

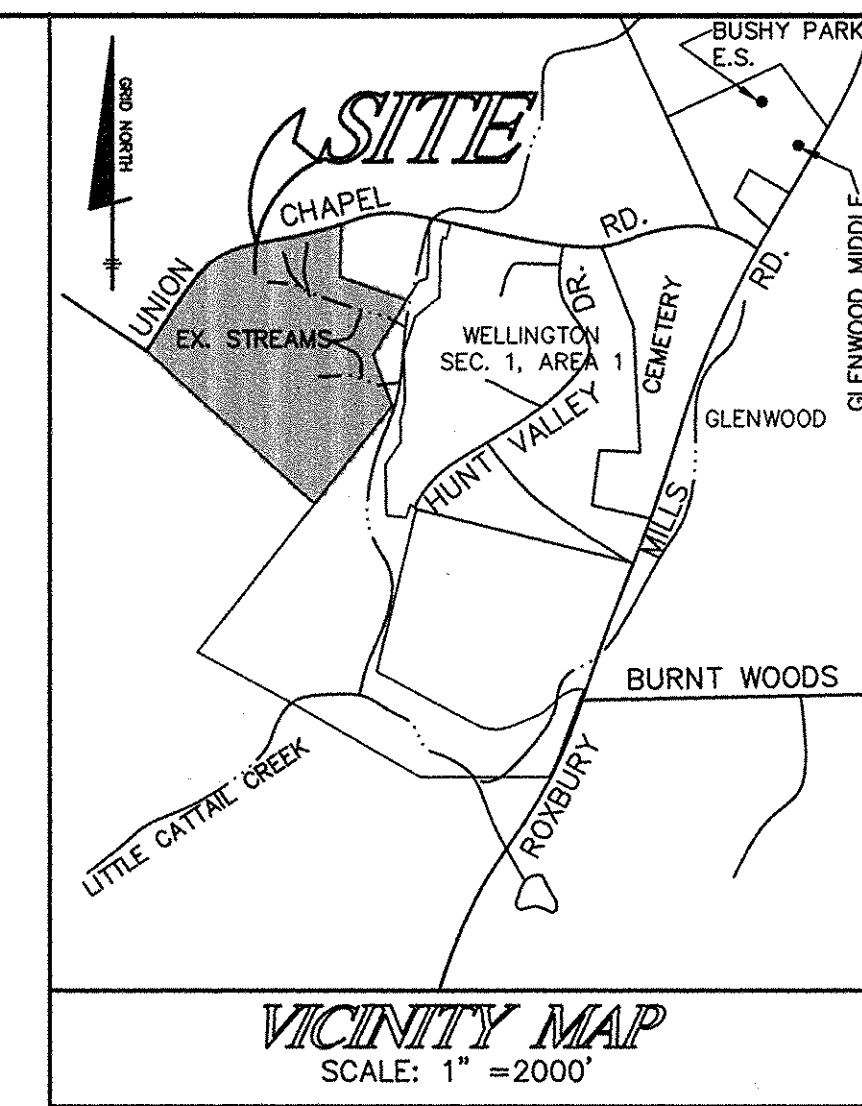
WELLINGTON WEST

SECTION TWO

4th ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

ROADS, STORMWATER MANAGEMENT AND STORM DRAINAGE CONSTRUCTION PLANS



BENCH MARKS (NAD83) HORIZONTAL

HO. CO. No. 14E1 ELEV. 590.862'
 STAMPED BRASS DISK SET ON
 TOP OF CONCRETE BASE
 33' WEST OF CENTERLINE OF DRIVE TO 15050
 CARRS MILL ROAD; 19.8' NORTH OF EDGE OF
 PAVING OF CARRS MILL ROAD.
 N 595,213.6182' E 1,301,991.8973'

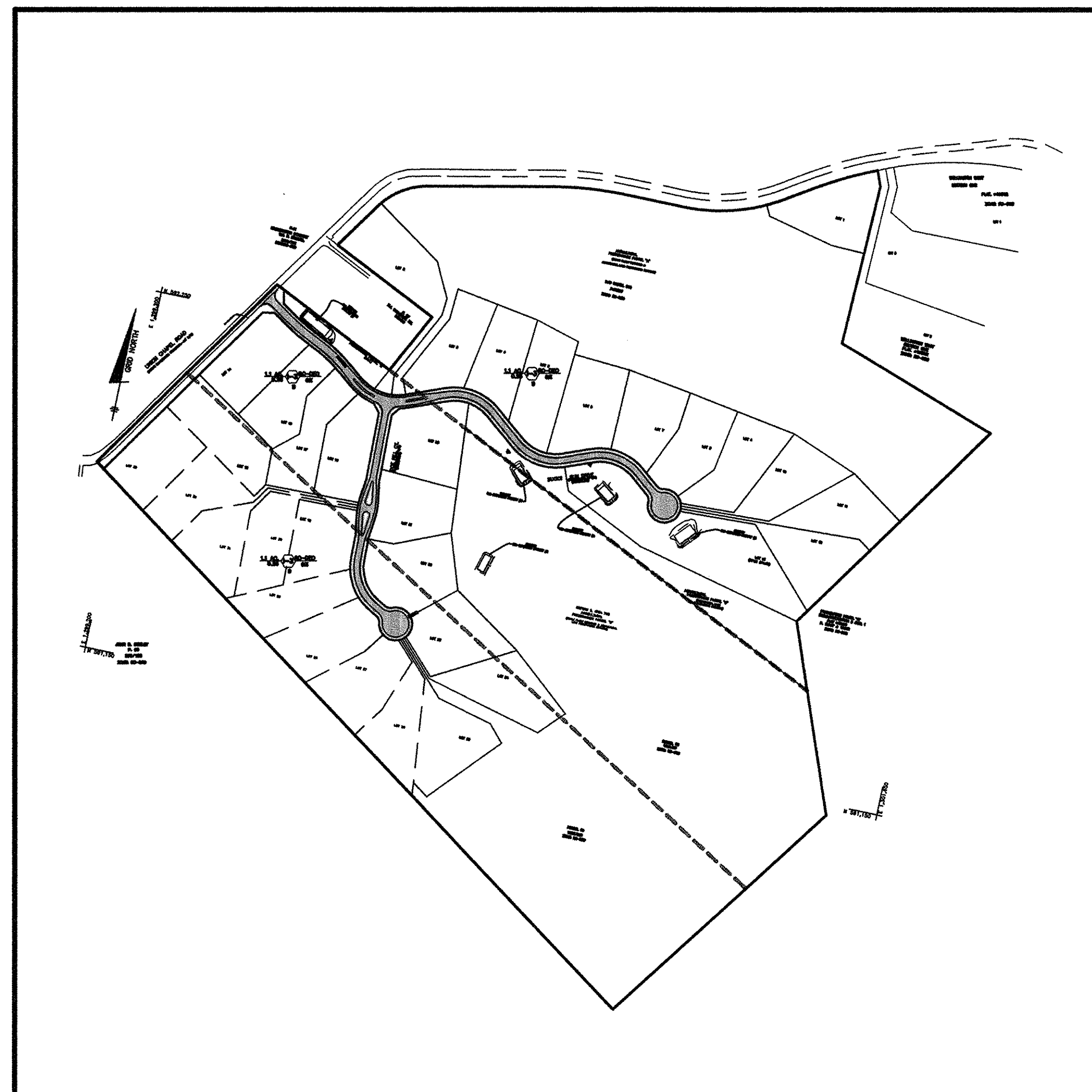
HO. CO. No. 0039
 STAMPED BRASS DISK SET ON
 TOP OF CONCRETE BASE
 @ SOUTHWEST CORNER OF CARRS MILL ROAD
 AND ROUTE 97; 33.4' SOUTH OF CENTERLINE OF
 CARRS MILL ROAD AND 40.3' WEST OF
 CENTERLINE OF ROUTE 97.
 N 595,722.8541' E 1,306,481.6720'

BENCH MARKS (NAD29) VERTICAL

HO. CO. No. 3432001 ELEV. 590.862'
 STAMPED BRASS DISK SET ON
 TOP OF CONCRETE BASE (NAD83 STA. 14E1).

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARD AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- PROJECT BACKGROUND:
 LOCATION: TAX MAP: 14, PARCELS 69, 69 & 222
 ZONING: RC-DEO
 ELECTION DISTRICT: 4th
 SECTION: TWO AREAS ONE & TWO
 TOTAL TRACT AREA: 86.31 AC.
 SECTION 2, AREA ONE AREA: 52.31 AC.
 SECTION 2, AREA TWO AREA: 34.00 AC.
 NUMBER OF PROPOSED LOTS: 32
 NUMBER OF PROPOSED OPEN SPACE LOT: 1
 NUMBER OF PROPOSED NON-BUILDABLE PRESERVATION PARCELS: 2
 NUMBER OF PROPOSED BUILDABLE PRESERVATION PARCELS: 2
 DPZ REFERENCE FILE: S-98-03, WP-98-72, P-98-24
 PRELIMINARY PLAN APPROVED ON FEB. 6, 1998.
- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- TOPOGRAPHY SHOWN HEREON WAS TAKEN FROM FIELD RUN SURVEY DONE BY TSA GROUP, INC. DATED 6/97 AND CONTOURS SHOWN ARE 2 FOOT INTERVALS.
- COORDINATES ARE BASED ON NAD 83, MARYLAND STATE PLAN GRID AS PROJECTED BY HOWARD CO. GEODETIC CONTROL STATIONS NO. 14E1 AND 0039.
- THE PROJECT IS NOT WITHIN THE METROPOLITAN DISTRICT. WATER AND SEWER FOR THIS PROJECT SHALL BE PRIVATE AND WILL BE PROVIDED ON THE LOTS.
- WATER QUALITY AND QUANTITY TREATMENT FOR THE PROPOSED ROADWAY IS BEING PROVIDED BY BIO-RETENTION ADJACENT TO THE PUBLIC ROAD. THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE H.O.A.
- A REQUEST TO THE DEVELOPMENT ENGINEERING DIVISION HAS BEEN MADE TO WAIVE THE STORM WATER MANAGEMENT REQUIREMENTS FOR THE CLUSTER LOTS AS SPECIFIED IN SECTION 10.2.1.A OF HOWARD COUNTY DESIGN MANUAL VOL. 1 - STORM DRAINAGE BASED ON THE "GUIDELINES FOR STORM WATER MANAGEMENT IN CLUSTERED SUBDIVISION", AUG. 1993.
- THE FLOODPLAIN LIMIT SHOWN HAS BEEN CALCULATED BY TSA GROUP, INC. DATED DEC., 1997, AND APPROVED ON FEB. 6, 1998 (P-98-24).
- WETLAND LIMITS SHOWN HEREON ARE BASED ON A DELINEATION BY ECO-SCIENCE PROFESSIONAL, INC. DATED JUNE 1997 AND WAS APPROVED ON NOV. 5, 1997.
- ADEQUATE PUBLIC FACILITIES ORDINANCE TRAFFIC ANALYSIS WAS PREPARED BY LEE CUNNINGHAM & ASSOCIATES DATED JUNE 1997 AND APPROVED ON NOV. 5, 1997.
- NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY HILLIS-CARNES AND ASSOCIATES DATED DECEMBER 10, 1997.
- EXISTING UTILITIES SHOWN ARE TAKEN FROM RECORD INFORMATION AND FIELD LOCATIONS.
- FOREST STAND DELINEATION WAS PREPARED BY ECO-SCIENCE PROFESSIONAL, INC. DATED JUNE 1997 AND APPROVED PER S-98-03 DATED NOV. 5, 1997.
- NO DISTURBANCE SHALL OCCUR IN THE WETLANDS, 25' WETLAND BUFFER, 75' STREAM BUFFER, OR 100-YEAR FLOODPLAIN.
- A SIGHT DISTANCE ANALYSIS FOR UNION CHAPEL ROAD AND THE PROPOSED INTERSECTION OF BUCKS RUN DRIVE HAS BEEN PROVIDED TO THE DEVELOPMENT ENGINEERING DIVISION DURING THE SKETCH PLAN (S-98-03) APPROVAL AND THE SIGHT DISTANCE EASEMENT FROM OWNER OF PARCEL 67 WAS OBTAINED AND SUBMITTED TO DPZ.
- TO THE BEST OF OWNERS KNOWLEDGE, THERE ARE NO CEMETERY LOCATIONS ONSITE.
- A REQUEST TO WAIVE THE CURRENT HORIZONTAL AND VERTICAL ROAD DESIGN CRITERIA HAS BEEN MADE TO THE DEVELOPMENT ENGINEERING DIVISION CHIEF AND APPROVED UNDER S-98-03 DATED NOV. 5, 1997.
- A REQUEST TO ALTER THE DESIGN CRITERIA FOR BIO-RETENTION HAS BEEN MADE TO THE DEVELOPMENT ENGINEERING DIVISION CHIEF AND APPROVED UNDER S-98-03 DATED NOV. 5, 1997.
- UNION CHAPEL ROAD IS A MAJOR COLLECTOR ROAD AND HAS RESTRICTED ACCESS FOR RESIDENTIAL LOTS. A WAIVER TO SECTION 16.120(a) (1) AND 16.119(f) IS REQUIRED FOR THE PROPOSED ACCESS POINT TO LOT 1. THE WAIVER WAS APPROVED ON FEB. 6, 1998 (WP-98-72) FOR ONLY LOT 1.
- THIS AREA DESIGNATES A PRIVATE SEWER EASEMENT OF 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWER DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWER IS AVAILABLE. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT VARIANCES FOR ENCROACHMENT INTO THE PRIVATE SEWERAGE EASEMENT. RECORDATION OF A MODIFIED SEWERAGE EASEMENT PLAT SHALL NOT BE NECESSARY.
- EXISTING WELLS AND/OR SEWERAGE EASEMENTS WITHIN 100 FEET OF THE PROPERTY HAVE BEEN SHOWN FROM THE BEST AVAILABLE INFORMATION.
- ALL SEWERAGE EASEMENTS LOCATED WITHIN 50 FEET OF THE PROPOSED ROADWAY MUST BE STAKED OUT PRIOR TO SITE GRADING. GRADING OPERATION MUST BE SUPERVISED BY THE APPLICANT TO INSURE NO GRADING TAKES PLACE WITHIN 20 FEET OF SEWERAGE EASEMENT WITHOUT PRIOR NOTIFICATION TO THE HOWARD COUNTY HEALTH DEPARTMENT.
- A WAIVER REQUEST TO ELIMINATE THE AUXILIARY LANE FOR UNION CHAPEL ROAD HAS BEEN APPROVED BY DEVELOPMENT ENGINEERING DIVISION ON JANUARY 23, 1998.
- CONTRACTOR SHALL VERIFY ALL UTILITIES LOCATIONS AND EASEMENT/RIGHT-OF-WAYS PRIOR TO ANY CONSTRUCTION.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 a) WIDTH - 12'(14' SERVING MORE THAN ONE RESIDENCE).
 b) SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING.
 c) GEOMETRY - MAX. 15% GRADE, MAX. 10% GRADE CHANGE AND MIN. 45' TURNING RADIUS.
 d) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
 e) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
 f) STRUCTURE CLEARANCES - MINIMUM 12 FEET.
 g) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
- ALL CHANNELS/SWALES TO OR FROM THE BIO-RETENTION FACILITIES ARE TO BE LINED WITH SOIL STABILIZATION MATTING OVER SEED AND MULCH (USE CURLEX MATTING OR EQUAL).



LOCATION MAP
 SCALE: 1" = 300'

SHEET INDEX	
NO.	DESCRIPTION
1	TITLE SHEET
2	ROAD PLAN
3-4	ROAD PROFILE
5	GRADING PLAN
6	STORM DRAIN PROFILES
7	STORM DRAIN DRAINAGE AREA MAP
8	BIO-RETENTION FACILITY DETAILS & SECTIONS
9	SEDIMENT & EROSION CONTROL NOTES AND DETAILS
10	LANDSCAPE PLAN
11-12	FOREST CONSERVATION PLAN

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Howard Shick for 12/19/98
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Richard Blund 12/19/98
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John Demaris 12/19/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

NO.	DATE	REVISION
0	6/98	SUBMISSION TO COUNTY FOR REVIEW AND APPROVAL.
1	8/10/98	REV. PER COUNTY COMMENTS DATED 8/3/1998

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

OWNER/DEVELOPER:
 BPMB ASSOCIATES, LLC.
 15298 UNION CHAPEL ROAD
 WOODBINE, MARYLAND 21797
 (410) 442-2101

PROJECT: **WELLINGTON WEST**
SECTION TWO
 (S-98-03, WP-98-72, P-98-24)

LOCATION:
 TAX MAP 14 - PARCEL 222, PARCELS 68 & 69
 4th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE:
TITLE SHEET

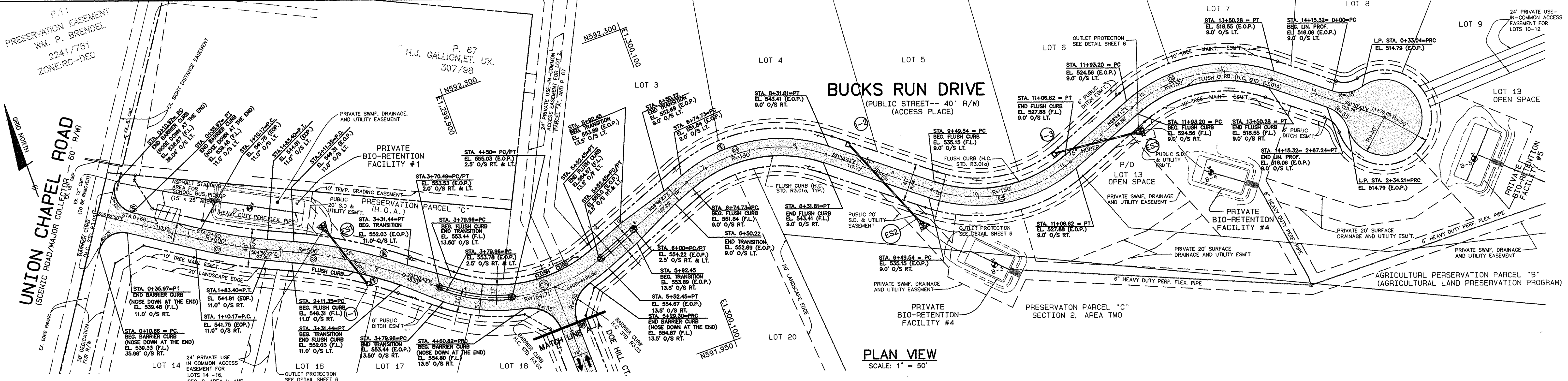
DATE: APRIL 1998 PROJECT NO. 1131

P.11
PRESERVATION EASEMENT
W.M. P. BRENDLE
22A1/751
ZONE:RC-DEO

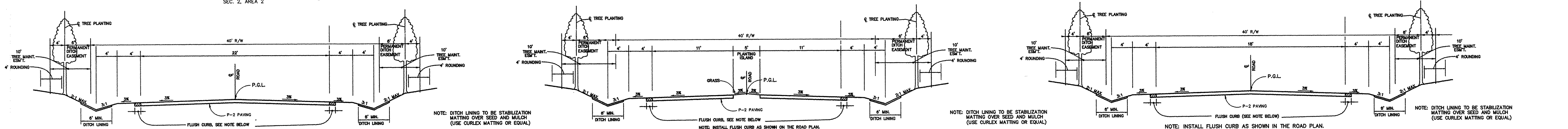
P. 67
H.J. GALLION, ET. UX.
307/98

UNION CHAPEL ROAD
(SCENIC ROAD/MAJOR COLLECTOR RD)
60' R/W

BUCKS RUN DRIVE
(PUBLIC STREET-- 40' R/W)
(ACCESS PLACE)



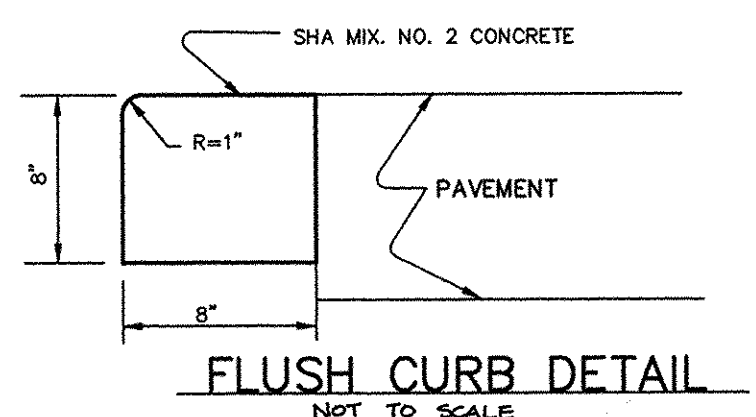
PLAN VIEW
SCALE: 1" = 50'



TYPICAL ROADWAY SECTION (DESIGN SPEED: 25 MPH)
(ACCESS STREET)
BUCKS RUN DRIVE : STA. 0+00 TO 3+31.44
NOT TO SCALE

TYPICAL MODIFIED ROADWAY SECTION (DESIGN SPEED: 25 MPH)
(ACCESS STREET)
BUCKS RUN DRIVE : STA. 3+80 TO 4+50, AND STA. 5+52 TO 5+92
NOT TO SCALE

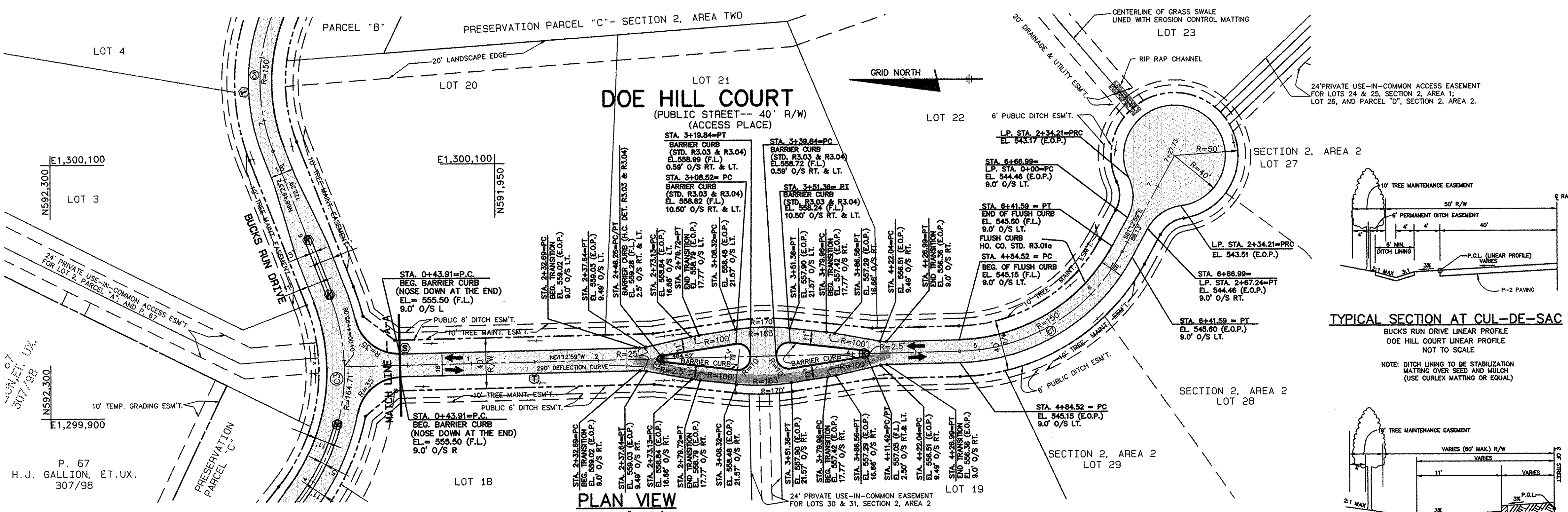
TYPICAL ROADWAY SECTION (DESIGN SPEED: 25 MPH)
(ACCESS PLACE)
BUCKS RUN DRIVE : STA. 6+50 TO 14+15
DOE HILL COURT: 0+44 TO 2+32, AND STA. 4+27 TO 6+67
NOT TO SCALE



FLUSH CURB DETAIL
NOT TO SCALE

STREET CENTERLINE CURVE DATA

CURVE	RADIUS	LENGTH	TANGENT	CHORD	CHORD BEARING	DELTA	PC STA.	PT STA.	STREET NAME
1	500.00'	73.24'	36.68'	119.80'	S 60°44'36"	08°23'32"	1+10.17	1+83.40	BUCKS RUN DRIVE
2	500.00'	120.09'	60.33'	58°03'32"	S 58°03'32"	13°45'39"	2+11.35	3+31.44	BUCKS RUN DRIVE
3	164.71'	172.48'	95.10'	164.71'	S 81°10'43"	60°00'00"	3+79.96	5+52.45	BUCKS RUN DRIVE
4	150.00'	157.08'	86.60'	150.00'	S 81°10'40"	60°00'00"	6+74.73	8+31.81	BUCKS RUN DRIVE
5	150.00'	157.08'	86.60'	150.00'	S 81°10'43"	60°00'00"	9+49.45	11+06.62	BUCKS RUN DRIVE
6	150.00'	157.08'	86.60'	150.00'	S 81°10'43"	60°00'00"	11+83.20	13+50.28	BUCKS RUN DRIVE
7	150.00'	157.08'	86.60'	150.00'	S 31°12'59"	60°00'00"	4+84.52	6+41.59	DOE HILL CT.

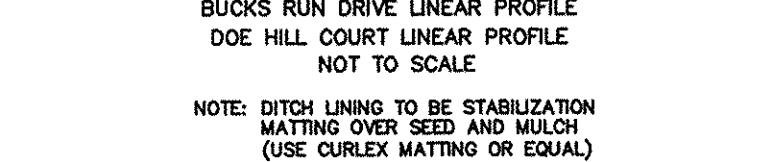


PLAN VIEW
SCALE: 1" = 50'

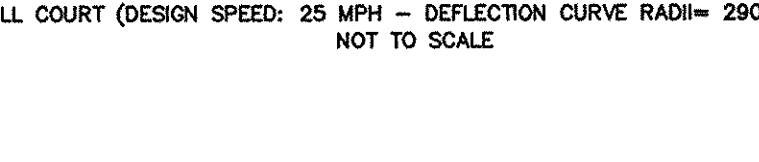
TRAFFIC SIGN LOCATION & LEGEND

- S** "STOP" SIGN, 30" x 30" OCTAGON, STD. R1-1
STA. 0+36 LEFT @ BUCKS RUN DRIVE
STA. 0+43 LEFT @ DOE HILL COURT
- A** "STOP AHEAD" SIGN, 36" x 36" DIAMOND, STD. W3-1A
STA. 3+00 LEFT @ BUCKS RUN DRIVE
- T** "SPEED LIMIT 25 MPH" SIGN, 24" x 30" RECTANGLE, STD. R2-2
STA. 3+00 RIGHT @ BUCKS RUN DRIVE
STA. 7+25 RIGHT @ BUCKS RUN DRIVE
STA. 1+50 RIGHT @ DOE HILL COURT
- K** "KEEP RIGHT" SIGN, 24" x 30" RECTANGLE, STD. R4-7
STA. 3+70 @ BUCKS RUN DRIVE MEDIAN ISLAND
STA. 4+50 @ BUCKS RUN DRIVE MEDIAN ISLAND
STA. 5+52 @ BUCKS RUN DRIVE MEDIAN ISLAND
STA. 6+00 @ BUCKS RUN DRIVE MEDIAN ISLAND
STA. 2+48 @ DOE HILL COURT MEDIAN ISLAND
STA. 4+10 @ DOE HILL COURT MEDIAN ISLAND

TYPICAL SECTION AT CUL-DE-SAC
BUCKS RUN DRIVE LINEAR PROFILE
DOE HILL COURT LINEAR PROFILE
NOT TO SCALE



TYPICAL SECTION AT MEDIAN ISLAND
DOE HILL COURT (DESIGN SPEED: 25 MPH - DEFLECTION CURVE RADIUS= 290' @ 25 MPH)
NOT TO SCALE



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Richard Blood 12/11/98
CHIEF, DIVISION OF LAND DEVELOPMENT

Howard Shil 12/11/98
CHIEF, BUREAU OF HIGHWAYS

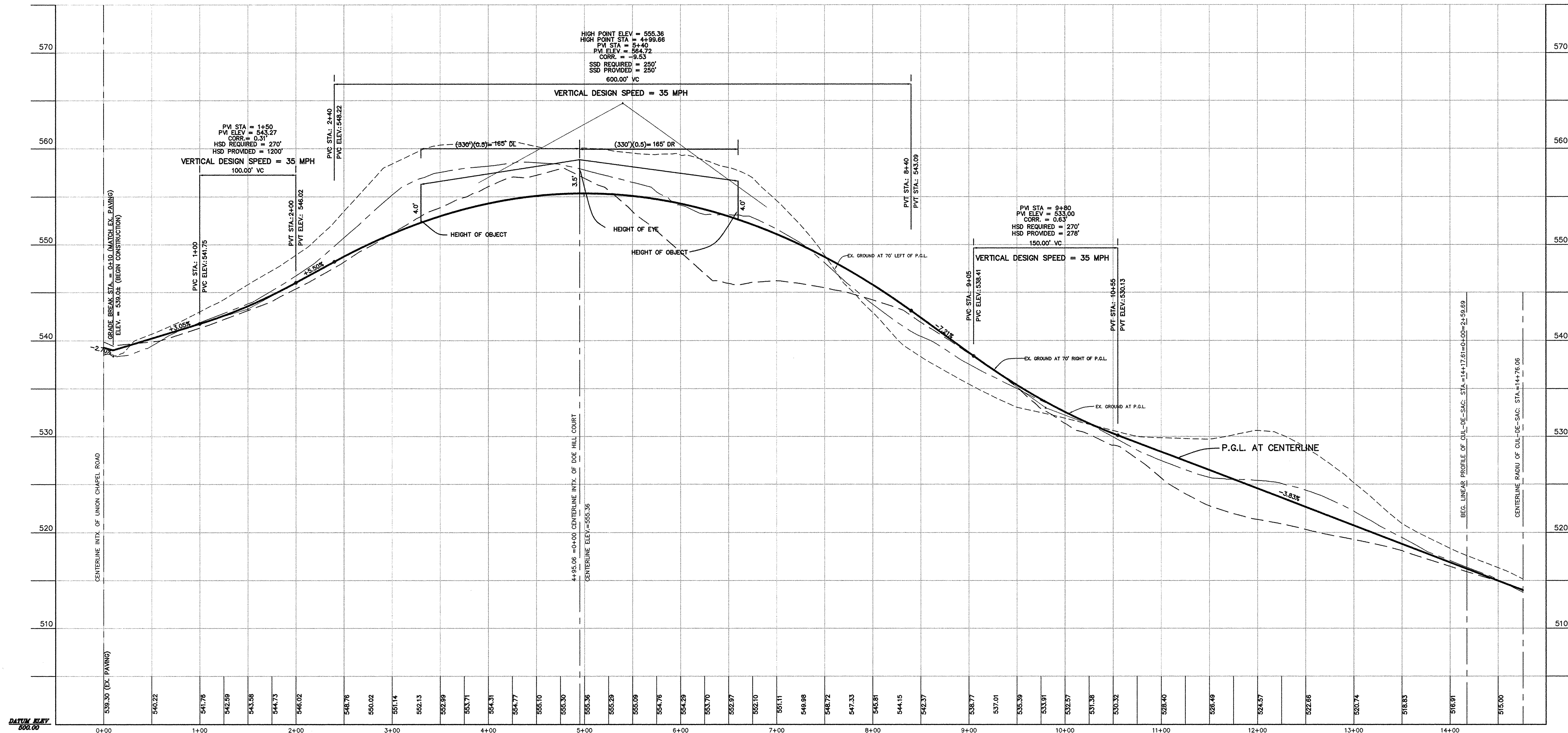
Chris Dammus 12/11/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION

NO	DATE	REVISION
0	6/98	SUBMISSION TO COUNTY FOR REVIEW AND APPROVAL
1	8/10/98	REV. PER COUNTY COMMENTS DATED 8/3/98

BENCHMARK ENGINEERING INC.
ENGINEERS • LAND SURVEYORS • PLANNERS

8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6844

OWNER/DEVELOPER: BPMB ASSOCIATES, LLC. 15298 UNION CHAPEL ROAD WOODBINE, MARYLAND 21797 (410) 442-2101	PROJECT: WELLINGTON WEST SECTION TWO (S-98-03, WP-98-72, P-98-24)
LOCATION: TAX MAP 14 - PART OF PARCEL 222, PARCELS 68 & 69 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: ROAD PLAN
DATE: APRIL 1998	PROJECT NO. 1131
DESIGN: YSL DRAFT: YSL CHECK: DAM	SCALE: 1"=50' DRAWING 2 OF 12



BUCKS RUN DRIVE--HORIZONTAL DESIGN SPEED: 25 MPH

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Howard Schilf 12/1/98
CHIEF, BUREAU OF HIGHWAYS DATE

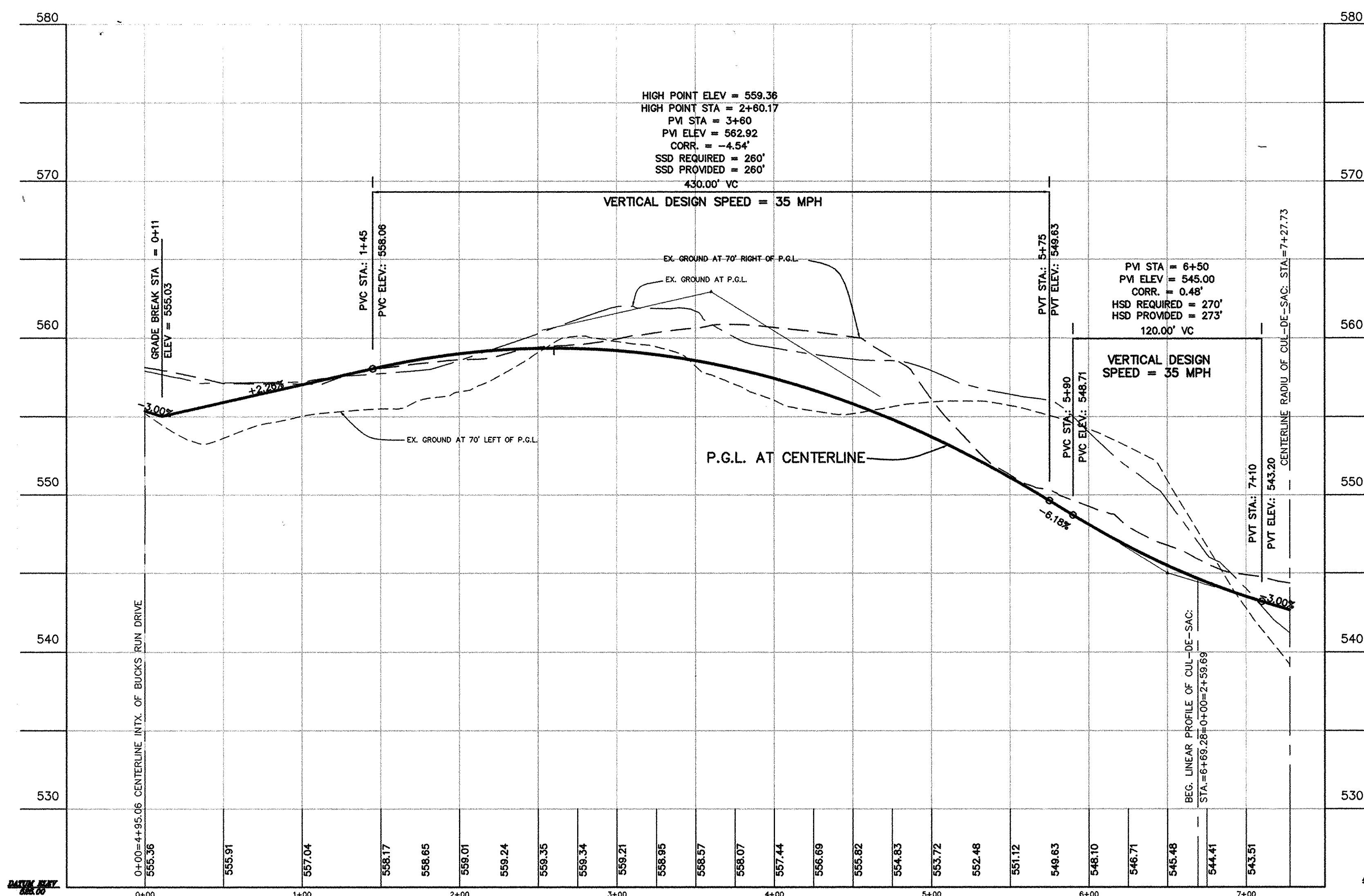
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Richard Blouard 12/1/98
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
Cheri Damman 12/1/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

NO	DATE	REVISION
0	6/98	SUBMISSION TO COUNTY FOR REVIEW AND APPROVAL

BENCHMARK ENGINEERING INC.
ENGINEERS • LAND SURVEYORS • PLANNERS

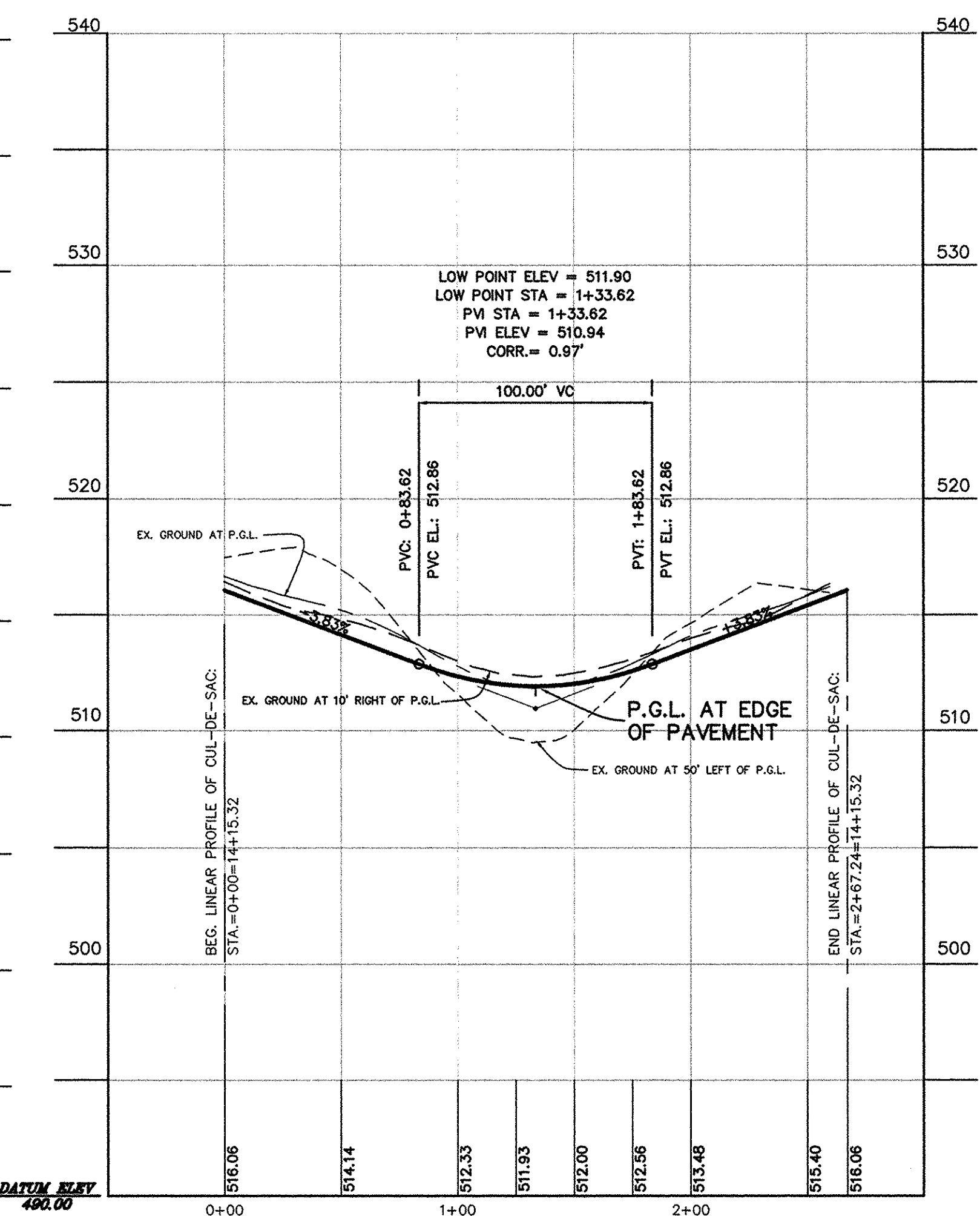
8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644

OWNER/DEVELOPER: BPMB ASSOCIATES, LLC. 15298 UNION CHAPEL ROAD WOODBINE, MARYLAND 21797 (410) 442-2101	PROJECT: WELLINGTON WEST SECTION TWO (S-98-03, WP-98-72, P-98-24)
LOCATION: TAX MAP 14 - PART OF PARCEL 222, PARCELS 68 & 69 4th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: ROAD PROFILE: BUCKS RUN DRIVE
DATE: APRIL 1998	PROJECT NO. 1131
DESIGN: YSL	DRAFT: YSL
CHECK: DAM	SCALE: AS SHOWN
DRAWING NO. 3 OF 12	



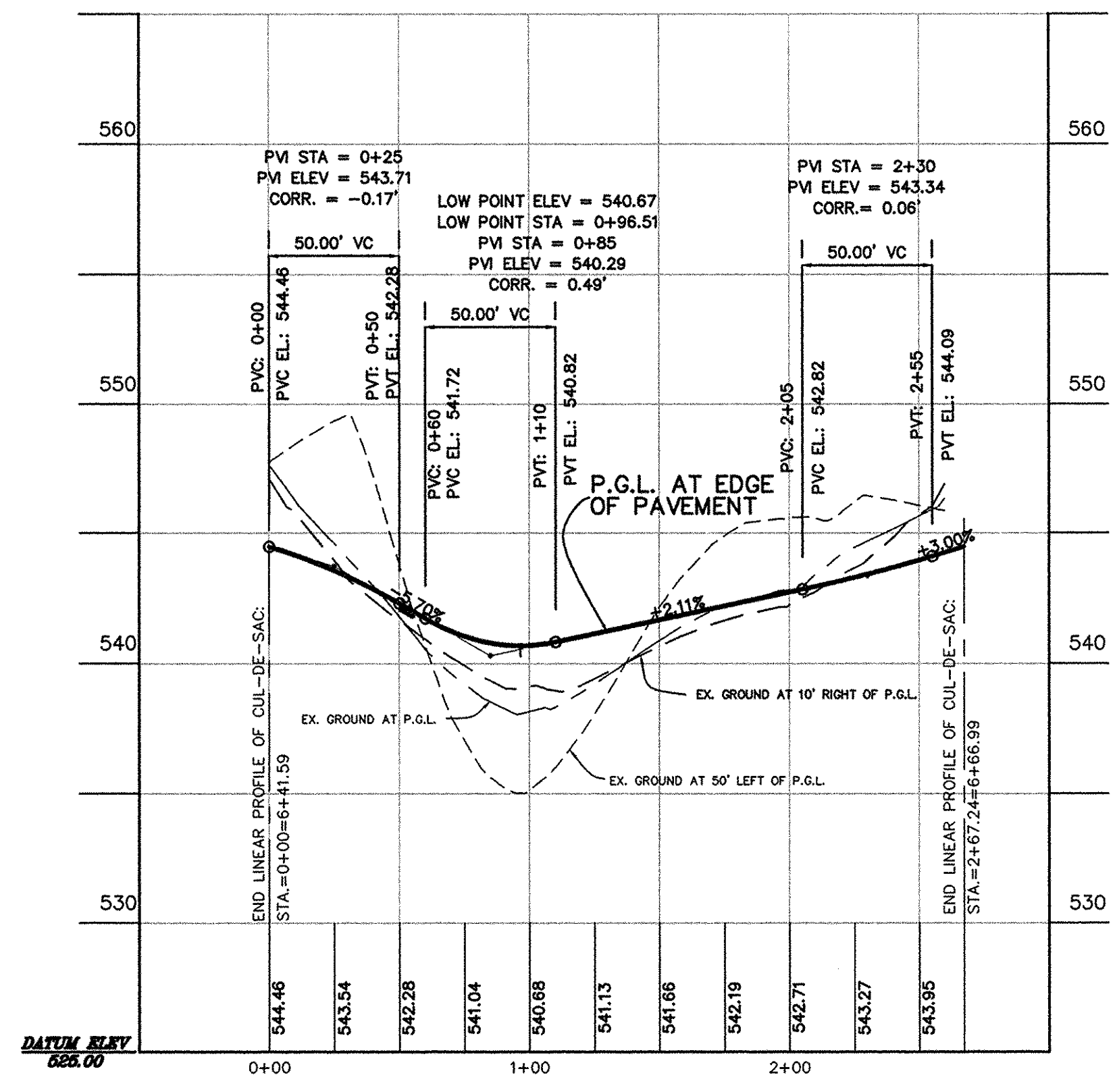
DOE HILL COURT -- HORIZONTAL DESIGN SPEED: 25 MPH

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



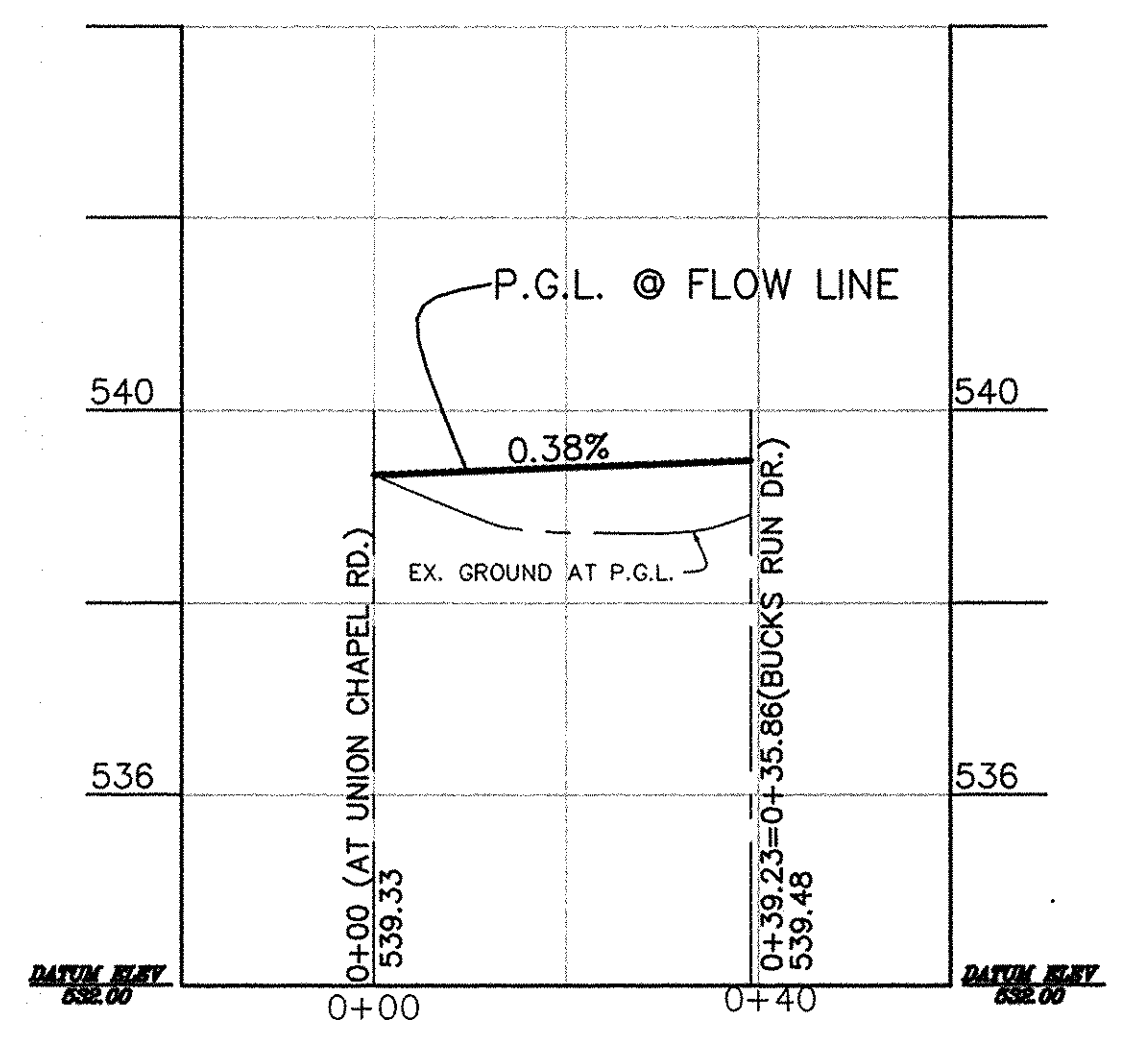
LINEAR PROFILE AT BUCKS RUN DRIVE

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



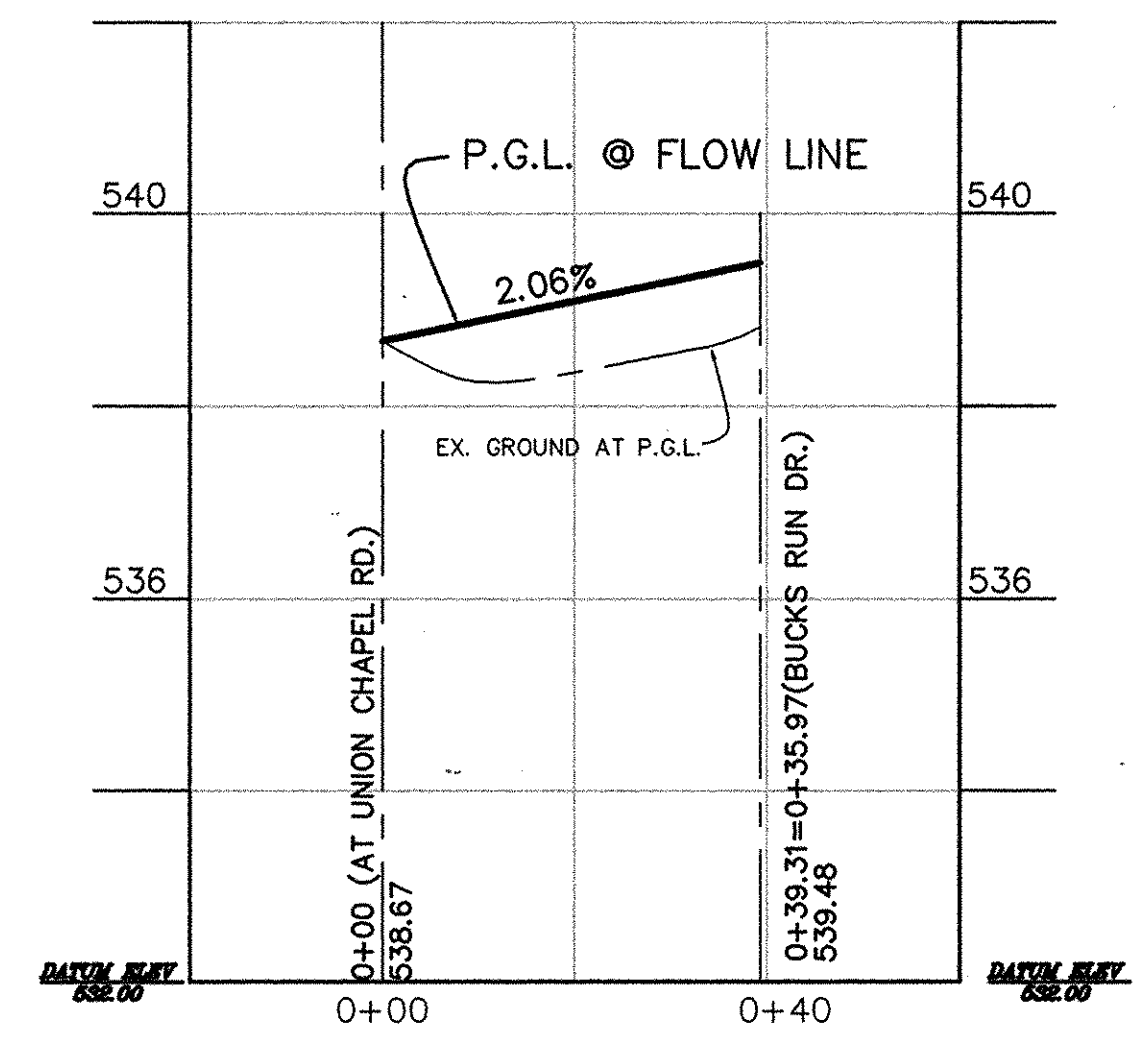
LINEAR PROFILE AT DOE HILL COURT

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



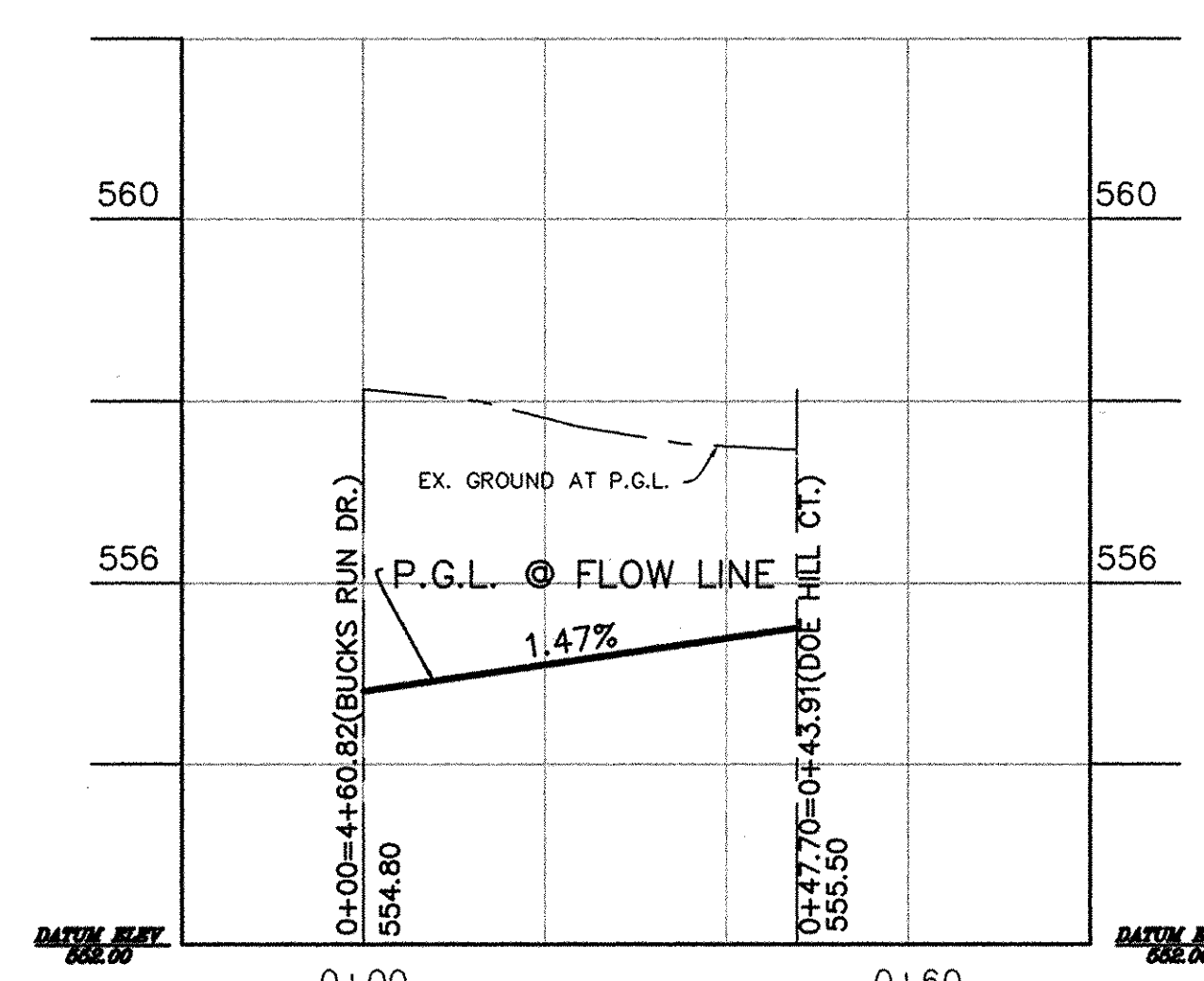
CURB RETURN PROFILE AT RIGHT OF INTX. OF UNION CHAPEL RD. & BUCKS RUN DR.

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



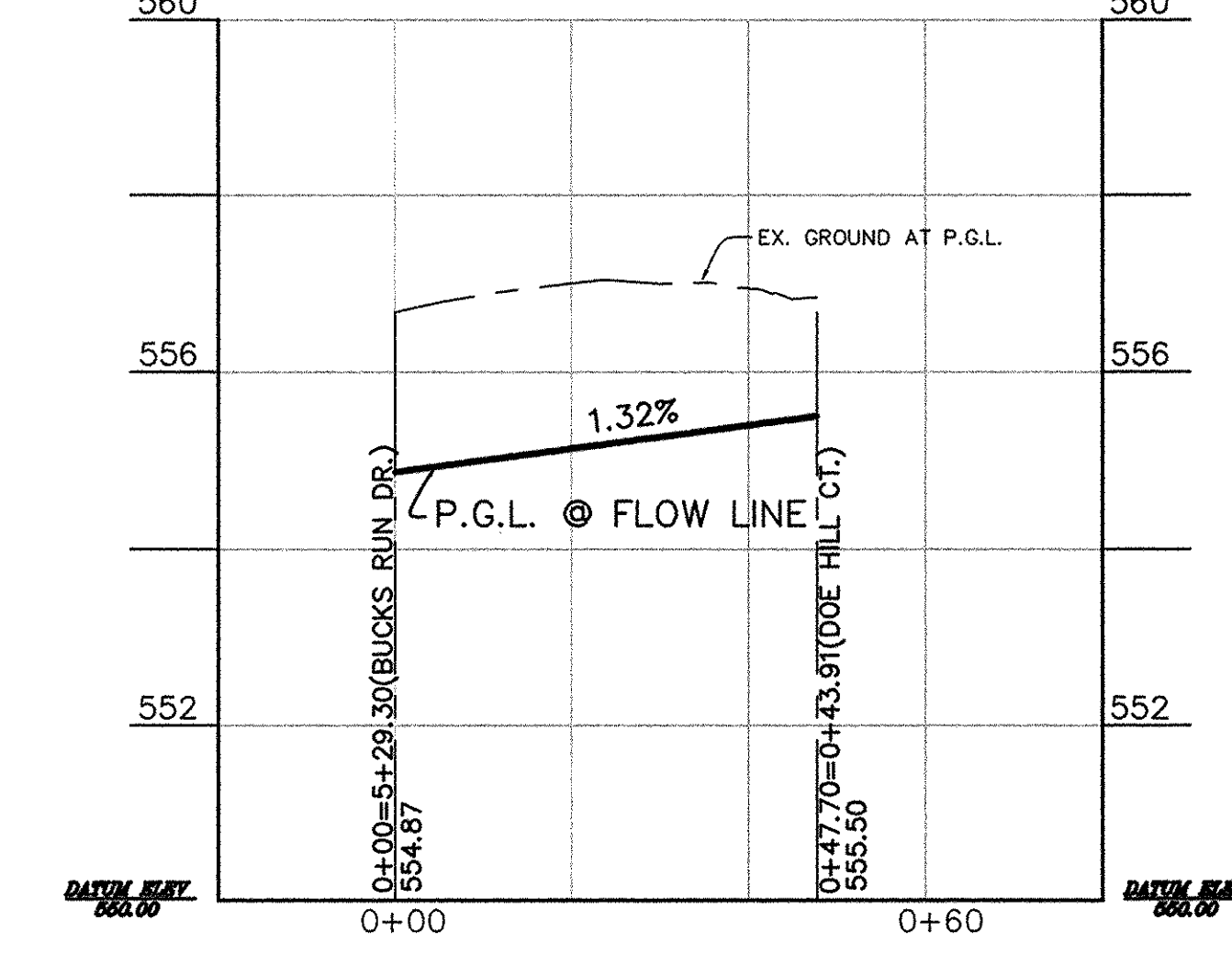
CURB RETURN PROFILE AT LEFT OF INTX. OF UNION CHAPEL RD. & BUCKS RUN DR.

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



CURB RETURN PROFILE AT RIGHT OF INTX. OF DOE HILL CT. & BUCKS RUN DR.

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



CURB RETURN PROFILE AT LEFT OF INTX. OF DOE HILL CT. & BUCKS RUN DR.

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

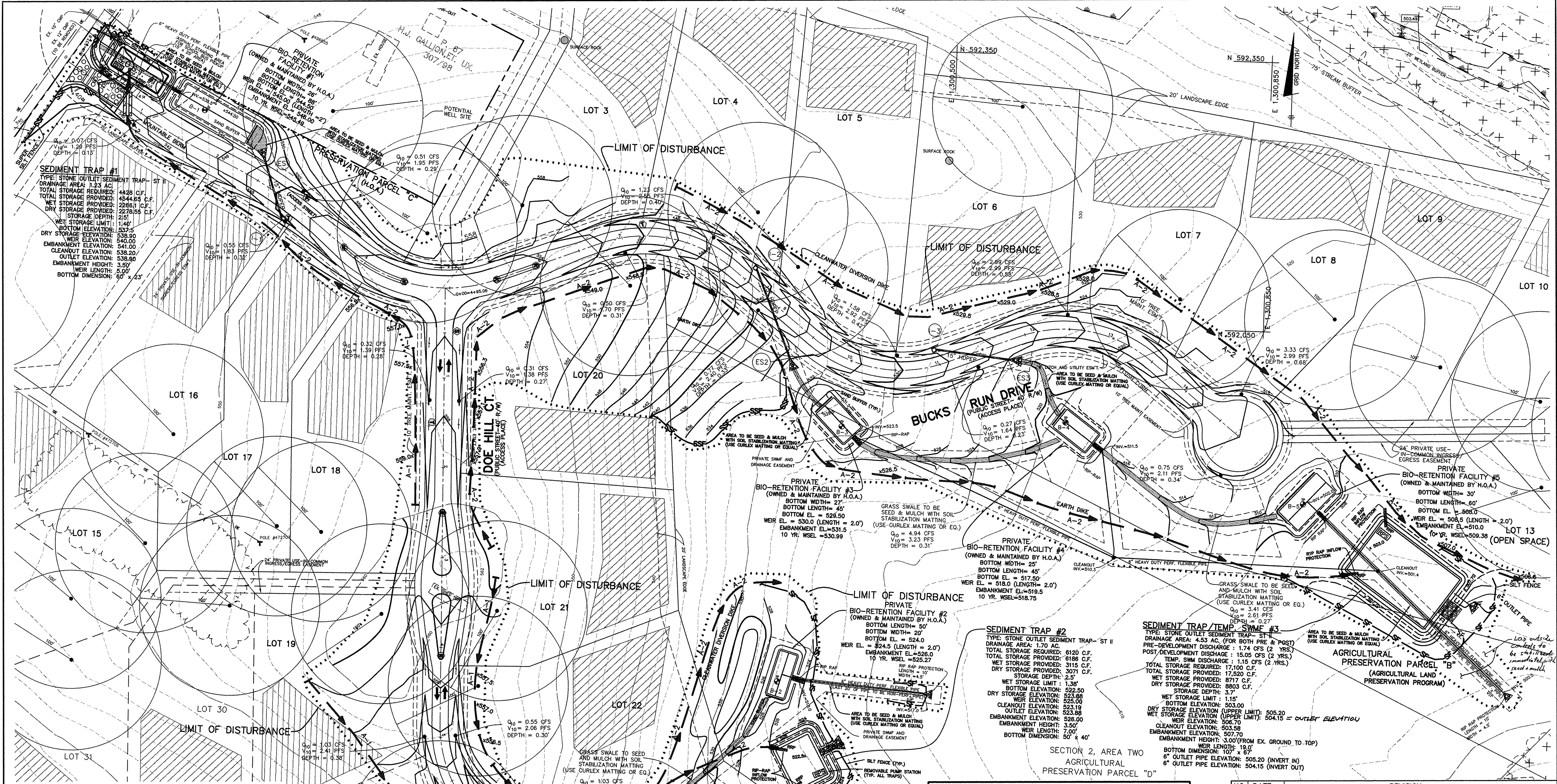
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Howard's Seal for 12/19/98
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Richard B. Beard 12/14/98
DATE
Chris Damman 12/19/98
DATE

NO	DATE	REVISION
0	6/98	SUBMISSION TO COUNTY FOR REVIEW AND APPROVAL

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

OWNER/DEVELOPER: BPMB ASSOCIATES, L.L.C. 15298 UNION CHAPEL ROAD WOODBINE, MARYLAND 21797 (410) 442-2101	PROJECT: WELLINGTON WEST SECTION TWO (S-98-03, WP-98-72, P-98-24)
LOCATION: TAX MAP 14 - PART OF PARCEL 222, PARCELS 68 & 69 4th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: ROAD PROFILES: DOE HILL COURT & LINEAR PROFILES
DATE: APRIL 1998	PROJECT NO. 1131
DESIGN: YSL DRAFT: YSL CHECK: DAM SCALE: AS SHOWN	DRAWING NO. 4 OF 12



APPROVED: THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 11/20/98
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

[Signature] 11/20/98
NATURAL RESOURCES CONSERVATION SERVICE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature] 12/7/98
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

[Signature] 12/11/98
CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 12/19/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION

NOTE: ALL ROAD SIDE DITCHES ARE TO BE SEED AND MULCH WITH SOIL STABILIZATION MATTING. (USE CURLEX MATTING OR EQUAL.)

GRADING INDICATED WITHIN THE BUILDING LOTS IS TEMPORARY FOR THE PURPOSE OF ROAD CONSTRUCTION AND INSTALLATION OF SEDIMENT CONTROL MEASURES.

ENGINEER'S CERTIFICATE
I hereby certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

[Signature] 10/21/98
Date

DEVELOPER'S CERTIFICATE
I/We certify that all development and construction will be done in accordance with this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction of this 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 onsite inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.

[Signature] 11/8/98
Signature of Developer Date

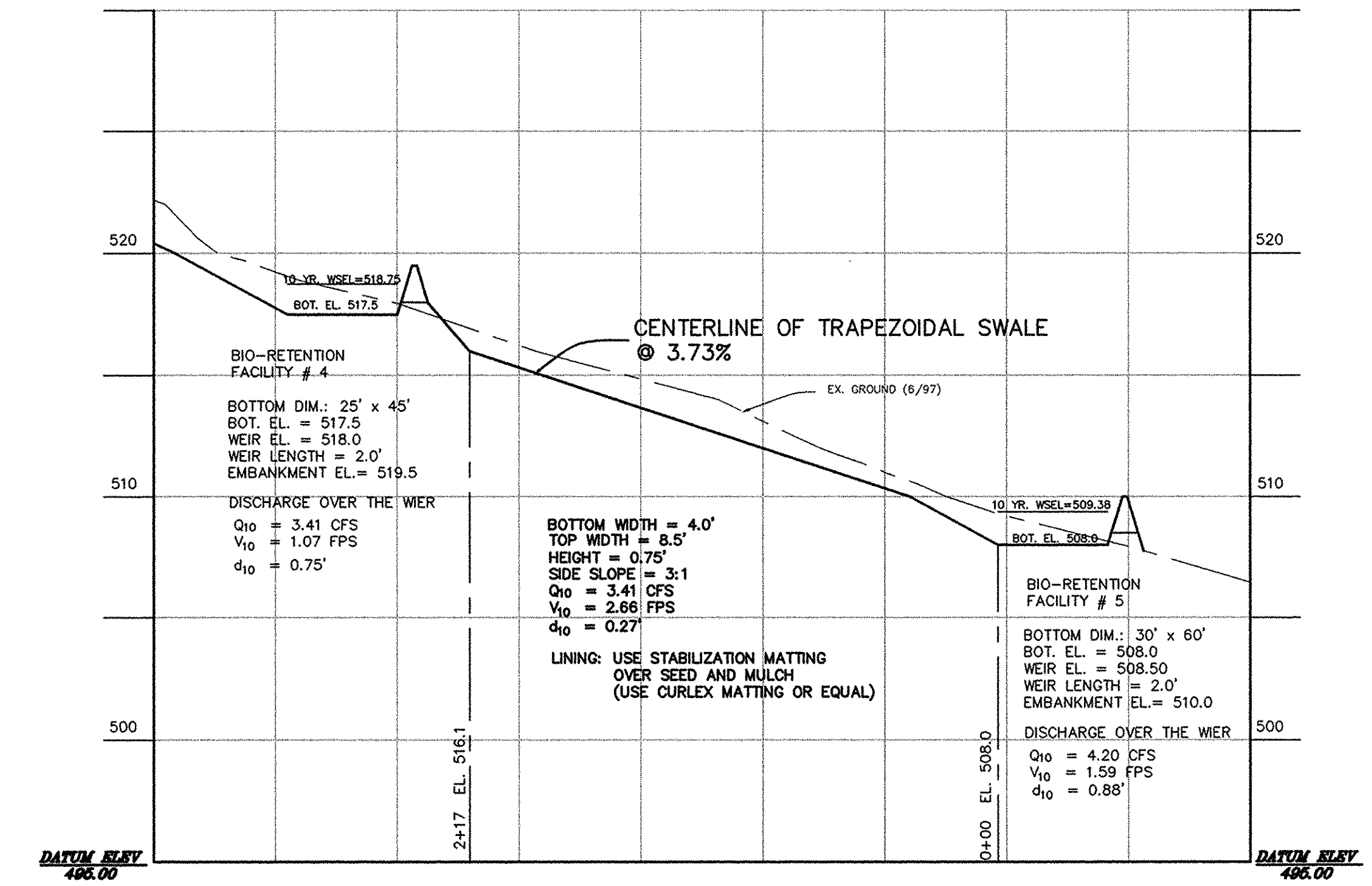
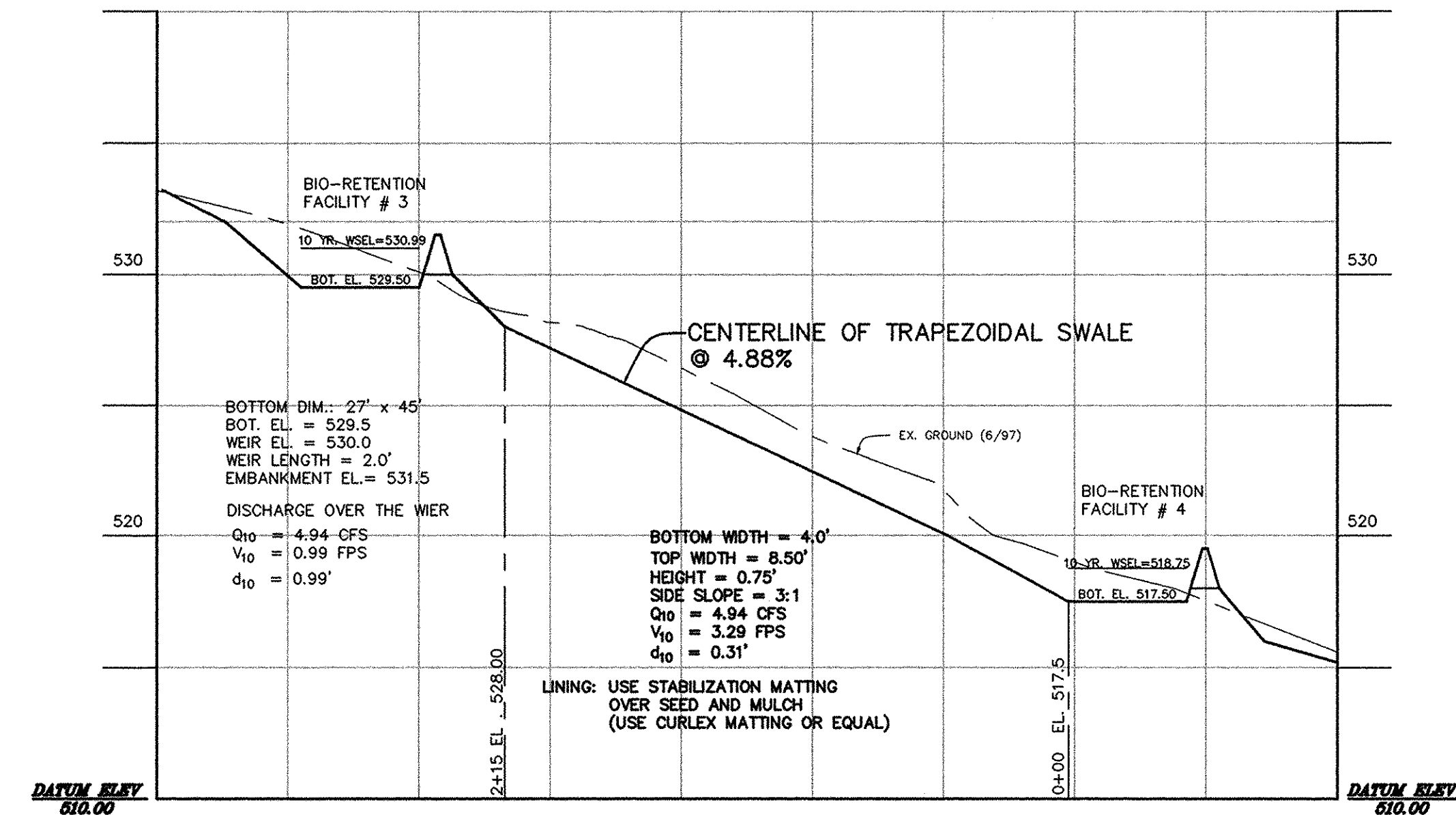
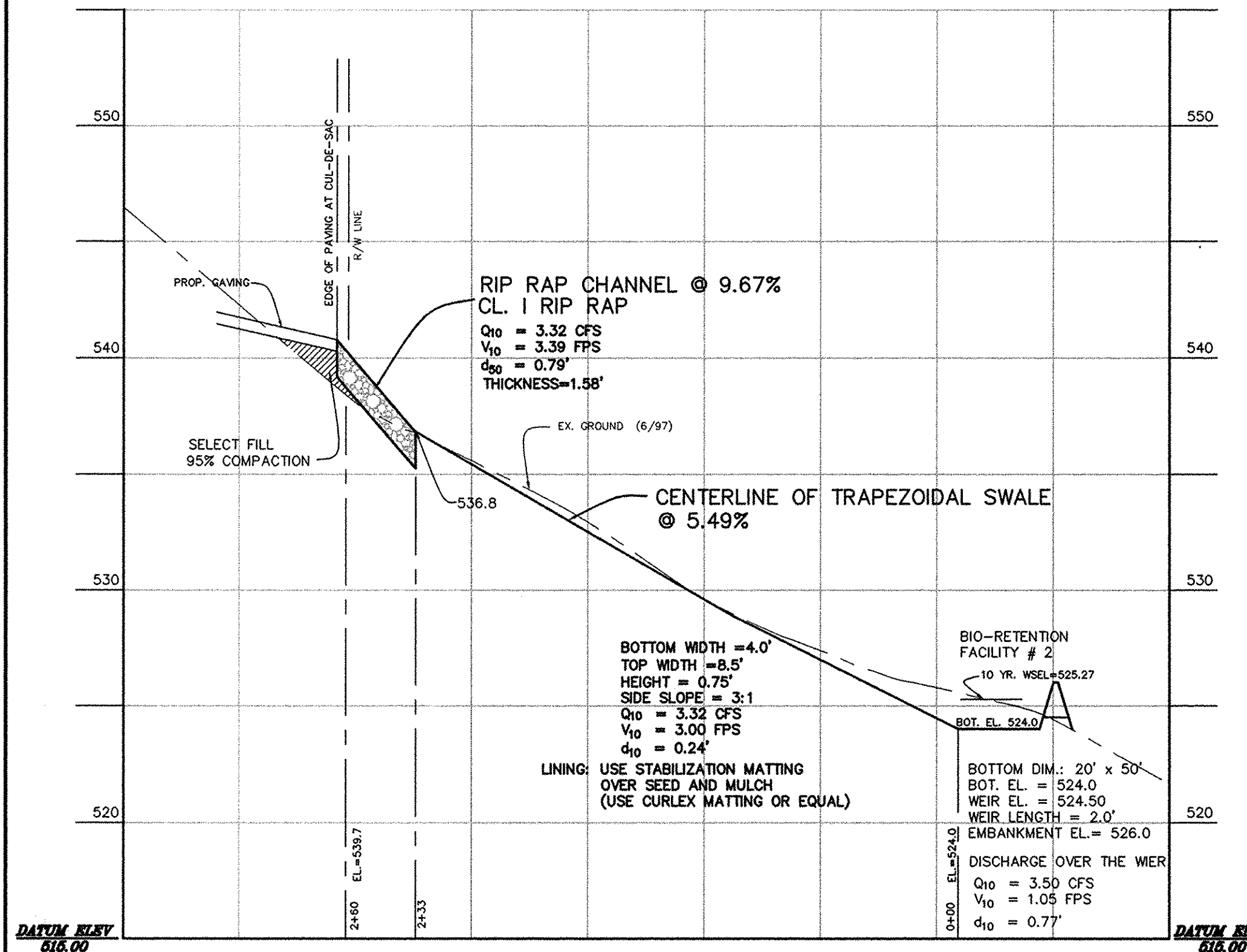
NO	DATE	REVISION
0	6/98	SUBMISSION TO COUNTY FOR REVIEW AND APPROVAL.
1	8/10/98	REV. PER COUNTY'S COMMENTS DATED 8/3/98.
2	10/14/98	REV. PER COUNTY'S COMMENTS DATED 10/2/98.

BENCHMARK
ENGINEERS • LAND SURVEYORS • PLANNERS

ENGINEERING INC.

8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21143
PHONE: 410-465-6105 FAX: 410-465-6644

PROJECT: WELLINGTON WEST SECTION TWO (S-98-03, WP-98-72, P-98-24)	
OWNER/DEVELOPER: BPMB ASSOCIATES, LLC. 15298 UNION CHAPEL ROAD WOODBINE, MARYLAND 21797 (410) 442-2101	
LOCATION: TAX MAP 14 - PART OF PARCEL 222, PARCELS 68 & 69 4th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE: GRADING, AND SEDIMENT CONTROL PLAN	
DATE: APRIL 1998	PROJECT NO. 1131
DESIGN: YSL	DRAFT: YSL
CHECK: DAM	SCALE: 1"=50'
DRAWING 5 OF 12	



SWALE PROFILE: BETWEEN LOTS 22 & 23

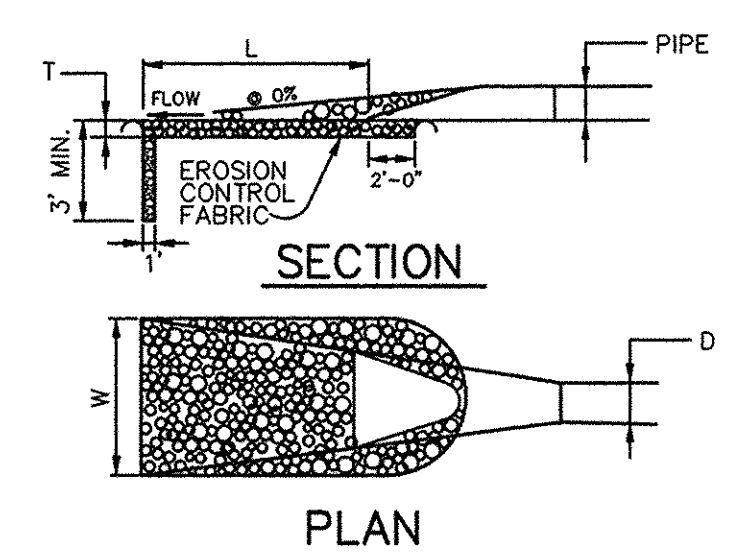
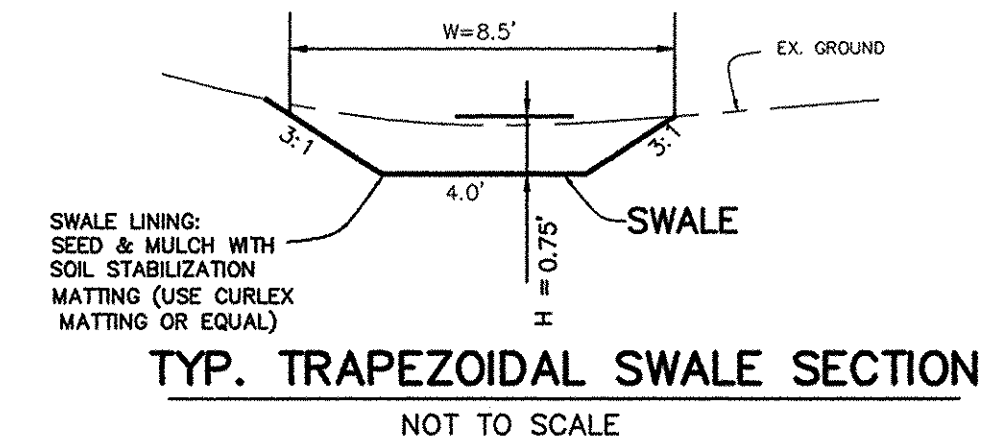
SWALE PROFILE: FROM BIO-RETENTION FACILITY # 3 TO #4

SWALE PROFILE: FROM BIO-RETENTION FACILITY #4 TO #5

STORM DRAIN STRUCTURE SCHEDULE

STRUCTURE	TYPE	INVERT (OUT)	INVERT (IN)	TOP ELEVATION	LOCATION	PIPE LENGTH	REMARKS
I-1	HO. CO. STD. "K" INLET	546.04		550.52	STA. 2+97.97 19.28' O/S RT. BUCKS RUN DRIVE	65' HDPEP	ONE OPENING
I-2	HO. CO. STD. "K" INLET	536.53		541.80	STA. 8+50.57 17.00' O/S LT. BUCKS RUN DRIVE	105' HDPEP	ONE OPENING
I-3	HO. CO. STD. "K" INLET	524.32		527.95	STA. 10+98.06 17.10' O/S LT. BUCKS RUN DRIVE	82' HDPEP	ONE OPENING
ES1	HO. CO. STD. SD-5.52		545.39	545.39	STA. 2+47.80 21.23' O/S LT. BUCKS RUN DRIVE		
ES2	HO. CO. STD. SD-5.52		534.00	534.00	STA. 9+42.70 32.85' O/S RT. BUCKS RUN DRIVE		
ES3	HO. CO. STD. SD-5.52		522.27	522.27	STA. 11+72.27 19.22' O/S RT. BUCKS RUN DRIVE		

NOTES: 1). "K" INLETS SHALL BE CAST IN PLACE OR BRICK ONLY AND SHALL BE TRAFFIC BEARING.
 2). TOP OF GRATE ELEVATIONS ARE SHOWN FOR "K" TYPE INLETS.

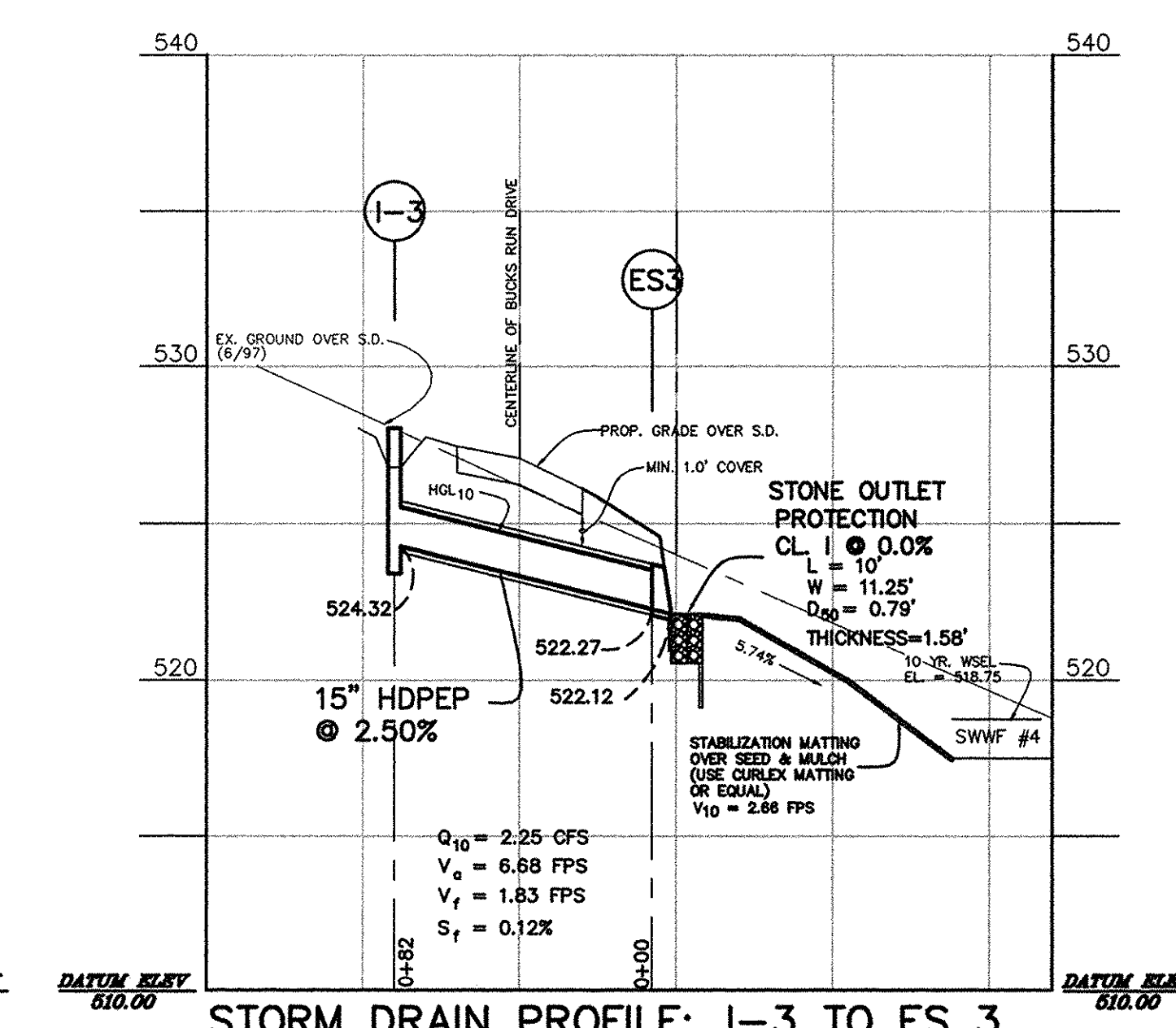
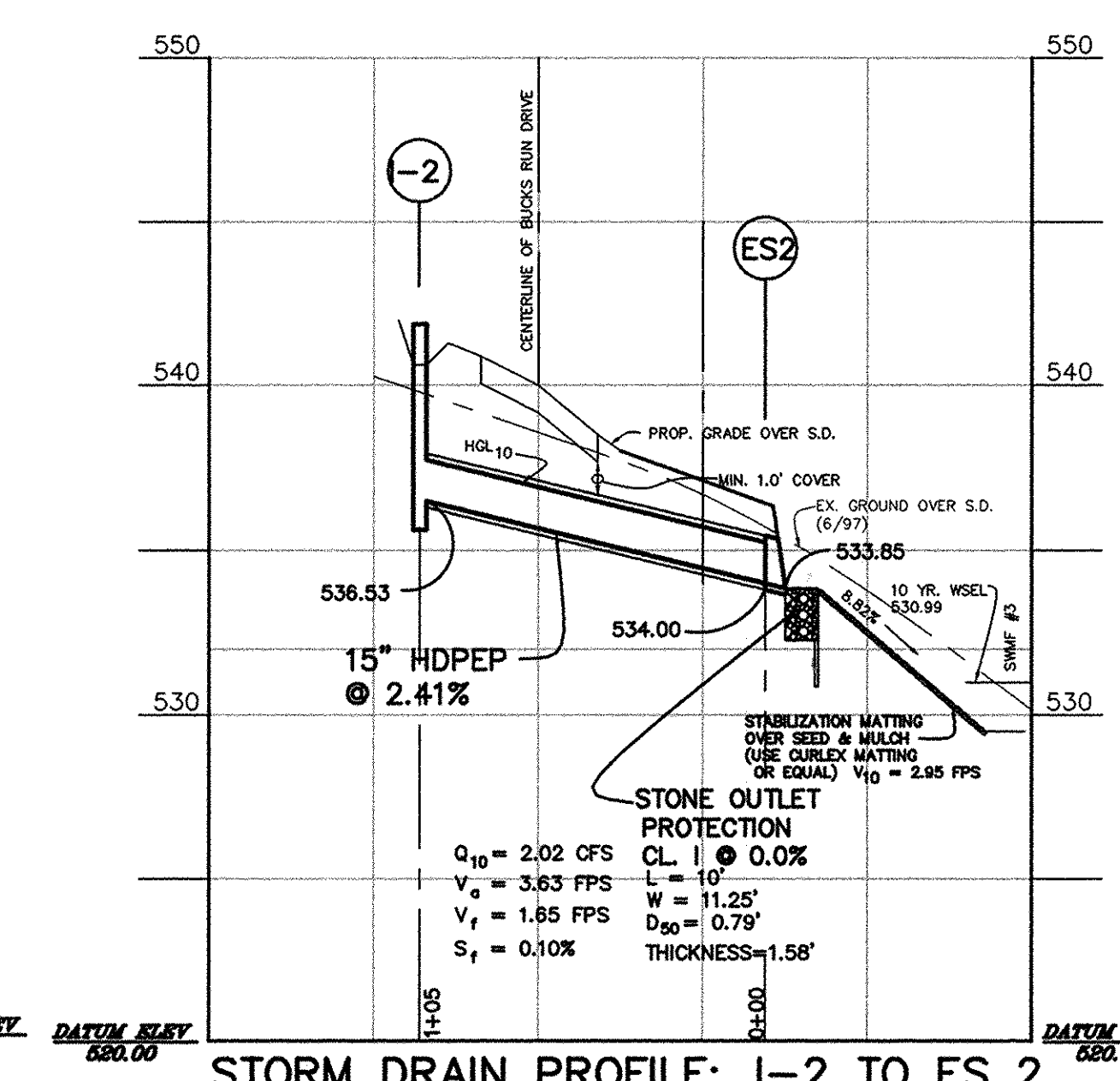
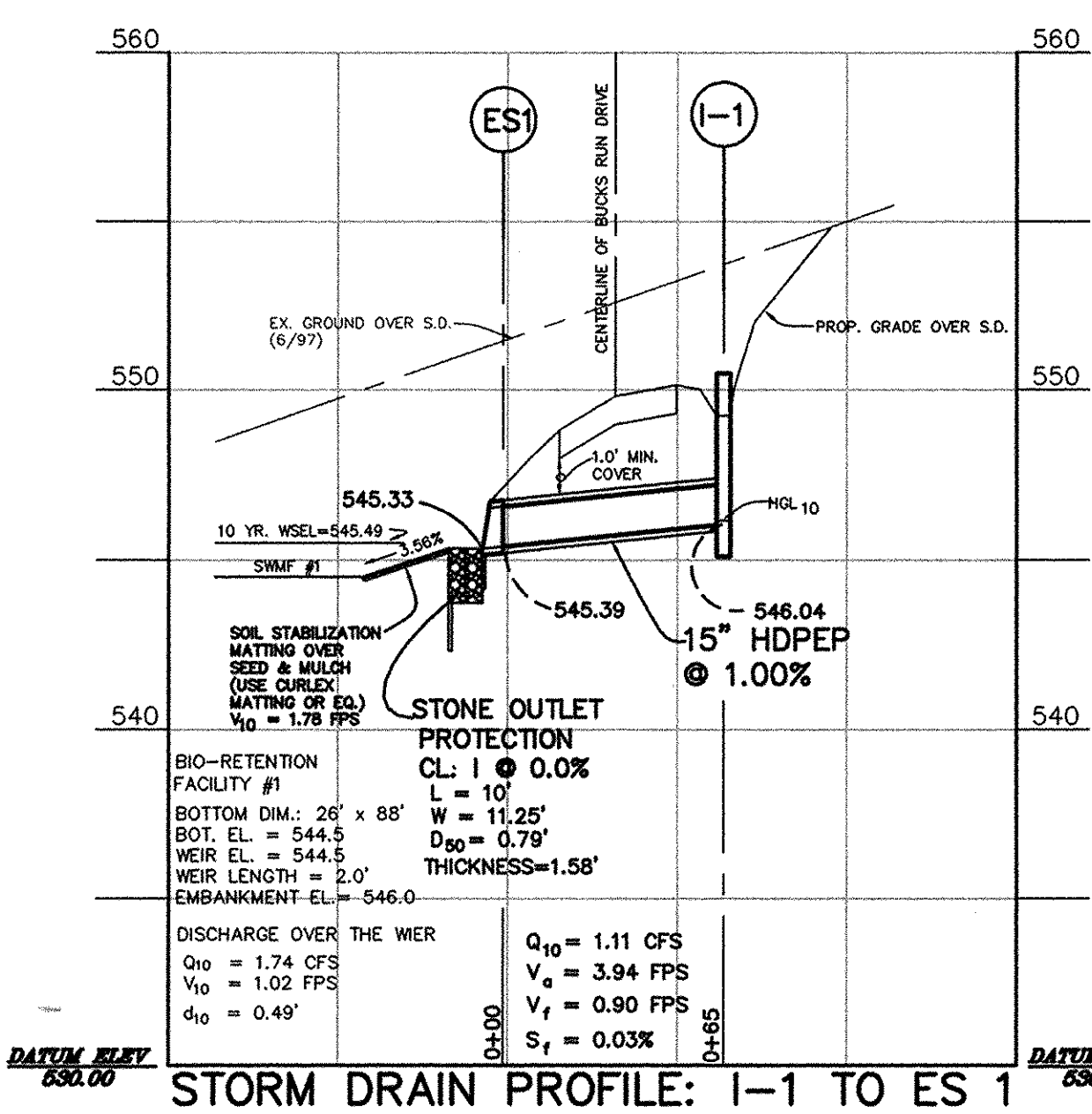


STRUCTURE	D-50	LENGTH (L)	WIDTH (W)	THICKNESS (T)	SHA CLASS
ES-1	0.79'	10'	5.25'	1.58'	I
ES-2	0.79'	10'	5.25'	1.58'	I
ES-3	0.79'	10'	5.25'	1.58'	I

OUTLET PROTECTION DETAIL
 NOT TO SCALE

DRIVEWAY CULVERT SIZING

LOT NO.	PIPE SIZE
3	12" DIA. CMP
4	12" DIA. CMP
5	12" DIA. CMP
6	12" DIA. CMP
7	12" DIA. CMP
8	12" DIA. CMP
9	12" DIA. CMP
10/11/12	12" DIA. CMP
20	12" DIA. CMP
21	12" DIA. CMP
22	12" DIA. CMP
23	12" DIA. CMP
24/25, FUT. LOT 26/PARCEL "D"	12" DIA. CMP
FUT. 27	12" DIA. CMP
FUT. 28	12" DIA. CMP
FUT. 29	12" DIA. CMP
19	12" DIA. CMP
18	12" DIA. CMP
14/16	12" DIA. CMP



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 [Signature] 10/2/98
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 [Signature] 12/6/98
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 12/9/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

NO	DATE	REVISION
0	6/98	SUBMISSION TO COUNTY FOR REVIEW AND APPROVAL.
1	8/10/98	REV. PER COUNTY'S COMMENTS DATED 8/3/98.

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

OWNER/DEVELOPER: BPMB ASSOCIATES, LLC.
 15298 UNION CHAPEL ROAD
 WOODBINE, MARYLAND 21797
 (410) 442-2101

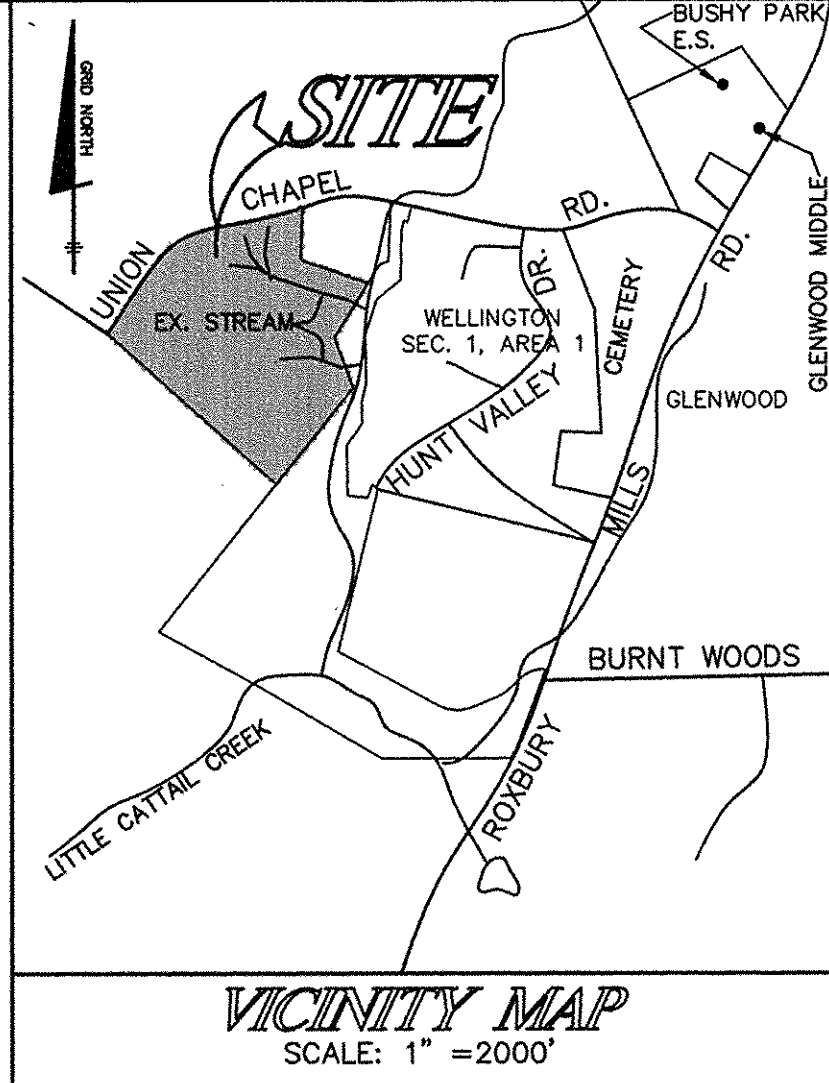
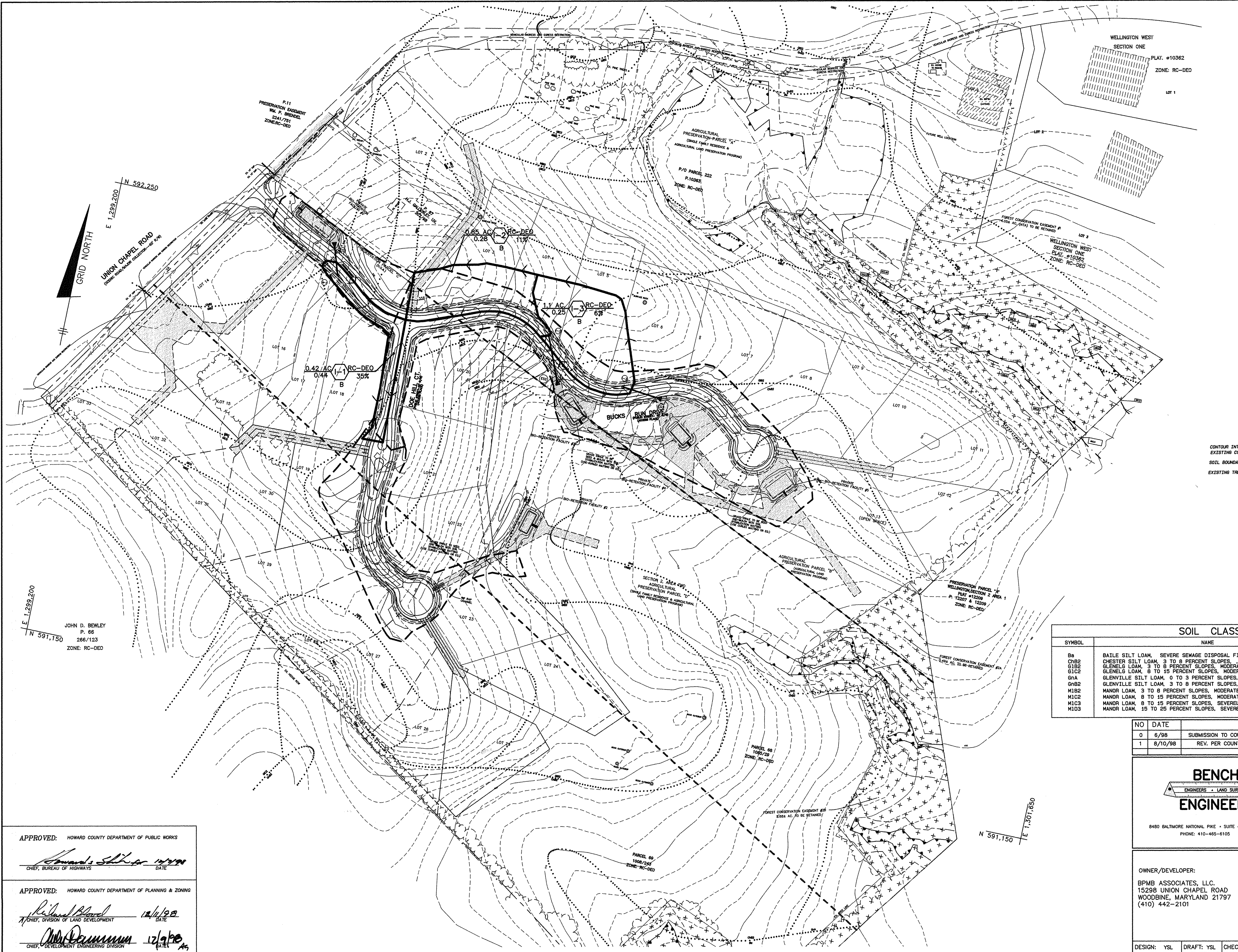
PROJECT: **WELLINGTON WEST**
SECTION TWO
 (S-98-03, WP-98-72, P-98-24)

LOCATION: TAX MAP 14 - PART OF PARCEL 222, PARCELS 68 & 69
 4th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: **STORM DRAIN SYSTEM PROFILES**

DATE: APRIL 1998 PROJECT NO. 1131

DESIGN: YSL DRAFT: YSL CHECK: DAM SCALE: AS SHOWN DRAWING 6 OF 12



LEGEND

CONTOUR INTERVAL	2 FEET
EXISTING CONTOUR	---
SOIL BOUNDARY & SOIL TYPES	---/---
EXISTING TREE LINE	+

SOIL CLASSIFICATION

SYMBOL	NAME	SOIL TYPE
B8	BATTLE SILT LOAM, SEVERE SEWAGE DISPOSAL FIELD LIMITATION	D
CHB2	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED, SLIGHT SEWAGE DISPOSAL	B
G1B2	GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED, SLIGHT SEWAGE DISPOSAL	B
G1C2	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED, MODERATE SEWAGE DISPOSAL	B
G1A	GLENVILLE SILT LOAM, 0 TO 3 PERCENT SLOPES, SEVERE SEWAGE DISPOSAL	C
G8B2	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED, SEVERE SEWAGE DISPOSAL	C
M1B2	MANOR LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED, SLIGHT SEWAGE DISPOSAL	B
M1C2	MANOR LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED, MODERATE SEWAGE DISPOSAL	B
M1C3	MANOR LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED, MODERATE SEWAGE DISPOSAL	B
M1D3	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED, SEVERE SEWAGE DISPOSAL	B

REVISION

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 8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6644

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard S. [Signature] 12/10/98
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Richard [Signature] 12/10/98
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Michael [Signature] 12/9/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

PROJECT: **WELLINGTON WEST SECTION TWO**
 (S-98-03, WP-98-72, P-98-24)

OWNER/DEVELOPER:
 BPMB ASSOCIATES, L.L.C.
 15298 UNION CHAPEL ROAD
 WOODBINE, MARYLAND 21797
 (410) 442-2101

LOCATION:
 TAX MAP 14 - PART OF PARCEL 222, PARCELS 68 & 69
 4TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: **DRAINAGE AREA MAP FOR STORM DRAIN SYSTEM**

DATE: APRIL 1998 PROJECT NO. 1131

DESIGN: YSL DRAFT: YSL CHECK: DAM SCALE: 1" = 100' DRAWING 7 OF 12

PLANT LIST				
QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
15	(Symbol)	BETULA NIGRA	RIVER BIRCH	2 1/2" - 3" CAL.
14	(Symbol)	FRAXINUS PENNSYLVANICA	GREEN ASH	2 1/2" - 3" CAL.
16	(Symbol)	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	2 1/2" - 3" CAL.
135	(Symbol)	VIBURNUM CASSINOIDES	NORTHERN WILD RAISIN	2 1/2" - 3" HT.

BIO-RETENTION FACILITY PLANTING DATA

REQUIRED: 1000 TREES/SHRUBS PER ACRE (3:1 RATIO OF SHRUBS TO TREES)

BIO-RETENTION FACILITY #1:
 SIZE: 26' x 88'
 AREA= 2288 S.F. OR 0.053 AC.
 REQUIRED: 53 TREES/SHRUBS
 PROVIDED: TREES = 14
 SHRUBS = 42
 TOTAL = 56

BIO-RETENTION FACILITY #2:
 SIZE: 20' x 50'
 AREA= 1000 S.F. OR 0.023 AC.
 REQUIRED: 23 TREES/SHRUBS
 PROVIDED: TREES = 6
 SHRUBS = 16
 TOTAL = 24

BIO-RETENTION FACILITY #3:
 SIZE: 27' x 45'
 AREA= 1215 S.F. OR 0.028 AC.
 REQUIRED: 28 TREES/SHRUBS
 PROVIDED: TREES = 7
 SHRUBS = 21
 TOTAL = 28

BIO-RETENTION FACILITY #4:
 SIZE: 25' x 45'
 AREA= 1125 S.F. OR 0.026 AC.
 REQUIRED: 28 TREES/SHRUBS
 PROVIDED: TREES = 7
 SHRUBS = 21
 TOTAL = 28

BIO-RETENTION FACILITY #5:
 SIZE: 30' x 60'
 AREA= 1800 S.F. OR 0.041 AC.
 REQUIRED: 41 TREES/SHRUBS
 PROVIDED: TREES = 11
 SHRUBS = 33
 TOTAL = 44

MAINTENANCE SCHEDULE FOR BIORETENTION AREA			
DESCRIPTION	METHOD	FREQUENCY	TIME OF YEAR
SOIL INSPECT AND REPAIR EROSION	VISUAL	MONTHLY	MONTHLY
ORGANIC LAYER REMULCH ANY VOID AREAS	BY HAND	WHENEVER NEEDED	WHENEVER NEEDED
REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER (OPTIONAL)	BY HAND	ONCE A YEAR	SPRING
ANY ADDITIONAL MULCH ADDED OPTIONAL	BY HAND	ONCE A YEAR	SPRING
PLANTS REMOVAL AND REPLACEMENT OF ALL DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT	SEE PLANTING SPECIFICATIONS	TWICE A YEAR	3/15 TO 4/30 AND 10/1 TO 11/30
TREAT ALL DISEASED TREES AND SHRUBS	MECHANICAL OR BY HAND	N/A	VARIABLE DEPENDING ON INSECT OR DISEASE INFESTATION
WATERING OF PLANT MATERIAL SHALL TAKE PLACE AT THE END OF EACH DAY FOR FOURTEEN CONSECUTIVE DAYS AFTER PLANTING HAS BEEN COMPLETED	BY HAND	IMMEDIATELY AFTER COMPLETION OF PROJECT	N/A
REPLACE STAKES AFTER ONE YEAR	BY HAND	ONCE A YEAR	ONLY REMOVE STAKES IN THE SPRING
REPLACE ANY DEFICIENT STAKES OR WIRES	BY HAND	N/A	WHENEVER NEEDED

I. BIORETENTION AREA SOIL SPECIFICATIONS

A. PLANTING SOIL

THE BIORETENTION AREAS SHALL CONSIST OF A PLANTING SOIL HAVING A COMPOSITION OF AT LEAST 10 TO 25 PERCENT CLAY AND SHALL BE OF A SANDY LOAM OR LOAMY SAND TEXTURE. LOAMY SOILS MAY BE UTILIZED FOR THE PLANTING SOIL BY MUST CONSIST OF 35 PERCENT SAND. IN ADDITION, THE FURNISHED PLANTING SOIL SHALL BE OF UNIFORM COMPOSITION, FREE OF STONES, STUMPS, ROOTS OF OBJECTS LARGER THAN ONE INCH, BRUSH, OR ANY OTHER MATERIAL OR SUBSTANCE WHICH MAY BE HARMFUL TO PLANT GROWTH, OR A HINDRANCE TO PLANTING OR MAINTENANCE OPERATIONS.

THE PLANTING SOIL SHALL BE FREE OF PLANTS OR PLANT PARTS OF BERMUDA GRASS, QUARK GRASS, JOHNSON GRASS, MUGWORT, NUTSEDGE, POISON IVY, CANADIAN THISTLE, OR OTHERS AS SPECIFIED. IT SHALL NOT CONTAIN TOXIC SUBSTANCES HARMFUL TO PLANT GROWTH.

THE PLANTING SOIL SHALL BE TESTED AND MEET THE FOLLOWING CRITERIA:

pH RANGE	5.5 - 6.5
ORGANIC MATTER	1.5 - 3.0%
MAGNESIUM - Mg	30 LBS./ACRE
PHOSPHORUS - P ₂ O ₅	100 LBS./ACRE
POTASSIUM - K ₂ O	85 LBS./ACRE
SOLUBLE SALTS	NOT TO EXCEED 500 PPM

THE FOLLOWING TESTING FREQUENCIES SHALL APPLY TO THE ABOVE SOIL CONSTITUENTS:

pH, ORGANIC MATTER: 1 TEST PER 90 YARDS, BUT NO MORE THAN 1 TEST PER BIORETENTION AREA.

MAGNESIUM, PHOSPHORUS, POTASSIUM, SOLUBLE SALTS: 1 TEST PER 500 CUBIC YARDS, BUT NO MORE THAN 1 TEST PER BORROW SOURCE.

ONE GRAIN SIZE ANALYSIS SHALL BE PERFORMED PER 90 CUBIC YARDS OF PLANTING SOIL, BUT NO LESS THAN 1 PER BIORETENTION AREA.

CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING THE SOIL MATERIAL AND PROVIDING THE PROPER CONSTITUENTS TO THE SOIL TO ACHIEVE THE PROPER MIXTURE. IF NECESSARY THE ENTIRE PLANTING AREA SHALL BE REMOVED AND REPLACED WITH THE PROPER PLANTING MIXTURE.

B. MULCH LAYER SPECIFICATIONS

A MULCH LAYER SHALL BE PROVIDED ON TOP OF THE PLANTING SOIL. AN ACCEPTABLE MULCH LAYER SHALL INCLUDE SHREDDED HARDWOOD OR SHREDDED WOOD CHIPS OR OTHER SIMILAR PRODUCTS.

OF THE APPROVED MULCH PRODUCTS ALL MUST BE WELL AGED, UNIFORM IN COLOR, AND FREE OF FOREIGN MATERIALS INCLUDING PLANT MATERIAL. WELL AGED MULCH IS DEFINED AS MULCH THAT HAS BEEN STOCKPILED OR STORED AT LEAST TWELVE (12) MONTHS.

C. SAND SPECIFICATIONS

THE SAND SHALL BE FREE OF DELETERIOUS MATERIAL AND ROCKS GREATER THE 1 INCH IN DIAMETER.

D. COMPACTION

SOIL SHALL BE PLACED IN LIFTS LESS THAN 18 INCHES AND LIGHTLY COMPACTED (MINIMAL COMPACTION EFFORT) BY TAMING WITH A BUCKET FROM A DOZER OR A BACKHOE.

II. MAINTENANCE SCHEDULE

A. PLANTING SOIL

URBAN PLANT COMMUNITIES TEND TO BECOME VERY ACIDIC DUE TO PRECIPITATION AS WELL AS THE INFLUENCE OF STORM WATER RUNOFF. FOR THIS REASON, IT IS RECOMMENDED THAT THE APPLICATION OF ALKALINE, SUCH AS LIMESTONE, BE CONSIDERED ONCE TO TWICE A YEAR. TESTING OF THE pH OF THE ORGANIC LAYER AND SOIL, SHOULD PRECEDE THE LIMESTONE APPLICATION, DETERMINING THE AMOUNT OF LIMESTONE REQUIRED.

SOIL TESTING SHOULD BE CONDUCTED ANNUALLY SO THAT THE ACCUMULATION OF TOXINS AND HEAVY METALS CAN BE DETECTED OR PREVENTED.

THE PREVENTATIVE MEASURES WOULD INCLUDE THE REMOVAL OF THE CONTAMINATED SOIL. IN SOME CASES, REMOVAL AND DISPOSAL OF THE ENTIRE SOIL BASE AS WELL AS THE PLANT MATERIAL MAY BE REQUIRED.

B. MULCH

BIORETENTION AREAS SHOULD BE MULCHED ONCE THE PLANTING OF TREES AND SHRUBS HAS OCCURRED. ANY GROUND COVER SPECIFIED AS PLUGS MAY BE INSTALLED ONCE THE AREA HAS BEEN MULCHED. GROUND COVER ESTABLISHED BY SEEDING AND/OR CONSISTING OF GRASS SHOULD NOT BE COVERED WITH MULCH.

C. PLANT MATERIAL

CERTAIN SPECIES INVOLVE MAINTENANCE PROBLEMS DUE TO DROPPING OF FRUIT OR OTHER PORTIONS OF THE PLANT. ANOTHER PROBLEM INCLUDES PLANTS, PRIMARILY TREES, THAT ARE SUSCEPTIBLE TO WINDTHROW, WHICH CREATES A POTENTIAL HAZARD TO PEOPLE AND PROPERTY (PARKED CARS). AS A RESULT, SOME PLANT SPECIES WILL BE LIMITED TO USE IN LOW-TRAFFIC AREAS.

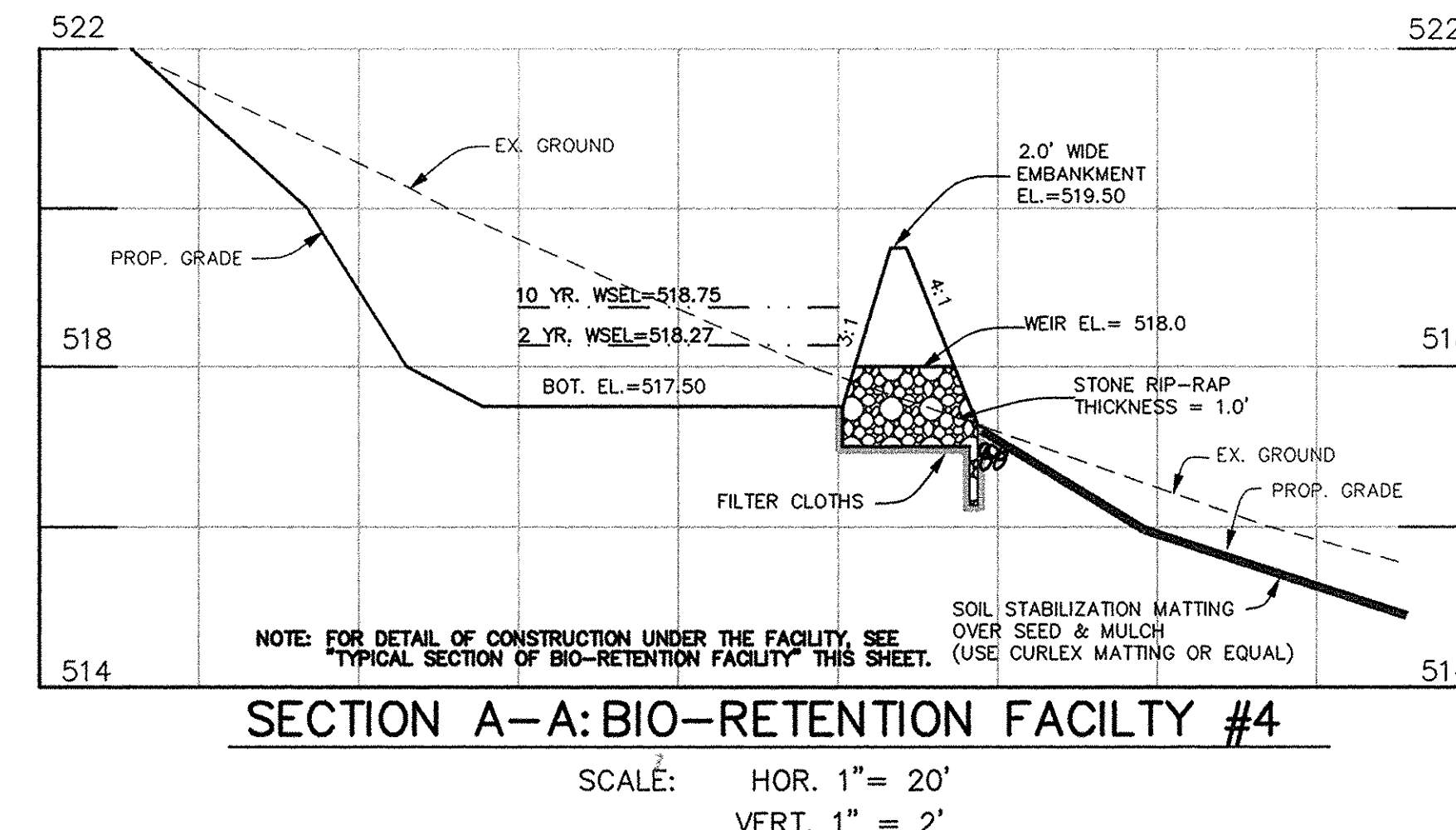
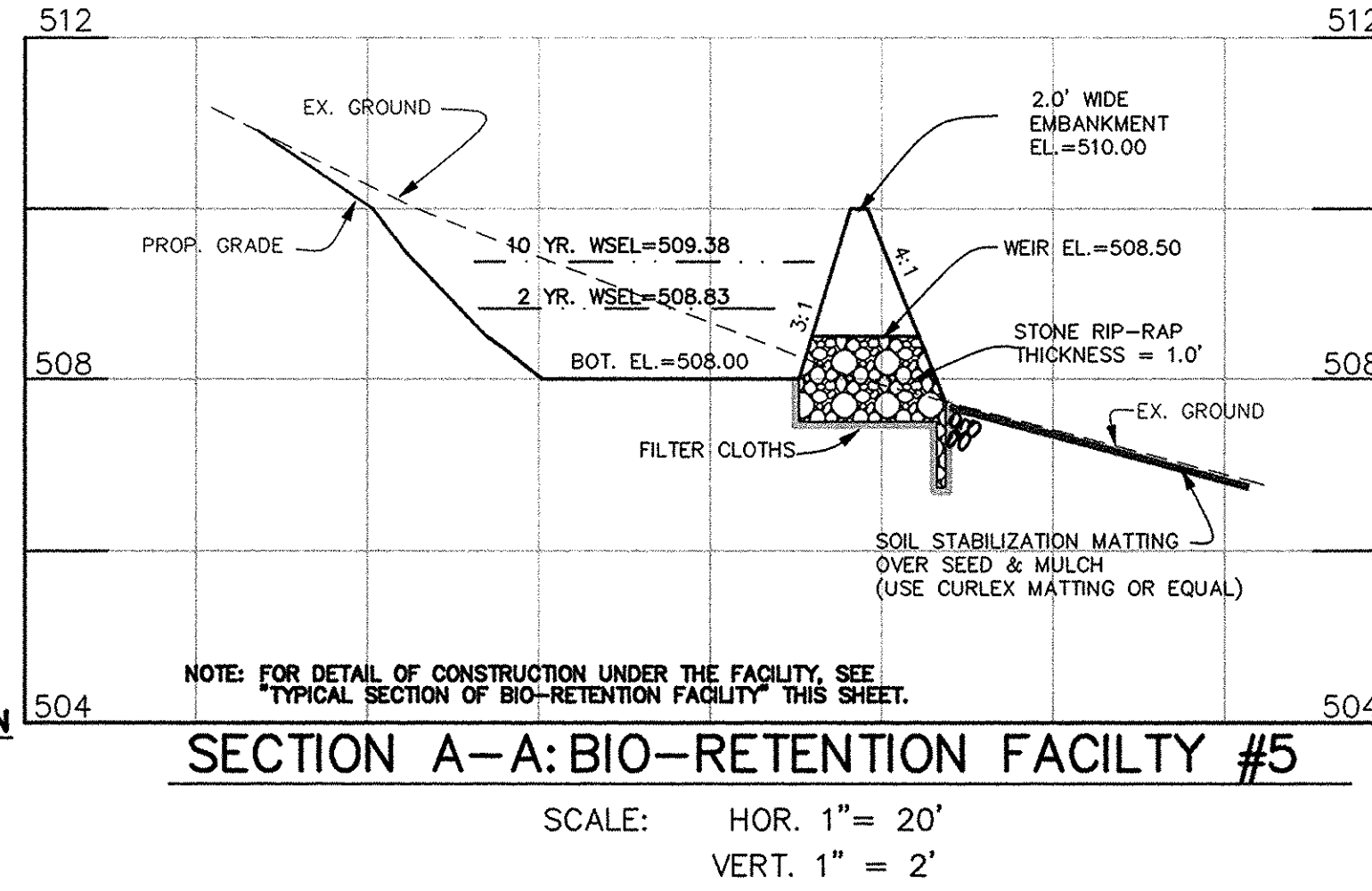
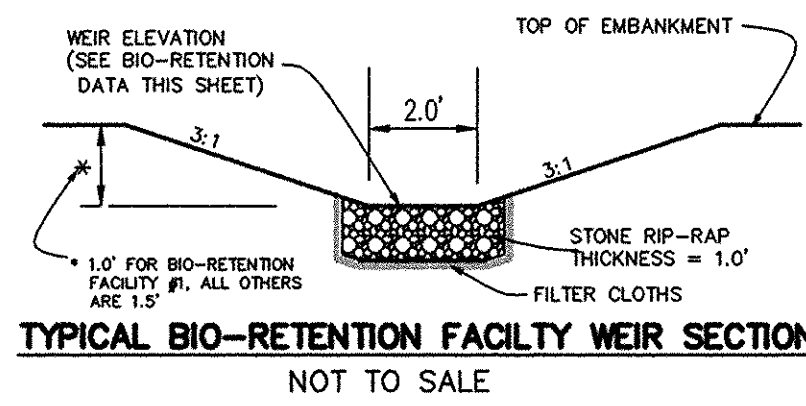
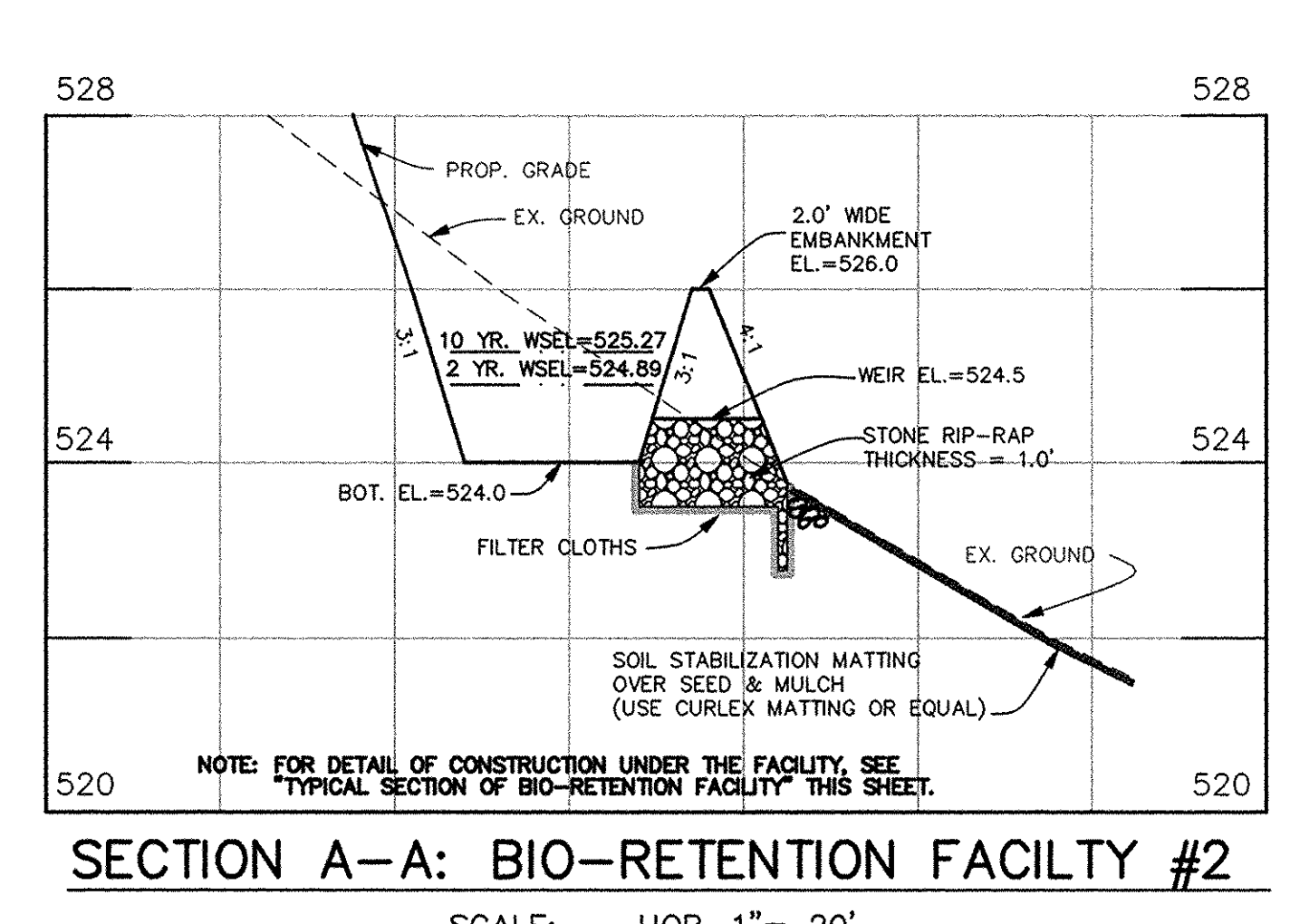
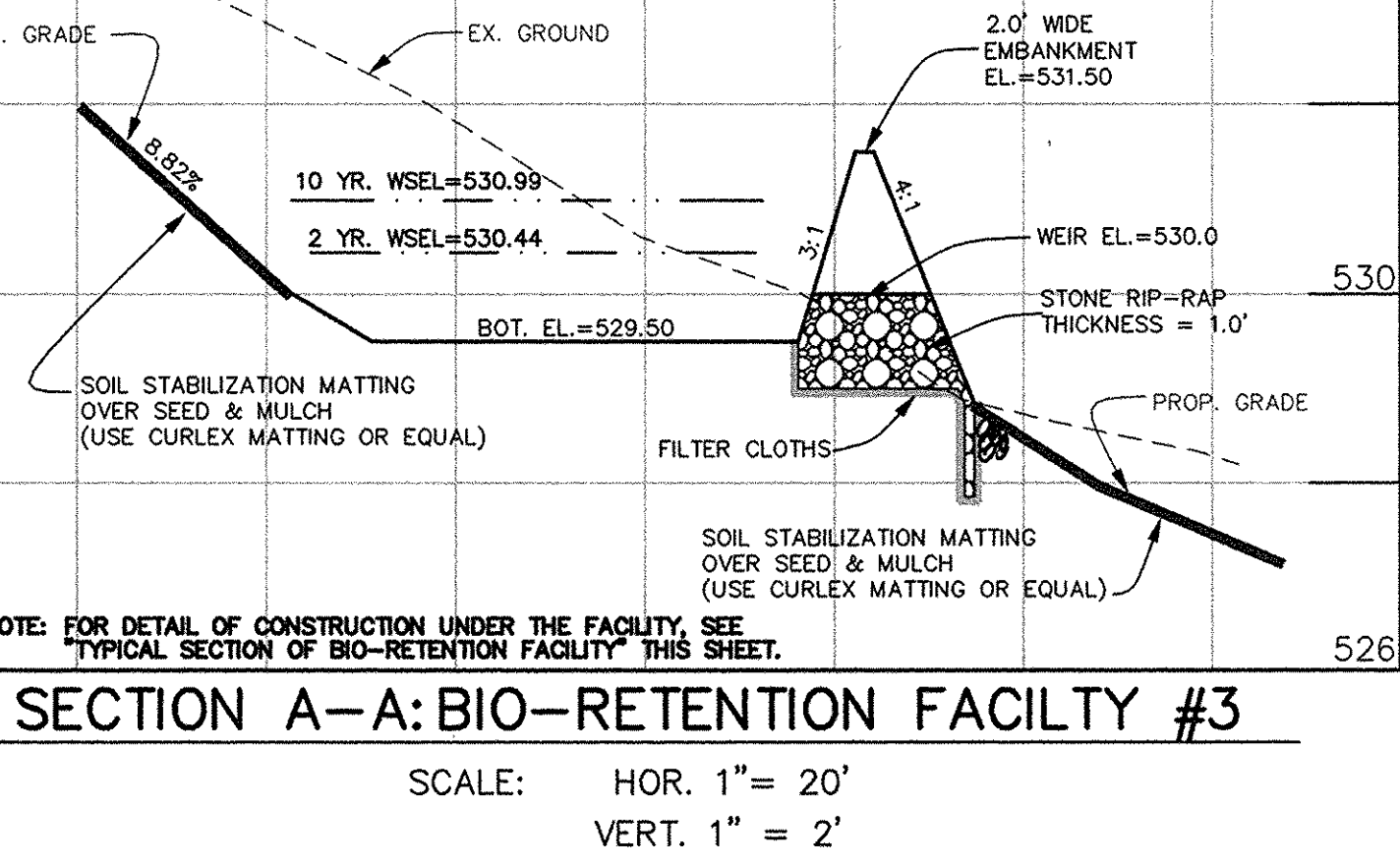
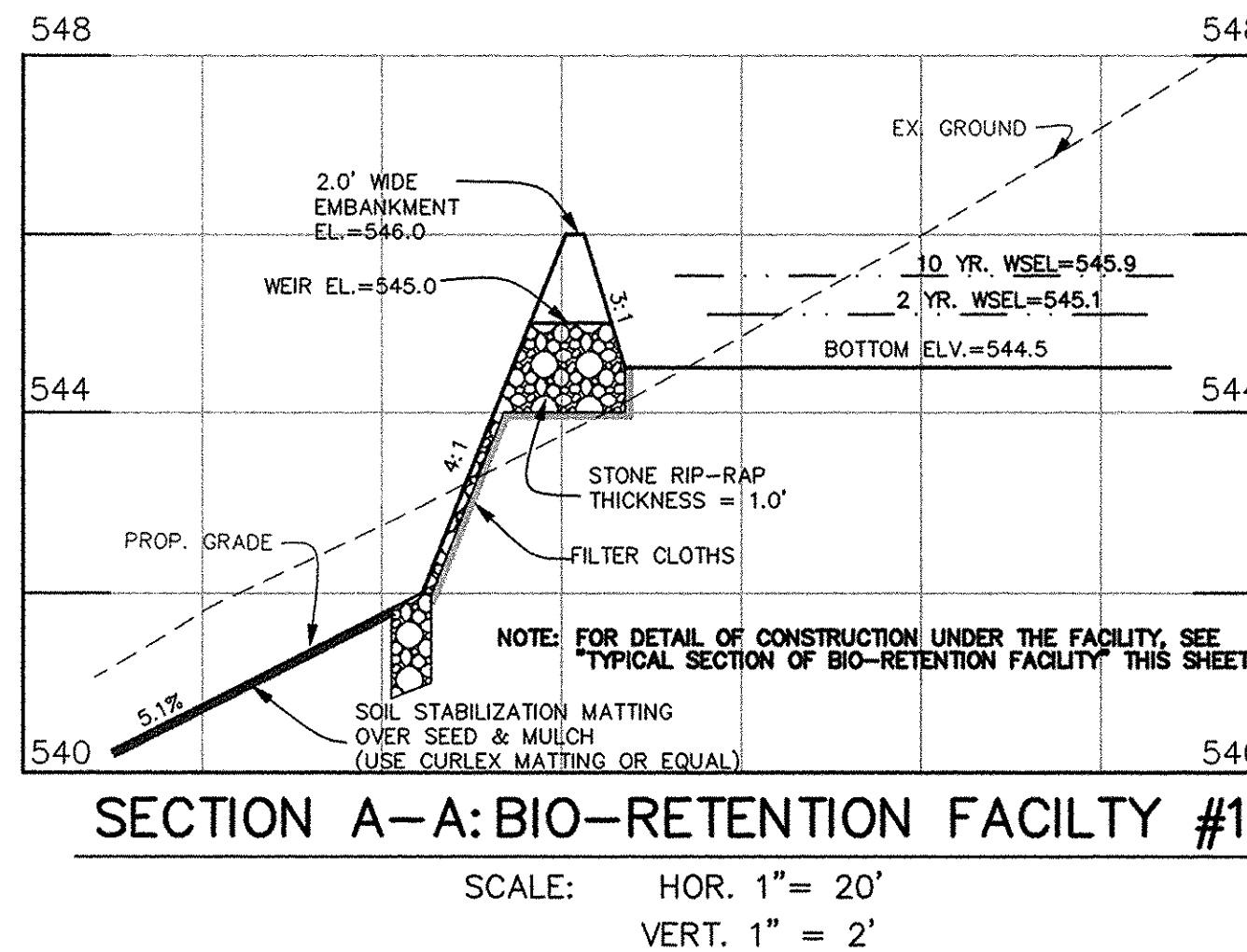
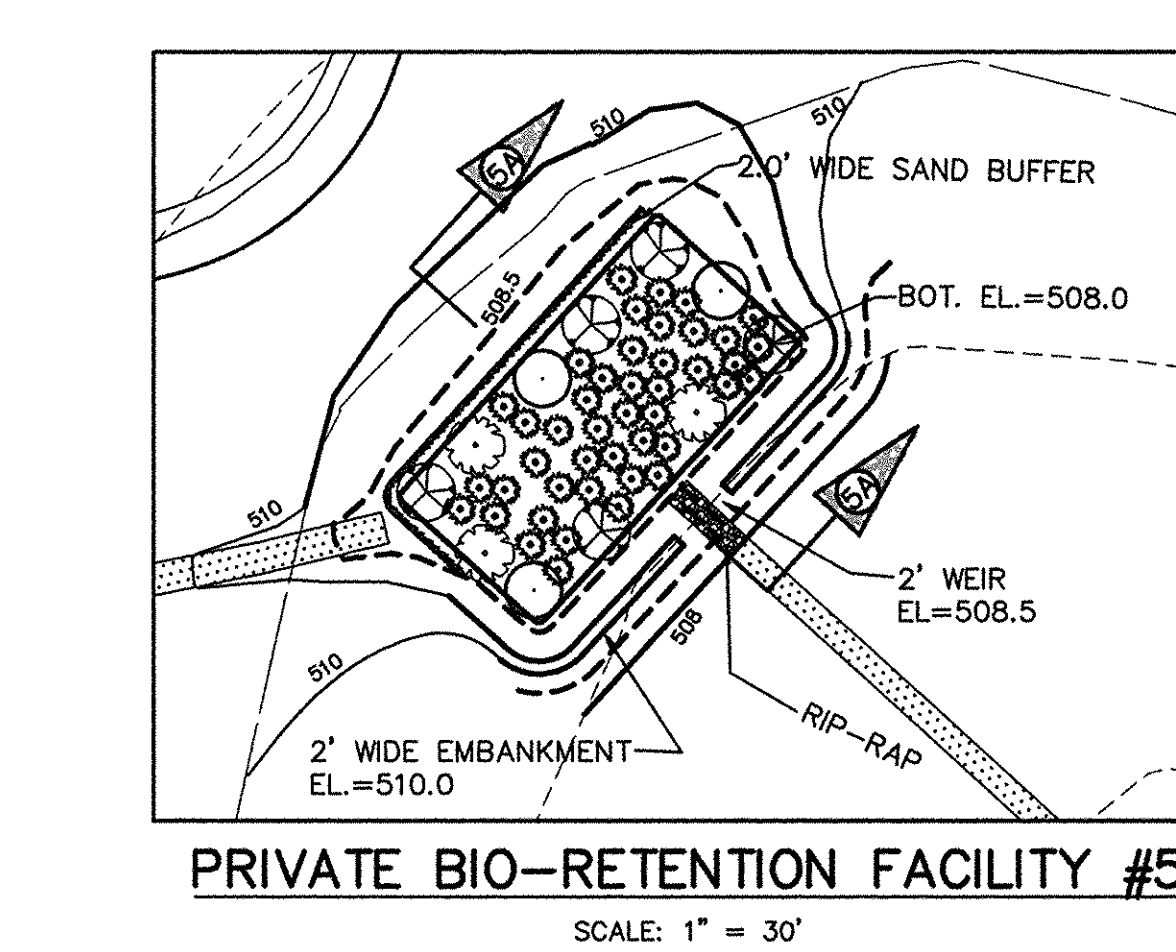
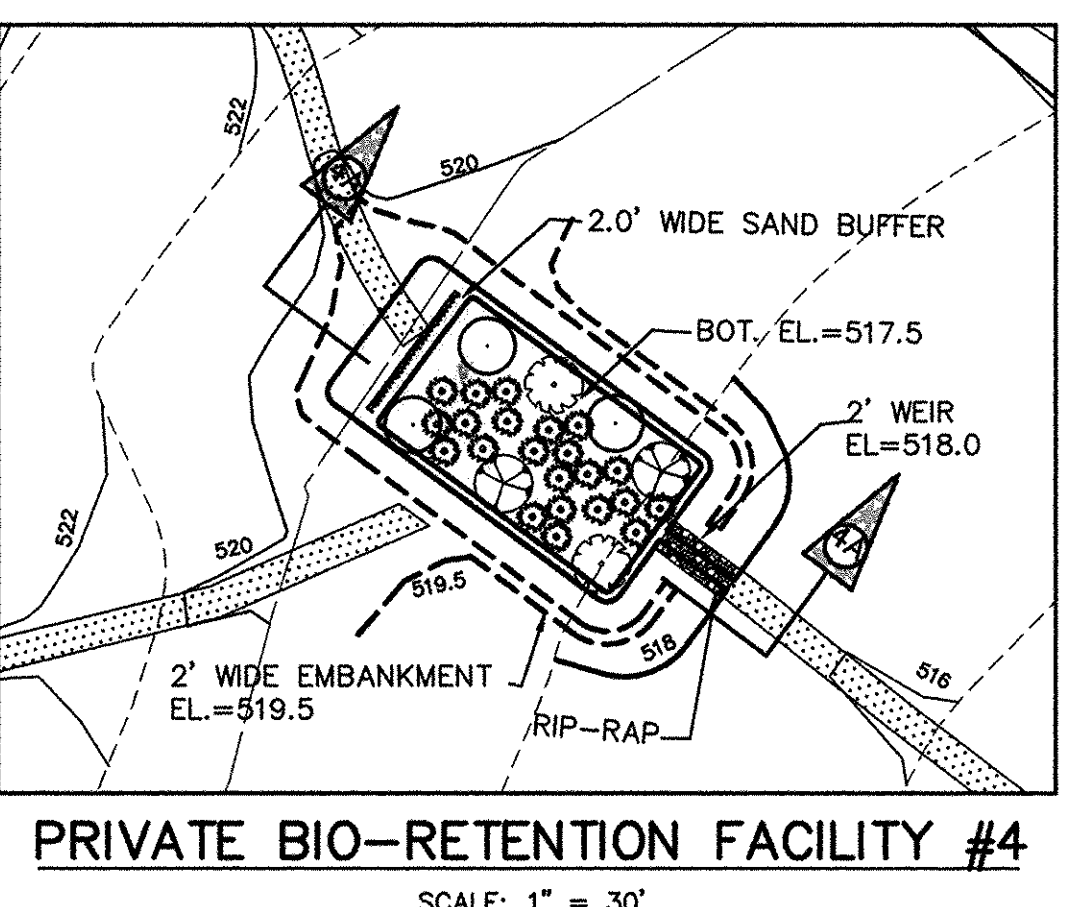
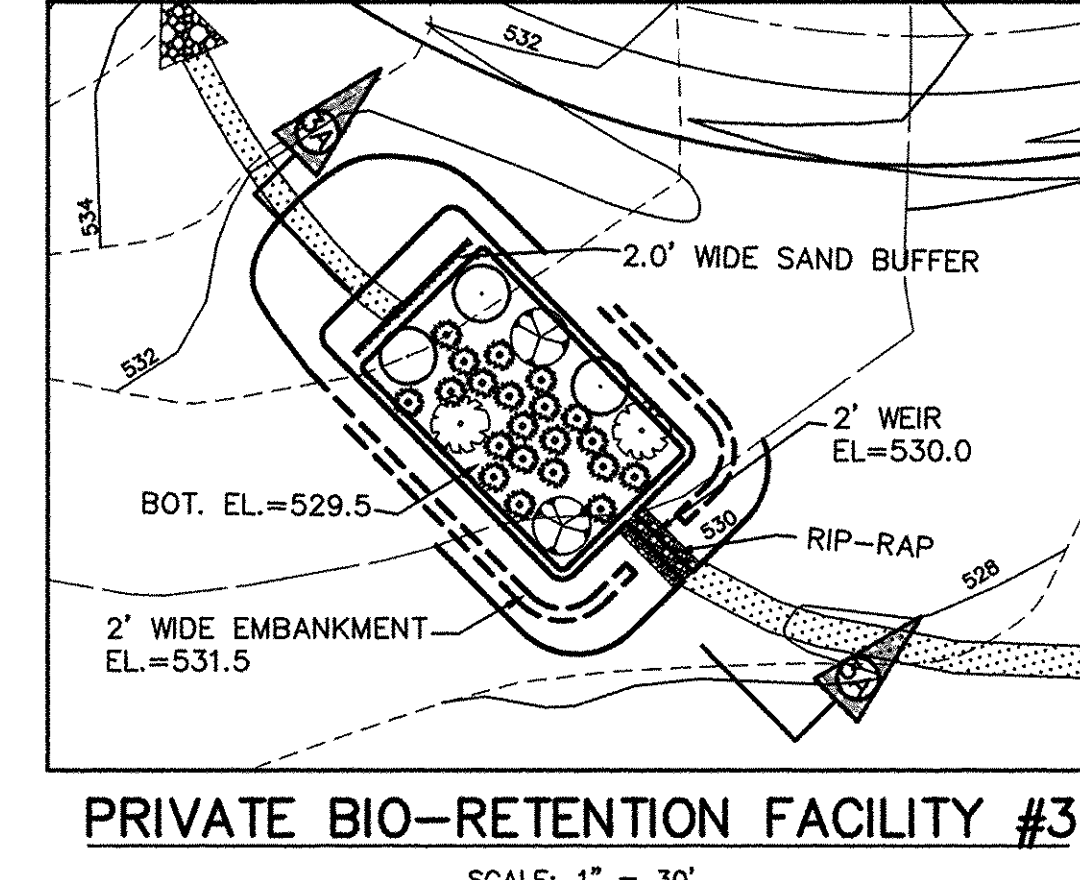
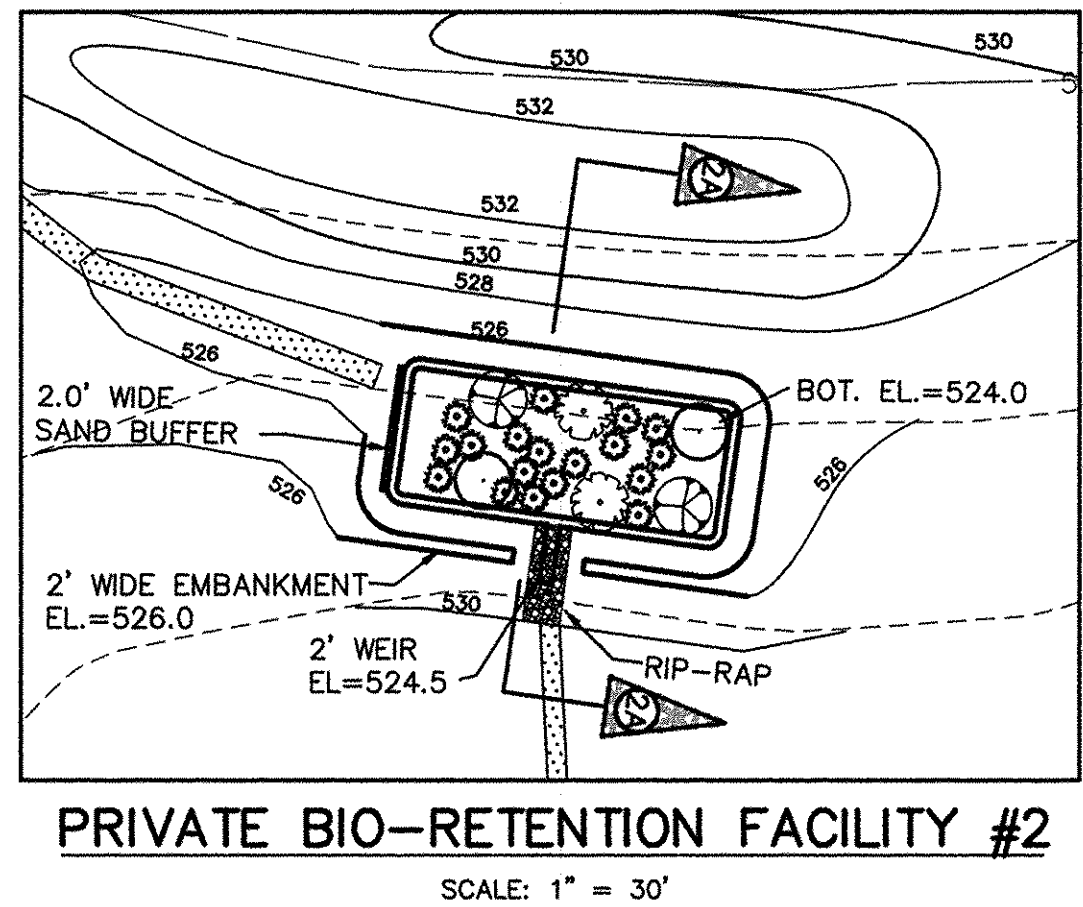
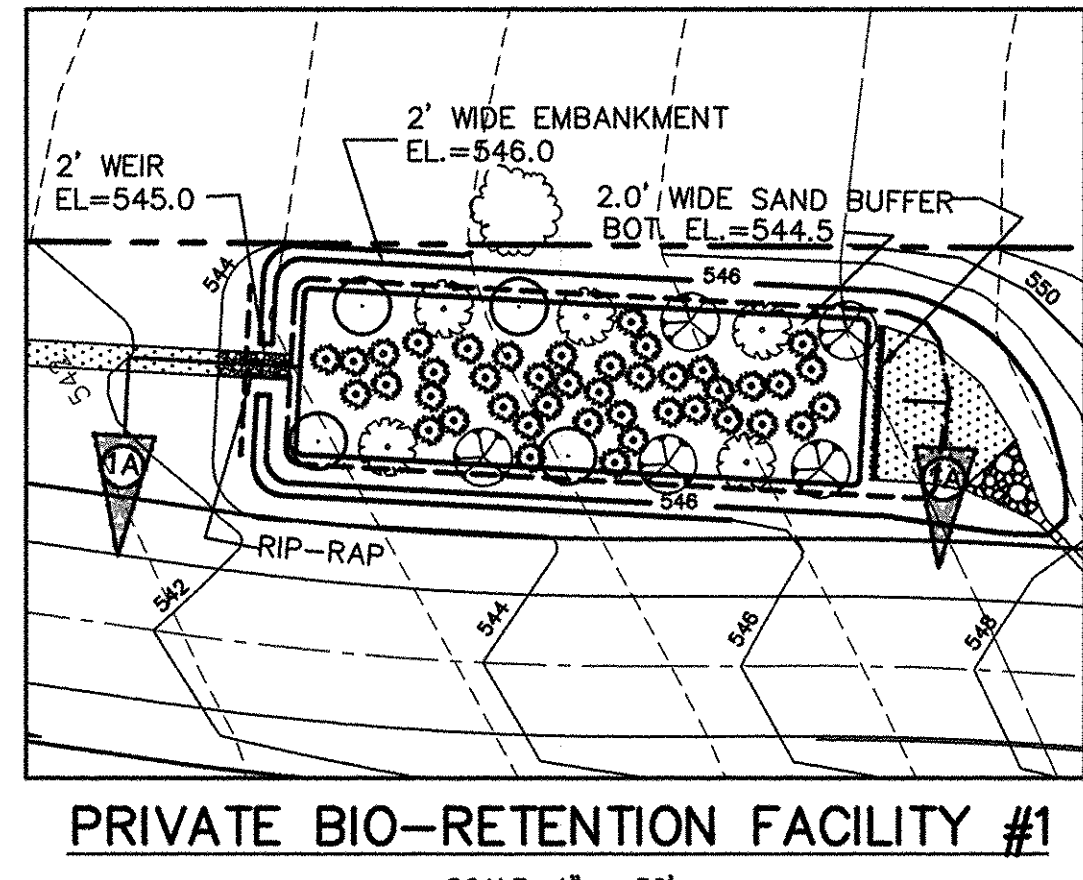
ONGOING MONITORING AND MAINTENANCE IS VITAL TO THE OVERALL SUCCESS OF BIORETENTION AREAS. ANNUAL MAINTENANCE WILL BE REQUIRED FOR PLANT MATERIAL, MULCH LAYER, AND SOIL LAYER.

MAINTENANCE REQUIREMENTS WILL VARY DEPENDING ON THE IMPORTANCE OF AESTHETICS. SOIL AND MULCH LAYER MAINTENANCE WILL MOST LIKELY BE LIMITED TO CORRECTING AREAS OF EROSION. AS AN OPTION, MULCH CAN BE ADDED TO THE BIORETENTION AREA, OR THE MULCH LAYER CAN BE REPLACED EVERY TWO TO THREE YEARS IN THE SPRING. WHEN THE MULCH LAYER IS REPLACED, THE PREVIOUS LAYER SHOULD BE REMOVED FIRST. PLANTING MATERIAL UP-KEEP WILL INCLUDE ADDRESSING PROBLEMS ASSOCIATED WITH DISEASE OR INSECT INFESTATIONS, REPLACING DEAD PLANT MATERIAL, AND ANY NECESSARY PRUNING.

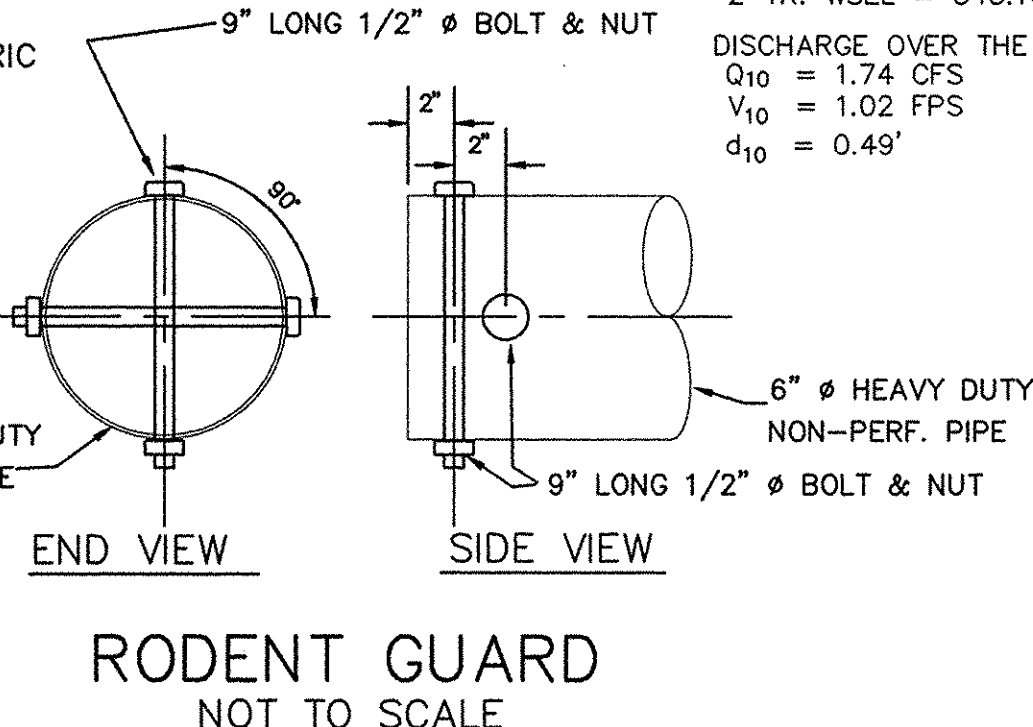
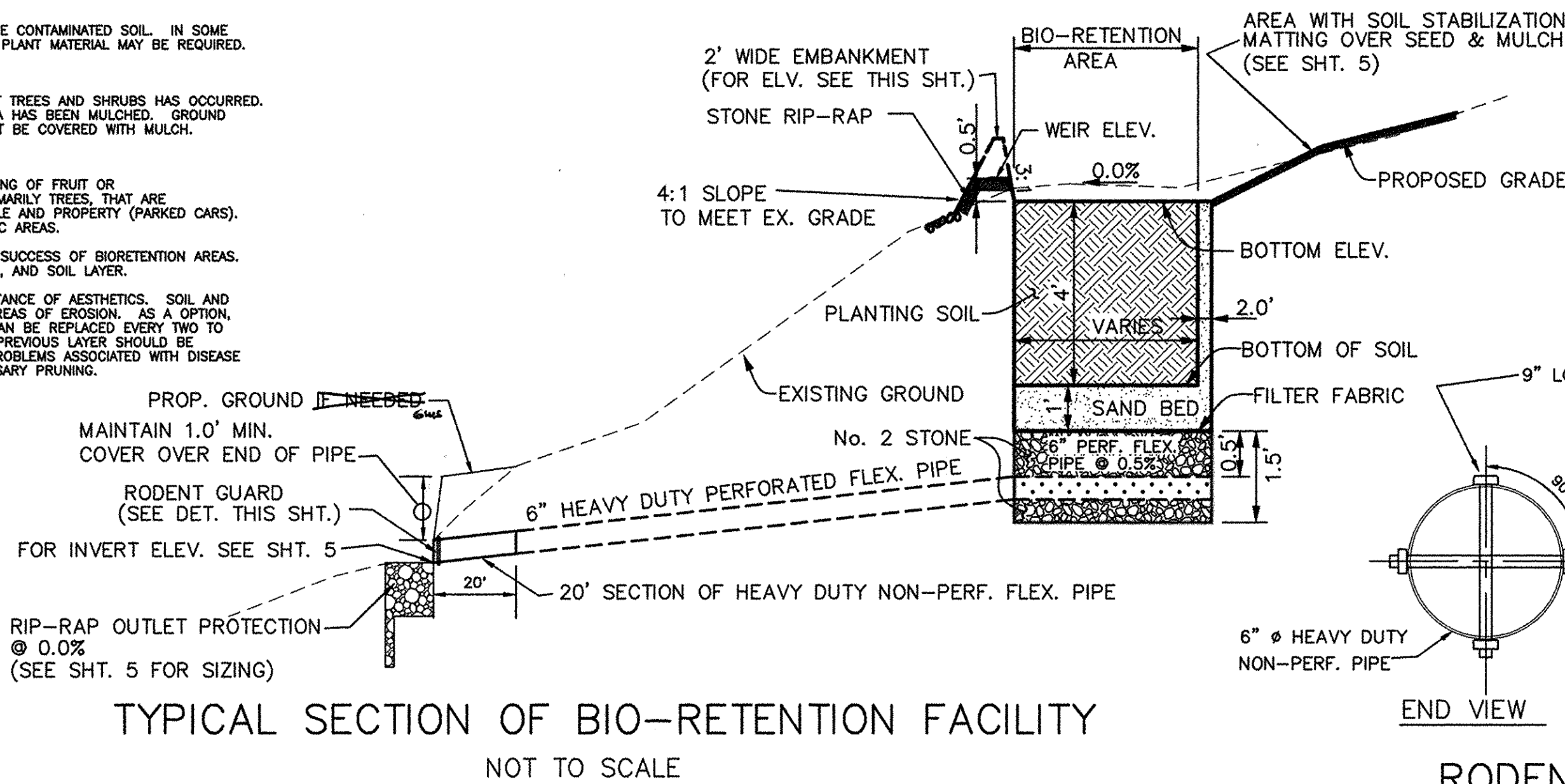
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 (Signature) DATE 12/19/98
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 (Signature) DATE 12/19/98
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: (Signature) DATE 12/19/98
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



NOTES: DENOTES AREA TO BE LINED WITH SOIL STABILIZATION MATTING OVER SEED & MULCH (USE CURLEX MATTING OR EQUAL).



BIO-RETENTION FACILITY #1	BIO-RETENTION FACILITY #2	BIO-RETENTION FACILITY #3
BOTTOM DIM.: 26' x 88'	BOTTOM DIM.: 20' x 50'	BOTTOM DIM.: 27' x 45'
BOT. EL. = 544.50	BOT. EL. = 524.0	BOT. EL. = 529.50
WEIR EL. = 545.0	WEIR EL. = 524.5	WEIR EL. = 530.0
WEIR LENGTH = 2.0'	WEIR LENGTH = 2.0'	WEIR LENGTH = 2.0'
EMBANKMENT EL. = 546.0	EMBANKMENT EL. = 526.0	EMBANKMENT EL. = 531.50
SIDE SLOPE: 3:1	SIDE SLOPE: 3:1	SIDE SLOPE: 3:1
10 YR. WSEL = 545.49	10 YR. WSEL = 525.27	10 YR. WSEL = 530.99
2 YR. WSEL = 545.10	2 YR. WSEL = 524.89	2 YR. WSEL = 530.44
DISCHARGE OVER THE WEIR	DISCHARGE OVER THE WEIR	DISCHARGE OVER THE WEIR
Q ₁₀ = 1.74 CFS	Q ₁₀ = 3.50 CFS	Q ₁₀ = 4.94 CFS
V ₁₀ = 1.02 FPS	V ₁₀ = 1.05 FPS	V ₁₀ = 0.99 FPS
d ₁₀ = 0.49'	d ₁₀ = 0.77'	d ₁₀ = 0.99'
BIO-RETENTION FACILITY #4	BIO-RETENTION FACILITY #5	
BOTTOM DIM.: 25' x 45'	BOTTOM DIM.: 30' x 60'	
BOT. EL. = 517.5	BOT. EL. = 508.0	
WEIR EL. = 518.0	WEIR EL. = 508.5	
WEIR LENGTH = 2.0'	WEIR LENGTH = 2.0'	
EMBANKMENT EL. = 519.5	EMBANKMENT EL. = 510.0	
SIDE SLOPE: 3:1	SIDE SLOPE: 3:1	
10 YR. WSEL = 518.75	10 YR. WSEL = 509.38	
2 YR. WSEL = 518.27	2 YR. WSEL = 508.83	
DISCHARGE OVER THE WEIR	DISCHARGE OVER THE WEIR	
Q ₁₀ = 1.74 CFS	Q ₁₀ = 3.41 CFS	
V ₁₀ = 1.02 FPS	V ₁₀ = 1.07 FPS	
d ₁₀ = 0.49'	d ₁₀ = 0.75'	

REVISION	
NO	DATE
0	6/98
1	8/10/98
2	10/14/98

SUBMISSION TO COUNTY FOR REVIEW AND APPROVAL.
 REV. PER COUNTY'S COMMENTS DATED 8/3/98.
 REV. PER COUNTY'S COMMENTS DATED 10/2/98.

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

PROJECT: **WELLINGTON WEST SECTION TWO**
 (S-98-03, WP-98-72, P-98-24)

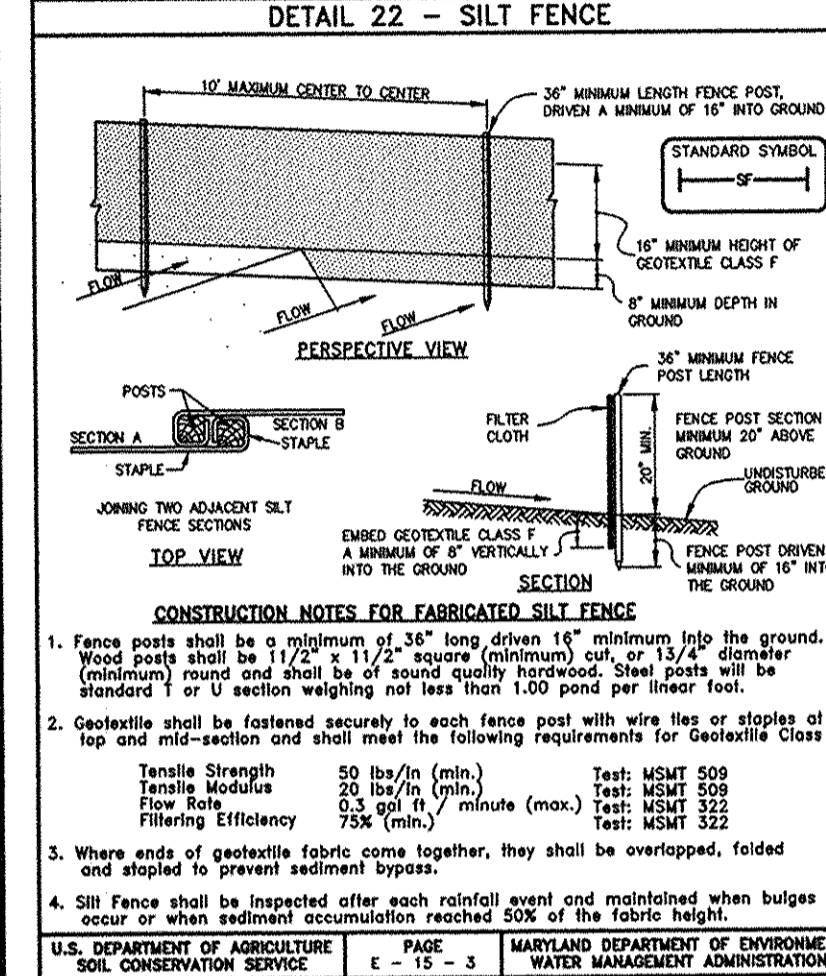
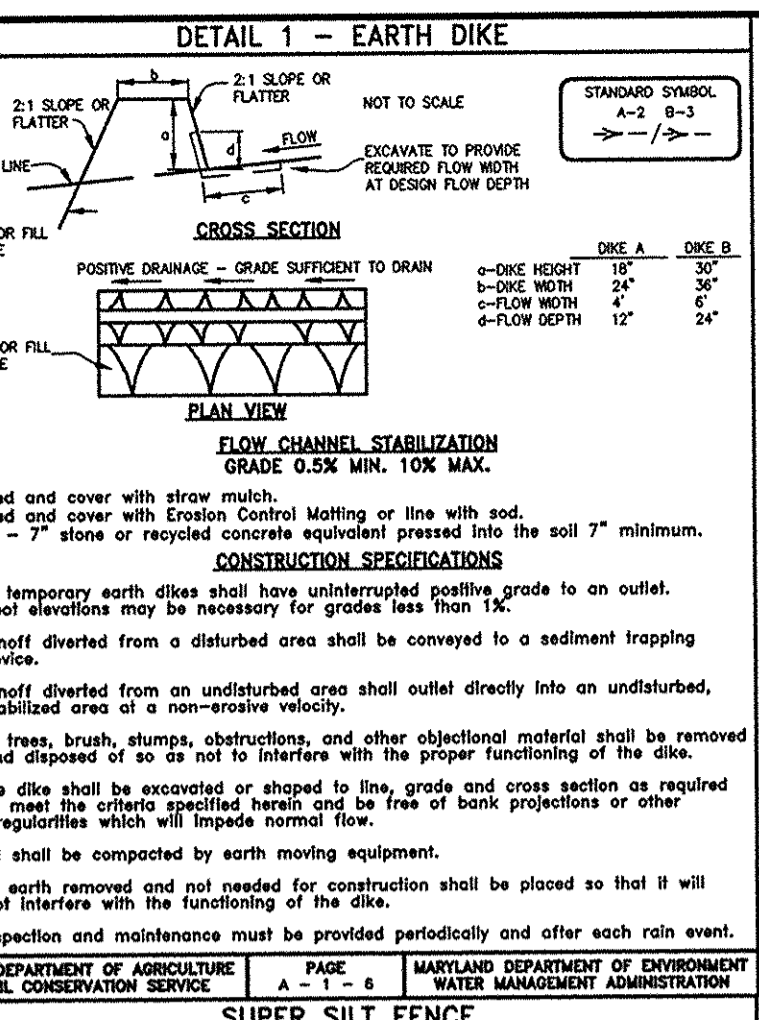
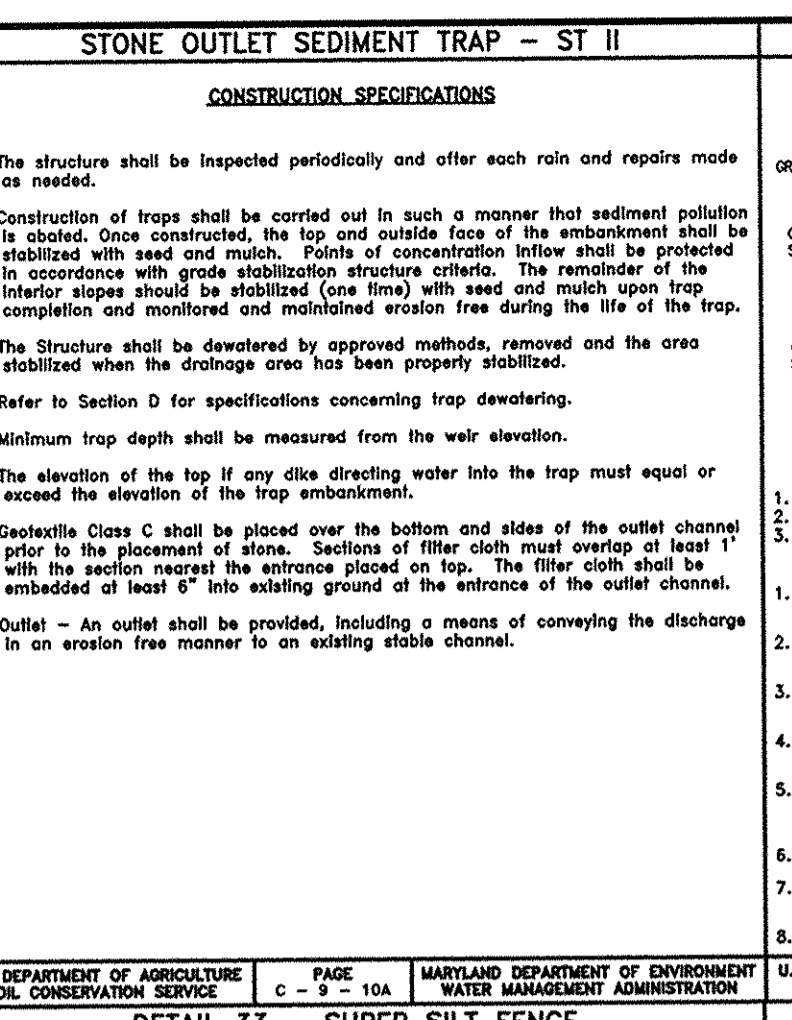
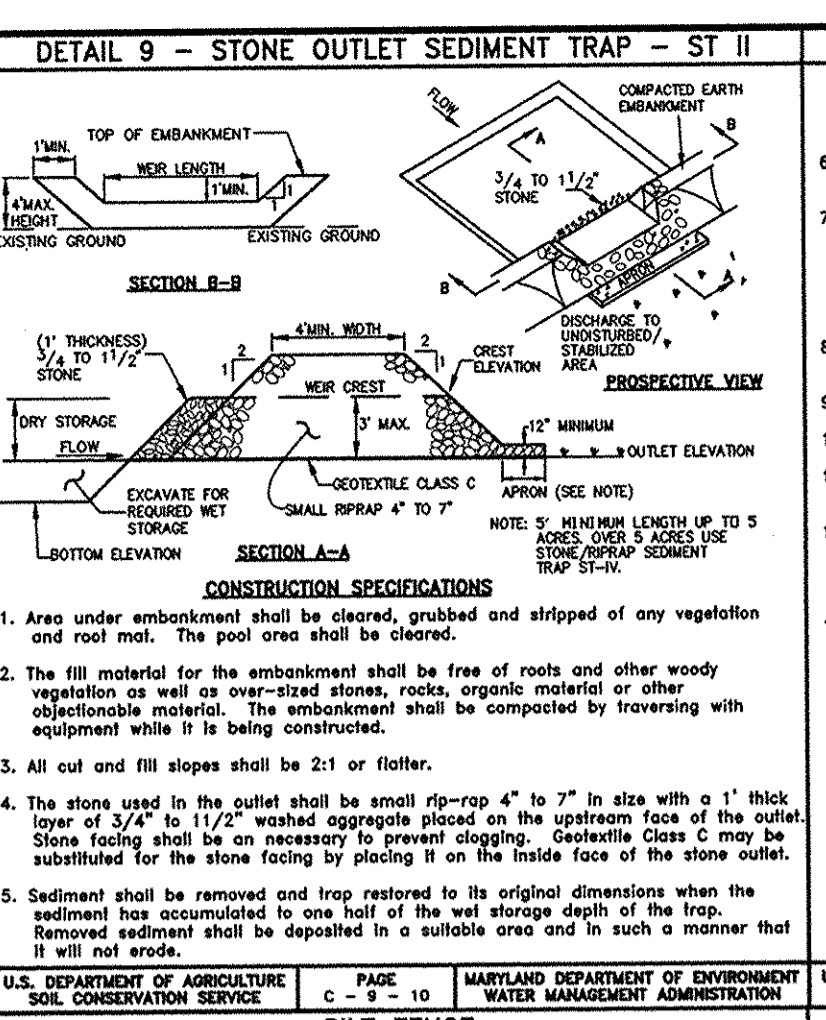
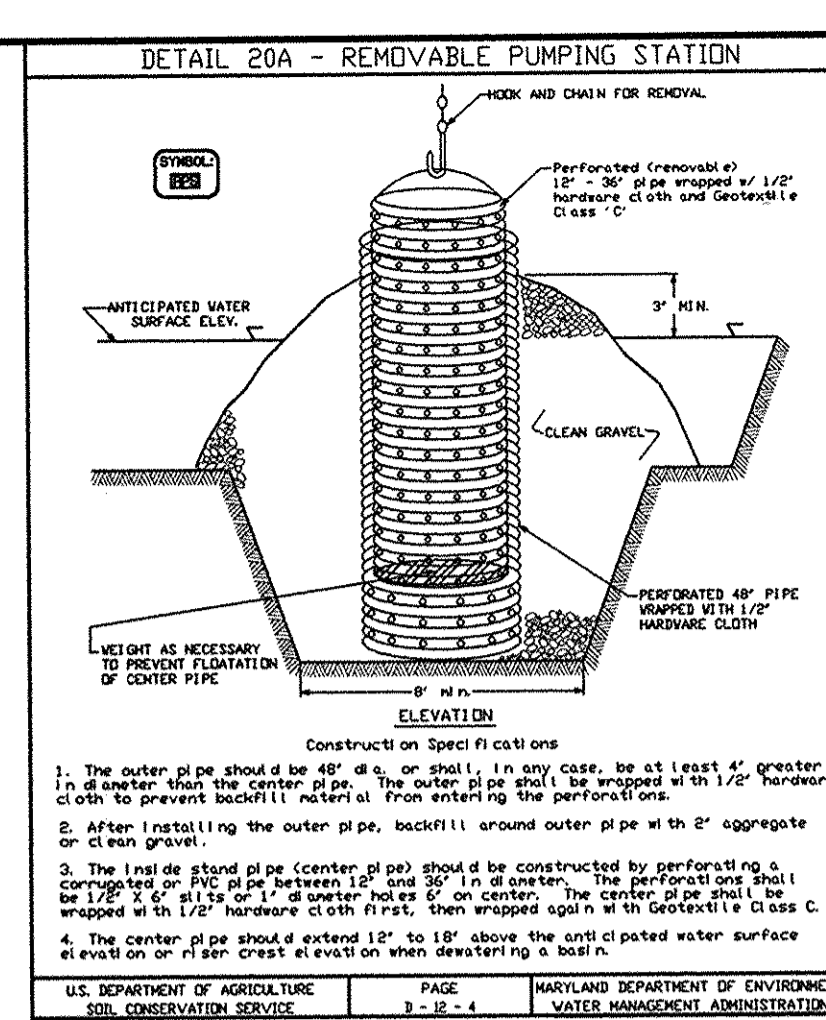
OWNER/DEVELOPER: BPMB ASSOCIATES, L.L.C.
 15298 UNION CHAPEL ROAD
 WOODBINE, MARYLAND 21797
 (410) 442-2101

LOCATION: TAX MAP 14 - PART OF PARCEL 222, PARCELS 68 & 69
 4th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

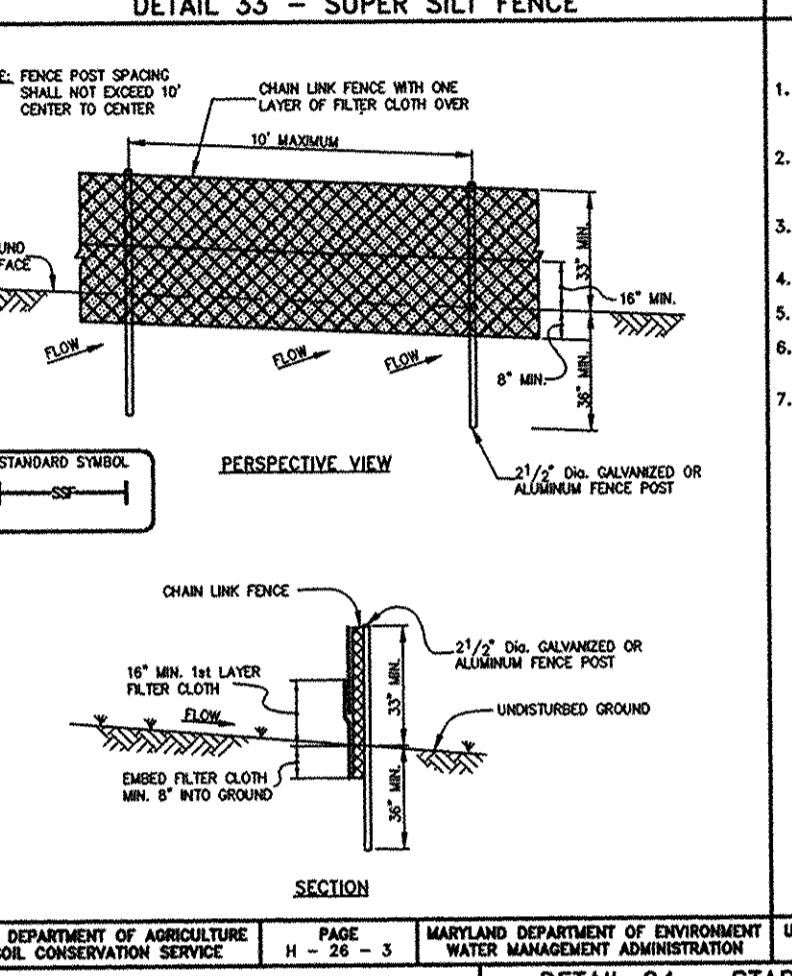
TITLE: **BIO-RETENTION FACILITY NOTES AND DETAILS**

DATE: APRIL 1998 PROJECT NO. 1131
 SCALE: AS SHOWN DRAWING .8 OF 12

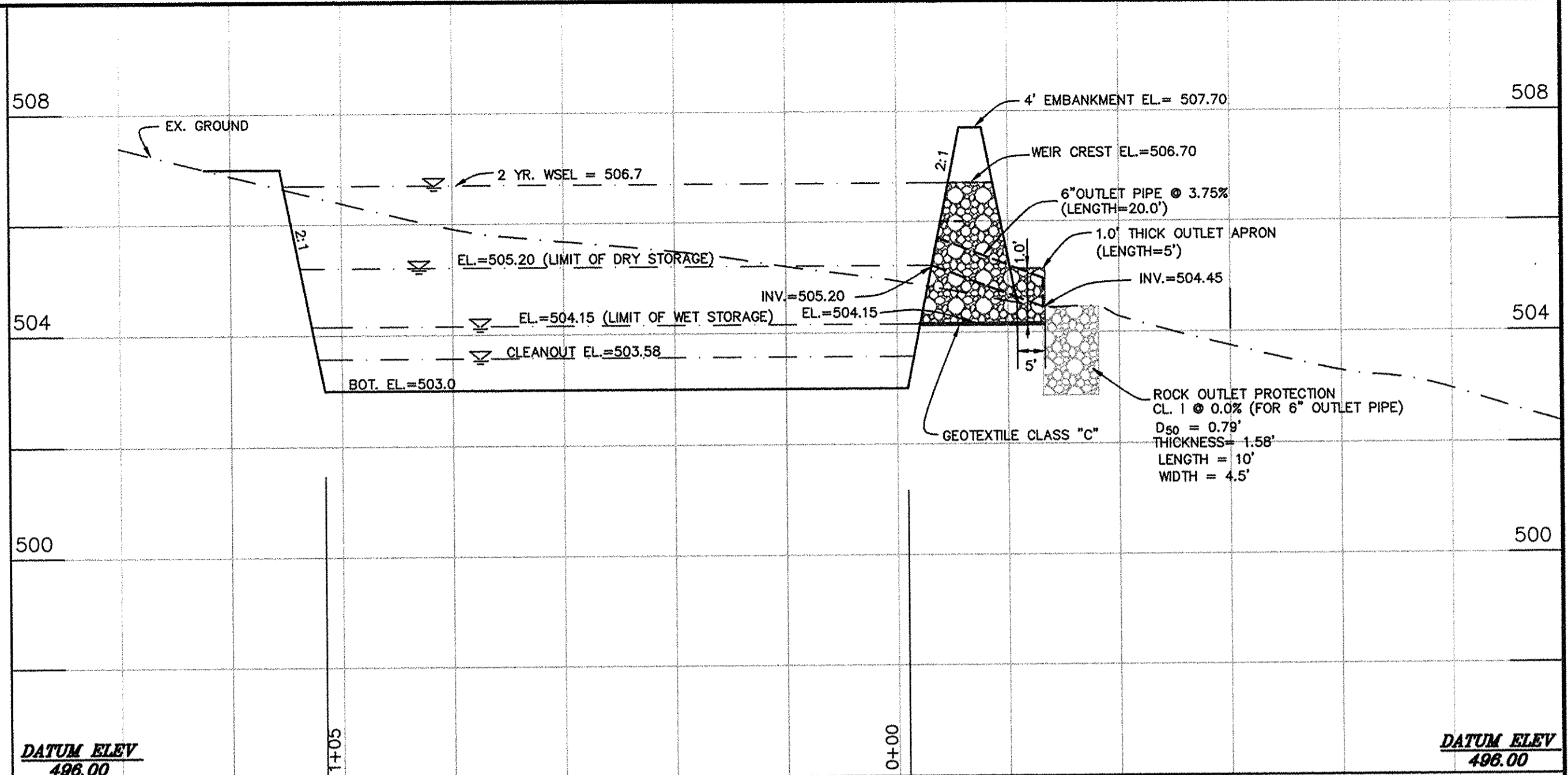
DESIGN: YSL DRAFT: YSL CHECK: DAM



Slope Steadiness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet



Slope	Slopes	Slope Length (Maximum)	Silt Fence Length (Maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet



PERMANENT SEEDING NOTES

Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seeded Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. (If not previously loosened)

Soil Amendments: In lieu of soil test recommendations, use on the following schedules:

- Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sf).
- Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil.

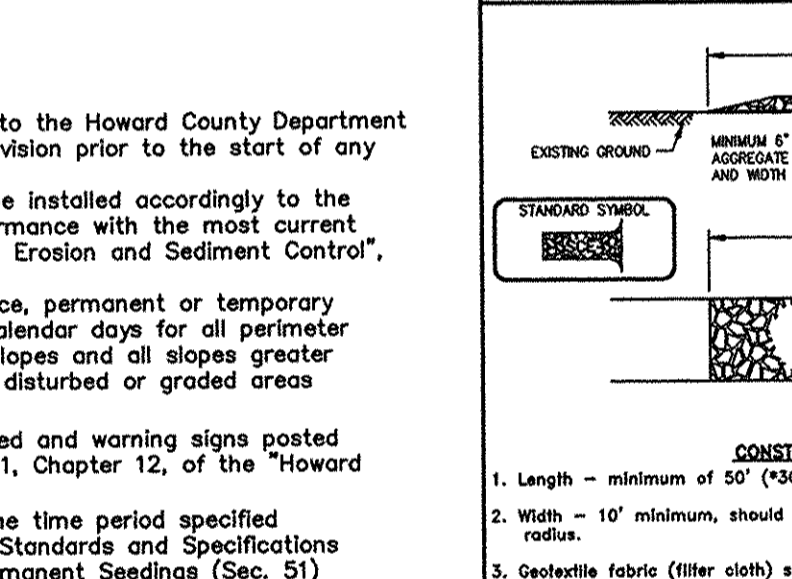
Seeding: For the periods March 1 through April 30 and August 1 through October 15, seed with 60 lbs per acre (1.4 lbs/1000 sf) of Kentucky 31 Tall Fescue. For the period May 1 through July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (0.05 lbs/1000 sf) of Weeping Lovegrass. During the period of October 16 through February 28, protect site by Option 1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option 2) use seed. 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 sf) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sf) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sf) for anchoring.

Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseedings.

SEDIMENT CONTROL NOTES

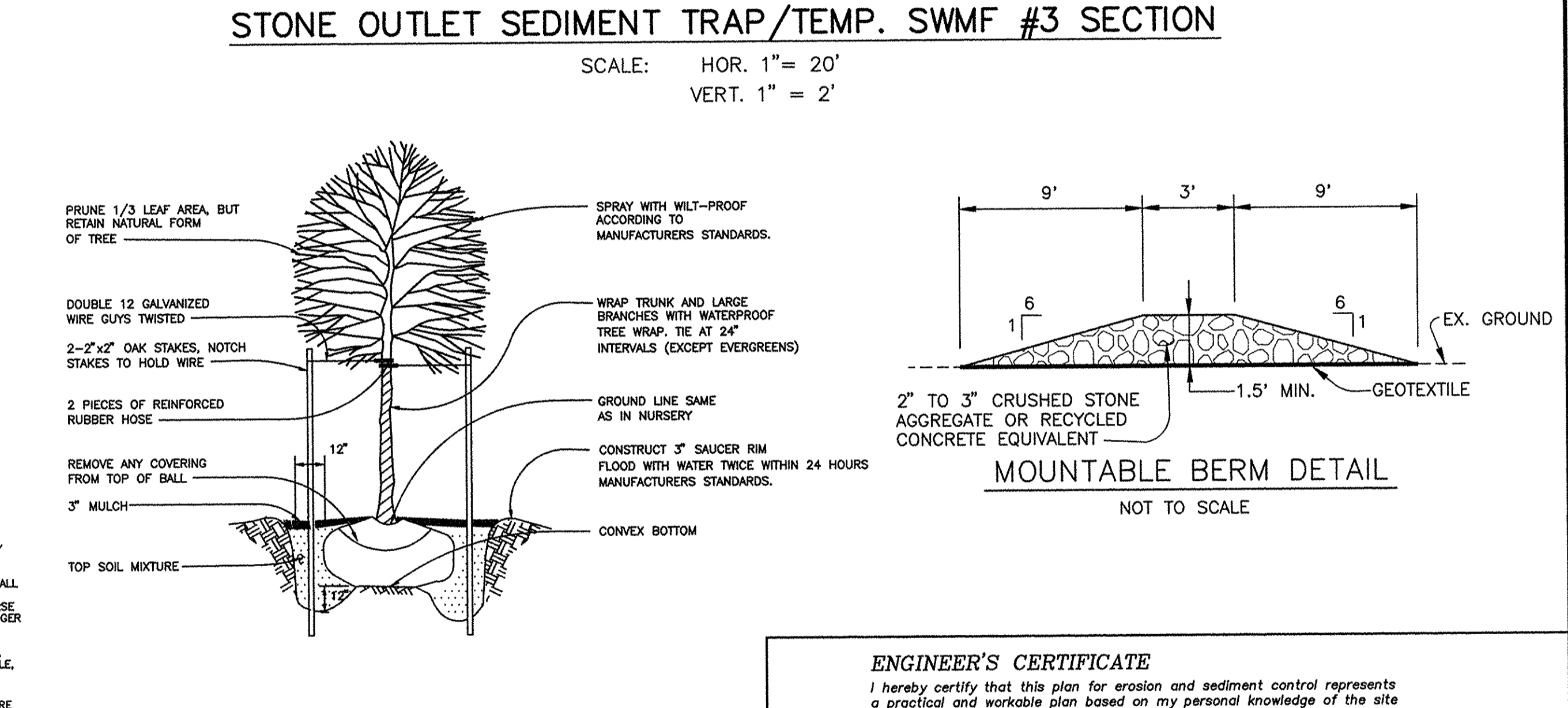
- A minimum of 48 hours notice must be given to the Howard County Department of Inspections and Permits, Sediment Control Division prior to the start of any construction (313-1855).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current Maryland Standards and Specifications for Soil Erosion and Sediment Control, and revisions thereto.
- Following initial soil disturbances or re-disturbances, 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, b) 14 calendar 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) Sod (Sec. 54), Temporary Seeding (Sec. 50) and Mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:
Total Area of Site: 86.31± acres
Area to be Disturbed: 9.98± acre
Area to be roofed or paved: 0.92± acre
Area to be vegetatively stabilized: 9.06± acre
Total Cut: 12.261 C.Y.
Total Fill: 12.261 C.Y.
Offsite Waste/Borrow Area Location: NA
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment controls must be provided, if deemed necessary by the Howard County DPM, Sediment Control Inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- Trenches for the construction of utilities is limited to three pipe lengths or that which can be back filled and stabilized within one working day, whichever is shorter.
- Quantities and estimates shown are for sediment control purposes only. Contractor shall prepare his/her own quantity estimates to his/her satisfaction.



21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

CONSTRUCTION AND MATERIAL SPECIFICATIONS

- 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-ARS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL 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. REPAIRABLE, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CONCRETE, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, TWIGS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
 - TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERBERIS, GRASSES, SLICK GRASS, JOHNSON GRASS, NUTCRACK, POISON IVY, TRISTLE, OR OTHERS AS SPECIFIED.
 - WHERE THE SUBSOIL IS EITHER ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-6 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. IT SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
 - ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS FROM THE APPROPRIATE FERTILIZER AND LIME ADJUSTMENTS REQUIRED TO BRING 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 OF 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 500 OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL, UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DEGRADATION OF PESTICIDE MATERIALS.
 - PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS.



TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.

Seeded Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. (If not previously loosened)

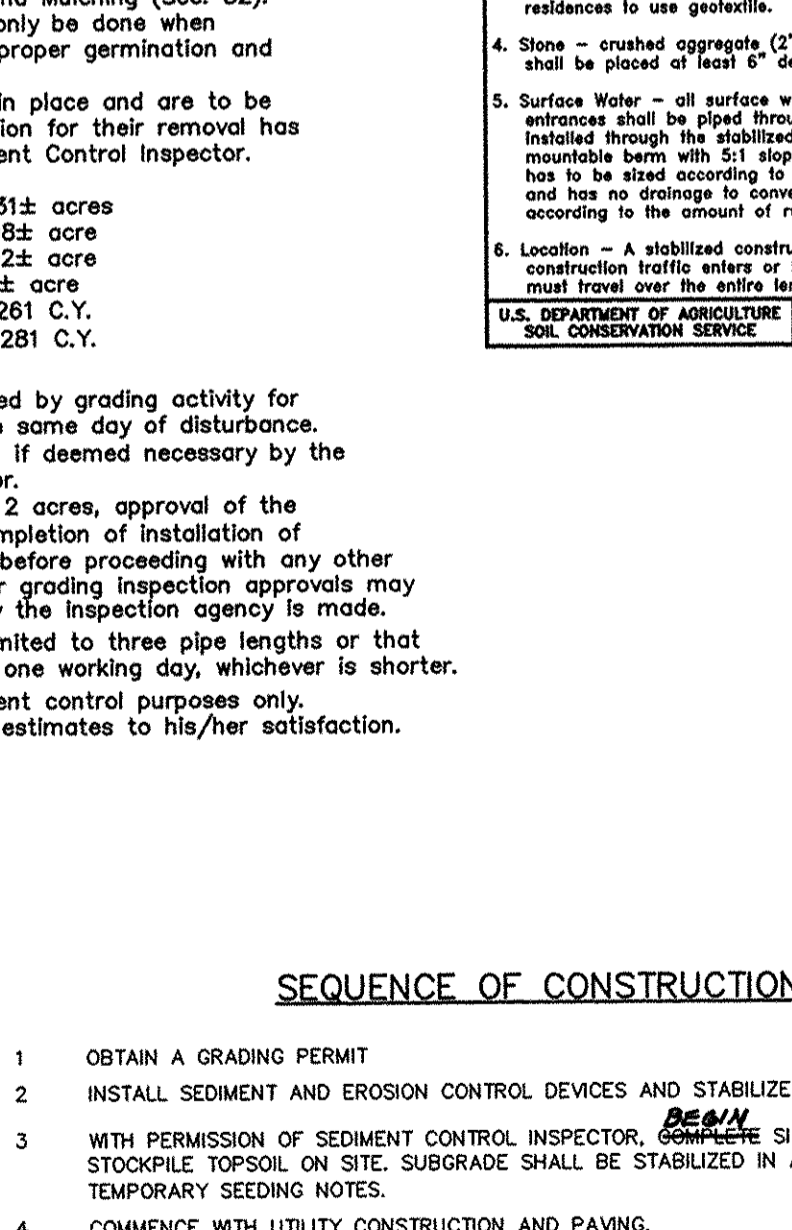
Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf).

Seeding: For periods March 1 through April 30 and from August 15 through November 15, seed with 2-1/2 bushel per acre of annual ryegrass (3.2 lbs/1000 sf). For the period May 1 through August 14, seed with 3 lbs per acre of Weeping Lovegrass (0.07 lbs/1000 sf). For the period of February 16 through February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sf) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sf) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sf) for anchoring.

Refer to the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control for rate and methods not covered.

Activity	Duration
1. OBTAIN A GRADING PERMIT	DAY 1
2. INSTALL SEDIMENT AND EROSION CONTROL DEVICES AND STABILIZE.	DAY 2-5
3. WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR, BEGIN SITE AND ROAD GRADING, STOCKPILE TOPSOIL ON SITE, SUBGRADE SHALL BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY SEEDING NOTES.	DAY 6-20
4. COMMENCE WITH UTILITY CONSTRUCTION AND PAVING.	DAY 21-30
5. FINAL GRADE, REDISTRIBUTE TOPSOIL AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDING NOTES. SEE TOPSOIL SPECIFICATIONS FOR FURTHER DETAILS.	DAY 31-35
6. INSTALL BIO-RETENTION FACILITIES, AND COMPLETE ANY REMAINING GRADING WHICH IS NOT STABILIZED IN ACCORDANCE WITH PERMANENT SEEDING NOTES.	DAY 36-41
7. PLANT BIO-RETENTION AREA WITH VEGETATION SPECIFIED PLANTING PLAN.	DAY 41-45
8. UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT AND EROSION CONTROL DEVICES AND STABILIZE AS NEEDED.	DAY 45-46



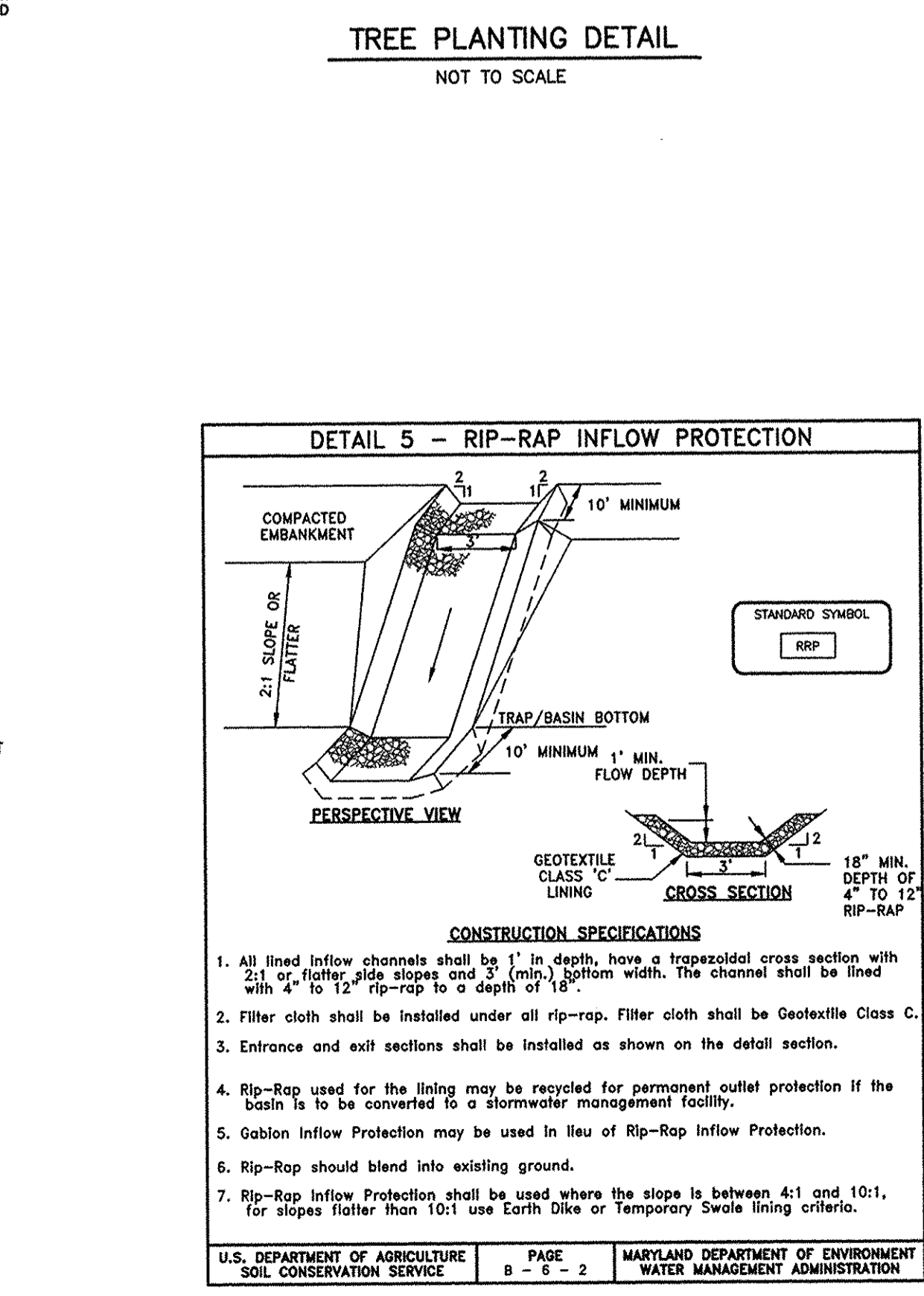
CONSTRUCTION SPECIFICATIONS

- All lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3" (min.) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 18".
- Filter cloth shall be installed under inflow rip-rap. Filter cloth shall be Geotextile Class C.
- Entrance and exit sections shall be installed as shown on the detail section.
- Rip-Rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.
- Gabion Inflow Protection may be used in lieu of Rip-Rap Inflow Protection.
- Rip-Rap should blend into existing ground.
- Rip-Rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Slope lining criteria.

CONSTRUCTION SPECIFICATIONS

- COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR ANY HAZARDOUS MATERIALS. SITES HAVING 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
 - COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS THAT ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 28.04.06.
 - COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHORUS, AND 0.2 PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS, THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
 - COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET.
 - COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB/1,000 SQUARE FEET, AND 1/3 THE NORMAL LIME APPLICATION RATE.

REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING, MD-VA, PUB. #1, COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTE, REVISED 1973.



ENGINEER'S CERTIFICATE

I hereby certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Donald M. Mason 11/2/98
Date

DEVELOPER'S CERTIFICATE

I/We certify that all development and construction will be done in accordance with this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction of this 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 onsite inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.

Bruce F. Brundel 11/8/98
Signature of Developer Date

NO	DATE	REVISION
0	6/98	SUBMISSION TO COUNTY FOR REVIEW AND APPROVAL.
1	8/10/98	REV. PER COUNTY COMMENTS DATED 8/3/98.
2	10/14/98	REV. PER COUNTY COMMENTS DATED 8/2/98.

BENCHMARK ENGINEERING INC.
ENGINEERS • LAND SURVEYORS • PLANNERS

8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-8105 FAX: 410-465-6644

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Howard S. Shick 11/2/98
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Richard Blood 11/4/98
DATE

APPROVED: THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Clayton L. Shick 11/24/98
DATE

APPROVED: REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
Clayton L. Shick 11/24/98
DATE

OWNER/DEVELOPER: BPMB ASSOCIATES, LLC.
15298 UNION CHAPEL ROAD
WOODBINE, MARYLAND 21797
(410) 442-2101

PROJECT: WELLINGTON WEST
SECTION TWO
(S-98-03, WP-98-72, P-98-24)

LOCATION: TAX MAP 14 - PART OF PARCEL 222, PARCELS 68 & 69
4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: EROSION & SEDIMENT CONTROL NOTES AND DETAILS

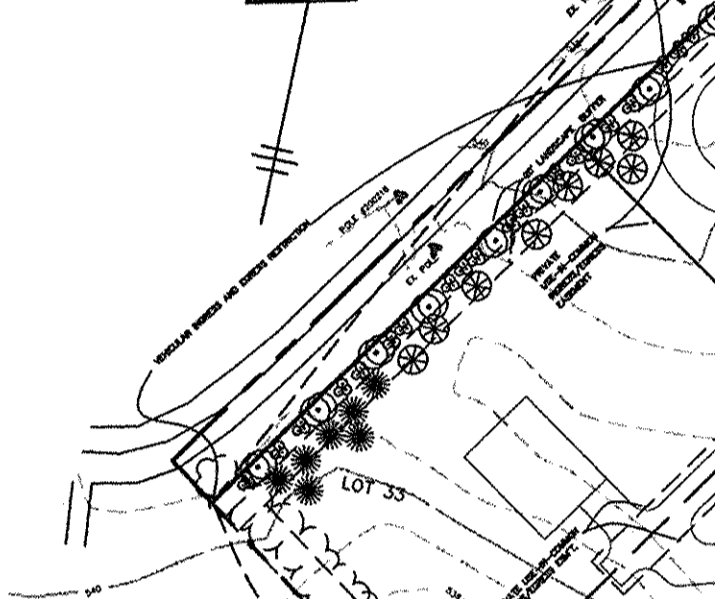
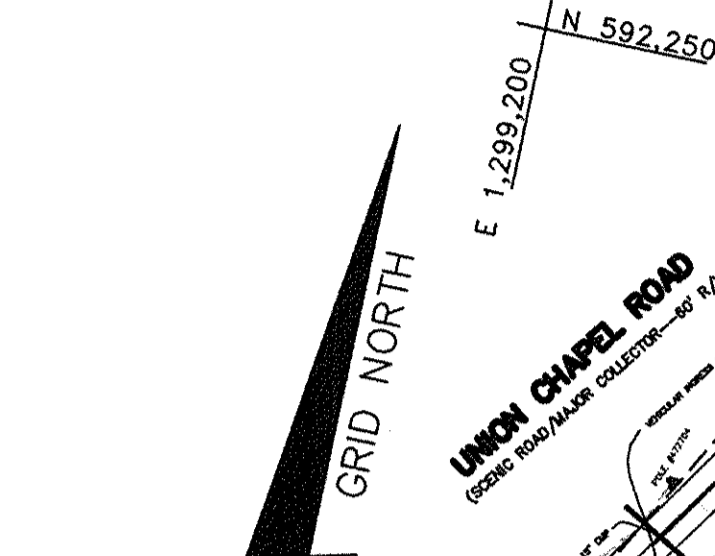
DATE: APRIL 1998 PROJECT NO. 1131

DESIGN: YSL DRAFT: YSL CHECK: dam SCALE: AS SHOWN DRAWING 9 OF 12

NOTE: SEE BIO-RETENTION FACILITY DETAILS FOR ADDITIONAL PLANTING REQUIREMENT AND PLANT LIST.

LEGEND

- CONTOUR INTERVAL 2 FEET
- EXISTING CONTOUR
- EXISTING TREE LINE
- PROPOSED HOUSE LOCATION (APPROXIMATION)
- FOREST CONSERVATION EASEMENT
- LIMIT OF METLAND
- LANDSCAPE EDGE SCHEDULE NO.



JOHN D. BEWLEY
P. 66
266/123
ZONE: RC-DEO

DEVELOPER'S/BUILDER'S CERTIFICATE

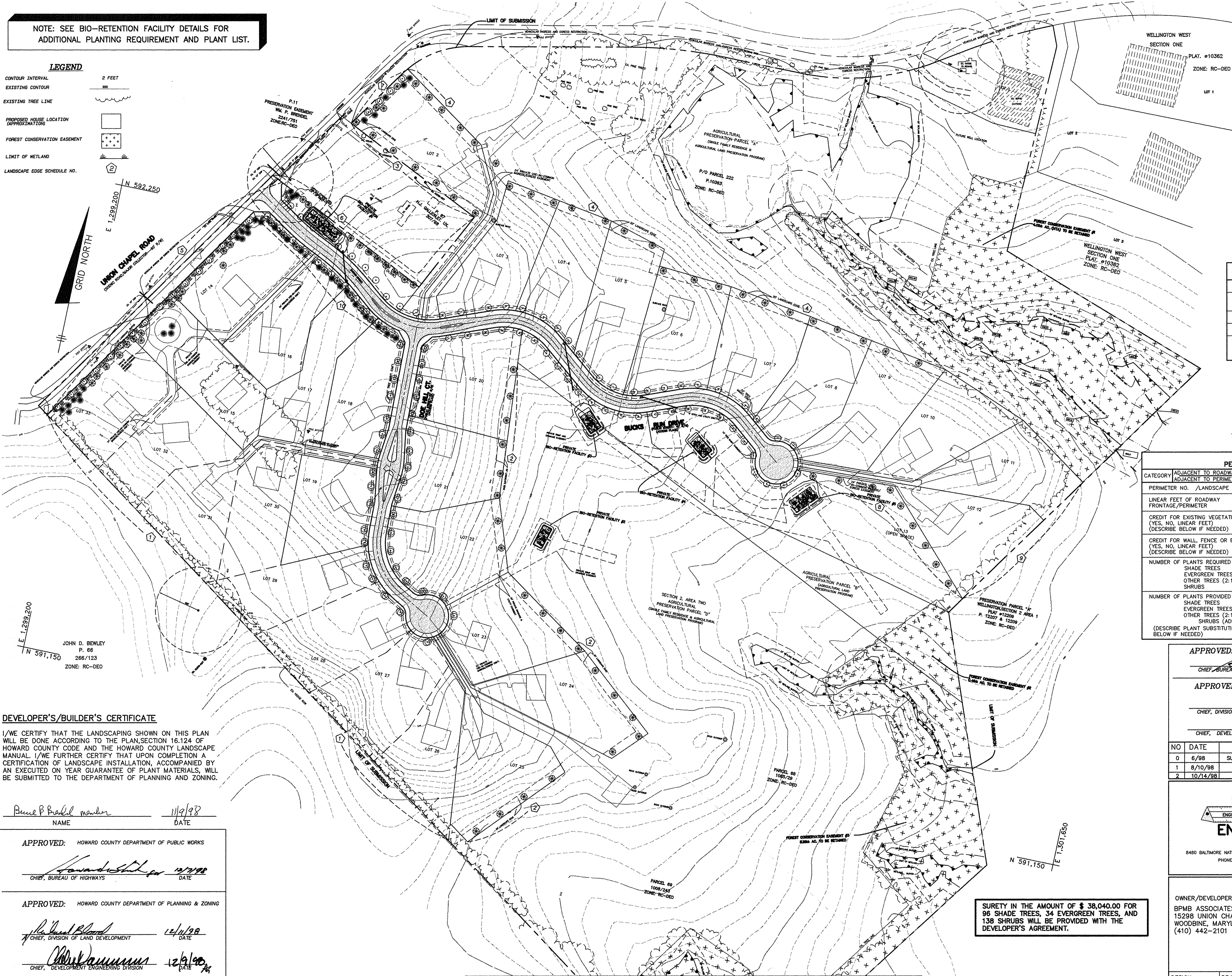
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ON YEAR GUARANTEE OF PLANT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

Bruce B. Baskin
NAME DATE 11/9/98

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Howard Stoltz
CHIEF, BUREAU OF HIGHWAYS DATE 12/2/98

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
R. Paul Blood
CHIEF, DIVISION OF LAND DEVELOPMENT DATE 12/11/98

John D. Bewley
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 12/9/98



STREET TREE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS
⊙	68	ACER SACCHARUM (Sugar Maple)	2 1/2" MIN. CAL. B & B FULL HEAD
⊙	55	ACER RUBRUM (October Glory Red Maple)	2 1/2" MIN. CAL. B & B FULL HEAD

PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS
⊗	96	PLATANUS ACERFOLIA (Bloodgood London Plane)	2 1/2" MIN. CAL. B & B FULL HEAD
⊗	34	PINUS STROBUS (Eastern White Pine)	6" - 8" HT. B & B
⊗	138	FORSYTHIA SUSPENSIVAR. "SIEBOLDII" (SHOWY BORDER FORSYTHIA)	2' - 4' HEIGHT

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

SWMP NO.	LINEAR FEET OF PERIMETER				
	#1	#2	#3	#4	#5
NUMBER OF TREES REQUIRED	270	476	215	200	247
SHADE TREES (1:50)	5	10	4	4	5
EVERGREEN TREES (1:40)	7	12	5	5	6
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	YES	NO	NO	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO	NO	NO	NO	NO
NUMBER OF TREES PROVIDED					
SHADE TREES					
EVERGREEN TREES					
OTHER TREES (2:1 SUBSTITUTE)					

* ALTERNATIVE COMPLIANCE: PLANTING WITHIN PROPOSED BIO-RETENTION FACILITIES WHICH WILL IMPROVE ENVIRONMENTAL QUALITY.

STREET TREE REQUIREMENTS
REQUIRED: 1 PER 40' O.C. AT 4930' = 123
PROVIDED: 123

LANDSCAPING NOTES

- THE DEVELOPER SHALL BE RESPONSIBLE FOR THE STREET TREES, STORMWATER MANAGEMENT POND PLANTING, AND THE PRESERVATION OF THE PERIMETER VEGETATION AS SHOWN ON THESE PLANS.

SCHEDULE A PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAY										ADJACENT TO PERIMETER PROPERTIES									
	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	Ⓗ	Ⓘ	Ⓚ	Ⓐ	Ⓑ	Ⓒ	Ⓓ	Ⓔ	Ⓕ	Ⓖ	Ⓗ	Ⓘ	Ⓚ
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	1362	1256	360	1870	670	600	180	535	390	461	1362	1256	360	1870	670	600	180	535	390	461
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES	NO	NO	445'	NO	NO	NO	NO	390'	NO	YES	NO	NO	445'	NO	NO	NO	NO	390'	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED	0	21	6	24	13	10	4	9	0	9	0	21	6	24	13	10	4	9	0	9
SHADE TREES	-	-	-	-	17	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-
EVERGREEN TREES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OTHER TREES (2:1 SUBSTITUTE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SHRUBS (ADDITIONAL)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NUMBER OF PLANTS PROVIDED	0	21	6	24	13	10	4	9	0	9	0	21	6	24	13	10	4	9	0	9
SHADE TREES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EVERGREEN TREES	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OTHER TREES (2:1 SUBSTITUTE)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SHRUBS (ADDITIONAL)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)																				

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Howard Stoltz
CHIEF, BUREAU OF HIGHWAYS DATE 12/2/98

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

R. Paul Blood
CHIEF, DIVISION OF LAND DEVELOPMENT DATE
John D. Bewley
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

NO	DATE	REVISION
0	6/98	SUBMISSION TO COUNTY FOR REVIEW AND APPROVAL.
1	8/10/98	REV. PER COUNTY'S COMMENTS DATED 8/3/98.
2	10/14/98	REV. PER COUNTY'S COMMENTS DATED 10/2/98.

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

SURETY IN THE AMOUNT OF \$ 38,040.00 FOR 96 SHADE TREES, 34 EVERGREEN TREES, AND 138 SHRUBS WILL BE PROVIDED WITH THE DEVELOPER'S AGREEMENT.

OWNER/DEVELOPER: BPMB ASSOCIATES, LLC
15298 UNION CHAPEL ROAD
WOODBINE, MARYLAND 21797
(410) 442-2101

PROJECT: WELLINGTON WEST
SECTION TWO
(S-98-03, WP-98-72, P-98-24)

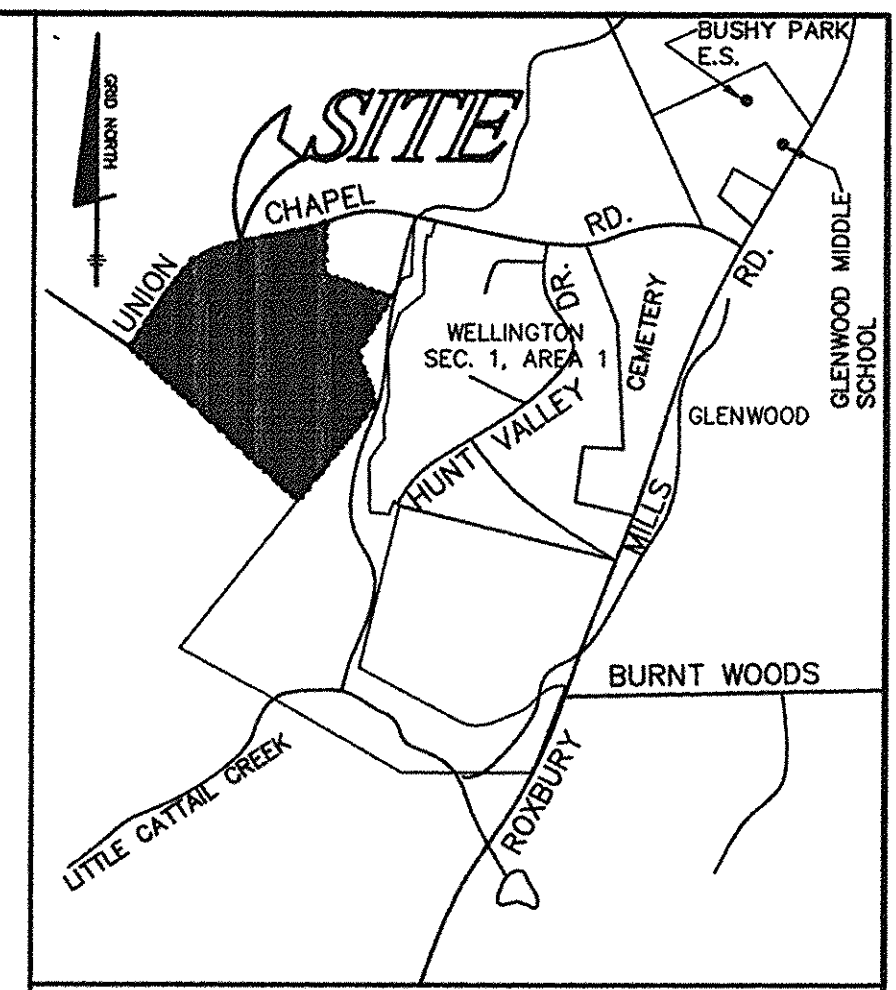
LOCATION: TAX MAP 14 - PART OF PARCEL 222, PARCELS 68 & 69
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: LANDSCAPE PLAN

DATE: NOV. 1997 PROJECT NO. 1003

DESIGN: YSL DRAFT: YSL CHECK: DAM SCALE: 1" = 100' DRAWING 19 OF 12

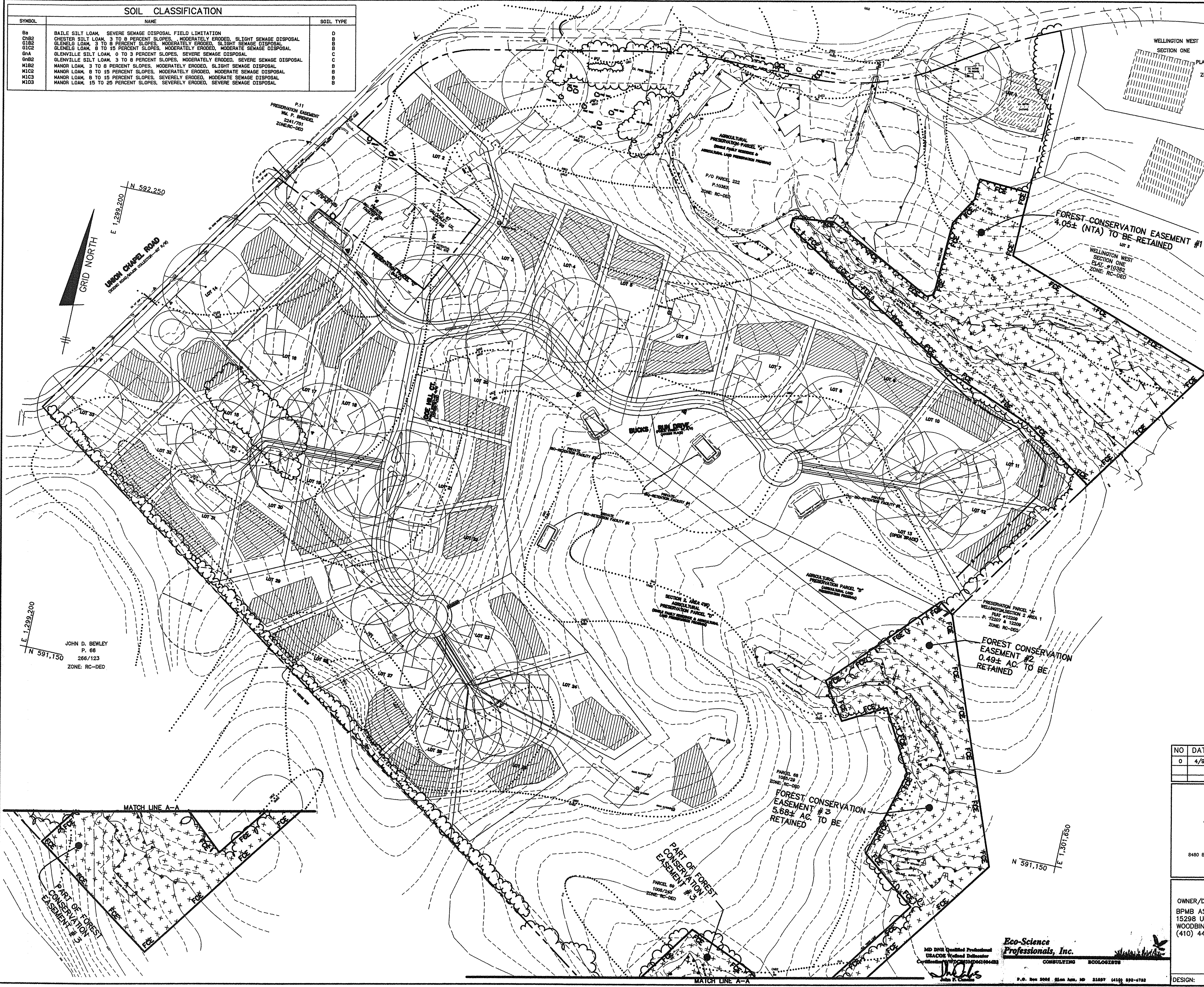
SOIL CLASSIFICATION		
SYMBOL	NAME	SOIL TYPE
Ba	BATLE SILT LOAM, SEVERE SEWAGE DISPOSAL FIELD LIMITATION	D
CB2	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED, SLIGHT SEWAGE DISPOSAL	B
G1B2	GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED, SLIGHT SEWAGE DISPOSAL	B
G1C2	GLENELG LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED, MODERATE SEWAGE DISPOSAL	C
G3A	GLENVILLE SILT LOAM, 0 TO 3 PERCENT SLOPES, SEVERE SEWAGE DISPOSAL	C
G3B2	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED, SEVERE SEWAGE DISPOSAL	B
M1B2	MANOR LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED, SLIGHT SEWAGE DISPOSAL	B
M1C2	MANOR LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED, MODERATE SEWAGE DISPOSAL	B
M1C3	MANOR LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED, MODERATE SEWAGE DISPOSAL	B
M1D3	MANOR LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED, SEVERE SEWAGE DISPOSAL	B



VICINITY MAP
SCALE: 1" = 2000'

LEGEND	
CONTOUR INTERVAL	2 FEET
EXISTING CONTOUR	---
EXISTING TREE LINE	~~~~~
EXISTING SEPTIC FIELD	▨
PROPOSED SEPTIC FIELD	▩
PROPOSED WELL LOCATION	○
EXISTING WELL LOCATION	○
PROPOSED HOUSE LOCATION (APPROXIMATE)	□
LIMIT OF WETLAND	▬

FCP LEGEND	
EXISTING TREE LINE	~~~~~
FOREST CONSERVATION EASEMENT	+
TEMPORARY FENCING	-x-x-
PERMANENT STORAGE	FCE



SEE SHEET 12 FOR FCP NOTES, SPECIFICATIONS, AND DETAILS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
<i>Howard S. ...</i>	12/7/98
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	
<i>Richard Blood</i>	12/11/98
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>Chris ...</i>	12/9/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE

NO	DATE	REVISION
0	4/98	SUBMISSION TO COUNTY FOR REVIEW AND APPROVAL

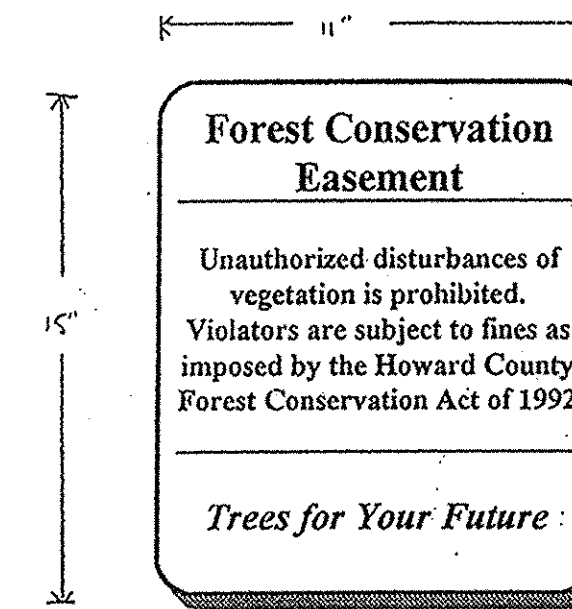
BENCHMARK ENGINEERING INC.
ENGINEERS • LAND SURVEYORS • PLANNERS
8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644

OWNER/DEVELOPER: BPMB ASSOCIATES, LLC. 15295 UNION CHAPEL ROAD WOODBINE, MARYLAND 21797 (410) 442-2101	PROJECT: WELLINGTON WEST SECTION TWO (S-98-03)
LOCATION: TAX MAP 14 - PART OF PARCEL 222, PARCELS 68 & 69 48th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: FOREST CONSERVATION PLAN
DATE: AUG. 1998	PROJECT NO. 1003
DESIGN:	DRAFT:
CHECK:	SCALE: 1" = 100'
	DRAWING 11 OF 12

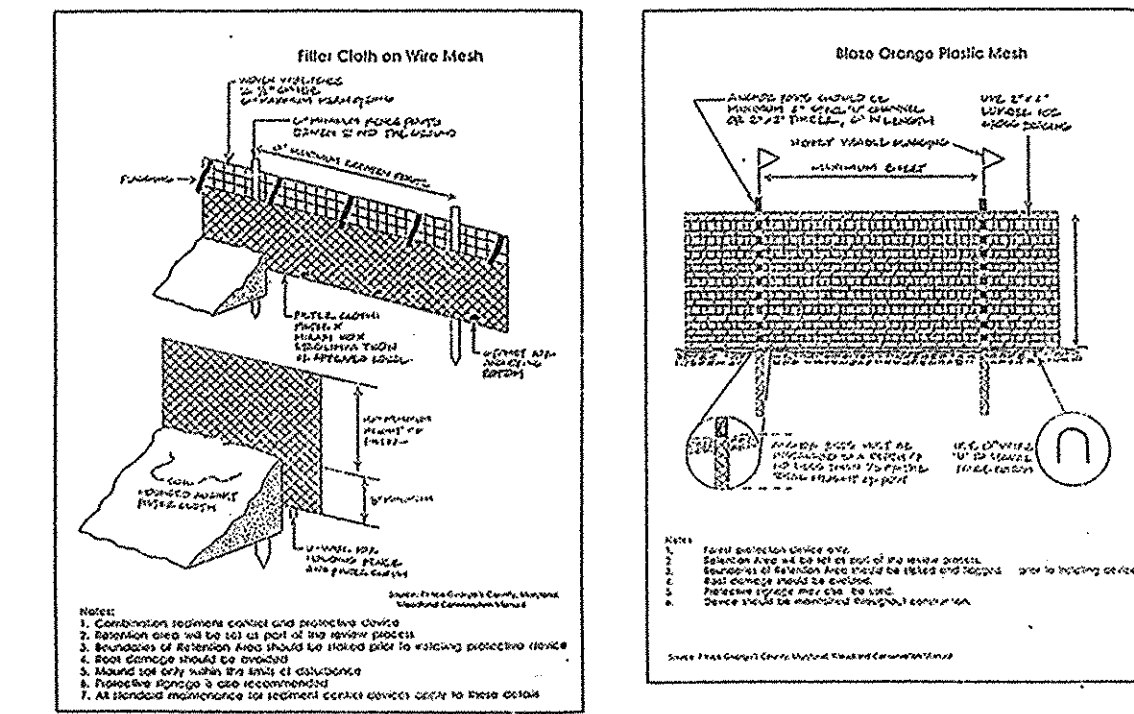
Eco-Science Professionals, Inc.
MD DNR Registered Professional
DEACON Woodard DeBevoise
Consulting SCOLOGIST
P.O. Box 8006 (5th Ave. N.D.) 21087 (410) 890-4742

JOHN D. BEWLEY
P. 68
266/123
ZONE: RC-DEO

Signage



Temporary Protective Fencing



FCP NOTES

1. Unforested sections of the Preservation Parcel (34.5 acres) and the forested floodplain (1.5 acres) have been subtracted from the net tract area of the site.
2. Any Forest Conservation Easement (FCE) shown hereon is subject to protective covenants which may be found in the Land Records of Howard County which restrict the disturbance and use of these areas.
3. There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Easement, except as permitted by Howard County DPZ.
4. No stockpiles, parking areas, equipment cleaning areas, etc. shall occur within areas designated as Forest Conservation Easements.
5. Permanent signage shall be placed 50-100' apart along the boundaries of all areas included in Forest Conservation Easements.
6. Temporary protective fencing shall be installed along the critical zone of the forest on Lots 8-11 prior to the initiation of construction activities on each lot. This fencing may be removed following site stabilization.

Site Data	
Gross Area:	86.3 Acres
Unforested Preservation Parcel & Floodplain:	36.0
Net Tract Area:	50.3
Existing Forest (NTA):	10.2
Afforestation Threshold:	10.1
Afforestation Required:	0.0

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
<i>Howard Shid for</i>	12/7/98
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING	
<i>Richard Blomel</i>	12/6/98
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>Adrian...</i>	12/5/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE

NO	DATE	REVISION
0	12/97	SUBMISSION TO COUNTY FOR REVIEW AND APPROVAL

BENCHMARK ENGINEERING INC.

8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELKJOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644

OWNER/DEVELOPER: BPWB ASSOCIATES, LLC. 15298 UNION CHAPEL ROAD WOODBINE, MARYLAND 21797 (410) 442-2101	PROJECT: WELLINGTON WEST SECTION TWO (S-98-03)
TITLE: FOREST CONSERVATION NOTES AND DETAILS	LOCATION: TAX MAP 14 - PART OF PARCEL 222, PARCELS 68 & 69 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: DEC. 1997	PROJECT NO. 1003
DESIGN:	DRAFT:
CHECK:	SCALE: 1" = 100'
	DRAWING 12 OF 12

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACO2 Wetland Delimitator
Certification # WJ0623MD0610044B2

P.O. Box 5006 Glen Artn, MD 21057 (410) 592-6752