

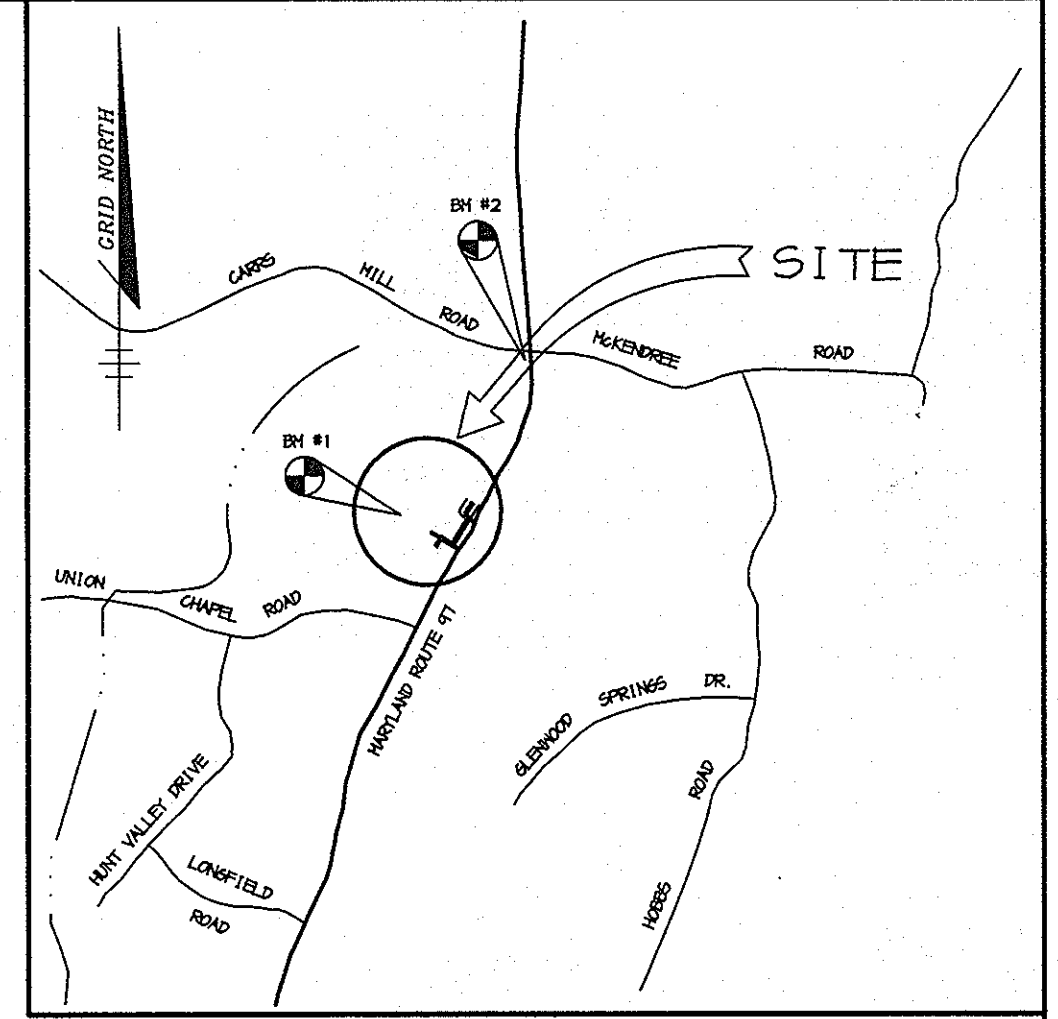
SHEET INDEX	
NO	DESCRIPTION
1	TITLE SHEET
2	SITE DEVELOPMENT PLAN
3	SEDIMENT CONTROL PLAN
4	NOTES AND DETAILS
5	PROFILES AND DETAILS
6	LANDSCAPE PLAN

# SITE DEVELOPMENT PLAN

## GLENWOOD MIDDLE SCHOOL/ BUSHY PARK ELEMENTARY SCHOOL

### DRIVELANE AND PARKING AREA ADDITION

#### 4th ELECTION DISTRICT HOWARD COUNTY, MARYLAND



**BENCHMARKS**  
 BM #1  
 HOCO CONTROL STATION 0033  
 ELEV. 594.56  
 N 593,953.24 E 1,304,825.84

BM #2  
 HOCO CONTROL STATION 0039  
 ELEV. 620.07  
 N 595,722.83 E 1,306,481.67

**VICINITY MAP**  
 SCALE: 1" = 2000'

### 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. ALSO NOTIFICATION OF HOWARD COUNTY SCHOOLS MAINTENANCE DEPARTMENT IS REQUIRED AT 410-313-7093.
- 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 ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB AND FACE OF BUILDING UNLESS OTHERWISE NOTED.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY RIEMER MUEGGE & ASSOC. DATED JANUARY, 1997.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. STATION NUMBERS 37GC AND 37HC WERE USED.
- NO WATER EXTENSIONS ARE PROPOSED FOR THIS PROJECT.
- NO SEWER EXTENSIONS ARE PROPOSED FOR THIS PROJECT.
- STORMWATER MANAGEMENT IS PROVIDED VIA A PRIVATELY MAINTAINED MODIFIED DETENTION FACILITY.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.
- A 100-YEAR FLOODPLAIN STUDY IS NOT REQUIRED FOR THIS PROJECT.
- A TRAFFIC STUDY IS NOT REQUIRED FOR THIS PROJECT.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- A GEOTECHNICAL STUDY FOR THIS PROJECT IS NOT REQUIRED.
- SUBJECT PROPERTY ZONED RC-DEO PER 10-18-93 COMPREHENSIVE ZONING PLAN.
- ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
- SEE DEPARTMENT OF PLANNING AND ZONING FILE NO'S SDP-75-40, & SDP-88-07.
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
- NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
- ALL STORM DRAIN PIPE BEDDING SHALL BE CLASS 'C' AS SHOWN IN FIG. 11.4, VOLUME 1 OF HOWARD COUNTY DESIGN MANUAL UNLESS OTHERWISE NOTED.
- ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- STORM DRAIN TRENCHES WITHIN ROAD RIGHT OF WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, I.E., STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, LATEST AMENDMENTS.
- PROFILES STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
- ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180.

**SITE ANALYSIS**

AREA OF PARCELS	PARCEL 153: 30.00 AC.
	PARCEL 198: 12.00 AC.
DISTURBED AREA	3.13 AC
PRESENT ZONING	RC-DEO
PROPOSED USE	PARKING

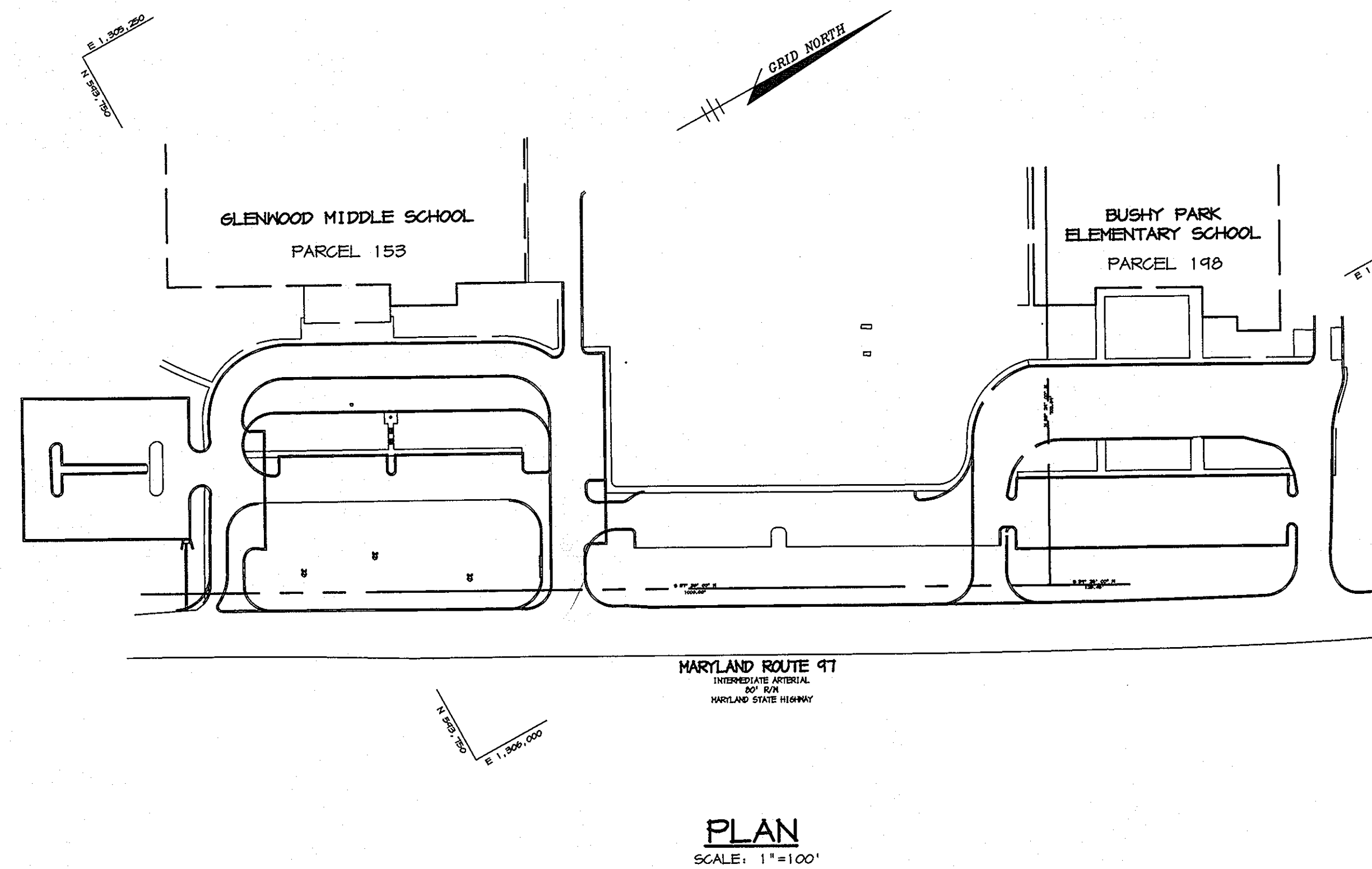
**BUSHY PARK ELEMENTARY (PARCEL 198)**

EXISTING PARKING	63 SPACES
TOTAL PARKING PROVIDED	63 SPACES
EXISTING HANDICAP PARKING	3 SPACES
HANDICAP PARKING REQUIRED	3 SPACES

**GLENWOOD MIDDLE (PARCEL 153)**

EXISTING PARKING	81 SPACES
EXISTING PARKING DELETED	18 SPACES
TOTAL NEW PARKING PROVIDED	71 SPACES (INCLUDING 11 DROP-OFF SPACES)
TOTAL NET PARKING	134 SPACES*
EXISTING HANDICAP PARKING	2 SPACES
HANDICAP PARKING REQUIRED	5 SPACES
TOTAL HANDICAP PARKING PROVIDED	5 SPACES

\*36 SPACES HAVE BEEN APPROVED BY THE COUNTY COUNCIL FOR SETBACK ENCROACHMENTS PER RESOLUTION 67 ON JUNE 1, 1998.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*James S. Batten* 6/11/98  
 DIRECTOR DATE

*William J. ...* 6/11/98  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Candy ...* 6/11/98  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER/DEVELOPER  
 BOARD OF EDUCATION OF HOWARD COUNTY  
 10910 ROUTE 108  
 ELLICOTT CITY, MD 21042

PROJECT  
 GLENWOOD MIDDLE SCHOOL/  
 BUSHY PARK ELEM. SCHOOL  
 DRIVEWAY AND PARKING ADDITION

AREA  
 PARCELS 153 & 198  
 TAX MAP 14, BLOCKS 10 & 16  
 4th ELECTION DISTRICT  
 ZONED RC-DEO

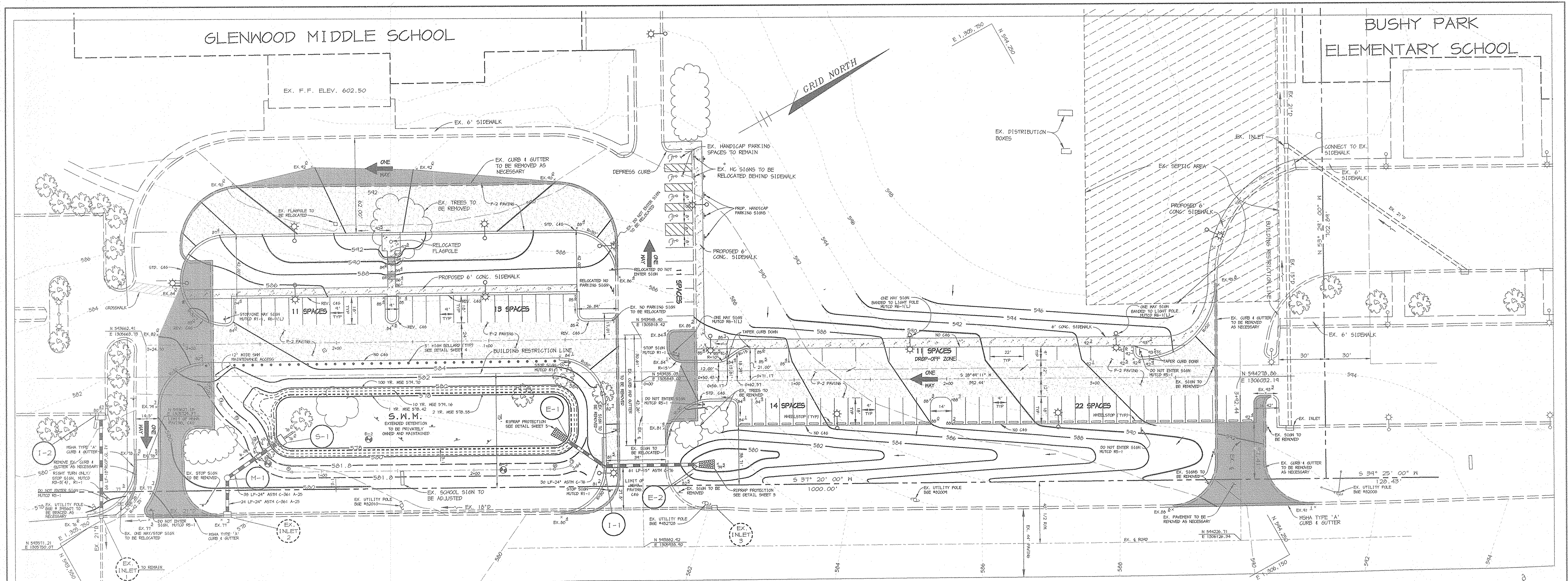
TITLE  
 TITLE SHEET

**RIEMER MUEGGE & ASSOCIATES, INC.**  
 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
 8818 Centre Park Drive, Columbia, Maryland 21045  
 tel 410.997.8900 fax 410.997.9282

DATE	DESIGNED BY: CJR
	DRAWN BY: RPP
	PROJECT NO.: 97178 SDP1A.DWG
	DATE: JUNE 4, 1998
	SCALE: AS SHOWN
	DRAWING NO.: 1 OF 6

SUBDIVISION NAME	SECT./AREA	PARCEL	153 & 198
PLAT #	BLOCK #	ZONING	TAX MAP NO.
	10 & 16	RC-DEO	14
			ELECT. DIST.
			4th
			CENSUS TRACT
			6040
WATER CODE	SEWER CODE		
N/A	N/A		





PLAN  
SCALE: 1"=30'

MARYLAND ROUTE 97  
INTERMEDIATE ARTERIAL  
80' R/W  
MARYLAND STATE HIGHWAY

**LEGEND**

- 400 WATT HIGH PRESSURE SODIUM ROADWAY (COBRAHEAD) LUMINAIRE MOUNTED ON A 25" HIGH ALUMINUM POLE
- EXISTING LIGHT POLE (W/NEK FIXTURE)
- DENOTES TRANSITION BETWEEN STANDARD AND REVERSE CURB AND GUTTER
- P-2 PAVING
- EXISTING PAVING/C&G TO BE REMOVED

NOTE: CONTRACTOR TO MAINTAIN ACCESS TO MIDDLE SCHOOL AT ALL TIMES DURING CONSTRUCTION.

**NOTES:**

1. ALL CURB RADII ARE 5' UNLESS OTHERWISE NOTED.
2. DIMENSIONS ARE TO FACE OF BUILDING, FACE OF CURB OR CENTERLINE UNLESS OTHERWISE NOTED.
3. ALL LIGHTS TO BE DIRECTED/REFLECTED AWAY FROM ADJACENT PUBLIC ROADS AND RESIDENTIALLY ZONED PROPERTIES AND BE IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.
4. THE COUNTY COUNCIL APPROVED THE LOCATION OF THE 36 SPACES BETWEEN THE SCHOOLS PER RESOLUTION 67 ON JUNE 1, 2008.

**DAM CENTERLINE DATA**

①	N 543606.02	E 1305708.81	①	②	S 26° 05' 01" E	12.72'
②	N 543606.04	E 1305721.50	②	③	R = 45.00'	L = 16.73'
③	N 543604.11	E 1305737.60	③	④	R = 25.00'	L = 17.02'
④	N 543602.74	E 1305754.21	④	⑤	R = 26.00'	L = 34.12'
⑤	N 543705.54	E 1305783.23	⑤	⑥	N 20° 35' 56" E	172.16'
⑥	N 543856.70	E 1305865.64	⑥	⑦	R = 26.00'	L = 11.25'
⑦	N 543867.41	E 1305868.75				

**STORMWATER MANAGEMENT DESIGN SUMMARY**  
DRAINAGE AREA: 5.42 ac

DESIGN STORM (YR.)	ALLOWABLE RELEASE (C.F.S.)	FACILITY INFLOW (C.F.S.)	FACILITY DISCHARGE (C.F.S.)	DESIGN POINT DISCHARGE (C.F.S.)	WATER SURFACE ELEVATION (FT.)	STORAGE VOLUME (AC. FT.)
2	8.37	5.90	0.62	6.70	578.55	0.248
10	24.94	14.35	4.60	24.33	574.16	0.354
100	46.68	24.68	14.65	50.36	574.70	0.457

OPERATION AND MAINTENANCE SCHEDULE OF PRIVATELY OWNED AND MAINTAINED STORMWATER MANAGEMENT FACILITY EXTENDED DETENTION POND

**ROUTINE MAINTENANCE**

1. Facility shall be inspected annually and after major storms. Inspections should be performed during wet weather to determine if the pond is functioning properly.
2. Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes, the bottom of the pond, and maintenance access should be mowed as needed.
3. Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
4. Visible signs of erosion in the pond as well as riprap outlet area shall be repaired as soon as it is noticed.

**NON-ROUTINE MAINTENANCE**

1. Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components should be inspected during routine maintenance operations.
2. Sediment should be removed when its accumulation significantly reduces the design storage, interferes with the function of the riser, when deemed necessary for aesthetic reasons, or when deemed necessary by the Howard County's Department of Public Works.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Scott A. ...* 6/11/08  
DIRECTOR DATE

*John ...* 6/11/08  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Cindy ...* 6/11/08  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE NO. REVISION

OWNER/DEVELOPER  
BOARD OF EDUCATION OF HOWARD COUNTY  
10410 ROUTE 108  
ELLICOTT CITY, MD 21042

PROJECT  
GLENWOOD MIDDLE SCHOOL/  
BUSHY PARK ELEM. SCHOOL  
DRIVEWAY AND PARKING ADDITION

AREA  
PARCELS 153 & 198  
TAX MAP 14, BLOCKS 10 & 16  
4th ELECTION DISTRICT  
ZONED RC-DEO

TITLE

**RIEMER MUEGGE & ASSOCIATES, INC.**  
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
8818 Centre Park Drive, Columbia, Maryland 21045  
tel 410.997.8900 fax 410.997.9282

DATE

DESIGNED BY: CJR

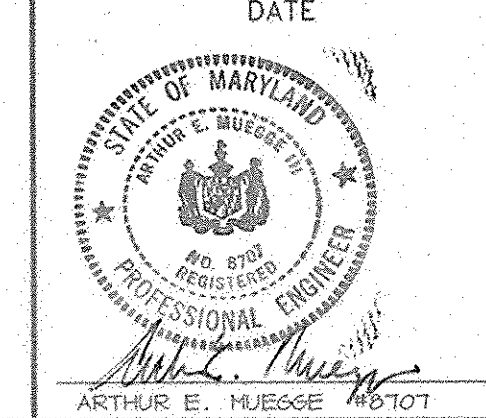
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PROJECT NO.: 97178  
SDP2A.DWG

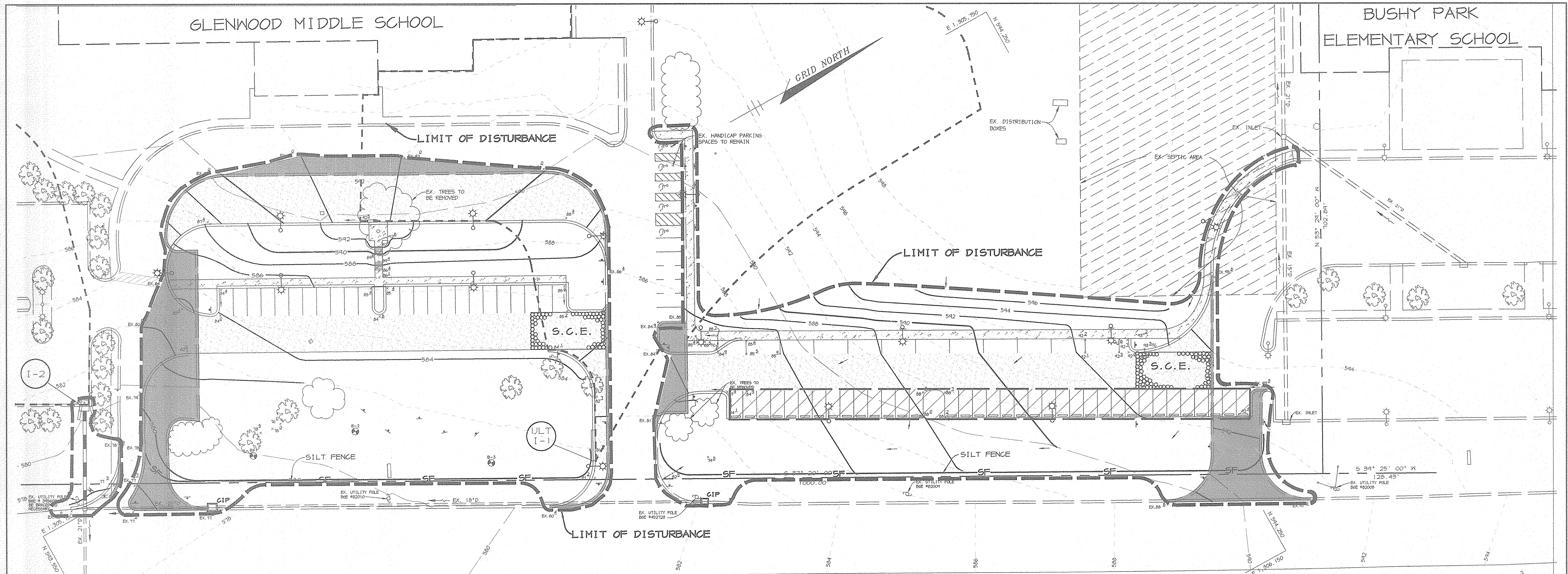
DATE: JUNE 4, 1998

SCALE: AS SHOWN

DRAWING NO.: 2 OF 6







EX. I-1 GRATE TO BE RAISED TO PROPOSED GRADES  
REPLACE GRATE WITH  
RECTANGULAR GRATE  
10" 3/4" 02

**LEGEND**

- SF- SF- SILT FENCE
- - - - - LIMIT OF DISTURBANCE
- S.C.E. STABILIZED CONSTRUCTION ENTRANCE
- - - - - STORM DRAIN DRAINAGE AREA
- CIP CURB INLET PROTECTION

NOTE: SEE SHEET 2 FOR FINAL GRADING AND STORM DRAIN LAYOUT.

NOTE: CONTRACTOR TO MAINTAIN ACCESS TO MIDDLE SCHOOL AT ALL TIMES DURING CONSTRUCTION.

MARYLAND ROUTE 97  
INTERMEDIATE ARTERIAL  
80' R/W  
MARYLAND STATE HIGHWAY

PLAN  
SCALE: 1"=30'

**DRAINAGE AREA TABULATIONS**

D.A. #	DRAINAGE AREA (AC.)	"C"	% IMP.
I-1	2.44	0.35	26.6
I-2	2.11	0.31	21.8

NOTE: ALL ON-SITE SOILS ARE TYPE 'B'.

0' FILL - SAMPLED AS SILT, TRACE SAND, TRACE CLAY, DARK BROWN, MOIST, STIFF, (FILL/ML)	0' FILL - SAMPLED AS SILT, TRACE SAND, TRACE CLAY, DARK BROWN, MOIST, MEDIUM STIFF, (FILL/ML)	0' SILTY SAND, TRACE MICA, GRAYISH BROWN, MOIST TO WET, LOOSE TO MEDIUM DENSE, (SM), SAPROLITIC-ROCK FRAGMENTS AT 2.0 FEET
2.5' POSSIBLE FILL - SAMPLED AS SANDY LEAN CLAY, ORANGISH BROWN, MOIST, STIFF, (CL)	2.5' SANDY LEAN CLAY, ORANGISH BROWN, MOIST, STIFF, (CL)	WET BELOW 8.0 FEET
5' SANDY SILT, LITTLE MICA, YELLOWISH BROWN, MOIST, MEDIUM STIFF TO STIFF, (ML), SAPROLITIC	5' SILTY SAND, GRAYISH TO ORANGISH BROWN, MOIST TO WET, LOOSE TO MEDIUM DENSE, (SM), SAPROLITIC	EXTREMELY DENSE AT 13.5 FEET
15' END OF BORING @ 15.0'	15' END OF BORING @ 15.0'	15' END OF BORING @ 15.0'

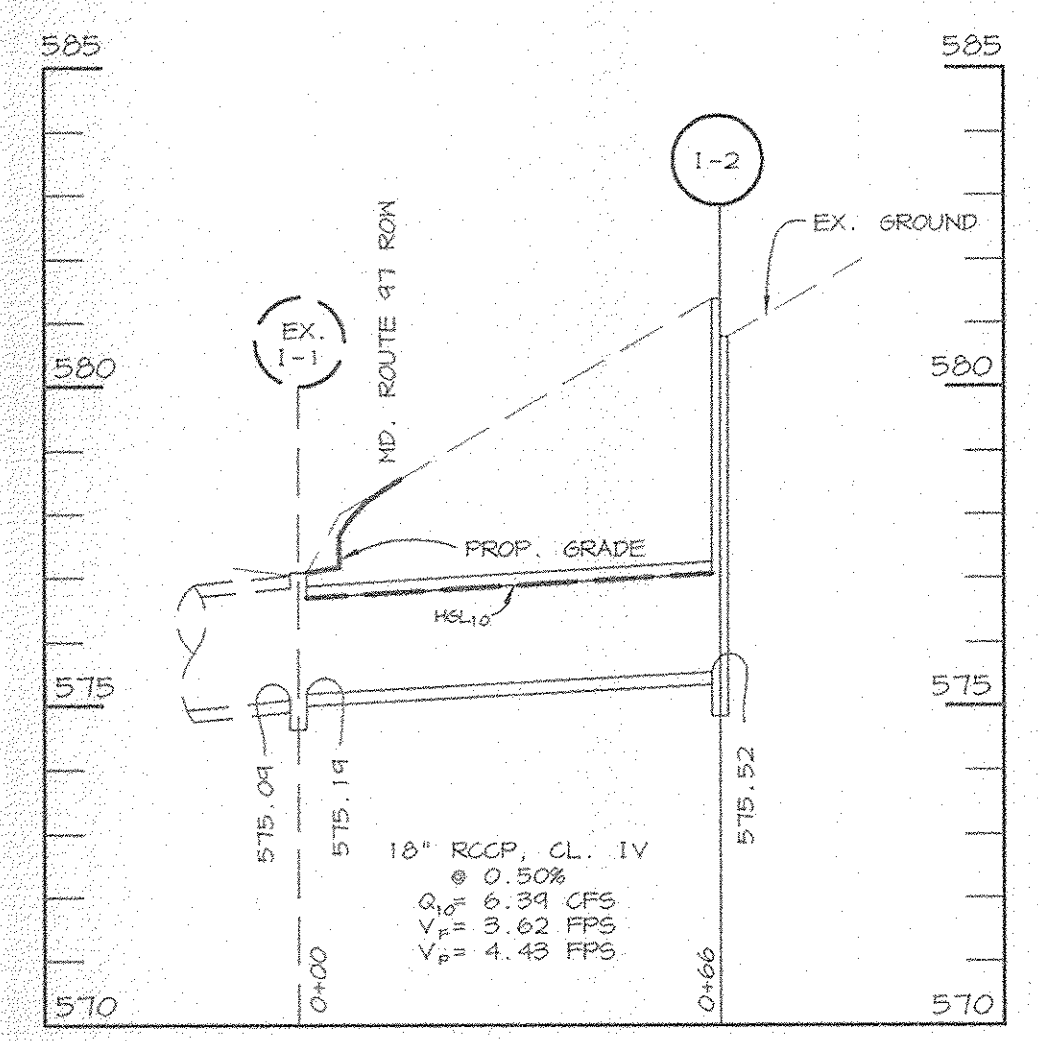
**BORING B-1**  
NO SCALE

**BORING B-2**  
NO SCALE

**BORING B-3**  
NO SCALE

**SEQUENCE OF CONSTRUCTION**

1. OBTAIN GRADING PERMIT.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE. (1 DAY)
3. REMOVE EXISTING CURB AND EXISTING PAVING WHERE NECESSARY AND ROUGH GRADE SITE PER SHEET 3. (7 DAYS)
4. POUR NEW CURB AND GUTTER AND INSTALL AND COMPACT SIDEWALK AND ROADWAY SUB-BASES. (5 DAYS)
5. PAVE ROADWAY AND POUR SIDEWALK. (4 DAYS)
6. GRADE AREA FOR STORMWATER MANAGEMENT FACILITY PER SHEET 2 AND INSTALL STORM DRAIN. (5 DAYS)
7. STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (3 DAYS)
8. WITH PERMISSION OF HOWARD COUNTY DILP SEDIMENT CONTROL INSPECTOR REMOVE SEDIMENT CONTROL DEVICES AND STABILIZE REMAINING DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 DAYS)



**STORM DRAIN PROFILE**

SCALE: HOR. : 1"=30'  
VERT. : 1"=3'

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*John R. Hamilton* 6/11/98  
DIRECTOR DATE  
*Chris Deunmann* 6/11/98  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*Chris Hamilton* 6/11/98  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE NO. REVISION

OWNER/DEVELOPER  
BOARD OF EDUCATION OF HOWARD COUNTY  
10910 ROUTE 100  
ELLCOTT CITY, MD 21042

PROJECT  
GLENWOOD MIDDLE SCHOOL/  
BUSHY PARK ELEM. SCHOOL  
DRIVEWAY AND PARKING ADDITION

AREA PARCELS 153 & 148  
TAX MAP 14, BLOCKS 10 & 16  
4th ELECTION DISTRICT  
ZONED RC-DEO

TITLE

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8818 Centre Park Drive, Columbia, Maryland 21045  
tel 410.997.8900 fax 410.997.9282

DATE  
DESIGNED BY : CJR  
DRAWN BY: RPP  
PROJECT NO : 97178  
SDP3A.DWG  
DATE : JUNE 4, 1998  
SCALE : AS SHOWN  
DRAWING NO. : 3 OF 6

BY THE DEVELOPER :

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

*J.C. Kinslow* 6-5-98  
DEVELOPER DATE

BY THE ENGINEER :

I 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.

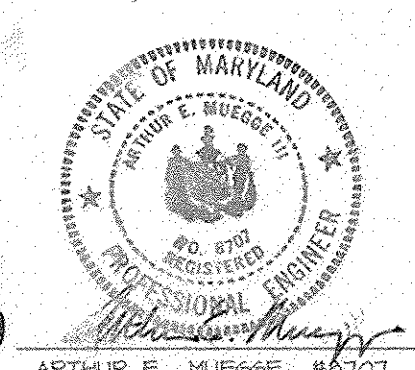
*John L. Muegge* 6-9-98  
ENGINEER DATE

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

*Cheryl Simmons* 6/10/98  
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*John R. Hamilton* 6/10/98  
HOWARD SOIL CONSERVATION DISTRICT DATE





**TEMPORARY SEEDING NOTES**

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

**Seeding 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. per 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 optimal type (3.2 lbs. per 1000 sq. ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre (3.6 lbs. per 1000 sq. ft.). For the period November 16 thru February 26, protect site by applying 2 tons per acre of well-rotted manure 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. per 1000 sq. ft.) of unrotted small grain straw immediately after seeding. Another mulch immediately after application using mulch anchoring tool or 210 gal. per acre (5 gal. per 1000 sq. ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq. ft.) for anchoring.

Refer to the 1988 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.

**Seeding 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:

- 1) Preferred - Apply 2 tons per acre dolomitic limestone (42 lbs. per 1000 sq. ft.) and 1000 lbs. per acre of optimal fertilizer (14 lbs. per 1000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil. As final seedling, apply 400 lbs. per acre 30-20-20 uniform fertilizer (4 lbs. per 1000 sq. ft.).
- 2) Acceptable - Apply 2 tons per acre dolomitic limestone (42 lbs. per 1000 sq. ft.) and 1000 lbs. per acre 10-10-10 fertilizer (28 lbs. per 1000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil.

**Seeding** - For the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sq. ft.) of Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq. ft.) of seeding legumes. During the period October 16 thru February 26, protect site by one of the following options:

- 1) 2 tons per acre of well-rotted manure mulch and seed as soon as possible in the spring.
- 2) Use sod.
- 3) Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well-rotted straw.

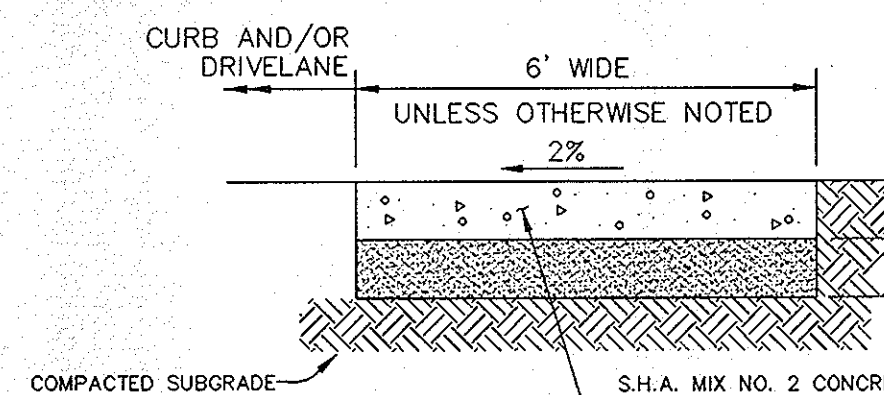
**Mulching** - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq. ft.) of unrotted small grain straw immediately after seeding. Another mulch immediately after application using mulch anchoring tool or 210 gal. per acre (5 gal. per 1000 sq. ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq. ft.) for anchoring.

**Maintenance** - Inspect all seeded areas and note needed repairs, replacements and reseedings.

**SEDIMENT CONTROL NOTES**

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES, AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO ANY CONSTRUCTION (319-1005).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERE TO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY SEDIMENT CONTROL SHALL BE COMPLETED WITHIN 48 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1. BY 14 CALENDAR DAYS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THE PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SO2, TEMPORARY SEEDING, AND MULCHING (SEC. 0), TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. 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.
7. SITE ANALYSIS:
 

TOTAL AREA OF SITE	3.13 ACRES
AREA TO BE ROOFED OR PAVED	3.13 ACRES
AREA TO BE VEGETATIVELY STABILIZED	1.56 ACRES
TOTAL CUT	1.37 ACRES
TOTAL FILL	3672 CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION TO HAVE AN ACTIVE GRADING PERMIT.	0 CU. YDS.
8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. SITE GRADING SHALL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
11. SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN ON THE PLANS.
12. CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL, STRUCTURAL FILL OR EMBANKMENT MATERIAL. HOW DO THEY REFLECT CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.
13. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 AC., APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROL, 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.
14. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.



**SIDEWALK DETAIL**

NO SCALE

**MD-378 STANDARDS AND SPECIFICATIONS**

**SPECIFICATIONS**

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

**SITE PREPARATION**

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and shop breaks shall be sloped to no steeper than 1:1.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut and removed to the ground surface. For dry stormwater management ponds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner's site representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

**EARTH FILL**

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable material. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 4-inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

**Compaction** - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread from each piece of equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tire or vibrator roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not be so wet that it will not be squeezed out.

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

**Cutoff Trench** - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The side slopes of the trench shall be 1 to 1 or flatter.

The back fill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

**STRUCTURE BACKFILL**

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

**PIPE CONDUITS**

All pipes shall be circular in cross section.

**Reinforced Concrete Pipes** - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal ASTM Designation C-361. An approved equivalent is AWWA Specification C-302.
2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high strength concrete placed under the pipe and up the side of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.
3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.
4. Backfilling shall conform to Structure Backfill.
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

**CONCRETE**

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3.

**ROCK RIPRAP**

All rock shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering. The rock fragments shall be angular to subrounded in shape. The least dimension of an individual rock fragment shall be not less than one-third the greatest dimension of the fragment.

The rock shall have the following properties:

1. Bulk specific gravity (saturated surface-dry basis) not less than 2.5.
2. Absorption not more than three percent.
3. Soundness: Weight loss in five cycles not more than 20 percent when sodium sulfate is used.

Bulk specific gravity and absorption shall be determined according to ASTM C 127. The test for soundness shall be performed according to ASTM C 88.

The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be uniform throughout the structure. The riprap shall be distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all riprap and shall meet the requirements of the Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 919.12.

**CARE OF WATER DURING CONSTRUCTION**

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level of the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to pumps from which the water shall be pumped.

**STABILIZATION**

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

**EROSION AND SEDIMENT CONTROL**

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

Refer to the 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

**21.0 STANDARD AND SPECIFICATIONS**

**FOR TOPSOIL**

**DEFINITION**

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

**PURPOSE**

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

**CONDITIONS WHERE PRACTICE APPLIES**

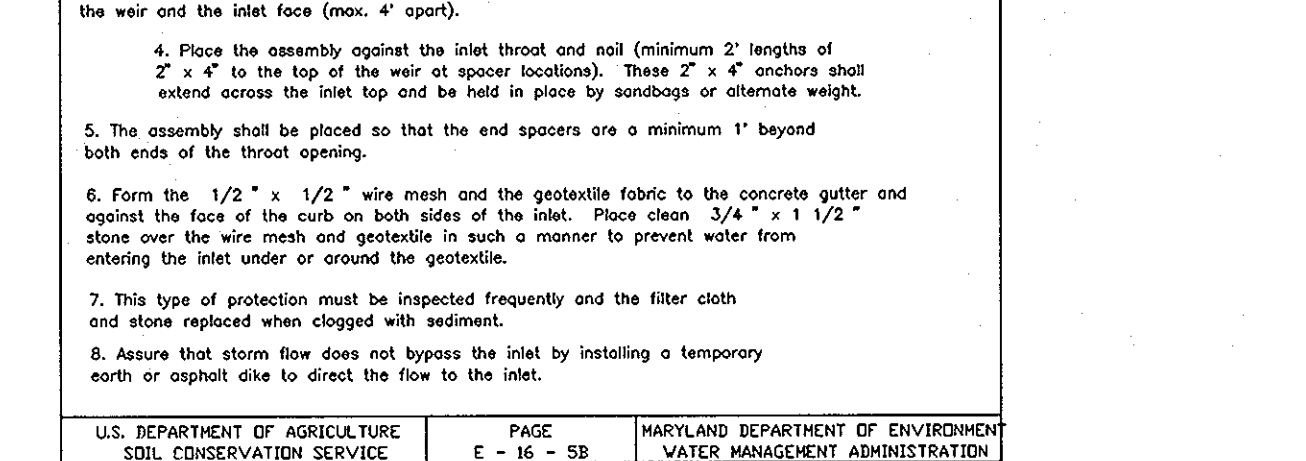
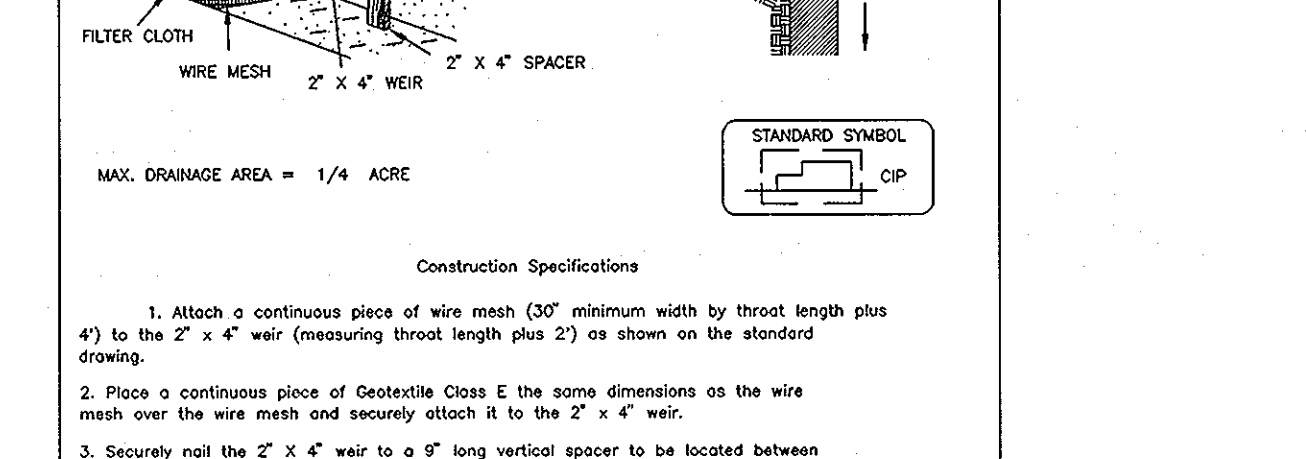
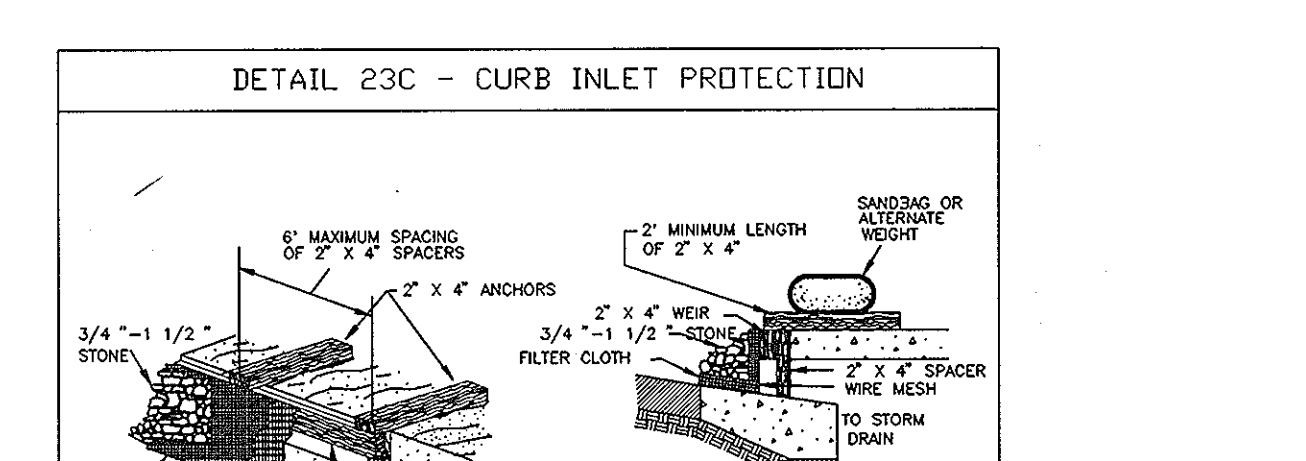
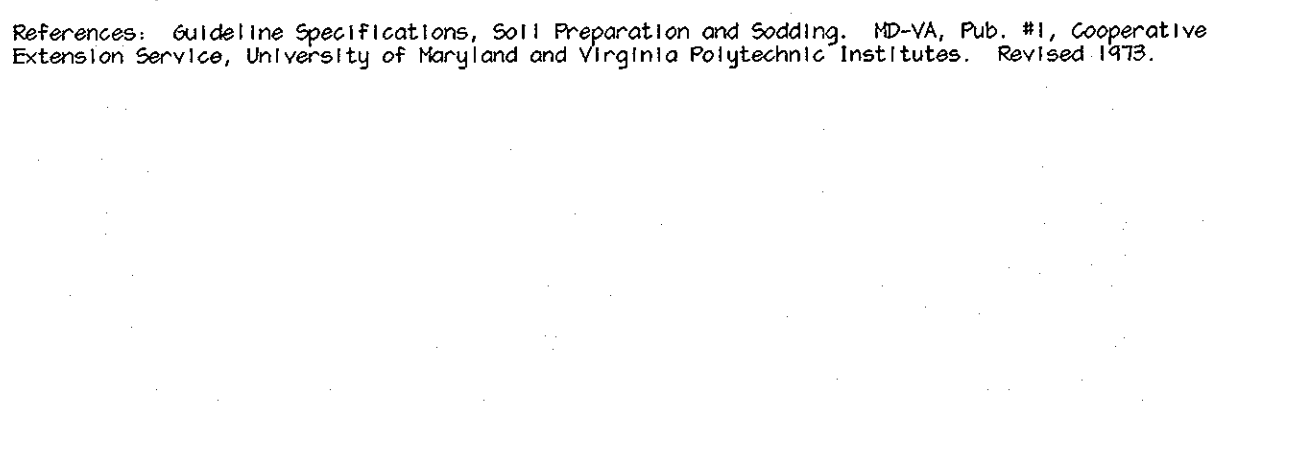
1. This practice is limited to areas having 2:1 or flatter slopes where:
  - a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
  - b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies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

**CONSTRUCTION AND MATERIAL SPECIFICATIONS**

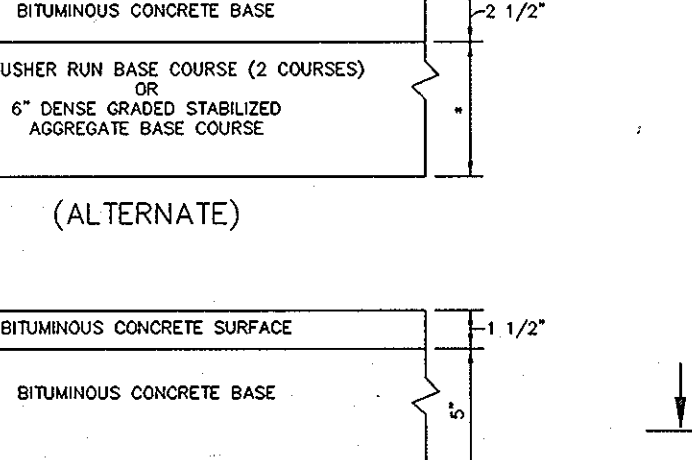
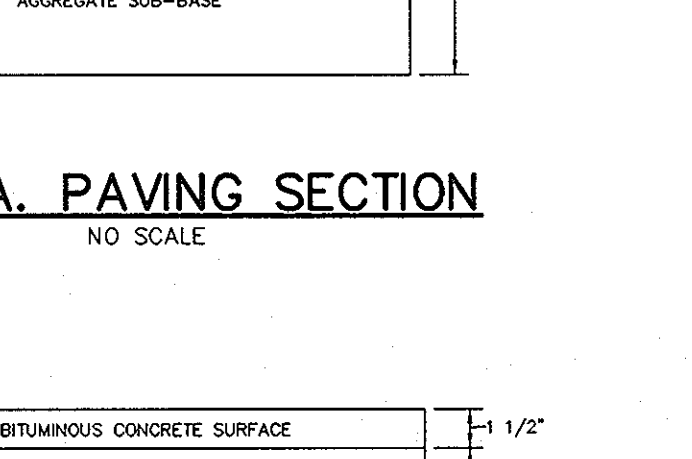
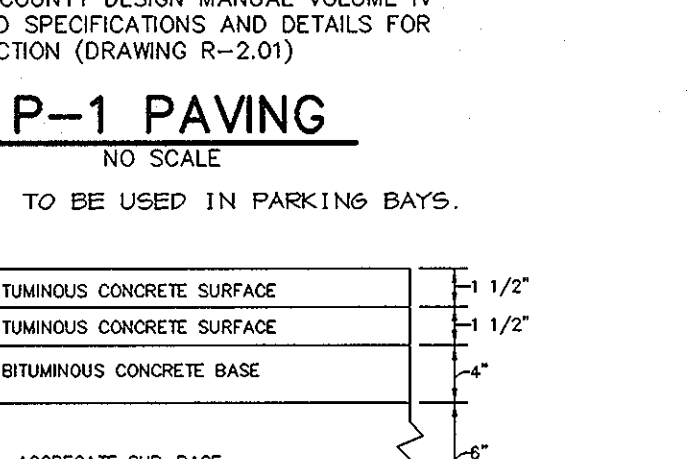
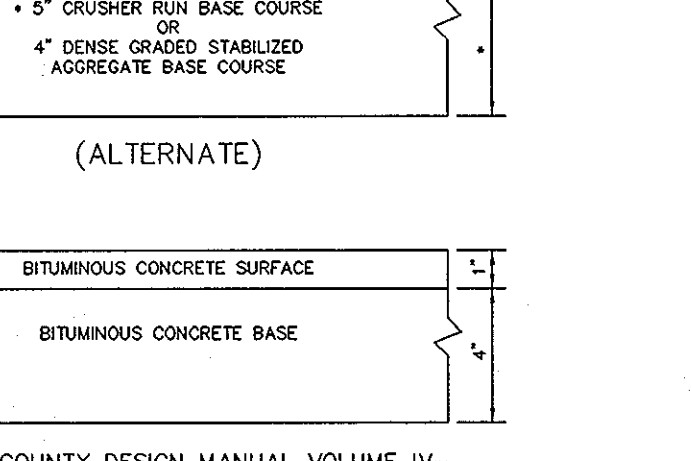
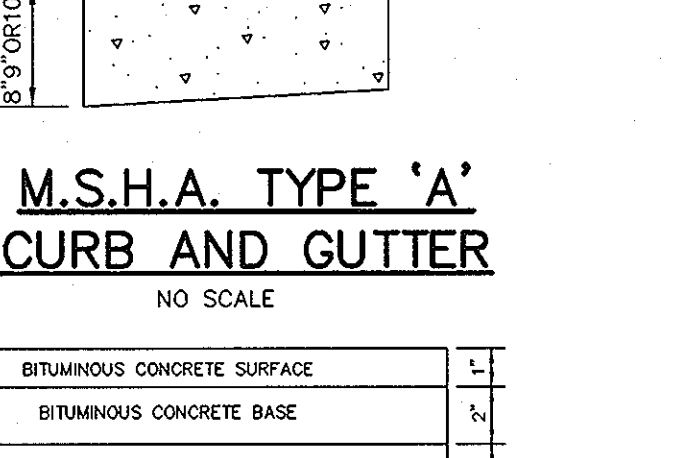
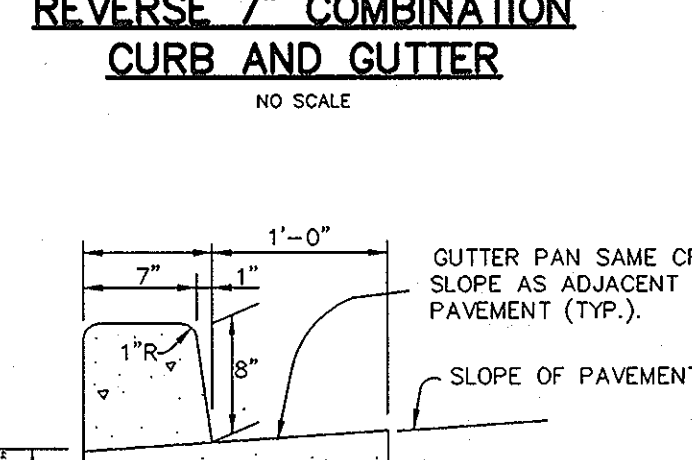
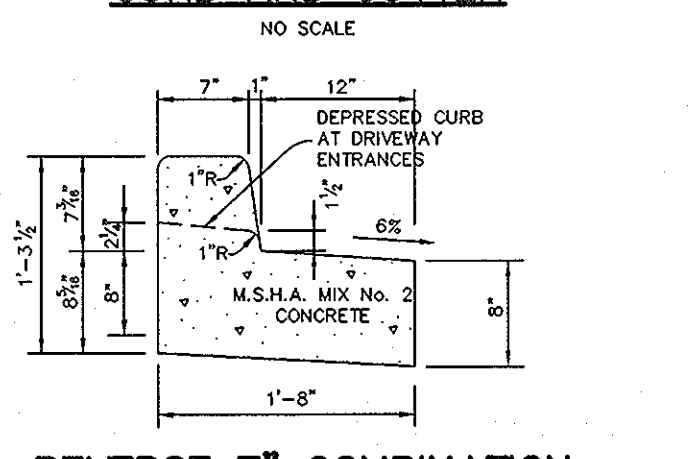
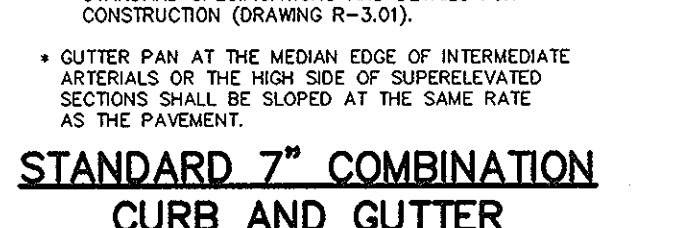
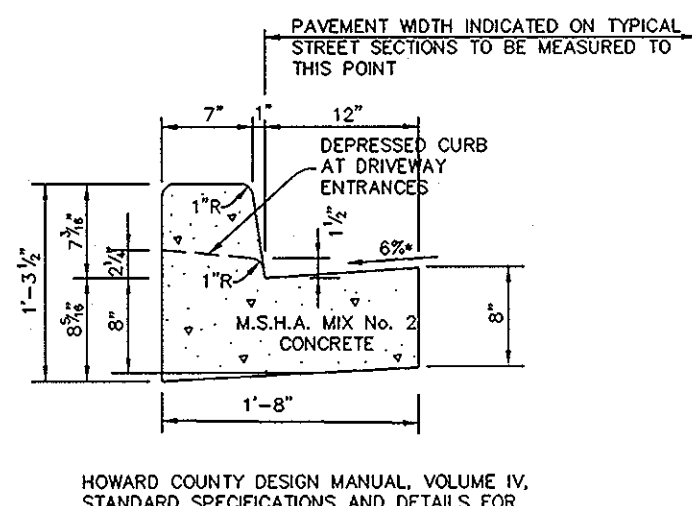
1. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimentation Station.
2. Topsoil Specifications - Soil to be used as topsoil must meet the following:
  1. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
  2. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
  3. Where subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over the designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
  4. For sites having disturbed areas over 5 acres:
    1. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
    2. For sites having disturbed areas over 5 acres:
      1. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
        - a. pH for topsoil shall be between 6.0 and 7.5. If the test soil pH demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
        - b. Organic content of topsoil shall be not less than 1.5 percent by weight.
        - c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
        - d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.
      2. Topsoil substitutes to amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority may be used in lieu of natural topsoil.
      3. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.

- Note:** Topsoil substitutes to amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority may be used in lieu of natural topsoil.
1. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
  2. Topsoil Application
    1. When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, earth dikes, slope silt fence and sediment traps and basins.
    2. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit a 4" - 8" higher in elevation.
    3. 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 seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
    4. Topsoil shall not be placed where 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.
- VI. Alternative For Permanent Seeding** - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
1. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for site having disturbed areas over 5 acres shall conform to the following requirements:
    - a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
    - b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
    - c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
    - d. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/2 the normal lime application rate.

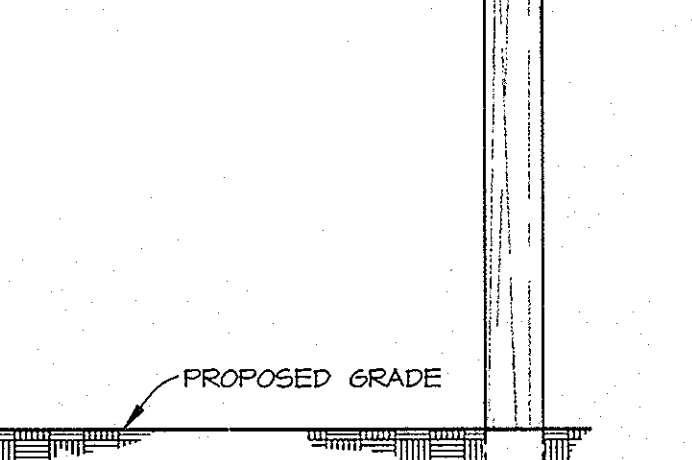
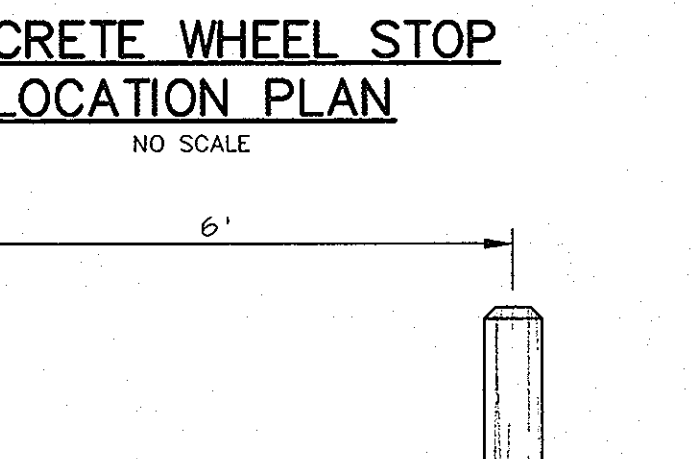
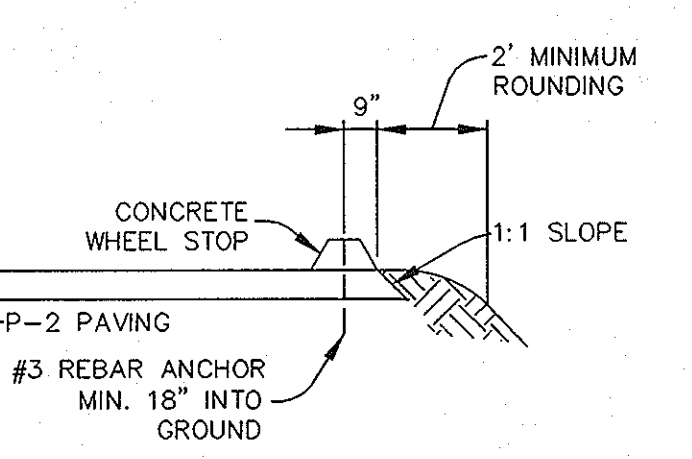
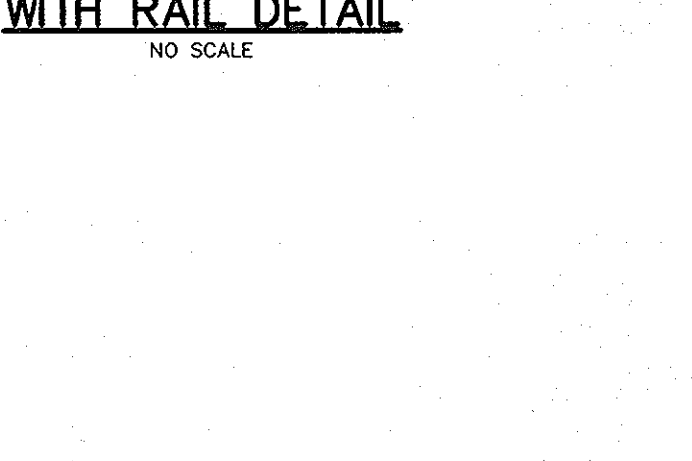
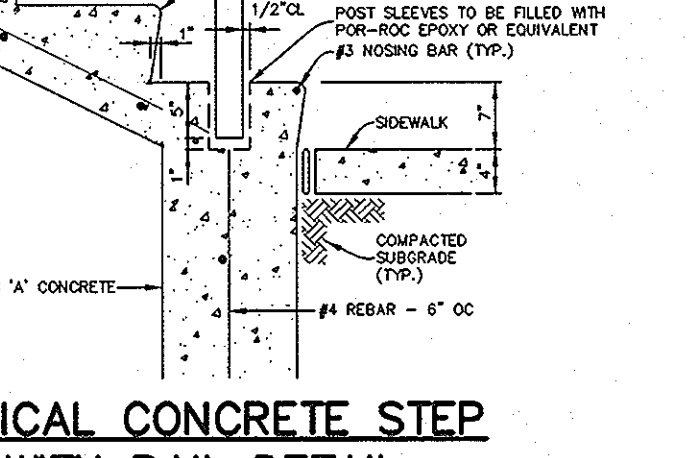
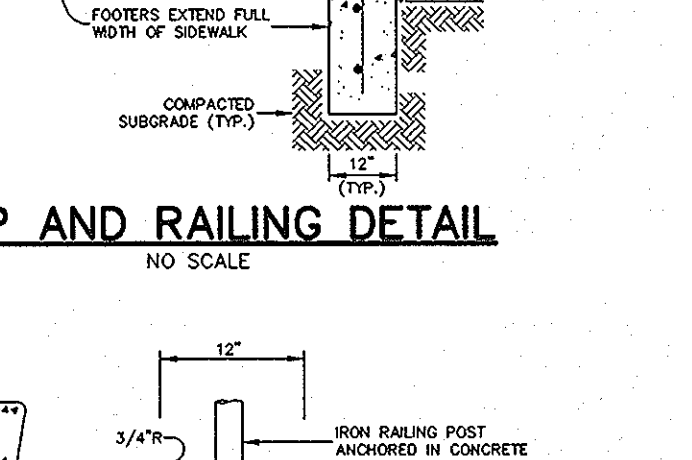
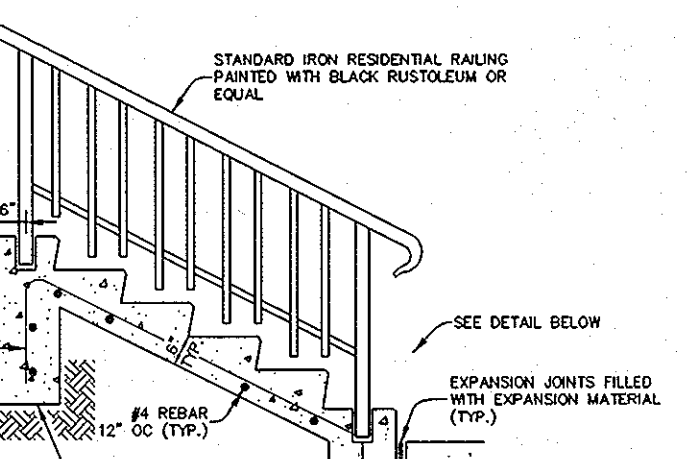
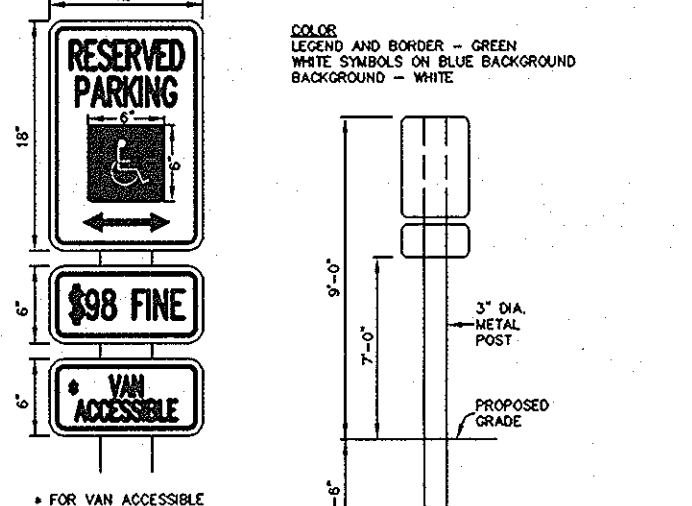
**References:** Guideline Specifications, Soil Preparation and Sodding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institute, Revised 1978.



NOTE: TO BE USED IN DRIVE LANES



NOTE: TO BE USED IN DRIVE LANES



NOTE: TO BE USED IN DRIVE LANES

BY THE DEVELOPER :

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

*Arthur E. Muegge* 6.5.98  
DEVELOPER DATE

BY THE ENGINEER :

I 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.

*Arthur E. Muegge* 6.9.98  
ENGINEER DATE

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

*Carol Simmons* 6/10/98  
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*John R. Roberts* 6/10/98  
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*David R. Butler* 6/11/98  
DIRECTOR DATE

*William D. Simmons* 6/11/98  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Andy Harmon* 6/11/98  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

OWNER/DEVELOPER

BOARD OF EDUCATION OF HOWARD COUNTY  
10910 ROUTE 108  
ELLCOTT CITY, MD 21042

PROJECT

GLENWOOD MIDDLE SCHOOL/  
BUSHY PARK ELEM. SCHOOL  
DRIVEWAY AND PARKING ADDITION

AREA

PARCELS 153 & 198  
TAX MAP 14, BLOCKS 10 & 16  
4th ELECTION DISTRICT  
ZONED RC-DEO

TITLE

NOTES AND DETAILS

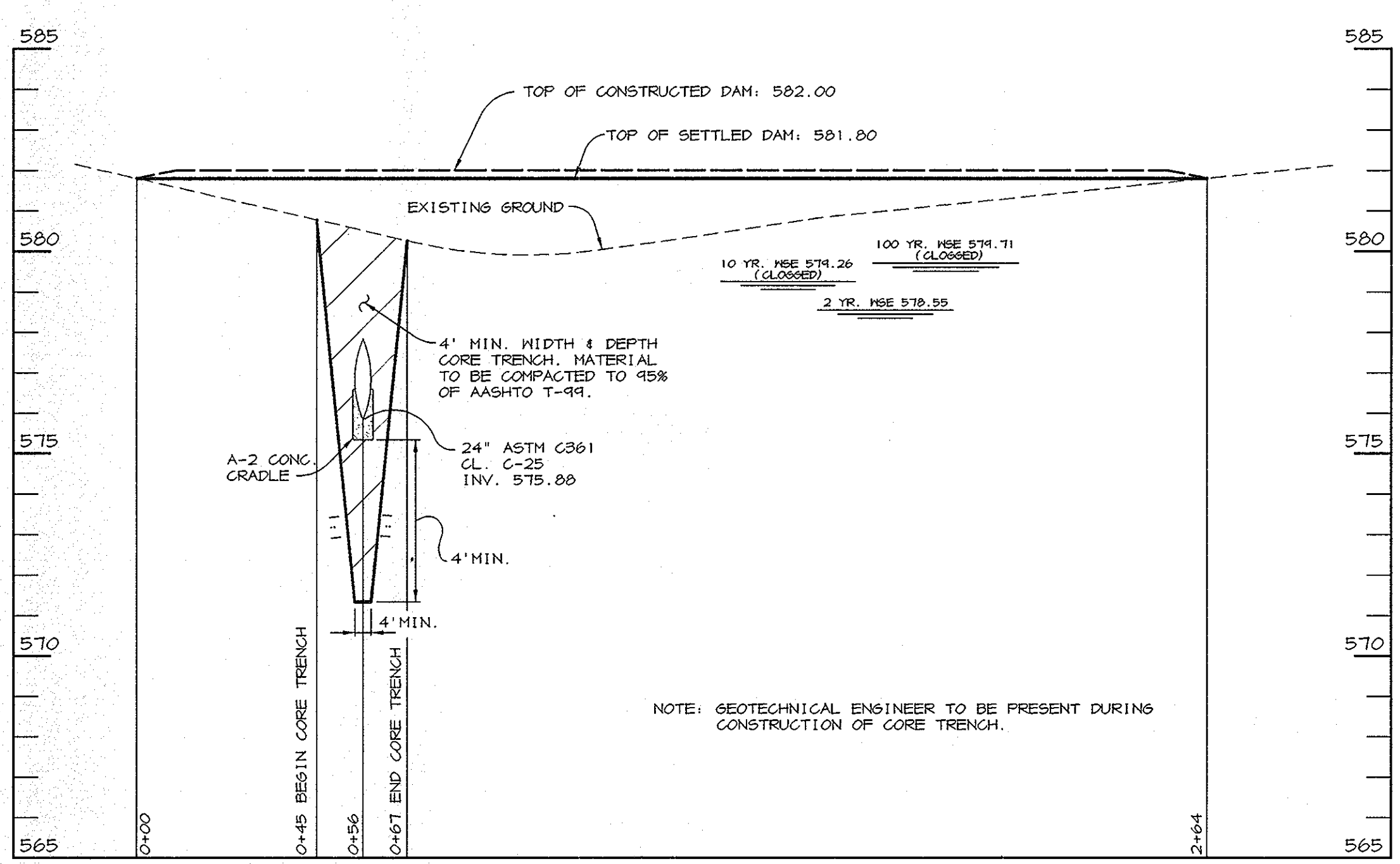
**RIEMER MUEGGE & ASSOCIATES, INC.**  
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
8818 Centre Park Drive, Columbia, Maryland 21045  
tel 410.997.8900 fax 410.997.9282

DATE

DESIGNED BY : CJR  
DRAWN BY : RPP  
PROJECT NO : 97178  
DATE : JUNE 4, 1998  
SCALE : AS SHOWN  
DRAWING NO 4 OF 6

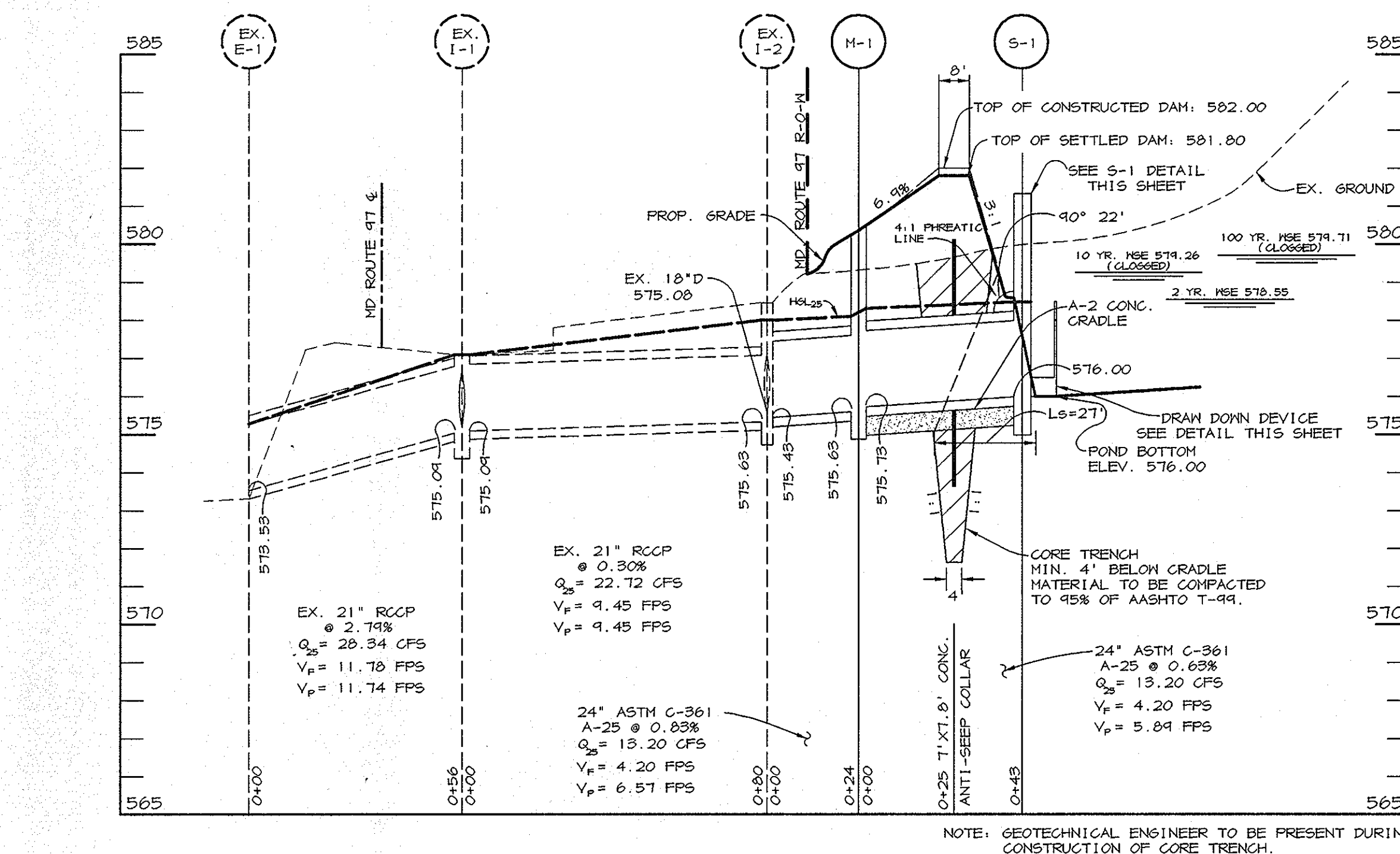
STATE OF MARYLAND  
ARTHUR E. MUEGGE  
PROFESSIONAL ENGINEER  
NO. 810  
EXPIRES 12/31/00





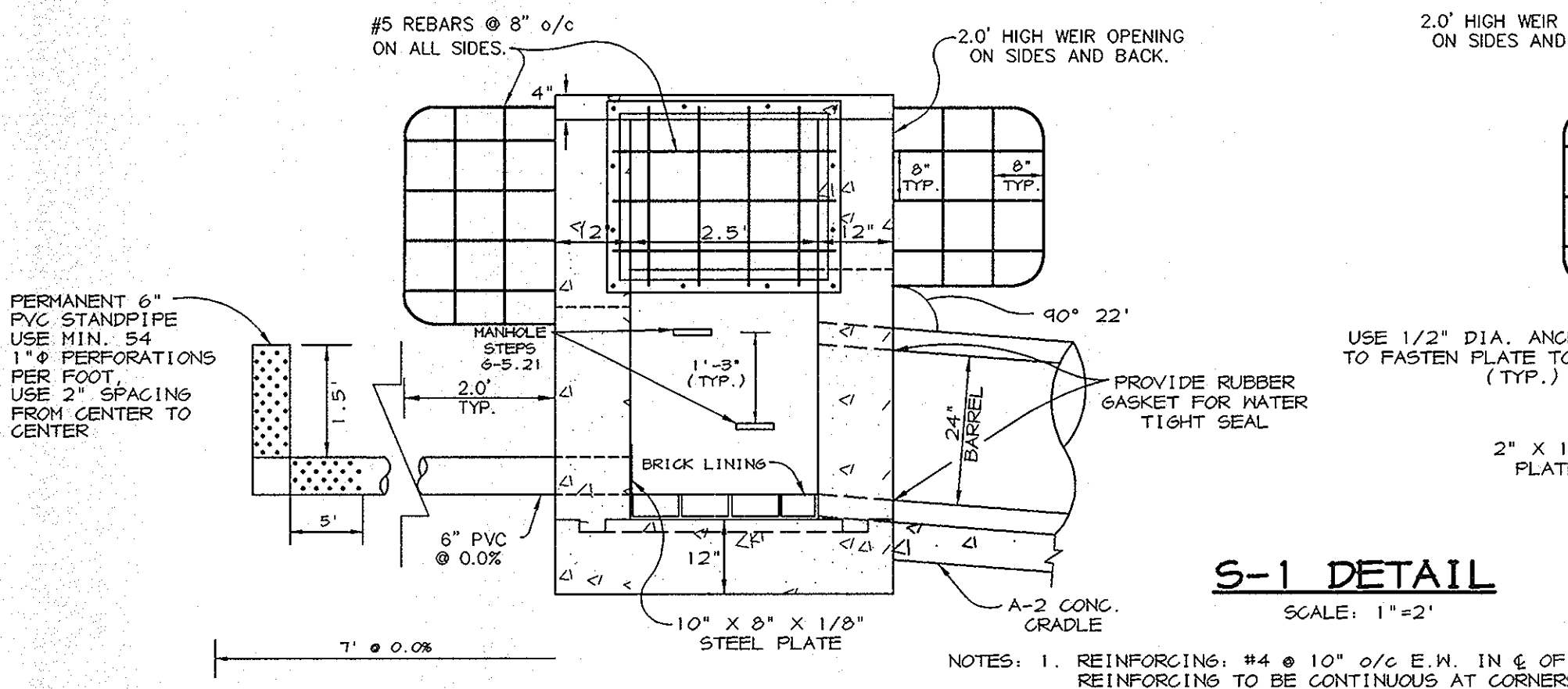
PROFILE ALONG CENTERLINE OF EMBANKMENT

SCALE: HOR. 1"=30'  
VERT. 1"=3'



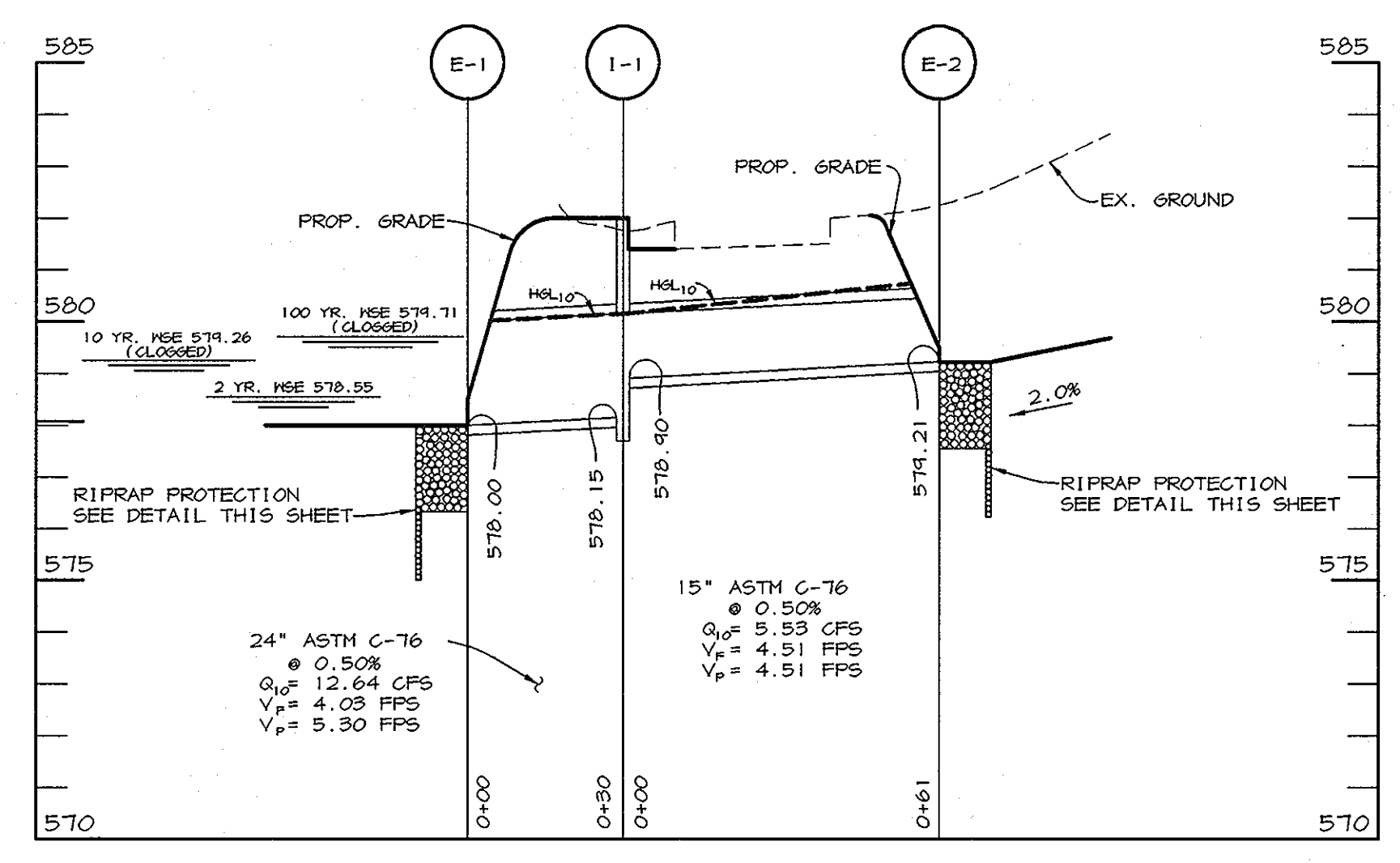
PRINCIPAL SPILLWAY PROFILE

SCALE: HOR. 1"=30'  
VERT. 1"=3'



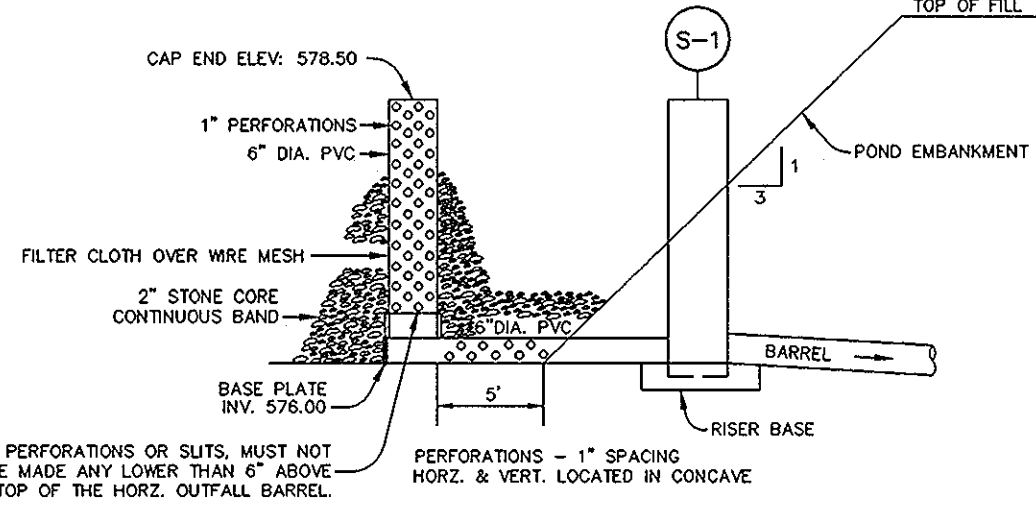
S-1 DETAIL

- NOTES:
1. REINFORCING, #4 @ 10" O/C E.W. IN & OF WALLS. REINFORCING TO BE CONTINUOUS AT CORNERS. ALL LAPS 1'-4"
  2. SHOP DRAWINGS TO BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION.
  3. GALVANIZE BACK AFTER FABRICATION AND PAINT BATTLESHIP GRAY.
  4. RISER TO BE CASTE IN PLACE WITH 2' MIN. BARREL STUB. PROVIDE WATER TIGHT SEAL.
  5. SEE HO. CO. STD. DETAIL 6-5.21 FOR MANHOLE STEPS.



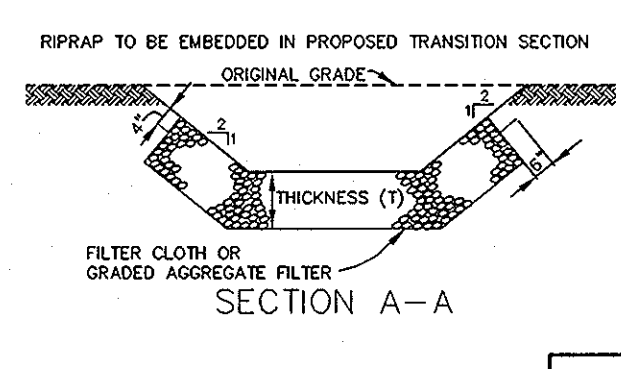
STORM DRAIN PROFILE

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



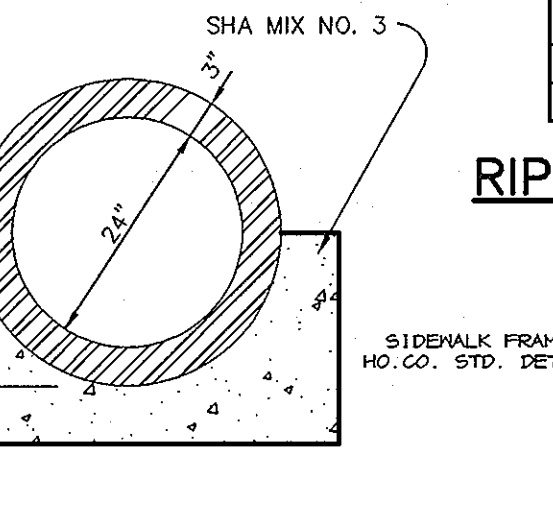
PERMANENT DRAW DOWN DEVICE

NO SCALE



RIPRAP OUTLET PROTECTION DETAIL

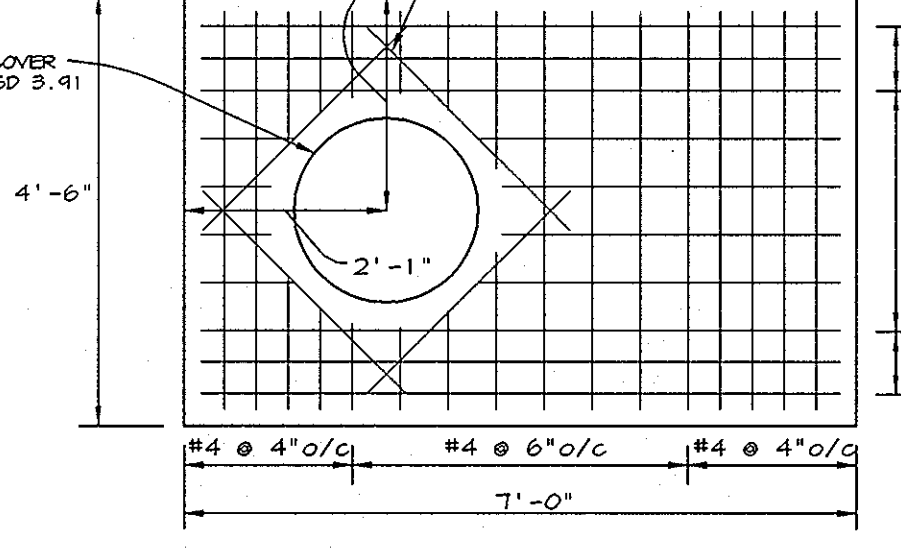
NO SCALE



A-2 CONCRETE CRADLE

NO SCALE

STRUCTURE	MEDIAN STONE DIA.	LENGTH (L)	WIDTH (W)	THICKNESS (T)
E-1	9.5'	10'	6'	20"
E-2	9.5'	10'	6'	20"



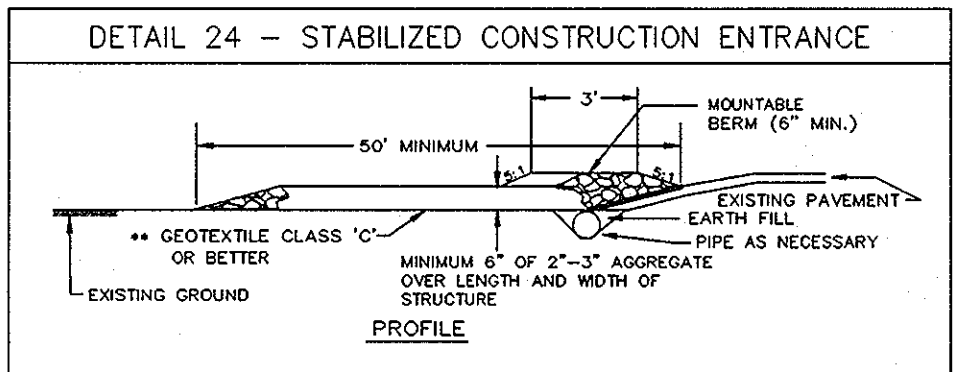
TOP SLAB - S-1

- SCALE: 1"=2'
- NOTES:
1. SLAB REINFORCING 1" CLEAR FROM BOTTOM AND 2" CLEAR FROM SIDES.
  2. MIX NO. 2 CONCRETE.

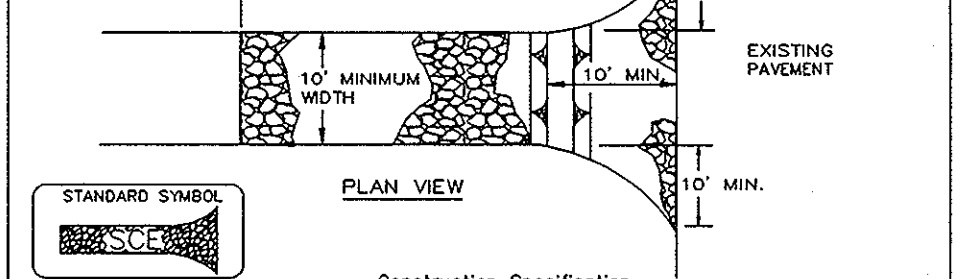
STRUCTURE SCHEDULE

STRUCTURE	TYPE	LOCATION	INV. IN	INV. OUT	TOP	REMARKS
I-1	20' COB	N 543,841.67 E 1,305,872.61	578.40	578.30	582.00 @ 2.1%	MSHA STD. DET. MD-374.31
I-2	A-5 INLET	N 543,613.45 E 1,305,684.86	-	575.52	581.38	HOCO STD. DETAIL SD 4.11
M-1	4' SMALL ON MANHOLE	N 543,666.78 E 1,305,765.46	575.73	575.63	580.36	HOCO STD. DETAIL 6 5.12
E-1	24\"/>					
E-2	15\"/>					
S-1	SNM CONTROL STRUCTURE	N 543,704.56 E 1,305,761.61	-	-	-	SEE THIS SHEET

- NOTES:
1. LOCATION AND ELEVATION OF I-1 IS AT CENTER OF CURB OPENING AT FACE OF CURB.
  2. TOP ELEVATION IS TOP OF CURB, GRATE OR RIM.
  3. TOP ELEVATION FOR I-2 IS AT THROAT OPENING.

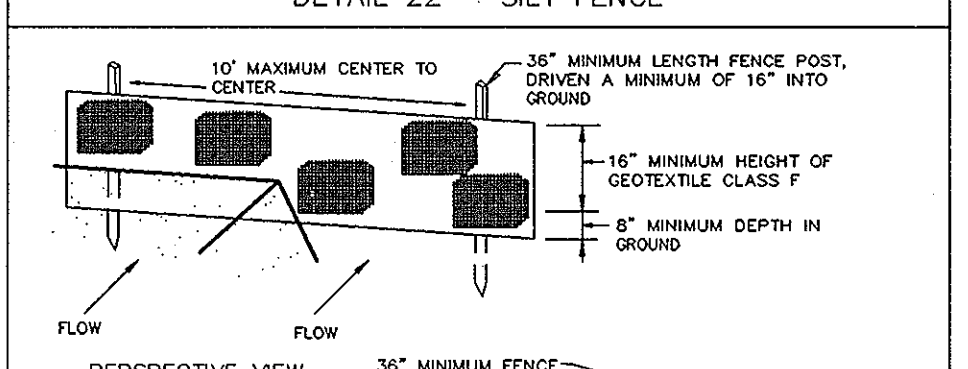


DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



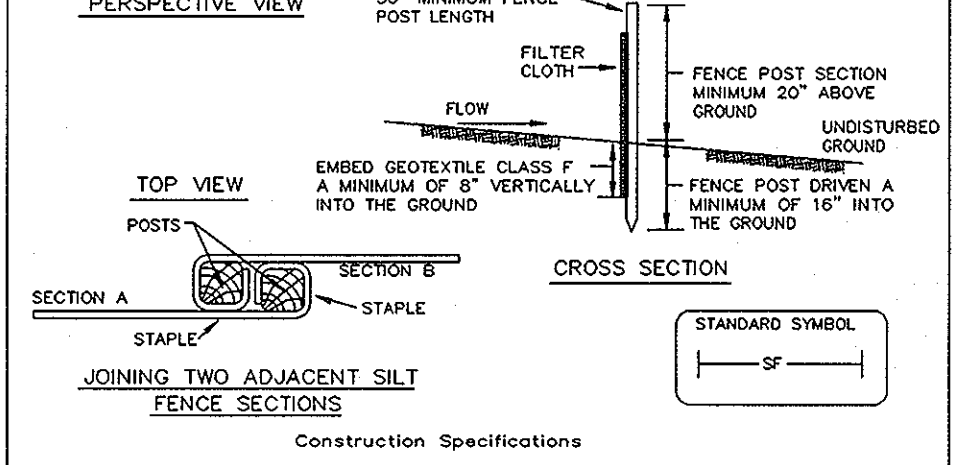
DETAIL 22 - SILT FENCE

- Construction Specifications
1. Length - minimum of 50' (+30' for single residence lot).
  2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.
  3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. The plan approval authority may not require single family residences to use geotextile.
  4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
  5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
  6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.
- U.S. DEPARTMENT OF AGRICULTURE PAGE 1-17-3 MARYLAND DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES WATER MANAGEMENT ADMINISTRATION



CONCRETE ANTI-SEEP COLLAR

NO SCALE



CORE TRENCH DETAIL

NO SCALE

BY THE DEVELOPER:

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

*W. K. Kuntz* 6.5.98  
DEVELOPER DATE

BY THE ENGINEER:

I 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.

*Sub. E. Mung* 6.9.98  
ENGINEER DATE

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

*Charles S. Immons* 6/11/98  
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*John R. Platter* 6/11/98  
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Ang S. Smith* 6/11/98  
DIRECTOR DATE

*John S. Immons* 6/11/98  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Andy Hammit* 6/11/98  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER/DEVELOPER

BOARD OF EDUCATION OF HOWARD COUNTY  
10910 ROUTE 108  
ELLCOTT CITY, MD 21042

PROJECT

GLENWOOD MIDDLE SCHOOL/  
BUSHY PARK ELEM. SCHOOL  
DRIVEWAY AND PARKING ADDITION

AREA

PARCELS 153 & 198  
TAX MAP 14, BLOCKS 10 & 16  
4th ELECTION DISTRICT  
ZONED RC-DEO

TITLE

PROFILES AND DETAILS

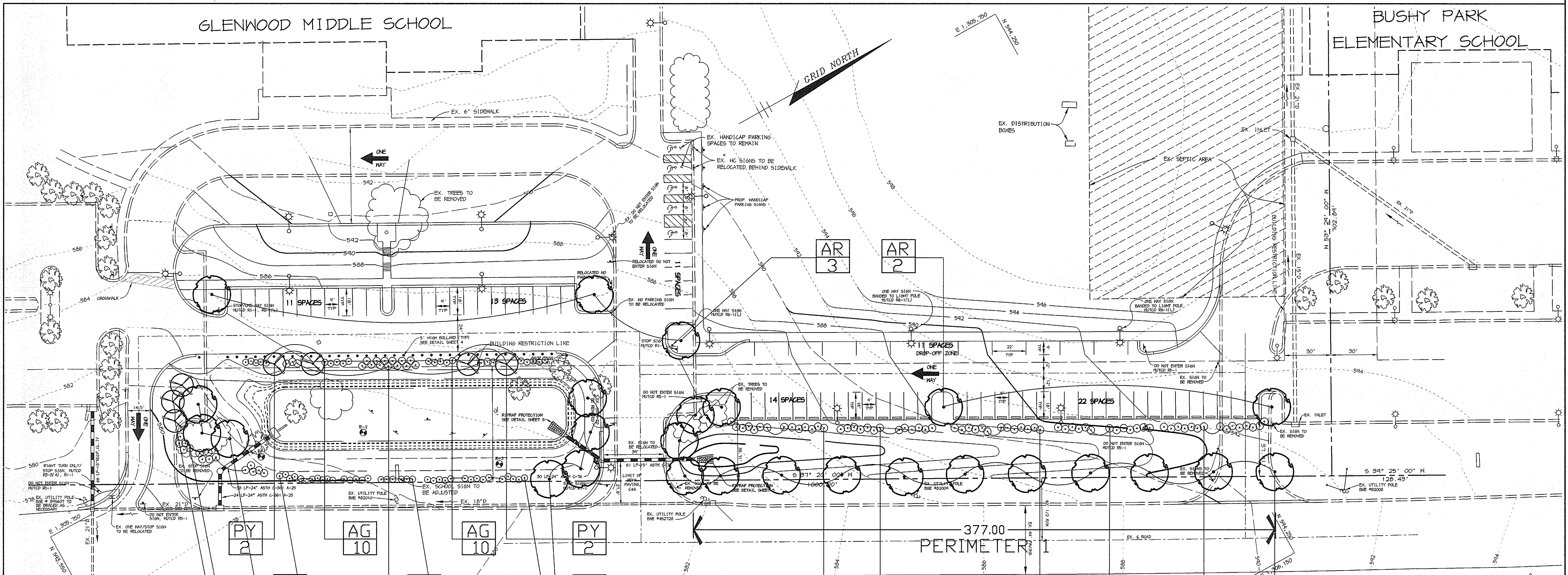
RIEMER MUEGGE & ASSOCIATES, INC.  
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
8818 Centre Park Drive, Columbia, Maryland 21045  
tel 410.997.8900 fax 410.997.9282

DATE	DESIGNED BY:
	CJR
DATE	DRAWN BY:
	RPP
DATE	PROJECT NO.:
	97178
DATE	SCALE:
	AS SHOWN
DATE	DRAWING NO.:
	5 OF 6



GLENWOOD MIDDLE SCHOOL

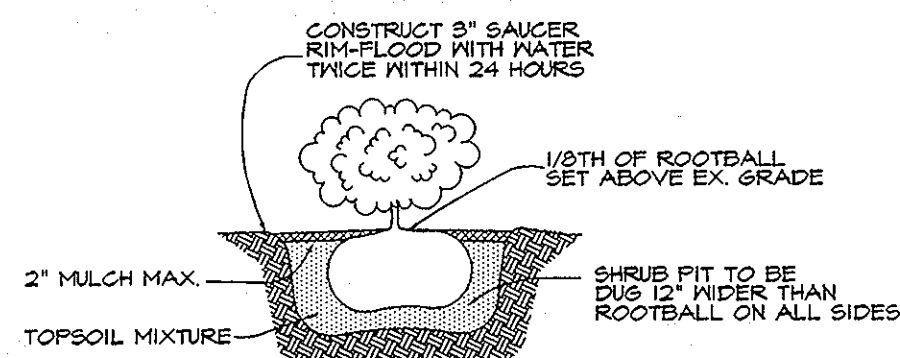
BUSHY PARK  
ELEMENTARY SCHOOL



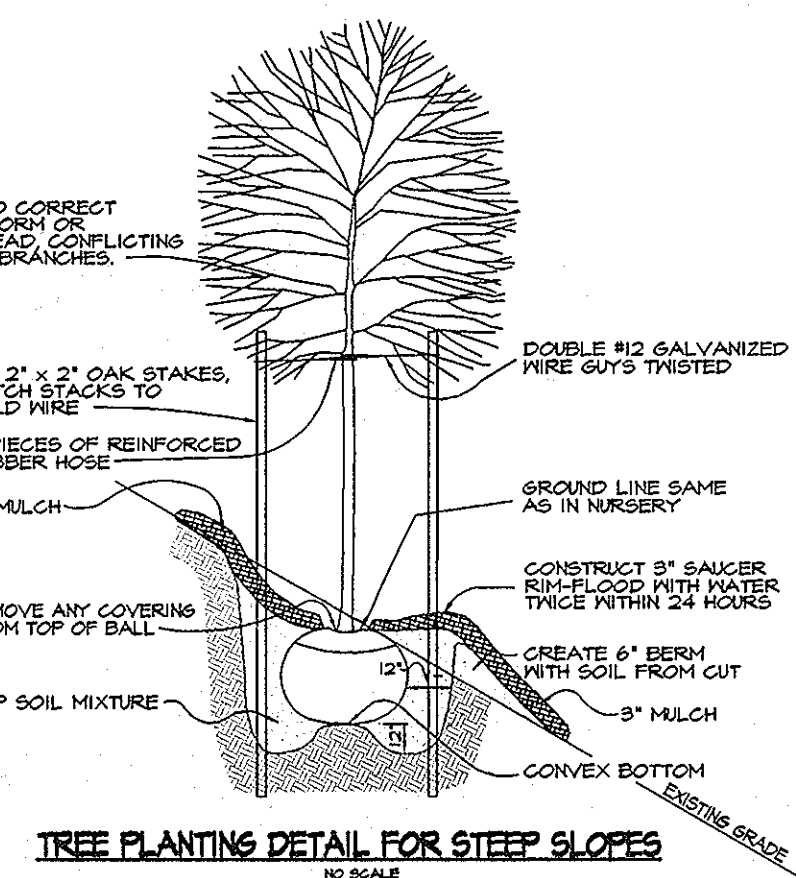
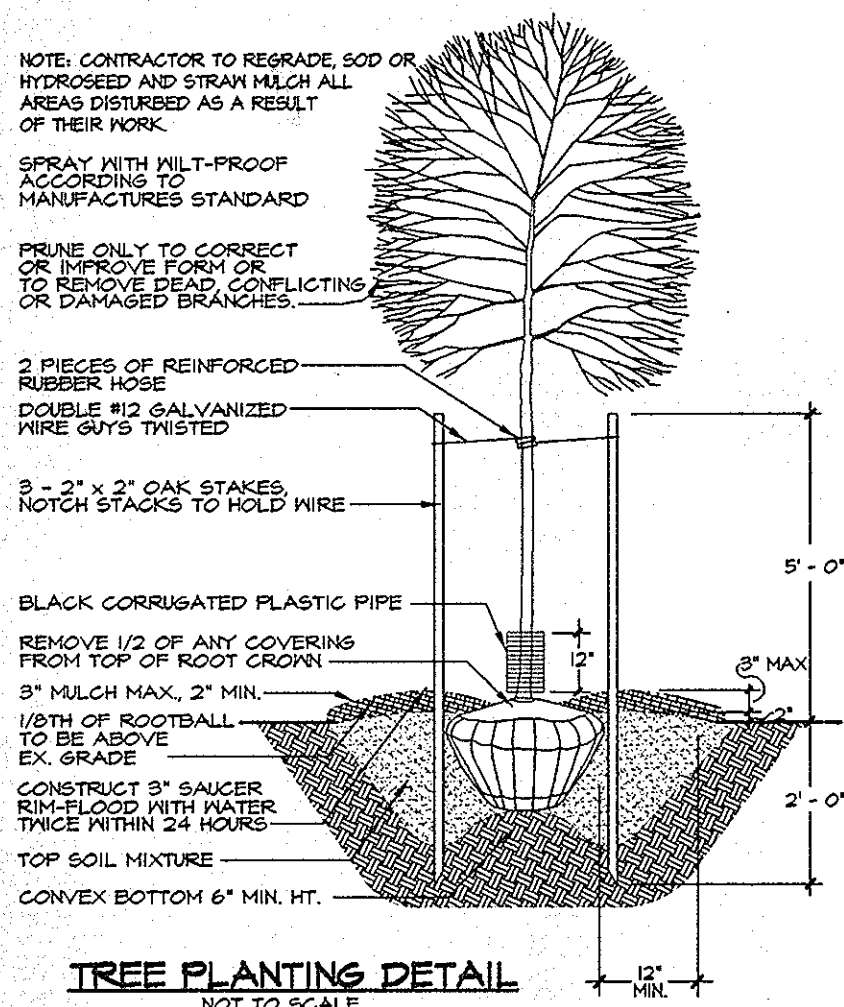
GENERAL LEGEND

- PROPOSED SHADE TREE
- PROPOSED FLOWERING TREE
- PROPOSED SHRUB
- EXISTING TREES
- EXISTING TREE

SHRUB PLANTING DETAIL



TREE PLANTING DETAIL



SCHEDULE A PERIMETER LANDSCAPE EDGE	
	ADJACENT TO ROADWAYS
PERIMETER	1
LANDSCAPE TYPE	E
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	± 371 LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO
NUMBER OF PLANTS PROVIDED	13
SHADE TREES	0
EVERGREEN TREES	0
SMALL FLOWERING TREES	0
SHRUBS	68

SCHEDULE A - SUBSTITUTION NOTES:  
PERIMETER I:  
4 SHADE TREES WERE SUBSTITUTED FOR 26 SHRUBS.

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
NUMBER OF PARKING SPACES	83
NUMBER OF SHADE TREES REQUIRED (@ 1 S.T./20 SPACES)	4
NUMBER OF TREES PROVIDED	6
SHADE TREES (@ 1/50')	0
OTHER TREES (2:1 SUBSTITUTION)	6
NUMBER OF ISLANDS REQUIRED (1 ISLAND/20 SPACES)	4
NUMBER OF ISLANDS PROVIDED	6

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING	
LINEAR FEET OF PERIMETER	520'
NUMBER OF TREES REQUIRED (@ TYPE B BUFFER)	10
SHADE TREES (@ 1/50')	13
EVERGREEN TREES (@ 1/40')	NO
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF TREES PROVIDED	7
SHADE TREES	0
EVERGREEN TREES (2:1 SUBSTITUTION)	1
FLOWERING TREES (2:1 SUBSTITUTION)	40
SHRUBS (10:1 SUBSTITUTION)	NO

SCHEDULE D - SUBSTITUTION NOTES:  
7 FLOWERING TREES WERE SUBSTITUTED FOR 7 EVERGREEN TREES.  
30 SHRUBS WERE SUBSTITUTED FOR 3 SHADE TREES.  
60 SHRUBS WERE SUBSTITUTED FOR 6 EVERGREEN TREES.

PLANT MATERIAL LIST					
KEY	QTY	BOTANICAL + COMMON NAME	SIZE	ROOT	REMARKS
<b>SHADE TREES</b>					
AR	23	Acer rubrum 'October Glory'	2½" - 3" Cal.	B & B	Full Crown Central Leader
		October Glory Red Maple			
QP	3	Quercus palustris	2½" - 3" Cal.	B & B	Full Crown Central Leader
		Pin Oak			
<b>FLOWERING TREES</b>					
FY	7	Prunus yedoensis	1½" - 2" Cal.	B & B	Specimen
		Yoshino Cherry			
<b>SHRUBS</b>					
AG	33	Abelia grandiflora 'Edward Goucher'	2½" - 3" Ht.	B & B	Full, Round
		Edward Goucher Abelia			
EA	41	Evonymus alatus 'compacta'	2½" - 3" Ht.	B & B	Full, Round
		Compact Burning Bush			
IC	36	Ilex crenata 'hoogendorn'	2½" - 3" Ht.	B & B	Full, Round
		Hoogendorn Holly			
VJ	29	Viburnum x Juddi	2½" - 3" Ht.	B & B	Full, Round
		Juddi Viburnum			
VR	19	Viburnum rhytidophyllum	2½" - 3" Ht.	B & B	Full, Round
		Leatherleaf Viburnum			

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*James S. Smith* 6/11/98  
DIRECTOR DATE

*Michael D. Summers* 6/11/98  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Candy Harvatta* 6/11/98  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE NO. REVISION

OWNER/DEVELOPER  
BOARD OF EDUCATION OF HOWARD COUNTY  
10910 ROUTE 108  
ELLCOTT CITY, MD 21042

PROJECT  
GLENWOOD MIDDLE SCHOOL/  
BUSHY PARK ELEM. SCHOOL  
DRIVEWAY AND PARKING ADDITION

AREA  
PARCELS 153 & 198  
TAX MAP 14, BLOCKS 10 & 16  
4th ELECTION DISTRICT  
ZONED RC-DEO

TITLE  
LANDSCAPE PLAN

RIEMER MUEGGE & ASSOCIATES, INC.  
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
8818 Centre Park Drive, Columbia, Maryland 21045  
tel 410.997.8900 fax 410.997.9282

DATE 6-4-98

DESIGNED BY: D.T.D.

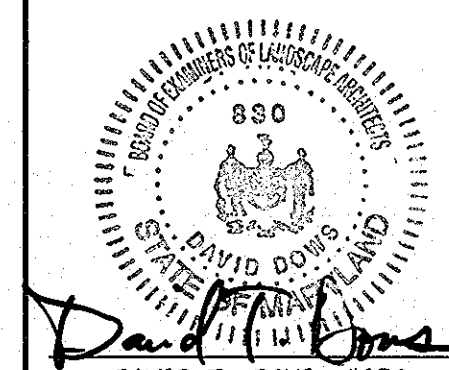
DRAWN BY: A.J.L.

PROJECT NO.: 97178  
LSCP.DWG

DATE: JUNE 4, 1998

SCALE: 1" = 30'

DRAWING NO. 6 OF 6



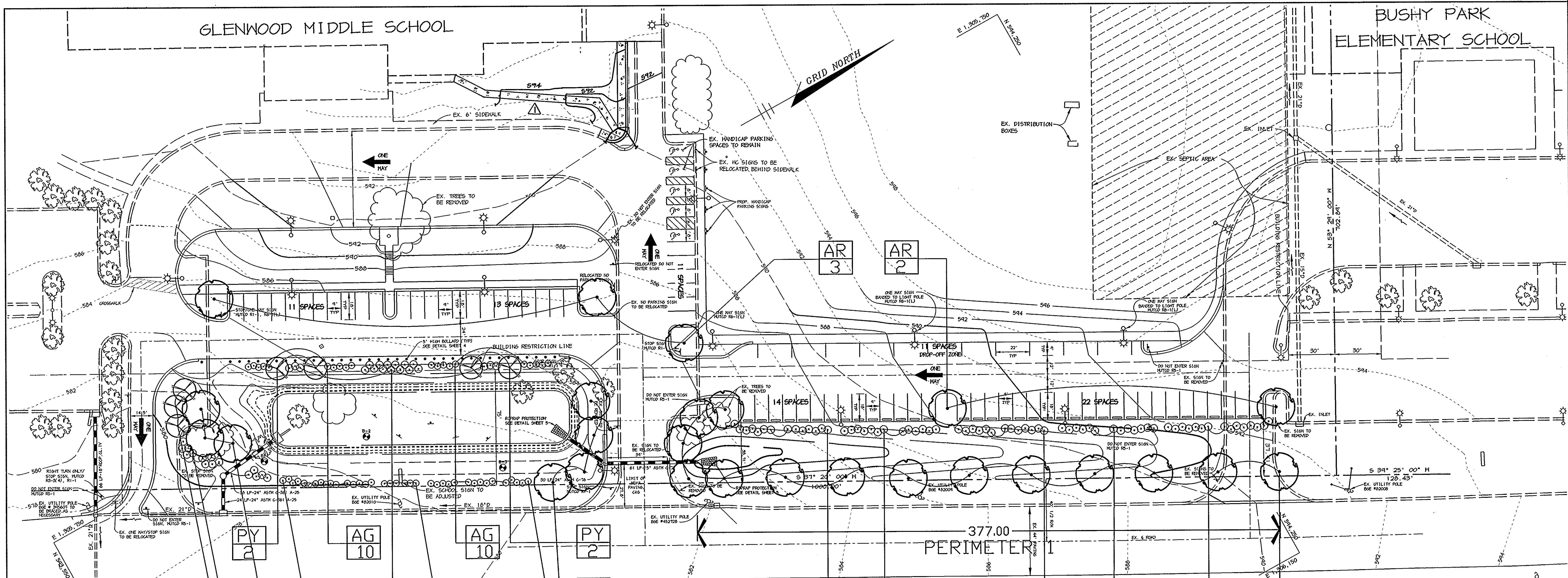
NOTES: THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.

K:\PROJECTS\97178\LSCP Thu Jun 4 15:15:05 1998 RIEMER MUEGGE & ASSOCIATES, INC.



GLENWOOD MIDDLE SCHOOL

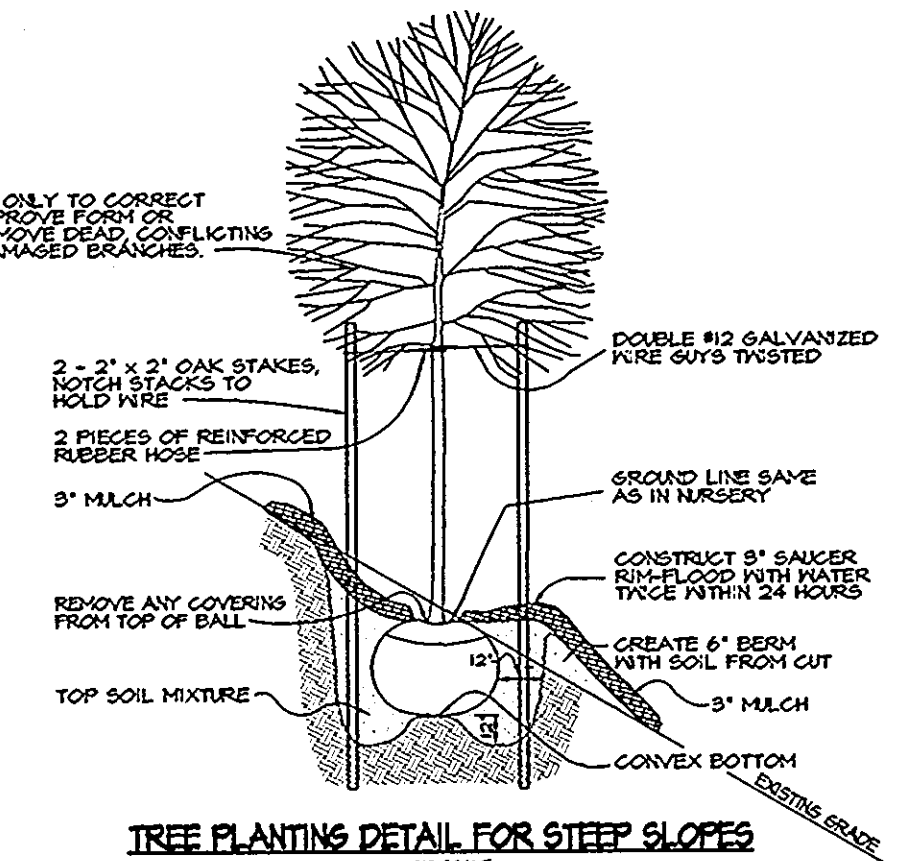
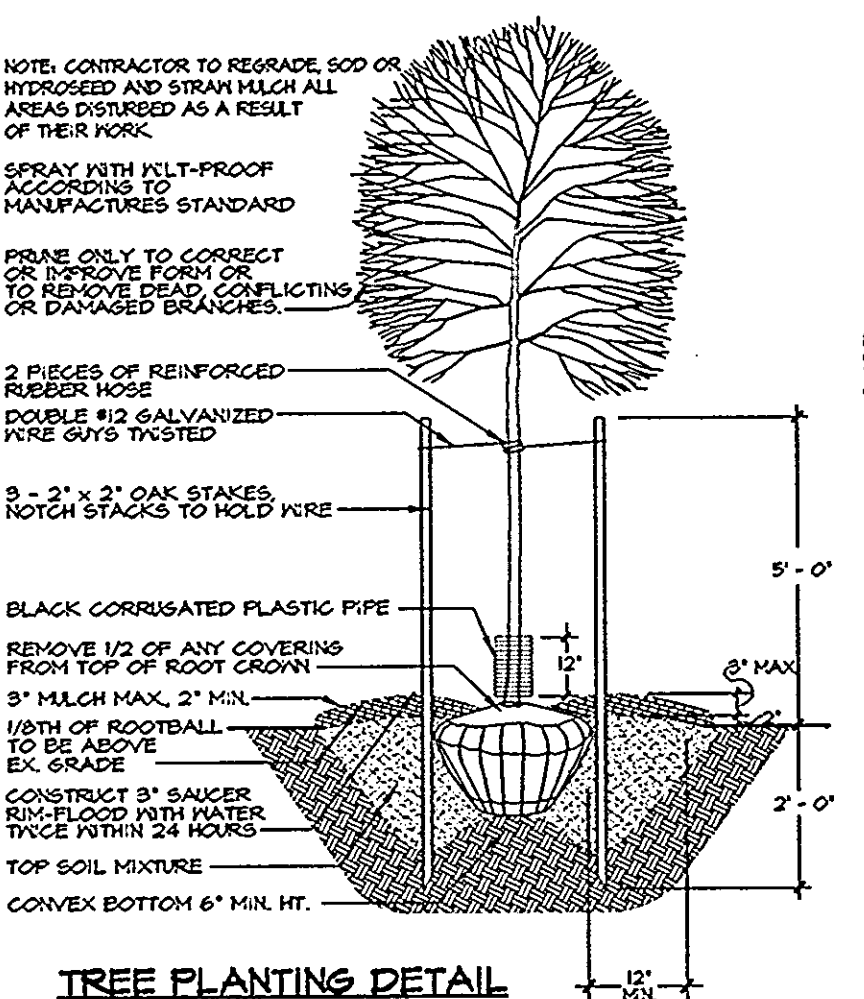
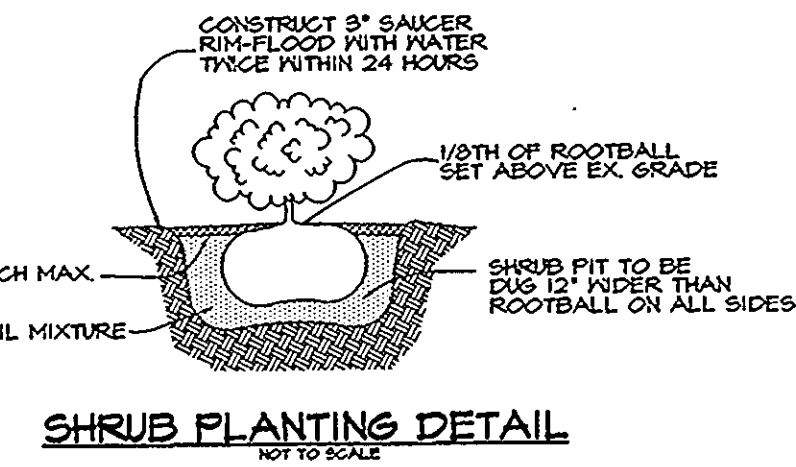
BUSHY PARK ELEMENTARY SCHOOL



MARYLAND ROUTE 97  
INTERMEDIATE ARTERIAL  
80' R/W  
MARYLAND STATE HIGHWAY

GENERAL LEGEND

- PROPOSED SHADE TREE
- PROPOSED FLOWERING TREE
- PROPOSED SHRUB
- EXISTING TREES
- EXISTING TREE



SCHEDULE A PERIMETER LANDSCAPE EDGE

	ADJACENT TO ROADWAYS
PERIMETER	1
LANDSCAPE TYPE	E
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	± 371 LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO
NUMBER OF PLANTS PROVIDED	
SHADE TREES	0 1/4" = 1
EVERGREEN TREES	0
SHRUBS	0 1/4" = 94
NUMBER OF PLANTS PROVIDED	
SHADE TREES	13
EVERGREEN TREES	0
SMALL FLOWERING TREES	0
SHRUBS	60

SCHEDULE A - SUBSTITUTION NOTES:  
PERIMETER I  
4 SHADE TREES WERE SUBSTITUTED FOR 36 SHRUBS.

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	83
NUMBER OF SHADE TREES REQUIRED (@ 1 S.T./20 SPACES)	4
NUMBER OF TREES PROVIDED	
SHADE TREES	6
OTHER TREES (2:1 SUBSTITUTION)	0
NUMBER OF ISLANDS REQUIRED (1 ISLAND/ 20 SPACES)	4
NUMBER OF ISLANDS PROVIDED	6

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

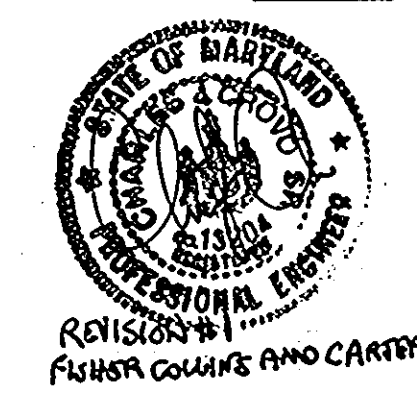
LINEAR FEET OF PERIMETER	520'
NUMBER OF TREES PROVIDED	
SHADE TREES (@ TYPE B BUFFER)	10
SHADE TREES (@ 1/150')	13
EVERGREEN TREES (@ 1/140')	0
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF TREES PROVIDED	
SHADE TREES	1
EVERGREEN TREES (2:1 SUBSTITUTION)	1
FLOWERING TREES (2:1 SUBSTITUTION)	1
SHRUBS (10:1 SUBSTITUTION)	40

SCHEDULE D - SUBSTITUTION NOTES:  
1 FLOWERING TREES WERE SUBSTITUTED FOR 1 EVERGREEN TREES.  
30 SHRUBS WERE SUBSTITUTED FOR 3 SHADE TREES.  
60 SHRUBS WERE SUBSTITUTED FOR 6 EVERGREEN TREES.

PLANT MATERIAL LIST

KEY	QTY	BOTANICAL + COMMON NAME	SIZE	ROOT	REMARKS
<b>SHADE TREES</b>					
AR	23	Acer rubrum 'October Glory' October Glory Red Maple	2 1/2" - 3" Cal.	B & B	Full Crown Central Leader
QP	3	Quercus palustris Pin Oak	2 1/2" - 3" Cal.	B & B	Full Crown Central Leader
<b>FLOWERING TREES</b>					
PY	7	Prunus yedoensis Yoshino Cherry	1 1/2" - 2" Cal.	B & B	Specimen
<b>SHRUBS</b>					
AG	33	Abelia grandiflora 'Edward Goucher' Edward Goucher Abelia	2 1/2" - 3" Ht.	B & B	Full, Round
EA	41	Evonymus alatus 'compacta' Compact Burning Bush	2 1/2" - 3" Ht.	B & B	Full, Round
IC	36	Ilex creata 'Hoopendorn' Hoopendorn Holly	2 1/2" - 3" Ht.	B & B	Full, Round
VJ	29	Viburnum x Juddi Juddi Viburnum	2 1/2" - 3" Ht.	B & B	Full, Round
VR	19	Viburnum rhytidophyllum Leatherleaf Viburnum	2 1/2" - 3" Ht.	B & B	Full, Round

NOTES: THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
 Director: *John S. Smith* 6/11/98 DATE  
 Chief, Development Engineering Division: *David T. Doms* 6/11/98 DATE  
 Chief, Division of Land Development: *Candy Hamilton* 6/11/98 DATE

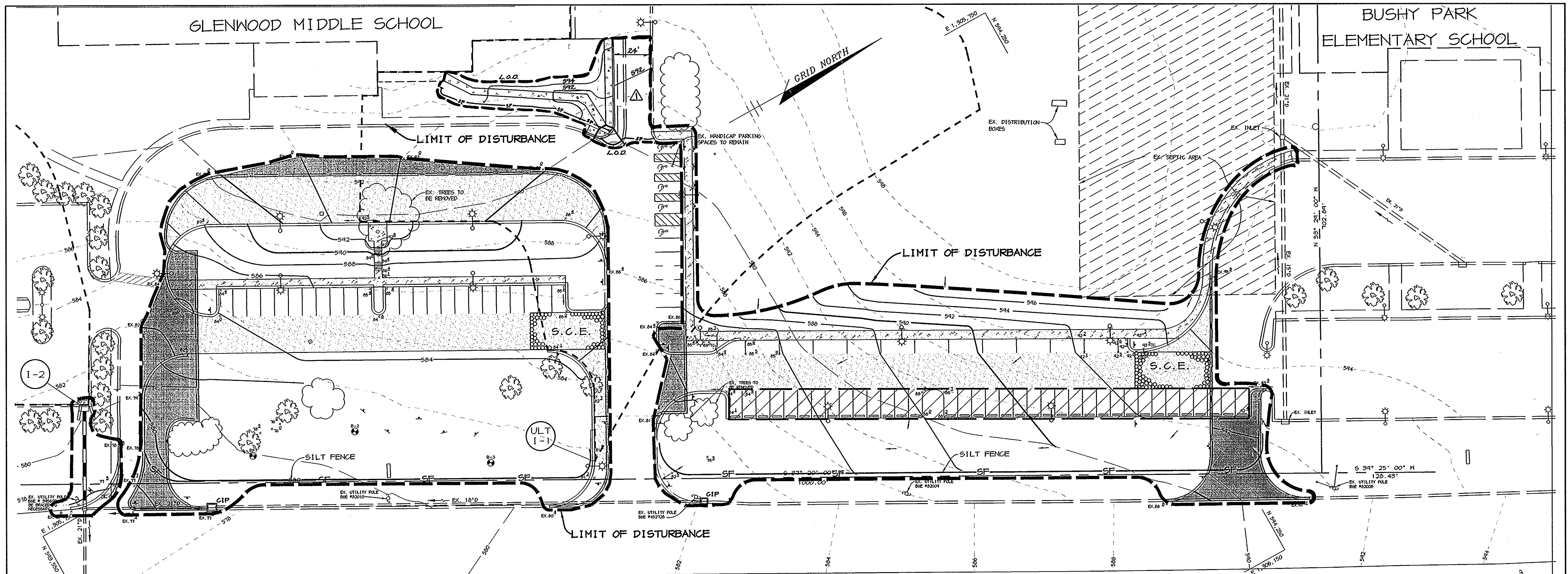
4/10/8 1 Revise Sidewalk & widen Driveway  
 DATE NO. REVISION  
 OWNER/DEVELOPER  
 BOARD OF EDUCATION OF HOWARD COUNTY  
 10910 ROUTE 108  
 ELLICOTT CITY, MD 21042

PROJECT  
 GLENWOOD MIDDLE SCHOOL/  
 BUSHY PARK ELEM. SCHOOL  
 DRIVEWAY AND PARKING ADDITION  
 AREA PARCELS 153 & 198  
 TAX MAP 14, BLOCKS 10 & 16  
 4th ELECTION DISTRICT  
 ZONED RC-DEO  
 TITLE  
 LANDSCAPE PLAN

RIEMER MUEGGE & ASSOCIATES, INC.  
 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
 8818 Centre Park Drive, Columbia, Maryland 21045  
 tel 410.997.8900 fax 410.997.9282

6-4-98 DATE  
 DESIGNED BY: D.T.D.  
 DRAWN BY: A.J.L.  
 PROJECT NO.: 97178  
 LSCP.DWG  
 DATE: JUNE 4, 1998  
 SCALE: 1" = 30'  
 DRAWING NO.: 6 OF 6





EX. I-1 GRATE TO BE RAISED TO PROPOSED GRADES  
 REPLACE GRATE WITH RECTANGULAR GRATE  
 NO. 314-02

**LEGEND**

- SF-SF- SILT FENCE
- LIMIT OF DISTURBANCE
- S.C.E. STABILIZED CONSTRUCTION ENTRANCE
- - - - STORM DRAIN DRAINAGE AREA
- CIP CURB INLET PROTECTION

NOTE: SEE SHEET 2 FOR FINAL GRADING AND STORM DRAIN LAYOUT.

NOTE: CONTRACTOR TO MAINTAIN ACCESS TO MIDDLE SCHOOL AT ALL TIMES DURING CONSTRUCTION.

MARYLAND ROUTE 97  
 INTERMEDIATE ARTERIAL  
 80' R/W  
 MARYLAND STATE HIGHWAY

PLAN  
 SCALE: 1"=30'



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 DIRECTOR: *[Signature]* 6/11/99 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* 6/11/98 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* 6/11/98 DATE

**DRAINAGE AREA TABULATIONS**

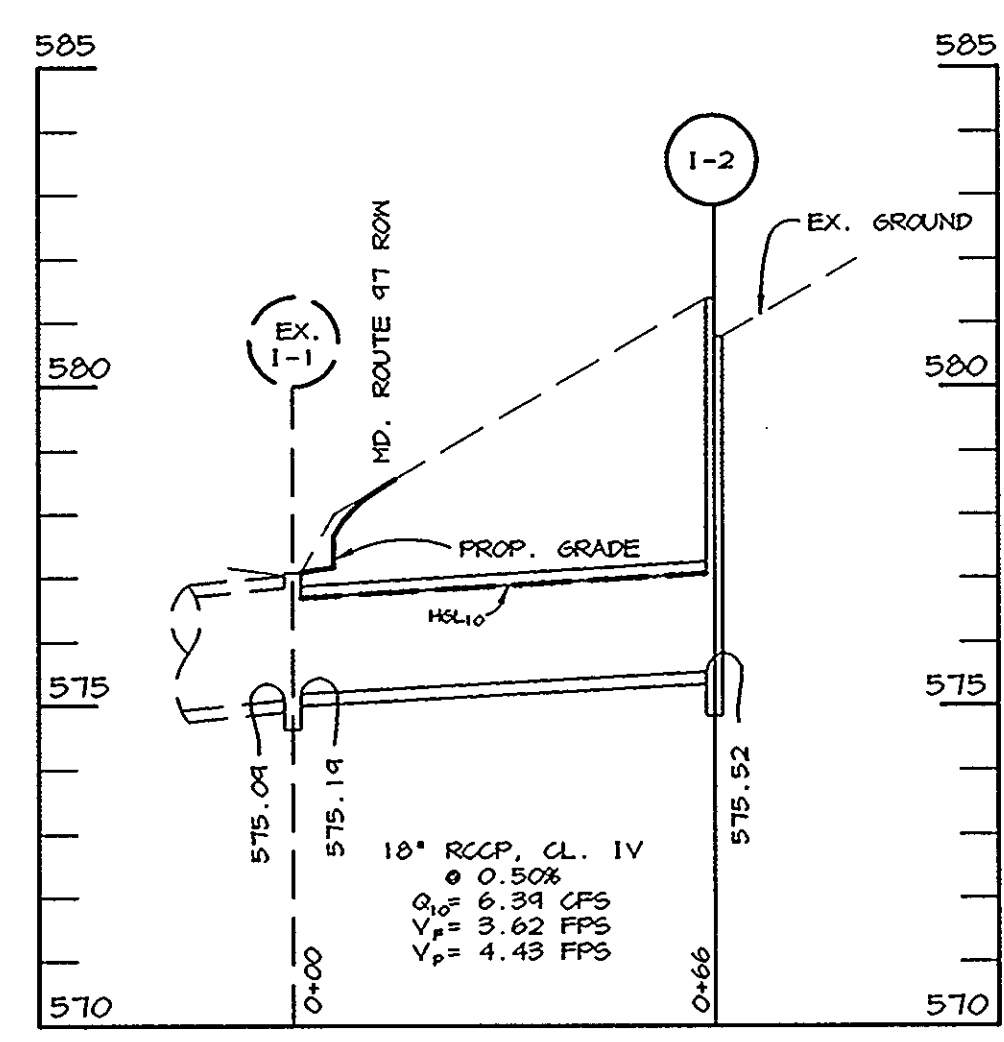
D.A. #	DRAINAGE AREA (AC.)	"C"	% IMP.
I-1	2.44	0.35	26.6
I-2	2.11	0.31	21.8

NOTE: ALL ON-SITE SOILS ARE TYPE 'B'.

BORING	SOIL DESCRIPTION
BORING B-1	0' - FILL - SAMPLED AS SILT, TRACE SAND, TRACE CLAY, DARK BROWN, MOIST, STIFF, (FILL/ML) 2.5' - POSSIBLE FILL - SAMPLED AS SANDY LEAN CLAY, ORANGISH BROWN, MOIST, STIFF, (CL) 5' - SANDY SILT, LITTLE MICA, YELLOWISH BROWN, MOIST, MEDIUM STIFF TO STIFF, (ML), SAPROLITIC 15' - END OF BORING @ 15.0'
BORING B-2	0' - FILL - SAMPLED AS SILT, TRACE SAND, TRACE CLAY, DARK BROWN, MOIST, MEDIUM STIFF, (FILL/ML) 2.5' - SANDY LEAN CLAY, ORANGISH BROWN, MOIST, STIFF, (CL) 5' - SILTY SAND, GRAYISH TO ORANGISH BROWN, MOIST TO WET, LOOSE TO MEDIUM DENSE, (SM), SAPROLITIC 15' - END OF BORING @ 15.0'
BORING B-3	0' - SILTY SAND, TRACE MICA, GRAYISH BROWN, MOIST TO WET, LOOSE TO MEDIUM DENSE, (SM), SAPROLITIC ROCK FRAGMENTS AT 2.0 FEET WET BELOW 8.0 FEET EXTREMELY DENSE AT 13.5 FEET 15' - END OF BORING @ 15.0'

**SEQUENCE OF CONSTRUCTION**

1. OBTAIN GRADING PERMIT.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE. (1 DAY)
3. REMOVE EXISTING CURB AND EXISTING PAVING WHERE NECESSARY AND ROUGH GRADE SITE PER SHEET 3. (7 DAYS)
4. FOUR NEW CURB AND GUTTER AND INSTALL AND COMPACT SIDEWALK AND ROADWAY SUB-BASES. (5 DAYS)
5. PAVE ROADWAY AND POUR SIDEWALK. (4 DAYS)
6. GRADE AREA FOR STORMWATER MANAGEMENT FACILITY PER SHEET 2 AND INSTALL STORM DRAIN. (5 DAYS)
7. STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (3 DAYS)
8. WITH PERMISSION OF HOWARD COUNTY DILP SEDIMENT CONTROL INSPECTOR REMOVE SEDIMENT CONTROL DEVICES AND STABILIZE REMAINING DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 DAYS)



**STORM DRAIN PROFILE**

SCALE: HOR. 1"=30'  
 VERT. 1"=3'

BY THE DEVELOPER:  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*J.C. Kierulff* 6.5.98 DATE  
 DEVELOPER

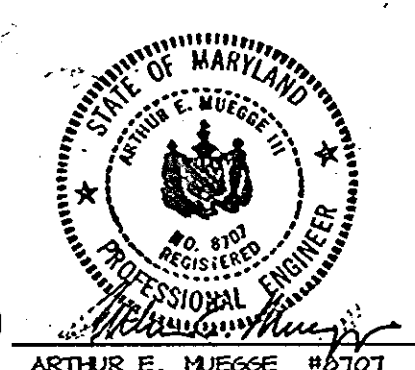
BY THE ENGINEER:  
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
*Arthur E. Muesse* 6.9.98 DATE  
 ENGINEER

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.  
*Cheryl Simmons* 6/11/98 DATE  
 NATURAL RESOURCES CONSERVATION SERVICE  
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*John R. Robertson* 6/11/98 DATE  
 HOWARD SOIL CONSERVATION DISTRICT

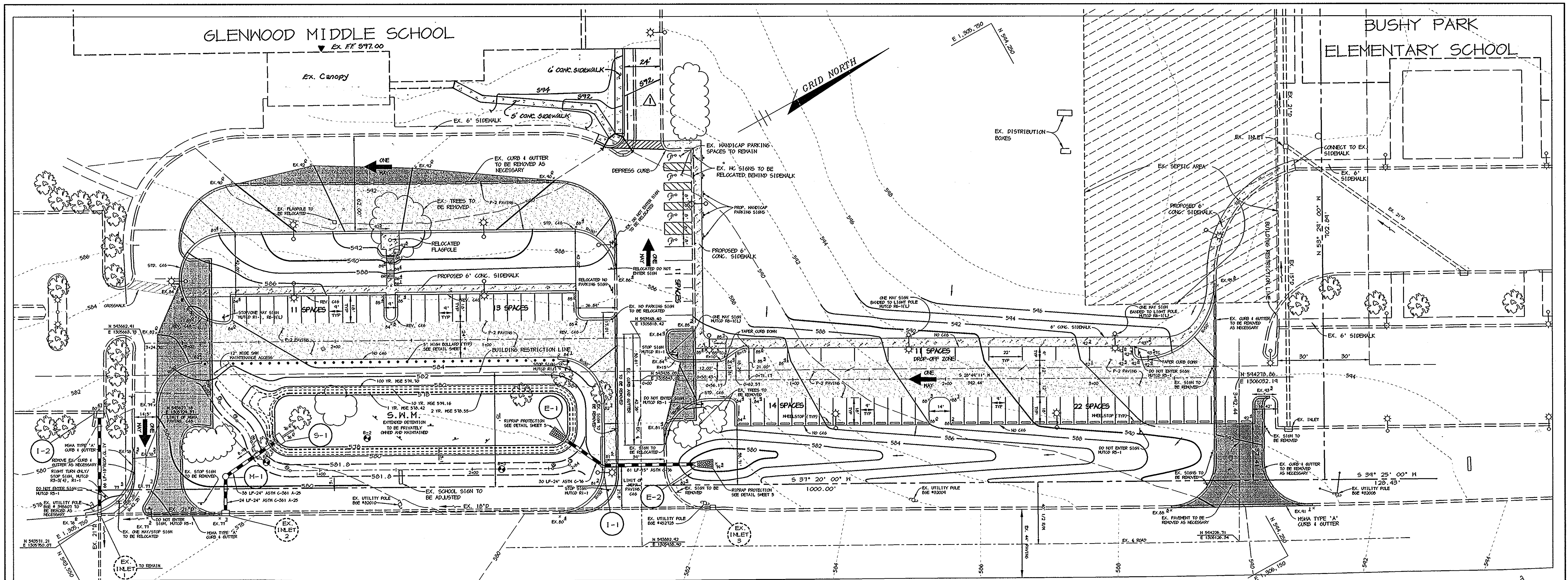
4/11/98  Revise Sidewalk & Widen Driveway  
 DATE NO. REVISION  
 OWNER/DEVELOPER  
 BOARD OF EDUCATION OF HOWARD COUNTY  
 10910 ROUTE 108  
 ELLICOTT CITY, MD 21042  
 PROJECT  
 GLENWOOD MIDDLE SCHOOL/  
 BUSHY PARK ELEM. SCHOOL  
 DRIVEWAY AND PARKING ADDITION  
 AREA  
 PARCELS 15B & 19B  
 TAX MAP 14, BLOCKS 10 & 16  
 4TH ELECTION DISTRICT  
 ZONED RC-DEO  
 TITLE

**RIEMER MUEGGE & ASSOCIATES, INC.**  
 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
 8818 Centre Park Drive, Columbia, Maryland 21045  
 tel 410.997.8900 fax 410.997.9282

DATE  
 DESIGNED BY: CJR  
 DRAWN BY: RPP  
 PROJECT NO: 97178  
 'SDP3A.DWG'  
 DATE: JUNE 4, 1998  
 SCALE: AS SHOWN  
 DRAWING NO. 3 OF 6







PLAN  
SCALE: 1"=30'

MARYLAND ROUTE 97  
INTERMEDIATE ARTERIAL  
80' R/W  
MARYLAND STATE HIGHWAY

LEGEND

- 400 WATT HIGH PRESSURE SODIUM ROADWAY (COBRAHEAD) LUMINAIRE MOUNTED ON A 25" HIGH ALUMINUM POLE
- EXISTING LIGHT POLE (W/NSB FIXTURE)
- STD. C&G W/ REV. C&G DENOTES TRANSITION BETWEEN STANDARD AND REVERSE CURB AND GUTTER
- P-2 PAVING
- EXISTING PAVING/C&G TO BE REMOVED

NOTE: CONTRACTOR TO MAINTAIN ACCESS TO MIDDLE SCHOOL AT ALL TIMES DURING CONSTRUCTION.

NOTES:

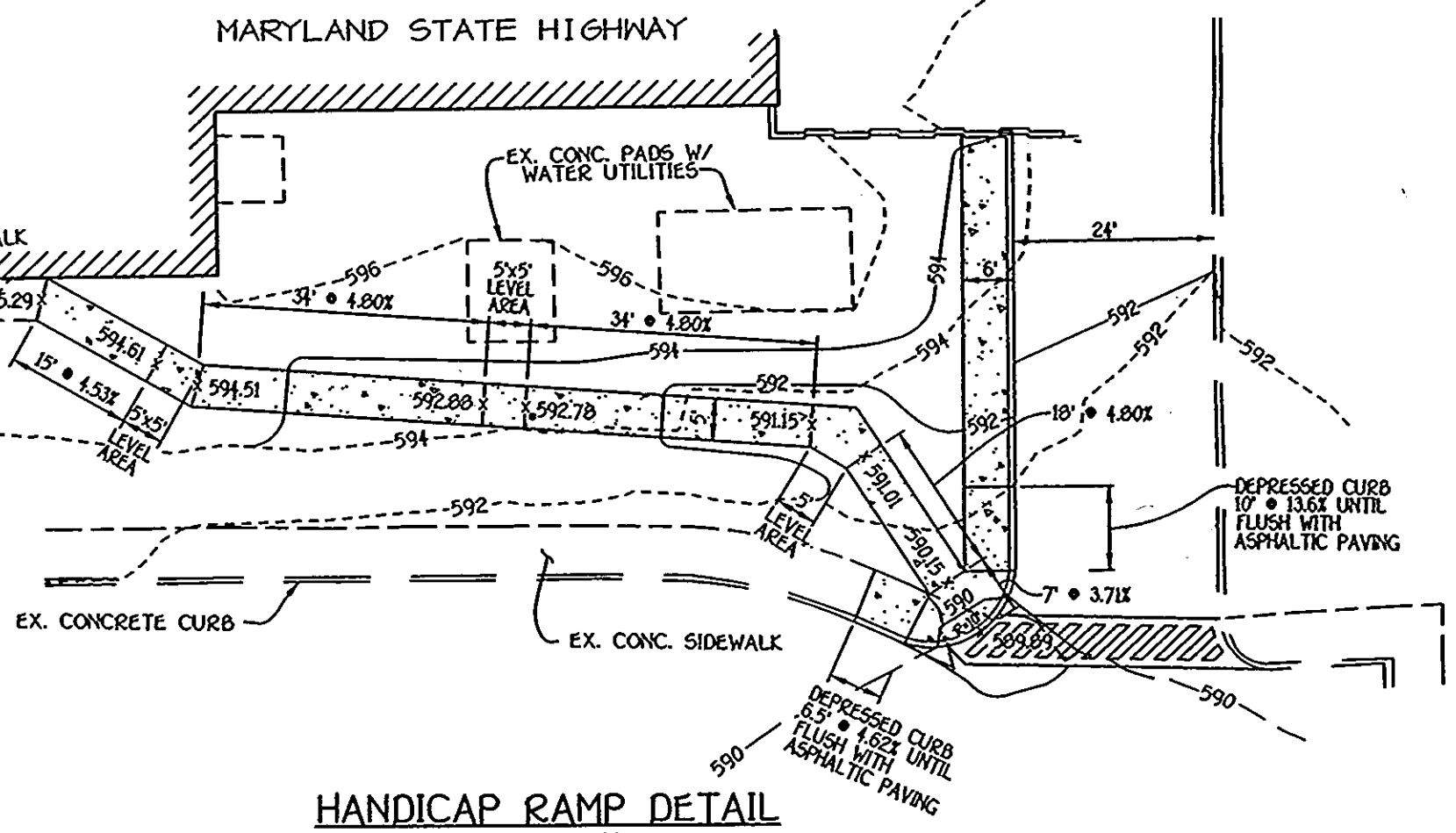
1. ALL CURB RADII ARE 5' UNLESS OTHERWISE NOTED.
2. DIMENSIONS ARE TO FACE OF BUILDINGS, FACE OF CURB OR CENTERLINE UNLESS OTHERWISE NOTED.
3. ALL LIGHTS TO BE DIRECTED/REFLECTED AWAY FROM ADJACENT PUBLIC ROADS AND RESIDENTIALLY ZONED PROPERTIES AND BE IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.
4. THE COUNTY COUNCIL APPROVED THE LOCATION OF THE 36 SPACES BETWEEN THE SCHOOLS PER RESOLUTION 07 ON JUNE 1, 2006.

DAM CENTERLINE DATA

STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION	STATION	ELEVATION
① N 593686.02	E 1305700.81	①	②	S 86° 05' 01" E	12.72'		
② N 593686.84	E 1305721.50	②	③	R = 45.00'	L = 16.73'		
③ N 593691.00	E 1305737.60	③	④	R = 25.00'	L = 17.02'		
④ N 593692.74	E 1305754.21	④	⑤	R = 26.00'	L = 34.12'		
⑤ N 593705.54	E 1305783.23	⑤	⑥	N 20° 35' 56" E	172.16'		
⑥ N 593856.70	E 1305865.64	⑥	⑦	R = 26.00'	L = 11.25'		
⑦ N 593867.41	E 1305868.75						

STORMWATER MANAGEMENT DESIGN SUMMARY

DESIGN STORM (YR.)	ALLOWABLE RELEASE (C.F.S.)	FACILITY INFLOW (C.F.S.)	FACILITY DISCHARGE (C.F.S.)	DESIGN POINT DISCHARGE ELEVATION (FT.)	WATER SURFACE ELEVATION (FT.)	STORAGE VOLUME (AC. FT.)
2	8.97	5.90	0.62	6.70	578.55	0.248
10	24.99	14.35	9.60	24.33	579.16	0.354
100	46.68	24.68	14.65	50.36	579.70	0.457



HANDICAP RAMP DETAIL  
SCALE: 1" = 20'

CONSTRUCTION SEQUENCE FOR SIDEWALK AND DRIVELANE IMPROVEMENTS

- 1) OBTAIN GRADING PERMIT.
- 2) NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-315-1330 24 HOURS BEFORE STARTING WORK.
- 3) INSTALL SEDIMENT CONTROL MEASURES SHOWN ON THE PLANS. 1 WEEK.
- 4) REMOVE EXISTING SIDEWALK, CURB AND PAVING. 2 WEEKS
- 5) GRADE TO SUBGRADE. 2 WEEKS
- 6) INSTALL PROPOSED CURB, SIDEWALK AND PAVE. 1 MONTH
- 7) FINE GRADE DISTURBED AREAS AND STABILIZE WITH PERMANENT SEEDING.
- 8) NOTIFY HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION FOR PERMISSION FOR REMOVAL OF SEDIMENT CONTROL MEASURES AND STABILIZE DISTURBED AREAS WITH PERMANENT SEEDING.

ROUTINE MAINTENANCE

1. Facility shall be inspected annually and after major storms. Inspections should be performed during wet weather to determine if the pond is functioning properly.
2. Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes, the bottom of the pond, and maintenance access should be mowed as needed.
3. Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
4. Visible signs of erosion in the pond as well as riprap outlet area shall be repaired as soon as it is noticed.

NON-ROUTINE MAINTENANCE

1. Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components should be inspected during routine maintenance operations.
2. Sediment should be removed when its accumulation significantly reduces the design storage, interferes with the function of the riser, when deemed necessary for aesthetic reasons, or when deemed necessary by the Howard County's Department of Public Works.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*John P. Smith* 4/11/08  
DIRECTOR DATE  
*William D. Williams* 4/11/08  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*Cathy Hammit* 6/11/05  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

4/11/08 A Revise Sidewalk & Widen Driveline  
DATE NO. REVISION

OWNER/DEVELOPER  
BOARD OF EDUCATION OF HOWARD COUNTY  
10910 ROUTE 108  
ELLCOTT CITY, MD 21042

PROJECT  
GLENWOOD MIDDLE SCHOOL/  
BUSHY PARK ELEM. SCHOOL  
DRIVELANE AND PARKING ADDITION

AREA PARCELS 153 & 198  
TAX MAP 14, BLOCKS 10 & 16  
4th ELECTION DISTRICT  
ZONED RC-DEO

TITLE  
**RIEMER MUEGGE & ASSOCIATES, INC.**  
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
8818 Centre Park Drive, Columbia, Maryland 21045  
tel 410.997.8900 fax 410.997.9282

DATE  
DESIGNED BY: CJR  
DRAWN BY: RPP  
PROJECT NO.: 97178  
SDP2A.DWG  
DATE: JUNE 4, 1998  
SCALE: AS SHOWN  
DRAWING NO. 2 OF 6

