SHEET INDEX	
SHEET No.	SHEET
1	TITLE SHEET
2-4	MERIWETHER DRIVE - PLAN AND PROFILE
5	ROADWAY DETAILS
6-10	STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
11-12	LANDSCAPE PLAN
13-15	STORM DRAIN PROFILES
16	STORMWATER MANAGEMENT NOTES AND DETAILS
17	STORMWATER MANAGEMENT PROFILES AND DETAILS - BMP•5
18	STORMWATER MANAGEMENT PROFILES AND DETAILS - BMP•8
19	STORMWATER MANAGEMENT PROFILES AND DETAILS - BMP•11
20	STORMWATER MANAGEMENT NOTES AND DETAILS
21	BIO-RETENTION FACILITIES - PLAN AND DETAILS
22	SEDIMENT CONTROL NOTES & DETAILS
23	SEDIMENT CONTROL NOTES & DETAILS
24-25	STORM DRAIN DRAINAGE AREA MAP
26-27	SOIL BORINGS
28-30	FOREST CONSERVATION PLAN

FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLAN

MERIWETHER FARM

SECTION TWO

PHASE TWO

BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)

ZONING: RC-DEO

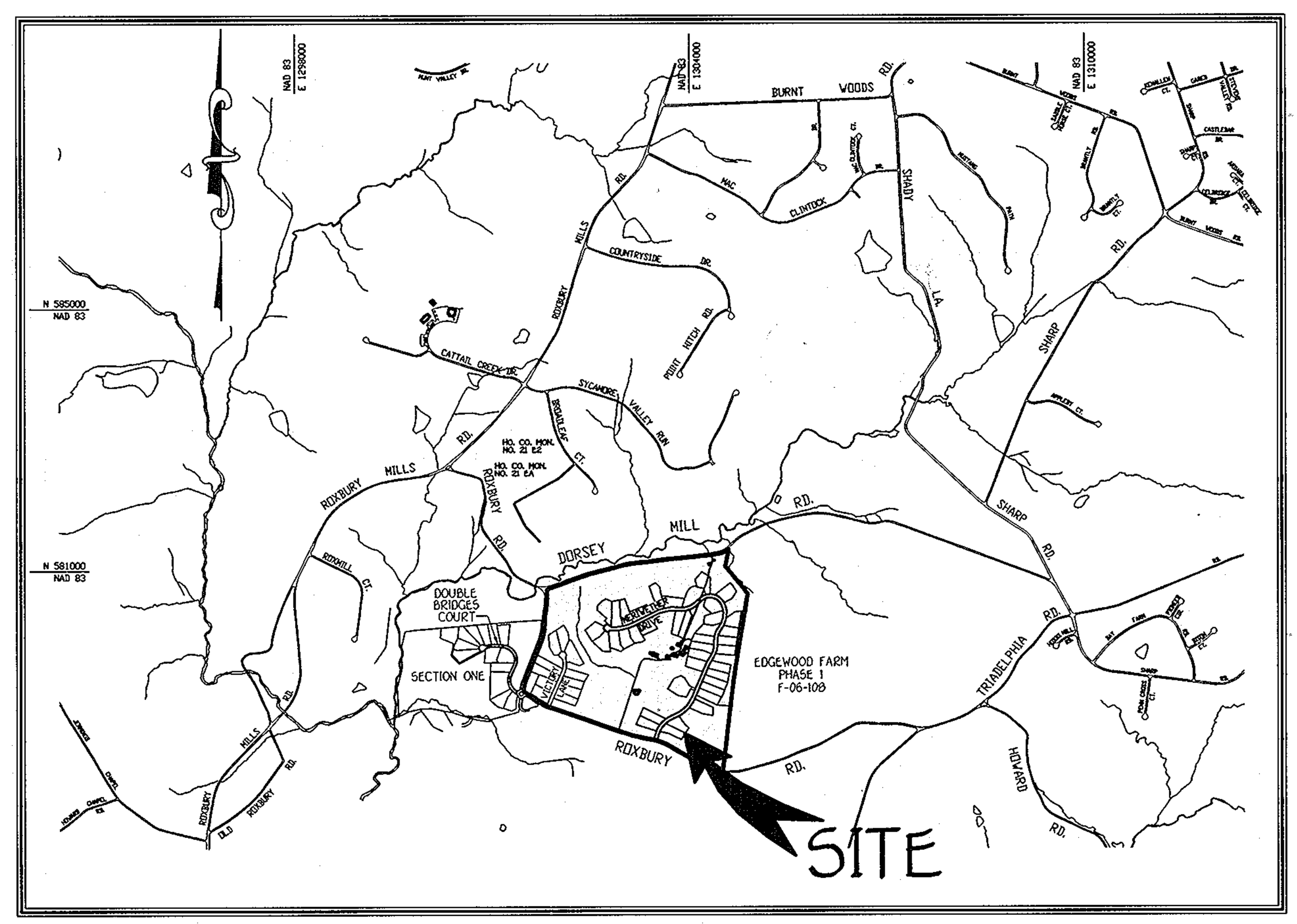
TAX MAP No. 21 GRID No. 15, 16, 21 & 22 PARCEL No. 28

APPROVED: DEPARTMENT OF PUBLIC WORKS	
CHIEF, BUREAU OF HIGHWAYS	10-23-09 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT	10-30-09 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	10/28/09 DATE

ROADWAY INFORMATION CHART			
ROAD NAME	CLASSIFICATION	DESIGN SPEED	R/W WIDTH
MERIWETHER DRIVE	PUBLIC ACCESS STREET	30 M.P.H.	50'

TRAFFIC CONTROL SIGNS				
ROAD NAME	CENTERLINE STA.	OFFSET	POSTED SIGN	SIGN CODE
MERIWETHER DRIVE	0+25	18' L	STOP	R1-1
MERIWETHER DRIVE	1+50	14' R	SPEED LIMIT 25	R2-1
MERIWETHER DRIVE	2+65	14' L	STOP AHEAD	W3-1
MERIWETHER DRIVE	19+70	14' R	SHARP LEFT TURN 20 MPH	W1-1L W13-1

PHASING TABULATION		
PHASE	ALLOCATION YEAR	No. OF LOTS
ONE	2010	10
TWO	2011	36 AND 1 BUILDABLE PRESERVATION PARCEL = 37



VICINITY MAP

SCALE: 1" = 2000'

FOURTH 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, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
5. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON HOWARD COUNTY GEODETIC CONTROL STATIONS:
   HOWARD COUNTY MONUMENT NO. 21 EA N 582715.1489 ELEV. = 450.292 E 1300495.9996
   HOWARD COUNTY MONUMENT NO. 21 E2 N 582976.4443 ELEV. = 476.653 E 1300868.4416
6. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY MARS GROUP DATED NOVEMBER, 2006 AND WAS APPROVED UNDER SP-07-007.
7. BACKGROUND INFORMATION:
   A. SUBDIVISION NAME: MERIWETHER FARM
   B. TAX MAP NO.: 21
   C. PARCEL NO.: 28
   D. ZONING: RC-DEO
   E. ELECTION DISTRICT: FOURTH
   F. TOTAL TRACT AREA: 162.902 AC.± (BULK PARCEL 'E', F-08-199); ORIGINAL TRACT AREA = 183.068 AC.± (F-08-198)
   G. NET AREA = (182.972 - 6.78 (FLOODPLAIN) - 5.81 (STEEP SLOPES OUTSIDE FLOODPLAIN) = 170.382 AC.±
   H. AREA OF STEEP SLOPES 25% AND GREATER = 6.01 AC.± TOTAL (5.81 AC. OUTSIDE FLOODPLAIN)
   I. NO. OF BUILDABLE LOTS: 36
   J. NO. OF NON-BUILDABLE PRESERVATION PARCELS: 4
   K. NO. OF BUILDABLE PRESERVATION PARCELS: 1
   L. AREA OF BUILDABLE LOTS: 38.334 AC.±
   M. AREA OF NON-BUILDABLE PRESERVATION PARCELS: 7.722 AC.±
   N. AREA OF BUILDABLE PRESERVATION PARCELS: 111.646 AC.±
   O. TOTAL AREA OF ROADWAY TO BE DEDICATED: 5.200 AC.±
   P. AREA OF FLOODPLAIN: 6.78 AC.±
8. NO CEMETERIES EXIST WITHIN THIS SUBDIVISION.
9. ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180.
10. PLAN SUBJECT TO PRIOR DPZ FILE No.: SP-07-009, F-08-198, F-08-199
11. THE PROPOSED WATER AND SEWER SYSTEMS SHALL BE PRIVATE.
12. THE SUBJECT PROPERTY IS LOCATED OUTSIDE OF THE METROPOLITAN DISTRICT.
13. TOPOGRAPHIC CONTOURS BASED ON AERIAL BY HARFORD AERIAL SURVEYS, INC., DATED APRIL 6, 2004.
14. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.
15. BOUNDARY OUTLINE BASED ON FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC. DATED JUNE 15, 2005.
16. SUBJECT PROPERTY ZONED RC-DEO PER THE 2004 ZONING REGULATIONS AND THE COMP-LITE ZONING AMENDMENTS DATED 7/28/06.
17. THIS SUBDIVISION PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE 2004 ZONING REGULATIONS PER COUNCIL BILL NO. 45-2003 AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL NO. 75-2003. DEVELOPMENT OR CONSTRUCTION ON THIS LOTS OR PARCELS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF A BUILDING OR GRADING PERMIT APPLICATION.
18. THERE ARE AREAS OF STEEP SLOPES (25% OR GREATER) LOCATED ON THIS PROPERTY AS DEFINED BY THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.116b THESE AREAS ARE LOCATED WITHIN THE PRESERVATION PARCELS AND NOT ON THE RESIDENTIAL LOTS.
19. STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY AND MARYLAND 378 SPECIFICATIONS. THE PROPOSED STORMWATER MANAGEMENT FOR THIS SITE IS CHANNEL PROTECTION AND WATER QUALITY AND IS PROVIDED IN THE FOLLOWING FACILITIES:
   a. B.M.P. NO. 4 IS A BIO-RETENTION FACILITY, PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION, LOCATED ON BUILDABLE PRESERVATION PARCEL 'J'.
   b. B.M.P. NO. 5 IS A MICRO-POOL EXTENDED DETENTION POND AND IS PRIVATELY OWNED BY H.O.A AND JOINTLY MAINTAINED BY H.O.A. AND HOWARD COUNTY; LOCATED ON NON-BUILDABLE PRESERVATION PARCEL 'F'.
   c. B.M.P. NO. 6 IS A BIO-RETENTION FACILITY, PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER, LOCATED ON LOT 34.
   d. B.M.P. NO. 7 IS A BIO-RETENTION FACILITY, PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER, LOCATED ON LOT 33.
   e. B.M.P. NO. 8 IS A MICRO-POOL EXTENDED DETENTION POND AND IS PRIVATELY OWNED BY H.O.A AND JOINTLY MAINTAINED BY H.O.A. AND HOWARD COUNTY, LOCATED ON NON-BUILDABLE PRESERVATION PARCEL 'H'.
   f. B.M.P. NO. 9 IS A BIO-RETENTION FACILITY, PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION, LOCATED ON BUILDABLE PRESERVATION PARCEL 'J'.
   g. B.M.P. NO. 10 IS A BIO-RETENTION FACILITY, PRIVATELY OWNED AND MAINTAINED BY HOMEOWNER, LOCATED ON LOT 30.
   h. B.M.P. NO. 11 IS A MICRO-POOL EXTENDED DETENTION POND AND IS PRIVATELY OWNED BY H.O.A AND JOINTLY MAINTAINED BY H.O.A. AND HOWARD COUNTY, LOCATED ON NON-BUILDABLE PRESERVATION PARCEL 'I'.
   i. B.M.P. NO. 12 IS A BIO-RETENTION FACILITY, PRIVATELY OWNED AND MAINTAINED BY HOMEOWNER, LOCATED ON LOT 27.
   j. B.M.P. NO. 13 IS A BIO-RETENTION FACILITY, PRIVATELY OWNED AND MAINTAINED BY HOMEOWNER, LOCATED ON LOT 26.
20. THE NON-CRITICAL FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY FISHER, COLLINS & CARTER, INC. DATED NOVEMBER, 2006, AND SUPPLEMENTED WITH INFORMATION OBTAINED FROM HO.CO. CAPITAL PROJECT D-1079 AND WAS APPROVED UNDER SP-07-007.
21. AS PER SECTION 104.F.4.B OF THE ZONING REGULATIONS, ONLY ONE EASEMENT HOLDER IS REQUIRED FOR PRESERVATION PARCELS DESIGNED SOLELY FOR SWM FACILITIES OR COMMUNITY SEWERAGE DISPOSAL SYSTEMS.
   A. NON-BUILDABLE PRESERVATION PARCEL 'F'
      OWNED: HOMEOWNER'S ASSOCIATION
      EASEMENT HOLDER: HOWARD COUNTY, MARYLAND
      USE: S.W.M.
   B. NON-BUILDABLE PRESERVATION PARCEL 'G'
      OWNED: HOMEOWNER'S ASSOCIATION
      EASEMENT HOLDERS: HOWARD COUNTY, MARYLAND & HOWARD COUNTY CONSERVANCY
      USE: ENVIRONMENTAL PROTECTION (F.C.E.)
   C. NON-BUILDABLE PRESERVATION PARCEL 'H'
      OWNED: HOMEOWNER'S ASSOCIATION
      EASEMENT HOLDER: HOWARD COUNTY, MARYLAND
      USE: S.W.M.
   D. NON-BUILDABLE PRESERVATION PARCEL 'I'
      OWNED: HOMEOWNER'S ASSOCIATION
      EASEMENT HOLDER: HOWARD COUNTY, MARYLAND
      USE: S.W.M.
   E. BUILDABLE PRESERVATION PARCEL 'J'
      OWNED: PRIVATE HOMEOWNER
      EASEMENT HOLDERS: HOWARD COUNTY, MARYLAND & HOMEOWNER'S ASSOCIATION
22. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE WETLANDS, STREAM, FOREST CONSERVATION EASEMENT OR THEIR REQUIRED BUFFERS. (SEE NOTE No. 36 FOR CONTINUATION.)
23. THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY PENNIMAN & BROWN DATED NOVEMBER, 2006.
24. THE FOREST STAND DELINEATION AND WETLAND DELINEATION FOR THIS PROJECT WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED NOVEMBER, 2006 AND WAS APPROVED UNDER SP-07-007.
25. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR MERIWETHER FARM, SECTION TWO SUBDIVISION WILL BE FULFILLED BY PROVIDING A TOTAL OF ONSITE RETENTION OF 30.1 ACRES OF FOREST AND 21.4 ACRES OF ONSITE PLANTING.
   A. TOTAL FOREST RETENTION OBLIGATION FOR MERIWETHER FARM, SECTION TWO = 30.1 ACRES.
   B. REQUIRED FOREST RETENTION OBLIGATION FOR MERIWETHER FARM, SECTION TWO, PHASE TWO = 15.851 ACRES. (30.1 AC. - 14.249 AC. PROVIDED IN FOREST EASEMENTS 3, 4 & 5 IN PHASE ONE, F-08-199)
   C. PROVIDED FOREST RETENTION CONSERVATION EASEMENT FOR MERIWETHER FARM, SECTION TWO, PHASE TWO = 15.851 AC.
   D. TOTAL FOREST REFORESTATION OBLIGATION FOR MERIWETHER FARM, SECTION TWO = 21.4 ACRES.
   E. REQUIRED FOREST REFORESTATION OBLIGATION FOR MERIWETHER FARM, SECTION TWO, PHASE TWO = 12.187 AC. (21.4 AC. - *1.04 AC. (PROVIDED IN MERIWETHER FARM, SECTION ONE UNDER F-08-198) - 8.173 AC. (PROVIDED IN EASEMENTS 2 & 3 IN PHASE ONE, F-08-199))
   F. PROVIDED FOREST REFORESTATION CONSERVATION EASEMENT FOR MERIWETHER FARM, SECTION TWO, PHASE TWO = 12.187 AC.
   G. THE FOREST CONSERVATION SURETY AMOUNT REQUIRED IS $403,527.00 (15.851 AC. X 43,560 X $0.20 = $138,094) + (12.187 AC. X 43,560 X $0.50 = $265,433) AND WILL BE PROVIDED WITH THE DEVELOPER'S AGREEMENT.
   * NOTE: THE 1.04 AC. REFORESTATION REQUIREMENT WAS SUBSTITUTED WITH 2.08 AC. OF RETENTION ON THE MERIWETHER FARM, SECTION ONE PROJECT.
26. THE LANDSCAPE SURETY IN THE AMOUNT OF $81,450.00 FOR PERIMETER LANDSCAPE REQUIREMENTS (243 SHADE TREES AND 57 EVERGREEN TREES) OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS SUBDIVISION.
27. FINANCIAL SURETY FOR THE 220 REQUIRED STREET TREES SHALL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $66,000.00.
28. ALL EXISTING WELLS AND SEPTIC FIELDS WITHIN 100 FEET OF SUBJECT PROPERTY HAVE BEEN SHOWN.
29. SIGN POSTS: ALL SIGN POST 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."
30. DRIVEWAY (S) SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS:
   A) WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE)
   B) SURFACE - SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING
   C) GEOMETRY - MAXIMUM 14% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM OF 45 FOOT TURNING RADIUS
   D) STRUCTURES (CULVERTS/BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING)
   E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE
   F) STRUCTURE CLEARANCES - MINIMUM 12 FEET
   G) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE
31. GROUND WATER APPROPRIATION PERMIT SHALL BE ISSUED PRIOR TO SUBMISSION OF RECORD PLAT FOR SIGNATURE.
32. ALL WELLS TO BE DRILLED PRIOR TO FINAL PLAT APPROVAL. IT IS THE DEVELOPER'S RESPONSIBILITY TO SCHEDULE THE WELL DRILLING PRIOR TO FINAL PLAT SUBMISSION. IT WILL NOT BE CONSIDERED "GOVERNMENT DELAY" IF THE WELL DRILLING HOLDS UP THE HEALTH DEPARTMENT SIGNATURE OF THE RECORD PLAT.
33. THERE IS AN EXISTING DWELLING/STRUCTURE(S) ON BUILDABLE PRESERVATION PARCEL 'J' TO REMAIN. NO NEW BUILDINGS, EXTENTIONS OR ADDITIONS TO THE EXISTING DWELLING ARE TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATION REQUIREMENTS.
34. ALL EXISTING WELLS, BUILDINGS AND SEPTIC SYSTEMS WHICH ARE TO BE REMOVED SHALL BE REMOVED PRIOR TO FINAL PLAT SIGNATURE.
35. (hatched) THIS AREA DESIGNATES A PRIVATE SEWAGE EASEMENT OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL (COMAR 26.04.03). IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWAGE IS AVAILABLE. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT VARIANCES FOR ENCROACHMENTS INTO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A MODIFIED SEWAGE EASEMENT SHALL NOT BE NECESSARY.
36. EXCEPT FOR THOSE SWM POND OUTFALLS AND NO WOODY ZONES LOCATED WITHIN THE STREAM BUFFER. THESE DISTURBANCES HAVE BEEN DEEMED A NECESSARY DISTURBANCE IN ACCORDANCE WITH SECTION 16.116 (C) OF THE SUBDIVISION REGULATIONS.

DENSITY TABULATIONS

1. ORIGINAL BASE DENSITY IS BASED ON ORIGINAL TRACT AREA OF 183.068 ACRES± (F-08-198)
2. BASE DENSITY: 183.068 ACRES / 4.25 = 43.07 UNITS OR 43 SINGLE FAMILY DETACHED HOMES.
3. 43 LOTS (4-46) = 183.068 - (45.787 AC. LOT AREA - 11.449 AC. ROAD R/W - 10.483 AC. NON-BUILDABLE PARCELS) = 115.349 AC.
4. 115.349 AC. FOR PRESERVATION PARCEL 'J' / 25 AC. = 4 BONUS UNITS.
5. BONUS UNITS ARE LOTS 1, 2, 3 (3.607 AC.±) & BUILDABLE PRESERVATION PARCEL 'J' (111.646 AC.±)
6. MAXIMUM DENSITY: 183.068 ACRES - 6.78 AC. FLOODPLAIN - 5.81 AC. STEEP SLOPES / 2 = 85.239 UNITS OR 85 SINGLE FAMILY DETACHED
7. TOTAL NUMBER OF PROPOSED DWELLING UNITS = 47
   a. SECTION TWO, PHASE ONE - 10 BUILDABLE LOTS (F-08-199)
   b. SECTION TWO, PHASE TWO - 36 BUILDABLE LOTS AND 1 BUILDABLE PRESERVATION PARCEL

1	REVISED OWNER AND DEVELOPER	10-19-11
NO.	DESCRIPTION	DATE
REVISIONS		

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
Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer
Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

ALDO M... 9-22-09 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 2-22-11."

MERIWETHER FARM
SECTION TWO
PHASE TWO
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'
(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 1 OF 30

F-09-044

I:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 1 TITLE SHEET.dwg, 9/21/2009 9:48:36 AM, james, 1:1

NOTE:
THE PROPOSED 15'x20' STANDING PAD WILL BE PRIVATELY OWNED & MAINTAINED BY THE H.O.A.

LOT 11 | LOT 12 | LOT 13 | LOT 39 | LOT 40 | LOT 41 | LOT 42 | LOT 43 | LOT 44 | LOT 45 | LOT 46

PRIVATELY OWNED BUILDABLE PRESERVATION PARCEL 'J'

PRIVATELY OWNED BUILDABLE PRESERVATION PARCEL 'J'

OWNER: H.O.A.
EASEMENT HOLDER: HO. CO., MD.
NON-BUILDABLE PRESERVATION PARCEL 'F'

B.M.P. No. 5
MICRO-POOL EXTENDED DETENTION POND

MERIWETHER DRIVE
(PUBLIC ACCESS STREET)

PRIVATELY OWNED BUILDABLE PRESERVATION PARCEL 'J'
EASEMENT HOLDERS: H.O.A. & HO. CO., MD.

PRIVATELY OWNED BUILDABLE PRESERVATION PARCEL 'J'
EASEMENT HOLDERS: H.O.A. & HO. CO., MD.

MATCH LINE SEE SHEET 3

"STOP AHEAD" SIGN
PROP. 15'x20' STANDING PAD
PRIVATE 30' x 20' BUS STOP EASEMENT
PROPOSED BOLLARDS
PROP. FLUSH CURB (E-3.07) (INSIDE CURVE ONLY)
STD. 7" CONC. CURB & GUTTER
SPEED LIMIT 25 MPH SIGN
30' Wide Private Landscape Entrance Monument Easement
PUBLIC 10' TREE MAINTENANCE EASEMENT
150 L.F. OF CL. I RIP-RAP INFLOW PROTECTION SEE PROFILE, SHEET 13
SCARLET RIDGE LOTS 1 - 5 PLAT No. 20105 LOT 1

PRIVATE 20' DRAINAGE & UTILITY EASEMENT
20' PRIVATE DRAINAGE & UTILITY EASEMENT
PUBLIC 20' DRAINAGE & UTILITY EASEMENT
PUBLIC DRAINAGE & UTILITY EASEMENT
PUBLIC 20' DRAINAGE & UTILITY EASEMENT
PRIVATE 20' DRAINAGE & UTILITY EASEMENT

18" RCCP, CL. IV (120')
30" RCCP, CL. IV (30')
18" RCCP, CL. IV (102')
18" RCCP, CL. IV (168')
18" RCCP, CL. IV (40')
30" RCCP, CL. IV (40')
18" RCCP, CL. IV (105')

E/P=545.30
E/P=536.72
E/P=535.55
E/P=535.52
E/P=532.23
E/P=542.39

PC = 1+15.44
PT = 1+77.26
PC = 5+33.04
PT = 9+34.04
PC = 14+75.70
PT = 16+13.04

N 579700
E 1303500
N 579740
E 1304100
N 579760
E 1304100

PLAN

SCALE : 1"=50'

℄ CURVE DATA
MERIWETHER DRIVE
STA. 1+15.44 TO STA. 4+77.26
RAD. = 400.00'
ARC LENGTH = 361.81'
TAN. = 194.34'
△ = 51°49'33"
CHORD. = N 40°49'29" E, 349.60'

℄ CURVE DATA
MERIWETHER DRIVE
STA. 5+33.04 TO STA. 9+34.04
RAD. = 525.00'
ARC LENGTH = 401.00'
TAN. = 210.85'
△ = 43°45'47"
CHORD. = N 44°50'22" E, 391.32'

℄ CURVE DATA
MERIWETHER DRIVE
STA. 14+75.70 TO STA. 16+13.04
RAD. = 695.00'
ARC LENGTH = 137.34'
TAN. = 68.89'
△ = 11°19'20"
CHORD. = N 28°40'08" E, 137.12'

NO.	DESCRIPTION	DATE
	REVISIONS	
1	REV. LANDSCAPE & ENTRANCE ESM'T.	10-19-11
1	REV. OWNER & DEVELOPER	10-19-11

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10-30-09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/28/09

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-23-09

MERIWETHER FARM
SECTION TWO
(PHASE TWO)
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

MERIWETHER DRIVE
PLAN AND PROFILE

Owner	Developer
Meriwether Farm II, LLC c/o Second Goodier, LLC 10715 Charter Drive Suite 350 Columbia, Maryland 21044 Ph: (410) 997-7501 Attn: Mr. Robert C. Goodier, Jr.	Toll Brothers, Inc. Maryland Division 7164 Columbia Gateway Drive Suite 230 Columbia, Maryland 21046 Ph: (410) 997-7501 Attn: Mr. Jeff Driscoll

SCALE: AS SHOWN	DATE: SEPT. 21, 2009	DWG. NO. 2 OF 30
DES. R.A.I.	DRN. J.C.L.	CHK. A.M.V.

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

ALDO M. VITALE — DATE 9-22-09

"Professional Engineer, I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-11."

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

MERIWETHER DRIVE
(PUBLIC ACCESS STREET)
DESIGN SPEED = 30 M.P.H.

VERTICAL CURVE DATA
150' VC
PVI STA = 1+50
PVI ELEV = 545.00
CORR. = -0.09'
SSD = 287.500'

VERTICAL CURVE DATA
300' VC
PVI STA = 4+50
PVI ELEV = 537.50
CORR. = +0.19'
HSD = 1750.00'

VERTICAL CURVE DATA
489.50' VC
PVI STA = 9+44.75
PVI ELEV = 529.51
CORR. = +2.56'
HSD = 500.00'

VERTICAL CURVE DATA
100' VC
PVI STA = 12+77.19
PVI ELEV = 539.04
CORR. = +0.19'
HSD = 1,199.99'

VERTICAL CURVE DATA
212' VC
PVI STA = 14+33.19
PVI ELEV = 544.82'
CORR. = -1.85'
SSD = 291.20'

PAVING STA. 0+00
EDGE OF EXIST. ROADWAY
PVI STA. 0+75
ELEV. = 546.55
PVI STA. 2+25
ELEV. = 543.12
PVCC STA. 3+00
ELEV. = 541.25
PVCC STA. 6+00
ELEV. = 534.50
PVI STA. 10+89.50
ELEV. = 534.95
PVI STA. 12+27.19
ELEV. = 537.95
PVCC STA. 13+27.19
ELEV. = 540.09
STA. 0+00 = ℄ ROXBURY ROAD, EL. 546.00
P.G.I. (CENTER LINE OF ROAD)
EXISTING GROUND (75' LEFT)
95% COMPACTION
EXISTING GROUND (CENTERLINE)
95% COMPACTION
-2.00%
-2.50%
-2.30%
2.18%
2.70%
MATCH LINE SEE SHEET 3

NOTE:
ALL FILL AREAS TO HAVE 95% COMPACTION PER AASHTO T-180 SPECIFICATIONS.

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

546.00 | 547.00 | 546.50 | 545.99 | 545.46 | 544.91 | 544.33 | 543.74 | 543.12 | 542.50 | 541.25 | 540.63 | 540.02 | 539.42 | 538.83 | 538.26 | 537.69 | 537.13 | 536.98 | 536.05 | 535.52 | 535.01 | 534.50 | 534.03 | 533.61 | 533.24 | 532.93 | 532.67 | 532.46 | 532.31 | 532.21 | 532.15 | 532.17 | 532.23 | 532.35 | 532.51 | 532.73 | 533.01 | 533.34 | 533.72 | 534.15 | 534.64 | 535.19 | 535.81 | 536.49 | 537.23 | 537.96 | 538.94 | 539.77 | 540.61 | 541.85 | 542.26 | 542.71

0+00 | 1+00 | 2+00 | 3+00 | 4+00 | 5+00 | 6+00 | 7+00 | 8+00 | 9+00 | 10+00 | 11+00 | 12+00 | 13+00 | 14+00

550 | 545 | 540 | 535 | 530 | 525 | 520 | 515 | 510

F-09-044

I:\2004\04058\dwg\PHASE TWO SECTION TWO FINALS\SHEET 2-4 ROAD PLANS.dwg, 9/21/2009 10:22:11 AM, jjames,

NO.	DESCRIPTION	DATE
1	REV. OWNER & DEVELOPER	10-19-11
	REVISIONS	

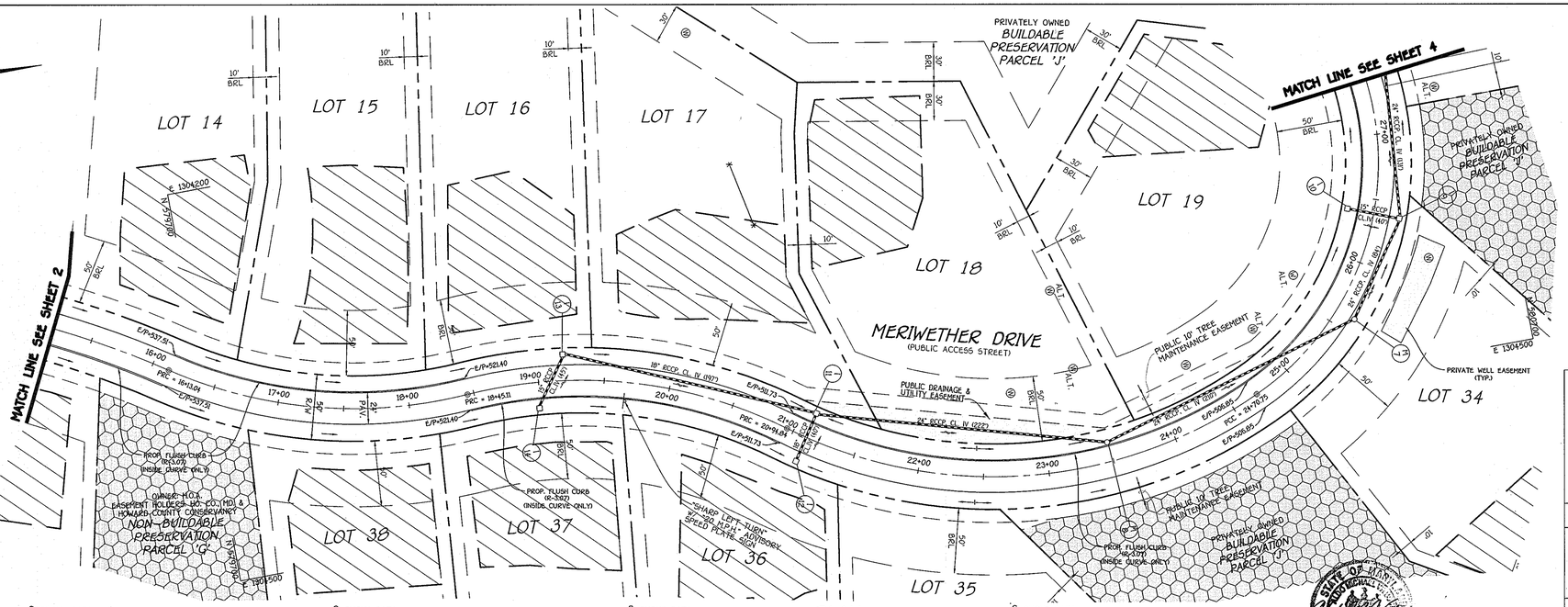
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10-20-09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/22/09

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-23-09



℄ CURVE DATA
MERIWETHER DRIVE
STA. 14+75.70 TO STA. 16+13.04
RAD. = 695.00'
ARC LENGTH = 137.34'
TAN. = 68.89'
△ = 11°19'20"
CHORD. = N 28°40'08" E, 137.12'

℄ CURVE DATA
MERIWETHER DRIVE
STA. 16+13.04 TO STA. 18+45.11
RAD. = 350.00'
ARC LENGTH = 232.07'
TAN. = 120.48'
△ = 37°59'27"
CHORD. = N 15°20'05" E, 227.85'

℄ CURVE DATA
MERIWETHER DRIVE
STA. 18+45.11 TO STA. 20+94.84
RAD. = 350.00'
ARC LENGTH = 249.73'
TAN. = 130.44'
△ = 40°52'50"
CHORD. = N 16°46'46" E, 244.46'

PLAN
SCALE : 1"=50'

℄ CURVE DATA
MERIWETHER DRIVE
STA. 20+94.84 TO STA. 24+70.75
RAD. = 350.00'
ARC LENGTH = 375.91'
TAN. = 200.38'
△ = 61°32'08"
CHORD. = N 06°27'06" E, 358.10'

℄ CURVE DATA
MERIWETHER DRIVE
STA. 24+70.75 TO STA. 28+85.10
RAD. = 215.00'
ARC LENGTH = 414.35'
TAN. = 309.47'
△ = 110°25'17"
CHORD. = N 79°18'58" W, 353.14'

STATE OF MARYLAND — ALDO E. VARONE — No. 7168 — REGISTERED PROFESSIONAL ENGINEER

9.22.09
DATE

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20746, Expiration Date 2-22-11."

MERIWETHER FARM
SECTION TWO
(PHASE TWO)
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

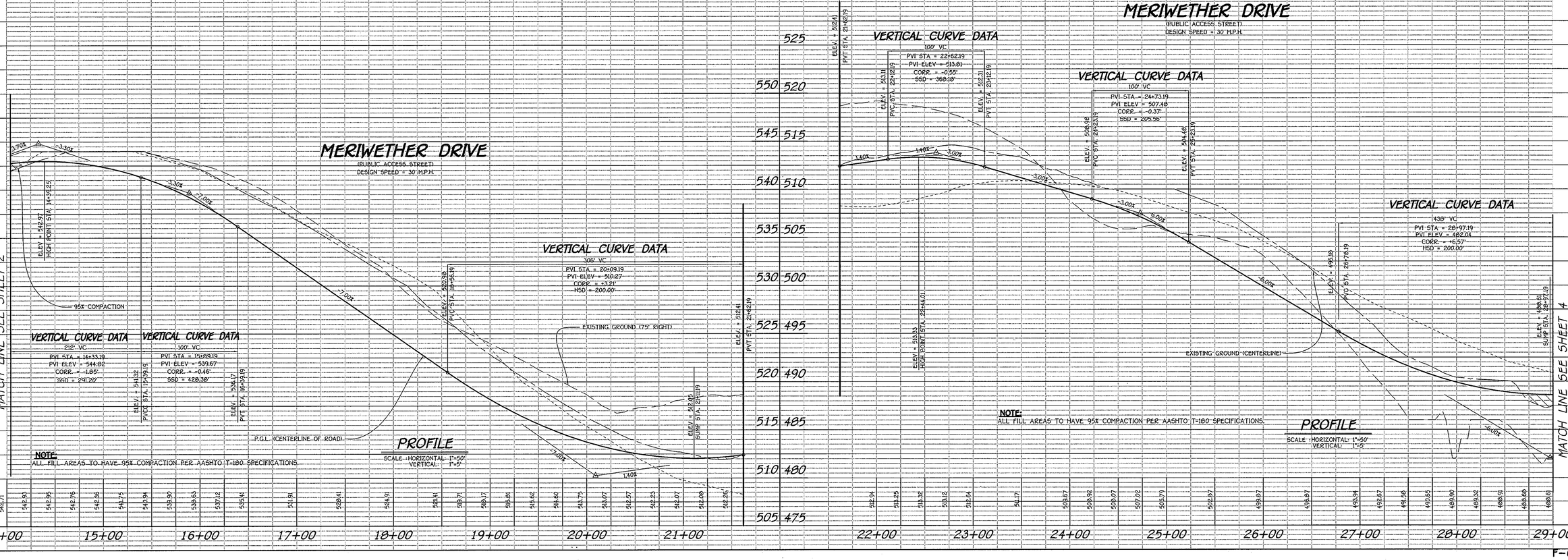
(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

MERIWETHER DRIVE
PLAN AND PROFILE

Owner	Developer
Meriwether Farm II, LLC c/o Second Goodier, LLC 10715 Charter Drive Suite 350 Columbia, Maryland 21044 Ph: (410) 997-7501 Attn: Mr. Robert C. Goodier, Jr.	Toll Brothers, Inc. Maryland Division 7164 Columbia Gateway Drive Suite 230 Columbia, Maryland 21046 Ph: (410) 997-7501 Attn: Mr. Jeff Driscoll

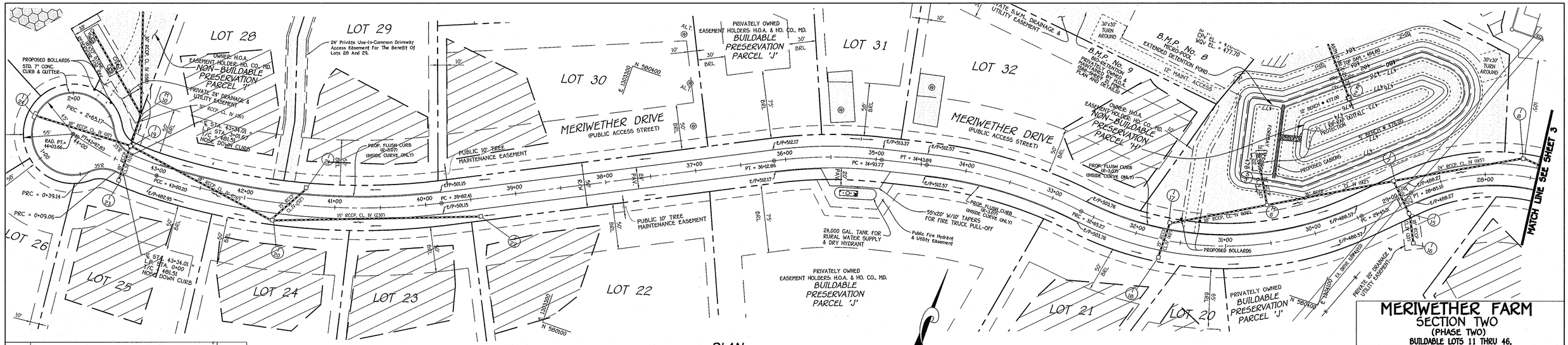
SCALE: AS SHOWN	DATE: SEPT. 21, 2009	DWG. NO. 3 OF 30
DES. R.A.I.	DRN. J.C.L.	CHK. A.M.V.

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



F-09-044

I:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 2-4 ROAD PLANS.dwg, 9/21/2009 10:28:41 AM, jamesl,



PLAN

SCALE : 1"=50'

NO.	DESCRIPTION	DATE
	REVISIONS	

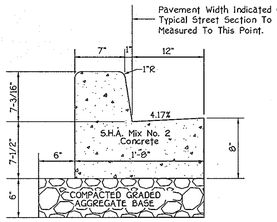
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10-30-09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/28/09

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-23-09



(DETAIL R-3.01)

STANDARD 7" COMB. CONC. CURB AND GUTTER

NO SCALE

℄ CURVE DATA
MERIWETHER DRIVE
STA. 43+00.20 TO STA. 43+97.83
RAD. = 350.00'
ARC LENGTH = 97.63'
TAN. = 49.13'
△ = 15°58'54"
CHORD. = N 83°09'32" W, 97.31'

℄ CURVE DATA
MERIWETHER DRIVE
STA. 39+82.41 TO STA. 43+00.20
RAD. = 725.00'
ARC LENGTH = 317.79'
TAN. = 161.49'
△ = 25°06'51"
CHORD. = S 76°17'35" W, 315.25'

℄ CURVE DATA
MERIWETHER DRIVE
STA. 34+93.77 TO STA. 36+12.86
RAD. = 495.00'
ARC LENGTH = 119.08'
TAN. = 59.83'
△ = 13°47'02"
CHORD. = S 70°17'07" W, 118.80'

℄ CURVE DATA
MERIWETHER DRIVE
STA. 32+65.27 TO STA. 34+43.89
RAD. = 495.00'
ARC LENGTH = 178.62'
TAN. = 90.29'
△ = 20°40'30"
CHORD. = S 87°30'52" W, 177.65'

℄ CURVE DATA
MERIWETHER DRIVE
STA. 29+45.31 TO STA. 32+65.27
RAD. = 350.00'
ARC LENGTH = 319.96'
TAN. = 172.14'
△ = 52°22'44"
CHORD. = S 71°39'45" W, 308.94'

℄ CURVE DATA
MERIWETHER DRIVE
STA. 24+70.75 TO STA. 28+85.10
RAD. = 215.00'
ARC LENGTH = 414.35'
TAN. = 309.47'
△ = 110°25'17"
CHORD. = N 79°18'58" W, 353.14'

ALDO V. VITTUCCI, P.E. — 9-22-09 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. 20740, Expiration Date 2-22-11."

MERIWETHER FARM
SECTION TWO
(PHASE TWO)
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No.: 29 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

MERIWETHER DRIVE
PLAN AND PROFILE

Owner
Meriwether Farm II, LLC
c/o David Carney, Attorney In Fact
Carney, Kelehan, Bresler & Scherr, LLP
Suite 200
10715 Charter Drive
Columbia, Maryland 21044
Ph: (410) 740-4600

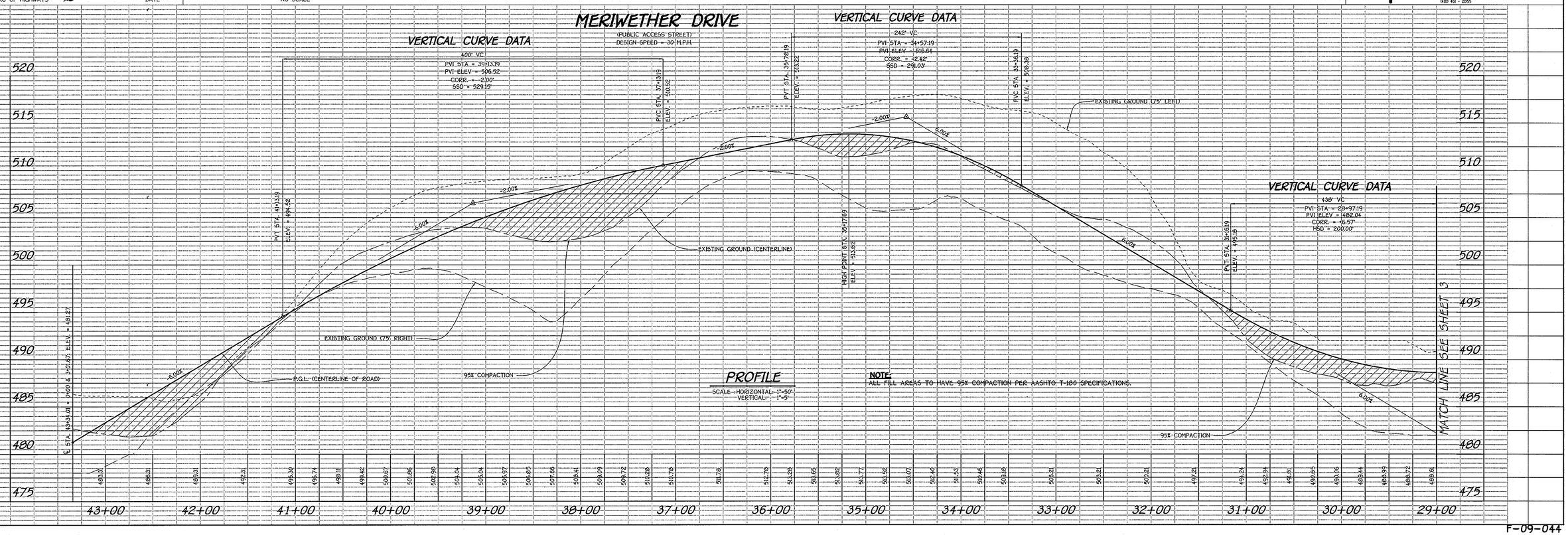
Developer
Second Goodier, LLC
10705 Charter Drive
Suite 300
Columbia, Maryland 21044
Ph: (410) 997-7501

SCALE: AS SHOWN	DATE: SEPT. 21, 2009	DWG. NO. 4 OF 30
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

MERIWETHER DRIVE
(PUBLIC ACCESS STREET)
DESIGN SPEED = 30 M.P.H.

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



NOTE:
ALL FILL AREAS TO HAVE 95% COMPACTION PER AASHTO T-180 SPECIFICATIONS.

I:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 2-4 ROAD PLANS.dwg, 9/21/2009 10:31:19 AM, jamesl, 111

F-09-044

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO <5	5 TO <7	≥7	3 TO <5	5 TO <7	≥7
		PAVEMENT MATERIAL (INCHES)	MIN HMA WITH GAB			HMA WITH CONSTANT GAB		
P-2	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY; LOCAL ROADS: ACCESS PLACE, ACCESS STREET; CUL-DE-SACS: RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE 9.5 MM, PG 64-22, LEVEL 1 (ESAL)	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM. PG 64-22; LEVEL 1 (ESAL)	1.0	1.0	1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE 19.0 MM. PG 64-22, LEVEL 1 (ESAL)	2.0	2.0	2.0	3.5	2.0	2.0
		GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0	4.0	4.0

APPROVED: DEPARTMENT OF PUBLIC WORKS

[signature] 10-23-09
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

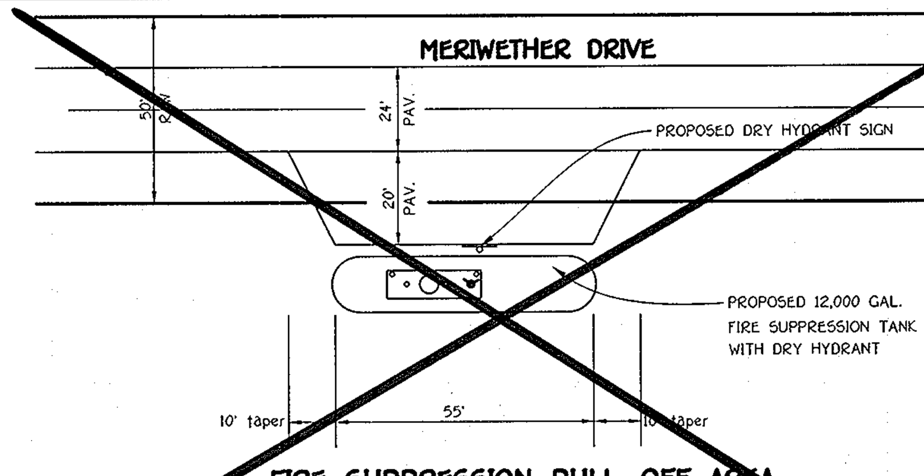
[signature] 10-30-09
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] 10/28/09
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

NOTE:
ALL FILL AREAS TO HAVE 95% COMPACTION PER AASHTO T-180 SPECIFICATIONS.

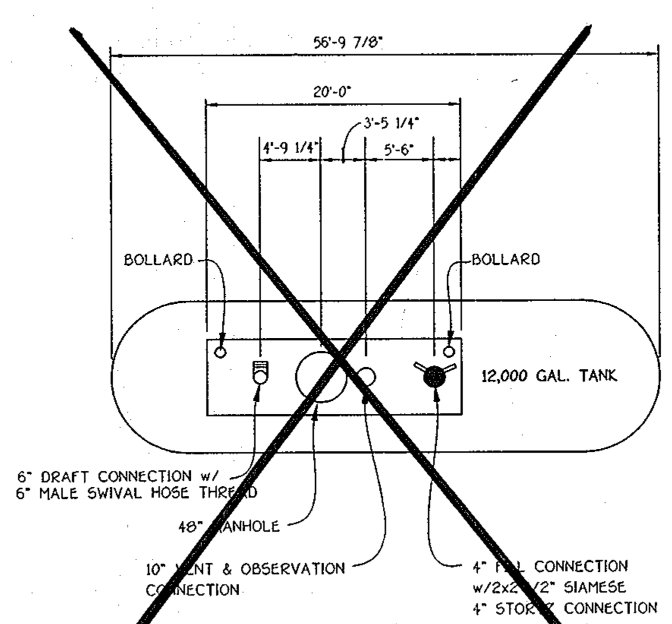
~~SPECIFICATIONS FOR UNDERGROUND WATER STORAGE TANKS FOR FIRE PROTECTION~~

1. Introduction
 1.1. Scope
 The construction of underground tanks for fire protection in accordance with Howard County Code, Title 17 and this specification is part of a program designed to improve the level of protection from fires in residential and commercial properties. These Specifications, along with associated documents, provides the information necessary for the construction and placement of fire protection tanks used for this purpose.
 1.2. Purpose
 The purpose of this specification is to provide the technical information required for the construction of underground water storage tanks in accordance with Howard County Maryland, Title 17 and all data therein referenced.
2. Underground tanks
 2.1. Materials for static water supply tank
 2.1.1. Tanks shall be constructed of single-wall fiberglass per approved manufacturer's specifications.
 2.1.2. The manufacturer shall provide a 30-year warranty, against defects in material for the tank system, to the purchaser of the tank and their heirs, successors, and assigns.
 2.2. Features
 2.2.1. The tank system shall include a device for holding the tank in position against floatation (deadman). This configuration shall be supplied by the tank manufacturer as part of the tank package. Installation shall be in accordance with the manufacturer's recommendations.
 2.2.2. The tank shall include a removable access cover at grade (manhole), at least 48" in diameter, to allow entry for maintenance and inspection of the inside of the tank. An internal ladder shall be securely mounted to the tank. The cover shall be properly secured and locked.
 2.2.3. A pad consisting of 4 inch thick concrete shall be placed over the tank, and shall encompass all fittings. Refer to tank drawings for concrete specifications.
 2.2.4. Fittings
 2.2.4.1. One draft connection shall consist of a 6 inch diameter galvanized or ductile iron pipe. The draft connection shall terminate in a 6NH (National Hydrant female) swivel connector with plug or cap. A PVC draft pipe with an anti-vortex plate shall be installed inside the tank by the manufacturer. The draft connection allows a fire department pumper to connect and remove water from the tank at the specified rate of flow (fire flow). Draft connection shall be painted "Fire Engine Red."
 2.2.4.2. One combination vent/fill indicator shall consist of an 8 inch diameter PVC pipe which allows visual inspection of the tank water level, as well as providing the required amount of venting to the tank.
 2.2.4.3. One fill connection shall consist of a 4 inch diameter galvanized or ductile iron pipe, with a Siamese connection with two, two and one half inch (2-2 1/2") connection and one 4" Stortz connection. The fitting shall be angled downward at 30 degrees to reduce hose and fitting strain during filling operations.
 2.2.4.4. All pipe joints above the slab shall be flanged.
 2.2.5. Any features not included in this specification, as well as any special circumstances such as multiple tank designs shall be evaluated and approved during design phase and before any construction is started.
 2.2.6. The standard tank drawing Fire Suppression Water Storage, 30,000 Gallon defines the requirements for a typical 30,000 gallon, 10-foot diameter tank installation. Tank sizes other than 30,000 gallons may require additional drawings to be provided to fit the requirements for a particular site. Drawing Fire Suppression Water Storage, 12,000 Gallon defines the general requirements for construction of 8-foot diameter tanks, and shall be used accordingly. Supplemental drawings shall be reviewed and approved by the Fire Official prior to construction on an as needed basis.
 2.3. Installation
 2.3.1. All tanks shall be installed per the manufacturer's requirements
 2.3.2. Location and orientation of the tank shall be determined during site plan or preliminary subdivision plan layout, as approved by the Fire Official.
 2.3.3. The installing contractor shall be responsible for obtaining all necessary permits for work and for scheduling required inspections.
 2.3.4. The fittings shall be placed as follows:
 2.3.4.1. The draft connection shall be located 8 feet or less from the edge of the parking surface or curb line. This allows for one 10-foot section of suction sleeve to be used for drafting. The draft connection opening shall be turned facing directly toward the road surface.
 2.3.4.2. Total elevation from the bottom of the suction pipe to the centerline of the draft connection shall not exceed 15 feet zero inches. This dimension shall be minimized as much as possible to reduce head loss while maintaining correct depth of cover over tank, per manufacturer's specifications.
 2.3.4.3. The draft connection shall be fixed at a height of 18 inches above finished grade of the pull off pad, to the centerline of the fitting.
 2.3.4.4. The fill connection shall be fixed at a height of 18 inches above finished grade of the pull off pad, to the centerline of the fitting.
 2.3.5. Excavation shall be performed per all applicable regulations. The excavation shall be backfilled with a material per manufacturer's specifications. In designs in which the draft pipe is placed on the tank end, the tank shall have a 1 percent slope toward the draft connection end.
 2.4. Testing and acceptance
 2.4.1. The tank shall be operable with a rate of flow (fire flow) of 1000 gallons per minute (GPM) minimum using a fire department pumper operating under normal conditions.
 2.4.2. A pressure test shall be performed prior to installation of the tank, per manufacturer's specifications.
 2.4.3. A pressure test shall be performed after the tank is installed and covered at a maximum pressure of 5 psi (pounds per square inch) and held for a time period as determined by the Fire Official, or per manufacturer's specifications.
 2.4.4. An operational test shall be performed when construction is completed, in accordance with the approved procedures. The test shall be conducted by the fire department and the installer. When testing has been completed, the installer shall refill the tank to full capacity as required. Once accepted, further use of the tank shall be limited to firefighting operations and routine testing. The fire department shall be responsible for subsequent refilling to full capacity within 12 hours after using water from the tank.
 2.4.5. Final approval will be made per notification in writing by the Fire Official.
 2.5. Accessibility and surrounding features
 2.5.1. A pulloff shall be constructed per Appendix 5.1, Drawing Pulloff Tank Access unless otherwise specified. The requirements for each site will be evaluated and approved by the Fire Official prior to start of work. Details shall . be indicated on the site or subdivision plan as applicable.
 2.5.2. No obstructions shall impede access to tank fittings. The facility shall remain accessible on a year-round basis.
 2.5.2.1. Landscaping, brush, and trees shall be trimmed away from fittings. Overhanging branches shall be trimmed away at a minimum of 12 feet overhead. Grass and weeds shall be cut as needed.
 2.5.3. Protective devices shall be used as applicable to prevent damage to the fittings and to provide safety to operators. These include, but are not limited to the following:
 a. Bollards
 b. Guard rails
 c. Fencing
 d. Walkways
 e. Curbs
 f. Any other barriers/devices as determined by the Fire Official
 2.5.4. A reflective sign shall be posted which clearly indicates tank full capacity and identification (ID) number. An identification number shall be assigned by the county and posted at the site. Signs shall be placed on all major roads indicating the distance and direction to tank with in a 2,500 foot radius.
 2.5.5. An approved NO PARKING sign shall be provided and attached to a metal post.
 2.5.6. All fittings above grade shall be painted with exterior-grade enamel. Color shall be yellow unless otherwise specified.
3. References
 3.1. Published standards
 3.1.1. NFPA 1963 - Standard for Fire Hose Screw Threads
 3.1.2. NFPA 1142 - Standard for Water Supplies for Suburban and Rural Fire Protection
 3.1.3. NFPA 1141 - Standard for Fire Protection in Planned Building Groups
 3.2. Other referenced documents
 3.2.1. The Code of Public Local Laws and Ordinances of Howard County Maryland, Chapter 17.
 3.2.2. Underground Tanks & Dry Fire Hydrants Maintenance and Inspection, Chief Greg Ends Regional Fire Protection Committee, 2003.
4. Appendix
 4.1. Drawing, Pulloff Tank Access.



FIRE SUPPRESSION PULL-OFF AREA
SCALE: 1" = 50'

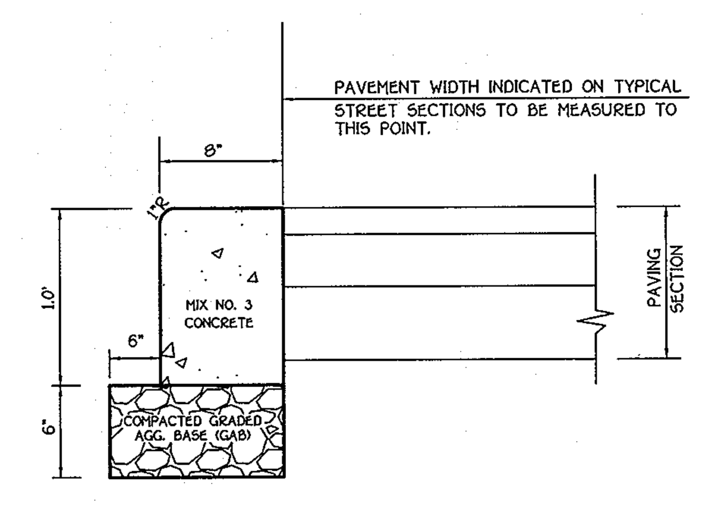
DRY HYDRANT SIGN
NO SCALE



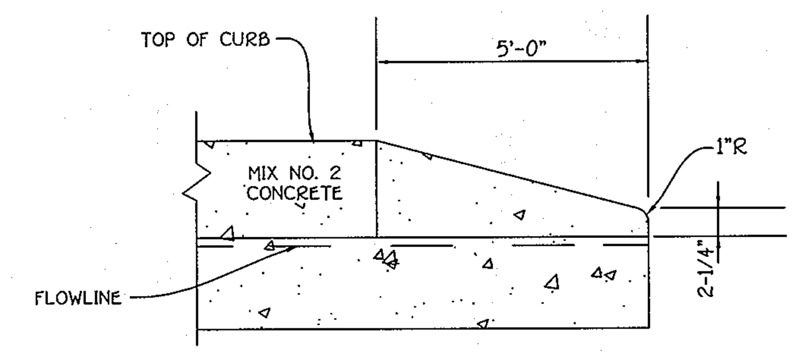
TANK DETAIL
NO SCALE

NO.	DESCRIPTION	DATE
1	REVISED OWNER AND DEVELOPER & REMOVED FIRE SUPPRESSION DETAILS	10-19-11

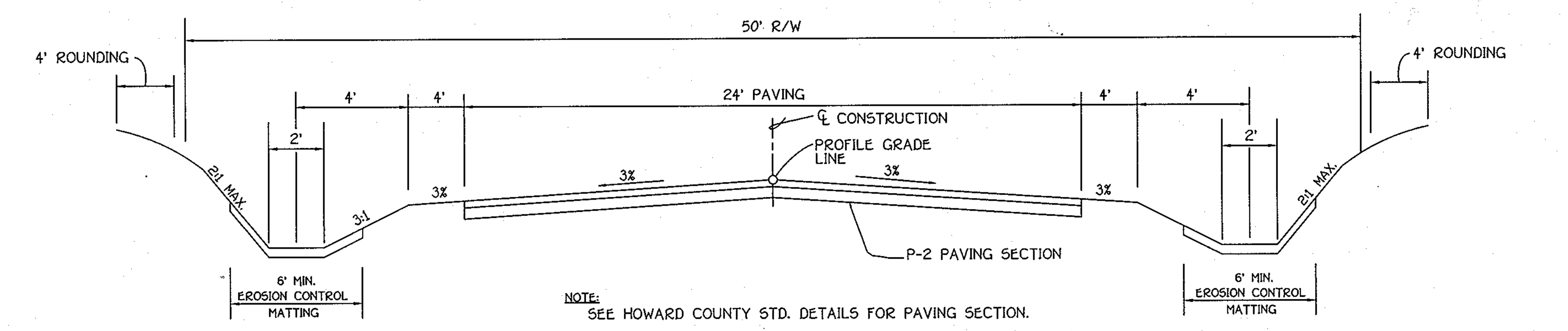
REVISIONS



FLUSH CURB
NO SCALE (R-3.07)



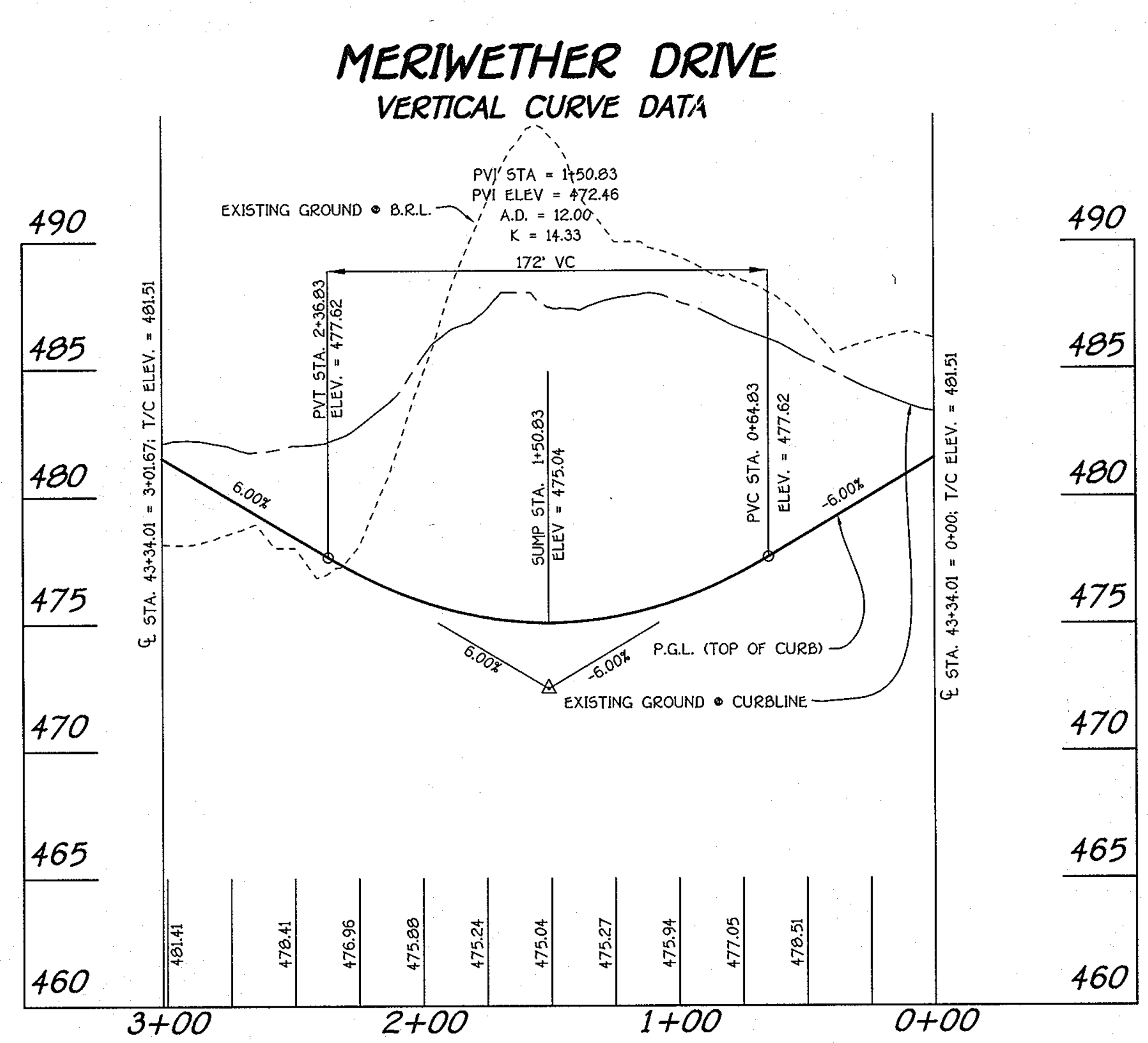
NOSE DOWN CURB
NO SCALE (R-3.02)



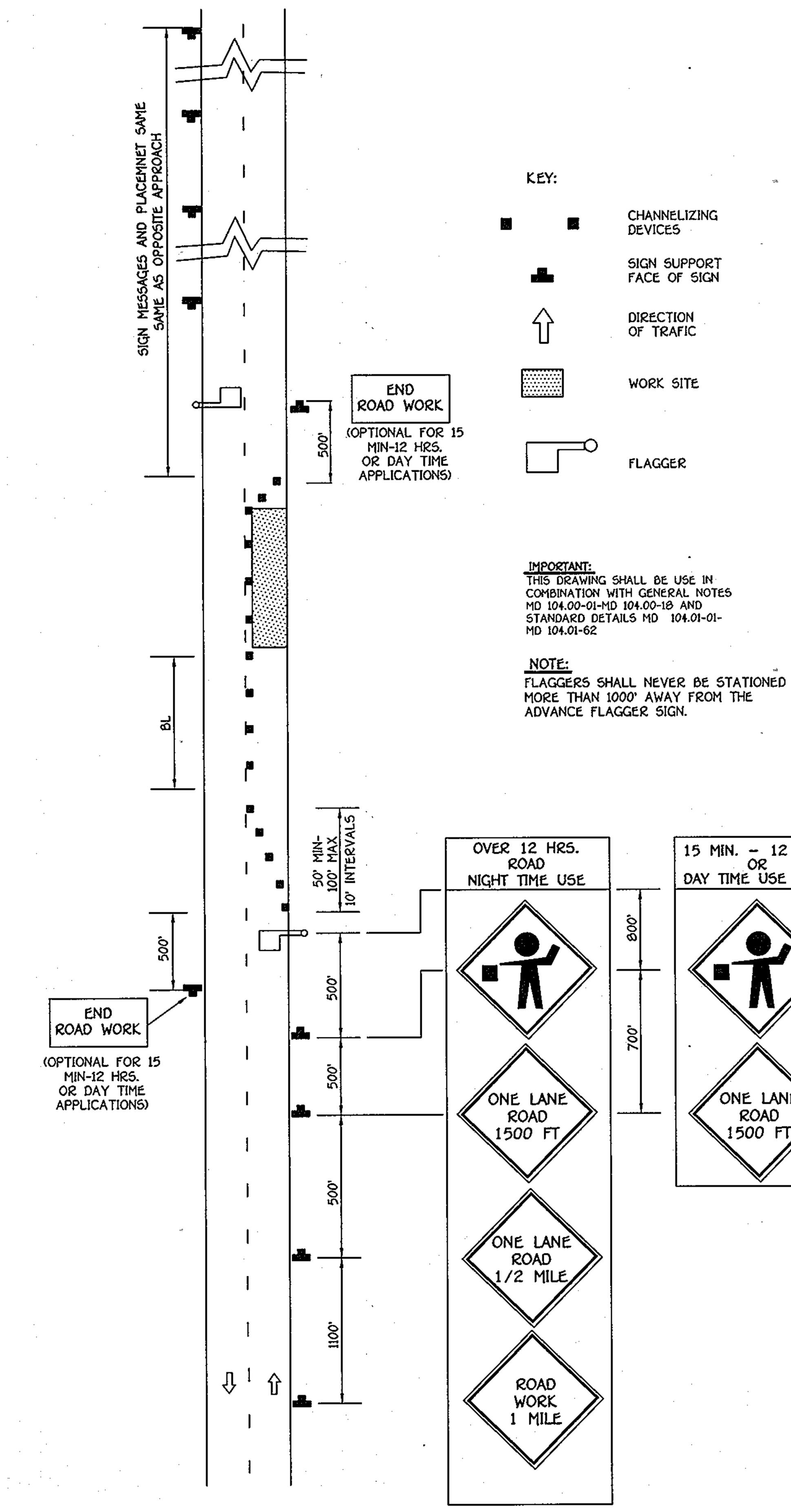
TYPICAL ROADWAY SECTION
NO SCALE

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	℄ STATION LIMITS	PAVING SECTION
MERIWETHER DRIVE	PUBLIC ACCESS STREET	30 M.P.H.	RC-DEO	0+00 TO 44+03.66	P-2



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



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
EQUAL/LESS THAN 40 MPH
NO SCALE

MAINTENANCE OF TRAFFIC SPECIAL PROVISIONS

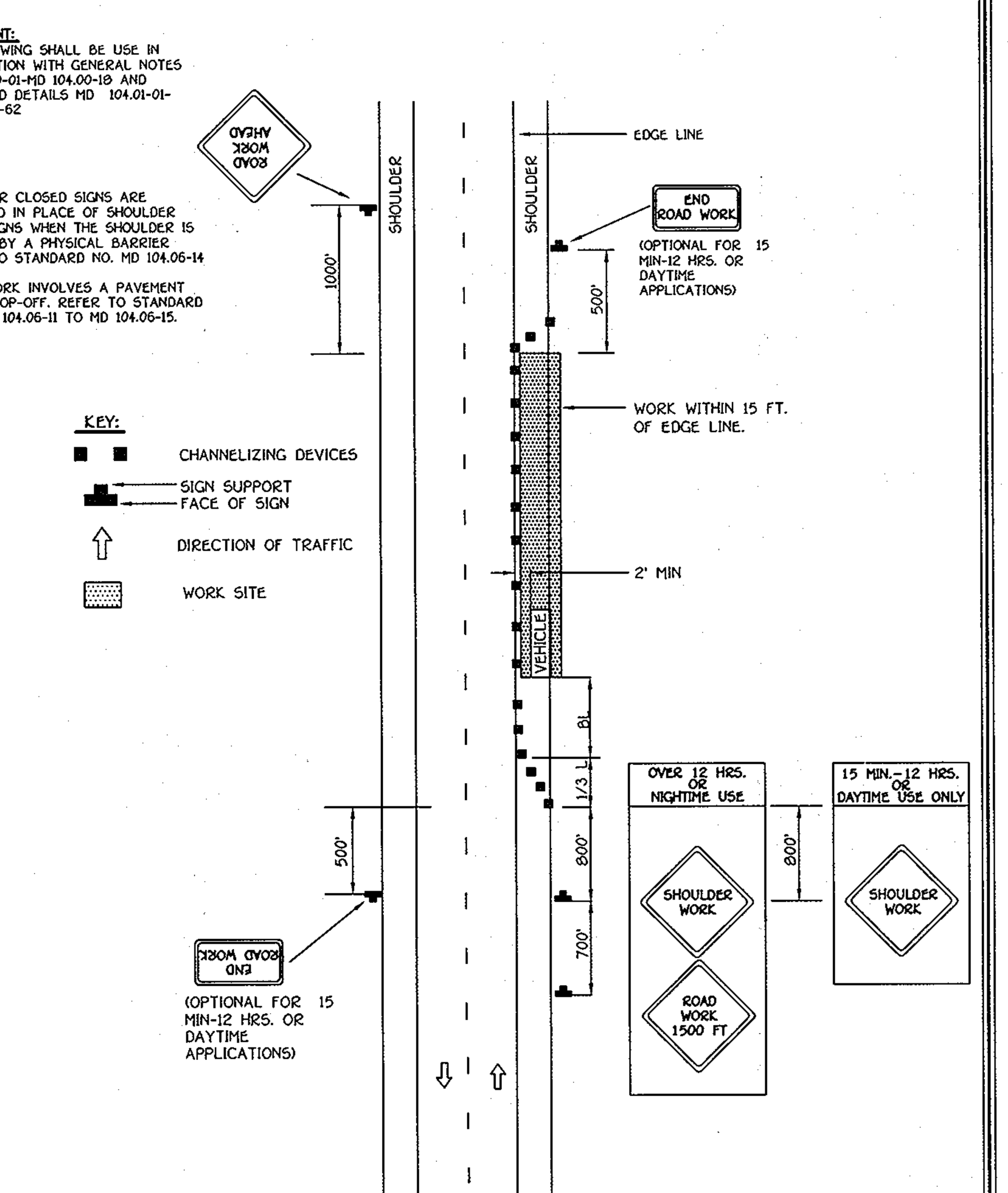
GENERAL

1. THE PURPOSE OF THIS PORTION OF THE SPECIAL PROVISION IS TO SET FOR THE TRAFFIC CONTROL REQUIREMENTS NECESSARY FOR THE SAFE AND EFFICIENT MAINTENANCE TO TRAFFIC WITHIN WORK AREAS, AND TO MINIMIZE ANY INCONVENIENCES TO THE TRAVELING PUBLIC AND THE CONTRACTOR AND/OR PERMITTEE.
2. PROPERTY TRAFFIC CONTROL THROUGH WORK AREAS IS ESSENTIAL FOR INSURING THE SAFETY AND THAT OF HIGHWAY WORKERS HAS THE HIGHEST PRIORITY OF ALL TASKS WITHIN THIS PROJECT. THE PROPERTY APPLICATION OF THE APPROVED TRAFFIC CONTROL PLAN (TCP) WILL PROVIDE THE DESIRED LEVEL OF SAFETY.
3. THROUGHOUT THESE SPECIAL PROVISIONS, ANY MENTION OF THE TCP SHALL BE IMPLIED TO INCLUDE ANY COMBINATION OF TYPICAL TRAFFIC CONTROL STANDARDS WHICH FORM THE OVERALL TCP FOR THIS PROJECT WHICH HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER.
4. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE PROVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 1988 EDITION, ESPECIALLY PART VI, AND TO SECTION 814 OF THE MARYLAND DOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS (JANUARY, 1982; INCLUDING ALL REVISIONS AND SUPPLEMENTS TO EACH.
5. THE CONTRACTOR AND/OR PERMITTEE SHALL BE REQUIRED TO ADHERE TO THE REQUIREMENTS SET FOR IN THE TCP AND THESE SPECIAL PROVISIONS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ANY REQUESTS TO MAKE MINOR CHANGES TO THE TCP OR THE SPECIAL PROVISIONS WITH REGARD TO THE TRAFFIC CONTROL ITEMS SHALL BE MADE IN WRITING TO THE ENGINEER A MINIMUM OF THREE(3) WORKING DAYS PRIOR TO THE PROPOSED SCHEDULING CHANGE. THE CONTRACTOR AND/OR PERMITTEE SHALL HAVE WRITTEN APPROVAL OF THE ENGINEER PRIOR TO THE IMPLEMENTATION OF ANY CHANGE.
6. NO WORK SHALL BEGIN ON ANY WORK ACTIVITY OR WORK PHASE UNTIL ALL REQUIRED TRAFFIC CONTROL PATTERNS AND DEVICES INDICATED ON THE TCP FOR THAT ACTIVITY OR PHASE ARE COMPLETELY AND CORRECTLY IN PLACE TO HAVE BEEN CHECKED FOR APPROVED USAGE.
7. GENERAL AND SPECIFIC WARNING SIGNS SHALL ONLY BE IN PLACE WHEN SPECIFIC WORK TASKS AND ACTIVITIES ARE ACTUALLY UNDERWAY OR CONDITIONS EXIST THAT POSE A POTENTIAL HAZARD TO THE PUBLIC, AND ANY ADDITIONAL SIGNING HAS BEEN APPROVED BY THE APPROPRIATE SHA TRAFFIC ENGINEER. NOTE: THE PRACTICE OF PLACING SIGNING AND OTHER TRAFFIC CONTROL DEVICES IN ADDITION TO THOSE INDICATED ON THE APPROVED TCP IS NOT PERMITTED.
8. THE CONTRACTOR AND/OR PERMITTEE SHALL PROVIDE, MAINTAIN IN NEW CONDITION, AND MOVE WHEN NECESSARY, OR AS DIRECTED BY THE ENGINEER, ALL TRAFFIC CONTROL DEVICES USED FOR THE GUIDANCE AND PROTECTION OF MOTORISTS, PEDESTRIANS, AND WORKERS.
9. ALL TRAFFIC CONTROL DEVICES REQUIRED BY THE TCP SHALL BE KEPT IN GOOD CONDITION, FULLY PERFORMING AS SET FORTH IN THE TCP, THE MUTCD, AND/OR SECTION 814 OF THE SPECIFICATIONS. FOR REFLECTIVE DEVICES, A PARTICULAR DEVICE IS ASSUMED TO HAVE FAILED TO MEET MINIMUM OPERATIONAL STANDARDS WHEN THE DEVICE NO LONGER HAS RETRO-REFLECTANCE CAPABILITY OF AT LEAST 60%%% OF THE SPECIFIED MINIMUM VALUE OVER AT LEAST 90%%% OF THE VISIBLE REFLECTIVE SURFACE.
10. ALL TRAFFIC CONTROL DEVICES NOT REQUIRED FOR THE SAFE CONDUCT OF TRAFFIC SHALL BE PROMPTLY REMOVED, COMPLETELY COVERED, TURNED AWAY FROM TRAFFIC, OR OTHERWISE TAKEN OUT OF SERVICE. IT IS INTENDED THAT NO TRAFFIC CONTROL DEVICE IS TO BE IN SERVICE WHEN THERE IS NO CLEAR CUT REASON FOR THE DEVICE.
11. THROUGHOUT THE PERIOD(S) OF WORK ACTIVITIES, TRAFFIC SHALL BE MAINTAINED BY IMPLEMENTING THE APPROVED TCP. IN LIEU OF THE TCP PREPARED FOR THIS PROJECT, AND/OR INDIVIDUAL TYPICAL TRAFFIC CONTROL STANDARDS, THE CONTRACTOR AND/OR PERMITTEE HAS THE OPTION OR PREPARING AND SUBMITTING A TCP, WHOLLY OR IN PART, OF HIS OWN DESIGN, FOLLOWING GUIDELINES SET FORTH IN THE MUTCD AND PRESCRIBED BY THE ADMINISTRATION. A TCP DEVELOPED BY THE CONTRACTOR AND/OR PERMITTEE SHALL NOT BE IMPLEMENTED UNTIL ADVANCE WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER. TCP'S MAY BE IMPLEMENTED WITHIN A SINGLE PROJECT OR JOINTLY BETWEEN TWO OR MORE PROJECTS. IN SITUATIONS WHERE TCP'S JOINTLY IMPLEMENTED, CARE SHALL BE EXERCISED TO PRESENT CORRECT AND NON-CONFLICTING GUIDANCE TO THE TRAVELING PUBLIC.
12. THROUGHOUT THESE SPECIAL PROVISIONS, WHERE SPEED OF TRAFFIC IS NOTED, THIS MEANS THE POSTED SPEED OR PREVAILING TRAVEL SPEED, WHICHEVER IS HIGHER, UNLESS OTHERWISE NOTED.
13. TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT THE ENTIRE LENGTH OF THE PROJECT, UNLESS OTHERWISE NOTED. NO TRAVEL LANE(S) OTHER THAN THOSE DESIGNATED FOR POSSIBLE CLOSURE IN THE TCP SHALL BE CLOSED WITHOUT OBTAINING PRIOR APPROVAL FROM THE ENGINEER. ALL INGRESS AND EGRESS TO THE WORK AREA BY THE CONTRACTOR AND/OR PERMITTEE SHALL BE PERFORMED WITH THE FLOW OF TRAFFIC.

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

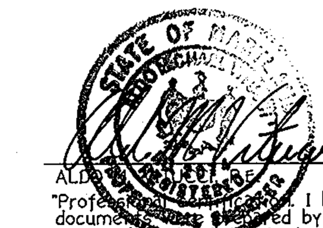
NOTES:
SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY A PHYSICAL BARRIER REFER TO STANDARD NO. MD 104.06-14

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
EQL/LESS THAN 40 MPH
NO SCALE

Owner	Developer
Meriwether Farm II, LLC c/o Second Goodier, LLC 10715 Charter Drive Suite 350 Columbia, Maryland 21044 Ph: (410) 997-7501 Attn: Mr. Robert C. Goodier, Jr.	Toll Brothers, Inc. Maryland Division 7164 Columbia Gateway Drive Suite 230 Columbia, Maryland 21046 Ph: (410) 997-7501 Attn: Mr. Jeff Driscoll



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

[signature] 9-22-09
ALDO ... 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 2-22-11."

ROADWAY DETAILS
MERIWETHER FARM
SECTION TWO
PHASE TWO
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 5 OF 30

F-09-044

STREET TREE SCHEDULE

SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
	4403.66 x 2 / 40 = 220.18 220 TREES	PYRUS CALLERYANA 'CLEVELAND SELECT' CLEVELAND SELECT PEAR	2 1/2"-3" CAL.	40' APART ON PUBLIC R/W

NOTE: STREET TREE TYPES ARE ONLY A RECOMMENDATION AND MAY BE SUBSTITUTED WITH A COUNTY ACCEPTED EQUIVALENT FROM THE HOWARD COUNTY LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE 220 REQUIRED STREET TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $66,000.00

NOTE:
CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, BUFFERS AND PRESERVATION PARCELS.

NOTE:
THE PURPOSE OF BMP No. 4 IS TO PROVIDE WQv FOR LOTS 11 & 12 AND SHALL BE INSTALLED LAST IN THE SEQUENCE OF CONSTRUCTION. B.M.P. SHALL BE INSTALLED WITH A 5-DAY CLEAR WEATHER FORECAST AND PERMISSION FROM THE INSPECTOR TO PROCEED.

TEMP. FLEX. PIPE @ S-2 PROFILE

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

NOTE:
CONTRACTOR SHALL NOT INSTALL S-2 UNTIL AFTER THE REMOVAL OF THE TEMPORARY FLEXIBLE PIPE

TEMPORARY 20' RIP-RAP OUTFALL PROTECTION w/ 3' TOEWALL d50= 9.5", dmax.= 15" THICKNESS = 19"

TEMPORARY 36" FLEXIBLE PIPE

36" RCCP, CL IV @ 0.45% Q25 = 50.6 c.f.s. V25 = 8.69 f.p.s.

NOTE: SEE HOWARD COUNTY DETAIL D-5.52, SHEET 20 FOR CONNECTION OF HDPE PIPE TO RCCP PIPE

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: 9/22/09

Printed Name Of Developer: Robert C Goodier

By The Engineer:

"I Certify That These 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 Met With 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: 9.22.09

Printed Name: ALDO L. VITTORI

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

Howard Soil Conservation District — Date: 10/15/09

Approved: Department Of Public Works

Chief, Bureau Of Highways — Date: 10-23-09

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 10-30-09

Chief, Development Engineering Division — Date: 10/28/09

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.

LEGEND

- SSF/TP — SUPER-SILT / TREE PROTECTION FENCE
- SSF — SSF — SSF — SUPER-SILT FENCE
- SF — SF — SF — SILT FENCE
- S.C.E. — STABILIZED CONSTRUCTION ENTRANCE
- EARTH DIKE
- L.O.D. — DENOTES LIMITS OF DISTURBANCE
- E.C.M. — DENOTES EROSION CONTROL MATTING

DRIVEWAY CULVERT DATA

LOT	SLOPE (%)	Q10 (cfs)	PIPE SIZE
11	2.50%	0.35	12"
12	2.50%	0.73	12"
13	HIGHPOINT	-----	N/A
14	HIGHPOINT	-----	N/A
15	7.00%	0.95	12"
16	7.00%	1.30	12"
17	INLET	-----	N/A
18	HIGHPOINT	-----	N/A
19	6.00%	3.50	12"
20	INLET	-----	N/A
21	6.00%	4.35	12"
22	2.50%	5.80	12"
23	INLET	-----	N/A
24	6.00%	4.38	12"
25	6.00%	5.20	12"
26	INLET	-----	N/A
27	INLET @ SUMP	-----	N/A
28	INLET	-----	N/A
29	INLET	-----	N/A
30	2.00%	0.85	12"
31	HIGHPOINT	-----	N/A
32	2.25%	1.50	12"
33	INLET	-----	N/A
34	4.50%	0.63	12"
35	HIGHPOINT	-----	N/A
36	3.00%	6.30	12"
37	7.00%	5.20	12"
38	7.00%	3.80	12"
39	2.00%	1.50	12"
40	3.70%	3.80	12"
41	3.70%	3.80	12"
42	INLET	-----	N/A
43	1.50%	8.50	12"
44	1.00%	10.00	12"
45	INLET	-----	N/A
46	2.50%	0.75	12"

EXISTING CULVERT PROFILE

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

EX. 42" RCCP @ 7.90%
Q10 = 56.5 c.f.s.
V10 = 15.10 f.p.s.
TAILWATER VELOCITY = 4.14 F.P.S. (NON-EROSIVE)

NOTE: EXISTING PIPE IS ADEQUATE.

PLAN

SCALE: 1" = 50'

TYPICAL SECTION 'A-A' @ HW-1

NOT TO SCALE

CL. 1 RIP-RAP CHANNEL PROTECTION d50 = 9.5", dmax. = 15" BLANKET THICKNESS = 19"

EDGEWOOD FARM
LIBER 2287, FOLIO 469
TAX MAP 21
PARCEL 213
ZONED: RC-DEO

N 578381.59
E 1303468.98

N 578500
E 1303250

N 579000
E 1303250

NO.	DESCRIPTION	DATE
1	REVISED LANDSCAPE AND ENTRANCE EASEMENT	10-19-11
1	REVISED OWNER AND DEVELOPER	10-19-11
	REVISIONS	

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
Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer
Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-11."

ALDO L. VITTORI — 9.22.09 DATE

STREET TREE, GRADING & SEDIMENT CONTROL PLAN
MERIWETHER FARM
SECTION TWO
PHASE TWO
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED RC-DEO

TAX MAP No.: 21 PARCEL No: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 6 OF 30

F-09-044

I:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 6-10,20 GRADING PLANS.dwg, 9/21/2009 3:27:36 PM, jamesL

NO.	DESCRIPTION	DATE
	REVISIONS	
1	REVISED OWNER AND DEVELOPER	10-19-11

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 9/22/09

Printed Name Of Developer Robert Goodier

By The Engineer:

"I Certify That The 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 Advised 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 9-22-09

Printed Name Of Engineer Alan M. Vanstory

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 10/5/09

Approved: Department Of Public Works

Chief, Bureau Of Highways — Date 10-23-09

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 10-30-09

Chief, Development Engineering Division — Date 10/28/09

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.

MATCH LINE SEE SHEET 8

MATCH LINE SEE SHEET 6

NOTE:
CONTRACTOR TO IMBRICATE ALL 5F/55F RUNNING DOWNHILL INTO J-SHAPED SEGMENTS AT 25' AND CURL ENDS UPHILL 2' IN ELEVATION

TEMPORARY STOCKPILE AREA

TEMPORARY SEDIMENT BASIN No. 1/POND No. 2 @ B.M.P. No. 5
MICRO-POOL EXTENDED DETENTION POND FOR WQv & CPv HAZARD CLASS 'A' (OWNED BY H.O.A. AND JOINTLY MAINTAINED BY H.O.A. & HO. CO.)

TEMPORARY SEDIMENT BASIN No. 1/POND No. 2 @ B.M.P. No. 5

INITIAL D.A. = 5.08 Ac.±
FINAL D.A. = 16.40 Ac.±
STORAGE REQUIRED
WET = 1800 x 16.40 = 29,520 Cu.Ft.
DRY = 1800 x 16.40 = 29,520 Cu.Ft.
STORAGE PROVIDED
WET = 29,520 Cu.Ft. @ ELEV. 519.30
DRY = 59,040 Cu.Ft. @ ELEV. 521.10
BOTTOM ELEV. = 516.00
STORAGE DEPTH = 3.30' WET, 5.10' DRY
TOP OF EMBANKMENT = 526.85
CLEAN OUT ELEV. = 517.85
WEIR CREST ELEV. = 522.00
FOR 1 YR. TEMP. STORAGE REQ'D. = 0.63 AC.FT.
CU.FT. STORAGE (DRY) PROVIDED @ 521.10 = 59,242 CU.FT.
Q1 exist. = 0.34 c.f.s.
Q1 prop. = 0.20 c.f.s. @ 521.72

B.M.P. No. 5
MICRO-POOL EXTENDED DETENTION POND FOR WQv & CPv HAZARD CLASS 'A' (OWNED BY H.O.A. AND JOINTLY MAINTAINED BY H.O.A. & HO. CO.)
PERM. POOL = 520.00
100 yr. WSEL = 523.70
10 yr. WSEL = 522.38
CPv EL. = 520.75
WQv EL. = 520.35

PUBLIC S.W.M. DRAINAGE & UTILITY EASEMENT

PROPOSED GABIONS

CL 1 RIP-RAP OUTFALL PROTECTION

FINAL GRADING PLAN FOR B.M.P. No. 5
SCALE: 1" = 50'

PRIVATELY OWNED EASEMENT HOLDERS: H.O.A. & HO. CO., MD. BUILDABLE PRESERVATION PARCEL 'J'

OWNER: H.O.A. EASEMENT HOLDER: HO. CO., MD. NON-BUILDABLE PRESERVATION PARCEL 'F'

PRIVATELY OWNED EASEMENT HOLDERS: HO. CO., MD. & HOME OWNERS ASSOCIATION NON-BUILDABLE PRESERVATION PARCEL 'G'

MERIWETHER DRIVE (PUBLIC ACCESS STREET)

LOT 1A, LOT 13, LOT 39, LOT 40, LOT 41, LOT 42, LOT 43, LOT 44

FOREST CONSERVATION EASEMENT NO. 7 9.26 AC.± (1.41 AC. RETENTION) (7.85 AC. REFORESTATION)

PRIVATELY OWNED EASEMENT HOLDERS: HO. CO., MD. & HOME OWNERS ASSOCIATION NON-BUILDABLE PRESERVATION PARCEL 'G'

EDGEWOOD FARM PHASE 2 LOTS 9-60 AND NON-BUILDABLE PRESERVATION PARCEL PLAT NOS. 19266 THRU 19268

LOT 30, LOT 29, LOT 28, LOT 31

35' ENVIRONMENTAL SETBACK (TYP.)

PLAN
SCALE: 1" = 50'

LEGEND

- 55F—55F—55F — SUPER-SILT FENCE
- SF—SF—SF — SILT FENCE
- S.C.E. — STABILIZED CONSTRUCTION ENTRANCE
- EARTH DIKE
- L.O.D. — DENOTES LIMITS OF DISTURBANCE
- E.C.M. — DENOTES EROSION CONTROL MATTING
- R.P.S. — DENOTES REMOVABLE PUMPING STATION
- F.B. — DENOTES FILTER BAG

NOTE:
CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, BUFFERS AND PRESERVATION PARCELS.

BAFFLE DESIGN

BAFFLE No. 1
D = 100'
A = 10,275.85 sq.ft.
We = A/D = 102.76'
L1 = 93', L2 = 113'
TOTAL LENGTH = 206'
Le/We = 206/102.76 = 2.004
2.004 ≥ 2 ∴ OK

BAFFLE No. 2
D = 95'
A = 10,275.85 sq.ft.
We = A/D = 108.17'
L1 = 111', L2 = 56', L3 = 53'
TOTAL LENGTH = 220'
Le/We = 220/108.17 = 2.03
2.04 ≥ 2 ∴ OK

Owner
Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer
Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

ALAN M. VANSTORY, P.E. — 9-22-09 DATE

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-11."

STREET TREE, GRADING & SEDIMENT CONTROL PLAN

MERIWETHER FARM
SECTION TWO
PHASE TWO
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)

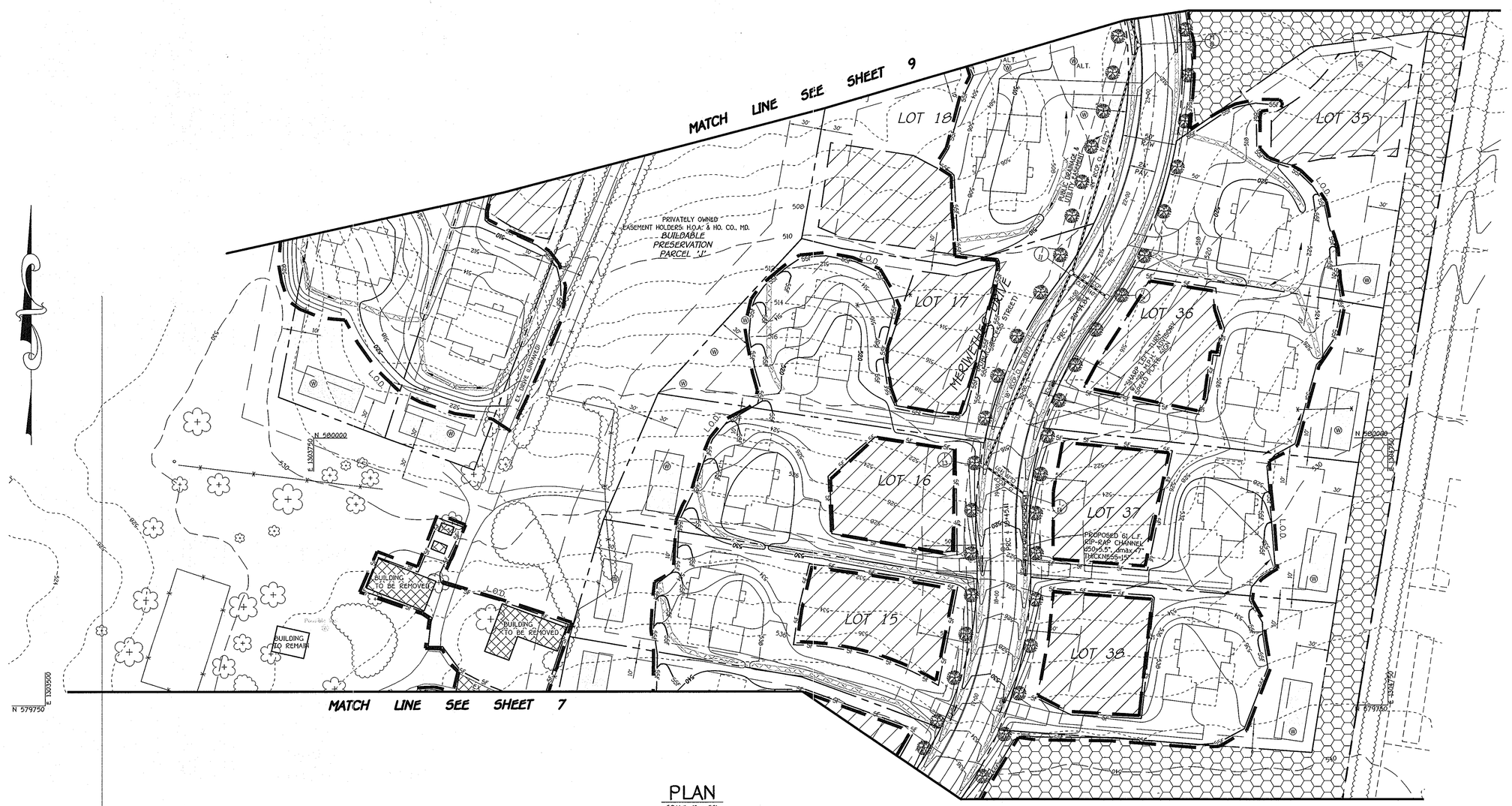
ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 7 OF 30

F-09-044

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:\2004\04056\dwg\PHASE TWO SECTION TWO FINAL\SHEET 6-10,20 GRADING PLANS.dwg, 9/21/2009 3:29:48 PM, jamesl,
1:1

NOTE:
CONTRACTOR TO IMBRICATE ALL SF/SSF RUNNING DOWNHILL INTO J-SHAPED SEGMENTS AT 25' AND CURL ENDS UPHILL 2' IN ELEVATION



PLAN
SCALE: 1" = 50'

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 — 9/22/09 Date

Printed Name Of Developer: Robert Goodier

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 Of Engineer — 9-22-09 Date

Printed Name: Alden W. Mitteer

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

Howard Soil Conservation District — 10/15/09 Date

Approved: Department Of Public Works

Chief, Bureau Of Highways — 10-23-09 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 10-30-09 Date

Chief, Development Engineering Division — 10/28/09 Date

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.

LEGEND

- SSF—SSF—SSF— SUPER-SILT FENCE
- SF—SF—SF— SILT FENCE
- S.C.E. — STABILIZED CONSTRUCTION ENTRANCE
- EARTH DIKE
- L.O.D. — DENOTES LIMITS OF DISTURBANCE
- E.C.M. — DENOTES EROSION CONTROL MATTING

NOTE:
CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, BUFFERS AND PRESERVATION PARCELS.

NO.	DESCRIPTION	DATE
1	REVISED OWNER AND DEVELOPER	10-19-11
	REVISIONS	

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

Owner	Developer
Meriwether Farm II, LLC c/o Second Goodier, LLC 10715 Charter Drive Suite 350 Columbia, Maryland 21044 Ph: (410) 997-7501 Attn: Mr. Robert C. Goodier, Jr.	Toll Brothers, Inc. Maryland Division 7164 Columbia Gateway Drive Suite 230 Columbia, Maryland 21046 Ph: (410) 997-7501 Attn: Mr. Jeff Driscoll

STATE OF MARYLAND — ALDEN WAYNE MITTEER — 21748 — REGISTERED PROFESSIONAL ENGINEER

9-22-09
DATE

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-11."

STREET TREE, GRADING & SEDIMENT CONTROL PLAN

MERIWETHER FARM
SECTION TWO
PHASE TWO
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 8 OF 30

F-09-044

I:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 6-10,20 GRADING PLANS.dwg, 9/21/2009 3:33:39 PM, jamesl, 1:1

NO.	DESCRIPTION	DATE
	REVISIONS	
1	REMOVED FIRE SUPPRESSION TANK AND PULL-OFF AREA	10-19-11
1	REVISED OWNER AND DEVELOPER	10-19-11

DORSEY MILL ROAD
LOCAL ROAD

FOREST CONSERVATION EASEMENT NO. 5 (6.29) AC.± (1.13) AC. RETENTION (2.140 AC. REFORESTATION)

FOREST CONSERVATION EASEMENT NO. 7 (9.25 AC.± (1.41 AC. RETENTION) (7.88 AC. REFORESTATION)

DOUBLE ROW OF SUPER-SILT FENCE AT LOW POINT AND IMBRICATE

25' Wetland Buffer

35' ENVIRONMENTAL SETBACK (TYP.)

BUILDINGS TO BE REMOVED

EX. DRIVE (UNPAVED)

P.O.S.T. #1

CONTRACTOR TO IMBRICATE ALL SF/SSF RUNNING DOWNHILL INTO J-SHAPED SEGMENTS AT 25' AND CURL ENDS UPHILL 2' IN ELEVATION

PRIVATELY OWNED EASEMENT HOLDERS: H.O.A. & HO. CO., MD. BUILDABLE PRESERVATION PARCEL 'I'

LOT 33

LOT 31

LOT 34

LOT 32

LOT 19

LOT 21

LOT 20

PROVIDE ARMORED CL. II RIP-RAP ALONG CHANNEL TO STREAM (APPROX. 100 L.F.)

DOUBLE ROW OF SSF AT LOW POINT AND IMBRICATE

CL. II RIP-RAP STILLING BASIN SEE DETAIL SHEET 23

OWNER: H.O.A. EASEMENT HOLDER: HO. CO. MD. NON-BUILDABLE PRESERVATION PARCEL 'H'

TEMPORARY SEDIMENT BASIN No. 2/POND No. 3 B.M.P. No. 8 MICRO-POOL EXTENDED DETENTION POND (TO: H.O.A. & CPC) "HAZELWOOD, INC." OWNED BY H.O.A. AND JOINTLY MAINTAINED BY H.O.A. & HO. CO.
CREST ELEV. = 480.40
TOP ELEV. = 477.00
10 YR. WSEL = 476.50
CPV EL. = 476.50
WQV EL. = 477.70

B.M.P. No. 9 BIO-RETENTION PRIVATELY OWNED & MAINTAINED BY H.O.A. WITH 21 POND DETAILED

B.M.P. No. 6 BIO-RETENTION PRIVATELY OWNED & MAINTAINED BY HOMEOWNER

TEMPORARY STOCKPILE AREA

PRIVATE 20' DRAINAGE & UTILITY EASEMENT

PRIVATE S.W.M. DRAINAGE & UTILITY EASEMENT

MERIWETHER DRIVE (PUBLIC ACCESS STREET)

PRIVATELY OWNED BUILDABLE PRESERVATION PARCEL 'J'

PRIVATELY OWNED BUILDABLE PRESERVATION PARCEL 'I'

PROPOSED CABANA

PROPOSED GAZEBO

TRASH RACK

L.O.D.

S.C.E.

E.C.M.

MATCH LINE SEE SHEET 10

MATCH LINE SEE SHEET 8

N 581000

N 580560

E 1304750

E 1305150

SEDIMENT TRAP #1 (P.O.S.T.) DATA

1. TYPE OF TRAP: PIPE OUTLET SEDIMENT TRAP
2. DRAINAGE AREA: 2.34 Ac. ±
3. STORAGE REQUIRED: 8,424 Cu. Ft.
4. STORAGE PROVIDED: 11,729 Cu. Ft.
5. PIPES: BARREL DIA.= 18", RISER DIA.= 24" TRASH RACK DIA.= 36"
6. STORAGE DEPTH BELOW OUTLET: 4,212 Cu. Ft.
7. CLEANOUT ELEV.: 465.10
8. EMBANKMENT HEIGHT: 4'
9. ELEVATION (TOP OF EMBANKMENT): 470.69
10. TYPICAL DETAIL: DETAIL "B"
11. BOTTOM TRAP: 464.00
12. WET STORAGE LIMIT: 466.15
13. TOP RISER CREST ELEVATION: 467.75

SEE DETAIL, SHEET 23

NOTE:
CONTRACTOR SHALL REMOVE EXISTING DRIVEWAY AND ESTABLISH A DEFINED CHANNEL LINED WITH RIP-RAP & EROSION CONTROL MATTING. SEE SHEET 20 FOR GRADING & TYPICAL DITCH SECTION.

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 — Robert Goodier — 9/22/09 Date

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 Within 30 Days Of Completion."

Signature & Seal — 9.22.09 Date

ALAN M. LATTIMER, No. 19214, PROFESSIONAL ENGINEER

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 — 10/15/09 Date

Approved Department Of Public Works

Chief, Bureau Of Highways — 10-23-09 Date

Approved Department Of Planning And Zoning

Chief, Division Of Land Development — 10-30-09 Date

Chief, Development Engineering Division — 10/28/09 Date

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.

TEMPORARY SEDIMENT BASIN No. 2/POND No. 3 @ B.M.P. No. 8

INITIAL D.A. = 20.77 Ac.±
FINAL D.A. = 22.98 Ac.±
STORAGE REQUIRED
WET = 1800 x 22.98 = 41,364 Cu.Ft.
DRY = 1800 x 22.98 = 41,364 Cu.Ft.
STORAGE PROVIDED
WET = 41,364 Cu.Ft. @ ELEV. 478.40
DRY = 82,764 Cu.Ft. @ ELEV. 480.40
BOTTOM ELEV. = 473.00
STORAGE DEPTH = 5.40' WET, 7.40' DRY
TOP OF EMBANKMENT = 484.30
CLEAN OUT ELEV. = 477.10
WEIR CREST ELEV. = 481.00
FOR 1 YR. TEMP. STORAGE REQ'D. = 0.84 AC.FT.
CU.FT. STORAGE (DRY) PROVIDED @ 480.40 = 82,764 CU.FT.
Qi exist. = 1.40 c.f.s.
Qi prop. = 1.0 c.f.s.

LEGEND

- SSF/TP — SUPER-SILT/TREE PROTECTION FENCE
- SSF SSF SSF — SUPER-SILT FENCE
- SF SF SF — SILT FENCE
- S.C.E. — STABILIZED CONSTRUCTION ENTRANCE
- EARTH DIKE
- L.O.D. — DENOTES LIMIT OF DISTURBANCE
- E.C.M. — DENOTES EROSION CONTROL MATTING
- DENOTES SLOPES 25% OR GREATER
- DENOTES SLOPES 15% TO 24.99%

NOTE:
CONTRACTOR TO IMBRICATE ALL SF/SSF RUNNING DOWNHILL INTO J-SHAPED SEGMENTS AT 25' AND CURL ENDS UPHILL 2' IN ELEVATION

NOTE:
CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, BUFFERS AND PRESERVATION PARCELS.

BAFFLE DESIGN

BAFFLE No. 1
D = 55'
A = 5,296.76 sq.ft.
We = A/D = 96.30'
L1 = 115', L2 = 84'
TOTAL LENGTH = 199'
Le/We = 199/96.30 = 2.07
2.07 ≥ 2 ∴ OK

BAFFLE No. 2
D = 85'
A = 5,296.76 sq.ft.
We = A/D = 62.31'
L1 = 30', L2 = 25', L3 = 85'
TOTAL LENGTH = 143'
Le/We = 143/62.31 = 2.29
2.29 ≥ 2 ∴ OK

PLAN

SCALE: 1" = 50'

Owner	Developer
Meriwether Farm II, LLC c/o Second Goodier, LLC 10715 Charter Drive Suite 350 Columbia, Maryland 21044 Ph: (410) 997-7501 Attn: Mr. Robert C. Goodier, Jr.	Toll Brothers, Inc. Maryland Division 7164 Columbia Gateway Drive Suite 230 Columbia, Maryland 21046 Ph: (410) 997-7501 Attn: Mr. Jeff Driscoll

ALAN M. LATTIMER, No. 19214, PROFESSIONAL ENGINEER — 9-22-09 DATE

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

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

STREET TREE, GRADING & SEDIMENT CONTROL PLAN

MERIWETHER FARM

SECTION TWO

PHASE TWO

BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)

ZONED: RC-DEO

TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22

FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 9 OF 30

F-09-044

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BAFFLE DESIGN

BAFFLE No. 1
D = 64'
A = 3,615.61 sq.ft.
We = A/D = 56.49'
L1 = 85', L2 = 67'
TOTAL LENGTH = 152'
Le/We = 152/56.49 = 2.69
2.69 ≥ 2 ∴ OK

TEMPORARY SEDIMENT BASIN No. 3/POND No. 4 @ B.M.P. No. 11

INITIAL D.A. = 8.97 Ac.±
FINAL D.A. = 11.09 Ac.±
STORAGE REQUIRED
WET = 1800 x 11.09 = 19,962 Cu.Ft.
DRY = 1800 x 11.09 = 19,962 Cu.Ft.
STORAGE PROVIDED
WET = 19,962 Cu.Ft. @ ELEV. 464.42
DRY = 19,962 Cu.Ft. @ ELEV. 466.08
BOTTOM ELEV. = 460.00
STORAGE DEPTH = 4.42' WET, 6.08' DRY
TOP OF EMBANKMENT = 470.70
CLEAN OUT ELEV. = 463.40
WEIR CREST ELEV. = 467.50
FOR 1 YR. TEMP. STORAGE REQ'D. = 0.605 AC.FT.
CU.FT. STORAGE (DRY) PROVIDED @ 466.08 = 40,075 CU.FT.
Q1 exist. = 0.39 c.f.s.
Q1 prop. = 0.20 c.f.s. @ 467.25

LEGEND

- SSF—SSF—SSF — SUPER-SILT FENCE
- SF—SF—SF — SILT FENCE
- S.C.E. — STABILIZED CONSTRUCTION ENTRANCE
- EARTH DIKE
- L.O.D. — DENOTES LIMITS OF DISTURBANCE
- E.C.M. — DENOTES EROSION CONTROL MATTING
- DENOTES SLOPES 25% OR GREATER
- DENOTES SLOPES 15% TO 24.99%

NOTE:
CONTRACTOR TO IMBRICATE ALL SF/SSF RUNNING DOWNHILL INTO J-SHAPED SEGMENTS AT 25' AND CURL ENDS UPHILL 2' IN ELEVATION

NOTE:
CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, BUFFERS AND PRESERVATION PARCELS.

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 — 9/22/09 Date

Robert Goodier
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 — 9-22-09 Date

ALDO M. VISCONTI, P.E.
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 — 10/15/09 Date

Approved Department Of Public Works
Chief, Bureau Of Highways — 10-23-09 Date

Approved Department Of Planning And Zoning
Chief, Division Of Land Development — 10-30-09 Date
Chief, Development Engineering Division — 10/28/09 Date

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.

MATCH LINE SEE SHEET 9

PRESERVATION EASEMENT
Easement Holder: H.O.A. & HOWARD COUNTY, MARYLAND
F-08-199

FOREST CONSERVATION EASEMENT NO. 6
17.15± Ac. (RETENTION)
13.11± Ac. (REFORESTATION)

35' ENVIRONMENTAL SETBACK (TYP.)

PRIVATE 20' DRAINAGE & UTILITY EASEMENT

B.M.P. No. 10
BIO-RETENTION
PRIVATELY OWNED & MAINTAINED BY HOMEOWNER

A-2 EARTH DIKE

DOUBLE ROW OF SUPER-SILT FENCE AT LOW POINT AND IMBRICATE

L.O.D.

LOT 30

MERIWETHER DRIVE
(PUBLIC ACCESS STREET)

LOT 29

LOT 28

PRIVATE 24' DRAINAGE & UTILITY EASEMENT

PC = 43+02.41

LOT 22

LOT 23

LOT 24

LOT 25

LOT 26

LOT 27

PCC = 43+00.20

L=PROPOSED 90 LF CL IV RIP-RAP CHANNEL 450+5.8" dmax. THICKNESS=15"

B.M.P. No. 12
BIO-RETENTION
PRIVATELY OWNED & MAINTAINED BY HOMEOWNER

PRIVATE 20' DRAINAGE & UTILITY EASEMENT

DOUBLE ROW OF SUPER-SILT FENCE AT LOW POINT AND IMBRICATE

100' STREAM BANK BUFFER

25' Wetland Buffer

NON-BUILDABLE BULK PARCEL 'E'

B.M.P. No. 13
BIO-RETENTION
PRIVATELY OWNED & MAINTAINED BY HOMEOWNER

PRIVATE 20' DRAINAGE & UTILITY EASEMENT

STONE CHECK DAM

TYPE 'A-2' CLEANWATER EARTH DIKE

B.M.P. No. 11
MICRO-POOL EXTENDED DETENTION POND FOR WQv & CPv
HAZARD CLASS 'A'
(OWNED BY H.O.A. AND JOINTLY MAINTAINED BY H.O.A. & HO. CO.)
TEMPORARY SEDIMENT BASIN No. 3/POND No. 4

FOREST CONSERVATION EASEMENT NO. 5
0.29 AC.± (RETENTION)

OWNER: H.O.A.
EASEMENT HOLDER: HO. CO., MD.
NON-BUILDABLE PRESERVATION PARCEL 'J'

PRIVATELY OWNED
EASEMENT HOLDERS: H.O.A. & HO. CO., MD.
BUILDABLE PRESERVATION PARCEL 'J'

EX. WELL (W) HO-95-1626

POOL

BUILDING TO REMAIN

BUILDING TO REMAIN

CL. II RIP-RAP STILLING BASIN SEE DETAIL SHEET 23

OWNER: H.O.A.
EASEMENT HOLDER: HO. CO., MD.
NON-BUILDABLE PRESERVATION PARCEL 'J'

PUBLIC S.W.M. DRAINAGE & UTILITY EASEMENT

B.M.P. No. 11
MICRO-POOL EXTENDED DETENTION POND FOR WQv & CPv
HAZARD CLASS 'A'
OWNED BY H.O.A. AND JOINTLY MAINTAINED BY H.O.A. & HO. CO.
PERM. POOL = 464.50
100 yr. WSEL = 468.38
10 yr. WSEL = 467.12
CPv EL. = 464.97
WQv EL. = 464.50

FOREBAY

CL. II RIP-RAP OUTFALL PROTECTION

FOREST CONSERVATION EASEMENT NO. 5
0.29 AC.± (RETENTION)

FINAL GRADING PLAN FOR B.M.P. No. 11

SCALE: 1" = 50'

PLAN

SCALE: 1" = 50'

STREET TREE, GRADING & SEDIMENT CONTROL PLAN

MERIWETHER FARM

SECTION TWO
PHASE TWO

BUILDABLE LOTS 11 THRU 16, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)

ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 10 OF 30

ALDO M. VISCONTI, P.E. — 9-22-09 DATE

"Professional Engineer's Certificate: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-11."

NO.	DESCRIPTION	DATE
1	REVISED OWNER AND DEVELOPER	10-19-11
REVISIONS		

Owner
Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 300
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer
Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

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-09-044

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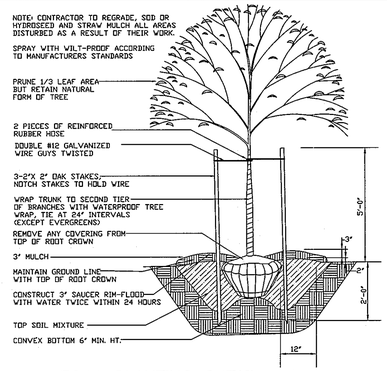
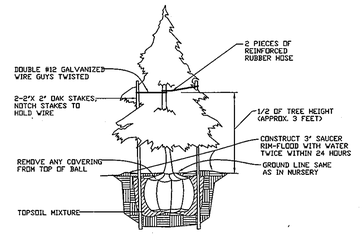
SCHEDULE A - PERIMETER LANDSCAPING

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 & PROVIDED		
						SHADE TREES	EVERGREEN TREES	SHRUBS
P-1	ADJACENT TO ROADWAY	B	327.0'	NO	NO	7	8	-
P-2	ADJACENT TO PERIMETER	A	663.0'	NO	NO	11	-	-
P-3	ADJACENT TO PERIMETER	A	1232.0'	NO	NO	20	-	-
P-4	ADJACENT TO PERIMETER	A	303.0'	NO	NO	5	-	-
P-5	ADJACENT TO PERIMETER	A	1018.0'	YES (215')	NO	13	-	-
P-6	ADJACENT TO PERIMETER	A	2081.0'	YES (210')	NO	31	-	-
P-7	ADJACENT TO PERIMETER	A	844.0'	YES (205')	NO	11	-	-
P-8	ADJACENT TO PERIMETER	A	1226.0'	NO	NO	20	-	-
P-9	ADJACENT TO PERIMETER	A	689.0'	YES (71')	NO	10	-	-
P-10	ADJACENT TO PERIMETER	A	732.0'	NO	NO	12	-	-
P-11	ADJACENT TO PERIMETER	A	1247.0'	NO	NO	21	-	-
P-12	ADJACENT TO PERIMETER	A	1310.0'	NO	NO	22	-	-
P-13	ADJACENT TO PERIMETER	A	814.0'	NO	NO	14	-	-
P-14	ADJACENT TO PERIMETER	A	443.0'	NO	NO	7	-	-
P-15	ADJACENT TO ROADWAY	B	350.0'	NO	NO	7	9	-
TOTAL						211	17	-



TREE PLANTING DETAIL



EVERGREEN PLANTING DETAIL

PLANT LIST

SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE
	126	PLATANUS OCCIDENTALIS "BLOODGOOD" LONDON PLANETREE	2 1/2-3" CAL.
	117	QUERCUS ACUTISSIMA SAWTOOTH OAK	2 1/2-3" CAL.
	30	ILEX OPACA AMERICAN HOLLY	5' - 6' HT.
	27	PINUS STROBUS EASTERN WHITE PINE	6' - 8' HT.

This plan has been prepared in accordance with the provision of Section 16.124 of the Howard County Code and Landscape Manual. Financial surety for the required 243 shade and 57 evergreen trees will be posted as part of the Developer's Agreement in the amount of $81,450.00.

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-23-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10-30-09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/28/09

PLAN

SCALE: 1" = 100'

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 certification 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 9/22/09

"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".

NO.	DESCRIPTION	DATE
1	REVISED LANDSCAPE AND ENTRANCE EASEMENT	10-19-11
1	REVISED OWNER AND DEVELOPER	10-19-11
	REVISIONS	

Owner	Developer
Meriwether Farm II, LLC c/o Second Goodier, LLC 10715 Charter Drive Suite 350 Columbia, Maryland 21044 Ph: (410) 997-7501 Attn: Mr. Robert C. Goodier, Jr.	Toll Brothers, Inc. Maryland Division 7164 Columbia Gateway Drive Suite 230 Columbia, Maryland 21046 Ph: (410) 997-7501 Attn: Mr. Jeff Driscoll

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

ALDO — DATE 9-22-09

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20746, Expiration Date 2-22-11."

LANDSCAPE PLAN
MERIWETHER FARM
SECTION TWO
PHASE TWO
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED RC-DEO

TAX MAP No: 21 PARCEL No: 20 GRID Nos: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 11 OF 30

F-09-044

I:\2004\04056\dwg\PHASE TWO SECTION TWO FINAL\SHEET 11-12 LANDSCAPE PLANS.dwg, 9/21/2009 11:00:23 AM, jamesl,

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF TYPE 'B' PERIMETER	D1: 796'	D2: 680'	D3: 689'
NUMBER OF TREES REQUIRED & PROVIDED: SHADE TREES / EVERGREEN TREES	16 / 20	11 / 14	5 / 6
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO	YES (120') F.C.E.	YES (436') F.C.E.
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO	NO	NO

INTERNAL LANDSCAPING
S.W.M. PONDS

ZONE	SYMBOL	DESCRIPTION
ZONE 4 RIPARIAN TERRACE		1' - 4' ELEVATION ABOVE NORMAL POOL ELEVATION - PLANT AREA w/ CONEFLOWER, VIOLETS, PRIMROSE, MILKWORT OR LILIES QUANTITY - N/A SPACING - N/A
ZONE 3 SHORELINE FRINGE		0" - 12" ELEVATION ABOVE NORMAL POOL ELEVATION - PLANT AREA w/ THE FOLLWING: INKBERRY, WITCHHAZEL & WINTERBERRY QUANTITY - 10 EACH SPACING - 12" MAX.
ZONE 2 SHALLOW WATER BENCH		6" - 12" ELEVATION BELOW NORMAL POOL ELEVATION - PLANT AREA w/ LOBELIA, BAYBERRY, IRIS OR BLUEFLAG QUANTITY - N/A SPACING - N/A
ZONE 1 DEEPWATER POOL		1' - 4' ELEVATION BELOW NORMAL POOL ELEVATION - PLANT AREA w/ LOTUS, WILD CELERY OR REDHEAD GRASS QUANTITY - N/A SPACING - N/A

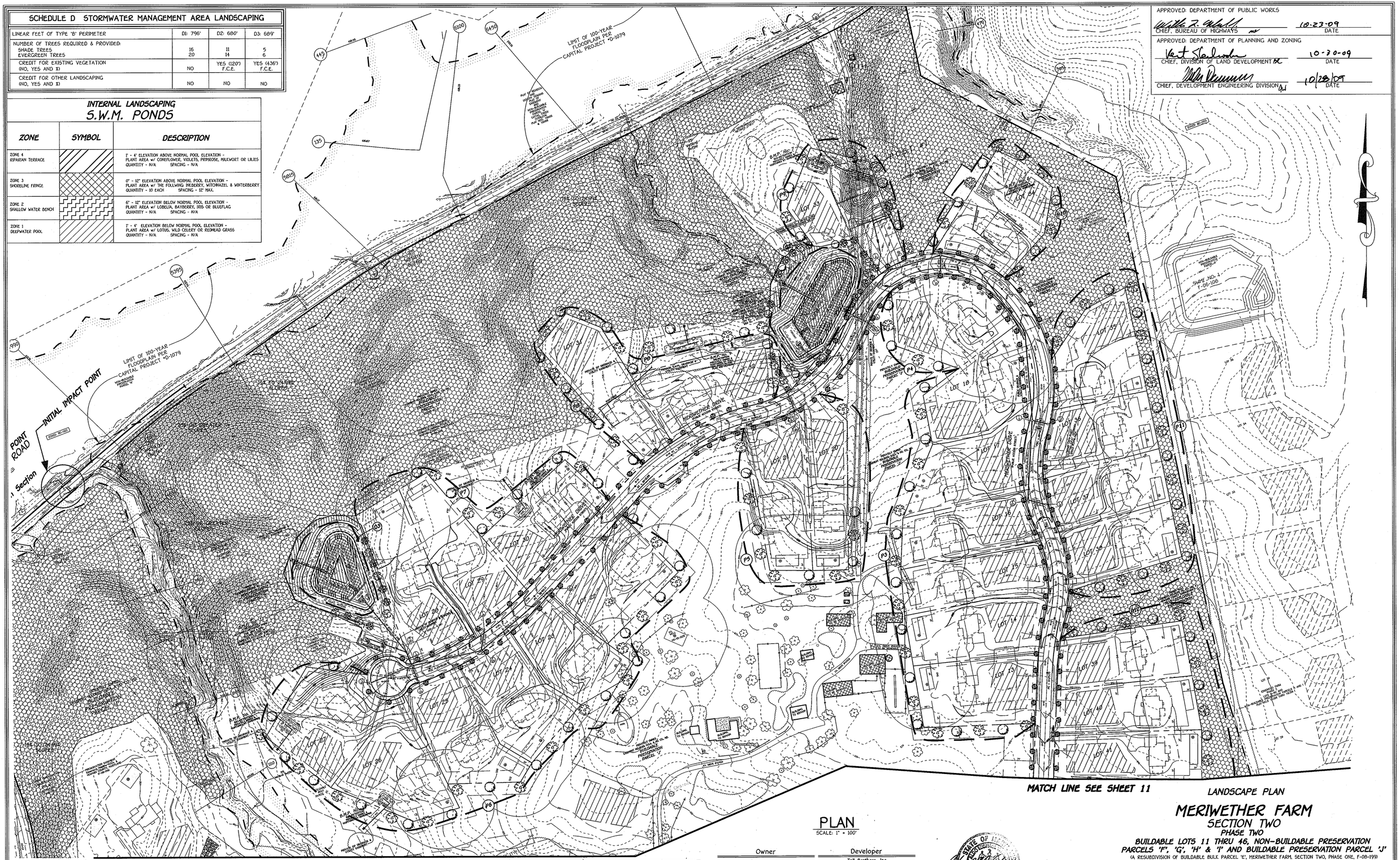
APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-23-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10-30-09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/28/09



PLAN
SCALE: 1" = 100'

LANDSCAPE PLAN

MERIWETHER FARM
SECTION TWO
PHASE TWO
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)

ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 12 OF 30

NO.	DESCRIPTION	DATE
1	REMOVED FIRE SUPPRESSION TANK & UIC EASEMENT	10-19-11
1	REVISED OWNER AND DEVELOPER	10-19-11

REVISIONS

Owner
Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer
Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

ALDO M. [illegible] — DATE 9-22-09

"Professional Engineer 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 2-22-11."

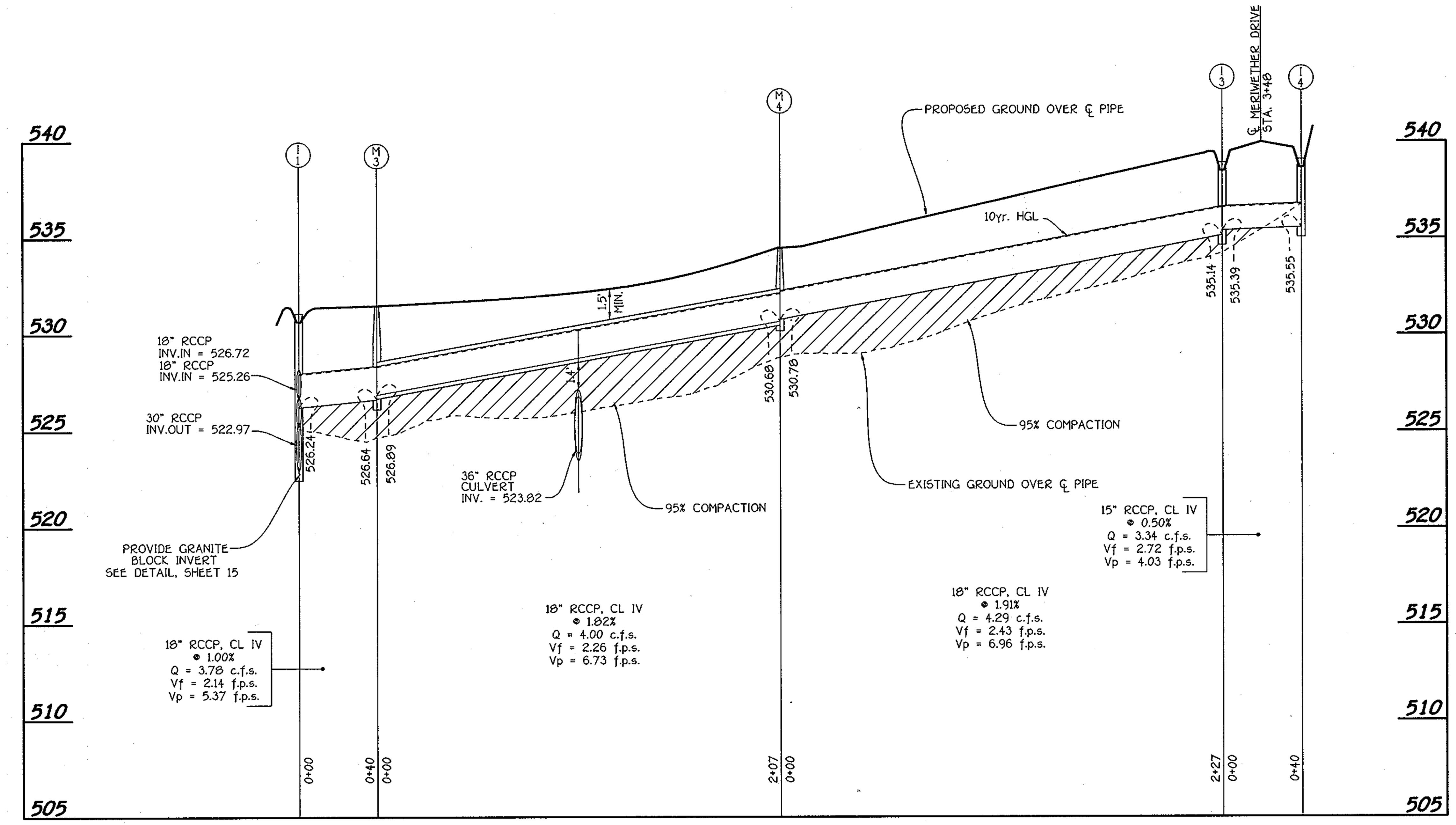
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

F-09-044

1:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 11-12 LANDSCAPE PLANS.dwg, 9/21/2009 11:43:51 AM, jamesl, 1:1

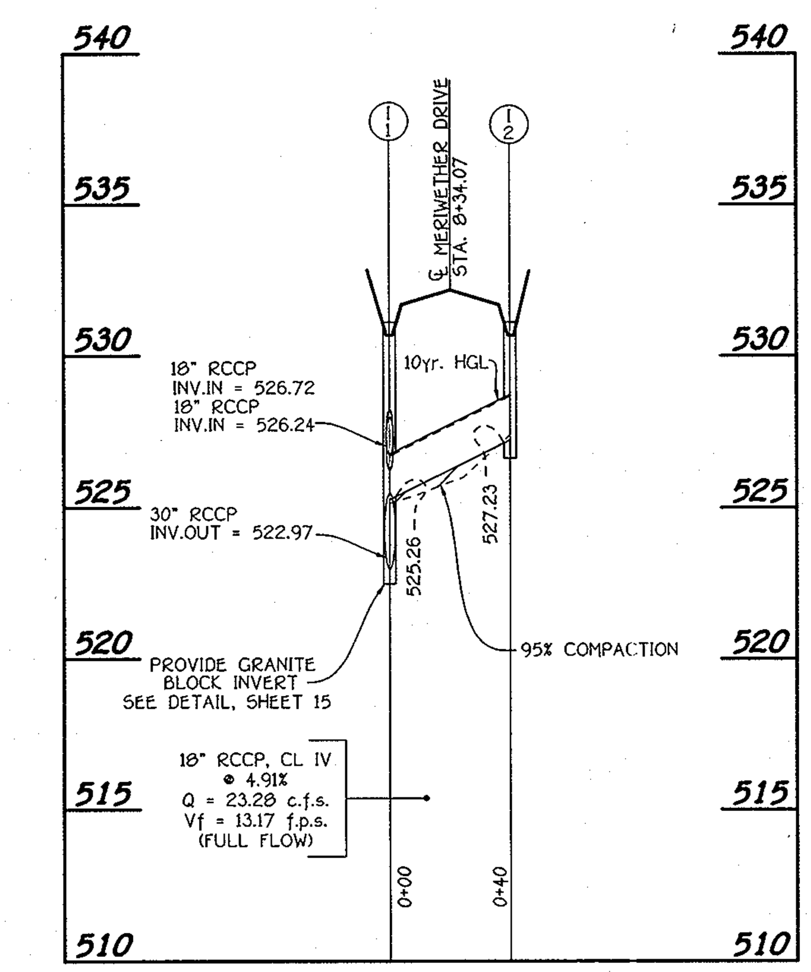
STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	LOCATION	STATION	OFFSET	TYPE	REMARKS
I-1	THROAT = 530.68	526.72, 526.24, 525.26	522.97	MERIWETHER DRIVE	8+34.07	20'L	'K' INLET	D - 4.12 w/D - 4.13
I-2	THROAT = 530.68	----	527.23	MERIWETHER DRIVE	8+34.07	20'R	'K' INLET	D - 4.12 w/D - 4.13
I-3	THROAT = 538.49	535.39	535.14	MERIWETHER DRIVE	3+52	20'L	'K' INLET	D - 4.12 w/D - 4.13
I-4	THROAT = 538.66	----	535.55	MERIWETHER DRIVE	3+45	20'R	'K' INLET	D - 4.12 w/D - 4.13
I-5	THROAT = 535.36	532.15	531.90	MERIWETHER DRIVE	11+76	20'L	'K' INLET	D - 4.12 w/D - 4.13
I-6	THROAT = 535.36	----	532.55	MERIWETHER DRIVE	11+76	20'R	'K' INLET	D - 4.12 w/D - 4.13
I-7	THROAT = 487.13	482.52, 481.62	481.12	MERIWETHER DRIVE	28+97.19	20'R	'K' INLET	D - 4.12 w/D - 4.13
I-8	THROAT = 489.67	485.80	485.55	MERIWETHER DRIVE	27+61	20'R	'K' INLET	D - 4.12 w/D - 4.13
I-9	THROAT = 496.05	492.16, 491.41	490.41	MERIWETHER DRIVE	26+39	20'R	'K' INLET	D - 4.12 w/D - 4.13
I-10	THROAT = 496.05	----	492.56	MERIWETHER DRIVE	26+39	20'L	'K' INLET	D - 4.12 w/D - 4.13
I-11	THROAT = 510.57	506.96, 506.60	506.10	MERIWETHER DRIVE	21+11.19	20'L	'K' INLET	D - 4.12 w/D - 4.13
I-12	THROAT = 510.57	----	507.46	MERIWETHER DRIVE	21+11.19	20'R	'K' INLET	D - 4.12 w/D - 4.13
I-13	THROAT = 515.64	512.75	512.50	MERIWETHER DRIVE	19+19	20'L	'K' INLET	D - 4.12 w/D - 4.13
I-14	THROAT = 516.75	----	513.65	MERIWETHER DRIVE	18+99	20'R	'K' INLET	D - 4.12 w/D - 4.13
I-15	THROAT = 487.13	483.02	482.02	MERIWETHER DRIVE	28+97.19	20'L	'K' INLET	D - 4.12 w/D - 4.13
I-16	THROAT = 489.50	----	485.50	MERIWETHER DRIVE	29+07	52'L	'D' INLET	D - 4.10
I-17	THROAT = 496.63	492.35	492.10	MERIWETHER DRIVE	31+65	20'R	'K' INLET	D - 4.12 w/D - 4.13
I-18	THROAT = 496.99	----	492.75	MERIWETHER DRIVE	31+71	20'L	'K' INLET	D - 4.12 w/D - 4.13
I-19	THROAT = 479.43	475.35, 475.35, 470.65	469.65	MERIWETHER DRIVE	43+40	20'R	'K' INLET	D - 4.12 w/D - 4.13
I-20	THROAT = 489.81	486.06, 486.06	485.81	MERIWETHER DRIVE	41+67	20'L	'K' INLET	D - 4.12 w/D - 4.13
I-21	THROAT = 491.85	----	488.66	MERIWETHER DRIVE	41+33	20'R	'K' INLET	D - 4.12 w/D - 4.13
I-22	THROAT = 501.89	----	498.56	MERIWETHER DRIVE	39+41	20'L	'K' INLET	D - 4.12 w/D - 4.13
I-23	THROAT = 479.67	----	475.76	MERIWETHER DRIVE	43+36	20'L	'K' INLET	D - 4.12 w/D - 4.13
I-24	475.04	----	471.21	MERIWETHER DRIVE	L.P. 1+50.83	---	A-5	D - 4.01
M-1	526.50	522.20	521.95	MERIWETHER DRIVE	8+85	78'L	5' STD. MANHOLE	G - 5.13
M-2	527.80	522.79	522.54	MERIWETHER DRIVE	8+34	50'L	5' STD. MANHOLE	G - 5.13
M-3	531.75	526.89	526.64	MERIWETHER DRIVE	7+94	15'L	STD. MANHOLE	G - 5.12
M-4	534.50	530.76	530.68	MERIWETHER DRIVE	5+76	28'L	STD. MANHOLE	G - 5.12
M-5	531.70	527.65	527.40	MERIWETHER DRIVE	9+06	25'L	STD. MANHOLE	G - 5.12
M-6	488.10	478.85, 477.57	477.41	MERIWETHER DRIVE	30+48	42'R	5' STD. MANHOLE	G - 5.13
M-7	501.76	494.70	494.45	MERIWETHER DRIVE	25+61	15'R	STD. MANHOLE	G - 5.12
M-8	510.76	503.68	503.43	MERIWETHER DRIVE	23+49	15'L	STD. MANHOLE	G - 5.12
M-10	479.30	469.46	469.23, 468.73	MERIWETHER DRIVE	43+45	56'R	5' STD. MANHOLE	G - 5.13
HW-1	528.68	----	524.18 (36")	MERIWETHER DRIVE	7+00.9	43'R	TYPE 'A' HEADWALL	D - 5.11
HW-2	518.95	514.45 (36")	----	N 579201.74 E 1303737.25	-----	-----	TYPE 'A' HEADWALL	D - 5.11
HW-3	475.45	470.95 (36")	----	N 580683.92 E 1304008.38	-----	-----	TYPE 'A' HEADWALL	D - 5.11
HW-4	462.50	458.50 (30")	----	N 580474.21 E 1302636.12	-----	-----	TYPE 'A' HEADWALL	D - 5.11
S-1	523.75	521.25	----	N 579139.66 E 1303919.35	-----	-----	30" CONC. END SECTION	D - 5.51
S-2	526.75	523.75	----	MERIWETHER DRIVE	6+82.7	50'L	36" CONC. END SECTION	D - 5.51
S-3	480.12	477.12	----	MERIWETHER DRIVE	30+49	74'R	36" CONC. END SECTION	D - 5.51
S-4	467.66	465.16	----	N 580318.78 E 1302758.05	-----	-----	30" CONC. END SECTION	D - 5.51
R-1	525.50	516.00 (6")	515.80 (36")	N 579226.01 E 1303801.69	-----	-----	CONCRETE RISER	SEE SHEET 17
R-2	483.00	473.00 (8")	472.90 (36")	N 580627.28 E 1304057.15	-----	-----	CONCRETE RISER	SEE SHEET 18
R-3	469.30	460.00 (6")	459.80 (30")	N 580426.53 E 1302890.41	-----	-----	CONCRETE RISER	SEE SHEET 19



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

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 10-23-09
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10-30-09
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/28/09



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

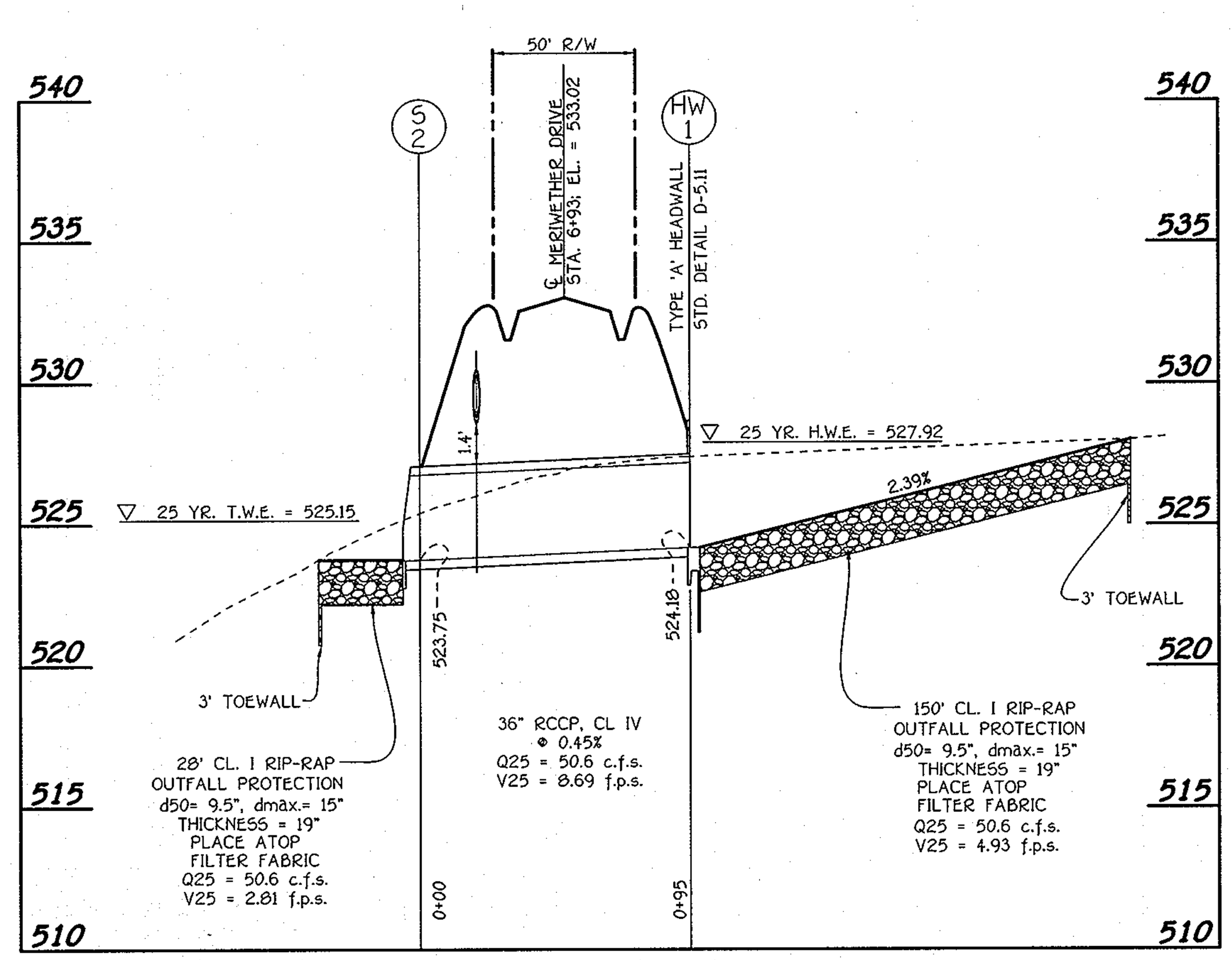
STORM DRAIN PIPE SCHEDULE

SIZE	CLASS	LENGTH
15"	RCCP. CL. IV	487 L.F.
18"	RCCP. CL. IV	1642 L.F.
24"	RCCP. CL. IV	792 L.F.
30"	RCCP. CL. IV	413 L.F.
36"	RCCP. CL. IV	181 L.F.
6"	(SOLID) PVC, SCH. 40	55 L.F.
6"	(PERFORATED) PVC, SCH. 40	52 L.F.

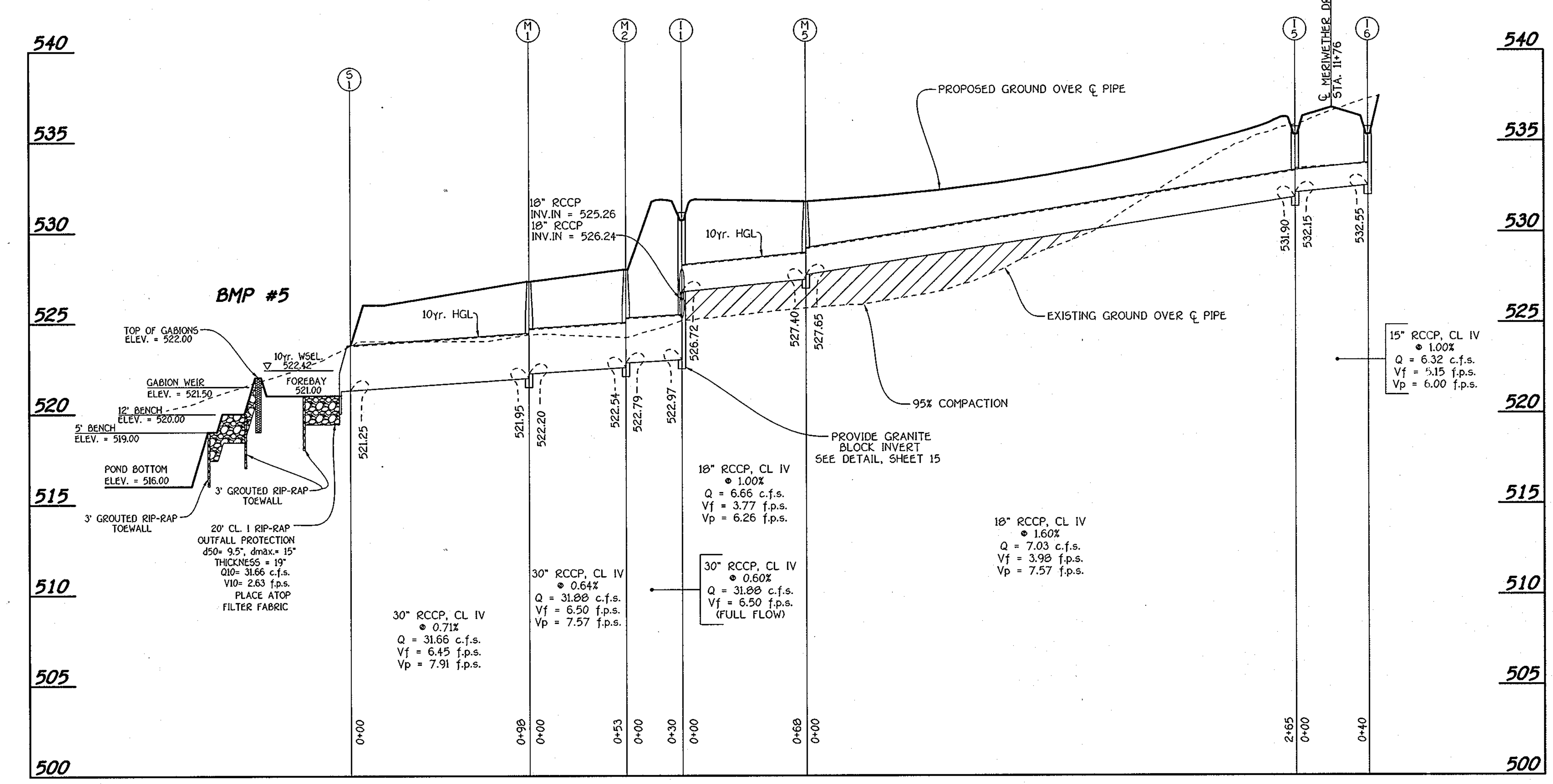
STORMWATER MANAGEMENT PIPE SCHEDULE

SIZE	CLASS	LENGTH
6"	D.I.P. DRAIN PIPE	20 L.F.
8"	D.I.P. DRAIN PIPE	10 L.F.
30"	ASTM C-361, B-25 RUBBER GASKET PIPE	70 L.F.
36"	ASTM C-361, B-25 RUBBER GASKET PIPE	66 L.F.
36"	ASTM C-361, C-25 RUBBER GASKET PIPE	72 L.F.

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



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



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

NO.	DESCRIPTION	DATE
1	REVISED OWNER AND DEVELOPER	10-19-11
1	ADDED STORMDRAIN PIPE SUBSTITUTION NOTE	10-19-11
REVISIONS		

Owner
Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer
Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

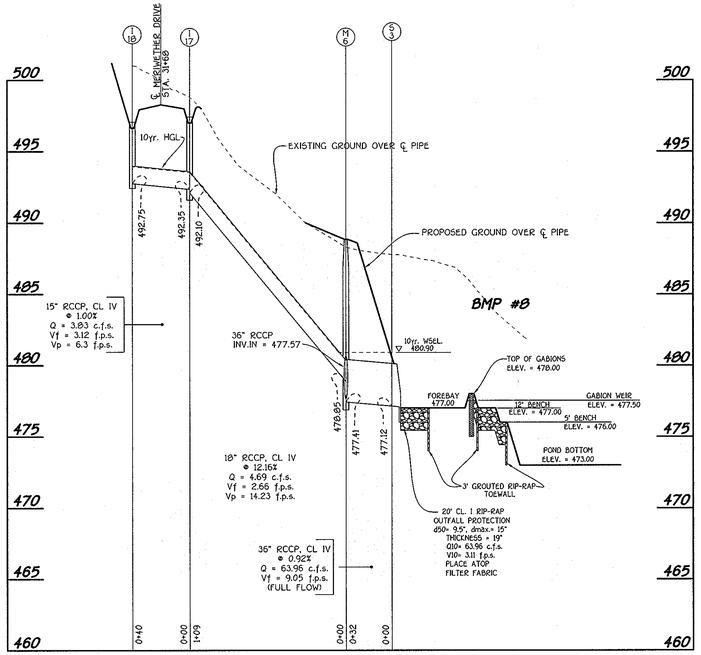
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

ALDO — DATE 9-22-09
"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 2-22-11."

STORM DRAIN PROFILES
MERIWETHER FARM
SECTION TWO
PHASE TWO
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'
(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 13 OF 30

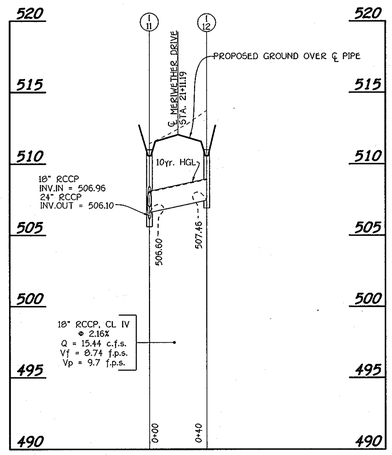
F-09-044

I:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 13-15 SD PROFILES.dwg, 9/21/2009 11:56:21 AM, jamesl, 1:1



PROFILE

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



PROFILE

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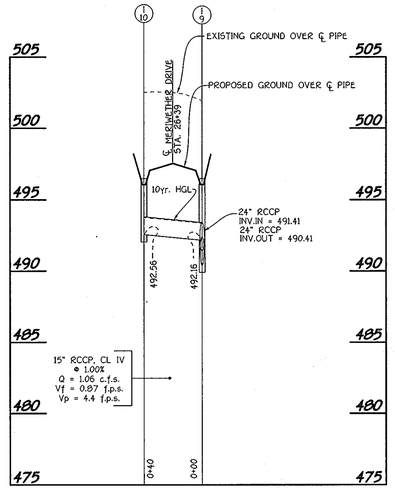
VER: 1" = 5'



PROFILE

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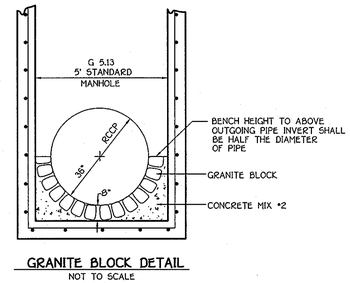
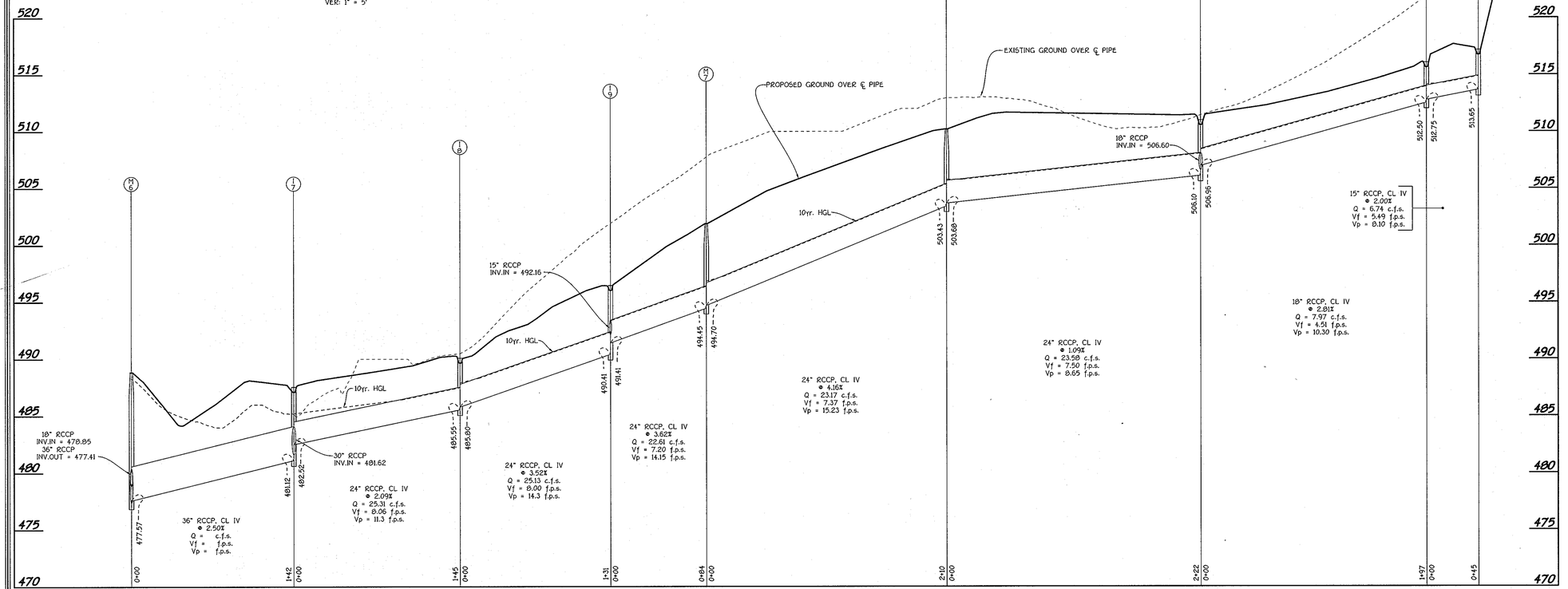


GRANITE BLOCK DETAIL

NOT TO SCALE



PROFILE

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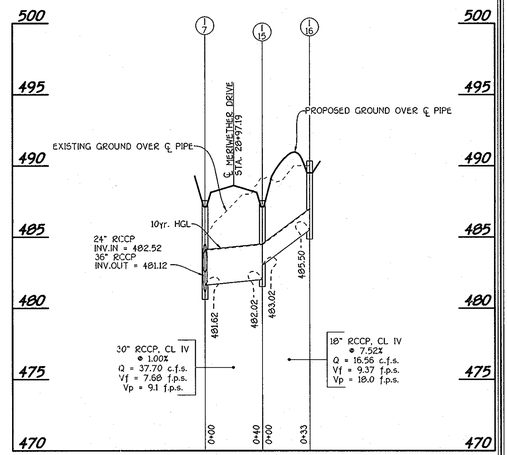

PROFILE

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

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-23-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10-30-09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/28/09

NO.	DESCRIPTION	DATE
	REVISIONS	
1	REVISED OWNER AND DEVELOPER	10-19-11

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
Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer
Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

STATE OF MARYLAND — CHRISTOPHER J. FISHER — No. 20748 — REGISTERED PROFESSIONAL ENGINEER

9-22-09
DATE

"PROFESSIONAL ENGINEER'S CERTIFICATE: I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-11."

STORM DRAIN PROFILES

MERIWETHER FARM
SECTION TWO
PHASE TWO
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED RC-DEO
TAX MAP No: 21 PARCEL No: 20 GRID Nos: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 14 OF 30

F-09-044

I:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 13-15 SD PROFILES.dwg, 9/21/2009 11:58:48 AM, jamesL
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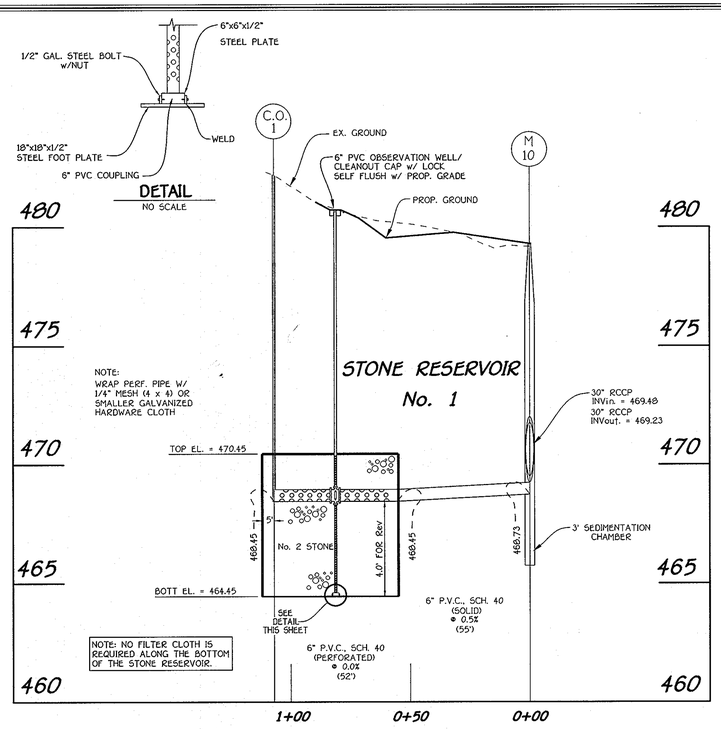
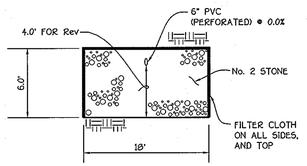


DETAIL
NO SCALE

OFF-LINE STONE RESERVOIR FOR Rev REQUIREMENT

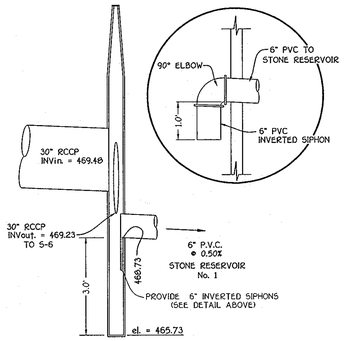
SCALE: HOR. : 1" = 30'
VER. : 1" = 3'

NO.	DESCRIPTION	DATE
1	REVISED OWNER AND DEVELOPER	10-19-11
	REVISIONS	



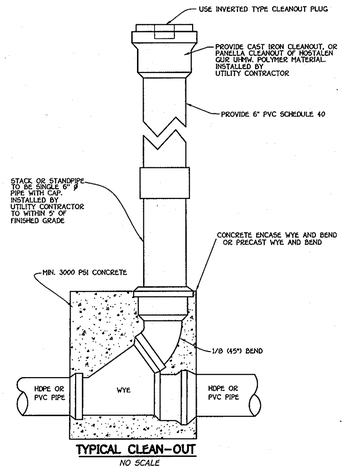
OFF-LINE STONE RESERVOIR SECTION

NO SCALE

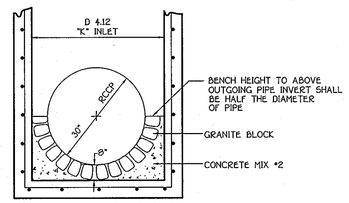


(M-10)
DIVERSION MANHOLE

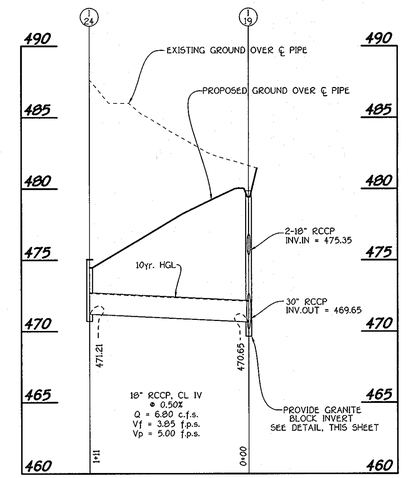
NO SCALE



TYPICAL CLEAN-OUT
NO SCALE



GRANITE BLOCK DETAIL
NOT TO SCALE



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

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER INFILTRATION TRENCHES FOR Rev

1. The monitoring wells and structures shall be inspected on a quarterly basis and after every large stone event.
2. Water levels and sediment build up in the monitoring wells shall be recorded over a period of several days to insure trench drainage.
3. A logbook shall be maintained to determine the rate at which the facility drains.
4. When the facility becomes clogged so that it does not drain down within the 72 hour time period, corrective action shall be taken.
5. The maintenance logbook shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
6. 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.

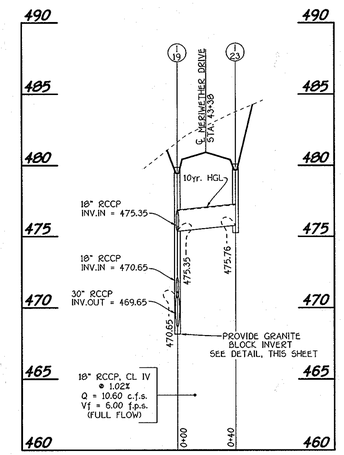
APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-23-09

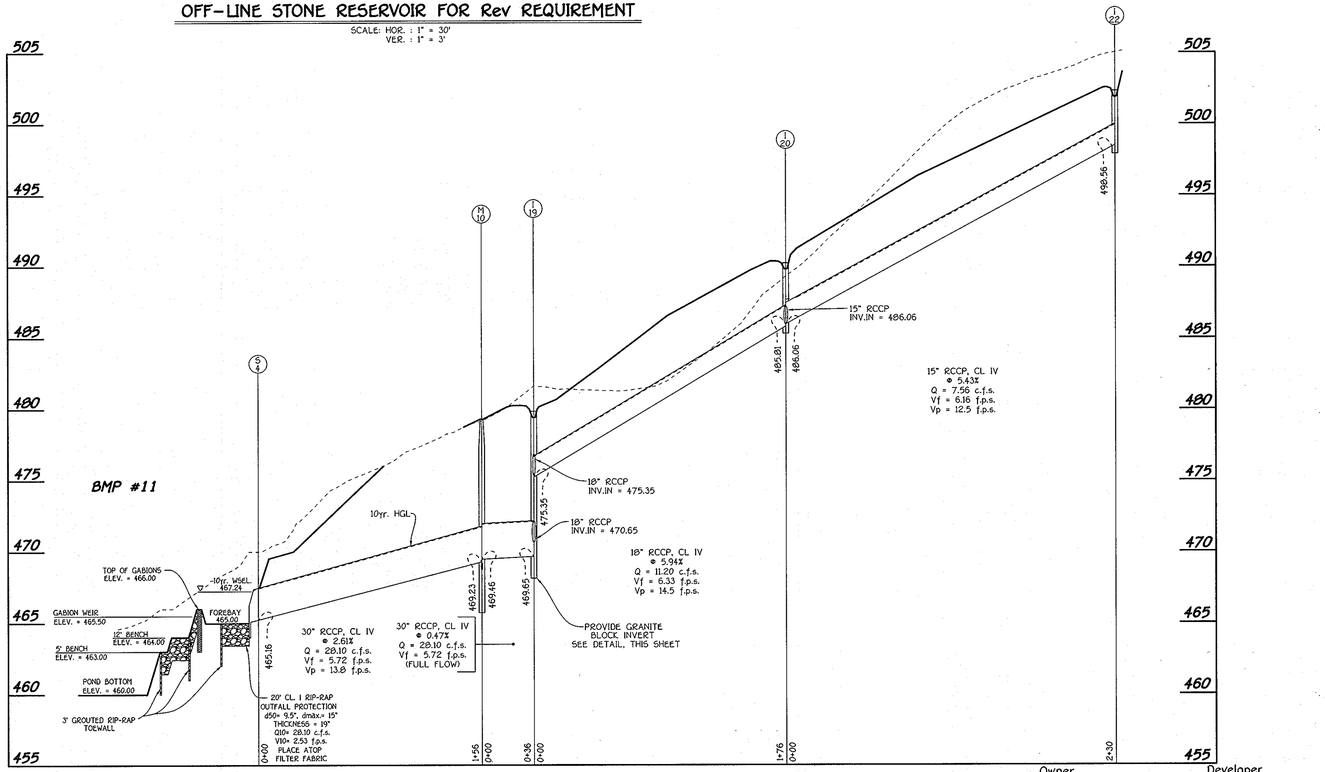
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10-30-09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/28/09

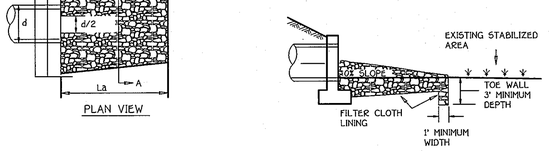


PROFILE
SCALE: HOR: 1" = 50'
VER: 1" = 5'



PROFILE

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



SECTION A-A

RIP-RAP CHANNEL DETAIL

NO SCALE

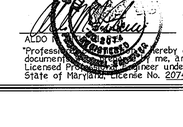
RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	AREA (s.f.)	WETTED PERIMETER (ft.)	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
S-1	12.20	12.22	0.9984	0.9989	0.005	0.0707	6.0'	1.39'	0.04	2.63	31.66	9.5"	15"	19"
S-2	18.23	16.50	1.1048	1.0691	0.005	0.0707	8.0'	1.66'	0.04	2.81	50.6 **	9.5"	15"	19"
S-3	20.58	15.96	1.2895	1.1857	0.005	0.0707	8.0'	1.78'	0.04	3.11	63.96	9.5"	15"	19"
S-4	11.18	11.81	0.5686	0.6850	0.005	0.0707	6.0'	1.30'	0.04	2.53	28.10	9.5"	15"	19"
HW-1	10.36	13.02	0.7957	0.8580	0.0239	0.0707	10.0'	1.11'	0.04	4.93	50.6 **	9.5"	15"	19"
HW-2	13.28	14.87	0.5357	0.6591	0.005	0.0707	10.0'	1.09'	0.04	2.44	32.3 *	9.5"	15"	19"
HW-3	21.45	17.24	1.2442	1.1576	0.005	0.0707	10.0'	1.62'	0.04	3.04	65.2 *	16"	24"	32"
HW-4	14.16	14.22	0.9958	0.9971	0.005	0.0707	8.5'	1.28'	0.04	2.62	36.9 *	16"	24"	32"

* DENOTES 100yr. Q
** DENOTES 25yr. Q

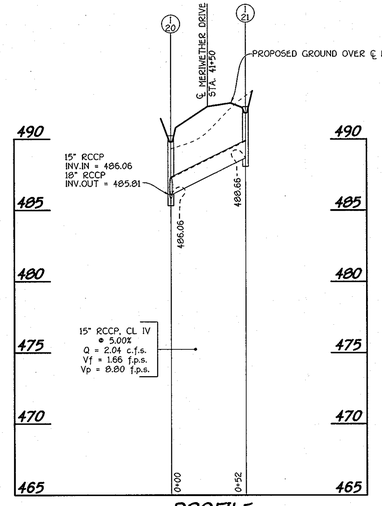
CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

1. The subgrade for the filter, rip-rap 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 rip-rap 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 rip-rap 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 rip-rap 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. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.



ALDO E. VITALI — DATE 9.28.09

"Professional Engineer, I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 9-22-11."



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

STORM DRAIN PROFILES

MERIWETHER FARM

SECTION TWO

PHASE TWO

BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)

ZONED: RC-DEO

TAX MAP No.: 21 PARCEL No.: 20 GRID Nos.: 15, 16, 21 & 22

FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 15 OF 30

F-09-044

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
Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer
Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

I:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 13-15 SD PROFILES.dwg, 9/21/2009 11:59:55 AM, jamesj, 1:1

STORMWATER 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 bands 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

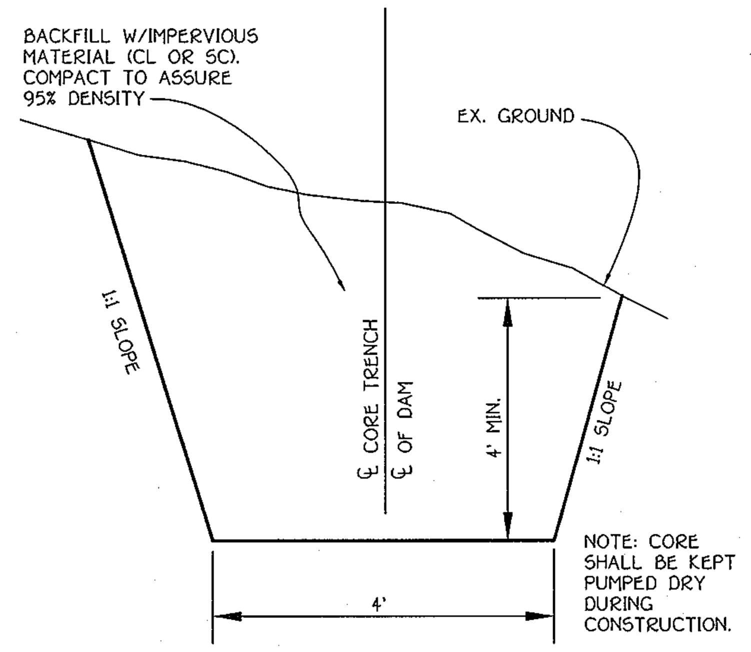
All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service 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.

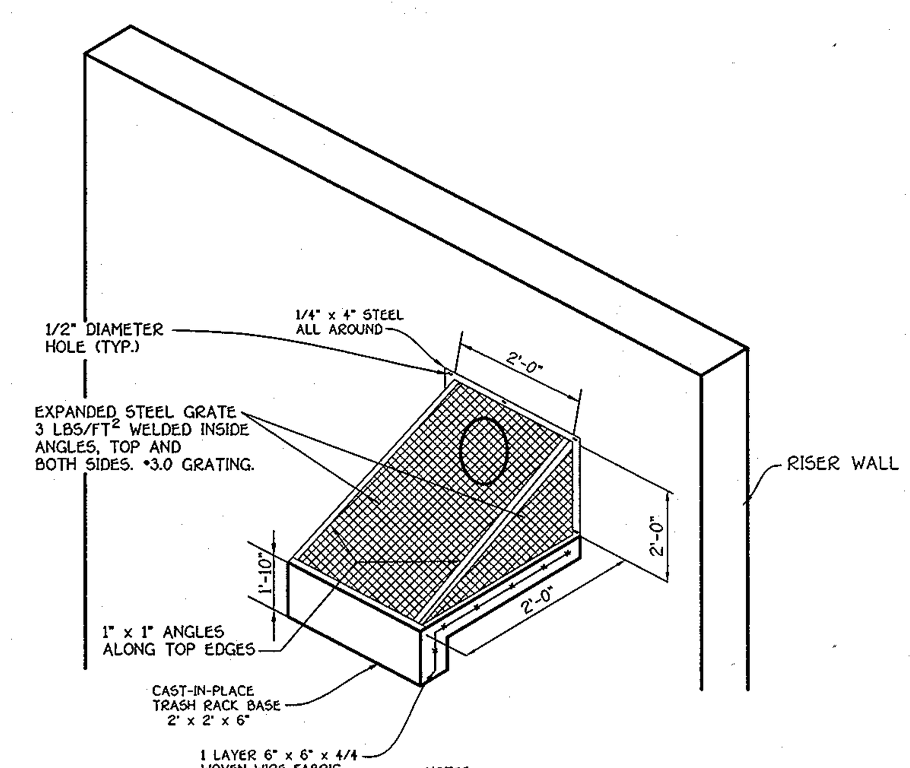
OPERATION AND MAINTENANCE

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.



CORE TRENCH DETAIL

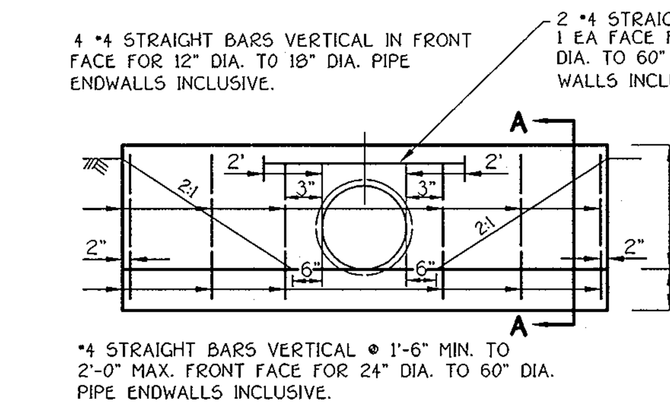
(NO SCALE)



NOTES:
1. TRASH RACK TO BE CENTERED OVER OPENING .
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING AND PAINTED BATTLESHIP GREY.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS, TRASH RACK TO BE REMOVABLE.

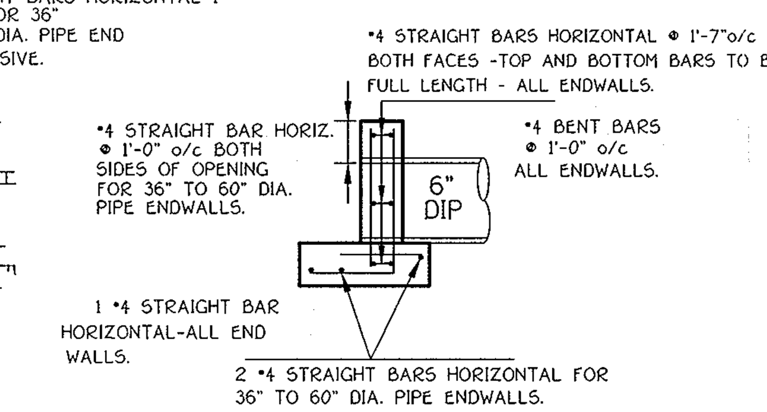
EXPANDED METAL TRASH RACK FOR LOW FLOW ORIFICE

NOT TO SCALE

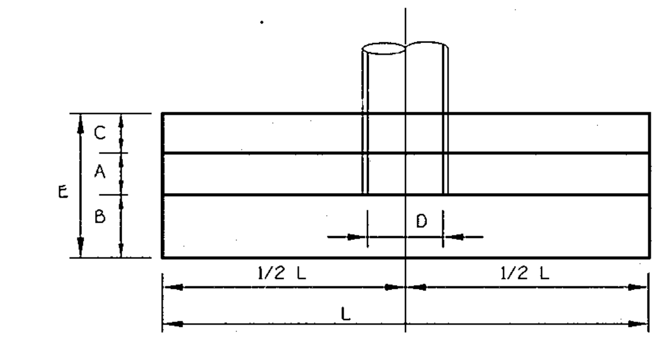


ELEVATION

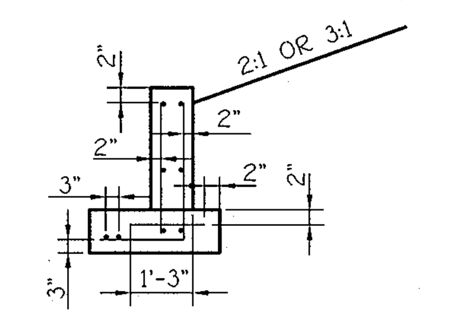
'S' DISTANCES FROM INSIDE SURFACE OF PIPE TO VERTICAL BARS IN FRONT AND REAR FACE.
4" FOR 12" DIA. TO 18" DIA. PIPES INCL.
6" FOR 24" DIA.TO 36" DIA. PIPES INCL.
8" FOR 42" DIA.TO 60" DIA. PIPES INCL.



SECTION A-A



PLAN



DISPOSITION OF BARS - DETAIL

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

OPENINGS		DIMENSIONS							VOLUME	STEEL
D IN.	AREA SQ.FT.	A	B	C	E	F	H	L	CONC. C.Y.	LBS.
6"	0.79	9"	6"	6"	1'-9"	9"	1'-6"	5'-5"	0.61	38

MODIFIED TYPE 'C' ENDWALL

NO SCALE

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 9/22/9

Robert Goodier

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 Of Engineer — Date 9-22-09

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 10/15/09

Approved: Department Of Public Works

Chief, Bureau Of Highways — Date 10-23-09

Approved: Department Of Planning And Zoning

Kent Sheubrooks

Chief, Division Of Land Development — Date 10-30-09

Chief, Development Engineering Division — Date 10/28/09

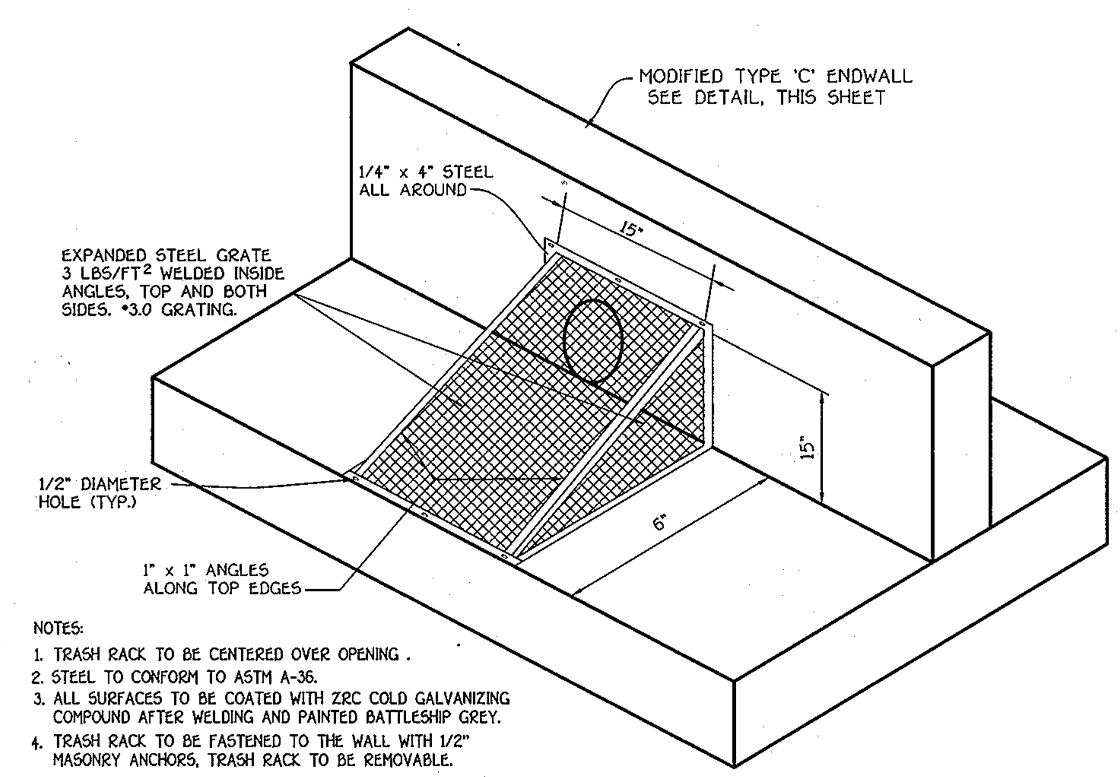
AS-BUILT CERTIFICATION

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.



NOTES:
1. TRASH RACK TO BE CENTERED OVER OPENING .
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING AND PAINTED BATTLESHIP GREY.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS, TRASH RACK TO BE REMOVABLE.

EXPANDED METAL TRASH RACK FOR DRAIN PIPE

NOT TO SCALE

EARTHWORK RECOMMENDATIONS

THE GEOTECHNICAL ASPECTS OF THE STORMWATER CONSTRUCTION SHOULD CONFORM TO MD 378/2000 SPECIFICATIONS. A REVIEW OF THE MOISTURE/COMPACTED DENSITY RELATIONSHIP TEST RESULTS PRESENTED ON PLATE 1 THROUGH 5, SHOW THE TESTED SOILS TO HAVE SUFFICIENTLY HIGH COMPACTED MAXIMUM DRY DENSITIES FOR USE AS EMBANKMENT OR STRUCTURAL FILL. THE EXISTING MOISTURE CONTENTS AT THE TIME OF SAMPLING VARIED CONSIDERABLY, FROM 8 PERCENT ABOVE TO 6 PERCENT BELOW THE OPTIMUM FOR MOST EFFICIENT COMPACTION. SOME SOILS MAY REQUIRE THE ADDITION OF MOISTURE, WHILE OTHERS WOULD REQUIRE SIGNIFICANT AERATION AND DRYING AFTER SPREADING BUT PRIOR TO COMPACTION IN ORDER TO ACHIEVE A 95 PERCENT COMPACTION CRITERIA.

WITH THE VARIABILITY OF SOIL MOISTURES, WE WOULD RECOMMEND THAT THE EARTHWORK CONSTRUCTION OCCUR DURING THE NORMALLY WARMER, DRIER SUMMER AND EARLY FALL CONSTRUCTION SEASON WHEN DRYING OF SOILS BY AERATION IS MOST EFFICIENT. CONSTRUCTION DURING THE COOLER WETTER SEASONS OF THE YEAR MAY PROHIBIT THE USE OF HIGH MOISTURE SOILS IN CONTROLLED COMPACTED FILLS AS THE COOLER WEATHER WILL PROHIBIT DRYING.

ONLY IN BORING B-10 WAS A UNIFIED CL SOIL ENCOUNTERED. THE LABORATORY TEST RESULTS INDICATE THAT THESE SOILS ARE BORDERLINE TO THE ML CLASSIFICATION. WE WOULD NOT EXPECT TO ENCOUNTER UNIFIED "C" CLASSIFICATION SOILS IN THIS ROCK TYPE; THUS, WE EXPECT THAT THE DEPOSIT FOUND IN BORING B-10 WOULD BE OF LIMITED EXTENT.

GENERAL GEOTECHNICAL CONCLUSIONS AND RECOMMENDATIONS

From review of most of the test borings, it appears that adequate support would be provided for principal spillway construction, in most cases. In borings where existing fill or native soils with standard penetration resistances of less than 6 blows per foot, it may be necessary to selectively undercut and backfill with controlled compacted fill or additional riser foundation or pipe cradle concrete.

Only limited amounts of Unified "C" soils were encountered in the test borings which are suitable for use as core trench or dam core fill. Typically "C" soils are not encountered in the residual soils formed from this rock formation and it is expected that these materials will be of only limited extent. Impervious core trench fills will likely have to be imported from off site.

Cut slopes should generally be stable in the residual soils at slopes no steeper than 3H:1V. It is possible that slopes cut below the groundwater table into the silt and medium to fine-grained sand soils could experience some sloughage requiring either flattening of the slopes or construction of slope drains to provide additional stability. The need and extent of these drains would best be determined at the time of construction; however, if possible, it would be best not to extend the basin grades below the indicated groundwater levels.

For preliminary planning purposes, we would assume that the standard 4-foot deep MD378/2000 core trench and standard dam core dimensions will be acceptable. In small facilities which need not meet MD 378/2000 requirements, we would still recommend construction of a smaller core trench to cut off possible subsurface flow through the loosened surface soils and to lock the embankment into the original ground. For these facilities, we would recommend a core trench 2 feet deep, with a 4-foot bottom width and 1H:1V side slopes constructed of Unified "C" or plastic ML soils.

NO.	DESCRIPTION	DATE
1	REVISED OWNER AND DEVELOPER	10-19-11

REVISIONS

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

Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer

Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

ALDO M. VITUCCI, P.E. — DATE 9-22-09

"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 2-22-11."

STORMWATER MANAGEMENT NOTES AND DETAILS

MERIWETHER FARM

SECTION TWO

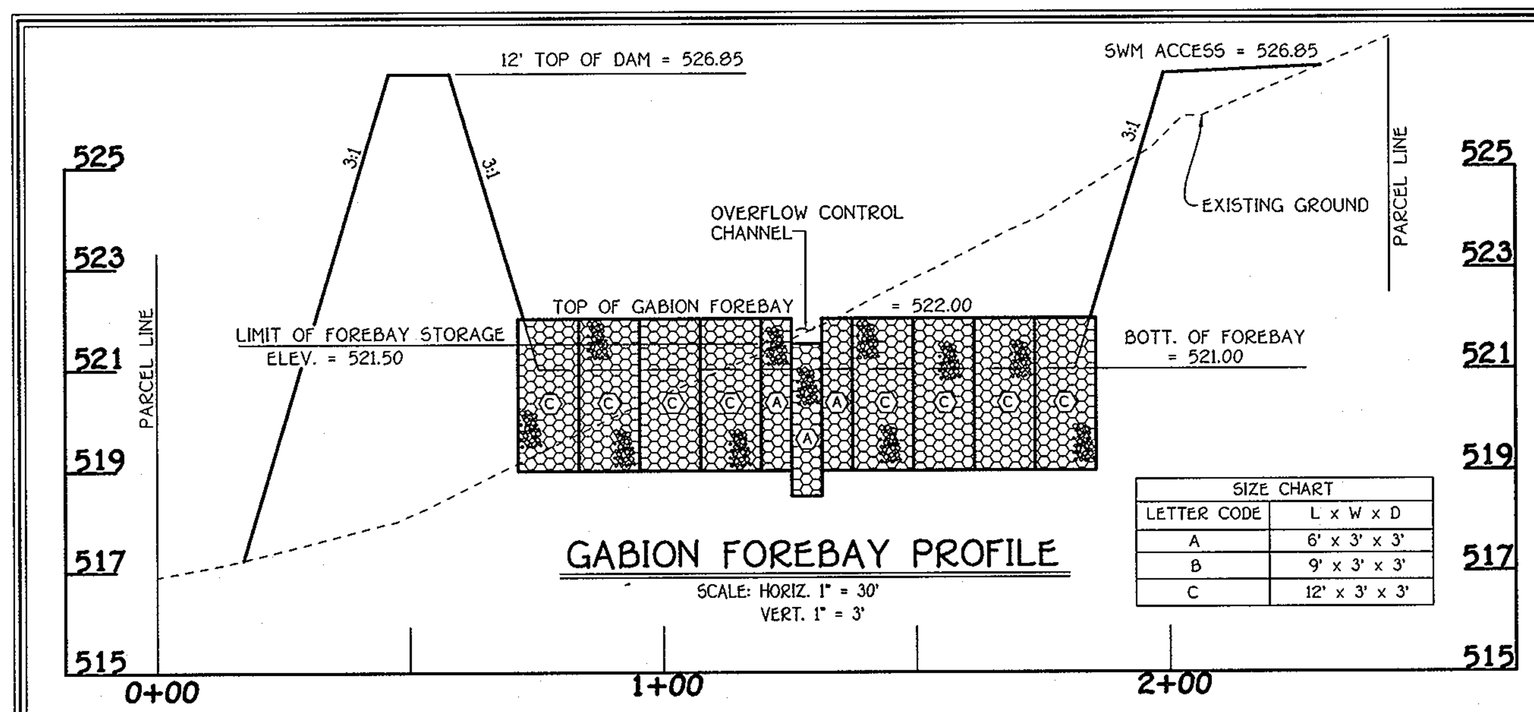
PHASE TWO

BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 16 OF 30

F-09-044

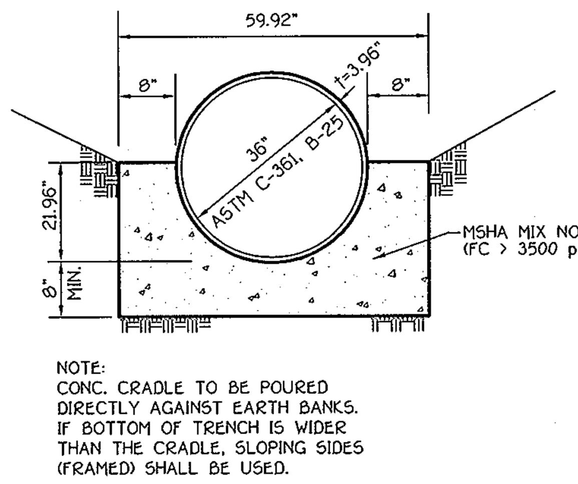
I:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 16-19 SWM DETAILS.dwg, 9/21/2009 2:34:31 PM, jamesl, 1:1



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

GABION FOREBAY PROFILE

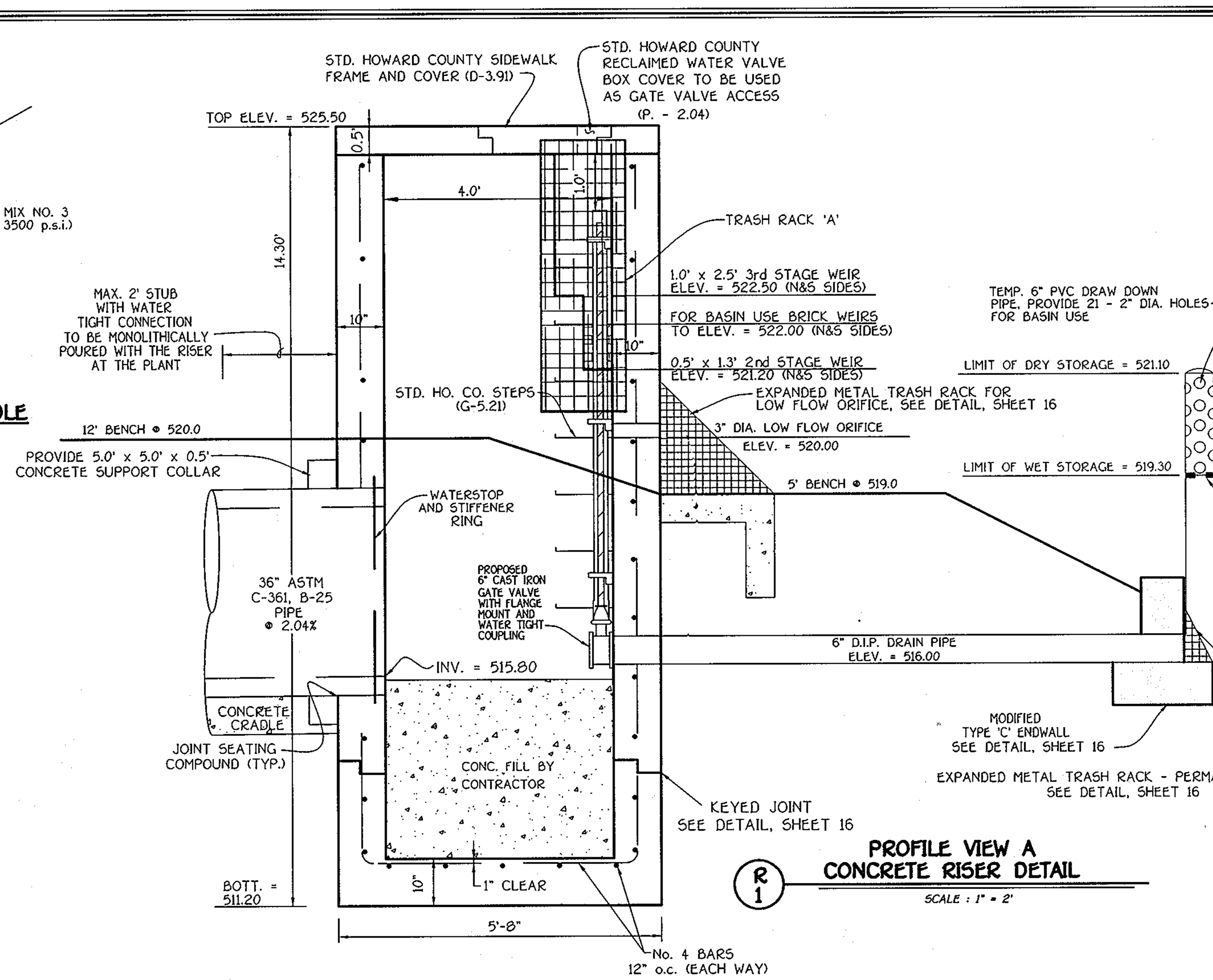
SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



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

SCS TR-46 A2 CONCRETE CRADLE

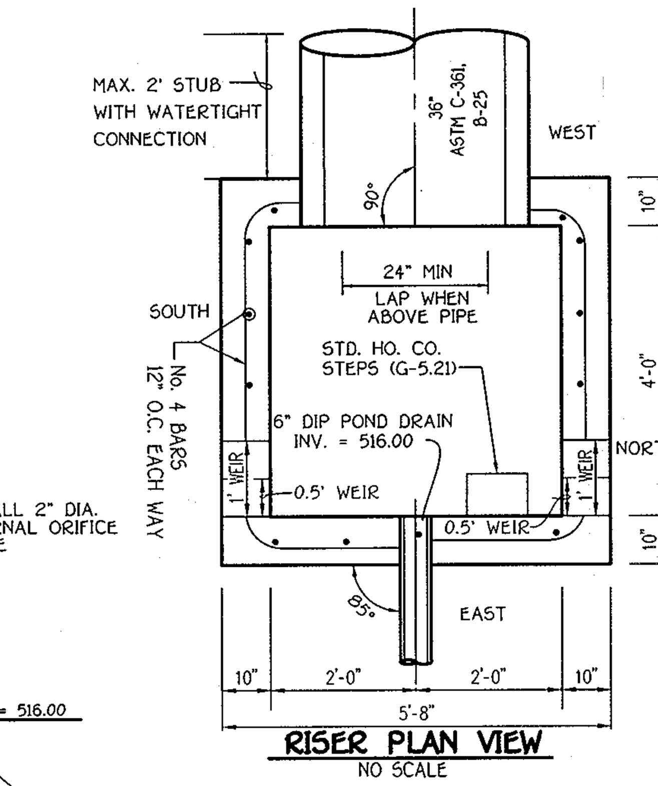
NO SCALE



PROFILE VIEW A CONCRETE RISER DETAIL

R 1

SCALE : 1" = 2'



RISER PLAN VIEW

NO SCALE

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: 9/22/9

Robert C Goodier
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 Of Engineer — Date: 9-22-09

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: 10/15/09

Approved: Department Of Public Works

Chief Bureau Of Highways — Date: 10-23-09

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 10-30-09

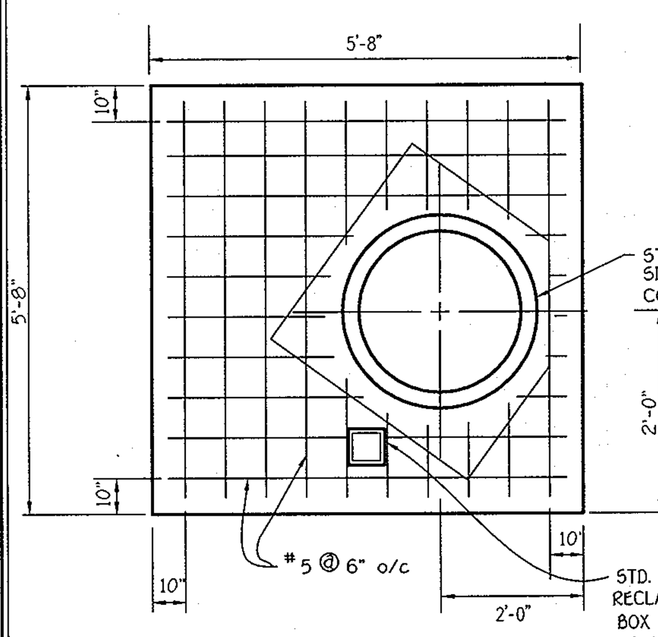
Chief, Development Engineering Division — Date: 10/28/09

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.

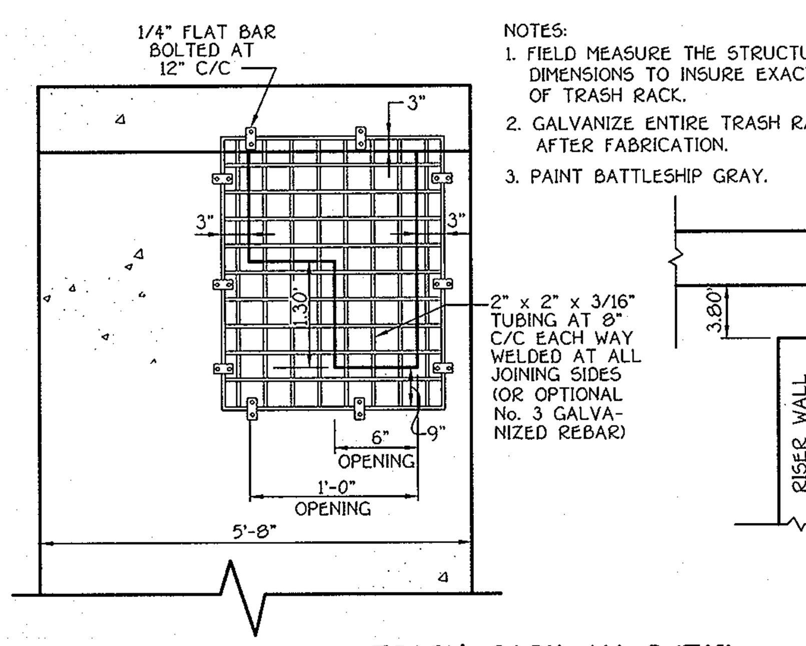
Signature — P.E. No. — Date:

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.



TOP SLAB DETAIL

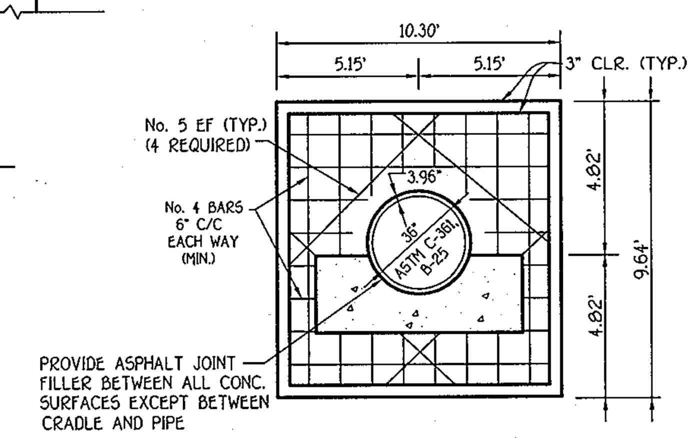
NO SCALE



NOTES:
1. FIELD MEASURE THE STRUCTURE DIMENSIONS TO INSURE EXACT FIT OF TRASH RACK.
2. GALVANIZE ENTIRE TRASH RACK AFTER FABRICATION.
3. PAINT BATTLESHIP GRAY.

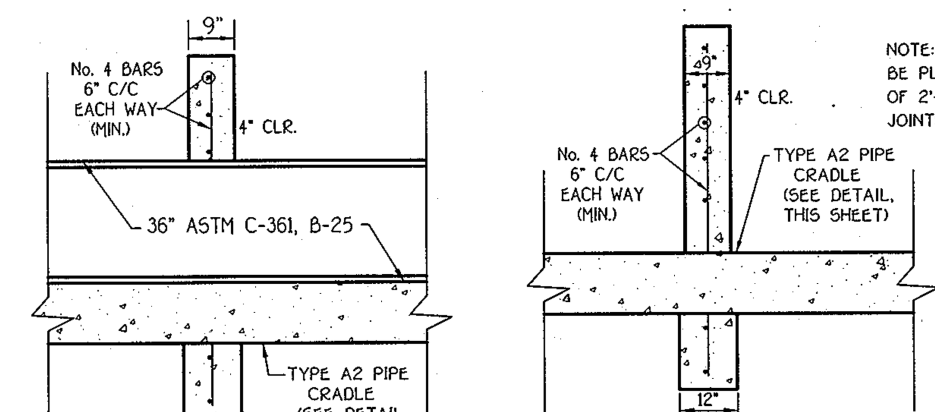
TRASH RACK 'A' DETAIL

(NO SCALE)



ANTI-SEEP COLLAR

NO SCALE



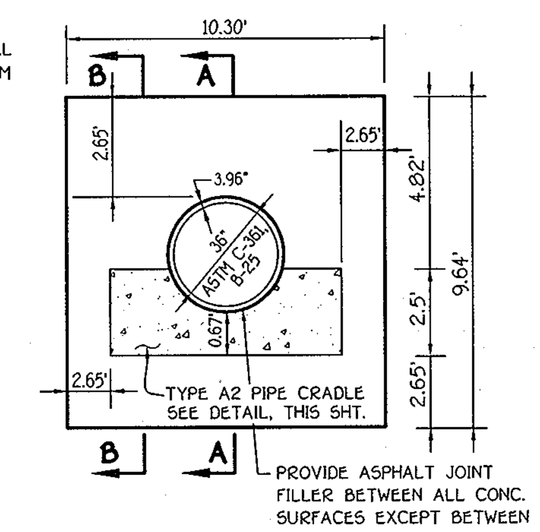
SECTION 'A-A'

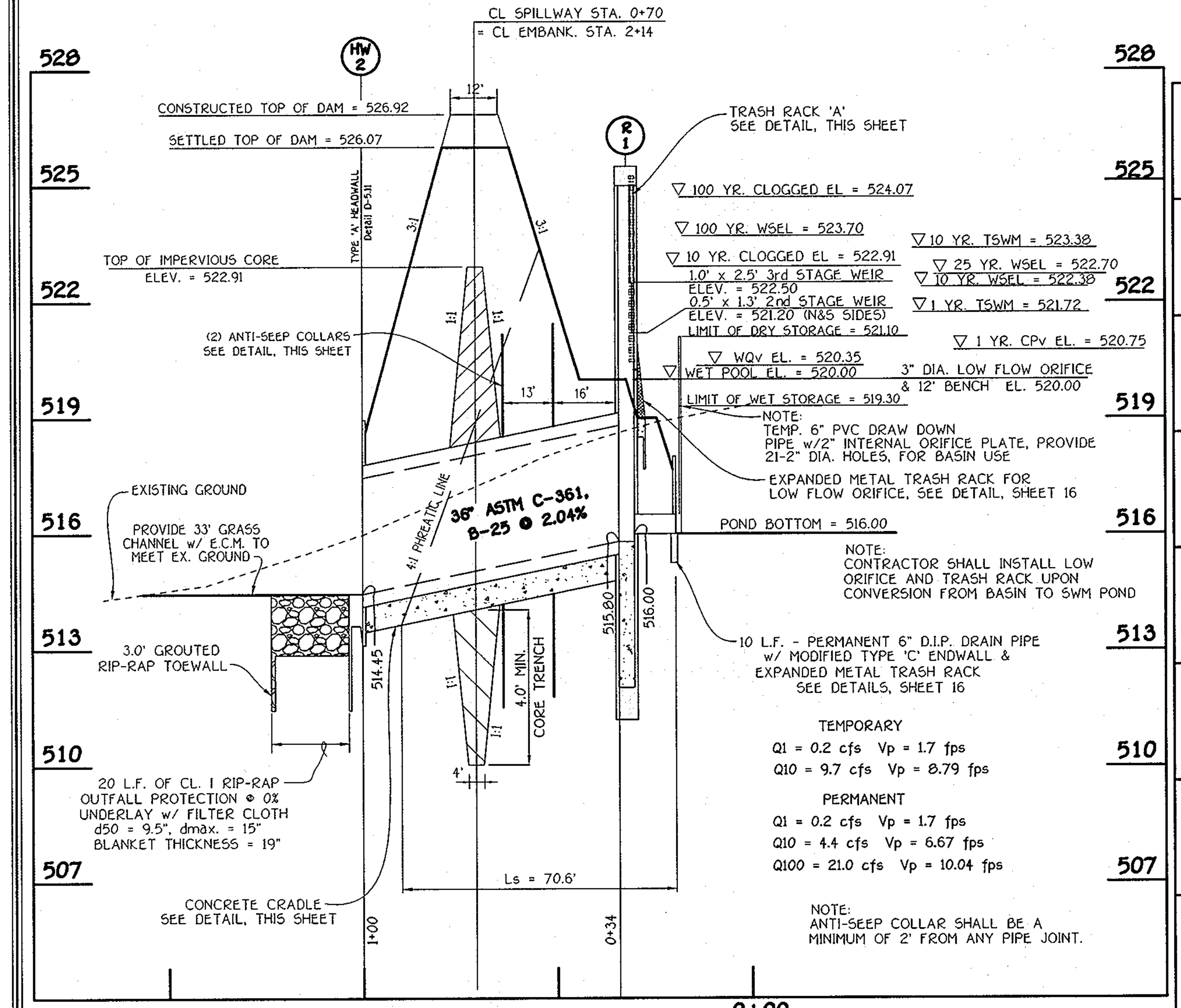
SECTION 'B-B'

TYPICAL SECTION THROUGH BARREL, CRADLE AND ANTI-SEEP COLLAR

NO SCALE

NOTE: COLLARS SHALL BE PLACED A MINIMUM OF 2'-0" FROM PIPE JOINTS.





TEMPORARY

Q1 = 0.2 cfs Vp = 1.7 fps
Q10 = 9.7 cfs Vp = 8.79 fps

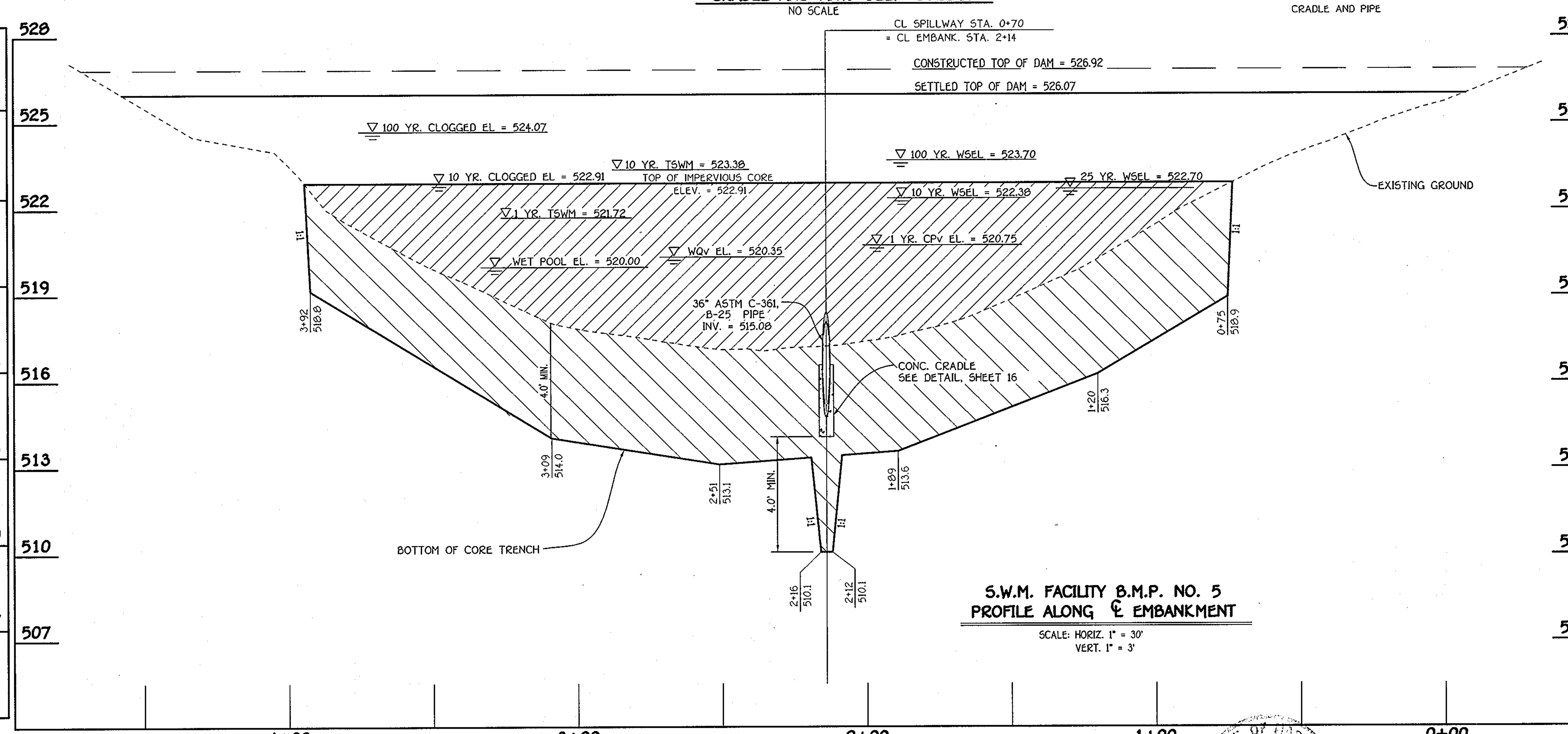
PERMANENT

Q1 = 0.2 cfs Vp = 1.7 fps
Q10 = 4.4 cfs Vp = 6.67 fps
Q100 = 21.0 cfs Vp = 10.04 fps

NOTE:
ANTI-SEEP COLLAR SHALL BE A MINIMUM OF 2' FROM ANY PIPE JOINT.

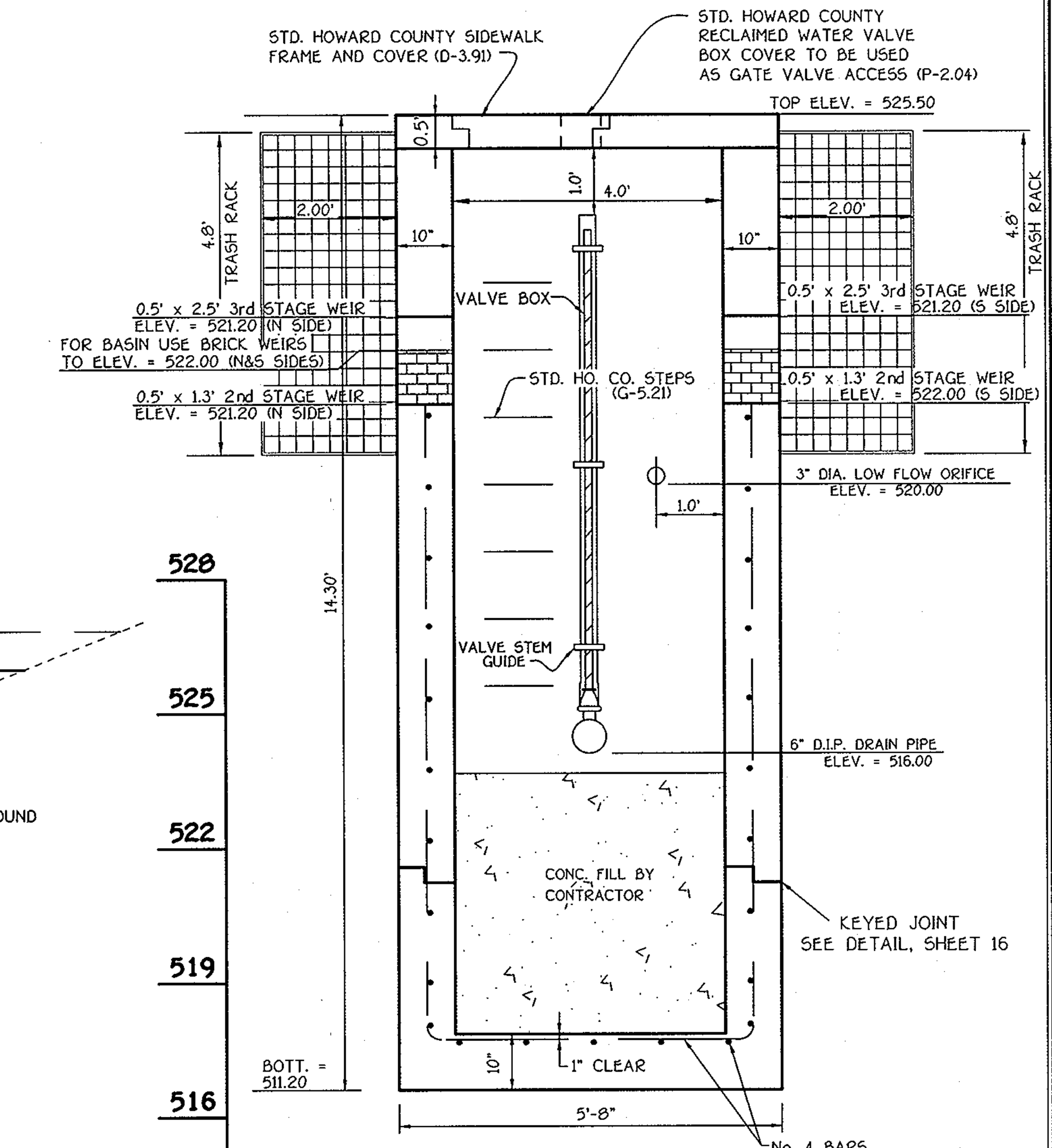
PRINCIPLE SPILLWAY PROFILE

SCALE: HOR. : 1" = 30'
VER. : 1" = 3'



S.W.M. FACILITY B.M.P. NO. 5 PROFILE ALONG ℄ EMBANKMENT

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



PROFILE VIEW B CONCRETE RISER DETAIL

R 1

SCALE : 1" = 2'

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

NO.	DESCRIPTION	DATE
1	REVISED OWNER AND DEVELOPER	10-19-11
	REVISIONS	

Owner

Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer

Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

ALDO M. VITUCCI — DATE: 9-22-09

"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 2-22-11."

STORMWATER MANAGEMENT NOTES AND DETAILS (B.M.P. No. 5, POND No. 2/BASIN No. 1)

MERIWETHER FARM

SECTION TWO

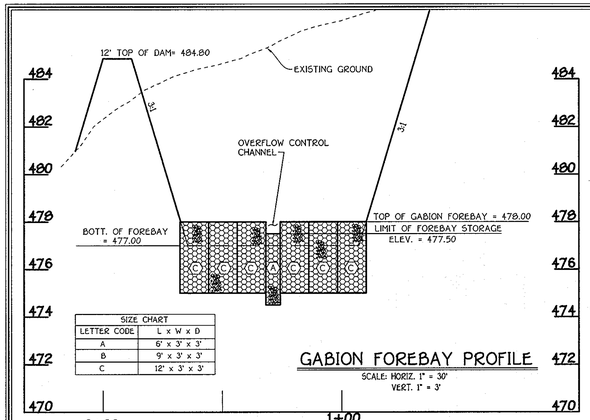
PHASE TWO

BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 17 OF 30

F-09-044

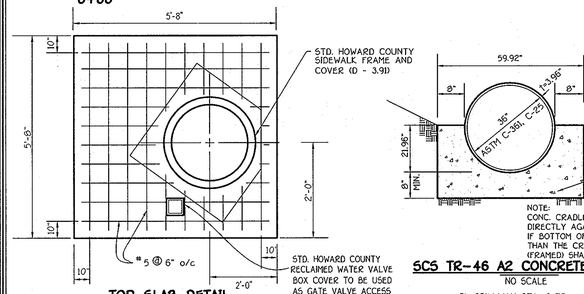
I:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 16-19 SWM DETAILS.dwg, 9/21/2009 2:37:54 PM, jamesl, 1:1



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

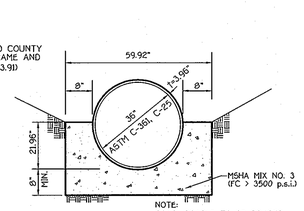
GABION FOREBAY PROFILE

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



TOP SLAB DETAIL

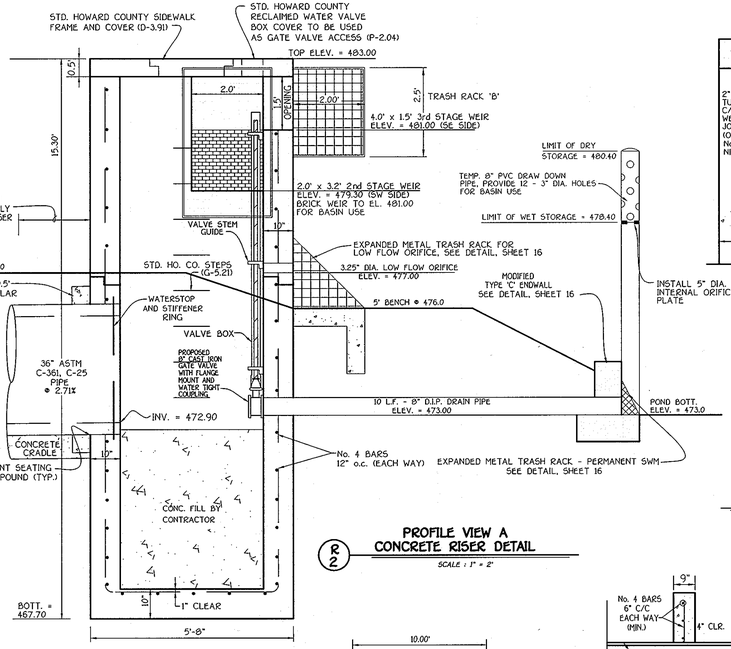
NO SCALE



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

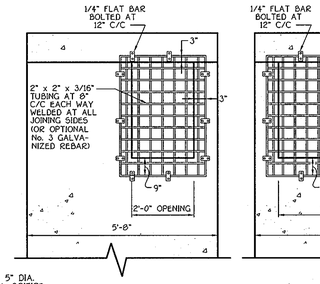
SCS TR-46 A2 CONCRETE CRADLE

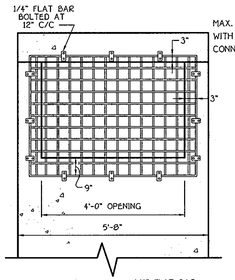
NO SCALE

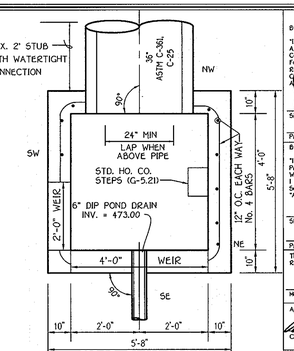


PROFILE VIEW A CONCRETE RISER DETAIL

SCALE : 1" = 2"

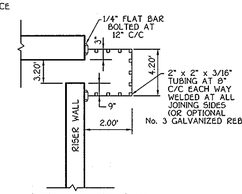






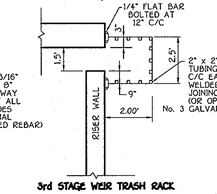
RISER PLAN VIEW

NO SCALE



2nd STAGE WEIR TRASH RACK
TRASH RACK 'A' DETAIL

(NO SCALE)



3rd STAGE WEIR TRASH RACK
TRASH RACK 'B' DETAIL

(NO SCALE)

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 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 Authorize Periodic On-Site Inspection By The Howard Soil Conservation District."

Signature Of Developer — Date: 9/22/09

Printed Name Of Developer: Robert C. Goodier

By The Engineer:

"I Certify That These Plans 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 Given The Developer The Items That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Signature Of Engineer — Date: 9/22/09

Printed Name Of Engineer: Alan D. Taylor

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

Howard Soil Conservation District — Date: 10/15/09

Approved Department Of Public Works

Chief, Bureau Of Highways — Date: 10-23-09

Approved Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 10-30-09

Chief, Development Engineering Division — Date: 10/28/09

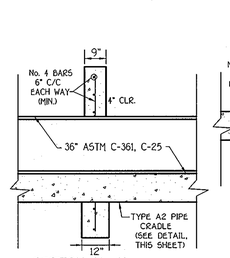
AS-BUILT CERTIFICATION

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.

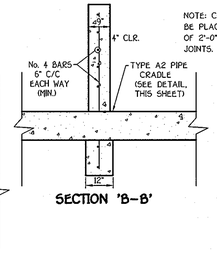
Signature — P.E. No. — Date

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.

NO.	DESCRIPTION	DATE
	REVISIONS	
1	REVISED OWNER AND DEVELOPER	10-19-11

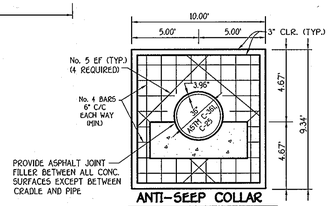


SECTION 'A-A'



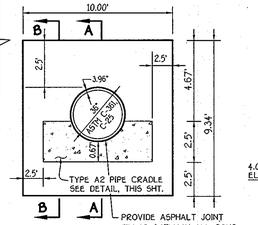
SECTION 'B-B'

NOTE: COLLARS SHALL BE PLACED A MINIMUM OF 2'-0" FROM PIPE JOINTS.



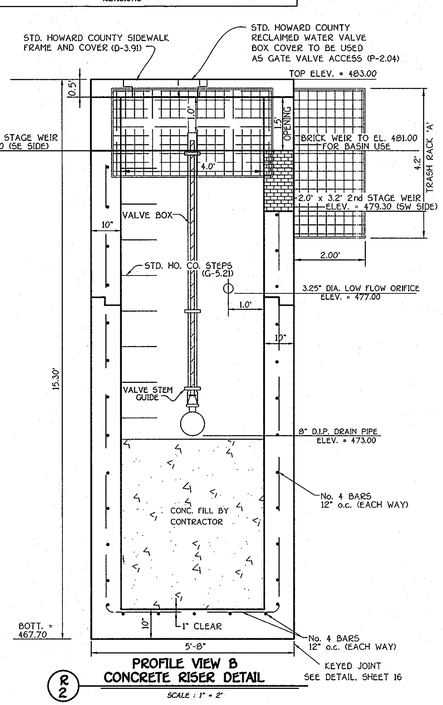
ANTI-SEEP COLLAR

NO SCALE



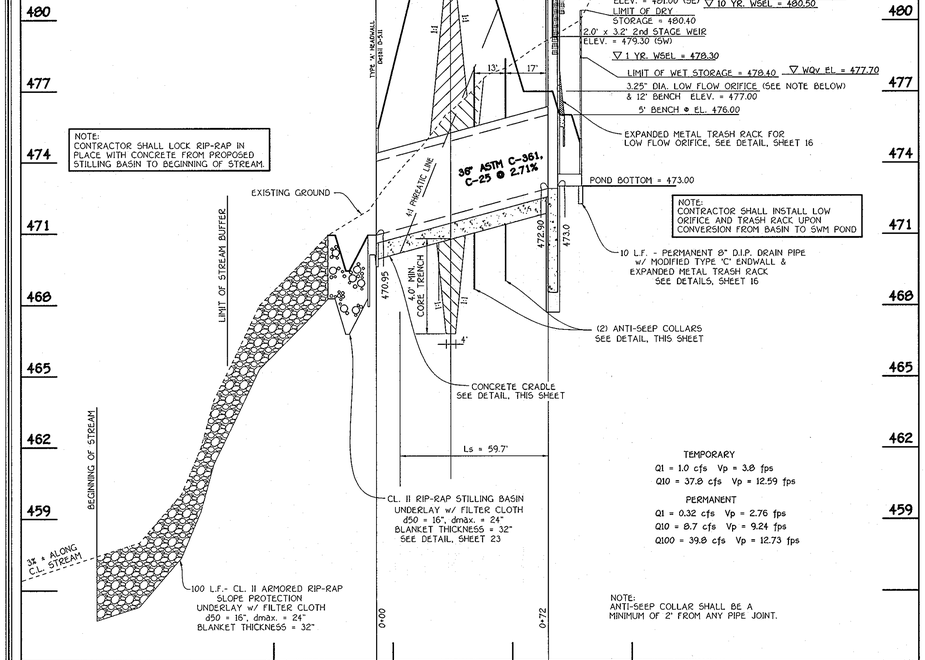
TYPICAL SECTION THROUGH BARREL, CRADLE AND ANTI-SEEP COLLAR

NO SCALE



PROFILE VIEW B CONCRETE RISER DETAIL

SCALE : 1" = 2"



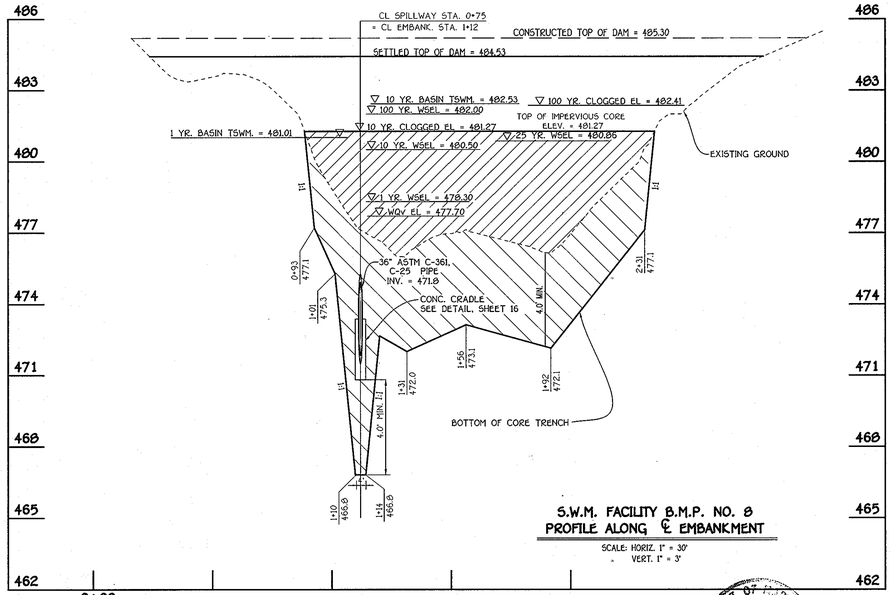
PRINCIPLE SPILLWAY PROFILE

SCALE: HOR. : 1" = 30'
VER. : 1" = 3'

TEMPORARY
Q1 = 1.0 cfs Vp = 3.8 fps
Q10 = 37.8 cfs Vp = 12.59 fps

PERMANENT
Q1 = 0.32 cfs Vp = 2.76 fps
Q10 = 8.7 cfs Vp = 9.24 fps
Q100 = 39.8 cfs Vp = 12.73 fps

NOTE:
ANTI-SEEP COLLAR SHALL BE A MINIMUM OF 2' FROM ANY PIPE JOINT.



S.W.M. FACILITY B.M.P. NO. 8 PROFILE ALONG ℄ EMBANKMENT

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'

Owner	Developer
Meriwether Farm II, LLC c/o Second Goodier, LLC 10715 Charter Drive Suite 350 Columbia, Maryland 21044 Ph: (410) 997-7501 Attn: Mr. Robert C. Goodier, Jr.	Toll Brothers, Inc. Maryland Division 7164 Columbia Gateway Drive Suite 230 Columbia, Maryland 21046 Ph: (410) 997-7501 Attn: Mr. Jeff Driscoll

ALAN D. TAYLOR — 9-22-09 DATE

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-11."

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

STORMWATER MANAGEMENT NOTES AND DETAILS (B.M.P. No. 8, POND No. 3/BASIN No. 2)

MERIWETHER FARM

SECTION TWO

PHASE TWO

BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)

ZONED: RC-DEO

TAX MAP No: 21 PARCEL No: 20 GRID Nos: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 18 OF 30

F-09-044

I:\2004\04055\dwg\PHASE TWO SECTION TWO FINAL\SHEET 16-19 SWM DETAILS.dwg, 9/21/2009 2:39:57 PM, jamesl,
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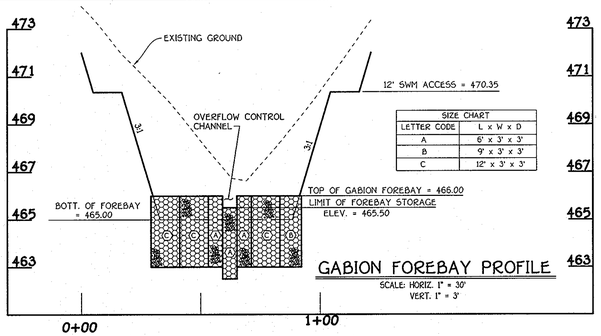
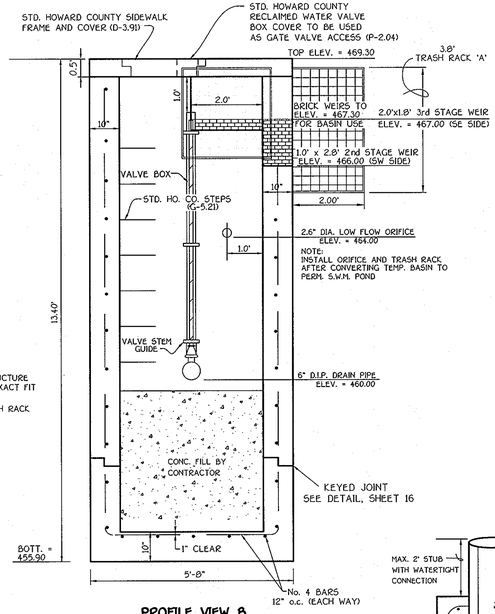


SIZE CHART	
LETTER CODE	L x W x D
A	6' x 3' x 3'
B	9' x 3' x 3'
C	12' x 3' x 3'

GABION FOREBAY PROFILE

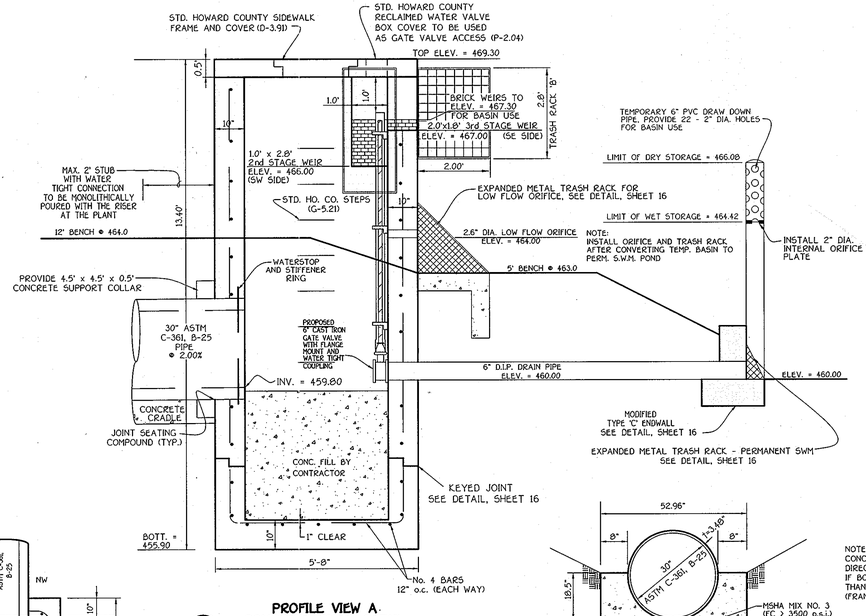
SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



PROFILE VIEW B CONCRETE RISER DETAIL

R 3

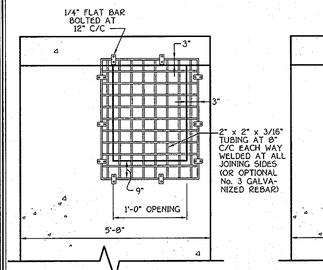
SCALE : 1" = 2'

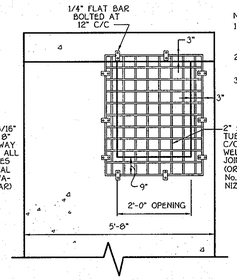


PROFILE VIEW A CONCRETE RISER DETAIL

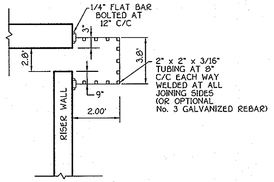
R 3

SCALE : 1" = 2'





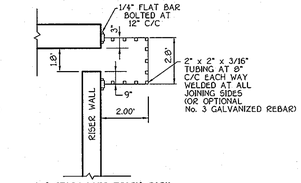
NOTES:
1. FIELD MEASURE THE STRUCTURE DIMENSIONS TO INSURE EXACT FIT OF TRASH RACK.
2. GALVANIZE ENTIRE TRASH RACK AFTER FABRICATION.
3. PAINT BATTLESHIP GRAY.



2nd STAGE WEIR TRASH RACK

TRASH RACK 'A' DETAIL

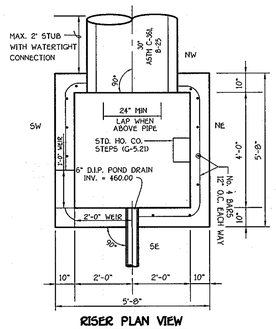
(NO SCALE)



3rd STAGE WEIR TRASH RACK

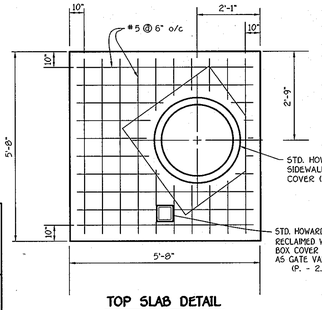
TRASH RACK 'B' DETAIL

(NO SCALE)



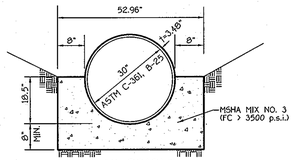
RISER PLAN VIEW

NO SCALE



TOP SLAB DETAIL

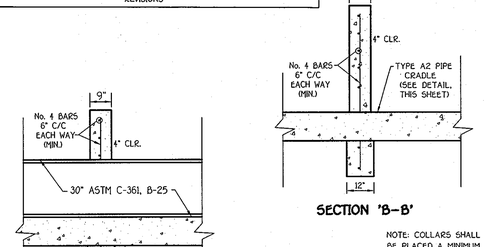
NO SCALE



A2 CRADLE

NO SCALE

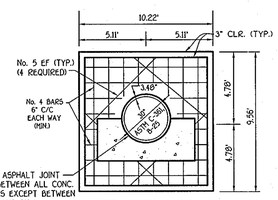
NOTE: CONC. CRADLE TO BE POURED DIRECTLY AGAINST EARTH BANKS. IF BOTTOM OF TRENCH IS WIDER THAN THE CRADLE, SLOPING SIDES (FRAMED) SHALL BE USED.



SECTION 'A-A'

SECTION 'B-B'

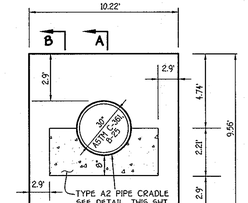
NOTE: COLLARS SHALL BE PLACED A MINIMUM OF 2'-0" FROM PIPE JOINTS.



ANTI-SEEP COLLAR

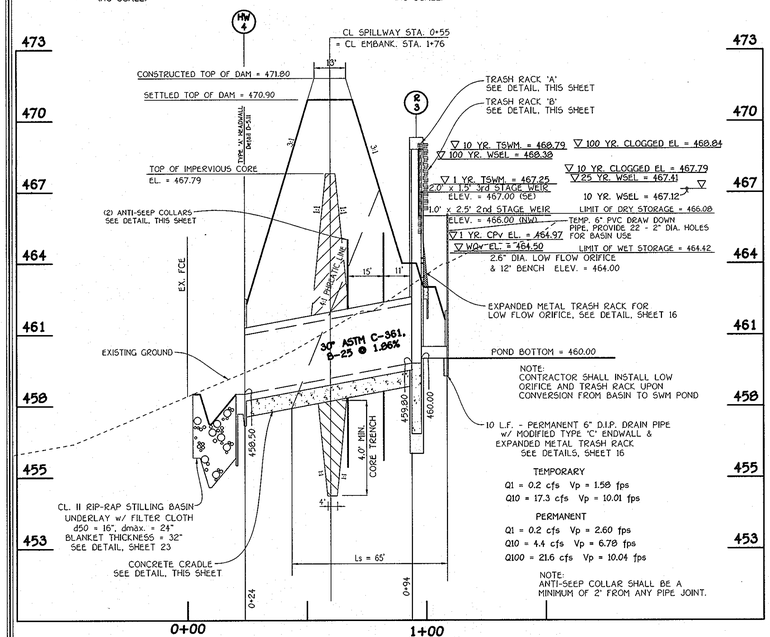
NO SCALE

NOTES:
1. CONCRETE SHALL BE MSHA MIX No. 3 (FC) 3,500 P.S.I.)
2. REINFORCING STEEL: GRADE 60
3. FOR WALLS OF STRUCTURE SHALL UTILIZE I.M. SCOFIELD CO. T-9055 FORM LINERS (RANDOM SPLIT-FACE ROCK) OPTIONAL.
4. PROVIDE ROUGH BROOM FINISH.
5. ANCHOR BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 6.07.03.59 OF THE MSHA STANDARDS AND SPECS.
6. ALL REINFORCING SPLICES SHALL BE LAP SPLICES OF 3 BAR DIA. UNLESS OTHERWISE SHOWN.



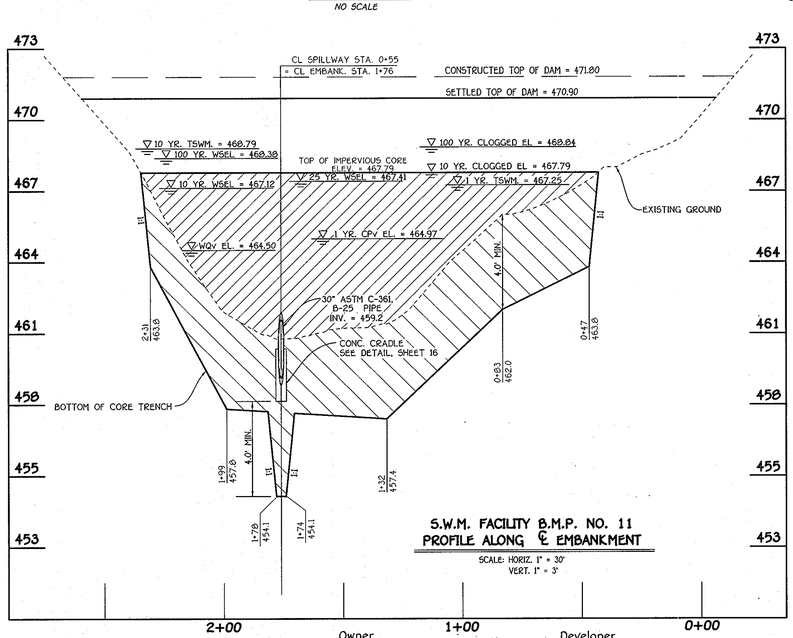
TYPICAL SECTION THROUGH BARREL, CRADLE AND ANTI-SEEP COLLAR

NO SCALE



PRINCIPLE SPILLWAY PROFILE

SCALE: HOR. : 1" = 30'
VER. : 1" = 3'



S.W.M. FACILITY B.M.P. NO. 11 PROFILE ALONG ℄ EMBANKMENT

SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'

NO.	DESCRIPTION	DATE
	REVISIONS	
1	REVISED OWNER AND DEVELOPER	10-19-11

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 — 9/22/09 Date

Robert C. Goodier

Printed Name Of Developer

By The Engineer:

"I Certify That These Plans 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 Visited With 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 — 9-22-09 Date

ALDO E. PIPPA, PROFESSIONAL ENGINEER

Printed Name

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

Howard Soil Conservation District — 10/15/09 Date

Approved: Department Of Public Works

Chief, Bureau Of Highways — 10-23-09 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 10-30-09 Date

Chief, Development Engineering Division — 10/28/09 Date

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.

STORMWATER MANAGEMENT NOTES AND DETAILS (B.M.P. No. 11, POND No. 4/BASIN No. 3)

MERIWETHER FARM

SECTION TWO

PHASE TWO

BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)

ZONED: RC-DEO

TAX MAP No.: 21 PARCEL No: 28 GRID Nos.: 15, 16, 21 & 22

FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 19 OF 30

F-09-044

ALDO E. PIPPA — 9-22-09 DATE

"Professional Engineer, I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20746, Expiration Date 2-22-11."

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

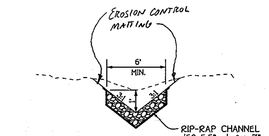
Owner

Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer

Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

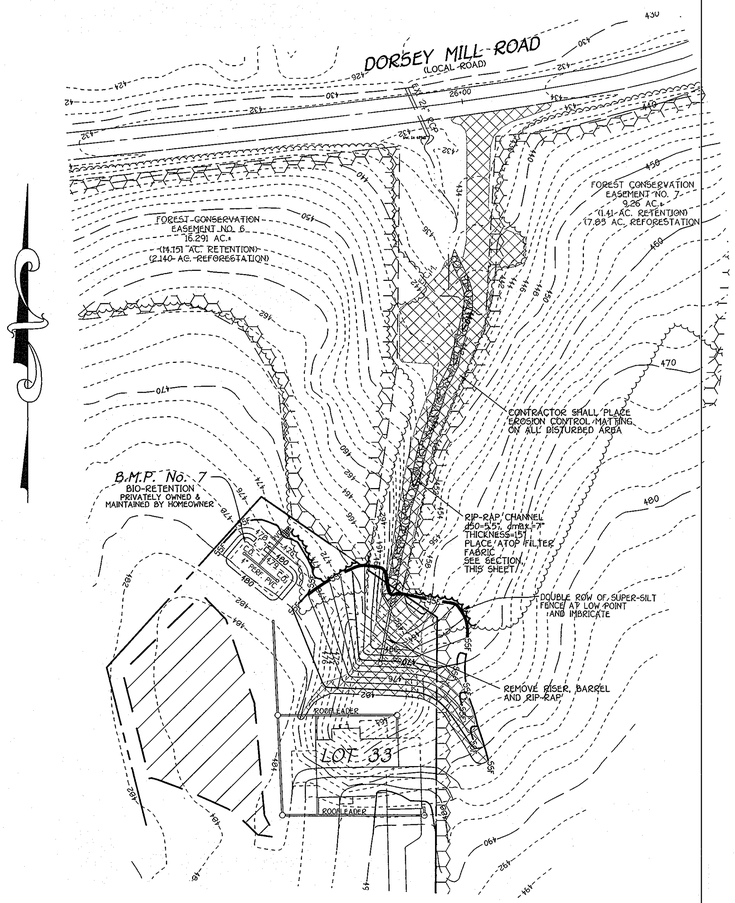
I:\2009\01\05\dwg\PHASE TWO SECTION TWO FINAL\SHEET 16-19 SWM DETAILS.dwg, 9/21/2009 2:41:24 PM, jamesl,



TYPICAL CHANNEL SECTION @ LOT 33

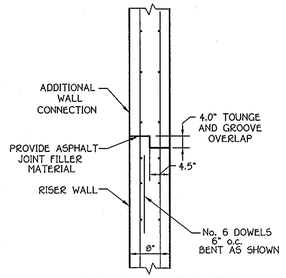
NOT TO SCALE

CHANNEL COMPUTATIONS @ LOT 33											
10-YR. Q	SLOPE	DEPTH FT.	DEPTH IN.	n VALUE	SIDE SLOPE	AREA	WETTED PERIMETER	COMP. Q	VELOCITY	CONDITION USE
3.48 cfs	12.97%	0	5.40	0.033	3:1	0.61 sf	2.85'	3.52 cfs	5.79 fps	COARSE GRAVEL



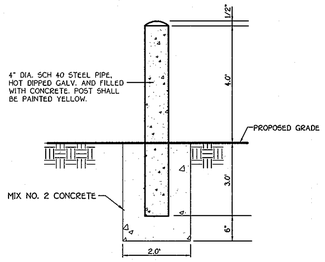
GRADING & SEDIMENT CONTROL PLAN

SCALE: 1" = 50'



KEYED JOINT DETAIL WALL SECTION TO WALL SECTION

(NO SCALE)



TYPICAL METAL BOLLARD DETAIL

NOT TO SCALE (STD. G-7.42)

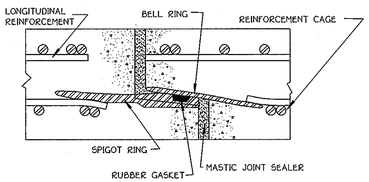
OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND JOINTLY MAINTAINED STORMWATER MANAGEMENT FACILITIES

ROUTINE MAINTENANCE

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

NON-ROUTINE MAINTENANCE

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



NOTE: PROVIDE MASTIC JOINT SEALER FROM OUTSIDE OF PIPE JOINTS PRIOR TO INSTALLING BARREL UNDERGROUND

ASTM DESIGNATION C361
DIAMETERS 12 THRU 168 INCH
PRESSURES TO 125 FEET OF HEAD

CONCRETE PIPE JOINT DETAIL

(NO SCALE)

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 Do Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

Signature Of Developer — 9/22/09 Date

Printed Name Of Developer: Robert C Goodier

By The Engineer:

"I Certify That These Plans 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 Met With 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 — 9.22.09 Date

ALDO V. [illegible]

Printed Name

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

Howard Soil Conservation District — 10/15/09 Date

Approved: Department Of Public Works

Chief, Bureau Of Highways — 10-27-09 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 10-30-09 Date

Chief, Development Engineering Division — 10/28/09 Date

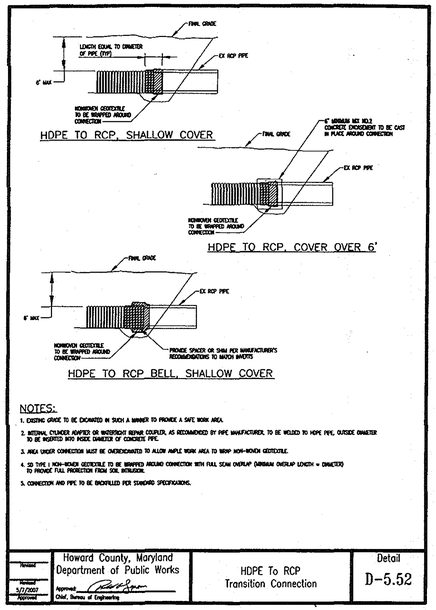
AS-BUILT CERTIFICATION

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.



NOTES:

1. EXISTING GRADE TO BE EXCAVATED IN SUCH A MANNER TO PROVIDE A SAFE WORK AREA.
2. EXTERNAL CYLINDER JOINTER OR WATERTIGHT REPAIR COUPLER, AS RECOMMENDED BY PIPE MANUFACTURER, TO BE WELDED TO HDPE PIPE, OUTSIDE DIAMETER TO BE INSERTED INTO INSIDE DIAMETER OF CONCRETE PIPE.
3. AREA UNDER CONNECTION MUST BE OVEREXCAVATED TO ALLOW AMPLE WORK AREA TO WRAP NON-WOVEN GEOTEXTILE.
4. 2D TYPE 2 NON-WOVEN GEOTEXTILE TO BE WRAPPED AROUND CONNECTION WITH FULL SEAM OVERLAP (MINIMUM OVERLAP LENGTH = DIAMETER) TO PROVIDE FULL PROTECTION FROM SOIL INTRUSION.
5. CONNECTION AND PIPE TO BE BACKFILLED PER STANDARD SPECIFICATIONS.

Revised 5/1/2007 Approved	Howard County, Maryland Department of Public Works — Approved: Chief, Bureau of Engineering	HDPE To RCP Transition Connection	Detail D-5.52

NO.	DESCRIPTION	DATE
1	REVISED OWNER AND DEVELOPER	10-19-11
	REVISIONS	

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

Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer

Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

STATE OF MARYLAND — ALDO V. [illegible] — PROFESSIONAL ENGINEER

9-22-09 DATE

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-11."

STORMWATER MANAGEMENT NOTES AND DETAILS

MERIWETHER FARM

SECTION TWO

PHASE TWO

BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)

ZONED: RC-DEO

TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22

FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 20 OF 30

F-09-044

I:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 6-10.20 GRADING PLANS.dwg, 9/21/2009 4:25:29 PM, jamesl, 111

Infiltration and Filter System Construction Specifications

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

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

Design Constraints:

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

Bio-retention

Soil Bed Characteristics

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

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

Table A.3 Planting Soil Characteristics

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

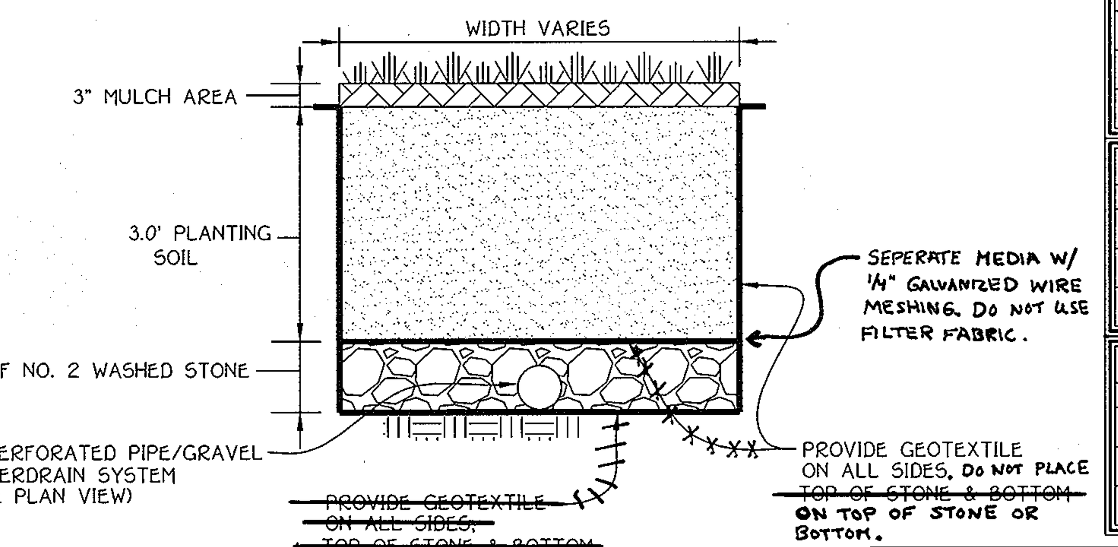
The mulch layer should be standard landscape style, single or double shredded hardwood mulch or chips. The mulch layer should be well aged (stockpiled or stored for at least 12 months), uniform in color, and free of other materials, such as weed seeds, soil, roots, etc. The mulch should be applied to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

Planting Guidance

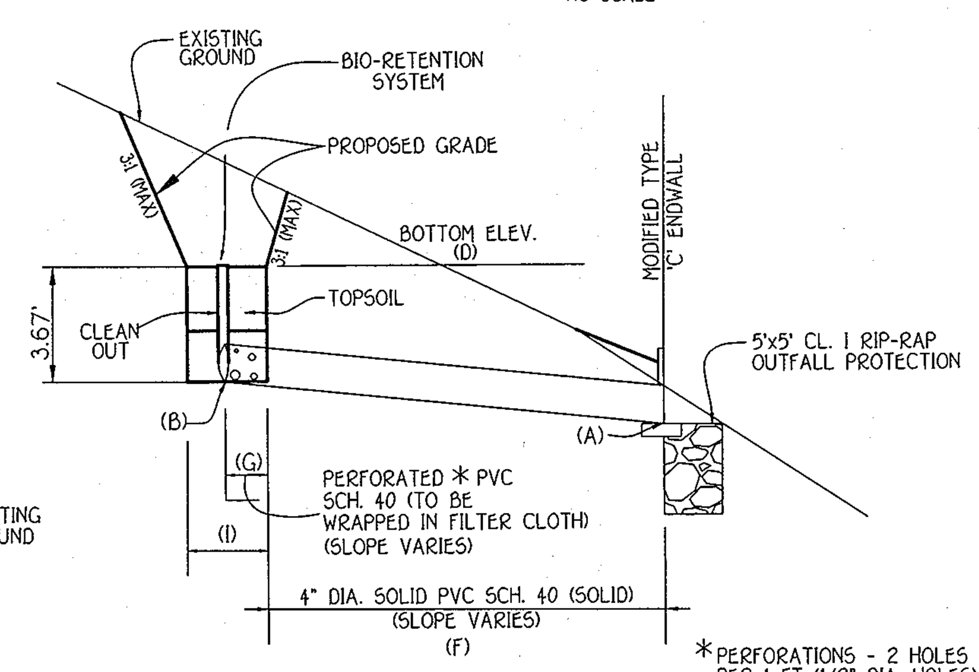
Plant material selection should be based on the goal of simulating a terrestrial forested community of native species. Bioretention simulates an upland-species ecosystem. The community should be dominated by trees, but have a distinct community of understory trees, shrubs and herbaceous materials. By 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.

Table B.3.2 Materials Specifications for Bio-retention

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
planting soil (2.5' to 4' deep)	sand 35-60% silt 30-55% clay 10-25%	n/a	USDA soil types loamy sand, sandy loam or loam
mulch	shredded hardwood		aged 6 months, minimum
pea gravel diaphragm and curtain drain	pea gravel: ASTM-D-448 ornamental stone: washed cobbles	pea gravel: No. 6 stone: 2" to 5"	
geotextile	Class "C" - apparent opening size.(ASTM-D-4751) grab tensile strength (ASTM-D 4632), puncture resistance (ASTM-D-4833)	n/a	for use as necessary beneath underdrains only
underdrain gravel	AASHTO M-43	0.375" to 0.75"	
underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes
poured in place concrete (if required)	MSHA. Mix No. 3; f'c= 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place of pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland design to include meeting ACI Code 350.R/89; vertical loading (H-10 or H-20); allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand (1' deep)	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone N10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable: No "rock dust" can be used for sand.

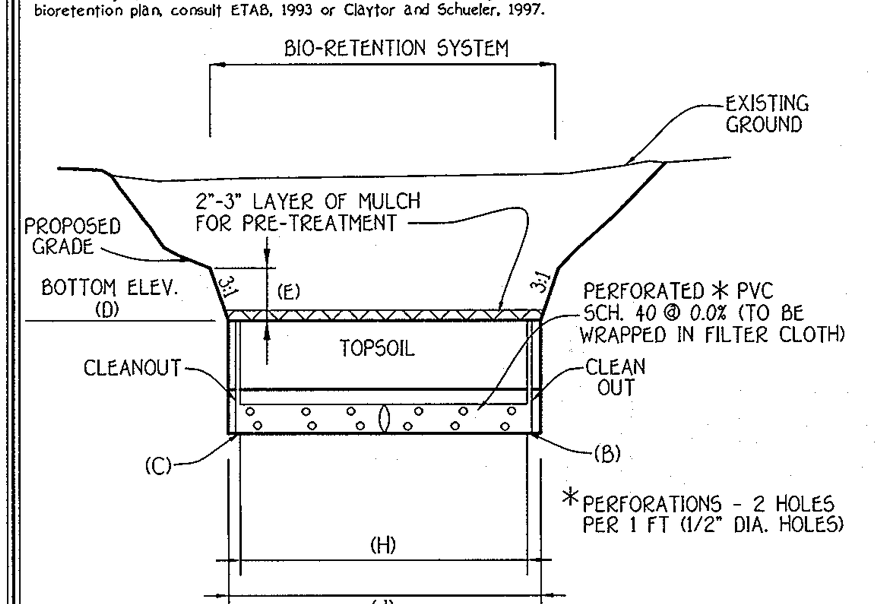


TYPICAL SECTION (BIO-RETENTION FILTER)
NO SCALE



*PERFORATIONS - 2 HOLES PER 1 FT (1/2" DIA. HOLES)

PROFILE ALONG PVC OUTLET
NO SCALE



*PERFORATIONS - 2 HOLES PER 1 FT (1/2" DIA. HOLES)

PROFILE ALONG PVC UNDERDRAIN
NO SCALE

BIO-RETENTION FILTER DATA

BIO-RETENTION FILTER	A	B	C	D	E	F	G	H	I	J
BMP #4	512.5	515.33	515.33	519.0	1.0'	165'	10'	70'	18'	94'
BMP #6	486.5	489.33	489.33	493.0	1.0'	52'	7'	22'	16'	32'
BMP #7	472.5	475.33	475.33	479.0	1.0'	21'	7'	30'	18'	40'
BMP #9	482.5	485.33	485.33	489.0	1.0'	40'	7'	70'	15'	88'
BMP #10	482.5	483.33	483.33	487.0	1.0'	82'	7'	22'	16'	32'
BMP #12	468.5	471.33	471.33	475.0	1.0'	58'	7'	22'	16'	32'
BMP #13	473.5	475.33	475.33	479.0	1.0'	87'	7'	22'	16'	32'

BIO-RETENTION No. 4 PLANT MATERIAL

QUANTITY	NAME	MAXIMUM SPACING (FT.)
50	MIXED PERENNIALS	1 FT.
50	MIXED GRASSES	1 FT.
2	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION

BIO-RETENTION No. 6 PLANT MATERIAL

QUANTITY	NAME	MAXIMUM SPACING (FT.)
30	MIXED PERENNIALS	1 FT.
30	MIXED GRASSES	1 FT.
1	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION

BIO-RETENTION No. 7 PLANT MATERIAL

QUANTITY	NAME	MAXIMUM SPACING (FT.)
30	MIXED PERENNIALS	1 FT.
30	MIXED GRASSES	1 FT.
1	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION

BIO-RETENTION No. 9 PLANT MATERIAL

QUANTITY	NAME	MAXIMUM SPACING (FT.)
50	MIXED PERENNIALS	1 FT.
50	MIXED GRASSES	1 FT.
2	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION

BIO-RETENTION No. 10 PLANT MATERIAL

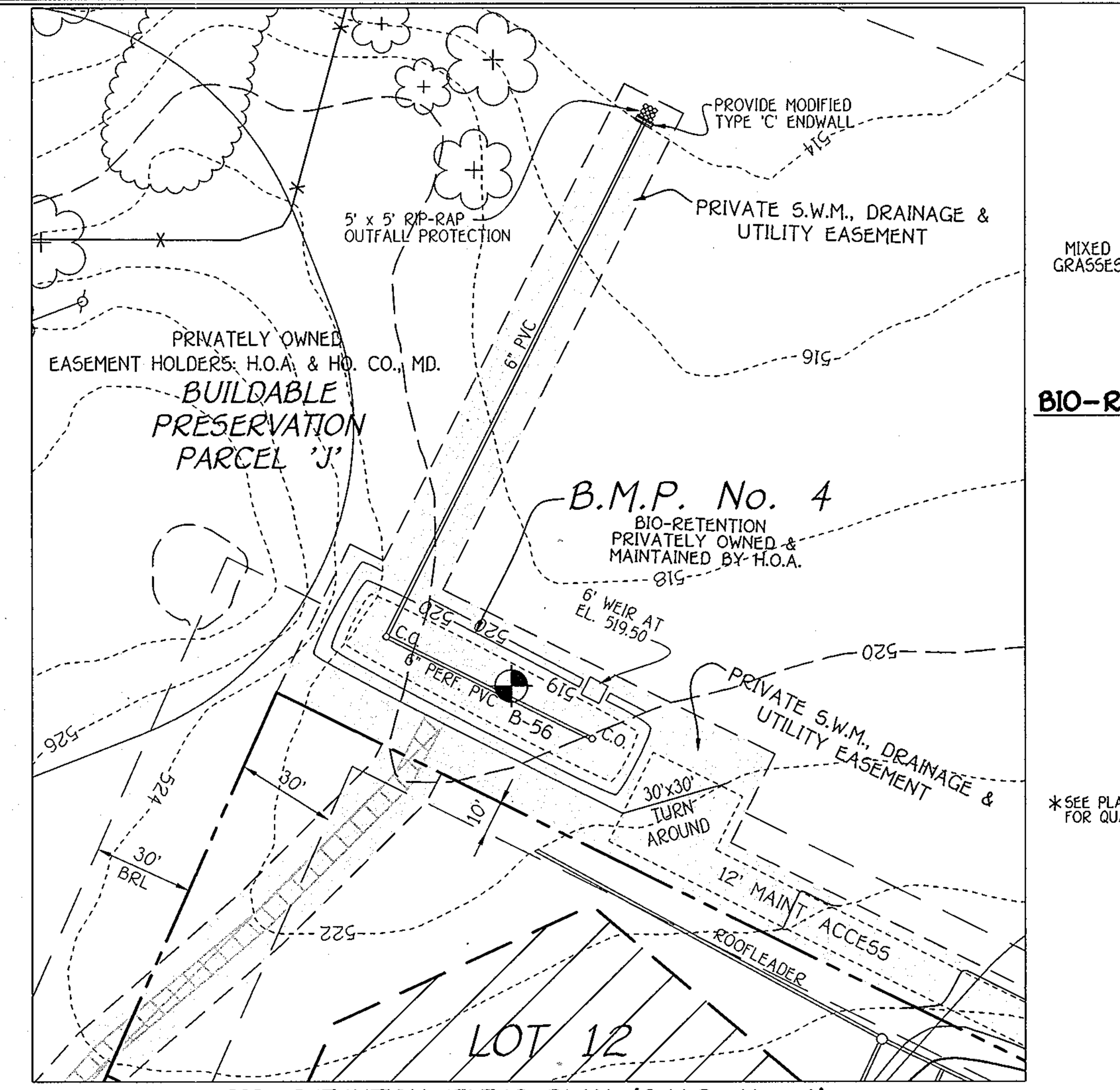
QUANTITY	NAME	MAXIMUM SPACING (FT.)
30	MIXED PERENNIALS	1 FT.
30	MIXED GRASSES	1 FT.
1	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION

BIO-RETENTION No. 12 PLANT MATERIAL

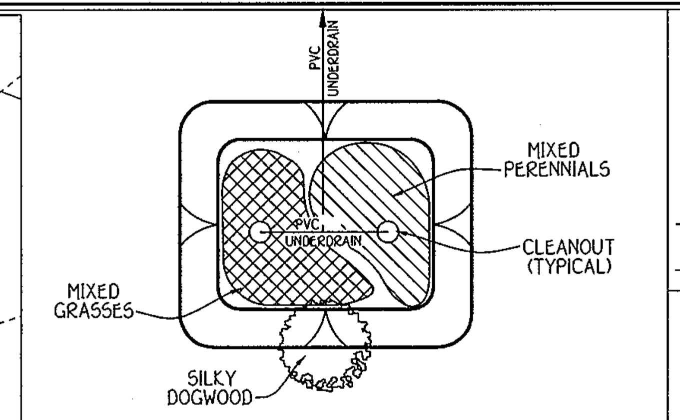
QUANTITY	NAME	MAXIMUM SPACING (FT.)
30	MIXED PERENNIALS	1 FT.
30	MIXED GRASSES	1 FT.
1	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION

BIO-RETENTION No. 13 PLANT MATERIAL

QUANTITY	NAME	MAXIMUM SPACING (FT.)
30	MIXED PERENNIALS	1 FT.
30	MIXED GRASSES	1 FT.
1	SILKY DOGWOOD	PLANT AWAY FROM INFLOW LOCATION



BIO-RETENTION FILTER PLAN (B.M.P. No. 4)
SCALE: 1" = 40'



BIO-RETENTION FILTER PLANTING DETAIL
NOT TO SCALE

MIXED PERENNIALS*
CUT-LEAF CONEFLOWER
CARDINAL FLOWER
TRADUSCANT ASTER

MIXED GRASSES*
TUFTED FOXTAIL
BROOM SEDGE
SWITCH GRASS

SILKY DOGWOOD

*SEE PLANT MATERIAL CHARTS FOR QUANTITIES AND SPACING

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

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 — 9/22/9 Date

Robert Goodier
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 Of Engineer — 9-22-09 Date

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 — 10/15/09 Date

Approved: Department Of Public Works
Chief Bureau Of Highways — 10-23-09 Date

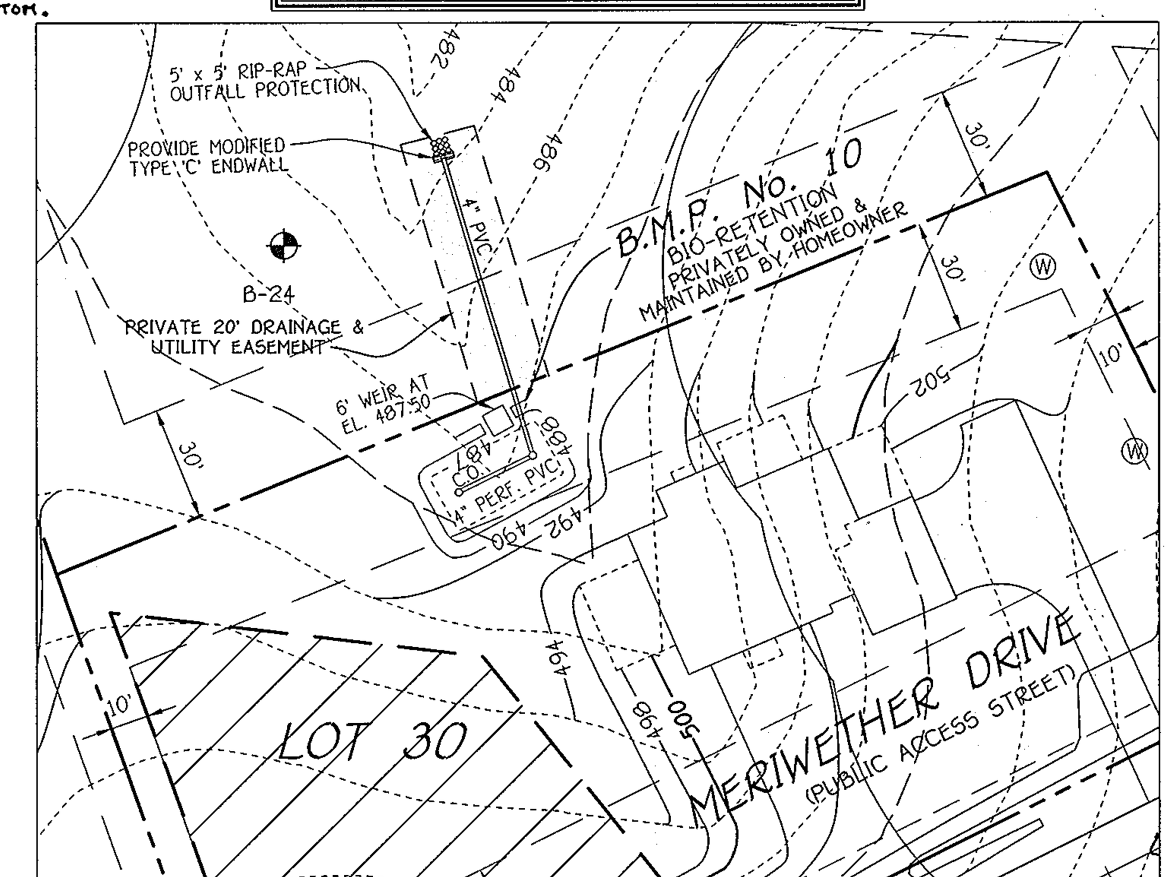
Approved: Department Of Planning And Zoning
Chief, Division Of Land Development — 10-30-09 Date
Chief, Development Engineering Division — 10/28/09 Date

AS-BUILT CERTIFICATION

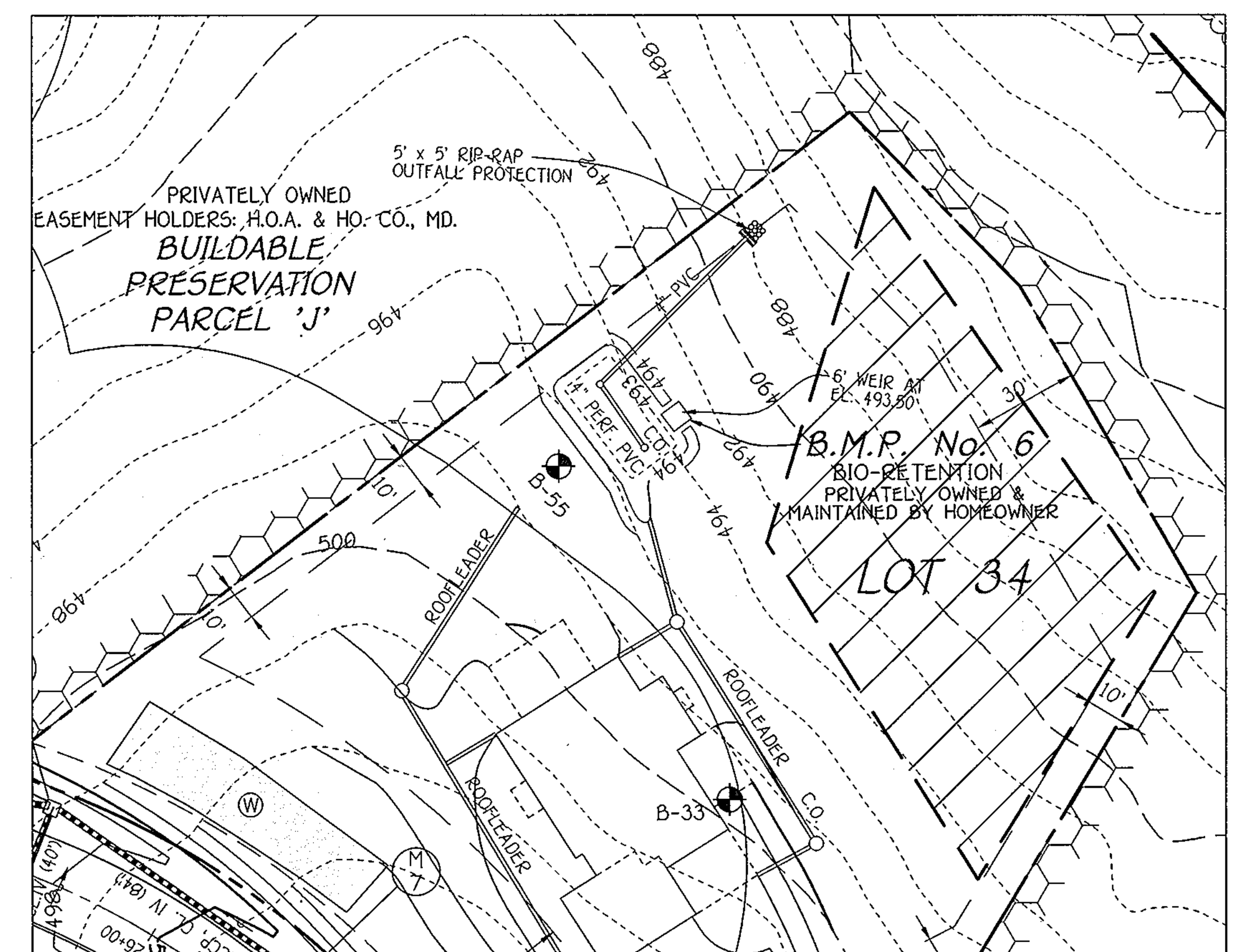
I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.

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.



BIO-RETENTION FILTER PLAN (B.M.P. No. 10)
SCALE: 1" = 40'



BIO-RETENTION FILTER PLAN (B.M.P. No. 6)
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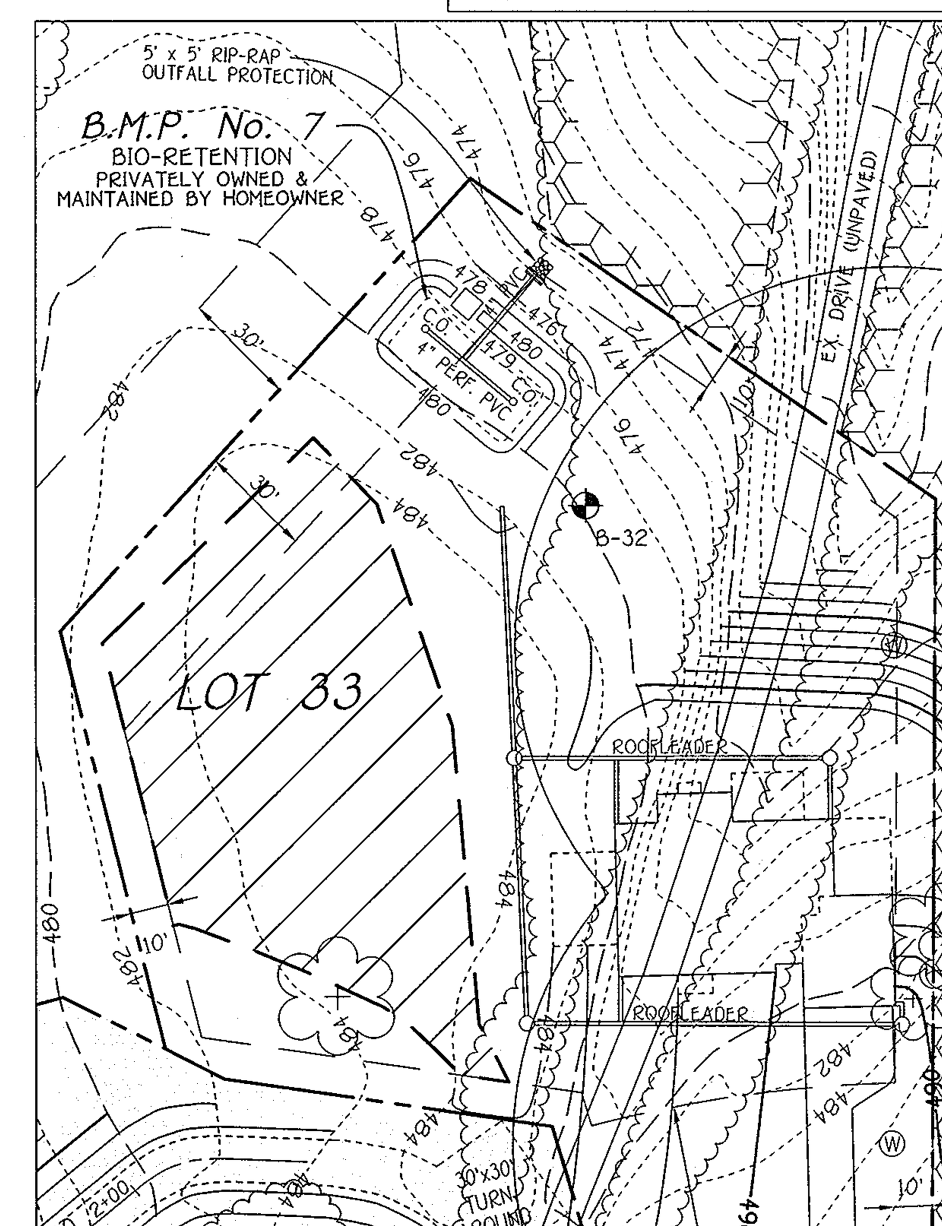
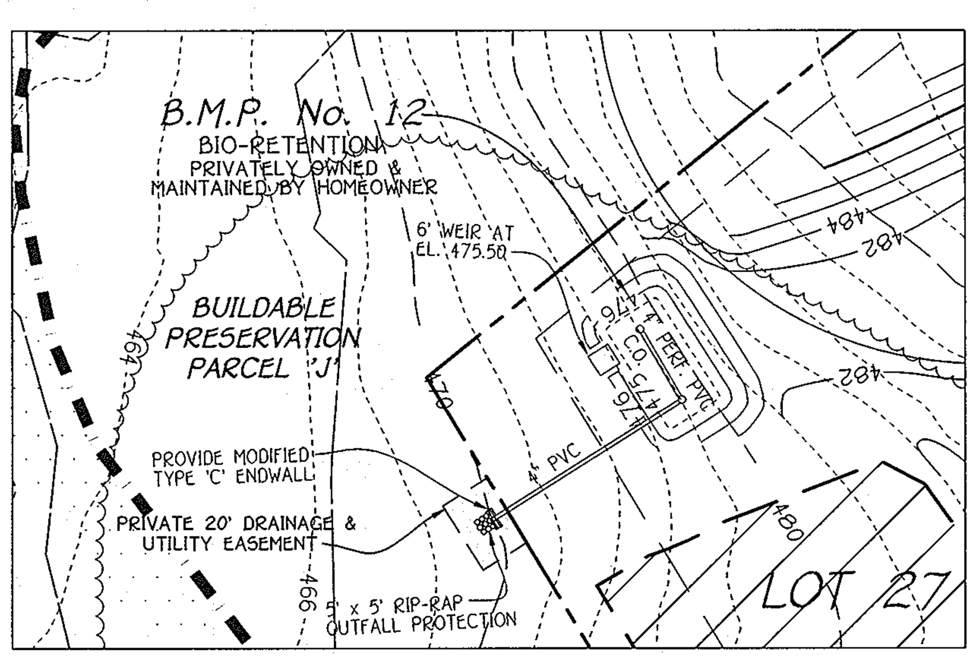
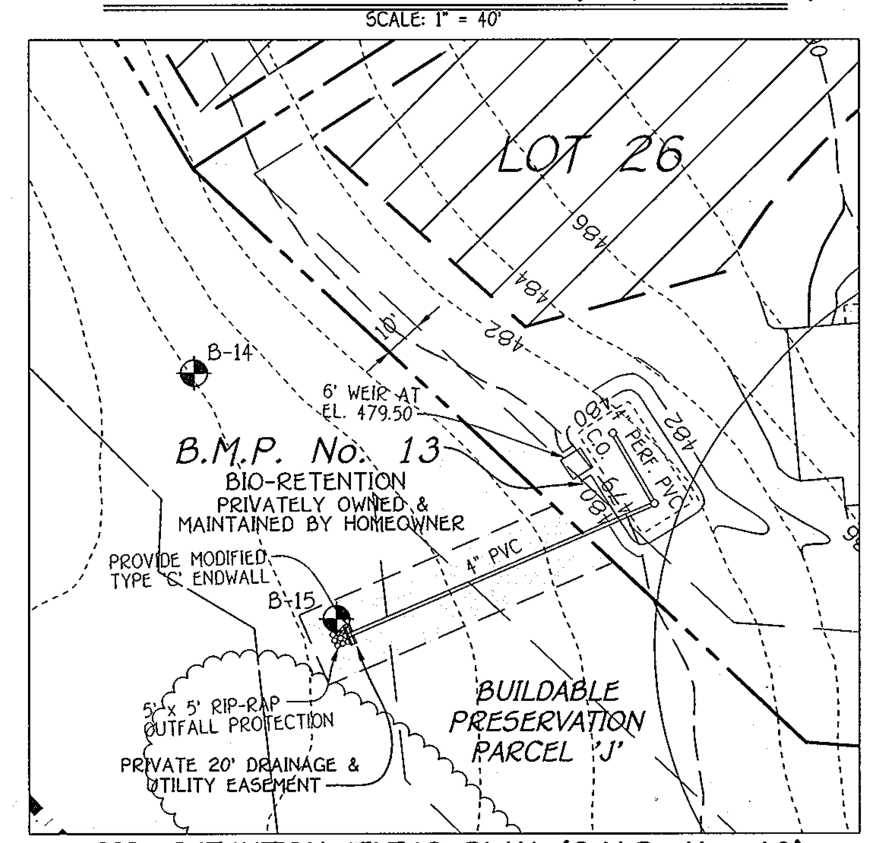


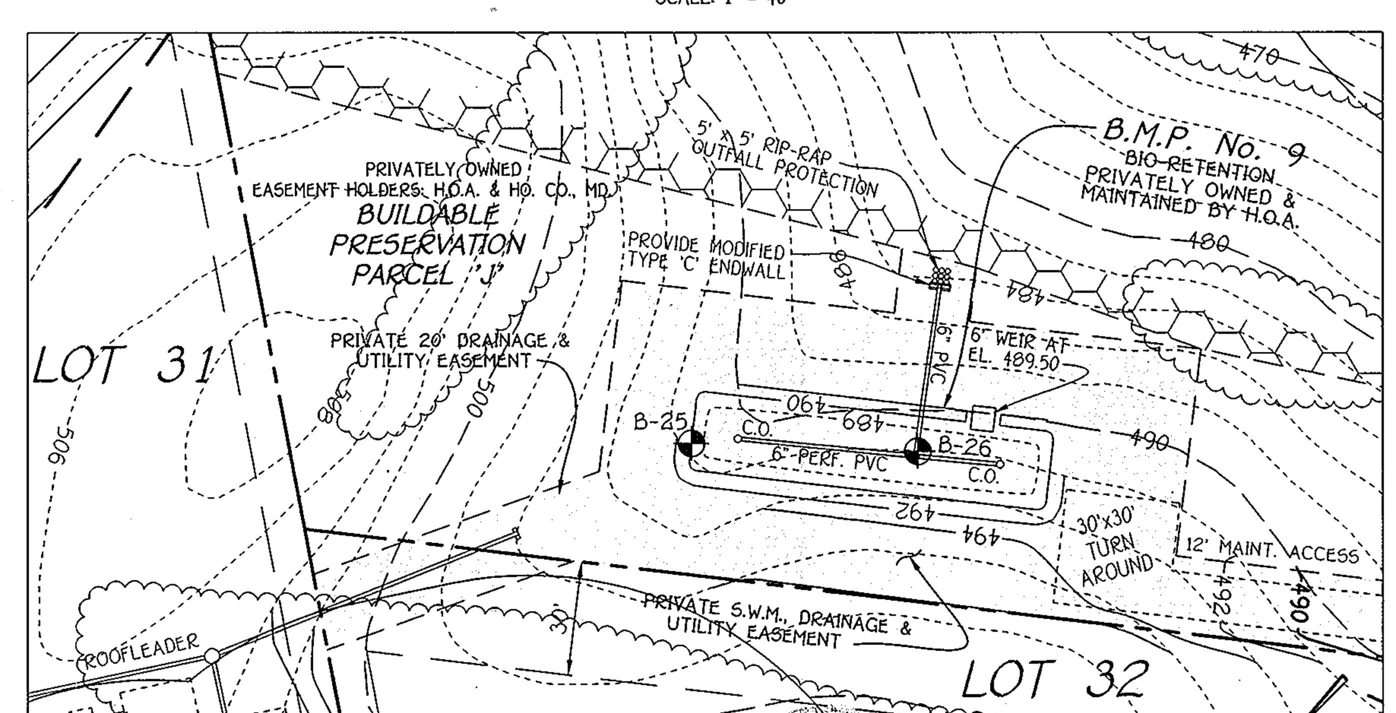
BIO-RETENTION FILTER PLAN (B.M.P. No. 7)
SCALE: 1" = 40'



BIO-RETENTION FILTER PLAN (B.M.P. No. 12)
SCALE: 1" = 40'



BIO-RETENTION FILTER PLAN (B.M.P. No. 13)
SCALE: 1" = 40'



BIO-RETENTION FILTER PLAN (B.M.P. No. 9)
SCALE: 1" = 40'

PRIVATE BIO-RETENTION FILTER OPERATION & MAINTENANCE SCHEDULE

1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. 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.
2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDER BEYOND TREATMENT. TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

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

NO.	DESCRIPTION	DATE
1	REVISED OWNER AND DEVELOPER	10-19-11

REVISIONS

Owner
Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

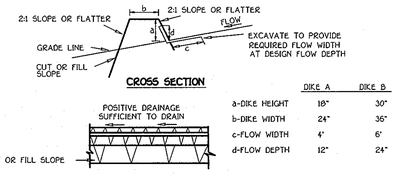
Developer
Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

ALDO M. VITERI — 9-22-09 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 2-22-11."

BIO-RETENTION FACILITIES
PLANS AND DETAILS
MERIWETHER FARM
SECTION TWO
PHASE TWO
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'
(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009

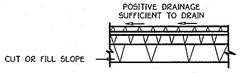
F-09-044

I:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 21 BIOTENTION PLANS & DETAILS.dwg, 9/21/2009 2:07:02 PM, james\, 1:1



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.

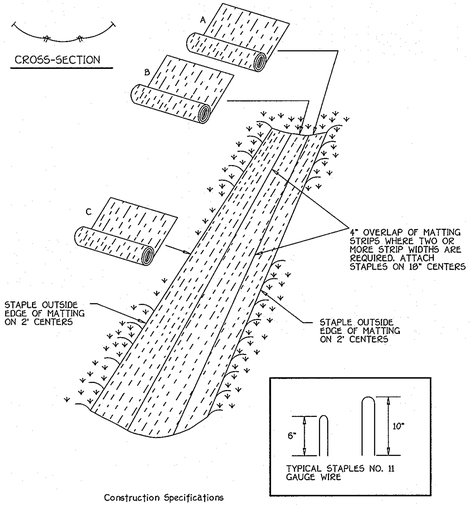
1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

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 bark 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



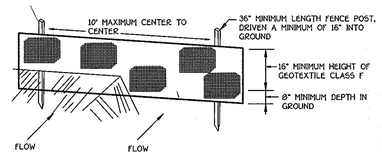
Construction Specifications

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.

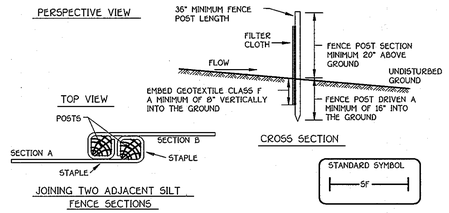
   Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

EROSION CONTROL MATTING

NOT TO SCALE



PERSPECTIVE VIEW



TOP VIEW

CROSS SECTION

STANDARD SYMBOL
5F

JOINING TWO ADJACENT SILT FENCE SECTIONS

Construction Specifications

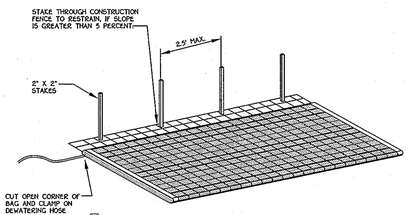
1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear 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:

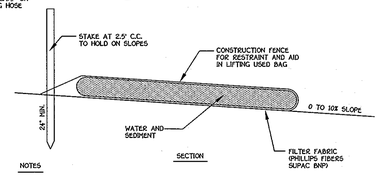
Tensile Strength	50 lbs/in (min)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max)*	Test: MSMT 322
Filtering Efficiency	75% (min)	Test: MSMT 322

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

NOT TO SCALE





SECTION

NOTES

1. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
2. WIDTH AND LENTH SHALL BE AS SHOWN IN THE TABLE.
3. THE FILTER BAG MUST BE STAKED IN PLACE AND SECURED TO THE PUMP DISHARGE LINE.

   FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
4. DEVICE SHALL BE REMOVED AND DISPOSED OF AFTER BAG IS FILLED WITH SEDIMENT.
5. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA.

AVAILABLE FROM:

INDIAN VALLEY INDUSTRIES, INC.
P.O. BOX 810
JOHNSON CITY, NEW YORK 13790
(800) 659-2111

OR

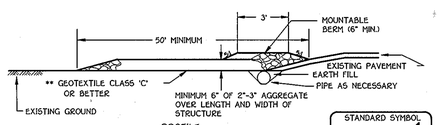
A.C.F. ENVIRONMENTAL
1801-A WILLIS ROAD
RICHMOND, VIRGINIA 23237
TOLL FREE 1-800-448-3636

OR

PIPE AND COMPANY, INC.
425 36TH STREET
WYOMING, MI. 49548
(616) 530-8230

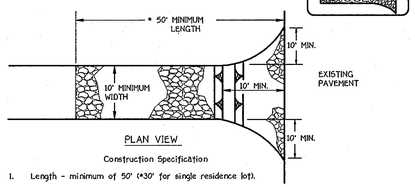
FILTER BAG DETAIL

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.

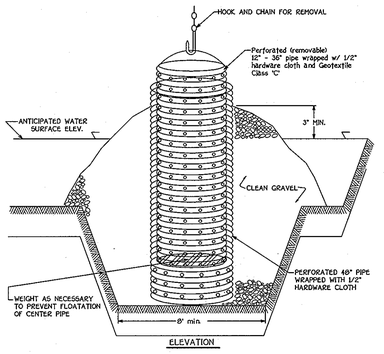
   Surface Water - All surface water flowing to or diverted toward construction
5. entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone 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.

   Location - A stabilized construction entrance shall be located at every point where
6. 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

NOT TO SCALE

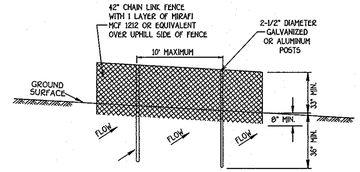
REMOVABLE PUMPING STATION



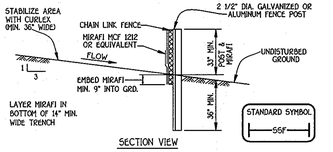
ELEVATION

Construction Specifications

1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class C.
4. The center pipe should extend 12" to 18" above the Anticipated water surface elevation or riser crest elevation when dewatering a basin.



PERSPECTIVE VIEW



SECTION VIEW

CONSTRUCTION SPECIFICATIONS

1. FENCING SHALL BE 42" HIGH CHAIN CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD DETAILS 690.01 AND 690.02 FOR CHAIN U FENCING. THE SPECIFICATIONS FOR A 6'-0" FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 8' POSTS. POSTS SHALL BE PLACED WITHOUT CONCRETE EMBEDMENT.
2. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE.
3. FILTER CLOTH TO BE FASTENED SECURELY TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
4. FILTER CLOTH SHALL BE IMBEDDED A MINIMUM OF 9" INTO THE GROUND.
5. WHEN TWO SECTIONS OF DIVERSION CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED.

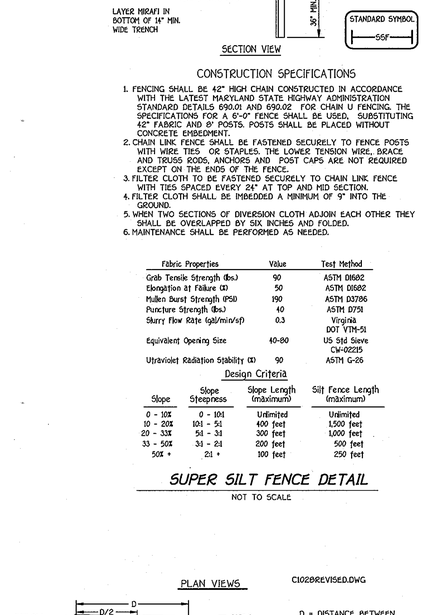
Fabric Properties	Value	Test Method
Grab Tensile Strength (lbs.)	90	ASTM D1682
Elongation at Failure (%)	50	ASTM D1682
Mullen Burst Strength (PSI)	190	ASTM D3786
Puncture Strength (lbs.)	40	ASTM D751
Slurry Flow Rate (gal/min/sf)	0.3	Virginia DOT VTM-51
Equivalent Opening Size	40-80	US Std Sieve CW-02215
Ultraviolet Radiation Stability (%)	90	ASTM G-26

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	400 feet	1,500 feet
20 - 33%	5:1 - 3:1	300 feet	1,000 feet
33 - 50%	3:1 - 2:1	200 feet	500 feet
50% +	2:1 +	100 feet	250 feet

SUPER SILT FENCE DETAIL

NOT TO SCALE



D = DISTANCE BETWEEN INFLOW AND OUTFLOW

A = AREA OF NORMAL POOL

W_e = EFFECTIVE WIDTH = A/D

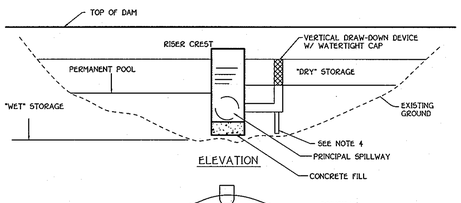
L_e = TOTAL DISTANCE FROM THE INFLOW POINT AROUND THE BAFFLES TO THE RISER

FORMULA: $\frac{L_e}{W_e} \geq 2$

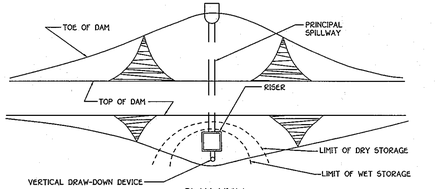
BAFFLE DETAIL

SEDIMENT BASIN BAFFLES

NOT TO SCALE



ELEVATION



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.
2. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 2 TIMES THE AREA OF THE INTERNAL ORIFICE.
3. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
4. PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOATATION. AN ACCEPTABLE PREVENTATIVE MEASURE IS TO STAKE BOTH SIDES OF DRAW-DOWN DEVICE WITH 1" STEEL ANGLE, OR 1" BY 4" SQUARE OR 2" ROUND WOODEN POSTS SET 3' MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GAUGE MINIMUM WIRE.

VERTICAL DRAW-DOWN DEVICE

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.

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

Signature Of Engineer — 9.22.09 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 — 9/22/09 Date

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

District Howard Soil Conservation Dist. — 10/15/09 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 10-30-09 Date

Chief, Development Engineering Division — 10/28/09 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 10-23-09 Date

NO.	DESCRIPTION	DATE
	REVISIONS	
1	REVISED OWNER AND DEVELOPER	10-19-11

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

Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer

Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

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

ALDO M. VITUCCI, P.E. — 9.22.09 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. 20740, Expiration Date 2-22-11."

SEDIMENT CONTROL NOTES & DETAILS

MERIWETHER FARM

SECTION TWO

PHASE TWO

BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)

ZONED: RC-DEO

TAX MAP No.: 21 PARCEL No: 20 GRID Nos.: 15, 16, 21 & 22

FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 22 OF 30

F-09-044

I:\2004\04050\dwg\PHASE TWO SECTION TWO FINALS\SHEET 22-23 SED CON DETAILS.dwg, 9/21/2009 2:31:31 PM, jamesl, 1:1

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 O(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 1/4 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 or 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 seeding 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 int he 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.

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"				

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	137.337	ACRES
AREA DISTURBED	35.58	ACRES
AREA TO BE ROOFED OR PAVED	5.20	ACRES
AREA TO BE VEGETATIVELY STABILIZED	30.38	ACRES
TOTAL CUT	59,934	CU.YDS.
TOTAL FILL	59,934	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A	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.

STILLING BASIN DATA

STRUCTURE NO.	INV. A	EL. B	C	D	E	F	h	M	a1	X
HW-3	470.95	470.95	4.50'	36"	5.5'	12.5'	1.5'	4.5'	32"	8.8'
HW-4	458.50	458.50	3.75'	30"	3.25'	7.5'	1.0'	1.25'	32"	11.0'

TOPSOIL NOTES

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, Johnsongrass, 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 perscribed 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 havina 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.

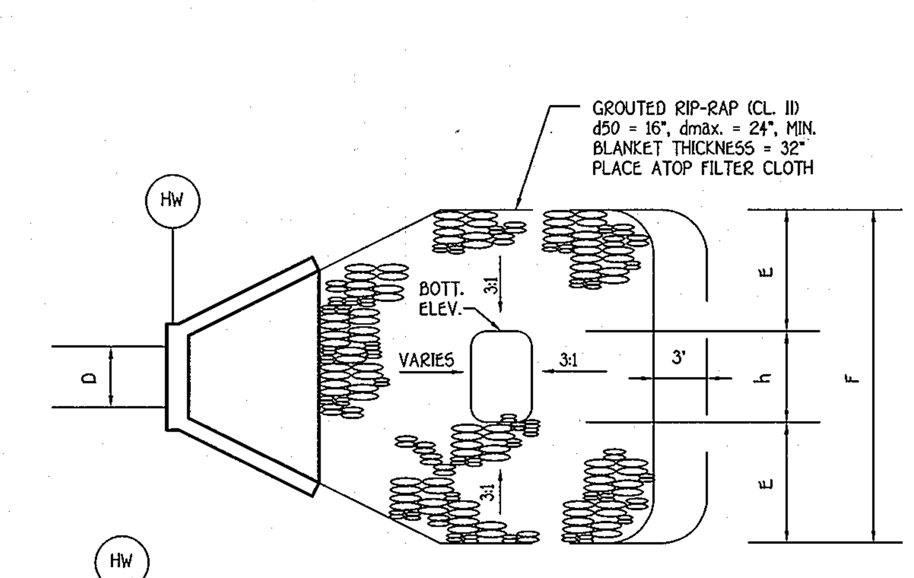
  Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appopriate approval authority, may be used in lieu of natural topsoil.

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

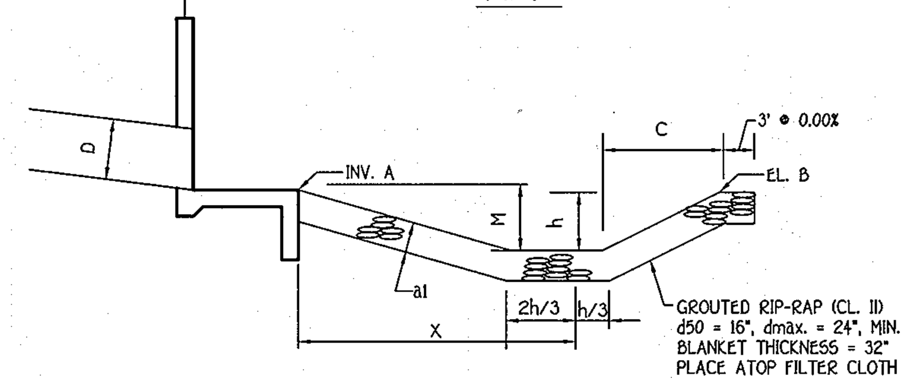
V. Topsoil Application
  i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
  ii. Grades on the areas to be topsoiled, which have been previously established, shall 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 seedine can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling 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.



PLAN



PROFILE

TYP. STILLING BASIN OUTFALL DETAIL

NO SCALE

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT.	7 DAYS
2. INSTALL STONE CONSTRUCTION ENTRANCE.	
3. INSTALL INSTALL PROPOSED 36" RCCP CULVERT FOR BY-PASS DRAINAGE	4 DAYS
4. INSTALL SEDIMENT BASIN Nos. 1 (#BMP No. 5), 2 (#BMP No. 8) AND 3 (#BMP No. 11)	10 DAYS
5. INSTALL PROPOSED EARTH DIKES TO CONTROL PERIMETER SEDIMENT RUN-OFF FROM ROAD CONSTRUCTION AND ASSOCIATED SILT FENCE/TREE PROTECTION FENCE AS SHOWN ON THE PLANS.	5 DAYS
6. OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING WITH CONSTRUCTION.	
7. INSTALL REMAINING SILT FENCE FOR STOCKPILE AREAS AND THE REMAINING STORM DRAIN SYSTEM TO BE USED FOR SEDIMENT CONTROL INCLUDING TEMP. FLEXIBLE PIPES FROM S-2 & EARTH DIKE INTO POND/B.M.P. No. 5.	4 DAYS
8. INSTALL BASE COURSE OF PAVING FOR MERIWETHER DRIVE.	5 DAYS
9. INSTALL PROPOSED FLUSH CURB ALONG MERIWETHER DRIVE ON INSIDE OF CURVES AS SHOWN ON THE PLANS.	5 DAYS
10. INSTALL FINAL COURSE OF PAVING FOR MERIWETHER DRIVE AND STABILIZE ANY REMAINING DISTURBANCES WITH TEMPORARY SEEDING.	10 DAYS
11. FINE GRADE THE LOTS AS INDICATED ON THE PLAN INSTALL PERMANENT SEEDING	10 DAYS
12. OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING WITH CONSTRUCTION.	
13. UPON COMPLETION OF STORM DRAIN CONSTRUCTION, CONVERT THE SEDIMENT CONTROL BASIN #1, #2 AND #3 TO PERMANENT SWM POND CONDITION FOR PONDS #5, #8 AND #11.	10 DAYS
14. INSTALL BIO-RETENTION FACILITY BMP No. 9. SEE PLANS.	5 DAYS
15. REMOVE SEDIMENT EROSION CONTROL DEVICES AND TREE PROTECTION FENCE AS SHOWN ON THE PLAN UPON APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR.	4 DAYS
16. PHASE TWO: INSTALL B.M.P. No. 4. B.M.P. No. 4 SHALL BE INSTALLED WITH A 5-DAY CLEAR WEATHER FORECAST AND PERMISSION FROM THE INSPECTOR TO PROCEED.	5 DAYS
17. CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, BUFFERS AND PRESERVATION PARCELS.	

NOTE: ALL REMAINING BMP FACILITIES (Nos. 6, 10, 12 & 13) WILL BE INSTALLED AS PART OF THE SITE DEVELOPMENT PLANS FOR THOSE INDIVIDUAL LOTS (LOT Nos. 27, 30, 33 & 34).

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 — 9-22-09 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 — 9/22/9 Date

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

District Howard Soil Conservation Dist. — 10/15/09 Date

Approved: Department Of Planning And Zoning

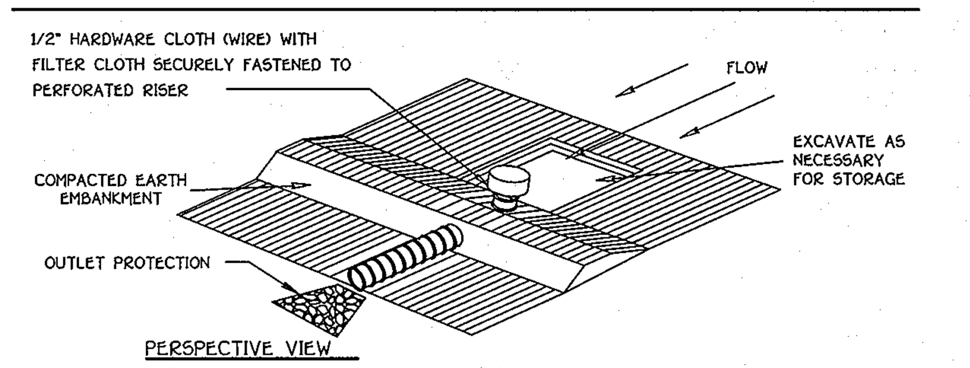
Chief, Division Of Land Development — 10-30-09 Date

Chief, Development Engineering Division — 10/28/09 Date

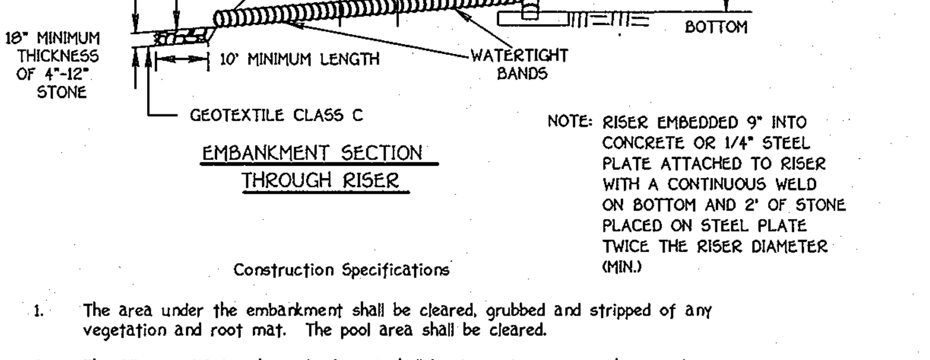
Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 10-23-09 Date

PIPE OUTLET SEDIMENT TRAP - ST I



PERSPECTIVE VIEW



EMBANKMENT SECTION THROUGH RISER

NOTE: RISER EMBEDDED 9" INTO CONCRETE OR 1/4" STEEL PLATE ATTACHED TO RISER WITH A CONTINUOUS WELD ON BOTTOM AND 2' OF STONE PLACED ON STEEL PLATE TWICE THE RISER DIAMETER (MIN.)

Construction Specifications

1. The area under the 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 or other woody vegetation as well as oversized stones, rocks, organic material, or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
3. The total trap volume as measured from the bottom to riser crest elevation shall be 3600 cubic feet per acre of drainage area (see Table 9). The top of embankment must be ≥1' above the riser crest elevation.
4. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap (900cf/ac). The sediment shall be deposited in a suitable area and in such a manner that it will not erode.
5. The structure shall be inspected periodically and after each rain and repairs made as necessary.
6. Construction operations shall be carried out in such a manner that erosion and water pollution are abated. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. Points of concentrated 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.
7. The structure shall be removed and area stabilized when the drainage area has been properly stabilized.
8. All cut and fill slopes shall be 2:1 or flatter.
9. All pipe connections shall be watertight.
10. Above the wet storage elevation, the riser shall be perforated with 1/2" wide by 6" long slits or 1" diameter holes spaced 6" vertically and horizontally. No perforations will be allowed within 6" of the horizontal barrel.
11. The riser shall be wrapped with 1/2" hardware cloth (wire) then wrapped with Geotextile Class E. The filter cloth shall extend 6" above the highest slit and 6" below the lowest slit. Where ends of filter cloth come together, they shall be overlapped, folded and fastened to prevent bypass. Filter cloth shall be replaced as necessary to prevent clogging.
12. Straps or connecting bands shall be used to hold the filter cloth and wire fabric in place. They shall be placed at the top and bottom of the cloth.
13. Fill material around the pipe spillway shall be hand compacted in 4" layers. A minimum of 2' of hand-compacted backfill shall be placed over the pipe spillway before crossing it with construction equipment.
14. The riser shall be anchored with either a concrete base or steel plate base to prevent flotation. Concrete bases shall be at least twice the riser diameter and 12" deep with the riser embedded 9". Steel plate bases shall be at least twice the riser diameter, 1/4" minimum thickness and attached to the bottom of the riser by a continuous weld to form a watertight connection. Then place 2' of stone, gravel or tamped earth on the plate.
15. Anti seep collars shall be constructed in accordance with plans (ref. table 16 and Details 13 and 14).
16. Concentric trash rack and anti-vortex device design details are on Detail 16.
17. Refer to Section D for dewatering requirements of sediment traps.
18. Outlet - An outlet shall be provided, which includes a means of conveying the discharge in an erosion free manner to an existing stable channel.
19. Where discharge occurs at the property line, local ordinances and drainage easement requirements shall be met.

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

NO.	DESCRIPTION	DATE
1	REVISED OWNER AND DEVELOPER	10-19-11

REVISIONS

Owner

Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer

Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

ALDO M. VITICELLO P.E. — 9-22-09 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 2-22-11."

SEDIMENT CONTROL NOTES & DETAILS

MERIWETHER FARM

SECTION TWO

PHASE TWO

BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 23 OF 30

F-09-044

I:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 22-23 SED CON DETAILS.dwg, 9/21/2009 2:32:30 PM, jamesl, 1:1

DRAINAGE AREA DATA				
STRUCTURE NO.	DRAINAGE AREA	AREA	'C'	ZONED
I-1	A	0.53 acres	0.60	RC-DEO
I-2	B	6.27 acres	0.50	RC-DEO
I-3	C	0.25 acres	0.60	RC-DEO
I-4	D	1.10 acres	0.46	RC-DEO
I-5	E	0.18 acres	0.60	RC-DEO
I-6	F	1.99 acres	0.48	RC-DEO
I-7	G	0.29 acres	0.58	RC-DEO
I-8	H	0.11 acres	0.59	RC-DEO
I-9	I	0.63 acres	0.45	RC-DEO
I-10	J	0.34 acres	0.47	RC-DEO
I-11	K	0.27 acres	0.52	RC-DEO
I-12	L	4.16 acres	0.50	RC-DEO
I-13	M	0.32 acres	0.58	RC-DEO
I-14	N	1.98 acres	0.52	RC-DEO
I-15	O	6.98 acres	0.40	RC-DEO
I-16	P	5.66 acres	0.39	RC-DEO
I-17	Q	0.23 acres	0.60	RC-DEO
I-18	R	1.30 acres	0.45	RC-DEO
I-19	S	0.13 acres	0.61	RC-DEO
I-20	T	0.66 acres	0.54	RC-DEO
I-21	U	0.40 acres	0.60	RC-DEO
I-22	V	2.74 acres	0.42	RC-DEO
I-23	W	3.66 acres	0.44	RC-DEO
I-24	X	2.00 acres	0.45	RC-DEO
HW-1	Y	21.37 acres	0.42	RC-DEO

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-23-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10-30-09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/28/09

MATCH LINE SEE SHEET 25

MATCH LINE SEE SHEET 25

PLAN
SCALE: 1" = 100'

NO.	DESCRIPTION	DATE
1	REVISED LANDSCAPE AND ENTRANCE EASEMENT & F.C.E.	10-19-11
1	REVISED OWNER AND DEVELOPER	10-19-11
	REVISIONS	

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

Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer

Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 250
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

STATE OF MARYLAND — ALDO E. FISHER — No. 7746 — REGISTERED PROFESSIONAL ENGINEER

ALDO E. FISHER — DATE 9-22-09

"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. 7746, Expiration Date 2-22-11."

STORM DRAIN DRAINAGE AREA MAP
MERIWETHER FARM
SECTION TWO
PHASE TWO
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)

ZONED: RC-DEO

TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22

FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 24 OF 30

F-09-044

I:\2004\04005\dwg\PHASE TWO SECTION TWO FINALS\SHEET 24-25 SD DRAINAGE AREA MAP.dwg, 9/21/2009 1:11:23 PM, jamesl, 1:1

DRAINAGE AREA DATA

STRUCTURE NO.	DRAINAGE AREA	AREA	'C'	ZONED
I-1	A	0.53 acres	0.60	RC-DEO
I-2	B	6.27 acres	0.50	RC-DEO
I-3	C	0.25 acres	0.60	RC-DEO
I-4	D	1.10 acres	0.46	RC-DEO
I-5	E	0.18 acres	0.60	RC-DEO
I-6	F	1.99 acres	0.48	RC-DEO
I-7	G	0.29 acres	0.58	RC-DEO
I-8	H	0.11 acres	0.59	RC-DEO
I-9	I	0.63 acres	0.45	RC-DEO
I-10	J	0.34 acres	0.47	RC-DEO
I-11	K	0.27 acres	0.52	RC-DEO
I-12	L	4.16 acres	0.50	RC-DEO
I-13	M	0.32 acres	0.58	RC-DEO
I-14	N	1.98 acres	0.52	RC-DEO
I-15	O	6.98 acres	0.40	RC-DEO
I-16	P	5.66 acres	0.39	RC-DEO
I-17	Q	0.23 acres	0.60	RC-DEO
I-18	R	1.30 acres	0.45	RC-DEO
I-19	S	0.13 acres	0.61	RC-DEO
I-20	T	0.66 acres	0.54	RC-DEO
I-21	U	0.40 acres	0.60	RC-DEO
I-22	V	2.74 acres	0.42	RC-DEO
I-23	W	3.66 acres	0.44	RC-DEO
I-24	X	2.00 acres	0.45	RC-DEO
HW-1	Y	21.37 acres	0.42	RC-DEO

NO.	DESCRIPTION	DATE
1	REMOVED FIRE SUPPRESSION TANK AND UIC EASEMENT	10-19-11
1	REVISED OWNER AND DEVELOPER	19-19-11

REVISIONS

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-27-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10-30-09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/28/09

DORSEY MILL ROAD

LIMIT OF 100-YEAR FLOODPLAIN PER CAPITAL PROJECT 70-1079

MIDWEATHER AVENUE

SWM POND NO. 1 F-06-106

BUILDABLE PRESERVATION PARCEL 'I'

BUILDABLE PRESERVATION PARCEL 'J'

MATCH LINE SEE SHEET 24

MATCH LINE SEE SHEET 24

PLAN

SCALE: 1" = 100'

Owner	Developer
Meriwether Farm II, LLC c/o Second Goodier, LLC 10715 Charter Drive Suite 350 Columbia, Maryland 21044 Ph: (410) 997-7501 Attn: Mr. Robert C. Goodier, Jr.	Toll Brothers, Inc. Maryland Division 7164 Columbia Gateway Drive Suite 230 Columbia, Maryland 21046 Ph: (410) 997-7501 Attn: Mr. Jeff Driscoll

ALEX. J. HORVATH, P.E.

"Professional Engineer, I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-11."

9-22-09 DATE

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

STORM DRAIN DRAINAGE AREA MAP

MERIWETHER FARM

SECTION TWO

PHASE TWO

BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)

ZONED: RC-DEO

TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22

FOURTH ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN

DATE: SEPTEMBER 21, 2009

SHEET 25 OF 30

F-09-044

I:\2004\04056\dwg\PHASE TWO SECTION TWO FINAL\SHEET 24-25 SD DRAINAGE AREA MAP.dwg, 9/21/2009 1:19:54 PM, jamesl, 1:1

Approved: Department Of Planning And Zoning

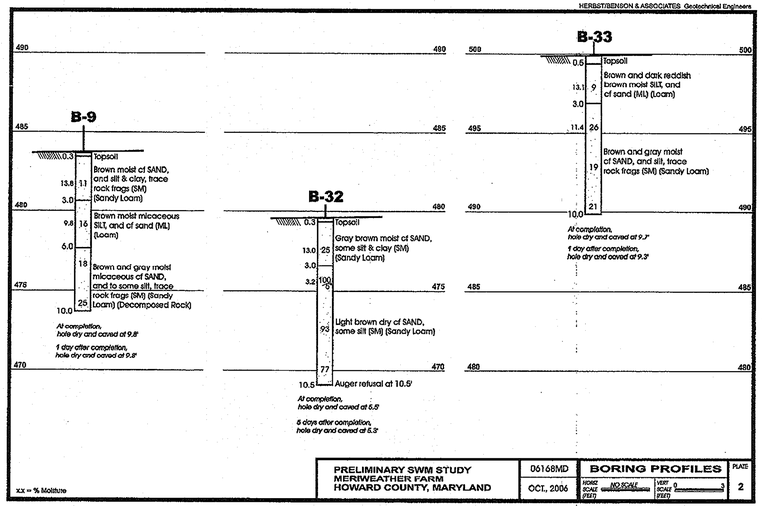
Chief, Division Of Land Development — Date 10-30-09

Chief, Development Engineering Division — Date 10/28/09

Approved: Howard County Department Of Public Works

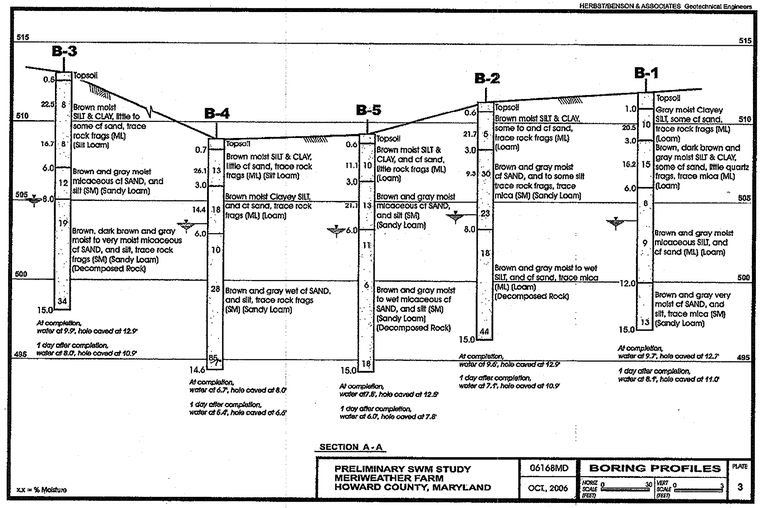
Chief, Bureau Of Highways — Date 10-23-09

HERBST/BENSON & ASSOCIATES Geotechnical Engineers



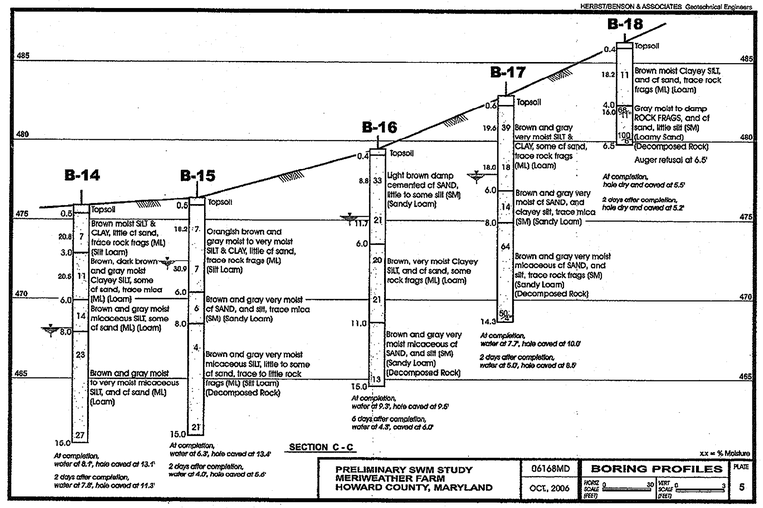
PRELIMINARY SWM STUDY MERIWEATHER FARM HOWARD COUNTY, MARYLAND	06168MD	BORING PROFILES	PLATE
	OCT., 2006	HORIZ SCALE NO SCALE (FEET) VERT SCALE 0 3 (FEET)	2

HERBST/BENSON & ASSOCIATES Geotechnical Engineers



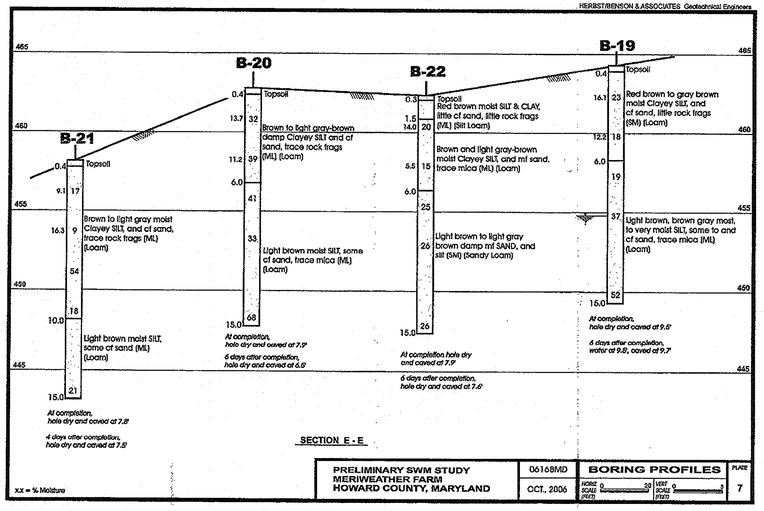
PRELIMINARY SWM STUDY MERIWEATHER FARM HOWARD COUNTY, MARYLAND	06168MD	BORING PROFILES	PLATE
	OCT., 2006	HORIZ SCALE 0 30 (FEET) VERT SCALE 0 3 (FEET)	3

HERBST/BENSON & ASSOCIATES Geotechnical Engineers



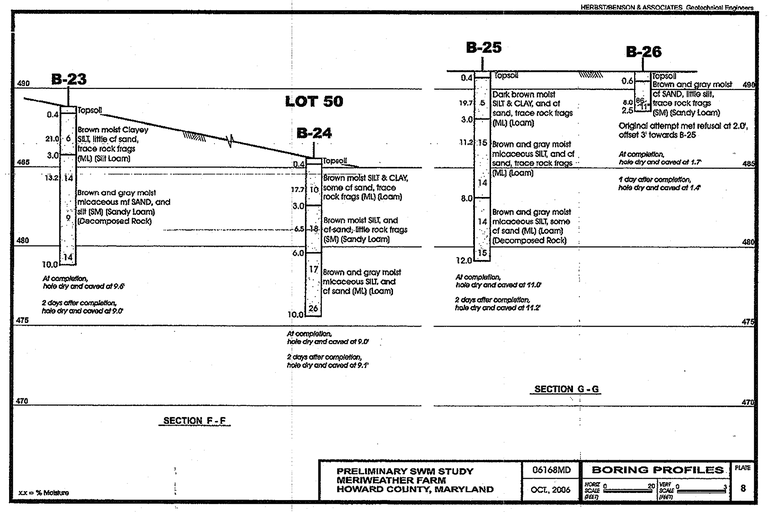
PRELIMINARY SWM STUDY MERIWEATHER FARM HOWARD COUNTY, MARYLAND	06168MD	BORING PROFILES	PLATE
	OCT., 2006	HORIZ SCALE 0 30 (FEET) VERT SCALE 0 3 (FEET)	5

HERBST/BENSON & ASSOCIATES Geotechnical Engineers



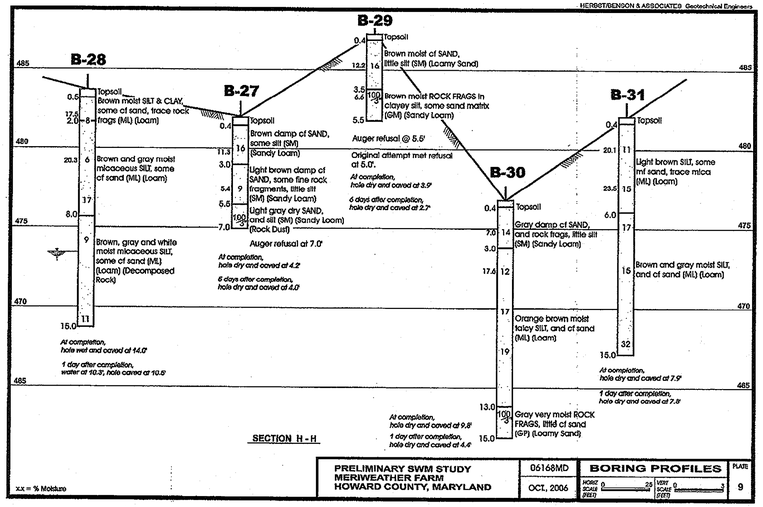
PRELIMINARY SWM STUDY MERIWEATHER FARM HOWARD COUNTY, MARYLAND	06168MD	BORING PROFILES	PLATE
	OCT., 2006	HORIZ SCALE 0 50 (FEET) VERT SCALE 0 3 (FEET)	7

HERBST/BENSON & ASSOCIATES Geotechnical Engineers



PRELIMINARY SWM STUDY MERIWEATHER FARM HOWARD COUNTY, MARYLAND	06168MD	BORING PROFILES	PLATE
	OCT., 2006	HORIZ SCALE 0 20 (FEET) VERT SCALE 0 3 (FEET)	8

HERBST/BENSON & ASSOCIATES Geotechnical Engineers



PRELIMINARY SWM STUDY MERIWEATHER FARM HOWARD COUNTY, MARYLAND	06168MD	BORING PROFILES	PLATE
	OCT., 2006	HORIZ SCALE 0 20 (FEET) VERT SCALE 0 3 (FEET)	9

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

NO.	DESCRIPTION	DATE
1	REVISED OWNER AND DEVELOPER	10-19-11
	REVISIONS	

Owner

Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer

Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

ALDO M. [illegible]
PROFESSIONAL ENGINEER
"Professional Engineer's Certificate 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 2-22-11."

12.2.09
DATE

SOIL BORINGS
MERIWEATHER FARM
SECTION TWO
PHASE TWO
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWEATHER FARM, SECTION TWO, PHASE ONE, F-08-199)

ZONED: RC-DEO

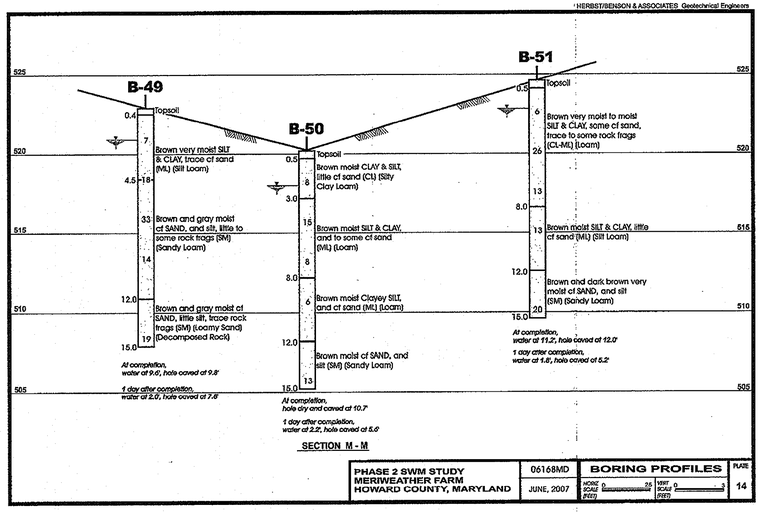
TAX MAP No: 21 PARCEL No: 28 GRID Nos: 15, 16, 21 & 22

FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALES AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 26 OF 30

F-09-044

I:\2009\06059\dwg\PHASE TWO SECTION TWO FINALS\SHEET 26-27 SOIL BORINGS.dwg, 9/21/2009 1:46:18 PM, jamesl, 111

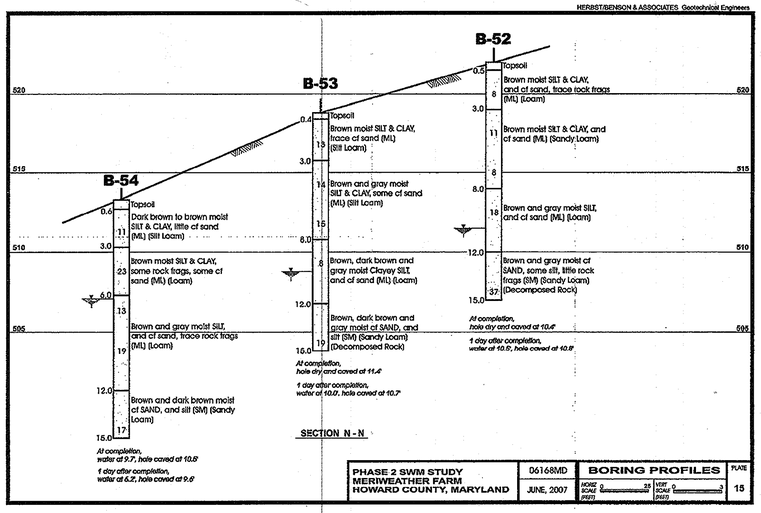
HERBST/BENSON & ASSOCIATES Geotechnical Engineers



SECTION M - M

PHASE 2 SWM STUDY MERIWEATHER FARM HOWARD COUNTY, MARYLAND	06168MD JUNE, 2007	BORING PROFILES HORIZ SCALE (FEET) 0 — 25 VERT SCALE (FEET) 0 — 3	PLATE 14

HERBST/BENSON & ASSOCIATES Geotechnical Engineers



SECTION N - N

PHASE 2 SWM STUDY MERIWEATHER FARM HOWARD COUNTY, MARYLAND	06168MD JUNE, 2007	BORING PROFILES HORIZ SCALE (FEET) 0 — 25 VERT SCALE (FEET) 0 — 3	PLATE 15

HERBST/BENSON & ASSOCIATES Geotechnical Engineers

PHASE 2 SWM STUDY MERIWEATHER FARM HOWARD COUNTY, MARYLAND	06168MD JUNE, 2007	BORING PROFILES HORIZ SCALE (FEET) NONE VERT SCALE (FEET) 0 — 3	PLATE 16

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 10-30-09

Chief, Development Engineering Division — Date 10/28/09

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 10-23-09

NO.	DESCRIPTION	DATE
	REVISIONS	
1	REVISED OWNER AND DEVELOPER	10-19-11

Owner

Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer

Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

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 — ALDEN J. LAUDENSLAGER — No. 20748 — REGISTERED PROFESSIONAL ENGINEER

9-22-09
DATE

ALDEN J. LAUDENSLAGER
"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 2-22-11."

SOIL BORINGS
MERIWEATHER FARM
SECTION TWO
PHASE TWO
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWEATHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 27 OF 30

F-09-044

I:\2006\06056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 26-27 SOIL BORINGS.dwg, 9/21/2009 1:28:39 PM, James, 1:1

APPROVED: DEPARTMENT OF PUBLIC WORKS	
CHIEF, BUREAU OF HIGHWAYS	10-23-09 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT	10-30-09 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	10/28/09 DATE

FOREST CONSERVATION DATA (ON-SITE)

EASEMENT NO.	CREDITED RETENTION AREA	PLANTING AREA	NON-CREDITED RETENTION AREA	TOTAL EASEMENT AREA
1 - (F-08-198)	---	1.04 AC.	---	1.04 AC.
1 - (F-08-199)	4.303 AC.	---	---	4.303 AC.
2 - (F-08-199)	---	0.747 AC.	---	0.747 AC.
3 - (F-08-199)	2.53 AC.	7.426 AC.	---	9.956 AC.
4 - (F-08-199)	7.416 AC.	---	---	7.416 AC.
5	0.29 AC.	---	---	0.29 AC.
6	14.151 AC.	2.14 AC.	---	16.291 AC.
7	1.41 AC.	7.85 AC.	---	9.26 AC.
8	---	2.197 AC.	---	2.197 AC.
TOTAL	30.1 AC.	21.4 AC.	---	51.5 AC.

DENOTES EXISTING FOREST CONSERVATION EASEMENT PER F-08-199

DENOTES PROPOSED FOREST CONSERVATION EASEMENT

DENOTES PROPOSED PLANTING AREA

PLAN
SCALE: 1" = 100'

NO.	DESCRIPTION	DATE
1	REVISED LANDSCAPE AND ENTRANCE EASEMENT & F.C.E.	10-19-11
1	REVISED OWNER AND DEVELOPER	10-19-11
REVISIONS		

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

Owner
Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer
Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

ALDO ... P.E. — 9-22-09 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 2-22-11."

FOREST CONSERVATION PLAN
MERIWETHER FARM
SECTION TWO
PHASE TWO
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'
(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 28 OF 30

F-09-044

I:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 28-30 FOREST CONSERVATION PLANS.dwg, 9/21/2009 1:43:16 PM, jamesl, 1:1

DENOTES EXISTING FOREST CONSERVATION EASEMENT PER F-08-199

DENOTES PROPOSED FOREST CONSERVATION EASEMENT

DENOTES PROPOSED PLANTING AREA

NO.	DESCRIPTION	DATE
	REVISIONS	
1	REVISED OWNER AND DEVELOPER	10-19-11
1	REMOVED FIRE SUPPRESSION TANK AND UIC EASEMENT	10-19-11

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-23-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10-30-09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/28/09

DORSEY MILL ROAD

LIMIT OF 100-YEAR FLOODPLAIN PER CAPITAL PROJECT #D-1079

FOREST CONSERVATION EASEMENT NO. 6 (16.29± AC.± (11.151 AC. RETENTION) (2.140 AC. REFORESTATION)

FOREST CONSERVATION EASEMENT NO. 7 5.0± AC.± (1.41 AC. RETENTION) 7.92± AC. REFORESTATION)

FOREST CONSERVATION EASEMENT NO. 5 12.9± AC.± (RETENTION)

SWM POND NO. 1 F-06-199

MEADOWRIDGE DRIVE

MEADOWRIDGE ROAD

MEADOWRIDGE OVERLOOK DRIVE

MEADOWRIDGE LANDING

MEADOWRIDGE RUN

MEADOWRIDGE CENTRAL PARK

MEADOWRIDGE CENTRAL PARK DRIVE

MEADOWRIDGE CENTRAL PARK PLAZA

MEADOWRIDGE CENTRAL PARK AVENUE

MEADOWRIDGE CENTRAL PARK CIRCLE

MEADOWRIDGE CENTRAL PARK TERRACE

MEADOWRIDGE CENTRAL PARK PLACE

MEADOWRIDGE CENTRAL PARK LANE

MEADOWRIDGE CENTRAL PARK WAY

MEADOWRIDGE CENTRAL PARK COURT

MEADOWRIDGE CENTRAL PARK BOULEVARD

MEADOWRIDGE CENTRAL PARK ROAD

MEADOWRIDGE CENTRAL PARK STREET

MEADOWRIDGE CENTRAL PARK ALLEY

MEADOWRIDGE CENTRAL PARK PATH

MEADOWRIDGE CENTRAL PARK TRAIL

MEADOWRIDGE CENTRAL PARK WALK

MEADOWRIDGE CENTRAL PARK GREEN

MEADOWRIDGE CENTRAL PARK SQUARE

MEADOWRIDGE CENTRAL PARK PARK

MEADOWRIDGE CENTRAL PARK GARDEN

MEADOWRIDGE CENTRAL PARK COMMON

MEADOWRIDGE CENTRAL PARK PLAZA

MEADOWRIDGE CENTRAL PARK AVENUE

MEADOWRIDGE CENTRAL PARK CIRCLE

MEADOWRIDGE CENTRAL PARK TERRACE

MEADOWRIDGE CENTRAL PARK PLACE

MEADOWRIDGE CENTRAL PARK LANE

MEADOWRIDGE CENTRAL PARK WAY

MEADOWRIDGE CENTRAL PARK COURT

MEADOWRIDGE CENTRAL PARK BOULEVARD

MEADOWRIDGE CENTRAL PARK ROAD

MEADOWRIDGE CENTRAL PARK STREET

MEADOWRIDGE CENTRAL PARK ALLEY

MEADOWRIDGE CENTRAL PARK PATH

MEADOWRIDGE CENTRAL PARK TRAIL

MEADOWRIDGE CENTRAL PARK WALK

MEADOWRIDGE CENTRAL PARK GREEN

MEADOWRIDGE CENTRAL PARK SQUARE

MEADOWRIDGE CENTRAL PARK PARK

MEADOWRIDGE CENTRAL PARK GARDEN

MEADOWRIDGE CENTRAL PARK COMMON

MATCH LINE SEE SHEET 28

PLAN
SCALE: 1" = 100'

Owner	Developer
Meriwether Farm II, LLC c/o Second Goodier, LLC 10715 Charter Drive Suite 350 Columbia, Maryland 21044 Ph: (410) 997-7501 Attn: Mr. Robert C. Goodier, Jr.	Toll Brothers, Inc. Maryland Division 7164 Columbia Gateway Drive Suite 230 Columbia, Maryland 21046 Ph: (410) 997-7501 Attn: Mr. Jeff Driscoll

STATE OF MARYLAND — JOSEPH MICHAEL PETRUCCI — No. 20740 — PROFESSIONAL ENGINEER

9.22.09
JOSEPH M. PETRUCCI, P.E. — DATE

"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. 20740, Expiration Date 2-22-11."

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

FOREST CONSERVATION PLAN
MERIWETHER FARM
SECTION TWO
PHASE TWO
BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'
(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)

ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 29 OF 30

F-09-044

I:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 29-30 FOREST CONSERVATION PLANS.dwg, 9/21/2009 1:51:22 PM, jjames, 1:1

FCE Planting Area # 6 – 2.14 acres

Planting required: (350 WHIPS PER ACRE) x 2.14 x 350 = 749 WHIPS
Planting provided: (705 whips and 25 - 1" trees)

Qty	Species	Size	Spacing
10	Acer rubrum - Red maple	1" cal.	15' o.c.
15	Quercus alba - White oak	1" cal.	15' o.c.
			25 Total 1" caliper trees
100	Acer rubrum - Red maple	2-3' whip	11' o.c.
100	Cercis canadensis - Red bud	2-3' whip	11' o.c.
75	Cornus florida - Flowering dogwood	2-3' whip	11' o.c.
75	Liriodendron tulipifera - Tulip poplar	2-3' whip	11' o.c.
125	Prunus serotina - Black cherry	2-3' whip	11' o.c.
105	Robinia pseudo-acacia - Black locust	2-3' whip	11' o.c.
75	Quercus alba - White oak	2-3' whip	11' o.c.
50	Viburnum prunifolium - Blackhaw	2-3' whip	11' o.c.
			705 Total whip plantings

1" CAL. TREES = 200/ACRE (25 TREES/200) = 0.125 AC.
WHIPS w/shelters = 350/ACRE = (350 x 2.015 AC. (2.14 - 0.125)) = 705 WHIPS

~~FCE Planting Area # 7 – 7.85 acres~~

~~Planting required: (350 WHIPS PER ACRE) x 7.85 x 350 = 2748 WHIPS~~
~~Planting provided: (2573 whips and 100 - 1" trees)~~

Qty	Species	Size	Spacing
~~50~~	~~Acer rubrum - Red maple~~	~~1" cal.~~	~~15' o.c.~~
~~50~~	~~Quercus alba - White oak~~	~~1" cal.~~	~~15' o.c.~~
			~~100 Total 1" caliper trees~~
~~500~~	~~Acer rubrum - Red maple~~	~~2-3' whip~~	~~11' o.c.~~
~~450~~	~~Cercis canadensis - Red bud~~	~~2-3' whip~~	~~11' o.c.~~
~~273~~	~~Cornus florida - Flowering dogwood~~	~~2-3' whip~~	~~11' o.c.~~
~~300~~	~~Liriodendron tulipifera - Tulip poplar~~	~~2-3' whip~~	~~11' o.c.~~
~~300~~	~~Prunus serotina - Black cherry~~	~~2-3' whip~~	~~11' o.c.~~
~~350~~	~~Robinia pseudo-acacia - Black locust~~	~~2-3' whip~~	~~11' o.c.~~
~~200~~	~~Quercus alba - White oak~~	~~2-3' whip~~	~~11' o.c.~~
~~200~~	~~Viburnum prunifolium - Blackhaw~~	~~2-3' whip~~	~~11' o.c.~~
			~~2573 Total whip plantings~~

~~1" CAL. TREES = 200/ACRE (100 TREES/200) = 0.50 AC.~~
~~WHIPS w/shelters = 350/ACRE = (350 x 7.35 AC. (7.85 - 0.50)) = 2573 WHIPS~~

~~FCE Planting Area # 8 – 2.197 acres~~

~~Planting required: (350 WHIPS PER ACRE) x 2.197 x 350 = 769 WHIPS~~
~~Planting provided: (725 whips and 25 - 1" trees)~~

Qty	Species	Size	Spacing
~~10~~	~~Acer rubrum - Red maple~~	~~1" cal.~~	~~15' o.c.~~
~~15~~	~~Quercus alba - White oak~~	~~1" cal.~~	~~15' o.c.~~
			~~25 Total 1" caliper trees~~
~~100~~	~~Acer rubrum - Red maple~~	~~2-3' whip~~	~~11' o.c.~~
~~100~~	~~Cercis canadensis - Red bud~~	~~2-3' whip~~	~~11' o.c.~~
~~85~~	~~Cornus florida - Flowering dogwood~~	~~2-3' whip~~	~~11' o.c.~~
~~85~~	~~Liriodendron tulipifera - Tulip poplar~~	~~2-3' whip~~	~~11' o.c.~~
~~125~~	~~Prunus serotina - Black cherry~~	~~2-3' whip~~	~~11' o.c.~~
~~105~~	~~Robinia pseudo-acacia - Black locust~~	~~2-3' whip~~	~~11' o.c.~~
~~75~~	~~Quercus alba - White oak~~	~~2-3' whip~~	~~11' o.c.~~
~~50~~	~~Viburnum prunifolium - Blackhaw~~	~~2-3' whip~~	~~11' o.c.~~
			~~725 Total whip plantings~~

~~1" CAL. TREES = 200/ACRE (25 TREES/200) = 0.125 AC.~~
~~WHIPS w/shelters = 350/ACRE = (350 x 2.072 AC. (2.197 - 0.125)) = 725 WHIPS~~

FOREST CONSERVATION WORKSHEET

NET TRACT AREA	ACRES
A. TOTAL TRACT AREA	182.91
B. DEDUCTIONS (CRITICAL AREA, AREA RESTRICTED BY LOCAL OR PROGRAM)	6.78
C. NET TRACT AREA NET TRACT AREA = TOTAL TRACT (A) - DEDUCTIONS (B)	176.13
LAND USE CATEGORY: MEDIUM DENSITY RESIDENTIAL	
D. AFFORESTATION THRESHOLD (NET TRACT AREA (C) x 20%)	35.23
E. CONSERVATION THRESHOLD (NET TRACT AREA (C) x 25%)	44.03
EXISTING FOREST COVER	
F. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	40.8
G. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	0
IF THE EXISTING FOREST COVER (F) IS GREATER THAN THE CONSERVATION THRESHOLD (E), THEN	
G = F - E; OTHERWISE G = 0.	
BREAKEVEN POINT	
H. BREAKEVEN POINT (AMOUNT OF FOREST THAT MUST BE RETAINED SO THAT NO MITIGATION IS	40.8
REQUIRED)	
(1) IF THE AREA OF FOREST ABOVE CONSERVATION THRESHOLD (G) IS GREATER THAN 0, THEN	
H = (0.2 x THE AREA OF FOREST ABOVE CONSERVATION THRESHOLD (G) + THE	
CONSERVATION THRESHOLD (E).	
(2) IF THE AREA OF FOREST ABOVE CONSERVATION THRESHOLD (G) IS EQUAL TO 0, THEN	
H = EXISTING FOREST COVER (F)	
I. FOREST CLEARING PERMITTED WITHOUT MITIGATION	0
I = EXISTING FOREST COVER (F) - BREAKEVEN POINT (H)	
PROPOSED FOREST CLEARING	
J. TOTAL AREA OF FOREST TO BE CLEARED	10.7
K. TOTAL AREA OF FOREST TO BE RETAINED	30.1
K = EXISTING FOREST COVER (F) - FOREST TO BE CLEARED (J)	
PLANTING REQUIREMENTS	
IF THE TOTAL AREA OF FOREST TO BE RETAINED (K) IS AT OR ABOVE THE BREAKEVEN POINT (H), NO	
PLANTING IS REQUIRED, AND NO FURTHER CALCULATIONS ARE NECESSARY (L=0, M=0, N=0, P=0, Q=0,	
R=0).	
OTHERWISE, CALCULATE THE PLANTING REQUIREMENT(S) AS FOLLOWS:	
L. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION THRESHOLD	0
(1) IF THE TOTAL AREA OF FOREST TO BE RETAINED (K) IS GREATER THAN THE	
CONSERVATION THRESHOLD (E), THEN L = THE AREA OF FOREST TO BE CLEARED (J) x 0.25;	
(2) IF THE FOREST TO BE RETAINED (K) IS LESS THAN OR EQUAL TO THE CONSERVATION THRESHOLD	
(E), THEN L = AREA OF FOREST ABOVE CONSERVATION THRESHOLD (G) x 0.25	
M. REFORESTATION FOR CLEARING BELOW THE CONSERVATION THRESHOLD	21.4
(1) IF EXISTING FOREST COVER (F) IS GREATER THAN THE CONSERVATION THRESHOLD (E) AND THE	
FOREST TO BE RETAINED (K) IS LESS THAN OR EQUAL TO THE CONSERVATION THRESHOLD (E),	
THEN M = 2.0 x (CONSERVATION THRESHOLD (E) - FOREST TO BE RETAINED (K))	
(2) IF EXISTING FOREST COVER (F) IS LESS THAN OR EQUAL TO THE CONSERVATION THRESHOLD (E),	
THEN M = 2.0 x FOREST TO BE CLEARED (J)	
N. CREDIT FOR RETENTION ABOVE THE CONSERVATION THRESHOLD	0
IF THE AREA OF FOREST TO BE RETAINED (K) IS GREATER THAN THE CONSERVATION THRESHOLD (E),	
THEN N = K - E; OTHERWISE N = 0	
P. TOTAL REFORESTATION REQUIRED P = L + M - N	21.4
Q. TOTAL AFFORESTATION REQUIRED	
IF EXISTING FOREST COVER (F) IS LESS THAN THE AFFORESTATION THRESHOLD (D), THEN	
Q = AFFORESTATION THRESHOLD (D) - EXISTING FOREST COVER (F)	0
R. TOTAL PLANTING REQUIREMENT R = P + Q	21.4

Planting/Soil Specifications

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

Sequence of Construction

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

Maintenance of Plantings

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

Guarantee Requirements

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

Surety for Forestation

Meriwether Farm, Section Two, Phase Two Subdivision Will Be Fulfilled By Providing A Total Of Onsite Retention Of 30.1 Acres Of Forest And 21.4 Acres Of Onsite Planting.

A. Total Forest Retention Obligation For Meriwether Farm, Section Two = 30.1 Acres.
B. Required Forest Retention Obligation For Meriwether Farm, Section Two, Phase Two = 15.851 Acres. (30.1 Ac. - 14.249 Ac. Provided in Forest Easements 3, 4 & 5 in Phase One, F-08-199)
C. Provided Forest Retention Conservation Easement For Meriwether Farm, Section Two, Phase Two = 15.851 Ac.
D. Total Forest Reforestation Obligation For Meriwether Farm, Section Two = 21.4 Acres.
E. Required Forest Reforestation Obligation For Meriwether Farm, Section Two, Phase Two = 12.187 Ac. (21.4 Ac. - 1.04 Ac. (Provided in Meriwether Farm, Section One under F-08-198) - 8.173 Ac. (Provided in Easements 2 & 3 in Phase One, F-08-199))
F. Provided Forest Reforestation Conservation Easement For Meriwether Farm, Section Two, Phase Two = 12.187 Ac.
G. The Forest Conservation Surety Amount Required Is $403,527.00 (15.851 ac. x 43,560 x $0.20 = $138,094) + (12.187 ac. x 43,560 x $0.50 = $265,433) And Will Be Provided With The Developer's Agreement.

Planting Notes

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

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

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

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. THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE, FOREST CONSERVATION ACT. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENTS, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
3. FORESTED AREAS OCCURRING OUTSIDE OF THE FCE SHALL NOT BE CONSIDERED PART OF THE FCE AND SHALL NOT BE SUBJECT TO PROTECTIVE LAND COVENANTS.
4. LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
5. THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ.
6. NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS.
7. TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE PLACED ALONG ALL FCE BOUNDARIES WHICH OCCUR WITHIN 15 FEET OF THE PROPOSED LIMITS OF DISTURBANCE.
8. PERMANENT SIGNAGE SHALL BE PLACED 50' - 100' APART ALONG BOUNDARIES OF ALL AREAS INCLUDED IN FOREST CONSERVATION EASEMENTS.

APPROVED: DEPARTMENT OF PUBLIC WORKS

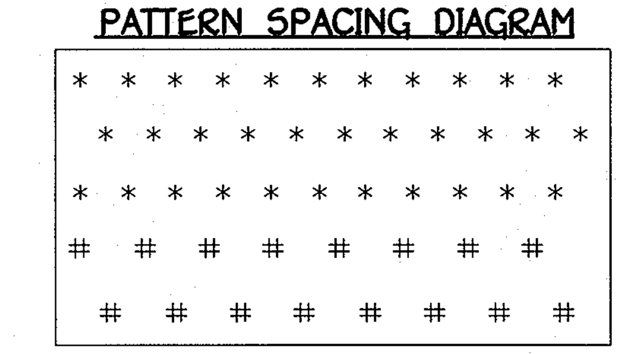
CHIEF, BUREAU OF HIGHWAYS — DATE 10-23-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10-30-09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10/28/09

PATTERN SPACING DIAGRAM



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

EX. FCE Planting Area # 1 – 1.04 acres

Planting units required: 350 WHIPS PER ACRE x 1.04 = (364 whips)
Planting units provided: (333 whips and 18 trees)

Qty	Species	Size	Spacing	Total FCA Units
6	Acer rubrum – Red maple	1" cal.	15' o.c.	
12	Quercus alba – White oak	1" cal.	15' o.c.	
				18 Total 1" caliper trees
53	Acer rubrum – Red maple	2–3' whip	11' o.c.	
40	Cercis canadensis – Red bud	2–3' whip	11' o.c.	
40	Cornus florida – Flowering dogwood	2–3' whip	11' o.c.	
40	Liriodendron tulipifera – Tulip poplar	2–3' whip	11' o.c.	
40	Prunus serotina ~ Black cherry	2–3' whip	11' o.c.	
40	Robinia pseudo-acacia – Black locust	2–3' whip	11' o.c.	
40	Quercus alba – White oak	2–3' whip	11' o.c.	
40	Viburnum prunifolium – Blackhaw	2–3' whip	11' o.c.	
				333 Total whip plantings

1" CAL. TREES = 200/ACRE (18 TREES/200 = 0.09 AC.)
WHIPS w/shelters = 350/ACRE = 350 x 0.95 AC. = 333 WHIPS

FCE Planting Area # 7 – 7.66 acres

Planting units required: 350 WHIPS PER ACRE x 7.66 = (2681 whips)
Planting units provided: (2506 whips and 100 trees)

Qty	Species	Size	Spacing	Total FCA Units
50	Acer rubrum ~ Red maple	1" cal.	15' o.c.	
50	Quercus alba – White oak	1" cal.	15' o.c.	
				100 Total 1" caliper trees
500	Acer rubrum – Red maple	2–3' whip	11' o.c.	
450	Cercis canadensis – Red bud	2–3' whip	11' o.c.	
400	Cornus florida – Flowering dogwood	2–3' whip	11' o.c.	
300	Liriodendron tulipifera – Tulip poplar	2–3' whip	11' o.c.	
300	Prunus serotina – Black cherry	2–3' whip	11' o.c.	
200	Robinia pseudo-acacia – Black locust	2–3' whip	11' o.c.	
200	Quercus alba – White oak	2–3' whip	11' o.c.	
156	Viburnum prunifolium – Blackhaw	2–3' whip	11' o.c.	
				2506 Total whip plantings

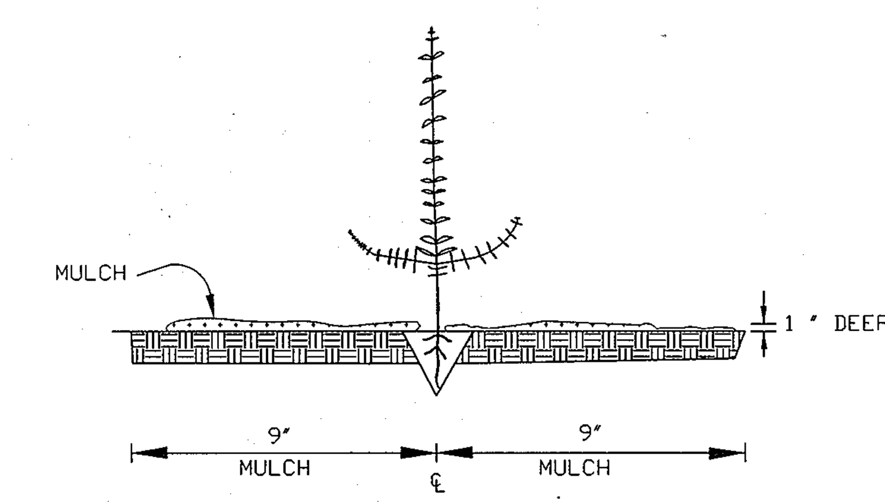
1" CAL. TREES = 200/ACRE (100 TREES/200 = 0.50 AC.)
WHIPS w/shelters = 350/ACRE = 350 x 7.16 AC. = 2506 WHIPS

FCE Planting Area # 8 – 1.347 acres

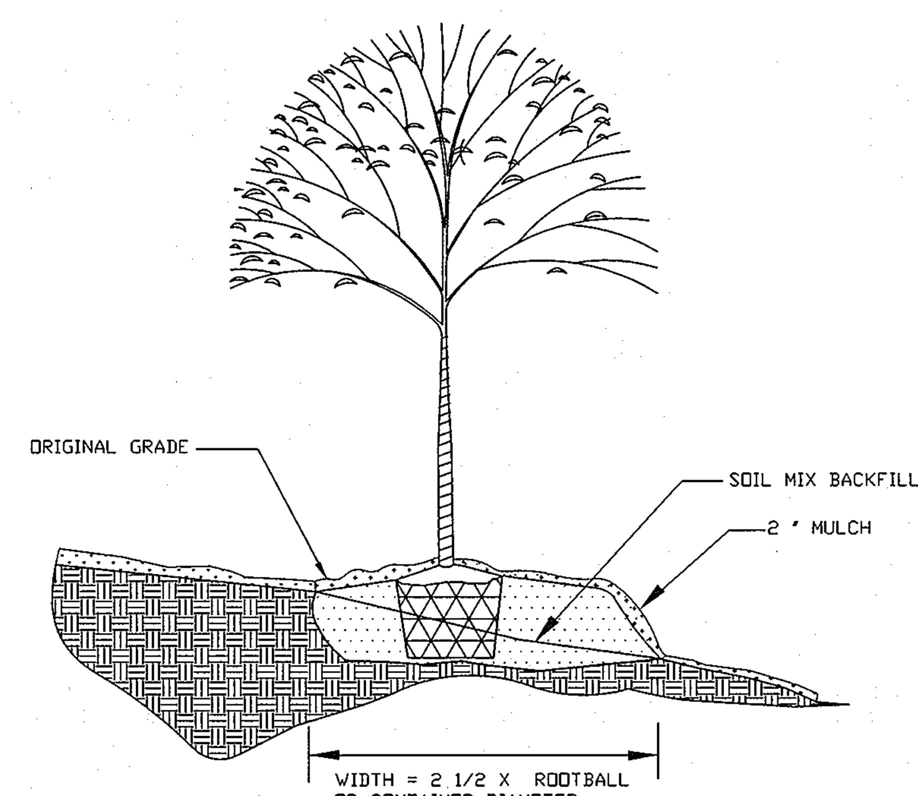
Planting units required: 350 WHIPS PER ACRE x 1.347 = (472 whips)
Planting units provided: (440 whips and 18 trees)

Qty	Species	Size	Spacing	Total FCA Units
6	Acer rubrum – Red maple	1" cal.	15' o.c.	
12	Quercus alba – White oak	1" cal.	15' o.c.	
				18 Total 1" caliper trees
65	Acer rubrum – Red maple	2–3' whip	11' o.c	
60	Cercis canadensis – Red bud	2–3' whip	11' o.c	
60	Cornus florida – Flowering dogwood	2–3' whip	11' o.c	
60	Liriodendron tulipifera – Tulip poplar	2–3' whip	11' o.c	
50	Prunus serotina – Black cherry	2–3' whip	11' o.c	
50	Robinia pseudo-acacia – Black locust	2–3' whip	11' o.c	
50	Quercus alba – White oak	2–3' whip	11' o.c	
45	Viburnum prunifolium – Blackhaw	2–3' whip	11' o.c	
				440 Total whip plantings

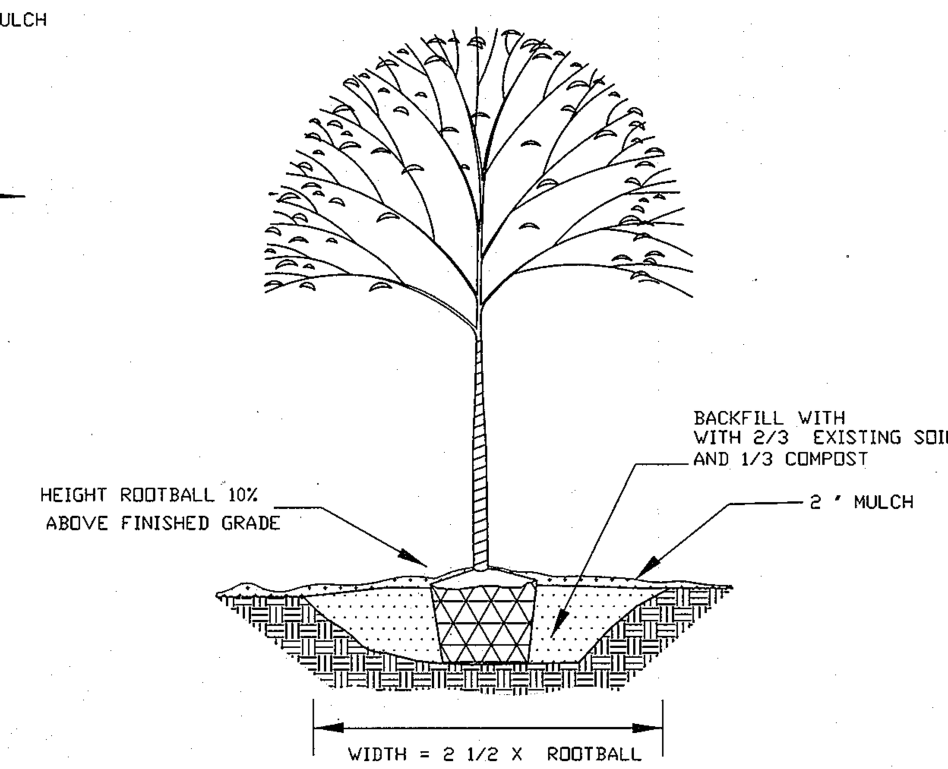
1" CAL. TREES = 200/ACRE (18 TREES/200 = 0.09 AC.)
WHIPS w/shelters = 350/ACRE = 350 x 1.257 AC. = 440 WHIPS



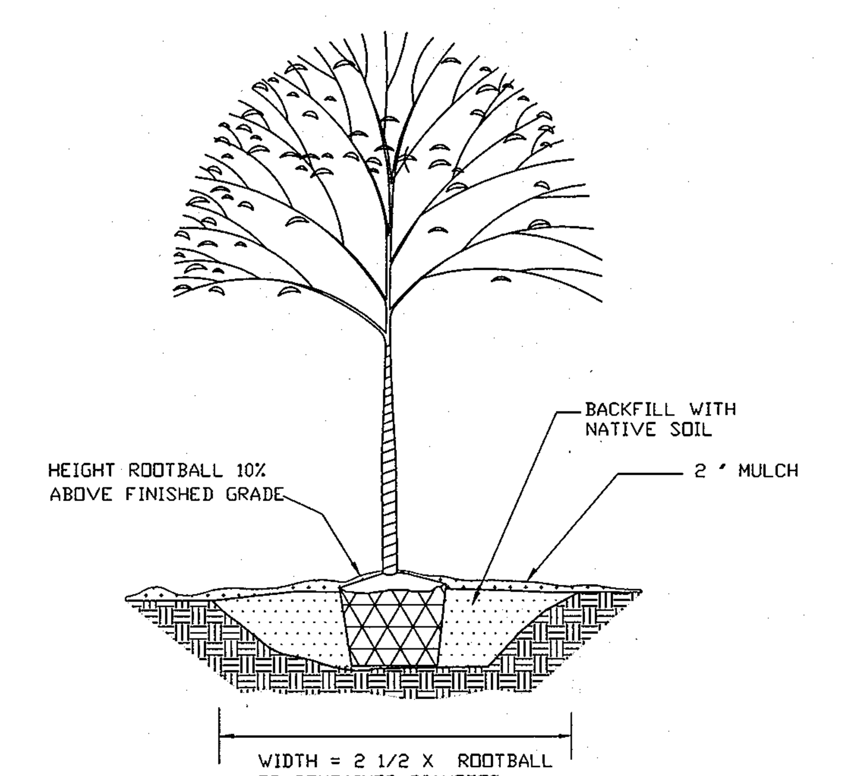
Seeding and Whip Planting Specification



Planting on Slope



Disturbed Soil



Undisturbed Soil

ON-SITE SIGNAGE

FOREST CONSERVATION EASEMENT

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

TREES FOR YOUR FUTURE

15" MINIMUM

11" MINIMUM

NO.	DESCRIPTION	DATE
1	REVISED FOREST CONSERVATION PLANTING	10-19-11
1	REVISED OWNER AND DEVELOPER	10-19-11
	REVISIONS	

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 # WDSP93MD0610044B
JOHN P. CANOLES

Owner
Meriwether Farm II, LLC
c/o Second Goodier, LLC
10715 Charter Drive
Suite 350
Columbia, Maryland 21044
Ph: (410) 997-7501
Attn: Mr. Robert C. Goodier, Jr.

Developer
Toll Brothers, Inc.
Maryland Division
7164 Columbia Gateway Drive
Suite 230
Columbia, Maryland 21046
Ph: (410) 997-7501
Attn: Mr. Jeff Driscoll

DONALD M. VITUCCI, P.E. — DATE 9-22-09
"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 2-22-11."

FOREST CONSERVATION NOTES & DETAILS

MERIWETHER FARM

SECTION TWO

PHASE TWO

BUILDABLE LOTS 11 THRU 46, NON-BUILDABLE PRESERVATION PARCELS 'F', 'G', 'H' & 'I' AND BUILDABLE PRESERVATION PARCEL 'J'

(A RESUBDIVISION OF BUILDABLE BULK PARCEL 'E', MERIWETHER FARM, SECTION TWO, PHASE ONE, F-08-199)
ZONED: RC-DEO
TAX MAP No.: 21 PARCEL No.: 28 GRID Nos.: 15, 16, 21 & 22
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN
DATE: SEPTEMBER 21, 2009
SHEET 30 OF 30

F-09-044

I:\2004\04056\dwg\PHASE TWO SECTION TWO FINALS\SHEET 28-30 FOREST CONSERVATION PLANS.dwg, 9/21/2009 1:54:35 PM, jamesl, 1:1