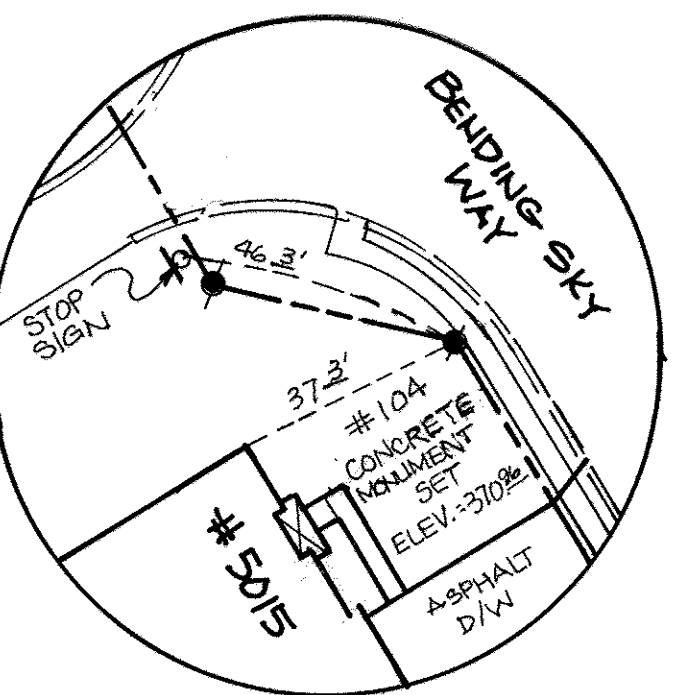


**GENERAL NOTES**

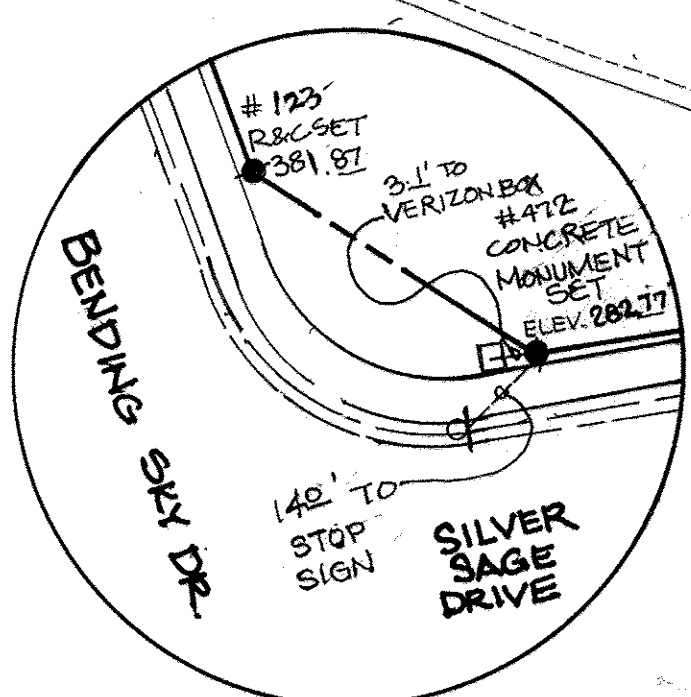
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
  - THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING WORK ON THESE DRAWINGS: 1-800-257-7777  
 MISS UTILITY 725-9976  
 BELL ATLANTIC TELEPHONE CO. 313-2366  
 HOWARD COUNTY BUREAU OF UTILITIES 393-3553  
 VERIZON CABLE LOCATION DIVISION 850-4620  
 B.G.&E. CO. CONTRACTOR SERVICES 787-4620  
 B.G.&E. CO. UNDERGROUND DAMAGE CONTROL 531-5533  
 STATE HIGHWAY ADMINISTRATION
  - THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK.
  - ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
  - 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) INSTEAD IN TO A 2-1/2" GALVANIZED STEEL PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE-3" LONG). A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON THE TOP OF EACH POST.
  - DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:  
 A) WIDTH - 14 FEET (16 FEET IF SERVING MORE THAN ONE RESIDENCE)  
 B) SURFACE - 6 INCHES OF COMPACTED CRUSHED RUN BASE WITH TAR AND CHIP COATING  
 C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE, AND MINIMUM 45 FOOT TURNING RADIUS  
 D) STRUCTURES (CULVERTS/BRIDGES) - MUST SUPPORT 25 GROSS TON LOADING (H25 LOADING)  
 E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD EVENTS WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE  
 F) STRUCTURE CLEARANCES - MINIMUM 12 FEET  
 G) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE
  - ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
  - DEED REFERENCE: 3883/725 AND 3883/735.
  - THE TOPOGRAPHY SHOWN HEREON IS BASED ON AN AERIAL TOPOGRAPHIC SURVEY PREPARED BY WINGS AERIAL MAPPING COMPANY, INC. PHOTOGRAPHIC MARCH 1995.
  - WATER AND SEWER FOR THIS PROJECT WILL BE PUBLIC. WATER WILL PROVIDED THROUGH CONTRACT NO. 286-W. SEWER WILL BE PROVIDED THROUGH CONTRACT NO. 680-S & 10-3898. FROM NEW PUMPING STATION.
  - STORM WATER MANAGEMENT TO BE PROVIDED FOR THIS DEVELOPMENT BY MICROPOOL EXTENDED DETENTION FACILITY LOCATED IN OPEN SPACE LOT 30. A FACILITY IS HAZARD CLASS 'A' AND WILL BE PRIVATELY OWNED & JOINTLY MAINTAINED.
  - STREAMS AND WETLANDS SHOWN ON-SITE ARE BASED ON A FIELD INVESTIGATION PREPARED BY CHESAPEAKE ENVIRONMENTAL DATED MARCH, 1995.
  - THE 100-YR FLOODPLAIN DRAINAGE AND UTILITY EASEMENT SHOWN ON-SITE IS BASED ON A FLOODPLAIN STUDY PREPARED BY ROBERT H. VOGEL ENGINEERING, INC., DATED DEC. 2006.
  - THIS SITE IS NOT LOCATED IN A HISTORIC DISTRICT.
  - THIS PROPERTY IS WITHIN THE METROPOLITAN DISTRICT.
  - THE ACCOMMODATION OF AND ACCESS TO THE CEMETERY ON NON-BUILDABLE PARCEL A-1 WAS APPROVED BY THE PLANNING BOARD ON JANUARY 27, 1999.
  - STREET TREES ARE PROVIDED FOR THIS SUBDIVISION IN ACCORDANCE WITH SECTION 16.124(e)(1) OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL.
  - WP-07-095: A WAIVER PETITION HAS BEEN SUBMITTED AND APPROVED, DATED AUGUST 22, 2007, TO WAIVE SECTION 16.116(a)(1) TO ALLOW GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING AND NEW STRUCTURES WITHIN 25 FEET OF A WETLAND, SECTION 16.116(a)(2) TO ALLOW GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, PAVING AND STRUCTURES WITHIN 75' OF A PERENNIAL STREAM BANK AND SECTION 16.116 (b) TO ALLOW GRADING, REMOVAL OF VEGETATIVE COVER AND TREES, NEW STRUCTURES AND PAVING ON LAND WITH STEEP SLOPES.
- APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
- COMPLIANCE WITH ALL SUBDIVISION REVIEW COMMITTEE COMMENTS.
  - COMPLIANCE WITH THE COMMENTS DATED AUGUST 14, 2007 FROM THE HOWARD SOIL CONSERVATION DISTRICT.
  - APPROVAL OF ANY STATE PERMITS REQUIRED FOR THE ENVIRONMENTAL DISTURBANCES. THE PERMIT NUMBER MUST BE SHOWN AS A GENERAL NOTE ON THE FINAL PLAN.
  - A DESIGN MANUAL WAIVER TO WAIVE VOLUME IV, DETAIL R-1.02 WHICH REQUIRES A 50-FOOT WIDE RIGHT-OF-WAY FOR A PUBLIC ACCESS PLACE AND PUBLIC ACCESS STREET, HAS BEEN SUBMITTED AND APPROVED, DATED OCTOBER 15, 2008. APPROVAL WAS BASED ON THE FOLLOWING:  
 THE PLAN WAS ORIGINALLY DESIGNED & APPROVED UNDER SEPARATE REGULATIONS WHICH ONLY REQUIRED A 40-FOOT RIGHT-OF-WAY. UPDATING THE PLAN TO CURRENT STANDARDS WOULD HAVE A SIGNIFICANT AFFECT ON THE SUBDIVISION AS ALREADY APPROVED.  
 B. THE REQUEST TO ALLOW THE 40-FOOT RIGHT-OF-WAY WIDTH IS APPROVED BUT THE MINIMUM PAVEMENT WIDTHS MUST BE PROVIDED AS SPECIFIED WITH THE WAIVER REQUEST.
  - IN LIEU OF PROVIDING RETAINING WALLS ON OPEN SPACE LOT 30 (BEHIND LOTS 33 AND 34), THE AREA WILL BE GRADED, BUT NOT TO EXCEED THE LOD SHOWN ON THE WAIVER PETITION EXHIBIT, AND RESTABILIZED AND PLANTED.
  - REFUSE COLLECTION, SNOW REMOVAL, AND MAINTENANCE FOR LOTS 6, 7, 8, 9, & 10, SHALL BE PROVIDED AT THE JUNCTION OF PRIVATE USE-IN-COMMON ACCESS EASEMENT AND THE RIGHT-OF-WAY OF PROPOSED ROAD.
  - A NOISE STUDY IS NOT REQUIRED FOR THIS DEVELOPMENT.
  - TREE PROTECTION FENCING WILL BE PROVIDED AT THE LIMITS OF DISTURBANCE WHERE GRADING IS ADJACENT TO ENVIRONMENTAL AREAS.
  - THIS SUBDIVISION COMPLIES WITH THE AMENDED 4TH EDITION OF THE SUBDIVISION AND ZONING REGULATIONS, BOTH AS AMENDED BY COUNCIL BILL 75-2003.
  - FOREST STAND DELINEATION PLAN PREPARED BY CHESAPEAKE ENVIRONMENTAL AND APPROVED ON 10, 1989 UNDER P-98-16, DATED JUNE 2004, (FOR LOTS 1, 2, 3 & BULK PARCEL 'A' AND FOR OPEN SPACE LOT 4 AND BULK PARCEL 'B').
  - FOREST CONSERVATION PLAN PREPARED BY CHESAPEAKE ENVIRONMENTAL AND APPROVED ON NOVEMBER 10, 1999 UNDER P-99-16, (FOR LOTS 1, 2, 3 & BULK PARCEL 'A' AND FOR OPEN SPACE LOT 4 AND BULK PARCEL 'B').
  - WETLANDS AREA DELINEATED BY CHESAPEAKE ENVIRONMENTAL AND APPROVED ON NOVEMBER 10, 1999 UNDER P-99-16, DATED JUNE 2004, (FOR LOTS 2, 3 & BULK PARCEL 'A').
  - NO TYPICAL WETLANDS, WETLAND BUFFERS, STREAM OR STREAM BUFFERS ARE LOCATED WITHIN OPEN SPACE LOT 4 WETLAND LOCATIONS DETERMINED BY CHESAPEAKE ENVIRONMENTAL IN MARCH, 1995 SHOWN ON S-98-16, (FOR OPEN SPACE LOT 4 AND BULK PARCEL 'B') SEE PLAT # 14513 & PLAT # 15794.  
 WETLAND DELINEATION CONFIRM BY ECO-SCIENCE PROFESSIONALS, INC. ON NOVEMBER 24, 2008.
  - FOREST CONSERVATION REQUIREMENTS AS SET FORTH IN SECTION 16.1202 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.  
 THE FOREST CONSERVATION OBLIGATION WAS FULLY MET BY THE RETENTION OF 13.81 AC. (601,564 SF) OF CREDITED EASEMENT AND 0.12 ACRES OF NON-CREDITED EASEMENT WHICH EXCEEDS THE BREAK-EVEN POINT OBLIGATION OF 13.81 ACRES FOR THE SITE. THE TOTAL FINANCIAL SURETY AMOUNT IS \$120,313.00 (\$60,564 SF X 0.20 = \$120,313.00)
  - A TRAFFIC IMPACT ANALYSIS WAS PREPARED BY THE TRAFFIC GROUP AND APPROVED ON FEBRUARY 8, 1999 UNDER S-98-16.
  - A NOISE STUDY IS NOT REQUIRED FOR THIS SUBDIVISION.
  - COLLEGE AVENUE IS A SCENIC ROAD. A 35' WIDE FOREST BUFFER IS PROVIDED FOR SCENIC ROAD AS PROVIDED ON S-98-16. AND TYPE "B" BUFFER LANDSCAPING IS PROVIDED ALONG COLLEGE AVE.
  - TREE PROTECTION FENCING WILL BE PROVIDED AT THE LIMITS OF DISTURBANCE WHERE GRADING IS ADJACENT TO ENVIRONMENTAL AREAS AND RETENTION FOREST CONSERVATION AREAS.
  - INGRESS AND EGRESS IS RESTRICTED ALONG COLLEGE AVENUE.
  - OPEN SPACE LOT 68 TO BE OWNED AND MAINTAINED BY THE HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS. OPEN SPACE LOTS 30, 37, 44, 68 & 110 ARE TO BE OWNED AND MAINTAINED BY THE HOA. OPEN SPACE LOT 37 TO BE OWNED AND MAINTAINED BY DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY.
  - 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 THE DRIVEWAY.
  - NON-BUILDABLE BULK PARCEL D & E WILL BE RE-SUBDIVIDED WITH PHASE III & NON-BUILDABLE PARCEL C WILL BE PRIVATELY OWNED AND WILL BE UTILIZE TO PROVIDED ACCESS TO THE EXISTING HOUSE ON THE ADJACENT PROPERTY OF HOWARD COUNTY SANITARIUM INC. NON-BUILDABLE BULK PARCEL F WILL BE RESUBDIVIDED WITH PHASE IV.

# FINAL ROAD CONSTRUCTION PLAN AUTUMN RIVER PHASE II

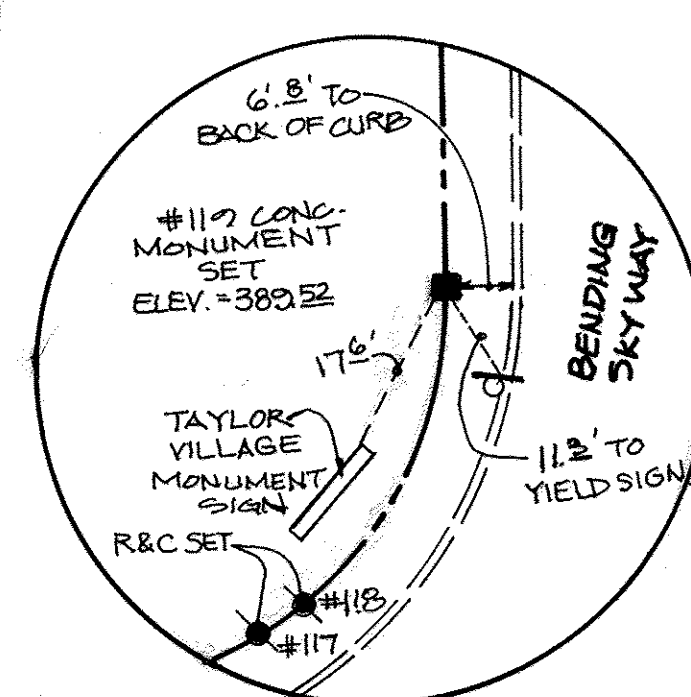
## LOTS 5-29, 31-36, 38-43, 45-67 & OPEN SPACE LOT 30, 37, 44, 68 & 110 & NON-BUILDABLE PARCEL C & NON-BUILDABLE BULK PARCEL D, E & F RESUBDIVISION OF EXISTING LOT 1, 2, 3 & BULK PARCEL A HOWARD COUNTY, MARYLAND



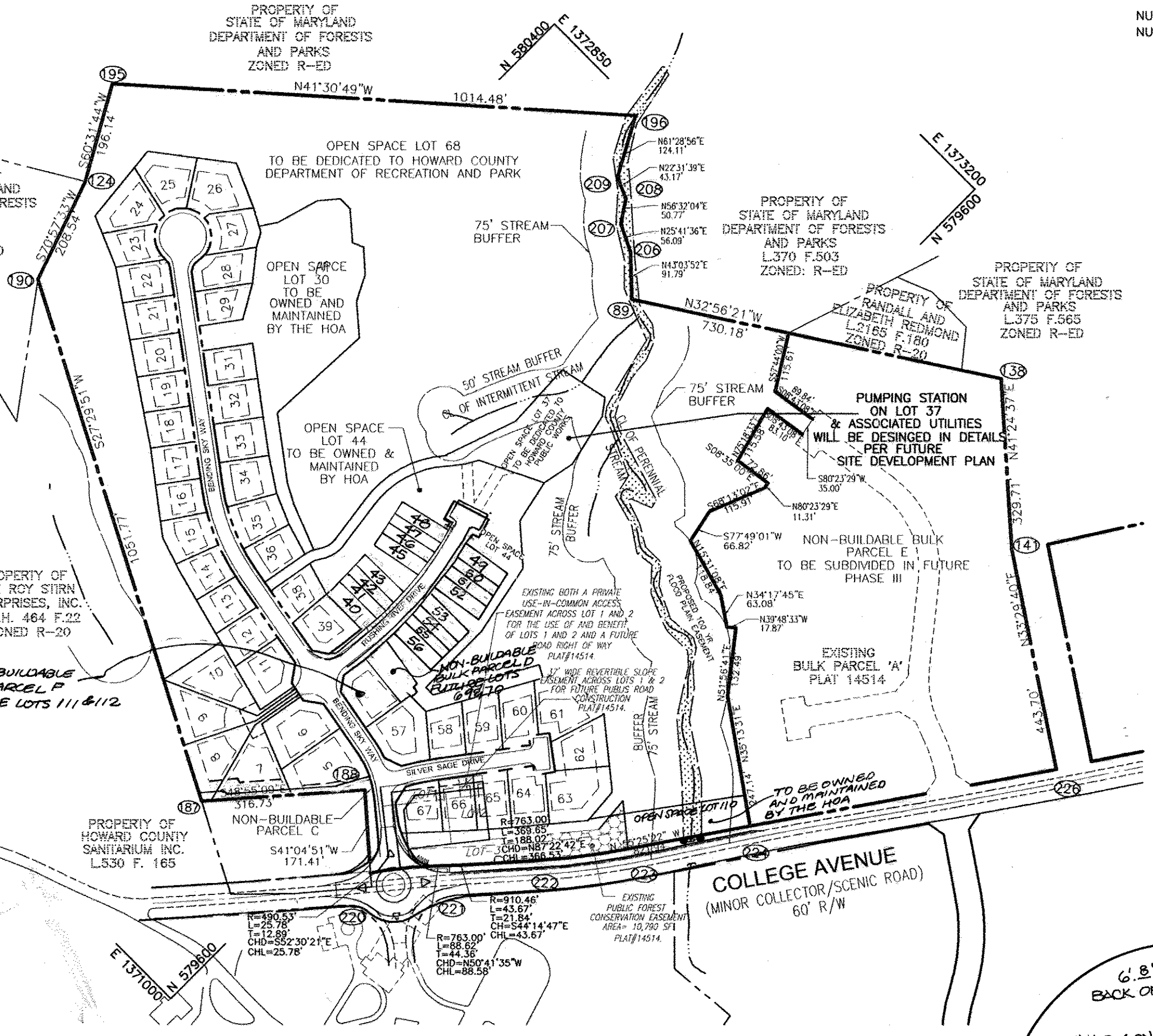
RECOVERY SKETCH  
CONCRETE MONUMENT  
#104  
SEE SHEET 2 OF 30



RECOVERY SKETCH  
CONCRETE MONUMENT  
#4712  
SEE SHEET 2 OF 30



RECOVERY SKETCH  
CONCRETE MONUMENT  
#117  
SEE SHEET 2 OF 30



LOCATION MAP  
SCALE 1"=200'

**AUTUMN RIVER DENSITY TABULATION**

PHASE	TOTAL SUBDIVISION AREA (GROSS AREA)	PREVIOUSLY RECORDED PLATS	FLOODPLAIN	STEEP SLOPES	NET AREA	UNITS PERMITTED BY NET AREA	UNITS PROPOSED	TOTAL UNITS REMAINING
I (F-00-131)	48,229 AC.	(# 14513)	-	-	-	-	02	95
II (P-07-016)	37,429 AC.	-	0.86	5,786 AC.	30,783 AC.	62	60 **	35
III	10.8 AC.	(# 14513)	0.84	9,964 AC.	20,296 AC.	40	35 **	0
TOTAL			1.7	15,75 AC.	51,079 AC.	-	97	-

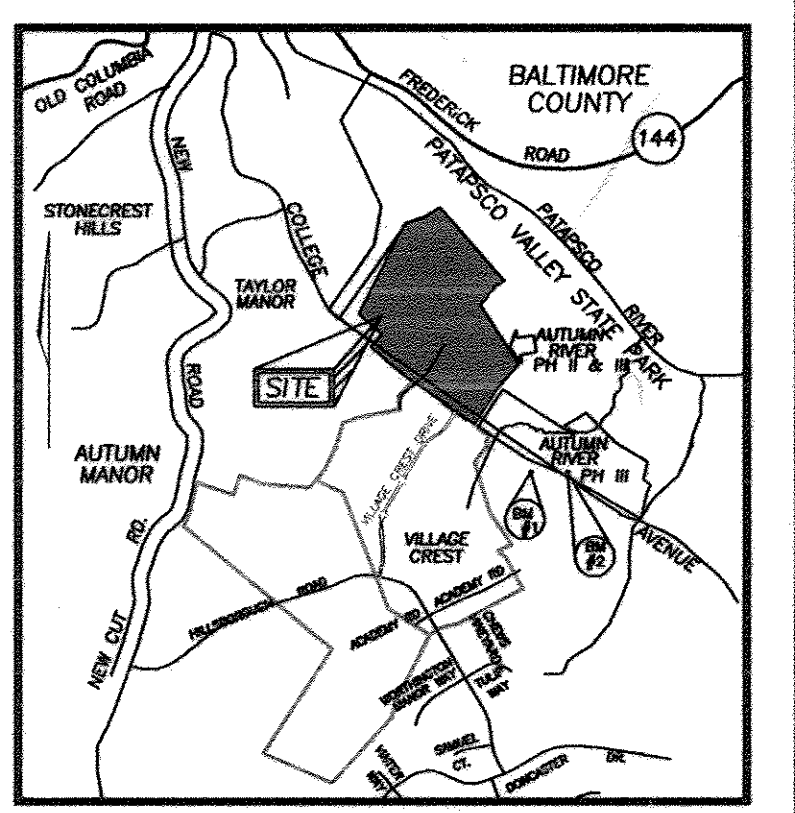
\* SKETCH PLAN S-98-016 APPROVED A TOTAL OF 97 UNITS.  
 \*\* THIS PLAN PROPOSES 58 UNITS PLUS 2 EXISTING UNITS FOR A TOTAL OF 60 UNITS.  
 PHASE III PROPOSES 35 UNITS (33 LOTS) ALLOWING FOR THE RESUBDIVISION OF PHASE II, NON BUILDABLE BULK PARCEL D INTO 2 LOTS.

**BENCHMARKS**

BENCHMARK NO. 1, COUNTY CONTROL #3044005R  
 3/4" REBAR 0.6' BELOW SURFACE  
 N. 578233.92, E. 1473142.33  
 ELEV. = 374.389  
 BENCHMARK NO. 2, COUNTY CONTROL #3044004R  
 3/4" REBAR 0.6' BELOW SURFACE  
 N. 578128.03, E. 1473460.71  
 ELEV. = 362.575

**ADC MAP COORDINATES:**

N: 517,000  
 E: 860,000  
 ADC MAP PAGE: 12 & 16  
 ADC MAP GRID: H-13



VICINITY MAP  
SCALE 1"=2000'

**SITE DATA**

LOCATION: TAX MAP 25, PARCEL 172 & 279  
 DEED REFERENCE: L 3883, F. 735  
 2ND ELECTION DISTRICT  
 EXISTING ZONING: R-ED  
 LOCATION EAST SIDE OF COLLEGE AVENUE, APPROX. 1.5 MILES SOUTH OF HISTORIC ELLICOTT CITY  
 ELECTION DISTRICT: 2ND  
 DENSITY: SEE DENSITY TABULATION THIS SHEET.  
 GROSS AREA OF PARCEL: 48,228 AC.  
 TOTAL AREA OF ROAD RIGHT OF WAY: 97,967 SF (2,249.0 AC)  
 AREA OF 100 YR FLOODPLAIN: 37483.20  
 AREA OF STEEP SLOPES: 5,786 AC.  
 NET AREA OF PROJECT: 30,783 AC.  
 AREA OF NON-BUILDABLE BULK PARCELS: 400,650 SF (9.142 AC)  
 NUMBER OF PROPOSED RESIDENTIAL LOTS (SFD): 44  
 NUMBER OF PROPOSED RESIDENTIAL LOTS (SFA): 16  
 AREA OF PROPOSED RESIDENTIAL LOTS (SFD): 359,569 SF (8,254.6 AC)  
 AREA OF PROPOSED RESIDENTIAL LOTS (SFA): 22,836 SF (0.525 AC)  
 NUMBER OF PROPOSED OPEN SPACE LOTS: 5  
 OPEN SPACE CALCULATION: 25% OF GROSS PROPERTY AREA  
 OPEN SPACE REQUIRED: 12.06 AC.  
 TOTAL AREA OF OPEN SPACE: 1,111,594 SF (25,510.7 AC)  
 NON CREDITED OPEN SPACE: 9,387 SF (0.215 AC)  
 CREDITED OPEN SPACE: 1,102,227 SF (25,303.7 AC)  
 DPZ FILE REFERENCES: S-02-004, P-07-006,  
 S-98-16, P-99-16, F-00-131, F-01-08  
 P-8-326, P. B. 148, PLAT # 15794 & 15795  
 PLAT # 14513 TO 14515  
 APPLICABLE DPZ FILE REFERENCE: S-98-16, P-99-16, F-00-131, F-01-08  
 PLAT # 14513 TO 14515

**PROPOSED USE OF SITE:** SINGLE FAMILY DETACHED SINGLE FAMILY ATTACHED

PROPOSED WATER SYSTEM: PUBLIC  
 PROPOSED SEWER SYSTEM: PUBLIC  
 EX. 2 SFD UNIT LOTS TO BE RECONFIGURED  
 58 PROPOSED BUILDABLE LOTS  
 TOTAL DWELLING UNITS FOR THIS SUBMISSION: 60  
 NO. OF SINGLE FAMILY DETACHED: 44  
 NO. OF SINGLE FAMILY ATTACHED: 16  
 NO. OF OPEN SPACE LOTS: 5  
 NON-BUILDABLE BULK PARCELS: 3

OPEN SPACE LOT-30 : (OWNED AND MAINTAINED BY HOA)  
 OPEN SPACE LOT-44 : (OWNED AND MAINTAINED BY HOA)  
 OPEN SPACE LOT-37 : (TO BE DEDICATED TO HOWARD COUNTY DEPARTMENT PUBLIC WORKS)

OPEN SPACE LOT 68: (TO BE DEDICATED TO HOWARD COUNTY DEPARTMENT OF REC. AND PARK.)  
 OPEN SPACE LOT 110: (OWNED AND MAINTAINED BY HOA)  
 PARKING:  
 DWELLING UNITS: 60  
 REQUIRED AT 2.5 SPACES PER DU: 150

TOTAL PARKING SPACES REQUIRED: = 150 SPACES  
 TOTAL PARKING SPACES PROVIDED: = 240 SPACES

**RECREATION OPEN SPACE**

RECREATION OPEN SPACE REQUIRED: 14,200 SF  
 FOR SINGLE FAMILY DETACHED UNIT: 44 (250 SF PER UNIT) = 11,000 SF  
 FOR SINGLE FAMILY ATTACHED UNIT: 16 (200 SF PER UNIT) = 3,200 SF

PASSIVE/ACTIVE RECREATION OPEN SPACE PROVIDED:  
 LOT 30 : PICNIC AREA = 6 TABLES X 500 SF = 3,000 SF PER S-98-16  
 CREDITED FOR EXCESS WOODED OPEN SPACE = 8,000 SF. PER S-98-16  
 8,500 SF. OF RECC. OPEN SPACE WILL BE PROVIDED IN PHASE III.  
 PASSIVE RECREATIONAL OPEN SPACE ONLY:  
 NO STRUCTURES ARE ALLOWED.

**SHEET INDEX**

DESCRIPTION	SHEET NO.
COVER SHEET	1 OF 30
FINAL ROAD CONSTRUCTION PLAN	2 OF 30
FINAL ROAD CONSTRUCTION PLAN	3 OF 30
FINAL ROAD CONSTRUCTION PLAN	4 OF 30
FINAL ROAD CONSTRUCTION PLAN	5 OF 30
FINAL ROAD CONSTRUCTION PLAN	6 OF 30
GRADING AND SEDIMENT & EROSION CONTROL PLAN	7 OF 30
GRADING AND SEDIMENT & EROSION CONTROL PLAN	8 OF 30
GRADING AND SEDIMENT & EROSION CONTROL PLAN	9 OF 30
SEDIMENT & EROSION CONTROL DETAILS	10 OF 30
SEDIMENT & EROSION CONTROL DETAILS	11 OF 30
STORM DRAIN DRAINAGE AREA MAP	12 OF 30
STORM DRAIN DRAINAGE AREA MAP	13 OF 30
STORM DRAIN PROFILES	14 OF 30
STORM DRAIN PROFILES	15 OF 30
STORM DRAIN PROFILES	16 OF 30
STORMWATER MANAGEMENT DETAILS	17 OF 30
STORMWATER MANAGEMENT DETAILS	18 OF 30
STORMWATER MANAGEMENT DETAILS	19 OF 30
STORMWATER MANAGEMENT DETAILS & NOTES	20 OF 30
LANDSCAPE AND FOREST CONSERVATION PLAN	21 OF 30
LANDSCAPE AND FOREST CONSERVATION PLAN	22 OF 30
LANDSCAPE AND FOREST CONSERVATION PLAN	23 OF 30
LANDSCAPE AND FOREST CONSERVATION DETAIL	24 OF 30
PRE-CONSTRUCTION DRAINAGE AREA MAP	25 OF 30
POST-CONSTRUCTION DRAINAGE AREA MAP	26 OF 30
TRAFFIC CIRCLE DETAILS	27 OF 30
TRAFFIC SIGNS & DETAILS	28 OF 30
TRAFFIC SIGNS & DETAILS	29 OF 30
TEMPORARY PAVING PLAN	30 OF 30

**AS-BUILT CERTIFICATION**  
 I hereby certify that the facility shown on this plan was constructed as shown on the "as-built" plan and meets the approved plans and specifications.  
 Signature: \_\_\_\_\_  
 PE No. 16193  
 Date: 7/27/15

NO.	REVISION	DATE
2	MODIFICATION TO PROPOSED RUSHING RIVER DRIVE BASED ON RECONFIGURATION OF LOTS ALONG ROADWAY	3/7/12
NO.		

**FINAL ROAD CONSTRUCTION PLAN  
AUTUMN RIVER - PHASE II  
COVER SHEET**

LOTS: 5-29, 31-36, 38-43, 45-67  
 OPEN SPACE LOT 30, 37, 44, 68 & 110  
 & NON-BUILDABLE PARCEL C  
 & NON-BUILDABLE BULK PARCEL D, E & F  
 RESUBDIVISION OF EXISTING LOT 1, 2, 3  
 & BULK PARCEL A  
 PARCELS 172 & 279  
 HOWARD COUNTY, MARYLAND

TAX MAP #25 GRID 14 & 21  
 2ND ELECTION DISTRICT

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET  
 ELLICOTT CITY, MD 21043  
 TEL: 410.461.7666  
 FAX: 410.461.8961

**PROFESSIONAL CERTIFICATE**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193  
 EXPIRATION DATE: 09-27-2016

DESIGN BY: Rj/RHV  
 DRAWN BY: RJ  
 CHECKED BY: RHV  
 DATE: MAY 2010  
 SCALE: AS SHOWN  
 W.O. NO.: 04-145

1 SHEET OF 30

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 [Signature] 6-22-10  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 7/14/10  
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF ENGINEERING  
 [Signature] 7-13-10  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

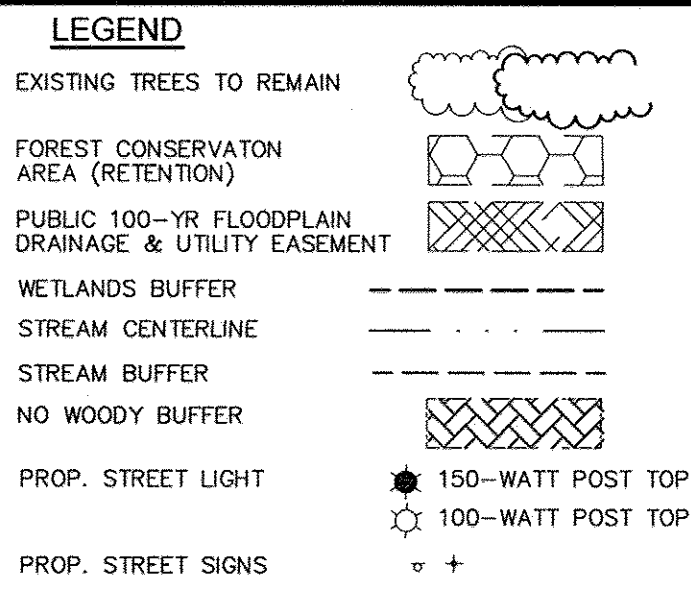
36. TRAFFIC ENGINEERING DIVISION TO SUSPECT TRAFFIC CIRCLE  
 LAYOUT PRIOR TO CONSTRUCTION  
 39. A DESIGN MANUAL WAIVER TO VOLUME IV, SECTION 2.4B AND APPENDIX A WHICH REQUIRES A MINIMUM 26' PAVEMENT WIDTH ALONG TOWNHOMES HAS BEEN APPROVED 12/22/10. APPROVAL WAS BASED ON THE FOLLOWING:  
 A. NO PARKING SHALL BE PERMITTED ALONG RUSHING RIVER DRIVE.  
 B. IF THE PARKING QUANTITIES CHANGE WITH THE SUBMITTAL OF THE SOP (2-CAR GARAGE AND 2 CARS IN DRIVEWAY) THIS APPROVAL SHALL BE RE-EVALUATED TO ENSURE IT MEETS THE MINIMUM REQUIREMENTS FOR OVERFLOW PARKING. AS SHOWN ON THE SOP, THE GARAGES (AND POSSIBLY THE DRIVEWAYS) ARE TOO NARROW TO DOUBLE PARK.



CURVE TABLE						
CURVE	LENGTH	RADIUS	DELTA ANGLE	TANGENT	CHORD DIRECTION	CHORD LENGTH
C1	100.93	200.00	28°54'53"	51.57	N24°38'19"E	99.86
C2	185.49	400.00	28°34'08"	94.44	S23°25'38"W	183.83
C3	29.77	100.00	17°03'33"	15.00	S45°14'47"W	29.66
C4	105.67	450.26	13°26'49"	53.08	N59°56'26"W	105.43
C5	383.69	800.00	27°28'46"	195.61	N85°21'59"E	380.02

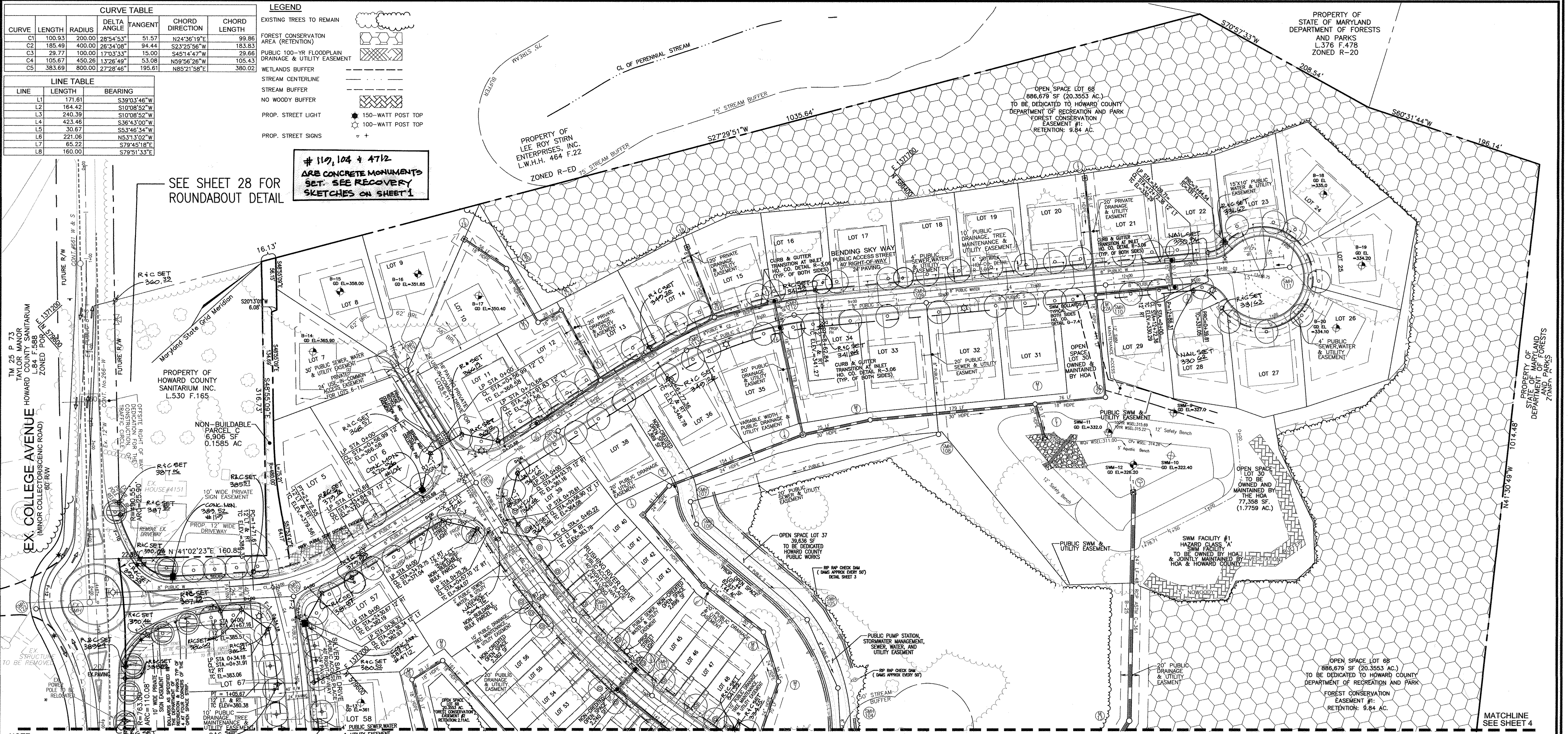
  

LINE TABLE		
LINE	LENGTH	BEARING
L1	171.61	S39°03'46"W
L2	164.42	S10°08'52"W
L3	240.39	S10°08'52"W
L4	423.46	S38°43'00"W
L5	30.67	S53°46'34"W
L6	221.06	N53°13'02"W
L7	65.22	S79°45'18"E
L8	160.00	S79°51'33"E



# 110, 104 & 4712  
ARE CONCRETE MONUMENTS SET. SEE RECOVERY SKETCHES ON SHEET 1

SEE SHEET 28 FOR ROUNDABOUT DETAIL



NOTE: ALL HANDICAP RAMPS TO BE HOWARD COUNTY STANDARD DETAIL R-4.01

STREET TREE CALCULATIONS			
STREET NAME	LINEAR FEET	NO. REQUIRED	NO. PROVIDED
BENDING SKY WAY	2847/40	71	71
SILVER SAGE DRIVE	756/40	19	19
RUSHING RIVER DRIVE	870/40	22	22
COLLEGE AVE-RD IMPROV.	103/40	04	04

LIGHT LOCATIONS			
STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
COLLEGE AVENUE	5+04	47' RIGHT	150 WATT HPS VAPOR PREMIER
COLLEGE AVENUE	5+14	47' LEFT	POST-TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE
COLLEGE AVENUE	4+32	47' LEFT	
BENDING SKY WAY	1+76	28' RIGHT	
BENDING SKY WAY	3+96	24' RIGHT	
BENDING SKY WAY	4+65	21' LEFT	
BENDING SKY WAY	7+54	15' RIGHT	
BENDING SKY WAY	10+20	15' RIGHT	
BENDING SKY WAY	12+90	21' RIGHT	
SILVER SAGE DRIVE	2+97	22' LEFT	
RUSHING RIVER DRIVE	2+54	23' LEFT	

STREET TREES				
KEY	QUAN.	BOTANICAL NAME	SIZE	REM.
○	67	ACER SACCHARUM 'GOLDSPIRE' COLUMNAR SUGAR MAPLE	2 1/2"-3" CAL.	B & B
○	04	AMUR MAPLE ACER GINNALA (SHADE TREES-GROWTH HEIGHT=20') FOR BG&E WIRE ZONE		
○	19	ACER RUBRUM 'RED SUNSET' RED SUNSET RED MAPLE	2 1/2"-3" CAL.	B & B
○	22	ACER SACCHARUM 'GREEN MOUNTAIN' GREEN MOUNTAIN SUGAR MAPLE	2 1/2"-3" CAL.	B & B
○	04	AMUR MAPLE ACER GINNALA (SHADE TREES-GROWTH HEIGHT=20')	2 1/2"-3" CAL.	B & B

ROAD NAMES	ROAD CLASSIFICATION	DESIGN SPEED	PAVING
BENDING SKYWAY STA. 0+00 TO 13+46.75	PUBLIC ACCESS STREET 24' WIDE PAVING	35 MPH	P-2
SILVER SAGE DRIVE STA. 0+00 TO 3+26.23	PUBLIC ACCESS PLACE 24' WIDE PAVING	25 MPH	P-2
RUSHING RIVER DR. STA. 0+00 TO 4+48.90	PUBLIC ACCESS PLACE 24' WIDE PAVING	25 MPH	P-2
24' USE IN COMMON DRIVE FOR LOT 6, 7, 8, 9, 10, & 11	16' WIDE PAVING		P-1

NOTE: A MINIMUM OF 20' IS REQUIRED BETWEEN ANY STREET LIGHT AND ANY TREE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 DATE: 6-20-12  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 DATE: 8/08/12  
 APPROVED: DEPARTMENT OF ENGINEERING DIVISION  
 DATE: 7/30/12

SIGNAGE LOCATION CHART			
FOR ADDITIONAL SIGNAGE AT ROUNDABOUT, CONTACT HOWARD COUNTY TRAFFIC DIVISION, CONTACT 410-313-5752			
R2-1 (25 MPH)	BENDING SKY WAY	CL RD. STA. 1+26.11, 14' RT.	
R1-1 (STOP)	SILVER SAGE DR.	CL RD. STA. 0+36, 21.5' LT.	
TEE TURN AROUND	3' BEHIND THE CURB AS SHOWN - SILVER SAGE DR.	NO PARKING IN TEE TURN AROUND	
R1-1 (STOP)	RUSHING RIVER DRIVE	CL RD. STA. 0+32, 21.5' LT.	
TEE TURN AROUND	3' BEHIND THE CURB AS SHOWN - RUSHING RIVER DRIVE	NO PARKING IN TEE TURN AROUND	
R1-1 (STOP)	USE-IN-COMMON DRIVE	CL RD. STA. 0+32, 18.9' RT.	
R7-1 (NO PARKING ANYTIME)	RUSHING RIVER DRIVE	CL RD. STA. 1+53, 14' RT.	
R7-1 (NO PARKING ANYTIME)	RUSHING RIVER DRIVE	CL RD. STA. 2+61, 14' LT.	

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: \_\_\_\_\_  
 PE NO. 16103  
 Date: 7/27/15  
 SEE SHEET 5 FOR ROADWAY SECTIONS AND DETAILS

**OWNERS**  
 AUTUMN RIVER CORPORATION  
 4100 COLLEGE AVE.  
 ELLICOTT CITY MD 21042-7819  
 21043 - 5506  
 (410) 465-3500

**DEVELOPER**  
 AUTUMN DEVELOPMENT CORPORATION  
 C/O LAND DESIGN & DEVELOPMENT, INC.  
 5300 DORSEY HALL DR STE 102  
 ELLICOTT CITY MD 21042-7819  
 ATTN: MR. DONALD R. REUWER  
 (443) 367-0422

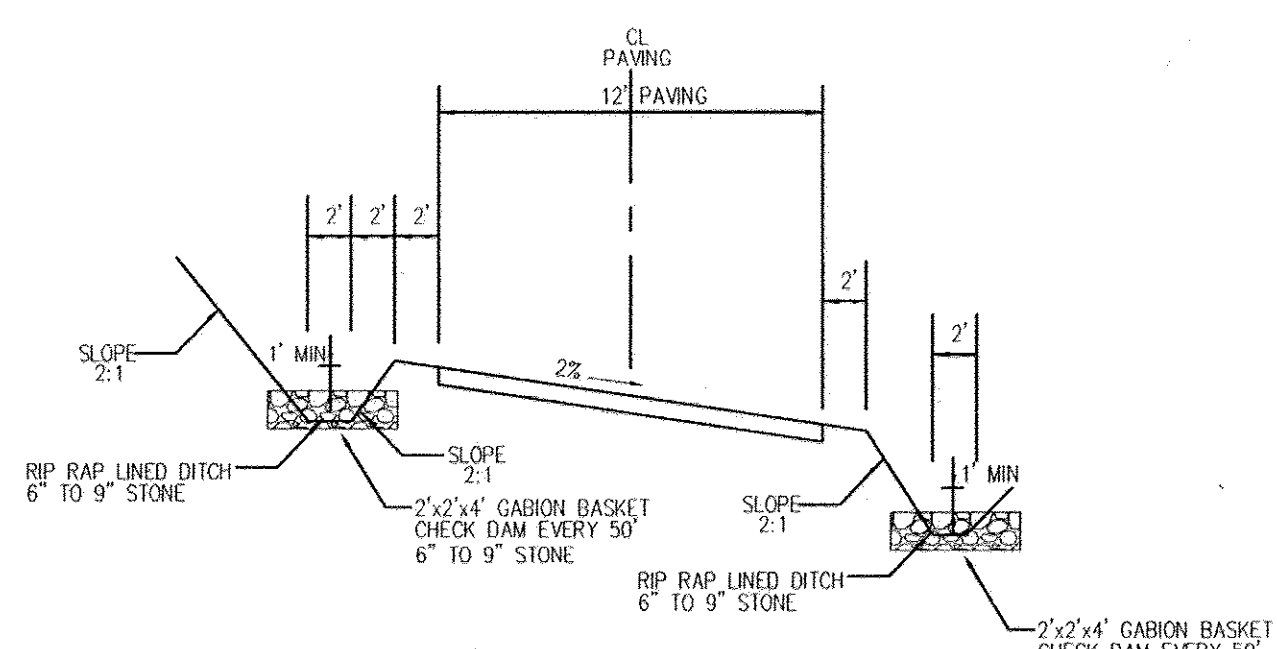
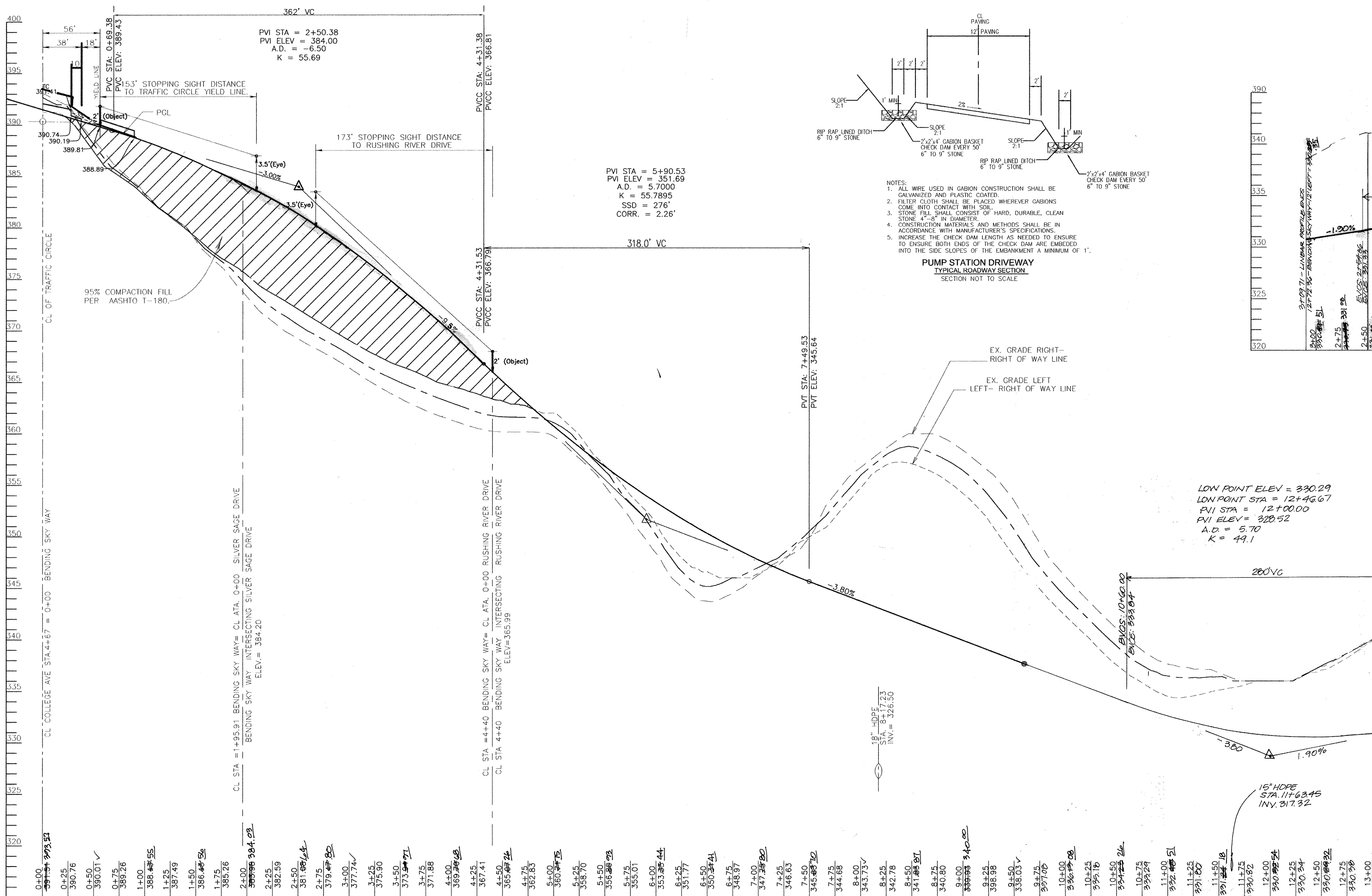
**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET  
 ELLICOTT CITY, MD 21043  
 TEL: 410.461.7666  
 FAX: 410.461.8961

DESIGN BY: RJ/RHV  
 DRAWN BY: RJ  
 CHECKED BY: RHV  
 DATE: MAY 2010  
 SCALE: 1"=50'  
 W.O. NO.: 04-145

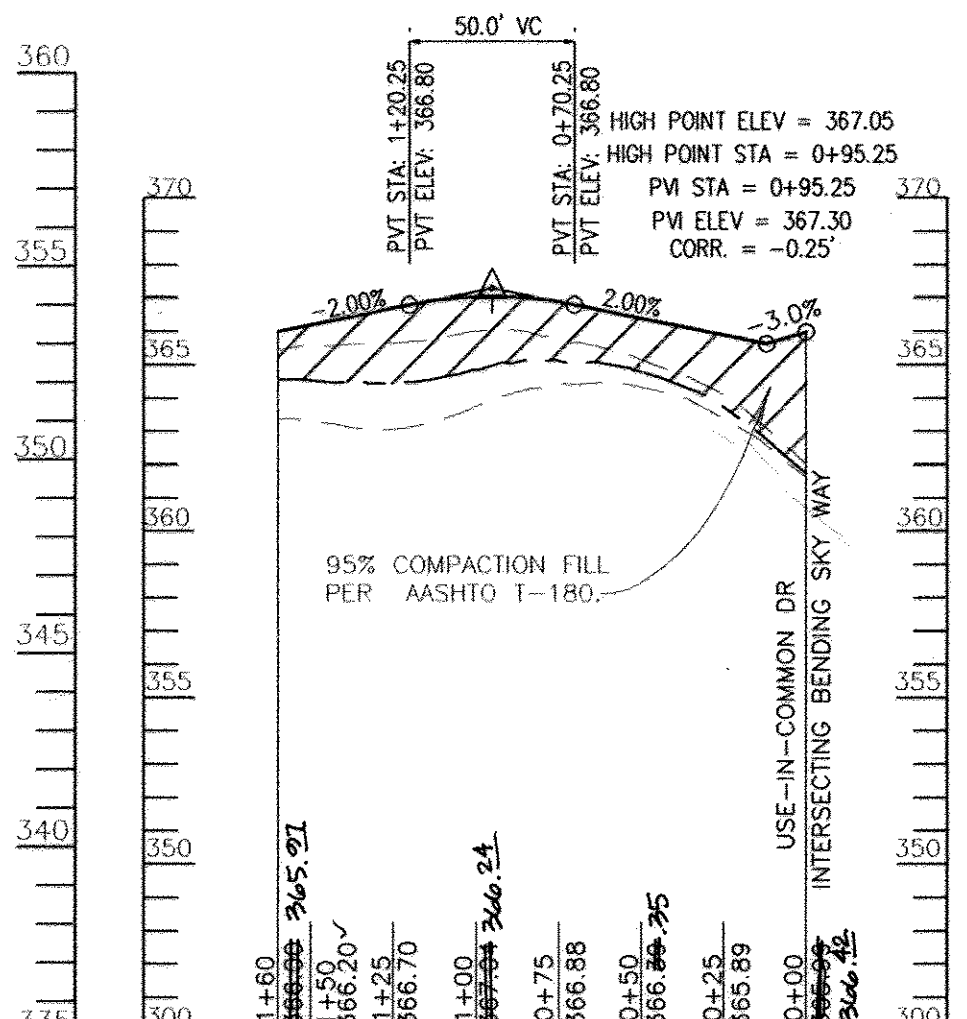
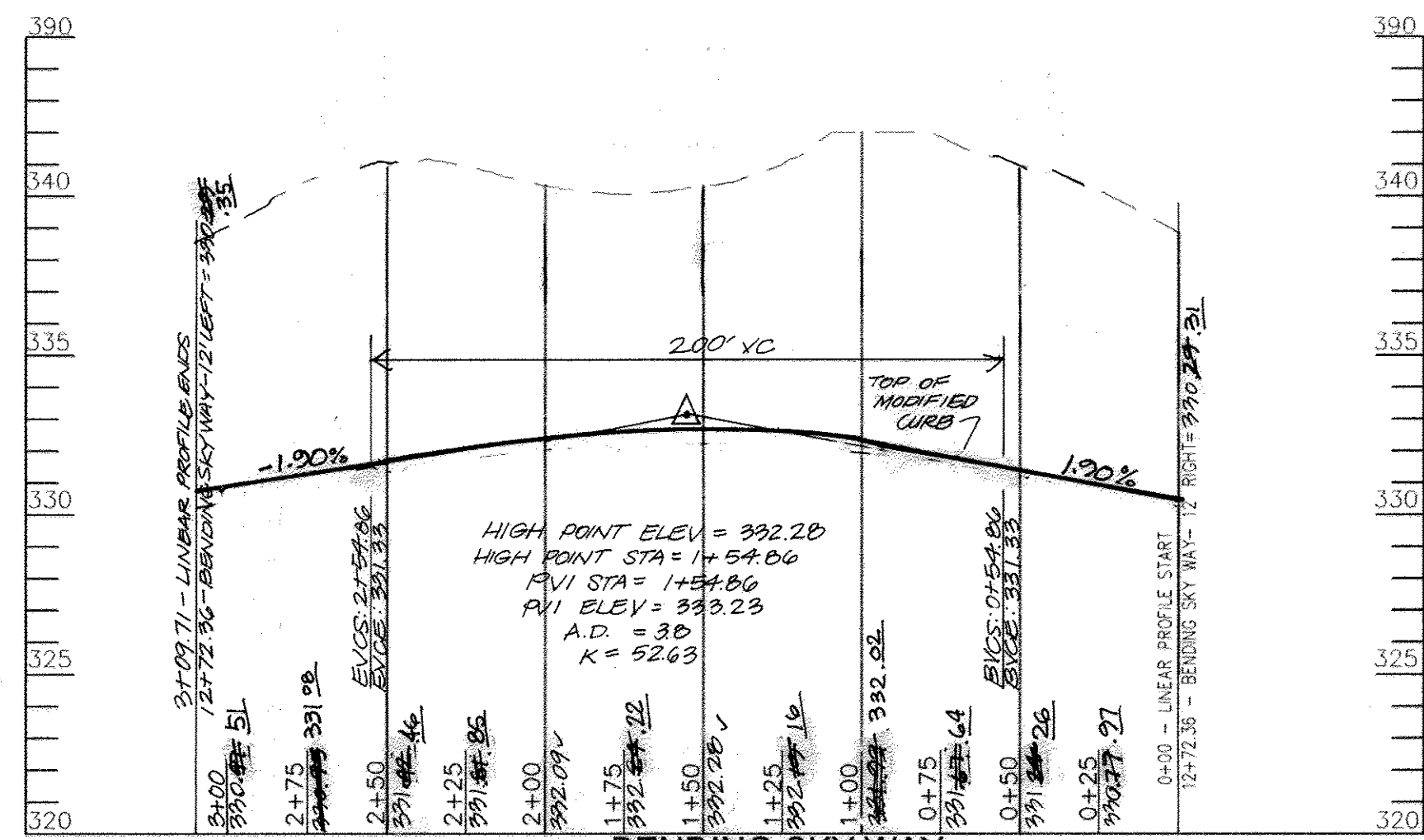
PROFESSIONAL CERTIFICATE  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18193  
 EXPIRATION DATE: 09-27-2010

2 SHEET OF 30





NOTES:  
 1. ALL WIRE USED IN GABION CONSTRUCTION SHALL BE GALVANIZED AND PLASTIC COATED.  
 2. FILTER CLOTH SHALL BE PLACED WHEREVER GABIONS COME INTO CONTACT WITH SOIL.  
 3. STONE FILL SHALL CONSIST OF HARD, DURABLE, CLEAN STONE 4-7.5" IN DIAMETER.  
 4. CONSTRUCTION MATERIALS AND METHODS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.  
 5. INCREASE THE CHECK DAM LENGTH AS NEEDED TO ENSURE TO ENSURE BOTH ENDS OF THE CHECK DAM ARE EMBEDDED INTO THE SIDE SLOPES OF THE EMBANKMENT A MINIMUM OF 1'.



STOPPING SIGHT DISTANCE PER AASHTO  
 PUBLIC ACCESS STREET - BENDING SKY WAY - DESIGNED FOR 35 MPH  
 POSTED DESIGN SPEED = 25 MPH  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*W. J. M. M. M.* 6-22-10  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*K. J. S. D.* 7/19/10  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE

*C. E. C.* 7-17-10  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE

NO.	REVISION	DATE
1	MODIFY GRADING TOWARDS END OF BENDING SKY WAY TO LOWER ROADWAY, CUL-DE-SAC & STORM DRAIN	2-2-11
NO.		

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: \_\_\_\_\_  
 PE No. 16193  
 Date: 7/27/15

OWNERS  
 AUTUMN RIVER CORPORATION  
 4100 COLLEGE AVE.  
 ELLICOTT CITY MD 21042-7819  
 21043 - 5506  
 (410) 465-3500

DEVELOPER  
 AUTUMN RIVER DEVELOPMENT CORPORATION  
 5300 DORSEY HALL DR STE 102  
 ELLICOTT CITY MD 21042-7819  
 ATTN: MR. DONALD R. REUWER  
 (443) 367-0422

**FINAL ROAD CONSTRUCTION PLAN**  
**AUTUMN RIVER - PHASE II**  
**ROAD CONSTRUCTION PLAN**  
 LOTS: 5-29, 31-36, 38-43, 45-67  
 OPEN SPACE LOT 30, 37, 44, 68, & 110  
 & NON-BUILDABLE PARCEL C  
 & NON-BUILDABLE BULK PARCEL D, E, F  
 RESUBDIVISION OF EXISTING LOT 1, 2, 3  
 & BULK PARCEL A

TAX MAP #25 GRID 14 & 21 PARCELS 172 & 279  
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

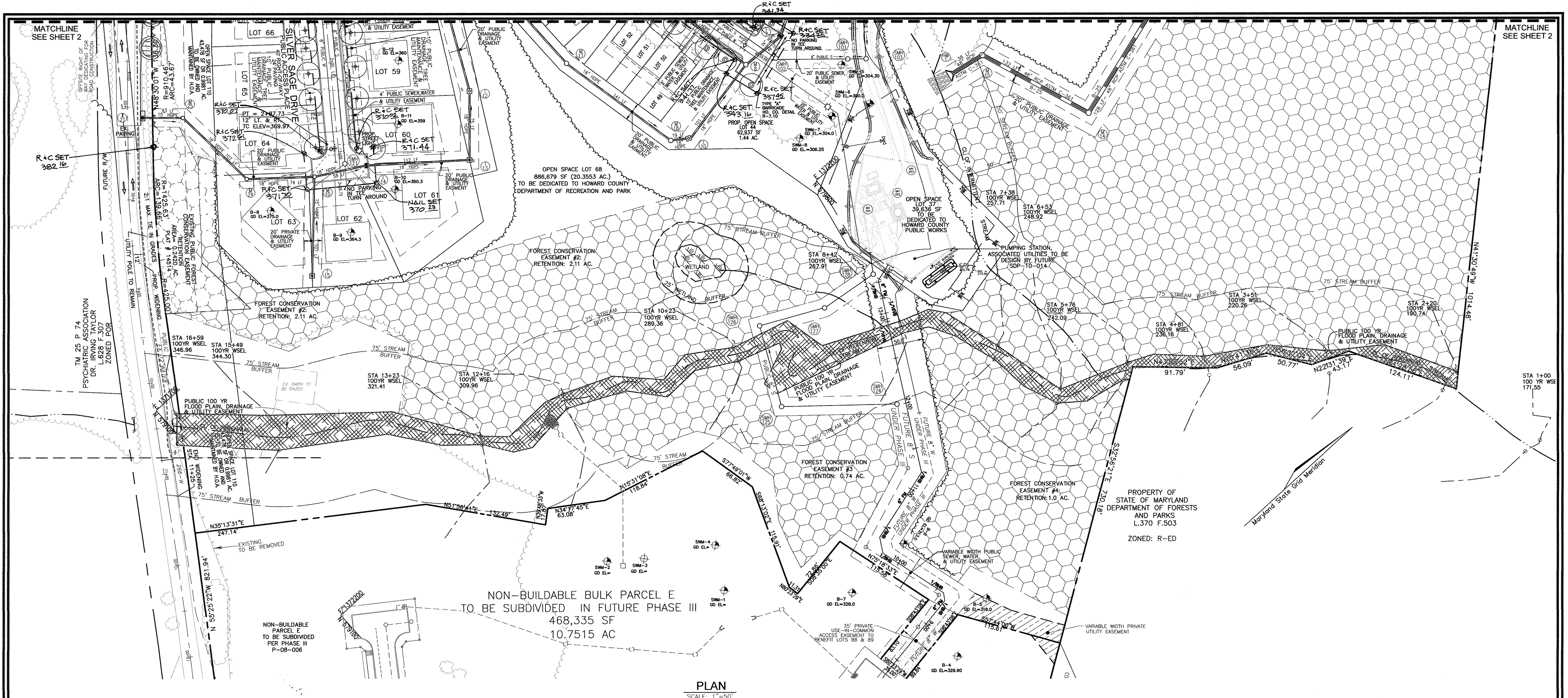
**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET TEL: 410.461.7666  
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

PROFESSIONAL CERTIFICATE  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2016

DESIGN BY: R.J./R.H.V.  
 DRAWN BY: R.J.  
 CHECKED BY: R.H.V.  
 DATE: MAY 2010  
 SCALE:  
 W.O. NO.: 04-145

3 SHEET OF 30



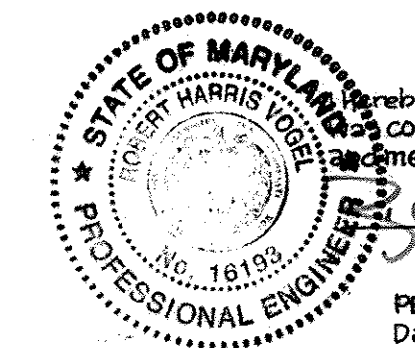


- LEGEND**
- EXISTING TREES TO REMAIN
  - FOREST CONSERVATION AREA (RETENTION)
  - PUBLIC 100-YR FLOODPLAIN DRAINAGE & UTILITY EASEMENT
  - WETLANDS BUFFER
  - STREAM CENTERLINE
  - STREAM BUFFER
  - NO WOODY BUFFER
  - PROP. STREET LIGHT
  - PROP. STREET SIGNS

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*W. P. ...* 6-20-12  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*K. J. ...* 3/20/12  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*M. ...* 7/30/12  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



**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: \_\_\_\_\_  
 PE NO. 16193  
 Date: 7/27/15

**OWNERS**  
 AUTUMN RIVER CORPORATION  
 4100 COLLEGE AVE.  
 ELLICOTT CITY MD 21042-7819  
 21043 - 5506  
 (410) 465-3500

**DEVELOPER**  
 AUTUMN DEVELOPMENT CORPORATION  
 C/O LAND DESIGN & DEVELOPMENT, INC.  
 5300 DORSEY HALL DR STE 102  
 ELLICOTT CITY MD 21042-7819  
 ATTN: MR. DONALD R. REIJWER  
 (443) 367-0422

**REVISED FINAL ROAD CONSTRUCTION PLAN  
 AUTUMN RIVER - PHASE II  
 ROAD CONSTRUCTION PLAN**

LOTS: 5-29, 31-36, 38-43, 45-67  
 OPEN SPACE LOT 30, 37, 44, 68, & 110  
 & NON-BUILDABLE PARCEL C  
 & NON-BUILDABLE BULK PARCEL D, E, & F  
 RESUBDIVISION OF EXISTING LOT 1, 2, 3  
 & BULK PARCEL A

TAX MAP #25 GRID 14 & 21 PARCELS 172 & 279  
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

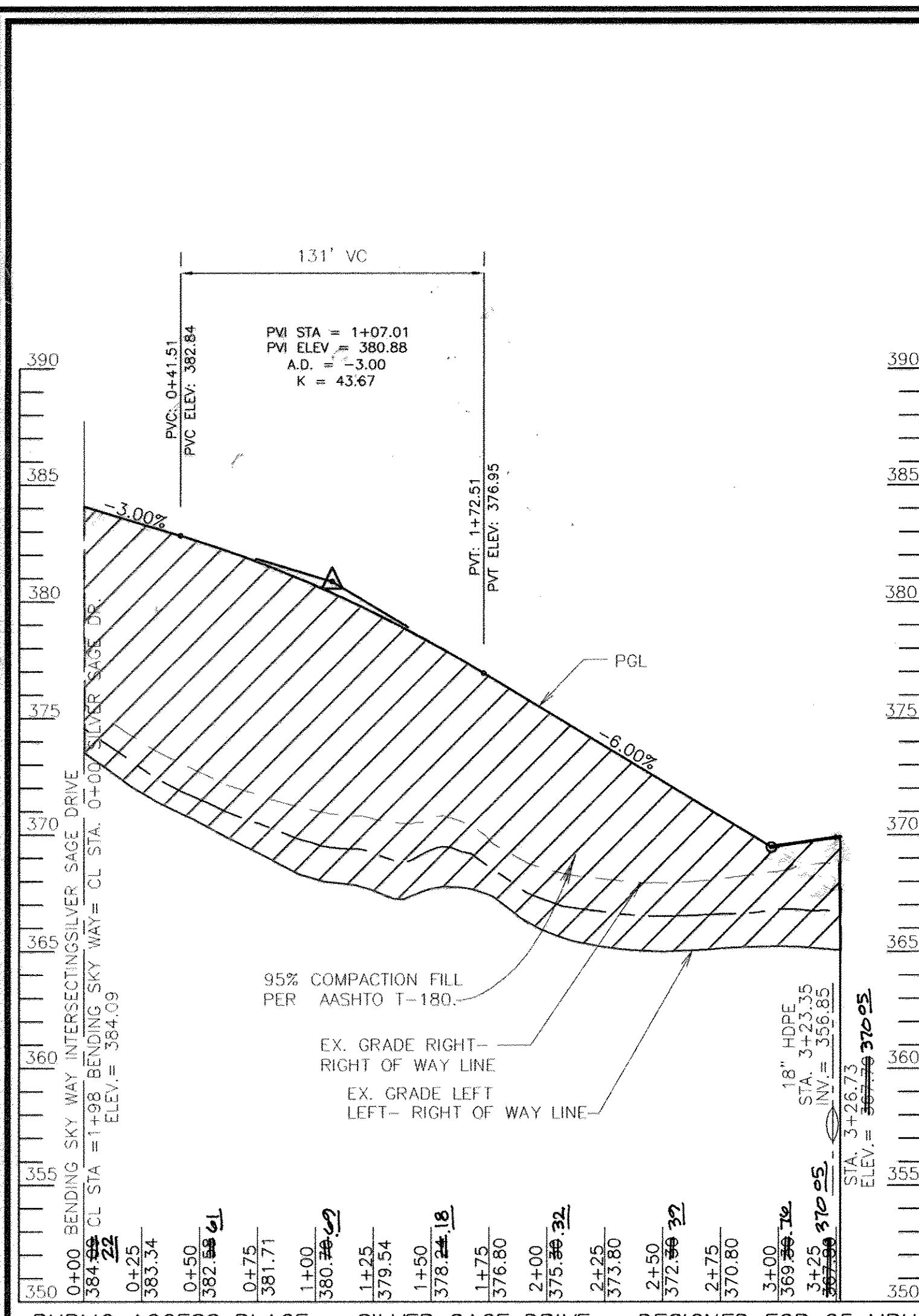
**ROBERT H. VOGEL  
 ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET TEL: 410.461.7666  
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

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 EXPIRATION DATE: 09-27-2010

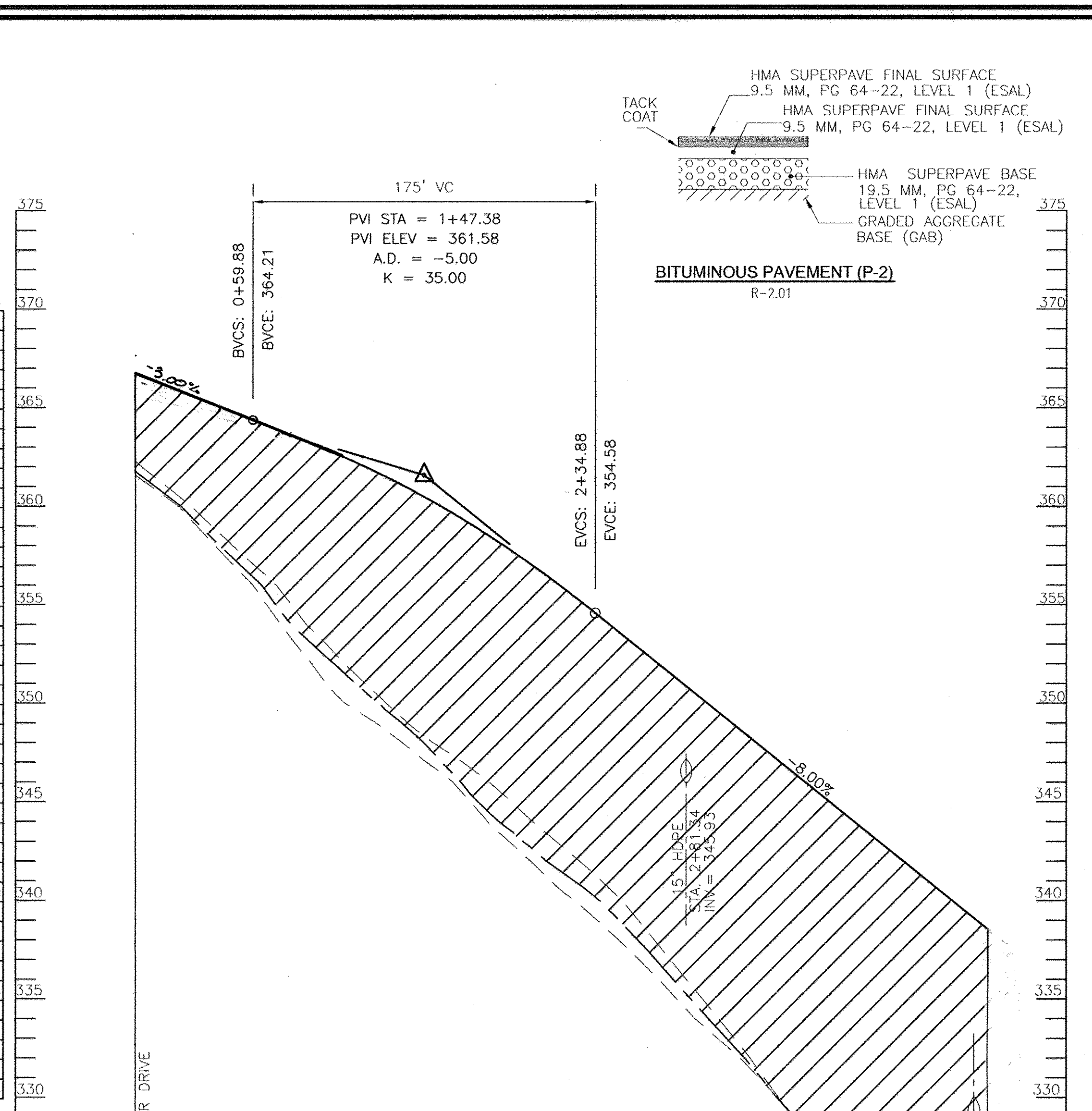
DESIGN BY: RJ/RHV  
 DRAWN BY: RJ  
 CHECKED BY: RHV  
 DATE: MAY 2010  
 SCALE: AS SHOWN  
 W.O. NO.: 04-145

4 SHEET OF 30

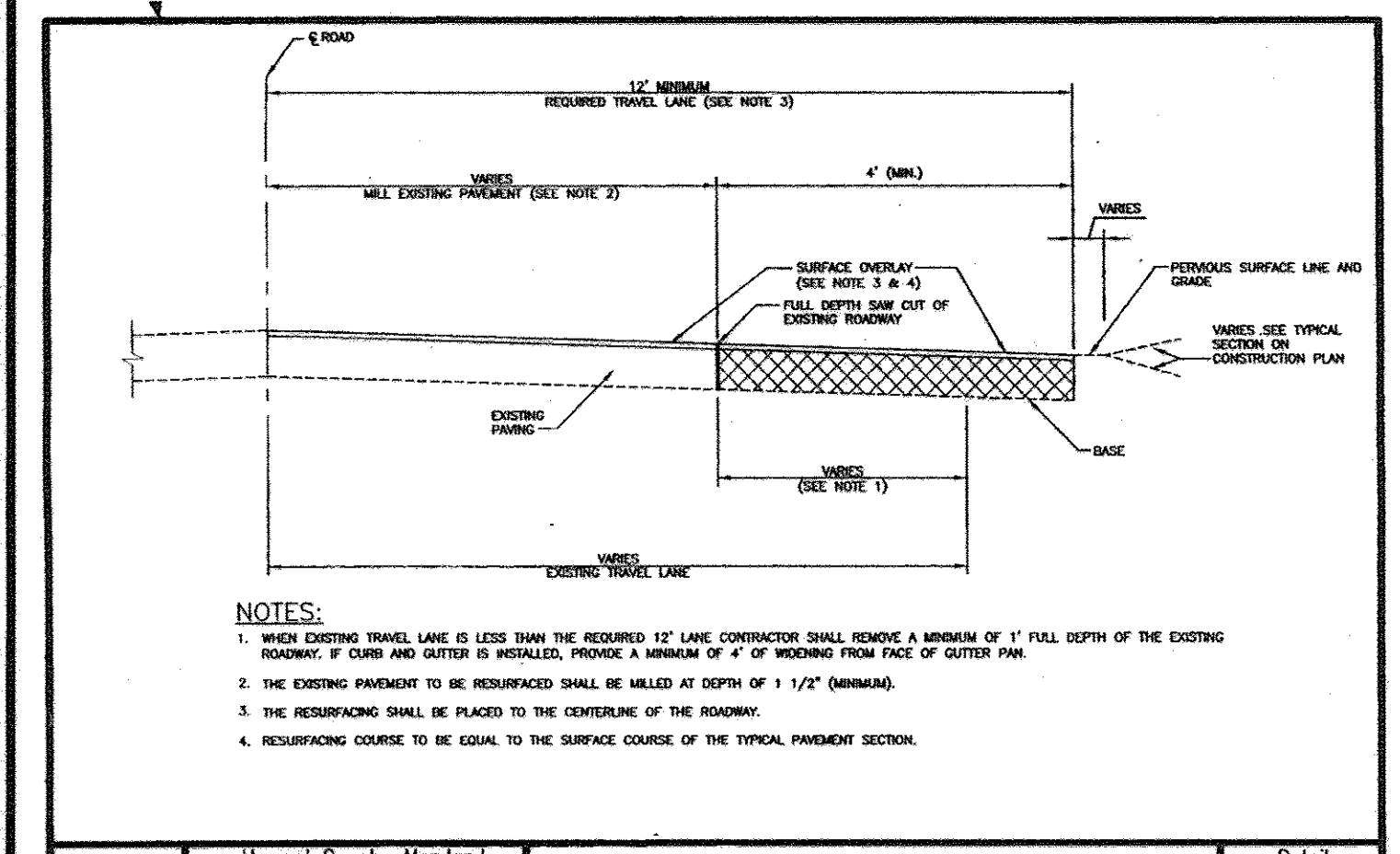




**PUBLIC ACCESS PLACE - SILVER SAGE DRIVE - DESIGNED FOR 25 MPH**  
 POSTED DESIGN SPEED = 15 MPH  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'

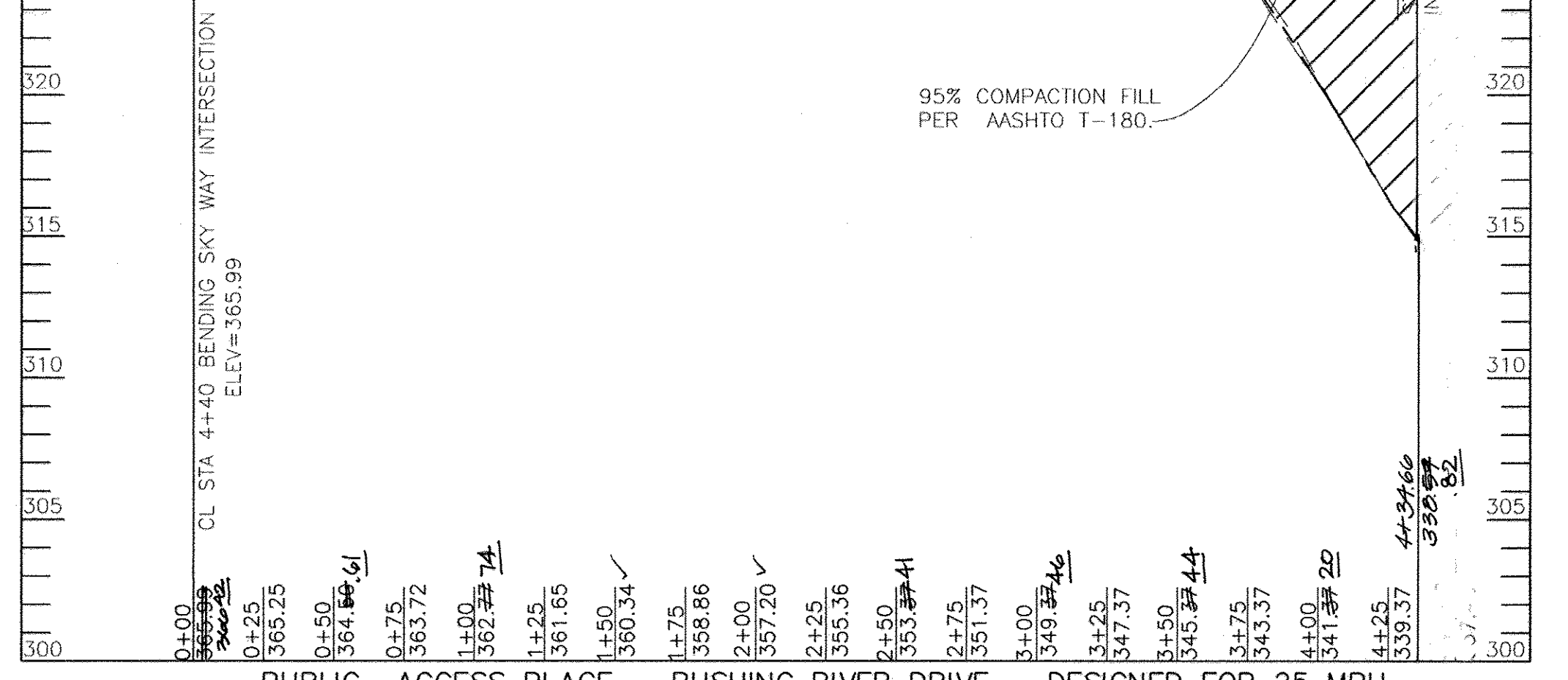


**PUBLIC ACCESS PLACE - RUSHING RIVER DRIVE - DESIGNED FOR 25 MPH**  
 POSTED DESIGN SPEED = 15 MPH  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'



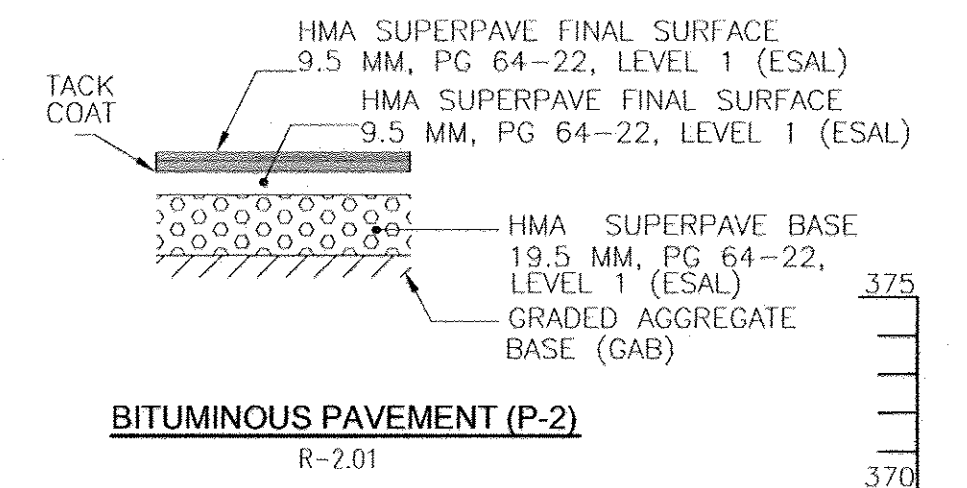
**HOWARD COUNTY, MARYLAND**  
 Department of Public Works  
 Existing Roadway Widening Strip  
 Detail R-1.08

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 With 2.04.11 G-22-10  
 CHIEF, BUREAU OF HIGHWAYS DATE  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 7/19/10  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
 7.13.10  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

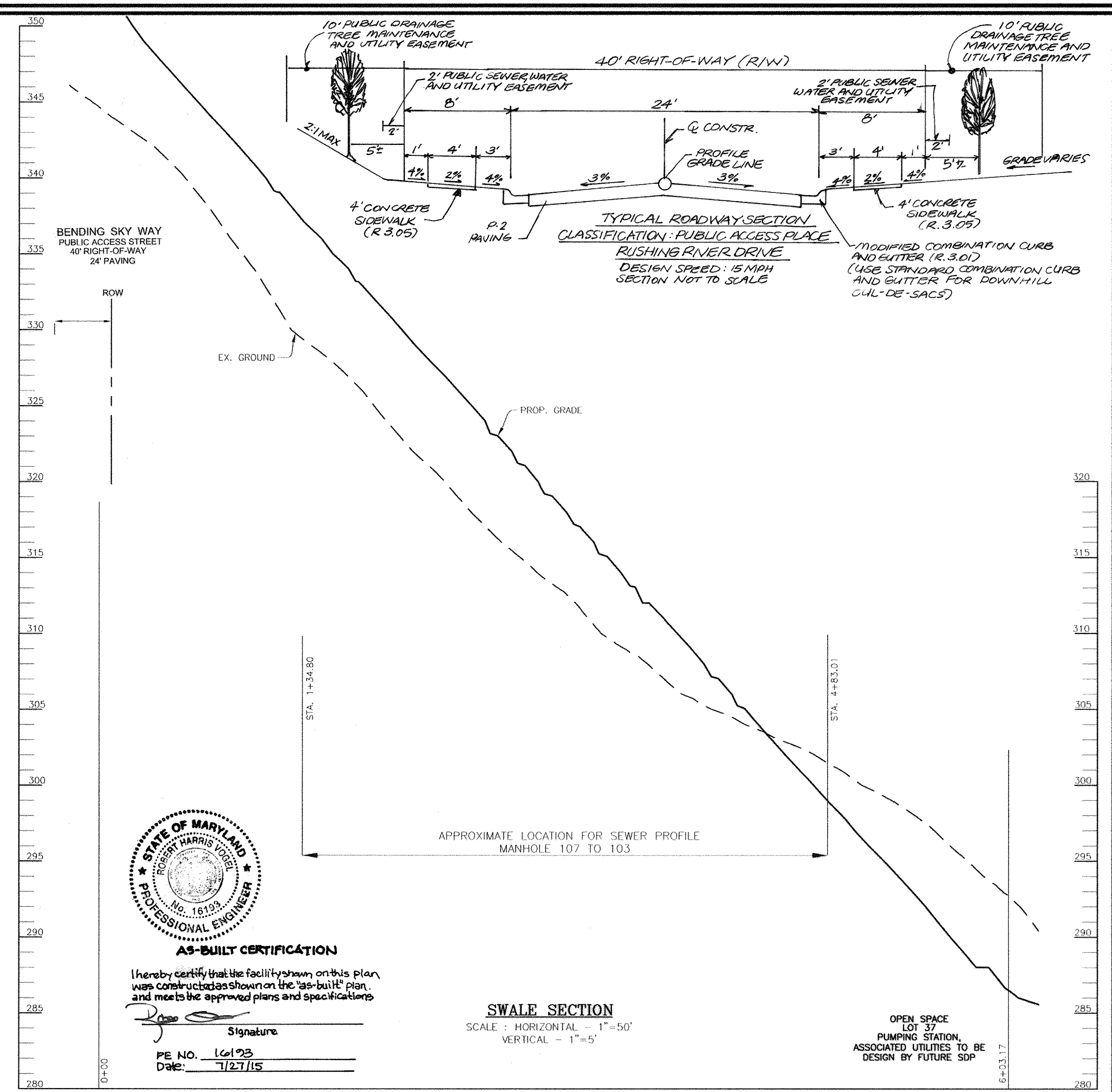


**PUBLIC ACCESS PLACE - RUSHING RIVER DRIVE - DESIGNED FOR 25 MPH**  
 POSTED DESIGN SPEED = 15 MPH  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 With 2.04.11 G-22-10  
 CHIEF, BUREAU OF HIGHWAYS DATE  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 7/19/10  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
 7.13.10  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



**BITUMINOUS PAVEMENT (P-2)**  
 R-2.01



**TYPICAL ROADWAY SECTION**  
 CLASSIFICATION: PUBLIC ACCESS PLACE  
 RUSHING RIVER DRIVE  
 DESIGN SPEED: 15 MPH  
 SECTION NOT TO SCALE



**SWALE SECTION**  
 SCALE: HORIZONTAL - 1"=50'  
 VERTICAL - 1"=5'

**AS-BUILT CERTIFICATION**  
 I hereby certify that the facility shown on this plan was constructed as shown on the 'as-built' plan, and meets the approved plans and specifications.  
 Signature: [Signature]  
 PE NO. 16193  
 Date: 7/27/15

**OWNERS**  
 AUTUMN RIVER CORPORATION  
 4100 COLLEGE AVE.  
 ELLICOTT CITY, MD 21042-7819  
 21043-5506  
 (410) 465-3500

**DEVELOPER**  
 AUTUMN DEVELOPMENT CORPORATION  
 C/O LAND DESIGN & DEVELOPMENT, INC.  
 5300 DORSEY HALL DR STE 102  
 ELLICOTT CITY, MD 21042-7819  
 ATTN: MR. DONALD R. REUWER  
 (443) 367-0422

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DESIGN BY: R.J./RHV  
 DRAWN BY: RJ  
 CHECKED BY: RHV  
 DATE: MAY 2010  
 SCALE: AS SHOWN  
 W.O. NO.: 04-145

5 SHEET OF 30

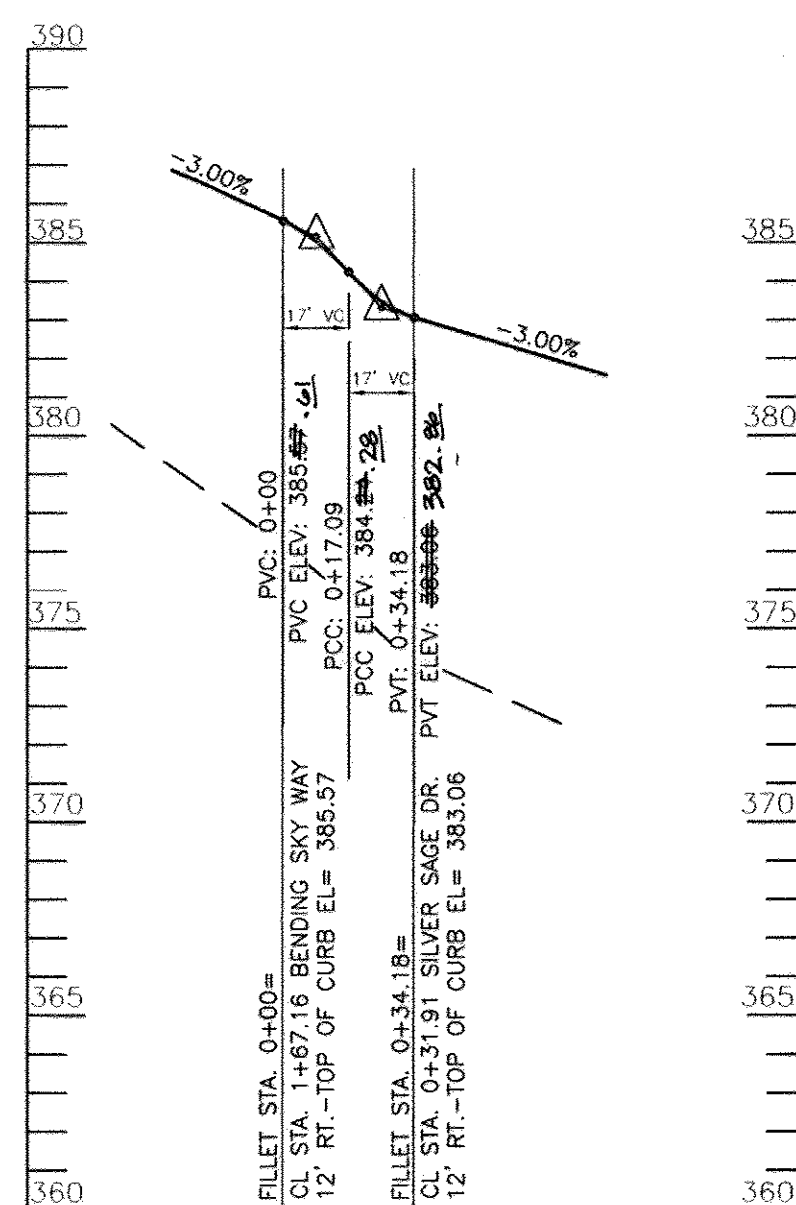
NO.	REVISION	DATE
2	MODIFICATION TO PROPOSED RUSHING RIVER DRIVE BASED ON RECONFIGURATION OF LOTS ALONG ROADWAY	2/7/12

**FINAL ROAD CONSTRUCTION PLAN**  
**AUTUMN RIVER - PHASE II**  
**ROAD CONSTRUCTION PLAN**  
 LOTS: 5-29, 31-36, 38-43, 45-67  
 OPEN SPACE LOT 30, 37, 44, 68 & 110  
 & NON-BUILDABLE PARCEL C  
 RESUBDIVISION OF EXISTING LOT 1, 2, 3  
 & BULK PARCEL A  
 TAX MAP #25 GRID 14 & 21  
 2ND ELECTION DISTRICT  
 PARCELS 172 & 279  
 HOWARD COUNTY, MARYLAND

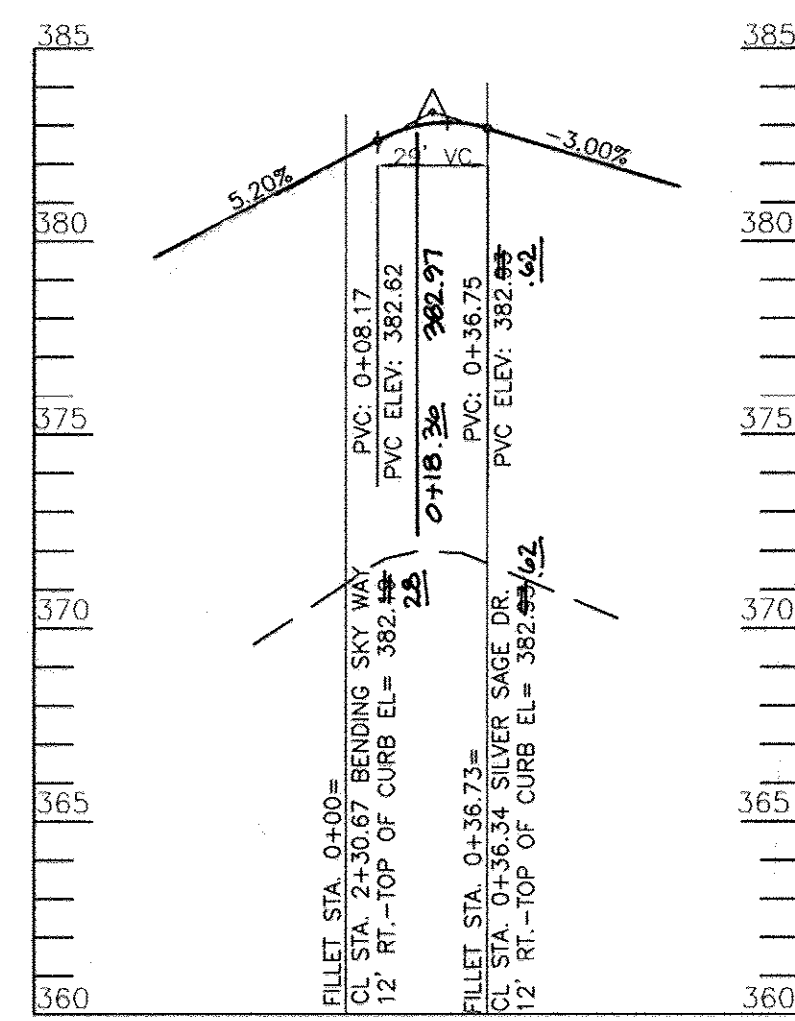
**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET  
 ELLICOTT CITY, MD 21043  
 TEL: 410.461.2666  
 FAX: 410.461.8969

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 With 2.04.11 G-22-10  
 CHIEF, BUREAU OF HIGHWAYS DATE  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 7/19/10  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
 7.13.10  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

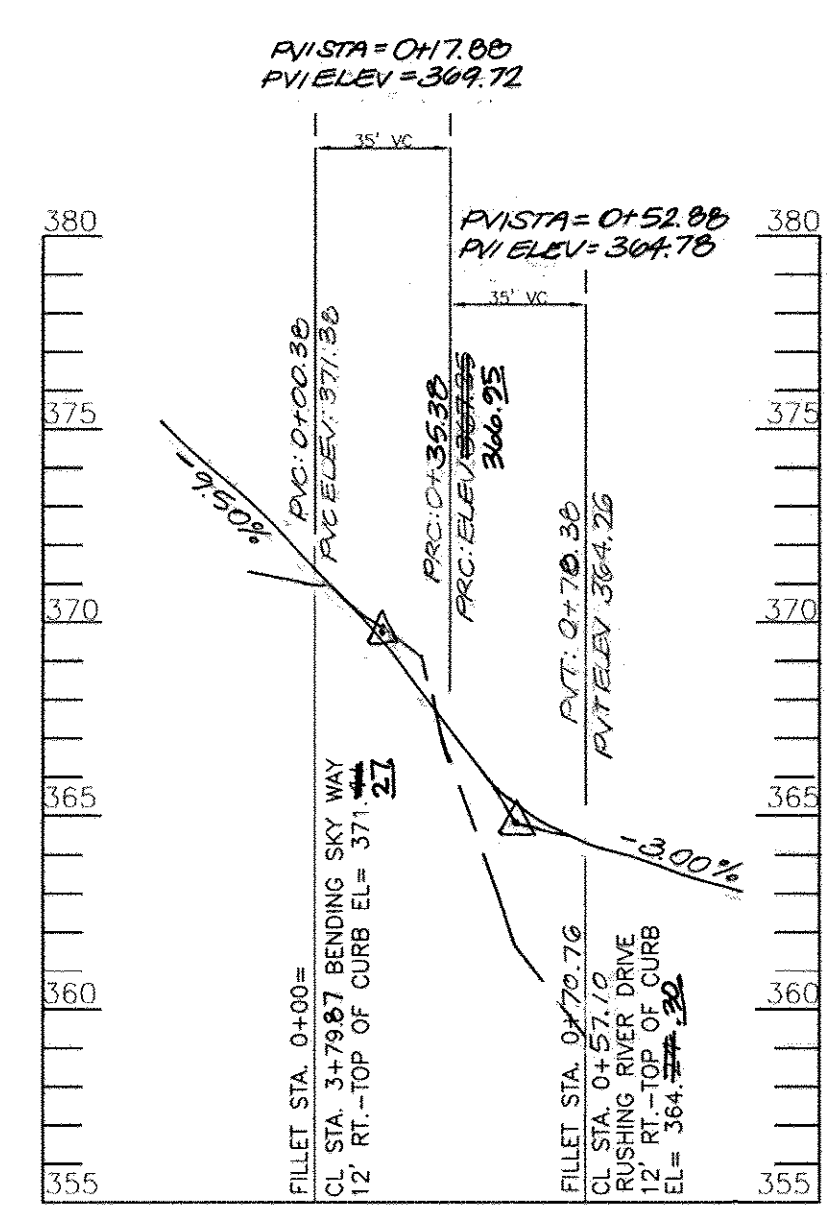




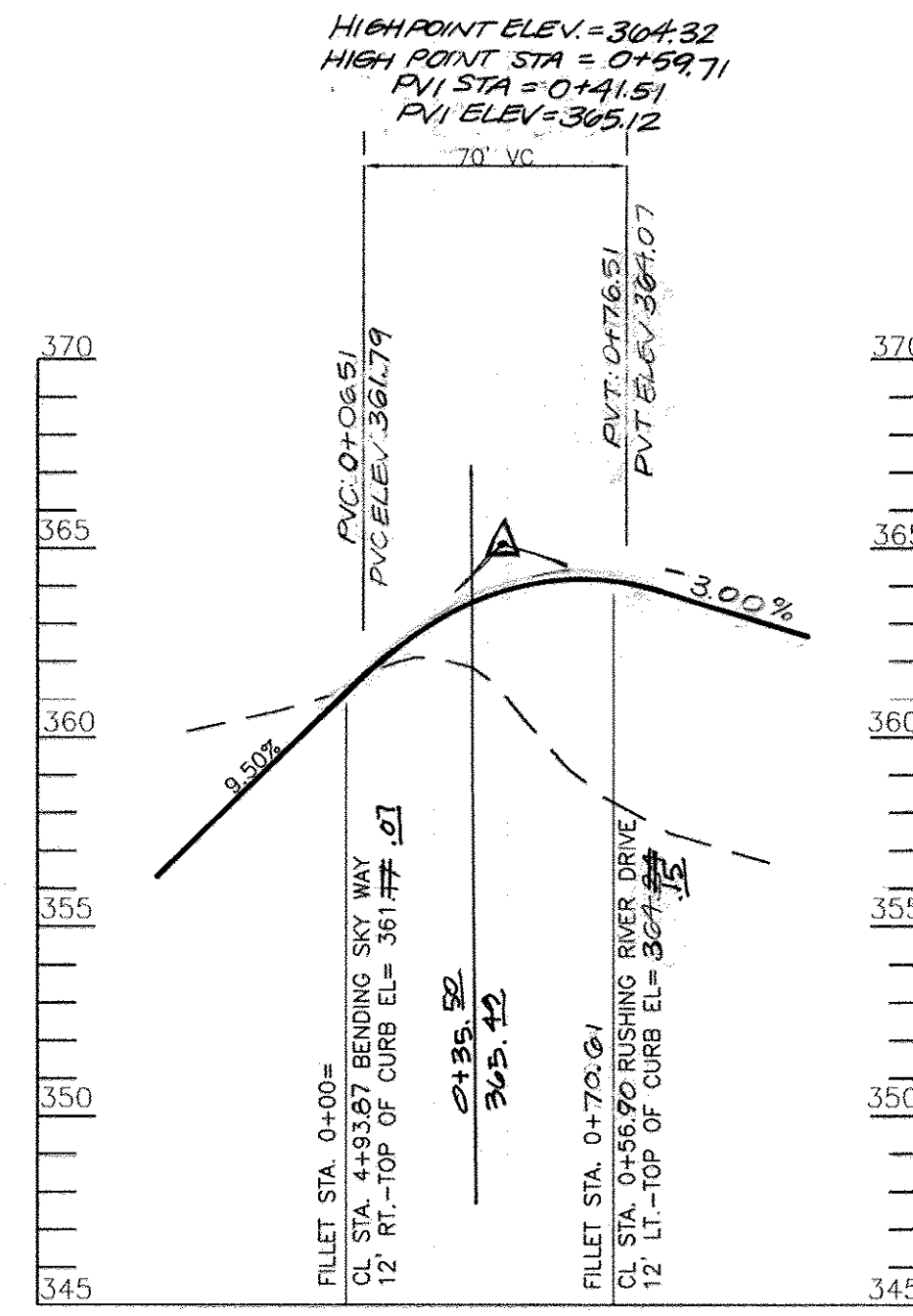
**TOP OF CURB  
FILLET PROFILE-(F-1)**  
SILVER STAGE DRIVE  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'



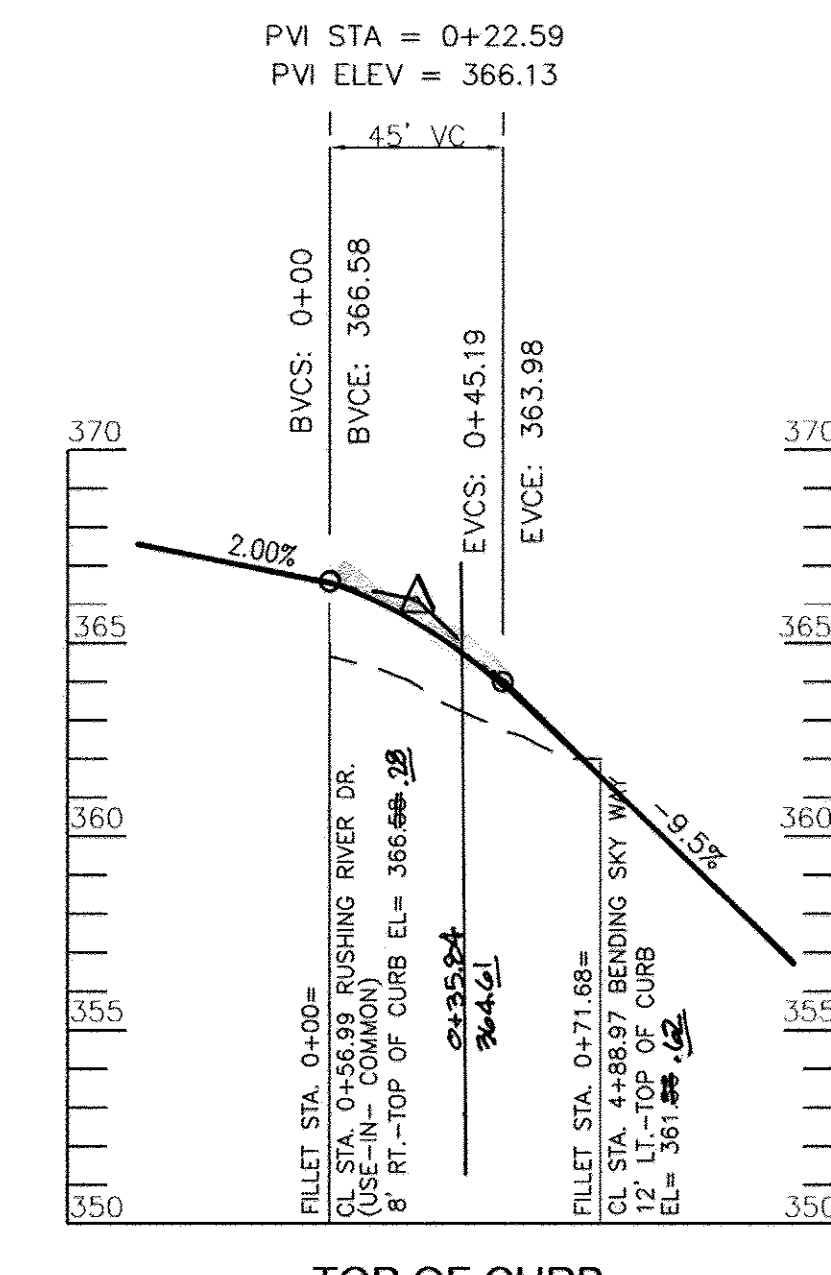
**TOP OF CURB  
FILLET PROFILE-(F-2)**  
SILVER STAGE DRIVE  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'



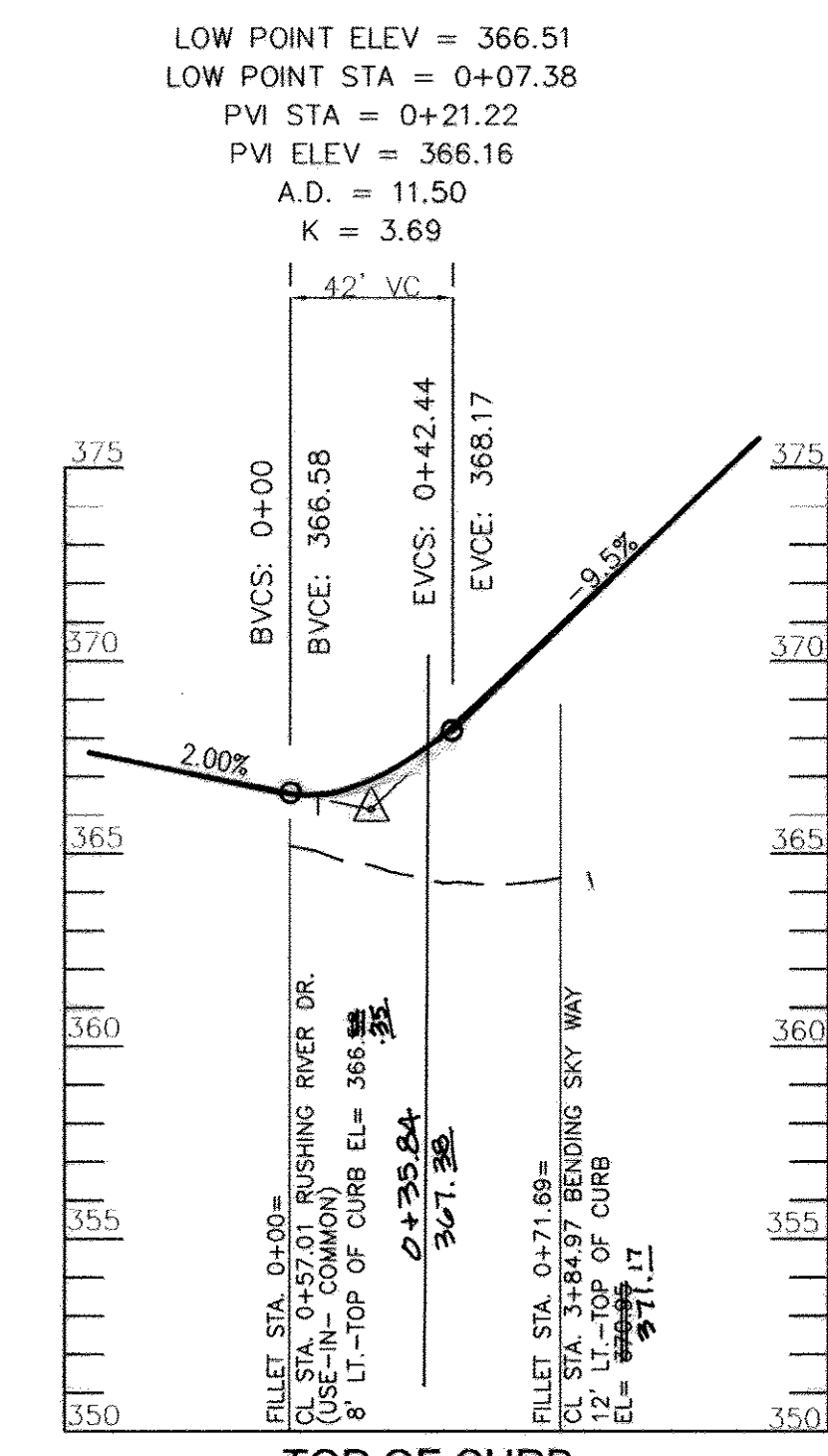
**TOP OF CURB  
FILLET PROFILE-(F-3)**  
RUSHING RIVER DRIVE  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'



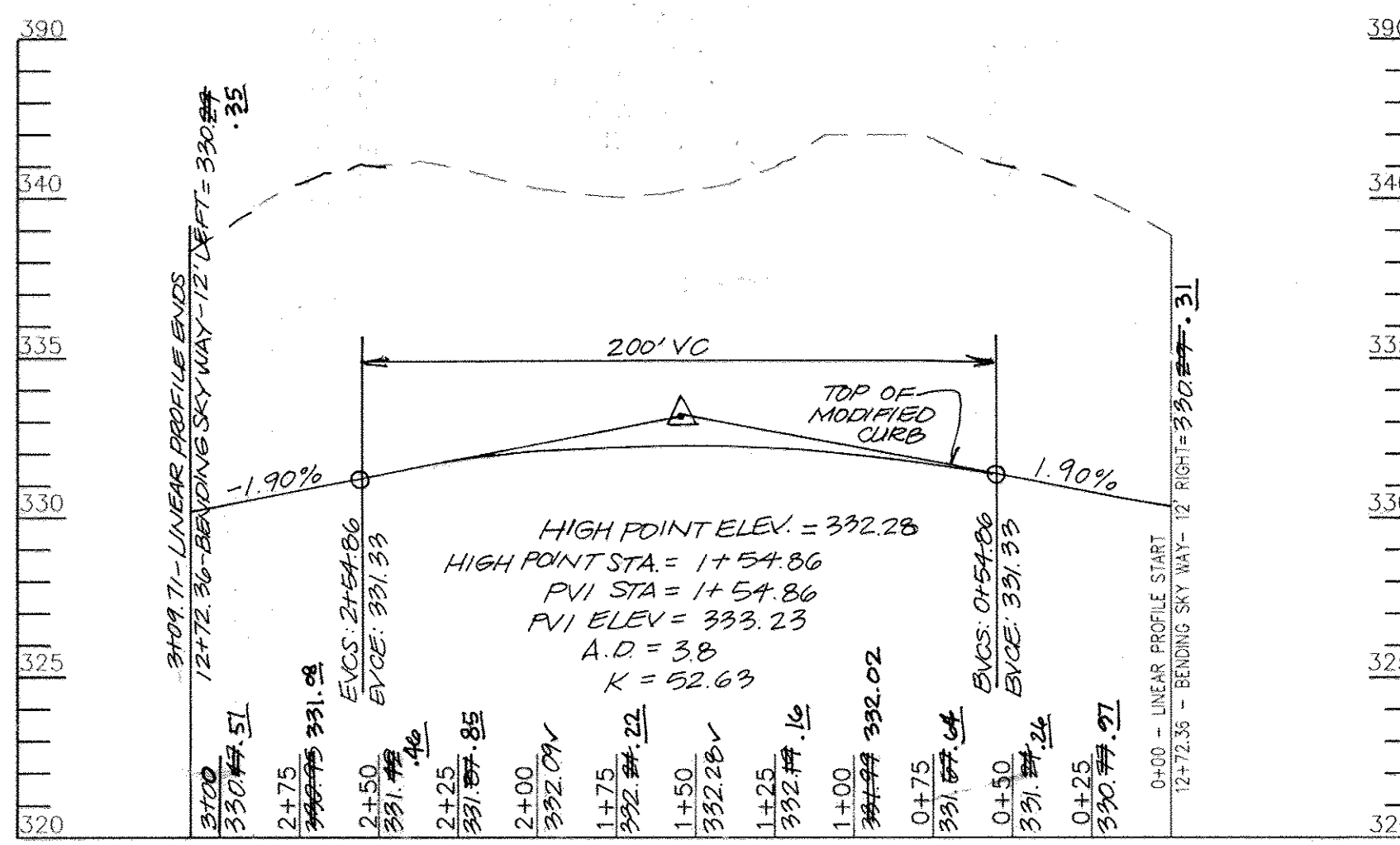
**TOP OF CURB  
FILLET PROFILE-(F-4)**  
RUSHING RIVER DRIVE  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'



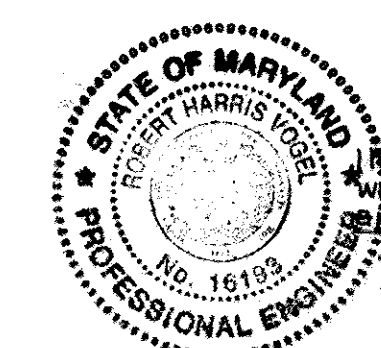
**TOP OF CURB  
FILLET PROFILE-(F-5)**  
USE IN COMMON DRIVE  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'



**TOP OF CURB  
FILLET PROFILE-(F-6)**  
USE IN COMMON DRIVE  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'



**LINEAR PROFILE OF CUL-DE-SAC**  
SCALE: HORIZONTAL - 1"=50'  
VERTICAL - 1"=5'



**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: \_\_\_\_\_  
PE NO. 16193  
Date: 7/27/15

APPROVED: DEPARTMENT OF PUBLIC WORKS  
WILLIAM J. MULLIN, CHIEF, BUREAU OF HIGHWAYS, DATE: 6.22.10  
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Kurt Sheehan, CHIEF, DIVISION OF LAND DEVELOPMENT, DATE: 7/19/10  
Charles Edwards, CHIEF, DEVELOPMENT ENGINEERING DIVISION, DATE: 7.13.10

NO.	REVISION	DATE
2	MODIFICATION TO PROPOSED RUSHING RIVER DRIVE BASED ON RECONFIGURATION OF LOTS ALONG ROADWAY	2/7/12
1	MODIFY GRADING BENDING SKY WAY TO LOWER ROADWAY, CUL-DE-SAC AND STORM DRAIN	2-2-11

**OWNERS**  
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4100 COLLEGE AVE.  
ELLCOTT CITY, MD 21042-7819  
21043 - 5506  
(410) 465-3500  
**DEVELOPER**  
AUTUMN DEVELOPMENT CORPORATION  
C/O LAND DESIGN & DEVELOPMENT, INC.  
5300 DORSEY HALL DR STE 102  
ELLCOTT CITY MD 21042-7819  
ATTN: MR. DONALD R. REUWER  
(443) 367-0422

**FINAL ROAD CONSTRUCTION PLAN  
AUTUMN RIVER - PHASE II  
ROAD CONSTRUCTION PLAN**  
LOTS: 5-29, 31-36, 38-43, 45-67  
OPEN SPACE LOT 30, 37, 44, 68 & 110  
& NON-BUILDABLE PARCEL C  
& NON-BUILDABLE BULK PARCEL D, E & F  
RESUBDIVISION OF EXISTING LOT 1, 2, 3  
& BULK PARCEL A PARCELS 172 & 279  
TAX MAP #25 GRID 14 & 21 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET TEL: 410.461.7666  
ELLCOTT CITY, MD 21043 FAX: 410.461.8961

DESIGN BY: R.J./RHV  
DRAWN BY: RJ  
CHECKED BY: RHV  
DATE: MAY 2010  
SCALE: AS SHOWN  
W.D. NO.: 04-145

PROFESSIONAL CERTIFICATE  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-30-2010

6 SHEET OF 30



SOILS LEGEND		
SYMBOL	NAME / DESCRIPTION	GROUP
AdB2	ALDINO SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	D
AdC2	ALDINO SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	D
BrB2	BRANDYWINE LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
BrD2	BRANDYWINE LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED	C
BrD3	BRANDYWINE LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	C
GnB2	GLENNVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
LeB2	LEGORE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
LeC3	LEGORE SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	C
MeE	MANOR LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
MnD	MANOR LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
MnF	MONTALTO AND RELAY VERY STONY SILT LOAMS, 3 TO 25 PERCENT SLOPES	B
NnC2	NESHAMINY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
ReC2	WATCHUNG SILT LOAM, 3 TO 8 PERCENT SLOPES	B
St	STONY LAND	B
WaB	WATCHUNG SILT LOAM, 3 TO 8 PERCENT SLOPES	D

- GENERAL NOTES**
- ALL EARTH DIKES ARE TO BE PLACED IN WORKING ORDER AT THE END OF EACH WORKING DAY.
  - IMBRICATE SF/SF IN 25' SEGMENTS AS REQUIRED UPHILL BY 2' IN ELEVATION.
  - NO IN STREAM CONSTRUCTION MAY OCCUR FROM 3/1 TO 6/15.
  - PROVIDE IMMEDIATE STABILIZATION OF ALL LIMIT OF DISTURBANCE WITHIN BUFFER AREA WITH EROSION CONTROL MATTING.

- LEGEND**
- FOREST CONSERVATION AREA (RETENTION)
  - NO WOODY BUFFER
  - WETLANDS
  - PUBLIC 100-YR FLOODPLAIN DRAINAGE & UTILITY EASEMENT
  - EXISTING CONTOUR
  - EXISTING TREES TO REMAIN
  - WETLANDS BUFFER
  - STREAM CENTERLINE
  - STREAM BUFFER
  - EROSION CONTROL MATTING
  - AREA OF 15 TO 24.9 PERCENT SLOPES
  - AREA OF 25 PERCENT OR GREATER SLOPES
  - SUPER SILT FENCE
  - LIMIT OF DISTURBANCE
  - EARTHDIKE
  - STABILIZED CONSTRUCTION ENTRANCE



**REVISED FINAL ROAD CONSTRUCTION PLAN  
AUTUMN RIVER - PHASE II  
GRADING & SEDIMENT CONTROL PLAN**  
 LOTS: 5-29, 31-36, 38-43, 45-67  
 OPEN SPACE LOT 30, 37, 44, 68, & 110  
 & NON-BUILDABLE PARCEL C  
 & NON-BUILDABLE BULK PARCEL D, E, & F  
 RESUBDIVISION OF EXISTING LOT 1, 2, 3  
 & BULK PARCEL A

TAX MAP #25 GRID 14 & 21 PARCELS 172 & 279  
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL  
ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET TEL: 410.461.7666  
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 [Signature] DATE: 6-20-12  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 [Signature] DATE: 8/08/12  
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] DATE: 7/20/12  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

**ENGINEERS CERTIFICATE**  
 I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

[Signature] DATE: 5/17/12  
 SIGNATURE OF ENGINEER  
 ROBERT H. VOGEL

**DEVELOPER'S CERTIFICATE**  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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.

[Signature] DATE: 4/18/12  
 SIGNATURE OF DEVELOPER  
 RONALD SPAN

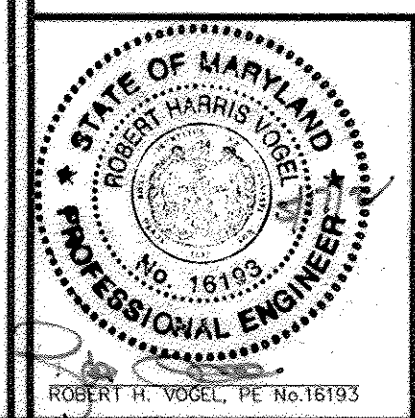
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] DATE: 6/12/12  
 HOWARD S.C.D.

**NO AS-BUILT INFORMATION  
THIS SHEET.**

**OWNERS**  
 AUTUMN RIVER CORPORATION  
 4100 COLLEGE AVE.  
 ELLICOTT CITY, MD 21042-7819  
 (410) 465-5506  
 (410) 465-3500

**DEVELOPER**  
 AUTUMN DEVELOPMENT CORPORATION  
 C/O LAND DESIGN & DEVELOPMENT, INC.  
 5300 DORSEY HALL DR STE 102  
 ELLICOTT CITY, MD 21042-7819  
 ATTN: MR. DONALD R. REUWER  
 (443) 367-0422

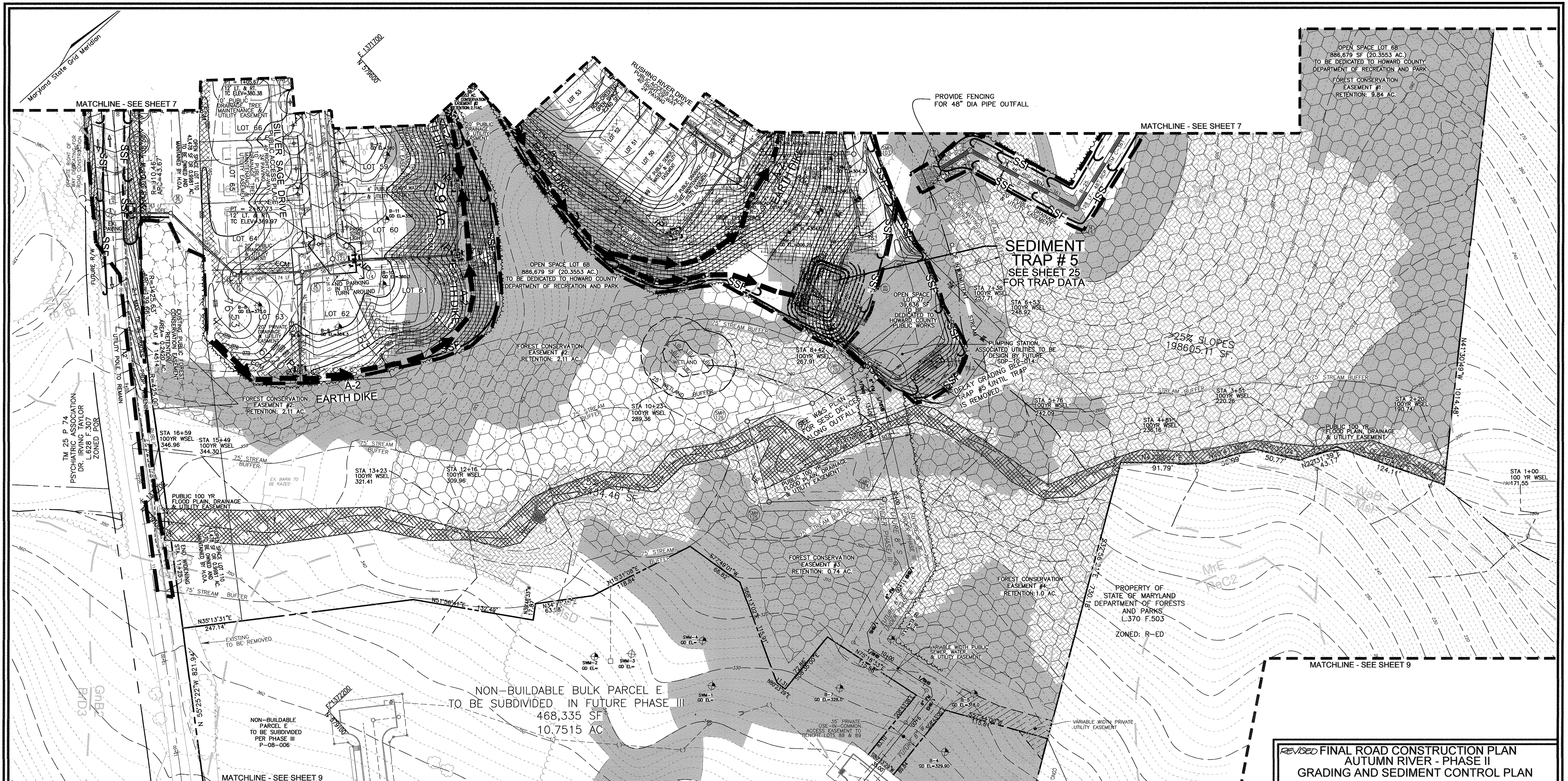


DESIGN BY: RJ/RHV  
 DRAWN BY: RJ  
 CHECKED BY: RHV  
 DATE: MAY 2010  
 SCALE: 1"=50'  
 W.O. NO.: 04-145

**PROFESSIONAL CERTIFICATE**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16169, EXPIRATION DATE: 09-27-2010

7 SHEET OF 30





OPEN SPACE LOT 68  
886,679 SF (20.3553 AC.)  
TO BE DEDICATED TO HOWARD COUNTY  
DEPARTMENT OF RECREATION AND PARK  
FOREST CONSERVATION  
EASEMENT #1:  
RETENTION: 9.84 AC.

SEDIMENT  
TRAP # 5  
SEE SHEET 25  
FOR TRAP DATA

OPEN SPACE LOT 68  
886,679 SF (20.3553 AC.)  
TO BE DEDICATED TO HOWARD COUNTY  
DEPARTMENT OF RECREATION AND PARK

EARTH DIKE

NON-BUILDABLE BULK PARCEL E  
TO BE SUBDIVIDED IN FUTURE PHASE III  
468,335 SF  
10.7515 AC

PROPERTY OF  
STATE OF MARYLAND  
DEPARTMENT OF FORESTS  
AND PARKS  
L.370 F.503  
ZONED: R-ED

- LEGEND**
- EXISTING CONTOUR
  - EXISTING TREES TO REMAIN
  - PROPOSED STREET TREE
  - FOREST CONSERVATION AREA (RETENTION)
  - PUBLIC 100-YR FLOODPLAIN DRAINAGE & UTILITY EASEMENT
  - WETLANDS
  - NATURAL AREA CONSERVATION EASEMENT
  - EXISTING FOREST CONSERVATION EASEMENT
  - WETLANDS BUFFER
  - STREAM CENTERLINE
  - STREAM BUFFER
  - NO WOODY BUFFER
  - AREA OF 15 TO 24.9 PERCENT SLOPES
  - AREA OF 25 PERCENT OR GREATER SLOPES
  - SUPER SILT FENCE
  - LIMIT OF DISTURBANCE
  - EARTHDIKE
  - STABILIZED CONSTRUCTION ENTRANCE
  - EROSION CONTROL MATTING
  - SSF
  - SCE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*William J. Walsh* 6-29-12  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Kathleen...* 8/09/12  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*...* 7/30/12  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**ENGINEERS CERTIFICATE**

"I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

SIGNATURE OF ENGINEER: ROBERT H. VOGEL  
DATE: 8/11/12

**DEVELOPER'S CERTIFICATE**

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

SIGNATURE OF DEVELOPER: RONALD SPAIN  
DATE: 4/13/12

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*John R. Robertson* 6/12/12  
HOWARD S.C.D. DATE

**OWNERS**  
AUTUMN RIVER CORPORATION  
4100 COLLEGE AVE.  
ELLCOTT CITY MD 21042-7819  
21043 - 5506  
(410) 465-3500

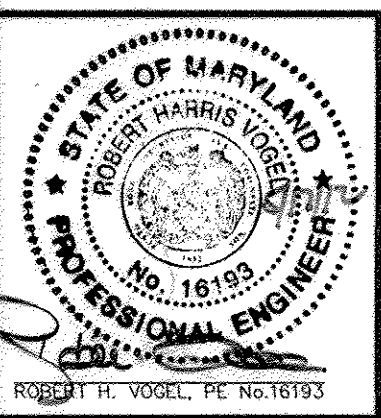
**DEVELOPER**  
AUTUMN DEVELOPMENT CORPORATION  
C/O LAND DESIGN & DEVELOPMENT, INC.  
5300 DORSEY HALL DR STE 102  
ELLCOTT CITY MD 21042-7819  
ATTN: MR. DONALD R. REUWER  
(443) 367-0422

REVISED FINAL ROAD CONSTRUCTION PLAN  
AUTUMN RIVER - PHASE II  
GRADING AND SEDIMENT CONTROL PLAN

LOTS: 5-29, 31-36, 38-43, 45-67  
OPEN SPACE LOT 30, 37, 44, 68, & 110  
& NON-BUILDABLE PARCEL C  
& NON-BUILDABLE BULK PARCEL D, E, & F  
RESUBDIVISION OF EXISTING LOT 1, 2, 3  
& BULK PARCEL A PARCELS 172 & 279

TAX MAP #25 GRID 14 & 21  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET  
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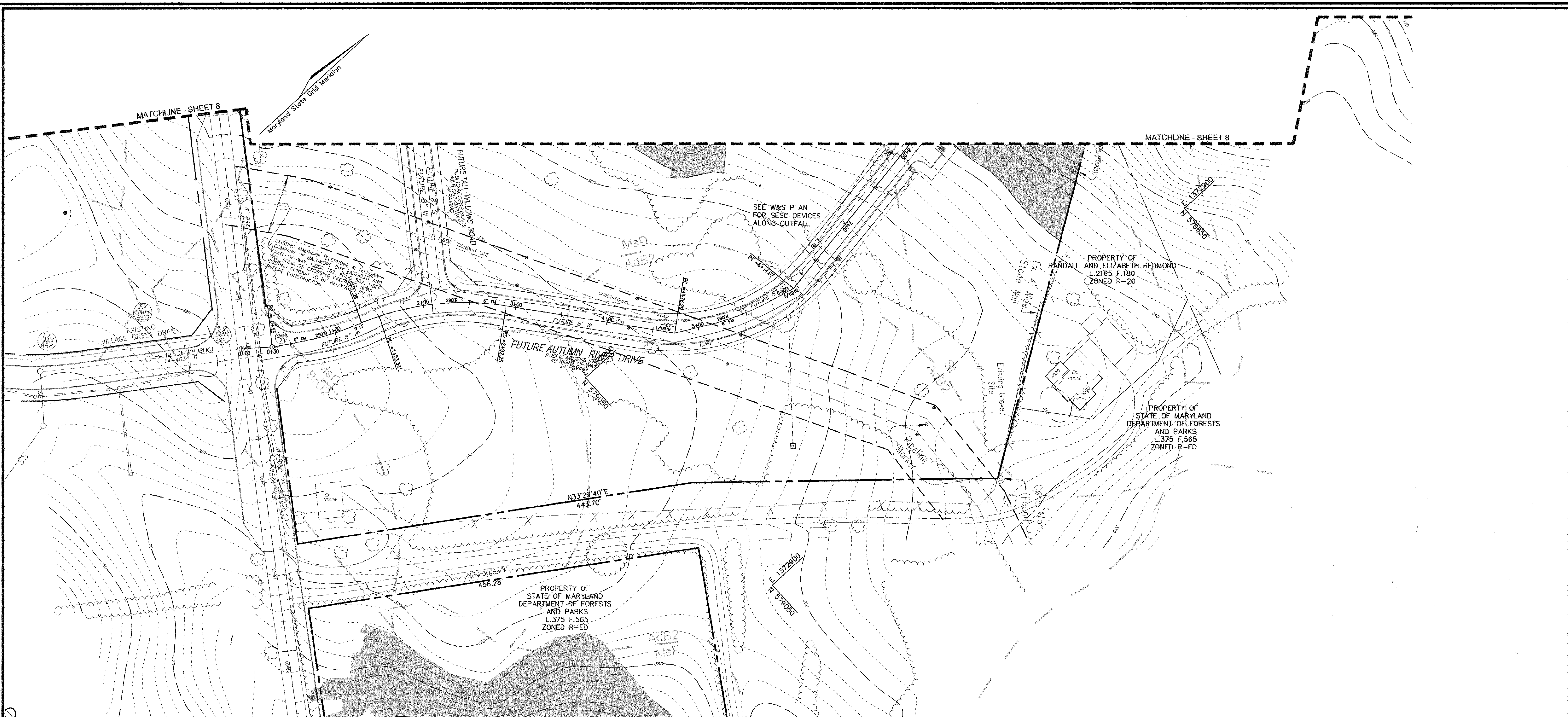
**PROFESSIONAL CERTIFICATE**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2010.

DESIGN BY: RJ/RHV  
DRAWN BY: RJ  
CHECKED BY: RHV  
DATE: MAY 2010  
SCALE: 1"=50'  
W.O. NO.: 04-145

8 SHEET OF 30





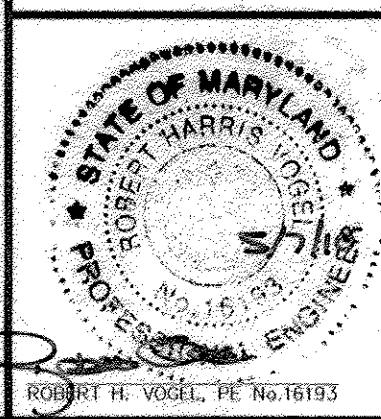
**LEGEND**

EXISTING CONTOUR	10' PUBLIC STREET TREE MAINTENANCE & UTILITY EASEMENT	PUBLIC 100-YR FLOODPLAIN DRAINAGE & UTILITY EASEMENT	WETLANDS BUFFER
EXISTING TREES TO REMAIN	PUBLIC UTILITY EASEMENT	WETLANDS	STREAM CENTERLINE
PROPOSED STREET TREE	FOREST CONSERVATION AREA (RETENTION)	NATURAL AREA CONSERVATION EASEMENT	STREAM BUFFER
PROP. STREET LIGHT	FOREST CONSERVATION AREA (REFORESTATION)	EXISTING FOREST CONSERVATION EASEMENT	NO WOODY BUFFER
150-WATT POST TOP			PROP. STREET SIGNS
100-WATT POST TOP			TREE PROTECTION FENCE
AREA OF 15 TO 24.9 PERCENT SLOPES			
AREA OF 25 PERCENT OR GREATER SLOPES			

**NO AS-BUILT INFORMATION THIS SHEET.**

**FINAL ROAD CONSTRUCTION PLAN  
AUTUMN RIVER - PHASE II  
GRADING AND SEDIMENT CONTROL PLAN**  
 LOTS: 5-29, 31-36, 38-43, 45-67  
 OPEN SPACE LOT 30, 37, 44, 68, & 110  
 & NON-BUILDABLE PARCEL C  
 & NON-BUILDABLE BULK PARCEL D, E & F  
 RESUBDIVISION OF EXISTING LOT 1, 2, 3  
 & BULK PARCEL A PARCELS 172 & 279  
 TAX MAP #25 GRID 14 & 21 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL, INC.**  
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DESIGN BY: R.J./RHV  
 DRAWN BY: RHV  
 CHECKED BY: RHV  
 DATE: MAY 2010  
 SCALE: 1"=50'  
 W.O. NO.: 04-145

9 SHEET OF 30

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*William J. M... 6-22-10*  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*... 7/14/10*  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*... 7.13.10*  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**ENGINEERS CERTIFICATE**  
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*Robert H. Vogel* 5/1/10  
 SIGNATURE OF ENGINEER DATE  
 ROBERT H. VOGEL

**DEVELOPER'S CERTIFICATE**  
 "I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

*Ross Taveak* 5/1/2010  
 SIGNATURE OF DEVELOPER DATE  
 ROSS TAVEAK

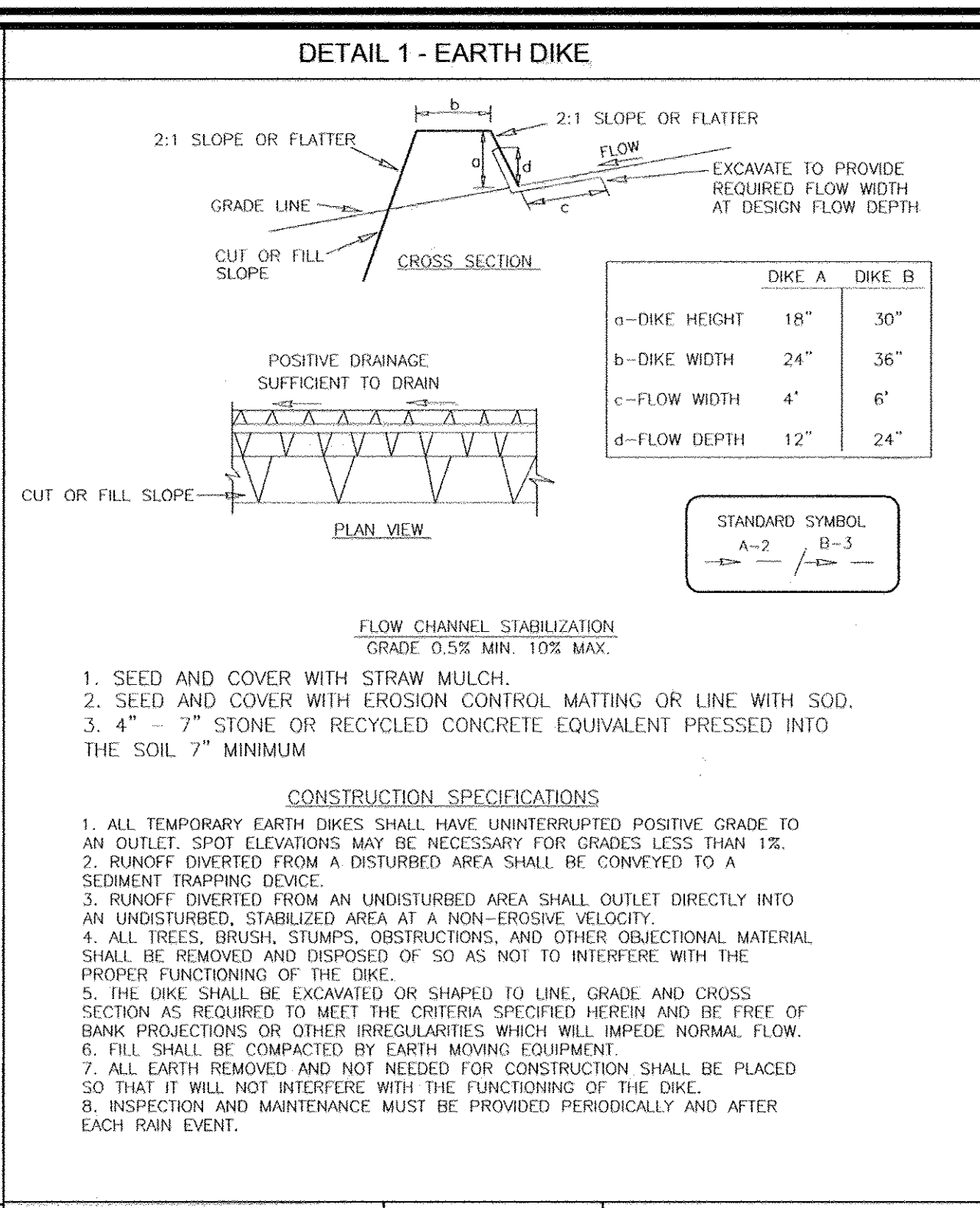
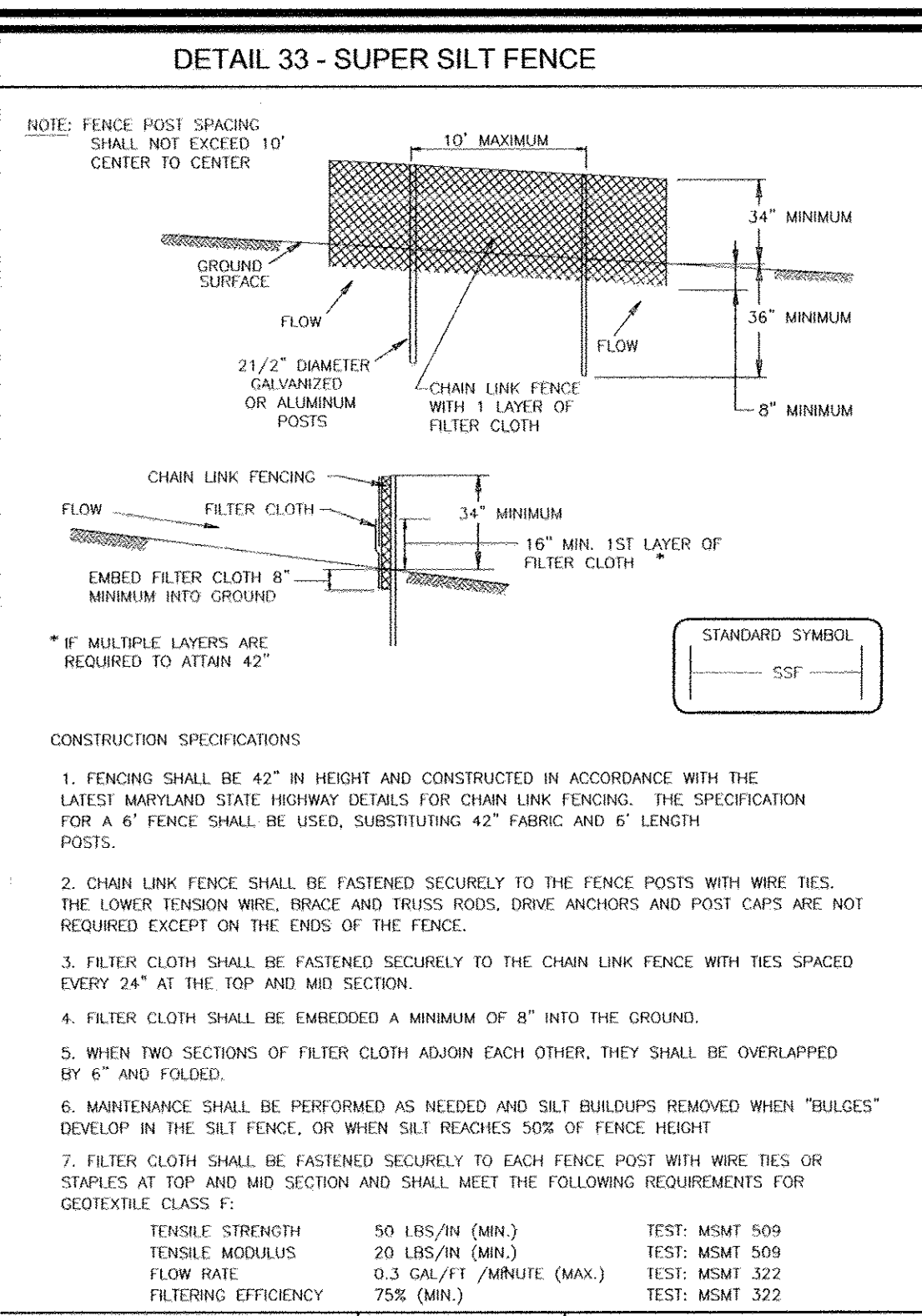
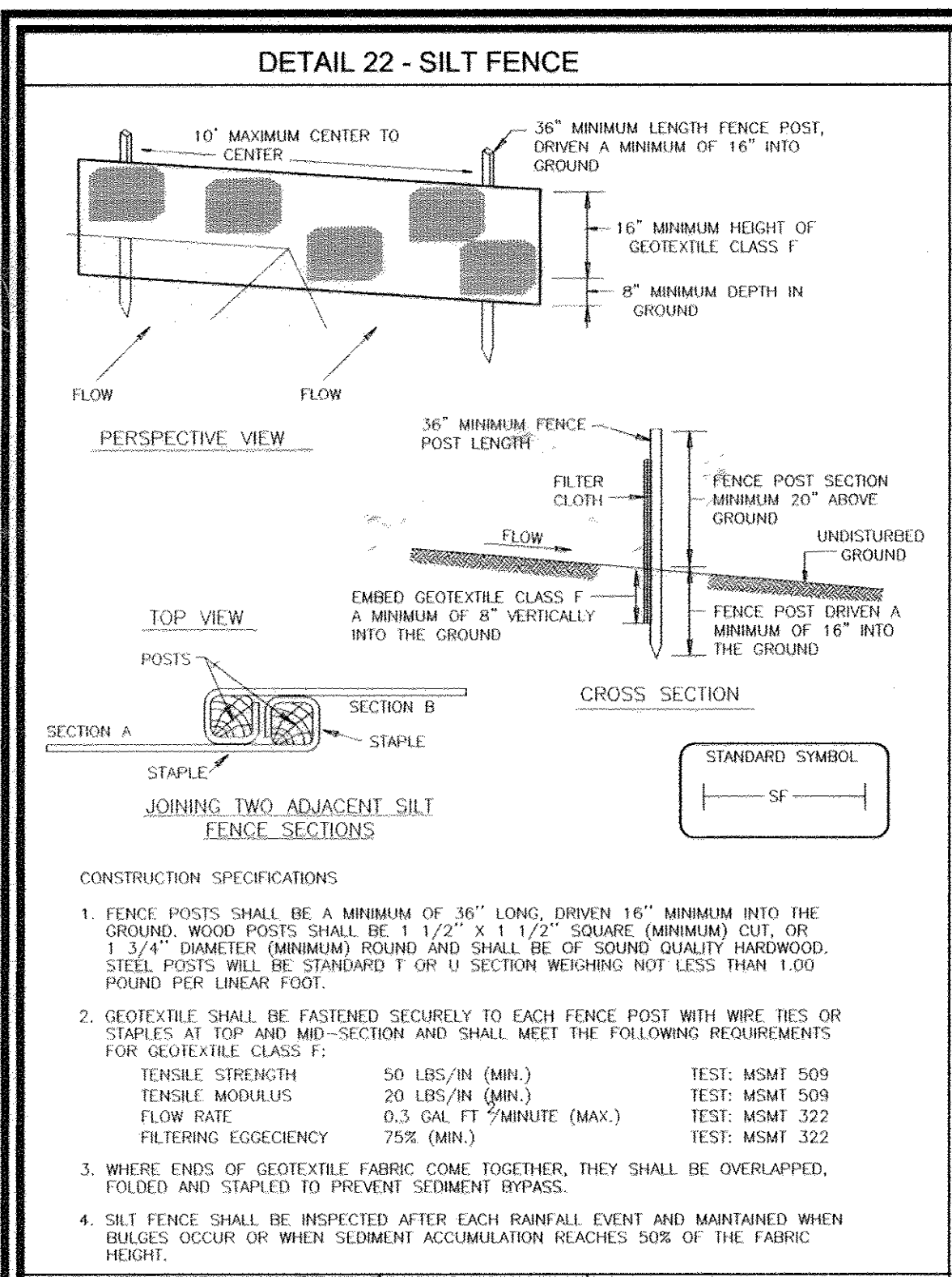
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Howard S.C.D.* 6/15/10  
 HOWARD S.C.D. DATE

**OWNERS**  
 AUTUMN RIVER CORPORATION  
 4100 COLLEGE AVE.  
 ELLICOTT CITY, MD 21042-7819  
 21043 - 5506  
 (410) 465-3500

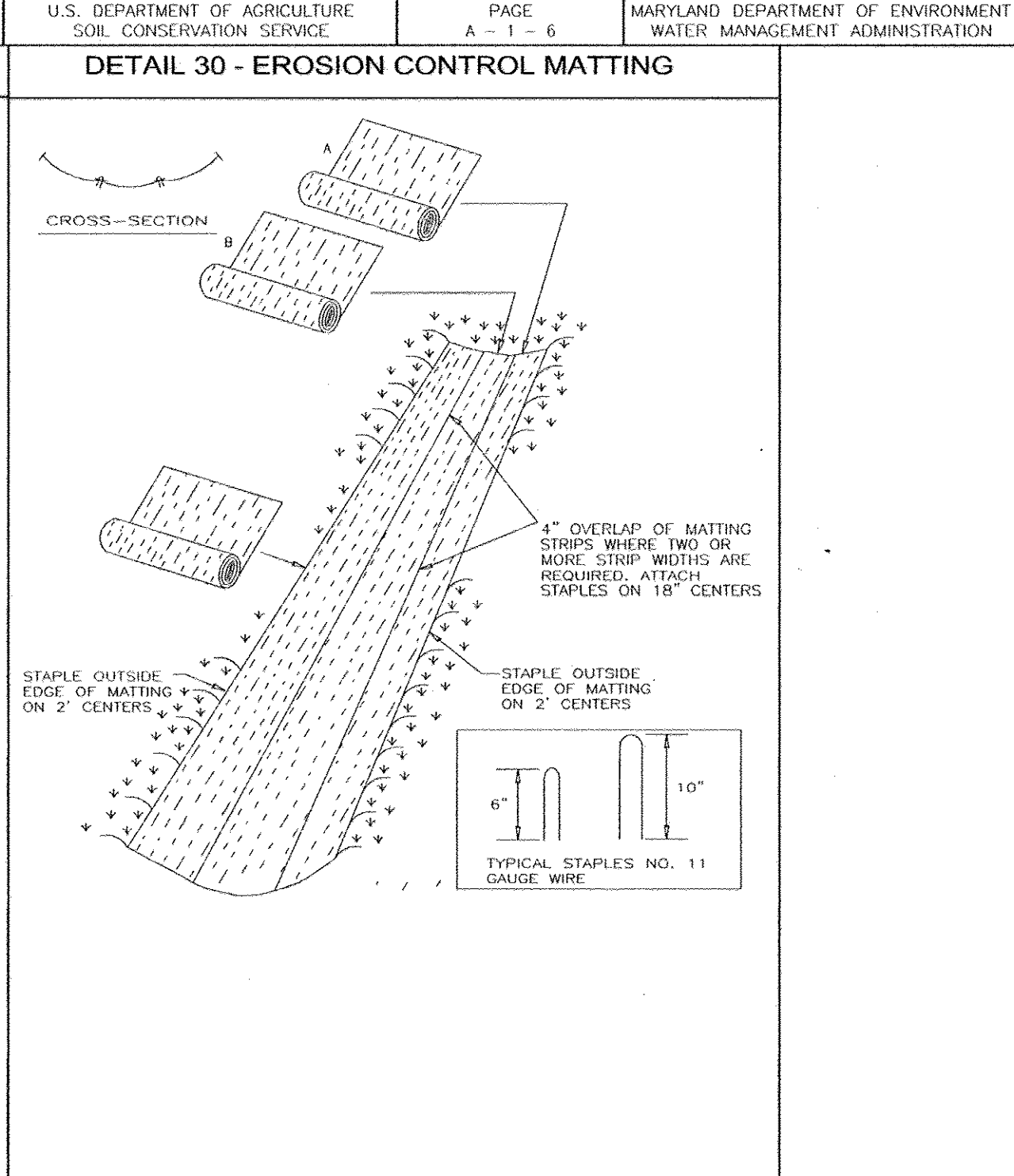
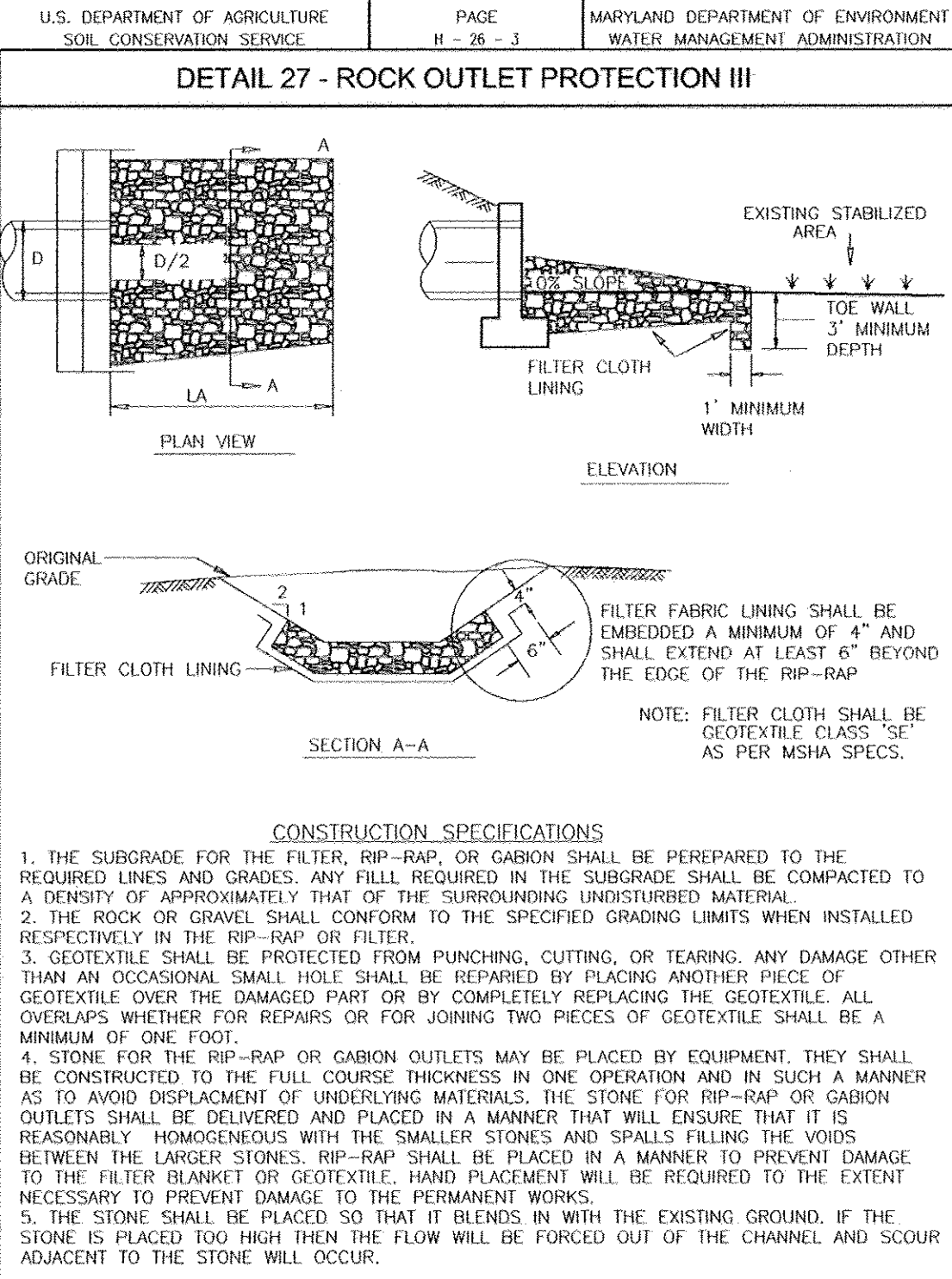
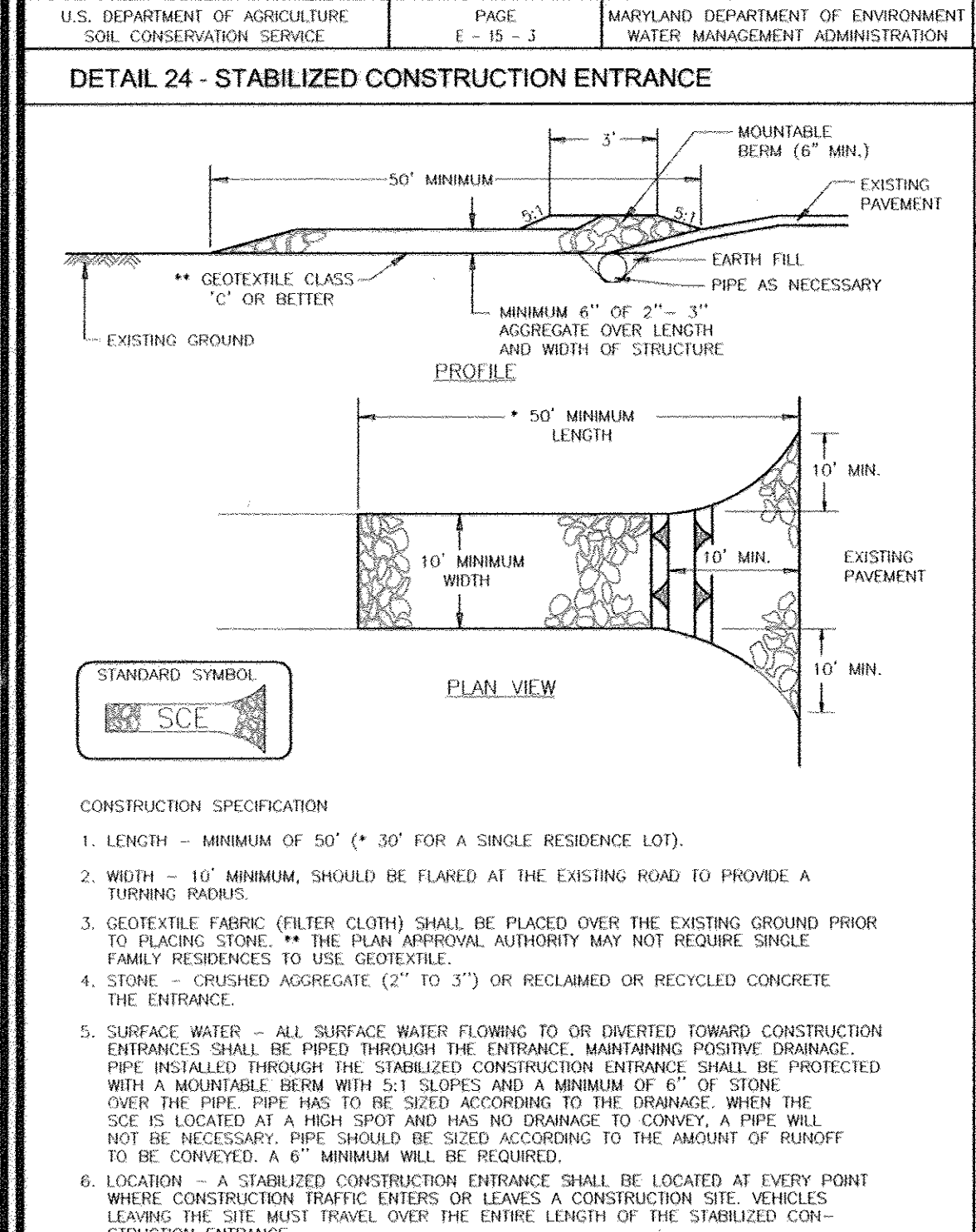
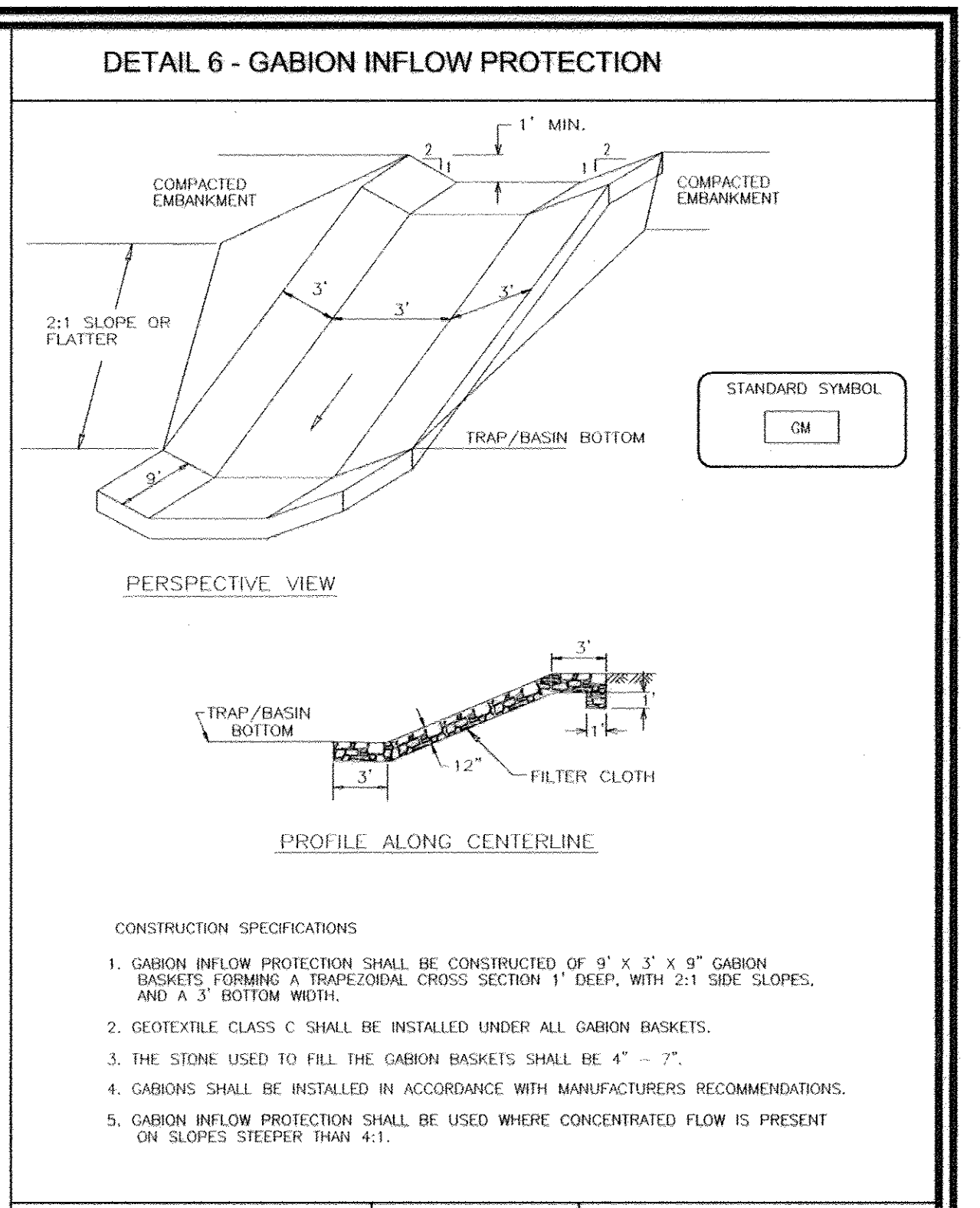
**DEVELOPER**  
 AUTUMN DEVELOPMENT CORPORATION  
 C/O LAND DESIGN & DEVELOPMENT, INC.  
 5300 DORSEY HALL DR STE 102  
 ELLICOTT CITY MD 21042-7819  
 ATTN: MR. DONALD R. REUWER  
 (443) 367-0422





### SEQUENCE OF CONSTRUCTION

DESCRIPTION	DURATION
1. OBTAIN HOWARD COUNTY GRADING PERMIT.	1 DAY
2. NOTIFY HOWARD COUNTY BUREAU OF INSPECTIONS AND PERMITS (313-1880) AT LEAST 24 HOURS BEFORE STARTING ANY WORK.	1 DAY
3. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE.	1 DAY
4. INSTALL TREE PROTECTION FENCE AS SHOWN ON PLAN.	1 WEEK
PHASE I (See sheet 25)	
5. CLEAR AND GRUB PHASE I AREA AS NECESSARY TO INSTALL SILT FENCE AND SUPER SILT FENCE ASSOCIATED WITH THE POND/BASIN #1, BASIN #4, TRAP#2, TRAP #3 AND TRAP #5 AS SHOWN ON PLAN.	1 WEEK
6. WITH PERMISSION FROM SEDIMENT CONTROL INSPECTOR CLEAR AND GRUB SITE AS NECESSARY TO INSTALL POND/BASIN #1, SEDIMENT BASIN #4, SEDIMENT TRAP#2, SEDIMENT TRAP #3 AND SEDIMENT TRAP #5	2 DAYS
7. CONSTRUCT POND/BASIN #1 AND SEDIMENT BASIN #4 (ALL MATERIAL FOR POND/BASIN CONSTRUCTION MUST BE ON-SITE, AND PERMISSION FROM THE INSPECTOR GRANTED, BEFORE PROCEEDING). UPON COMPLETION, AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, CONSTRUCT ASSOCIATED EARTH DIKES TO DIRECT DRAINAGE TOWARDS BASIN #1 AND SEDIMENT BASIN #4.	4 WEEKS
8. INSTALL SEDIMENT TRAP 2, SEDIMENT TRAP 3 AND SEDIMENT TRAP #5. UPON COMPLETION, AND WITH THE PERMISSION OF THE INSPECTOR, CONSTRUCT ASSOCIATED EARTH DIKES TO DIRECT DRAINAGE TOWARDS TRAPS.	2 WEEKS
9. CLEAR AND GRUB THE REMAINDER OF THE PHASE I AREA. DELAY GRADING BELOW TRAP #5 UNTIL TRAP #5 IS REMOVED AS NOTED.	1 WEEK
10. WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR BEGIN GRADING OPERATION REQUIRED TO INSTALL THE STORM DRAIN SYSTEM FROM E-1 TO M-5 & I-7 TO M-16. UPON COMPLETION OF GRADING, INSTALL THE STORM DRAIN SYSTEM FROM E-1 TO M-5 & I-7 TO M-16. PROVIDE INLET PROTECTION AS SHOWN ON THE PLAN. TEMPORARILY DIRECT OUTFALL FROM I-7 TO BASIN #4.	2 WEEKS
11. WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR PARTIALLY FILL SEDIMENT BASIN #4 AS NECESSARY TO CONSTRUCT STORM DRAIN M-5 TO I-7.	2 DAYS
12. UPON COMPLETION OF THE CONSTRUCTION OF THE STORM DRAIN SYSTEM FROM M-5 TO I-7 AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR REMOVE THE EARTH DIKES DIRECTING DRAINAGE TO SEDIMENT CONTROL BASIN #4 & TRAP #5 AND REDIRECT DRAINAGE TO THE STORM DRAIN SYSTEM. REMOVE SEDIMENT CONTROL BASIN #4 & TRAP #5 GRADE AREAS TO BRING THEM TO ULTIMATE GRADE AND STABILIZE AREAS NOT DIRECTED TO STORM DRAIN SYSTEM WITH EROSION CONTROL MATTING. ALLOW A 5 DAY CLEAR AND PRECIPITATION FORECAST FROM THE NWS BEFORE BEGINNING THIS SEQUENCE ITEM.	1 WEEK
13. COMPLETE GRADING OPERATION OF REMAINDER OF PHASE I AREA.	2 WEEKS
14. CONSTRUCT REMAINDER OF STORM DRAIN AND BEGIN CONSTRUCTION OF WATER AND SEWER SYSTEM.	4 WEEKS
15. GRADE ROADS TO SUB-BASE AND APPLY DUST CONTROL SPECIFICATIONS.	2 WEEKS
16. WITH ROAD GRADED TO SUB-BASE BEGIN CURB AND GUTTER CONSTRUCTION AND ROAD PAVING.	4 WEEKS
17. FINE GRADE SITE IN CONFORMANCE WITH PLAN.	2 WEEK
18. WITH INSPECTOR APPROVAL AND FINAL ROAD PAVING COMPLETE STABILIZE ANY REMAINING DISTURBED AREAS.	1 DAY
PHASE II	
19. CLEAR AND GRUB PHASE II AREA AS NECESSARY TO INSTALL SUPER SILT FENCE.	1 WEEK
20. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR CLEAR, GRUB AND GRADE AS NECESSARY TO INSTALL M-16 TO I-15, AND M-10 TO I-21 AND CONSTRUCT STORM DRAIN SYSTEM. INSTALL INLET PROTECTION.	2 DAYS
21. INSTALL EARTH DIKES AND DIRECT DRAINAGE TOWARDS STORM DRAIN SYSTEM. STABILIZE AREAS BELOW EARTH DIKES WITH EROSION CONTROL MATTING.	2 WEEKS
22. WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR CLEAR, GRUB AND GRADE REMAINDER OF PHASE II AREA	2 WEEKS
23. BEGIN CONSTRUCTION OF WATER & SEWER SYSTEM.	1 WEEK
24. GRADE ROADS TO SUB-BASE, APPLY DUST CONTROL SPECIFICATIONS.	2 WEEKS
25. WITH ROAD GRADED TO SUB-BASE BEGIN CURB AND GUTTER CONSTRUCTION AND ROAD PAVING.	4 WEEKS
26. FINE GRADE SITE IN CONFORMANCE WITH PLAN.	1 DAY
27. WITH INSPECTOR APPROVAL AND FINAL ROAD PAVING COMPLETE STABILIZE ANY REMAINING DISTURBED AREAS.	TOTAL 12 WEEKS
PHASE III	
NOTE: PHASE III CAN PROCEED DURING PHASE II WITH PERMISSION OF THE SEDIMENT CONTROL INSPECTOR.	1 WEEK
28. CLEAR AND GRUB PHASE III AREA AS NECESSARY TO INSTALL SEDIMENT CONTROL DEVICES.	1 WEEK
29. WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR CLEAR, GRUB AND GRADE REMAINDER OF PHASE III AREA. STABILIZE SLOPES ASSOCIATED WITH THE ROAD CONSTRUCTION WITH EROSION CONTROL MATTING.	2 WEEKS
30. INSTALL TRAFFIC BYPASS.	12 WEEKS
31. BEGIN CONSTRUCTION OF TRAFFIC CIRCLE. UPON COMPLETION REMOVE TEMPORARY PAVING AND STABILIZE DISTURBED AREA WITH EROSION CONTROL MATTING.	1 WEEK
32. INSTALL STREET TREES AND ALL LANDSCAPING.	TOTAL 17 WEEKS
OVERALL PROJECT	
30. CONVERT SEDIMENT BASINS TO FINAL STORMWATER MANAGEMENT FACILITIES AND REMOVE SEDIMENT CONTROL MEASURES.	
31. REMOVE ALL NEW AND OLD JUNK, TRASH, DEBRIS AND OTHER MAN-MADE OBJECTS FROM THE ENTIRE FOREST CONSERVATION EASEMENT, FLOODPLAIN, WETLANDS, STREAMS AND THEIR BUFFERS.	
NOTE: 1. BASIN I IS TO REMAIN UNTIL CONSTRUCTION FOR ALL PHASES INCLUDING DWELLING UNITS ARE FINISHED.	



### NO AS-BUILT INFORMATION THIS SHEET.

### EROSION CONTROL MATTING

**CONSTRUCTION SPECIFICATIONS**

- 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".
- STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
- BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.
- STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP, 2 OUTER ROWS, AND 2 ALTERNATING ROWS DOWN THE CENTER.
- 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". SHIRLAP FASHION. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 6" APART IN A STAGGERED PATTERN ON EITHER SIDE.
- 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.

### 30.0 DUST CONTROL

**DEFINITION**

CONTROLLING DUST BLOWING AND MOVEMENT ON CONSTRUCTION SITES AND ROADS.

**PURPOSE**

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

**CONDITIONS WHERE PRACTICE APPLIES**

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

### SPECIFICATIONS

**TEMPORARY METHODS**

- MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING.
- VEGETATIVE COVER - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.
- TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12' APART, SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.

**PERMANENT METHODS**

- PERMANENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVER, AND PERMANENT STABILIZATION WITH SOD. EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
- TOPSOILING - COVERING WITH LESS ERODIBLE SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
- STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

**REFERENCES**

- AGRICULTURAL HANDBOOK 346. WIND EROSION FORCES IN THE UNITED STATES AND THEIR USE IN PREDICTING SOIL LOSS.
- AGRICULTURAL INFORMATION BULLETIN 354. HOW TO CONTROL WIND EROSION, USDA-ARS.

### ENGINEERS CERTIFICATE

I HEREBY 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.

**DEVELOPER'S CERTIFICATE**

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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.

### OWNERS

AUTUMN RIVER CORPORATION  
4100 COLLEGE AVE.  
ELLICOTT CITY MD 21042-7819  
21043 - 5506  
(410) 465-3500

### DEVELOPER

AUTUMN DEVELOPMENT CORPORATION  
C/O LAND DESIGN & DEVELOPMENT, INC.  
5300 DORSEY HALL DR STE 102  
ELLICOTT CITY MD 21042-7819  
ATTN: MR. DONALD R. REUWER  
(443) 367-0422

### FINAL ROAD CONSTRUCTION PLAN AUTUMN RIVER - PHASE II SEDIMENT AND EROSION CONTROL DETAILS

LOTS: 5-29, 31-36, 38-43, 45-67  
OPEN SPACE LOT 30, 37, 44, 68 & 110  
& NON-BUILDABLE PARCEL C  
& NON-BUILDABLE BULK PARCEL D, E, & F  
RESUBDIVISION OF EXISTING LOT 1, 2, 3

TAX MAP #25 GRID 14 & 21 PARCELS 172 & 279  
2ND ELECTION DISTRICT & BULK PARCEL A HOWARD COUNTY, MARYLAND

### ROBERT H. VOGEL ENGINEERING, INC.

ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET  
ELLICOTT CITY, MD 21043  
TEL: 410-461-7666  
FAX: 410-461-8961

DESIGN BY: RJ/RHV  
DRAWN BY: RJ  
CHECKED BY: RJ  
DATE: MAY 2010  
SCALE: AS SHOWN  
W.O. NO.: 04-145

PROFESSIONAL CERTIFICATE  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE 09-27-2010

10 SHEET OF 30

APPROVED: DEPARTMENT OF PUBLIC WORKS

*William J. Marshall* 6-22-10  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Kathleen L. ...* 7/19/10  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chad Edinger* 7-13-10  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION

*Robert H. Vogel* 5/7/10  
SIGNATURE OF ENGINEER DATE  
ROBERT H. VOGEL

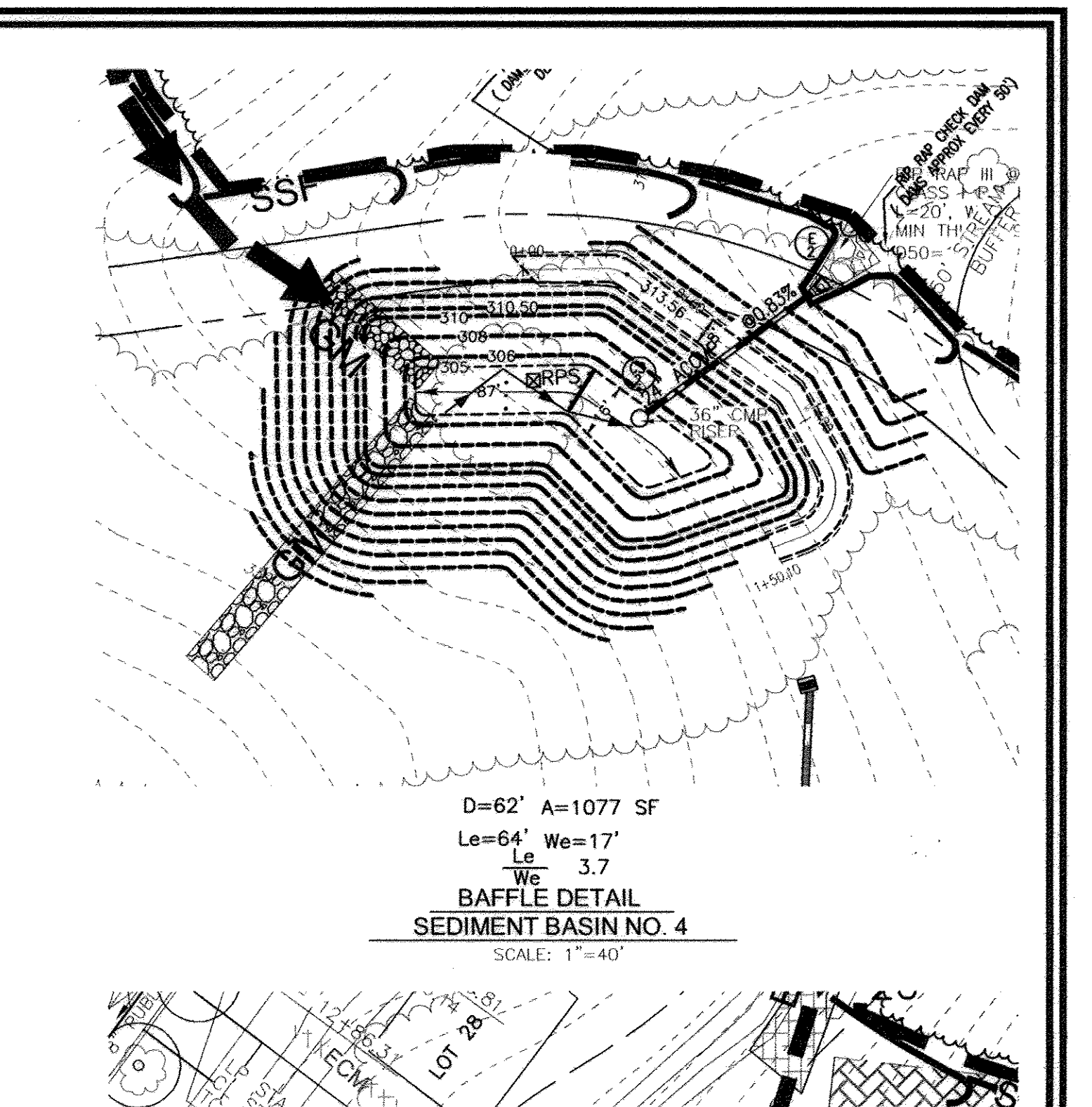
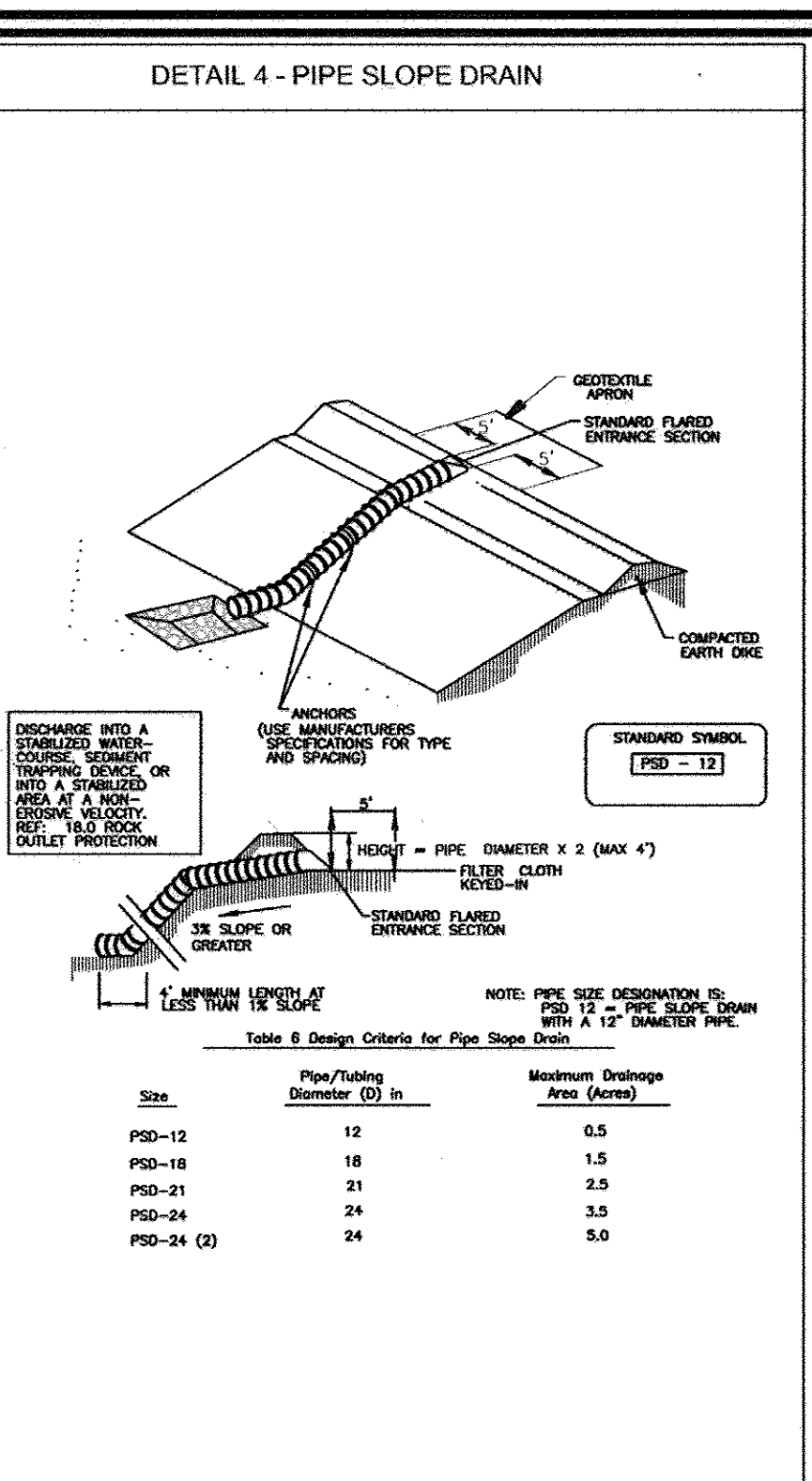
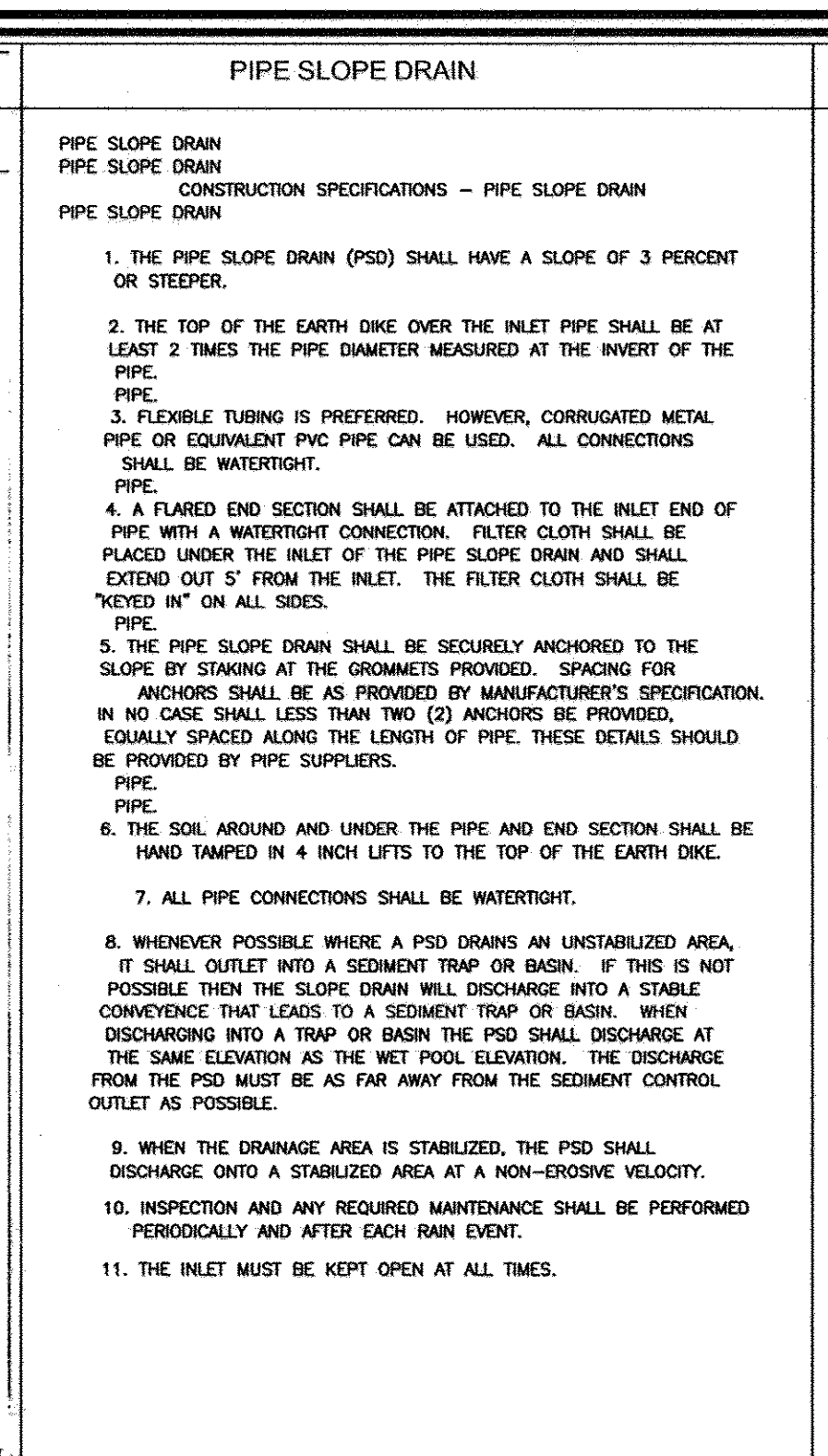
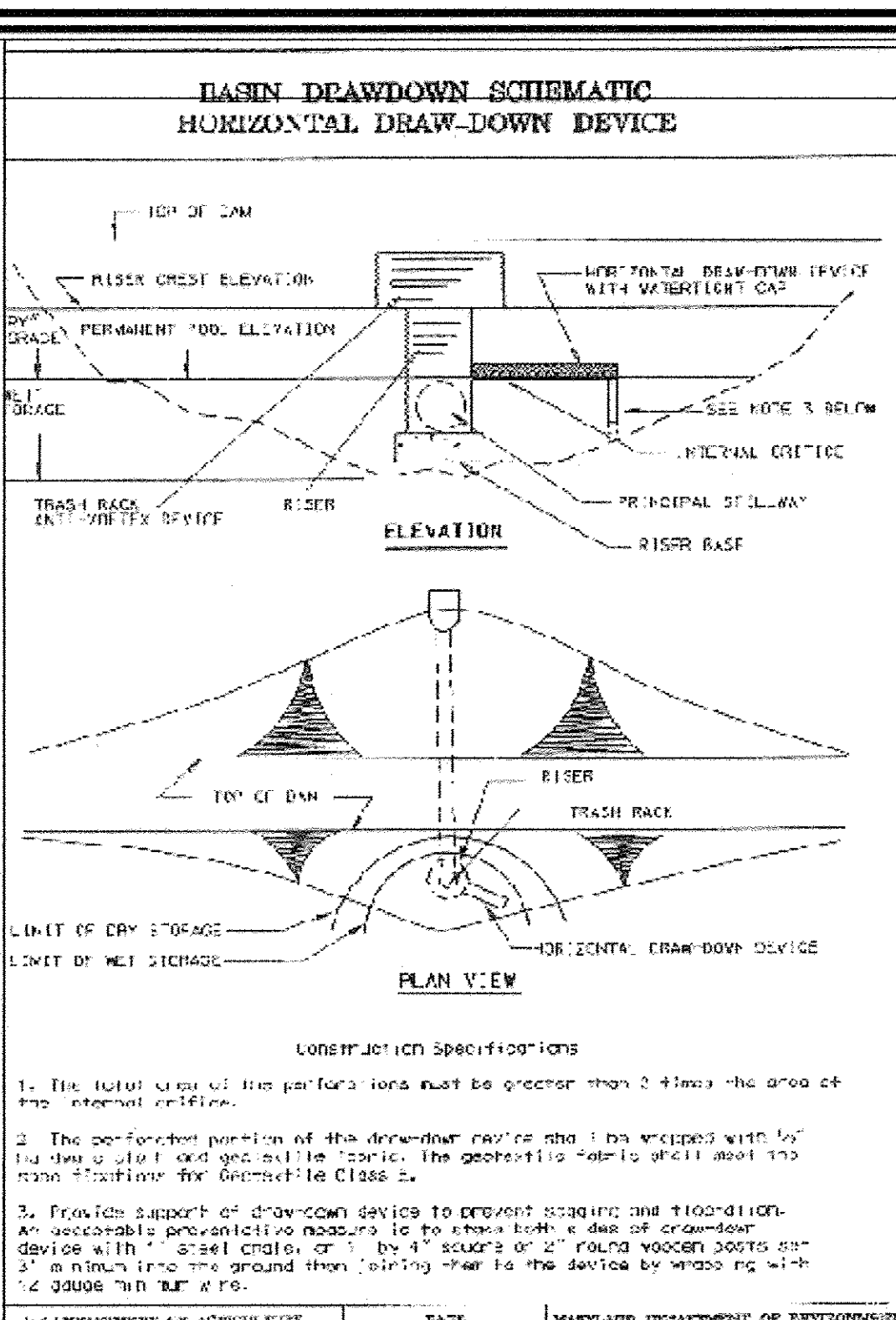
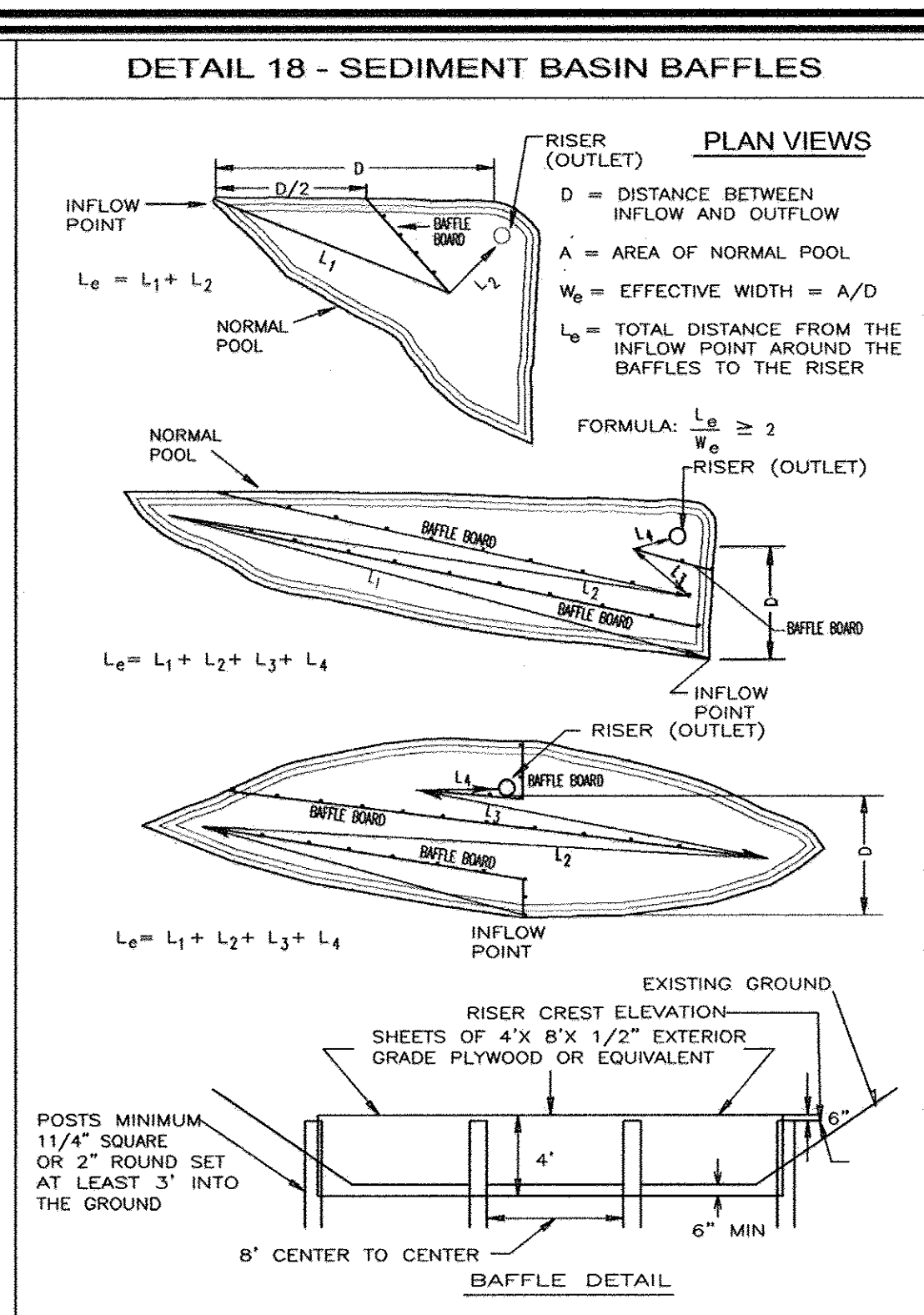
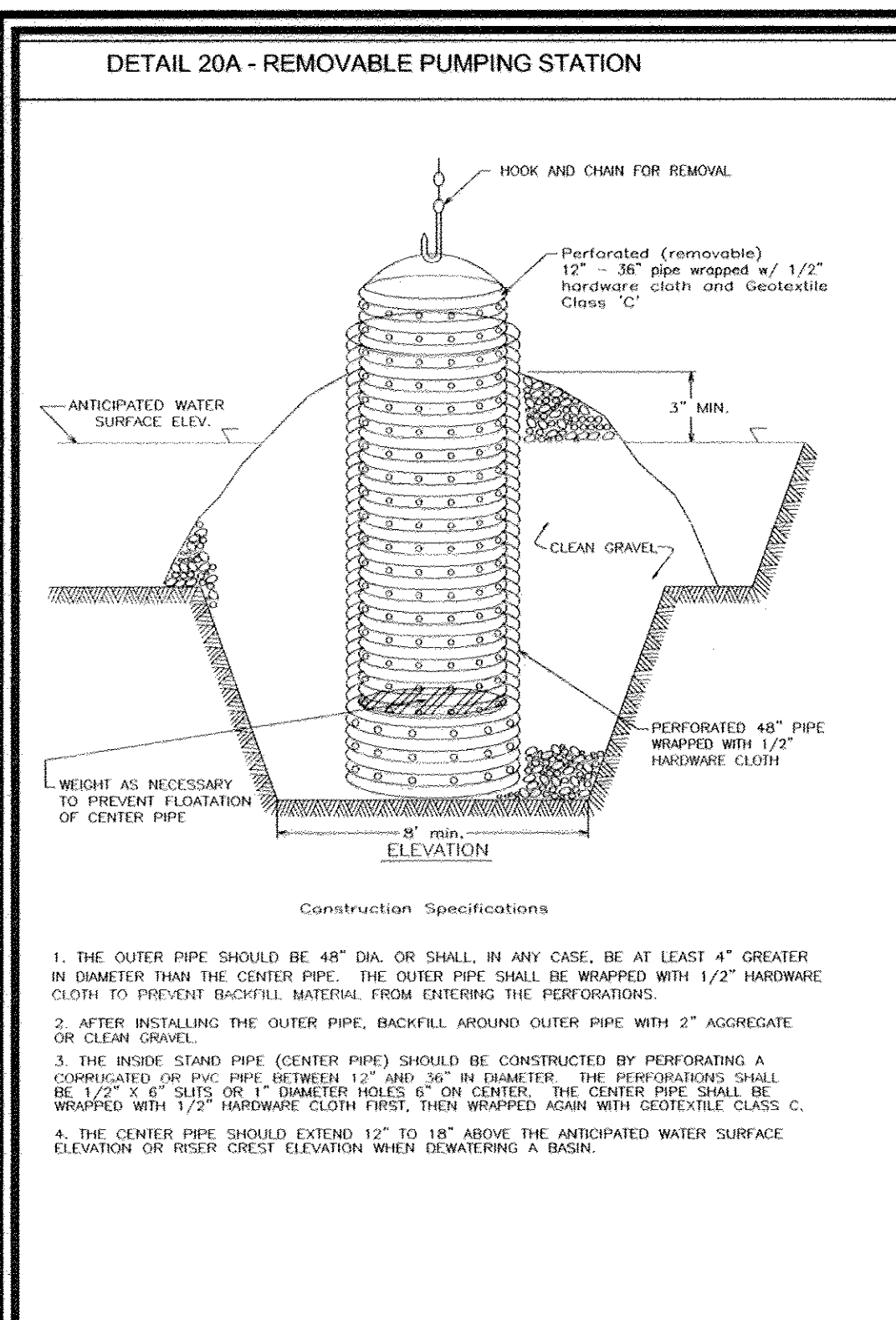
APPROVED: DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION

*Robt. ...* 5/12/10  
SIGNATURE OF DEVELOPER DATE  
ROBT. ...

APPROVED: DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION

*Howard S.C.D.* 6/15/10  
SIGNATURE OF DEVELOPER DATE  
HOWARD S.C.D.





### 21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

#### DEFINITION

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

#### PURPOSE

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETABLE 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:

A. 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 A 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 CONCRETES, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 AND 1/2" IN DIAMETER.

B. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON Ivy, THISTLE, OR OTHERS AS SPECIFIED.

C. 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.

III. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:

I. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

II. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:

I. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS INDICATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:

A. PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.0 OR HIGHER.

B. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.

C. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.

D. NO SOO OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL. SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.

II. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION-SECTION I-VEGETATIVE STABILIZATION METHODS AND MATERIALS.

IV. 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, ALBERT 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 SOODING OR SEEDING 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 MOODY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

#### PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY BAKING, DISING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

1) PREFERRED-APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/100 SO.FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SO.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT THE TIME OF SEEDING APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SO.FT.)

2) ACCEPTABLE-APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SO.FT.) AND APPLY 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SO.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU NOVEMBER 15, SEED WITH 60 LBS. PER ACRE (1.4 LBS/1000 SO.FT.) OF KENTUCKY 31 TALL FESCUE FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (0.5 LBS/1000 SO.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY OPTION (1) 2 TONS PER ACRE WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOO. OPTION (3) SEED WITH 60 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SO. FT.) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SO.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SO.FT.) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

#### TEMPORARY SEEDING NOTES

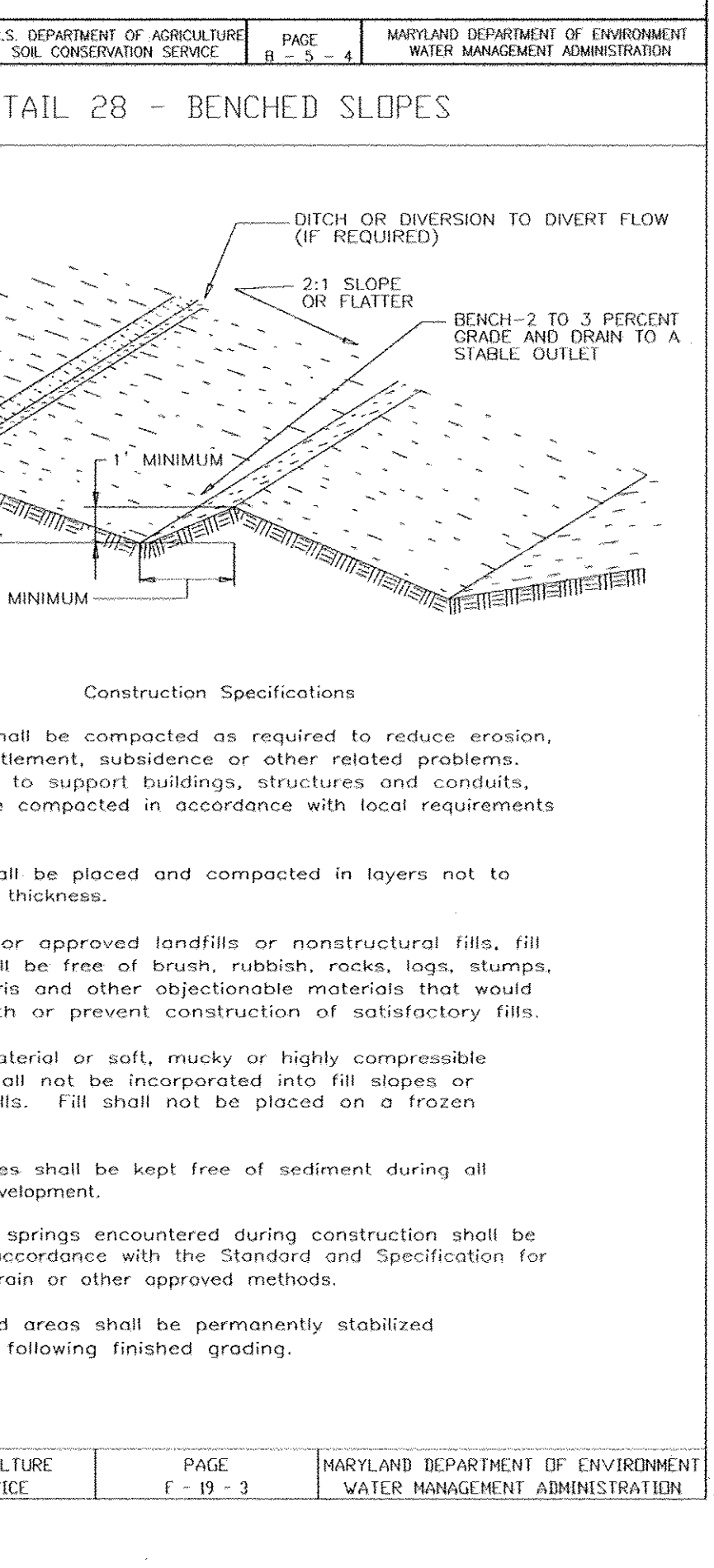
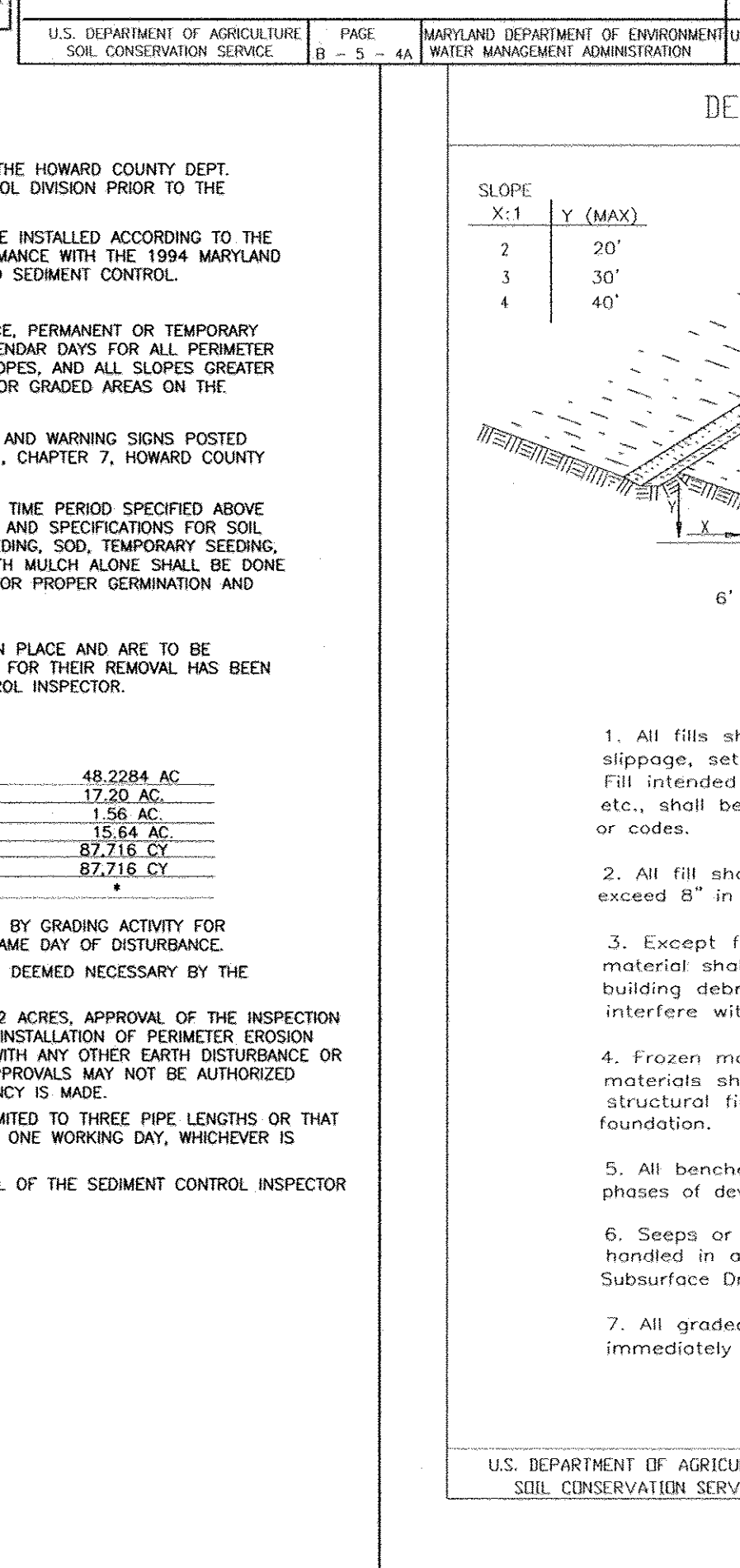
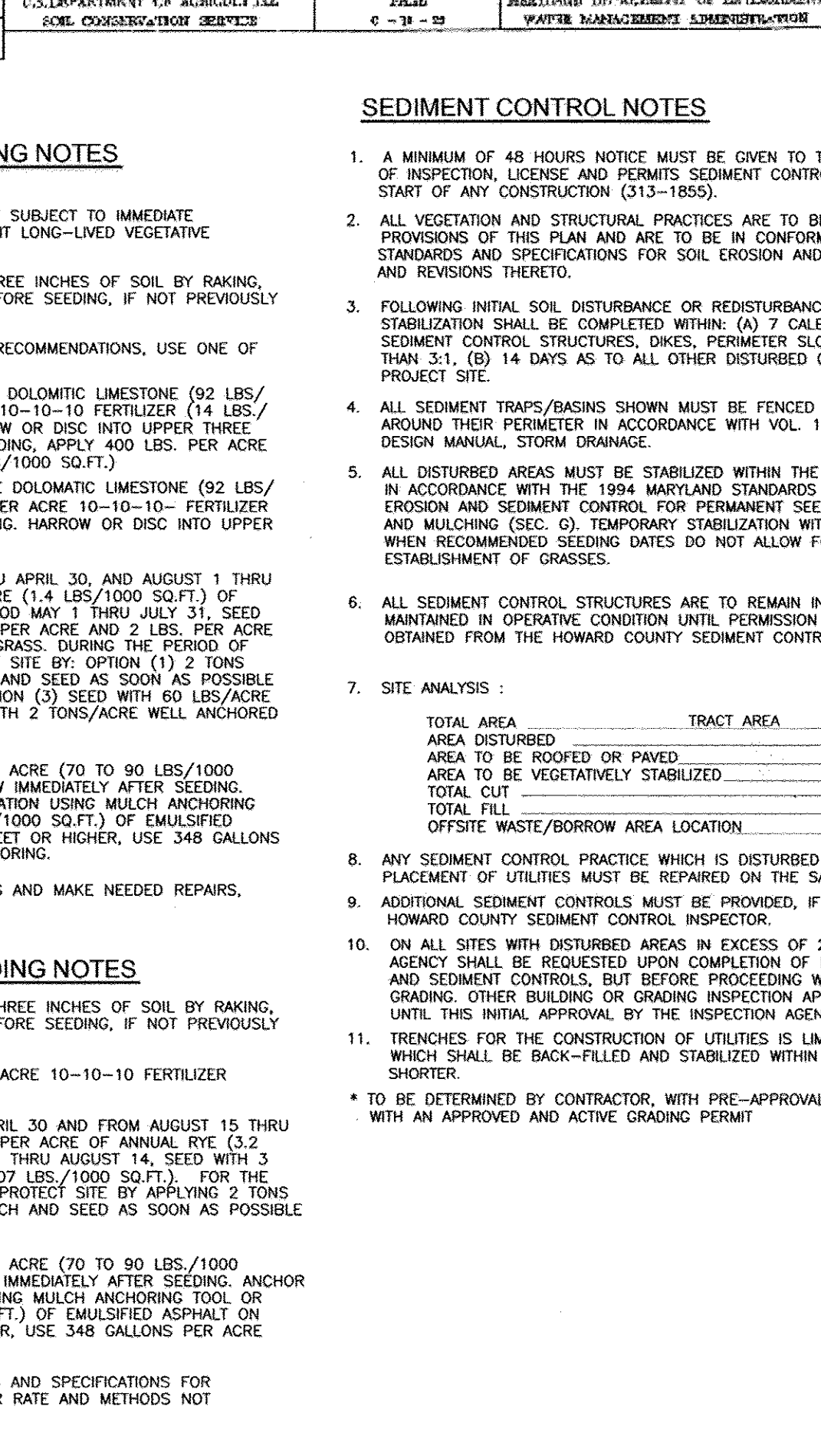
SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SO.FT.)

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SO.FT.) FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (0.7 LBS./1000 SO.FT.). FOR THE PERIOD NOVEMBER 1 THRU FEBRUARY 28, SEED WITH 60 LBS./ACRE PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOO.

MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SO.FT.) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SO.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SO.FT.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT



APPROVED: DEPARTMENT OF PUBLIC WORKS  
DATE: 6-22-10

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
DATE: 7/19/10

APPROVED: DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES  
DATE: 7-13-10

#### ENGINEERS CERTIFICATE

"I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

SIGNATURE OF ENGINEER: ROBERT H. VOGEL  
DATE: 3/7/10

#### DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

SIGNATURE OF DEVELOPER: ROSS TAYLOR  
DATE: 5/7/2010

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF HOWARD S.C.D.  
DATE: 6/15/10

#### OWNERS

AUTUMN RIVER CORPORATION  
4100 COLLEGE AVE.  
ELLICOTT CITY, MD 21042-7819  
21043 - 4506  
(410) 465-3500

#### DEVELOPER

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C/O LAND DESIGN & DEVELOPMENT, INC.  
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ATTN: MR. DONALD R. REUWER  
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ENGINEERS • SURVEYORS • PLANNERS

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ELLICOTT CITY, MD 21043  
TEL: 410.461.7666  
FAX: 410.461.8961

DESIGN BY: RJ/RHV  
DRAWN BY: RJ  
CHECKED BY: RHV  
DATE: MAY 2010  
SCALE: AS SHOWN  
W.O. NO.: 04-145

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11 SHEET OF 30

No AS-BUILT INFORMATION THIS SHEET.



SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP
Adb2	ALDINO SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
Apc2	ALDINO SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	C
Bb2	BRANDYWINE LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
Bd2	BRANDYWINE LOAM, 15 TO 25 PERCENT SLOPES, MODERATELY ERODED	C
Bd3	BRANDYWINE LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	C
Ga2	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
Le2	LEGORE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
Lgc3	LEGORE SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	C
Ma	MANOR LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
Md	MANOR LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	C
Mf	MONTALTO AND RELAY VERY STONY SILT LOAMS, 3 TO 25 PERCENT SLOPES	C
Ne2	NESHAMINY SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
Re2	WATCHUNG SILT LOAM, 3 TO 8 PERCENT SLOPES	B
St	STONY LAND	B
Wb	WATCHUNG SILT LOAM, 3 TO 8 PERCENT SLOPES	D



**LEGEND**

FOREST CONSERVATION AREA (RETENTION)		AREA OF 15 TO 24.9 PERCENT SLOPES	
WETLANDS		AREA OF 25 PERCENT OR GREATER SLOPES	
PUBLIC 100-YR FLOODPLAIN DRAINAGE & UTILITY EASEMENT			
EXISTING CONTOUR			
EXISTING TREES TO REMAIN			
WETLANDS BUFFER			
STREAM CENTERLINE			
STREAM BUFFER			

STORM DRAIN DRAINAGE AREA MAP  
SCALE: 1"=50'

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*W. J. [Signature]* 6-20-12  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*K. [Signature]* 8/08/12  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*M. [Signature]* 7/20/12  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

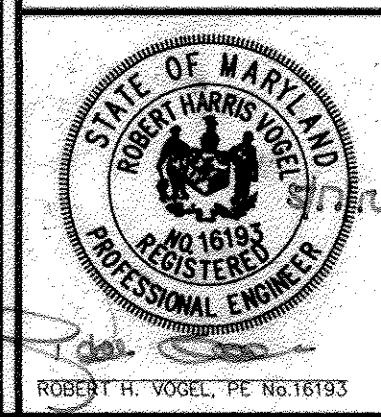
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 4100 COLLEGE AVE.  
 ELLICOTT CITY MD 21042-7819  
 21043 - 5506  
 (410) 465-3500

**DEVELOPER**  
 AUTUMN DEVELOPMENT CORPORATION  
 C/O LAND DESIGN & DEVELOPMENT, INC.  
 5300 DORSEY HALL DR STE 102  
 ELLICOTT CITY MD 21042-7819  
 ATTN: MR. DONALD R. REUWER  
 (443) 367-0422

REVISED FINAL ROAD CONSTRUCTION PLAN  
 AUTUMN RIVER - PHASE II  
 STORM DRAIN DRAINAGE AREA MAP  
 LOTS: 5-29, 31-36, 38-43, 45-67  
 OPEN SPACE LOT 30, 37, 44, 68, & 110  
 & NON-BUILDABLE PARCEL C  
 & NON-BUILDABLE BULK PARCEL D, E, & F  
 RESUBDIVISION OF EXISTING LOT 1, 2, 3  
 & BULK PARCEL A PARCELS 172 & 279  
 TAX MAP #25 GRID 14 & 21 & 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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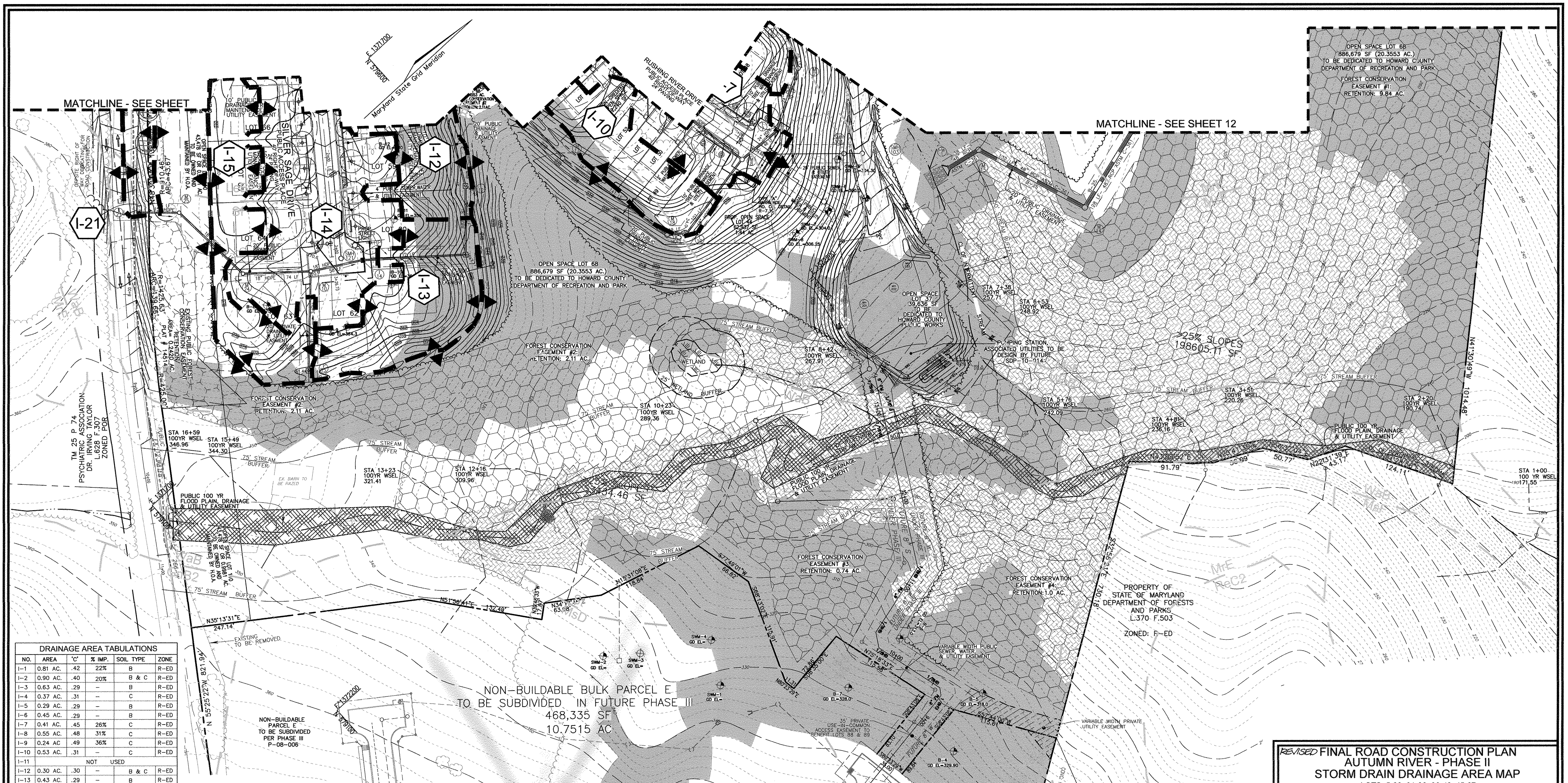


DESIGN BY: RJ/RHV  
 DRAWN BY: RJ  
 CHECKED BY: RHV  
 DATE: MAY 2010  
 SCALE: AS SHOWN  
 W.O. NO.: 04-145

PROFESSIONAL CERTIFICATE  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2010

12 SHEET OF 30





**DRAINAGE AREA TABULATIONS**

NO.	AREA	'C'	% IMP.	SOIL TYPE	ZONE
I-1	0.81 AC.	.42	22%	B	R-ED
I-2	0.90 AC.	.40	20%	B & C	R-ED
I-3	0.63 AC.	.29	-	B	R-ED
I-4	0.37 AC.	.31	-	C	R-ED
I-5	0.29 AC.	.29	-	B	R-ED
I-6	0.45 AC.	.29	-	B	R-ED
I-7	0.41 AC.	.45	26%	C	R-ED
I-8	0.55 AC.	.48	31%	C	R-ED
I-9	0.24 AC.	.49	36%	C	R-ED
I-10	0.53 AC.	.31	-	C	R-ED
I-11	NOT USED				
I-12	0.30 AC.	.30	-	B & C	R-ED
I-13	0.43 AC.	.29	-	B	R-ED
I-14	1.13 AC.	.30	-	B & C	R-ED
I-15	0.54 AC.	.31	-	B & C	R-ED
I-16	0.54 AC.	.44	25%	B & C	R-ED
I-17	0.58 AC.	.41	24%	B	R-ED
I-18	0.58 AC.	.29	-	B & C	R-ED
I-19	1.18 AC.	.32	-	C & D	R-ED
I-20	0.50 AC.	.46	29%	C	R-ED
I-21	0.22 AC.	.54	50%	B	R-ED

- LEGEND**
- FOREST CONSERVATION AREA (RETENTION)
  - WETLANDS
  - PUBLIC 100-YR FLOODPLAIN DRAINAGE & UTILITY EASEMENT
  - EXISTING CONTOUR
  - EXISTING TREES TO REMAIN
  - WETLANDS BUFFER
  - STREAM CENTERLINE
  - STREAM BUFFER
  - AREA OF 15 TO 24.9 PERCENT SLOPES
  - AREA OF 25 PERCENT OR GREATER SLOPES

NON-BUILDABLE BULK PARCEL E  
TO BE SUBDIVIDED IN FUTURE PHASE III  
468,335 SF  
10.7515 AC

**STORM DRAIN DRAINAGE AREA MAP**  
SCALE: 1"=50'

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*W. J. Smith* 6-20-12  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*K. J. Decker* 8/09/12  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*M. J. Decker* 7/30/12  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**NO AS-BUILT INFORMATION THIS SHEET.**

**OWNERS**  
 AUTUMN RIVER CORPORATION  
 4100 COLLEGE AVE.  
 ELLICOTT CITY MD 21042-7819  
 21043 - 5506  
 (410) 465-3500

**DEVELOPER**  
 AUTUMN DEVELOPMENT CORPORATION  
 C/O LAND DESIGN & DEVELOPMENT, INC.  
 5300 DORSEY HALL DR STE 102  
 ELLICOTT CITY MD 21042-7819  
 ATTN: MR. DONALD R. REUWER  
 (443) 367-0422

**REVISED FINAL ROAD CONSTRUCTION PLAN  
 AUTUMN RIVER - PHASE II  
 STORM DRAIN DRAINAGE AREA MAP**

LOTS: 5-29, 31-36, 38-43, 45-67  
 OPEN SPACE LOT 30, 37, 44, 68, & 110  
 & NON-BUILDABLE PARCEL C  
 & NON-BUILDABLE BULK PARCEL D, E, & F  
 RESUBDIVISION OF EXISTING LOT 1, 2, 3  
 & BULK PARCEL A PARCELS 172 & 279

TAX MAP #25 GRID 14 & 21  
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

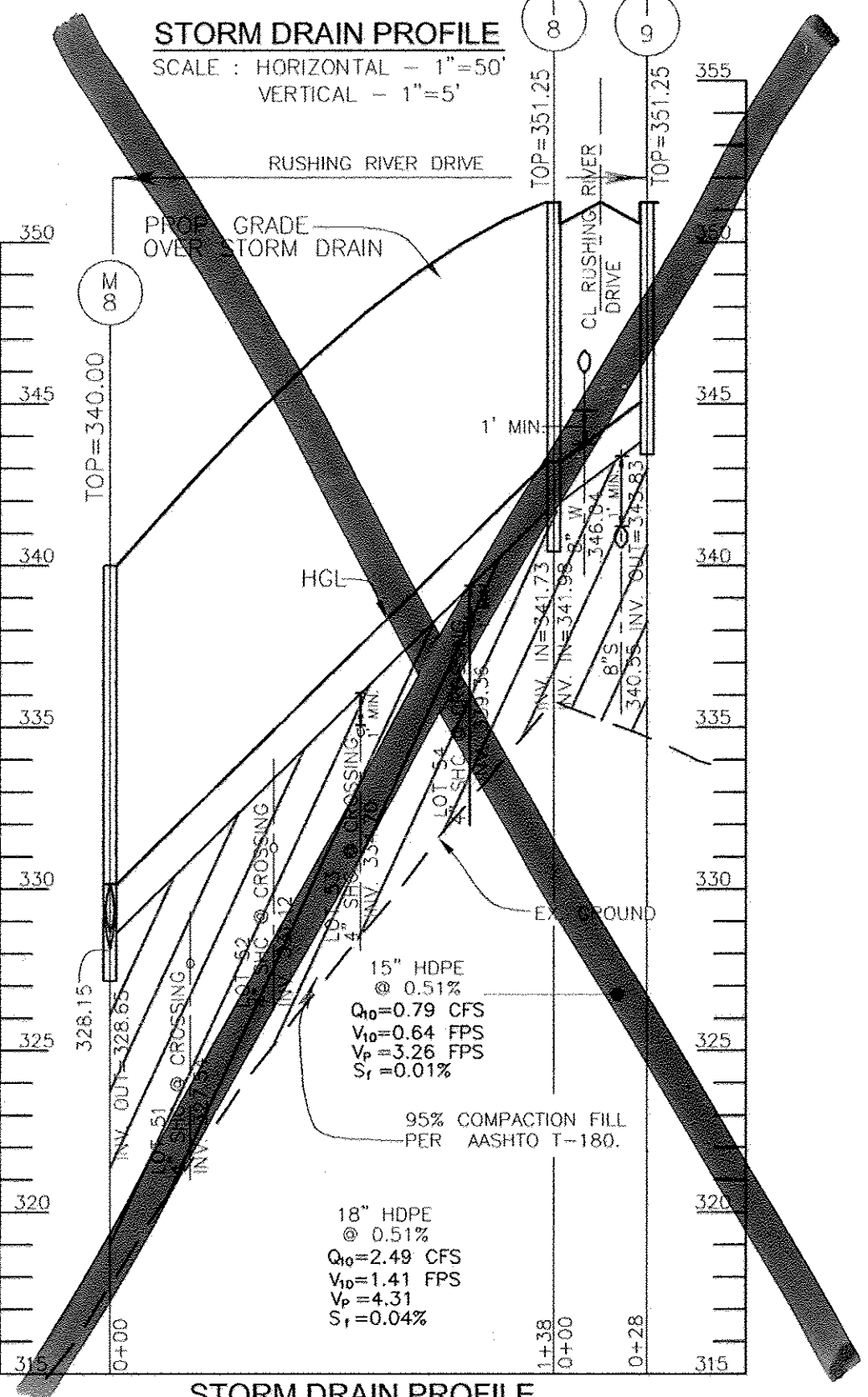
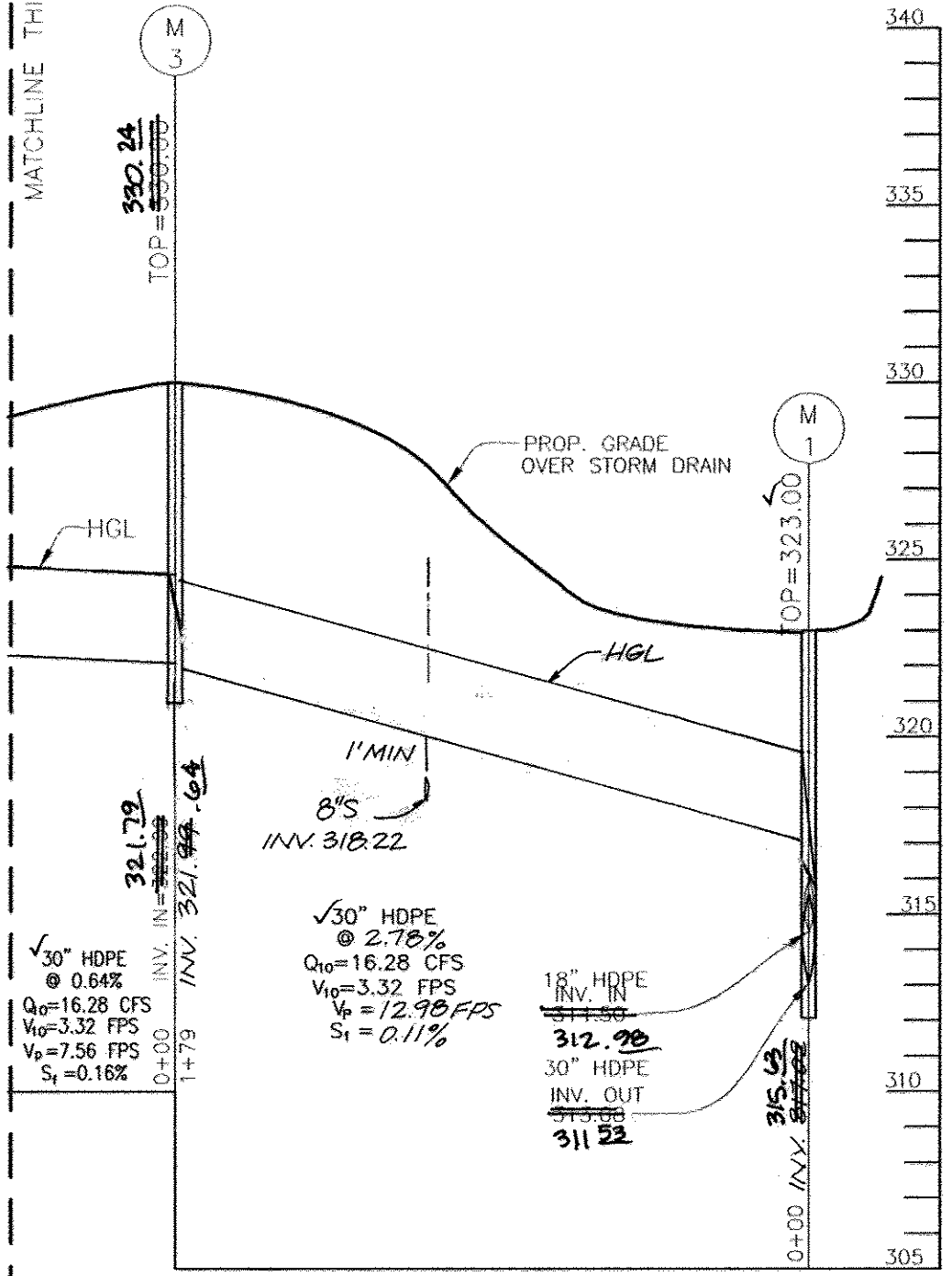
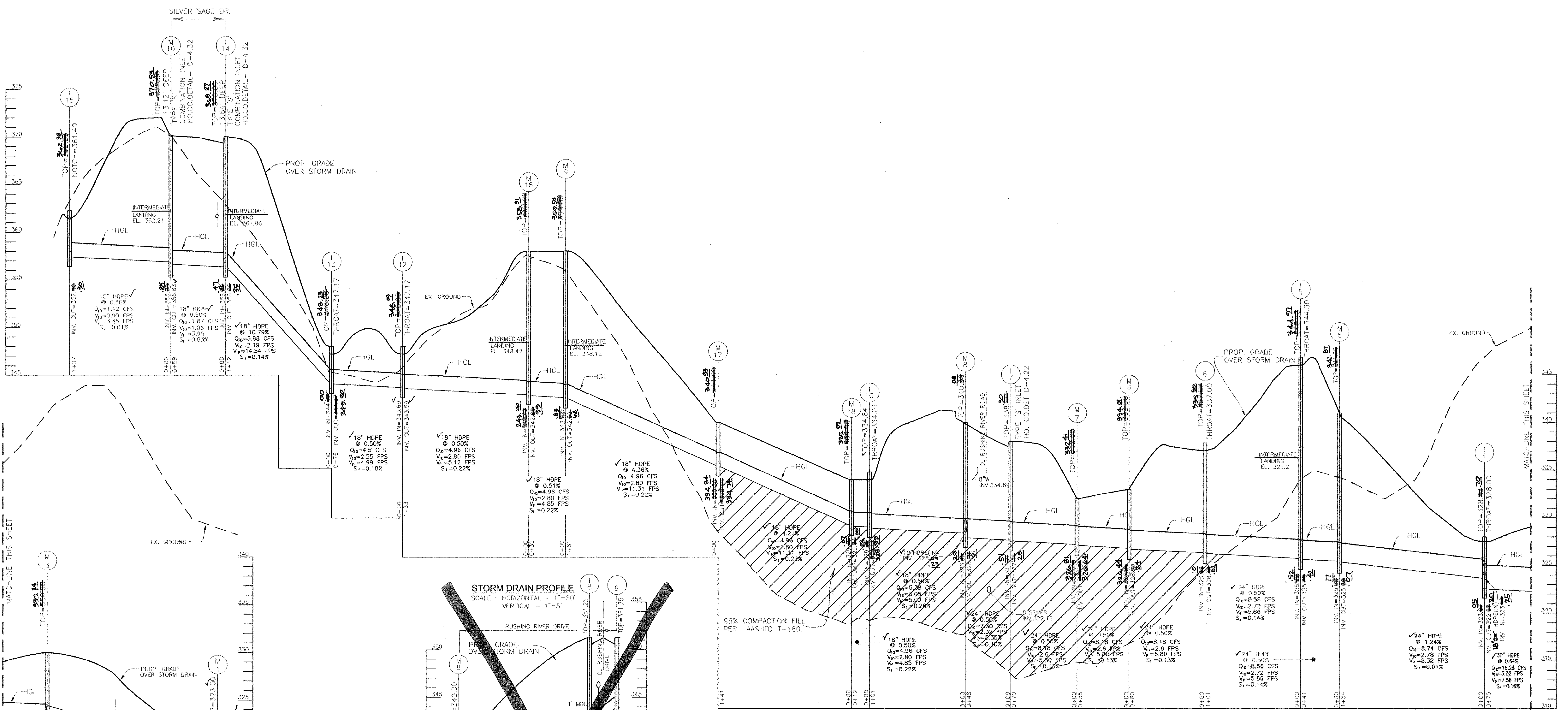
**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

**PROFESSIONAL CERTIFICATE**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2010

DESIGN BY: RJ/RHV  
 DRAWN BY: RJ  
 CHECKED BY: RHV  
 DATE: MAY 2010  
 SCALE: AS SHOWN  
 W.O. NO.: 04-145

13 SHEET OF 30

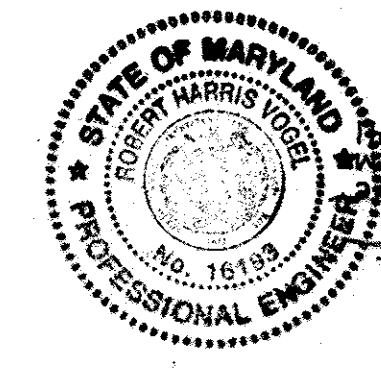




APPROVED: DEPARTMENT OF PUBLIC WORKS  
 WILLIE P. WALKER, CHIEF, BUREAU OF HIGHWAYS, DATE: 6-22-10  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 KATHY BELMONT, CHIEF, DIVISION OF LAND DEVELOPMENT, DATE: 7/16/10  
 CHUD ELMOND, CHIEF, DEVELOPMENT ENGINEERING DIVISION, DATE: 7-13-10

No.	REVISION	DATE
2	MODIFICATION TO PROPOSED RUSHING RIVER DRIVE BASED ON RECONFIGURATION OF LOTS ALONG ROADWAY	2/7/12
1	MODIFY GRADING BENDING SKYWAY TO LOWER ROADWAY, CUL-DE-SAC, AND STORM DRAIN	2-2-11

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: \_\_\_\_\_  
 PE No. 16193  
 Date: 7/27/15



**FINAL ROAD CONSTRUCTION PLAN**  
**AUTUMN RIVER - PHASE II**  
**STORM DRAIN PROFILES**  
 LOTS: 5-29, 31-36, 38-43, 45-67  
 OPEN SPACE LOT 30, 37, 44, 68 & 110  
 & NON-BUILDABLE PARCEL C  
 & NON-BUILDABLE BULK PARCEL D, E & F  
 RESUBDIVISION OF EXISTING LOT 1, 2, 3  
 & BULK PARCEL A PARCELS 172 & 279  
 TAX MAP #25 GRID 14 & 21 PARCELS 172 & 279  
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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 5300 DORSEY HALL DR STE 102  
 ELLICOTT CITY, MD 21042-7819  
 ATTN: MR. DONALD R. REUWER  
 (443) 367-0422

**PROFESSIONAL CERTIFICATE**  
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DESIGN BY: RJ/RHV  
 DRAWN BY: RJ  
 CHECKED BY: RBV  
 DATE: MAY 2010  
 SCALE: AS SHOWN  
 W.O. NO.: 04-145

14 SHEET OF 30



**MARYLAND 378  
STORMWATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS**

CONSTRUCTION SPECIFICATIONS  
THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE MD-378. ALL REFERENCES TO ASTM AND ASHITO 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 ALL VEGETATION. ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIALS SHALL BE REMOVED. CHANNEL BANKS AND SHARP BENCHES 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 MATERIALS UNLESS OTHERWISE SPECIFIED. 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 5% PASSING THE #200 SIEVE. CONSIDERATION SHALL 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 BY MAXIMUM 8 INCH THICK (GROSS) COMPACTED 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.

COMPACTING: 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 ASHITO METHOD 1-99 (STANDARD PROCTOR).

CUT OFF TRENCH: 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 CORNER CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORNER SHALL BE 4 FEET. THE BOTTOM WIDTH OF THE CORNER 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 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 LAYERS MUST 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 311.5 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 MINIMUM OF 6" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) 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, 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 THE 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 (FLOWABLE, FILLZONE, SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

**PIPE CONCRETS**  
ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.  
CORRUGATED METAL PIPE OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:  
1. MATERIALS (POLYMER COATED STEEL PIPE) - STEEL PIPES WITH POLYMER COATING 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 ASHITO SPECIFICATIONS M-245 & M-246 WITH WATER TIGHT COUPLING BANDS OR FLANGES.

MATERIALS - (ALUMINUM COATED STEEL PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF ASHITO SPECIFICATION M-274 WITH WATER TIGHT COUPLING BANDS OR FLANGES. ALUMINUM COATED STEEL PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONTACT IS EXPECTED, THE NEED FOR INCREASED DURABILITY SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF ASHITO 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.

**OPERATION AND MAINTENANCE SCHEDULE FOR  
STORMWATER MANAGEMENT  
EXTENDED DETENTION FACILITY**

**ROUTINE MAINTENANCE (BY HOA)**  
1. FACILITY WILL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS.  
INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF 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 NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.  
4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREAS SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

**NON-ROUTINE MAINTENANCE (BY HOWARD COUNTY)**  
1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RIVER, AND THE PIPES SHALL BE REPAIRED UPON DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.  
2. SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERE WITH THE FUNCTION OF THE RIVER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

**POND BOTTOM SOIL CONDITIONS**  
IF BROKEN ROCK FRAGMENTS ARE ENCOUNTERED AT FINISHED POND BOTTOM, UNDER CUT A MINIMUM OF 12" BELOW BASIN GRADE AND TO A HORIZONTAL DISTANCE OF AT LEAST 18" BEYOND EACH EDGE OF THE BROKEN ROCK AND BACKFILL WITH FINE-GRAINED ML OR CL SOILS COMPACTED TO A FIRM CONDITION. THIS PROCEDURE SHOULD BE PERFORMED UNDER THE SUPERVISION OF THE PROJECT GEOTECHNICAL ENGINEER.

IN ORDER TO LOWER THE INFILTRATION RATE INTO THE SANDS WITH GRAVEL, IT IS RECOMMENDED THAT THE SANDS WITH GRAVEL BE UNDERCUT AND REPLACED WITH A MINIMUM OF 12 INCHES OF SOILS CLASSIFIED AS SM PER ASTM D-2487 OR SANDY LOAM PER USDA CLASSIFICATION. THE FILL SOIL SHOULD BE COMPACTED TO AT LEAST 95 PERCENT OF ITS MAXIMUM DRY DENSITY PER ASTM D-698.

**OPERATION, MAINTENANCE AND INSPECTION**  
INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, NRCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATORS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

**APPROVED: DEPARTMENT OF PUBLIC WORKS**  
*[Signature]* 6-23-10  
CHIEF, BUREAU OF HIGHWAYS DATE

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**  
*[Signature]* 7/19/10  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**APPROVED: DEVELOPMENT ENGINEERING DIVISION**  
*[Signature]* 7-13-10  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**STORMWATER POND HERBACEOUS LANDSCAPE SCHEDULE**

KEY	QUAN.	BOTANICAL NAME	SIZE	REMARKS
VA	735	Vallisneria spiralis Wild Celery	plug	2' oc
IV	48	Iris pseudacoris Yellow Water Iris	plug	1.5' oc
CE	325	Iris versicolor Blue Flag (wear gloves)	plug	1.5' oc
CL	325	Sagittaria latifolia Duck Potato (do not plant tubers)	plug	4' oc

MATERIALS - (ALUMINUM PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF ASHITO SPECIFICATION M-196 OR M-211 WITH WATER TIGHT COUPLING BANDS OR FLANGES. ALUMINUM PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONTACT IS EXPECTED, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF ASHITO 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 CONTAINS AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 INCHES LONG.

3. CONNECTIONS - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATER TIGHT. 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 WATER TIGHT. SIMPLE BANDS ARE NOT CONSIDERED TO BE WATER TIGHT.

4. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSUITABLE 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 LAD IN A CONCRETE BEDDING/CRADE FOR THEIR ENTIRE LENGTH. THIS BEDDING/CRADE 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 8 INCHES. WHERE A CONCRETE CRADE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN SUBSECTION 3.11.5 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" EACH PIPE SHALL MEET THE REQUIREMENTS OF ASHITO M252 TYPE S, AND 12" THROUGH 24" SHALL MEET THE REQUIREMENTS OF ASHITO M254 TYPE S.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATER TIGHT.  
3. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSUITABLE 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 DRAINAGE** - WHEN A DRAINAGE DRAINAGE IS USED, A REGISTERED PROFESSIONAL ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.

**CONCRETE** SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 414, MIX NO. 3.

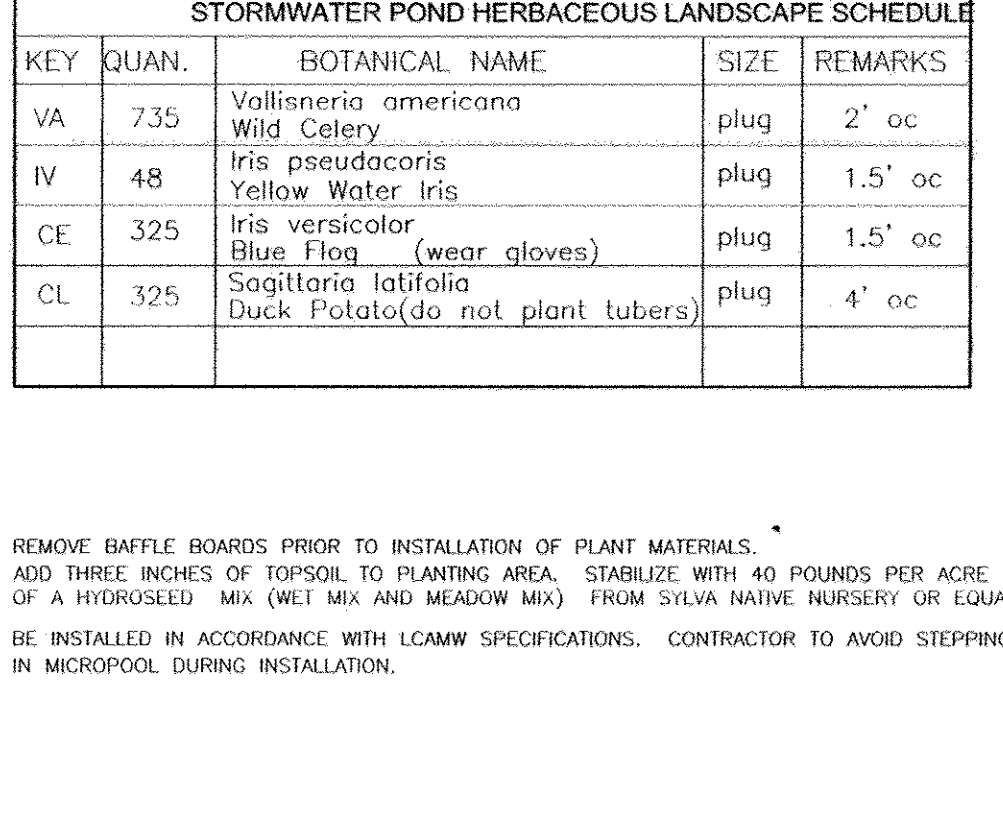
**ROCK RIPRAP** SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION MATERIALS, SECTION 311.

**GEOTEXTILE** SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 951.03, 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, LEVES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT 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 LIVED AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DESIRED MAINTENANCE 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 MAINTAINED THROUGHOUT THE CONSTRUCTION OF THE STRUCTURE. THE MAINTENANCE STABILITY OF THE EXCAVATED SLOPES AND BOTTOM REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING RETAINED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER STOPS FROM WHICH THE WATER SHALL BE PUMPED.

**STERILIZATION**  
ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY CONCAVED. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPILL AND BORROW AREAS, AND BENCH 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.



**RECORD OF SOIL EXPLORATION**

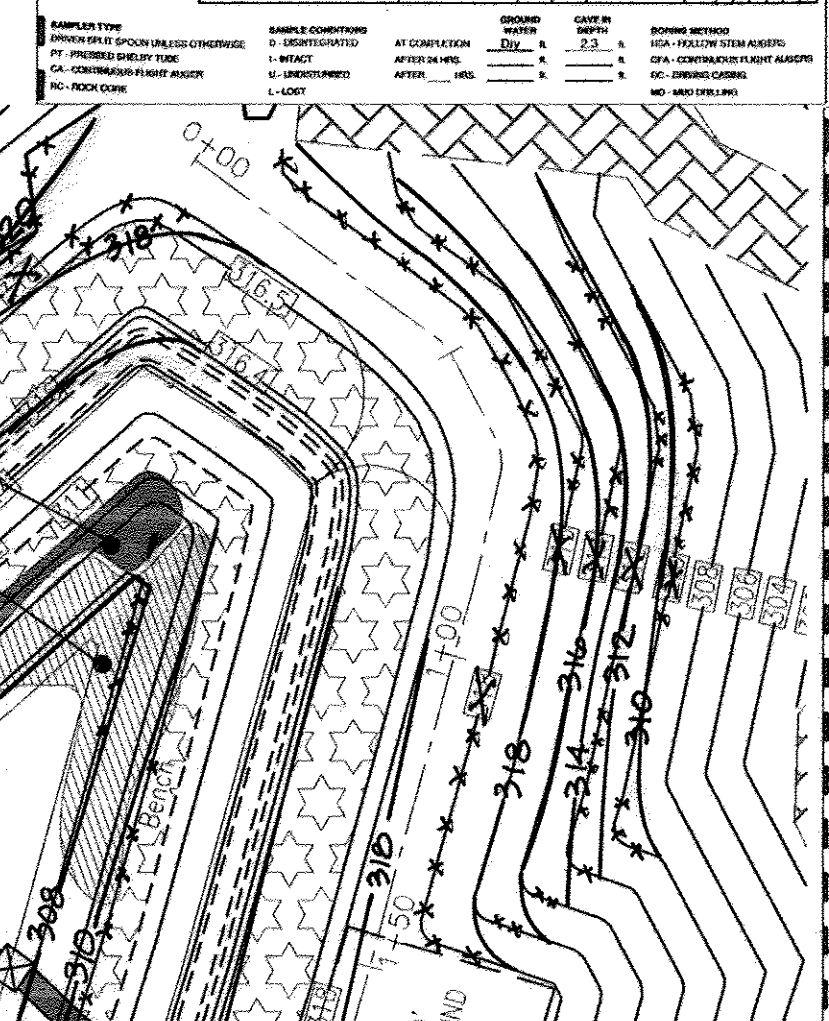
NO.	DEPTH	DESCRIPTION	WATER TABLE	REMARKS
1	0-10'	Light brown, silty, medium sand, silty clay (ML, CL)	10'	
2	10-15'	Light brown, silty, medium sand, silty clay (ML, CL)	10'	
3	15-20'	Light brown, silty, medium sand, silty clay (ML, CL)	10'	
4	20-25'	Light brown, silty, medium sand, silty clay (ML, CL)	10'	
5	25-30'	Light brown, silty, medium sand, silty clay (ML, CL)	10'	

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**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: \_\_\_\_\_  
PE NO. 16193  
Date: 7/27/15

**OWNERS**  
AUTUMN RIVER CORPORATION  
4100 COLLEGE AVE.  
ELLCOTT CITY, MD 21042-7819  
21043 - 5506  
(410) 465-3500

**DEVELOPER**  
AUTUMN DEVELOPMENT CORPORATION  
C/O LAND DESIGN & DEVELOPMENT, INC.  
5300 DORSEY HALL DR STE 102  
ELLCOTT CITY MD 21042-7819  
ATTN: MR. DONALD R. REUWER  
(443) 367-0422

**FINAL ROAD CONSTRUCTION PLAN  
AUTUMN RIVER - PHASE II  
STORMWATER MANAGEMENT DETAILS & NOTES**  
LOTS: 5-29, 31-36, 38-43, 45-67  
OPEN SPACE LOT 30, 37, 44, 68, 69, 70  
& NON-BUILDABLE PARCEL C  
& NON-BUILDABLE BULK PARCEL D, E, F  
RESUBDIVISION OF EXISTING LOT 1, 2, 3  
& BULK PARCEL A PARCELS 172 & 279  
TAX MAP #25 GRID 14 & 21 PARCELS 172 & 279  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET TEL: 410.461.7666  
ELLCOTT CITY, MD 21043 FAX: 410.461.8991

**PROFESSIONAL CERTIFICATE**  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193, EXPIRATION DATE: 09-27-2016.

DESIGN BY: RJ/RHV  
DRAWN BY: RJ  
CHECKED BY: RHV  
DATE: MAY 2010  
SCALE: AS SHOWN  
W.O. NO.: 04-145

18 SHEET OF 30

**APPROVED: DEPARTMENT OF PUBLIC WORKS**  
*[Signature]* 6-23-10  
CHIEF, BUREAU OF HIGHWAYS DATE

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**  
*[Signature]* 7/19/10  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**APPROVED: DEVELOPMENT ENGINEERING DIVISION**  
*[Signature]* 7-13-10  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**ENGINEERS CERTIFICATE**  
I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.  
*[Signature]* 7/13/10  
SIGNATURE OF ENGINEER  
ROBERT H. VOGEL DATE

**DEVELOPER'S CERTIFICATE**  
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH 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 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.  
*[Signature]* 5/7/2010  
SIGNATURE OF DEVELOPER  
ROSS TAYLOR DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
*[Signature]* 4/5/10  
HOWARD S.C.D. DATE



**BASINS3  
CONSTRUCTION SPECIFICATIONS**

1. SITE PREPARATION: PERIMETER SEDIMENT CONTROL DEVICES MUST BE INSTALLED PRIOR TO CLEARING AND GRUBBING. AREA WHERE THE EMBANKMENT IS TO BE PLACED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL. THE POOL AREA SHALL NOT BE CLEARED UNTIL COMPLETION OF THE DAM EMBANKMENT UNLESS THE POOL AREA IS TO BE USED FOR BORROW. IN ORDER TO FACILITATE CLEAN-OUT AND RESTORATION, THE POOL AREA (MEASURED AT THE TOP OF THE PIPE SPILLWAY) SHALL BE CLEARED OF ALL BRUSH, TREES AND OTHER OBJECTIONABLE MATERIALS.

2. CUT-OFF TRENCH: A CUT-OFF TRENCH SHALL BE EXCAVATED ALONG THE CENTERLINE OF EARTH FILL EMBANKMENTS. THE MINIMUM DEPTH SHALL BE FOUR FEET. THE CUT-OFF TRENCH SHALL EXTEND UP BOTH ABUTMENTS TO THE RISER CREST ELEVATION. THE MINIMUM BOTTOM WIDTH SHALL BE TWO FEET BUT WIDE ENOUGH TO PERMIT OPERATION OF EXCAVATION AND COMPACTION EQUIPMENT. THE SIDE SLOPES SHALL BE NO STEEPER THAN 1:1. COMPACTION REQUIREMENTS SHALL BE THE SAME AS THOSE FOR THE EMBANKMENT. THE TRENCH SHALL BE DEWATERED DURING THE BACKFILLING-COMPACTION OPERATIONS. FOR DEWATERING SEE SECTION D.

3. EMBANKMENT: THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED AREAS SHOWN ON THE PLANS. IT SHALL BE CLEAN MATERIAL SOIL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, OR OTHER OBJECTIONABLE MATERIAL. RELATIVELY PERVIOUS MATERIALS SUCH AS SAND OR GRAVEL (UNIFIED SOIL CLASSES GW, GP, SW & SP) OR ORGANIC MATERIALS (UNIFIED SOIL CLASSES OL AND OH) SHALL NOT BE PLACED IN THE EMBANKMENT. AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IT CAN BE FORMED BY HAND INTO A BALL WITHOUT CRUMBING. IF WATER CAN BE SQUEEZED FROM THE BALL, IT IS TOO WET FOR PROPER COMPACTION. FILL MATERIAL SHALL BE PLACED IN SIX-INCH BY EIGHT-INCH THICK CONTINUOUS LIFTS OF THE ENTIRE LENGTH OF THE FILL. COMPACTION SHALL BE OBTAINED BY ROUTING AND HAULING THE CONSTRUCTION EQUIPMENT OVER THE FILL SO THAT THE ENTIRE SURFACE OF EACH LAYER OF THE FILL IS TRAVERSED BY AT LEAST ONE WHEEL OR TREAD TRACK OF THE EQUIPMENT OR BY THE USE OF A COMPACTOR. THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION 10 PERCENT HIGHER THAN THE DESIGN TO ALLOW FOR SETTLEMENT.

4. PRINCIPAL SPILLWAY: STEEL RISERS SHALL BE SECURELY ATTACHED TO THE BARREL OR BARREL STUB BY WELDING THE FULL CIRCUMFERENCE MAKING A WATER TIGHT STRUCTURAL CONNECTION. CONCRETE RISERS SHALL BE POURED WITH THE PRINCIPAL SPILLWAY IN PLACE OR PRECAST WITH JOINTS AROUND THE PRINCIPAL SPILLWAY FILLED WITH CONCRETE OR SIKKIM PROOF GROUT FOR WATER TIGHT CONNECTION. THE BARREL STUB MUST BE ATTACHED TO THE RISER AND THE RISER BASE SHALL BE WATER TIGHT. ALL CONNECTIONS BETWEEN BARREL SECTIONS MUST BE ACHIEVED BY APPROVED WATER TIGHT BAND ASSEMBLIES. THE BARREL AND RISER SHALL BE PLACED ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL AS THE EMBANKMENT IS CONSTRUCTED. BREACHING THE EMBANKMENT TO INSTALL THE BARREL IS UNACCEPTABLE. PERVIOUS MATERIALS SUCH AS SAND, GRAVEL OR CRUSHED STONE SHALL NOT BE USED AS BACKFILL AROUND THE PIPE OR ANTI-SEEP COLLARS. THE FILL MATERIAL AROUND THE PIPE SPILLWAY SHALL BE PLACED IN FOUR INCH LIFTS AND COMPACTED UNDER AND AROUND THE PIPE TO AT LEAST THE SAME DENSITY AS THE ADJACENT EMBANKMENT. A DEPTH OF 1.5 TIMES THE PIPE DIAMETER (MIN.) SHALL BE BACKFILL OVER THE PRINCIPAL SPILLWAY AND HAND COMPACTED BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.

5. EMERGENCY SPILLWAY: THE EMERGENCY SPILLWAY SHALL BE INSTALLED IN UNDISTURBED GROUND. THE ACHIEVEMENT OF PLANNED ELEVATIONS, GRADES, DESIGN WIDTH, ENTRANCE AND EXIT CHANNEL SLOPES ARE CRITICAL TO THE SUCCESSFUL OPERATION OF THE EMERGENCY SPILLWAY AND MUST BE CONSTRUCTED WITHIN A TOLERANCE OF + 0.2 FEET.

6. VEGETATIVE TREATMENT: STABILIZE THE EMBANKMENT IN ACCORDANCE WITH THE APPROPRIATE VEGETATIVE STANDARD AND SPECIFICATION IMMEDIATELY FOLLOWING CONSTRUCTION. IN NO CASE SHALL THE EMBANKMENT REMAIN UNSTABILIZED FOR MORE THAN SEVEN (7) DAYS. ONCE CONSTRUCTED, THE TOP AND OUTSIDE FACE OF THE EMBANKMENT SHALL BE STABILIZED WITH SEED AND MULCH. THE REMAINDER OF THE INTERIOR SLOPES SHOULD BE STABILIZED (ONE TIME) WITH SEED AND MULCH UPON BASIN COMPLETION AND MONITORING AND MAINTAINED EROSION FREE DURING THE LIFE OF THE BASIN.

7. SAFETY: LOCAL REQUIREMENTS CONCERNING FENCING AND SIGNS SHALL BE MET, WARNING THE PUBLIC OF HAZARDS OF SOFT SEDIMENT AND FLOODWATER.

8. MAINTENANCE: REPAIR ALL DAMAGE CAUSED BY SOIL EROSION AND CONSTRUCTION EQUIPMENT AT OR BEFORE THE END OF EACH WORKING DAY. SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE SPECIFIED DEPTH BELOW THE TOP OF THE RISER AS SHOWN ON THE RISER. THIS SEDIMENT SHALL BE PLACED IN SUCH A MANNER THAT IT WILL NOT ERODE FROM THE SITE. THE SEDIMENT SHALL NOT BE DEPOSITED DOWNSTREAM FROM THE EMBANKMENT, ADJACENT TO A STREAM OR FLOODPLAIN. DISPOSAL AREAS MUST BE STABILIZED.

9. FINAL DISPOSAL: WHEN TEMPORARY STRUCTURES HAVE SERVED THEIR INTENDED PURPOSE AND THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, THE EMBANKMENT AND RESULTING SEDIMENT DEPOSITS ARE TO BE LEVELED OR OTHERWISE DISPOSED OF IN ACCORDANCE WITH THE APPROVED SEDIMENT CONTROL PLAN. THE PROPOSED USE OF A SEDIMENT BASIN SITE WILL OBTAIN THE APPROVED SEDIMENT CONTROL PLAN. ANY SEDIMENT CONTAINED THEREIN, IF THE SITE IS SCHEDULED FOR FUTURE CONSTRUCTION, THEN THE BASIN MATERIAL TRAPPED SEDIMENTS MUST BE REMOVED AND SAFELY DISPOSED OF THE AND BASIN SHALL BE STRUCTURAL FILL. THE BASIN AREA IS TO REMAIN OPEN SPACE, THE POND MAY BE PUMPED DRY (USING METHODS IN SECTION D - DEWATERING), GRADING, AND BACK FILLED.

10. CONVERSION TO STORMWATER MANAGEMENT STRUCTURE: AFTER PERMANENT STABILIZATION OF ALL DISTURBED CONTRIBUTORY DRAINAGE AREAS, TEMPORARY SEDIMENT BASINS IF INITIALLY BUILT AND CERTIFIED TO MEET PERMANENT STANDARDS, MAY BE CONVERTED TO PERMANENT STORMWATER MANAGEMENT STRUCTURES. TO CONVERT THE BASIN FROM TEMPORARY TO PERMANENT USE, THE OUTLET STRUCTURE MUST BE MODIFIED IN ACCORDANCE WITH APPROVED STORMWATER MANAGEMENT DESIGN PLANS. ADDITIONAL GRADING MAY ALSO BE NECESSARY TO PROVIDE THE REQUIRED STORAGE VOLUME IN THE BASIN. CONVERSION CAN ONLY TAKE PLACE AFTER ALL DISTURBED AREA HAVE BEEN PERMANENTLY STABILIZED TO SATISFACTION OF THE INSPECTION AUTHORITY AND STORM DRAINS HAVE BEEN FLUSHED.

**EMBANKMENT AND CUT-OFF TRENCH CONSTRUCTION**

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

A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH. IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SPECIFICATION 378 SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUT-OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH OR CL.

IT IS OUR PROFESSIONAL OPINION THAT IN ADDITION TO THE SOIL MATERIALS DESCRIBED ABOVE A FINE GRAINED SOIL, INCLUDING SILT (ML) WITH A PLASTICITY INDEX OF 10 OR MORE CAN BE UTILIZED FOR THE CENTER OF THE EMBANKMENT & CORE TRENCH. EXPLORATION WITH TEST PITS AND LABORATORY TESTING CAN BE CONDUCTED PRIOR TO CONSTRUCTION TO IDENTIFY AND QUANTIFY POTENTIAL BORROW AREAS FOR CORE TRENCH MATERIAL. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH MD SCS 378 SPECIFICATIONS.

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*W. J. Mall* 6/22/10  
CHIEF, BUREAU OF HIGHWAYS  
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*R. J. ...* 7/17/10  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE

*Robert H. Vogel* 7/17/10  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE

**ENGINEERS CERTIFICATE**  
I HEREBY 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.

*Robert H. Vogel* 7/17/10  
SIGNATURE OF ENGINEER  
ROBERT H. VOGEL  
DATE

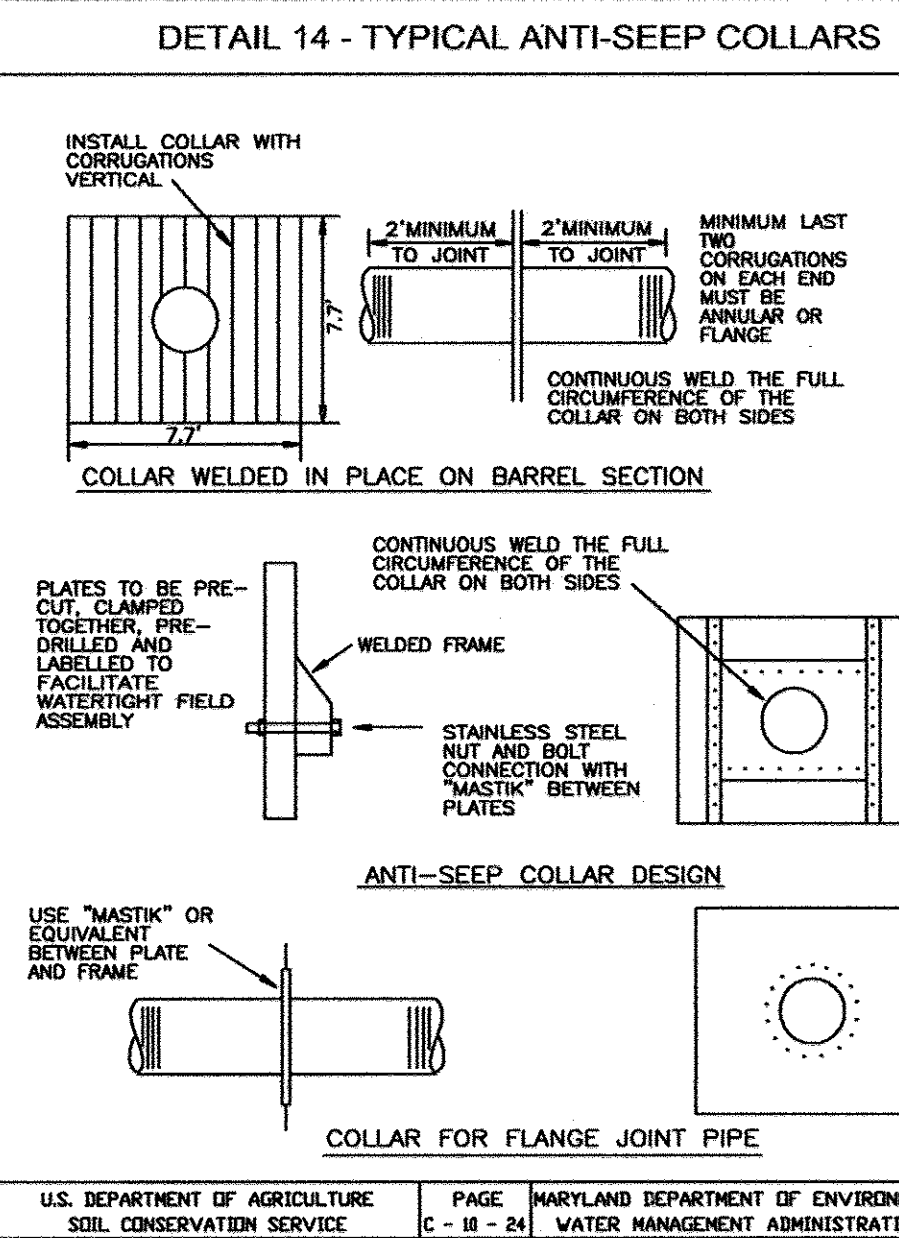
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*[Signature]* 6/15/10  
SIGNATURE OF DEVELOPER  
DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 6/15/10  
HOWARD-S.C.D.  
DATE

**BASIN#4**



**Construction Specifications**

The riser shall have a base attached with a watertight connection and shall have sufficient weight to prevent flotation of the riser. Two approved bases for risers 10" or less in height are:

- A concrete base 18" thick with the riser embedded 9" in the base.
- A 1/4" minimum thickness steel plate attached to the riser by a continuous weld around the circumference of the riser to form a watertight connection. The plate shall have 2" of stone, gravel, or compacted earth placed on it to prevent flotation. In either case, each side of the square base shall be twice the riser diameter.

Note: For risers greater than ten feet high computations shall be made to design a base which will prevent flotation. The minimum factor of safety shall be 1.20 (downward forces = 1.20 x upward forces).

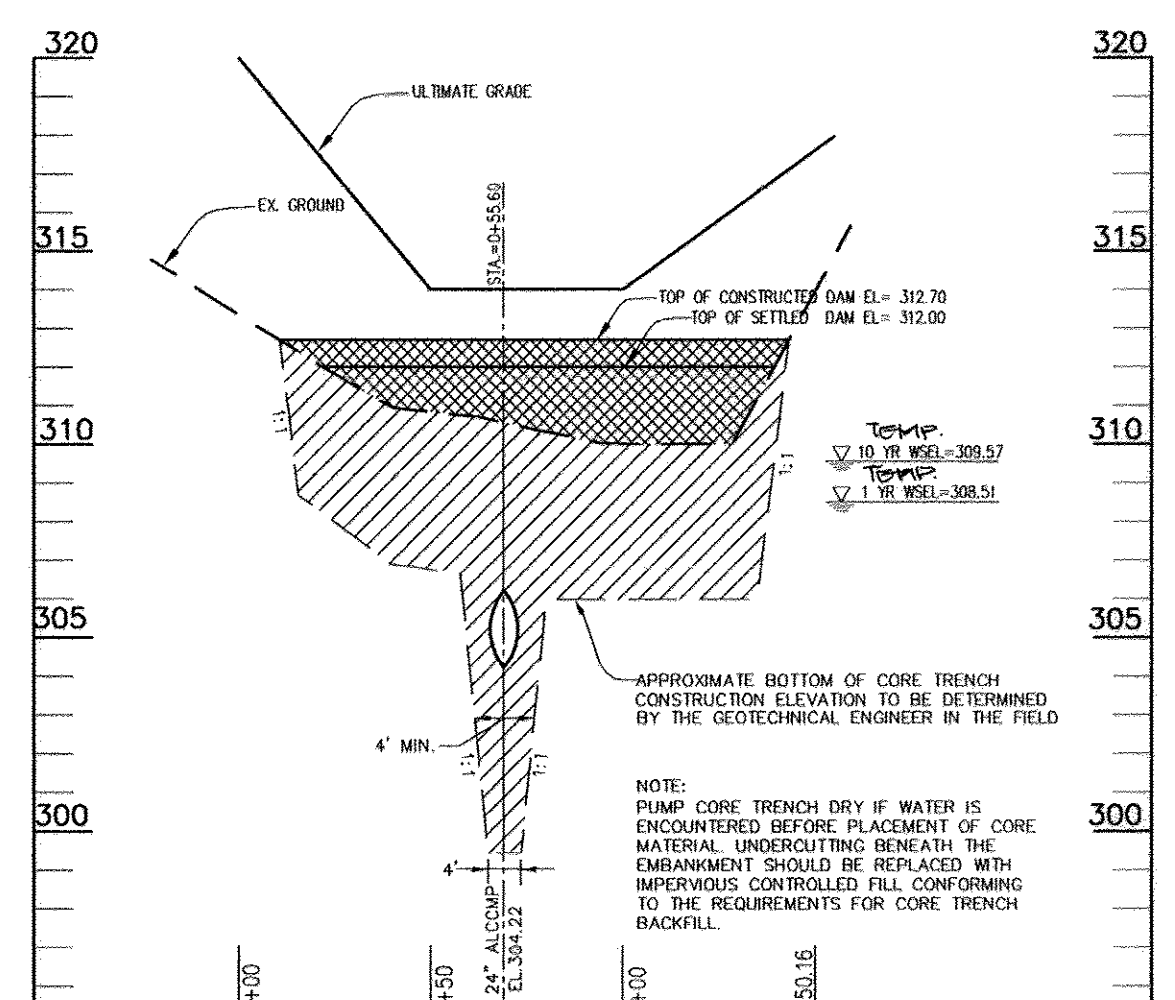
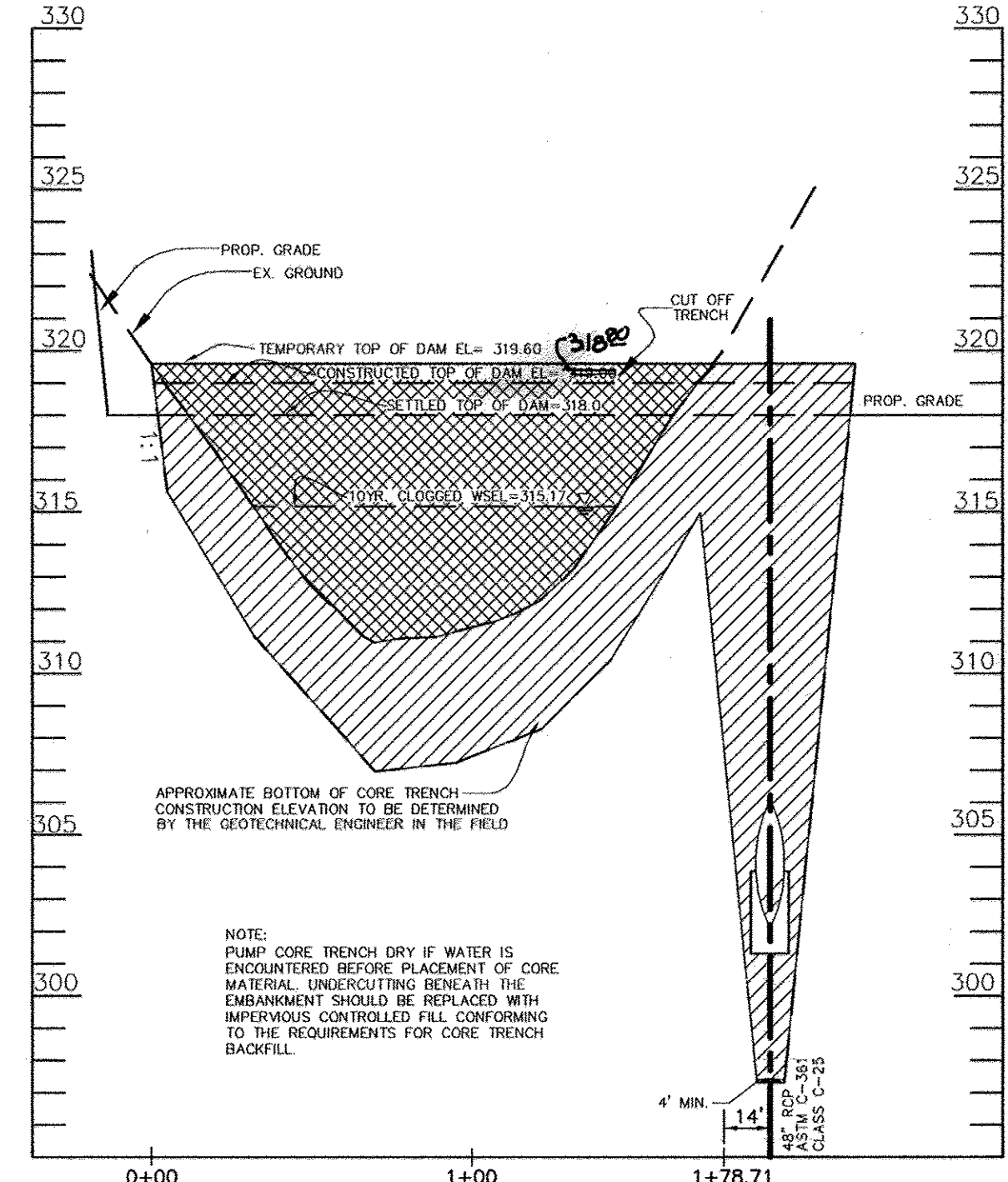
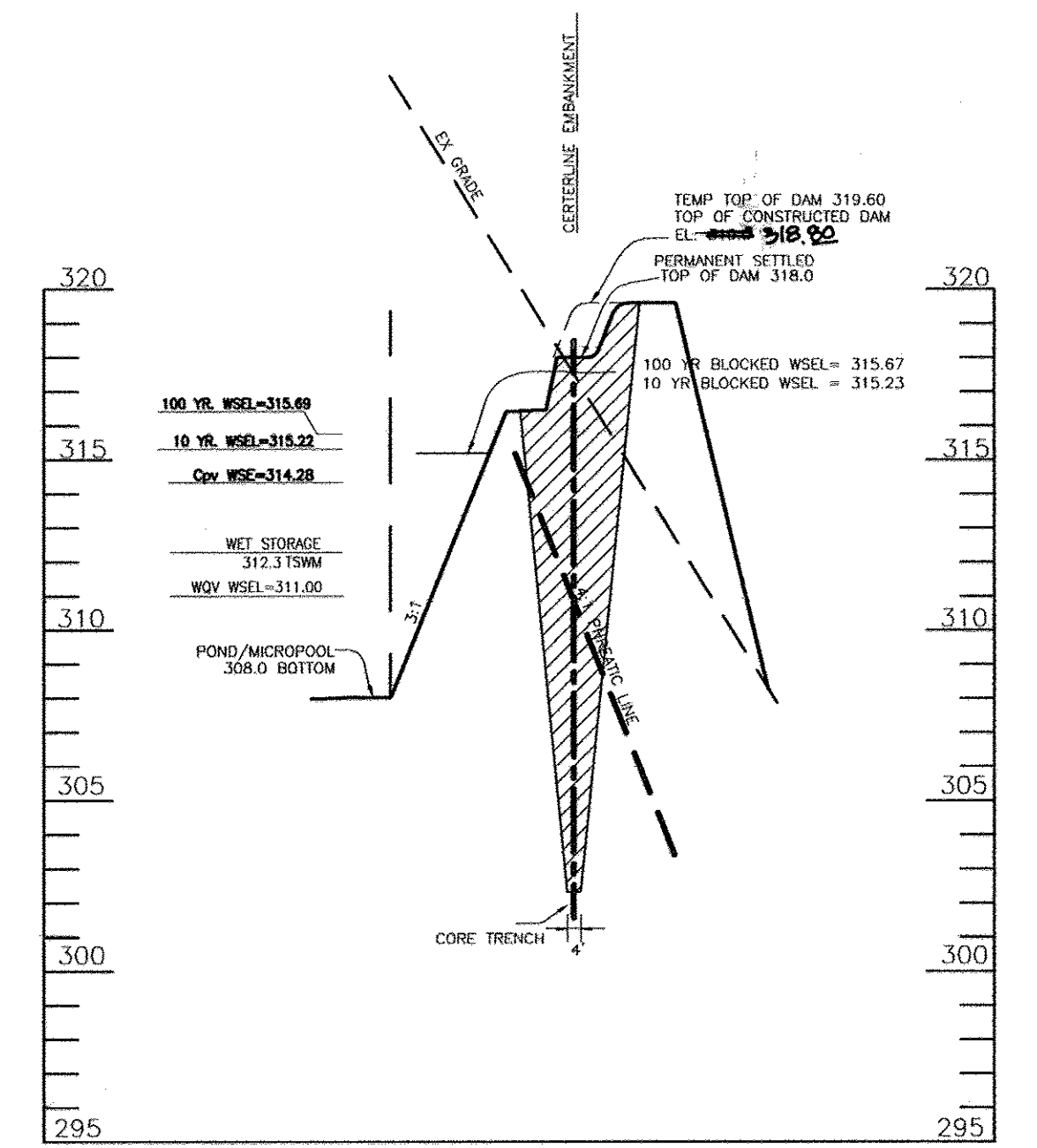
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE C-18-24 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**DETAIL 16 - CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE (continued)**

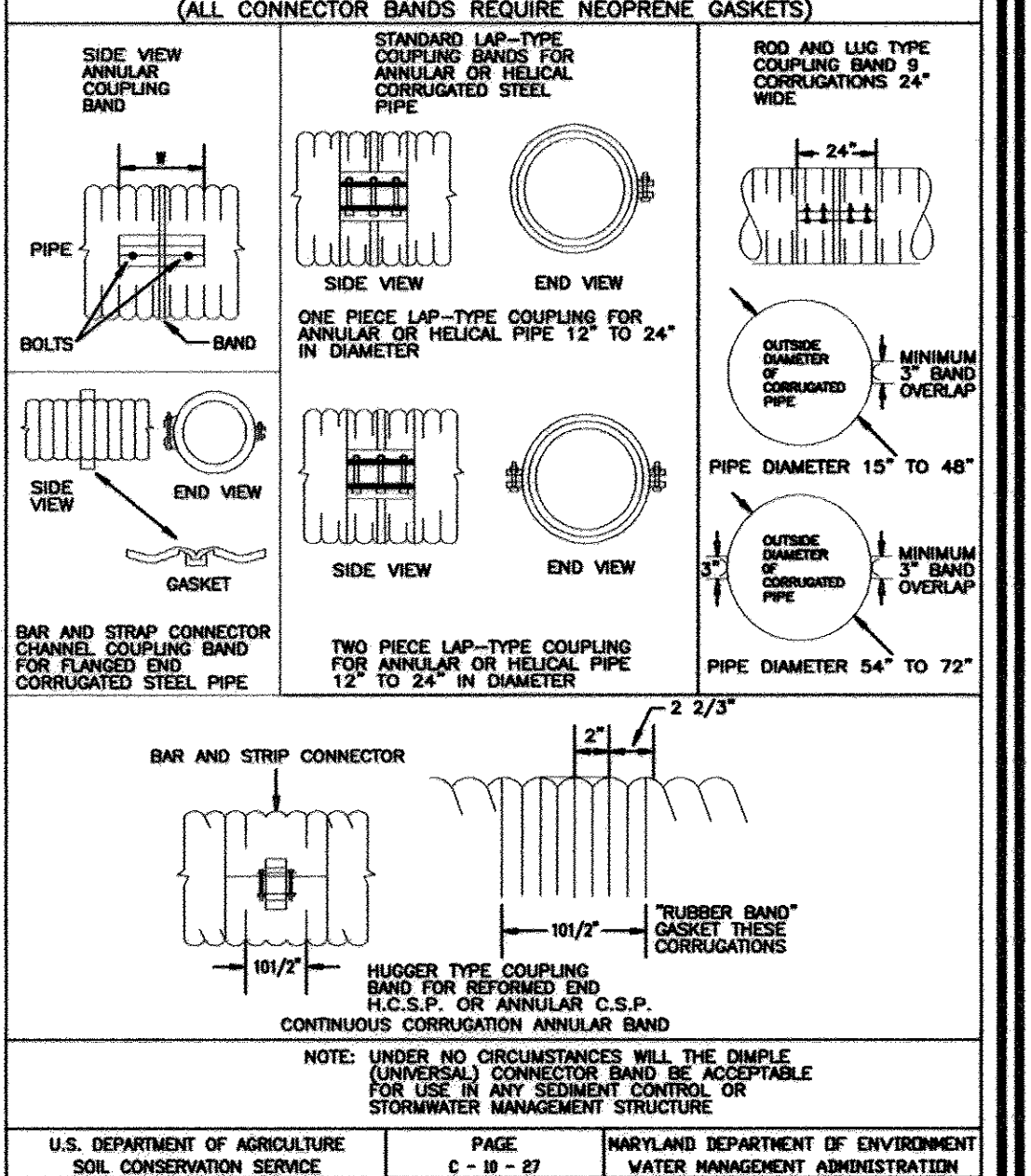
Riser Diam., in.	Trash Rack Cylinder Diam., in.	Thick., in.	H, in.	Minimum Support Bar	Minimum Top Thickness	Stiffener
12	18	16	6	#6 Rebar	16 ga.	---
15	21	16	7	---	---	---
18	27	16	8	---	---	---
21	30	16	11	---	---	---
24	36	16	13	---	14 ga.	---
27	42	16	15	---	14 ga.	---
36	54	14	17	#8 Rebar	12 ga.	---
42	60	14	19	---	---	---
48	72	12	21	1-1/4" pipe or 1-1/4 x 1-1/4 x 1/4 angle	10 ga.	---
54	78	12	25	---	---	---
60	90	12	29	1-1/2" pipe or 1-1/2 x 1-1/2 x 1/4 angle	8 ga.	---
66	96	10	33	2" pipe or 2x2x1/4 angle	8 ga.	2x2x1/4 w/stiffener
72	102	10	36	---	---	2-1/2x2-1/2x1/4 angle
78	114	10	39	2-1/2" pipe or 2-1/2x2-1/2x1/4 angle	---	---
84	120	10	42	2-1/2" pipe or 2-1/2x2-1/2x1/4 angle	---	2-1/2 x 2-1/2 x 5/16 angle

Note: The above trash rack and anti-vortex device information is only for corrugated metal pipe. Concrete risers must meet the requirements of MD 378.

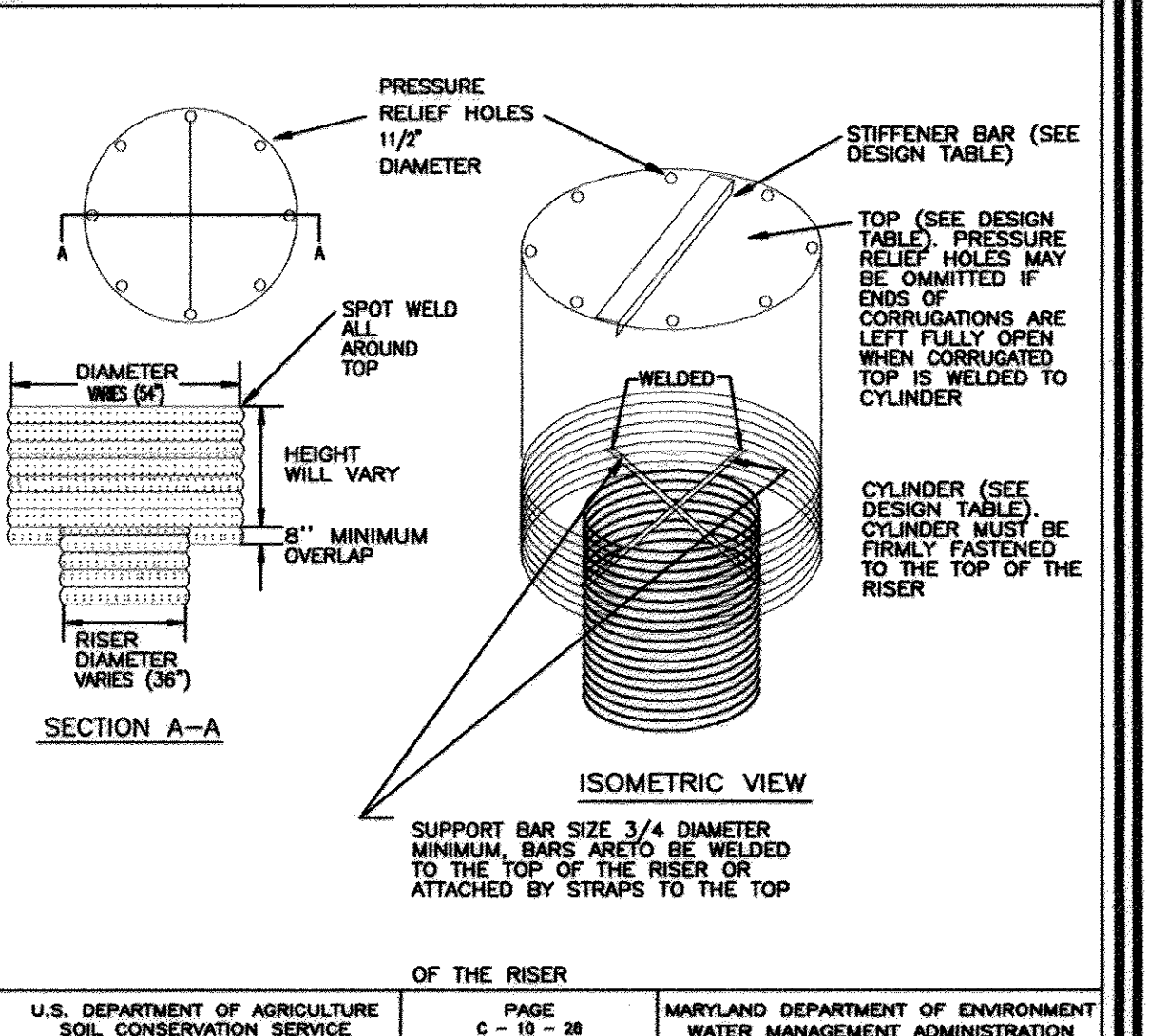
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE C-18-26A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



**DETAIL 17 - TYPES OF COUPLERS FOR CORRUGATED STEEL PIPE (ALL CONNECTOR BANDS REQUIRE NEOPRENE GASKETS)**



**DETAIL 16 - CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE**



**FINAL ROAD CONSTRUCTION PLAN  
AUTUMN RIVER - PHASE II  
STORMWATER MANAGEMENT DETAILS - BASINS**

LOTS: 5-29, 31-36, 38-43, 45-67  
OPEN SPACE LOT 30, 37, 44, 68, & 110  
& NON-BUILDABLE PARCEL C  
& NON-BUILDABLE BULK PARCEL D, E & F  
RESUBDIVISION OF EXISTING LOT 1, 2, 3  
& BULK PARCEL A

TAX MAP #25 GRID 14 & 21 & PARCELS 172 & 279  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL, INC.**  
ENGINEERS • SURVEYORS • PLANNERS  
8407 MAIN STREET  
ELLIOTT CITY, MD 21043  
Tel: 410.461.7666  
Fax: 410.461.8961

**PROFESSIONAL CERTIFICATE**  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18183 EXPIRATION DATE: 09-27-2010

DESIGN BY: R.J./RHV  
DRAWN BY: RJ  
CHECKED BY: RHV  
DATE: MAY 2010  
SCALE: AS SHOWN  
W.O. NO.: 04-145

19 SHEET OF 30



HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION									
Project Name	Address	Sheet No.	Scale	Date	Drilling Method	Soil Description	Depth (ft)	SPT Blows	Notes
Boring # 10.0	10.0	10.0	10.0	10.0	10.0	0.0 - 1.0	0.0	10	Light brown, moist, silty clay with sand and gravel (SM-SC).
						1.0 - 2.0	1.0	15	Light brown, moist, silty clay with sand and gravel (SM-SC).
						2.0 - 3.0	2.0	20	Light brown, moist, silty clay with sand and gravel (SM-SC).
						3.0 - 4.0	3.0	25	Light brown, moist, silty clay with sand and gravel (SM-SC).
						4.0 - 5.0	4.0	30	Light brown, moist, silty clay with sand and gravel (SM-SC).
						5.0 - 6.0	5.0	35	Light brown, moist, silty clay with sand and gravel (SM-SC).
						6.0 - 7.0	6.0	40	Light brown, moist, silty clay with sand and gravel (SM-SC).
						7.0 - 8.0	7.0	45	Light brown, moist, silty clay with sand and gravel (SM-SC).
						8.0 - 9.0	8.0	50	Light brown, moist, silty clay with sand and gravel (SM-SC).
						9.0 - 10.0	9.0	55	Light brown, moist, silty clay with sand and gravel (SM-SC).
Boring # 10.1	10.1	10.1	10.1	10.1	10.1	0.0 - 1.0	0.0	10	Light brown, moist, silty clay with sand and gravel (SM-SC).

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*W. J. ...* 6-22-10  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*K. ...* 7/16/10  
 CHIEF, DIVISION OF LAND DEVELOPMENT

*C. ...* 7-13-10  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION									
Project Name	Address	Sheet No.	Scale	Date	Drilling Method	Soil Description	Depth (ft)	SPT Blows	Notes
Boring # 10.2	10.2	10.2	10.2	10.2	10.2	0.0 - 1.0	0.0	10	Light brown, moist, silty clay with sand and gravel (SM-SC).

NO AS-BUILT INFORMATION THIS SHEET.

**FINAL ROAD CONSTRUCTION PLAN**  
**AUTUMN RIVER - PHASE II**  
**STORMWATER MANAGEMENT - BORING LOGS**  
**& GEOTECH RECOMMENDATION**  
 LOTS: 5-29, 31-36, 38-43, 45-67  
 OPEN SPACE LOT 30, 37, 44, 68 & 110  
 & NON-BUILDABLE PARCEL C  
 & NON-BUILDABLE BULK PARCEL D, E & F  
 RESUBDIVISION OF EXISTING LOT 1, 2, 3  
 & BULK PARCEL A PARCELS 172 & 279  
 TAX MAP #25 GRID 14 & 21 PARCELS 172 & 279  
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERS • SURVEYORS • PLANNERS**  
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7669 FAX: 410.461.7661

**OWNERS**  
 AUTUMN RIVER CORPORATION  
 4100 COLLEGE AVE.  
 ELLICOTT CITY MD 21042-7819  
 21043 5506  
 (410) 465-3500

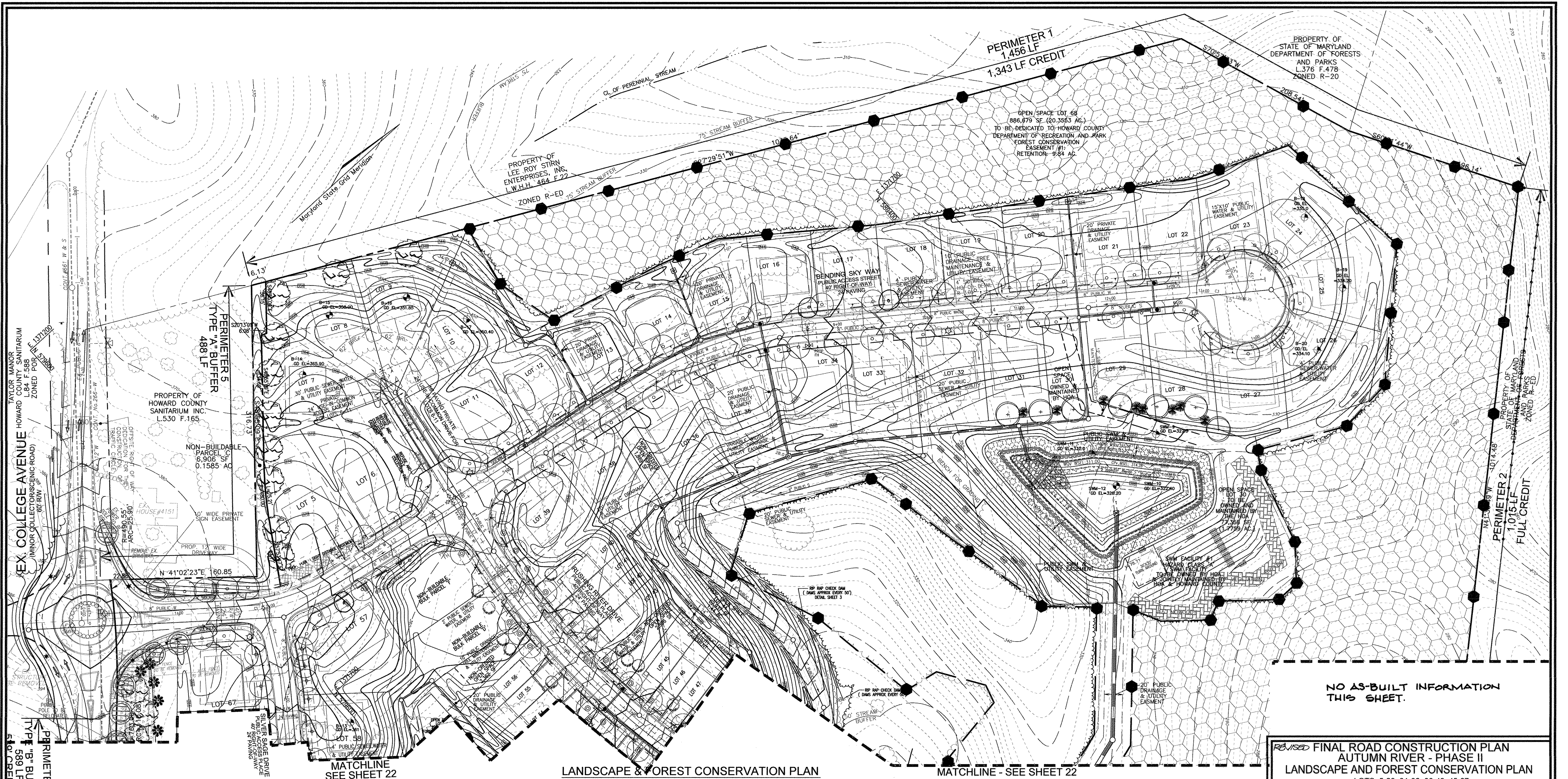
**DEVELOPER**  
 AUTUMN DEVELOPMENT CORPORATION  
 C/O LAND DESIGN & DEVELOPMENT, INC.  
 5300 DORSEY HALL DR STE 102  
 ELLICOTT CITY MD 21042-7819  
 ATTN: MR. DONALD R. REUWER  
 (443) 367-0422

PROFESSIONAL CERTIFICATE  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 08-27-2010

DESIGN BY: R.J./RHV  
 DRAWN BY: R.J.  
 CHECKED BY: RHV  
 DATE: MAY 2010  
 SCALE: AS SHOWN  
 W.O. NO.: 04-145

20 OF 30





**LANDSCAPE & FOREST CONSERVATION PLAN**

SCALE: 1"=50'

**LEGEND:**

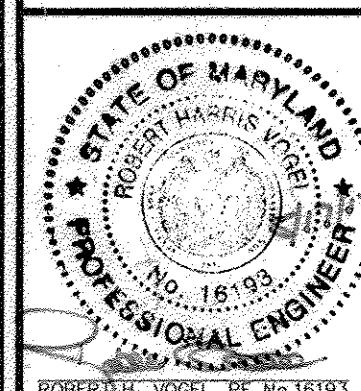
	EXISTING CONTOUR		EXISTING WATER LINE		LANDSCAPE PERIMETER		150-WATT POST TOP
	PROPOSED CONTOUR		EXISTING FENCE		PROPOSED STREET TREE		100-WATT POST TOP
	EXISTING CURB AND GUTTER		PROPERTY LINE		FOREST CONSERVATION AREA (RETENTION)		TREE PROTECTION FENCE
	PROPOSED CURB AND GUTTER		RIGHT-OF-WAY LINE		PUBLIC 100-YR FLOODPLAIN DRAINAGE & UTILITY EASEMENT		40' WIDE B&E WIRE ZONE
	EXISTING UTILITY POLE		PROPOSED STORM DRAIN		WETLANDS		NO WOODY BUFFER
	EXISTING LIGHT POLE		PROPOSED STORM DRAIN INLET		WETLANDS BUFFER		FOREST CONSERVATION SIGNS
	EXISTING MAILBOX		PROPOSED SIDEWALK		STREAM CENTERLINE		
	EXISTING SIGN		PROPOSED SHADE TREES		STREAM BUFFER		
	EXISTING SANITARY MANHOLE		PROPOSED EVERGREENS				
	EXISTING SANITARY LINE		PROPOSED SHRUBS				
	EXISTING CLEANOUT						
	EXISTING FIRE HYDRANT						

NO AS-BUILT INFORMATION THIS SHEET.

**REVISED FINAL ROAD CONSTRUCTION PLAN  
AUTUMN RIVER - PHASE II  
LANDSCAPE AND FOREST CONSERVATION PLAN**

LOTS: 5-29, 31-36, 38-43, 45-67  
OPEN SPACE LOT 30, 37, 44, 68, & 110  
& NON-BUILDABLE BULK PARCEL C  
& NON-BUILDABLE BULK PARCEL D, E, & F  
RESUBDIVISION OF EXISTING LOT 1, 2, 3  
TAX MAP #25 GRID 14 & 21 PARCELS 172 & 279  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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ELLCOTT CITY, MD 21043  
TEL: 410.461.7666  
FAX: 410.461.8961



DESIGN BY: RJ/RHV  
DRAWN BY: RJ  
CHECKED BY: RHV  
DATE: MAY 2010  
SCALE: AS SHOWN  
W.O. NO.: 04-145

PROFESSIONAL CERTIFICATE  
HEREBY CERTIFY THAT THESE DOCUMENTS  
WERE PREPARED OR APPROVED BY ME, AND  
THAT I AM A DULY LICENSED PROFESSIONAL  
ENGINEER UNDER THE LAWS OF THE STATE  
OF MARYLAND, LICENSE NO. 16193  
EXPIRATION DATE: 09-27-2010

21 SHEET OF 30

**J. CHRIS OGLE**  
DNR QUALIFIED PROFESSIONAL  
J. CHRIS OGLE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Michelle Z. ...* 6-29-12  
CHIEF, BUREAU OF HIGHWAYS DATE

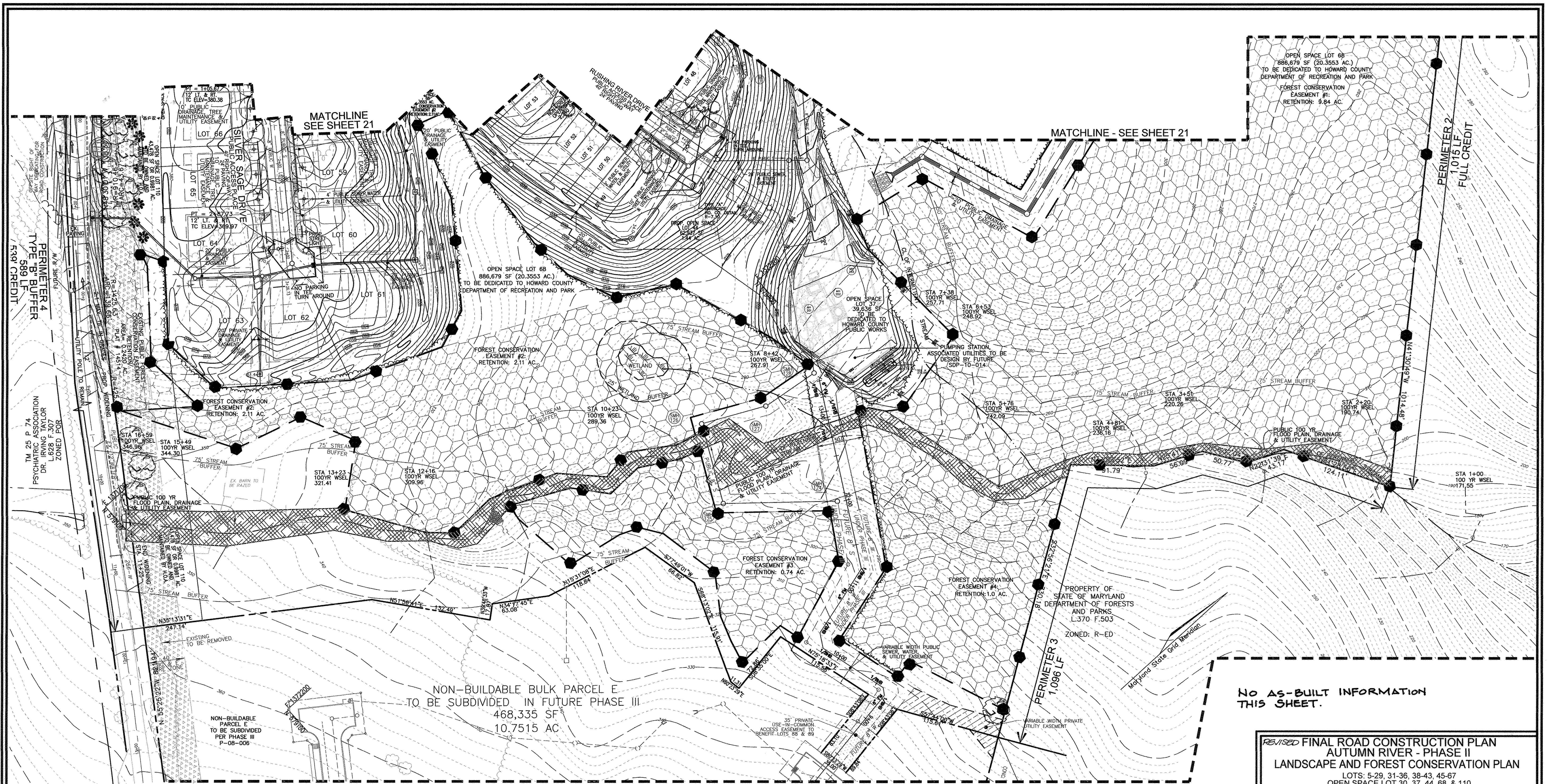
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Neil ...* 3/26/12  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*...* 7/30/12  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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

DEVELOPER'S/OWNER'S NAME:  
*Ronald Spahn*  
DATE: 7/30/12





LANDSCAPE & FOREST CONSERVATION PLAN MATCHLINE - SEE SHEET 23  
SCALE: 1"=50'

*J. Chris Ogle*  
DNR QUALIFIED PROFESSIONAL  
J. CHRIS OGLE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Walter R. ...* 6-20-12  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Neil She ...* 8/08/12  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*...* 7/20/12  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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DEVELOPER'S/OWNER'S NAME:  
AUTUMN RIVER DEVELOPMENT CORPORATION  
RONALD SPANIN

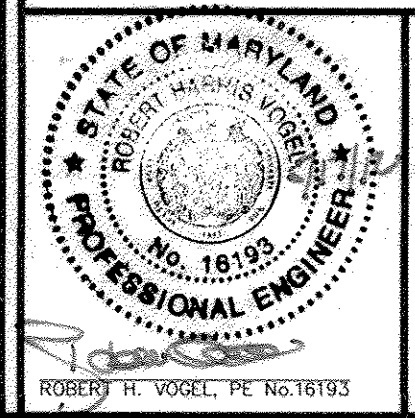
**LEGEND:**

	EXISTING CONTOUR		EXISTING WATER LINE		LANDSCAPE PERIMETER		PROP. STREET LIGHT
	PROPOSED CONTOUR		EXISTING FENCE		PROPOSED STREET TREE		PROP. STREET SIGNS
	EXISTING CURB AND GUTTER		PROPERTY LINE		FOREST CONSERVATION AREA (RETENTION)		TREE PROTECTION FENCE
	PROPOSED CURB AND GUTTER		RIGHT-OF-WAY LINE		PUBLIC 100-YR FLOODPLAIN DRAINAGE & UTILITY EASEMENT		40' WIDE BGE WIRE ZONE
	EXISTING UTILITY POLE		PROPOSED STORM DRAIN		WETLANDS		NO WOODY BUFFER
	EXISTING LIGHT POLE		PROPOSED STORM DRAIN INLET		WETLANDS BUFFER		FOREST CONSERVATION SIGNS
	EXISTING MAILBOX		PROPOSED SIDEWALK		STREAM CENTERLINE		
	EXISTING SIGN		PROPOSED SHADE TREES		STREAM BUFFER		
	EXISTING SANITARY MANHOLE		PROPOSED EVERGREENS				
	EXISTING SANITARY LINE		PROPOSED SHRUBS				
	EXISTING CLEANOUT						
	EXISTING FIRE HYDRANT						

**NO AS-BUILT INFORMATION THIS SHEET.**

**REVISED FINAL ROAD CONSTRUCTION PLAN  
AUTUMN RIVER - PHASE II  
LANDSCAPE AND FOREST CONSERVATION PLAN**  
LOTS: 5-29, 31-36, 38-43, 45-67  
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& NON-BUILDABLE PARCEL C  
& NON-BUILDABLE BULK PARCEL D, E, & F  
RESUBDIVISION OF EXISTING LOT 1, 2, 3  
TAX MAP #25 GRID 14 & 21 PARCELS 172 & 279  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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**OWNERS**  
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4100 COLLEGE AVE.  
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21043 - 3506  
(410) 465-3500

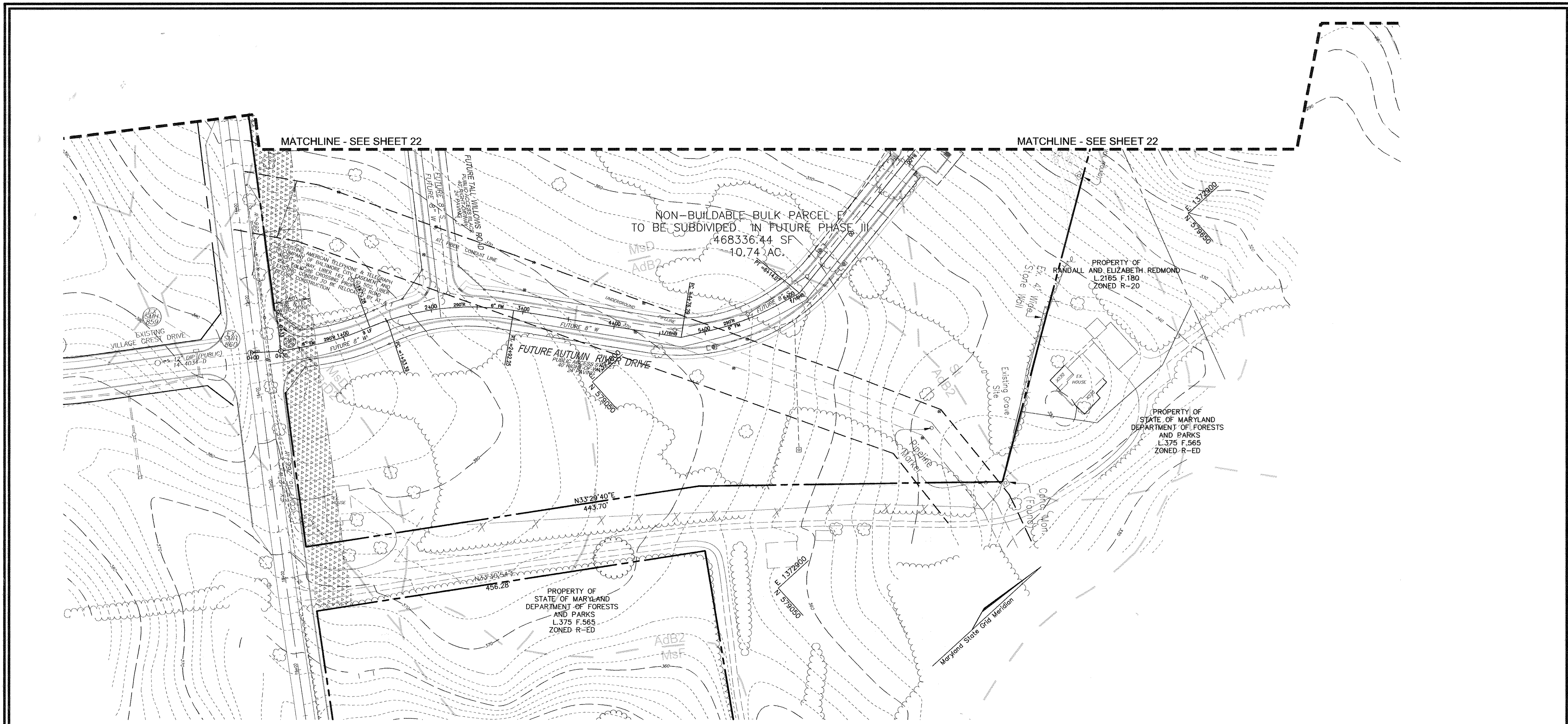
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5300 DORSEY HALL DR STE 102  
ELLICOTT CITY MD 21042-7819  
ATTN: MR. DONALD R. REUWER  
(443) 367-0422

DESIGN BY: R.J./RHV  
DRAWN BY: R.J.  
CHECKED BY: RHV  
DATE: MAY 2010  
SCALE: AS SHOWN  
W.O. NO.: 04-145

PROFESSIONAL CERTIFICATE  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18193  
EXPIRATION DATE: 09-27-2010

22 SHEET OF 30





**LANDSCAPE & FOREST CONSERVATION PLAN**  
SCALE: 1"=50'

**NO AS-BUILT INFORMATION THIS SHEET.**

*J. Chris Ogle*  
DNR QUALIFIED PROFESSIONAL  
J. CHRIS OGLE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*William J. Marshall* 6-22-10  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Kevin J. ...* 7/19/10  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chris ...* 7-13-10  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

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

DEVELOPER'S/OWNER'S NAME: *ROSS TAYLOR*

**LEGEND:**

	EXISTING CONTOUR		EXISTING WATER LINE		PROP. STREET LIGHT
	PROPOSED CONTOUR		EXISTING FENCE		PROP. STREET SIGNS
	EXISTING CURB AND GUTTER		PROPERTY LINE		TREE PROTECTION FENCE
	PROPOSED CURB AND GUTTER		RIGHT-OF-WAY LINE		40' WIDE BGE WIRE ZONE
	EXISTING UTILITY POLE		SOILS BOUNDARY		PUBLIC 100-YR FLOODPLAIN DRAINAGE & UTILITY EASEMENT
	EXISTING LIGHT POLE		LANDSCAPE PERIMETER		WETLANDS
	EXISTING MAILBOX		WETLANDS BUFFER		
	EXISTING SIGN		STREAM CENTERLINE		
	EXISTING SANITARY MANHOLE		STREAM BUFFER		
	EXISTING SANITARY LINE				
	EXISTING CLEANOUT				
	EXISTING FIRE HYDRANT				

**OWNERS**  
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4100 COLLEGE AVE.  
ELlicOTT CITY MD 21042-7819  
21043 - 5506  
(410) 465-3500

**DEVELOPER**  
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5300 DORSEY HALL DR STE 102  
ELlicOTT CITY MD 21042-7819  
ATTN: MR. DONALD R. REUWER  
(443) 367-0422

**FINAL ROAD CONSTRUCTION PLAN**  
**AUTUMN RIVER - PHASE II**  
**LANDSCAPE & FOREST CONSERVATION PLAN**  
LOTS: 5-29, 31-36, 38-43, 45-67  
OPEN SPACE LOT 30, 37, 44, 68 & 110  
& NON-BUILDABLE PARCEL C  
& NON-BUILDABLE BULK PARCEL D, *ERF*  
RESUBDIVISION OF EXISTING LOT 1, 2, 3  
TAX MAP #25 GRID 14 & 21 PARCELS 172 & 279  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL, INC.**  
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8407 MAIN STREET TEL: 410.461.7666  
ELlicOTT CITY, MD 21043 FAX: 410.461.8961

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DESIGN BY: *RJ/RHV*  
DRAWN BY: *RJ*  
CHECKED BY: *RHV*  
DATE: MAY 2010  
SCALE: AS SHOWN  
W.O. NO.: 04-145

23 SHEET OF 30



SCHEDULE C RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING	
NUMBER OF DWELLING UNITS (SFA)	10
NUMBER OF TREES REQUIRED (1:1 DU SFA)	10
NUMBER OF TREES PROVIDED	10
SHADE TREES	10
OTHER TREES (2:1 SUBSTITUTION)	-

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
NUMBER OF PARKING SPACES	45
NUMBER OF ISLANDS/TREES REQUIRED	05
NUMBER OF ISLANDS/TREES PROVIDED	05
SHADE TREES (1 TREE FOR EVERY 10 PARKING SPACES)	-
OTHER TREES (2:1 SUBSTITUTION)	-
LANDSCAPE ISLAND 200SF X 5 = 1000 SF REQ.	PROVIDED 2536 SF

SCHEDULE A: PERIMETER LANDSCAPE EDGE						
CATEGORY	ADJACENT TO PERIMETER PROPERTIES					TOTAL
	1 A	2 A	3 A	4 B	5 A	
PERIMETER/FRONTAGE DESIGNATION						
LANDSCAPE TYPE						
LINEAR FEET OF ROADWAY, PERIMETER/FRONTAGE	1456'	1015'	676'	741'	488'	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	YES* 1343'	YES* FULL CREDIT	YES* 646'	YES* 202'	0	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	-	-	-	-	-	
NUMBER OF PLANTS REQUIRED (LF REMAINING)	113'	180'	30'	539'	488'	22
SHADE TREES	1:60	2	1:60	1	1:50	11
EVERGREEN TREES	-	-	-	-	1:40	13
SHRUBS	-	-	-	-	-	-
NUMBER OF PLANTS PROVIDED	2	0	1	11	8	22
SHADE TREES	-	-	-	-	-	-
EVERGREEN TREES	-	-	-	-	-	-
OTHER TREES (2:1 SUBSTITUTION)	-	-	-	-	-	-
SHRUBS (10:1 SUBSTITUTION)	-	-	-	-	-	-
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)						

TRASH PAD LANDSCAPING			
SYM.	QTY.	DESCRIPTION	SIZE
6	1	DWARF JAPANESE YEW	2 1/2' - 3' HT

TRAFFIC CIRCLE LANDSCAPING			
SYM.	QTY.	DESCRIPTION	SIZE
26	1	JUNIPERUS HORIZONTALIS 'PLUMOSA' ANDORRA JUNIPER	2 1/2' - 3' HT
20	1	HEMEROCALLIS (DWARF REBLOOMING CULTIVARS) DAYLILIES	18 INCHES ON CENTER
20	1	LEUCANTHEMUM MAXIMUM "SNOWLADY" SHASTA DAISY	18 INCHES ON CENTER
20	1	RUDBECKIA FULGIDA VAR FULGIDA BLACK-EYED SUSAN	18 INCHES ON CENTER
20	1	SALVIA MEMOROSA 'EAST FRIESLAND' PERENNIAL SALVIA	18 INCHES ON CENTER

PLANT LIST			
QUAN.	BOTANICAL NAME	SIZE	REM.
05	THIA CORDATA 'GREENSPIRE' GREENSPIRE WHITELEAF LINDEN (SHADE TREE)	2 1/2" - 3" Cal.	B & B
07	ZELKOVA SERRATA 'VILLAGE GREEN' GREEN JAPANESE ZELKOVA	2 1/2" - 3" Cal.	B & B
22	JAPANESE RED MAPLE ACER PALMATUM ATROPURPUREUM (SHADE TREES - GROWTH HEIGHT = 20') FOR BGE WIREZONE	4'-6" HT.	B & B
10	AMUR MAPLE ACER GINNALA	4'-6" HT.	B & B
8	PINUS STROBUS EASTERN WHITE PINE (EVERGREEN TREES)	6'-8" HT.	B & B
13	ARBORVITAE TECHNY THUJA OCCIDENTALIS, 'TECHNY' (EVERGREEN TREE) MATURE HEIGHT = 20' FOR BGE WIREZONE	6'-8" HT.	B & B

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 With 2.10.10  
 CHIEF, BUREAU OF HIGHWAYS DATE 6-22-10  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Chief, Division of Land Development DATE 7/19/10  
 Chief, Development Engineering Division DATE 7-13-10

**LANDSCAPE NOTES**

- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED FOR THIS SITE BE OF THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF THE REQUIRED PLANTING MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.
- THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- NO CLEARING OF EXISTING VEGETATION IS PERMITTED WITHIN THE LANDSCAPE EDGE FOR WHICH CREDIT IS BEING TAKEN; HOWEVER, LANDSCAPE MAINTENANCE IS AUTHORIZED.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS. TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.
- CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

**B G & E NOTES:**

- THE LANDSCAPING ON WIREZONE (40' FROM BGE POLES) IS IN ACCORDANCE WITH BGE LIST OF TREES AND PLANTS.
- BGE RESERVES THE RIGHT TO TRIM, TOP OR CUT DOWN ANY TREE IN PROXIMITY TO THE LINE THAT IN THE OPINION OF BGE SHALL BE DEEMED A HAZARD TO THE SAFE AND RELIABLE DELIVERY OF ELECTRICITY.
- THE DEPARTMENT OF PLANNING AND ZONING MAY AUTHORIZE THE TRIMMING OR REMOVAL OF TREES OR VEGETATION IMMEDIATELY ADJACENT TO THE BGE R/W OR EASEMENT, IF BGE DETERMINES THE TREES ARE COMPROMISING THE SAFETY OR A TRANSMISSION LINE LOCATED WITHIN THEIR UTILITY R/W OR EASEMENT, IF BGE

**DEVELOPER'S AGREEMENT**

STREET TREES ARE PROVIDED FOR THIS PROJECT IN ACCORDANCE WITH SECTION 16.124(a)(1) OF THE SUBDIVISION REGULATIONS AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$34,800.00 TO BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT FOR THE REQUIRED 1/6 PUBLIC STREET TREES.

FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING PROVIDED PER THE LANDSCAPE MANUAL TO BE POSTED WITH THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$17,400 FOR THE REQUIRED 47 SHADE TREES AND THE REQUIRED 21 EVERGREEN TREES & 6 SHRUBS

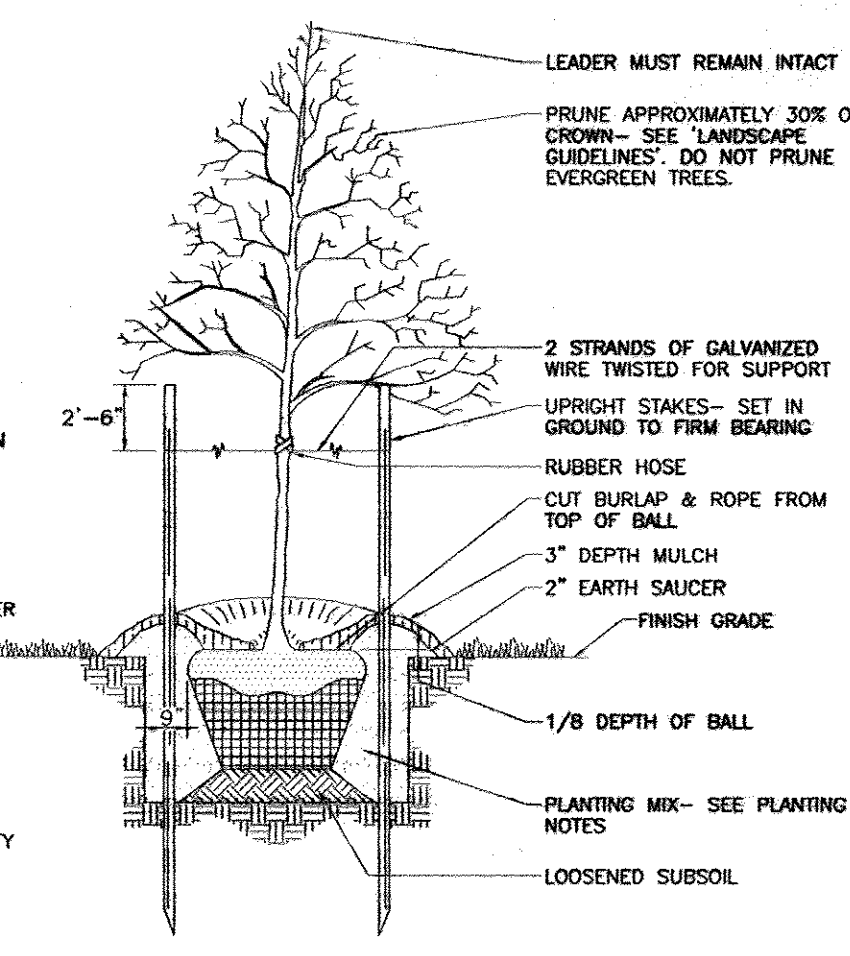
**DEVELOPER'S/OWNER'S LANDSCAPE CERTIFICATE**

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

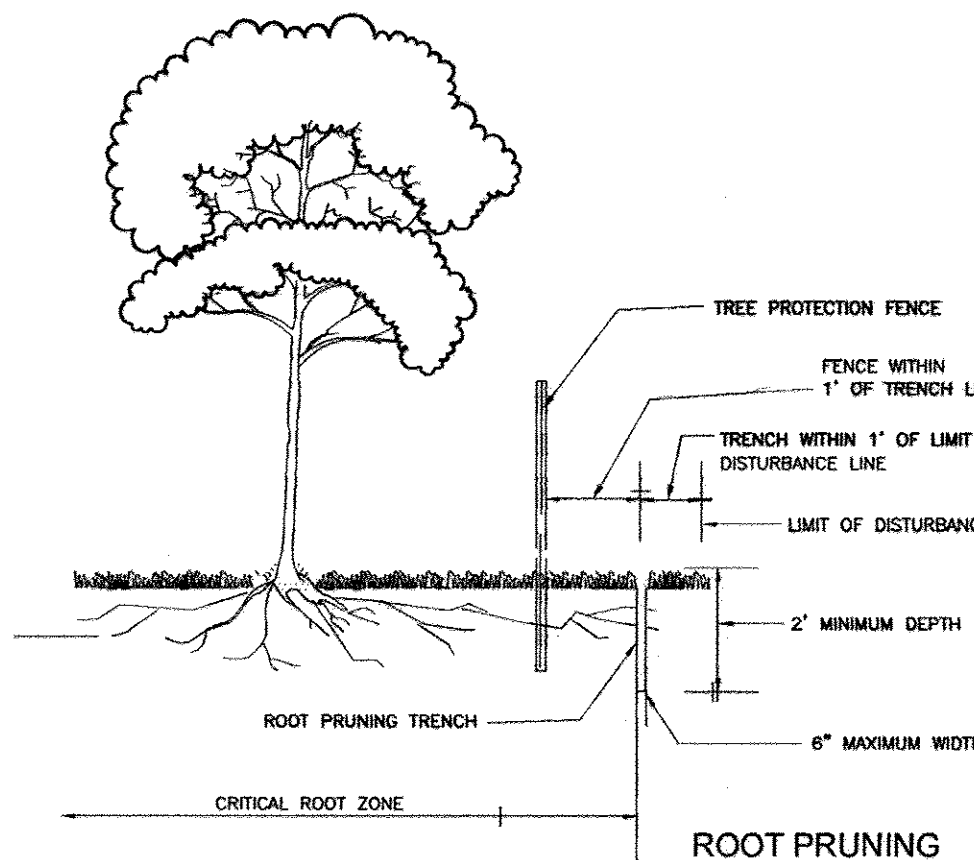
DEVELOPER'S/OWNER'S NAME: ROSS TAYLOR  
 AUTUMN DEVELOPMENT CORPORATION

**NOTES**

- SEE "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS" FOR ALL MATERIAL, PRODUCT, AND PROCEDURE SPECIFICATIONS.
- SEE "LANDSCAPE GUIDELINES" FOR SUPPORTING TREES LARGER THAN 2-1/2" CALIPER.
- PLACE UPRIGHT STAKES PARALLEL TO WALKS & BUILDINGS.
- KEEP MULCH 1" FROM TRUNK
- SEE ARCHITECTURAL PLANS FOR ADDITIONAL PLANTINGS WHICH EXCEED HOWARD COUNTY MINIMUM REQUIREMENTS.
- TREES ARE NOT TO BE PLANTED OVER PRIVATE SEWAGE EASEMENT.



**TREE PLANTING AND STAKING**  
 DECIDUOUS TREES UP TO 2-1/2" CALIPER  
 NOT TO SCALE



**NOTES:**

- RETENTION AREAS TO BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
- BOUNDARIES OF RETENTION AREAS TO BE STAKED, FLAGGED AND/OR FENCED PRIOR TRENCHING.
- EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED.
- TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL REMOVED OR ORGANIC SOIL.
- ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.

**FOREST RETENTION AREAS AND NOTES**

- FORESTED STREAM AND WETLAND BUFFERS ARE RETAINED IN OPEN SPACE LOTS.
- NO RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED ON THIS SITE.
- FORESTED AREAS ADJACENT TO FLOODPLAINS AND STREAM BUFFERS ARE SUBSTANTIALLY RETAINED IN OPEN SPACE LOTS.
- THERE ARE NO ISOLATED FOREST STANDS ON THIS SITE.
- CHANGES IN GRADING AND RUNOFF WITHIN CONSTRUCTION/INSTALLATION AREAS WILL NOT ADVERSELY AFFECT THE SOILS WITHIN THE FOREST RETENTION AREA. SEDIMENT CONTROL MEASURES WILL REDIRECT CONCENTRATED FLOW RUNOFF TO STORMWATER MANAGEMENT FACILITIES, RETAIN SEDIMENT WITHIN THE CONSTRUCTION SITE, AND/OR REDIRECT CLEAN WATER AWAY FROM CONSTRUCTION AREAS.
- FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE, DPZ AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY THE RETENTION OF EXISTING FOREST IN THE AMOUNT OF 16.15 ACRES.
- THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

**FOREST PROTECTION NOTES**

- PRE-CONSTRUCTION ACTIVITIES**
- FOR RETENTION AREAS, INSTALL BLAZE ORANGE FENCE AND RETENTION SIGNS BEFORE CONSTRUCTION BEGINS.
  - FENCING SHALL BE MAINTAINED IN GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS THE SITUATION WARRANTS.
  - A QUALIFIED TREE CARE EXPERT SHALL DETERMINE IF ROOT PRUNING IS REQUIRED ALONG THE LIMIT OF DISTURBANCE. ROOT PRUNING TREES AS REQUIRED. WATER ANY ROOT-PRUNED TREES IMMEDIATELY AFTER ROOT-PRUNING AND MONITOR FOR SIGNS OF STRESS DURING CONSTRUCTION.
- CONSTRUCTION PHASE**
- NO DISTURBANCE OR DUMPING IS ALLOWED INSIDE THE TREE RETENTION AREA.
  - NO EQUIPMENT SHALL BE OPERATED INSIDE THE TREE RETENTION AREA INCLUDING TREE CANOPIES.
  - IN THE EVENT OF DROUGHT, THE PROTECTED TREES SHALL BE MONITORED FOR SIGNS OF STRESS AND WATERED AS NEEDED.
- POST-CONSTRUCTION ACTIVITIES**
- AT THE DIRECTION OF A QUALIFIED TREE CARE EXPERT, DAMAGES TO RETAINED TREES SHALL BE REPAIRED BY THE CONTRACTOR.
  - FENCE REMOVAL AND STABILIZATION SHALL BE AS PER THE SEDIMENT AND EROSION CONTROL PLAN.
  - DO NOT REMOVE SIGNS.

**COST ESTIMATE:** (For bonding purposes, only)  
 (RETENTION - (13.81 AC.) 601,563.6 SF x .20 = \$120,313.00)

**SURETY NOTE**  
 FINANCIAL SURETY IN THE AMOUNT OF \$120,313.00 WILL BE POSTED WITH THE FC MAINTENANCE AGREEMENT.

**SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION**

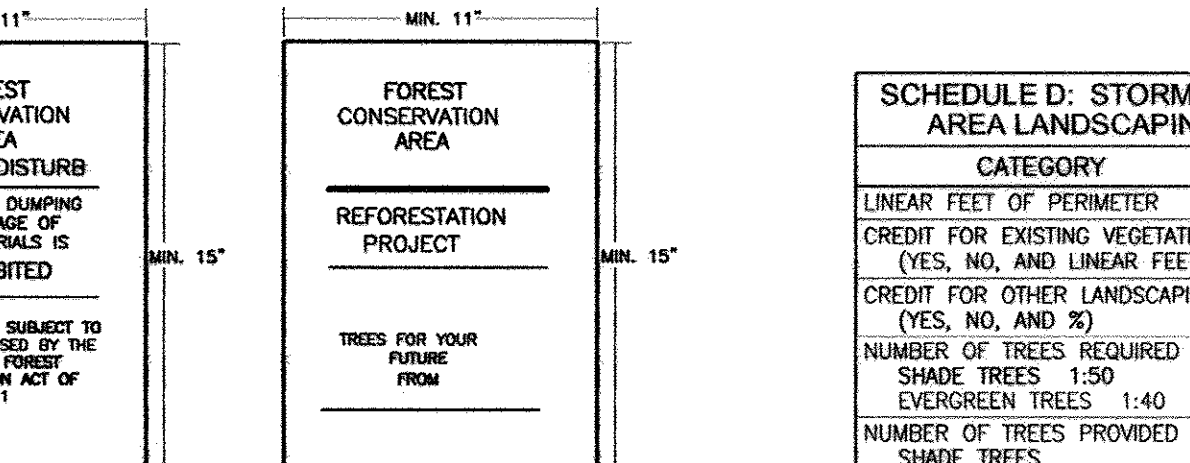
- PRECONSTRUCTION MEETING / SITE WALK WITH CONTRACTORS AND OTHER RESPONSIBLE PARTIES TO DEFINE PROTECTION MEASURES TO BE UTILIZED AND TO POINT OUT PARTICULAR TREES TO BE SAVED.
- STAKE OUT LIMITS OF DISTURBANCE AND TREE PROTECTION FENCING LOCATIONS.
- INSTALL TREE PROTECTION FENCING; FENCING TO BE INSPECTED BY THE PROJECT ENGINEER OR THE PROJECT ECOLOGIST AND HOWARD COUNTY PLANNING AND ZONING.
- PROCEED WITH TREE REMOVAL AND SITE IMPROVEMENTS AS PER APPROVED SEDIMENT CONTROL PLAN - TO BE INSPECTED BY HOWARD COUNTY PLANNING AND ZONING.
- TEMPORARY TREE PROTECTION DEVICES SHALL BE REMOVED AFTER ALL FINISHED GRADING AND UTILITY CONSTRUCTION HAS OCCURRED AND WITH APPROVAL FROM THE HOWARD COUNTY OFFICE OF PLANNING AND ZONING.

**SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION**

**SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION**

**SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION**

**SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION**



- NOTES:**
- BOTTOM OF SIGNS TO BE HIGHER THAN TOP OF TREE PROTECTION FENCE.
  - SIGNS TO BE PLACED AT A MAXIMUM SPACING OF 50-100 FEET. CONDITIONS ON-SITE AFFECTING VISIBILITY MAY WARRANT PLACING SIGNS CLOSER OR FARTHER APART.
  - ATTACHMENT OF SIGNS TO TREES IS PROHIBITED.

**HOWARD COUNTY  
 FOREST CONSERVATION WORKSHEET**

ZONED R-ED  
 NET TRACT AREA: 48.63 AC  
 A. TOTAL TRACT AREA  
 B. AREA WITHIN 100 YEAR FLOODPLAIN 0.86 AC  
 C. NET TRACT AREA 47.77 AC

LAND USE CATEGORY  
 INPUT THE NUMBER "1" UNDER THE APPROPRIATE LAND USE ZONING, AND LIMIT TO ONLY ONE ENTRY. ZONED R-ED.  
 ARA MDR IDA HDR MPD CIA  
 0 0 0 1 0 0

E. AFFOREST THRESHOLD 15% X D = 7.17 AC  
 F. CONSERVATION THRESHOLD 20% X D = 9.55 AC  
 G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN) 30.81 AC  
 H. AREA OF FOREST ABOVE AFFORESTATION THRESHOLD 23.64 AC  
 I. AREA OF FOREST ABOVE CONSERVATION THRESHOLD 21.26 AC  
 J. BREAK EVEN POINT  
 K. CLEARING PERMITTED WITHOUT MITIGATION 13.81 AC  
 L. TOTAL AREA OF FOREST TO BE CLEARED 14.76 AC  
 M. TOTAL AREA OF FOREST TO BE RETAINED 15.89 AC  
 N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD 0.00 AC  
 O. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD 0.00 AC  
 P. TOTAL REFORESTATION REQUIRED (N+P-Q) 0.00 AC  
 Q. TOTAL AFFORESTATION REQUIRED 0.00 AC  
 R. TOTAL REFORESTATION AND AFFORESTATION REQUIRED 0.00 AC

TOTAL RETENTION AREA: 13.93 AC.  
 FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION MANUAL. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

THE PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE WITH THE RETENTION OF 13.93 ACRES OF CREATED EASEMENTS AND 2.08 ACRES OF NON-CREDITED EASEMENT WHICH EXCEEDS THE BREAK-EVEN POINT OBLIGATION OF 13.81 ACRES FOR THIS SITE.

BOND FOR 13.81 AC. (6,015,634.00 X .20 = \$ 1,203,130.00)  
 TOTAL FINANCIAL SURTY OBLIGATION IS 120,313.00

FOREST CONSERVATION EASEMENT TABLE	
TOTAL RETENTION: 13.93 AC.	
FOREST CONSERVATION EASEMENT 1	RETENTION AREA : 9.84 AC.
FOREST CONSERVATION EASEMENT 2	RETENTION AREA : 2.11 AC.
FOREST CONSERVATION EASEMENT 3	RETENTION AREA : 0.74 AC.
FOREST CONSERVATION EASEMENT 4	RETENTION AREA : 1.00 AC.
EXISTING FOREST CONSERVATION EASEMENT	RETENTION AREA : 10,790 SF. (0.24 AC.) PLAT # 14514
TOTAL RETENTION AREA: 13.93 AC.	

SCHEDULE D: STORMWATER MANAGEMENT AREA LANDSCAPING-TYPE 'B' BUFFER	
CATEGORY	SWMF 1
LINEAR FEET OF PERIMETER	888'
CREDIT FOR EXISTING VEGETATION (YES, NO, AND LINEAR FEET)	YES* 553'
CREDIT FOR OTHER LANDSCAPING (YES, NO, AND %)	-
NUMBER OF TREES REQUIRED	335'
SHADE TREES 1:50	07
EVERGREEN TREES 1:40	08
NUMBER OF TREES PROVIDED	07
SHADE TREES	08
EVERGREEN TREES	-
SHRUBS	-

\*EXISTING WOODS TO REMAIN

J. CHRIS OGLE  
 DNR QUALIFIED PROFESSIONAL

2. MODIFICATION TO PROPOSED RUSHING RIVER DRIVE BASED ON RECONFIGURATION OF LOTS ALONG ROADWAY REVISION DATE 2/7/12

**FINAL ROAD CONSTRUCTION PLAN  
 AUTUMN RIVER - PHASE II**  
 LANDSCAPE & FOREST CONSERVATION NOTES & DETAILS  
 LOTS: 5-29, 31-36, 38-43, 45-67  
 OPEN SPACE LOT 30, 37, 44, 68 & 110  
 & NON-BUILDABLE PARCEL C  
 & NON-BUILDABLE BULK PARCEL D, E & F  
 RESUBDIVISION OF EXISTING LOT 1, 2, 3  
 & BULK PARCEL A PARCELS 172 & 279  
 TAX MAP #25 GRID 14 & 21 PARCELS 172 & 279  
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL  
 ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET TEL: 410-461-7666  
 ELLICOTT CITY, MD 21043 FAX: 410-461-8561

DESIGN BY: R.J./R.H.V.  
 DRAWN BY: R.J.  
 CHECKED BY: R.H.V.  
 DATE: MAY 2010  
 SCALE: AS SHOWN  
 W.O. NO.: 04-145

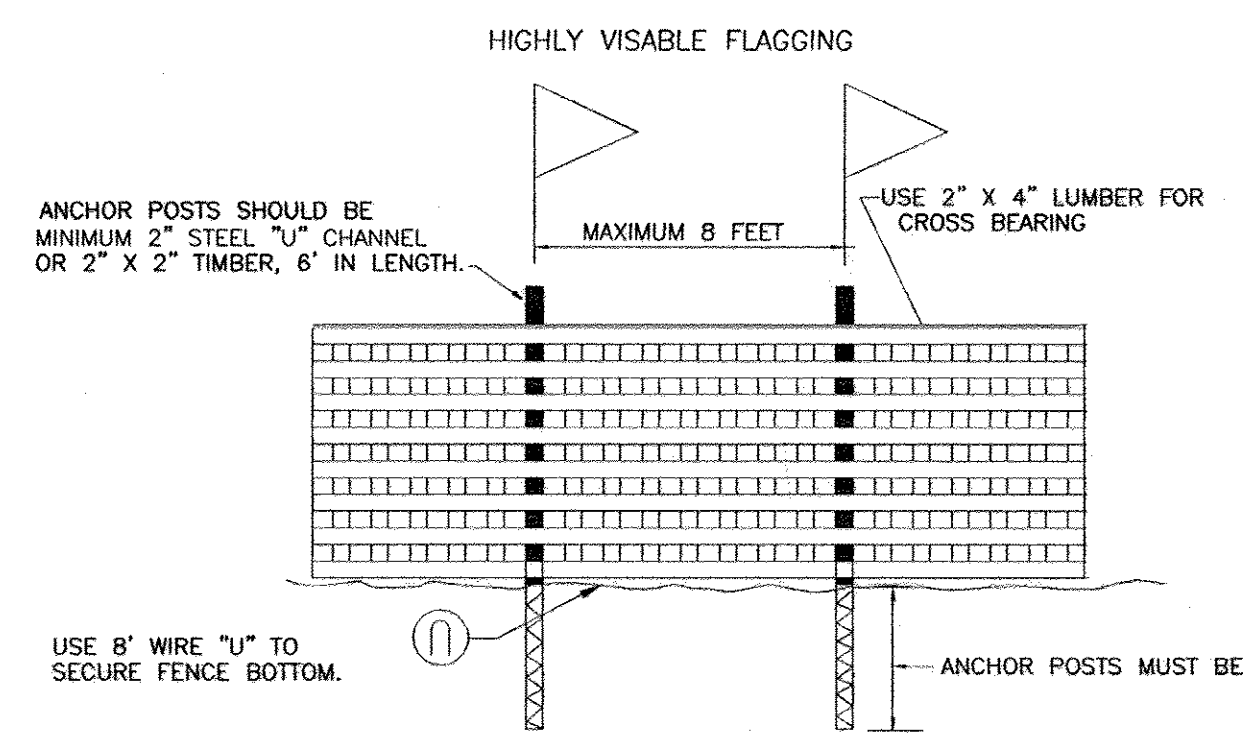
PROFESSIONAL CERTIFICATE  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16183 EXPIRATION DATE: 08-27-2010

24 SHEET OF 30

**LANDSCAPE NOTES TRAFFIC CIRCLE:**

- CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL MEASURES AND SHALL WORK WITH THE COUNTY ON THE BEST TIME OF DAY FOR THE WORK TO TAKE PLACE.
- LANDSCAPE SHALL BE PLANTED BETWEEN APRIL AND MAY OR SEPTEMBER AND OCTOBER.
- THE OUTER FOUR FEET OF THE ISLAND SHALL BE DUG OUT TO THE DEPTH OF THREE INCHES BELOW CURB AND SOIL REMOVED.
- THE DUG OUT AREA SHALL BE COMPACTED USING A SMALL VIBRATOR.
- LANDSCAPE FABRIC SHALL COVER THE COMPACTED AREA AND GO UP THE INNER SOIL EDGE. JOINTS IN FABRIC SHALL OVERLAP BY A FOOT.
- "BARN RED STONE" (3-4 INCHES IN DIAMETER) SHALL BE ADDED TO THE COMPACTED AREA AND BROUGHT UP TO JUST ABOVE THE TOP OF THE CURB AND INNER CIRCLE OF SOIL.
- 3 INCHES THICK OF LEAFGRO OVER TOTAL PLANTING AREA SHALL BE TILLED INTO TOP 6 INCHES.
- CREATE A SLIGHT CROWN IN THE CENTER OF THE ISLAND.
- SHREDDED HARDWOOD MULCH SHALL BE ADDED TO THE DEPTH OF 2-3 INCHES WITH IT NOT TOUCHING THE BASE OF PLANTS.
- PLANTS SHALL MEET MARYLAND NURSERYMEN SPECIFICATIONS.
- HOWARD COUNTY SHALL APPROVE LANDSCAPE DESIGN AND PLANT SELECTION, BEFORE PURCHASE OF PLANTS.
- DEBRIS SHALL BE REMOVED FROM THE SITE.
- PLANTS SHALL BE WATERED WITHIN 24 HOURS OF PLANTING AND NOT ALLOWED TO DRY-OUT AND DIE.

**NO AS-BUILT INFORMATION  
 THIS SHEET.**



**TYPICAL TREE PROTECTION FENCE DETAIL**

**NOTES:**

- FOREST PROTECTION DEVICE ONLY.
- RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
- BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
- ROOF DAMAGE SHOULD BE AVOIDED.



**BASIN NO.1**

TRAP TYPE: BASIN  
 EX. DRAINAGE AREA: 6.46 AC.  
 PROP. DRAINAGE AREA: 14.48 AC.  
 WET STORAGE REQUIRED: 26,064 CF  
 WET STORAGE PROVIDED: 26,064 CF  
 DRY STORAGE REQUIRED: 26,064 CF  
 DRY STORAGE PROVIDED: 68,389 CF  
 TOTAL STORAGE REQUIRED: 52,108 CF  
 TOTAL STORAGE PROVIDED: 94,453 CF  
 BOTTOM ELEV: 308.0 CF  
 WEIR ELEVATION: 316.50 CF  
 WET STORAGE ELEVATION: 308.0 - 312.30  
 DRY STORAGE ELEVATION: 312.30 - 314.30  
 TOTAL STORAGE DEPTH: 9.42  
 TOP OF EMBANKMENT: 319.42 (TEMPORARY)  
 CLEANOUT ELEVATION: 310.80  
 SIDE SLOPES: 3:1  
 EMERGENCY SPILLWAY: N/A  
 01 EX. = 0.99 CFS  
 010 EX. = 13.80 CFS  
 01 SED = 0.92 CFS-1YR WSEL 316.09  
 ULTIMATE Q1 = 0.32 CFS  
 010 SED = 58.37 CFS  
 10 YR WSEL 317.42

**SEDIMENT TRAP DATA  
TRAP NO. 5**

TRAP TYPE: STONE OUTLET  
 SEDIMENT TRAP - ST II  
 DRAINAGE AREA: 1.55 AC.  
 WET STORAGE REQUIRED: 2790 CF  
 WET STORAGE PROVIDED: 2790 CF  
 DRY STORAGE REQUIRED: 2797 CF  
 DRY STORAGE PROVIDED: 2797 CF  
 BOTTOM DIMENSIONS: 45'X25'  
 BOTTOM ELEVATION: 296.0  
 WEIR CREST ELEVATION: 299.40  
 WEIR WIDTH: 6.2'  
 WET STORAGE ELEVATION: 298.0  
 DRY STORAGE ELEVATION: 299.4  
 TOP OF EMBANKMENT: 300.40  
 CLEANOUT ELEVATION: 297.00  
 SIDE SLOPES: 2:1

**TRAP NO. 2  
TEMPORARY  
SEDIMENT TRAP II**

TRAP TYPE: STONE OUTLET  
 SEDIMENT TRAP ST IV  
 DRAINAGE AREA: 1.90 AC.  
 WET STORAGE REQUIRED: 3420 CF  
 WET STORAGE PROVIDED: 3420 CF  
 DRY STORAGE REQUIRED: 3420 CF  
 DRY STORAGE PROVIDED: 3564 CF  
 BOTTOM DIMENSIONS: 55' X 25'  
 BOTTOM ELEV: 324.0  
 WEIR ELEVATION: 327.5  
 WEIR WIDTH: 7.6'  
 WET STORAGE ELEVATION: 326.0  
 DRY STORAGE ELEVATION: 327.50  
 TOP OF EMBANKMENT: 328.50  
 CLEANOUT ELEVATION: 325.0  
 SIDE SLOPES: 2:1

**SEDIMENT TRAP DATA  
TRAP NO. 3**

TRAP TYPE: STONE OUTLET  
 SEDIMENT TRAP ST IV  
 DRAINAGE AREA: 1.69 AC.  
 WET STORAGE REQUIRED: 3042 CF  
 WET STORAGE PROVIDED: 3042 CF  
 DRY STORAGE REQUIRED: 3132 CF  
 DRY STORAGE PROVIDED: 3294 CF  
 BOTTOM DIMENSIONS: 25'x50'  
 BOTTOM ELEV: 342.00  
 WEIR CREST ELEVATION: 345.50  
 WEIR WIDTH: 6.8'  
 WET STORAGE ELEVATION: 344.0  
 DRY STORAGE ELEVATION: 345.5  
 TOP OF EMBANKMENT: 346.5  
 CLEANOUT ELEVATION: 343.0  
 SIDE SLOPES: 2:1

**BASIN NO. 4**

TRAP TYPE: BASIN  
 EX. DRAINAGE AREA: 1.95 AC.  
 PROP. DRAINAGE AREA: 3.17 AC.  
 WET STORAGE REQUIRED: 5706 CF  
 WET STORAGE PROVIDED: 5706 CF  
 DRY STORAGE REQUIRED: 5706 CF  
 DRY STORAGE PROVIDED: 10846 CF  
 TOTAL STORAGE REQUIRED: 11412 CF  
 TOTAL STORAGE PROVIDED: 16552 CF  
 CREST ELEV: 309.00  
 BOTTOM ELEV: 304.00  
 RISER WEIR: 306.27  
 WET STORAGE ELEVATION: 304.00-306.27  
 DRY STORAGE ELEVATION: 306.27-307.40  
 TOTAL STORAGE DEPTH: 5.57  
 TOP OF EMBANKMENT: 312.00  
 CLEANOUT ELEVATION: 305.00  
 SIDE SLOPES: 3:1  
 EMERGENCY SPILLWAY: N/A  
 01 EX.=0.66 CFS  
 010 EX.=4.96 CFS  
 1 YR WSEL 308.51  
 01 SED.=0.60 CFS  
 010 SED.=13.68 CFS  
 10 YR WSEL 309.57



PRE-CONSTRUCTION TEMPORARY SWM DRAINAGE AREA MAP  
SCALE: 1"=100'

NO AS-BUILT INFORMATION  
THIS SHEET.

**OWNERS**

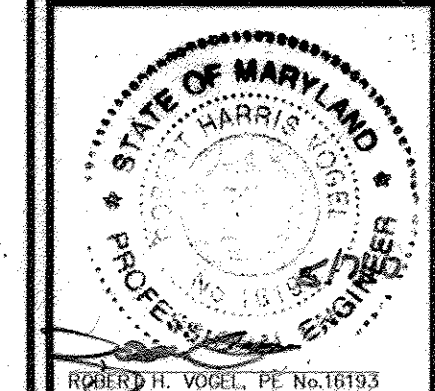
AUTUMN RIVER CORPORATION  
 4100 COLLEGE AVE.  
 ELLICOTT CITY MD 21042-7819  
 21043 - 5506  
 (410) 465-3500

**DEVELOPER**

AUTUMN DEVELOPMENT CORPORATION  
 C/O LAND DESIGN & DEVELOPMENT, INC.  
 5300 DORSEY HALL DR STE 102  
 ELLICOTT CITY MD 21042-7819  
 ATTN: MR. DONALD R. REUWER  
 (443) 367-0422

**FINAL ROAD CONSTRUCTION PLAN  
AUTUMN RIVER - PHASE II  
PRE-CONSTRUCTION DRAINAGE AREA MAP**  
 LOTS: 5-29, 31-36, 38-43, 45-67  
 OPEN SPACE LOT 30, 37, 44, 68, & 110  
 & NON-BUILDABLE PARCEL C  
 & NON-BUILDABLE BULK PARCEL D, E, F  
 RESUBDIVISION OF EXISTING LOT 1, 2, 3  
 TAX MAP #25 GRID 14 & 21 & BULK PARCEL A PARCELS 172 & 279  
 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL, INC.**  
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 8407 MAIN STREET TEL: 410.461.7666  
 ELLICOTT CITY, MD 21043 FAX: 410.461.8961



DESIGN BY: RJ/RHV  
 DRAWN BY: RJ  
 CHECKED BY: RHV  
 DATE: MAY 2010  
 SCALE: AS SHOWN  
 W.O. NO.: 04-145  
 25 SHEET OF 30

**ENGINEERS CERTIFICATE**

"I HEREBY 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."

*Robert H. Vogel* 5/7/10  
 SIGNATURE OF ENGINEER DATE  
 ROBERT H. VOGEL

**DEVELOPER'S CERTIFICATE**

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

*Ross Taylor* 5/7/2010  
 SIGNATURE OF DEVELOPER DATE  
 ROSS TAYLOR

THESE PLANS HAVE BEEN REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

USDA-NATURAL RESOURCES  
 CONSERVATION SERVICE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Howard W.C.D.* 6/15/10  
 HOWARD W.C.D. DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

*Michelle J. Wall* 6-22-10  
 CHIEF, BUREAU OF HIGHWAYS DATE




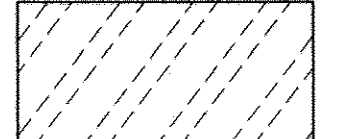
APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Robert J. Shindler* 7/19/10  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chad Chosh* 7.13.10  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



**LEGEND**

-  DRAINAGE DIVIDE
-  EARTH DIKE
-  SSF SUPER SILT FENCE
-  DRAINAGE AREA MANAGED BY SUPER SILT FENCE



**ENGINEERS CERTIFICATE**

"I HEREBY 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."

*Robert H. Vogel* 5/7/12  
 SIGNATURE OF ENGINEER DATE  
 ROBERT H. VOGEL

**DEVELOPER'S CERTIFICATE**

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE 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."

*Ronald Spahn* 4/10/12  
 SIGNATURE OF DEVELOPER DATE  
 RONALD SPAHN

THESE PLANS HAVE BEEN REVIEWED BY THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

USDA-NATURAL RESOURCES CONSERVATION SERVICE DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*John S. C.D.* 6/12/12  
 HOWARD S.C.D. DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

*Mike R. Smith* 6-20-12  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Karl S. L. ...* 8/03/12  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

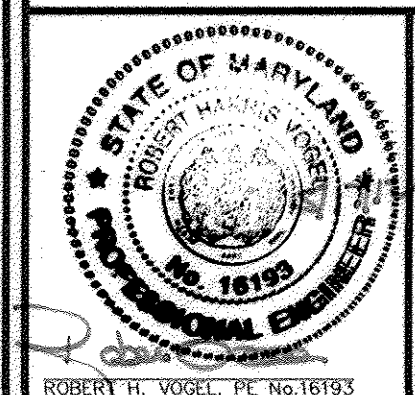
*...* 7/30/12  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

POST-CONSTRUCTION TEMPORARY SWM DRAINAGE AREA MAP  
 SCALE: 1"=80'

NO AS-BUILT INFORMATION THIS SHEET.

REVISED FINAL ROAD CONSTRUCTION PLAN  
 AUTUMN RIVER - PHASE II  
 POST-CONSTRUCTION DRAINAGE AREA MAP  
 LOTS: 5-29, 31-36, 38-43, 45-67  
 OPEN SPACE LOT 30, 37, 44, 68, & 110  
 & NON-BUILDABLE PARCEL C  
 & NON-BUILDABLE BULK PARCEL D, E, & F  
 RESUBDIVISION OF EXISTING LOT 1, 2, 3  
 & BULK PARCEL A PARCELS 172 & 279  
 TAX MAP #25 GRID 14 & 21 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
 ENGINEERS • SURVEYORS • PLANNERS  
 8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961



DESIGN BY: RJ/RHV  
 DRAWN BY: RJ  
 CHECKED BY: RHV  
 DATE: MAY 2010  
 SCALE: AS SHOWN  
 W.O. NO.: 04-145

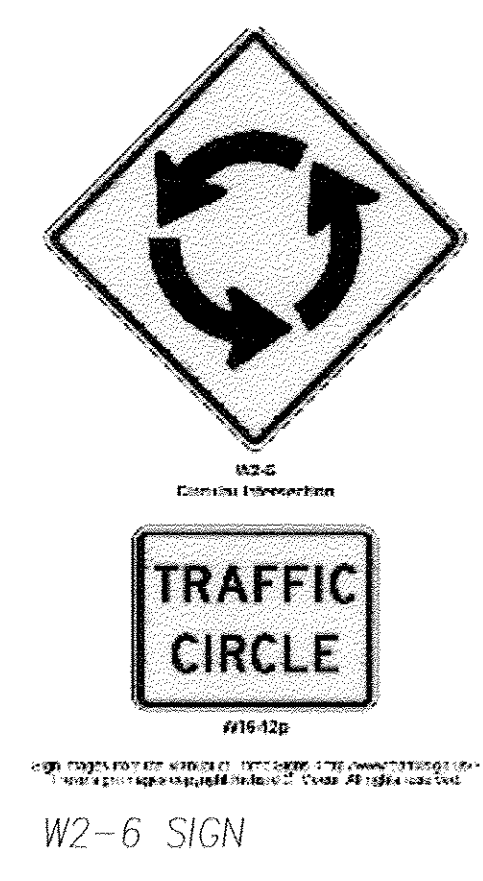
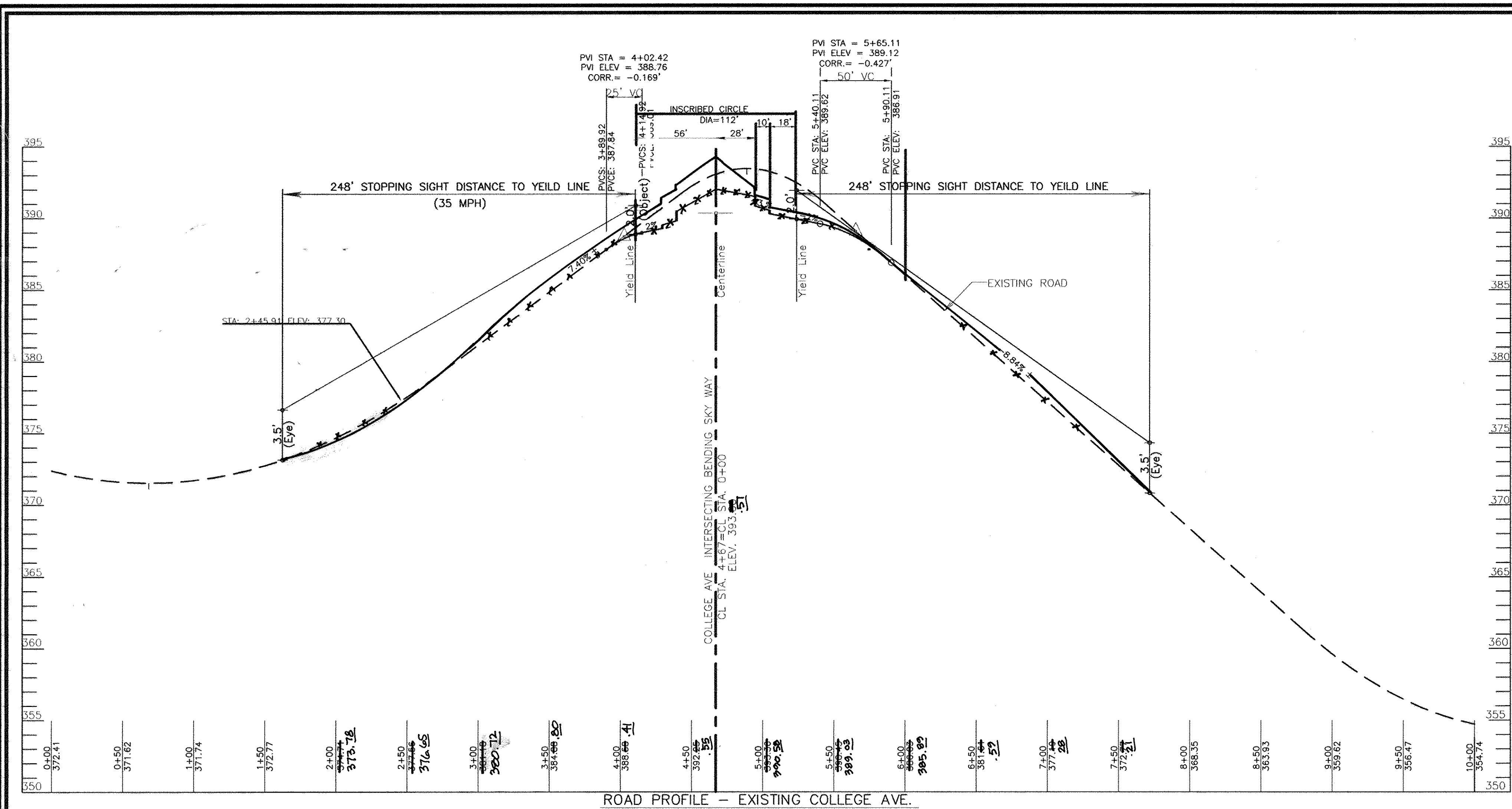
PROFESSIONAL CERTIFICATE  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2010

26 SHEET OF 30

**OWNERS**  
 AUTUMN RIVER CORPORATION  
 4100 COLLEGE AVE.  
 ELLICOTT CITY MD 21042-7819  
 21043 - 5506  
 (410) 465-3500

**DEVELOPER**  
 AUTUMN DEVELOPMENT CORPORATION  
 C/O LAND DESIGN & DEVELOPMENT, INC.  
 5300 DORSEY HALL DR STE 102  
 ELLICOTT CITY MD 21042-7819  
 ATTN: MR. DONALD R. REUWER  
 (443) 367-0422





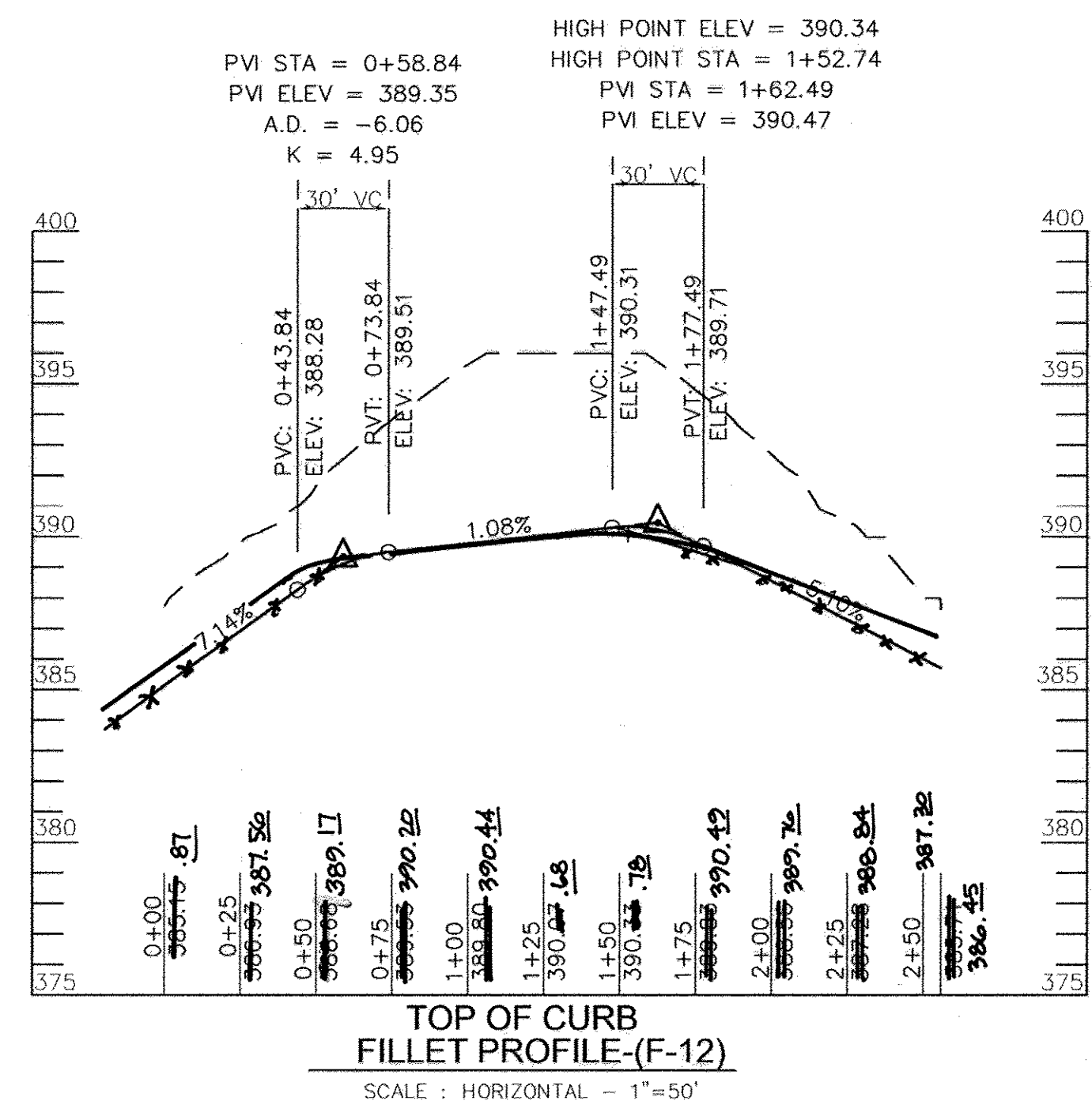
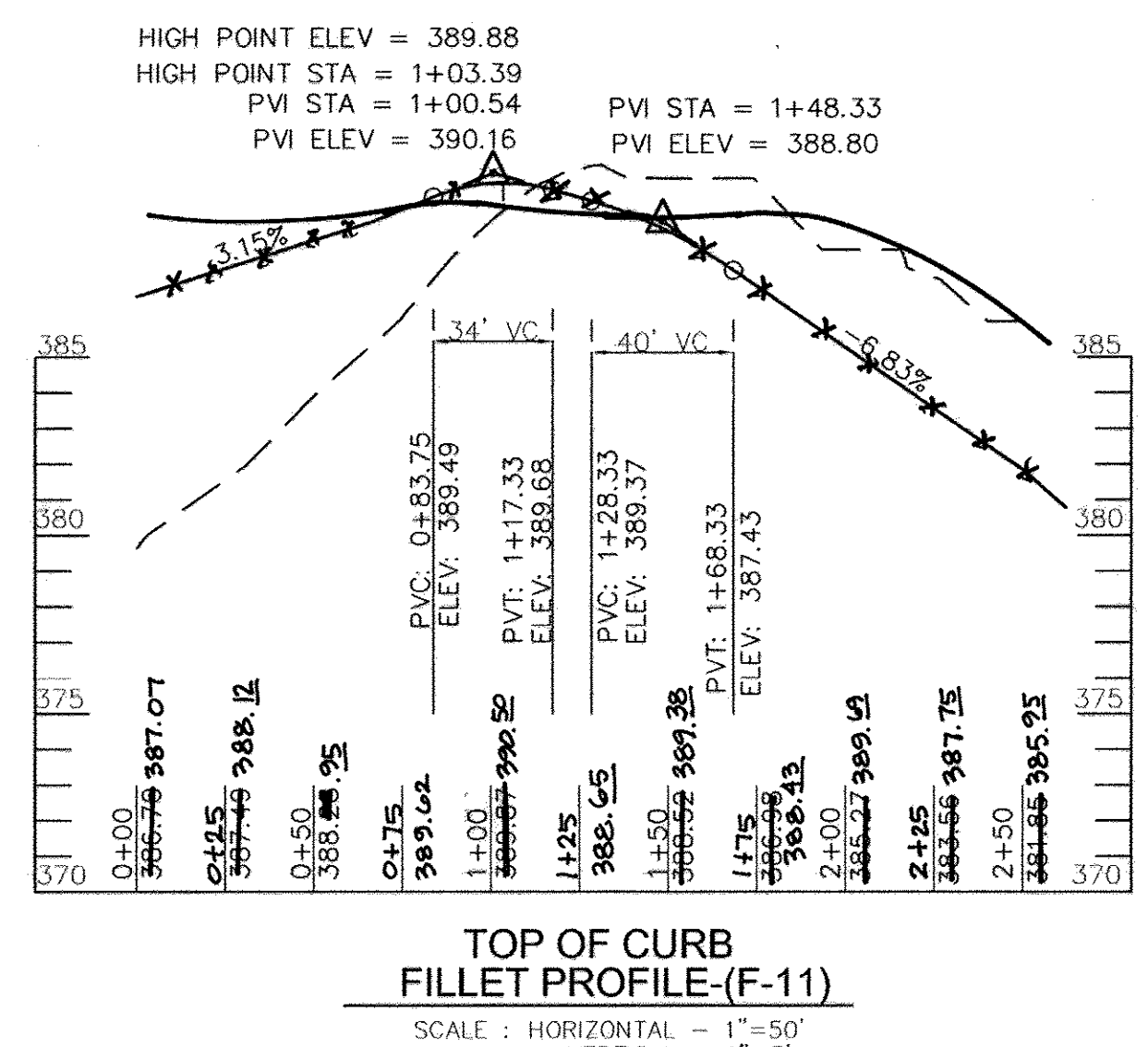
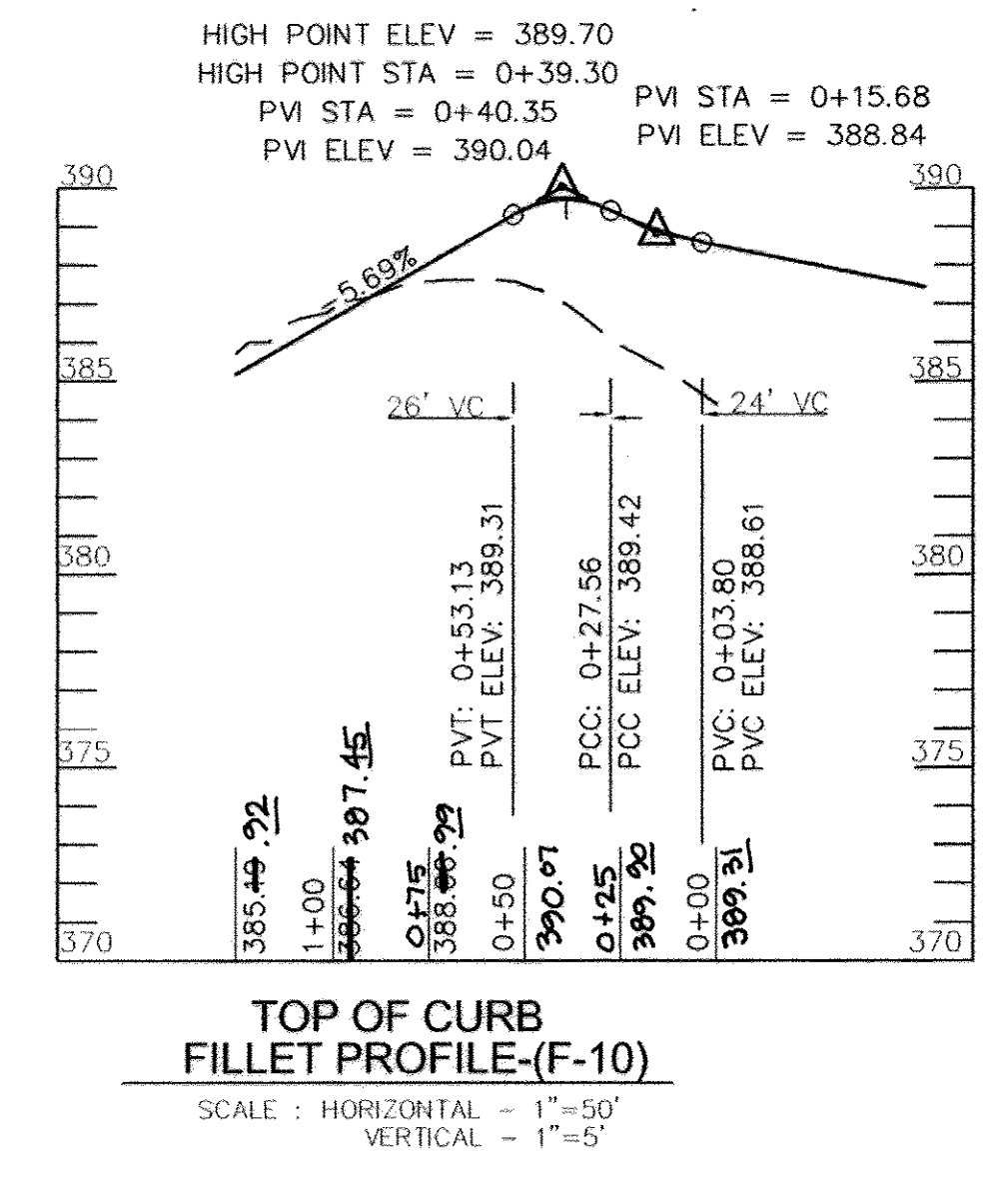
**GENERAL NOTES**

- ALL SIGNS SHALL BE MOUNTED ON 2" SQUARE GALVANIZED METAL POSTS 64 GAUGE INSERTED INTO A 2" SQUARE GALVANIZED METAL TUBE SLEEVE, 1/2" LONG 5/8" GAUGE. A GALVANIZED POLE CAP SHALL BE MOUNTED ON TOP.
- ALL SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS WILL BE FIELD MARKED BY TRAFFIC ENGINEER, PRIOR TO INSTALLATION.
- ALL MARKINGS WILL BE MARKED AND APPROVED BY TRAFFIC ENGINEER, PRIOR TO INSTALLATION.
- THE 'YIELD LINE' AND 3" WHITE STOP MARKINGS SHALL BE HEAT APPLIED TAPE.
- SINGLE SIGN ON POST - 5' TO BOTTOM OF SIGN, TWO SIGNS/PANELS - 4' TO BOTTOM OF SIGN, HEIGHT MEASURED FROM ROAD SURFACE, EXCEPT WHERE THERE ARE SOCIALS.
- THE STREET NAME (D-3) SIGNS MOUNTED AT 90 DEGREE ANGLE ABOVE THE YIELD (R-2) SIGNS LOCATED IN THE SPLITTER ISLANDS WILL BE FABRICATED BY HOWARD COUNTY AND INSTALLED BY THE CONTRACTOR.
- TE EDGE LINE (5' W) MARKINGS INTO EXISTING PAVEMENT MARKINGS.
- TRUCK APRON AND SPLITTER ISLANDS - USE STAMPED ASPHALT, PAINTED RED.
- WHERE CROSSWALKS ARE REQUIRED - WILL PASS THROUGH CENTER OF SPLITTER ISLAND.
- SEE DETAIL T-7.03 FOR W96-9, W96-10, AND ON-3C SIGN DETAILS.

Revised	Howard County, Maryland Department of Public Works	Typical Roundabout Signing and Marking Layout	Detail T-7.02
Approved	Approved: <i>[Signature]</i> Chief, Bureau of Engineering		

NOTE: THE W96-9 (ROUNDAHEAD AHEAD) WARNING SIGN SHOWN IN DETAIL T-7.02 HAS BEEN REPLACED WITH THE W2-6 (ROUNDAHEAD AHEAD) WARNING SIGN.

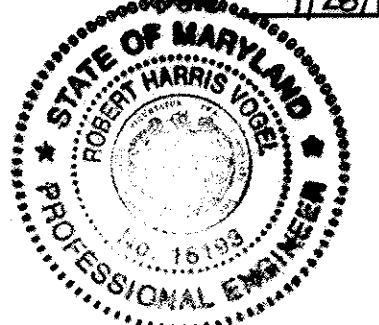
NOTE: CONTACT HOWARD COUNTY TRAFFIC DIVISION PRIOR TO INSTALLATION OF SIGNS AND STRIPING. HOWARD COUNTY TRAFFIC WILL FIELD LOCATE ALL SIGNAGE AND SIGNS FOR ROUNDAHEAD TRAFFIC DIVISION: 410-313-5752



**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: \_\_\_\_\_  
PE No. 16193 / 7126/115



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21043 - 5506  
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ELLCOTT CITY MD 21042-7819  
ATTN: MR. DONALD R. REUWER  
(443) 367-0422

**FINAL ROAD CONSTRUCTION PLAN  
AUTUMN RIVER - PHASE II**

**TRAFFIC CIRCLE DETAILS**  
LOTS: 5-29, 31-36, 38-43, 45-67  
OPEN SPACE LOT 30, 37, 44, 68, & 110  
& NON-BUILDABLE BULK PARCEL C  
& NON-BUILDABLE BULK PARCEL D, E, F  
RESUBDIVISION OF EXISTING LOT 1, 2, 3  
TAX MAP #25 GRID 14 & 21 & BULK PARCEL A PARCELS 172 & 279  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**ROBERT H. VOGEL ENGINEERING, INC.**  
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ELLCOTT CITY, MD 21043 FAX: 410.461.8961

**PROFESSIONAL CERTIFICATE**  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18193 EXPIRATION DATE: 09-27-2010

DESIGN BY: RJ/RHV  
DRAWN BY: RJ  
CHECKED BY: RHV  
DATE: MAY 2010  
SCALE: AS SHOWN  
W.O. NO.: 04-145

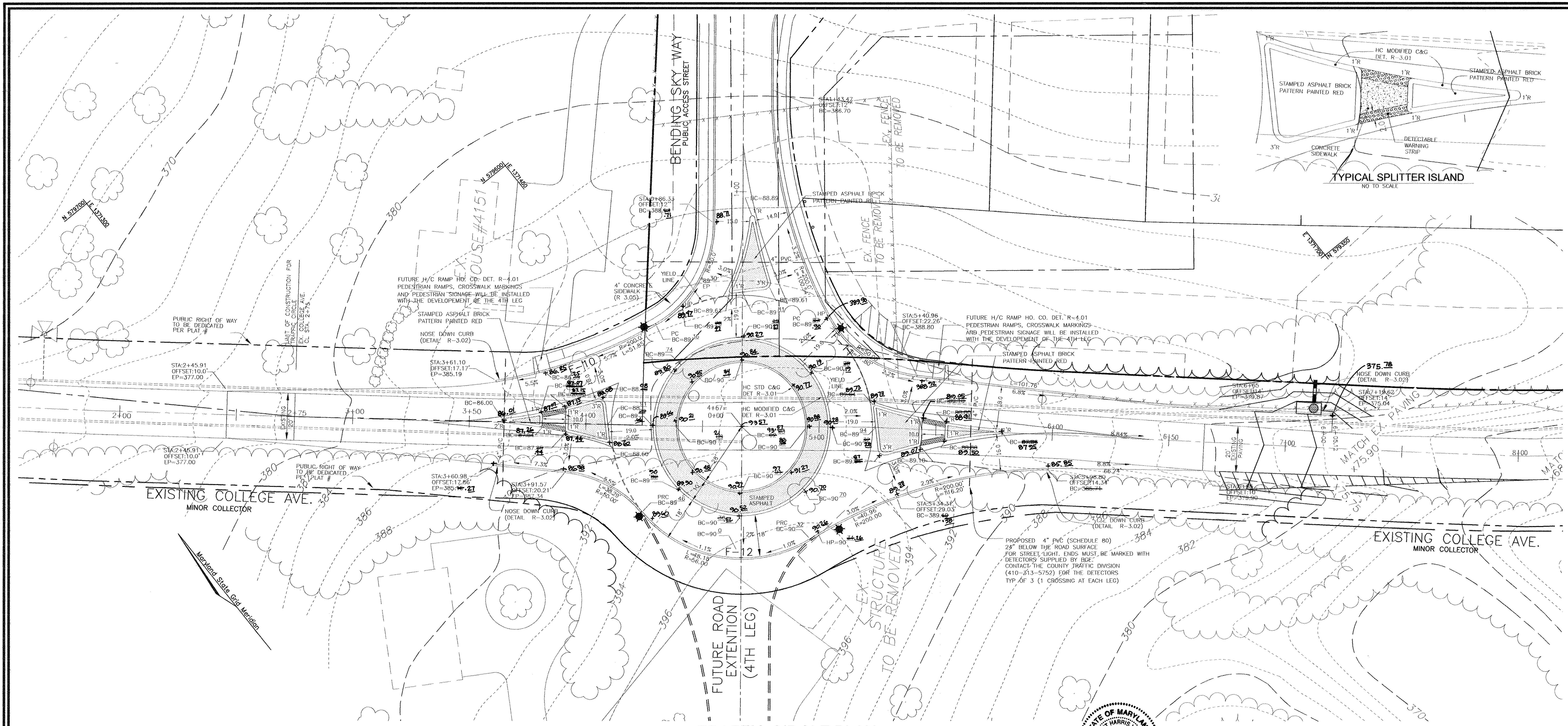
27 SHEET OF 30

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 6.22.10  
CHIEF, BUREAU OF HIGHWAYS DATE

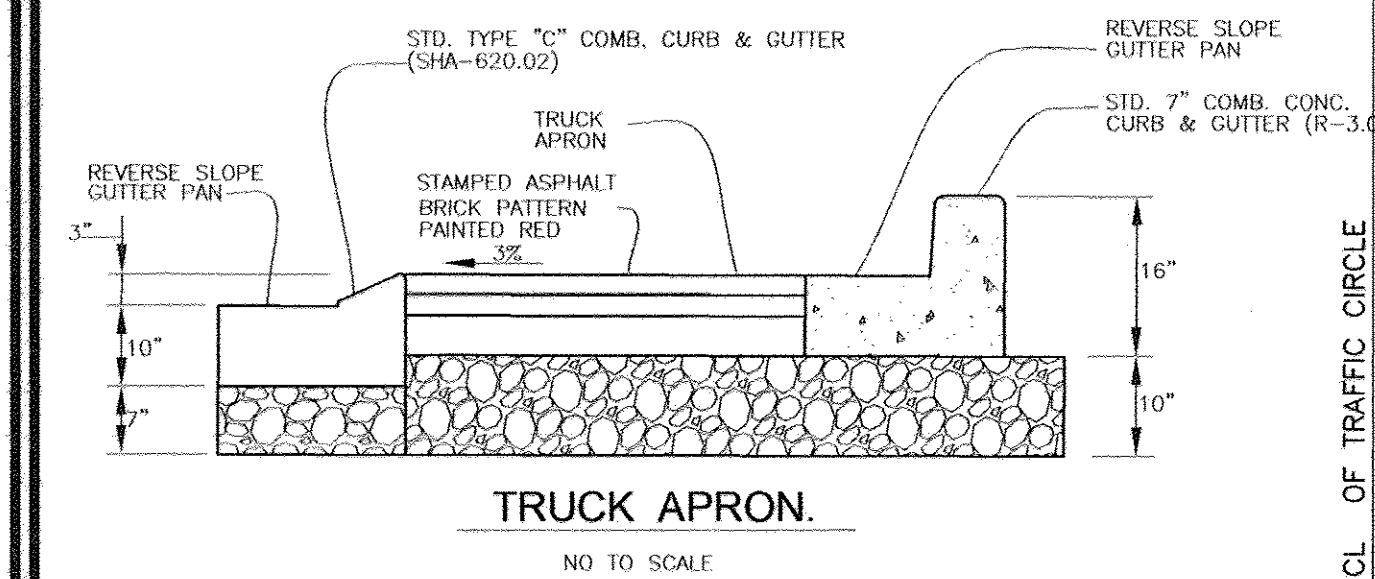
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 7/16/10  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 7.13.10  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

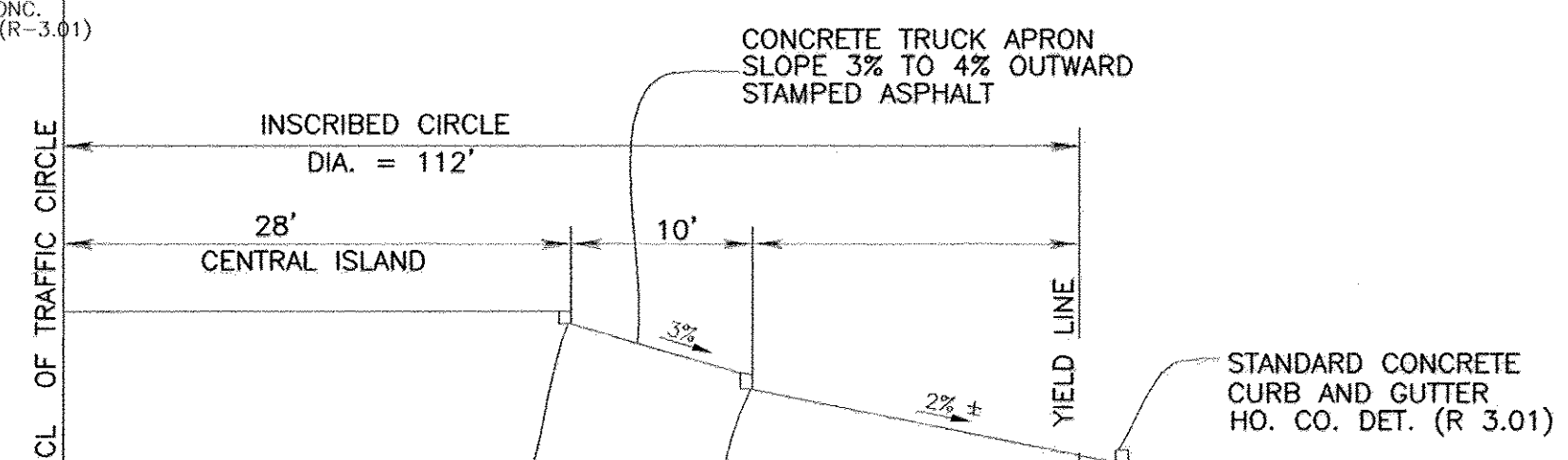




**TRAFFIC CIRCLE PLAN**  
SCALE: 1"=20'



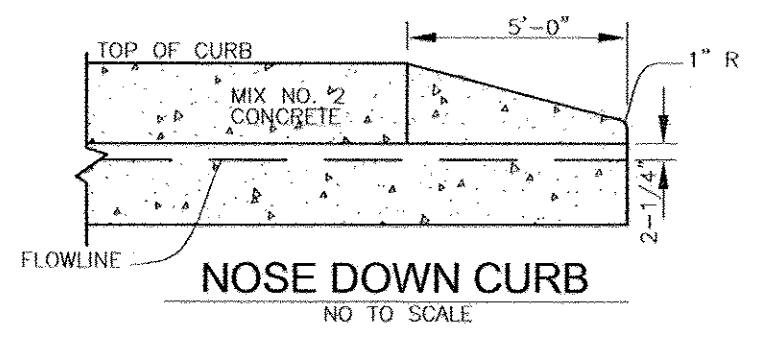
**TRUCK APRON.**  
NO TO SCALE



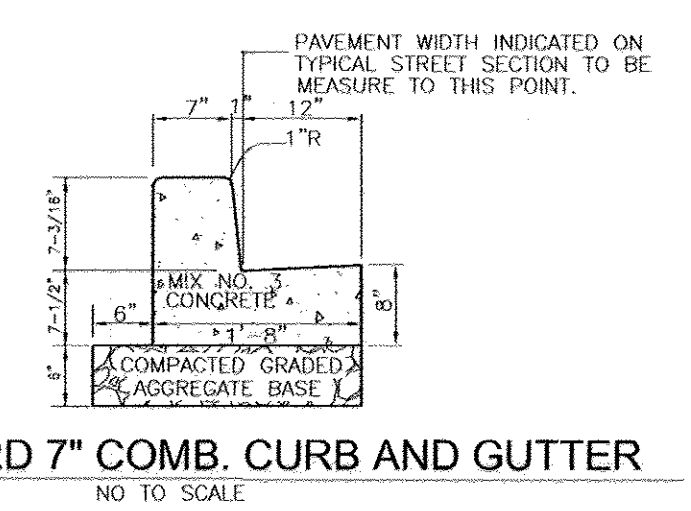
**CROSS SECTION TRAFFIC CIRCLE AT INTERSECTION OF COLLEGE AVENUE & BENDING SKY WAY**  
SECTION NOT TO SCALE

**GENERAL NOTES**

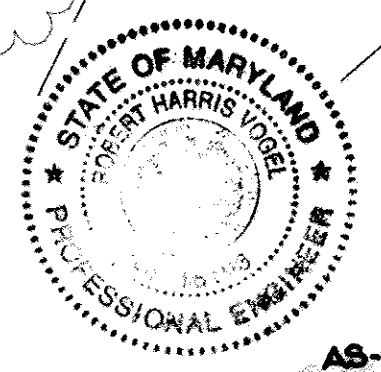
- CONTACT HOWARD COUNTY TRAFFIC DIVISION (410-313-5752) PRIOR TO INSTALLATION OF SIGNS AND STRIPING. HOWARD COUNTY TRAFFIC DIVISION WILL FIELD LOCATE ALL SIGNING AND MARKINGS FOR ROUNDABOUT.
- HOWARD COUNTY TRAFFIC DIVISION TO INSPECT AND APPROVE CURB FORMS PRIOR TO POURING CONCRETE.
- PEDESTRIAN CROSSING STRIPING WILL BE PROVIDED IN CONJUNCTION WITH THE FUTURE 4TH LEG CONSTRUCTION.
- SEE SHEET 27 FOR SIGNING AND MARKINGS FOR ROUNDABOUT.



**NOSE DOWN CURB**  
NO TO SCALE



**STANDARD 7" COMB. CURB AND GUTTER**  
NO TO SCALE



**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: \_\_\_\_\_  
PE No. 16193  
Date: 7/27/15

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Walter Z. March* 6-22-10  
CHIEF, BUREAU OF HIGHWAYS DATE  
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Walter Z. March* 7/19/10  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*Chris Edwards* 7-13-10  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**FINAL ROAD CONSTRUCTION PLAN AUTUMN RIVER - PHASE II TRAFFIC SIGNS & DETAILS**  
LOTS: 5-29, 31-36, 38-43, 45-67  
OPEN SPACE LOT 30, 37, 44, 68, & 110  
& NON-BUILDABLE PARCEL C  
& NON-BUILDABLE BULK PARCEL D, E, F  
RESUBDIVISION OF EXISTING LOT 1, 2, 3  
TAX MAP #25 GRID 14 & 21 PARCELS 172 & 279  
2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

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8407 MAIN STREET TEL: 410.461.7666  
ELLCOTT CITY, MD 21043 FAX: 410.461.8961

**OWNERS**  
AUTUMN RIVER CORPORATION  
4100 COLLEGE AVE.  
ELLCOTT CITY MD 21042-7819  
21043 5506  
(410) 465-3500

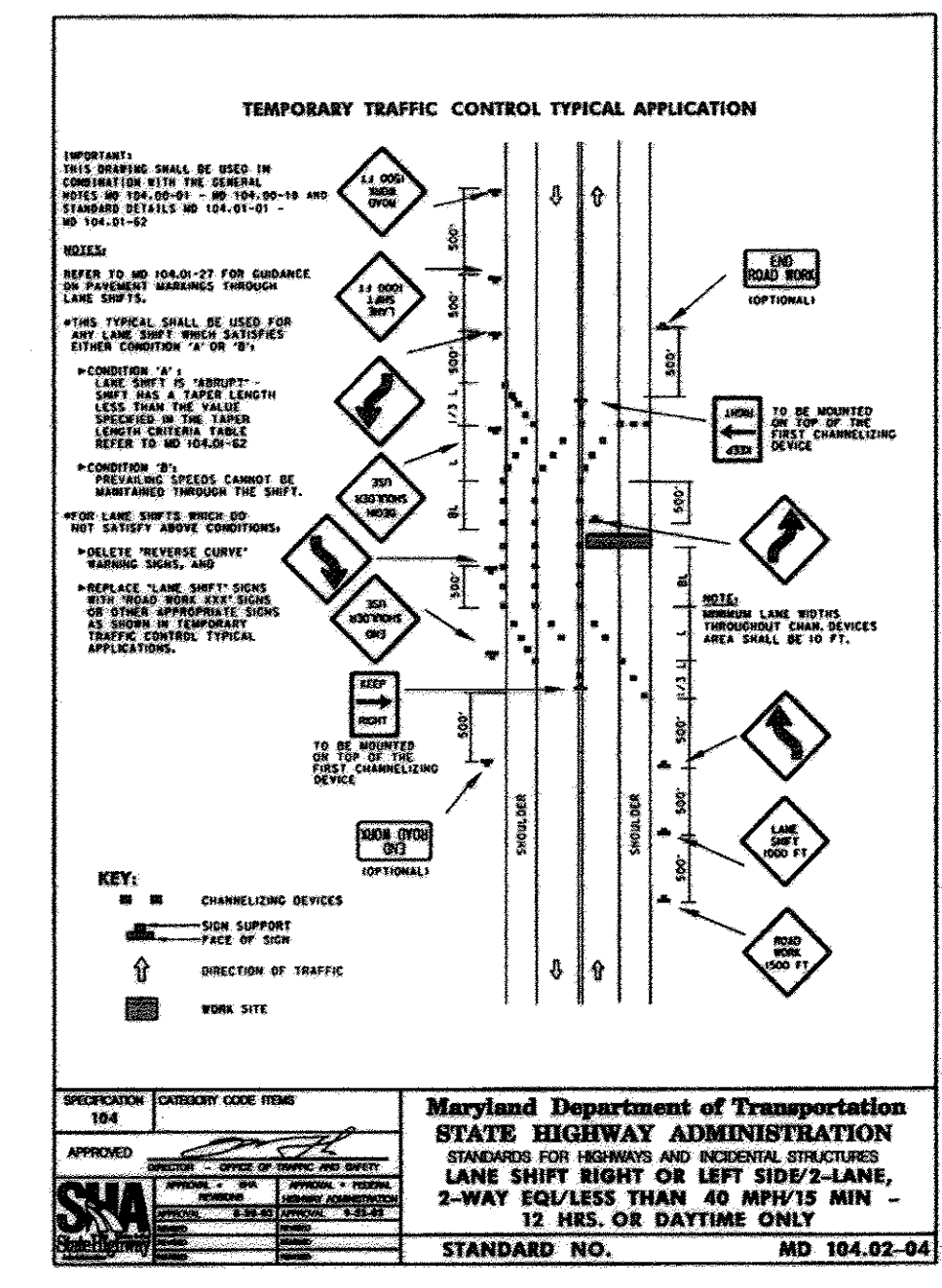
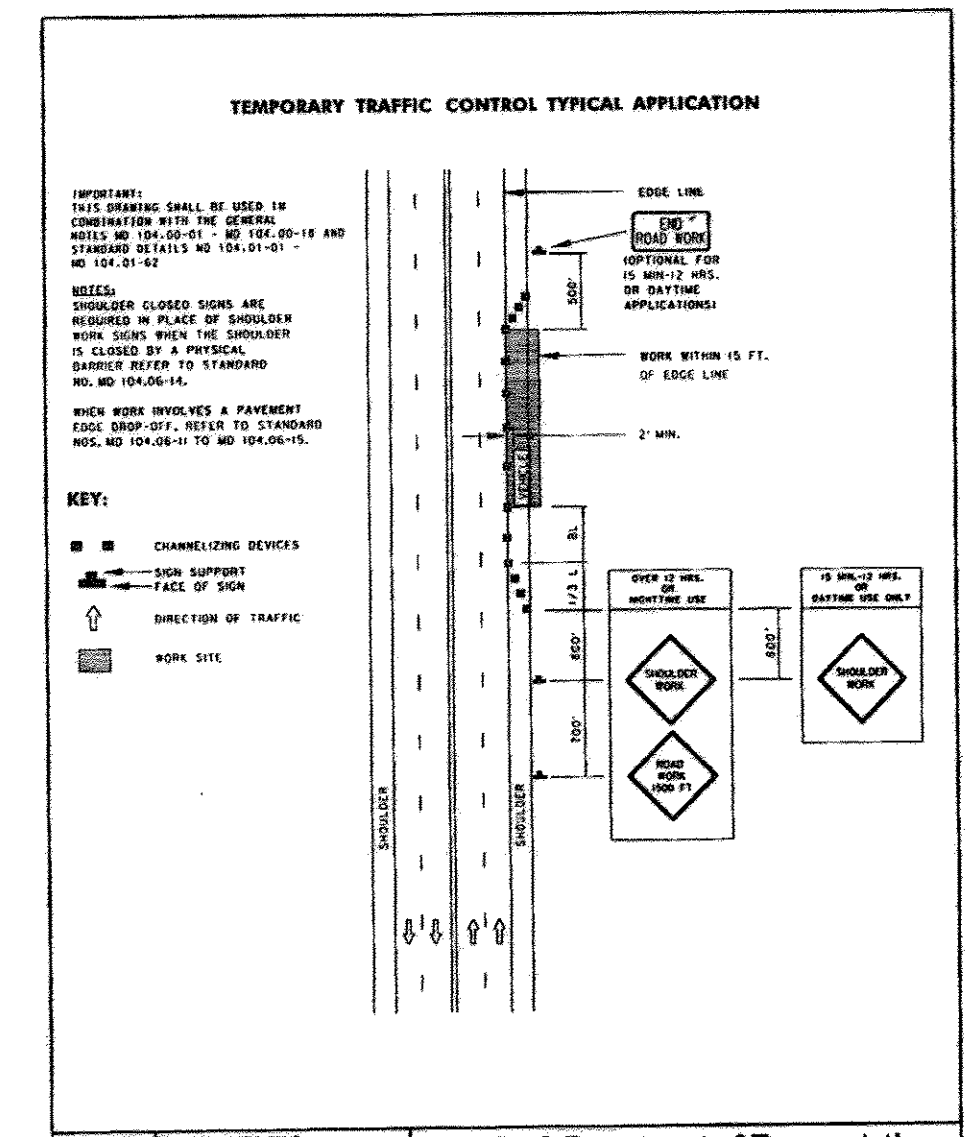
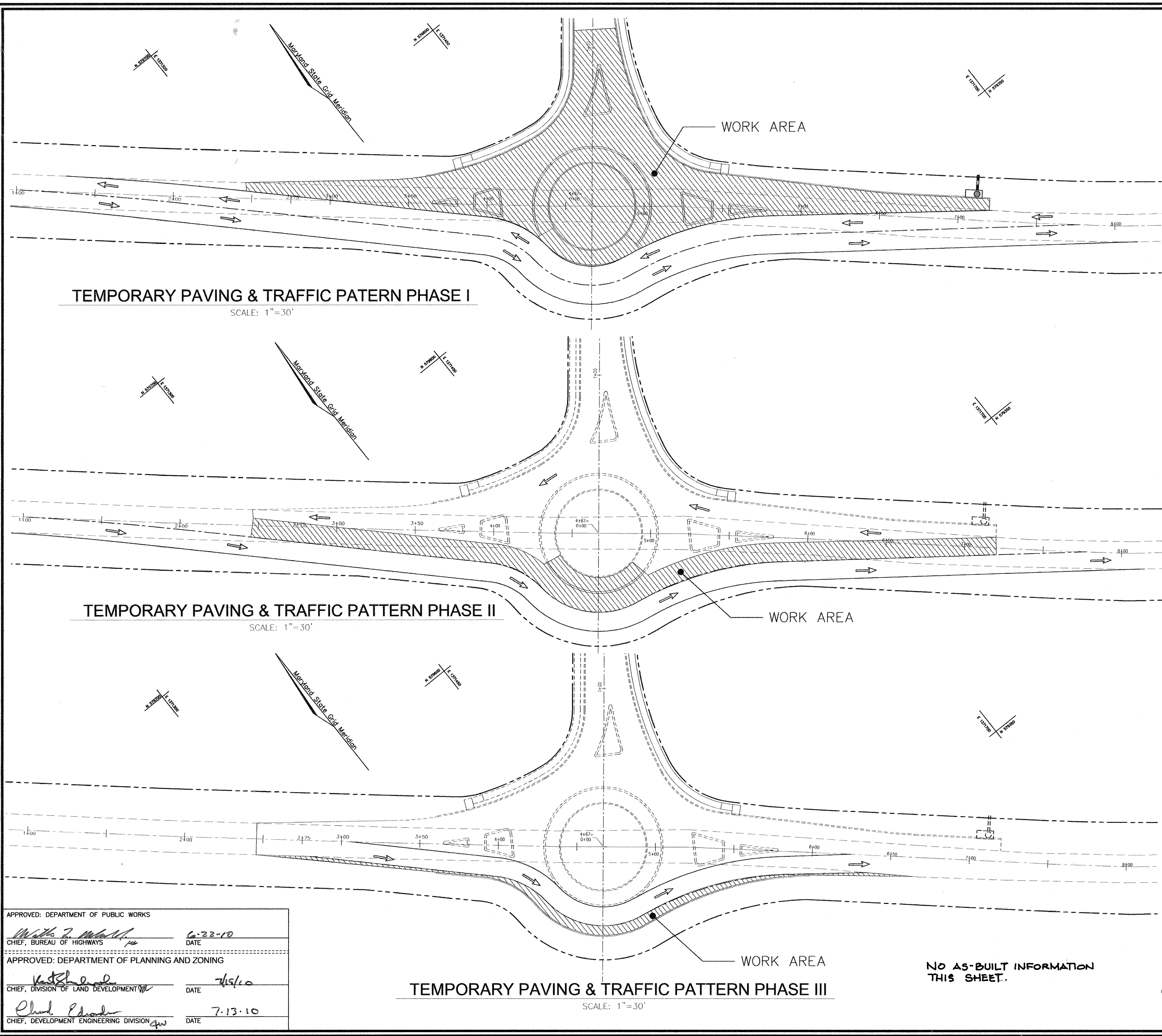
**DEVELOPER**  
AUTUMN DEVELOPMENT CORPORATION  
C/O LAND DESIGN & DEVELOPMENT, INC.  
5300 DORSEY HALL DR STE 102  
ELLCOTT CITY MD 21042-7819  
ATTN: MR. DONALD R. REUWER  
(443) 367-0422

**DESIGN BY:** RJ/RHV  
**DRAWN BY:** RJ  
**CHECKED BY:** RJ  
**DATE:** MAY 2010  
**SCALE:** AS SHOWN  
**W.O. NO.:** 04-145

**PROFESSIONAL CERTIFICATE**  
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**28** SHEET **30**





APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Walter J. Marshall* 6-22-10  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Kathleen* 7/15/10  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chad Edwards* 7-13-10  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

TEMPORARY PAVING & TRAFFIC PATTERN PHASE III  
 SCALE: 1"=30'

NO AS-BUILT INFORMATION  
 THIS SHEET.

OWNERS  
 AUTUMN RIVER CORPORATION  
 4100 COLLEGE AVE.  
 ELLICOTT CITY MD 21042-7819  
 21043-5506  
 (410) 465-3500

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FINAL ROAD CONSTRUCTION PLAN  
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 TAX MAP #25 GRID 14 & 21 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

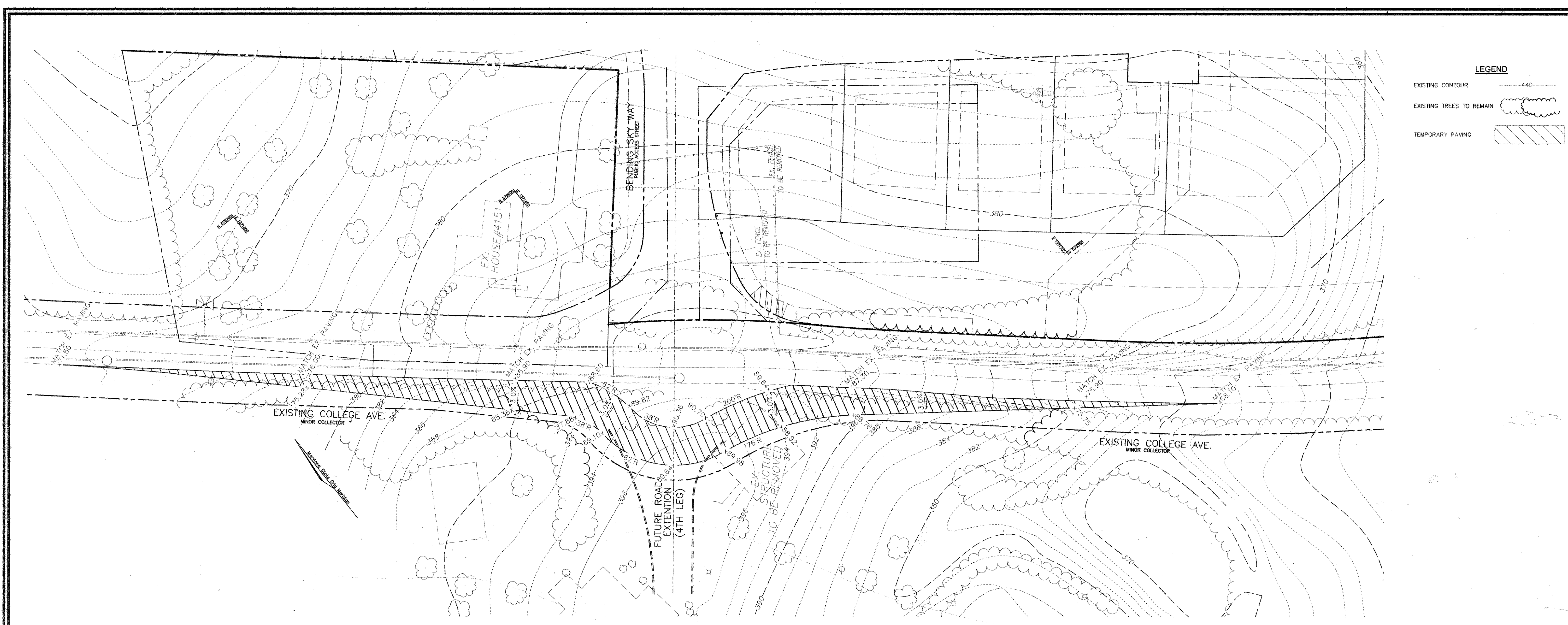
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 THAT I AM A FULLY LICENSED PROFESSIONAL  
 ENGINEER UNDER THE LAWS OF THE STATE  
 OF MARYLAND, LICENSE NO. 16193  
 EXPIRATION DATE: 09-27-2015

DESIGN BY: RJ/RHV  
 DRAWN BY: RJ  
 CHECKED BY: RHV  
 DATE: MAY 2010  
 SCALE: AS SHOWN  
 W.O. NO.: 04-145

29 SHEET OF 30





**LEGEND**

EXISTING CONTOUR	---
EXISTING TREES TO REMAIN	
TEMPORARY PAVING	

**TEMPORARY PAVING PLAN**  
SCALE: 1"=30'

APPROVED: DEPARTMENT OF PUBLIC WORKS	
	6-22-10
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
	7/19/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
	7.13.10
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE

**NO AS-BUILT INFORMATION  
THIS SHEET.**

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AUTUMN RIVER CORPORATION  
4100 COLLEGE AVE.  
ELLCOTT CITY MD 21042-7819  
21043 - 5506  
(410) 465-3500

**DEVELOPER**  
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5300 DORSEY HALL DR STE 102  
ELLCOTT CITY MD 21042-7819  
ATTN: MR. DONALD R. REUWER  
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**FINAL ROAD CONSTRUCTION PLAN  
AUTUMN RIVER - PHASE II**

**TEMPORARY PAVING PLAN**  
LOTS: 5-29, 31-36, 38-43, 45-67  
OPEN SPACE LOT 30, 37, 44, 68 & 110  
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& BULK PARCEL A

TAX MAP #25 GRID 14 & 21 PARCELS 172 & 279  
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I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18183, EXPIRATION DATE 09-27-2010.

DESIGN BY: RJ/RHV  
DRAWN BY: RJ  
CHECKED BY: RHV  
DATE: MAY 2010  
SCALE: AS SHOWN  
W.O. NO.: 04-145

30 SHEET OF 30

K:\Projects\04 - 145 ENR\04-145 ENR\04-145 ENR\ROAD\TRAFFIC\_S001.dwg, 5/9/2010 1:42:19 PM