SHEET NO.	DESCRIPTION
17	~~PROPOSED RETAINING WALLS PLAN AND GENERAL NOTES~~
18	~~PROPOSED RETAINING WALLS PROFILE, TYPICAL SECTION AND TYPICAL DETAILS~~

SHEET INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	OLD SCAGGSVILLE ROAD WIDENING PLAN AND CROSS-SECTIONS
3	ORNDORFF WAY PLAN AND PROFILE
4	GRADING & SEDIMENT CONTROL PLAN
5	STORMDRAIN AND STORMWATER MANAGEMENT DRAINAGE AREA MAPS
6	STORMWATER MANAGEMENT PLANS
7	STORMWATER MANAGEMENT & STORM DRAIN DETAILS
8	STORMDRAIN PROFILES
9	SEDIMENT CONTROL NOTES & DETAILS
10	SEDIMENT CONTROL NOTES & DETAILS
11	WETLAND & FOREST STAND DELINEATION PLAN
12	STREET TREE, LANDSCAPE & STORMWATER MANAGEMENT FACILITY PLAN
13	FUTURE STORMWATER MANAGEMENT DETAILS
14	OLD SCAGGSVILLE ROAD STRIPING, ROAD SECTION DETAILS & TRAFFIC CONTROL PLAN
15	OFF-SITE FOREST AFFORESTATION PLAN
16-17	RETAINING WALL DETAILS

FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLANS

CHERRYTREE VIEW

BUILDABLE LOTS 1 - 4 AND 14 - 20
OPEN SPACE LOTS 12 & 13

ZONING: R-20

TAX MAP No. 46 GRID No. 11 PARCEL No. 55

APPROVED: DEPARTMENT OF PUBLIC WORKS	
CHIEF, BUREAU OF HIGHWAYS	DATE 3-25-14
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 4/02/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3.28.14

REVISIONS

NO.	DESCRIPTION	DATE
1	REPLACE THREE MICRO-BIORETENTION WITH A SINGLE MICRO-BIORETENTION LOCATED AT THE REAR OF LOT 15	2/3/14
2	REVISED SHEET INDEX & ADD RETAINING WALL AT THE REAR OF LOT 15	9/29/15
3	REMOVE SHEETS 15&16-HOWARD HUNT OFF-SITE PLANTING REPLACE WITH SHEET 15-HOBART MULLINEAUX PROPERTY PLANTING	12/15/15

STORMWATER MANAGEMENT PRACTICES

LOT No.	ADDRESS	PERMEABLE PAVING A-2 (Y/N)	DRY WELLS M-5 (NUMBER)	MICRO BIO-RETENTION M-6 (NUMBER)
1	8407 ORNDORFF WAY	Y	2	FACILITY #4
2	8411 ORNDORFF WAY	Y	2	
3	8415 ORNDORFF WAY	Y	2	
4	8423 ORNDORFF WAY	Y	2	
14	8428 ORNDORFF WAY	Y	2	FACILITY #8
15	8424 ORNDORFF WAY	Y	2	
16	8420 ORNDORFF WAY	Y	2	FACILITY #3
17	8416 ORNDORFF WAY	Y	2	
18	8412 ORNDORFF WAY	Y	2	
19	8408 ORNDORFF WAY	Y	2	FACILITY #5
20	8404 ORNDORFF WAY	N	5	FACILITY #7

STREET LIGHT CHART

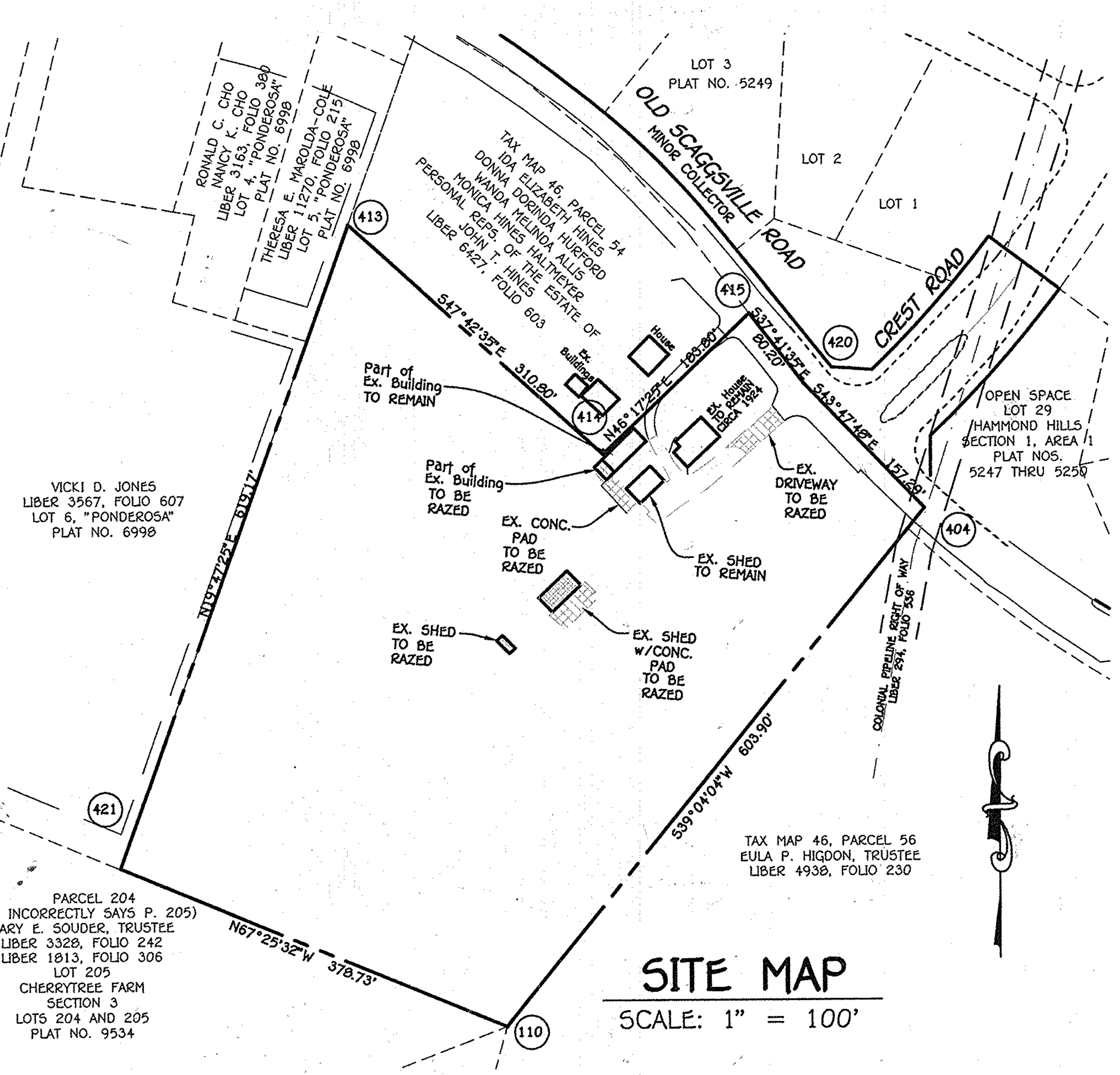
STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
ORNDORFF WAY	0+33	28'R	250-WATT H.P.S. VAPOR VAPOR COBRA FIXTURE MOUNTED ON A 30-FOOT BRONZE FIBERGLASS POLE WITH A 12' ARM. ANGLE ARM TOWARDS CENTER OF INTERSECTION.
ORNDORFF WAY	L.P. 1+38	5' BEHIND CURB	100-WATT H.P.S. COLONIAL POST TOP MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
ORNDORFF WAY	2+05	15'L	100-WATT H.P.S. COLONIAL POST TOP MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.

TRAFFIC CONTROL SIGNS

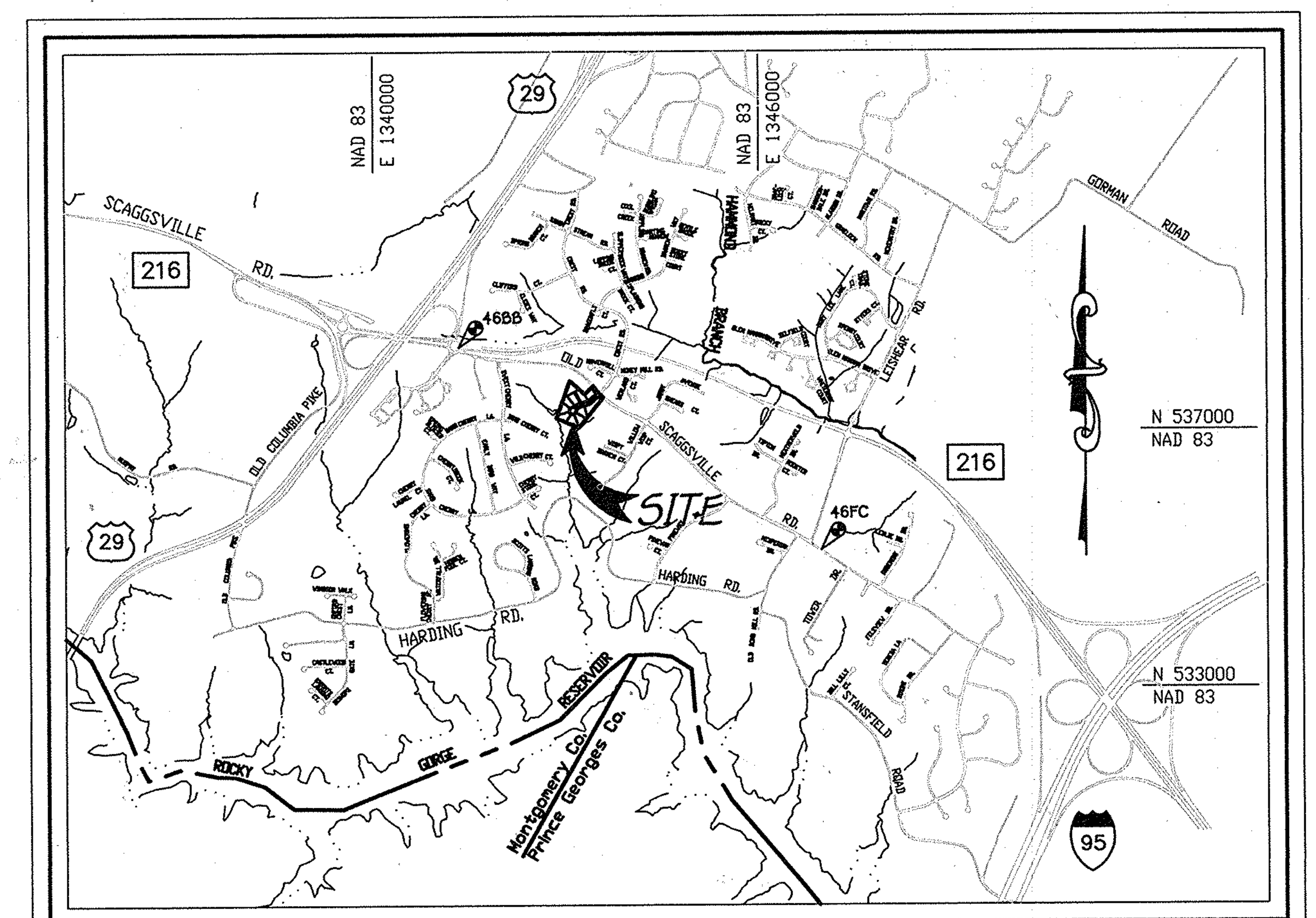
ROAD NAME	CENTERLINE STA.	OFFSET	POSTED SIGN	SIGN CODE
ORNDORFF WAY	0+30	15' L	STOP	R1-1
ORNDORFF WAY	1+25	15' R	SPEED LIMIT 25	R2-1

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	R/W WIDTH
ORNDORFF WAY	PUBLIC ACCESS PLACE	25 M.P.H.	50'



SITE MAP
SCALE: 1" = 100'



HOWARD COUNTY STATION 46BB
N 538306.50150000
E 1341329.15640000
ELEVATION: 422.64'

HOWARD COUNTY STATION 46FC
N 535145.94450000
E 1346954.84270000
ELEVATION: 403.75

REFER TO HOWARD CO. ADC MAP 5052-H8

VICINITY MAP
SCALE: 1" = 2000'

SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

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 NAME SIGN (SNS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
   b. THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-5752) 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, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

5. THIS SUBDIVISION PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AS AMENDED ON OCTOBER, 2003.

6. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 46BB AND 46FC WERE USED FOR THIS PROJECT.

   HOWARD COUNTY STATION 46BB
   N 538306.50150000
   E 1341329.15640000
   ELEVATION: 422.64'

   HOWARD COUNTY STATION 46FC
   N 535145.94450000
   E 1346954.84270000
   ELEVATION: 403.75

7. SUBJECT PROPERTY ZONED R-20 PER 02/02/04 COMPREHENSIVE ZONING PLAN AND THE "COMP LITE" ZONING AMENDMENTS EFFECTIVE 7/28/06.

8. BACKGROUND INFORMATION:
   a. SUBDIVISION NAME: CHERRYTREE VIEW
   b. TAX MAP NO. 46
   c. PARCEL NO. 55
   d. ZONING R-20
   e. ELECTION DISTRICT: SIXTH
   f. GROSS AREA OF TRACT = 6.541 ACRES±
   g. NUMBER OF BUILDABLE LOTS: 11
   h. NUMBER OF OPEN SPACE LOTS: 2
   i. AREA OF BUILDABLE LOTS: 5.245 ACRES
   j. AREA OF OPEN SPACE LOTS: 0.392 ACRES
   k. AREA OF ROAD R/W TO BE DEDICATED: 0.904 ACRES
   l. PREVIOUS DPZ FILE NUMBERS: ECP-11-003, WP-11-065, SP-11-001
   m. AREA OF FLOODPLAIN = 0.00 ACRES
   n. AREA OF 25% OR GREATER SLOPES = 0.00 ACRES±
   o. NET AREA OF TRACT = 6.541 AC.±

9. OPEN SPACE REQUIREMENTS:
   a. AREA OF OPEN SPACE REQUIRED = (6.541 x 6%) = 0.392 AC.±
   b. CREDITED OPEN SPACE PROVIDED = 17,096 SQ.FT. (LOT 12 + LOT 13 = 8,860 SQ.FT + 8,207 SQ.FT.) = 0.392 AC.±
   c. RECREATIONAL AREA REQUIRED = 2,200 SQ.FT. (11 LOTS x 200 SQ.FT. PER LOT)
   d. RECREATIONAL AREA PROVIDED = 2,750 SQ.FT. (2,200 SQ.FT. CREDITED)
   e. OPEN SPACE USE:

OPEN SPACE LOT	OWNER	PURPOSE
12	H.O.A.	RECREATIONAL OPEN SPACE
13	REC. & PARKS	ACCESS TO ADJACENT OPEN SPACE

10. ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180.

11. SOILS INFORMATION TAKEN FROM SOIL SURVEY, HOWARD COUNTY, MARYLAND.

12. BOUNDARY OUTLINE BASED ON FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. DATED ON OR ABOUT MAY, 2010.

13. ALL EXISTING STRUCTURES LOCATED ON SITE ARE TO REMAIN UNLESS OTHERWISE NOTED. THERE IS AN EXISTING HOUSE ON LOT 11 TO REMAIN.

14. TOPOGRAPHIC CONTOURS BASED ON FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS AND CARTER, INC. DATED MAY, 2010.

15. NO NOISE STUDY IS REQUIRED FOR THIS PROJECT.

16. WATER IS PUBLIC (CONTRACT NO. 24-4687-D), SEWER IS PUBLIC (CONTRACT NO. 24-4687-D)

17. THERE ARE NO AREAS OF STEEP SLOPES LOCATED ON THIS PROPERTY AS DEFINED BY THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.116.b

18. STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY AND MDE 2000 STORMWATER DESIGN MANUAL AS AMENDED IN 2010. RECHARGE VOLUME WILL BE PROVIDED THROUGH THE USE OF A STONE RESERVOIR LOCATED BENEATH THE PROPOSED MICRO BIO-RETENTION AREAS. THESE FIVE (5) MICRO BIO-RETENTION FACILITIES PROVIDE THE REQUIRED WATER QUALITY VOLUMES FOR THE ROAD IMPROVEMENTS PROPOSED. OVERBANK FLOOD PROTECTION VOLUME AND EXTREME FLOOD VOLUMES ARE NOT REQUIRED FOR THIS SITE. THE FIVE (5) MICRO BIO-RETENTION FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE H.O.A. (STREET TREES, PERFORATED UNDERDRAINS, FEEDERS, PLANTINGS, SWALES AND DRIVEWAY CULVERTS. HOWARD COUNTY WILL ONLY MAINTAIN THE INLET STRUCTURE WITHIN THE MICRO BIO-RETENTION FACILITIES ADJACENT TO THE RIGHT-OF-WAY. DRYWELLS AND PERMEABLE PAVEMENT LOCATED ON THE BUILDABLE LOTS (1-4 & 14-20) PROVIDE WQv & Rev FOR THE PROPOSED DWELLINGS AND ARE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER.

19. THERE IS NO FLOODPLAIN WITHIN THIS SITE.

20. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP, DATED JUNE, 2010 AND APPROVED ON SEPTEMBER 16, 2010 UNDER SP-11-001.

21. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULLFILLED BY PROVIDING 1.0 ACRE OF OFF-SITE AFFORESTATION, THIS IS PROVIDED ON THE HOWARD HUNT PROPERTIES, INCORPORATED LOCATED AT TAX MAP 6, PARCELS 51 AND LIBER 4032, FOLIO 363 AND LIBER 4137, FOLIO 385 AT $0.50/SF FOR 43,560 SF = $21,780.00. TOTAL FOREST CONSERVATION SURETY = $21,780.00

22. THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY HILLIS-CARNES, DATED JULY, 2010 AND APPROVED UNDER SP-11-001.

23. THE FOREST STAND DELINEATION AND WETLAND DELINEATION FOR THIS PROJECT WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., DATED JUNE, 2010 AND APPROVED UNDER SP-11-001.

24. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.

25. FOR FLAG OR PIPESTEM LOTS (LOT 9), REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND THE ROAD R/W LINE AND NOT THE PIPESTEM LOT DRIVEWAY.

26. NO CEMETERIES EXIST WITHIN THE BOUNDARIES OF THIS SUBDIVISION BASED ON A VISUAL SITE VISIT AND AN EXAMINATION OF THE HOWARD COUNTY CEMETERY INVENTORY MAP.

27. THE LANDSCAPE SURETY IN THE AMOUNT OF $11,250.00 BASED ON 35 SHADE TREES @ $300/TREE, 2 EVERGREEN TREES @ $150/TREE AND 3 ORNAMENTAL TREES @ $150/TREE HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT.
THE STREET TREE SURETY FOR THE REQUIRED 31 STREET TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $9,300.00.

28. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.

29. DURING THE INSTALLATION OF PUBLIC WATER AND SEWER, LOT #11 MUST HAVE THE WELL AND SEPTIC PROPERLY ABANDONED/SEALED AND THE HOWARD COUNTY HEALTH DEPARTMENT WILL BE NOTIFIED. DOCUMENTATION OF PROPER ABANDONMENT OF THE WELL BY A LICENSED WELL DRILLER AND PROPER ABANDONMENT OF THE SEPTIC SYSTEM WILL BE FORWARDED TO THE HOWARD COUNTY HEALTH DEPARTMENT.

30. DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS:
   a. WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE)
   b. SURFACE - SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING.
   c. GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM OF 45 TURNING RADIUS.
   d. STRUCTURES (CULVERTS/BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS (H 25 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 - SUFFIFIENT TO INSURE ALL WEATHER USE.

31. A SPLIT RAIL FENCE SHALL BE CONSTRUCTED ADJACENT TO OPEN SPACE LOT 13 WITHIN LOTS 3 AND 4 ALONG COMMON LOT LINES WITH OPEN SPACE LOT 13. THIS FENCE WILL BE MAINTAINED BY THE H.O.A. AND ACCESSED BY UTILIZING THE 5' PROVIDED MAINTENANCE EASEMENT ON LOTS 3 & 4.

32. DEVELOPER TO COMPLETE A LEASE AGREEMENT WITH DEPARTMENT OF RECREATION AND PARKS TO ALLOW H.O.A. MAINTENANCE OF OPEN SPACE LOT 13.

33. OPEN SPACE 12 TO BE OWNED BY H.O.A.

34. OPEN SPACE LOT 13 TO BE OWNED BY HOWARD COUNTY, MARYLAND AND MAINTAINED BY H.O.A. (SEE GENERAL NOTE NO. 32)

35. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE LIMITS OF WETLANDS, STREAMS OR THEIR REQUIRED BUFFERS, FLOODPLAIN AND FOREST CONSERVATION EASEMENT AREAS.

36. THIS PROPERTY IS LISTED ON THE HOWARD COUNTY HISTORIC SITES INVENTORY AS HO-712, THE JOHN L. HINES HOUSE. ON OCTOBER 7, 2010 THE HISTORIC DISTRICT COMMISSION APPROVED THE REMOVAL OF THE STRUCTURES AS NOTED HEREON AFTER ADJUSTMENT OF COMMON LOT LINE BETWEEN LOT 10 AND LOT 11 TO RETAIN PART OF EXISTING SHED/BARN. THE COMMISSION APPROVED THE PLAN WHICH SHOWED THE HOUSE, SHED AND ORIGINAL BARN REMAINING. THE EXISTING BARN IS ALLOWED TO ENCROACH WITHIN THE 10' SETBACK (ALONG THE PROPERTY LINE SHARED WITH PARCEL 54) SINCE IT IS AN EXISTING ENCROACHMENT AND THE BARN WAS CONSTRUCTED PRIOR TO THE EXISTING ZONING REGULATIONS. THE EXISTING HOUSE ON LOT 11 WILL REMAIN.

37. THIS PLAN IS SUBJECT TO WAIVER WP-11-065 TO WAIVE SECTION 16.120(b)(4)(III)(c) FOR R-20 INFILL SUBDIVISIONS THAT ARE RESTRICTED IN USING OPTIONAL LOT SIZES UNDER SECTION 16.121(a), STEEP SLOPES, FLOODPLAINS, WETLANDS, WETLAND BUFFERS, STREAMS AND STREAM BUFFERS MAY BE LOCATED ON LOTS WITH A 35' SETBACK FROM THE BUILDING ENVELOPE. THE WAIVER WAS APPROVED BY THE PLANNING DIRECTOR ON NOVEMBER 22, 2010 SUBJECT TO THE FOLLOWING CONDITIONS:

1. A 35-FOOT SETBACK WILL BE MAINTAINED FROM ENVIRONMENTAL FEATURES AND BUFFERS LOCATED ON ALL RESIDENTIAL LOTS. A DECK MAY PROJECT 10' BEYOND THE BUILDING ENVELOPE.

2. AN OPEN SPACE LOT (LOT 12) CONTAINING A PORTION OF THE REQUIRED 6% OF OPEN SPACE MUST BE PROVIDED AND THE REQUIRED RECREATION OPEN SPACE WILL BE PROVIDED AT THIS LOCATION. THIS OPEN SPACE IS TO BE OWNED BY THE HOMEOWNER'S ASSOCIATION OF THIS SUBDIVISION.

3. AN ADDITIONAL OPEN SPACE LOT TO BE OWNED BY THE DEPARTMENT OF RECREATION AND PARKS WILL BE PROVIDED AS A 35' WIDE STRIP BETWEEN LOTS 3 AND 4 (ALSO TO WRAP TO THE PROPERTY CORNER BEHIND LOT 3 TO ENCOMPASS THE MAJORITY OF THE STREAM BUFFER), TO BE KNOWN AS OPEN SPACE LOT 13, AND CONTAINING THE REMAINING PORTION OF THE REQUIRED 6% OPEN SPACE AREA.

4. NO GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING AND NEW STRUCTURES ARE PERMITTED WITHIN THE 25' WETLAND BUFFER AND THE 50' STREAM BUFFER.

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
MR. & MRS. HILEY A. ORNDORFF
10909 SCAGGSVILLE ROAD
LAUREL, MARYLAND 20723
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

DEVELOPER
FAL DEVELOPERS, L.L.C.
5300 DORSEY HALL DRIVE, SUITE 102
ELLICOTT CITY, MARYLAND 21042
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

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

AS BUILT 6/12/15

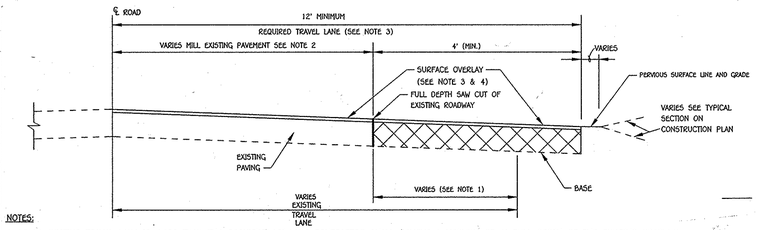
ALDO M. VITUCCI, P.E. 2/11/14 DATE

"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15."

REVISED
CHERRYTREE VIEW
BUILDABLE LOTS 1 - 4 AND 14-20, OPEN SPACE LOTS 12 & 13
ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003, WP-11-065 & SP-11-001
TAX MAP No. 46 GRID No. 11 PARCEL No. 55
SIXTH ELECTION DISTRICT . HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2014
SHEET 1 OF 17

AS-BUILT F-11-083

I:\2010\10014\dwg\FINALS\Redline 11-20-13\10014 SHEET 1 TITLE SHEET.dwg, 2/4/2014 11:15:18 AM, HP Designjet T1500 PS HPGL2 (temporary).pc3

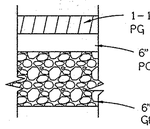


NOTES:

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



S.H.A. PAVING SECTION

NO SCALE

NO.	DESCRIPTION	DATE
2	REVISED PER WD. TO REPLACE NOVO PIPES	9/20/15
1	REPLACE PIPES MICRO-BIORETENTION WITH A SINGLE MICRO-BIORETENTION LOCATED AT THE REAR OF LOT 15	2/3/14

REVISIONS

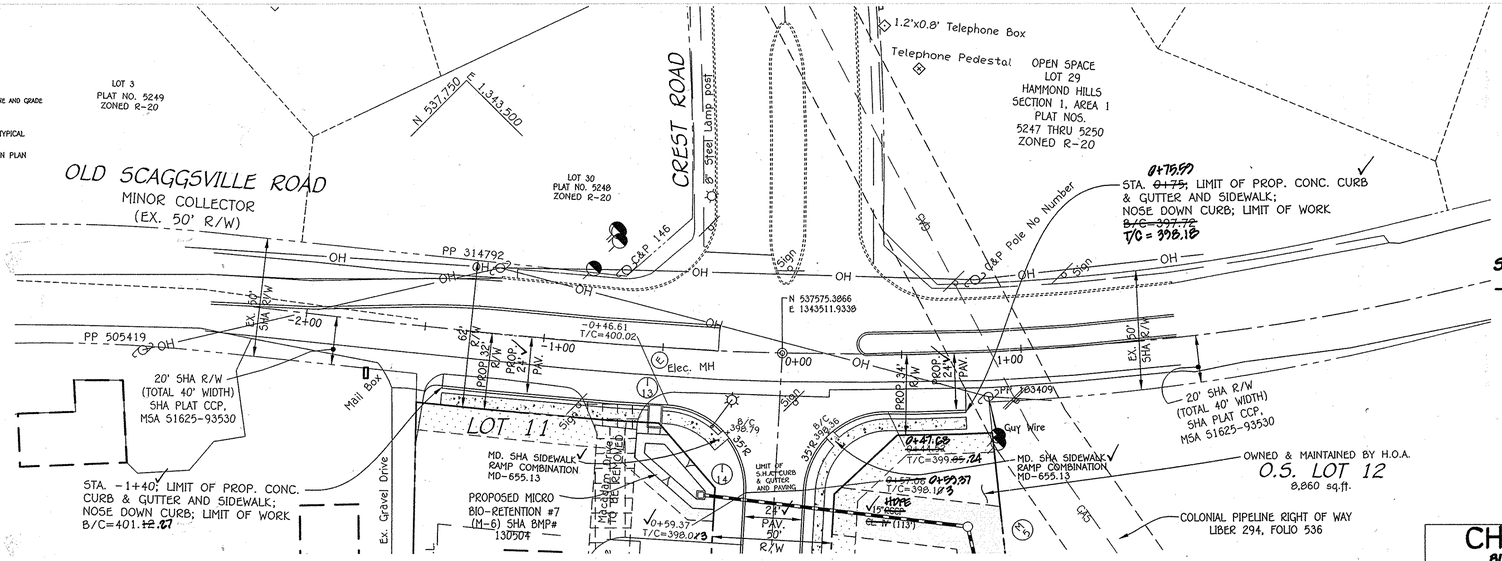
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/19/11

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7.13.11

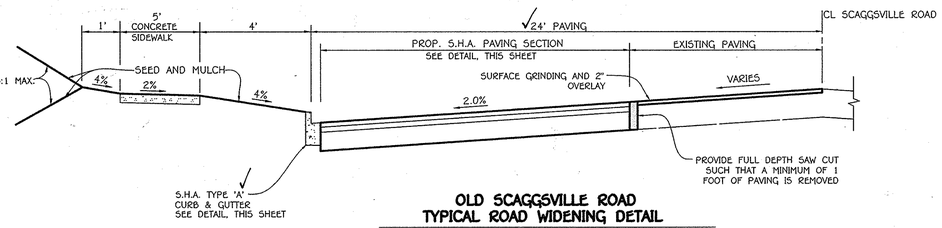
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 7-11-2011



PLAN

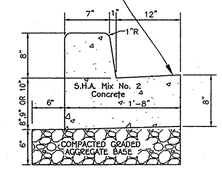
SCALE: 1" = 30'



OLD SCAGGSVILLE ROAD TYPICAL ROAD WIDENING DETAIL

NO SCALE

NOTE: SLOPE GUTTER PAN 1/2" PER FOOT TOWARD FLOW LINE ON ALL ROADWAYS INCLUDING SUPERELEVATED SECTIONS, EXCEPT INTERCHANGE RAMPS.



S.H.A. TYPE 'A' COMB. CONC. CURB AND GUTTER

NO SCALE

CHERRYTREE VIEW

BUILDABLE LOTS 1 - 4 AND 14-20, OPEN SPACE LOTS 12 & 13

ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003 & WP-11-065
TAX MAP No. 46 — QRID No. 11 — PARCEL No. 55
SIXTH ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

OLD SCAGGSVILLE ROAD WIDENING

PLAN AND CROSS-SECTIONS

OWNER	DEVELOPER
MR. & MRS. MILEY A. ORNDORFF 10909 SCAGGSVILLE ROAD LAUREL, MARYLAND 20723 ATTN: MR. DONALD R. REUWER, JR. 443-367-0422	FAL DEVELOPERS, L.L.C. 5300 DORSEY HALL DRIVE, SUITE 102 ELLICOTT CITY, MARYLAND 21042 ATTN: MR. DONALD R. REUWER, JR. 443-367-0422

SCALE: AS SHOWN	DATE: ~~FEBRUARY 9, 2011~~	DWG. NO. 2 OF 17
DES. R.A.I.	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

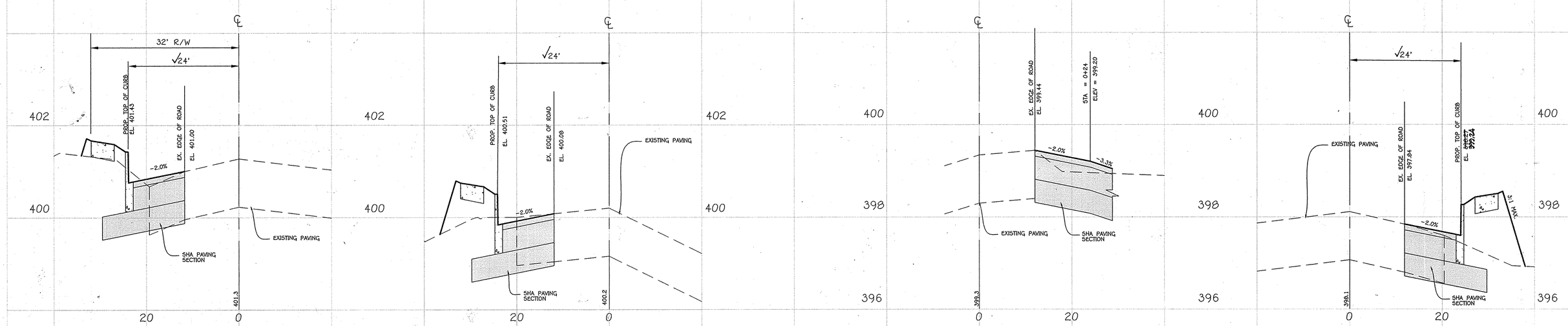
STATE OF MARYLAND — ALDO MICHAEL VITALE — No. 20748 — PROFESSIONAL ENGINEER

ALDO — 6/9/11 DATE

"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

STATE OF MARYLAND — ROBERT E. FISHER — No. 13248 — PROFESSIONAL ENGINEER

PS BUILT 6/12/15



CROSS-SECTIONS

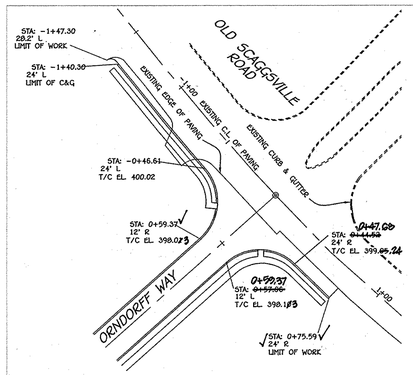
SCALE: HOR. : 1" = 10'
VER. : 1" = 1'

AS-BUILT F-11-063

I:\2010\10014\dwg\FINALS\10014 SHEET 2 SCAGGSVILLE WIDENING.dwg, 6/9/2011 12:53:55 PM, 36 Mylar (temporary).pc3

℄ CURVE DATA
ORNDORFF WAY
STA. 1+59.06 TO STA. 2+66.68
RADIUS = 225.00'
ARC LENGTH = 107.62'
TAN. = 54.86'
DELTA = 27°24'20"
CHORD = S62°02'42"W, 106.60'

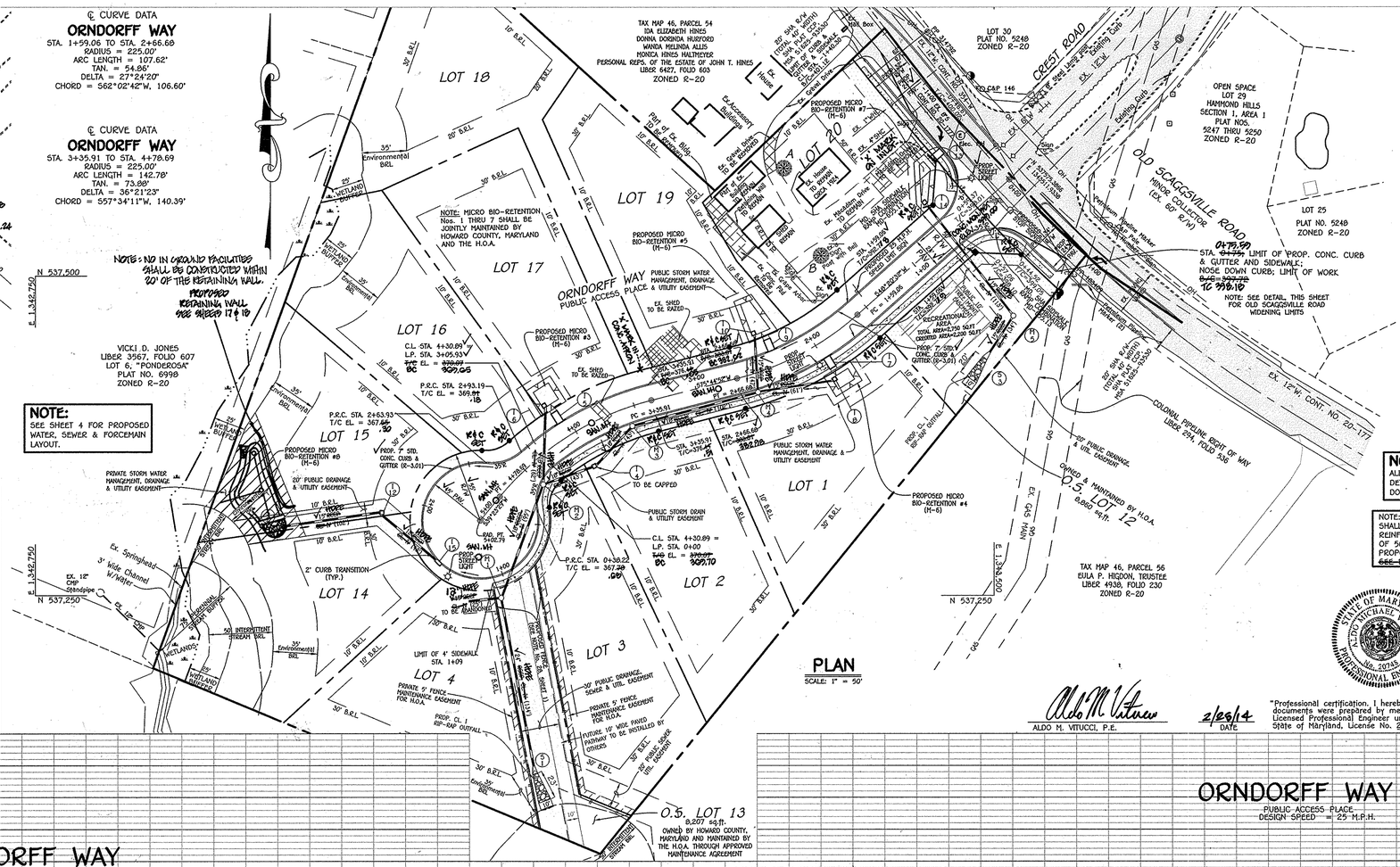
℄ CURVE DATA
ORNDORFF WAY
STA. 3+35.91 TO STA. 4+78.69
RADIUS = 225.00'
ARC LENGTH = 142.78'
TAN. = 73.28'
DELTA = 36°21'23"
CHORD = S57°34'11"W, 140.39'



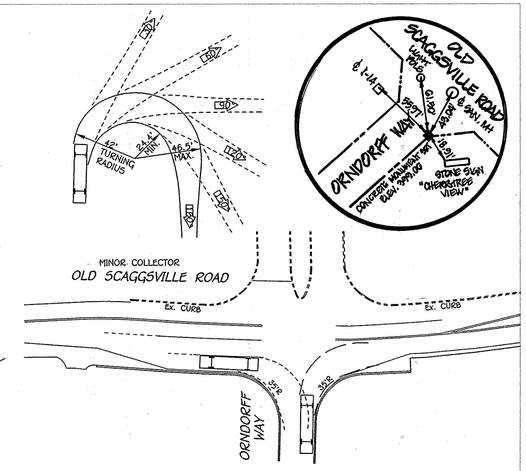
FILLET DETAIL
SCALE: 1" = 50'

NOTE: NO IN GROUND FACILITIES SHALL BE CONSTRUCTED WITHIN 20' OF THE RETAINING WALL.
PROPOSED RETAINING WALL SEE SHEET 17 & 18

NOTE:
SEE SHEET 4 FOR PROPOSED WATER, SEWER & FORCEMAIN LAYOUT.



PLAN
SCALE: 1" = 50'



TURNING MOVEMENT DETAIL
SCALE: 1" = 50'

NOTE:
ALL HANDICAP RAMPS SHALL HAVE DETECTABLE WARNING TRUNCATED DOMES (SEE DETAIL, SHEET 14)

NOTE: THE PROPOSED 4' SIDEWALK SHALL BE TRAFFIC BEARING (7" REINFORCED CONCRETE) A MINIMUM OF 50' ON EITHER SIDE OF THE PROPOSED CCG/CO5 INLET OPENING. ~~SEE DETAIL, SHEET 14~~

2	REVISED SHEET NO. 10 TO REFLECT ADDED SHEETS AND ADDED RETAINING WALL AT THE REAR OF LOT 15	8/07/15
1	REPLACE THREE MICRO-BIORETENTION WITH A SINGLE MICRO-BIORETENTION LOCATED AT THE REAR OF LOT 15	2/3/14
NO.	DESCRIPTION	DATE

REVISIONS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT	4/10/14 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	3.28.14 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS	3-25-14 DATE

Aldo M. Vitucci 2/26/14
ALDO M. VITUCCI, P.E. DATE

"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15."

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

STATE OF MARYLAND · ROBERT A. KONCZ · No. 13201 · PROFESSIONAL ENGINEER · AS BUILT 6/12/15

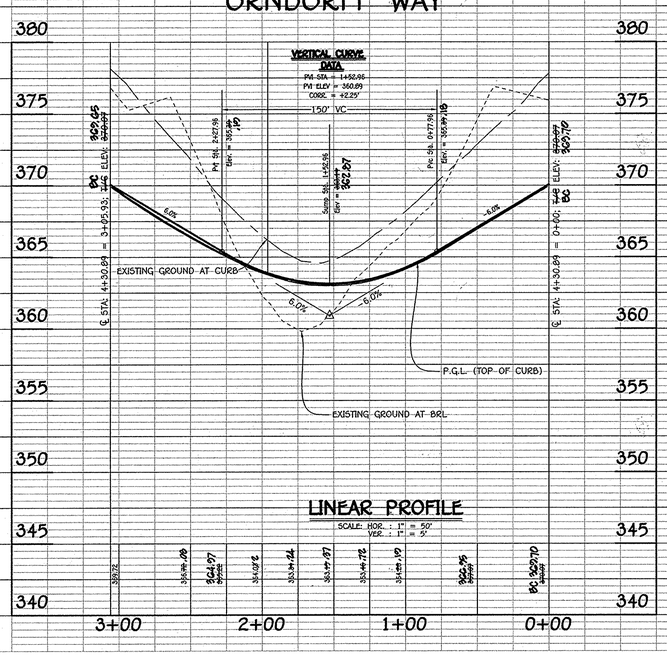
REVISED
CHERRYTREE VIEW
BUILDABLE LOTS 1 - 4 AND 14-20
OPEN SPACE LOTS 12 & 13
ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003, WP-11-065 & SP-11-001
TAX MAP No. 46 GRID No. 11 PARCEL No. 55
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

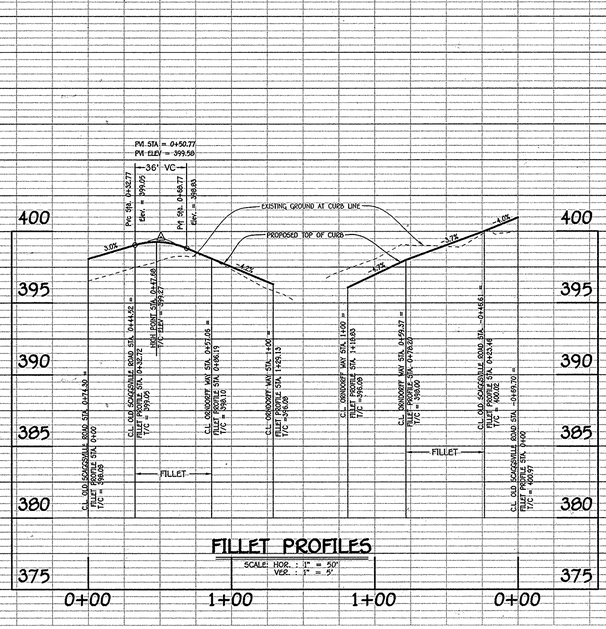
ORNDORFF WAY
PLAN AND PROFILE

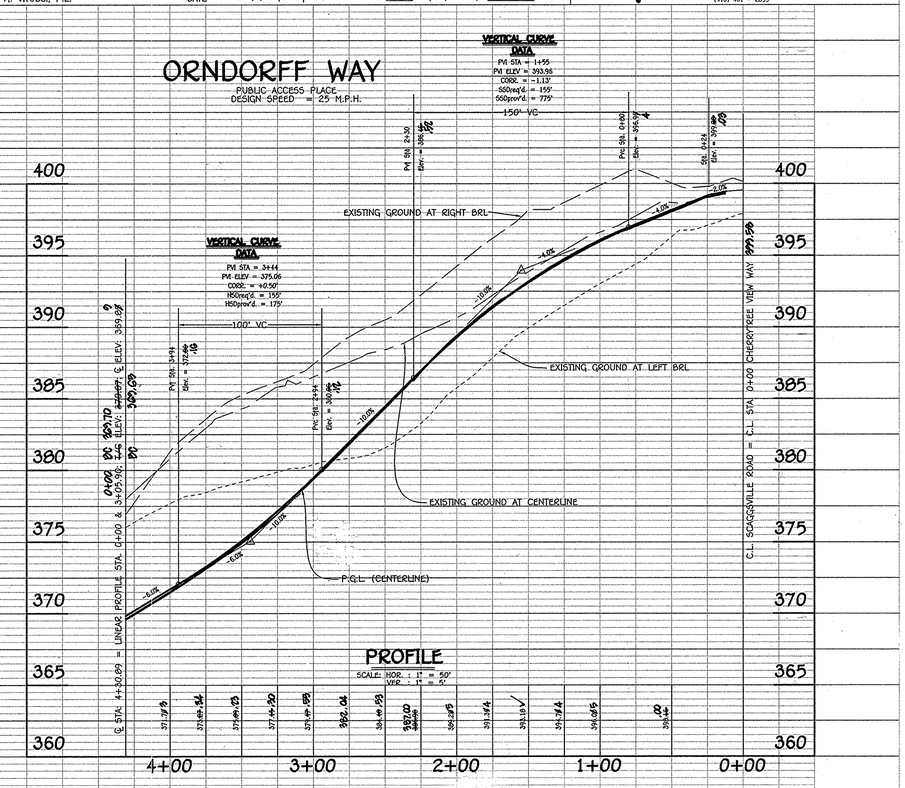
OWNER	DEVELOPER
MR. & MRS. HILEY A. ORNDORFF 10909 SCAGGSVILLE ROAD LAUREL, MARYLAND 20723 ATTN: MR. DONALD R. REUWER, JR. 443-367-0422	FAL DEVELOPERS, L.L.C. 5300 DORSEY HALL DRIVE, SUITE 102 ELLICOTT CITY, MARYLAND 21042 ATTN: MR. DONALD R. REUWER, JR. 443-367-0422

SCALE: AS SHOWN	DATE: FEBRUARY 3, 2014	DWG. NO. 3 OF 17
DES. R.A.I.	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







AS-BUILT F-11-063

PLAN

SCALE: 1" = 50'

TEMPORARY S.O.S.T. (ST. II) No. 1

INITIAL D.A. = 1.82 Ac.±
FINAL D.A. = 1.03 Ac.±
STORAGE REQUIRED
WET = 1800 x 1.82 = 3,276 CuFt.
DRY = 1800 x 1.82 = 3,276 CuFt.
STORAGE PROVIDED
WET = 3,276 CuFt. @ ELEV. 345.18
DRY = 3,276 CuFt. @ ELEV. 346.25
BOTTOM ELEV. = 344.00
STORAGE DEPTH = 1.82' WET, 2.40' DRY
TOP OF EMBANKMENT = 348.00
CLEAN OUT ELEV. = 344.60
WEIR CREST ELEV. = 347.00
WEIR LENGTH = 8'
TEMP. SWM FOR 1yr. STORM NOT REQUIRED
D.A. < 2 AC.

S.O.S.T. No. 1
BAFFLE DESIGN
D = 45'
A = 2,304 SQ.FT.
We = A/D = 2,304/45 = 51.2'
Le = 104'
Le/We = 104/51.2' = 2.03
2.03 > 2 ∴ OK

TEMPORARY S.O.S.T. (ST. II) No. 2

INITIAL D.A. = 1.88 Ac.±
FINAL D.A. = 2.97 Ac.±
STORAGE REQUIRED
WET = 1800 x 2.97 = 5,346 CuFt.
DRY = 1800 x 2.97 = 5,346 CuFt.
STORAGE PROVIDED
WET = 5,346 CuFt. @ ELEV. 353.20
DRY = 5,346 CuFt. @ ELEV. 354.30
BOTTOM ELEV. = 352.00
STORAGE DEPTH = 1.80' WET, 2.45' DRY
TOP OF EMBANKMENT = 356.50
CLEAN OUT ELEV. = 352.55
WEIR CREST ELEV. = 355.50
WEIR LENGTH = 10'
FOR 1yr. TEMP. STORM REQUIRED = 6,970 CU.FT. @ 355.45

S.O.S.T. No. 2
BAFFLE DESIGN
D = 90'
A = 4,586 SQ.FT.
We = A/D = 4,586/90 = 50.95'
Le = 140'
Le/We = 140/50.95' = 2.74
2.74 > 2 ∴ OK

TEMPORARY S.O.S.T. (ST. II) No. 3

INITIAL D.A. = 1.59 Ac.±
FINAL D.A. = 1.21 Ac.±
STORAGE REQUIRED
WET = 1800 x 1.59 = 2,862 CuFt.
DRY = 1800 x 1.59 = 2,862 CuFt.
STORAGE PROVIDED
WET = 2,862 CuFt. @ ELEV. 363.40
DRY = 2,862 CuFt. @ ELEV. 364.43
BOTTOM ELEV. = 362.00
STORAGE DEPTH = 1.60' WET, 2.30' DRY
TOP OF EMBANKMENT = 366.00
CLEAN OUT ELEV. = 362.70
WEIR CREST ELEV. = 365.00
WEIR LENGTH = 12'
TEMP. SWM FOR 1yr. STORM NOT REQUIRED
D.A. < 2 AC.

S.O.S.T. No. 3
BAFFLE DESIGN
D = 60'
A = 1,656 SQ.FT.
We = A/D = 1,656/60 = 27.6'
Le = 105'
Le/We = 105/27.6' = 3.8
3.8 > 2 ∴ OK

LEGEND

—SSF—SSF—SSF—	SUPER-SILT FENCE
—SF—SF—SF—	SILT FENCE
—TP—TP—TP—	TREE PROTECTION FENCE
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
A-2	EARTH DIKE
	LIMIT OF DISTURBANCE
	RIP-RAP INFLOW PROTECTION
	SEDIMENT BAFFLE (SEE DETAIL, SHEET 10)

By The Developer:

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

Signature Of Developer — Date: 2/3/14

DONALD REUWER, JR.
Printed Name Of Developer

By The Engineer:

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

Signature — Date: 2/28/14

ALDO M. VITUCCI
Printed Name Of Engineer

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

Howard Soil Conservation District — Date: 3/13/14

Approved: Department Of Public Works

Chief Bureau Of Highways — Date: 3-25-14

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 4/02/14

Chief, Development Engineering Division — Date: 3-28-14

AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.

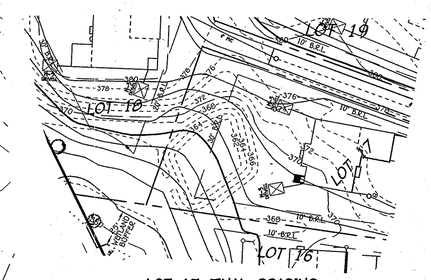
Signature — P.E. No. — Date:

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee Or The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

REVISIONS

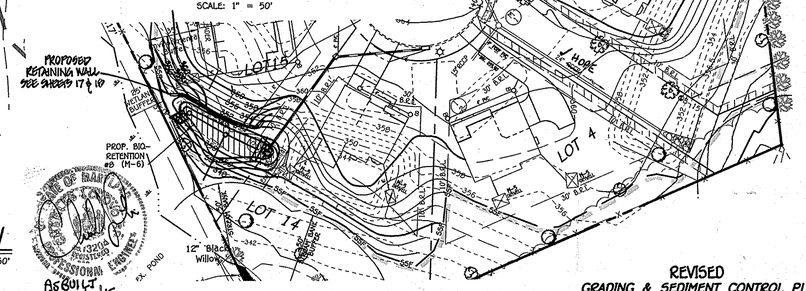
NO.	DESCRIPTION	DATE
1	REPLACE THREE MICRO-BIORETENTION WITH A SINGLE MICRO-BIORETENTION LOCATED AT THE REAR OF LOT 15	2/3/14
2	REVISED SHEET NO. 10 REFLECT ADDED FILLED AND ADDED RETAINING WALL AT THE REAR OF LOT 19	2/28/14

NOTE: SEE SHEET 13 FOR STORMWATER MANAGEMENT FACILITIES ON THE INDIVIDUAL LOTS TO BE CONSTRUCTED AT SDP STAGE.



LOT 17 FINAL GRADING

SCALE: 1" = 50'



LOTS 3, 4 AND 14 FINAL GRADING

SCALE: 1" = 50'

BORING CHART				
BORING NO.	LOCATION NORTH	LOCATION EAST	DEPTH	REMARKS
B-1	N 537540.2799	E 1343422.0431	12 FT.	NO GROUNDWATER ENCOUNTERED
B-2	N 537436.8009	E 1343344.6703	15 FT.	NO GROUNDWATER ENCOUNTERED
B-3	N 537603.3295	E 1343234.7897	15 FT.	NO GROUNDWATER ENCOUNTERED
B-4	N 537360.8529	E 1343147.3495	15 FT.	NO GROUNDWATER ENCOUNTERED
B-5	N 537253.3635	E 1343064.1783	12 FT.	NO GROUNDWATER ENCOUNTERED
B-6	N 537561.1710	E 1343217.3727	10 FT.	NO GROUNDWATER ENCOUNTERED
B-7	N 537589.6771	E 1343135.9635	12 FT.	NO GROUNDWATER ENCOUNTERED
B-8	N 537608.3285	E 1343017.7223	13 FT.	NO GROUNDWATER ENCOUNTERED
B-9	N 537515.4593	E 1343058.4632	12 FT.	NO GROUNDWATER ENCOUNTERED
B-10	N 537436.7082	E 1342970.1471	12 FT.	NO GROUNDWATER ENCOUNTERED
B-11	N 537307.0299	E 1343027.3915	12 FT.	NO GROUNDWATER ENCOUNTERED
B-12	N 537297.6377	E 1342922.0668	12.5 FT.	NO GROUNDWATER ENCOUNTERED
B-13	N 537198.3982	E 1342923.5773	12 FT.	NO GROUNDWATER ENCOUNTERED
B-14	N 537152.9737	E 1343029.7110	12 FT.	NO GROUNDWATER ENCOUNTERED
B-15	N 537121.0197	E 1343166.4569	12.5 FT.	NO GROUNDWATER ENCOUNTERED
B-16	N 537237.7730	E 1343315.0657	10 FT.	NO GROUNDWATER ENCOUNTERED

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

OWNER
MR. & MRS. HILEY A. ORNDORFF
10909 SCAGGSVILLE ROAD
LAUREL, MARYLAND 20723
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

DEVELOPER
FAL DEVELOPERS, L.L.C.
5300 DORSEY HALL DRIVE, SUITE 102
ELLICOTT CITY, MARYLAND 21042
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

ALDO M. VITUCCI, P.E. — DATE: 2/28/14

"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20746, Expiration Date 2-22-15."

REVISED
GRADING & SEDIMENT CONTROL PLAN
CHERRYTREE VIEW
BUILDABLE LOTS 1 - 4 AND 14 - 20
OPEN SPACE LOTS 12 & 13
ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003, WP-11-065 & SP-11-001
TAX MAP No. 46 GRID No. 11 PARCEL No. 55
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2014
SHEET 4 OF 17

AS-BUILT

F-11-063

STORMWATER MANAGEMENT DRAINAGE AREA MAP

SCALE: 1" = 60'

SOILS LEGEND

SOIL	NAME	CLASS
** Ba	Baile silt loam	D
GIB2	Glenelg loam, 3 to 8 percent slopes, moderately eroded	B
GIC3	Glenelg loam, 8 to 15 percent slopes, severely eroded	B
GID3	Glenelg loam, 15 to 25 percent slopes, severely eroded	B

NOTES:

* Hydric soils and/or contains hydric inclusions

** May contain hydric inclusions

† Generally only within 100-year floodplain areas

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 3-25-14

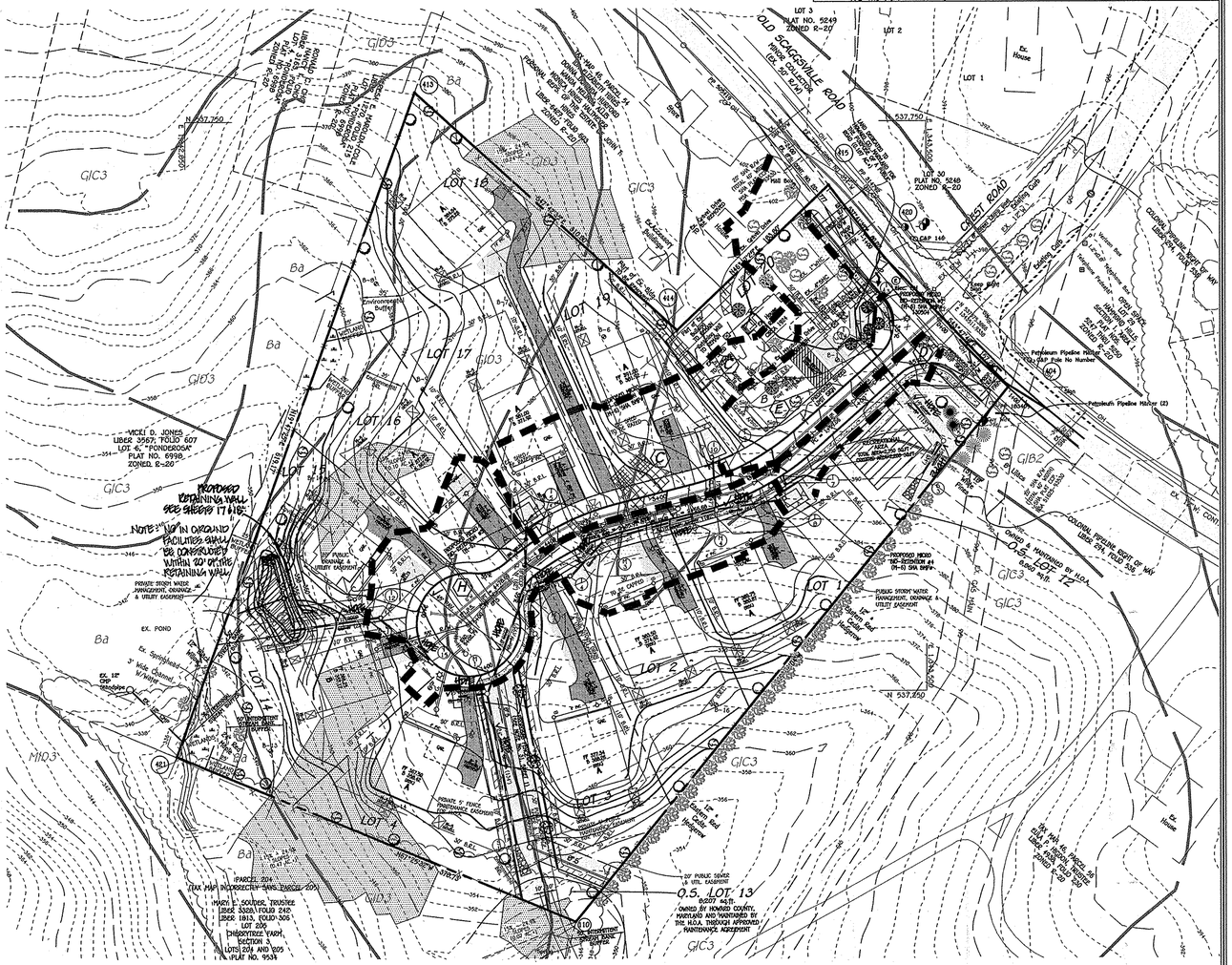
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/02/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3-28-14

REVISIONS

NO.	DESCRIPTION	DATE
1	REPLACE THREE MICRO-BIORETENTION WITH A SINGLE MICRO-BIORETENTION LOCATED AT THE REAR OF LOT 15	2/3/14
2	REVISED SHEET NO. 17 REFLECT RETAINING WALL SHEETS AND ADDED RETAINING WALL IN THE REAR OF LOT 19	9/03/15



STORMDRAIN DRAINAGE AREA MAP

SCALE: 1" = 60'

STORMWATER MANAGEMENT PRACTICES

LOT No.	DRAINAGE AREA TO FACILITY: DRY WELL (M-5)	PERMEABLE PAVING (M-2)	MICRO BIO-RETENTION (M-6)	ESDv = REQ'D.	ESDv = PROV'D.
1	0.02 Ac.	0.062 Ac.		444 Cu.Ft.	631 Cu.Ft.
2	0.02 Ac.	0.066 Ac.		450 Cu.Ft.	657 Cu.Ft.
3	0.02 Ac.	0.079 Ac.		441 Cu.Ft.	782 Cu.Ft.
4	0.02 Ac.	0.070 Ac.		445 Cu.Ft.	696 Cu.Ft.
14	0.01 Ac.	0.029 Ac.	0.015 Ac.	265 Cu.Ft.	352 Cu.Ft.
15	0.01 Ac.	0.064 Ac.	0.030 Ac.	285 Cu.Ft.	352 Cu.Ft.
16	0.02 Ac.	0.062 Ac.		443 Cu.Ft.	633 Cu.Ft.
17	0.02 Ac.	0.039 Ac.	0.016 Ac.	342 Cu.Ft.	493 Cu.Ft.
18	0.02 Ac.	0.166 Ac.		874 Cu.Ft.	1,277 Cu.Ft.
19	0.02 Ac.	0.676 Ac.		473 Cu.Ft.	661 Cu.Ft.
20	0.07 Ac.			240 Cu.Ft.	255 Cu.Ft.

TOTAL AREA OF PROPERTY = 6.54 AC.
DEVELOPABLE AREA (L.O.D.) = 5.11 AC.
COMPOSITE RCNw = 57
TARGET Pe = 1.57 INCHES

TOTAL SITE AREA = 6.54 Ac.+; L.O.D. = 5.11 Ac.+
TARGET RCN = 57
TARGET Pe = 1.57"

ESDv SUMMARY TABLE

AREA ID / AREA AC.	ESDv = REQ'D. CU. FT.	ESDv = PROV'D. CU. FT.	PERCENT IMPERVIOUS	REMARKS
C I-6 / 0.30 AC.	428 CU. FT.	560 CU. FT.	46%	MICRO-BIO-RETENTION #3
D I-8 / 0.13 AC.	447 CU. FT.	456 CU. FT.	61.5%	MICRO-BIO-RETENTION #4
E I-10 / 0.53 AC.	592 CU. FT.	648 CU. FT.	16%	MICRO-BIO-RETENTION #5
G I-14 / 0.13 AC.	606 CU. FT.	632 CU. FT.	85%	MICRO-BIO-RETENTION #7
H I-15 / 0.95 AC.	1,832 CU. FT.	1,632 CU. FT.	32%	BIO-RETENTION #8
LOT 1 / 0.10 AC.	631 CU. FT.	631 CU. FT.	80%	2 DRY WELLS PERMEABLE PAVING
LOT 2 / 0.10 AC.	657 CU. FT.	657 CU. FT.	78%	2 DRY WELLS PERMEABLE PAVING
LOT 3 / 0.12 AC.	782 CU. FT.	782 CU. FT.	64%	2 DRY WELLS PERMEABLE PAVING
LOT 4 / 0.11 AC.	696 CU. FT.	696 CU. FT.	75%	2 DRY WELLS PERMEABLE PAVING
LOT 14 / 0.06 AC.	352 CU. FT.	352 CU. FT.	83%	2 DRY WELLS PERMEABLE PAVING
LOT 15 / 0.09 AC.	603 CU. FT.	603 CU. FT.	32%	2 DRY WELLS PERMEABLE PAVING
LOT 16 / 0.10 AC.	633 CU. FT.	633 CU. FT.	80%	2 DRY WELLS PERMEABLE PAVING
LOT 17 / 0.08 AC.	493 CU. FT.	493 CU. FT.	80%	2 DRY WELLS PERMEABLE PAVING
LOT 18 / 0.20 AC.	1,277 CU. FT.	1,277 CU. FT.	75%	2 DRY WELLS PERMEABLE PAVING
LOT 19 / 0.10 AC.	661 CU. FT.	661 CU. FT.	80%	2 DRY WELLS PERMEABLE PAVING
LOT 20	240 CU. FT.	255 CU. FT.	--%	5 DRY WELLS, 1-NON-ROOFTOP DISCONNECT & ROOFTOP DISCON.
TOTALS	10,687 CU. FT.	11,371 CU. FT.	62.9%-AVG.	

118% OF THE REQUIRED ESD VOLUME HAS BEEN PROVIDED

DRAINAGE AREA DATA

STRUCTURE NO.	DRAINAGE AREA	AREA	'C'	ZONED	% IMP.
I-5	C	0.74 AC.	0.55	R-20	43%
I-6	C	0.39 AC.	0.57	R-20	46%
I-7	D	0.11 AC.	0.81	R-20	80%
I-8	D	0.02 AC.	0.68	R-20	61%
I-9	E	0.51 AC.	0.51	R-20	37%
I-10	E	0.16 AC.	0.36	R-20	16%
I-11	F	0.28 AC.	0.71	R-20	65%
I-13	G	0.12 AC.	0.88	R-20	90%
I-14	G	0.13 AC.	0.85	R-20	85%
I-15	H	0.79 AC.	0.43	R-20	27%

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

OWNER

MR. & MRS. HILEY A. ORNDORFF
10909 SCAGGSVILLE ROAD
LAUREL, MARYLAND 20723
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

DEVELOPER

FAL DEVELOPERS, L.L.C.
5300 DORSEY HALL DRIVE, SUITE 102
ELLICOTT CITY, MARYLAND 21042
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

STATE OF MARYLAND — ALDO M. VITUCCI — No. 20248 — PROFESSIONAL ENGINEER

STATE OF MARYLAND — ALDO M. VITUCCI — No. 20248 — PROFESSIONAL ENGINEER — AS-BUILT 6/12/15

ALDO M. VITUCCI, P.E. — DATE 2/20/14

"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20248, Expiration Date 2-22-15."

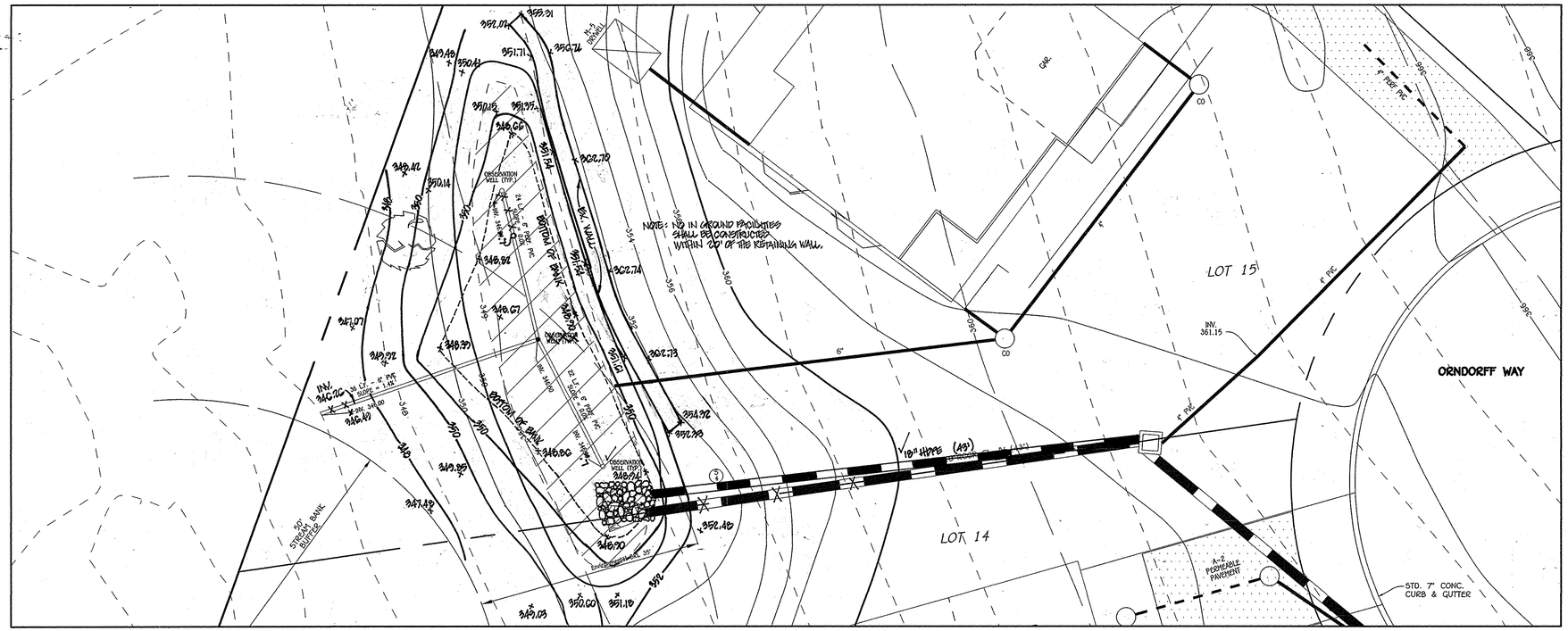
REVISED
STORMDRAIN & STORMWATER MANAGEMENT DRAINAGE AREA MAPS

CHERRYTREE VIEW

BUILDABLE LOTS 1 - 11 AND 14-20
OPEN SPACE LOTS 12 & 13

ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003, WP-11-065 & SP-11-001
TAX MAP No. 46 GRID No. 11 PARCEL No. 55
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2014
SHEET 5 OF 17

AS-BUILT F-11-063



MICRO BIO-RETENTION (M-6) FACILITY NO. 8 PLAN

SCALE: 1" = 10'

NOTE: THE PROPOSED 4' SIDEWALK SHALL BE TRAFFIC BEARING (7" REINFORCED CONCRETE) A MINIMUM OF 50' ON EITHER SIDE OF THE PROPOSED COG/COS INLET OPENING.

By The Developer:

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

Signature Of Developer — Date: 3/3/14

DONALD REUWER, JR.

Printed Name Of Developer

By The Engineer: NK

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

Signature Of Engineer — Date: 2/11/14

ALDO M. VITUCCI

Printed Name Of Engineer

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

Howard Soil Conservation District — Date: 3/13/14

Approved: Department Of Public Works

Chief Bureau Of Highways — Date: 3-25-14

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 4/02/14

Chief, Development Engineering Division — Date: 3-28-14

AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.

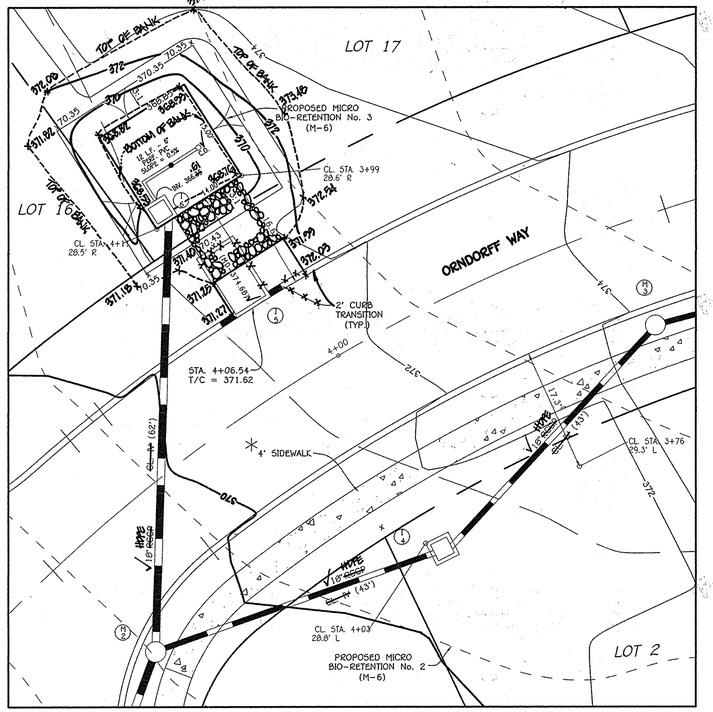
Signature — P.E. No. 13204

Date: 6/12/15

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

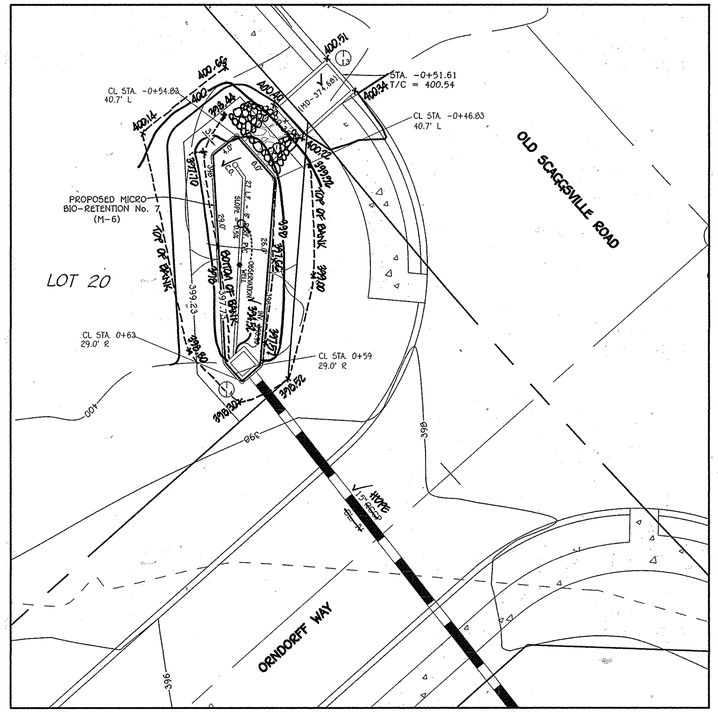
REVISIONS

NO.	DESCRIPTION	DATE
1	REPLACE THREE MICRO-BIORETENTION WITH A SINGLE MICRO-BIORETENTION LOCATED AT THE REAR OF LOT 15	2/3/14
2	~~REVISED PLANS TO REPLACE MICRO-BIORETENTION AND ADDED~~ RECONTOURING AT THE REAR OF LOT 19	6/12/15



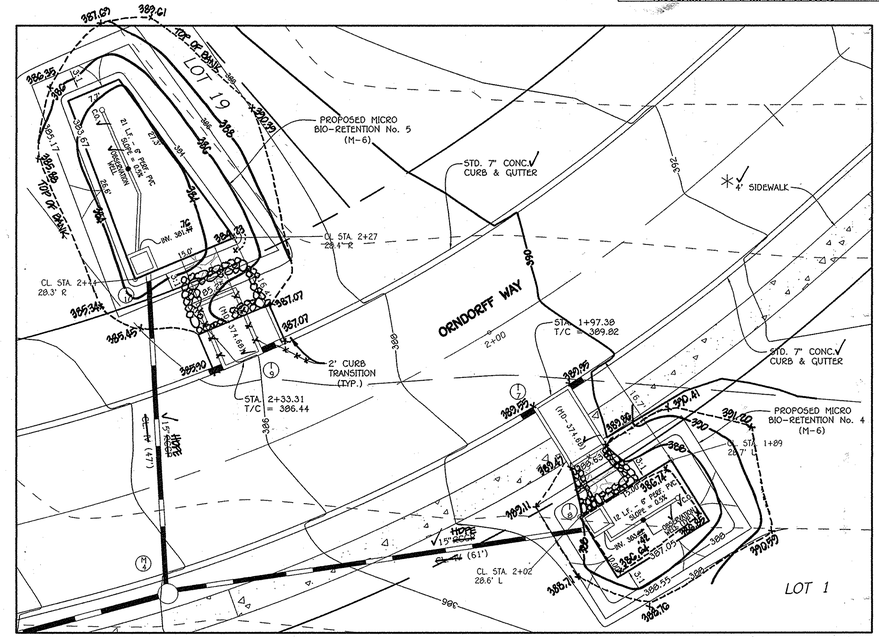
MICRO BIO-RETENTION (M-6) FACILITY NO. 3 PLAN

SCALE: 1" = 10'



MICRO BIO-RETENTION (M-6) FACILITY NO. 7 PLAN

SCALE: 1" = 10'



MICRO BIO-RETENTION (M-6) FACILITY NOS. 4 & 5 PLAN

SCALE: 1" = 10'

AS BUILT 6/12/15

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

NOTE: SEE SHEET 13 FOR DETAILS OF THE PRIVATE STORMWATER MANAGEMENT FACILITIES TO BE BUILT UNDER THE SDP.

OWNER
MR. & MRS. HILEY A. ORNDORFF
10909 SCAGGSVILLE ROAD
LAUREL, MARYLAND 20723
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

DEVELOPER
FAL DEVELOPERS, L.L.C.
5300 DORSEY HALL DRIVE, SUITE 102
ELLICOTT CITY, MARYLAND 21042
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

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

ALDO M. VITUCCI, P.E. — 2/11/14 DATE

"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15."

STATE OF MARYLAND — ALDO M. VITUCCI — No. 13204 — PROFESSIONAL ENGINEER — 6/12/15

REVISED
STORMWATER MANAGEMENT PLANS
(FACILITY Nos. 3-5, 7)

CHERRYTREE VIEW

BUILDABLE LOTS 1 - 4 AND 14-20
OPEN SPACE LOTS 12 & 13

ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003, WP-11-065 & SP-11-001
TAX MAP No. 46 — GRID No. 11 — PARCEL No. 55
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2014
SHEET 6 OF 13

AS-BUILT F-11-063

I:\2010\100141\dwg\FINALS\Redline 11-20-13\100141 SHEET 6 & 7 SWM PLANS.dwg, 2/11/2014 10:52:28 AM, HP Designjet T1500 PS HPGL2 (temporary).pc3

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 (or WC), and the v. in some instances where permeability is great, these facilities may be used for Qp as well. The most common systems include infiltration trenches, infiltration basins, sand filters, and organic filters.

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

Design Constraints:

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

Bio-retention

Soil Bed Characteristics

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

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

Table A.3 Planting Soil Characteristics

Parameter	Value
pH range	5.2 to 7.00
Organic matter	1.5 to 4.0% (by weight)
Magnesium	35 lbs. per acre, minimum
Phosphorus (phosphate - P2O5)	75 lbs. per acre, minimum
Potassium (potash -(K2O)	85 lbs. per acre, minimum
Soluble salts	500 ppm
Clay	10 to 25 %
Silt	30 to 55 %
Sand	35 to 60%

Mulch Layer

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

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

Planting Guidance:

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

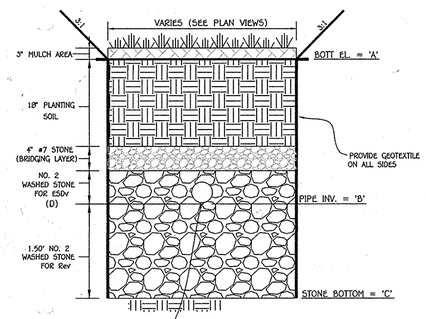
OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6) (FACILITY Nos. 3-5, 7-8)

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.6.1 and 2.

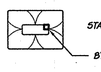
2. The owner shall perform a plant in the spring and in the fall each year, during the inspection, the owner shall remove dead and diseased vegetation considered beyond treatment, replace dead plant material with acceptable replacement plant material. Treat diseased trees ans shrubs and replace all deficient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



FACILITY NO.	A	B	C	D
BIO-RETENTION No. 3	368.83	~~366.35~~ 366.61	364.85	8"
BIO-RETENTION No. 4	~~387.05~~ 387.67	~~383.22~~ 383.67	381.72	24"
BIO-RETENTION No. 5	383.67	~~381.17~~ 381.67	379.67	8"
BIO-RETENTION No. 7	397.72	~~393.90~~ 394.22	392.40	24"
BIO-RETENTION No. 8	~~349.00~~ 348.9	346.50	345.00	8"



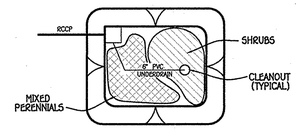
NOTE: PERFORATIONS SHOULD BE ⅜" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW.

(FACILITY Nos. 3-5, 7-8) MICRO BIO-RETENTION (M-6) SECTION

NO SCALE

*SEE PLANT MATERIAL CHARTS FOR QUANTITIES AND SPACING

NOTES:
PLANT MATERIAL MUST COVER AT LEAST 50% OF THE SURFACE AREA OF THE BIO-RETENTION



(FACILITY Nos. 3-5, 7-8) BIO-RETENTION FILTER PLANTING DETAIL

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 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".

PLANT MATERIAL-BIO-RETENTION FILTER No. 3		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
53	MIXED PERENNIALS	1 FT.
27	SHRUBS	2 FT.

PLANT MATERIAL-BIO-RETENTION FILTER No. 4		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
37	MIXED PERENNIALS	1 FT.
19	SHRUBS	2 FT.

PLANT MATERIAL-BIO-RETENTION FILTER No. 5		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
56	MIXED PERENNIALS	1 FT.
28	SHRUBS	2 FT.

PLANT MATERIAL-BIO-RETENTION FILTER No. 7		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
52	MIXED PERENNIALS	1 FT.
26	SHRUBS	2 FT.

PLANT MATERIAL-BIO-RETENTION FILTER No. 8		
QUANTITY	NAME	MAXIMUM SPACING (FT.)
243	MIXED PERENNIALS	1 FT.
122	SHRUBS	2 FT.

By The Developer:

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

Signature Of Developer — Date 2/3/14

DONALD REUWER, JR.
Printed Name Of Developer

By The Engineer:

"I Certify That This Plan For ~~Pond Construction,~~ Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. ~~I Have Verified The Design Of Pond Outlet Structures Shown Hereon And Certify That They Meet Acceptable Engineering Standards. I Shall Engage A Qualified Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An As-Built Plan Of The Pond Within 30 Days Of Completion."~~

Signature Of Engineer — Date 2/4/14

ALDO M. VITUCCI
Printed Name Of Engineer

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

Howard Soil Conservation District — Date 3/13/14

Approved: Department Of Public Works

Chief Bureau Of Highways — Date 3-25-14

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 4/02/14

Chief, Development Engineering Division — Date 3.24.14

AS-BUILT CERTIFICATION

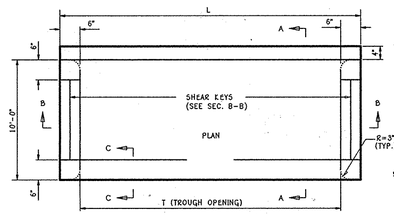
I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

Signature — P.E. No. 13204 — Date: 6/12/15

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

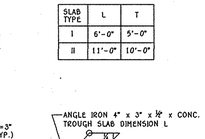
REVISIONS

NO.	DESCRIPTION	DATE
1	REPLACE THREE MICRO-BIORETENTION WITH A SINGLE MICRO-BIORETENTION LOCATED AT THE REAR OF LOT 15	2/3/14
2	REVISED SHEET NO. 10 REFLECT ADDED SHEETS	6/12/15



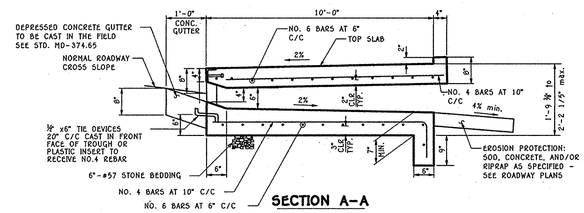
PRECAST CONCRETE TOP SLAB

SLAB TYPE	L	T
I	6'-0"	5'-0"
II	11'-0"	10'-0"

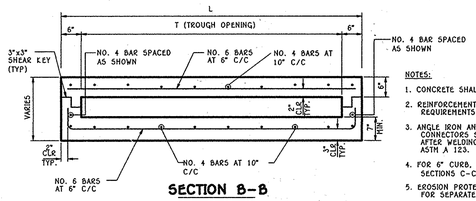


NOTE: FOR 6" CURB, SEE NOTE 4 BELOW.

SECTION C-C



SECTION A-A

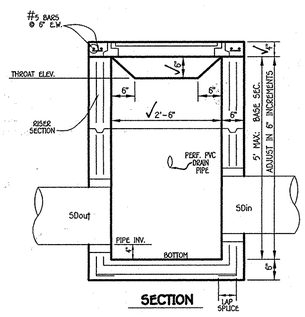


SECTION B-B

NOTES:

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

PRECAST OR CAST IN PLACE COG/COS OPENING FOR 8" CURB 5' OR 10' ONLY

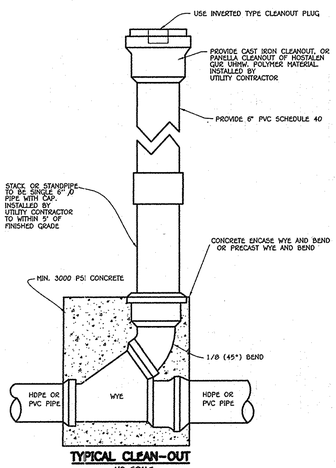


SECTION

PRECAST STANDARD TYPE "D" INLET

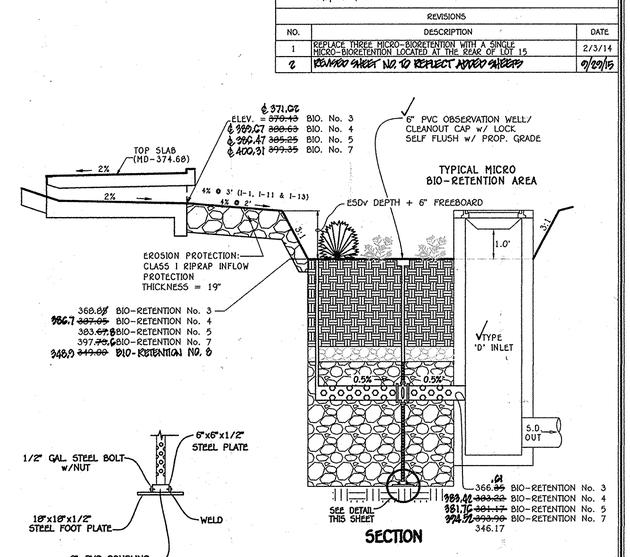
NOTES

1. CONCRETE SHALL CONFORM TO THE MARYLAND D.O.T. S.H.A. STANDARD SPECIFICATIONS, FOR CONSTRUCTION AND MATERIALS, 1982 MIX. NO. 6, EXCEPT THAT TY. III CEMENT & A.S.T.M. C33 NO. 8 COARSE AGG. SHALL BE USED.
2. WELDED WIRE FABRIC SHALL CONFORM TO A.S.T.M. A-185, LAP SPLICES SHALL BE A MIN. OF 1 1/2 TRANSVERSE WIRE SPACES. WIRE CAGES SHALL BE TACK WELDED TO PRODUCE A RIGID UNIT.
3. OVERALL HEIGHT OF PRECAST IS ADJUSTABLE IN 6" INCREMENTS. FINAL GRADE ADJUSTMENTS SHALL BE MADE BY THE CONTRACTOR WITH BRICK AND MORTAR.



TYPICAL CLEAN-OUT

NO SCALE



DETAIL

NO SCALE

(FACILITY Nos. 3-5, 7-8) MICRO BIO-RETENTION UNDERDRAIN

NOT TO SCALE

OWNER
MR. & MRS. HILEY A. ORNDORFF
10909 SCAGGSVILLE ROAD
LAUREL, MARYLAND 20723
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

DEVELOPER
FAL DEVELOPERS, L.L.C.
5300 DORSEY HALL DRIVE, SUITE 102
ELLICOTT CITY, MARYLAND 21042
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

ALDO M. VITUCCI, P.E. — DATE 2/4/14

"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15."

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

STATE OF MARYLAND — JAMES T. REGAN — No. 13204 — PROFESSIONAL ENGINEER — AS-BUILT 6/12/15

REVISED
STORMWATER MANAGEMENT & STORM DRAIN DETAILS (FACILITY Nos. 3-5, 7-8)

CHERRYTREE VIEW

BUILDABLE LOTS 1 - 4 AND 14-20, OPEN SPACE LOTS 12 & 13

ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003, WP-11-065 & SP-11-001
TAX MAP No. 46 GRID No. 11 PARCEL No. 55
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2014
SHEET 7 OF 17

AS-BUILT

F-11-063

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:\2010\10014\dwg\FINALS\Redline 11-20-13\10014 SHEET 6 & 7 SWM PLANS.dwg, 2/4/2014 11:43:16 AM, HP Designjet T1500 PS HPGL2 (temporary).pc3

STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	LOCATION	ROAD STA./ COORDINATE	OFFSET	TYPE AND WIDTH	REMARKS
~~I-1~~	~~363.22~~	-----	-----	~~ORNDORFF WAY~~	~~L.P. 1+52.96~~	-----	~~COG/COS OPENING~~	~~MD - 374.68 SLAB TYPE II~~
~~I-2~~	* ~~361.41~~	~~357.58(6")~~	~~356.00~~	~~ORNDORFF WAY~~	~~L.P. 1+42.26~~	~~31'L~~	~~TYPE 'D' INLET~~	~~D - 4.10~~
~~I-3~~	~~372.21~~	370.42(4") / 367.33	-----	~~ORNDORFF WAY~~	~~3+96.73~~	~~12'L~~	~~COG/COS OPENING~~	~~MD - 374.68 SLAB TYPE I~~
I-4 **	37~~6.14~~ 2.75	365.~~11~~ .55(18"), ~~366.24~~(6")	365.~~01~~ .34	ORNDORFF WAY	4+0~~0.72~~ 1.01	30.5'L ✓	TYPE 'D' INLET ✓	D - 4.10
I-5	371.6~~8~~ 5	-----	-----	ORNDORFF WAY	4+0~~6.54~~ 3.40	~~12~~'R 12.09'	COG/COS OPENING ✓	MD - 374.68 SLAB TYPE I
369.78(3") 366.61(6") INVERTS IN I-6	* 369.~~65~~ .71	366.~~35~~ .61(6") ✓	365.~~52~~ .49	ORNDORFF WAY	4+~~09.62~~ 10.64	30.~~5~~'R .23'	TYPE 'D' INLET ✓	D - 4.10
I-7	389.~~82~~ .75	-----	-----	ORNDORFF WAY	1+97.3~~8~~ 6	~~12~~'L 12.05'	COG/COS OPENING ✓	MD - 374.68 SLAB TYPE I
I-8	* 388.05 387.19	383.~~22~~ .42(6")	~~382.97~~ 383.34	ORNDORFF WAY	2+00.~~47~~ .67	30.5'L ✓	TYPE 'D' INLET ✓	D - 4.10
362.17(4") 362.44(4") 358.81(6") INVERTS IN I-9	386.44 9	-----	-----	ORNDORFF WAY	2+3~~3.34~~ 1.87	12'R ✓	COG/COS OPENING ✓	MD - 374.68 SLAB TYPE I
I-10	* 384.~~67~~ .86	381.65(4") 381.~~47~~ .76(6") ✓	~~379.59~~ 380.32	ORNDORFF WAY	2+4~~4.99~~ 2.45	~~30.5~~'R 29.89'	TYPE 'D' INLET ✓	D - 4.10
~~I-11~~	~~363.96~~	-----	-----	~~ORNDORFF WAY~~	~~L.P. 1+96~~	-----	~~COG/COS OPENING~~	~~MD - 374.68 SLAB TYPE I~~
I-12 **	~~362.15~~ 364.40	~~355.85~~ 356.61	355.~~60~~ .94	ORNDORFF WAY	L.P. 1+~~92~~ 86.68	32.~~7~~'L .94	TYPE 'D' INLET ✓	D - 4.10
I-13	400.~~54~~ .42	-----	-----	OLD SCAGGSVILLE ROAD	-0+51.6~~4~~ 7	~~24~~'L 24.16'	COG/COS OPENING ✓	MD - 374.68
I-14	* 398.~~73~~ .60	394.52 393.90(6") ✓	394.31 ~~390.90~~	ORNDORFF WAY	0+6~~1.50~~ 0.22	30.~~5~~'R .95'	TYPE 'D' INLET ✓	D - 4.10 SLAB TYPE I
I-15	~~364.00~~ 362.81	~~359.82~~ 360.99	~~360.05~~ 358.87	ORNDORFF WAY	1+~~95.98~~ 54.17	-----	TYPE 'A-5' INLET ✓	
M-1	363.~~75~~ .67	355.~~72~~ .84 .25, 355.~~79~~ .81	355.~~69~~ .73	ORNDORFF WAY	L.P. 1+0~~5.71~~ 4.90	~~10~~'L 18.37'	4' DIA. MANHOLE ✓	G - 5.12
M-2	369.~~15~~ .07	364.~~00~~, 364.~~00~~ .16	~~363.75~~ 364.09	ORNDORFF WAY	4+4~~7.11~~ 6.92	~~10~~'L 17.11'	4' DIA. MANHOLE ✓	G - 5.12
M-3	374.~~80~~ .90	370.9~~8~~ 3	368.~~50~~ .09	ORNDORFF WAY	3+5~~6.66~~ 7.25	~~15~~'L 14.94'	4' DIA. MANHOLE ✓	G - 5.12
M-4	384.~~10~~ .02	379.~~36~~ .41, ~~379.36~~ 378.93	~~379.11~~ 378.92	ORNDORFF WAY	2+54.~~24~~ .68	15'L .73'	4' DIA. MANHOLE ✓	G - 5.12
M-5	393.~~60~~ .45	389.~~60~~ .49	389.~~45~~ .34	N 537,469.68 E 1,343,51~~5~~ 6.15			4' DIA. MANHOLE ✓	G - 5.12
				8.08				
S-1	357.0~~2~~ 0	355.0~~2~~ 0	-----	N 537,11~~7~~ E 1,343,140.07	-----	-----	CONC. END SECTION ✓	D - 5.51
S-2	350.17 8	348.92 3	-----	N 537,304.34 E 1,342,943.08	-----	-----	CONC. END SECTION ✓	D - 5.51
S-3	389.47 ✓	388.22 ✓	-----	N 537,440.44 E 1,343,49~~7~~ 6.56	-----	-----	CONC. END SECTION ✓	D - 5.51

NOTE: TOP ELEVATION OF COG/COS OPENING IS AT 12' OFFSET FROM CENTERLINE ON ORNDORFF WAY
* - DENOTES THROAT ELEVATION
NOTE: SEE SHEET 7 FOR COG/COS OPENING DETAIL FOR SLAB TYPES
** - DENOTES 'D' INLET CONVERTED TO JUNCTION BOX

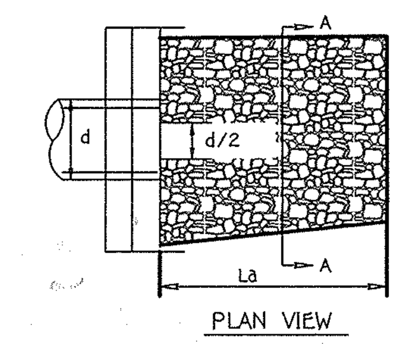
PIPE SCHEDULE

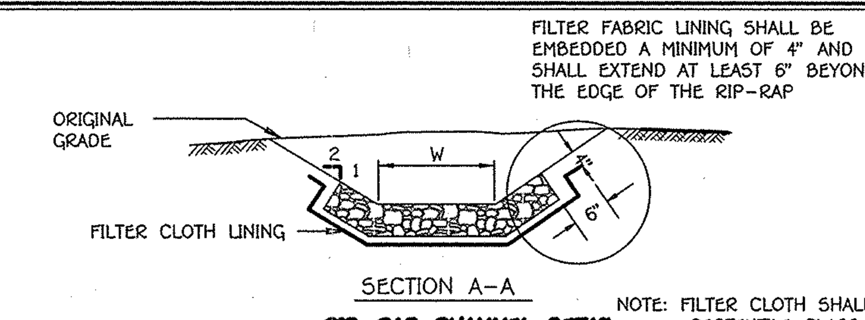
SIZE	CLASS	LENGTH
15"	HDPE ~~RCCP, CL. IV~~	415 L.F.
18"	HDPE ~~RCCP, CL. IV~~	345 L.F.
24"	HDPE ~~RCCP, CL. IV~~	134 L.F.
6"	PERFORATED PVC	132 L.F.
12"	HDPE ~~RCCP, CL. IV~~	43 L.F.

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

RIP-RAP CHANNEL DESIGN DATA

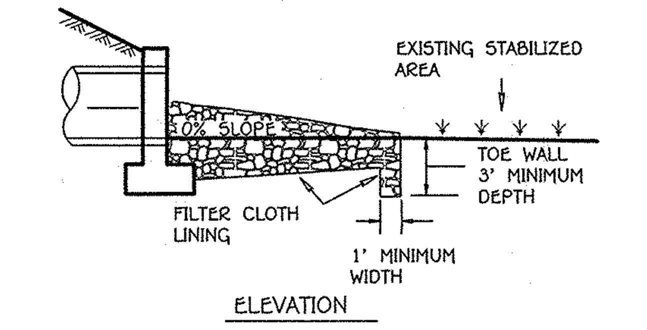
STRUCTURE	AREA (S.F.)	WETTED PERIMETER	R	R 2/3	S	S 1/2	W	d	n	V (f.p.s.)	Q (c.f.s.)	RIP-RAP SIZE D_{50}	RIP-RAP SIZE D_{MAX}	BLANKET THICKNESS	PIPE SIZE	La
S-1	0.1470	12.37	1.7103	1.4301	0.005	0.0707	6.0'	2.85'	0.04	0.07	12.41	9.5"	15"	19"	24"	23'
S-3	10.0	6.28	1.592	1.366	0.005	0.0707	4.0'	1.02'	0.04	0.21	0.96	9.5"	15"	19"	15"	20'





RIP-RAP CHANNEL DETAIL
NO SCALE

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C



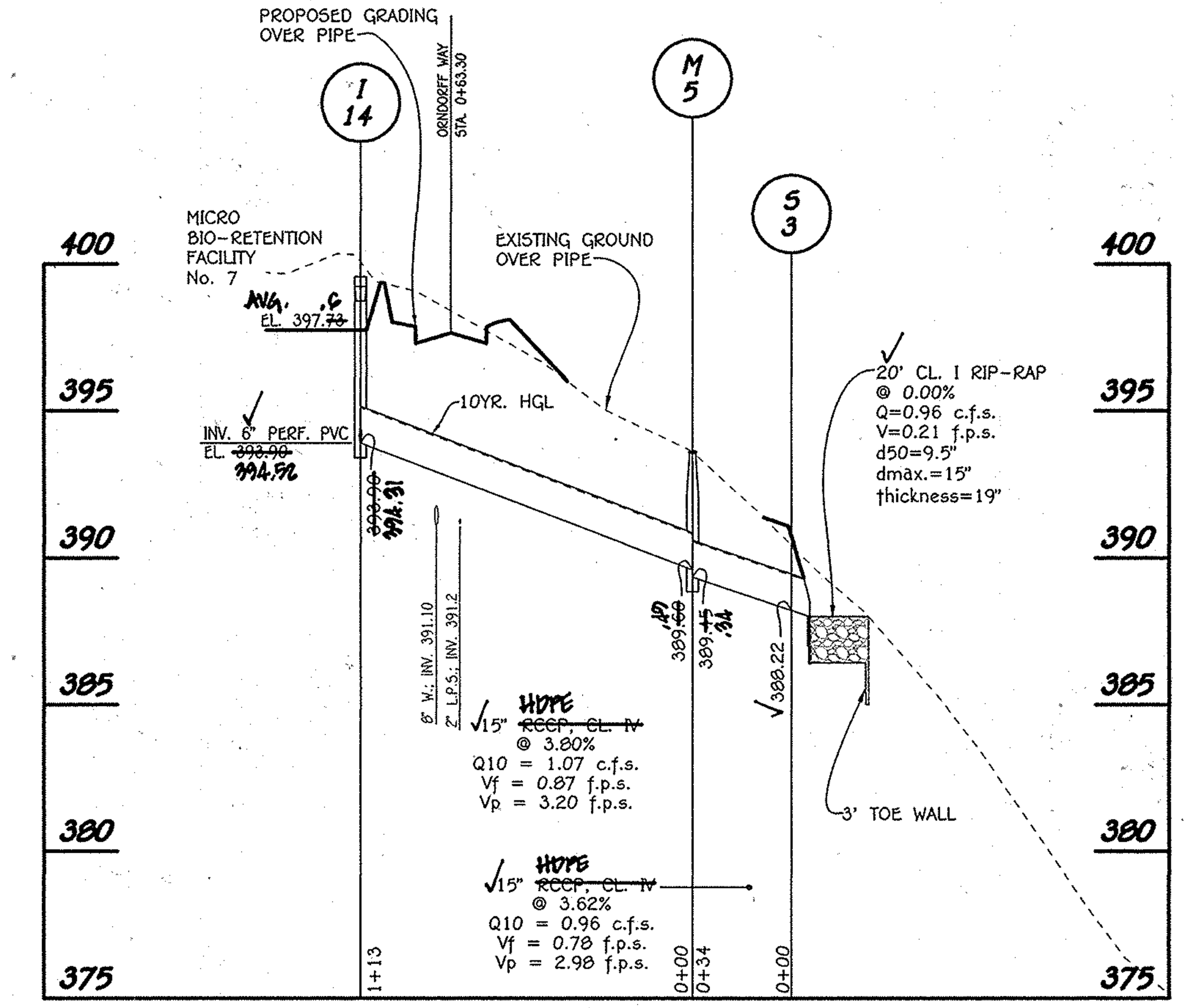
CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

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

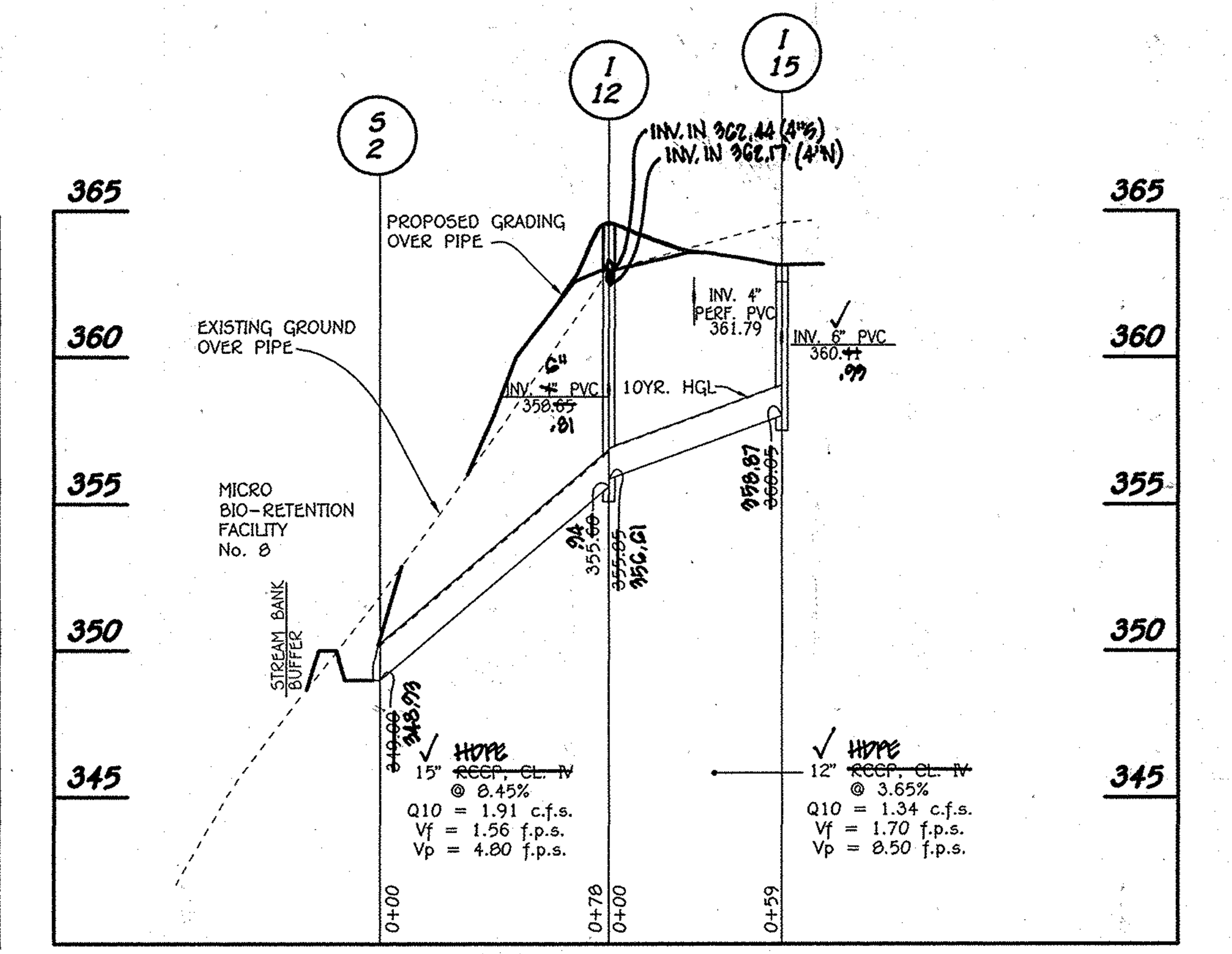
APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 3-25-14
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/02/14
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3-28-14

REVISIONS

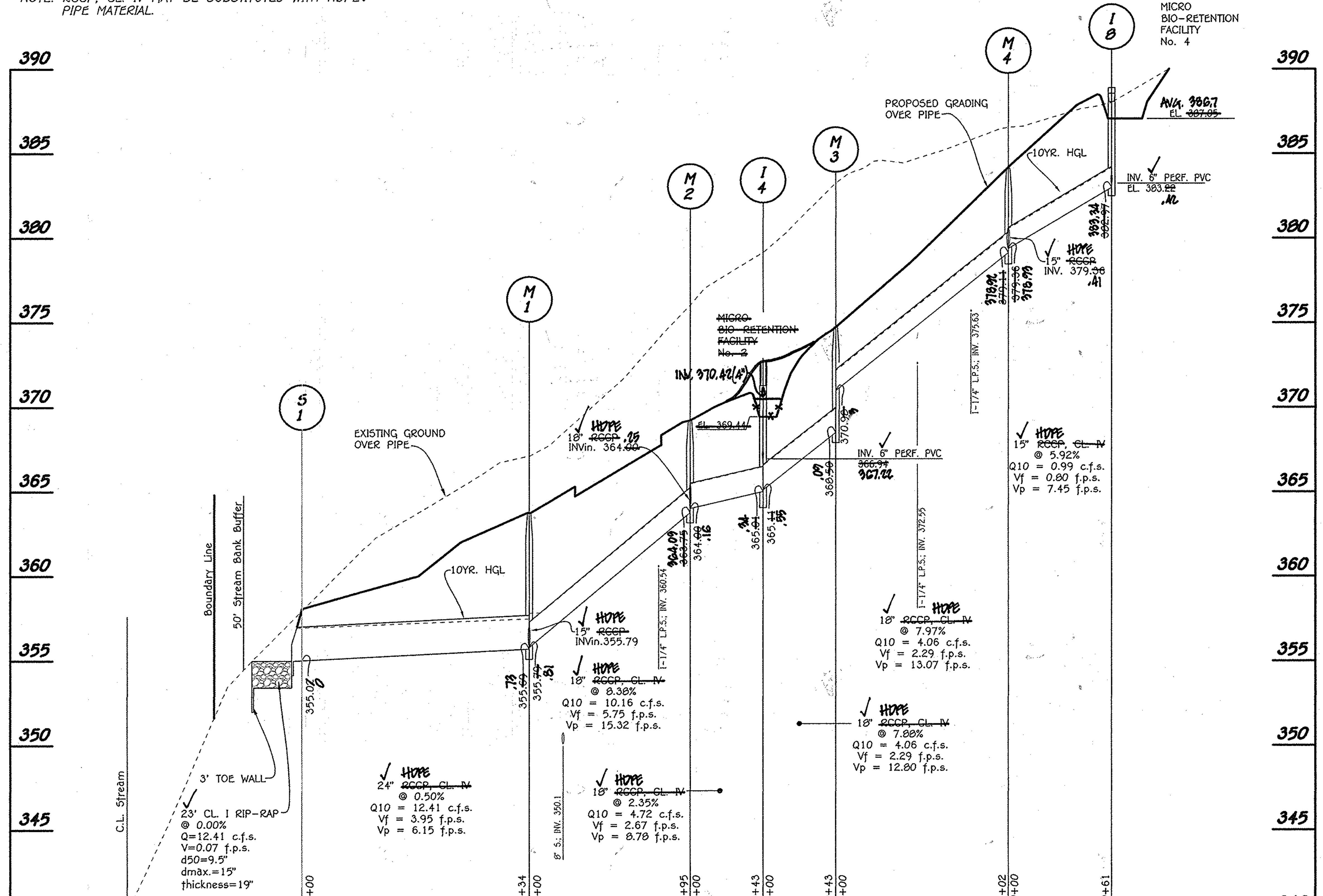
NO.	DESCRIPTION	DATE
1	REPLACE THREE MICRO-BIORETENTION WITH A SINGLE MICRO-BIORETENTION LOCATED AT THE REAR OF LOT 15	2/3/14
2	REVISED SHEET NO. TO REFLECT ADDED SHEETS	9/29/15



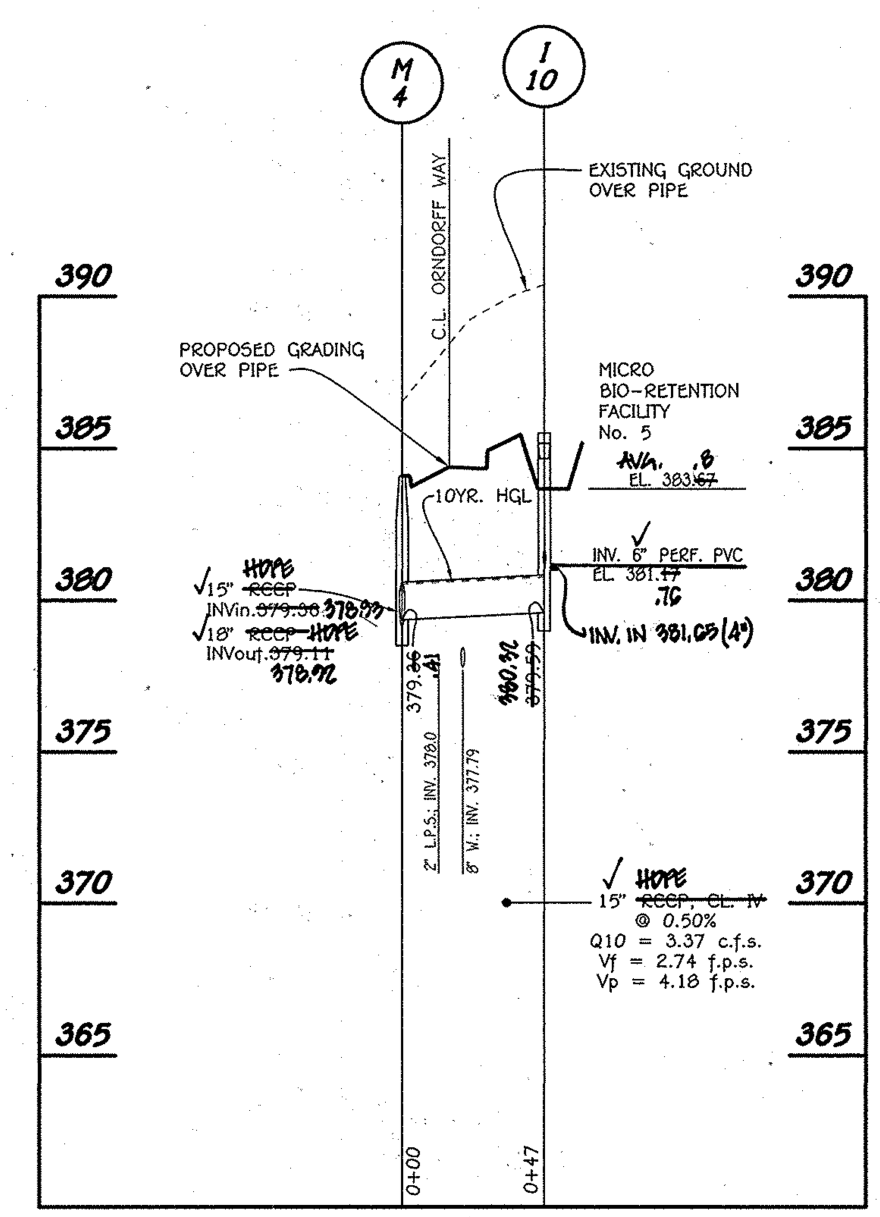
PROFILE
SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'



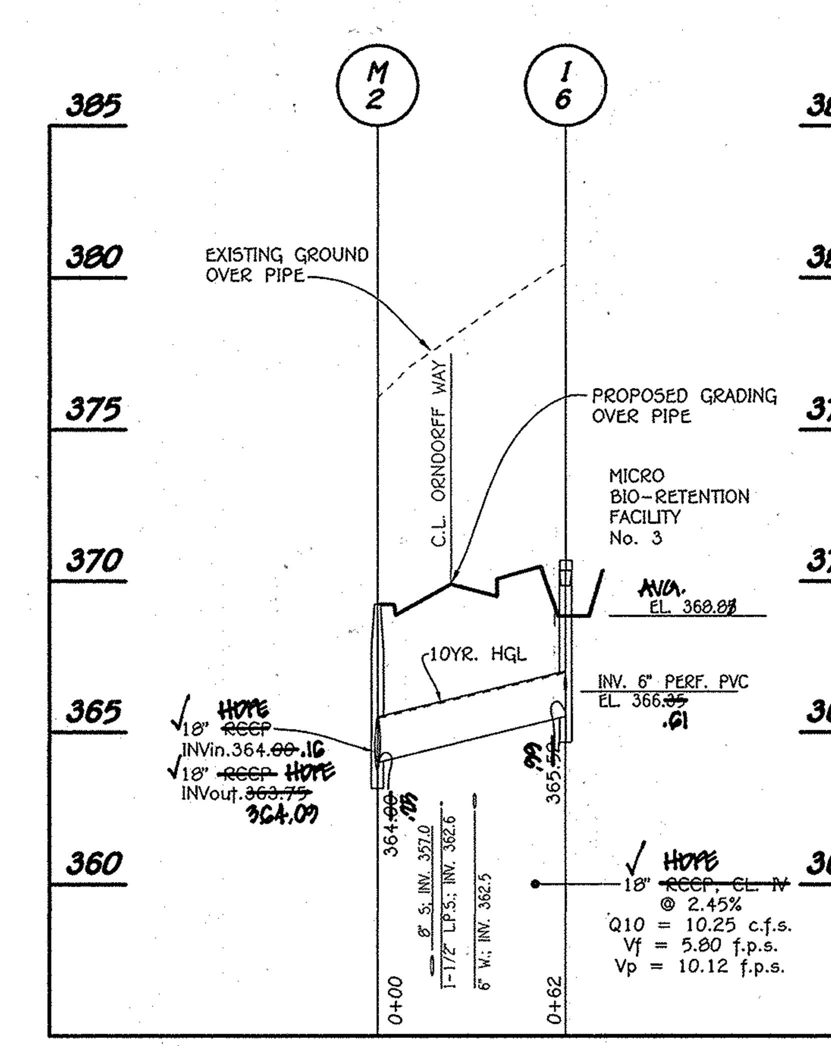
PROFILE
SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'



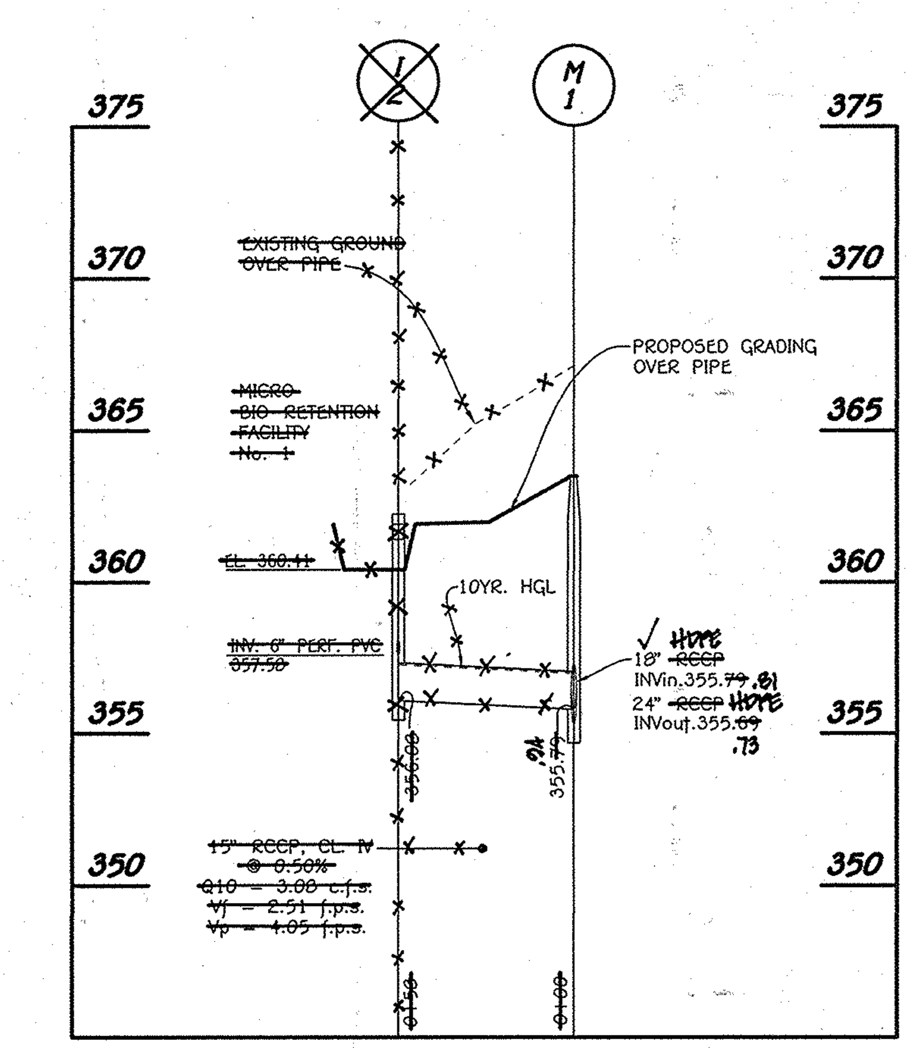
PROFILE
SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'



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



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



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

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
MR. & MRS. HILEY A. ORNDORFF
10909 SCAGGSVILLE ROAD
LAUREL, MARYLAND 20723
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

DEVELOPER
FAL DEVELOPERS, L.L.C.
5300 DORSEY HALL DRIVE, SUITE 102
ELLICOTT CITY, MARYLAND 21042
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

ALDO M. VITUCCI, P.E. — 2/4/14 DATE

AS BUILT 6/12/15

"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15."

REVISED
STORM DRAIN PROFILES
CHERRYTREE VIEW
BUILDABLE LOTS 1 - 4 AND 14-20
OPEN SPACE LOTS 12 & 13
ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003, WP-11-065 & SP-11-001
TAX MAP No. 46 GRID No. 11 PARCEL No. 55
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2014
SHEET 8 OF 17

AS-BUILT F-11-063

I:\2010\10014\dwg\FINALS\Redline 11-20-13\10014 SHEET 8 SD PROFILES.dwg, 2/11/2014 10:50:24 AM, HP Designjet T1500 PS HPGL2 (temporary).pc3

20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION

Using vegetation as cover for barren soil to protect it from forces that cause erosion.

PURPOSE

Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration (up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.
Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.
Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation
   i. Install erosion and sediment control structures (either temporary of permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
   ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
   iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
B. Soil Amendments (Fertilizer and Lime Specifications)
   i. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
   ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.
   iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
   iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
C. Seedbed Preparation
   i. Temporary Seeding
      a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" 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 should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
      b. Apply fertilizer and lime as prescribed on the plans.
      c. In corporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
   ii. Permanent Seeding
      a. Minimum soil conditions required for permanent vegetative establishment:
         1. Soil pH shall be between 6.0 and 7.0.
         2. Soluble salts shall be less than 500 parts per million (ppm).
         3. The soil shall contain less than 40% clay, but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedezas is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
         4. Soil shall contain 1.5% minimum organic matter by weight.
         5. Soil must contain sufficient pore space to permit adequate root penetration.
         6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
      b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
      c. Apply soil amendments as per soil test or as included on the plans.
      d. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.

D. Seed Specifications
   i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.
   Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
   ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.
E. Methods of Seeding
   i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker seeder.
      a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous); 200 lbs/ac; K20 (potassium): 200 lbs/ac.
      b. 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.
      c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
   ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
      a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
      b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
   iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
      a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 174 inch of soil covering. Seedbed must be firm after planting.
      b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
F. Mulch Specifications (In order of preference)
   i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
   ii. Wood Cellulose Fiber Mulch (WCFM)
      a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
      b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
      c. WCFM, including dye, shall contain no germination or growth inhibiting factors.
      d. WCFM materials shall 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 shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
      e. WCFM material shall contain no elements of compounds at concentration levels that will be phytol-toxic.
      f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm. , diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.
   Note: Only sterile straw mulch should be used in areas where one species of grass is desired.
G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
   i. If grading is completed outside of the seeding season, mulch along shall be applied as prescribed in this section and maintained until the seecing season returns and seeding can be performed in accordance with these specifications.
   ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
   iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of 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 two (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 be used on the contour if possible.
   ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
   iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
   iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.
I. Incremental Stabilization - Cut Slopes
   i. All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.
   ii. Construction sequence (Refer to Figure 3 below):
      a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
      b. Perform Phase 1 excavation, dress, and stabilize.
      c. Perform Phase 2 excavation, dress, and stabilize. Overseed Phase 1 areas as necessary.
      d. Perform final phase excavation, dress 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 of completing the operation out of the seeding season will necessitate the application of temporary stabilization.
J. Incremental Stabilization of Embankments - Fill Slopes
   i. Embankments shall be constructed in lifts as prescribed on the plans.
   ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15", or when the grading operation ceases as prescribed in the plans.
   iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.
   iv. Construction sequence: Refer to Figure 4 (below).
      a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.
      b. Place Phase 1 embankment, dress and stabilize.
      c. Place Phase 2 embankment, dress and stabilize.
      d. Place final phase embankment, dress 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 and placement of topsoil (if required) grading 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.

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

SECTION 2 - TEMPORARY SEEDING

Vegetation - annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.

A. Seed mixtures - Temporary Seeding

i. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardiness Zone (from Figure 5) 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 plans and completed, then Table 26 must be put on the plans.

ii. For sites having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for Temporary Seeding.

Seed Mixture (Hardiness Zone 6b) From Table 26					Fertilizer Rate (10-10-10)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
1	BARLEY OATS RYE	122 96 140	3/1 - 5/15, 8/15 - 10/15	1" - 2" 1" - 2" 1" - 2"	600 lb/ac (15 lb/1000sf)	2 tons/ac (100 lb/1000sf)

SECTION 3 - PERMANENT SEEDING

Seeding grass and legumes to establish groung cover for a minimum of one year on disturbed areas generally receiving low maintenance.

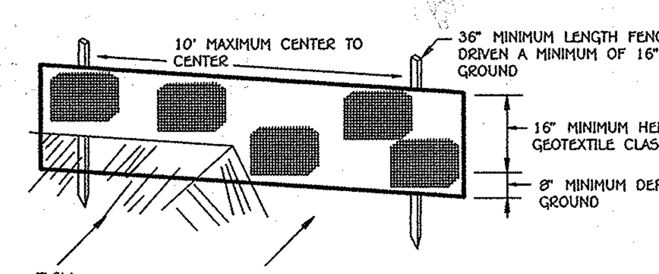
A. Seed mixtures - Permanent Seeding

i. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Permanent Seeding Summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 26. If this summary is not put on the construction plans and completed, then Table 25 must be put on the plans. Additional planting specifications for exceptional sites such as shorelines, streambanks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-SCS Techinical Field Office Guide, Section 342 - Critical Area Planting. For special lawn maintenance areas, see Sections IV Sod and V Turfgrass.

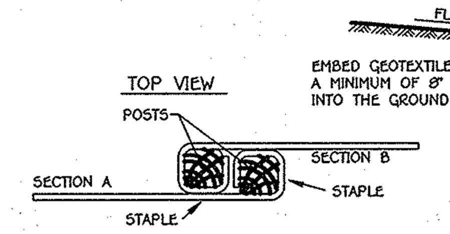
ii. For sites having disturbed area over 5 areas, the rates shown on this table shall be deleted and the rates recommended by the soil testing agency shall be written in.

iii. For areas receiving low maintenance, apply ureaform fertilizer (46-0-0) at 3 1/2 lbs/1000 sq. ft. (150 lbs/ac), in addition to the above soil amendments shown in the table below, to be performed at the time of seeding.

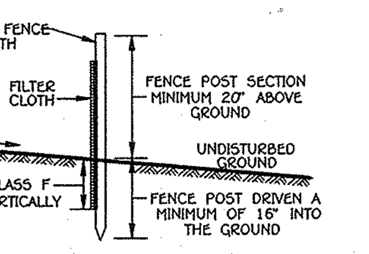
Seed Mixture (Hardiness Zone 6b) From Table 25					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
3	TALL FESCUE (85%) PERENNIAL RYE GRASS (10%) KENTUCKY BLUEGRASS (5%)	125 15 10	3/1 - 5/15, 8/15 - 10/15	1" - 2"	90 lb/ac (2.0 lb/ 1000sf)	175 lb/ac (4 lb/ 1000sf)	175 lb/ac (4 lb/ 1000sf)	2 tons/ac (100 lb/ 1000sf)
10	TALL FESCUE (80%) HARD FESCUE (20%)	120 30	3/1 - 5/15, 8/15 - 10/15	1" - 2"				



PERSPECTIVE VIEW



JOINING TWO ADJACENT SILT FENCE SECTIONS



CROSS SECTION

STANDARD SYMBOL
|——SF——|

Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

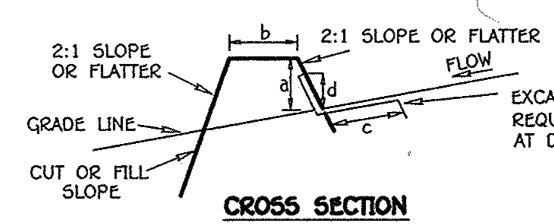
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

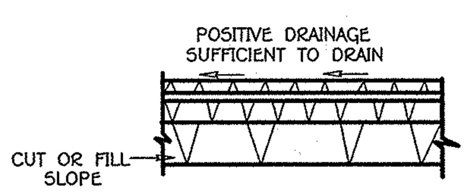
Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

SILT FENCE
NOT TO SCALE



CROSS SECTION

	DIKE A	DIKE B
a-DIKE HEIGHT	18"	30"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	12"	24"



PLAN VIEW

STANDARD SYMBOL
A-2 B-3

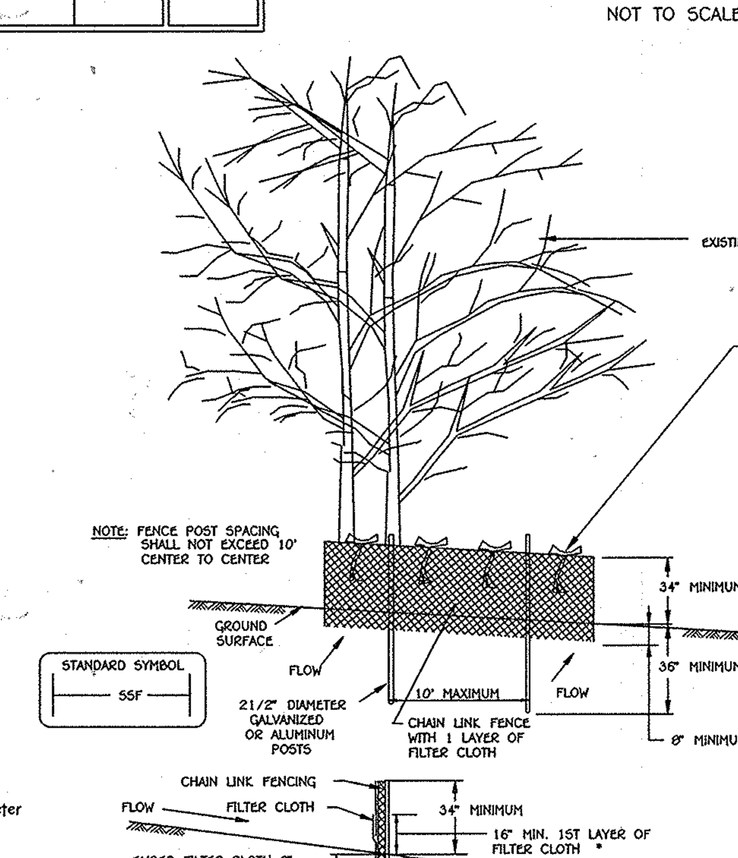
FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX.

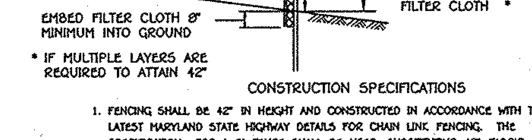
1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
6. Fill shall be compacted by earth moving equipment.
7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
8. Inspection and maintenance must be provided periodically and after each rain event.

EARTH DIKE
NOT TO SCALE





* IF MULTIPLE LAYERS ARE REQUIRED TO ATTAIN 42"

CONSTRUCTION SPECIFICATIONS

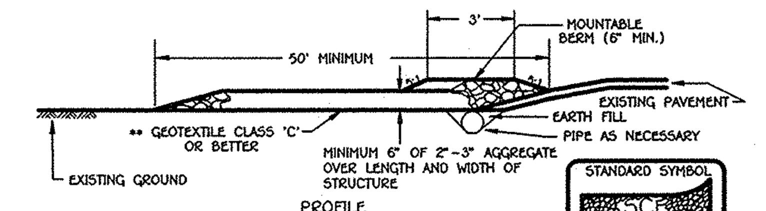
1. FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATION FOR A 6' FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 6' LENGTH POSTS.
2. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE.
3. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION.
4. FILTER CLOTH SHALL BE EMBEDDED A MINIMUM OF 8" INTO THE GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES 50% OF FENCE HEIGHT.
7. FILTER CLOTH SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F:

TENSILE STRENGTH	50 LBS/IN (MIN.)	TEST: MSMT 509
TENSILE MODULUS	20 LBS/IN (MIN.)	TEST: MSMT 509
FLOW RATE	0.3 GAL/FT /MINUTE (MAX.)	TEST: MSMT 322
FILTERING EFFICIENCY	75% (MIN.)	TEST: MSMT 322

DESIGN CRITERIA

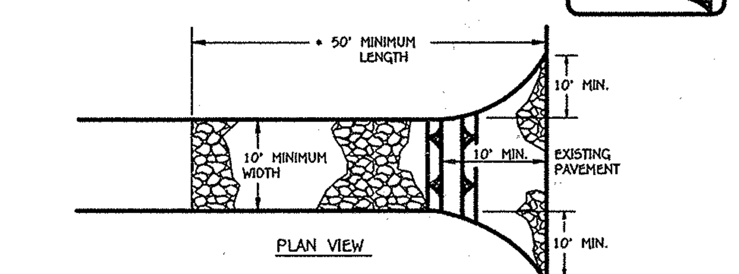
SLOPE	SLOPE STEEPNESS	SLOPE LENGTH (MAXIMUM)	SILT FENCE LENGTH (MAXIMUM)
0 - 10%	0 - 10:1	UNLIMITED	UNLIMITED
10 - 20%	10:1 - 5:1	200 FEET	1,500 FEET
20 - 33%	5:1 - 3:1	100 FEET	1,000 FEET
33 - 50%	3:1 - 2:1	100 FEET	500 FEET
50% +	2:1 +	50 FEET	250 FEET

SUPER SILT FENCE, TREE PROTECTION FENCE
NOT TO SCALE



PROFILE

STANDARD SYMBOL
SCE



PLAN VIEW

CONSTRUCTION SPECIFICATION

1. LENGTH - MINIMUM OF 50' (*30' FOR SINGLE RESIDENCE LOT).
2. WIDTH - 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
3. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE. **THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE.
4. STONE - CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
5. SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED.
6. LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

STABILIZED CONSTRUCTION ENTRANCE

STORM WATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

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

Site Preparation

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

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

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

EARTH FILL

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

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

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

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

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

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

Structure Backfill

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

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

Pipe Conduits

All pipes shall be circular in cross section.

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

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

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

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

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

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

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

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

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

5. Backfilling shall conform to "Structure Backfill".

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

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

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

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

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

4. Backfilling shall conform to "Structure Backfill".

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

Plastic Pipe

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

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

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

4. Backfilling shall conform to "Structure Backfill".

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

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

Concrete

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

Rock Riprap

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

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

Care of Water during Construction

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

Stabilization

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

Erosion and Sediment Control

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

OPERATION AND MAINTENANCE

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

ENGINEER'S CERTIFICATE

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

Signature Of Engineer — 6/9/11 Date

DEVELOPER'S CERTIFICATE

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

Signature Of Developer — 6/13/2011 Date

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

District Howard Soil Conservation Dist. — 6/28/11 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 7/19/11 Date

Chief, Development Engineering Division — 7-13-11 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 7-11-2011 Date

REVISIONS

NO.	DESCRIPTION	DATE
1	REPLACE THREE MICRO-BIORETENTION WITH A SINGLE MICRO-BIORETENTION LOCATED AT THE REAR OF LOT 15	2/3/14
2	REVISED SHEET NO. TO REFLECT ADDED SHEETS	07/20/15

SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
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 MOST CURRENT 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 SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7) SITE ANALYSIS:

TOTAL AREA OF SITE	6.541	AC.±
AREA DISTURBED	5.1	AC.±
AREA TO BE ROOFED OR PAVED	1.5	AC.±
AREA TO BE VEGETATIVELY STABILIZED	3.6	AC.±
TOTAL CUT	16,587	CU.YDS.
TOTAL FILL	5,300	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	11,757	CU.YDS.

8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9) ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGHTS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

OWNER
MR. & MRS. HILEY A. ORNDORFF
10909 SCAGGSVILLE ROAD
LAUREL, MARYLAND 20723
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

DEVELOPER
FAL DEVELOPERS, L.L.C.
5300 DORSEY HALL DRIVE, SUITE 102
ELLICOTT CITY, MARYLAND 21042
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

ALDO M. VITTURDI — 6/9/11 DATE

"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

SEDIMENT CONTROL NOTES & DETAILS

CHERRYTREE VIEW

BUILDABLE LOTS 1-4 AND 14-20, OPEN SPACE LOTS 12 & 13

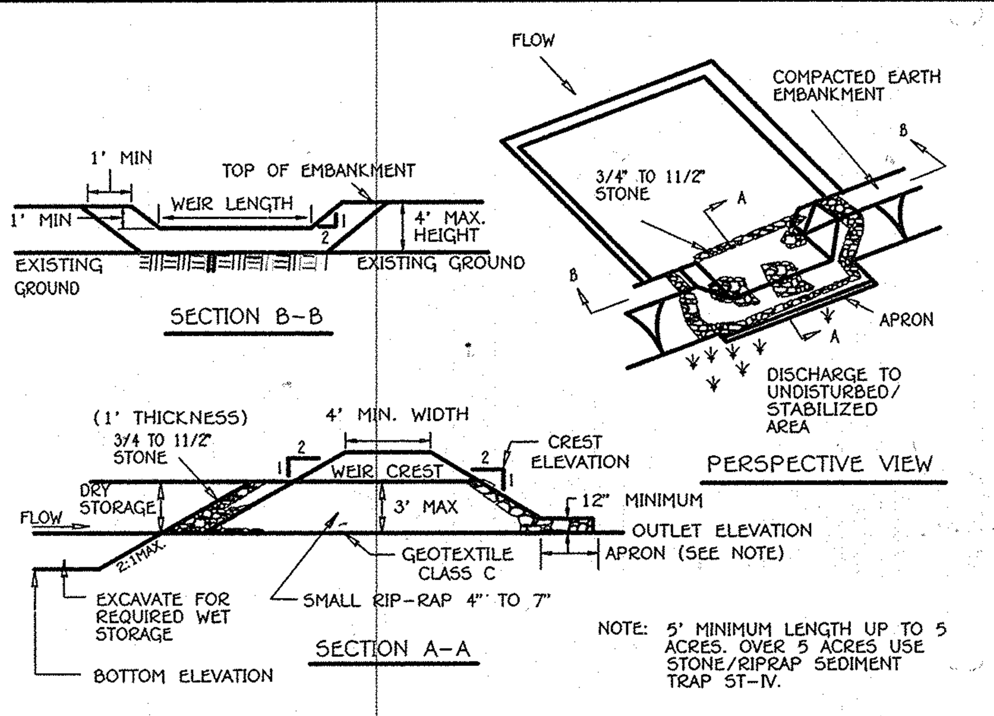
ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003, WP-11-065 & SP-11-001
TAX MAP No. 46 GRID No. 11 PARCEL No. 55
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2014
SHEET 9 OF 17

F-11-063

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

I:\2010\10014\dwg\FINALS\10014 SHEET 9 & 10 SED CON DETAILS.dwg, 6/9/2011 1:08:29 PM, 36 Mylar (temporary).pc3

STONE OUTLET SEDIMENT TRAP – ST II



NOTE: 5' MINIMUM LENGTH UP TO 5 ACRES. OVER 5 ACRES USE STONE/RIPRAP SEDIMENT TRAP ST-IV.

Construction Specifications

1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.

2. The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.

3. All cut and fill slopes shall be 2:1 or flatter.

4. The stone used in the outlet shall be small rip-rap 4" to 7" in size with a 1' thick layer of 3/4" to 11/2" washed aggregate placed on the upstream face of the outlet. Stone facing shall be as necessary to prevent clogging. Geotextile Class C may be substituted for the stone facing by placing it on the inside face of the stone outlet.

5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

6. The structure shall be inspected periodically and after each rain and repairs made as needed.

7. Construction of traps shall be carried out in such a manner that sediment pollution is abated. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. Points of concentration inflow shall be protected in accordance with Grade Stabilization Structure criteria. The remainder of the interior slopes should be stabilized (one time) with seed and mulch upon trap completion and monitored and maintained erosion free during the life of the trap.

8. The structure shall be dewatered by approved methods, removed and the area stabilized when the drainage area has been properly stabilized.

9. Refer to Section D for specifications concerning trap dewatering.

10. Minimum trap depth shall be measured from the weir elevation.

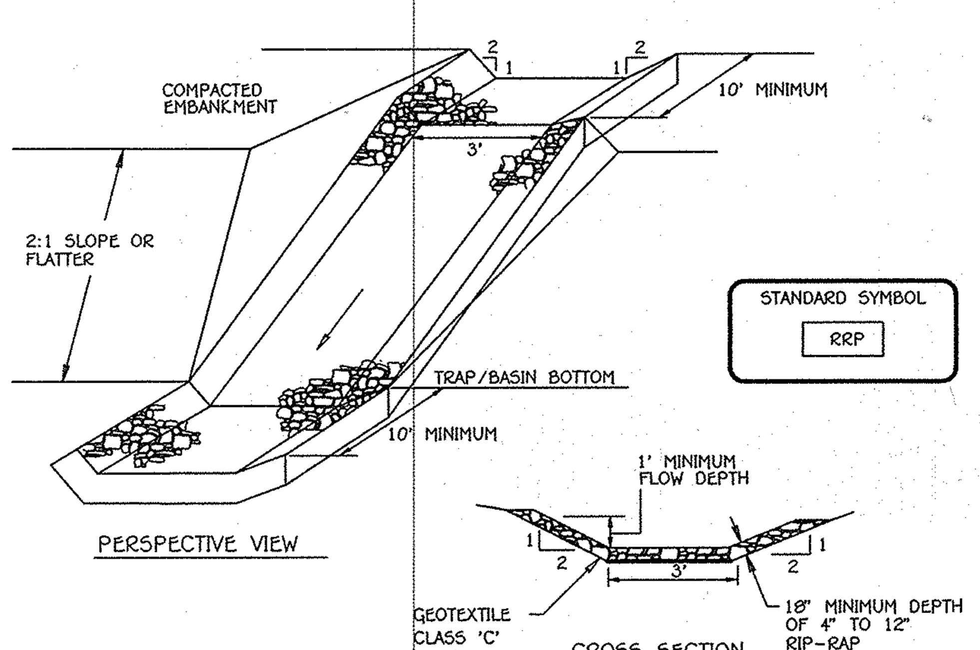
11. The elevation of the top of any dike directing water into the trap must equal or exceed the elevation of the trap embankment.

12. Geotextile Class C shall be placed over the bottom and sides of the outlet channel prior to the placement of stone. Sections of filter cloth must overlap at least 1' with the section nearest the entrance placed on top. The filter cloth shall be embedded at least 6" into existing ground at the entrance of the outlet channel.

13. Outlet – An outlet shall be provided, including a means of conveying the discharge in an erosion free manner to an existing stable channel.

RIP-RAP INFLOW PROTECTION

NOT TO SCALE



STANDARD SYMBOL

RRP

Construction Specifications

1. Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min.) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 18".
2. Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
3. Entrance and exit sections shall be installed as shown on the detail section.
4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.
5. Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.
6. Rip-rap should blend into existing ground.
7. Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

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

STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

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.

Conditions Where Practice Applies

I. This practice 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.

II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

I. Topsoil salvaged from the existing site may be used provided that 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-SCS in cooperation with Maryland Agricultural Experimental Station.

II. Topsoil Specifications – Soil to be used as topsoil must meet the following:

i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 11/2" in diameter.

ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnson grass, nutsedge, poison ivy, thistle, or others as specified.

iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

II. For sites having, disturbed areas under 5 acres:
i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization – Section I – Vegetative Stabilization Methods and Materials.

III. For sites having disturbed areas over 5 acres:

i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:

a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.

b. Organic content of topsoil shall be not less than 1.5 percent by weight.

c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.

d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

Note: 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.

ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization – Section I – Vegetative Stabilization Methods and Materials.

V. Topsoil Application

i. When top soiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.

ii. Grades on the areas to be top soiled, which have been previously established, shall be maintained, albeit 4" – 8" higher in elevation.

iii. Topsoil shall be uniformly distributed in a 4" – 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall 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 top soiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.

iv. Topsoil shall not be placed while 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.

VI. Alternative for Permanent Seeding – Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:

a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.

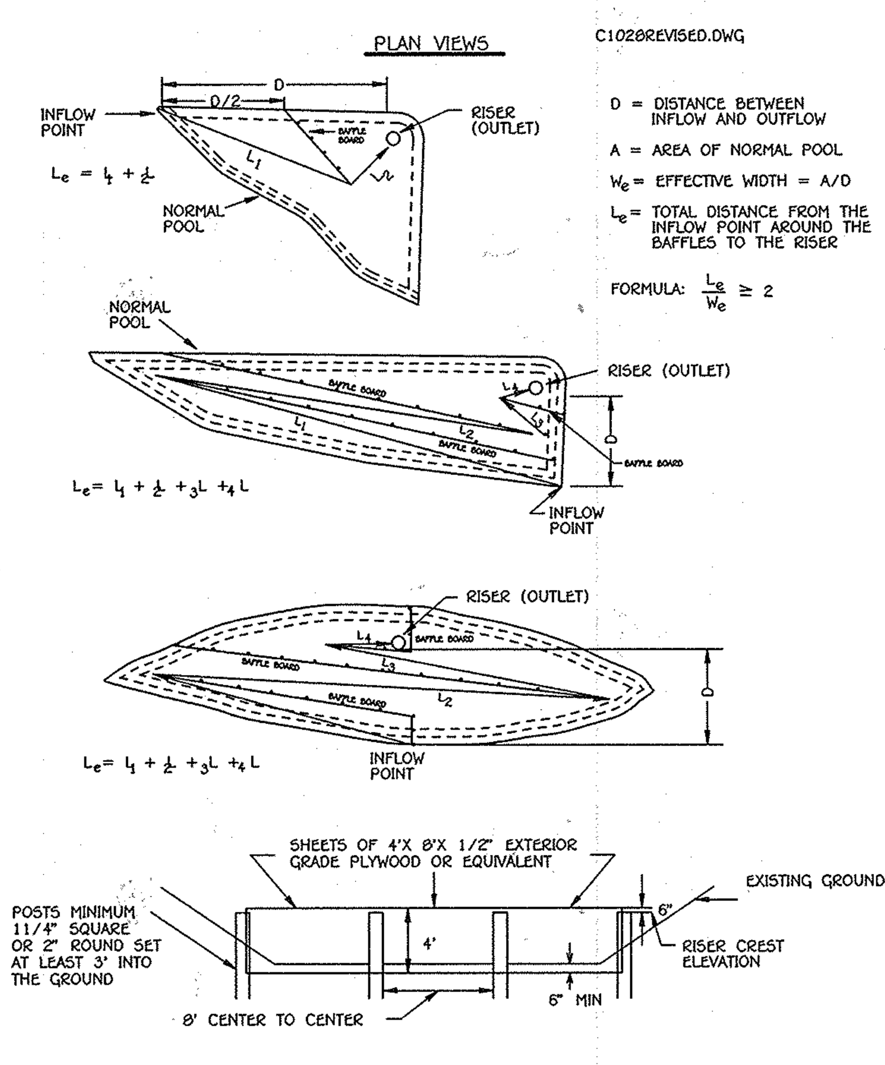
b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.

c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.

iv. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding,. MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

SEDIMENT BASIN BAFFLES



DUST CONTROL

DEFINITION

CONTROLLING DUST BLOWING AND MOVEMENT ON CONSTRUCTION SITES AND ROADS.

PURPOSE

TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES, REDUCE ON AND OFF-SITE DAMAGE, HEALTH HAZARDS AND IMPROVE TRAFFIC SAFETY.

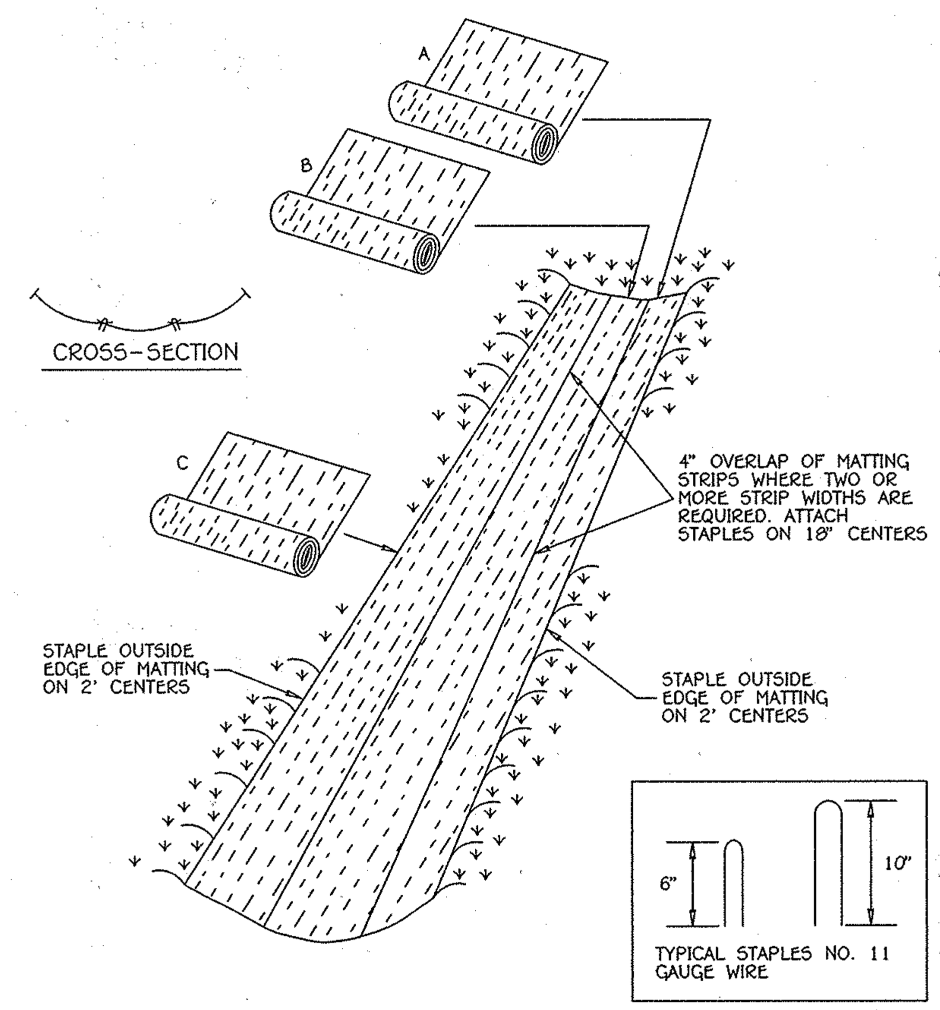
CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT.

SPECIFICATIONS

TEMPORARY METHODS
1. MULCHES – SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING.
2. VEGETATIVE COVER – SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.
3. TILLAGE – TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF THE SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12" APART, SPRING-TOOTHED HARROWS AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
4. IRRIGATION – THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THAT RUNOFF BEGINS TO FLOW.
5. BARRIERS – SOLID BOARD FENCES SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALE DIKES AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING SOIL BLOWING.
6. CALCIUM CHLORIDE – APPLY AT RATES THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.

PERMANENT METHODS
1. PERMENENT VEGETATION – SEE STANDARDS FOR PERMANENT VEGETATIVE COVER AND PERMANENT STABILIZATION WITH SOD. EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
2. TOPSOILING – COVERING WITH LESS EROSIVE SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
3. STONE – COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.



CONSTRUCTION SPECIFICATIONS

1. KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH, 6" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" DOWN SLOPE FROM THE TRENCH. SPACING BETWEEN STAPLES IS 6".
2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
3. BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.
4. STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP, 2 OUTER ROWS, AND 2 ALTERNATING ROWS DOWN THE CENTER.
5. WHERE ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4", SHIPLAP FASHION. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 6" APART IN A STAGGERED PATTERN ON EITHER SIDE.
6. THE DISCHARGE END OF THE MATTING LINER SHOULD BE SIMILARLY SECURED WITH 2 DOUBLE ROWS OF STAPLES.

NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA EFFECTED BY THE FLOW MUST BE KEYED-IN.

EROSION CONTROL MATTING

NOT TO SCALE

ENGINEER'S CERTIFICATE

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

Signature Of Engineer — 6/9/11 Date

DEVELOPER'S CERTIFICATE

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

Signature Of Developer — 6/13/2011 Date

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

District Howard Soil Conservation Dist. — 6/28/11 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 7/19/11 Date

Chief, Development Engineering Division — 7.13.11 Date

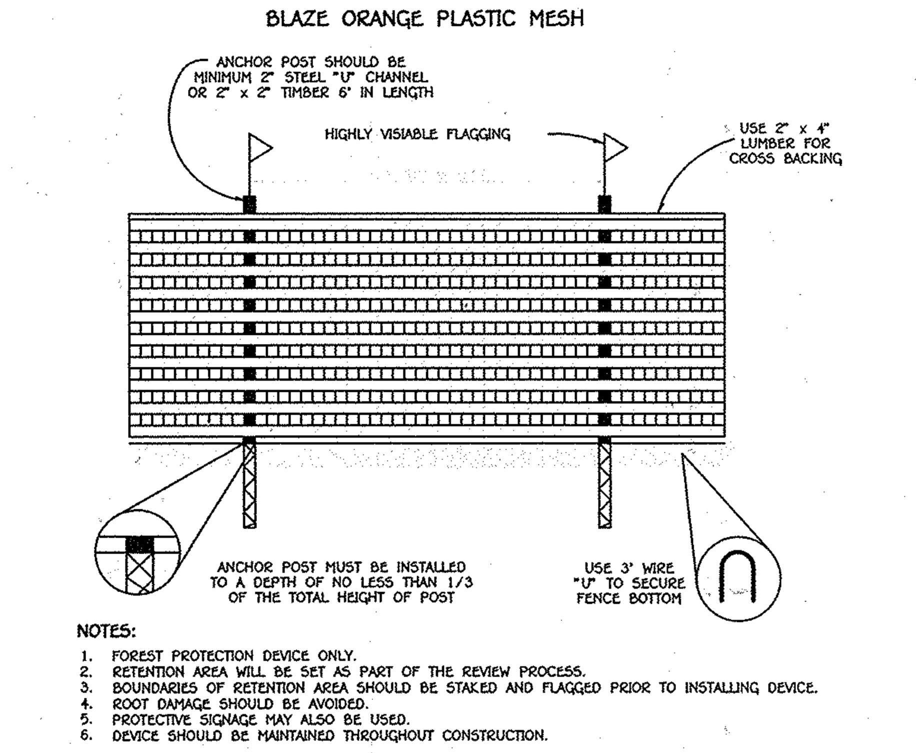
Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 7-11-2011 Date

REVISIONS

NO.	DESCRIPTION	DATE
1	REPLACE THREE MICRO-BIORETENTION WITH A SINGLE MICRO-BIORETENTION LOCATED AT THE REAR OF LOT 15	2/3/14
2	REVISED SHEET NO. TO REFLECT ADDED SHEETS	9/29/15

BLAZE ORANGE PLASTIC MESH



NOTES:
1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION DETAIL

NOT TO SCALE

SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT.
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-L330 AT LEAST 24 HOURS BEFORE STARTING WORK.
3. INSTALL THE STABILIZED CONSTRUCTION ENTRANCE. INSTALL ALL SUPER-SILT FENCE FOR PERIMETER TO REMAIN UNDISTURBED AS INDICATED ON THE PLANS. INSTALL TREE PROTECTION FOR SPECIMEN TREE 'B' (POST W/ BELT). (3 DAYS)
4. INSTALL STONE OUTLET SEDIMENT TRAPS 1, 2 & 3 AS SHOWN ON PLAN. (3 DAYS)
5. INSTALL ALL EARTH DIKES AND REMAINING PERIMETER SEDIMENT CONTROL DEVICES. (1 DAY)
6. GRADE SITE TO PROPOSED SUBGRADE AND INSTALL THE STORM DRAIN SYSTEMS FIRST, WITH THE EXCEPTION OF PIPE FROM M-1 TO S-1. INSTALL WATER AND SEWER MAINS. STABILIZE ALL SLOPES IMMEDIATELY UPON COMPLETION OF GRADING. DO NOT BLOCK INLETS AS STORM DRAIN SYSTEM WILL BE USED TO CONVEY SEDIMENT RUNOFF INTO TRAP NO. 2. INSTALL TEMPORARY 18" FLEXIBLE PIPE AT TRAP 2 FROM M-1 (2 WEEKS)
7. CONSTRUCT ROAD BASE COURSE FOR SUBDIVISION ROADS. (1 WEEK)
8. FLUSH STORM DRAIN SYSTEM AND INSTALL ALL MICRO BIO-RETENTION FACILITIES AND STABILIZE ALL PROPOSED SLOPES. (4 DAYS)
9. WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE SEDIMENT CONTROL DEVICES MAY BE REMOVED AND/OR BACKFILLED AND THE REMAINING AREAS BROUGHT TO FINAL GRADE. STABILIZE ALL AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. INSTALL PERMANENT STORM DRAIN OUTFALL FROM M-1 TO S-1. (1 WEEK)
10. NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR FINAL INSPECTION OF THE COMPLETED PROJECT.

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.
NOTE: ALL OF THE PRIVATE ON-LOT FACILITIES SHOWN ON SHEET 13 WILL BE CONSTRUCTED AT THE SITE DEVELOPMENT PLAN STAGE WHEN ALL ESD PRACTICES WILL BE CONSTRUCTED.

OWNER
MR. & MRS. HILEY A. ORNDORFF
10909 SCAGGSVILLE ROAD
LAUREL, MARYLAND 20723
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

DEVELOPER
FAL DEVELOPERS, L.L.C.
5300 DORSEY HALL DRIVE, SUITE 102
ELLICOTT CITY, MARYLAND 21042
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

6/9/11
DATE

"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

SEDIMENT CONTROL NOTES & DETAILS

CHERRYTREE VIEW

BUILDABLE LOTS 1-4 AND 14-20, OPEN SPACE LOTS 12 & 13

ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003, WP-11-065 & SP-11-001
TAX MAP No. 46 GRID No. 11 PARCEL No. 55
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2014
SHEET 10 OF 17

F-11-063

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

I:\2010\10014\dwg\FINALS\10014 SHEET 9 & 10 SED CON DETAILS.dwg, 6/9/2011 1:10:03 PM, 36 Mylar (temporary).pc3

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 7-11-2011

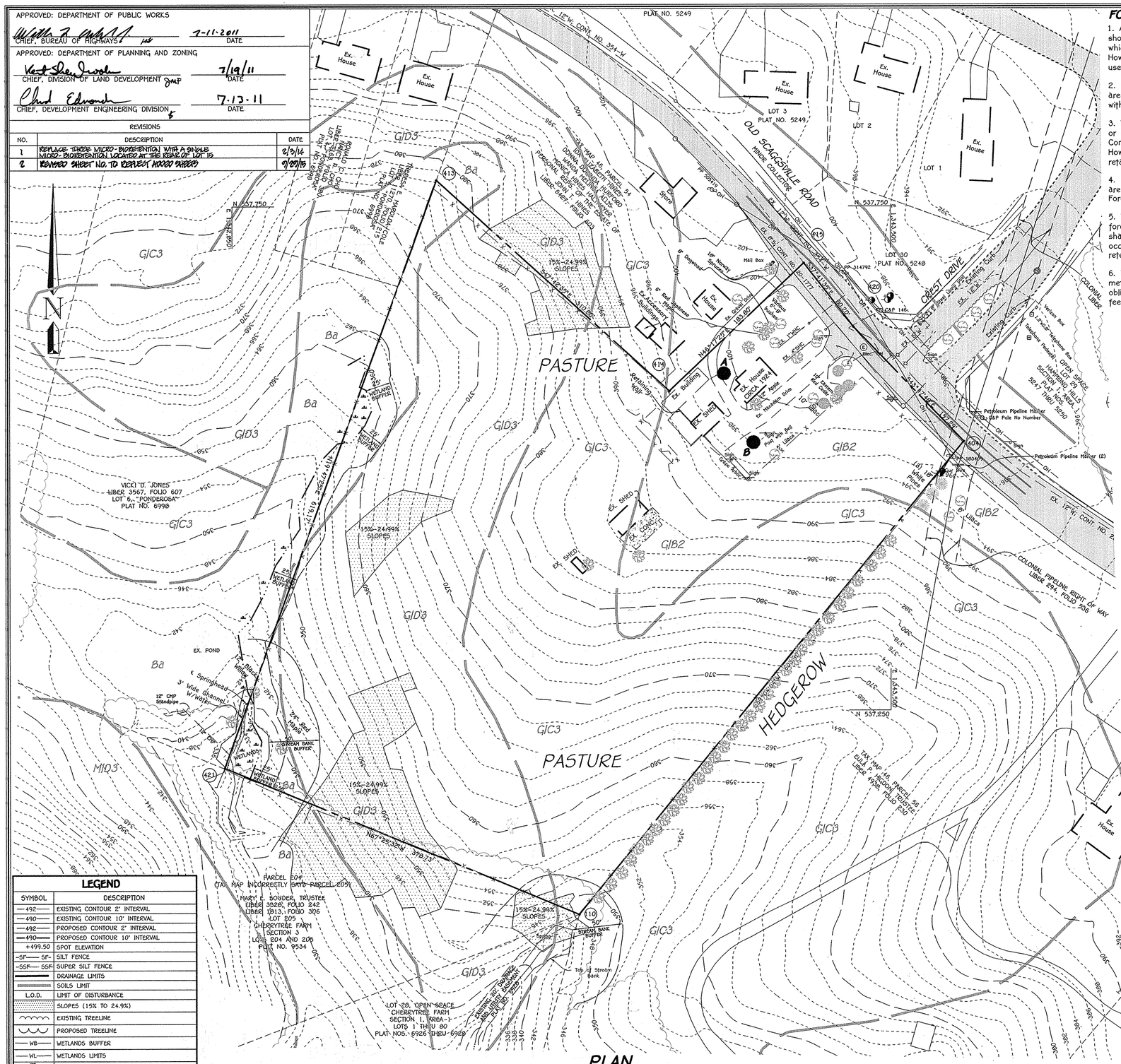
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/19/11

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7.13.11

REVISIONS

NO.	DESCRIPTION	DATE
1	REPLACE THREE MICRO-BIORETENTION WITH A BIO-VALE MICRO-BIORETENTION LOCATED AT THE REAR OF LOT 13	2/3/14
2	REVISED SHEET NO. TO REFLECT ADDED SHEETS	7/22/15



PLAN

SCALE: 1" = 50'

FCP NOTES

1. Any Forest Conservation Easement (FCE) area shown hereon is subject to protective covenants which may be found in the Land Records of Howard County which restrict the disturbance and use of these areas.

2. Limits of disturbance shall be restricted to areas outside the limit of temporary fencing or within the shown limits of disturbance.

3. There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Easement, except as permitted by Howard County DPZ. Permanent signage shall be retained on the easement limits in perpetuity.

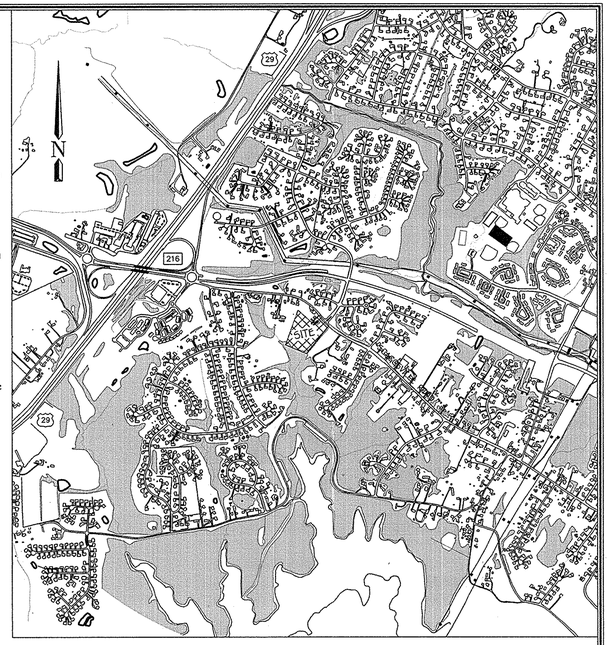
4. No stockpiles, parking areas, equipment cleaning areas, etc. shall occur within areas designated as Forest Conservation Easements.

5. Temporary fencing shall be used to protect forest resources during construction. The fencing shall be installed along limits of disturbance occuring within 50 feet of the proposed forest retention limits.

6. The Forest Conservation Act requirements will be met through the afforestation of 1.0 acre. This obligation will be met through payment of a fee-in-lieu in the amount of $32,670.00.

NOTES:

1. NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR HABITATS WERE OBSERVED ON THE PROPERTY.
2. NO HISTORIC STRUCTURES OR CEMETERIES EXIST ON THE PROPERTY.
3. SURROUNDING LAND USE IS PRIMARILY MEDIUM DENSITY RESIDENTIAL DEVELOPMENT.
4. NO FOREST IS PRESENT ON THE SITE.



VICINITY MAP

SCALE: 1" = 1200'

SOILS LEGEND

SOIL	NAME	CLASS
** Ba	Baile silt loam	D
GlB2	Glenelg loam, 3 to 8 percent slopes, moderately eroded	B
GlC3	Glenelg loam, 8 to 15 percent slopes, severely eroded	B
GlD3	Glenelg loam, 15 to 25 percent slopes, severely eroded	B

NOTES:

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

WETLAND DATA

WETLAND SYSTEM	COWARDIN CLASSIFICATION	DOMINANT VEGETATION
A	PEM1C	JUNCUS EFFUSUS, MENTHA SPICATA, IMPATIENS CAPENSIS, CINNA ARUNDINACEA, CAREX STRICTA, SALIX NIGRA

SPECIMEN TREE CHART

SYMBOL	SPECIES, SIZE	COMMENT
A	BLACK OAK, 51" DBH	GOOD CONDITION
B	NORWAY MAPLE, 32" DBH	GOOD CONDITION, NON-NATIVE SPECIES

NOTE:
THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULLFILLED BY PROVIDING 1.0 ACRE OF OFF-SITE AFFORESTATION. THIS IS PROVIDED ON THE JEFF HARRISON PROPERTY AT $0.50/SF FOR 43,560 SF = $21,780.00. TOTAL FOREST CONSERVATION SURETY = $21,780.00

SEE PLAN AND DETAILS ON SHEETS 15 AND 16.

FOREST CONSERVATION WORKSHEET
VERSION 1.0

NET TRACT AREA	ACRES
A. TOTAL TRACT AREA	6.5
B. DEDUCTIONS (AREA WITHIN 100 YEAR FLOODPLAIN)	0
C. AREA TO REMAIN IN AGRICULTURAL PRODUCTION	0
D. NET TRACT AREA	6.5
LAND USE CATEGORY: HIGH DENSITY RESIDENTIAL	
E. AFFORESTATION THRESHOLD (NET TRACT AREA (C) x 15%)	1.0
F. CONSERVATION THRESHOLD (NET TRACT AREA (C) x 20%)	1.3
EXISTING FOREST COVER	
G. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	0
H. AREA OF FOREST ABOVE AFFORESTATION TRESHOLD	0
I. AREA OF FOREST ABOVE CONSERVATION TRESHOLD	0
BREAKEVEN POINT	
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	N/A
BREAKEVEN POINT	N/A
K. CLEARING PERMITTED WITHOUT MITIGATION	N/A
PROPOSED FOREST CLEARING	
L. TOTAL AREA OF FOREST TO BE CLEARED OR RETAINED OUTSIDE FCE	N/A
M. TOTAL AREA OF FOREST TO BE RETAINED	N/A
PLANTING REQUIREMENTS	
N. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION TRESHOLD	0
P. REFORESTATION FOR CLEARING BELOW THE CONSERVATION TRESHOLD	0
Q. CREDIT FOR RETENTION ABOVE THE CONSERVATION TRESHOLD	0
R. TOTAL REFORESTATION REQUIRED	0
S. TOTAL AFFORESTATION REQUIRED	1.0
T. TOTAL PLANTING REQUIREMENT	1.0

LEGEND

SYMBOL	DESCRIPTION
492	EXISTING CONTOUR 2' INTERVAL
490	EXISTING CONTOUR 10' INTERVAL
492	PROPOSED CONTOUR 2' INTERVAL
490	PROPOSED CONTOUR 10' INTERVAL
+499.50	SPOT ELEVATION
-SF- SF-	SILT FENCE
-SSF- SSF-	SUPER SILT FENCE
	DRAINAGE LIMITS
	SOILS LIMIT
L.O.D.	LIMIT OF DISTURBANCE
	SLOPES (15% TO 24.9%)
	EXISTING TREELINE
	PROPOSED TREELINE
WB	WETLANDS BUFFER
WL	WETLANDS LIMITS
FP	FLOODPLAIN LIMITS

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

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WDCP93MD0610044B
JOHN P. CANOLES 6/9/11

OWNER

MR. & MRS. HILEY A. ORNDORFF
10909 SCAGGSVILLE ROAD
LAUREL, MARYLAND 20723
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

DEVELOPER

FAL DEVELOPERS, L.L.C.
5300 DORSEY HALL DRIVE, SUITE 102
ELLICOTT CITY, MARYLAND 21042
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER

6/9/11
DATE

"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

WETLAND & FOREST STAND DELINEATION PLAN

CHERRYTREE VIEW

BUILDABLE LOTS 1-4 AND 14-20, OPEN SPACE LOTS 12 & 13

ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003, WP-11-065 & SP-11-001
TAX MAP No. 46 GRID No. 11 PARCEL No. 55
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2014
SHEET 11 OF 17

F-11-063

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

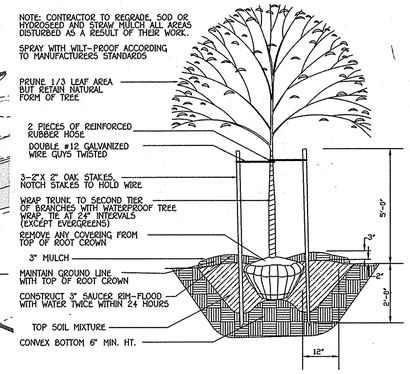
I:\2010\10014\dwg\FINAL\10014 SHEET 11 FOREST STAND PLAN.dwg, 6/9/2011 1:12:16 PM, 36 Mylar (temporary).pc3

PLAN

SCALE: 1" = 50'

NOTE: CONTRACTOR TO REGRADE, SOD OR HYDROSEED AND STRAW MULCH ALL AREAS DISTURBED AS A RESULT OF THEIR WORK.

SPRAY WITH WILT-PROOF ACCORDING TO MANUFACTURERS STANDARDS



SHADE TREE PLANTING DETAIL

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 3-25-14

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 4/02/14

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3-28-14

REVISIONS		
NO.	DESCRIPTION	DATE
1	REPLACE THREE MICRO-BIORETENTION WITH A SINGLE MICRO-BIORETENTION LOCATED AT THE REAR OF LOT 15	2/3/14
2	REVISED SHEET NO. TO REFLECT REVISED SHEETS AND ADDED RETAINING WALL AT REAR OF LOT 13	9/02/15

SCHEDULE A PERIMETER LANDSCAPE EDGE

PERIMETER	CATEGORY (PROPERTIES/ ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF OF ROADWAY FRONTAGE PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NUMBER OF PLANTS REQUIRED AND PROVIDED		
						SHADE TREES	EVERGREEN TREES	SHRUBS
P-1	ADJACENT TO ROADWAY	B	75.7'	NO	NO	2	2	–
P-2	ADJACENT TO PERIMETER	A	570.6'	NO	NO	10	–	–
P-3	ADJACENT TO PERIMETER	A	378.7'	NO	NO	6	–	–
P-4	ADJACENT TO PERIMETER	A	619.2'	NO	NO	10	–	–
P-5	ADJACENT TO PERIMETER	A	310.8'	NO	NO	5	–	–
P-6	ADJACENT TO PERIMETER	A	151.9'	YES – 51" BLACK OAK	NO	2	–	–
P-7	FRONT TO ROADWAY	N/A	138.0'	NO	NO	–	–	–
O.S. LOT 13	---	---	---	---	---	3	–	–

51" BLACK OAK IS SPECIMEN TREE 'A'

THREE (3) ADDITIONAL NATIVE SHADE TREES SHALL BE PLANTED IN OPEN SPACE LOT 13 ALONG THE FUTURE PATHWAY

PLANTING SPECIFICATIONS

Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.

All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to the species, size, root and shape shown on the plant list and the American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sun scald injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug; no healed-in plants from cold storage will be accepted.

Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to 'Landscape Specification Guidelines for Baltimore-Washington Metropolitan Areas', thereafter 'Landscape Guidelines' approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architect, latest edition, including all agends.

Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.

Contractor shall be responsible for notifying utility companies, utility contractors and 'Miss Utility' a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.

Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence or blaze orange safety fence at the drip line.

Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within the growing season of completion of site construction.

Bid shall be base on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications

Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence

All shrubs shall be planted in continuous trenches or prepared planting beds and mulched with composted hardwood mulch as details and specified except where noted on plans.

Positive drainage shall be maintained in planting beds (2 percent slope).

Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure. Add 3 lbs. of standard fertilizer per cubic yard of planting mix. Evergreen Plants - Two parts topsoil, one part humus or other approved organic material. Add 3 lbs. of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.

Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its adaptability to the specific ground cover to be treated.

All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.

This plan is intended for landscape use only. see other plan sheets for more information on grading, sediment control, layout, etc.

NOTES:

Should any tree designated for preservation for which landscaping credit is given, die prior to release of bonds, the owner 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 3 inches in caliper and installed as required in the Howard County landscape manual.

At the time of plant installation, all 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 deviations 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 road drawing plans.

The Owner, tenants and/or their agents shall be responsible for maintenance of the required perimeter landscaping. 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.

LEGEND

- PROPOSED FENCE, SEE GENERAL NOTE No. 31
- EXISTING TREE TO BE REMOVED
- EXISTING TREE TO REMAIN
- PROPOSED LANDSCAPE TREE
- PROPOSED STREET TREE

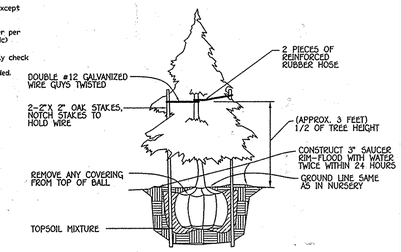
STREET TREE SCHEDULE

SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
	222.89 / 40 = 5.57 6 TREES	CLADRASTIS KENTUKEA YELLOWWOOD	2 1/2–3" CAL.	40' APART ON PUBLIC R/W OLD SCAGGSVILLE ROAD
	502.79 x 2 / 40 = 25.14 25 TREES	* ULMUS AMERICAN AMERICAN ELM (PRINCETON OR VALLEY FORGE)	2 1/2–3" CAL.	40' APART ON PUBLIC R/W ORNDORFF WAY

NOTE: FINANCIAL SURETY FOR THE REQUIRED 31 STREET TREES WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $9,300.00.

*TREE TYPE MUST TO BE PLANTED A MINIMUM OF 45 FEET FROM POWER LINES PER B.G.&E. PLANTING GUIDE.

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 WITH 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 FROM A DRIVEWAY.



EVERGREEN TREE PLANTING DETAIL

PLANT LIST

SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE
	10	CLADRASTIS KENTUKEA YELLOWWOOD	2 1/2–3" CAL.
	17	PRUNUS SARGENTII SARGENT CHERRY	2 1/2–3" CAL.
	3	CORNUS KOUSA KOUSA DOGWOOD	8' – 10' HT.
	2	* ILEX OPACA AMERICAN HOLLY	5' – 6' HT.

"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 35 SHADE, 2 EVERGREEN TREES & 3 ORNAMENTAL TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $11,250.00.

* APPROVED TREE TYPE TO BE PLANTED WITHIN 20 – 45 FEET (YELLOW ZONE) OF POWER LINES PER B.G.&E. PLANTING GUIDE.

SPECIMEN TREE CHART

SYMBOL	SPECIES, SIZE	COMMENT
A	BLACK OAK, 51" DBH	GOOD CONDITION
B	NORWAY MAPLE, 32" DBH	GOOD CONDITION, NON-NATIVE SPECIES

LANDSCAPE DEVELOPER'S CERTIFICATE

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

Name — Date 1/22/2014

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
MR. & MRS. HILEY A. ORNDORFF
10909 SCAGGSVILLE ROAD
LAUREL, MARYLAND 20723
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

DEVELOPER
FAL DEVELOPERS, L.L.C.
5300 DORSEY HALL DRIVE, SUITE 102
ELLICOTT CITY, MARYLAND 21042
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

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

ALDO M. VITUCCI, P.E. — DATE 2/20/14

"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15."

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

AS BUILT 6/12/15

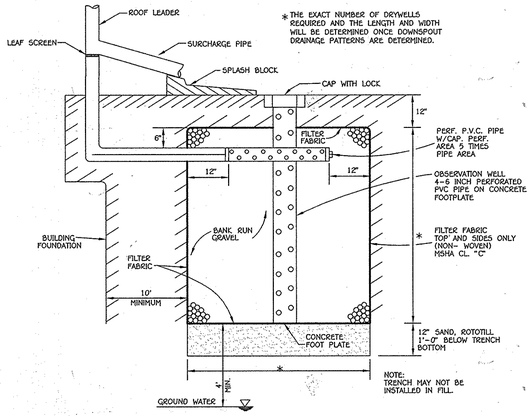
REVISED
STREET TREE, LANDSCAPE & STORMWATER MANAGEMENT FACILITY PLAN

CHERRYTREE VIEW

BUILDABLE LOTS 1 – 11 AND 14-20
OPEN SPACE LOTS 12 & 13

ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003, WP-11-065 & SP-11-001
TAX MAP No. 46 GRID No. 11 PARCEL No. 55
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2014
SHEET 12 OF 17

AS-BUILT F-11-063

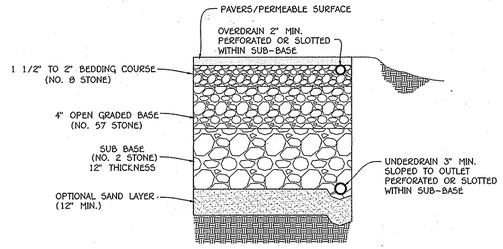


LOT 10
DRY WELL DETAIL

NOT TO SCALE

STORMWATER MANAGEMENT NOTES

1. STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH THE 2000 MARYLAND STORMWATER DESIGN MANUAL.
2. CREDITS ARE GIVEN FOR DISCONNECTION OF IMPERVIOUS COVERS.
3. MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE LESS THAN 500 SQ. FT.
4. DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 75' AT 5%. THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE FIGURE 5.2 OF THE MANUAL AND THE DETAIL SHOWN ON THIS SHEET.
5. FINAL GRADING SHALL BE SHOWN ON SITE DEVELOPMENT PLAN.



LOTS 2, 3, 6 THRU 11
TYPICAL SECTION – PERMEABLE PAVEMENT w/ OVERDRAIN & UNDERDRAIN (A-2)

NO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-2)

a. The owner shall periodically sweep (or vacuum porous concrete pavement) the pavement surfaces to reduce sediment accumulation and insure continued surface porosity. Sweeping should be performed at least twice annually with a commercial cleaning unit. Washing or compressed air units should not be used to perform surface cleaning.

b. The owner shall periodically clean drainage pipes, inlets, stone edge drains and other structures within or draining to the subbase.

c. The owner shall use deicers in moderation. Deicers should be non-toxic and be applied either as calcium magnesium acetate or as pretreated salt.

d. The owner shall ensure snow plowing is performed carefully with blades set one inch above the surface. Plowed snow piles and snowmelt should not be directed to permeable pavement.

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.

By The Developer:

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

Signature Of Developer — Date: 3/3/14

DONALD REUWER, JR.
Printed Name Of Developer

By The Engineer:

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

Signature — Date: 2/11/14

ALDO M. VITUCCI
Printed Name Of Engineer

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

Howard Soil Conservation District — Date: 3/13/14

Approved: Department Of Public Works

Chief Bureau Of Highways — Date: 3-23-14

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 4/02/14

Chief, Development Engineering Division — Date: 3.28.14

AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.

Signature — P.E. No.

Date:

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

REVISIONS

NO.	DESCRIPTION	DATE
1	REPLACE THREE MICRO-BIORETENTION WITH A SINGLE MICRO-BIORETENTION LOCATED AT THE REAR OF LOT 15.	2/3/14
2	REVISED SHEET NO. TO REFLECT ADDED SHEETS.	9/29/15

PRIVATE FACILITIES

NOTE: ALL PRIVATE FACILITIES ARE TO BE CONSTRUCTED & DETAILED AT THE SITE DEVELOPMENT PLAN PHASE, ONCE ACTUAL HOUSE TYPES ARE SELECTED.

FUTURE STORMWATER MANAGEMENT DETAILS

CHERRYTREE VIEW

BUILDABLE LOTS 1 – 4 AND 14 – 20
OPEN SPACE LOTS 12 & 13

ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003, WP-11-065 & SP-11-001
TAX MAP No. 46 GRID No. 11 PARCEL No. 55
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2014
SHEET 13 OF 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

OWNER
MR. & MRS. HILEY A. ORNDORFF
10909 SCAGGSVILLE ROAD
LAUREL, MARYLAND 20723
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

DEVELOPER
FAL DEVELOPERS, L.L.C.
5300 DORSEY HALL DRIVE, SUITE 102
ELLICOTT CITY, MARYLAND 21042
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

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

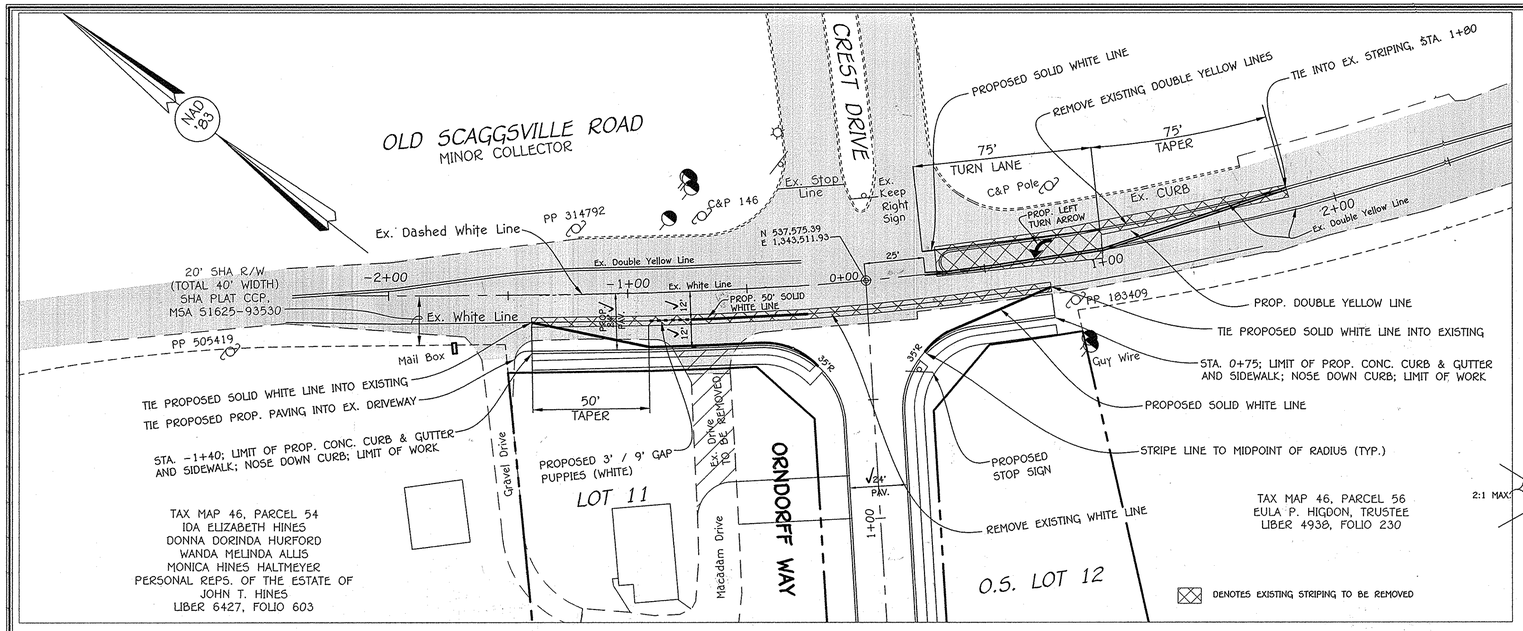
ALDO M. VITUCCI, P.E. — DATE 2/11/14

"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15."

F-11-065

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

I:\2010\10014\dwg\FINALS\Repline and Replacement SDP Lots 1-4, 14-20\10014 Sheet 13.dwg, 2/10/2014 2:47:58 PM,
HP Designjet T1100 PS HPGL2 (temporary).pc3

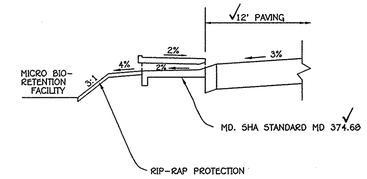


STRIPING PLAN

SCALE: 1" = 30'

PAVEMENT MARKING NOTES:

1. ALL EXISTING LINE REMOVAL SHALL BE DONE BY GRINDING AS DIRECTED BY TRAFFIC DIVISION.
2. ALL LINE WIDTHS ARE 5".



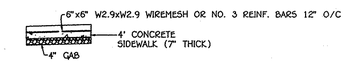
TYPICAL SECTION @ FLOW THRU INLET

NO SCALE

APPROVED: DEPARTMENT OF PUBLIC WORKS	
CHIEF, BUREAU OF HIGHWAYS	7-11-2011 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT	7/19/11 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	7.13.11 DATE

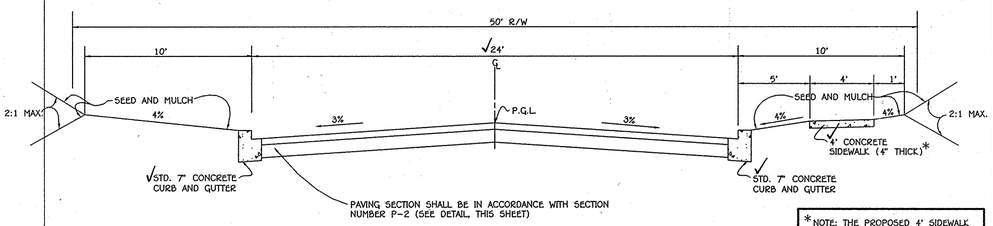
REVISIONS

NO.	DESCRIPTION	DATE
1	REPLACE THREE MICRO-BIORETENTION WITH A SINGLE MICRO-BIORETENTION LOCATED AT THE REAR OF LOT 15	8/3/11
2	REVISED SHEET NO. 10 REVISED ADDED SHEET	9/22/15



7" REINFORCED CONCRETE SIDEWALK

NO SCALE



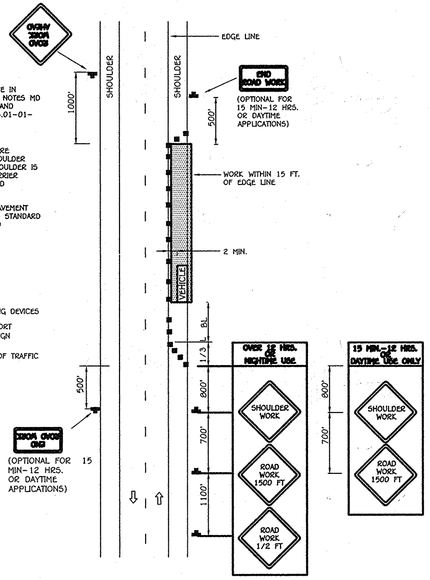
TYPICAL ROADWAY SECTION

NO SCALE

*NOTE: THE PROPOSED 4' SIDEWALK SHALL BE TRAFFIC BEARING (7" REINFORCED CONCRETE) A MINIMUM OF 50' ON EITHER SIDE OF THE PROPOSED CCO/CO5 INLET OPENING.

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	℄ STATION LIMITS	PAVING SECTION
ORNDORFF WAY	PUBLIC ACCESS PLACE	25 M.P.H.	R-20	0+00 TO 5+02.79	P-2



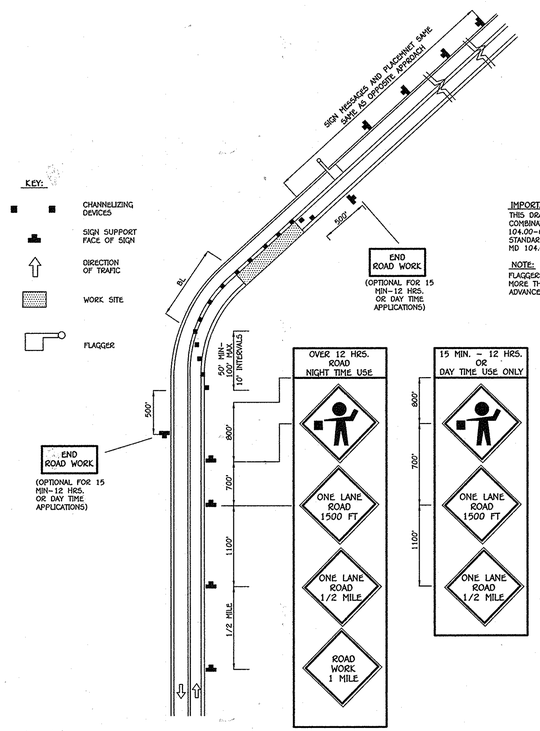
IMPORTANT:
THIS DRAWING SHALL BE USE IN COMBINATION WITH GENERAL NOTES MD 104.00-01-MD 104.00-18 AND STANDARD DETAILS MD 104.01-01-MD 104.01-62

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.

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

NO SCALE

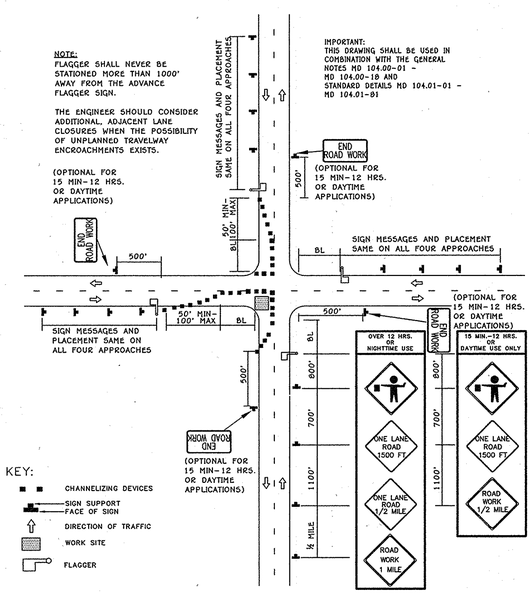


IMPORTANT:
THIS DRAWING SHALL BE USE IN COMBINATION WITH GENERAL NOTES MD 104.00-01-MD 104.00-18 AND STANDARD DETAILS MD 104.01-01-MD 104.01-62

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

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

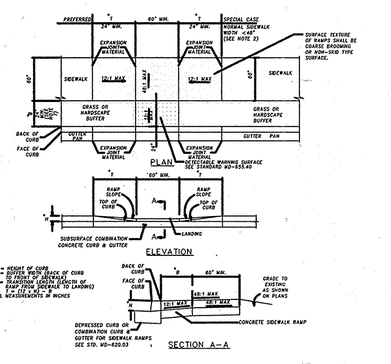
NO SCALE



IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-81

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

NO SCALE



NOTES

1. TO BE USED WHERE AT LEAST 7'-6" EXISTS BETWEEN THE BACK OF CURB AND THE BACK OF SIDEWALK. THIS STANDARD MAY BE MODIFIED TO SUIT A PARTICULAR LOCATION.
2. WHERE 60" SIDEWALK CAN NOT BE PROVIDED, A DESIGN WAIVER MUST BE REQUESTED.
3. NO TRAVERSABLE SLOPE ON THE RAMP OR SIDEWALK SHALL EXCEED 12:1 IN THE DIRECTION OF PEDESTRIAN TRAVEL, OR 48:1 PERPENDICULAR TO THE DIRECTION OF PEDESTRIAN TRAVEL.
4. EXPANSION JOINT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH STD. MD-655.01.
5. SIDEWALK RAMP SHALL BE INCLUDED IN PRICE BID FOR CONCRETE SIDEWALK. DEPRESSED CURB AND CURB TRANSITION SHALL BE INCLUDED IN PRICE BID FOR CURB OR CURB & GUTTER ADJACENT TO SIDEWALK RAMP. DETECTABLE WARNING SURFACE SHALL BE PAID FOR IN ACCORDANCE WITH SECTION 611 OF THE SPECIFICATIONS.
6. SIDEWALK RAMPS TO BE SHOWN ON PLANS SYMBOLICALLY AND REFERENCED WITH THE CENTER OF THE RAMP ALIGNED TO A STATION ON THE CONSTRUCTION CENTERLINE. SEPARATE DETAILS SHALL BE SHOWN WHERE PROPOSED RAMP VARIES FROM STANDARD CASES.
7. FOR BUFFER WIDTHS LESS THAN 24', WIDEN SIDEWALK TO BACK OF CURB AS SHOWN FOR THE SPECIAL CASE, THEN BUILD PARALLEL RAMP USING STANDARD MD-655.12.

MD. SHA SIDEWALK RAMP COMBINATION MD-655.13

STATE OF MARYLAND ALDO G. MITUNA No. 20748 PROFESSIONAL ENGINEER
AS BUILT 6/21/15

OLD SCAGGSVILLE ROAD STRIPING, ROAD SECTION DETAILS & TRAFFIC CONTROL PLAN

CHERRYTREE VIEW

BUILDABLE LOTS 1-4 AND 14-20, OPEN SPACE LOTS 12 & 13

ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003, WP-11-065 & SP-11-001
TAX MAP No. 46 GRID No. 11 PARCEL No. 55
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY 3, 2014
SHEET 14 OF 17

AS-BUILT F-11-063

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
MR. & MRS. HILEY A. ORNDORFF
10909 SCAGGSVILLE ROAD
LAUREL, MARYLAND 20723
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

DEVELOPER
FAL DEVELOPERS, L.L.C.
5300 DORSEY HALL DRIVE, SUITE 102
ELLICOTT CITY, MARYLAND 21042
ATTN: MR. DONALD R. REUWER, JR.
443-367-0422

STATE OF MARYLAND ALDO G. MITUNA No. 20748 PROFESSIONAL ENGINEER
6/9/11 DATE

"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

I:\2010\10014\dwg\PLAN\AS\10014 SHEET 14 STRIPING PLAN.dwg, 6/9/2011 1:19:43 PM, 36 MyStr (temporary).pc3

MULTIFLORA ROSE CONTROL NOTE:

PRIOR TO PLANTING ALL MULTIFLORA ROSE WITHIN PLANTING AREAS SHALL BE REMOVED. Removal Of The Multiflora Rose May Be Performed With Mowing And Herbicide Treatments. Physical Removal Of All Top Growth Followed By A Periodic Herbicide Treatment Of Stump Sprouts Is Recommended. Native Tree And Shrub Species Occurring Within The Rose Thickets Should Be Retained Wherever Possible. Herbicide Treatments Shall Occur On Two (2) Month Intervals During The First Growing Seaseon And Once In The Spring And Once In the Fall For Subsequent Years. Herbicide Used Shall Be Made Specifically To Address Woody Plant Material And Shall Be Applied As Per Manufacturers Specifications. Care Should Be Taken Not To Spray Planted Trees Or Naturally Occurring Native Tree And Shrub Seedlings. It Is Recommended That Initiation Of Rose Removal Begin At Least Six Months Prior To Planting So That New Growth Of Roses Is Able To Be More Successfully Managed.

PLANTING / SOIL SPECIFICATIONS

1. Planting Of Nursery Stock Shall Take Place Between March 15th And April 30th Or September 15th And November 15th.
2. A Twelve (12) Inch Layer Of Topsoil Shall Be Spread Over All Reforestation Areas Impacted By Site Grading To Assure A Suitable Planting Area, If Applicable. Disturbed Areas Shall Be Seeded And Stabilized In Accordance With The Sediment & Erosion Control Plan For This Project. Planting Areas Not Impacted By Site Grading Shall Have No Additional Topsoil Installed.
3. All Bare Rood Planting Stock Shall Have Their Root System Dipped Into An Anti-Desiccant Gel Prior To Planting.
4. Plants Shall Be Installed So That The Top Of The Root Mass Is Level With The Top Of Existing Grade. Backfill In The Planting Pits Shall Consist of 3 Parts Existing Soil to 1 Part Pine Fines Or Equivalent.
5. Fertilizer Shall Consist Of Agriform 22-8-2, Or Equivalent, Applied As Per Manufacturer's Specifications.
6. A Two (2) Inch Layer Of Hardwood Mulch Shall Be Placed Over The Root Area Of All Plantings. See Planting Detail.
7. Plant Material Shall Be Transported To The Site In A Tarped Or Covered Truck. Plants Shall Be Kept Moist Prior To Planting.
8. All Non-Organic Debris Associated With The Planting Operation Shall Be Removed From The Site By The Contractor.

SEQUENCE OF CONSTRUCTION

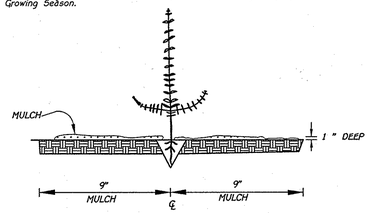
1. Sediment Controls And Tree Protective Devices Shall Be Installed In Accordance With Sediment & Erosion Control Plans For This Site, If Applicable. Site Shall Be Graded In Accordance With The Plans.
2. Proposed Reforestation Areas Impacted By The Site Grading Shall Be Topsoiled And Stabilized As Per Note 2 Of The "Planting / Soil Specifications".
3. Plants Shall Be Installed And Maintained As Per Notes And Specifications For This Project.
4. Upon Completion Of The Plantings, Signage Shall Be Installed As Per The Signage Detail.
5. Plantings Shall Be Guaranteed and Maintained In Accordance With The "Guarantee Requirements" And "Maintenance Of Plantings" Associated With This Project.

MAINTENANCE OF PLANTINGS

1. Maintenance Of Plantings Shall Last For A Period Of 26 Months.
2. All Plant Material Shall Be Generally Watered Twice A Month During The 1st Growing Season. Watering May Be More Or Less Frequent Depending On Weather Conditions.
3. During The 2nd Growing Season, Plant Material Shall Be Watered Once A Month From May To September, As Needed.
4. Invasive Exotics And Noxious Weeds Shall Be Removed From The Reforestation Area(s). Old Field Successional Species Shall Be Retained.
5. Plants Shall Be Examined A Minimum Of Two (2) Times During The Growing Season For Serious Plant Pests And Diseases With The Appropriate Agent.
6. Dead Branched Shall Be Pruned From The Plantings.

GUARANTEE REQUIREMENTS

A 75% Survival Rate For The Reforestation Plantings Is Required At The End Of The 24 Month Maintenance Period. All Plant Material Below The 75% Threshold Is Required To Be Replaced At The Beginning Of The Next Growing Sedson.



Seedling and Whip Planting Specification

* Each whip to be protected by a tree shelter

Windsor Forest-Density Sending Chart (Plat No. 18473)

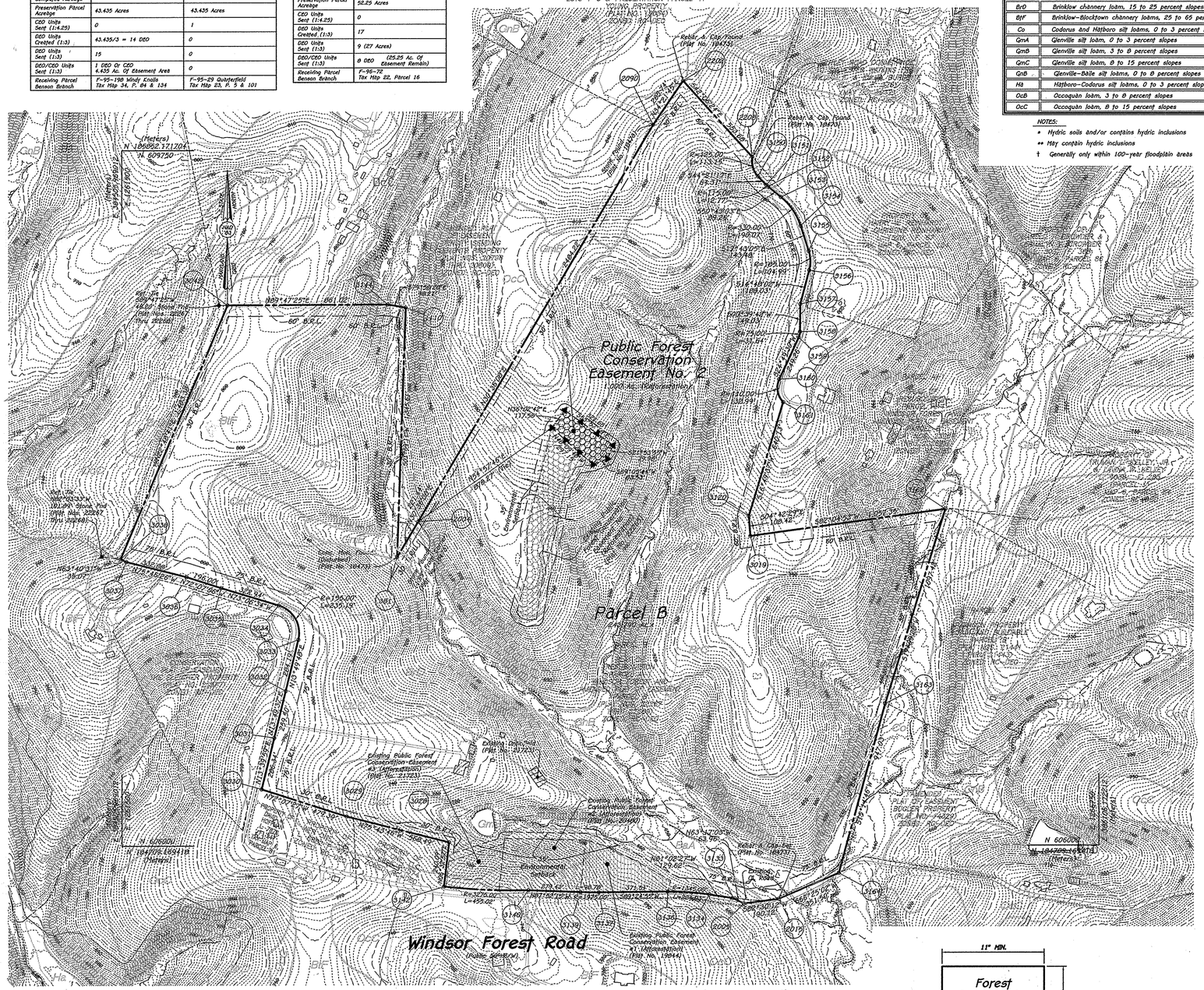
Total Computed Parcel Acreage	194.7112 Acres		
DEO Units Sent	63		
Receiving Parcel	16 DEO Units Ashleigh Knolls, Phase 3, F-95-63 Tax Map 40, Parcel 174 Tax Map 41, Parcel 137	45 DEO Units Ashleigh Knolls, Phase 3, F-95-60 Tax Map 40, Parcel 174 Tax Map 41, Parcel 137	2 DEO Units Ashleigh Knolls, Phase 3, F-96-22 Tax Map 40, Parcel 174 Tax Map 41, Parcel 137
Size Of Presentation Parcel	194.7112 Acres		

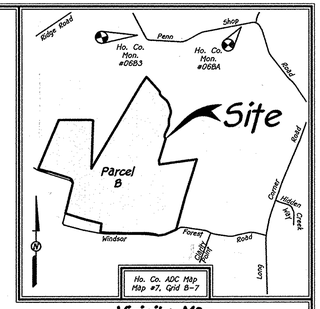
Mullineaux Property-Density Sending Chart (Plat No. 12241)

	1st Exchange	2nd Exchange
Sending Parcel Information	Windsor Forest Fox Chasing Tax Map 6, Part Of Parcel 15	Windsor Forest Fox Chasing Tax Map 6, Part Of Parcel 15
Total Parcel Computed Acreage	97.270 Acres	97.270 Acres
Preservation Parcel Acreage	43.435 Acres	43.435 Acres
CEO Units Sent (1:4.25)	0	1
DEO Units Created (1:3)	43.435/3 = 14 DEO	0
DEO Units Sent (1:3)	15	0
DEO/CEO Units Sent (1:3)	1 DEO Or CEO 4.435 Ac. Of Easement Area	0
Receiving Parcel Benson Branch	F-95-198 Windy Knolls Tax Map 34, P. 84 & 134	F-95-29 Quakerfield Tax Map 23, P. 5 & 101

Mullineaux Property-Density Sending Chart (Plat No. 12132)

Sending Parcel Information	Windsor Forest Fox Chasing Tax Map 6, Part Of Parcel 15
Total Parcel Computed Acreage	97.270 Acres
Preservation Parcel Acreage	52.25 Acres
CEO Units Sent (1:4.25)	0
DEO Units Created (1:3)	17
DEO Units Sent (1:3)	9 (27 Acres)
DEO/CEO Units Sent (1:3)	8 DEO (25.25 Ac. Of Easement Remain)
Receiving Parcel Benson Branch	F-96-72 Tax Map 22, Parcel 16





Vicinity Map

Scale: 1" = 2,000'

Soils Legend

Soil	Name	Class
BaA	Baile silt loam, 0 to 3 percent slopes	D
BrC	Brinklow channery loam, 8 to 15 percent slopes	B
BrD	Brinklow channery loam, 15 to 25 percent slopes	B
BtF	Brinklow-blocktown channery loams, 25 to 65 percent slopes	B/C
Co	Codorus and Hatboro silt loams, 0 to 3 percent slopes	C
GnA	Glenville silt loam, 0 to 3 percent slopes	C
GnB	Glenville silt loam, 3 to 8 percent slopes	C
GnC	Glenville silt loam, 8 to 15 percent slopes	C
GoB	Glenville-Baile silt loams, 0 to 8 percent slopes	C
Ha	Hatboro-Codorus silt loams, 0 to 3 percent slopes	D
OcB	Occoquan loam, 3 to 8 percent slopes	B
OcC	Occoquan loam, 8 to 15 percent slopes	B

NOTES:

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

General Notes:

1. Subject Property Zoned RC-DEO Per The 10/06/13 Zoning Regulations.
2. Coordinates Based On Nad '83, Maryland Coordinate System As Projected By Howard County Geodetic Control Stations No. 068A And 0683.
   Station No. 068A North 611,660.1438 East 1,267,349.3405
   Station No. 0683 North 611,265.3969 East 1,264,511.0850
3. This Plat Is Based On Field Run Monumented Boundary Survey Performed On Or About May, 2012 By Vanmar Assoc., Inc., As Shown On Plat Nos. 22267 Thru 22269.
4. ● Denotes Iron Pin Set With Cap "F.C.C. 106".
5. ⸸ Denotes Iron Pipe Or Iron Bar Found.
6. ○ Denotes Angular Change In Bearing Of Boundary Or Rights-Of-Way.
7. ■ Denotes Concrete Monument Set With Cap "F.C.C. 106".
8. ▣ Denotes Concrete Monument Or Stone Found.
9. No Grading, Removal Of Vegetative Cover Or Trees, Or Placement Of New Structures Is Permitted Within The Limits Of Wetlands, Or Their Buffers And Forest Conservation Easement Areas.
10. All Lot Areas Are More Or Less (±).
11. Distances Shown Are Based On Surface Measurement And Not Reduced To Nad '83 Grid Measurement.
12. Previous Department Of Planning And Zoning File Numbers: F-82-13, F-95-29, F-95-072, F-06-19, F-07-030, F-07-030(FC), F-08-203(FC), F-11-026, F-11-026(FC), F-13-059, F-13-063 And Council Resolution 17-2008.
13. This Property Is Located Outside The Metropolitan District.
14. There Are Existing Dwellings/Structures Located On Parcel B To Remain. No New Buildings, Extensions Or Additions To The Existing Dwelling(s) Are To Be Constructed At A Distance Less Than The Zoning Regulation Requirements.
15. This Plat Is In Compliance With The Amended Fifth Edition Of The Subdivision And Land Development Regulations Per Council Bill 45-2003 And The Zoning Regulations As Amended By Council Bill 75-2003. Development Or Construction On These Lots Must Comply With Setback And Buffer Regulations In Effect At The Time Of Submission Of The Site Development Plan, Waiver Petition Application, Or Building/Grading Permit.
16. This Property Is Encumbered By A Preservation Easement Deed With Howard County And The Howard County Conservancy, Inc. Dated June 30, 1995 And Recorded In Liber 3546 At Folio 637.
17. ▨ 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 Easement Are Restricted. This Easement 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 Revised Sewage Easement Shall Not Be Necessary.
18. The Lots Shown Hereon Comply With The Minimum Ownership Width And Lot Area As Required By The Maryland State Department Of The Environment.
19. A 50' Environmental Setback Is Required On Parcels/Lots That Contain Environmental Features.
20. Topography Is Based On Howard County 200' Scale Topographic Maps.
21. This Plan Complies With The Requirements Of Section 16.1200 Of The Howard County Code For Forest Conservation By The Reforestation Of 1.000 Acres (43,560 Sq. Ft.) Of Forest. Surety For The Reforestation In The Amount Of $21,760.00 (43,560 x $0.50) Shall Be Posted As Part Of The DPW Developers Agreement Associated With Cherrytree View, F-11-063.

REFORESTATION PLANTING NOTES

1. Plants, Related Material, And Operations Shall Meet The Detailed Description As Given On The Plans And As Described Herein.
2. Plant Material, Unless Otherwise Specified, Shall Be Nursery Grown, Uniformly Branched And Have A Vigorous Root System. Plant Material Shall Be Healthy, Vigorous Plants Free From Defects, Decay, Disfiguring Roots, Sunscald Injuries, Abrasions Of The Bark, Plant Disease, Insect Pest Eggs, Boxers, Infestations Or Objectionable Disfigurements. Plant Material That Is Weak Or Which Has Been Cut Back From Larger Grades To Meet Specified Requirements Will Be Rejected. Trees With Forked Leaders Will Not Be Accepted. Plants Shall Be Freshly Dug; No Heeled-in Plants Or Plants From Cold Storage Will Be Accepted.
3. Unless Otherwise Specified, Plant Material Shall Conform To "American Standard For Nursery Stock" ANSI Z60.1-1990, Published By The American Association Of Nurserymen, Including All Addenda.
4. Contractor Will Be Required To Guarantee Plant Material For A Period of Two (2) Years After The Date Of Acceptance And Maintain A 75% Survivability At The End of The Two (2) Years.
5. To Lessen The Chance Of Loss, The Plantings Should Be Checked From Time To Time To Insure That They Are Receiving Sufficient Water. See "Maintenance Of Plantings" For Guidelines.
6. The Location And Orientation Of All Plant Material Shall Be Randomly Planted In Designated Reforestation Areas By the Contractor. Contractor Shall Be Responsible For Moving Any Plant Material Installed Without Approval.
7. Mowing And Applying Herbicides To The Reforestation Area Is Prohibited At Any An All Stages Of The Planting Process In Order To Encourage The Existing Saplings To Grow.
8. Contractor Is Responsible For Installing And Pruning Plant Material In The Proper Planting Season For Each Plant Type, See Tree Planting & Maintenance Calendar.
9. Upon Completion Of Installation, Signage Shall Be Installed As Shown.

Purpose Statement

The Purpose Of This Plat Is To Create Public Forest Conservation Easement No. 2 (1.000 Ac.+) (Reforestation) On Parcel B, As Shown On Plats Entitled "Plat Of Resubdivision, Parcel A-1, Windsor Forest And Amended Plat Of Easement, Parcel B, Hobart Mullineaux Property" Previously Recorded As Plat Nos. 22267 Thru 22269 To Fulfill The Forest Conservation Off-Site Obligation For Cherrytree View, F-11-063, Tax Map 46, Grid 11, Parcel No. 55.

Off-Site Forest Planting Plan On Hobart Mullineaux Property Parcel B

Tax Map #6 Grid #8 Parcel #15
Fourth Election District - Howard County, Maryland
Zoned: RC-DEO

For

Cherrytree View (F-11-063) Buildable Lots 1 Thru 11 And Open Space Lots 12 And 13

Zoned: R-20
Tax Map #46 Grid # 11 Parcel #55
Sixth Election District - Howard County, Maryland
Date: September 29, 2015

SHEET 15 OF 17

Approved: Howard County Department Of Planning And Zoning

Kent Sheubrooks Chief, Division Of Land Development	1-4-16 Date
Chad Edmondson Chief, Development Engineering Division	12-23-15 Date

MD DNR Qualified Professional

STATE OF MARYLAND
STEPHANIE J. TUITE
No. 28326
PROFESSIONAL ENGINEER

Stephanie J. Tuite, RLA, PE,
Qualified Professional

Planting Schedule

FCE # 2 - 1.000 Acres
Planting Required: 700
Planting Provided: 700

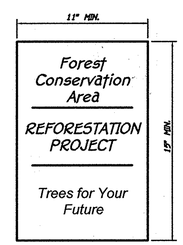
Qty	Species	Size	Spacing	Total FCA Units
50	Acer rubrum - Red maple	2-3' whip	11' o.c.	
25	Diospyros virginiana - Persimmon	2-3' whip	11' o.c.	
55	Liriodendron tulipifera - Tulip poplar	2-3' whip	11' o.c.	
40	Nyssa sylvatica - Black gum	2-3' whip	11' o.c.	
40	Platanus occidentalis - Sycamore	2-3' whip	11' o.c.	
50	Prunus serotina - Black cherry	2-3' whip	11' o.c.	
60	Quercus alba - White oak	2-3' whip	11' o.c.	
30	Ulmus rubra - Slippery Elm	2-3' whip	11' o.c.	
350	TOTAL			
	Total Whip Plantings x 2 Units/Tree = FCA Unit Credit			700
	Total Unit Credit			700

Graphic Scale

0' 300' 450' 600'
Scale: 1" = 300'

Legend

- Existing Public Forest Conservation Easement (Reforestation) (Plat No. 22265)
- Existing Public Forest Conservation Easement Nos. 1, 2 And 3 (Afforestation) (Plat Nos. 19844, 20480 And 21723)
- Public Forest Conservation (Reforestation)



▲ Forest Conservation Sign Detail
Not To Scale

Owner

Robert Arthur Scranton
10950 Windsor Forest Road
Mount Airy, Maryland 21771-3922
(410) 549-1669

Developer

Howard Land Developers, LLC
5300 Dorsey Hall Drive
Suite 102
Ellicott City, Maryland 21042
(443) 367-0422

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

F-11-063

K:\Drawings 3\30696 Ridge Road - Pulte\REVISION PLAT-FOREST CON-TO SCRANTON PROPERTY\30696 Off-Site Forest Planting to-SCRANTON.dwg, 9/30/2015 9:35:24 AM, 1:1

SEGMENTAL RETAINING WALL SPECIFICATIONS

PART 1 - GENERAL

1.1 WORK INCLUDES

FURNISHING AND INSTALLING SEGMENTAL RETAINING WALL UNITS, GEOGRID REINFORCEMENT, WALL FILL, AND BACKFILL TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS AND AS SPECIFIED HEREIN. THE CONTRACT ALSO INCLUDES THE FURNISHING AND INSTALLING OF ALL APPURTENANT MATERIALS, EQUIPMENT, AND LABOR REQUIRED FOR CONSTRUCTION OF THE GEOGRID REINFORCED, SEGMENTAL RETAINING WALL. ALL EXISTING AND PROPOSED CONSTRUCTION AND SITE GRADING INFORMATION WAS REFERENCED FROM THE TOPO WORKSHEET, PREPARED BY FISHER, COLLINS, & CARTER, INC., DATED FEBRUARY 4, 2015.

1.2 REFERENCE STANDARDS

A. ASTM C90-75 (1981 REV) – HOLLOW LOAD BEARING MASONRY UNITS.
B. ASTM C140-75 (1981 REV) – SAMPLING AND TESTING CONCRETE MASONRY UNITS.
C. ASTM C145-75 (1981 REV) – SOLID LOAD BEARING CONCRETE MASONRY UNITS.
D. GEOSYNTHETIC RESEARCH INSTITUTE (GRI), GRI-GG4 – DETERMINATION OF LONG TERM DESIGN STRENGTH OF GEOGRIDS.
E. ASTM D 638 – TEST METHOD FOR TENSILE PROPERTIES OF PLASTIC.
F. ASTM D 1248 – SPECIFICATION OF POLYETHYLENE PLASTICS MOLDING AND EXTRUSION MATERIALS.
G. ASTM D 4218 – TEST METHOD FOR CARBON BLACK CONTENT IN POLYETHYLENE COMPOUNDS BY THE MUFFLE FURNACE TECHNIQUE.
H. ASTM D 3034 – SPECIFICATION FOR POLYVINYL CHLORIDE (PVC) PIPE.
I. ASTM C 1372 – SPECIFICATIONS FOR SEGMENTAL RETAINING WALL UNITS.
J. INTERNATIONAL BUILDING CODE 2009 (IBC 2009)

1.3 DELIVERY, STORAGE AND HANDLING

A. CONTRACTOR SHOULD CHECK THE MATERIALS UPON DELIVERY TO ASSURE THAT PROPER MATERIAL HAS BEEN RECEIVED.
B. CONTRACTOR SHOULD PREVENT EXCESSIVE MUD, WET CEMENT, EPOXY, AND LIKE MATERIALS WHICH MAY AFFIX THEMSELVES, FROM COMING IN CONTACT WITH THE MATERIALS.
C. GEOGRIDS SHOULD BE STORED ABOVE -20° F.
D. CONTRACTOR SHOULD PROTECT THE MATERIALS FROM DAMAGE. DAMAGED MATERIAL SHOULD NOT BE INCORPORATED INTO THE REINFORCED RETAINING WALL.

1.4 SUBMITTALS/CERTIFICATION

THE CONTRACTOR SHALL SUBMIT A MANUFACTURER'S CERTIFICATION, PRIOR TO THE START OF THE WORK, THAT THE RETAINING WALL SYSTEM COMPONENTS MEET THE REQUIREMENTS OF ASTM C 1372 AND OTHER REQUIREMENTS SPECIFIED HEREIN. THIS CERTIFICATION SHOULD BE PROVIDED TO THE GEOTECHNICAL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO WALL CONSTRUCTION.

PART 2 - PRODUCTS

2.1 DEFINITIONS

A. GEOGRID IS A HIGH DENSITY POLYETHYLENE, POLYESTER, OR POLYPROPYLENE GRID, SPECIFICALLY FABRICATED FOR USE AS A SOIL REINFORCEMENT.
B. CONCRETE RETAINING WALL UNITS ARE AS DETAILED ON THE DRAWINGS AND AS SPECIFIED HEREIN.
C. GEOSYNTHETIC DRAINAGE COMPOSITES ARE POLYETHYLENE NET STRUCTURE WITH NON-WOVEN GEOTEXTILES BONDED TO BOTH SIDES.
D. EROSION CONTROL BLANKETS CONSIST OF A WEB OF POLYOLEFIN FIBERS SECURELY BOUNDED BY POLYOLEFIN THREADS BETWEEN TWO HIGH STRENGTH POLYOLEFIN NETS.
E. BACKFILL IS THE SOIL WHICH IS USED AS FILL FOR THE REINFORCED SOIL MASS.
F. FOUNDATION SOIL IS THE IN-SITU SOIL OR CONTROLLED COMPACTED FILL PLACED BELOW THE BOTTOM OF THE RETAINING WALL AND GEOGRID ZONE.

2.2 MATERIALS

THE CONTRACTOR SHOULD SUBMIT MANUFACTURER'S CATALOG AND SAMPLES OF THE PROPOSED MATERIALS FOR APPROVAL BY THE PROJECT GEOTECHNICAL ENGINEER A MINIMUM OF SEVEN DAYS BEFORE THE START OF CONSTRUCTION. MATERIALS SHOULD BE TRANSPORTED TO THE SITE ONLY AFTER APPROVAL OF THE PROPOSED MATERIALS BY THE PROJECT GEOTECHNICAL ENGINEER.

A. CONCRETE UNITS

1. MASONRY UNITS SHOULD BE DIAMOND PRO STRAIGHT FACE RETAINING WALL UNITS. BLOCK TYPE AND COLOR SHOULD MATCH THAT OF EXISTING ON-SITE RETAINING WALLS AND SHOULD BE APPROVED BY THE OWNER.
2. CONCRETE WALL UNITS SHOULD HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI, IN ACCORDANCE WITH ASTM C-90. THE CONCRETE SHOULD HAVE ADEQUATE FREEZE/THAW PROTECTION WITH A MAXIMUM MOISTURE ABSORPTION OF 6 PERCENT.
3. MODULAR CONCRETE MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C 1372 – STANDARD SPECIFICATIONS FOR SEGMENTAL RETAINING WALL UNITS.
4. THE UNITS SHALL PASS 100 FREEZE/THAW CYCLES IN WATER WITH LESS THAN 1% WEIGHT LOSS IN ACCORDANCE WITH ASTM C 1372.
5. UNITS SHOULD HAVE ANGLED SIDES AND BE CAPABLE OF ATTAINING CONCAVE AND CONVEX ALIGNMENT CURVES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. UNITS SHOULD BE INTERLOCKED AS TO PROVIDE A MAXIMUM OF 1 INCH OF SETBACK PER BLOCK, WHERE REQUIRED.

B. LEVELING PAD

MATERIAL FOR LEVELING PAD/FOOTING SHOULD CONSIST OF COMPACTED FREE-DRAINING COARSE AGGREGATES MEETING THE REQUIREMENTS OF GRADED AGGREGATE BASE (GAB) PER MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS. A MINIMUM OF 6 INCHES DEEP AND 30 INCHES WIDE COMPACTED LEVELING PAD IS REQUIRED.

C. GEOGRID

GEOGRID SHOULD BE SF55 WOVEN GEOGRID, MANUFACTURE BY SYNTEEN TECHNICAL FABRICS, OR EQUIVALENT AS APPROVED BY THE GEOTECHNICAL ENGINEER. THE GEOGRID SHOULD HAVE AN ALLOWABLE STRENGTH OF 1136 POUNDS PER FOOT. THE ALLOWABLE STRENGTH IS DEFINED AS THE ULTIMATE STRENGTH DIVIDED BY REDUCTION FACTORS FOR CREEP, DURABILITY, INSTALLATION DAMAGE AND AN OVERALL FACTOR OF SAFETY OF 1.5.

D. REINFORCED BACKFILL

REINFORCED BACKFILL SOILS SHOULD BE NON-PLASTIC, CONTROLLED FILL MEETING THE REQUIREMENTS OF AASHTO A-2-4, OR MORE GRANULAR. BASED ON THE AVAILABLE SUBSURFACE INFORMATION, CLAYEY SOILS WHICH DO NOT MEET THIS REQUIREMENT ARE PRESENT IN THE AREA OF THE PROPOSED RETAINING WALL. IMPORTED BACKFILL FROM OTHER PORTIONS OF THE SITE OR FROM OFF-SITE MAY BE REQUIRED, AND SHOULD BE APPROVED BY THE GEOTECHNICAL ENGINEER. IF SUITABLE MATERIALS ARE GENERATED FROM ON-SITE EXCAVATIONS, THESE MATERIALS SHOULD BE CAREFULLY SEGREGATED AND STOCKPILED.

E. CONTROLLED FILL

CONTROLLED FILL SOILS TO BE PLACED OUTSIDE THE REINFORCED BACKFILL AREA AND WHERE SPECIFIED SHOULD CONSIST OF ON-SITE OR BORROW SOILS MEETING THE REQUIREMENTS OF AASHTO A-4 OR MORE GRANULAR. ALL FILL MATERIALS PROPOSED TO BE PLACED BEHIND THE REINFORCED BACKFILL SHOULD BE PLACED AS CONTROLLED FILL COMPACTED TO 95 PERCENT OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH THE STANDARD PROCTOR, ASTM D-698.

F. LOW-PERMEABILITY SOIL

LOW-PERMEABILITY SOILS TO BE PLACED AT THE TOP OF THE WALL WHERE SPECIFIED SHOULD CONSIST OF SANDY, SILTY OR CLAYEY SOILS MEETING THE REQUIREMENTS OF ML, CL, SM, OR SC WITH A MINIMUM OF 25% PASSING THE #200 SIEVE.

G. DRAINAGE PIPE

THE DRAINAGE PIPES SHOULD BE PERFORATED OR SLOTTED PVC PIPE MANUFACTURED IN ACCORDANCE WITH ASTM D-3034, OR PERFORATED OR SLOTTED HDPE PIPE MANUFACTURED IN ACCORDANCE WITH ASTM F-405.

H. FILTER FABRIC

FILTER FABRIC SHOULD BE NON-WOVEN, POLYPROPYLENE GEOTEXTILE, WINFAB 800N MANUFACTURED BY WILLACOOCHEE INDUSTRIAL FABRICS, INC. OR APPROVED EQUIVALENT.

PART 3 - EXECUTION

A. EXCAVATION

1. THE CONTRACTOR SHOULD EXCAVATE TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS. UNDER NO CIRCUMSTANCES SHOULD THE EXCAVATION LINES AND GRADES BE EXCEEDED, EXCEPT WITH OWNER'S APPROVAL. THE CONTRACTOR SHOULD PROTECT THE EXCAVATION FROM SLOUGHING BY PLACING A MEMBRANE OVER THE FACE OF THE EXCAVATION.
2. PRIOR TO RETAINING WALL CONSTRUCTION AND PLACEMENT OF FILL, ALL TOPSOIL SHOULD BE STRIPPED AND REMOVED FROM THE SITE.
3. EXCAVATIONS SHOULD BE SLOPED OR OTHERWISE SUPPORTED IN ACCORDANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND OTHER LOCAL AND STATE REGULATIONS.

B. FOUNDATION SUBGRADE PREPARATION

1. FOUNDATION SOIL SHOULD BE EXCAVATED AS REQUIRED FOR INSTALLATION OF LEVELING PAD, GEOGRID AND OTHER ELEMENTS AND AS SHOWN ON THE CONSTRUCTION DRAWINGS.
2. FOUNDATION SOIL SHOULD BE EXAMINED BY THE ENGINEER TO ASSURE THAT THE ACTUAL FOUNDATION SOIL STRENGTH MEETS OR EXCEEDS THE ASSUMED DESIGN STRENGTH. SOILS NOT MEETING REQUIRED STRENGTH SHOULD BE REMOVED AND REPLACED WITH CONTROLLED, COMPACTED MATERIAL.
3. IF PREVIOUSLY PLACED FILLS ARE PRESENT AT THE FOUNDATION SUBGRADE FOLLOWING FOUNDATION EXCAVATION, HAND AUGER EXPLORATIONS OR BACKHOE EXCAVATED TEST PITS SHOULD BE PERFORMED TO 3 FEET BELOW THE FOUNDATION SUBGRADE. ANY EXISTING FILLS WHICH CONTAIN A SIGNIFICANT PROPORTION OF ORGANIC MATERIAL SHOULD BE OVER-EXCAVATED TO A SUITABLE BEARING STRATUM AND REPLACED WITH CONTROLLED, COMPACTED MATERIAL.
4. OVER-EXCAVATED AREAS SHOULD BE FILLED WITH SELECT AND APPROVED MATERIAL AND COMPACTED TO 95 PERCENT OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH THE STANDARD PROCTOR, ASTM D-698.
5. ALLOWABLE BEARING PRESSURE FOR NATURAL AND CONTROLLED, COMPACTED FILL SOILS SHOULD BE AS SPECIFIED IN PART 5.
6. THE EXPOSED FOUNDATION SUBGRADE SHOULD BE PROOFROLLED WITH A LOADED DUMP TRUCK. ANY SOFT OR UNSTABLE AREAS IDENTIFIED DURING PROOFROLLING SHOULD BE OVEREXCAVATED AND BACKFILLED WITH CONTROLLED FILL.
7. ANY FILLS REQUIRED TO ESTABLISH SLOPING SURFACES IN FRONT OF THE WALLS SHOULD CONSIST OF CONTROLLED FILL AND SHOULD BE PLACED, COMPACTED AND FIELD TESTED IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED HEREIN.

C. LEVELING PAD

1. THE LEVELING PAD SHOULD BE PLACED AS SHOWN ON THE CONSTRUCTION DRAWINGS WITH A MINIMUM THICKNESS OF 6 INCHES.
2. LEVELING PAD MATERIALS SHOULD BE INSTALLED UPON UNDISTURBED IN-SITU SOILS OR CONTROLLED, COMPACTED BACKFILL.
3. LEVELING PAD SHOULD BE PREPARED TO ENSURE COMPLETE CONTACT OF RETAINING WALL UNIT WITH BASE. GAPS SHOULD NOT BE ALLOWED.

D. UNIT INSTALLATION

1. FIRST COURSE OF CONCRETE WALL UNITS SHOULD BE PLACED ON THE LEVELING PAD. THE UNITS SHOULD BE CHECKED FOR LEVEL AND ALIGNMENT. THE FIRST COURSE IS THE MOST IMPORTANT TO PROVIDE ACCURATE AND ACCEPTABLE RESULTS.
2. ENSURE THAT UNITS ARE IN FULL CONTACT WITH BASE.
3. UNITS ARE TO BE PLACED SIDE BY SIDE FOR THE FULL LENGTH OF WALL ALIGNMENT. ALIGNMENT MAY BE ESTABLISHED BY MEANS OF A STRING LINE OR OFFSET FROM BASE LINE.
4. AT THE END OF EACH COURSE WHERE THE WALL CHANGES ELEVATION, UNITS SHOULD BE TURNED INTO THE BACKFILL. UNITS SHOULD BE LAID AS TO CREATE THE MINIMUM RADIUS POSSIBLE. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, A MINIMUM OF ONE UNIT SHOULD BE INSTALLED INTO THE GRADE. ONLY THE FRONT FACE OF THE UNITS SHOULD BE VISIBLE FROM THE SIDE OF THE WALL.
5. CONCAVE CURVES SHOULD BE MADE USING TAPERED BLOCKS.
6. CAP UNITS SHOULD BE INSTALLED AND BONDED WITH CONSTRUCTION ADHESIVE OR EPOXY CEMENT AS REQUIRED BY MANUFACTURER.
7. THE CONTRACTOR SHOULD PROVIDE POSITIVE DRAINAGE FOR THE BACK OF THE RETAINING WALL DURING CONSTRUCTION.

E. GEOGRID INSTALLATION

1. ALL UTILITIES IN THE VICINITY OF ANY RETAINING WALL OR GEOGRID REINFORCEMENT MUST BE INSTALLED AND PROPERLY BACKFILLED PRIOR TO PLACING THE GEOGRID SOIL REINFORCEMENT OR CONSTRUCTING THE WALL.
2. CLEAN GRAVEL, SOIL, OR OTHER DEBRIS FROM TOP OF BLOCK AND PLACE GEOGRID.
3. THE GEOGRID SOIL REINFORCEMENT SHOULD BE LAID HORIZONTALLY ON COMPACTED BACKFILL, CONNECTED TO THE CONCRETE WALL UNITS. INSTALL HDPE CONNECTORS, PULL GEOGRID TAUT, AND ANCHOR BEFORE BACKFILL IS PLACED ON THE GEOGRID.
4. THE GEOGRID SOIL REINFORCEMENT SHOULD BE LAID HORIZONTALLY ON COMPACTED BACKFILL, CONNECTED TO THE CONCRETE WALL UNITS. INSTALL HDPE CONNECTORS, PULL TAUT, AND ANCHOR BEFORE BACKFILL IS PLACED ON THE GEOGRID.
5. SLACK IN THE GEOGRID AT THE WALL UNIT CONNECTIONS SHOULD BE REMOVED IN A MANNER, AND TO SUCH A DEGREE, AS APPROVED BY THE ENGINEER.
6. GEOGRID SHOULD BE LAID AT THE PROPER ELEVATION AND ORIENTATION AS SHOWN ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE ENGINEER.
7. CORRECT ORIENTATION (ROLL DIRECTION) OF THE GEOGRID SHOULD BE VERIFIED BY THE CONTRACTOR.
8. GEOGRID SHOULD BE SECURED IN-PLACE WITH STAPLES, PINS, SAND BAGS, OR BACKFILL AS REQUIRED BY FILL PROPERTIES, FILL PLACEMENT PROCEDURES, OR WEATHER CONDITIONS, OR AS DIRECTED BY THE ENGINEER.
9. OVERLAPS.
   a. UNIAXIAL GEOGRID DOES NOT NEED TO BE OVERLAPPED IN THE ACROSS THE ROLL DIRECTION, EXCEPT TO CONTAIN THE FILL AT THE SLOPE FACE WHEN WRAP-AROUND FACING IS USED. UNIAXIAL GRID SHOULD BE OVERLAPPED 48 INCHES IN THE ROLLED DIRECTION.
   b. A LAYER OF SOIL A MINIMUM OF 3 INCHES IN THICKNESS SHOULD BE SPREAD BETWEEN UNIAXIAL GEOGRID LAYERS IN THE AREA TO BE OVERLAPPED, OR AS DIRECTED.

F. FILL PLACEMENT

1. WALL BACKFILL MATERIAL SHOULD BE PLACED IN NO MORE THAN 8-INCH LIFTS AND COMPACTED TO 95 PERCENT OF THE STANDARD PROCTOR (ASTM D-698).
2. BACKFILL SHOULD BE PLACED, SPREAD, AND COMPACTED IN SUCH A MANNER THAT MINIMIZES THE DEVELOPMENT OF WRINKLES IN AND/OR MOVEMENT OF THE GEOGRID.
3. ONLY HAND-OPERATED COMPACTION EQUIPMENT SHOULD BE ALLOWED WITHIN 4 FEET OF THE WALL FACE.
4. BACKFILL SHOULD BE PLACED FROM THE WALL OUTWARD TO ENSURE THAT THE GEOGRID REMAINS TAUT.
5. TRACKED CONSTRUCTION EQUIPMENT SHOULD NOT BE OPERATED BEHIND OR ABOVE THE WALL.
6. RUBBER-TIRED EQUIPMENT MAY PASS OVER THE GEOGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH. SUDDEN BRAKING AND SHARP TURNING SHOULD BE AVOIDED.
7. PLACE FILTER FABRIC BETWEEN THE UNIT CORE FILL AND THE REINFORCED BACKFILL AS SHOWN ON PLANS. THE FILTER FABRIC SHOULD BE EMBEDDED A MINIMUM OF TWO FEET INTO THE REINFORCED FILL.
8. THE FINISHED SLOPING SURFACE ON THE TOE SIDE OF RETAINING WALLS SHOULD BE PROTECTED BY INSTALLING THE PERMANENT EROSION CONTROL BLANKET AND LOAMING AND SEEDING IN ACCORDANCE WITH PROJECT REQUIREMENTS.

G. DRAINAGE

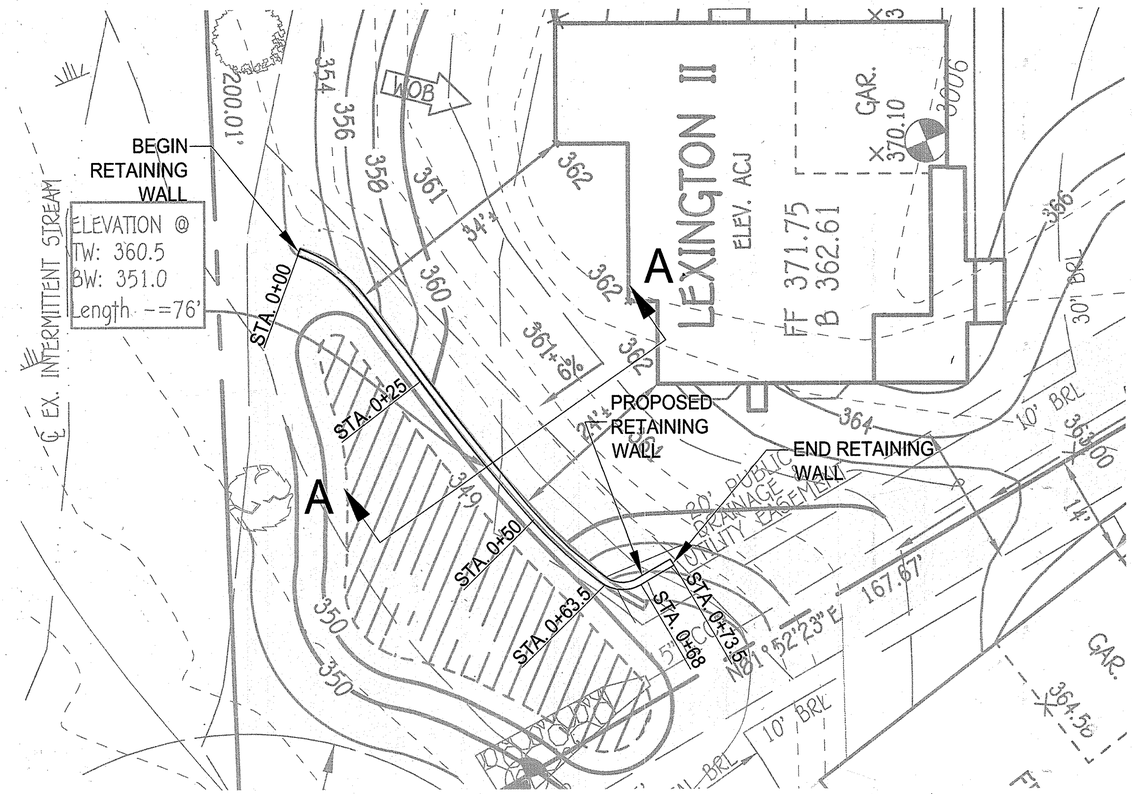
1. DRAINAGE FILL SHOULD BE PLACED BEHIND THE WALL TO THE LIMITS SHOWN. THE DRAINAGE FILL SHOULD BE A MINIMUM OF 12-INCHES THICK. THE DRAINAGE FILL SHOULD BE ASTM #57 STONE. THE DRAINAGE FILL SHOULD BE WRAPPED IN FILTER FABRIC (MIRAFI 140N OR EQUAL) AS SHOWN ON THE DRAWINGS.
2. POSITIVE DRAINAGE SHOULD BE MAINTAINED DURING AND AFTER CONSTRUCTION. SOILS WITHIN THE REINFORCED ZONE THAT BECOME WET DURING CONSTRUCTION SHOULD BE DRIED TO OPTIMUM MOISTURE OR REMOVED.
3. INSTALL THE PERFORATED DRAINAGE PIPES AND LATERAL DRAINAGE PIPES INCREMENTALLY ALONG WITH THE INSTALLATION OF CONCRETE UNITS AND PLACEMENT OF FILL.

PART 4 - CONSTRUCTION OBSERVATION AND TESTING

A. RETAINING WALLS SHOULD ONLY BE CONSTRUCTED UNDER THE OBSERVATION OF A REGISTERED PROFESSIONAL ENGINEER AND A CERTIFIED (NICET, WACEL, OR EQUIVALENT) SOILS TECHNICIAN.
B. THE REQUIRED BEARING PRESSURE BENEATH THE FOOTING OF THE WALL SHOULD BE VERIFIED IN THE FIELD BY A CERTIFIED SOILS TECHNICIAN. TESTING DOCUMENTATION MUST BE PROVIDED TO THE GEOTECHNICAL ENGINEER PRIOR TO THE START OF WALL CONSTRUCTION. THE REQUIRED TEST PROCEDURE SHALL BE THE DYNAMIC CONE PENETROMETER (DCP) TEST ASTM STP-399.
C. THE SUITABILITY OF FILL MATERIAL SHOULD BE CONFIRMED BY THE ON-SITE SOILS TECHNICIAN.

PART 5 - DESIGN CRITERIA

1. REQUIRED MINIMUM ALLOWABLE FOUNDATION BEARING PRESSURE IS 2,000 PSF.
2. DESIGN INTERNAL FRICTION ANGLE FOR REINFORCED SOIL = 28 DEGREES.
3. DESIGN MOIST UNIT WEIGHT FOR REINFORCED SOIL = 120 PCF.
4. FOUNDATION AND RETAINED SOIL INTERNAL FRICTION ANGLE = 28 DEGREES AND COHESION = 0 PSF.
5. FOUNDATION AND RETAINED SOIL DESIGN MOIST UNIT WEIGHT = 120 PCF.
6. RETAINING WALLS ARE NOT DESIGNED TO RESIST HYDROSTATIC PRESSURE.



RETAINING WALL LOCATION PLAN

SCALE: 1" = 10'

BASE MAP WAS ADAPTED FROM THE TOPO WORKSHEET, PREPARED BY FISHER, COLLINS, & CARTER, INC., DATED FEBRUARY 4, 2015 (ORIGINAL SCALE: 1"=10').

CHERRYTREE VIEW
BUILDABLE LOTS 1 – 11 AND
OPEN SPACE LOTS 12 & 13
ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003, WP-11-065 & SP-11-001
TAX MAP No. 46 GRID No. 11 PARCEL No. 55
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JULY 29, 2015
SHEET 17 OF 18

F-11-063

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 11/3/2015
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11-13-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-12-15

REVISIONS		
NO.	DESCRIPTION	DATE

GEO-TECHNOLOGY ASSOCIATES, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
14280 PARK CENTER DRIVE, SUITE: A
LAUREL, MARYLAND 20707
(410) 792-9446 OR (301) 470-4470
FAX: (410) 792-7395
WWW.GTAENG.COM

STATE OF MARYLAND — RAVINDRA PRASAD MALHOTRA — No. 24495 — PROFESSIONAL ENGINEER

MD 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. 24495, EXPIRATION DATE: 10/30/15.

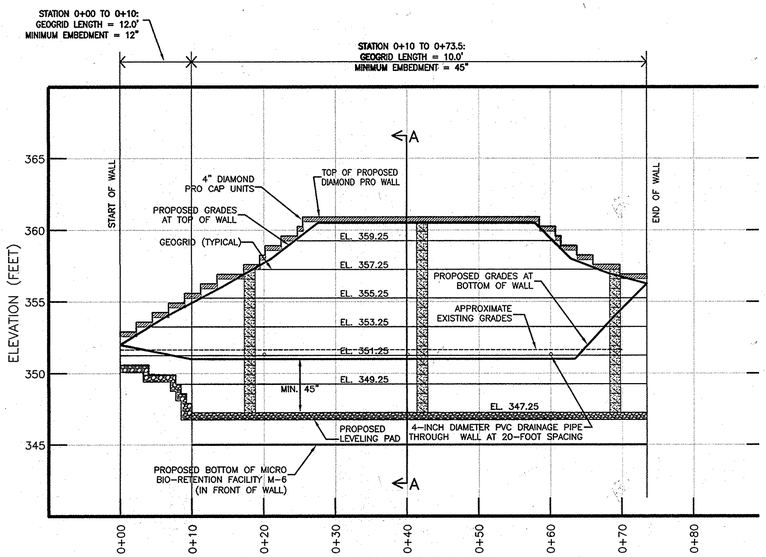
CHERRY TREE VIEW - LOT 15
PROPOSED RETAINING WALL

PLAN AND GENERAL NOTES

HOWARD COUNTY, MARYLAND

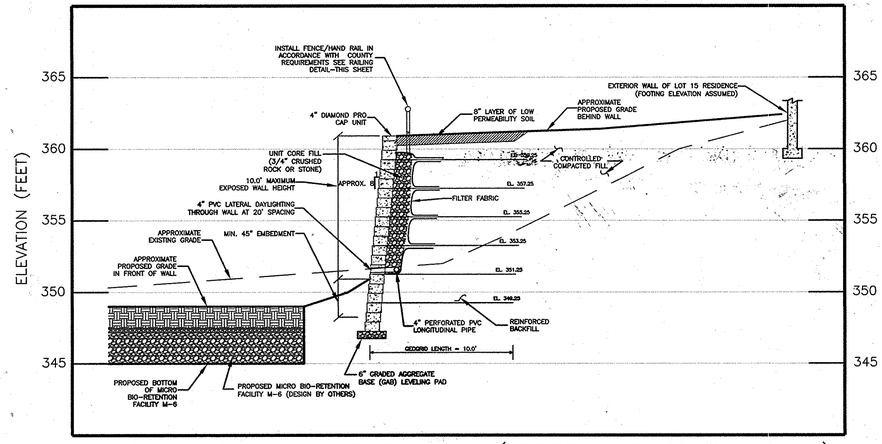
DATE	REVISIONS	
		JOB NO.: 141100
		SCALE: AS SHOWN
		DATE: 4/7/2015
		DRAWN BY: JPE
		DESIGN BY: JPE
		REVIEW BY: RPM
		SHEET: 16 OF 17

F-11-063



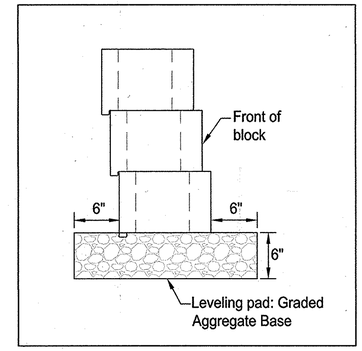
RETAINING WALL PROFILE

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 5'



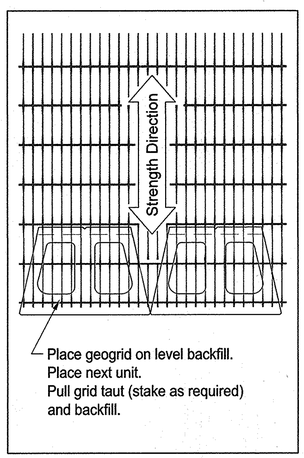
RETAINING WALL – SECTION A–A (APPROXIMATE STATION 0+40)

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



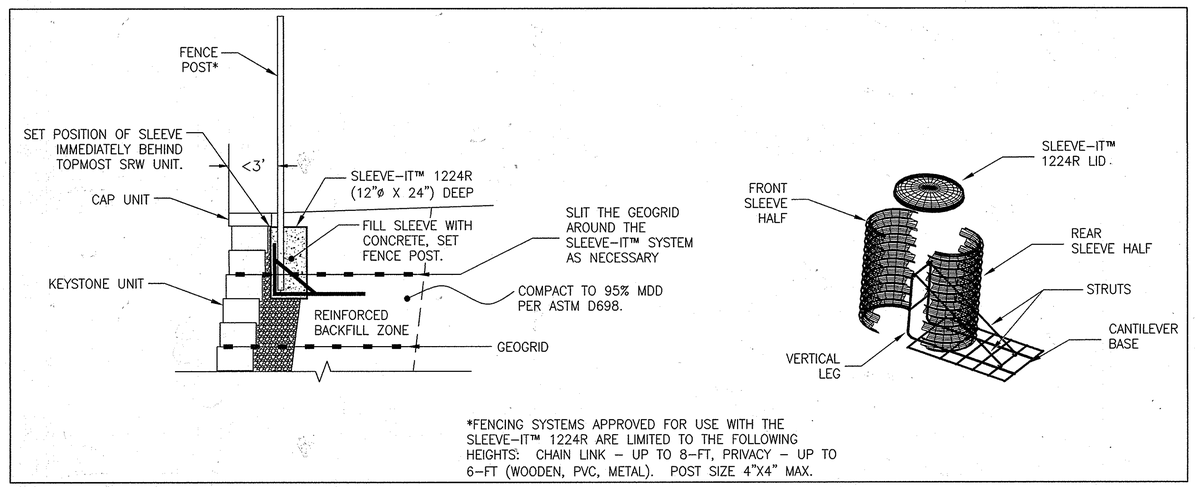
CONNECTOR/LEVELING PAD DETAIL

NTS



GEOGRID INSTALLATION DETAIL

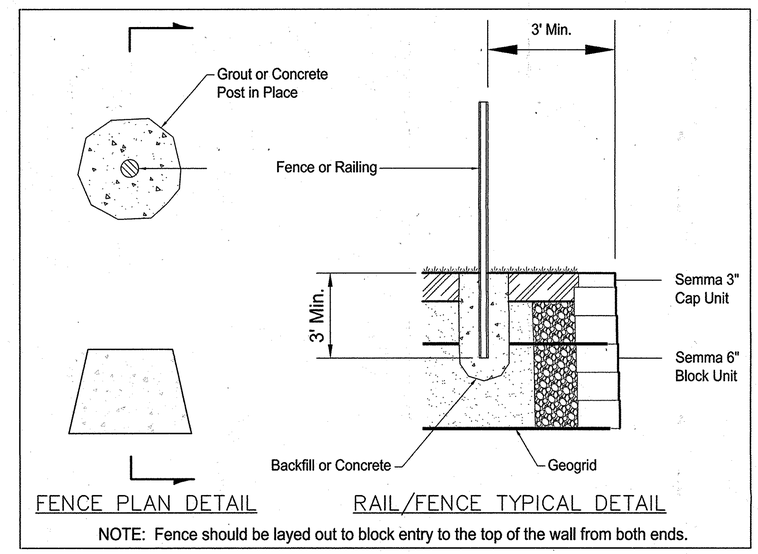
NTS



*FENCING SYSTEMS APPROVED FOR USE WITH THE SLEEVE-IT™ 1224R ARE LIMITED TO THE FOLLOWING HEIGHTS: CHAIN LINK – UP TO 8-FT, PRIVACY – UP TO 6-FT (WOODEN, PVC, METAL). POST SIZE 4"X4" MAX.

TYPICAL FENCE SECTION DETAILS
(USING SLEEVE-IT™ 1224R)

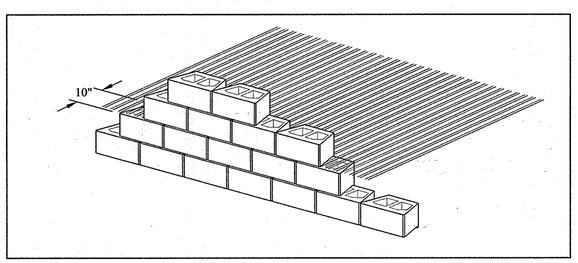
NTS



NOTE: Fence should be layed out to block entry to the top of the wall from both ends.

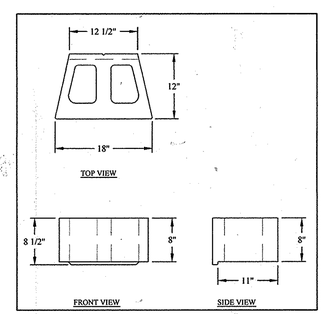
ALTERNATE FENCE SECTION DETAILS

NTS



DIAMOND PRO BLOCK ISOMETRIC SECTION VIEW

NTS



BLOCK DIMENSIONS

NTS

CHERRYTREE VIEW
BUILDABLE LOTS 1 – 11 AND OPEN SPACE LOTS 12 & 13
ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003, WP-11-065 & SP-11-001
TAX MAP No. 46 GRID No. 11 PARCEL No. 55
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JULY 29, 2015
SHEET 18 OF 18

F-11-063

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 11/3/2015
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11-13-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-12-15

REVISIONS		
NO.	DESCRIPTION	DATE

GEO-TECHNOLOGY ASSOCIATES, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
14280 PARK CENTER DRIVE, SUITE: A
LAUREL, MARYLAND 20707
(410) 792-9446 OR (301) 470-4470
FAX: (410) 792-7395
WWW.GTAENG.COM

STATE OF MARYLAND — RAVINDRA PRASAD MALIK — No. 24495 — PROFESSIONAL ENGINEER

MD 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. 24495, EXPIRATION DATE: 10/30/15.

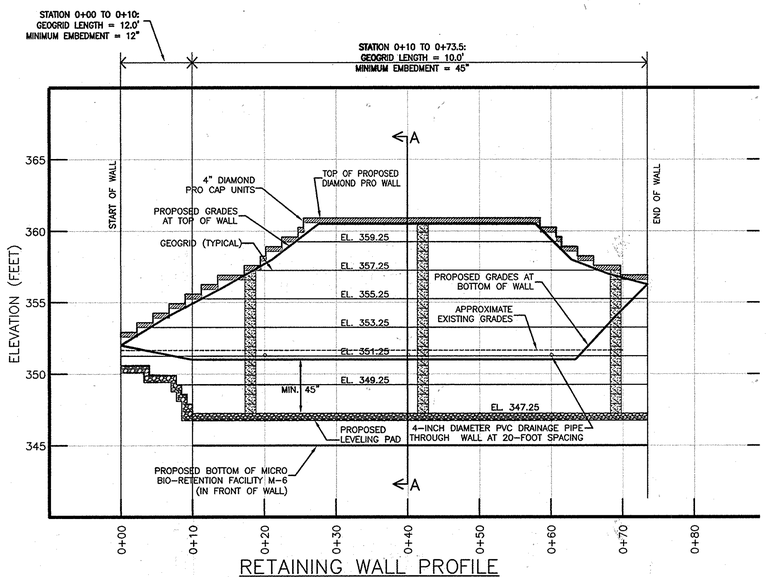
CHERRY TREE VIEW - LOT 15
PROPOSED RETAINING WALL

PLAN AND GENERAL NOTES

HOWARD COUNTY, MARYLAND

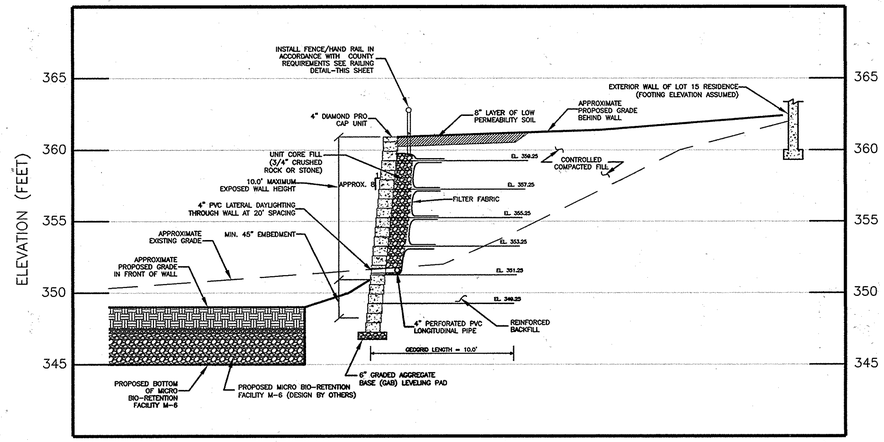
DATE	REVISIONS	
		JOB NO.: 141100
		SCALE: AS SHOWN
		DATE: 4/7/2015
		DRAWN BY: JPE
		DESIGN BY: JPE
		REVIEW BY: RPM
		SHEET: 17 OF 17

F-11-063



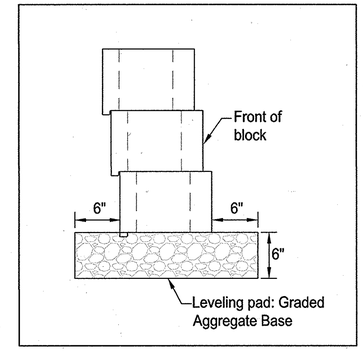
RETAINING WALL PROFILE

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 5'



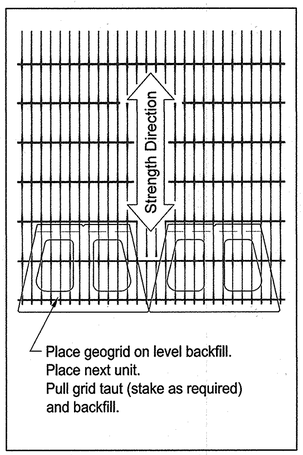
RETAINING WALL – SECTION A–A (APPROXIMATE STATION 0+40)

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



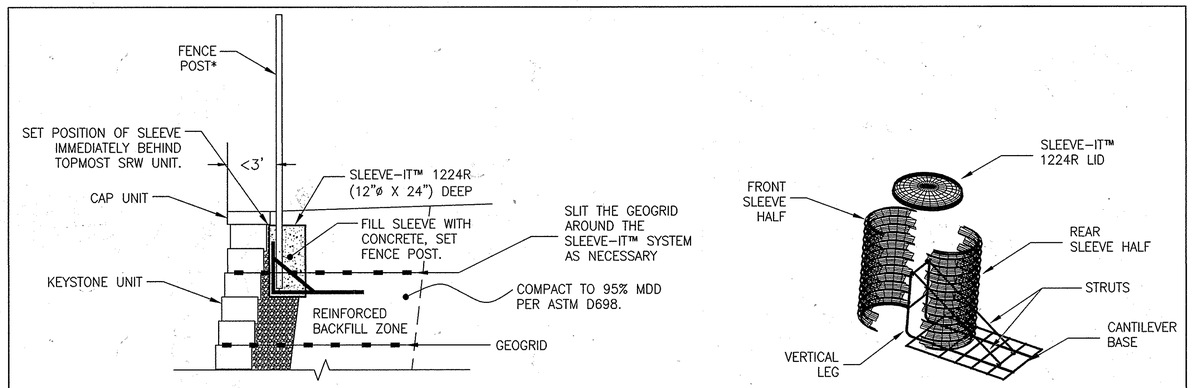
CONNECTOR/LEVELING PAD DETAIL

NTS



GEOGRID INSTALLATION DETAIL

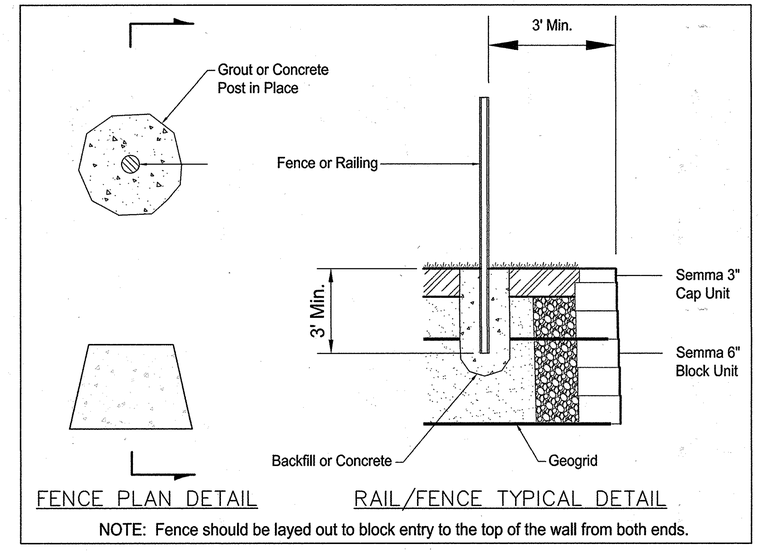
NTS



*FENCING SYSTEMS APPROVED FOR USE WITH THE SLEEVE-IT™ 1224R ARE LIMITED TO THE FOLLOWING HEIGHTS: CHAIN LINK – UP TO 8-FT, PRIVACY – UP TO 6-FT (WOODEN, PVC, METAL). POST SIZE 4"X4" MAX.

TYPICAL FENCE SECTION DETAILS
(USING SLEEVE-IT™ 1224R)

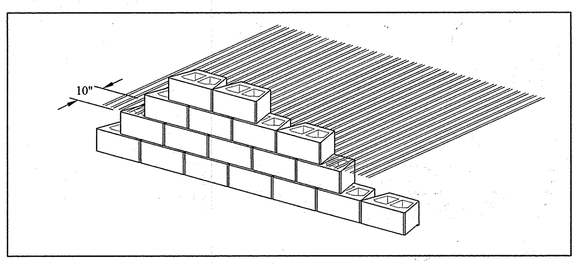
NTS



NOTE: Fence should be layed out to block entry to the top of the wall from both ends.

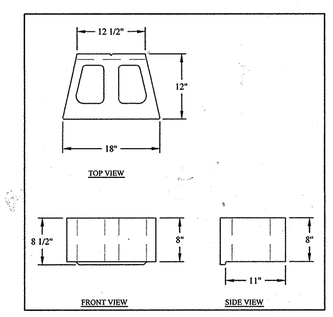
ALTERNATE FENCE SECTION DETAILS

NTS



DIAMOND PRO BLOCK ISOMETRIC SECTION VIEW

NTS



BLOCK DIMENSIONS

NTS

CHERRYTREE VIEW
BUILDABLE LOTS 1 – 11 AND OPEN SPACE LOTS 12 & 13
ZONING: R-20
PREVIOUS FILE Nos.: ECP-11-003, WP-11-065 & SP-11-001
TAX MAP No. 46 GRID No. 11 PARCEL No. 55
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JULY 29, 2015
SHEET 18 OF 18

F-11-063

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 11/3/2015
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11-13-15
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11-12-15

REVISIONS		
NO.	DESCRIPTION	DATE

GEO-TECHNOLOGY ASSOCIATES, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
14280 PARK CENTER DRIVE, SUITE: A
LAUREL, MARYLAND 20707
(410) 792-9446 OR (301) 470-4470
FAX: (410) 792-7395
WWW.GTAENG.COM

STATE OF MARYLAND — RAVINDRA PRASAD MUTYALA — No. 24495 — PROFESSIONAL ENGINEER

MD 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. 24495, EXPIRATION DATE: 10/30/15.

CHERRY TREE VIEW - LOT 15
PROPOSED RETAINING WALL

PLAN AND GENERAL NOTES

HOWARD COUNTY, MARYLAND

DATE	REVISIONS	
		JOB NO.: 141100
		SCALE: AS SHOWN
		DATE: 4/7/2015
		DRAWN BY: JPE
		DESIGN BY: JPE
		REVIEW BY: RPM
		SHEET: 18 OF 18

F-11-063