

Modify Existing Riser Barrel by:  
 1. Adding Trash Rack as detailed on sheet 12 of 12.  
 2. Lowering water surface elevation of existing pond by setting new riser @ elevation 4626 (0.3 ft. lower than Ex. W.S.EI.).

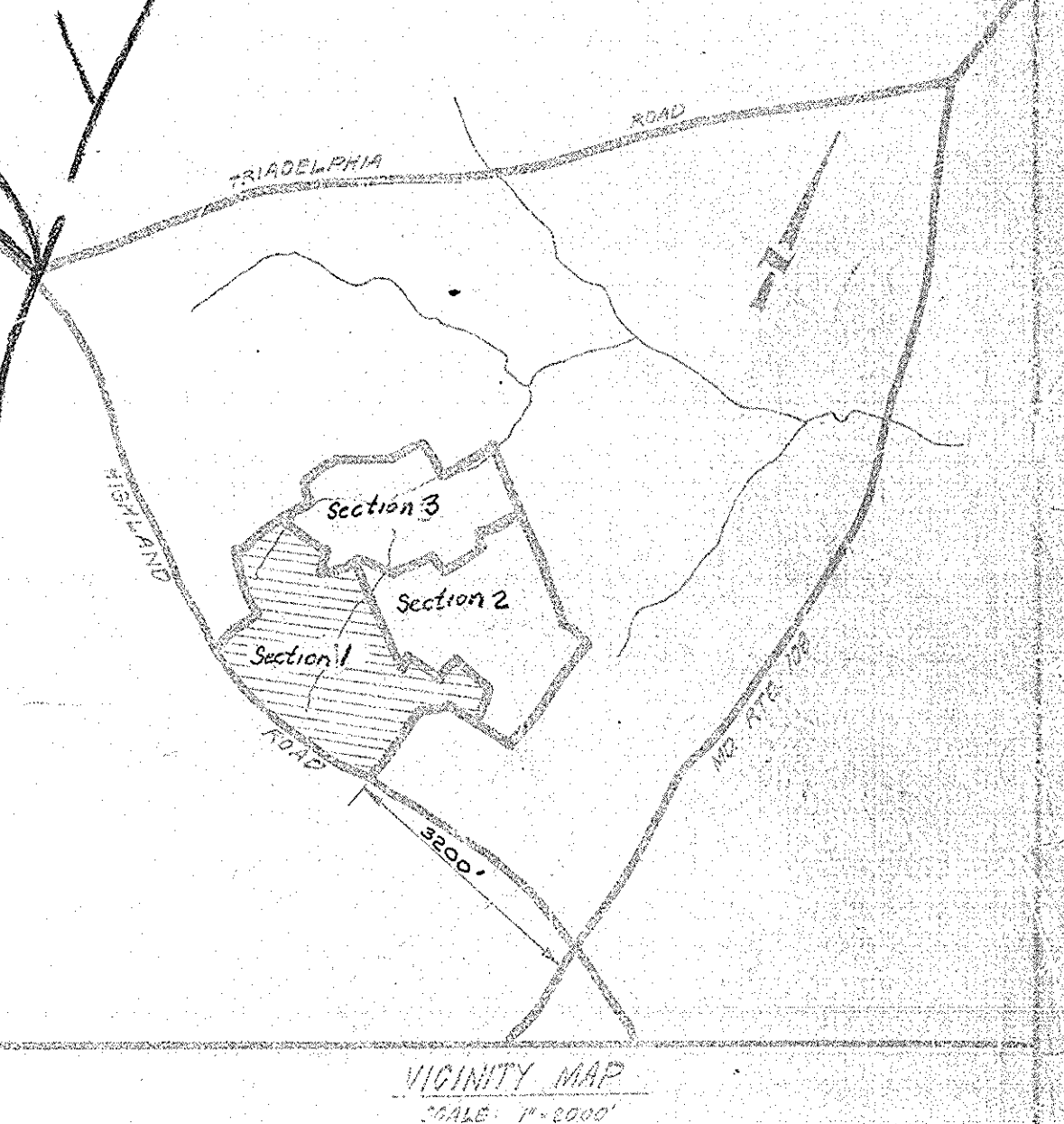
100 YEAR FLOOD PLAIN  
 ELY. = 471.0  
 (POND)

Provide positive drainage to Reargrade lots to provide swales as shown. 20' wide by 1' deep

Existing dirt road crossing Lots 34 & 45 provides access to a single tenant of The Highland Partnership. House will be vacated prior to construction of improvements shown and roadway will be abandoned.

SECTION THREE SHEET  
 1984 OF LOTS 1-45  
 1.75 AC. TOTAL AREA  
 TOTAL AREA 100.00 AC.

**GENERAL NOTES**  
 Area of property shown = 104.56 Ac.  
 Priority given Road (60,000 B.M.P.)  
 Number of lots = 45  
 Density = 0.35 lots/acre  
 1. This property is a large private water supply & storage disposal system.  
 2. For street services, typical street sections & paving widths, see your establishment drawings.  
 3. Parcels of existing ponds shall be created at completion of construction to a community association for this development only, 5.75 ac.  
 4. Building Restriction Lines:  
 (A) Front = 25'  
 (B) Side Street = 40'  
 (C) Side Yard = 30'  
 (D) Rear = 30'  
 5. Symbols:  
 Dwelling Unit (30' x 60')  
 Septic system (10,000 gal) minimum  
 Water Well  
 10. There is no 100 year flood plain encroachment at this site.



**GENERAL NOTES**  
 1. Horizontal and Vertical Control based on an assumed Datum of Erid.  
 2. Notify Howard County, Department of Public Works 5 days prior to beginning construction of entrances on Highland Road.  
 3. Positive drainage will be maintained along the north side of Highland Road.  
 4. The north half of Highland Lake Road will be widened to a paved width of 12' in accordance with the typical section shown on sheet 10 of 13.

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*D. M. McLeod* 6/6/77  
 CHIEF, BUREAU OF HIGHWAYS DATE  
 APPROVED: OFFICE OF PLANNING AND ZONING  
*Shelia M. Muschman* 6-1-77  
 CHIEF, DIVISION OF LAND DATE  
 DEVELOPMENT #

CONTRACT OWNER/DEVELOPER  
 HIGHLAND PARTNERSHIP  
 8777 FIRST AVENUE  
 SILVER SPRING, MARYLAND 20901  
 W. W. BUCHER 301-588-3100

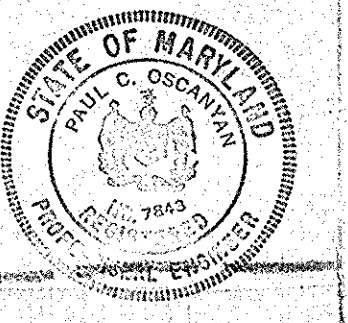
Benchmark Elev. 565.23  
 Top of Iron Pipe

Benchmark Elev. 534.07  
 Top of Iron Pipe

**TOUPS AND LOIEDERMAN**  
 ENGINEERS, PLANNERS, LANDSCAPE ARCHITECTS  
 JOSEPH R. HARRIS BUILDING  
 1376 PICCARD DRIVE ROCKVILLE, MARYLAND 20850 301-940-3300

NO.	REVISIONS	BY	DATE
1	LOT NUMBERS REVISED	PLB	4-15-76
2	LAYOUT REVISED	MES	6-21-76
3	GENERAL REVISIONS	MEW	10-76
4	General Revision	MEW	12-76
5	Revisions as per County	JRC	4/28/77

PREPARED UNDER THE SUPERVISION OF  
*Paul C. Cray*  
 7843 24 Dec. '76



Section 1  
 Drainage Area Map  
**HIGHLAND LAKE**  
 ELECTION DISTRICT 5  
 HOWARD COUNTY, MARYLAND

JOB NUMBER  
 1780-202-01  
 SHEET NO.  
 1  
 OF 12

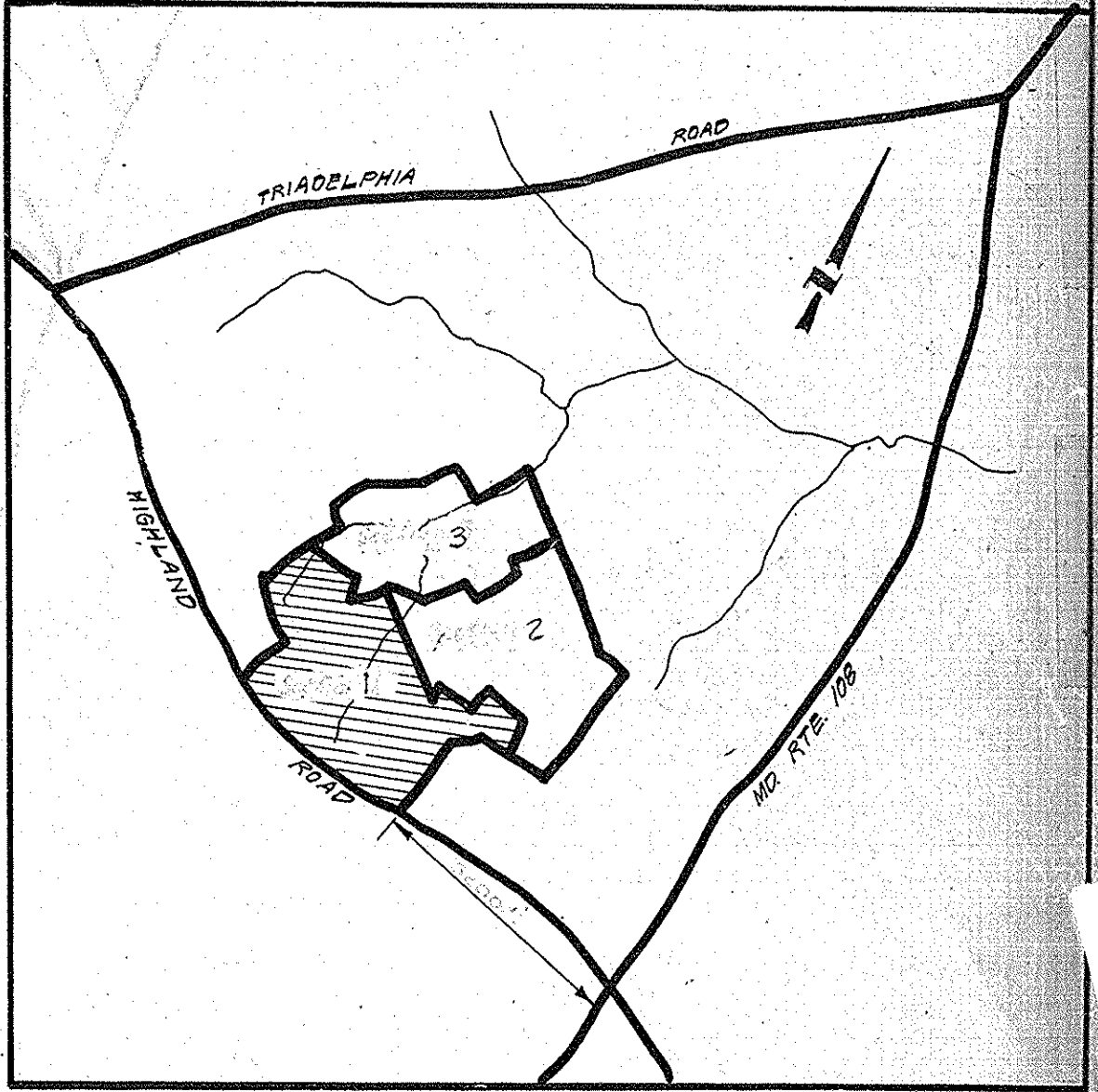


TABULATION THIS SHEET  
 NUMBER OF LOTS = 45  
 AREA OF LOTS = 82,54 sq. ft.  
 AREA OF R/W = 10,294 sq. ft.  
 TOTAL AREA = 104,56 sq. ft.

- GENERAL NOTES**
- Area of property shown = 104,56 Ac.
  - Property zoned R-40 (40,000 sq. ft. min.)
  - Number of lots = 45
  - Density 0.43 lots/acre
  - This property to utilize private water supply & sewage disposal systems.
  - For street profiles, typical street sections & paving sections, see grade establishment drawings.
  - Parcels A including pond shall be deeded at completion of construction to a community association for this development only 8.33 Ac.
  - Building Restriction Line.
    - (A) Front: 75'
    - (B) Side Street: 40'
    - (C) Side Yard: 20'
    - (D) Rear: 50'
  - Symbols:
    - Dwelling Unit (30' x 60')
    - Septic system (10,000 sq. ft.)
    - Water Well
  - There is no 100 year flood plain encroachment on this plan.

\* Common Area to be deeded to Home Owners Association  
 CONTRACT OWNER/DEVELOPER  
 HIGHLAND PARTNERSHIP  
 8777 FIRST AVENUE  
 SILVER SPRING, MARYLAND 20901  
 W. BUCHER 301-598-3100

Limits of Parcel A this sheet +303A. (Privately owned open space to be transferred to Home Owners Association when formed)



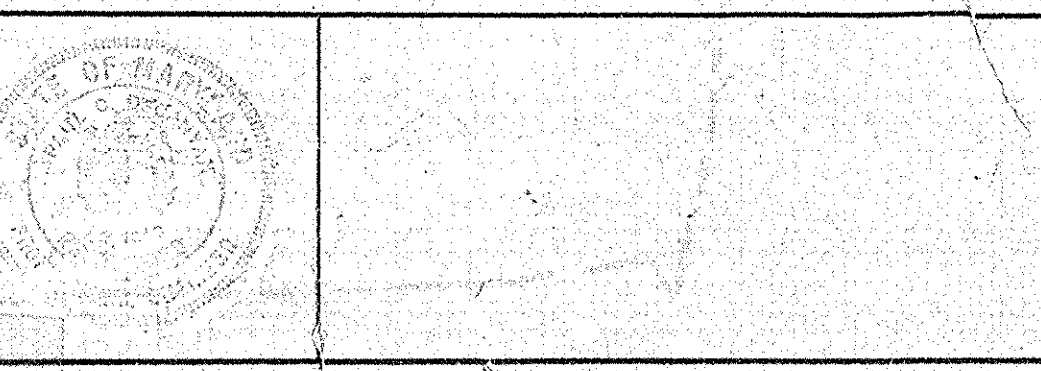
VICINITY MAP  
 SCALE: 1" = 2000'

APPROVED AS SHOWN BY THESE WORKS  
 B. N. M... 6/6/77  
 J. H. M... 6-1-77  
 Note: For percolation test data see sheet 2 of 2

**TOUPS AND LOIEDERMAN**  
 ENGINEERS, PLANNERS, LANDSCAPE ARCHITECTS  
 JOSEPH R. HARRIS BUILDING  
 1370 PICCARD DRIVE ROCKVILLE MARYLAND 20850 301-840-1300  
 A PLANNING RESEARCH CORPORATION COMPANY

NO.	REVISIONS	BY	DATE
1	LOT NUMBERS REVISED	MLS	4-15-76
2	LAYOUT REVISED	MLS	6-21-76
3	GENERAL REVISIONS	MEW	10-7-76

PREPARED UNDER THE SUPERVISION OF:  
 [Signature]  
 P. E. NO. [ ] DATE [ ]  
 DESIGNED BY [ ] CHECKED [ ] SCALE 1" = 100'  
 DRAWN Emil Heinrich DATE Feb. 1976 R.E.F.



**HIGHLAND LAKE**  
 ELECTION DISTRICT 5  
 HOWARD COUNTY, MARYLAND  
 JOB NUMBER 1780-002-0  
 SHEET NO. 1  
 OF 4 SHEETS

1-042-1780-002

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*D. M. McElreath* 6/6/77  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: OFFICE OF PLANNING AND ZONING  
*John W. Messer* 6-1-77  
 CHIEF, DIVISION OF LAND DEVELOPMENT & TRANSPORTATION DATE

**± CURVE DATA**

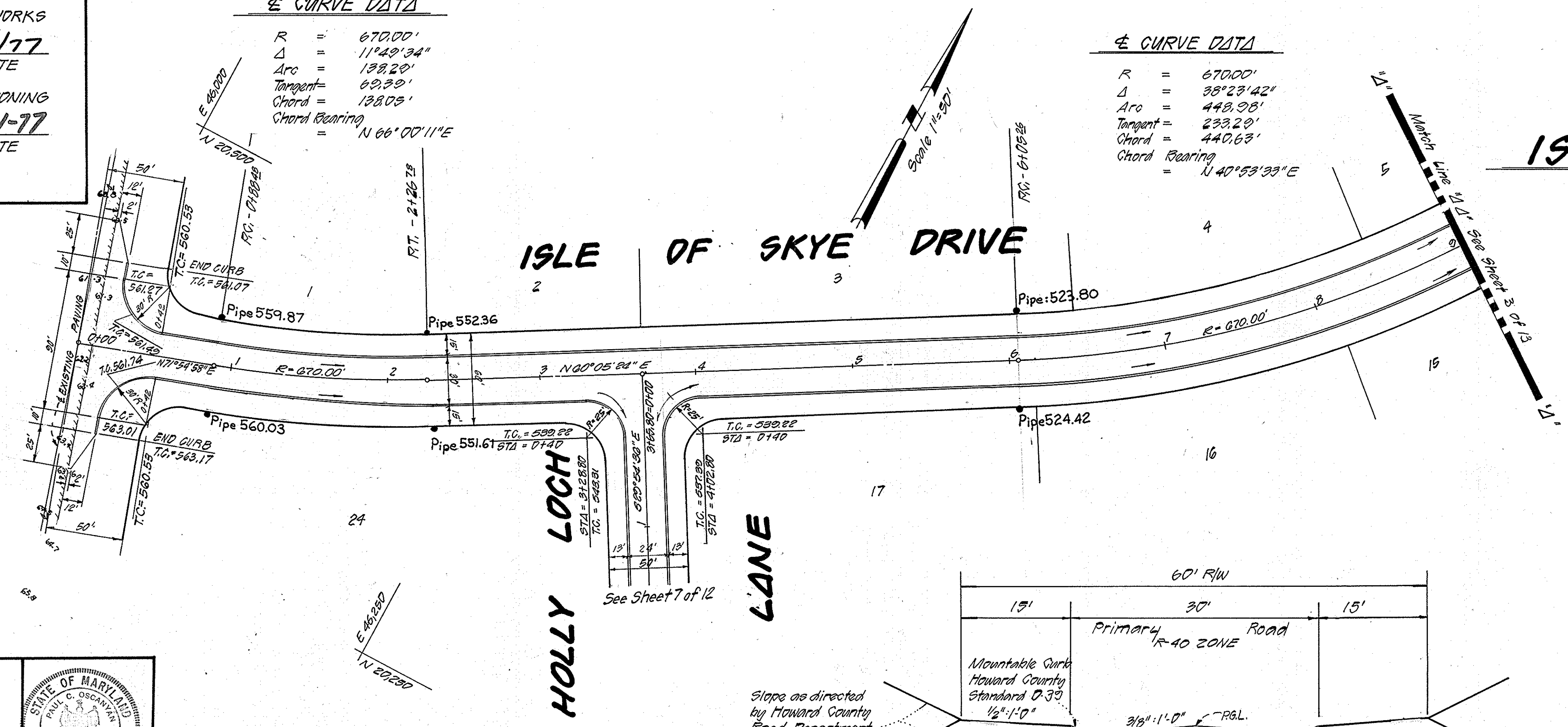
R = 670.00'  
 Δ = 114°23'34"  
 Arc = 138.20'  
 Tangent = 62.22'  
 Chord = 138.02'  
 Chord Bearing = N 66°00'11"E

**± CURVE DATA**

R = 670.00'  
 Δ = 38°23'42"  
 Arc = 443.28'  
 Tangent = 233.22'  
 Chord = 440.63'  
 Chord Bearing = N 40°53'33"E

Grade Establishment  
 Storm Drain and Raving Plan  
 For  
**ISLE OF SKYE DRIVE**  
 SECTION I - AREA I  
 HIGHLAND LAKE  
 Election District 3  
 Howard County, Maryland  
 (35 MPH Design Speed)

- GENERAL NOTES**
1. Geometric design based on current AASHTO criteria
  2. All construction will be in accordance with the latest edition of the Howard County Road Construction Code and Standard Specifications.
  3. Positive drainage will be maintained along Highland Road.



PREPARED UNDER THE SUPERVISION OF  
*Paul C. O'Brien*  
 PAUL C. O'BRIEN  
 7843 R.E. NO. 28 Dec '76 DATE

**TOUPE AND LIEDERMAN**  
 JOSEPH R. HARRIS BUILDING  
 1370 PICCARD DRIVE  
 ROCKVILLE, MARYLAND  
 301-840-1300

Revisions			
No.	Description	By	Date
1	Rev'd as per con.	J.R.G.	4/28/77

PLAN  
 SURVEYED, PLOTTED, CHECKED, BY DATE  
 NOTE BOOK NO. OF WAY CHECKED

PROFILE  
 SURVEYED, PLOTTED, CHECKED, BY DATE  
 NOTE BOOK NO. E. & M. NOTES, SIGNATURE, NOTATIONS, CHECKED

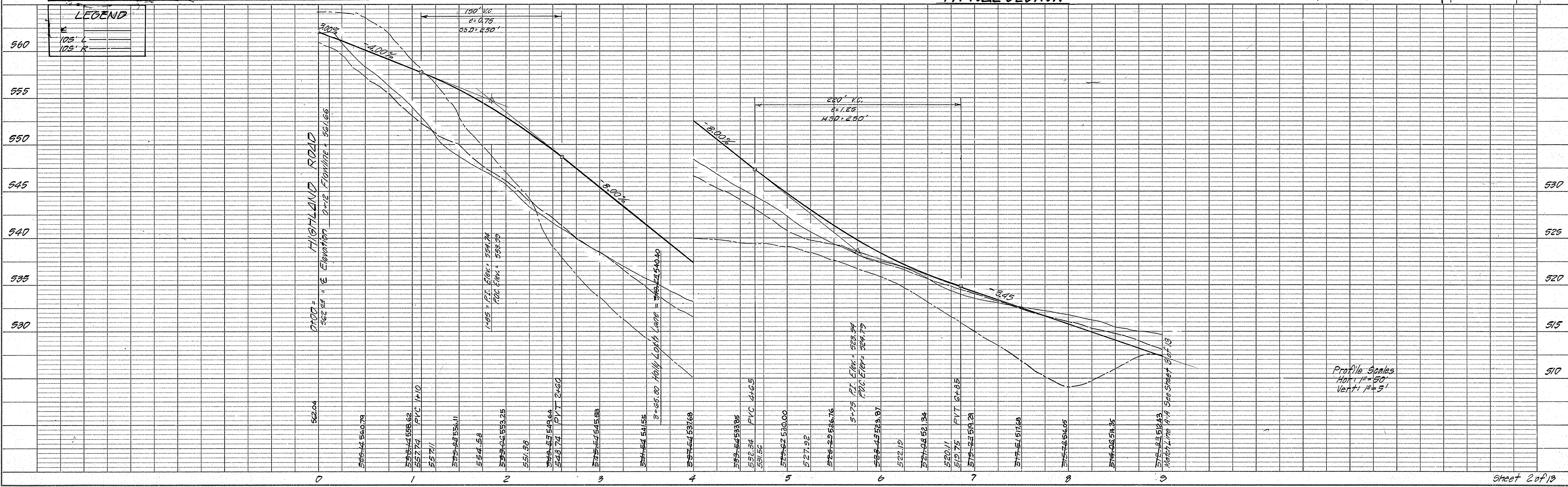


PLATE 1 PLAN-PROFILE 3 P R STANDARD  
 ENGINE DESIGN CO. CHICAGO - NEW YORK

'As-Built' Sept 13, 1978

ISLE OF SKYE DRIVE

1780-002-0 E-77-113

1-044-1780-002

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*D. M. McCreary* 6/6/77  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: OFFICE OF PLANNING AND ZONING  
*John W. McCreary* 6-7-77  
 CHIEF, DIVISION OF LAND DEVELOPMENT & RECONSTRUCTION DATE

**± CURVE DATA**

R = 670.00'  
 $\Delta$  = 38°23'42"  
 Arc = 448.98'  
 Tangent = 233.25'  
 Chord = 440.63'  
 Chord Bearing = N 40°53'33" E

**± CURVE DATA**

R = 670.00'  
 $\Delta$  = 25°45'35"  
 Arc = 301.88'  
 Tangent = 153.10'  
 Chord = 228.00'  
 Chord Bearing = N 32°34'30" E

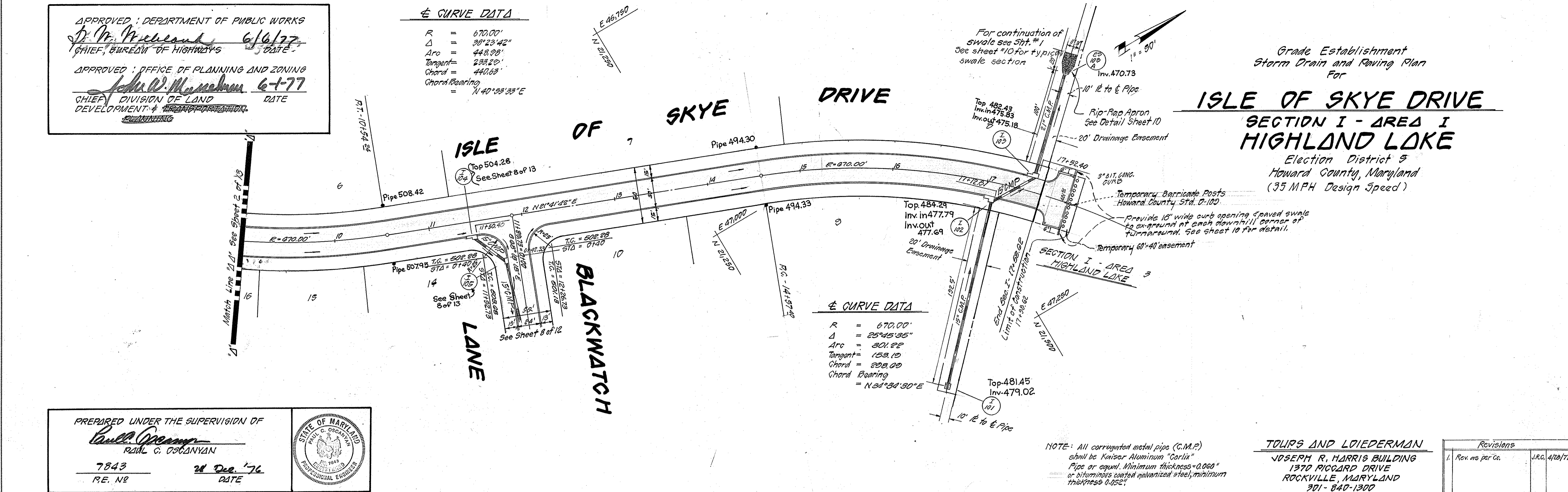
Grade Establishment  
 Storm Drain and Raving Plan  
 For

**ISLE OF SKYE DRIVE**  
**SECTION I - AREA I**  
**HIGHLAND LAKE**

Election District 3  
 Howard County, Maryland  
 (35 MPH Design Speed)

DATE	
BY	
NO. OF SHEETS	
NO. OF SHEETS CHECKED	
NO. OF SHEETS REVISIONS CHECKED	
NO.	

DATE	
BY	
NO. OF SHEETS	
NO. OF SHEETS CHECKED	
NO. OF SHEETS REVISIONS CHECKED	
NO.	



PREPARED UNDER THE SUPERVISION OF

*Paul C. O'Connell*  
 PAUL C. O'CONNOR

7843 21 Dec. '76  
 R.E. NO. DATE

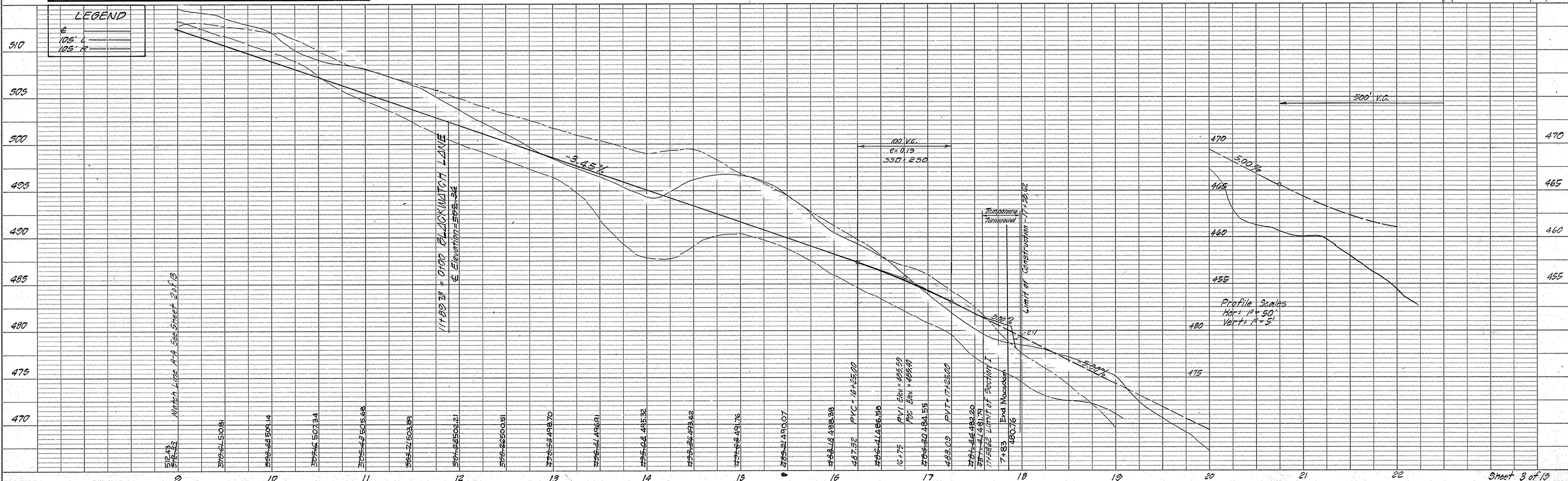


NOTE: All corrugated metal pipe (C.M.P.) shall be Kaiser Aluminum "Corlix" Pipe or equal. Minimum thickness = 0.060" or bituminous coated galvanized steel, minimum thickness 0.052"

**TOURS AND LOIEDERMAN**

JOSEPH R. HARRIS BUILDING  
 1370 PICCARD DRIVE  
 ROCKVILLE, MARYLAND  
 301-840-1300

Revisions	
1. Rev. as per Co.	J.R.C. 4/28/77



1-045-1780-002

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*D. M. McNeill* 6/6/77  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE

APPROVED: OFFICE OF PLANNING AND ZONING  
*John W. Muschman* 6-7-77  
 CHIEF, DIVISION OF LAND DEVELOPMENT & TRANSPORTATION PLANNING  
 DATE

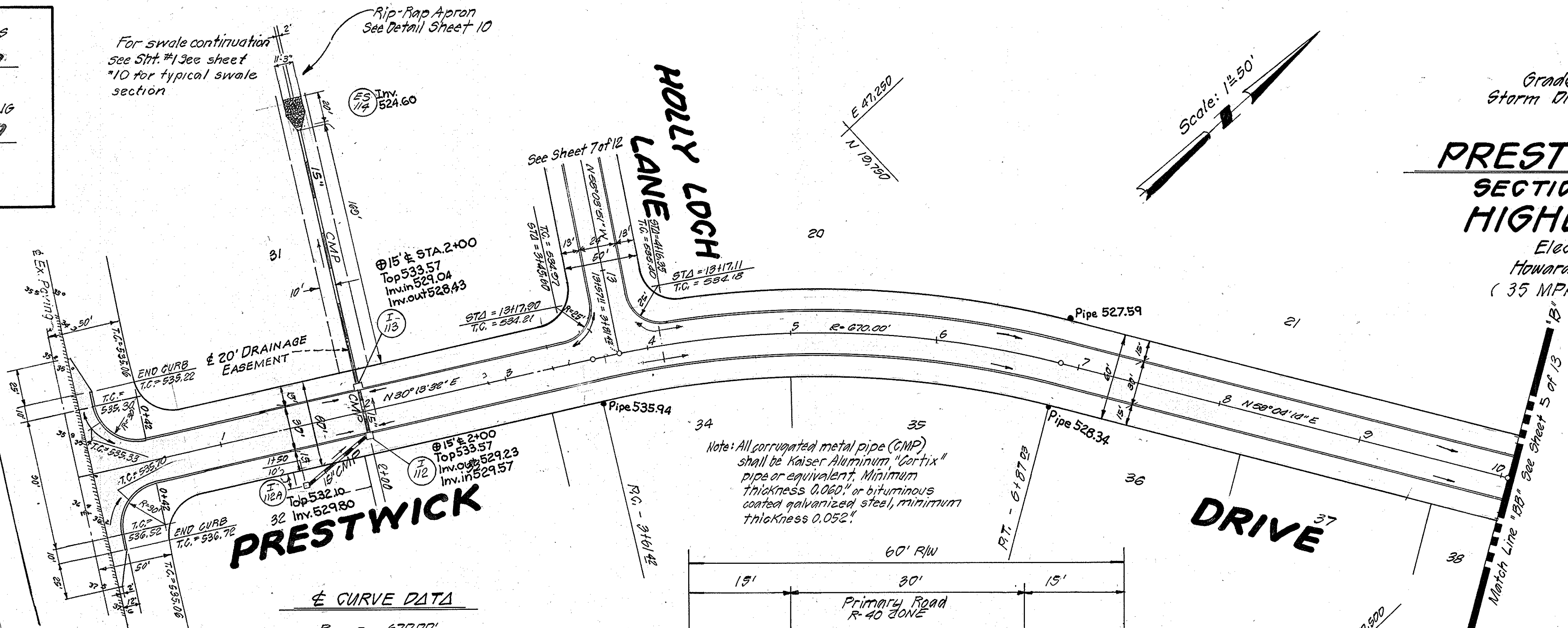
For swale continuation  
 see Sht. #1 see sheet  
 \*10 for typical swale  
 section

Grade Establishment  
 Storm Drain and Paving Plan  
 For  
**PRESTWICK DRIVE**  
 SECTION I - AREA I  
 HIGHLAND LAKE  
 Election District 5  
 Howard County, Maryland  
 (35 MPH Design Speed)

PLAN  
 SURVEYED: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_  
 ALIGNMENT CHECKED: \_\_\_\_\_  
 RT. OF WAY CHECKED: \_\_\_\_\_  
 No. \_\_\_\_\_

HIGHLAND ROAD

Note: Positive drainage will  
 be maintained along  
 Highland Road.



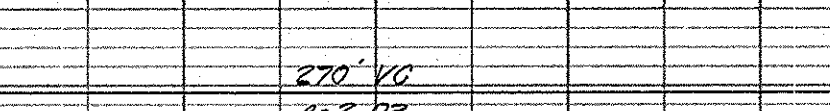
± CURVE DATA

R = 670.00'  
 Δ = 27°30'43"  
 Arc = 325.61'  
 Tangent = 166.00'  
 Chord = 322.42'  
 Chord Bearing = N44°08'53"E

Slope as directed  
 by Howard County  
 Road Department

Standard Paving Section 0-3, 0-4 or 0-5 1/2 prime & tack coats in accordance  
 with sections C-30-3 and C-31-4 of Howard Co. road construction code and standard specs

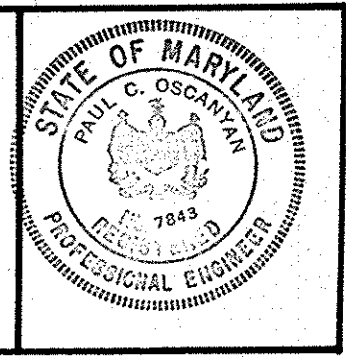
TYPICAL SECTION



TOURS AND LIEDERMAN  
 JOSEPH R. HARRIS BUILDING  
 1370 FICCARD DRIVE  
 ROCKVILLE, MARYLAND  
 301-840-1300

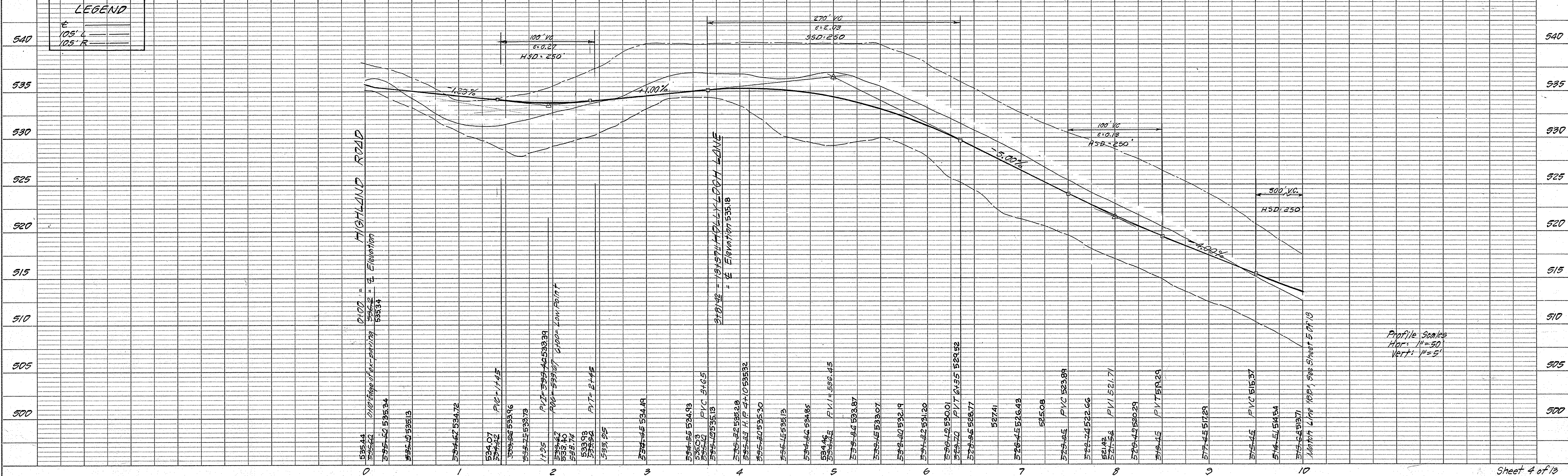
Revisions	
1. Rev. as per ca.	JRC 4/20/77

PREPARED UNDER THE SUPERVISION OF  
*Paul G. Osganian*  
 PAUL G. OSGANIAN  
 7843  
 P.E. No. DATE 14 Dec. 76



LEGEND

± 105' L  
 ± 105' R



Profile Scales  
 Hor: 1"=50'  
 Vert: 1"=5'

1-646-1780-002

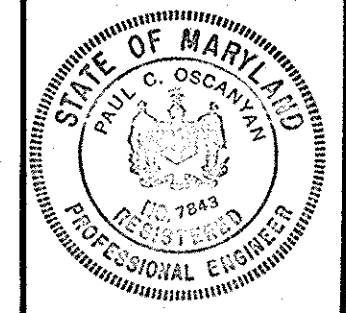
APPROVED DEPARTMENT OF PUBLIC WORKS  
*S.M. McCreary* 6/6/77  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED OFFICE OF PLANNING AND ZONING  
*John W. Muschman* 6-7-77  
 CHIEF, DIVISION OF LAND DEVELOPMENT & SUBDIVISIONS DATE

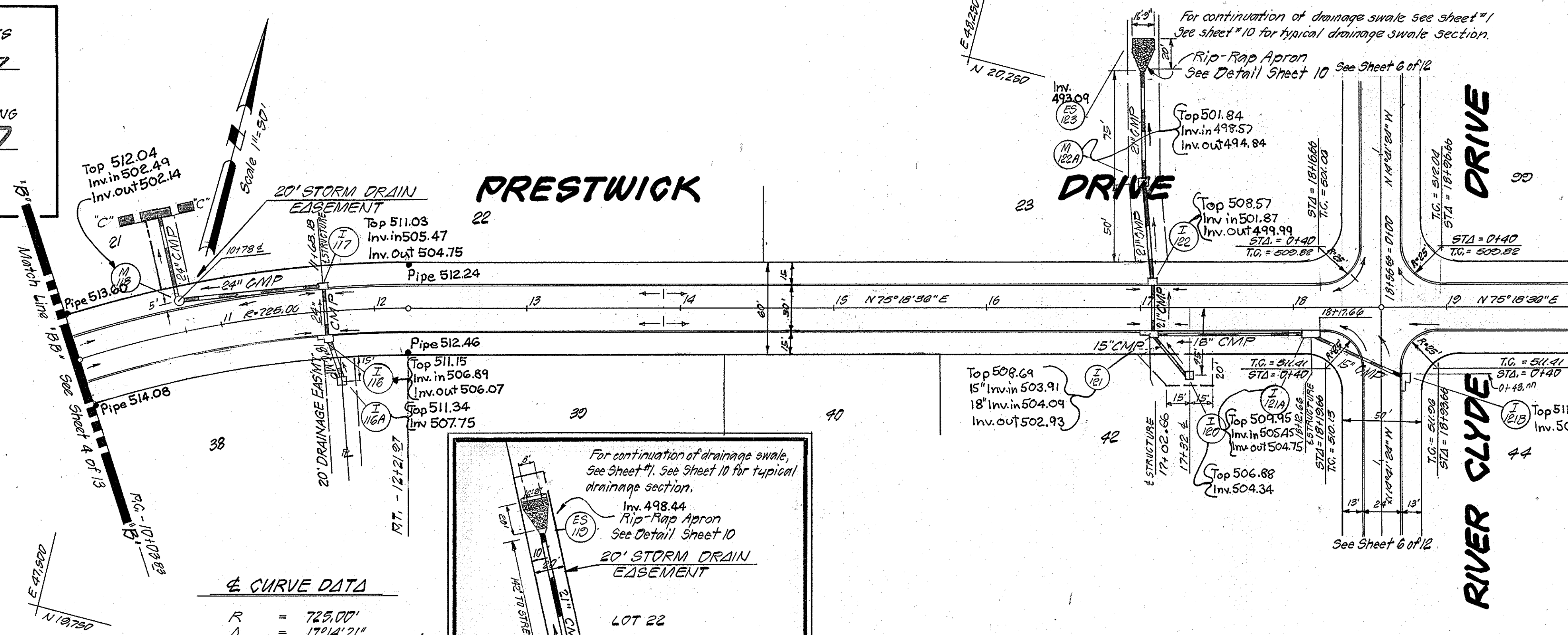
DATE \_\_\_\_\_  
 BY \_\_\_\_\_  
 SURVEYED \_\_\_\_\_  
 NOTED \_\_\_\_\_  
 CHECKED \_\_\_\_\_  
 S.W. NOTES \_\_\_\_\_  
 STRUCTURE NOTATIONS CHECKER \_\_\_\_\_  
 PLAN  
 NOTE BOOK  
 No. \_\_\_\_\_

DATE \_\_\_\_\_  
 BY \_\_\_\_\_  
 SURVEYED \_\_\_\_\_  
 NOTED \_\_\_\_\_  
 CHECKED \_\_\_\_\_  
 S.W. NOTES \_\_\_\_\_  
 STRUCTURE NOTATIONS CHECKER \_\_\_\_\_  
 PROFILE  
 NOTE BOOK  
 No. \_\_\_\_\_

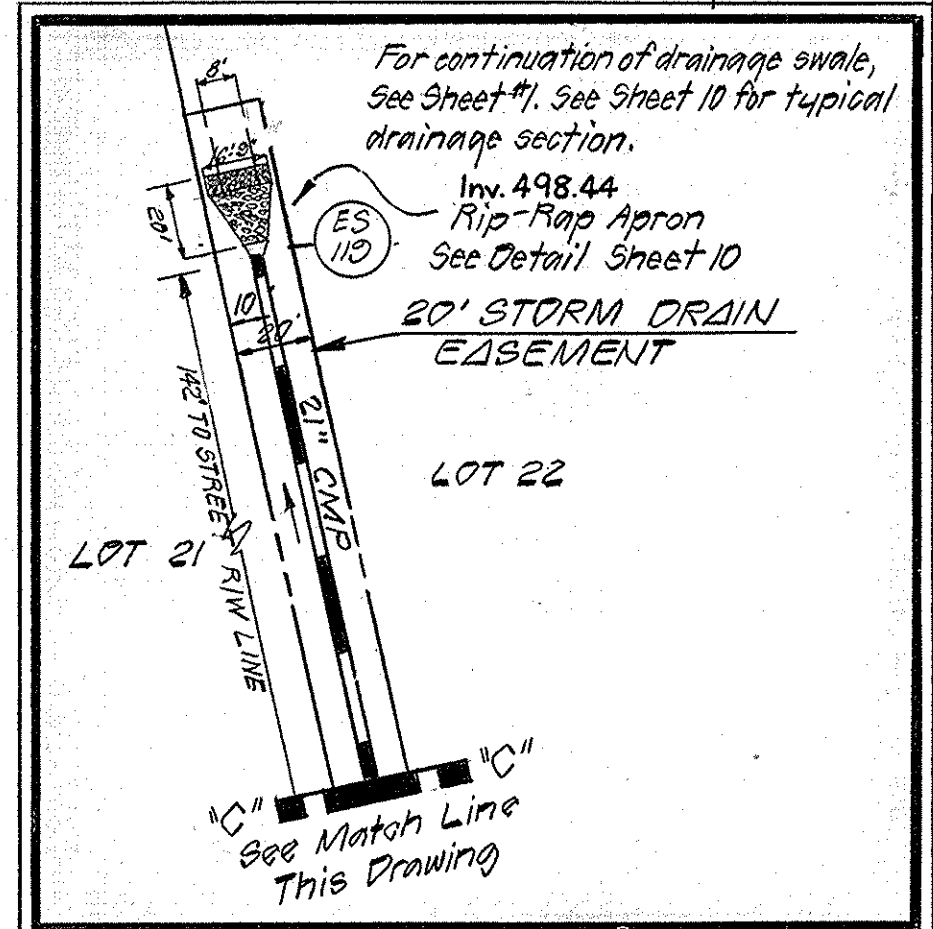
PREPARED UNDER THE SUPERVISION OF  
*Russell C. Osgood*  
 RUSSELL C. OSGOOD  
 7843 RE. NO. 24 Dec. '76 DATE



LEGEND  
 10% L  
 10% R



CURVE DATA  
 R = 725.00'  
 Δ = 171°42'21\"/>



Note: All corrugated metal pipe (CMP) shall be Kaiser Aluminum "Cortix" Pipe or equivalent, Minimum thickness 0.060, or aluminum coated galvanized steel, minimum thickness 0.052."

TOURS AND LOEDERMAN  
 JOSEPH R. HARRIS BUILDING  
 1370 PICCARD DRIVE  
 ROCKVILLE, MARYLAND  
 301-840-1300

Revisions		
1	Rev. one per Co.	J.R.C. 4/22/77

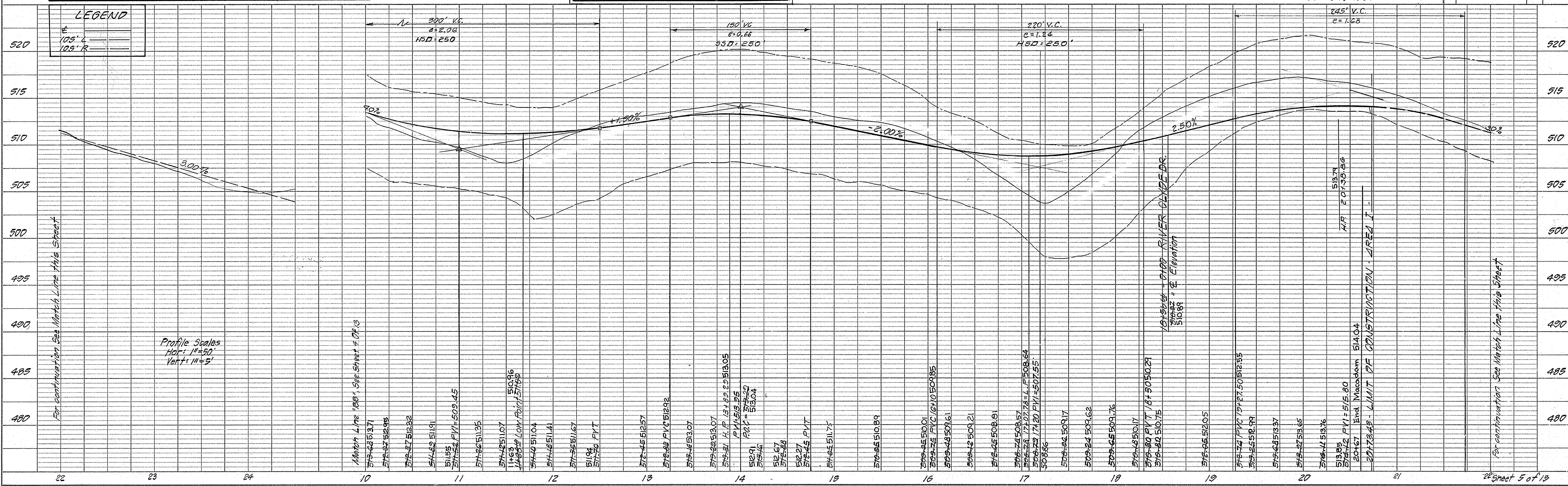


PLATE 1 PLAN - PROFILE B P R STANDARD  
 EUGENE FITZGERALD CO. CHICAGO, NEW YORK

"As-Built" Sept 18, 1978  
 PRESTWICK DRIVE  
 1780-002-0  
 1-047-1780-002

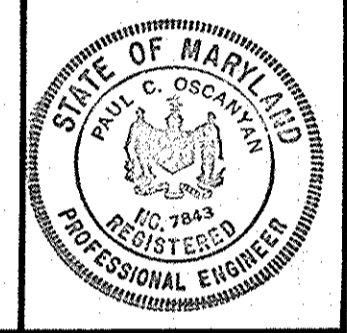
APPROVED DEPARTMENT OF PUBLIC WORKS  
*D. W. Heenan* 76/12/77  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED OFFICE OF PLANNING AND ZONING  
*Shull W. Muehlman* 6-1-77  
 CHIEF, DIVISION OF LAND DEVELOPMENT & ZONING DATE

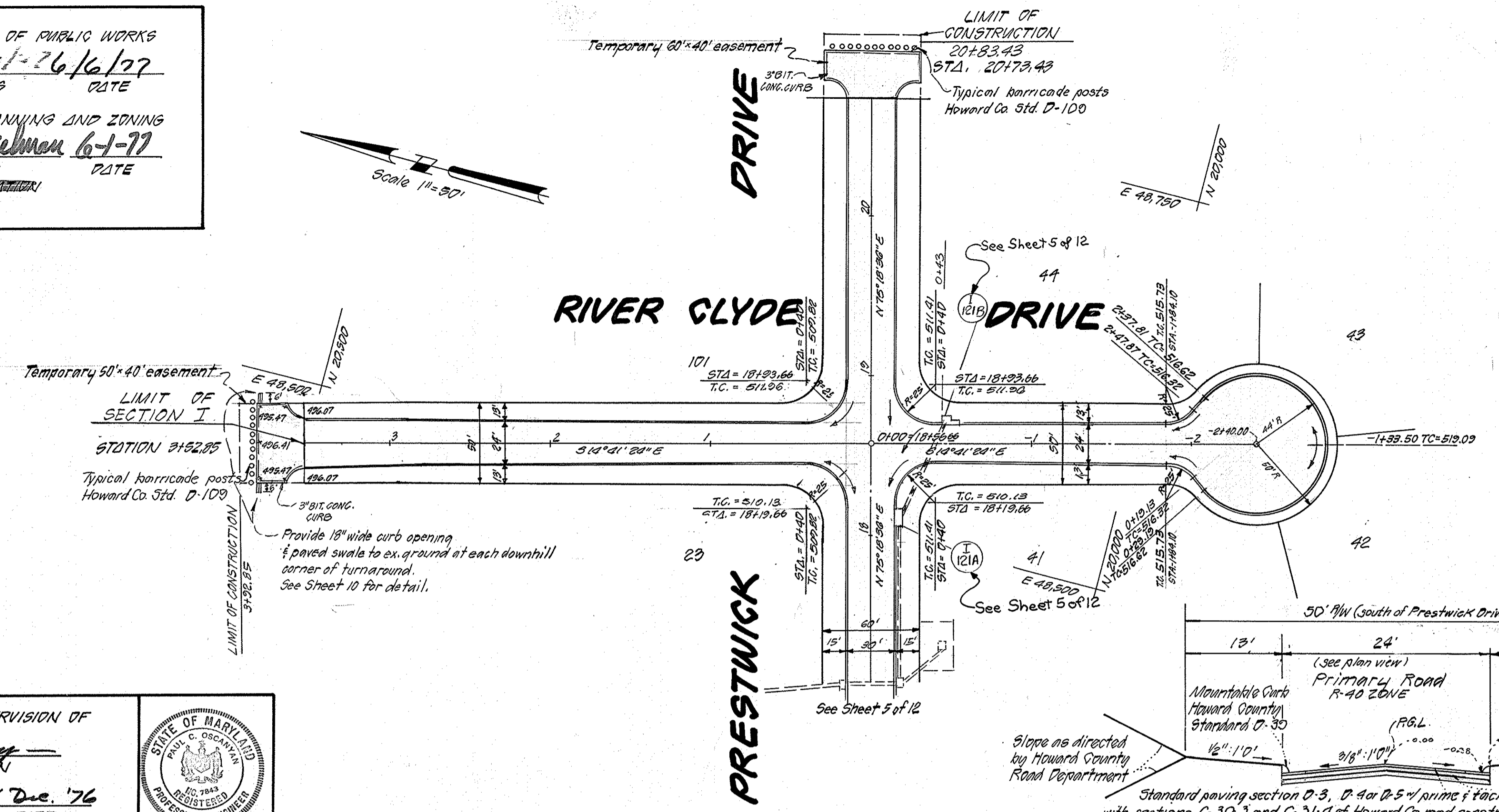
DATE  
 BY  
 SURVEYED  
 NOTE BOOK  
 NO.

DATE  
 BY  
 SURVEYED  
 NOTE BOOK  
 NO.

PREPARED UNDER THE SUPERVISION OF  
*Paul C. Osganyan*  
 PAUL C. OSGANYAN  
 7843 R.E. No. 28 Dec. '76 DATE



Grade Establishment  
 Storm Drain and Raving Plan  
 For  
**RIVER CLYDE DRIVE**  
**SECTION I - AREA I**  
**HIGHLAND LAKE**  
 Election District 5  
 Howard County, Maryland  
 (35 MPH Design Speed)



TOURS AND LOIEDERMAN  
 JOSEPH R. HARRIS BUILDING  
 1370 PIGGARD DRIVE  
 ROCKVILLE, MARYLAND  
 301-840-1300

Revisions	
1. Rev. as per Co.	J.R.G. 4/28/77

LEGEND  
 1" = 100' L  
 1" = 100' R

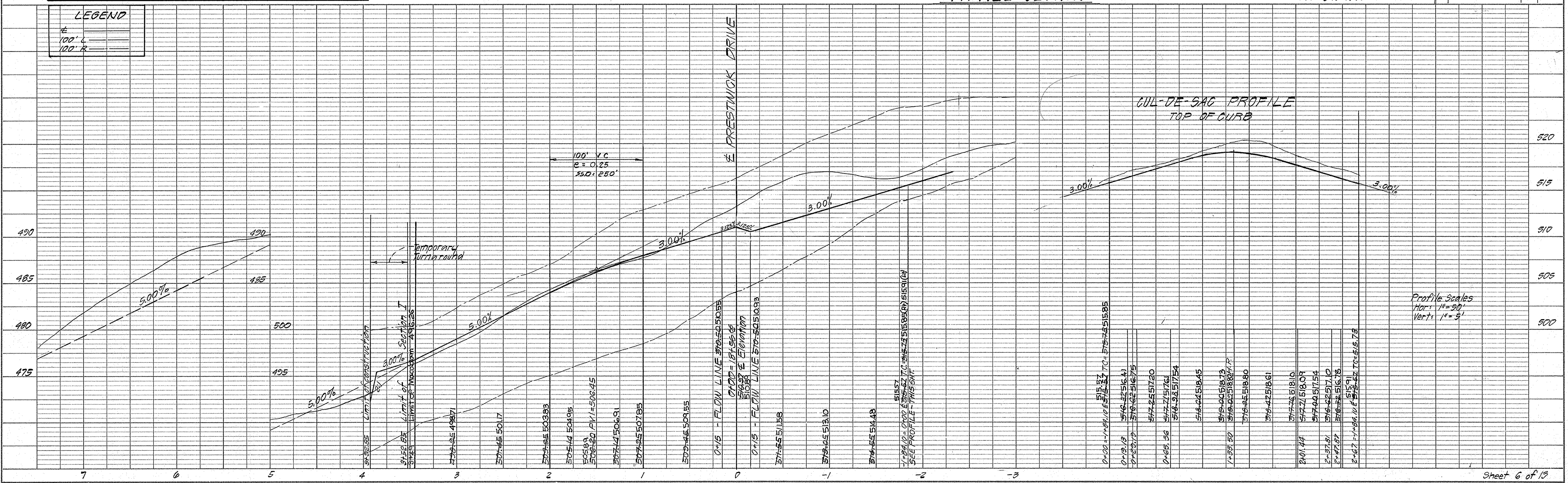


PLATE 1 PLAN - PROFILE B P R STANDARD  
 EUGENE DETZNER CO. CHICAGO, NEW YORK

RIVER CLYDE DRIVE

1780-002-0 F-777-113

5/11  
 1-048-1780-002

As-Built 18, 1978

Sheet 6 of 13

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*D. M. McLaughlin* 12/16/77  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: OFFICE OF PLANNING AND ZONING  
*Aschell* 6-1-77  
 CHIEF, DIVISION OF LAND DEVELOPMENT & RECONSTRUCTION DATE

☉ CURVE DATA  
 R = 900.00'  
 Δ = 17° 19' 04"  
 Arc = 272.03'  
 Tangent = 137.06'  
 Chord = 270.99'  
 Chord Bearing = 93° 34' 08"E

☉ CURVE DATA  
 R = 678.00"  
 Δ = 10° 50' 11"  
 Arc = 127.66'  
 Tangent = 64.02'  
 Chord = 127.97'  
 Chord Bearing = 95° 28' 46"E

ISLE OF SKYE DRIVE

HOLLY LOCH LANE

PRESTWICK DRIVE

Grade Establishment  
 Storm Drain and Paving Plan  
 For  
**HOLLY LOCH LANE**  
 SECTION I - AREA I  
 HIGHLAND LAKE  
 Election District 5  
 Howard County, Maryland  
 (30 MPH Design Speed)

PREPARED UNDER THE SUPERVISION OF  
*Raul G. Oskanyan*  
 RAUL G. OSKANYAN  
 7843 24 Dec '76  
 P.E. No. DATE



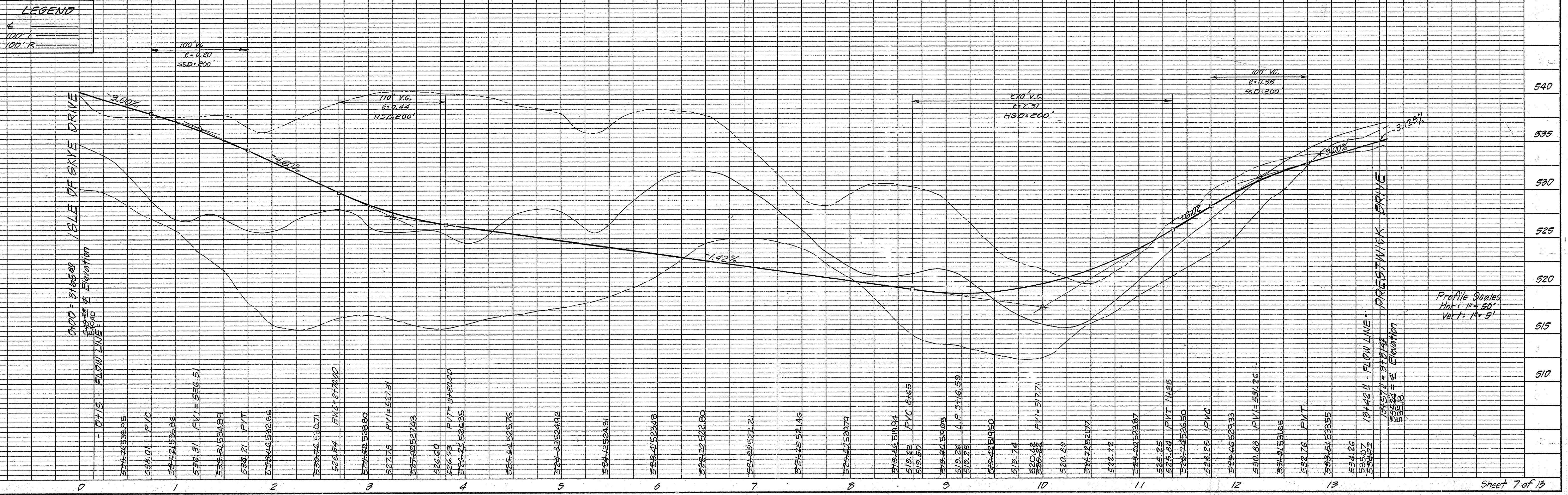
NOTE: All corrugated metal pipe (C.M.P.) shall be Kaiser Aluminum "Corlix" Pipe or Equivalent. Minimum thickness = 0.060" or bituminous coated galvanized steel, minimum thickness 0.052"

Slope as directed by Howard County Road Department

Standard paving section 0-3, 0-4 or 0-5" prime; tack coats in accordance with sections C-30-3 and C-31-4 of Howard Co road construction code and standard spec.

TOUPS AND LOIEDERMAN  
 JOSEPH R. HARRIS BUILDING  
 1370 PICCARD DRIVE  
 ROCKVILLE, MARYLAND  
 901-840-1300

Revisions	
1. Rev. as per Co.	JRC 4/28/77



LEGEND  
 100' V.C.  
 0.20  
 SSD=200'

Profile Scales  
 Hor: 1" = 50'  
 Vert: 1" = 5'

PLATE 1 PLAN-PROFILE B.P.R. STANDARD

As-Built Sept 18, 1978

HOLLY LOCH LANE

1780-002-0

DATE  
 DRAWN BY  
 CHECKED BY  
 IN CHARGE

DATE  
 DRAWN BY  
 CHECKED BY  
 IN CHARGE

1-049-1780-002

F-77-113



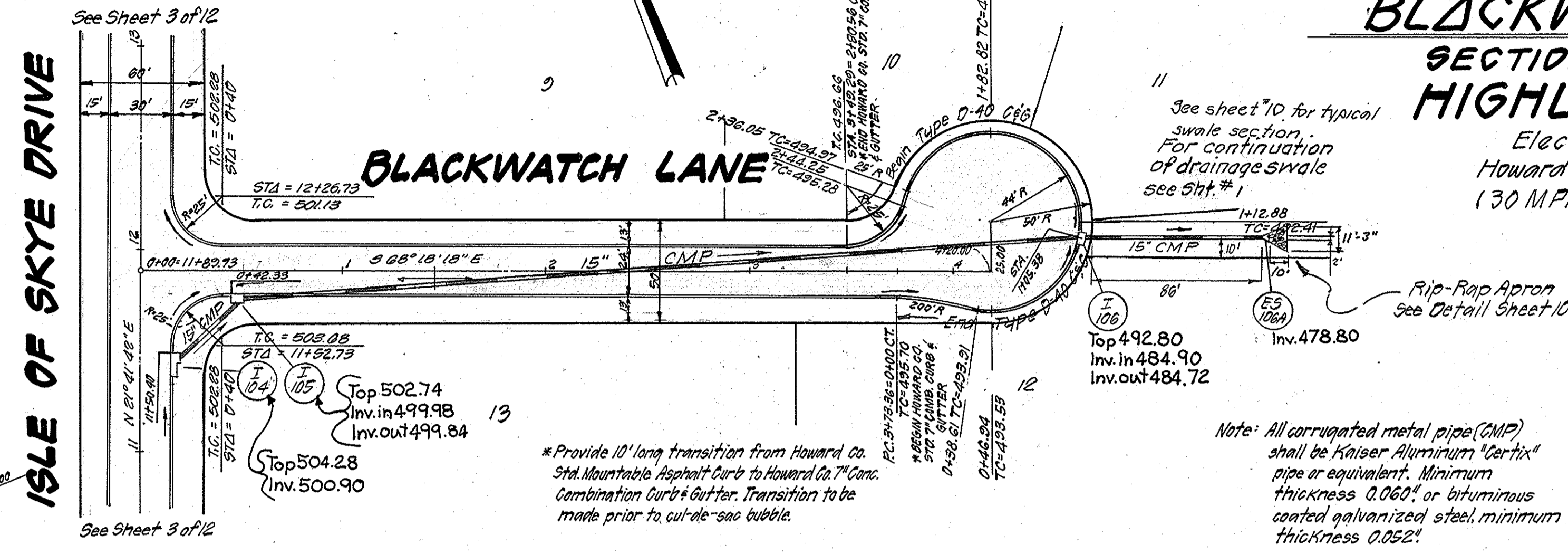
APPROVED: DEPARTMENT OF PUBLIC WORKS  
*D. P. Weiland* 6/16/77  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: OFFICE OF PLANNING AND ZONING  
*Arthur W. Marshall* 6-1-77  
 CHIEF, DIVISION OF LAND DEVELOPMENT & ZONING DATE

Grade Establishment  
 Storm Drain and Raving Plan  
 For

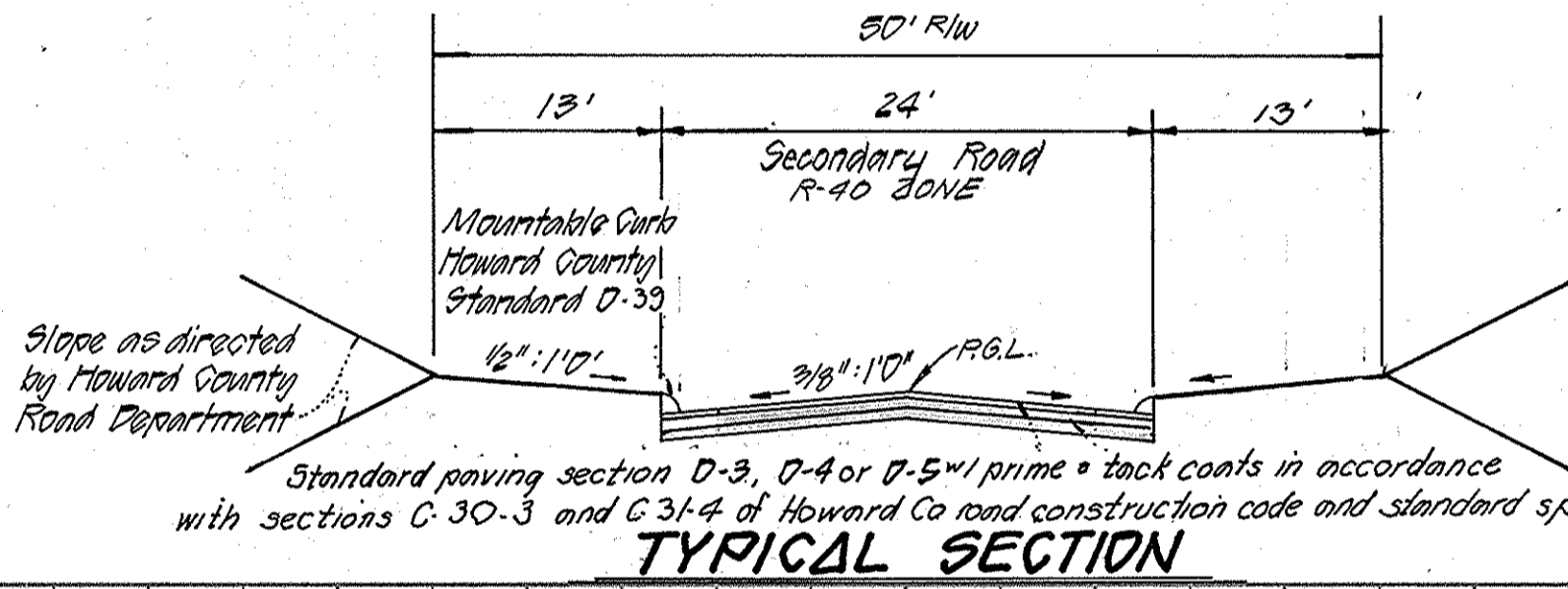
# BLACKWATCH LANE SECTION I - AREA I HIGHLAND LAKE

Election District 3  
 Howard County, Maryland  
 (30 MPH Design Speed)



\*Provide 10' long transition from Howard Co. Std. Mountable Asphalt Curb to Howard Co. 7" Conc. Combination Curb & Gutter. Transition to be made prior to cul-de-sac bubble.

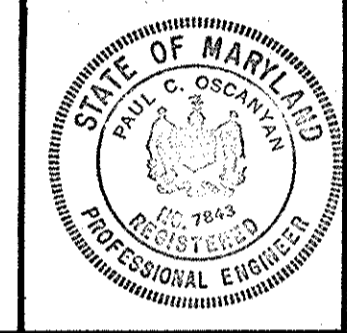
Note: All corrugated metal pipe (CMP) shall be Kaiser Aluminum 'Certix' pipe or equivalent. Minimum thickness 0.060". Minimum coated galvanized steel, minimum thickness 0.052".



TOURS AND LOIEDERMAN  
 JOSEPH R. HARRIS BUILDING  
 1370 PICCARD DRIVE  
 ROCKVILLE, MARYLAND  
 301-840-1300

Revisions	
1. Rev. as per Co.	J.R.G. 4/28/77

PREPARED UNDER THE SUPERVISION OF  
*Paul C. Oscanyan*  
 PAUL C. OSCANYAN  
 T843 28 Dec. '76  
 R.E. NO. DATE



LEGEND  
 100' L  
 100' R

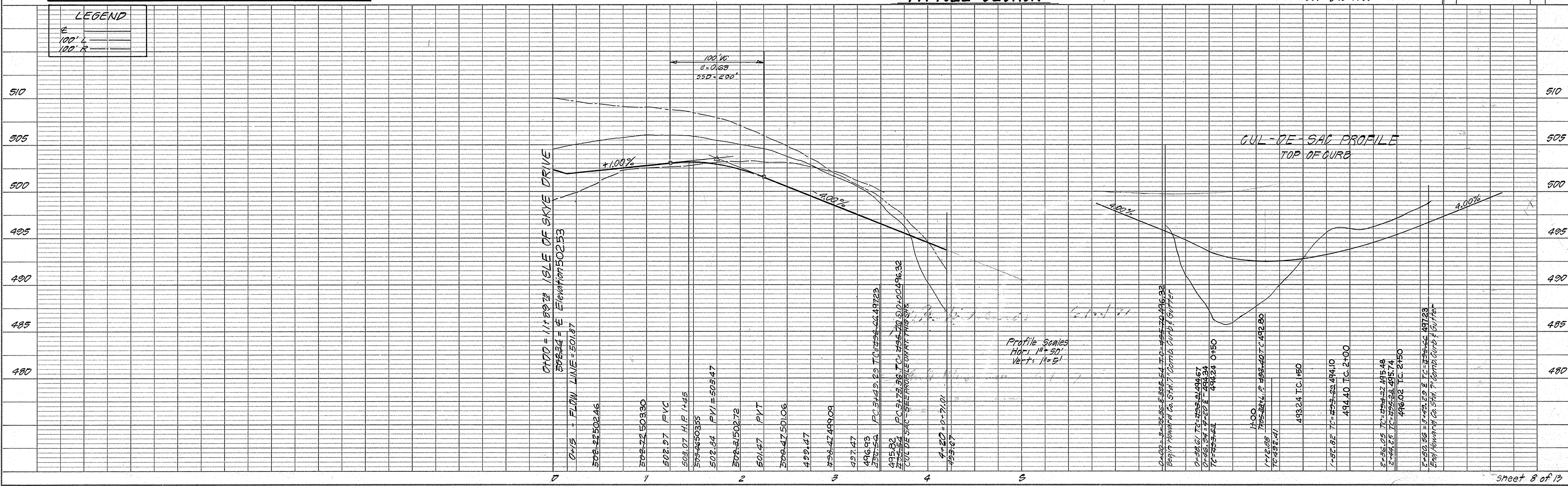


PLATE 1 PLAN-PROFILE B P R STANDARD  
 EUGENE DETZLER CO. CHICAGO, ILL. U.S.A.

'As-Built' Sept. 18, 1978

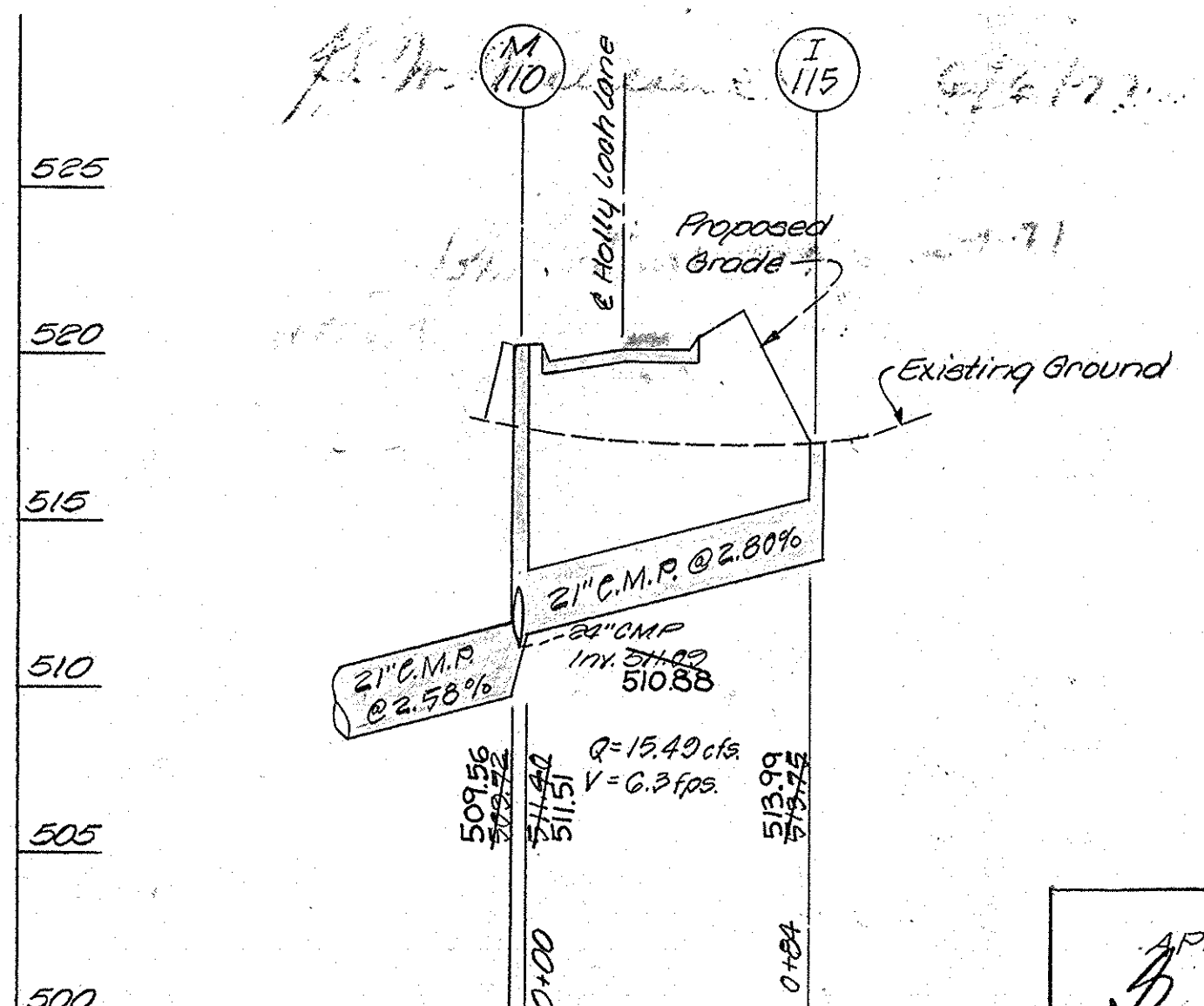
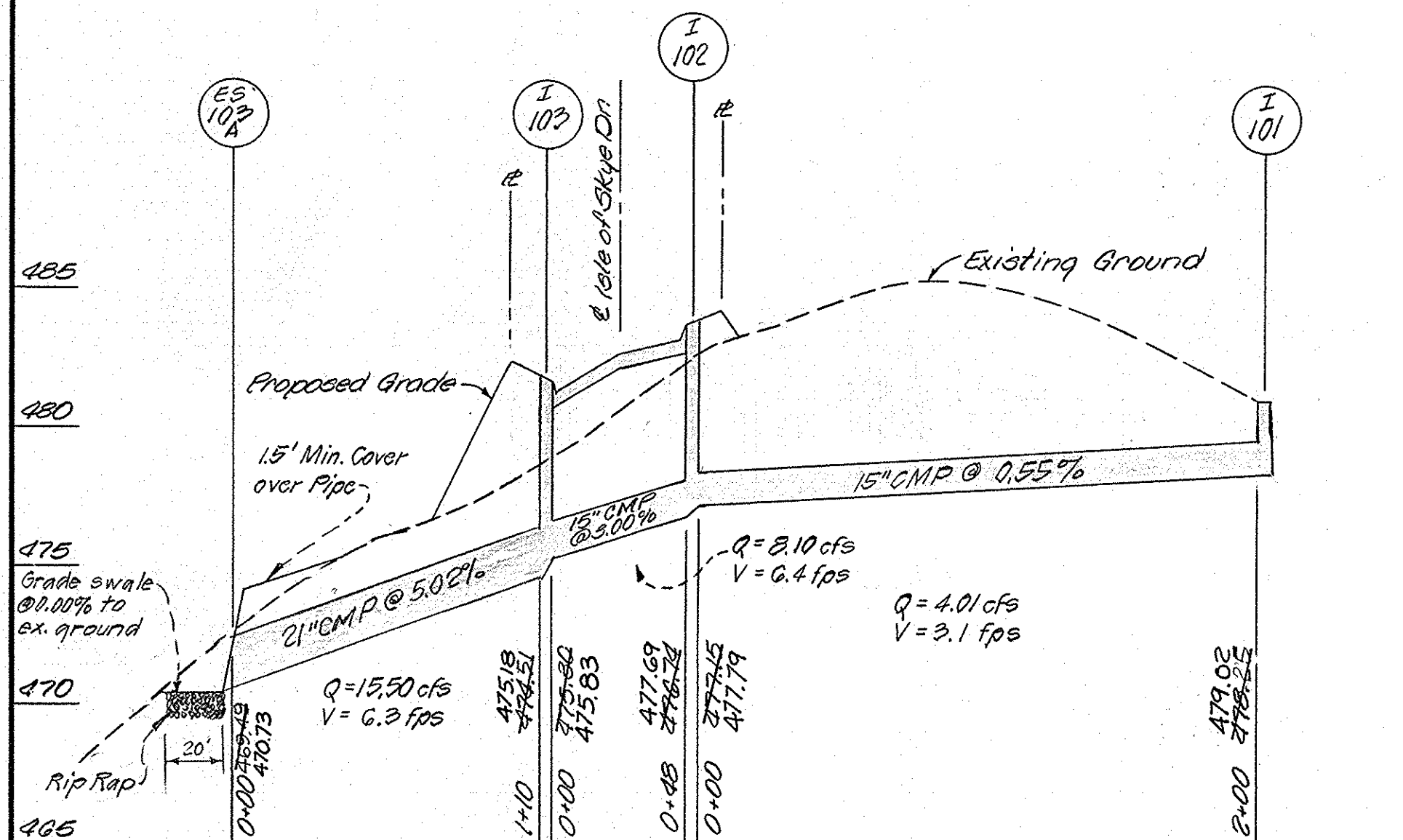
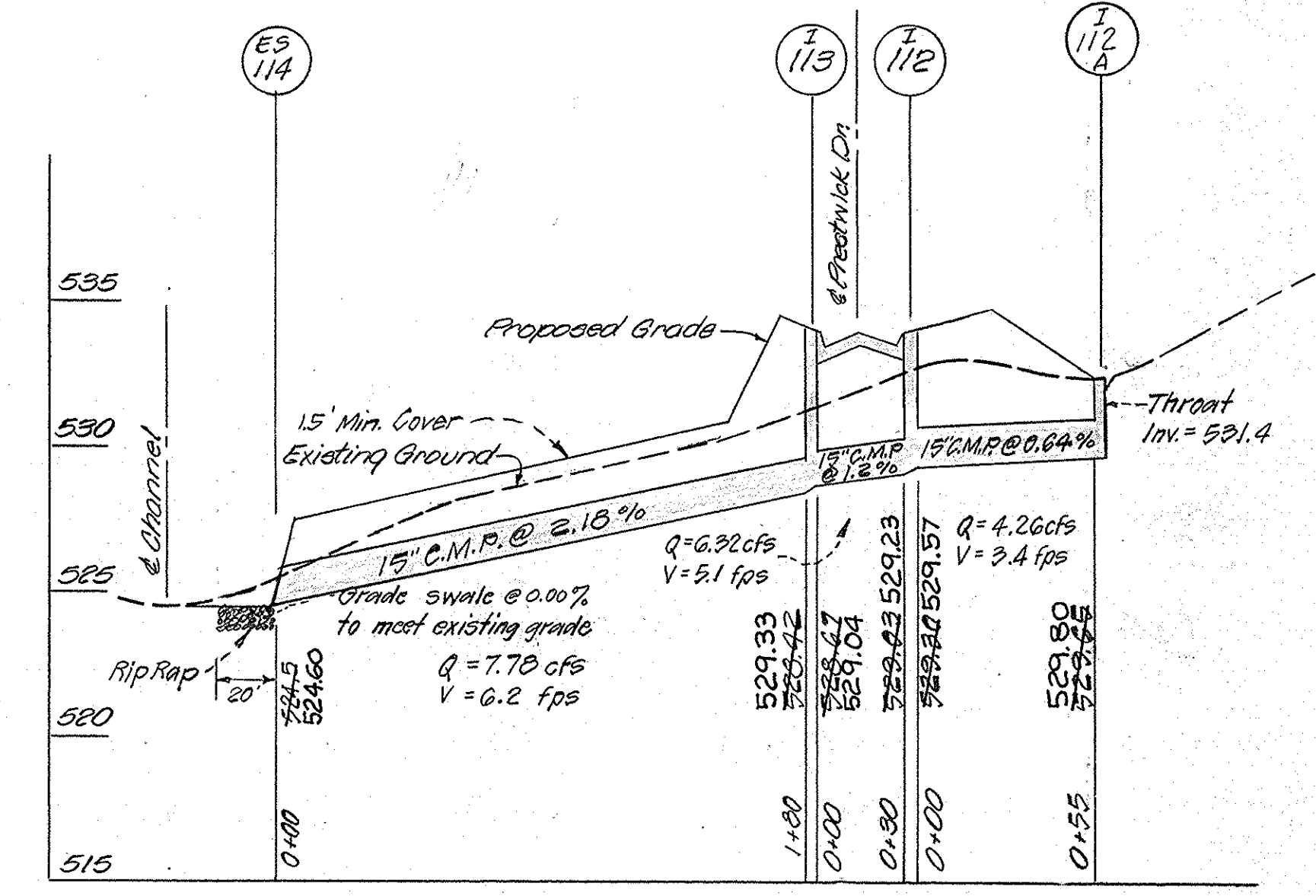
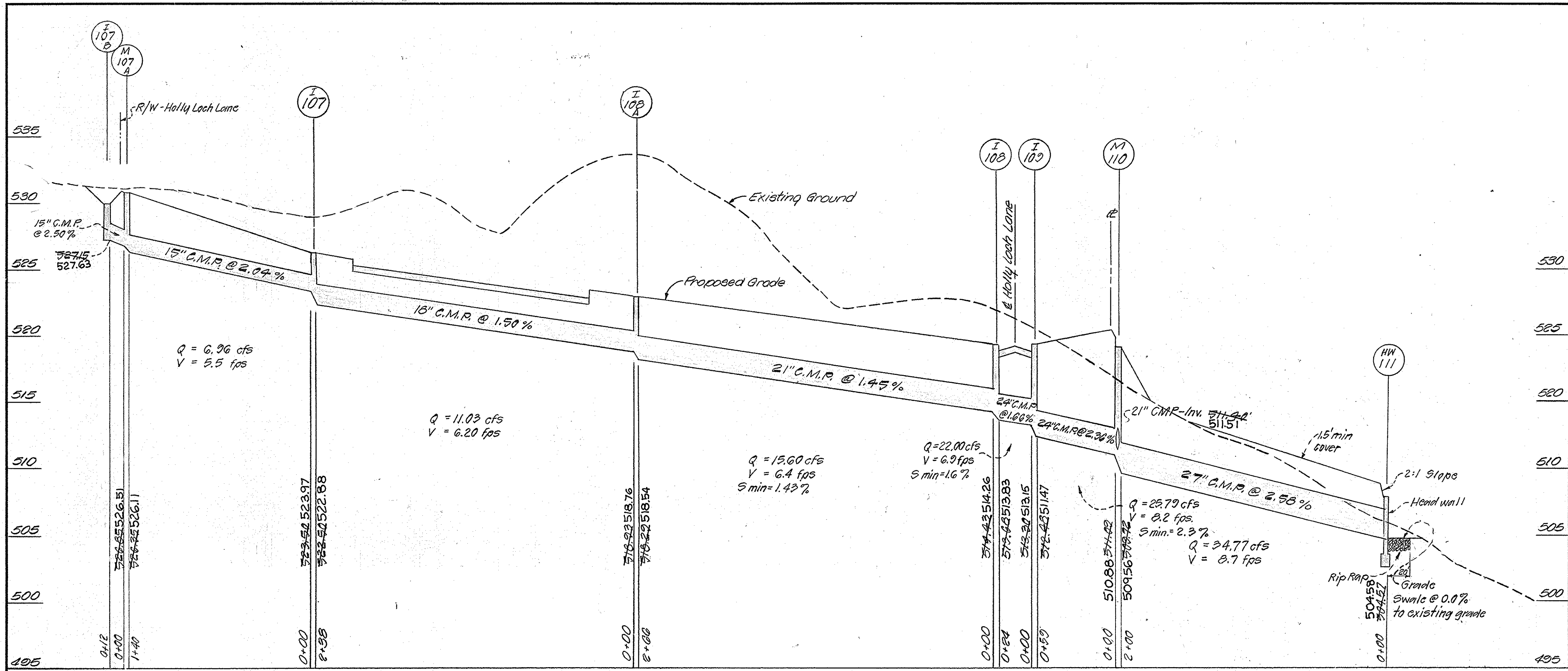
BLACKWATCH LANE

1780-002-0 LF-77-113

DATE	BY

DATE	BY

1-050-1788-002



**PIPE SCHEDULE**

Size	Type	Length
15"	CMP	1300'
18"	CMP	340'
21"	CMP	580'
24"	CMP	340'
27"	CMP	200'

NOTE: All CMP to have 1.5' Min cover.

**STRUCTURE SCHEDULE**

No	Type	Top Station Upper	Top Station Lower	Top Elevation Upper	Top Elevation Lower	Remarks
I-101	"K" Yard Inlet			481.0		Howard Co. Std D-95
I-102	B-10 Inlet *	17+01.48	17+12.81	484.31	483.78	" " " D-G4B
I-103	B-10 Inlet *	17+41.07	17+52.40	482.30	481.81	" " " D-G4B
E-103A	End Section					Prefab. Alum. End Sect.
I-104	B-10 Inlet *	11+39.07	11+50.40	504.17	503.80	Howard Co. Std D-G4B
I-105	A-5 Inlet	0+48.66	0+42.33	502.35	502.28	" " " D-G4A
I-106	A-5 Inlet	1+05.38	L.P.	492.40		" " " D-G4A
E-106A	End Section					Prefab. Alum. End Sect.
I-107	B-10 Inlet *	3+33.14	3+04.47	526.49	526.33	Howard Co. Std. D-G4B
I-107B	"K" YARD INLET			530.00		Howard Co. Std D-95
I-108	A-5 Inlet	3+16.59	L.P.	519.40		" " " D-G4A
I-108A	B-10 Inlet *	6+34.84	6+46.17	523.05	522.89	" " " D-G4B
I-109	A-5 Inlet	9+16.59	L.P.	519.40		Howard Co. Std D-G4A
W-110	Std. Manhole	9+80.00 (65' d. of E)		520.16		" " " D-103
E-111	End Wall					" " " D-52
I-112	A-5 Inlet	2+03.70	L.P.	533.77		Howard Co. Std D-G4A
I-113	A-5 Inlet					" " " D-G4A
E-114	End Section					Prefab. Alum. End Sect.
I-115	"K" Yard Inlet			517.30		Howard Co. Std D-95
I-116	B-10 Inlet	11+63.18	L.P.	511.14		" " " D-G4B
I-117	A-5 Inlet					" " " D-G4A
W-118	Std. Manhole	10+78 (65' d. of E)		512.03		Howard Co. Std D-103
E-118	End Section					Prefab. Alum. End Sect.
I-120	"O" Inlet			507.50		Howard Co. Std D-G4C
I-121	B-10 Inlet	17+07.78	L.P.	508.83		" " " D-G4B
I-121A	A-10 Inlet *	18+17.66	18+06.33	510.16	509.88	" " " D-G4B
I-122	A-5 Inlet	17+07.78	L.P.	508.83		Howard Co. Std D-G4A
E-123	End Section					Prefab. Alum. End Sect.
I-124	"K" Yard Inlet			522.4		Howard Co. Std D-95
I-124A	"K" Yard Inlet			510.3		" " " D-95
W-127A	Std. Manhole			530.74		" " " D-103
I-121B	B-10 Inlet	01+4.33	01+93.00	511.84	511.50	" " " D-G4B
W-128A	Std. Manhole			501.7		" " " D-103

\* With deflectors. See Detail Sheet 10 of 13.  
Note: Above elevations for "K" type inlets are for top of grate.

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*P. H. Meacham* 6/6/77  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: OFFICE OF PLANNING AND ZONING  
*John W. Muschler* 6-1-77  
 CHIEF, DIVISION OF LAND DEVELOPMENT & TRANSPORTATION DATE

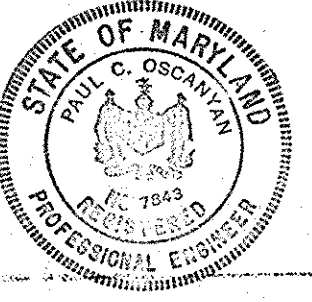
SCALE: HOR. 1"=50'- VER. 1"=5'

**TOUPS AND LOIEDERMAN**  
 ENGINEERS, PLANNERS, LANDSCAPE ARCHITECTS  
 JOSEPH R. HARRIS BUILDING  
 1370 PICCARD DRIVE ROCKVILLE MARYLAND 20850 301-840-1300  
 A PLANNING RESEARCH CORPORATION COMPANY

NO.	REVISIONS	BY	DATE
1.	Revisions as per county	WRK	3/16/77

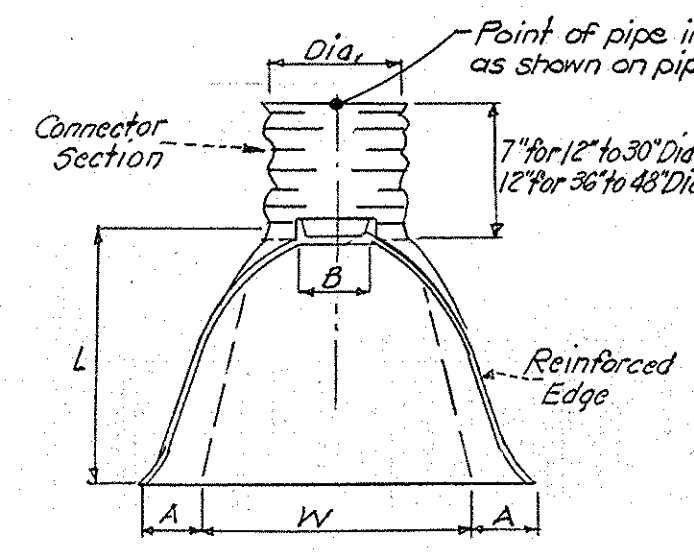
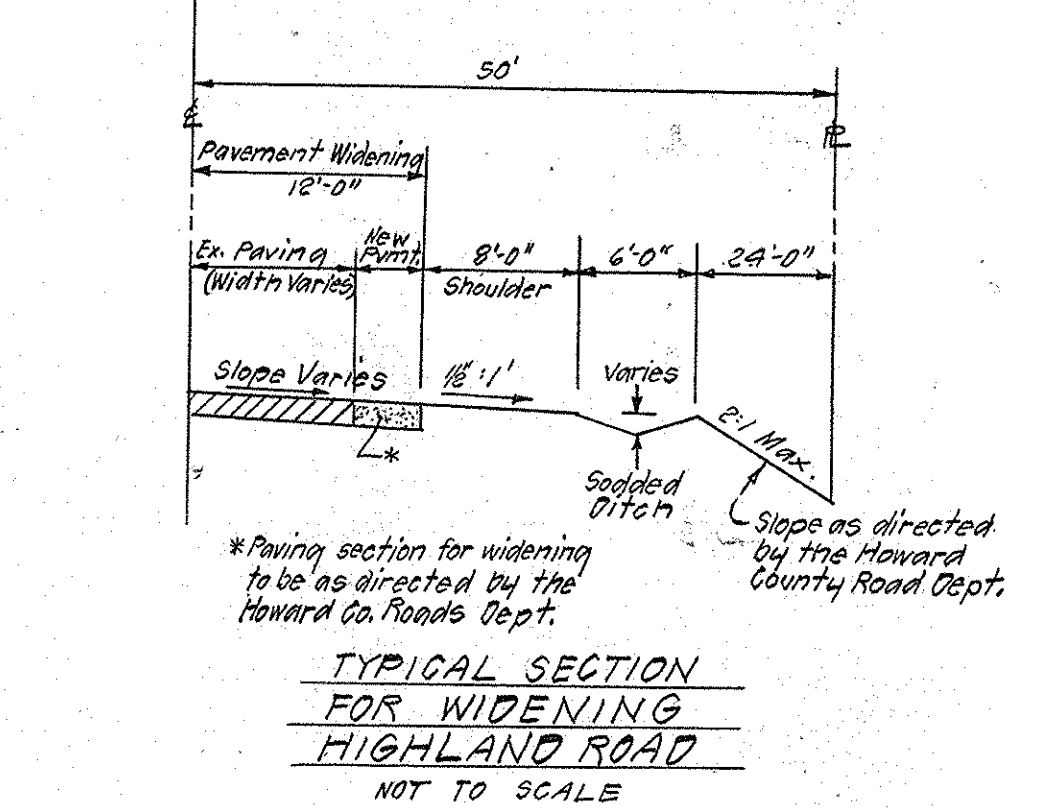
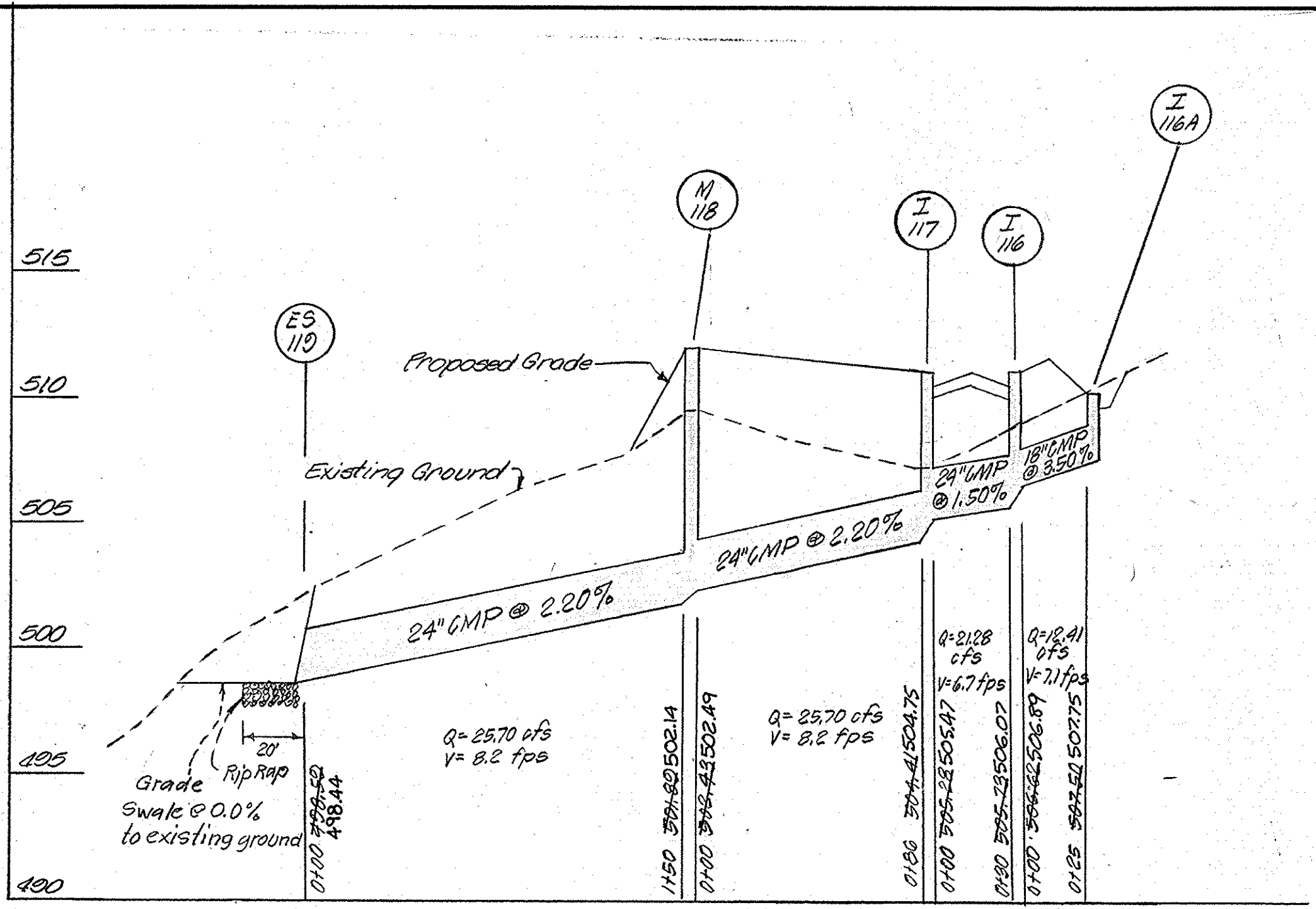
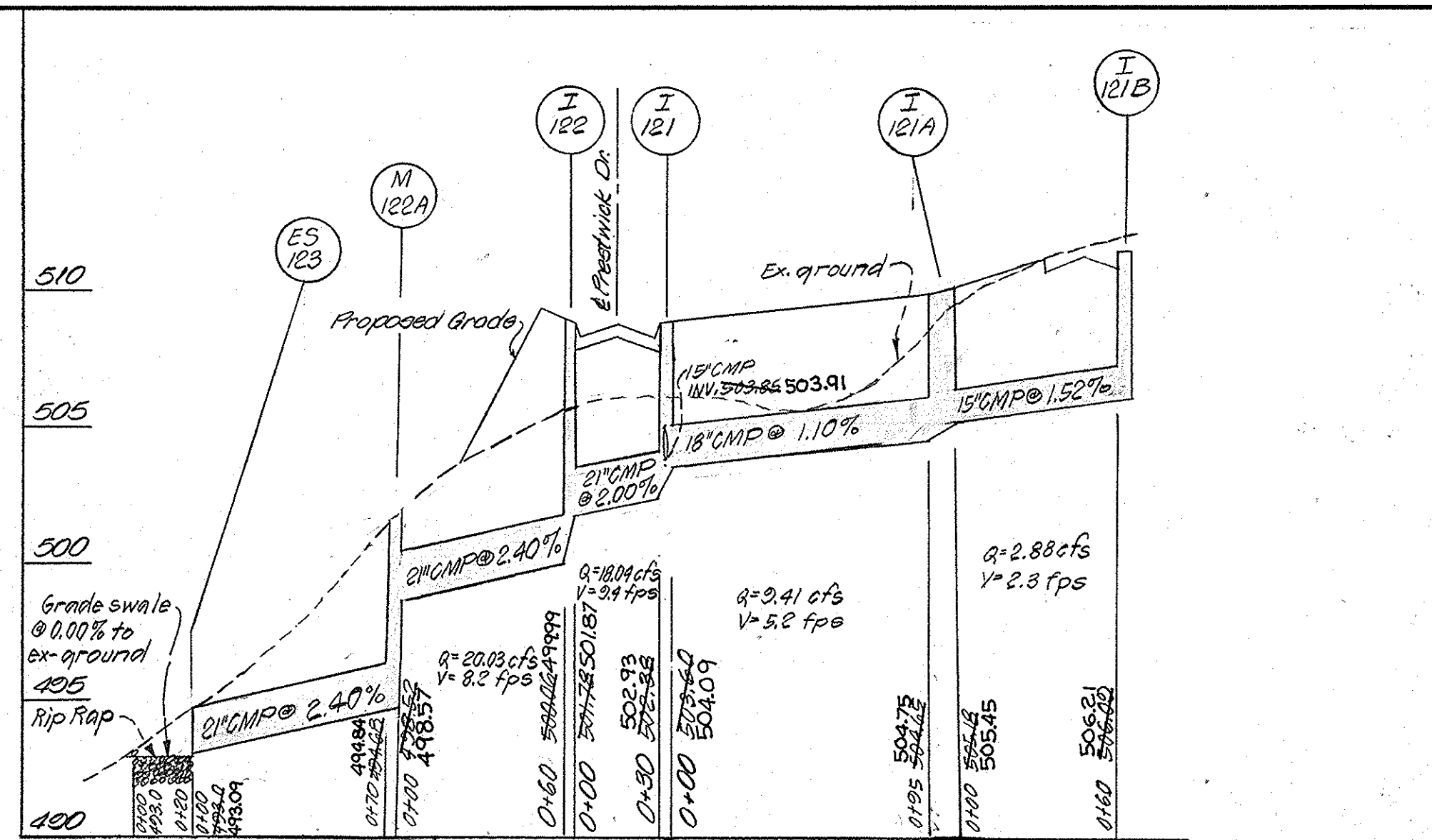
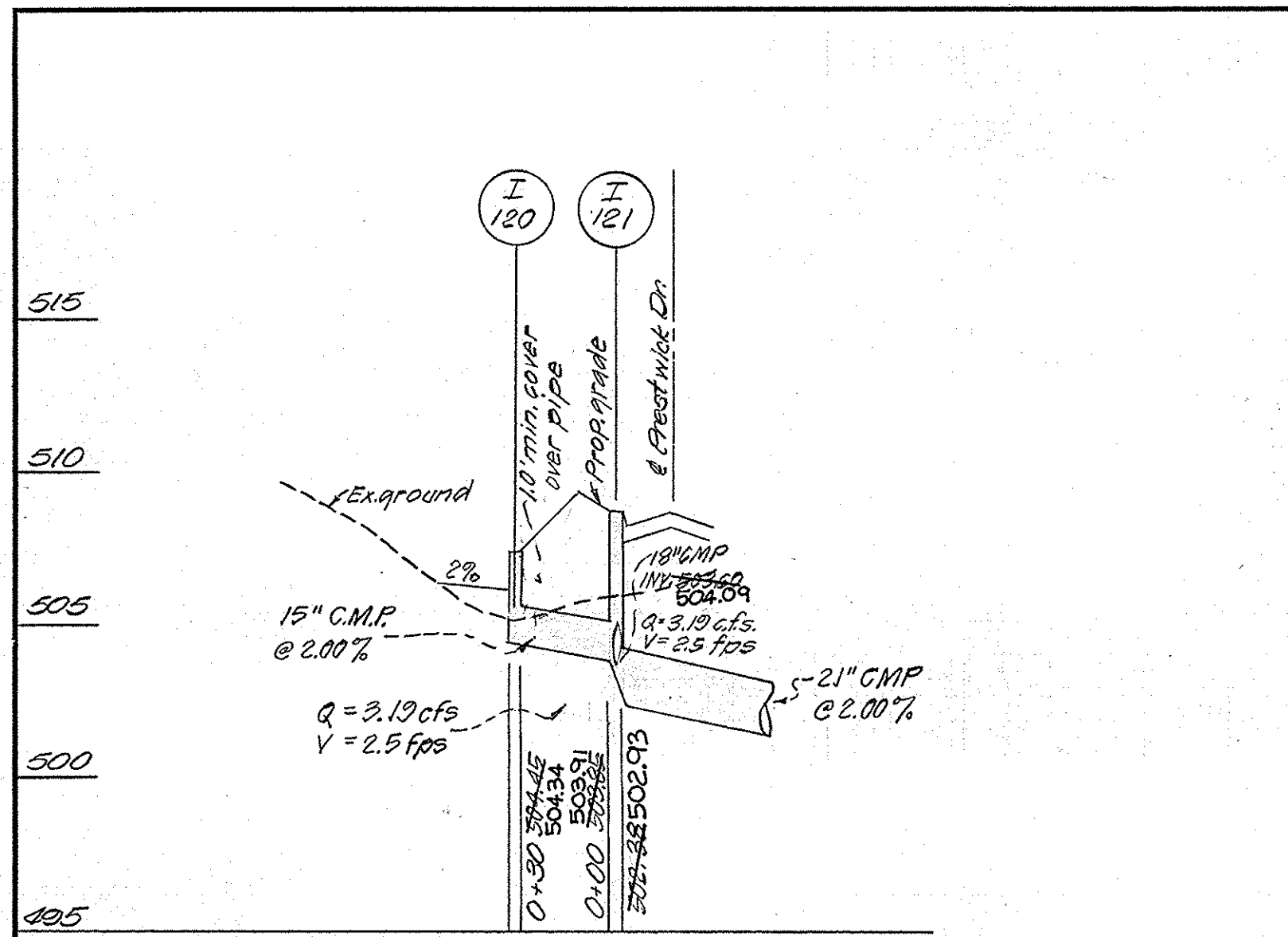
PREPARED UNDER THE SUPERVISION OF:  
*Paul G. Gump*  
 7843  
 P. E. NO. DATE 21 Dec. '76

DESIGNED MFW CHECKED JEC SCALE As Shown  
 DRAWN JES DATE Dec. 1976 R.E.P.

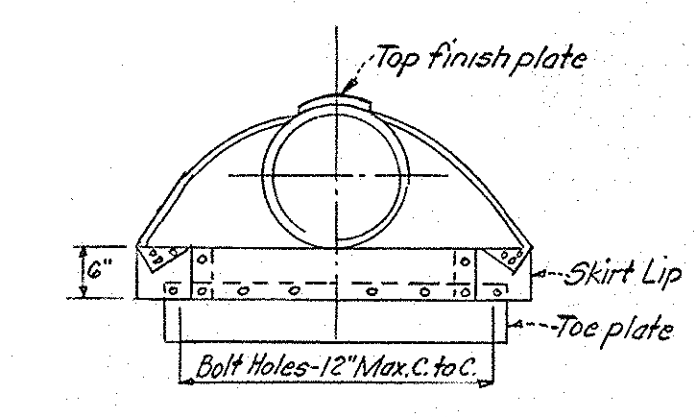


STORM DRAIN PROFILES  
 AREA I - SECTION I  
 HIGHLAND LAKE  
 ELECTION DISTRICT 5  
 HOWARD COUNTY, MARYLAND

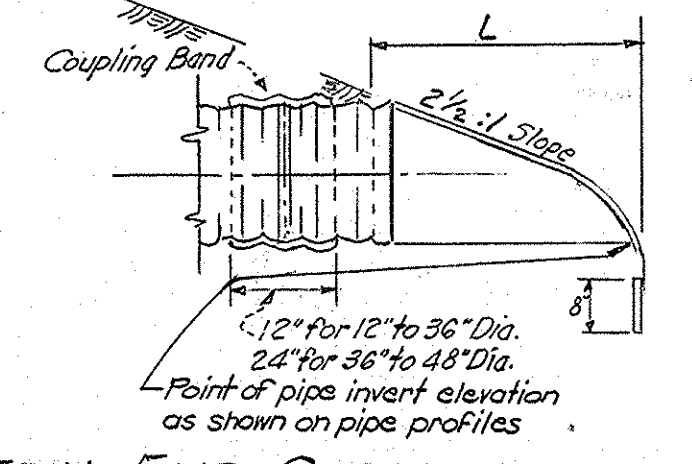
JOB NUMBER  
 1780-002-0  
 SHEET NO.  
 9  
 OF 13 SHEETS



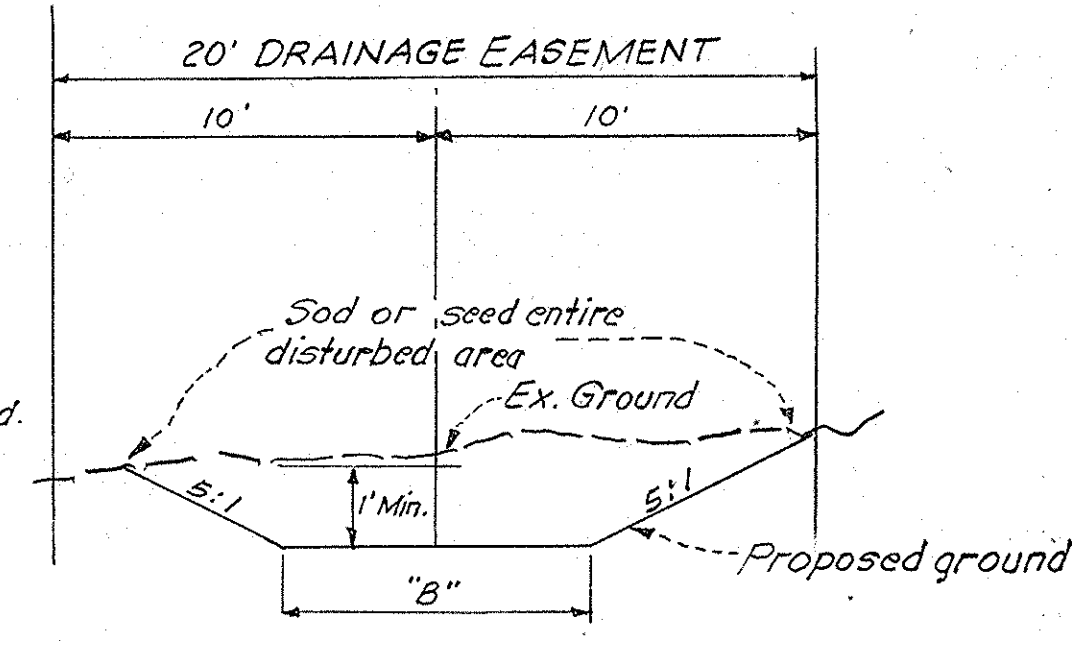
PIPE DIA. (IN.)	DIMENSIONS (IN.)			
	A	B	(1/2")	(1/2")
15	7	8	26	30
18	8	10	31	36
21	9	12	36	42
24	10	13	42	48



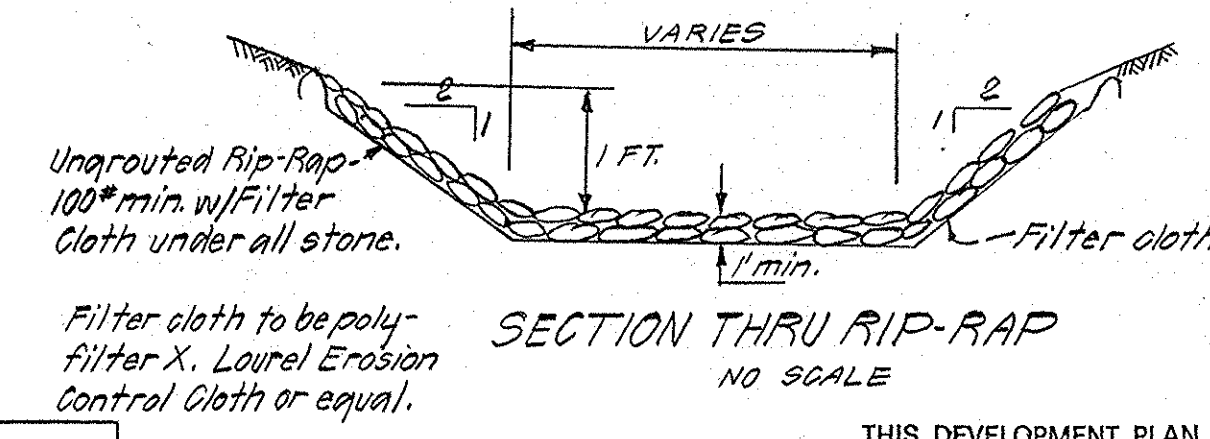
PREFABRICATED METAL END SECTION  
DETAIL  
NO SCALE



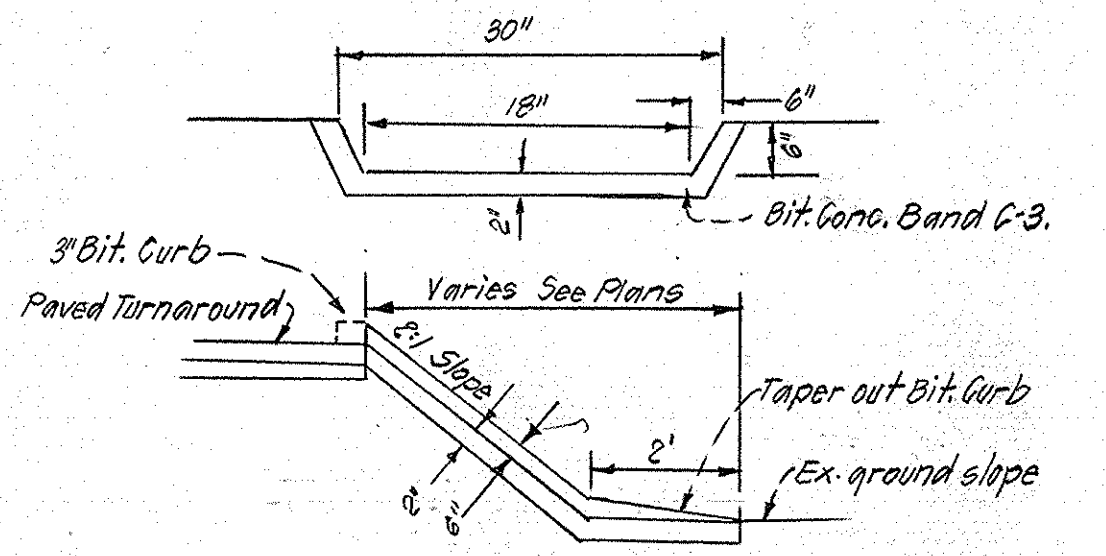
OUTFALL "B"	
103-A	4'
106-A	7'
111	10'
119	8'
123	6'



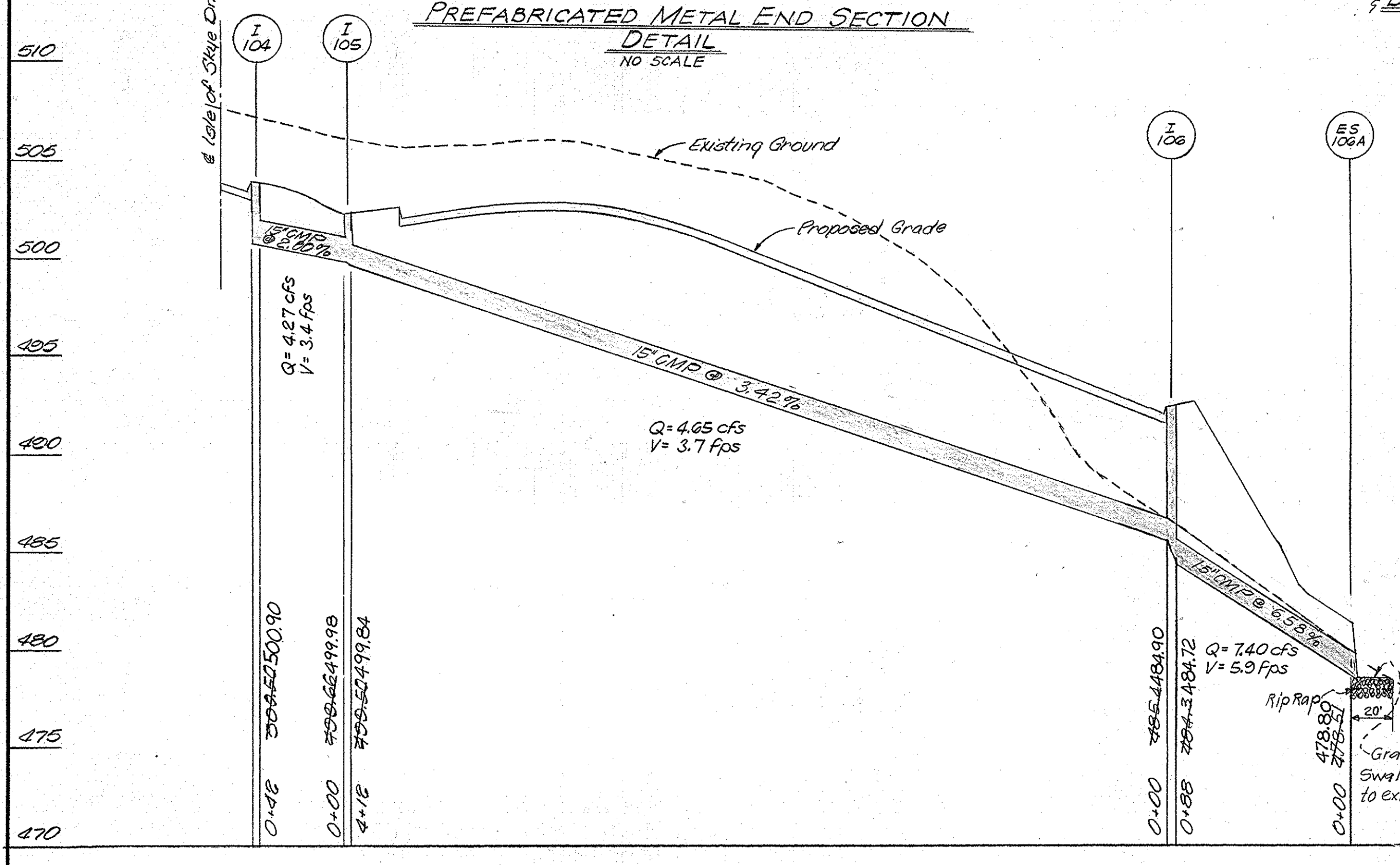
TYPICAL DRAINAGE SWALE SECTION  
& DIMENSION TABLE  
NO SCALE



SECTION THRU RIP-RAP  
NO SCALE



TYPICAL SECTION  
PAVED SWALE @ TEMPORARY TURNAROUND  
NO SCALE



APPROVED: DEPARTMENT OF PUBLIC WORKS  
*D. W. Wallace* 6/6/77  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED OFFICE OF PLANNING AND ZONING  
*John W. Marshall* 6-7-77  
CHIEF, DIVISION OF LAND DEVELOPMENT & TRANSPORTATION DATE

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

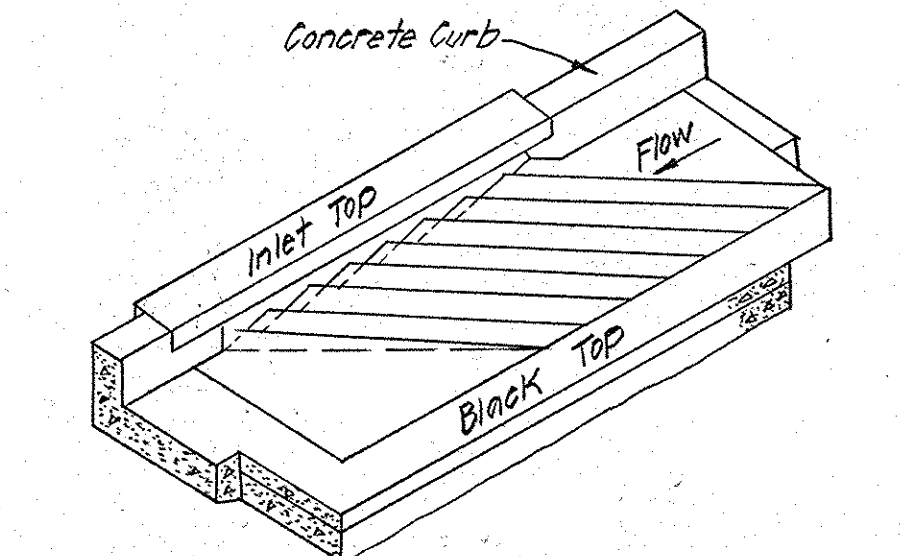
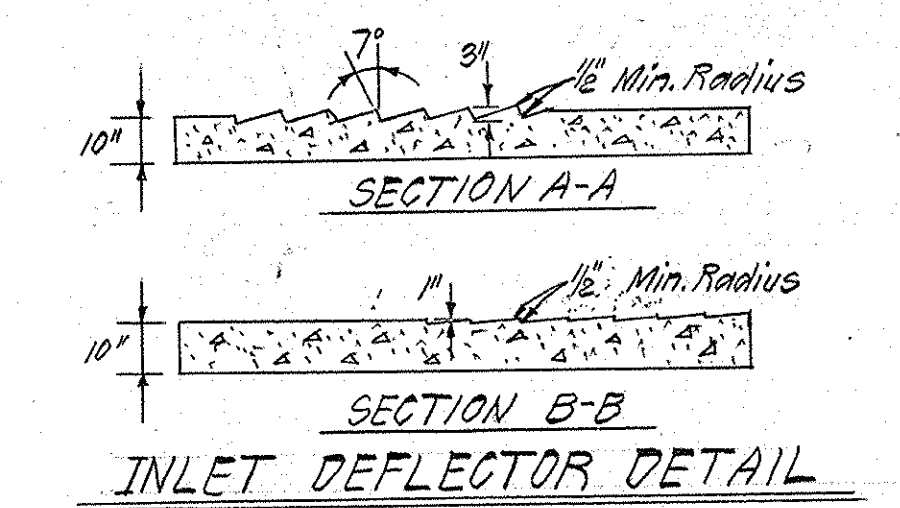
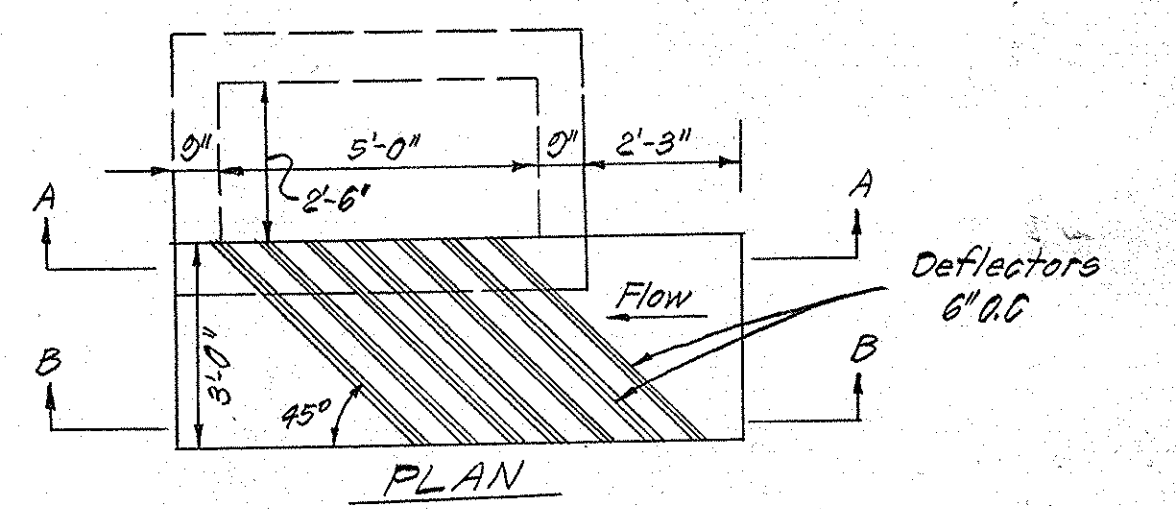
Approved *Robert J. ...* Date 5/31/77  
Howard S.C.D.

Reviewed for *Howard* S.C.D. Name  
and meets Technical Requirements  
*C. ...* Date 5/31/77  
Signature  
U.S. Soil Conservation Service

- Notes:
- All corrugated metal pipe (CMP) shall be Kaiser Aluminum "Corlix" pipe or equivalent, Minimum thickness 0.060" with 1/2" x 2-3/8" helical corrugations or Bituminous coated galvanized steel, minimum thickness 0.052" with 1/2" x 2-3/8" annular corrugations.
  - Design of all drainage outfalls are based on USDA Soil Conservation Service "Standards and Specifications for soil erosion and sediment control in developing areas".

Drainage pipes shall have the following roughness coefficients:

Pipe Ø	15"	18"	21"	24"	27"
Bit Coated Gal. Steel	0.012	0.012	0.012	0.012	0.012
Aluminum	0.014	0.015	0.016	0.017	0.018



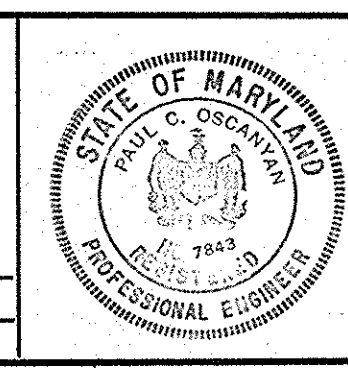
ISOMETRIC VIEW  
NO SCALE

**TOUPS AND LOIEDERMAN**  
ENGINEERS, PLANNERS, LANDSCAPE ARCHITECTS  
Joseph R. Harris Building  
1370 Piccard Drive Rockville, Maryland 20850 301-940-1900  
A PLANNING RESEARCH CORPORATION COMPANY

NO.	REVISIONS	BY	DATE
1.	Revisions as per County	J.R.C.	4/28/77

PREPARED UNDER THE SUPERVISION OF:  
*Paul C. ...*  
78-43 P. E. NO. DATE 24 Dec. '76

DESIGNED *MEW* CHECKED *JEB* SCALE As Shown  
DRAWN *JEB* DATE Dec. 1976 REF.

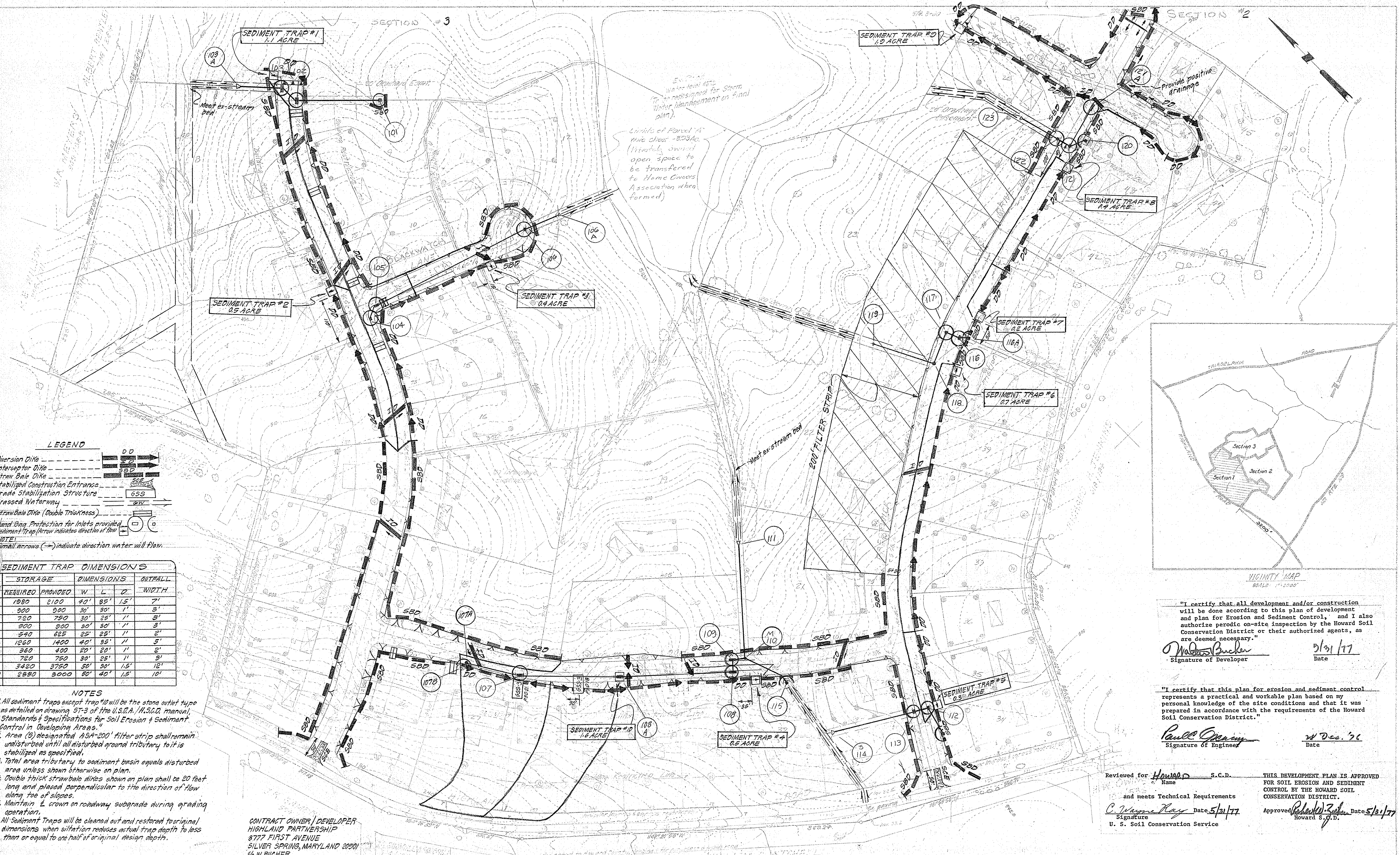


STORM DRAIN PROFILES  
AREA 1 SECTION 1  
**HIGHLAND LAKE**  
ELECTION DISTRICT 5  
HOWARD COUNTY, MARYLAND

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

JOB NUMBER 1780-002-0  
SHEET NO. 10  
OF 13 SHEETS

'As-Built' Sept. 18, 1978



**LEGEND**

- Diversion Dike
- Interceptor Dike
- Straw Bale Dike
- Stabilized Construction Entrance
- Grade Stabilization Structure
- Grassed Waterway
- Straw Bale Dike (Double Thickness)
- Sand Bin Protection for Inlets provided
- Sediment Trap (arrow indicates direction of flow)

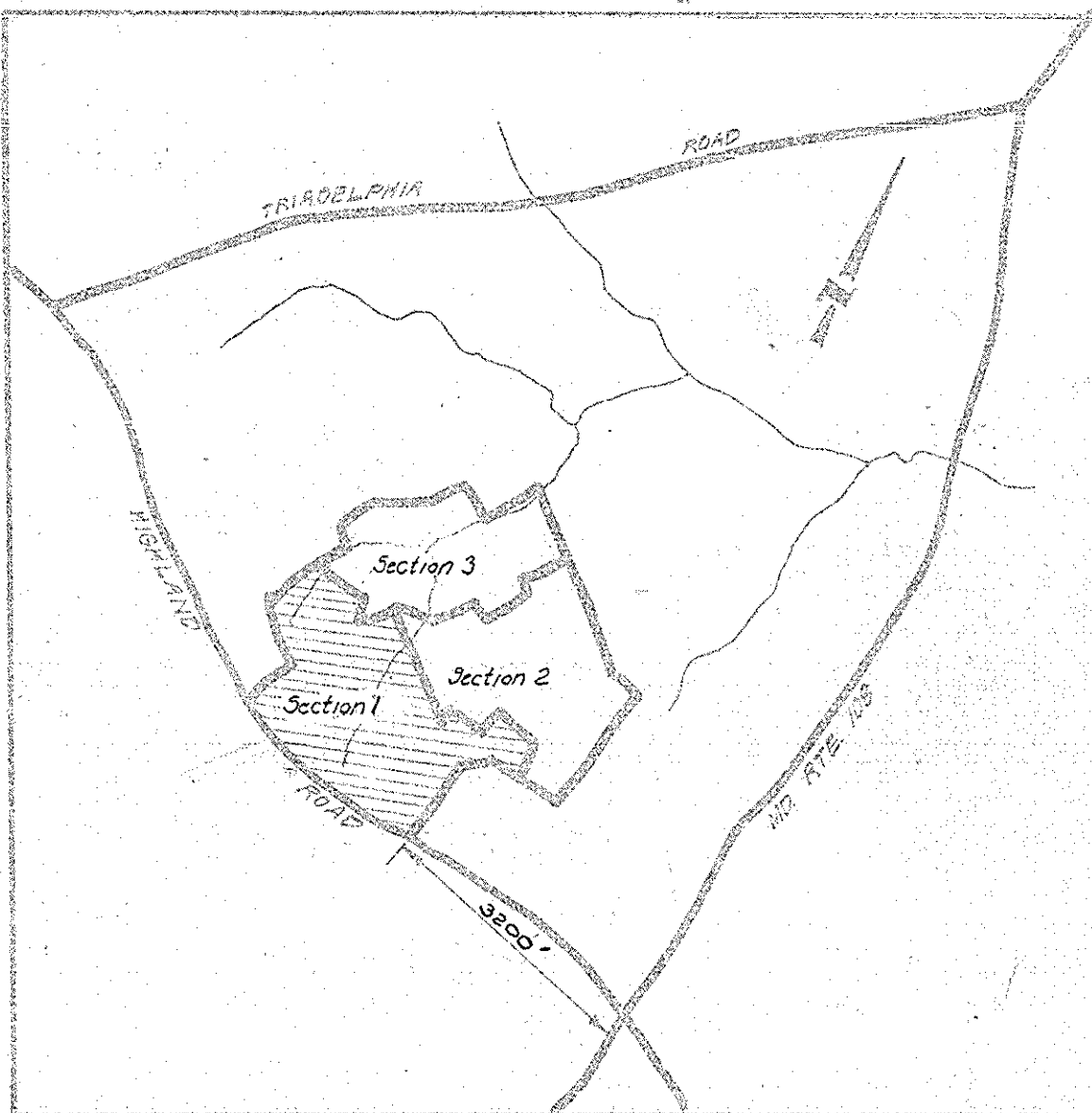
**NOTE:**  
Small arrows (→) indicate direction water will flow.

**SEDIMENT TRAP DIMENSIONS**

#	STORAGE		DIMENSIONS			OUTFALL
	REQUIRED	PROVIDED	W	L	D	WIDTH
1	1000	2100	40'	85'	1.5'	7'
2	300	300	30'	30'	1'	3'
3	720	750	30'	25'	1'	3'
4	900	900	30'	30'	1'	3'
5	540	625	25'	25'	1'	2'
6	1260	1400	40'	35'	1'	5'
7	360	400	20'	20'	1'	2'
8	720	750	30'	25'	1'	3'
9	3420	3750	50'	50'	1.5'	10'
10	2880	3000	50'	40'	1.5'	10'

- NOTES**
- All sediment traps except trap #10 will be the stone outlet type as detailed on drawing ST-3 of the U.S.D.A./H.S.C.D. manual, "Standards & Specifications for Soil Erosion & Sediment Control in Developing Areas."
  - Area (B) designated ASA-200' filter strip shall remain undisturbed until all disturbed ground tributary to it is stabilized as specified.
  - Total area tributary to sediment basin equals disturbed area unless shown otherwise on plan.
  - Double thick straw bale dikes shown on plan shall be 20 feet long and placed perpendicular to the direction of flow along toe of slopes.
  - Maintain 1/2 crown on roadway subgrade during grading operation.
  - All Sediment Traps will be cleaned out and restored to original dimensions when siltation reduces actual trap depth to less than or equal to one half of original design depth.

CONTRACT OWNER / DEVELOPER  
 HIGHLAND PARTNERSHIP  
 8777 FIRST AVENUE  
 SILVER SPRING, MARYLAND 20901  
 1/6 N. BUCHER



"I certify that all development and/or construction will be done according to this plan of development and plan for Erosion and Sediment Control, and I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

*Walter Bucher*  
 Signature of Developer  
 5/31/77  
 Date

"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."

*Paul C. Gray*  
 Signature of Engineer  
 28 Dec. '76  
 Date

Reviewed for Howard S.C.D. Name  
 and meets Technical Requirements  
*C. Wayne Ray* Date 5/31/77  
 Signature U. S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 Approved *Robert J. Zelen* Date 5/31/77  
 Howard S.C.D.

**TOUPS AND LOIEDERMAN**  
 ENGINEERS, PLANNERS, LANDSCAPE ARCHITECTS  
 JOSEPH F. HARRIS BUILDING  
 170 WILKINSON DRIVE ROCKVILLE, MARYLAND 20850 301-840-3300

NO.	REVISIONS	BY	DATE
1.	Revisions as per County	J.R.C.	4/28/77

DESIGNED BY: MFW  
 CHECKED BY: JRC  
 DRAWN BY: JRC  
 DATE: 12/76



APPROVED: DEPARTMENT OF PUBLIC WORKS  
*S. M. McCreed* 6/16/77  
 CHIEF, BUREAU OF HIGHWAYS  
 APPROVED: *Robert J. Zelen* 6-10-77  
 CHIEF, DIVISION OF LAND DEVELOPMENT

SECTION 1  
**SEDIMENT CONTROL**  
**HIGHLAND LAKE**  
 ELECTION DISTRICT 5  
 HOWARD COUNTY, MARYLAND

JOB NUMBER: 1700-002-0  
 SHEET NO: 11  
 OF 12 SHEETS



Ex. P. 44  
Water level 46.2  
(To be redesigned for Storm  
Water Management on final  
plan).

Limits of Parcel A  
this sheet - 3234c.  
(Privately owned  
open space to  
be transferred to Home Owners  
Association when  
formed)

**LEGEND**

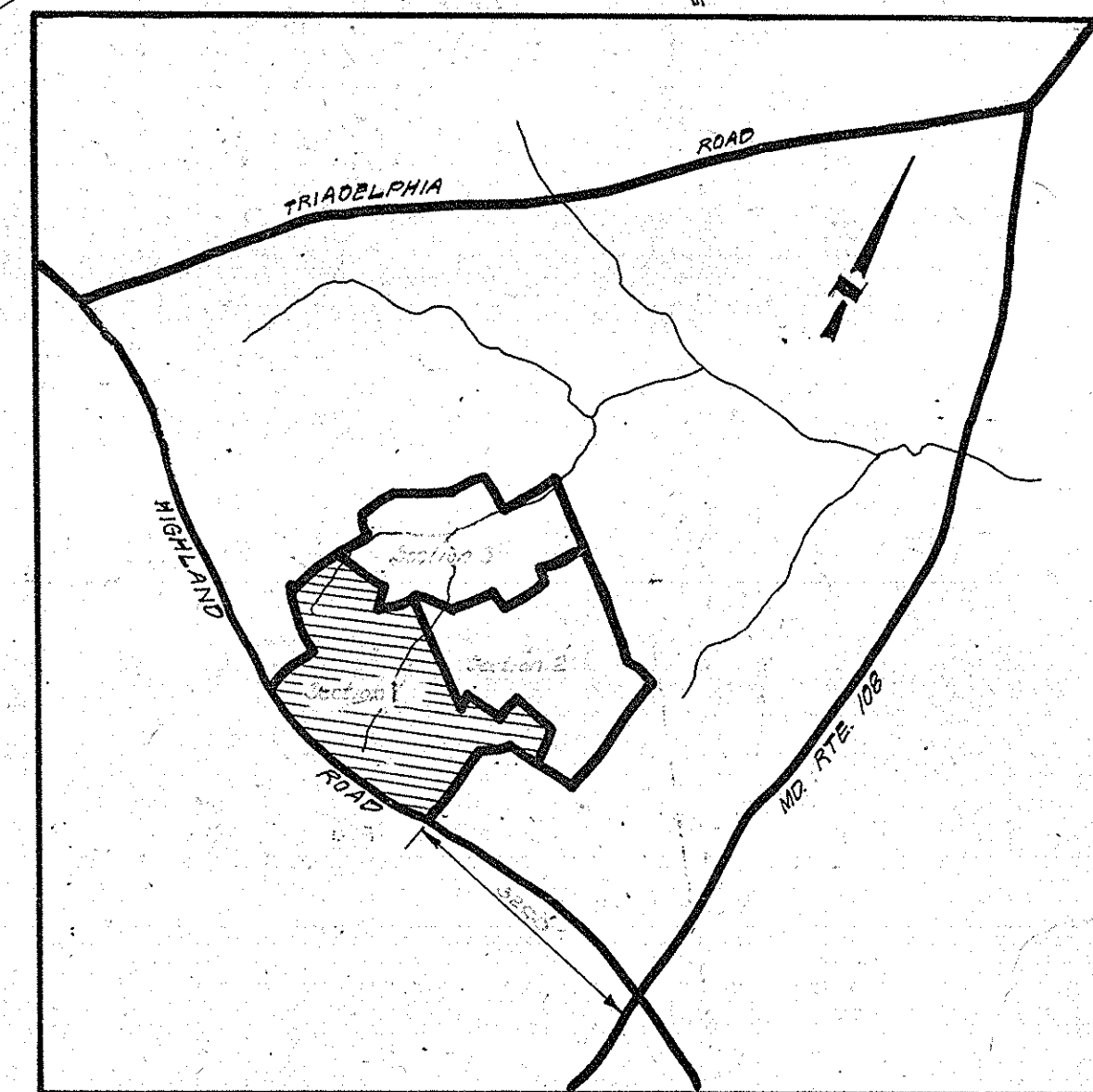
Quarter Mile  
Intersecting Dike  
Stream Open Dike  
Stabilized Construction Entrance  
Grade Stabilization Structure  
Grassed Waterway  
Stream Bed Dike (Double Thickness)  
Sand Bay Protection for Intake Structure  
Subsided by adjacent structure (Section of 100 ft)  
NOTE:  
Small arrows (→) indicate direction water will flow

**SEDIMENT TRAP DIMENSIONS**

STORAGE	DIMENSIONS			INITIAL	
REQUIRED PROVIDED	W	L	H	WIDTH	
1	18.5	8.75	4.0	1.5	7.5
2	200	200	30	1	2
3	700	700	30	1	2
4	800	800	30	1	2
5	800	800	30	1	2
6	1000	1000	30	1	2
7	300	400	30	1	2
8	700	700	30	1	2
9	3420	3700	50	1	2
10	2880	3000	50	1	2

**NOTE:**

- All sediment traps except trap #11 will be the standard type as detailed on drawings 51-2 of the U.S.D. Manual.
- Standard specifications for Soil Erosion Control in Developing Areas.
- Area (B) designated A-1-200 after the sediment trap is installed with a disturbed ground surface to be stabilized as specified.
- Total area tributary to sediment trap, except disturbed area unless shown otherwise in plan.
- Ditch is thick structure with slope on plan about 20 feet long and placed perpendicular to the direction of flow along top of slope.
- Maintain 1.5 feet or greater subgrade width of opening operation.
- All Sediment Traps will be cleared out and restored to original dimensions, which allows a minimum actual trap depth to less than an equal to the loss of original design depth.



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

I hereby certify that all development and/or construction will be done according to this plan of development and plan for Erosion and Sediment Control, and I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.

Signature of Developer: \_\_\_\_\_ Date: \_\_\_\_\_

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 of Engineer: \_\_\_\_\_ Date: \_\_\_\_\_

H.W. OWENS, S.C.E.  
100/586  
Professional Requirements  
Signature Date: 5/11/77  
H. S. Soil Conservation Service

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

Approved: \_\_\_\_\_  
Howard S.C.D.

**TOUPS AND LOIEDERMAN**  
ENGINEERS, PLANNERS, LANDSCAPE ARCHITECTS

JOSEPH R. HARRIS BUILDING  
1370 PICCARD DRIVE ROCKVILLE MARYLAND 20850 301-840-1300

PLANNING RESEARCH CORPORATION COMPANY

NO.	REVISIONS	BY	DATE
1	REVISIONS TO EROSION CONTROL	E.L.C.	1/28/77

PREPARED UNDER THE SUPERVISION OF:  
*Paul G. ...*

P. E. NO. \_\_\_\_\_ DATE: 26 Dec. 76

DESIGNED BY: \_\_\_\_\_ CHECKED: J.R.S. SCALE: 1" = 100'

DRAWN: Emil Heimlich DATE: Feb. 1976 R.E.F.

3-13-76

APPROVED: DEPARTMENT OF PUBLIC WORKS  
H. M. ... 6/6/77  
OFFICE: DIVISION OF HIGHWAYS  
APPROVED: OFFICE OF PLANNING AND ZONING  
H. S. ... 6-10-77  
OFFICE: DIVISION OF LAND DEVELOPMENT

SECTION 1  
**SEDIMENT CONTROL**  
**HIGHLAND LAKE**  
ELECTION DISTRICT 5  
HOWARD COUNTY, MARYLAND

JOB NUMBER: 1790-002-0  
SHEET NO.: 11  
OF 2 SHEETS

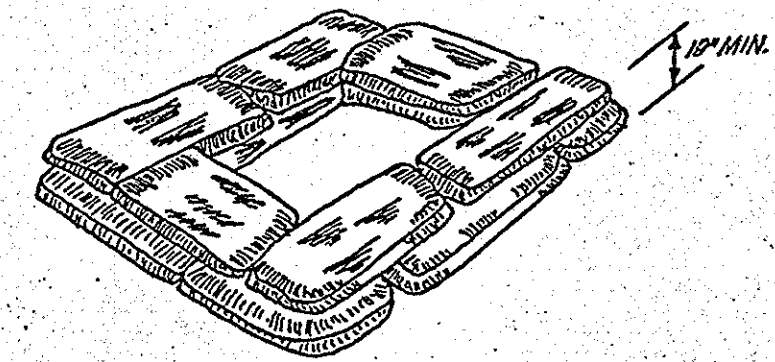
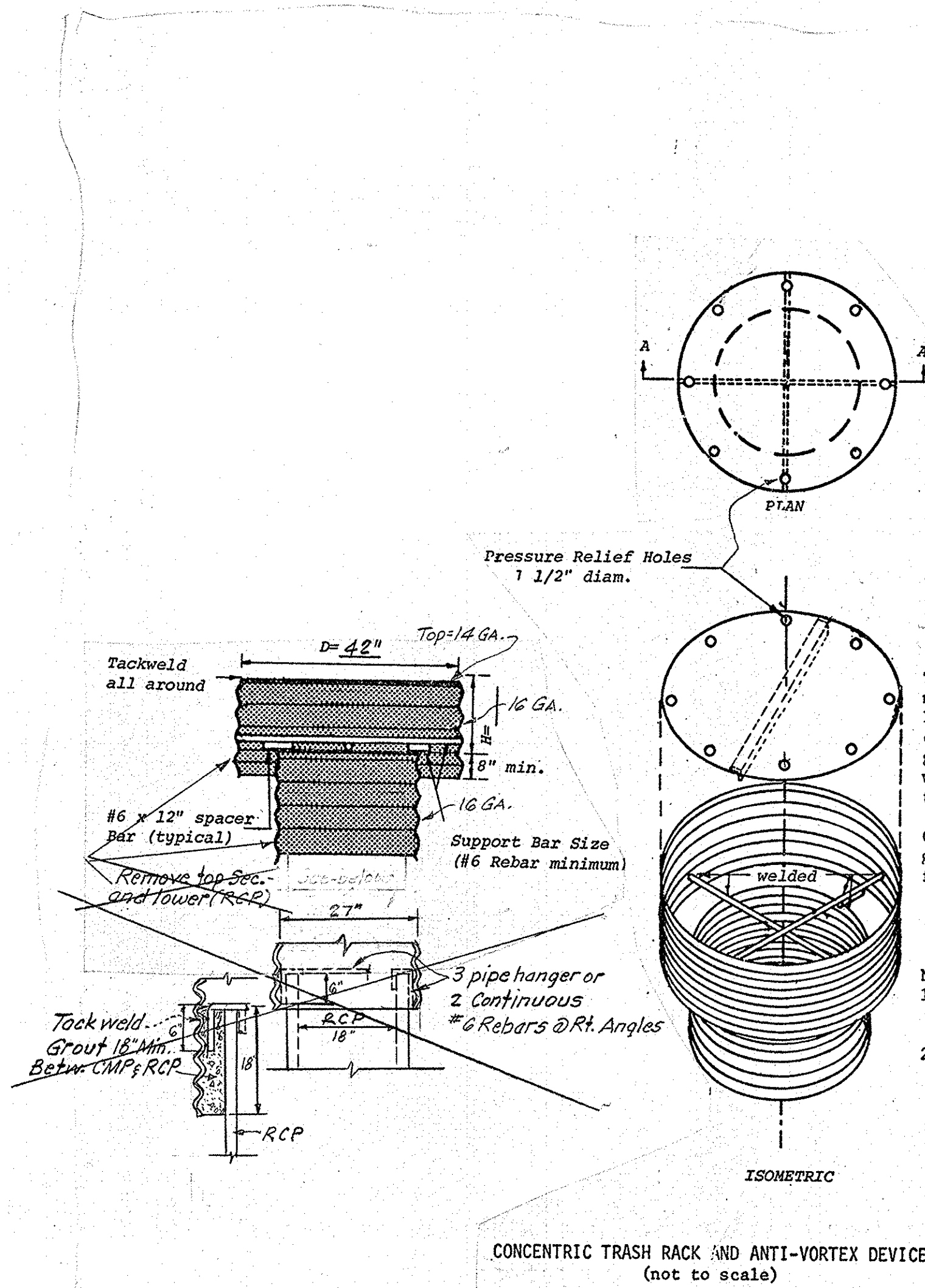
As Built Sept 18, 1978

GENERAL NOTES

- Obtain and follow the "Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas" dated July, 1975, (hereinafter referred to as "Standards and Specifications"), from the Howard Soil Conservation District (H.S.C.D.), 9051 Baltimore National Pike, Ellicott City, Maryland 21043, Phone: 301/465-3180.
- Install and maintain sediment control measures in strict accordance with these approved plans and the criteria and specifications adopted by the Howard Soil Conservation District.
- Sediment control measures may require minor field adjustments at the time of construction to ensure that their intended purpose is accomplished. H.S.C.D. approval will be required for any other deviation from the approved plan.
- Provide periodic inspection and maintenance of all sediment control measures to ensure that maximum sediment control efficiency is obtained until final stabilization of site has taken place.
- Install sediment control devices prior to any grading operations so that effective sediment control can be achieved during the entire grading operation period.
- After clearing, temporarily stabilize any disturbed area that is to be exposed for more than 30 days (but less than 60 days) as follows:
  - Apply small grain straw mulch at a uniform rate of 1 1/2 to 2 tons per acre.
  - Anchor mulch immediately after placement by spraying with a liquid binder of either cut-back or emulsified asphalt at a rate of 200 gal./acre.
- Stabilize all disturbed areas at a grade less than 3 to 1 and not covered by paving as soon as possible by permanent seeding and mulching as follows:
  - Scarify surface to a depth of 3 inches.
  - Seed with a mixture of 15 pounds "Crownvetch" (inoculated) plus 40 pounds "Kentucky 31" tall fescue per acre.
  - Apply straw mulch uniformly at a rate of 1 1/2 to 2 tons per acre.
  - Anchor mulch immediately after placement with either cut-back or emulsified asphalt. Apply at a minimum rate of 200 gal./acre. Application should be heavier in valleys, at the crest of banks and along edges.
- Stabilize all disturbed areas at a grade equal to or greater than 3 to 1 and not covered by paving, as well as all drainage swales, as soon as possible by sodding. Class of sod shall be Maryland State approved or certified, machine cut to a uniform thickness of 3/4 inch (± 1/4 inch) excluding top growth and thatch. Sod shall be installed within 36 hours of harvesting or be subject to inspection and approval by H.S.C.D. Lay sod to a tight fit. Roll to ensure contact with underlying soil. Water as necessary for first two weeks (in summer) to ensure establishment.
- If stabilization of disturbed areas is to be accomplished during the months of December, January, or February, the stabilization shall consist of mulching in accordance with Note 6 above. Seeding and mulching shall then be done as soon as the season permits.
- Prior to seeding or sodding, the following amounts of fertilizer (10-10-10) and ground agricultural limestone will be incorporated into the subsoil by disking:
 

Seeding Areas:	Fertilizer:	500 lbs./acre
	Limestone:	1,000 lbs./acre
Sodding Areas:	Fertilizer:	1,000 lbs./acre
	Limestone:	2,000 lbs./acre
- The term "seeding" on this plan shall mean the successful germination and establishment of a stable grass cover from a properly prepared seedbed containing the specified amounts of lime and fertilizer, in accordance with the applicable "Standards and Specifications".
- The term "mulching" on this plan shall mean the application and anchoring of a H.S.C.D. approved mulch (such as wheat straw or Timothy hay) in accordance with the applicable "Standards and Specifications".
- All points of construction ingress and egress shall be stabilized as per the H.S.C.D. standard for stabilized construction entrances to prevent tracking of mud onto public ways.
- Notify the Howard County Department of Inspection and Permits before the start of work and before removal of temporary sediment control measures.
- Notify the Howard County Department of Inspection and Permits if the accompanying construction schedule cannot be met, and provide the said Department with a revised construction schedule.
- Prevent all sediment from entering any constructed storm drainage system through the use of sand bags, gravel, board or other applicable method.
- The Highland Partnership, developers of the site, will be responsible for the maintenance of the sediment control and storm water management structures to ensure that they remain clear of debris and in effective working condition, after completion and acceptance of the work.

- The intention of the project designers has been to achieve a balance between cut and fill, exclusive of other future site development.
- The sediment control measures shown on this plan are designed for use during construction of the roads and storm drainage system within the limits of Section I as delineated on Sheet #11 of these Drawings.
- Storm water management for the development of Section I in its entirety will be provided by modifying the 18-inch reinforced concrete pipe outfall riser of the existing 4.7 acre pond, so as to lower the present water surface elevation by 0.3 feet, to a new elevation of 467.6 feet.
- Use 4-inch to 6-inch surge stone in place of #2 gravel in all sediment control structures.
- Prior to proceeding with any construction, the contractor shall obtain a grading permit.



SAND-BAG DETAIL  
NO SCALE

NOTE: Form 18" high dike of sand-bags around inlet, stagger sand-bags.

CONSTRUCTION SCHEDULE			
ITEM#	ITEM	START	COMPLETE
1.	SEDIMENT CONTROL	May, 1977	May, 1977
2.	ROUGH GRADING	May, 1977	June, 1977
3.	STORM DRAIN	June, 1977	June, 1977
4.	FINAL GRADING	July, 1977	Sept., 1977
5.	PAVING	July, 1977	Aug., 1977
6.	FINAL STABILIZATION	Aug., 1977	Sept., 1977
7.	REMOVAL OF SEDIMENT CONTROL STRUCTURES (DIKES & FLUMES)	Aug., 1977	Sept., 1977

"I certify that all development and/or construction will be done according to this plan of development and plan for Erosion and Sediment Control, and I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

Signature of Developer: Malcolm Bucher Date: 5/31/77

"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 of Engineer: Paul C. Green Date: 24 Dec. '76

Note: No construction other than roadway and storm drainage improvements will be performed until a redesign of the existing pond has been approved by the Howard Soil Conservation District.

APPROVED: DEPARTMENT OF PUBLIC WORKS  
B. M. Weiland 6/6/77  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: OFFICE OF PLANNING AND ZONING  
John W. Musselman 6-10-77  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

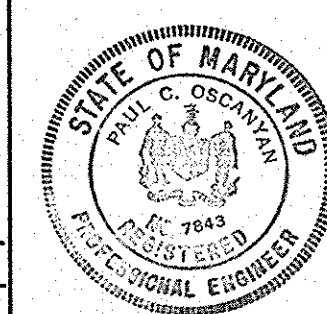
Reviewed for HOWARD S.C.D. Name: C. Wayne Ray Date: 5/31/77  
and meets Technical Requirements  
Signature: C. Wayne Ray Date: 5/31/77  
U. S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
Approved: Paul C. Green Date: 5/31/77  
Howard S.C.D.

**TOUPS AND LOIEDERMAN**  
ENGINEERS, PLANNERS, LANDSCAPE ARCHITECTS  
Joseph R. Harris Building  
1970 Piccard Drive Rockville, Maryland 20850 301-840-1900  
A PLANNING RESEARCH CORPORATION COMPANY

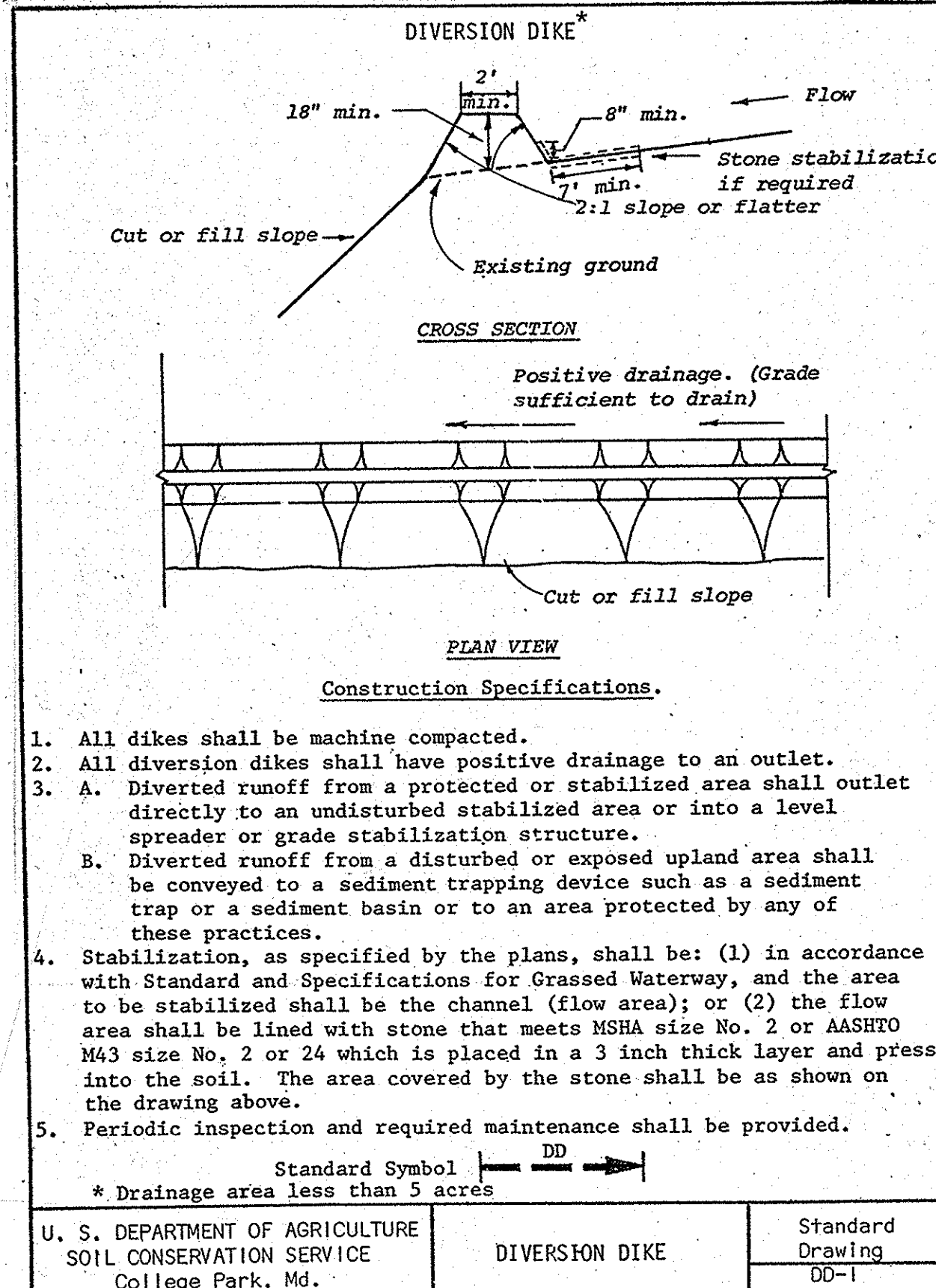
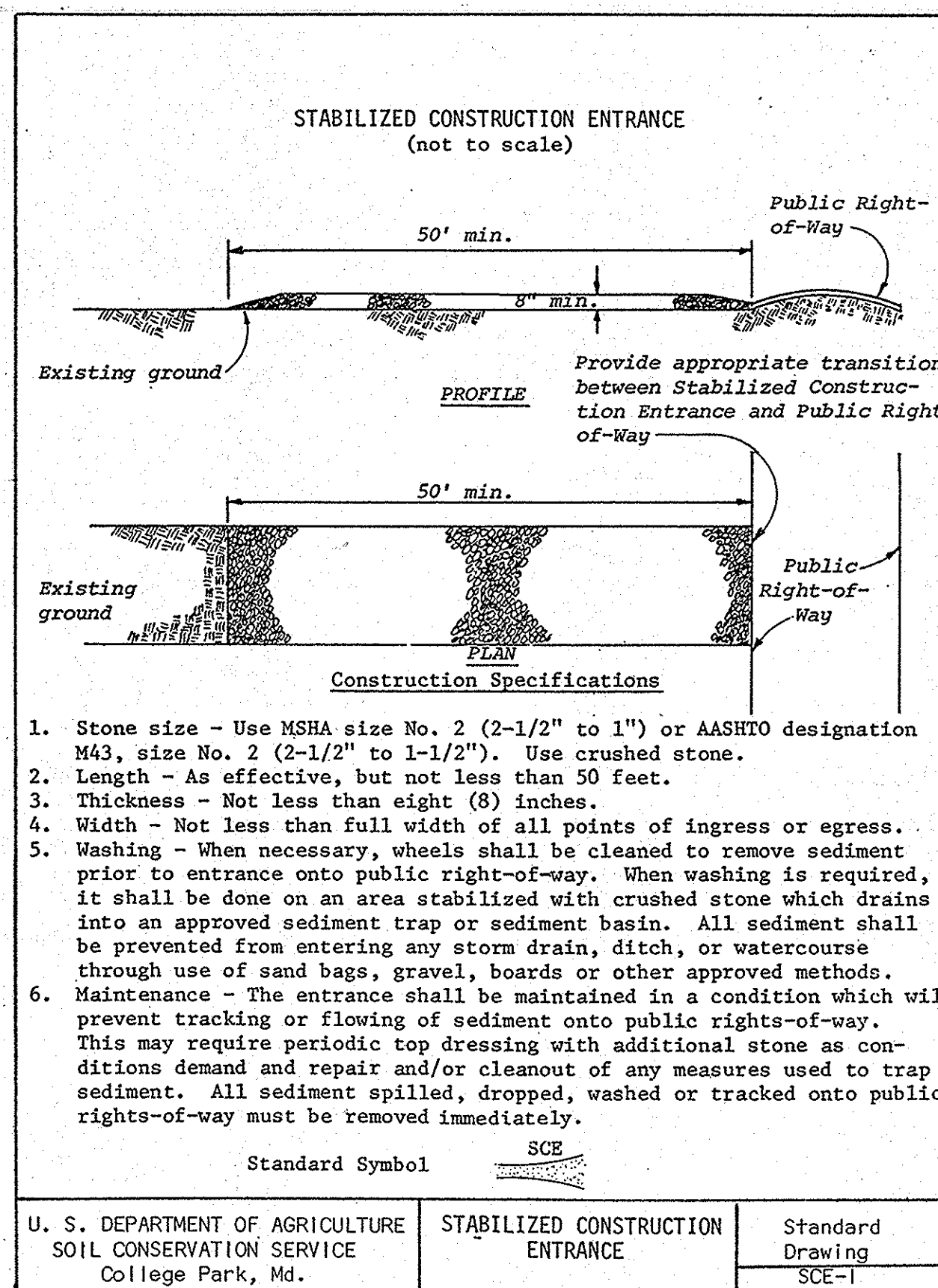
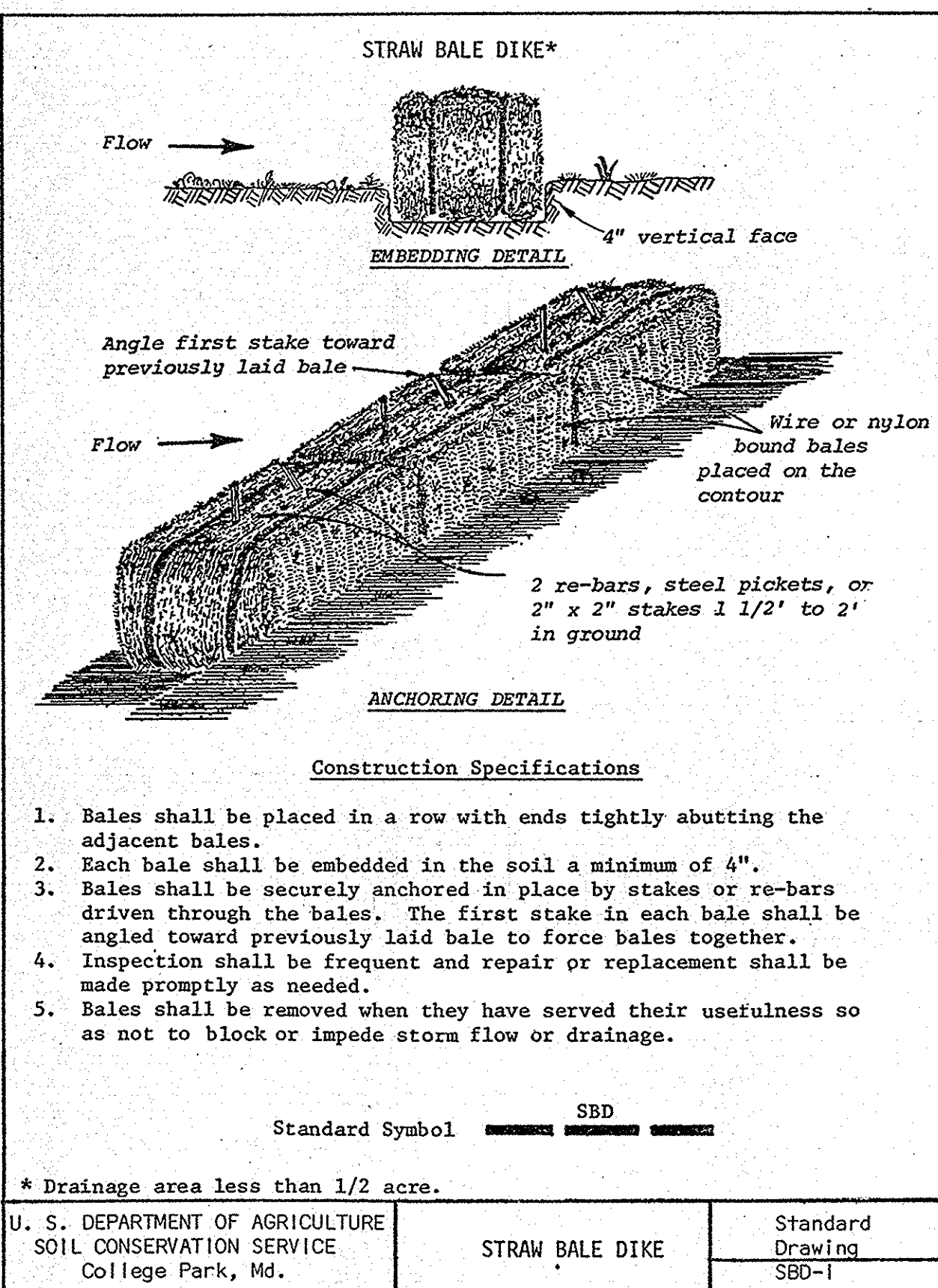
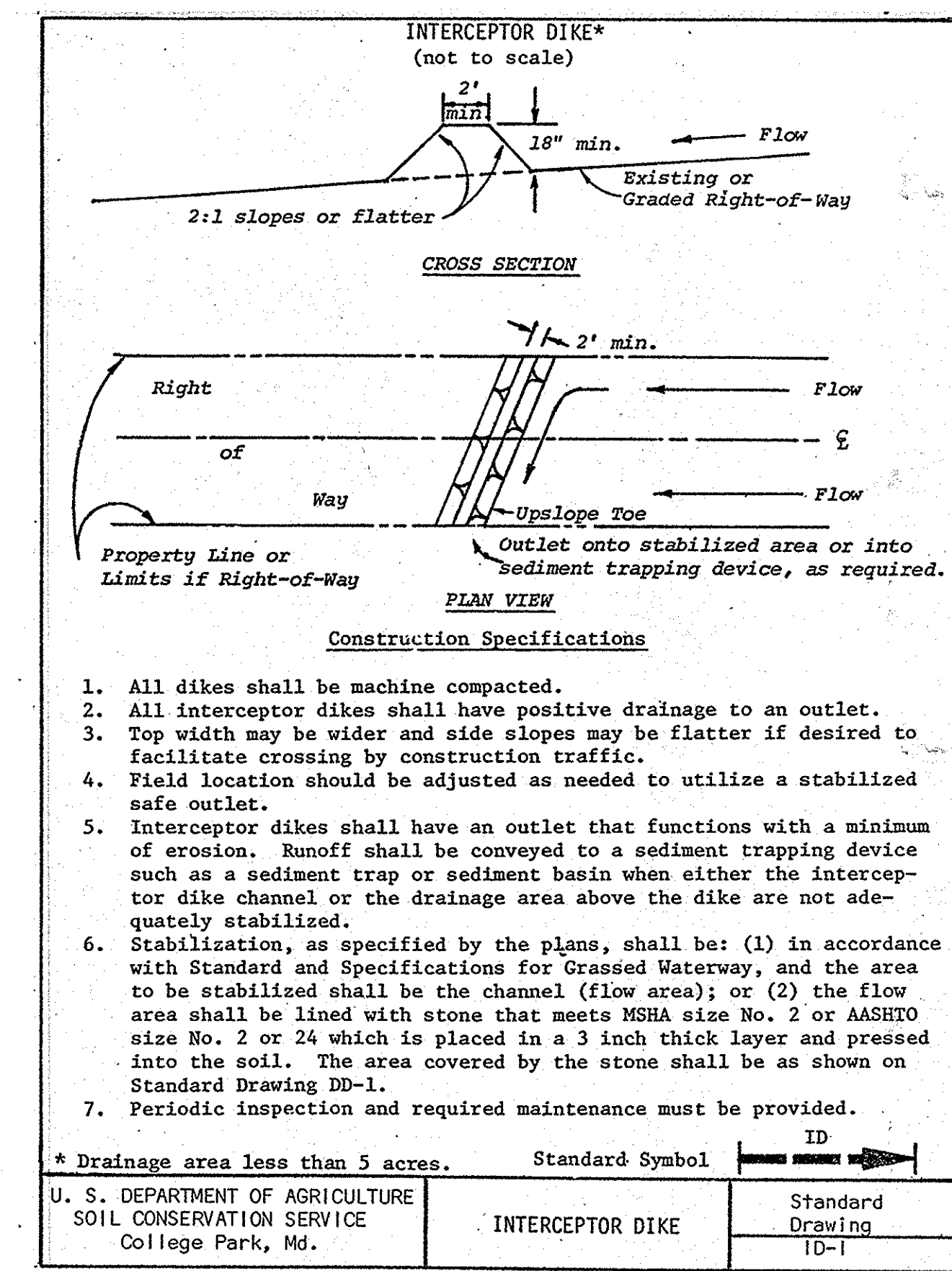
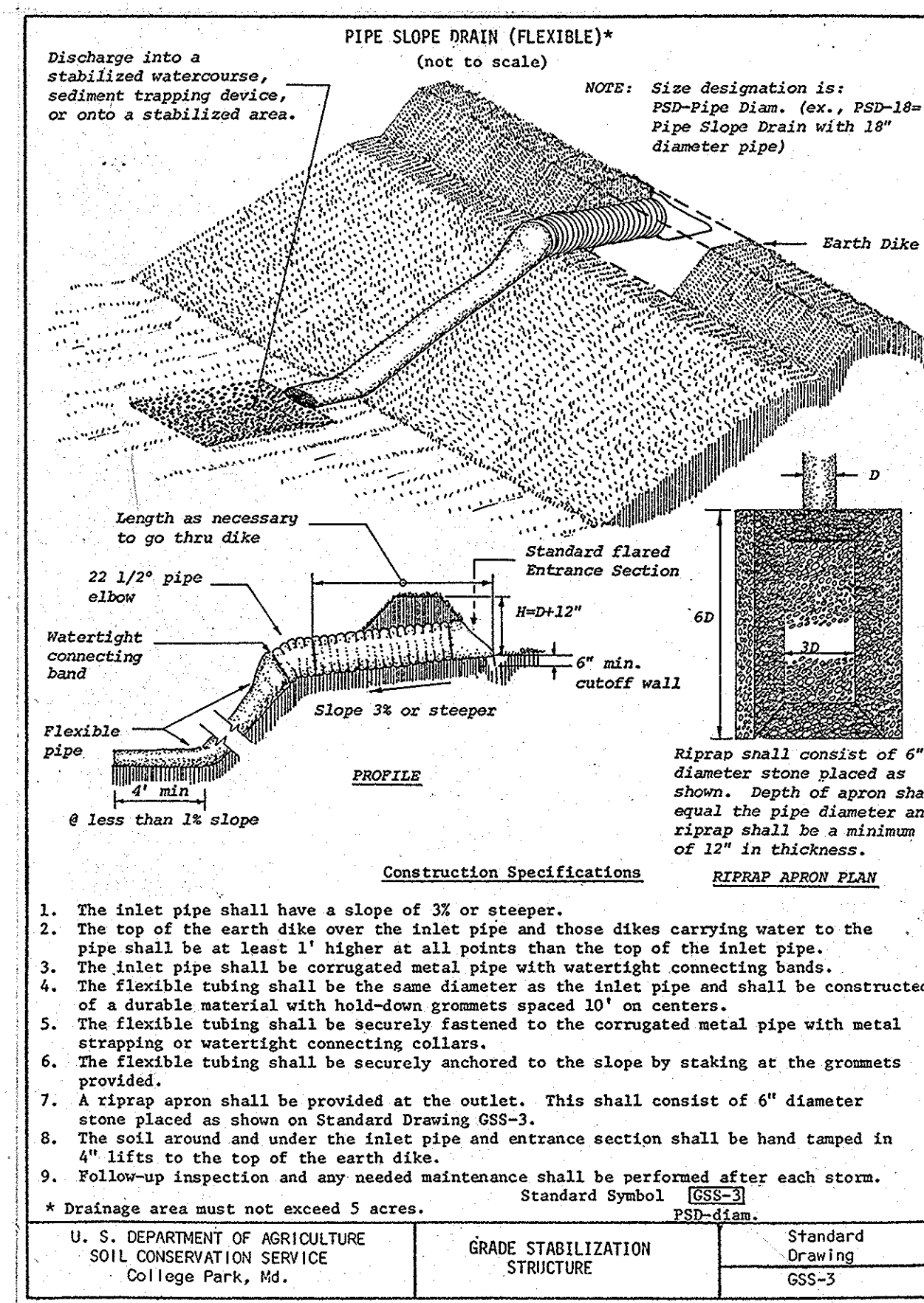
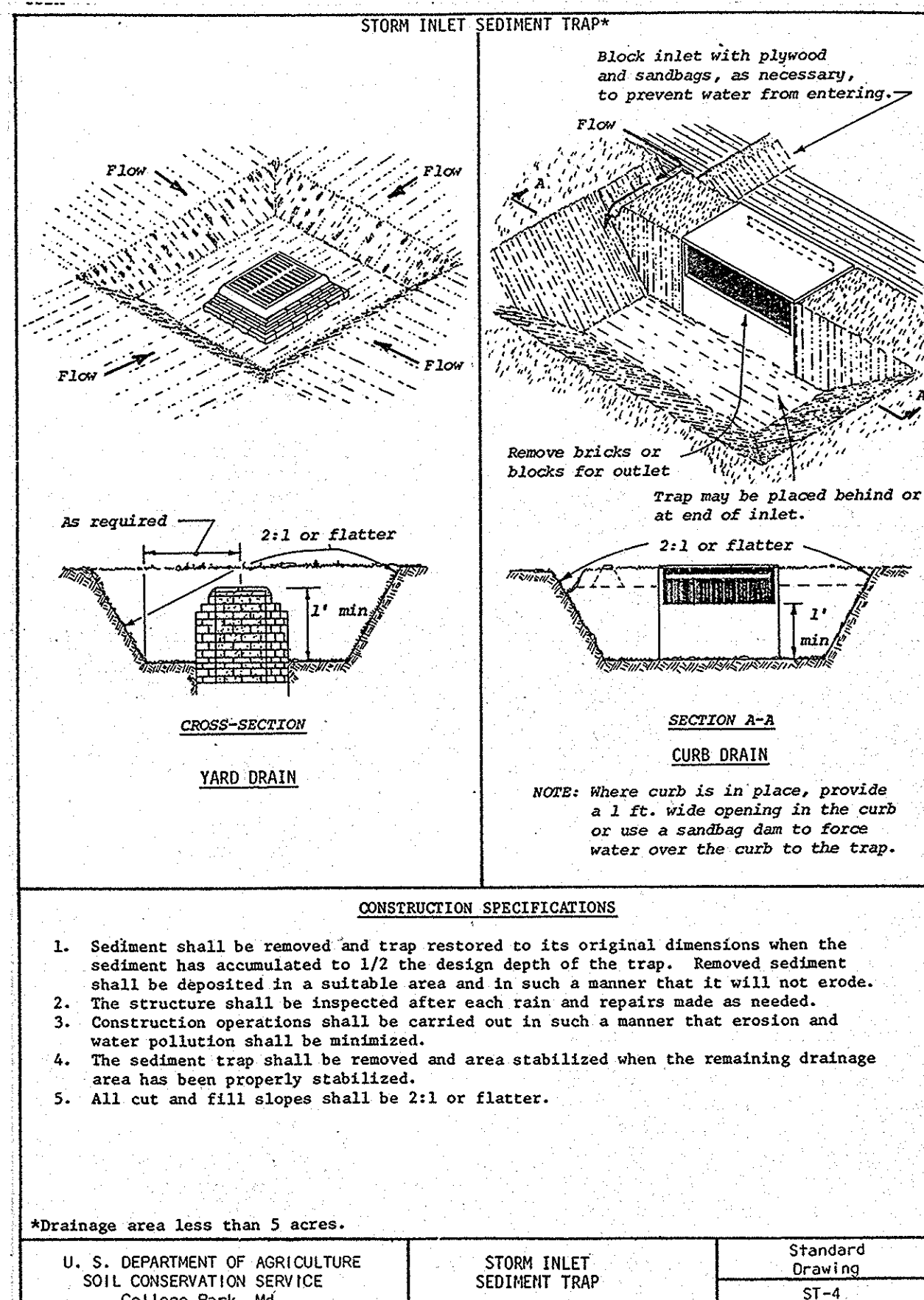
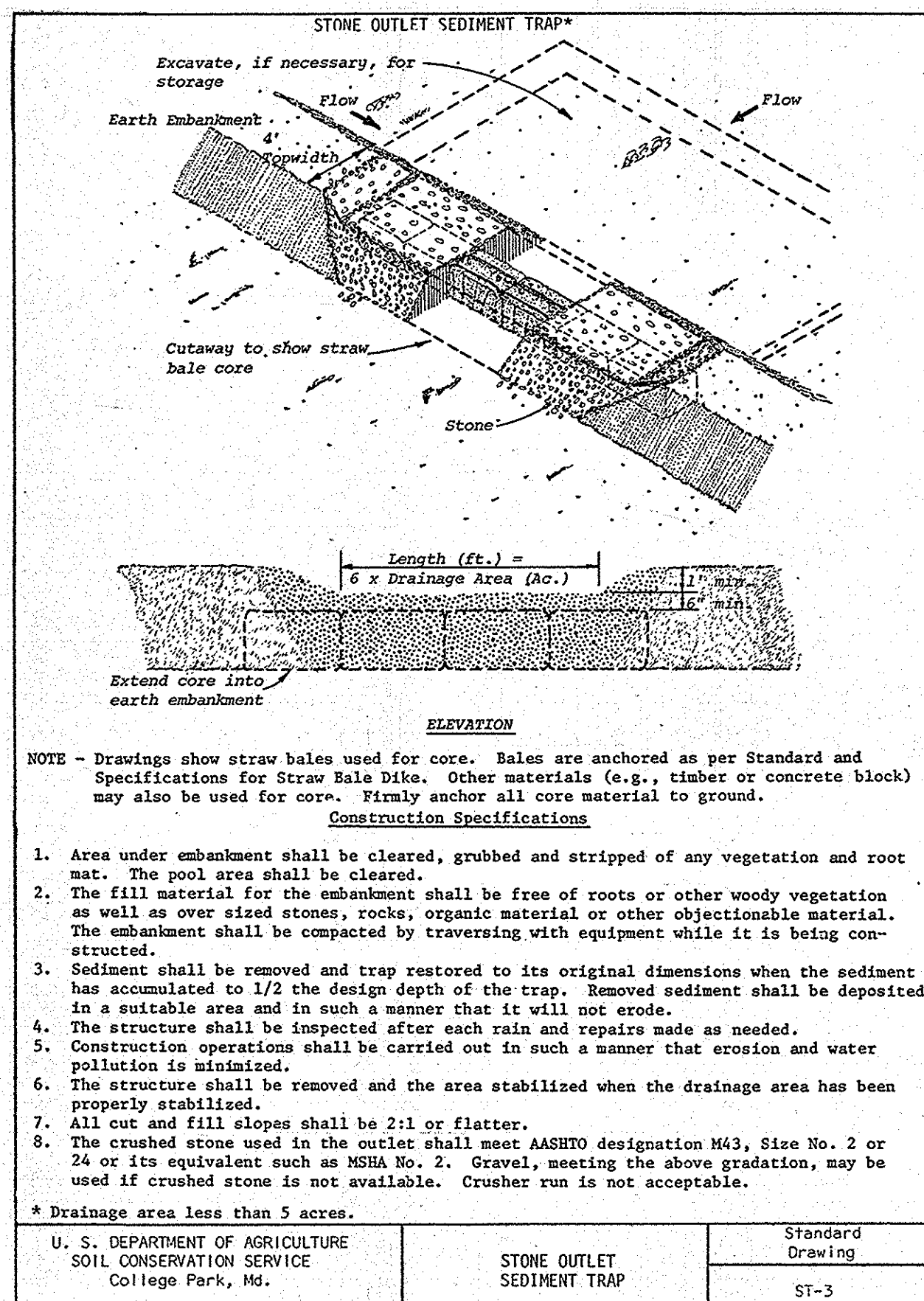
NO.	REVISIONS	BY	DATE

PREPARED UNDER THE SUPERVISION OF:  
Paul C. Green  
7843 P. E. NO. DATE: 24 Dec. '76  
DESIGNED: J.A.B. CHECKED: E.R.H. SCALE:    
DRAWN: DATE: 24 March, 1977 R.E.F.:



SEDIMENT CONTROL / STORM WATER MANAGEMENT PLAN  
**HIGHLAND LAKE**  
ELECTION DISTRICT 5, HOWARD COUNTY, MARYLAND

JOB NUMBER: 1780-002-0  
SHEET NO.: 12  
OF 13 SHEETS



"I certify that all development and/or construction will be done according to this plan of development and plan for Erosion and Sediment Control, and I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

Signature of Developer: *Walter Buckler* Date: 5/31/77

"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 of Engineer: *Paul C. Quinn* Date: 25 Mar '77

Reviewed for HOWARD S.C.D. Name: *C. Wayne Ray* Date: 5/31/77 and meets Technical Requirements

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

Approved: *Robert J. Zick* Date: 5/31/77 Howard S.C.D.

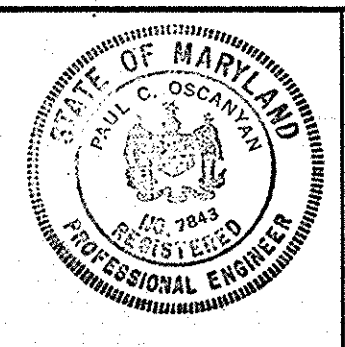
APPROVED: DEPARTMENT OF PUBLIC WORKS  
*J. P. McKeown* 6/6/77  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: OFFICE OF PLANNING AND ZONING  
*John W. McKeown* 6-10-77  
CHIEF, DIVISION OF LAND DEVELOPMENT

**TOUPS AND LOIEDERMAN**  
ENGINEERS, PLANNERS, LANDSCAPE ARCHITECTS  
A PLANNING RESEARCH CORPORATION COMPANY

NO.	REVISIONS	BY	DATE

PREPARED UNDER THE SUPERVISION OF:  
*Paul C. Quinn*  
7843 P. E. NO. DATE: 25 Mar '77  
DESIGNED: J.A.B. CHECKED: E.R.H. SCALE: NONE  
DRAWN: DATE: 24 MAR 1977 R.E.F.



**SEDIMENT CONTROL/STORM WATER MANAGEMENT**  
**HIGHLAND LAKE**  
ELECTION DISTRICT 5, HOWARD COUNTY, MARYLAND

JOB NUMBER: 1780-002-0  
SHEET NO.: 13  
OF 13 SHEETS