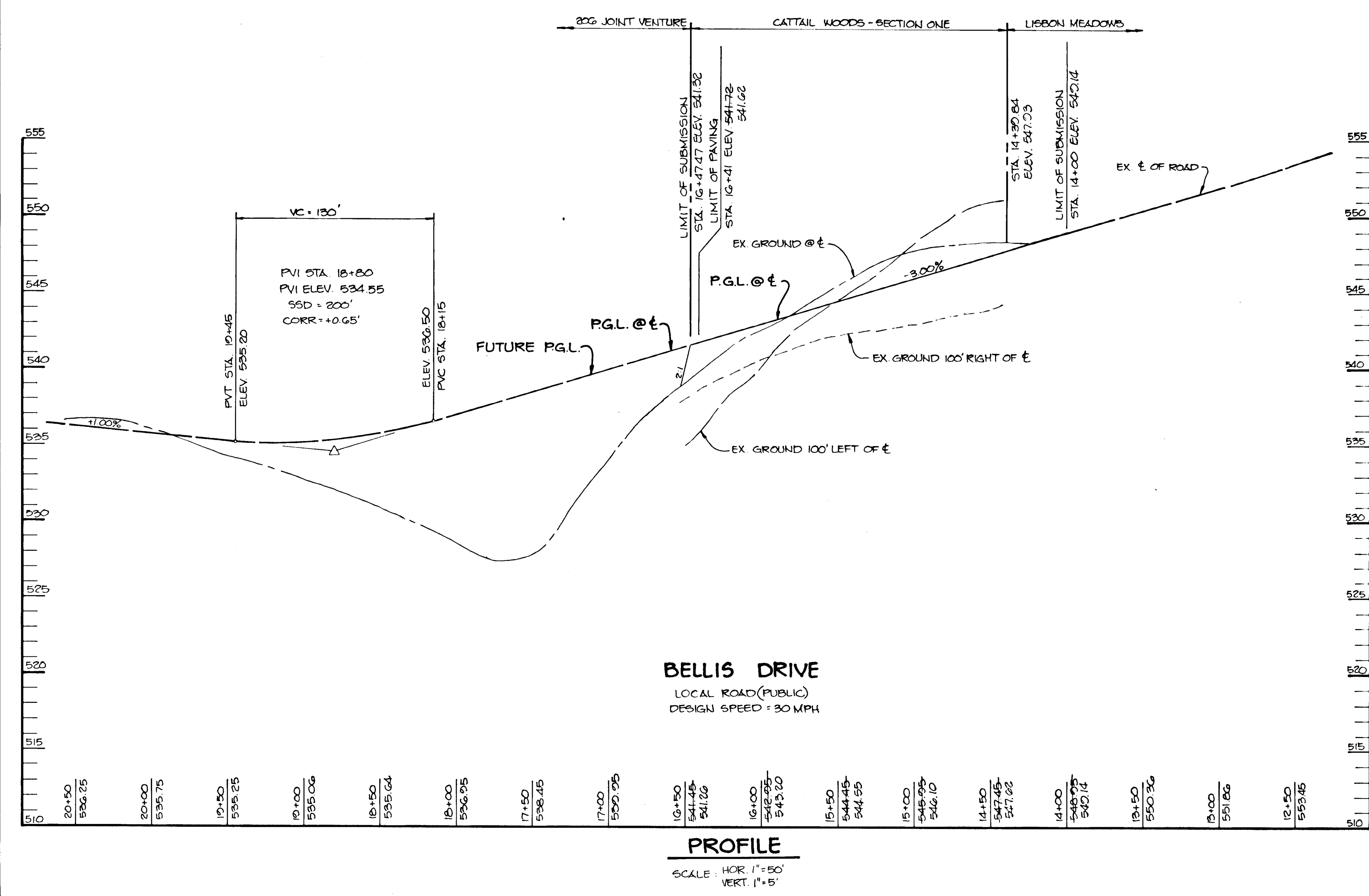


PLAN
SCALE 1"=50'



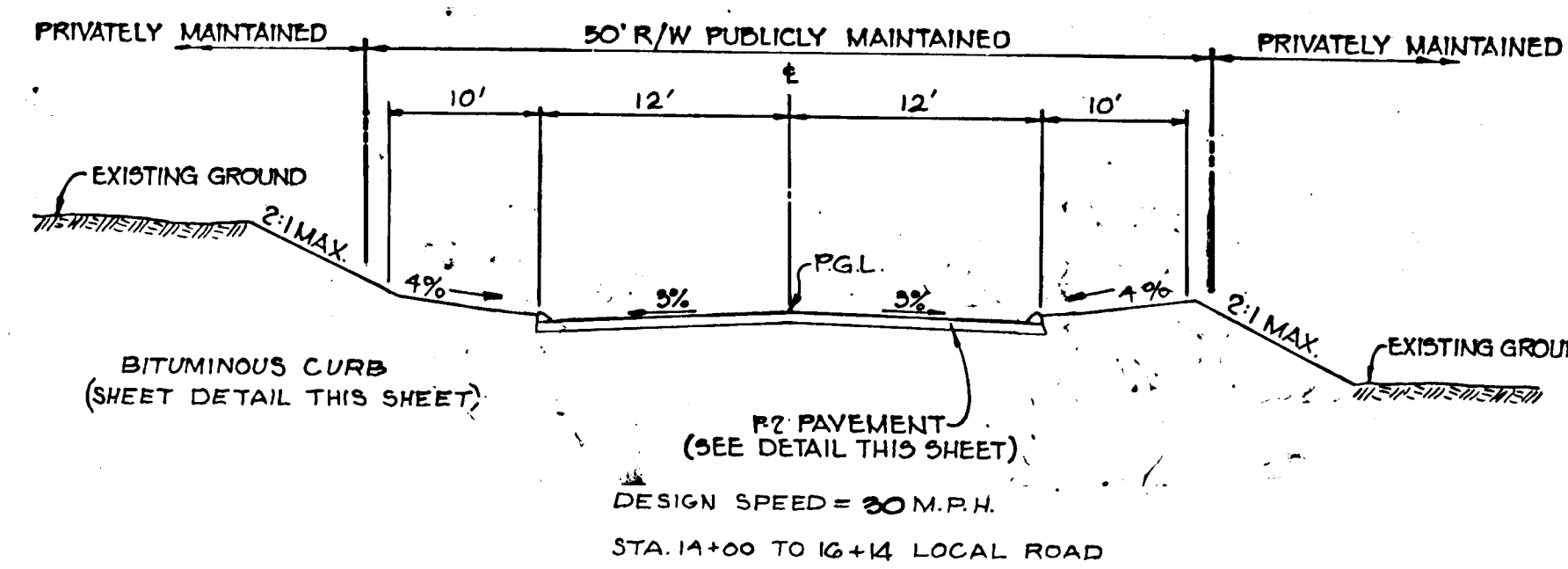
BELLIS DRIVE
LOCAL ROAD (PUBLIC)
DESIGN SPEED = 30 MPH

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

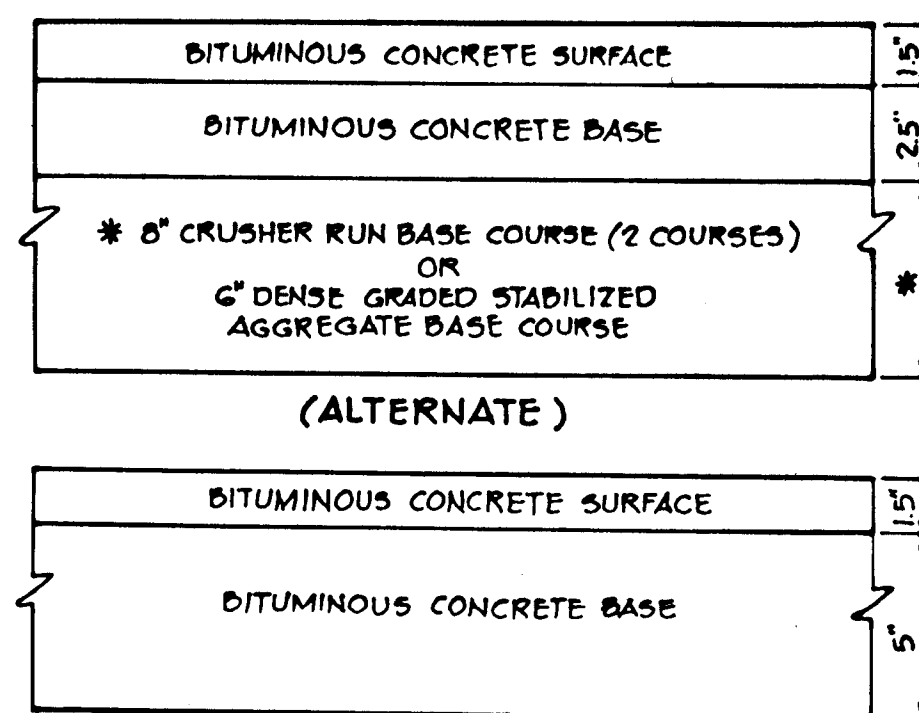
AS-BUILT CERTIFICATION	
	DATE: 4.6.93
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING	
	DATE: 11/1/91
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
	DATE: 10/20/91
CHIEF, LAND DEVELOPMENT DIVISION	
CHIEF, BUREAU OF HIGHWAYS	
DATE: 10-28-91	
CHIEF, BUREAU OF ENGINEERING	
DATE	REVISION
OWNER/DEVELOPER	
200 JOINT VENTURE % BRUCE BRENDEL 15280 UNION CHAPEL ROAD WOODBINE, MARYLAND 21797	
PROJECT: CATTAIL WOODS SECTION ONE (LOTS 1-3)	
AREA TAX MAP 7 ZONED R PARCEL 137 4 TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE: PLAN AND PROFILE BELLIS DRIVE	
RIEMER MUEGGE & ASSOCIATES, INC. A Land Planning, Engineering and Consulting Firm 3105 North Ridge Road Ellicott City, Maryland 21043 301-461-2690 FAX: 301-750-3176	
DATE: 9-5-91	DESIGNED BY: J.J.B.
DATE: 5-87-71 F-80-244 F-80-23	DRAWN BY: DAM
	PROJECT NO: 34809
	DATE: JUNE, 1991
	SCALE: AS SHOWN
	DRAWING NO. 2 OF 5

1552

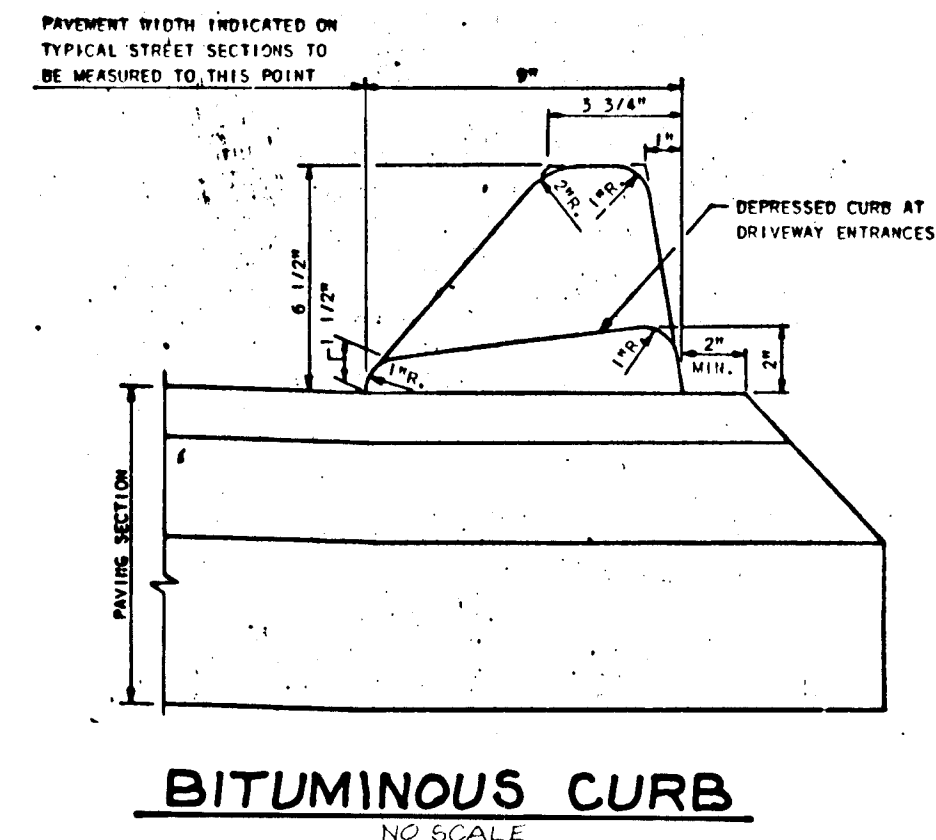
MARYLAND BLUEPRINT CO. INC. 123709



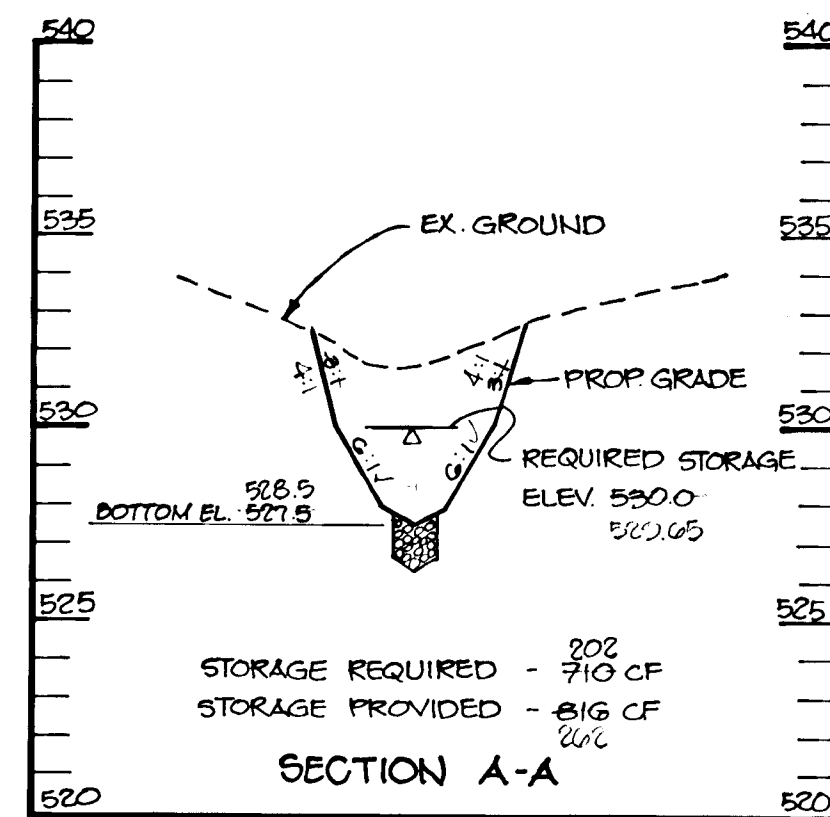
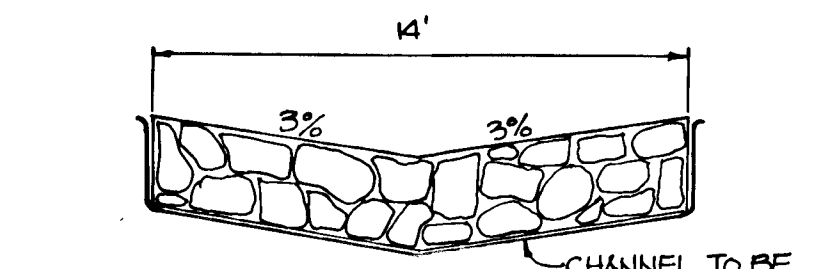
BELLIS DRIVE
ZONING R, NO SCALE



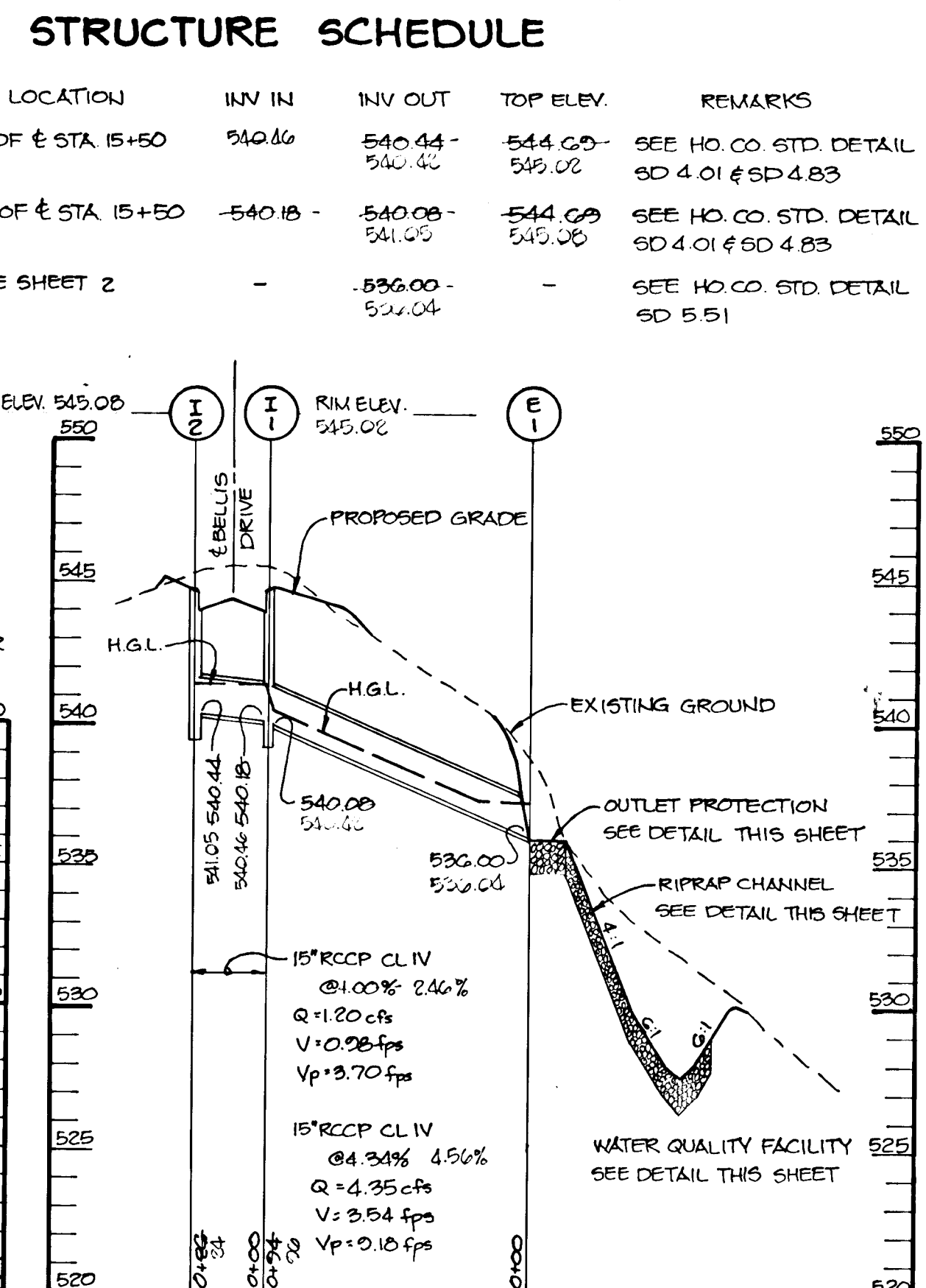
HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-2.01)
(6" PAVING, P-2)



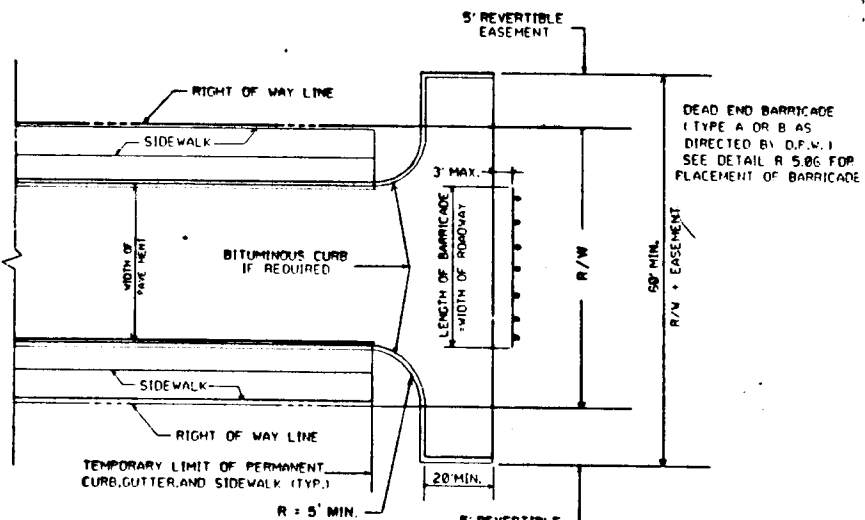
BITUMINOUS CURB
NO SCALE



SECTION A-A
SCALE HOR: 1"=50'
VERT: 1"=5'

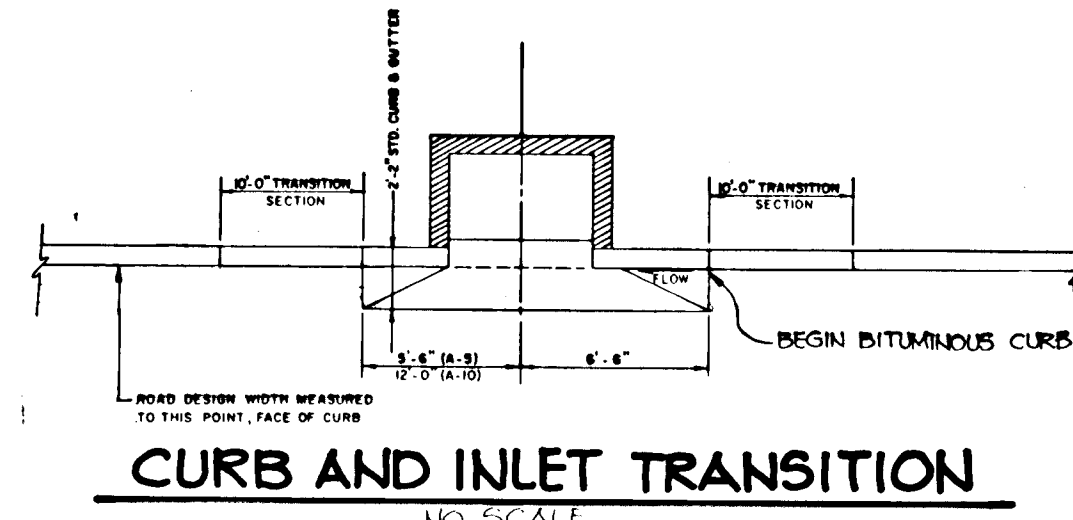


STORM DRAIN PROFILE
SCALE HOR: 1"=50'
VERT: 1"=5'

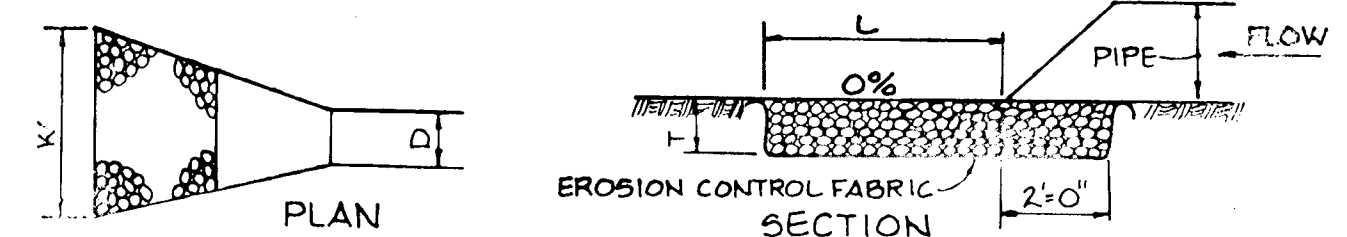


- NOTES:
1. A TEE TURNAROUND SHALL BE USED IN LIEU OF A CUL-DE-SAC ONLY IF THE STREET IS TO BE EXTENDED IN THE FUTURE.
2. BITUMINOUS CURB SHALL EXTEND AROUND THE TEE TURNAROUND IF AND AS REQUIRED TO CONTROL CURB DRAINAGE FROM THE ROADWAY SECTION.
3. REFER TO STANDARD R-5.06 FOR TYPICAL ROADWAY PROFILE OF TEMPORARY LIMIT OF PAVING.
4. PROVIDE REVERSIBLE EASEMENT FOR CONSTRUCTION.
5. PROVIDE EASEMENTS AS REQUIRED FOR PLACEMENT OF PAVEMENT BARRICADE AND ANY NECESSARY GRADING (SEE DETAIL R-5.06)

TEMPORARY TEE TURNAROUND
NO SCALE

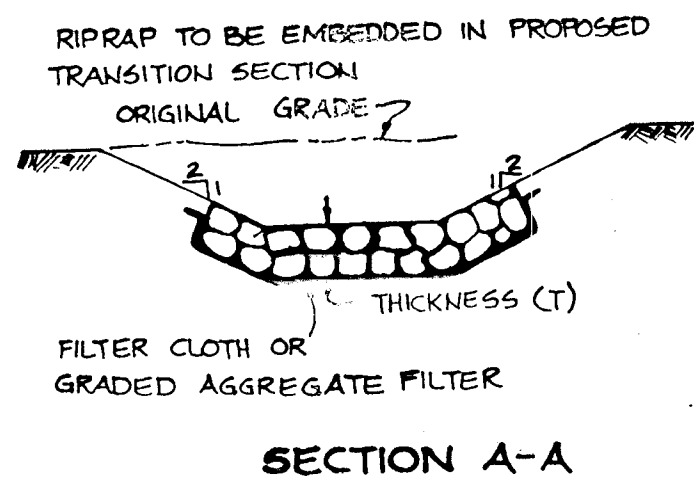


CURB AND INLET TRANSITION
NO SCALE



STRUCTURE	MEDIUM STONE DIA.	LENGTH (L)	WIDTH (W)	THICKNESS (T)
E-1	0.5'	42' 11"	14'	14"
CHANNEL	0.5'	58' 9"	14'	14"

OUTLET PROTECTION DETAIL
NO SCALE



SECTION A-A

AS-BUILT CERTIFICATION

J. Parekh
JAYKANT D. PAREKH #10148
DATE: 9.6.93

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Emma Heilmath 11/1/91
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Al M. Ryan 10/21/91
CHIEF, LAND DEVELOPMENT DIVISION/M.K. DATE

Annville W. Welton 10/3/91
CHIEF, BUREAU OF HIGHWAYS DATE

William E. Riley 10-28-91
CHIEF, BUREAU OF ENGINEERING DATE

OWNER/DEVELOPER

100 JOINT VENTURE
% BRUCE BRENDEL
15228 UNION CHAPEL ROAD
WOODBINE MARYLAND 21737

PROJECT: **CATTAIL WOODS**
SECTION ONE (LOTS 1-3)

AREA TAX MAP 7 ZONED-R PARCEL 137
4TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

TITLE: **DETAILS AND PROFILES**

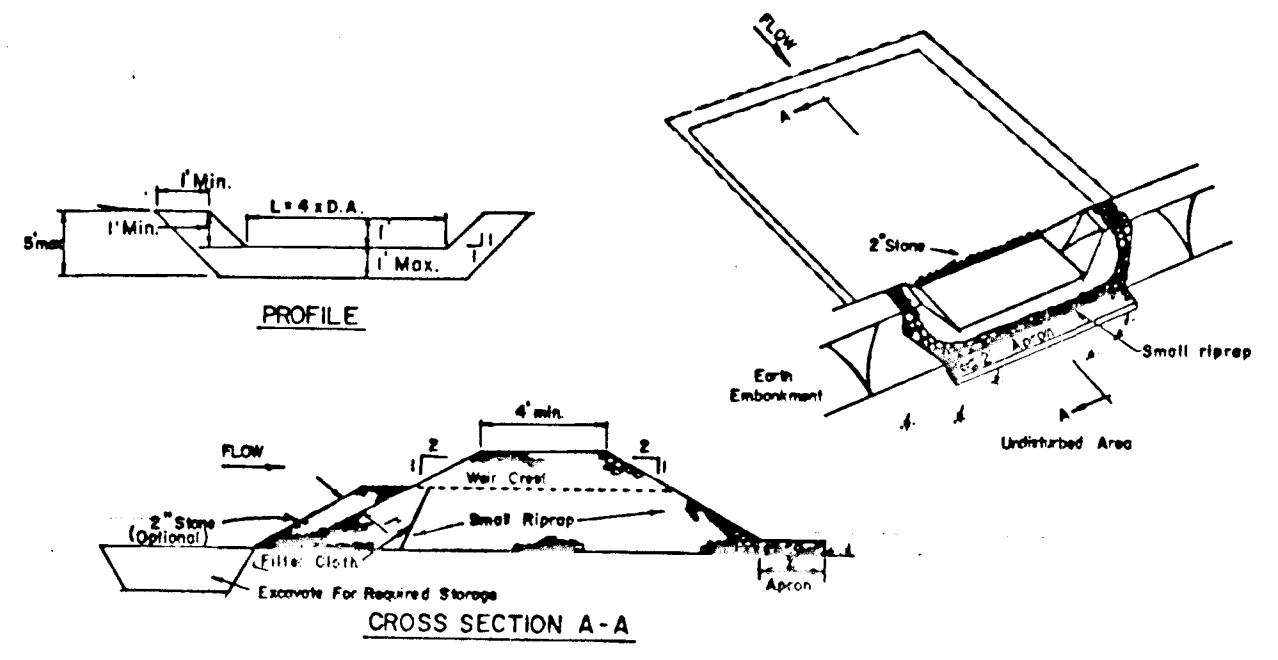
RIEMER MUEGGE & ASSOCIATES, INC.
A Land Planning, Engineering and Consulting Firm
3105 North Ridge Road Ellicott City, Maryland 21043
301-461-2690 FAX: 301-750-3176

DATE: 9-5-91

DESIGNED BY: MCM
DRAWN BY: MEL
PROJECT NO: 34803
DATE: JUNE, 1991
SCALE: AS SHOWN
DRAWING NO: 3 OF 5

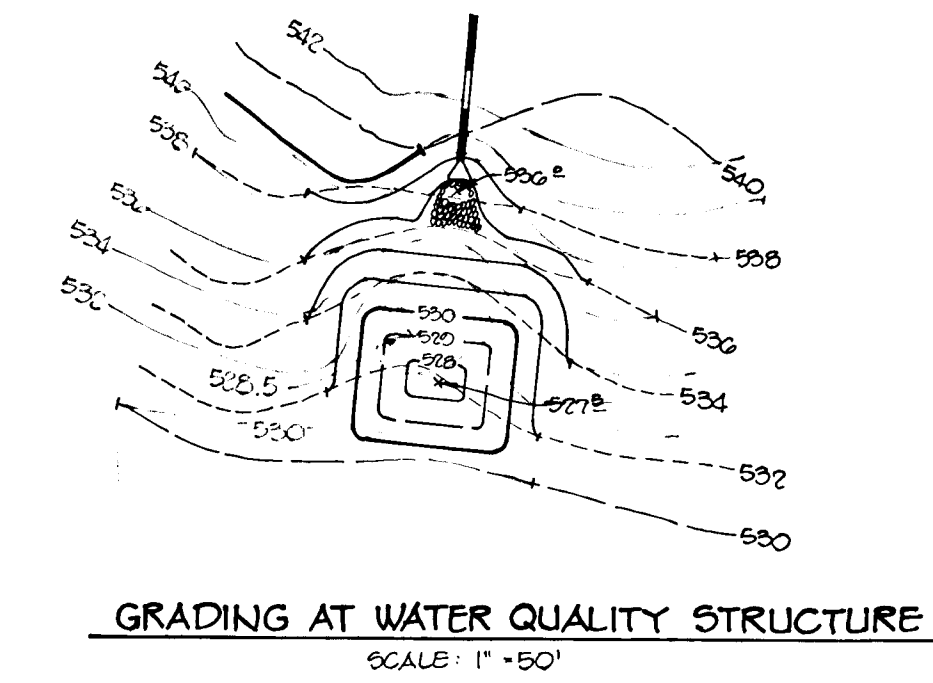
1557

MARYLAND BLUEPRINT CO. INC. 18632



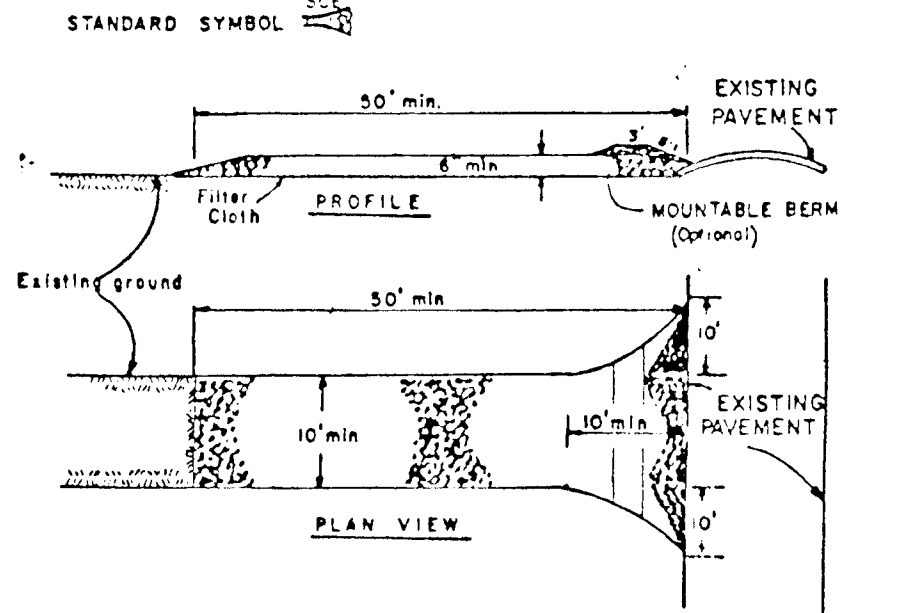
- OPTION:** A one foot layer of 2" stone may be placed on the upstream side of the riprap in place of the embedded filter cloth.
- CONSTRUCTION SPECIFICATIONS FOR ST-7**
- Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
 - The fill material for the embankment shall be free of roots and other woody vegetation as well as oversized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
 - All cut and fill slopes shall be 2:1 or flatter.
 - The stone used in the outlet shall be small riprap 4"-8" along with a 1' thickness of 2" aggregate placed on the upgrade side on the small riprap embedded filter cloth in the riprap.
 - Sediment shall be removed and trap returned to its original dimensions when the sediment has accumulated to the design depth of the trap.
 - The structure shall be inspected after each rain and repairs made as needed.
 - Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
 - The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

STONE OUTLET SEDIMENT TRAP
NO SCALE



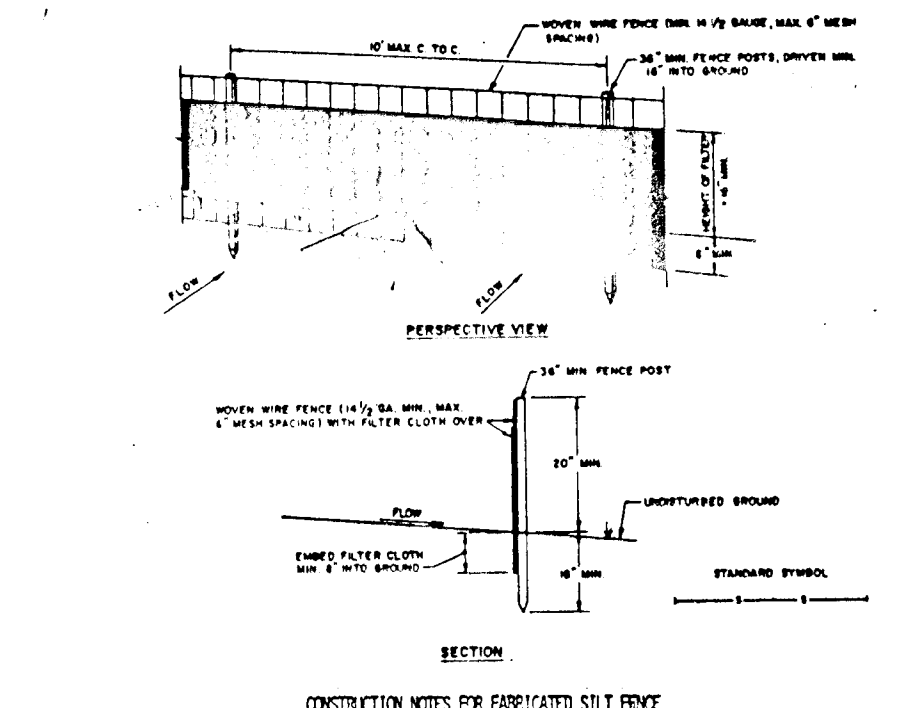
GRADING AT WATER QUALITY STRUCTURE
SCALE: 1" = 50'

- SEQUENCE OF CONSTRUCTION**
- OBTAIN GRADING PERMIT
 - CLEAR AND GRUB FOR SEDIMENT CONTROL MEASURES OR DEVICES ONLY (2 DAYS)
 - INSTALL STABILIZED CONSTRUCTION ENTRANCE, SEDIMENT TRAP #1, EARTH DIKE, AND SILT FENCE (2 DAYS)
 - CLEAR AND GRUB THE LIMIT OF DISTURBANCE AND ROUGH GRADE SITE. APPLY TEMPORARY STABILIZATION (2 DAYS)
 - INSTALL STORM DRAIN SYSTEM (2 DAYS)
 - REMOVE EX TEE TURKAROUND, INSTALL CURB AND GUTTER AND PAVE ROAD. (1 WEEK)
 - FINE GRADE AND APPLY PERMANENT STABILIZATION (2 DAYS)
 - UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR REMOVE ALL SEDIMENT CONTROL MEASURES AND STABILIZE THE REMAINING DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES AT TRAP #1 EXCAVATE ADDITIONAL EARTH FOR WATER QUALITY STRUCTURE, INSTALL STONE CHANNEL OVER FILTER CLOTH AND STABILIZE IN ACCORDANCE WITH PERMANENT SEEDING NOTES.



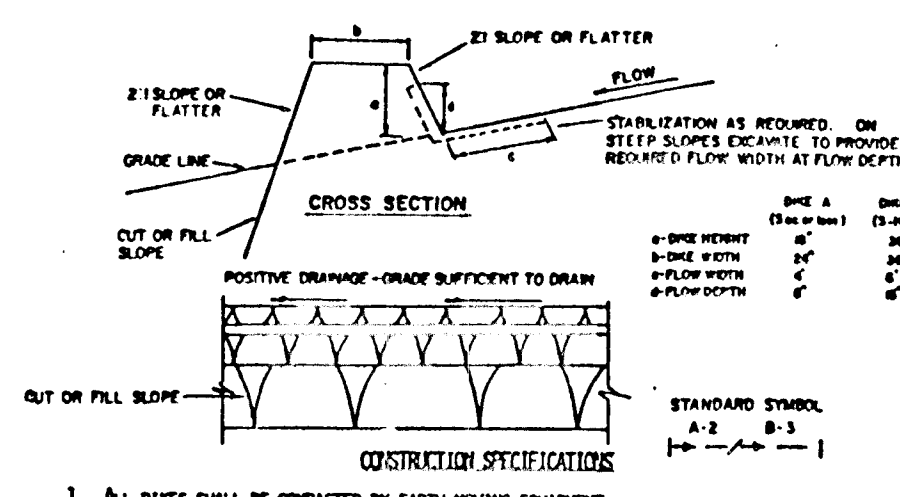
- CONSTRUCTION SPECIFICATIONS**
- Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
 - Length - As required, but not less than 50 feet (except on a single residential lot where a 15 foot minimum length would apply).
 - Thickness - Not less than six (6) inches.
 - Width - Two (2) feet minimum, but not less than the full width at points where ingress or egress occurs.
 - Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residential lot.
 - Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 3:1 slopes will be permitted.
 - Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment applied, dropped, washed or tracked onto public rights-of-way must be removed immediately.
 - Washing - Washes shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
 - Periodic inspection and needed maintenance shall be provided at each rain event.

STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



- CONSTRUCTION NOTES FOR STABILIZED SILT FENCE**
- WOOD WIRE FENCE TO BE FASTENED SECURELY TO WOOD POSTS WITH WIRE TIE OR STAPLER.
 - FILTER CLOTH TO BE FASTENED SECURELY TO WOOD POSTS WITH WIRE TIE OR STAPLER EVERY 2' AT TOP AND MID SECTION.
 - WEN NO SECTION OF FILTER CLOTH AGAIN BUILT OVER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FILLED.
 - MAINTENANCE SHALL BE PERFORMED AS FOLLOWS: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PERMANENT SEEDING NOTES. (B) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PERMANENT SEEDING NOTES.

SILT FENCE
NOT TO SCALE



- CONSTRUCTION SPECIFICATIONS**
- ALL DICES SHALL BE CONSTRUCTED BY EXISTING-TOUR EQUIPMENT.
 - ALL DICES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
 - TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
 - FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET. EARTH DICES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF DISTURBANCE. DICES SHALL BE CONSTRUCTED TO A SUFFICIENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASKET WHERE EITHER THE DICE CHANNEL OR THE DRAINAGE AREA ABOVE THE DICE ARE NOT PROPERLY STABILIZED.
 - STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PERMANENT SEEDING NOTES OR STRIP MULCH OR STRIP MULCH IF NOT IN STRIPING BEHAVIOR. (B) FLOW CHANNEL AS PER THE OWNER BELOW.

TYPE OF DISTURBANCE	CHANNEL SIZE	DICING	SEEDING
1	5-3.00	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.00	SEED AND STRAW MULCH	SEED USING JUNE, OR EXCELLENCE, SOI 2" STONE
3	5.1-8.00	SEED WITH JUNE, OR SOI 2" STONE	LINED RIP-RAP 4-8"
4	8.1-200	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

A. STONE TO BE 2" THICK STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3" THICK IN THICKNESS AND AS PROTECTIVE INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
B. RIP-RAP TO BE 4-8" THICK IN A LAYER AT LEAST 8" THICK IN THICKNESS AND PROTECTIVE INTO THE SOIL.
C. THE SOIL SHALL BE STABILIZED WITH PERMANENT SEEDING NOTES.
D. PERMANENT SEEDING NOTES CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.
E. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

EARTH DIKE
NOT TO SCALE

EROSION & SEDIMENT CONTROL NOTES

- A minimum of 24 hours notice must be given to the Howard County Office of Inspections and Permits prior to the start of any construction (992-1437).
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:

Total Area of Site	1454	acres
Area Disturbed	0.65	acres
Area to be roofed or paved	0.55	acres
Area to be vegetatively stabilized	0.57	cu. yds.
Total Cut	20	cu. yds.
Total Fill	20	cu. yds.
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment controls must be provided, if deemed necessary by the Howard County Department of Public Works Sediment Control Inspector.
- Site grading will begin only after all perimeter sediment control measures have been installed and are in a functioning condition.
- Sediment will be removed from traps when its depth reaches the clean out elevation shown on the plans.
- 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, nor do they reflect consideration of undercutting or removal of unusable material. The contractor shall familiarize himself with site conditions which may affect the work.

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

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

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

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

Seeding: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs./1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by Option (1) 2 tons per acre of well-anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well-anchored straw.

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

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

PERMANENT SEEDING NOTES

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

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

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

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2 1/2 tons per acre of annual ryegrass (1.2 lbs./1000 sq. ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (.07 lbs./1000 sq. ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

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

TEMPORARY SEEDING NOTES

DATE	NO.	REVISION

AS-BUILT CERTIFICATION

STATE OF MARYLAND
JAYKANT D. PAREKH # 10148
4.6.93
DATE

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 NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT."
Parcel 13 7 Doc.
Bruce B. Brendel President
3/28/91
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 COUNTY SOIL CONSERVATION DISTRICT."
Max Kauter
9-5-91
DATE

REVIEWED FOR HOWARD COUNTY S.C.D.
AND MEETS TECHNICAL REQUIREMENTS
James M. Helm / JMH 9/24/91
DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
John R. Robertson 9/24/91
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Amina Hilsomath 11/1/91
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
C. M. Pagan 10/20/91
DATE
D. W. Albrecht 10/3/91
DATE
D. W. Albrecht 10-28-91
DATE

OWNER/DEVELOPER
200 JOINT VENTURE
96 BRUCE BRENDDEL
15208 UNION CHAPEL ROAD
WOODBINE, MARYLAND 21797

PROJECT: CATTAIL WOODS
(SECTION 1 - LOTS 1-3)

AREA: TAX MAP 7 ZONED - R
4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: SEDIMENT CONTROL NOTES AND DETAILS

RIEMER MUEGGE & ASSOCIATES, INC.
A Land Planning, Engineering and Consulting Firm
3105 North Ridge Road Ellicott City, Maryland 21043
301-461-2690 FAX: 301-750-3176

9-5-91 DATE
S-87-71 P-80-244
P-80-23
DESIGNED BY: JJD
DRAWN BY: G.R.H.
PROJECT NO: 34803
DATE: JUNE, 1991
SCALE: AS SHOWN
DRAWING NO. 5 OF 5

F-89-244 AS-BUILT

1552