

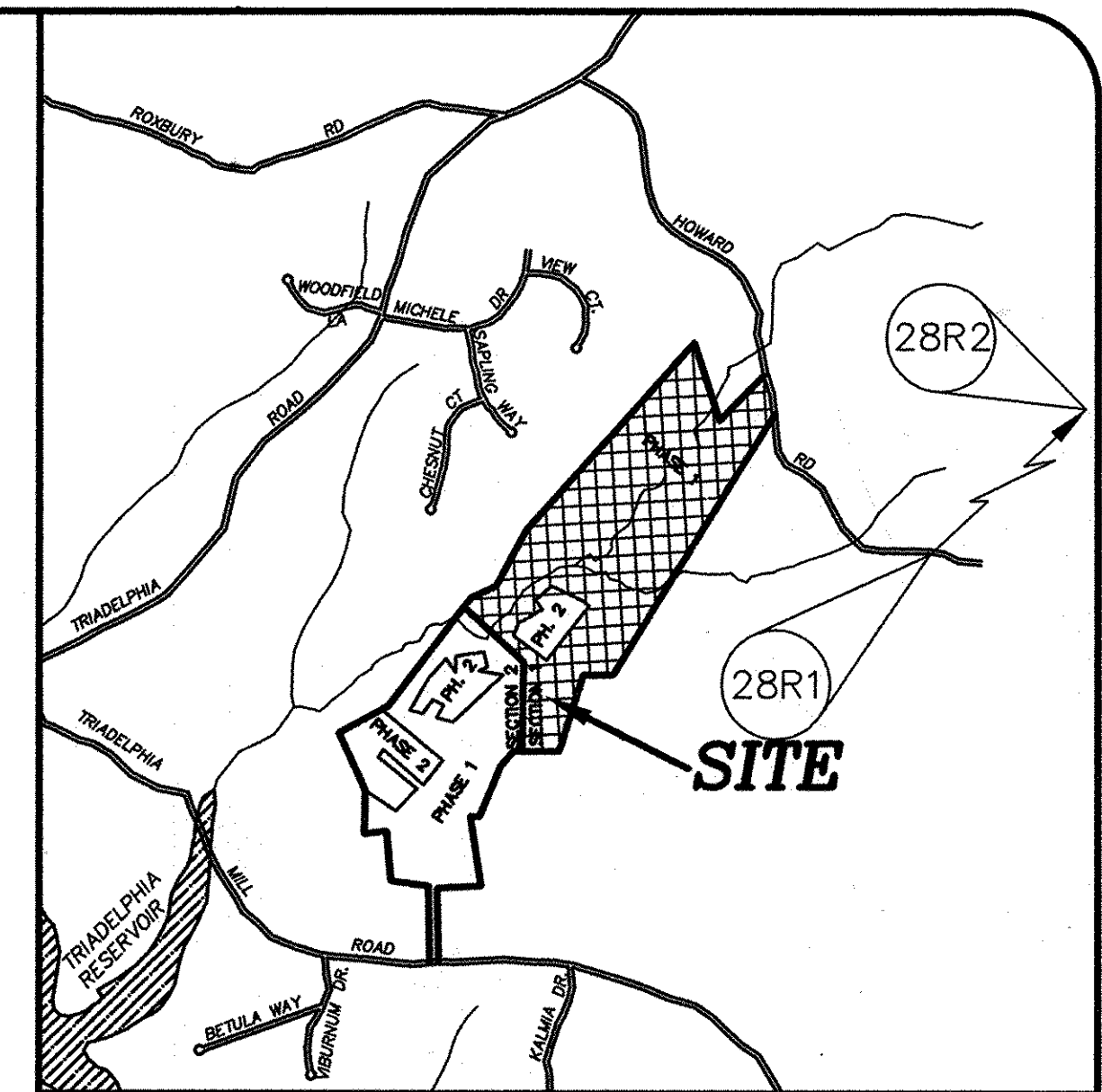
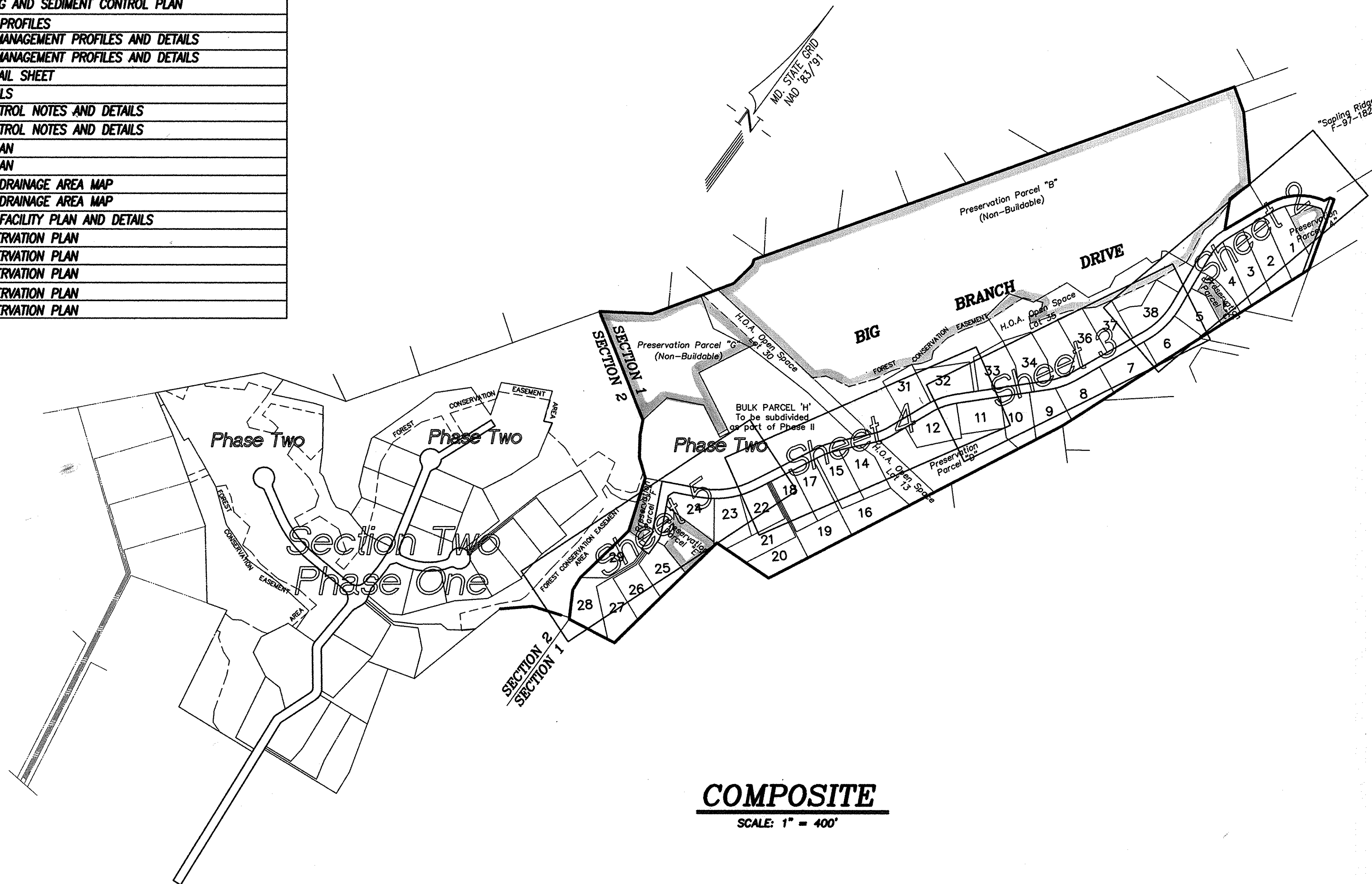
# ROADS, STORM DRAIN, AND GRADING BIG BRANCH OVERLOOK

## SECTION 1, PHASE 1

Election District No.5 Howard County, MD

### INDEX OF SHEETS:

1. COVER SHEET
2. BIG BRANCH DRIVE PLAN AND PROFILE
3. BIG BRANCH DRIVE PLAN AND PROFILE
4. BIG BRANCH DRIVE PLAN AND PROFILE
5. BIG BRANCH DRIVE PLAN AND PROFILE
6. BIG BRANCH DRIVE GRADING AND SEDIMENT CONTROL PLAN
7. BIG BRANCH DRIVE GRADING AND SEDIMENT CONTROL PLAN
8. S.W.M. GRADING AND SEDIMENT CONTROL PLAN
9. STORM DRAIN PROFILES
10. STORMWATER MANAGEMENT PROFILES AND DETAILS
11. STORMWATER MANAGEMENT PROFILES AND DETAILS
12. HEADWALL DETAIL SHEET
13. CULVERT DETAILS
14. SEDIMENT CONTROL NOTES AND DETAILS
15. SEDIMENT CONTROL NOTES AND DETAILS
16. LANDSCAPE PLAN
17. LANDSCAPE PLAN
18. STORM DRAIN DRAINAGE AREA MAP
19. STORM DRAIN DRAINAGE AREA MAP
20. BIORETENTION FACILITY PLAN AND DETAILS
21. FOREST CONSERVATION PLAN
22. FOREST CONSERVATION PLAN
23. FOREST CONSERVATION PLAN
24. FOREST CONSERVATION PLAN
25. FOREST CONSERVATION PLAN



### GENERAL NOTES:

- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
- Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
- Street light placement and the type of fixture and pole shall be in accordance with the Howard County Design Manual, Volume III (1993) and as modified by "Guidelines for Street Lights in Residential Developments (June 1993).  
A minimum spacing of 20' shall be maintained between any street light and any tree.
- The existing topography is taken from aerial survey with two foot contour intervals prepared by Wings Mapping Co., dated 12/96.
- The coordinates shown herein are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monument Nos. 28R1 and 28R2 were used for this project.
- Water is private.
- Sewer is private.
- Stormwater management control will be provided on site, on either open space or preservation parcels. Ponds shall be maintained by Howard County. Infiltration facility and inlet 1-109 shall be maintained by the H.O.A.
- Existing utilities are based on Howard County contract drawings.
- The floodplain study for this project was prepared by R.M. Mochi Group, P.C., dated October, 1997, and was approved on November 13, 1997.
- The wetlands delineation study for this project was prepared by American Land Concepts dated May, 1997 and was approved on September 16, 1997.
- The traffic study for this project was prepared by Lee Cunningham and Associates, Inc. dated May, 1997 and was approved on September 16, 1997.
- Project Background information:
  - Zoning: RC-DEO
  - Gross Area of Tract: 136.54 AC.
  - Net Area of Tract: 103.52 AC.
  - Area of Proposed Lots/Parcels: 37.8 AC.
  - Area of Proposed R/W: 6.0 AC.
  - Number of Proposed Lots: 35 Buildable Lots  
3 Open Space Lots, 7 Non-Build. Pres. Parcels  
1 Bulk Parcel (To be subdivided in Phase II)  
46 Total
  - Open Space Required: 12.1 AC. (Phases 1 & 2)  
Open Space Provided: 12.1 AC. (Section One - 9.7 Ac., Section Two - 2.4 Ac.)
- Howard Road is a scenic road.
- Waiver request for use of draft road design standards and cul-de-sac length approval 7/10/97.
- Unless otherwise noted all B.R.L.'s shown are standard for RC zoning district.
- Coordinates are based on NAD '83/91 Maryland Coordinate System as projected by Howard County Geodetic Control Stations Nos. 28R1 & 28R2.  
(Meters X 3.280833333 = Feet; Feet X 0.3048006096 = Meters)  
No. 28R1 N 573,574.1517 No. 28R2 N 573,637.5879  
E 1,313,221.1140 E 1,314,445.6788  
Elev. 547.85 Elev. 606.27
- Disturbances into wetlands and streams were determined necessary for the road by the Department of Planning and Zoning per the Preliminary Plan (Approved 4/7/98, P-98-14)
- Groundwater appropriations permit tracking number is H0970013/01, (Per P-98-14, Approved 4/7/98).
- Don Blizzard with the Columbia Gas Transmission (301-762-6308) should be notified one week prior to commencement of construction.

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Daulton* 2-3-99  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamilton* 2/18/99  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Robert M. Mochi* 2/1/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**OWNER/DEVELOPER**  
MR. CHARLES A. SHARP  
3779 SHARP ROAD  
GLENWOOD, MD 21738

**ENGINEER/SURVEYOR**  
R.M. MOCHI GROUP, P.C.  
P.O. BOX 10  
NEW MARKET, MD 21774  
(301) 865-5659  
ATTN: MR. ROBERT M. MOCHI, P.E.

F-98-165  
**BIG BRANCH OVERLOOK**

Election District No.5 Howard County, MD  
Tax Map 27, Grid 6, Parcels 140,141, & 142  
Previous Files: S-97-21, P-98-14, BA: 399-D, BA: 413-D



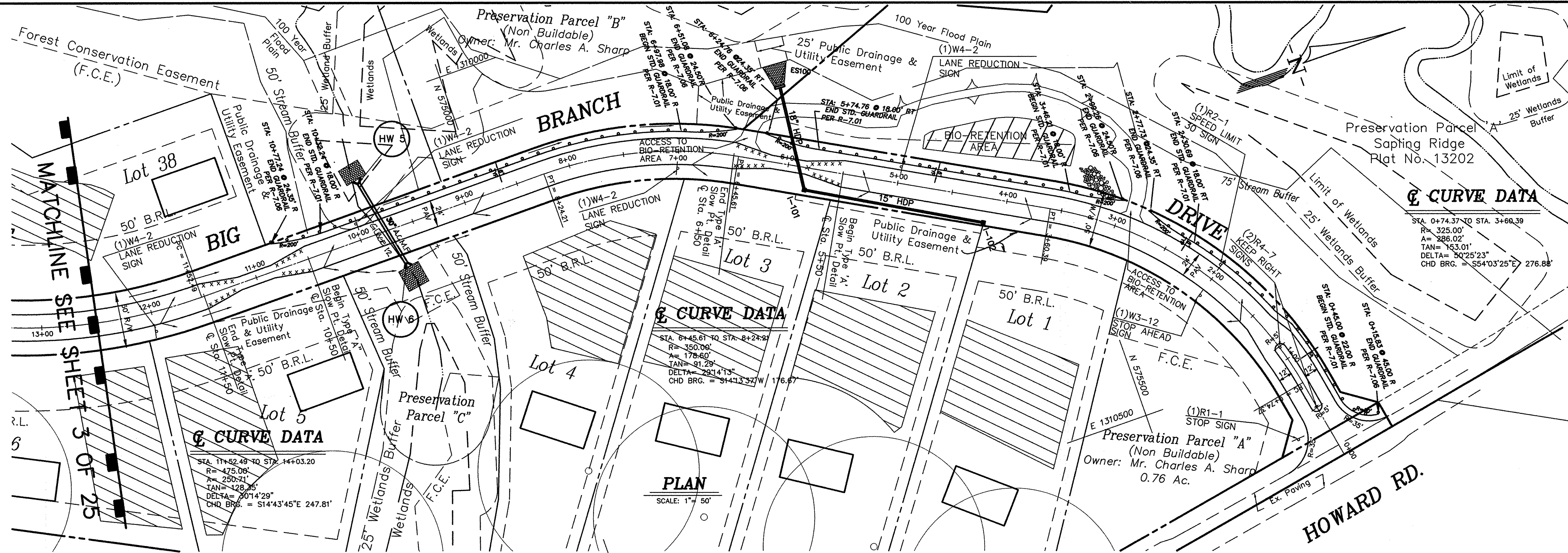
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illustration	K.M.B.	engineering	M.W.Z.
scale	1" = 400'	approval	R.M.M.

REMOVED PER BUREAU OF HIGHWAYS COMMENT	02-02-99	date	
SUBMITTED ORIGINAL MYLARS FOR SIGNATURE	01-14-99	date	
DIRECT SUBMITTAL TO HOWARD CO. DEP. FOR REVIEW	12-07-98	date	
REMOVED SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW	08-16-98	date	
SUBMITTED TO HOWARD CO. D.P.Z. FOR REVIEW	08-26-98	date	
description		revisions	
no.		date	

SECTION 1, PHASE 1  
**BIG BRANCH OVERLOOK**  
ELECTION DISTRICT NO. 5  
HOWARD COUNTY, MD.  
TITLE SHEET

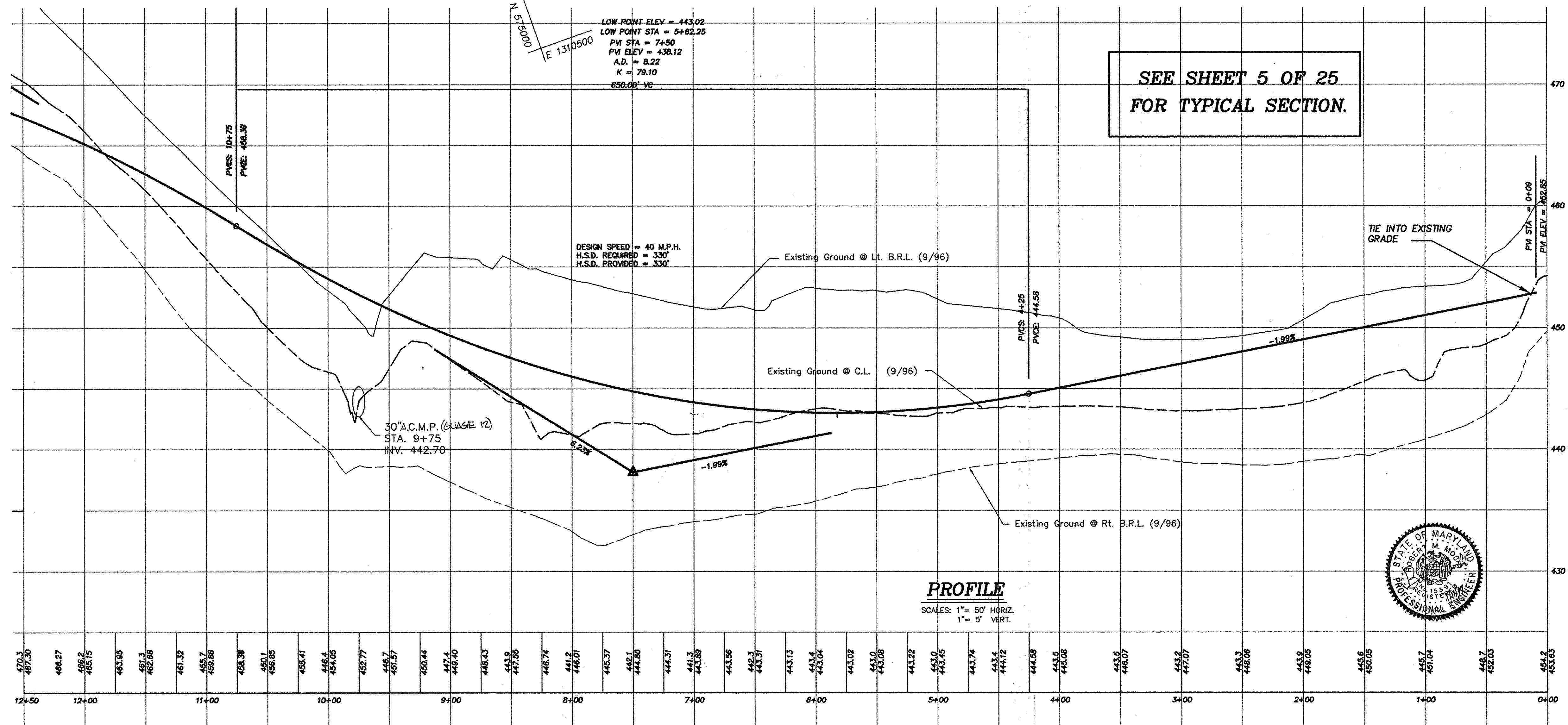
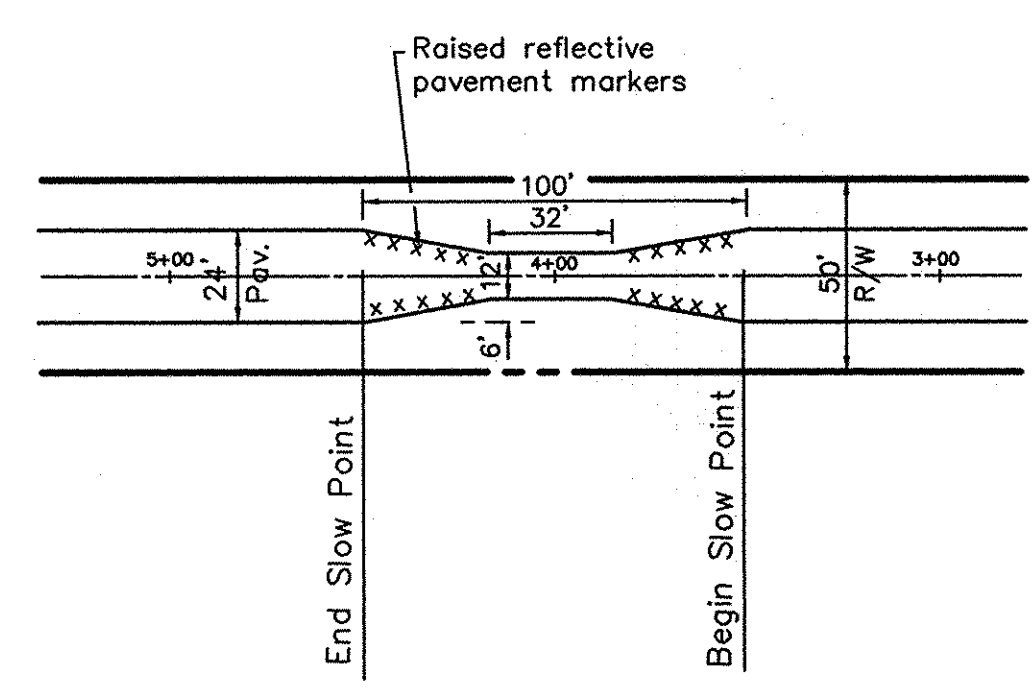
R.M. MOCHI GROUP, P.C.  
P.O. Box 10  
New Market, MD 21774-0010  
10120 A Old National Pike  
Jennings, MD 21754-8706  
(301) 865-5659  
Fax: (301) 865-5111





SEE SHEET 3 OF 25  
FOR PAVING SECTION &  
TREE PLANTING DETAIL

SEE SHEET 5 OF 25  
FOR TYPICAL SECTION.



APPROVED:  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Thomas M. Joseph* 2/3/99  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamilton* 2/12/99  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*William P. ...* 2/9/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



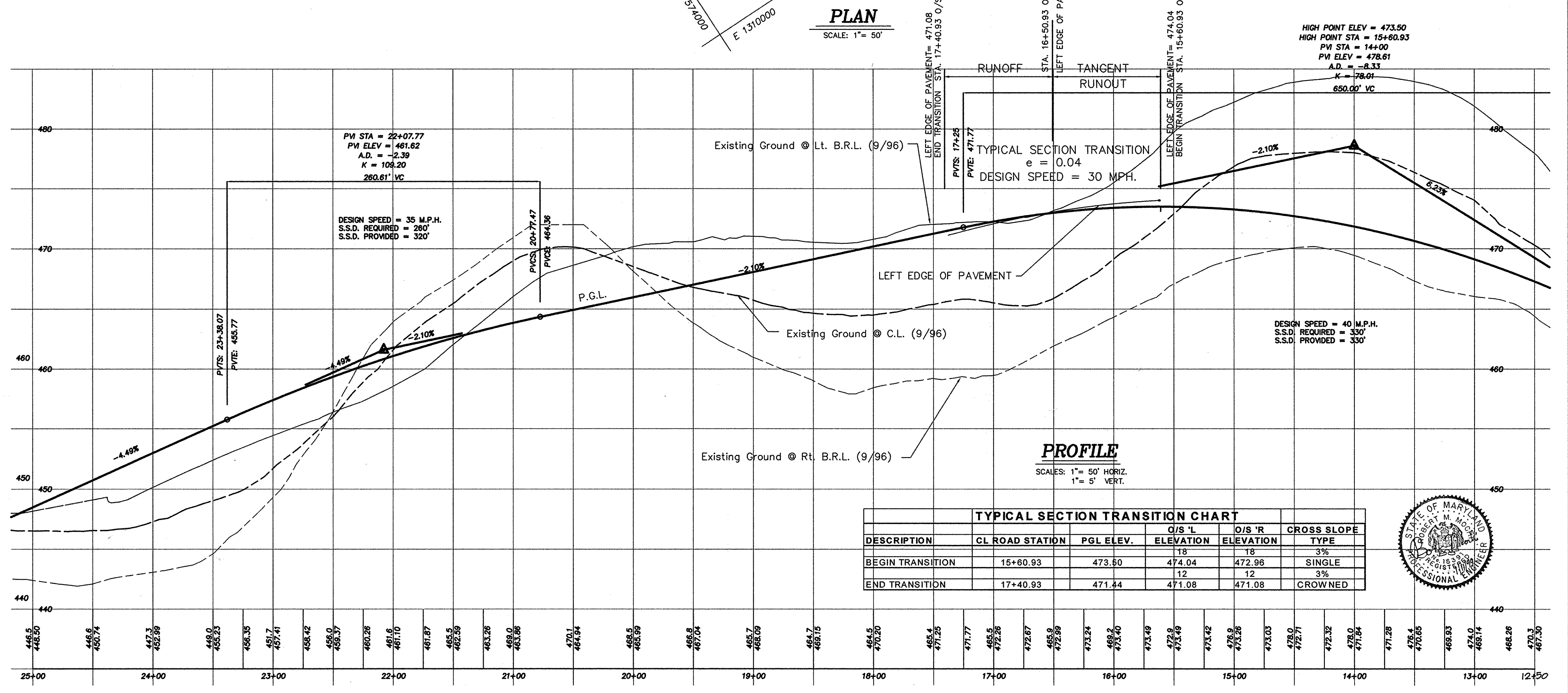
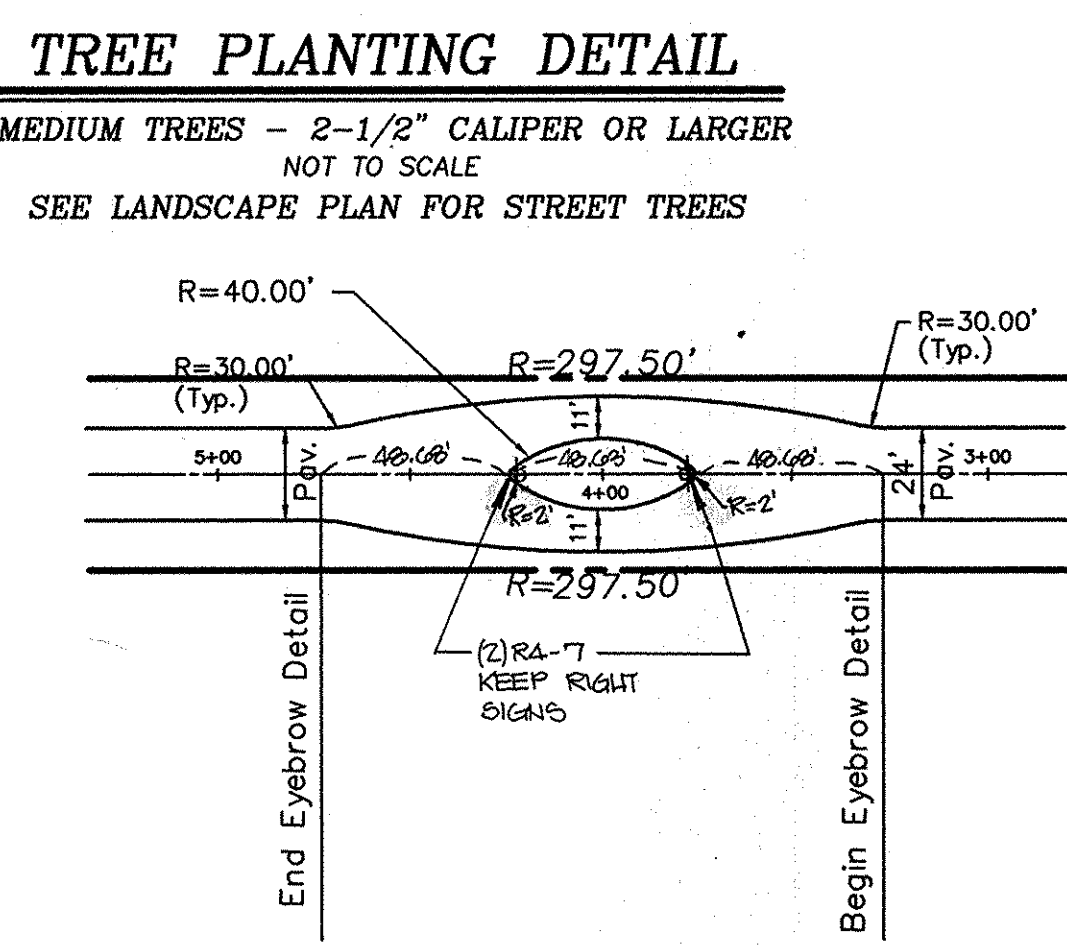
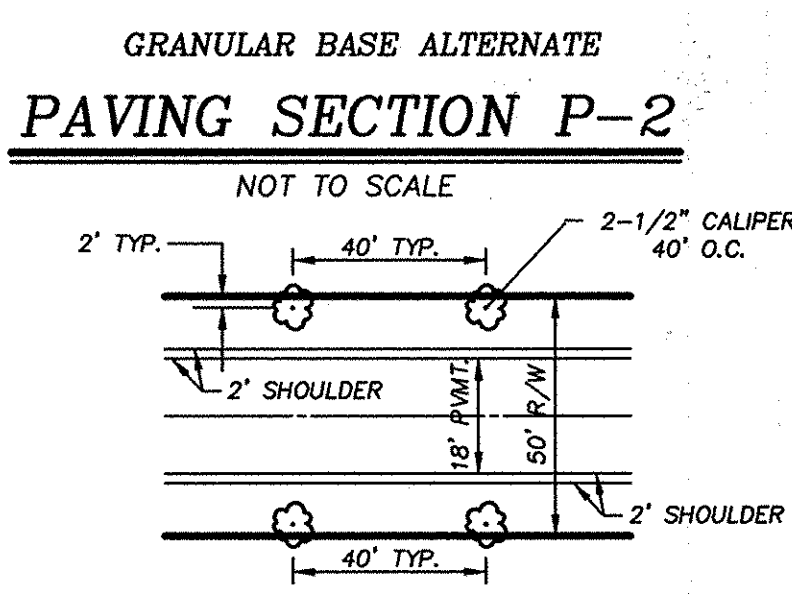
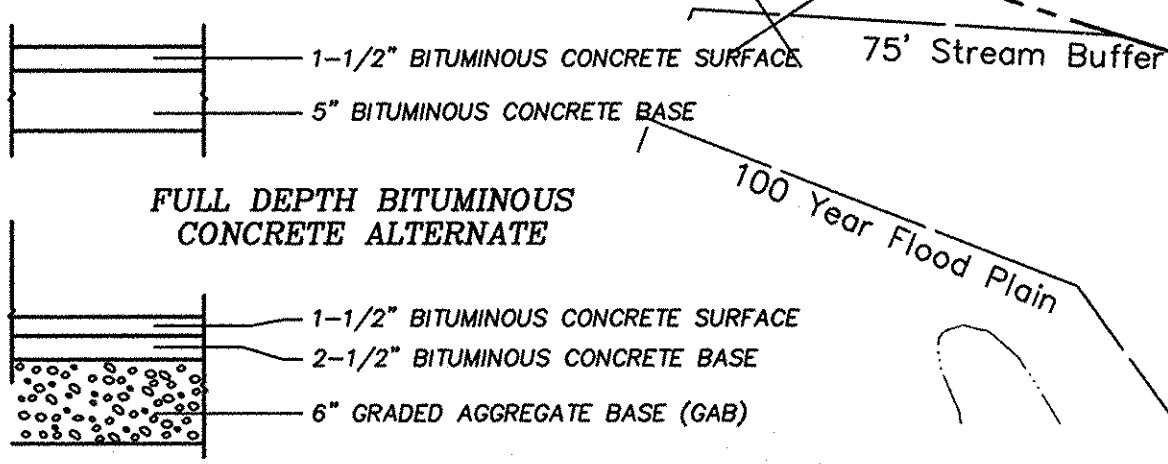
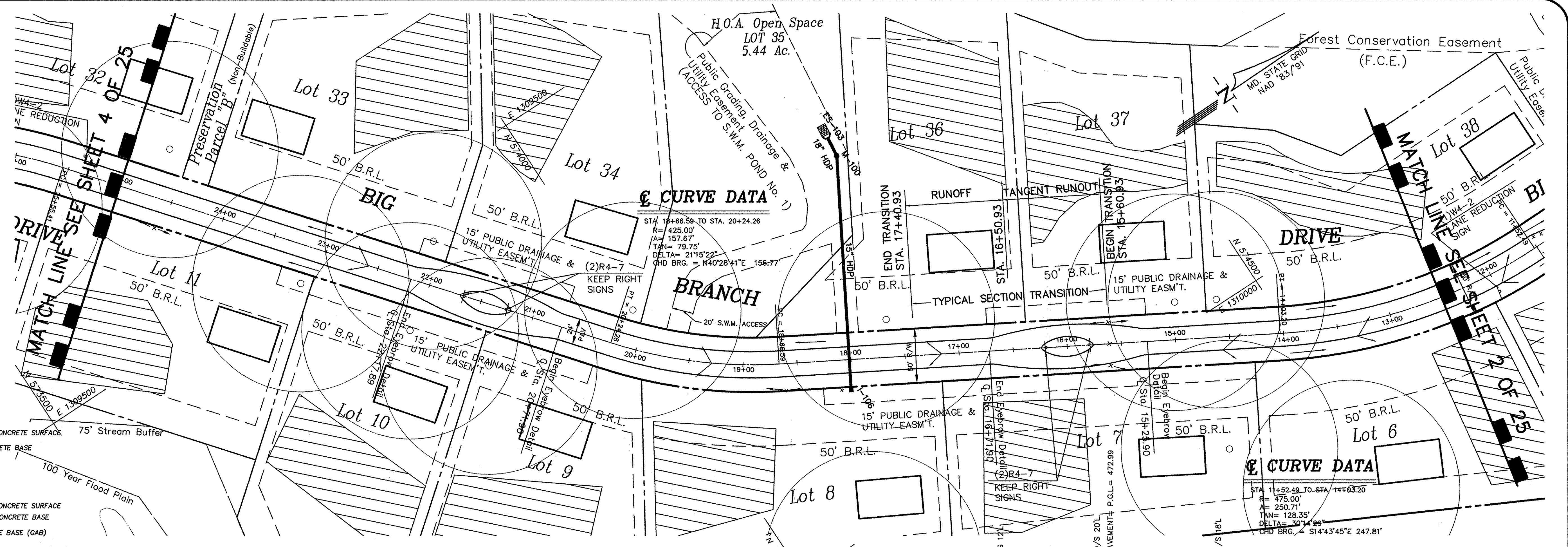
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Illustration	K.M.B.	Engineering	M.W.Z.
Scale	As Noted	Approval	R.M.M.

Revised	02-02-99	By	REVISIONS
1	12-07-98	For	REVISIONS
2	09-16-98	For	REVISIONS
3	06-08-98	For	REVISIONS

SECTION 1, PHASE 1  
**BIG BRANCH OVERLOOK**  
ELECTION DISTRICT NO. 5  
HOWARD COUNTY, MD.  
BIG BRANCH DRIVE PLAN AND PROFILE

**R.M. MOCHI GROUP, P.C.**  
P.O. Box 10 10 Old National Pike  
New Market, MD 21774-0010  
(301) 865-5858  
Fax: (301) 865-5111





**TYPICAL SECTION TRANSITION CHART**

DESCRIPTION	CL ROAD STATION	PGL ELEV.	O/S 'L' ELEVATION	O/S 'R' ELEVATION	CROSS SLOPE TYPE
BEGIN TRANSITION	15+60.93	473.50	474.04	472.96	SINGLE 3%
END TRANSITION	17+40.93	471.44	471.08	471.08	CROWNED 12 3%



APPROVED:  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Thomas M. Davelos* 2-3-99  
 CHIEF, BUREAU OF HIGHWAYS MS DATE

APPROVED:  
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamilton* 2/12/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT JX DATE

*Mike Panamas* 2/19/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

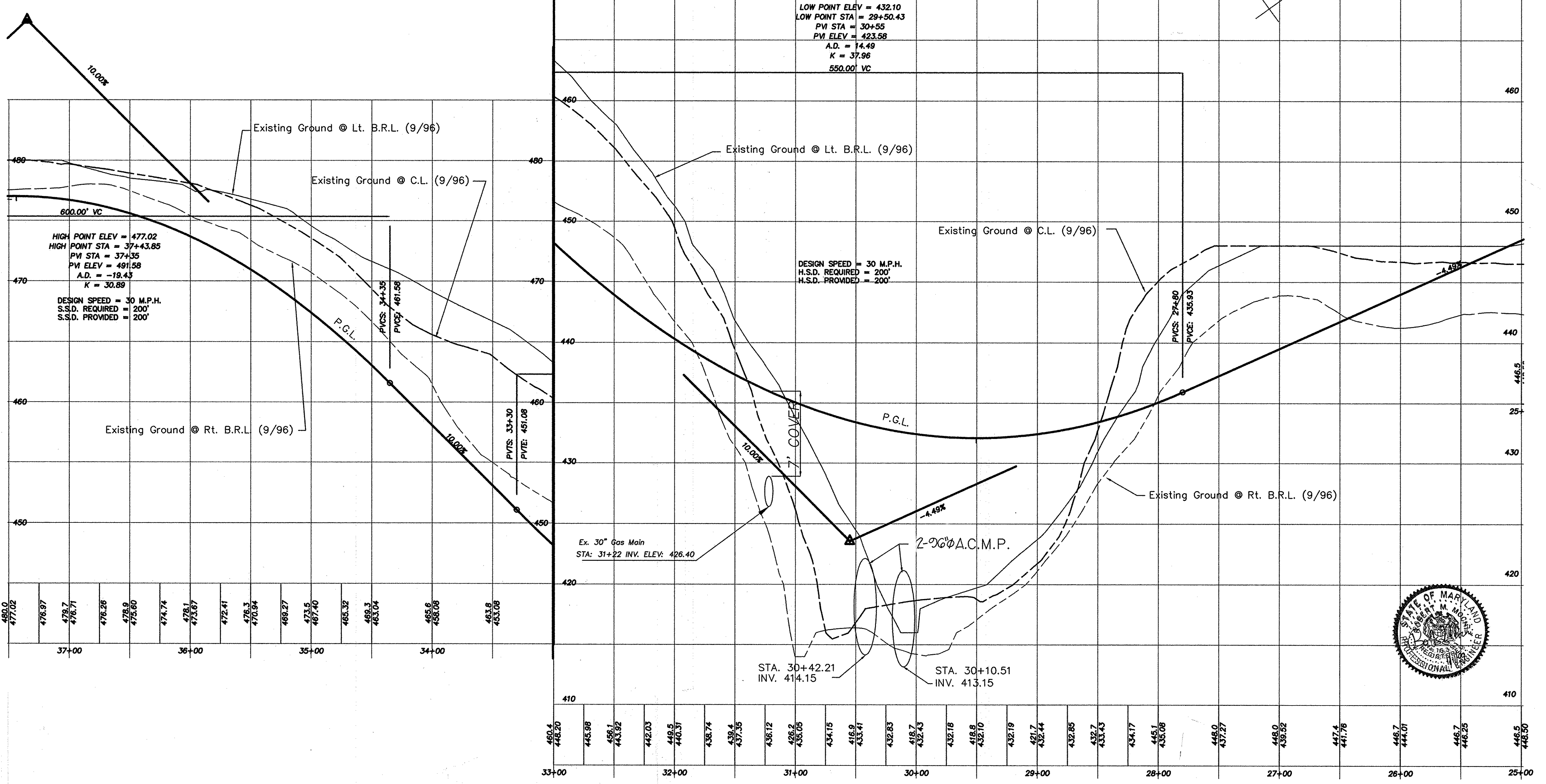
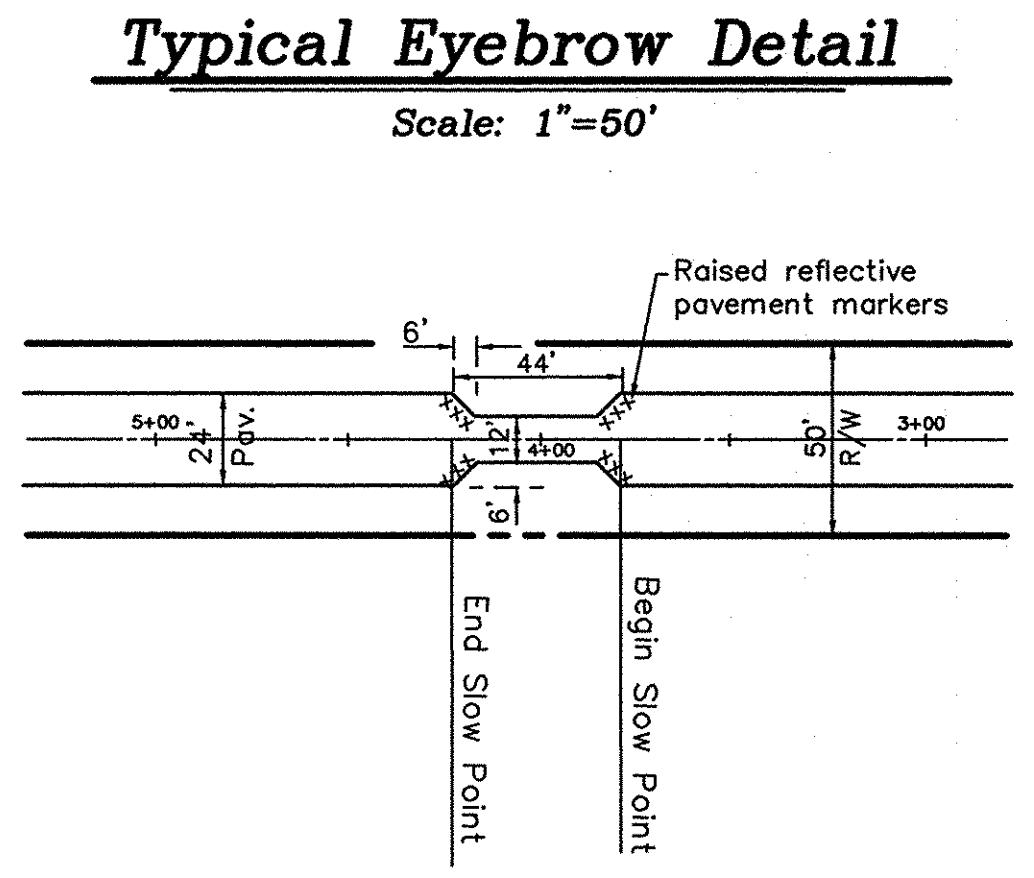
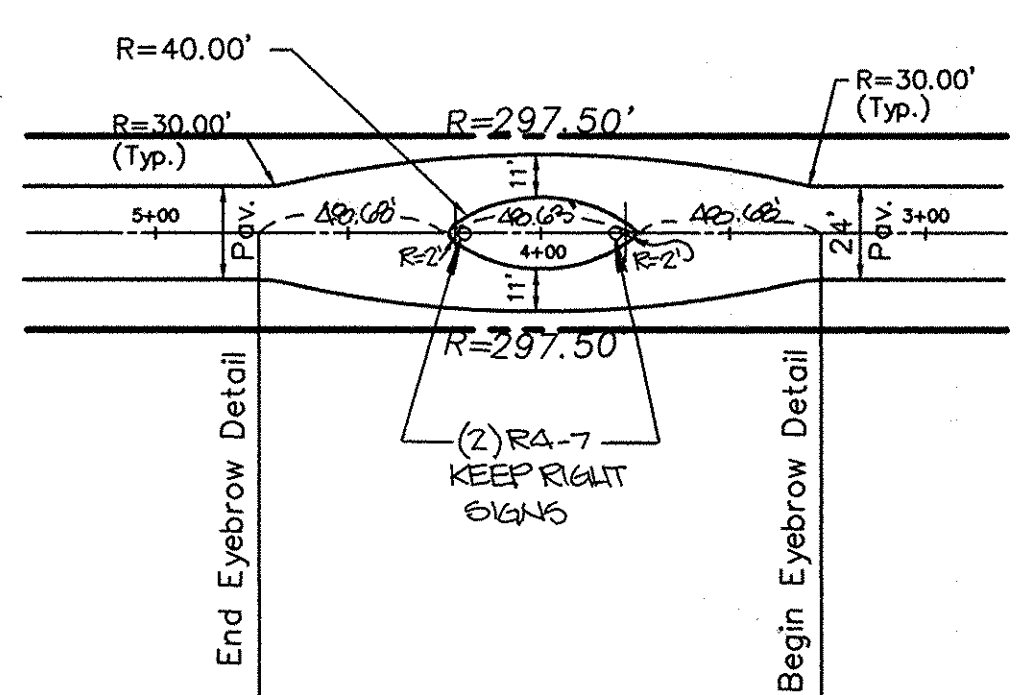
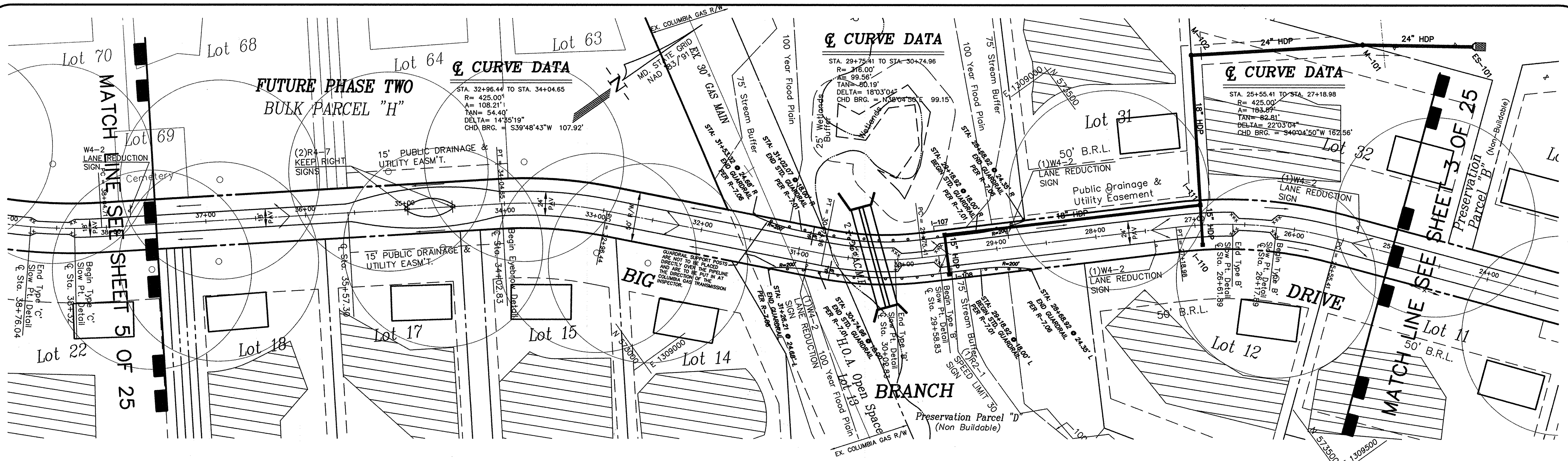
Project: 96019.13  
 date: 06-05-98  
 illustration: K.M.B.  
 M.W.Z.  
 As Noted  
 scale: approval  
 R.M.M.

1. REVISED PER SUBMITTAL OF HOWARD COUNTY PUBLIC WORKS  
 2. SUBMITTED ORIGINAL MYLARS FOR SIGNATURE  
 3. DIRECT SUBMITTAL TO HOWARD COUNTY DEPT. OF PUBLIC WORKS  
 4. REVISED SUBMITTAL TO HOWARD COUNTY DEPT. OF PUBLIC WORKS FOR REVIEW  
 5. SUBMITTED TO HOWARD COUNTY DEPT. OF PUBLIC WORKS FOR REVIEW

SECTION 1, PHASE 1  
**BIG BRANCH OVERLOOK**  
 HOWARD COUNTY, MD.  
 ELECTION DISTRICT NO. 5  
**BIG BRANCH DRIVE PLAN AND PROFILE**

**R.M. MOCH GROUP, INC.**  
 P.O. Box 10  
 New Market, MD 21774-0010  
 (301) 865-5568  
 (301) 865-5111  
 Fax: (301) 865-5111





APPROVED:  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Dancka* 2-3-99  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:  
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamilton* 2/3/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*John D. ...* 2/9/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



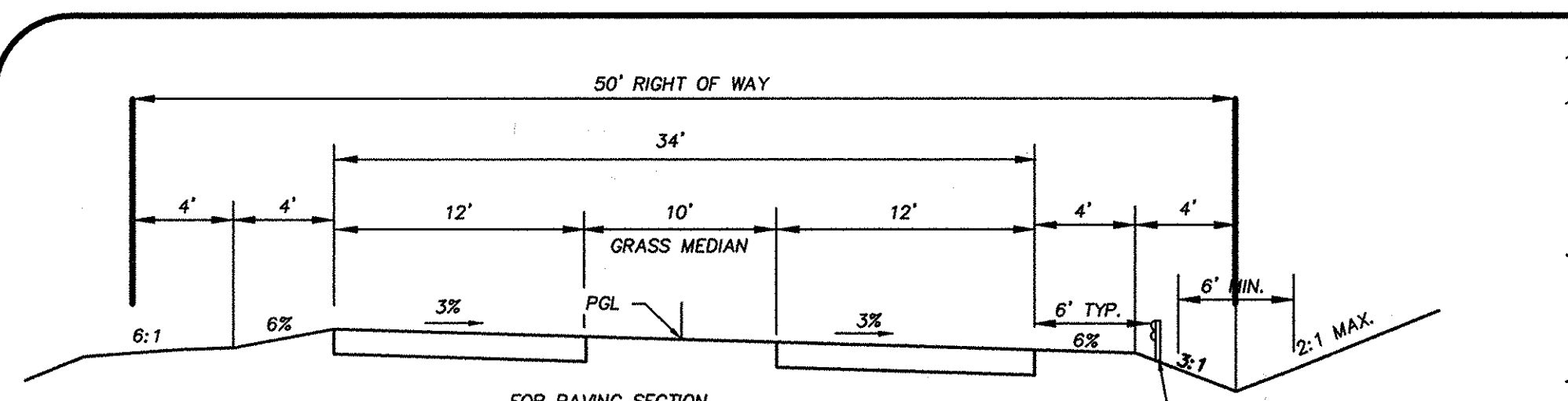
Project	98019.13	Date	06-06-98
Illustration	K.M.B.	Engineering	M.W.Z.
Scale	As Noted	Approval	R.M.M.

1	REVISED PER SUBMITTAL TO HOWARD COUNTY ENGINEERS	02-02-99	DATE
2	SUBMITTED ORIGINAL PLANS FOR SIGNATURES	01-14-99	DATE
3	DIRECT SUBMITTAL TO HOWARD CO. DEPT. FOR REVIEW	12-07-98	DATE
4	REVISED SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW	09-16-98	DATE
5	SUBMITTED TO HOWARD CO. D.P.Z. FOR REVIEW	06-08-98	DATE

SECTION 1, PHASE 1  
**BIG BRANCH OVERLOOK**  
 HOWARD COUNTY, MD.  
 ELECTION DISTRICT NO. 5  
**BIG BRANCH DRIVE PLAN AND PROFILE**

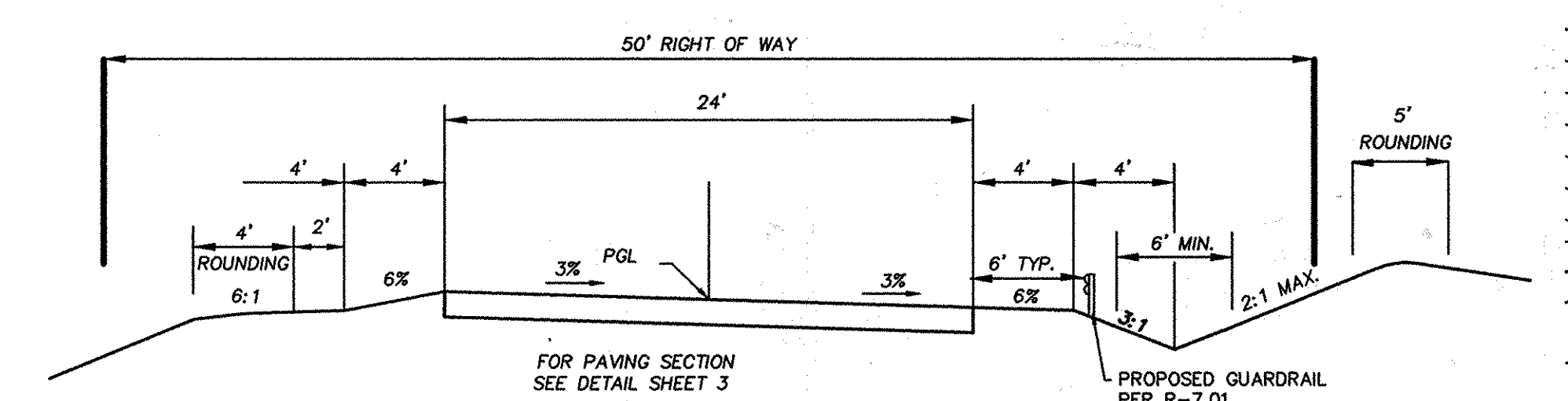
**R.M. MOCHI GROUP, P.C.**  
 P.O. Box 10  
 New Market, MD 21774-0010  
 10120 A Old National Pike  
 Glenmont, MD 21034-9706  
 Tel: (301) 865-5858  
 Fax: (301) 865-5171





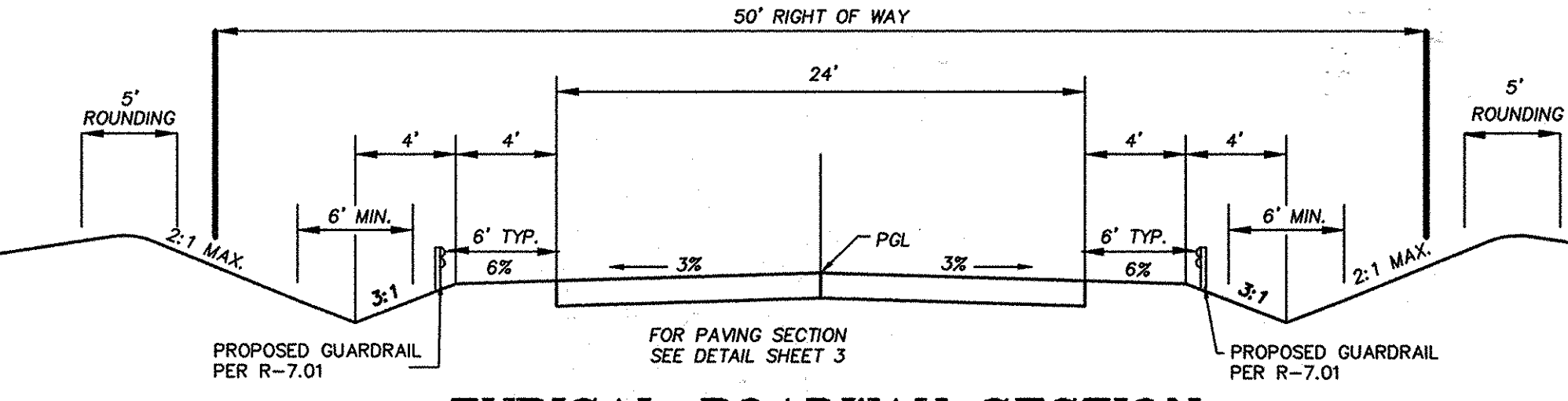
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NOT TO SCALE  
FOR BIG BRANCH DRIVE  
STA. 00+00.00 TO STA. 1+50.00



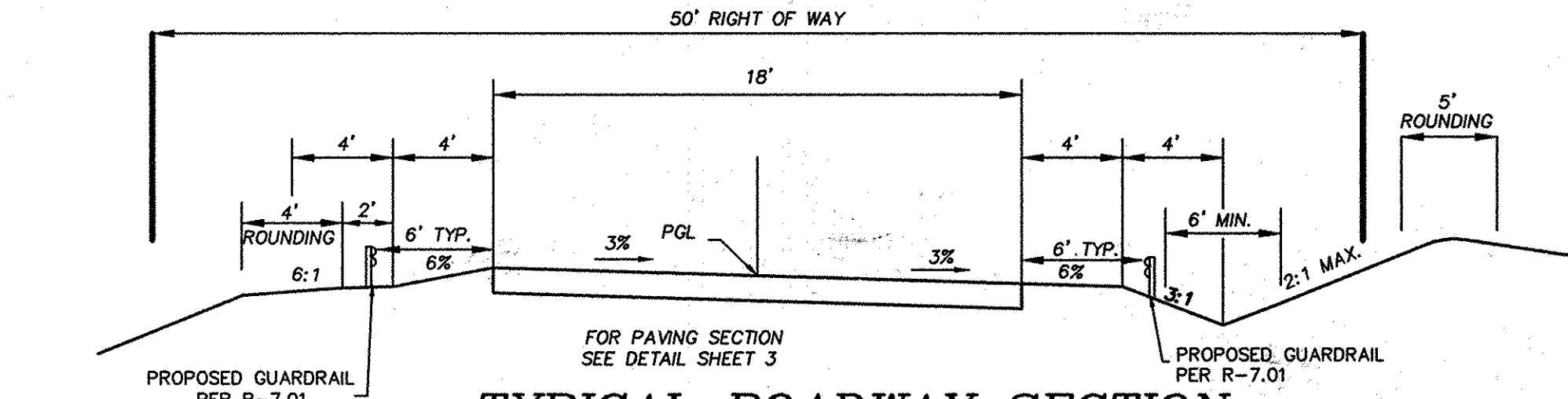
**TYPICAL ROADWAY SECTION**

NOT TO SCALE  
FOR BIG BRANCH DRIVE  
STA. 1+50.00 TO STA. 15+60.93  
RESIDENTIAL STREET- ACCESS STREET  
OPEN SECTION (RURAL) ("RC" ZONING DISTRICT)  
MINIMUM DESIGN SPEED - 30 MPH



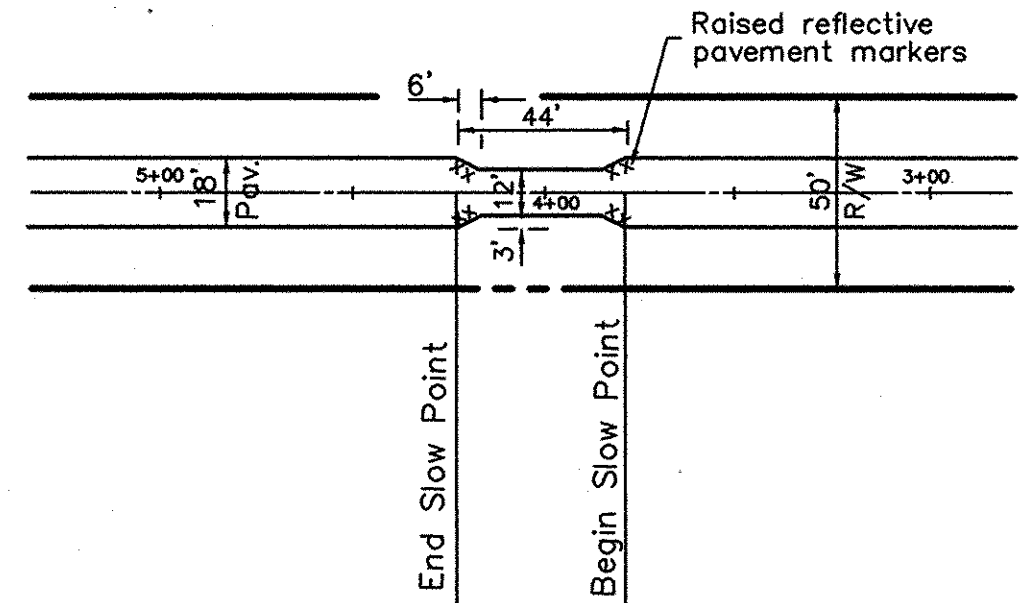
**TYPICAL ROADWAY SECTION**

NOT TO SCALE  
FOR BIG BRANCH DRIVE  
STA. 17+40.93 TO STA. 37+50  
RESIDENTIAL STREET- ACCESS STREET  
HOWARD COUNTY STANDARD FIGURE 2.05A  
OPEN SECTION (RURAL) ("RC" ZONING DISTRICT)  
MINIMUM DESIGN SPEED - 30 MPH



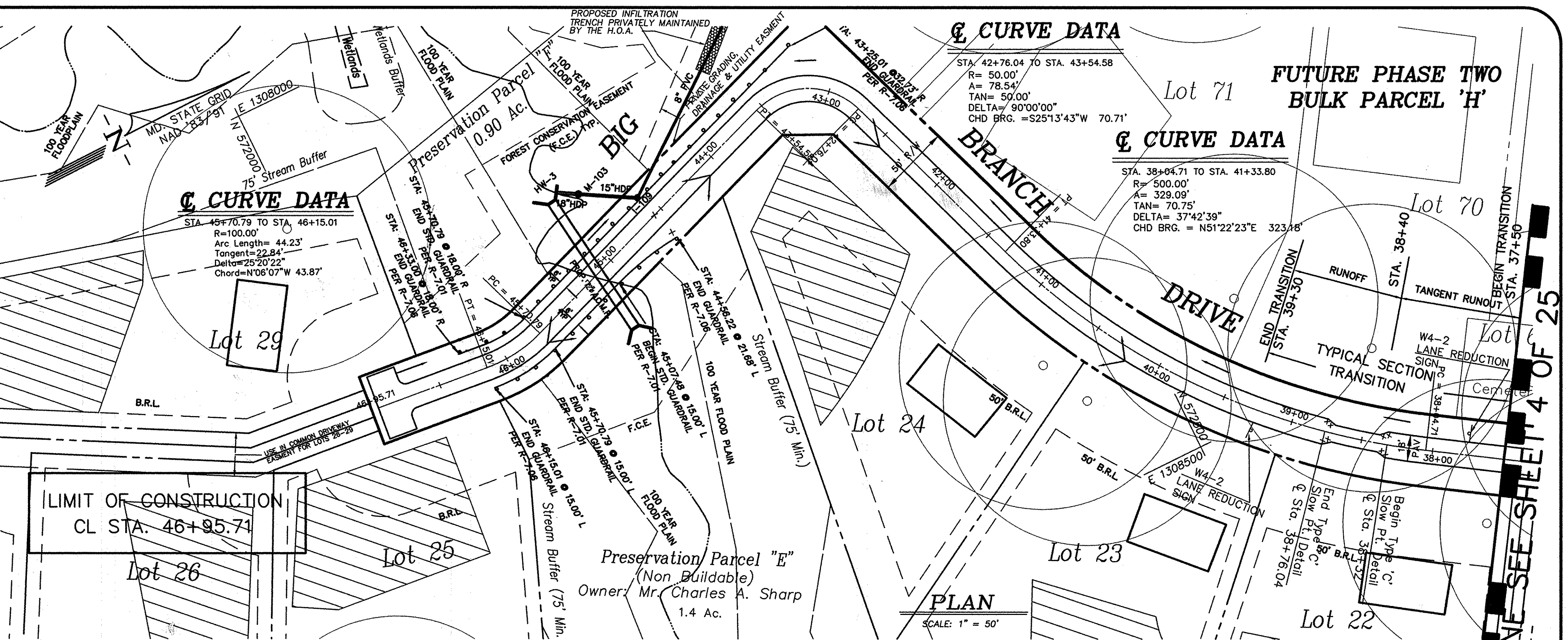
**TYPICAL ROADWAY SECTION**

NOT TO SCALE  
FOR BIG BRANCH DRIVE  
STA. 39+30 TO STA. 46+95.71  
RESIDENTIAL STREET- ACCESS PLACE (PUBLIC RC & RR)  
OPEN SECTION (RURAL) ("RC" ZONING DISTRICT)  
MINIMUM DESIGN SPEED - 25 MPH

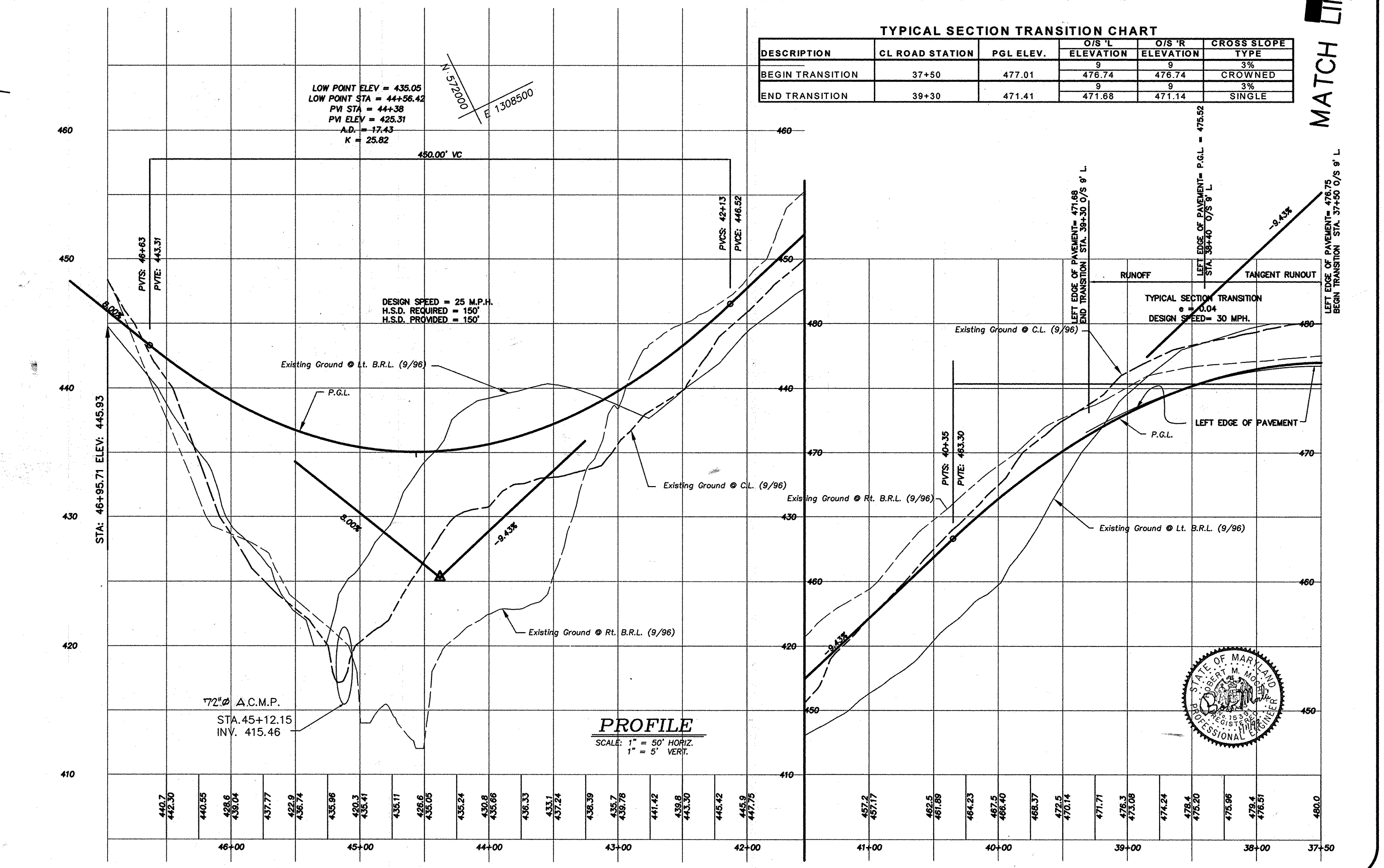


**Type 'C' Slow Point Detail**

Scale: 1"=50'



**PLAN**  
SCALE: 1" = 50'



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

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Jancko* 2/3/99  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamilton* 2/3/99  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*John P. ...* 2/3/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

project	98019.13	date	08-05-98
illustration	K.M.B.	engineering	M.W.Z.
scale	As Noted	approval	R.M.M.

4 REVISED PER BUREAU OF HIGHWAY COMMENTS  
SUBMITTED ORIGINAL MYLARS FOR SIGNATURE  
12-07-98  
2 DIRECT SUBMITTAL TO HOWARD CO. DEP. FOR REVIEW  
09-16-98  
1 REVISED SUBMITTAL TO HOWARD CO. DEP. FOR REVIEW  
09-25-98  
SUBMITTED TO HOWARD CO. DEP. FOR REVIEW

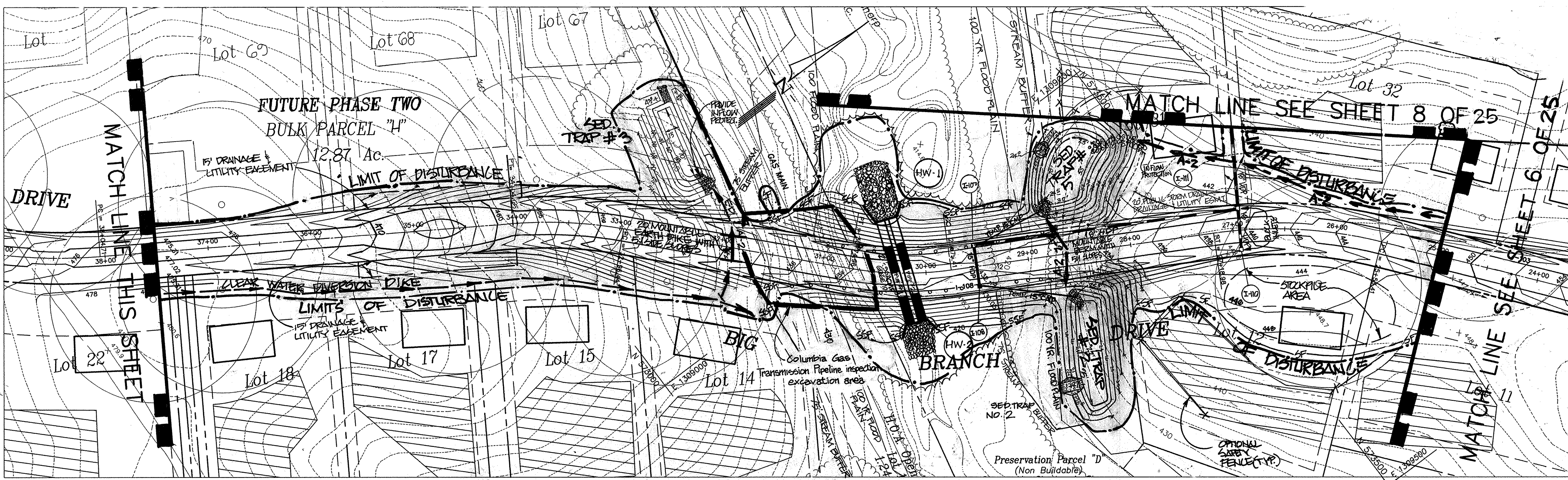
SECTION 1, PHASE 1  
**BIG BRANCH OVERLOOK**  
ELECTION DISTRICT NO. 5  
HOWARD COUNTY, MD.  
**BIG BRANCH DRIVE PLAN AND PROFILE**

R.M. MOCHI-GROUP, INC.  
P.O. Box 10  
New Market, MD 21774-0010  
10120 A 04 National Pike  
Jennersville, MD 21754-9706  
(301) 865-5858  
(301) 865-3111  
Fax: (301) 865-3111









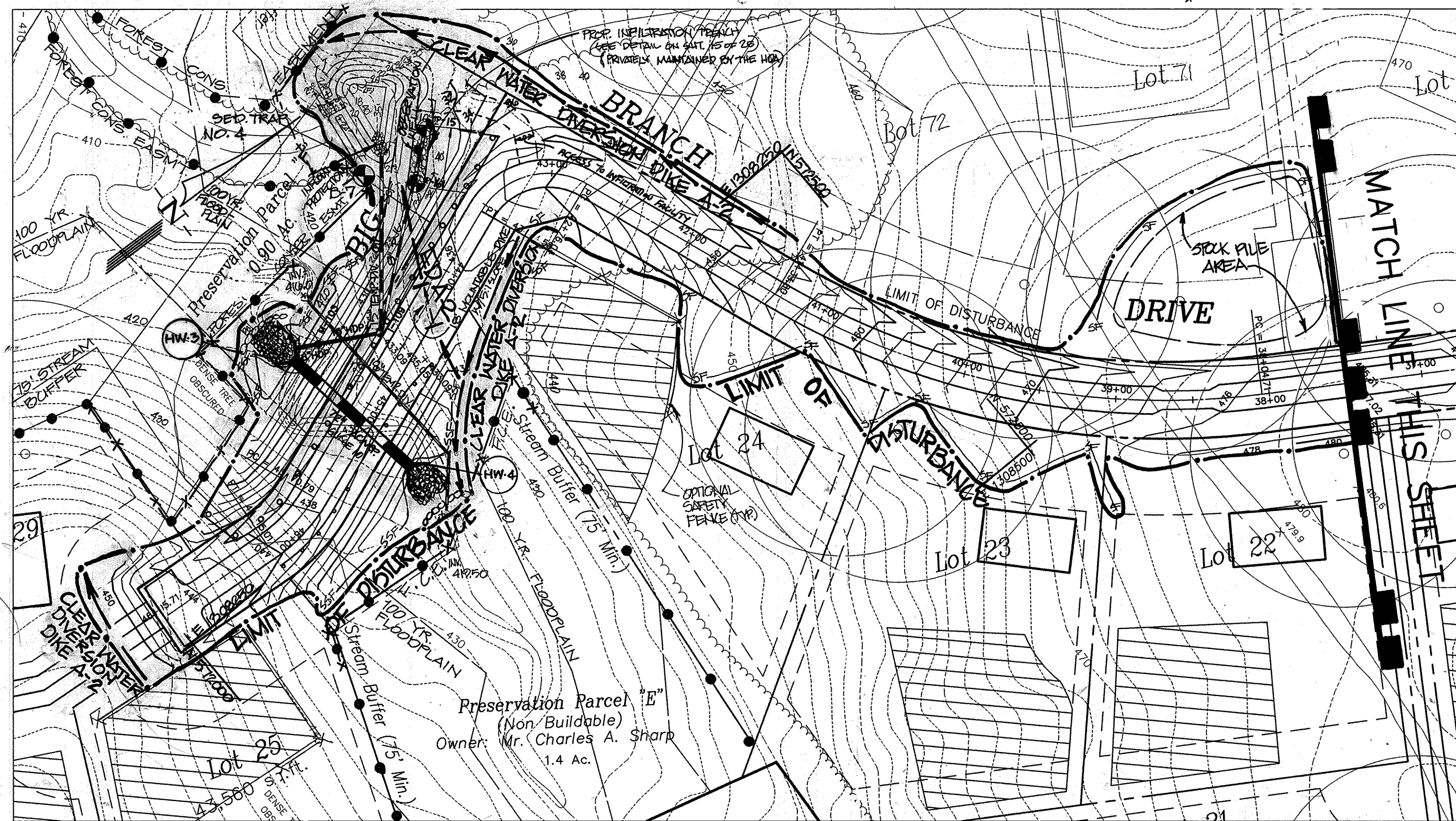
**SED. TRAP NO. 4**  
 SEDIMENT TRAP TYPE II  
 INITIAL DA. - 0.7 AC.  
 FINAL DA. - 1.5 AC.  
 STORAGE REQUIRED - 5400 CF.  
 STORAGE PROVIDED - 6101 CF @ 421.0  
 WET - 2347 CF @ 421.0  
 DRY - 3314 CF @ 423.0  
 BOTTOM EL. - 418.0  
 BOTTOM DIMENSIONS - SEE PLAN  
 STORAGE DEPTH - 13.0'  
 WEIR EL. - 423.0  
 WEIR LENGTH - 80'  
 EX. GRD @ EMBANK. - 421.0  
 TOP OF EMBANK. - 424.0  
 CLEANOUT EL. - 419.5  
 SIDESLOPES - 2:1 MAX.

**SED. TRAP NO. 3**  
 SEDIMENT TRAP TYPE II  
 INITIAL DA. - 1.0 AC.  
 FINAL DA. - 1.4 AC.  
 STORAGE REQUIRED - 5040 CF.  
 STORAGE PROVIDED - 6816 CF.  
 WET - 1540 CF @ 440.0  
 DRY - 4182 CF @ 442.0  
 BOTTOM EL. - 428.0  
 BOTTOM DIMENSIONS - SEE PLAN  
 STORAGE DEPTH - 4.0'  
 WEIR EL. - 442.0  
 WEIR LENGTH - 80'  
 EX. GRD @ EMBANK. - 440.0  
 TOP OF EMBANK. - 443.0  
 CLEANOUT EL. - 439.0  
 SIDESLOPES - 2:1 MAX.

**SED. TRAP NO. 2**  
 SEDIMENT TRAP TYPE II  
 INITIAL DA. - 0.3 AC.  
 FINAL DA. - 2.0 AC.  
 STORAGE REQUIRED - 7200 CF.  
 STORAGE PROVIDED - 8940 CF.  
 WET - 4507 CF @ 425.0  
 DRY - 3970 CF @ 421.0  
 BOTTOM EL. - 424.0  
 BOTTOM DIMENSIONS - SEE PLAN  
 STORAGE DEPTH - 2.0'  
 WEIR EL. - 427.0  
 WEIR LENGTH - 80'  
 EX. GRD @ EMBANK. - 420.5  
 CLEANOUT EL. - 424.0  
 SIDESLOPES - 2:1 MAX.  
 EX. GRD @ OUTFALL - 415.8  
 TOP OF EMBANK. - 420.0

**SED. TRAP NO. 5**  
 SEDIMENT TRAP TYPE II  
 INITIAL DA. - 0.3 AC.  
 FINAL DA. - 2.0 AC.  
 STORAGE REQUIRED - 7200 CF.  
 STORAGE PROVIDED - 8940 CF.  
 WET - 3716 CF @ 422.5  
 DRY - 5070 CF @ 414.0  
 BOTTOM EL. - 421.0  
 BOTTOM DIMENSIONS - SEE PLAN  
 STORAGE DEPTH - 3.0'  
 WEIR EL. - 424.0  
 WEIR LENGTH - 80'  
 EX. GRD @ EMBANK. - 424.0  
 CLEANOUT EL. - 421.5  
 SIDESLOPES - 2:1 MAX.  
 EX. GRD @ OUTFALL - 422.5  
 TOP OF EMBANK. - 425.0

NOTE: TRAP #2 & #5 SIZED TO TAKE FLOWS INITIALLY DRAINING TO TRAP #3 ONCE ROAD GRADES WILL ALLOW THIS DRAINAGE TO INLETS I-107 & I-108 WHICH WILL DIVERT FLOWS TO TRAPS 5 & 2 RESPECTIVELY.



APPROVED:  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Decker* 2-3-99  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:  
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Andy Hamilton* 2/18/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE  
*John D. ...* 2/18/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED:  
 THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
*John D. ...* 2/22/99  
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED:  
 THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.  
*Charles A. Sharp* 4/22/99  
 USDA - NATIONAL RESOURCES CONSERVATION SERVICE DATE

DEVELOPER'S CERTIFICATE  
 I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.  
*Charles A. Sharp* 6-10-98  
 Signature of Developer DATE

ENGINEER'S CERTIFICATE  
 I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.  
*Robert N. Mochi, P.E.* 6-11-98  
 DATE



project	96019.13	date	06-98
illustration	GEM.M.B.	engineering	M.W.Z.
scale	as shown	approval	R.M.M.

no.	1	date	02-02-99
description	REVISED PER GEM.M.B. COMMENTS	revision	01-14-99
no.	2	date	12-07-98
description	DIRECT SUBMITTAL TO HOWARD CO. DED	revision	01-16-99
no.	3	date	02-02-99
description	REVISED PER GEM.M.B. COMMENTS	revision	01-14-99
no.	4	date	02-02-99
description	REVISED PER GEM.M.B. COMMENTS	revision	01-14-99

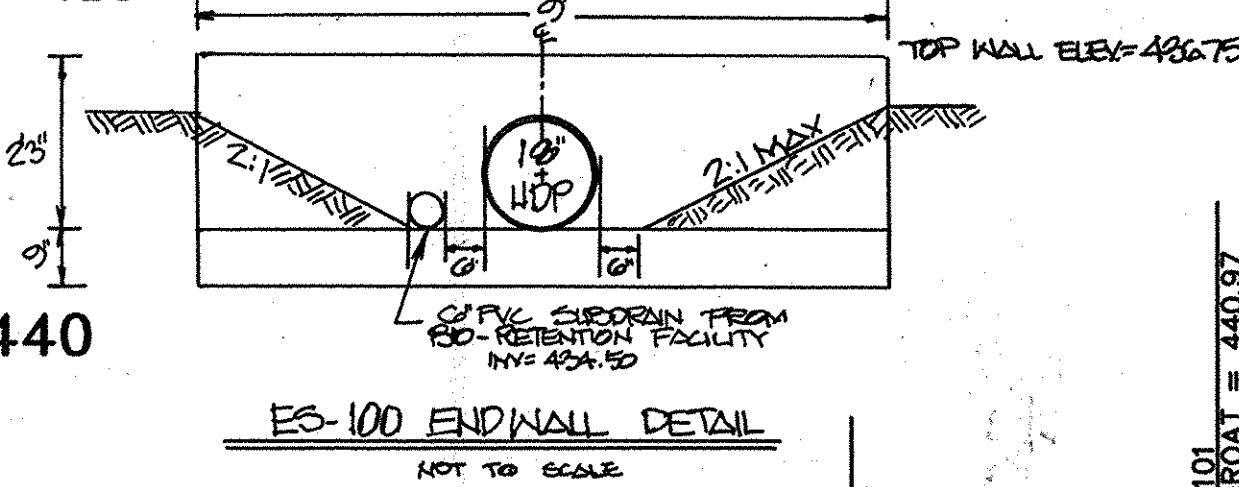
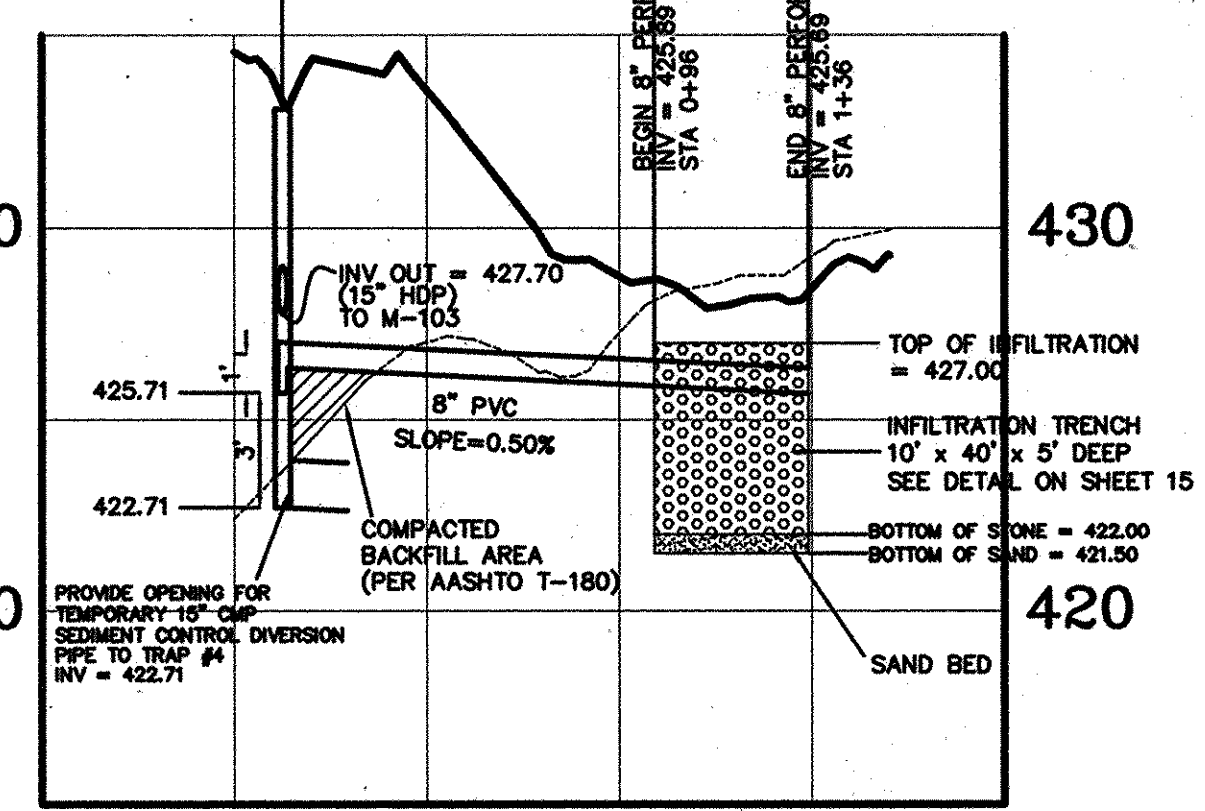
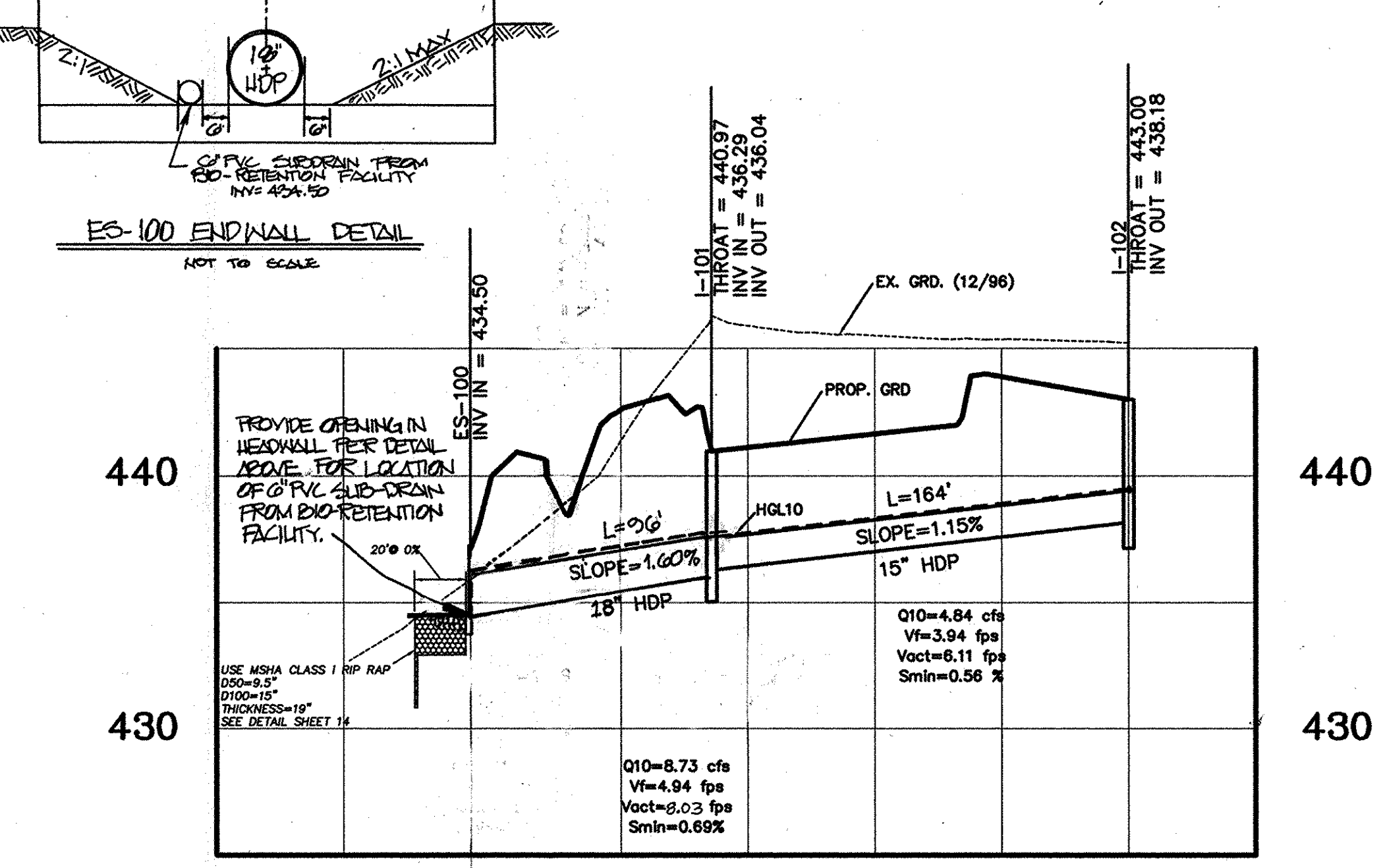
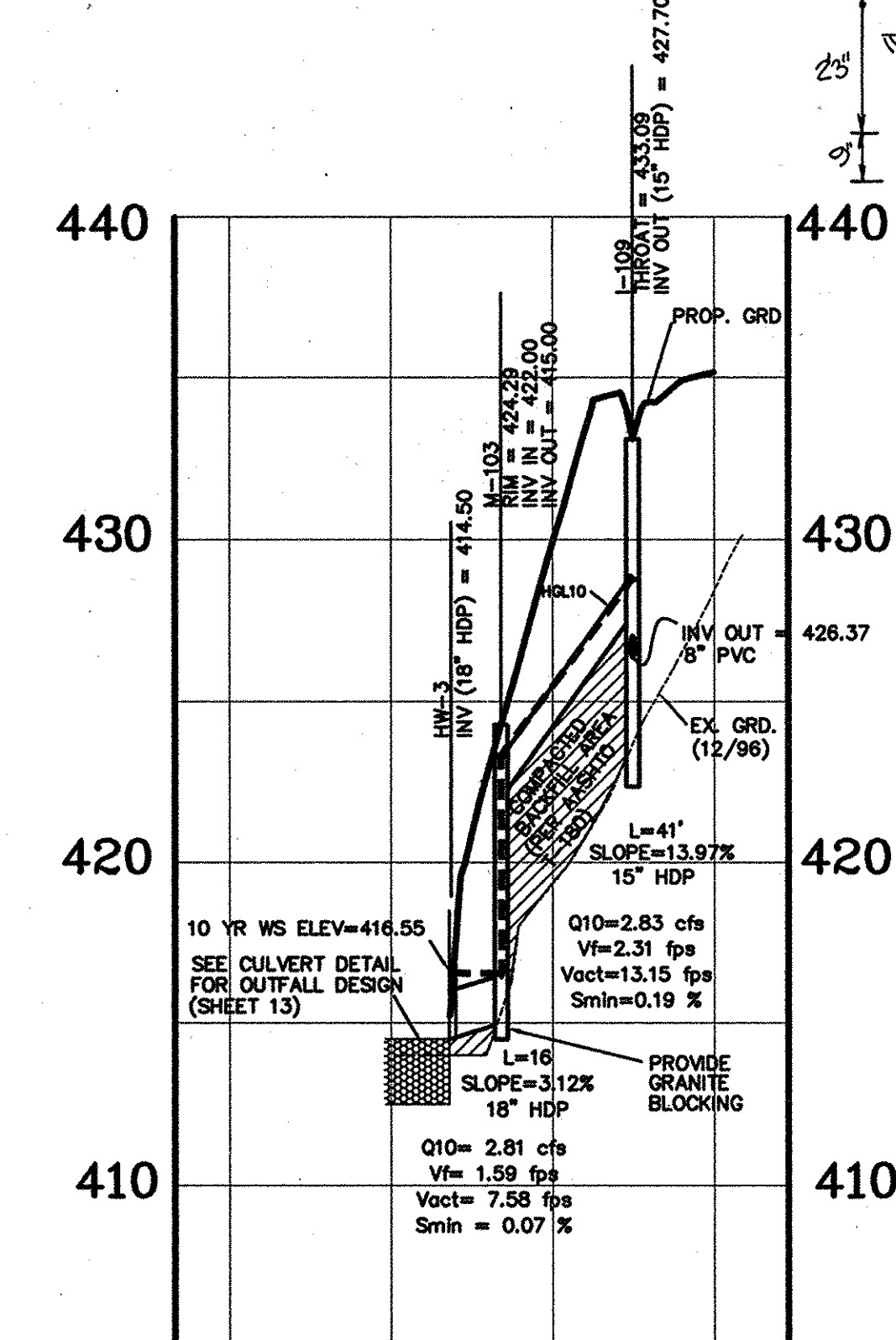
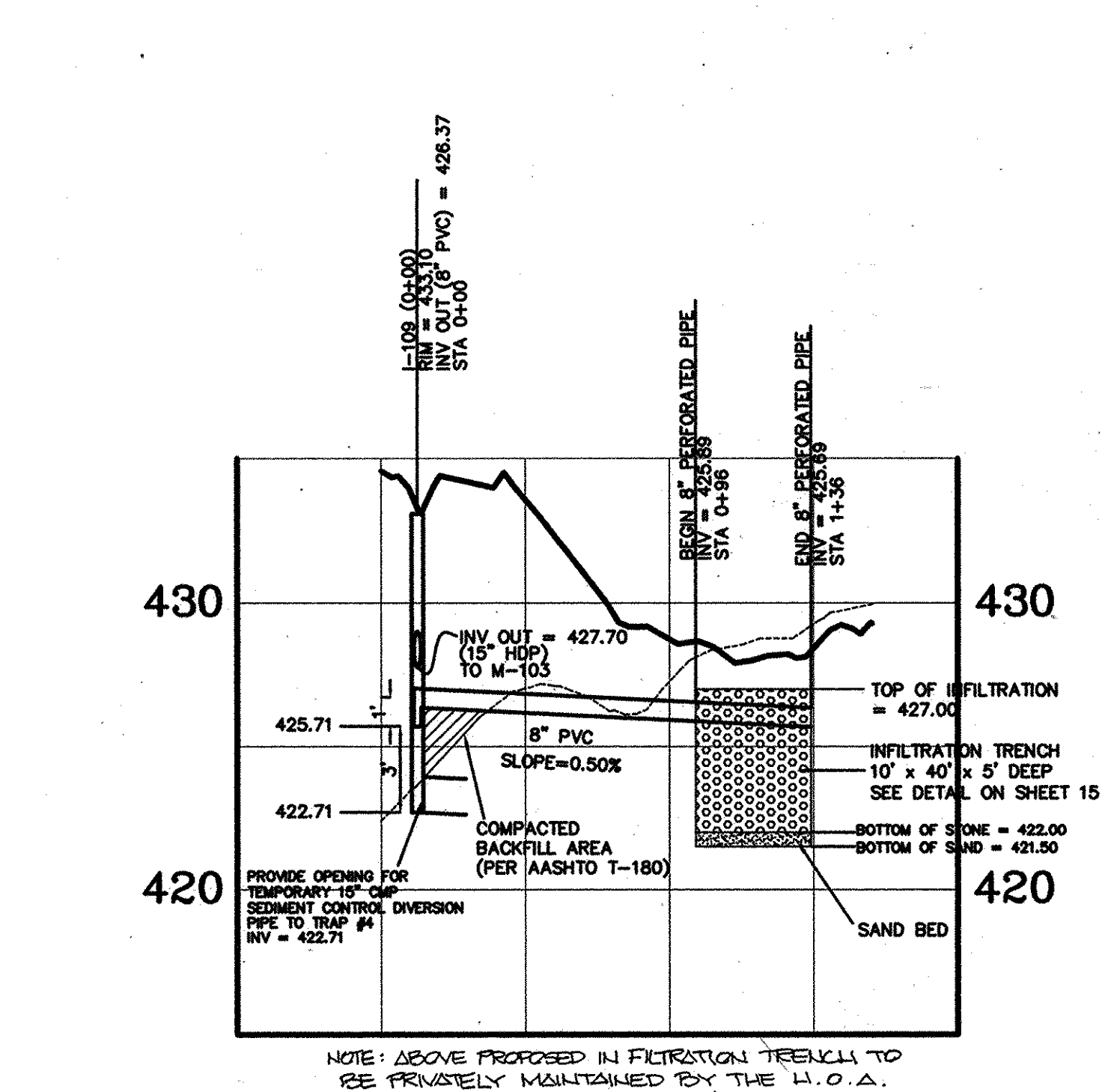
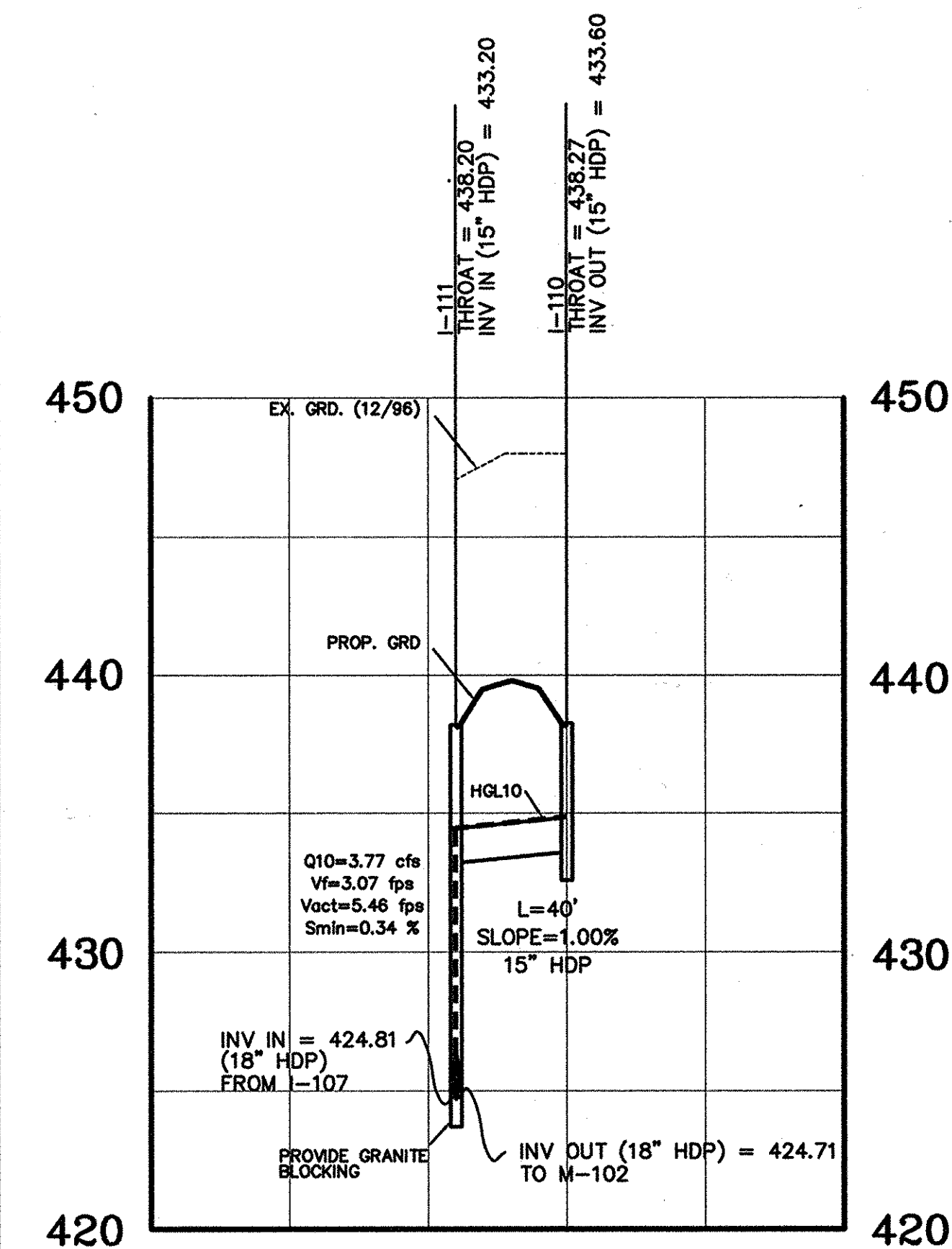
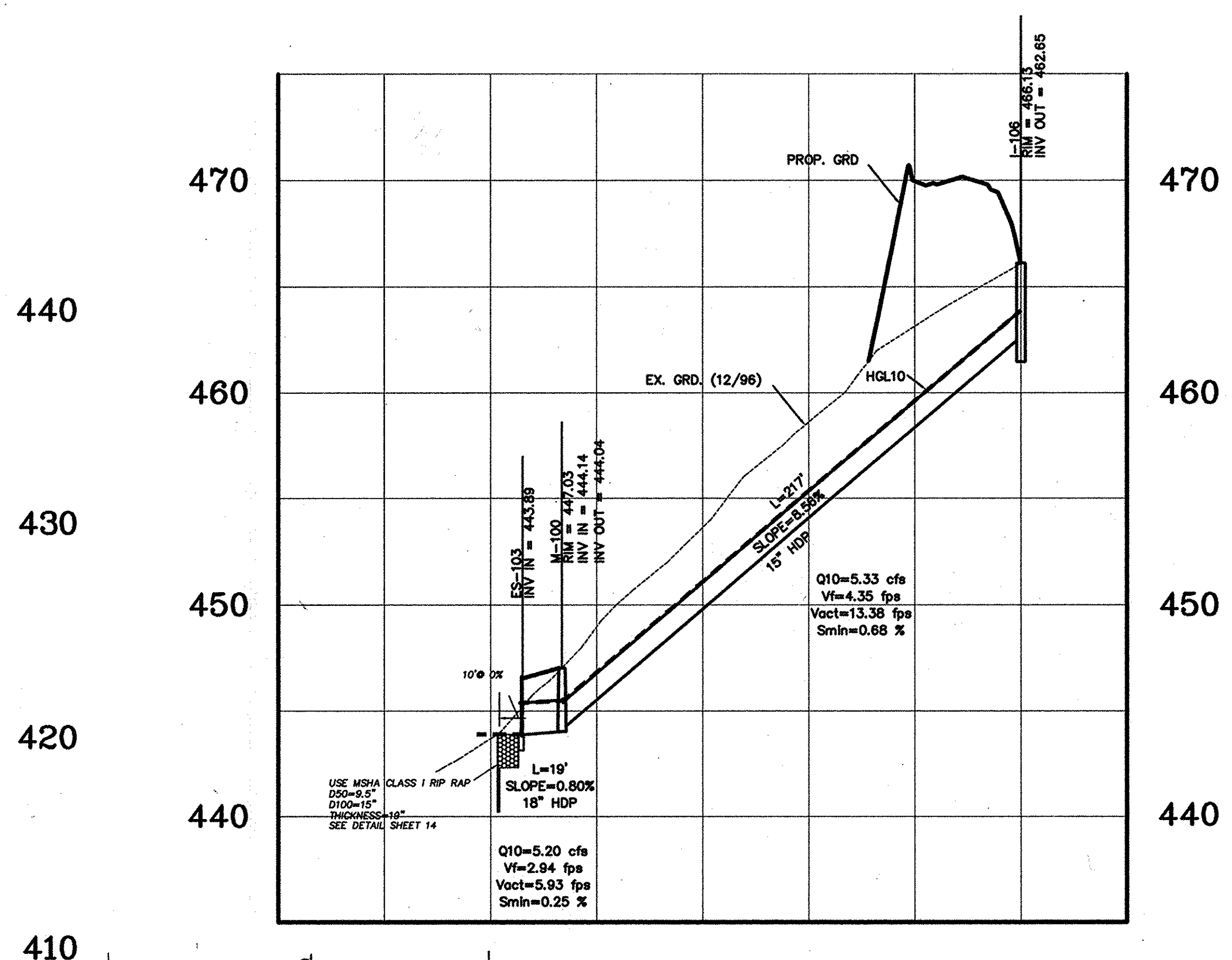
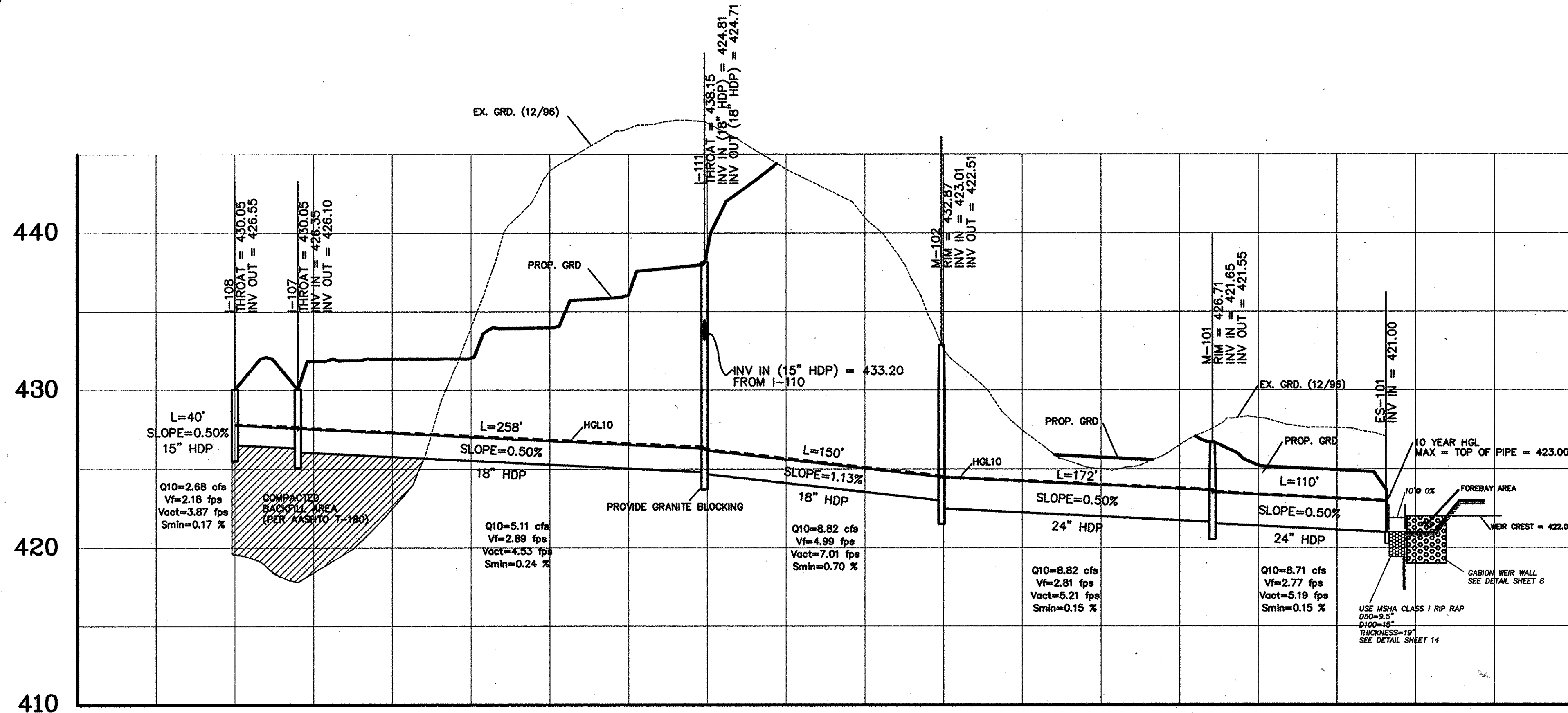
SECTION 1, PHASE 1  
**BIG BRANCH OVERLOOK**  
 ELECTION DISTRICT NO. 5  
 HOWARD COUNTY, MD.  
**Big Branch Dr. Grading and Sediment Control Plan**

R.M. MOCHI GROUP, P.C.  
 1010 A Old Howard Pike  
 Towson, MD 21286-5026  
 Tel: (410) 284-5950  
 Fax: (410) 284-5911









STORM DRAIN STRUCTURE SCHEDULE				
No.	Type	Location		Remarks
I-101	Precast Open End Grate	STA. 5+82.25	O/S 20.00 L	SD 4.36
I-102	Precast Open End Grate	STA. 4+17.94	O/S 22.32 L	SD 4.36
I-106	Precast Open End Grate	STA. 18+01.63	O/S 27.77 L	SD 4.36
I-107	Precast Open End Grate	STA. 29+50.43	O/S 20.00 R	SD 4.36
I-108	Precast Open End Grate	STA. 29+50.43	O/S 20.00 L	SD 4.36
I-109	Precast Open End Grate	STA. 44+56.42	O/S 17.00 R	SD 4.36
I-110	Precast Open End Grate	STA. 26+93.43	O/S 20.00 L	SD 4.36
I-111	Precast Open End Grate	STA. 26+93.43	O/S 20.00 R	SD 4.36
M-100	4'0" Precast Manhole	N 574239.94	E 1309691.40	G5.12
M-101	4'0" Precast Manhole	N 573771.33	E 1309164.58	G5.12
M-102	4'0" Precast Manhole	N 573626.16	E 1309072.09	G5.12
M-103	4'0" Precast Manhole	STA. 44+82.93	E 48.00 R	G5.12
*ES-100	Type "C" Endwall Circular Pipe	N 575286.92	E 1310114.30	SD 5.21
ES-101	Type "C" Endwall Circular Pipe	N 573859.62	E 1309230.77	SD 5.21
ES-103	Type "C" Endwall Circular Pipe	N 574242.04	E 1309673.01	SD 5.21

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Daneker* 2-3-99  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamlett* 2/18/99  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chris Williams* 2/18/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

FOR ALL PROFILES  
VERT SCALE: 1"=5'  
HORIZ SCALE: 1"=50'



project	96019-19	date	09-88
illustration	J.M.Z.	engineering	M.W.Z.
scale	AS SHOWN	approval	R.M.M.

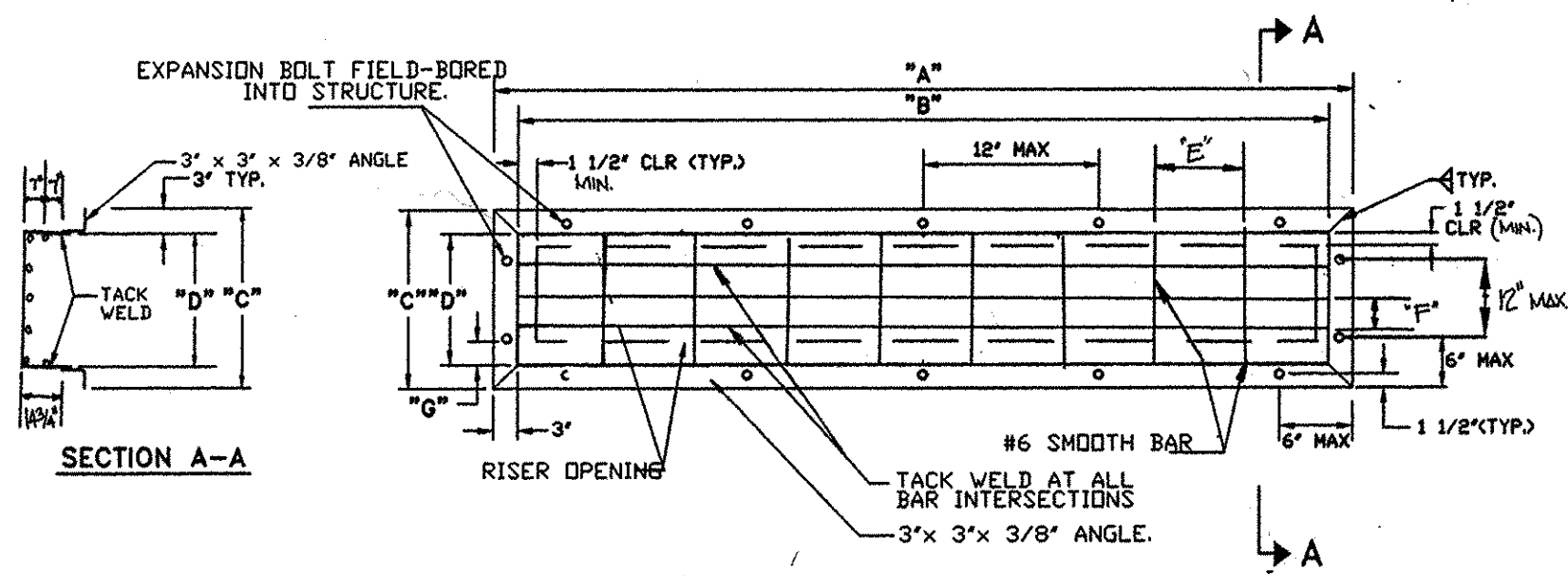
no.	4	description	REVISIONS
1	9	REMOVED PER BUREAU OF HIGHWAYS COMMENTS	02-02-99
2	9	SUBMITTED ORIGINAL MYLARS FOR SIGNATURE	01-14-99
3	7	2ND SUBMITTAL TO HO. CO. FOR REVIEW	09-88
4	0	1ST SUBMITTAL TO HO. CO.	09-88

SECTION 1, PHASE 1  
BIG BRANCH OVERLOOK  
ELECTION DISTRICT NO. 5  
HOWARD COUNTY  
STORM DRAIN PROFILES

R.M. MOCHI GROUP, P.C.  
P.O. Box 10  
New Market, MD 21774-0010  
(301) 885-5888  
Fax: (301) 885-5111

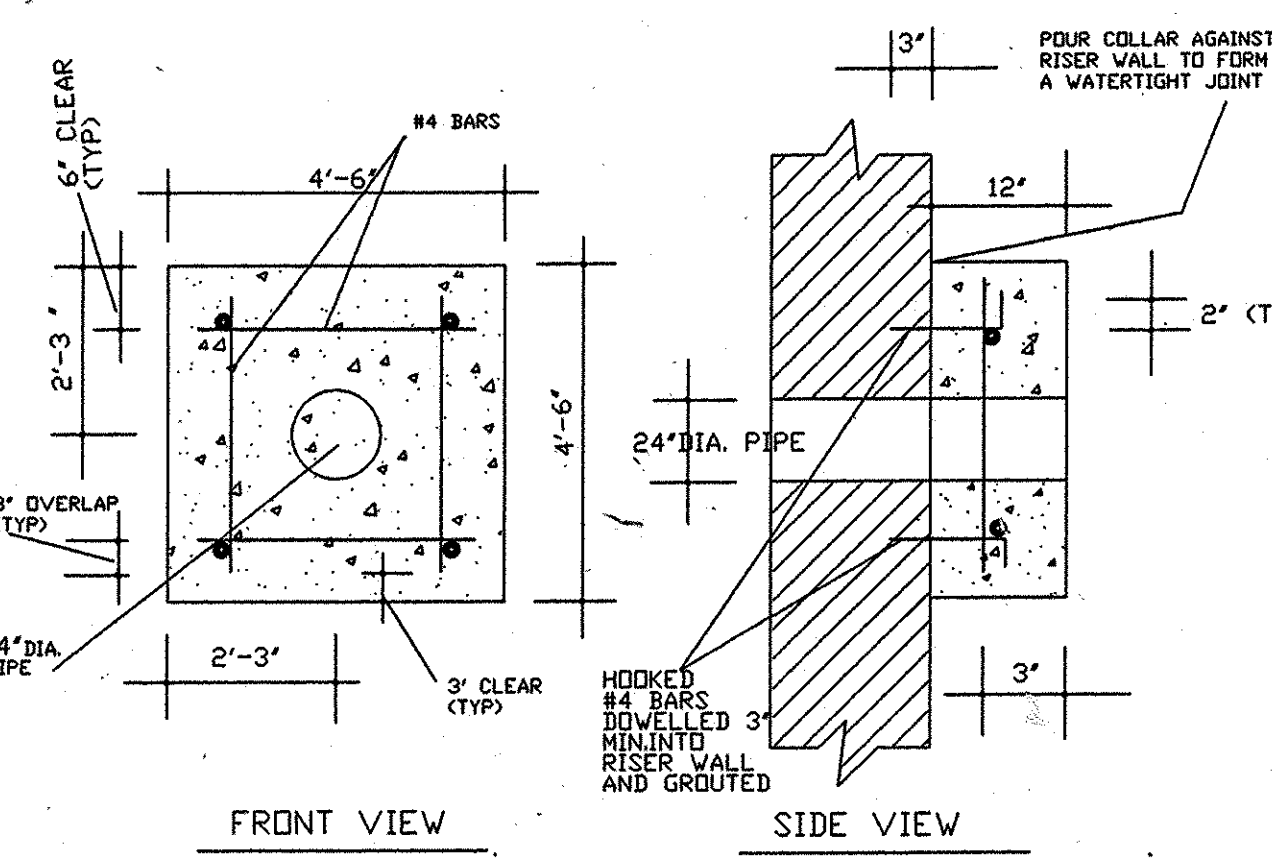


LOCATION OF TRASH RACK	QTY. RORR	A	B	C	D	E	F	G	NOTES
SIDE 14'	1	5'-9 3/4"	5'-3 3/4"	2'-4 1/2"	2'-10 1/2"	7'-0"	6'-0"	2'-3 1/2"	7' hardware ID variables
AS-BUILT									



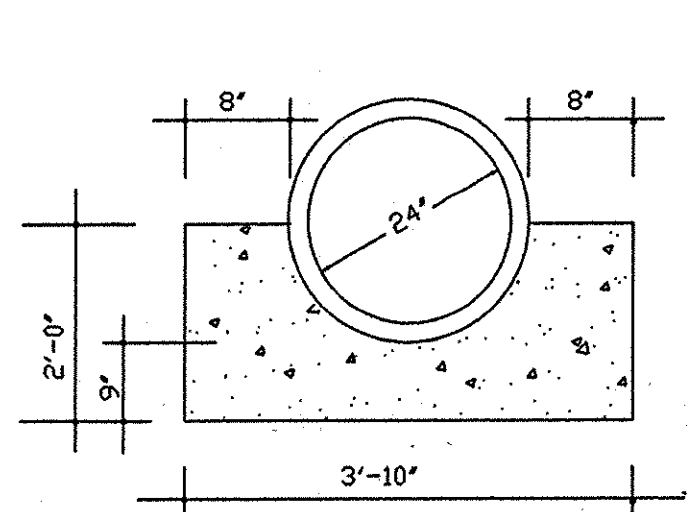
**HIGH STAGE TRASH RACK**  
NOT TO SCALE

**NOTES:**  
1. TRASH RACK TO BE HOT-DIPPED GALVANIZED AFTER ASSEMBLY AND PRIOR TO INSTALLATION.  
2. VERTICAL BARS TO BE PLACED ON OUTSIDE OF HORIZONTAL BARS.



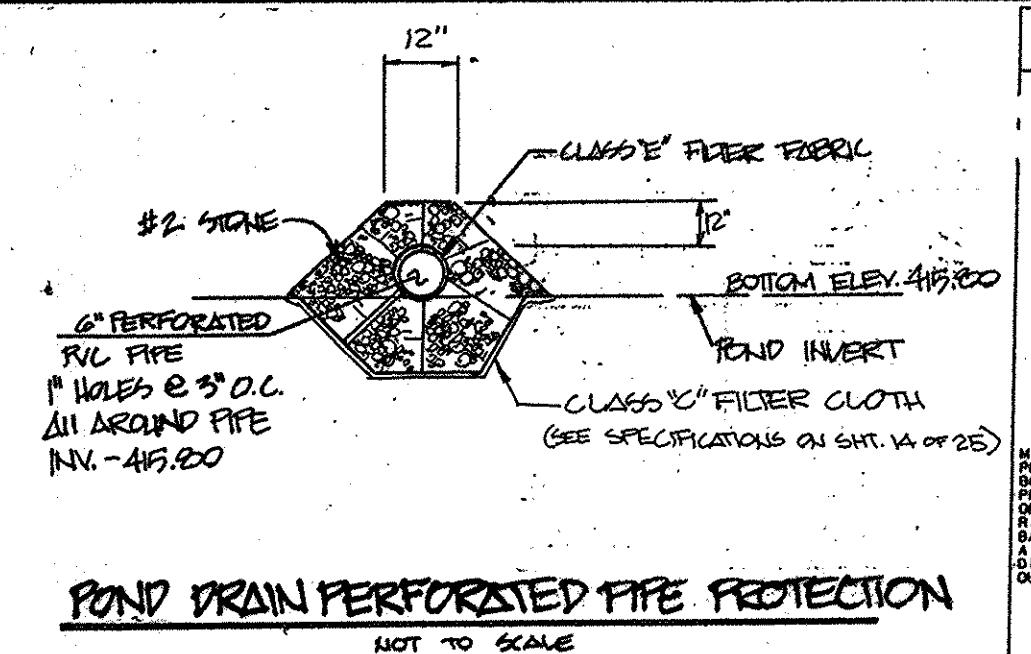
**CONCRETE COLLAR**  
NOT TO SCALE

**NOTE:**  
1. CONCRETE SHALL BE MSHA MIX NO.3 (F'c = 3,500 PSI)

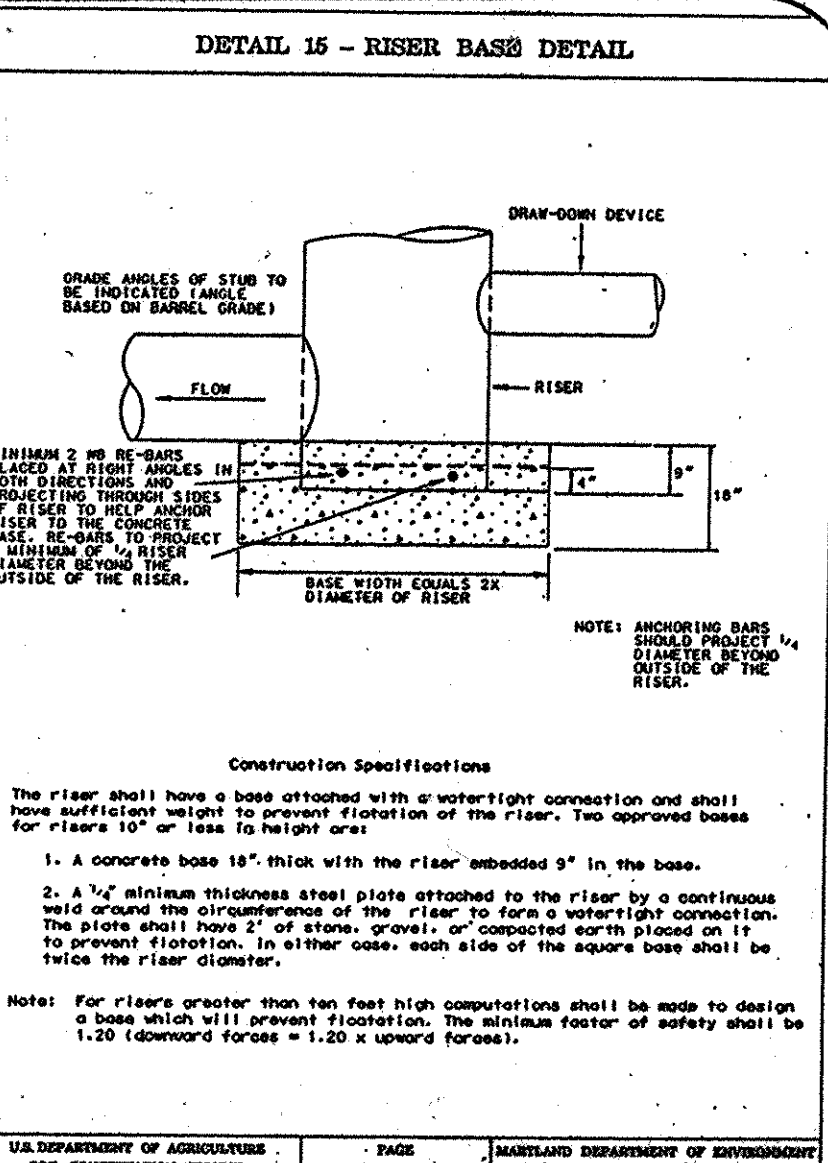


**CONCRETE CRADLE**  
NOT TO SCALE

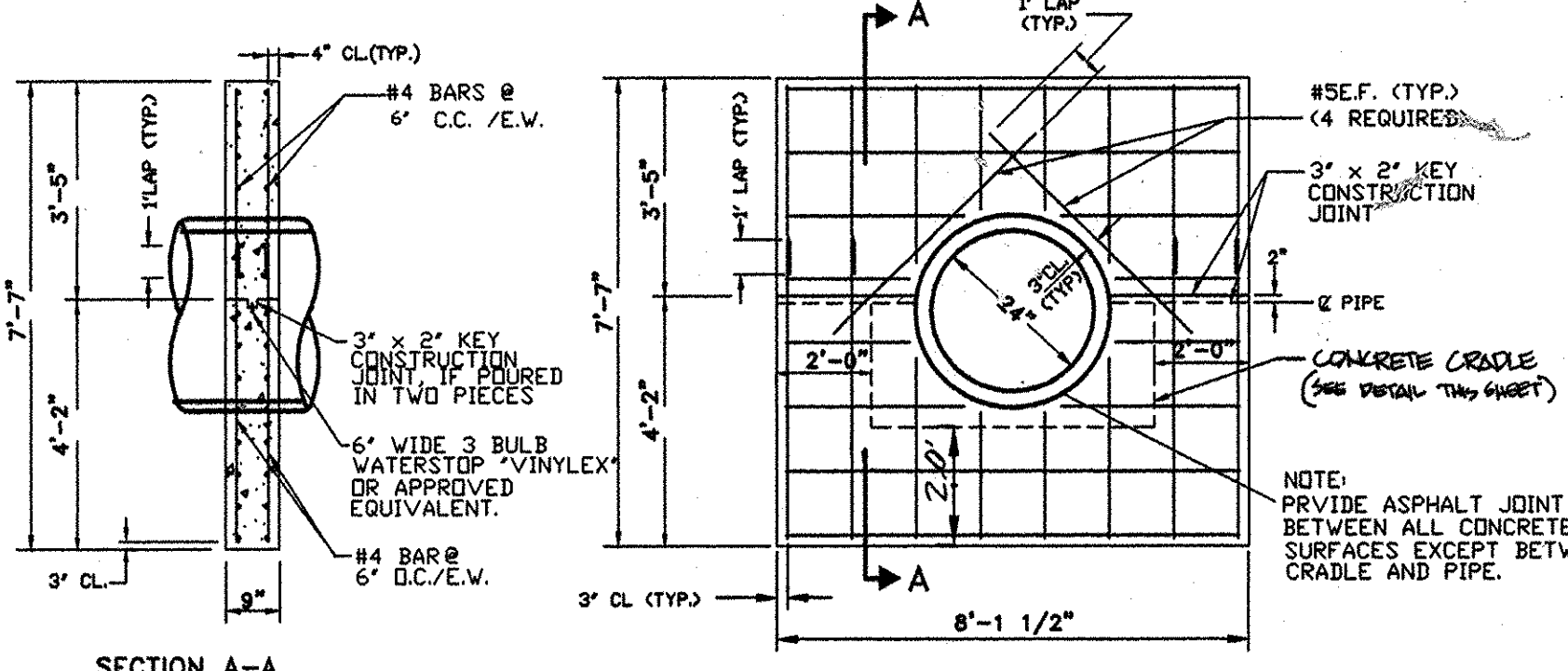
**NOTES:**  
1. POUR CONCRETE AGAINST UNDISTURBED EARTH. CONCRETE SHALL BE MSHA MIX NO.3 (F'c = 3,500 PSI) BARRIL MAY BE PLACED ON PRECAST CONCRETE BLOCKS PRIOR TO CRADLE POUR.  
2. POURING AN ADDITIONAL 4\"/>



**POND DRAIN PERFORATED PIPE PROTECTION**  
NOT TO SCALE

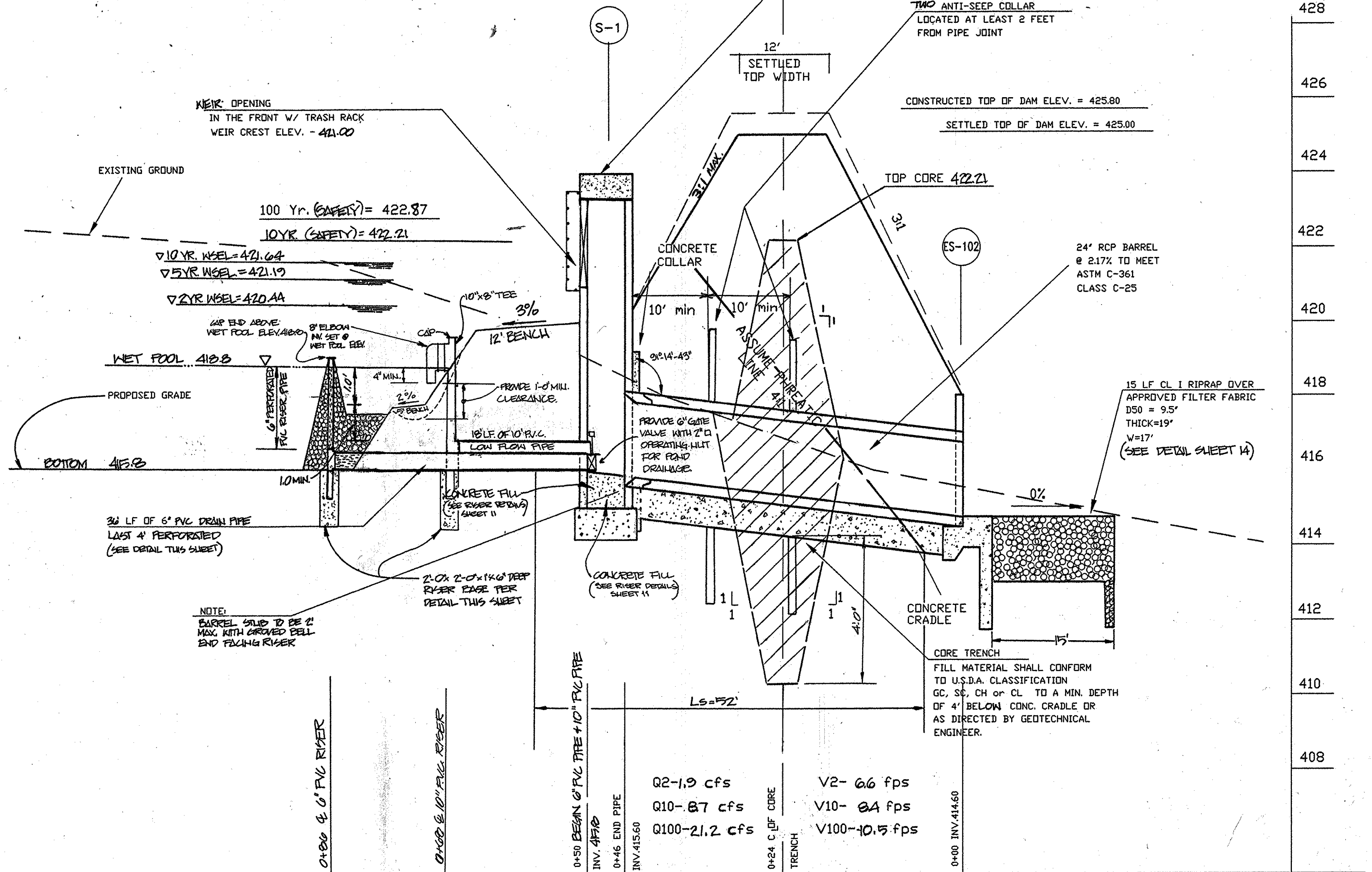


**Construction Specifications**  
The riser shall have a base attached with a watertight connection and shall have sufficient weight to prevent flotation of the riser. Two approved bases for risers 18\"/>



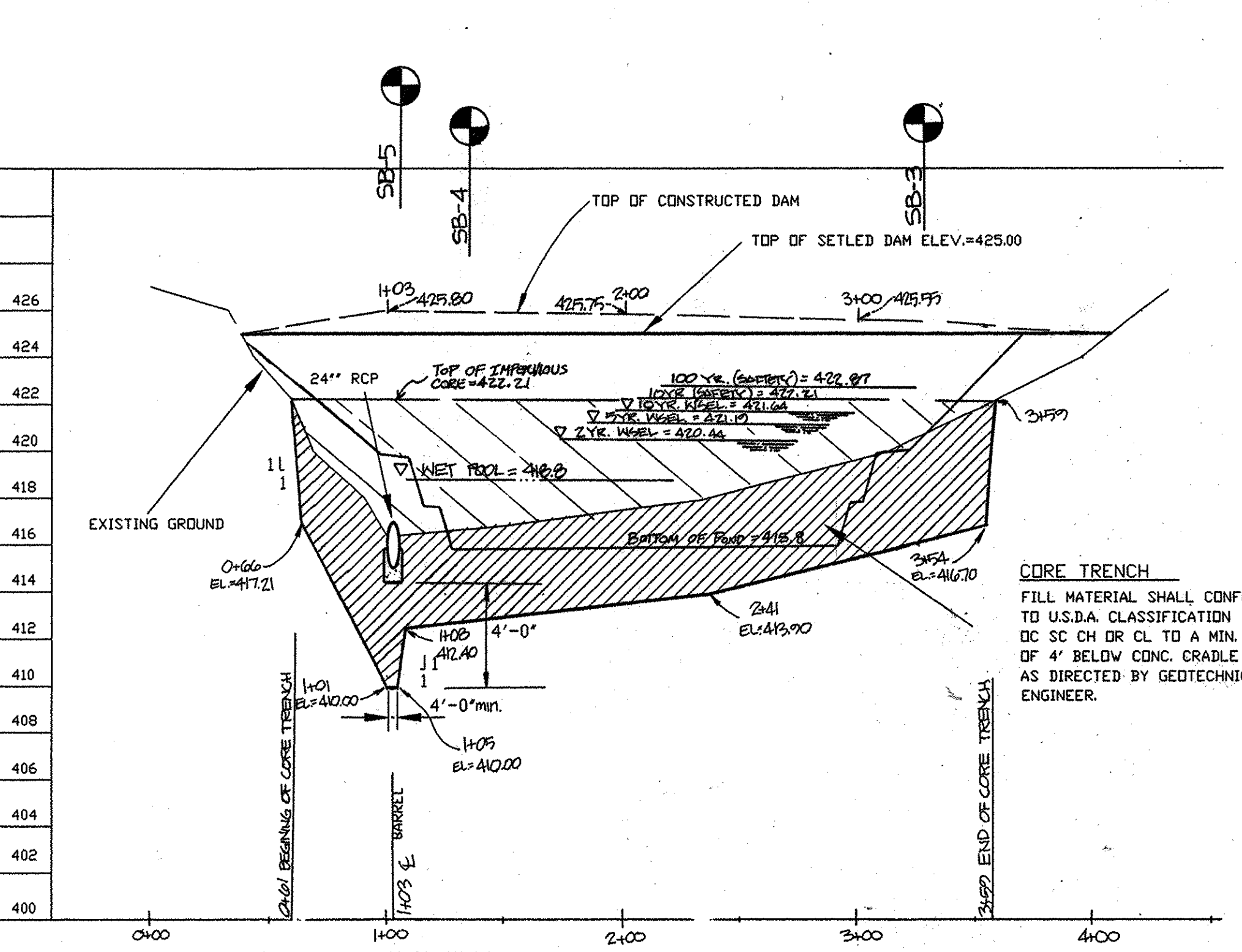
**CONCRETE ANTI-SEEP COLLAR**  
NOT TO SCALE

**NOTES:**  
1. ANTI-SEEP COLLARS ARE TO BE FIELD LOCATED A MINIMUM OF 2' AWAY FROM ANY PIPE JOINT. SEE PIPE PROFILE FOR APPROX. SPACING.  
2. CONCRETE SHALL BE MSHA MIX NO.3 (F'c = 3,500 PSI)  
3. A 'ONE POUR' COLLAR DOES NOT REQUIRE A CONSTRUCTION JOINT.  
4. PROVIDE A MINIMUM OF 2' CLEARANCE FROM OUTSIDE OF PIPE OR CONCRETE CRADLE TO OUTSIDE OF ANTI-SEEP COLLAR.  
5. CONCRETE CRADLE IS NOT SHOWN IN SECTION A-A.



STRUCTURE	TYPE	LOCATION	INVERT		ELEVATION	REMARKS
			IN	OUT		
S-1	RISER	E1309088.63 N573919.00	415.60		TOP 424.17	HOLD STANDARD TYPE 14\"/>
ES-102	END WALL	E1309132.33 N573841.95		414.60		

**PRINCIPAL SPILLWAY PROFILE FOR SWM POND #1**  
SCALE: HORIZ. 1\"/>



**PROFILE ALONG C OF THE DAM**  
SCALE: HORIZ. 1\"/>

**APPROVED:**  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Charles M. Decker* 2-3-99  
CHIEF, BUREAU OF HIGHWAYS

**APPROVED:**  
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Charles Hamilton* 2/2/99  
CHIEF, DIVISION OF LAND DEVELOPMENT

**APPROVED:**  
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
*John R. Howard* 1/22/99  
HOWARD SOIL CONSERVATION DISTRICT

**APPROVED:**  
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.  
*Charles Simmons* 1/22/99  
USDA - NATIONAL RESOURCE CONSERVATION SERVICE

**DEVELOPER'S CERTIFICATE**  
I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.  
*Charles A. S. Hoop* 6-10-98  
Signature of Developer

**ENGINEER'S CERTIFICATE**  
I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.  
*Robert M. Mochl, P.E.* 6-11-98  
DATE



PROJECT	86018.13	DATE	06-98
ILLUSTRATION	K.M.B.	ENGINEERING	M.W.Z.
SCALE	1" = 50'	APPROVAL	

NO.	4	DATE	02-02-99
DESCRIPTION	REVIEWED PER BUREAU OF HIGHWAYS COMMENTS	DATE	01-14-99
	1	REVIEWED PER PLANNING & ZONING COMMENTS	01/14/99
	2	REVIEWED PER HO. CO. DPZ COMMENTS	01/14/99
	3	1ST SUBMITTAL TO HO. CO. DPZ FOR REVIEW	01/14/99

**SECTION 1, PHASE 1**  
**BIG BRANCH OVERLOOK**  
HOWARD COUNTY  
ELECTION DISTRICT NO. 5  
**STORMWATER MANAGEMENT PLAN**

**RM MOCHI GROUP, P.C.**  
P.O. Box 10  
New Market, MD 21774-0010  
10279 A Old National Pike  
Pawnee, MD 21784-9706  
(301) 882-5589  
Fax: (301) 882-5111







**Structural Notes**

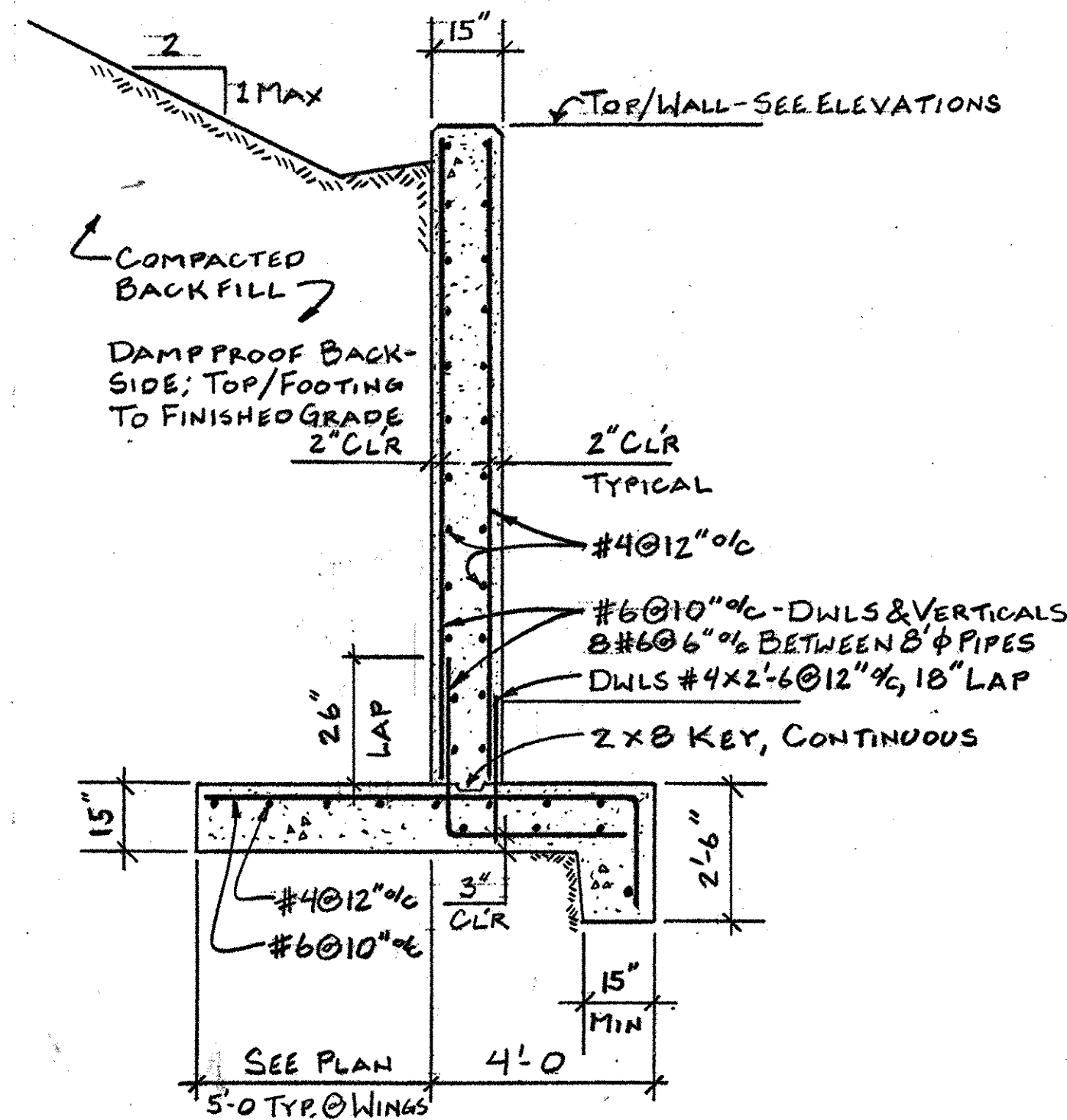
See Site Plan for location and grading.

**Foundations and Earth Work:**

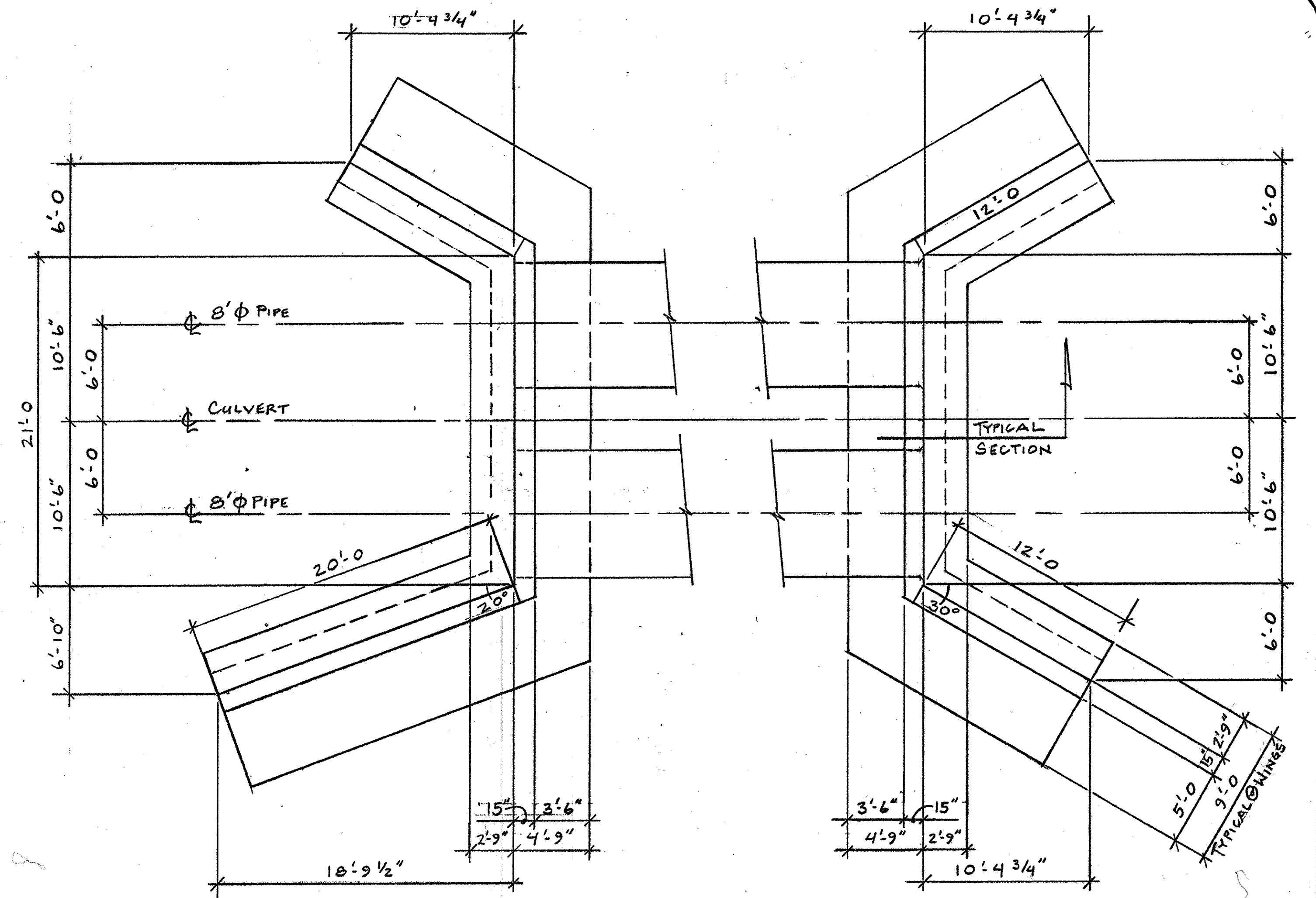
- A. Footings are designed for an allowable bearing capacity of 1850 pounds per square foot.
- B. Bottom of footings shall be 2'-6" minimum below finished grade and at least 6" into original soil. Where bottom of footing is above this elevation, fill with course stone or structural fill compacted to 95% maximum density per ASTM D698.
- C. The Contractor shall retain the services of a Geotechnical Engineer to monitor fill operations and to inspect and certify the bearing capacity of the soil prior to placing footings.
- D. Backfill shall consist of clean porous material compacted with appropriate equipment per AASHTO T-180.
- E. Backfill shall have a friction angle,  $\phi$ , of at least 30 degrees, and a maximum weight of 120 pounds per cubic foot.

**Concrete:**

- A. All concrete shall be Mix No. 3 and shall develop a compressive strength of 3500 psi in 28 days and, except footings, shall have 5% air entrainment.
- B. Concrete work shall conform to the Building Code Requirements of the American Concrete Institute, 318, latest edition.
- C. Reinforcing steel shall be ASTM A615, Grade 60.
- D. Provide spacers, chairs and ties as required to support reinforcing in position. Provide 3" clearance to bottom footing steel and 2" cover on wall reinforcing and top footing steel.
- E. Continuous longitudinal reinforcing shall be lapped 36 bar diameters. Vertical steel shall not be lapped except where shown.
- F. Remove fins, patch tie holes, provide rubbed finish and apply clear sealer.
- G. Provide 3/4" chamfer at exposed edges.
- H. Three concrete cylinders shall be formed and tested for each pour.



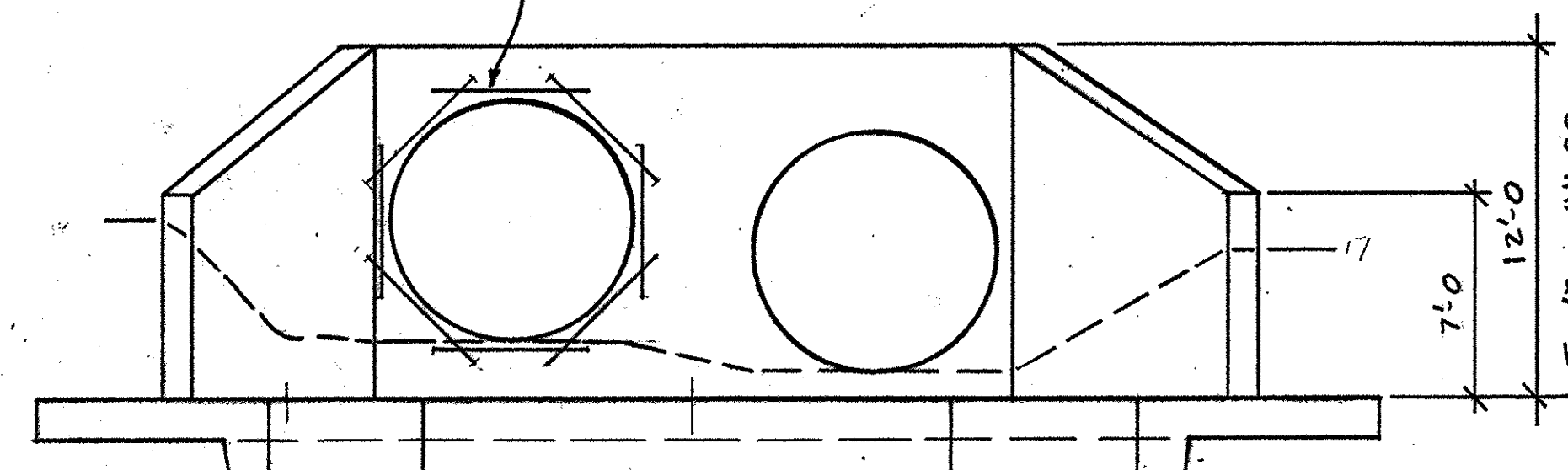
**Typical Section** 3/8" = 1'-0"



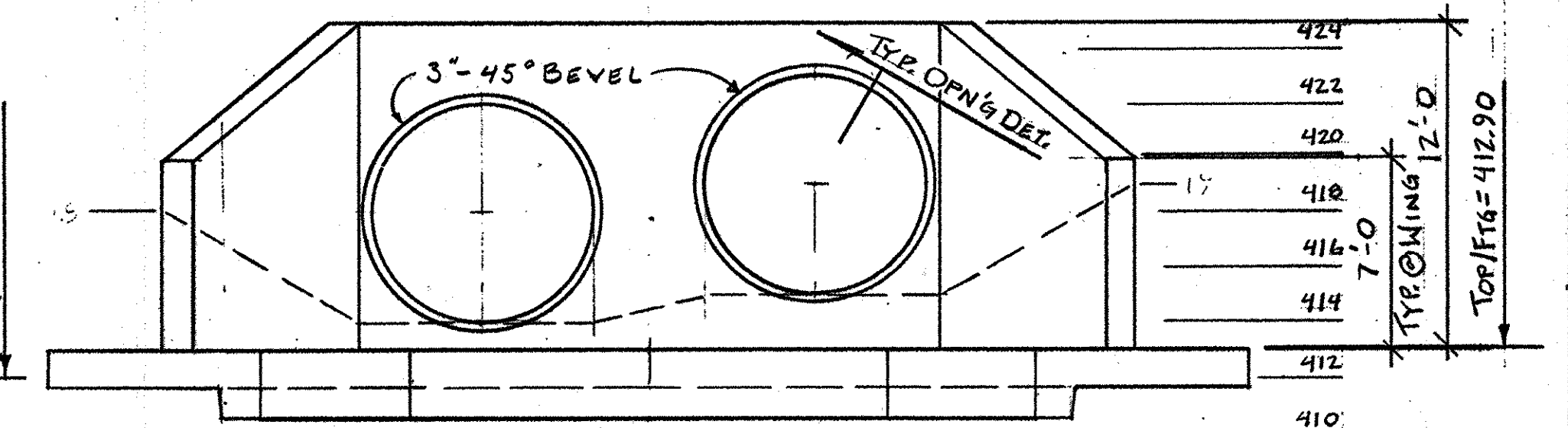
**Plan HW-1** 3/16" = 1'-0"

**Plan HW-2** 3/16" = 1'-0"

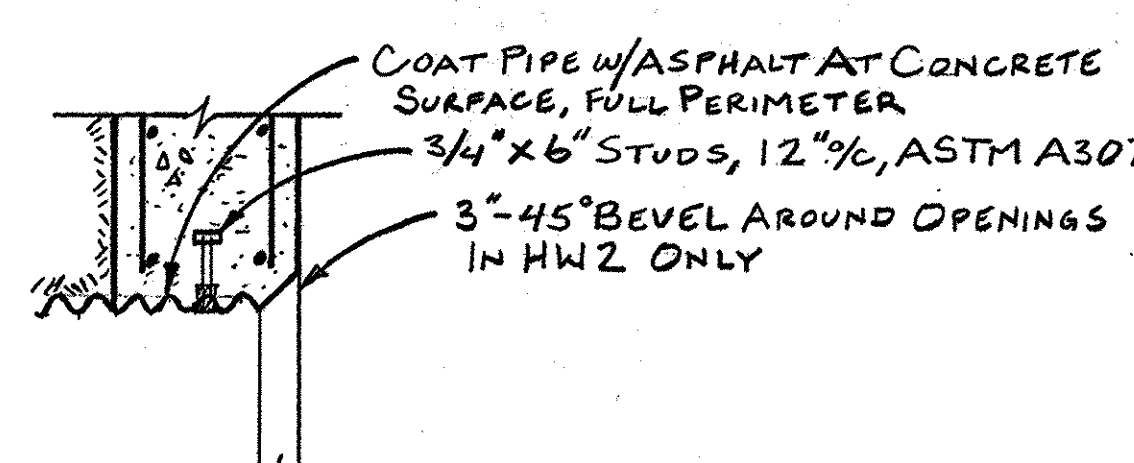
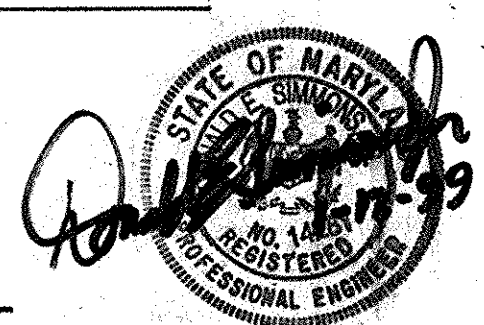
8 ADD'L #4 x 5'-0" EACH FACE, AT 8"  $\phi$  OPENINGS; 4 LOCATIONS



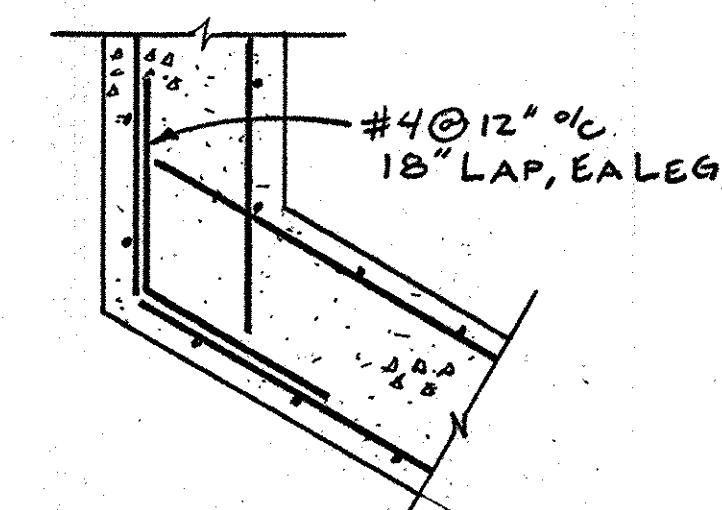
**Elevation HW-1** 3/16" = 1'-0"



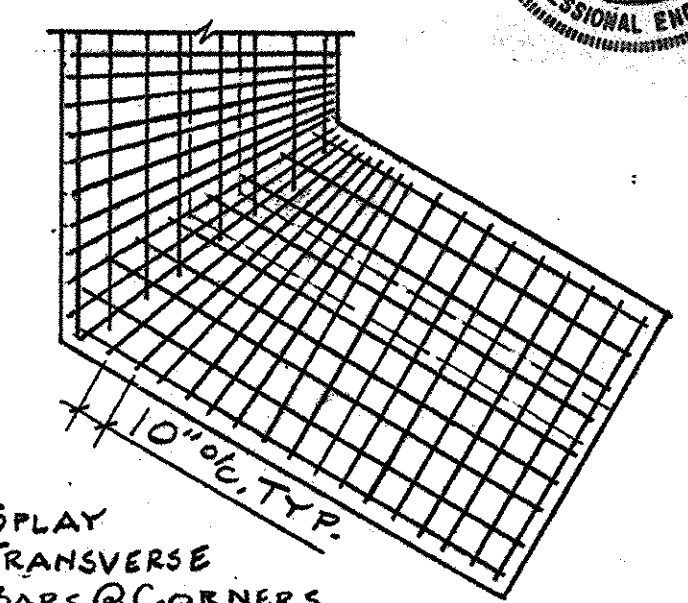
**Elevation HW-2** 3/16" = 1'-0"



**Typical Opening Detail** 3/4" = 1'-0"



**Typical Corner Reinforcing** 3/4" = 1'-0"



**Reinforcing Detail** 3/16" = 1'-0"

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Paucher* 2-3-99  
CHIEF, BUREAU OF HIGHWAYS  
DATE

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Ardis Hamilton* 2/10/99  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE

*Donald Simmons, Jr.* 2/16/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE

Date: 06-98

No.	Description	Revisions	Date
1	SUBMITTED ORIGINALS NYLARS FOR SIGN.		01-14-99

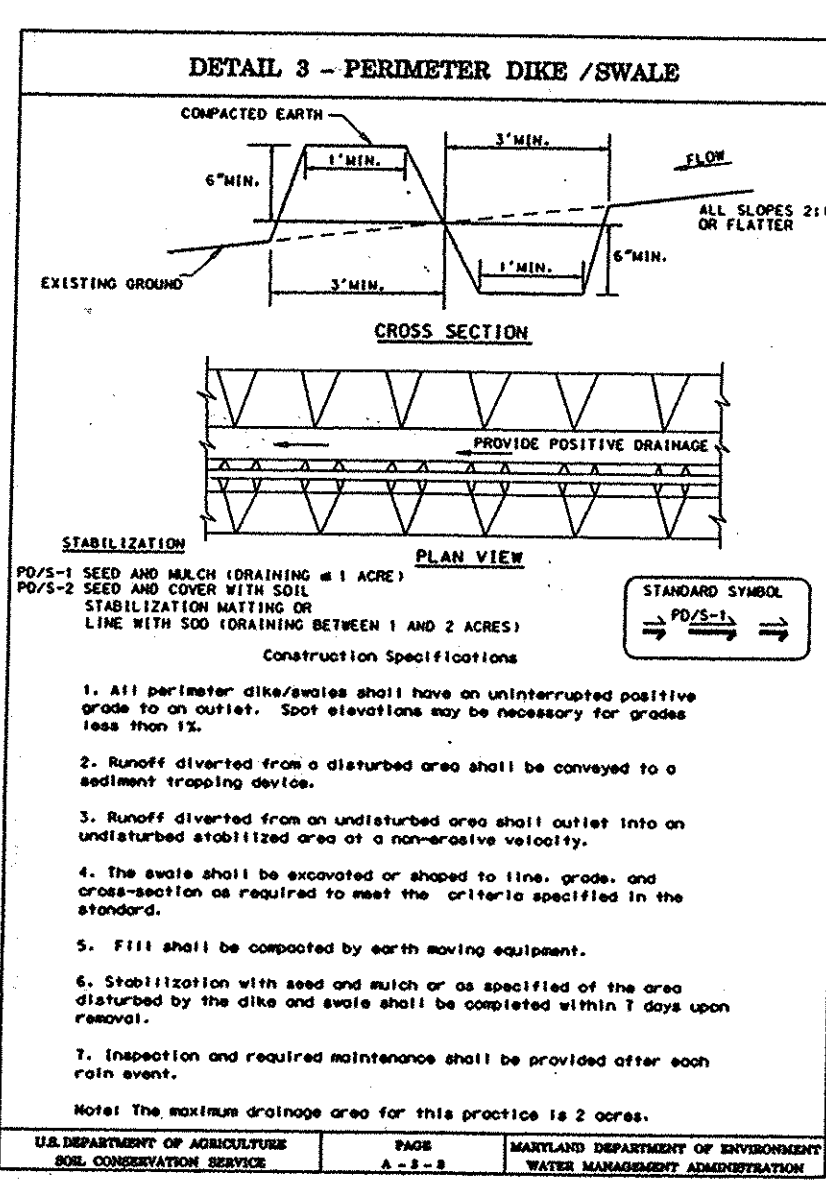
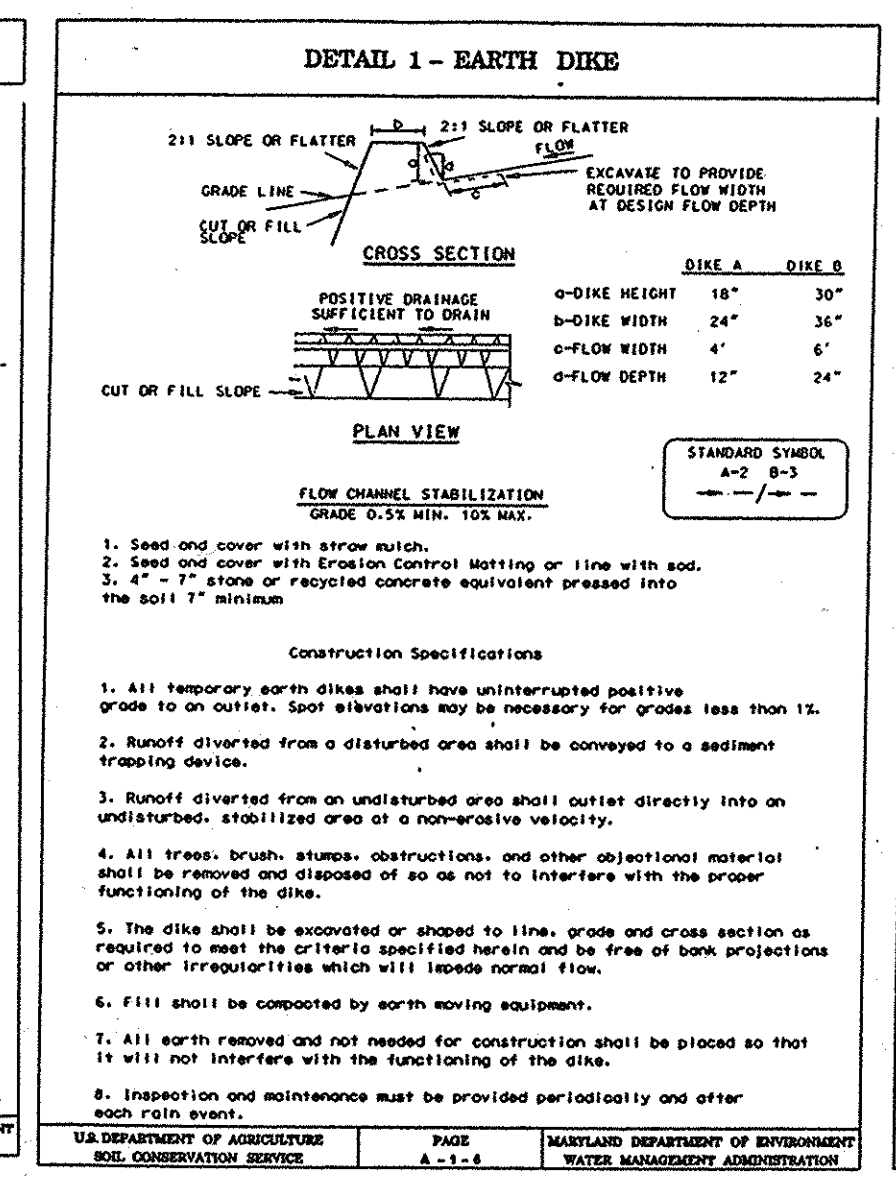
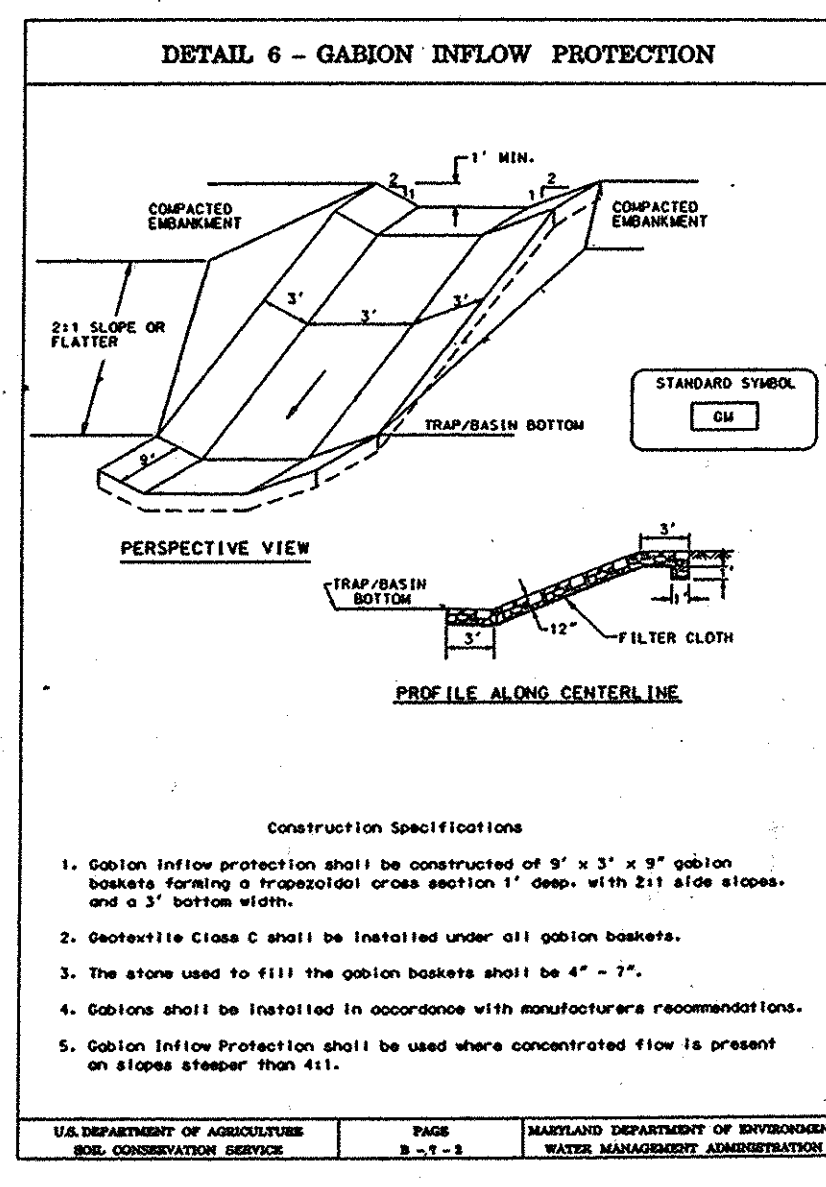
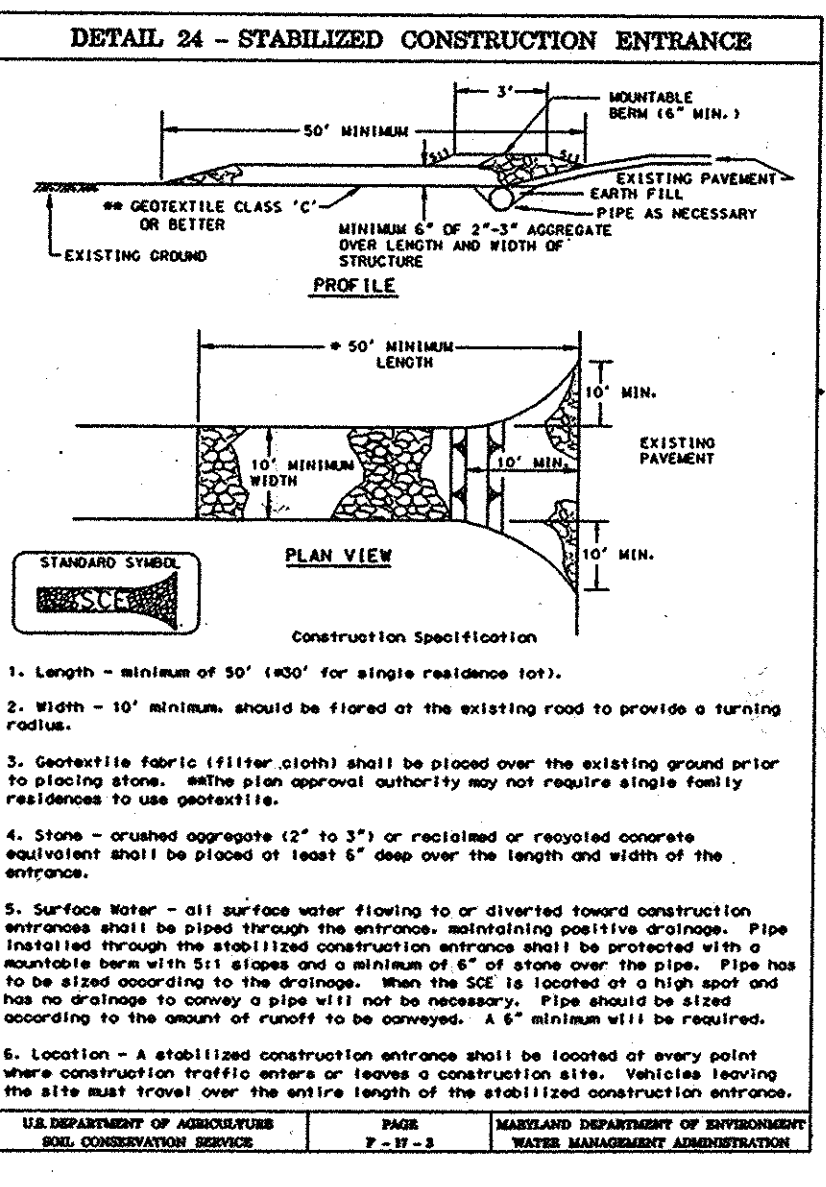
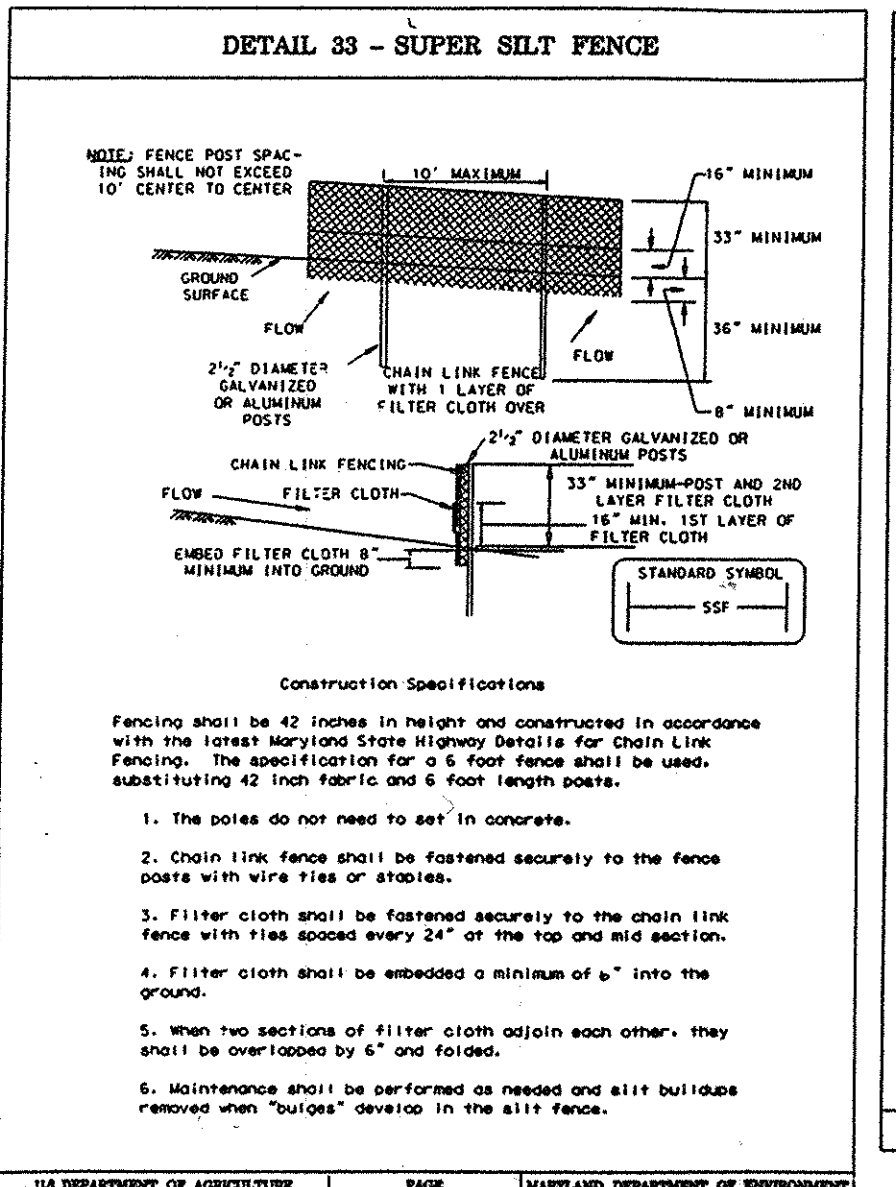
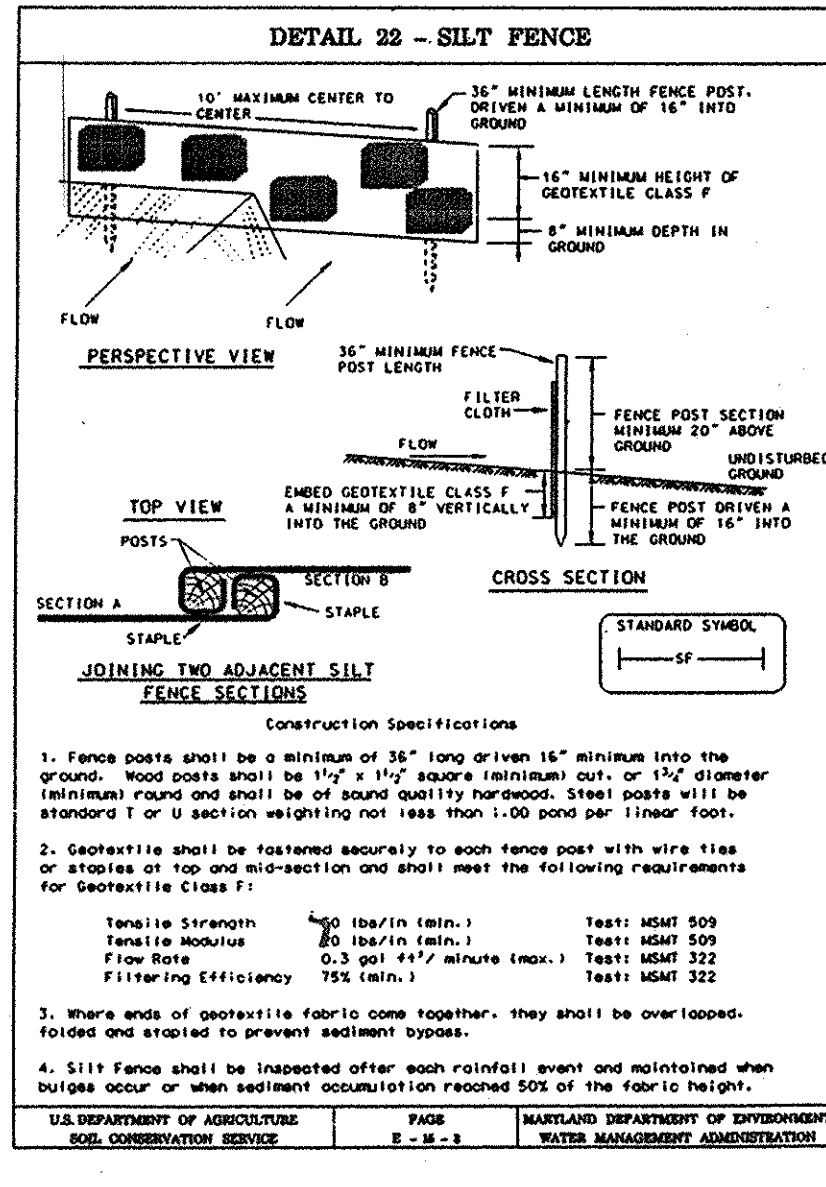
SECTION 1, PHASE 1  
BIG BRANCH OVERLOOK  
HOWARD COUNTY  
ELECTION DISTRICT NO. 5  
CULVERT HEADWALL DETAILS

Donald Simmons, Jr.  
Professional Engineer  
14 Arden Valley Ct.  
Sparks, MD 21152  
410-771-8278









### PERMANENT SEEDING NOTES

Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived 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: 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 100 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.

### TEMPORARY SEEDING NOTES

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

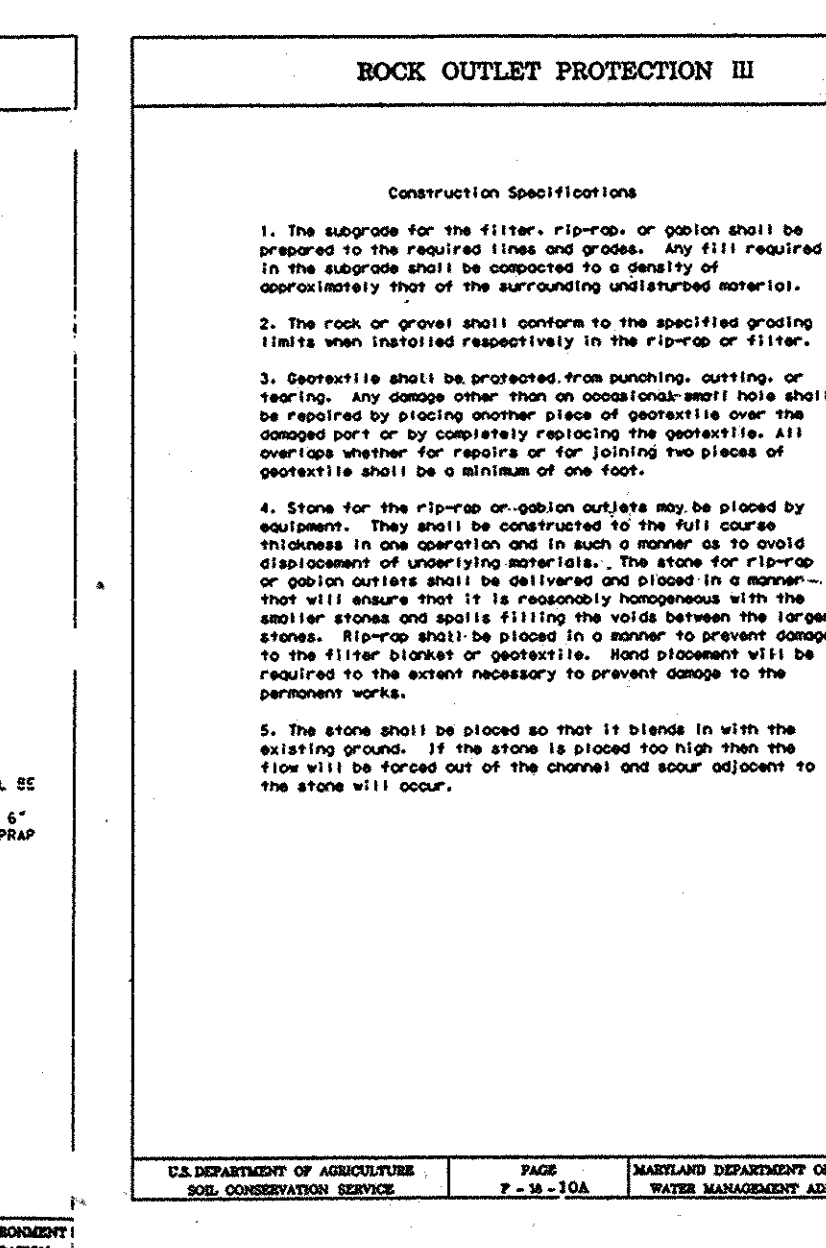
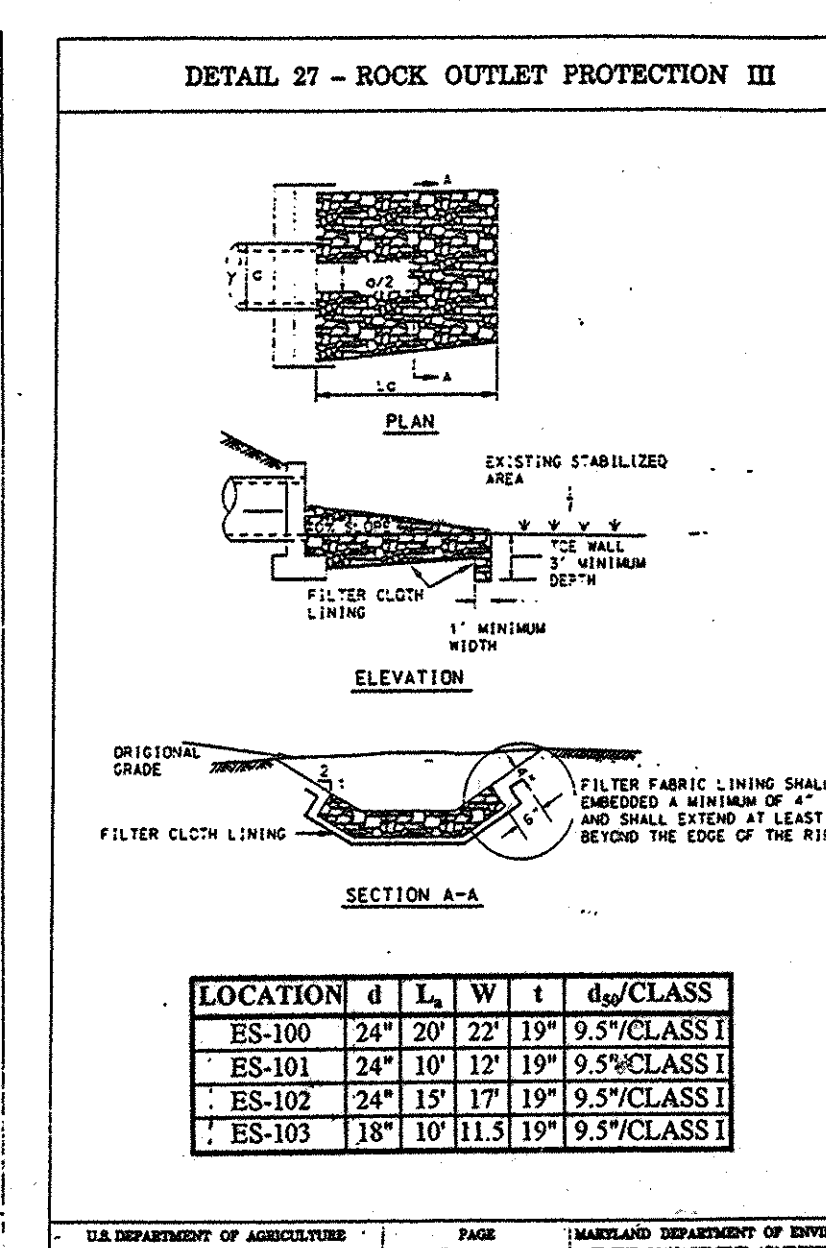
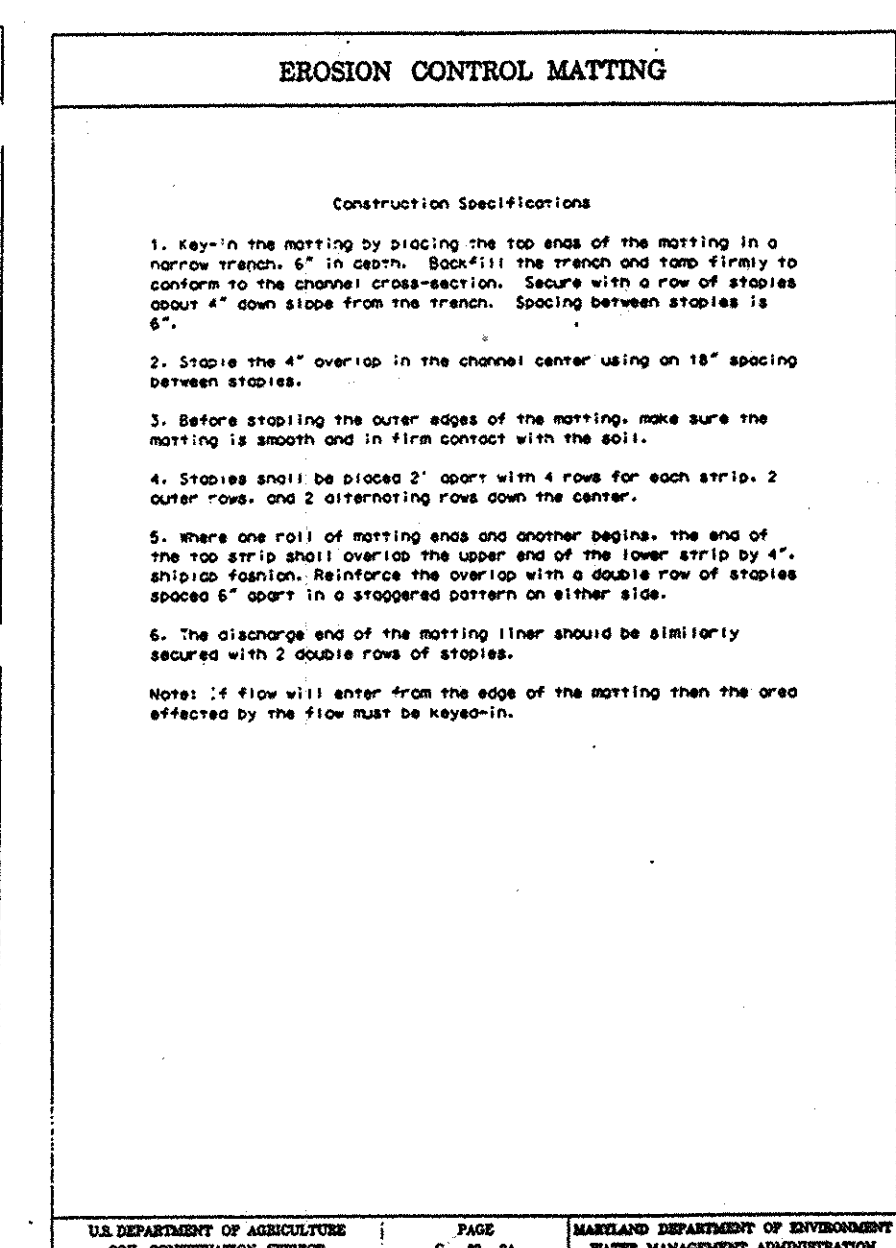
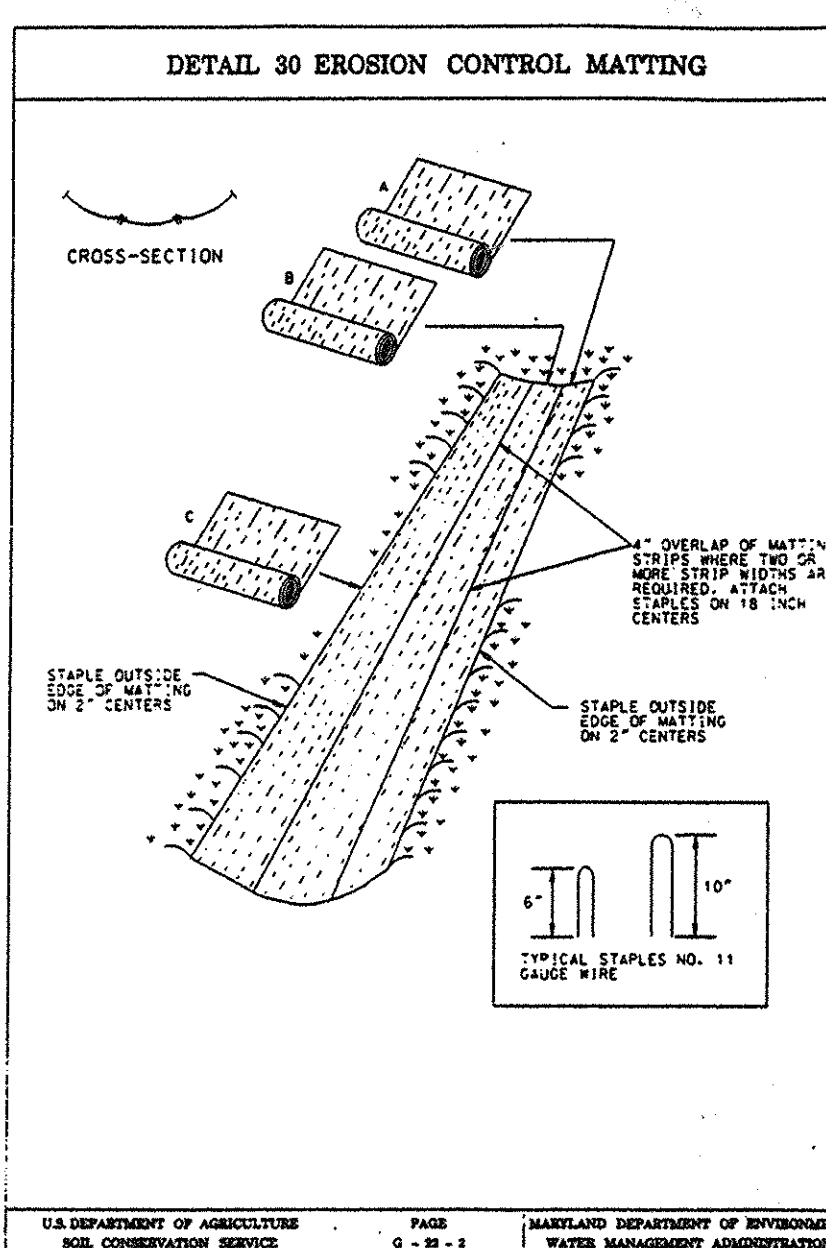
Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. (If not previously loosened)

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

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.



### 2.0 MATERIALS SPECIFICATIONS

#### Table 27 Geotextile Fabrics

CLASS	APPEARANT OPENING SIZE, MM. MAX.	GRAB TENSILE STRENGTH, LB. MIN.	BURST STRENGTH, PSI. MIN.
A	0.30	230	500
B	0.60	200	320
C	0.30	200	320
D	0.60	90	145
E	0.30	90	145
F (SILT FENCE)	0.40-0.80*	90	190

U.S. Silt Fence MSMT 323

The properties shall be determined in accordance with the following procedures:

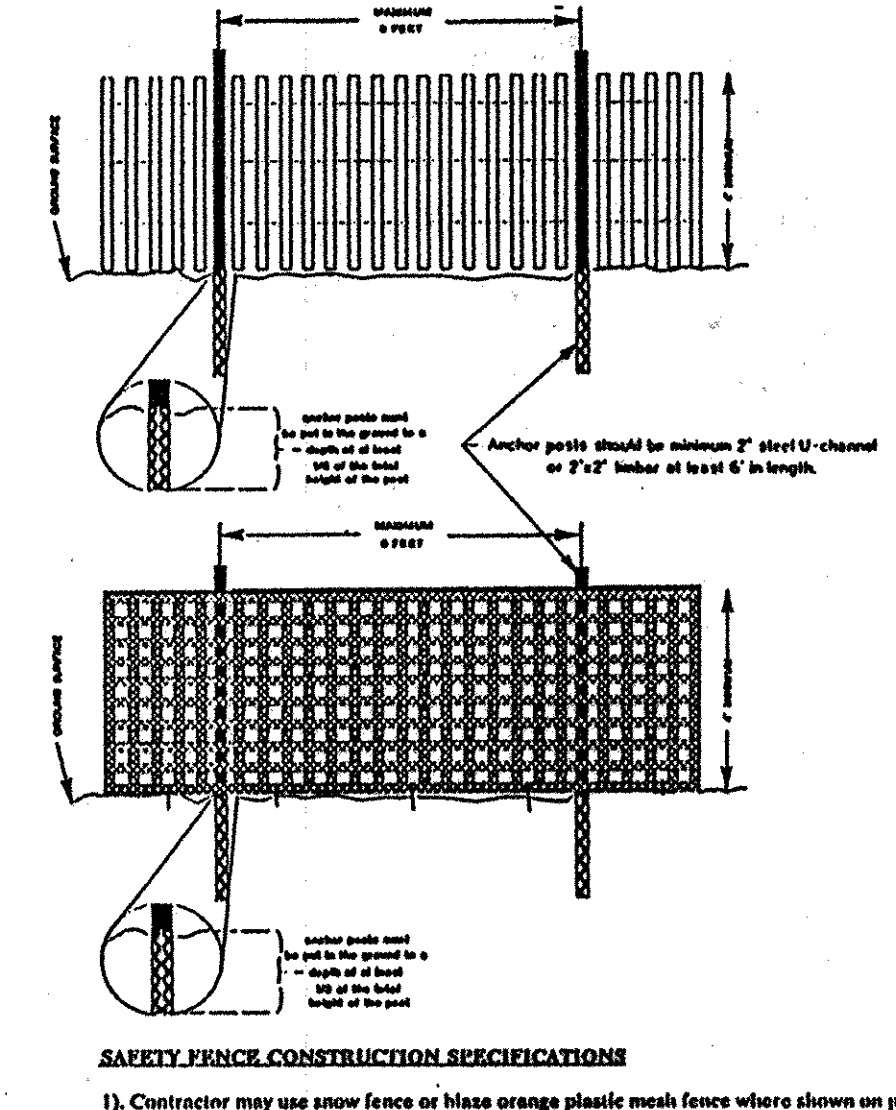
- \*Apparent opening size MSMT 323
- Grab tensile strength ASTM D 1682; 48" specimen, 1x2" clamps, 12" min. strain rate in both principal directions of geotextile fabric.
- Burst strength ASTM D 3786

The fabric shall be inert to commonly encountered chemicals and hydrocarbons, and will be rot and mildew resistant. It shall be manufactured from fibers consisting of long chain synthetic polymers, and composed of a minimum of 85% by weight of polypropylene, polyethylene, or polyethylene. The geotextile fabric shall resist deterioration from ultraviolet exposure.

In addition, Classes A through E shall have a 0.01 cm. min. minimum permeability when tested in accordance with MSMT 501 and an apparent minimum elongation of 20 percent (200%) when tested in accordance with the grab tensile strength requirements listed above.

Silt Fence Class F geotextile fabrics for silt fence shall have a 50 lb. in. minimum tensile strength and a 20 lb. in. minimum tensile modulus when tested in accordance with MSMT 500. The material shall also have a 0.3 gal./ft. flow rate and seventy-five percent (75%) minimum filtering efficiency when tested in accordance with MSMT 320.

Geotextile fabrics used in the construction of silt fence shall resist deterioration from ultraviolet exposure. The fabric shall obtain sufficient amounts of ultraviolet ray inhibitors and stabilizers to provide a minimum of 12 months of expected usable construction life at a temperature range of 0 to 120 degrees F.



### Table 28 Stone Size

NUMBER	SIZE RANGE	D <sub>10</sub>	D <sub>50</sub>	AASHTO	WEIGHT
1	3/8" - 1 1/2"	1/2"	1 1/2"	M-43	N/A
2	2" - 3"	2 1/2"	3"	M-43	N/A
3	4" - 7"	5 1/2"	7"	N/A	N/A
CLASS I	N/A	5"	15"	N/A	1500 max.
CLASS II	N/A	5"	24"	N/A	2000 max.
CLASS III	N/A	23"	34"	N/A	2000 max.

\* This classification is to be used on the inside face of stone outlets and check dams.

\*\* This classification is to be used when ever small riprap is required. The State Highway Administration designation for this stone is Stone For Riprap (9505.01.04).

### Table 29 For Gabion Baskets

BASKET THICKNESS	SIZE OF INDIVIDUAL STONES
INCHES	MM
4	150
6	225
9	300
12	360
18	450
36	910

### PHASE I SECTION 1 - SEQUENCE OF CONSTRUCTION

- Obtain all required permits, approvals and licenses from appropriate agencies.
- Notify Howard County Construction Inspection Division (910-213-1000) at least five (5) working days prior to starting work.
- Install sediment control structures in accordance with the approved plan and specifications. 1 day
- Construct culverts at STA 9+75, 30+25, and 45+10. 2 days
  - 30" culverts @ 0.75% and 60" culverts @ 0.75%.
  - Install appropriate silt fence and dewatering basin (WPD 1.1). Install all fence along stream for 10' of outlet for initial disturbance (not shown on plan).
  - Install stream diversion per WPD 2.2 outlet on Sheet 15. (Optional for 30" culverts)
  - Install culvert and riprap apron.
  - Backfill to provide cover over pipe, provide temporary stabilization.
  - Divert water through culvert, remove temporary stream diversion and dewatering basin.
  - Provide temporary stabilization for disturbed areas.
- 30" culverts @ STA 30+25. 30 days
  - Install appropriate silt fence and dewatering basin (WPD 1.1). Install all fence along stream for 10' of outlet for initial disturbance (not shown on plan).
  - Install culvert pipe #2, wing walls associated with pipe #2 and riprap apron.
  - Divert stream flow through pipe #2 utilizing seeding diversions per WPD 2.3 on Sheet 15.
  - Install pipe #1, wing walls associated with pipe #1, and finish riprap apron for flow channel.
  - Provide backfill over pipe and temporary stabilization.
  - Divert flow to low flow channel.
  - Remove dewatering device and stabilize.
- Install remaining sediment control structures, silt fences, clean water diversion ditches and associated stream drain systems. 15 days
  - Construct storm drain ES-100 through 1+100 to pass clean flow through construction area as shown.
  - Construct SWM Pond #1. (Pond not being used for sediment control.) 30 days
  - Clear and grub area for SWM pond.
  - Construct core trench with suitable material as verified by a Professional Engineer.
  - Construct phloeo siphony precast structure, barrel, crest, anti-seep collar, and outlet per plans.
  - Upon obtaining proper inspections and certifications, backfill principal siphony.
  - Complete embankment fill and excavate for pond volumes per plan.
  - Clear and grub for road grading. 5 days
  - Grade roadway and ditches. 5 days
  - Construct storm drainage. 15 days
    - Block inlet 1+10 and 1+111 to divert flow to inlet 1+107 and 1+108.
    - Install diversion pipes at 1+107 to Trap #2 and 1+108 to Trap #4. Block proposed storm drain outlets at these locations.
  - Construct roads and stabilize. 15 days
  - Upon stabilization of all disturbed areas, clean and back appropriate storm drains. Remove sediment traps. 10 days
  - Remove remaining sediment control and stabilize. 10 days
  - Remove remaining sediment control and stabilize. 1 day
  - Notify Howard County Construction Inspection Division for final inspection. 1 day

APPROVED: **Howard County Department of Public Works**  
*Andrew M. Donato* 2-3-99  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: **Howard County Department of Planning & Zoning**  
*Cindy Hamatta* 2/3/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: *John Robinson* 1/22/99  
 HOWARD SOIL CONSERVATION DISTRICT DATE

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

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

APPROVED: *Charles W. Sharp* 6-10-98  
 Signature of Developer DATE

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

APPROVED: *Robert W. Mochi, P.E.* 6-11-98  
 Signature of Engineer DATE

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

APPROVED: *Robert W. Mochi, P.E.* 6-11-98  
 Signature of Engineer DATE

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

APPROVED: *Robert W. Mochi, P.E.* 6-11-98  
 Signature of Engineer DATE

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

APPROVED: *Robert W. Mochi, P.E.* 6-11-98  
 Signature of Engineer DATE

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

APPROVED: *Robert W. Mochi, P.E.* 6-11-98  
 Signature of Engineer DATE

SECTION I, PHASE 1  
**BIG BRANCH OVERLOOK**  
 ELECTION DISTRICT NO. 5  
**SEDIMENT CONTROL NOTES AND DETAILS**

HOWARD COUNTY, MD.

DATE: 06-08-98  
 PROJECT: 98019.13  
 ILLUSTRATION: G.E.M.  
 SCALE: AS NOTED  
 APPROVAL: R.M.M.

REVISIONS:

1. REQUESTED PERMITS FROM HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS FOR SIGNATURE OF THE DISTRICT ENGINEER TO HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS FOR REVIEW AND APPROVAL.

2. SUBMITTED TO HOWARD CO. D.I.Z. FOR REVIEW AND APPROVAL.

3. DATE: 06-08-98

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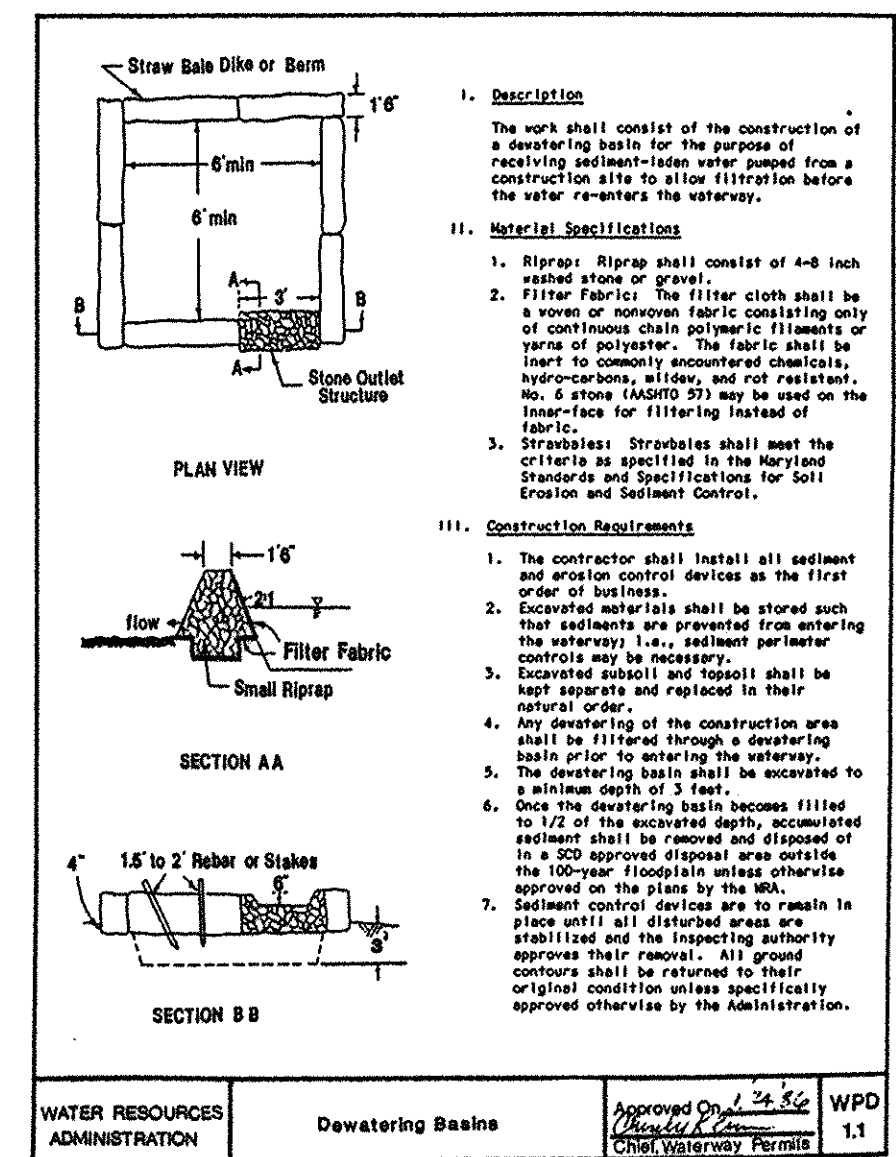
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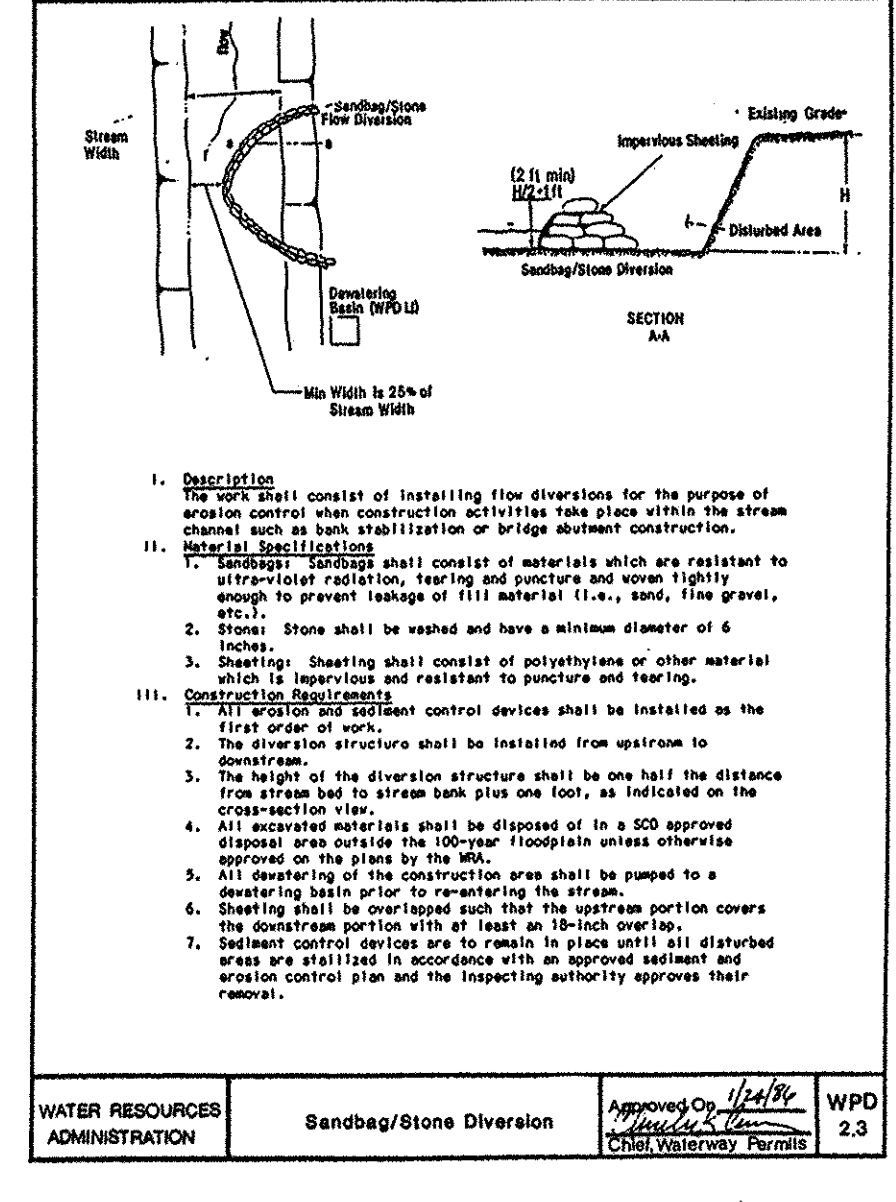
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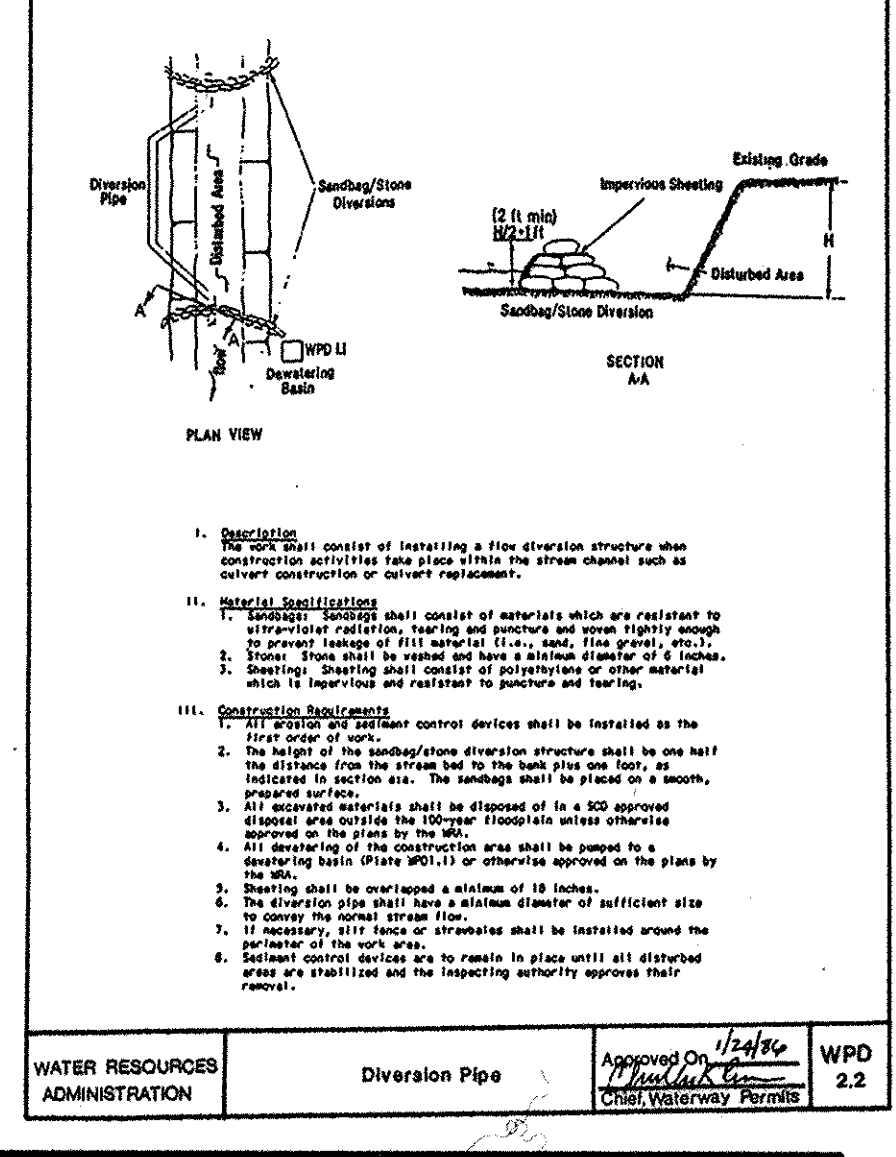




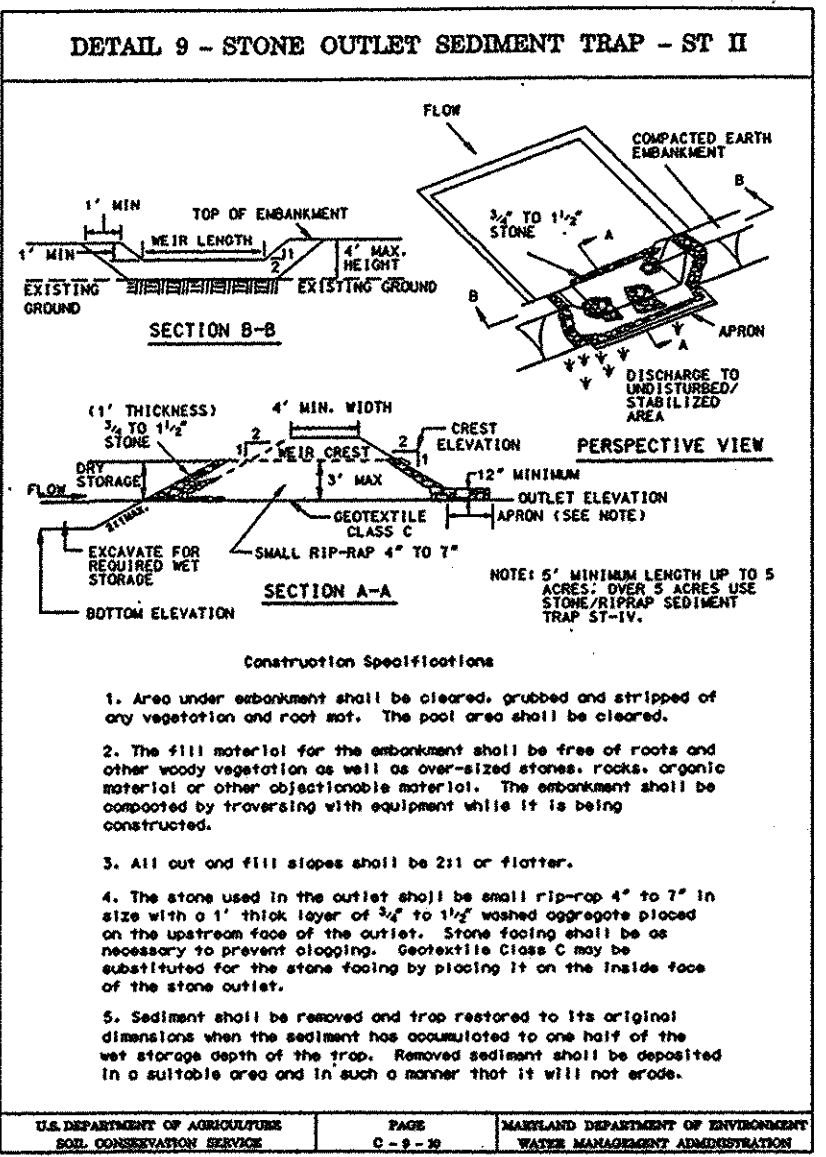
WATER RESOURCES ADMINISTRATION  
Decontaminating Basins  
Approved On: 2/2/99  
Date: 2/2/99  
WPD 11



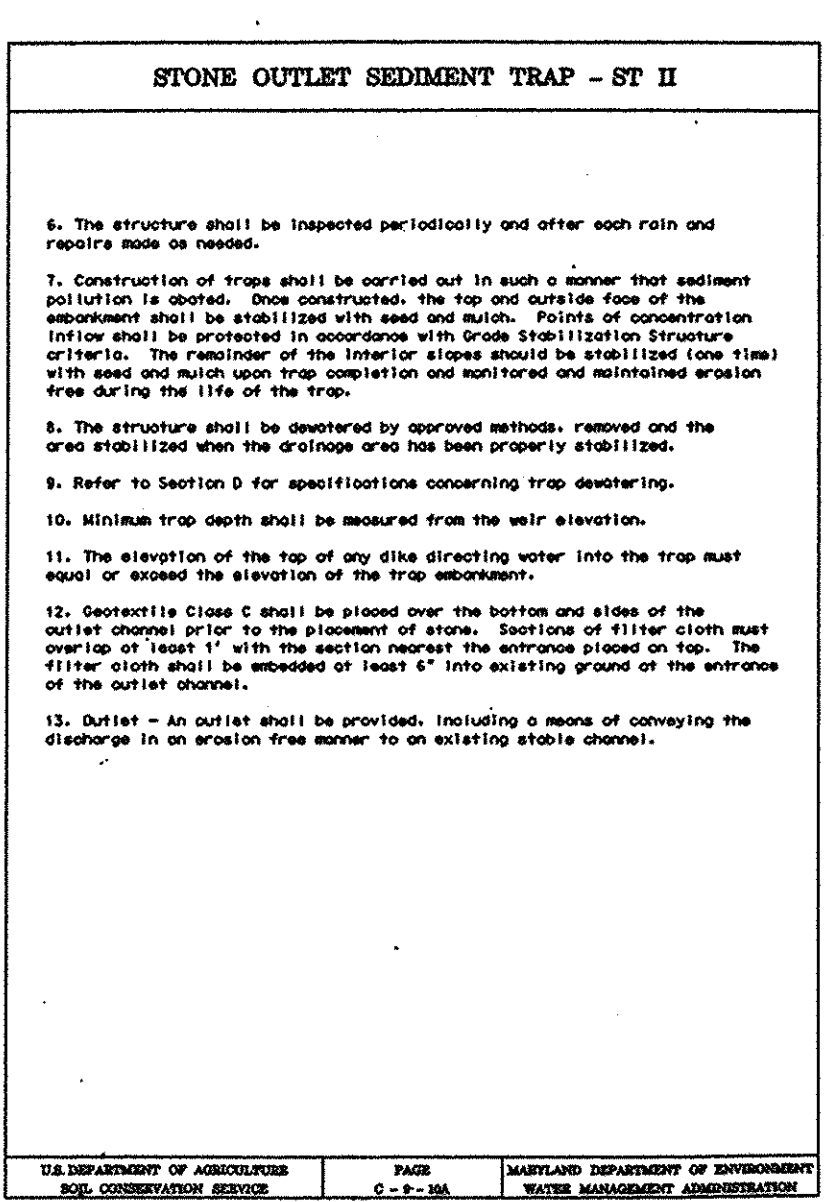
WATER RESOURCES ADMINISTRATION  
Sandbag/Stone Diversion  
Approved On: 1/24/99  
Date: 1/24/99  
WPD 2.3



WATER RESOURCES ADMINISTRATION  
Diversion Pipe  
Approved On: 1/24/99  
Date: 1/24/99  
WPD 2.2



WATER RESOURCES ADMINISTRATION  
Sandbag/Stone Diversion  
Approved On: 1/24/99  
Date: 1/24/99  
WPD 2.3



WATER RESOURCES ADMINISTRATION  
Diversion Pipe  
Approved On: 1/24/99  
Date: 1/24/99  
WPD 2.2

4.0 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STORM DRAIN DIVERSION

**Definitions**

Temporary storm drain diversions redirect a storm drain system or outlet channel to discharge into a sediment trap or basin.

**Purpose**

To prevent sediment laden water covered by the storm drain system from reaching a watercourse or off-site property.

**Conditions Where Practice Applies**

One of the following practices or procedures shall be used to temporarily divert storm drain systems. A special exception may be given, at the discretion of the local planning agency, where site conditions make this procedure impossible.

**Design Criteria**

- Construction of a sediment trap or basin below a permanent storm drain outlet: the storm drain system outlet into a temporary basin or trap constructed below the permanent outlet channel.
- In-line diversion of storm drain at an inlet or manhole: this diversion requires installing a pipe with the side of a manhole or inlet and temporarily blocking the diversion outlet pipe from that structure. A temporary outlet pipe may be used to convey storm flow from the inlet to a sediment trap or basin. This method may be used just above a permanent outlet pipe or connecting into an existing storm drain system.
- Delay completion of the permanent storm drain outlet and temporarily divert storm flow into a sediment basin or trap: an earth dike, embankment or designed diversion, can be used depending on the drainage area, to direct flow into a sediment basin or trap.
- Installation of a stormwater management basin early in the construction sequence: install temporary measures to allow use as a sediment basin. Because these structures are designed to receive storm drain outflow, diversion should not be necessary.
- Label protection is not required if storm drain diversions have been installed and are functioning properly.

**Removal and Restoration**

When the areas contributing sediment to the storm drain system have been stabilized, remove the system to its planned use.

The following removal and restoration procedure is recommended and must be included in the sequence of operations for the sediment control plan:

- Flush the storm drain system prior to removal of the trap or basin to remove any accumulated sediment.
- Establish a permanent stabilized outlet channel as noted on the plan.
- For sites where an inlet was modified, plug the temporary pipe and open the permanent outlet pipe.
- Remove the sediment control devices, such as traps, basins, dikes, weirs, etc.
- Restore the area to grades shown on the plan and stabilize with vegetative measures.
- For basins that will be converted to stormwater management, remove the accumulated sediment, open the low flow outlet, and seal all disturbed areas in the basin to permanent vegetation.

U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
PAGE 6-2-89  
NATIONAL DEPARTMENT OF ENVIRONMENTAL WATER MANAGEMENT ADMINISTRATION

TEST PITS

Location	Soil Description	DEPTH (FEET)	BORING & SAMPLING NOTES
418.30	Topsoil - 2"	0.0	Operator indicates soft soil from 0 to 2 ft. Run below 3.0 feet.
418.30	Brown, moist, sandy SILT, trace root fragments and mica (M)	2.0	
418.30	Brown, moist, sandy SILT, trace root fragments and mica (M)	5.0	Note: All samples were recovered from this soil pH excavation. Therefore, no SPT blow was recorded, and all samples were recovered in a disturbed "D" condition.
418.30	Refused on rock @ 11.0 ft.	10.0	Difficult to excavate below 11.0 ft.
417.70	Refused on rock @ 11.0 ft.	12.5	
		15.0	
		17.0	
		20.0	

U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
PAGE 6-2-89  
NATIONAL DEPARTMENT OF ENVIRONMENTAL WATER MANAGEMENT ADMINISTRATION

TEST PITS

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418.30	Refused on rock @ 11.0 ft.	10.0	Difficult to excavate below 11.0 ft.
417.70	Refused on rock @ 11.0 ft.	12.5	
		15.0	
		17.0	
		20.0	

U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
PAGE 6-2-89  
NATIONAL DEPARTMENT OF ENVIRONMENTAL WATER MANAGEMENT ADMINISTRATION

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

**Definitions**

Phenomena of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

**Purpose**

To provide a suitable soil medium for vegetative growth. Soils of coarser than low loam texture, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

**Conditions Where Practice Applies**

- This practice is limited to areas having 2:1 or flatter slopes where:
  - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
  - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish cooling supplies of moisture and plant nutrients.
  - The original soil to be vegetated contains materials toxic to plant growth.
  - The soil is so acidic that treatment with limestone is not feasible.
- For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plan.

**Construction and Material Specifications**

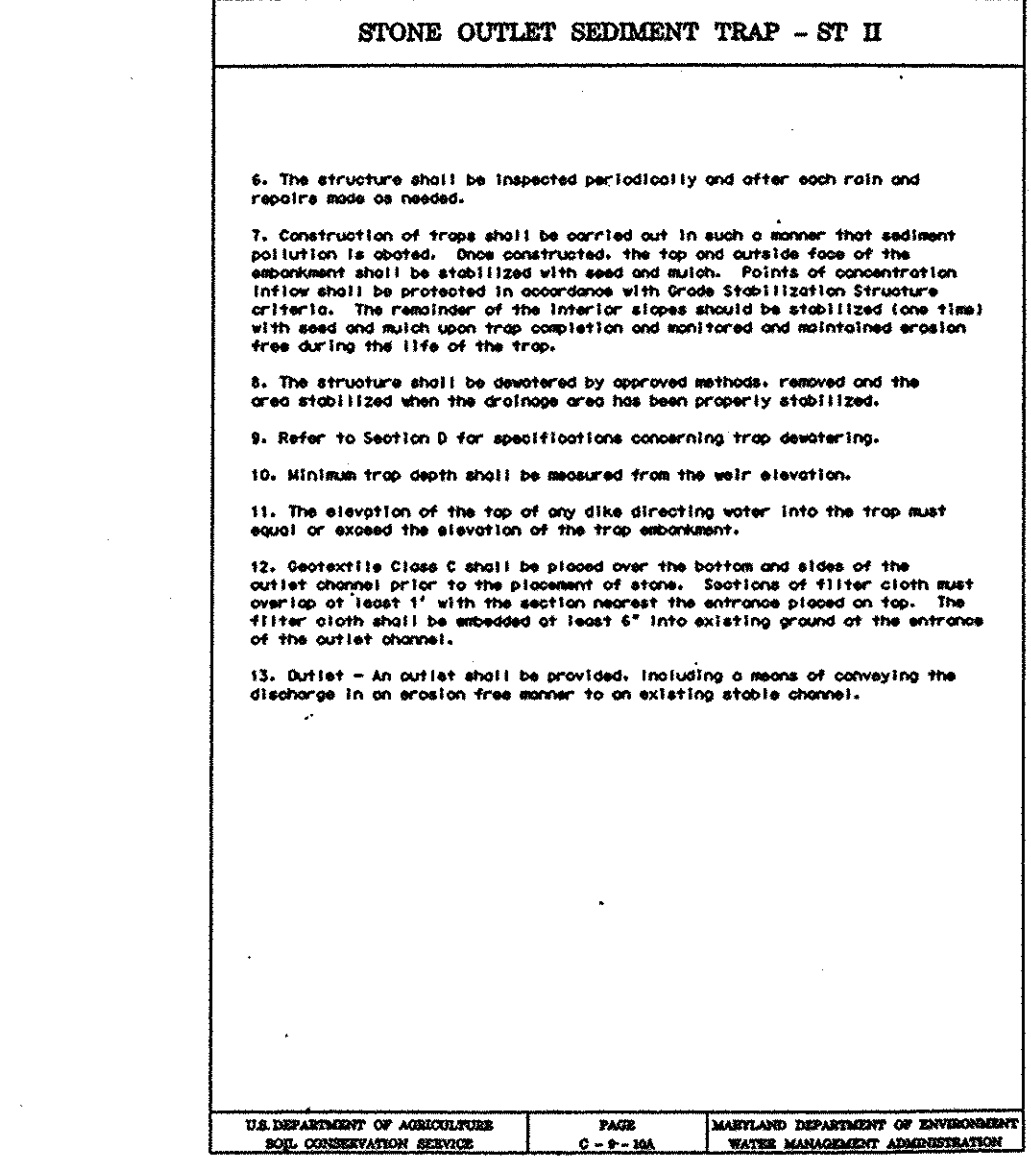
- All fill shall be compacted to reduce erosion, slippage, settlement, subsidence or other undesirable conditions. Fills intended to support buildings, structures and conduits, etc., shall be constructed in accordance with local requirements or codes.
- Except for approved (a) fill or nonstructural fill, fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris and other objectionable materials that would interfere with or prevent construction of satisfactory fill.
- From material or soft, moist or highly compressible materials shall not be incorporated into fill unless structural fill. Fill shall not be placed on a frozen construction.
- All benches shall be kept free of settlement during all phases of development.
- Steps or berms encountered during construction shall be finished in accordance with the Standards and Specifications for Subsurface Drain or other approved methods.
- All grades shall be maintained by permanent stabilization immediately following finished grading.

**Construction and Material Specifications**

- Topsoil salvaged from the existing site may be provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given site may be found in the representative soil profile section in the Soil Survey published by USDA-ARS 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, silty 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 be a mixture of contrasting textures and shall contain less than 25% volume of clods, stones, slag, coarse fragments, gravel, mica, rocks, trash, or other materials larger than 1 1/2" in diameter.
  - Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutgrass, pine, yucca, etc., or other species.
  - When the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. 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 I - Vegetative Stabilization Methods and Materials.
- For sites having disturbed areas over 5 acres:
  - On soil needing Topsoil specifications, obtain test results detailing fertilizer and lime amendments 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 provided 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 200 parts per million shall not be used.
    - No soil or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
  - Topsoil substances or amendments, as recommended by a qualified agronomist or soil scientist approved by the appropriate approval authority, may be used in lieu of natural topsoil.
- Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- Topsoil Application
  - When spreading, maintain seeded erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Stone Step Faces and Sediment Traps and Basins.
  - Grades on the area to be topsoiled, which have been previously established, shall be maintained, about 4" - 8" higher in elevation.
  - Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or sodding can proceed with the use of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
  - Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.
- Alternative to Permanent Sodding - Instead of applying the full amount of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
  - Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be made to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
    - Composted sludge shall be applied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
    - 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 or 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 1 lb/1,000 square feet, and 1/3 the normal lime application rate.

Reference: Guidelines Specifications, Soil Preparation and Sodding, MD-VA, Rev. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institute, January 1979.

U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
PAGE 6-2-89  
NATIONAL DEPARTMENT OF ENVIRONMENTAL WATER MANAGEMENT ADMINISTRATION

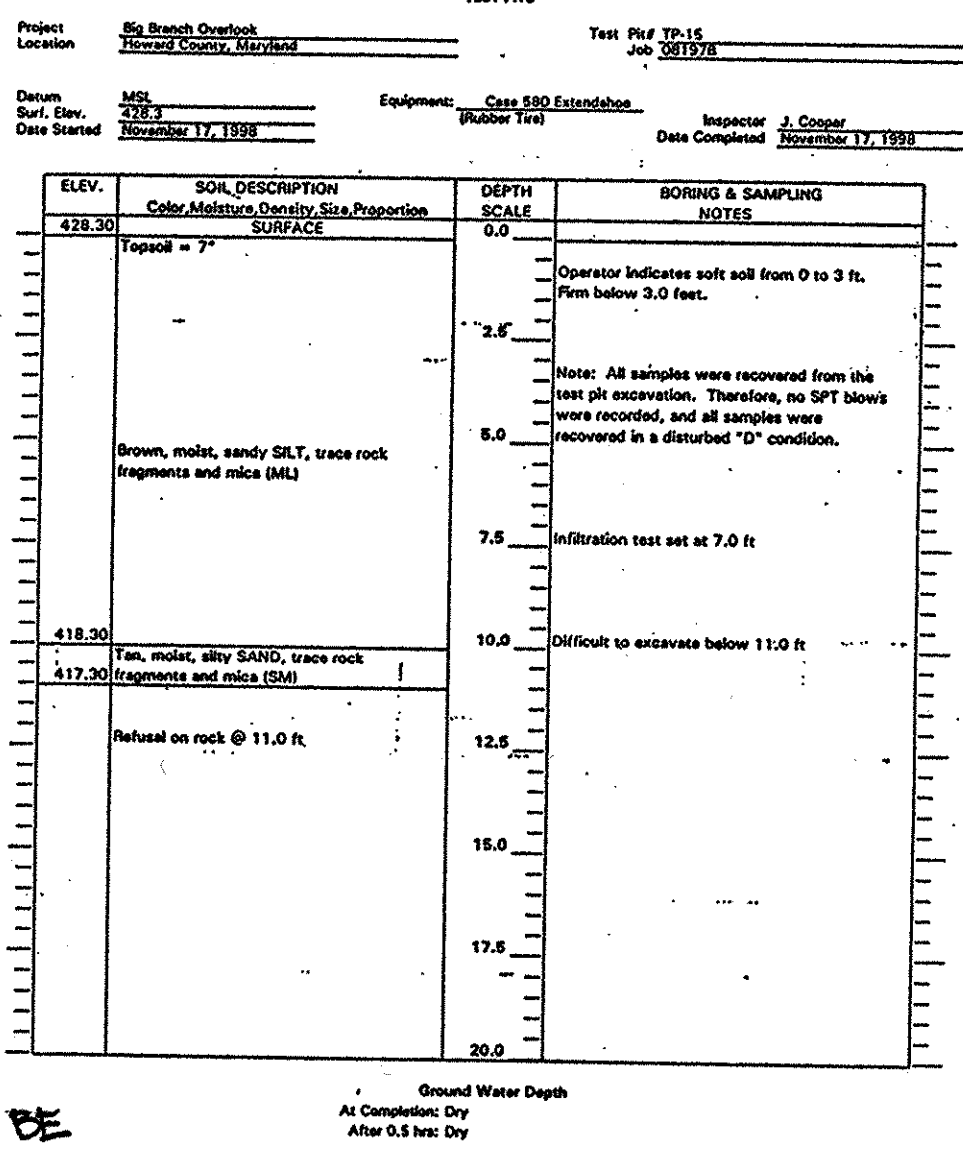


WATER RESOURCES ADMINISTRATION  
Sandbag/Stone Diversion  
Approved On: 1/24/99  
Date: 1/24/99  
WPD 2.3

RECORD OF SOIL EXPLORATION

SOIL DESCRIPTION	DEPTH (FEET)	SCALE	REMARKS	RECORDED	NOTES
418.30	0.0	0.0			
418.30	2.0	2.0			
418.30	5.0	5.0			
418.30	10.0	10.0			
417.70	12.5	12.5			
	15.0	15.0			
	17.0	17.0			
	20.0	20.0			

U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
PAGE 6-2-89  
NATIONAL DEPARTMENT OF ENVIRONMENTAL WATER MANAGEMENT ADMINISTRATION



WATER RESOURCES ADMINISTRATION  
Diversion Pipe  
Approved On: 1/24/99  
Date: 1/24/99  
WPD 2.2

INFILTRATION TRENCH AND INLET 1-109 MAINTENANCE SCHEDULE

- Remove silt from bottom of Inlet 1-109 when accumulation exceeds 1.5'.
- Remove accumulated paper, trash and debris as necessary.
- Vegetation growing within the trench area is not allowed to exceed 18 inches in height at any time.
- Corrective maintenance is required any time the trench does not drain down completely within 96 hours (i.e., no standing water within the trench is allowed).
- Inspect observation well after every major storm event.

U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
PAGE 6-2-89  
NATIONAL DEPARTMENT OF ENVIRONMENTAL WATER MANAGEMENT ADMINISTRATION

INFILTRATION CONSTRUCTION SPECIFICATIONS

**TIMING:** An infiltration trench shall not be constructed or placed in service until all of the contributing drainage area has been stabilized and approved by the responsible inspector.

**TRENCH PREPARATION:** Excavate the trench to the design dimensions. Excavated materials shall be placed away from the trench sides to enhance trench wall stability. Large tree roots must be removed from the trench sides in order to prevent fabric puncturing or tearing during the installation procedures. The side walls of the trench shall be roughened where sheared and sealed by heavy equipment.

**FABRIC LAYDOWN:** The filter fabric roll must be cut to the proper width prior to installation. The cut width must include sufficient material to conform to trench perimeter, irregularities and for a 6-inch minimum top overlap. Place the fabric at the trench and unroll a sufficient length to allow placement of the fabric down into the trench. Stones or other anchoring objects should be placed on the fabric at the edge of the trench to keep the fabric from sliding during windy periods. When overlaps are required between rolls, the upstream roll should lap a minimum of 2' over the downstream roll in order to provide a slanted effect. The overlap ensures fabric continuity and subsidence of the trench. The trench surface during aggregate placement and compaction.

**STONE AGGREGATE PLACEMENT AND COMPACTION:** The stone aggregate should be placed in lifts and compacted using plate compactor. As a rule of thumb, a maximum loose fill thickness of 12 inches is recommended. The compaction process ensures fabric conformity to the excavation sides, thereby reducing the potential for soil piping, fabric clogging, and settlement problems.

**OVERLAPPING AND COVERING:** Following the stone aggregate placement, the filter fabric shall be folded over the stone aggregate to form a 6" minimum horizontal lap. The desired fill or stone aggregate shall be placed over the lap at sufficient intervals to maintain the lap during subsequent backfilling.

**CONTAMINATION:** Care should be exercised to prevent natural or fill soils from intruding into the stone aggregate. All contaminated stone aggregate shall be removed and replaced with uncontaminated stone aggregate.

**VOIDS BEHIND FABRIC:** Voids can be created between the fabric and excavation sides and shall be avoided. Removing boulders or other obstacles from the trench walls is one source of such voids. Natural soils should be placed in these voids at the most convenient time during construction to ensure fabric conformity to the excavation sides. Soil piping, fabric clogging, and possible surface subsidence will be avoided by this remedial process.

**UNSTABLE EXCAVATION SIDES:** Vertically excavated walls may be difficult to maintain in areas where the soil moisture is high or where soil cohesion or cohesionless soils predominate. These conditions may require laying back of the side slopes to maintain stability; trapezoidal rather than rectangular cross sections may result.

**VEGETATIVE BUFFER:** A vegetative buffer of at least 20' (width, if possible) shall be used to intercept surface runoff from all impervious areas.

**OBSERVATION WELL:** The depth of the well at the time of installation will be clearly marked on the well cap.

U.S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
PAGE 6-2-89  
NATIONAL DEPARTMENT OF ENVIRONMENTAL WATER MANAGEMENT ADMINISTRATION

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Charles W. M... 2-3-99*  
DATE: 2-3-99  
WPD 2.3

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamstra 2/12/99*  
DATE: 2/12/99  
WPD 2.2

APPROVED:  
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
*John... 1/22/99*  
DATE: 1/22/99  
WPD 2.2

APPROVED:  
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.  
*Charles... 1/22/99*  
DATE: 1/22/99  
WPD 2.2

DEVELOPER'S CERTIFICATE  
I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Howard Soil Conservation District Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.  
*Charles U. Sharp 6-10-98*  
DATE: 6-10-98  
WPD 2.2

ENGINEER'S CERTIFICATE  
I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.  
*Robert M. Mochl, P.E. 6-11-98*  
DATE: 6-11-98  
WPD 2.2

STATE OF MARYLAND  
DEPARTMENT OF ENVIRONMENTAL & NATURAL RESOURCES  
HOWARD COUNTY, MARYLAND  
ELECTION DISTRICT NO. 5  
SECTION 1, PHASE 1  
BIG BRANCH OVERLOOK  
SEDMENT CONTROL NOTES AND DETAILS  
15 OF 25  
F-98-165



**LEGEND:**

- ACER RUBRUM / "RED SUNSET" RED MAPLE (RS)  
5 PROPOSED ADJACENT TO SWM
- ACER RUBRUM / "OCTOBER GLORY" RED MAPLE (OG)  
6 PROPOSED ADJACENT TO SWM
- QUERCUS PHELLOS / WILLOW OAK (WO)  
3 PROPOSED ADJACENT TO SWM
- QUERCUS RUBRA / RED OAK (RO)  
3 PROPOSED ADJACENT TO SWM
- CUPRESSOCYPARIS LEYLANDI / LEYLAND CYPRESS (LC)  
41 PROPOSED ADJACENT TO SWM, PRES. PARCEL & ADJACENT PROPERTY.
- PINUS STROBUS / EASTERN WHITE PINE (EWP)  
43 PROPOSED ADJACENT TO SWM, PRES. PARCEL & ADJACENT PROPERTY.

NOTE:  
THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 101 LANDSCAPE TREES, IN THE AMOUNT OF \$ 17,700 IS PART OF THE DEVELOPER'S AGREEMENT.

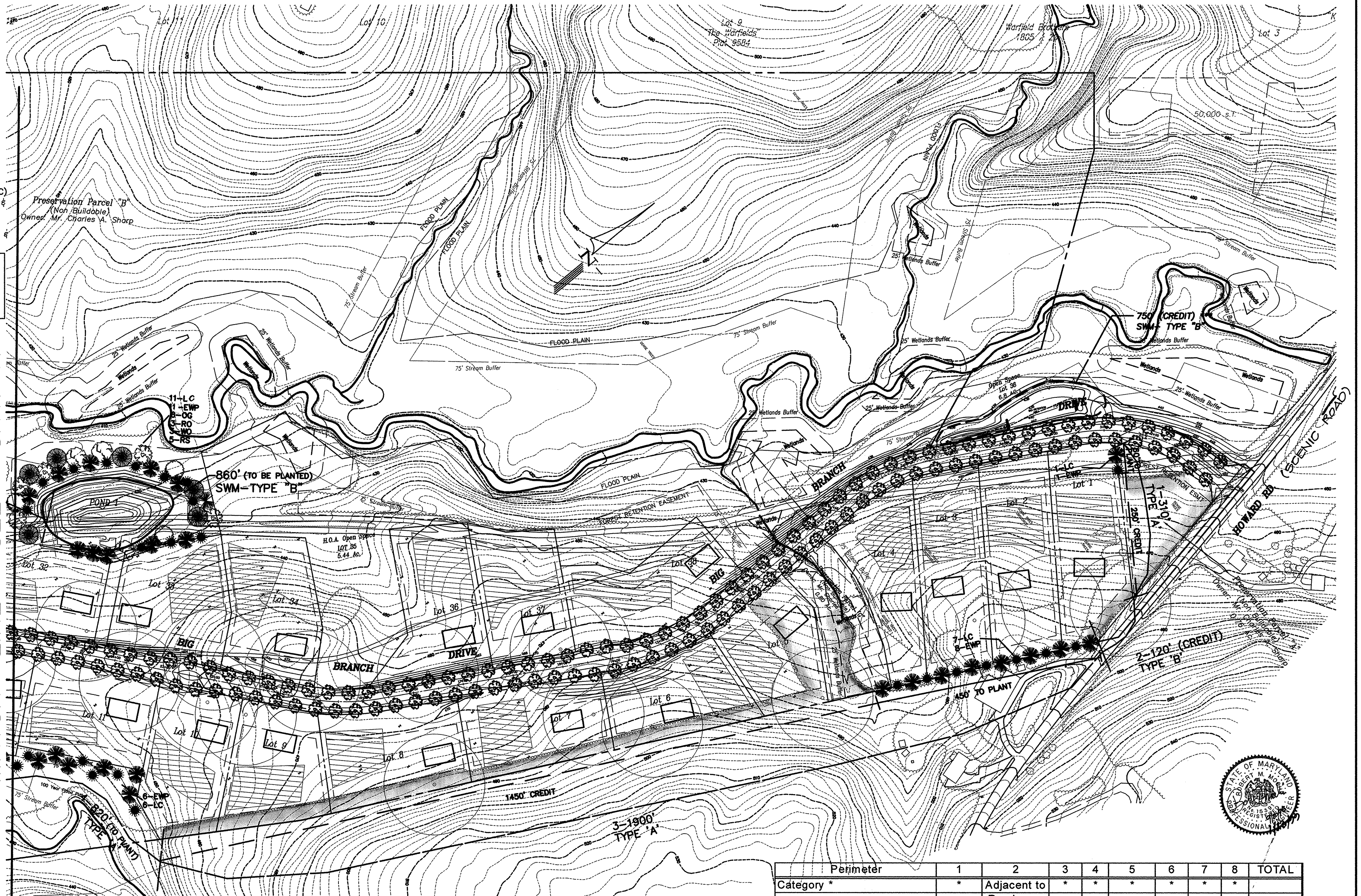
**STREET TREES:**

**BIG BRANCH DRIVE:**  
9,300 L.F. RIGHT OF WAY  
232 STREET TREES REQUIRED (40 FEET APART)  
240 ACER RUBRUM "RED SUNSET" PROPOSED

THE DEVELOPER WILL BE RESPONSIBLE FOR STREET TREE INSTALLATION. FINANCIAL SURETY FOR THE 246 PROPOSED STREET TREES, IN THE AMOUNT OF \$72,000 IS PART OF THE DEVELOPER'S AGREEMENT.

NOTE:  
THIS PLAN IS FOR LANDSCAPING PURPOSES ONLY.

MATCH LINE SEE SHT. 17



**SCHEDULE D - STORMWATER MANAGEMENT AREA LANDSCAPING**

SWM POND 1 BIO-RETENTION POND		
	(TYPE B)	(TYPE B)
LINEAR FEET OF PERIMETER	860	750
NUMBER OF TREES REQUIRED		
SHADE TREES	17	0
EVERGREEN TREES	22	0
CREDIT FOR EXISTING VEG. (NO, YES AND L.F.)	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO	YES 100%***

\*\*\* CREDIT FROM BIO-RETENTION LANDSCAPING (SEE SHEET 20 OF 25 FOR DETAILS)

Perimeter	1	2	3	4	5	6	7	8	TOTAL
Category *	*	Adjacent to Roadways	*	*	*	*	*	*	
Landscape Type	A	B	A	A	A	A	A	A	
Linear Feet of Perimeter	310	120	1900	820	1650	1800	1350	550	8500
Credit for Existing Vegetation (Yes, Linear Feet)	Yes 250	Yes 120	Yes 1450	NO 0	Yes 1650	Yes 1800	Yes 1350	NO 0	6620
Net Linear Feet to be planted	60	0	450	820	0	0	0	550	1880
Number of Plants Required									
Shade Trees	0	0	0	0	0	0	0	0	
Evergreen Trees**	2	0	15	27	0	0	0	18	62
Shrubs	0	0	0	0	0	0	0	0	

\* = Adjacent to Perimeter Properties / Preservation Parcel unless otherwise noted  
\*\* = 2 EVERGREEN TREES SUBSTITUTED FOR EACH SHADE TREE

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Daneker* 2/3/99  
CHIEF, BUREAU OF HIGHWAYS

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Andy Hammit* 2/4/99  
CHIEF, DIVISION OF LAND DEVELOPMENT

*John Danner* 2/4/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Project	96019.13	Date	05/25/98
Illustration	G.E.M.	Engineering	M.W.Z.
Scale	1" = 100'	Approval	R.M.L.

Revised	02-02-99	Revised	FOR BUREAU OF HIGHWAYS COMMENTS
01-14-98	01-14-98	01-14-98	SUBMITTED ORIGINAL MYLARS FOR SIGNATURE
09/21/98	09/21/98	09/21/98	REVISED TO SUBMIT INITIAL TO HOWARD CO. DED
06/26/98	06/26/98	06/26/98	SUBMITTED TO HOWARD CO. D.E.Z. FOR REVIEW
06/26/98	06/26/98	06/26/98	APPROVAL

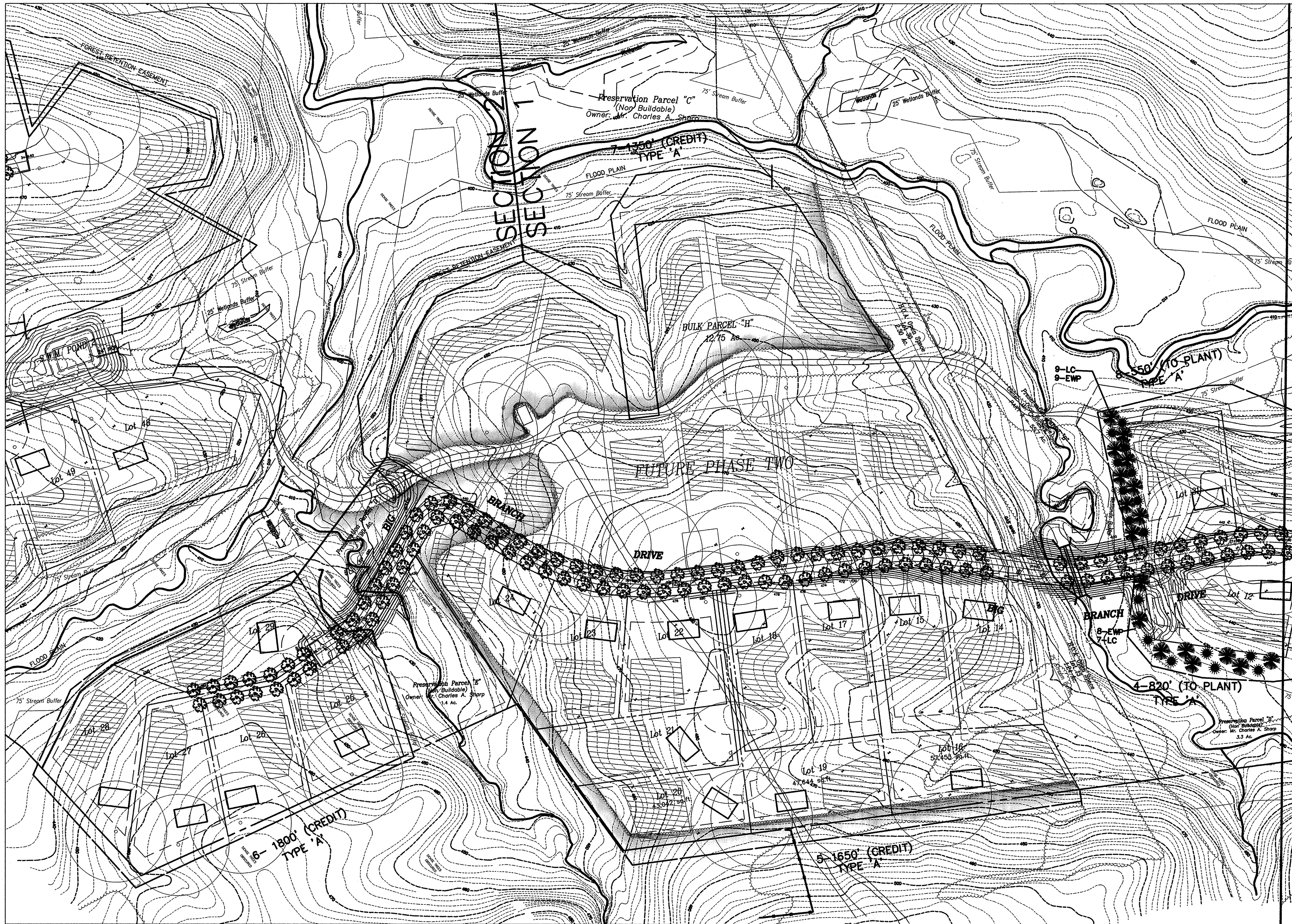
SECTION 1, PHASE 1  
**BIG BRANCH OVERLOOK**  
HOWARD COUNTY, MD.  
ELECTION DISTRICT NO. 5  
LANDSCAPE AND STREET TREE PLAN

**R.M. MOCHI GROUP, P.C.**  
P.O. Box 10  
New Market, MD 21774-0010  
(301) 865-8838  
Fax: (301) 865-8111

F98165



NOTE:  
THIS PLAN IS FOR LANDSCAPING  
PURPOSES ONLY.



MATCH LINE SEE SHT. 16

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Andrew M. Sucker* 2/3/99  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamilton* 2/19/99  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Bill Danner* 2/19/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



Project	96018.13	Date	05/25/98
Illustration	G.E.M.	Engineering	M.W.Z.
Scale	1" = 100'	Approval	R.M.M.

NO.	DESCRIPTION	DATE
1	REVISED PER BUREAU OF HIGHWAY COMMENTS	02/10/99
2	DIRECT SUBMITTAL TO HOWARD CO. P.E.D.	12/07/98
3	REVISED SUBMITTAL	9/21/98
4	SUBMITTED TO HOWARD CO. D.E.Z. FOR REVIEW	6/98

SECTION 1, PHASE 1  
BIG BRANCH OVERLOOK  
ELECTION DISTRICT NO. 5  
HOWARD COUNTY, MD.  
LANDSCAPE AND STREET TREE PLAN

R.M. MOCHL GOLF, P.C.  
P.O. Box 10  
New Market, MD 21771-0010  
(301) 665-8895  
Fax: (301) 665-5171



MATCH LINE SEE SHEET 19 OF 25



**LEGEND**

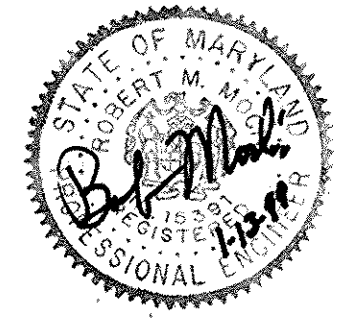
- PROPOSED GRADING
- Tc PATH FOR SWM ANALYSIS
- SOILS BOUNDRIES
- STORM DRAIN DRAINAGE DIVIDES

APPROVED:  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
  
 CHIEF, BUREAU OF HIGHWAYS 1/5 2-3-99  
 DATE

APPROVED:  
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
  
 CHIEF, DIVISION OF LAND DEVELOPMENT 2/1/99  
 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 2/1/99  
 DATE

PHASE(SECTION)	INLET #	ZONING	SUBAREA	AREA (ac)	C* FACTOR	TIME(min.)	% IMPERVIOUS
		(Z)	(B)	(A)	(C)	(Tc)	(P)
1(1)	I-100	RC-DEO	N/A	1.96	0.26	10.0	5
1(1)	I-101	RC-DEO	N/A	2.55	0.26	10.0	5
1(1)	I-102	RC-DEO	N/A	3.00	0.26	11.4	5
1(1)	I-106	RC-DEO	N/A	4.23	0.26	19.0	5
1(1)	I-107	RC-DEO	N/A	1.42	0.26	10.0	5
1(1)	I-108	RC-DEO	N/A	1.54	0.26	10.0	5
1(1)	I-109	RC-DEO	N/A	1.65	0.26	10.0	5
1(1)	I-110	RC-DEO	N/A	2.90	0.26	18.0	5
1(1)	I-111	RC-DEO	N/A	0.92	0.26	10.0	5



project	96018.13	date	06-05-98
illustration	GEM, K.M.B.	engineering	M.W.Z.
scale	1"=100'	approval	R.M.M.

no.	description	date
1	REVISED PER BUREAU OF HIGHWAYS COMMENTS	02-22-99
2	REVISED PER BUREAU OF HIGHWAYS COMMENTS	02-14-99
3	REVISED SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW	09-16-98
4	REVISED SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW	06-08-98

SECTION I, PHASE I  
**BIG BRANCH OVERLOOK**  
 ELECTION DISTRICT NO. 5  
 HOWARD COUNTY, MD.  
**STORM DRAIN DRAINAGE AREA MAP**

**RM MOCHI GROUP, P.C.**  
 P.O. Box 10  
 New Market, MD 21774-0010  
 10129 A Old National Pike  
 (301) 865-5858  
 (301) 865-5111  
 (301) 865-9706





**LEGEND**

- PROPOSED GRADING
- T. PATH FOR SWM ANALYSIS
- SOILS BOUNDARIES
- STORM DRAIN DRAINAGE DIVIDES

APPROVED:  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Robert M. Duerke* 2/5/99  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:  
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Andy Hamilton* 2/6/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Alan Cummings* 2/19/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



J:\960198AS\SDSKPRC\CD\DATA\DMAP.DWG

PROJECT	960198AS	DATE	08-05-98
ILLUSTRATION	engineering	ENGINEER	M.W.Z.
SCALE	1"=100'	APPROVAL	R.M.M.

NO.	DESCRIPTION	DATE
4	REVISED PER BUREAU OF HIGHWAY COMMENTS	02-02-99
3	REVISION FOR ORIGINAL MYLANS FOR SIGNATURE	12/14/98
2	REVISION SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW	09-16-98
1	SUBMITTED TO HOWARD CO. D.P.Z. FOR REVIEW	06-98

**SECTION 1, PHASE 1**  
**BIG BRANCH OVERLOOK**  
 HOWARD COUNTY, MD.  
 ELECTION DISTRICT NO. 5  
**STORM DRAIN DRAINAGE AREA MAP**

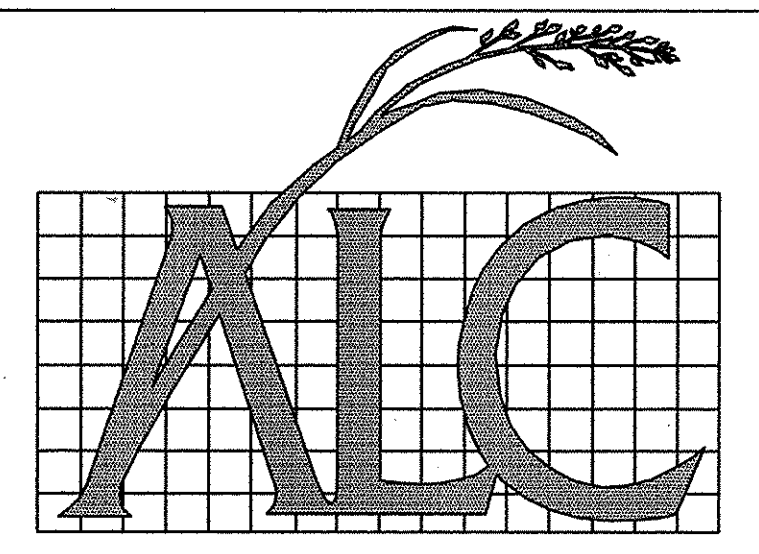
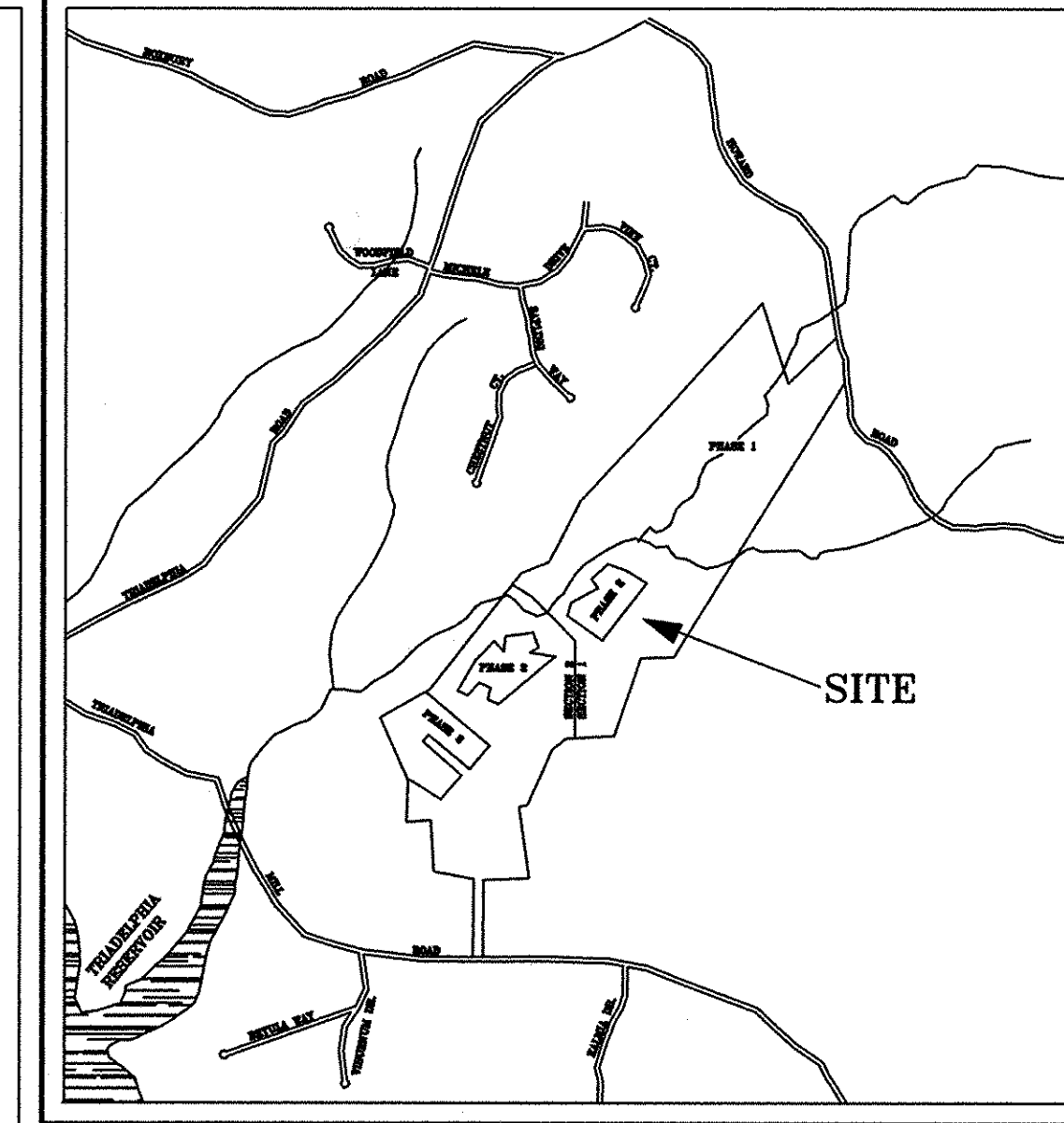
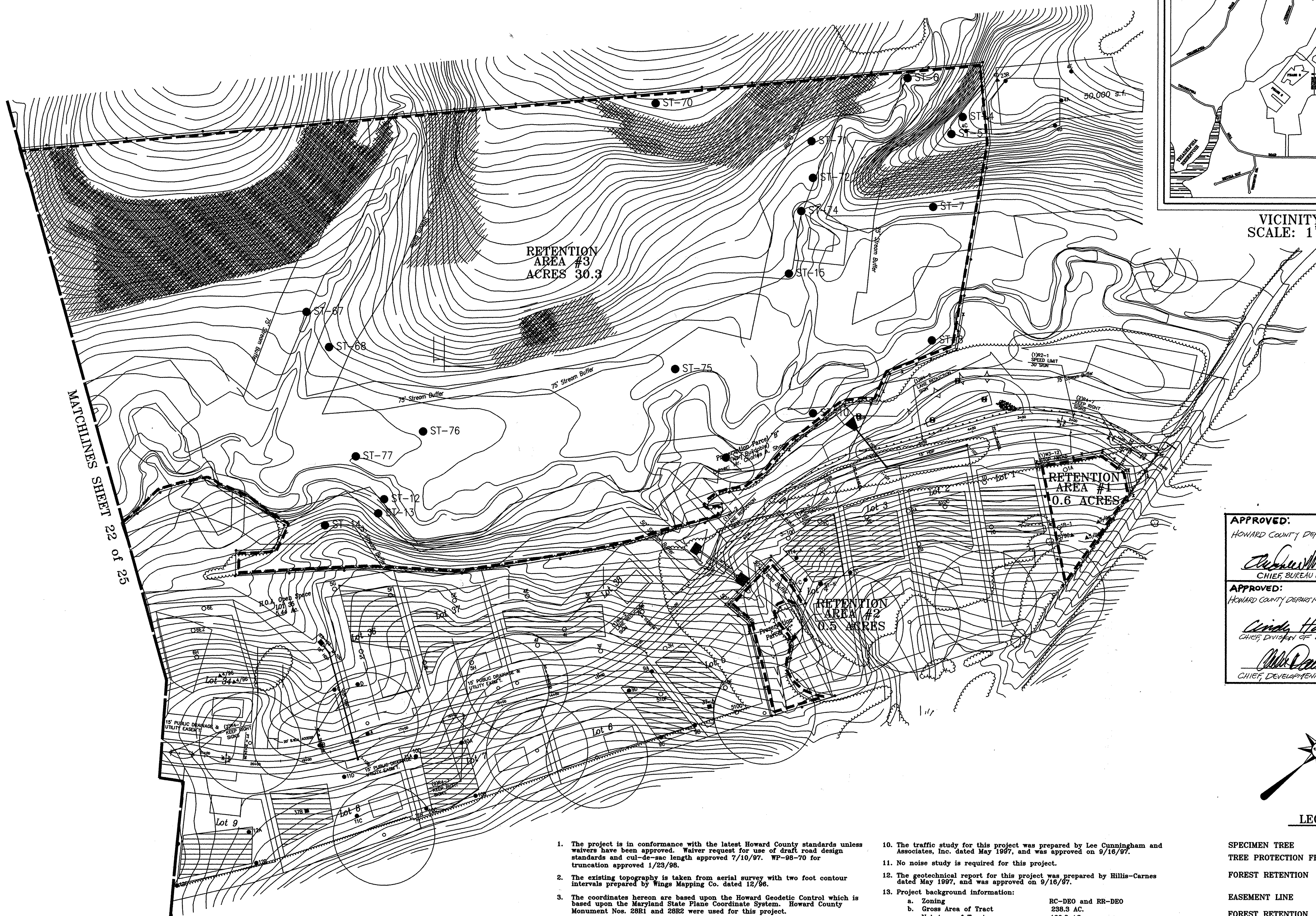
**R.M. MOCHI GROUP, P.C.**  
 P.O. Box 10  
 New Market, MD 21774-0010  
 (301) 865-5858  
 Fax: (301) 865-5111

F98.145









**AMERICAN LAND CONCEPTS**  
 238 B MAIN STREET  
 REISTERSTOWN, MARYLAND 21136  
 PHONE: (410)-526-2688 FAX: (410)-526-2970

**OWNER/DEVELOPER**

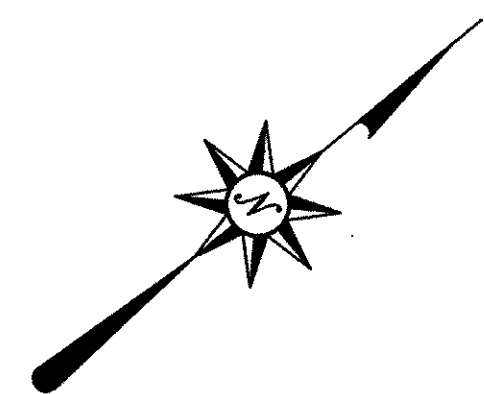
Mr. Charles A. Sharp  
 3779 Sharp Road  
 Glenwood, MD 21738

**BIG BRANCH OVERLOOK**  
**FINAL FOREST CONSERVATION PLAN**  
 ELECTION DISTRICT NO. 4  
 HOWARD COUNTY, MARYLAND

**APPROVED:**  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Robert M. Dwyer* 2-3-90  
 CHIEF, BUREAU OF HIGHWAYS, MD DATE

**APPROVED:**  
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamilton* 2/10/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*John P. ...* 2/1/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



**LEGEND**

- SPECIMEN TREE ● ST-42
- TREE PROTECTION FENCE ————
- FOREST RETENTION - - - - -
- EASEMENT LINE - - - - -
- FOREST RETENTION SIGNAGE ————
- SLOPES 15-25% [diagonal hatching]
- SLOPES 25% & UP [cross-hatching]

1. The project is in conformance with the latest Howard County standards unless waivers have been approved. Waiver request for use of draft road design standards and cul-de-sac length approved 7/10/97. WP-98-70 for truncation approved 1/23/98.
2. The existing topography is taken from aerial survey with two foot contour intervals prepared by Wings Mapping Co. dated 12/96.
3. The coordinates hereon are based upon the Howard Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monument Nos. 28R1 and 28R2 were used for this project.
4. Water is private.
5. Sewer is private.
6. Stormwater Management control will be provided on-site, on either open or preservation parcels. Ponds shall be maintained by Howard County.
7. Existing utilities are based on Howard County contract drawings.
8. The floodplain study for this project was prepared by R.M. Mochi Group, P.C. dated October 1997, and was approved on 11/13/97.
9. The wetland delineation study for this project was prepared by American Land Concepts, Inc. dated May 1997, and was approved on 9/16/97.
10. The traffic study for this project was prepared by Lee Cunningham and Associates, Inc. dated May 1997, and was approved on 9/18/97.
11. No noise study is required for this project.
12. The geotechnical report for this project was prepared by Hillis-Carnes dated May 1997, and was approved on 9/18/97.
13. Project background information:
  - a. Zoning RC-DEO and RR-DEO
  - b. Gross Area of Tract 238.3 AC.
  - c. Net Area of Tract: 199.8 AC.
  - d. Area of Proposed Lots/Parcels: 228.2 AC.
  - e. Area of Proposed R/W: 9.9 AC.
  - f. Number of Proposed Units: Phase I - 59 Units, Phase II - 36 Units
14. Howard Road is a scenic road.
15. \* - Denotes approved location of future traffic calming device (if required).

**R.M. MOCHI GROUP, P.C.**  
 P.O. Box 10  
 New Market, MD 21774-0010  
 10120 A Old National Pike  
 Jomsville, MD 21754-9706  
 (301) 865-5858  
 Fax: (301) 865-5111

**SIGNATURE BLOCK**

*Matthew V. Smith* 01/04/99  
 MATTHEW V. SMITH, ENVIRONMENTAL SCIENTIST  
 QUALIFIED PROFESSIONAL STATUS AS  
 PER THE FOREST CONSERVATION ACT

C:\RIS\DRAWINGS\BIG BRANCH OVERLOOK\BBO-Fop 1.dwg  
 DRAWN BY: MVS/JKF SCALE: 1" = 100'  
 DESIGNED BY: MVS DATE: JAN 5, 1999  
 CHECKED BY: MVS SHEET 21 OF 25





AMERICAN LAND CONCEPTS  
 238 B MAIN STREET  
 REISTERSTOWN, MARYLAND 21136  
 PHONE: (410)-526-2888 FAX: (410)-526-2970

OWNER/DEVELOPER

Mr. Charles A. Sharp  
 3779 Sharp Road  
 Glenwood, MD 21738

**BIG BRANCH  
 OVERLOOK**  
 FINAL FOREST CONSERVATION PLAN  
 ELECTION DISTRICT NO. 4  
 HOWARD COUNTY, MARYLAND

B.M. MOCHI GROUP, P.C.

P.O. Box 10  
 New Market, MD 21774-0010  
 10120 A Old National Pike  
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SIGNATURE BLOCK

*Matthew V. Smith* 01/04/99  
 MATTHEW V. SMITH, ENVIRONMENTAL SCIENTIST  
 QUALIFIED PROFESSIONAL STATUS AS  
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C:\RIS\DRAWINGS\BIG BRANCH OVERLOOK\BBO-top 2.dwg

DRAWN BY: MVS/JKF SCALE: 1" = 100'  
 DESIGNED BY: MVS DATE: JAN. 5, 1999  
 CHECKED BY: MVS SHEET 22 OF 25

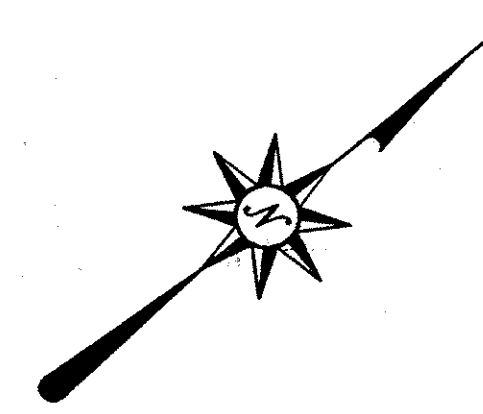


APPROVED:  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*John M. Dwyer* 2-3-99  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:  
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamstra* 2/2/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Chris Dammann* 2/2/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

- LEGEND
- SPECIMEN TREE ● ST-42
  - TREE PROTECTION FENCE ———
  - FOREST RETENTION - - - - -
  - EASEMENT LINE - · - · - ·
  - FOREST RETENTION SIGNAGE ———
  - SLOPES 15-25% [diagonal hatching]
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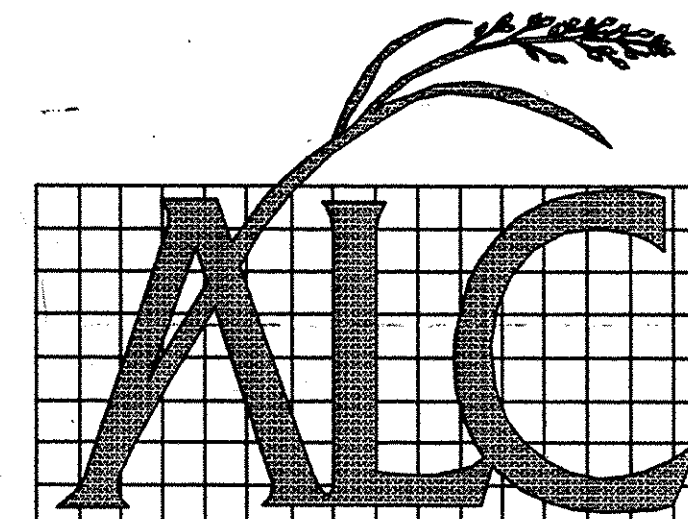


MATCHLINES SHEET 24 of 25

MATCHLINES SHEET 23 of 25

MATCHLINES SHEET 21 of 25





AMERICAN LAND CONCEPTS  
 238 B MAIN STREET  
 REISTERSTOWN, MARYLAND 21136  
 PHONE: (410)-526-2888 FAX: (410)-526-2970

OWNER/DEVELOPER

Mr. Charles A. Sharp  
 3779 Sharp Road  
 Glenwood, MD 21738

**BIG BRANCH  
 OVERLOOK**  
 FINAL FOREST CONSERVATION PLAN  
 ELECTION DISTRICT NO. 4  
 HOWARD COUNTY, MARYLAND

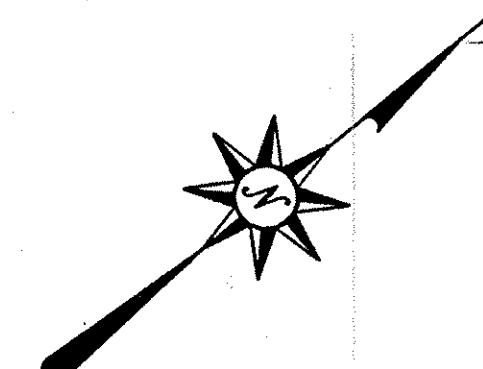
R.M. MOCHI GROUP, P.C.

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 New Market, MD 21774-0010  
 10120 A Old National Pike  
 Igouville, MD 21754-9706  
 (301) 865-5858  
 Fax: (301) 865-5111

SIGNATURE BLOCK

*Matthew V. Smith* 01/04/99  
 MATTHEW V. SMITH, ENVIRONMENTAL SCIENTIST  
 QUALIFIED PROFESSIONAL STATUS AS  
 PER THE FOREST CONSERVATION ACT

C:\R19\DRAWINGS\BIG BRANCH OVERLOOK\BBO-fcp 9.dwg  
 DRAWN BY: MVS/JKF SCALE: 1" = 100'  
 DESIGNED BY: MVS DATE: JAN. 5, 1999  
 CHECKED BY: MVS SHEET 23 OF 25



LEGEND

- SPECIMEN TREE ● ST-42
- TREE PROTECTION FENCE ———
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**APPROVED:**  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Charles M. Donker* 2-3-99  
 CHIEF, BUREAU OF HIGHWAYS MS DATE

**APPROVED:**  
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Cindy Hamilton* 2/2/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Abdullah* 2/2/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE





**AMERICAN LAND CONCEPTS**  
 238 B MAIN STREET  
 REISTERSTOWN, MARYLAND 21136  
 PHONE: (410)-526-2668 FAX: (410)-526-2970

**OWNER/DEVELOPER**

Mr. Charles A. Sharp  
 3779 Sharp Road  
 Glenwood, MD 21738

**BIG BRANCH OVERLOOK**  
**FINAL FOREST CONSERVATION PLAN**  
 ELECTION DISTRICT NO. 4  
 HOWARD COUNTY, MARYLAND

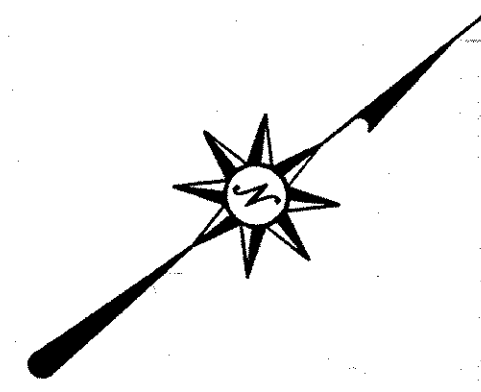
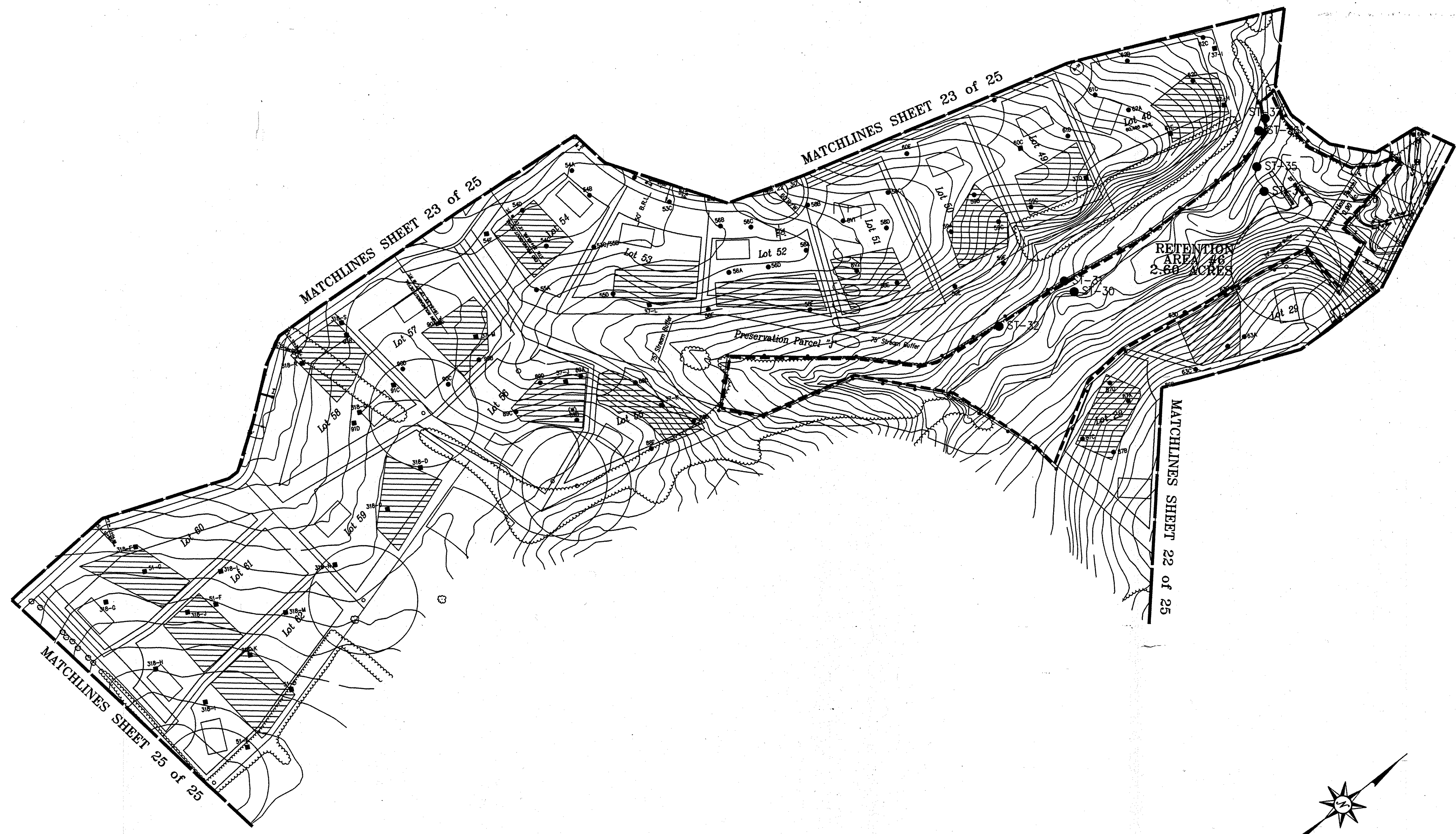
**R.M. MOCHI GROUP, P.C.**

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 New Market, MD 21774-0010  
 10120 A Old National Pike  
 Jarnsville, MD 21754-9706  
 (301) 865-5858  
 Fax: (301) 865-5111

**SIGNATURE BLOCK**

*Matthew V. Smith* 01/04/99  
 MATTHEW V. SMITH, ENVIRONMENTAL SCIENTIST  
 QUALIFIED PROFESSIONAL STATUS AS  
 PER THE FOREST CONSERVATION ACT

C:\R19\DRAWINGS\BIG BRANCH OVERLOOK\BBO-top 4.dwg  
 DRAWN BY: MVS/JKF SCALE: 1" = 100'  
 DESIGNED BY: MVS DATE: Jan 5, 1999  
 CHECKED BY: MVS SHEET 24 OF 25



**LEGEND**

- SPECIMEN TREE ●ST-42
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- SLOPES 25% & UP [cross-hatching]

**APPROVED:**  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Robert M. Daniels* 2-3-99  
 CHIEF, BUREAU OF HIGHWAYS DATE

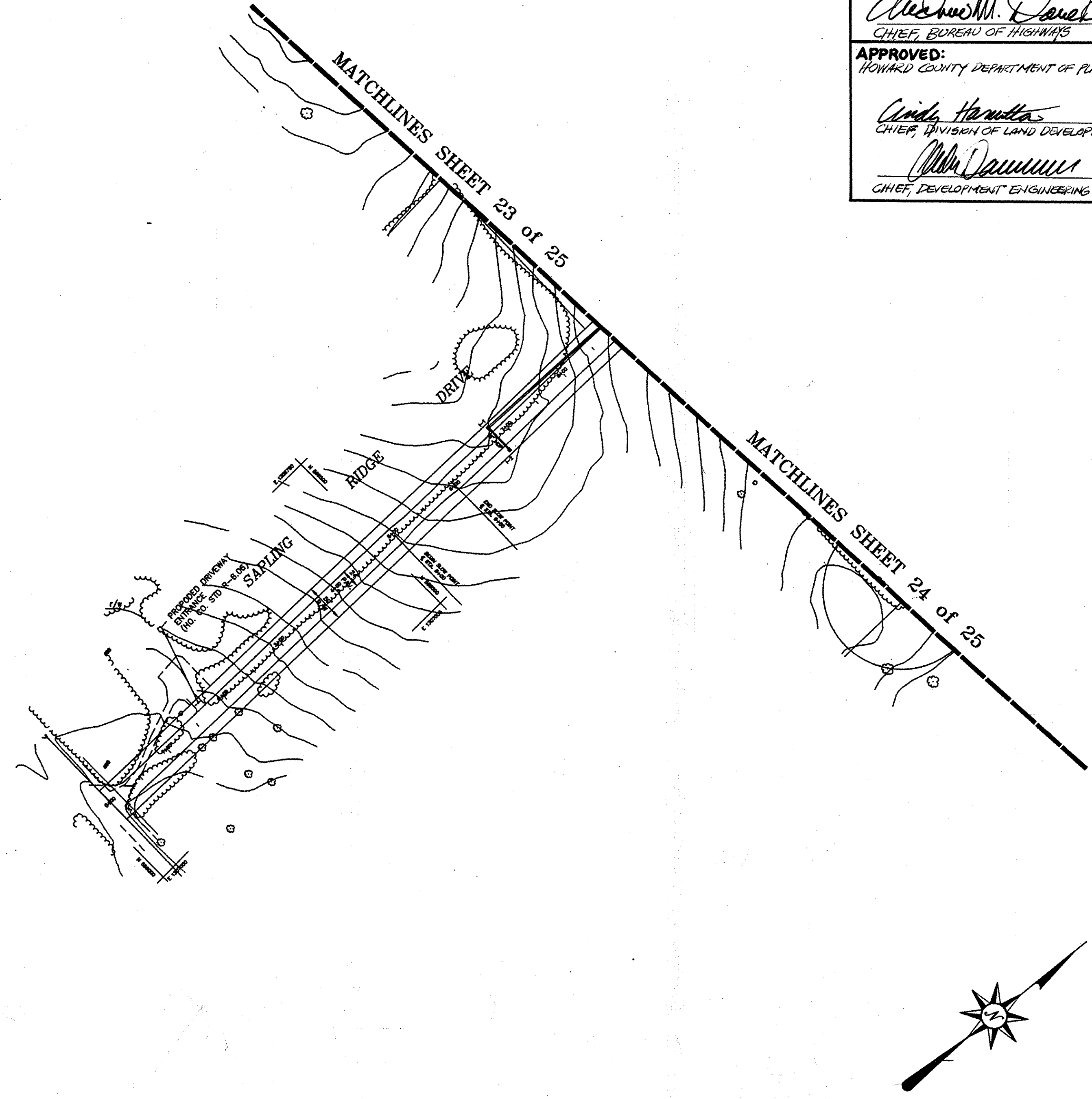
**APPROVED:**  
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*C. Hamilton* 2/3/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*John J. ...* 2/4/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



**SPECIMEN TREE LIST**

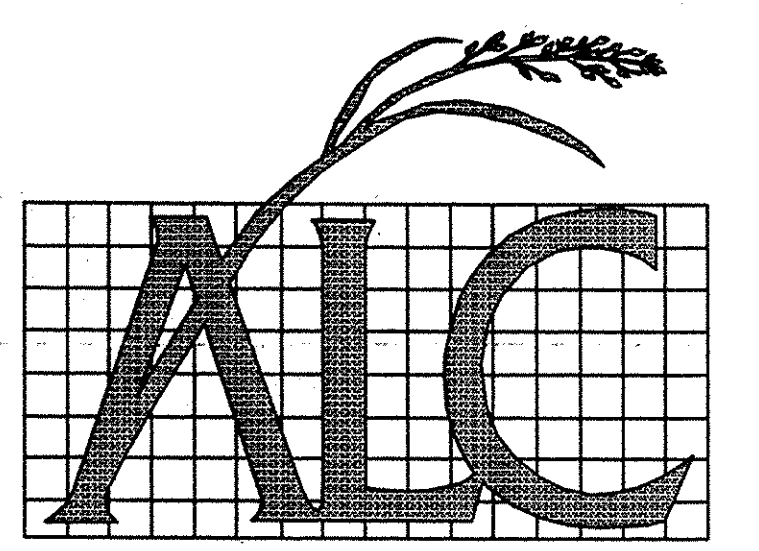
NO.	COMMON NAME	BOTANICAL NAME	SIZE	CONDITION
4	TULIP POPLAR	Liriodendron tulipifera	36"	GOOD
5	BLACK OAK	Quercus velutina	35"	GOOD
6	TULIP POPLAR	Liriodendron tulipifera	33"	GOOD
7	TULIP POPLAR	Liriodendron tulipifera	35"	GOOD
8	SYCAMORE	Platanus occidentalis	34"	GOOD
9	SYCAMORE	Platanus occidentalis	36"	GOOD
10	TULIP POPLAR	Liriodendron tulipifera	65"	GOOD
11	SYCAMORE	Platanus occidentalis	47"	GOOD
12	TULIP POPLAR	Liriodendron tulipifera	32"	GOOD
13	TULIP POPLAR	Liriodendron tulipifera	39"	GOOD
14	TULIP POPLAR	Liriodendron tulipifera	35"	GOOD
15	SYCAMORE	Platanus occidentalis	38"	GOOD
16	SYCAMORE	Platanus occidentalis	33"	GOOD
17	SYCAMORE	Platanus occidentalis	31"	GOOD
18	SYCAMORE	Platanus occidentalis	20"	GOOD
19	BLACK OAK	Quercus velutina	22"	GOOD
20	TULIP POPLAR	Liriodendron tulipifera	59"	GOOD
21	TULIP POPLAR	Liriodendron tulipifera	41"	GOOD
22	TULIP POPLAR	Liriodendron tulipifera	40"	FAIR-GOOD
24	TULIP POPLAR	Liriodendron tulipifera	33"	GOOD
25	TULIP POPLAR	Liriodendron tulipifera	32"	GOOD
26	TULIP POPLAR	Liriodendron tulipifera	33"	GOOD
28	TULIP POPLAR	Liriodendron tulipifera	33"	GOOD
29	TULIP POPLAR	Liriodendron tulipifera	33"	GOOD
30	TULIP POPLAR	Liriodendron tulipifera	42"	GOOD
31	TULIP POPLAR	Liriodendron tulipifera	32"	GOOD
32	TULIP POPLAR	Liriodendron tulipifera	45"	GOOD
33	TULIP POPLAR	Liriodendron tulipifera	30"	GOOD
34	TULIP POPLAR	Liriodendron tulipifera	32"	GOOD
35	TULIP POPLAR	Liriodendron tulipifera	46"	GOOD
36	TULIP POPLAR	Liriodendron tulipifera	38"	GOOD
37	TULIP POPLAR	Liriodendron tulipifera	35"	GOOD
38	TULIP POPLAR	Liriodendron tulipifera	39"	GOOD
39	TULIP POPLAR	Liriodendron tulipifera	31"	GOOD
40	TULIP POPLAR	Liriodendron tulipifera	41"	GOOD
48	SOUTHERN RED OAK	Quercus falcata	31"	GOOD
49	SOUTHERN RED OAK	Quercus falcata	33"	GOOD
50	TULIP POPLAR	Liriodendron tulipifera	36"	GOOD
51	TULIP POPLAR	Liriodendron tulipifera	46"	GOOD
52	BLACK OAK	Quercus velutina	30"	GOOD
53	TULIP POPLAR	Liriodendron tulipifera	48"	GOOD
54	BLACK OAK	Quercus velutina	32"	GOOD
55	SYCAMORE	Platanus occidentalis	33"	GOOD
56	TULIP POPLAR	Liriodendron tulipifera	38"	GOOD
57	TULIP POPLAR	Liriodendron tulipifera	40"	GOOD
58	SYCAMORE	Platanus occidentalis	36"	GOOD
60	TULIP POPLAR	Liriodendron tulipifera	32"	GOOD
61	BLACK OAK	Quercus velutina	35"	GOOD
62	TULIP POPLAR	Liriodendron tulipifera	41"	GOOD
63	SYCAMORE	Platanus occidentalis	32"	GOOD
64	SYCAMORE	Platanus occidentalis	36"	GOOD
65	TULIP POPLAR	Liriodendron tulipifera	32"	GOOD
66	TULIP POPLAR	Liriodendron tulipifera	32"	GOOD
67	TULIP POPLAR	Liriodendron tulipifera	35"	GOOD
68	TULIP POPLAR	Liriodendron tulipifera	30"	GOOD
69	TULIP POPLAR	Liriodendron tulipifera	36"	GOOD
70	BLACK OAK	Quercus velutina	44"	GOOD
71	SOUTHERN RED OAK	Quercus falcata	32"	GOOD
72	SOUTHERN RED OAK	Quercus falcata	30"	GOOD
73	TULIP POPLAR	Liriodendron tulipifera	31"	GOOD
74	TULIP POPLAR	Liriodendron tulipifera	31"	GOOD
75	SYCAMORE	Platanus occidentalis	32"	GOOD
76	BLACK OAK	Quercus velutina	34"	GOOD
77	TULIP POPLAR	Liriodendron tulipifera	20"	GOOD
78	SOUTHERN RED OAK	Quercus falcata	35"	GOOD
79	BLACK OAK	Quercus velutina	31"	GOOD



APPROVED:  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*Richard M. Davelos* 2-3-99  
CHIEF, BUREAU OF HIGHWAYS MS DATE

APPROVED:  
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING  
*Andy Hamilton* 2/3/99  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*John Dammann* 2/3/99  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



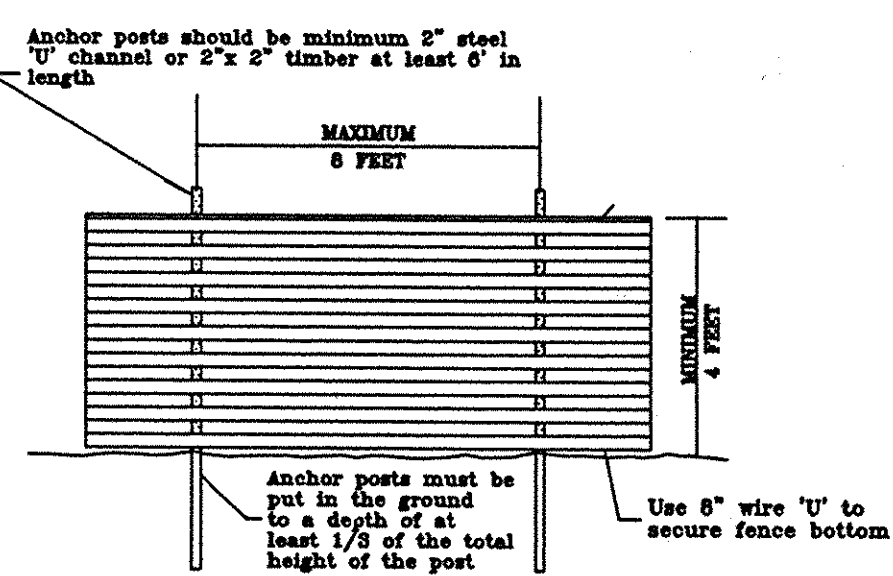
AMERICAN LAND CONCEPTS  
236 B MAIN STREET  
REISTERSTOWN, MARYLAND 21136  
PHONE: (410)-526-2688 FAX: (410)-526-2970

**OWNER/DEVELOPER**

Mr. Charles A. Sharp  
3779 Sharp Road  
Glenwood, MD 21738

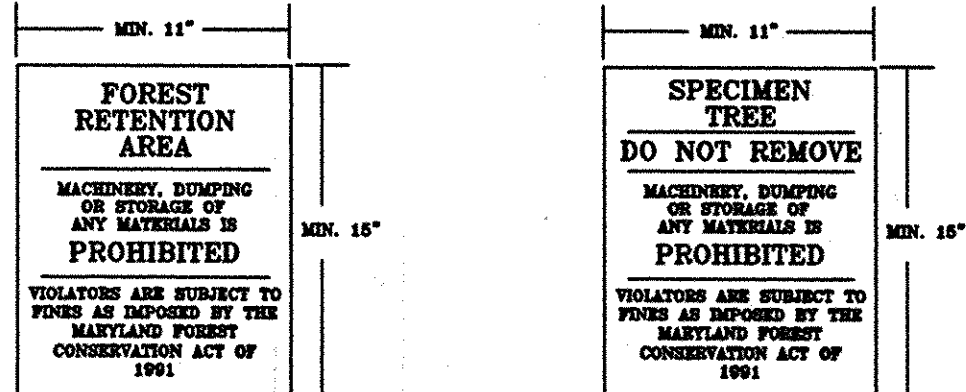
**BIG BRANCH OVERLOOK**  
**FINAL FOREST CONSERVATION PLAN**  
**ELECTION DISTRICT NO. 4**  
**HOWARD COUNTY, MARYLAND**

**TREE PROTECTION FENCE**  
BLAZE ORANGE PLASTIC MESH  
NOT TO SCALE



- GENERAL NOTES**
- FOREST PROTECTION FENCE ONLY
  - RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
  - BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND PLACES FROM TO INSTALLING DEVICE.
  - ROOT DAMAGE SHOULD BE AVOIDED.
  - PROTECTIVE SIGNAGE MAY ALSO BE USED.
  - DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

**TREE SIGNAGE**  
NOT TO SCALE



- GENERAL NOTES**
- Bottom of signs to be higher than top of tree protection fence.
  - Signs to be placed approximately 100 feet apart. Conditions on site affecting visibility may warrant placing signs closer or further apart.
  - Attachment of signs to trees is prohibited.

**FOREST CONSERVATION WORKSHEET**  
BIG BRANCH OVERLOOK

	ACRES (1/10)
<b>I. BASIC SITE DATA</b>	
GROSS SITE AREA	238.5
AREA WITHIN 100 YEAR FLOODPLAIN	33.5
AREA WITHIN AG USE OR PRESERVATION PARCEL (IF APPLICABLE)	0.0
NET TRACT AREA	199.8
LAND USE CATEGORY (R-R1D, R-R2D, R-S, C-1/0, 1)	RR/RC
<b>II. INFORMATION FOR CALCULATIONS</b>	
A. NET TRACT AREA	199.8
B. REFORESTATION THRESHOLD (ROW X A)	60.0
C. AFFORESTATION MINIMUM (COS X A)	40.0
D. EXISTING FOREST ON NET TRACT AREA	109.92
E. FOREST AREAS TO BE CLEARED	47.92
F. FOREST AREAS TO BE RETAINED	62.4
<b>III. DETERMINING REQUIREMENTS: AFFORESTATION OR REFORESTATION</b>	
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.	
GO TO SECTION IV	
If existing forests exceed 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.	
2. Afforestation	
If existing forest area are less than the afforestation minimum (if D is less than C), afforestation requirements apply.	
GO TO SECTION V	

	ACRES (1/10 acre)
<b>IV. REFORESTATION CALCULATIONS</b>	
A. NET TRACT AREA	199.8
B. REFORESTATION THRESHOLD (ROW X A)	60.0
C. EXISTING FOREST ON NET TRACT AREA	109.92
D. FOREST AREAS TO BE CLEARED	47.92
E. FOREST AREAS TO BE RETAINED	62.4
<b>G. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD</b>	
(D-F, if F equals or is greater than B, Alternate 1)	47.92
(D-B, if F is less than B, Alternate 2)	
<b>H. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD</b>	
(D-F, if applicable)	0.0
<b>I. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD</b>	
(F-B, Retention Credit, if applicable)	16.4

Select the alternative that applies:

- Clearing above the threshold only  
If forest areas to be retained equal or are greater than the reforestation threshold (if F equals or is greater than B), the following calculations apply:  
 REFORESTATION FOR CLEARING ABOVE THRESHOLD  
 $C \times 1/4 = 12.0$   
 CREDIT FOR FOREST AREAS RETAINED ABOVE THRESHOLD  
 1 = Retention Credit  
 TOTAL REFORESTATION REQUIRED  
 $(C \times 1/4) - 1 = 16.4$
- Clearing below the threshold  
If forest areas to be retained are less than the reforestation threshold (if F is less than B), the following calculations apply:  
 REFORESTATION FOR CLEARING ABOVE THRESHOLD  
 $C \times 1/4 = N/A$   
 CREDIT FOR FOREST AREAS RETAINED ABOVE THRESHOLD  
 $C \times 1/2 = N/A$   
 TOTAL REFORESTATION REQUIRED  
 $(C \times 1/4) + (R \times 1/2) = N/A$   
 Since clearing occurs below the threshold, no forest retention credit is possible.

- LEGEND**
- SPECIMEN TREE: ● ST-42
  - TREE PROTECTION FENCE: ————
  - FOREST RETENTION: ————
  - EASEMENT LINE: ————
  - FOREST RETENTION SIGNAGE: ————
  - SLOPES 15-25%: [Hatched pattern]
  - SLOPES 25% & UP: [Cross-hatched pattern]

NOTE: ONLY THE FLOODPLAIN AREA WAS DEDUCTED FROM THE GROSS AREA OF THE PROPERTY, TO OBTAIN THE NET TRACT AREA VALUE.

NOTE: ALL FOREST CONSERVATION EASEMENTS SHOWN ARE SUBJECT TO THE TERMS OF THE DEED OF FOREST CONSERVATION EASEMENT TO BE EXECUTED WITH HOWARD COUNTY AND RECORDED AMONG THE LAND RECORDS OF HOWARD COUNTY.

NOTE: TREE PROTECTION FENCE WILL BE INSTALLED IF DISTURBANCE IS WITHIN 100' OF THE FOREST RETENTION EASEMENT LINE.

**SEQUENCE OF CONSTRUCTION**

- INSTALL TREE PROTECTION FENCE.
- INSTALL FOREST CONSERVATION SIGNAGE.
- COMPLETE ALL REQUIRED GRADING AND CONSTRUCTION.
- REMOVE TREE PROTECTION FENCE.

**R.M. MOCHI GROUP, P.C.**

P.O. Box 10  
New Market, MD 21774-0010  
10120 A Old National Pike  
Jameville, MD 21754-9706  
(301) 865-5858  
Fax: (301) 865-5111

**SIGNATURE BLOCK**

*Matthew V. Smith* 01/04/99  
MATTHEW V. SMITH, ENVIRONMENTAL SCIENTIST  
QUALIFIED PROFESSIONAL STATUS AS  
PER THE FOREST CONSERVATION ACT

C:\RIS\DRAWINGS\BIG BRANCH OVERLOOK\BBO-top 5.dwg  
DRAWN BY: MVS/JKF SCALE: 1" = 100'  
DESIGNED BY: MVS DATE: JAN 5, 1999  
CHECKED BY: MVS SHEET 25 OF 25

#98.165