

LANDSCAPE NOTES:

- TREES SHOULD BE PLANTED A MINIMUM OF 5 FEET FROM THE EDGE OF PAVING AND MUST BE A MINIMUM OF 5 FEET FROM ANY STORM DRAIN.
- TREES MUST BE PLANTED A MINIMUM OF 5 FEET FROM AN OPEN SPACE ACCESS STRIP AND 10 FEET FROM A DRIVEWAY.
- SEE TREE PLANTING DETAIL - THIS SHEET.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.
- PERIMETER AND STORM WATER MANAGEMENT LANDSCAPING IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL SHALL BE PROVIDED AS SHOWN ON THE LANDSCAPE PLAN SHEETS OF THE ROAD CONSTRUCTION DRAWING FOR THIS PROJECT. SURETY IN THE AMOUNT OF \$18,000.00 FOR 48 SHADE TREES, 24 EVERGREEN TREES AND 20 SHRUBS SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS FINAL PLAN, F-08-05.
- AT THE TIME OF INSTALLATION, ALL SHRUBS AND OTHER PLANTINGS HEREWIT LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.
- 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.
- IN THE BGE GREEN ZONE, ONLY TREES WITH A MATURE HEIGHT OF LESS THAN 25 FEET SHALL BE ALLOWED.
- IN THE BGE YELLOW ZONE, ONLY TREES WITH A MATURE HEIGHT OF LESS THAN 40 FEET SHALL BE ALLOWED.

SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO PERIMETER PROPERTIES						ADJACENT TO ROADWAYS	TOTAL
	1A	2A	3A	4A	5B	6B		
LANDSCAPE BUFFER TYPE	318'	527'	800'	99'	62'	54'		
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER								
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	YES, 95'	NO	NO	NO		
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO		
NUMBER OF PLANTS REQUIRED								
SHADE TREES	5	9	12	2	1	1	30	
EVERGREEN TREES	-	-	-	-	2	1	3	
NUMBER OF PLANTS PROVIDED								
SHADE TREES	5	9	12	2	1	1	30	
EVERGREEN TREES	-	-	-	-	2	1	3	

*CREDIT TAKEN FOR REFORESTATION EASEMENT

STREET TREE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS
(Symbol)	41	ACER RUBRUM 'OCTOBER GLORY' (October Glory Red Maple)	2 1/2" MIN. CAL. BAB FULL HEAD
(Symbol)	9	ACER GRISELUM (Paperback Maple)	1 1/2" MIN. CAL. BAB FULL HEAD

BGE ZONE LEGEND

GREEN ZONE (Symbol)

YELLOW ZONE (Symbol)

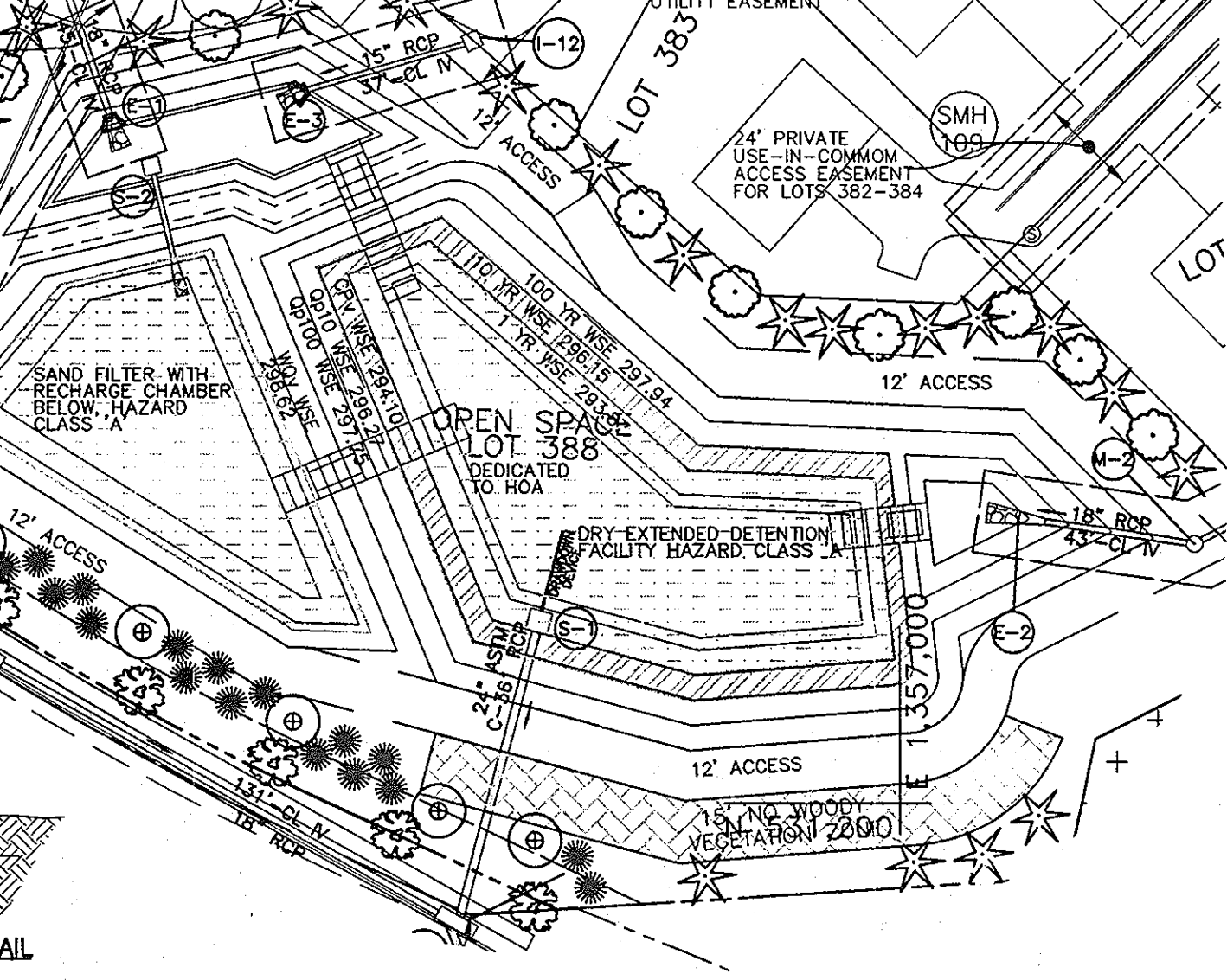
STREET TREE SCHEDULE

ROAD NAME	PERIMETER	TREES REQ.
CHATON ROAD	1,651'	41
WHISKEY BOTTOM ROAD	273'	9

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	TYPE 'B'
981'	
NUMBER OF TREES REQUIRED	
SHADE TREES (1:50)	20
EVERGREEN TREES (1:40)	25*
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	YES, 74'
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	10%
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF TREES PROVIDED	
SHADE TREES (1:50)	18
EVERGREEN TREES (1:40)	21*
SHRUB (10 PER TREE)	20*

* TWO EVERGREENS REPLACED AT 10:1 WITH EVERGREEN SHRUBS, IN BGE PLANTING ZONE



OUTLET PROTECTION DIMENSIONS

STRUCTURE	D-50	LENGTH (L)	WIDTH (W)	THICKNESS (T)	S/S CLASS
E-1	9.5"	8'	5'	19"	I
E-2	9.5"	6'	4'	19"	I
E-3	9.5"	6'	4'	19"	I
E-4	9.5"	4'	3'	19"	I

NOT TO SCALE

PIPE SCHEDULE

RUN	LENGTH	DIAMETER	MATERIAL	NOTES
E-1 TO I-1	45	18"	RCP CL IV	PUBLIC
I-1 TO M-1	108	18"	RCP CL IV	PUBLIC
M-1 TO I-2	149	18"	RCP CL IV	PUBLIC
I-2 TO I-3	115	18"	RCP CL IV	PUBLIC
I-3 TO I-4	124	18"	RCP CL IV	PUBLIC
I-4 TO I-5	26	15"	RCP CL IV	PUBLIC
I-5 TO I-6	91	15"	RCP CL IV	PRIVATE
M-1 TO I-7	101	18"	RCP CL IV	PRIVATE
I-7 TO I-8	95	18"	RCP CL IV	PRIVATE
I-8 TO I-9	217	15"	RCP CL IV	PRIVATE
E-2 TO M-2	43	18"	RCP CL IV	PUBLIC
M-2 TO I-10	321	18"	RCP CL IV	PUBLIC
I-10 TO I-11	26	15"	RCP CL IV	PUBLIC
E-3 TO I-12	37	15"	RCP CL IV	PRIVATE
I-12 TO I-13	109	18"	RCP CL IV	PUBLIC
I-13 TO I-14	131	18"	RCP CL IV	PUBLIC
I-14 TO I-15	117	15"	RCP CL IV	PUBLIC

LANDSCAPE PLANTING LIST

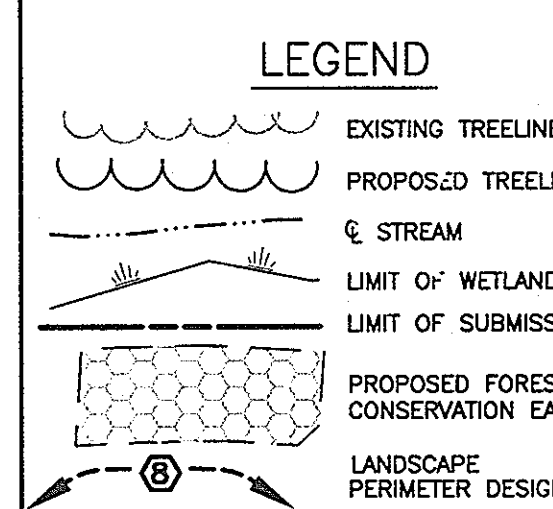
SYMBOL	QUANTITY	NAME	REMARKS
(Symbol)	12	PLANTANUS ACOEFOLIA 'BLOODGOOD' (Bloodgood London Plane)	2 1/2" MIN. CAL. BAB FULL HEAD
(Symbol)	30	QUERCUS COCINNEA SCARLET OAK	2 1/2" MIN. CAL. BAB FULL HEAD
(Symbol)	24	PINUS THUNBERGIANA (JAPANESE BLACK PINE)	6"-8" Ht. UNSHEARED
(Symbol)	6	PRUNUS CASPIERA ATROPURPUREA THUNDERCLOUD PURPLELEAF PLUM	1 1/2" MIN. CAL. BAB FULL HEAD
(Symbol)	20	TAXUS MEDIA 'HICKSII' HICKS VIEW	2 1/2" MIN. HT. BAB

STREET LIGHTING CHART

STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE	COMMENTS
CHATON ROAD	9+41.5	14.2'	100 WATT IPS VAPOR PHOSPHOR POST-TOP MOUNTED ON A 14" BLACK FERROGLASS POLE	
CHATON ROAD	12+61.9	13.9'	100 WATT IPS VAPOR PHOSPHOR POST-TOP MOUNTED ON A 14" BLACK FERROGLASS POLE	
CHATON ROAD	15+13.9	47.6'	100 WATT IPS VAPOR PHOSPHOR POST-TOP MOUNTED ON A 14" BLACK FERROGLASS POLE	

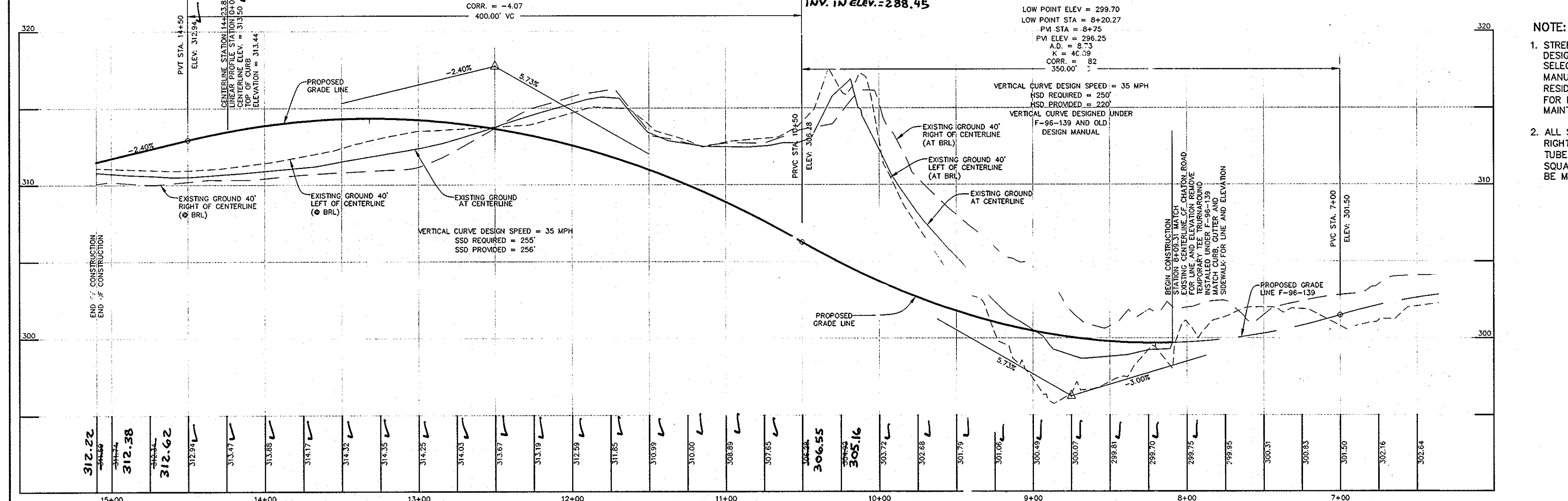
NOTE:

- STREETLIGHTS WILL BE REQUIRED IN THIS DEVELOPMENT IN ACCORDANCE WITH THE DESIGN MANUAL, STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SELECTED SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY DESIGN MANUAL VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." THE JUNE 1993 POLICY INCLUDES GUIDELINES FOR LATERAL AND LONGITUDINAL PLACEMENT. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE.
- ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG, A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.



CENTERLINE CURVE DATA

CURVE	STATION	RADIUS	ARC LENGTH	DELTA	TANGENT	CHORD
C1	PC=8+44.80 PT=9+94.69	120.00'	149.89'	71°34'08"	86.50'	S80°56'07"W 140.34'
C2	PC=12+27.95 PT=13+01.48	50.00'	73.53'	84°15'31"	45.22'	N87°16'48"W 67.08'
C3	PC=14+28.51 END=15+09.90	105.00'	81.40'	44°24'55"	42.87'	S28°22'59"W 79.37'



CHATON ROAD PROFILE
 PUBLIC STREET - DESIGN SPEED 35 MPH
 HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 5'

NOTE: SEE SHEET 3 FOR CUL-DE-SAC LINEAR PROFILE AND TYPICAL SECTION

POND PLANTING SCHEDULE

ZONE	AREA (SF)	ELEVATION RANGE	PLANT MIX	QUANTITIES
3	6,685	291.0 - 293.87	50% CUTGRASS, RICE 50% SWITCHGRASS	371
4	2,563	293.87 - 296.15	50% LOVEGRASS-MEADOW 25% CONEFLOWER, CUT-LEAF 25% CONIFER, COMMON BLUE	142
5	0	N/A	N/A	0
6	0	N/A	N/A	0

SAND FILTER PLANTING SCHEDULE

ZONE	AREA (SF)	ELEVATION RANGE	PLANT MIX	QUANTITIES
3	4,591	294.01 - 296.33	50% LOVEGRASS-MEADOW 25% CONEFLOWER, COMMON BLUE 25% CONEFLOWER, CUT-LEAF	256

ALL PLANTINGS TO BE QUART BULBS AND SPACED AT 3' O.C.

REVISION

NO.	DATE	REVISION
1	10-22-08	REVISION TO STORM DRAIN FROM I-13 TO EXISTING SYSTEM AS REQUIRED BY HOWARD COUNTY BUREAU OF HIGHWAYS

BENCHMARK ENGINEERS, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS

8480 BALTIMORE NATIONAL PIKE # SUITE 418
 ELLICOTT CITY, MARYLAND 21043
 phone: 410-465-8105 • fax: 410-465-6644
 email: bei@bei-civilengineering.com

OWNER: JAMES H. KING
 9648 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723
 301-498-8922

PROJECT: KINGS WOODS SECTION 5
 LOTS 362 - 386 AND OPEN SPACE LOTS 387 & 388

LOCATION: TAX MAP No. 47 - GRID No. 21
 PARCEL No. 857
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

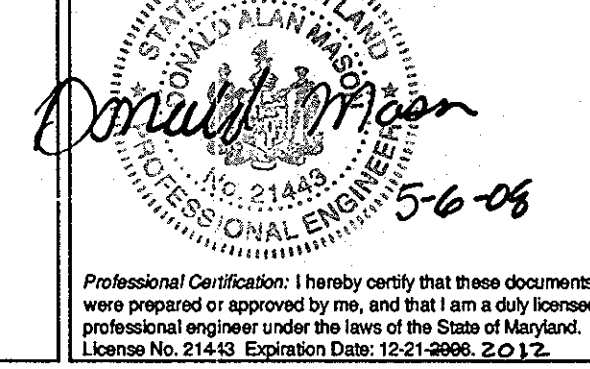
FILE: S-09-12
 P-07-01

TITLE: ROAD PLAN AND PROFILES, LANDSCAPE PLAN AND DETAILS

DATE: OCTOBER, 2007
 APRIL, 2008

PROJECT NO.: 1504

Design: JMC Draft: AM Check: DAM SCALE: AS SHOWN DRAWING 2 OF 9



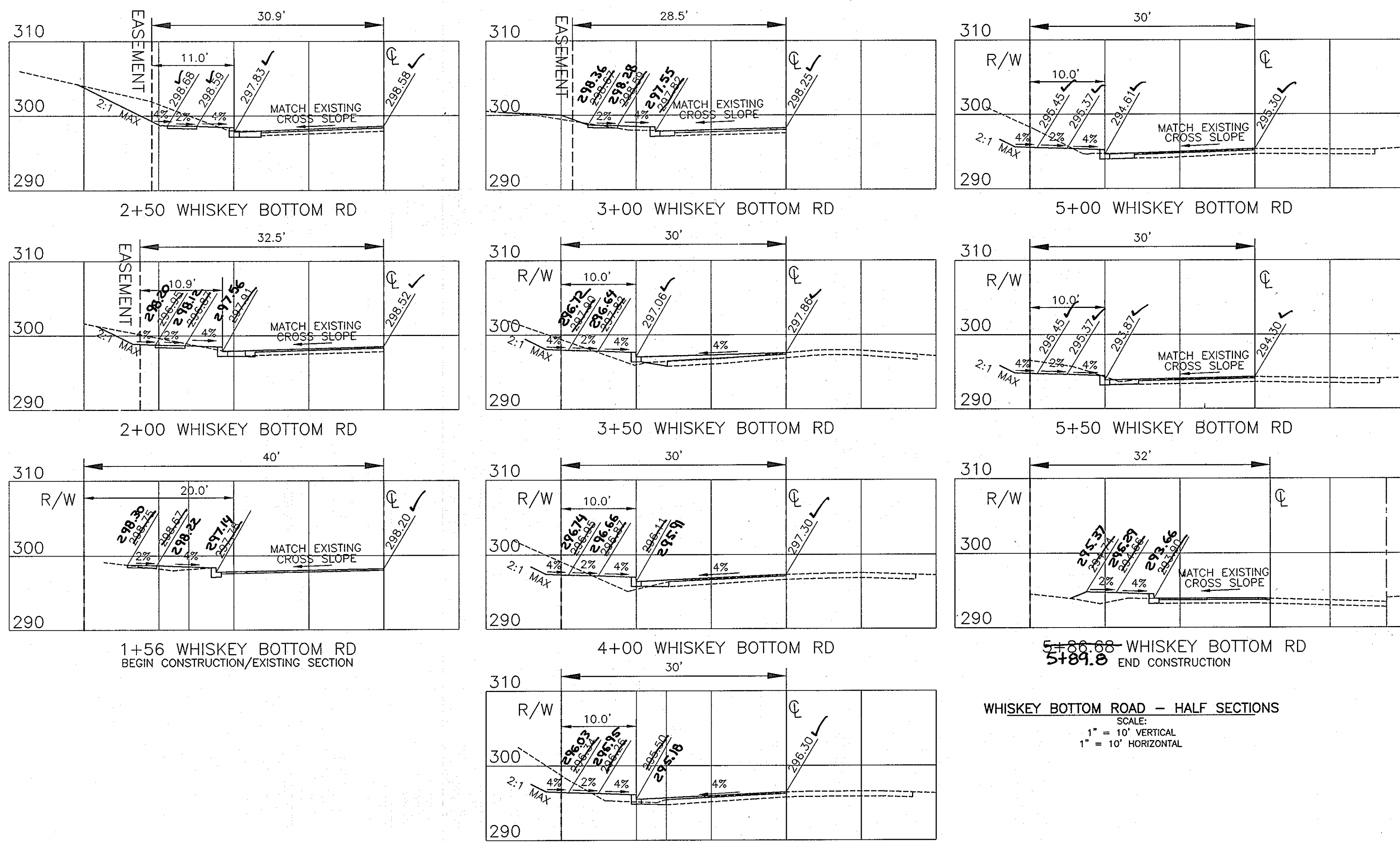
DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF 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.

James R. Mooney III
 SECURITY DEVELOPMENT, LLC
 APPROVED: DEPARTMENT OF PUBLIC WORKS
 DATE: 8/28/08

Walter R. Mooney III
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 DATE: 9/5/08

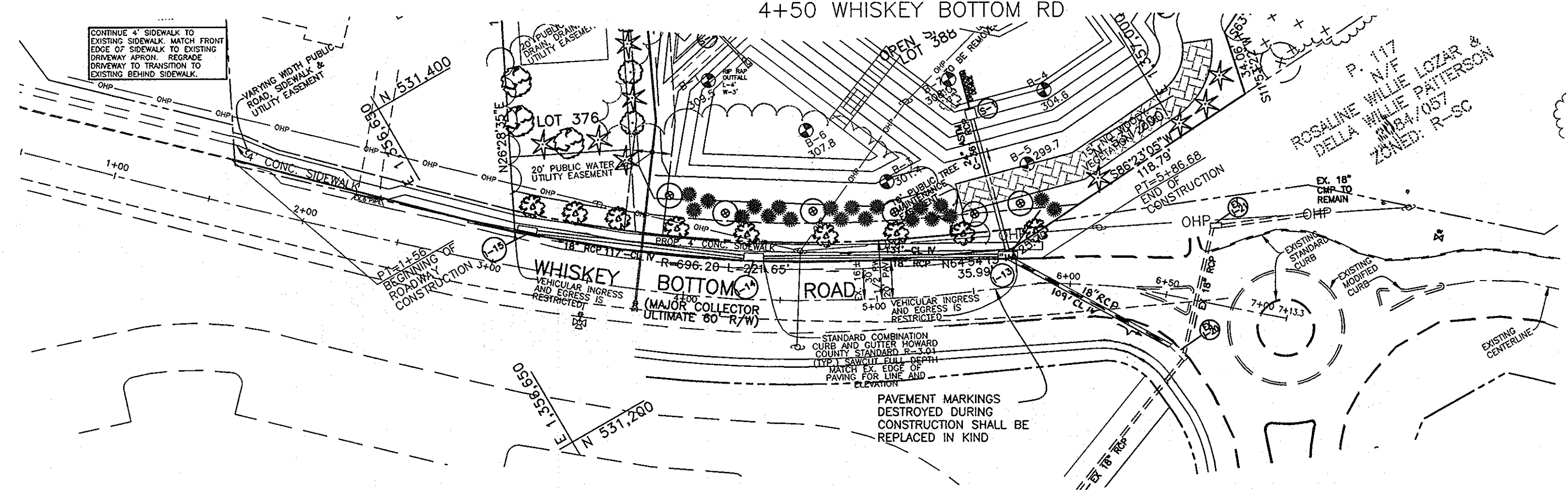
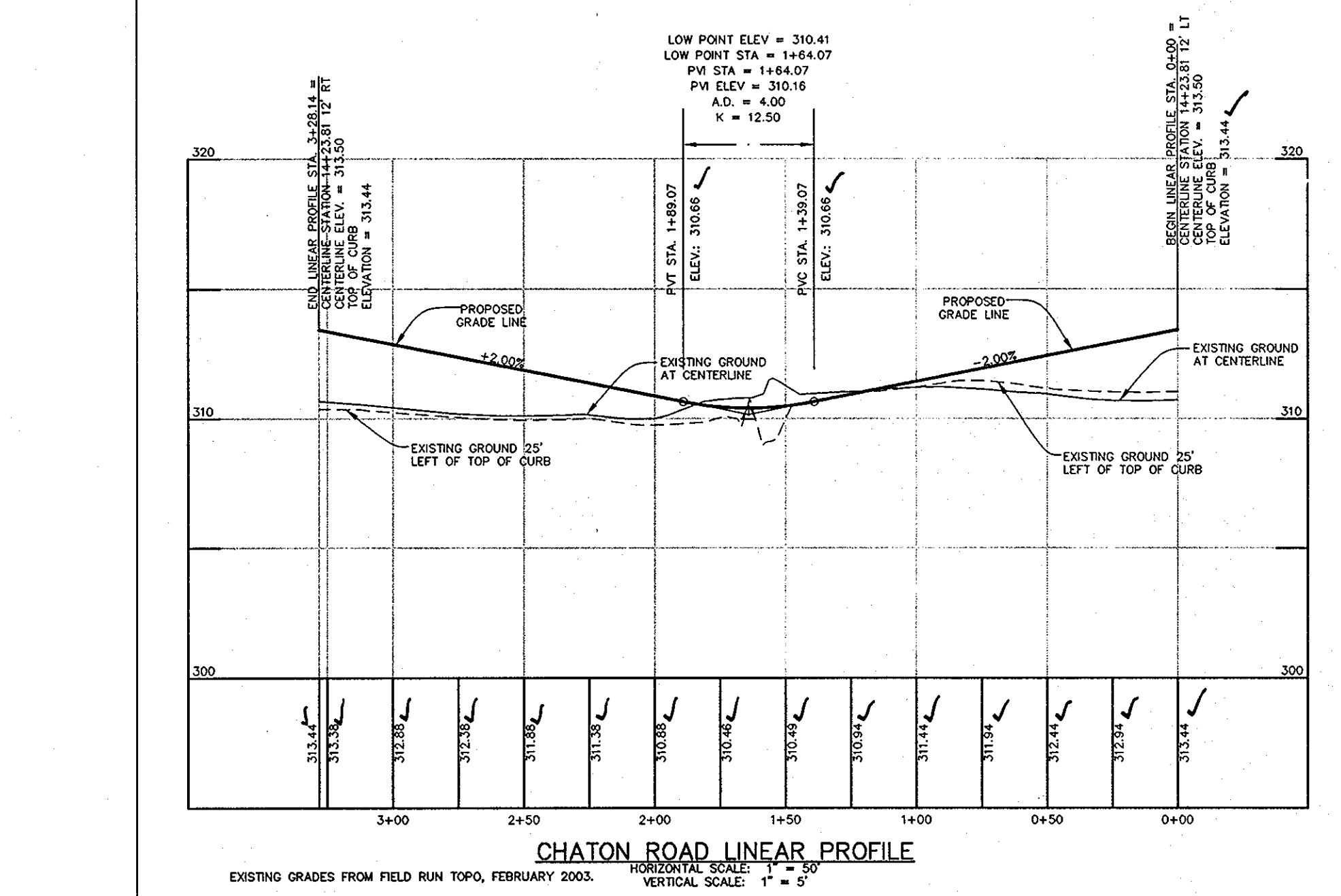
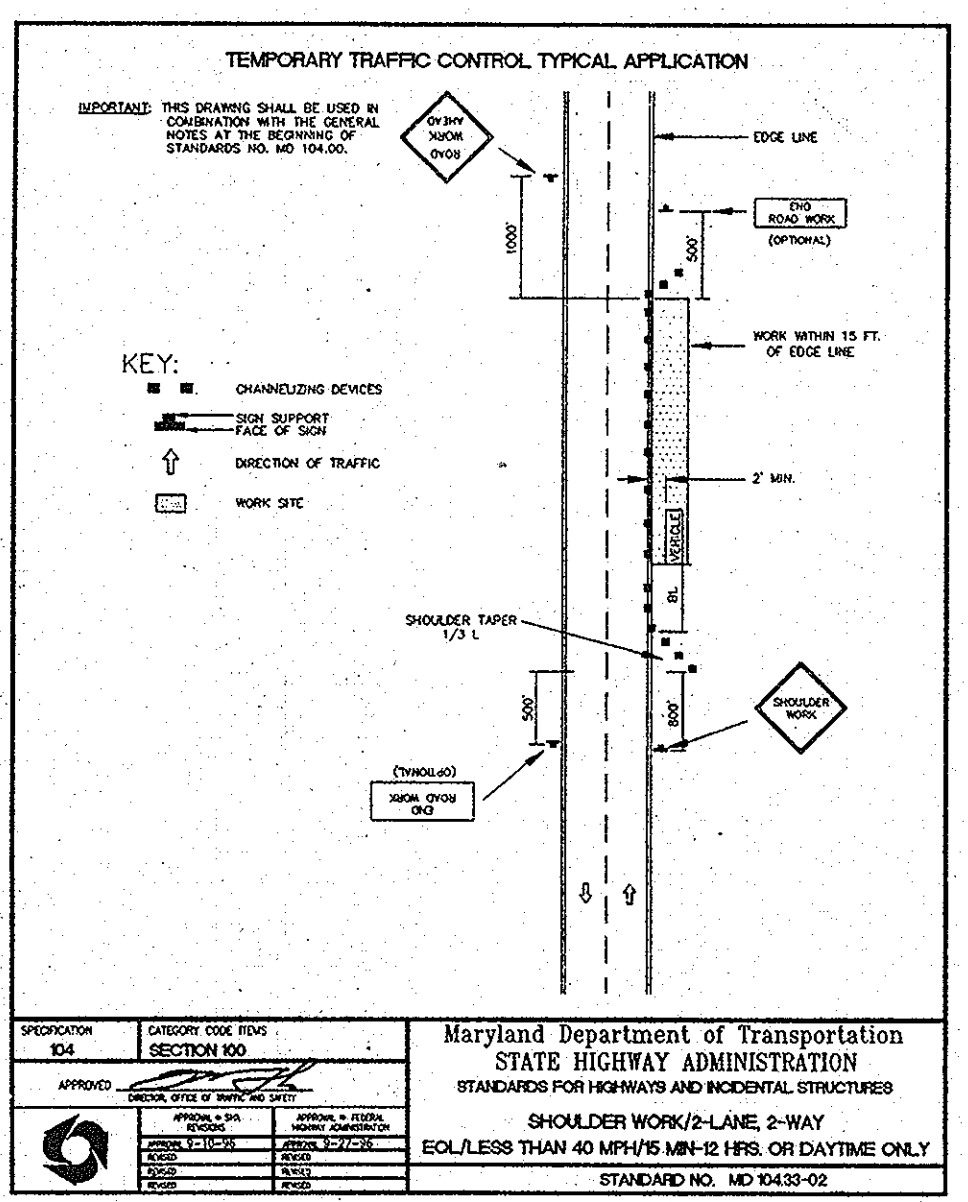
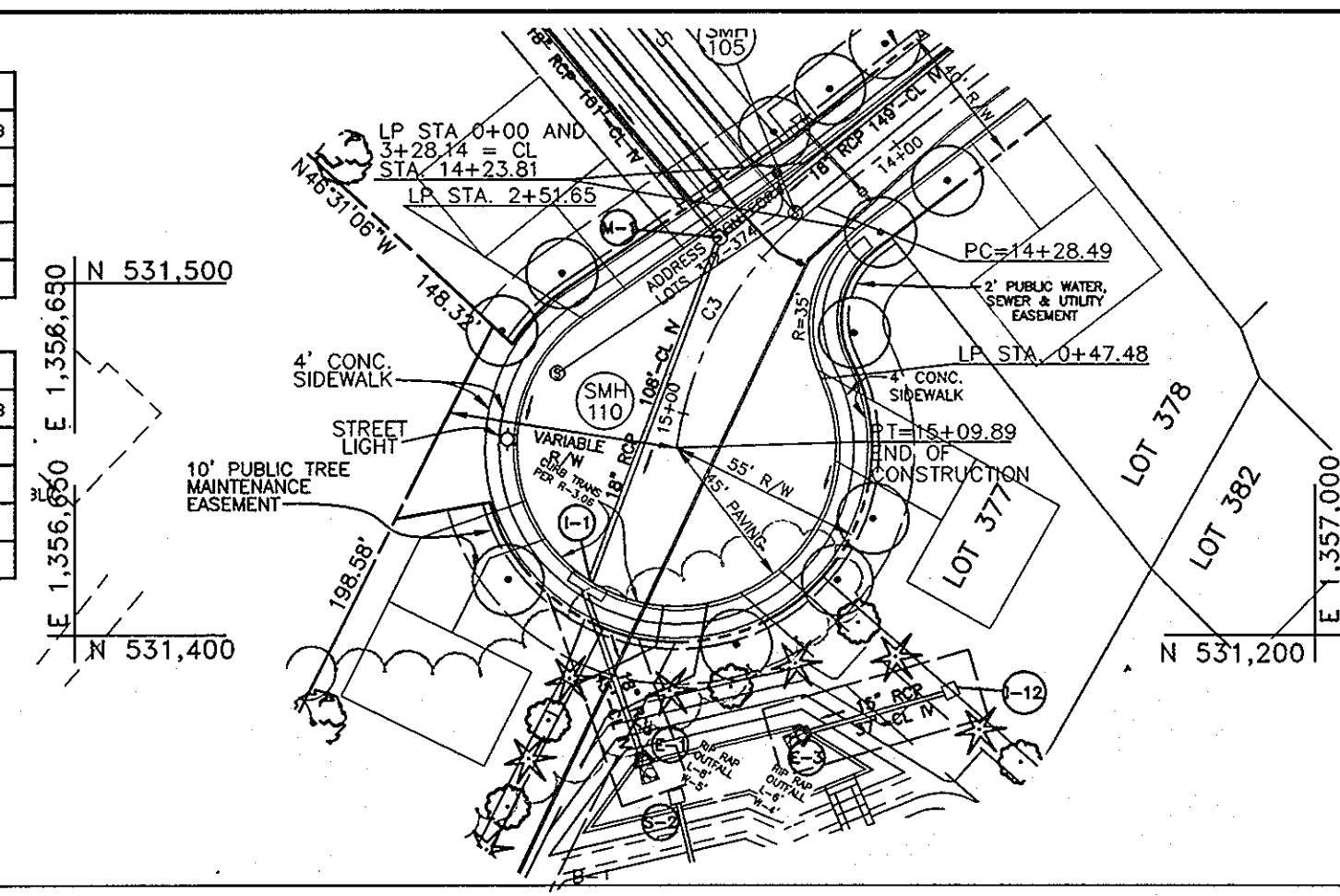
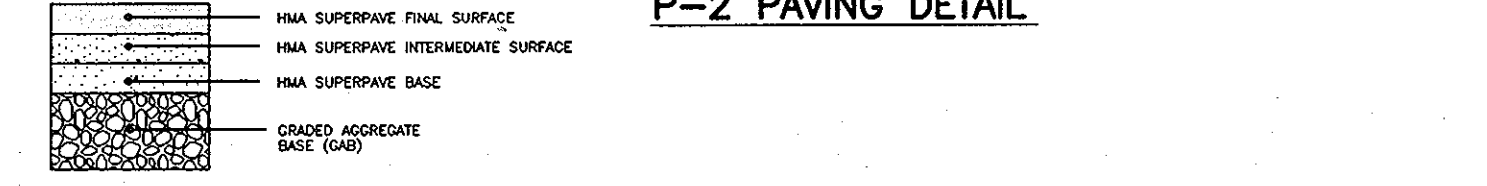
John Hamilton
 CHIEF, DIVISION OF U-T-D DEVELOPMENT
 DATE: 9/3/08



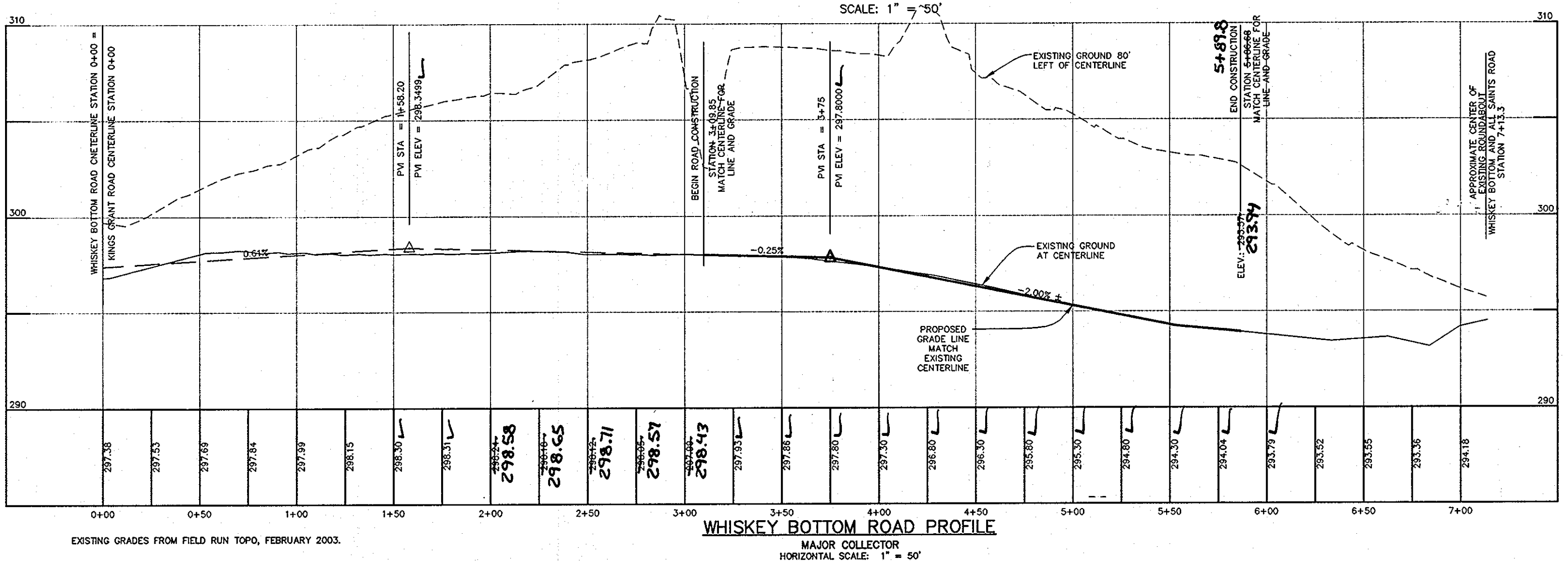
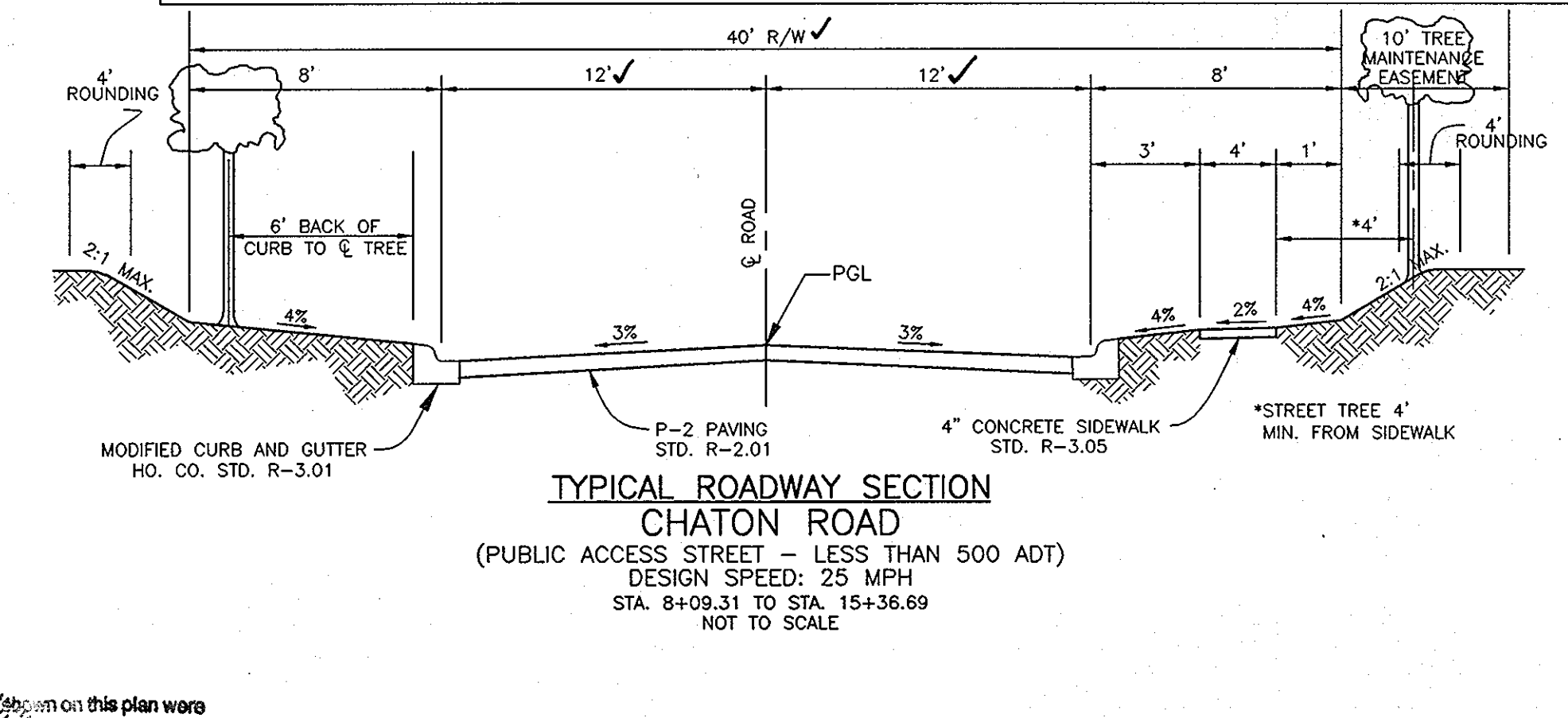
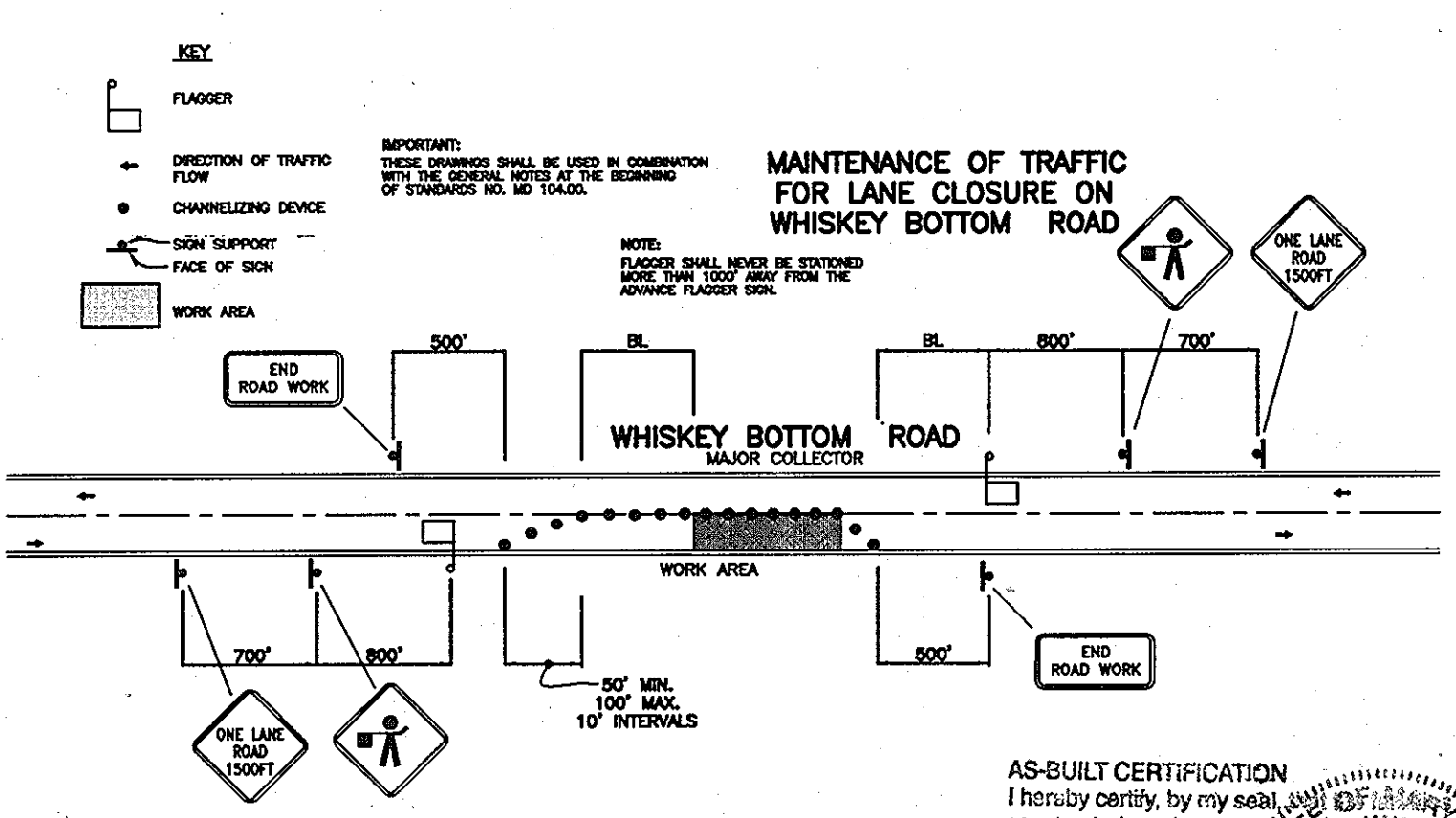
WHISKEY BOTTOM ROAD - HALF SECTIONS
SCALE: 1" = 10' VERTICAL
1" = 10' HORIZONTAL

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	PAVEMENT MATERIAL (INCHES)			
			3 TO <5	5 TO <7	7 TO <9	9 TO <12
P-3	PARKING DRIVE ASILES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SAC: RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE	1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE	3.0	3.0	3.0	3.0
		GRADED AGGREGATE BASE (GAB)	10.0	6.0	3.0	6.0

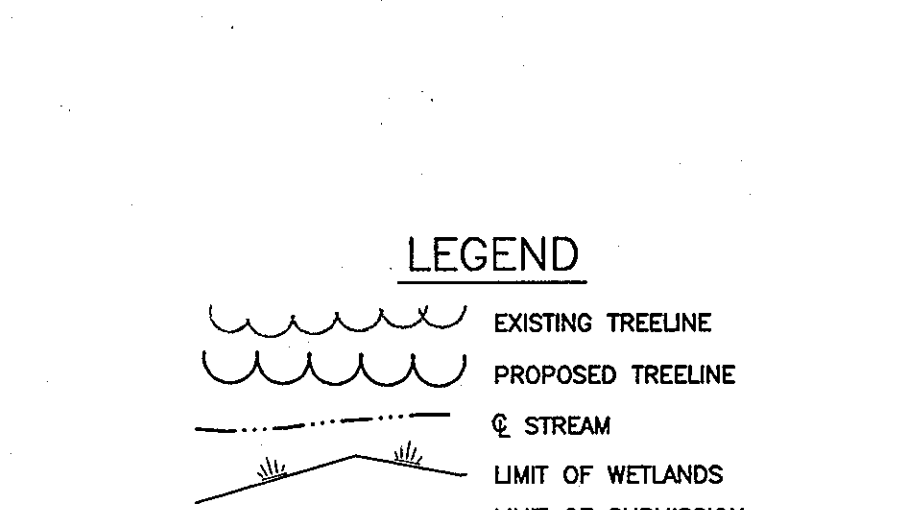
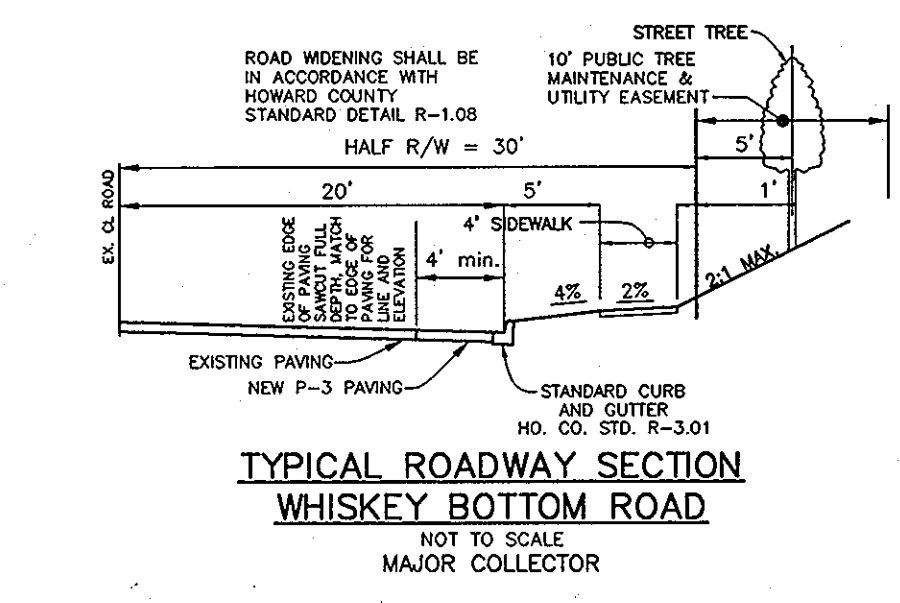
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			3 TO <5	5 TO <7	7 TO <9	9 TO <12
P-2	PARKING DRIVE ASILES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SAC: RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE	1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE	2.0	2.0	2.0	2.0
		GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0



WHISKEY BOTTOM ROAD - PLAN VIEW
SCALE: 1" = 50'



WHISKEY BOTTOM ROAD PROFILE
SCALE: 1" = 5' VERTICAL
1" = 50' HORIZONTAL



AS-BUILT CERTIFICATION
I hereby certify that the work shown on this plan was constructed as shown on 7-26-11
Donald Mason, P.E. No. 21443

DEVELOPER'S/BUILDER'S CERTIFICATE
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION OF 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.
APPROVED: DEPARTMENT OF PUBLIC WORKS
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PROJECT: KINGS WOODS SECTION 5
LOTS 362 - 386 AND OPEN SPACE LOTS 387 & 388

LOCATION: TAX MAP No. 47 - GRID No. 21
PARCEL No. 857
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER: SECURITY DEVELOPMENT, LLC
P.O. BOX 417
ELLICOTT CITY, MD 21041
410-465-4244

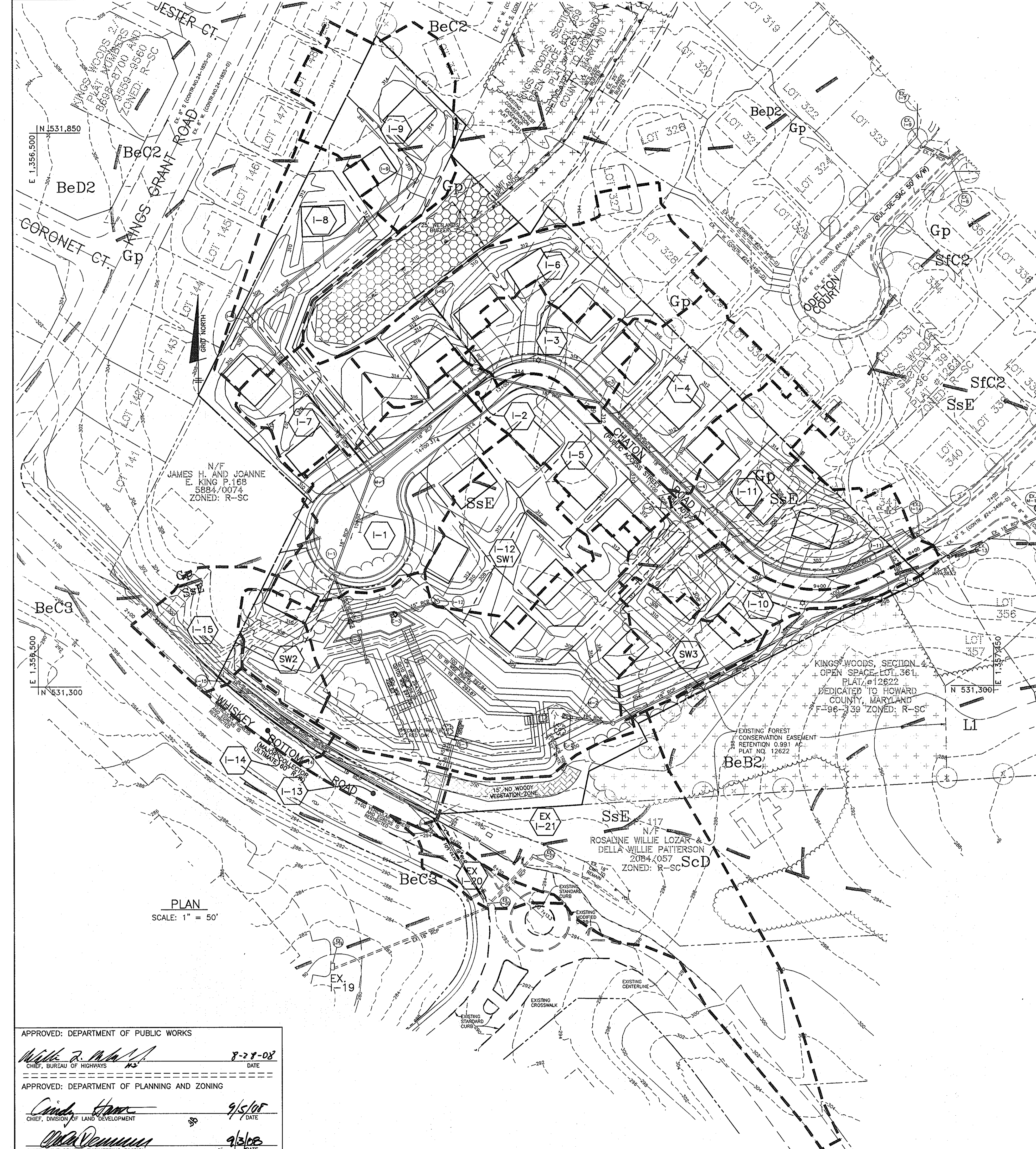
TITLE: ROAD PLANS, PROFILES, MOT PLAN AND DETAILS

DATE: OCTOBER, 2007
APRIL, 2008

PROJECT NO. 1504

SCALE: AS SHOWN DRAWING 3 OF 9

Design: JMC Draft: AM Check: DAM



AREA AND "C" FACTOR TABULATION						
PROJECT: KINGS WOODS, SEC. 5		FILE: STORMDRAIN	DATE: 10/03/07	JMC		
PARCEL	INLET #	ZONING (Z)	SUBAREA (B)	AREA (Ac) (A)	"C" FACTOR (C)	% IMPERVIOUS (P) CALCULATED
	I-1	R-SC		0.62	0.59	79
	I-2	R-SC		0.03	0.52	80
	I-3	R-SC		0.28	0.40	72
	I-4	R-SC		0.45	0.35	69
	I-5	R-SC		0.34	0.47	77
	I-6	R-SC		0.67	0.27	60
	I-7	R-SC		0.26	0.24	50
	I-8	R-SC		0.46	0.28	65
	I-9	R-SC		0.51	0.31	63
	I-10	R-SC		0.33	0.53	80
	I-11	R-SC		0.62	0.41	72
	I-12 & SW1	R-SC		0.43	0.29	65
	I-13	R-SC		0.16	0.57	58
	I-14	R-SC		0.11	0.70	69
	I-15	R-SC		0.22	0.48	72
	SW2	R-SC		0.16	0.23	34
	SW3	R-SC		0.24	0.28	56
	EX-120	R-SC		0.10	0.86	100
	EX-121	R-SC		1.24	0.58	16

RUNOFF COMPUTATIONS												
D.A. #	AREA (Ac.)	ZONING	% IMPERVIOUS	"C"		tc (min)	i ₂ (in/hr)	i ₁₀ (in/hr)	i ₁₀₀ (in/hr)	Q ₂ (cfs)	Q ₁₀ (cfs)	Q ₁₀₀ (cfs)
				(< 25 Yr)	(> 25 Yr)							
I-1	0.62	R-SC	79	0.59	0.68	10.0	4.50	6.60	10.00	1.65	2.41	3.66
I-2	0.03	R-SC	80	0.52	0.62	10.0	4.50	6.60	10.00	0.07	0.10	0.16
I-3	0.28	R-SC	72	0.40	0.49	10.0	4.50	6.60	10.00	0.50	0.74	1.12
I-4	0.45	R-SC	69	0.35	0.44	10.0	4.50	6.60	10.00	0.71	1.04	1.58
I-5	0.34	R-SC	77	0.47	0.57	10.0	4.50	6.60	10.00	0.72	1.05	1.60
I-6	0.67	R-SC	60	0.27	0.35	10.0	4.50	6.60	10.00	0.81	1.19	1.81
I-7	0.26	R-SC	50	0.24	0.32	10.0	4.50	6.60	10.00	0.28	0.41	0.62
I-8	0.46	R-SC	65	0.28	0.37	10.0	4.50	6.60	10.00	0.58	0.85	1.29
I-9	0.51	R-SC	63	0.31	0.40	10.0	4.50	6.60	10.00	0.71	1.04	1.58
I-10	0.33	R-SC	80	0.53	0.62	10.0	4.50	6.60	10.00	0.79	1.15	1.75
I-11	0.62	R-SC	72	0.41	0.50	10.0	4.50	6.60	10.00	1.14	1.68	2.54
I-12 & SWALE 1	0.43	R-SC	65	0.29	0.38	10.0	4.50	6.60	10.00	0.56	0.82	1.25
I-13	0.16	R-SC	58	0.57	0.65	10.0	4.50	6.60	10.00	0.41	0.60	0.91
I-14	0.11	R-SC	69	0.70	0.75	10.0	4.50	6.60	10.00	0.35	0.51	0.77
I-15	0.22	R-SC	72	0.48	0.57	10.0	4.50	6.60	10.00	0.48	0.70	1.06
SW2	0.16	R-SC	34	0.23	0.30	10.0	4.50	6.60	10.00	0.17	0.24	0.37
SW3	0.24	R-SC	56	0.28	0.36	10.0	4.50	6.60	10.00	0.30	0.44	0.67
EX-120	0.10	R-SC	100	0.86	0.96	10.0	4.50	6.60	10.00	0.39	0.57	0.86
EX-121	1.24	R-SC	16	0.58	0.70	10.0	4.50	6.60	10.00	3.24	4.75	7.19

LEGEND

SOILS CLASSIFICATION AbC1

SOILS DELINEATION

EXISTING CONTOURS

LIMIT OF WETLANDS

EXISTING WOODS LINE

PROPOSED WOODS LINE

EXISTING STRUCTURE

PROPOSED STRUCTURE

SPECIMEN TREE

FOREST CONSERVATION EASEMENT

EX. LANDSCAPE TREE F-96-139

SOILS LEGEND		
MAP SYMBOL	SOIL TYPE	MAPPING UNIT
BeB2 *	C	BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED
BeC2 *	C	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED
BeC3 *	C	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED
BeD2 *	C	BELTSVILLE SILT LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED
Gp *	A	GRAVEL PITS AND QUARRIES
L1 *	D	LEONARDTOWN SILT LOAM
SsE	B	SASSAFRAS SOILS, 15 TO 40 PERCENT SLOPES
Sfc2	B	SASSAFRAS GRAVELLY SANDY LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED
ScD	C	SANDY AND CLAYEY LAND, MODERATELY SLOPING

* - INDICATES HYDRIC SOILS
TAKEN FROM SOILS SURVEY, ISSUED JULY 1968, MAP NO. 33

NO.	DATE	REVISION
1	10-22-08	REVISIONS TO STORM DRAIN FROM I-13 TO EXISTING SYSTEM AS REQUIRED BY HOWARD COUNTY BUREAU OF HIGHWAYS

BENCHMARK
ENGINEERS • LAND SURVEYORS • PLANNERS

ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE • SUITE 418
ELLCOTT CITY, MARYLAND 21043
phone: 410-465-6105 • fax: 410-465-6644
email: bei@bei-civilengineering.com

Donald Maas
5-6-08

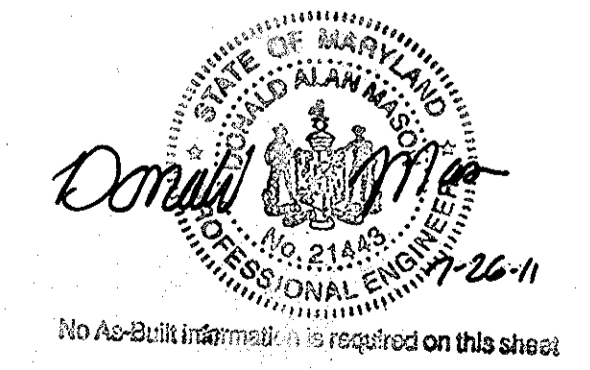
Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 21443. Expiration Date: 12-31-2008. 2c-17.

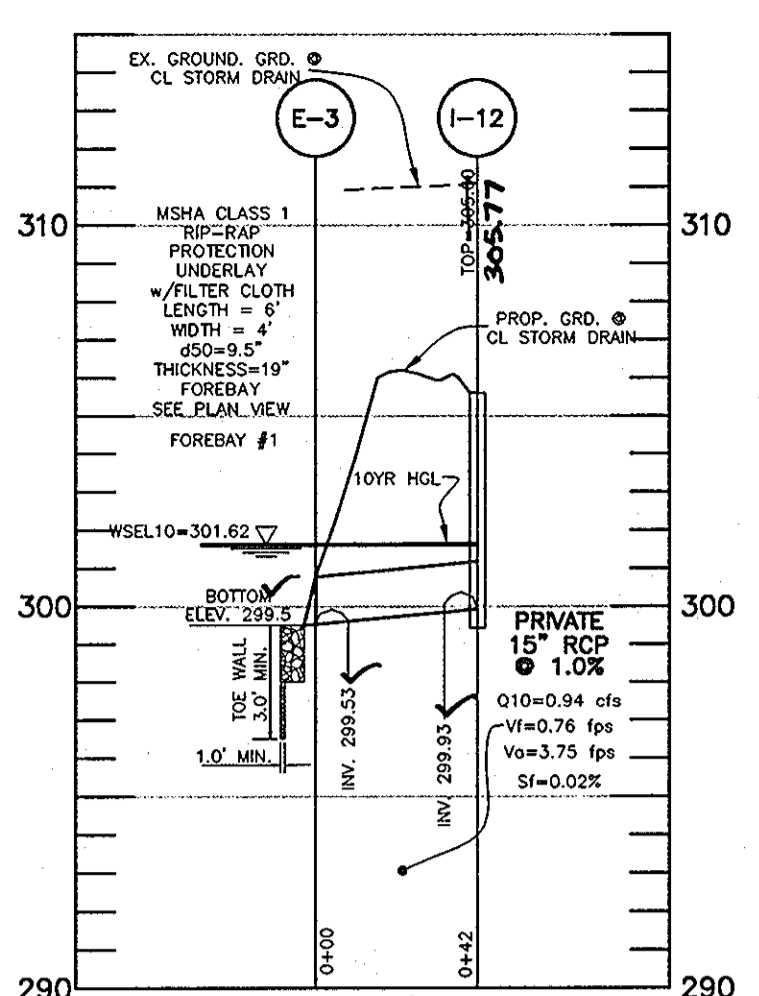
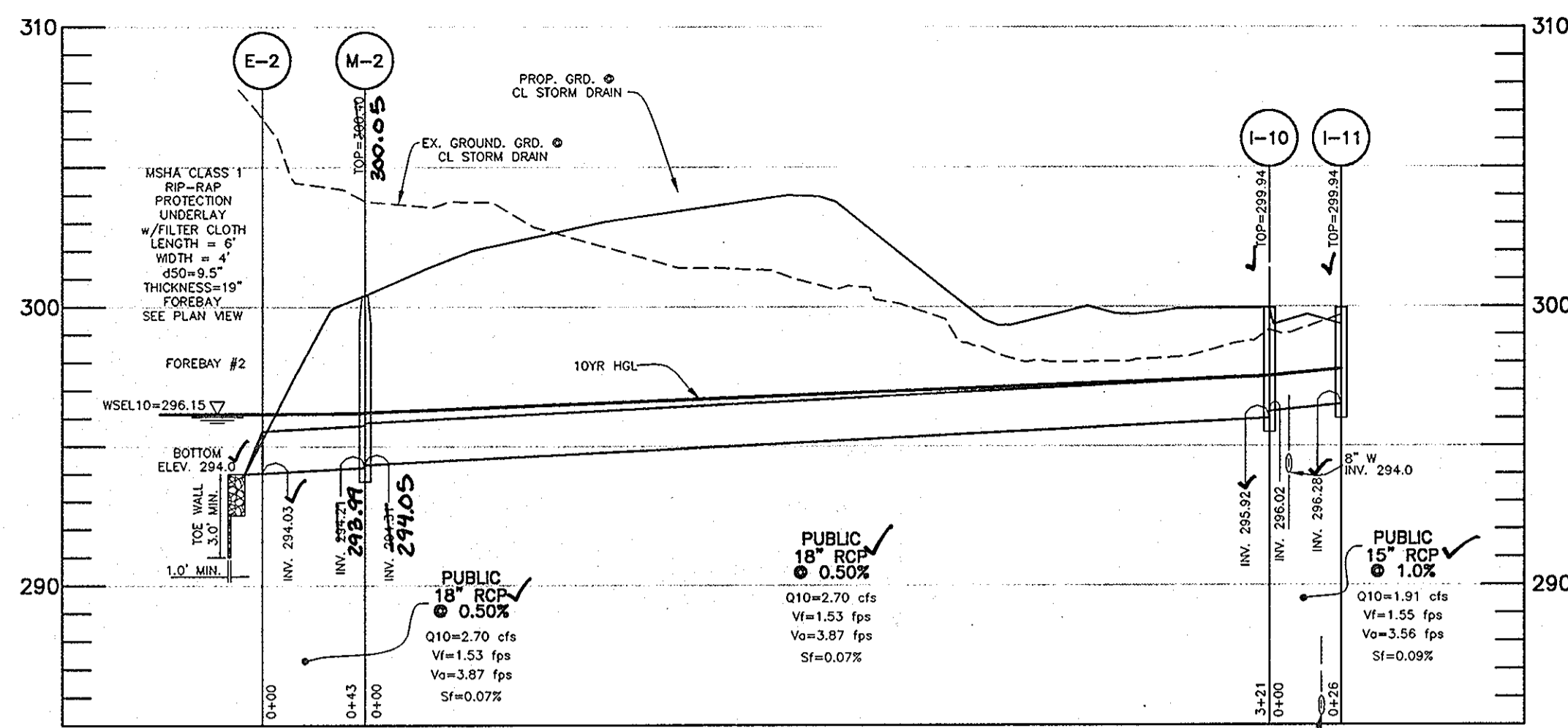
OWNER: JAMES H. KING 9648 WHISKEY BOTTOM ROAD LAUREL, MD 20723 301-498-8922	PROJECT: KINGS WOODS SECTION 5 LOTS 362 - 386 AND OPEN SPACE LOTS 387 & 388
DEVELOPER: SECURITY DEVELOPMENT, LLC P.O. BOX 417 ELLCOTT CITY, MD 21041 410-465-4244	LOCATION: TAX MAP No. 47 - GRID No. 21 PARCEL No. 857 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: OCTOBER, 2007 APRIL, 2008	TITLE: STORM DRAIN DRAINAGE AREA MAP
Design: JMC Draft: AM Check: DAM	PROJECT NO. 1504
SCALE: AS SHOWN	DRAWING 4 OF 9

APPROVED: DEPARTMENT OF PUBLIC WORKS
William R. ... 8-28-08 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
... 9/5/08 DATE

... 9/3/08 DATE

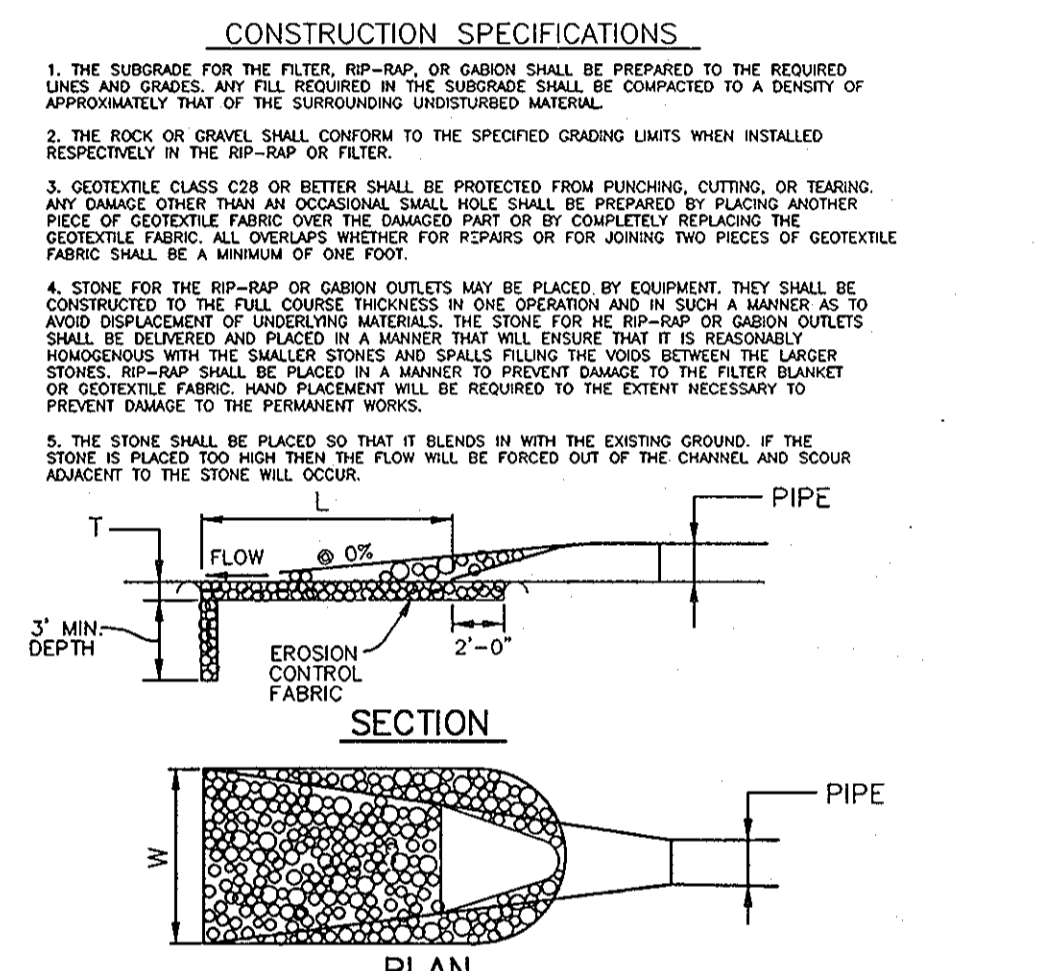
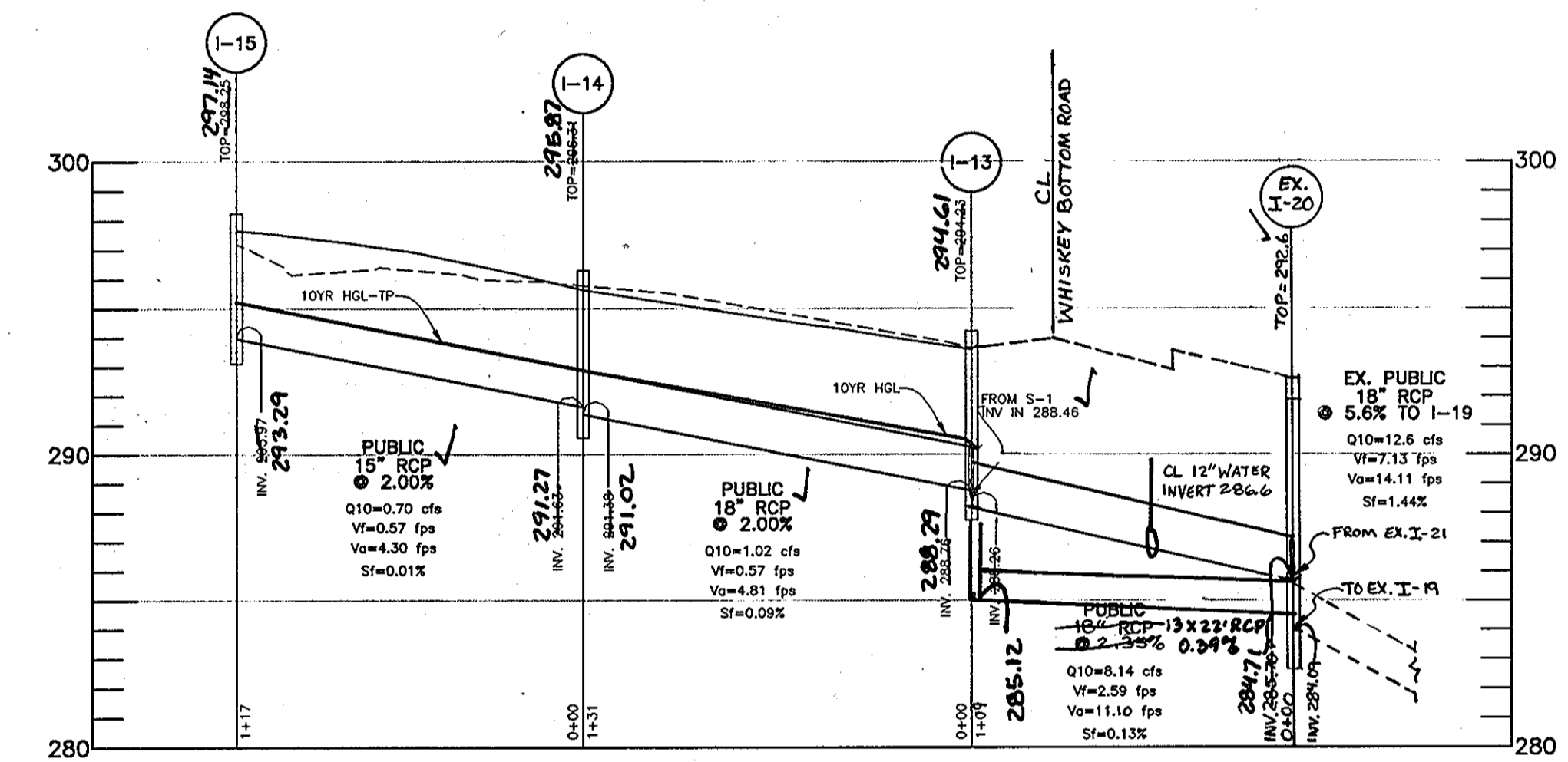
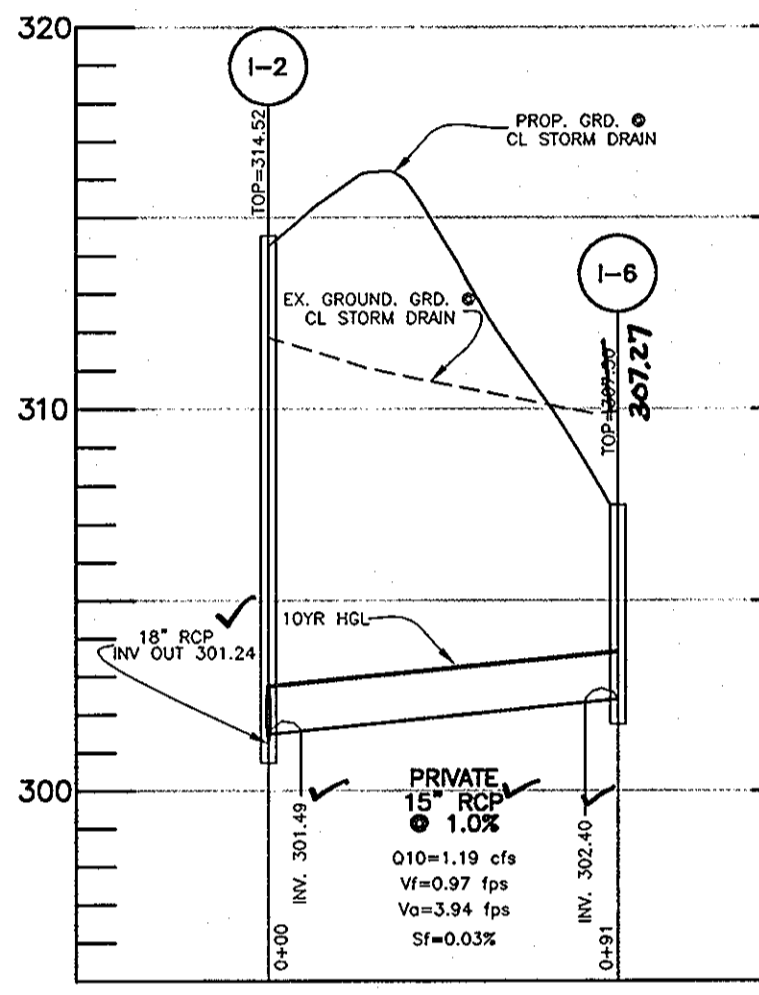
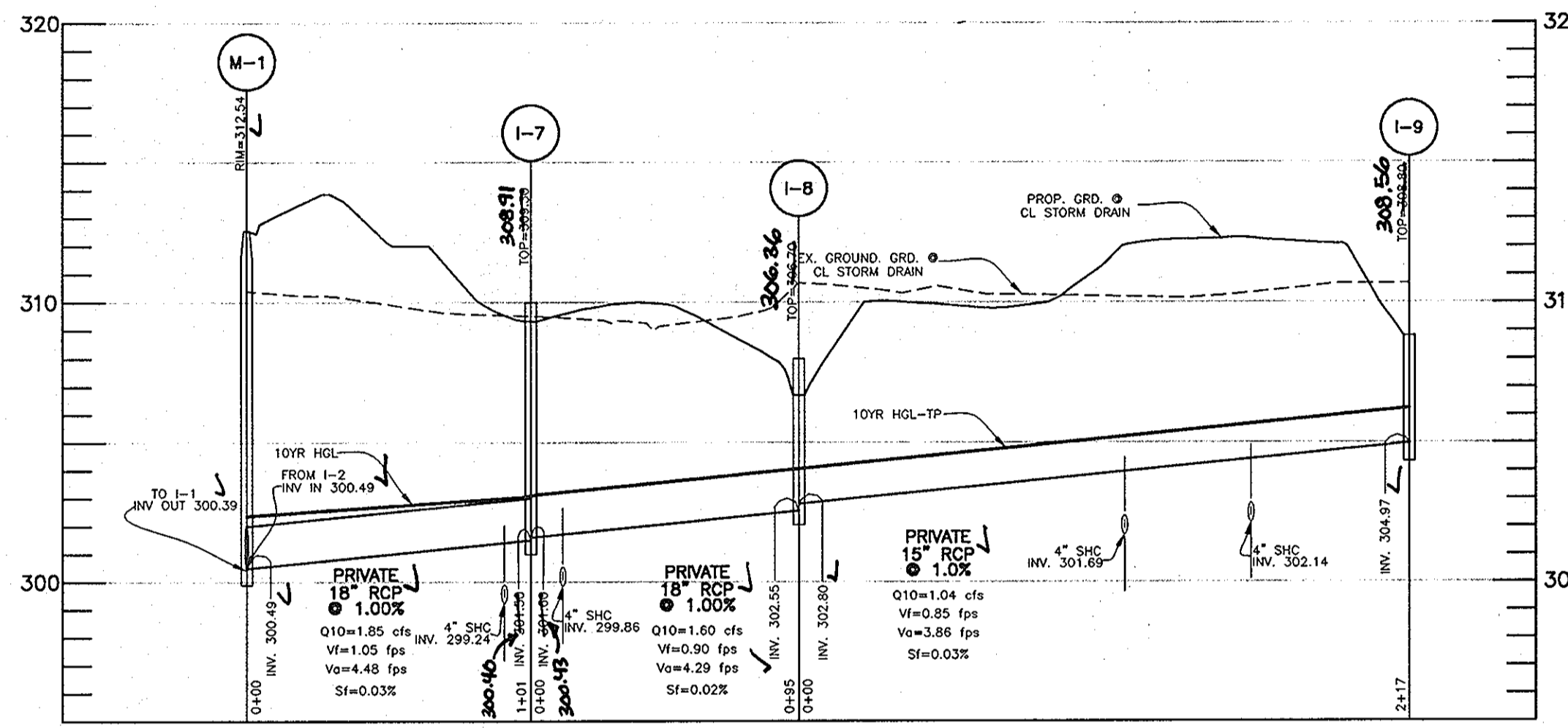




DIAMETER	MATERIAL	LENGTH	OWNERSHIP
15"	RCP CLV	189'	PUBLIC
18"	RCP CLV	189'	PUBLIC
24"	RCP CLV		PUBLIC
18"	RCP CLV	196'	PRIVATE
15"	RCP CLV	345'	PRIVATE

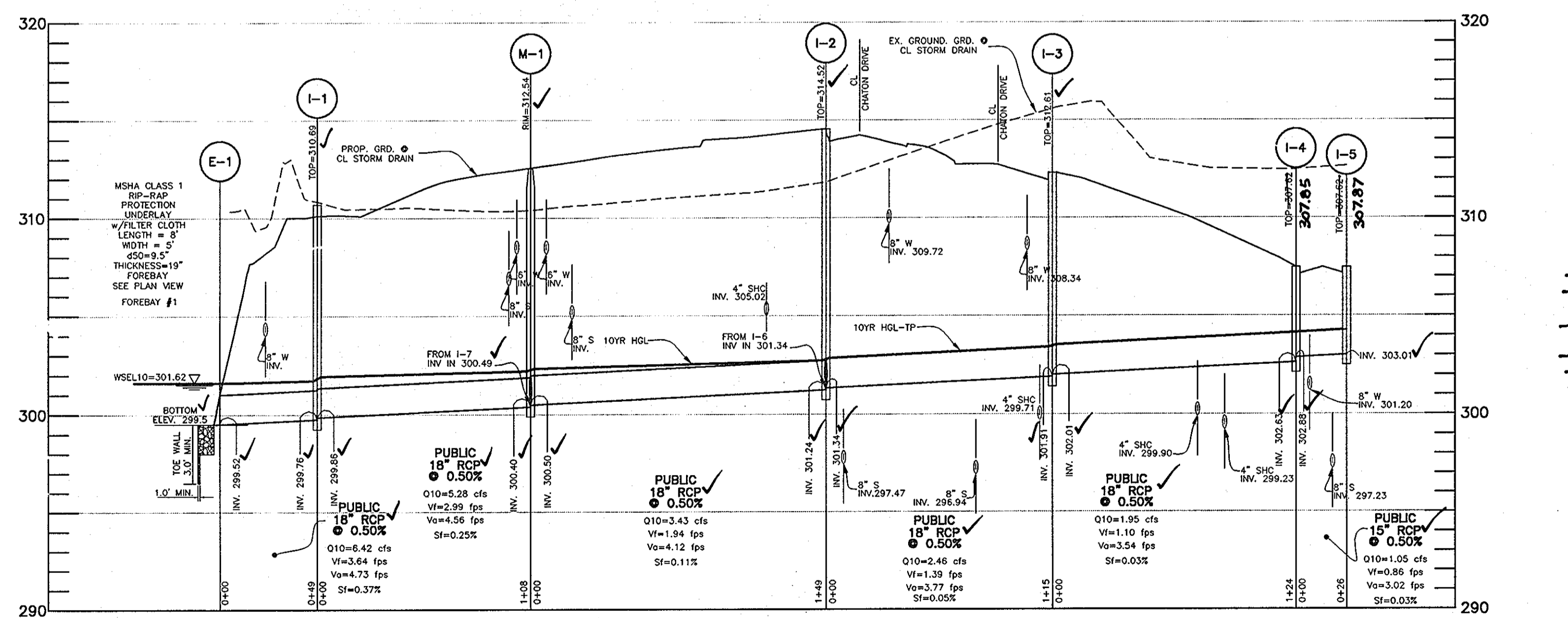
STRUCTURE SCHEDULE							
NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	HO. CO. STD.	OWNERSHIP
E-1	TYPE 'A' HEADWALL	N 531363.05 E 1356810.68	---	299.50 ✓	---	D - 5.11	PUBLIC
E-2	TYPE 'A' HEADWALL	N 531269.06 E 1357029.12	---	294.00 ✓	---	D - 5.11	PUBLIC
E-3	15" CONC. END SECT.	N 531371.82 E 1356855.08	---	299.50 ✓	---	D - 5.51	PRIVATE
I-1	A-10 INLET	LP STA. 1+64.07 OFFS. 0.43' LEFT	299.86 ✓	310.49 ✓	310.69 ✓	SD - 4.03 OR 4.04	PUBLIC
I-2	A-5 INLET	CL STA. 13+04.91 OFFS. 12.43' RIGHT	✓ 301.34 / 301.49 ✓	301.24 ✓	314.52 ✓	SD - 4.01 OR 4.02	PUBLIC
I-3	A-5 INLET	CL STA. 11+92.19 OFFS. 12.43' RIGHT	302.01 ✓	301.91 ✓	312.61 ✓	SD - 4.01 OR 4.02	PUBLIC
I-4	A-5 INLET	CL STA. 10+71.85 OFFS. 12.43' RIGHT	302.88 ✓	303.03 ✓	307.85 ✓	SD - 4.01 OR 4.02	PUBLIC
I-5	A-5 INLET	CL STA. 10+71.85 OFFS. 12.43' LEFT	303.01 ✓	302.62 ✓	307.87 ✓	SD - 4.01 OR 4.02	PUBLIC
I-6	'D' INLET	N 531681.79 E 1356891.32	---	302.40 ✓	302.50 ✓	4.10 OR 4.11 OPEN 4 SIDES	PRIVATE
I-7	'D' INLET	N 531590.84 E 1356787.79	301.60 ✓	301.50 ✓	308.30 ✓	SD - 4.10 OR 4.11 OPEN 4 SIDES	PRIVATE
I-8	'D' INLET	N 531664.44 E 1356707.31	302.80 ✓	302.55 ✓	306.70 ✓	SD - 4.10 OR 4.11 OPEN 4 SIDES	PRIVATE
I-9	'D' INLET	N 531802.48 E 1356877.05	---	304.97 ✓	308.60 ✓	SD - 4.10 OR 4.11 OPEN 4 SIDES	PRIVATE
I-10	A-5 INLET	CL STA. 8+20.27 OFFS. 12.43' LEFT	295.92 ✓	295.92 ✓	299.94 ✓	SD - 4.01 OR 4.02	PUBLIC
I-11	A-5 INLET	CL STA. 8+20.27 OFFS. 12.43' RIGHT	---	296.28 ✓	299.94 ✓	SD - 4.01 OR 4.02	PUBLIC
I-12	'D' INLET	N 531384.23 E 1356896.90	---	299.93 ✓	305.60 ✓	SD - 4.10 OR 4.11 OPEN 4 SIDES	PRIVATE
I-13	A-10 INLET	CL STA. 5+68.72 OFFS. 14.56' RIGHT	200.29 ✓	288.76 / 288.46 ✓	288.26 ✓	SD - 4.03 OR 4.04	PUBLIC
I-14	A-10 INLET	CL STA. 4+35.78 OFFS. 20.00' LEFT	291.38 ✓	291.02 ✓	295.87 ✓	SD - 4.03 OR 4.04	PUBLIC
I-15	A-10 INLET	CL STA. 3+15.38 OFFS. 20.00' LEFT	---	293.97 ✓	298.25 ✓	SD - 4.03 OR 4.04	PUBLIC
M-1	4'-0" MANHOLE	CL STA. 14+52.88 OFFSET 12.91' RIGHT	300.50 ✓	300.40 ✓	312.54 ✓	G - 5.12	PUBLIC
M-2	4'-0" MANHOLE	N 531262.12 E 1357065.68	294.31 ✓	293.99 ✓	300.40 ✓	G - 5.12	PUBLIC
S-1	SEE DETAIL	N 531253.47 E 1356916.21	---	---	---	SEE SWM DETAILS	PRIVATE
S-2	SEE DETAIL	N 531354.02 E 1356819.57	---	---	---	SEE SWM DETAILS	PRIVATE

- STRUCTURE ELEVATION AND LOCATION FOR MANHOLES IS AT THE TOP AND CENTER OF RIM.
- STRUCTURE ELEVATION AND LOCATION FOR INLETS IS AT THE TOP OF CURB AT MID-POINT OF THE INLET OR AT THE CENTER OF SLAB FOR "D" INLETS.
- STRUCTURE ELEVATION AND LOCATION FOR ENDSECTIONS IS AT CENTERLINE OF THE END OF THE END SECTION.
- PRECAST STRUCTURES MEETING HS-20 LOADING MAY BE USED.
- ALL STORM DRAINS SHALL BE SMOOTH CORE HIGH DENSITY POLYETHYLENE PIPE

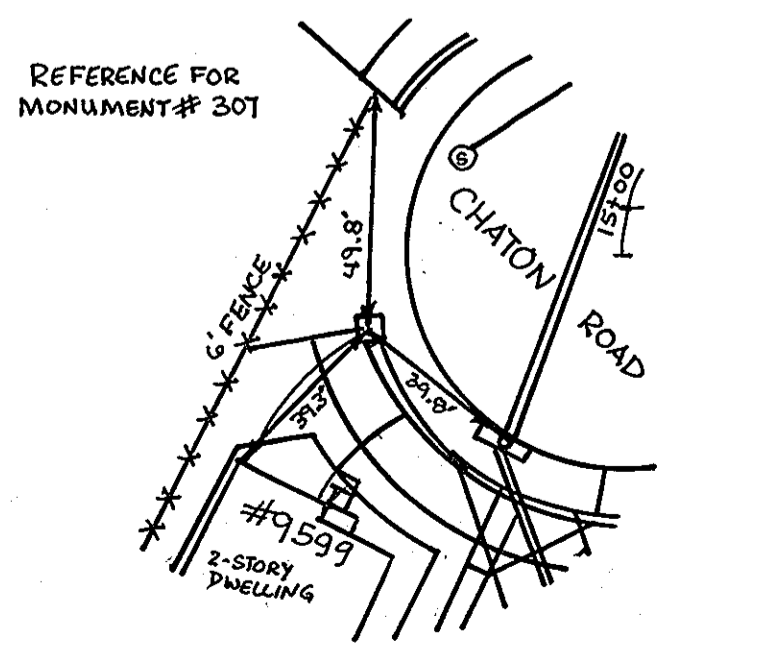
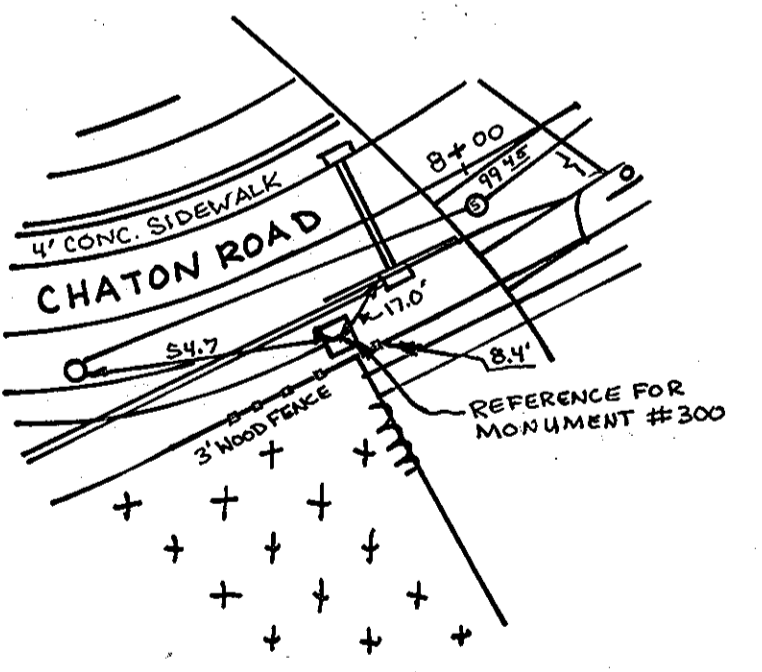


STRUCTURE	D-50	LENGTH (L)	WIDTH (W)	THICKNESS (T)	SHA CLASS
E-1	9.5"	8'	5'	19"	I
E-2	9.5"	6'	4'	19"	I
E-3	9.5"	6'	4'	19"	I
E-4	9.5"	4'	3'	19"	I

OUTLET PROTECTION DETAIL
 NOT TO SCALE



R/W FT. NO.	DESCRIPTION	ELEVATION
212	REBAR # CAP	310.56'
203	MAGNAIL	313.55'
204	REBAR # CAP	314.52'
205	REBAR # CAP	313.41'
207	MONUMENT SET	311.00'
208	REBAR # CAP	310.24'
209	REBAR # CAP	309.65'
311	REBAR # CAP	314.67'
313	REBAR # CAP	313.48'



AS-BUILT CERTIFICATION
 I hereby certify that the information shown on this plan was constructed as shown on the drawings prepared by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland.
 License No. 21445, Expiration Date: 12-31-2008, Exp. 1-2-09
 Donald Mason, P.E.
 9-26-11

APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] 8-28-08
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] 9/15/08
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 9/13/08
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

10-22-08 REVISIONS TO STORM DRAIN FROM I-13 TO EXISTING SYSTEM AS REQUIRED BY HOWARD COUNTY BUREAU OF HIGHWAYS

BENCHMARK ENGINEERING, INC.
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OWNER: JAMES H. KING
 9648 WHISKEY BOTTOM ROAD
 LAUREL, MD 20723
 301-493-8922

PROJECT: KINGS WOODS SECTION 5
 LOTS 362 - 386 AND OPEN SPACE LOTS 387 & 388

LOCATION: TAX MAP No. 47 - GRID No. 21
 PARCEL No. 857
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

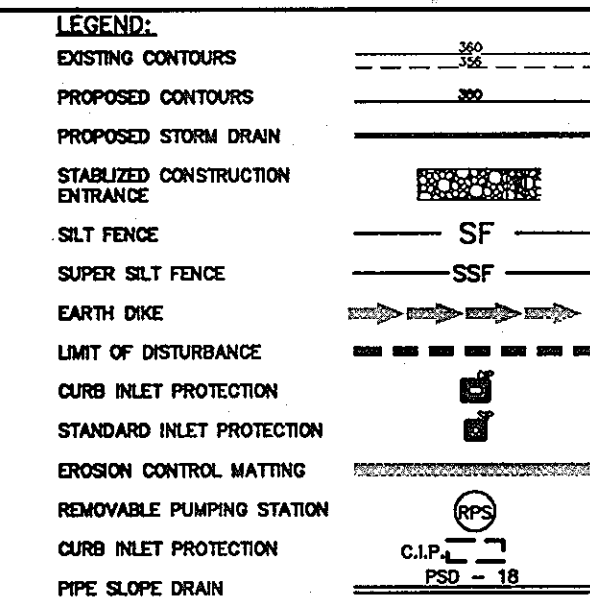
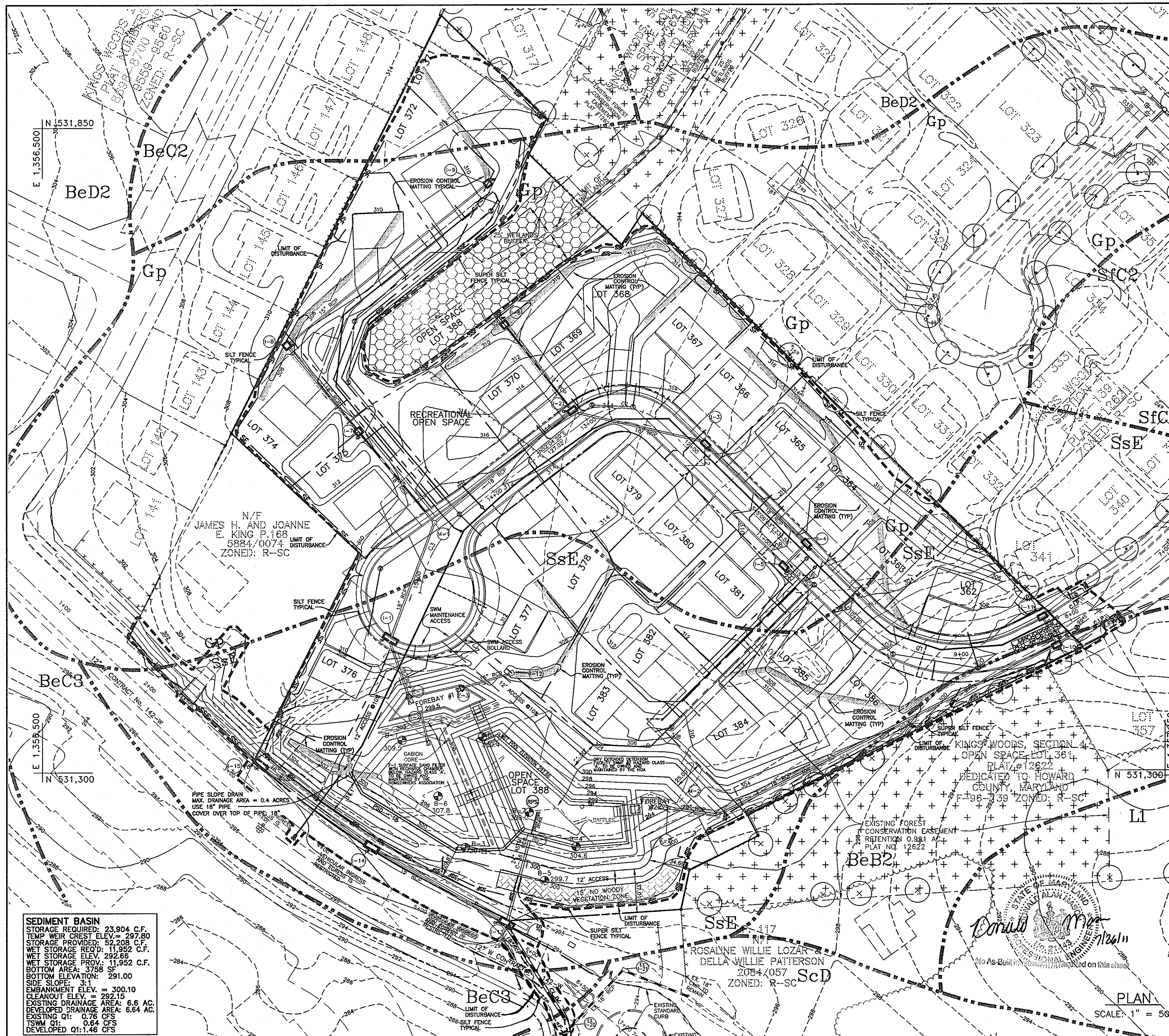
DEVELOPER: SECURITY DEVELOPMENT, LLC
 P.O. BOX 417
 ELLICOTT CITY, MD 21041
 410-465-4244

TITLE: STORM DRAIN PROFILES

DATE: OCTOBER, 2007
 APRIL, 2008 PROJECT NO. 1504

Design: JMC Draft: AM Check: DAM SCALE: AS SHOWN DRAWING 5 OF 9

AS BUILT F-08-065



SEDIMENT CONTROL NOTES

- A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION. (313-1850).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL, REVISIONS THEREOF.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1 TO 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51) 500 (SEC. 52), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING PRACTICES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:

TOTAL AREA OF SITE	6.74	ACRES
AREA TO BE ROOFED OR PAVED	3.76	ACRES
AREA TO BE VEGETATIVELY STABILIZED	2.98	ACRES
TOTAL CUT	27,000	CY*
TOTAL FILL	8,700	CY*

TOPSOIL SPECIFICATIONS

Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. 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 Experiment Station.

Topsoil Specifications - Soil to be used as topsoil must meet the following:

- Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textures and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
- Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutgrass, poison ivy, thistle, or others as specified.
- Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be applied at the rate of 4-8 tons/core (2000 square feet) prior to the placement. Limestone shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
- For sites having disturbed areas under 5 acres:
 - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
 - For sites having disturbed areas over 5 acres:
 - On soil meeting topsoil specifications, obtain test results indicating fertilizer and lime concentrations required for bringing the soil into compliance with the following:
 - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
 - Organic content or topsoil shall be not less than 1.5 percent by weight.
 - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
 - No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days) to permit germination of phyto-toxic materials.

TEMPORARY SEEDBED PREPARATIONS

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

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

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

SEEDING: FOR PERIOD MARCH 1 THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 2-1/2 BUAGS PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT) FOR THE PERIOD MAY 1 THROUGH AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (0.7 LBS/1000 SQ FT) FOR THE PERIOD NOVEMBER 16 THROUGH FEBRUARY 28. PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WET ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOO.

SEQUENCE OF CONSTRUCTION

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF CONSTRUCTION.

- OBTAIN GRADING PERMIT. (DAY 1-5)
- INSTALL STABILIZED CONSTRUCTION ENTRANCE AND PERIMETER SILT FENCE. (DAY 6-8)
- WHEN ALL MATERIALS FOR THE POND CONSTRUCTION ARE ON SITE, CLEAR AND CONSTRUCT SEDIMENT BASIN/STORMWATER POND, FOREBAY AND SAND FILTER. PROVIDE BLOCKING AT S-2 TO PREVENT STORMWATER FROM ENTERING SAND FILTER UNTIL FOREBAY AREAS ARE STABILIZED AND SEDIMENT BASIN HAS BEEN CONVERTED TO STORMWATER POND. (DAY 9-31)
- UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR (INSPECTOR), BRING ROAD BEDS TO SUBGRADE AND STABILIZE SLOPES IN ACCORDANCE WITH TEMPORARY SEEDBED NOTES. UTILIZE DUST CONTROL METHODS. (DAY 32-39)
- CONSTRUCT STORM DRAINS. (DAY 40-43)
- CLEAR AND GRADE REMAINING PLOTS, INSTALLING WATER AND SEWER, MAINTAINING DIVERSION OF WATER TO POND. STABILIZE DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDBED NOTES. (DAY 44-51)
- PAVE ROADWAYS. (DAY 55-60)
- WHEN ALL AREAS TRIBUTARY TO THE SWM POND ARE STABILIZED, AND WITH THE APPROVAL OF INSPECTOR, CONVERT SEDIMENT BASIN TO STORMWATER POND CONSTRUCTION AND REMOVE BLOCKING FROM S-2 TO ALLOW LOW FLOWS TO ENTER SAND FILTER. (DAY 57-59)
- UPON APPROVAL OF INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDBED NOTES. (DAY 60-62)

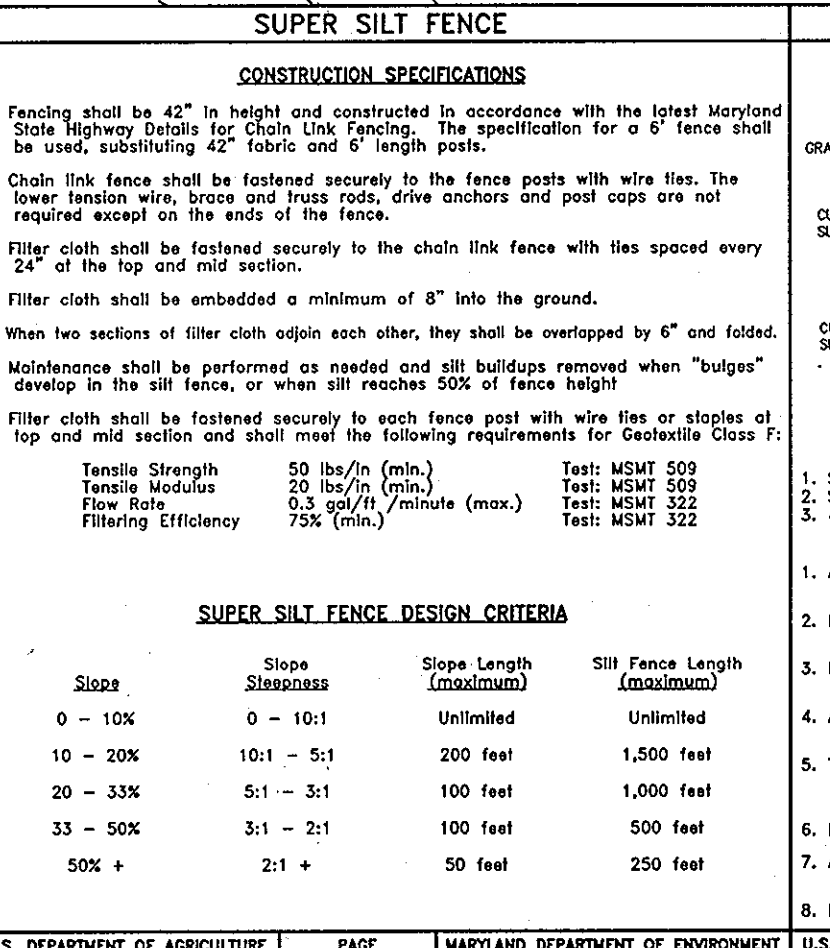
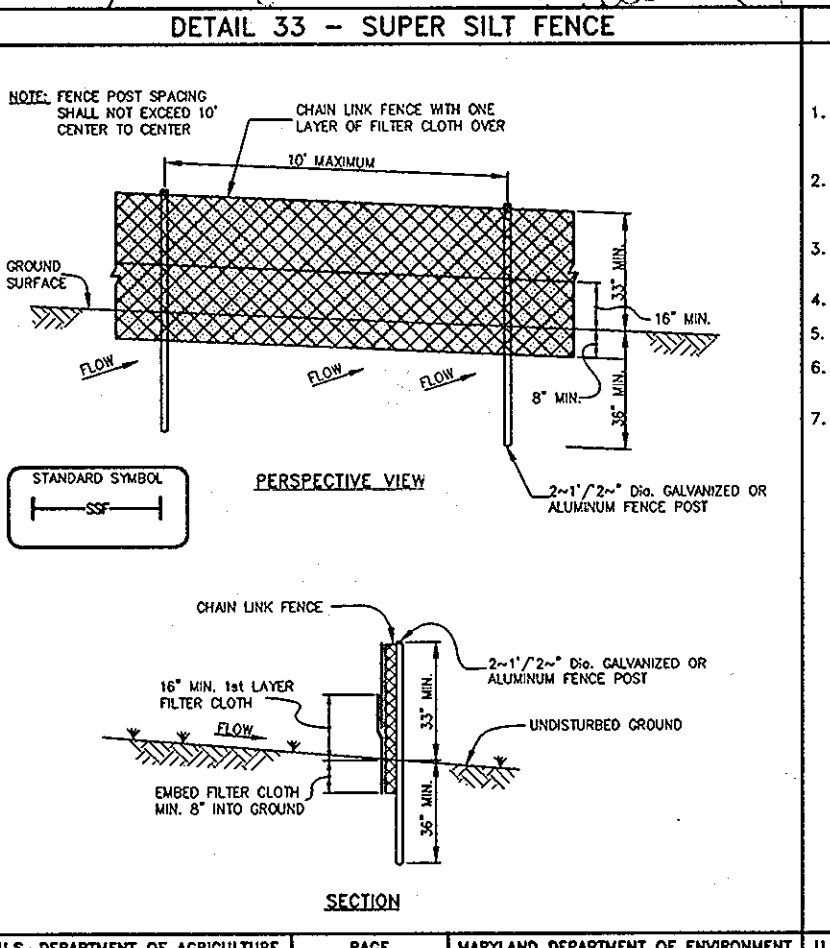
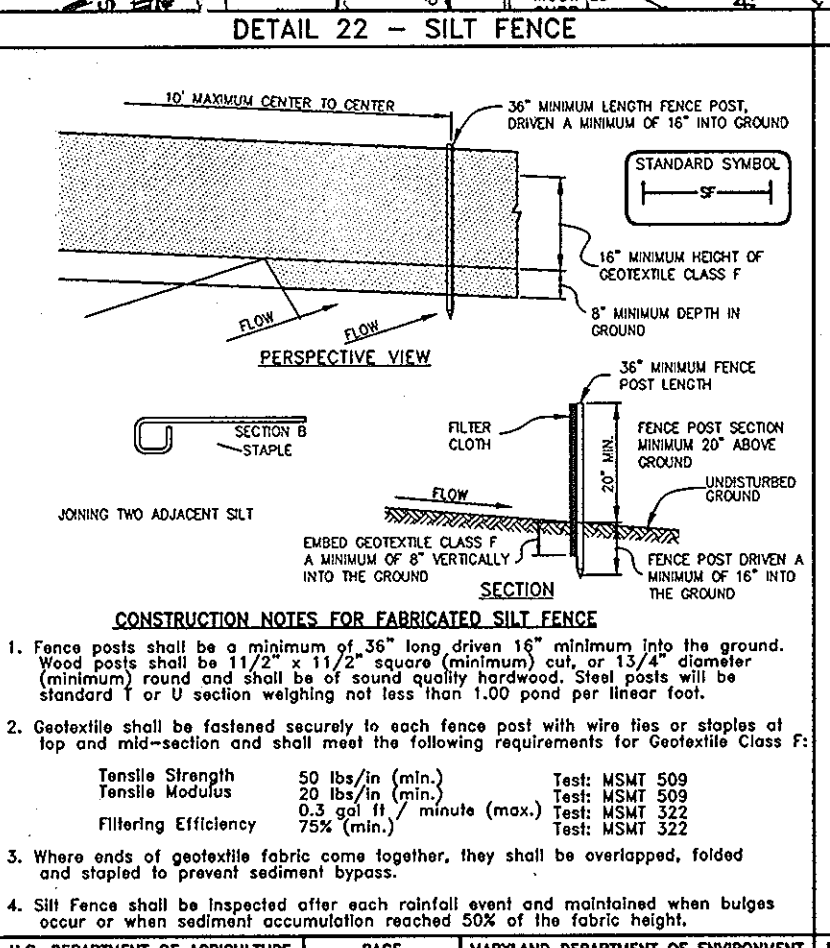
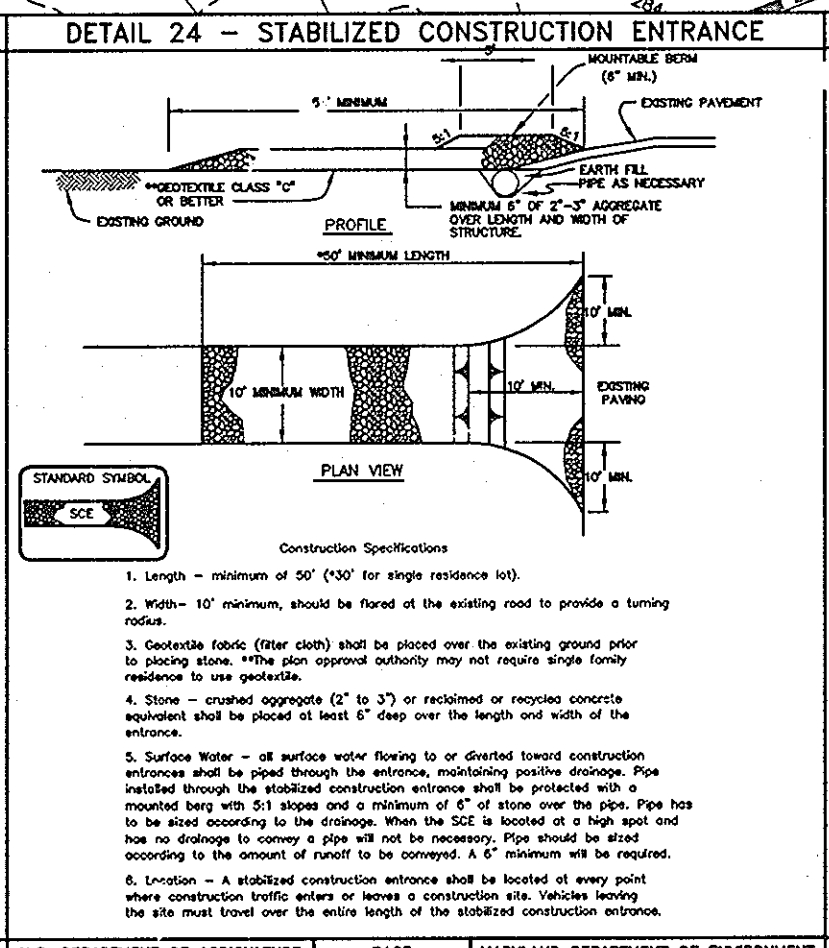
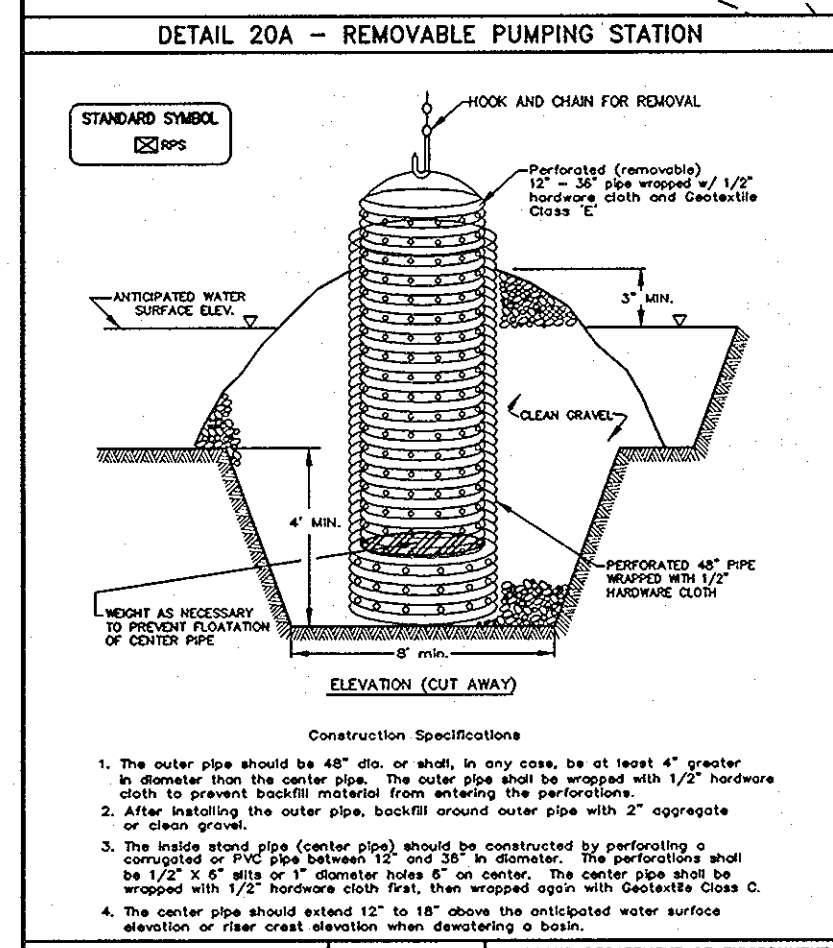
CONTROL VOLUMES AND WATER SURFACE ELEVATIONS

Drainage Area	Rev.	Control Volume				Water Surface Elevations				
		Ac.	Elev. Ft.	Ac.	Elev. Ft.	Op10	Op100	Op1000	Op10000	
1	0.09	395.00	0.8	298.55	0.49	294.10	0.81	296.27	1.30	297.75
2	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A
3	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A
4	2.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A	0.00	N/A

A dry extended detention facility is going to provide the required Cp10 and C10100 detention volumes. The developed condition 10 and 100 year discharges at study point number 1 will be less than the existing condition discharge at that same point. The 1 year developed condition discharge is slightly higher. The developed discharge will not be erosive and will discharge directly into a drainage system. Water quality treatment will be provided using a surface sand filter. Recharge will be provide via a stone chamber below the sand filter.

SEDIMENT BASIN

REQUIREMENT: 23,904 C.F. STORAGE PROVIDED: 52,208 C.F. NET STORAGE REQ'D: 11,992 C.F. NET STORAGE ELEV.: 292.66' BOTTOM ELEV.: 292.66' BOTTOM AREA: 1,992 SQ. FT. BOTTOM AREA: 3758 SF. SIDE SLOPE: 2:1.00. EMBANKMENT ELEV.: 300.10. CLEANOUT ELEV.: 292.15. EXISTING DRAINAGE AREA: 6.6 AC. DEVELOPED DRAINAGE AREA: 6.64 AC. EXISTING Q1: 0.76 CFS. TSM1 Q1: 0.64 CFS. DEVELOPED Q1: 1.48 CFS.



CONSTRUCTION SPECIFICATIONS

- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Design for Chain Link Fencing. The specification for a 2' fence shall be used, substituting 42" fabric and 6" length posts.
- Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, boom and trust rods, drive ends of fence shall not be required except on the ends of the fence.
- Filter cloth shall be fastened to the chain link fence with ties spaced every 24" at the top and mid section.
- Filter cloth shall be embedded a minimum of 8" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Maintenance shall be performed as needed and silt baffles removed when "bubbles" develop in the silt fence, or when silt reaches 50% of fence height.
- Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Synthetic Class F:

Tensile Strength	50 lb/in. (min.)	Test: MSMT 509
Tensile Modulus	20 lb/in. (min.)	Test: MSMT 509
Flow Rate	0.5 lb/in. (min.)	Test: MSMT 322
Filtration Efficiency	75% (min.)	Test: MSMT 322

SUPER SILT FENCE DESIGN CRITERIA

Slopes	Slope Steepness	Slope Length (Maximum)	Silt Fence Length (Maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 30%	10:1 - 3:1	200 feet	1,500 feet
30 - 50%	5:1 - 3:1	100 feet	1,000 feet
50% +	3:1 - 2:1	50 feet	500 feet
	2:1 +	25 feet	250 feet

ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Donald M. Mason 5-6-08
ENGINEER DATE

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

James H. King 5/6/08
DEVELOPER DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

Walter J. ... 8-28-08
DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

Walter J. ... 8-28-08
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Walter J. ... 9/5/08
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Walter J. ... 9/3/08
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

BENCHMARK

ENGINEERS • LAND SURVEYORS • PLANNERS

Donald M. Mason 6-6-08

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phone: 410-465-6105 fax: 410-465-6644
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301-498-8922

DEVELOPER: SECURITY DEVELOPMENT, LLC
P.O. BOX 417
ELLICOTT CITY, MD 21041
410-465-4244

PROJECT: KINGS WOODS SECTION 5
LOTS 362 - 386 AND OPEN SPACE LOTS 387 & 388

LOCATION: TAX MAP No. 47 - Grid No. 21
PARCEL No. 857
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

FILE: S-02-12
P-07-01

TITLE: MASS GRADING, SEDIMENT AND EROSION CONTROL PLAN AND DETAILS

DATE: OCTOBER, 2007
APRIL, 2008

PROJECT NO. 1504

Design: JMC Draft: AM Check: DAM Scale: AS SHOWN Drawing: 6 OF 9

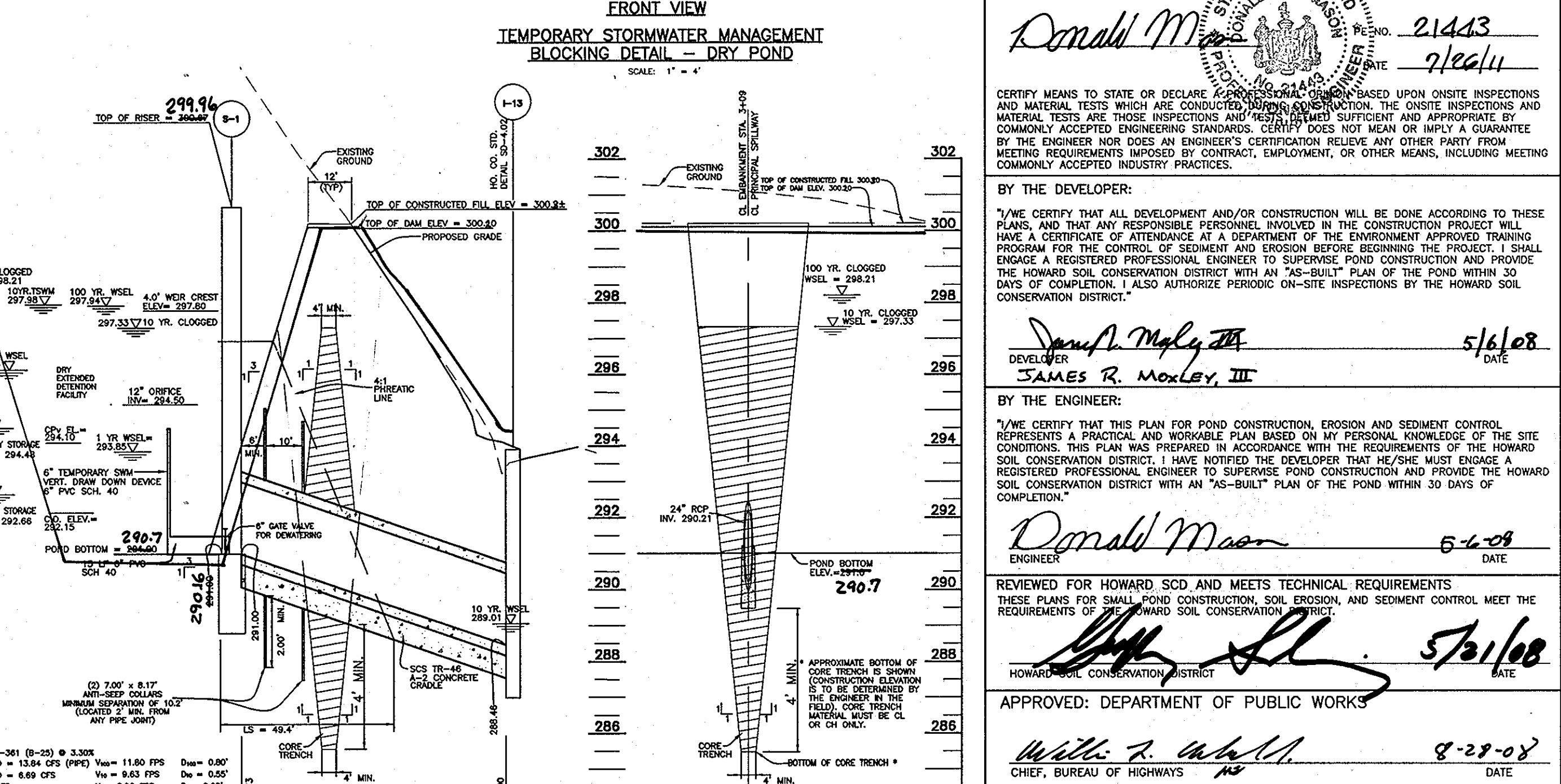
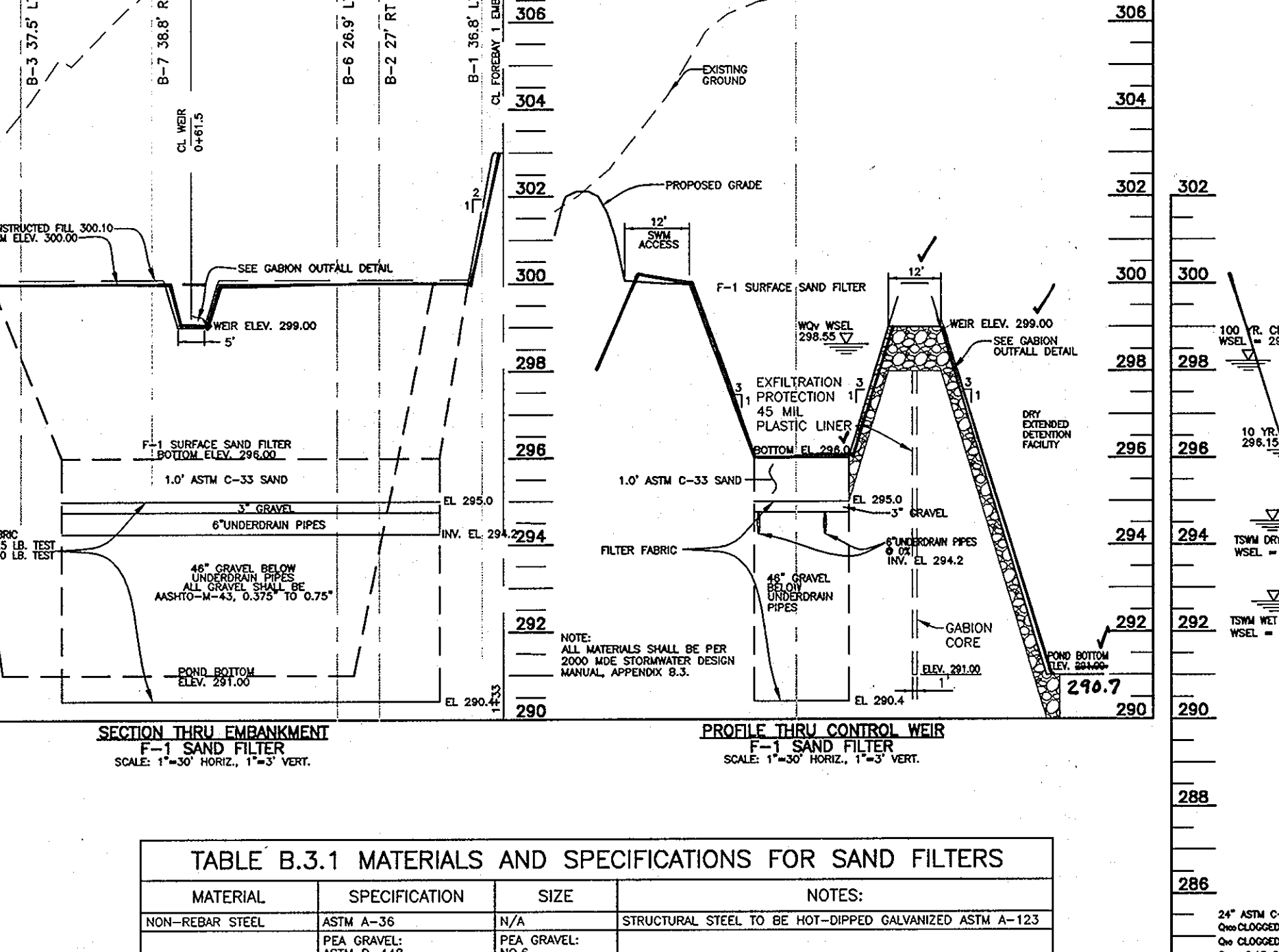
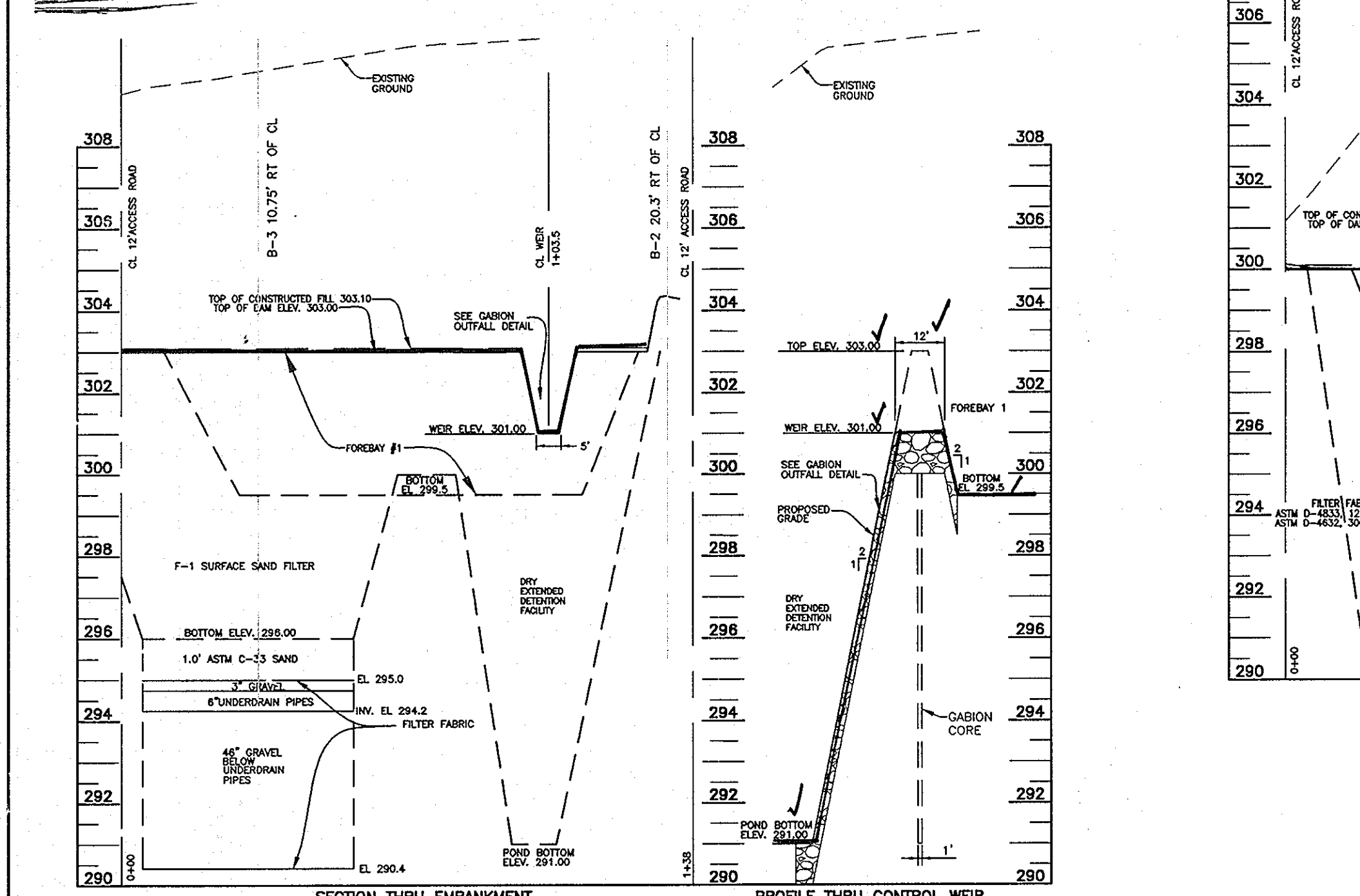
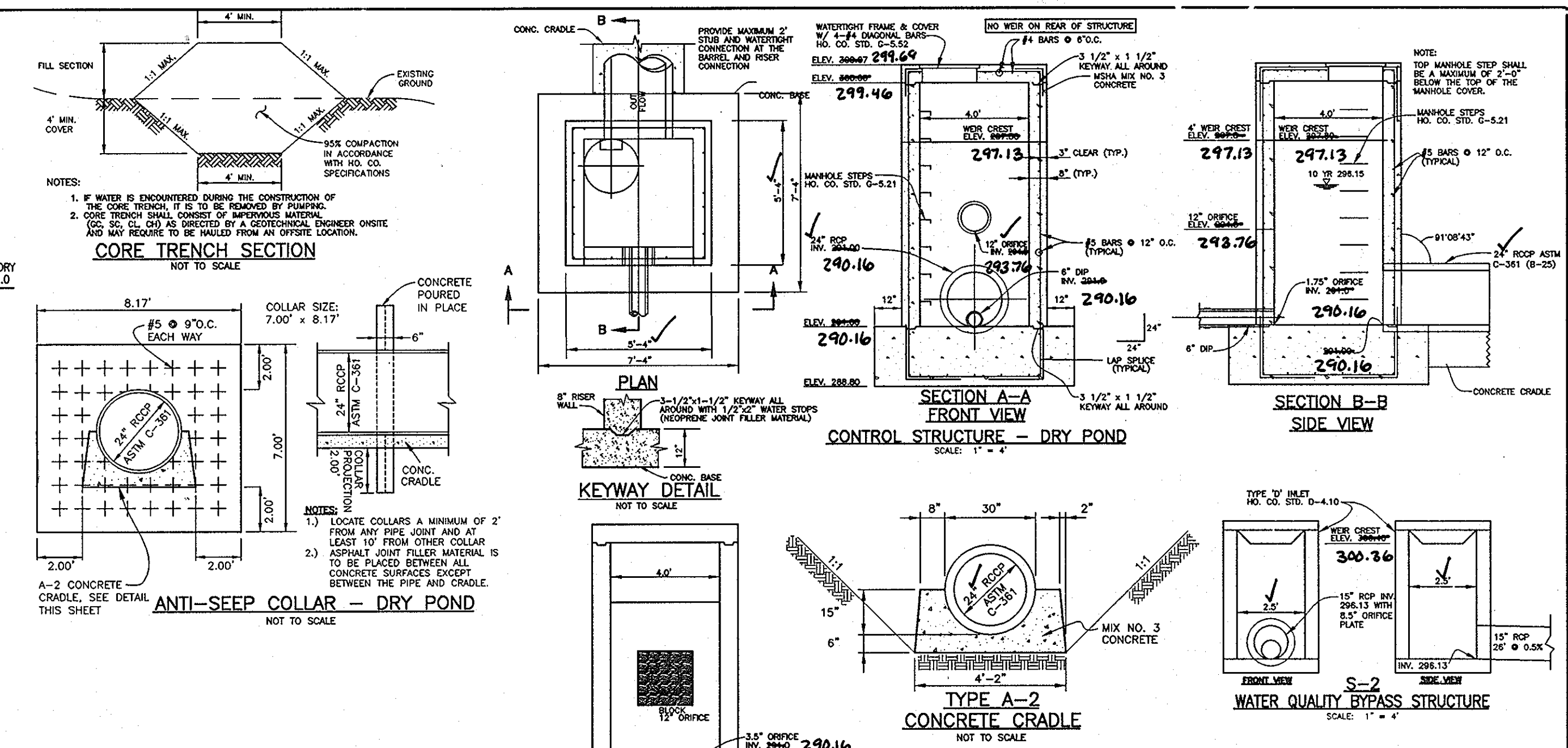
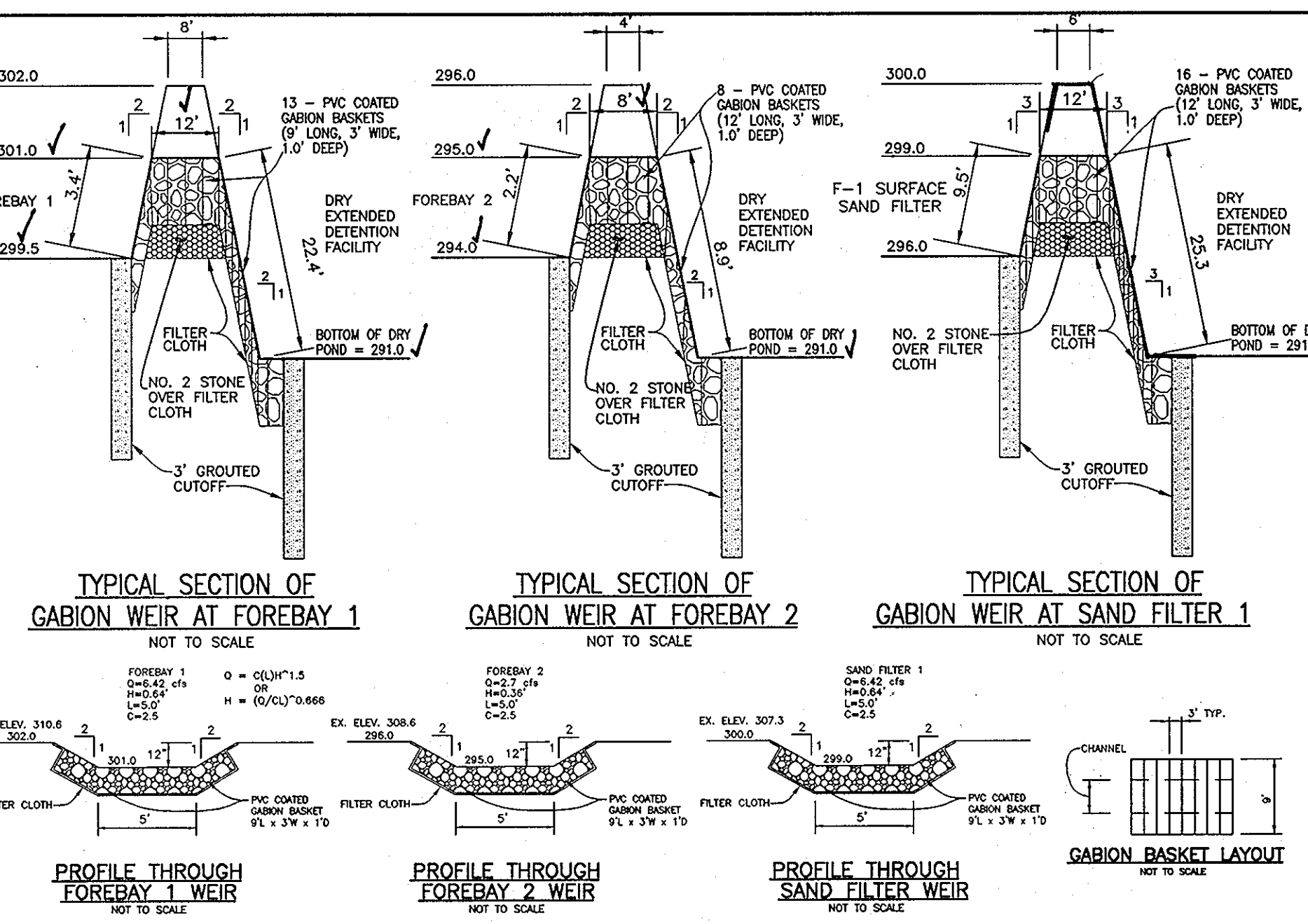
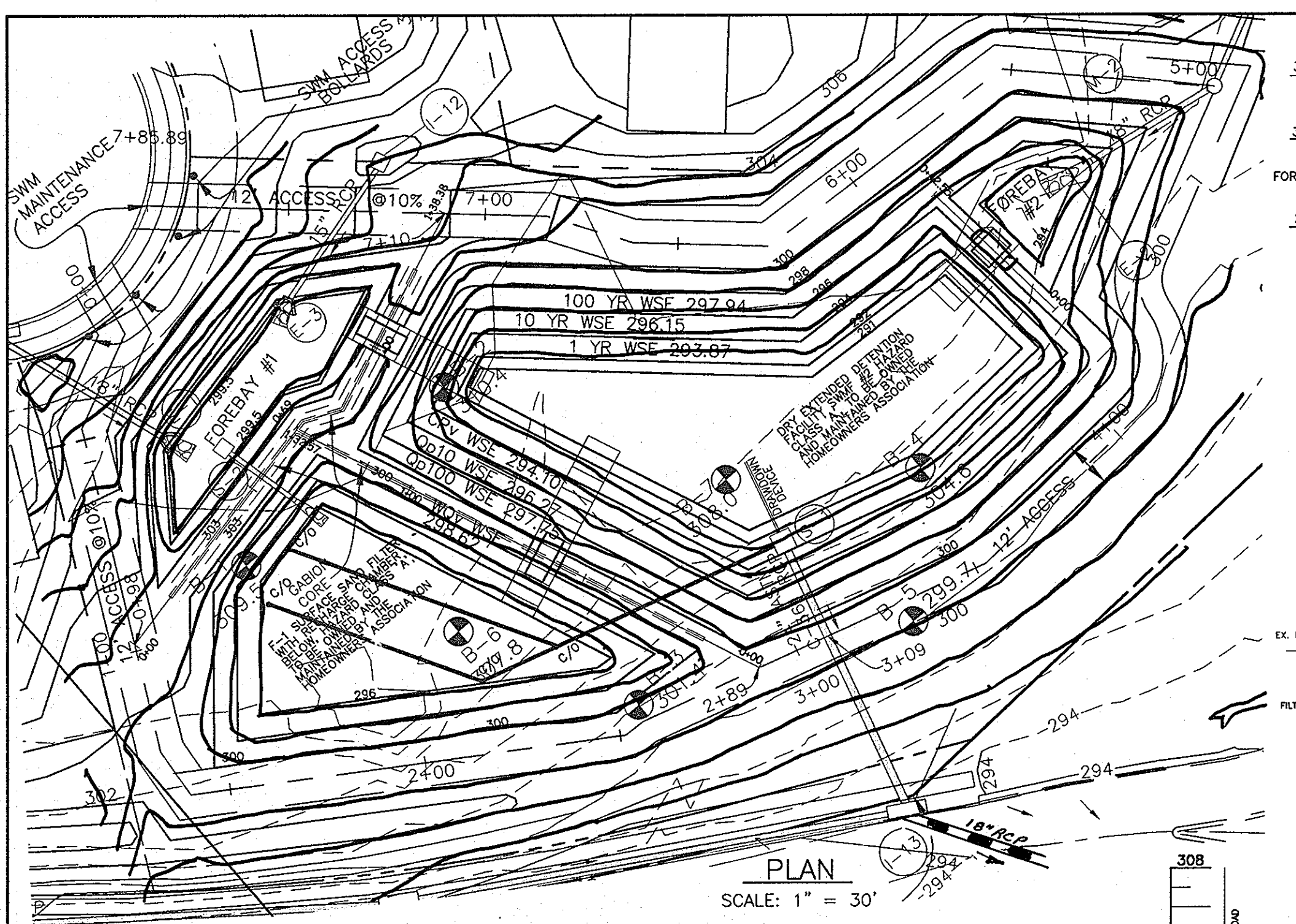


TABLE B.3.1 MATERIALS AND SPECIFICATIONS FOR SAND FILTERS

MATERIAL	SPECIFICATION	SIZE	NOTES:
NON-REBAR STEEL	ASTM A-36	N/A	STRUCTURAL STEEL TO BE HOT-DIP GALVANIZED ASTM A-133
PEA GRAVEL	ASTM D-448	NO. 8	
ORNAMENTAL STONE	ASTM D-448	NO. 8	
WASHED COBBLES	ASTM D-448	NO. 8	
GEOTEXTILE (CLASS "C")	ASTM D-4751	NO. 10	MUST MAINTAIN 125 GPM / SQ. FT. FLOW RATE. NOTE: A PEA GRAVEL LAYER MAY BE SUBSTITUTED FOR GEOTEXTILES MEAN TO "SEPARATE" SAND FILTER LAYERS
UNDERDRAIN GRAVEL	ASTM M-43	0.375" TO 0.750"	
UNDERDRAIN PIPING	ASTM M-278	4" TO 6" RIGID	3/8" PERFORATED 6" O.C. 4 HOLES PER ROW. MINIMUM OF 5" OF SCHLAD PVC OR SDR35
SAND (1.0' DEEP)	ASTM C-33	0.075" TO 0.04"	SAND SUBSTITUTIONS SUCH AS DIABASE AND GRAYSTONE ARE NOT ACCEPTABLE. NO CALCIUM CARBONATE OR DOLOMIC SAND SUBSTITUTIONS ARE ACCEPTABLE. NO "ROCK DUST" CAN BE USED FOR SAND

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY MAINTAINED DRY DETENTION POND

- POND SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
- TOP AND SIDE SLOPES OF THE EMBANKMENTS SHALL BE MOVED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOVED AS NEEDED. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MAINTENANCE OPERATIONS AND AS NEEDED.
- VISIBLE SIGNS OF EROSION IN THE EMBANKMENTS AND RIP-RAP OUTLET AREAS SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
- STRUCTURAL COMPONENTS SUCH AS THE EMBANKMENTS, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
- SEDIMENT SHALL BE REMOVED FROM THE POND WHEN THE CAPACITY OF THE POND IS HALF FULL OF SEDIMENT, OR WHEN DESIRED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.

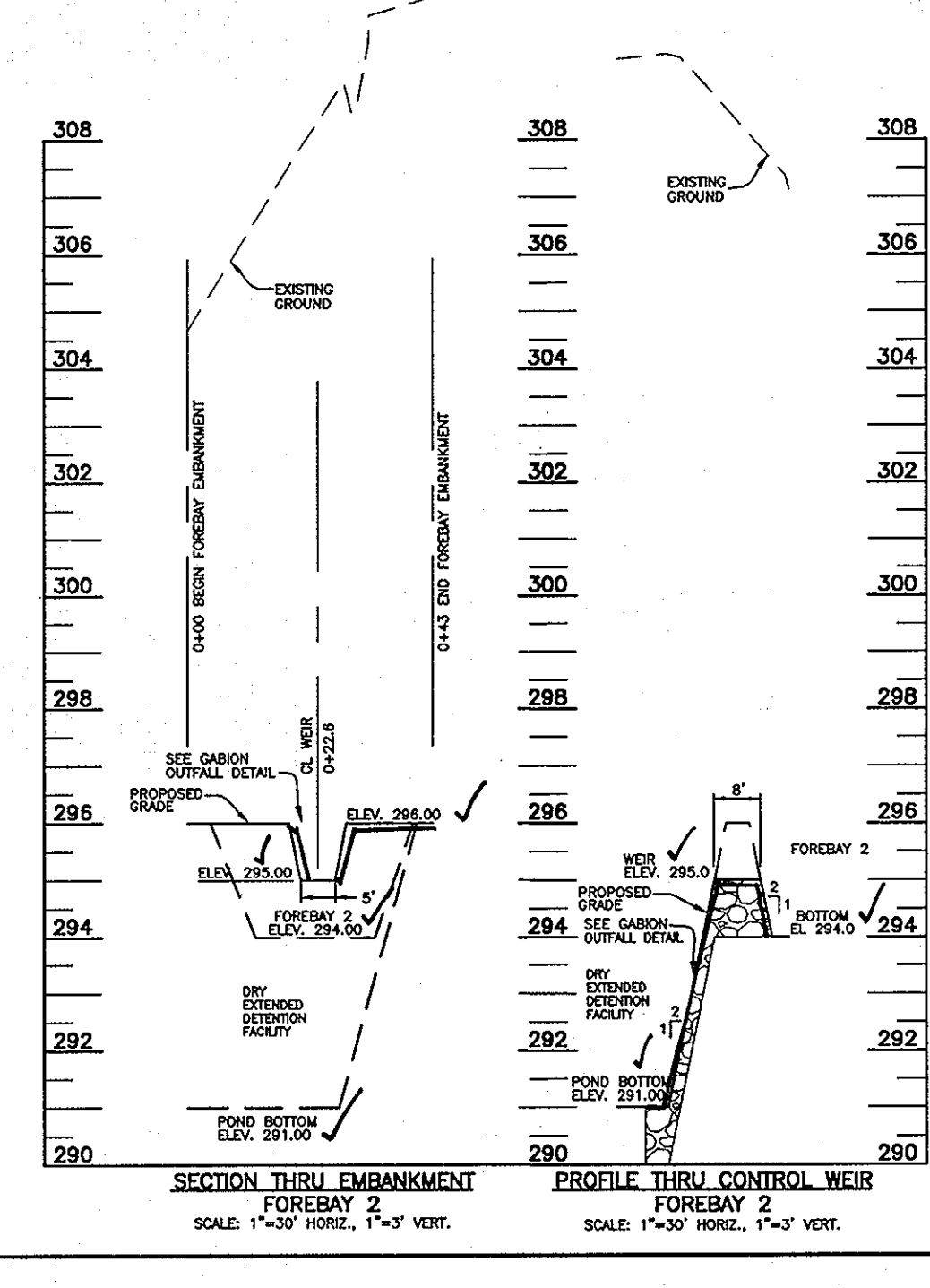
OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED F-1 SURFACE STORMWATER FILTER

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

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS
DATE

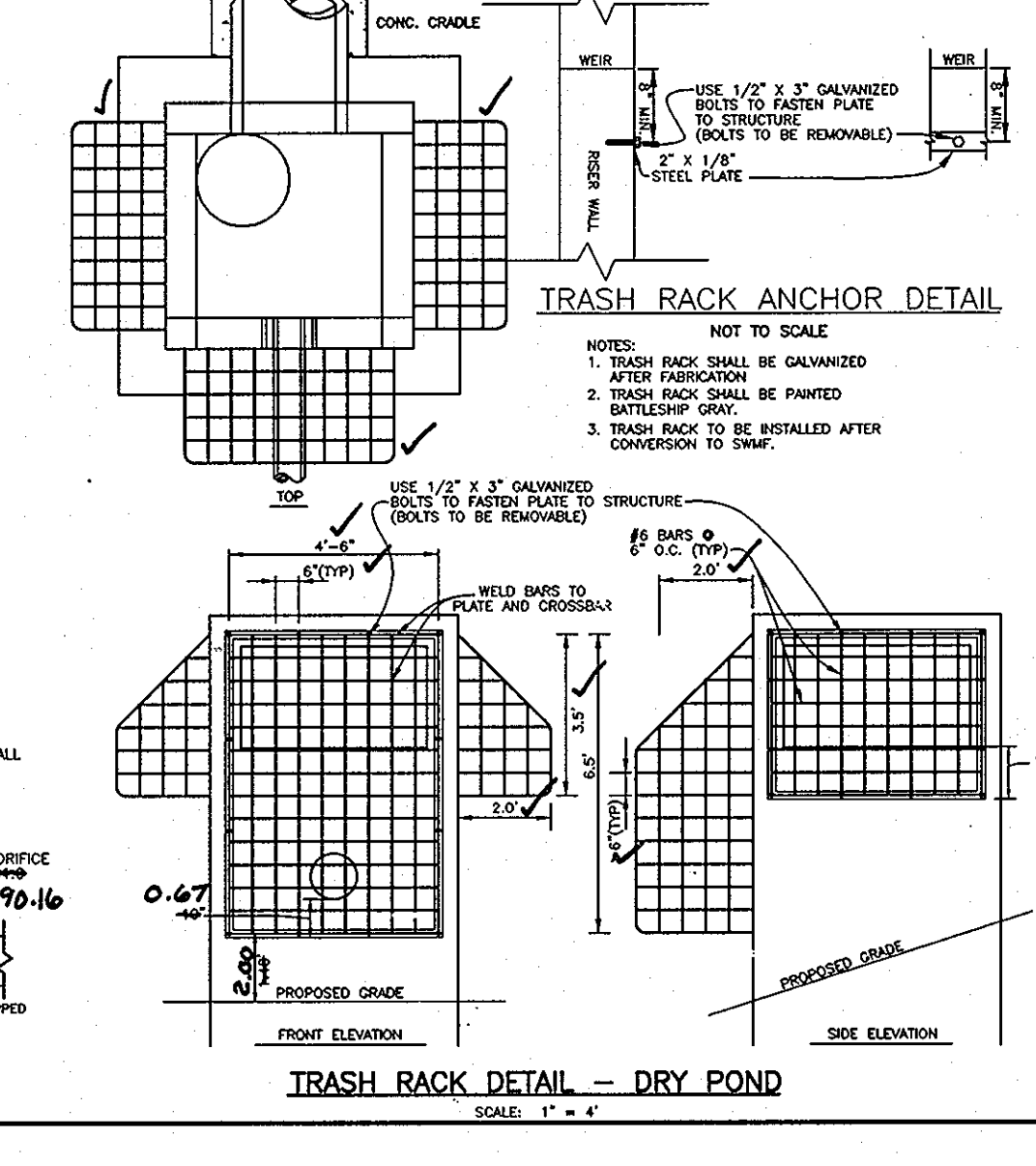
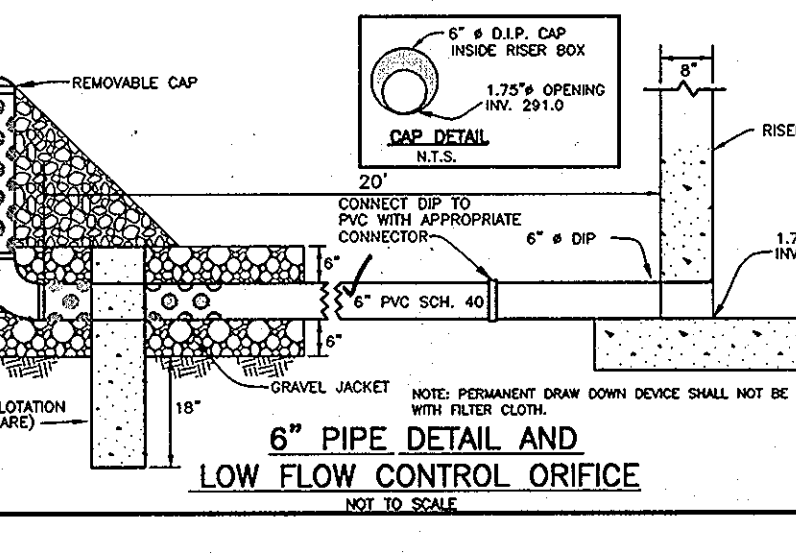
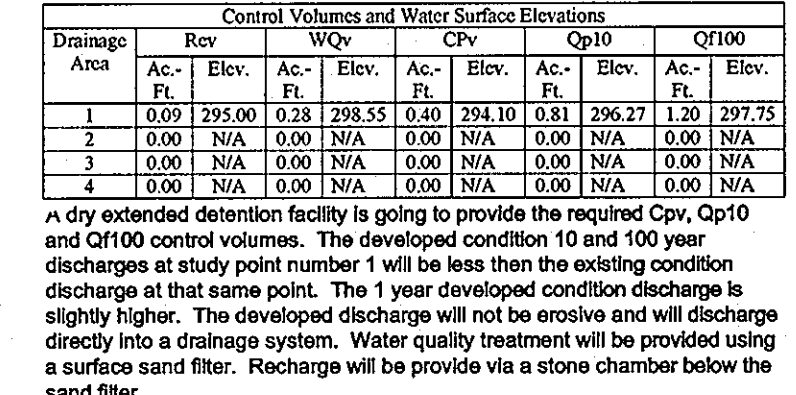
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE



SWM SUMMARY TABLE

REQUIREMENT	VOLUME REQUIRED (ac-ft)	PROVIDED (ac-ft)	NOTES
WATER QUALITY VOLUME (WQV) (1.00 cfs)	0.28	0.28	MADE REQUIRED PER STORAGE IN SAND FILTER
RECHARGE VOLUME (REV) (1.00 acres)	0.09	0.09	PROVIDED UNDER SAND FILTER
CHANNEL PROTECTION VOLUME (CPV) (1.00 acres)	0.40	0.40	PROVIDED IN DRY POND
OVERBANK FLOOD PROTECTION VOLUME (OFV) (1.00 acres)	0.807	0.807	PROVIDED IN DRY POND
EXTREME FLOOD VOLUME (EFV) (1.00 acres)	1.2	1.2	PROVIDED IN DRY POND



AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED TECHNICAL REQUIREMENTS.

Donald M. Mason
DONALD M. MASON, P.E.
DATE: 9/24/08

CERTIFY MEANS TO STATE OR DECLARE UNDER PENALTY OF PERJURY, THAT THE CONSTRUCTION OF THE FACILITY HAS BEEN COMPLETED IN ACCORDANCE WITH THE "AS-BUILT" PLANS AND MEETS THE APPROVED TECHNICAL REQUIREMENTS. THIS CERTIFICATION IS VALID FOR ONE YEAR FROM THE DATE OF COMPLETION. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THE "AS-BUILT" PLANS OR THE CONSTRUCTION OF THE FACILITY. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THE "AS-BUILT" PLANS OR THE CONSTRUCTION OF THE FACILITY. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THE "AS-BUILT" PLANS OR THE CONSTRUCTION OF THE FACILITY.

BY THE DEVELOPER:

James R. Moxley, III
JAMES R. MOXLEY, III
DATE: 5/6/08

BY THE ENGINEER:

Donald M. Mason
DONALD M. MASON, P.E.
DATE: 6-4-08

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS
THESE PLANS FOR SMALL POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HOWARD COUNTY, MARYLAND, SOIL CONSERVATION DISTRICT.

APPROVED: DEPARTMENT OF PUBLIC WORKS
William T. Moxley, III
WILLIAM T. MOXLEY, III, CHIEF, BUREAU OF HIGHWAYS
DATE: 8-28-08

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Cindy Haver
CINDY HAVER, CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 9/5/08

Donald M. Mason
DONALD M. MASON, P.E., CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 9/3/08

10-22-08 REVISIONS TO STORM DRAIN FROM I-13 TO EXISTING SYSTEM AS REQUESTED BY HOWARD COUNTY BUREAU OF HIGHWAYS

BENCHMARK ENGINEERING, INC.
ENGINEERS • LAND SURVEYORS • PLANNERS

8480 BALTIMORE NATIONAL PIKE & SUITE 418
ELlicott CITY, MARYLAND 21043
phone: 410-465-6105 • fax: 410-465-6644
email: bai@bel-civilengineering.com

OWNER: JAMES H. KING
9648 WHISKEY BOTTOM ROAD
LAUREL, MD 20723
301-498-8922

DEVELOPER: SECURITY DEVELOPMENT, LLC
P.O. BOX 417
ELlicott CITY, MD 21041
410-465-4244

PROJECT: KINGS WOODS SECTION 5
LOTS 362 - 386 AND OPEN SPACE LOTS 387 & 388

LOCATION: TAX MAP No. 47 - GRID No. 21
PARCEL No. 857
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

FILE: S-02-12
P-07-01

TITLE: STORMWATER MANAGEMENT NOTES AND DETAILS

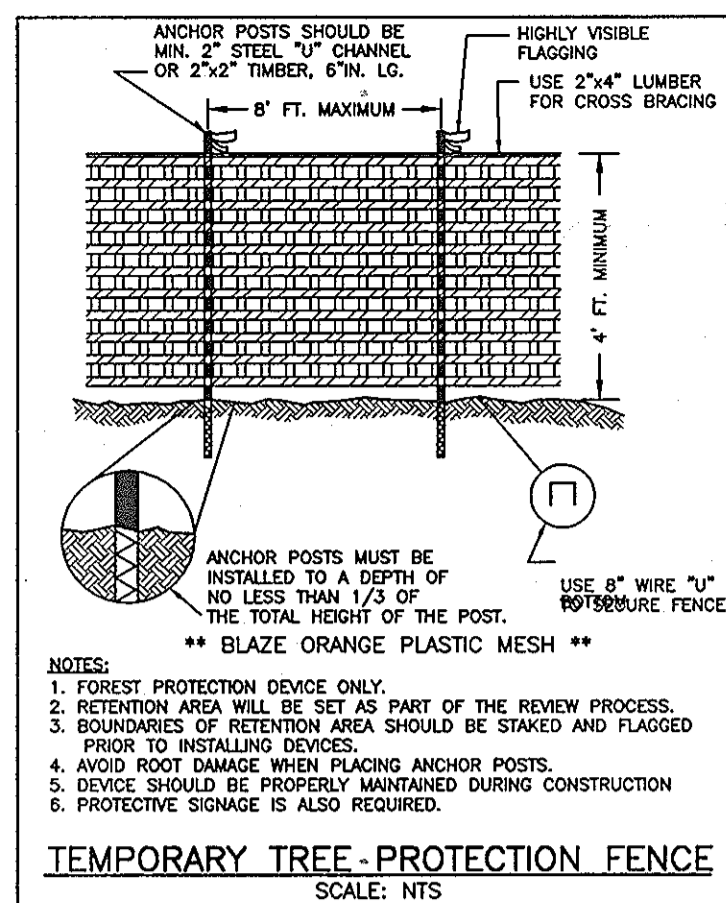
DATE: OCTOBER, 2007
APRIL, 2008

PROJECT No. 1504
SCALE: AS SHOWN DRAWING 8 OF 9

Design: JMC Draft: AM Check: DAM
AS BUILT F-08-065

ACRES OF AFFORESTATION
(APPENDIX E) FOREST CONSERVATION WORKSHEET

I. BASIC SITE DATA		SELECT THE ALTERNATE THAT APPLIES:	
GROSS SITE AREA (INCLUSIVE OF ALL PROPOSED LOTS)	6.74 AC.±	1. No clearing below the minimum	---
AREA WITHIN 100 YEAR FLOOD PLAIN	0.0 AC.	If existing forests are less than the afforestation minimum (if D is less than C) and no clearing is proposed, the following calculations apply:	---
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL	0.0 AC.	Total afforestation required	---
AREA WITHIN UNDERGROUND TRANSMISSION LINES	0.0 AC.	C - D	---
NET TRACT AREA	6.74 AC.±	Afforestation must make total forest area equal the minimum required.	---
LAND USE CATEGORY (R-RLD, R-RMD, R-S, C/I/O, I)	ADR	2. Clearing below the minimum	---
II. INFORMATION FOR CALCULATIONS		If existing forest area less than the afforestation minimum (if D is less than C) and clearing is proposed, the following calculations apply:	---
(A) NET TRACT AREA	6.74 AC.±	Afforestation for unforrested areas below minimum	---
(B) REFORESTATION THRESHOLD (20% x NTA)	1.35 AC.±	Afforestation for Clearing below Minimum	---
(C) AFFORESTATION MINIMUM (15% x NTA)	1.01 AC.±	E x 2	---
(D) EXISTING FOREST ON NET TRACT AREA	1.39 AC.±	TOTAL AFFORESTATION REQUIRED	---
(E) EXISTING FOREST ABOVE CONSERVATION THRESHOLD	0.04 AC.±	(C - D) + (E x 2)	---
(F) BREAK EVEN POINT (IF APPLICABLE)	0.03 AC.±	Afforestation required the total forest area be equal to the minimum and it requires compensation for clearing	---
(G) FOREST AREAS TO BE CLEARED	1.39 AC.±	GO TO SECTION V	---
(H) FOREST AREAS TO BE RETAINED (RETENTION)	0.00 AC.		---
III. DETERMINING REQUIREMENTS: AFFORESTATION OR REFORESTATION		IV. REFORESTATION CALCULATIONS	
1. Reforestation	If existing forest areas equal or exceed the afforestation minimum (if D equals or is more than C), and clearing of forest areas is proposed, reforestation requirements may apply.	A. NET TRACT AREA	6.74
2. Afforestation	If existing forest areas are less than the afforestation minimum (if D equals or is more than C), and no clearing of existing forest resources is proposed, no reforestation is required. No further calculations are needed.	B. REFORESTATION THRESHOLD (20% x A)	1.35
		C. EXISTING FOREST ON NET TRACT AREA	1.39
		D. FOREST AREAS TO BE CLEARED	1.39
		E. FOREST AREAS TO BE RETAINED	0.00
		F. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD (D-F, if F equals or is greater than B, Alternate 1)	0.04
		G. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD (D-B, if B is less than B, Alternate 2)	0.00
		H. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD (B-F, if applicable)	1.35
		I. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD (B-F, Retention Credit, if applicable)	0.00



SEQUENCE OF CONSTRUCTION

- SEDIMENT CONTROL AND TREE PROTECTION DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH GENERAL CONSTRUCTION PLAN FOR SITE. SITE SHALL BE GRADED IN ACCORDANCE WITH THE GENERAL CONSTRUCTION PLANS.
- REMOVE HAZARDOUS TREES (DEAD, DISEASED OR THOSE SUBJECT TO WIND THROWS) ALONG THE EDGE OF THE FOREST RETENTION AREAS AS WELL AS WITHIN OTHER TREE SAVE AREAS.
- SIGNAGE SHALL BE INSTALLED AS PER THE FOREST PROTECTION DEVICES SHOWN ON THE FOREST CONSERVATION PLAN.

PLANTING SCHEDULE

FOREST CONSERVATION EASEMENT #1 (0.27 AC.±) 95 TOTAL PLANTING UNITS

DATE	SPECIES	SIZE	PLANTING	SEASONING
11	Acer rubrum - RED MAPLE	2-3" WHIP	**	Δ
8	Cornus florida - FLOWERING DOGWOOD	2-3" WHIP	**	Δ
9	Fraxinus pennsylvanica - RED CEDAR	2-3" WHIP	**	Δ
5	Juniperus virginiana - RED CEDAR	2-3" WHIP	**	Δ
10	Liquidambar styraciflua - SPOKANE	2-3" WHIP	**	Δ
5	Nyssa sylvatica - BLACK GUM	2-3" WHIP	**	Δ
10	Prunus serotina - BLACK CHERRY	2-3" WHIP	**	Δ
10	Quercus alba - WHITE OAK	2-3" WHIP	**	Δ
5	Quercus rubra - RED OAK	2-3" WHIP	**	Δ
5	Sassafras	2-3" WHIP	**	Δ
5	Viburnum prunifolium - BLACKHAW	2-3" WHIP	**	Δ

** PLANTINGS TO BE SPACED 11 FOOT CENTERS - PLANTINGS SHOULD BE INSTALLED IN ROWS TO FACILITATE FUTURE MAINTENANCE. WHERE POSSIBLE, ROWS SHOULD BE MADE ALONG CONTOUR. PER COUNTY REQUIREMENTS, TREE SHELTERS SHOULD BE USED. PLANTING IS BASED ON 150 TREES PER ACRE. Δ - PLANT THESE SPECIES IN UPLAND AREAS ONLY.

PLANTING NOTES:

- MULTIFLORA ROSE CONTROL MAY BE REQUIRED AS PART OF THIS PLANTING PLAN.
 - BAREROOT PLANT MATERIAL MAY BE USED TO OFFSET THE COST OF MULTIFLORA ROSE REMOVAL AND MAINTENANCE IF BAREROOT MATERIAL IS USED IT MUST BE PLANTED IN MARCH - APRIL AND AN ANTI-DESICCANT GEL SHOULD BE UTILIZED TO PROTECT ROOT SYSTEMS. CONTAINER GROWN STOCK IS RECOMMENDED.
 - PLANTS SHOULD BE FLAGGED TO AID ON LOCATION DURING MAINTENANCE. PLANTINGS SHOULD BE MAINTAINED ALONG CONTOUR TO FACILITATE MAINTENANCE AND REMOVAL OF INVASIVE AND EXOTIC SPECIES.
- PLANTING/SOIL SPECIFICATIONS
- PLANTING OF NURSERY STOCK SHALL TAKE PLACE BETWEEN MARCH 15TH AND APRIL 30TH. CONTAINER STOCK MAY BE PLANTED BETWEEN SEPTEMBER 1ST AND OCTOBER 30TH.
 - A TWELVE (12) INCH LAYER OF TOPSOIL SHALL BE SPREAD OVER ALL REFORESTATION AREAS IMPACTED BY SITE CHANGING TO ASSURE A SUITABLE PLANTING AREA. DISTURBED AREAS SHALL BE SEEDED AND STABILIZED AS PER GENERAL CONSTRUCTION PLAN FOR PROJECT. PLANTING AREAS NOT IMPACTED BY CHANGING SHALL HAVE NO ADDITIONAL TOPSOIL INSTALLED.
 - ALL BAREROOT PLANTING STOCK SHALL HAVE THEIR ROOT SYSTEMS DIPPED INTO AN ANTI-DESICCANT GEL PRIOR TO PLANTING.
 - PLANTS SHALL BE INSTALLED SO THAT THE TOP OF ROOT MASS IS LEVEL WITH THE TOP OF EXISTING GRADE. PLANTING PITS SHALL CONSIST OF 3 PARTS EXISTING SOIL TO 1 PART FINE SAND OR EQUIVALENT.
 - FERTILIZER SHALL CONSIST OF AGRIFORM 22-8-2, OR EQUIVALENT, APPLIED AS PER MANUFACTURER'S SPECIFICATION.
 - A TWO (2) INCH LAYER OF HARDWOOD MULCH SHALL BE PLACED OVER THE ROOT AREA OF ALL PLANTS.
 - PLANT MATERIAL SHALL BE TRANSPORTED TO THE SITE IN A TARPED OR COVERED TRUCK. PLANTS SHALL BE KEPT MOIST PRIOR TO PLANTING.
 - ALL NON-ORGANIC DEBRIS ASSOCIATED WITH THE PLANTING OPERATION SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.

SEQUENCE OF CONSTRUCTION

- PLANTS SHALL BE INSTALLED AS PER PLANT SCHEDULE AND PLANTING/SOIL SPECIFICATIONS FOR THE PROJECT.
- UPON COMPLETION OF THE PLANTING, SIGNAGE SHALL BE INSTALLED AS PER THE FOREST RETENTION AREA.
- PROTECTION DEVICES SHOWN ON THE FOREST CONSERVATION PLAN SHALL BE MAINTAINED AND GUARANTEED IN ACCORDANCE WITH THE MAINTENANCE AND GUARANTEE REQUIREMENTS FOR PROJECT.

MAINTENANCE OF PLANTINGS

- MAINTENANCE OF ALL PLANTINGS SHALL LAST FOR A PERIOD OF 24 MONTHS. ONCE ALL PLANT MATERIAL SHALL BE WATERED THREE (3) TIMES DURING THE 1ST GROWING SEASON. ONCE A MONTH DURING MAY-SEPTEMBER, IF NEEDED.
- INVASIVE EXOTIC AND WEEDS SHALL BE REMOVED FROM REFORESTATION AREAS. OLD FIELD SUCCESSIONAL SPECIES WILL BE RETAINED.
- PLANTS WILL BE EXAMINED AT A MINIMUM OF TWO TIMES DURING THE GROWING SEASON FOR SERIOUS PLANT PESTS AND DISEASES. SERIOUS PROBLEMS WILL BE TREATED WITH THE DEAD BRANCHES WILL BE PRUNED FROM PLANTINGS.

SURETY FOR REFORESTATION

- THE DEVELOPER SHALL POST A SURETY (BOND, LETTER OF CREDIT) TO ENSURE THAT REFORESTATION PLANTINGS ARE COMPLETED. UPON ACCEPTANCE OF THE PLANTINGS BY THE COUNTY, THE BOND SHALL BE RELEASED.

FLOODPLAIN NOTE:

PORTIONS OF THE SITE OCCURRING WITHIN THE 100-YEAR FLOODPLAIN ARE NOT INCLUDED AS PART OF THE NET TRACT AREA OF THE SITE. AREAS OF FLOODPLAIN AFFORESTATION OCCURRING WITHIN THE LIMITS OF A FOREST CONSERVATION EASEMENT WILL BE PROTECTED BY THE EASEMENT RESTRICTIONS.

SOILS LEGEND

MAP SYMBOL	SOIL TYPE	MAPPING UNIT
BeB2 *	C	BELTSVILLE SILT LOAM, 1 TO 5 PERCENT SLOPES, MODERATELY ERODED
BeC2 *	C	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED
BeC3 *	C	BELTSVILLE SILT LOAM, 5 TO 10 PERCENT SLOPES, SEVERELY ERODED
BdD2 *	C	BELTSVILLE SILT LOAM, 10 TO 15 PERCENT SLOPES, MODERATELY ERODED
GP *	A	GRAVEL PITS AND QUARRIES
L1 *	D	LEONARDTOWN SILT LOAM
SsE	B	SASSAFRAS SOILS, 15 TO 40 PERCENT SLOPES
SiC2	B	SASSAFRAS GRAVELY SANDY LOAM, 5 TO 10 PERCENT SLOPES, MODERATELY ERODED

* - INDICATES HYDRIC SOILS
TAKEN FROM SOILS SURVEY, ISSUED JULY 1968, MAP NO. 33

LEGEND

- TREE PROTECTION FENCE //
- FCE PERMANENT SIGNAGE ●

THIS PLAN IS FOR FOREST CONSERVATION ONLY



SITE DATA

GROSS AREA (INCL. ALL PROP. LOTS)	6.74 AC.±
PRES. PARCELS, TRANS. LINE R/W & FLOODPLAIN	0.00 AC.
NET TRACT AREA (NTA)	6.74 AC.±
EXISTING FOREST (NTA)	1.39 AC.±
AFFORESTATION THRESHOLD	1.01 AC.±
AFFORESTATION PROPOSED	0.00 AC.
OFF-SITE REFORESTATION	2.71 AC.±

APPROVED: DEPARTMENT OF PUBLIC WORKS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

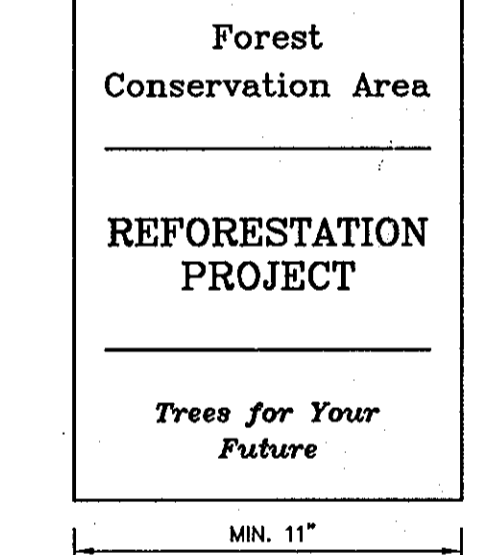
APPROVED: CHIEF, BUREAU OF HIGHWAYS
APPROVED: CHIEF, DIVISION OF LAND DEVELOPMENT
APPROVED: CHIEF, DEVELOPMENT ENGINEERING DIVISION

SITE DATA TABULATION

1) GENERAL SITE DATA	
a. PRESENT ZONING: R-SC	
b. APPLICABLE DPZ FILE REFERENCES: S-02-012, P-07-01	
c. DEED REF.: 4208/403	
d. PROPOSED USE OF SITE: 25 BUILDABLE LOTS, 2 OPEN SPACE LOTS	
e. PROPOSED WATER AND SEWER SYSTEMS: PUBLIC	
2) AREA TABULATION	
a. TOTAL AREA OF SITE.....	6.74 AC.±
b. AREA OF 100 YEAR FLOODPLAIN (APPROX.).....	0.0 AC.±
c. AREA OF STEEP SLOPES (25% OR GREATER AND 10 VERTICAL FEET).....	0.00 AC.±
d. NET AREA OF SITE.....	6.74 AC.±
e. AREA OF THIS PLAN SUBMISSION.....	6.74 AC.±
f. AREA OF PROPOSED BUILDABLE LOTS.....	4.09 AC.±
g. AREA OF PROPOSED OPEN SPACE LOTS.....	1.75 AC.±
h. AREA OF PROPOSED PUBLIC ROAD R/W.....	0.90 AC.±

FCP NOTES:

- ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREIN IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
- FORESTED AREAS OCCURRING OUTSIDE OF THE FCE SHALL NOT BE CONSIDERED PART OF THE FCE AND SHALL NOT BE SUBJECT TO PROTECTIVE LAND COVENANTS.
- LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
- THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ.
- NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS.
- TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE PLACED ALONG ALL FCE BOUNDARIES WHICH OCCUR WITHIN 25 FEET OF THE PROPOSED LIMITS.
- PERMANENT SIGNAGE SHALL BE PLACED 50-100' APART ALONG THE BOUNDARIES OF ALL AREAS INCLUDED IN FOREST CONSERVATION EASEMENTS. SIGNS SHALL BE MOUNTED ON A PERMANENT WOOD POST OR METAL STAKE. FCE SIGNS SHALL NOT BE ATTACHED TO TREES.
- FOREST CONSERVATION OBLIGATIONS IN ACCORDANCE WITH SECTION 16.1202 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION MANUAL SHALL BE PROVIDED BY THE PLACEMENT OF 0.27 ACRES OF ON-SITE REFORESTATION INTO AN EASEMENT AREA (F-08-65 KINGS WOODS) AND THE ACQUISITION OF 2.44 ACRES OF OFF-SITE REFORESTATION FROM A FOREST MITIGATION BANK IDENTIFIED AS NON-BUILDABLE PRESERVATION PARCEL G OF EDGEWOOD FARM, TAX MAP 21, GRID 20 (F-08-108) WHICH IS SUFFICIENT TO MEET THE TOTAL REFORESTATION OBLIGATION OF 2.71 ACRES. SURETY FOR 27 ACRES OF REFORESTATION IN THE AMOUNT OF \$8,920.75 (10.761 SQ. FT. X \$82.75) SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS FINAL PLAN, F-08-65. NO SURETY IS REQUIRED FOR THE OFF-SITE REFORESTATION SINCE IT IS LOCATED IN A FOREST MITIGATION BANK.



TYP. PERM. SIGN. DETAIL

NOT TO SCALE

Professional Engineer Seal for Donald M. Moore, No. 21445, State of Maryland.

DESIGNATION	TYPE	ACREAGE
1	REFORESTATION	0.27 AC.±
2	OFFSITE REFORESTATION	2.44 AC.±
TOTAL:		2.71 AC.±

Eco-Science Professionals, Inc. CONSULTING ECOLOGISTS
P.O. Box 5006 Glen Arm, MD 21057
410-652-2480

MD DNR Qualified Professional
USACOE Wildlife Diligence
Certification # WDP2P3MD061004003

John P. Canoles 5/17/08

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LAUREL, MD 20723
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DEVELOPER: SECURITY DEVELOPMENT, LLC
P.O. BOX 417
ELLICOTT CITY, MD 21041
410-465-4244

PROJECT: KINGS WOODS SECTION 5
LOTS 362 - 386 AND OPEN SPACE LOTS 387 & 388

LOCATION: TAX MAP No. 47 - GRID No. 21
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

FILE: S-02-12 P-07-01

TITLE: FOREST CONSERVATION PLAN, NOTES AND DETAILS

DATE: OCTOBER, 2007
APRIL, 2008

PROJECT NO. 1504

Design: JMC Draft: AM Check: DAM SCALE: AS SHOWN DRAWING 9 OF 9

AS BUILT F-08-065