

GENERAL NOTES

- 1.) ALL WORK SHALL BE DONE IN ACCORDANCE WITH HOWARD COUNTY STANDARDS, SPECIFICATIONS, AND DETAILS FOR CONSTRUCTION.
- 2.) ALL UTILITY COMPANIES MUST BE NOTIFIED 24 HOURS IN ADVANCE OF ANY CONSTRUCTION.
- 3.) ALL INLETS SHALL BE HOWARD COUNTY STANDARDS UNLESS OTHERWISE SHOWN. ALL "A" INLETS SHALL BE DEPRESSED.
- 4.) STORM DRAIN TRENCHES WITHIN ROAD RIGHTS-OF-WAYS SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY ROAD CODE.
- 5.) ANY DAMAGE, TO PUBLIC RIGHTS-OF-WAYS OR PAVING WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- 6.) CONTRACTOR TO NOTIFY THE HOWARD COUNTY DEPT. OF INSPECTION AT LEAST 3 DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
TELEPHONE 792-7272
- 7.) ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN COMPLIANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 1978 EDITION.
- 8.) DESIGN SHOWN HEREON IS BASED ON 1" AERIAL TOPOGRAPHY PREPARED BY MAPS INC.
- 9.) WATER AND SEWER SEDIMENT CONTROL SHOWN ON SHEET 5 IS FOR INFORMATIONAL PURPOSES ONLY. SEE WATER AND SEWER CONTRACT #24-1758 D FOR WATER AND SEWER SEDIMENT CONTROL.

BENCH MARKS

BM # 1 ELEV = 374.31

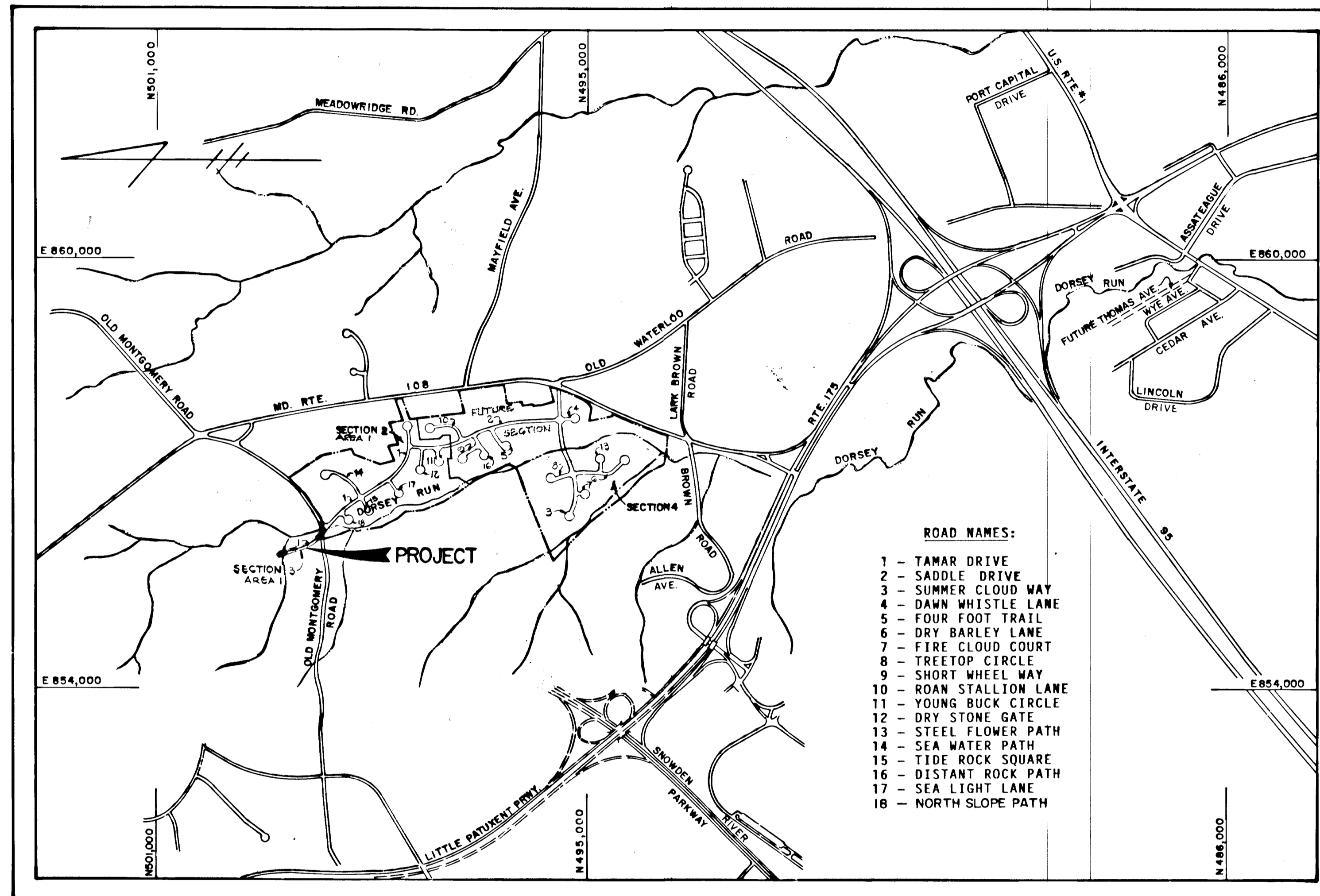
P.K. NAIL SET IN C&P # 5, 40' ± SOUTHEAST OF P.I. "H-2"
*SEE SHEET 2 FOR LOCATION.

BM # 2 ELEV = 315.72

P.K. NAIL SET IN 30" OAK TREE BETWEEN TRAV. STA. H-9 & H-10; 150' SOUTH OF H-9
*SEE SHEET 7 FOR LOCATION.

STREET LIGHT

⊙ - 250 WATT MERCURY VAPOR LAMP MOUNTED ON A 30 FOOT POLE LOCATED AT E. STA. 40+64.25 TAMAR DRIVE. FOR LOCATION SEE SHEET 2.



SCALE: 1" = 1200'

**COLUMBIA
VILLAGE OF LONGREACH**

SECTION 3 AREA 1

SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

APPROVED DEPARTMENT OF PUBLIC WORKS
Franklin H. Wells 2/1/88
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED DEPARTMENT OF PUBLIC WORKS
Richard E. P. ... 3-17-88
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED OFFICE OF PLANNING AND ZONING
James ... 3/25/88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED DEPARTMENT OF PUBLIC WORKS
William ... 3
CHIEF LAND DEVELOPMENT DIVISION DATE

- INDEX OF SHEETS:**
- 1.) TITLE SHEET
 - 2.) TAMAR DRIVE - PLAN AND PROFILE
 - 3.) ROADWAY SECTION, NOTES & DETAILS
 - 4.) STORM DRAIN PROFILES
 - 5.) STREET TREE, GRADING AND SEDIMENT CONTROL PLAN
 - 6.) STREET TREE, GRADING AND SEDIMENT CONTROL PLAN

HORIZONTAL & VERTICAL CONTROL BASED ON HOWARD CO. TRAVERSE #2544002 & #2544008



OWNER & DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
S87-39 P87-60

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERS & LAND SURVEYORS
8388 COURT AVENUE
ELLCOTT CITY, MARYLAND 21043

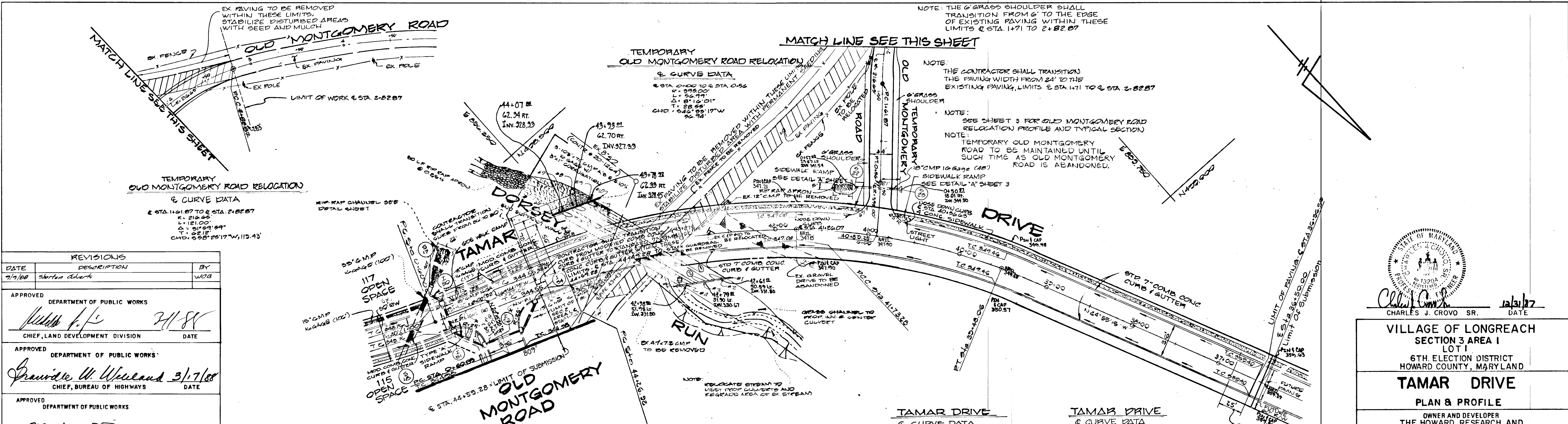
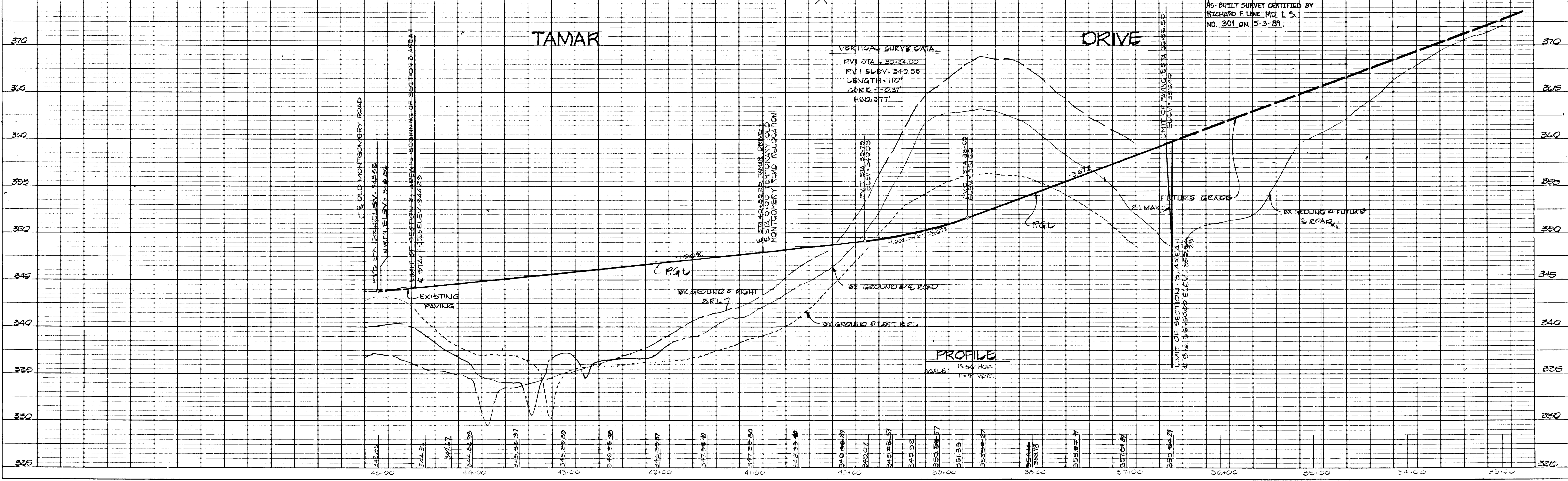
DATE
BY
SURVEYED
PLOTTED
CHECKED
RT. OF WAY CHECKED
NOTE BOOK NO.

DATE
BY
SURVEYED
PLOTTED
CHECKED
STRUCTURE NOTATION CHKD
NOTE BOOK NO.

DATE	DESCRIPTION	BY
7/9/88	Shirley Clark	WOB

APPROVED	DEPARTMENT OF PUBLIC WORKS	DATE
<i>[Signature]</i>	CHIEF, LAND DEVELOPMENT DIVISION	3/1/88
APPROVED	DEPARTMENT OF PUBLIC WORKS	DATE
<i>[Signature]</i>	CHIEF, BUREAU OF HIGHWAYS	3/17/88
APPROVED	DEPARTMENT OF PUBLIC WORKS	DATE
<i>[Signature]</i>	CHIEF, BUREAU OF ENGINEERING	3-17-88
APPROVED	OFFICE OF PLANNING AND ZONING	DATE
<i>[Signature]</i>	CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	3/25/88

NO.	DATE	DESCRIPTION	BY
#1	N498782.078	E886161.889	CORNER OF WALL @ FACE
#2	N498783.036	E886167.829	@ PIPE @ END
#3	N498787.928	E886181.867	@ PIPE @ END
#4	N498784.182	E886198.063	@ PIPE @ END
#5	N498784.082	E886207.868	CORNER OF WALL @ FACE
#6	N498784.872	E886284.977	CORNER OF WALL @ FACE
#7	N498787.860	E886248.877	@ PIPE @ END
#8	N498787.768	E886234.848	@ PIPE @ END
#9	N498788.076	E886280.820	@ PIPE @ END
#10	N498788.122	E886210.823	CORNER OF WALL @ FACE



STATE OF MARYLAND
 REGISTERED PROFESSIONAL SURVEYOR
 CHARLES J. CROVO SR.
 DATE: 12/31/87

VILLAGE OF LONGREACH
 SECTION 3 AREA I
 LOT 1
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

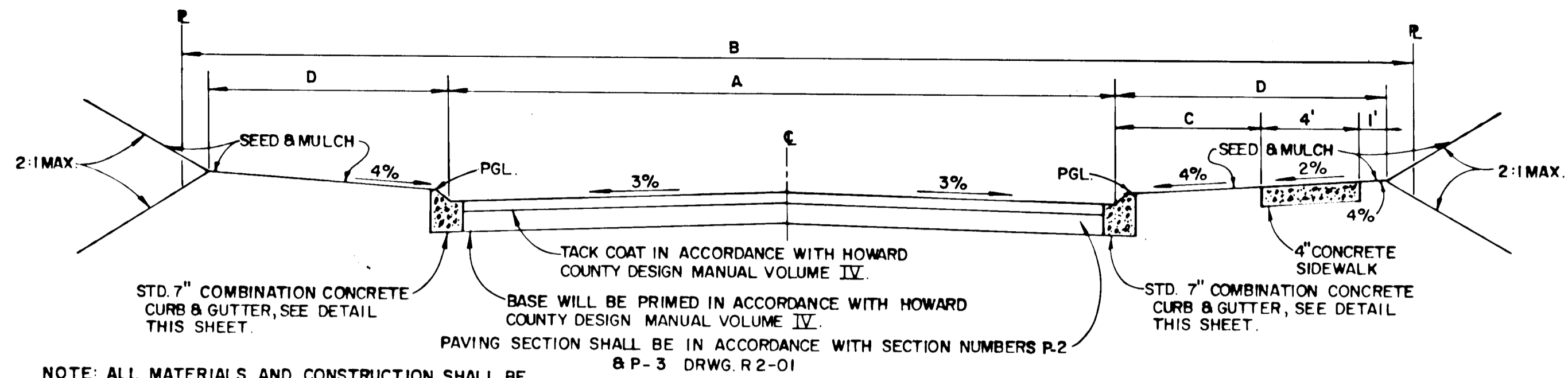
TAMAR DRIVE
 PLAN & PROFILE

OWNER AND DEVELOPER
 THE HOWARD RESEARCH AND
 DEVELOPMENT LAND COMPANY
 10275 LITTLE PATUMENT PARKWAY
 COLUMBIA, MARYLAND 21044

SCALEAS SHOWN: DATE: SEPT. 24, 1987. DWG. NO. 2 OF 6
 DES. R. ISAACS DRN. D. PARRAN CHK. C. J. CROVO

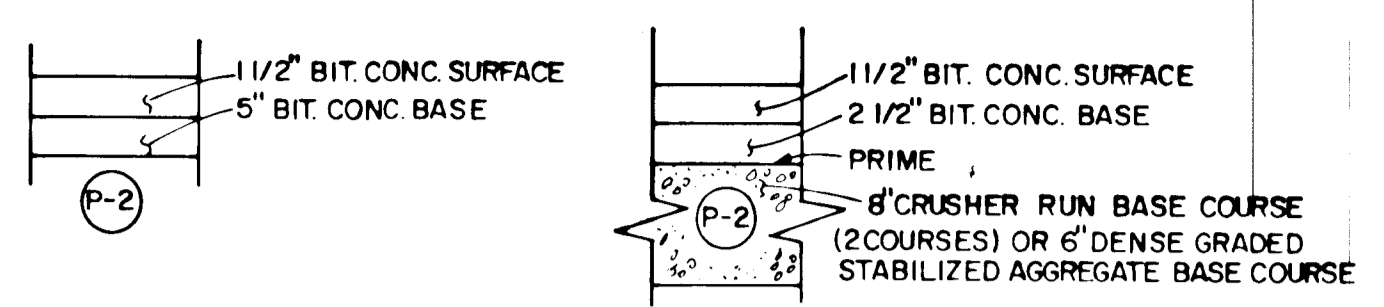
FISHER, COLLINS AND CARTER, INC.
 CIVIL ENGINEERS AND LAND SURVEYORS
 8388 COURT AVE. ELLICOTT CITY, MARYLAND 21043

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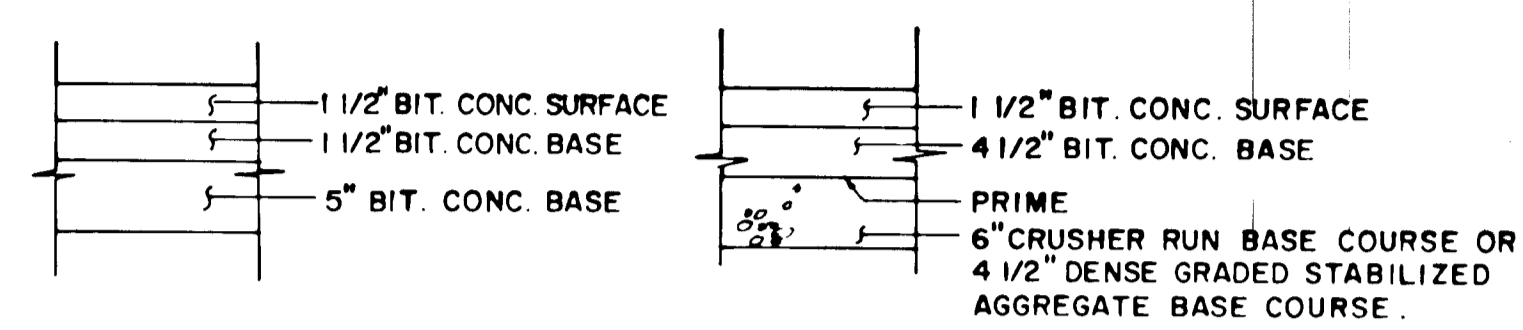


NOTE: ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.

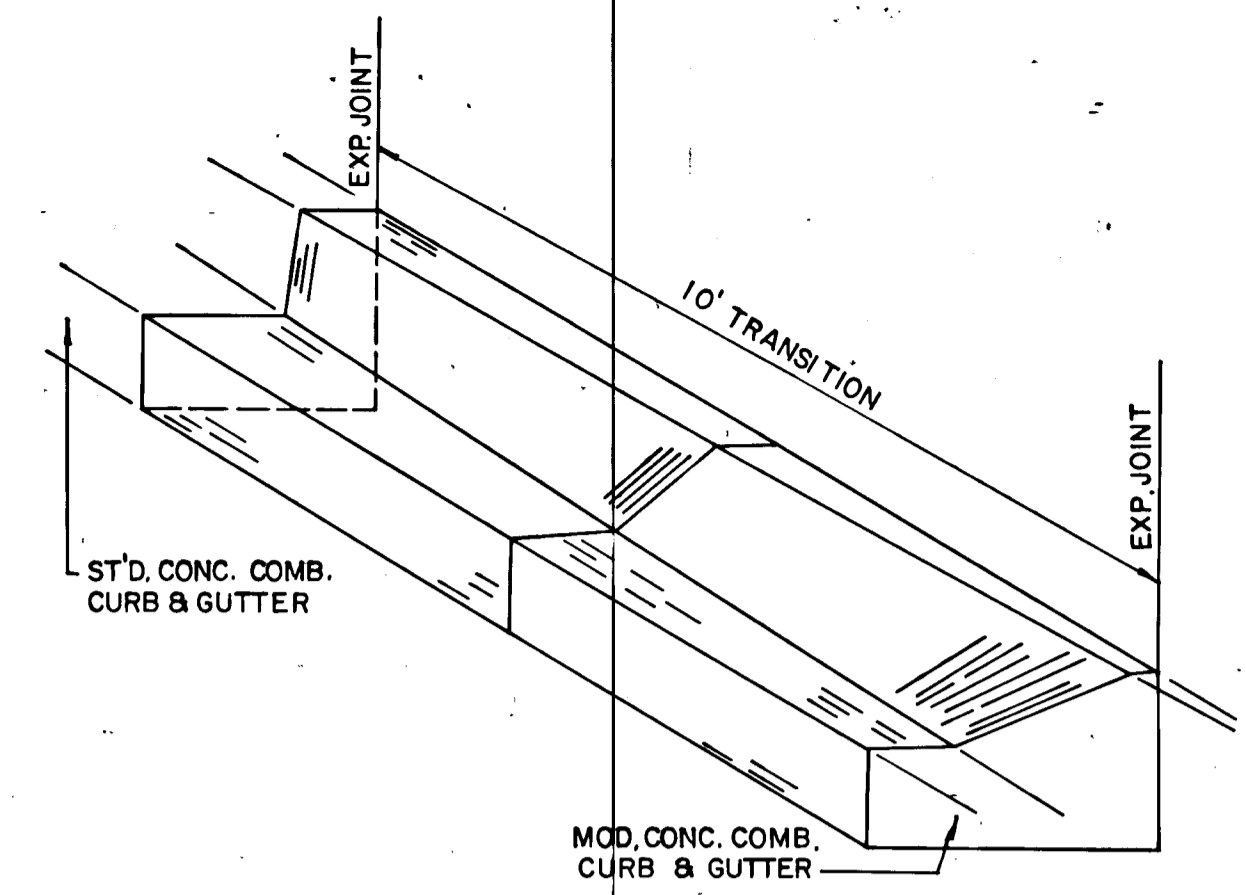
TYPICAL ROADWAY SECTION
NO SCALE



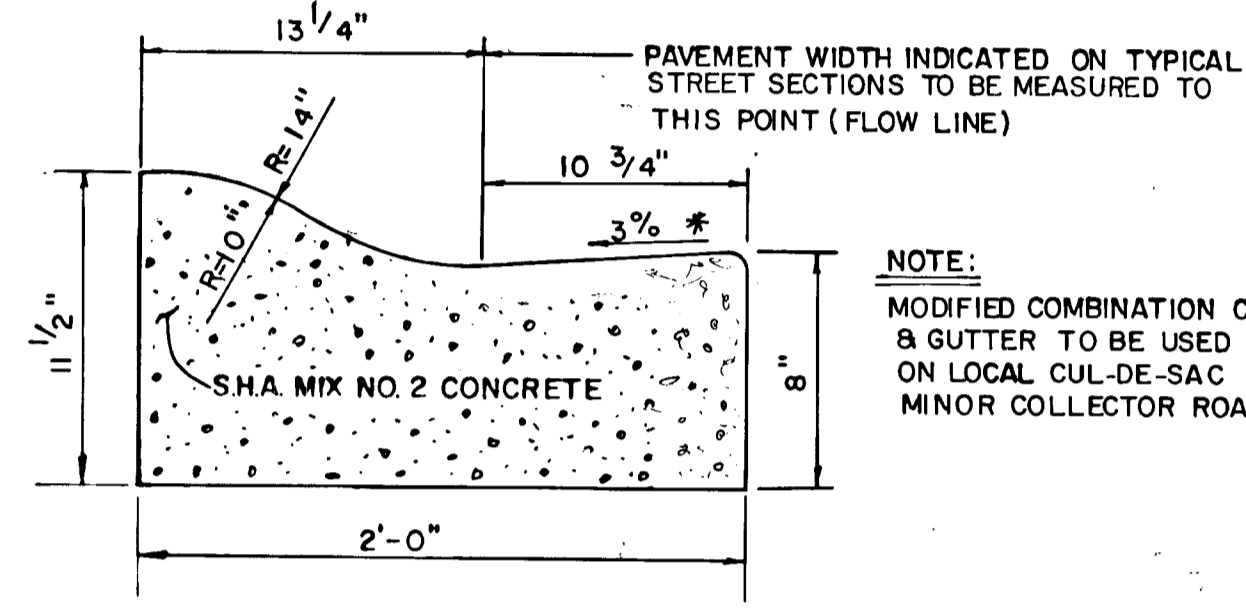
PAVING SECTION P-2
NO SCALE



PAVING SECTION P-3
NO SCALE

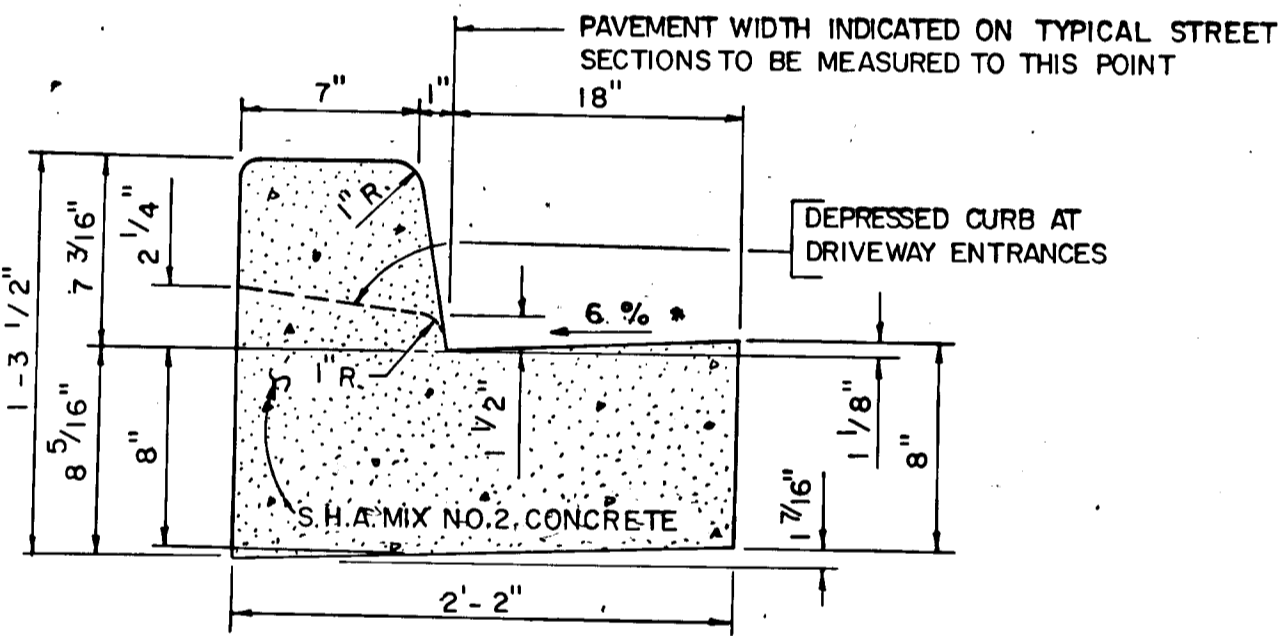


CURB TRANSITION DETAIL
NO SCALE

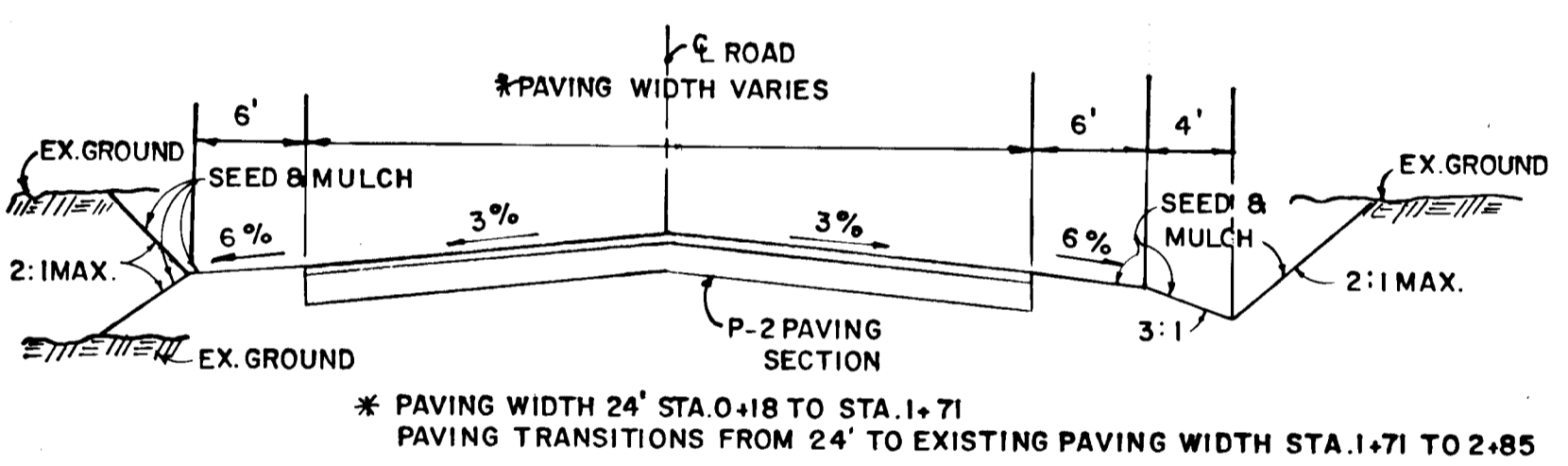


MODIFIED COMBINATION CURB AND GUTTER
NO SCALE

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	A	B	C	D	STATION LIMITS	PAVING SECTION
TAMAR DRIVE	MINOR COLLECTOR	35 M.P.H.	NT	36'	60'	7'	12'	36+50.00 TO 44+59.25	P-3



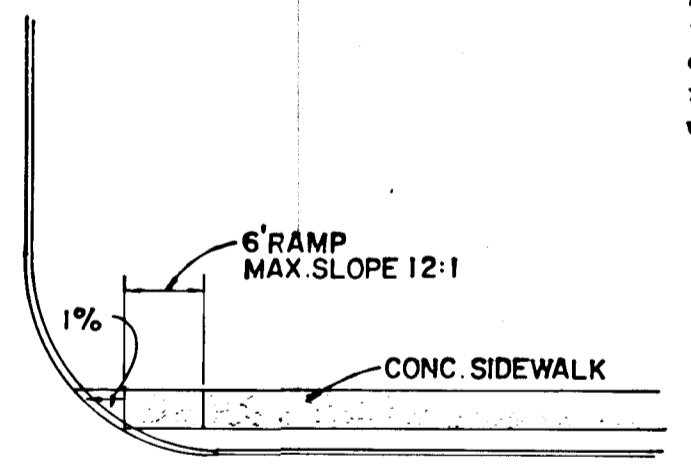
STANDARD 7\"/>



TYPICAL SECTION TEMPORARY OLD MONTGOMERY ROAD RELOCATION
NO SCALE

CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

- The subgrade for the filter, riprap or gabion shall be prepared to the required lines 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 riprap or filter.
- Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
- Stone for the riprap or gabion outlets may be placed by equipment. Both shall each be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will insure that it is reasonably homogenous with the smaller stones and spalls filling the voids between the larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.



SIDEWALK RAMP DETAIL "A"
NO SCALE

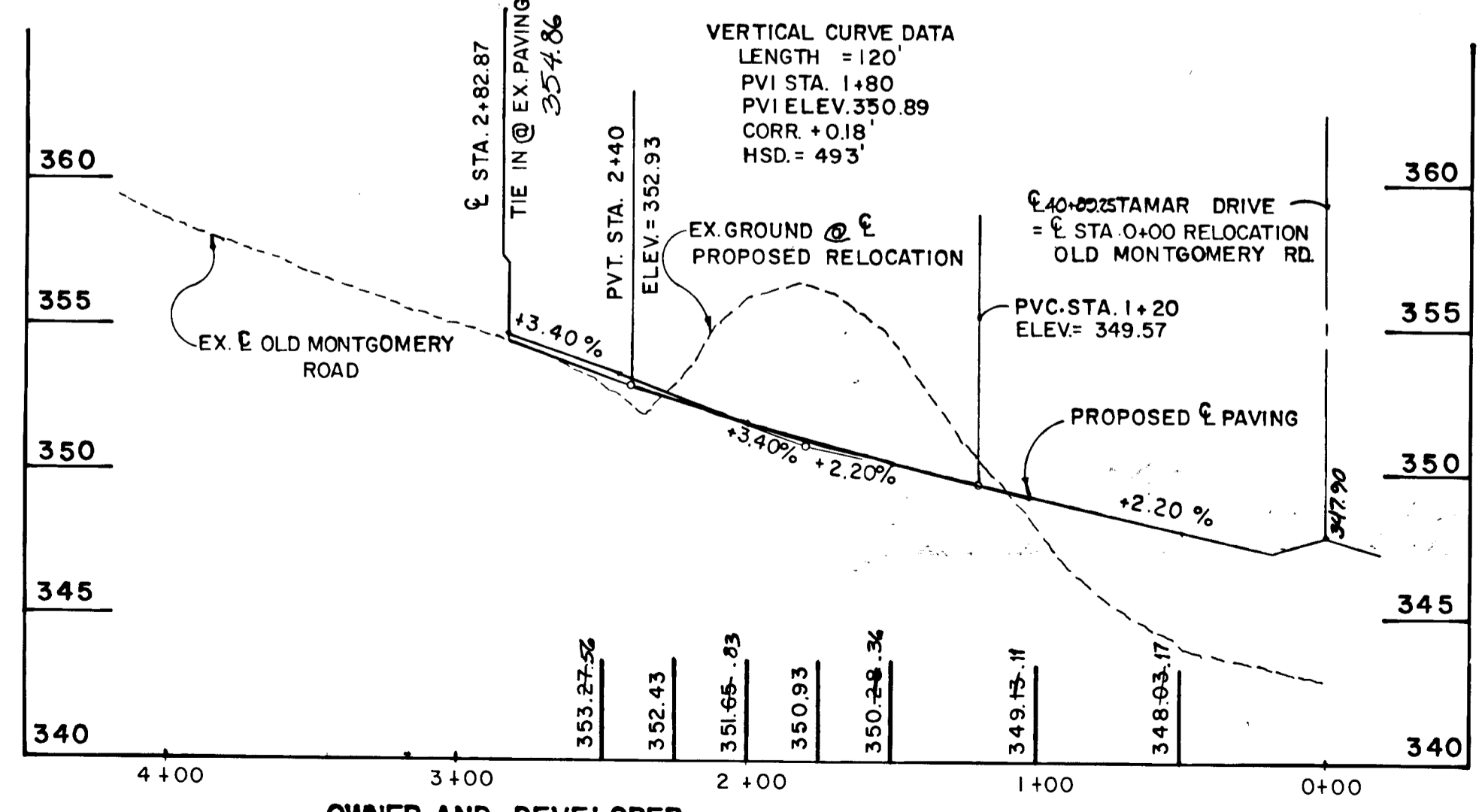
APPROVED
 DEPARTMENT OF PUBLIC WORKS
Franklin W. Woodland 3/17/88
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED
 DEPARTMENT OF PUBLIC WORKS
William E. Ray 3-17-88
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED
 OFFICE OF PLANNING AND ZONING
Joseph R. Butler 3/25/88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED
 DEPARTMENT OF PUBLIC WORKS
William H. F. 3-11-88
 CHIEF LAND DEVELOPMENT DIVISION DATE

TEMPORARY OLD MONTGOMERY ROAD RELOCATION



OWNER AND DEVELOPER
 THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044

PROFILE
 SCALE: 1" = 50' HOR.
 1" = 5' VER.

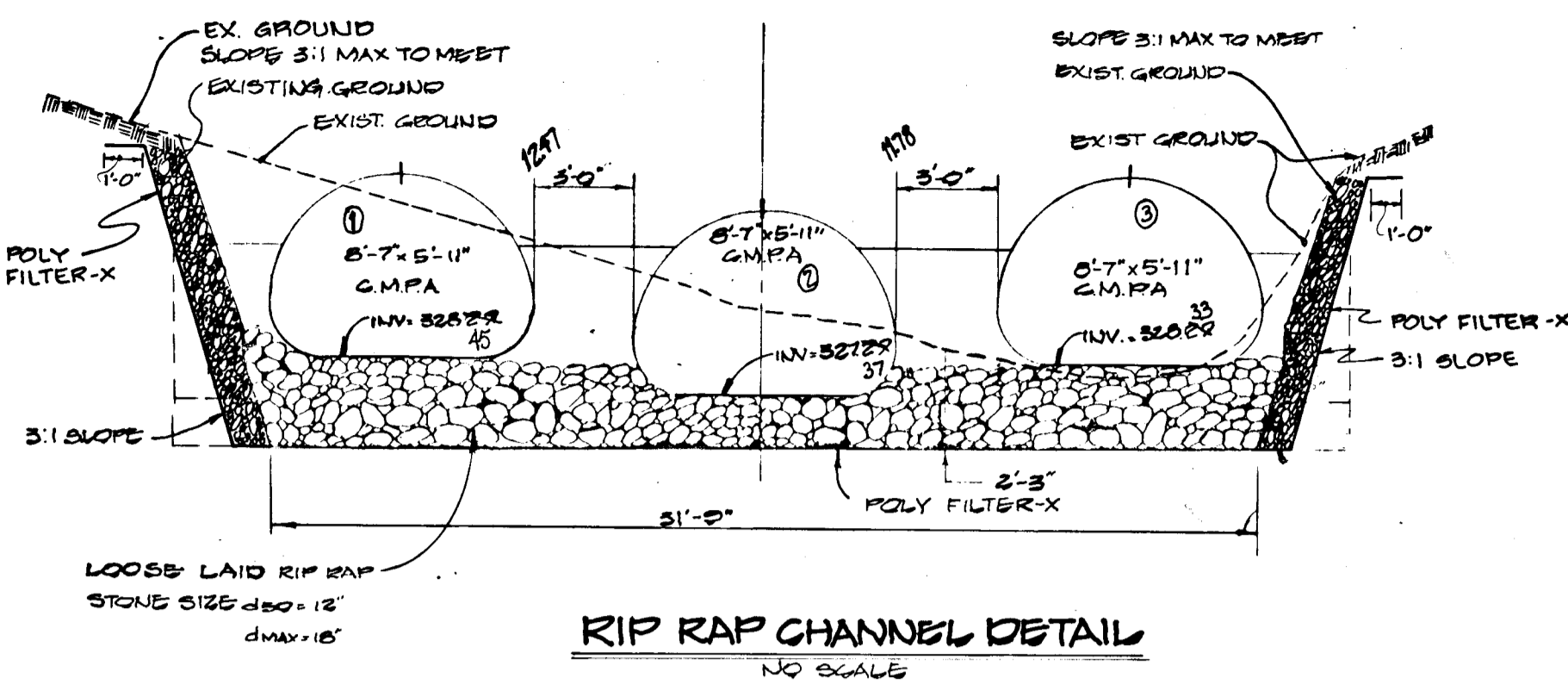
AS-BUILT SURVEY CERTIFIED BY
 RICHARD F. LANE, Md. L.S.
 NO. 301 ON 3-3-82.



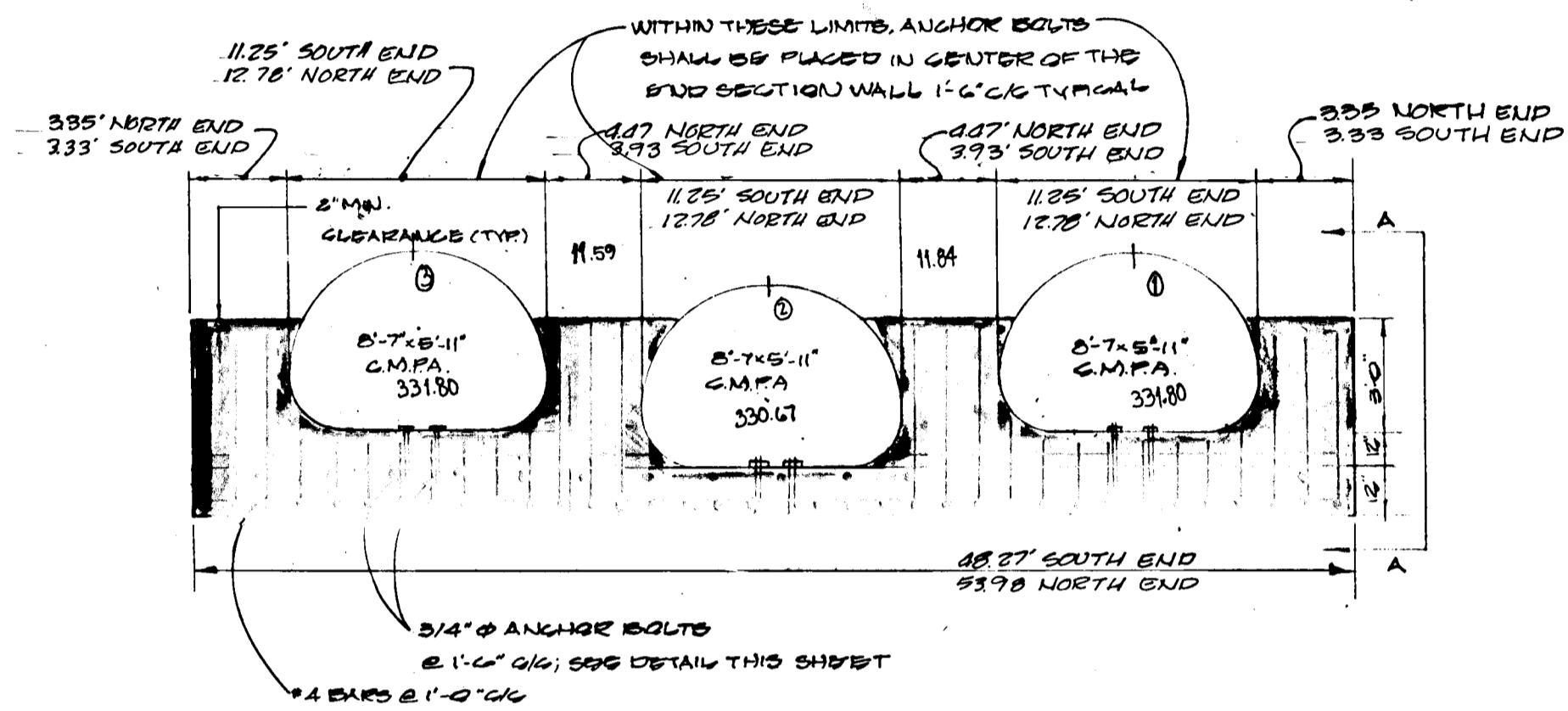
Charles J. Crovo Sr. 12/31/87
 CHARLES J. CROVO SR. DATE

ROADWAY SECTIONS, NOTES AND DETAILS VILLAGE OF LONGREACH

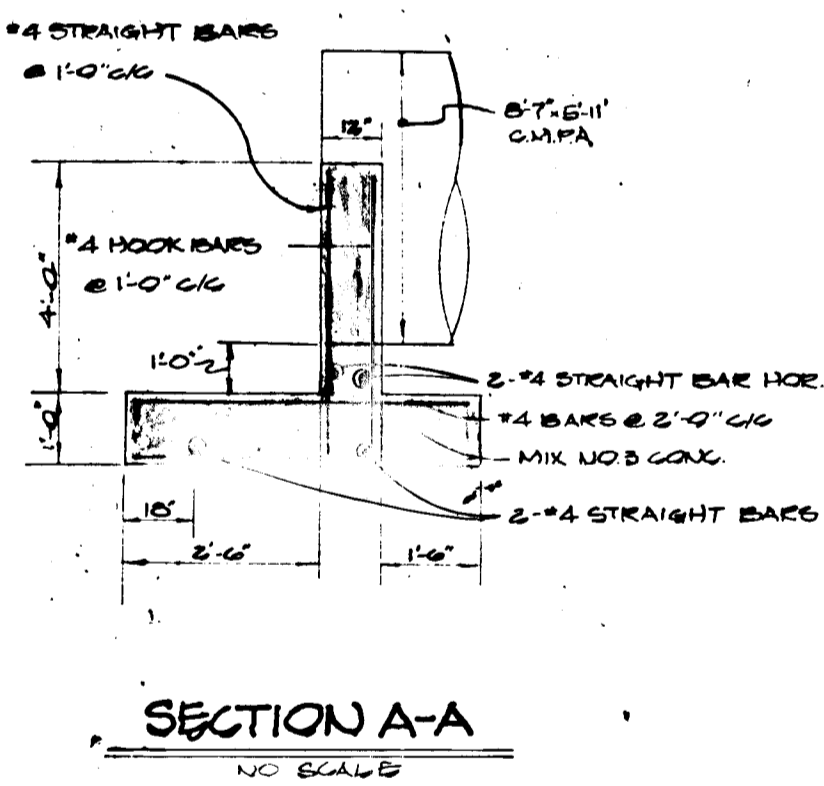
SECTION 3 AREA I
 LOT 1
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND



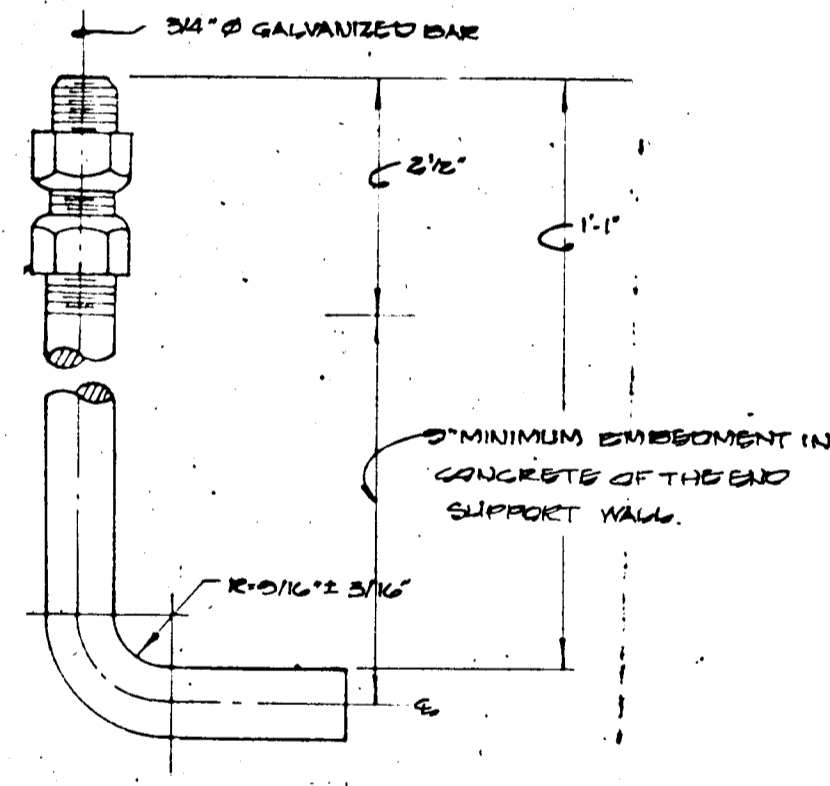
RIP RAP CHANNEL DETAIL
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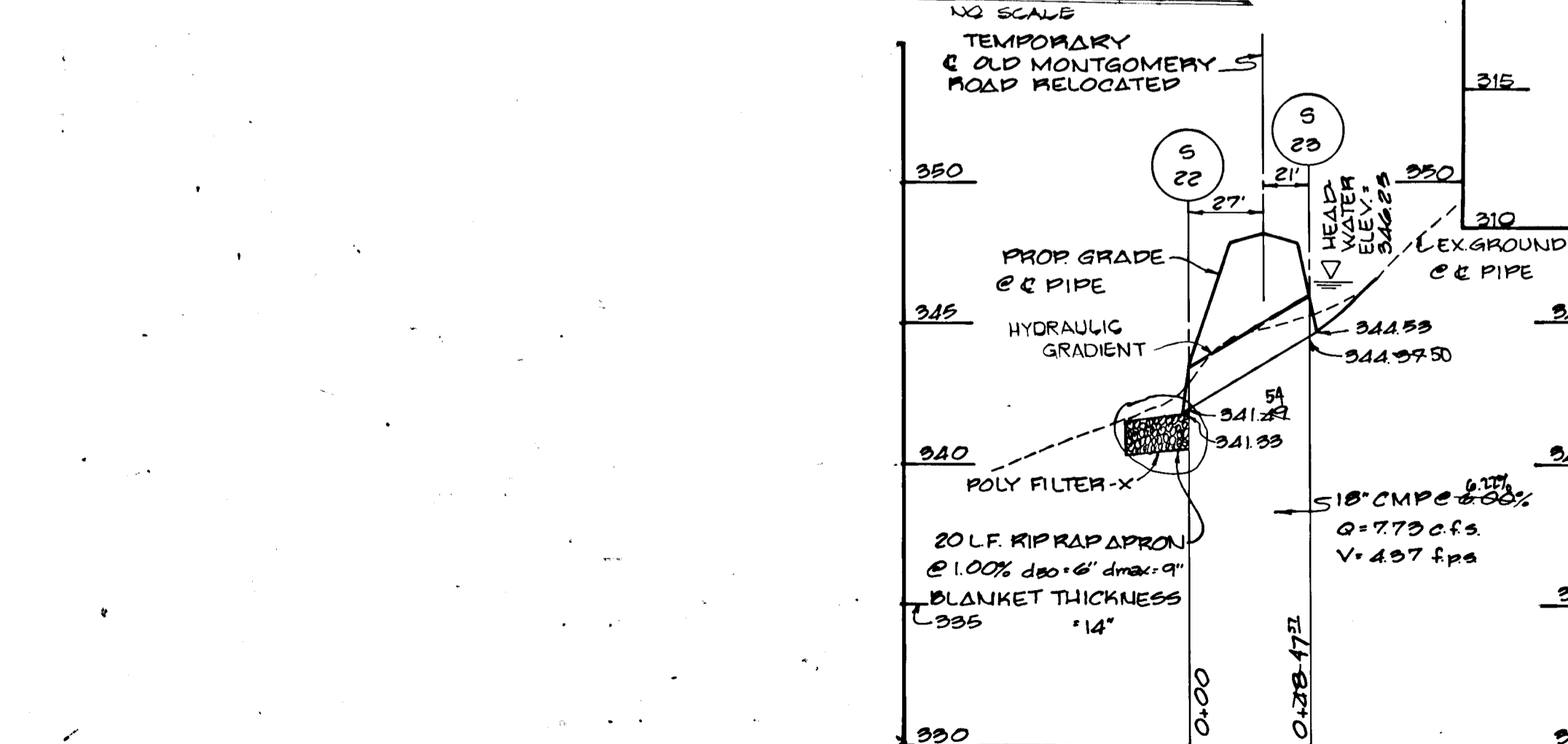
END SUPPORT WALL DETAIL
NO SCALE



SECTION A-A
NO SCALE



ANCHOR BOLT DETAIL
NO SCALE



FISHER, COLLINS AND CARTER, INC.
CIVIL ENGINEERS & LAND SURVEYORS
8388 COURT AVENUE
ELLCOTT CITY, MARYLAND 21043

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND
DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

APPROVED DEPARTMENT OF PUBLIC WORKS
[Signature] 3-21-87
CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED DEPARTMENT OF PUBLIC WORKS
[Signature] 3/7/87
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED DEPARTMENT OF PUBLIC WORKS
[Signature] 3-17-88
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED OFFICE OF PLANNING AND ZONING
[Signature] 3/25/88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

REVISIONS		
DATE	DESCRIPTION	BY
7/9/88	change inverts of culverts & shorten culverts	WCS

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

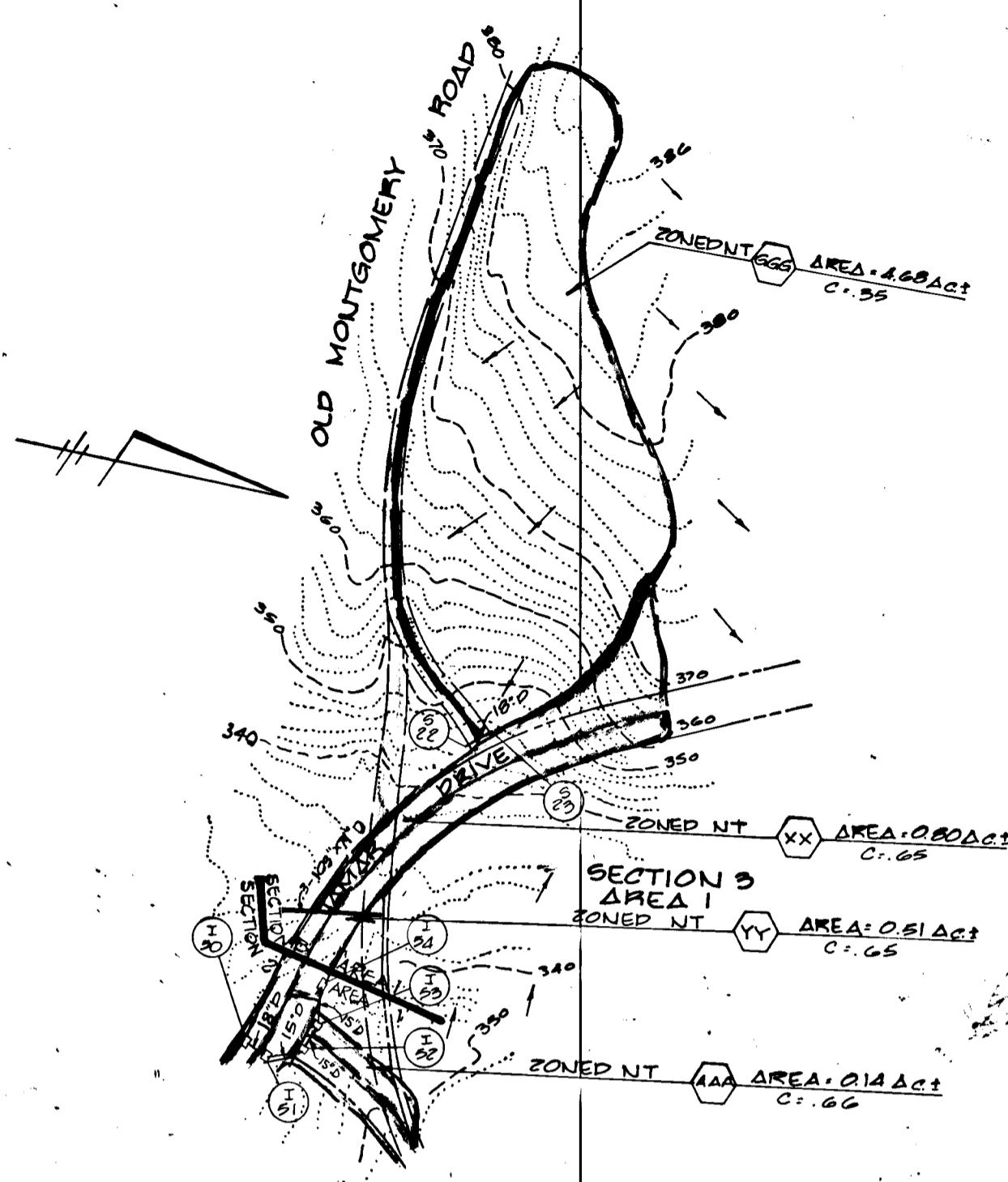
AS-BUILT SURVEY CERTIFIED BY
RICHARD F. LANE, Md. L.S.
NO. 301 ON 5-3-87



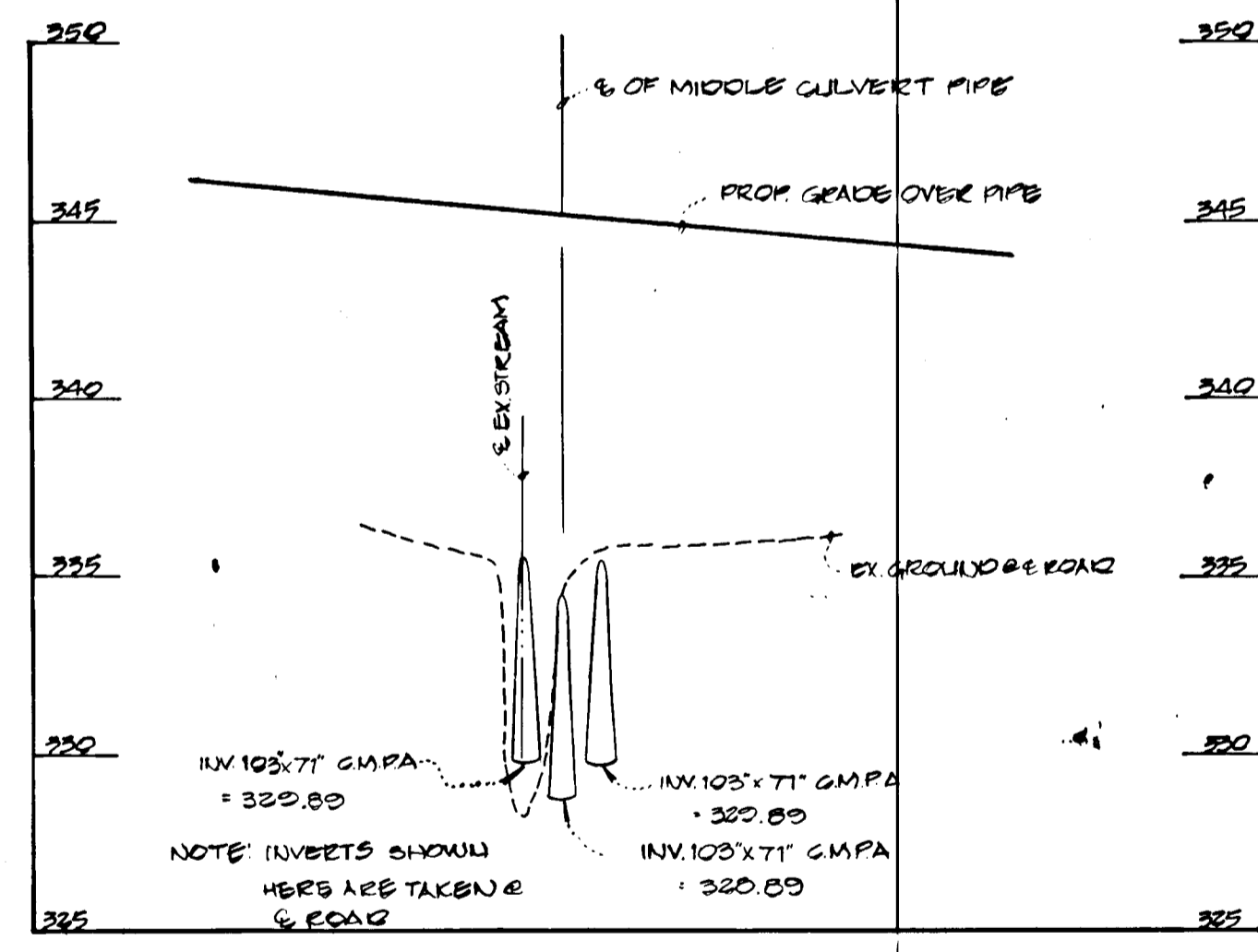
STORM DRAIN PROFILES
VILLAGE OF LONGREACH
SECTION 3 AREA I
LOT 1
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE AS SHOWN SHEET 4 OF 6 SEPTEMBER 24, 1987

INVERTS AT END OF PIPE				
PIPE #	PIPE LENGTH	INV. UPSTREAM	INV. DOWNSTREAM	% SLOPE
1	105.75 79.2	331.79	328.27	2.05%
2	105.75 79.2	330.94	327.27	2.05%
3	105.75 79.2	331.79	328.27	2.05%

STRUCTURE SCHEDULE						
STRUCTURE	TYPE	INV. IN	INV. OUT	¢ TOP ELEV.	¢ ROAD STATION	REMARKS
S-22	STD METAL PIPE SECTION	341.24	341.93	342.99		SD 5.61
S-23	STD METAL SECTION	344.93	344.93	345.87		SD 5.61



DRAINAGE AREA MAP
SCALE: 1" = 200'

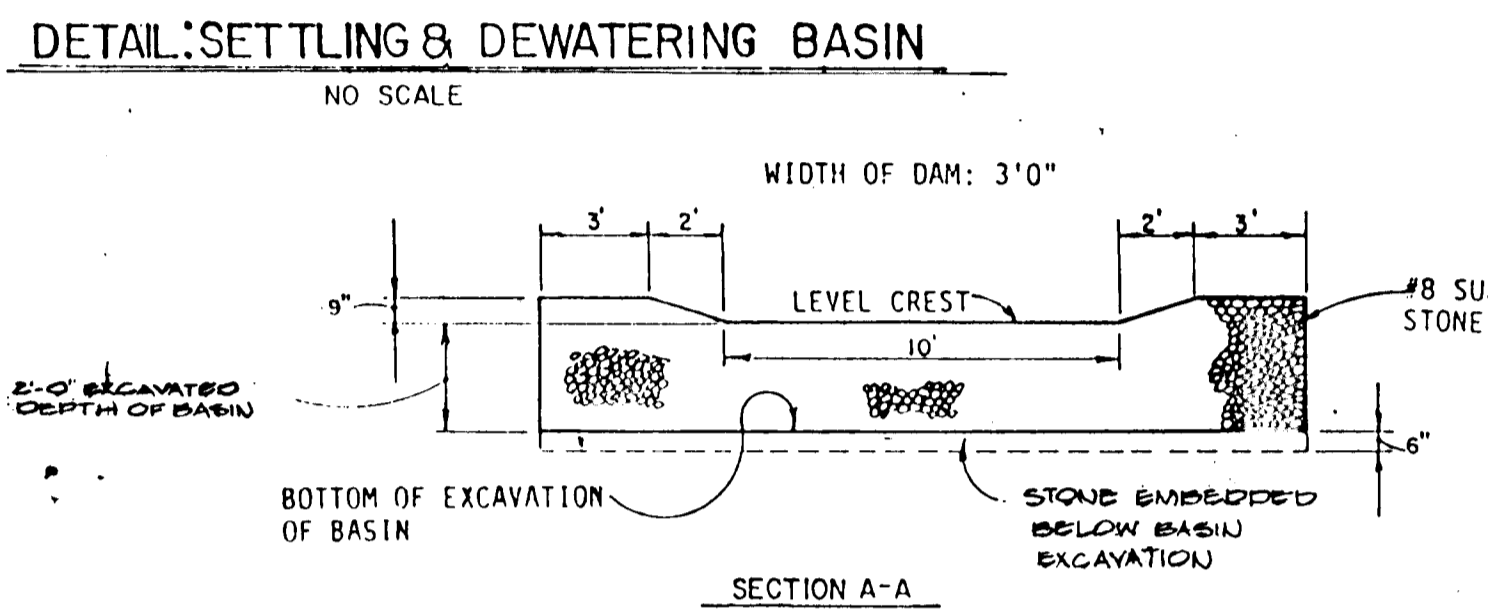
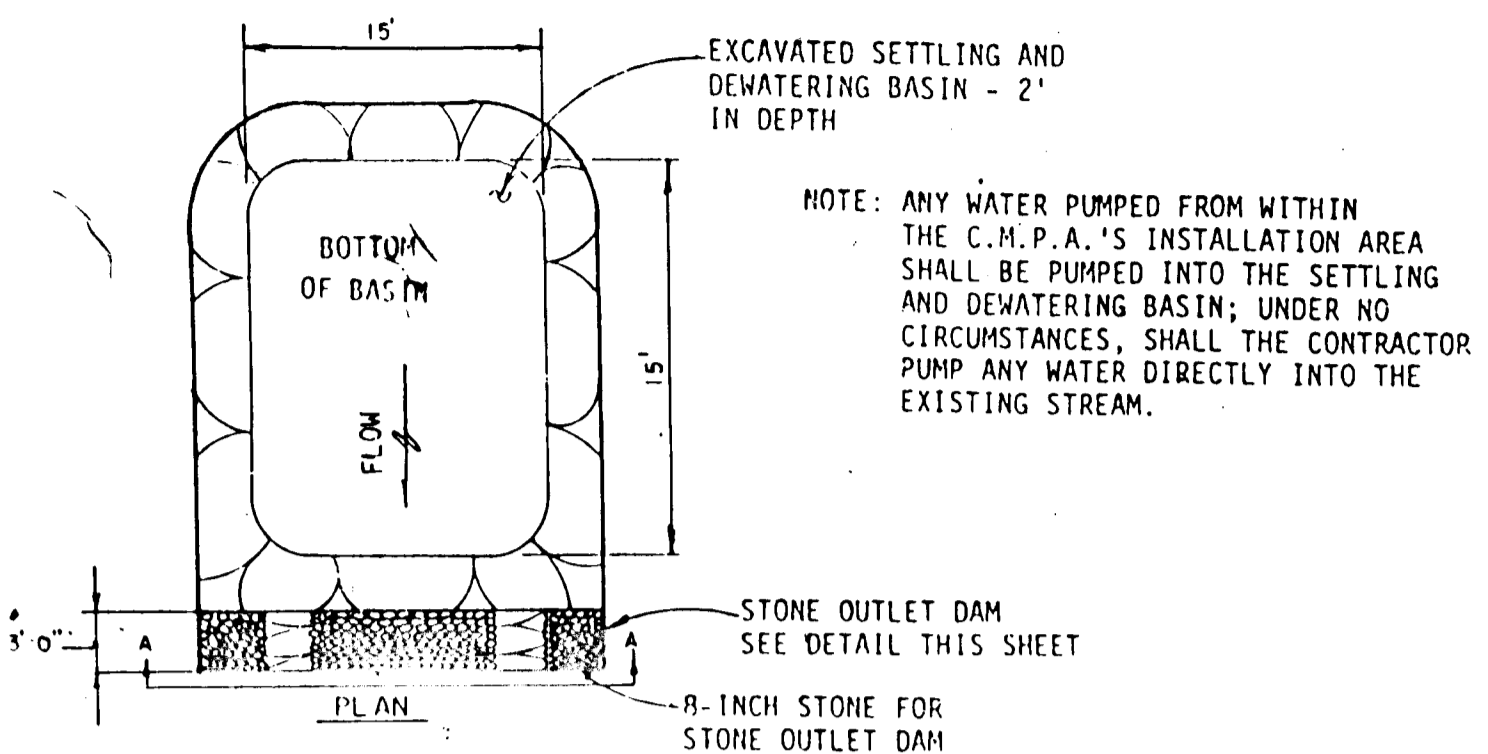


END SUPPORT WALL DETAIL NOTES

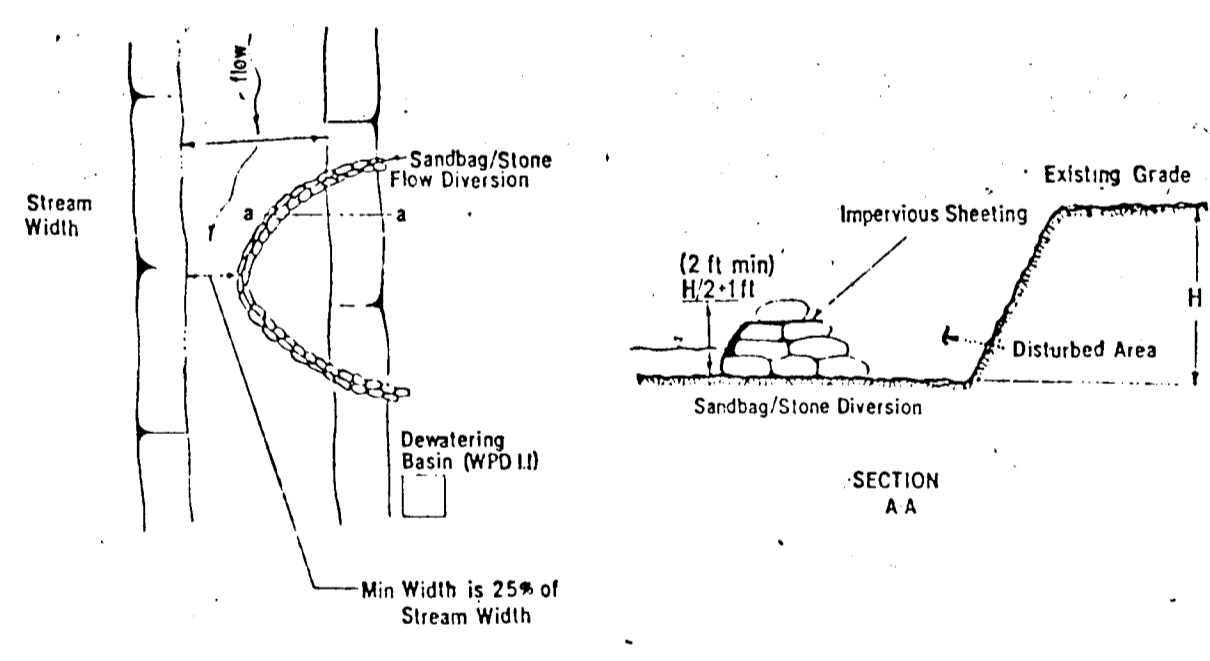
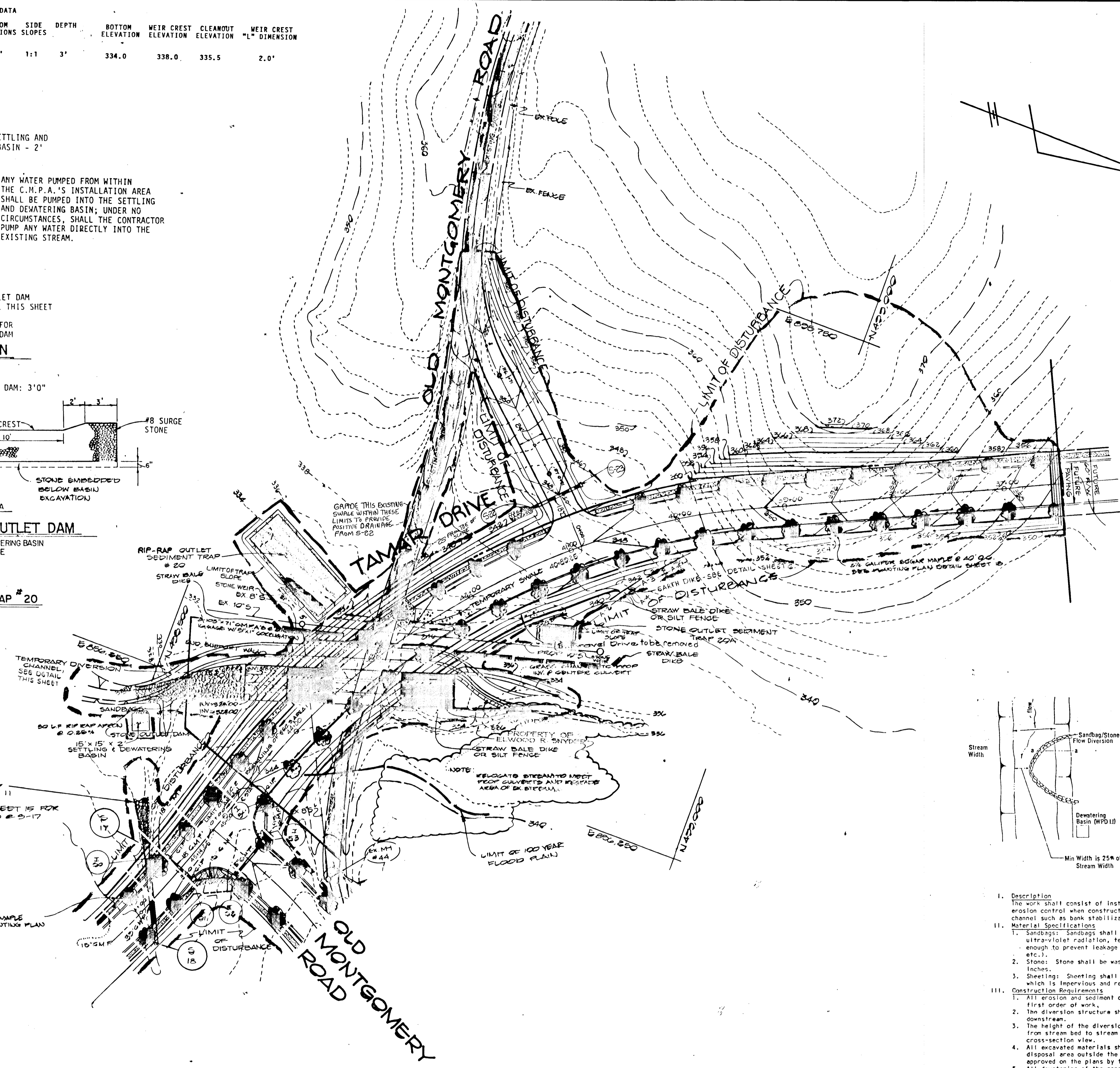
- EXCAVATION, BEDDING, FOUNDATION PREPARATION & BACKFILL FOR THE C.M.P.A.'S SHALL BE IN ACCORDANCE WITH SECT. 602 OF THE STATE HIGHWAY ADMINISTRATION SPECIFICATIONS. IF ROCK IS ENCOUNTERED, IT SHALL BE REMOVED & REPLACED WITH SAND TO PROVIDE A MINIMUM CUSHION OF 8 INCHES BELOW THE BOTTOM OF THE PIPE ARCH. SELECTED BACKFILL, IF REQUIRED, SHALL MEET THE REQUIREMENTS OF SECT. 601 OF THE S.H.A. SPECIFICATIONS.
- REINFORCING STEEL SHALL BE FREE FROM MUD, OIL OR OTHER NON-METALLIC COATINGS THAT ADVERSELY AFFECT BONDING CAPACITY.

100

TRAP #	DRAINAGE AREA	VOLUME REQUIRED	VOLUME PROVIDED	TOP DIMENSIONS	BOTTOM DIMENSIONS	SIDE SLOPES	DEPTH	BOTTOM ELEVATION	WEIR CREST ELEVATION	CLEANOUT ELEVATION	WEIR CREST "L" DIMENSION
20A	0.5 AC. ±	34 CU. YDS.	34 CU. YDS.	30'x14'	24'x8'	1:1	3'	334.0	338.0	335.5	2.0'



RIP-RAP OUTLET SEDIMENT TRAP # 20
 DRAINAGE AREA = 6.18 AC. ±
 VOLUME REQUIRED = 412 CU. YDS.
 VOLUME PROVIDED = 415 CU. YDS.
 TOP DIMENSION = 101'x41'
 BOTTOM DIMENSION = 95'x35'
 SIDE SLOPES = 1:1
 DEPTH = 3'
 BOTTOM ELEVATION = 329.0
 WEIR CREST ELEVATION = 333.0
 CLEANOUT ELEVATION = 330.5
 WEIR CREST "L" DIMENSION = 14'



- I. Description
The work shall consist of installing flow diversions for the purpose of erosion control when construction activities take place within the stream channel such as bank stabilization or bridge abutment construction.
- II. Material Specifications
 1. Sandbags: Sandbags shall consist of materials which are resistant to ultra-violet radiation, tearing and puncture and woven tightly enough to prevent leakage of fill material (i.e., sand, fine gravel, etc.).
 2. Stone: Stone shall be washed and have a minimum diameter of 6 inches.
 3. Sheeting: Sheeting shall consist of polyethylene or other material which is impervious and resistant to puncture and tearing.
- III. Construction Requirements
 1. All erosion and sediment control devices shall be installed as the first order of work.
 2. The diversion structure shall be installed from upstream to downstream.
 3. The height of the diversion structure shall be one half the distance from stream bed to stream bank plus one foot, as indicated on the cross-section view.
 4. All excavated materials shall be disposed of in a SCD approved disposal area outside the 100-year floodplain unless otherwise approved on the plans by the MRA.
 5. All dewatering of the construction area shall be pumped to a dewatering basin prior to re-entering the stream.
 6. Sheeting shall be overlapped such that the upstream portion covers the downstream portion with at least an 18-inch overlap.
 7. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.

TEMPORARY STREAM DIVERSION DETAIL
NO SCALE

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.

Charles J. Crovo 12/31/87
 REGISTERED PROFESSIONAL ENGINEER

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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS AFORESAID NOTWITHSTANDING.

Joseph M. ... 12-31-87
 SUPERVISOR

Thomas M. Hill 3-8-88
 DISTRICT ENGINEER

Stephen D. ... 2/6/88
 DISTRICT ENGINEER

... 5-11-88
 CHIEF, BUREAU OF ENGINEERING

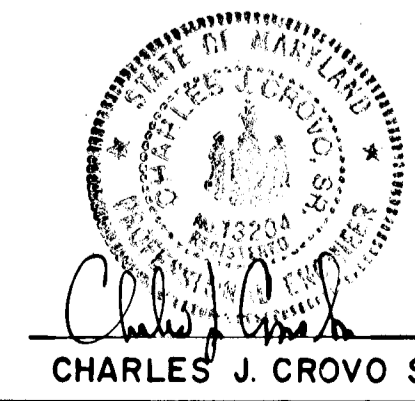
... 3/25/88
 CHIEF, BUREAU OF PLANNING AND ZONING

...
 CHIEF, BUREAU OF HIGHWAYS

...
 CHIEF, LAND DEVELOPMENT DIVISION

STREET TREES: THE LOCATIONS, TYPE AND NUMBER OF TREES SHOWN ON THESE PLANS ARE TENTATIVE AND ARE USED FOR BOND PURPOSES ONLY. THE FINAL LOCATION AND VARIETY OF TREES MAY VARY TO ACCOMMODATE FIELD CONDITIONS AND BUILDERS LANDSCAPE PROGRAM. BOND RELEASE IS CONTINGENT UPON SECTION 16.131 OF THE HOWARD COUNTY SUBDIVISION REGULATIONS, AS APPROVED BY THE OFFICE OF PLANNING AND ZONING.

FISHER, COLLINS AND CARTER, INC.
 CIVIL ENGINEERS & LAND SURVEYORS
 8388 COURT AVENUE
 ELLICOTT CITY, MARYLAND 21043



CHARLES J. CROVO SR. DATE 12/31/87

STREET TREE, GRADING, AND SEDIMENT CONTROL PLAN
 VILLAGE OF LONGREACH

SECTION 3 AREA I
 LOT 1
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN SHEET 5 OF 6 SEPTEMBER 24, 1987

AS-BUILT 5-3-89

PERMANENT SEEDING NOTES:
 APPLY TO GRADED OR CLEARED AREA 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 LOGGING.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULE:

- 1) 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 30-10-10 UREAFORM FERTILIZER (9 LBS/1000 SQ. FT.).
- 2) 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 PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 50 LBS PER ACRE (11.4 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 APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOO. 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 FT. OR HIGHER, 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.

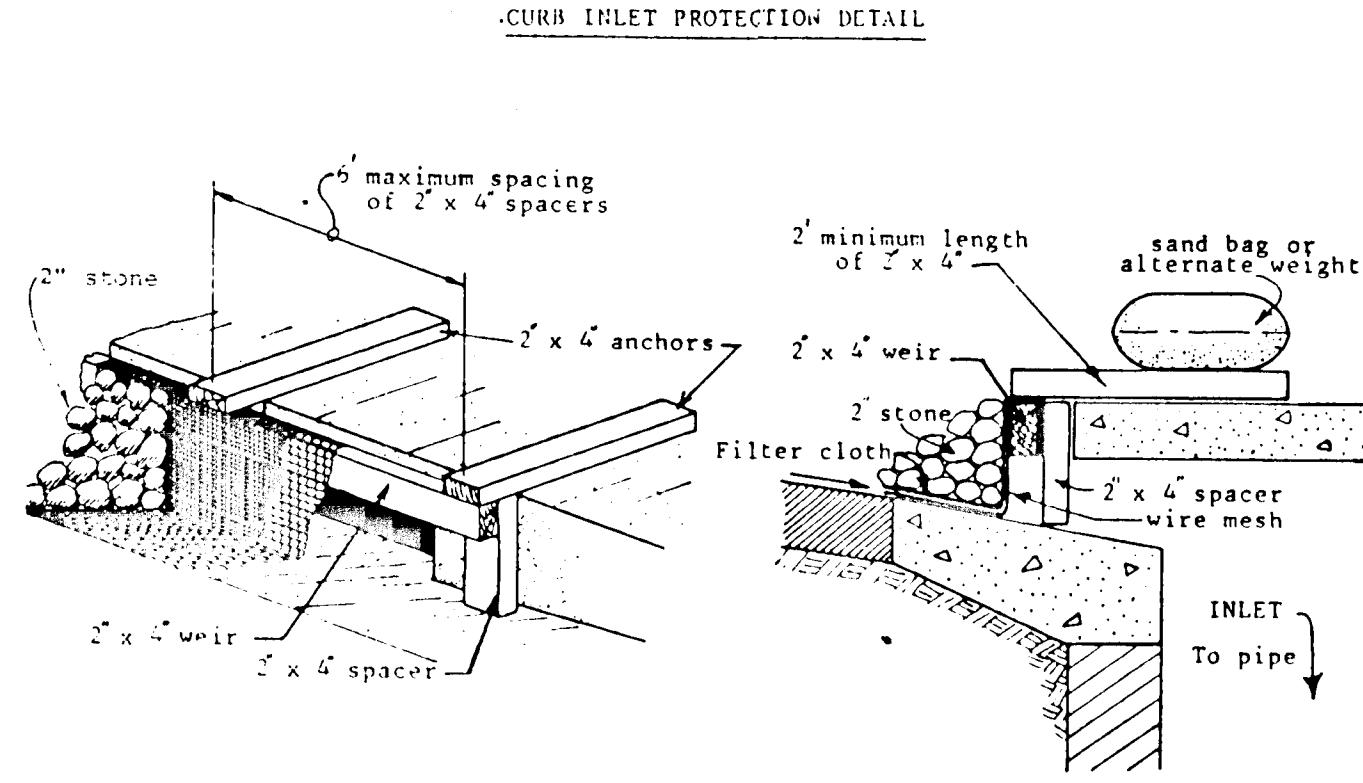
SEEDING PREPARATION: LOOSEN UPPER THREE-INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOGGING.

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 25 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 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 SOO.

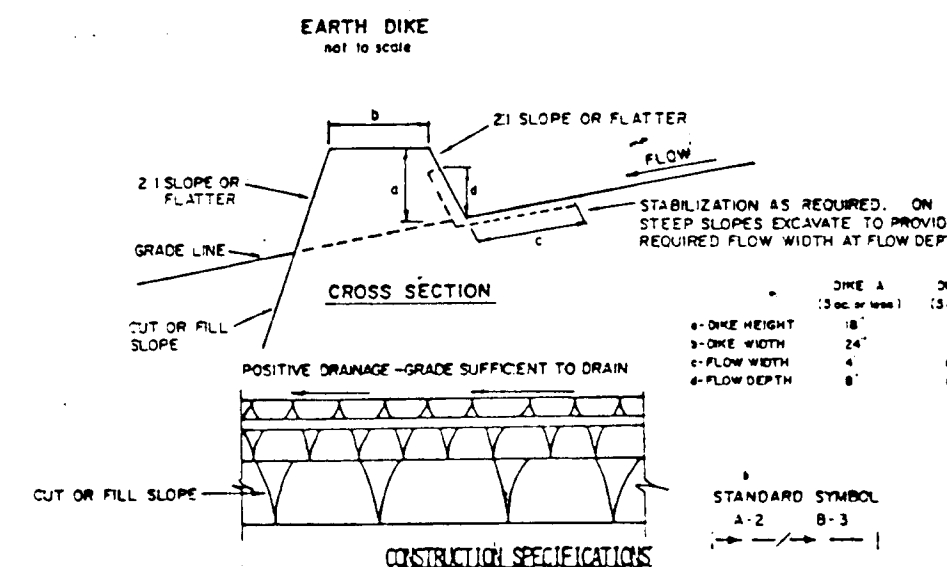
MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

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

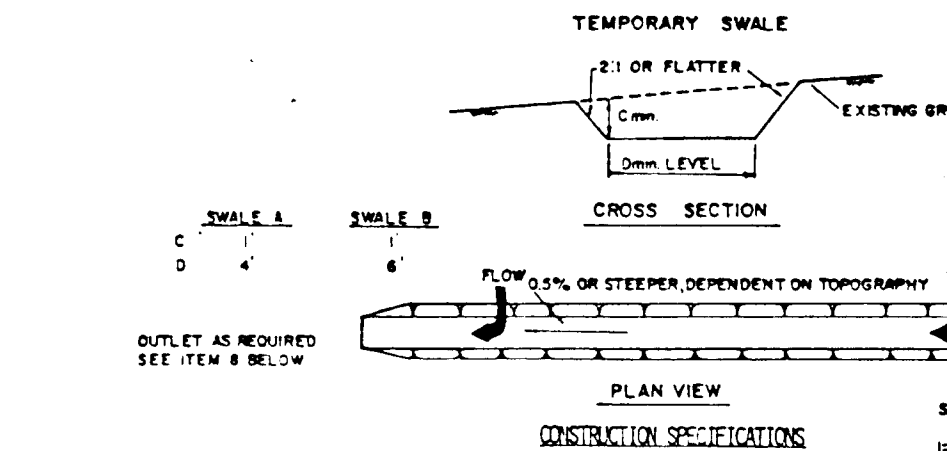


B. Curb Inlet Protection.

1. Attach a continuous piece of wire mesh (30" min. width by throat length plus 4") to the 2" x 4" weir (measuring throat length plus 2") as shown on the standard drawing.
2. Place a piece of approved filter cloth (40-85 sieve) of the same dimensions as the wire mesh over the wire mesh and securely attach to the 2" x 4" weir.
3. Securely nail the 2" x 4" weir to 9" long vertical spacers to be located between the weir and inlet face (max. 6' apart).
4. Place the assembly against the inlet throat and nail (minimum 2" lengths of 2" x 4" to the top of the weir at spacer locations. These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.
5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.
6. Form the wire mesh and filter cloth to the concrete gutter and against the face of curb on both sides of the inlet. Place clean 2" stone over the wire mesh and filter fabric in such a manner as to prevent water from entering the inlet under or around the filter cloth.
7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
8. Assure that storm flow does not bypass inlet by installing temporary earth or asphalt dikes directing flow into inlet.



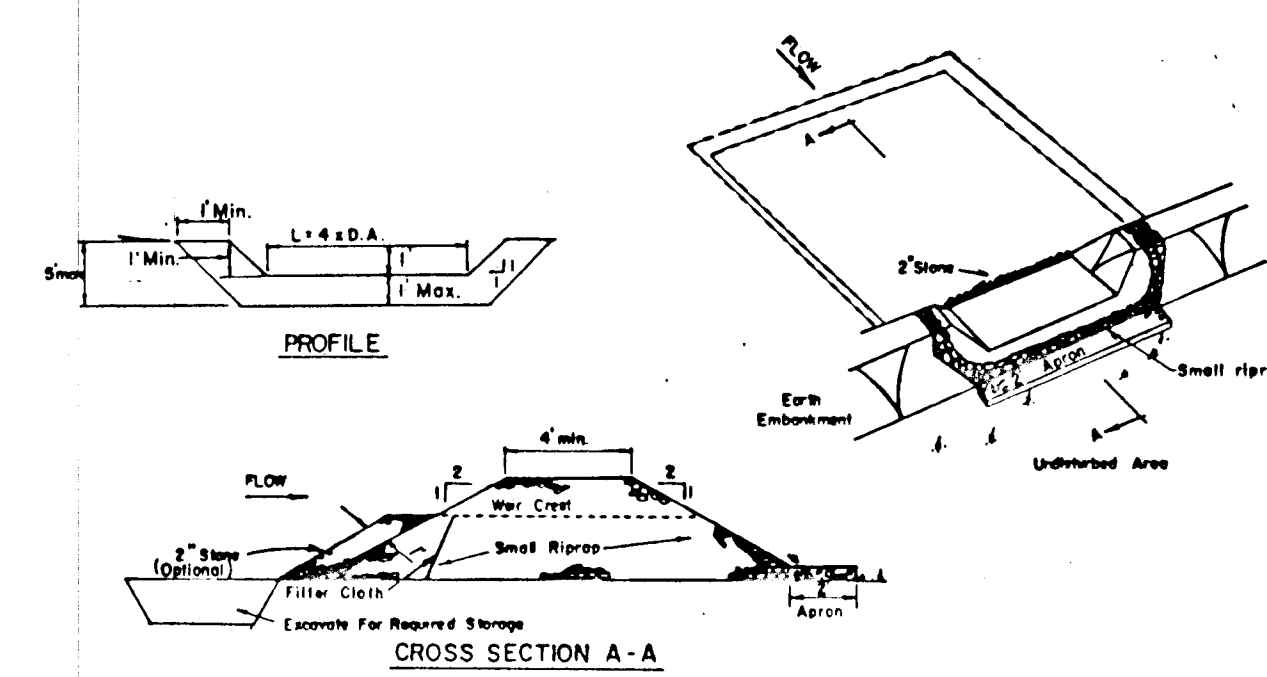
1. All dikes shall be compacted by earth-moving equipment.
 2. Dikes shall have positive drainage to an outlet.
 3. Top width may be wider and side slopes may be flatter if desired to facilitate earth construction traffic.
 4. Field location should be adjusted as needed to utilize a stabilized safe outlet.
 5. Earth dikes shall have an outlet that functions with a minimum of erosion. Traffic shall be diverted to a sediment trapping device such as a sediment trap or sediment basin when either the dike channel or the drainage area above the dike are not adequately stabilized.
 6. Stabilization shall be: (a) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SECOND SEASON; (b) FLOW CHANNEL AS PER THE CHART BELOW.
- | TYPE OF TREATMENT | CHANNEL SIZE | DIKE A | DIKE B |
|-------------------|--------------|------------------------|---|
| 1 | 0.5-3.0c | SEED AND STRAW MULCH | SEED AND STRAW MULCH |
| 2 | 3.1-5.0c | SEED AND STRAW MULCH | SEED USING JUTE, OR EXCELLENT SOO, 2" STONE |
| 3 | 5.1-8.0c | SEED WITH JUTE, OR SOO | LINED RIP-RAP 4-8" |
| 4 | 8.1-20c | LINED RIP-RAP 4-8" | ENGINEERING DESIGN |
- A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES THICK WITH AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. TRAFFIC SHALL BE DIVERTED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHEN EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
 - B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
 - C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.
 - D. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.



1. All temporary swales shall have uninterrupted positive grade to an outlet.
 2. Diverted runoff from a disturbed area shall be conveyed to a sediment trapping device.
 3. Diverted runoff from an undisturbed area shall outlet directly into an undisturbed stabilized area at non-erosive velocity.
 4. All trees, brush, stumps, obstructions, and other obstructions internal shall be removed and disposed of so as not to interfere with the proper functioning of the swale.
 5. The swale shall be excavated or shaped to line, 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. Fills shall be compacted by earth moving equipment.
 7. All earth remove and not needed on construction shall be placed so that it will not interfere with the functioning of the swale.
 8. Stabilization shall be as per the chart below:
- | TYPE OF TREATMENT | CHANNEL SIZE | A (5 ac or less) | B (5 ac - 10 ac) |
|-------------------|--------------|---------------------------------|----------------------------------|
| 1 | 0.5-3.0c | SEED AND STRAW MULCH | SEED AND STRAW MULCH |
| 2 | 3.1-5.0c | SEED AND STRAW MULCH | SEED USING JUTE OR EXCELLENT SOO |
| 3 | 5.1-8.0c | SEED WITH JUTE OR EXCELLENT SOO | LINED RIP-RAP 4-8" |
| 4 | 8.1-20c | LINED RIP-RAP 4-8" | ENGINEERING DESIGN |
9. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

CURB INLET PROTECTION DETAIL

STONE OUTLET SEDIMENT TRAP

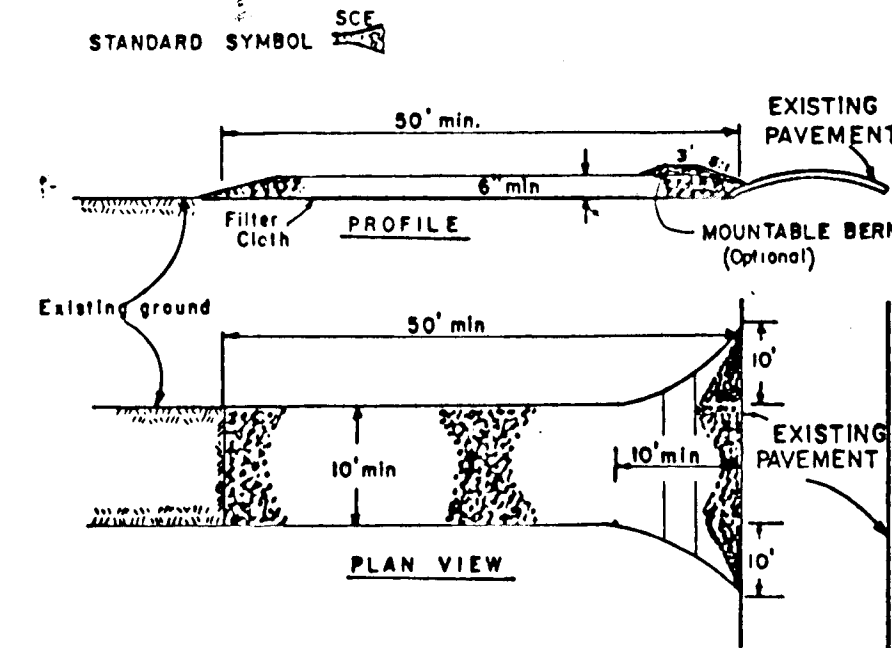


OPTION: A one foot layer of 2" stone may be placed on the upstream side of the riprap in place of the embedded filter cloth.

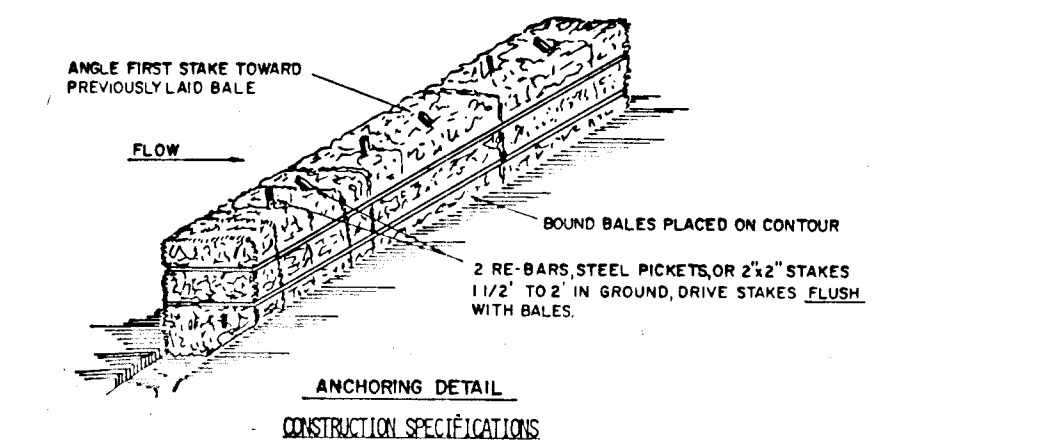
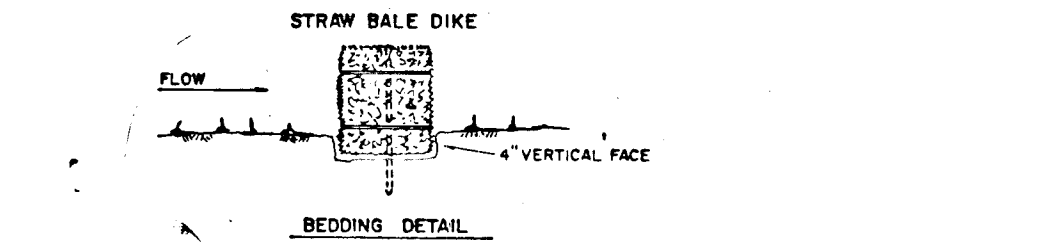
- CONSTRUCTION SPECIFICATIONS FOR ST-Y**
1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
 2. The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
 3. All cut and fill slopes shall be 2:1 or flatter.
 4. 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 on embedded filter cloth in the riprap.
 5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap.
 6. The structure shall be inspected after each rain and repairs made as needed.
 7. Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
 8. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

Maximum Drainage Area: 5 Acres.

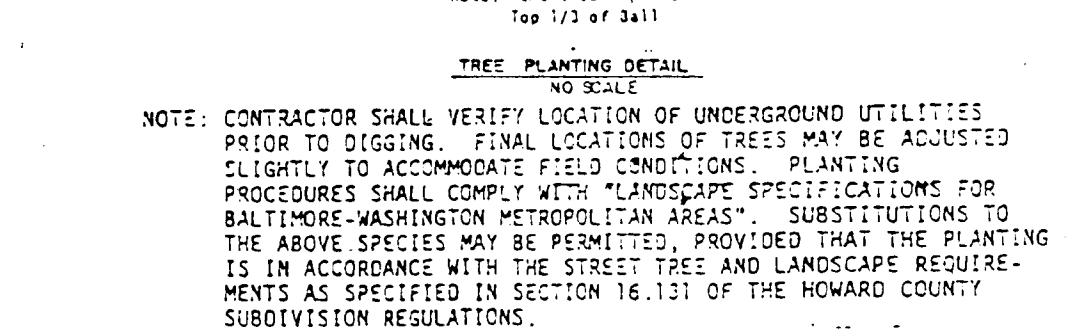
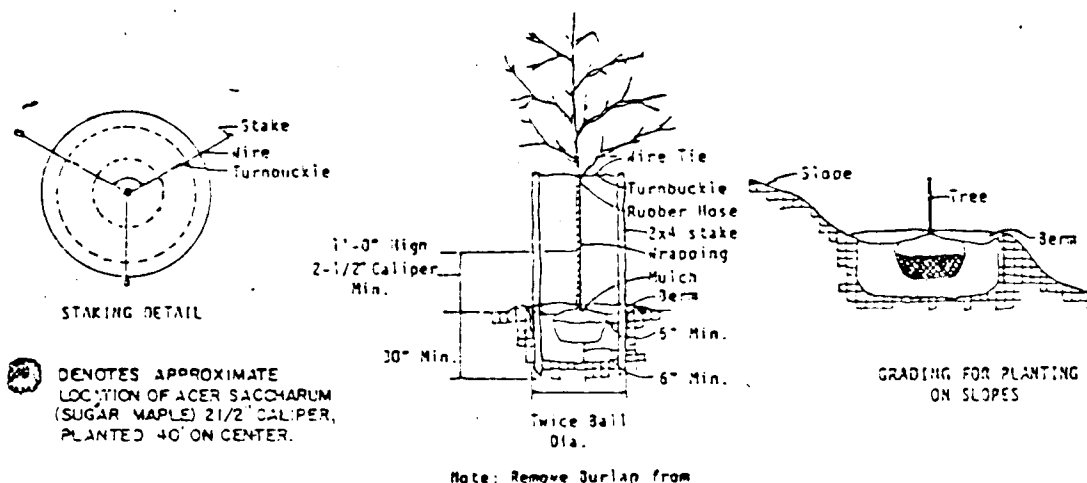
STABILIZED CONSTRUCTION ENTRANCE



- CONSTRUCTION SPECIFICATIONS**
1. Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
 2. Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
 3. Thickness - Not less than six (6) inches.
 4. Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
 5. Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
 6. 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 1:1 slope will be permitted.
 7. 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 cleanup of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
 8. Washing - Wheels 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.
 9. Periodic inspection and needed maintenance shall be provided after each rain.



1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH GAPS TIGHTLY ADJACENT TO THE ADJACENT BALES.
2. EACH BALE SHALL BE POSITIONED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN THROUGH THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPED STORM FLOW OR DRAINAGE.

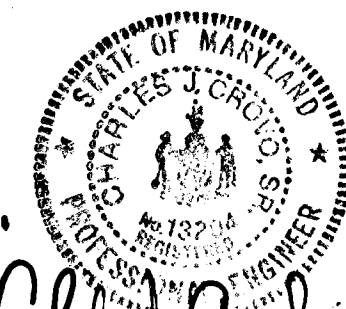


STREET TREES:
 THE LOCATIONS, TYPE AND NUMBER OF TREES SHOWN ON THESE PLANS ARE TENTATIVE AND ARE USED FOR BOND PURPOSES ONLY. THE FINAL LOCATION AND VARIETY OF TREES MAY VARY TO ACCOMMODATE FIELD CONDITIONS AND BUILDERS LANDSCAPE PROGRAM. BOND RELEASE IS CONTINGENT UPON SECTION 16.131 OF THE HOWARD COUNTY SUBDIVISION REGULATIONS, AS APPROVED BY THE OFFICE OF PLANNING AND ZONING.

FISHER, COLLINS AND CARTER INC.
 CIVIL ENGINEERS & LAND SURVEYORS
 8388 COUNTESS AVENUE
 ELLICOTT CITY, MARYLAND 21043

SEDIMENT CONTROL NOTES:

- 1) 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 (892-2437).
- 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 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- 3) FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 2 (TWO) CALENDAR DAYS FOR ALL PERMITS. PERMANENT STABILIZATION SHALL BE COMPLETED WITHIN 14 (FOURTEEN) CALENDAR DAYS FOR ALL PERMITS. TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 14 (FOURTEEN) CALENDAR DAYS FOR ALL PERMITS. PERMANENT STABILIZATION SHALL BE COMPLETED WITHIN 14 (FOURTEEN) CALENDAR DAYS FOR ALL PERMITS.
- 4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE WENCED AND MARKING SIGNS POSTED AROUND THEIR PERIMETERS IN ACCORDANCE WITH VOL. 1, 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 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT STABILIZATION (SEC. 541, 542, 543, 544), TEMPORARY SEEDING (SEC. 540) AND MULCHING (SEC. 523). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SLEDDING 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: 0.983 ACRES
 AREA DISTURBED: 0.226 ACRES
 AREA TO BE ROOFED OR PAVED: 0.226 ACRES
 AREA TO BE VEGETATIVELY STABILIZED: 5.000 CU. YDS.
 TOTAL CUT: 5.000 CU. YDS.
 RESIDUE WASTE/BORROW AREA LOCATION: 5.000 CU. YDS.
- 8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY CERTAIN ACTIVITY (OR 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 OPI SEDIMENT CONTROL INSPECTOR.
- 10) ALL SITES WITH DISTURBED AREAS IN EXCESS OF 10,000 SQ. YDS. SHALL BE STABILIZED WITHIN 14 (FOURTEEN) CALENDAR DAYS OF COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.



CHARLES W. CROVO SR. DATE 12/31/87

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.

12/31/87
 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 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."

12/31/87
 SIGNATURE OF DEVELOPER DATE

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

3/1/88
 U.S. SOIL CONSERVATION DISTRICT DATE

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

3/17/88
 DISTRICT DATE
 APPROVED: DEPARTMENT OF PUBLIC WORKS

3/17/88
 CHIEF, BUREAU OF ENGINEERING DATE
 APPROVED: OFFICE OF PLANNING AND ZONING

3/17/88
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE
 APPROVED DEPARTMENT OF PUBLIC WORKS

3/17/88
 CHIEF, BUREAU OF HIGHWAYS DATE
 APPROVED DEPARTMENT OF PUBLIC WORKS

3/17/88
 CHIEF, LAND DEVELOPMENT DIVISION DATE

CONSTRUCTION SEQUENCE

1. OBTAIN GRADING PERMIT, OBTAIN AND IMPLEMENT REQUIREMENTS OF THE WATERWAY CONSTRUCTION PERMIT ISSUED BY WATER RESOURCES ADMINISTRATION. WORK WILL BE CONTIGUOUS WITH THE APPROVED FINAL PLAN ADJACENT TO THE LIMIT OF SUBMITTAL WITH TEMPORARY SEEDING.
2. INSTALL SILT FENCE OR STRAW BALE DIKES AS SHOWN ON PLAN.
3. CONSTRUCT SEDIMENT TRAPS AND TEMPORARY SWALE, STABILIZE WITH TEMPORARY SEEDING.
4. INSTALL SILT FENCE OR STRAW BALE DIKE ALONG UPGRADE SIDES OF THE EXCAVATION AT THE LIMITS OF DISTURBANCE-BOTH SIDES OF STREAM.
5. EXCAVATE SETTLING AND DEWATERING BASIN TO DIMENSIONS SHOWN-CONSTRUCT STONE OUTLET DAM AT DOWNSTREAM FACE OF BASIN.
6. EXCAVATE STREAM DIVERSION CHANNEL.
7. PLACE SANDBAGS AT BOTH UPSTREAM AND DOWNSTREAM LIMITS OF C.M.P.A.'S INSTALLATION AREA.
8. DEMATER C.M.P.A.'S INSTALLATION AREA - PUMP ALL WATER INTO THE SETTLING AND DEWATERING BASIN.
9. CONSTRUCT CONCRETE END SUPPORT WALLS.
10. INSTALL C.M.P.A.'S.
11. AS ROADWAY FILL IS PLACED, INSTALL SILT FENCE OR STRAW BALE DIKES ALONG THE ENTIRE LENGTH OF THE TOE OF SLOPE OF THE EMBANKMENT-UPSTREAM AND DOWNSTREAM FACES.
12. INSTALL THE RIP-RAP CHANNEL AT THE DOWNSTREAM END OF THE C.M.P.A.'S
13. REDIRECT FLOW THROUGH C.M.P.A.'S. BACKFILL AND RESTABILIZE DIVERSION CHANNEL.
14. GRADE ROADS TO SUBGRADE AND CONSTRUCT STORM DRAIN SYSTEM, S-22 TO S-23.
15. CONSTRUCT CURB AND GUTTER AND INSTALL BASE COURSE.
16. SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT TRAPS WHEN THE CLEANOUT ELEVATION HAS BEEN REACHED.
17. THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON THE SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON, AFTER EACH RAINFALL AND ON A DAILY BASIS.
18. THE SEDIMENT TRAPS SHALL BE DEWATERED BY PUMPING. THE SEDIMENT FROM THE TRAPS SHALL BE PLACED UP-GRADE FROM THE SEDIMENT TRAPS IN SUCH A MANNER AS NOT TO INTERFERE WITH CONSTRUCTION OPERATIONS OR CAUSE EROSION DOWNGRADE FROM THE SEDIMENT TRAP.
19. REMOVE SEDIMENT FROM ROADWAYS AND DRESS STONE CONSTRUCTION ENTRANCE AS REQUIRED.
20. DISTURBED AREAS SHOULD BE STABILIZED WITH PERMANENT SEEDING MIXTURE BEFORE REMOVAL OF SEDIMENT CONTROL DEVICES.
21. REMOVE INLET PROTECTION DEVICES AND FLUSH STORM DRAIN SYSTEM TO REMOVE ANY TRAPPED SEDIMENT. INSTALL RIP-RAP APRONS.
22. REMOVE STONE CONSTRUCTION ENTRANCE AND STRAW BALE DIKE/SILT FENCE. CLEAN BASE COURSE. APPLY TACK COAT TO BASE COURSE AND LAY SURFACE COURSE.
23. ALL DISTURBED AREAS DUE TO REMOVAL OF SEDIMENT CONTROL MEASURES SHALL BE GRADED AND STABILIZED WITH PERMANENT SEEDING MIXTURE.

STREET TREE, GRADING, AND SEDIMENT CONTROL PLAN
 VILLAGE OF LONGREACH
 SECTION 3 AREA 1
 LOT 1
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 SCALE AS SHOWN SHEET 6 OF 6 SEPTEMBER 24, 1987
 AS-BUILT 5-3-89