FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLAN

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' & NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONING: RC-DEO

TAX MAP No. 2 GRID No. 22 PARCEL No. 75

FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SHEET INDEX

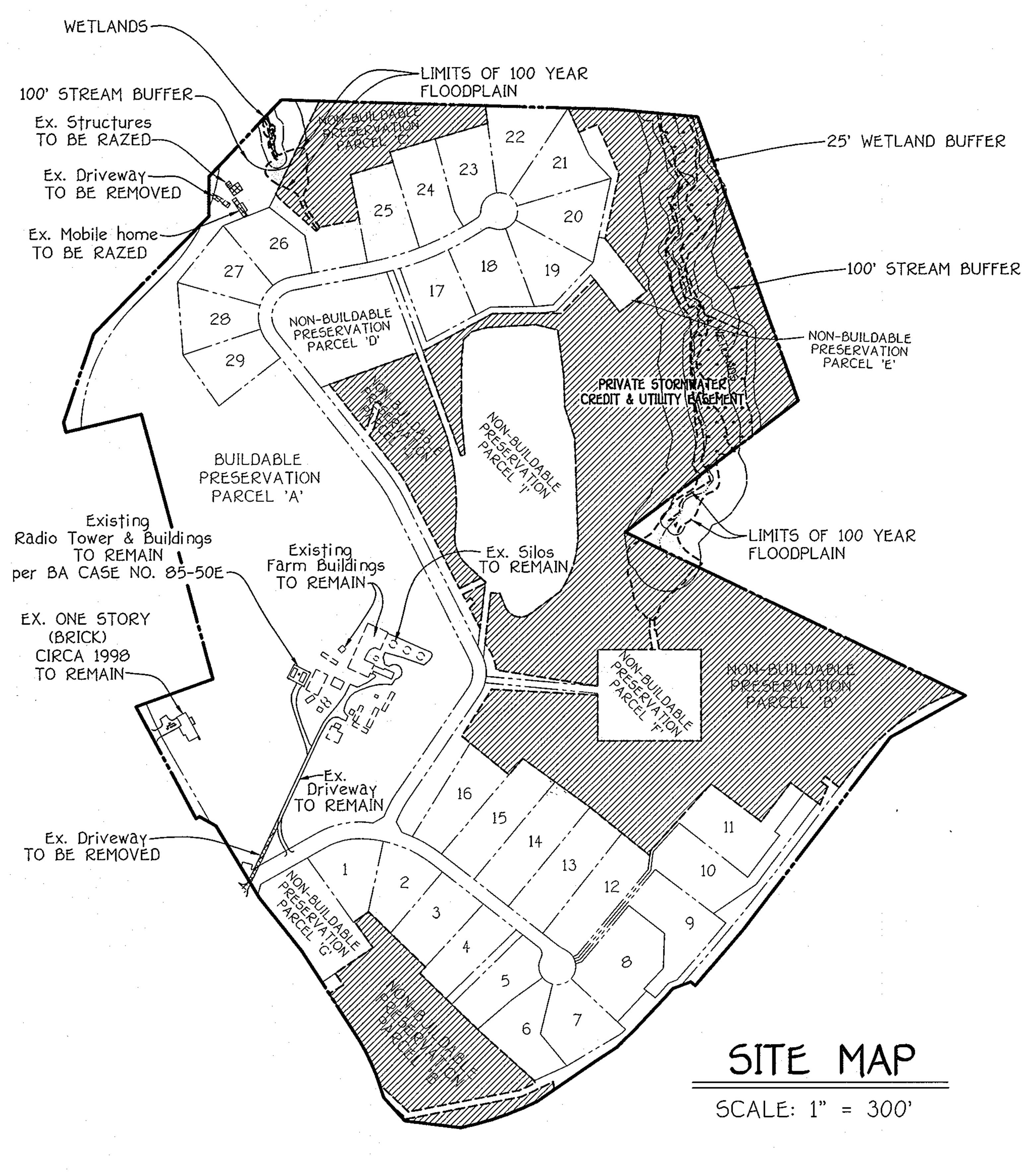
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	WATERSVILLE ROAD WIDENING - PLAN AND PROFILE
3	WATERSVILLE ROAD WIDENING - CROSS-SECTIONS
4	SHADY PASTURE COURT - PLAN AND PROFILE
5	HARVEST DANCE COURT - PLAN AND PROFILE
6	HARVEST DANCE COURT - PLAN AND PROFILE
7-8	LANDSCAPE PLAN
9-12	STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
13-16	STORM DRAIN PROFILES
17-18	STORM DRAIN DRAINAGE AREA MAP
19-22	STORMWATER MANAGEMENT NOTES AND DETAILS
23-24	FOREST CONSERVATION PLAN
25-26	SEDIMENT & EROSION CONTROL NOTES & DETAILS
27-29	SOIL BORINGS
30	STORMWATER MANAGEMENT NOTES AND DETAILS
31	TRAFFIC CONTROL PLAN AND STRIPING PLAN

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	R/W WIDTH
HARVEST DANCE COURT	PUBLIC ACCESS PLACE	25 M.P.H.	40'
SHADY PASTURE COURT	PUBLIC ACCESS STREET / PUBLIC ACCESS PLACE	30 M.P.H. / 25 M.P.H.	50' / 40'

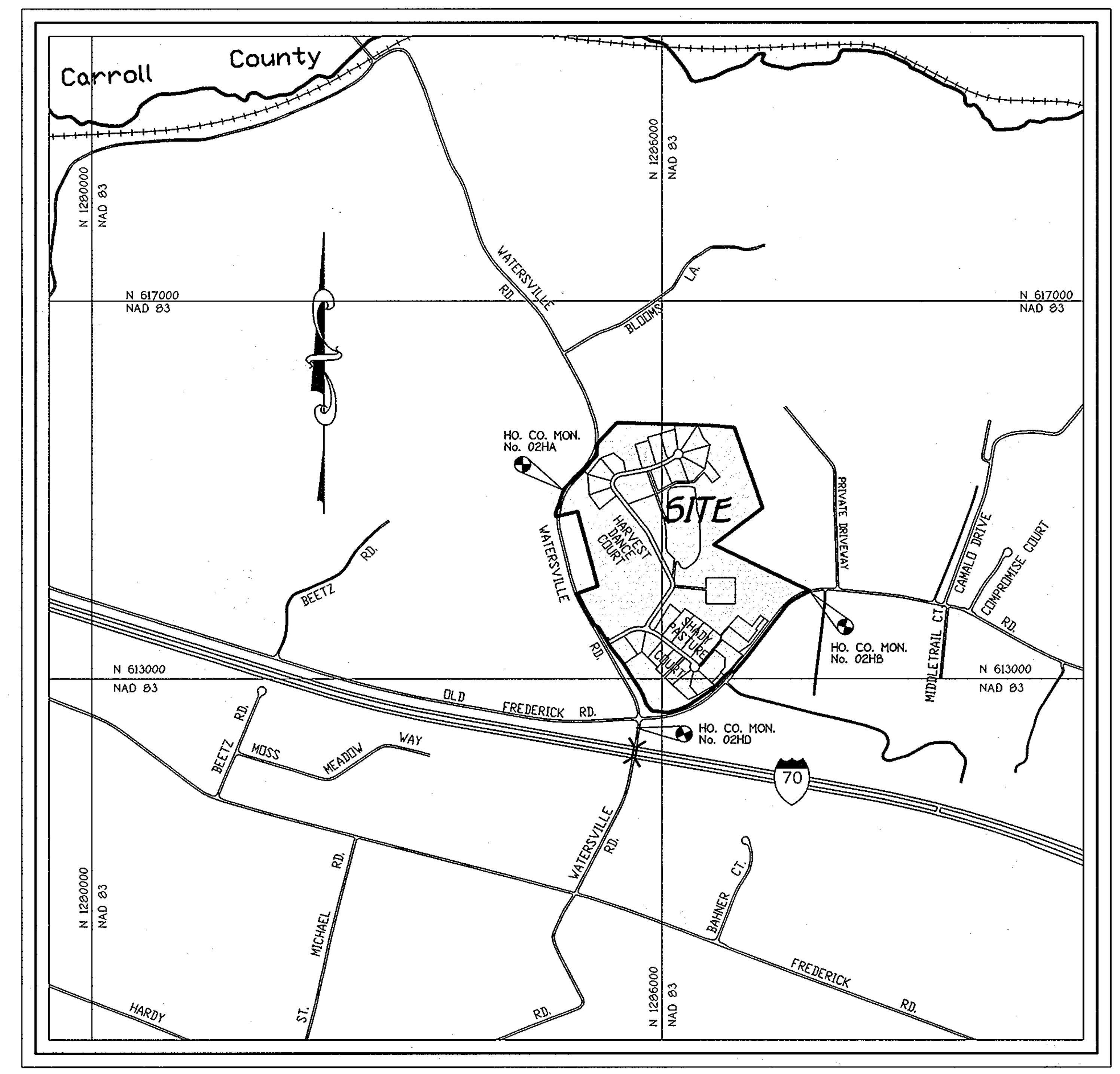
TRAFFIC CONTROL SIGNS

ROAD NAME	CENTERLINE STA.	OFFSET	POSTED SIGN	SIGN CODE
HARVEST DANCE COURT	3+00	14' L	STOP AHEAD	W3-1a
HARVEST DANCE COURT	0+40	14' L	STOP	R1-1
HARVEST DANCE COURT	1+90	25' R	TURN SPEED LIMIT 15	W1-1(L) W13-1
HARVEST DANCE COURT	9+00	14' L	TURN SPEED LIMIT 15	W1-1(L) W13-1
HARVEST DANCE COURT	15+00	14' R	TURN SPEED LIMIT 10	W1-1(L) W13-1
HARVEST DANCE COURT	21+75	14' L	TURN SPEED LIMIT 10	W1-1(L) W13-1
SHADY PASTURE COURT	0+50	15' L	STOP	R1-1
SHADY PASTURE COURT	2+00	14' R	SPEED LIMIT 25	R2-1
SHADY PASTURE COURT	3+00	14' L	STOP AHEAD	W3-1a



SITE MAP

SCALE: 1" = 300'



ADC MAP No. 2, GRID No. J6

VICINITY MAP

SCALE: 1" = 1200'

APPROVED: DEPARTMENT OF PUBLIC WORKS	
CHIEF, BUREAU OF HIGHWAYS	1-22-09 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT	2/23/09 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	2/20/09 DATE

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. THE CONTRACTOR OR DEVELOPER 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). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
5. COORDINATES BASED ON NAD'83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 02HA, 02HB & 02HD.

02HA	N 615,000.156 E 1,284,960.923	ELEV.= 736.063
02HB	N 613,910.926 E 1,287,573.278	ELEV.= 736.981
02HD	N 612,479.746 E 1,285,732.027	ELEV.= 746.801

6. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY MARS GROUP DATED NOVEMBER 2004 UNDER SP-05-018.
7. BACKGROUND INFORMATION:
   - A. SUBDIVISION NAME: THE LEGACY
   - B. TAX MAP NO.: 2
   - C. PARCEL NO.: 75
   - D. ZONING: RC-DEO
   - E. ELECTION DISTRICT: FOURTH
   - F. TOTAL TRACT AREA: 111.474 AC.±
   - G. NO. OF BUILDABLE LOTS: 30; 29 PROPOSED & 1 EXISTING DWELLING TO REMAIN
   - H. NO. OF OPEN SPACE LOTS: 0
   - I. NO. OF NON-BUILDABLE PRESERVATION PARCELS: 8
   - J. NO. OF BUILDABLE PRESERVATION PARCELS: 1
   - K. AREA OF BUILDABLE LOTS: 26.532 AC±
   - L. AREA OF OPEN SPACE LOTS: 0.00 AC.±
   - M. AREA OF NON-BUILDABLE PRESERVATION PARCELS: 54.454 AC.±
   - N. AREA OF BUILDABLE PRESERVATION PARCEL 'A': 25.013 AC.±
   - O. TOTAL AREA OF ROADWAY TO BE DEDICATED: 5.475 AC.
   - P. AREA OF FLOODPLAIN: 2.48 AC.±
   - Q. PREVIOUS FILE NOS.: SP-05-018 APPROVAL DATE: 1/20/06; BA-07-04C APPROVAL DATE: 5/21/07
   - R. DEED REFERENCE: 10247 / 675
8. NO CEMETERIES EXIST ON THE PROPERTY.
9. ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95 % COMPACTION OF AASHTO T-180.
10. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY PROVIDING 6.6 AC. OF ON-SITE FOREST RETENTION AND 10.2 AC. OF ON-SITE AFFORESTATION. THE TOTAL FOREST CONSERVATION AREA IS 16.8 ACRES. THE FOREST CONSERVATION SURETY AMOUNT TO FULFILL THE FOREST CONSERVATION OBLIGATION IS $279,656.00.
11. STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY AND MARYLAND 378 SPECIFICATIONS. THE PROPOSED STORMWATER MANAGEMENT FOR THIS SITE IS PROVIDED BY ONE MICRO-POOL EXTENDED DETENTION FACILITY, ONE POCKET POND & ONE RETENTION POND. WATER QUALITY IS PROVIDED IN EACH FACILITY ALONG WITH A COMBINATION OF A PRIVATE SURFACE SAND FILTER AND THREE LEVEL SPREADERS.
    - a. B.M.P. NO. 1 (MICRO-POOL) - OWNED BY H.O.A., MAINTAINED BY H.O.A. & HOWARD COUNTY
    - b. B.M.P. NO. 2 (LEVEL SPREADER) - OWNED BY H.O.A., MAINTAINED BY H.O.A.
    - c. B.M.P. NO. 3 (LEVEL SPREADER) - OWNED BY H.O.A., MAINTAINED BY H.O.A.
    - d. B.M.P. NO. 4 (LEVEL SPREADER) - OWNED BY H.O.A., MAINTAINED BY H.O.A.
    - e. B.M.P. NO. 5 (SURFACE SAND FILTER) - OWNED BY H.O.A., MAINTAINED BY H.O.A.
    - f. B.M.P. NO. 6 (RETENTION POND) - OWNED BY H.O.A., MAINTAINED BY H.O.A.
    - g. B.M.P. NO. 7 (POCKET POND) - OWNED BY H.O.A., MAINTAINED BY H.O.A. AND HOWARD COUNTY
    - f. CREDITS:
      1) WQv FOR LOTS 21 - 23 & 26 IS BEING PROVIDED BY THE USE OF LEVEL SPREADERS. THESE LEVEL SPREADERS ARE BEING USED TO MEET THE SHEET FLOW TO BUFFER CREDIT.
      2) WQv FOR LOT 25 IS BEING PROVIDED BY A PROPOSED RAINGARDEN. THE DOWNSPOUTS WILL BE DIS-CONNECTED THROUGH THE ROOFTOP DISCONNECTION CREDIT.
      3) THE REMAINING CREDITS INCLUDE NATURAL AREA CONSERVATION CREDITS AS INDICATED ON SHEETS 2 & 3 OF THIS SUBMISSION. THESE CREDITS ARE USED TO REDUCE THE REQUIRED CPv AND WQv FOR THOSE DRAINAGE AREAS.
12. THE NON-CRITICAL FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY FISHER, COLLINS & CARTER, INC. DATED APRIL, 2005.
13. THE PROPOSED WATER AND SEWER SYSTEMS SHALL BE PRIVATE. SEWER CONTRACT NO. 50-4386-D.
14. THE SUBJECT PROPERTY IS LOCATED OUTSIDE OF THE METROPOLITAN DISTRICT.
15. TOPOGRAPHIC CONTOURS BASED ON HARFORD AERIAL SURVEY, INC. FLOWN SURVEY DATED JANUARY 2005. FLOWN TOPO WAS FIELD VERIFIED BY FISHER, COLLINS & CARTER, INC. AND SHOWN AT 2' INTERVALS.
16. FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE IS TO BE PROVIDED AT THE JUNCTION OF THE FLAG OR PIPESTEM AND THE ROAD RIGHT-OF-WAY AND NOT ONTO THE FLAG OR PIPESTEM DRIVEWAY.
17. THE FOREST STAND DELINEATION AND WETLAND DELINEATION FOR THIS PROJECT WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., DATED APRIL 2005.
18. SOILS INFORMATION TAKEN FROM SOIL MAP No. 20, SOIL SURVEY, HOWARD COUNTY, MARYLAND, JULY, 1968 ISSUE.
19. THIS SUBDIVISION PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL NO. 45-2003 AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL NO. 75-2003. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS OR PARCELS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF A BUILDING OR GRADING PERMIT APPLICATION.
20. SUBJECT PROPERTY ZONED RC-DEO Per 02/02/04 COMPREHENSIVE ZONING PLAN.
21. AREA OF STEEP SLOPES (25% OR GREATER) LOCATED ON THIS PROPERTY AS DEFINED BY THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.116.b. IS 1.00 ACRE.
22. 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. BUILDABLE PRESERVATION PARCEL 'A'
OWNED: PRIVATELY
EASEMENT HOLDERS: HOMEOWNER'S ASSOCIATION & HOWARD COUNTY, MARYLAND
USE: AGRICULTURAL

B. NON-BUILDABLE PRESERVATION PARCEL 'B' OWNED: HOMEOWNER'S ASSOCIATION
EASEMENT HOLDERS: HOWARD COUNTY, MARYLAND & HOWARD COUNTY CONSERVANCY
USE: ENVIRONMENTAL PROTECTION

C. NON-BUILDABLE PRESERVATION PARCEL 'C'
OWNED: HOMEOWNER'S ASSOCIATION
EASEMENT HOLDERS: HOWARD COUNTY, MARYLAND & HOWARD COUNTY CONSERVANCY
USE: ENVIRONMENTAL PROTECTION

D. NON-BUILDABLE PRESERVATION PARCEL 'D'
OWNED: HOMEOWNER'S ASSOCIATION
EASEMENT HOLDER: HOWARD COUNTY, MARYLAND
USE: S.W.M.

E. NON-BUILDABLE PRESERVATION PARCEL 'E'
OWNED: HOMEOWNER'S ASSOCIATION
EASEMENT HOLDER: HOWARD COUNTY, MARYLAND
USE: S.W.M.

F. NON-BUILDABLE PRESERVATION PARCEL 'F'
OWNED: HOMEOWNER'S ASSOCIATION
EASEMENT HOLDER: HOWARD COUNTY, MARYLAND
USE: S.W.M.

G. NON-BUILDABLE PRESERVATION PARCEL 'G'
OWNED: HOMEOWNER'S ASSOCIATION
EASEMENT HOLDER: HOWARD COUNTY, MARYLAND
USE: S.W.M.

H. NON-BUILDABLE PRESERVATION PARCEL 'H'
OWNED: HOMEOWNER'S ASSOCIATION
EASEMENT HOLDERS: HOWARD COUNTY, MARYLAND & HOWARD COUNTY CONSERVANCY
USE: AGRICULTURAL

I. NON-BUILDABLE PRESERVATION PARCEL 'I'
OWNED: HOMEOWNER'S ASSOCIATION
EASEMENT HOLDERS: HOWARD COUNTY
USE: SHARED SEPTIC SYSTEM

23. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE WETLANDS, STREAM OR THEIR REQUIRED BUFFERS
24. A LANDSCAPE SURETY FOR 186 SHADE TREES & 149 EVERGREEN TREES IN THE AMOUNT OF $78,150 WILL BE PROVIDED IN THE DEVELOPER'S AGREEMENT.
25. NOISE ANALYSIS WAS PERFORMED BY MARS GROUP, DATED DECEMBER, 2004.
26. THE EXISTING TRAILER/MOBILE HOME, GARAGE AND SHED LOCATED ON BUILDABLE PRESERVATION PARCEL 'A' WILL BE RAZED PRIOR TO FINAL PLAT SIGNATURE. SEE PLAN VIEW ON SHEET 12.
27. 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.
28. 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."

GENERAL NOTES CONTINUED:

29. 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
30. DRIVEWAYS SHALL BE PROVIDED IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL R-6.06 IN THE VOL. IV DESIGN MANUAL.
31. ANY WELL BOX SHALL BE A MINIMUM OF 50' FROM LOW PRESSURE SEWER MAIN.
32. ANY CHANGES TO A PRIVATE SEWAGE EASEMENT SHALL REQUIRE A REVISED PERC CERTIFICATION PLAN.
33. STORMWATER MANAGEMENT BMP*'S 1 AND 7 ARE PUBLIC FACILITIES AND ARE JOINTLY MAINTAINED BY H.O.A. AND HOWARD COUNTY. THE REMAINING FACILITIES *2 THRU *6 ARE PRIVATELY OWNED AND MAINTAINED BY H.O.A.
34. THIS SUBDIVISION PLAN IS SUBJECT TO COMPLIANCE WITH THE APPROVAL CONDITIONS GRANTED PER THE DECISION AND ORDER DATED MAY 21, 2007 FROM THE BOARD OF APPEALS HEARING EXAMINER FOR BA CASE No. 07-04C FOR A CONDITIONAL USE TO ALLOW A FARM TENANT HOUSE ON A PRESERVATION PARCEL OF LESS THAN 50 ACRES IN SIZE BUT GREATER THAN 25 ACRES.
35. THE GROUND WATER APPROPRIATIONS PERMIT No. HO2007G.013 RECEIVED MDE APPROVAL ON MARCH 1, 2008.
36. THIS PROJECT IS SUBJECT TO M.D.E. WATER MANAGEMENT ADMINISTRATION TRACKING No. 200760060 FROM THE APPLICATION THAT WAS SUBMITTED ON JANUARY 5, 2007.
37. THE GROUNDWATER DISCHARGE PERMIT NUMBER IS 06-DP-3558 RECEIVED MDE APPROVAL IN JANUARY, 2008.
38. ON JUNE 19, 2008, A DESIGN MANUAL WAIVER WAS APPROVED TO REDUCE THE 'B' DIMENSION (ROAD SHOULDER) OF DETAIL R-1.01 FROM 4' TO 2' IN WIDTH AND TO REDUCE THE ROAD RIGHT-OF-WAY FOR HARVEST DANCE COURT AND SHADY PASTURE COURT (EAST OF HARVEST DANCE COURT) FROM 50' TO 40' IN WIDTH.
39. 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.
40. THIS AREA DESIGNATES A SHARED SEWAGE EASEMENT FOR LOTS 1-7 AND 16-29.

ALDO [illegible] — 1-8-09 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 2-22-09."

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

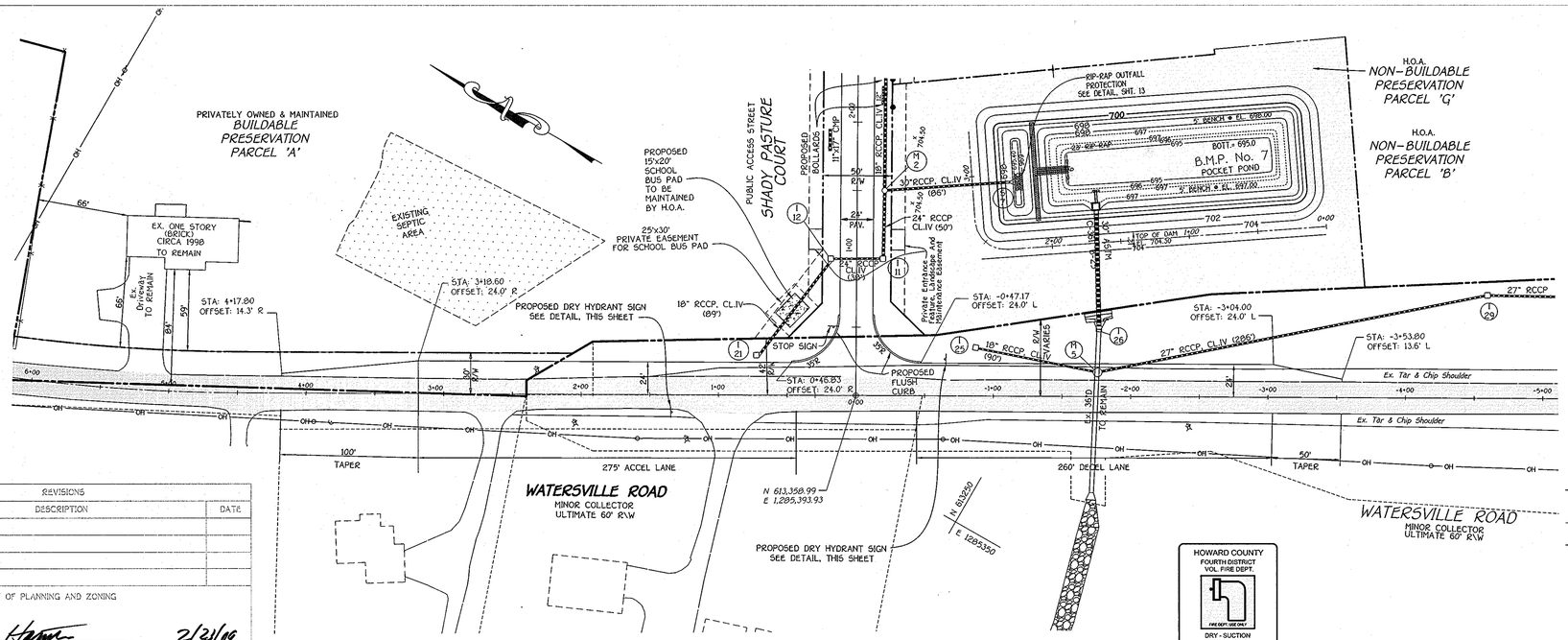
OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

TITLE SHEET
THE LEGACY
LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'
ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 1 OF 31

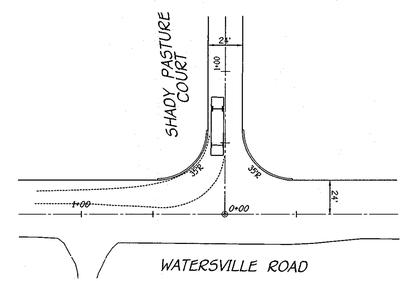
F-07-052

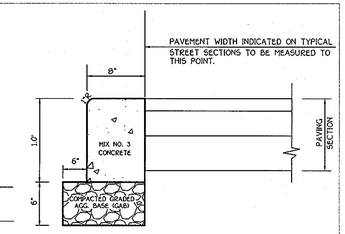
I:\2004\04002\dwg\04002-3001 SHEET 1 FINAL ROAD TITLE SHEET.dwg, 1/6/2009 1:50:22 PM, jamesl, 1:1



PLAN

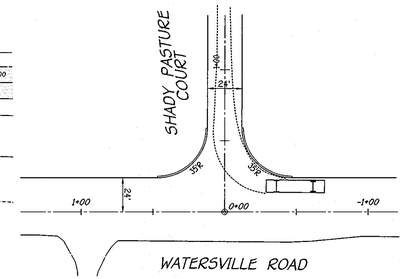
SCALE: 1" = 50'





CURB FLUSH (R-3.07)

NO SCALE



BUS TURNING MOVEMENT

SCALE: 1" = 50'

DRY HYDRANT SIGN

REVISIONS		
NO.	DESCRIPTION	DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hanna — CHIEF, DIVISION OF LAND DEVELOPMENT — 2/21/09 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 2/20/09 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 1-22-09 DATE

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO

TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75

FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

WATERSVILLE ROAD WIDENING @
SHADY PASTURE COURT
PLAN AND PROFILE

OWNER
MR. STANLEY H. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SCIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

SCALE: AS SHOWN	DATE: JANUARY, 2009	DWG. NO. 2 OF 31
DES. R.A.I.	DRN. J.C.L.	CHK. A.M.V.

STATE OF MARYLAND — ALDO M. VITALI — No. 20748

1-9-09 DATE

"Professional Engineer 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 2-22-09."

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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ELLICOTT CITY, MARYLAND 21042
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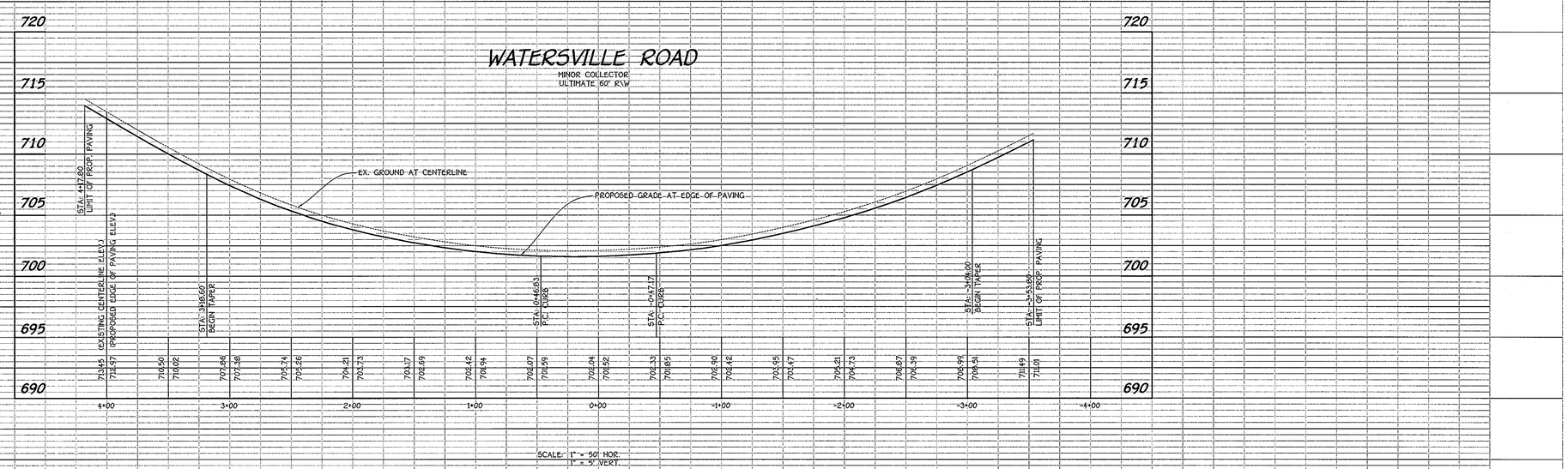


F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 2-3 FINAL ROAD CROSS SECTIONS.dwg, 1/6/2009 2:12:38 PM, jamesl, 1:1

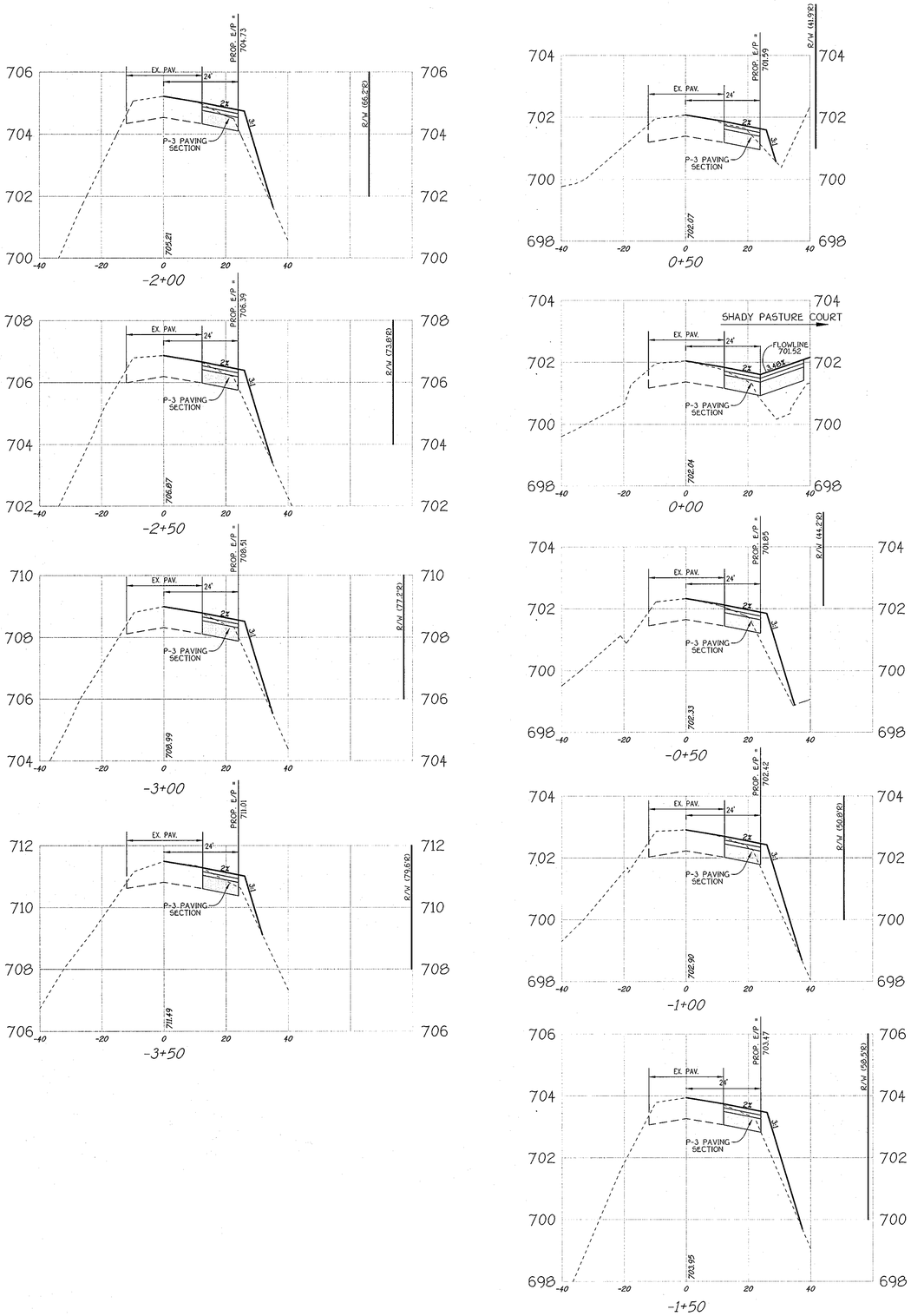
APPROVED: DEPARTMENT OF PUBLIC WORKS

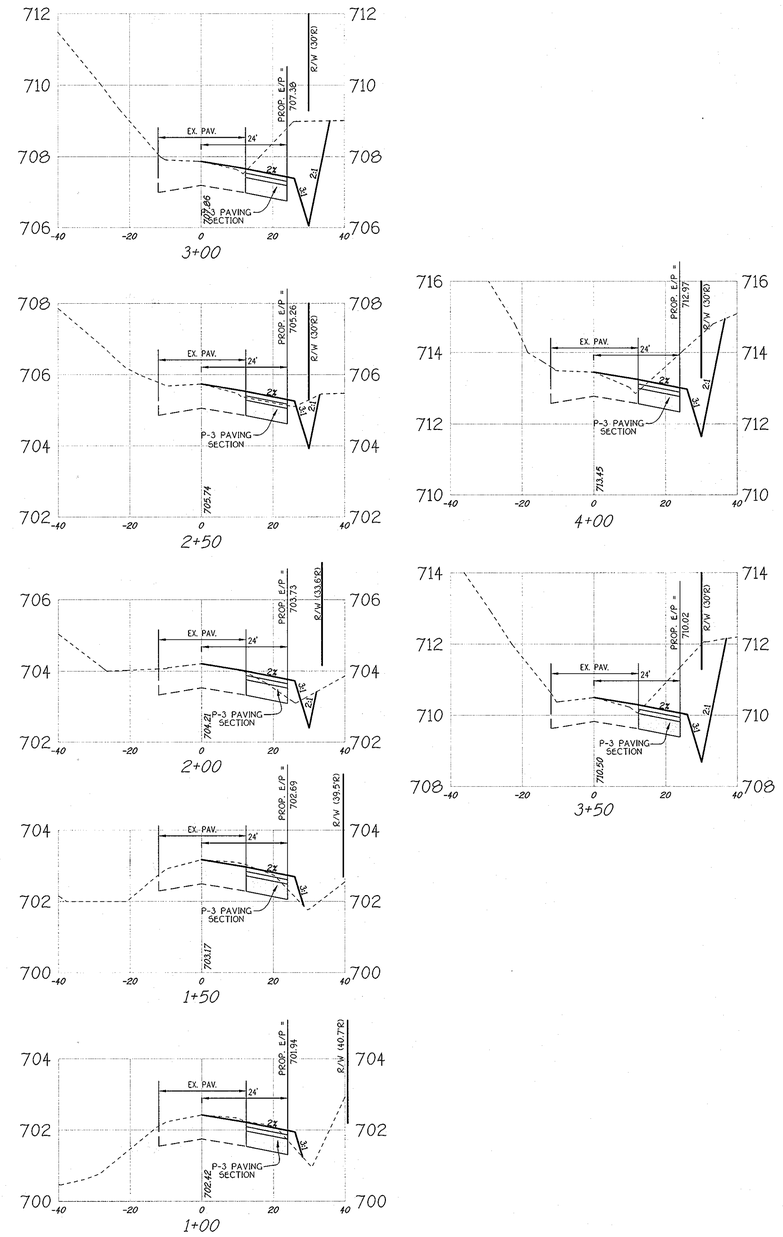
CHIEF, BUREAU OF HIGHWAYS — DATE 1-22-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

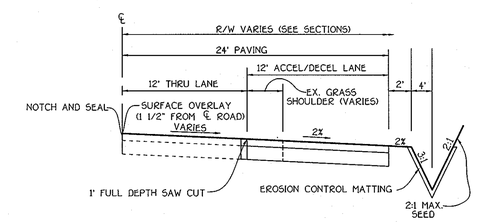
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 2/23/09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/20/09



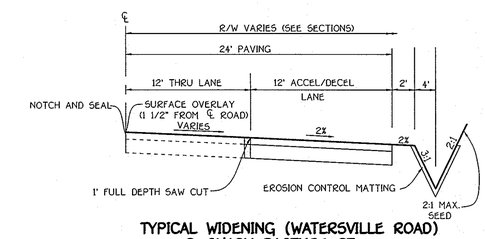


NOTE: WIDENING TO BE DONE IN ACCORDANCE WITH NEW VOLUME IV DESIGN MANUAL, DETAIL R-1.08



TYPICAL WIDENING (WATERSVILLE ROAD) @ SHADY PASTURE CT. STA. -3+00 TO STA. 2+00

NO SCALE



TYPICAL WIDENING (WATERSVILLE ROAD) @ SHADY PASTURE CT. WITHOUT GRASS SHOULDER

NO SCALE

WATERSVILLE ROAD WIDENING @ SHADY PASTURE COURT CROSS-SECTIONS

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

FISHER, COLLINS & CARTER, INC.
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COLUMBIA, MARYLAND 21045

ALDO M. [illegible] — DATE 1-9-09

"Professional Engineer, 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 2-22-09."

WATERSVILLE ROAD CROSS-SECTIONS

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 3 OF 31

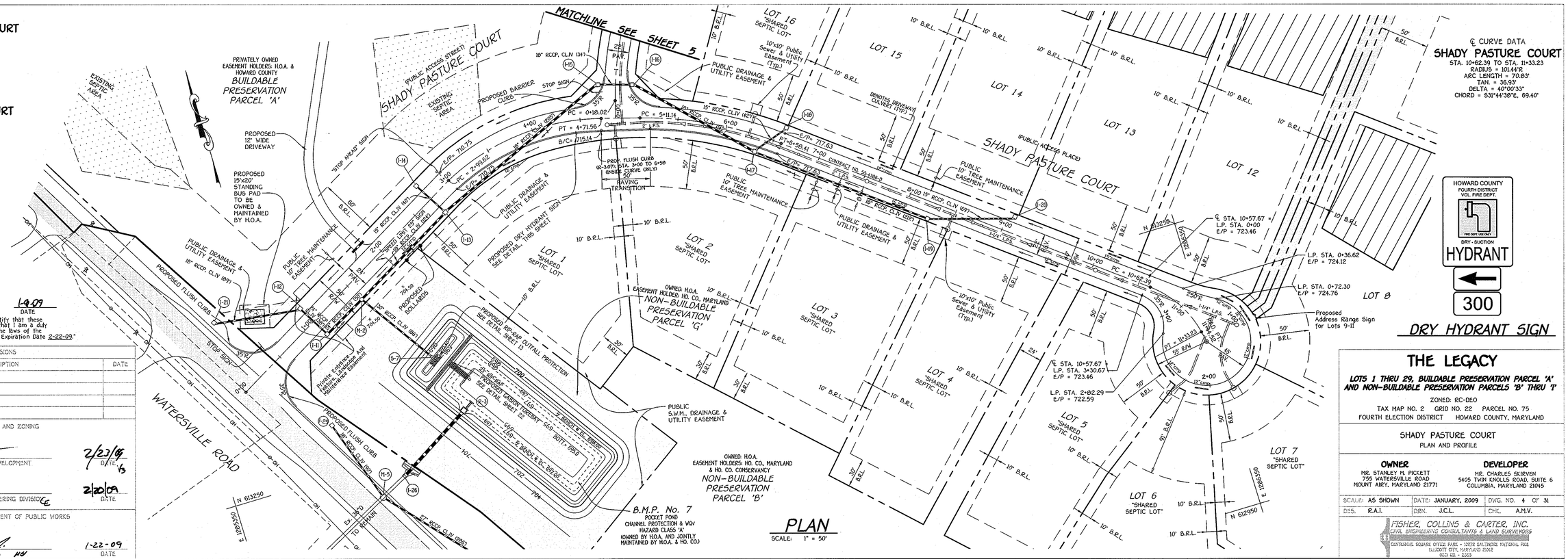
F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 2-3 FINAL ROAD CROSS SECTIONS.dwg, 1/6/2009 2:10:18 PM, jamesl,
1:1

℄ CURVE DATA
SHADY PASTURE COURT
STA. 5+11.14 TO STA. 6+58.41
RADIUS = 380.00'R
ARC LENGTH = 147.27'
TAN. = 74.57'
DELTA = 22°12'18"
CHORD = S62°51'04"E, 146.35'

℄ CURVE DATA
SHADY PASTURE COURT
STA. 2+99.62 TO STA. 4+71.56
RADIUS = 230.00'R
ARC LENGTH = 171.94'
TAN. = 90.21'
DELTA = 42°50'03"
CHORD = N84°37'45"E, 167.97'

℄ CURVE DATA
SHADY PASTURE COURT
STA. 10+62.39 TO STA. 11+33.23
RADIUS = 101.44'R
ARC LENGTH = 70.83'
TAN. = 36.93'
DELTA = 40°00'33"
CHORD = S31°44'38"E, 69.40'



PLAN
SCALE: 1" = 50'

ALDO M. VISCONTE
1-9-09
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 2-22-09."

REVISIONS		
NO.	DESCRIPTION	DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hunter — CHIEF, DIVISION OF LAND DEVELOPMENT — 2/23/09 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 2/20/09 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 1-22-09 DATE

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

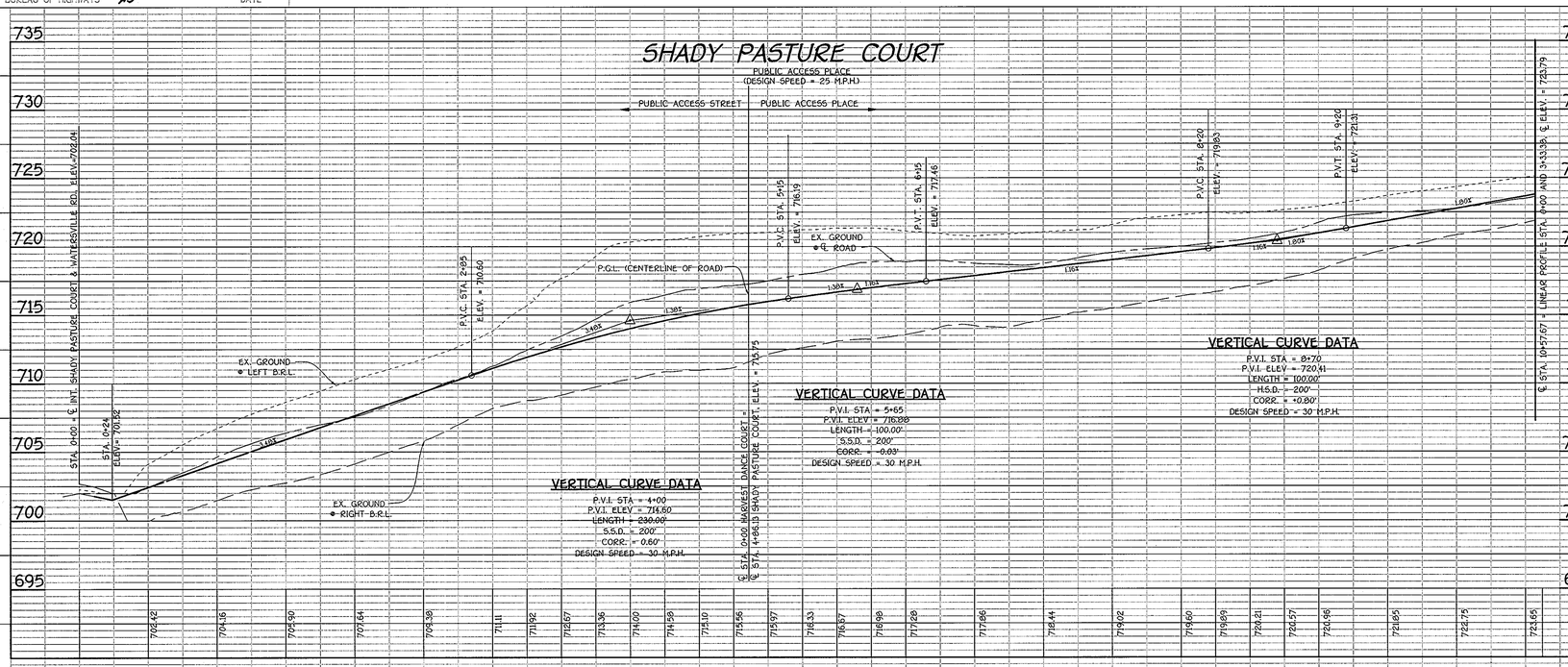
SHADY PASTURE COURT
PLAN AND PROFILE

OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

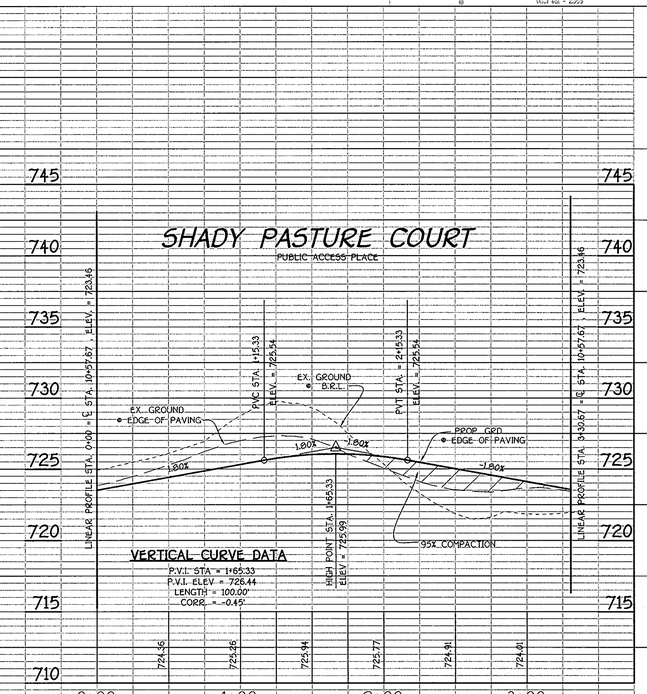
DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

SCALE: AS SHOWN	DATE: JANUARY, 2009	DWG. NO. 4 OF 31
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



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



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

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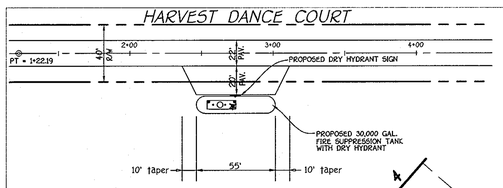
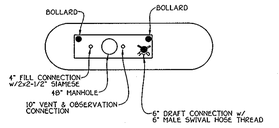


FIRE SUPPRESSION PULL-OFF AREA

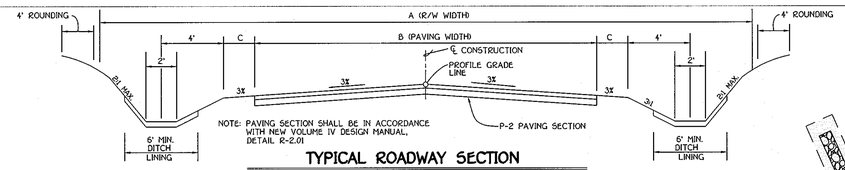
NO SCALE



TANK DETAIL

NO SCALE

NOTE: TANK AND PULL-OFF AREA ARE TAKEN FROM "SPECIFICATIONS FOR UNDERGROUND WATER STORAGE TANKS FOR FIRE PROTECTION" PREPARED BY KCI TECHNOLOGIES DATED AUGUST, 2007.



NOTE: PAVING SECTION SHALL BE IN ACCORDANCE WITH NEW VOLUME IV DESIGN MANUAL, DETAIL R-2.01

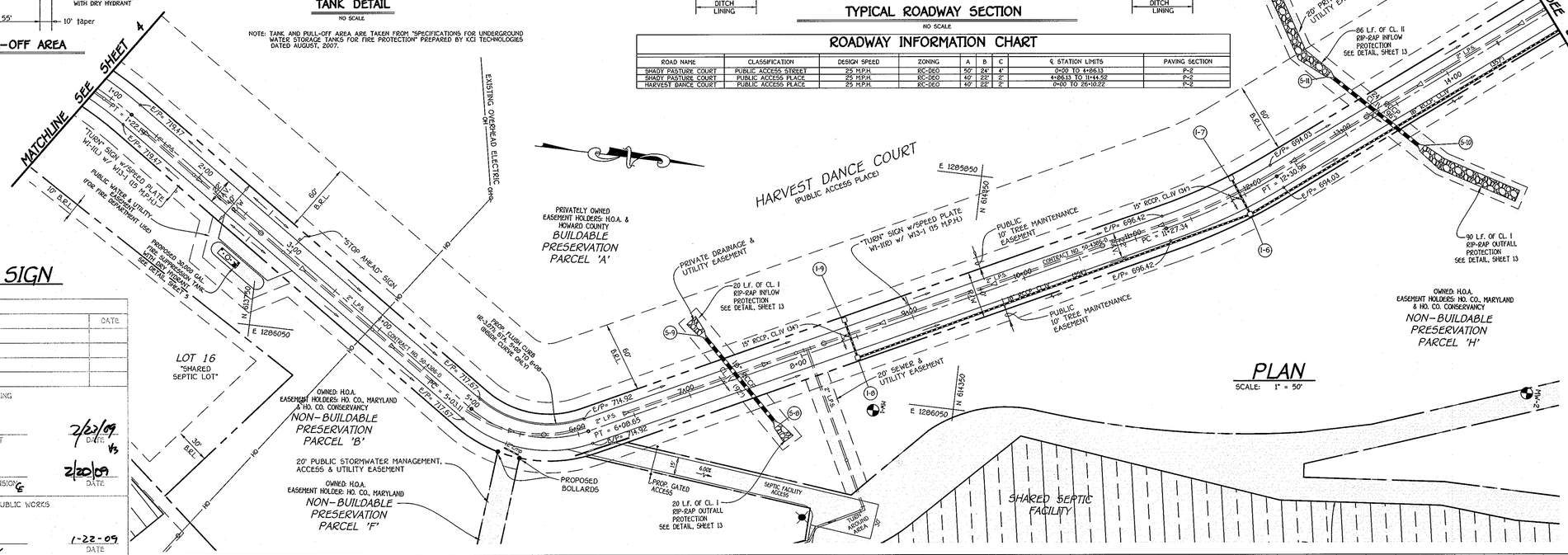
TYPICAL ROADWAY SECTION

NO SCALE

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	A	B	C	℄ STATION LIMITS	PAVING SECTION
SHADY PASTURE COURT	PUBLIC ACCESS STREET	25 M.P.H.	RC-DEO	50'	24'	4'	0+00 TO 4+86.13	P-2
SHADY PASTURE COURT	PUBLIC ACCESS PLACE	25 M.P.H.	RC-DEO	40'	22'	2'	4+86.13 TO 11+44.52	P-2
HARVEST DANCE COURT	PUBLIC ACCESS PLACE	25 M.P.H.	RC-DEO	40'	22'	2'	0+00 TO 26+10.22	P-2

DRY HYDRANT SIGN



PLAN

SCALE: 1" = 50'

℄ CURVE DATA

HARVEST DANCE COURT

STA. 5+03.11 TO STA. 6+08.65
RADIUS = 100.00'R
ARC LENGTH = 105.54'
TAN. = 58.28'
DELTA = 60°29'15"
CHORD = N03°53'47"E, 100.71'

℄ CURVE DATA

HARVEST DANCE COURT

STA. 11+27.34 TO STA. 12+30.96
RADIUS = 500.00'R
ARC LENGTH = 103.62'
TAN. = 51.99
DELTA = 11°52'25"
CHORD = N32°16'33"W, 103.43'

℄ CURVE DATA

HARVEST DANCE COURT

STA. 0+18.02 TO STA. 1+22.19
RADIUS = 330.00'R
ARC LENGTH = 104.17'
TAN. = 52.52'
DELTA = 18°05'08"
CHORD = N25°05'21"E, 103.73'

STATE OF MARYLAND
ALDO M. VITUCCI
No. 20748

1.9.09
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 2-22-09."

REVISIONS

NO.	DESCRIPTION	DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Harris — 2/27/09
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

2/20/09
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

1-22-09
CHIEF, BUREAU OF HIGHWAYS — DATE

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO

TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

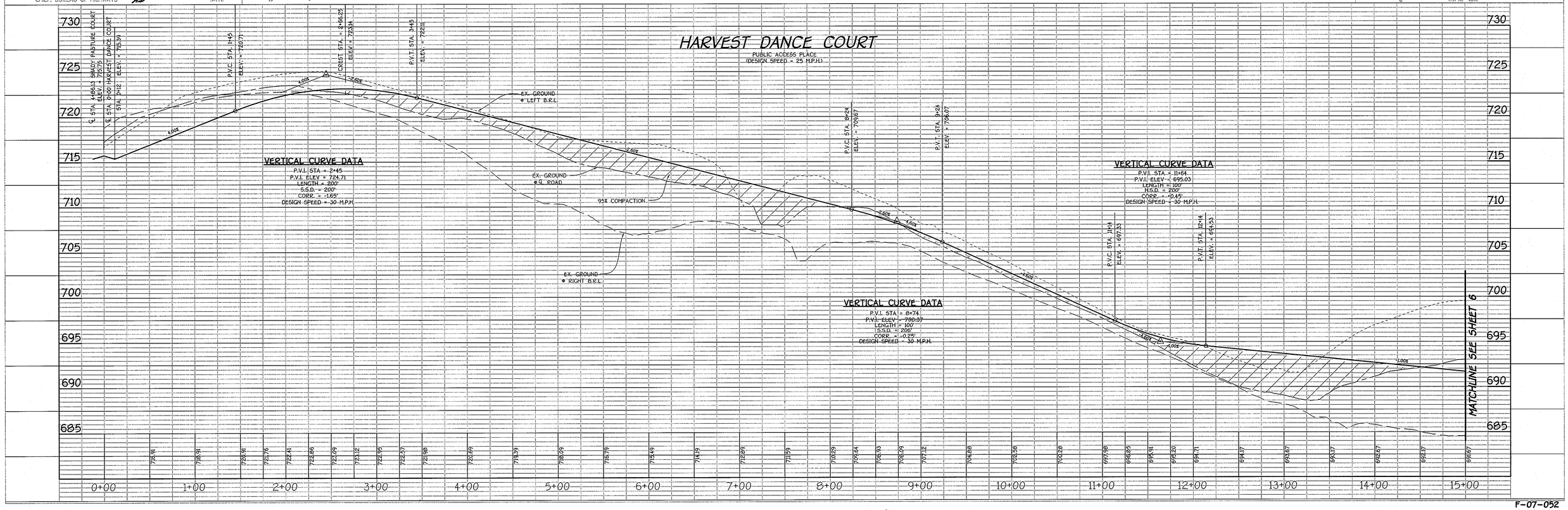
HARVEST DANCE COURT
PLAN AND PROFILE

OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

SCALE: AS SHOWN	DATE: JANUARY, 2009	DWG. NO. 5 OF 31
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



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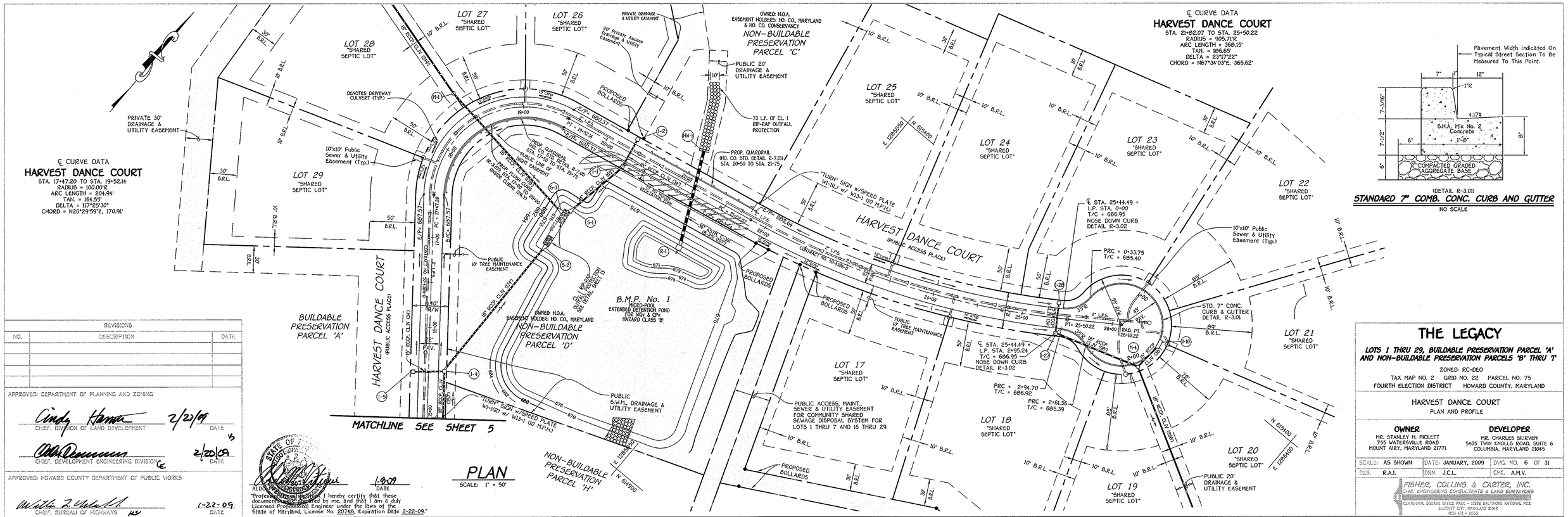

REVISIONS		
NO.	DESCRIPTION	DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Harner — CHIEF, DIVISION OF LAND DEVELOPMENT — 2/20/09 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 2/20/09 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 1-22-09 DATE

STATE OF MARYLAND — ALDO R. SCARPELLI

1-8-09 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 2-22-09."

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO

TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75

FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

HARVEST DANCE COURT

PLAN AND PROFILE

OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

SCALE: AS SHOWN	DATE: JANUARY, 2009	DWG. NO. 6 OF 31
DES. R.A.I.	DRN. J.C.L.	CHK. A.M.V.

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(410) 461 - 2855

F-07-052

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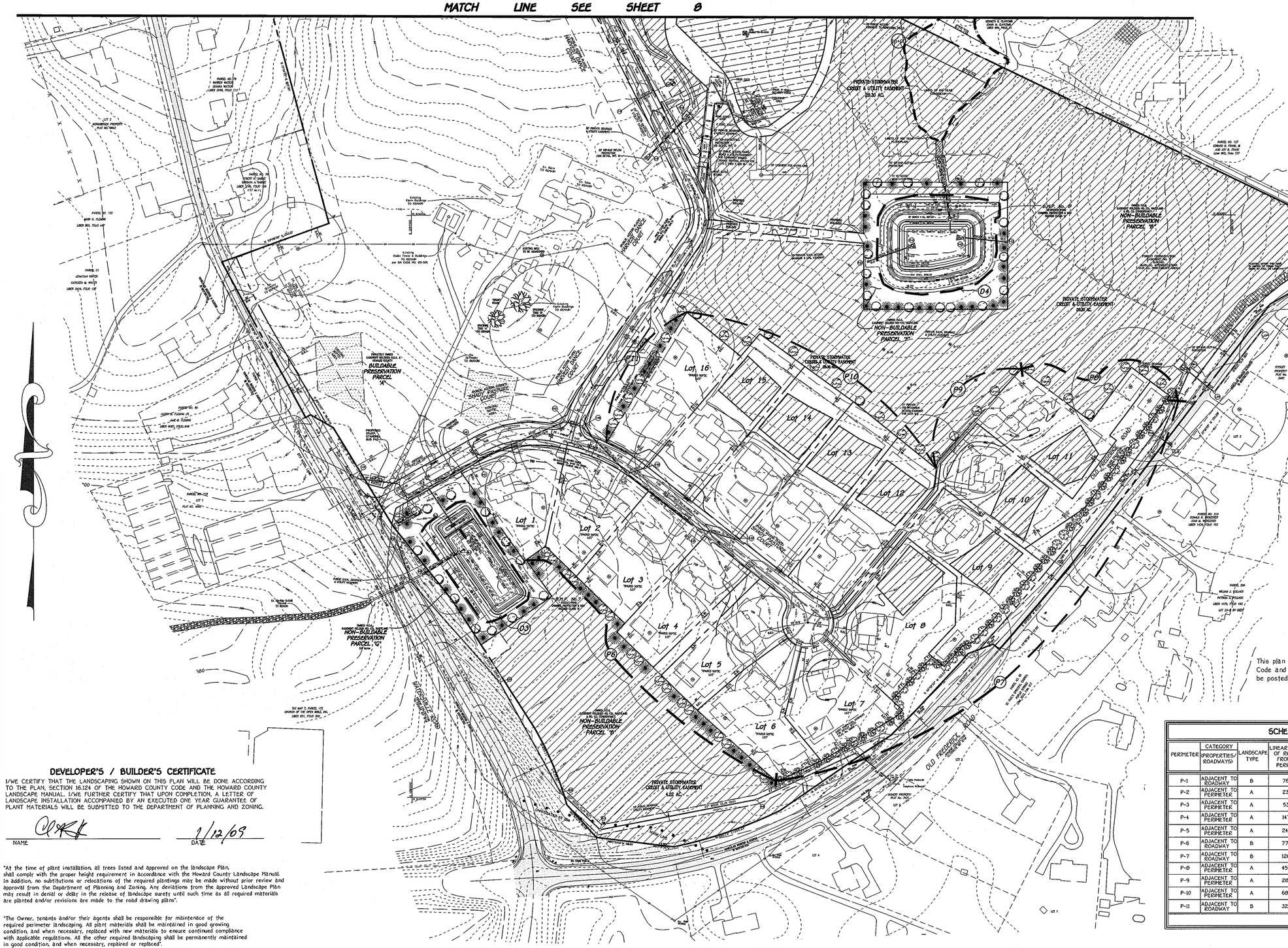
MATCH LINE SEE SHEET 8



Approved: Department Of Public Works

Chief Bureau Of Highways — Date: 1-22-09

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 2/23/09

Chief, Development Engineering Division — Date: 2/20/09

PLANT LIST

SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE
	84	ACER RUBRUM 'OCTOBER GLORY' RED MAPLE	2 1/2-3" CAL.
	77	PLATANUS OCCIDENTALIS 'BLOODGOOD' LONDON PLANETREE	2 1/2-3" CAL.
	25	QUERCUS ACUTISSIMA SAWTOOTH OAK	2 1/2-3" CAL.
	32	ILEX OPACA AMERICAN HOLLY	5' - 6' HT.
	117	PINUS STROBUS EASTERN WHITE PINE	6' - 8' HT.

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF TYPE 'B' PERIMETER	D1: 1032'	D2: 369'	D3: 683'	D4 870'
NUMBER OF TREES REQUIRED: SHADE TREES / EVERGREEN TREES	21 / 26	7 / 9	14 / 17	17 / 22
CREDIT FOR EXISTING VEGETATION (NO, YES AND X)	NO	YES (123')	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND X)	NO	NO	NO	NO
REMAINING PERIMETER	1032'	246'	683'	870'
TOTAL NUMBER OF TREES PROVIDED: SHADE TREES / EVERGREEN TREES	21 / 26	5 / 6	14 / 17	17 / 22
TOTAL :	57 SHADE TREES 71 EVERGREEN TREES			

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 186 shade and 149 evergreen trees will be posted as part of the Developer's Agreement in the amount of $78,150.00.

SCHEDULE A PERIMETER LANDSCAPE EDGE

PERIMETER	CATEGORY (PROPERTIES/ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET 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	769'	NO	NO	15	19	-
P-2	ADJACENT TO PERIMETER	A	231'	NO	NO	4	-	-
P-3	ADJACENT TO PERIMETER	A	532'	NO	NO	9	-	-
P-4	ADJACENT TO PERIMETER	A	1475'	NO	NO	25	-	-
P-5	ADJACENT TO PERIMETER	A	249'	NO	NO	4	-	-
P-6	ADJACENT TO ROADWAY	B	778'	NO	NO	16	19	-
P-7	ADJACENT TO ROADWAY	B	1268'	NO	NO	25	32	-
P-8	ADJACENT TO PERIMETER	A	455'	NO	NO	8	-	-
P-9	ADJACENT TO PERIMETER	A	280'	NO	NO	5	-	-
P-10	ADJACENT TO PERIMETER	A	687'	NO	NO	11	-	-
P-11	ADJACENT TO ROADWAY	B	329'	NO	NO	7	8	-
					TOTAL	129	78	0

DEVELOPER'S / BUILDER'S CERTIFICATE

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

NAME — DATE: 1/12/09

"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 maintenace 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".

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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(410) 461 - 2855

OWNER
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755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SCIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

ALDO — DATE: 1-9-09

"Professional Engineer 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 2-22-09."

PLAN
SCALE: 1" = 100'

THIS PLAN IS FOR LANDSCAPING PURPOSES ONLY

LANDSCAPE PLAN

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 7 OF 31

F-07-052

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Approved: Department Of Public Works

Chief Bureau Of Highways — Date: 1-22-09

Approved: Department Of Planning And Zoning

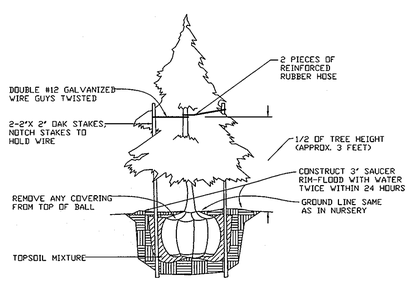
Chief, Division Of Land Development — Date: 2/27/09

Chief, Development Engineering Division — Date: 2/20/09

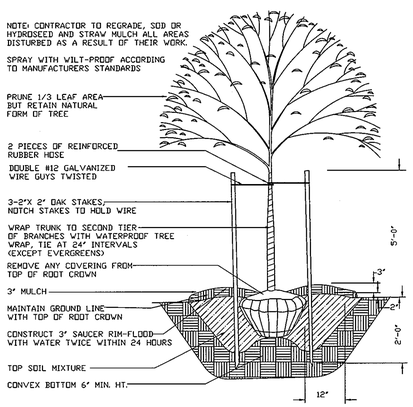
PLAN

SCALE: 1" = 100'

MATCH LINE SEE SHEET 7



EVERGREEN PLANTING DETAIL



TREE PLANTING DETAIL

PLANTING SPECIFICATIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

STATE OF MARYLAND — ALDO E. VITUCCI

ALDO E. VITUCCI — DATE: 1-8-09

"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 2-22-09."

THIS PLAN IS FOR LANDSCAPING PURPOSES ONLY

LANDSCAPE PLAN

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO

TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75

FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JANUARY, 2009

SHEET 8 OF 31

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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COLUMBIA, MARYLAND 21045

I:\2004\04002\dwg\04002-3001 SHEET 7-8 FINAL ROAD LANDSCAPE PLAN.dwg, 1/6/2009 3:39:26 PM, jamesl,
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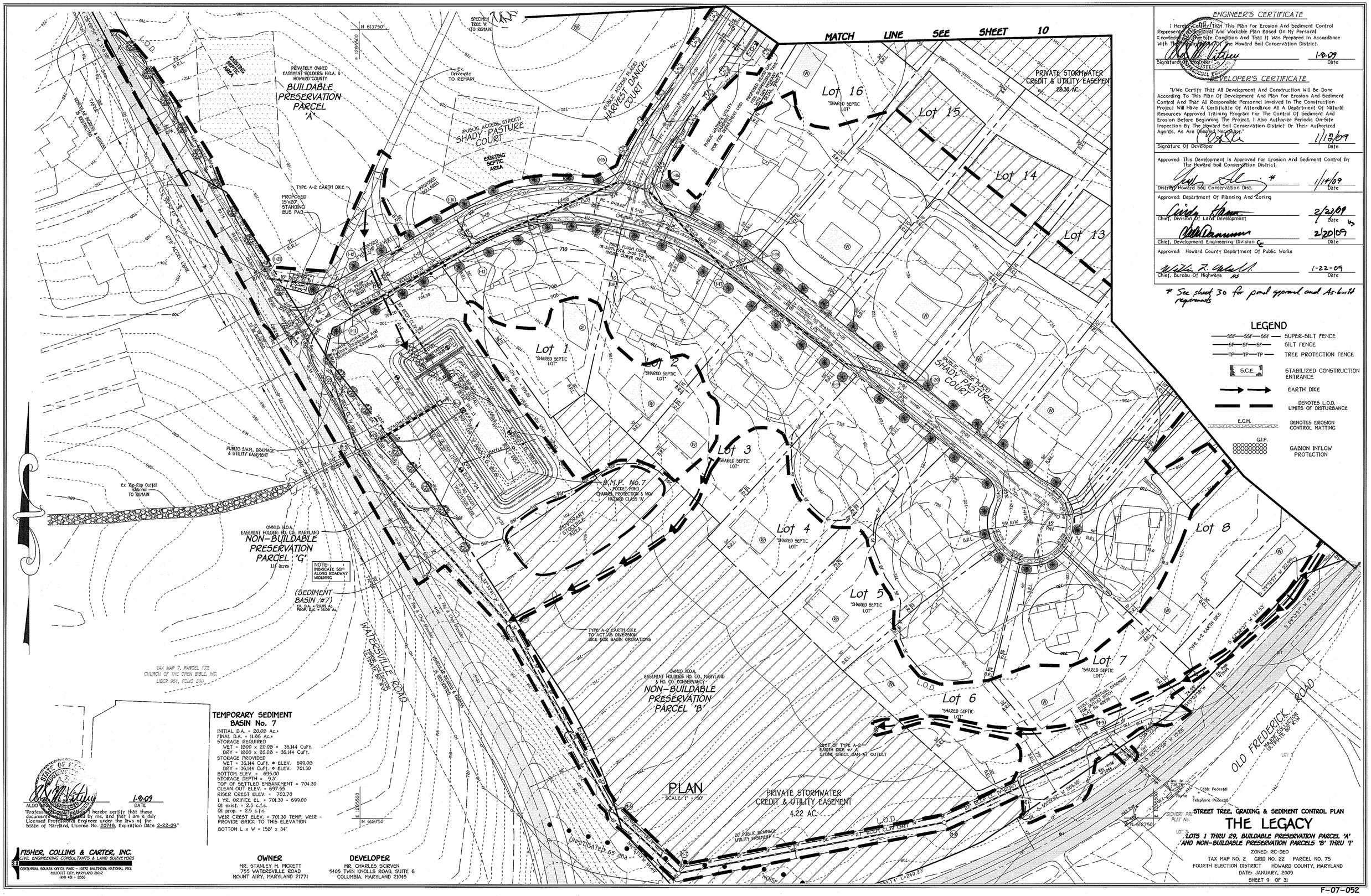
F-07-052



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 Standards And Specifications Of The Howard Soil Conservation District.

Signature Of Engineer — Date: 1-8-09

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 Described Herein."

Signature Of Developer — Date: 1/13/09

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

District Howard Soil Conservation Dist. — Date: 1/14/09 *

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 2/20/09

Chief, Development Engineering Division — Date: 2/20/09

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 1-22-09

* See sheet 30 for pond general and As-built requirements

LEGEND

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

TEMPORARY SEDIMENT BASIN No. 7

INITIAL D.A. = 20.08 Ac.±
FINAL D.A. = 11.86 Ac.±
STORAGE REQUIRED
WET = 1800 x 20.08 = 36,144 CuFt.
DRY = 1800 x 20.08 = 36,144 CuFt.
STORAGE PROVIDED
WET = 36,144 CuFt. @ ELEV. 699.08
DRY = 36,144 CuFt. @ ELEV. 701.30
BOTTOM ELEV. = 695.00
STORAGE DEPTH = 9.3'
TOP OF SETTLED EMBANKMENT = 704.30
CLEAN OUT ELEV. = 697.55
RISER CREST ELEV. = 703.70
1 YR. ORIFICE EL. = 701.30 - 699.00
Q1 exist. = 2.5 c.f.s.
Q1 prop. = 2.5 c.f.s.
WEIR CREST ELEV. = 701.30 TEMP. WEIR - PROVIDE BRICK TO THIS ELEVATION
BOTTOM L x W = 158' x 34'

STATE OF MARYLAND — ALDO M. VITALY — No. 20745

1-8-09 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. 20745, Expiration Date 2-22-09."

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

OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SCIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

PLAN
SCALE: 1" = 50'

STREET TREE, GRADING & SEDIMENT CONTROL PLAN

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 9 OF 31

F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 9-12 FINAL ROAD GRADING PLANS.dwg, 1/7/2009 9:28:09 AM, jamesl,
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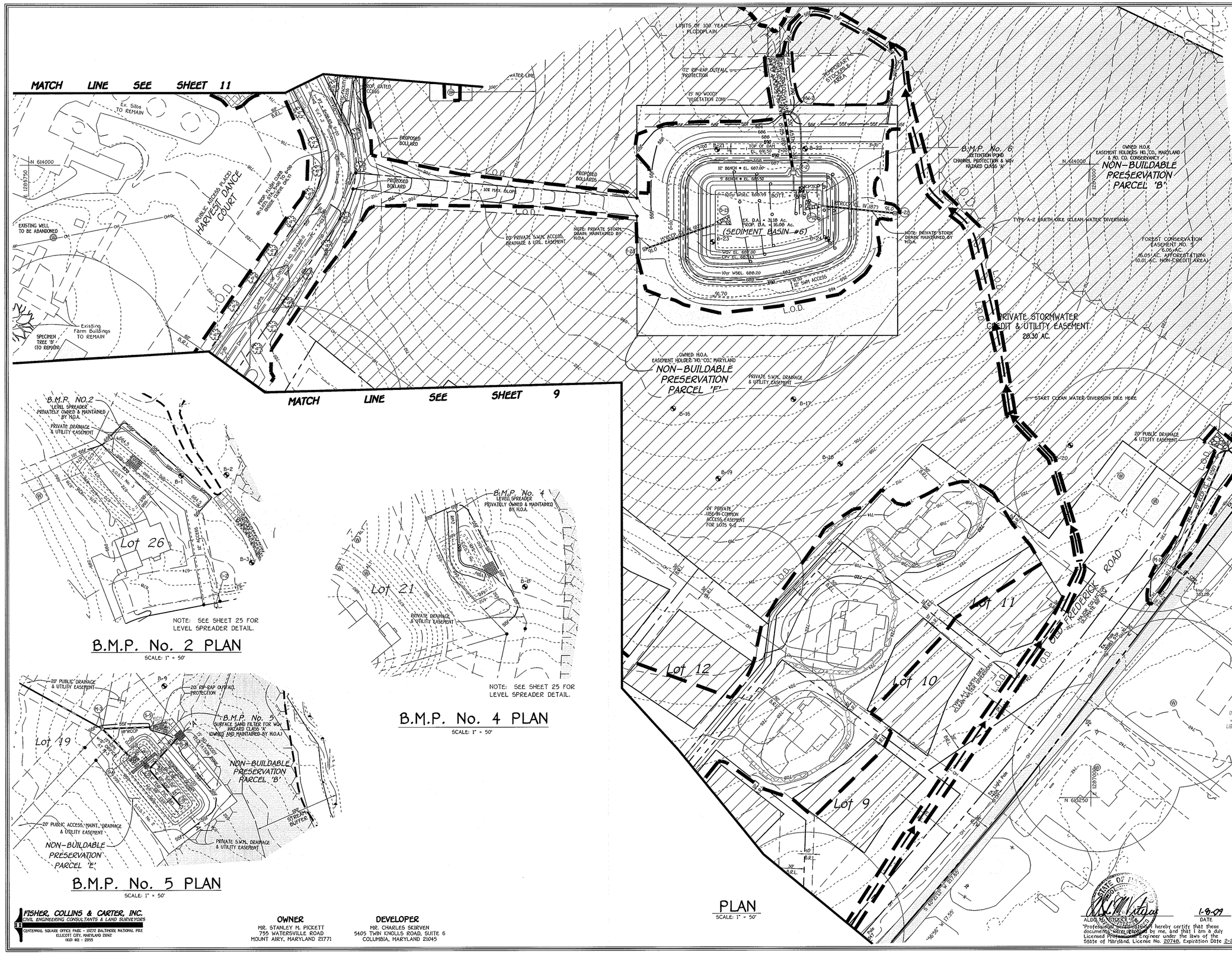


ENGINEER'S CERTIFICATE

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 — Date: 1-8-09

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 — Date: 1/12/09

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

District Howard Soil Conservation Dist. — Date: 1/14/09

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 2/20/09

Chief, Development Engineering Division — Date: 2/20/09

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 1-22-09

* See Sheet 30 for pond signs and fencing requirements

TEMPORARY SEDIMENT BASIN No. 6 – BMP#6

INITIAL D.A. = 31.18 Ac.±
FINAL D.A. = 11.04 Ac.±
STORAGE REQUIRED
WET = 1800 x 31.18 = 56,124 Cu.Ft.
DRY = 1800 x 31.18 = 56,124 Cu.Ft.
STORAGE PROVIDED
WET = 56,124 Cu.Ft. @ ELEV. 685.80
DRY = 56,124 Cu.Ft. @ ELEV. 688.50
BOTTOM ELEV. = 681.00
STORAGE DEPTH = 10.50'
TOP OF SETTLED EMBANKMENT = 691.50
CLEAN OUT ELEV. = 683.60
RISER CREST ELEV. = 690.60
1 YR. ORIFICE EL. = 685.80
Q1 exist. = 1.4 c.f.s.
Q1 prop. = 0.9 c.f.s.
TEMP. WEIR CREST ELEV. = 688.50 - PROVIDE BRICK TO THIS ELEVATION
BOTTOM L x W = 134' x 47'

LEGEND

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

ALDO M. VITALI
"Professional Engineer certify that 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 2-22-09."

DATE: 1-8-09

STREET TREE, GRADING & SEDIMENT CONTROL PLAN

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 10 OF 31

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

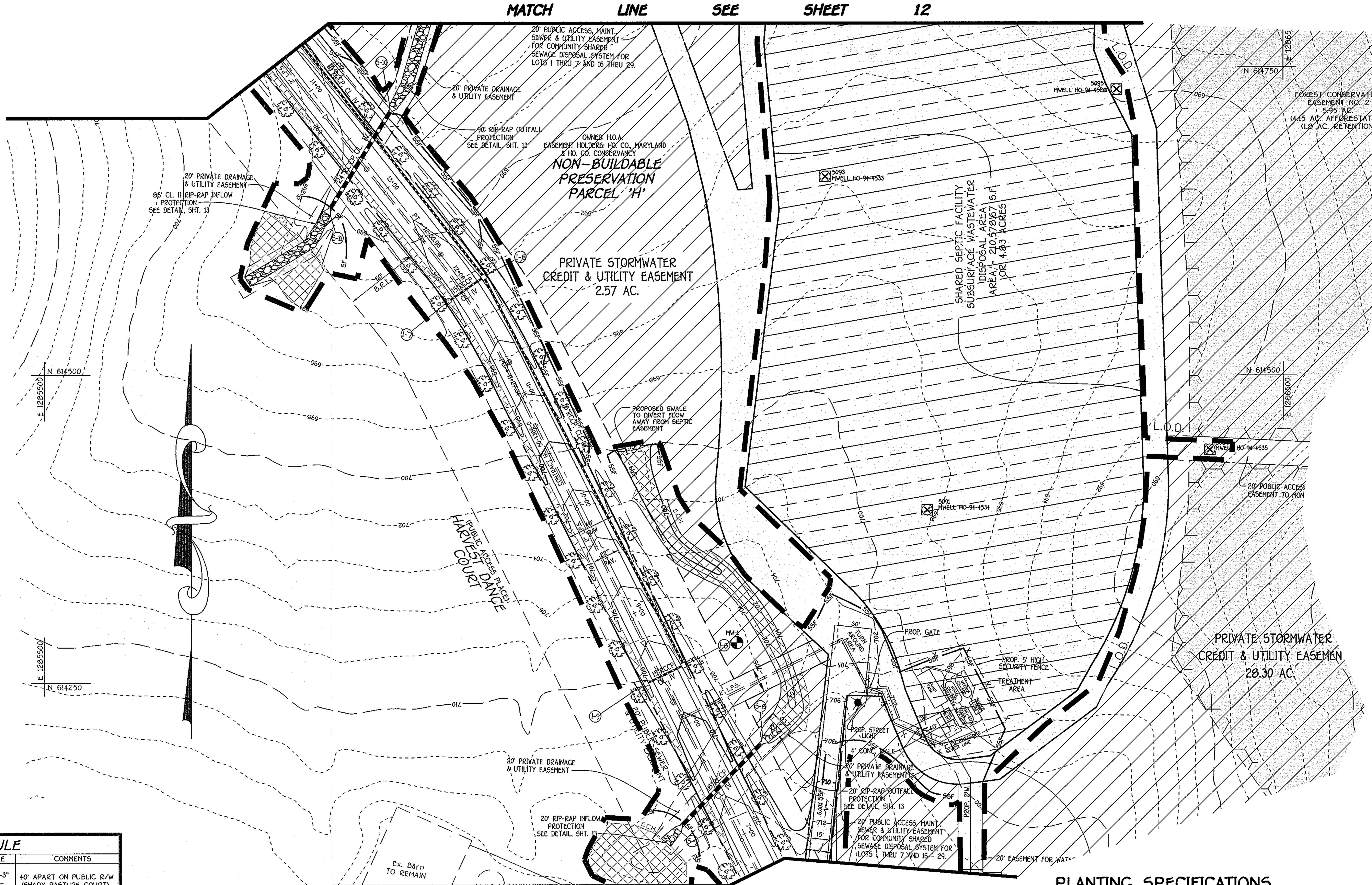
OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

F-07-052

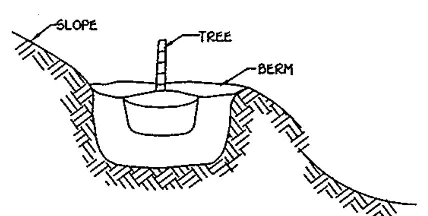
I:\2004\04002\dwg\04002-3001 SHEET 9-12 FINAL ROAD GRADING PLANS.dwg, 1/7/2009 9:27:08 AM, jsmeal, 1:1

MATCH LINE SEE SHEET 12

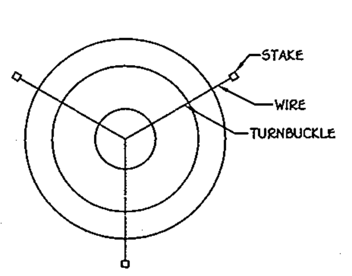


MATCH LINE SEE SHEET 10

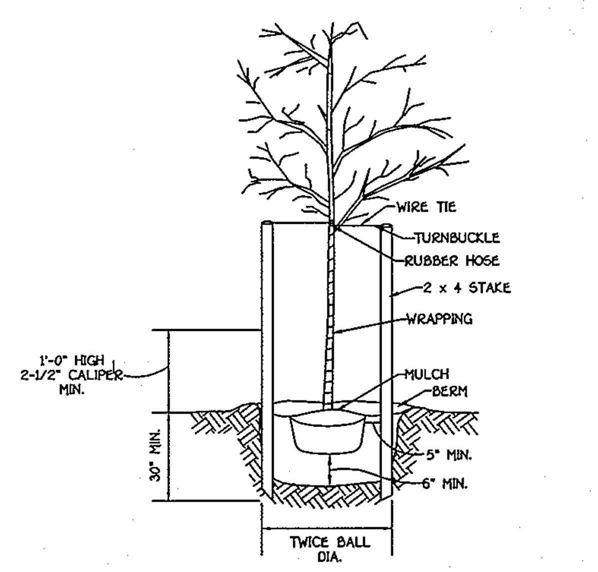
PLAN
SCALE: 1" = 50'



GRADING FOR PLANTING ON SLOPES
NOT TO SCALE

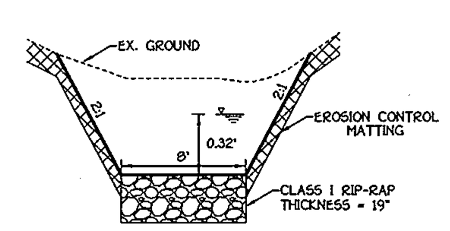


STAKING DETAIL
NOT TO SCALE



NOTE: REMOVE BURLAP FROM TOP 1/3 OF BALL

TREE PLANTING
NOT TO SCALE

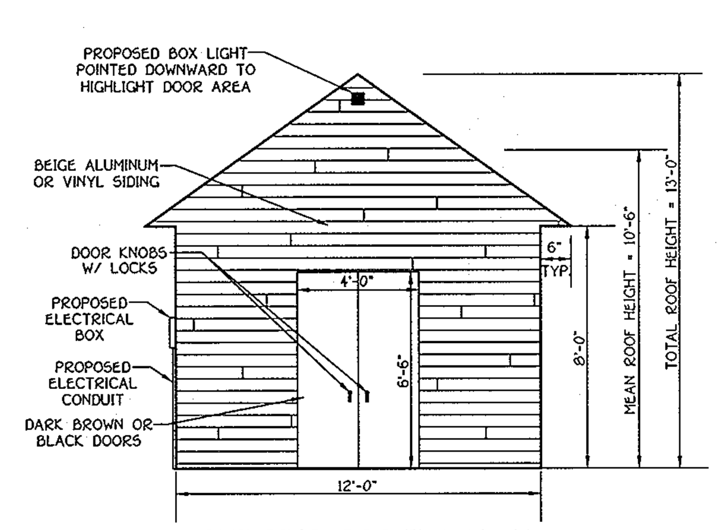


TYPICAL SECTION @ S-11
NOT TO SCALE

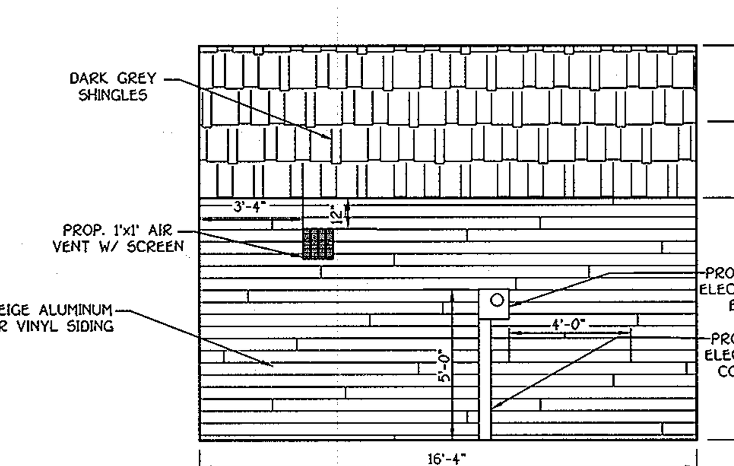
STREET TREE SCHEDULE

SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
	1144.52' /40 x 2 = 57 TREES	ACER SACCHARUM 'GREEN MOUNTAIN' SUGAR MAPLE	2 1/2-3" CAL.	40' APART ON PUBLIC R/W (SHADY PASTURE COURT)
	2611.21' /40 x 2 = 130 TREES	QUERCUS RUBRA NORTHERN RED OAK	2 1/2-3" CAL.	40' APART ON PUBLIC R/W (HARVEST DANCE COURT)
	772' /40 = 19 TREES	PRUNUS SARGENTII SARGENT CHERRY	2 1/2-3" CAL.	40' APART ON PUBLIC R/W (WATERSVILLE ROAD)

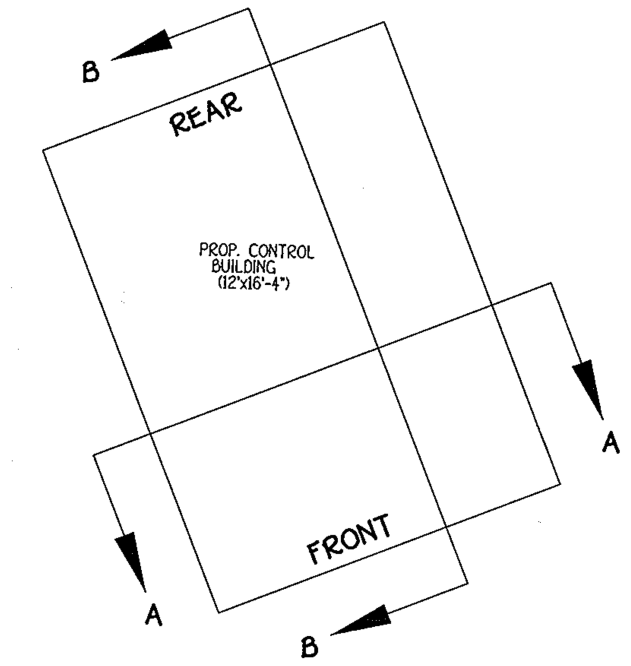
NOTE: STREET TREE TYPES ARE ONLY A RECOMMENDATION AND MAY BE SUBSTITUTED WITH A COUNTY ACCEPTED EQUIVALENT FROM THE HOWARD COUNTY LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE 206 REQUIRED STREET TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $ 61,800.00.



BUILDING PROFILE 'A-A'
SCALE: 1" = 5'



BUILDING PROFILE 'B-B'
SCALE: 1" = 5'



BUILDING DETAIL
SCALE: 1" = 5'

PLANTING SPECIFICATIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ALDO M. VITUCCI P.E. 1-9-09
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 2-22-09."

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 — 1-9-09 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 — 1/12/09 Date

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

District Howard Soil Conservation Dist. — 1/14/09 Date

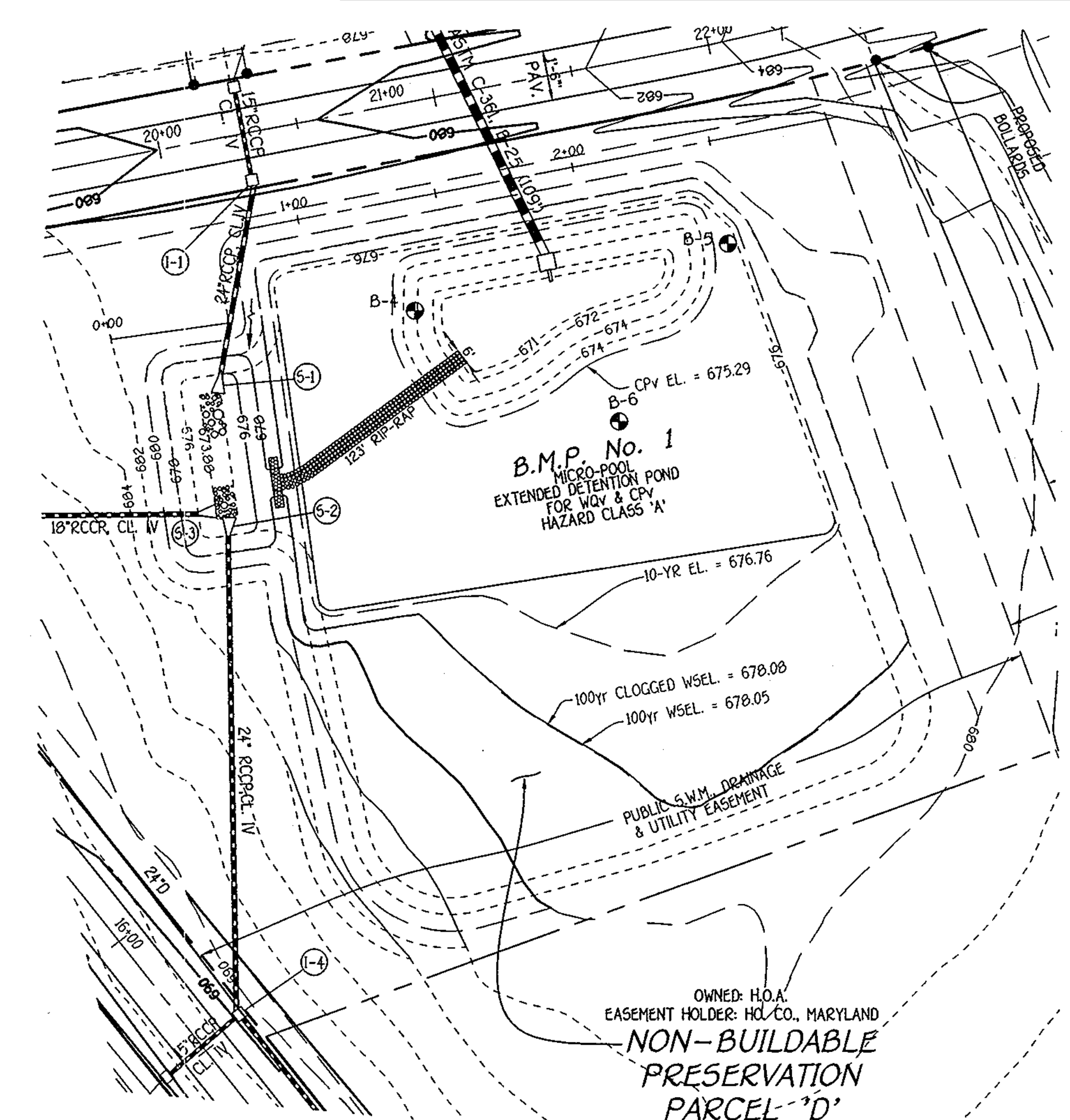
Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 2/23/09 Date

Chief, Development Engineering Division — 2/20/09 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 1-22-09 Date



FINAL GRADING PLAN-BMP#1
SCALE: 1" = 50'

LEGEND

—SSF—SSF—SSF—	SUPER-SILT FENCE
—SF—SF—SF—	SILT FENCE
—TP—TP—TP—	TREE PROTECTION FENCE
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
→ →	EARTH DIKE
▬ ▬	DENOTES L.O.D. LIMITS OF DISTURBANCE
E.C.M.	DENOTES EROSION CONTROL MATTING
G.I.P.	GABION INFLOW PROTECTION

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DEVELOPER
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COLUMBIA, MARYLAND 21045

STREET TREE, GRADING & SEDIMENT CONTROL PLAN

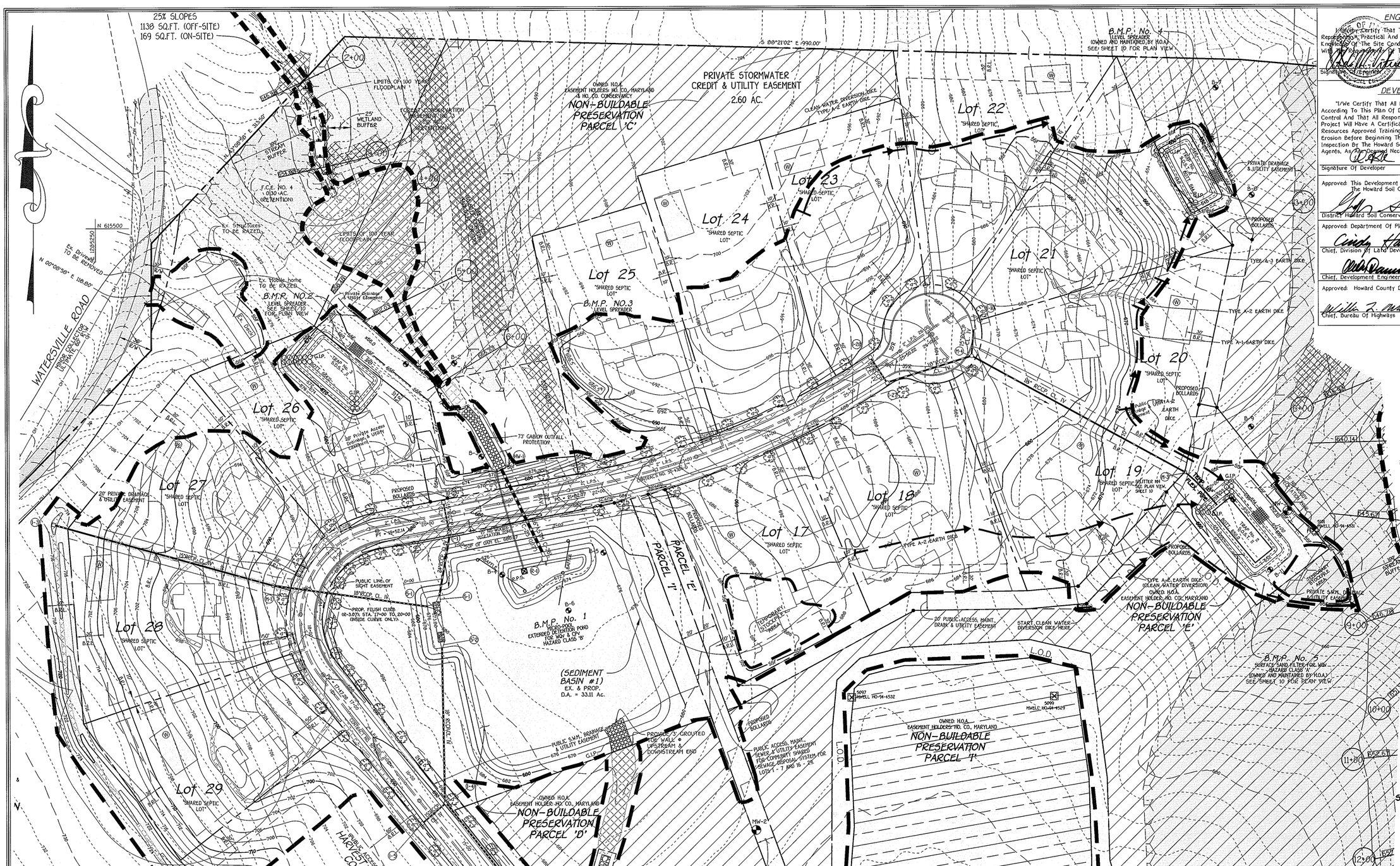
THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009

F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 9-12 FINAL ROAD GRADING PLANS.dwg, 1/7/2009 9:23:54 AM, jamesl, 1:1



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Signature Of Engineer — Date: 1-8-09

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 — Date: 1/12/09

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

District Howard Soil Conservation Dist. — Date: 1/14/09

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 2/23/09

Chief, Development Engineering Division — Date: 2/20/09

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date: 1-22-09

LEGEND

SSF SSF SSF	SUPER-SILT FENCE
SF SF SF	SILT FENCE
TP TP TP	TREE PROTECTION FENCE
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
	EARTH DIKE
L.O.D.	LIMITS OF DISTURBANCE
E.C.M.	DENOTES EROSION CONTROL MATTING
G.I.P.	GABION INFLOW PROTECTION
	DENOTES RIPARIAN FRINGE PLANTING ZONE FOR SWM BMP #1 (USE ANY OF THE FOLLOWING: CONEFLOWER, VIOLETS, PRIMROSE, MILKWORT, NANNYBERRY, LESPEDEZA, LILIES, FLATSEDGE, HOLLIES, HORSYTHIA, LOVEGRASS, HAWTHORN, SPIRAEA, BIRCH OR SUGAR MAPLE.)
	DENOTES SEED MIX No. 3 PLANTING ZONE FOR AREA BELOW HW-1 TALL FESCUE (85%) 37.5 lbs., PERENNIAL RYEGRASS (10%) 4.5 lbs. & KENTUCKY BLUEGRASS (5%) 3.0 lbs.

TEMPORARY SEDIMENT S.O.S.T. II – TRAP No. 1 – Area B

INITIAL D.A. = 2.95 Ac.±
FINAL D.A. = 1.86 Ac.±
STORAGE REQUIRED
WET = 1800 x 2.95 = 5,310 Cu.ft.
DRY = 1800 x 2.95 = 5,310 Cu.ft.
STORAGE PROVIDED
WET = 5,310 Cu.ft. @ ELEV. 647.75
DRY = 5,310 Cu.ft. @ ELEV. 649.60
BOTTOM ELEV. = 644.00
STORAGE DEPTH = 6.0'
TOP OF EMBANKMENT = 651.00
CLEAN OUT ELEV. = 646.05
WEIR CREST ELEV. = 650.00
WEIR LENGTH = 12.0'
FOR 1 YR. TEMP. STORAGE REQ'D. = 0.21 AC.FT.
STORAGE (DRY) PROVIDED @ 649.60 = 0.21 AC.FT.
BOTTOM L x W = 62' x 22'

TEMPORARY SEDIMENT S.O.S.T. II – TRAP No. 2 – Area C

INITIAL D.A. = 3.01 Ac.±
FINAL D.A. = 2.81 Ac.±
STORAGE REQUIRED
WET = 1800 x 3.01 = 5,418 Cu.ft.
DRY = 1800 x 3.01 = 5,418 Cu.ft.
STORAGE PROVIDED
WET = 5,418 Cu.ft. @ ELEV. 652.45
DRY = 5,418 Cu.ft. @ ELEV. 653.75
BOTTOM ELEV. = 650.00
STORAGE DEPTH = 4.0'
TOP OF EMBANKMENT = 655.00
CLEAN OUT ELEV. = 651.25
WEIR CREST ELEV. = 654.00
WEIR LENGTH = 12.0'
FOR 1 YR. TEMP. STORAGE REQ'D. = 0.21 AC.FT.
STORAGE (DRY) PROVIDED @ 653.75 = 0.21 AC.FT.
BOTTOM L x W = 74' x 18'

TEMPORARY SEDIMENT BASIN No. 1–BMP#1

INITIAL D.A. = 28.55 Ac.±
FINAL D.A. = 32.91 Ac.±
STORAGE REQUIRED
WET = 1800 x 32.91 = 59238 Cu.ft.
DRY = 1800 x 32.91 = 59238 Cu.ft.
STORAGE PROVIDED
WET = 59238 Cu.ft. @ ELEV. 676.70
DRY = 59238 Cu.ft. @ ELEV. 677.90
BOTTOM ELEV. = 671.00
STORAGE DEPTH = 9.0'
TOP OF SETTLED EMBANKMENT = 680.07
CLEAN OUT ELEV. = 676.08
RISER CREST ELEV. = 679.20
1 YR. ORIFICE EL. = 676.70 TO 677.90
Q1 exist. = 0.64 c.f.s.
Q1 prop. = 0.56 c.f.s. @ 677.31
TEMPORARY WEIR CREST ELEV. = 677.90 - PROVIDE BRICK TO THIS ELEV. AT DRY STORAGE ELEVATION.
BOTTOM L x W = 218' x 166'

MATCH LINE SEE SHEET 11

PLAN

SCALE: 1" = 50'

NOTE:
SEE SHEET 11 FOR FINAL GRADING OF BMP#1 TO CONVERT IT FROM A SEDIMENT BASIN TO THE SWM FACILITY.

TEMPORARY SEDIMENT S.O.S.T. II – TRAP No. 3 – Area F

INITIAL D.A. = 3.46 Ac.±
FINAL D.A. = 0.88 Ac.±
STORAGE REQUIRED
WET = 1800 x 3.46 = 6,228 Cu.ft.
DRY = 1800 x 3.46 = 6,228 Cu.ft.
STORAGE PROVIDED
WET = 6,228 Cu.ft. @ ELEV. 666.20
DRY = 6,228 Cu.ft. @ ELEV. 667.70
BOTTOM ELEV. = 664.00
STORAGE DEPTH = 4.0'
TOP OF EMBANKMENT = 669.00
CLEAN OUT ELEV. = 665.10
WEIR CREST ELEV. = 668.00
WEIR LENGTH = 14.0'
FOR 1 YR. TEMP. STORAGE REQ'D. = 0.12 AC.FT.
STORAGE (DRY) PROVIDED @ 667.50 = 0.12 AC.FT.
BOTTOM L x W = 63' x 28'

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

SEDIMENT TRAP ST-II
CONTRACTOR SHALL USE GEOTEXTILE CLASS 'C' OR BETTER ON THE UPSTREAM SIDE OF ALL SEDIMENT TRAPS.

ALDO M. VITUCCI — DATE: 1-8-09

"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 2-22-09."

STREET TREE, GRADING & SEDIMENT CONTROL PLAN

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'F'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 12 OF 31

F-07-052

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I:\2004\04002\dwg\04002-3001 SHEET 9-12 FINAL ROAD GRADING PLANS.dwg, 1/7/2009 9:07:54 AM, jamesl,
1:1

INLET & MANHOLE STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	ROAD NAME	ROAD STA.	OFFSET	TYPE	REMARKS
I-1	* 678.47	674.25	675.15	HARVEST DANCE COURT	20+30.69	17' R	'D' INLET	D. - 4.10
I-2	* 678.47	-----	675.49	HARVEST DANCE COURT	20+30.69	17' L	'D' INLET	D. - 4.10
I-3	719.50	-----	708.21	N 615171.37 E 1285202.87	-----	-----	YARD INLET	D. - 4.14
I-4	* 689.76	684.78, 685.03	677.31	HARVEST DANCE COURT	15+52.00	17' R	'D' INLET	D. - 4.10
I-5	* 689.76	-----	685.37	HARVEST DANCE COURT	15+52.00	17' L	'D' INLET	D. - 4.10
I-6	* 693.36	688.85, 688.60	688.35	HARVEST DANCE COURT	11+96.85	17' R	'D' INLET	D. - 4.10
I-7	* 693.36	-----	689.19	HARVEST DANCE COURT	11+96.85	17' L	'D' INLET	D. - 4.10
I-8	* 707.69	703.56	703.31	HARVEST DANCE COURT	8+45.00	17' R	'D' INLET	D. - 4.10
I-9	* 707.69	-----	703.90	HARVEST DANCE COURT	8+45.00	17' L	'D' INLET	D. - 4.10
I-10	680.97	-----	676.94	HARVEST DANCE COURT	L.P. 1+64.00	---	A-10	D. - 4.03
I-11	* 702.68	696.73	696.63	SHADY PASTURE COURT	1+00.00	20' R	'D' INLET	D. - 4.10
I-12	* 702.68	697.42	696.92	SHADY PASTURE COURT	1+00.00	20' L	'D' INLET	D. - 4.10
I-13	* 708.70	705.25, 705.00	704.75	SHADY PASTURE COURT	2+73.00	20' R	'D' INLET	D. - 4.10
I-14	* 708.70	-----	705.45	SHADY PASTURE COURT	2+73.00	20' L	'D' INLET	D. - 4.10
I-15	* 714.90	710.85	710.60	HARVEST DANCE COURT	0+34.50	17' L	'D' INLET	D. - 4.10
I-16	* 714.90	711.44	711.19	HARVEST DANCE COURT	0+34.50	17' R	'D' INLET	D. - 4.10
I-17	* 716.31	712.40, 712.65	712.15	SHADY PASTURE COURT	6+35.50	17' R	'D' INLET	D. - 4.10
I-18	* 716.55	-----	712.86	SHADY PASTURE COURT	6+57.60	17' L	'D' INLET	D. - 4.10
I-19	* 718.43	715.53	715.28	SHADY PASTURE COURT	8+48.40	17' R	'D' INLET	D. - 4.10
I-20	* 719.70	-----	716.50	SHADY PASTURE COURT	9+07.75	17' L	'D' INLET	D. - 4.10
I-21	702.55	-----	699.55	N 613585.69 E 1285306.13	-----	-----	YARD INLET	D. - 4.14
I-22	691.00	-----	686.50	N 613942.21 E 1286770.12	-----	-----	YARD INLET	D. - 4.14
I-23	691.00	-----	686.50	N 613900.24 E 1286475.54	-----	-----	YARD INLET	D. - 4.14
I-24	* 733.40	729.62	729.37	N 613619.16 E 1287214.42	-----	-----	'D' INLET	D. - 4.10
I-24A	* 733.65	-----	730.92	N 613751.37 E 1287316.66	-----	-----	'D' INLET	D. - 4.10
I-25	* 700.94	-----	695.85	N 613300.93 E 1285467.99	-----	-----	'D' INLET	D. - 4.10
I-26	* 702.80	694.65	694.56	N 613229.77 E 1285524.53	-----	-----	'D' INLET	D. - 4.10
I-27	* 685.56	681.89	681.64	HARVEST DANCE COURT	25+39	17' R	'D' INLET	D. - 4.10
I-28	* 685.56	-----	682.06	HARVEST DANCE COURT	25+39	17' L	'D' INLET	D. - 4.10
I-29	* 706.50	702.68	702.58	N 612997.51 E 1285687.00	-----	-----	'D' INLET	D. - 4.10
M-1	685.20	679.08	675.77	HARVEST DANCE COURT	18+42	39' L	STD. MANHOLE	G - 5.12
M-2	704.36	696.26, 699.00	696.24	SHADY PASTURE COURT	1+50.20	20' R	STD. MANHOLE	G - 5.12
M-3	659.85	656.25	655.50, 656.00	N 615225.97 E 1286452.63	-----	-----	STD. MANHOLE	G - 5.12
M-4	680.83	(2) 675.80	675.55	HARVEST DANCE COURT	L.P. 2+01.45	5' L	STD. MANHOLE	G - 5.12
M-5	704.30	693.71 (2") 694.50 (18") 692.96 (EX. 36")	EX. 36" RCP 692.73	N 613215.05 E 1285496.56	-----	-----	STD. MANHOLE	G - 5.11
M-6	720.70	712.91	712.66	N 612759.32 E 1285817.47	-----	-----	STD. MANHOLE	G - 5.12
M-7	730.00	722.50	722.25	N 612679.92 E 1285901.68	-----	-----	STD. MANHOLE	G - 5.12
M-8	735.15	729.93	729.68	N 612744.60 E 1286236.49	-----	-----	STD. MANHOLE	G - 5.12
M-9	738.80	734.57	734.32	N 612844.92 E 1286450.22	-----	-----	STD. MANHOLE	G - 5.12
M-10	734.70	732.64 (Ex. 12")	731.30		-----	-----	STD. MANHOLE	G - 5.12

* DENOTES THROAT ELEVATION

M-5 TO BE BUILT OVER EXISTING 36" RCP

OUTFALL & RISER STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	LOCATION NORTH	LOCATION EAST	TYPE	REMARKS
S-1	675.91	673.91	-----	N 615084.78	E 1285627.47	CONC. END SECTION	D. - 5.51
S-2	675.50	674.00	-----	N 615039.95	E 1285631.62	CONC. END SECTION	D. - 5.51
S-3	675.49	673.99	-----	N 615079.49	E 1285621.64	CONC. END SECTION	D. - 5.51
S-4	655.25	654.00	-----	N 615191.02	E 1286486.79	15" FLARED END SECTION	ADVANCED DRAINAGE SYSTEMS, INC.
S-5	653.91	652.41	-----	N 615227.67	E 1286513.01	CONC. END SECTION	D. - 5.51
S-6	651.65	650.20	-----	N 615213.76	E 1286540.19	TYPE 'C' HEADWALL	D. - 5.21
S-7	697.95	695.45	-----	N 613344.97	E 1285581.48	CONC. END SECTION	D. - 5.51
S-8	705.46	703.96	-----	N 614203.96	E 1286081.80	CONC. END SECTION	D. - 5.51
S-9	709.29	707.79	-----	N 614130.84	E 1286011.24	CONC. END SECTION	D. - 5.51
S-10	684.25	682.25	-----	N 614717.18	E 1285781.55	CONC. END SECTION	D. - 5.51
S-11	688.00	686.00	-----	N 614631.06	E 1285728.11	CONC. END SECTION	D. - 5.51
S-12	682.65	681.35	-----	N 613950.73	E 1286689.25	CONC. END SECTION	D. - 5.51
S-13	682.65	681.35	-----	N 613927.69	E 1286553.06	CONC. END SECTION	D. - 5.51
HW-1	670.00	666.00	-----	N 615239.09	E 1285694.01	TYPE 'C' HEADWALL	D. - 5.21
HW-2	683.25	680.00	-----	N 614061.15	E 1286639.54	TYPE 'C' HEADWALL	D. - 5.21
HW-3	730.20	728.70 (18") 728.70 (15")	-----	N 613663.81	E 1287159.43	TYPE 'A' HEADWALL	D. - 5.11
R-1	679.20	671.00	669.95	N 615136.31	E 1285743.12	CONCRETE RISER	-------
R-2	690.60	681.00	680.74	N 613988.79	E 1286650.46	CONCRETE RISER	-------
R-3	703.70	695.90	695.90	N 613276.72	E 1285600.85	CONCRETE RISER	-------

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-22-09

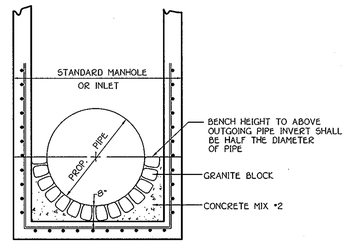
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 2/23/09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/20/09

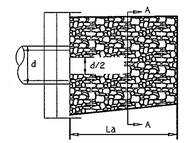
PIPE SCHEDULE

SIZE	CLASS	LENGTH
15"	RCCP, CL IV.	1082'
18"	RCCP, CL IV.	2538'
24"	RCCP, CL IV.	311'
27"	RCCP, CL IV.	1347'
30"	RCCP, CL IV.	91'
30"	ASTM, C-361 B-25	157'
36"	ASTM, C-361 C-25	107'
4"	SCH. 40, PVC SOLID	62'
4"	SCH. 40, PVC PERF.	47'
6"	SCH. 40, PVC SOLID	49'
6"	SCH. 40, PVC PERF.	58'
6"	D.I.P. (POND DRAINS)	29'
15"	HDPE	42'

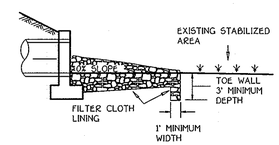


GRANITE BLOCK DETAIL

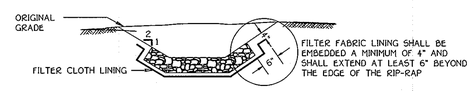
NOT TO SCALE



PLAN VIEW



ELEVATION



SECTION A-A

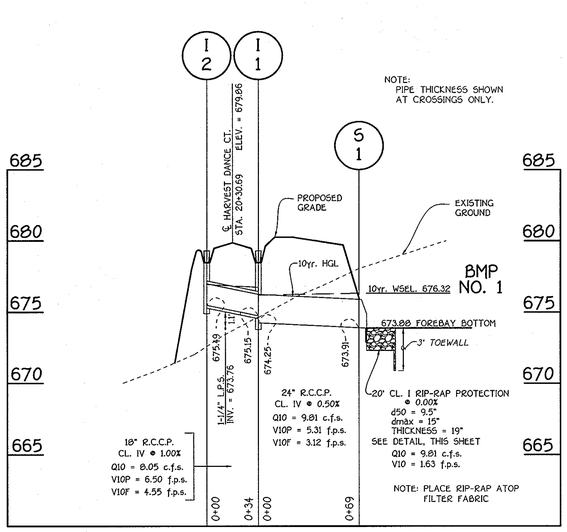
RIP-RAP CHANNEL DETAIL

NO SCALE

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

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



PROFILE

SCALE: HOR. : 1" = 50'
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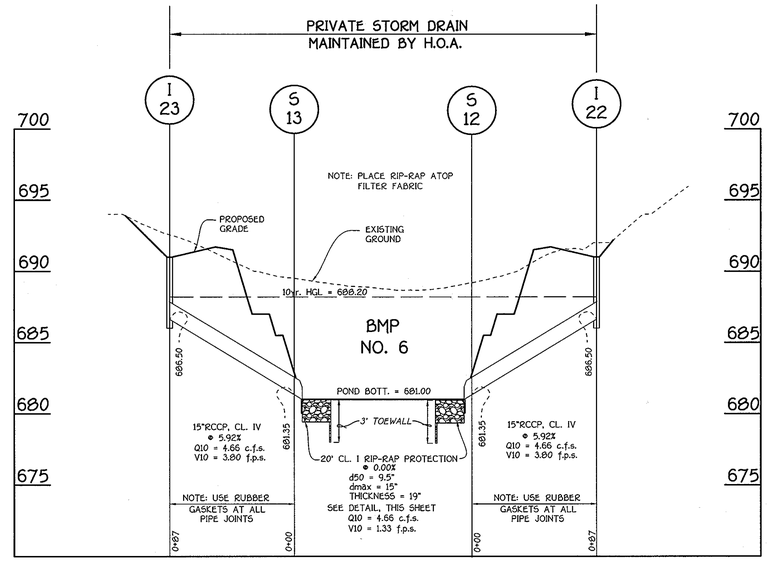

PROFILE

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RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	AREA (S.F.)	WETTED PERIMETER	R	R 2/3	S	S 1/2	W	d	N	V (f.p.s.)	Q (c.f.s.)	RIP-RAP SIZE D_{50}	RIP-RAP SIZE D_{max}	BLANKET THICKNESS	PIPE SIZE
S-1	6.11	12.46	0.4904	0.6204	0.0050	0.0707	10'	0.55'	0.04	1.63	9.81	9.5"	15"	19"	24"
S-2	6.35	12.55	0.5060	0.6335	0.0050	0.0707	10'	0.57'	0.04	1.67	10.51	9.5"	15"	19"	18"
S-3	3.97	11.65	0.3408	0.4862	0.0050	0.0707	10'	0.37	0.04	1.28	5.09	9.5"	15"	19"	18"
S-4	1.13	5.12	0.2207	0.3634	0.0050	0.0707	4'	0.25'	0.04	0.96	1.03	9.5"	15"	19"	6"
S-5	2.96	11.25	0.2631	0.4088	0.0050	0.0707	10'	0.28'	0.04	1.08	3.17	9.5"	15"	19"	18"
S-6	1.42	8.76	0.1621	0.2955	0.0050	0.0707	8'	0.17'	0.04	0.78	1.03	9.5"	15"	19"	6"
S-7	11.72	13.10	0.8947	0.9282	0.0050	0.0707	8'	1.14'	0.04	2.44	27.70	9.5"	15"	19"	30"
S-8	1.98	7.34	0.2697	0.4156	0.0050	0.0707	6'	0.30'	0.04	1.10	2.15	9.5"	15"	19"	18"
S-9	1.02	10.45	0.0976	0.2103	0.0050	0.0707	10'	0.10'	0.04	2.26	2.15	9.5"	15"	19"	18"
S-10	10.00	12.47	0.8019	0.8625	0.0050	0.0707	8'	1.00'	0.04	2.27	22.40	9.5"	15"	19"	24"
S-11	3.40	11.43	0.2975	0.4438	0.0050	0.0707	10'	0.32'	0.04	6.87	22.40	9.5"	15"	19"	24"
S-12	3.52	9.79	0.3596	0.5040	0.0050	0.0707	8'	0.40'	0.04	1.33	4.29	9.5"	15"	19"	15"
S-13	3.52	9.79	0.3596	0.5040	0.0050	0.0707	8'	0.40'	0.04	1.33	4.29	9.5"	15"	19"	15"
HW-1	23.97	17.92	1.3376	1.2151	0.0050	0.0707	10'	1.77'	0.04	3.19	* 75.9	9.5"	15"	19"	36"
HW-2	15.63	15.59	1.0026	1.0017	0.0050	0.0707	10'	1.25'	0.04	2.63	* 40.9	9.5"	15"	19"	30"

* DENOTES 100 YEAR Q USED FOR DESIGN

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

OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

ALDO R. VETTORI — DATE 1-8-09

"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 2-22-09."

STORM DRAIN PROFILES

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO

TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75

FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JANUARY, 2009

SHEET 13 OF 31

F-07-052

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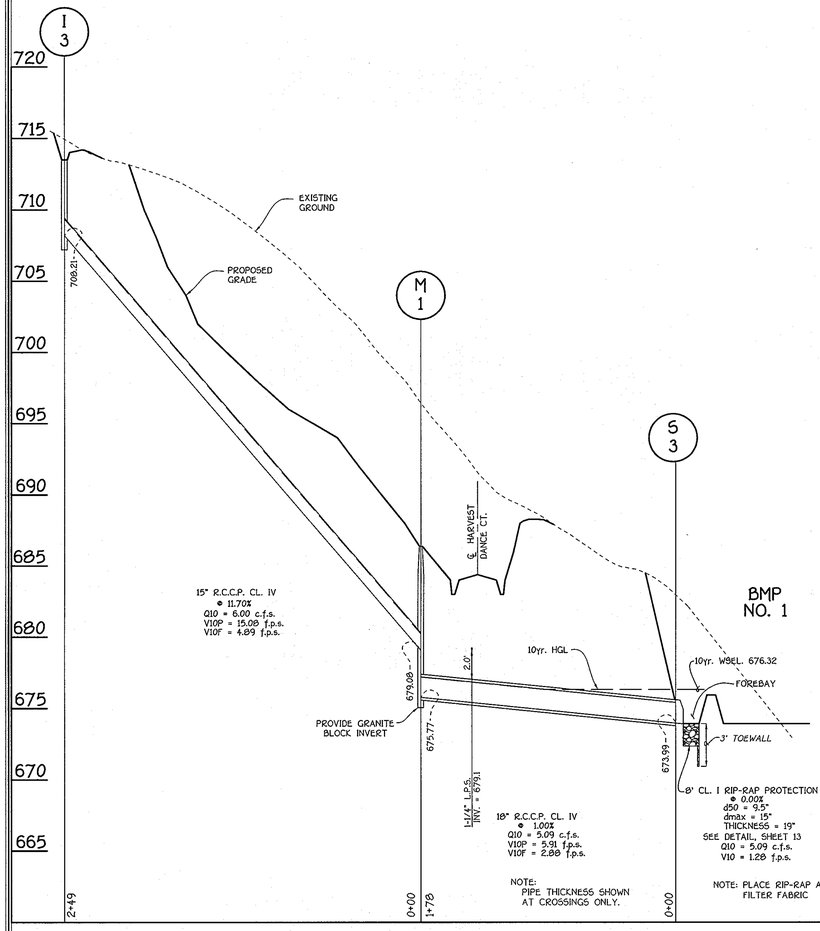
APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-22-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

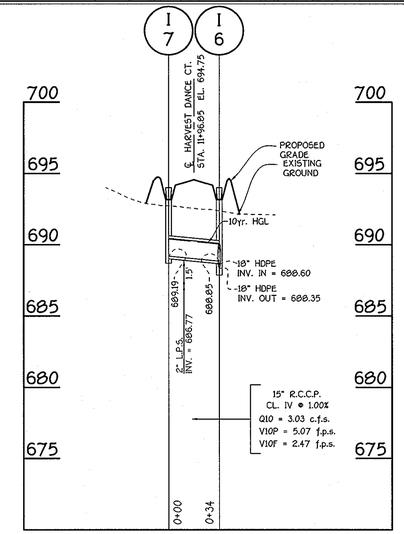
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 2/2/09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/20/09



PROFILE

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



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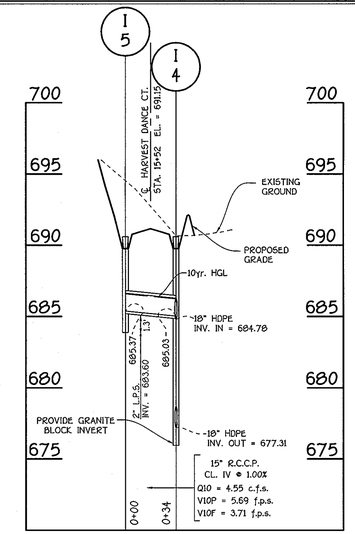

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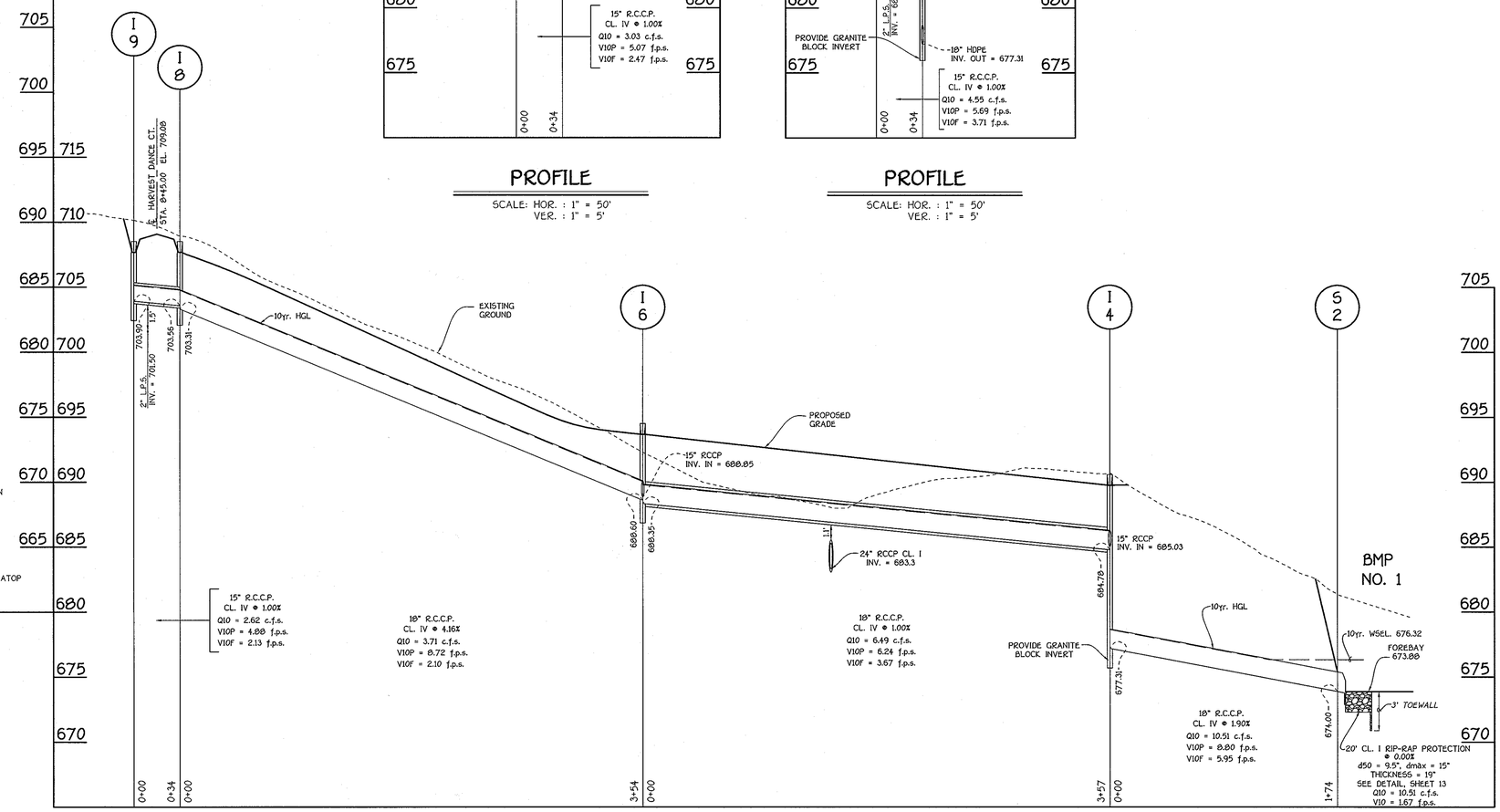

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STATE OF MARYLAND — ALDO M. MANUCCI, PE

1-9-09

"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 2-22-09."

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STORM DRAIN PROFILES

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO

TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 14 OF 31

F-07-052

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1:50

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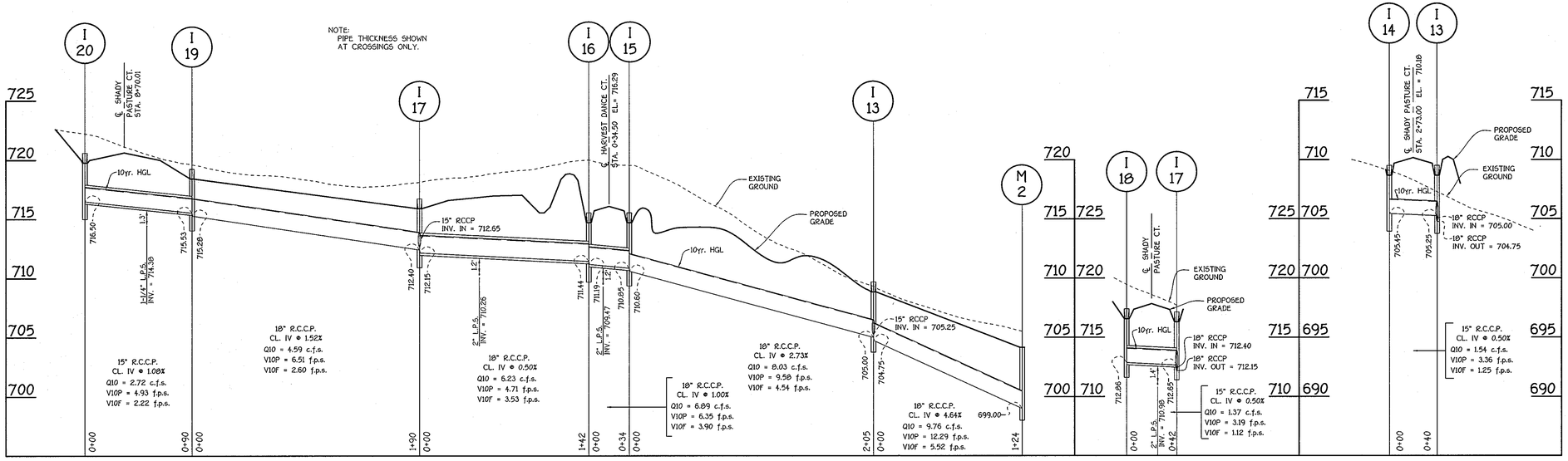

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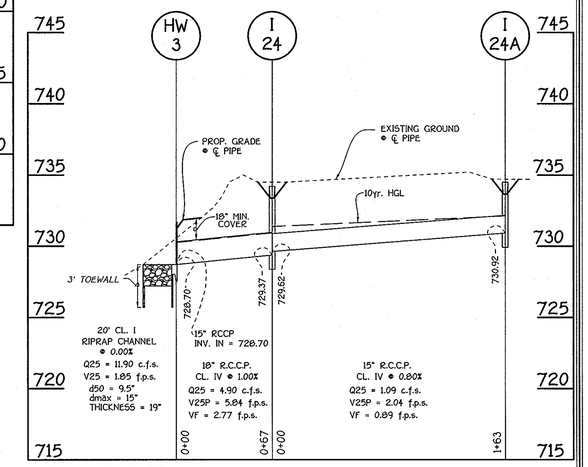

NOTE: PLACE RIP-RAP ATOP FILTER FABRIC

PROFILE

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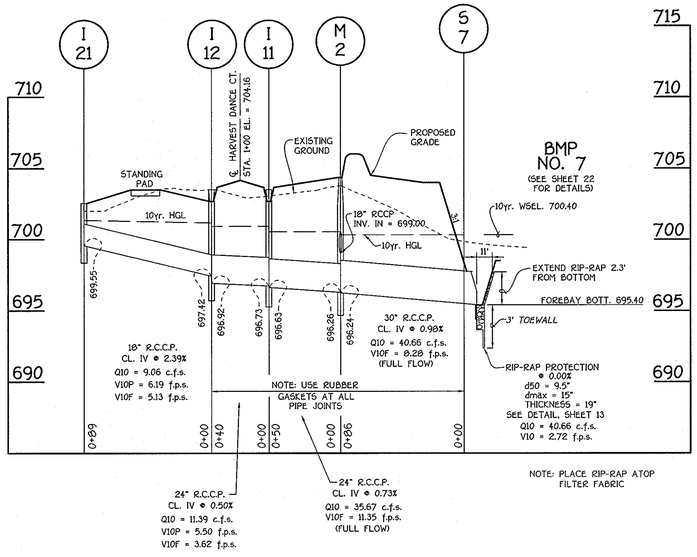

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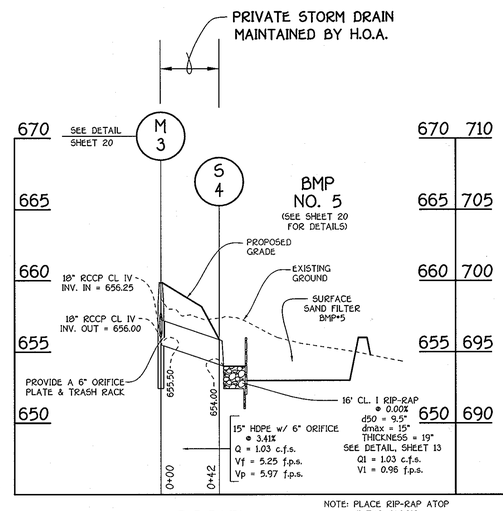

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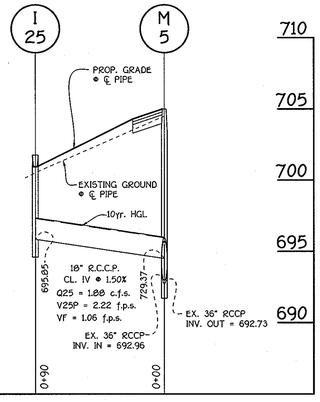

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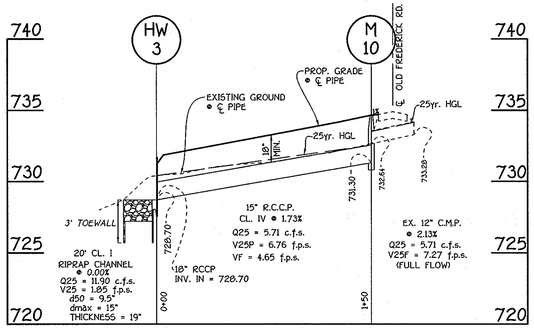

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(410) 461 - 2855

OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

STATE OF MARYLAND — ALDO DI TANNO — REGISTERED PROFESSIONAL ENGINEER

ALDO M. DI TANNO — DATE 1-9-09

"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. 20748, Expiration Date 2-22-09."

STORM DRAIN PROFILES

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 15 OF 31

F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 13-16 FINAL ROAD STORMDRAIN PROFILES.dwg, 1/7/2009 8:32:33 AM, jamesl, 1:50

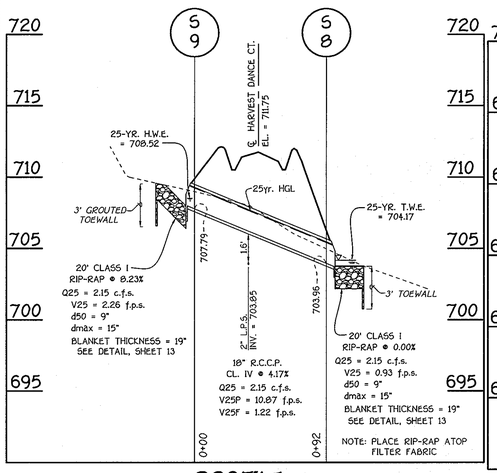
APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-22-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

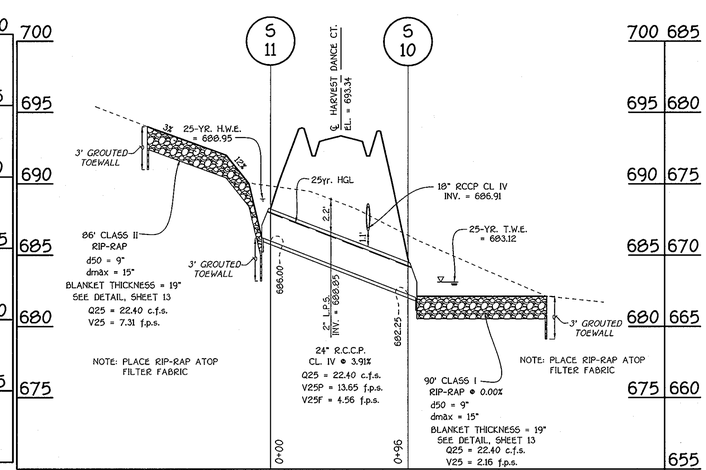
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 2/23/09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/20/09



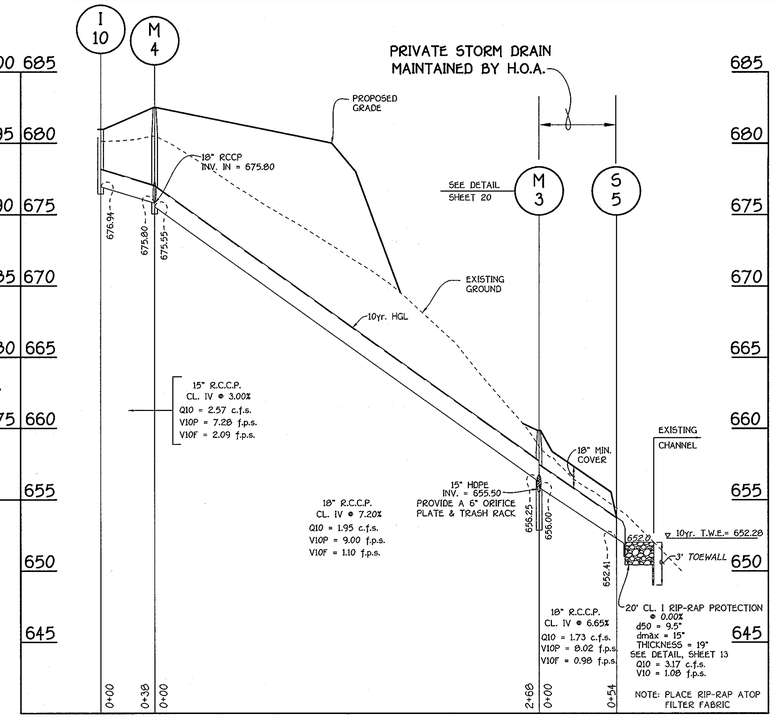
PROFILE

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



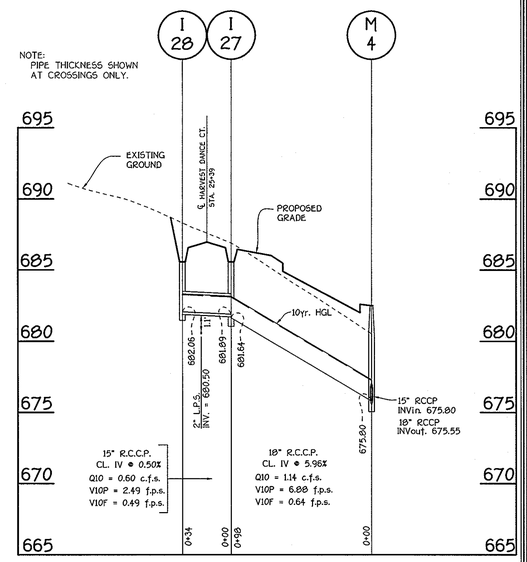
PROFILE

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



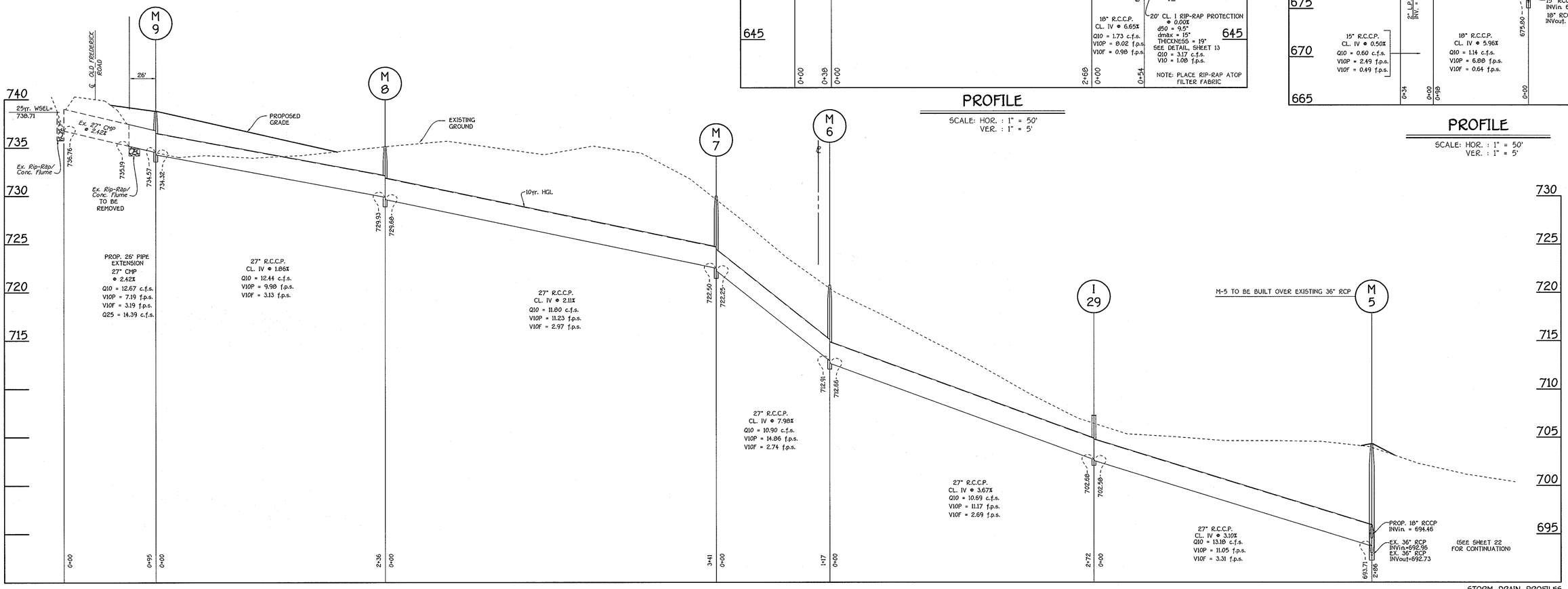
PROFILE

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



PROFILE

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



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CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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COLUMBIA, MARYLAND 21045

STATE OF MARYLAND — ALDO R. VITALONE

1-8-09
DATE

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STORM DRAIN PROFILES

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'T'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 16 OF 31

F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 13-16 FINAL ROAD STORMDRAIN PROFILES.dwg, 1/7/2009 8:32:07 AM, jamesl, 1:50

MATCH LINE SEE SHEET 18

PLAN
SCALE: 1" = 100'

Approved: Department Of Public Works

Chief Bureau Of Highways — 1-22-09 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 2/23/09 Date

Chief, Development Engineering Division — 2/20/09 Date

DRAINAGE AREA DATA					
STRUCTURE NO.	DRAINAGE AREA	AREA	'C'	ZONED	% IMP.
I-1	A	0.46	0.51	RC-DEO	38%
I-2	B	3.79	0.28		5%
I-3	C	3.18	0.25		0.21%
I-4	D	0.17	0.57		46%
I-5	E	2.53	0.27		3%
I-6	F	0.17	0.56		45%
I-7	G	1.63	0.28		5%
I-8	H	0.34	0.50		36%
I-9	I	1.25	0.32		9%
I-10	J	0.93	0.35		14%
I-11	K	0.16	0.59		49%
I-12	L	3.48	0.29		6%
I-13	M	0.19	0.58		47%
I-14	N	0.76	0.31		8%
I-15	O	0.65	0.31		9%
I-16	P	0.39	0.35		14%
I-17	Q	0.30	0.35		15%
I-18	R	0.68	0.30		8%
I-19	S	0.79	0.37		18%
I-20	T	1.34	0.31		8%
I-21	U	4.81	0.29		5%
S-9	V	1.15	0.25		0%
S-11	W	11.61	0.26		1%
Ex. HW	X	3.99	0.48		33%
I-22	Y	2.12	0.32		9%
I-23	Z	2.02	0.35		14%
I-24	AA	0.32	0.35		14%
I-24A	BB	1.32	0.41		23%
I-25	CC	0.59	0.42		25%
I-26	DD	1.12	0.31		8%
I-27	EE	0.27	0.34		13%
I-28	FF	0.29	0.31		9%
I-29	GG	1.63	0.35		14%
EX. 12" CMP	HH	2.30	0.33		12%

STORM DRAIN DRAINAGE AREA MAP

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 17 OF 31

ALDO [illegible] — 1-9-09 DATE

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F-07-052

1:\2004\04002\dwg\04002-3001 SHEET 17-18 FINAL ROAD STORMDRAIN DA MAP.dwg, 1/7/2009 8:26:59 AM, jamesl, 1:1

Approved: Department Of Public Works

Chief Bureau Of Highways — Date: 1-27-09

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 2/23/09

Chief, Development Engineering Division — Date: 2/20/09

PLAN

SCALE: 1" = 100'

DRIVEWAY CULVERT SIZE ANALYSIS				
LOT NO.	PIPE SIZE	ROAD STA. & GRADE	ROAD NAME	REMARKS
1	12"	3+70 @ 2.50%	SHADY PASTURE COURT	Q10 = 5.78 c.f.s.
2	N/A	Driveway next to inlet	SHADY PASTURE COURT	
3	12"	7+97 @ 1.16%	SHADY PASTURE COURT	Q10 = 3.82 c.f.s.
4	12"	9+01 @ 1.80%	SHADY PASTURE COURT	Q10 = 4.82 c.f.s.
5	12"	LP 2+65 @ 1.80%	SHADY PASTURE COURT	Q10 = 4.82 c.f.s.
6	12"	LP 2+40 @ 1.80%	SHADY PASTURE COURT	Q10 = 4.82 c.f.s.
7	N/A	Driveway at High Point	SHADY PASTURE COURT	
8	12"	LP 1+30 @ 1.00%	SHADY PASTURE COURT	Q10 = 3.00 c.f.s.
9	12"	LP 1+00 @ 1.60%	SHADY PASTURE COURT	Q10 = 4.52 c.f.s. SHARED
10	12"	LP 1+00 @ 1.80%	SHADY PASTURE COURT	Q10 = 4.82 c.f.s. PIPESTEM
11	12"	LP 1+00 @ 1.80%	SHADY PASTURE COURT	Q10 = 4.82 c.f.s. LOTS
12	12"	LP 0+69 @ 1.80%	SHADY PASTURE COURT	Q10 = 4.82 c.f.s.
13	15"	10+10 @ 1.60%	SHADY PASTURE COURT	Q10 = 8.70 c.f.s.
14	N/A	Driveway next to base	SHADY PASTURE COURT	
15	12"	7+70 @ 1.16%	SHADY PASTURE COURT	Q10 = 4.20 c.f.s.
16	N/A	Driveway next to inlet	SHADY PASTURE COURT	
17	N/A	Driveway at High Point	HARVEST DANCE COURT	
18	12"	26+40 @ 2.00%	HARVEST DANCE COURT	Q10 = 5.18 c.f.s.
19	N/A	No Ditch Section	HARVEST DANCE COURT	
20	N/A	No Ditch Section	HARVEST DANCE COURT	
21	N/A	No Ditch Section	HARVEST DANCE COURT	
22	N/A	No Ditch Section	HARVEST DANCE COURT	
23	N/A	No Ditch Section	HARVEST DANCE COURT	
24	N/A	Driveway at High Point	HARVEST DANCE COURT	
26	12"	23+25 @ 2.50%	HARVEST DANCE COURT	Q10 = 5.80 c.f.s.
28	15"	19+22 @ 3.60%	HARVEST DANCE COURT	Q10 = 12.50 c.f.s.
27	15"	19+50 @ 3.75%	HARVEST DANCE COURT	Q10 = 12.50 c.f.s.
28	12"	17+95 @ 3.75%	HARVEST DANCE COURT	Q10 = 7.00 c.f.s.
29	12"	17+50 @ 3.75%	HARVEST DANCE COURT	Q10 = 7.00 c.f.s.
EMP#1A/5	12"	22+05 @ 4.75%	HARVEST DANCE COURT	Q10 = 7.90 c.f.s.
EMP#2	N/A	Driveway at Inlet	HARVEST DANCE COURT	Q10 = 5.01 c.f.s.
EMP#6	12"	5+10 @ 2.50%	HARVEST DANCE COURT	Q10 = 5.80 c.f.s.
EMP#7	12"	0+85 @ 3.49%	SHADY PASTURE COURT	Q10 = 6.70 c.f.s.

STATE OF MARYLAND — ALDO M. VITALIANO

ALDO M. VITALIANO — DATE: 1-8-09

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STORM DRAIN DRAINAGE AREA MAP

THE LEGACY

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ZONED: RC-DEO

TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75

FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

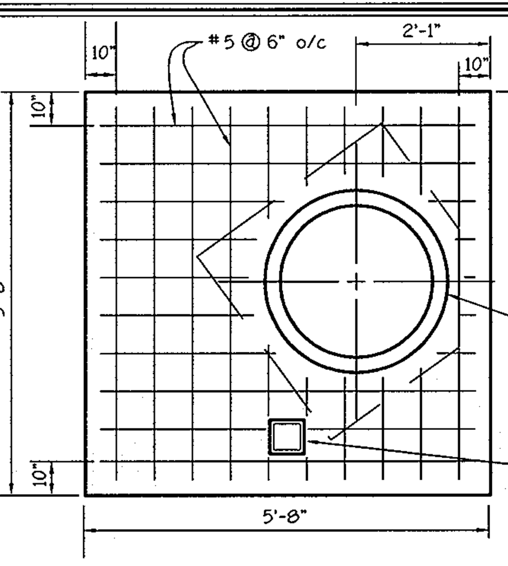
DATE: JANUARY, 2009

SHEET 18 OF 31

F-07-052

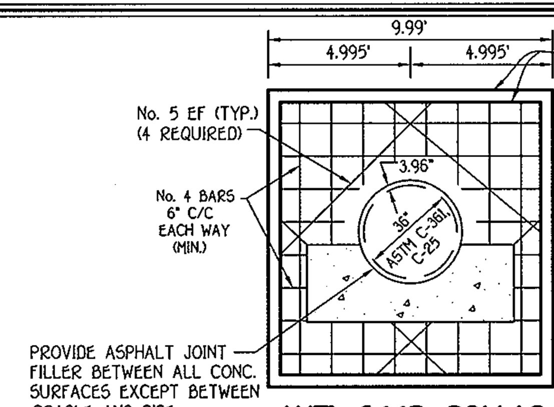
I:\2004\04002\dwg\04002-3001 SHEET 17-18 FINAL ROAD STORMDRAIN DA MAP.dwg, 1/7/2009 8:25:56 AM, jamesl, 1:1

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 L.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 30 BAR DIA. UNLESS OTHERWISE SHOWN.



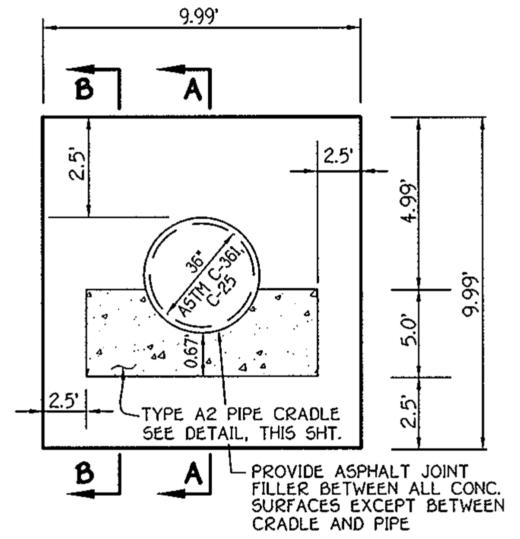
TOP SLAB DETAIL

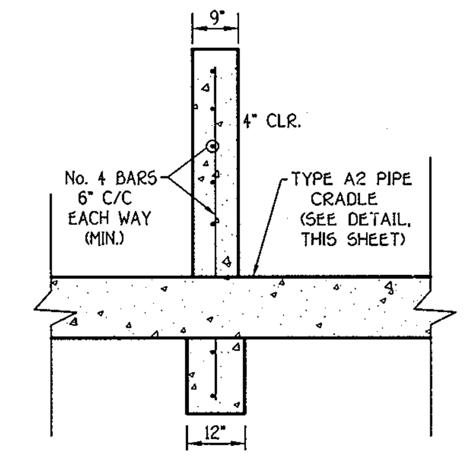
NO SCALE



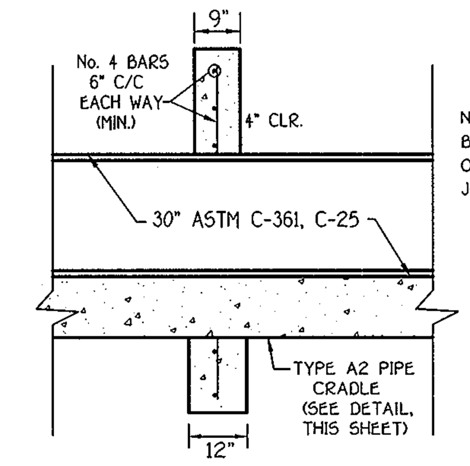
ANTI-SEEP COLLAR

NO SCALE





SECTION 'B-B'



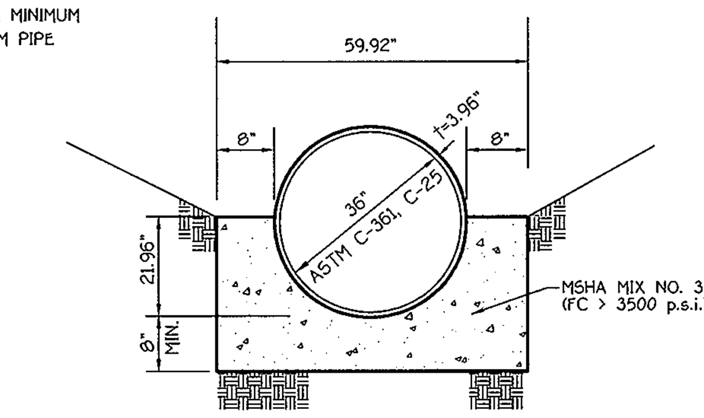
SECTION 'A-A'

TYPICAL SECTION THROUGH BARREL, CRADLE AND ANTI-SEEP COLLAR

NO SCALE

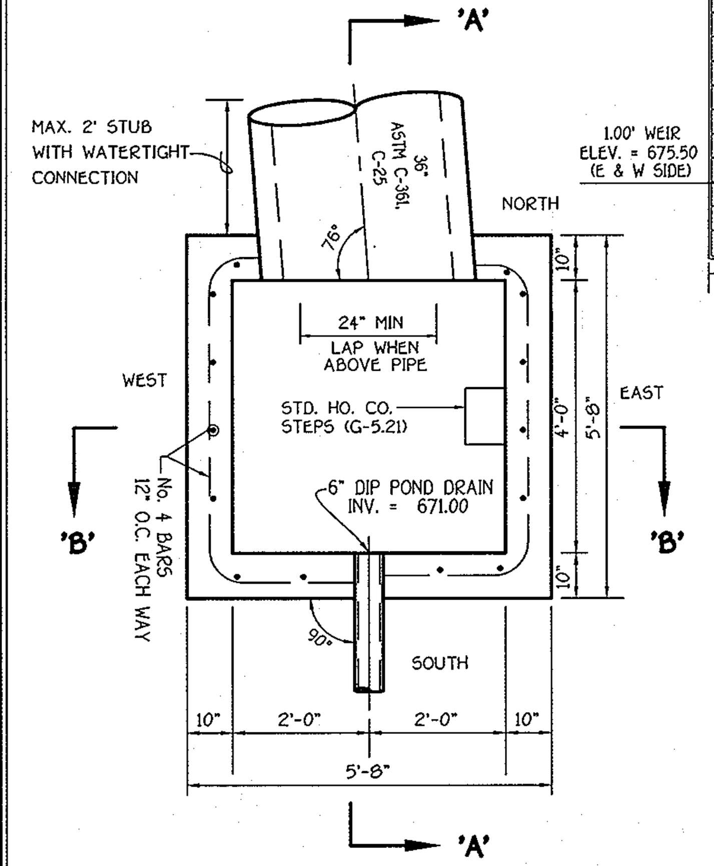
NOTE: COLLARS SHALL BE PLACED A MINIMUM OF 2'-0" FROM PIPE JOINTS.

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.



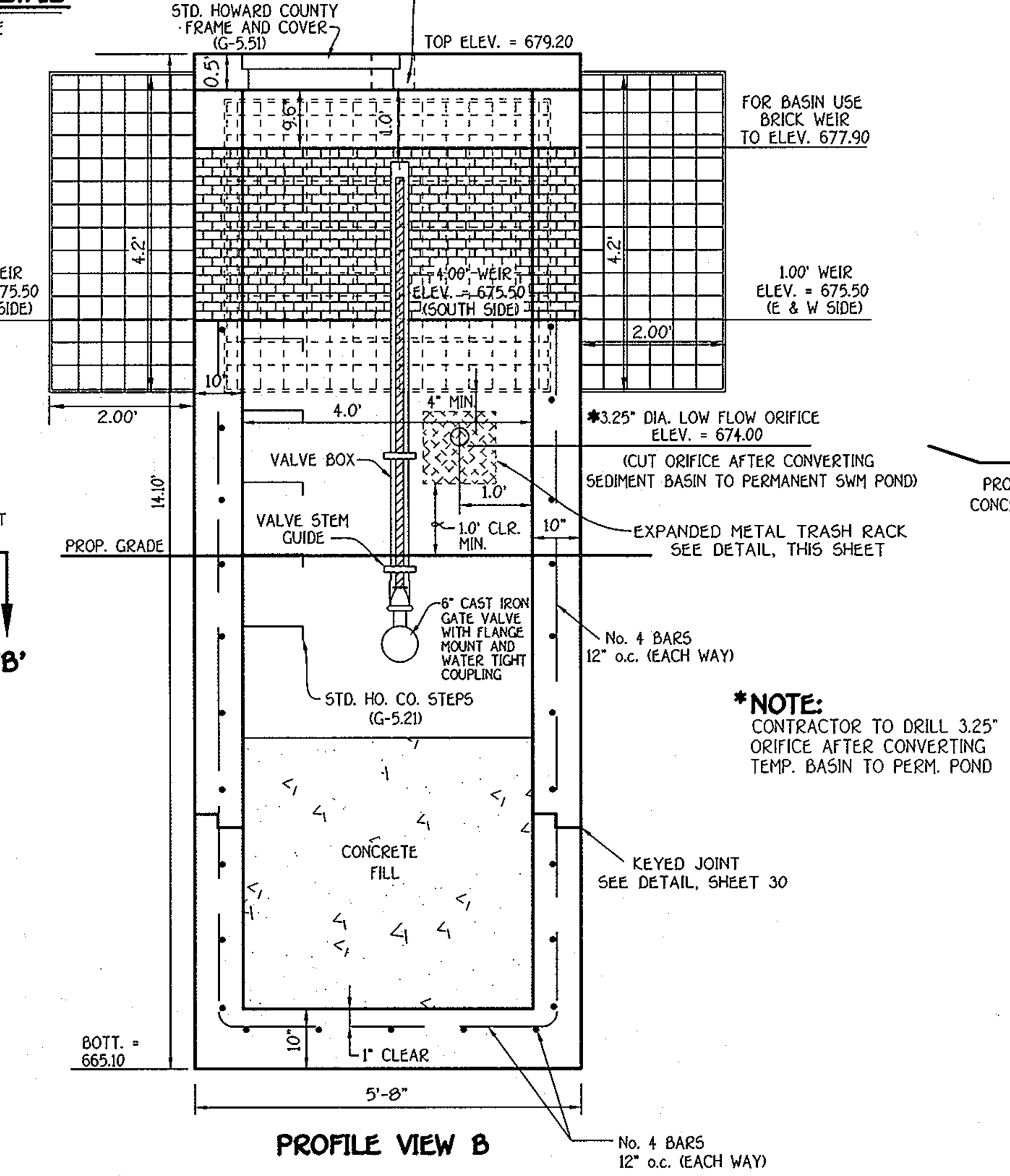
A2 CRADLE

NO SCALE



RISER PLAN VIEW

NO SCALE

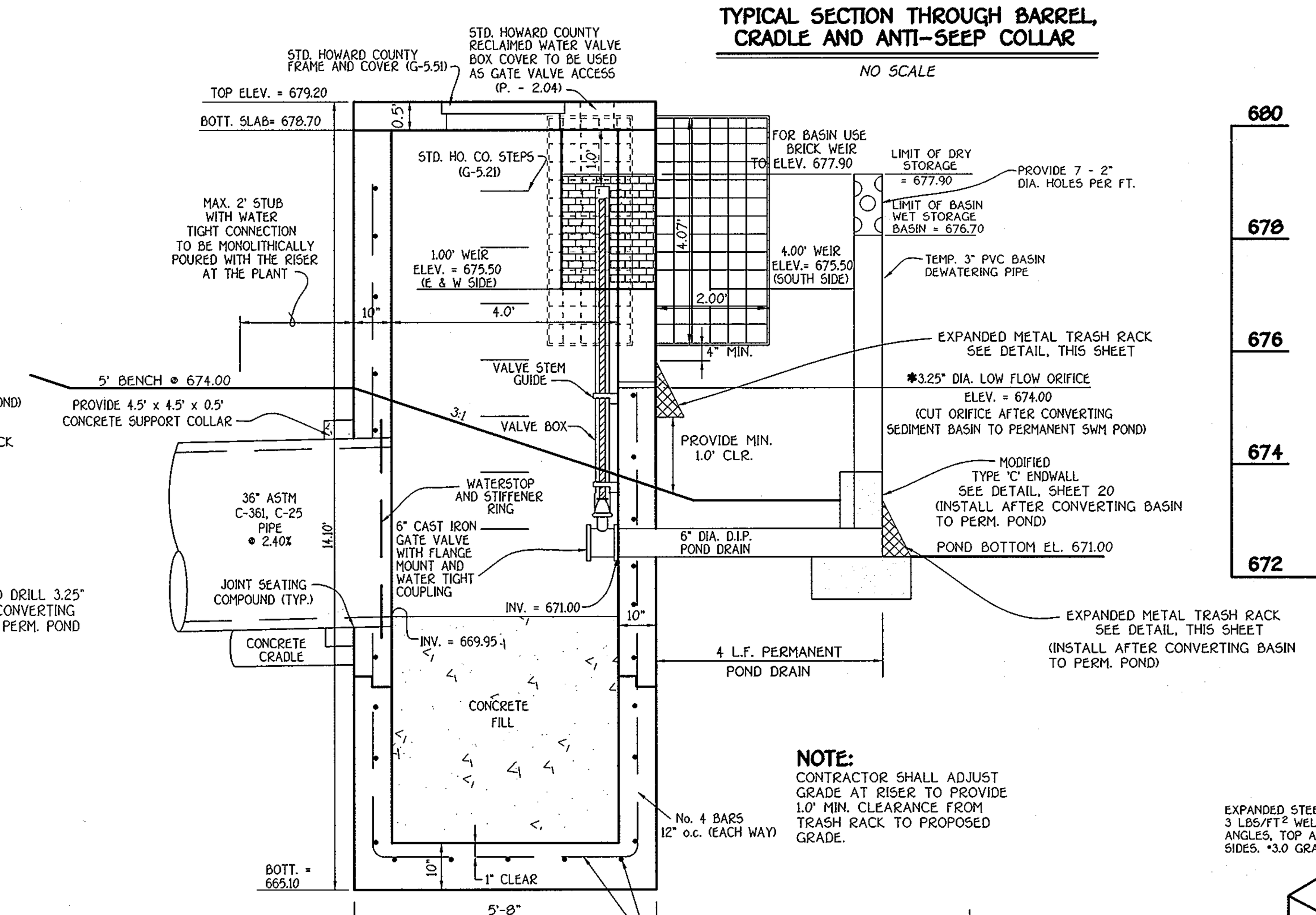


PROFILE VIEW B

*NOTE:
CONTRACTOR TO DRILL 3.25" ORIFICE AFTER CONVERTING TEMP. BASIN TO PERM. POND

R 1 CONCRETE RISER DETAIL

SCALE : 1" = 2'

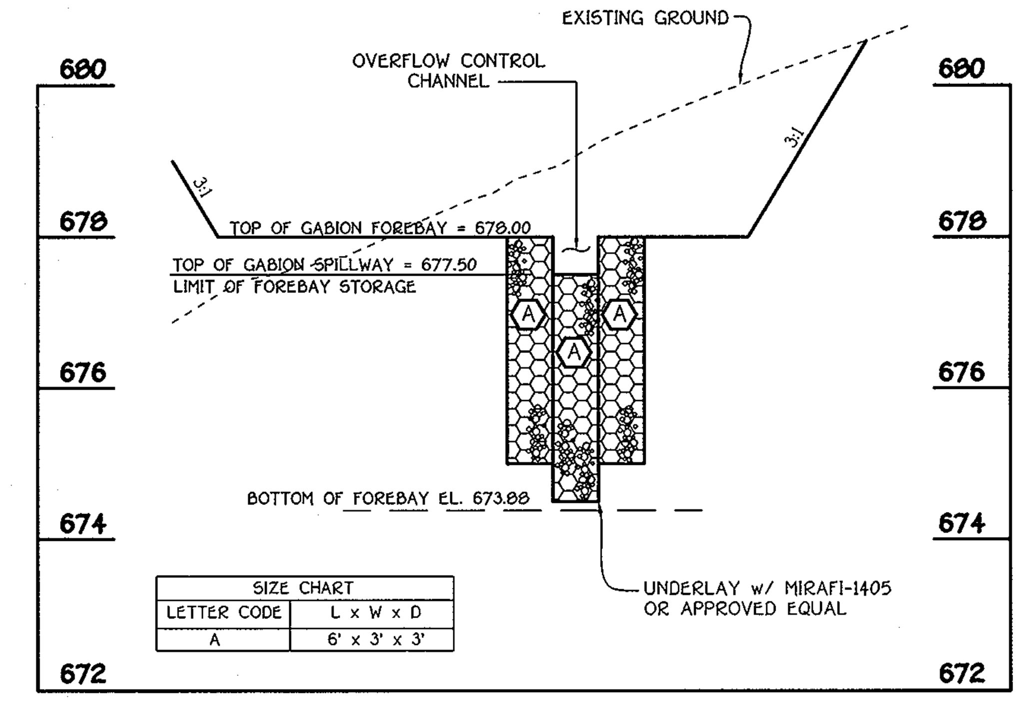


NOTE:
CONTRACTOR SHALL ADJUST GRADE AT RISER TO PROVIDE 1.0' MIN. CLEARANCE FROM TRASH RACK TO PROPOSED GRADE.

PROFILE VIEW A

R 1 CONCRETE RISER DETAIL

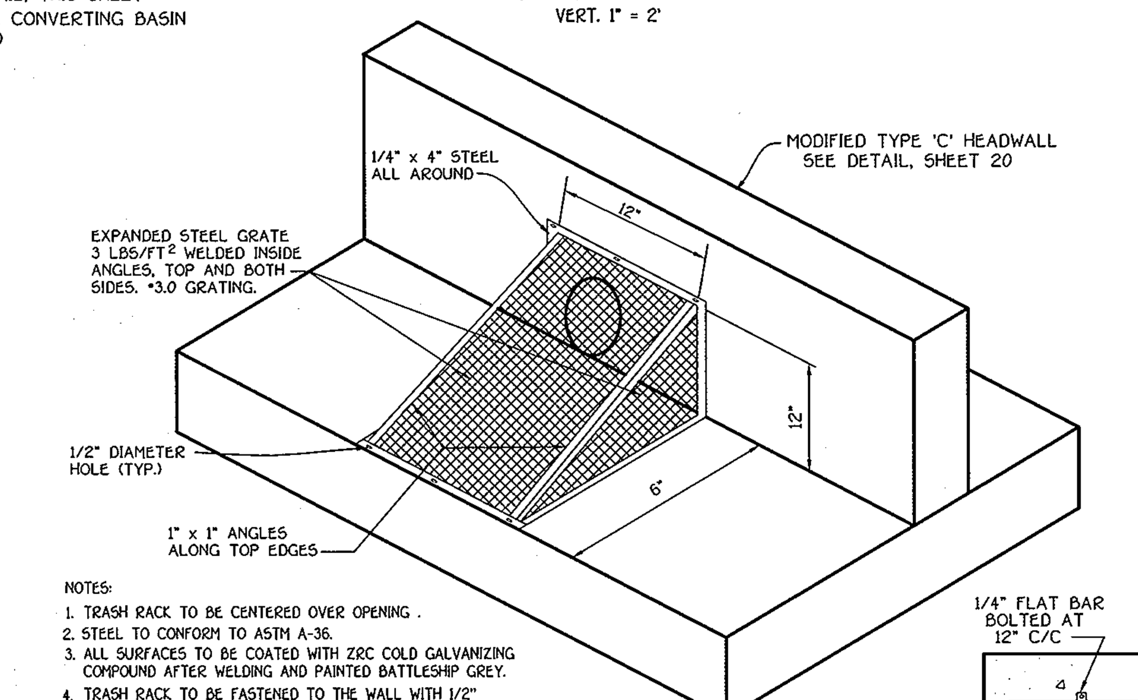
SCALE : 1" = 2'



SIZE CHART	
LETTER CODE	L x W x D
A	6' x 3' x 3'

GABION FOREBAY PROFILE

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



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

NOT TO SCALE

ENGINEER'S CERTIFICATE

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

Signature Of Engineer — 1-9-09 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 — 1/12/09 Date

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

District Howard Soil Conservation Dist. * — 1/14/09 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 2/23/09 Date

Chief, Development Engineering Division — 2/20/09 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 1-22-09 Date

* See sheet 30 for pond approval and As-built requirements

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 Gutarantee 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.

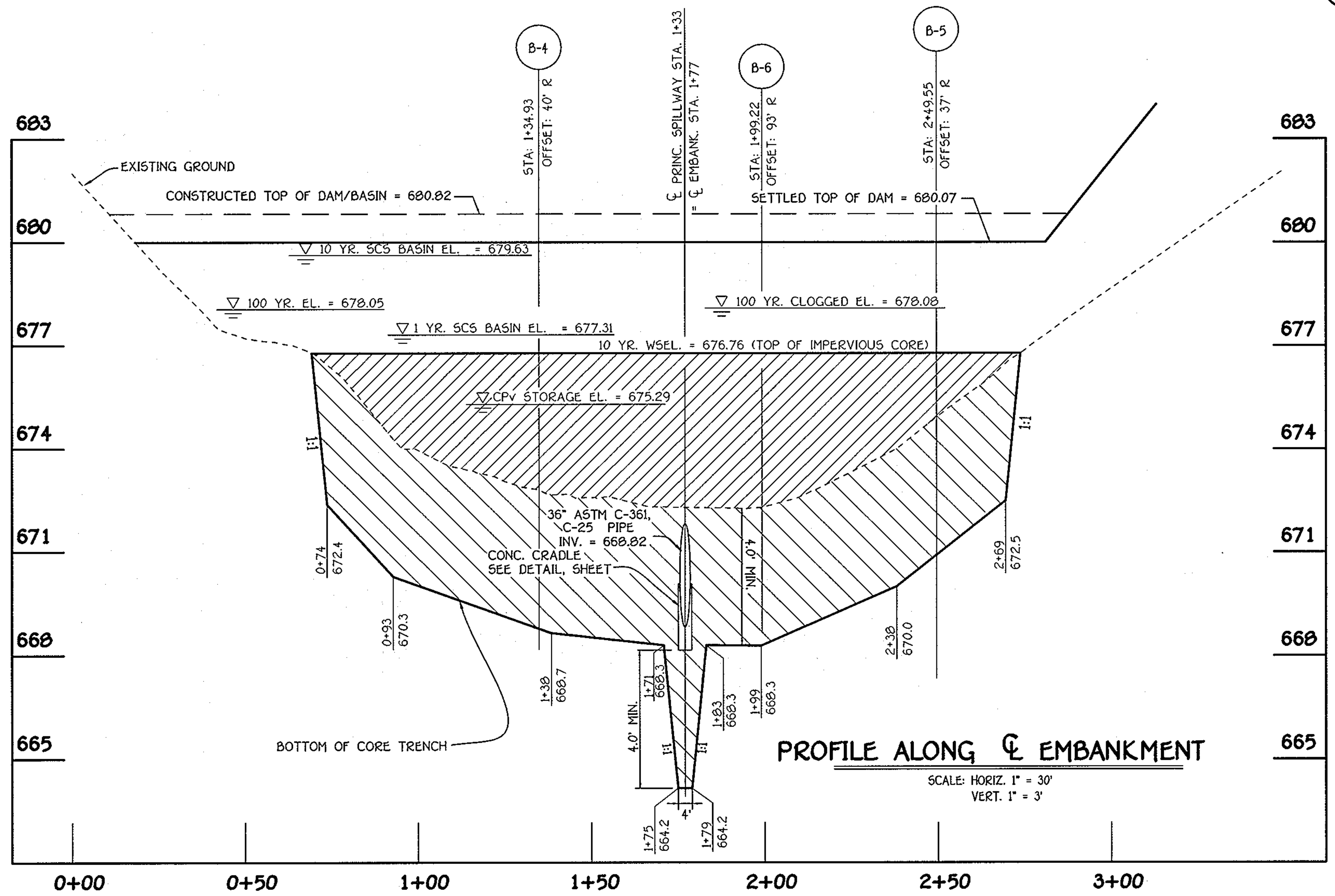
OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND JOINTLY MAINTAINED STORMWATER MANAGEMENT FACILITIES

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

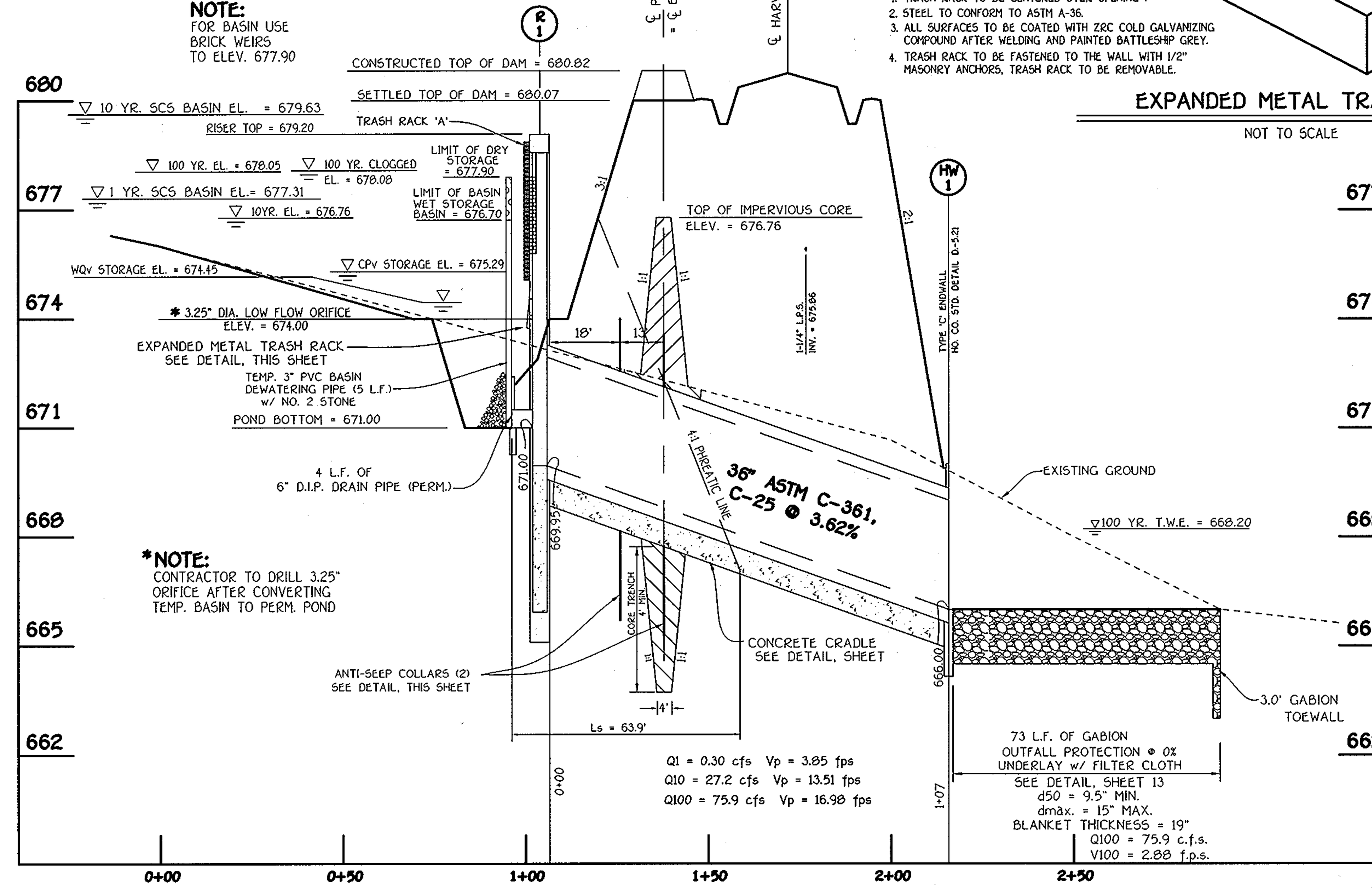
1. Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components shall be inspected during routine maintenance operations.
2. Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond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



PROFILE ALONG ℄ EMBANKMENT

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

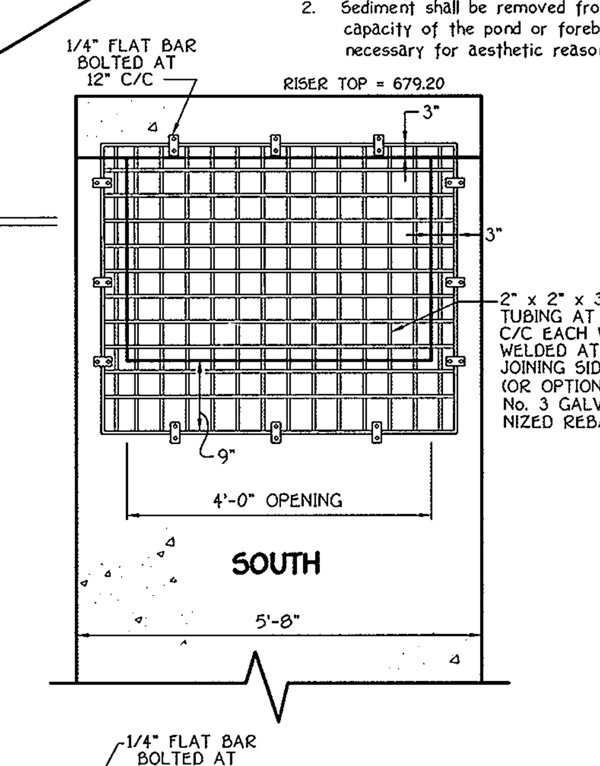
NOTE:
FOR BASIN USE BRICK WEIRS TO ELEV. 677.90



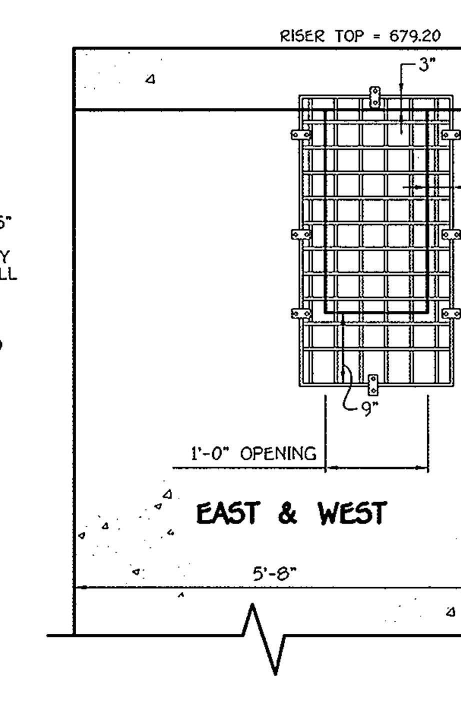
*NOTE:
CONTRACTOR TO DRILL 3.25" ORIFICE AFTER CONVERTING TEMP. BASIN TO PERM. POND

PRINCIPLE SPILLWAY PROFILE

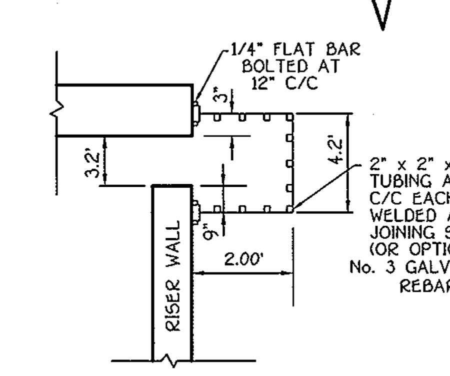
SCALE: HOR. : 1" = 30'
VER. : 1" = 3'



SOUTH



EAST & WEST



TRASH RACK 'A' 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.

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COLUMBIA, MARYLAND 21045

ALDO M. VITUCCI, P.E. — 1-9-09 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 2-22-09."

BMP NO. 1 (BASIN NO. 1)
STORMWATER MANAGEMENT NOTES AND DETAILS

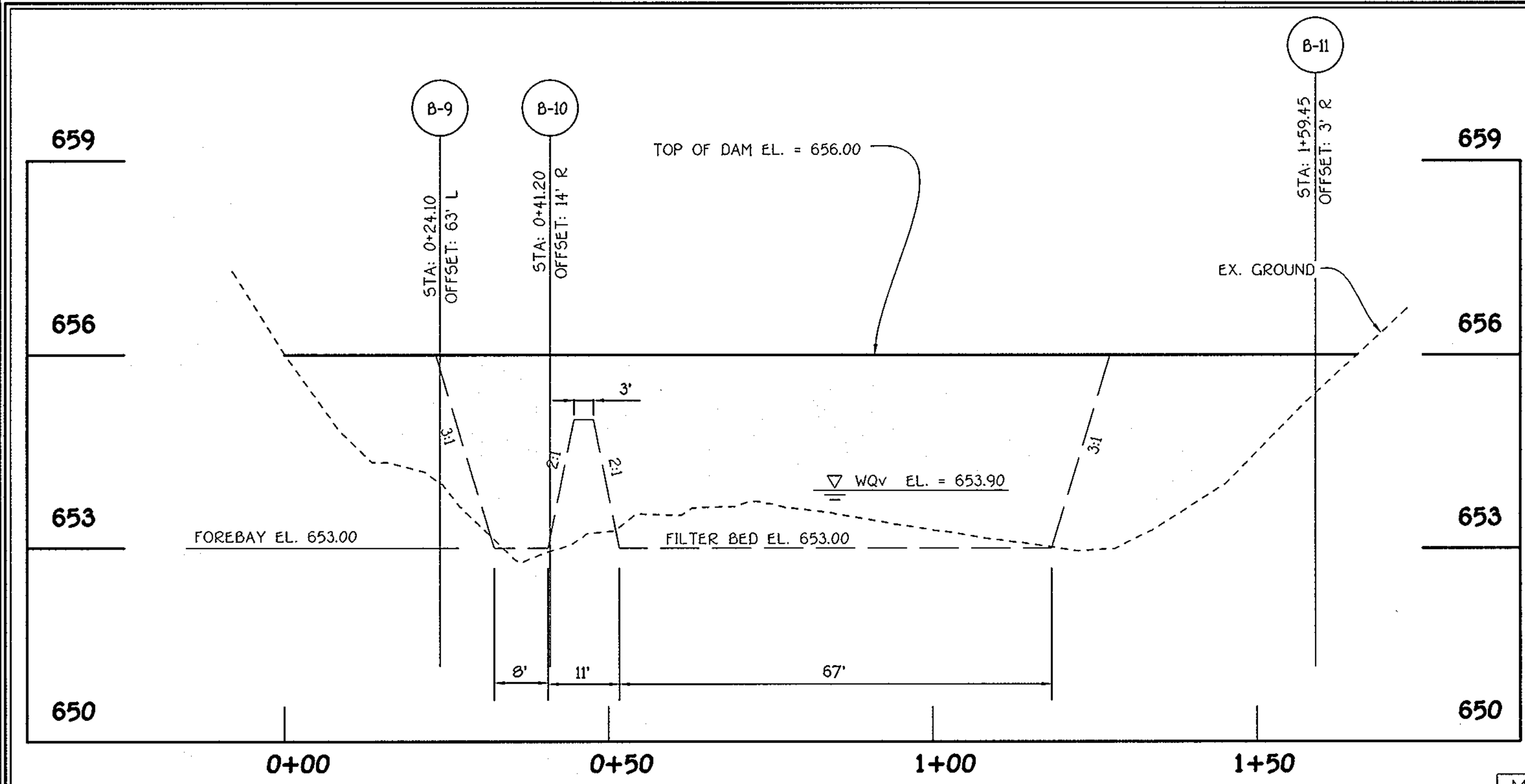
THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 19 OF 31

F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 19-22 FINAL ROAD SWM DETAILS.dwg, 1/7/2009 8:10:43 AM, jamesl, 1:20



℄ PROFILE ALONG TOP OF EMBANKMENT

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

Sand Filter Specifications

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

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

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

3. Sand Filter Construction Specifications

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

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

Surface of filter bed is to be level.

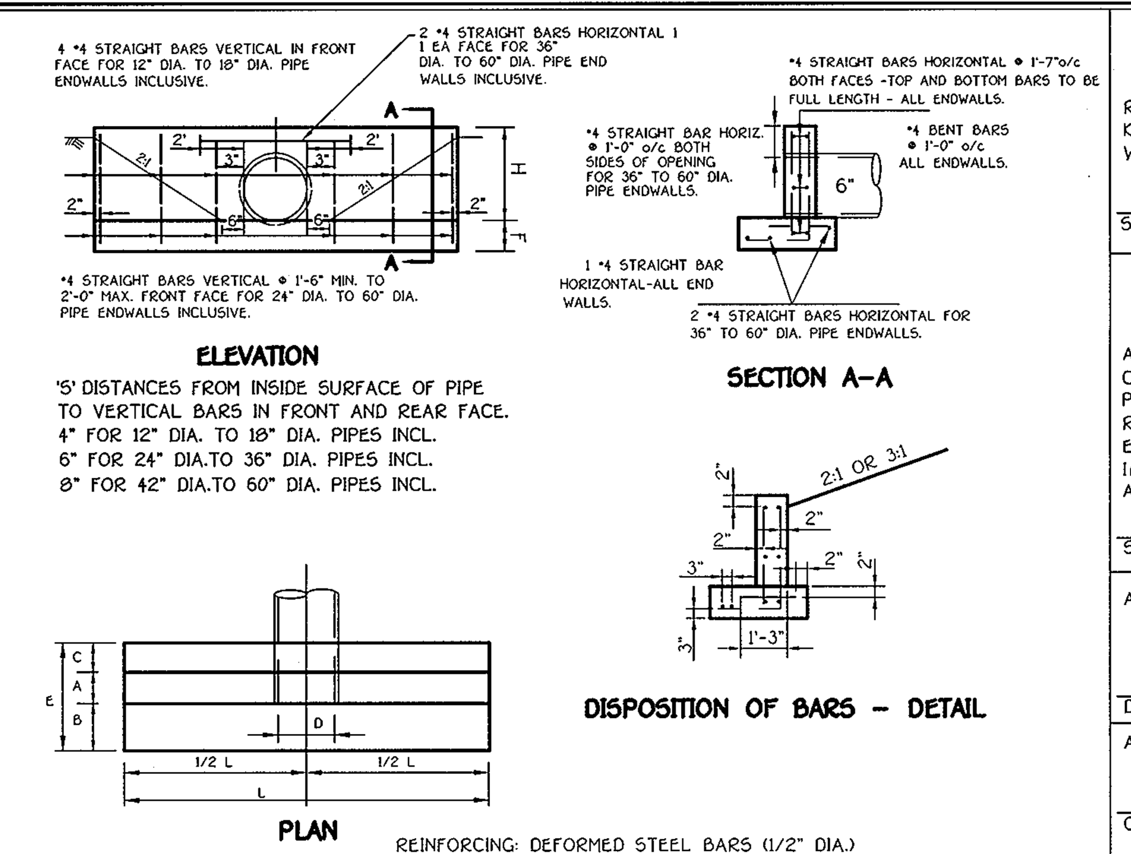
All underground sand filters should be clearly delineated with signs so that they may be located when maintenance is due.

Surface sand filters may be planted with appropriate grasses; see Appendix A.

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

Table B.3.1 Material Specifications for Sand filters

Material	Specifications/Test Method	Size	Notes
sand	clean AASHTO-M-6 of ASTM-Cconcrete sand	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone *10 are note acceptable. No calcium carbonated or dolomitic sand substitutions are: acceptable. No' "rock dust" can be used for sand:
peat	ash content: < 15% pH range: 5.2 to 4.9 loose bulk density 0.12 to 0.15 g/cc	N/a	The material must be reed-sedge hemic peat, shredded, uncompacted, uniform, and clean.
leaf compost		N/a	
underdrain gravel	AASHTO-M-43	0.375" to 0.75"	
geotextile fabric (if required)	ASTM-D-4833 (puncture strength lb.) ASTM-D-4632 (Tensile Strength lb.)	0.08" thick equivalent opening size of *80 sieve	Must maintain 125 gpm per sq. ft. flow rate. Note: a 4" pea gravel layer may be substituted for geotextiles meant to "separate" sand filter layers.
impermeable liner (if required)	ASTM-D-4833 (thickness) ASTM-D-412 (tensile strength 1,100 lb., elongation 200%) ASTM-D-624 (Tear resistance - 150 lb./in) ASTM-D-471 (water adsorption: +8 to -2% mass)	30 mil thickness	Liner to be ultraviolet resistant. A geotextile fabric should be used to protect the liner from puncture.
underdrain piping	F 758, Type PS 28 or AASHTO-M-278	4" - 6" rigid schedule 40 PVC or SDR35	3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes
concrete (cast-in-place)	MSHA Standards and Specs. Section 902, Mix No. 3, f'c = 3500 psi, normal weight, air-entrained; reinforcing to meet ASTM-615-60	N/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or precast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland
concrete (pre-cast)	per pre-cast manufacturer	N/a	SEE ABOVE NOTE
non-rebar steel	ASTM A-36	N/a	structural steel to be hot-dipped galvanized ASTM-A-123



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

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 — Date 1-9-09

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 — Date 1/12/09

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

District Howard Soil Conservation Dist. — Date 1/14/09

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 2/23/09

Chief, Development Engineering Division — Date 2/20/09

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 1-22-09

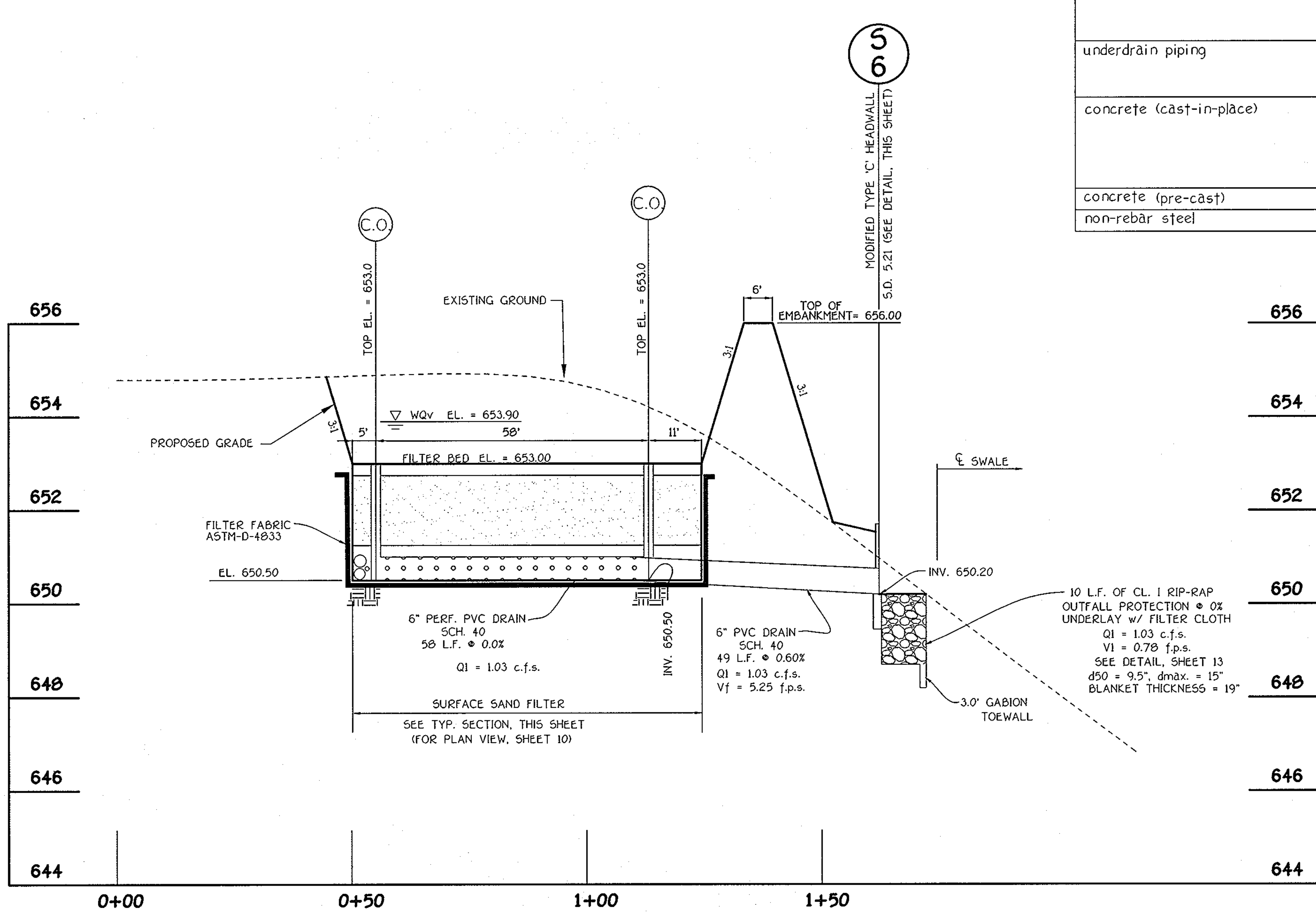
AS-BUILT CERTIFICATION

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.

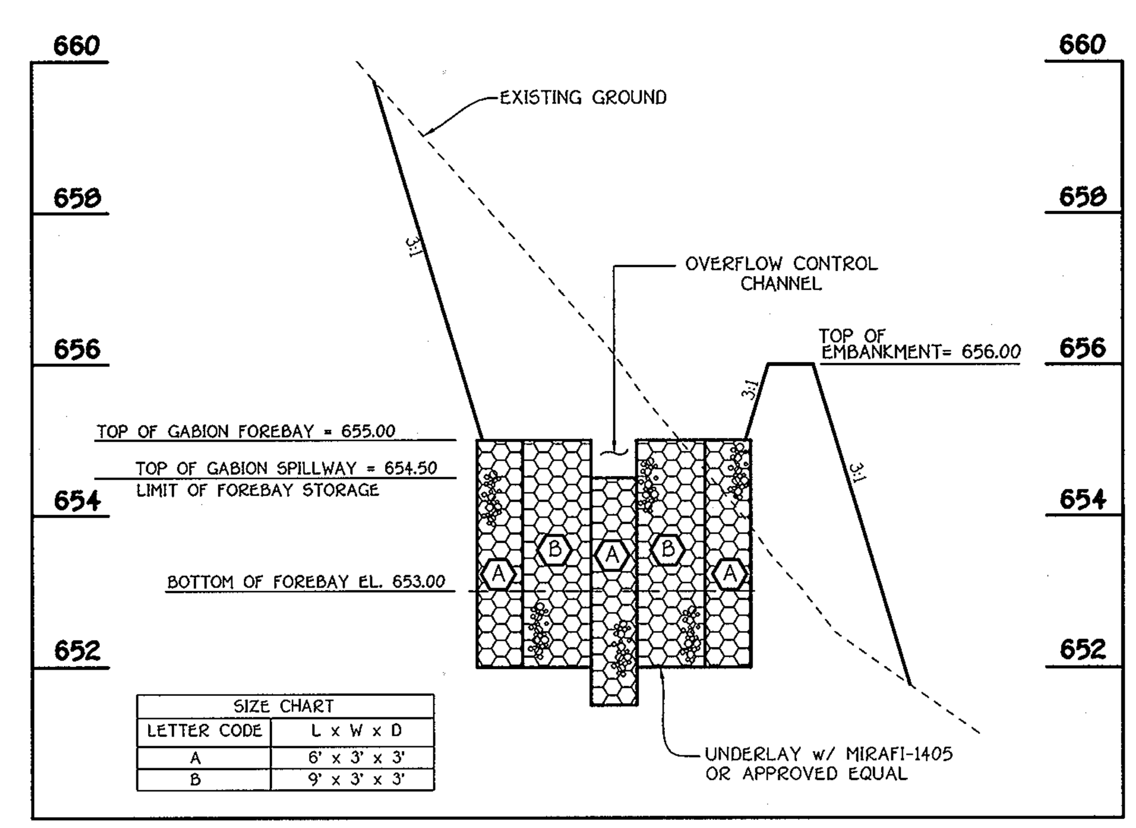
Date:

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.



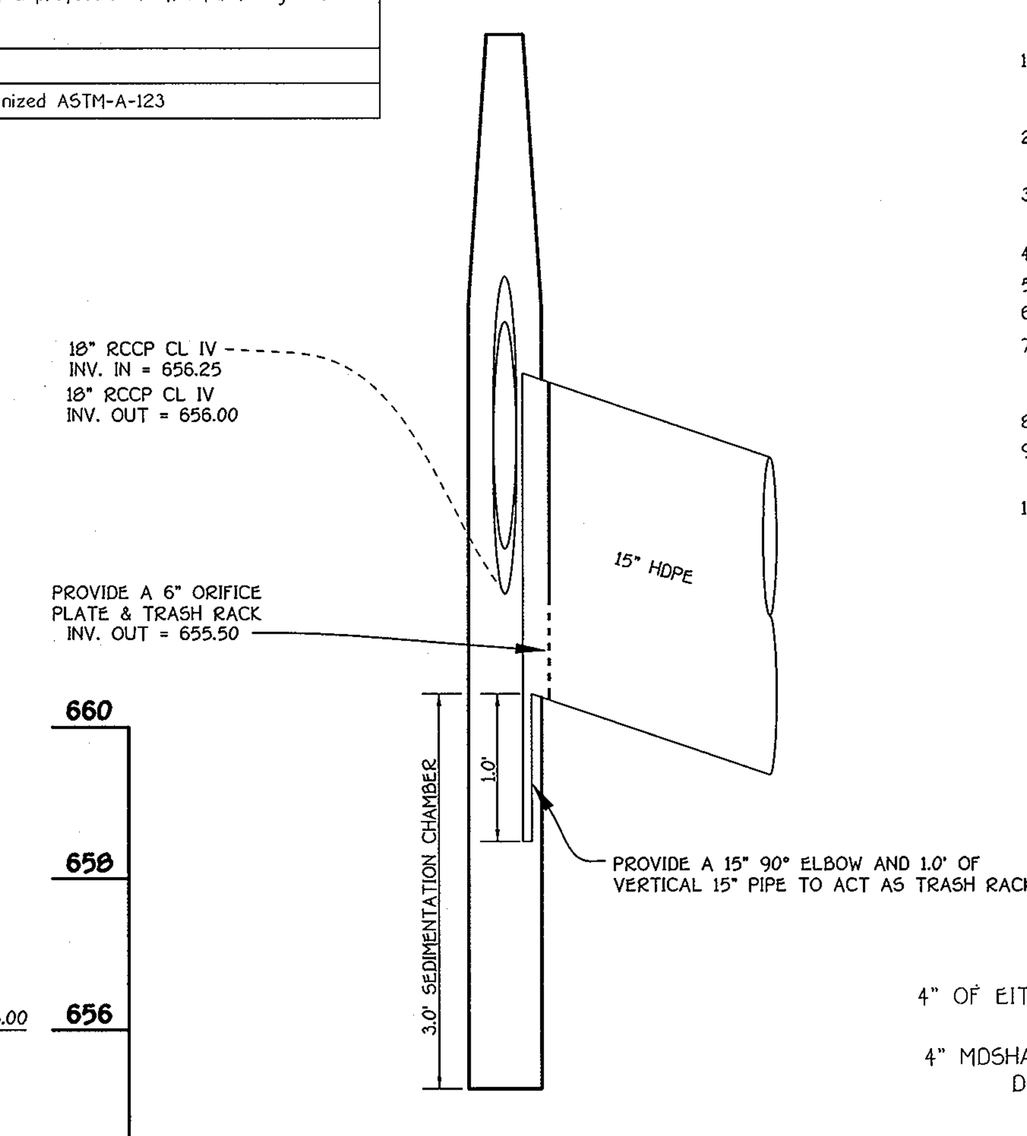
S.W.M. FACILITY PROFILE ALONG SECTION 'A-A'

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



GABION FOREBAY PROFILE

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

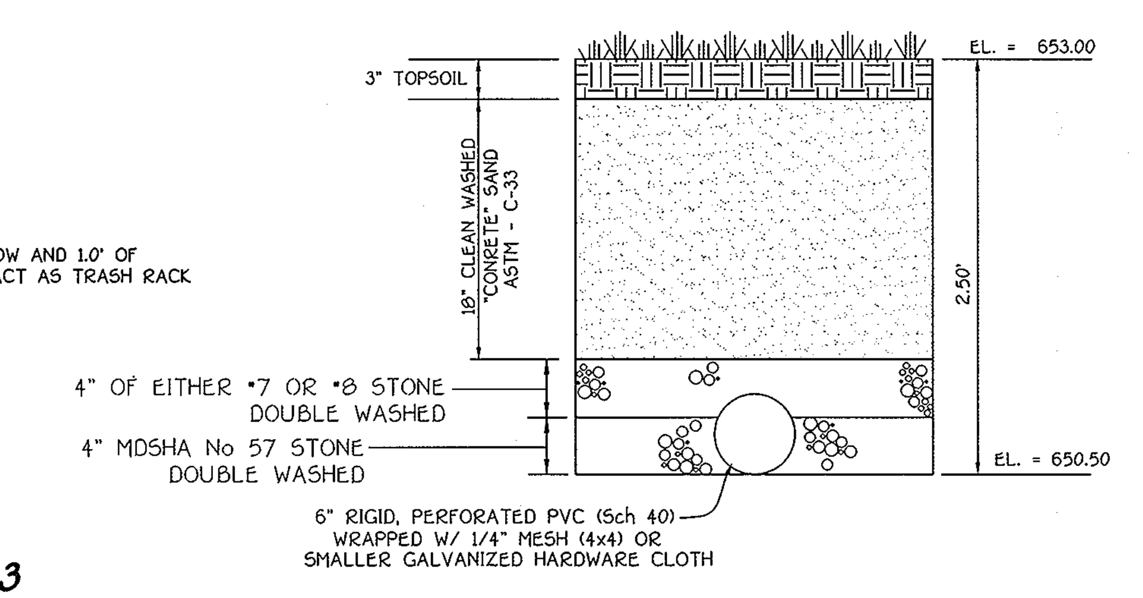


TYPICAL SPLITTER DETAIL AT M-3

NOT TO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS

1. THE STORMWATER WETLAND FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
2. THE TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF ONCE PER YEAR, WHEN VEGETATION REACHES 18" IN HEIGHT OR AS NEEDED.
3. FILTERS THAT HAVE A GRASS COVER SHALL BE MOWED A MINIMUM OF THREE (3) TIMES PER GROWING SEASON TO MAINTAIN A MAXIMUM GRASS HEIGHT OF LESS THAN 12 INCHES.
4. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
5. VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
6. REMOVE SILT WHEN IT EXCEEDS FOUR (4) INCHES DEEP IN THE FOREBAY.
7. WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 72 HOURS, THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REPLACED WITH FRESH MATERIAL. THE OWNER MUST FOLLOW PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIALS AND LIQUID.
8. A LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
9. THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
10. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION SYSTEM HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.



TYPICAL SECTION - SURFACE SAND FILTER

NO SCALE

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

OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

ALDO M. VITUCCI, P.E. — DATE 1-8-09

"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 2-22-09."

BMP NO. 5
STORMWATER MANAGEMENT NOTES AND DETAILS

THE LEGACY

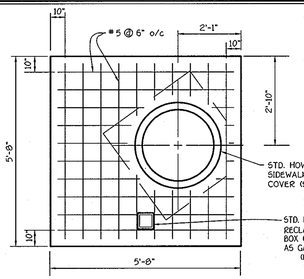
LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 20 OF 31

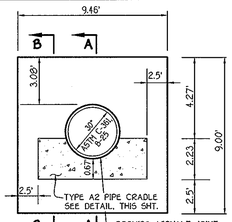
F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 19-22 FINAL ROAD SWM DETAILS.dwg, 1/7/2009 8:03:42 AM, jamesl, 1:20

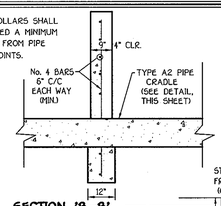
NOTES:
1. CONCRETE SHALL BE MSHA MIX No. 3 (F'C > 3,500 P.S.I.)
2. REINFORCING STEEL: GRADE 60
3. FOR WALLS OF STRUCTURE SHALL UTILIZE L.M. SCOFIELD CO. T-9055 FORM LINERS (RANDOM SPLIT-FACE ROCK) OPTIONAL.
4. PROVIDE ROUGH BROOM FINISH
5. ANCHOR BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 6.07.03.59 OF THE MSHA STANDARDS AND SPECS.
6. ALL REINFORCING SPLICES SHALL BE LAP SPLICES OF 30 BAR DIA. UNLESS OTHERWISE SHOWN.



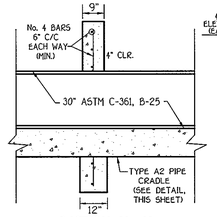
TOP SLAB DETAIL
NO SCALE



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

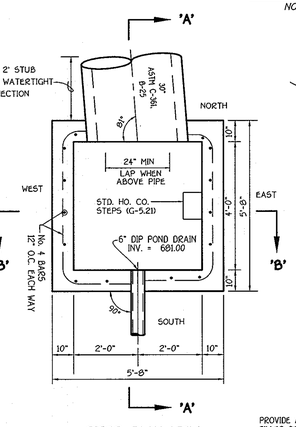


SECTION 'B-B'

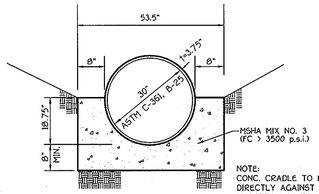


SECTION 'A-A'

TYPICAL SECTION THROUGH BARREL, CRADLE AND ANTI-SEEP COLLAR
NO SCALE

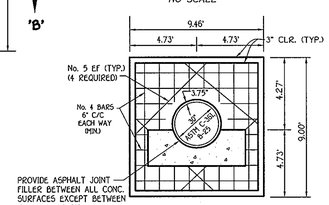


RISER PLAN VIEW
NO SCALE



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.



ANTI-SEEP COLLAR
NO SCALE

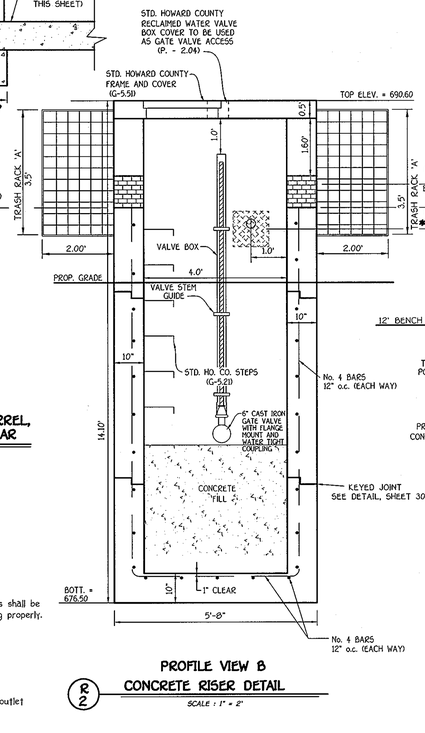
OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED BY H.O.A. STORMWATER MANAGEMENT FACILITIES

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

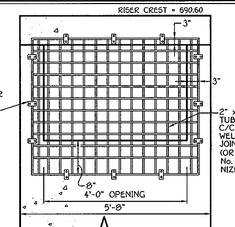
1. Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components shall be inspected during routine maintenance operations.
2. Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond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

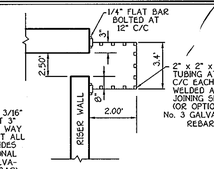


PROFILE VIEW B
CONCRETE RISER DETAIL
(R2)
SCALE : 1" = 2'

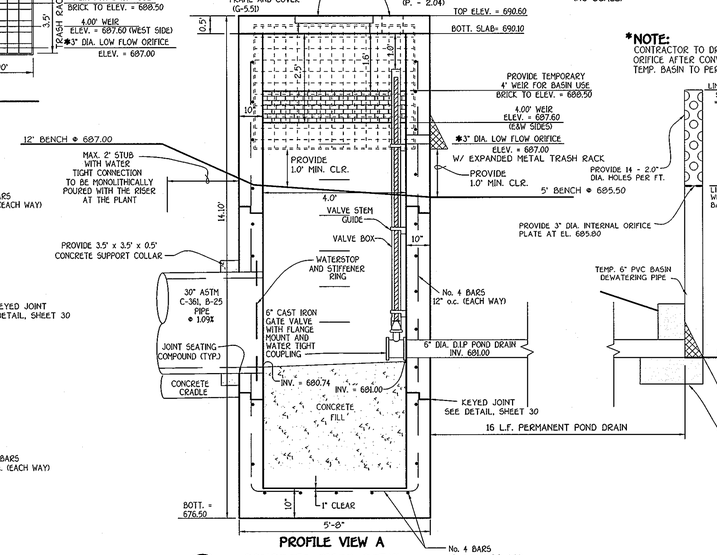
*NOTE:
CONTRACTOR TO DRILL 3" ORIFICE AFTER CONVERTING TEMP. BASIN TO PERM. POND

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)

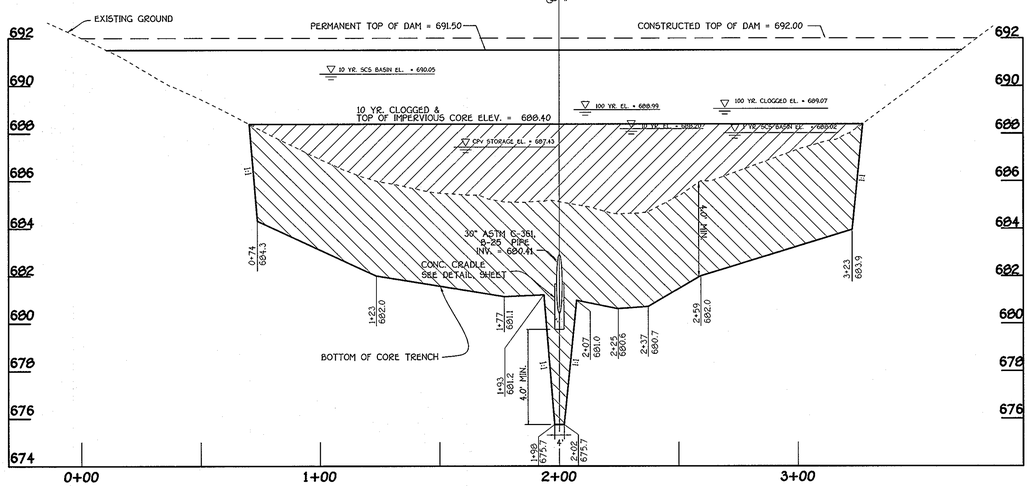


*NOTE:
CONTRACTOR TO DRILL 3" ORIFICE AFTER CONVERTING TEMP. BASIN TO PERM. POND

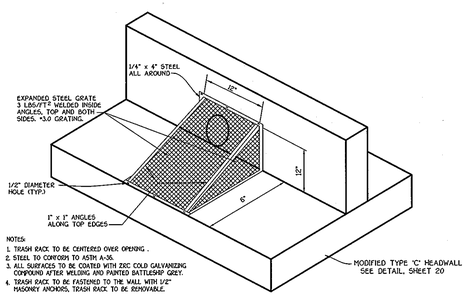
* See sheet 30 for pond approval and As-built requirements.

PROFILE VIEW A
CONCRETE RISER DETAIL
(R2)
SCALE : 1" = 2'

NOTE:
CONTRACTOR TO INSTALL ENDWALL & TRASH RACK AFTER CONVERTING TEMP. BASIN TO PERM. POND

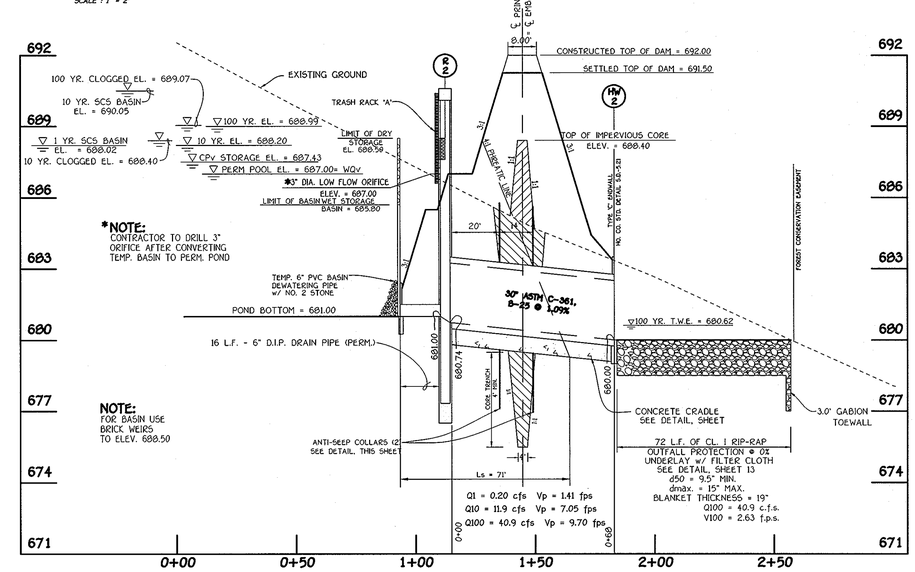


PROFILE ALONG ℄ EMBANKMENT
SCALE: HORIZ. 1" = 30'
VERT. 1" = 3'



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
NOT TO SCALE



PRINCIPLE SPILLWAY PROFILE
SCALE: HOR. : 1" = 30'
VER. : 1" = 3'

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 Conditions And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Signature, Engineer — 1-9-09 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 — 1/12/09 Date

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

District Howard Soil Conservation Dist. — 1/12/09 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 2/23/09 Date

Chief, Development Engineering Division — 2/20/09 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 1-22-09 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.

STATE OF MARYLAND — PROFESSIONAL ENGINEER

1-9-09
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 2-22-09."

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

OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

BMP NO. 6 (BASIN NO. 6)
STORMWATER MANAGEMENT NOTES AND DETAILS

THE LEGACY

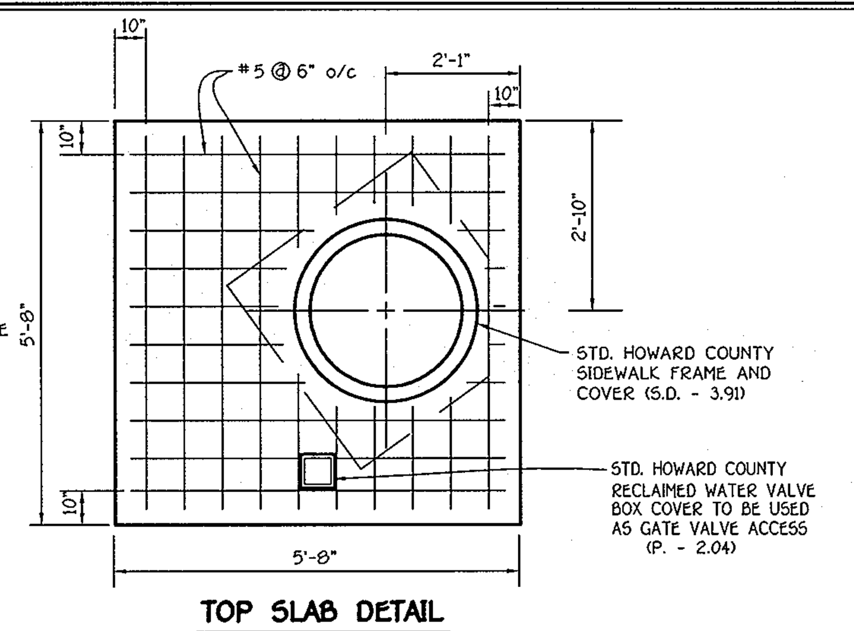
LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 21 OF 31

F-07-052

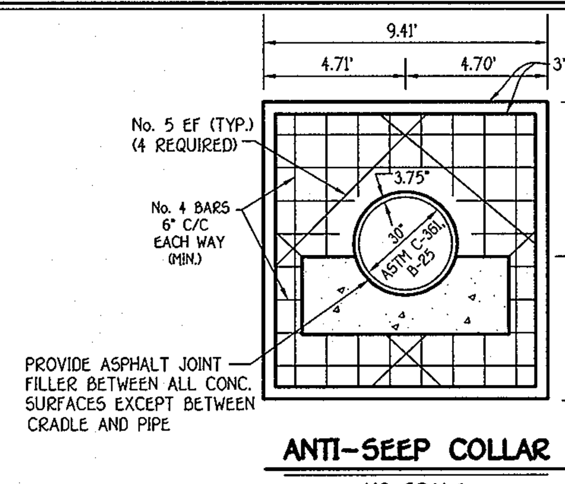
I:\2004\04002\dwg\04002-3001 SHEET 19-22 FINAL ROAD SWM DETAILS.dwg, 1/7/2009 8:02:55 AM, james\, 1:20

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 L.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 30 BAR DIA. UNLESS OTHERWISE SHOWN.



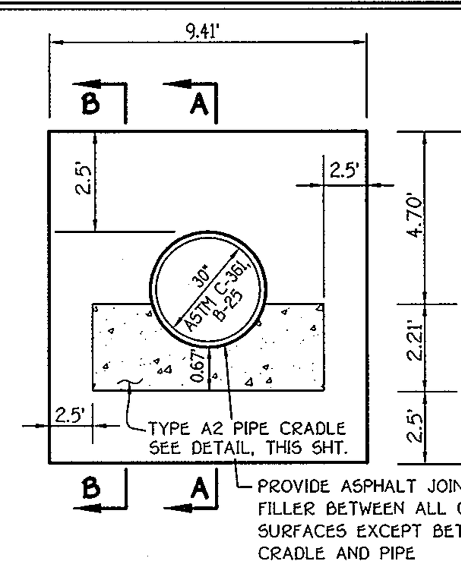
TOP SLAB DETAIL

NO SCALE

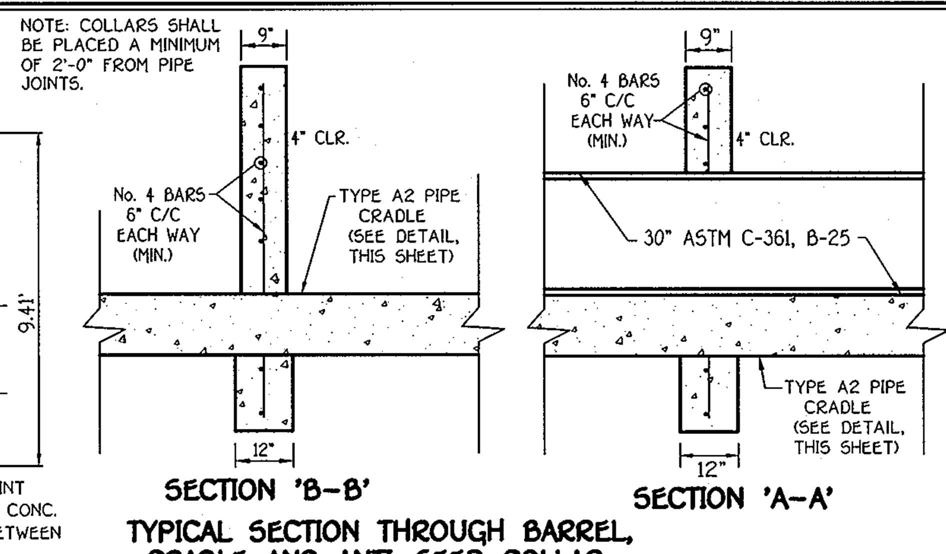


ANTI-SEEP COLLAR

NO SCALE

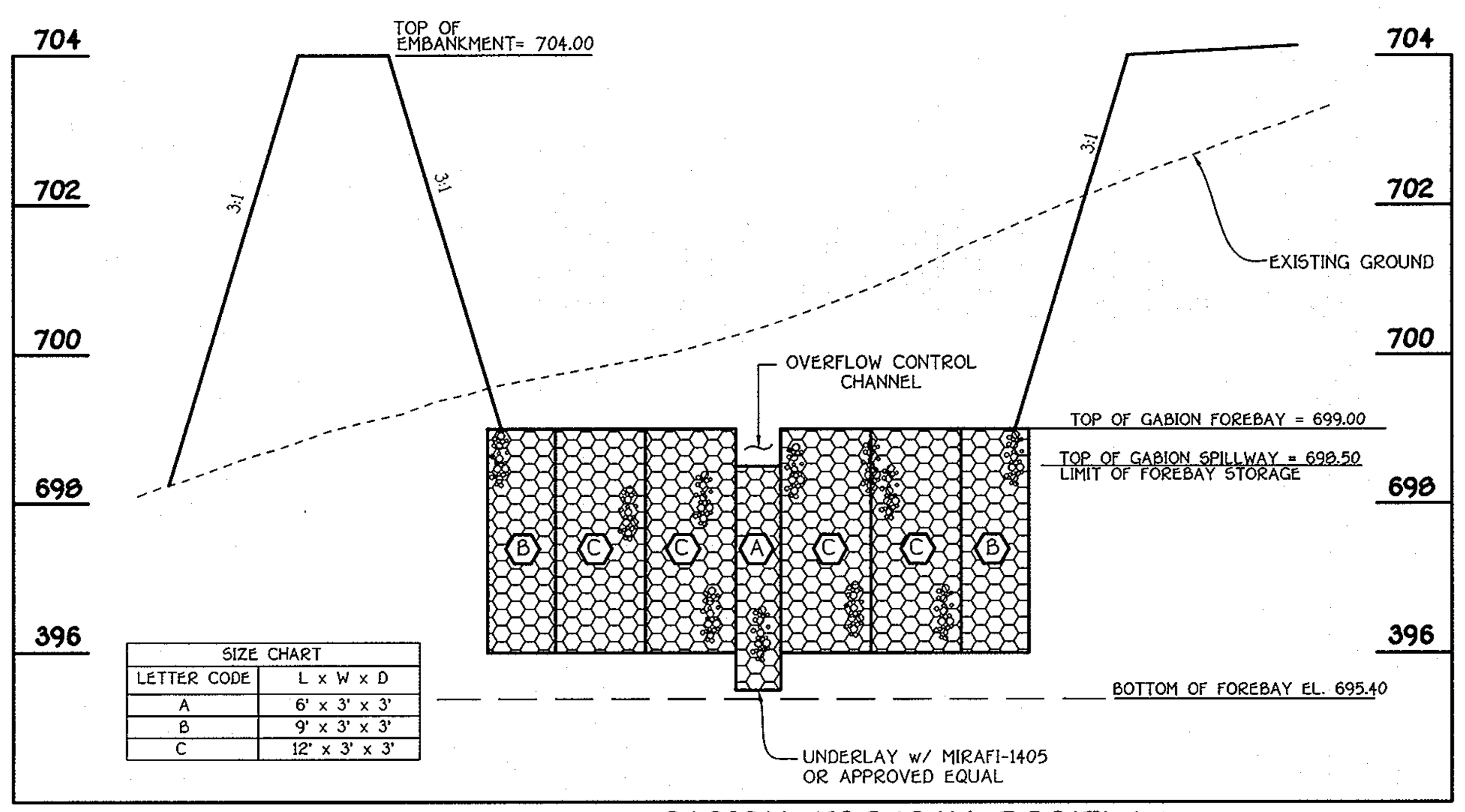


NOTE: COLLARS SHALL BE PLACED A MINIMUM OF 2'-0" FROM PIPE JOINTS.



TYPICAL SECTION THROUGH BARREL, CRADLE AND ANTI-SEEP COLLAR

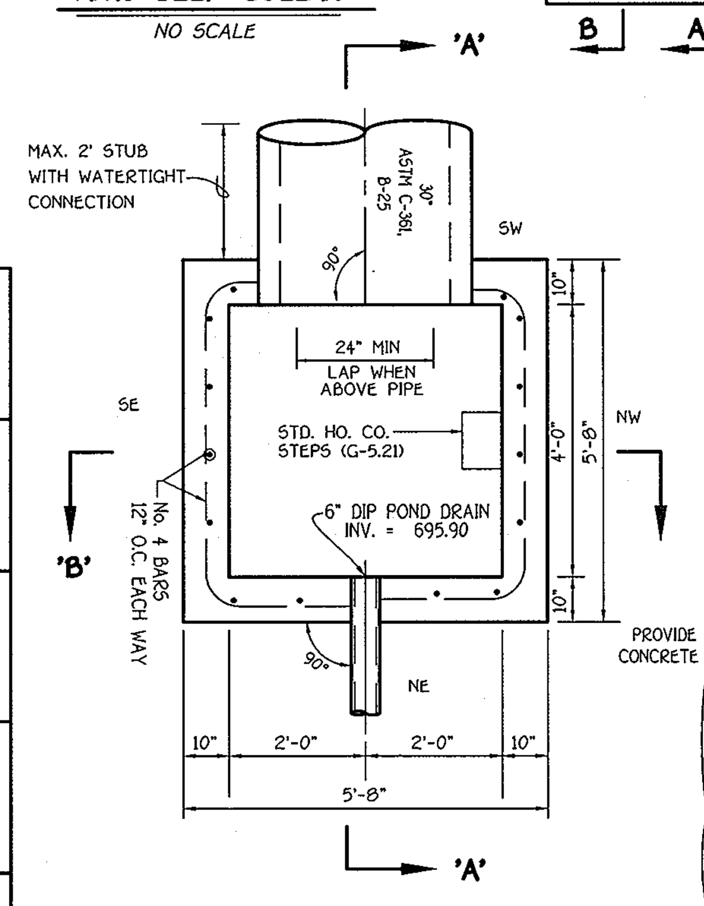
NO SCALE



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

GABION FOREBAY PROFILE

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



RISER PLAN VIEW

NO SCALE

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

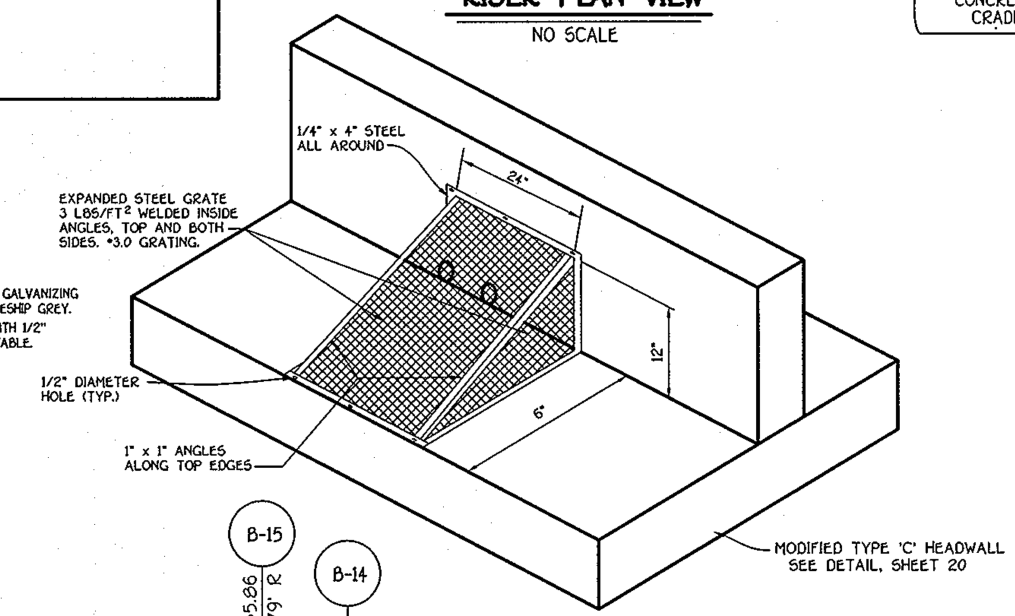
ROUTINE MAINTENANCE

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

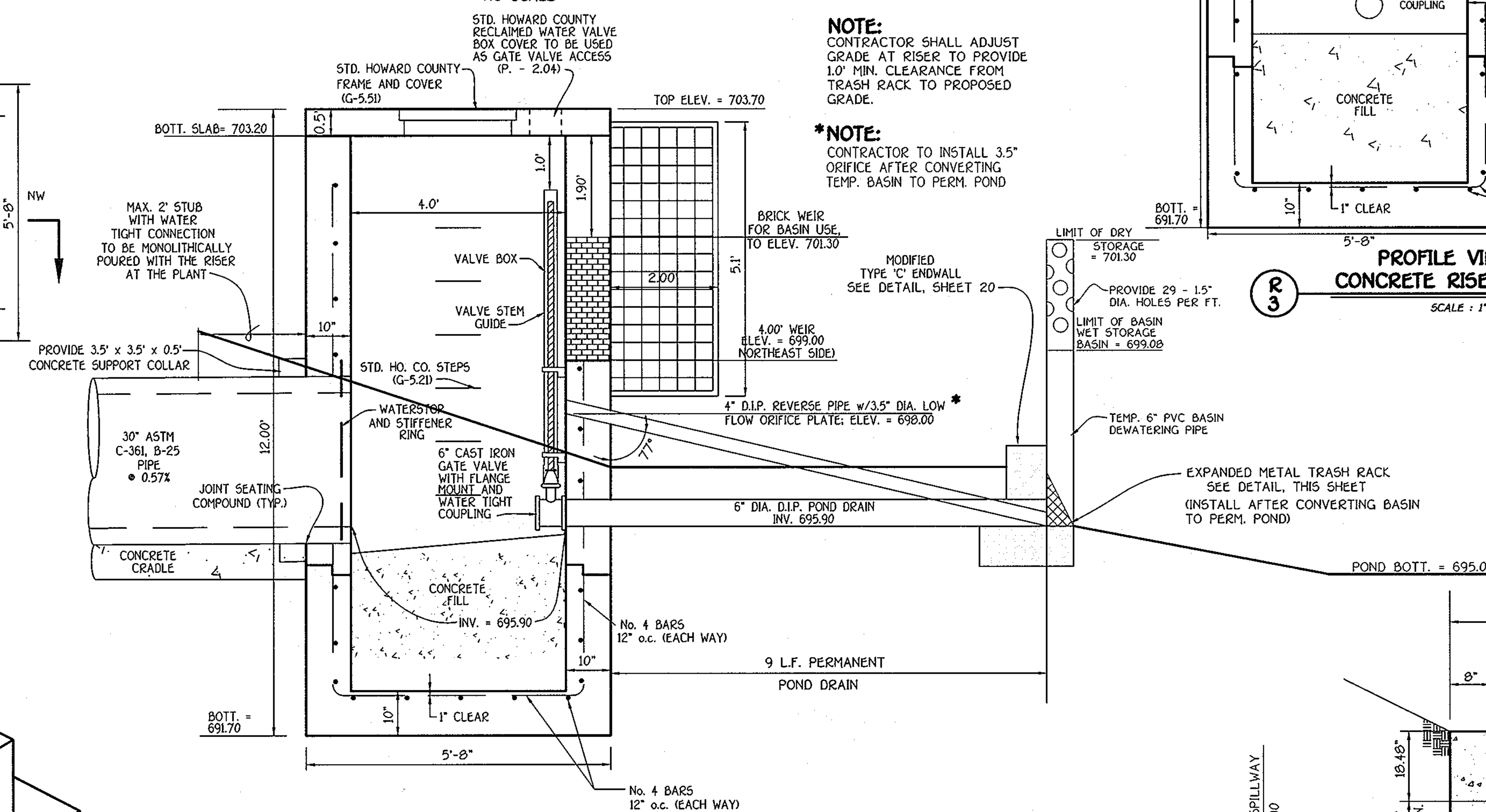
1. Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components shall be inspected during routine maintenance operations.
2. Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond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

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

NOT TO SCALE



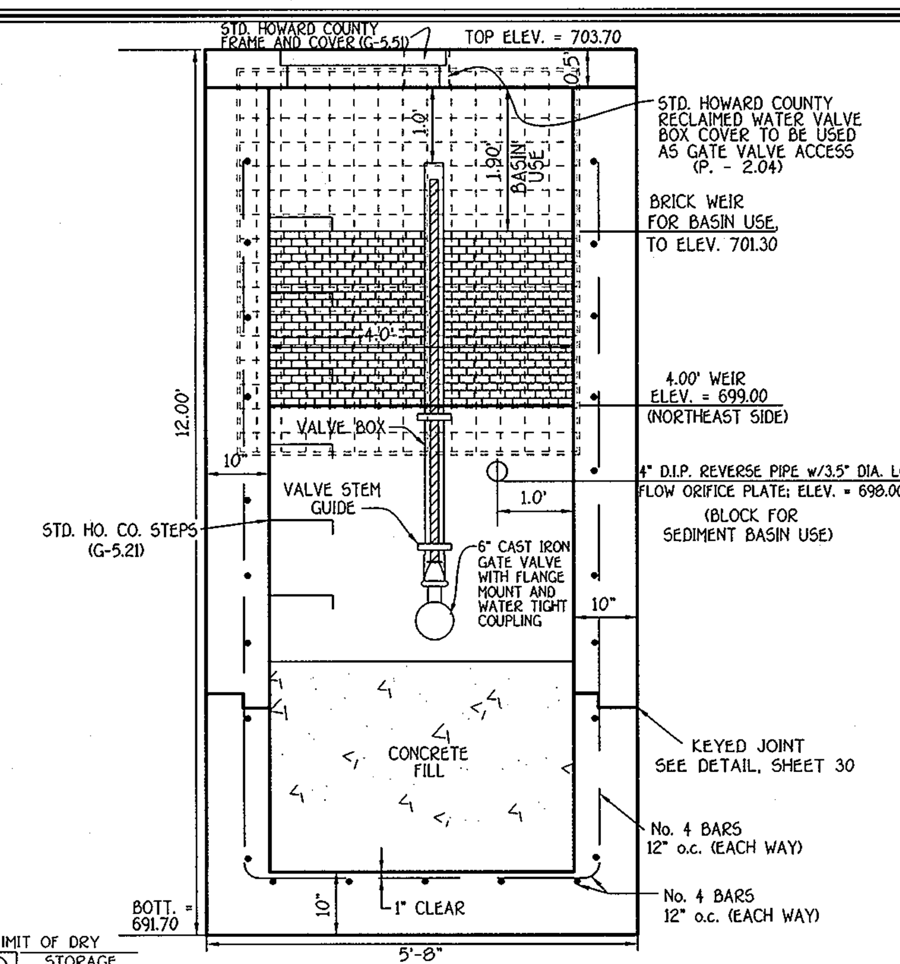
NOTE:
CONTRACTOR SHALL ADJUST GRADE AT RISER TO PROVIDE 1.0' MIN. CLEARANCE FROM TRASH RACK TO PROPOSED GRADE.

***NOTE:**
CONTRACTOR TO INSTALL 3.5" ORIFICE AFTER CONVERTING TEMP. BASIN TO PERM. POND

PROFILE VIEW A

R 3 CONCRETE RISER DETAIL

SCALE : 1" = 2'



PROFILE VIEW B

R 3 CONCRETE RISER DETAIL

SCALE : 1" = 2'

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 Conditions And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

[signature] 1-8-09
Signature Of Engineer — 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] 1/12/09
Signature Of Developer — Date

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

[signature] 1/14/09
District Howard Soil Conservation Dist. — Date

Approved: Department Of Planning And Zoning

[signature] 2/23/09
Chief, Division Of Land Development — Date

[signature] 2/20/09
Chief, Development Engineering Division — Date

Approved: Howard County Department Of Public Works

[signature] 1-22-09
Chief, Bureau Of Highways — Date

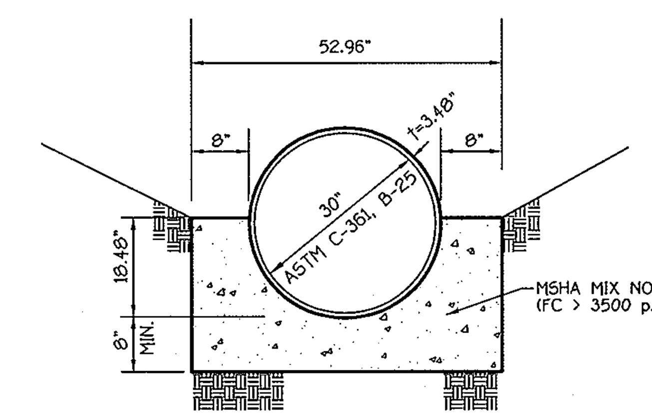
AS-BUILT CERTIFICATION

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:

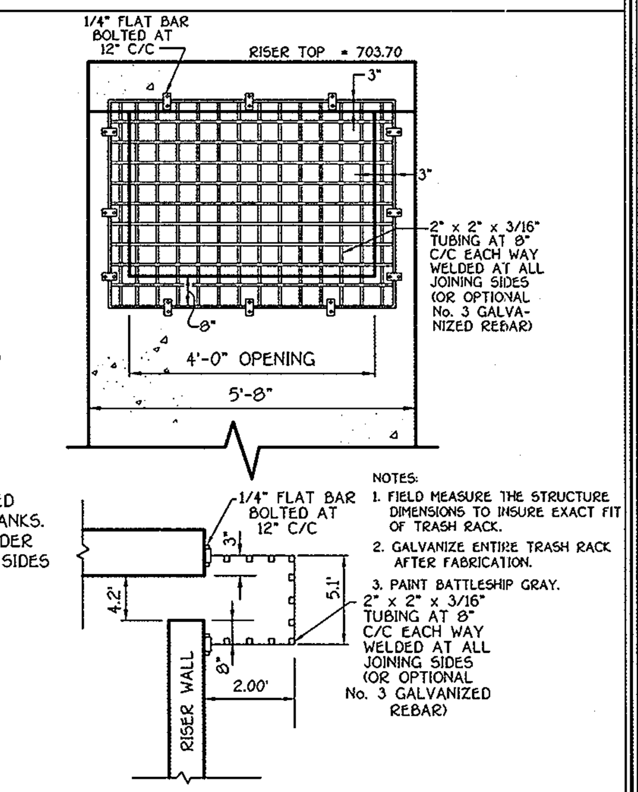
Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify 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.



A2 CRADLE

NO SCALE

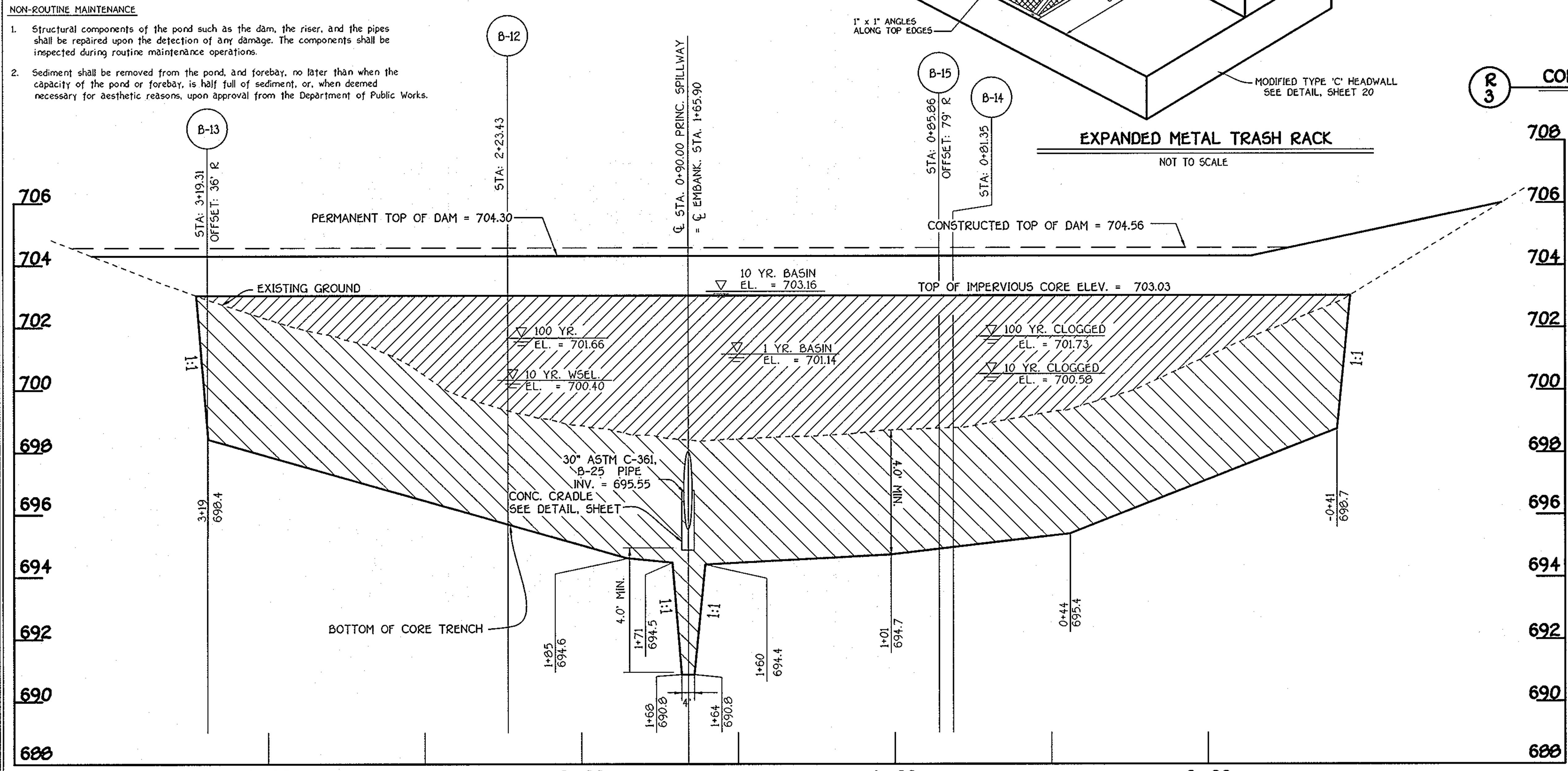
NOTE:
CONC. CRADLE TO BE POURED DIRECTLY AGAINST EARTH BANKS. IF BOTTOM OF TRENCH IS WIDER THAN THE CRADLE, SLOPING SIDES (FRAMED) SHALL BE USED.



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.

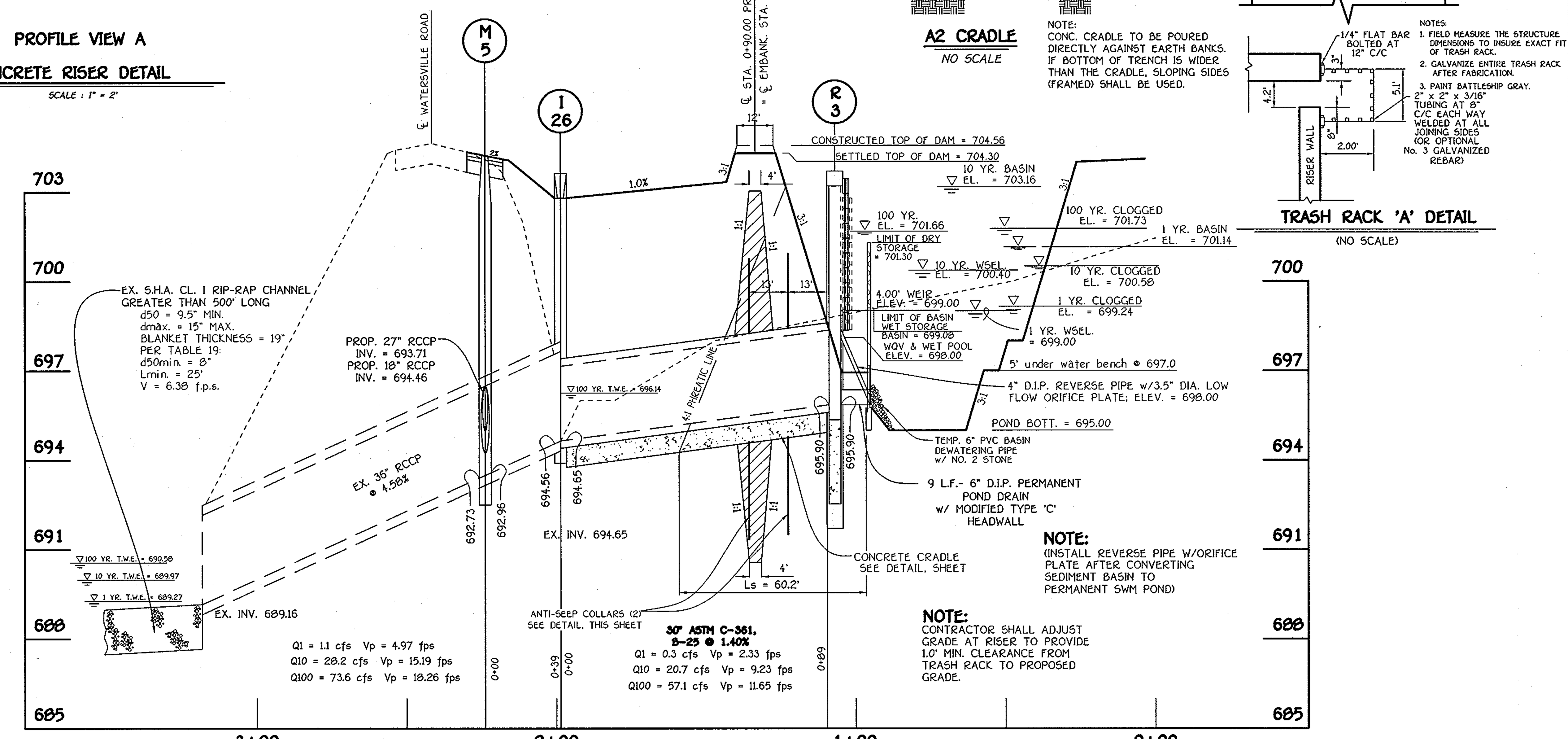
TRASH RACK 'A' DETAIL

(NO SCALE)



PROFILE ALONG ℄ EMBANKMENT

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



NOTE:
(INSTALL REVERSE PIPE W/ORIFICE PLATE AFTER CONVERTING SEDIMENT BASIN TO PERMANENT SWM POND)

NOTE:
CONTRACTOR SHALL ADJUST GRADE AT RISER TO PROVIDE 1.0' MIN. CLEARANCE FROM TRASH RACK TO PROPOSED GRADE.

PRINCIPLE SPILLWAY PROFILE

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

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

OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

[signature] 1-8-09
ALDO M. VITUCCI, P.E. — DATE

"Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-09."

BMP NO. 7 (BASIN NO. 7)
STORMWATER MANAGEMENT NOTES AND DETAILS

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 22 OF 31

F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 19-22 FINAL ROAD SWM DETAILS.dwg, 1/7/2009 8:02:06 AM, jamesl, 1:20

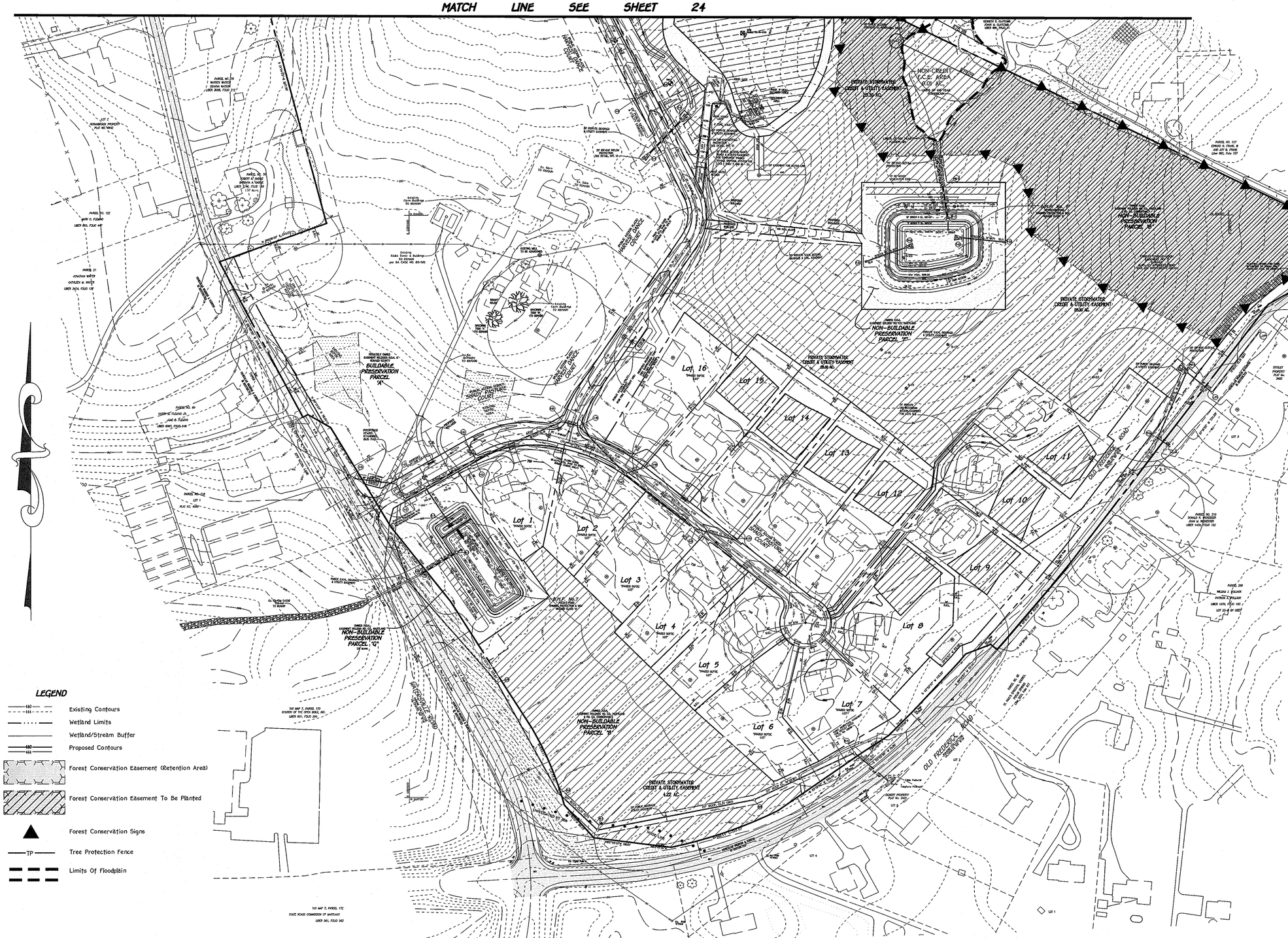
Approved: Department Of Public Works

Chief Bureau Of Highways — Date: 1-22-09

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 2/23/09

Chief, Development Engineering Division — Date: 2/20/09



FOREST CONSERVATION DATA

EASEMENT NO.	CREDITED RETENTION AREA	PLANTING AREA (AFFORESTATION)	NON-CREDITED AREA	TOTAL EASEMENT AREA
1	3.39 AC.	0.00 AC.	0.00 AC.	3.39 AC.
2	1.80 AC.	4.15 AC.	0.00 AC.	5.95 AC.
3	1.11 AC.	0.00 AC.	0.00 AC.	1.11 AC.
4	0.3 AC.	0.00 AC.	0.00 AC.	0.3 AC.
5	0.00 AC.	6.05 AC.	0.01 AC.	6.06 AC.
TOTAL	6.6 AC.	10.20 AC.	0.01 AC.	16.81 AC.

FOREST CONSERVATION WORKSHEET
Version 1.0

NET TRACT AREA		Acres
A. Total tract area		111.5
B. Area within 100 Year Floodplain		2.5
C. Area to remain in agricultural production - (pres. parcel 'A' excluded) * 0.2 AC. OF FLOODPLAIN EXISTS ON PARCEL 'A'		24.8*
D. Net Tract Area		84.2
LAND USE CATEGORY: (from table 3.2.1, page 40, Manual) ARA MDR IDA HDR MPD CIA (1)		
E. Afforestation Threshold (percentage)	0.2	16.8
F. Conservation Threshold (percentage)	0.25	21.0
EXISTING FOREST COVER:		
G. Existing Forest Cover (excluding floodplain)		6.6
H. Area of forest above afforestation threshold		--
I. Area of forest above conservation threshold		--
BREAK EVEN POINT:		
J. Forest retention above threshold with no mitigation		--
Break-Even Point		--
K. Clearing permitted without mitigation		--
PROPOSED FOREST CLEARING		
L. Total area of forest to be cleared or retained Outside FCE		0.0
M. Total area of forest to be retained in FCE		6.6
PLANTING REQUIREMENTS		
N. Reforestation for clearing above conservation threshold		--
P. Reforestation for clearing below conservation threshold		--
Q. Credit for retention above conservation threshold		--
R. Total reforestation required		--
S. Total afforestation required		10.2
T. Total reforestation and afforestation required		10.2

NOTE: THIS PROJECT IS USING 'RURAL CLUSTER OPTION C' PER APPENDIX L OF THE FOREST CONSERVATION MANUAL FOR ITS FOREST REQUIREMENT CALCULATIONS.

LEGEND

- Existing Contours
- Wetland Limits
- Wetland/Stream Buffer
- Proposed Contours
- Forest Conservation Easement (Retention Area)
- Forest Conservation Easement To Be Planted
- Forest Conservation Signs
- TP — Tree Protection Fence
- Limits Of Floodplain

PLAN

SCALE: 1" = 100'

STATE OF MARYLAND — ALDEN J. WOOSLEY III, P.E. — 1-9-09 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 2-22-09."

Note: THE FOREST CONSERVATION EASEMENT(S) WILL BE ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification • WDCP93M0060044B
JOHN P. CANOLES 1/7/09

FOREST CONSERVATION PLAN

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 23 OF 31

F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 23-24 FINAL ROAD FOREST CONSERVATION.dwg, 1/6/2009 4:36:02 PM, jamesl,

Approved: Department Of Public Works

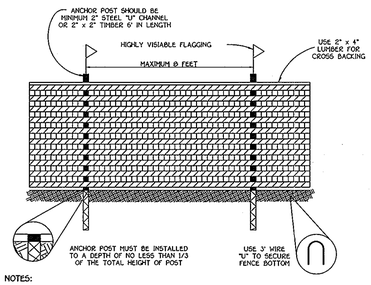
Chief, Bureau Of Highways — Date: 1-22-09

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 2/23/09

Chief, Development Engineering Division — Date: 2/20/09

BLAZE ORANGE PLASTIC MESH

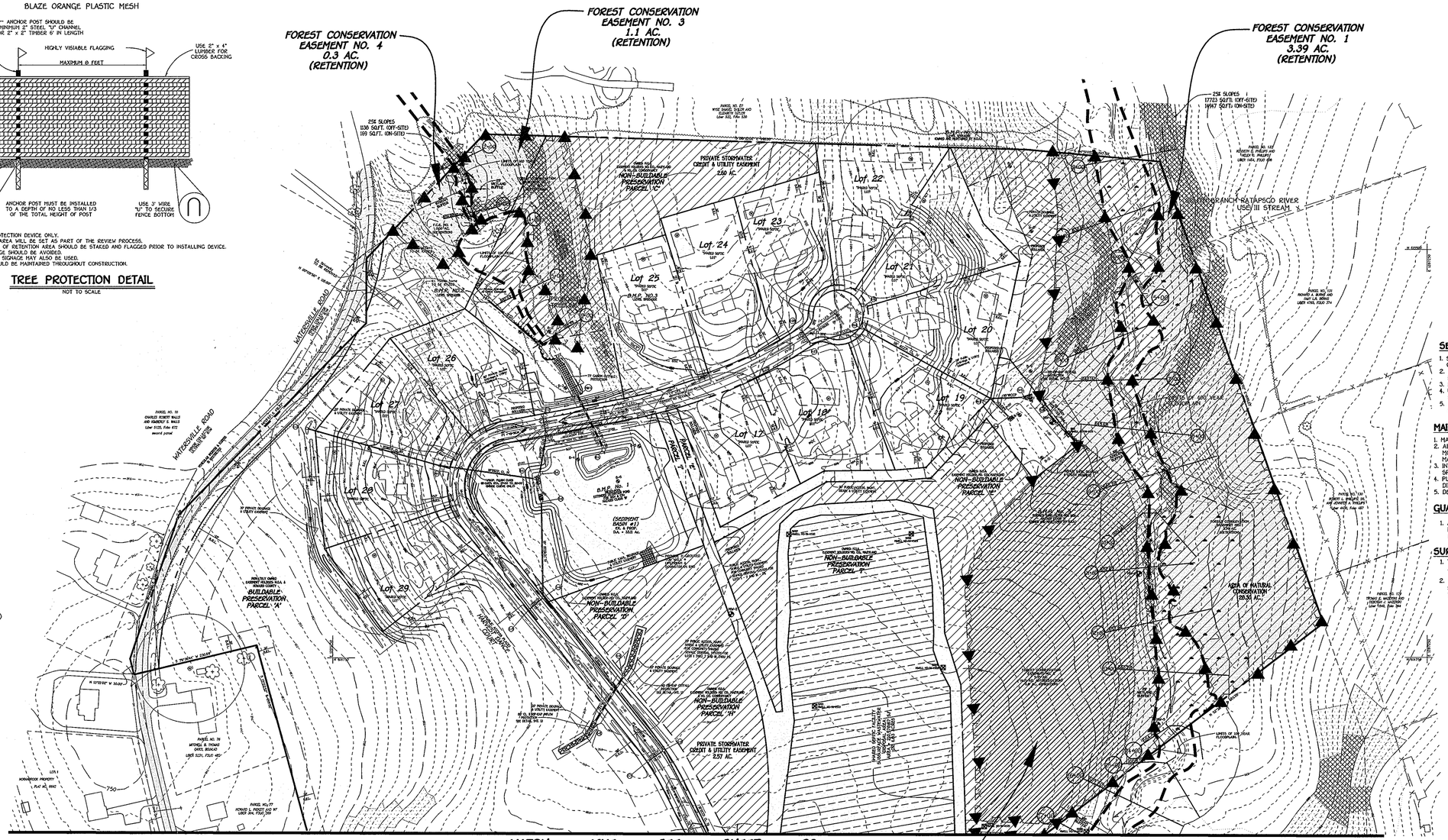


NOTES:

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

TREE PROTECTION DETAIL

NOT TO SCALE



MATCH LINE SEE SHEET 23

PLAN

SCALE: 1" = 100'

PLANTING/SOIL SPECIFICATIONS

1. PLANTING OF NURSERY STOCK SHALL TAKE PLACE BETWEEN MARCH 15th. AND APRIL 30th. OR SEPTEMBER 15th. AND NOVEMBER 15th.
2. A TWELVE (12) INCH LAYER OF TOPSOIL SHALL BE SPREAD OVER ALL FORESTATION AREAS IMPACTED BY SITE GRADING TO ASSURE A SUITABLE PLANTING AREA. 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. ALL BAREROOT PLANTING STOCK SHALL HAVE THEIR ROOT SYSTEMS DIPPED INTO AN ANTI-DESICCANT GEL PRIOR TO PLANTING.
4. PLANTS SHALL BE INSTALLED SO THAT THE TOP OF ROOT MASS IS LEVEL WITH THE TOP OF EXISTING GRADE. BACKFILL IN THE PLANTING PITS SHALL CONSIST OF 3 PARTS EXISTING SOIL TO 1 PART PINE FINES OR EQUIVALENT.
5. FERTILIZER SHALL CONSIST OF AGRIFORM 22-8-2, OR EQUIVALENT, APPLIED AS PER MANUFACTURER'S SPECIFICATIONS.
6. A TWO (2) INCH LAYER OF HARDWOOD MULCH SHALL BE PLACED OVER THE ROOT AREA OF ALL PLANTINGS.
7. PLANT MATERIAL SHALL BE TRANSPORTED TO THE SITE IN A TARPED OR COVERED TRUCK. PLANTS SHALL BE KEPT MOIST PRIOR TO PLANTING.
8. ALL NON-ORGANIC DEBRIS ASSICIATED WITH THE PLANTING OPERATION SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.

SEQUENCE OF CONSTRUCTION

1. SEDIMENT CONTROL AND TREE PROTECTION DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH GENERAL CONSTRUCTION PLAN FOR SITE. SITE SHALL BE GRADED IN ACCORDANCE WITH GENERAL CONSTRUCTION PLANS.
2. PROPOSED FORESTATION AREAS IMPACTED BY SITE GRADING SHALL BE TOPSOILED AND STABILIZED AS PER NOTE NO. 2 OF PLANTING/SOIL SPECIFICATIONS FOR PROJECT.
3. PLANTS SHALL BE INSTALLED AS PER PLANT SCHEDULE AND THE PLANTING/SOIL SPECIFICATIONS FOR THE PROJECT.
4. UPON COMPLETION OF THE PLANTING, SIGNAGE SHALL BE INSTALLED AS PER THE FOREST PROTECTION DEVICES SHOWN ON THE FOREST CONSERVATION PLAN.
5. 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 26 MONTHS.
2. ALL PLANT MATERIAL SHALL BE WATERED TWICE A MONTH DURING THE 1st. GROWING SEASON. WATERING MAY BE MORE OR LESS FREQUENT DEPENDING IN WEATHER CONDITIONS. DURING 2nd. GROWING SEASON, ONCE A MONTH DURING MAY-SEPTEMBER, IF NEEDED.
3. INVASIVE EXOTICS AND NOXIOUS WEEDS WILL BE REMOVED FROM FORESTATION AREAS. 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.

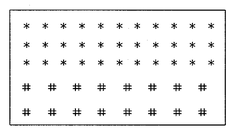
GUARANTEE REQUIREMENTS

1. A 75 PERCENT SURVIVAL RATE OF FORESTATION PLANTINGS WILL BE REQUIRED AT THE END OF THE 24 MONTH MAINTENANCE PERIOD. ALL PLANT MATERIAL BELOW THE 75 PERCENT THRESHOLD WILL BE REPLACED AT THE BEGINNING OF THE NEXT GROWING SEASON.

SURETY FOR FORESTATION

1. THE DEVELOPER SHALL POST A SURETY (BOND, LETTER OF CREDIT) TO ENSURE THAT FORESTATION PLANTINGS ARE COMPLETED. UPON ACCEPTANCE OF THE PLANTINGS BY THE COUNTY, THE BOND SHALL BE RELEASED.
2. SURETY FOR THE AFFORESTATION OF 10.2 ACRES (43,560 SF/ACRE x $0.50/SF = $222,156.00) .
   SURETY FOR THE RETENTION OF 6.6 ACRES (43,560 SF/ACRE x $0.20/SF = $57,499.20) .
   THE TOTAL SURETY AMOUNT OF $279,656.00 WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT.

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

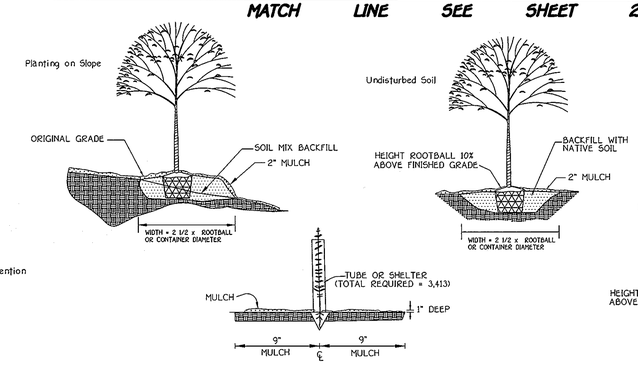
FCP NOTES:

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. Forested areas occurring outside of the FCE shall not be considered part of the FCE and shall not be subject to protective land covenants.
3. Limits of disturbance shall be restricted to areas outside the limit of temporary fencing or the FCE boundary, whichever is greater.
4. There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Easement, except as permitted by Howard County DPZ.
5. No stockpiles, parking areas, equipment cleaning areas, etc. shall occur within areas designated as Forest Conservation Easements.
6. 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.
7. Permanent signage shall be placed 50-100' apart along the boundaries of all areas included in Forest Conservation Easements
8. The Forest Conservation Act requirements for this project include 6.6 acres of forest retention and afforestation of 10.2 acres. The forestation obligation will be met by providing a total planting/retention area of [illegible] acres.

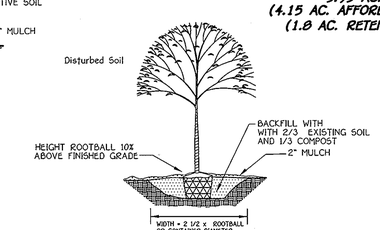
STATE OF MARYLAND — ALDO M. MATUSKO — No. 10000

ALDO M. MATUSKO — DATE: 1-9-09

"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. 20748, Expiration Date 2-22-09."



Seeding and Whip Planting Specification



FCE Planting Area (Afforestation) – 10.2 acres

Planting units required: 7140 (3570 whips)
Planting units provided: 7141 (3413 whips and 90 trees)

Qty	Species	Size	Spacing	Total FCA Units
20	Acer rubrum - Red maple	1" cal.	15' o.c.	
15	Acer saccharinum - Silver maple	1" cal.	15' o.c.	
25	Liriodendron tulipifera - Tulip poplar	1" cal.	15' o.c.	
15	Quercus alba - White oak	1" cal.	15' o.c.	
15	Quercus rubra - Red oak	1" cal.	15' o.c.	
90	Total 1" caliper trees (3.5 planting units per tree)	FCA unit credit		315
450	Acer rubrum - Red maple	2-3' whip	11' o.c.	
450	Acer saccharinum - Silver maple	2-3' whip	11' o.c.	
100	Cornus florida - Flowering dogwood	2-3' whip	11' o.c. *	
100	Diospyros virginiana - Persimmon	2-3' whip	11' o.c. *	
563	Liriodendron tulipifera - Tulip poplar	2-3' whip	11' o.c.	
200	Platanus occidentalis - Sycamore	2-3' whip	11' o.c.	
500	Prunus serotina - Black cherry	2-3' whip	11' o.c. *	
350	Quercus alba - White oak	2-3' whip	11' o.c. *	
350	Quercus rubra - Red Oak	2-3' whip	11' o.c.	
350	Viburnum prunifolium - Blackhaw	2-3' whip	11' o.c. *	
3413 Total whip plantings (2 planting units per tree) = 6826 Total FCA unit credit				
Total Unit Credit		(315 + 6826)		7141

Planting Notes:

2" caliper trees = 7 planting units, 1" caliper trees = 3.5 planting units, whips with shelter = 2 planting units

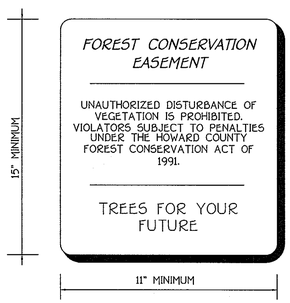
* - These species should not be planted within the wetland limits.

2" caliper trees should be staggered along the outer perimeter of the planting area to serve as demarcation of the boundary. The tree should be no closer than 20 foot spacing.

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

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

ON-SITE SIGNAGE



FISHER, COLLINS & CARTER, INC.
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Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # MDCP93MD0610014B
JOHN P. CANOLES — 1/7/09

FOREST CONSERVATION PLAN

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 24 OF 31

F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 23-24 FINAL ROAD FOREST CONSERVATION.dwg, 1/6/2009 4:33:10 PM, jamesl,
1:1

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 — 1-8-09 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 — 1/18/09 Date

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements.

U.S.D.A. - Natural Resources Conservation Service — 1/14/09 Date

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

District Howard Soil Conservation Dist. — 1/14/09 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 2/23/09 Date

Chief, Development Engineering Division — 2/20/09 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 1-22-09 Date

20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION

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

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

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

EFFECTS ON WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation
 i. Install erosion and sediment control structures (either temporary of permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
 ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
 iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.

B. Soil Amendments (Fertilizer and Lime Specifications)
 i. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
 ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.
 iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
 iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

C. Seedbed Preparation
 i. Temporary Seeding
  a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
  b. Apply fertilizer and lime as prescribed on the plans.
  c. In corporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
 ii. Permanent Seeding
  a. Minimum soil conditions required for permanent vegetative establishment:
   1. Soil pH shall be between 6.0 and 7.0.
   2. Soluble salts shall be less than 500 parts per million (ppm).
   3. The soil shall contain less than 40% clay, but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedezas is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
   4. Soil shall contain 1.5% minimum organic matter by weight.
   5. Soil must contain sufficient pore space to permit adequate root penetration.
   6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
  b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
  c. Apply soil amendments as per soil test or as included on the plans.
  d. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.

D. Seed Specifications
 i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.
 Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
 ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.

E. Methods of Seeding
 i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker seeder.
  a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous): 200 lbs/ac; K20 (potassium): 200 lbs/ac.
  b. Lime - use only ground agricultural limestone, (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
  c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
 ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
  a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
  b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
 iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
  a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 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"				

Sequence of Construction

1. OBTAIN A GRADING PERMIT. THIS PLAN IS SUBJECT TO MDE WATER MANAGEMENT ADMINISTRATION PERMIT NO'S: 07-PO-0010, 07-PO-0011 & 07-PO-0012. (1 WEEK)

2. NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 24-HOURS BEFORE STARTING WORK. ALL BASIN AND TRAP MATERIALS MUST BE ON SITE BEFORE PROCEEDING.

3. CONSTRUCT ROAD WIDENING AND ENTRANCE AREA WITH SCE. CONSTRUCT BASIN No. 7 WITH OUTFALL PIPE AND I-26. CONSTRUCT STORM DRAIN SYSTEM FROM I-25 TO M-5 AND FROM THE EXISTING 27" CMP TO M-9 AND TIE INTO M-5. INSTALL DIVERSION DIKE INTO I-29. THIS IS PROPOSED TO DIVERT THE OFFSITE RUNOFF FROM THE EX. PIPE AT FREDERICK ROAD AND TO AVOID THE NEED FOR A TRAP IN THIS AREA. (2 WEEKS)

4. INSTALL THE SEDIMENT CONTROL MEASURES ASSOCIATED WITH SEDIMENT BASINS No. 1 & 6 AS WELL AS STONE OUTLET SEDIMENT TRAPS NO'S. 1, 2 AND 3. THIS WOULD INCLUDE THE BASINS AND TRAPS WITH ASSOCIATED EARTH DIKES. INTERNAL EARTH DIKES TO BE INSTALLED ONLY UPON COMPLETION OF BASINS. ALSO INSTALL SILT FENCE AS INDICATED ON THESE PLANS. NO BLASTING WILL BE PERMITTED FOR THE EXCAVATION OF THE BASINS AND TRAPS EXCEPT AS PERMITTED BY THE SEDIMENT CONTROL INSPECTOR. WHERE NECESSARY, RIPPING AND JACK HAMMERING SHOULD BE UTILIZED IN THE EXCAVATION OF EACH FACILITY. (3 WEEKS)

5. OBTAIN PERMISSION FROM THE INSPECTOR PRIOR TO PROCEEDING WITH STEP 5. (1 DAY)

6. GRADE THE ROADWAYS AREAS TO THE PROPOSED SUBGRADE FOR EACH ROAD AND INSTALL THE STORM DRAIN SYSTEM AND UTILITIES. STABILIZE ALL ROADWAY SLOPES IMMEDIATELY UPON COMPLETION OF THE GRADING AS SHOWN. THIS INCLUDES INSTALLING THE PROPOSED SANITARY SEWER SYSTEM. (3 WEEKS)

7. INSTALL BASE COURSE PAVING FOR THE PROPOSED ROADS IN THE GRADED AREAS. (1 WEEK)

8. OBTAIN PERMISSION OF THE INSPECTOR PRIOR TO PROCEEDING WITH STEP 8. (1 DAY)

9. MASS GRADE THE LOT AREAS TO THE PROPOSED GRADING INDICATED ON THESE PLANS. STABILIZE ROADWAY SLOPES IMMEDIATELY UPON COMPLETION OF THE GRADING AS SHOWN. (4 DAYS)

10. STABILIZE ALL DISTURBED AREAS, INCLUDING EX. BREACHED POND AND ASSOCIATED TRAILS LOCATED ONSITE. IN ADDITION, REMOVE ALL NEW AND OLD JUNK, TRASH, DEBRIS AND ANY OTHER UNNATURAL ITEMS FROM THE FOREST CONSERVATION, OPEN SPACE FLOODPLAIN, STREAM, WETLAND AND BUFFER AREAS. PROVIDE WRITTEN ACCEPTANCE OF THE STABILIZATION BY A REPRESENTATIVE OF BOTH THE DEPARTMENT OF REC. AND PARKS AND THE HOWARD COUNTY CONSERVANCY TO THE SEDIMENT CONTROL INSPECTOR. OBTAIN PERMISSION FOR THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING. (3 DAYS)

11. WHEN ALL CONTRIBUTING AREAS TO THE BASINS AND TRAPS HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE TEMPORARY DEVICE MAY BE REMOVED, BACKFILLED OR REGRADED TO THE PROPOSED FINAL GRADES FOR ALL SWM FACILITIES. THIS INCLUDES THE BMP FACILITIES 1 THRU 7. STABILIZE ALL REMAINING AREAS PER PERMANENT SEEDING NOTES. (2 DAYS)

12. APPLY TACK COAT TO BASE COURSE AND LAY SURFACE COURSE PAVING. (3 DAYS)

SEQUENCE NOTES:
1. THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON AFTER EACH RAINFALL EVENT AND ON A WEEKLY BASIS. REMOVE SEDIMENTS FROM ALL TRAPS WHEN CLEAN OUT ELEVATIONS ARE REACHED. ALL SEDIMENTS MUST BE PLACED UPSTREAM OF ANY APPROVED BASIN OR TRAP DEVICE.
2. THE CONTRACTOR SHALL ONLY DISTURB A MAXIMUM OF 20 ACRES AT A TIME.

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 havinc, 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 I 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 I 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 Sodding,. MD-VA, Pub. #I, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

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COLUMBIA, MARYLAND 21045

ALDO M. VITUCCI P.E. — 1-8-09 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 2-22-09."

SEDIMENT AND EROSION CONTROL DETAILS

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 26 OF 31

F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 25-26 FINAL ROAD SEDCON DETAILS.dwg, 1/6/2009 4:24:58 PM, james),
1:20

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 — 1-9-09 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 — 1/12/09 Date

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements.

U.S.D.A. - Natural Resources Conservation Service — Date

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

District Howard Soil Conservation Dist. — 1/14/09 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 2/23/09 Date

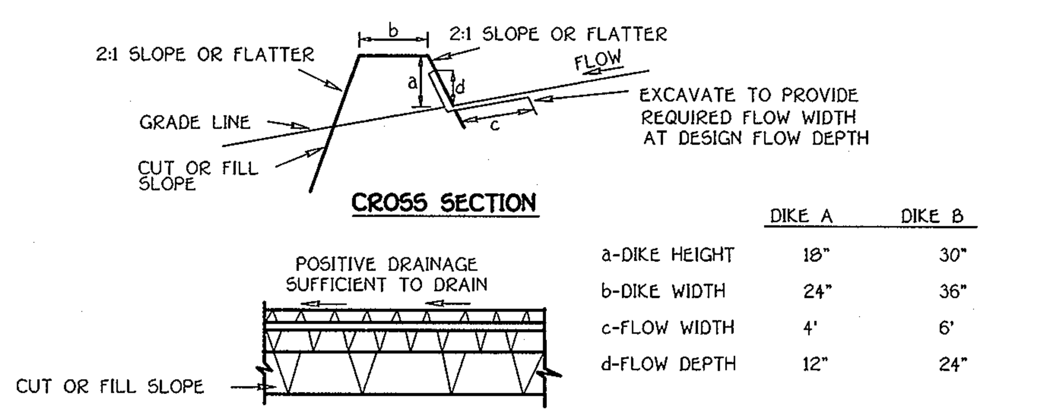
Chief, Development Engineering Division — 2/20/09 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 1-22-09 Date

EARTH DIKE

NOT TO SCALE



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

STANDARD SYMBOL
A-2 B-3
→ —/→ —

FLOW CHANNEL STABILIZATION

GRADE 0.5% MIN. 10% MAX.

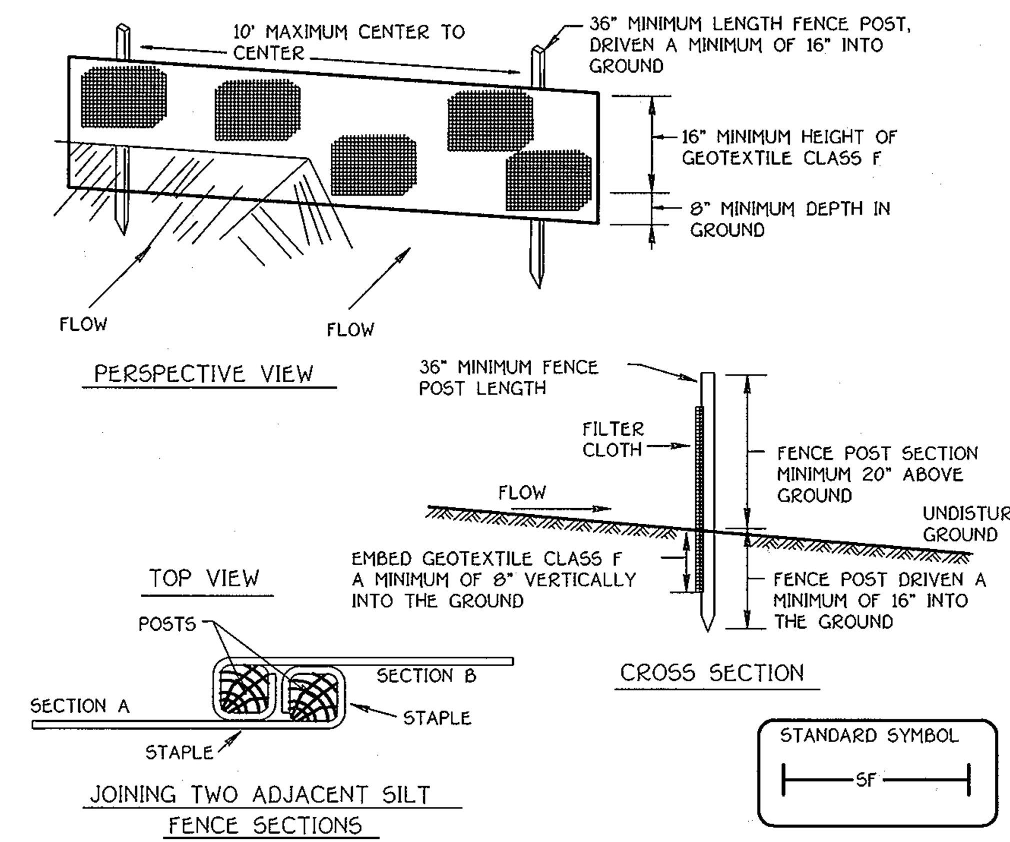
1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

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

SILT FENCE

NOT TO SCALE



STANDARD SYMBOL
|—SF—|

Construction Specifications

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

2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

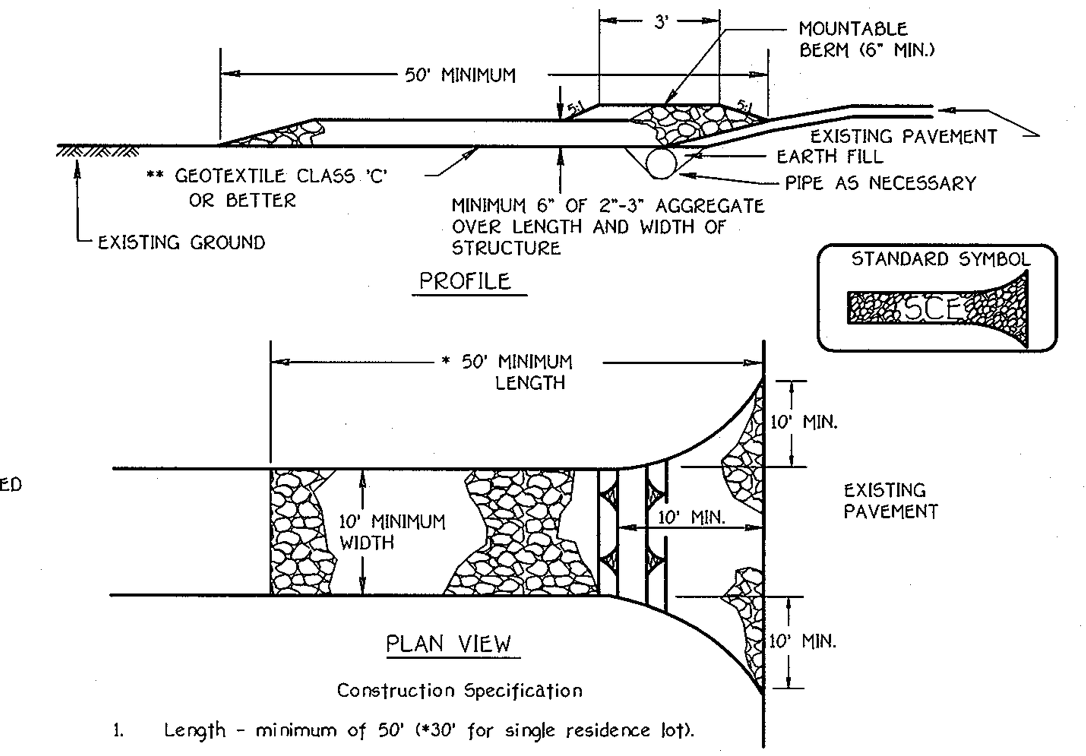
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max.)[2]	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

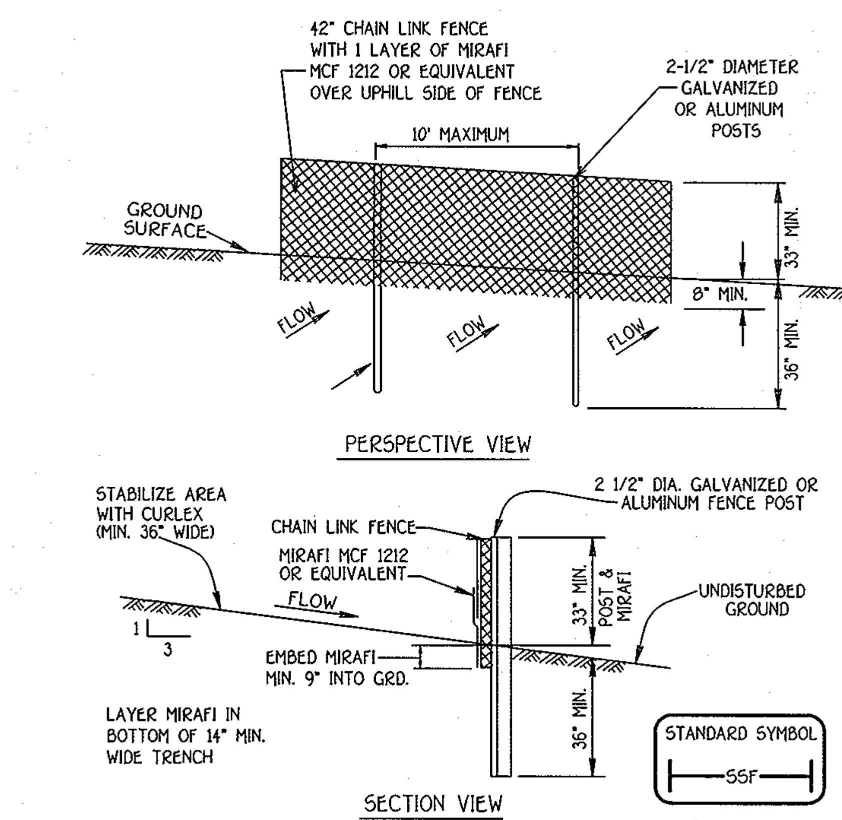


Construction Specification

1. Length - minimum of 50' (*30' for single residence lot).
2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.
4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

SUPER FENCE DIVERSION

NOT TO SCALE



STANDARD SYMBOL
|—SSF—|

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.

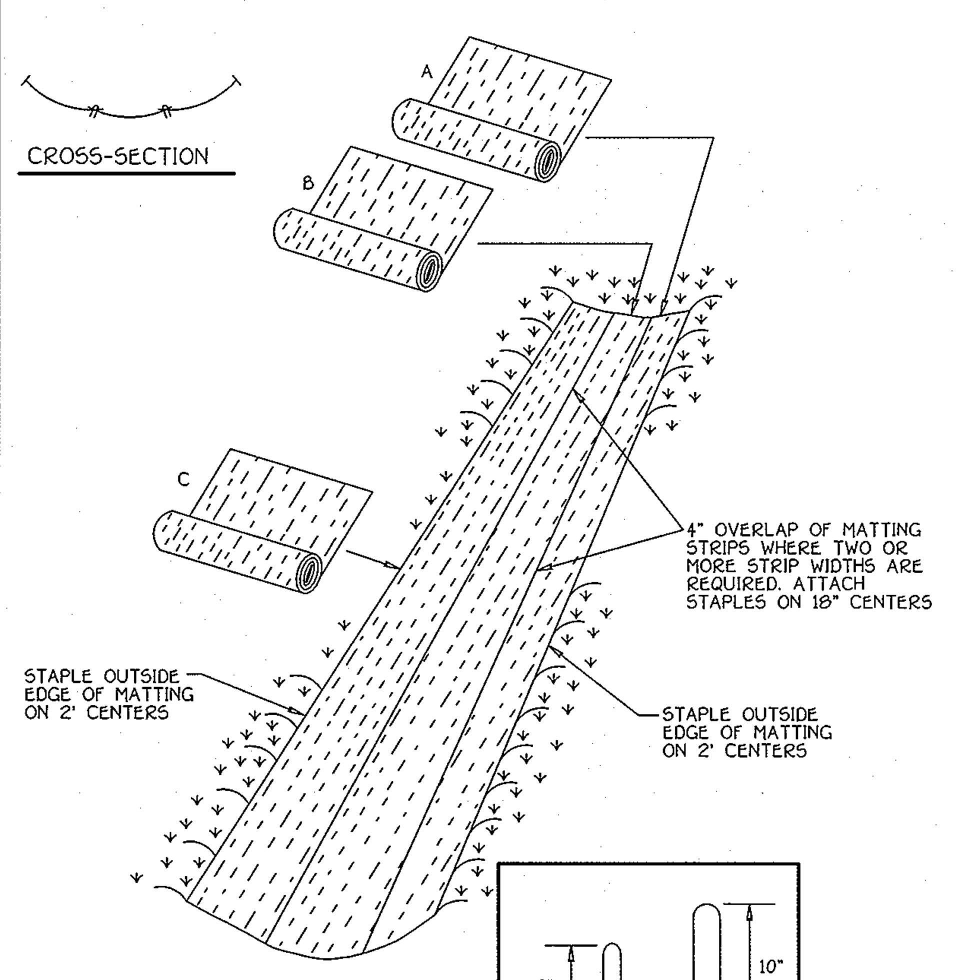
Fabric Properties	Value	Test Method
Grab Tensile Strength (lbs.)	90	ASTM D1682
Elongation at Failure (%)	50	ASTM D1682
Mullen Burst Strength (PSI)	190	ASTM D3786
Puncture Strength (lbs.)	40	ASTM D751
Slurry Flow Rate (gal/min/sf)	0.3	Virginia DOT VTM-51
Equivalent Opening Size	40-80	US Std Sieve CW-02215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

EROSION CONTROL MATTING

NOT TO SCALE



Construction Specifications

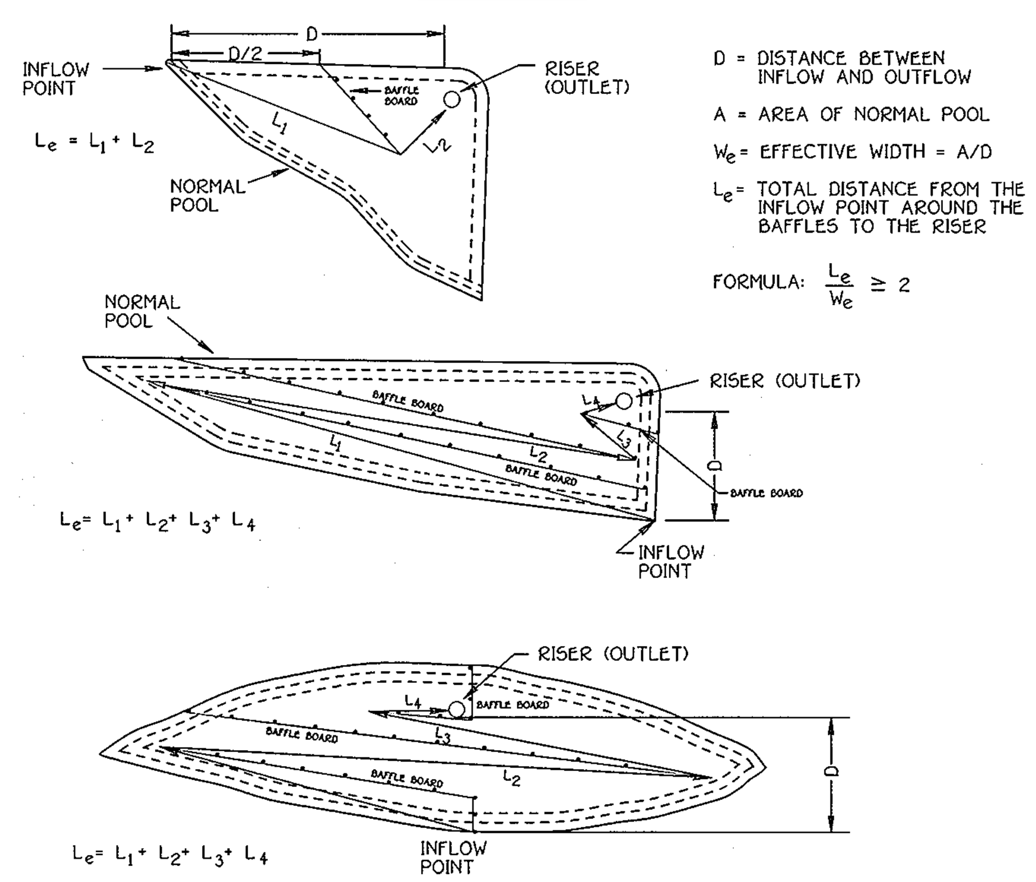
1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
2. Staple the 4" overlap in the channel 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.

SEDIMENT BASIN BAFFLES

PLAN VIEWS

C1028REVISED.DWG



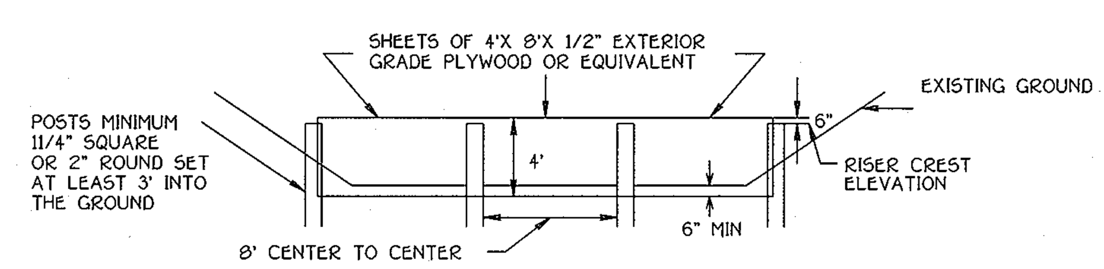
D = DISTANCE BETWEEN INFLOW AND OUTFLOW

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

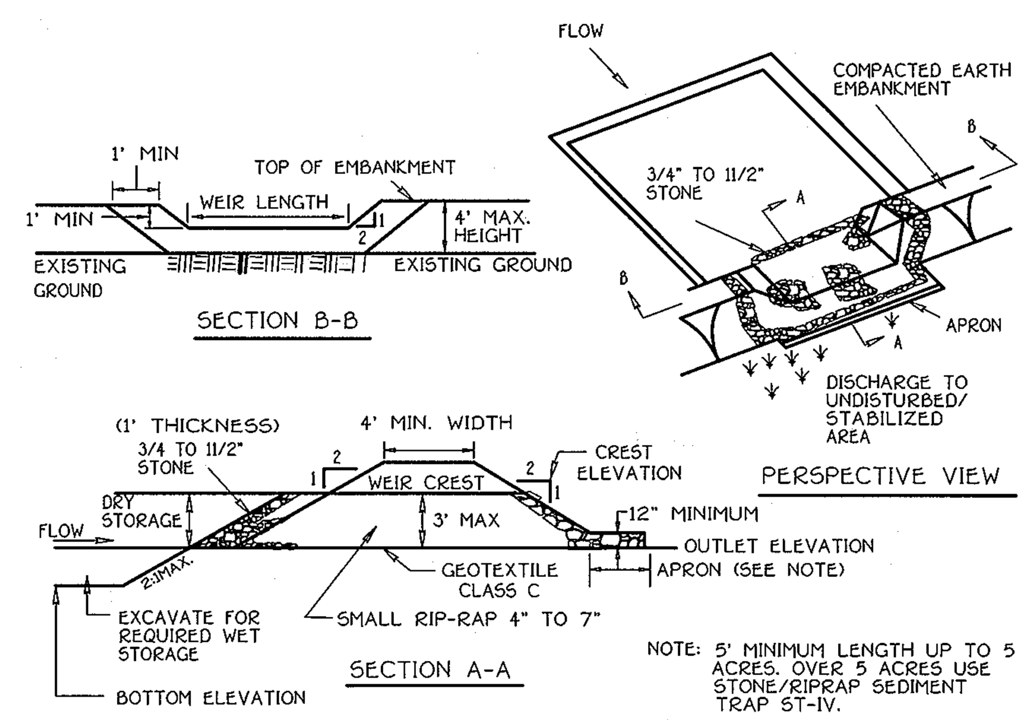
FORMULA: $\frac{L_e}{W_e} \geq 2$



BAFFLE DETAIL

STONE OUTLET SEDIMENT TRAP - ST II

NOT TO SCALE



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

Construction Specifications

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

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

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

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

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

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

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

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

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

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

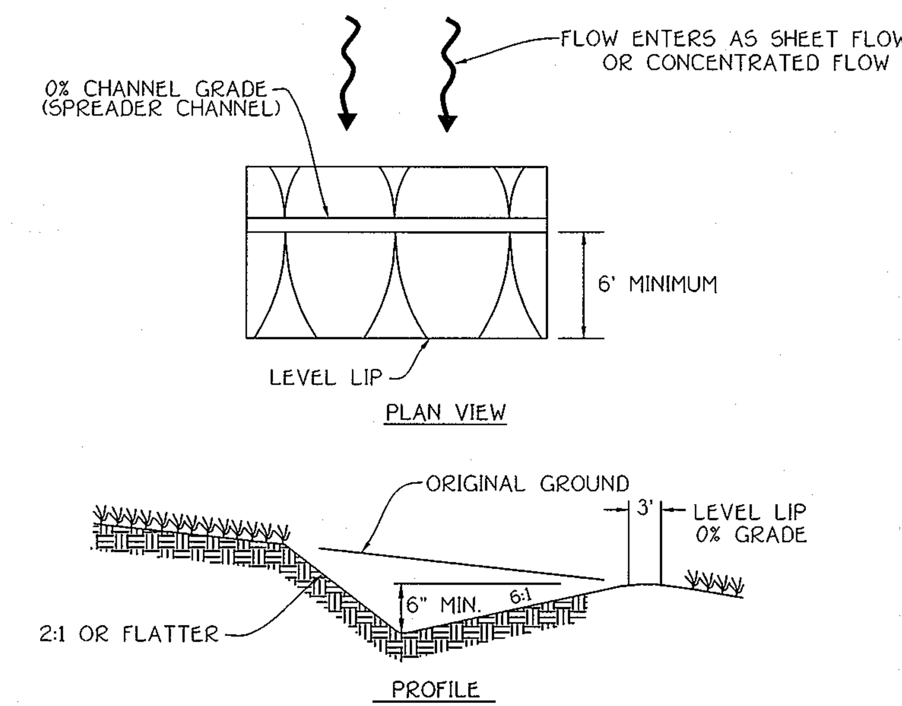
11. The elevation of the top of any dike directing water into the trap must equal or exceed the elevation of the trap embankment.

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

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

LEVEL SPREADER

NOT TO SCALE



LEVEL SPEADER CRITERIA

For impervious surface runoff applications:
The capacity for the level spreader is determined in the design of the filter strip to which it discharges.

The spreader shall run linearly along the entire width of the filter strip to which it discharges. In most cases, the spreader will be the same width as the contributing impervious surface. The ends of the spreader shall be tied into higher ground to prevent flow around the spreader.

The minimum depth shall be 6 inches and the minimum width shall be 6 feet for the lower side slope. Side slopes shall be 2:1 (horizontal to vertical) or flatter.

The grade of the spreader shall be 0%.

The outlet discharge area must be generally smooth and well vegetated with a maximum slope of 10%.

For all applications:
The spreader lip shall be constructed to a uniform height and zero grade over the length of the spreader. For design flows of 4 cfs or greater, a rigid lip of non-erodible material, such as pressure-treated timbers or concrete curbing, shall be used. For flows less than 4 cfs, a vegetated lip may be used. The spreader lip shall be constructed on undisturbed soil.

When using a vegetated lip it shall be protected with an erosion control blanket to prevent erosion and allow the vegetation to become established. The blanket shall be a minimum of 4 feet wide extending a minimum of 1 foot downstream over the level lip. The blanket shall be secured with heavy-duty staples and the downstream and upstream edges shall be buried at least 6 inches deep in a vertical trench.

When using a rigid lip it shall be entrenched at least 4 inches below existing ground and securely anchored to prevent displacement. An apron of Class I rip-rap shall be placed to the top of the rigid lip and extend downslope at least 3 feet. A filter fabric shall be placed under the coarse aggregate.

Immediately after level spreader construction, seed and mulch the entire disturbed area of the spreader in accordance with the Standards and Specifications for Vegetative Stabilization.

CONSIDERATIONS
The level spreader is a relatively low-cost structure to:

1. Disperse impervious surface runoff uniformly to a filter strip or

2. Release small volumes of concentrated flow from diversions when conditions are suitable.

To accomplish these purposes, particular care must be taken to construct the spreader lip completely level. Any depressions in the lip will concentrate the flow, resulting in a loss of pollutant filtering effectiveness and/or erosion. Evaluate the outlet system to be sure that flow does not concentrate below the outlet.

For filter strip applications, the determination of whether a level spreader is needed should be based on how the runoff is entering the filter strip. If the runoff is concentrated by curb cuts, and particularly if a large area of impervious surface drains to one point, a level spreader is essential to achieve effective pollutant removal in the filter strip. A level spreader also is important if the filter strip is relatively steep in order to avoid erosion from concentrated runoff discharge. If the runoff is evenly distributed over the width of the impervious surface (e.g., a curbless, even-sloped road or parking lot), a level spreader may not be necessary.

When the level spreader is used as an outlet for temporary or permanent diversions and diversion dikes, runoff containing high sediment loads must be treated in an approved sediment trapping device.

OPERATION AND MAINTENANCE
Inspect level spreaders after every rainfall until vegetation is established, and promptly make needed repairs. After the area has been stabilized, make periodic inspections and maintain vegetation in a healthy, vigorous condition.

Verify that the level spreader is distributing flow evenly. If problems are noted, make appropriate modifications to ensure even flow distribution.

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	111.474	ACRES
AREA DISTURBED	37.73	ACRES
AREA TO BE ROOFED OR PAVED	7.43	ACRES
AREA TO BE VEGETATIVELY STABILIZED	30.30	ACRES
TOTAL CUT	20000	CU.YDS.
TOTAL FILL	20000	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	-----	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.

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

OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

ALDO M. VITUCCI, P.E. — 1-9-09 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 2-22-09."

SEDIMENT AND EROSION CONTROL DETAILS

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 25 OF 31

F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 25-26 FINAL ROAD SEDCON DETAILS.dwg, 1/6/2009 4:24:14 PM, jamesl, 1:20

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-1
Location: Howard County, MD — Job # 05214A

SAMPLER
Datum: ____ Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 666.04 Ft. Hammer Drop 30 in. Rock Core Diameter ____ Inspector ____
Date Started 3/24/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/24/05

Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
Brown, moist, very soft, silty clay, trace rock fragments, organics and sand (CL)	Topsoil-9in.	13		1-2-1	3
Brown, damp, very soft, sandy clay, trace rock fragments and organics (CL)		13		2-1-2	3
Reddish brown, moist, stiff, sandy silt, trace rock fragments (ML)	No groundwater encountered while drilling.	13		5-6-6	12
Tan, moist, very dense, silty sand, trace rock fragments and clay (SM) (Decomposed Rock)	Offset boring, 5in. in-situ pipe installed at 6ft. depth.	15		6-12-51/5	51/5

Auger refusal-9.5ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
GROUND WATER / CAVE IN DEPTH: AT COMPLETION Dry ft. 7 ft.; AFTER 24 HRS. ____ ft. ____ ft.; AFTER ___ HRS. ____ ft. ____ ft.
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-2
Location: Howard County, MD — Job # 05214A
Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 666.36 Ft. Hammer Drop 30 in.
Date Started 3/24/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/24/05

Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
Brown to light brown, moist, very soft to medium stiff, silty clay, trace organics, rock fragments and sand (CL)	Topsoil-5in.	10		1-1-2	3
		14		2-3-6	9
Light brown, moist, medium dense, silty sand to sandy silt, trace rock fragments (SM-ML)	No groundwater encountered while drilling.	16		12-10-11	21
Light brown, moist, very dense, silty sand to sand silt, trace rock fragments (SM-ML) (Decomposed Rock)	Offset boring, 6in. in-situ pipe installed at 6ft. depth.	10		7-29-51/2	51/2

Auger refusal-9.2ft.

AT COMPLETION: Ground Water Dry ft., Cave in Depth 6.5 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-3
Location: Howard County, MD — Job # 05214A
Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 668.06 Ft. Hammer Drop 30 in.
Date Started 3/24/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/24/05

Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
Brown to light brown, moist to damp, stiff, to medium stiff, silty clay, trace organics, sand and rock fragments (CL)	Topsoil-7in.	6		1-3-16	19
		16		2-2-4	6
Light brown, moist, medium dense, silty sand to sandy silt, trace rock fragments (SM-ML)	No groundwater encountered while drilling.	18		4-7-11	19
Light brown, moist, very dense, silty sand to sand silt, trace rock fragments (SM-ML) (Decomposed Rock)	Offset boring, 5in. in-situ pipe installed at 6ft. depth.	11		32-51/5	51/5

Auger refusal-9ft.

AT COMPLETION: Ground Water Dry ft., Cave in Depth 6.5 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-4
Location: Howard County, MD — Job # 05214A
Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 673.81 Ft. Hammer Drop 30 in.
Date Started 3/24/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/24/05

Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
Brown, moist, soft, silty clay, trace organics, rock fragments, and sand (CL)	Topsoil-5in.	13		1-2-3	5
Light brown, moist, stiff, sandy clay, trace rock fragments (CL)		18		4-9-10	19
Light brown, moist, medium dense, silty sand, trace rock fragments (SM-ML)	No groundwater encountered while drilling.	18		8-11-12	23
Reddish brown, moist, medium dense, clayey sand, trace rock fragments (SC)	Offset boring, 5in. in-situ pipe installed at 6ft. depth.	5		5-5-9-10	14

Bottom of hole-10ft.

AT COMPLETION: Ground Water Dry ft., Cave in Depth 6.5 ft.; AFTER 24 HRS.: Dry ft., 4.5 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-5
Location: Howard County, MD — Job # 05214A
Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 674.26 Ft. Hammer Drop 30 in.
Date Started 3/24/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/24/05

Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
Brown to light brown, moist, soft to medium stiff, silty clay, trace organics, sand and rock fragments (CL)	Topsoil-8in.	18		2-2-2	4
		18		2-3-3	6
Brown, moist, medium stiff, sandy silt, trace rock fragments (ML)	No groundwater encountered while drilling.	18		4-5-5	10
Reddish brown, moist, medium dense, silty sand to sandy silt, trace rock fragments (SM-ML)	Offset boring, 5in. in-situ pipe installed at 6ft. depth.	17		10-15-8-10	23

Bottom of hole-10ft.

AT COMPLETION: Ground Water Dry ft., Cave in Depth 7 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-6
Location: Howard County, MD — Job # 05214A
Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 674.17 Ft. Hammer Drop 30 in.
Date Started 3/22/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/22/05

Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
Brown, moist, soft, silty clay, trace organics and sand (CL)	Topsoil-8in.	10		1-2-3	5
Light brown, moist, stiff to medium stiff, clayey silt, trace organics, sand and rock fragments (ML)		16		5-6-7	13
	No groundwater encountered while drilling.	18		5-5-5	10
Light brown, moist, medium stiff, silt, trace rock fragments (ML)	Offset boring, 6in. in-situ pipe installed at 6ft. depth.	18		5-4-4-5	8

Bottom of hole-10ft.

AT COMPLETION: Ground Water Dry ft., Cave in Depth 6 ft.; AFTER 24 HRS.: 1 ft., 1.6 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-7
Location: Howard County, MD — Job # 05214A
Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 643.43 Ft. Hammer Drop 30 in.
Date Started 3/24/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/24/05

Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
Brown, moist, soft, silty clay, trace sand, rock fragments and organics (CL)	Topsoil-7in.	13		2-2-2	4
Light brown, moist, medium stiff, sandy silt, trace rock fragments (ML)		13		2-3-5	8
Brown to light gray, moist, medium dense, silty sand to sandy silt, trace rock fragments (SM-ML)	No groundwater encountered while drilling.	15		2-3-8	11
	Offset boring, 5in. in-situ pipe installed at 6ft. depth.	16		12-13-14-18	27

Bottom of hole-10ft.

AT COMPLETION: Ground Water Dry ft., Cave in Depth 7 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-8
Location: Howard County, MD — Job # 05214A
Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 649.19 Ft. Hammer Drop 30 in.
Date Started 3/24/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/24/05

Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
Brown, moist, soft, silty clay, trace sand, rock fragments (CL)	Topsoil-6in.	12		2-3-2	5
Brown, moist, loose, silty sand to sandy silt, trace rock fragments (SM-ML)		15		4-6-4	10
Brown to reddish brown, moist, medium dense, silty sand, trace rock fragments (SM)	No groundwater encountered while drilling.	12		7-6-6	12
	Offset boring, 5in. in-situ pipe installed at 6ft. depth.	13		4-5-7-8	12

Bottom of hole-10ft.

AT COMPLETION: Ground Water Dry ft., Cave in Depth 6 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 1-22-09
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 2/23/09
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/20/09

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

OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

ALDO M. [illegible] — DATE 1-9-09
"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 2-22-09."

SOIL BORINGS
THE LEGACY
LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'
ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 27 OF 31

F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 27 FINAL ROAD SOIL BORINGS.dwg, 1/6/2009 4:14:12 PM, jamesl, 1:20

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-9
Location: Howard County, MD — Job # 05214A

SAMPLER
Datum: ___ Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 656.69 Ft. Hammer Drop 30 in. Rock Core Diameter ___ Inspector ___
Date Started 3/24/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/24/05

Sample Condition	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
D	Reddish brown, moist, medium stiff, sandy clay, trace rock fragments and silt (CL)	Topsoil-6in.	10		2-3-5	8
D	Light brown, moist, very dense, silty sand and rock fragments, trace clay (SM-GM) (Decomposed Rock)		18		51/6	51/6
D	Light gray to light brown, damp, very dense, silty sand to sandy silt, trace rock fragments (SM-ML) (Decomposed Rock)	No groundwater encountered while drilling.	10		32-51/4	51/4
D	Light brown, damp, very dense, silty sand and rock fragments (SM-GM) (Decomposed Rock) Auger refusal-8.9ft.	Offset boring, 5in. in-situ pipe installed at 6ft. depth.	2		4-3-51/3	51/3

Ground Water: At completion Dry ft. Cave in depth: 6.5 ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-10
Location: Howard County, MD — Job # 05214A

SAMPLER
Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 655.04 Ft. Hammer Drop 30 in.
Date Started 3/24/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/24/05

Sample Condition	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
I	Light brown, moist, soft to stiff, silty clay, trace sand, trace to none organics and rock fragments (CL)	Topsoil-7in.	13		1-2-2	4
D			16		6-10-12	22
D	Light brown to brown, moist, medium dense, silty sand to sandy silt, trace to none rock fragments and clay (SM-ML)	No groundwater encountered while drilling.	18		7-9-10	20
D		Offset boring, 5in. in-situ pipe installed at 6ft. depth.	18		6-7-7-9	14
	Bottom of hole-10ft.					

Ground Water: At completion Dry ft. Cave in depth: 6.5 ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-11
Location: Howard County, MD — Job # 05214A

SAMPLER
Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 655.42 Ft. Hammer Drop 30 in.
Date Started 3/24/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/24/05

Sample Condition	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
I	Brown, moist, very soft to stiff, silty clay, trace sand, rock fragments and organics (CL)	Topsoil-6in.	15		1-1-2	3
D			18		5-7-8	15
D	Light brown, moist, stiff, sandy silt, trace rock fragments (ML)	No groundwater encountered while drilling.	13		10-13-7	20
D	Light brown, moist, medium dense, silty sand to sandy silt (SM-ML)	Offset boring, 5in. in-situ pipe installed at 6ft. depth.	18		10-9-10-12	19
	Bottom of hole-10ft.					

Ground Water: At completion Dry ft. Cave in depth: 6.5 ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-12
Location: Howard County, MD — Job # 05214A

SAMPLER
Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 698.04 Ft. Hammer Drop 30 in.
Date Started 3/22/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/22/05

Sample Condition	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
D	Reddish brown, moist, soft, silty clay, trace rock fragments and organics (CL)	Topsoil-6in.	15		1-2-3	5
D	Reddish tan, moist, medium stiff, sandy silt, trace rock fragments (ML)		16		3-3-3	6
D		No groundwater encountered while drilling.	16		2-3-4	7
D	Reddish brown, moist, medium dense, silty sand to sandy silt, trace rock fragments (SM-ML)	Offset boring, 5in. in-situ pipe installed at 6ft. depth.	15		3-6-8-8	14
	Bottom of hole-10ft.					

Ground Water: At completion Dry ft. Cave in depth: 6 ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-13
Location: Howard County, MD — Job # 05214A

SAMPLER
Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 700.39 Ft. Hammer Drop 30 in.
Date Started 3/22/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/22/05

Sample Condition	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
I	Brown, moist, soft, silty clay, trace organics and rock fragments (CL)	Topsoil-9in.	15		1-1-3	4
D	Light brown, moist, medium dense, silty sand and rock fragments (GM-SM)		16		5-7-9	16
D	Reddish brown, moist, stiff, sandy silt, trace rock fragments (ML)	No groundwater encountered while drilling.	17		6-7-7	14
D	Reddish tan, moist, medium stiff, silt, trace sand (ML)	Offset boring, 5in. in-situ pipe installed at 6ft. depth.	18		2-3-4-5	7
	Bottom of hole-10ft.					

Ground Water: At completion Dry ft.; After 24 hrs. 1 ft. Cave in depth: 6 ft.; 2 ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-14
Location: Howard County, MD — Job # 05214A

SAMPLER
Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 697.28 Ft. Hammer Drop 30 in.
Date Started 3/22/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/22/05

Sample Condition	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
D	Brown, moist, soft, silt, trace rock fragments and organics (ML)	Topsoil-8in.	13		1-1-3	4
D	Light brown, moist, medium dense, silty sand and rock fragments (GM-SM)		16		6-12-14	26
D	Light brown, moist, meidum dense, silty sand, trace rock fragments (SM)	No groundwater encountered while drilling.	16		12-8-6	14
D	Reddish brown, moist, medium dense, silty sand, trace rock fragments (SM)	Offset boring, 5in. in-situ pipe installed at 6ft. depth.	17		3-5-6-8	11
	Bottom of hole-10ft.					

Ground Water: At completion Dry ft.; After 24 hrs. 1 ft. Cave in depth: 6 ft.; 3.5 ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-15
Location: Howard County, MD — Job # 05214A

SAMPLER
Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 698.67 Ft. Hammer Drop 30 in.
Date Started 3/22/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/22/05

Sample Condition	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
D	Brown, moist, soft, silt, trace rock fragments and organics (ML)	Topsoil-9in.	13		1-2-2	4
D	Light brown, moist, dense to medium dense, silty sand and rock fragments (GM-SM)		12		11-12-19	31
D		No groundwater encountered while drilling.	16		10-13-12	25
D		Offset boring, 5in. in-situ pipe installed at 6ft. depth.	15		3-4-6-8	10
	Bottom of hole-10ft.					

Ground Water: At completion Dry ft.; After 24 hrs. 1.5 ft. Cave in depth: 6 ft.; 2.5 ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-16
Location: Howard County, MD — Job # 05214A

SAMPLER
Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 700.13 Ft. Hammer Drop 30 in.
Date Started 3/22/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/22/05

Sample Condition	Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
D	Brown, moist, medium stiff, silty clay, trace organics and sand (CL)	Topsoil-8in.	10		2-3-5	8
I	Light brown, moist, medium stiff, silt, trace sand and rock fragments (ML)		16		2-3-4	7
D	Light brown, moist, medium dense to loose, silty sand to sandy silt, trace rock fragments (SM-ML)	No groundwater encountered while drilling.	18		5-7-5	12
D		Offset boring, 5in. in-situ pipe installed at 6ft. depth.	10		3-4-4-7	8
	Bottom of hole-10ft.					

Ground Water: At completion Dry ft.; After 24 hrs. 1.5 ft. Cave in depth: 6.5 ft.; 1.5 ft.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 1-22-09
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 2/23/09
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/20/09

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

OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

ALDO M. — DATE 1-8-09
"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 2-22-09."

SOIL BORINGS
THE LEGACY
LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'
ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 28 OF 31

F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 28 FINAL ROAD SOIL BORINGS.dwg, 1/6/2009 4:07:42 PM, jamesl, 1:20

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-18
Location: Howard County, MD — Job # 05214A

SAMPLER
Datum ___ Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 707.1 Ft. Hammer Drop 30 in. Rock Core Diameter ___ Inspector ___
Date Started 3/22/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/22/05

Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
Brown, moist, stiff, silty clay, trace organics, sand and rock fragments (CL)	Topsoil-8in.	6		3-6-5	11
Light brown, moist, medium stiff to stiff, sandy silt, trace rock fragments (ML)		18		3-4-5	9
	No groundwater encountered while drilling.	13		4-4-5	9
	Offset boring, 5in. in-situ pipe installed at 6ft. depth.	17		4-5-6-8	11
Bottom of hole-10ft.					

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE; PT - PRESSED SHELBY TUBE; CA - CONTINUOUS FLIGHT AUGER; RC - ROCK CORE
SAMPLE CONDITIONS: D - DISINTEGRATED; I - INTACT; U - UNDISTURBED; L - LOST
GROUND WATER / CAVE IN DEPTH: AT COMPLETION Dry ft. 6 ft.; AFTER 24 HRS. 3 ft. 3.5 ft.; AFTER ___ HRS. ___ ft. ___ ft.
BORING METHOD: HSA - HOLLOW STEM AUGERS; CFA - CONTINUOUS FLIGHT AUGERS; DC - DRIVING CASING; MD - MUD DRILLING
STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-19
Location: Howard County, MD — Job # 05214A

Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 705.57 Ft. Hammer Drop 30 in.
Date Started 3/22/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/22/05

Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
Brown, moist, very soft, silty clay, trace sand, organics and rock fragments (CL)	Topsoil-9in.	13		1-1-2	3
Reddish brown, moist, stiff to medium stiff, silty clay, trace sand and rock fragments (CL)		15		5-7-7	14
	No groundwater encountered while drilling.	16		4-4-5	9
Auger refusal-7ft.		0		51/0	51/0

GROUND WATER / CAVE IN DEPTH: AT COMPLETION Dry ft. 6 ft.; AFTER 24 HRS. 1 ft. 2 ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-19a
Location: Howard County, MD — Job # 05214A

Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. ___ Ft. Hammer Drop 30 in.
Date Started 3/22/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/22/05

Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
	Topsoil-9in.				
Light brown to tan, moist, stiff, sandy silt, trace rock fragments (ML)	Due to B-19 auger refusal, boring offset 6ft.	15		7-9-10-10	19
Bottom of hole-10ft.					

GROUND WATER / CAVE IN DEPTH: AT COMPLETION Dry ft. 7 ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION
Project Name: Pickett Farm SWM — Boring No. B-18; Location: Howard County, MD — Job # 05214A; Surf. Elev. 707.1; Date Started 3/22/05; Date Completed 3/22/05

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-20
Location: Howard County, MD — Job # 05214A

Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 718.52 Ft. Hammer Drop 30 in.
Date Started 3/24/05 Pipe Size 2 in. Boring Method HSA Date Completed 3/24/05

Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
Brown to reddish brown, moist, soft to medium stiff, silty clay, trace organics, sand and rock fragments (CL)	Topsoil-8in.	14		1-2-2	4
		15		2-3-3	6
Reddish brown, moist, stiff, sandy silt, trace rock fragments (ML)	No groundwater encountered while drilling.	16		5-7-7	14
Brown, moist, medium dense, silty sand, trace rock fragments (SM)	Offset boring, 5in. in-situ pipe installed at 6ft. depth.	15		5-5-9-7	14
Bottom of hole-10ft.					

GROUND WATER / CAVE IN DEPTH: AT COMPLETION Dry ft. 7 ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-21
Location: Howard County, Maryland — Job # 05214A

Hammer Wt. 140 lbs. Hole Diameter 6" Foreman S. Wooden
Surf. Elev. 685.43 Ft. Hammer Drop 30 in.
Date Started 12/29/06 Pipe Size 2 in. Boring Method HSA Date Completed 12/29/06

Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
Tan to light brown, moist, medium stiff to hard, sandy silt, trace rock fragments and mica (ML)	Topsoil-6"	8"		2-4-4	8
		16"		5-4-9	13
		14"		7-8-10	18
		13"		9-15-26	41
	Groundwater encountered @ 10.0' while drilling	15"		18-23-30-25	53
Bottom of boring @ 12.0'					

GROUND WATER / CAVE IN DEPTH: AT COMPLETION Dry ft. 4.2 ft.; AFTER 24 HRS. 4.8 ft. 6.0 ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-22
Location: Howard County, Maryland — Job # 05214A

Hammer Wt. 140 lbs. Hole Diameter 6" Foreman S. Wooden
Surf. Elev. 686.54 Ft. Hammer Drop 30 in.
Date Started 12/29/06 Pipe Size 2 in. Boring Method HSA Date Completed 12/29/06

Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
Brown, moist, medium stiff, sandy silt, trace organics (ML)	Topsoil-4" No groundwater encountered while drilling	13"		2-2-6	8
Light brown, damp, medium stiff, clay, trace sand (CL)		16"		4-5-5	10
Light brown, moist, medium stiff to stiff, sandy silt, trace rock fragments and mica (ML)		12"		3-4-5	9
		18"		6-8-10	18
		14"		9-9-13-14	22
Bottom of boring @ 12.0'					

GROUND WATER / CAVE IN DEPTH: AT COMPLETION Dry ft. 3.8 ft.; AFTER 24 HRS. Dry ft. 3.8 ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-23
Location: Howard County, Maryland — Job # 05214A

Hammer Wt. 140 lbs. Hole Diameter 6" Foreman S. Wooden
Surf. Elev. 680.44 Ft. Hammer Drop 30 in.
Date Started 12/29/06 Pipe Size 2 in. Boring Method HSA Date Completed 12/29/06

Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
Brown, moist, medium stiff, sandy silt, trace organics (ML)	Topsoil-5" No groundwater encountered while drilling	5"		4-4-5	9
Light brown to tan to brown, moist to damp, medium stiff to stiff, sandy silt, trace rock fragments and mica (ML)		18"		4-4-6	10
		18"		4-5-5	10
		6"		7-7-9	16
		13"		4-5-6	11
		9"		4-7-9	16
Bottom of boring @ 18.5'					

GROUND WATER / CAVE IN DEPTH: AT COMPLETION Dry ft. 6.0 ft.; AFTER 24 HRS. Dry ft. 6.0 ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION

Project Name: Pickett Farm SWM — Boring No. B-24
Location: Howard County, Maryland — Job # 05214A

Hammer Wt. 140 lbs. Hole Diameter 6" Foreman S. Wooden
Surf. Elev. 681.32 Ft. Hammer Drop 30 in.
Date Started 12/29/06 Pipe Size 2 in. Boring Method HSA Date Completed 12/29/06

Description	Boring and Sampling Notes	Rec.	NM	SPT Blows	N
Brown, moist, medium stiff, sandy silt, trace organics and clay (ML)	Topsoil-4"	9"		2-4-6	10
Light brown to white to brown, moist to wet, stiff, sandy silt, trace rock fragments and mica (ML)		14"		6-7-7	14
		13"		3-5-8	13
		13"		3-5-8	13
	Groundwater encountered @ 10.0' while drilling	12"		9-12-14	26
		15"		5-7-8	15
Bottom of boring @ 18.5'					

GROUND WATER / CAVE IN DEPTH: AT COMPLETION 4.5 ft. 9.7 ft.; AFTER 24 HRS. 4.5 ft. 6.3 ft.

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 1-22-09
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 2/23/09
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/20/09

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

OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

ALDO M. VITUCCI, P.E. — DATE 1-8-09
"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 2-22-09."

SOIL BORINGS
THE LEGACY
LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'
ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 29 OF 31

F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 29 FINAL ROAD SOIL BORINGS.dwg, 1/6/2009 3:56:49 PM, jamesl, 1:20

STORM WATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

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

Site Preparation

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

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

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

EARTH FILL

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

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

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

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

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

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

Structure Backfill

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

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

Pipe Conduits

All pipes shall be circular in cross section.

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

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

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

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

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

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

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

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

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

5. Backfilling shall conform to "Structure Backfill".

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

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

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

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

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

4. Backfilling shall conform to "Structure Backfill".

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

Plastic Pipe

The following criteria shall apply for plastic pipe:

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

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

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

4. Backfilling shall conform to "Structure Backfill".

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

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

Concrete

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

Rock Riprap

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

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

Care of Water during Construction

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

Stabilization

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

Erosion and Sediment Control

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

OPERATION AND MAINTENANCE

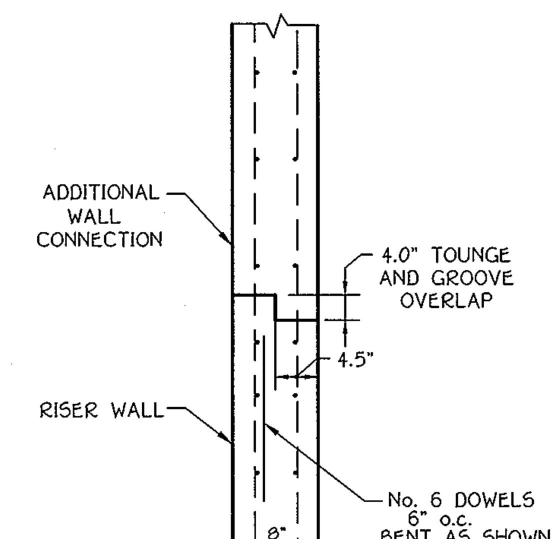
An operation and maintenance plan in accordance with Local or State Regulations will be prepared for all ponds. As a minimum, the dam inspection checklist located in Appendix A shall be included as part of the operation and maintenance plan and performed at least annually. Written records of maintenance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

Embankment and Cut-off Trench Construction

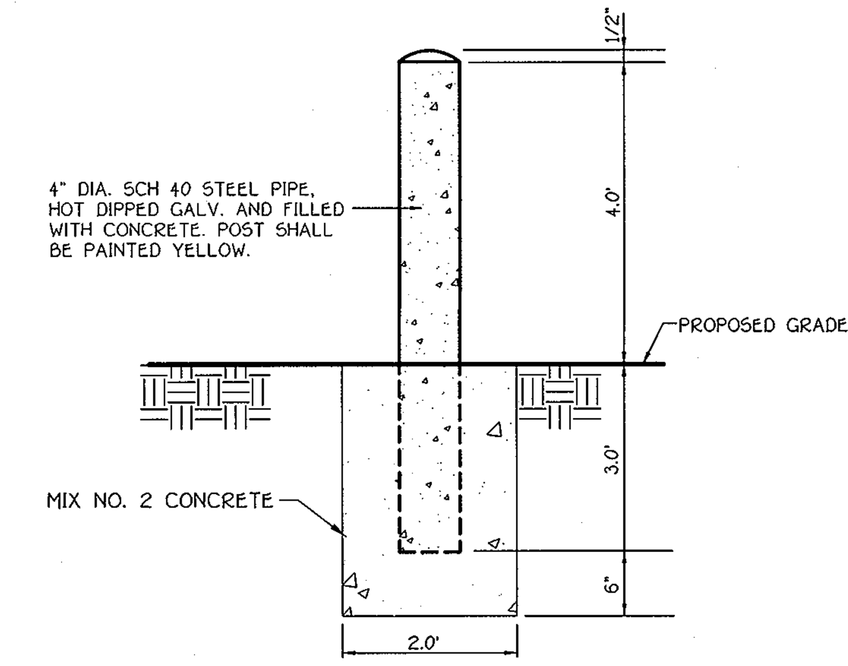
SHOULD AN EMBANKMENT BECOME NECESSARY, THE AREA OF THE PROPOSED SWM FACILITY SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREAS IN ACCORDANCE WITH SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROOFROLLED WITH A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE. FOR AREAS THAT ARE NOT ACCESSIBLE TO A DUMP TRUCK, THE EXPOSED MATERIALS SHOULD BE OBSERVED AND TESTED BY A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE UTILIZING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROOFROLLING OR PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FIRM SOIL, AND THEN GRADES REESTABLISHED BY BACKFILLING WITH SUITABLE SOIL.

A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH. IN ACCORDANCE WITH NRCS-MD CODE NO.378 SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUT-OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL.

IT IS OUR PROFESSIONAL OPINION THAT IN ADDITION TO THE SOIL MATERIALS DESCRIBED ABOVE A FINE-GRAINED SOIL, INCLUDING SILT (ML) WITH A PLASTICITY INDEX OF 10 OR MORE CAN BE UTILIZED FOR THE CENTER OF THE EMBANKMENT AND CORE TRENCH. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH NRCS-MD CODE NO.378 SPECIFICATIONS.



KEYED JOINT DETAIL
WALL SECTION TO WALL SECTION
(NO SCALE)



TYPICAL METAL BOLLARD DETAIL
NOT TO SCALE (STD. G-7.42)

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 1/12/09

CHARLES SKIRVEN
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 1-9-09

ALDO M. VITUCCI
Printed Name Of Engineer

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

Howard Soil Conservation District — Date 1/14/09

Approved: Department Of Public Works

Chief Bureau Of Highways — Date 1-22-09

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 2/23/09

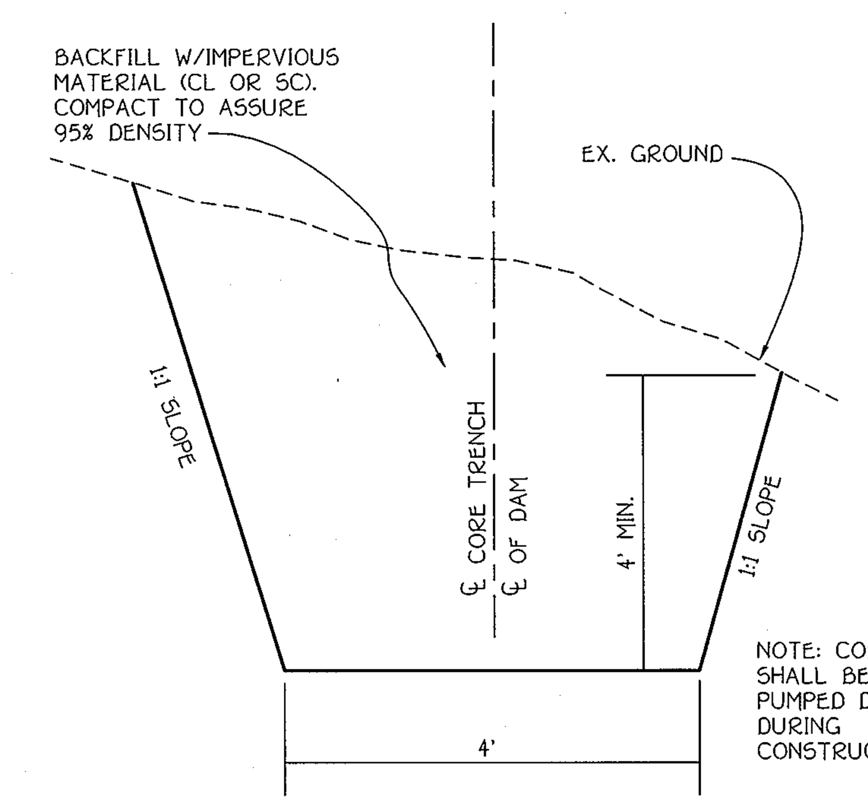
Chief, Development Engineering Division — Date 2/20/09

AS-BUILT CERTIFICATION

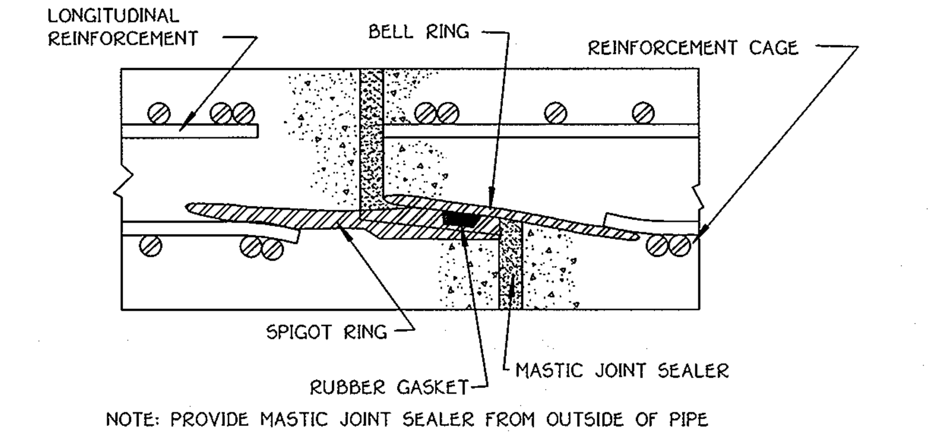
I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.

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.



CORE TRENCH DETAIL
NOT TO SCALE



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)

ALDO M. VITUCCI, PE — DATE 1-9-09

"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 2-22-09."

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
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OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

STORMWATER MANAGEMENT NOTES AND DETAILS

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009

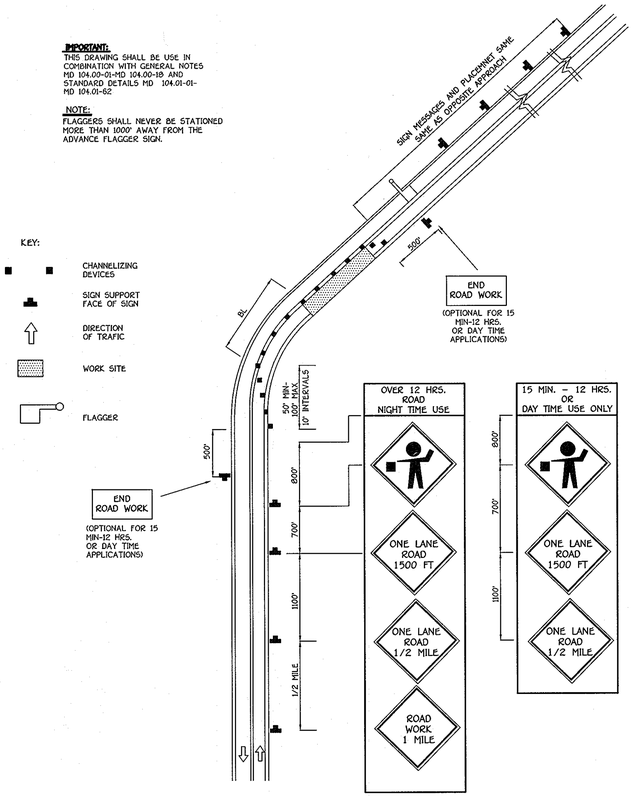
F-07-052

I:\2004\04002\dwg\04002-3001 SHEET 30 FINAL ROAD SWM NOTES.dwg, 1/6/2009 3:54:52 PM, jamesl, 1:50

Approved: Department Of Public Works Chief Bureau Of Highways	1-22-09 Date
Approved: Department Of Planning And Zoning Chief, Division Of Land Development	2/23/09 Date
Chief, Development Engineering Division	2/20/09 Date

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

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



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

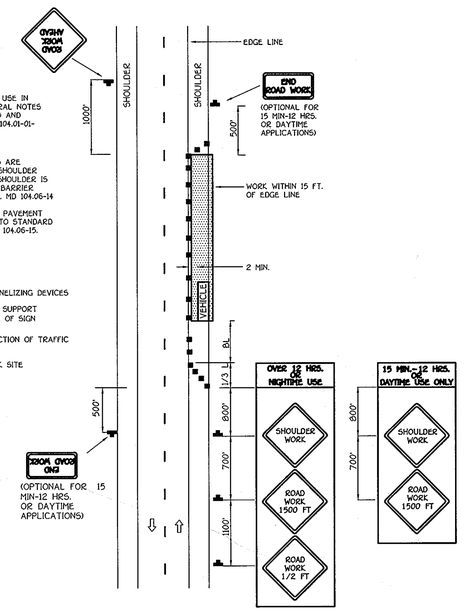
NO SCALE

IMPORTANT:
THIS DRAWING SHALL BE 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.

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



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

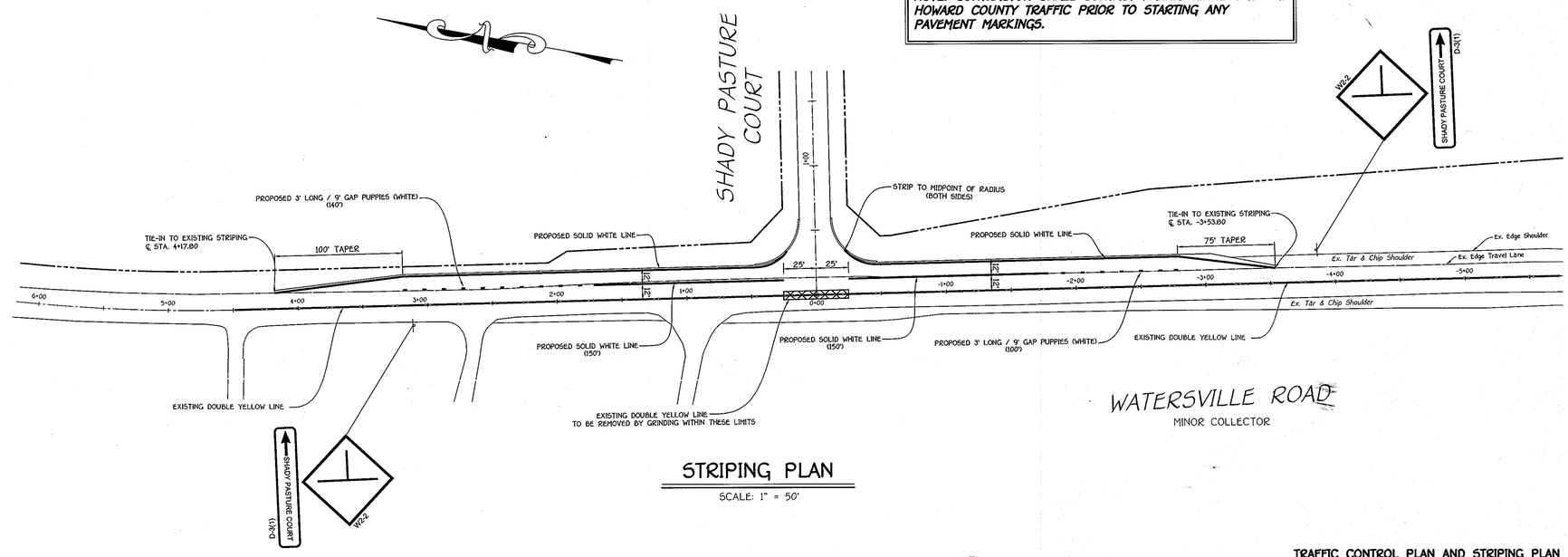
NO SCALE

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. PROPERLY 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 104 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 104 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 60xxx OF THE SPECIFIED MINIMUM VALUE OVER AT LEAST 90xxx 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 OF PREPARING AND SUBMITTING A TCP, WHOLY 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.

NOTE: CONTRACTOR SHALL CONTACT PARRIS ZIRKENBACH AT HOWARD COUNTY TRAFFIC PRIOR TO STARTING ANY PAVEMENT MARKINGS.



STRIPING PLAN

SCALE: 1" = 50'

STATE OF MARYLAND
ALDO M. VITUCCI, P.E.

1-8-09
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 2-22-09."

TRAFFIC CONTROL PLAN AND STRIPING PLAN

THE LEGACY

LOTS 1 THRU 29, BUILDABLE PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'I'

ZONED: RC-DEO
TAX MAP NO. 2 GRID NO. 22 PARCEL NO. 75
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JANUARY, 2009
SHEET 31 OF 31

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

OWNER
MR. STANLEY M. PICKETT
755 WATERSVILLE ROAD
MOUNT AIRY, MARYLAND 21771

DEVELOPER
MR. CHARLES SKIRVEN
5405 TWIN KNOLLS ROAD, SUITE 6
COLUMBIA, MARYLAND 21045

I:\2004\04021\dwg\04021-3001 SHEET 31 TRAFFIC CONTROL AND STRIPING.dwg, 1/6/2009 3:41:57 PM, james,
1:50

F-07-052