SHEET INDEX

SHEET No.	DESCRIPTION
1	TITLE SHEET
2	MILL RIVER COURT PLAN AND PROFILE
3	STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
4	STORM DRAIN PROFILES
5	LANDSCAPING PLAN
6	DRAINAGE AREA MAP
7	STORMWATER MANAGEMENT NOTES AND DETAILS
8	STORMWATER MANAGEMENT NOTES AND DETAILS
9	SOIL BORINGS & TEMPORARY TRAFFIC CONTROL PLAN
10	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS

FINAL ROAD CONSTRUCTION, GRADING AND SEDIMENT CONTROL PLANS

SLUSHER PROPERTY

BUILDABLE LOTS 1 - 12, OPEN SPACE LOTS 13 & 14

ZONING: R-12

TAX MAP No. 38 GRID No. 15 PARCEL No. 745

APPROVED: DEPARTMENT OF PUBLIC WORKS	
CHIEF, BUREAU OF HIGHWAYS (signed)	DATE 7-12-2011
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT (signed)	DATE 7/15/11
CHIEF, DEVELOPMENT ENGINEERING DIVISION (signed)	DATE 7.14.11

STORMWATER MANAGEMENT PRACTICES

LOT No.	ADDRESS	MICRO BIO-RETENTION M-6 (NUMBER)	ENHANCED FILTER F-6 (NUMBER)	RAIN WATER HARVESTING M-1 (NUMBER)
1	6210 Mill River Court	N/A	N/A	N/A
2	6214 Mill River Court	FACILITY #2	N/A	N/A
3	6218 Mill River Court	FACILITY #3	N/A	N/A
4	6222 Mill River Court	FACILITY #4	N/A	N/A
5	6226 Mill River Court	FACILITY #5	N/A	N/A
6	6230 Mill River Court	FACILITY #6	N/A	N/A
7	6234 Mill River Court	FACILITY #7	N/A	N/A
8	6231 Mill River Court	FACILITY#8,#9 & #10	N/A	1-RAIN BARREL
9	6227 Mill River Court	FACILITY #11 & #12	N/A	2-RAIN BARRELS
10	6223 Mill River Court	FACILITY #13	N/A	2-RAIN BARRELS
11	6219 Mill River Court	FACILITY #14	N/A	2-RAIN BARRELS
12	6215 Mill River Court	FACILITY #15 & #16	N/A	N/A
13	Open Space Lot	N/A	N/A	N/A
14	Open Space Lot	N/A	FACILITY #1	N/A

ROADWAY INFORMATION CHART

ROAD NAME	CLASSIFICATION	DESIGN SPEED	R/W WIDTH
MILL RIVER COURT	PUBLIC ACCESS PLACE	15 M.P.H.	40'

TRAFFIC CONTROL SIGNS

ROAD NAME	℄ STA.	OFFSET	POSTED SIGN	SIGN CODE
MILL RIVER COURT	0+40	15'L	STOP	R1-1
MILL RIVER COURT	0+70	14'R	SPEED LIMIT 25	R2-1
MILL RIVER COURT	AT TEE TURN AROUND SEE SHEET 2		NO PARKING IN TEE TURNAROUND	

STREET LIGHT CHART

STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
MILL RIVER COURT	C.L. STA. 0+32	18'R	100-WATT "PREMIER" H.P.S. VAPOR FIXTURE, POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
MILL RIVER COURT	C.L. STA. 1+33	14'R	100-WATT "PREMIER" H.P.S. VAPOR FIXTURE, POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
MILL RIVER COURT	C.L. STA. 2+93	14'L	100-WATT "PREMIER" H.P.S. VAPOR FIXTURE, POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
MILL RIVER COURT	C.L. STA. 4+36	14'R	100-WATT "PREMIER" H.P.S. VAPOR FIXTURE, POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.
MILL RIVER COURT	C.L. STA. 5+84	11'R	100-WATT "PREMIER" H.P.S. VAPOR FIXTURE, POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE.

ADC MAP COORDINATES: 17-H9

VICINITY MAP
SCALE: 1" = 2000'

GENERAL NOTES

1. SUBJECT PROPERTY ZONED R-12 Per 2/2/04 COMPREHENSIVE ZONING PLAN AND THE COMP LITE ZONING REGULATIONS EFFECTIVE 7/28/06.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
3. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
4. ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS ARE APPROVED.
5. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS, DIVISION OF CONSTRUCTION INSPECTION AT 410-313-1880 AT LEAST (5) WORKING DAYS. PRIOR TO THE START OF CONSTRUCTION.
6. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION.
7. LOCATION: HANOVER ROAD, NORTH OF PATUXENT QUARTER ROAD. TAX MAP No. 38, PARCEL No. 745
8. THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY AT 2-FOOT CONTOUR INTERVALS PREPARED BY FISHER, COLLINS & CARTER, INC. DATED OCTOBER, 2006 AND SUPPLEMENTED WITH HOWARD COUNTY 2-FOOT CONTOUR INTERVAL AERIAL MAPS.
9. PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
10. EXISTING UTILITIES SHOWN HEREON ARE TAKEN FROM CURRENT HOWARD COUNTY CONTRACT DRAWINGS.
    a. EXISTING WATER CONTRACT NO. 14-3192-D
    b. EXISTING SEWER CONTRACT NO. 14-3192-D
    PROPOSED WATER AND SEWER FOR THIS PROJECT WILL BE PUBLIC.
11. COORDINATES BASED ON NAD'83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 38GA AND NO. 38DA
    HOWARD COUNTY MONUMENT NO. 38GA — N 555,897.3242 E 1,390,132.1176 ELEV. = 80.853
    HOWARD COUNTY MONUMENT NO. 38DA — N 556,796.3031 E 1,390,221.4773 ELEV. = 126.145
12. AREA TABULATION:
    GROSS AREA OF TRACT: 4.111 AC. +/-
    AREA OF FLOODPLAIN: 0.00 AC. +/-
    AREA OF STEEP SLOPES: 0.00 AC. +/-
    NET AREA OF TRACT: 4.111 AC. +/-
    AREA OF PUBLIC ROAD R/W: 0.488 AC. +/-
    AREA OF BUILDABLE LOTS: 2.772 AC. +/-
    AREA OF OPEN SPACE LOTS: 0.851 AC. +/-
13. LOT TABULATION:
    TOTAL NO. OF PROPOSED LOTS: 14
    NO. OF BUILDABLE LOTS: 12
    NO. OF OPEN SPACE LOTS: 2
14. OPEN SPACE AND RECREATIONAL OPEN SPACE TABULATION:
    REQUIRED OPEN SPACE: 0.822 AC. +/-
    (20% FOR 9,600 SQ.FT. LOT SIZE OPTION)
    OPEN SPACE PROVIDED: 0.851 AC. +/-
    a). Non Credited Open Space = 0.028 AC.
    b). Credited Open Space Provided = 0.823 AC.
    RECREATIONAL OPEN SPACE REQUIRED: 200 SQ.FT./D.U. OR 2,400 SQ.FT.
    RECREATIONAL OPEN SPACE PROVIDED: 5,206 SQ. FT. WITHIN O.S. LOT 14 (2700 SQ.FT. CREDITED)
15. 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.
16. DRIVEWAY (S) SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING (MINIMUM) REQUIREMENTS:
    A) WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE)
    B) SURFACE - SIX (6") INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING
    C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE AND MINIMUM OF 45 FOOT TURNING RADIUS
    D) STRUCTURES (CULVERTS/BRIDGES) CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING)
    E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE
    F) STRUCTURE CLEARANCES - MINIMUM 12 FEET
    G) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE
17. WETLAND AND FOREST STAND DELINEATION INFORMATION SHOWN WAS TAKEN FROM REPORTS PREPARED BY ECO-SCIENCE PROFESSIONALS DATED NOVEMBER 2002 AND APPROVED UNDER THE SKETCH PLAN S03-12.
18. A TRAFFIC IMPACT ANALYSIS WAS PREPARED BY MARS GROUP, LTD. DATED NOVEMBER 2002.
19. STORMWATER MANAGEMENT WILL BE PROVIDED FOR IN ACCORDANCE WITH HOWARD COUNTY AND MDE CURRENT SPECIFICATIONS. GROUNDWATER RECHARGE (Rev) WILL BE PROVIDED VIA AN UNDERGROUND STONE RESERVIOR STORAGE AREA LOCATED BENEATH BIO-RETENTION FACILITY LOCATED ON OPEN SPACE LOT 14. WQv AND CPv WILL BE PROVIDED VIA ON-LOT MICRO-BIORETENTIONS, RAIN BARRELS AND BIO-RETENTION FACILITY LOCATED ON OPEN SPACE LOT 14. THESE FACILITIES ARE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
    TYPE: BIO-RETENTION FACILITY
    OWNER: THE HOMEOWNER'S ASSOCIATION
    MAINTENANCE: THE HOMEOWNER'S ASSOCIATION
20. PREVIOUS DEPARTMENT OF PLANNING AND ZONING FILE NUMBERS ARE: S-03-012, P-07-007.
21. NO CEMETERIES EXIST WITHIN THIS SUBDIVISION.
22. THE EXISTING DWELLING LOCATED ON LOT 1 IS TO REMAIN.
23. BOUNDARY INFORMATION SHOWN HEREON IS BASED ON DEED RESEARCH AND FIELD RUN SURVEY PERFORMED BY FISHER, COLLINS & CARTER, INC DATED DECEMBER 2002.
24. THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY HERBST/BENSON ASSOCIATES DATED MAY, 2004.
25. THERE IS NO 100-YEAR FLOODPLAIN ON THIS PROPERTY.
26. AN ADDRESS RANGE SIGN SHALL BE PROVIDED FOR LOTS 5 THRU 9 AT THE INTERSECTION OF THE TEE-TURN AROUND AND THE USE-IN-COMMON DRIVEWAY. EACH NUMBER SHALL BE A MINIMUM OF 3" PLAIN BLOCK LETTERING. IN ADDITION, THERE SHALL BE AN ADDRESS SIGN AT THE POINT WHERE EACH INDIVIDUAL DRIVEWAY INTERSECTS WITH THE USE-IN-COMMON DRIVEWAY PROVIDED WITH THE SITE DEVELOPMENT PLAN FOR THIS SUBDIVISION
27. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION (0.60 ACRES OF REFORESTATION) WILL BE PROVIDED OFF-SITE ON THE PROPERTY OF QUARTZ HILL, LLC, TAX MAP 8, TAX PARCEL 401 BY THE CREATION OF 1.20 ACRES OF RETENTION ON AN APPROVED FOREST RETENTION BANK, SDP-10-104.
28. A PERIMETER LANDSCAPE SURETY FOR 39 SHADE TREES, 21 EVERGREEN TREES AND 2 ORNAMENTAL TREES IN THE AMOUNT OF $15,000.00 IS PROVIDED IN A DEVELOPER'S AGREEMENT.
    A SURETY FOR 29 STREET TREES IN THE AMOUNT OF $8,700.00 IS ALSO PROVIDED IN THE DEVELOPER'S AGREEMENT.
29. "SIGN POSTS: ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST."
30. 95% COMPACTION IN FILL AREAS SHALL BE IN ACCORDANCE WITH AASTHO T-180 STANDARDS.
31. STREET LIGHTS WILL BE REQUIRED IN THE DEVELOPMENT IN ACCORDANCE WITH THE DESIGN MANUAL. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
32. AN ALTERNATIVE COMPLIANCE TO THE HOWARD COUNTY DESIGN MANUAL, VOL. I, SECTION 5.2.4.I. TO ALLOW LESS THAN 25' DISTANCE FROM A PROPERTY LINE TO THE TOE OF EMBANKMENT AND SECTION 5.2.7.A.4. TO ALLOW A WET POND WITHOUT A POND DRAIN WAS APPROVED ON AUGUST 30, 2007.
33. PROPOSED WATER & SEWER WILL BE PUBLIC. EXISTING UTILITIES SHOWN HEREON ARE TAKEN FROM CURRENT HOWARD COUNTY CONTRACT DRAWINGS.
    a. EXISTING WATER CONTRACT NO. 14-3192-D & 14-4443-DRAINAGE AREA: PATAPSCO
    b. EXISTING SEWER CONTRACT NO. 14-3192-D & 14-4443-DRAINAGE AREA: PATAPSCO
34. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, OR PLACEMENT OF NEW STRUCTURES IS PERMITTED WITHIN THE LIMITS OF WETLANDS, OR THEIR BUFFERS.
35. A FEE-IN-LIEU OF CONSTRUCTION OF THE REQUIRED ROAD IMPROVEMENTS IN THE AMOUNT OF $11,737.00 SHALL BE PAID BY THE DEVELOPER TO THE DEPARTMENT OF PUBLIC WORKS, REAL ESTATE SERVICES DIVISION, PRIOR TO OR CONCURRENT WITH THE SUBMISSION OF THE FINAL PLAT FOR SIGNATURE. THIS PAYMENT SHALL BE CREDITED TO HANOVER ROAD IMPROVEMENTS, CAPITAL PROJECT NO. J-4173 DEFERRED REVENUE ACCOUNT NO. 816-5030. A RECEIPT VERIFYING PAYMENT OF THE FEE SHALL BE PROVIDED WITH THE SUBMISSION OF THE ORIGINAL FINAL PLAT TO THE DEPARTMENT OF PLANNING AND ZONING.

FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

Purpose Statement

The purpose of this revised plan is to replace the chapter 3 stormwater management device with the new mde chapter 5 stormwater management regulations.

DENSITY TABULATIONS

1. BASE DENSITY: 4.11 ACRES / 12,000 sq.ft./lot = 14.919 UNITS OR 14 SINGLE FAMILY DETACHED HOMES
2. TOTAL NUMBER OF PROPOSED DWELLING UNITS = 12 BUILDABLE LOTS

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

NO.	DESCRIPTION	DATE
1	REMOVE POCKET POND AND REPLACE WITH BIO-RETENTION AND FUTURE PRIVATE FACILITIES	3/17/11
REVISIONS		

OWNER/DEVELOPER

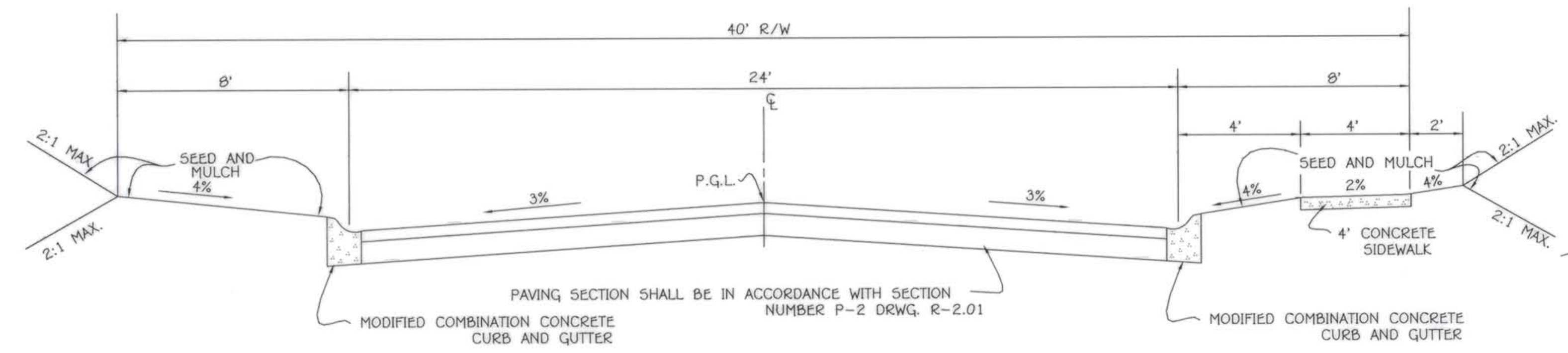
GORDON DEVELOPMENT
1498 REISTERSTOWN ROAD, SUITE 338
BALTIMORE, MARYLAND 21208
(443) 375-0324
ATTN: MR. GORDON GREENSPUN

ALDO M. VITUCCI, P.E. (signed) — DATE 6/20/11

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

REVISED
SLUSHER PROPERTY
BUILDABLE LOTS 1 THRU 12 AND OPEN SPACE LOTS 13 & 14
ZONED: R-12
TAX MAP No. 38, GRID No. 15, PARCEL No. 745
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 20, 2011
SHEET 1 OF 10

F-08-180



TYPICAL ROADWAY SECTION (PUBLIC ACCESS PLACE)

NO SCALE

ROADWAY INFORMATION CHART					
ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	℄ STATION LIMITS	PAVING SECTION
MILL RIVER COURT	PUBLIC ACCESS PLACE	15 M.P.H.	R-12	0+00 TO 5+78	P-2

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

℄ CURVE DATA
MILL RIVER COURT
STA. 3+66.81 TO STA. 4+75.19
RAD. = 100.00'
ARC LENGTH = 108.38'
TAN. = 60.20'
△= 62°05'51"
CHORD. = N 39°30'28" W, 103.15'

℄ CURVE DATA
MILL RIVER COURT
STA. 2+22.55 TO STA. 3+66.81
RAD. = 135.00'
ARC LENGTH = 144.25'
TAN. = 79.87'
△= 61°13'21"
CHORD. = N 39°04'13" W, 137.49'

NO.	DESCRIPTION	DATE
1	REMOVE POCKET POND AND REPLACE WITH BIO-RETENTION FACILITY	1/3/11

REVISIONS

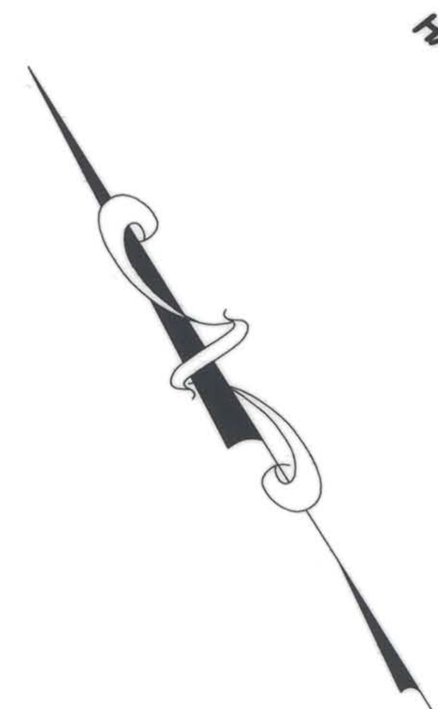
APPROVED: DEPARTMENT OF PLANNING AND ZONING

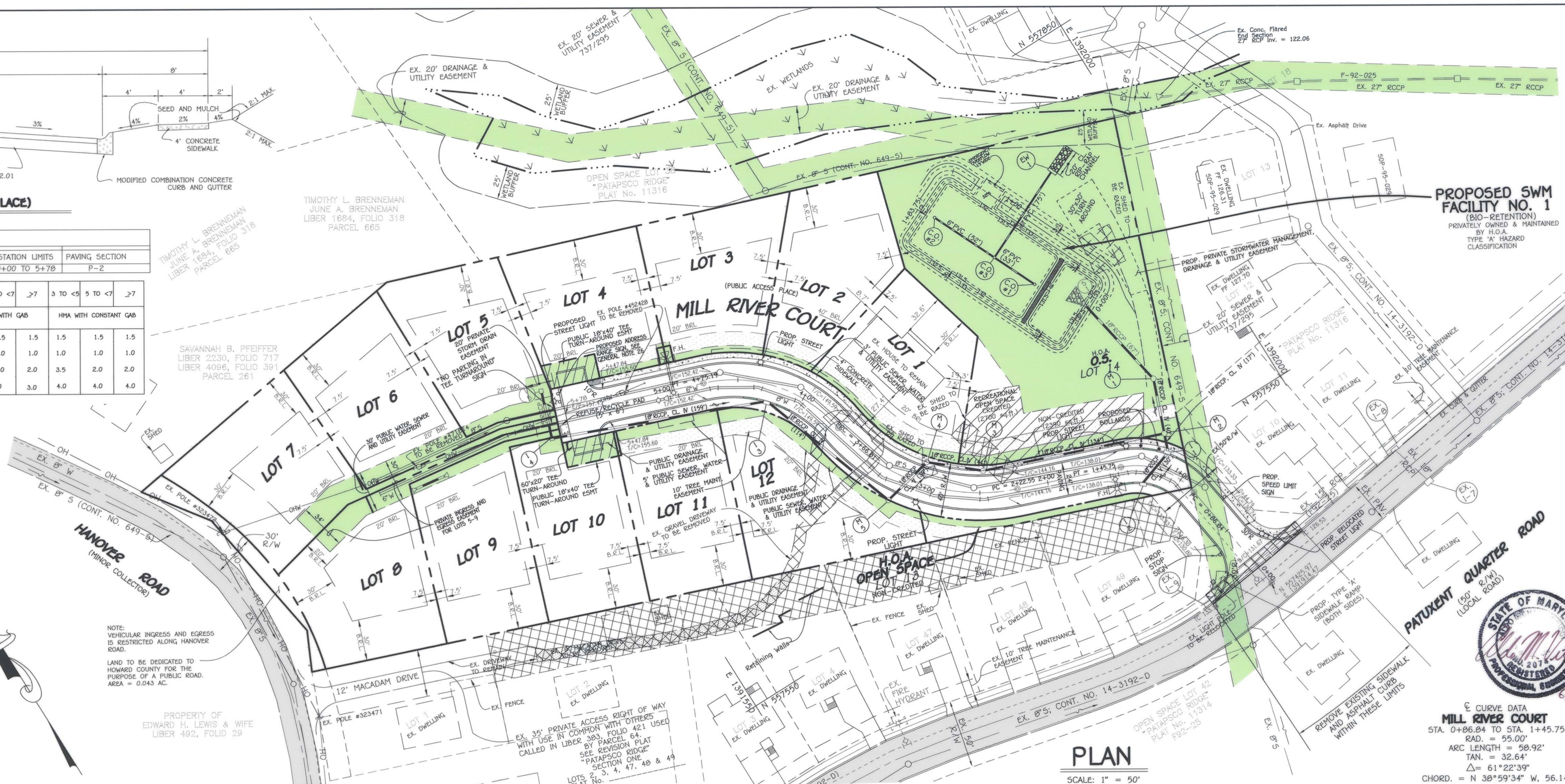
Kent Sheubrooks (signature) — 7/15/11
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

(signature) — 7.14.11
CHIEF, DEVELOPMENT ENGINEERING DIVISION NY — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

(signature) — 7-12-2011
CHIEF, BUREAU OF HIGHWAYS — DATE

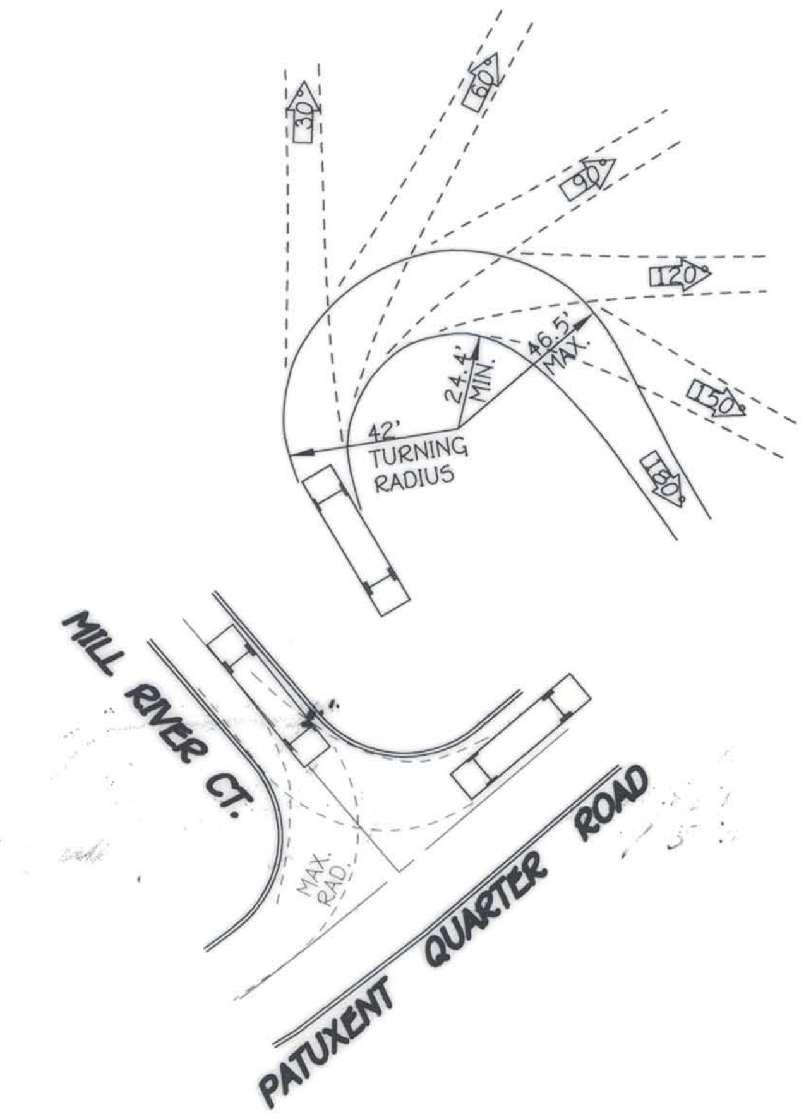




PLAN

SCALE: 1" = 50'

℄ CURVE DATA
MILL RIVER COURT
STA. 0+86.84 TO STA. 1+45.75
RAD. = 55.00'
ARC LENGTH = 58.92'
TAN. = 32.64'
△= 61°22'39"
CHORD. = N 38°59'34" W, 56.14'



BUS TURNING DETAIL

SCALE: 1" = 50'

Seal: STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER — 6/20/11

REVISED

SLUSHER PROPERTY

BUILDABLE LOTS 1 THRU 12 AND OPEN SPACE LOTS 13 & 14
ZONED: R-12
TAX MAP 38, GRID 15, PARCEL 745
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

MILL RIVER COURT
PLAN AND PROFILE

OWNER/DEVELOPER
GORDON DEVELOPMENT
1498 REISTERSTOWN ROAD, SUITE 330
BALTIMORE, MARYLAND 21208
(443) 375-0324
ATTN: MR. GORDON GREENSPUN

SCALE: AS SHOWN	DATE: JUNE 20, 2011	DWG. NO. 2 OF 11
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
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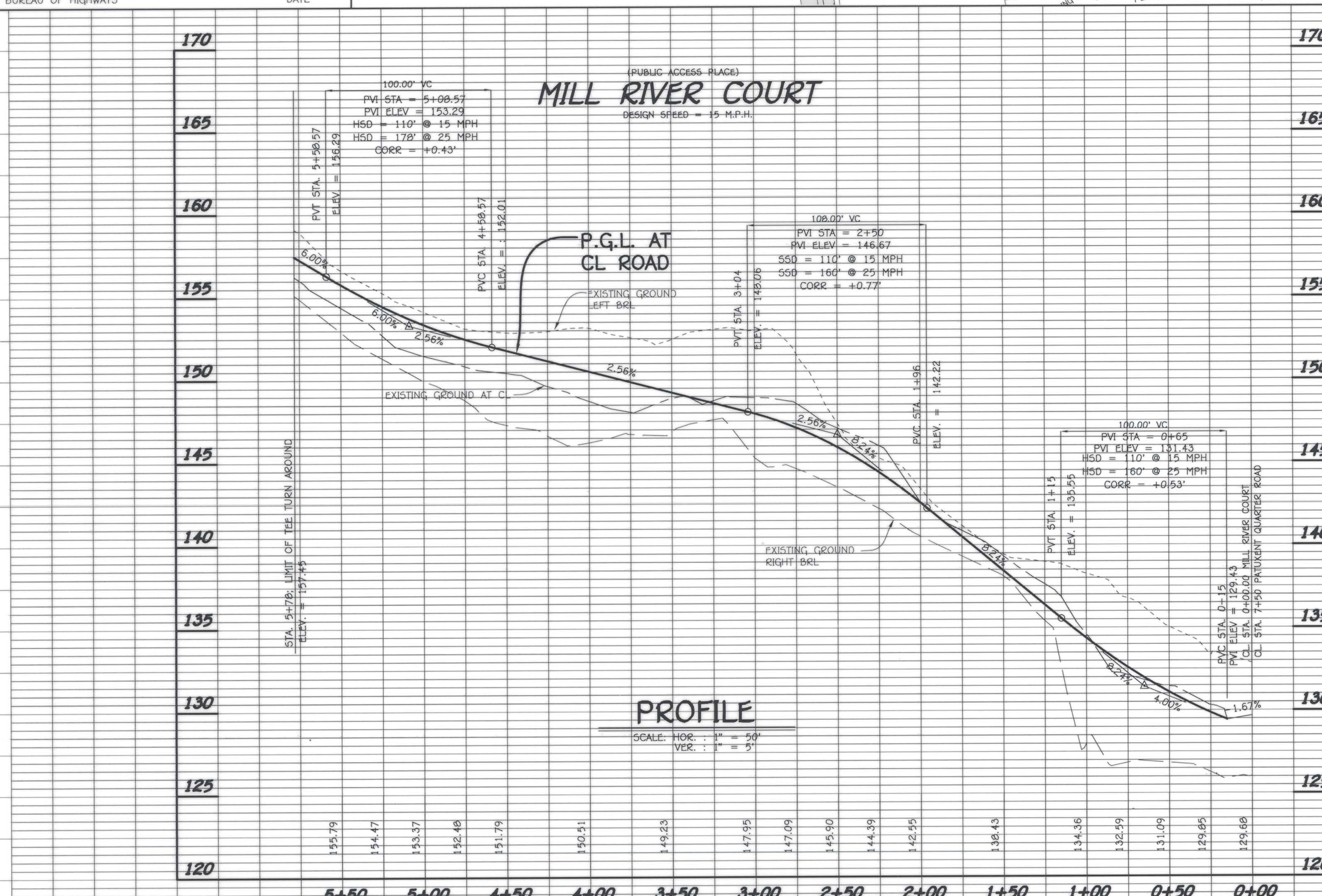
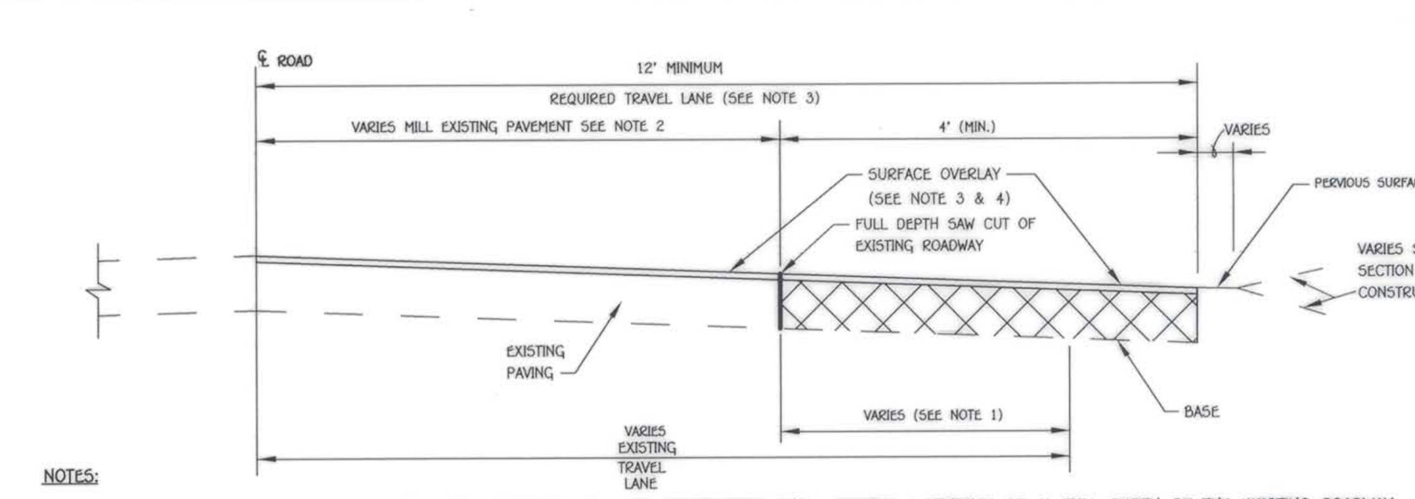
Purpose Statement

The purpose of this revised plan is to replace the chapter 3 stormwater management device with the new mde chapter 5 stormwater management regulations.



PROFILE

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

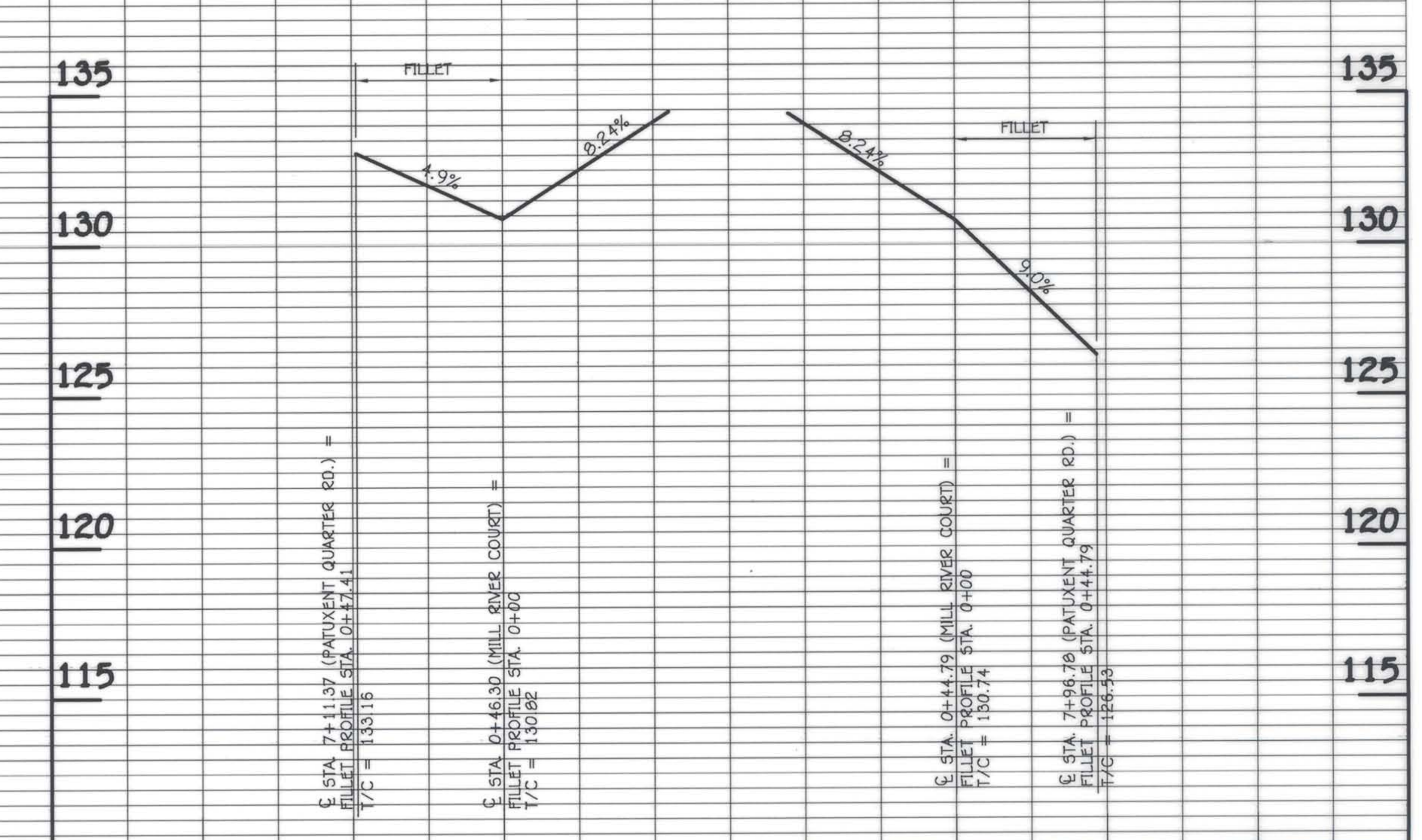


NOTES:

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

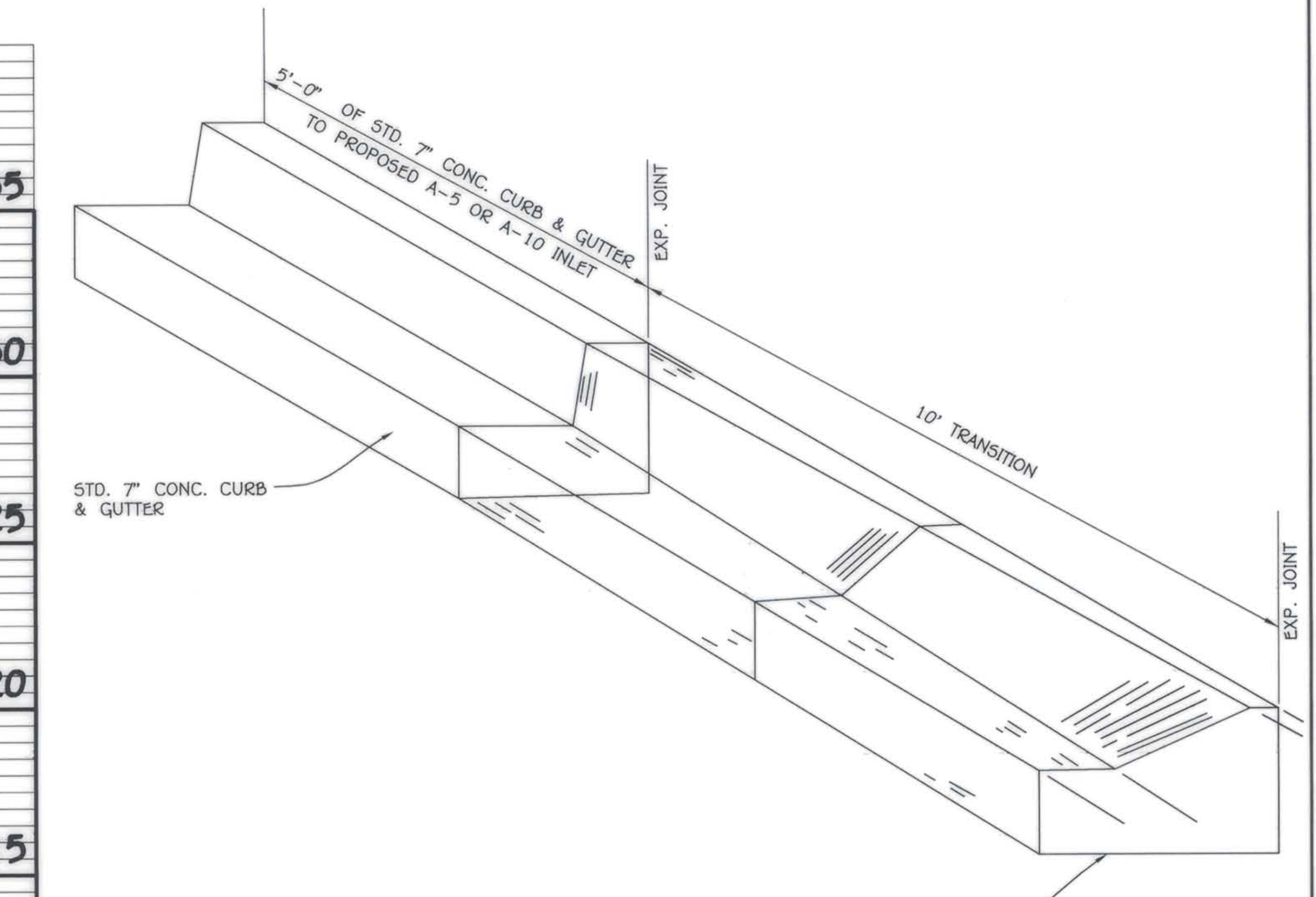
EXISTING ROADWAY WIDENING STRIP (R-1.08)

NO SCALE



FILLET PROFILES

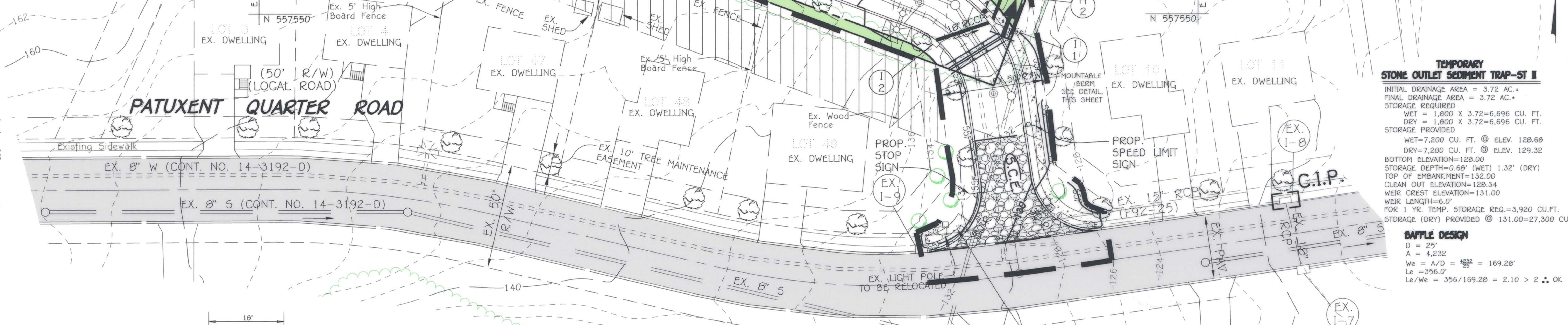
SCALE: HOR. : 1" = 50'
VER. : 1" = 5'



MODIFIED CONCRETE CURB & GUTTER TO STD. 7" CONCRETE CURB & GUTTER TRANSITION AT INLETS

NO SCALE

F-08-180



STREET TREE SCHEDULE

SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
(tree)	578 x 2 / 40 = 28.90 29 TREES	ACER RUBRUM 'OCTOBER GLORY' RED MAPLE	2 1/2-3" CAL.	40' APART ON PUBLIC R/W

NOTE: STREET TREE TYPES ARE ONLY A RECOMMENDATION AND MAY BE SUBSTITUTED WITH A COUNTY ACCEPTED EQUIVALENT FROM THE HOWARD COUNTY LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE 29 REQUIRED STREET TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $8,700.00

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."

Michael S. Greenspun — 6/20/11
Signature Of Developer — Date
Michael S. Greenspun
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."

Aldo M. Vitucci — 6/20/11
Signature Of Engineer — Date
Aldo M[illegible]
Printed Name Of Engineer

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

[signature] — 7/5/11
Howard Soil Conservation District — Date

Approved: Department Of Public Works
[signature] — 7-12-2011
Chief Bureau Of Highways — Date

Approved: Department Of Planning And Zoning
Kent Sheubrooks — 7/15/11
Chief, Division Of Land Development — Date
Chad Edmondson — 7.14.11
Chief, Development Engineering Division — Date
NY

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.

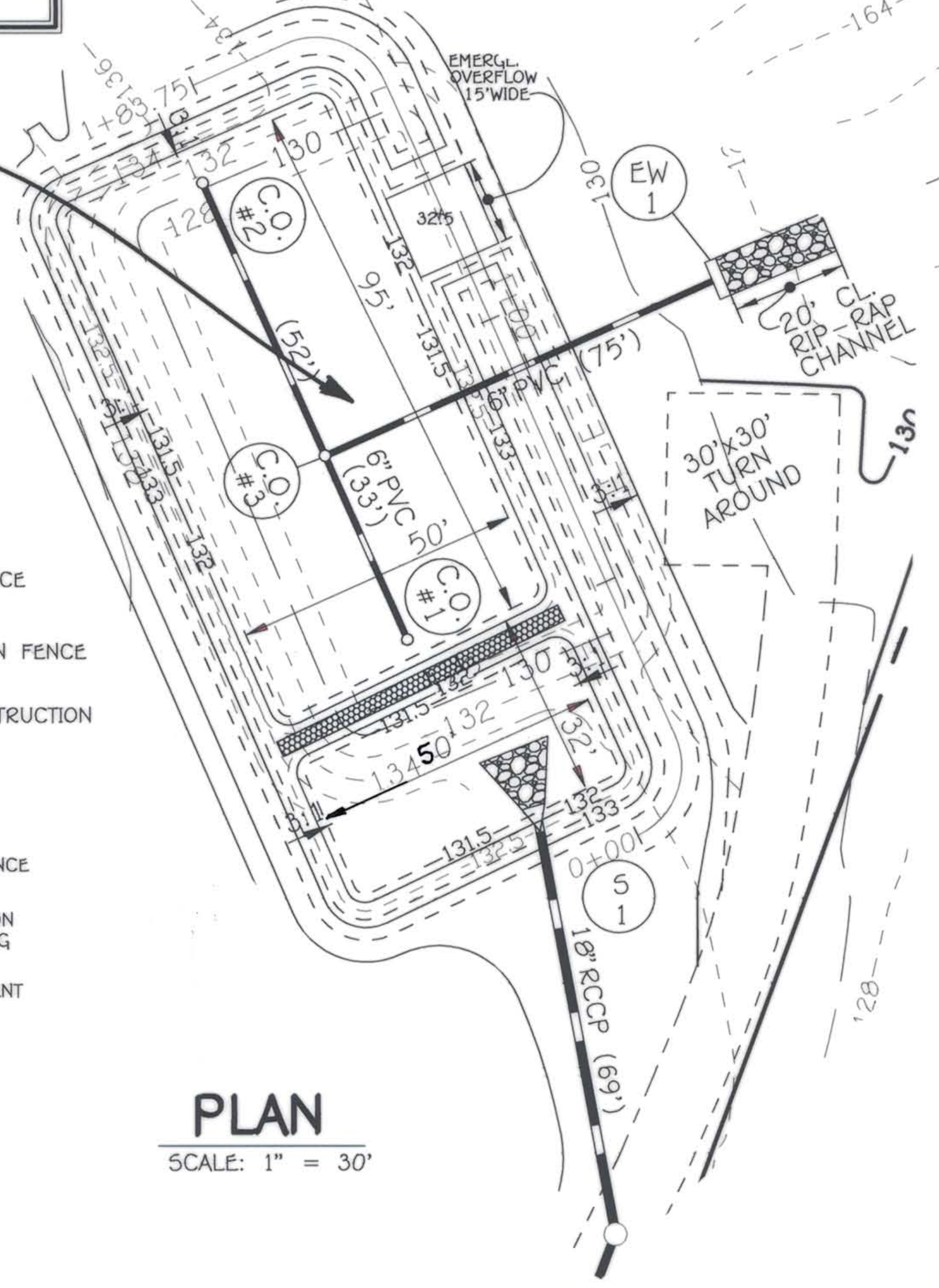
Signature — P.E. No.
Date:

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.

Purpose Statement

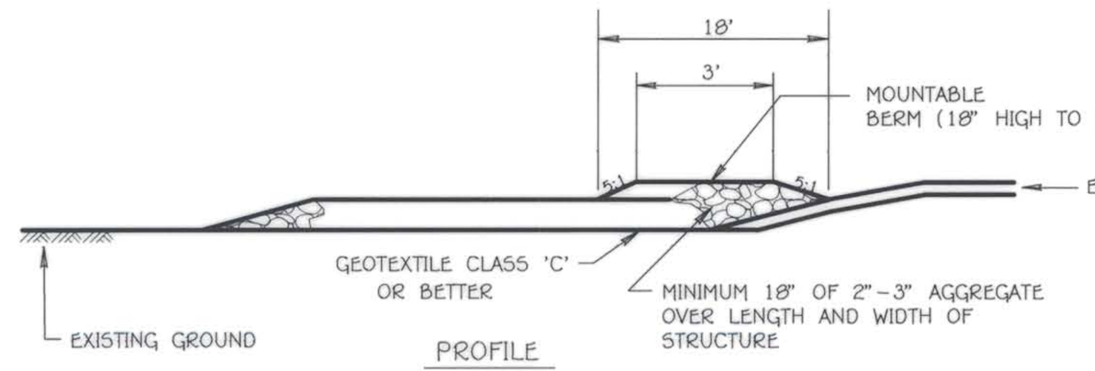
The purpose of this revised plan is to replace the chapter 3 stormwater management device with the new mde chapter 5 stormwater management regulations.

PROPOSED BIO-RETENTION FACILITY NO. 1
(98' x 50')
PRIVATELY OWNED & MAINTAINED BY H.O.A.
TYPE 'A' HAZARD CLASSIFICATION



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
green line	DENOTES L.O.D. LIMITS OF DISTURBANCE
E.C.M.	DENOTES EROSION CONTROL MATTING
• • • •	DENOTES SEDIMENT BAFFLES



MOUNTABLE BERM
NOT TO SCALE

TEMPORARY STONE OUTLET SEDIMENT TRAP-ST II

INITIAL DRAINAGE AREA = 3.72 AC.±
FINAL DRAINAGE AREA = 3.72 AC.±
STORAGE REQUIRED
WET = 1,800 X 3.72=6,696 CU. FT.
DRY = 1,800 X 3.72=6,696 CU. FT.
STORAGE PROVIDED
WET=7,200 CU. FT. @ ELEV. 128.68
DRY=7,200 CU. FT. @ ELEV. 129.32
BOTTOM ELEVATION=128.00
STORAGE DEPTH=0.68' (WET) 1.32' (DRY)
TOP OF EMBANKMENT=132.00
CLEAN OUT ELEVATION=128.34
WEIR CREST ELEVATION=131.00
WEIR LENGTH=6.0'
FOR 1 YR. TEMP. STORAGE REQ.=3,920 CU.FT.
STORAGE (DRY) PROVIDED @ 131.00=27,300 CU.FT.

BAFFLE DESIGN

D = 25'
A = 4,232
We = A/D = $\frac{4232}{25}$ = 169.28'
Le =356.0'
Le/We = 356/169.28 = 2.10 > 2 ∴ OK

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

OWNER/DEVELOPER
GORDON DEVELOPMENT
1498 REISTERSTOWN ROAD, SUITE 338
BALTIMORE, MARYLAND 21208
(443) 375-0324
ATTN: MR. GORDON GREENSPUN

NO.	DESCRIPTION	DATE
1	REMOVE POCKET POND REPLACE WITH BIO-RETENTION FACILITY AND SHOW FUTURE SWM FACILITIES	1/3/11

REVISIONS

ALDO M. VITUCCI — 6/20/11
DATE

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

REVISED
STREET TREE, GRADING & SEDIMENT CONTROL PLAN
SLUSHER PROPERTY
BUILDABLE LOTS 1 THRU 12 AND OPEN SPACE LOTS 13 & 14
ZONED: R-12
TAX MAP No. 38, GRID No. 15, PARCEL No. 745
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 20, 2011

F-08-180

STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	ROAD NAME	ROAD STA./ COORDINATE	OFFSET	TYPE	REMARKS
I-1	135.87*	133.20	132.95	MILL RIVER COURT	1+16	12.43'R	A-5	D-4.01
I-2	136.86*	---	132.83	MILL RIVER COURT	1+28	12.43'L	A-5	D-4.01
I-3	151.39*	147.17	146.92	MILL RIVER COURT	4+25	12.43'L	A-5	D-4.01
I-4	159.00**	152.10, 149.50	149.25	------	N 557,793.05 E 1,391,527.78	------	'S' GRATE	D-4.22
I-5	159.00 **	------	152.45	------	N 557,826.34 E 1,391,539.21	------	'S' GRATE	D-4.22
M-1	135.10	131.84	131.74	------	N 557,597.35 E 1,391,920.80	------	STD. MANHOLE	G-5.12
M-2	136.40	132.52, 132.15	132.05	MILL RIVER COURT	1+20	26'R	STD. MANHOLE	G-5.12
M-3	145.96	142.46	142.21	MILL RIVER COURT	2+47	16'R	STD. MANHOLE	G-5.12
M-4	148.02	143.68	143.43	MILL RIVER COURT	2+95	16'R	STD. MANHOLE	G-5.12
M-5	148.63	144.13	143.88	MILL RIVER COURT	3+10	20'L	STD. MANHOLE	G-5.12
M-6	153.21	148.00, 148.75(6")	147.75	MILL RIVER COURT	4+75	21'L	STD. MANHOLE	G-5.12
M-7	155.98	148.82, 149.32(6")	148.57	MILL RIVER COURT	5+48	17'L	STD. MANHOLE	G-5.12
S-1	132.50	131.38	---	------	N 557,689.53 E 1,391,910.76	------	CONC. END SECTION	D-5.51
EW-1	130.00	128.30	---	------	N 557,771.9 E 1,391,934.06	------	MOD. TYPE 'C' ENDWALL	SEE DETAIL

* DENOTES TOP OF CURB ELEVATION
** DENOTES TOP GRATE ELEVATION
*** DENOTES TOP SLAB ELEVATION

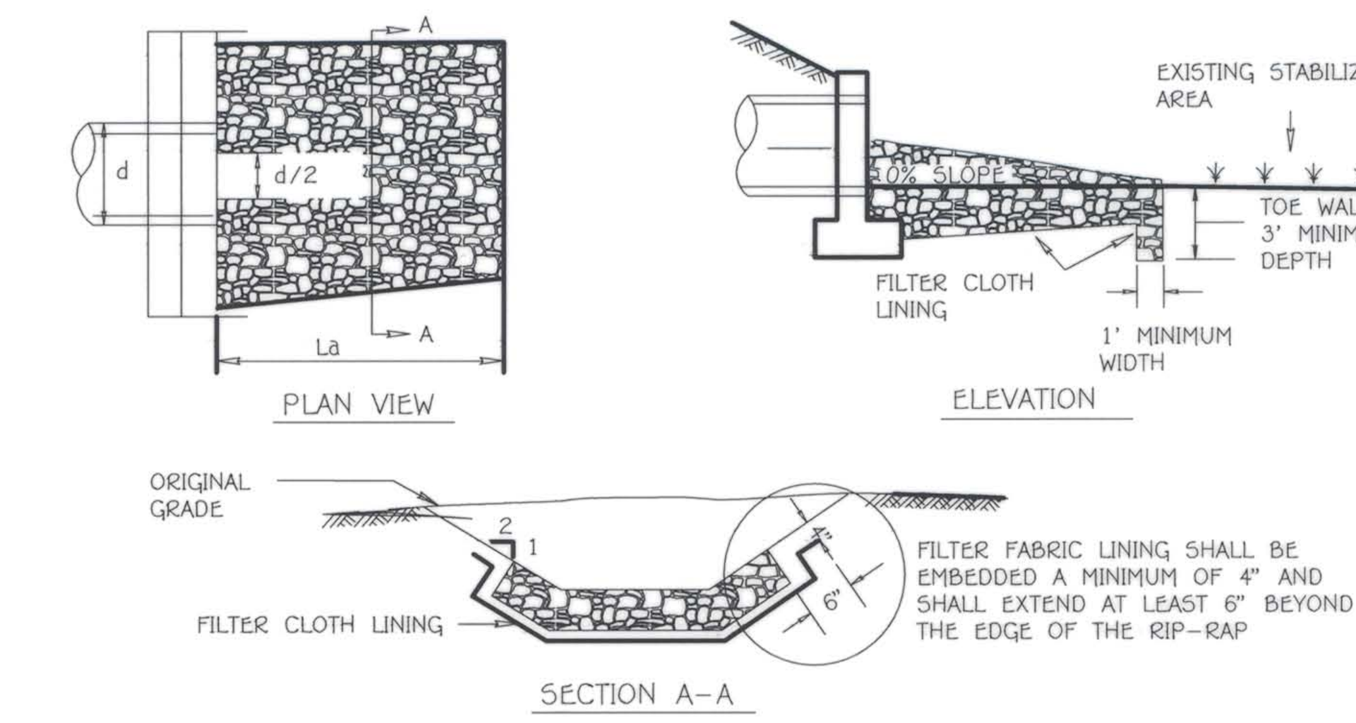
PIPE SCHEDULE

SIZE	CLASS	LENGTH
18"	RCCP, CL. IV.	637 L.F.
15"	RCCP, CL. IV	35 L.F.
6"	SCH. 40, PVC SOLID	120 L.F.
6"	SCH. 40, PVC PERF.	93 L.F.
4"	SCH. 40, PVC SOLID	62 L.F.
8"	SCH. 40, PVC SOLID	48 L.F.

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

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.



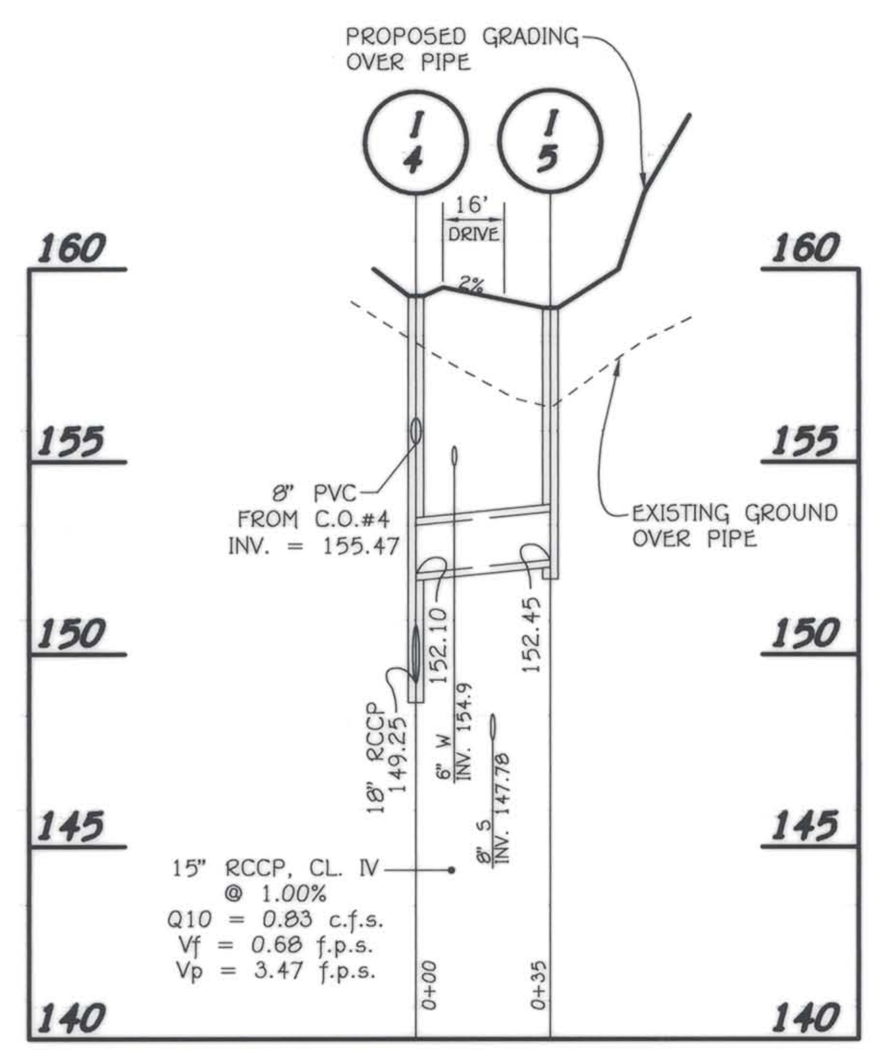
RIP-RAP CHANNEL DETAIL
NO SCALE

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

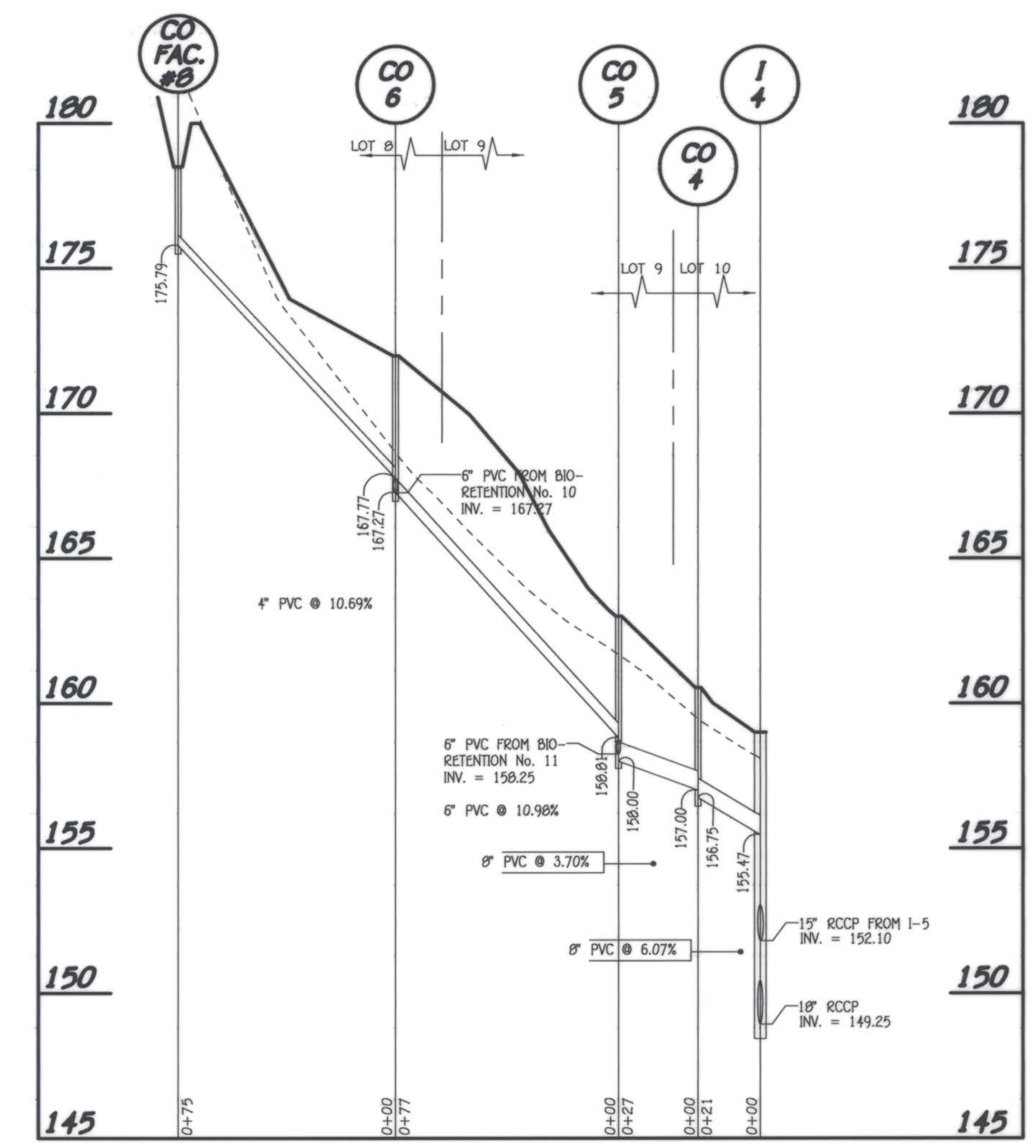
APPROVED: DEPARTMENT OF PUBLIC WORKS	
CHIEF, BUREAU OF HIGHWAYS	7-12-2011 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT	7/15/11 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	7·14·11 DATE

REVISIONS

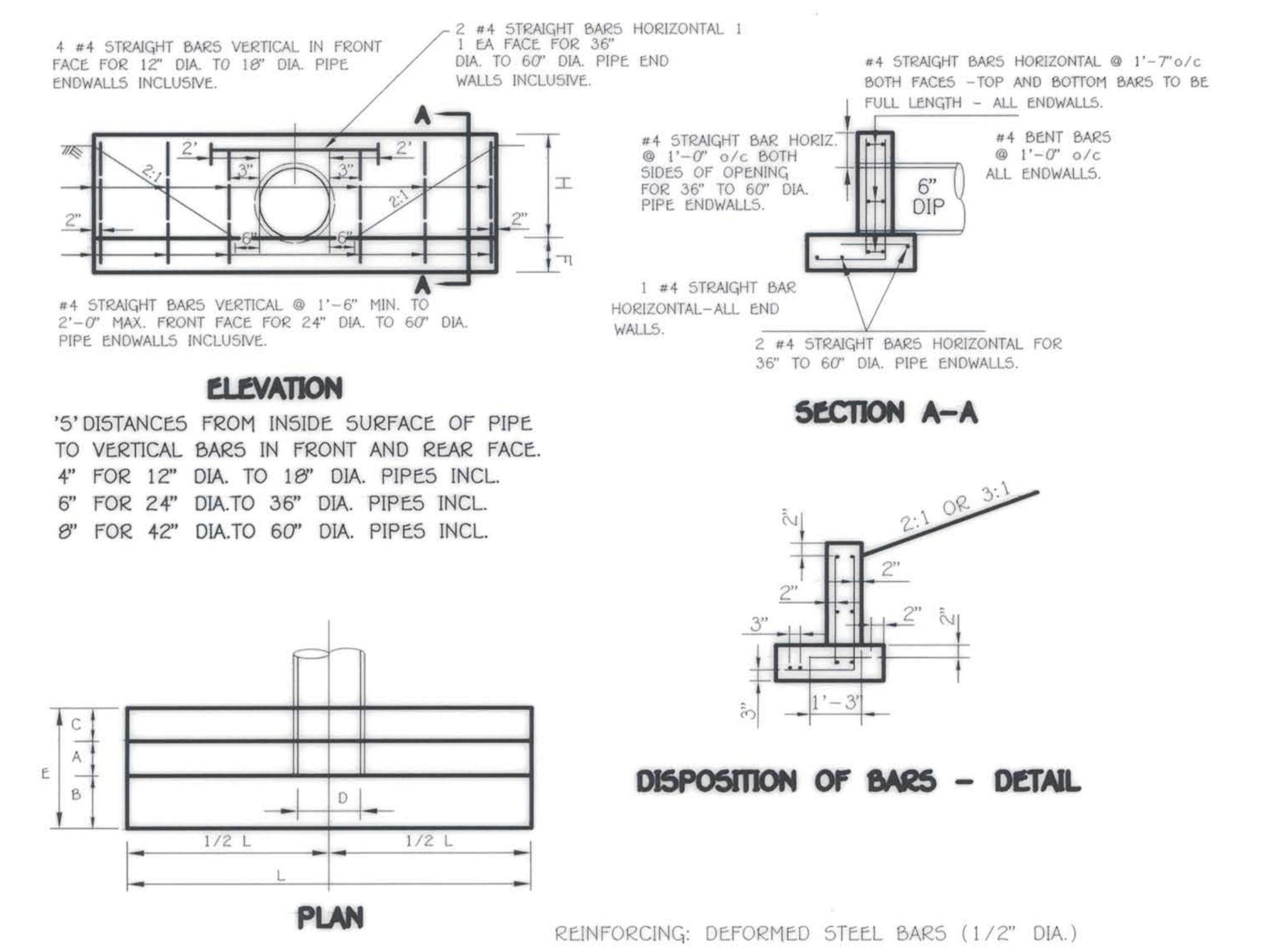
NO.	DESCRIPTION	DATE
1	REVISED STORM DRAIN PROFILE, REMOVE STONE RESERVOIR, DIVERSION MANHOLE I-5 & M-6 AND ADD EW-1	4/16/10
2	REMOVE POCKET POND AND REPLACE WITH BIO-RETENTION FACILITY AND SHOW FUTURE SWM FACILITIES	1/3/11



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



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

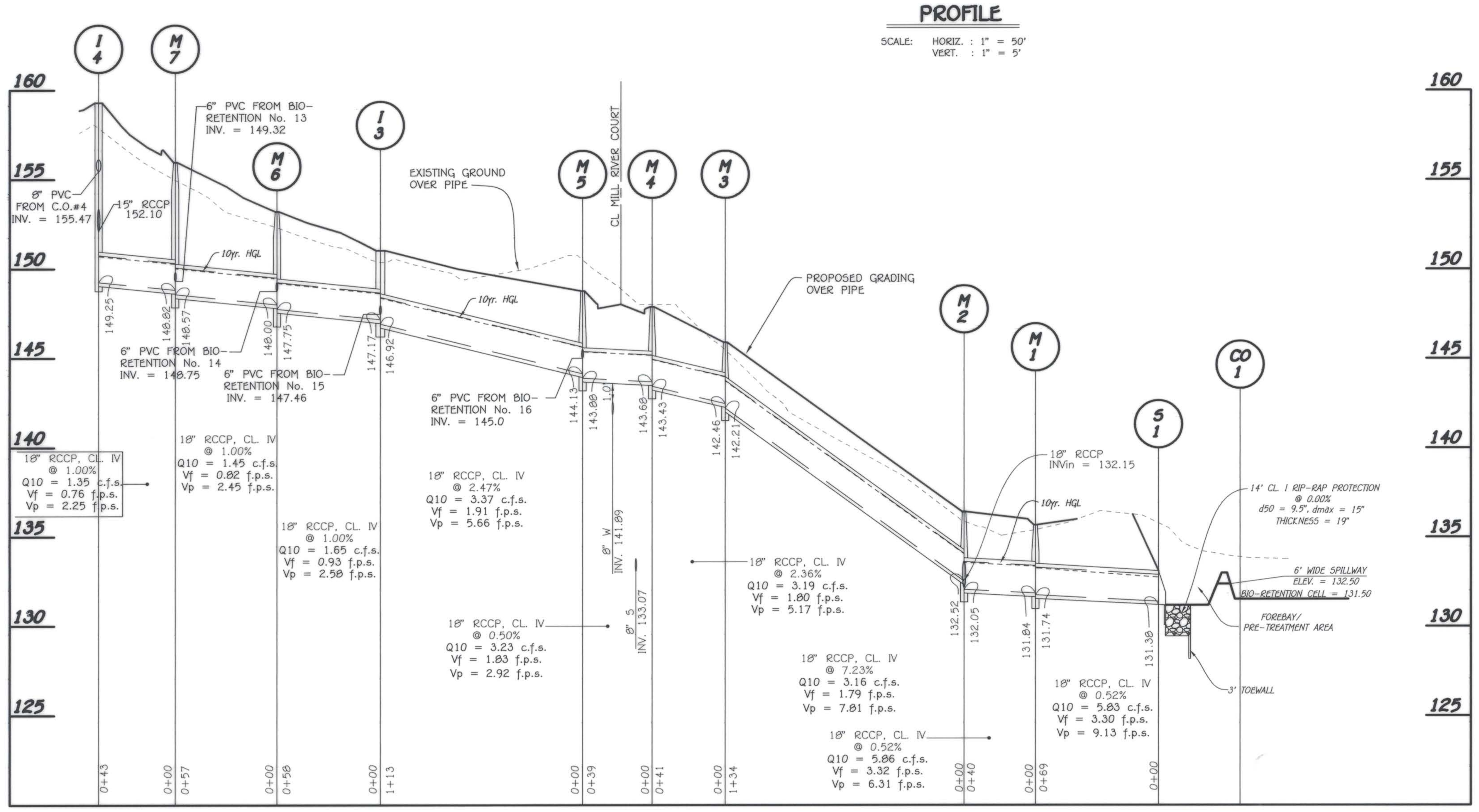


REINFORCING: DEFORMED STEEL BARS (1/2" DIA.)
CHAMFER: ALL EXPOSED EDGES 1"x 1" OR AS DIRECTED.
CONC. SHALL BE S.H.A. A. MIX No. 2.

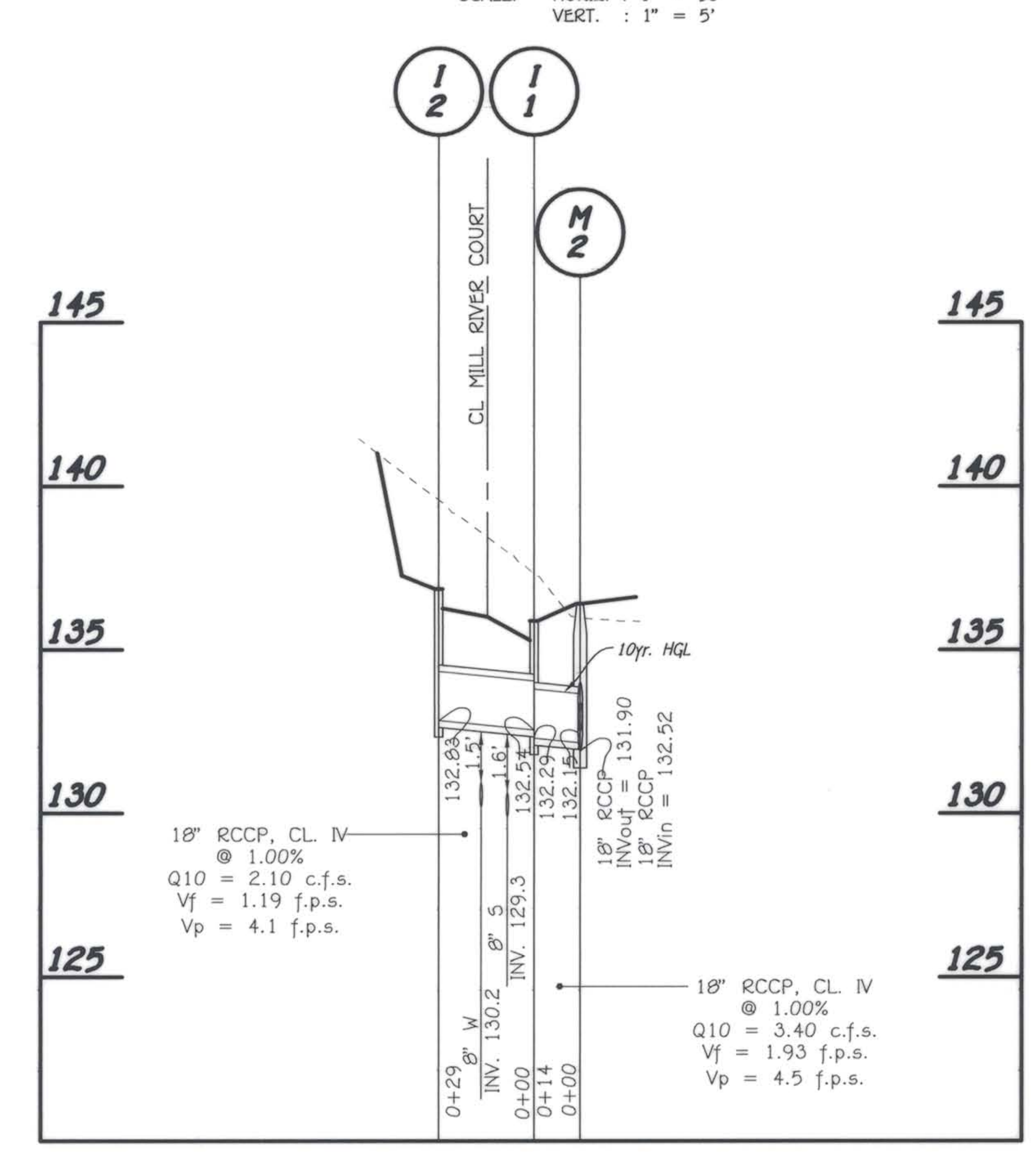
OPENINGS		DIMENSIONS							VOLUME	STEEL
D IN.	AREA SQ.FT	A	B	C	E	F	H	L	CONC. C.Y.	LBS.
6"	0.79	9"	6"	6"	1'-9'	9"	1'-6"	5'-5"	0.61	38

MODIFIED TYPE 'C' ENDWALL
NO SCALE

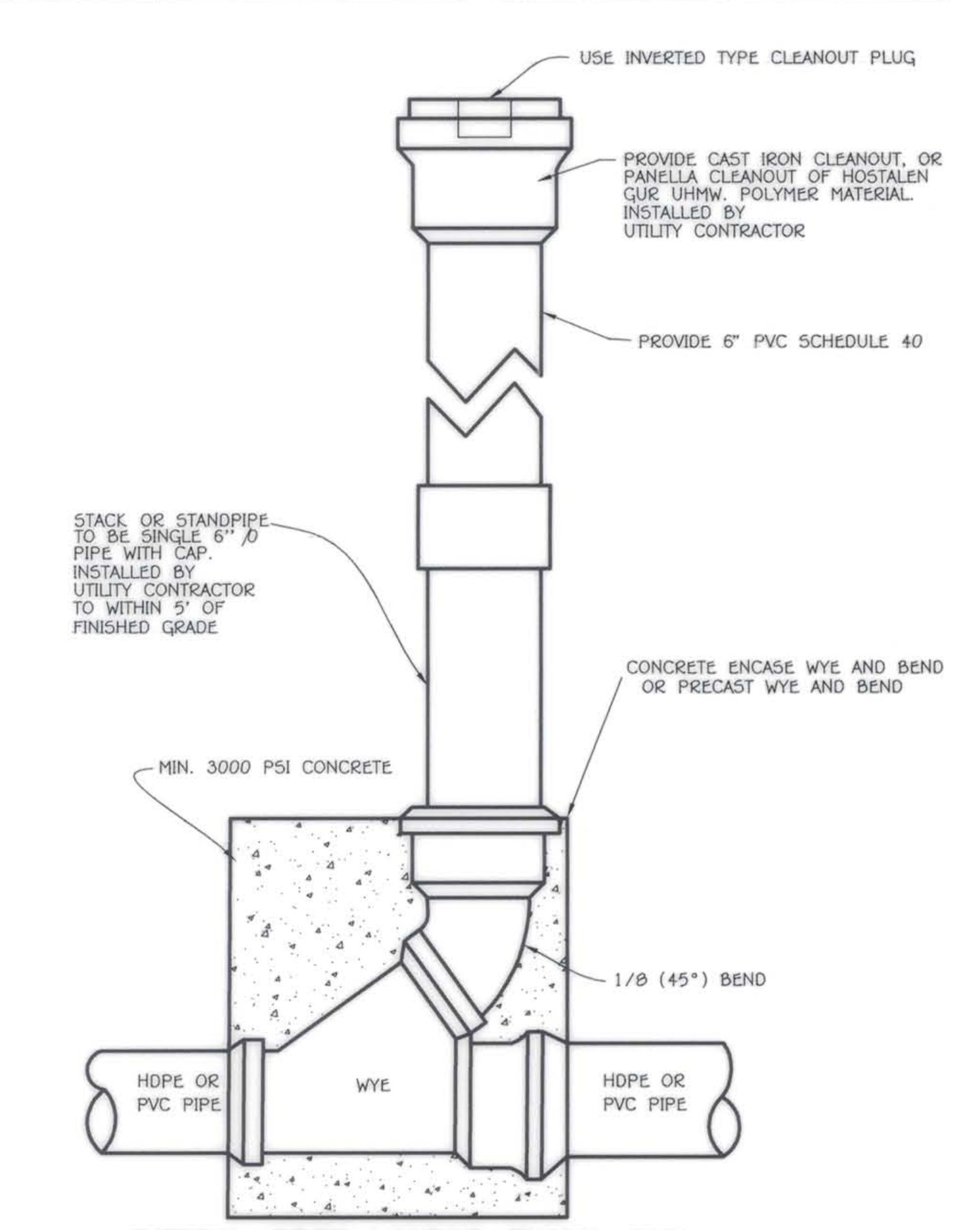
RIP-RAP CHANNEL DESIGN DATA															
STRUCTURE	AREA (S.F.)	WETTED PERIMETER	R	$R^{2/3}$	S	$S^{1/2}$	W	d	N	V (f.p.s.)	Q10 (c.f.s.)	RIP-RAP SIZE D_{50}	RIP-RAP SIZE D_{MAX}	BLANKET THICKNESS	PIPE SIZE
S-1	4.49	8.77	0.5120	0.6386	0.0050	0.0707	6.0'	0.62'	0.04	1.68	7.54	9.5"	15"	19"	18"
EW-1	0.63	3.12	0.2019	0.3423	0.0050	0.0707	2.0'	0.37'	0.04	0.90	0.53	9.5"	15"	19"	6"



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



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



TYPICAL ROOF LEADER CLEAN-OUT
NO SCALE

Purpose Statement

The purpose of this revised plan is to replace the chapter 3 stormwater management device with the new mde chapter 5 stormwater management regulations.

FISHER, COLLINS & CARTER, INC.
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OWNER/DEVELOPER

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(443) 375-0324
ATTN: MR. GORDON GREENSPUN

ALDO M. VITUCCI, P.E. — 6/20/11 DATE

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

REVISED
STORM DRAIN PROFILES
SLUSHER PROPERTY
BUILDABLE LOTS 1 THRU 12 AND OPEN SPACE LOTS 13 & 14

ZONED: R-12
TAX MAP No. 38, GRID No. 15, PARCEL No. 745
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 20, 2011
SHEET 4 OF 10

F-08-180

LANDSCAPE DEVELOPER'S CERTIFICATE

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

Name 6/20/11 Date

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 39 shade, 21 evergreen trees and 2 ornamental trees will be posted as part of the Developer's Agreement in the amount of $15,000.00

Approved: Department Of Public Works
Chief Bureau Of Highways — Date 7-12-2011

Approved: Department Of Planning And Zoning
Chief, Division Of Land Development — Date 7/15/11
Chief, Development Engineering Division — Date 7-14-11

SCHEDULE A PERIMETER LANDSCAPE EDGE

PERIMETER	CATEGORY (PROPERTIES/ ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF PERIMETER	CREDIT FOR EXISTING VEGETATION	REMAINING	NUMBER OF PLANTS REQUIRED			NUMBER OF PLANTS PROVIDED			TOTAL TREES
						SHADE TREES	EVERGREEN TREES	SHRUBS	SHADE TREES	EVERGREEN TREES	ORNAMENTAL TREES	
P-1	ADJACENT TO ROADWAY	B	190'	NO	190'	4	5	--	3	5	2*	10
P-2	ADJACENT TO PERIMETER PROPERTY	A	613'	NO	613'	11	0	--	11	0	0	11
P-3	ADJACENT TO PERIMETER PROPERTY	A	92'	NO	92'	2	0	--	2	0	0	2
P-4	ADJACENT TO PERIMETER PROPERTY	A	585'	NO	585'	10	0	--	10	0	0	10

* ONE SHADE TREE HAS BEEN SUBSTITUTED WITH TWO ORNAMENTAL TREES IN ORDER TO COMPLY WITH B.G.&.E PLANTING ZONE REGULATIONS.

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER (TYPE 'B')	D-1 : 247'	D-2 : 172'	D-3 : 169'
NUMBER OF TREES REQUIRED & PROVIDED: SHADE TREES (1:50) EVERGREEN TREES (1:40)	5 6	4 5	4 5
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO	NO	NO

FOREST CONSERVATION WORKSHEET

NET TRACT AREA	ACRES
A. TOTAL TRACT AREA	4.11
B. DEDUCTIONS (CRITICAL AREA, AREA RESTRICTED BY LOCAL OR PROGRAM)	0.0
C. NET TRACT AREA NET TRACT AREA = TOTAL TRACT (A) – DEDUCTIONS (B)	4.11
LAND USE CATEGORY: MEDIUM DENSITY RESIDENTIAL	
D. AFFORESTATION THRESHOLD (NET TRACT AREA [C] x 15%)	0.6
E. CONSERVATION THRESHOLD (NET TRACT AREA [C] x 20%)	0.8
EXISTING FOREST COVER	
F. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	0.0
G. AREA OF FOREST ABOVE CONSERVATION TRESHOLD	0.0
IF THE EXISTING FOREST COVER (F) IS GREATER THAN THE CONSERVATION TRESHOLD (E), THEN	
G = F – E; OTHERWISE G = 0.	
BREAKEVEN POINT	
H. BREAKEVEN POINT (AMOUNT OF FOREST THAT MUST BE RETAINED SO THAT NO MITIGATION IS	0.0
REQUIRED)	
(1) IF THE AREA OF FOREST ABOVE CONSERVATION TRESHOLD (G) IS GREATER THAN 0, THEN	
H = (0.2 x THE AREA OF FOREST ABOVE CONSERVATION TRESHOLD (G) + THE	
CONSERVATION TRESHOLD (E);	
(2) IF THE AREA OF FOREST ABOVE CONSERVATION TRESHOLD (G) IS EQUAL TO 0, THEN	
H = EXISTING FOREST COVER (F)	
I. FOREST CLEARING PERMITTED WITHOUT MITIGATION	0.0
I = EXISTING FOREST COVER (F) – BREAKEVEN POINT (H)	
PROPOSED FOREST CLEARING	
J. TOTAL AREA OF FOREST TO BE CLEARED	0.0
K. TOTAL AREA OF FOREST TO BE RETAINED	0.0
K = EXISTING FOREST COVER (F) – FOREST TO BE CLEARED (J)	
PLANTING REQUIREMENTS	
IF THE TOTAL AREA OF FOREST TO BE RETAINED (K) IS AT OR ABOVE THE BREAKEVEN POINT (H), NO	
PLANTING IS REQUIRED, AND NO FURTHER CALCULATIONS ARE NECESSARY (L=0, M=0, N=0, P=0, Q=0,	
R=0).	
OTHERWISE, CALCULATE THE PLANTING REQUIREMENT(S) AS FOLLOWS:	
L. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION TRESHOLD	0.0
(1) IF THE TOTAL AREA OF FOREST TO BE RETAINED (K) IS GREATER THAN THE	
CONSERVATION TRESHOLD (E), THEN L = THE AREA OF FOREST TO BE CLEARED (J) x 0.25;	
(2) IF THE FOREST TO BE RETAINED (k) IS LESS THAN OR EQUAL TO THE CONSERVATION TRESHOLD	
(E), THEN L = AREA OF FOREST ABOVE CONSERVATION TRESHOLD (G) x 0.25	
M. REFORESTATION FOR CLEARING BELOW THE CONSERVATION TRESHOLD	0.0
(1) IF EXISTING FOREST COVER (F) IS GREATER THAN THE CONSERVATION TRESHOLD (E) AND THE	
FOREST TO BE RETAINED (K) IS LESS THAN OR EQUAL TO THE CONSERVATION TRESHOLD (E),	
THEN M = 2.0 x (CONSERVATION TRESHOLD (E) – FOREST TO BE RETAINED (K)	
(2) IF EXISTING FOREST COVER (F) IS LESS THAN OR EQUAL TO THE CONSERVATION TRESHOLD (E),	
THEN M = 2.0 x FOREST TO BE CLEARED (J)	
N. CREDIT FOR RETENTION ABOVE THE CONSERVATION TRESHOLD .	0.0
IF THE AREA OF FOREST TO BE RETAINED (K) IS GREATER THAN THE CONSERVATION TRESHOLD (E),	
THEN N = K – E; OTHERWISE N = 0	
P. TOTAL REFORESTATION REQUIRED P = L + M – N	0.0
Q. TOTAL AFFORESTATION REQUIRED	
IF EXISTING FOREST COVER (F) IS LESS THAN THE AFFORESTATION TRESHOLD (D), THEN	
Q = AFFORESTATION TRESHOLD (D) – EXISTING FOREST COVER (F)	0.6
R. TOTAL PLANTING REQUIREMENT R = P + Q	0.6

NOTE: 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 A FEE-IN-LIEU PAYMENT OF $19,602.00 FOR 0.60 ACRES OF FOREST CONSERVATION OBLIGATION.

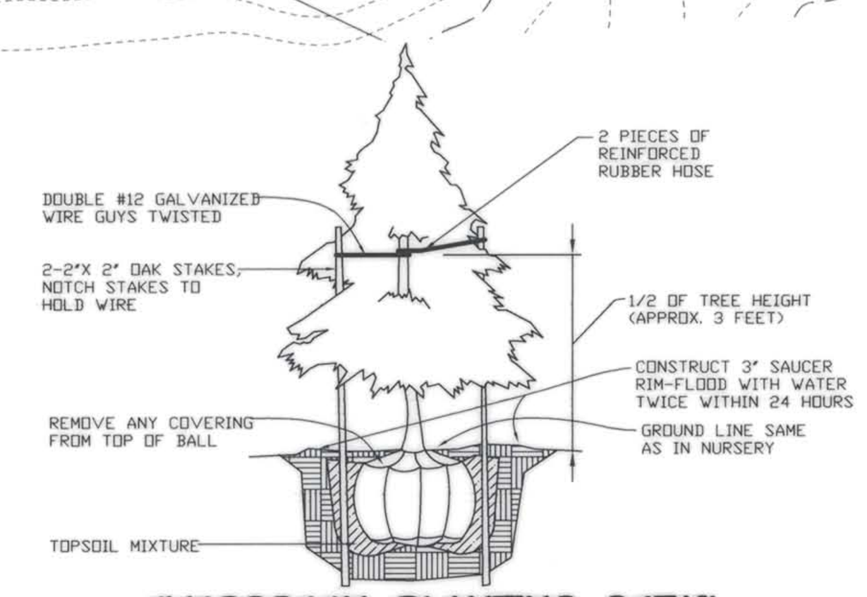
Purpose Statement

The purpose of this revised plan is to replace the chapter 3 stormwater management device with the new mde chapter 5 stormwater management regulations.

"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 subtitutions 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".

"Should any tree designated for preservation for which landscaping credit if given Die prior to release of bonds, the owner will be required to replace the tree with the Equivalent species or with a tree which will obtain the same height, spread and Growth characteristics. The replacement tree must be a minimum of 3 inches in Caliper and installed as required in the Howard county landscape manual."



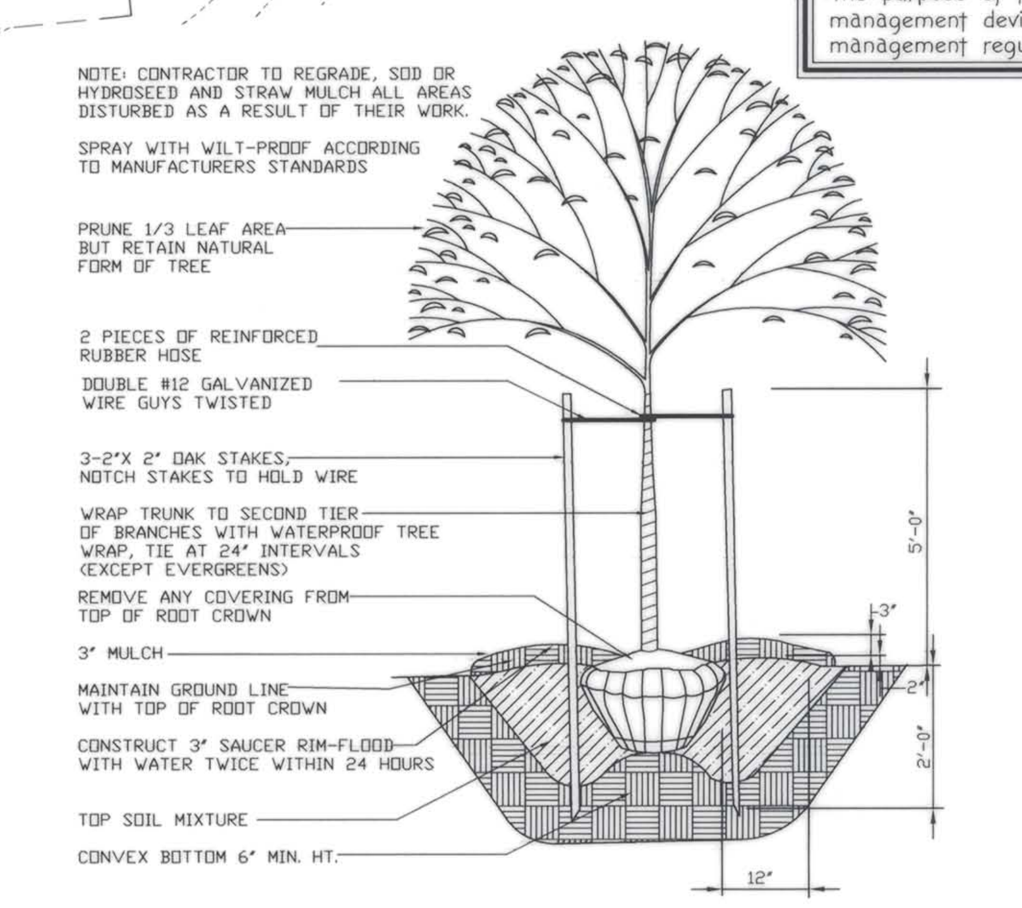
EVERGREEN PLANTING DETAIL

PLAN

SCALE: 1" = 50'

PLANT LIST

SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE
	2	KOUSA DOGWOOD CORNUS KOUSA	2 1⁄2 – 3" CAL.
	23	PLATANUS OCCIDENTALIS 'BLOODGOOD' LONDON PLANETREE	2 1⁄2 – 3" CAL.
	16	QUERCUS ACUTISSIMA SAWTOOTH OAK	2 1⁄2 – 3" CAL.
	5	ILEX OPACA AMERICAN HOLLY	5' – 6' HT.
	16	PINUS STROBUS EASTERN WHITE PINE	6' – 8' HT.



TREE PLANTING DETAIL

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

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WDCP93MD0610044B

JOHN P. CANOLES

OWNER/DEVELOPER

GORDON DEVELOPMENT
1498 REISTERSTOWN ROAD, SUITE 338
BALTIMORE, MARYLAND 21208
(443) 375-0324
ATTN: MR. GORDON GREENSPUN

STATE OF MARYLAND

[illegible] 6/20/11 DATE

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

REVISED
LANDSCAPE PLAN
SLUSHER PROPERTY
BUILDABLE LOTS 1 THRU 12 AND OPEN SPACE LOTS 13 & 14

ZONED: R-12
TAX MAP No. 38, GRID No. 15, PARCEL No. 745
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 20, 2011
SHEET 5 OF 10

F-08-180

K:\SDSKPROJ\30728 Greenspun\dwg\FINALS\REDLINES\30728 SHEET 5 LANDSCAPE PLAN.dwg, 6/20/2011 10:00:56 AM, jamesl
1:1

Approved: Department Of Public Works

Chief Bureau Of Highways — Date: 7-12-2011

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 7/15/11

Chief, Development Engineering Division — Date: 7·14·11

PLAN

SCALE: 1" = 50'

DRAINAGE AREA DATA

STRUCTURE NO.	DRAINAGE AREA	AREA	'C'	ZONED	% IMP.
I-1	A	0.39 AC.	0.54	RC-DEO	42%
I-2	B	0.62 AC.	0.49	RC-DEO	34%
I-3	C	0.62 AC.	0.49	RC-DEO	35%
I-4	D	0.47 AC.	0.46	RC-DEO	30%
I-5	E	0.15 AC.	0.57	RC-DEO	46%

Purpose Statement

The purpose of this revised plan is to replace the chapter 3 stormwater management device with the new mde chapter 5 stormwater management regulations.

NO.	DESCRIPTION	DATE
1	REMOVE POCKET POND REPLACE WITH BIO-RETENTION FACILITY AND SHOW FUTURE SWM FACILITIES	1/3/11

REVISIONS

FISHER, COLLINS & CARTER, INC.
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ALDO M. VITUCCI P.E. — DATE: 6/20/11

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REVISED

STORM DRAIN DRAINAGE AREA MAP

SLUSHER PROPERTY

BUILDABLE LOTS 1 THRU 12 AND OPEN SPACE LOTS 13 & 14

ZONED: R-12
TAX MAP No. 38, GRID No. 15, PARCEL No. 745
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 20, 2011
SHEET 6 OF 10

F-08-180

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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 gaskets 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 "Structure 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 for 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

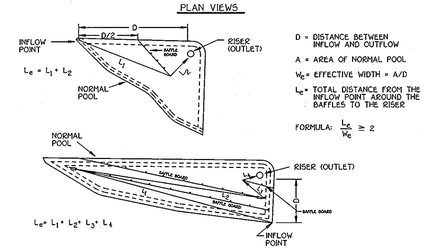
Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

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.

SEDIMENT BASIN BAFFLES

PLAN VIEWS



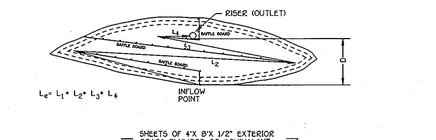
D = DISTANCE BETWEEN INFLOW AND OUTFLOW

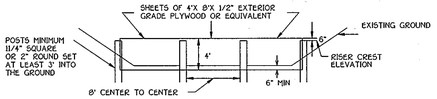
A = AREA OF NORMAL POOL

W_e = EFFECTIVE WIDTH = A/D

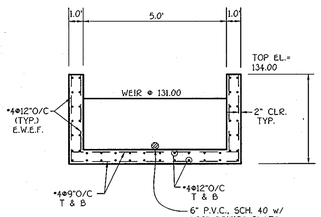
L_e = TOTAL DISTANCE FROM THE INFLOW POINT AROUND THE BAFFLES TO THE RISER

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





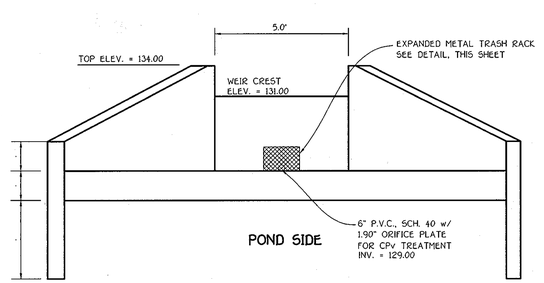
BAFFLE DETAIL



CONCRETE: f'_c = 3,500 P.S.I. (AIR ENTRAINED)
REBARS: ASTM A615- GO GRADE

SECTION 'A-A'

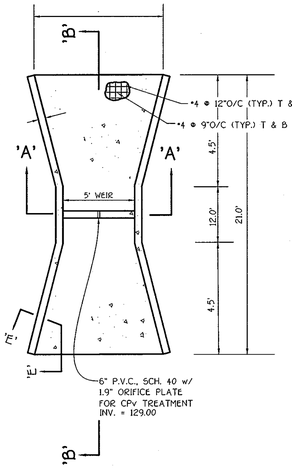
NO SCALE



POND SIDE

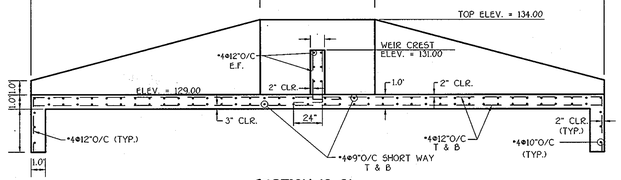
FRONT ELEVATION

NOT TO SCALE



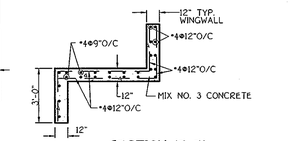
PLAN

NO SCALE



SECTION 'B-B'

NO SCALE

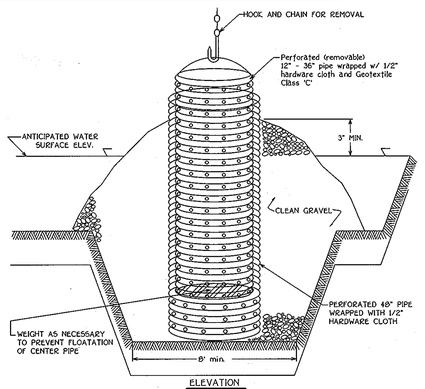


SECTION 'E-E'

MODIFIED LOW RISE SWM CONTROL STRUCTURE (STD. D-6.01)

CONCRETE WEIR STRUCTURE DETAIL

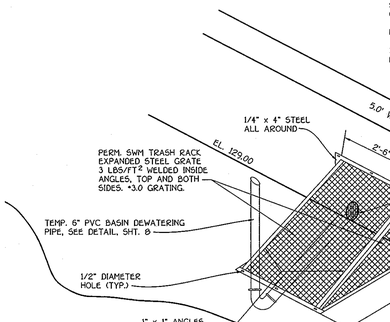
REMOVABLE PUMPING STATION



ELEVATION

Construction Specifications

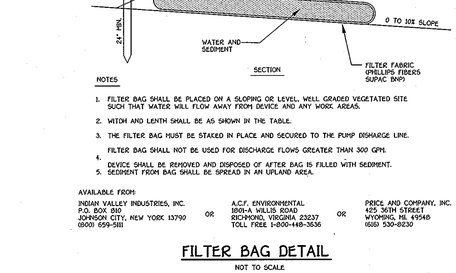
1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.
2. After installing the outer pipe, backfill around outer pipe with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



NOTES:

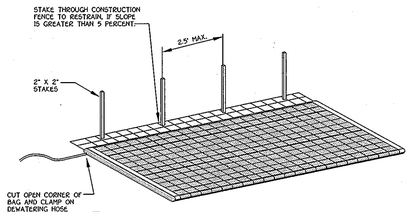
1. TRASH RACK TO BE CENTERED OVER OPENING .
2. STEEL TO CONFORM TO ASTM A-36.
3. ALL SURFACES TO BE COATED WITH ZRC COLD GALVANIZING COMPOUND AFTER WELDING AND PAINTED BATTLESHIP GREY.
4. TRASH RACK TO BE FASTENED TO THE WALL WITH 1/2" MASONRY ANCHORS. TRASH RACK TO BE REMOVABLE.

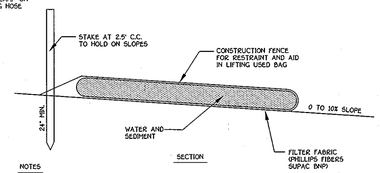
EXPANDED METAL TRASH RACK



TYPICAL METAL BOLLARD DETAIL

NOT TO SCALE (STD. G-7.42)





NOTES

1. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
2. WIDTH AND LENTH SHALL BE AS SHOWN IN THE TABLE.
3. THE FILTER BAG MUST BE STAKED IN PLACE AND SECURED TO THE PUMP DISHARGE LINE.
4. FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
5. DEVICE SHALL BE REMOVED AND DISPOSED OF AFTER BAG IS FILLED WITH SEDIMENT.
6. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA.

AVAILABLE FROM:

INDIAN VALLEY INDUSTRIES, INC. P.O. BOX 280 JOHNSON CITY, NEW YORK 13790 (800) 659-5111	OR	A.C.F. ENVIRONMENTAL 1801-A WILLIS ROAD RICHMOND, VIRGINIA 23237 TOLL FREE 1-800-448-3636	OR	PRICE AND COMPANY, INC. 425 36TH STREET WYOMING, MI 49548 (616) 530-8230

FILTER BAG DETAIL

NOT TO SCALE

OWNER/DEVELOPER

GORDON DEVELOPMENT
1498 REISTERSTOWN ROAD, SUITE 338
BALTIMORE, MARYLAND 21208
(443) 375-0324
ATTN: MR. GORDON GREENSPUN

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 — 4/3/09 Date

GORDON DEVELOPMENT
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 It Is The 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 — 4-2-09 Date

ALDO M. PETRUCCI
Printed Name Of Engineer

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

Howard Soil Conservation District — 4/14/09 Date

Approved Department Of Public Works

Chief, Bureau Of Highways — 6-5-09 Date

Approved Department Of Planning And Zoning

Chief, Division Of Land Development — 6/10/09 Date

Chief, Development Engineering Division — 6/10/09 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.

CONCRETE WEIR STRUCTURE GENERAL NOTES:

1. THE CONTRACTOR SHALL CALL "MISS UTILITY" AT 1-800-257-7777, A MINIMUM OF 48 HOURS IN ADVANCE OF ANY EXCAVATION, BORING AND OR DIGGING TO DETERMINE LOCATION OF ANY UNDERGROUND UTILITIES.

DESIGN CODES:

1. AMERICAN CONCRETE INSTITUTE (ACI 318-08)
2. HOWARD COUNTY STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (VOLUME IV DESIGN MANUAL)

LOADS:

1. BASIC WIND SPEED — 90 MPH PER BOCA CODE
2. SLAB ON GRADE LIVE LOAD — 100 PSF

MATERIALS:

1. CONCRETE TO BE MADE WITH NORMAL WEIGHT AGGREGATES. ADMIXTURES CONTAINING CHLORIDE SALTS SHALL NOT BE USED.
2. CHAMFER ALL EXPOSED CONCRETE CORNERS 3/4" x 3/4".
3. CONCRETE SHALL CONFORM TO ALL THE TYPES OF CLASS DESIGNATED BELOW: CLASS 3,500 - TYPICAL UNLESS OTHERWISE NOTED.
4. SLABS MAY BE USED FOR SUPPORT OD CONSTRUCTION EQUIPMENT ONLY WHERE SPACIFICALLY PERMITTED IN WRITING BY THE ENGINEER.

REINFORCING STEEL:

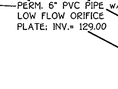
1. REINFORCING STEEL: ASTM A615, GRADE 60 (FY = 60,000 PSI)
2. ALL HOOKS, BENDS, LAPS AND DEVELOPMENT LENGTHS SHALL BE IN ACCORDANCE WITH ACI 318-02.
3. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH CURRENT ACI BUILDING CODE REQUIREMENT FOR STRUCTURAL CONCRETE. COVER FOR REINFORCING STEEL SHALL BE 2" UNLESS OTHERWISE NOTED.

SOIL PRESSURE:

1. SOIL PRESSURE FOR FOOTINGS WAS DETERMINED TO BE 2,000 PSF BASED ON GEOTECHNICAL STORMWATER MANAGEMENT STUDY BY HERBST/BENSON & ASSOCIATES DATED MAY 25, 2004. IF SOIL OF THIS CAPACITY IS NOT ENCOUNTERED AT ELEVATIONS SHOWN, FOOTINGS SHALL BE LOWERED OR INCREASED IN SIZE BY ENGINEER. FOR POND CONSTRUCTION RECOMMENDATIONS, SEE GEOTECHNICAL STUDY.

MISCELLANEOUS:

1. CONSTRUCTION JOINTS OTHER THAN THOSE SHOWN ON THE DRAWINGS MAY BE PROVIDED BY THE CONTRACTOR SUBJECT TO APPROVAL BY THE ENGINEER.



4.2.09
ALDO M. PETRUCCI, PE — DATE

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

STORMWATER MANAGEMENT NOTES AND DETAILS

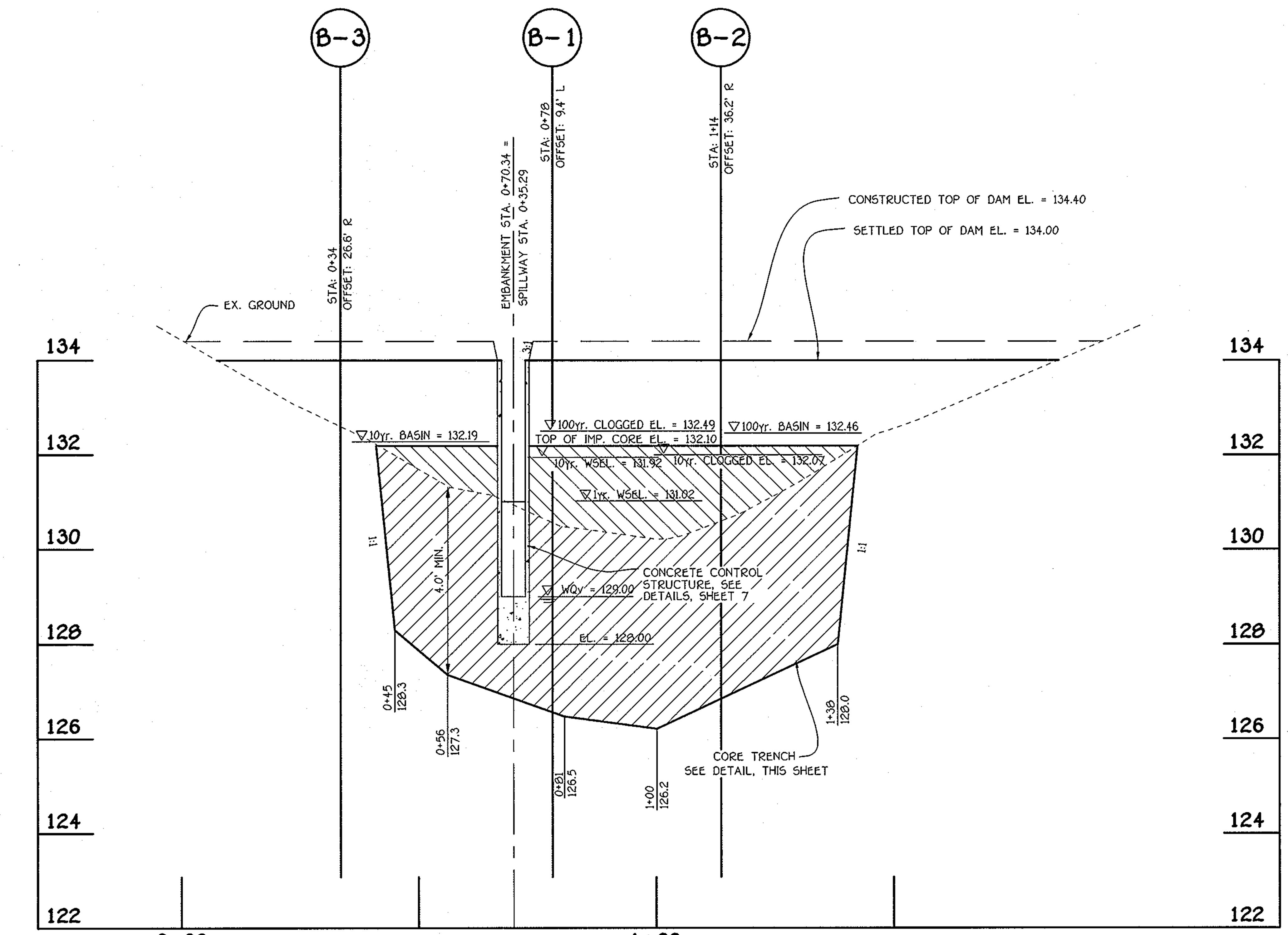
SLUSHER PROPERTY

BUILDABLE LOTS 1 THRU 12 AND OPEN SPACE LOTS 13 & 14

ZONED: R-12
TAX MAP No. 38, GRID No. 15, PARCEL No. 745
FIRST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
DATE: APRIL 1, 2009
SHEET 7 OF 10

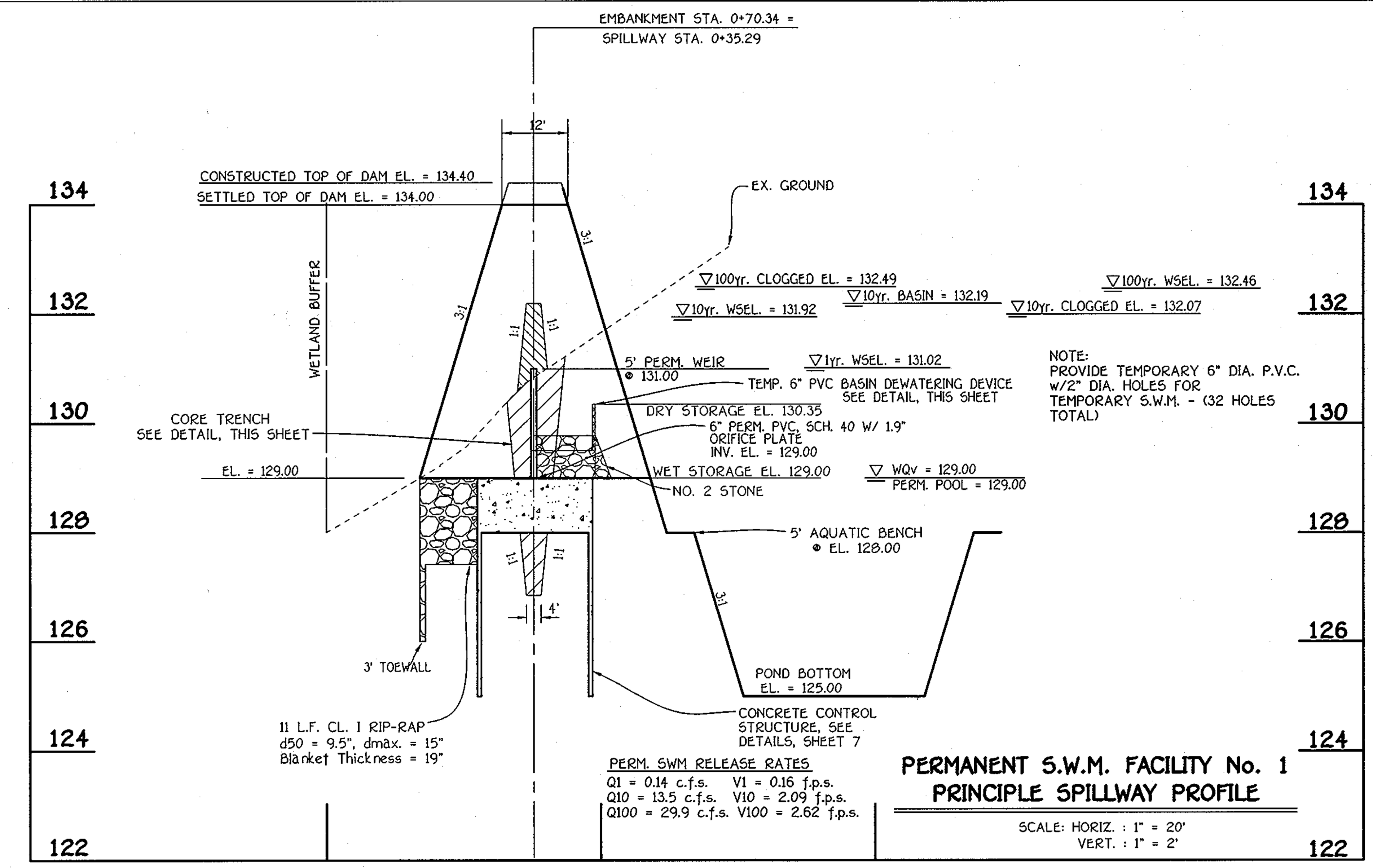
F-08-180

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 ALONG ℄ EMBANKMENT

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



PERM. SWM RELEASE RATES

Q1 = 0.14 c.f.s. V1 = 0.16 f.p.s.
Q10 = 13.5 c.f.s. V10 = 2.09 f.p.s.
Q100 = 29.9 c.f.s. V100 = 2.62 f.p.s.

PERMANENT S.W.M. FACILITY No. 1 PRINCIPLE SPILLWAY PROFILE

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

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER MANAGEMENT FACILITIES FOR BMP POND #1 & UNDERGROUND STONE RESERVOIR

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.
5. The off-line storm drain (M-1 to clean-out no. CO-2) and underground stone reservoir for ground water recharge (Rev) shall be inspected annually and after major storms.

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.

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] 4/3/09
Signature Of Developer — Date

GORDAN DEVELOPMENT
Printed Name Of Developer

By The Engineer:

"I Certify That The Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have 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 60 Days Of Completion."

[signature] 4.2.09
Signature Of Engineer — Date

ALDO M. VITTICORE
Printed Name Of Engineer

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

[signature] 4/14/09
Howard Soil Conservation District — Date

Approved: Department Of Public Works

[signature] 6-5-09
Chief Bureau Of Highways — Date

Approved: Department Of Planning And Zoning

[signature] 6/10/09
Chief, Division Of Land Development — Date

[signature] 6/10/09
Chief, Development Engineering Division — 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.

POND CONSTRUCTION RECOMMENDATIONS

A. General Design Recommendations

It is recommended that the pond be designed and constructed in accordance with MD 378/2000 specifications.

B. Principal Spillway

The principal spillway, at approximate overflow elevation 129 will likely have its footings in the very stiff sandy clay & silt soils below a depth of 3 feet in boring B-1. Footings for the proposed spillway may be designed for a maximum allowable soil bearing pressure of 2,500 PSF. Footings or slab turndowns should extend at least 30 inches below grade for protection from detrimental frost action. It is recommended that foundation concrete be placed the same day that footings are excavated in order to prevent deterioration of subgrade supporting strength upon exposure to the weather.

C. Earth Slope Stability

The proposed 3H:1V cut and fill slopes should be structurally stable in these materials providing that the embankment fills are properly controlled and compacted in accordance with MD 378/2000 specifications. The perched water seepage, however, may cause localized slope instabilities. These areas will have to be addressed at the time of construction with remedial measures including but not limited to removal of failed soils and replacement with more stable material or installation of toe drains and finger drains to intercept ground water flow before it reaches the exposed slope surface. The fine sand soils, which would be encountered intermittently in the excavation are also highly susceptible to erosion; thus, periodic maintenance may be required until a uniformly thick, mature grass cover can be established.

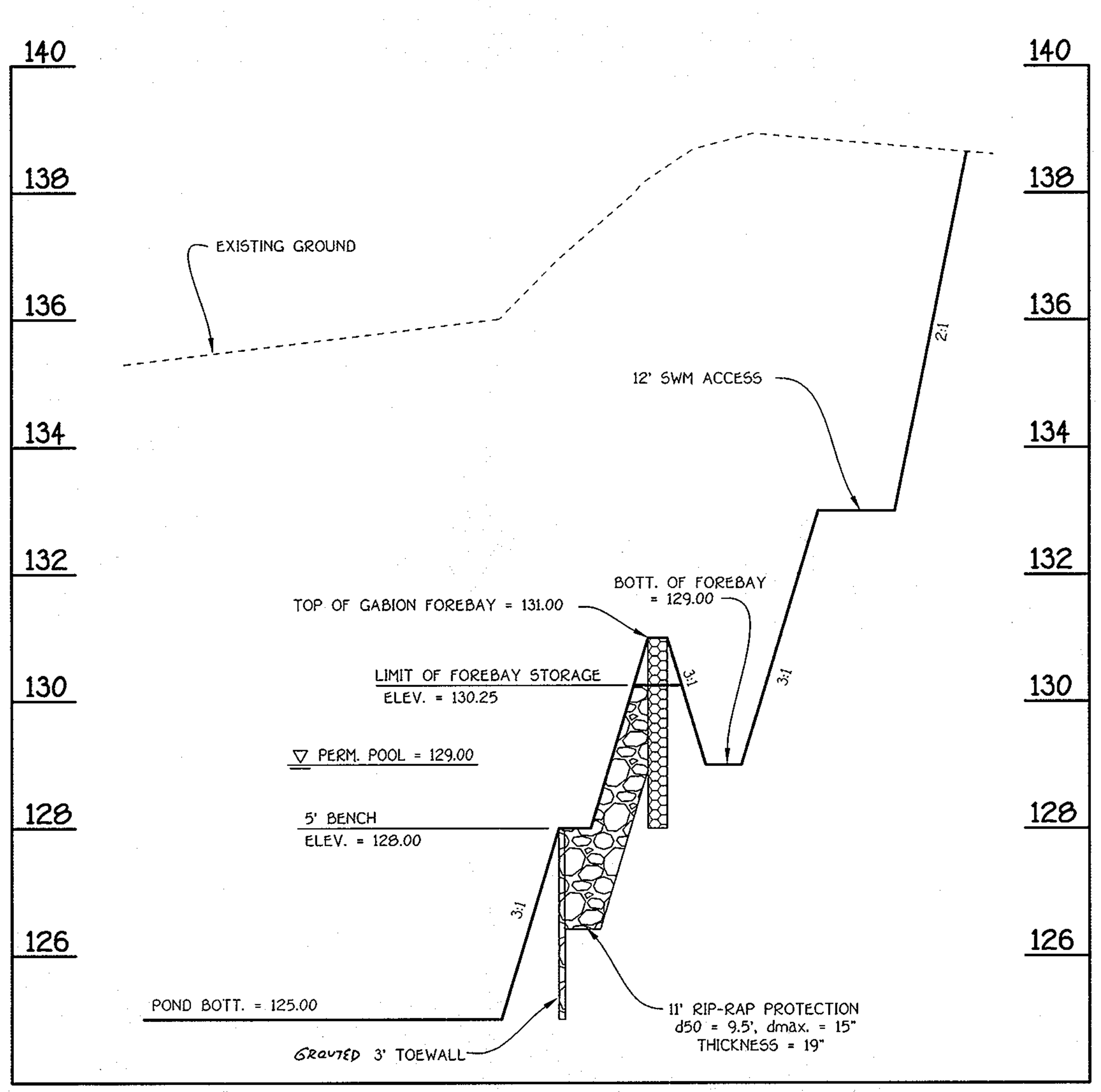
D. Core Trench

Given the relatively flat grades downstream of the proposed pond embankment and the generally medium dense to very stiff nature of the underlying subsoils, we recommend the standard 4-foot deep MDE 378/2000 specifications beneath the embankment. Should highly granular permeable soils be encountered at the base of the core trench in localized areas, it may be necessary to deepen the core trench at the selected locations to cut off any subsurface flow.

A review of the test borings indicates that some CL and SC soils are available within the pond excavation; thus, it is possible, depending upon existing soil moistures, that these materials would be suitable for reuse as core trench backfill or dam core fill.

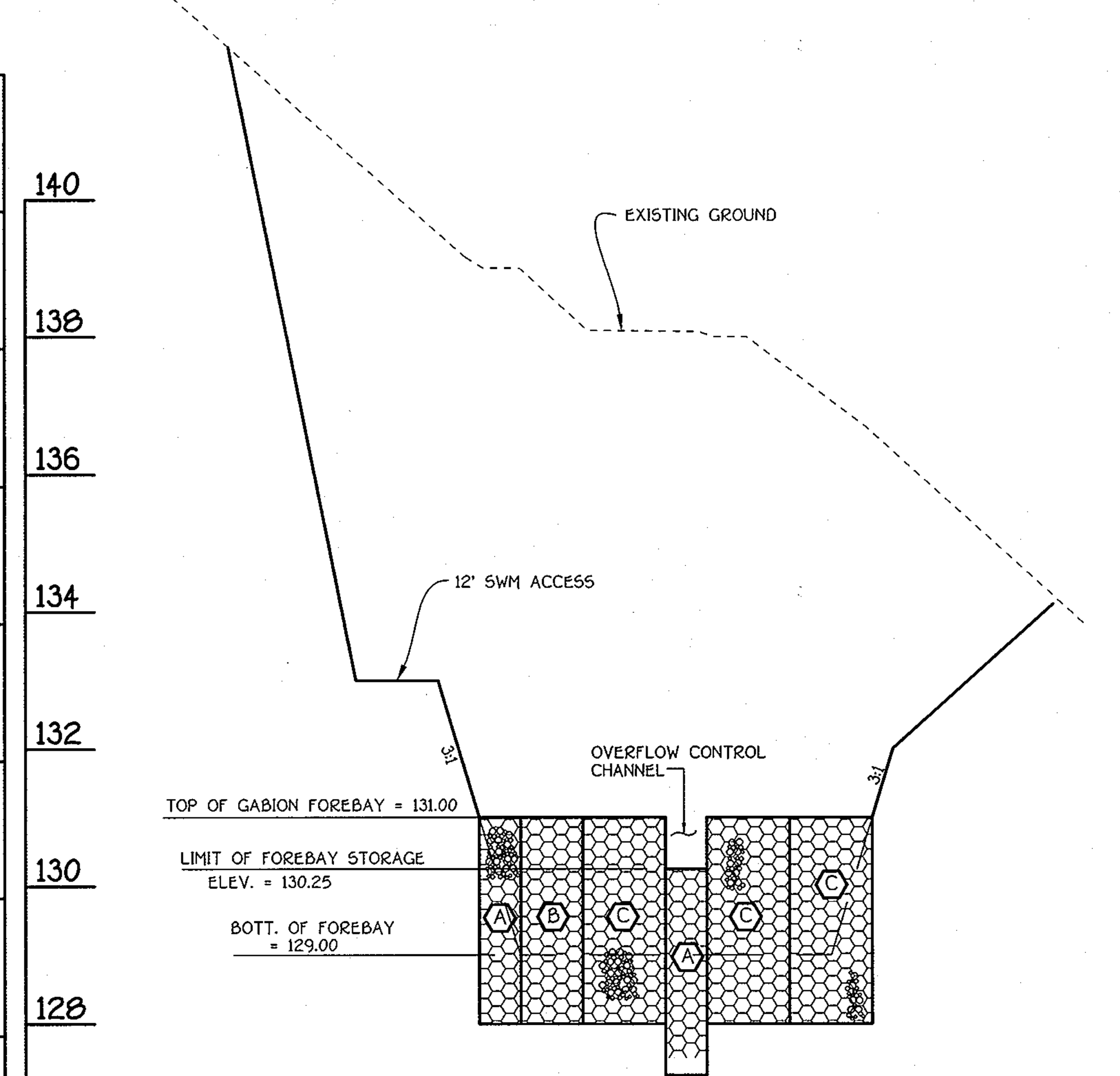
E. Ground Water Control

Ground water control was addressed previously in the slope stability portion of this report. It is also possible that temporary ground water control will be required in the core trench if perched water is encountered. Temporary control can normally be provided by a series of pits and trenches emptied by sump pump.



SECTION THRU GABION FOREBAY

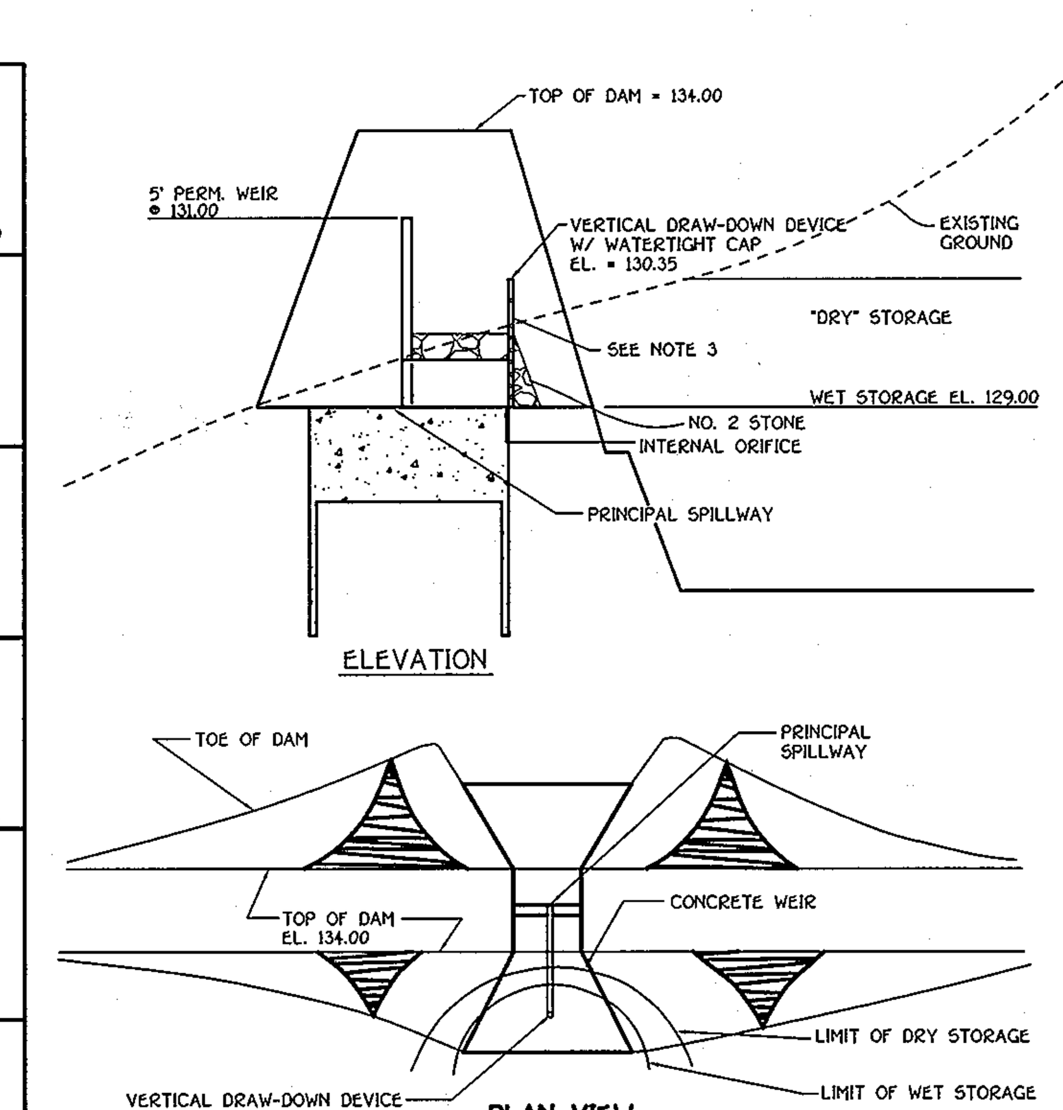
SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'



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

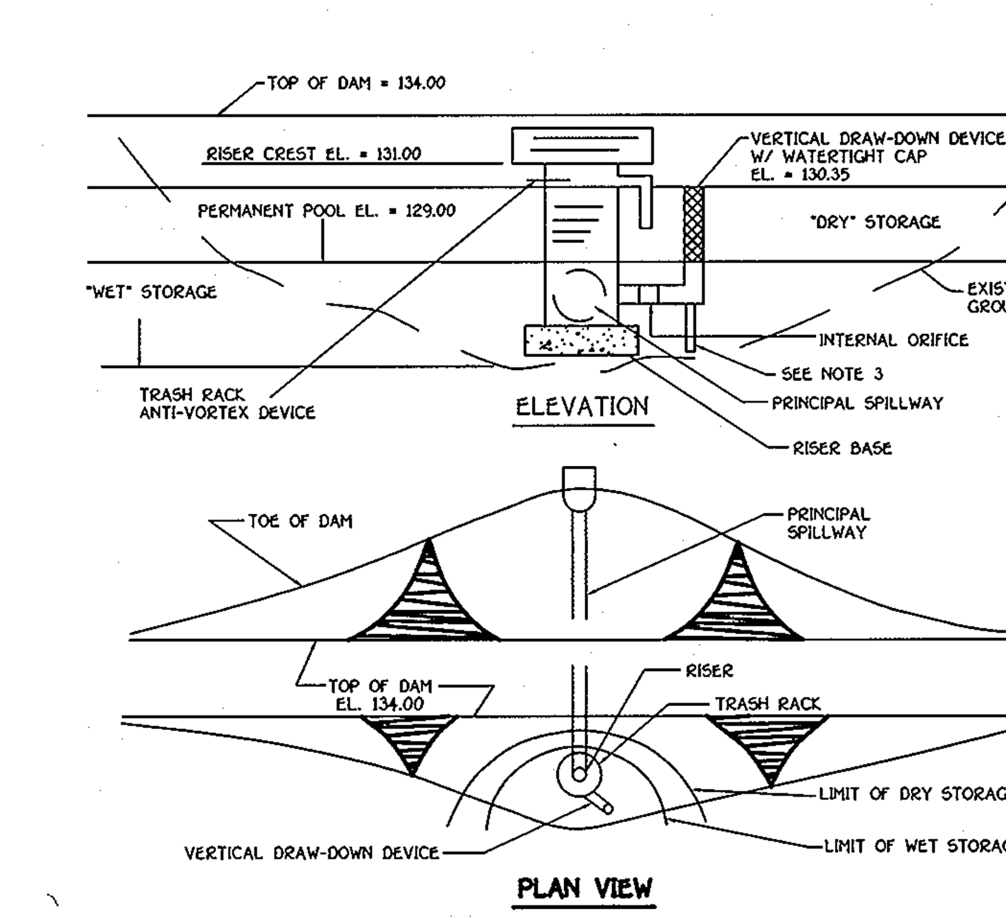
SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'



CONSTRUCTION SPECIFICATIONS

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

MODIFIED MDE STD. DETAIL C-10-30 VERTICAL DRAW-DOWN DEVICE



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VERTICAL DRAW-DOWN DEVICE

STD. DETAIL C-10-30

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

OWNER/DEVELOPER

GORDON DEVELOPMENT
1498 REISTERSTOWN ROAD, SUITE 338
BALTIMORE, MARYLAND 21208
(443) 375-0324
ATTN: MR. GORDON GREENSPUN

[signature] 4.2.09
ALDO M. VITTICORE — DATE

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

STORMWATER MANAGEMENT NOTES AND DETAILS

SLUSHER PROPERTY

BUILDABLE LOTS 1 THRU 12 AND OPEN SPACE LOTS 13 & 14

ZONED: R-12
TAX MAP No. 38, GRID No. 15, PARCEL No. 745
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: APRIL 1, 2009
SHEET 8 OF 10

F-08-180

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 6-5-09

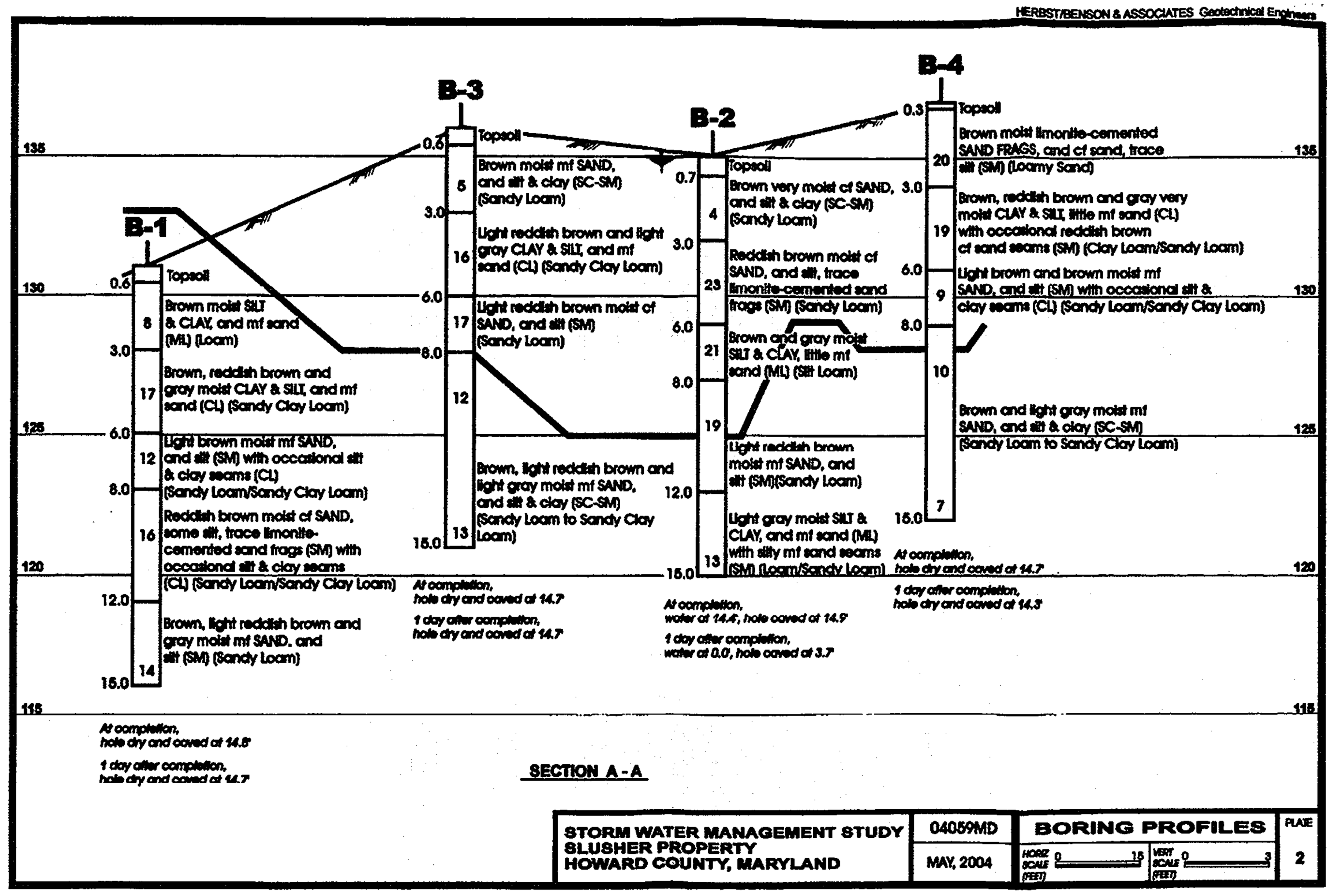
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 6/10/09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 6/10/09

REVISIONS

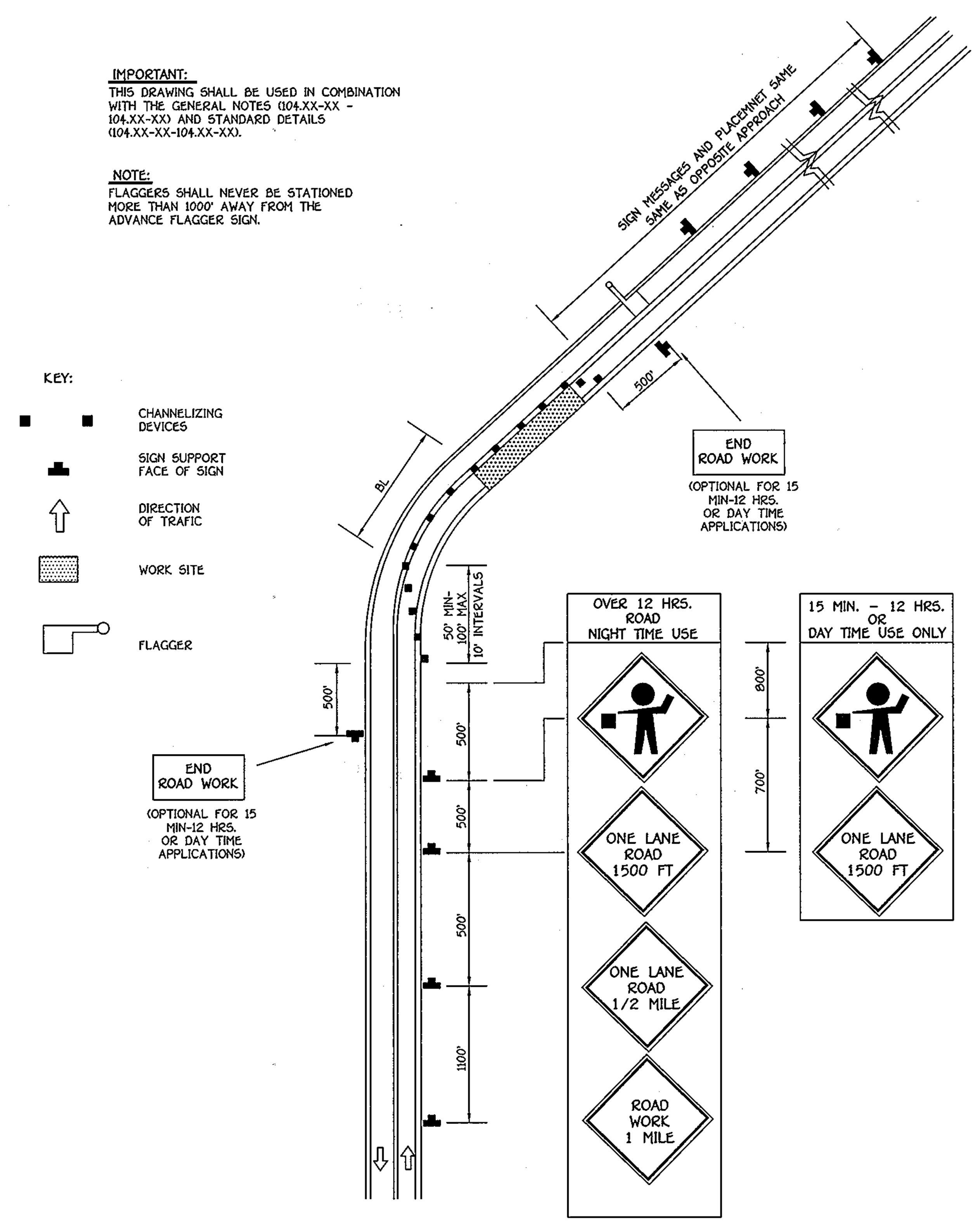
NO.	DESCRIPTION	DATE



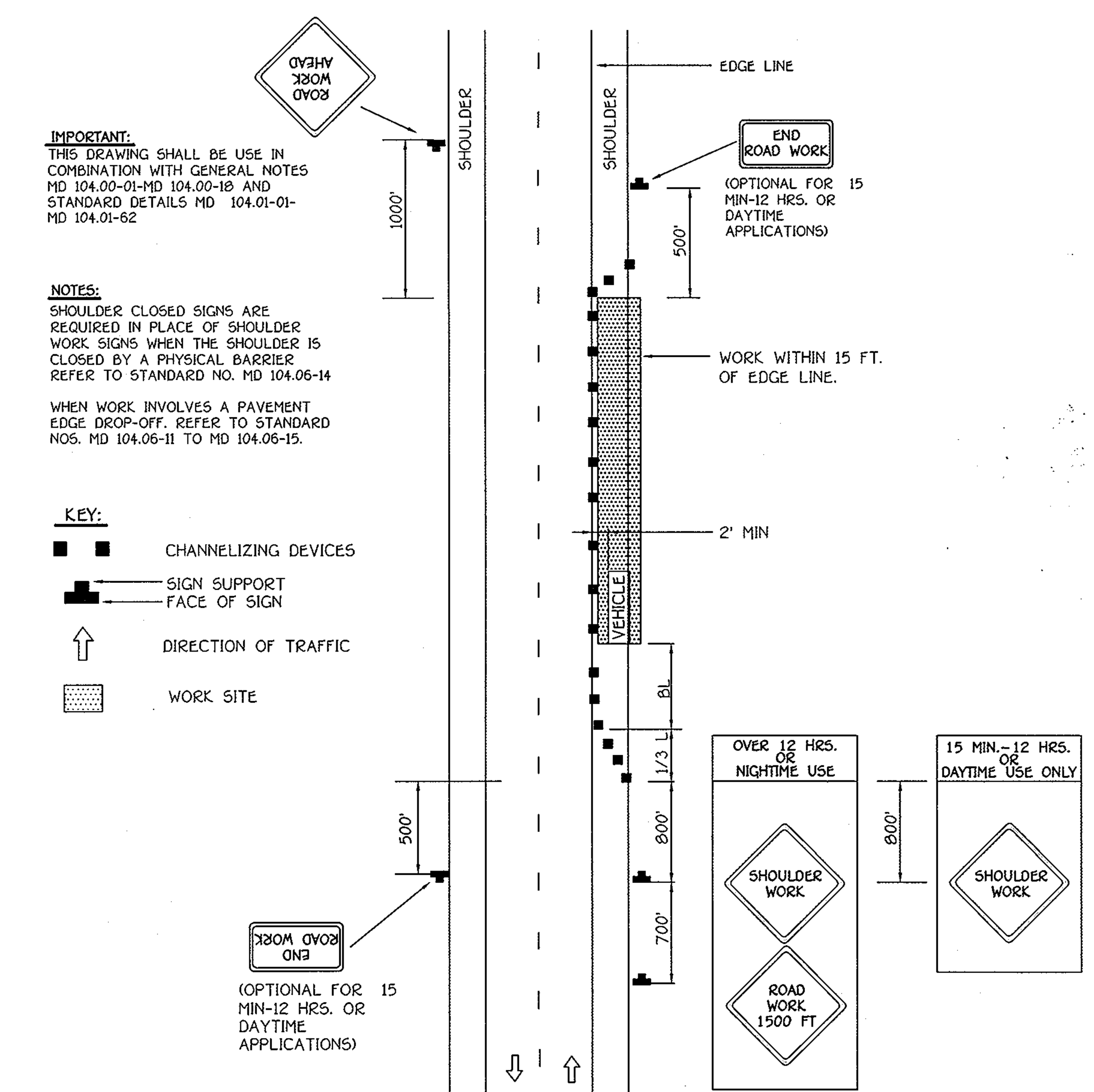
MAINTENANCE OF TRAFFIC SPECIAL PROVISIONS

GENERAL

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



FLAGGING OPERATION /-LANE, 2-WAY
EQUAL/LESS THAN 40 MPH
NO SCALE



SHOULDER WORK/2-LANE, 2-WAY
EQL/LESS THAN 40 MPH
NO SCALE

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OWNER/DEVELOPER
GORDON DEVELOPMENT
1498 REISTERSTOWN ROAD, SUITE 338
BALTIMORE, MARYLAND 21208
(443) 375-0324
ATTN: MR. GORDON GREENSPUN

ALDO M. VITUCCI, P.E. — DATE 4-2-09

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

SOIL BORINGS &
TEMPORARY TRAFFIC CONTROL PLAN

SLUSHER PROPERTY

BUILDABLE LOTS 1 THRU 12 AND
OPEN SPACE LOTS 13 & 14
ZONED: R-12
TAX MAP No. 38, GRID No. 15, PARCEL No. 745
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: APRIL 1, 2009

F-08-180

20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION

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

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

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

EFFECTS ON WATER QUALITY AND QUANTITY

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

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation
  i. Install erosion and sediment control structures (either temporary of permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
  ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
  iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
B. Soil Amendments (Fertilizer and Lime Specifications)
  i. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
  ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.
  iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a •100 mesh sieve and 98-100% will pass through a •20 mesh sieve.
  iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
C. Seedbed Preparation
  i. Temporary Seeding
    a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
    b. Apply fertilizer and lime as prescribed on the plans.
    c. In corporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
  ii. Permanent Seeding
    a. Minimum soil conditions required for permanent vegetative establishment:
      1. Soil pH shall be between 6.0 and 7.0.
      2. Soluble salts shall be less than 500 parts per million (ppm).
      3. The soil shall contain less than 40% clay, but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedezas is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
      4. Soil shall contain 1.5% minimum organic matter by weight.
      5. Soil must contain sufficient pore space to permit adequate root penetration.
      6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
    b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
    c. Apply soil amendments as per soil test or as included on the plans.
    d. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.
D. Seed Specifications
  i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.
  Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
  ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.
E. Methods of Seeding
  i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker seeder.
    a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous): 200 lbs/ac; K20 (potassium): 200 lbs/ac.
    b. Lime - use only ground agricultural limestone. (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
    c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
  ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
    a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
    b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
  iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
    a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
    b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
F. Mulch Specifications (In order of preference)
  i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
  ii. Wood Cellulose Fiber Mulch (WCFM)
    a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
    b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
    c. WCFM, including dye, shall contain no germination or growth inhibiting factors.
    d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
    e. WCFM material shall contain no elements or compounds at concentration levels that will be phytol-toxic.
    f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm. , diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.
  Note: Only sterile straw mulch should be used in areas where one species of grass is desired.
G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
  i. If grading is completed outside of the seeding season, mulch along shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
  ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
  iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
  i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
  ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
  iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
  iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.
I. Incremental Stabilization - Cut Slopes
  i. All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.
  ii. Construction sequence (Refer to Figure 3 below):
    a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
    b. Perform Phase 1 excavation, dress, and stabilize.
    c. Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as necessary.
    d. Perform final phase excavation, dress and stabilize. Overseed previously seeded areas as necessary.
Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions int he operation of completing the operation out of the seeding season will necessitate the application of temporary stabilization.
J. Incremental Stabilization of Embankments - Fill Slopes
  i. Embankments shall be constructed in lifts as prescribed on the plans.
  ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15', or when the grading operation ceases as prescribed in the plans.
  iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.
  iv. Construction sequence: Refer to Figure 4 (below).
    a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.
    b. Place Phase 1 embankment, dress and stabilize.
    c. Place Phase 2 embankment, dress and stabilize.
    d. Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.
Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of and placement of topsoil (if required) grading and permanent seed and mulch. any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

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

SECTION 2 - TEMPORARY SEEDING

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

A. Seed mixtures - Temporary Seeding

  i. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Temporary seeding summary below, along with application rates, seeding dates and seeding depths. If this summary is not put on the plans and completed, then Table 26 must be put on the plans.

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

Seed Mixture (Hardiness Zone ___6b___) From Table 26					Fertilizer Rate (10-10-10)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
1	BARLEY OATS RYE	122 96 140	3/1 - 5/15, 8/15 - 10/15	1" - 2" 1" - 2" 1" - 2"	600 lb/ac (15 lb/1000sf)	2 tons/ac (100 lb/1000sf)

SECTION 3 - PERMANENT SEEDING

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

A. Seed mixtures - Permanent Seeding

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

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

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

Seed Mixture (Hardiness Zone ___6b___) From Table 25					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
3	TALL FESCUE (85%) PERENNIAL RYE GRASS (10%) KENTUCKY BLUEGRASS (5%)	125 15 10	3/1 - 5/15, 8/15 - 10/15	1" - 2"	90 lb/ac (2.0 lb/ 1000sf)	175 lb/ac (4 lb/ 1000sf)	175 lb/ac (4 lb/ 1000sf)	2 tons/ac (100 lb/ 1000sf)
10	TALL FESCUE (80%) HARD FESCUE (20%)	120 30	3/1 - 5/15, 8/15 - 10/15	1" - 2"				

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.

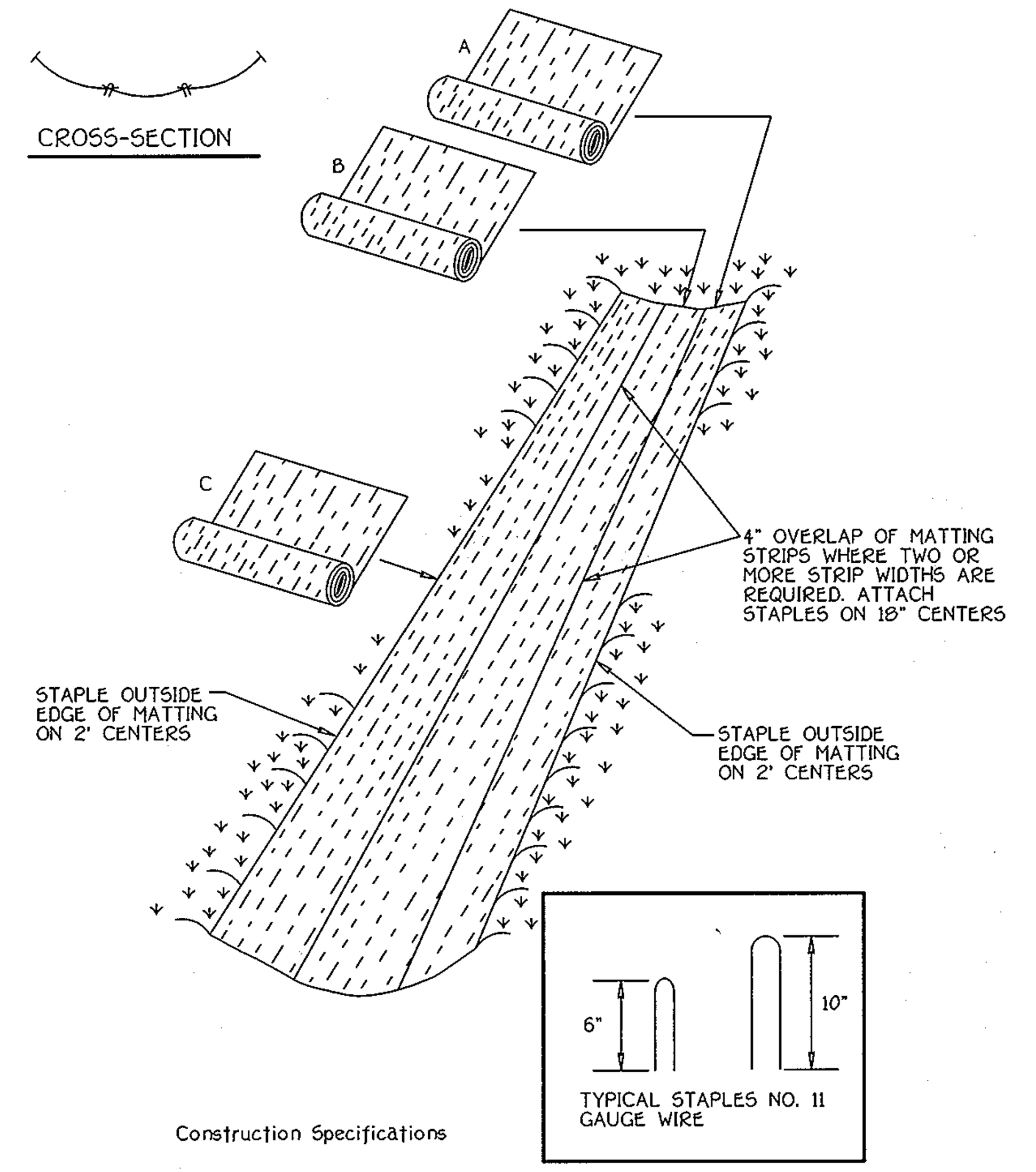
  Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appoprlate approval authority, may be used in lieu of natural topsoil.

  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.



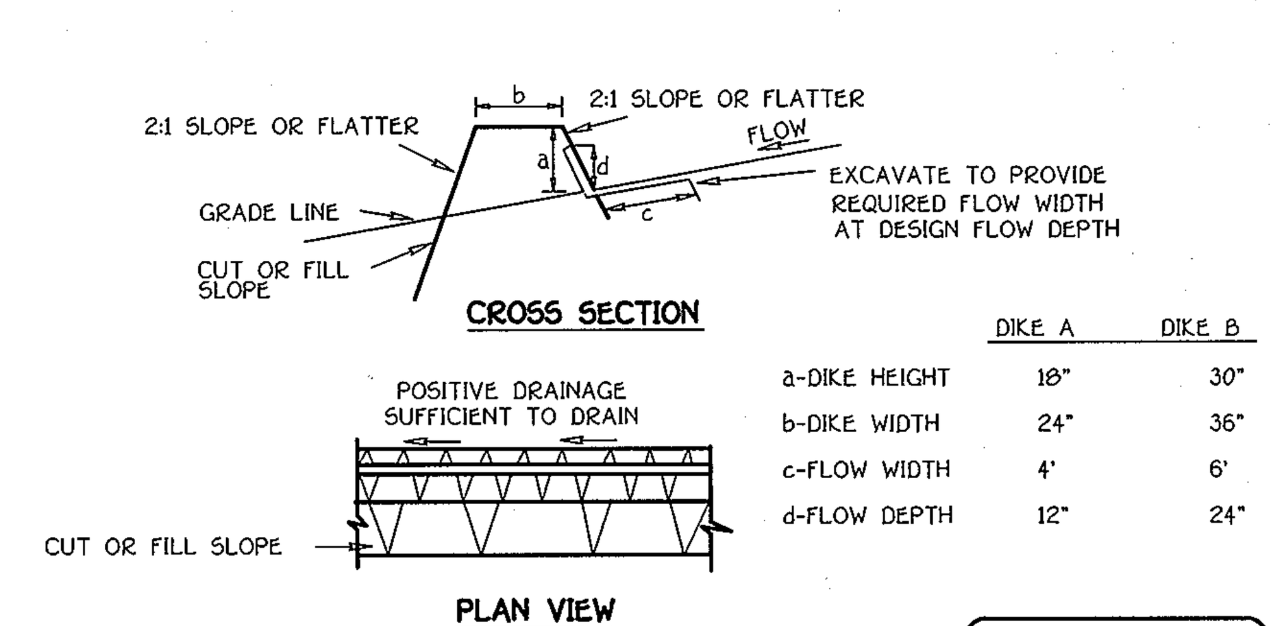
Construction Specifications

1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
2. Staple the 4" overlap in the channel center using an 18" spacing between staples.
3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

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

EROSION CONTROL MATTING

NOT TO SCALE



	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

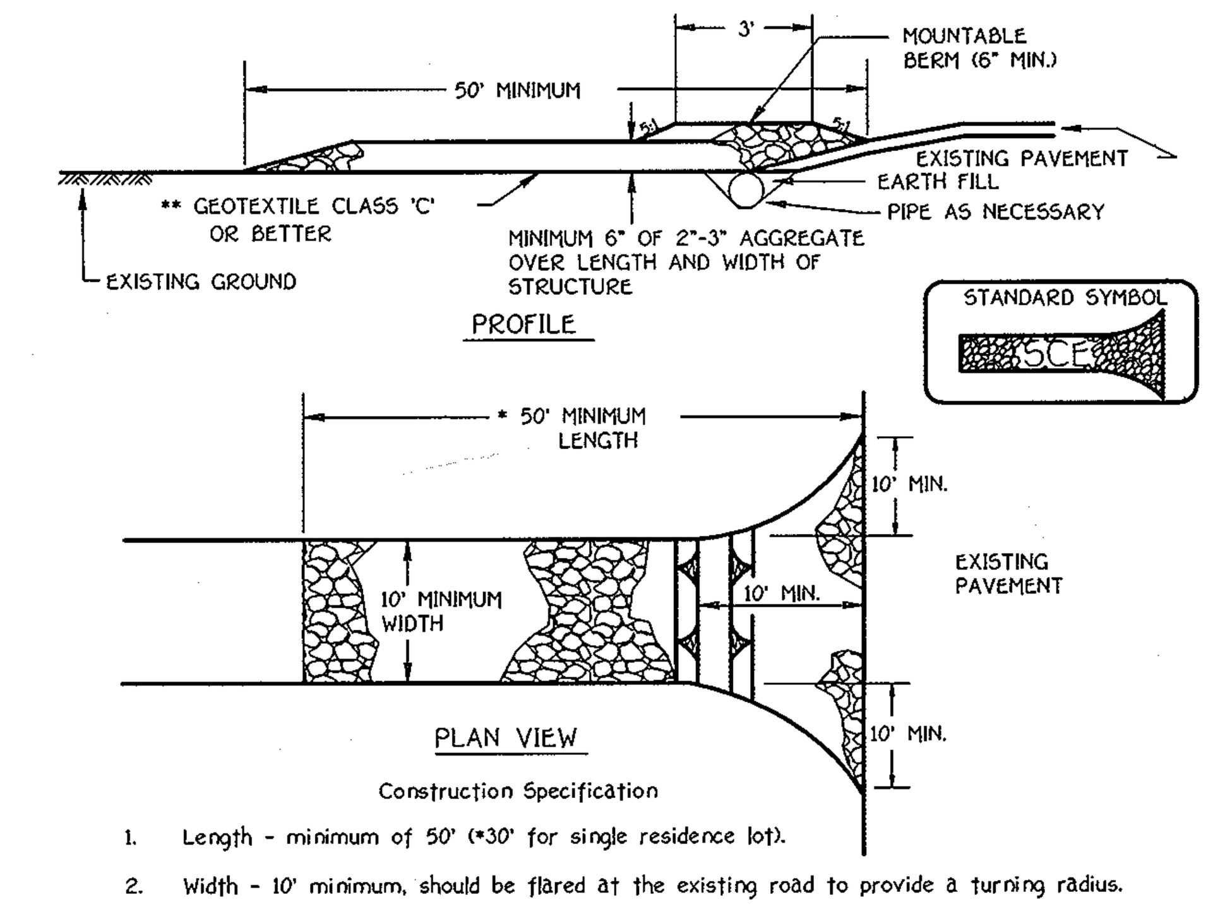
Construction Specifications

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.

EARTH DIKE

NOT TO SCALE

OWNER/DEVELOPER
GORDON DEVELOPMENT
1498 REISTERSTOWN ROAD, SUITE 338
BALTIMORE, MARYLAND 21208
(443) 375-0324
ATTN: MR. GORDON GREENSPUN

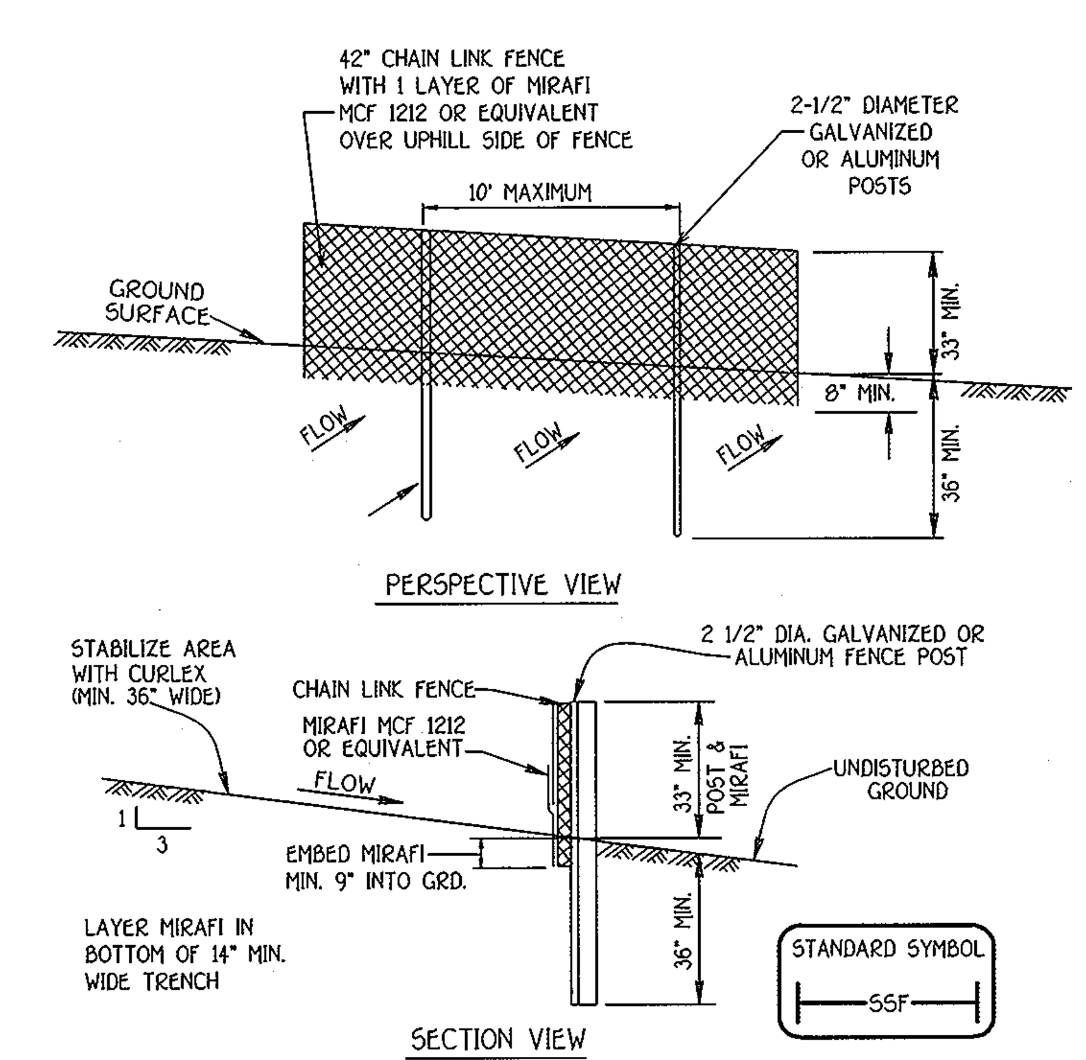


Construction Specification

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

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



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

SUPER FENCE DIVERSION

NOT TO SCALE

ALDO M. [signature] P.E. 4-2-09 DATE

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

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 [signature] — 4-2-09 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 [signature] — 4/3/09 Date

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

District Howard Soil Conservation Dist. [signature] — 4/14/09 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development [signature] — 6/10/09 Date

Chief, Development Engineering Division [signature] — 6/10/09 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways [signature] — 6-5-09 Date

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMITS. *PROPERTY SUBJECT TO MDE TRACKING / PERMIT No. 200960895 FOR S.W.M. POND No. 1.*
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 DIVISION AT 410-313-1870 AT LEAST 24 HOURS BEFORE STARTING ANY WORK. *NOTIFY MDE AT LEAST 48 HOURS BEFORE STARTING WORK*
3. INSTALL STABILIZED CONSTRUCTION ENTRANCE. CLEAR AND GRUB WHERE NECESSARY FOR AND INSTALL/CONSTRUCT ALL PERIMETER SEDIMENT DEVICES, INCLUDING SEDIMENT BASIN AND EARTH DIKES. (3 WEEKS)
4. OBTAIN PERMISSION FROM INSPECTOR BEFORE PROCEEDING. CLEAR FOR AND ROUGH GRADE PROPOSED ROAD. (2 WEEKS)
5. INSTALL STORM DRAINS. (1 WEEK)
6. INSTALL CURB AND PAVING IN THE ROADWAY AND SIDEWALK ALONG MILL RIVER CT. AS SHOWN ON PLANS. (3 WEEKS)
7. INSTALL STONE RESERVOIR AND 6" PVC FROM M-1 TO C.O. 1 FOR UNDERGROUND RECHARGE PRIOR TO FINAL POND CONVERSION. (3 DAYS)
8. CONVERT TEMP. SEDIMENT BASIN TO PERM. POCKET POND PER THESE PLANS. (4 DAYS)
9. WITH GRADING INSPECTOR'S PERMISSION, CONVERT BASIN TO S.W.M. POND w/ FOREBAY AS SHOWN ON PLANS AND STABILIZE THE GRADED AREAS. (2 WEEKS)
10. AFTER STABILIZATION HAS BEEN ESTABLISHED ON ALL DISTURBED SLOPES AND WITH GRADING INSPECTOR'S PERMISSION, REMOVE ALL TEMPORARY PERIMETER SEDIMENT CONTROL DEVICES. (1 WEEK)
11. NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR A FINAL INSPECTION OF THE COMPLETED SITE. *PROVIDE COPY OF MDE AS-BUILT APPROVAL TO THE INSPECTOR.*

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	4.11	ACRES
AREA DISTURBED	4.14	ACRES
AREA TO BE ROOFED OR PAVED	0.34	ACRES
AREA TO BE VEGETATIVELY STABILIZED	3.80	ACRES
TOTAL CUT	10,164	CU.YDS.
TOTAL FILL	10,164	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A	CU.YDS.

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

SEDIMENT AND EROSION CONTROL NOTES

SLUSHER PROPERTY

BUILDABLE LOTS 1 THRU 12 AND OPEN SPACE LOTS 13 & 14

ZONED: R-12
TAX MAP No. 38, GRID No. 15, PARCEL No. 745
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: APRIL 1, 2009
SHEET 10 OF 10

F-08-180