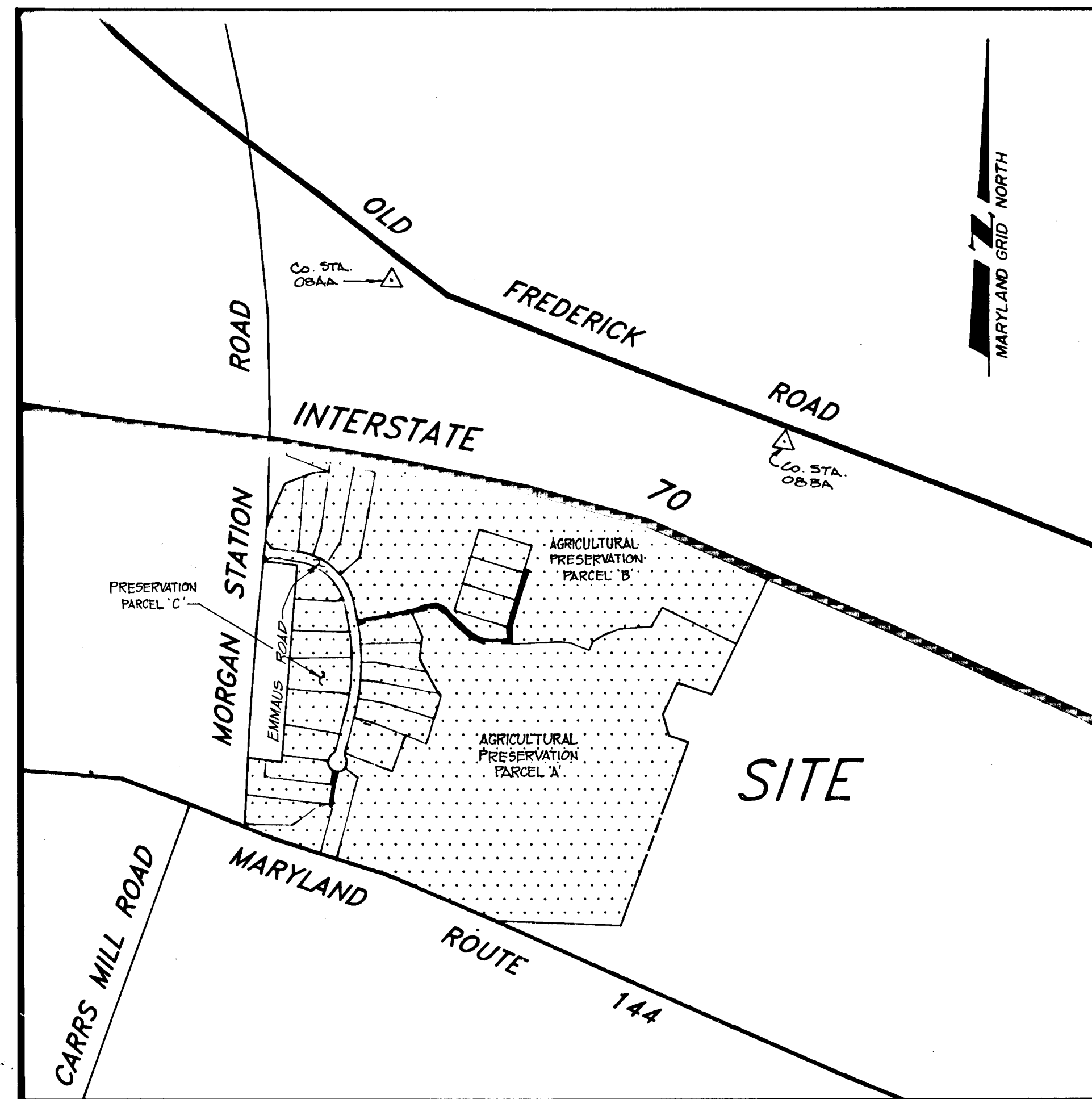


WALNUT SPRINGS

LOTS 4 - 26

4th ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

INDEX OF SHEETS	
SHEET NO.	TITLE
1	COVER SHEET
2	ROAD PLAN & PROFILE
3	ROAD DETAIL SHEET & STORMDRAIN PROFILE
4	DRAINAGE AREA MAP, SOILS MAP, GRADING, AND SEDIMENT CONTROL
5	FINAL GRADING PLAN
6	SEDIMENT CONTROL DETAILS AND NOISE BERM SECTIONS
7	LANDSCAPE PLAN



VICINITY MAP
SCALE: 1" = 600'

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 / 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.
- Total tract area is 107.93 acres with 3 existing lots and 21 proposed lots.
- Traffic control devices, markings, and signage shall be in accordance with the latest edition to the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
- A field run survey was conducted by Boender Associates, Inc. on June 4, 1993 and April 7, 1993.
- Private water and sewer will be utilized on-site.
- Stormwater management for water quality will be provided.
- The wetlands delineation study was performed by Wildman Environmental Services.
- The geotechnical report was prepared by Hillis-Carnes Associates, Inc.
- Floodplain delineation exempted under section 16.147(c)(17) of the subdivision regulations.
- Street trees provided in accordance with Section 16.136 of the subdivision regulations.
- Payment of fee-in-lieu of providing stormwater management for quantity management has been approved on August 8, 1994.
- WAIVER PETITIONS AND SITE PLAN REFERENCES:

 - WP 93-89 16.116 - Waive the submission of a wetland study -- Nov. 18, 1993
 - SP 94-02 Preliminary equivalent sketch approval -- Dec. 15, 1993
 - P 94-21 Preliminary site plan approval -- Aug. 14, 1994
 - WP 94-22 Waive platting the property residue, having minimum road frontage for the two proposed lots, and submitting an environmental study -- Oct. 2, 1992
 - F 93-55 Subdivision Plat of Lots 1, 2, & 3 as recorded among the Land Records of Howard County as Plats 10707 and 10708 -- Jan. 8, 1993

CO. STA. 08AA ELEV. 609.35
HOWARD COUNTY CONCRETE MONUMENT LOCATED 106' FROM CENTERLINE OF ASPHALT ROAD AND 73.7' FROM G&E POLE # 504108

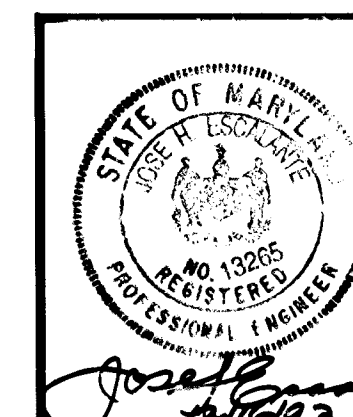
CO. STA. 08BA ELEV. 631.33
HOWARD COUNTY CONCRETE MONUMENT LOCATED 613' FROM G&E POLE # 504108, 28.5' FROM G&E POLE # 157180, AND 28.5' FROM 2" MAPLE.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Chia Strummanis 1/3/95
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH

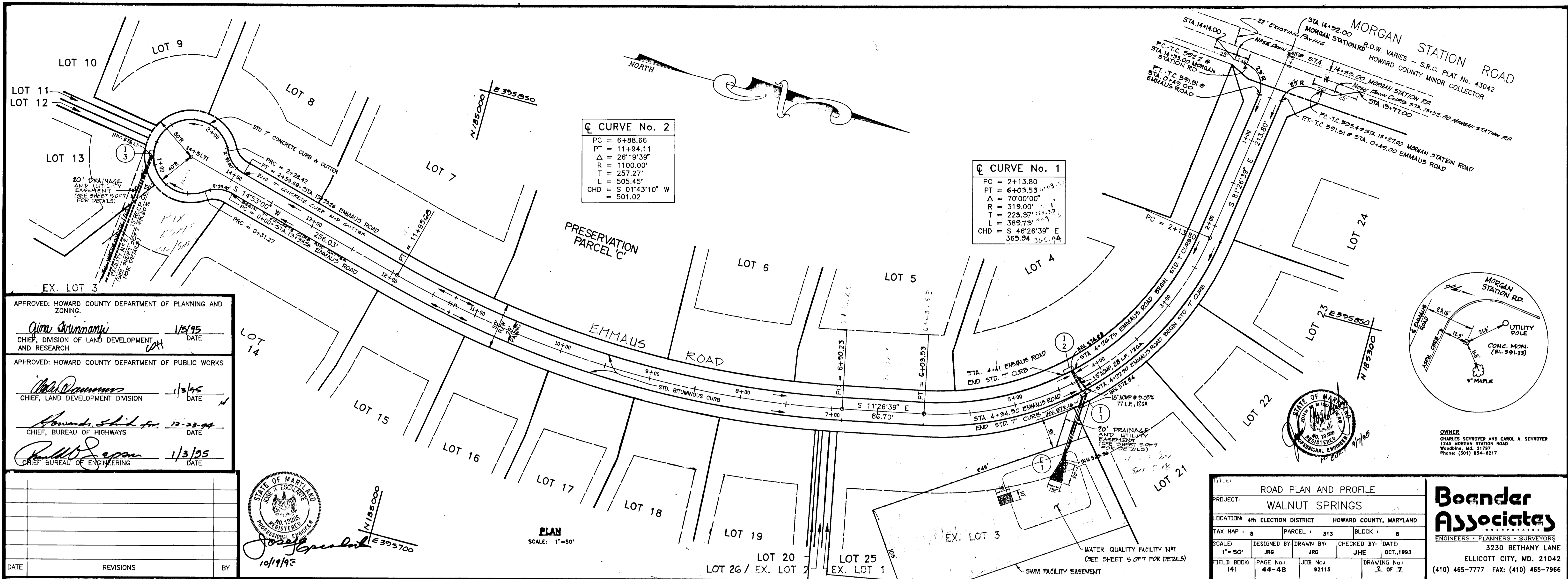
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Mark Dammann 1/5/95
CHIEF, LAND DEVELOPMENT DIVISION

Howard Shick 12-23-94
CHIEF, BUREAU OF HIGHWAYS

Robert J. Ryan 1/3/95
CHIEF, BUREAU OF ENGINEERING



PROJECT: WALNUT SPRINGS		OWNER: CHARLES SPINNEY AND GAIL A. SPINNEY 1345 WOODS STATION ROAD BETHANY, MD 21758 Phone: (301) 884-8917	
LOCATION: 4th ELECTION DISTRICT	HOWARD COUNTY, MARYLAND	ENGINEERS: PLANNERS: SURVEYORS	
TAX MAP: 8	PARCEL: 315	3230 BETHANY LANE	
DESIGNED BY: JRC	DRAWN BY: JRC	ELLICOTT CITY, MD. 21042	
CHECKED BY: JHE	DATE: NOV. 1993	(410) 465-7777 FAX: (410) 465-7966	
FIELD BOOK: 141	PAGE No: 44-48	JOB No: 92115	DRAWING No: L. OF J.
REVISION:	BY:	DATE:	



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Quin Drummond 1/5/95
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
John Danner 1/5/95
 CHIEF, LAND DEVELOPMENT DIVISION
Howard Shickler 12-23-94
 CHIEF, BUREAU OF HIGHWAYS
Paul D. Seaman 1/3/95
 CHIEF, BUREAU OF ENGINEERING

DATE REVISIONS BY

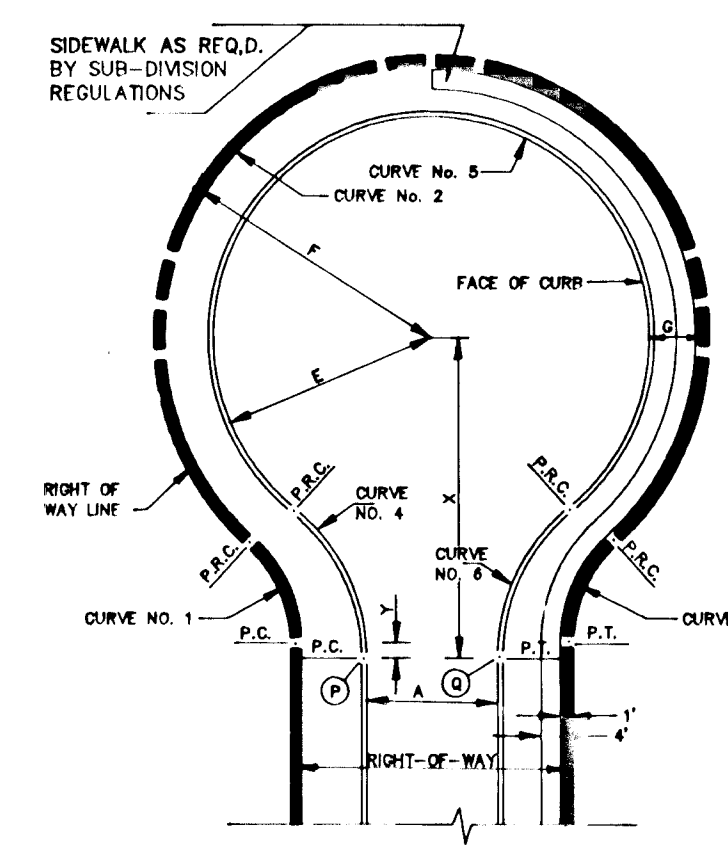
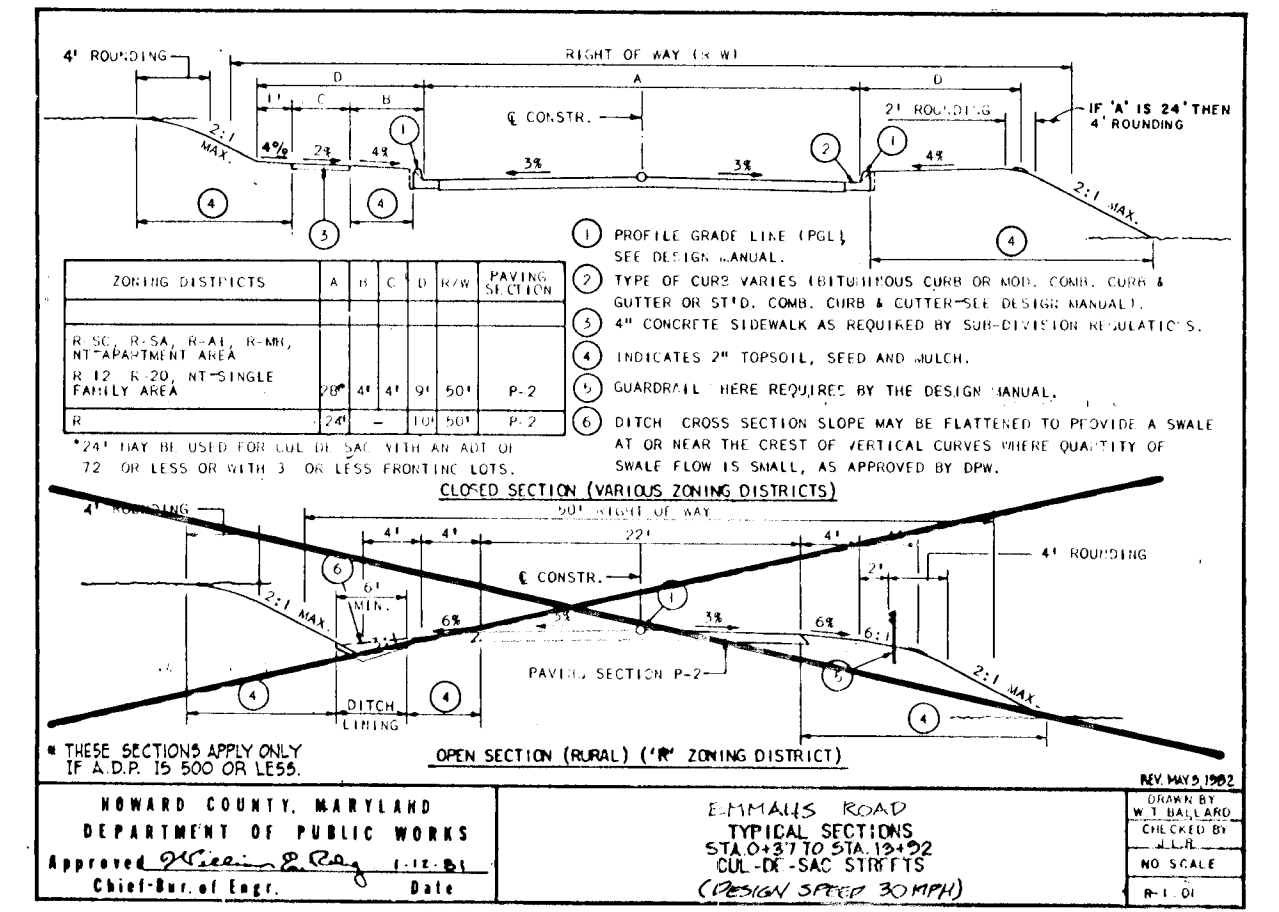
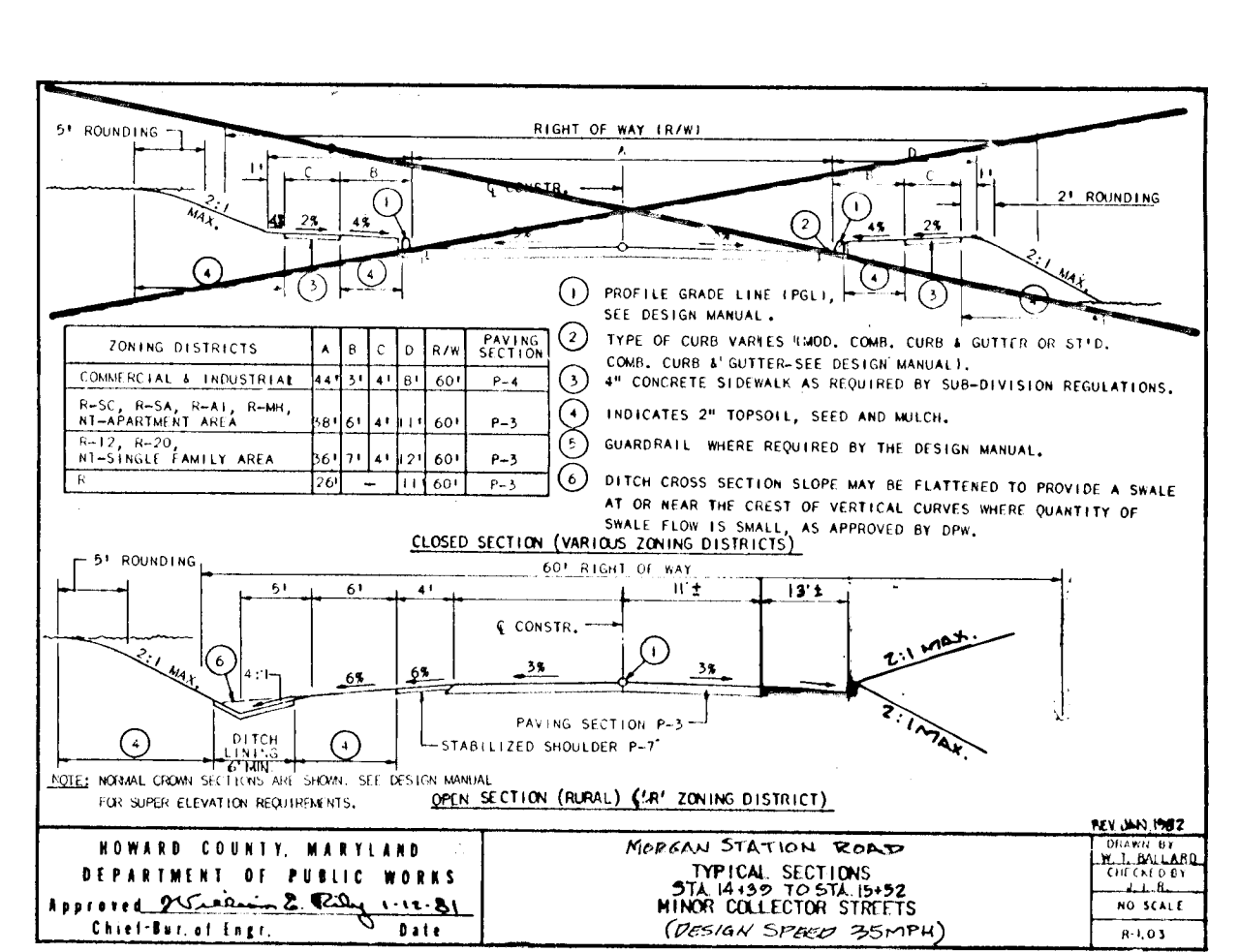
10/19/95

TITLE: ROAD PLAN AND PROFILE	
PROJECT: WALNUT SPRINGS	
LOCATION: 4th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TAX MAP #	PARCEL # 313 BLOCK # 8
SCALE: 1"=50'	DESIGNED BY: JRG DRAWN BY: JRG CHECKED BY: JHE DATE: OCT. 1993
FIELD BOOK: 141	PAGE No: 44-48 JOB No: 92115 DRAWING No: 2 OF 2

Boender Associates
 ENGINEERS - PLANNERS - SURVEYORS
 3230 BETHANY LANE
 ELLICOTT CITY, MD. 21042
 (410) 465-7777 FAX: (410) 465-7966

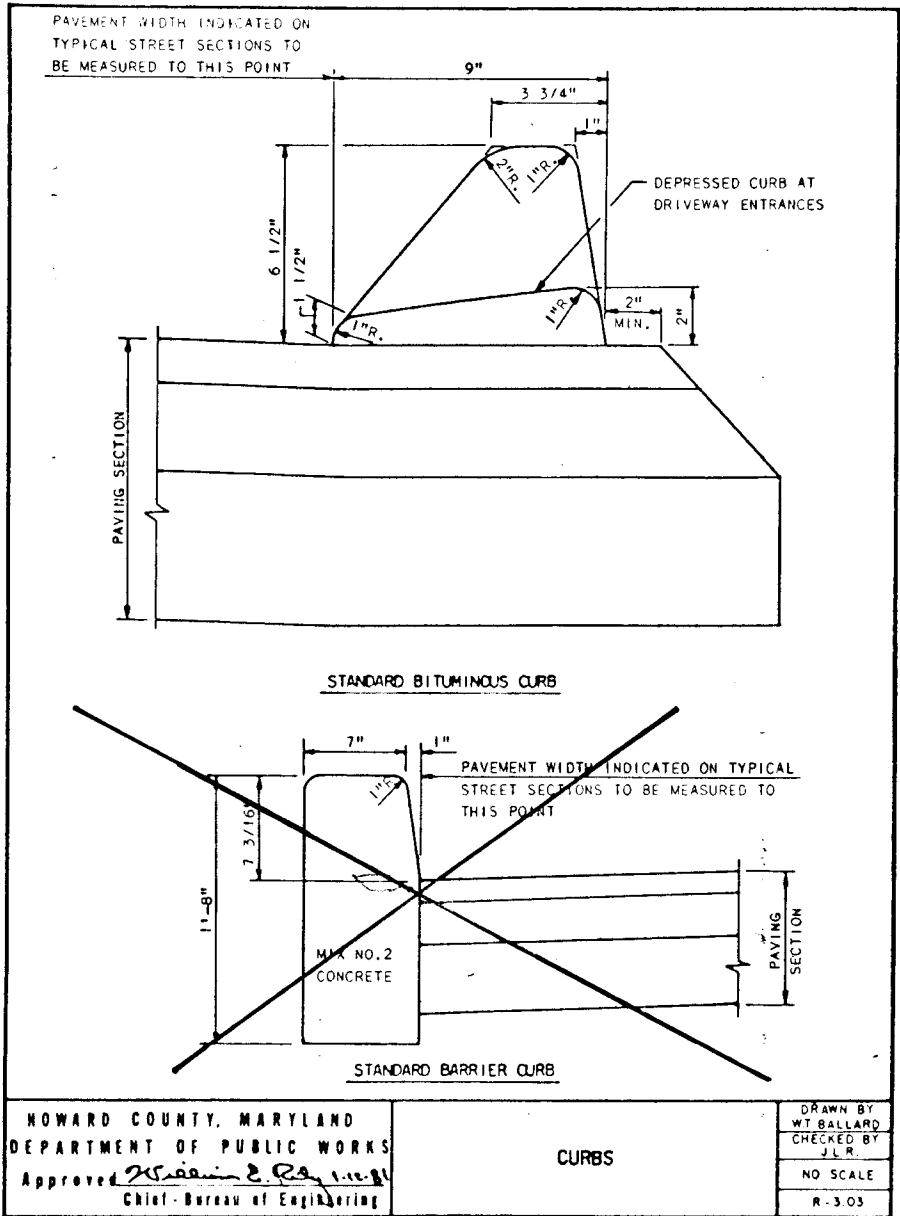
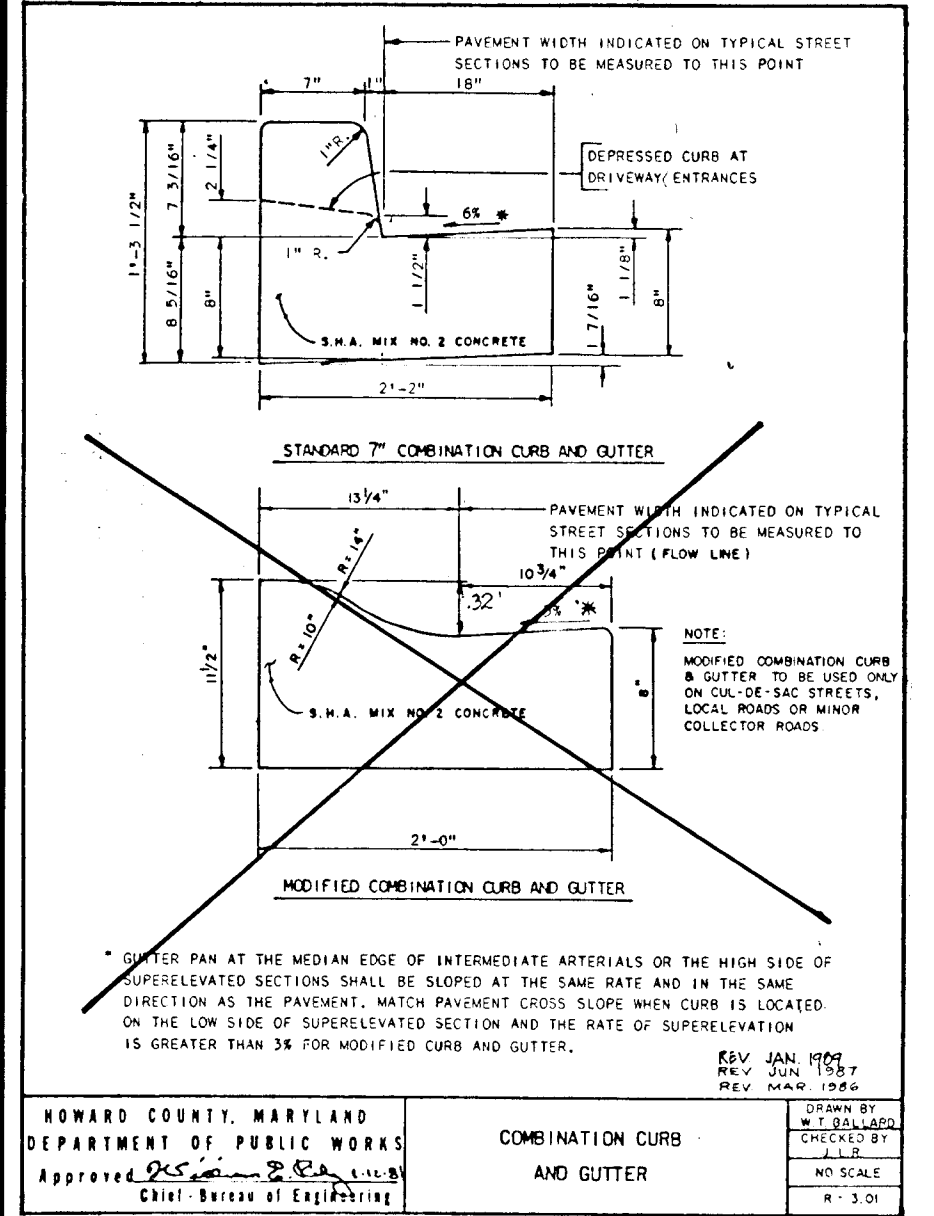
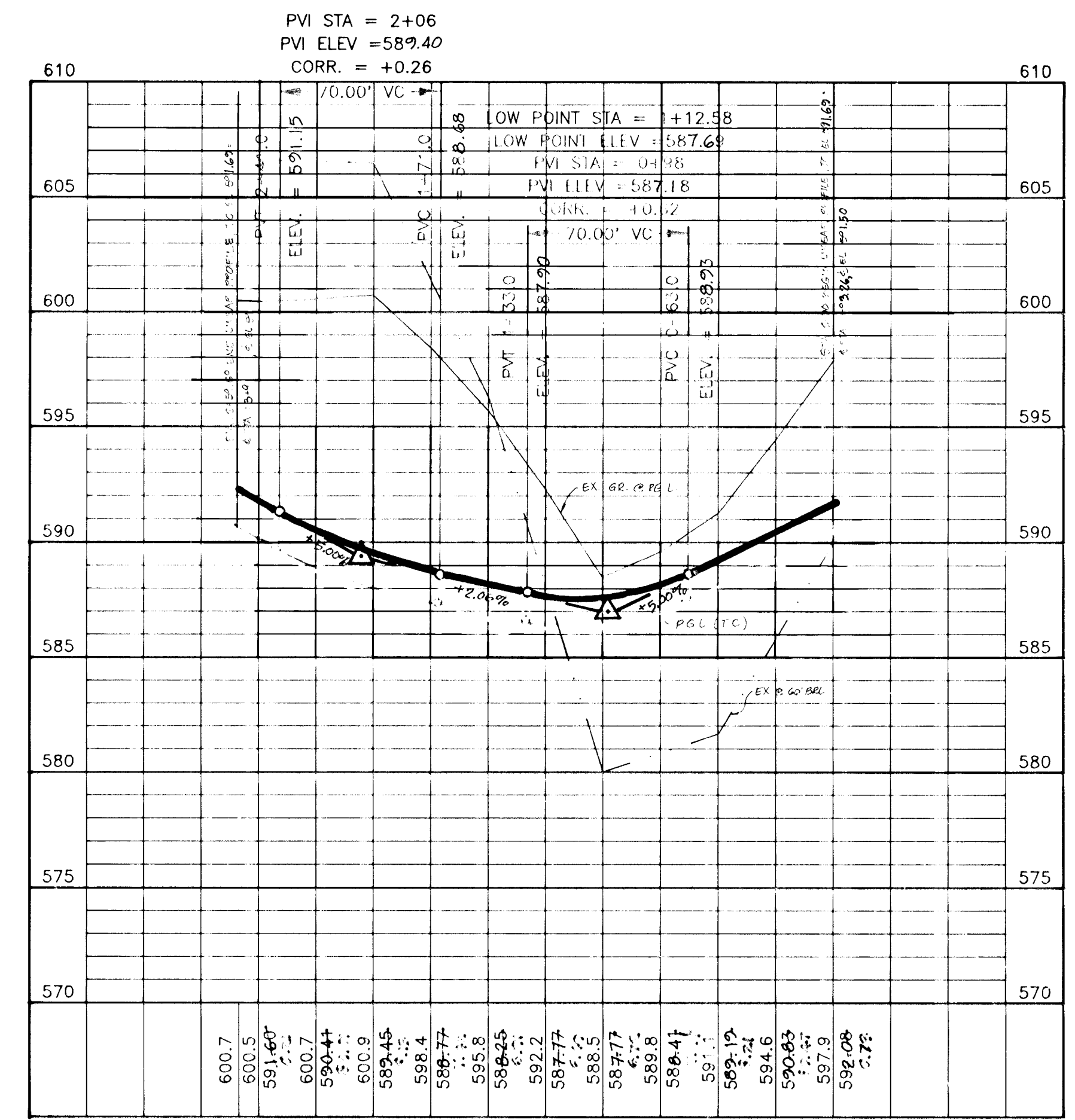
1719

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	PAVEMENT MATERIALS	GRANULAR BASE ALTERNATES
P-1	APARTMENT AND INDUSTRIAL ZONES WITH HEAVY TRUCK TRAVELWAY FOR APARTMENTS WITH HEAVY TRUCK	1" BIT. CONC. SURFACE 4" BIT. CONC. BASE	2" BIT. CONC. SURFACE 4" BIT. CONC. BASE
P-2	LOCAL CO. OF THE ST. ALLEYS AND PRIVATE ROADS SERVING INDIVIDUAL TRAVELWAYS	1" BIT. CONC. SURFACE 4" BIT. CONC. BASE	2" BIT. CONC. SURFACE 4" BIT. CONC. BASE
P-3	RESIDENTIAL ZONES WITH HEAVY TRUCK TRAVELWAYS	1" BIT. CONC. SURFACE 4" BIT. CONC. BASE	2" BIT. CONC. SURFACE 4" BIT. CONC. BASE
P-4	COMMERCIAL AND INDUSTRIAL ZONES TRUCK COLLECTION	1" BIT. CONC. SURFACE 4" BIT. CONC. BASE	2" BIT. CONC. SURFACE 4" BIT. CONC. BASE
P-5	COMMERCIAL AND INDUSTRIAL ZONES MAJOR COLLECTION	1" BIT. CONC. SURFACE 4" BIT. CONC. BASE	2" BIT. CONC. SURFACE 4" BIT. CONC. BASE
P-6	ALL ZONES INTERMEDIATE ARTERIAL	1" BIT. CONC. SURFACE 4" BIT. CONC. BASE	2" BIT. CONC. SURFACE 4" BIT. CONC. BASE
P-7	STABILIZED SHOULDER FOR ALL ZONES AND ROAD CLASSIFICATIONS	FOUR INCH SURFACE FOUR INCH BASE	FOUR INCH SURFACE FOUR INCH BASE
P-8	PAVED SHOULDER FOR ALL ZONES AND ROAD CLASSIFICATIONS SIDEWALKS AND PARKING AREAS (NOTE: THIS SECTION MAY BE USED IN LIEU OF SIDEWALKS AND PARKING AREAS OFF SITE - IMPROVEMENTS REQUIRED APPROX. 10%)	1" BIT. CONC. SURFACE 4" BIT. CONC. BASE	2" BIT. CONC. SURFACE 4" BIT. CONC. BASE

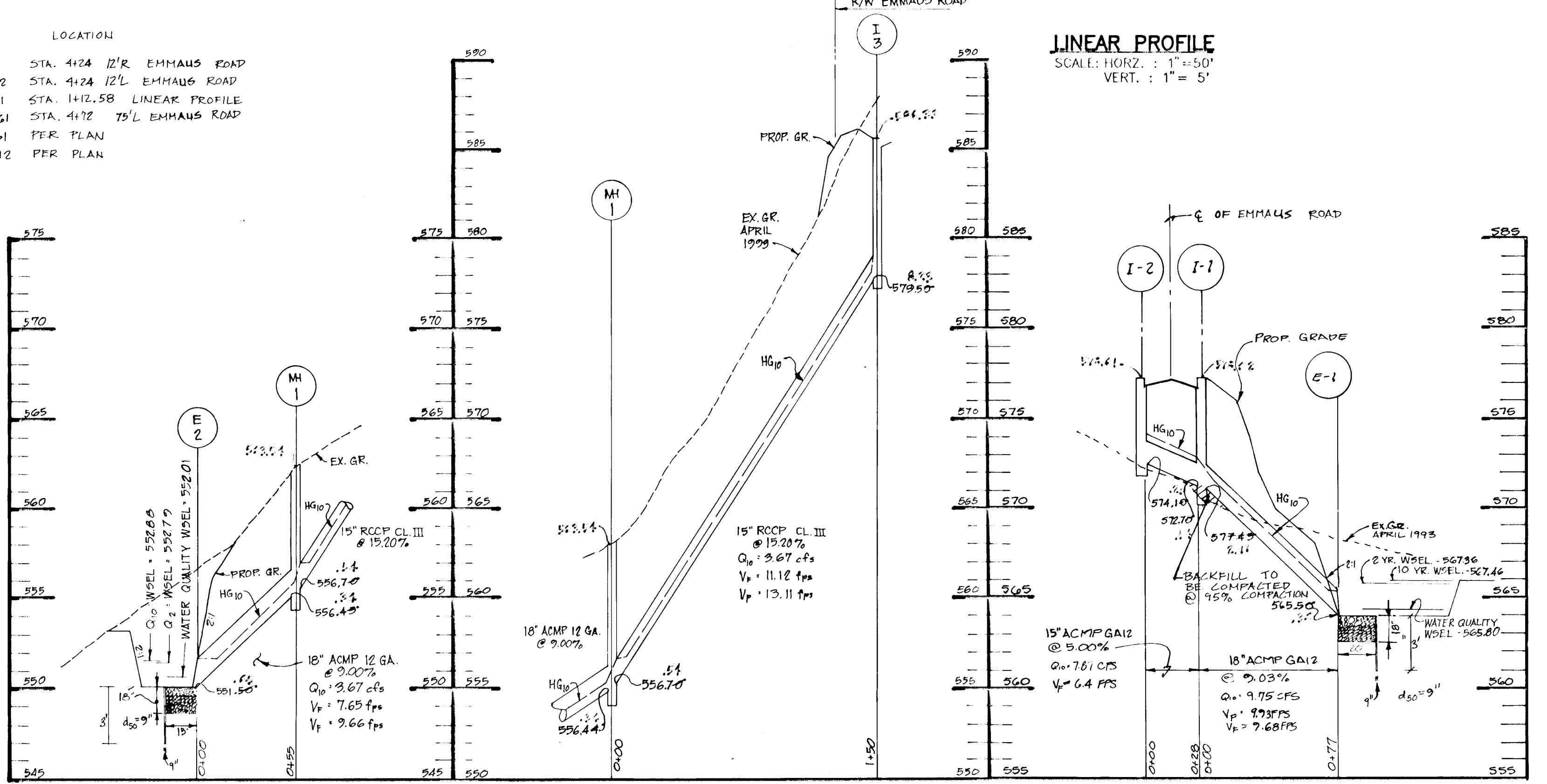


COMMERCIAL-INDUSTRIAL (30' APPROACH)					COMMERCIAL-INDUSTRIAL (44' APPROACH)				
X=62.81, Y=0.88' L.P.=289.96'					X=59.79, Y=3.70' L.P.=280.71'				
Δ	48°05'54"	2781'48"	2787'43"	Δ	48°05'54"	2781'48"	4572'54"	27045'47"	
R	25.00'	58.00'	37.00'	R	25.00'	58.00'	37.00'	47.00'	
L	21.42'	286.47'	31.12'	L	21.42'	286.47'	29.30'	222.11'	
T	11.42'	18.55'	-	T	11.42'	18.55'	-	18.47'	
L.C.	20.77'	30.71'	-	L.C.	20.77'	30.71'	-	28.55'	

CUL-DE-SAC DETAIL
NOT TO SCALE



STRUCTURE	TYPE	INV. IN.	INV. OUT.	TOP ELEV.	REMARKS	LOCATION
I-1	A-S INLET	572.70	572.44	570.00	HO CD STD SD-401	STA. 4+24 12'R EMMAUS ROAD
I-2	A-S INLET	574.12	570.00	570.00	HO CD STD SD-402	STA. 4+24 12'L EMMAUS ROAD
I-3	A-S INLET	579.20	567.84	570.00	HO CD STD SD-401	STA. 1+12.58 LINEAR PROFILE
E-1	METAL END SECTION	-	566.30	-	HO CD STD SD-501	STA. 4+72 75'L EMMAUS ROAD
E-2	METAL END SECTION	-	551.50	-	HO CD STD SD-501	PER PLAN
MH-1	STD MANHOLE	556.70	556.45	569.40	HO CD STD G-512	PER PLAN



DRIVEWAY AND INLET DETAIL
SCALE: 1"=50'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
 Omit Srivastava 1/5/95
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Omit Srivastava 1/3/95
 CHIEF, LAND DEVELOPMENT DIVISION
 Howard Shik for 12-23-92
 CHIEF, BUREAU OF HIGHWAYS
 Paul D. Brown 1/3/95
 CHIEF, BUREAU OF ENGINEERING



DATE: 12/16/93

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

PROJECT:	WALNUT SPRINGS		
LOCATION:	4th ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
TAX MAP:	4	PARCEL:	313
SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
AS SHOWN:	JRC	JRC	JHC
FIELD BOOK:	PAGE No.:	JOB No.:	DRAWING No.:
		92115	3 OF 2

OWNER: CHARLES SCHROYER AND CAROL A. SCHROYER
 1245 WOODLAND STATION ROAD
 WOODHINE, MD. 21787
 Phone: (301) 854-8217

Boender Associates
 ENGINEERS - PLANNERS - SURVEYORS
 3230 BETHANY LANE
 ELLICOTT CITY, MD. 21042
 (410) 465-7777 FAX: (410) 465-7966

1719

F 95-23

CURV	RAJUS	LENGTH	ANGLE	CHORD	BEARING	AREA
1	344.00'	73.31'	36.79'	78.56'	N 75°20'21" W	12123.36'
2	344.00'	83.67'	42.04'	83.46'	N 62°16'00" W	13568.07'
3	344.00'	78.73'	39.54'	82.47'	N 48°44'33" W	13098.50'
4	344.00'	184.87'	84.58'	182.39'	N 20°44'53" W	30444.28'
5	1125.00'	8.00'	4.00'	8.00'	N 110°3'0" W	00724.27'
6	1125.00'	8.00'	4.00'	8.00'	N 10°38'40" W	00724.27'
7	1125.00'	8.00'	4.00'	8.00'	N 107°47'4" W	00724.27'
8	1125.00'	104.87'	52.47'	104.83'	N 07°21'46" W	05207.58'
9	1125.00'	94.50'	47.28'	94.47'	N 02°17'09" W	04484.46'
10	1125.00'	96.57'	48.32'	96.54'	N 02°34'47" E	04555.06'
11	1125.00'	97.66'	48.89'	97.63'	N 07°31'33" E	04587.76'
12	1125.00'	95.84'	47.85'	95.81'	N 12°26'53" E	04521.15'
13	25.00'	21.03'	11.18'	20.41'	S 09°12'41" E	48.112.23'
14	50.00'	61.22'	35.11'	57.46'	N 01°46'00" E	70909.07'
15	50.00'	46.14'	24.86'	44.52'	N 63°18'42" E	52520.07'
16	50.00'	8.03'	4.03'	8.03'	S 85°41'02" E	09122.25'
17	50.00'	8.03'	4.03'	8.03'	S 76°28'37" E	09122.25'
18	50.00'	8.24'	4.14'	8.24'	S 67°08'44" E	09122.25'
19	50.00'	60.70'	34.72'	57.04'	S 27°38'18" E	89333.50'
20	50.00'	48.81'	26.55'	46.89'	S 35°06'25" W	55555.56'
21	25.00'	21.03'	11.18'	20.41'	N 38°58'43" E	48.112.23'
22	1075.00'	90.11'	45.08'	90.09'	N 122°05'50" E	04480.09'
23	1075.00'	211.20'	105.94'	210.86'	N 04°27'09" E	11115.23'
24	1075.00'	139.22'	69.71'	139.13'	N 04°53'09" W	07251.13'
25	1075.00'	33.44'	16.72'	33.43'	N 100°11'24" W	02550.73'
26	294.00'	14.53'	7.27'	14.53'	N 125°13'59" W	02495.52'
27	294.00'	344.68'	185.22'	325.26'	N 47°51'35" W	67100.08'

LEGEND

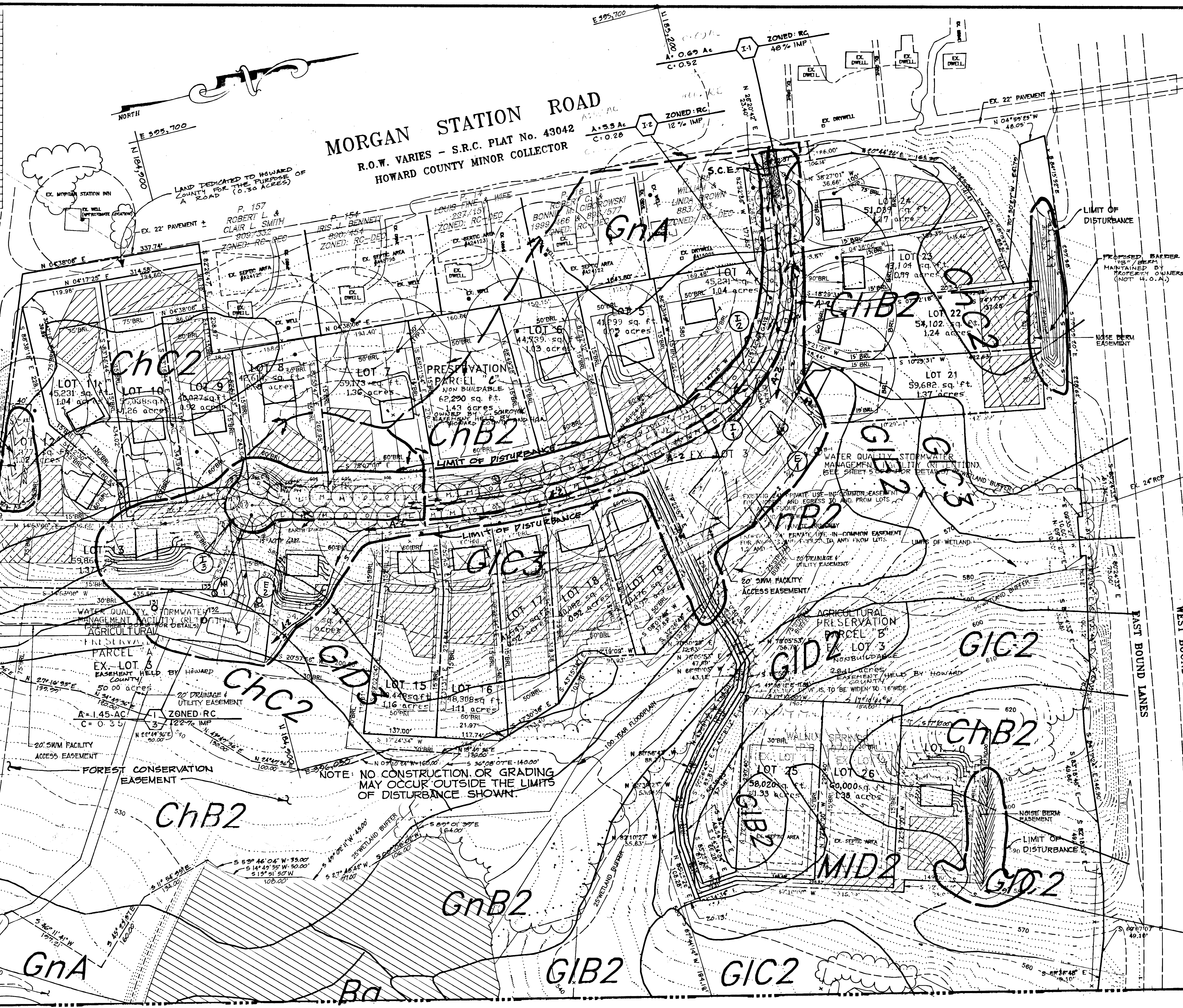
- SILT FENCE
- TEMPORARY SWALE
- DRAINAGE DIVIDE
- LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- BORINGS
- STREET TREES

MAP SYMBOL	SOIL SERIES	SLOPE	COMMENTS
Ba	BAILL	SLIGHT	HYDRIC INCLUSIONS
ChC2	CHESTER	SLIGHT	
ChB2	CHESTER	SLIGHT	
ChA	CHESTER	SLIGHT	
GIC3	GLENELG	MODERATE	
GIB2	GLENELG	SLIGHT	
GIC2	GLENELG	MODERATE	
GID2	GLENELG	SEVERE	
GID3	GLENELG	SEVERE	
GnB2	GLENVILLE	SLIGHT	HYDRIC INCLUSIONS
GnA	GLENVILLE	SLIGHT	HYDRIC INCLUSIONS
MID2	MANOR	SEVERE	

STREET TREE PLANTING SCHEDULE		
SYMBOL	QUANTITY	COMMON NAME
O	25	RED OAK
M	25	RED MAPLE
L	24	BLOODGOOD LONDON PLANE

SEDIMENT TRAP NO. 1
 DRAINAGE AREA - 5.99 ACRES
 OUTLET TYPE: RIPRAP OUTLET (ST-V1)
 SEDIMENT CONTROL VOLUME = 1900 * 5.99 = 10,782 C.F.
 TEMPORARY SWM VOLUME REQUIRED = 7,754 C.F.
 TOTAL VOLUME REQUIRED = 18,536 C.F.
 TRAP SIZE (BOTTOM DIMENSION) = 95' X 50'
 TRAP DEPTH = 4.00'
 BOTTOM ELEVATION: 564.00
 CREST ELEVATION: 568.00
 TOP EMBANKMENT ELEVATION: 570.00
 TOP EMBANKMENT WIDTH: 5.00'
 CLEANOUT ELEVATION: 565.13
 OUTLET WIDTH: 10.00'
 SIDE SLOPES: 2:1

SEDIMENT TRAP NO. 2
 DRAINAGE AREA - 1.94 ACRES
 OUTLET TYPE: STONE OUTLET
 VOLUME REQUIRED: 1800 X 1.94 = 3,492 C.F.
 VOLUME PROVIDED: 4800 C.F.
 TRAP SIZE (BOTTOM DIMENSION) = 30' X 80'
 TRAP DEPTH = 2.00'
 BOTTOM ELEVATION: 550.00
 CREST ELEVATION: 553.00
 TOP EMBANKMENT ELEVATION: 554.00
 TOP EMBANKMENT WIDTH: 5.00'
 CLEANOUT ELEVATION: 550.73
 OUTLET WIDTH: 5.00'
 SIDE SLOPES: 2:1



ROUTE 144 - FREDERICK ROAD
 MARYLAND STATE ROAD - MINOR ARTERIAL
 R.O.W. VARIES 24' PAVEMENT

VEHICULAR INGRESS/EGRESS RESTRICTED

INTERSTATE 70
 R.O.W. VARIES - S.R.C. PLAT No. 43042
 VEHICULAR INGRESS/EGRESS RESTRICTED

NOTE: NO CONSTRUCTION OR GRADING MAY OCCUR OUTSIDE THE LIMITS OF DISTURBANCE SHOWN.

61719

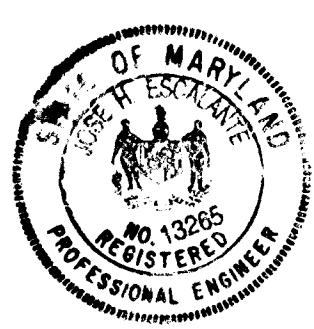
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
 Chira J... 11/5/95
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 ... 11/3/95
 CHIEF, LAND DEVELOPMENT DIVISION

APPROVED: ... 12/15/94
 CHIEF, BUREAU OF HIGHWAYS

DEVELOPERS CERTIFICATE
 I certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a certification of attendance at a Maryland Department of Environment approved training program for the periodic on-site inspections by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.
 ... 10-27-94

ENGINEER CERTIFICATE
 I certify that this plan for erosion and sediment control represents a practical and workable plan based on personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
 ... 10/19/93



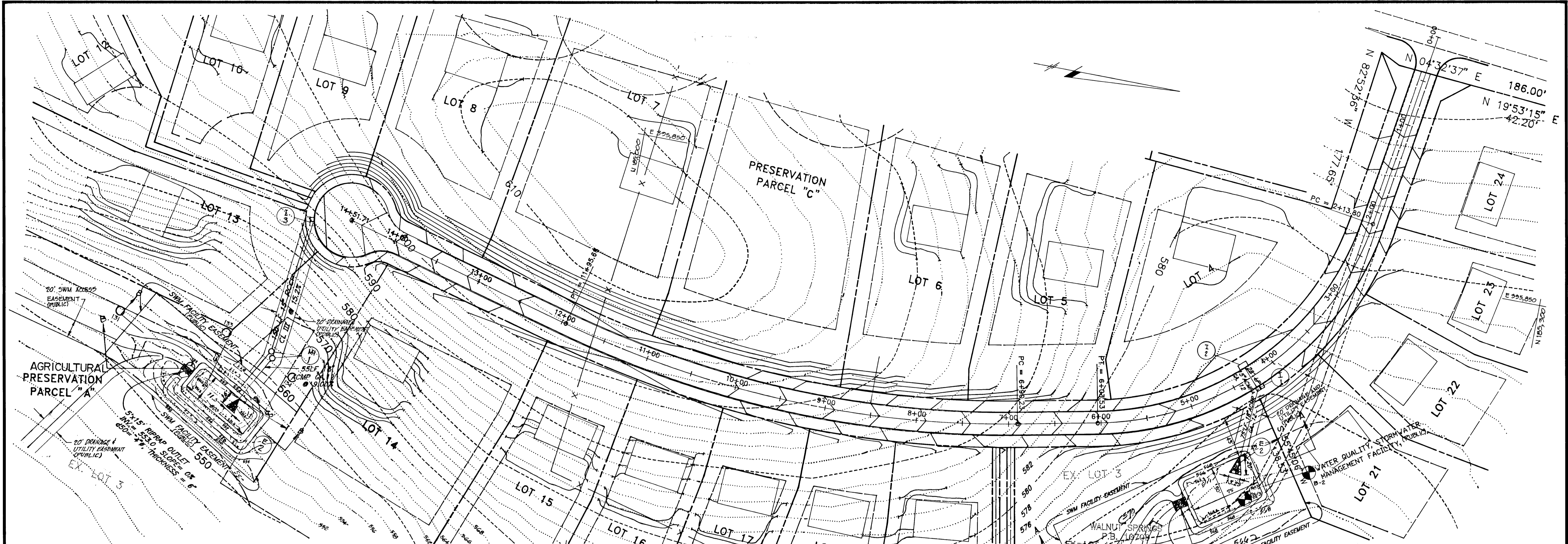
Reviewed for Howard Soil Conservation District and meets technical requirements.
 Patricia ... 12/15/94
 U.S. SOIL CONSERVATION SERVICE

DATE	REVISION	BY

DRAINAGE AREA MAP, SOILS MAP, GRADING AND SEDIMENT CONTROL
 PROJECT: WALNUT SPRINGS - LOTS 4-26 AND PRESERVATION PARCELS A AND B
 A RESUBDIVISION OF WALNUT SPRINGS - LOTS 1-3
 LOCATION: 4th ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
 TAX MAP: 8 PARCEL: 313 BLOCK: 8
 SCALE: 1" = 100'
 DESIGNED BY: JRG DRAWN BY: JRG CHECKED BY: JHE DATE: DEC. 1993
 FIELD BOOK: PAGE No. JOB No. 92115 DRAWING No. 4 OF 7

OWNER
 CHARLES SCHROYER AND CAROL A. SCHROYER
 1245 MORGAN STATION ROAD
 Woodbine, Md. 21797
 Phone: (301) 854-6217

Boender Associates
 ENGINEERS, PLANNERS, SURVEYORS
 3230 BETHANY LANE
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 (410) 465-7777 FAX: (410) 465-7966



**SUMMARY TABLE
WATER QUALITY FACILITY NO. 2**

OUTLET WEIR DATA:
 WIDTH --- 5.0'
 LENGTH --- 15.0'
 SIDE SLOPE --- 2:1
 SLOPE --- 0%

HYDRAULIC DATA:
 $Q_1 = 2.45$ CFS
 DEPTH, $d_1 = 0.29'$
 VELOCITY, $V_1 = 1.51$ FPS
 $Q_{10} = 3.67$ CFS
 DEPTH, $d_{10} = 0.38'$
 VELOCITY, $V_{10} = 1.68$ FPS

**SUMMARY TABLE
WATER QUALITY FACILITY NO. 1**

OUTLET WEIR DATA:
 WIDTH --- 10.0'
 LENGTH --- 15.0'
 SIDE SLOPE --- 2:1
 SLOPE --- 0%

HYDRAULIC DATA:
 $Q_2 = 6.81$ CFS
 DEPTH, $d_2 = 0.36'$
 VELOCITY, $V_2 = 1.76$ FPS

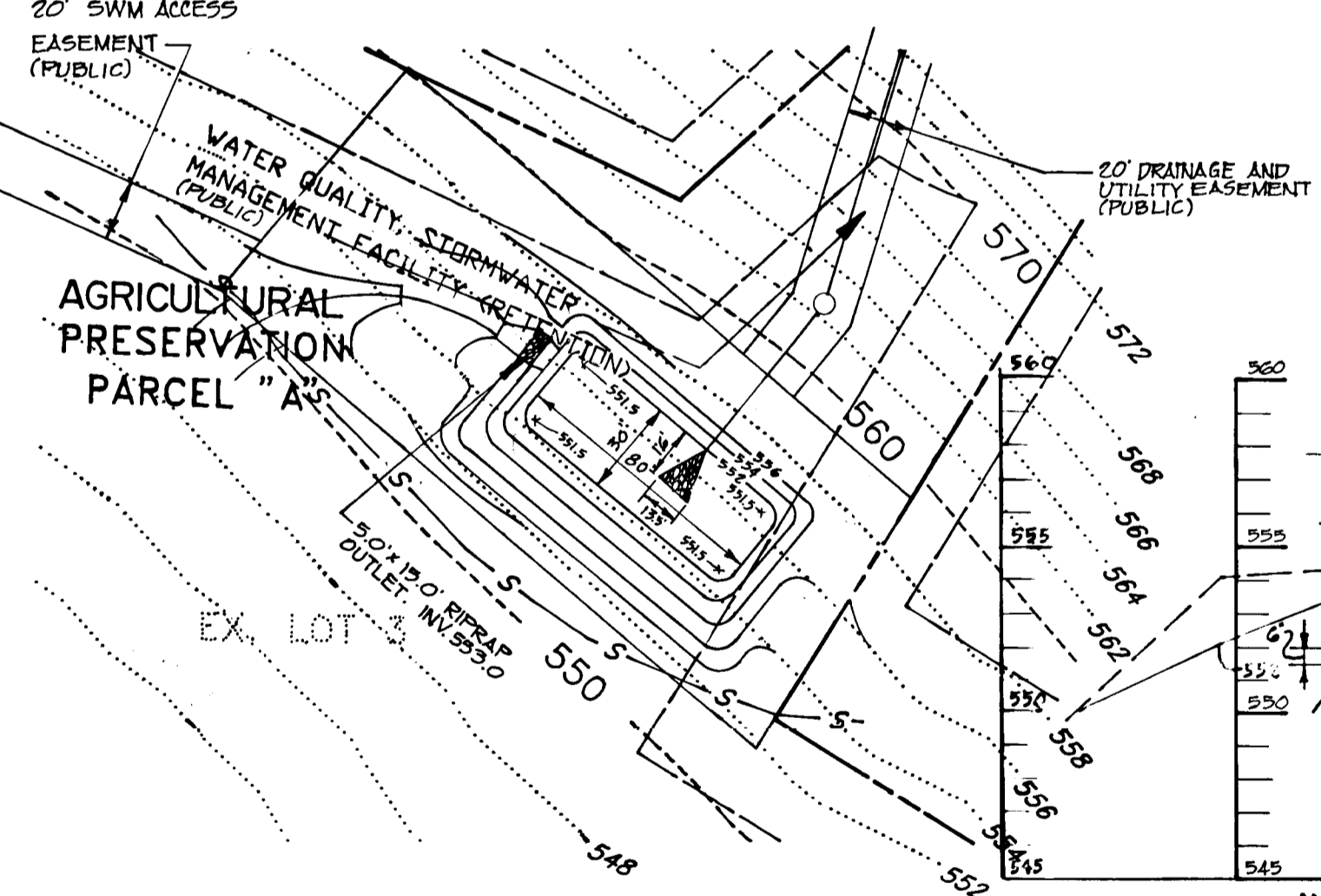
$Q_{10} = 9.75$ CFS
 DEPTH, $d_{10} = 0.46'$
 VELOCITY, $V_{10} = 1.94$ FPS

NOTE:
 THE WATER QUALITY FACILITY NOS. 1 AND 2 ARE EXCAVATED PONDS AND ARE HAZARD CLASS "A".

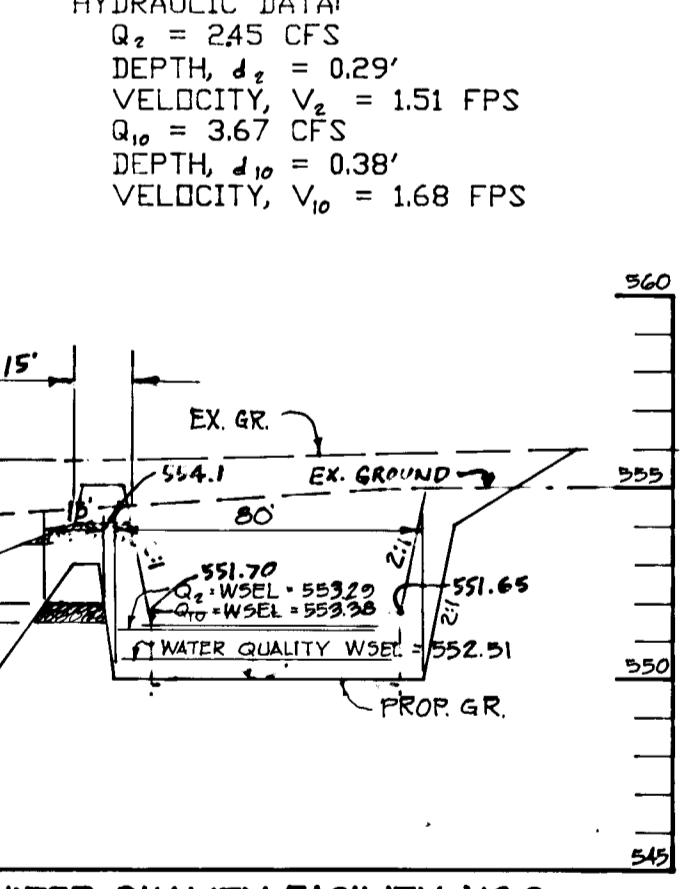


OPERATION AND MAINTENANCE SCHEDULE OF PUBLICLY OWNED AND MAINTAINED WATER QUALITY FACILITIES

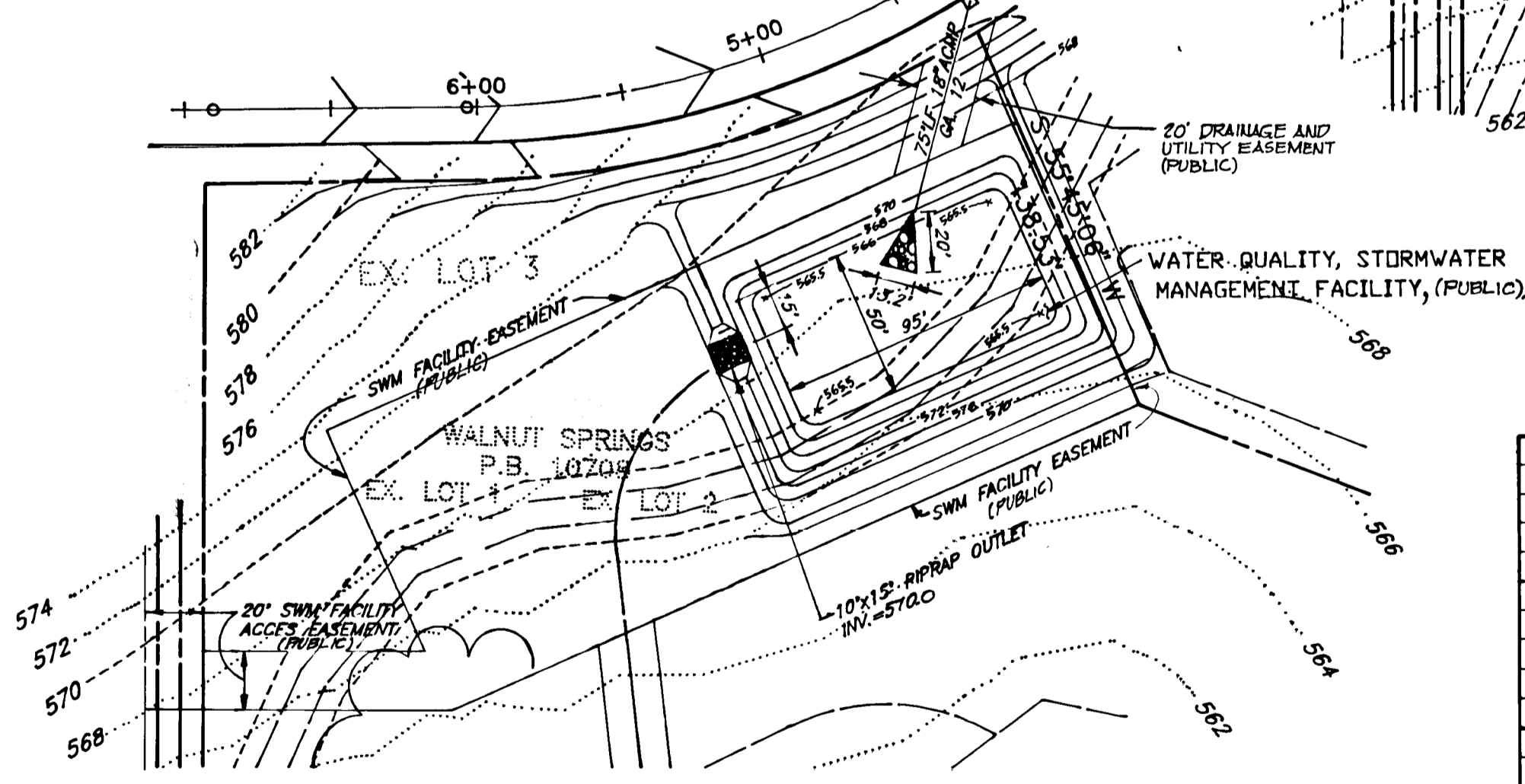
- ROUTINE MAINTENANCE**
- Facility shall be inspected annually and after major storms. Inspections should be performed during wet weather to determine if the pond is functioning properly.
 - Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes, the bottom of the pond, and maintenance access should be mowed as needed.
 - Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
 - Visible signs of erosion in the pond as well as riprap outlet area and outlet channel shall be repaired as soon as it is noticed.
- NON-ROUTINE MAINTENANCE**
- Structural components of the pond such as the riprap, outlet area, and the outfall channel shall be repaired upon the detection of any damage. The components should be inspected during routine maintenance operations.
 - The bottom of the Water Quality Facilities shall be retortled at least once per year in the late summer or early fall to increase permeability.
 - Sediment should be removed when its accumulation significantly reduces the design storage, when it interferes with the function of the Water Quality Facilities, when deemed necessary for aesthetic reasons, or when deemed necessary by the Howard County's Department of Public Works.



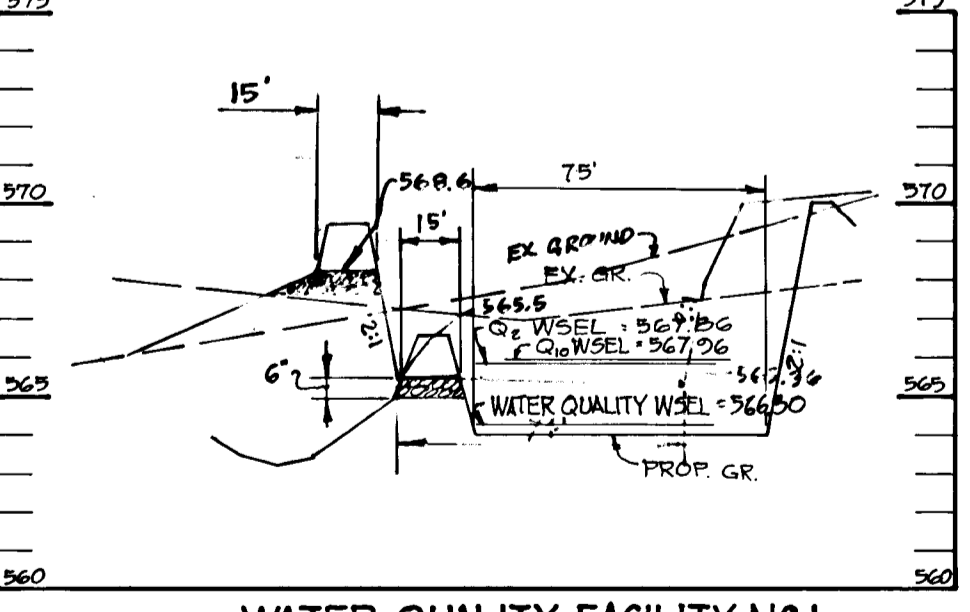
**SEDIMENT TRAP No.2 DETAIL
SCALE 1" = 50'**



**WATER QUALITY FACILITY No. 2
SECTION B-B
VERT. 1" = 5'
HORIZ. 1" = 50'**



**SEDIMENT TRAP No.1 DETAIL
SCALE 1" = 50'**



**WATER QUALITY FACILITY No. 1
SECTION A-A
VERT. 1" = 5'
HORIZ. 1" = 50'**

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Anna Strammaris 1/5/95
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH.

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

SIGNATURE *Patricia Lutz* DATE 12/21/94
 U.S. SOIL CONSERVATION DISTRICT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

John Deppa 1/3/95
 CHIEF, LAND DEVELOPMENT DIVISION

Richard J. ... 12-23-94
 CHIEF, BUREAU OF HIGHWAYS

... 1/3/95
 CHIEF, BUREAU OF ENGINEERING

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

APPROVED *John R. ...* DATE 12/12/94
 HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER'S/BUILDER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT THE MARYLAND DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY.

Edward J. Delgado 10-27-94
 DEVELOPER'S/BUILDER'S SIGNATURE DATE

ENGINEER'S CERTIFICATE

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

Joseph ... 10/24/94
 ENGINEER'S SIGNATURE DATE



DATE	REVISION	BY

TITLE: FINAL GRADING PLAN			
PROJECT:	WALNUT SPRINGS - LOTS 4-26 AND PRESERVATION PARCELS A AND B		
LOCATION:	A RESUBDIVISION OF WALNUT SPRINGS - LOTS 1-3		
TAX MAP:	8	PARCEL:	313
SCALE:	1" = 50'	DESIGNED BY:	JIB
FIELD BOOK:	PAGE No.:	JOB No.:	92115
		DRAWING No.:	5 OF 7

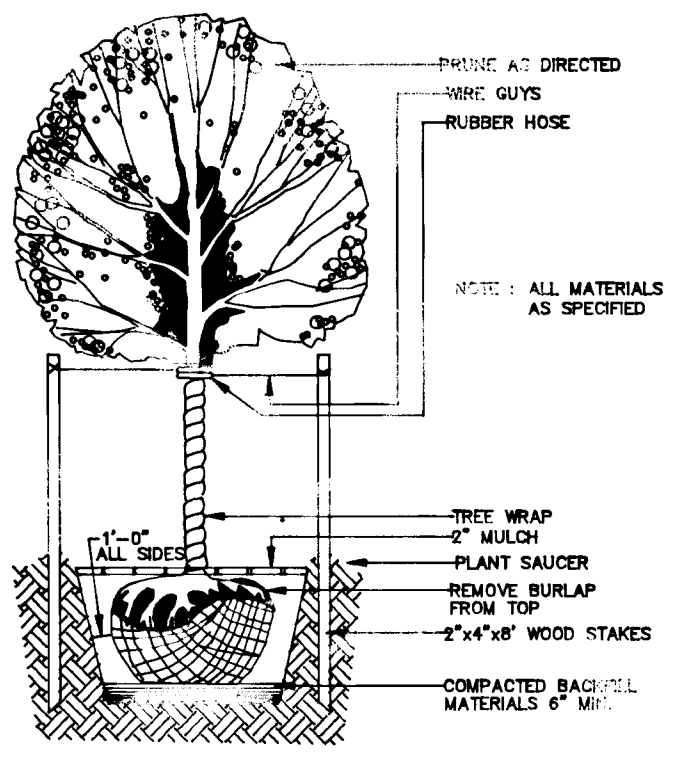
Boender Associates
 ENGINEERS - PLANNERS - SURVEYORS
 3230 BETHANY LANE
 ELLICOTT CITY, MD. 21042
 (410) 465-7777 FAX: (410) 465-7966

1719

F95.23 AS-BUILT 9/7/95

SEDIMENT CONTROL

- A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction (313-1855).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (sec. 51), sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:
 - Total area of site: 107.89 Acres
 - Area disturbed: 5.74 Acres
 - Area to be roofed or paved: 2.04 Acres
 - Area to be vegetatively stabilized: 5.05 Acres
 - Total cut: 13,279.77 Cu. Yds.
 - Total fill: 3,518.98 Cu. Yds.
 - Offsite waste/borrow area location: N/A
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment controls must be provided, if deemed necessary by the Howard County DPW sediment control inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.



TYPICAL DECIDUOUS TREE PLANTING DETAIL NOT TO SCALE

Reviewed for Howard Soil Conservation District and meets technical requirements.

Patricia Engler 12/21/94
U.S. SOIL CONSERVATION SERVICE

This development is approved soil erosion and sediment control by the Howard Soil Conservation District.

John P. Roberts 12/15/94
SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

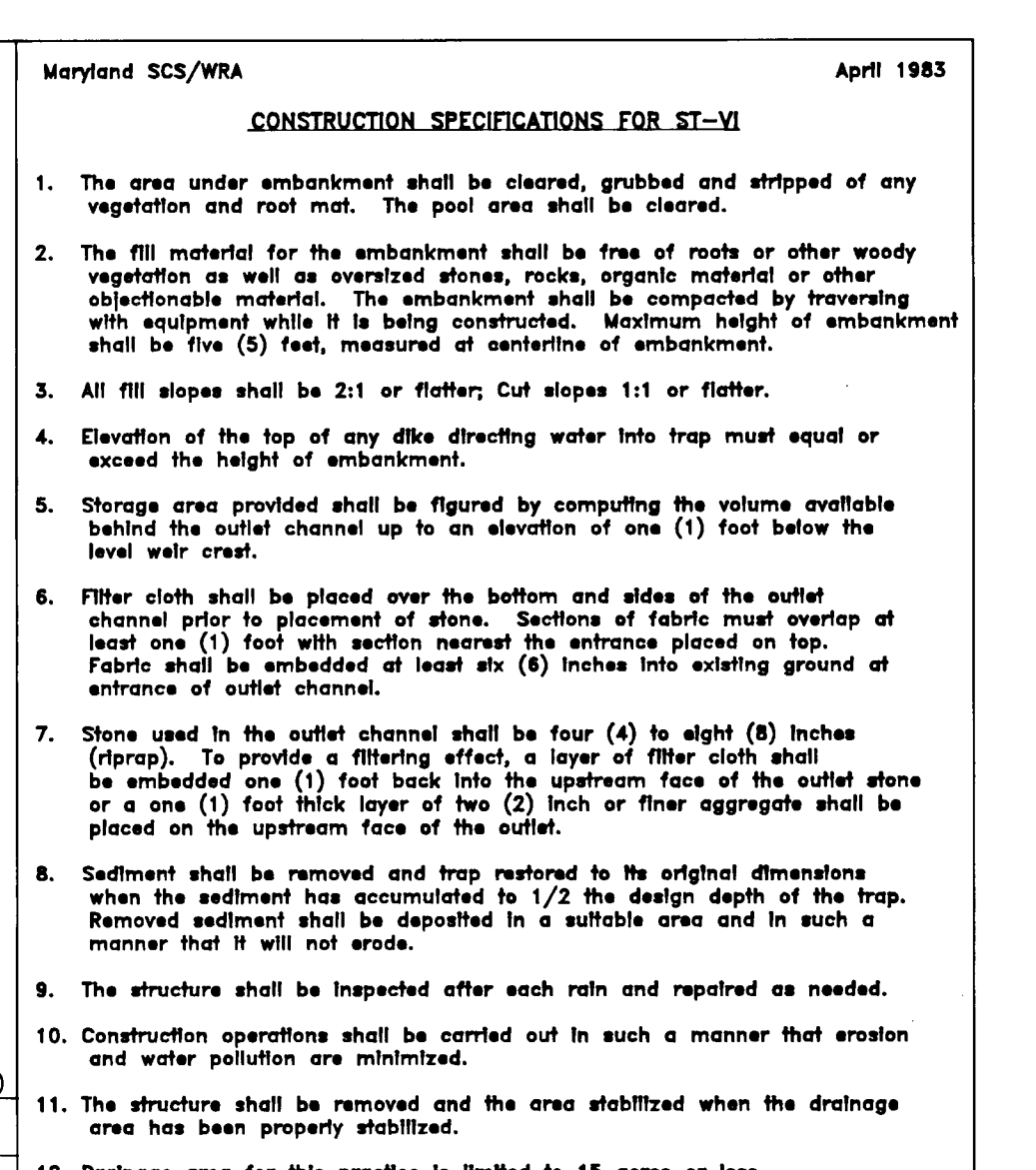
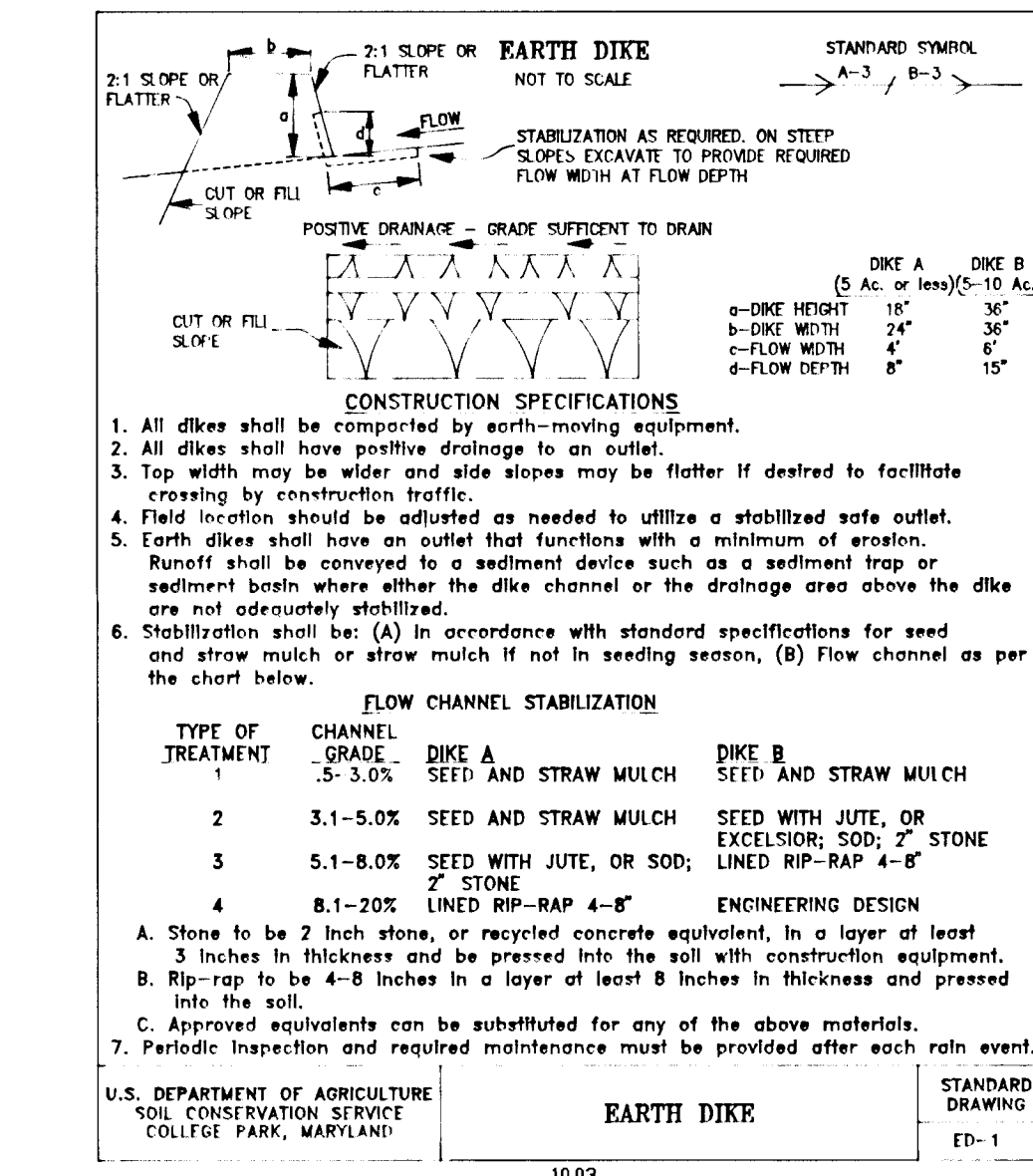
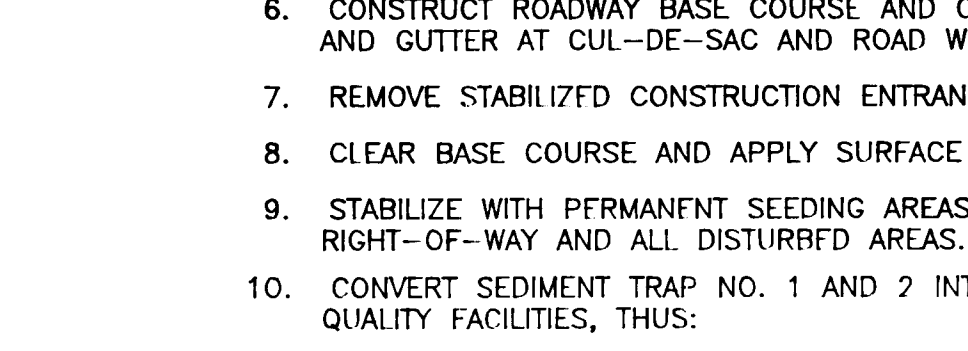
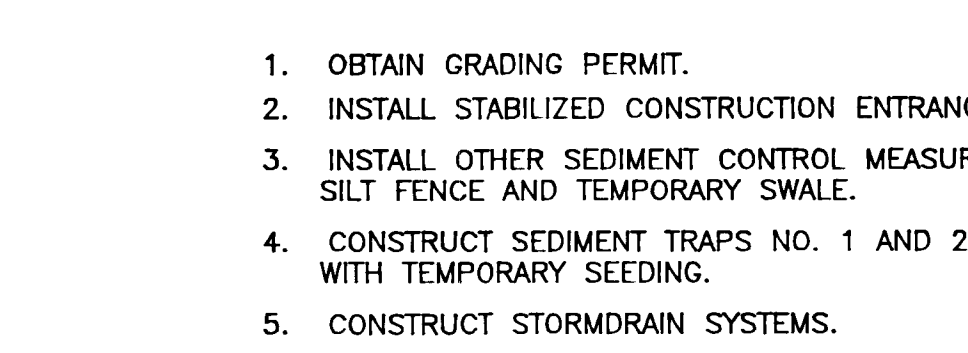
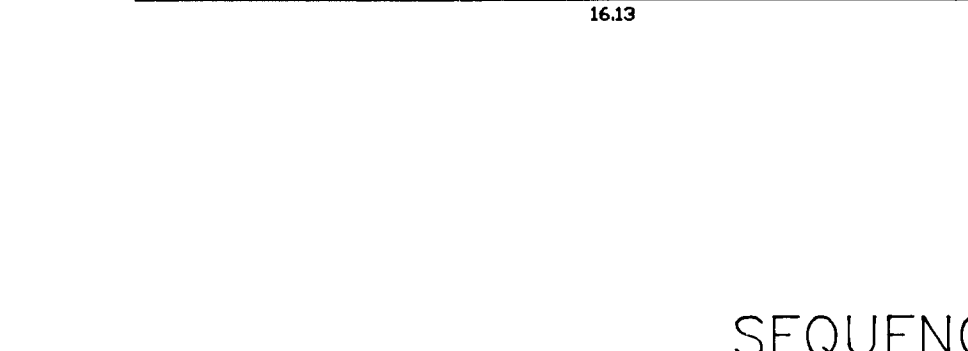
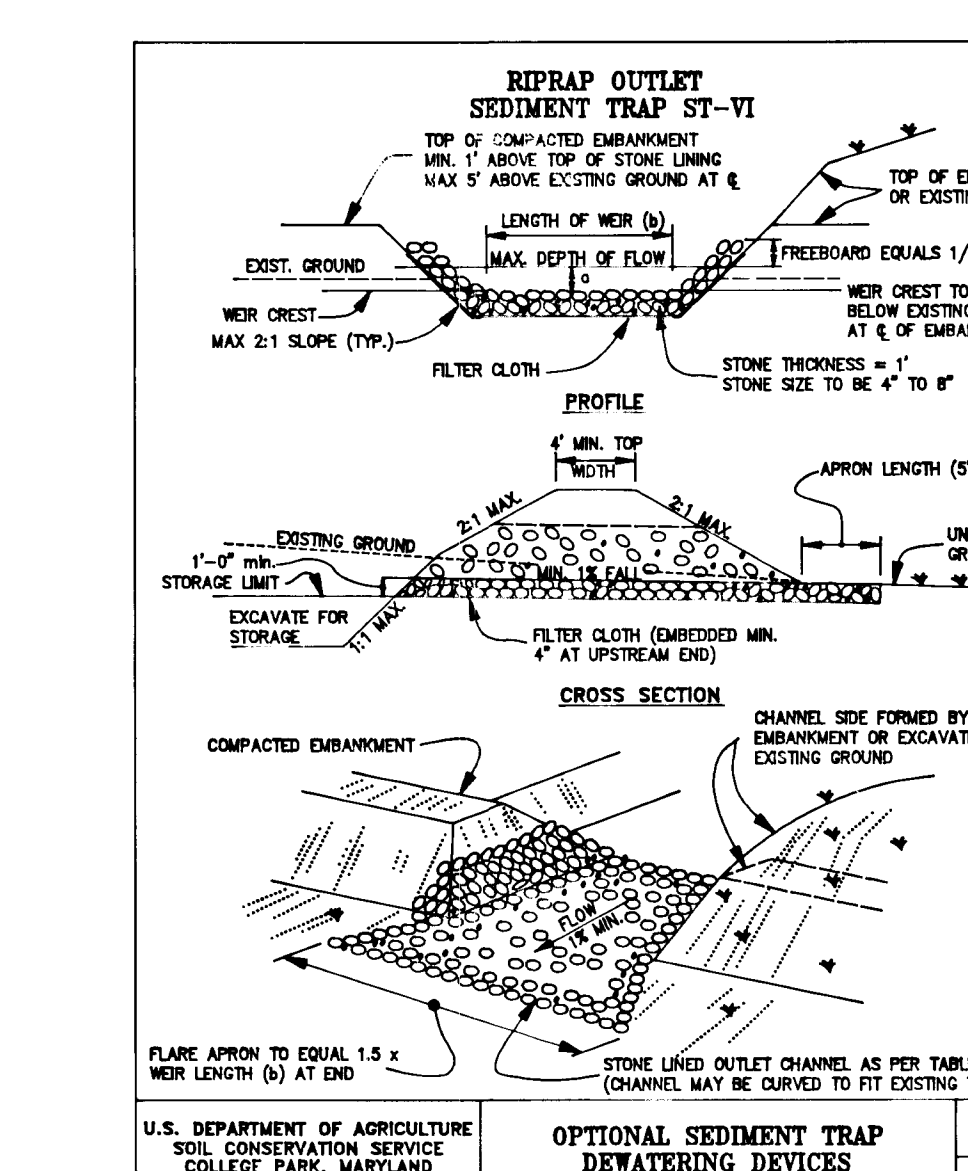
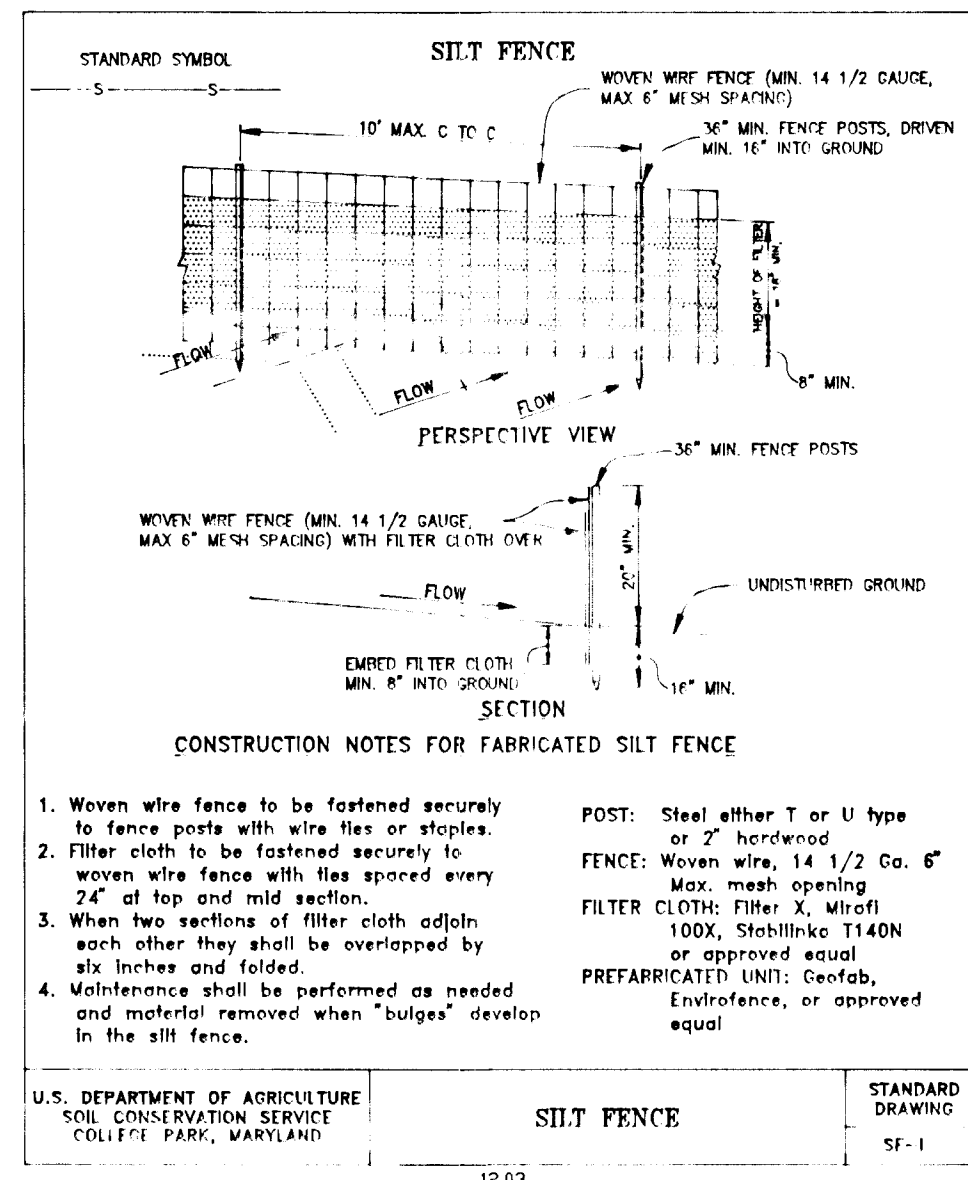
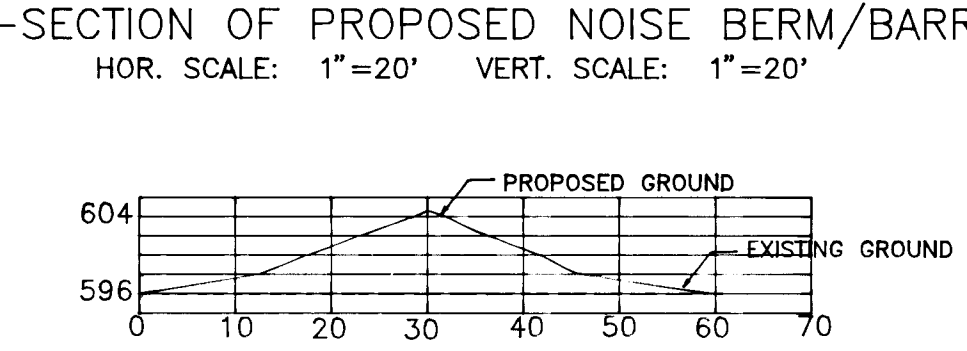
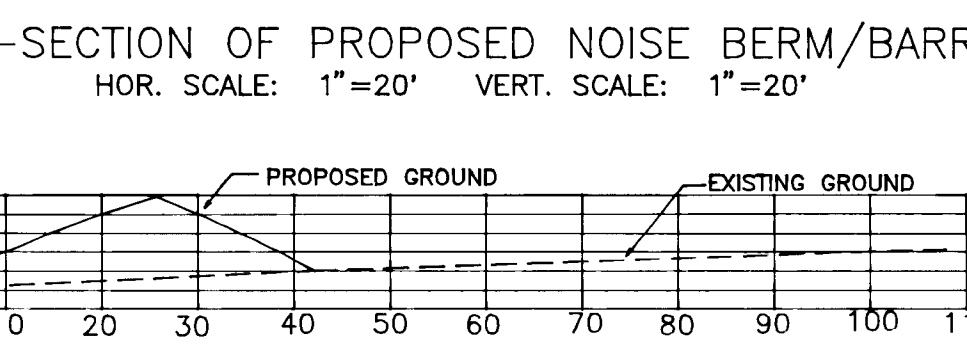
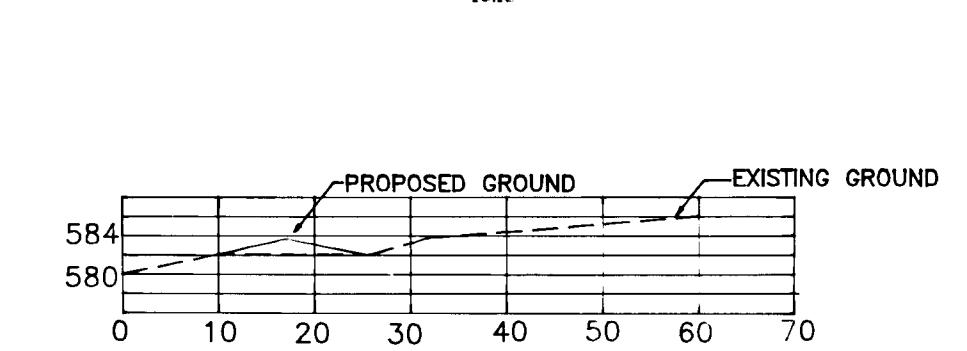
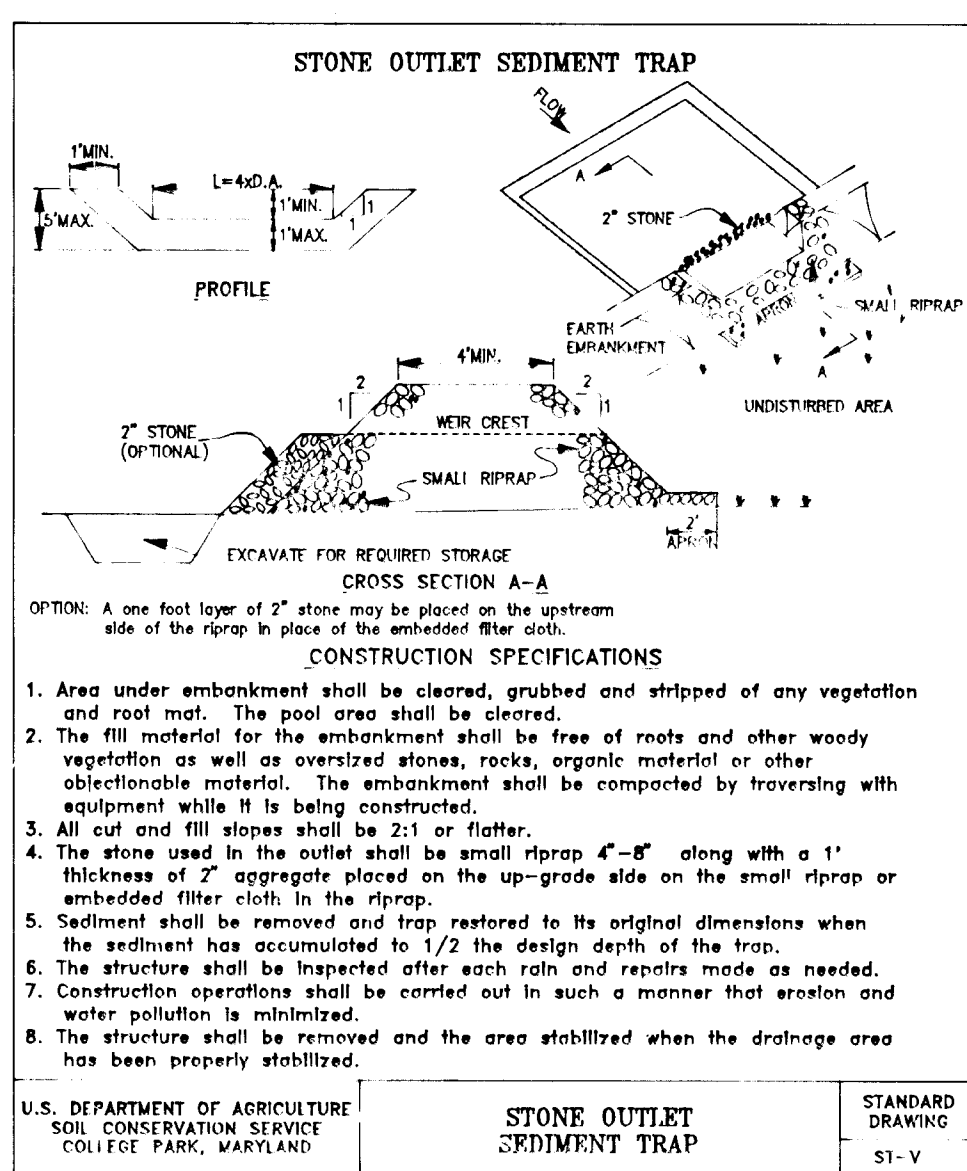
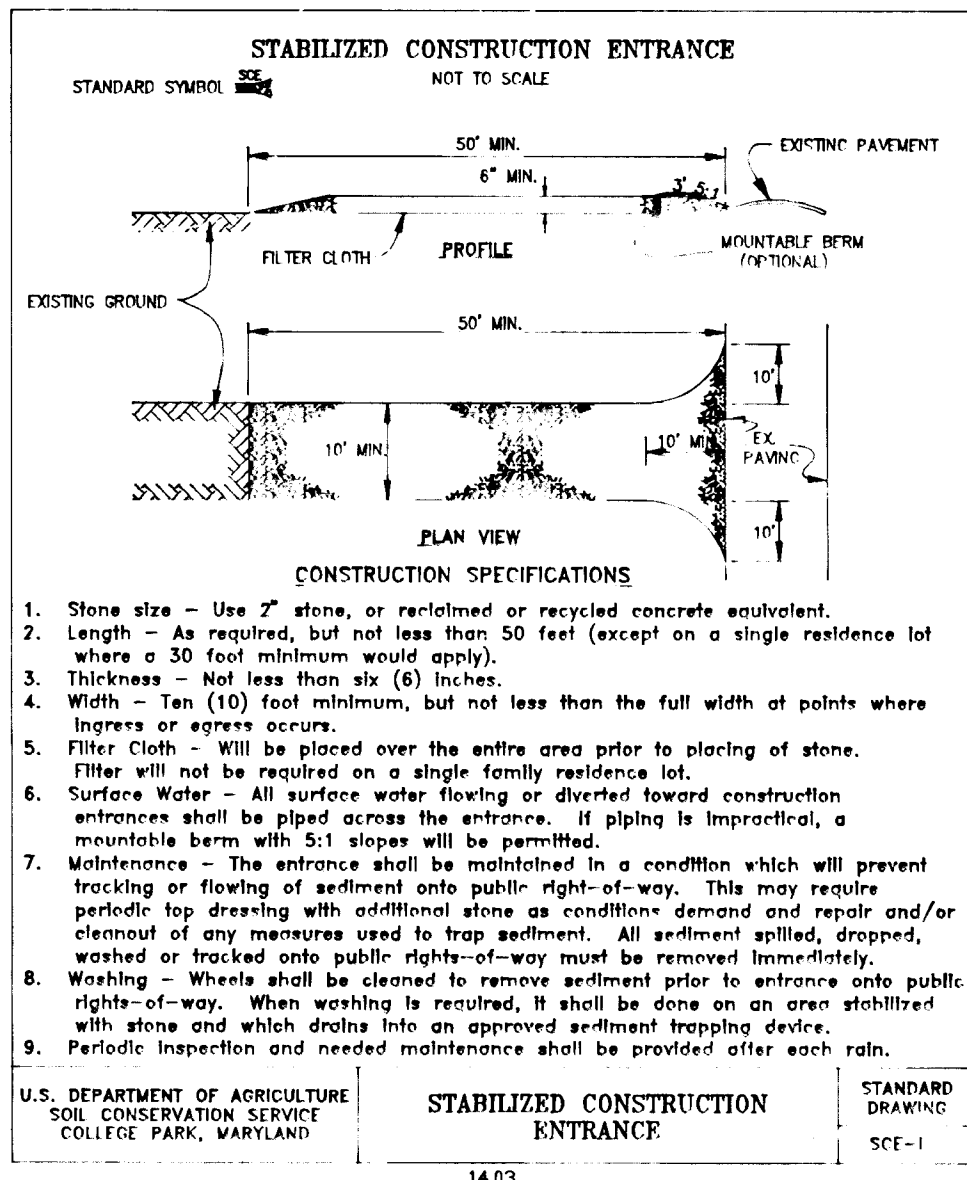
Gina Surraney 1/5/95
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Abba Doman 1/3/95
CHIEF, LAND DEVELOPMENT DIVISION

Howard S. Hill 12-23-94
CHIEF, BUREAU OF HIGHWAYS

Paul E. Ryan 1/3/95
CHIEF, PUBLIC WORKS



SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMIT.
- INSTALL STABILIZED CONSTRUCTION ENTRANCE.
- INSTALL OTHER SEDIMENT CONTROL MEASURES SUCH AS SILT FENCE AND TEMPORARY SWALE.
- CONSTRUCT SEDIMENT TRAPS NO. 1 AND 2 AND STABILIZE WITH TEMPORARY SEEDING.
- CONSTRUCT STORMDRAIN SYSTEMS.
- CONSTRUCT ROADWAY BASE COURSE AND CONCRETE CURB AND GUTTER AT CUL-DE-SAC AND ROAD WIDENING.
- REMOVE STABILIZED CONSTRUCTION ENTRANCE.
- CLEAR BASE COURSE AND APPLY SURFACE COURSE.
- STABILIZE WITH PERMANENT SEEDING AREAS WITHIN ROAD RIGHT-OF-WAY AND ALL DISTURBED AREAS.
- CONVERT SEDIMENT TRAP NO. 1 AND 2 INTO WATER QUALITY FACILITIES, THUS:
 - A. AFTER REMOVING WATER, MUCK OUT SEDIMENT TRAPS 1 AND 2 AND GRADE BOTTOM TO ELEVATIONS SHOWN ON THE FINAL GRADING PLAN.
 - B. ROTOTILL BOTTOMS OF WATER QUALITY FACILITIES 1 AND 2, AT LEAST 12 INCHES BELOW DESIGN INVERT TO INCREASE PERMEABILITY.
 - C. GRADE SIDES OF BOTH FACILITIES 1 AND 2 TO GRADES AND SLOPES SHOWN ON THE FINAL GRADING PLAN.
 - D. STABILIZE ALL DISTURBED AREAS WITH PERMANENT SEEDING AND MULCH.
- REMOVE TEMPORARY SWALE AFTER ALL AREAS DISTURBED HAVE BEEN STABILIZED WITH PERMANENT SEEDING.
- STABILIZE THOSE AREAS DISTURBED DUE TO THE REMOVAL OF SILT FENCE AND TEMPORARY SWALE WITH PERMANENT SEEDING.
- DURING CONSTRUCTION AND AFTER EACH RAINFALL, THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON THE SEDIMENT AND EROSION CONTROL STRUCTURES HEREON. SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT TRAPS WHEN CLEANOUT ELEVATIONS ARE REACHED.
- NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS, LICENSES, AND PERMITS FOR FINAL INSPECTION AT COMPLETION OF PROJECT AT (410) 313-2437.

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 sq. ft.)

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushels per acre of annual rye (3.2 lbs/1000 sq. ft.). For the period May 1 thru August 14, seed with 3 lbs per acre of creeping lovegrass (0.7 lb/1000 sq. ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.
Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.

Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

PERMANENT SEEDING NOTES

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

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

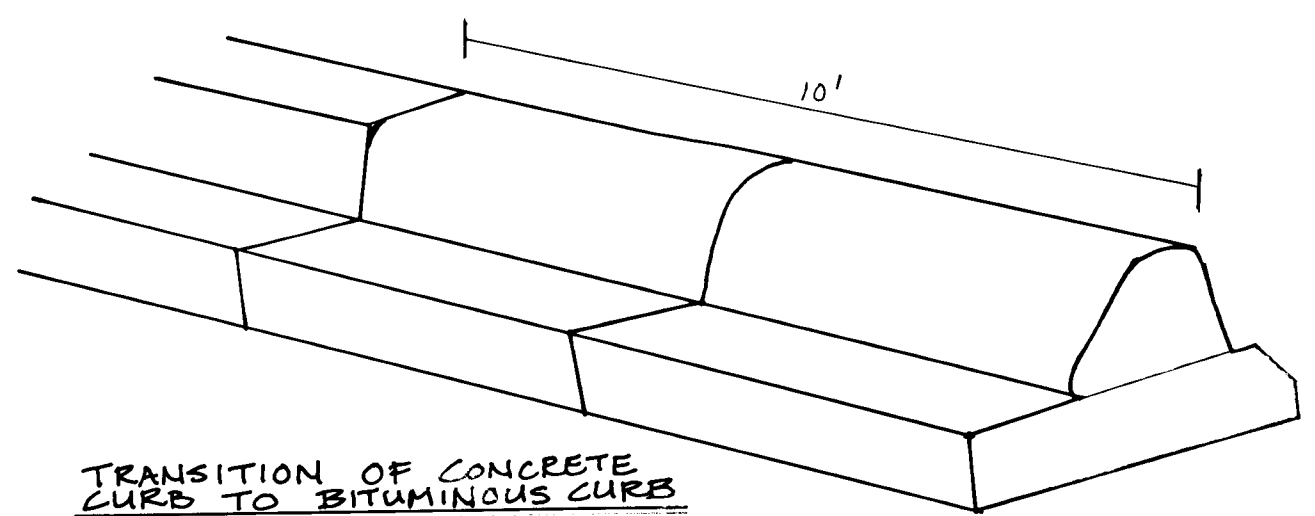
Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:

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

Seeding: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre of 1/4 lb/1000 sq ft) of Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of creeping lovegrass. During the period of October 16 thru 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 sod. 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 sq ft) 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 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring.

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



6171

DEVELOPERS CERTIFICATE
I certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a certification of attendance at a Maryland Department of environment approved training program for the period: on-site inspections by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.
Edward J. Deluga 9-5-94
Developer

ENGINEER CERTIFICATE
I certify that this plan for erosion and sediment control represents a practical and workable plan based on personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
Joseph J. ... 10-17-94
Engineer



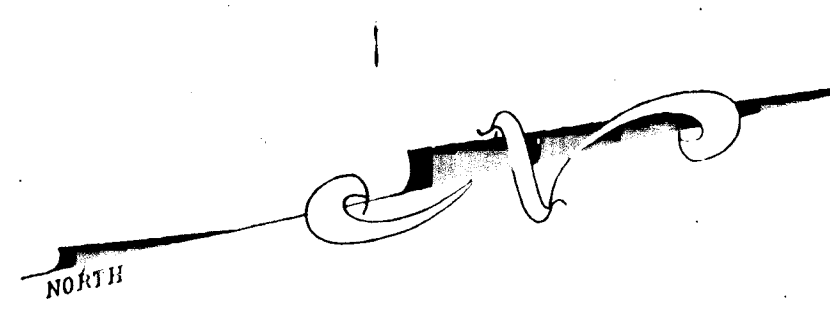
DATE	REVISION

SEDIMENT CONTROL DETAILS	
PROJECT:	WALNUT SPRINGS
LOCATION:	4th ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TAX MAP:	8 PARCEL: 313 BLOCK: 8
SCALE:	DESIGNED BY: JRG DRAWN BY: JRG CHECKED BY: DATE: NOV. 1993
FIELD BOOK:	PAGE No: 8215 DRAWING No: 6 OF 7

OWNER
CHARLES SCHROYER AND CAROL A. SCHROYER
1245 MORGAN STATION ROAD
WOODBINE, MARYLAND 21797
Phone: (301) 854-6217

Boender Associates
ENGINEERS • PLANNERS • SURVEYORS
3230 BETHANY LANE
ELLCOTT CITY, MD. 21042
(410) 465-7777 FAX: (410) 465-7966

CURVE	RADIUS	LENGTH	BEARING	CHORD	BEARING	DELTA
1	344.00'	73.31'	N 36.78° W	73.12'	N 75.20' 21" W	12 12' 30"
2	344.00'	83.87'	N 42.04° W	83.46'	N 82.16' 00" W	13 58' 07"
3	344.00'	92.75'	N 46.66° W	92.47'	N 87.34' 30" W	15 28' 53"
4	344.00'	100.55'	N 51.38° W	100.31'	N 92.38' 51" W	17 04' 25"
5	1125.00'	8.00'	N 110.00° W	8.00'	N 110.00' 00" W	00 24' 27"
6	1125.00'	8.00'	N 103.80° W	8.00'	N 103.80' 00" W	00 24' 27"
7	1125.00'	8.00'	N 101.14° W	8.00'	N 101.14' 00" W	00 24' 27"
8	1125.00'	104.87'	N 07.21° W	104.83'	N 07.21' 46" W	05 20' 28"
9	1125.00'	94.50'	N 02.17° W	94.47'	N 02.17' 09" W	04 48' 46"
10	1125.00'	96.57'	N 02.34° E	96.54'	N 02.34' 47" E	04 53' 06"
11	1125.00'	97.66'	N 07.31° E	97.63'	N 07.31' 33" E	04 58' 26"
12	1125.00'	95.64'	N 12.26° E	95.61'	N 12.26' 53" E	04 52' 15"
13	25.00'	21.03'	N 11.18° E	20.41'	N 08.12' 41" E	48 11' 23"
14	50.00'	61.22'	N 35.11° E	57.46'	N 01.46' 08" E	70 09' 01"
15	50.00'	46.14'	N 24.86° E	44.52'	N 03.16' 42" E	52 52' 07"
16	50.00'	8.03'	N 80.41° E	8.03'	N 79.28' 37" E	09 12' 25"
17	50.00'	8.03'	N 79.28° E	8.03'	N 78.06' 37" E	09 12' 25"
18	50.00'	8.25'	N 67.08° E	8.24'	N 67.08' 44" E	09 27' 22"
19	50.00'	60.70'	N 27.36° E	57.04'	N 27.36' 18" E	09 33' 30"
20	50.00'	48.81'	N 18.55° E	46.88'	N 18.55' 06" E	09 35' 58"
21	25.00'	21.03'	N 11.18° E	20.41'	N 08.12' 41" E	48 11' 23"
22	1075.00'	103.11'	N 51.59° E	103.07'	N 51.59' 08" E	05 29' 44"
23	1075.00'	188.19'	N 99.38° E	187.91'	N 99.38' 22" E	10 33' 48"
24	1075.00'	139.22'	N 69.11° E	139.13'	N 69.11' 09" E	07 25' 13"
25	1075.00'	53.44'	N 26.32° E	53.43'	N 26.32' 00" E	02 50' 53"
26	294.00'	32.54'	N 16.29° E	32.53'	N 16.29' 55" E	06 20' 32"
27	294.00'	326.65'	N 162.49° E	310.10'	N 149.36' 55" W	63 39' 28"



MORGAN STATION ROAD
 R.O.W. VARIES - S.R.C. PLAT No. 43042
 HOWARD COUNTY MINOR COLLECTOR

RESIDENTIAL PERIMETER LANDSCAPED EDGE CALCULATIONS

PERIMETER	EDGE TYPE	PERIMETER	EDGE TYPE
PERIMETER 1 SFD TO ROAD - 309.33LF 1 SHADE TREE/50 LF 6 1 EVERGREEN TREE/40 LF 8	B	PERIMETER 9 - 466.21LF SFD TO ROAD/50 LF 9 1 SHADE TREE/50 LF 9 1 EVERGREEN TREE/40 LF 12	B
PERIMETER 2 SFD TO SFD - 242.08LF 1 SHADE TREE/60 LF 4	A	PERIMETER 10 SFD TO SFD - 208.97LF 1 SHADE TREE/60 LF 3	A
PERIMETER 3 SFD TO ROAD - 504.83LF 1 SHADE TREE/50 LF 4 1 EVERGREEN TREE/40 LF 5 300' BERM	B	PERIMETER 11 SFD TO SFD - 1043.52LF 1 SHADE TREE/60 LF 17	A
PERIMETER 4 SFD TO PRES. PARCEL - 130.00LF 1 SHADE TREE/60 LF 2	A	PERIMETER 12 SFD TO PRES. PARCEL - 462.99LF EXISTING TREES TO REMAIN	A
PERIMETER 5 SFD TO PRES. PARCEL - 137.00LF 1 SHADE TREE/60 LF 2	A	PERIMETER 13 SFD TO SFD - 150.00LF EXISTING TREES TO REMAIN	A
PERIMETER 6 SFD TO PRES. PARCEL - 200.00LF 1 SHADE TREE/60 LF 3	A	PERIMETER 14 SFD TO PRES. PARCEL - 290.40LF EXISTING TREES TO REMAIN	A
PERIMETER 7 SFD TO PRES. PARCEL - 448.11LF 1 SHADE TREE/60 LF 7	A	PERIMETER 15 SFD TO PRES. PARCEL - 447.73LF EXISTING TREES TO REMAIN	A
PERIMETER 8 SFD TO ROAD - 495.75LF 1 SHADE TREE/50 LF 7 1 EVERGREEN TREE/40 LF 8 160' BERM	B	PERIMETER 16 SFD TO PRES. PARCEL - 137.26LF EXISTING TREES TO REMAIN	A

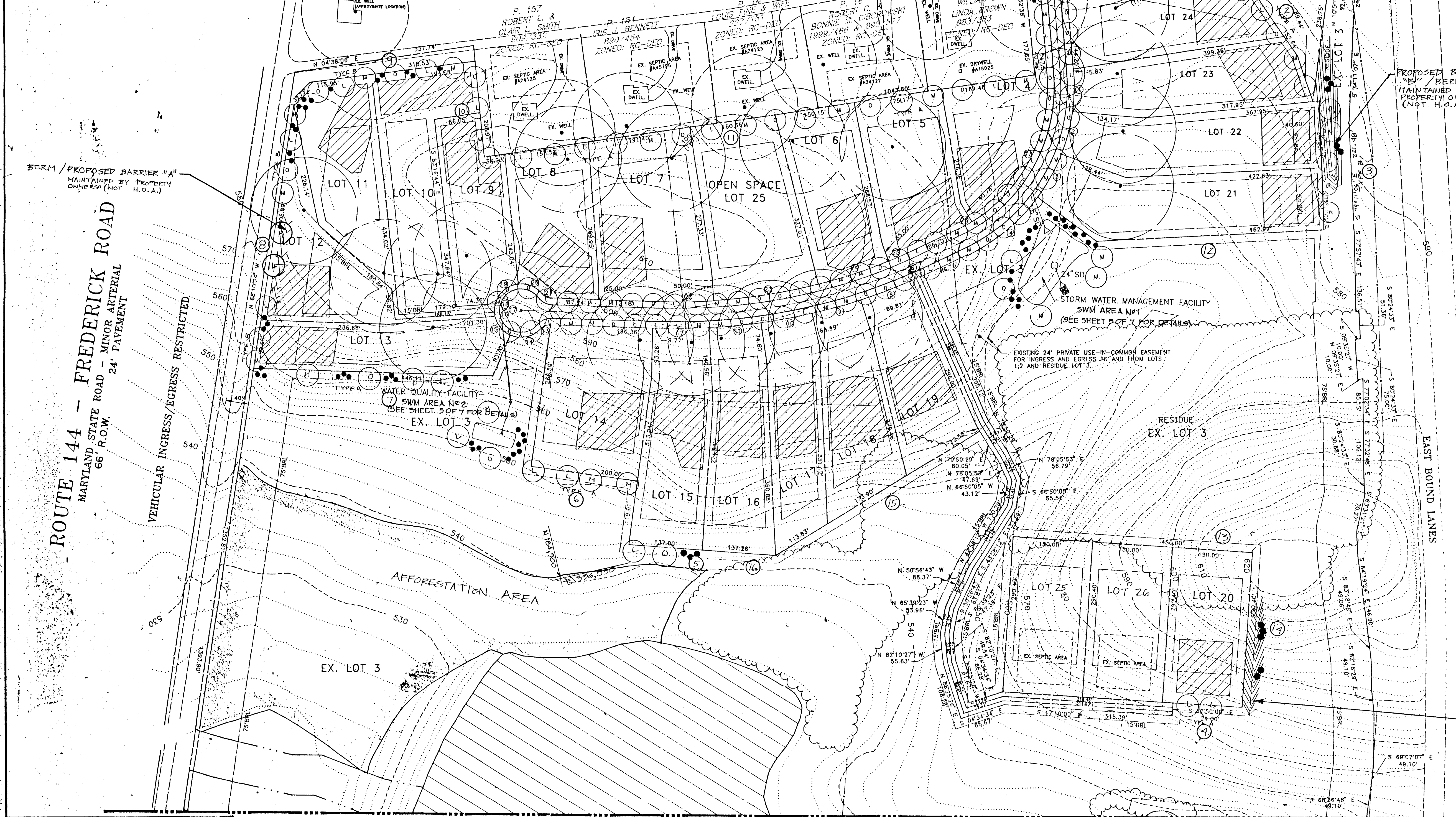
CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERMETER PROPERTIES
LANDSCAPE TYPE	TYPE B	TYPE A
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	1776.12	9816.06
CREDIT FOR EXISTING VEGETATION	NO	YES, 1248.30 FEET
CREDIT FOR WALL, FENCE OR BERM	300 FEET FO BERM NORTH OF LOTS 21-24 180 FEET OF BERM SOUTH OF LOT 12	210 FEET OF BERM NORTH OF LOT 20
NUMBER OF PLANTS REQUIRED	24 SHADE TREES 23 EVERGREEN TREES	40 SHADE TREES
NUMBER OF PLANTS PROVIDED	39 SHADE TREES 46 EVERGREEN TREES	37 SHADE TREES 11 SUBSTITUTE TREES (11 EVERGREEN TREES)

COMMENTS: WITH REGARD TO THE CREDIT FOR EXISTING VEGETATION, NOTE THE FOLLOWING LOCATIONS OF EXISTING VEGETATION: THE EASTERN SIDE OF LOTS 16-19, THE WEST AND NORTH SIDE OF LOTS 20, 25, 26, THE EAST SIDE OF LOT 21.

THE RESIDENTIAL PERIMETER LANDSCAPED EDGE CALCULATIONS INCLUDE BERM PLANTING QUANTITIES, WHICH ARE AS FOLLOWS:
 BERM A 2 SHADE TREES; NO EVERGREEN TREES
 BERM B 4 SHADE TREES; 5 EVERGREEN TREES
 BERM C NO SHADE TREES; 5 EVERGREEN TREES

STORMWATER MANAGEMENT AREA	PERIMETER LENGTH	EXISTING WOODS BUFFER LENGTH	TREES PROVIDED	EVERGREEN TREES
STORMWATER MANAGEMENT AREA 1	540 FEET	100 FEET	1 SHADE TREE/SO/LF 9 1 EVERGREEN TREE/40LF 11	5 6
STORMWATER MANAGEMENT AREA 2	240 FEET	20 FEET	1 SHADE TREE/SO/LF 3 1 EVERGREEN TREE/40LF 4	3 4

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 151 LANDSCAPE TREES, IN THE AMOUNT OF \$15,100, IS PART OF THE DEVELOPER'S AGREEMENT.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
 Quinn J. Jannetty 1/5/95
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH
 APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 [Signature] 1/5/95
 CHIEF, BUREAU OF HIGHWAYS
 [Signature] 1/3/95
 CHIEF, BUREAU OF ENGINEERING

PLANTING SCHEDULE

SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SYMBOL	QTY	BOTANICAL NAME	COMMON NAME	SIZE
●	79	PINUS STROBUS	EASTERN WHITE PINE	6'-8' HT.	○	45	QUERCUS RUBRA	RED OAK	2 1/2"-3" CAL.
M	52	ACER RUBRUM	RED MAPLE	2 1/2"-3" CAL.	L	49	PLATANUS X ACERIFOLIA 'BLOODGOOD'	BLOODGOOD LONDON PLANE	2 1/2"-3" CAL.

NOTE: ON PONDS, ALL PLANTINGS ARE A MINIMUM OF 20' FROM THE TOE OF SLOPE.
 [Signature] 12/16/93

TITLE	PROJECT
LANDSCAPE PLAN	WALNUT SPRINGS
LOCATION	4th ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TAX MAP	PARCEL 313 BLOCK B
SCALE: 1"=100'	DESIGNED BY: JRC DRAWN BY: JRC CHECKED BY: RWB DATE: OCT. 1993
FIELD BOOK	PAGE No. 92115 DRAWING No. 7 OF 7

Boone Assoc.
 ENGINEERS - IN ANNE ARD
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 (410) 465-7777 FAX: (410) 465-7778

WILDMAN
 ENVIRONMENTAL SERVICES
 3060 R. Route 97
 P.O. Box 58
 Glenwood, MD 21738
 Ronald B. Wildman 10/10/93
 RONALD B. WILDMAN
 (410) 442-2211

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F95.23