

# FINAL PLAN

## VILLAGE OF RIVER HILL

### SECTION 4, AREA 1, PHASE 1

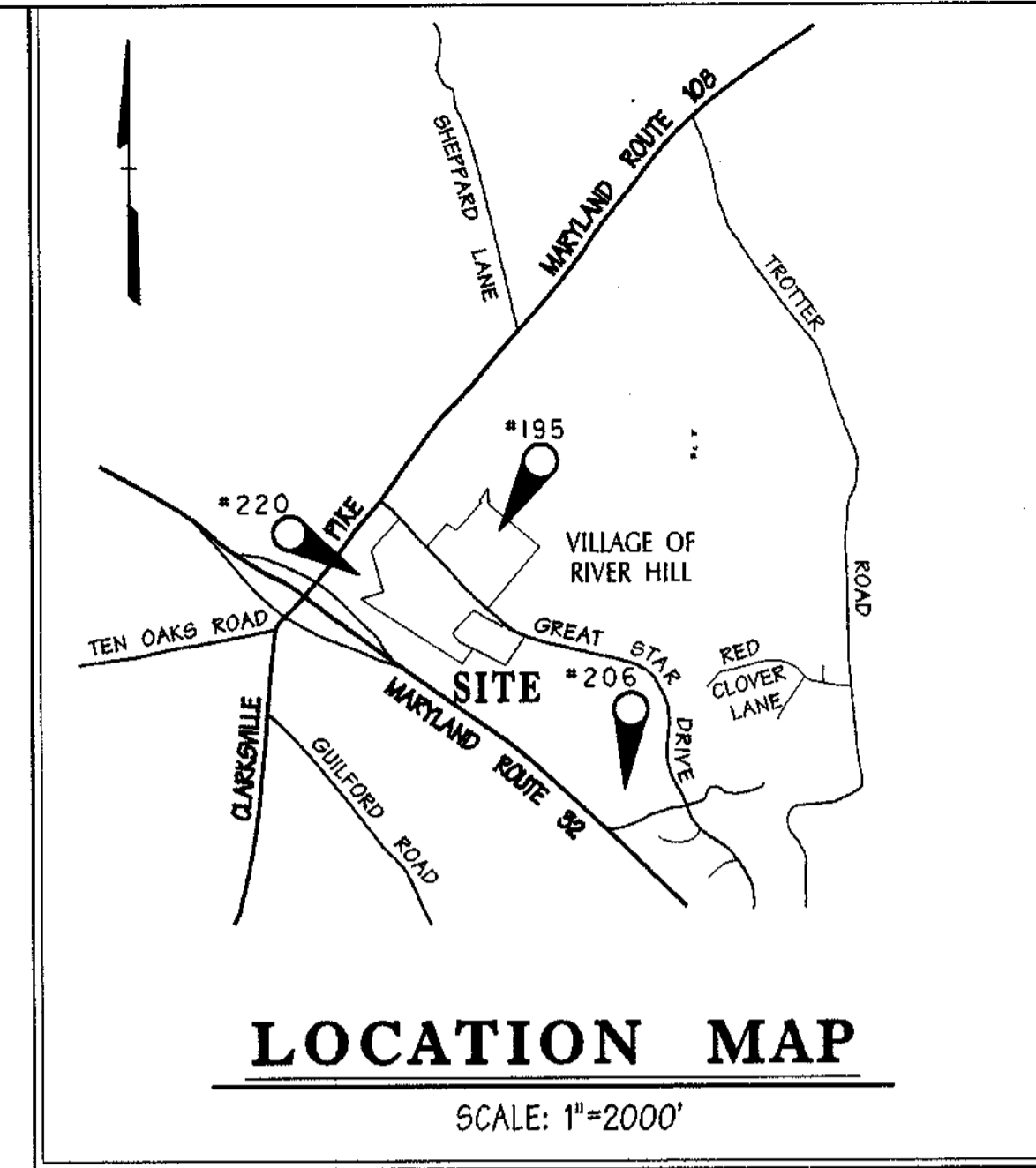
### LOTS B-68 THRU B-127 & 131

### & OPEN SPACE LOTS B-128 THRU B-130

### 5th ELECTION DISTRICT

### HOWARD COUNTY, MARYLAND

SHEET INDEX	
NO.	PLAN
1 OF 7	TITLE SHEET
2 OF 7	ROAD CONSTRUCTION PLAN & PROFILE
3 OF 7	ROAD CONSTRUCTION DETAILS
4 OF 7	STORM DRAIN PROFILES
5 OF 7	DRAINAGE AREA MAP
6 OF 7	GRADING AND SEDIMENT CONTROL PLAN
7 OF 7	SEDIMENT CONTROL DETAILS



BENCHMARK	
POINT #	DESCRIPTION
195	1/2" x 18" REBAR w/ TRAV. CAP
206	1/2" x 18" REBAR w/ TRAV. CAP
220	1/2" x 18" REBAR w/ TRAV. CAP

POINT #	DESCRIPTION	ELEV.	N	E
195	1/2" x 18" REBAR w/ TRAV. CAP	445.28	N 56932.09	E 133838.577
206	1/2" x 18" REBAR w/ TRAV. CAP	374.53	N 55936.249	E 133238.583
220	1/2" x 18" REBAR w/ TRAV. CAP	457.14	N 56238.646	E 1329635.522

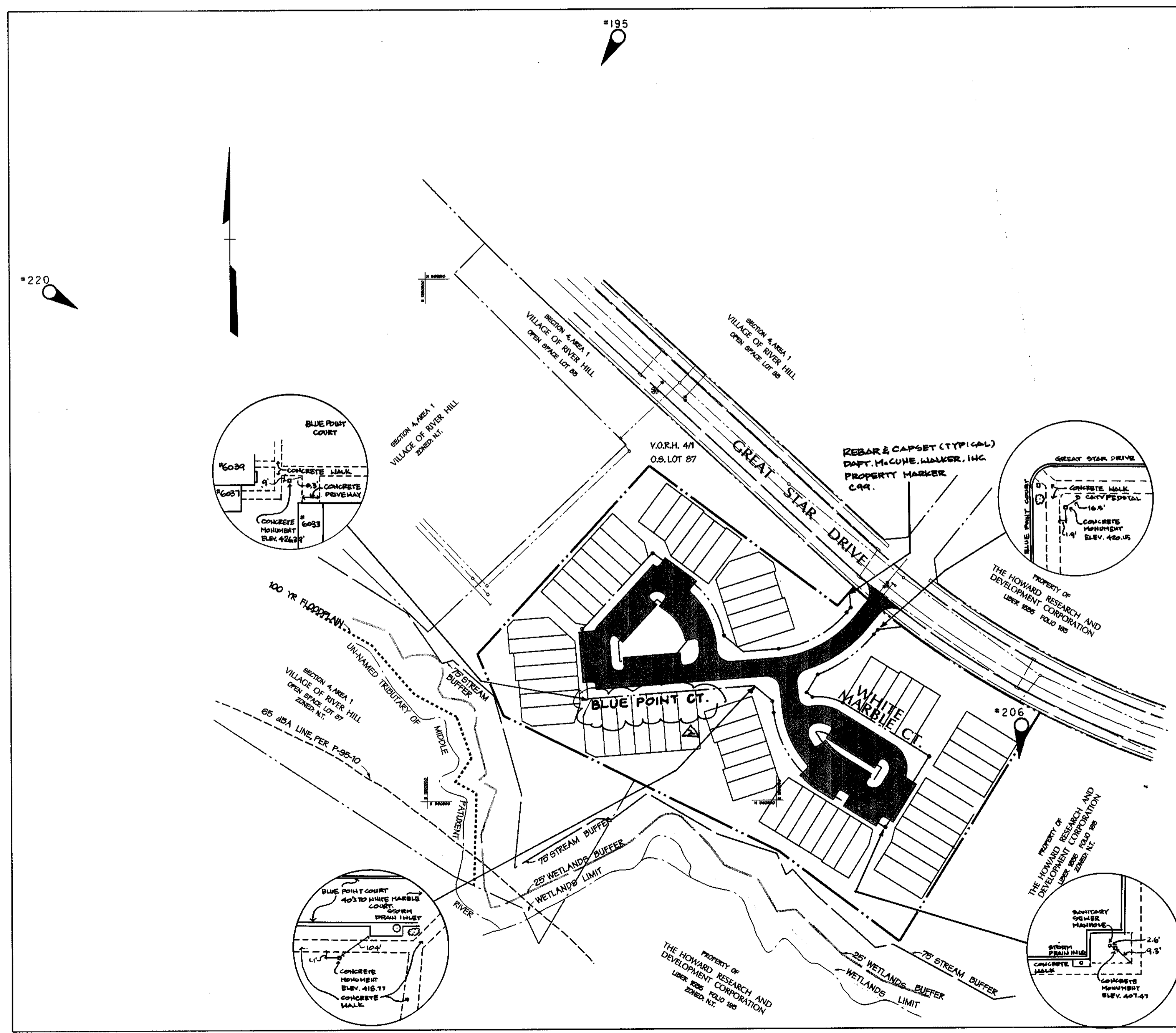
#### GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT HOWARD COUNTY DESIGN MANUAL, VOLUME IV, AND MARYLAND STATE HIGHWAY ADMINISTRATION STANDARDS AND SPECIFICATIONS FOR CONSTRUCTION, WHERE APPLICABLE, EXCEPT WHERE WAIVERS HAVE BEEN APPROVED.
- EXISTING ZONING IS NT PER FDP PHASE 222A-1, PART 1.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 318-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- CONTRACTOR SHALL VERIFY THE LOCATION OF ANY UTILITIES WHICH MAY BE IMPACTED BY THE WORK.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICES. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL TEST FIT EXISTING UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS TO VERIFY THEIR LOCATION AND ELEVATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF LOCATION OF UTILITIES IS OTHER THAN SHOWN.
- ANY DAMAGE CAUSED BY THE CONTRACTOR TO EXISTING PUBLIC RIGHT-OF-WAY, EXISTING PAVING, EXISTING CURB AND GUTTER, EXISTING UTILITIES, ETC. SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- TOPOGRAPHY IS TAKEN FROM F-96-110 AND G.P.-98-129.
- THIS PROPERTY IS LOCATED WITHIN THE HOWARD COUNTY METROPOLITAN DISTRICT.
- WATER AND SEWER ARE PUBLIC. CONTRACT NO. 34-3675-D.
- ALL OPEN SPACE TO BE GRANTED TO H.O.A.
- The coordinates shown hereon are based upon the NAD 83 Maryland Coordinate System. Howard County Geodetic Control Station Numbers 2964 and 2965.
- SEE COUNTY FILE NOS: S-95-21, F-95-10, F-96-110, WP-98-57, SF-98-08, GP-98-129, FDP 222A-1 PART 1.
- SIDEWALKS AND SIDEWALK RAMP SHALL BE IN ACCORDANCE WITH CURRENT ADA REQUIREMENTS.
- THERE ARE NO KNOWN CEMETERIES OR BURIAL GROUNDS ON THIS SITE.
- ELECTRIC, GAS, CABLE AND TELEPHONE LINES DESIGNED BY OTHERS.
- PROVIDE HANDICAP RAMPS WHERE SHOWN IN PLAN. SEE HOWARD COUNTY STD. DETAIL R-4.01 AND R-4.02.
- THE CONTRACTOR SHALL MAINTAIN TRAFFIC AT ALL TIMES AND SHALL INSTALL TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- UNLESS OTHERWISE NOTED, DIMENSIONS FROM THE CURB ARE MEASURED FROM FACE OF CURB.
- A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE. ANY STREET TREE MUST BE PLANTED A MINIMUM OF 5' FROM AN INLET.
- The following reports and studies were approved in connection with F-96-110:
  - Floodplain Study by Whitman Reardon & Assoc. dated January 20, 1995.
  - Wetland delineation by Exploration Research, Inc. dated January 20, 1995.
  - Noise Study by Stalano Engineering, Inc. dated January 20, 1995.
  - Traffic Study by Welle and Assoc. dated January 20, 1997.
  - Geotechnical report by Robert Daltor, Inc.
- STORMWATER MANAGEMENT QUANTITY CONTROL IS PROVIDED BY A REGIONAL FACILITY PER F-96-110. QUALITY CONTROL IS PROVIDED BY STORMCEPTOR SYSTEM.
- WP-98-57, approved 2-10-98, waives Section 16.134(b)(1) allowing sidewalks on one side of a public road and Section 16.155(a) allowing issuance of a grading permit prior to an Approved Site Development Plan. Approval for WP98-57 is conditional upon provision of temporary storm water management and a maintenance and monitoring agreement.
- Approved 12-25-97, waiver of the Design Manual, Volume III, Table 2-01 reducing the design speed of the public roads from 30 mph to 20 mph.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (9093) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS" (JUNE 1995).
- THERE IS NO FLOODPLAIN ON THIS SITE.
- THERE ARE NO WETLANDS ON THIS SITE.
- BUILDING RESTRICTION LINES AND LAND USES TO BE IN ACCORDANCE WITH THE APPROVED FDP 222A-1 PART 1, RECORDED IN PLAT NO. 3054-A-1167-1429.
- SECTION 16.116(a) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PROHIBITS CLEARING, GRADING OR CONSTRUCTION ACTIVITY WITHIN REQUIRED WETLAND AND STREAM BUFFERS.
- ACTUAL INSTALLATION OF LANDSCAPING IS DEFERRED UNTIL APPROVAL OF SITE DEVELOPMENT PLAN.
- THE LOCATION OF THE ASPHALT PATH ON LOT B-129 AND THE PRIVATE DRIVE FOR LOT B-72 THRU B-75 WILL BE DEFERRED UNTIL THE SITE DEVELOPMENT PLAN.

#### SANITARY SEWER MANHOLE AS-BUILT LOCATIONS

WHITE MARBLE COURT			
MANHOLE	STATION	OFFSET	ELEVATION
102	2+51.7	44.1 RT.	407.22
103	1+84.0	24.3 RT.	408.91
104	0+44.8	6.1 RT.	419.25
105	0+04.8	2.5 RT.	411.94

BLUE POINT COURT			
MANHOLE	STATION	OFFSET	ELEVATION
106	3+01.3	5.1 LT.	419.02
107	4+51.7	17.5 LT.	419.24
108	5+11.8	7.4 LT.	428.01
109	7+37.6	6.1 LT.	421.70
110	6+73.4	7.3 LT.	429.29
111	6+26.0	19.2 LT.	427.61
112	5+42.2	6.2 LT.	428.82



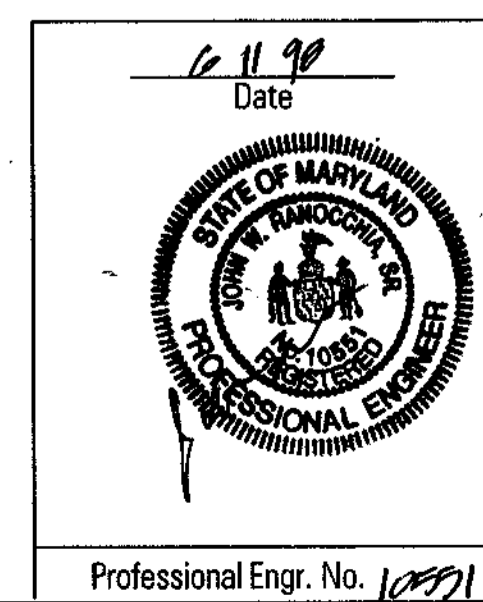
VICINITY MAP  
SCALE: 1" = 100'

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*Andrew M. Pankle* 6-18-98  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE

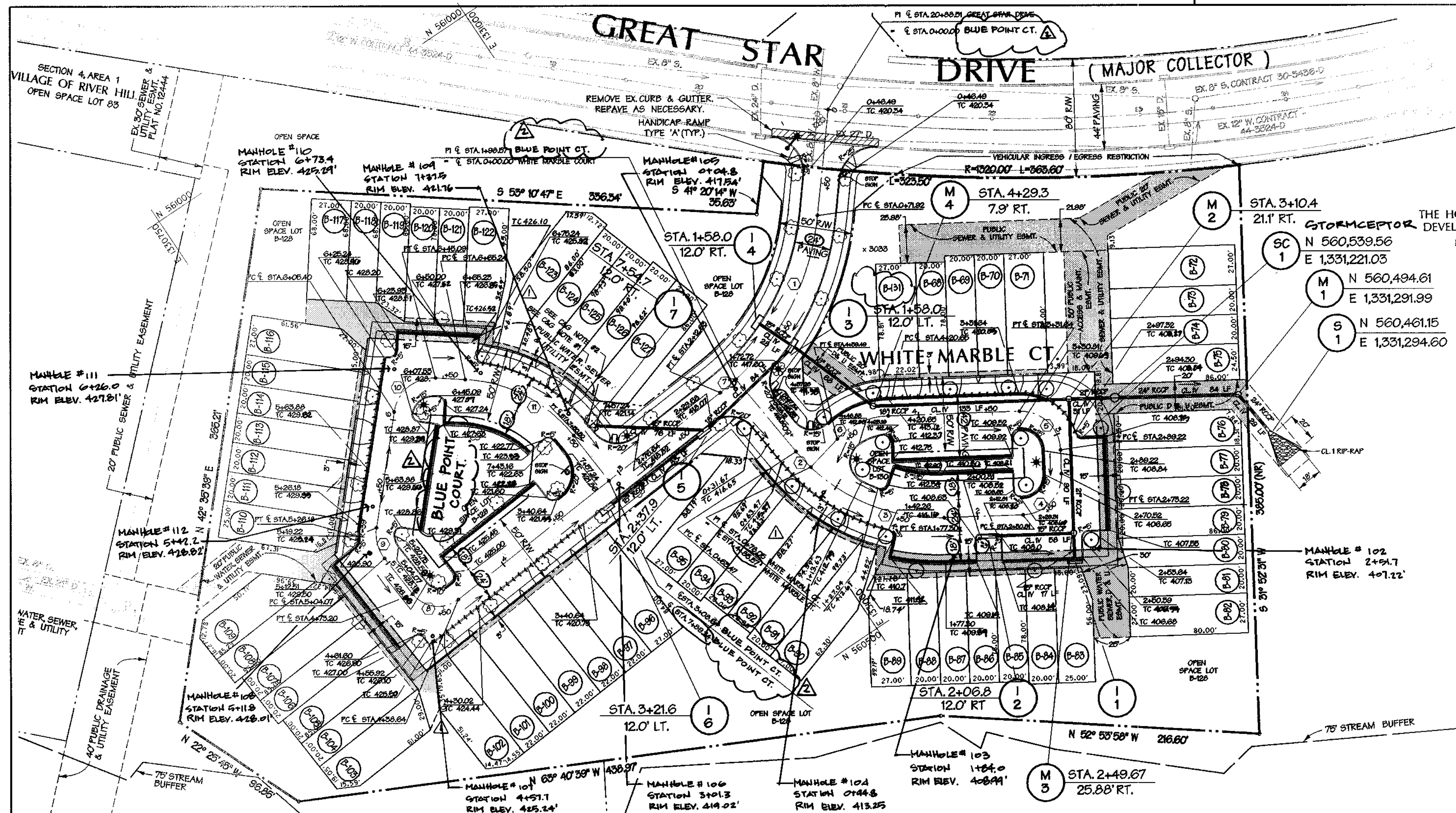
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Cindy H. Watter* 6/29/98  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE

*William R. Dammann* 6/19/98  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE

AS-BUILT 12/20/00



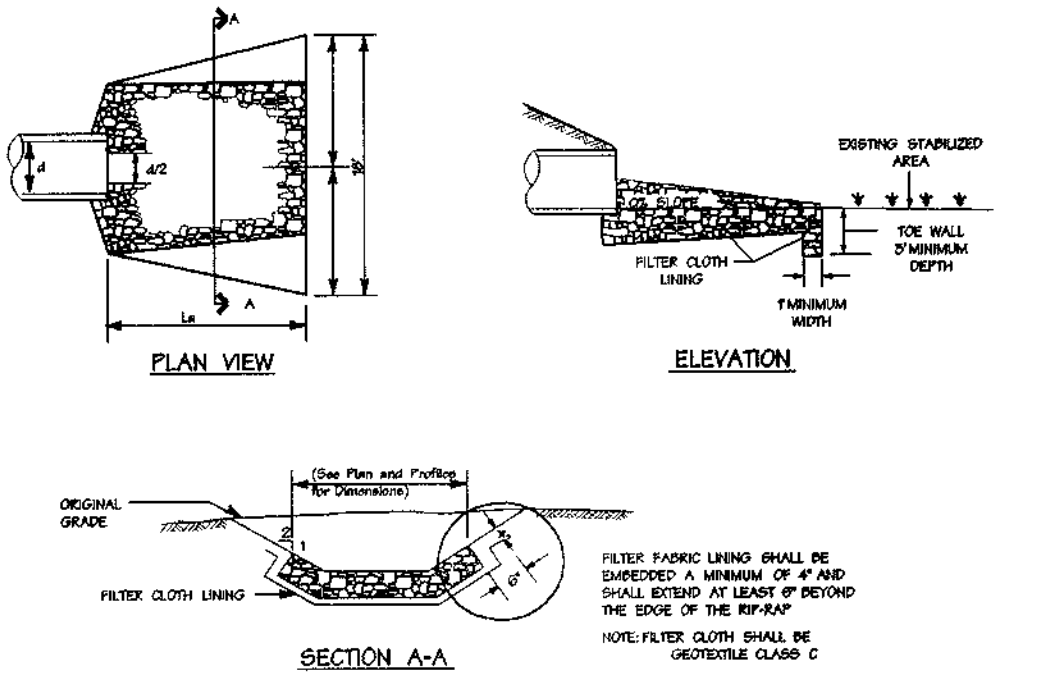
12-28-98	REV. STREET NAME AND LOT NUMBER.
Date	No. Revision Description
<b>VILLAGE OF RIVER HILL</b>	
SECTION 4, AREA ONE, PHASE 1 RESUBDIVISION OF PARCEL B-3, LOTS B-68-B127/131 & OPEN SPACE LOTS B-128 - B-130 COLUMBIA, HOWARD COUNTY, MARYLAND	
OWNER The Howard Research & Development Corporation 10275 Little Patuxent Parkway Columbia, Maryland 21044	DEVELOPER / CONTRACT PURCHASER Columbia Builders, Incorporated Post Office Box 989 Columbia, Maryland 21044
<b>DMW</b> Duff-McCune-Walker, Inc. 200 East Pennsylvania Avenue Towson, Maryland 21286 (410) 296-3333 Fax 296-4706 A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals	
PROJECT NO. Village of River Hill	SECTION/PARCEL 4/1, Phase 1
DATE OF PLAN 12-28-98	DATE OF SHEET 5th
SCALE 1/4" = 1'-0"	PROJECT NO. 6055
<b>TITLE SHEET</b>	
Des By JWS	Scale AS SHOWN
Dm By KDE	Date 6-10-98
Chk By JWR	Approved
Professional Engr. No. 10001	Proj. No. 97126
	1 OF 7



**Construction Specifications**

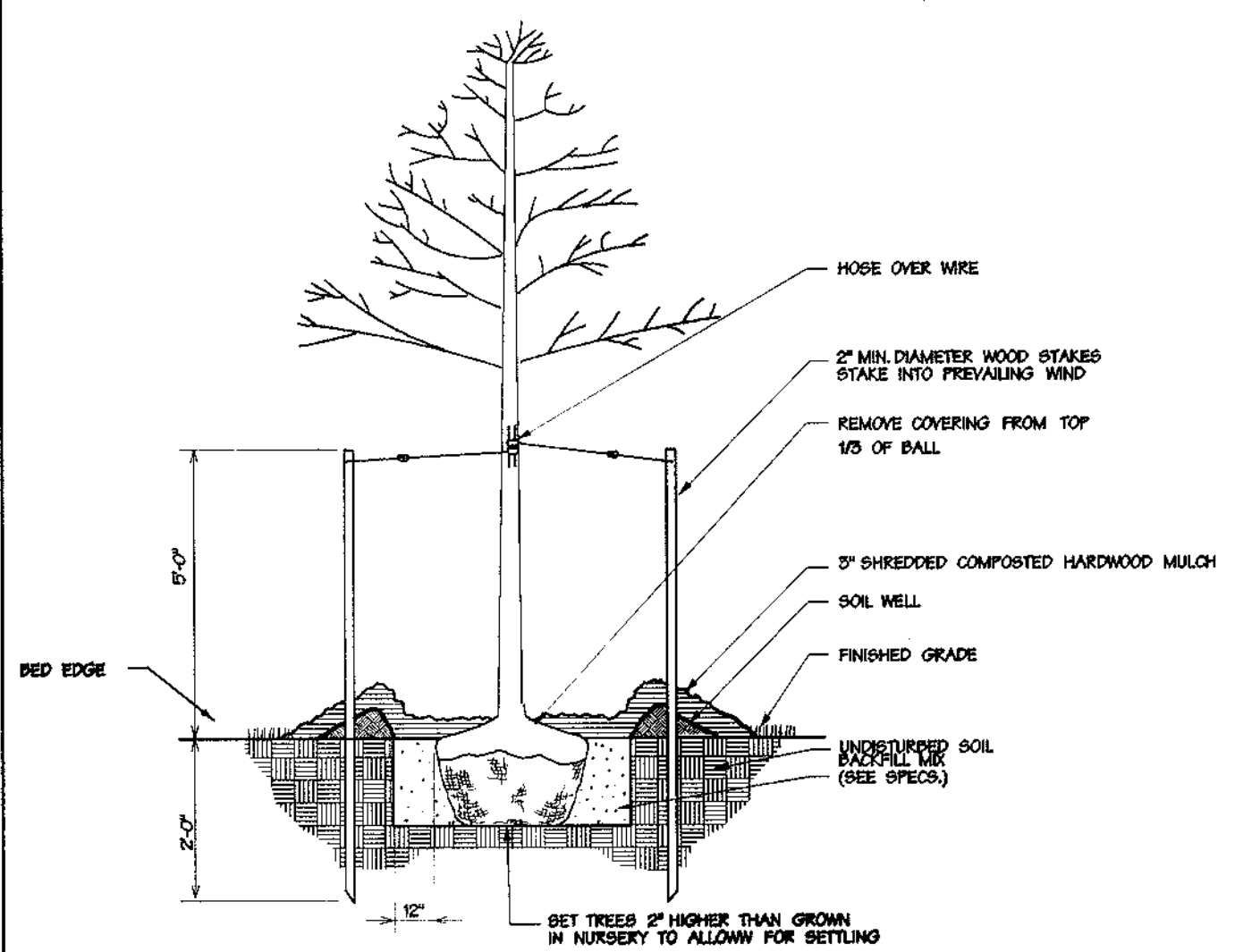
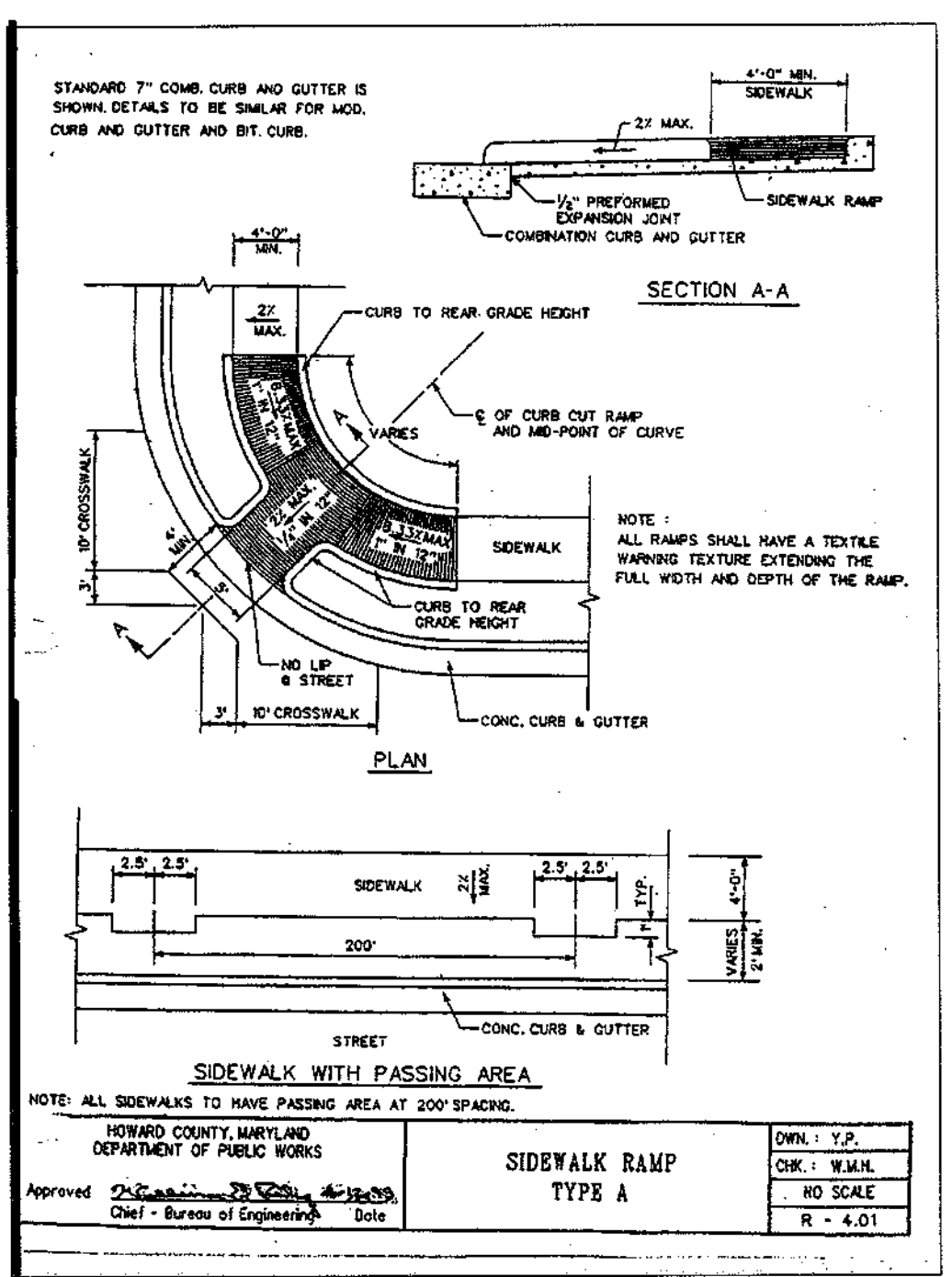
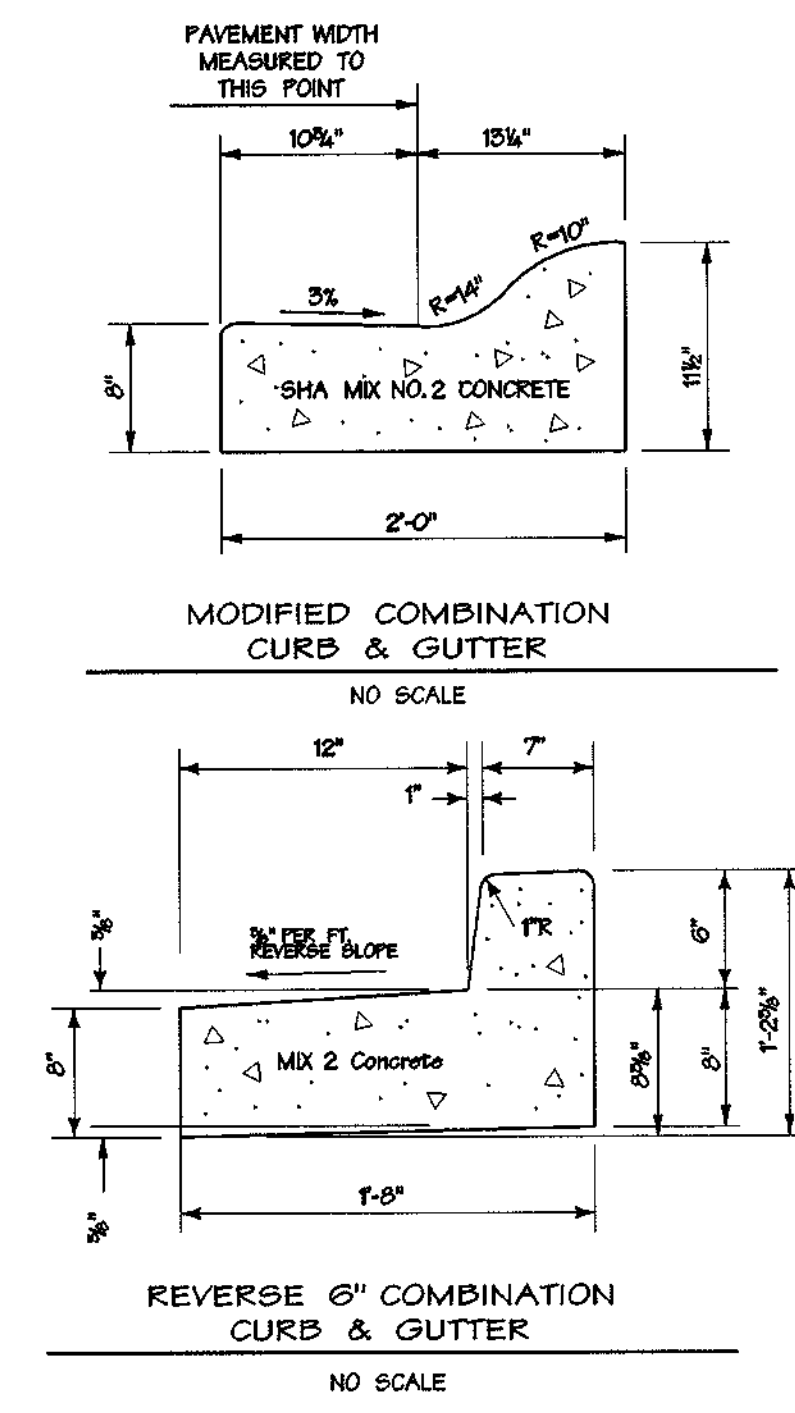
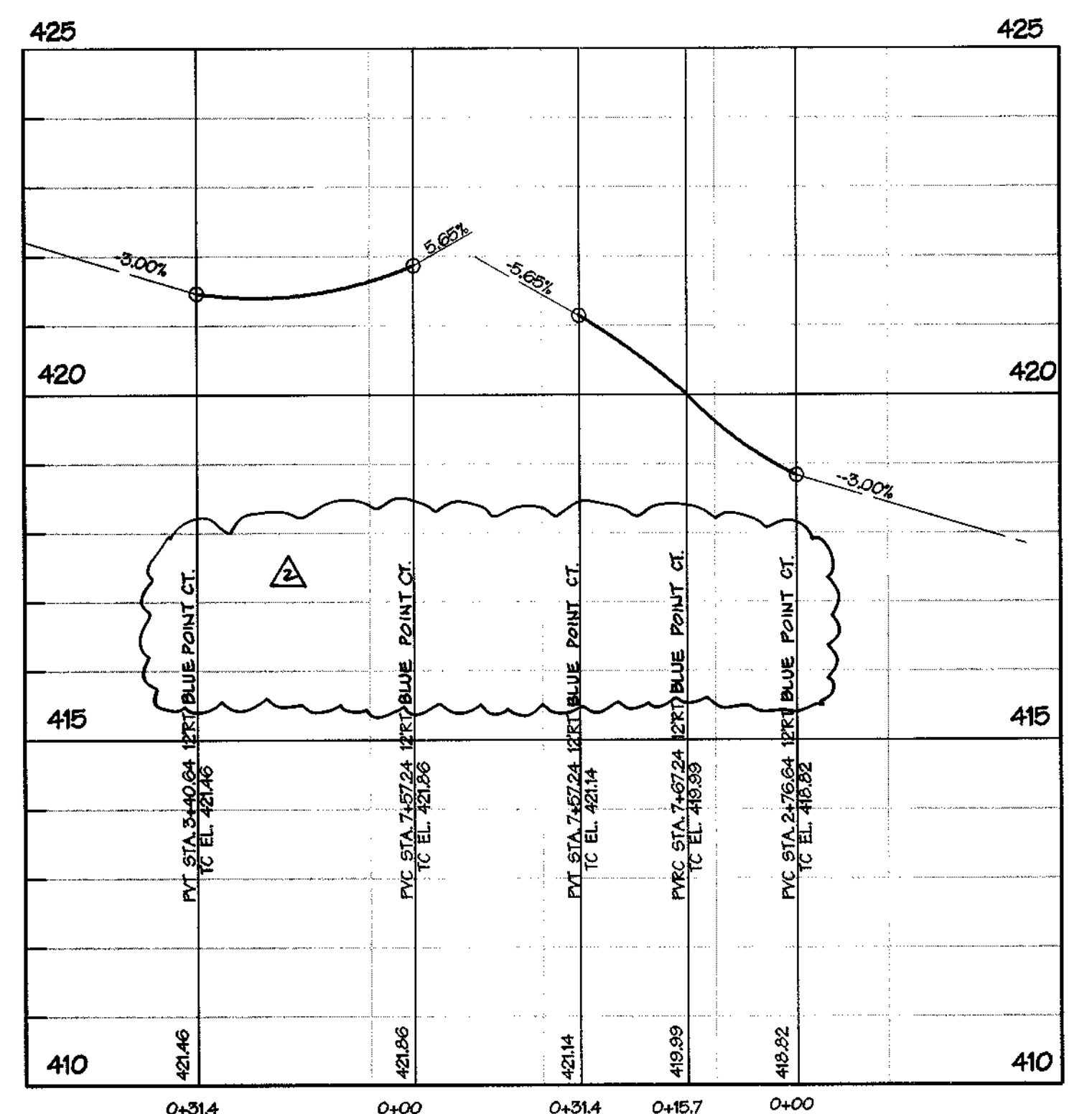
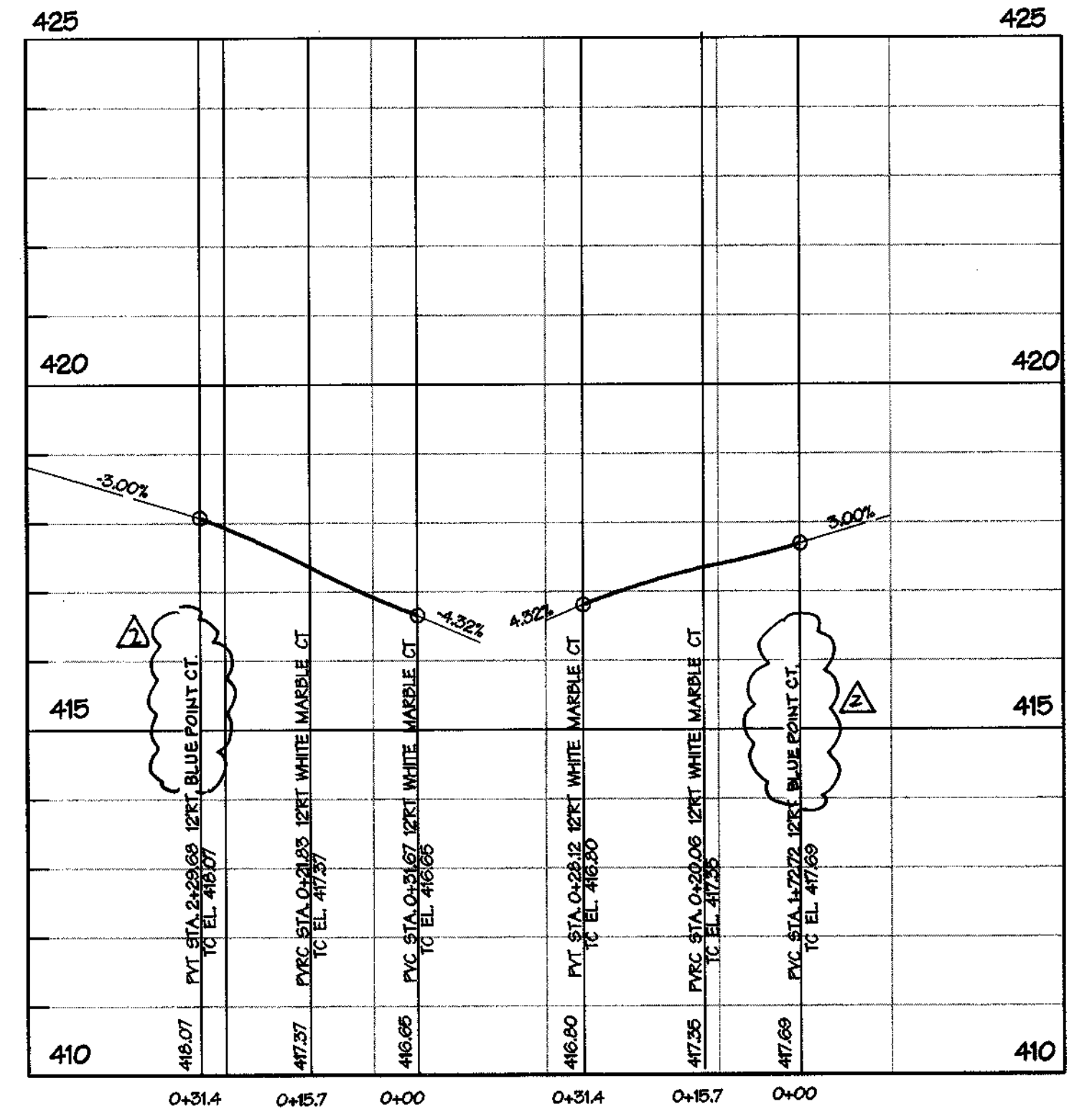
- The subgrade for the filter, rip-rap, or gation shall be prepared to the required line and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
- Geotextile class C shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
- Stones for the rip-rap or gation outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacements of underlying materials. The stones for rip-rap or gation outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blankets or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
- The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

**ROCK OUTLET PROTECTION SPECIFICATIONS**



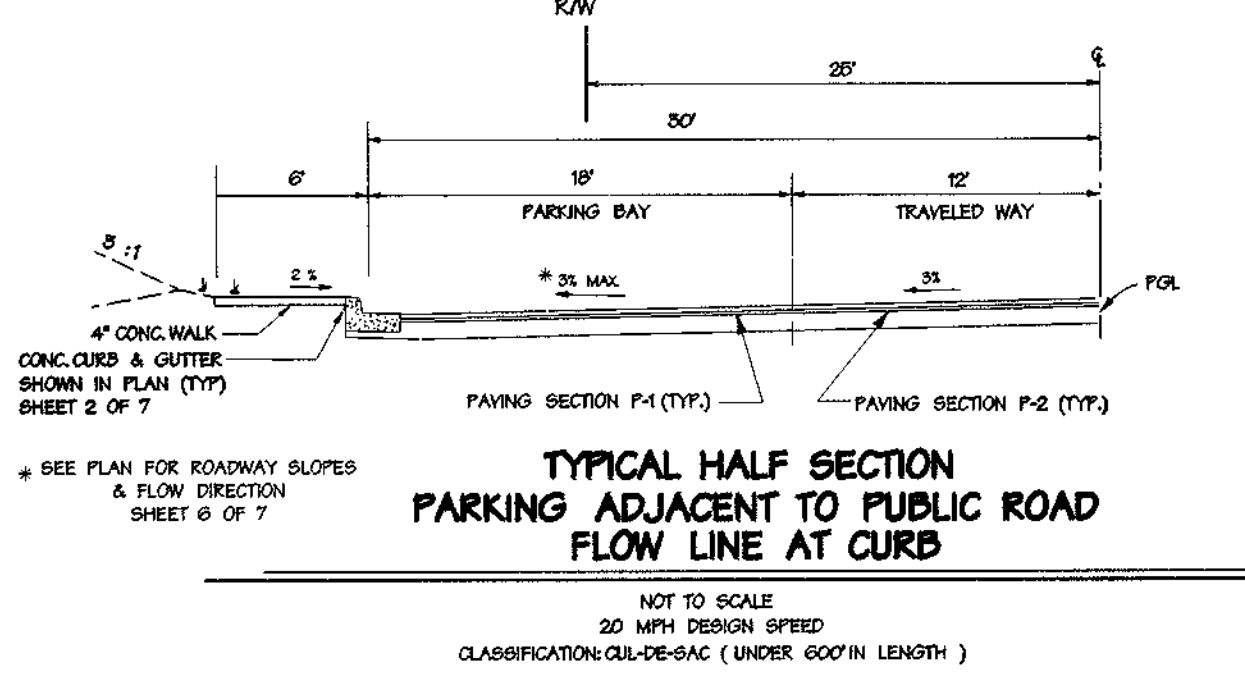
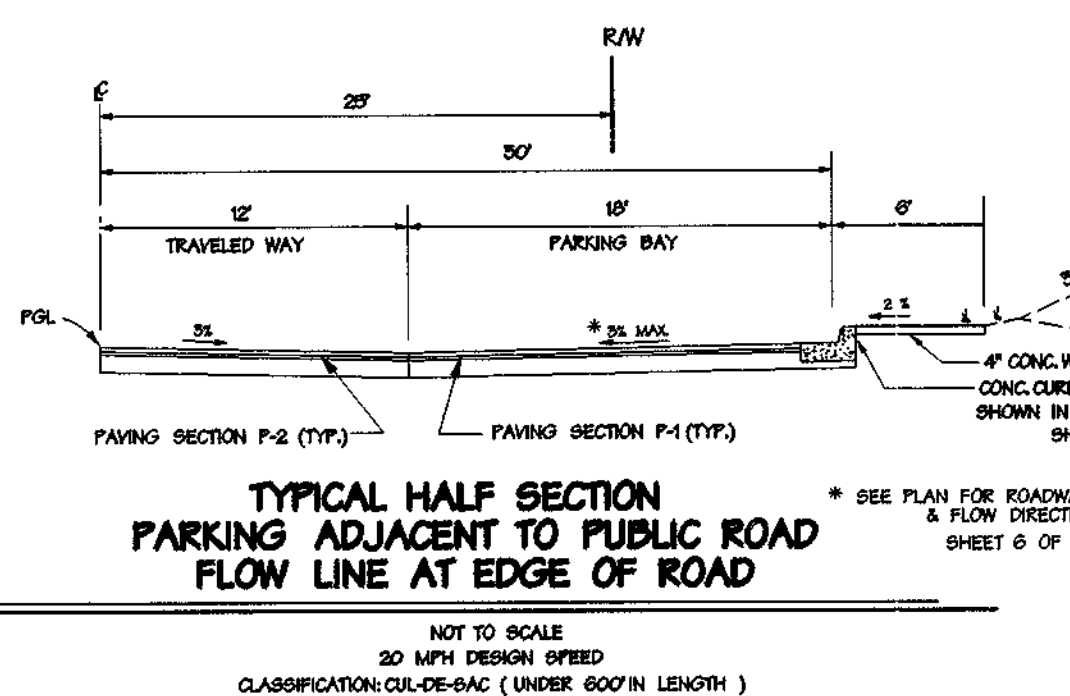
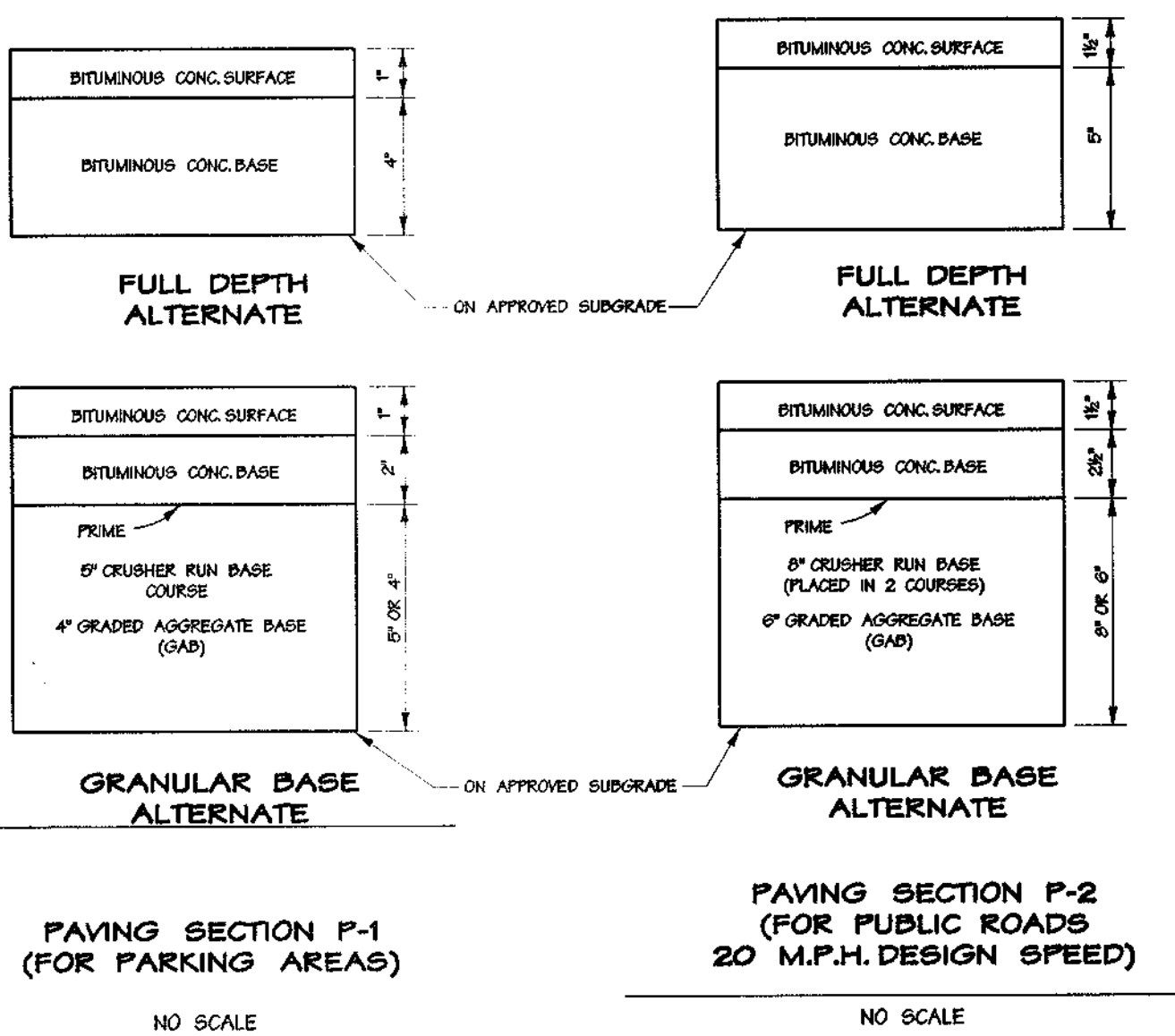
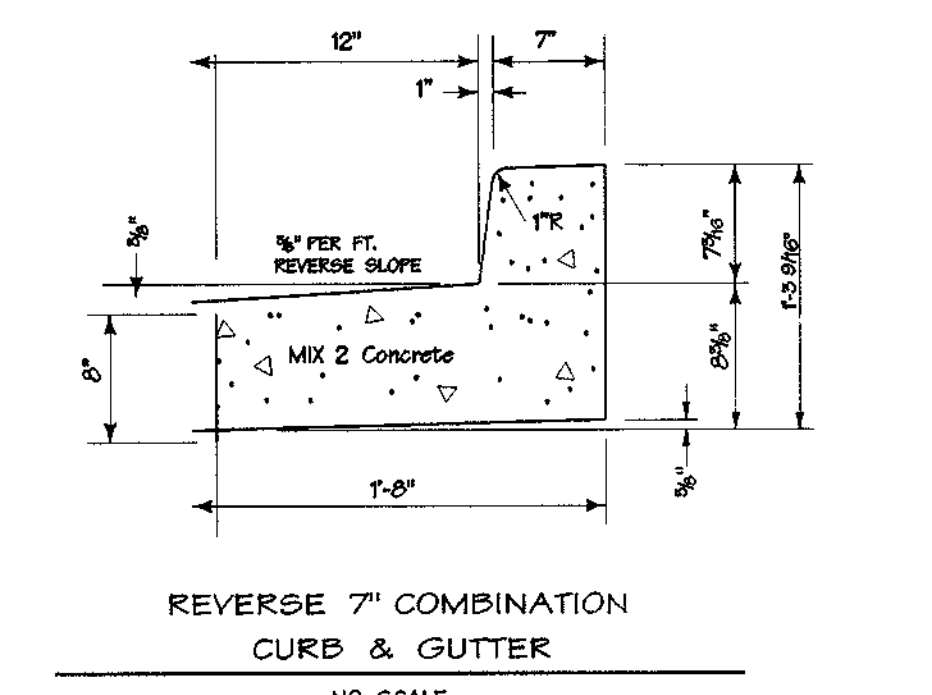
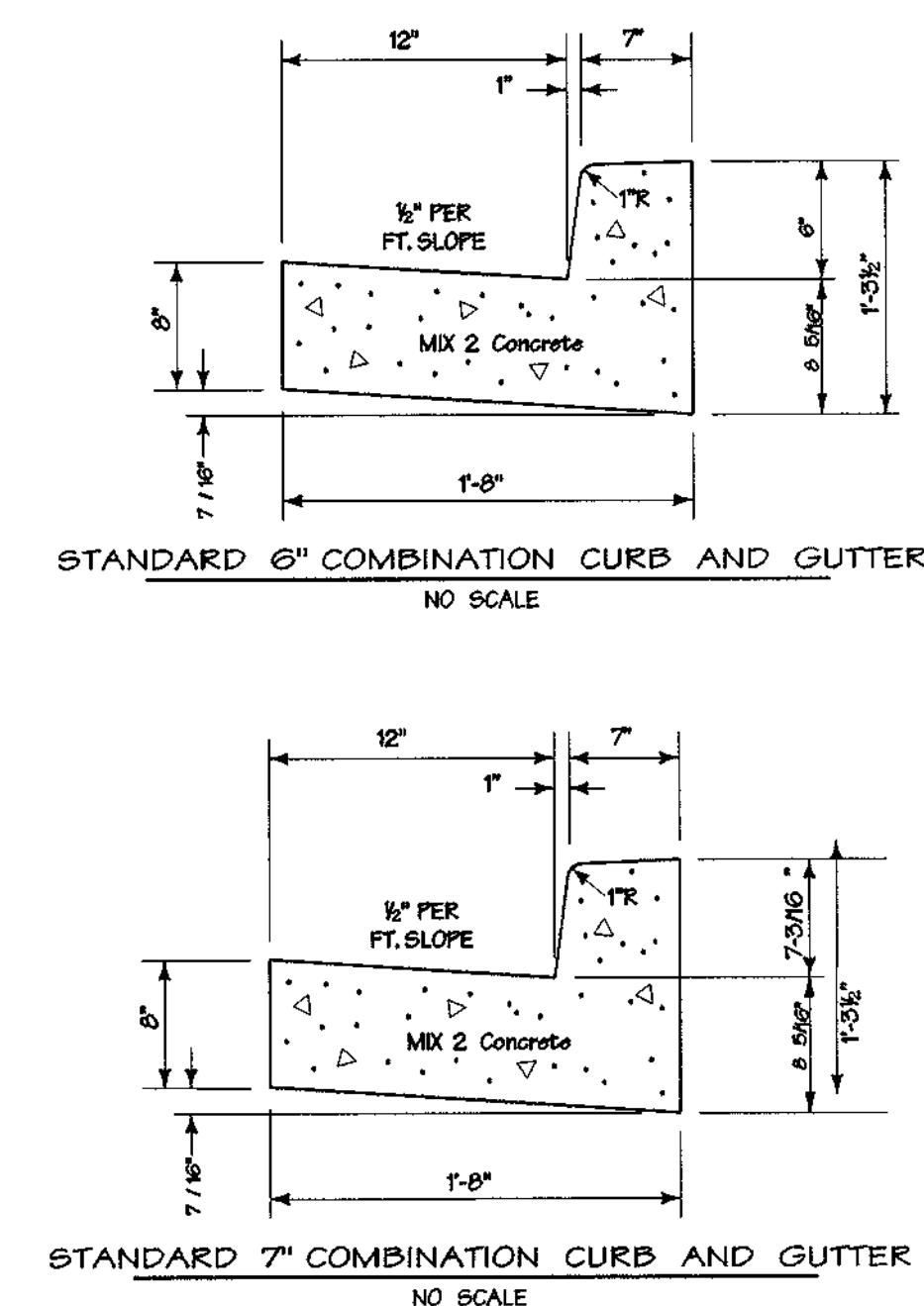
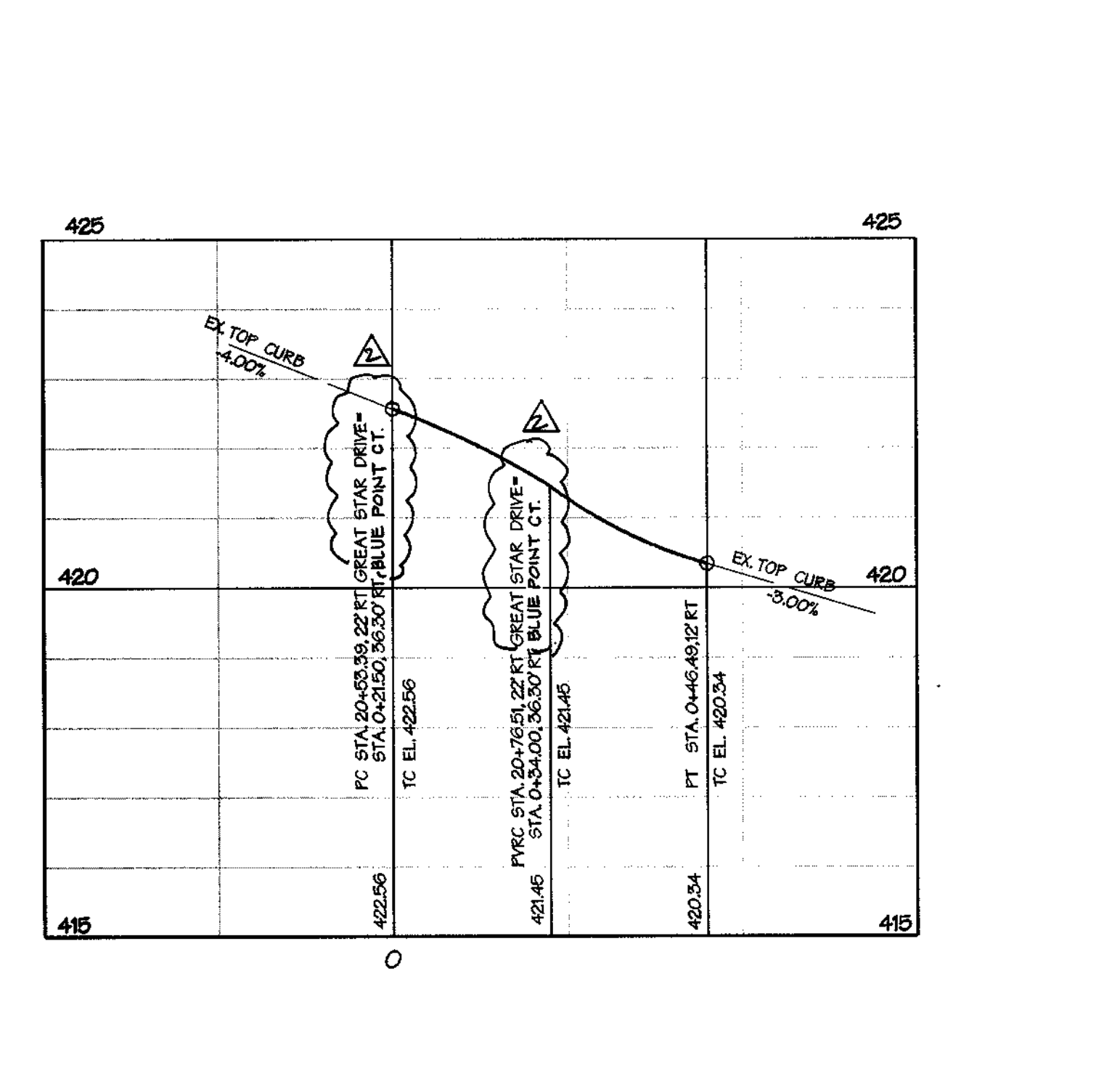
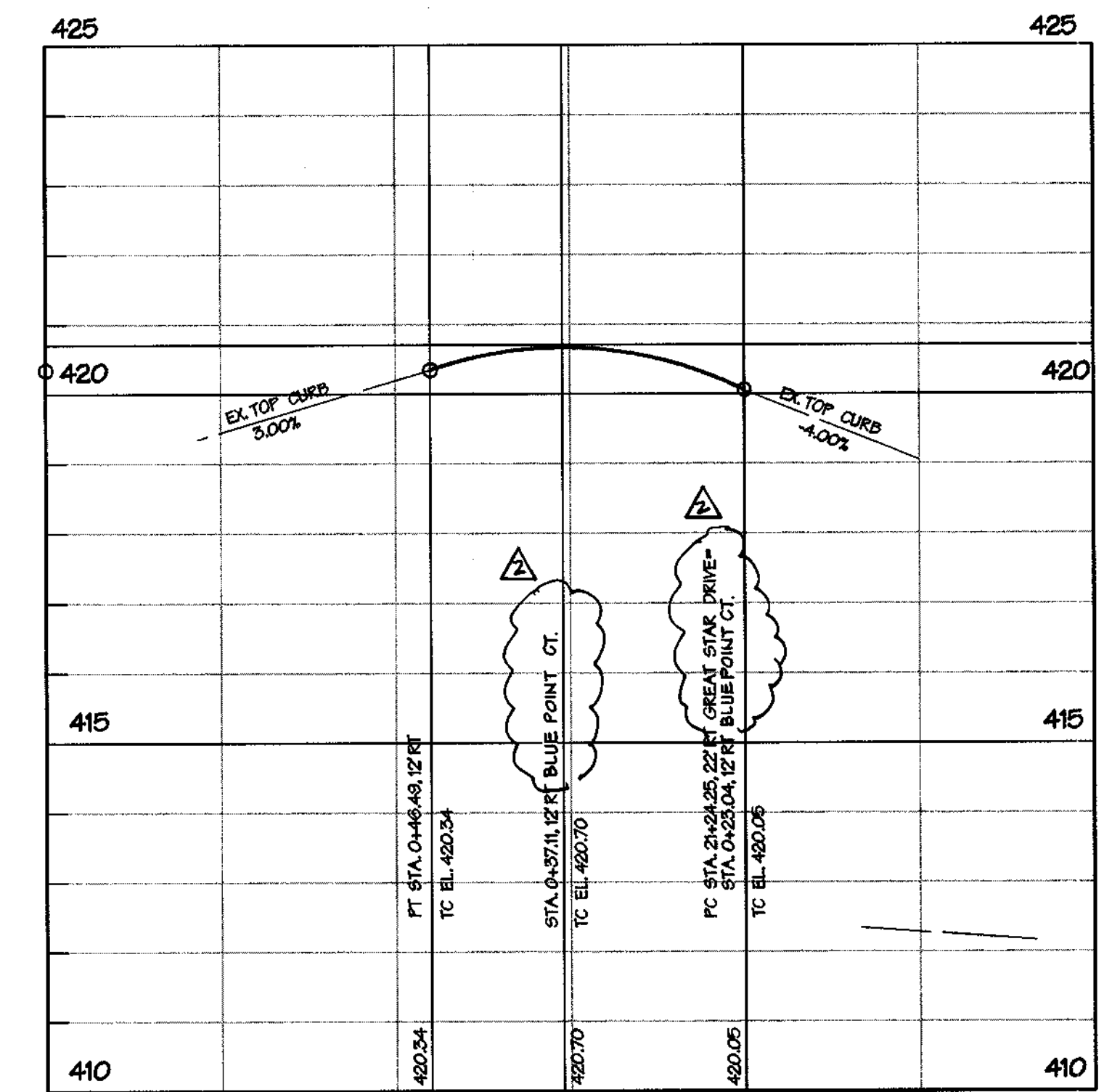
**ROCK OUTLET PROTECTION III FOR S-1**

Not to Scale



**DECIDUOUS TREE PLANTING DETAIL**

(TO 3\"/>



APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*Andrew M. Daniels* 6-18-98  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Chris Harotta* 6/29/98  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*Bill Summers* 6/19/98  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**VILLAGE OF RIVER HILL**  
 SECTION FOUR - AREA ONE - PHASE 1  
 REGRIDDING OF PARCEL B-3,  
 LOTS B-66 - B-67E(1) & OPEN SPACE LOTS B-128 - B-150  
 COLUMBIA, HOWARD COUNTY, MARYLAND

OWNER: The Howard Research & Development Corporation  
 10275 Little Patuxent Parkway  
 Columbia, Maryland 21044

DEVELOPER: Columbia Builders, Incorporated  
 Post Office Box 999  
 Columbia, Maryland 21044

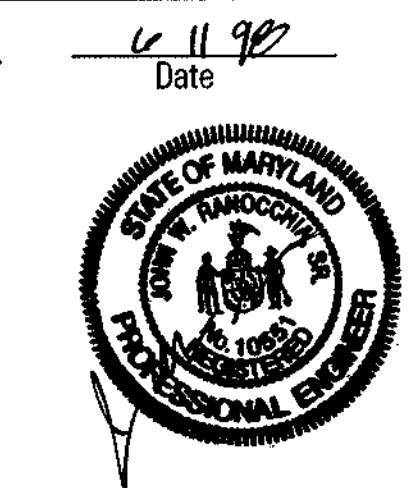
**DMW**  
 Dan-McCune-Walker, Inc.  
 200 East Pennsylvania Avenue  
 Towson, Maryland 21286  
 (410) 296-3833  
 Fax 296-4708

A Team of Land Planners,  
 Landscape Architects,  
 Engineers, Surveyors &  
 Environmental Professionals

AREA SECTION 4, AREA 1, PHASE 1  
 TAX MAP 3 PARCEL B-3  
 5TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND

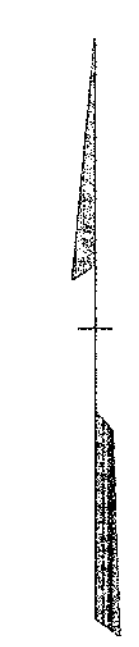
TITLE ROAD CONSTRUCTION DETAILS

Des By MMM Scale 1" = 50' Proj. No. 97126  
 Dwn By MMM Date 6-10-98  
 Chk By JWR Approved 3 OF 7



Wed Jun 10 17:56:33 1998 43/9725/0726407





E 1330500  
N 561250

E 1330500  
N 560250

SECTION 4, AREA 1  
VILLAGE OF RIVER HILL  
ZONED: N.T.

SECTION 4, AREA 1  
VILLAGE OF RIVER HILL  
OPEN SPACE LOT 85

GREAT  
(PUBLIC ROAD)

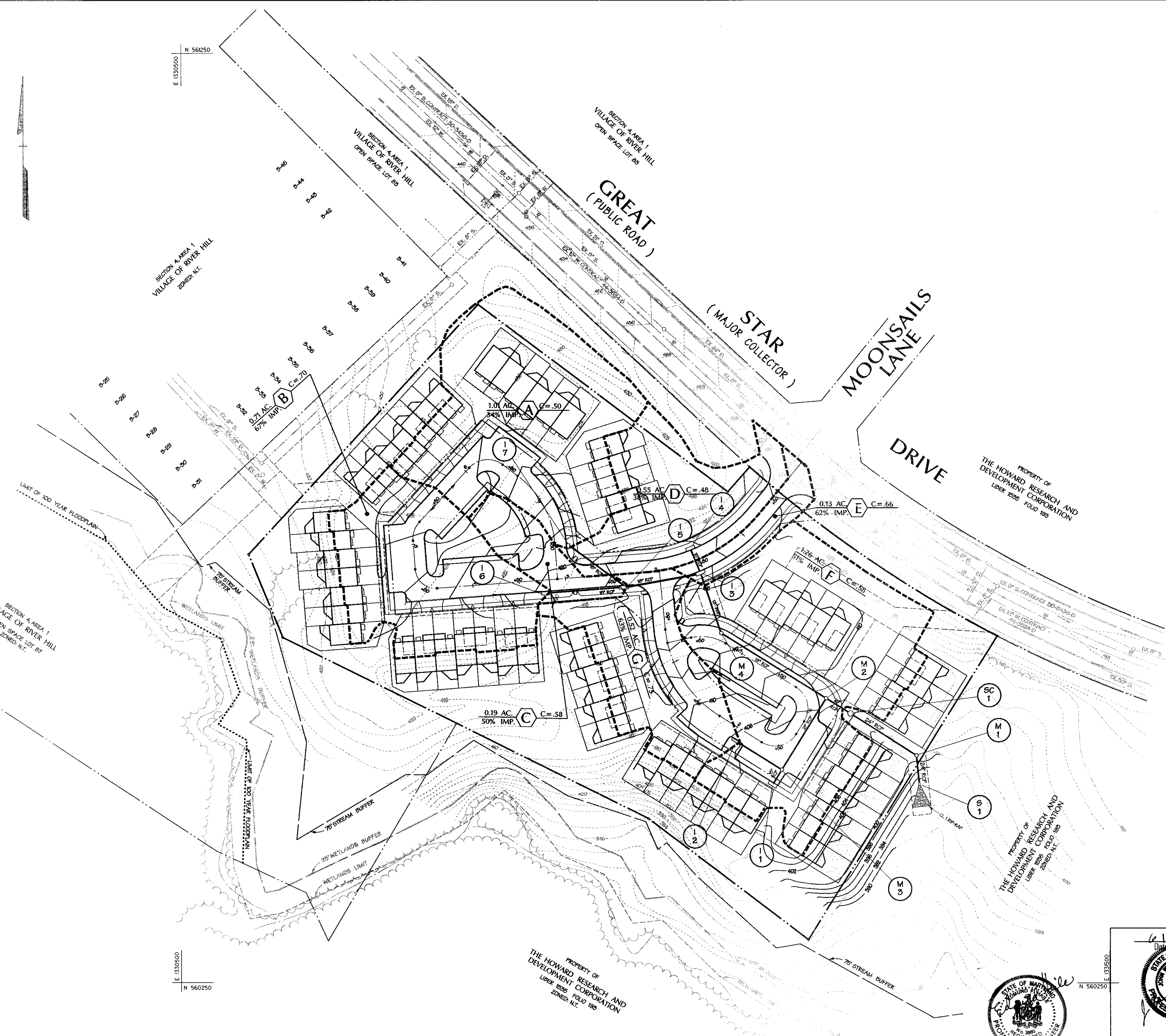
STAR  
(MAJOR COLLECTOR)

MOONSAILS  
LANE  
DRIVE

PROPERTY OF  
THE HOWARD RESEARCH AND  
DEVELOPMENT CORPORATION  
LIBER 1825 FOLIO 185

PROPERTY OF  
THE HOWARD RESEARCH AND  
DEVELOPMENT CORPORATION  
LIBER 1825 FOLIO 185  
ZONED: N.T.

SECTION 4, AREA 1  
VILLAGE OF RIVER HILL  
OPEN SPACE LOT 87  
ZONED: N.T.



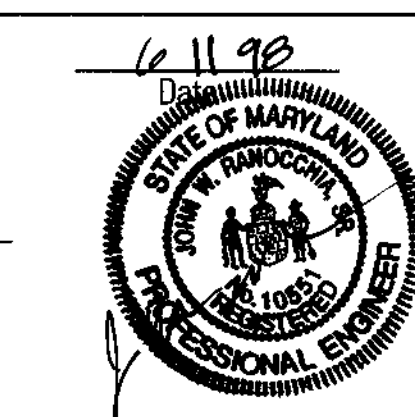
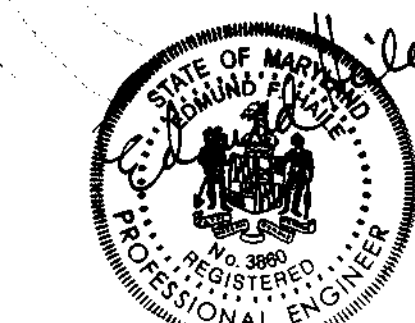
APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS		
<i>Andrew M. Daniels</i>	6-18-98	DATE
CHIEF, BUREAU OF HIGHWAYS		
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING		
<i>Andy Hamilton</i>	6/29/98	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT		
<i>Mike Pannunzi</i>	6/19/98	DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION		
Date	No.	Revision Description

**VILLAGE OF RIVER HILL**  
SECTION FOUR - AREA ONE - PHASE 1  
RESUBDIVISION OF PARCEL B-3,  
LOTS B-67 - B-127 & OPEN SPACE LOTS B-128 - B-130  
COLUMBIA, HOWARD COUNTY, MARYLAND

OWNER: The Howard Research & Development Corporation  
10275 Little Patuxent Parkway  
Columbia, Maryland 21044

DEVELOPER / CONTRACT PURCHASER: Columbia Builders, Incorporated  
Post Office Box 899  
Columbia, Maryland 21044

<b>DMW</b> Drew Mc-Cann-Walker, Inc. 300 East Pennsylvania Avenue Towson, Maryland 21286 (410) 296-8233 Fax 296-4705		
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals		
AREA	SECTION 4, AREA 1, PHASE 1 TAX MAP 35 PARCEL B-3 5TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND	
TITLE	DRAINAGE AREA MAP	
Des By	MMM	Scale 1" = 50'
Dm By	MMM	Date 6-10-98
Chk By	JWR	Approved
Proj. No.	97126	
Professional Engr. No.	5 OF 7	



Wed Jun 10 15:03 1998 619726.97126.dwg

**COORDINATE TABLE**

POINT	NORTH	EAST
2701	560623.19	1331879.01
2702	560296.23	1331875.70
2703	560621.56	1330608.49
2704	560771.09	1330572.53
2705	560979.93	1330819.71
2706	560778.57	1331088.85
2707	560805.11	1331112.46
2843	560426.91	1331002.94

**SEQUENCE OF CONSTRUCTION**

- OBTAIN GRADING PERMIT. 7
- CONSTRUCT SILT FENCE AT WATER MAIN CONNECTION, CLEAN AND REPAIR EXISTING ESC MEASURES EXISTING ESC WERE BUILT PER GP-98-129 SEQUENCE OF CONSTRUCTION ITEM #2. 3
- GRADE SITE. 7
- INSTALL STORM DRAINS, TEMPORARILY BRICK CLOSED ALL INLET THROATS. INSTALL TEMP DRAIN FROM M-2 TO SEDIMENT TRAP No.1. BRICK SHUT THE DOWNSTREAM DRAIN AT M-2. 21
- CONSTRUCT UTILITIES. 30
- FINE GRADE AND CONSTRUCT PAVING. 30
- FINE GRADE AND STABILIZE DISTURBED AREAS ON SITE IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS. 14
- UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL MEASURES AND STABILIZE. FINE GRADE AND STABILIZE PHASE II GRADING. 14

**LEGEND**

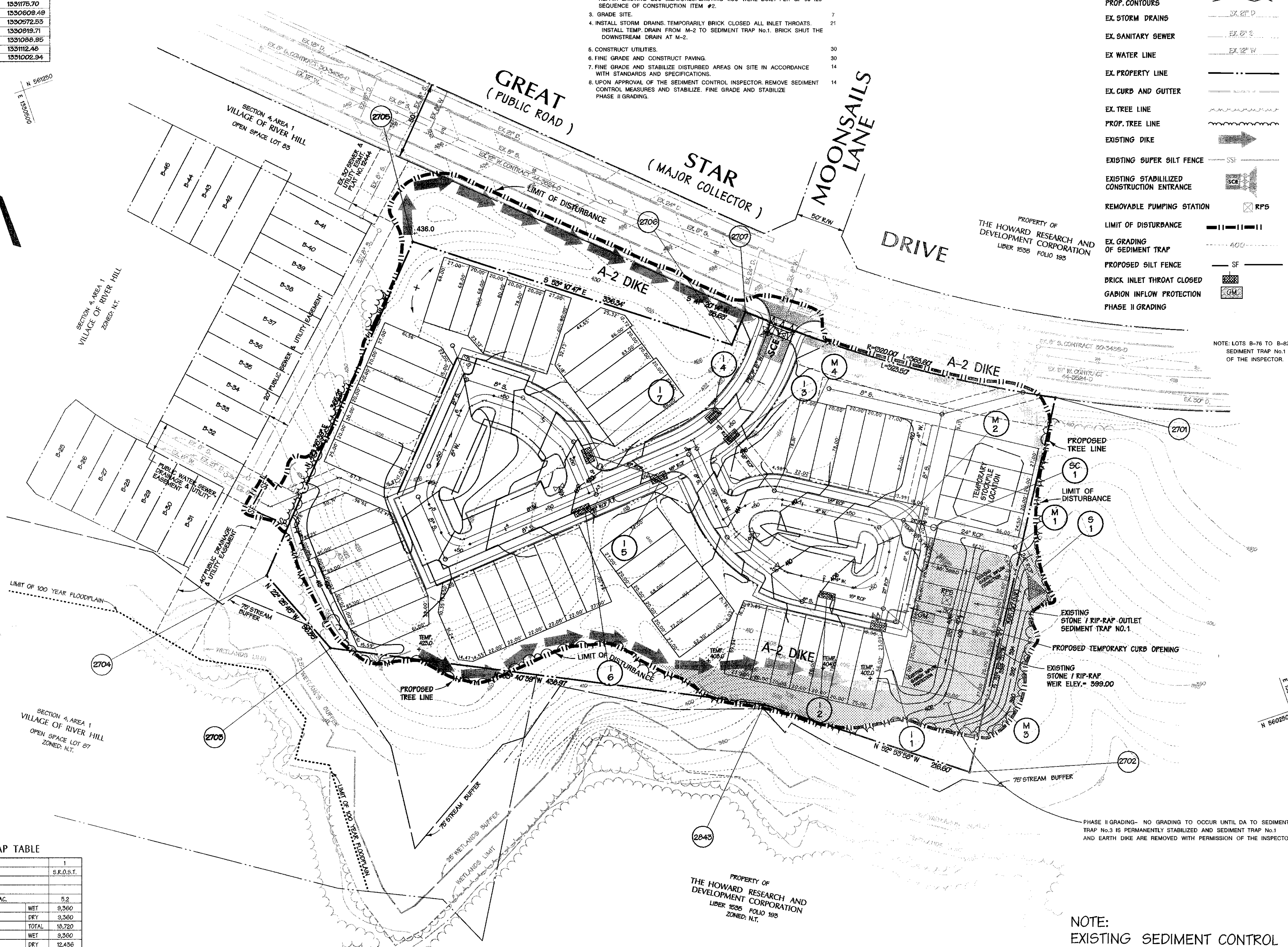
- EX. CONTOURS
- PROP. CONTOURS
- EX. STORM DRAINS
- EX. SANITARY SEWER
- EX. WATER LINE
- EX. PROPERTY LINE
- EX. CURB AND GUTTER
- EX. TREE LINE
- PROP. TREE LINE
- EXISTING DIKE
- EXISTING SUPER SILT FENCE
- EXISTING STABILIZED CONSTRUCTION ENTRANCE
- REMOVABLE PUMPING STATION
- LIMIT OF DISTURBANCE
- EX. GRADING OF SEDIMENT TRAP
- PROPOSED SILT FENCE
- BRICK INLET THROAT CLOSED
- GABION INFLOW PROTECTION
- PHASE II GRADING

**GENERAL NOTES**

- The contractor shall notify "Miss Utility" at 1 (800) 257-7777 at least 48 hours prior to any excavation work being done, and shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 515-1880 at least five (5) working days prior to the start of the work.
- This project is in conformance with the latest Howard County Standards unless waivers have been granted.
- The existing topography is taken from field run survey with two-foot contour intervals from F-96-110.
- The coordinates shown herein are based upon the NAD 83 Maryland Coordinate System. Howard County Geodetic Control Station Numbers 2964 and 2965.
- Public water and sewer will be provided. Contract Numbers
- No slopes of 25% or greater that are a contiguous area of 20,000 square feet exist on site.
- Existing utilities have been taken from available plans and records.
- There is no floodplain on this site.
- There are no wetlands on this site. Wetlands on adjacent open space lot 87 per Plat Number 12685.
- There are no known cemeteries on this site.
- The following reports and studies were approved in connection with F-96-110:
  - Floodplain Study by Whitman Requardt & Assoc. dated January 20, 1995.
  - Wetland delineation by Exploration Research, Inc. dated January 20, 1995.
  - Noise Study by Staiano Engineering, Inc. dated January 20, 1995.
  - Traffic Study by Wells and Assoc. dated January 20, 1997.
  - Geotechnical report by Robert Daltzer, Inc.
- Stormwater Management Note: Stormwater Management quantity control is provided by a regional facility per F 96-110. Quality control is provided by stormceptor.
- See SP-98-08 for Preliminary Equivalent Stotch Plan information.
- See GP-98-129 for Mass Grading Plan information.

NOTE: LOTS B-76 TO B-82 CANNOT BE BUILT ON UNTIL BRICK SHUT 21" FROM M-2 TO SEDIMENT TRAP No.1 IS REMOVED WITH PERMISSION OF THE INSPECTOR.

NOTE: INSTALL 15" D. FROM M-2 TO SEDIMENT TRAP No.1 BRICK SHUT 21" FROM M-2 TO SC-1. ONCE ALL PROPOSED INLETS ARE BUILT AND BRICKED CLOSED, REMOVE BRICK IN 21" D.



**ESC TRAP TABLE**

TRAP NUMBER	1
TRAP TYPE	S.F.O.S.T.
PROPOSED DRAINAGE AREA AC.	5.2
STORAGE REQUIRED C.F.	WET 9,360 DRY 3,360 TOTAL 12,720
STORAGE PROVIDED C.F.	WET 9,360 DRY 12,436 TOTAL 21,796
EXISTING GROUND ELEV.	397.0
TOP EMBANKMENT ELEV.	400.0
WEIR CREST ELEV.	398.0
CLEANOUT ELEV.	395.24
BOTTOM ELEV.	384.0
DEPTH OF CHANNEL (a)	1.0'
OUTLET WIDTH (b)	21.0'
BOTTOM DIMENSION	30' x 88'
TRAP SIDESLOPES	2:1
TRAP DEPTH	WET 2.55 DRY 2.45 TOTAL 5.0
WET STORAGE ZONE ELEV.	394.0 - 395.55
DRY STORAGE ZONE ELEV.	390.55 - 399.0

**DEVELOPER'S CERTIFICATION:**

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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]*  
 SIGNATURE OF DEVELOPER/CONTRACT PURCHASER  
 PRINT NAME BELOW SIGNATURE  
 DATE 6/10/98

**ENGINEER'S CERTIFICATION:**

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.

*[Signature]*  
 SIGNATURE OF ENGINEER  
 PRINT NAME BELOW SIGNATURE  
 DATE 6/11/98  
 John W. Ranocchia, Sr.

**REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS**

*[Signature]*  
 U.S. NATURAL RESOURCE CONSERVATION SERVICE  
 DATE 6/11/98  
 THIS DEVELOPMENT PLAN IS FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

6/11/98  
Date

Professional Engr. No. 10571

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS  
*[Signature]* 6-18-98  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING  
*[Signature]* 6/21/98  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*[Signature]* 6/15/98  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Date No. Revision Description

**VILLAGE OF RIVER HILL**

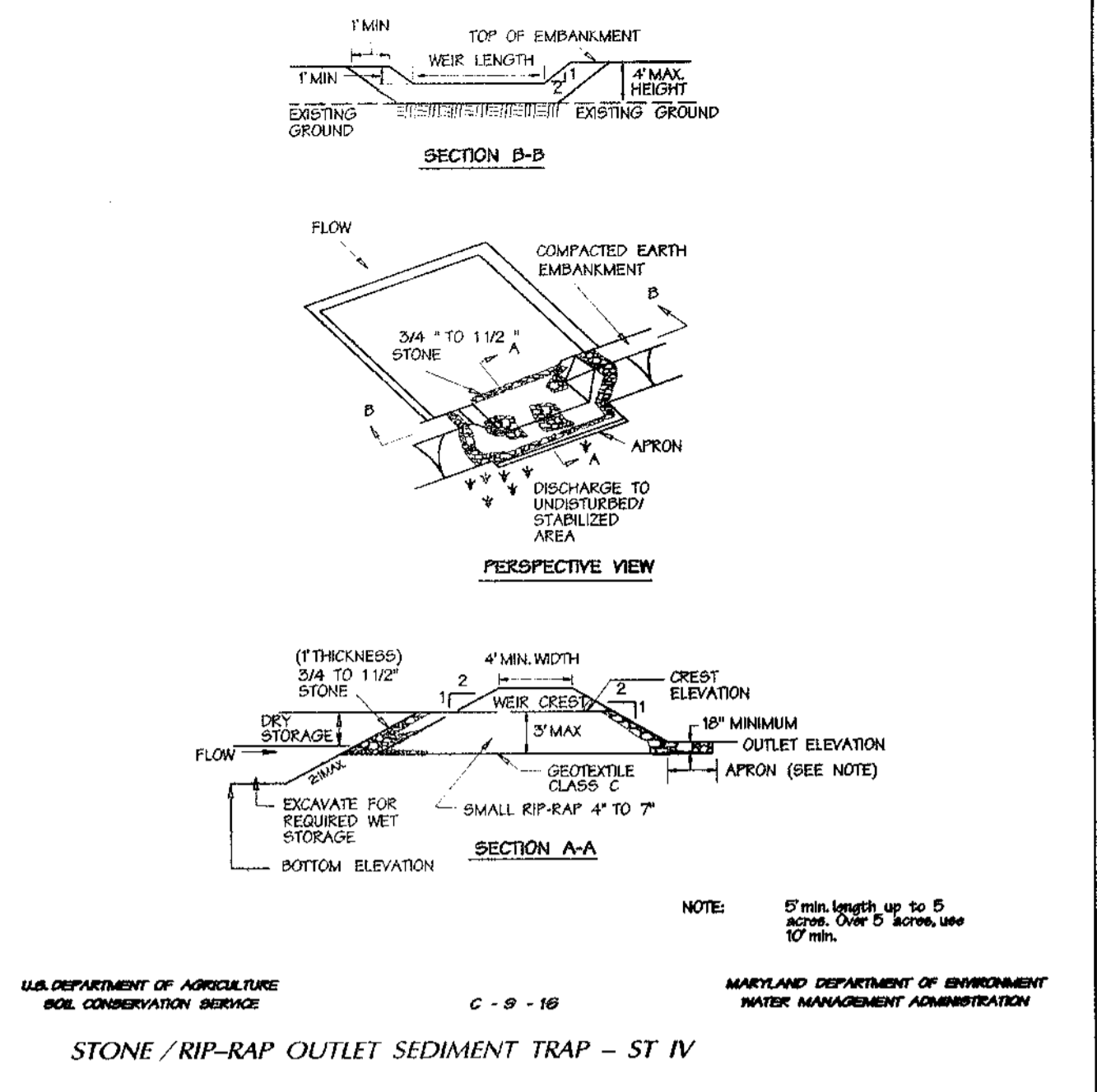
SECTION FOUR - AREA ONE - PHASE 1  
 RESUBDIVISION OF PARCEL B-3,  
 LOTS B-67 - B-127 & OPEN SPACE LOTS B-128 - B-130  
 COLUMBIA, HOWARD COUNTY, MARYLAND

OWNER DEVELOPER/CONTRACT PURCHASER  
 The Howard Research & Development Corporation Columbia Builders, Incorporated  
 10275 Little Patuxent Parkway Post Office Box 999  
 Columbia, Maryland 21044 Columbia, Maryland 21044

**DMW**  
 Davis-McCann-Walker, Inc.  
 200 East Pennsylvania Avenue  
 Towson, Maryland 21286  
 (410) 296-3058  
 Fax 296-4705

A Team of Land Planners,  
 Landscape Architects,  
 Engineers, Surveyors &  
 Environmental Professionals

AREA	SECTION 4, AREA 1, PHASE 1
TAX MAP	35
PARCEL	B-3
5TH ELECTION DISTRICT OF HOWARD COUNTY, MARYLAND	
<b>GRADING AND SEDIMENT CONTROL PLAN</b>	
Des By	MJP
Scale	1" = 50'
Proj. No.	97126
Dwn By	MSS/RLH
Date	6-10-98
Chk By	JWR
Approved	
6 OF 7	



STONE / RIP-RAP OUTLET SEDIMENT TRAP - ST IV

**Construction Specifications**

- The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The post-hole shall be cleared.
- The fill material for the embankment shall be free of rocks or other woody vegetation as well as untreated stones, rocks, organic material or other objectionable material. The embankment shall be compacted by tamping with equipment while it is being constructed. Maximum height of embankment shall be 4' measured at centerline of embankment.
- All O&S and fill slopes shall be 2:1 or flatter.
- Elevation of the top of any dike directing water into trap must equal or exceed the height of trap embankment.
- Storage area provided shall be figured by computing the volume measured from top of excavation. (For storage requirements see Table 8).
- Geotextile Class C shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Section of fabric must overlap at least 12" with section nearest the entrance placed on top. Fabric shall be embedded at least 6" into existing ground at entrance of outlet channel.
- 4" x 7" stone shall be used to construct the weir and 4" x 12" Class I riprap shall be used to construct the outlet channel.
- Outlet - An outlet shall include a means of conveying the discharge in an erosion free manner to an existing stable channel. Protection against scour at the discharge point shall be provided as necessary.
- Outlet channel must have positive drainage from the trap.
- Sediment shall be removed and trap restored to the original dimensions when the sediment has accumulated to 1/2 of the wet storage depth of the trap (300 cubic feet). Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
- The structure shall be inspected periodically after each rain and repaired as needed.
- Construction of traps shall be carried out in such a manner that sediment pollution is abated. Once construction, the top and outside face of the embankment shall be stabilized with seed and mulch. Points of concentrated inflow shall be protected in accordance with Grade Stabilization Structure criteria. The remainder of the interior slopes should be stabilized (one time) with seed and mulch upon trap completion and monitored and maintained erosion free during the life of the trap.
- The structure shall be demolished by approved methods, removed and the area stabilized when the drainage area has been properly stabilized.

STONE / RIP-RAP OUTLET SEDIMENT TRAP - ST IV

**PERMANENT SEEDING NOTES**

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

**Seedbed preparation** - Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

**Soil amendments** - In lieu of soil test recommendations, use one of the following schedules:

- Fertilizer** - Apply 2 tons per acre Dolomitic Limestone (92 lbs./1000 sq. ft.) and 1000 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq. ft.) before seeding. Harrow or disk 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 (14 lbs./1000 sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

**Seeding** - For the periods March 1 thru April 30, and August 1 thru October 15, seed with 50 lbs. per acre (1/4 lbs./1000 sq. ft.) of Kentucky 21 tall fescue. For the period May 1 thru July 31, seed with 50 lbs. per acre Kentucky 31 tall fescue per acre and 2 lbs. per acre (2 lbs./1000 sq. ft.) of creeping bentgrass. During the period of October 15 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. Option (2) - Use seed. Option (3) - Seed with 50 lbs. per acre Kentucky 21 tall fescue and mulch with 2 tons of well-anchored straw.

**Mulching** - Apply 1/2 to 2 tons per acre (70 - 300 lbs./1000 sq. ft.) of untreated small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchors (one 200 gals. per acre (5 gal./1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 5 ft. or higher, use 340 gals. per acre (8 gal./1000 sq. ft.) for anchoring.

**Maintenance** - Inspect all seeding areas and make needed repairs, replacements and reseedings.

**TEMPORARY SEEDING NOTES**

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

**Seedbed preparation** - Loosen upper three inches of soil by raking, disking 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 the periods March 1 thru April 30, and August 1 thru October 15, seed with 2/2 bushel per acre of annual ryegrass (3.0 lbs./1000 sq. ft.). For the period May 1 thru August 14, seed with 1/2 bushel per acre of annual ryegrass (3.0 lbs./1000 sq. ft.). For the period November 15 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 seed.

**Mulching** - Apply 1/2 to 2 tons per acre (70 - 300 lbs./1000 sq. ft.) of untreated small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchors (one 200 gals. per acre (5 gal./1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 5 ft. or higher, use 340 gals. per acre (8 gal./1000 sq. ft.) for anchoring.

Refer to the USDA National Standards and Specifications for Soil Erosion and Sediment Control for additional rates and methods not covered.

**PERMANENT SEEDING NOTES**

**TEMPORARY SEEDING NOTES**

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**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. Sole of concern are low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

**Conditions Where Practice Applies**

- The practice is limited to areas having 2:1 or flatter slopes where:
  - The texture of the proposed subsoil/parent material is not adequate to produce vegetative growth.
  - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuous supply of moisture and plant nutrients.
  - The original soil to be vegetated contains material toxic to plant growth.
  - The soil is so acidic that treatment with limestone is not feasible.

For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

**Construction and Material Specifications**

I. 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 Experiment Station.

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

- Topsoil shall be loam, sandy loam, clay loam, etc. 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.
- Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutgrass, poison ivy, thistle, or others as specified.
- When the subsoil is either highly acidic or composed of heavy clay, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedure.

III. For sites disturbed areas under 5 acres:

- Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I Vegetative Stabilization Methods and Materials.

IV. For sites having disturbed areas over 5 acres:

- On soil meeting Topsoil specifications, obtain test results indicating fertilizer and lime amendments required to bring the soil into compliance with the following:
  - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
  - Organic contents of topsoil shall be not less than 1.5 percent by weight.
  - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
  - No seed 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 (34 days min) to permit dissipation of phytotoxic materials.

Note: Topsoil substitutes or 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.

I. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I Vegetative Stabilization Methods and Materials.

V. Topsoil Application:

- When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Stiff Fences and Sediment Traps and Basins.
- Grades on the areas to be topsoiled, which have been previously established, shall be maintained, about 4" - 6" higher in elevation.
- Topsoil shall be uniformly distributed in a 4" - 6" 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.

VI. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

Alternative for Permanent Seeding - Instead of applying the amount of lime and commercial fertilizer, composted eluge and amendments may be applied as specified below:

- Composted eluge material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to provide amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
  - Composted eluge shall be supplied by or originate from a person or persons that are permitted (as the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
  - Composted eluge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
  - Composted eluge shall be applied at a rate of 1 ton/1000 square feet.

II. Composted eluge shall be amended with a potassium fertilizer applied at the rate of 4 lb./1000 square feet, and 1/5 the normal lime application rate.

References: Guidelines Specifications, Soil Preparation and Seeding, MD-VA, Pub. #F, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institute, Revised 1975.

1. 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 (982-2437).

2. All vegetation and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1984 Maryland Standards and Specifications for Soil Erosion and Sediment Control.

3. Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within:

- Down calendar days for all permanent sediment control structures, slope protection slopes and all slopes greater than 3:1
- Fourteen days as to all other disturbed or graded areas on the project site

4. All sediment trapping devices must be fenced and warning signs posted around their perimeter in accordance with Vol. I, Chapter 12, 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 seedings and temporary seedings, and mulching (Section G). Temporary stabilization with mulch alone can 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:

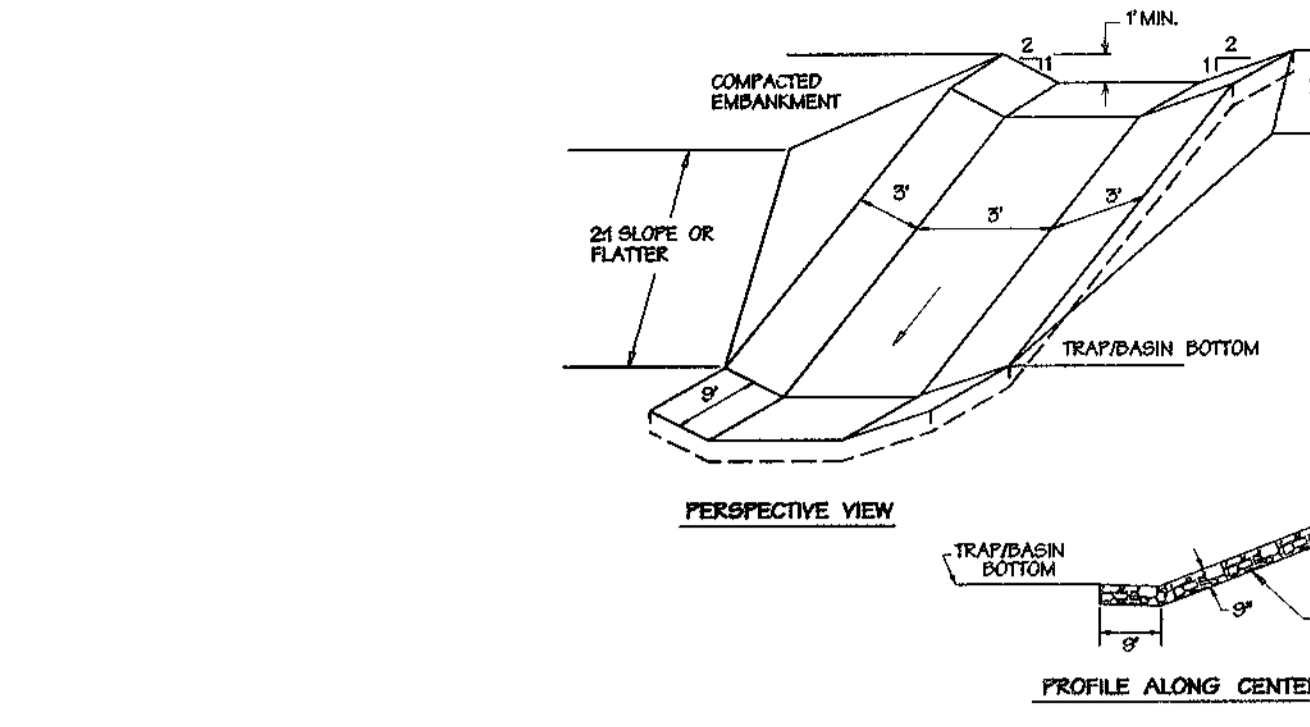
Total area of site	6.1 acres
Area to be seeded or paved	6.0 acres
Area to be vegetatively stabilized	2.54 acres
Total	8.54 acres
Off-site water/borrow area location	NA

8. Any sediment control practice which is disturbed by grading activity the 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 DPW Sediment Control Inspector.

10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of permanent erosion and sediment controls, but before proceeding with any other disturbance or grading. Other building or grading inspection approvals may not be authorized until the initial approval by the inspection agency is made.

**SEDIMENT CONTROL GENERAL NOTES**  
\* MARS GRADING PER GP - 88-128



GABION INFLOW PROTECTION

**Construction Specifications**

- Gabion inflow protection shall be constructed of 2' x 2' x 6" galvanized, forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 2' bottom width.
- Geotextile Class C shall be installed under all gabion baskets.
- The stone used to fill the gabion baskets shall be 4" - 7".
- Gabions shall be installed in accordance with manufacturer's recommendations.
- Gabion inflow protection shall be used where concentrated flow is present on slope steeper than 4:1.

**Construction Specifications**

- Seed and cover with straw mulch.
- Seed and cover with Erosion Control Matting or live with seed. 3/4" - 7" stones or recycled concrete equivalent prevent into the soil's minimum.

**Construction Specifications**

- All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1:1.
- Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
- Runoff diverted from an undisturbed area shall occur directly into an undisturbed, stabilized area at a non-erosive velocity.

4. All trees, brush, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.

5. The dike shall be constructed or shaped to the grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.

6. Fill shall be compacted by earth moving equipment.

7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.

8. Inspection and maintenance must be provided periodically and after each rain event.

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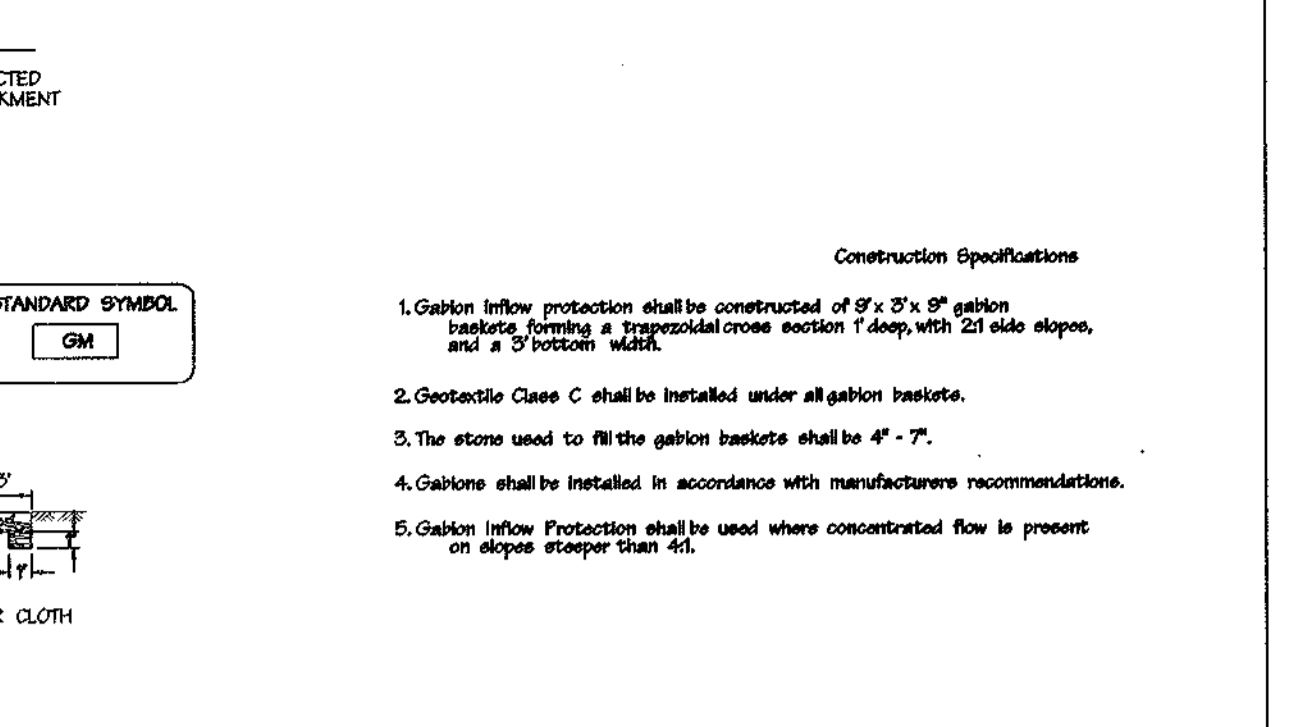
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**Construction Specifications**



SUPER SILT FENCE

**Construction Specifications**

- Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway (SHA) Details for Chain Link Fencing. The specification for a 42 inch fence shall be used, including 42" fabric and 4" length posts.
- The posts do not need to be set in concrete.
- Chain link fence shall be fastened securely to the fence posts with wire ties or staples. The lower tension wire, brack and loose rods, drive anchors and post caps are not required except on the ends of the fence. The chain link fencing shall be at (5) gauge or heavier.
- Filter cloth shall be fastened securely to the chain link fence with tie spaced every 50' at the top and mid section.
- Filter cloth shall be embedded a minimum of 6" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Maintenance shall be performed as needed and silt buildup removed when "ridges" develop in the silt fence, or when silt reaches 50% of fence height.

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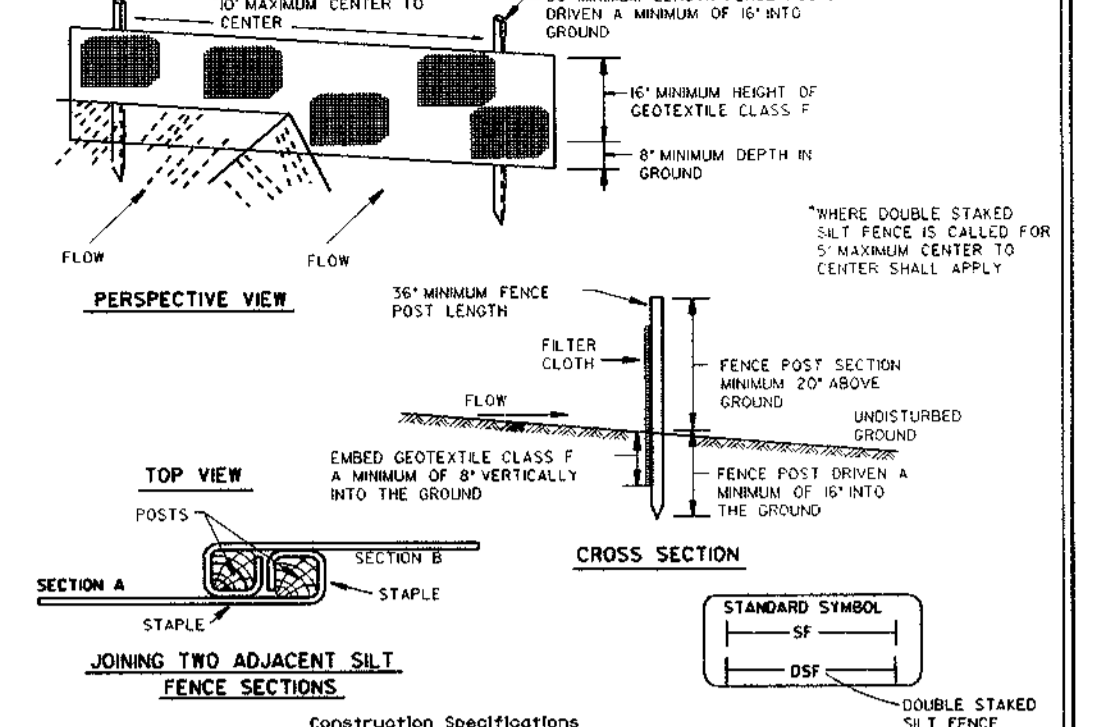
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SILTS FENCE