FINAL ROAD CONSTRUCTION, GRADING, FOREST MITIGATION BANK AND STORMWATER MANAGEMENT PLAN

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B' - 'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

ZONING: RC-DEO

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

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

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STORMWATER MANAGEMENT PRACTICES

LOT No.	MICRO BIO-RETENTION	DRY WELL	ROOFTOP DISCONNECTION	NON-ROOFTOP DISCONNECTION
1	--	--	--	X
2	--	--	--	X
3	--	--	--	X
4	--	--	X	X
5	--	--	X	X
6	--	X	--	X
7	--	--	--	X
8	--	--	X	X
9	--	X	X	X
10	--	X	--	X
11	X	--	--	X
12	X	--	--	X
13	--	X	X	--
14	--	X	X	--
15	--	X	--	X
16	--	X	--	X
17	--	--	--	X
18	--	--	--	X

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	R/W WIDTH
FAIRLANE ROAD	PUBLIC ACCESS PLACE/STREET	30 M.P.H.	50'
GALAXY DRIVE	PUBLIC ACCESS PLACE	25 M.P.H.	50'

TRAFFIC CONTROL SIGNS

ROAD NAME	CENTERLINE STA.	OFFSET	POSTED SIGN	SIGN CODE
FAIRLANE ROAD	0+33	17'L	STOP	R1-1
FAIRLANE ROAD	2+00	14'R	SPEED LIMIT 25	R2-1
FAIRLANE ROAD	3+63	14'R	REVERSE TURN w/ ADVISORY SPEED "15 MPH"	W1-3R W13-1
GALAXY DRIVE	0+29	18'L	STOP	R1-1
OLD FREDERICK ROAD	26+68 FACING WESTWARD	13'L	WARNING SIGN w/ROAD NAME PANEL	W2-2L M4-9(1)
OLD FREDERICK ROAD	19+70 FACING EASTWARD	13'R	WARNING SIGN w/ROAD NAME PANEL	W2-2R M4-9(1)
OLD FREDERICK ROAD	7+44 FACING WESTWARD	13'L	WARNING SIGN w/ROAD NAME PANEL	W2-2L M4-9(1)
OLD FREDERICK ROAD	0+44 FACING EASTWARD	13.5'R	WARNING SIGN w/ROAD NAME PANEL	W2-2R M4-9(1)

SITE MAP

NO SCALE

26 – DENOTES PHASE TWO LOTS

VICINITY MAP

SCALE: 1" = 2000'

FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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

1. TRACT AREA = 138.610 ACRES
2. FLOODPLAIN AREA = 6.01 ACRES
3. STEEP SLOPES AREA = 3.110 ACRES
4. NET TRACT AREA = 129.490 ACRES (138.610 AC – 6.01 AC. – 3.110 AC)
5. DENSITY ALLOWED BY MATTER OF RIGHT: 138.610 ACRES X 1 DWELLING UNIT/4.25 ACRES = 32 SINGLE FAMILY DETACHED UNITS.
6. DENSITY ALLOWED WITH DENSITY EXCHANGE OPTION = 64 SINGLE FAMILY UNITS (1 DWELLING UNIT /2 NET ACRES x 129.490 NET ACRES)
7. TOTAL NUMBER OF PROPOSED DWELLING UNITS FOR PROJECT = 45 UNITS (44 CLUSTER LOTS + 1 BUILDABLE PRESERVATION PARCEL).

(18 UNITS + 1 BUILDABLE PRESERVATION PARCEL ARE PROPOSED IN PHASE ONE)
(26 UNITS ARE PROPOSED IN PHASE TWO)

CONSTRUCTION PHASING TABULATION*

PHASE	ALLOCATION YEAR	No. OF LOTS
ONE	2015	18 AND BUILDABLE PRESERVATION PARCEL
TWO	2015	26

*NOTE: PHASING IS NOT APFO BASED.

OWNER

Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1327

DEVELOPER

Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

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

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

APPROVED: DEPARTMENT OF PUBLIC WORKS
[signature] 3/7/2016
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[signature] 3-31-16
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] 3.18.16
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

REVISIONS

NO.	DESCRIPTION	DATE

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, BUREAU OF ENGINEERING, CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST (5) WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
4. TRAFFIC CONTROL DEVICES:
a. THE R1-1 (STOP) SIGN AND THE STREET SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
b. THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
c. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MdMUTCD).
d. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ("QUICK PUNCH"), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) – 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
5. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON HOWARD COUNTY GEODETIC CONTROL STATIONS:

HO. CO. CONTROL STATION #08AA – HORIZONTAL – NAD '83)
N 609,215.0191
E 1,299,547.5412
ELEVATION = 608.586 – VERTICAL – (NAVD '88)

HO. CO. CONTROL STATION #08BA – HORIZONTAL – (NAD '83)
N 609,098.5466
E 1,301,409.1044
ELEVATION = 630.728 – VERTICAL – (NAVD '88)

6. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY TRAFFIC GROUP DATED NOVEMBER 21, 2013 AND WAS APPROVED UNDER SP-14-002.
7. BACKGROUND INFORMATION:
A. SUBDIVISION NAME: FAIRLANE FARM (Formerly SCHULTE PROPERTY)
B. TAX MAP NO.: 8
C. PARCEL NO.: 8 & 17
D. ZONING: RC-DEO
E. ELECTION DISTRICT: FOURTH
F. TOTAL TRACT AREA: 138.610 AC.±
G. NET AREA = 129.490 AC.±
H. AREA OF STEEP SLOPES 25% AND GREATER = 3.11 AC.± (OUTSIDE FLOODPLAIN)
I. NO. OF BUILDABLE LOTS: 18 (PHASE ONE)
J. NO. OF NON-BUILDABLE PRESERVATION PARCELS: 4
K. NO. OF BUILDABLE PRESERVATION PARCELS: 1
L. NO. OF PARCELS: 1
M. NO. OF NON-BUILDABLE BULK PARCELS: 2
N. AREA OF BUILDABLE LOTS: 19.105 AC.±
O. AREA OF NON-BUILDABLE PRESERVATION PARCELS: 42.433 AC.±
P. AREA OF BUILDABLE PRESERVATION PARCELS: 34.996 AC.±
Q. AREA OF PARCELS: 0.201 AC.±
R. AREA OF NON-BUILDABLE BULK PARCELS: 36.430 AC.±
S. TOTAL AREA OF ROADWAY TO BE DEDICATED: 5.445 AC.±
T. PREVIOUS FILE NOS.: ECP-14-003, SP-14-002, WP-14-107, RE-15-001, RE-15-001 (S1), F-15-054 (S1), WP-16-084 & F-15-094
U. AREA OF FLOODPLAIN: 6.01 AC.±
8. NO CEMETERIES EXIST WITHIN THIS SUBDIVISION.
9. ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180.
10. PROPERTY ZONED RC-DEO PER 10/6/13 COMPREHENSIVE ZONING PLAN.
11. AS PER SECTION 104.0.G.4(c) OF THE ZONING REGULATIONS, ONLY ONE EASEMENT HOLDER IS REQUIRED FOR PRESERVATION PARCELS THAT ARE BEING CREATED SOLELY FOR SWM FACILITIES, DEEDED TO HOWARD COUNTY OR DEEDED TO THE HOA WITH THE EASEMENT HELD BY THE COUNTY.
A. BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCEL 'B' OWNED: PRIVATE HOMEOWNER EASEMENT HOLDER(S): H.O.A. & HOWARD COUNTY, MD.
B. NON-BUILDABLE PRESERVATION PARCEL 'D' & 'E' OWNED: HOMEOWNERS ASSOCIATION EASEMENT HOLDER(S): HOWARD COUNTY, MD.
C. NON-BUILDABLE PRESERVATION PARCEL 'C' AND PARCEL 'F' OWNED: HOWARD COUNTY, MARYLAND EASEMENT HOLDER(S): H.O.A.
12. SOILS INFORMATION TAKEN FROM NRCS WEB SOIL SURVEY.
13. FOREST STAND DELINEATION REPORT DATED OCTOBER, 2013 AND WETLAND REPORT DATED NOVEMBER 21, 2013 FOR SCHULTE PROPERTY WAS PREPARED BY ECO-TONE, INC.
14. THERE ARE STEEP SLOPES OF 25% OR GREATER ON SITE OF 3.11 ACRES.
15. 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.
16. SITE IS NOT ADJACENT TO A SCENIC ROAD.
17. THERE ARE EXISTING STRUCTURES LOCATED WITHIN BUILDABLE PRESERVATION PARCEL 'A' TO REMAIN. ALL OTHER STRUCTURES ARE TO BE REMOVED PRIOR TO RECORDATION OF FINAL PLAT.
18. IN ACCORDANCE WITH SECTION 128.0.A.12 OF THE ZONING REGULATIONS, THE EXISTING HORSE PADDOCK AND BARN ON BUILDABLE PRESERVATION PARCEL 'A' ARE CONSIDERED FARM STRUCTURES FOR THE BOARDING AND GENERAL CARE OF LIVESTOCK AND CAN BE EXCLUDED FROM THE SIZE RESTRICTIONS FOR DETACHED ACCESSORY STRUCTURES ON RESIDENTIALLY ZONED LOTS.
19. PRIVATE RANGE OF ADDRESS SIGN ASSEMBLIES SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE FOR THE SIX (6) USE-IN-COMMON DRIVEWAYS ALONG FAIRLANE ROAD, GALAXY DRIVE AND THUNDERBIRD DRIVE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.
20. FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT TO THE PIPESTEM LOT DRIVEWAY.
21. ARTICLES OF INCORPORATION FOR THE FAIRLANE FARM HOMEOWNERS ASSOCIATION, INC. WILL BE FILED WITH THE STATE DEPARTMENT OF ASSESSMENTS AND TAXATION PRIOR TO RECORDATION OF THE FINAL PLAT.
22. A PRE-SUBMISSION COMMUNITY MEETING WAS HELD FOR THIS PROJECT ON AUGUST 12, 2013.
23. ALL EXISTING WELL AND SEPTIC SYSTEMS WHICH ARE NOT UTILIZED IN THE LOT DESIGN WILL BE ABANDONED PRIOR TO RECORDATION OF THE FINAL PLAT.
24. [hatch] 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 SEWAGE 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. RECORDATION OF A MODIFIED EASEMENT SHALL NOT BE NECESSARY.
25. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
26. ANY CHANGES TO THE PRIVATE SEWERAGE AREA SHALL REQUIRE A REVISED PERC CERTIFICATION PLAN.
27. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAM(S), OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.
28. THE 100 YEAR FLOODPLAIN DELINEATED ON THIS PLAN HAS BEEN DETERMINED TO BE "NOT CRITICAL" BASED ON A REPORT PREPARED BY FISHER, COLLINS AND CARTER, INC. ON MAY, 2014.
29. THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST ACT. NO, CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENTS; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED IN TWO PHASES PER WP-16-084. THIS PHASE ONE WILL PROVIDE 28.78 AC. OF ON-SITE CREDITED RETENTION AND 5.99 AC. OF ON-SITE REFORESTATION. SURETY WILL BE POSTED IN TWO (2) BONDS; ONE IN THE AMOUNT OF $130,462.00 FOR THE 5.99 ac. OF ON-SITE REFORESTATION AND ONE IN THE AMOUNT OF $224,552.00 FOR THE 10.31 ac. ON-SITE TREE PLANTING BANK ON NON-BUILDABLE PRESERVATION PARCEL 'C'. BOTH BONDS WILL BE INCLUDED AS PART OF THE DEVELOPER'S AGREEMENT FOR F-15-054. TOTAL SURETY AMOUNT = $355,014.00. SURETY FOR FOREST RETENTION IS NOT REQUIRED.
30. PERIMETER LANDSCAPING FOR THIS DEVELOPMENT SHALL BE IN ACCORDANCE WITH SECTION 16.124 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND LANDSCAPE MANUAL. FINANCIAL SURETY IN THE AMOUNT OF $37,470.00 FOR 105 SHADE TREES, 37 EVERGREEN TREES & 14 SHRUBS HAVE BEEN PROVIDED AS PART OF THE DEVELOPER'S AGREEMENT.
31. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
32. 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.
33. BOUNDARY INFORMATION IS BASED ON A SURVEY PERFORMED ON OR ABOUT APRIL 4, 2013 BY FISHER, COLLINS & CARTER, INC.
34. THIS PROPERTY IS NOT LOCATED WITHIN THE METROPOLITAN DISTRICT. PRIVATE WELL AND SEPTIC WILL BE UTILIZED FOR THIS PROJECT
35. STORM WATER MANAGEMENT IS IN ACCORDANCE WITH THE M.D.E. STORM WATER DESIGN MANUAL, VOLUMES I & II, 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 (IN ACCORDANCE WITH FIGURE 5.04 WHEN THE BUILDING PERMIT PLAT PLAN IS SUBMITTED), 2 AREAS OF (M-5) DRYWELLS, 3 (M-6) MICRO-BIORETENTION FACILITIES & 6 (M-8) GRASS SWALES TO MEET AND EXCEED THE REQUIRED ESD VOLUME.
36. STORM WATER MANAGEMENT DEVICES LOCATED ON INDIVIDUAL LOTS WILL BE OWNED AND MAINTAINED BY THAT PARTICULAR LOT OWNER AND SUBJECT TO THE REQUIREMENTS OF A RECORDED DECLARATION OF COVENANT, SWM DEVICES LOCATED WITHIN THE PUBLIC R/W WILL BE PUBLICLY OWNED AND MAINTAINED, AND SWM DEVICES LOCATED ON NON-BUILDABLE BULK 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.
37. A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
38. THIS SUBDIVISION IS WITHIN THE GROWTH TIER IV AREA, BUT NOT AFFECTED BY SB-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 18 MOS. OF THE SOIL PERCOLATION TEST APPROVAL OF JULY 1, 2012 AND WILL OBTAINED PRELIMINARY PLAN APPROVAL BY OCT. 1, 2016. NO FURTHER SUBDIVISION IS PERMITTED FOR LOTS 1 THRU 44 UNDER SB-236.
39. A GROUNDWATER APPROPRIATIONS PERMIT MUST BE OBTAINED FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT PRIOR TO HOWARD COUNTY HEALTH DEPARTMENT SIGNATURE OF THE FINAL PLAT.
40. ALL EXISTING WELL AND SEPTIC COMPONENTS TO BE ABANDONED OR REPLACED MUST BE PROPERLY ABANDONED AND REPLACEMENT COMPONENTS APPROVED BY THE HEALTH DEPARTMENT PRIOR TO SIGNATURE OF THE FINAL PLAT.
41. BUILDABLE PRESERVATION PARCEL 'A' HAS BEEN DESIGNED TO BE USED FOR HORSEBACK RIDING THAT ALLOWS HORSE TRAILS TO WEAVE THROUGHOUT THE SUBDIVISION. NON-BUILDABLE PRESERVATION PARCELS 'D' & 'E' ARE FOR STORMWATER MANAGEMENT USE AND NON-BUILDABLE PRESERVATION PARCELS 'B' & 'C' ARE FOR FOREST CONSERVATION.
42. PLAN SUBJECT TO WP-14-107 WHICH THE DIVISION OF LAND DEVELOPMENT WAIVE ON JUNE 19, 2014 APPROVED A REQUEST TO 16.120(A)(1) AND 16.119(F)(1) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH STATES THAT RESIDENTIAL SUBDIVISIONS THAT FRONT ON A MAJOR COLLECTOR ROAD SHOULD PROVIDE VEHICULAR ACCESS TO THE SUBDIVISION BY A LOWER CLASSIFICATION PUBLIC ROAD, SECTION 16.1205(A)(7)&(10) 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 16.120(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)(II) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WHICH REQUIRES CONSTRUCTION OF ROAD IMPROVEMENTS ON MAJOR COLLECTOR OR MINOR ARTERIAL ROADS.

APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:

*A). 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.
B). THE FRONTAGE ALONG OLD FREDERICK ROAD AND MORGAN STATION ROAD MUST BE WIDENED TO THE MINIMUM (12-FEET) HALF SECTION FOR A PUBLIC ROADWAY AND CONSTRUCTION OF ADEQUATE SIDE SWALES.
C). REMOVAL OF SEVEN SPECIMEN TREES #1915, #1916, #1928, #1933, #1934, #1938 AND #1939 WILL REQUIRE MITIGATION OF SEVEN 3"-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 WAIVER PETITION APPROVAL, THEREFORE, A WAIVER TO SECTION 16.119(f)(1) AND 16.120(a)(1) ARE NO LONGER APPLICABLE.

43. DRIVEWAY (S) SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS:
A) WIDTH – 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE)
B) SURFACE – SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING
C) GEOMETRY – MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM OF 45 FOOT TURNING RADIUS
D) STRUCTURES (CULVERTS/BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING)
E) DRAINAGE ELEMENTS – CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE
F) STRUCTURE CLEARANCES – MINIMUM 12 FEET
G) MAINTENANCE – SUFFICIENT TO ENSURE ALL WEATHER USE
44. 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 "GOVERNMENT DELAY" IF THE WELL DRILLING HOLDS UP THE HEALTH DEPARTMENT SIGNATURE OF THE RECORD PLAT.
45. THIS F PLAN CANNOT BE USED FOR THE CONSTRUCTION OF HOUSES SINCE THE ACTUAL HOUSE TYPE AND THE REQUIRED SEDIMENT CONTROL HAS NOT BEEN ESTABLISHED.
46. THIS SUBDIVISION PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE 10-06-13 ZONING REGULATIONS PER COUNCIL BILL NO. 32-2013. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS MUST COMPLY WITH SETBACKS AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF A BUILDING OR GRADING PERMIT APPLICATION.
47. THE CONCRETE PADS FOR REFUSE AND RECYCLING COLLECTION LOCATED WITHIN THE USE-IN-COMMON DRIVEWAY EASEMENTS FOR LOTS 7-10 & 15-18 WILL BE MAINTAINED BY THE OWNERS OF THOSE LOTS PURSUANT TO THE DECLARATION OF RIGHT OF ACCESS AND MAINTENANCE OBLIGATION RECORDED AMONG THE LAND RECORDS OF HOWARD COUNTY ALONG WITH THE RECORDING OF THE PLAT.
48. IN ACCORDANCE WITH SECTION 104.0.F OF THE ZONING REGULATIONS AT LEAST 10% OF THE DWELLINGS IN EACH RC DEVELOPMENT SHALL BE MODERATE INCOME HOUSING UNITS. THIS PROJECT HAS ELECTED TO SATISFY THE MIHU OBLIGATION BY A FEE-IN-LIEU PAYMENT FOR PHASE ONE FOR LOTS 1 THRU 18 = 2 UNITS (18 UNITS x 10%).
49. THERE WAS A PRE-APPLICATION MEETING HELD WITH MDE AND THE CORP OF ENGINEERS REGARDING THIS PROJECT AND THE REFERENCE NUMBER FROM THIS MEETING IS: AI # 147876. THE MDE TRACKING No. IS 201561942 FOR THE POND REMOVAL AND STREAM RESTORATION WORK TO BE DONE AS PART OF PHASE TWO OF THIS SUBDIVISION.

GENERAL NOTES CONTINUED:

50. NON-BUILDABLE BULK PARCELS 'G' AND 'H' RESERVE THE RIGHT TO BE FURTHER SUBDIVIDED IN ACCORDANCE WITH SECTION 104.0 OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
51. NON-BUILDABLE PRESERVATION PARCEL 'C' CONTAINS A FOREST TREE BANK (REFORESTATION) IDENTIFIED AS FOREST CONSERVATION EASEMENT No. 5. SEE SHEET 33 FOR PLAN VIEW AND DETAILS.
52. THE PRIVATE USE-IN-COMMON ACCESS EASEMENT AND MAINTENANCE AGREEMENT FOR THE USE AND BENEFIT OF LOTS 7 THRU 10 AND LOTS 15 THRU 18 IS RECORDED SIMULTANEOUSLY WITH THE FINAL PLAT.
53. THIS PLAN IS SUBJECT TO A WAIVER TO DESIGN MANUAL, VOLUME III, SECTIONS 2.4.A AND 2.4.B.2 TO REDUCE THE 14 FOOT WIDENING ALONG OLD FREDERICK ROAD. BASED ON THE INFORMATION PROVIDED AND THE INTENT TO NOT RELOCATE POWER POLES OR REMOVE MATURE TREES ALONG THE FRONTAGE, DEVELOPMENT ENGINEERING DIVISION HAS DECIDED TO APPROVE THESE WAIVERS SUBJECT TO THE FOLLOWING SECTIONS:
1. FROM STATION 5+37 (END OF EXCEL LANE) TO STA. 7+50, PROVIDE A 14 FOOT DRIVE LANE SECTION AND 2 FOOT GRASS SHOULDER.
2. FROM STATION 7+50 TO STA. 11+50, PROVIDE A 11 FOOT DRIVE LANE SECTION, 1 FOOT PAVED SHOULDER AND 2 FOOT GRASS SHOULDER.
3. FROM STATION 11+50 TO STA. 16+75, PROVIDE A 11 FOOT DRIVE LANE SECTION, 1 FOOT PAVED SHOULDER AND 4 FOOT GRASS SHOULDER.
4. FROM STATION 16+50 TO STA. 18+50, PROVIDE A 11 FOOT DRIVE LANE SECTION, 1 FOOT PAVED SHOULDER AND 2 FOOT GRASS SHOULDER.
5. FROM STATION 18+50 TO STA. 32+00, PROVIDE A 14 FOOT DRIVE LANE SECTION AND 4 FOOT GRASS SHOULDER MEETING R-1.03.
6. PROVIDE AN 80 FOOT TRANSITION FROM THE 12 FOOT PAVEMENT TO THE 14 FOOT PAVEMENT AT STATION 18+50.
7. THE EXISTING CULVERT AT STATION 15+00 MAY NEED TO BE EXTENDED DUE TO THE WIDENING. THE GUARDRAIL WILL HAVE TO BE ADJUSTED ACCORDINGLY.
54. THIS PLAN IS SUBJECT TO WAIVER PETITION WP-16-084 FROM SECTION 16.1202 (a)(1) OF THE HOWARD COUNTY CODE, WHICH REQUIRES APPROVAL OF A FOREST CONSERVATION PLAN FOR THE ENTIRE PROJECT AS PART OF THE SUBDIVISION PLAN. THE APPLICANT IS REQUESTING THE FOREST CONSERVATION REQUIREMENT BE REVIEWED IN PHASES RATHER THAN ENTIRELY UNDER PHASE ONE. THIS WAIVER WAS APPROVED ON JANUARY 4, 2016 WITH THE FOLLOWING CONDITION:
1. PHASE ONE OF THE DEVELOPMENT SHALL ADDRESS THE FOREST CONSERVATION REQUIREMENT FOR THE ENTIRE DEVELOPMENT, EXCEPT THE STREAM CHANNELIZATION AREA INDICATED AS PUBLIC EASEMENT No. 6 ON THE WAIVER PETITION EXHIBIT. PUBLIC FOREST CONSERVATION EASEMENT No. 6 SHALL BE ADDRESSED WITH PHASE TWO OF THE DEVELOPMENT.
55. BY LETTER DATED NOVEMBER 17, 2015 THE OWNER REQUESTED PRIVATE OWNERSHIP OF NON-BUILDABLE PRESERVATION PARCEL 'B' TO BE OWNED BY THE PRIVATE ENTITY OF BUILDABLE PRESERVATION PARCEL 'A' WITH HOWARD COUNTY, MARYLAND AND THE H.O.A. AS EASEMENT HOLDERS. AS OF DECEMBER 10, 2015 THE PLANNING DIRECTOR APPROVED THE REQUEST TO ALLOW NON-BUILDABLE PRESERVATION PARCEL 'B' TO BE PRIVATELY OWNED BY THE OWNER OF BUILDABLE PRESERVATION PARCEL 'A'.

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

[signature] 2/4/16
Aldo M. Vitucci, P.E. — Date

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

FAIRLANE FARM
PHASE ONE
LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 1 OF 38

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 1 Title sheet.dwg, 2/4/2016 7:09:41 AM, 1:1

CENTERLINE CURVE DATA							
CURVE #	ROAD NAME	STATION	RADIUS	LENGTH	DELTA	CHD LGTH	CHORD
C1	FAIRLANE ROAD	4+74.38 TO 6+64.77	120.00'	190.39'	47°44'47"	171.04'	N84°40'25"E
C2	FAIRLANE ROAD	6+95.58 TO 9+52.65	170.00'	257.07'	33°42'12"	233.27'	N86°48'24"E

Scale: 1" = 50'

NO.	DESCRIPTION	DATE

REVISIONS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, ~~DIVISION OF LAND DEVELOPMENT~~ DPW Bureau of Highways — 3/7/2016 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 3.18.16 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, ~~BUREAU OF HIGHWAYS~~ DPZ, Division of Land Development — 3-31-16 DATE

NOTES: 1. SEE SHEET 34 & 35 FOR OLD FREDERICK ROAD WIDENING AND STRIPING PLANS
2. SEE SHEET 36 - 38 FOR OLD FREDERICK ROAD CROSS SECTIONS.

Aldo M. Vitucci, P.E. — 2/4/16 Date

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

FAIRLANE FARM
PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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

FAIRLANE ROAD
PLAN AND PROFILE

OWNER	DEVELOPER
Estate Of F.J. Schulte c/o Diane Schulte, Personal Representative 2215 Duvall Road Woodbine, Md 21797 410-977-1327	Land Design & Development 5300 Dorsey Hall Drive Suite 102 Ellicott City, Maryland 21042 (410)-977-0422

SCALE: AS SHOWN	DATE: FEB. 3, 2016	DWG. NO. 2 OF 38
DES. R.A.I./A.M.V.	DRN. J.C.L.	CHK. A.M.V.

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

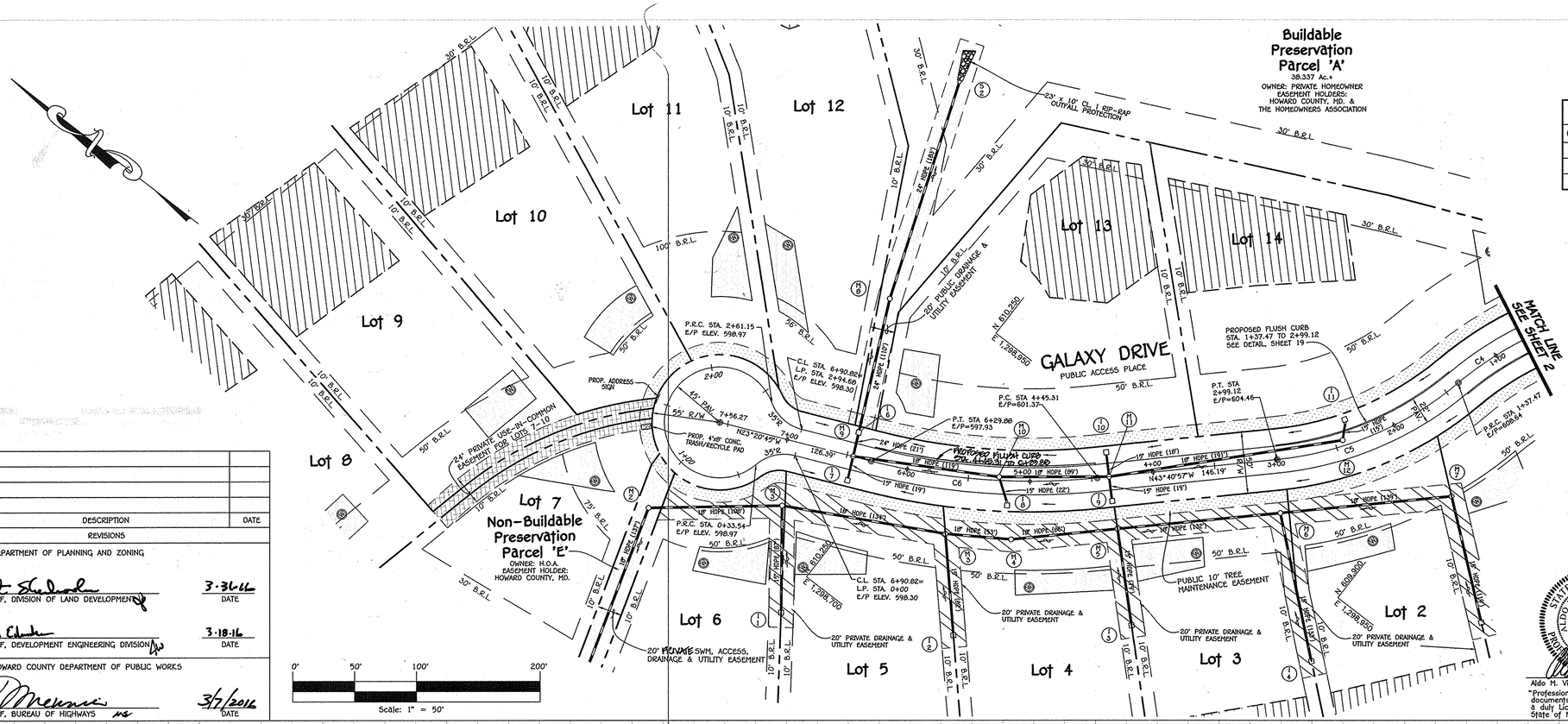
FAIRLANE ROAD
PUBIC ROAD
DESIGN SPEED = 25 M.P.H.

VERTICAL CURVE DATA
PVI STA = 4+00.14
PVI ELEV = 614.00
LENGTH = 200.00'
CORR. = 1.33'
SSD = 229.04'
HIGH PT STA = 4+10.82
HIGH PT ELEV = 612.73

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

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 2-3 road plans.dwg, 2/4/2016 7:37:55 AM, 1:1

F-15-054



CENTERLINE CURVE DATA							
CURVE #	ROAD NAME	STATION	RADIUS	LENGTH	DELTA	CHD LGTH	CHORD
C4	GALAXY DRIVE	0+00 TO 1+37.47	270.00'	137.47'	21°13'14"	135.99'	N63°23'56"W
C5	GALAXY DRIVE	1+37.47 TO 2+99.12	270.00'	161.65'	21°13'14"	159.25'	N60°50'02"W
C6	GALAXY DRIVE	4+45.31 TO 6+29.80	520.00'	184.57'	20°20'12"	183.60'	N33°30'51"W

NO.	DESCRIPTION	DATE
	REVISIONS	

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3.31.16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.18.16

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 3/7/2016

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — No. 20749 — PROFESSIONAL ENGINEER

Aldo M. Vitucci, P.E. — Date 2/4/16

"Professional certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20749, Expiration Date 5-22-17."

FAIRLANE FARM
PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK.

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

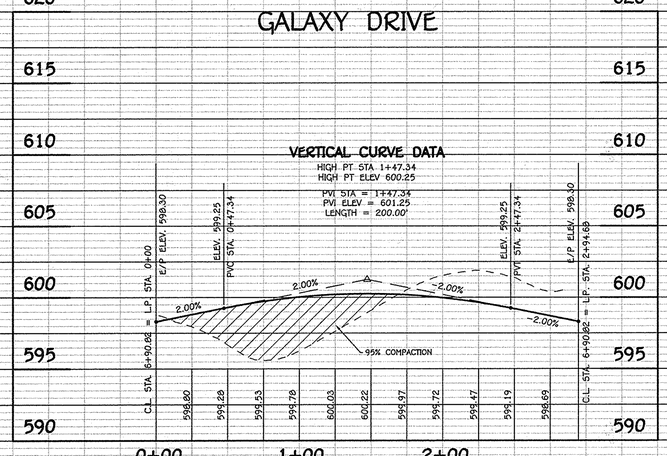
GALAXY DRIVE
PLAN AND PROFILE

OWNER
Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Ouzell Road
Woodbine, Md 21797
410-977-1327

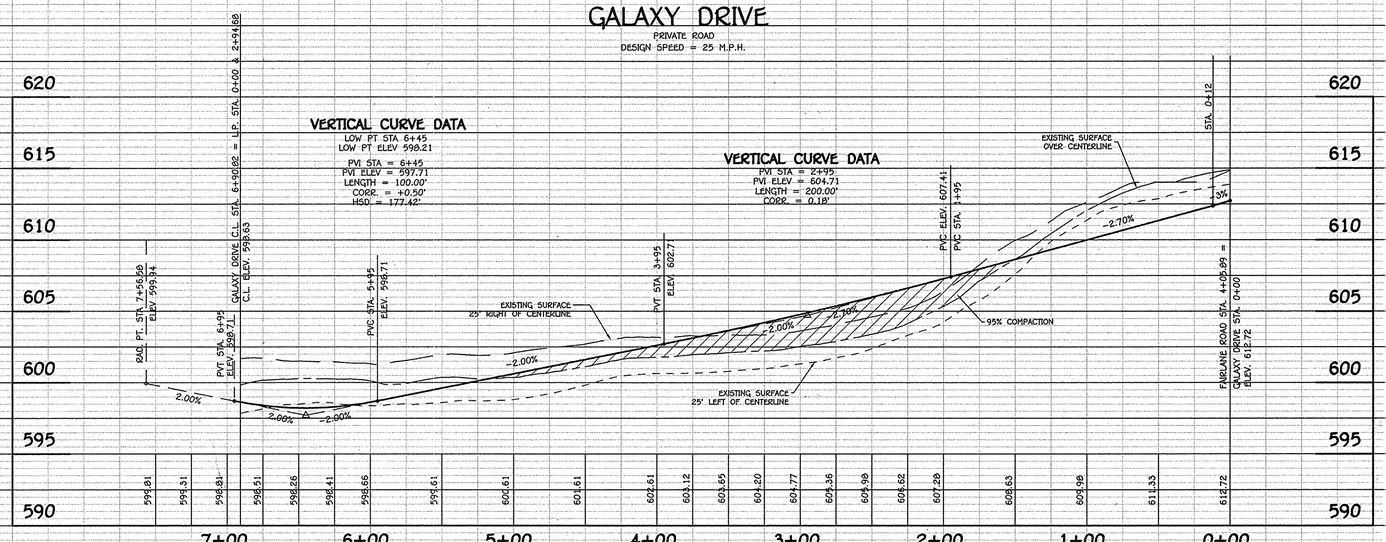
DEVELOPER
Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

SCALE: AS SHOWN	DATE: FEB. 3, 2016	DWG. NO. 3 OF 38
DES. R.A.I./A.M.V.	DRN. J.C.L.	CHK. A.M.V.

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



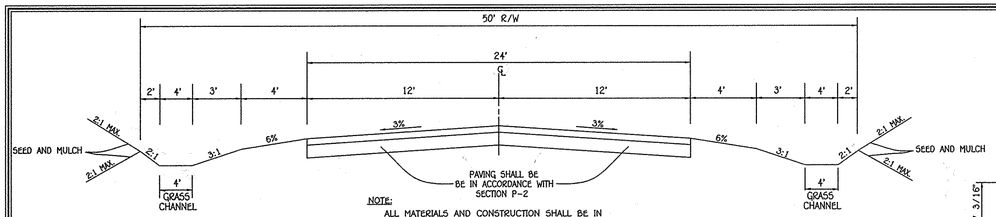
LINEAR PROFILE
SCALE HORZ. 1" = 50'
VERT. 1" = 5'



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

F-15-054

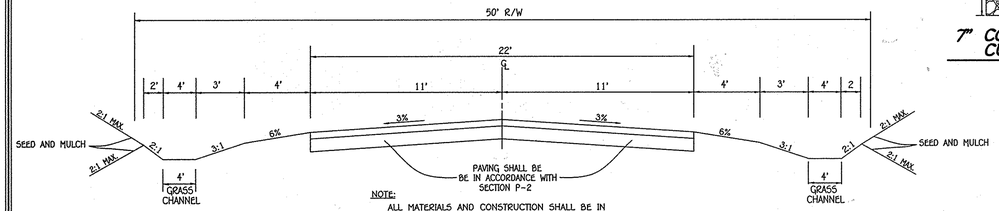
I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 2-3 road plans.dwg, 2/4/2016 7:39:57 AM, 1:1



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 STREET ROADWAY SECTION

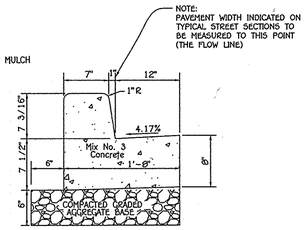
NO SCALE



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

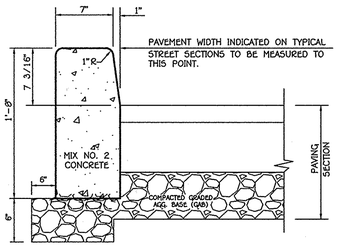
TYPICAL PUBLIC ACCESS PLACE ROADWAY SECTION

NO SCALE



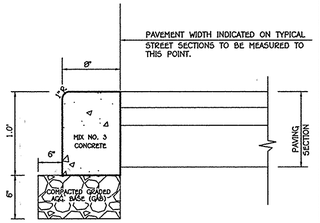
7" COMBINATION CONCRETE CURB AND GUTTER

NO SCALE (R-3.01)



STANDARD BARRIER CURB

NO SCALE DETAIL R-3.03



FLUSH CURB

NO SCALE DETAIL R-3.07

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 3/7/2016

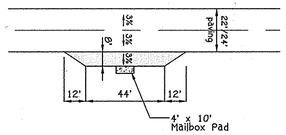
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3-31-16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.18.16

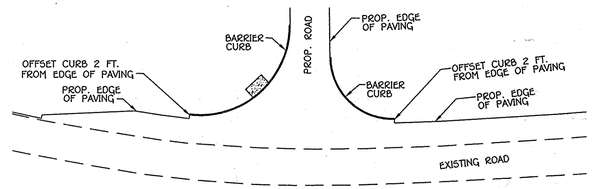
REVISIONS

NO.	DESCRIPTION	DATE



TYPICAL MAILBOX PULL-OFF AREA

SCALE: 1" = 40'

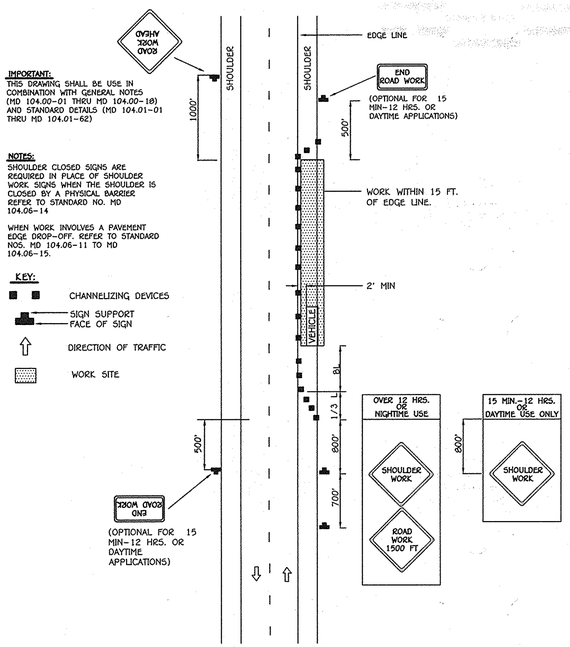


OFFSET CURB @ ENTRANCE DETAIL

SCALE: 1" = 40'

DETAIL R-2.01

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



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

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

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

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

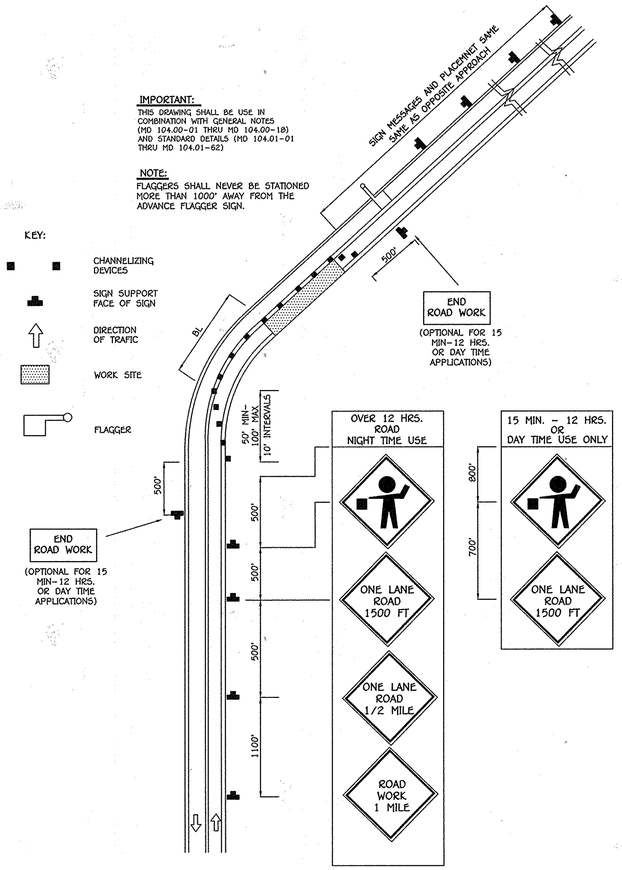
SHOULDER WORK/2-LANE, 2-WAY EQL/LESS THAN 40 MPH

NO SCALE

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

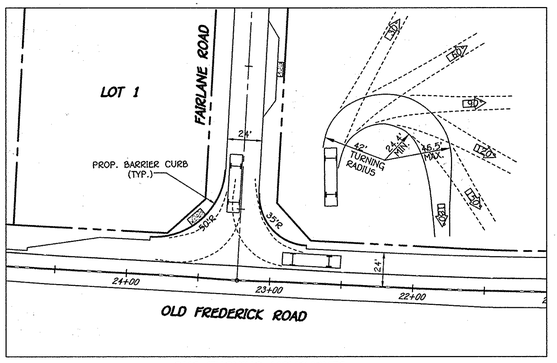
NOTE:
FLAGGERS SHALL NEVER BE STATIONED MORE THAN 1000' AWAY FROM THE ADVANCE FLAGGER SIGN.

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



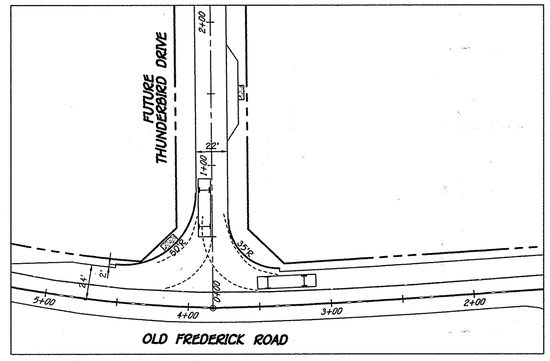
FLAGGING OPERATION /-LANE, 2-WAY EQUAL/LESS THAN 40 MPH

NO SCALE



BUS TURNING MOVEMENTS

SCALE: 1" = 50'



BUS TURNING MOVEMENTS

SCALE: 1" = 50'

OWNER

Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1327

DEVELOPER

Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

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

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — No. 20740 — PROFESSIONAL ENGINEER

Aldo M. Vitucci, P.E. — Date 2/4/16

"Professional certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20740, Expiration Date 2-22-17."

ROADWAY DETAILS & MOT PLAN

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 4 OF 38

F-15-054

I:\2005\05105\dwg\F Plan\revised f plan lots 1-18\05105 Sheet 4 Roadway details.dwg, 2/4/2016 7:48:49 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 phosphorous and metals. Vegetation planted in the facility will aid in nutrient uptake and water storage. Additionally, plant roots will provide arteries for stormwater to permeate soil for groundwater recharge. Finally, successful plantings provide aesthetic value and wildlife habitat making these facilities more desirable to the public.

Design Constraints:

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

Bio-retention

Soil Bed Characteristics

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

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

Table A.3 Planting Soil Characteristics

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

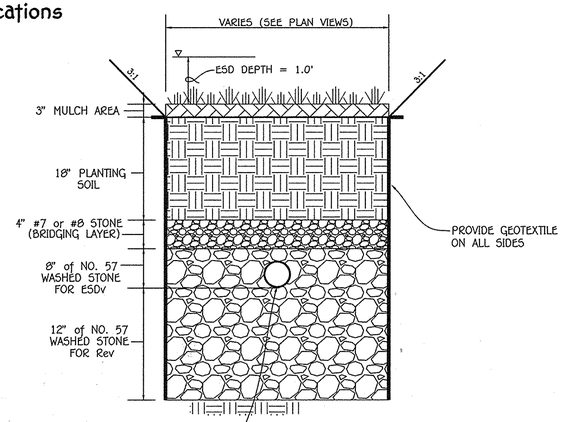
Mulch Layer

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

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

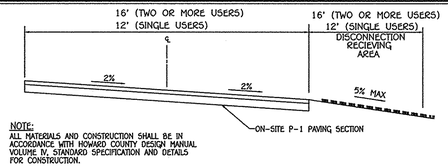
Planting Guidance

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



Micro Bio-Retention (M-6) Section

NO SCALE



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

Typical Private Drive Cross Slope Section

NOT TO SCALE

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

1. Maintenance Of Areas Receiving Disconnection Runoff Is Generally No Different Than That Required For Other Lawn Or Landscaped Areas. The Areas Receiving Runoff Should Be Protected From Future Compaction Or Development Of Impervious Area. In Commercial Areas, Foot Traffic Should Be Discouraged As Well.

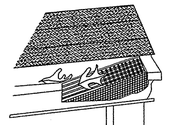
Operation and Maintenance Schedule For Privately Owned And Maintained Bio-Retention Areas (M-6)

1. 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.

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 ans shrubs and replace all deficient stakes and wires.

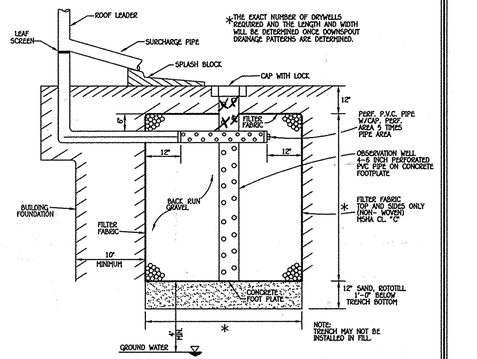
3. The HOA shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.

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



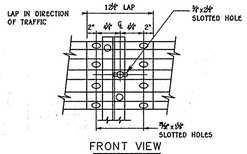
GUTTER DRAIN FILTER DETAIL

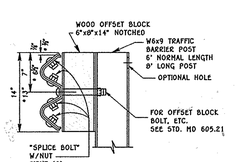
NOT TO SCALE



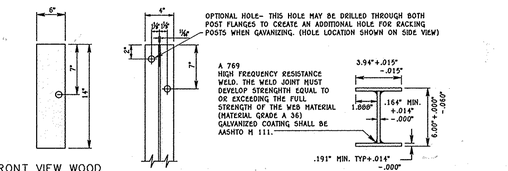
OPERATION AND MAINTENANCE SCHEDULE FOR DRYWELLS (M-5)

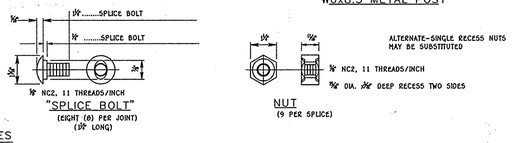
A. THE OWNER SHALL INSPECT THE MONITORING WELLS AND STRUCTURES ON A QUARTERLY BASIS AND AFTER EVERY HEAVY STORM EVENT.
B. THE OWNER SHALL RECORD THE WATER LEVELS AND SEDIMENT BUILD UP IN THE MONITORING WELLS OVER A PERIOD OF SEVERAL DAYS TO INSURE TRENCH DRAINAGE.
C. THE OWNER SHALL MAINTAIN A LOG BOOK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





TRAFFIC BARRIER W BEAM SPLICE JOINT



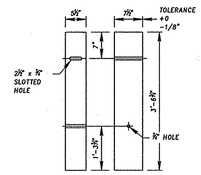


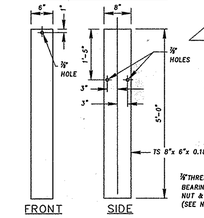
NOTES

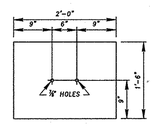
1. EXCEPT FOR THE DIMENSIONS SHOWN ON THE ALTERNATE WELDED W6x8.5 PLAN VIEW, ALL DIMENSIONS FOR HOLES, HOLE SPACING, LENGTHS, ETC. WILL REMAIN THE SAME AS THEY ARE FOR THE W6x9 POSTS AND WOOD OFFSET BLOCKS.
2. FOR COMPOSITE OFFSET BLOCKS SEE NOTE 5 ON MD 605.21
3. POSTS SHALL BE SPACED 6'-3" C/C, UNLESS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

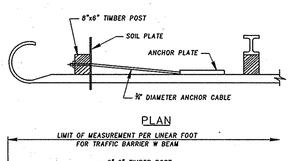
TRAFFIC BARRIER W BEAM METAL POST, W BEAM SPLICE AND WOOD OFFSET BLOCK

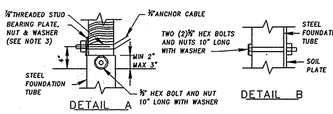
NOT TO SCALE MD 605.23

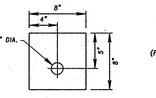










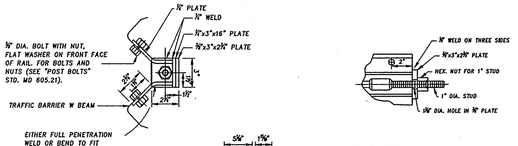


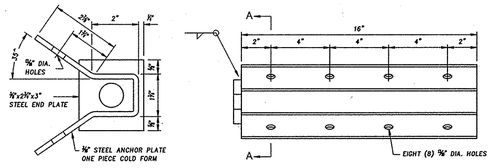
OPTION 2 (SHOWN ABOVE)
(FOUNDATION TUBE WITH SOIL PLATE)

OPTION 3 (NOT SHOWN)
(FOUNDATION TUBE WITHOUT SOIL PLATE)
(SAME AS OPTION 2 EXCEPT STEEL FOUNDATION TUBE IS 6½" LONG)

NOTES

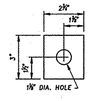
1. NOTES ON STD. MD 605.10 APPLY TO OPTION 2 & 3.
2. IF THE FOUNDATION TUBE AND SOIL PLATE (OPTION 2) ARE DRIVEN INTO THE SOIL, PROPER CARE SHOULD BE TAKEN TO ENSURE THAT THE SOIL PLATE FASTENERS ARE NOT BROKEN DURING THE DRIVING PROCESS.
3. SECURE BEARING PLATE WITH 16 PENNY GALVANIZED NAIL TO PREVENT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





NOTE

1. FOR MOUNTING DETAILS SEE STD. MD 605.10.



APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 3/7/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3.31.16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.18.16

REVISIONS		
NO.	DESCRIPTION	DATE

PRIVATE STORMWATER MANAGEMENT NOTES AND DETAILS & GUARDRAIL DETAILS

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 5 OF 38

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

2/4/16
Aldo M. Vitucci, P.E. — Date

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

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

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

OWNER
Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1327

DEVELOPER
Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

F-15-054

I:\2005\05109\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 5 Future Swm Details.dwg, 2/4/2016 7:51:35 AM, 11

DESIGN CERTIFICATION

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

Designer's Signature — Date: 2/4/16

Aldo M. Vitucci — Printed Name — 20748 — 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 — Date: 2/4/16

Joseph Rutter Principal — Printed Name & Title

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

Howard Soil Conservation District — Date: 3/1/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 3.31.16

Chief, Development Engineering Division — Date: 3.18.16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 3/7/2016

REVISIONS		
NO.	DESCRIPTION	DATE

SEDIMENT CONTROL LEGEND

- SUPER-SILT FENCE
- DIVERSION FENCE
- 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

SHEET 7 SEE MATCH LINE

Non-Buildable Bulk Parcel 'G' (PARCEL 'G' RESERVES THE RIGHT TO BE FURTHER SUBDIVIDED)

Non-Buildable Bulk Parcel 'H' (PARCEL 'H' RESERVES THE RIGHT TO BE FURTHER SUBDIVIDED)

Buildable Preservation Parcel 'A' OWNER: PRIVATE HOMEOWNER EASEMENT HOLDERS: HOWARD COUNTY, MD. & THE HOMEOWNERS ASSOCIATION

EX. WETLAND — 25' WETLAND BUFFER — 75' STREAM BUFFER — EX. WATERS OF THE U.S.

Existing Fence To Be Removed — Existing Fence To Be Remain — Existing Fence To Be Removed Within Lot

SPECIMEN TREE#1905 — SPECIMEN TREE#1906 — SPECIMEN TREE#1907 — SPECIMEN TREE#1908 — SPECIMEN TREE#1909 — SPECIMEN TREE#1927 — SPECIMEN TREE#1929 — SPECIMEN TREE#1930

LIMIT OF DISTURBANCE FOR STREAM RESTORATION (PHASE TWO) F-16-062 MDE TRACKING No. 201561942

FUTURE LOT — FUTURE PAVING

20' PRIVATE R/W FOR INGRESS, EGRESS AND REGRESS TO OLD FREDERICK ROAD L. 980, F. 452 and L. 2588, F. 150

EX. VARIABLE WIDTH GRAVEL DRIVE TO OLD FREDERICK ROAD TO REMAIN

B.M.P. No. 2 (M-6) BIO-RETENTION FACILITY (TO BE OWNED BY THE FAIRLANE FARM HOMEOWNERS ASSOCIATION AND JOINTLY MAINTAINED) (SEE SHEET 19 FOR PLAN & DETAILS)

PROP. 20' X 10' TEMP. 2' DEP-RAP OUTFALL PROTECTION w/GABION TOEWALL — 20' X 10' CL.1 RIP-RAP OUTFALL PROTECTION

PUBLIC 20' DRAINAGE & UTILITY EASEMENT — PRIVATE STORMWATER MANAGEMENT, ACCESS, DRAINAGE, & UTILITY EASEMENT — PROPOSED B.M.P. No. 2 (M-6) (MICRO BIO-RETENTION)

PUBLIC DRAINAGE & UTILITY EASEMENT — PUBLIC SIGHT DISTANCE EASEMENT — LAND DEDICATION FOR THE PURPOSE OF A PUBLIC ROAD

HOWARD COUNTY AGRICULTURAL LAND-PRESERVATION PROGRAM EASEMENT HC-86-066

Existing Overhead Power Lines — 24.00' Existing Overhead Power Lines — 15' PRESCRIPTIVE ROAD R/W

Existing Shed To Be Razed — Existing House To Be Razed — Wall To Be Abandoned — Ex. Septic Cleanout To Be Abandoned

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

ADGATE COURT (LOCAL ROAD) (COUNTY MAINTAINED) — CARTLEY COURT (LOCAL ROAD) — ROUND GATE CT.

LOT 7 LISBON ACRES PLAT NO. 3586 — LOT 21 LISBON ACRES PLAT NO. 3699 — LOT 12 LISBON ACRES PLAT NO. 3587 — LOT 13 LISBON ACRES PLAT NO. 3587 — LOT 14 LISBON ACRES PLAT NO. 3587 — LOT 15 LISBON ACRES PLAT NO. 3587 — LOT 23 LISBON ACRES PLAT NO. 3927

VEHICULAR EGRESS AND INGRESS RESTRICTED

N74°22'05"W 396.00' — S65°07'55"W 561.00' — N74°57'00"W 148.22' — S66°17'12"W 378.07'

E 1300700 — N 609900 — N 609800 — E 1300750 — E 1300150 — N 608050

-x-x-x-x-	DENOTES EXISTING FENCE TO BE REMOVED
x — x — x	DENOTES EXISTING FENCE TO REMAIN
	DENOTES EXISTING SLOPES 15% to 24.9%
	DENOTES EXISTING SLOPES 25% AND GREATER

CONTRACTOR NOTES:

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

ROOFLEADER NOTE:

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

HOUSE CONSTRUCTION:

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

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

OWNER

Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1327

DEVELOPER

Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

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

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

Aldo M. Vitucci, P.E. — 2/4/16 Date

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

PHASE II
GRADING & SEDIMENT CONTROL PLAN
FAIRLANE FARM
PHASE ONE
LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

ZONED: RC-DEO
TAX MAP NO.: 9 GRID NO.: 2, PAR.: 8
TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2016
SHEET 6 OF 30

F-15-054

I:\2005\05106\dwg\F Plan\revised f plan lots 1-18\05106 Sheet 6-9 Grading sediment plans.dwg, 2/3/2016 1:49:55 PM, 11

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 Complete And Workable Plan Based On My Personal Knowledge Of The Site, And That It Will Be Executed In Accordance With The Requirements Of The Howard Soil Conservation District.

Designer Signature — 2/4/16 Date

Aldo M. Vitucci — 20748

Printed Name — 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 — 2/4/16 Date

Printed Name & Title

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

Howard Soil Conservation District — 3/1/16 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 3-31-16 Date

Chief, Development Engineering Division — 3-18-16 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 3/17/2016 Date

REVISIONS		
NO.	DESCRIPTION	DATE

HOUSE CONSTRUCTION:

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

SEDIMENT CONTROL LEGEND

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

STOCKPILE NOTE:

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

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 6		
DRAINAGE AREA - INITIAL	0.90	ACRES
DRAINAGE AREA - INTERIM	——	ACRES
DRAINAGE AREA - FINAL	1.94	ACRES
TOTAL STORAGE REQUIRED	6,984	CF
TOTAL STORAGE PROVIDED	16,449	CF
WET STORAGE REQUIRED	3,492	CF
WET STORAGE PROVIDED	3,492	CF
DRY STORAGE REQUIRED	3,492	CF
DRY STORAGE PROVIDED	3,492	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	593.00	FT
TRAP BOTTOM ELEVATION	589.00	FT
TRAP BOTTOM DIMENSIONS	100 x 30	FT x FT
WEIR LENGTH	8	FT
WEIR CREST (DRY STORAGE) ELEVATION	591.00	FT
CLEANOUT ELEVATION	589.35	FT
TOP OF EMBANKMENT ELEVATION	592.00	FT
SIDE SLOPE	2:1	H:V RATIO
EMBANKMENT TOP WIDTH	4	FT
OUTLET PROTECTION - LENGTH	39	FT
OUTLET PROTECTION - DEPTH	19	IN

CONTRACTOR NOTES:

1. CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, STREAMS, WETLANDS & THEIR BUFFERS.

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

3. EARTH DIKES CROSSING THE ROADWAYS ARE TO BE CONNECTED TO MACADAM BERMS AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

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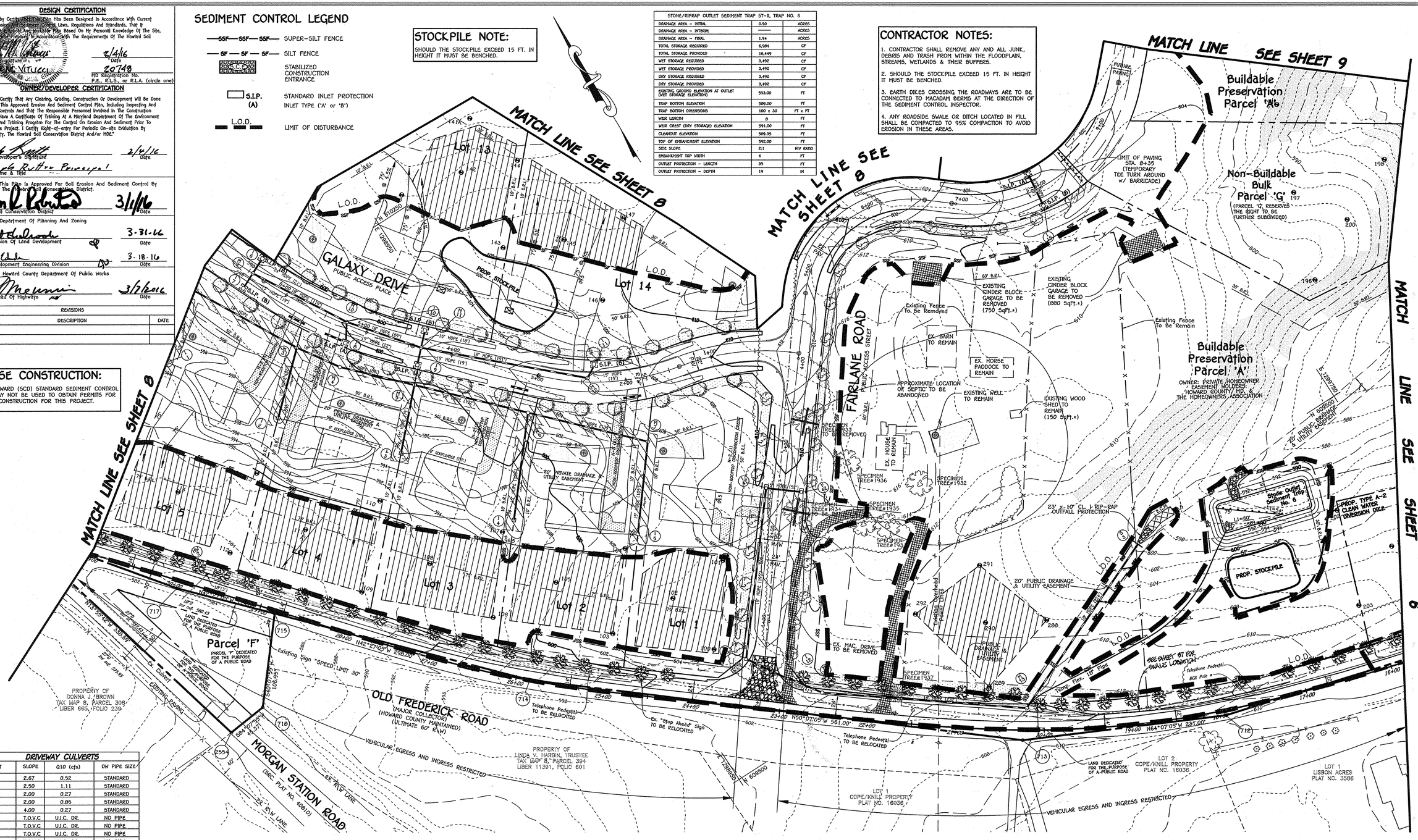

DRIVEWAY CULVERTS			
LOT	SLOPE	Q10 (cfs)	DW PIPE SIZE
2	2.67	0.52	STANDARD
3	2.50	1.11	STANDARD
4	2.00	0.27	STANDARD
5	2.00	0.85	STANDARD
6	4.00	0.27	STANDARD
7	T.O.V.C	U.I.C. DR.	NO PIPE
8	T.O.V.C	U.I.C. DR.	NO PIPE
9	T.O.V.C	U.I.C. DR.	NO PIPE
10	T.O.V.C	U.I.C. DR.	NO PIPE
11	0.36	0.27	STANDARD
12	4.00	1.52	STANDARD
13	AT I-10	DOWNHILL	NO PIPE
14	AT I-11	DOWNHILL	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

ALL Q's HAVE BEEN EXTRAPOLATED FROM THE 10-YEAR STORM DRAIN COMPUTATIONS

STANDARD - HOWARD COUNTY STARDARD 12" OR 14"x9" ARCH PIPE

TOVC - LOCATED NEAR THE TOP OF A VERTICAL CURVE

— x — x — x — x — x — x — x — x — x — DENOTES EXISTING FENCE TO BE REMOVED

x —— x —— x —— x —— x —— DENOTES EXISTING FENCE TO REMAIN

ROOFLEADER NOTE:

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

BAFFLE DESIGN

TOP OF BAFFLE EL. 590.00

$We = (A/2)^{.5} = (3,522/2)^{.5} = 42'$

Le req'd. = We x 2 = 84'

BAFFLE #1 L1 + L2 = 114'

FISHER, COLLINS & CARTER, INC.
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OWNER

Estate Of F.J. Schulte
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Personal Representative
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410-977-1327

DEVELOPER

Land Design & Development
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Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

0' 50' 100' 200'

Scale: 1" = 50'

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — PROFESSIONAL ENGINEER

Aldo M. Vitucci — 2/4/16 Date

Aldo M. Vitucci, P.E.

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

PHASE I
GRADING & SEDIMENT CONTROL PLAN

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

ZONED: RC-DEO
TAX MAP NO.: 8 GRID NO.: 2, PAR.: B
TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2016
SHEET 7 OF 38

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 6-9 Grading sediment plans.dwg, 2/4/2016 9:57:28 AM, 11

ROOFLEADER NOTE:

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

—x—x—x—x— DENOTES EXISTING FENCE TO BE REMOVED

—— x —— x —— DENOTES EXISTING FENCE TO REMAIN

HOUSE CONSTRUCTION:

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

REVISIONS		
NO.	DESCRIPTION	DATE

CONTRACTOR NOTES:

1. CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, STREAMS, WETLANDS & THEIR BUFFERS.

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

3. ANY ROADSIDE SWALE OR DITCH LOCATED IN FILL SHALL BE COMPACTED TO 95% COMPACTION TO AVOID EROSION IN THESE AREAS.

MATCH LINE SEE SHEET 9

MORGAN STATION ROAD (MINOR COLLECTOR) (HOWARD COUNTY MAINTAINED) (WIDTH VARIES)

OLD FREDERICK ROAD (MAJOR COLLECTOR) (HOWARD COUNTY MAINTAINED)

GALAXY DRIVE PUBLIC ACCESS PLACE

Buildable Preservation Parcel 'A'
OWNER: PRIVATE HOMEOWNER EASEMENT HOLDERS/ HOWARD COUNTY, MD. & THE HOMEOWNERS ASSOCIATION

Non-Buildable Preservation Parcel 'D'
OWNER: H.O.A. EASEMENT HOLDER: HOWARD COUNTY, MD.

Non-Buildable Preservation Parcel 'E'
OWNER: H.O.A. EASEMENT HOLDER: HOWARD COUNTY, MD.

Public Forest Conservation Easement 1
3.50 Ac.±

HOWARD COUNTY AGRICULTURAL LAND PRESERVATION EASEMENT NO. 06-09-PPSB

AGRICULTURAL SUBDIVISION ROBERT H. DAVIS PROPERTY PLAT NOS. 21742-21744

S75°45'49"E 1795.28'

N 610650 E 1298150

N 610650 E 1298150

N 610250 E 1298150

PROPERTY OF DONNA J. BROWN TAX MAP 8, PARCEL 308 LIBER 665, FOLIO 239

SPECIMEN TREE#1940

SPECIMEN TREE#1941

SPECIMEN TREE#1942

SPECIMEN TREE#1943

SPECIMEN TREE#1944

SPECIMEN TREE#1945

Lot 7 Lot 8 Lot 9 Lot 10 Lot 11 Lot 12 Lot 13 Lot 14 Lot 15 Lot 16 Lot 17 Lot 18 Lot 01 Lot 02

24' PRIVATE USE-IN-COMMON EASEMENT FOR LOTS 01-10

30' PRIVATE USE-IN-COMMON EASEMENT FOR LOTS 15 AND 16

PRIVATE ACCESS AND DRAINAGE EASEMENT FOR LOTS 17 AND 18

20' PRIVATE STORM DRAINAGE & UTILITY EASEMENT

50' PUBLIC ROAD DRAINAGE & UTILITY EASEMENT

B.M.P. No. 1 (F-1)
PRIVATE SURFACE SAND FILTER
(TO BE OWNED AND MAINTAINED BY THE FAIRLANE FARM HOMEOWNERS ASSOCIATION)
(SEE SHEET 24 FOR PLAN & DETAILS)

PROP. 50 L.F OF GUARD RAIL (CENTERED OVER HW-1)

Sediment Control No. 1 (SF) D

23' x 10' CI F/P-RAP OUTFALL PROTECTION

PROP. STOCKPILE

EXISTING CINDER BLOCK BUILDING TO BE REMOVED

MATCH LINE SEE SHEET 7

MATCH LINE SEE SHEET 9

MATCH LINE SEE SHEET 7

0' 50' 100' 200'

Scale: 1" = 50'

SEDIMENT CONTROL LEGEND

- 55F 55F 55F — SUPER-SILT FENCE
- DF DF DF — DIVERSION 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
- R.P.S. — REMOVABLE PUMPING STATION
- F.B. — FILTER BAG
- TYPE A-2 — EARTH DIKE

VEHICULAR EGRESS AND INGRESS RESTRICTED

BAFFLE DESIGN

TOP OF BAFFLE EL. 583.00

$We = (A/2)^{.5} = (6,992/2)^{.5} = 59'$

Le req'd. = We x 2 = 118'

BAFFLE #1 L1 + L2 = 119'

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II, TRAP NO. 1		
DRAINAGE AREA - INITIAL	4.55	ACRES
DRAINAGE AREA - INTERIM	———	ACRES
DRAINAGE AREA - FINAL	5.00	ACRES
TOTAL STORAGE REQUIRED (INCLUDES 1YR. TEMP.)	24,246	CF
TOTAL STORAGE PROVIDED	32,515	CF
WET STORAGE REQUIRED	9,000	CF
WET STORAGE PROVIDED	11,992	CF
DRY STORAGE REQUIRED	9,000	CF
DRY STORAGE PROVIDED (INCLUDES 1YR. TEMP.)	20,523	CF
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	582.00	FT
TRAP BOTTOM ELEVATION	580.00	FT
TRAP BOTTOM DIMENSIONS	105 x 54	FT x FT
WEIR LENGTH	20	FT
WEIR CREST (DRY STORAGE) ELEVATION	585.00	FT
CLEANOUT ELEVATION	581.0	FT
TOP OF EMBANKMENT ELEVATION	586.00	FT
SIDE SLOPE	2:1	H:V RATIO
EMBANKMENT TOP WIDTH	6	FT
OUTLET PROTECTION - LENGTH	20	FT
OUTLET PROTECTION - DEPTH	19	IN

DESIGN CERTIFICATION

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

Designer's Signature — Date: 2/4/16

Aldo M. Vitucci — MD Registration No. 20748 P.E., R.L.S., or R.L.A. (circle one)

OWNER/DEVELOPER CERTIFICATION

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

Owner/Developer's Signature — Date: 2/4/16

Joseph Rutter Principal — Printed Name & Title

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

Howard Soil Conservation District — Date: 3/1/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 3.31.16

Chief, Development Engineering Division — Date: 3.18.16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 3/7/2016

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

Aldo M. Vitucci, P.E. — Date: 2/4/16

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

PHASE I
GRADING & SEDIMENT CONTROL PLAN

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK.

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: FEBRUARY 3, 2016
SHEET 8 OF 38

OWNER
Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1327

DEVELOPER
Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

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

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 6-9 Grading sediment plans.dwg, 2/4/2016 9:21:46 AM, 1:1

F-15-054

DESIGN CERTIFICATION

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

Designer's Signature — Date: 2/4/16

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

OWNER/DEVELOPER CERTIFICATION

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

Owner's/Developer's Signature — Date: 2/4/16

Printed Name & Title: Joseph Ruther President

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

Howard Soil Conservation District — Date: 3/1/16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 3-31-16

Chief, Development Engineering Division — Date: 3-18-16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 3/7/2016

REVISIONS		
NO.	DESCRIPTION	DATE

CONTRACTOR NOTES:

1. CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, STREAMS, WETLANDS & THEIR BUFFERS.

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

3. EARTH DIKES CROSSING THE ROADWAYS ARE TO BE CONNECTED TO MACADAM BERMS AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

4. ANY ROADSIDE SWALE OR DITCH LOCATED IN FILL SHALL BE COMPACTED TO 95% COMPACTION TO AVOID EROSION IN THESE AREAS.

SEDIMENT CONTROL LEGEND

- SUPER-SILT FENCE
- SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- S.I.P. (A) — STANDARD INLET PROTECTION, INLET TYPE ('A' or 'B')
- L.O.D. — LIMIT OF DISTURBANCE
- DENOTES EXISTING FENCE TO BE REMOVED
- DENOTES EXISTING FENCE TO REMAIN
- DENOTES EXISTING SLOPES 15% to 24.9%
- DENOTES EXISTING SLOPES 25% AND GREATER

MATCH LINE SEE SHEET 8

MATCH LINE SEE SHEET 7

MATCH LINE SEE SHEET 6

Public Forest Conservation Easement 1
3.30 Ac±

AGRICULTURAL SUBDIVISION
ROBERT H. DAVIS PROPERTY
PLAT NO. 21742-21744
HOWARD COUNTY AGRICULTURAL LAND PRESERVATION PROGRAM
EASEMENT HO-05-08-PP05

Buildable Preservation Parcel 'A'
OWNER: PRIVATE HOMEOWNER
EASEMENT HOLDERS:
HOWARD COUNTY, MD. &
THE HOMEOWNERS ASSOCIATION

Non-Buildable Bulk Parcel 'G'
(PARCEL 'G' RESERVES THE RIGHT TO BE FURTHER SUBDIVIDED)

Buildable Preservation Parcel 'A'
OWNER: PRIVATE HOMEOWNER
EASEMENT HOLDERS:
HOWARD COUNTY, MD. &
THE HOMEOWNERS ASSOCIATION

Public Forest Conservation Easement 2
6.57 Ac±

FUTURE LOT

10' x 10' CL I RIP-RAP OUTFALL PROTECTION

20' PUBLIC DRAINAGE & UTILITY EASEMENT

18" HDPE

LIMIT OF DISTURBANCE FOR STREAM RESTORATION (PHASE TWO) F-15-062 MDE TRACKING No. 201561942

EX. WETLANDS

LIMITS OF "NON-CRITICAL FLOOD PLAIN" 0.15 Ac±

25' WETLAND BUFFER

EX. WETLAND

EX. WETLAND /STREAM

EX. Riser

18" HDPE Inv. 540.63

18" HDPE Inv. 545.80

SPECIMEN TREE#1926

SPECIMEN TREE#1925

SPECIMEN TREE#1924

SPECIMEN TREE#1923

SPECIMEN TREE#1912

N14°41'48"E 380.49'

E 1299650 N 611100

E 1300300 N 611100

PROPERTY OF
JOHN AND CYNTHIA BRIGANTE
LIBER 2558, FOLIO 150
TAX MAP 45, PARCEL 28
ZONED: RC-DEO
HOWARD COUNTY AGRICULTURAL LAND PRESERVATION PROGRAM
EASEMENT HO-91-07-E (B)

S 49°25'32" E 326.98'

S 49°25'32" E 326.98'

S 40°34'28" W 419.98'

SEE SHEET 6

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

OWNER
Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1327

DEVELOPER
Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

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

Aldo M. Vitucci, P.E. — Date: 2/4/16

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PHASE I
GRADING & SEDIMENT CONTROL PLAN

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 9 OF 38

F-15-054

I:\2005\05108\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 6-9 Grading sediment plans.dwg, 2/3/2016 2:06:16 PM, 1:1

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

A. Soil Preparation

1. Temporary Stabilization

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

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

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

2. Permanent Stabilization

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

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

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

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

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

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

B. Topsoiling

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

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

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

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

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

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

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

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

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

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

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

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

6. Topsoil Application

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

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

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

C. Soil Amendments (Fertilizer and Lime Specifications)

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

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

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

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

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

TEMPORARY SEEDING NOTES (B-4-4)

Definition

To stabilize disturbed soils with vegetation for up to 6 months.

Purpose

To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria

1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.

3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

Temporary Seeding Summary

Hardiness Zone (from Figure B.3): 6b Seed Mixture (from Table B.1):				Fertilizer Rate (10-20-20)	Lime Rate
Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
BARLEY	96	3/1 - 5/15, 8/15 - 10/15	1"	436 lb/ac (10 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)
OATS	72	3/1 - 5/15, 8/15 - 10/15	1"		
RYE	112	3/1 - 5/15, 8/15 - 10/15	1"		

PERMANENT SEEDING NOTES (B-4-5)

A. Seed Mixtures

1. General Use

a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.

b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.

c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency. d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary .

2. Turfgrass Mixtures

a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.

b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.

i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.

iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; Certified Kentucky Bluegrass Cultivars 30 to 40 percent, and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.

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

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

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

d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 1/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.

e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (1/2 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

Permanent Seeding Summary

Hardiness Zone (from Figure B.3): 6b Seed Mixture (from Table B.3): 8					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P_2O_5	K_2O	
8	TALL FESCUE	100	Mar. 1-May 15 Aug. 1-Oct. 15	1/4-1/2 in.	45 lbs. per acre (1.0 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	90 lb/ac (2 lb/ 1000 sf)	2 tons/ac (90 lb/ 1000 sf)

STANDARD STABILIZATION NOTE
FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
a.) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
b.) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

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

Definition

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

Purpose

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

Conditions Where Practice Applies

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

Criteria

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

Maintenance

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

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

Definition

The application of seed and mulch to establish vegetative cover.

Purpose

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

Conditions Where Practice Applies

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

Criteria

A. Seeding
1. Specifications
a. All seed must meet the requirement of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keetp inoculant as cook as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weedcontrol until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

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

B. Mulching
1. Mulch Materials (in order of preference)
a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: Use only sterile straw mulch in areas where one species of grass is desired.
b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into uniform fibrous physical state.
i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate colot to facilitate visual inspection of the uniformly spread slurry.
ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
iv. WCFM material must not contain elements or compounds at concentration levels that will by phyto-toxic.
v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.
2. Application
a. Apply mulch to all seeded areas immediately after seeding.
b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
c. Wood cellulose fiber used as mulch must be applied to a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
3. Anchoring
a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4-15 feet wide and 300 to 3,000 feet long.

SEQUENCE OF CONSTRUCTION-PHASE II-L.O.D.=1.66 AC.±

1. PLACE SSF ALONG OLD FREDERICK ROAD STA. 0+50± TO STA. 16+20± FOR CONSTRUCTION OF REMAINING ROAD WIDENING. REMOVE EXISTING HOUSE, DRIVEWAY, SHED AND WELL AS SHOWN ON SHEET 6. STABILIZE ANY DISTURBANCE WITH TEMPORARY SEEDING. (2 WEEKS)
NOTE: PRIVATE CAMP WOODBINE ROAD SHALL REMAIN ACCESSIBLE AT ALL TIMES DURING CONSTRUCTION. FOLLOWING NEW CONSTRUCTION WITH PROPOSED PUBLIC ROAD ACCESS MUST ALSO REMAIN UNTIL THE EASEMENT IS FULLY ABANDONED.
2. GRADE WIDENING TO SUBGRADE AND INSTALL ASSOCIATED STORM DRAIN INLETS I-43 AND I-32 & 33, M-26 THRU 27, M-29 THRU M-30 AND OUTFALLS 5-6 AND 5-17. INSTALL INLET PROTECTION AS SHOWN ON THE PLANS. (3 WEEKS)
3. INSTALL THE ENTRANCE WAY TO FUTURE THUNDERBIRD LANE ALONG WITH THE FLUSH CURB ALONG THE FILLETS, TO STA. 0+80±. INSTALL PROPOSED MICRO BIO-RETENTION FACILITY #2 AS SHOWN ON SHEET 6. (3 WEEKS)
4. STABILIZE ALL DISTURBED AREAS WITH PERMANENT SEEDING AND REMOVE THE SEDIMENT CONTROL DEVICES THAT ARE NO LONGER NEEDED. (2 WEEKS)
5. UPON COMPLETION OF THE REMOVAL OF THE SEDIMENT CONTROL DEVICES, OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR PRIOR TO FINISH THIS PORTION OF THE PROJECT. (1 WEEK)

DETAIL C-9 DIVERSION FENCE | STANDARD SYMBOL: —— DF —— | MAXIMUM DRAINAGE AREA = 2 ACRES

CONSTRUCTION SPECIFICATIONS

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

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

DETAIL C-8 MOUNTABLE BERM | STANDARD SYMBOL: MB

CONSTRUCTION SPECIFICATIONS

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

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

B-4-1 STANDARDS AND SPECIFICATIONS FOR INCREMENTAL STABILIZATION

Definition

Establishment of vegetative cover on cut and fill slopes.

Purpose

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

Conditions Where Practice Applies

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

Criteria

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

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

Figure B.1: Incremental Stabilization - Cut

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

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

Figure B.2: Incremental Stabilization - Fill

SEQUENCE OF CONSTRUCTION-(L.O.D.=19.54 AC.±)

1. OBTAIN A GRADING PERMIT. (2 WEEKS)
2. NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 AT LEAST 24 HOURS BEFORE STARTING WORK.
3. INSTALL THE STABILIZED CONSTRUCTION ENTRANCES. INSTALL ALL TREE PROTECTION FENCE FOR TREES TO BE UNDISTURBED AS INDICATED ON THE PLANS. (1 WEEK)
4. INSTALL PERIMETER SILT FENCE AS SHOWN ON THE PLANS. INSTALL THE SEDIMENT TRAPS #1 & #6 AND RPS DEVICES ALONG WITH THE FILTER BAGS, HOSES AND ASSOCIATED EARTH DIKES TO DRAIN INTO THE TRAPS. (4 WEEKS)
NOTE THAT NO DISTURBANCE IS ALLOWED UNTIL ALL SEDIMENT TRAP MATERIALS FOR THE PRINCIPAL SPILLWAYS ARE ON SITE AND PERMISSION FROM THE INSPECTOR IS GRANTED IN WRITING TO PROCEED.
5. UPON COMPLETION OF THE SEDIMENT TRAP CONSTRUCTION, RECEIVE PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING.
6. CLEAR AND GRUB FOR THE INSTALLATION OF THE REMAINING PERIMETER SEDIMENT CONTROL MEASURES. INSTALL TREE PROTECTION FENCE, SILT FENCE, EARTH DIKES AS SHOWN ON THESE PLANS. (2 WEEKS)
7. RAZE THE 4 EXISTING STRUCTURES EXISTING BUILDINGS AND DRIVEWAYS AS SHOWN ON PLAN. CLEAR AND GRUB FOR THE REMAINDER OF THE SITE. (3 WEEKS)
8. GRADE PROPOSED ROADS & LOTS TO SUBGRADE (FAIRLANE ROAD AND GALAXY DRIVE). INSTALL THE STORM DRAIN INLETS I-1 THRU 15, I-41 & I-42, MANHOLES 1, 1A THRU 14 AND END SECTIONS S-1 THRU S-2 AND S-4. SHEETS 7 THRU 9 ARE PHASE I LESS THAN 20 ACRES. NO MORE THAN 20 ACRES IS TO BE "OPEN" AT ANY ONE TIME. SHEET 6 OR PHASE II GRADING TO BE COMPLETED AFTER PHASE I GRADING IS "CLOSED".
STABILIZE ALL SLOPES IMMEDIATELY UPON COMPLETION OF GRADING. INSTALL INLET PROTECTION AS SHOWN ON PLAN. (5 WEEKS)
9. CONSTRUCT ROAD BASE COURSE FOR FAIRLANE ROAD AND GALAXY DRIVE. (4 WEEKS)
10. GRADE IN PROPOSED ROAD WIDENING FOR OLD FREDERICK ROAD AS SHOWN ON THE PLANS FOR PHASE I - STA. 16+20± TO STA. 32+50±. (2 WEEKS)
11. WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES AND TRAPS #1 & #6 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. CONVERT TRAP #1 TO SURFACE SAND FILTER AS SHOWN ON THE PLANS, INSTALL I-35 TO HW-1. STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. INSTALL REMAINING STORM DRAIN FROM M-13 TO S-3. (4 WEEKS)
12. NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR FINAL INSPECTION OF THE COMPLETED PROJECT. (1 WEEK)

NOTE: THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON, AFTER EACH RAINFALL AND ON A DAILY BASIS. REMOVE SEDIMENT FROM THE BASIN WHEN THE CLEANOUT ELEVATION HAS BEEN REACHED. ALL SEDIMENT MUST BE PLACED UPSTREAM OF THE APPROVED TRAPPING DEVICE.

TRAP#4 BAFFLE DESIGN:
INFLOW DISTANCE = 40'
SURFACE AREA AT WET POOL = 2,800 SQ.FT.
EFFECTIVE WIDTH (We) = (AREA/2)^.5 = 37.42'
We X 2 = 37.42 X 2 = 74.84' > 40' BAFFLES NEEDED
L1 + L2 = 80' + 82' = 162' > 74.84'
TOP ELEVATION OF BAFFLE BOARD = 574.80

TRAP#2 BAFFLE DESIGN:
INFLOW DISTANCE = 26'
SURFACE AREA AT WET POOL = 2,800 SQ.FT.
EFFECTIVE WIDTH (We) = (AREA/2)^.5 = 37.42'
We X 2 = 37.42 X 2 = 74.84' > 26' BAFFLES NEEDED
L1 + L2 = 142' + 128' = 270' > 74.84'
TOP ELEVATION OF BAFFLE BOARD = 577.80

DESIGN CERTIFICATION

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

Designer's Signature — Date: 2/4/16
Printed Name: ALDO M. VITUCCI — MD Registration No.: 20748
P.E., R.L.S., or R.L.A. (circle one)

OWNER/DEVELOPER CERTIFICATION

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

Owner's/Developer's Signature — Date: 2/4/16
Printed Name & Title: Joseph Rutter Principal

Approved: This Plan Is Approved For Soil Erosion And Sediment Control By The Howard Soil Conservation District.
Howard Soil Conservation District — Date: 3/1/16

Approved: Department Of Planning And Zoning
Chief, Division Of Land Development — Date: 3.31.16
Chief, Development Engineering Division — Date: 3.18.16

Approved: Howard County Department Of Public Works
Chief, Bureau Of Highways — Date: 3/7/2016

REVISIONS

NO.	DESCRIPTION	DATE

HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES

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

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

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

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

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

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

4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15' of cut and/or fill. Stockpiles (Sec. B-4-8) in excess of 20 ft. must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).

5. All sediment control structures are to remain in place, and are to be maintained in operative condition until permission for their removal has been obtained from the CID.

6. Site Analysis:

Total Area of Site:	138.61	Acres
Area Disturbed:	21.2	Acres
Area to be roofed or paved:	1.0	Acres
Area to be vegetatively stabilized:	20.2	Acres
Total Cut:	25,330	Cu. Yds.
Total Fill:	38,014	Cu. Yds.
Offsite waste/borrow area location:	ONSITE	

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

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

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

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

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

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

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

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

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

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

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

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

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

OWNER

Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1327

DEVELOPER

Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

Aldo M. Vitucci, P.E. — Date: 2/4/16

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

SEDIMENT AND EROSION CONTROL
NOTES & DETAILS

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

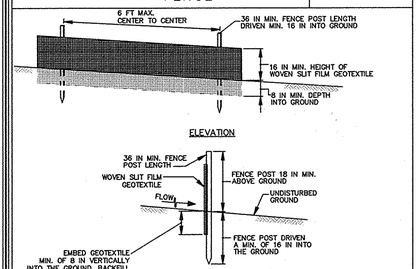
ZONED: RC-DEO
TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2016
SHEET 10 OF 38

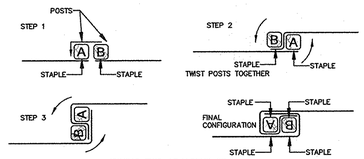
F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 10-12 SEC details.dwg, 2/3/2016 2:07:58 PM, 1:1

DETAIL E-1 SILT FENCE

STANDARD SYMBOL — SF





JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

CONSTRUCTION SPECIFICATIONS

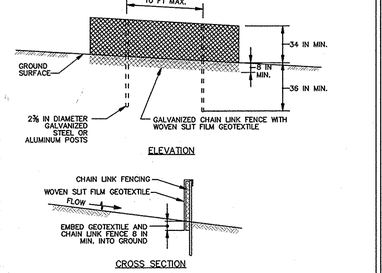
1. USE WOOD POSTS 1¾ X 1¾ X ¾ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL — SSF



CONSTRUCTION SPECIFICATIONS

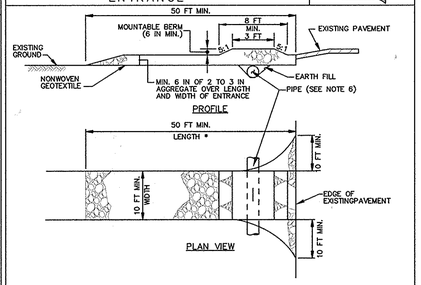
1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL — SCE



CONSTRUCTION SPECIFICATIONS

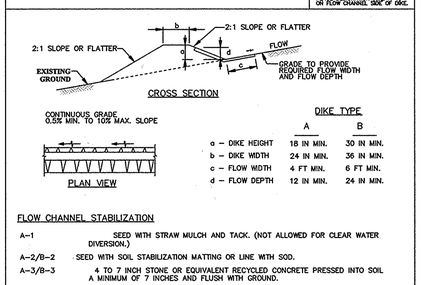
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*50 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL C-1 EARTH DIKE

STANDARD SYMBOL — A-1
PLACE DESIGNATION (e.g. A-2) ON FLOW CHANNEL SIDE OF DIKE.



DIKE TYPE	A	B
a – DIKE HEIGHT	18 IN MIN.	30 IN MIN.
b – DIKE WIDTH	24 IN MIN.	36 IN MIN.
c – FLOW WIDTH	4 FT MIN.	6 FT MIN.
d – FLOW DEPTH	12 IN MIN.	24 IN MIN.

FLOW CHANNEL STABILIZATION

A-1	SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
A-2/B-2	SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
A-3/B-3	4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS

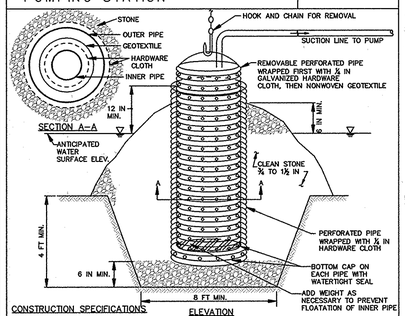
1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL F-1 REMOVABLE PUMPING STATION

STANDARD SYMBOL — ⊠RPS



CONSTRUCTION SPECIFICATIONS

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DESIGN CERTIFICATION

I Hereby Certify That This Plan Has Been Designed In Accordance With Current Maryland Erosion And Sediment Control Laws, Regulations And Standards. This 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 — 2/4/16 Date

Aldo M. Vitucci — 20748 MD Registration No.

Printed Name — P.E., R.L.S., or R.L.A. (circle one)

OWNER/DEVELOPER CERTIFICATION

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

Owner's or Developer's Signature — 2/4/16 Date

Joseph Ruffo Principal — Printed Name & Title

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

Howard Soil Conservation District — 3/1/16 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 3-31-16 Date

Chief, Development Engineering Division — 3.18.16 Date

Approved: Howard County Department Of Public Works

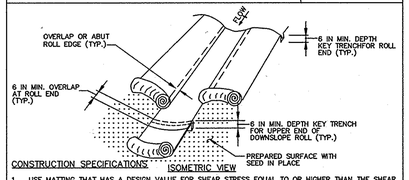
Chief, Bureau Of Highways — 3/7/2016 Date

REVISIONS

NO.	DESCRIPTION	DATE

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

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



CONSTRUCTION SPECIFICATIONS

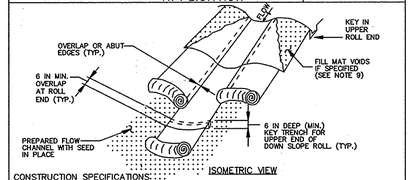
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 1¼ TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTERLINE, WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MAT SMOOTHLY AND FIRMLY ON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. KEY-IN UPSTREAM END OF EACH MAT ROLL BY DIGGING A 6 INCH (MINIMUM) TRENCH AT THE UPSTREAM END OF THE MATTING, PLACING THE ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END.
7. OVERLAP OR ABUT THE ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

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

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



CONSTRUCTION SPECIFICATIONS

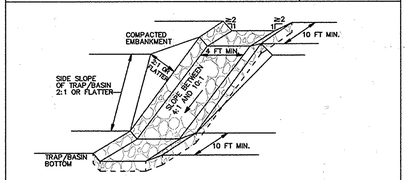
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL D-3-1 RIPRAP INFLOW PROTECTION

STANDARD SYMBOL — RRP



CONSTRUCTION SPECIFICATIONS

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

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

OWNER
Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1327

DEVELOPER
Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

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

Aldo M. Vitucci, P.E. — 2/4/16 Date

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

SEDIMENT AND EROSION CONTROL NOTES & DETAILS

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 11 OF 38

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 10-12 SEC details.dwg 2/3/2016 2:09:36 PM, 11

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

STANDARD SYMBOL: ST-II

MAXIMUM DRAINAGE AREA = 10 ACRES

ISOMETRIC VIEW

SECTION A-A

SECTION B-B

CONSTRUCTION SPECIFICATIONS

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL G-2-4 BAFFLE BOARDS

STANDARD SYMBOL: BB

BAFFLES ARE REQUIRED TO PROVIDE A FLOW LENGTH BETWEEN INFLOW POINT AND OUTLET EQUAL TO TWICE THE EFFECTIVE TRAP/BASIN WIDTH.

PLAN VIEWS

BAFFLE 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

DETAIL E-9-1 STANDARD INLET PROTECTION

STANDARD SYMBOL: SIP

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

ISOMETRIC VIEW

SECTION FOR TYPE A AND B

CONSTRUCTION SPECIFICATIONS

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

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL F-4 FILTER BAG

STANDARD SYMBOL: ☒FB

CONSTRUCTION SPECIFICATIONS

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

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

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

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

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.

[signature] Designer's Signature — 2/4/16 Date

ALDO M. VITUCCI — Printed Name — 20748 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"

[signature] Owner's/Developer's Signature — 2/4/16 Date

Joseph Rutter Principal — Printed Name & Title

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

[signature] Howard Soil Conservation District — 3/1/16 Date

Approved: Department Of Planning And Zoning

[signature] Chief, Division Of Land Development — 3-31-16 Date

[signature] Chief, Development Engineering Division — 3-18-16 Date

Approved: Howard County Department Of Public Works

[signature] Chief, Bureau Of Highways — 3/7/2016 Date

REVISIONS

NO.	DESCRIPTION	DATE

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

OWNER
Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1327

DEVELOPER
Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

[signature] Aldo M. Vitucci, P.E. — 2/4/16 Date

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

SEDIMENT AND EROSION CONTROL NOTES & DETAILS

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 12 OF 38

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 10-12 SEC details.dwg, 2/3/2016 2:10:18 PM, 1:1

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 3-21-16

Chief, Development Engineering Division — Date 3.18.16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 3/7/2016

REVISIONS		
NO.	DESCRIPTION	DATE

MATCH LINE

SEE SHEET 17

MATCH LINE

SEE SHEET 14

MATCH LINE

SEE SHEET 16

EX. WETLAND

75' STREAM BUFFER

25' WETLAND BUFFER

35' ENVIRONMENTAL SETBACK

EX. WETLAND

75' STREAM BUFFER

25' WETLAND BUFFER

65' WETLAND BUFFER

SPECIMEN TREE #1907

N 609800

E 1300750

Buildable Preservation Parcel 'A'

OWNER: PRIVATE HOMEOWNER EASEMENT HOLDERS: HOWARD COUNTY, MD. & THE HOMEOWNERS ASSOCIATION

EX. WATERS OF THE U.S.

FUTURE THUNDERBIRD DRIVE

FUTURE LOT

Non-Buildable Bulk Parcel 'H'

(PARCEL 'H' RESERVES THE RIGHT TO BE FURTHER SUBDIVIDED)

VARIABLE-WIDTH RIGHT TO USE-IN-COMMON WITH OTHERS OF AN EXISTING GRAVEL DRIVE TO OLD FREDERICK ROAD L.980 F.152

Existing Overhead Power Lines

P9

P14

P15

P2

P1

Existing Shed To Be Razed

Ex. Septic Cleanout To Be Abandoned

Ex. Septic Cleanout To Be Abandoned

Existing House To Be Razed

Ex. Well To Be Abandoned

20' EIGHTOW WAY FOR INGRESS AND EGRESS AND ACCESS TO OLD FREDERICK ROAD L. 980, F. 152 and 2588, F. 150

PROP. 4' x 10' MAILBOX PAD

PROP. 12' x 6' BUS PAD

177' LANDSCAPING CREDIT

540' LANDSCAPING CREDIT

HOWARD COUNTY AGRICULTURAL LAND PRESERVATION PROGRAM EASEMENT HO-86-06E

ADGATE COURT

COUNTY MAINTAINED (LOCAL ROAD)

LOT 7 LISBON ACRES PLAT NO. 3586

LOT 21 LISBON ACRES PLAT NO. 3699

CARTLEY COURT

LOT 12 LISBON ACRES PLAT NO. 3587

E 1300150

N 609050

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

LOT 13 LISBON ACRES PLAT NO. 3587

LOT 14 LISBON ACRES PLAT NO. 3587

LOT 15 LISBON ACRES PLAT NO. 3587

ROUND GATE CT.

COUNTY MAINTAINED (LOCAL ROAD)

LOT 23 LISBON ACRES PLAT NO. 3977

0' 50' 100' 200'

Scale: 1" = 50'

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

OWNER

Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1327

DEVELOPER

Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

DEVELOPER'S / BUILDER'S CERTIFICATE

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

NAME — DATE 2/4/16

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

Aldo M. Vitucci, P.E. — Date 2/4/16

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

STREET TREE & LANDSCAPE PLAN

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

ZONED: RC-DEO
TAX MAP NO.: 9 GRID NO.: 2, PAR.: 9
TAX MAP NO.: 9 GRID NO.: 3, PAR.: 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2016
SHEET 13 OF 38

F-15-054

I:\2005\05100\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 13-18 landscape plans.dwg, 2/3/2016 2:18:08 PM, 1:1

Approved: Department Of Planning And Zoning

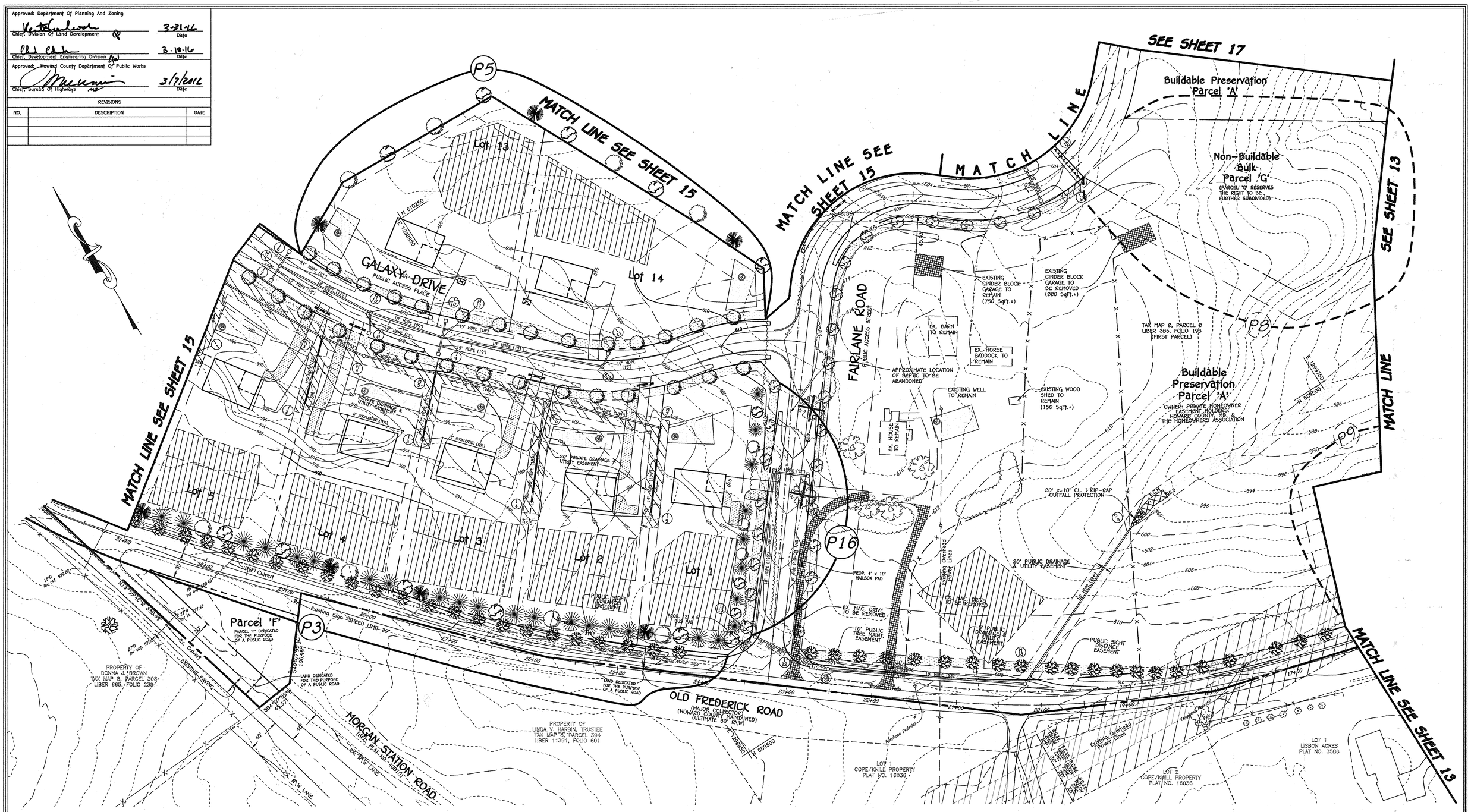
Chief, Division Of Land Development — Date 3-31-16

Chief, Development Engineering Division — Date 3-18-16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 3/9/2016

REVISIONS		
NO.	DESCRIPTION	DATE



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

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c/o Diane Schulte,
Personal Representative
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410-977-1327

DEVELOPER
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NAME — DATE 2/4/16

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

Aldo M. Vitucci, P.E. — Date 2/4/16

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STREET TREE & LANDSCAPE PLAN

FAIRLANE FARM

PHASE ONE

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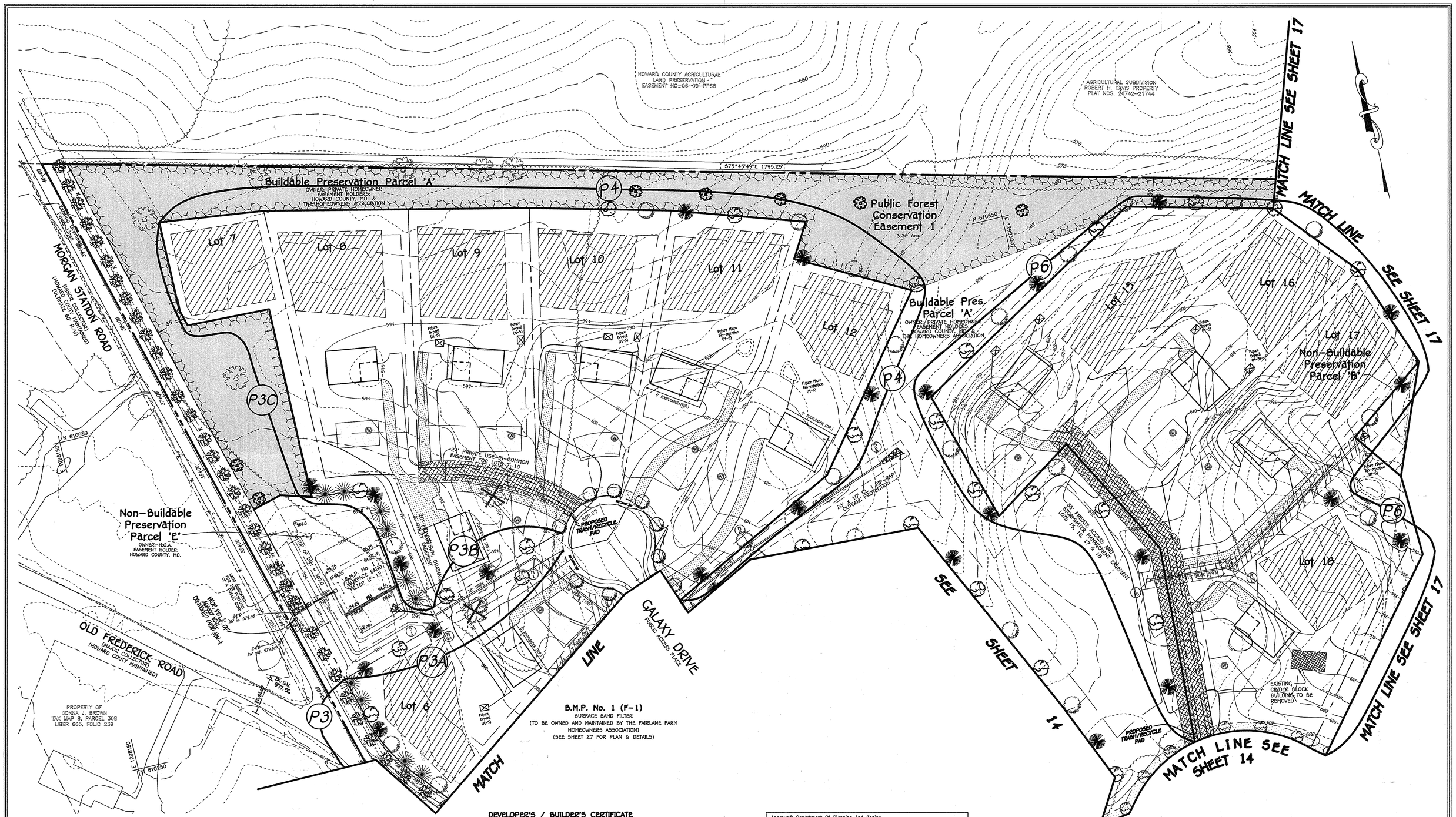
ZONED: RC-DEO
TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 5, 2016
SHEET 14 OF 38

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 13-18 landscape plans.dwg, 2/3/2016 2:20:08 PM, 1:1



B.M.P. No. 1 (F-1)
SURFACE SAND FILTER
(TO BE OWNED AND MAINTAINED BY THE FAIRLANE FARM HOMEOWNERS ASSOCIATION)
(SEE SHEET 27 FOR PLAN & DETAILS)

DEVELOPER'S / BUILDER'S CERTIFICATE

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NAME — DATE: 2/4/16

OWNER	DEVELOPER
Estate Of F.J. Schulte c/o Diane Schulte, Personal Representative 2215 Duvall Road Woodbine, Md 21797 410-977-1327	Land Design & Development 5300 Dorsey Hall Drive Suite 102 Ellicott City, Maryland 21042 (410)-977-0422

Approved: Department Of Planning And Zoning
Chief, Division Of Land Development — Date: 3-31-16
Chief, Development Engineering Division — Date: 3-18-16
Approved: Howard County Department Of Public Works
Chief, Bureau Of Highways — Date: 3/7/2016

REVISIONS

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STATE OF MARYLAND — ALDO MICHAEL VITUCCI — PROFESSIONAL ENGINEER

Aldo M. Vitucci, P.E. — Date: 2/4/16

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STREET TREE & LANDSCAPE PLAN
FAIRLANE FARM
PHASE ONE

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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: FEBRUARY 3, 2016
SHEET 15 OF 38

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

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

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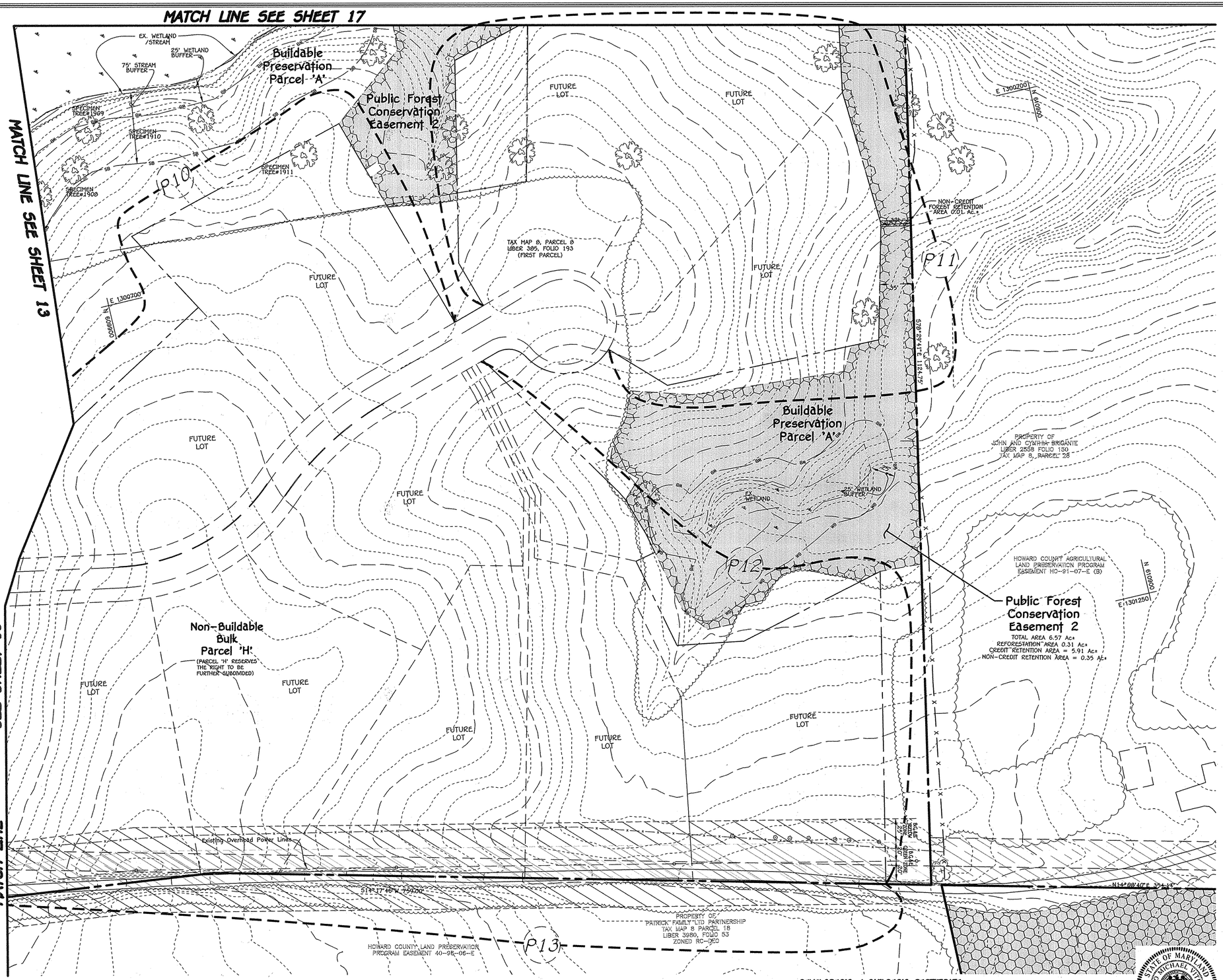

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NAME — DATE: 2/4/16

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — PROFESSIONAL ENGINEER

Aldo M. Vitucci, P.E. — Date: 2/4/16

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

STREET TREE & LANDSCAPE PLAN

FAIRLANE FARM

PHASE ONE

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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: FEBRUARY 3, 2016
SHEET 16 OF 38

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 13-18 landscape plans.dwg, 2/3/2016 2:22:04 PM, 1:1

Approved: Department Of Planning And Zoning

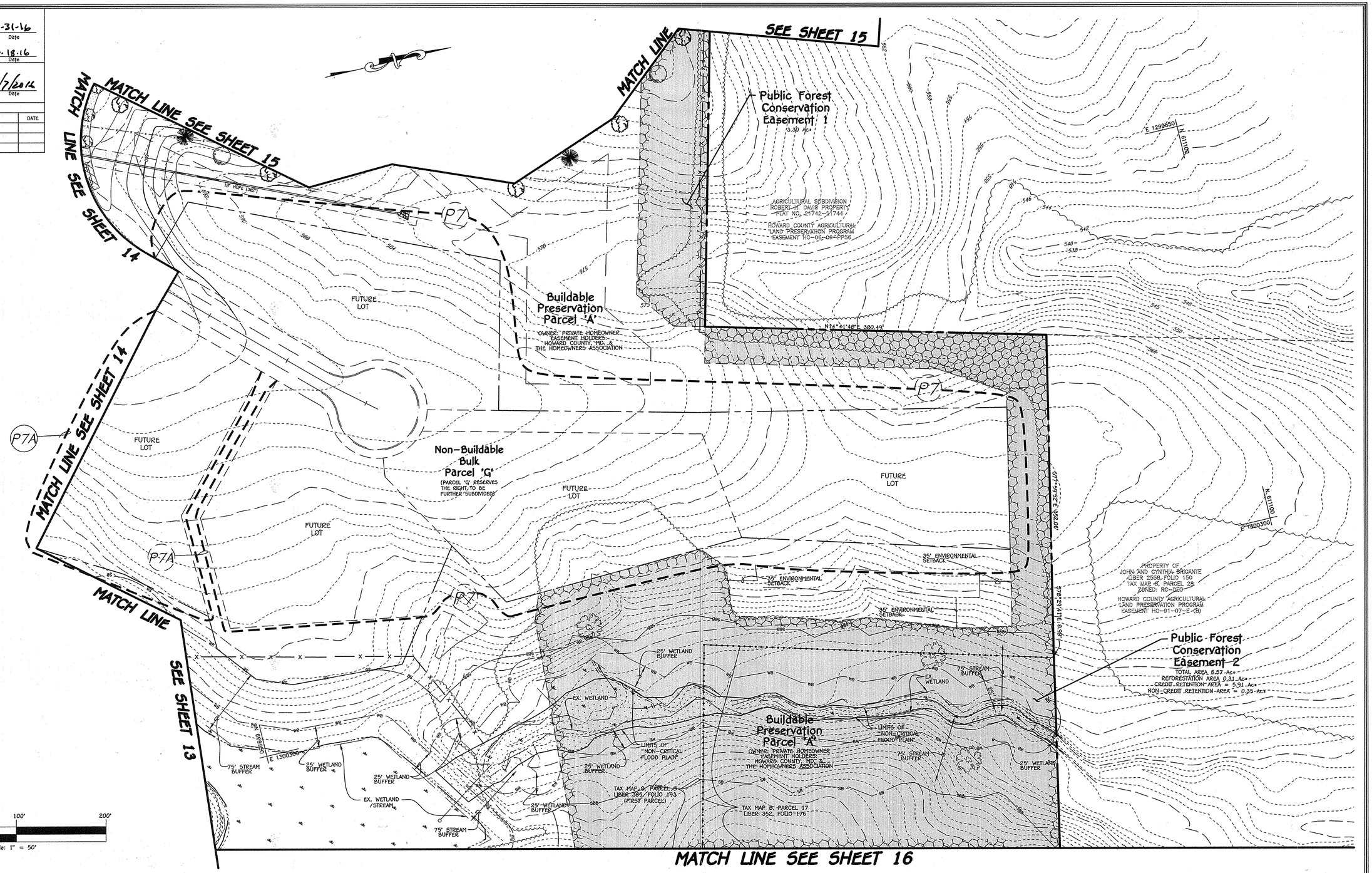
Chief, Division Of Land Development — Date 3-31-16

Chief, Development Engineering Division — Date 5.18.16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 3/7/2016

REVISIONS		
NO.	DESCRIPTION	DATE



DEVELOPER'S / BUILDER'S CERTIFICATE

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NAME — DATE 2/8/16

OWNER

Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1327

DEVELOPER

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(410) 461 - 2855

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

Aldo M. Vitucci, P.E. — Date 2/4/16

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

STREET TREE & LANDSCAPE PLAN

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 17 OF 38

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 13-18 landscape plans.dwg, 2/3/2016 2:22:54 PM, 1:1

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 3-31-16

Chief, Development Engineering Division — Date 3-18-16

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 3/7/2016

REVISIONS		
NO.	DESCRIPTION	DATE

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 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	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 (540')	--	--	--	--	YES (457')	YES (525') 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)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	6 8 --	-- -- --	18 23 --	5 -- --	3 -- --	5 6 --	15 -- --	12 -- --	34 -- --	40 -- --	13 -- --	14 -- --	27 -- --	9 -- --	3 -- --	8 -- --	21 -- --	9 -- --	7 9 --	6 8 --	98 37 --	157 17 --
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES SHRUBS SUBSTITUTIONS (Ornamental)	6 8 -- --	-- -- -- --	18 23 -- --	5 -- -- --	3 -- -- --	5 6 -- --	15 -- -- --	12 -- -- --	34 -- -- --	40 -- -- --	13 -- -- --	14 -- -- --	27 -- -- --	9 -- -- --	3 -- -- --	8 -- -- --	4 17 -- 17	5 -- -- 8	7 9 -- --	6 8 -- --	98 37 -- 0	136 34 -- 25

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 40-43 PAD: 12 l.f.
NUMBER OF SHRUBS PROVIDED:	7	7	7	7	7

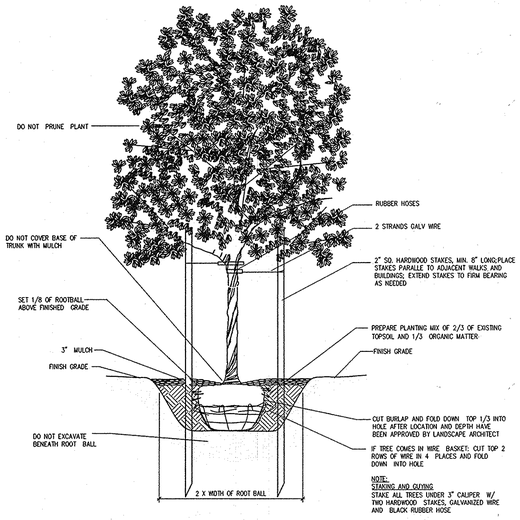
NOTES: 1. THE TRASH/RECYCLE PAD LANDSCAPING WILL BE MAINTAINED BY THE USERS OF THE PRIVATE USE-IN-COMMON MAINTENANCE AGREEMENT.
2. THE LANDSCAPING SHALL BE INSTALLED AROUND THE PERIMETER OF THE PAD EXCLUDING THE SIDE ADJACENT TO THE PUBLIC ROAD RIGHT-OF-WAY.

STREET TREE SCHEDULE

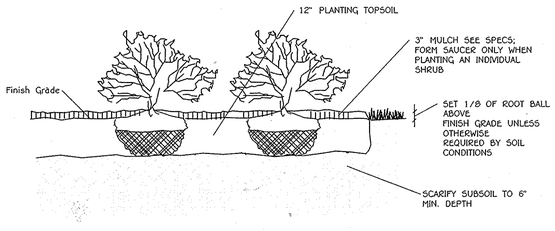
QTY. REQ'D.	QTY. PROV'D.	SIZE	BOTANICAL AND COMMON NAME	COMMENTS
* ROW LENGTH = 1265' 2530'/40 = 63.25 64 TREES	35 TREES (PHASE ONE)	2 1/2 - 3" CAL.	CLADRASTIS LUTEA YELLOWWOOD	40' APART ON PUBLIC R/W (Fairlane Road)
ROW LENGTH = 757' 1,514'/40 = 37.85 38 TREES	38 TREES	2 1/2 - 3" CAL.	ACER RUBRUM 'OCTOBER GLORY' RED MAPLE	40' APART ON PUBLIC R/W (Galaxy Drive)
ROW LENGTH = 3717' 3717'/30 = 123.90 124 TREES	124 TREES	2 1/2 - 3" CAL.	CERCIS CANADENSIS EASTERN REDBUD	30' APART ON PUBLIC R/W (Old Frederick Road/ Morgan Station Road)

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)



DECIDUOUS TREE - TYPICAL PLANTING DETAIL



SHRUB AND HEDGEROW - TYPICAL PLANTING DETAIL

- DENOTES PROPOSED 3" - 4" CALIPER TREE LOCATION (SEE SHEET 15) (TO REPLACE THE REMOVED SPECIMEN TREES)

TREES TO BE PLANTED:

2 RED OAK TREE
2 WHITE OAK TREES
2 BLACK OAK TREE
1 BLACK GUM TREE

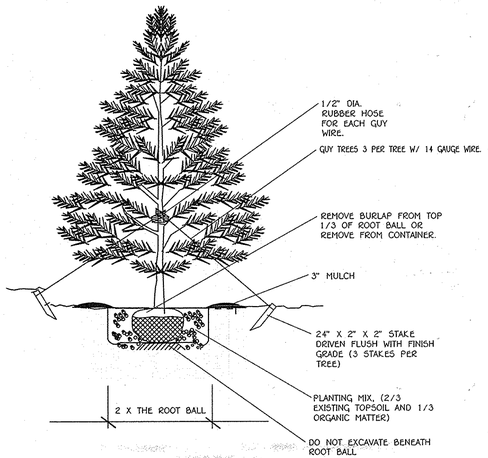
NOTES:

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

2. "At the time of plant installation, all shrubs and trees listed and approved on the landscape Plan, shall comply with the proper height requirement in accordance with the Howard County Landscape Manual. In addition, no 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".

3. "The Owner, tenants and/or their agents shall be responsible for maintenace of the required perimeter landscaping including both plant materials and berms, fences and walls. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All the other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced".

4. This Plan Has Been Prepared In Accordance With The Provisions Of Section 16.124 Of The Howard County Code And The Landscape Manual". Financial Surety For The Required 105 Shade (includes the mitigation trees required per the WP-14-107), 37 Evergreen Trees & 14 Shrubs Has Been Posted As Part Of The Developer's Agreement In The Amount Of $37,470.00.



EVERGREEN TREE - TYPICAL PLANTING DETAIL

PLANTING SPECIFICATIONS

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

PERIMETER PLANT LIST FOR

SCHEDULE 'A' - PERIMETER LANDSCAPE EDGE & TRASH/RECYCLE PAD LANDSCAPING

SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE
	37	ACER RUBRUM 'OCTOBER GLORY' RED MAPLE	2 1/2-3" CAL.
	31	PRUNUS SARGENTII SARGENT CHERRY	2 1/2-3" CAL.
	30	CLADRASTIS LUTEA YELLOWWOOD	2 1/2-3" CAL.
	37	PINUS STROBUS EASTERN WHITE PINE	6' - 8' HT.
o	14	AZALEA 'EXBURY'/EXBURY AZALEA (red, pink, yellow, orange, white)	18"-24" SPREAD

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

ESD SHRUBS/PERENNIALS (B.M.P. No. 2)

QTY.	SYM.	BOTANICAL/COMMON NAME	SIZE	CONT.	REMARKS
10	CHQ	Chelone glabra White Turtlehead	#1	Cont.	24" O.C.
5	IQS	Ilex glabra 'Shamrock' Inkberry	24"-30" Ht.	Cont.	30" o.c./Male Cultivar
5	ITH	Itea virginica 'Little Henry' Dwarf Virginia Sweetspire	18" - 24" Ht.	3 Gal.	30" o.c. min.

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 — DATE 2/4/16

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

Aldo M. Vitucci, P.E. — Date 2/4/16

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

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

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

OWNER
Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1327

DEVELOPER
Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

LANDSCAPE NOTES & DETAILS

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 18 OF 38

F-15-054

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Infiltration and Filter System Construction Specifications

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

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

Design Constraints:

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

Bio-retention

Soil Bed Characteristics

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

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

Table A.3 Planting Soil Characteristics

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

Mulch Layer

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

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

Planting Guidance

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

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

1. Material Specifications

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

2. Filtering Media or Planting Soil

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

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

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

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

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

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

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

3. Compaction

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

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

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

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

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

4. Plant Material

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

5. Plant Installation

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

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

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

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

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

6. Underdrains

Underdrains should meet the following criteria:

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

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

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

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

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

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

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

7. Miscellaneous

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

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

1. The owner shall maintain the plant material, mulch layer and soil layer annually. maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland stormwater design manual volume II, table A.4.1 and 2.

2. The owner shall perform a plant in the spring and in the fall each year. during the inspection, the owner shall remove dead and diseased vegetation considered beyond treatment, replace dead plant material with acceptable replacement plant material. Treat diseased trees and shrubs and replace all deficient stakes and wires.

3. The owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.

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

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

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

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 3/7/2016

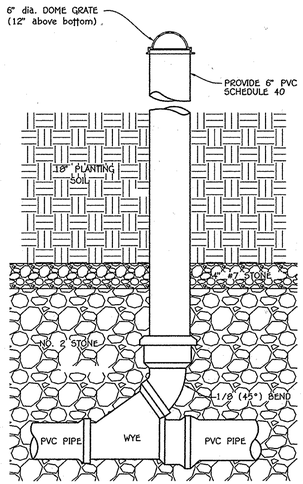
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/31/16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3-18-16

REVISIONS

NO.	DESCRIPTION	DATE



Typical Clean-Out Detail

NO SCALE

NOTES:
UNDERDRAIN PIPE SHALL BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM? 758, TYPE PS 28 OR AASHTO-M- 278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED 4" RIGID PIPE (e.g., PVC OR HDPE).

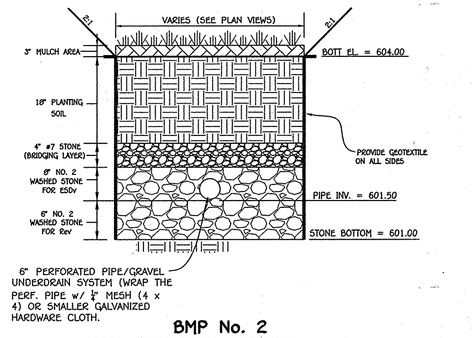
PERFORATIONS SHALL BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (No. 4 OR 4 x 4) GALVANIZED HARDWARE CLOTH.

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

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

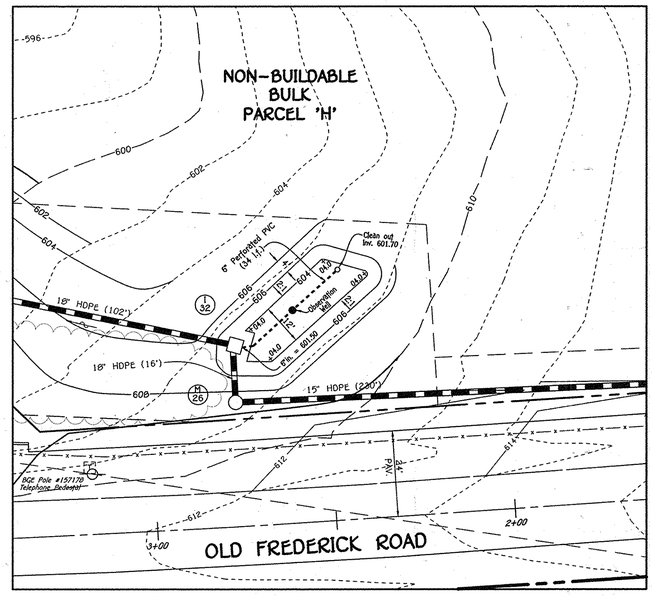
A RIGID, NON PERFORATED OBERSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,000 SQ.FT.) TO PROVIDE A CLEANOUT PORT AND MONITOR PERFORMANCE OF THE FILTER.

A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE PLANTING MEDIA AND No. 2 STONE TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".



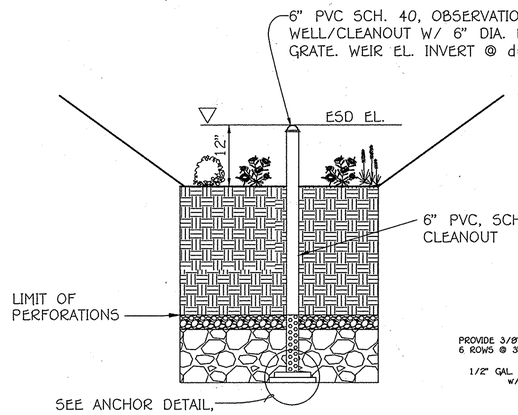
BMP No. 2
BIO-RETENTION SECTION (M-6)

NO SCALE



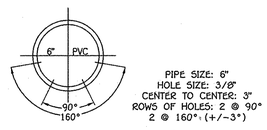
PROPOSED BIO-RETENTION FACILITY (M-6)
BMP No. 2 PLAN VIEW

SCALE: 1" = 20'



SECTION @ OBSERVATION WELL LOCATION

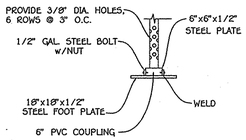
NOT TO SCALE



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

SCH 40 PVC PERFORATED UNDERDRAIN PIPE DETAIL FOR HORIZONTAL DRAIN PIPE

NO SCALE



ANCHOR DETAIL

NO SCALE

0' 20' 40' 80'

SCALE: 1" = 20'

STORMWATER MANAGEMENT NOTES AND DETAILS
(MICRO BIO-RETENTION)

FAIRLANE FARM
PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 19 OF 38

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — PROFESSIONAL ENGINEER

2/4/16
Date

Aldo M. Vitucci, P.E.

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

OWNER

Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1327

DEVELOPER

Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

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

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 19 Swm details.dwg, 2/4/2016 8:02:36 AM, 1:1

STRUCTURE SCHEDULE

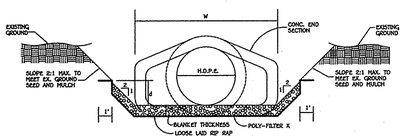
STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	LOCATION	ROAD STA.	OFFSET	TYPE AND WIDTH	REMARKS
I-1	593.50	-----	589.75 (15")	GALAXY DRIVE	6+70	137.2' L	YARD INLET	D = 4.14
I-2	595.50	-----	591.50 (15")	GALAXY DRIVE	5+50	127.9' L	YARD INLET	D = 4.14
I-3	593.50	-----	590.25 (15")	GALAXY DRIVE	4+30	121.9' L	YARD INLET	D = 4.14
I-4	595.50	-----	591.67 (15")	GALAXY DRIVE	2+92	166.6' L	YARD INLET	D = 4.14
I-5	601.50	-----	597.65 (15")	GALAXY DRIVE	2+08	182.0' L	YARD INLET	D = 4.14
I-6	* 596.64	593.36 (24")	593.26 (24")	GALAXY DRIVE	6+45	20' R	TYPE 'D'	D = 4.10
I-7	* 596.64	-----	593.00 (15")	GALAXY DRIVE	6+45	20' L	TYPE 'D'	D = 4.10
I-8	* 598.69	-----	596.21 (15")	GALAXY DRIVE	5+18	20' L	TYPE 'D'	D = 4.10
I-9	* 600.34	-----	597.58 (15")	GALAXY DRIVE	4+35	20' L	TYPE 'D'	D = 4.10
I-10	* 600.34	-----	597.58 (15")	GALAXY DRIVE	4+35	20' R	TYPE 'D'	D = 4.10
I-11	* 604.77	-----	602.02 (15")	GALAXY DRIVE	2+36	20' R	TYPE 'D'	D = 4.10
I-12	* 602.25	599.57 (15")	599.32 (18")	FAIRLANE ROAD	0+38	28.4' R	TYPE 'D'	D = 4.10
I-13	* 603.35	-----	600.09 (15")	FAIRLANE ROAD	0+55	21.1' L	TYPE 'D'	D = 4.10
I-14	* 602.27	598.20 (15")	597.95 (18")	FAIRLANE ROAD	8+42	20' R	TYPE 'D'	D = 4.10
I-15	* 602.27	-----	599.00 (15")	FAIRLANE ROAD	8+42	20' L	TYPE 'D'	D = 4.10
I-16	606.50	-----	603.25 (15")	N 610,188 E 1,299,368	-----	-----	YARD INLET	D = 4.14
I-16A	603.50	599.29 (15")	598.35 (18")	N 610,181 E 1,299,467	-----	-----	YARD INLET	D = 4.14
I-32	* 605.00	601.50 (6"), 601.50 (18")	601.25 (18")	N 609,170 E 1,300,948	-----	-----	TYPE 'S'	D = 4.22
I-33	* 619.30	------	615.71 (15")	OLD FREDERICK ROAD	0+46	30.2' R	TYPE 'D'	D = 4.10
I-35	* 585.75	581.50 (6")	581.00 (15")	MORGAN STATION ROAD	33+99	68.4' R	TYPE 'S'	D = 4.22
I-41	* 607.00	602.24 (15")	601.99 (18")	FAIRLANE ROAD	1+50	20' L	TYPE 'D'	D = 4.10
I-42	* 607.00	-----	603.04 (15")	FAIRLANE ROAD	1+50	20' R	TYPE 'D'	D = 4.10
I-43	597.50	593.91 (18")	593.66 (18")	N 609,262 E 1,299,805	-----	-----	YARD INLET	D = 4.14
M-1	597.45	586.05 (18")	585.95 (18")	N 610,385 E 1,298,666	-----	-----	4' DIA. MANHOLE	G = 5.12
M-1A	588.00	584.30 (18")	584.20 (18")	N 610,346 E 1,298,535	-----	-----	SHALLOW MANHOLE	G = 5.12
M-2	598.50	589.10 (15"), 586.99 (18")	586.89 (18")	GALAXY DRIVE	6+91	53.0' L	5' DIA. MANHOLE	G = 5.13
M-3	599.00	591.13 (15"), 588.19 (18")	588.09 (18")	GALAXY DRIVE	5+63	46.8' L	5' DIA. MANHOLE	G = 5.13
M-4	599.50	588.69 (18")	588.59 (18")	GALAXY DRIVE	5+14	47.4' L	4' DIA. MANHOLE	G = 5.12
M-5	600.00	589.86 (15"), 589.59 (18")	589.34 (18")	GALAXY DRIVE	4+33	42.8' L	5' DIA. MANHOLE	G = 5.13
M-6	602.50	590.75 (15"), 590.50 (18")	590.25 (18")	GALAXY DRIVE	3+01	43.5' L	5' DIA. MANHOLE	G = 5.13
M-7	605.50	596.86 (15")	596.61 (18")	GALAXY DRIVE	1+88	72.9' L	4' DIA. MANHOLE	G = 5.12
M-8	604.00	592.70 (24")	592.60 (24")	GALAXY DRIVE	6+48	131.4' R	4' DIA. MANHOLE	G = 5.12
M-9	598.20	593.78 (15"), 594.29 (18")	593.56 (24")	GALAXY DRIVE	6+45	-----	SHALLOW MANHOLE	G = 5.13
M-10	600.02	596.10 (15"), 596.47 (18")	595.77 (18")	GALAXY DRIVE	5+25	3.0' R	SHALLOW MANHOLE	G = 5.13
M-11	601.89	597.49 (15"), 597.48 (15"), 598.13 (18")	597.03 (18")	GALAXY DRIVE	4+35	-----	SHALLOW MANHOLE	G = 5.13
M-12	606.00	601.72 (15")	601.47 (18")	GALAXY DRIVE	2+43	5.0' R	SHALLOW MANHOLE	G = 5.12
M-13	608.00	597.86 (18")	597.76 (18")	OLD FREDERICK ROAD	20+20	24.9' R	4' DIA. MANHOLE	G = 5.12
M-14	604.15	599.12 (18")	599.02 (18")	OLD FREDERICK ROAD	22+54	25.8' R	4' DIA. MANHOLE	G = 5.12
M-26	608.00	601.91 (15")	601.66 (18")	OLD FREDERICK ROAD	2+76	34.8' R	4' DIA. MANHOLE	G = 5.12
M-27	609.00	605.75 (EX. 18")	597.40 (18")	OLD FREDERICK ROAD	14+93	17.85' R	4' DIA. MANHOLE	G = 5.12
M-29	608.19	601.97 (18"), 600.23 (15")	599.98 (18")	FUTURE THUNDERBIRD DRIVE	0+75.26	5.5' R	4' DIA. MANHOLE	G = 5.12
M-30	609.54	605.58 (18")	605.33 (18")	OLD FREDERICK ROAD	4+76	18.5' R	SHALLOW MANHOLE	G = 5.12
S-1	595.50	584.00 (18")	-----	N 610,361 E 1,298,497	-----	-----	18" FLARED END SECTION	A.D.S. OR EQUAL
S-2	593.60	591.60 (24")	-----	N 610,398 E 1,299,092	-----	-----	24" FLARED END SECTION	A.D.S. OR EQUAL
S-3	598.14	596.64 (18")	-----	N 609,479 E 1,299,473	-----	-----	18" FLARED END SECTION	A.D.S. OR EQUAL
S-4	598.10	596.60 (18")	-----	N 609,540 E 1,299,822	-----	-----	18" FLARED END SECTION	A.D.S. OR EQUAL
S-5	587.31	585.81 (18")	-----	N 610,290 E 1,299,650	-----	-----	18" FLARED END SECTION	A.D.S. OR EQUAL
S-6	596.00	594.50 (18")	-----		-----	-----	18" FLARED END SECTION	A.D.S. OR EQUAL
S-16	581.85	580.60 (15")	-----	MORGAN STATION ROAD	33+99	38.3' R	15" FLARED END SECTION	A.D.S. OR EQUAL
S-17	593.10	591.60 (18")	-----	N 609,365 E 1,299,818	-----	-----	18" FLARED END SECTION	A.D.S. OR EQUAL
HW-1	583.15	-----	579.85 (EX 24")	N 610,387 E 1,298,372	-----	-----	TYPE 'C' CONC. ENDWALL	D = 5.21
HW-2	584.19	-----	582.42 (18")	OLD FREDERICK ROAD	29+70	17.2' R	TYPE 'C' CONC. ENDWALL	D = 5.21
HW-3	582.83	-----	580.83 (EX 15")	OLD FREDERICK ROAD	31+22	17.2' R	TYPE 'C' CONC. ENDWALL	D = 5.21

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

PIPE SCHEDULE

SIZE	CLASS	LENGTH
6"	PVC, SCH. 40 (PERFORATED)	144 L.F.
15"	HDPE	979 L.F.
18"	HDPE	3,005 L.F.
24"	HDPE	314 L.F.

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



RIP RAP CHANNEL DETAIL
NO SCALE

RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	AREA	WETTED PERIMETER	R	R#/3	S	S 1/2	W	d	N	V (f.p.s.)	Q (c.f.s.)	RIP-RAP SIZE D_{50}	RIP-RAP SIZE D_{100}	BLANKET THICKNESS
S-1	12.71	14.7	0.8646	0.2492	0.5000	0.0707	10'	1.05'	0.04	0.75	9.49	9.5"	15"	19"
S-2	12.85	14.74	0.8718	0.2533	0.5000	0.0707	10'	1.06'	0.04	0.76	9.60	9.5"	15"	19"
S-3	5.62	12.28	0.4576	0.0698	0.5000	0.0707	10'	0.51'	0.04	0.49	2.70	9.5"	15"	19"
S-4	7.47	12.95	0.5768	0.1109	0.5000	0.0707	10'	0.66'	0.04	0.58	4.26	9.5"	15"	19"
S-5	4.32	11.79	0.3664	0.0447	0.5000	0.0707	10'	0.40'	0.04	0.43	1.83	9.5"	15"	19"

CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

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

FISHER, COLLINS & CARTER, INC.
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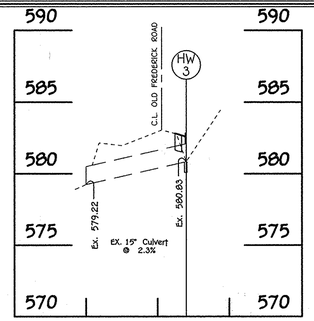
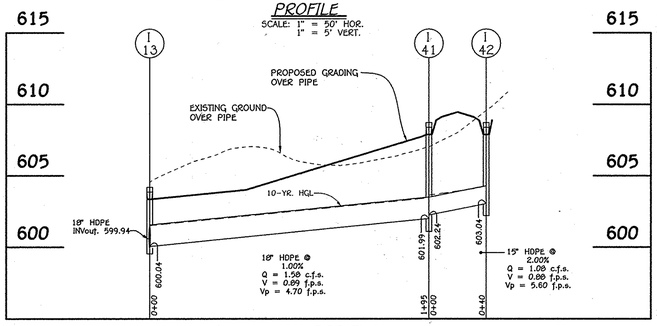
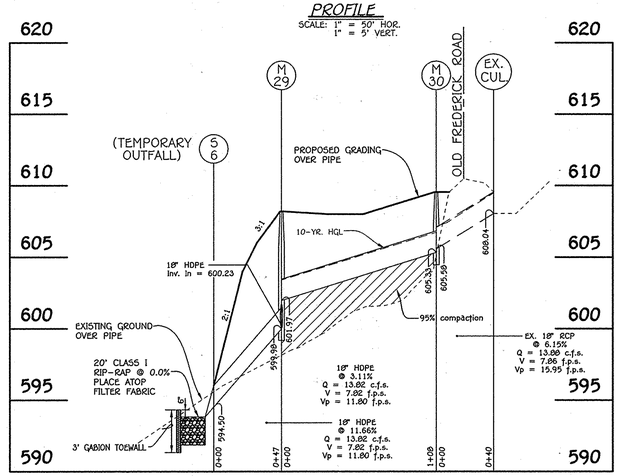
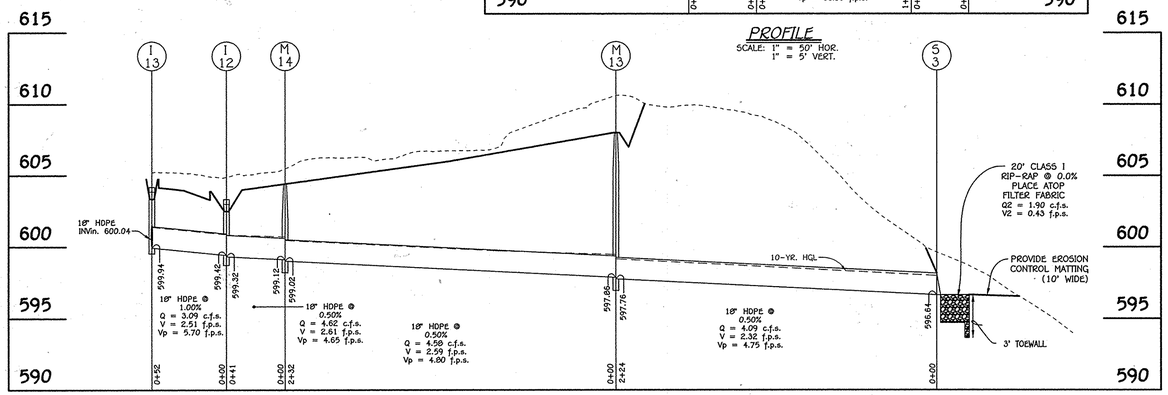
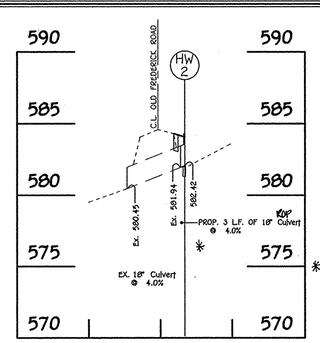


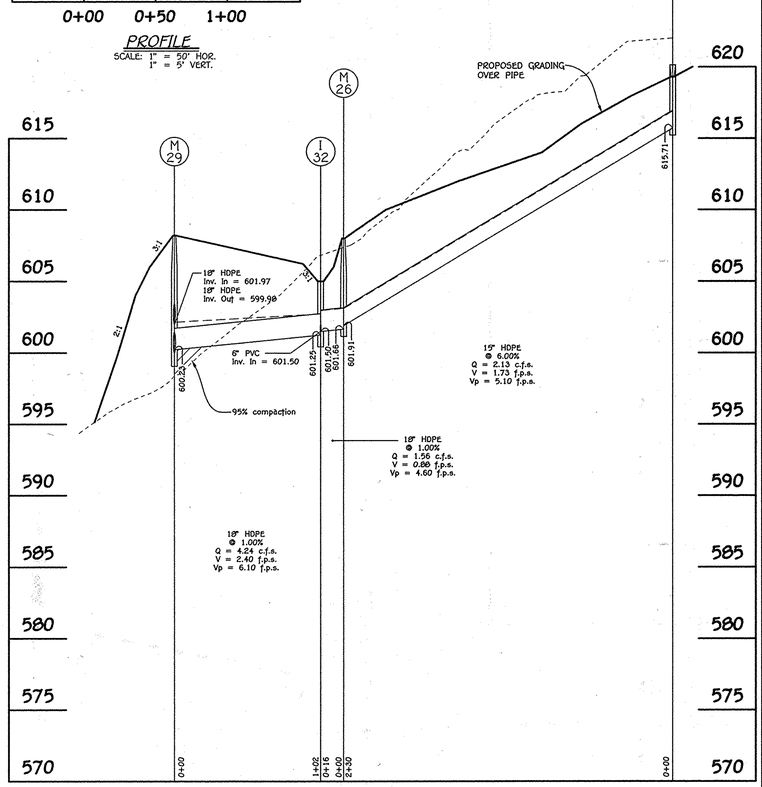


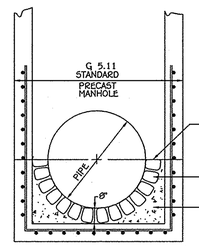






* NOTE: CONTRACTOR TO REMOVE LAST SECTION OF EX. RCP PIPE AND REPLACE WITH NEW SECTION TO REQUIRED LENGTH.





GRANITE BLOCK DETAIL
NOT TO SCALE

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

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

OWNER

Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
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410-977-1327

DEVELOPER

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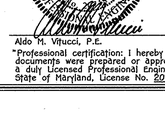
APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 3/7/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/31/16
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.18.16

REVISIONS

NO.	DESCRIPTION	DATE



Aldo M. Vitucci, P.E. — Date 2/4/16

"Professional certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 22748, Expiration Date 2-22-17."

STORM DRAIN PROFILES

FAIRLANE FARM

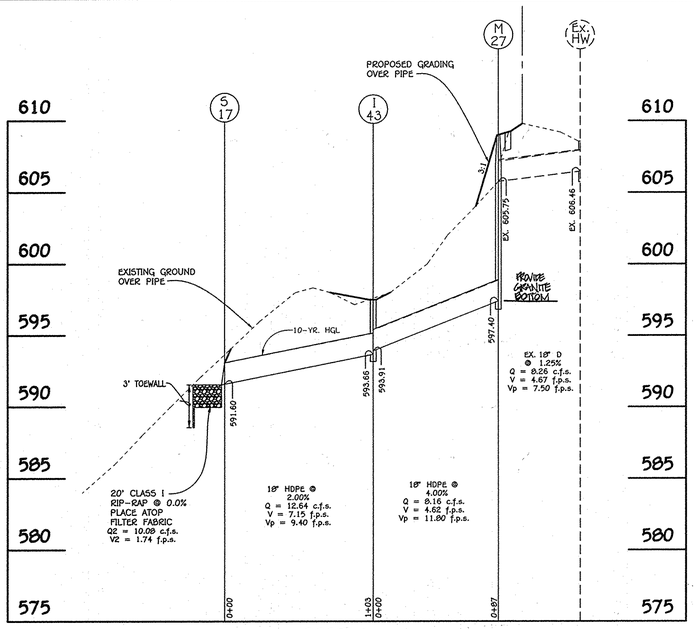
PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

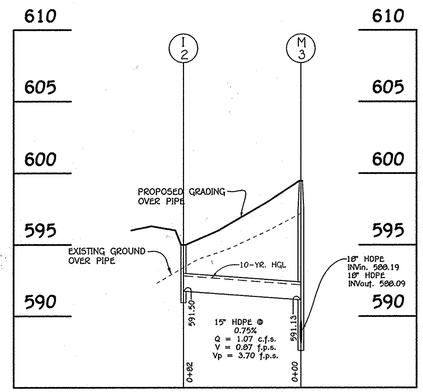
ZONED: RC-DEO
TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2016
SHEET 20 OF 38

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 20-22 Std profiles.dwg, 2/4/2016 8:11:17 AM, 1:1



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



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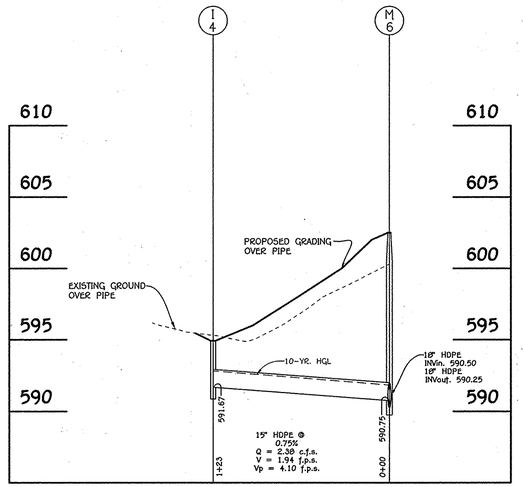

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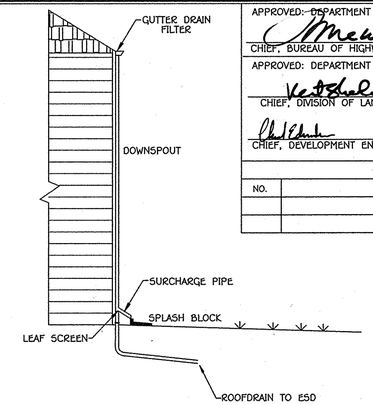
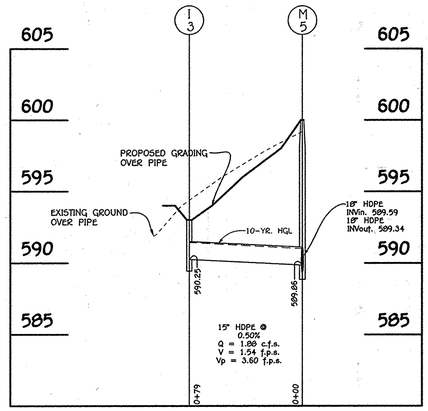


TYPICAL DOWNSPOUT FOR LOTS w/ROOFLEADERS
NO SCALE

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 3/7/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/3/16
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.18.16

REVISIONS		
NO.	DESCRIPTION	DATE



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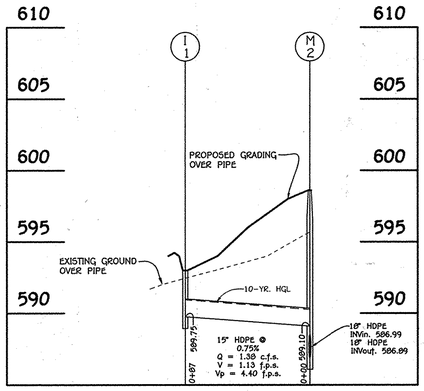

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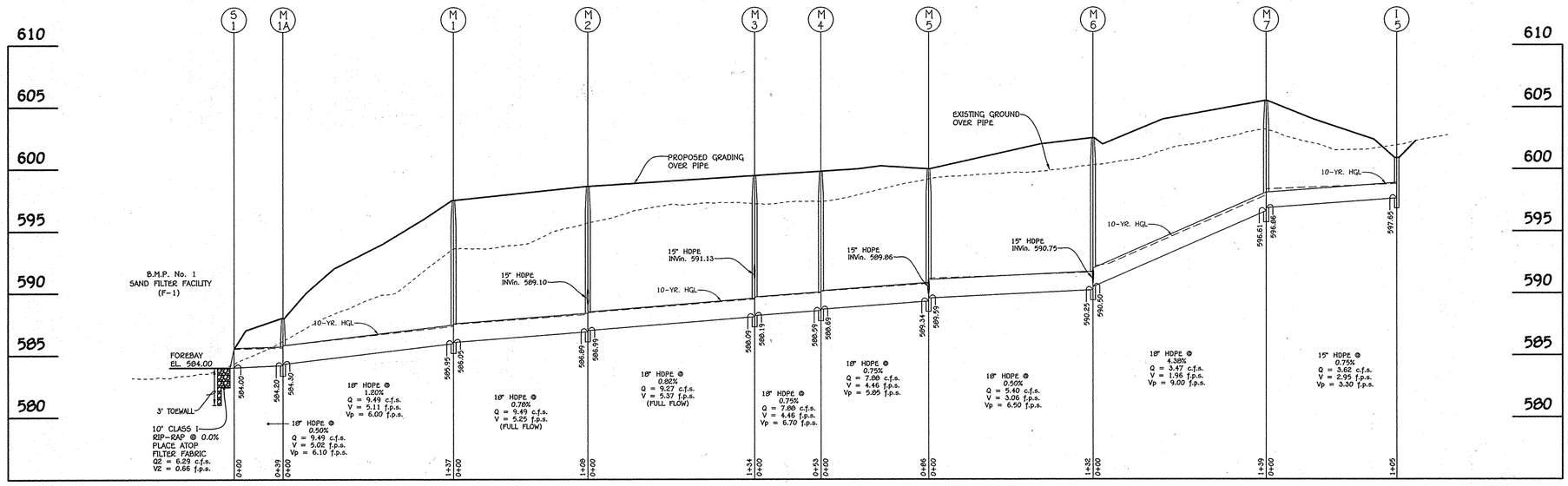

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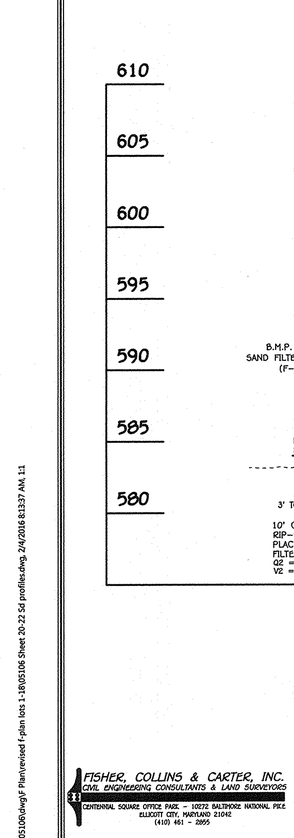

FISHER, COLLINS & CARTER, INC.
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ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

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410-977-1327

DEVELOPER
Land Design & Development
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0' 50' 100' 150'
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STATE OF MARYLAND — ALDO MICHAEL VITUCCI — No. 20748 — PROFESSIONAL ENGINEER

2/4/16
Date

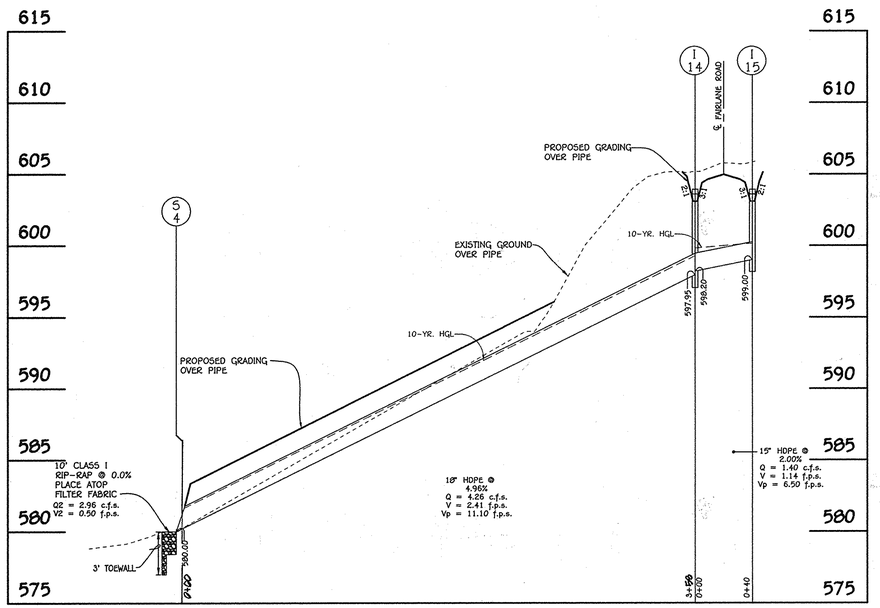
Aldo M. Vitucci, P.E.
"Professional certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-17."

STORM DRAIN PROFILES
FAIRLANE FARM
PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 21 OF 36

F-15-054



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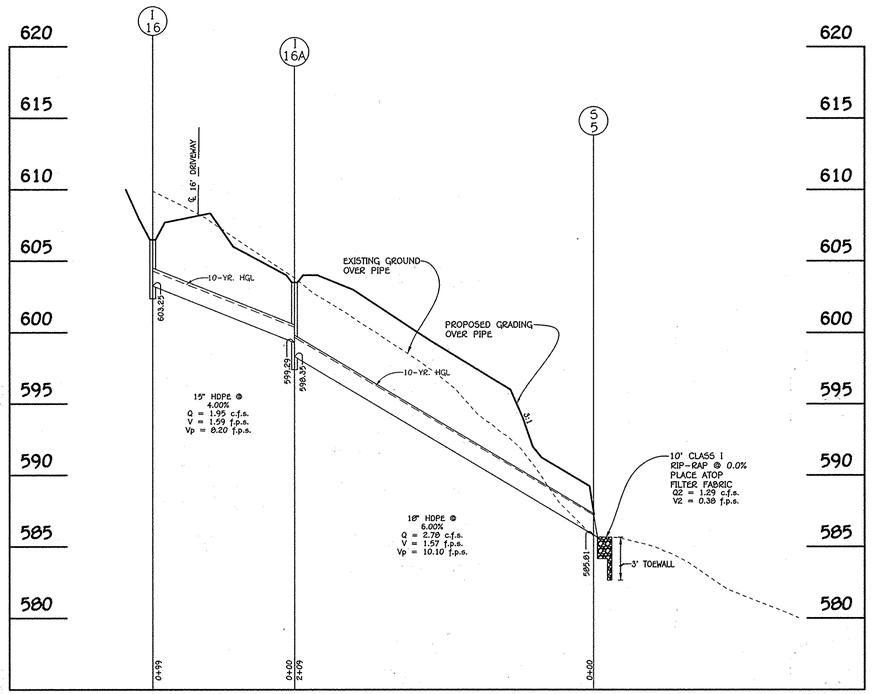

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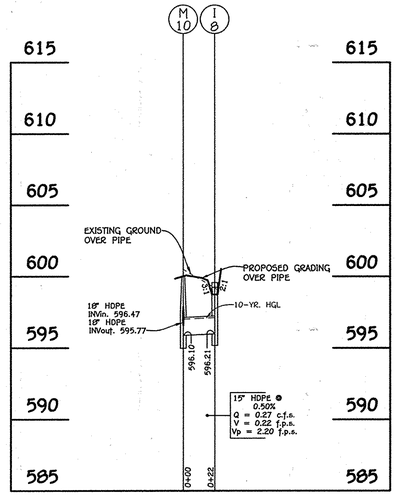

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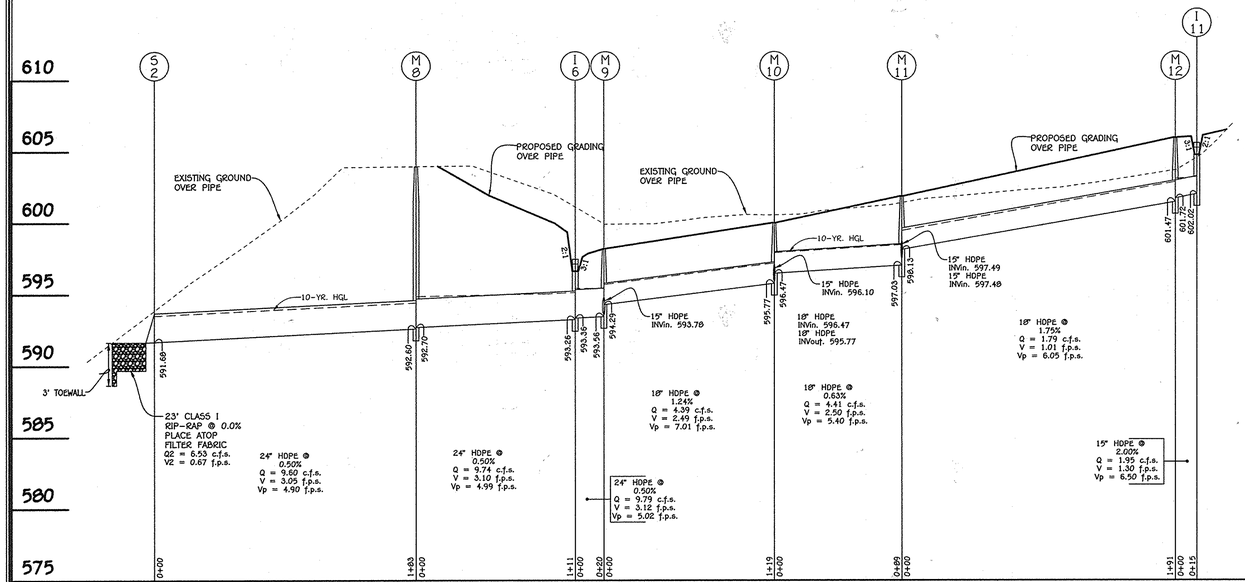

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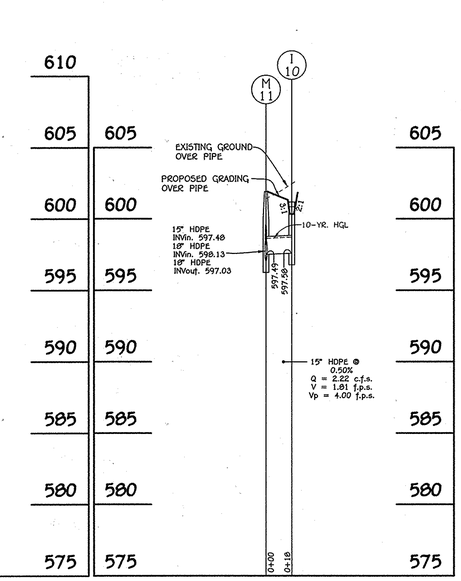

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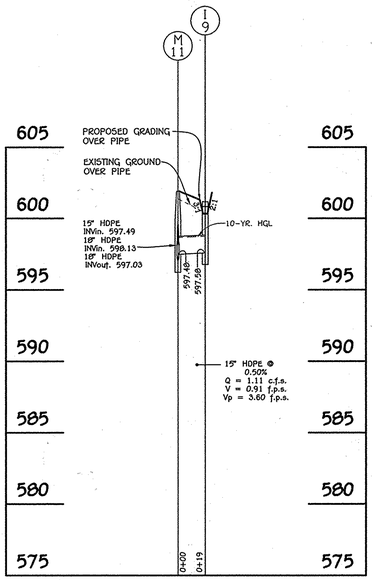

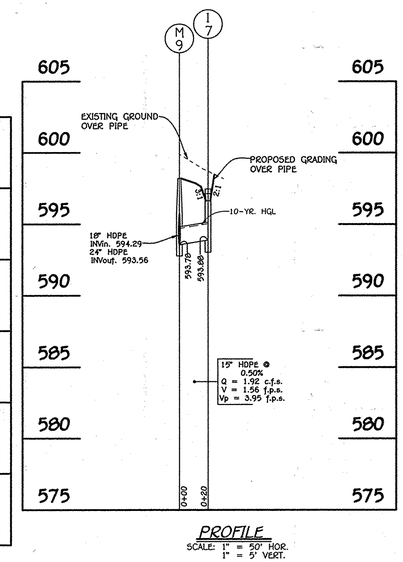

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Aldo M. Vitucci, P.E. — Date 2/4/16

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STORM DRAIN PROFILES
FAIRLANE FARM
PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

ZONED: RC-DEO
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TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2015
SHEET 22 OF 30

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 20-22 Sd profiles.dwg, 2/4/2016 8:16:28 AM, 1:1

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%.

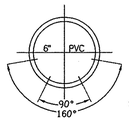
Absolutely no runoff is to enter the filter until all contributing drainage areas have been stabilized.

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).



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

SCH 40 PVC PERFORATED UNDERDRAIN PIPE DETAIL FOR HORIZONTAL DRAIN PIPE

NO SCALE

NOTES:
UNDERDRAIN PIPE SHALL BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTMF 758, TYPE PS 28 OR AASHTO-M- 278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED 4" RIGID PIPE (e.g., PVC OR HDPE).

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

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

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

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

A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE SAND MEDIA AND No. 57 STONE 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.
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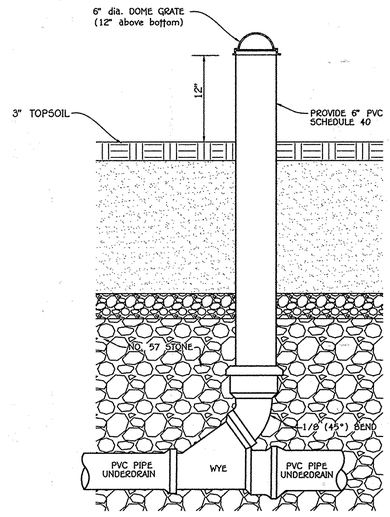
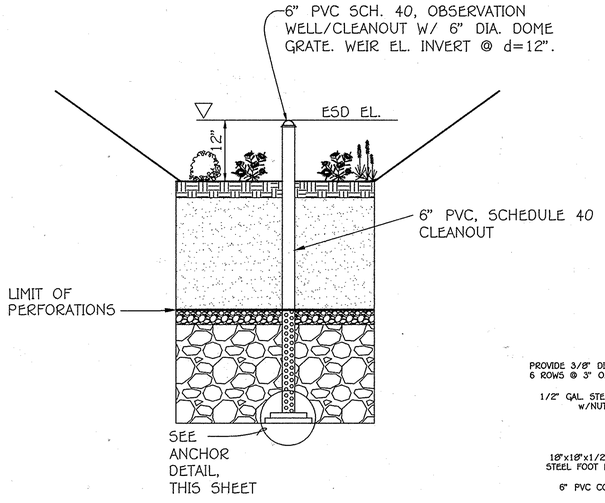


Typical Clean-Out Detail

NO SCALE

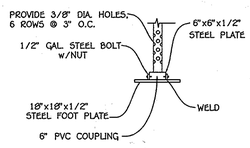
Table B.3.1 Material Specifications for Sand filters

Material	Specifications/Test Method	Size	Notes
sand	clean AASHTO-M-6 of ASTM-Cconcrete 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 PS 28 or AASHTO-M-278	4" - 6" rigid schedule 40 PVC or SDR35	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



SECTION @ OBSERVATION WELL LOCATION

NOT TO SCALE



ANCHOR DETAIL

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STORMWATER MANAGEMENT
NOTES AND DETAILS
(SURFACE SAND FILTER)

FAIRLANE FARM
PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2016
SHEET 23 OF 38

F-15-054

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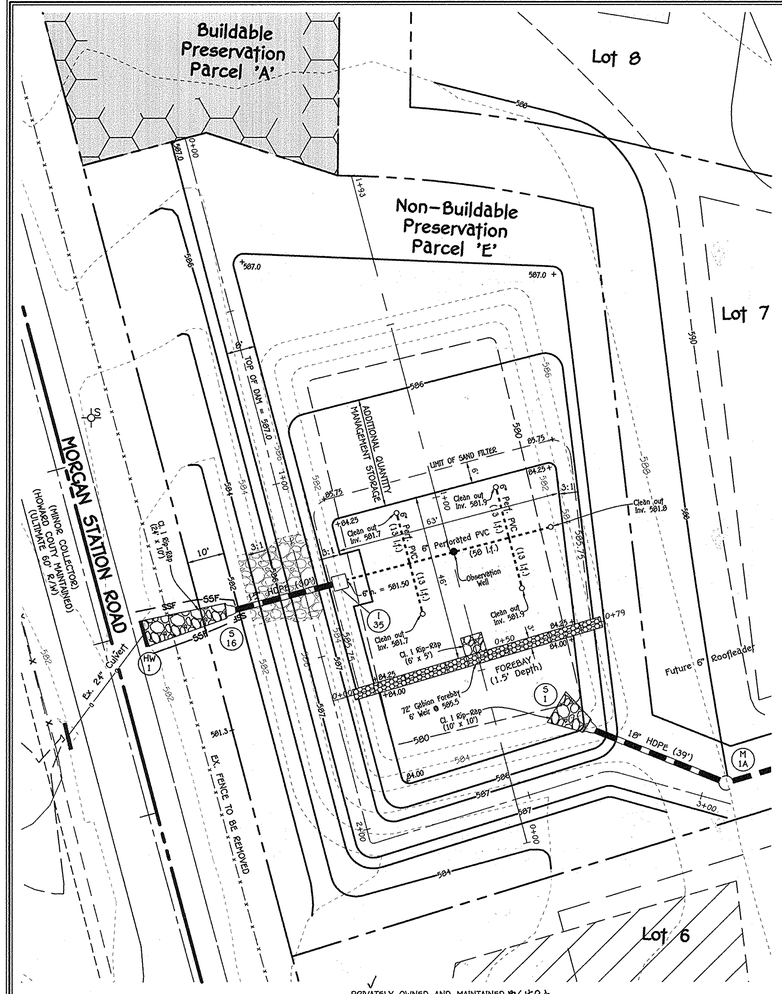

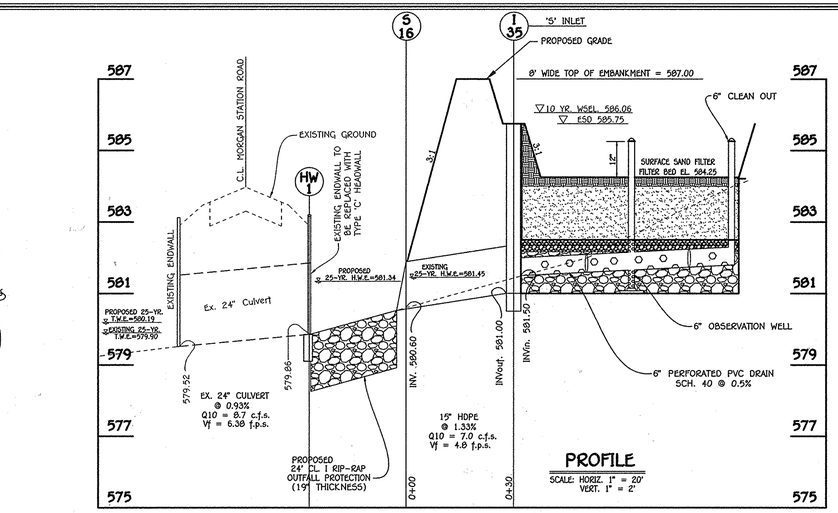

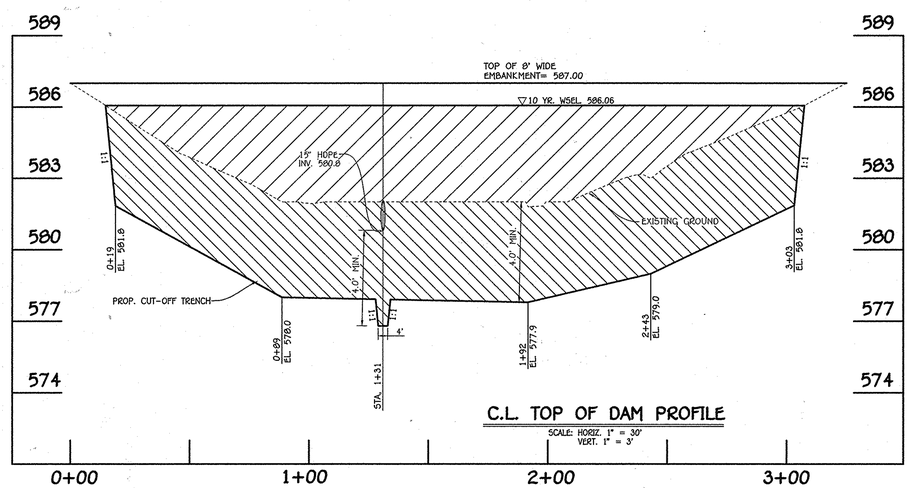

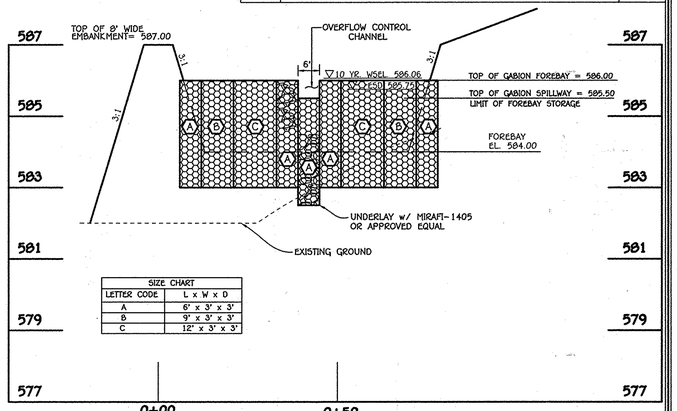

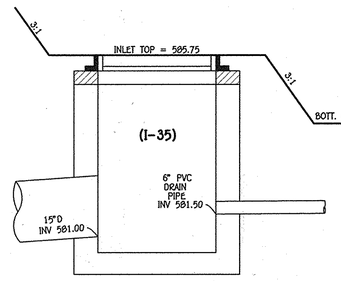

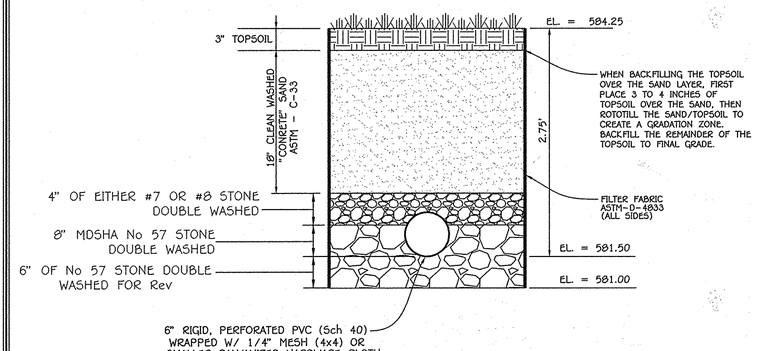

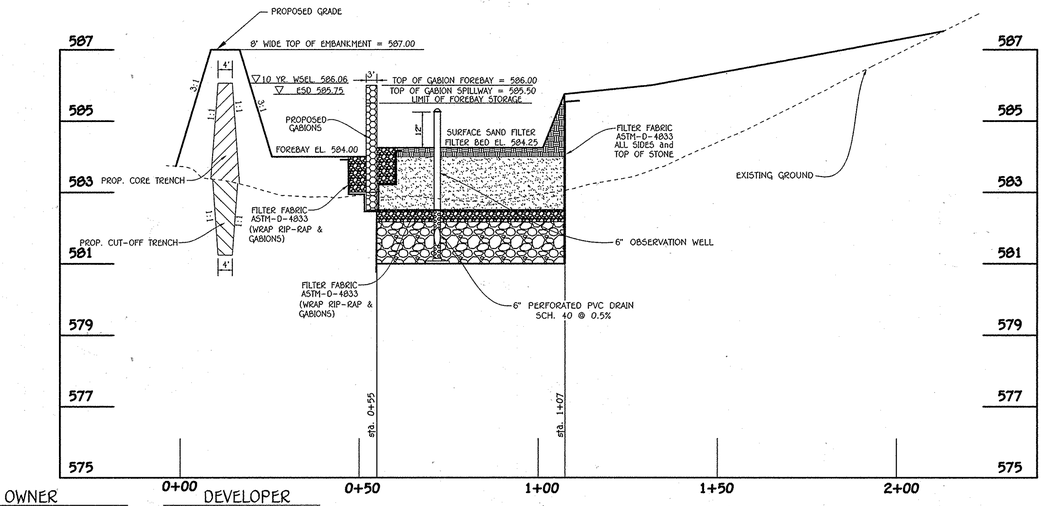

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STORMWATER MANAGEMENT PLAN AND DETAILS
B.M.P. No. 1 (F-1)

FAIRLANE FARM
PHASE ONE

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APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT	3/31/16 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	3.18.16 DATE

REVISIONS		
NO.	DESCRIPTION	DATE

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	Glenelg loam, 3 to 8 percent slopes	B	0.27
GnB	Glenville-Baile silt loams, 0 to 8 percent slopes	C	(e) 0.43
GgA	Glenelg 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

DRAINAGE AREA DATA

STRUCTURE NO.	DRAINAGE AREA	AREA	'C'	ZONED	% IMP.
I-1	A	0.43 AC.	0.33	RC-DEO	13%
I-2	B	0.24 AC.	0.46	RC-DEO	31%
I-3	C	0.52 AC.	0.37	RC-DEO	19%
I-4	D	0.86 AC.	0.28	RC-DEO	6%
I-5	E	0.65 AC.	0.57	RC-DEO	46%
I-6	F	1.26 AC.	0.46	RC-DEO	25%
I-7	G	0.32 AC.	0.62	RC-DEO	53%
I-8	H	0.06 AC.	0.48	RC-DEO	34%
I-9	I	0.29 AC.	0.39	RC-DEO	27%
I-10	J	0.55 AC.	0.41	RC-DEO	22%
I-11	K	0.47 AC.	0.35	RC-DEO	15%
I-12	L	0.42 AC.	0.44	RC-DEO	28%
I-13	M	0.13 AC.	0.55	RC-DEO	44%
I-14	N	0.46 AC.	0.41	RC-DEO	24%
I-15	O	0.29 AC.	0.50	RC-DEO	37%
I-16	P	0.63 AC.	0.32	RC-DEO	11%
I-16A	NN	0.23 AC.	0.32	RC-DEO	12%
I-17	Q	0.38 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	JJ	1.06 AC.	0.28	RC-DEO	5%
Ex. Culvert	GG	3.61 AC.	0.51	RC-DEO	38%
I-39	MM	0.07 AC.	0.63	RC-DEO	55%
I-40	JJ	1.00 AC.	0.42	RC-DEO	25%
I-41	OO	0.10 AC.	0.66	RC-DEO	59%
I-42	PP	0.41 AC.	0.31	RC-DEO	10%
I-43	QQ	1.34 AC.		RC-DEO	22%

MATCH LINE SEE SHEET 26

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 21042
(410) 461 - 2855

OWNER

Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
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Woodbine, Md 21797
410-977-1327

DEVELOPER

Land Design & Development
5300 Dorsey Hall Drive
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Ellicott City, Maryland 21042
(410)-977-0422

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — PROFESSIONAL ENGINEER

Aldo M. Vitucci, P.E. — 2/4/16 Date

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

OVERALL STORM DRAIN DRAINAGE AREA MAP & SOILS MAP

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 25 OF 38

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 25-26 da map.dwg, 2/4/2016 8:40:36 AM, 1:1

DENOTES 15%-24.9% SLOPES

DENOTES 25% AND GREATER SLOPE

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 3/7/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/31/16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.18.16

REVISIONS

NO.	DESCRIPTION	DATE

SOILS LEGEND

SOIL	NAME	CLASS	K.w
GbB	Gladstone loam, 3 to 8 percent slopes	B	0.28
MaB	Manor loam, 3 to 8 percent slopes	B	0.27
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GmB	Glenville silt loam, 3 to 8 percent slopes	C	(e) 0.43
GgB	Glenelg loam, 3 to 8 percent slopes	B	0.27
GnB	Glenville-Baile silt loams, 0 to 8 percent slopes	C	(e) 0.43
GgA	Glenelg 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 NRCS WEBSITE.

NOTES:

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

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CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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(410) 461 - 2855

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

Aldo M. Vitucci, P.E. — 2/4/16 Date

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

OVERALL STORM DRAIN DRAINAGE AREA MAP & SOILS MAP

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 26 OF 38

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 25-26 da map.dwg, 2/4/2016 8:44:06 AM, 1:1

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 3/31/16

Chief, Development Engineering Division — Date 3.18.16

REVISIONS

NO.	DESCRIPTION	DATE

PATTERN SPACING DIAGRAM

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

LEGEND

FOREST CONSERVATION AREA (Non-Credited)

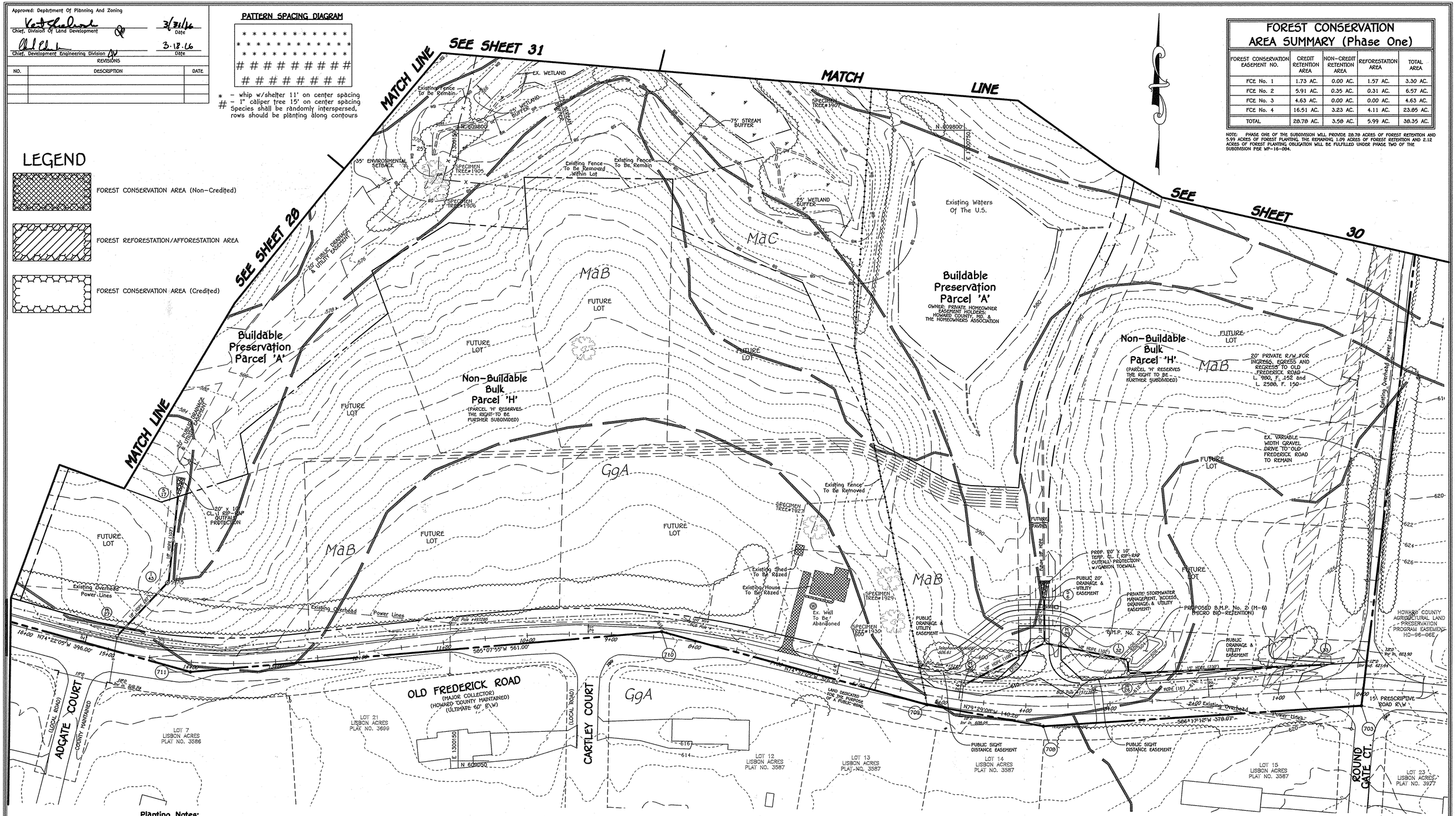
FOREST REFORESTATION/AFFORESTATION AREA

FOREST CONSERVATION AREA (Credited)

FOREST CONSERVATION AREA SUMMARY (Phase One)

FOREST CONSERVATION EASEMENT NO.	CREDIT RETENTION AREA	NON-CREDIT RETENTION AREA	REFORESTATION AREA	TOTAL AREA
FCE No. 1	1.73 AC.	0.00 AC.	1.57 AC.	3.30 AC.
FCE No. 2	5.91 AC.	0.35 AC.	0.31 AC.	6.57 AC.
FCE No. 3	4.63 AC.	0.00 AC.	0.00 AC.	4.63 AC.
FCE No. 4	16.51 AC.	3.23 AC.	4.11 AC.	23.85 AC.
TOTAL	28.78 AC.	3.58 AC.	5.99 AC.	38.35 AC.

NOTE: PHASE ONE OF THE SUBDIVISION WILL PROVIDE 28.78 ACRES OF FOREST RETENTION AND 5.99 ACRES OF FOREST PLANTING. THE REMAINING 1.09 ACRES OF FOREST RETENTION AND 2.12 ACRES OF FOREST PLANTING OBLIGATION WILL BE FULFILLED UNDER PHASE TWO OF THE SUBDIVISION PER WP-16-094.



Planting Notes:

Planting units defined by the spacing requirements established in the FCA Manual. One plant unit is defined as 1 seedling or whip without shelter. The Manual states that 700 seedlings/whips without shelters are required per acre, or 350 whips w/shelters, or 200 1" caliper trees, or 100 2" caliper trees. By conversion it has been determined that a seedling or whip without shelter = 1 unit, whip with shelter = 2 units, 1"caliper tree = 3.5 units and 2" caliper tree = 7 units. The use of plant units simplifies the plant density calculations when mixing stock size.

** - These species should not be planted within the wetland limits.

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

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

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

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

FISHER, COLLINS & CARTER, INC.
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(410) 461 - 2855

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c/o Diane Schulte,
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(410)-977-0422

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

Aldo M. Vitucci, P.E. — 2/4/16 Date

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

FOREST CONSERVATION PLAN

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 27 OF 38

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 27-33 Fce plans.dwg, 2/4/2016 9:17:14 AM, 11

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 3/31/16

Chief, Development Engineering Division — Date 3-18-16

REVISIONS

NO.	DESCRIPTION	DATE

DENOTES EXISTING SLOPES 15% to 24.9%

DENOTES EXISTING SLOPES 25% AND GREATER

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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(410)-977-0422

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

STATE OF MARYLAND — LANDSCAPE ARCHITECT — 3038

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — PROFESSIONAL ENGINEER

Aldo M. Vitucci, P.E. — Date 2/4/16

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

FOREST CONSERVATION PLAN

FAIRLANE FARM

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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: FEBRUARY 3, 2016
SHEET 28 OF 38

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 27-33 Fce plans.dwg, 2/4/2016 9:14:29 AM, 1:1

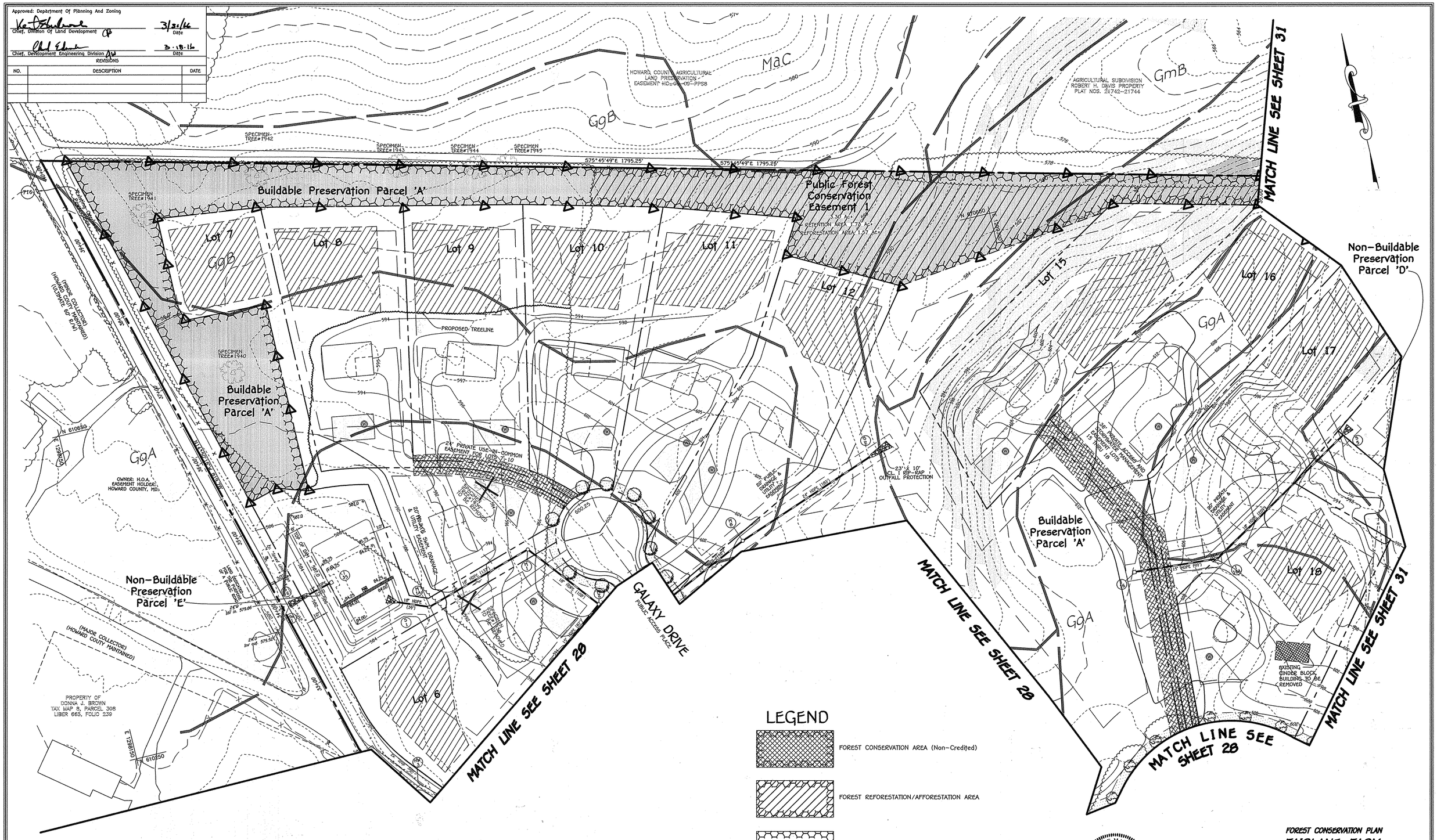
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 3/31/16

Chief, Development Engineering Division — Date 3.18.16

REVISIONS

NO.	DESCRIPTION	DATE



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STATE OF MARYLAND — ALDO MICHAEL VITUCCI — PROFESSIONAL ENGINEER

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FOREST CONSERVATION PLAN
FAIRLANE FARM
PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 29 OF 38

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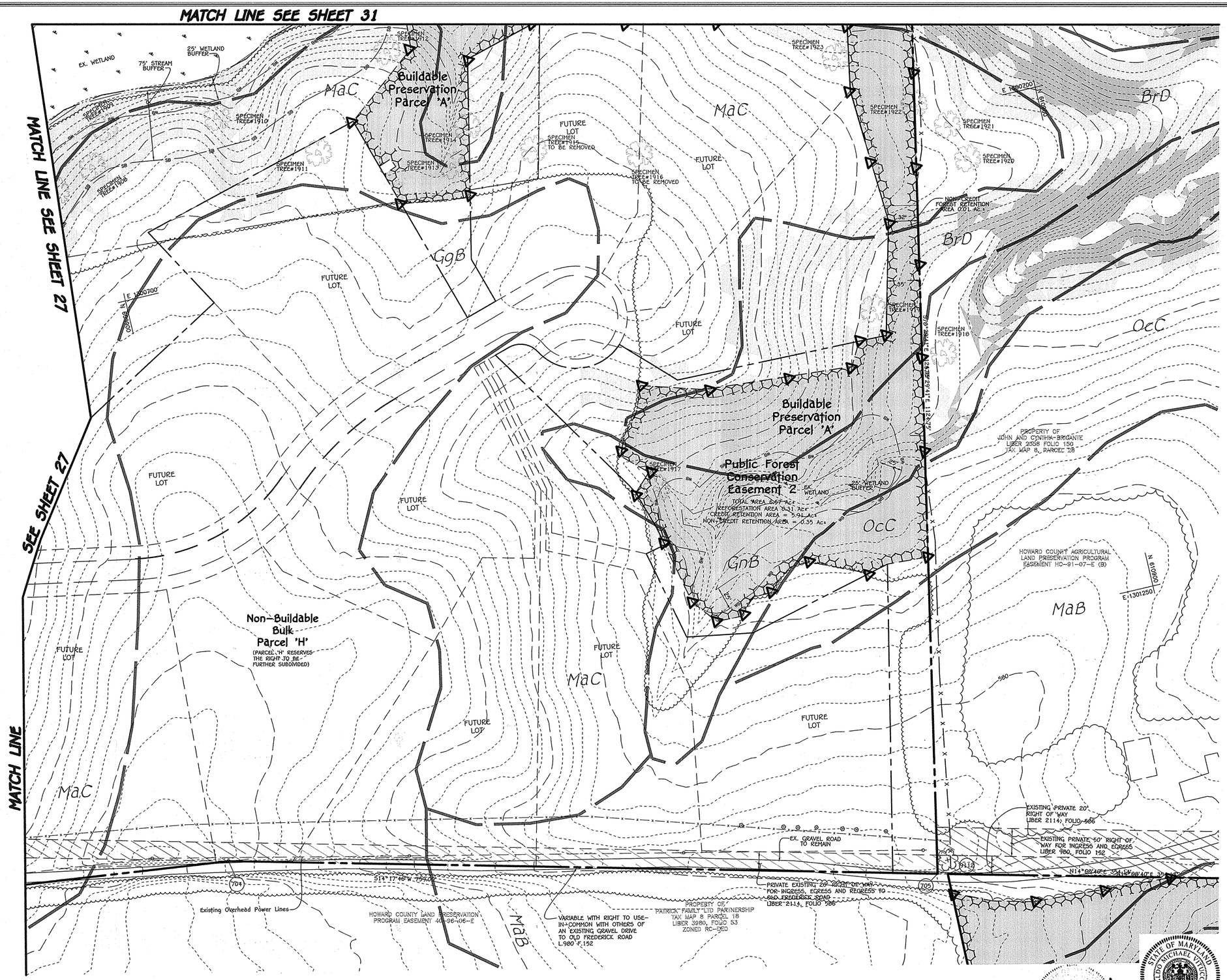

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 3/31/16

Chief, Development Engineering Division — Date: 3.18.16

REVISIONS

NO.	DESCRIPTION	DATE

DENOTES EXISTING SLOPES 15% to 24.9%

DENOTES EXISTING SLOPES 25% AND GREATER

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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0' 50' 100' 200'
Scale: 1" = 50'

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — PROFESSIONAL ENGINEER

Aldo M. Vitucci, P.E. — Date: 3/4/16

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FOREST CONSERVATION PLAN

FAIRLANE FARM

PHASE ONE

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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: FEBRUARY 3, 2016
SHEET 30 OF 38

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 27-33 Fce plans.dwg, 2/4/2016 10:02:51 AM, 1:1

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 3/31/16

Chief, Development Engineering Division — Date 3.18.16

REVISIONS

NO.	DESCRIPTION	DATE

FCE Planting Area # 1 – 1.57 acres

Planting units required: 1100 (550 whips)
Planting units provided: 1101 (463 whips and 50 trees)

Qty	Species	Size	Spacing	Total FCA Units
25	Acer x Freemanii 'Autumn Blaze' – Freeman Maple	1" cal.	15' o.c.	
25	Ulmus Americana 'Valley Forge' Valley Forge American Elm	1" cal.	15' o.c.	
50	Total 1" caliper trees (3.5 planting units per tree) =			175 Total FCA unit credit
65	Acer x Freemanii 'Autumn Blaze' – Freeman Maple	2-3' whip	11' o.c.	
65	Cercis canadensis – Red bud	2-3' whip	11' o.c.	
58	Carpinus caroliniana – American Hornbeam	2-3' whip	11' o.c.	
55	Liriodendron tulipifera – Tulip poplar	2-3' whip	11' o.c.	
55	Betula Nigra 'heritage' – River Birch	2-3' whip	11' o.c.	
55	Ostrya virginiana – American Hophornbeam	2-3' whip	11' o.c.	
55	Ulmus Americana 'Valley Forge' Valley Forge American Elm	2-3' whip	11' o.c.	
55	Acer campestre – Hedge Maple	2-3' whip	11' o.c.	
463	Total whip plantings (2 planting units per tree) =			926 Total FCA unit credit
	Total Unit Credit		(175 + 926)	1101

1" CAL. TREES = 200/ACRE (50 TREES/200 = 0.25 AC.)
WHIPS w/shelters = 350/ACRE = 350 x 1.32 AC. = 463 WHIPS
3.5 Planting units = 1 – 1" Cal. Tree
2 Planting units = 1 Whip

FCE Planting Area # 2 – 0.31 acres

Planting units required: 218 (109 whips)
Planting units provided: 218 (109 whips)

Qty	Species	Size	Spacing	Total FCA Units
18	Acer x Freemanii 'Autumn Blaze' – Freeman Maple	2-3' whip	11' o.c.	
13	Cercis canadensis – Red bud	2-3' whip	11' o.c.	
13	Carpinus caroliniana – American Hornbeam	2-3' whip	11' o.c.	
13	Liriodendron tulipifera – Tulip poplar	2-3' whip	11' o.c.	
13	Betula Nigra 'heritage' – River Birch	2-3' whip	11' o.c.	
13	Ostrya virginiana – American Hophornbeam	2-3' whip	11' o.c.	
13	Ulmus Americana 'Valley Forge' Valley Forge American Elm	2-3' whip	11' o.c.	
13	Acer campestre – Hedge Maple	2-3' whip	11' o.c.	
109	Total whip plantings (2 planting units per tree) =			218 Total FCA unit credit

WHIPS w/shelters = 350/ACRE = 350 x 0.31 AC. = 108.5 WHIPS
3.5 Planting units = 1 – 1" Cal. Tree
2 Planting units = 1 Whip

SEE SHEET 29

MATCH LINE SEE SHEET 29

MATCH LINE SEE SHEET 28

MATCH LINE

Public Forest Conservation Easement 1
3.30 Ac±
RETENTION AREA 1.73 Ac±
REFORESTATION AREA 1.57 Ac±

AGRICULTURAL SUBDIVISION
ROBERT H. DAVIS PROPERTY
PLAT NO. 21742-21744
HOWARD COUNTY AGRICULTURAL LAND PRESERVATION PROGRAM EASEMENT HO-06-08-FP956

Buildable Preservation Parcel 'A'
OWNER: PRIVATE HOMEOWNER EASEMENT HOLDERS: HOWARD COUNTY, MD. & THE HOMEOWNERS ASSOCIATION

Non-Buildable Bulk Parcel 'G'
(PARCEL 'G' RESERVES THE RIGHT TO BE FURTHER SUBDIVIDED)

FUTURE LOT

FUTURE PARKING

10' x 10' CL. 1 RIP-RAP OUTFALL PROTECTION

18" HDPE (SRC)

20' PUBLIC DRAINAGE & UTILITY EASEMENT

N14°41'48"E 380.49'

N 611100
E 1299650

N 611100
E 1300300

N 610800
E 1300300

N 610525.98
E 1299519.99

PROPERTY OF
JOHN AND CYNTHIA BRIGANTE
LIBER 2558, FOLIO 150
TAX MAP 6, PARCEL 28
ZONED: RC-DEO

HOWARD COUNTY AGRICULTURAL LAND PRESERVATION PROGRAM EASEMENT HO-91-07-E-(S)

Buildable Preservation Parcel 'A'
OWNER: PRIVATE HOMEOWNER EASEMENT HOLDERS: HOWARD COUNTY, MD. & THE HOMEOWNERS ASSOCIATION

SPECIMEN TREE#1926
SPECIMEN TREE#1925
SPECIMEN TREE#1924

25' WETLAND BUFFER

EX. WETLANDS
LIMITS OF "NON-CRITICAL FLOOD PLAIN" 0.49 AC±
EX. WETLAND
EX. WETLAND /STREAM

Public Forest Conservation Easement 2
TOTAL AREA 6.57 Ac±
REFORESTATION AREA 0.31 Ac±
CREDIT RETENTION AREA = 5.91 Ac±
NON-CREDIT RETENTION AREA = 0.35 Ac±

18" HDPE Inv. 548.63
12" HDPE Inv. 545.80
Ex. Riser

MaC GmB MkF MaB GgA GnB BrD BrC

MATCH LINE SEE SHEET 27

MATCH LINE SEE SHEET 30

LEGEND

- FOREST CONSERVATION AREA (Non-Credited)
- FOREST REFORESTATION/AFFORESTATION AREA
- FOREST CONSERVATION AREA (Credited)

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

OWNER
Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1327

DEVELOPER
Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

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

LANDSCAPE ARCHITECT

STATE OF MARYLAND — MICHAEL VITUCCI — No. 20746 — PROFESSIONAL ENGINEER

Aldo M. Vitucci, P.E. — Date 2/4/16

"Professional certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20746, Expiration Date 5-22-17."

FOREST CONSERVATION PLAN
FAIRLANE FARM
PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 31 OF 38

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 27-33 Fce plans.dwg, 2/4/2016 10:06:03 AM, L1

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 3/31/16 Date

Chief, Development Engineering Division — 3.18.16 Date

REVISIONS

NO.	DESCRIPTION	DATE

Notes:

1. Any Forest Conservation Easement (fce) Area Shown Hereon Is Subject To Protective Covenants Recorded In The Land Records Of Howard County Which Restrict Disturbance And Use Of These Areas.

2. The Forest Conservation Easements Have Been Established To Fulfill The Requirements Of Section 16.1200 Of The Howard Code And Forest Conservation Act. No Clearing, Grading Or Construction Is Permitted Within The Forest Conservation Easement; However, Forest Management Practices As Defined In The Deed Of Forest Conservation Easement Are Allowed.

3. Limits Of Disturbance Shall Be Restricted To Areas Outside The Limit Of Temporary Fencing Or The Fce Boundary, Whichever Is Greater. No Stockpiles, Parking Areas, Equipment Cleaning Areas, Etc. Shall Occur Within Areas Designated As Forest Conservation Easement.

4. Passive Recreational Activities, Including Horseback Riding On Unmarked Trails, Are Permitted Within The Forest Conservation Easements If Approved By The County, And If They Are Consistent With And Do Not Interfere With Forest Conservation Management, Do Not Cause Harm To Protected Forest Resources Or Do No Destroy The Forest Ecological System. Be Advised, If The Unmarked Horseback Riding Trails Do Not Adhere To The Above Requirements, Release Of The Forest Conservation Surety May Be Delayed Until The Forest Conservation Easements Are In Acceptable Condition.

5. Board On Board, Chain Link, Panel And Picket Fences Are Not Permitted Within The Forest Conservation Easements. The Existing Fencing Shown On The Plans Is An Open Wood Fencing That Allows Flora And Fauna To Freely Move Through The Easement. Any Alteration Of The Fencing, Like Wire Mesh, Is Not Permitted Because It Will Block The Forest Area From Wildlife And Natural Regeneration.

6. Part Of The Forest Conservation Obligation For This Site Has Been Met By 28.70 Acres Of Credited Retention And 5.99 Acres Of Reforestation. Surety In The Amount Of $130,462.00 For The Reforestation Plantings Will Be Bonded With The Dpw Developer's Agreement.

Construction Period Protection Program

A. Forest Protection Techniques

1. Soil Protection Area (Critical Root Zone)

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

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

2. Fencing and Signage

All forest retention areas will be protected from unauthorized intrusion by appropriate signage and fencing. Signage and fencing will be installed prior to any construction activity. Installation of these devices will be supervised by Eco-Science Professionals or another qualified professional. Fencing will placed along all LOD lines that occur within 35 feet of existing treelines. Signage will be placed along the edge of the FCE every 100 feet. Fencing will consist of blaze orange mesh fence or super silt fence. See Forest Conservation Plan for standard specifications.

B. Pre-Construction Meeting

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

C. Storage Facilities/Equipment Cleaning

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

D. Sequence of Construction

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

Below find a sequence of construction.

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

E. Construction Monitoring

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

F. Activities Permitted During Construction

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

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

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

G. Post-Construction Meeting

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

Post-Construction Management Plan

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

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

A. Signage

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

Planting/Soil Specifications

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

Sequence of Construction

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

Maintenance of Plantings

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

Guarantee Requirements

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

Surety for Forestation

1. The developer shall post a surety (bond, letter of credit) to ensure that forestation plantings are completed. SEE GENERAL NOTE 29, SHEET 1.

Planting Notes

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

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

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

Forest Easement Metes And Bounds

See Record Plats Titled "Fairlane Farm Lots 1 Thru 18, Buildable Preservation Parcel 'A', Non-Buildable Preservation Parcels 'B' Thru 'E', Parcel 'L' And Non-Buildable Bulk Parcels 'G' & 'H' ", Sheets 1 Thru 8 For Forest Conservation Easement Metes And Bounds.

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

OWNER	DEVELOPER
Estate Of F.J. Schulte c/o Diane Schulte, Personal Representative 2215 Duvall Road Woodbine, Md 21797 410-977-1327	Land Design & Development 5300 Dorsey Hall Drive Suite 102 Ellicott City, Maryland 21042 (410)-977-0422

0' 50' 100' 200'

Scale: 1" = 50'

FOREST CONSERVATION WORKSHEET VERSION 1.0 (ENTIRE PROJECT)

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	38.95
H. AREA OF FOREST ABOVE AFFORESTATION TRESHOLD	12.5
I. AREA OF FOREST ABOVE CONSERVATION TRESHOLD	5.8
BREAKEVEN POINT	
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	34.35
BREAKEVEN 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 TRESHOLD	1.45
P. REFORESTATION FOR CLEARING BELOW THE CONSERVATION TRESHOLD	6.66
Q. CREDIT FOR RETENTION ABOVE THE CONSERVATION TRESHOLD	---
R. TOTAL REFORESTATION REQUIRED	8.11
S. TOTAL AFFORESTATION REQUIRED	---
T. TOTAL PLANTING REQUIREMENT	8.11

NOTE: PHASE ONE OF THE SUBDIVISION WILL PROVIDE 28.70 ACRES OF FOREST RETENTION AND 5.99 ACRES OF FOREST PLANTING. THE REMAINING 1.09 ACRES OF FOREST RETENTION AND 2.12 ACRES OF FOREST PLANTING OBLIGATION WILL BE FULFILLED UNDER PHASE TWO OF THE SUBDIVISION PER WP-16-084.

FOREST CONSERVATION EASEMENT

UNAUTHORIZED DISTURBANCE OF VEGETATION IS PROHIBITED. VIOLATORS SUBJECT TO PENALTIES UNDER THE HOWARD COUNTY FOREST CONSERVATION ACT OF 1991.

TREES FOR YOUR FUTURE

15" MINIMUM

11" MINIMUM

ON-SITE SIGNAGE

STATE OF MARYLAND — LANDSCAPE ARCHITECT

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — PROFESSIONAL ENGINEER

Aldo M. Vitucci, P.E. — 2/4/16 Date

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

FOREST CONSERVATION PLAN

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 32 OF 38

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 27-33 Fce plans.dwg, 2/4/2016 10:28:52 AM, 1:1

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 3/31/16

Chief, Development Engineering Division — Date 3.18.16

REVISIONS

NO.	DESCRIPTION	DATE

FCE Planting Area # 4 - 4.11 acres

Planting units required: 2878 (1439 whips)
Planting units provided: 2878 (1264 whips and 100 trees)

Qty	Species	Size	Spacing	Total FCA Units
50	Acer x Fremmanii 'Autumn Blaze' - Freeman Maple	1" cal.	15' o.c.	
50	Ulmus Americana 'Valley Forge' Valley Forge American Elm	1" cal.	15' o.c.	
	100 Total 1" caliper trees (3.5 planting units per tree) = 350 Total FCA unit credit			
158	Acer x Fremmanii 'Autumn Blaze' - Freeman Maple	2-3' whip	11' o.c.	
158	Cercis canadensis - Red bud	2-3' whip	11' o.c.	
158	Carpinus caroliniana - American Hornbeam	2-3' whip	11' o.c.	
158	Liriodendron tulipifera - Tulip poplar	2-3' whip	11' o.c.	
158	Betula Nigra 'heritage' - River Birch	2-3' whip	11' o.c.	
158	Ostrya virginiana - American Hophornbeam	2-3' whip	11' o.c.	
158	Ulmus Americana 'Valley Forge' Valley Forge American Elm	2-3' whip	11' o.c.	
158	Acer campestre - Hedge Maple	2-3' whip	11' o.c.	
	1264 Total whip plantings (2 planting units per tree) = 2528 Total FCA unit credit			
	Total Unit Credit	(350 + 2528)		2878

1" CAL. TREES = 200/ACRE (100 TREES/200 = 0.50 AC.)
WHIPS w/shelters = 350/ACRE = 350 x 3.61 AC. = 1264 WHIPS
3.5 Planting units = 1 - 1" Cal. Tree
2 Planting units = 1 Whip

Seeding and Whip Planting Specification

Schulte Specimen Tree List

	TAG #	COMMON NAME	SCIENTIFIC NAME	DBH*	VIGOR**	NOTES
	#1905	BLACK CHERRY	Prunus serotina	32"	Fair	posion ivy & oriental bittersweet
	#1906	BLACK CHERRY	Prunus serotina	33"	Good	some oriental bittersweet
	#1907	NORTHERN RED OAK	Quercus rubra	32"	Good	
	#1908	BLACK OAK (HYBRID)	Quercus velutina	33"	Fair	some dead branches
	#1909	WHITE OAK	Quercus alba	37"	Good	
	#1910	NORTHERN RED OAK	Quercus rubra	31"	Fair	some dead branches
	#1911	WHITE OAK	Quercus alba	31"	Good	double at 5'
	#1912	CHESTNUT OAK	Quercus prinus	38.5"	Fair	some dead branches
	#1913	WHITE OAK	Quercus alba	34.5"	Fair	dead branches
	#1914	WHITE OAK	Quercus alba	31.5"	Good	
*	#1915	WHITE OAK	Quercus alba	35"	Fair	some dead branches
*	#1916	NORTHERN RED OAK	Quercus rubra	33"	Fair	some dead branches
	#1917	RED MAPLE	Acer rubrum	41"	Fair	some dead branches
	#1918	RED MAPLE	Acer rubrum	33"	Fair	some dead branches
	#1919	TULIP POPLAR	Liriodendron tulipifera	30.5	Good	
	#1920	WHITE OAK	Quercus alba	33"	Fair	some dead branches
	#1921	CHESTNUT OAK	Quercus prinus	36.5"	Fair	some dead branches
	#1922	BLACK OAK	Quercus velutina	30.5"	Fair	dead branches, posion ivy
	#1923	NORTHERN RED OAK	Quercus rubra	32"	Fair	some dead branches
	#1924	NORTHERN RED OAK	Quercus rubra	37"	Bad	fungus, dead branches, <5 years to live
	#1925	RED MAPLE	Acer rubrum	43.5"	Fair	some dead branches
	#1926	WHITE OAK	Quercus alba	35"	Fair	some dead branches
	#1927	RED MAPLE	Acer rubrum	39"	Good	
*	#1928	BLACK GUM	Nyssa sylvatica	34"	Fair	over spray
	#1929	WHITE PINE	Pinus strobus	44"	Fair	
	#1930	WHITE PINE	Pinus strobus	36"	Fair	
	#1931	E. RED CEDAR	Juniperus virginiana	31.5"	Good	
	#1932	RED MAPLE	Acer rubrum	32.5"	Fair	dead branch
*	#1933	WHITE PINE	Pinus strobus	31.5"	Good	
*	#1934	WHITE PINE	Pinus strobus	30"	Poor	trunk rot
	#1935	E. RED CEDAR	Juniperus virginiana	31.5"	Fair	
	#1936	SIBERIA ELM	Ulmus pumila	31.5"	Poor	deceased
	#1937	WHITE PINE	Pinus strobus	31"	Poor	trunk rot
*	#1938	WHITE OAK	Quercus alba	31"	Good	
*	#1939	BLACK OAK	Quercus velutina	32"	Fair	trunk rot
	#1940	NORTHERN RED OAK	Quercus rubra	31"	Good	
	#1941	NORTHERN RED OAK	Quercus rubra	31"	Good	
	#1942	NORTHERN RED OAK	Quercus rubra	35"	Good	
	#1943	WHITE OAK	Quercus alba	33"	Good	
	#1944	TULIP POPLAR	Liriodendron tulipifera	35"	Good	
	#1945	SOUTHERN RED OAK	Quercus falcata	41"	Good	
	#1973	BLACK CHERRY	Prunus serotina	32"	Good	double at 5'
	#2401	TULIP POPLAR	Liriodendron tulipifera	34.5"	Fair	Dead Branch 1/3 Triple
	#2402	TULIP POPLAR	Liriodendron tulipifera	30"	Fair	Dead Branches
	#2403	TULIP POPLAR	Liriodendron tulipifera	36"	Good	Double at 2'
	#2404	TULIP POPLAR	Liriodendron tulipifera	41.5"	Good	Vines
	#2405	TULIP POPLAR	Liriodendron tulipifera	35"	Good	1/2 of Double
	#2406	TULIP POPLAR	Liriodendron tulipifera	32"	Good	1/2 of Double
	#2407	WHITE OAK	Quercus alba	36"	Fair	Vines, fence through tree, split at 6', dead branch
	#2408	TULIP POPLAR	Liriodendron tulipifera	33"	Good	
	#2409	WHITE OAK	Quercus alba	39.5"	Fair	Dead Branch, Fence through Tree
	#2410	WHITE OAK	Quercus alba	38"	Fair	Dead Branch, Vines
	#2411	TULIP POPLAR	Liriodendron tulipifera	30.5"	Good	
	#2412	TULIP POPLAR	Liriodendron tulipifera	32"	Good	1/2 of Double
	#2413	WHITE OAK	Quercus alba	38"	Fair	Dead Branch
	#2414	WHITE OAK	Quercus alba	36"	Good	
	#2415	NORTHERN RED OAK	Quercus rubra	31.5	Good	Lean, Dead Branch
	#2416	TULIP POPLAR	Liriodendron tulipifera	35"	Good	1/2 of Double
	#2417	TULIP POPLAR	Liriodendron tulipifera	40"	Good	
	#2418	TULIP POPLAR	Liriodendron tulipifera	44"	Good	Dead Branch
	#2419	TULIP POPLAR	Liriodendron tulipifera	32"	Good	
	#2420	SYCAMORE	Plataus occidentalis	32"	Good	Lean
	#2421	TULIP POPLAR	Liriodendron tulipifera	39"	Good	Dead Branch
	#2422	WHITE OAK	Quercus alba	39"	Good	Vines
	#2423	TULIP POPLAR	Liriodendron tulipifera	36.5"	Good	Dead Branch
	#2424	RED MAPLE	Acer rubrum	31.5"	Good	
	#2425	NORTHERN RED OAK	Quercus rubra	41.5	Good	Growth of Trunk
	#2426	PIN OAK	Quercus palustris	36"	Good	Dead Branch
	#2427	TULIP POPLAR	Liriodendron tulipifera	31.5"	Fair	Split at 15'
	#2428	RED MAPLE	Acer rubrum	38"	Good	
	#2429	NORTHERN RED OAK	Quercus rubra	40.5"	Good	
	#2430	SHINGLE OAK	Quercus imbricaria	30"	Good	Dead Branch
	#2431	RED MAPLE	Acer rubrum	33"	Good	Dead Branch
	#2432	RED MAPLE	Acer rubrum	36.5	Fair	Dead Branch
	#2433	RED MAPLE	Acer rubrum	30"	Good	Dead Branch
	#2434	RED MAPLE	Acer rubrum	33"	Fair	Hole in Trunk
	#2435	PIN OAK	Quercus palustris	36"	Good	Lean
	#2436	NORTHERN RED OAK	Quercus rubra	34"	Fair	Dead Branch
	#2437	WHITE OAK	Quercus alba	37"	Good	
	#2438	WHITE OAK	Quercus alba	39"	Good	Split at 6'
	#2439	WHITE OAK	Quercus alba	32"	Good	
	#2440	NORTHERN RED OAK	Quercus rubra	31.5"	Good	
	#2441	NORTHERN RED OAK	Quercus rubra	43"	Poor	Split, hollow growth on trunk
	#2442	WHITE OAK	Quercus alba	30"	Good	Dead Branch
	#2443	WHITE OAK	Quercus alba	36"	Good	
	#2444	CHESTNUT OAK	Quercus prinus	35"	Good	Dead Branch
	#2445	CHESTNUT OAK	Quercus prinus	31"	Good	
	#2446	NORTHERN RED OAK	Quercus rubra	38"	Fair	Trunk Rot
	#2447	NORTHERN RED OAK	Quercus rubra	37.5"	Fair	Dead Branch

NOTE: (*) DENOTES SEVEN(7) SPECIMEN TREES TO BE REMOVED. OTHERS TO REMAIN.

SURETY NOTE:

THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENTS; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED IN TWO PHASES PER WP-16-084. THIS PHASE ONE WILL PROVIDE 28.78 AC. OF ON-SITE CREDITED RETENTION AND 5.99 AC. OF ON-SITE REFORESTATION. SURETY WILL BE POSTED IN TWO (2) BONDS; ONE IN THE AMOUNT OF $130,462.00 FOR THE 5.99 ac. OF ON-SITE REFORESTATION AND ONE IN THE AMOUNT OF $224,552.00 FOR THE 10.31 ac. ON-SITE TREE PLANTING BANK ON NON-BUILDABLE PRESERVATION PARCEL 'C'. BOTH BONDS WILL BE INCLUDED AS PART OF THE DEVELOPER'S AGREEMENT FOR F-15-054. TOTAL SURETY AMOUNT = $355,014.00. SURETY FOR FOREST RETENTION IS NOT REQUIRED.

FCE Planting Area # 5 - 10.31 acres

Planting units required: 7218 (3609 whips)
Planting units provided: 7230 (3440 whips and 100 trees)

Qty	Species	Size	Spacing	Total FCA Units
50	Acer x Fremmanii 'Autumn Blaze' - Freeman Maple	1" cal.	15' o.c.	
50	Ulmus Americana 'Valley Forge' Valley Forge American Elm	1" cal.	15' o.c.	
	100 Total 1" caliper trees (3.5 planting units per tree) = 350 Total FCA unit credit			
430	Acer x Fremmanii 'Autumn Blaze' - Freeman Maple	2-3' whip	11' o.c.	
430	Cercis canadensis - Red bud	2-3' whip	11' o.c.	
430	Carpinus caroliniana - American Hornbeam	2-3' whip	11' o.c.	
430	Liriodendron tulipifera - Tulip poplar	2-3' whip	11' o.c.	
430	Betula Nigra 'heritage' - River Birch	2-3' whip	11' o.c.	
430	Ostrya virginiana - American Hophornbeam	2-3' whip	11' o.c.	
430	Ulmus Americana 'Valley Forge' Valley Forge American Elm	2-3' whip	11' o.c.	
430	Acer campestre - Hedge Maple	2-3' whip	11' o.c.	
	3440 Total whip plantings (2 planting units per tree) = 6880 Total FCA unit credit			
	Total Unit Credit	(350 + 6880)		7230

1" CAL. TREES = 200/ACRE (100 TREES/200 = 0.50 AC.)
WHIPS w/shelters = 350/ACRE = 350 x 9.81 AC. = 3434 WHIPS
3.5 Planting units = 1 - 1" Cal. Tree
2 Planting units = 1 Whip

LEGEND

- SPECIMEN TREES TO BE REMAIN
- SPECIMEN TREES TO BE REMOVED
- FOREST CONSERVATION AREA (Non-Credited)
- FOREST REFORESTATION/AFFORESTATION AREA
- FOREST CONSERVATION AREA (Credited)
- FOREST BANK AREA (PLANTING) (FOREST MITIGATION BANK)

- DENOTES EXISTING SLOPES 15% to 24.9%
- DENOTES EXISTING SLOPES 25% AND GREATER

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	Glenelg loam, 3 to 8 percent slopes	B	0.27
GnB	Glenville-Baile silt loams, 0 to 8 percent slopes	C	(e) 0.43
GgA	Glenelg 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

FOREST BANK TRACKING CHART - FCE NO.5 (10.31 ACRES)			
DPZ FILE NUMBER	PROJECT NAME	FOREST CONSERVATION BANKED	REMAINING BANK AREA

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

OWNER

Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1327

DEVELOPER

Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

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

Aldo M. Vitucci, P.E. — Date 2/4/16

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

FOREST CONSERVATION PLAN AND FOREST MITIGATION BANK

FAIRLANE FARM

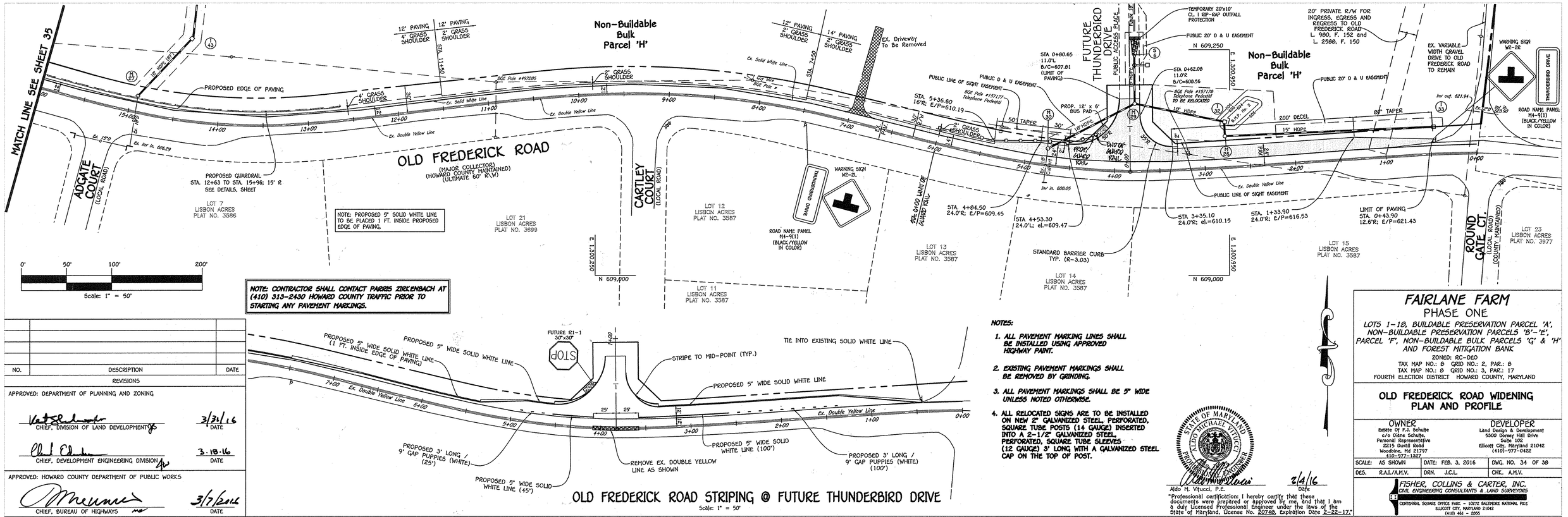
PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 33 OF 38

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 27-33 Fce plans.dwg, 2/15/2016 9:26:52 AM, 1:1



NOTE: CONTRACTOR SHALL CONTACT PARRIS ZIRKENBACH AT (410) 313-2430 HOWARD COUNTY TRAFFIC PRIOR TO STARTING ANY PAVEMENT MARKINGS.

NO.	DESCRIPTION	DATE
	REVISIONS	

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/31/16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.18.16

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 3/7/2016

OLD FREDERICK ROAD STRIPING @ FUTURE THUNDERBIRD DRIVE

Scale: 1" = 50'

NOTES:

1. **ALL PAVEMENT MARKING LINES SHALL BE INSTALLED USING APPROVED HIGHWAY PAINT.**
2. **EXISTING PAVEMENT MARKINGS SHALL BE REMOVED BY GRINDING.**
3. **ALL PAVEMENT MARKINGS SHALL BE 5" WIDE UNLESS NOTED OTHERWISE.**
4. **ALL RELOCATED SIGNS ARE TO BE INSTALLED ON NEW 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POSTS (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVES (12 GAUGE) 3' LONG WITH A GALVANIZED STEEL CAP ON THE TOP OF POST.**

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

Aldo M. Vitucci, P.E. — Date 2/4/16

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

FAIRLANE FARM
PHASE ONE

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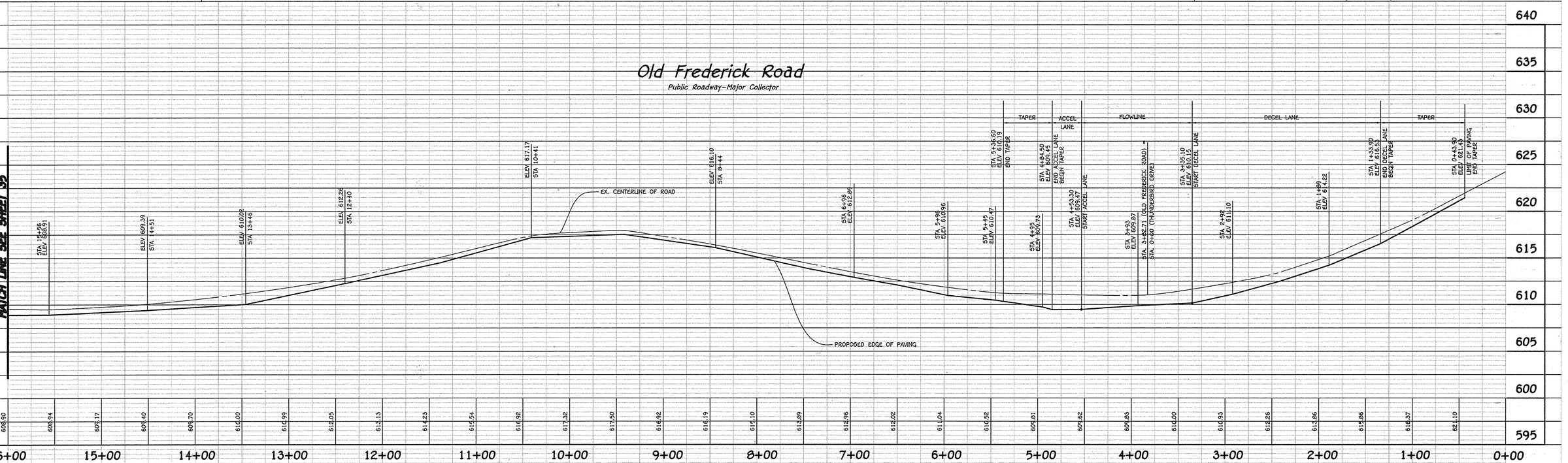
ZONED: RC-DEO
TAX MAP NO.: 8 GRID NO.: 2, PAR.: 8
TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

OLD FREDERICK ROAD WIDENING PLAN AND PROFILE

OWNER	DEVELOPER
Estate Of F.J. Schulte c/o Diane Schulte, Personal Representive 2215 Duvall Road Woodbine, Md 21797 410-977-1327	Land Design & Development 5300 Dorsey Hall Drive Suite 102 Ellicott City, Maryland 21042 (410)-977-0422

SCALE: AS SHOWN	DATE: FEB. 3, 2016	DWG. NO. 34 OF 38
DES. R.A.I./A.M.V.	DRN. J.C.L.	CHK. A.M.V.

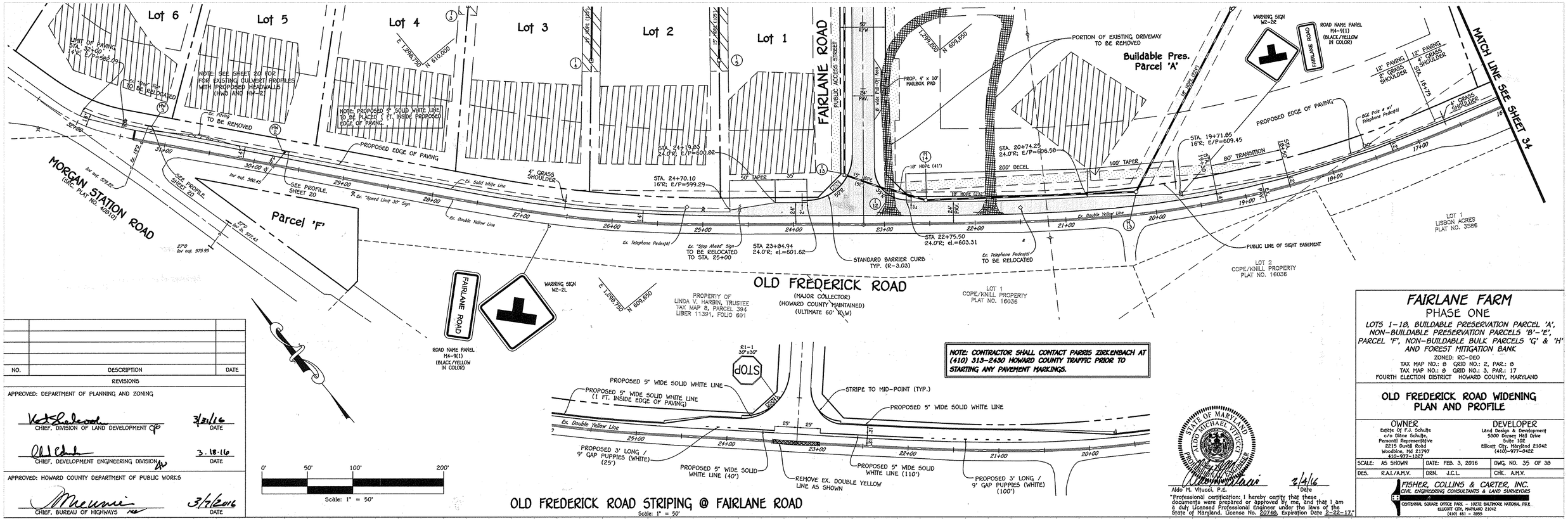
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855



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

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 34-38 old frederick widening.dwg, 2/4/2016 10:21:39 AM, 1:1



NOTE: CONTRACTOR SHALL CONTACT PARRIS ZIRKENBACH AT (410) 313-2430 HOWARD COUNTY TRAFFIC PRIOR TO STARTING ANY PAVEMENT MARKINGS.

OLD FREDERICK ROAD STRIPING @ FAIRLANE ROAD
Scale: 1" = 50'

NO.	DESCRIPTION	DATE
	REVISIONS	

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/31/16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.18.16

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 3/7/2016

FAIRLANE FARM
PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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

OLD FREDERICK ROAD WIDENING PLAN AND PROFILE

OWNER
Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1322

DEVELOPER
Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

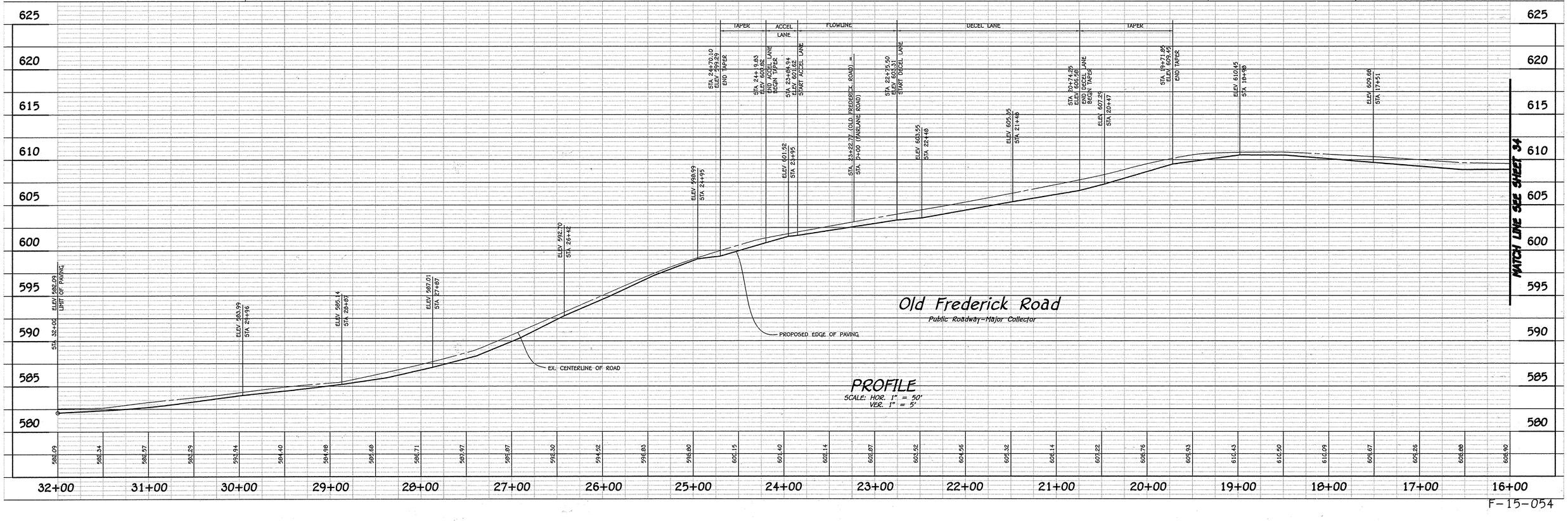
SCALE: AS SHOWN	DATE: FEB. 3, 2016	DWG. NO. 35 OF 38
DES. R.A.I./A.M.V.	DRN. J.C.L.	CHK. A.M.V.

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

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

Aldo M. Vitucci, P.E. — Date 2/4/16

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



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F-15-054

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 3/7/2016

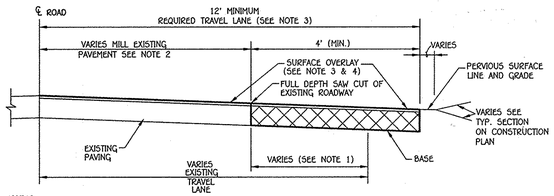
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/31/16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.18.16

REVISIONS

NO.	DESCRIPTION	DATE



NOTES:

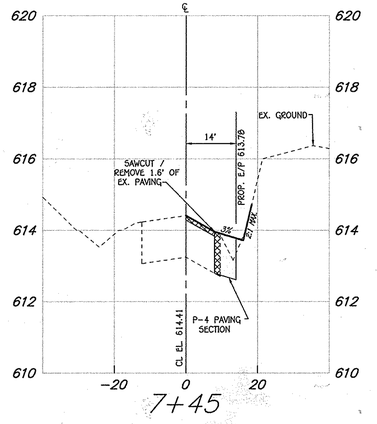
1. WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE CONTRACTOR SHALL REMOVE A MINIMUM OF 1' FULL DEPTH OF THE EXISTING ROADWAY. IF CURB AND GUTTER IS INSTALLED, PROVIDE A MINIMUM OF 4' OF WIDENING FROM FACE OF GUTTER PAN.
2. THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE MILLED AT DEPTH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

EXISTING ROADWAY WIDENING STRIP (R-1.08)

NO SCALE

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO <5	5 TO <7	≥7	3 TO <5	5 TO <7	≥7
		PAVEMENT MATERIAL (INCHES)	MIN HMA WITH GAB			HMA WITH CONSTANT GAB		
P-4	MINOR COLLECTORS: NON-RESIDENTIAL MAJOR COLLECTORS:	HMA SUPERPAVE FINAL SURFACE 12.5 MM, PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE INTERMEDIATE SURFACE 12.5 MM, PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 2 (LOW ESAL)	4.0	4.0	3.0	6.0	5.0	3.0
		GRADED AGGREGATE BASE (GAB)	13.0	7.0	4.0	6.0	6.0	6.0

NOTE: SEE SHEET 38 FOR TYPICAL WIDENING SECTIONS.



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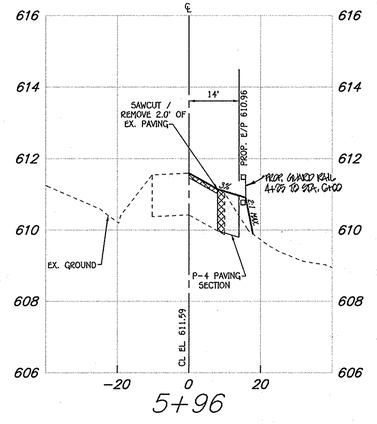

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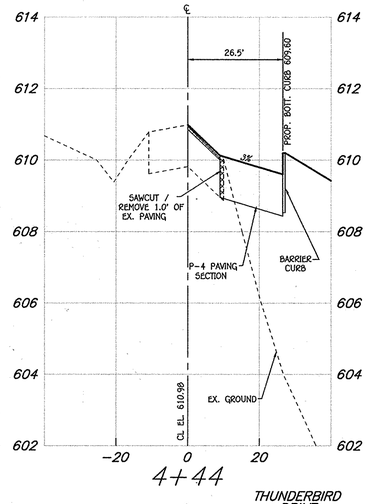

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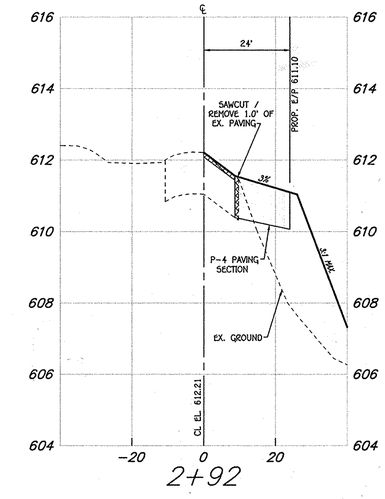

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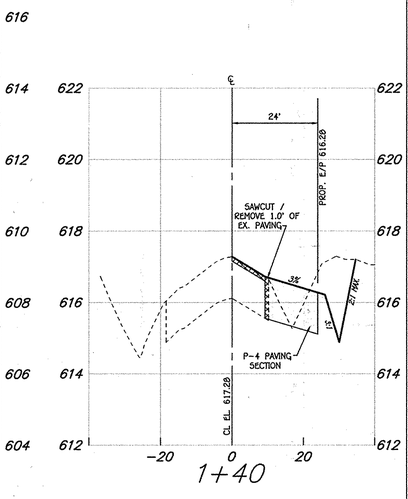

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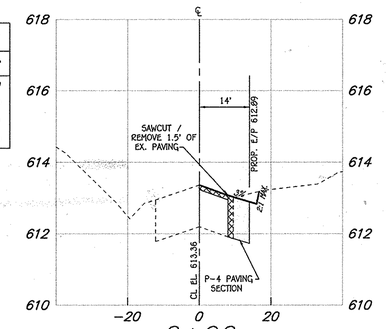

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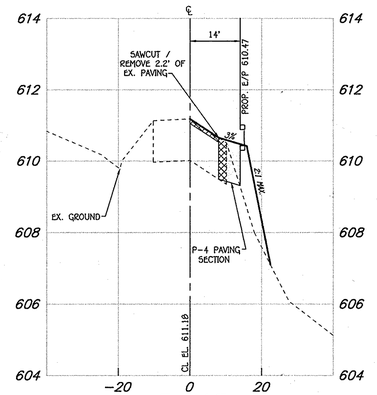

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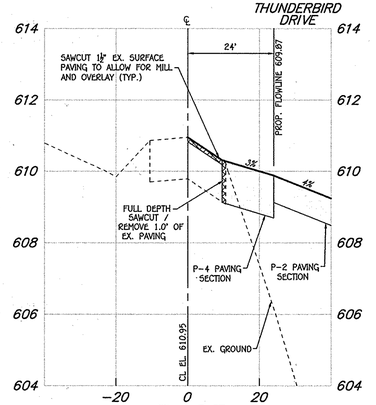

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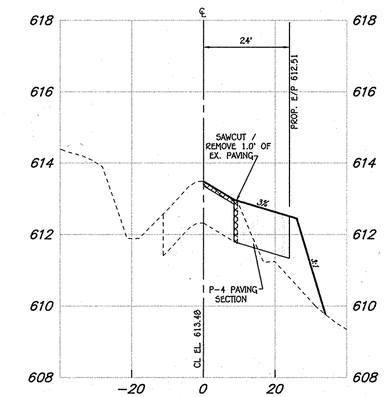

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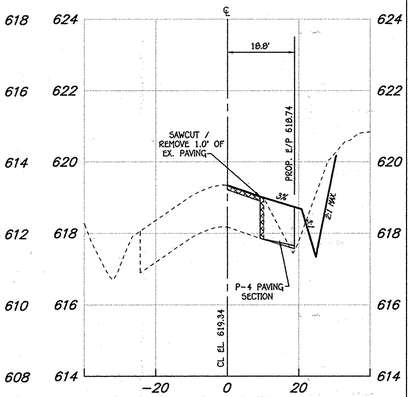

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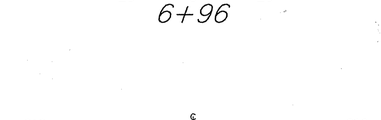

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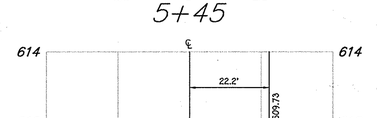

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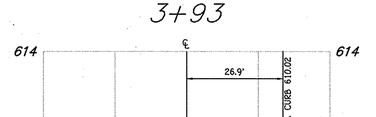

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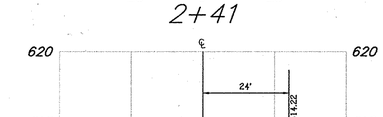

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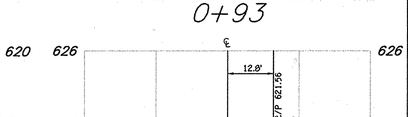

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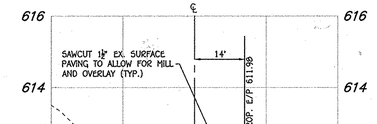

8+44

CROSS SECTIONS

SCALE: HOR. 1" = 20'
VER. 1" = 2'

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

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Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
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Woodbine, Md 21797
410-977-1327

DEVELOPER
Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

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

STATE OF MARYLAND — ALDO MICHAEL VITUCCI — No. 20749 — REGISTERED PROFESSIONAL ENGINEER

Aldo M. Vitucci, P.E. — 2/4/16 Date

"Professional certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20749, Expiration Date 2-22-17."

OLD FREDERICK ROAD CROSS SECTIONS

FAIRLANE FARM

PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 36 OF 38

F-15-054

L:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 34-38 old frederick widening.dwg, 2/4/2016 10:26:14 AM, 1:1

APPROVED: DEPARTMENT OF PUBLIC WORKS

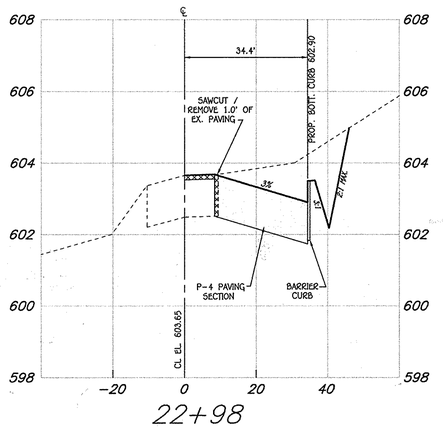
CHIEF, BUREAU OF HIGHWAYS — DATE 3/7/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/31/16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.18.16

REVISIONS		
NO.	DESCRIPTION	DATE



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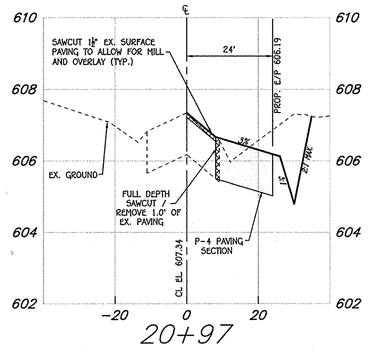

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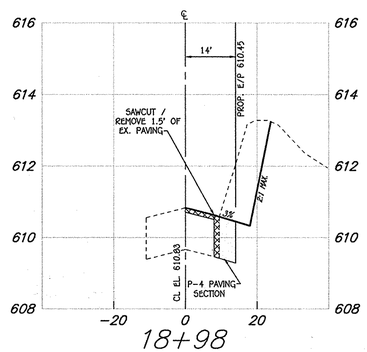

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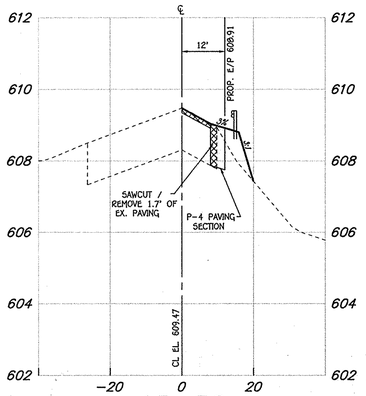

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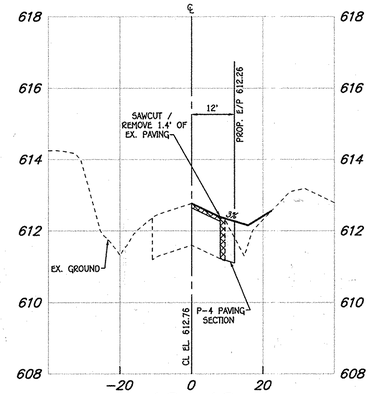

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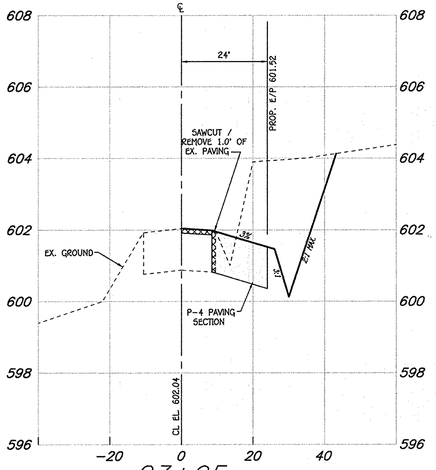

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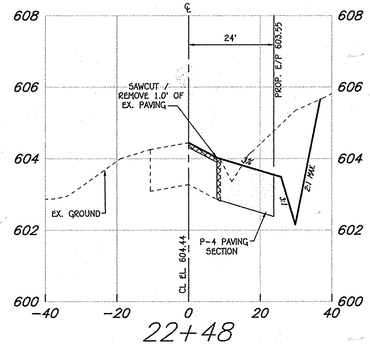

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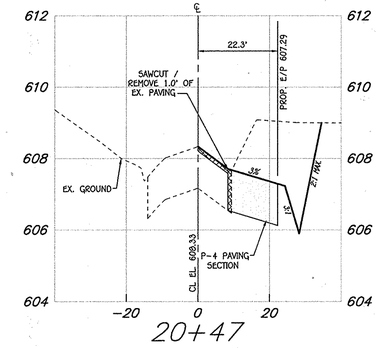

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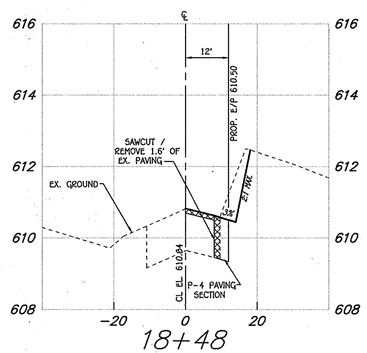

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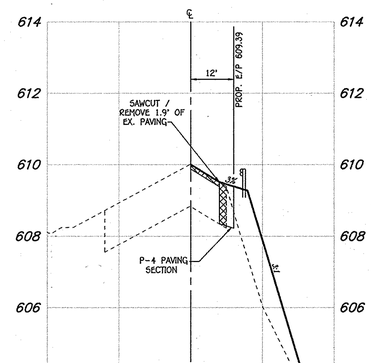
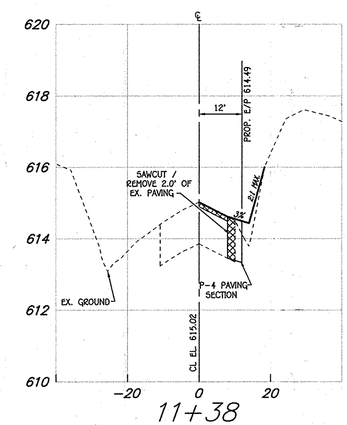
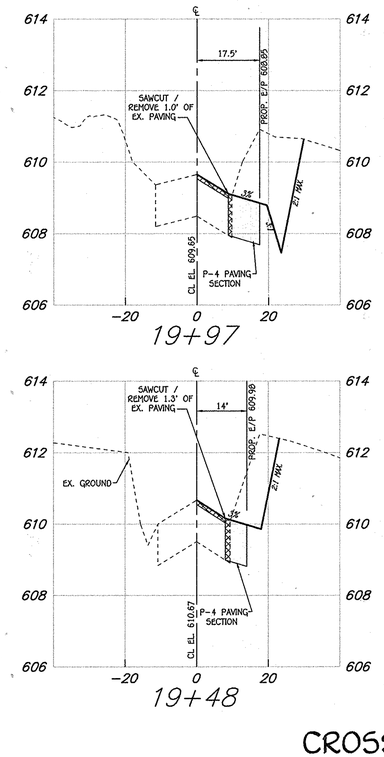


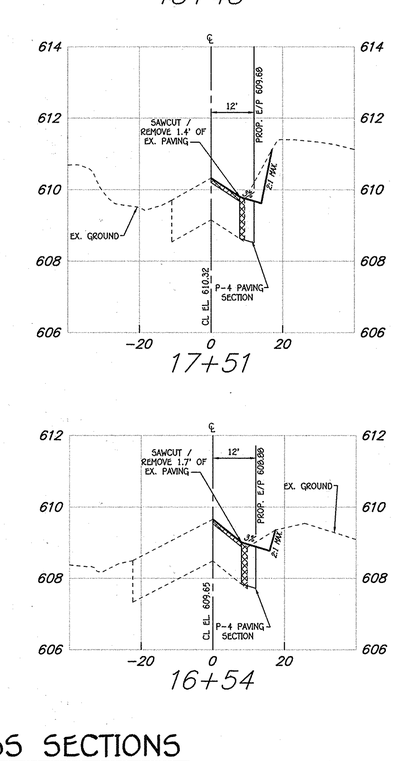
14+51



11+38



19+97



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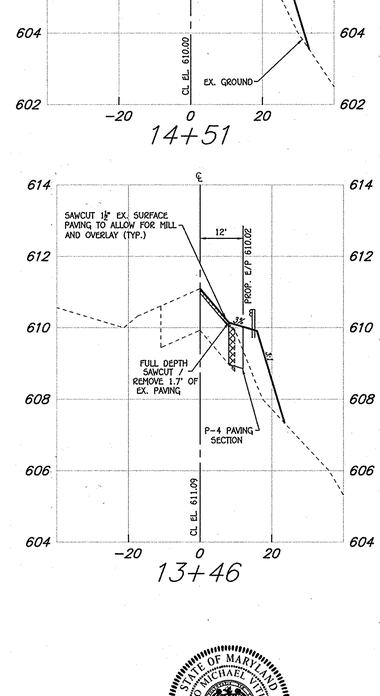
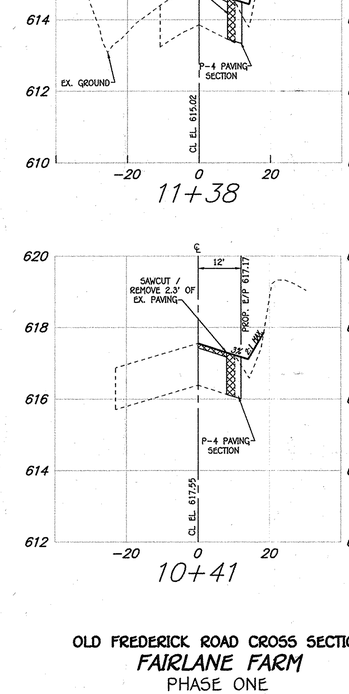
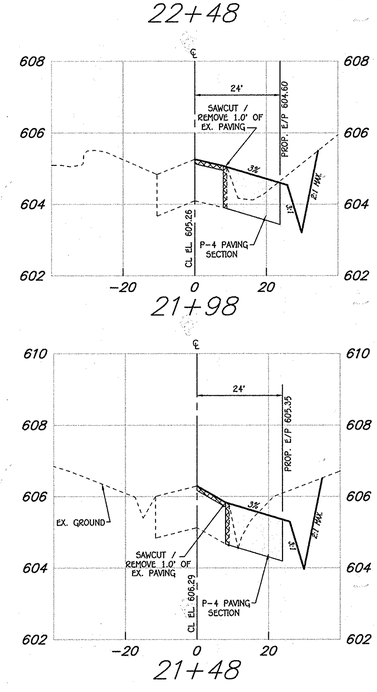


13+46



10+41

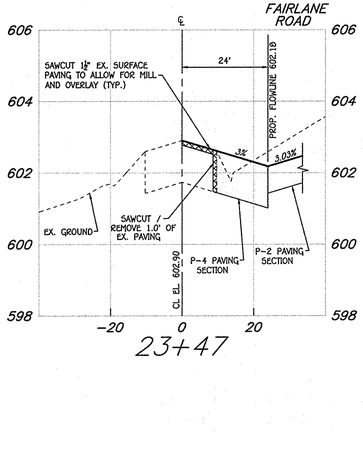


21+98

21+48

19+48

16+54



23+47

CROSS SECTIONS

SCALE: HOR. 1" = 20'
VER. 1" = 2'

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

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

OWNER
Estate Of F.J. Schulte
c/o Diane Schulte,
Personal Representative
2215 Duvall Road
Woodbine, Md 21797
410-977-1327

DEVELOPER
Land Design & Development
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(410)-977-0422

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

Aldo M. Vitucci, P.E. — 2/4/16 Date

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

OLD FREDERICK ROAD CROSS SECTIONS
FAIRLANE FARM
PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

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: FEBRUARY 3, 2016
SHEET 37 OF 39

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 34-38 old frederick widening.dwg, 2/4/2016 10:34:38 AM, 11

APPROVED: DEPARTMENT OF PUBLIC WORKS

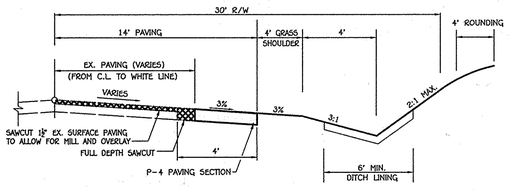
CHIEF, BUREAU OF HIGHWAYS — DATE 3/7/2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/31/16

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3.18.16

REVISIONS		
NO.	DESCRIPTION	DATE

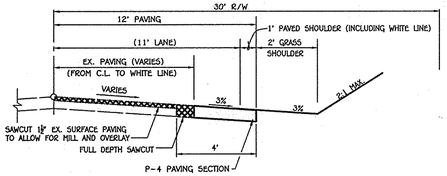


STA. 18+50 TO 32+00

TYPICAL WIDENING SECTION

NO SCALE

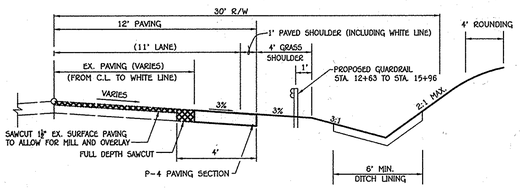
NOTE:
STA. 19+71.85 TO STA. 24+70+10
(ACCEL/DECEL LANES)



STA. 16+75 TO 18+50

TYPICAL WIDENING SECTION

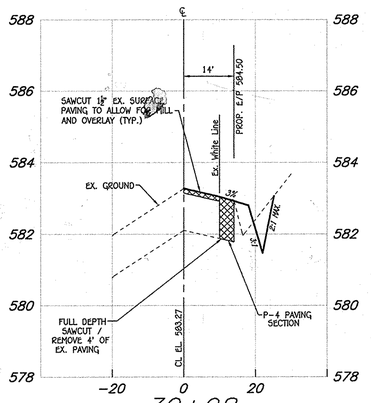
NO SCALE



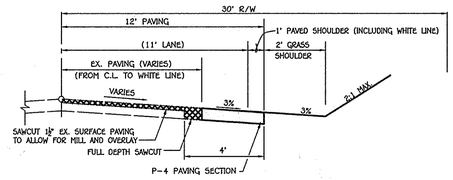
STA. 11+50 TO 16+75

TYPICAL WIDENING SECTION

NO SCALE



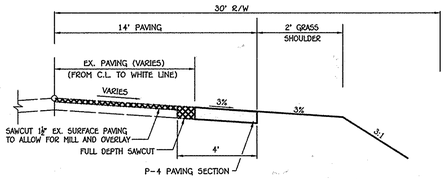
30+98



STA. 7+50 TO 11+50

TYPICAL WIDENING SECTION

NO SCALE

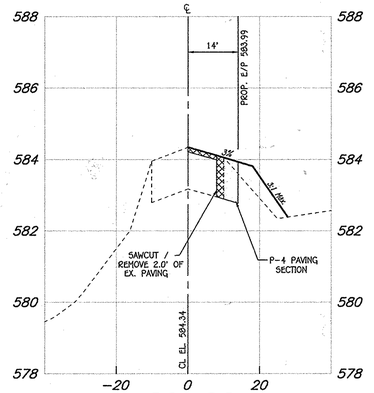


STA. 5+36.60 TO 7+50

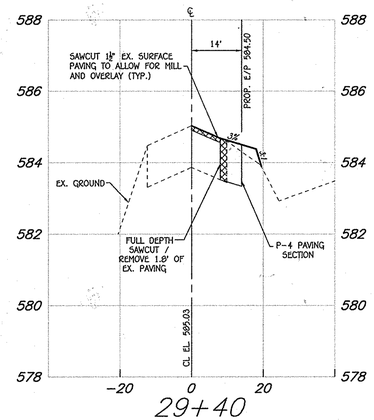
TYPICAL WIDENING SECTION

NO SCALE

NOTE:
STA. 0+43.90 TO STA. 5+36.60
(ACCEL/DECEL LANES)



29+96



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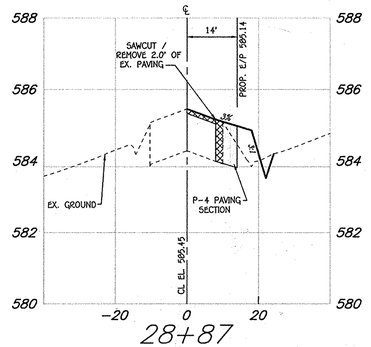
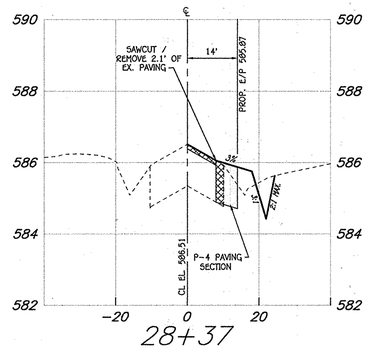
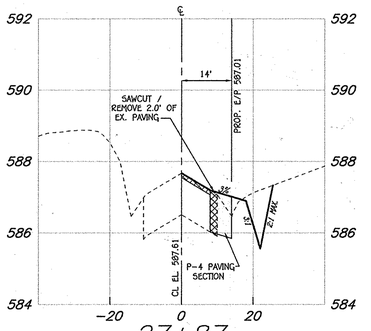


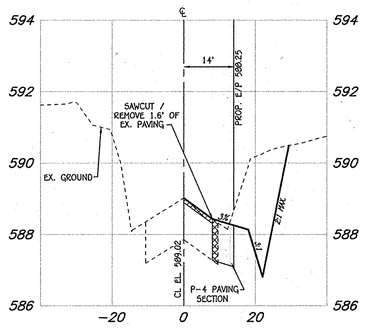
28+87



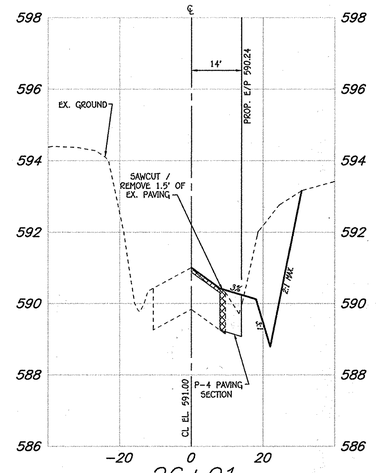
28+37



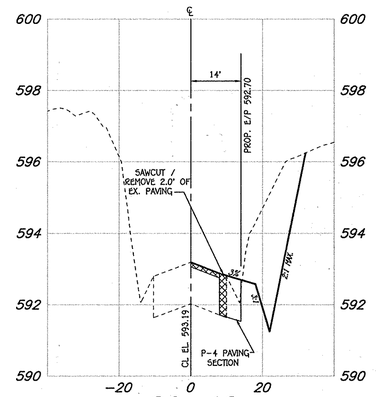
27+87



27+39



26+91



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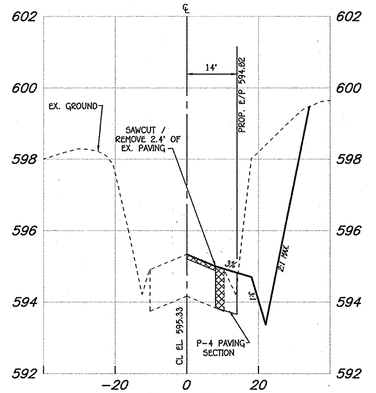
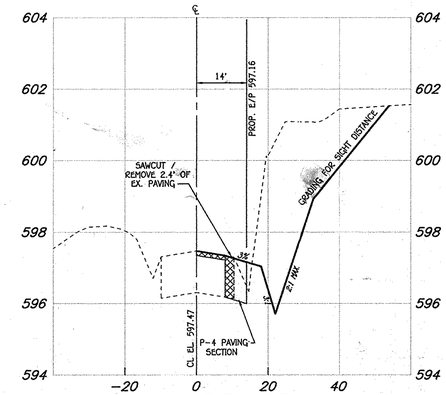
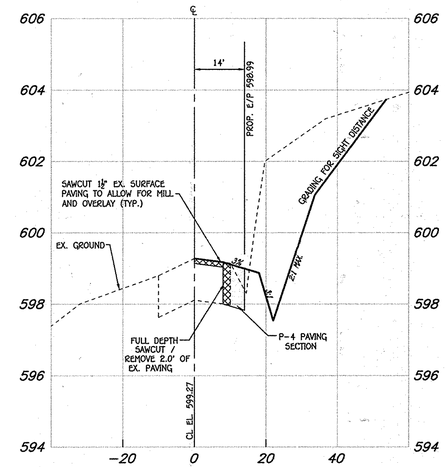


25+93



25+43



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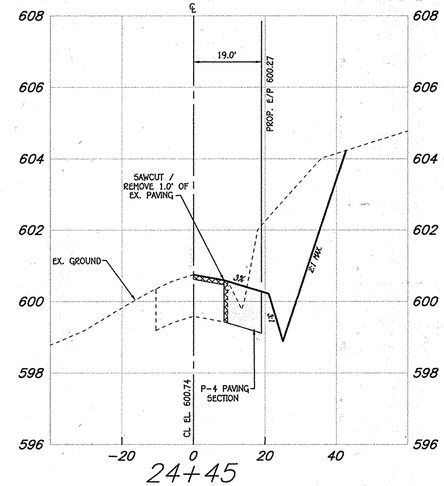

24+45

CROSS SECTIONS

SCALE: HOR. 1" = 20'
VER. 1" = 2'

Aldo M. Vitucci, P.E. — Date 2/4/16

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OLD FREDERICK ROAD CROSS SECTIONS
FAIRLANE FARM
PHASE ONE

LOTS 1-18, BUILDABLE PRESERVATION PARCEL 'A', NON-BUILDABLE PRESERVATION PARCELS 'B'-'E', PARCEL 'F', NON-BUILDABLE BULK PARCELS 'G' & 'H' AND FOREST MITIGATION BANK

ZONED: RC-DEO
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TAX MAP NO.: 8 GRID NO.: 3, PAR.: 17
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2016
SHEET 38 OF 38

F-15-054

I:\2005\05106\dwg\F Plan\revised f-plan lots 1-18\05106 Sheet 34-38 old frederick widening.dwg, 2/4/2016 10:38:22 AM, 1:1