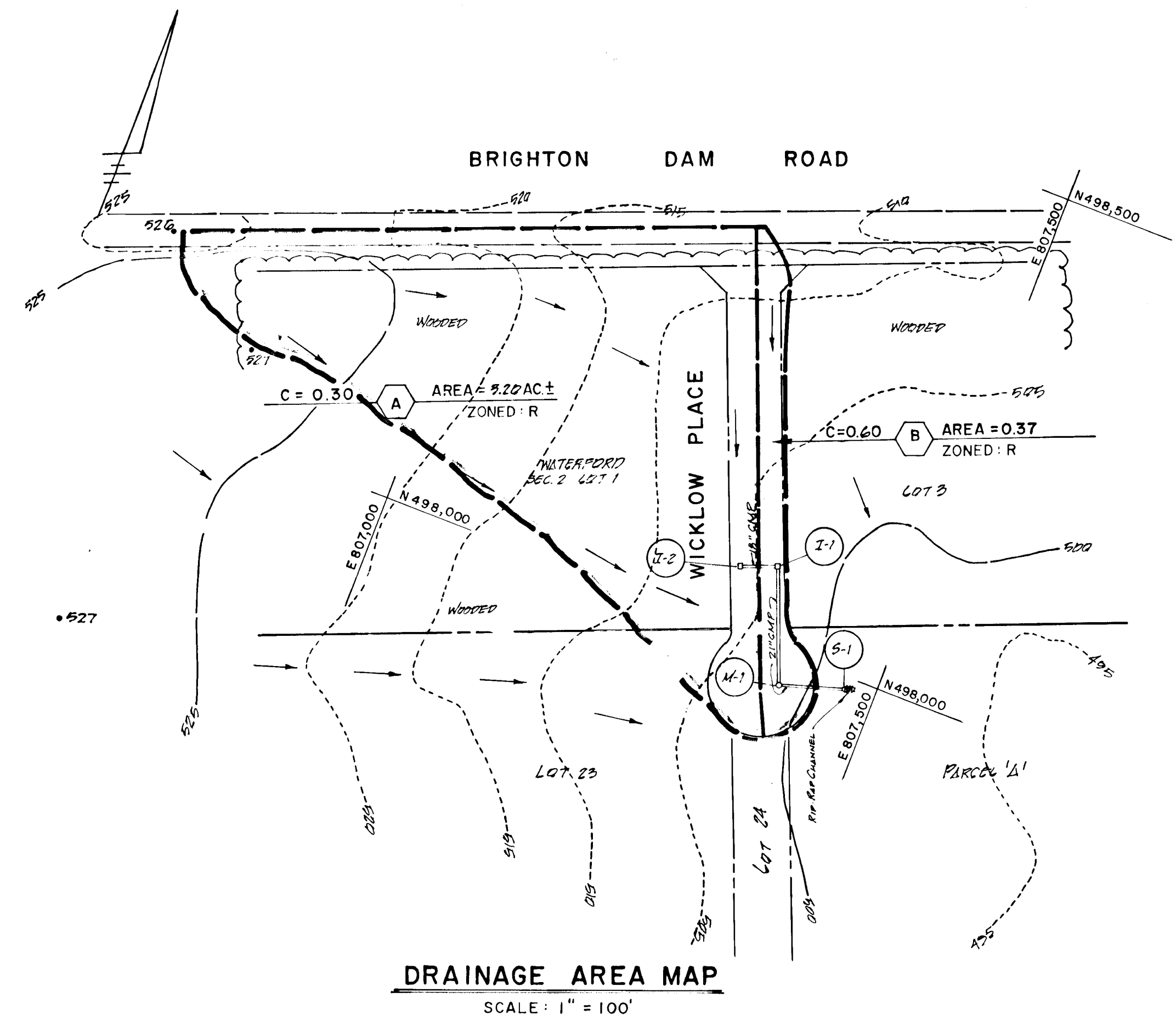


APPROVED
DEPARTMENT OF PUBLIC WORKS
Paul W. Peterson 1/12/89
CHIEF, LAND DEVELOPMENT DIVISION DATE

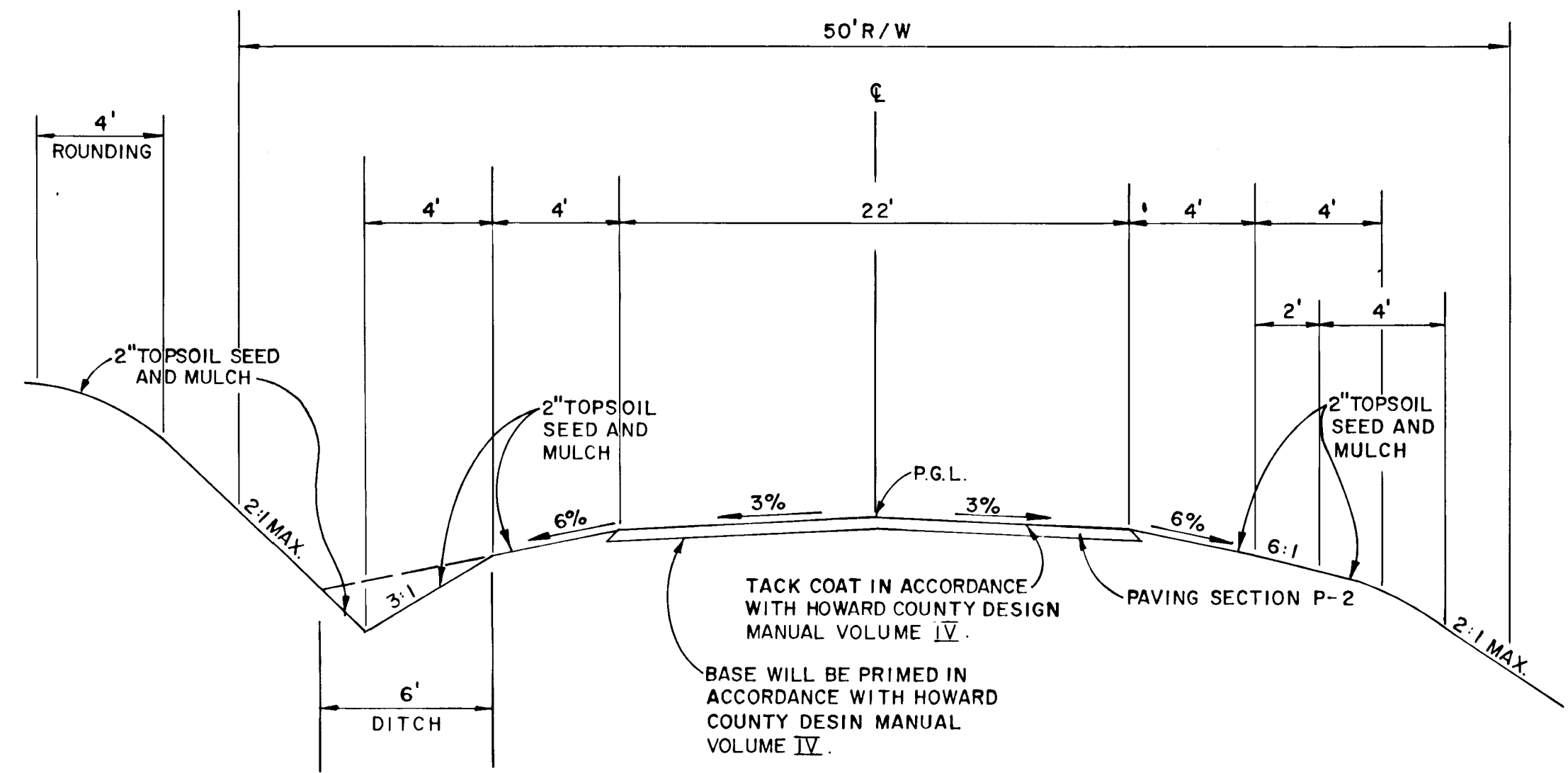
APPROVED
DEPARTMENT OF PUBLIC WORKS
Francis W. Weland 1/12/89
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
William S. Ray 1-17-89
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED
OFFICE OF PLANNING AND ZONING
Mark S. D'Angeli 1-27-89
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

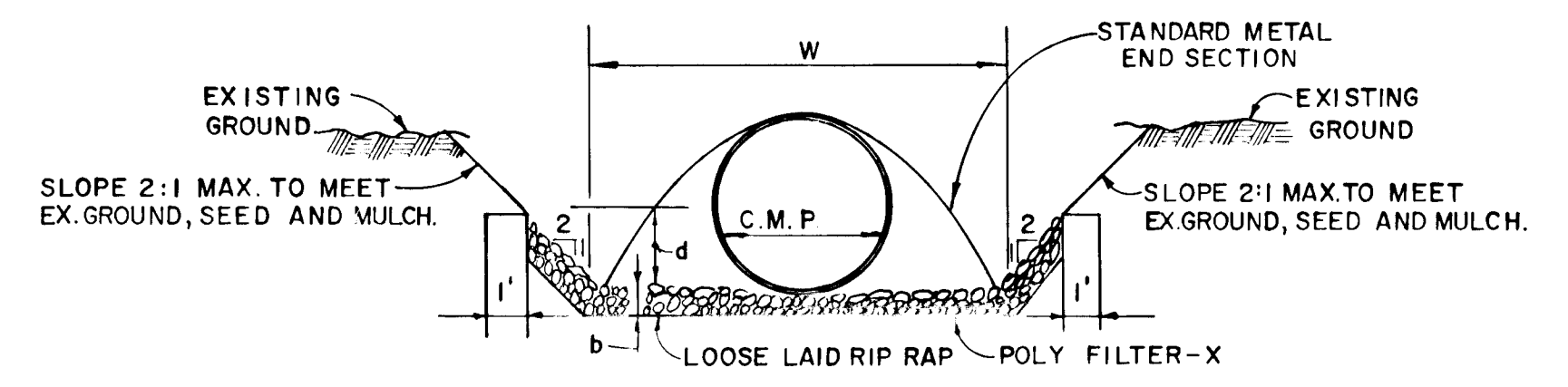


DRAINAGE AREA MAP
SCALE: 1" = 100'

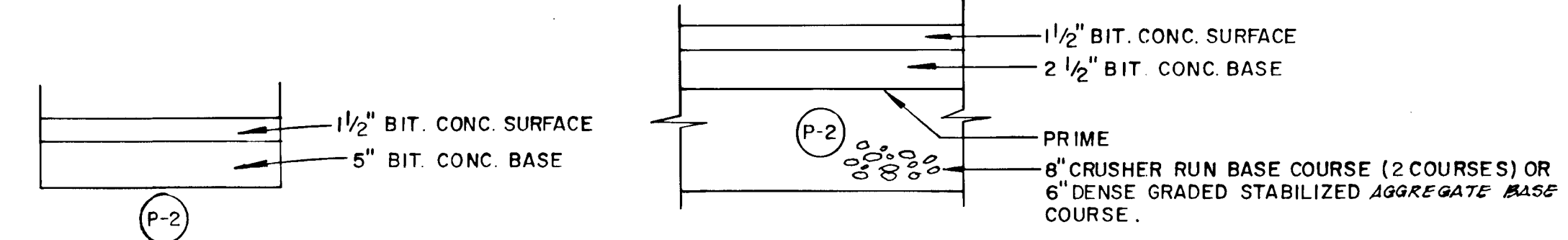


TYPICAL SECTION
NO SCALE

ROAD NAME	CLASSIFICATION	DESIGN SPEED	STATIONING
WICKLOW PLACE	CUL-DE-SAC	25 M. P. H.	0+00 TO 4+35



RIP-RAP CHANNEL DETAIL
NO SCALE



PAVING SECTION P-2
NO SCALE

CHANNEL DESIGN DATA

STRUCT.	AREA ^{sq}	P'	R	R ^{2/3}	S	S ^{1/2}	n	Q	V	d	W	RIP-RAP SIZE		b
												d50	dmax.	
S-1	3.87	7.77	0.497	0.628	0.0050	0.0707	0.04	6.98 cfs	1.65 fps	0.62'	5.0'	4"	6"	9"

STRUCTURE SCHEDULE

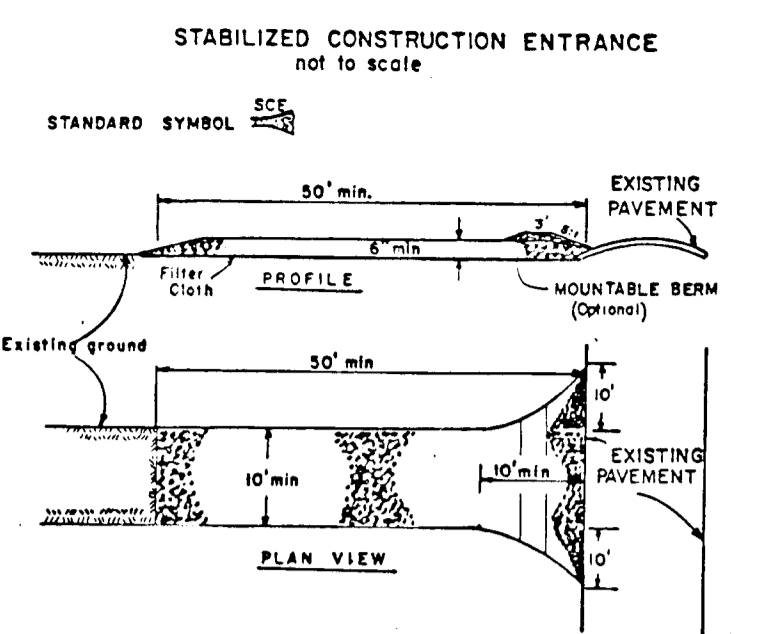
STRUCTURE	TYPE	INVERT IN	INVERT OUT	TOP ELEV.	STATION	REMARKS
I-1	10" INLET	457.00'	456.84'	458.00'	# STA. 9+80.00	DWRG. S.D. 4.11
I-2	10" INLET	457.00'	457.45'	458.00'	# STA. 9+80.00	DWRG. S.D. 4.11
M-1	STD. Manhole Metal	455.50'	455.50'	456.00'	6 P. STA. 9+79.71	DWRG. G. 5.02
S-1	METAL End Section	455.50'	455.50'	456.00'	---	DWRG. S.D. 5.63

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SUITE 304, 5570 STERRET PLACE
COLUMBIA, MD 21044

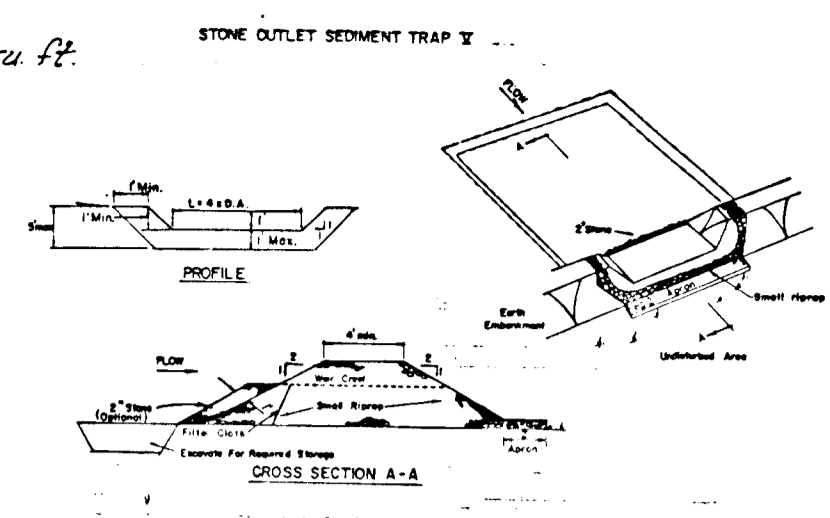
Charles J. Crovo 9/20/88
CHARLES J. CROVO SR. DATE

DRAINAGE AREA MAP, ROAD SECTION AND DETAILS
WATERFORD
SECTION 2
LOTS 23, 24 AND PARCEL 'A'
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN AUG. 31, 1988
SHEET 2 OF 3

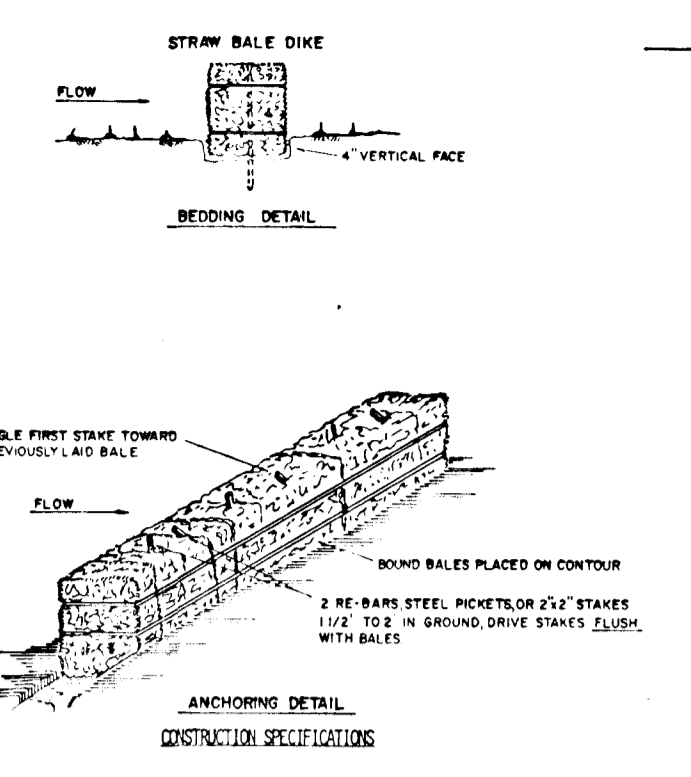


- CONSTRUCTION SPECIFICATIONS**
- Stone Size - Two 2" stones, or recycled or recycled concrete equivalent.
 - Length - As required, but not less than 30 feet (except on a slope less than 1:1 where a 30 foot minimum length would apply).
 - Thickness - Not less than six (6) inches.
 - Width - Ten (10) foot 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 replaced on a slope less than 1:1.
 - Surface Water - All surface water flowing or diverted toward construction entrance shall be piped across the entrance. If piping is impractical, a mountable beam with 3:1 slope will be permitted.
 - Maintenance - The entrance shall be maintained in a condition which will prevent tracking of flowing sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and rapid and/or cleanup of any measures used to trap sediment. All sediment applied, dropped, washed or tracked onto public rights-of-way must be removed immediately.
 - Washing - Areas 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 after each rain.

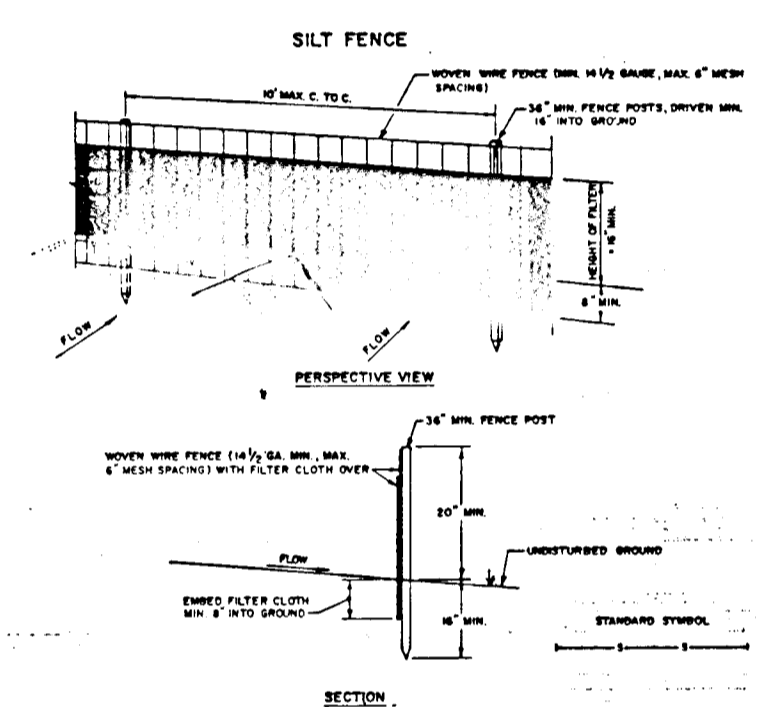
2021 DATA
 DRAINAGE AREA = 40 AC ±
 REQUIRED STORAGE = 1000 x A = 7000 cu ft.
 STORAGE PROVIDED = 7230 cu ft.
 DEPTH = 3'
 BOTTOM DIMENSION = 46' x 46'
 BOTTOM ELEV. = 491.50'
 WEIR ELEV. = 492.50'
 TOP ELEV. = 492.50'
 CLEANOUT ELEVATION = 493.00'
 SIDE SLOPES 1:1
 TOP DIMENSIONS: 62' x 52'



- CONSTRUCTION SPECIFICATIONS FOR FILL**
- Area under subsoil shall be cleared, graded and compacted to meet the subgrade.
 - The fill material for the subsoil shall be free of roots and other woody vegetation as well as unapproved stones, rocks, organic material or other objectionable materials. The subsoil shall be compacted to meet the requirements of the project.
 - All soil and fill placed shall be 100% free of roots.
 - The stone used in the outlet shall be small rip-rap 4" to 6" in diameter.
 - 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 permanently stabilized.

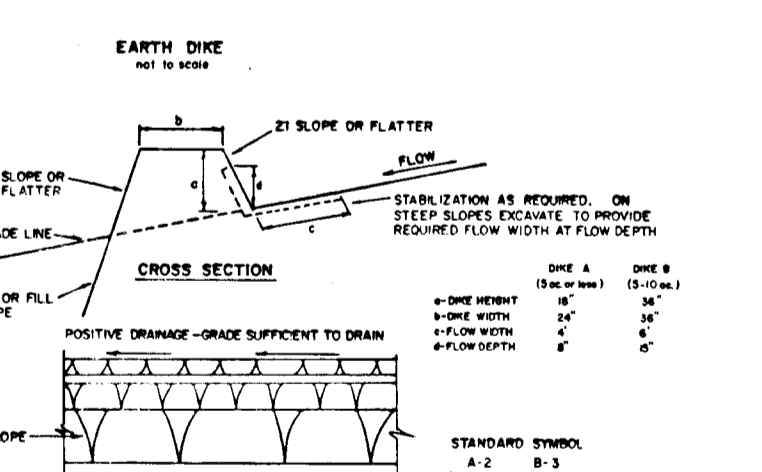
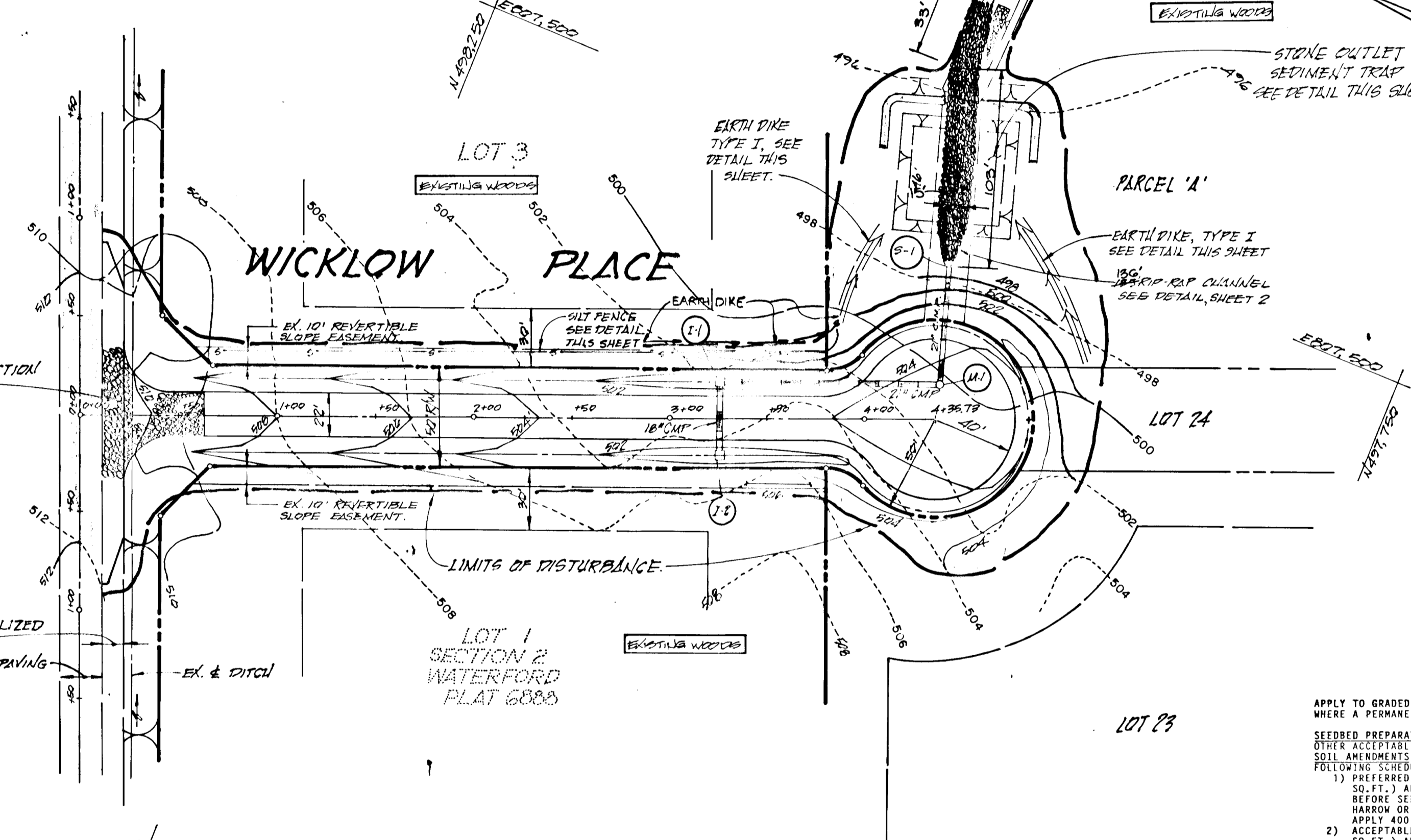


- CONSTRUCTION SPECIFICATIONS**
- Bales shall be placed at the toe of a slope or on the contour and in a row with ends tightly abutting the adjacent bales.
 - Each bale shall be covered in the soil a minimum of (6) inches, and placed so the bales are horizontal.
 - Bales shall be securely anchored in place by either no stakes or re-bar driven through the bale. The first stake in each bale shall be driven through the bale at an angle to force the bales together. Stakes shall be driven flush with the bale.
 - Inspection shall be frequent and repair replacement shall be made promptly as needed.
 - Bales shall be removed when they have served their usefulness as not to block or impede storm flow or drainage.



- CONSTRUCTION NOTES FOR PERMANENT SILT FENCE**
- Never wire fence to be fastened directly to fence posts with wire ties or staples.
 - Filter cloth to be fastened securely to fence posts with wire ties or staples.
 - When the sections of filter cloth align each other they shall be overlapped by six inches and nailed.
 - Maintenance shall be performed as needed to maintain proper mesh "bales" develop in the silt fence.

- CONSTRUCTION SEQUENCE**
- OBTAIN GRADING PERMIT.
 - CONSTRUCT STONE CONSTRUCTION ENTRANCE.
 - CONSTRUCT STONE OUTLET SEDIMENT TRAP.
 - INSTALL SILT FENCE, STRAW BALES AND EARTH DIKES AS SHOWN ON THIS SHEET.
 - CLEAR WICKLOW PLACE AND BRIGHTON DAM ROAD.
 - CONSTRUCT STORM DRAIN SYSTEM FROM S-1 THRU S-2.
 - PLACE WICKLOW PLACE AND BRIGHTON DAM ROAD TO SUBGRADE AND LAY BASE COURSE.
 - CONTRACTOR SHALL INSTALL SILT FENCE OR STRAW BALE DIKES DOWNGRADE OF ANY DISTURBED AREA ALONG BRIGHTON DAM ROAD DAILY.
 - GRADE SLOPE AREAS BETWEEN EXISTING GROUND AND EDGE OF PAVING.
 - UPON STABILIZATION OF GRADED AREAS, INLETS SHALL BE OPENED AND ALL ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE STORM DRAIN SYSTEM.
 - DURING CONSTRUCTION, SEDIMENT SHALL BE REMOVED FROM THE STONE OUTLET SEDIMENT TRAP WHEN THE CLEANOUT ELEVATION HAS BEEN REACHED.
 - REMOVE STONE CONSTRUCTION ENTRANCE.
 - INSTALL RIP-RAP CHANNEL AT S-1.
 - CLEAN BASE COURSE, APPLY TACK COAT TO BASE COURSE AND LAY SURFACE COURSE. STABILIZE ALL SHOULDER AREAS WITH PERMANENT SEEDING.
 - REMOVE EARTH DIKE, SILT FENCE AND STRAW BALE DIKES ONCE DISTURBED AREAS HAVE BEEN STABILIZED.
 - ALL DISTURBED AREAS DUE TO REMOVAL OF SEDIMENT CONTROL MEASURES SHALL BE GRADED AND STABILIZED BY PERMANENT SEEDING.
 - FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: (a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, SWALES, DITCH PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1; (b) 14 DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
 - NOTIFY HOWARD COUNTY OFFICE OF INSPECTION AND PERMITS FOR FINAL INSPECTION AT DURATION OF PROJECT.



ELM CHANNEL STABILIZATION

TYPE OF CHANNEL	CHANNEL	DIKE	DIKE B
1	5-3-02	Seed and Straw Mulch	Seed and Straw Mulch
2	3-3-02	Seed and Straw Mulch	Seed and Straw Mulch
3	5-3-02	Seed and Straw Mulch	Seed and Straw Mulch
4	8-3-02	Lined Rip-Rap 4-8"	Engineering Design

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 SCHEDULE.

- 1) PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (80 LBS/1000 SQ.FT.) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.) BEFORE SEEDING.
- 2) ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (80 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 7 LBS. PER ACRE (.08 LBS/1000 SQ.FT.) OF WEEPING LONGGRASS. 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 500, OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WILL ANCHORED STRAW.

MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (20 TO 30 LBS/1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 210 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHTER, USE 348 GALLONS 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 REDISTURBED 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/1000 SQ.FT.)

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ.FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF BEeping LONGGRASS (.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 SO.

MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (20 TO 30 LBS/1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 210 GAL PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES, 8 FT., OR HIGHTER, USE 348 GAL PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

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

Signature: *Charles J. Cruvo* DATE: 9/2/88
 SIGNATURE OF ENGINEER DATE

DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES 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 OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

Signature: *John S. Campbell* DATE: 12-15-88
 SIGNATURE OF DEVELOPER DATE

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 Signature: *John S. Campbell* DATE: 12-15-88
 U.S. SOIL CONSERVATION DISTRICT DATE

THE DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 Signature: *Stephen F. Rubin* DATE: 12-14-88
 DISTRICT HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: OFFICE OF PLANNING AND ZONING
 Signature: *Joseph S. Campbell* DATE: 1-27-89
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Signature: *William E. Ryan* DATE: 1-17-89
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Signature: *Dr. William W. Williams* DATE: 1/17/89
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Signature: *Donald E. Ryan* DATE: 1/12/89
 CHIEF, LAND DEVELOPMENT DIVISION DATE

GRADING AND SEDIMENT CONTROL PLAN
WATERFORD
 SECTION 2
 LOTS 23, 24 AND PARCEL 'A'
 5TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE: AS SHOWN AUG 31, 1988
 SHEET 3 OF 3

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