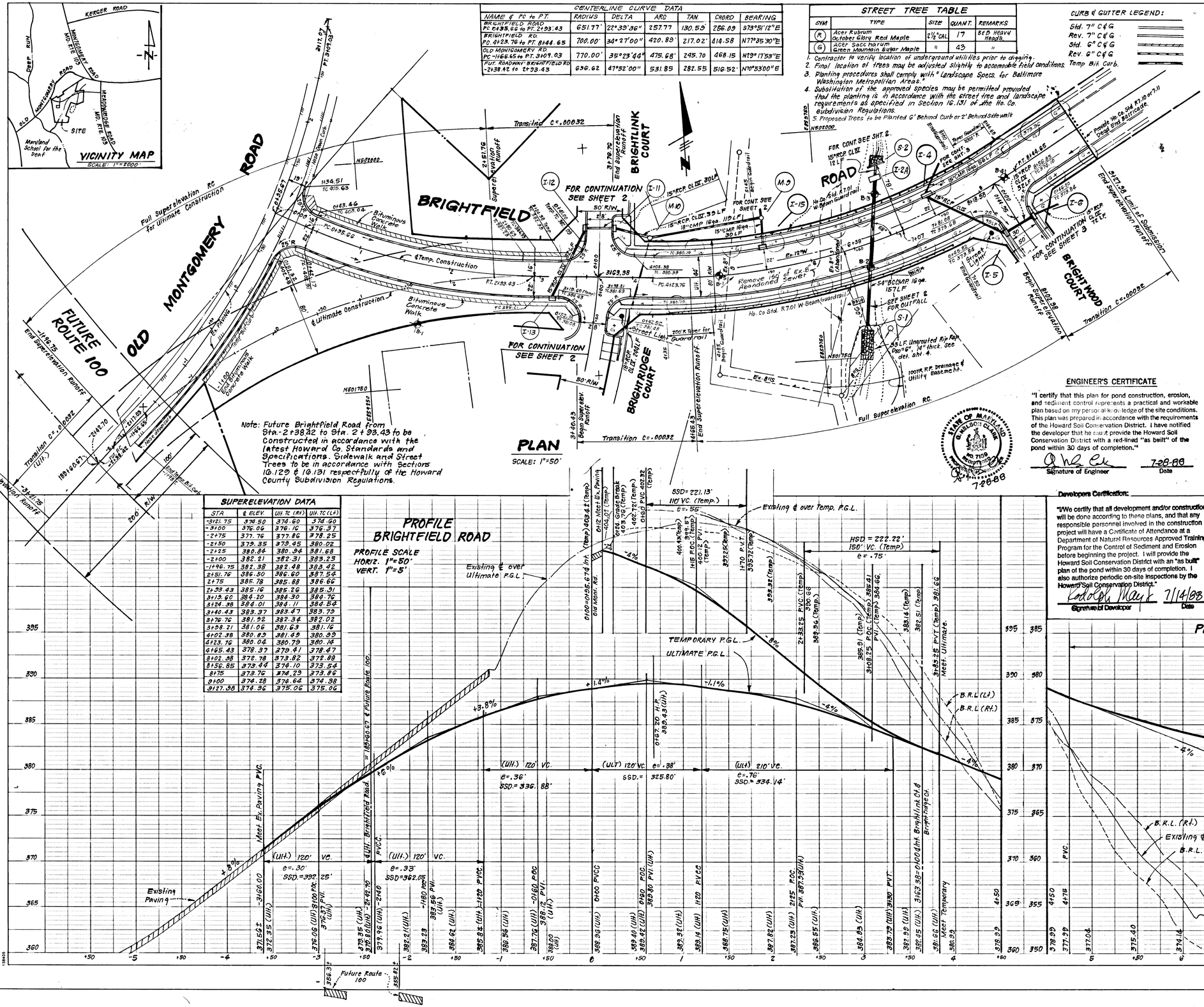


1332

Note: Future Brightfield Road from Sta.-2+38.42 to Sta. 2+93.43 to be Constructed in accordance with the latest Howard Co. Standards and Specifications. Sidewalk and Street Trees to be in accordance with Sections 16.129 & 16.131 respectfully of the Howard County Subdivision Regulations.

CENTERLINE CURVE DATA						
NAME & PC to PT.	RADIUS	DELTA	ARC	TAN.	CHORD	BEARING
BRIGHTFIELD ROAD PC 0+35.66 to PT. 2+93.43	651.77'	22°39'36"	257.77	130.59'	256.09	S73°51'12"E
BRIGHTFIELD RD. P.C. 4+23.76 to PT. 8+44.65	700.00'	34°27'00"	420.89'	217.02'	414.58	N77°35'30"E
OLD MONTGOMERY RD. PC -1+66.65 to P.T. 3+09.03	770.00'	35°23'44"	475.68'	245.70	468.15	N29°17'53"E
FUT. ROADWAY-BRIGHTFIELD RD -2+38.42 to 2+93.43	636.62	47°52'00"	531.85	282.55	516.52'	N70°53'00"E

STREET TREE TABLE				
SYM	TYPE	SIZE	QUANT.	REMARKS
Ⓡ	Acer Rubrum October Glory Red Maple	2½"CAL.	17	B&B Heavy Heads.
Ⓖ	Acer Saccharum Green Mountain Sugar Maple	"	43	"

1. Contractor to verify location of underground utilities prior to digging.
2. Final location of trees may be adjusted slightly to accomodate field conditions.
3. Planting procedures shall comply with "Landscape Specs. for Baltimore Washington Metropolitan Areas."
4. Substitution of the approved species may be permitted provided that the planting is in accordance with the street tree and landscape requirements as specified in Section 16.131 of the Ho. Co. Subdivision Regulations.
5. Proposed Trees to be Planted 6' Behind Curb or 2' Behind Sidewalk

CURB & GUTTER LEGEND:

Std. 7" C&G	═
Rev. 7" C&G	═
Std. 6" C&G	╪
Rev. 6" C&G	▬
Temp Bit. Curb.	▬

GENERAL NOTES

1. All storm drain & paving shall be constructed in accordance with the latest edition and specifications of Howard County & MDSHA.
2. Types of storm drainage refer to the standard details of Ho. Co. & MDSHA.
3. Trench compaction for storm drains within road or street right-of-way limits shall be in accordance with "Ho. Co. Design Manual, Vol. IV." Std. G-2.01.
4. Information concerning underground utilities was obtained from available records, but the contractor must determine the exact location and elevation of mains by digging test pits, by hand, at all utility crossings, well in advance of construction.
5. All utility companies shall be notified 24 hrs. in advance of construction.
6. All traffic services, parking and signing to be done in accordance with the "Manual of Uniform Traffic Control Devices," 1978 Edition.
7. Sag and Crest Vertical Curves were designed in accordance with "Ho. Co. Design Manual," Vol. III.
8. Provide Conc. Sidewalk Ramps. Ho. Co. Std. Type A R-4.01 where shown in plan.
9. Design Speed: See table sheet 3. Zoning: RSC.
10. The contractor or developer shall contact the Construction Inspection/Survey Division 24 hrs. in advance of commencement of work Ph. 792-7272.
11. Street Lights to be 250 watt on 30 ft. Steel Poles in accordance with Howard County Design Manual Vol. 3.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chief, Land Development Division — 2/15/89 Date.

Dranvelle H. Wehland
Chief, Bureau of Highways — 2/18/89 Date

William E. Riley
Chief, Bureau of Engineering — 2/21/89 Date.

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING.

Joseph J. McLaughlin
Chief, Division of Community Planning & Land Development — 2-27-89 Date

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (301) 381-7500 – BALTO. • (301) 621-8100 – WASH.

DESIGNED JLS	ROAD CONSTRUCTION PLANS BRIGHTFIELD ROAD	SCALE As Shown
DRAWN KIW	**BRIGHTFIELD** SECTION 1 AREA 1 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND	DRAWING 1 OF 9
CHECKED JLS		JOB NO. 85-053
DATE 7-27-88	FOR: KINGS MEADE LIMITED PARTNERSHIP 9030 Red Branch Rd. # 200 Columbia Md. 21045	FILE NO. 85-053-D

ENGINEER'S CERTIFICATE

"I certify that this plan for pond construction, erosion, and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with a red-lined "as built" of the pond within 30 days of completion."

Signature of Engineer — 7-28-88 Date

7-28-88

Developers Certification:

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Rodolph Mayer
Signature of Developer — 7/14/88 Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

J. Helmetz
U.S. Soil Conservation Service — 2-7-89 Date

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Approved R. Ziehm — 2/7/89
Howard S.C.D. — Date

Plan Number

SUPERELEVATION DATA			
STA	¢ ELEV.	Ult. TC (Rt)	Ult. TC (Lt)
-3+21.75	374.50	374.60	374.60
-3+00	376.06	376.16	376.37
-2+75	377.76	377.86	378.25
-2+50	379.35	379.45	380.02
-2+25	380.84	380.94	381.68
-2+00	382.21	382.31	383.23
-1+96.75	382.38	382.48	383.42
2+51.76	386.50	386.60	387.54
2+75	385.78	385.88	386.66
2+93.43	385.16	385.26	385.91
3+19.60	384.20	384.30	384.76
3+24.38	384.01	384.11	384.54
3+40.43	383.37	383.47	383.79
3+76.76	381.92	382.34	382.02
3+98.21	381.06	381.63	381.16
4+02.38	380.89	381.49	380.99
4+23.76	380.04	380.79	380.14
4+65.43	378.37	379.41	378.47
8+02.98	372.78	373.82	372.88
8+56.85	373.44	374.10	373.54
8+75	373.76	374.29	373.86
9+00	374.28	374.64	374.38
9+27.98	374.96	375.06	375.06

F-89-19

CENTERLINE CURVE DATA						
NAME & PC to PT.	RADIUS	DELTA	ARC	TAN.	CHORD	BEARING
BRIGHTRIDGE CT. P.C. 0100 to P.T. 2107.52	750.00'	15° 51' 13"	207.52'	104.43'	206.86'	S 16° 17' 25" W

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Approved R. Zichum Howard S.C.D. 2/7/89 Date

Plan Number

These Plans have been reviewed for the Howard Soil Conservation District and meet the technical requirement for small pond construction, soil erosion and sediment control.

J. Helm 12 2/7/89
USDA Soil Conservation Service Date

Developers Certification:

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Rudolph Mayl 7/14/88
Signature of Developer Date

ENGINEER'S CERTIFICATE

"I certify that this plan for pond construction, erosion, and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with a red-lined "as built" of the pond within 30 days of completion."

Signature of Engineer 7-28-88 Date

STATE OF MARYLAND — O. NELSON CLARK — No. 7688 — REGISTERED PROFESSIONAL ENGINEER

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chief, Land Development Division — 2/9/89 Date

Chief, Bureau of Highways — 2/10/89 Date

Chief, Bureau of Engineering — 2/21/89 Date

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING.

Chief, Division of Community Planning & Land Development — 2-23-89 Date

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA MD 21045 • (301) 381-7500 - BALTO • (301) 621-8100 — WASH

DESIGNED JLS	ROAD CONSTRUCTION PLANS BRIGHTRIDGE COURT
DRAWN KIW	**BRIGHTFIELD** SECTION 1 AREA 1 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
CHECKED JLS	FOR: KINGS MEADE LIMITED PARTNERSHIP 9030 Red Branch Rd. # 200 Columbia Md. 21045
DATE 7-27-88	SCALE As Shown · DRAWING 2 OF 9 · JOB NO. 85-053 · FILE NO. 85-053-D

PLAN
SCALE: 1"=50'

PROFILE SCALE
HORIZ. 1"=50'
VERT. 1"=5'

BRIGHTRIDGE COURT

BRIGHTLINK COURT

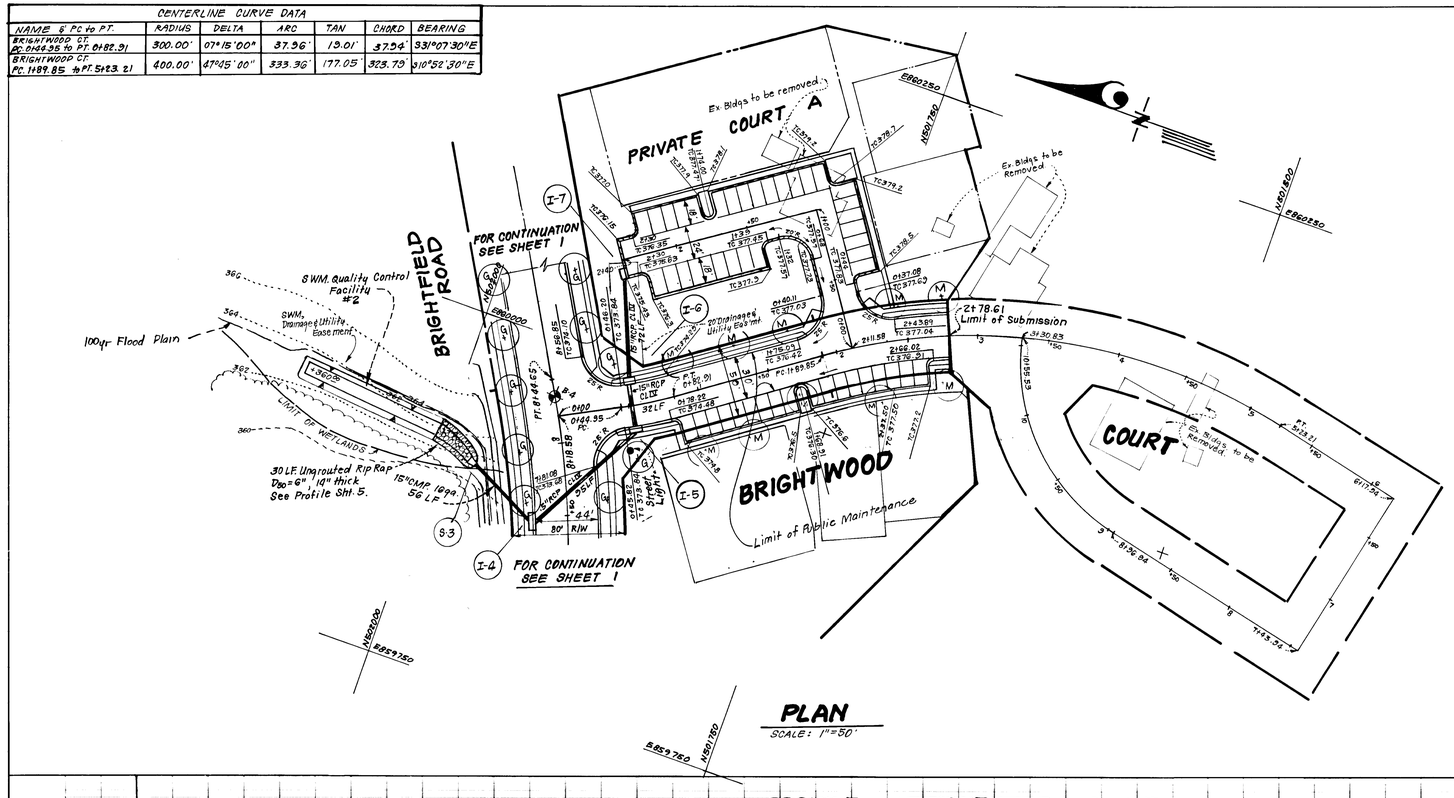
FUTURE LINEAR CURB PROFILE
BRIGHTLINK COURT

FUTURE GRADE EXTENSION
BRIGHTFIELD ROAD

1382

F-89-19

CENTERLINE CURVE DATA						
NAME & PC to PT.	RADIUS	DELTA	ARC	TAN	CHORD	BEARING
BRIGHTWOOD CT. PC 0148.95 to PT. 0482.91	300.00'	07°15'00"	37.96'	19.01'	37.94'	331°07'30"E
BRIGHTWOOD CT. PC 1189.85 to PT. 5123.21	400.00'	47°45'00"	333.36'	177.05	323.79	310°52'30"E



These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Approved R. Zielinski 2/7/89
Manager, H.S.C.D. Date

Plan Number

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

J. Helm Jr 2/7/89
U.S. Soil Conservation Service Date

Developers Certification:

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Rodolph Mayt 7/14/88
Signature of Developer Date

ENGINEER'S CERTIFICATE

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7-28-88
Signature of Engineer Date

STATE OF MARYLAND — JOHN NELSON CLARK — No. 7199 — REGISTERED PROFESSIONAL ENGINEER
7-28-88

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chief, Land Development Division — 2/15/89 Date.

Chief, Bureau of Highways — 2/18/89 Date

Chief, Bureau of Engineering — 2/21/89 Date.

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING.

Chief, Division of Community Planning & Land Development — 2-27-89 Date

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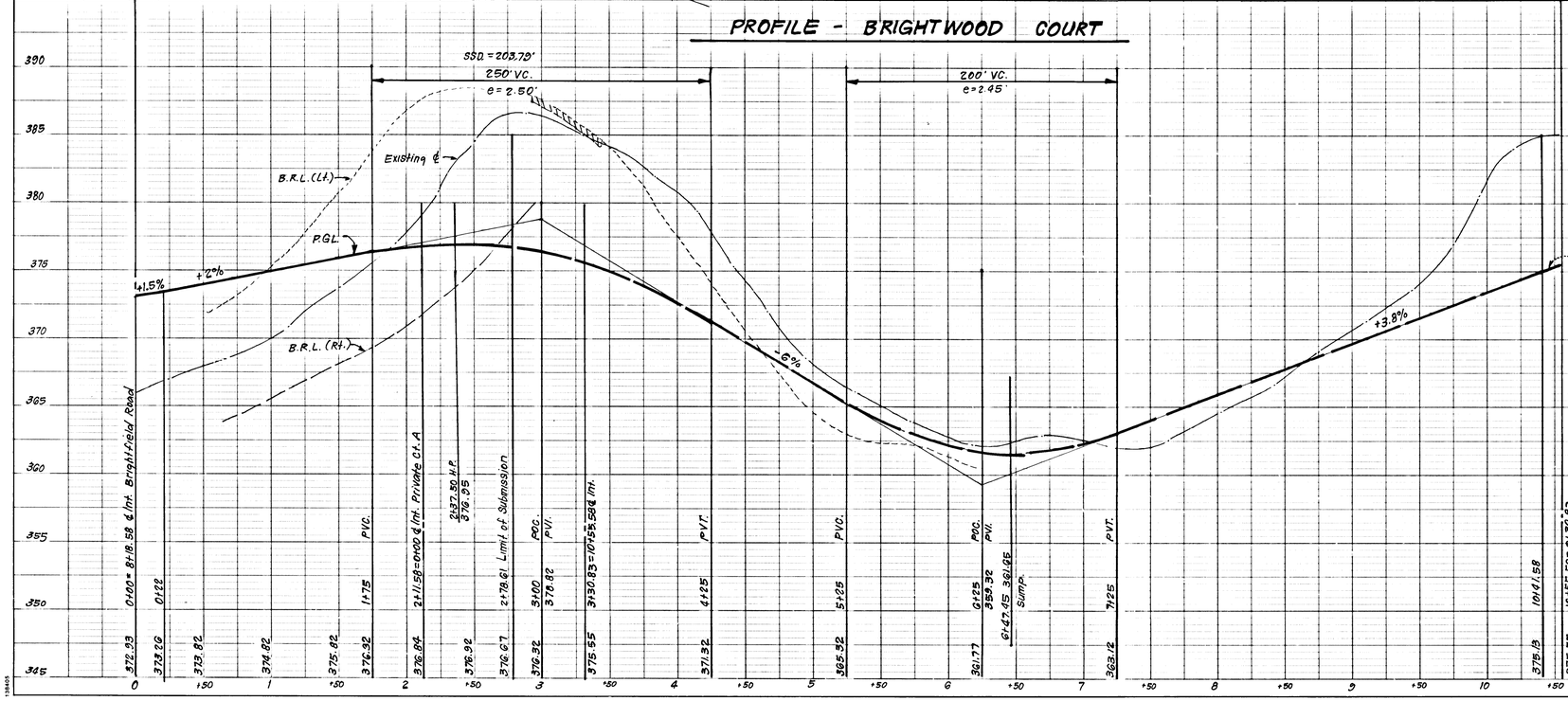
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA MD 21045 • (301) 381-7500 – BALTO. • (301) 621-8100 – WASH

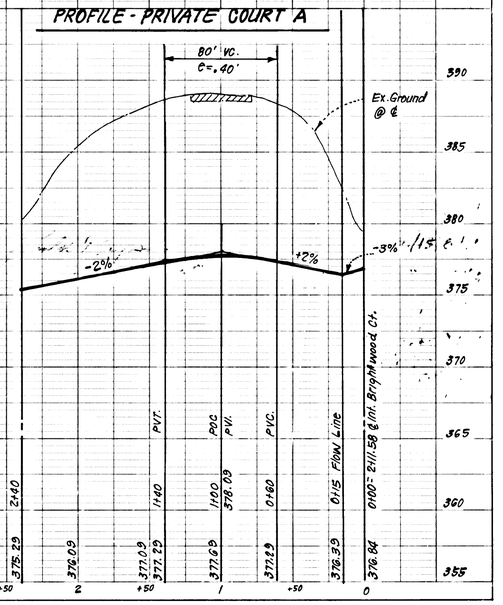
DESIGNED JLS	ROAD CONSTRUCTION PLANS BRIGHTWOOD COURT
DRAWN KIW	**BRIGHTFIELD** SECTION 1 AREA 1 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND.
CHECKED JLS	FOR: KINGS MEADE LIMITED PARTNERSHIP 9030 Red Branch Rd. # 200 Columbia Md. 21045
DATE 7-27-88	
SCALE As Shown	
DRAWING 3 OF 9	
JOB NO. 85-053	
FILE NO. 85-053-D	

PROFILE - BRIGHTWOOD COURT



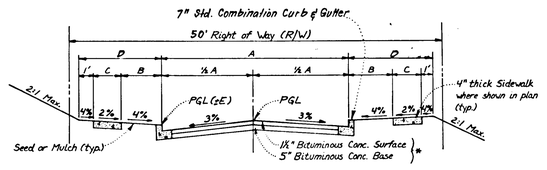
PROFILE SCALE
HORIZ. 1"=50'
VERT. 1"=5'

PROFILE - PRIVATE COURT A



1382

F-89-19

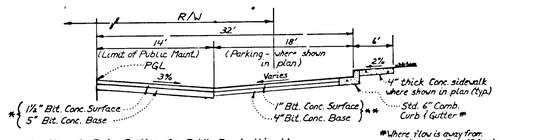


TYPICAL PAVING SECTION- PUBLIC ROADS

NO SCALE

* For Alternate Paving Section - See det. this sht.

STREET NAME & STATION	TYPE OF TRAFFIC	A	B	C	D	R/W	ZONING	DESIGN SPEED	E
BRIGHTWOOD CT. 0+00 to 0+78.22 & 2+66.02 to 2+78.61	LOCAL	30'	4'	4'	3'	50'	RSC	30	.10
BRIGHT RIDGE CT. 0+00 to 0+56.34	CUL-DE-SAC	28'	4'	4'	3'	50'	RSC	30	.13
BRIGHT LINK CT. 0+00 to 0+68.15	CUL-DE-SAC.	28'	4'	4'	3'	50'	RSC	30	.13



* See Alternate Paving Section for Public Roads, this sht.

** See Alternate Paving Section for Parking, this sht.

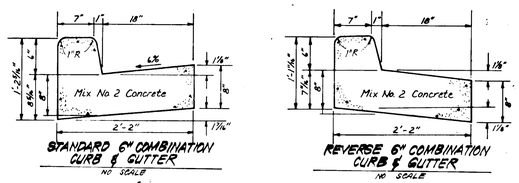
** Where flow is away from curb & gutter, Rev. 6" Comb. Curb & Gutter shall be used.

TYPICAL HALF SECTION
PARKING ADJACENT TO PUBLIC ROADS

NO SCALE

DESIGN SPEED: 30 mph
ZONE: RSC.

BRIGHTWOOD CT. STA. 0+78.22 to 2+66.02
BRIGHTRIDGE CT. STA. 0+56.34 to 4+63.87
BRIGHT LINK CT. STA. 0+68.15 to 1+82.03

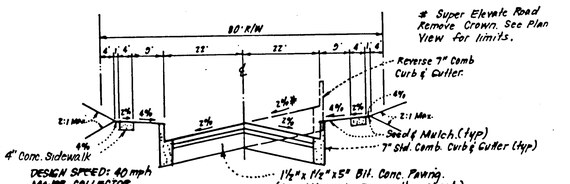


STANDARD 6" COMBINATION CURB & GUTTER

NO SCALE

REVERSE 6" COMBINATION CURB & GUTTER

NO SCALE



* Super Elevate Road Remove Crown. See Plan View for limits.

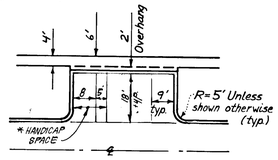
DESIGN SPEED: 40 mph
MAJOR COLLECTOR
RSC ZONE

ULTIMATE CONSTRUCTION

TYPICAL PAVING SECTION - BRIGHTFIELD ROAD

NO SCALE

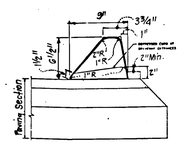
ULT. STA. -3+60 to 3+27.98



TYPICAL PARKING

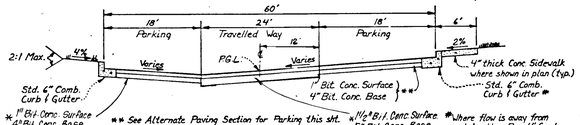
NO SCALE

* Two 8' Handicap Spaces may share one 5' Aisle



BITUMINOUS CURB

NO SCALE



* 1" Bit. Conc. Surface 4" Bit. Conc. Base.

** See Alternate Paving Section for Parking this sht.

* 1½" Bit. Conc. Surface 5" Bit. Conc. Base.

* Where flow is away from curb & gutter, Rev. 6" Comb. Curb & Gutter shall be used.

TYPICAL SECTION
PRIVATE DRIVE & PARKING

NO SCALE

PRIVATE COURT "A" - STA. 0+00 to 2+40

Bituminous Conc. Surface	1"
Bituminous Conc. Base	2"
Prime 5" Crusher Run Base Course or 4" Dense Graded Stabilized Aggregate Base Course	5" or 4"

ALTERNATE PAVING SECTION FOR PARKING AREAS

NO SCALE

(SECTION P-1)

Bituminous Conc Surface	1¼"
Bituminous Conc Base	2¼
Prime 8" Crusher Run Base (Placed in 2 Courses) or 6" Dense Graded Stabilized Aggregate Base Course	8" or 6"

ALTERNATE PAVING SECTION FOR PUBLIC ROADS

NO SCALE

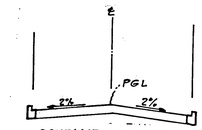
(SECTION P-2)

Bituminous Conc. Surface	1¼"
Bituminous Conc. Base	4¼"
Prime 6" Crusher Run Base Course or 4" Dense Graded Stabilized Aggregate Base Course	6" or 4¼"

ALTERNATE PAVING SECTION FOR MAJOR & MINOR COLLECTOR

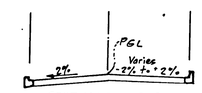
NO SCALE

(SECTION P-3)



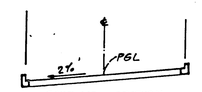
SCHEMATIC SECTION
BRIGHTFIELD ROAD
(NORMAL SECTION)

NO SCALE



SCHEMATIC SECTION
SUPERELEVATION RUNOFF
BRIGHTFIELD ROAD

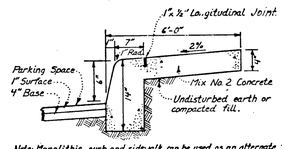
NO SCALE



SCHEMATIC SECTION
FULL SUPERELEVATION
BRIGHTFIELD ROAD

NO SCALE

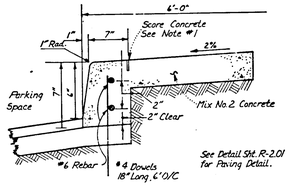
Notes:
1. Longitudinal Joint between sidewalk & curb shall be continuous and to a depth of ¼ the thickness of the sidewalk or 1" Max. Latitudinal joints shall run from back edge of sidewalk continuous to the bottom face of curb to a depth of ¼ & at spaced 5' apart.
2. Provide ½" expansion joints at 15' intervals. In latitudinal joints to full cross-section.



Note: Monolithic curb and sidewalk can be used as an alternate to reverse 6" curb & gutter where curb is adjacent to sidewalk.

MONOLITHIC CURB & SIDEWALK - PRIVATE PARKING AREA

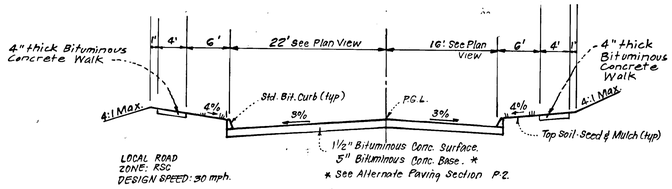
NO SCALE



See Detail Sht. R-2.01 for Paving Detail.

ALTERNATE SECTION

NO SCALE



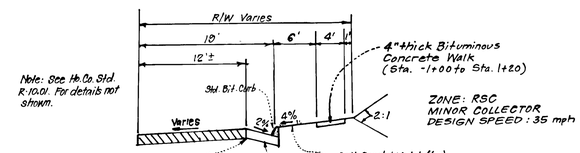
LOCAL ROAD
ZONE: RSC
DESIGN SPEED: 30 mph.

* See Alternate Paving Section P-2.

TYPICAL SECTION - BRIGHTFIELD ROAD

TEMP. CONSTRUCTION - STA. 0+00 to 3+63.38

NO SCALE



Note: See Ht. Co. Std. R-10.01. For details not shown.

ZONE: RSC
MINOR COLLECTOR
DESIGN SPEED: 35 mph

* See Alternate Paving Section P-2 (Temp. Construction).

TYPICAL HALF SECTION - OLD MONTGOMERY ROAD

STA. -1+98 to 1+33.57

NO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chief, Land Development, Division — Date: 2/15/89

Chief, Bureau of Highways — Date: 2/8/89

Chief, Bureau of Engineering — Date: 2-21-89

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING.

Chief, Division of Community Planning & Land Development — Date: 2-23-89

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (301) 381-7500 – BALTO. • (301) 621-8100 – WASH

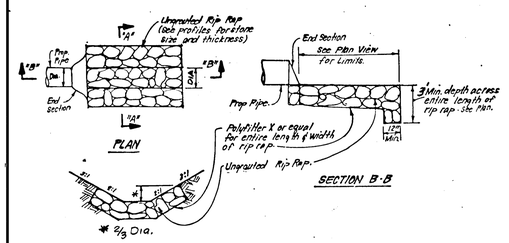
DESIGNED	ROAD CONSTRUCTION PLANS PAVING DETAILS	SCALE
JLS		As Shown
DRAWN	BRIGHTFIELD SECTION 1 AREA 1	DRAWING
KIW		4 OF 9
CHECKED	1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO.
JLS		85-053
DATE	FOR: KINGS MEADE LIMITED PARTNERSHIP 9030 Red Branch Rd. # 200 Columbia Md. 21045	FILE NO.
7-27-88		85-053-D

STATE OF MARYLAND — DANIEL BOYD CLARK — No. 7108 — REGISTERED PROFESSIONAL ENGINEER

7-28-88

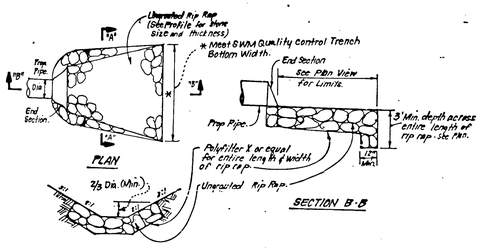
1392

F-89-19



UNGROUTED RIPRAP PAVING DETAILS

NO SCALE

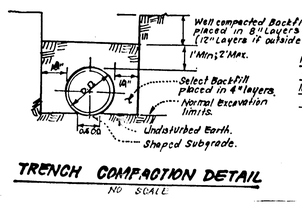


UNGROUTED RIPRAP PAVING DETAILS (9-3 & 9-8)

NO SCALE

Notes:

1. For o.d. of pipe see manufacturers specs. or field measure circumference of pipe and divide by 3.14.
2. Within road R/W, trench compaction density shall be 95% as determined A.A.S.H.T.O. T-180 A.
3. For conditions requiring solid sheeting or trench shields A "shall" not exceed 30".



PIPE DIA.	A
15"	8"
18"-21"	10"
54"	18"

TRENCH COMPACTION DETAIL

NO SCALE

STRUCTURE SCHEDULE 4

	No.	TYPE	INV. IN	INV. OUT	TOP ELEVATION UPPER	TOP ELEVATION LOWER	REMARKS		LOCATION
	S-1	Metal End Section	345.86	345.72	–		Ho. Co. Std.	54"Ø	See Plan
	S-2	Headwall	351.00	355.00	–		" " "	15"Ø	See Plan
	I-2A	Special	350.96	349.00	–		See det. sht. 6		See Plan
	S-3	Metal End Section	380.14	360.00	–		Ho. Co. Std. SD 5.61	15"Ø	See Plan
	I-4	A-10 Inlet	368.50	363.71	372.65		" " "	SD 4.02	W=2'-6" & Inlet 7+47 Brightfield Rd. 22' Lt.
*	I-5	A-5 Inlet w/Deflectors	369.58	369.45	374.02	373.81	" " "	SD 4.01	W=2'-6" & Inlet 0+51.82 Brightwood Ct. 15' Rt.
*	I-6	A-5 Inlet w/Deflectors	370.00	369.90	374.02	373.81	" " "	SD 4.01	W=2'-6" & Inlet 0+52.20 Bright wood Ct. 15' Rt.
	I-7	A-5 Inlet	–	371.00	375.58	375.43	" " "	SD 4.01	W=2'-6" & Inlet 2+40 Private Ct. 9.5' Lt.
	S-8	Concrete End Section	361.04	360.99	–		" " "	SD 5.52	21"Ø See Plan
	M-9	Shallow Brick Manhole	361.50 361.15	361.25	365.00		" " "	G 5.05	48"Sq See Plan
	M-10	Std. Precast Manhole	378.01 369.70	368.28	382.00		" " "	G 5.12	48"Rd. & MH 4+21 Brightfield Rd. 43' Lt.
*	I-11	A-5 Inlet w/Deflectors	378.88	378.60	383.59	383.35	" " "	SD 4.01	W=2'-6" & Inlet 0+53 Brightlink Ct. 14' Rt.
*	I-12	A-5 Inlet w/Deflectors	379.50	379.17	383.59	383.35	" " "	SD 4.01	W=2'-6" & Inlet 0+53 Brightlink Ct. 14' Lt.
*	I-13	A-5 Inlet w/Deflectors	–	380.32	385.15 Temp 384.65 Ult.	384.80 Temp 384.31 Ult.	" " "	SD 4.01	W=2'-6" & Inlet 3+13.60 Brightfield Rd. 22' Rt.
	I-14	A-10 Inlet	–	371.75	375.40		" " "	SD 4.02	W=2'-6" & Inlet 11+01.83 Brightridge Rd. 32' Lt.
*	I-15	A-5 Inlet w/Deflectors	–	369.25	375.59	375.42	" " "	SD 4.01	W=2'-6" & Inlet 5+50 Brightfield Rd. 22' Lt.

Δ All inverts to be fully developed. except @ I-4 and M-10.

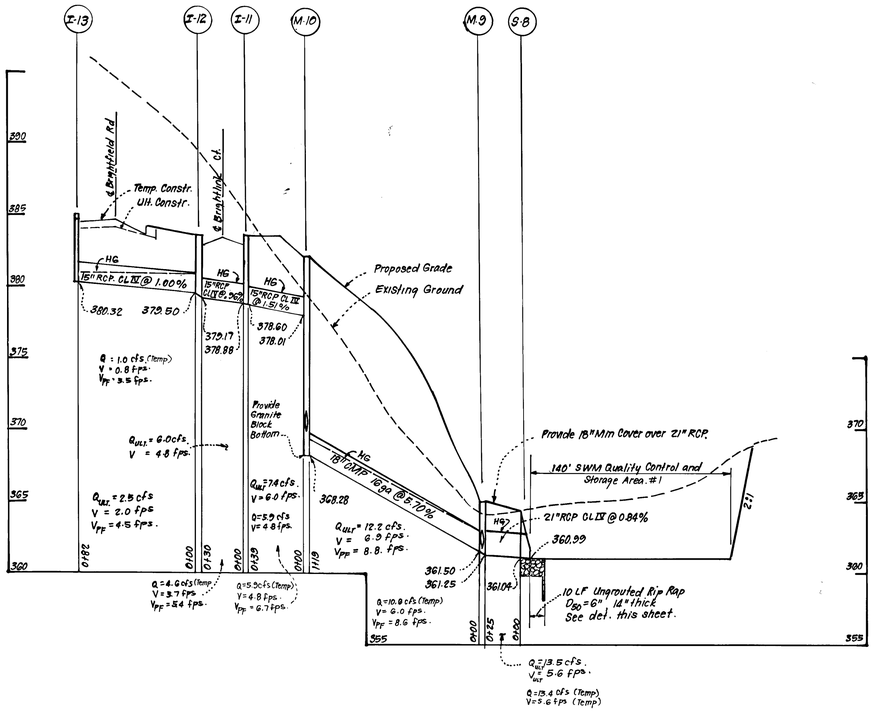
* See Ho. Co. Std SD 4.83 For inlet deflectors.

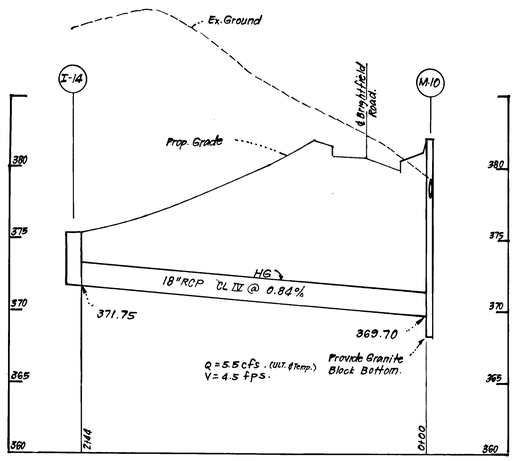
PIPE SCHEDULE

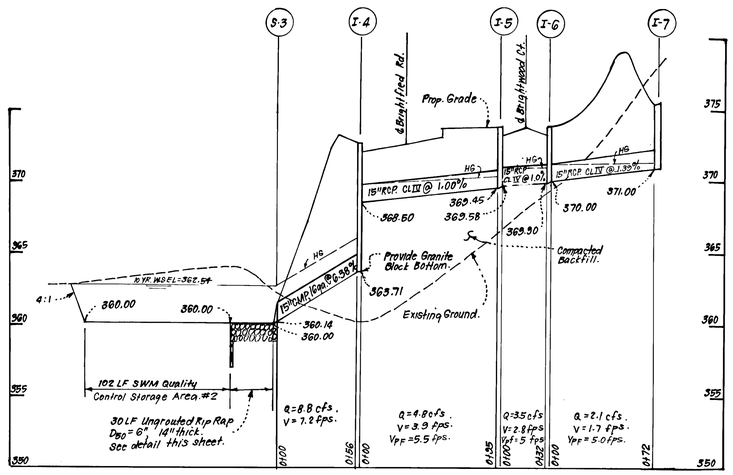
	SIZE	TYPE	LENGTH
	15"	RCP CL IV	362 LF
*	15"	CMP 16ga.	86 LF
	18"	RCP CL IV	244 LF
*	18"	CMP 16 ga.	119 LF
	21"	RCP CL IV	25 LF
#	54"	BCCMP 16ga.	157 LF

* 2 2/3" x 1/2" Corrugations.

3" x 1" Corrugations.

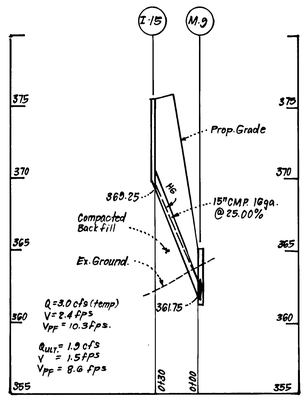






PROFILES

SCALE: HORIZ. 1"=50'
VERT. 1"=5'



These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Approved R. Zielke Howard S.C.D. 2/7/89 Date

Plan Number

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

J. Helmuth 2/7/89

U.S. Soil Conservation Service Date

Developers Certification:

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Rudolph Mayer 7/14/88

Signature of Developer Date

STATE OF MARYLAND G. WILSON CLARK NO. 7199 REGISTERED PROFESSIONAL ENGINEER

7-28-88

ENGINEER'S CERTIFICATE

"I certify that this plan for pond construction, erosion, and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with a red-lined "as built" of the pond within 30 days of completion."

G. Wilson Clark 7-28-88

Signature of Engineer Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chief, Land Development Division — 2/15/89 Date

Chief, Bureau of Highways — 2/15/89 Date

Chief, Bureau of Engineering — 2/21/89 Date

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING.

Chief, Division of Community Planning & Land Development — 2-27-89 Date

CLARK • FINEFROCK & SACKETT, INC.

ENGINEERS • PLANNERS • SURVEYORS

7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (301) 381-7500 – BALTO. • (301) 621-8100 – WASH

DESIGNED JLS	ROAD CONSTRUCTION PLANS STORM DRAINAGE PROFILES	SCALE As shown
DRAWN KIW	BRIGHTFIELD SECTION 1 AREA 1	DRAWING 5 OF 9
CHECKED JLS	1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 85-053
DATE 7-27-88	FOR: KINGS MEADE LIMITED PARTNERSHIP 9030 Red Branch Rd. # 200 Columbia Md. 21045	FILE NO. 85-053-D

F-89-19

STORM WATER MANAGEMENT NOTES

I. SITE PREPARATION

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.

Areas to be covered by the pond or reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

II. EARTH FILL

Material

The fill material shall be taken from approved designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, oversize stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased above the design elevation (including freeboard) as shown on the plans.

Placement

Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 8-inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream portions of the embankment.

Compaction

The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction can be obtained with the equipment used.

Where a minimum required density is specified, each layer of fill shall be compacted as necessary to obtain that density and is to be certified by the Engineer.

Cutoff Trench

Where specified, a cutoff trench shall be excavated along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be as shown on the drawings, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill material for the cutoff trench shall be the most impervious material available and shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

III. STRUCTURAL BACKFILL

Backfill material shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe unless there is a compacted fill of twenty-four inches or greater over the structure or pipe.

IV. PIPE CONDUITS

All pipes shall be circular in cross section.

A. Corrugated Metal Pipe

1. Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

   Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings are commercially available: Nexon, Plasti-Cote, Blac-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

   Materials - (Aluminized Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274-79I with watertight coupling bands or flanges.

   Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Coupling bands, anti-seep collars, end sections, etc. must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be less than 9 and greater than 4.

2. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Watertight coupling bands or flanges shall be used at all joints. Anti-seep collars shall be connected to the pipe in such a manner as to the completely watertight. Dimple bands are not considered to be watertight.

3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Laying pipe - The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides.

5. Backfilling shall conform to structural backfill as shown above.

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

B. Reinforced Concrete Pipe

1. Materials - Reinforced concrete pipe shall have a rubber gasket joint and shall equal or exceed ASTM Specification C-361. An approved equivalent is AWWA Specification C-301.

2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3", or as shown on the drawings.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe.

4. Backfilling shall conform to structural backfill as shown above.

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

C. For pipes of other materials, specific specifications shall be shown on the drawings.

V. CONCRETE

1. Materials

   a. Cement - Normal Portland cement shall conform to the latest ASTM Specification C-150.

   b. Water - The water used in concrete shall be clean, free from oil, acid, alkali, scales, organic matter or other objectionable substances.

   c. Sand - The sand used in concrete shall be clean, hard, strong and durable, and shall be well graded with 100 percent passing a one-quarter inch sieve. Limestone sand shall not be used.

   d. Coarse Aggregate - The coarse aggregate shall be clean, hard, strong and durable, and free from clay or dirt. It shall be well graded with a maximum size of one and one-half (1-1/2) inches.

   e. Reinforcing Steel - The reinforcing steel shall be deformed bars of intermediate grade billet steel or rail steel conforming to ASTM Specification A-615.

2. Design Mix - The concrete shall be mixed in the following proportions, measured by weight. The water-cement ratio shall be 5-1/2 to 6 U.S. Gallons of water per 94 pound bag of cement. The proportion of materials for the trial mix shall be 1:2:3-1/2. The combination of aggregates may be adjusted to produce a plastic and workable mix that will not produce harshness in placing or honeycombing in the structure.

3. Mixing - The concrete ingredients shall be mixed in batch mixers until the mixture is homogeneous and of uniform consistency. The mixing of each batch shall continue for not less than one and one-half minutes after all the ingredients, except the full amount of water, are in the mixer. The minimum mixing time is predicted on proper control of the speed of rotation of the mixer and of the introduction of the materials, including water, into the mixer. Water shall be added prior to, during, and following the mixer-charging operations. Excessive overmixing requiring the addition of water to preserve the required concrete consistency shall not be permitted. Truck mixing will be allowed provided that the use of this method shall cause no violation of any applicable provisions of the specifications given here.

4. Forms - The forms shall have sufficient strength and rigidity to hold the concrete and to withstand the necessary pressure, tamping, and vibration without deflection from the prescribed lines. They shall be mortar-tight and constructed so that they can be removed without hammering or prying against the concrete.

   The inside of forms shall be oiled with a non-staining mineral oil or thoroughly wetted before concrete is placed.

   Forms may be removed 24 hours after the placement of concrete. All wire ties and other devices used shall be recessed from the surface of the concrete.

5. Reinforcing Steel - All reinforcing material shall be free of dirt, rust, scale, oil, paint or any other coatings. The steel shall be accurately placed and securely tied and blocked into position so that no movement of the steel will occur during placement of concrete.

6. Consolidating - Concrete shall be consolidated with internal type mechanical vibrators. Vibration shall be suplemented by spading and hand tamping as necessary to insure smooth and dense concrete along form surfaces, in corners, and around embedded items.

7. Finishing - Defective concrete, honeycombed areas, voids left by the removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water on the finished structure, shall be repaired immediately after the removal of forms. All voids shall be reamed and completely filled with dry-patching mortar.

8. Protection and Curing - Exposed surfaces of concrete shall be protected from the direct rays of the sun for at least the first three (3) days. All concrete shall be kept continuously moist for at least ten (10) days after being placed. Moisture may be applied by spraying or sprinkling as necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compunds may also be used.

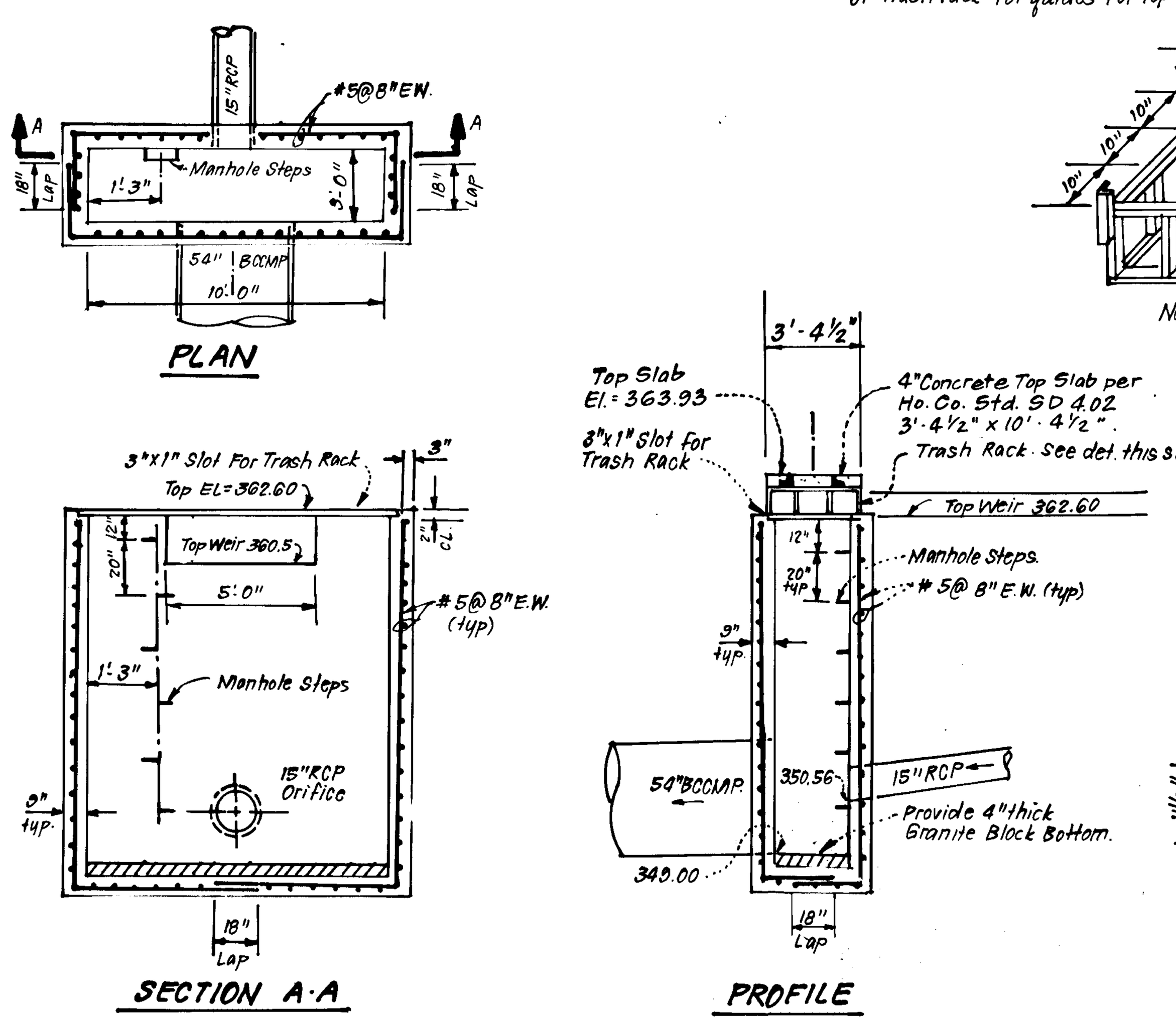
9. Placing Temperature - Concrete may not be placed at temperatures below 37° F with the temperature falling, or 34° with the temperature rising.

VI. STABILIZATION

All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching (if required) in accordance with the vegetative treatment specifications or as shown on the accompanying drawings.

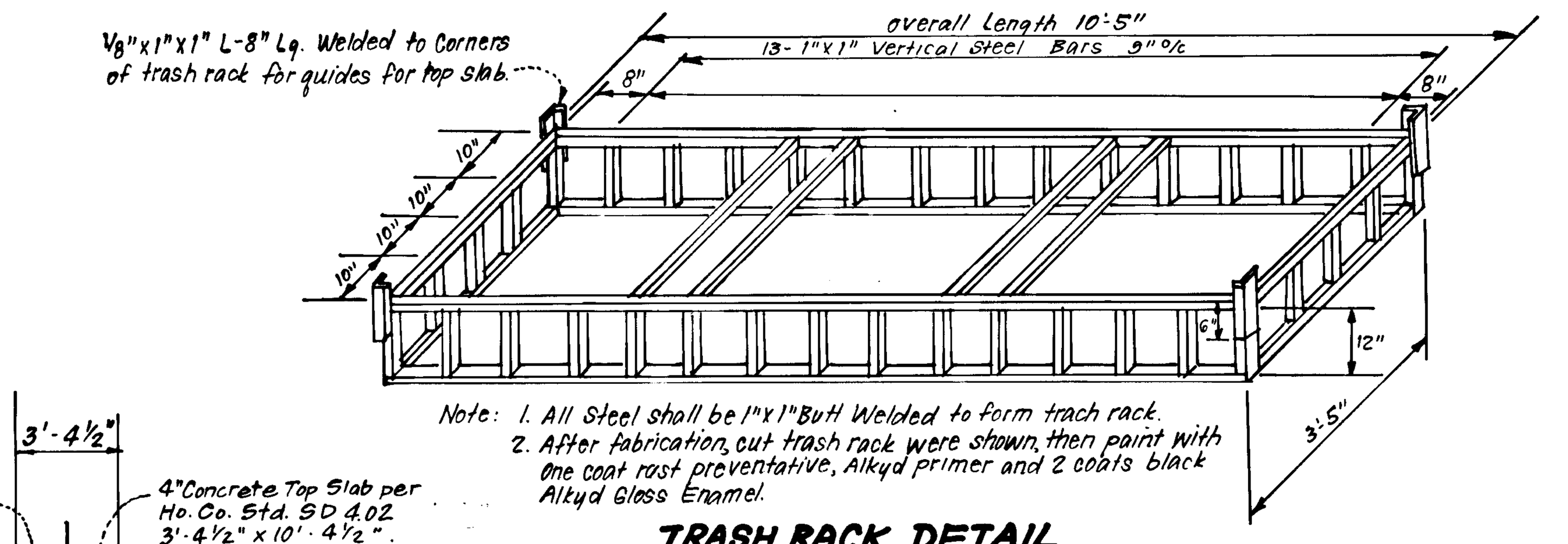
VII. EROSION AND SEDIMENT CONTROL

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.



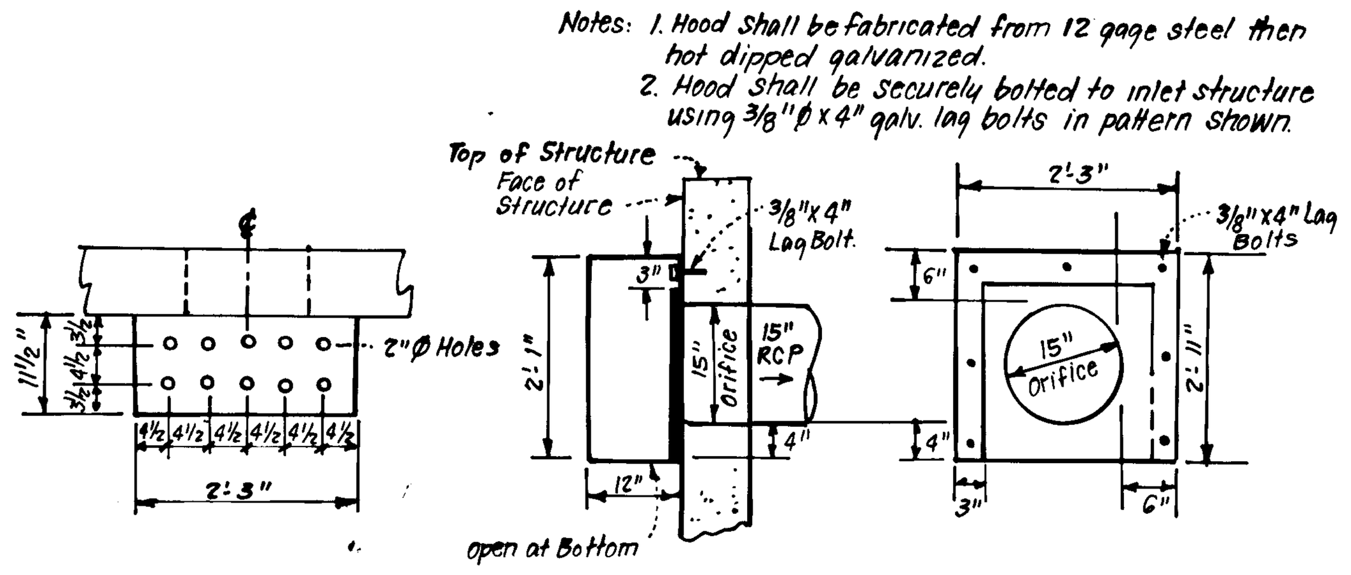
DETAIL - STRUCTURE No. I-2A

NO SCALE



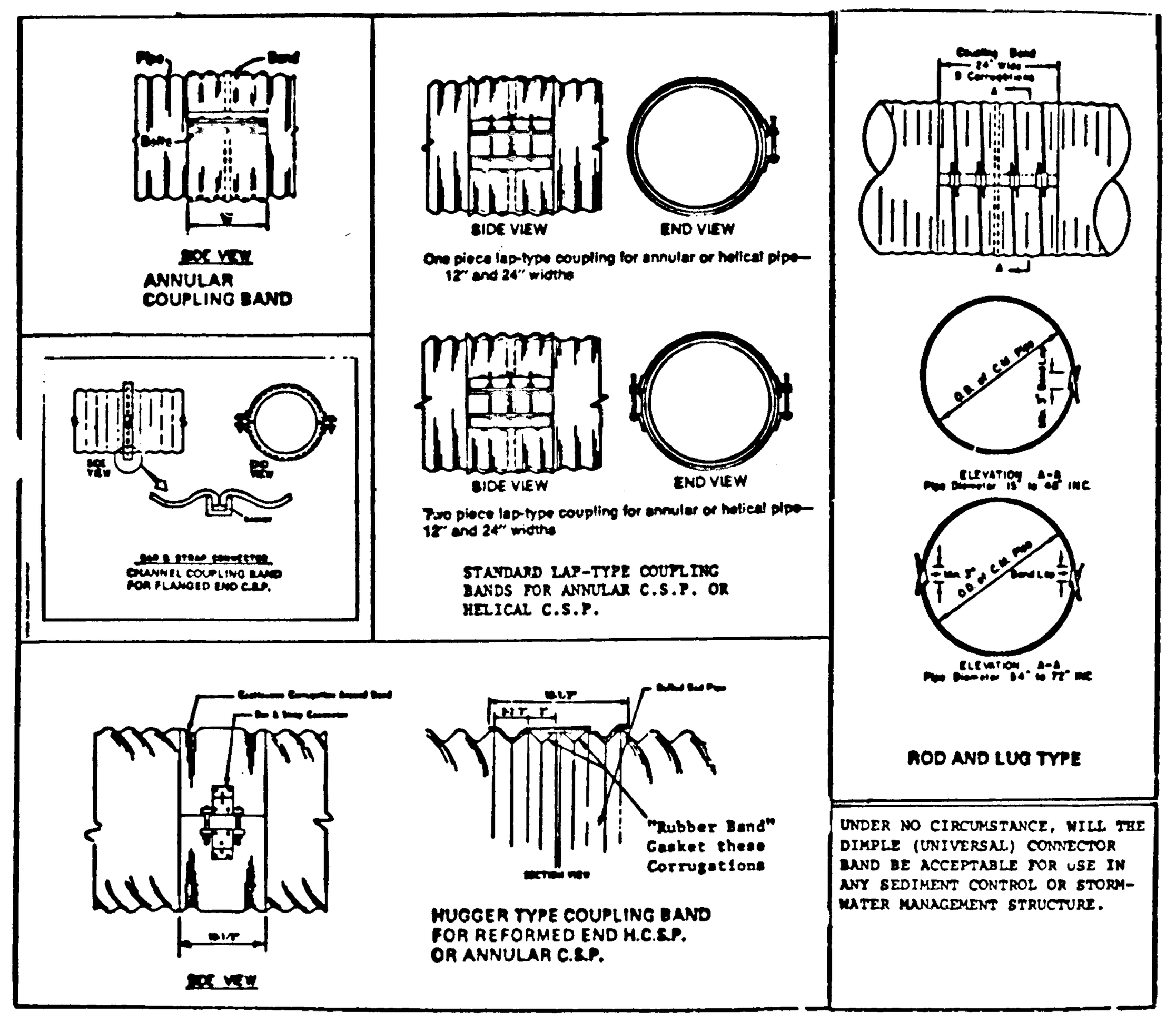
TRASH RACK DETAIL

NO SCALE

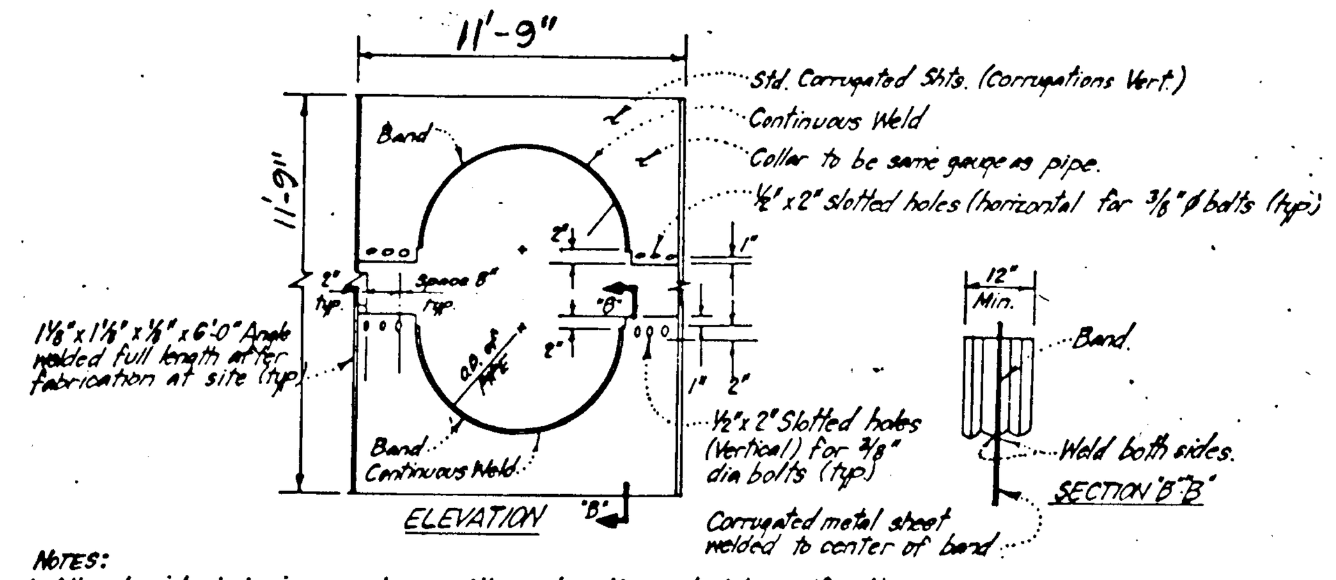


HOOD DETAIL @ STRUCTURE S-2

NO SCALE



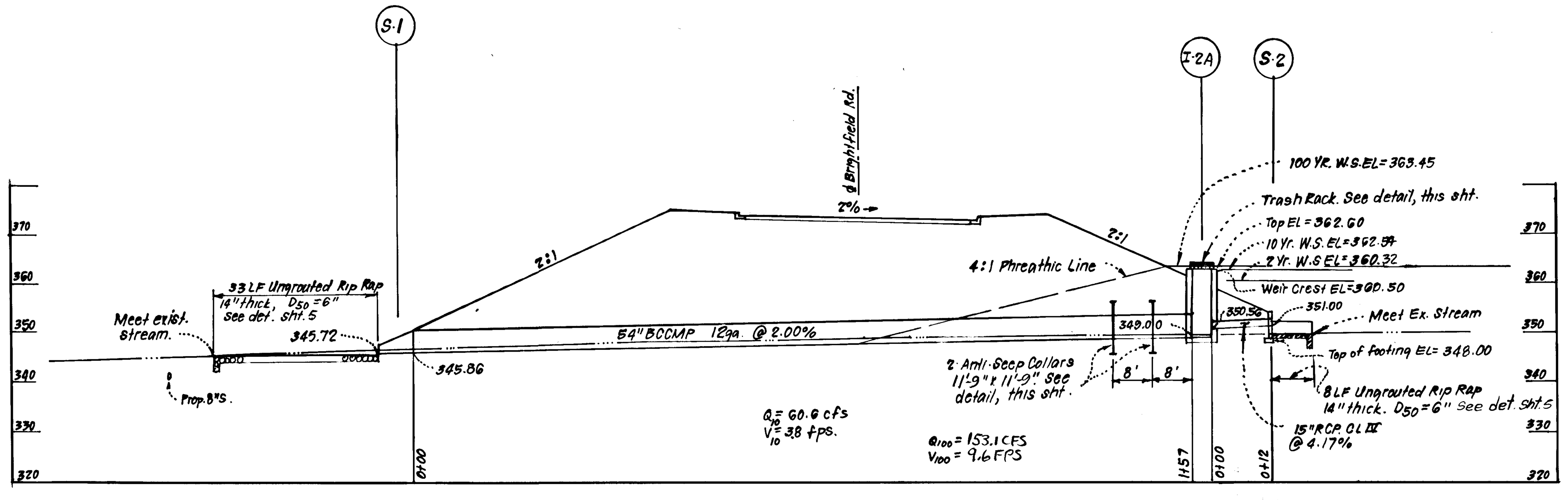
UNDER NO CIRCUMSTANCE, WILL THE DIMPLE (UNIVERSAL) CONNECTOR BAND BE ACCEPTABLE FOR USE IN ANY SEDIMENT CONTROL OR STORM-WATER MANAGEMENT STRUCTURE.



NOTES:
1. All materials to be in accordance with construction material specifications.
2. When specified on the plans, coating of collars shall be in accordance with contr. material specs.
3. Unassembled collars shall be marked by painting or tagging to identify matching pairs.
4. The lap between the two half sections and between the pipe and connection band shall be caulked with asphalt mastic at time of installation.
5. Each collar shall be furnished with two 1/2" diameter rods w/std. tank lugs for connecting collars to pipe.

CORRUGATED METAL ANTI-SEEP COLLAR DETAILS

NO SCALE



PROFILE

SCALE: 1"=20'

SOIL BORING INFORMATION - BORING #1				
Depth (Feet)	Samples #	Samples Depth (Feet)	Description of Materials	Remarks
1.0	1	.7'-2.5'	Dk Brown sand with some silt and gravel	U.S.C. SM AASHTO Soil Class A-2-4
5.0	2	2.5'-8'-0"	Brown sand with some silt and gravel	U.S.C. SM AASHTO Soil Class A-2-4
10.0	3	9.0'-11.0'	Gray silt with some sand trace gravel and clay	U.S.C. CL AASHTO A-4

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

J. Helm[?] 2/7/89
U.S. Soil Conservation Service — Date

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Approved R. Zielane[?] 2/7/89
Howard S.C.D. — Date

Plan Number

Developers Certification:

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Rodolph Mayt[?] 7/14/88
Signature of Developer — Date

STATE OF MARYLAND — G. NELSON CLARK — NO. 7180 — REGISTERED PROFESSIONAL ENGINEER — 7-28-88

ENGINEER'S CERTIFICATE

"I certify that this plan for pond construction, erosion, and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with a red-lined "as built" of the pond within 30 days of completion."

Signature of Engineer — 7-28-88 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chief, Land Development Division — 2/15/89 Date

Chief, Bureau of Highways — 2/18/89 Date

Chief, Bureau of Engineering — 2-21-89 Date

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING.

Chief, Division of Community Planning & Land Development — 2-23-89 Date

CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD 21045 • (301) 381-7500 — BALTO. • (301) 621-8100 — WASH

DESIGNED	ROAD CONSTRUCTION PLANS STORM WATER MANAGEMENT DETAILS	SCALE
DAB		As Shown
DRAWN	BRIGHTFIELD	DRAWING
KIW	SECTION 1 AREA 1 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND	6 OF 9
CHECKED		JOB NO.
DAB.		85.053
DATE	FOR: KINGS MEADE LIMITED PARTNERSHIP 9030 Red Branch Rd. # 200 Columbia Md. 21045	FILE NO.
7-27-88		85.053.D

F-89-19

TRAP # 1 (SOST, ST·V)
D.A.= 4.6 Ac.
Storage Required= 8280 cf
Storage Provided= 8280 cf
Stone Crest Elev.= 364.0
Bottom Elev.= 361.0
Bottom Dimensions= 150'x15'x3'deep
Clean Out Elev.= 362.5

TRAP # 2 (SOST, ST·V)
D.A.= 2.4 Acres
Storage Req'd.= 4320 cf
Storage Provided= 4329 cf
Stone Crest Elev= 363.0
Bottom Elev.= 360.0
Bottom Dimensions= 108 x 10' x 3' deep
Clean Out Elev.= 361.5

TRAP # 3 (SOST· ST·V)
D.A.= 2.3 Ac.
Storage Required= 4140 cf
Storage Provided= 4233 cf
Stone Crest Elev.= 364.5
Bottom Elev.= 361.5
Bottom Dimensions = 80'x14'x3'deep.
Clean Out Elev.= 363.0

TRAP # 4 S.O.S.T. ST-V
D.A.= 2.4 Ac.
Storage Req'd.= 4320 cf
Storage Provided: 4347 cf.
Stone Crest El.= 358.0
Bottom El.= 355.0
Bottom Dimensions = 60'x20'x3'Deep
Clean Out Elev. = 356.50

VICINITY MAP
SCALE: 1" = 2000'

Reviewed for Howard S.C.D.
Name
and meets Technical Requirements
J. Helm 2/7/89
Signature Date
U.S. Soil Conservation Service

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

Approved Date 3/7/89

DEVELOPER'S/BUILDER'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 Dept. 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."

Rodolph May 7/14/88
Signature of Developer/Builder Date

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."

G. Nelson Clark No. 7129 7-28-88

G. Nelson Clark 7-28-88
Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chief, Land Development Division 2/15/89 Date.

Granville W. Wehland
Chief, Bureau of Highways 2/18/89 Date

William E. Riley
Chief, Bureau of Engineering 2-21-89 Date.

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING.

Marsha S. McLaughlin
Chief, Division of Community Planning & Land Development 2-27-89 Date

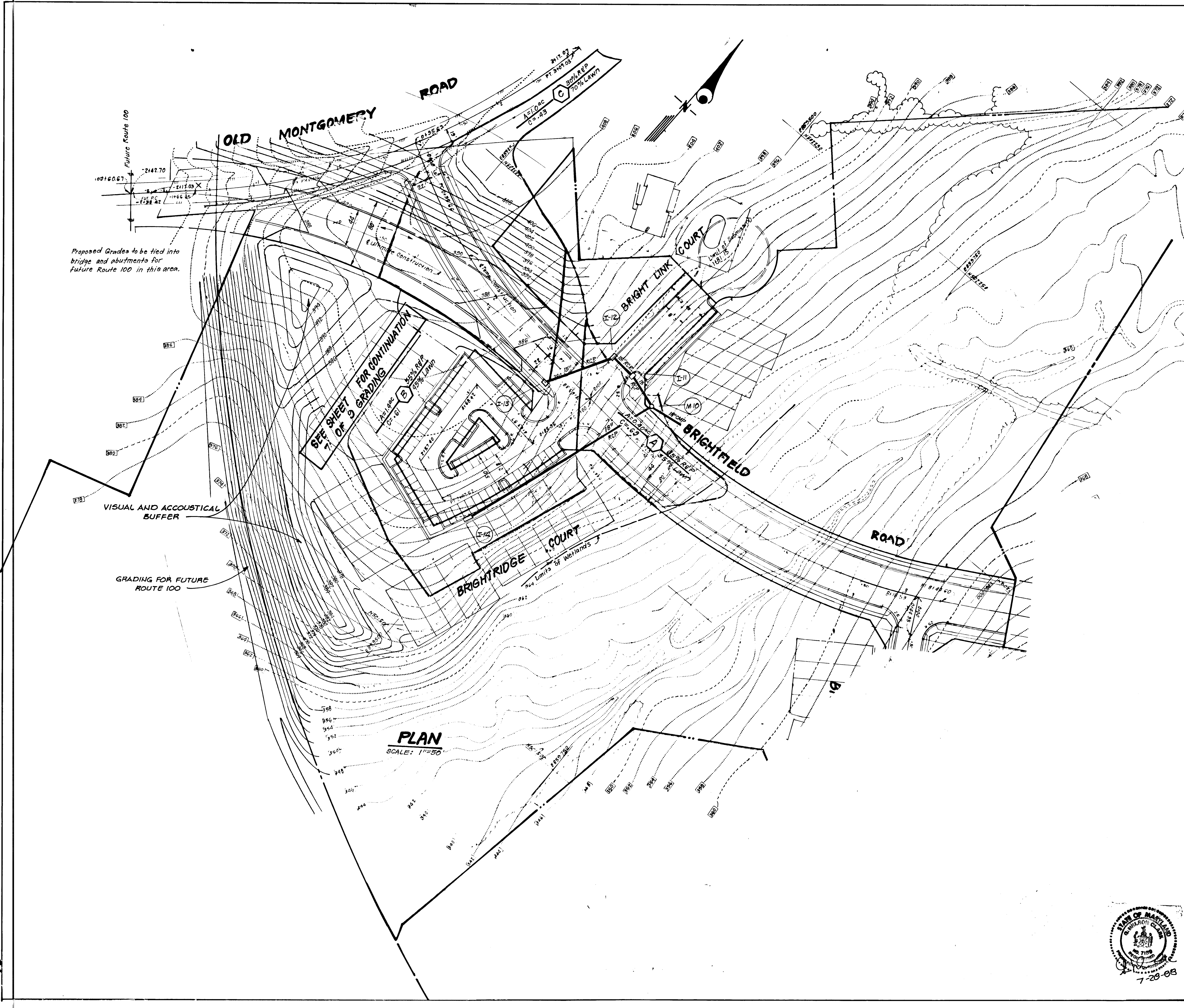
CLARK • FINEFROCK & SACKETT, INC.
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD. 21045 • (301) 381-7500 – BALTO. • (301) 621-8100 – WASH

DESIGNED JLS	ROAD CONSTRUCTION PLANS DRAINAGE AREA MAP AND SEDIMENT & EROSION CONTROL PLAN	SCALE 1" = 50'
DRAWN KIW	**BRIGHTFIELD** SECTION 1 AREA 1	DRAWING 7 OF 9
CHECKED JLS	1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND	JOB NO. 85.053
DATE 7-27-88	FOR: KINGS MEADE LIMITED PARTNERSHIP 9030 Red Branch Rd. # 200 Columbia Md. 21045	FILE NO. 85.053.D

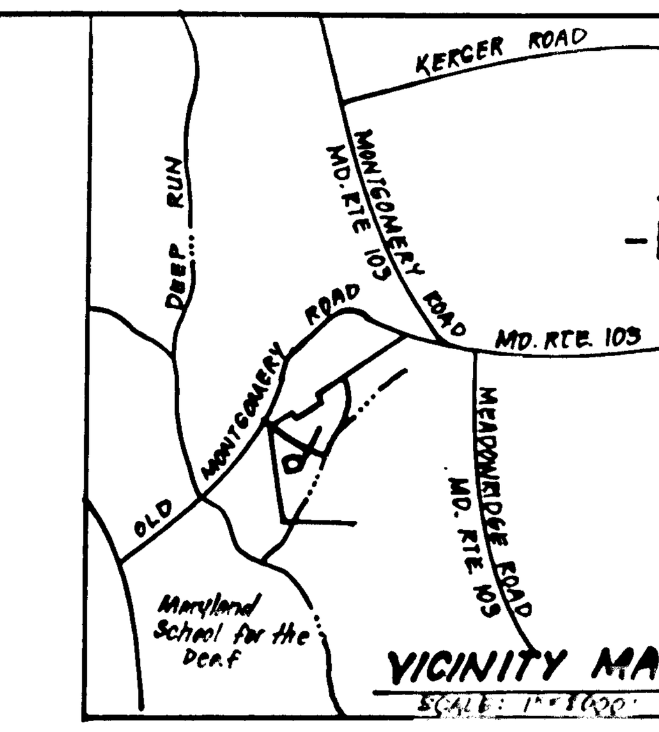
F-89-19

Approved Date

1321



PLAN
SCALE: 1"=50'



VICINITY MAP
SCALE: 1"=2000'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chief, Land Development Division	2/15/89 Date
Chief, Bureau of Highways	2/18/89 Date
Chief, Bureau of Engineering	2-21-89 Date

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING.

Chief, Division of Community Planning & Land Development	2-27-89 Date

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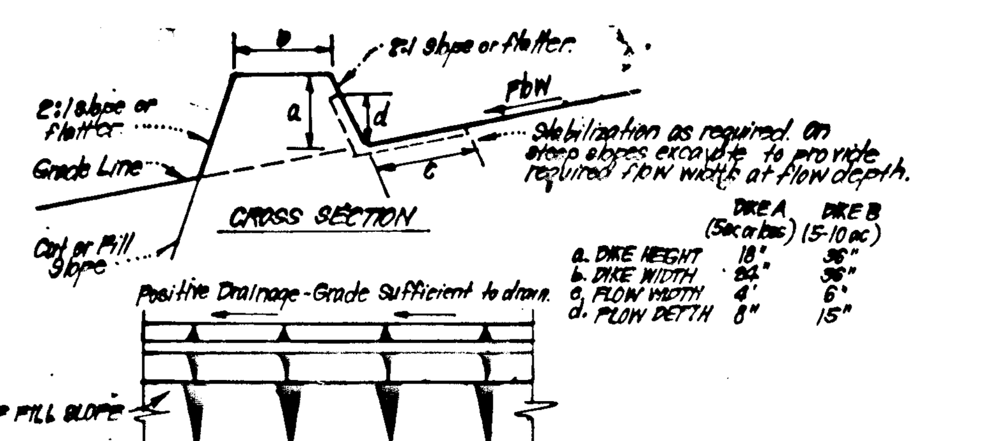
ENGINEERS • PLANNERS • SURVEYORS
7135 MINSTREL WAY • COLUMBIA, MD 21045 • (301) 381-7500 – BALTO • (301) 621-8100 – WASH

DESIGNED JLS	ROAD CONSTRUCTION PLANS ULTIMATE DRAINAGE AREA MAP AND GRADING PLAN **BRIGHTFIELD** SECTION 1 AREA 1 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE 1"=50'
DRAWN KIW		DRAWING 8 OF 9
CHECKED JLS		JOB NO 85-053
DATE 7-27-88	FOR: KINGS MEADE LIMITED PARTNERSHIP 9030 Red Branch Rd. # 200 Columbia Md. 21045	FILE NO. 85-053-D

7-28-88

F-89-19



CONSTRUCTION SPECIFICATIONS:

1. All dikes shall be compacted by earth-moving equipment.
2. All dikes shall have positive drainage to an outlet.
3. Top width may be wider and side slopes may be flatter if desired, to facilitate crossing by 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. Runoff shall be conveyed to a sediment trapping device such as a sediment trap or sediment basin where 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 seeding season, (B) flow channel as per chart below.

FLOW CHANNEL STABILIZATION

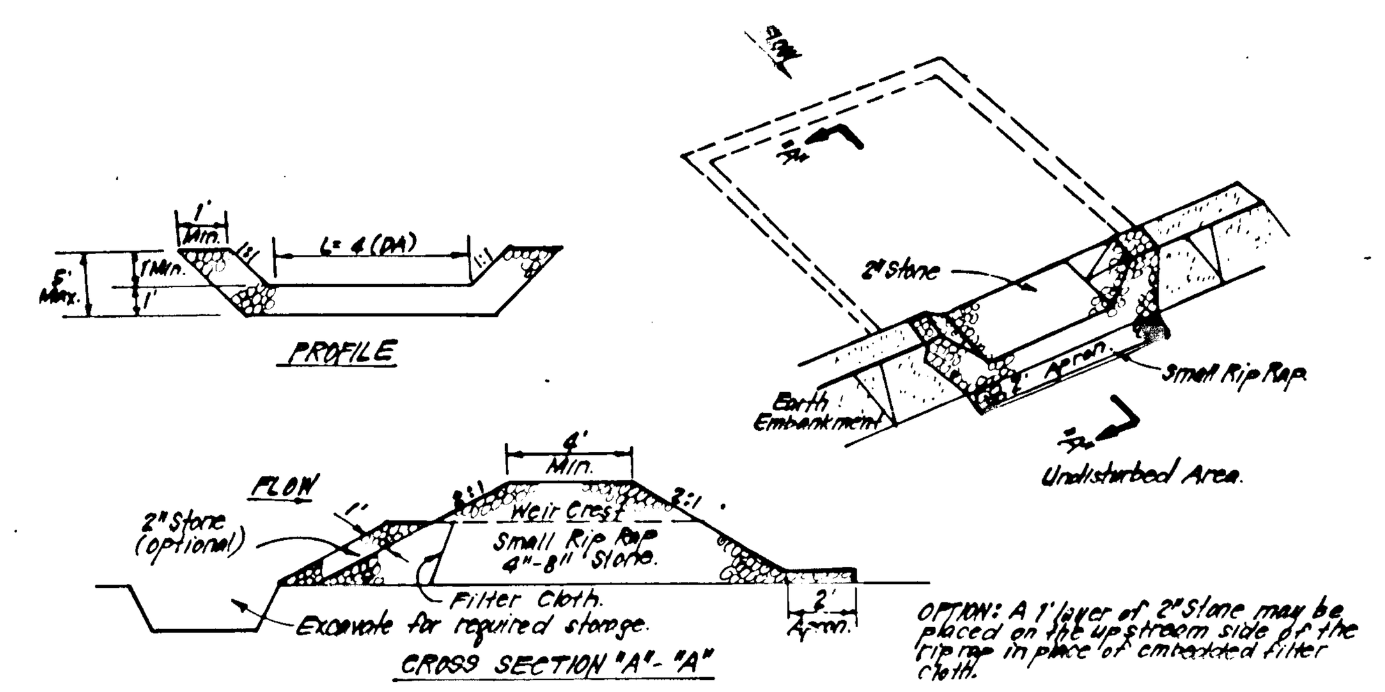
TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1.	0.5 - 3.0%	Seed & Straw Mulch	Seed or Straw Mulch
2.	3.1 - 5.0%	Seed & Straw Mulch	Seed w/Jute, or Excelsior; Sod; 2" Stone
3	5.1 - 8.0%	Seed w/Jute or Sod; 2" Stone	Lined Rip Rap 4"-8" Stone
4	8.1 - 20.0%	Lined Rip Rap 4-8" Stone	Engineering Design

A. Stone to be 2" Stone, or recycled concrete equivilent, in a layer at least 3" thick and be pressed into soil with construction equipment.
B. Rip Rap to be 4"-8" in a layer at least 8" thick, pressed into soil.
C. Approved equivalents can be substituted for any of the above materials.

7. Periodic Inspection and Required Maintenance must be provided after each rain.

EARTH DIKE DETAIL (E.D.)

NO SCALE



OPTION: A 1' layer of 2" Stone may be placed on the upstream side of the rip rap in place of embedded filter cloth.

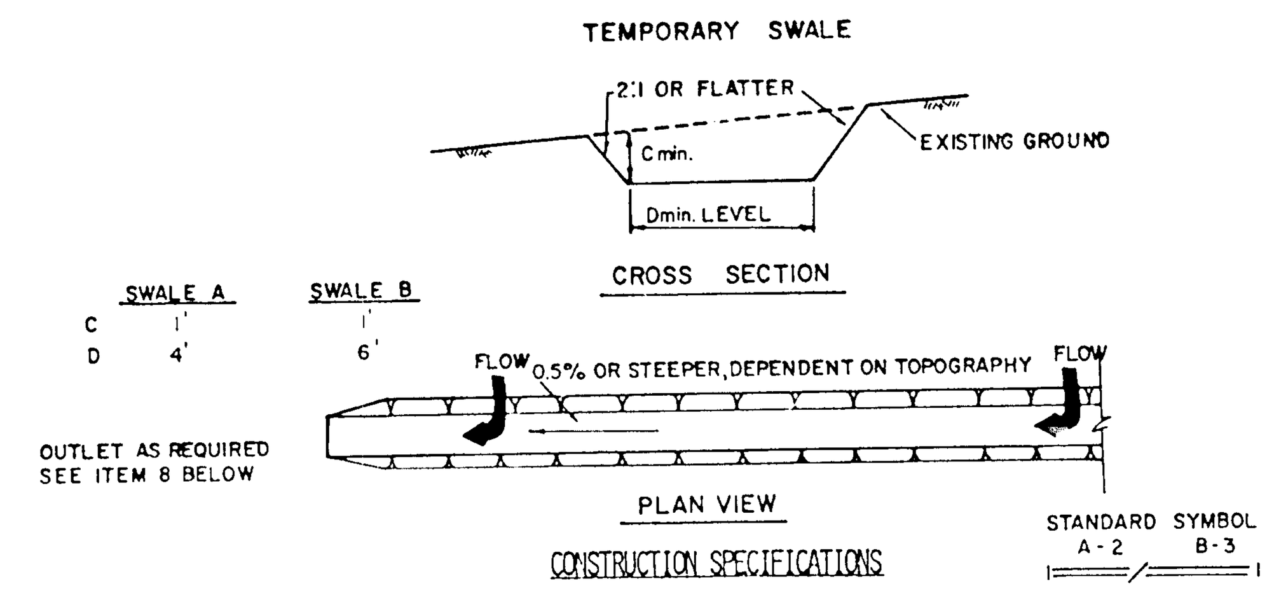
CONSTRUCTION SPECIFICATIONS:

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 rip-rap 4"-8" along with 1' thickness of 2" aggregate placed on the up-grade side on the small rip rap or embedded filter cloth in the rip rap.
5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to ½ 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 than erosion and water pollution is minimized.
8. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

STONE OUTLET SEDIMENT TRAP (S.O.S.T.) ST.V.

NO SCALE

TEMPORARY SWALE



STANDARD SYMBOL A-2 B-3

CONSTRUCTION SPECIFICATIONS

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 objectionable material 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 removed 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:

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	A (5 AC OR LESS)	B (5 AC - 10 AC)
1	0.5-3.0%	Seed and Straw Mulch	Seed and Straw Mulch
2	3.1-5.0%	Seed and Straw Mulch	Seed using Jute or Excelsior
3	5.1-8.0%	Seed with Jute or Excelsior; Sod	Lined Rip-Rap 4-8" Recycled Concrete Equivalent
4	8.1-20%	Lined 4-8" Rip-Rap	Engineered Design

9. Periodic inspection and required maintenance must be provided after each rain event.

SEDIMENT CONTROL NOTES

1) A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)
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: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4) All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chaper 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 seedings (Sec. 51) sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52.) Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
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 23.81 Acres
   - Area Disturbed 11.50 Acres
   - Area to be roofed or paved 2.30 Acres
   - Area to be vegetatively stabilized 9.20 Acres
   - Total Cut 77.750 Cu. yds
   - Total Fill 38 620 Cu. yds
   - Offsite waste/borrow area location Undetermined
8) Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9) Additional sediment control must be provided, if deemed necessary by the Howard County DPW sediment control inspector.
10) On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of 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.
11) If houses are to be constructed on an "As-Sold" basis, at random, Single Lot Sediment Control as shown below shall be implemented. N/A
12) All pipes to be blocked at the end of each day (see detail below).
13) The total amount of straw bale dikes/silt fence equals 940 L.F.

PERMANENT SEEDING NOTES

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

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

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

1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square ft) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq ft).
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 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 thre July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching - Apply 1½ to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring.

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

TEMPORARY SEEDING NOTES

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

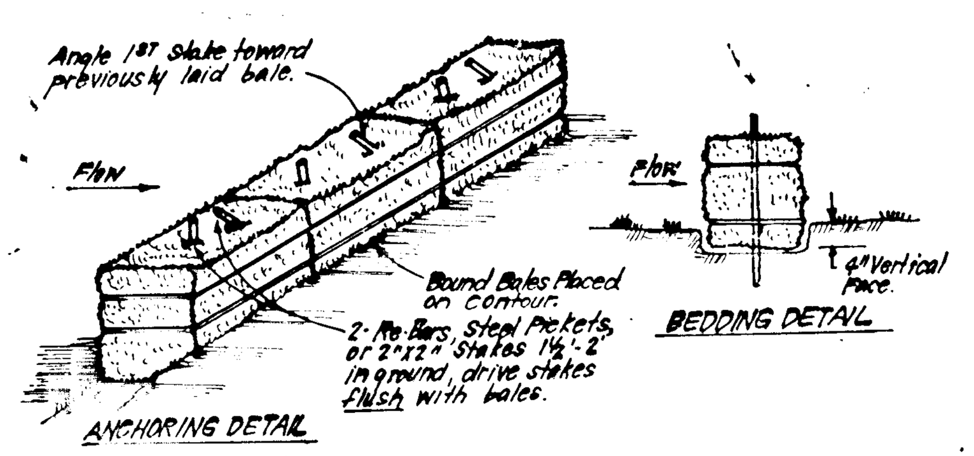
Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

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

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2½ 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 sod.

Mulching: Apply 1½ to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes, 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.

Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

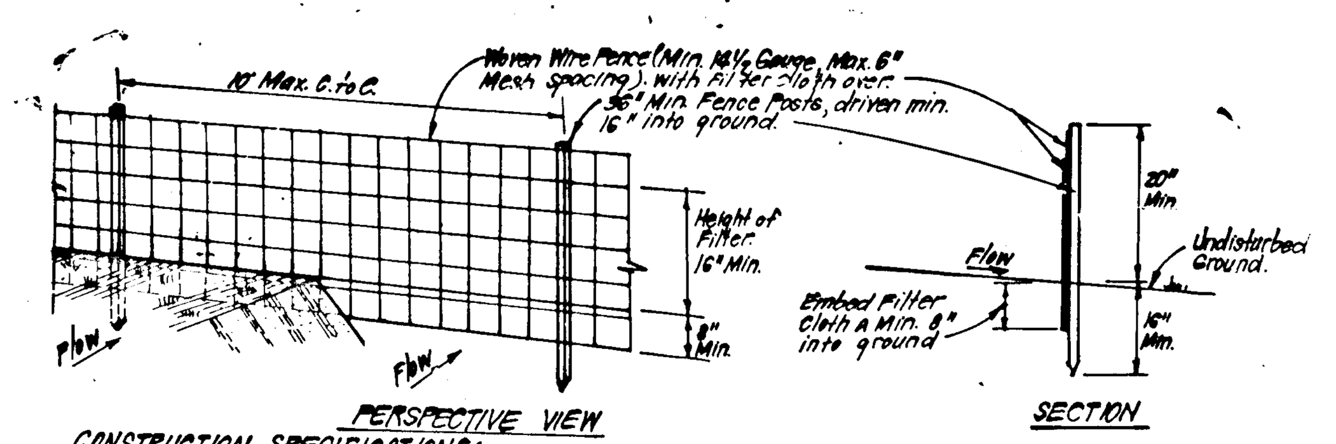


CONSTRUCTION SPECIFICATIONS:

1. Bales shall be placed at the Top of a Slope or on the contour and in a row with ends tightly abutting the adjacent bales.
2. Each bale shall be embedded in the soil a min. of 4" and placed so the bindings are horizontal.
3. Bales shall be securely anchored in place by either 2 stakes or re-bars driven thru the bale. The 1st stake in each bale shall be driven toward 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 impede storm flow or drainage.

STRAW BALE DIKE DETAIL (SBD)

NO SCALE



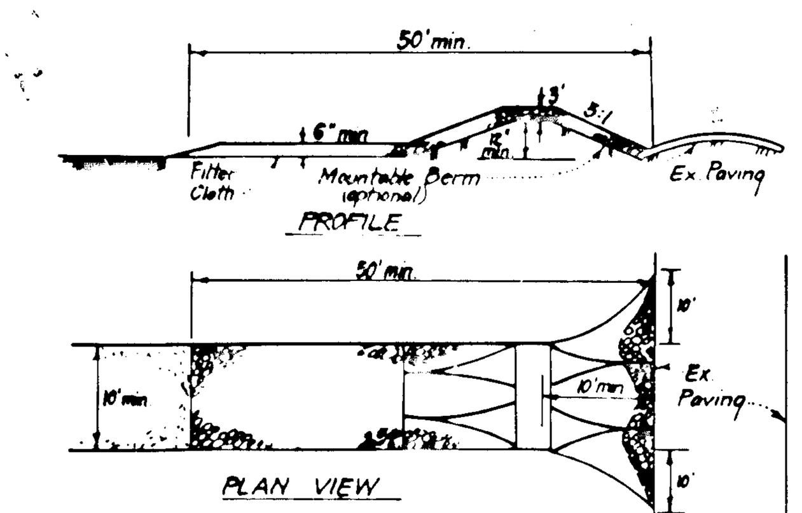
CONSTRUCTION SPECIFICATIONS:

1. Woven wire fence to be fastened securely to fence posts with wire ties or staples.
2. Filter cloth to be fastened securely to woven wire fence with ties spaced every 24" at top and mid section.
3. When 2 sections of filter cloth adjoin each other they shall be overlapped by 6" and folded.
4. Maintenance shall be performed as needed and material removed when "Bulges" develop in Silt Fence.

POSTS: Steel either T or U Type or 2" Hardwood.
FENCE: Woven Wire, 14½ Gage 6" Max. Mesh Opening.
FILTER CLOTH: Filter X, Mirafi 100X, Stablinka, T140N or Approv. equal
PREFABRICATED UNIT: Geofab, Envirofence, or Approv. equal

SILT FENCE DETAIL (SF)

NO SCALE

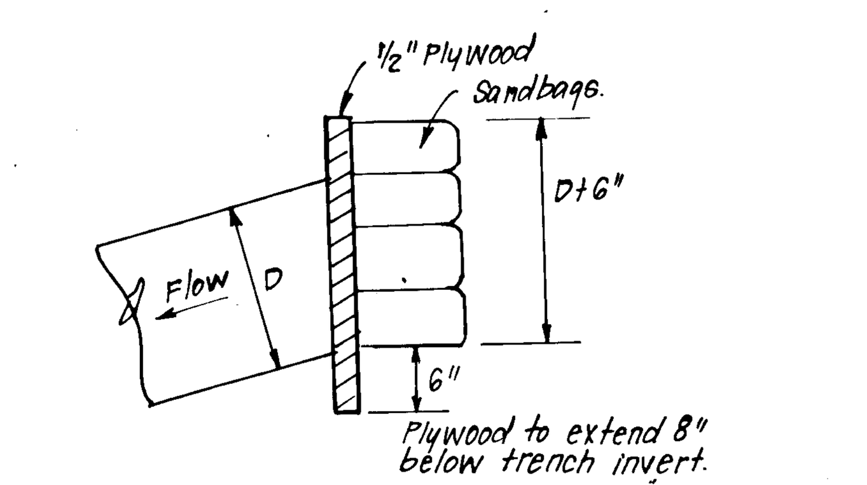


CONSTRUCTION SPECIFICATIONS:

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 5:1 slopes 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 cleanout 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.

STABILIZED CONSTRUCTION ENTRANCE (SCE)

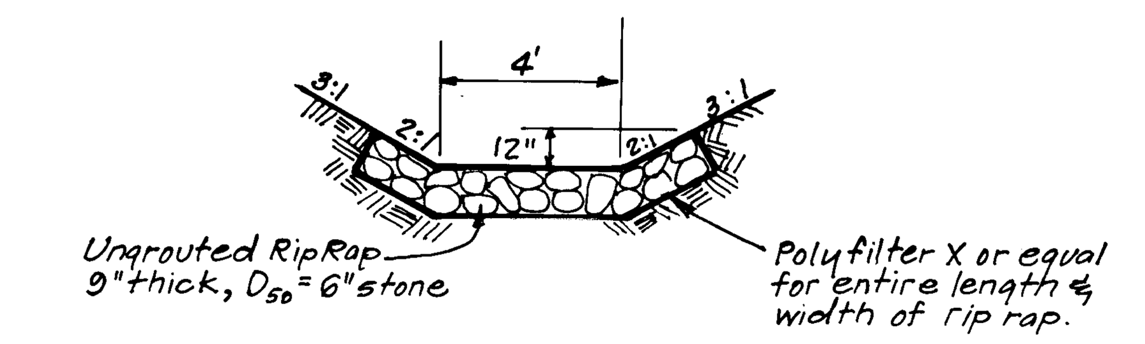
NO SCALE



PIPE BLOCKING DETAIL

NO SCALE

NOTE: Extend Rip Rap 5' into Trap Bottom.



UNGROUTED RIPRAP SWALE DETAIL @ STR. #4 & #15

NO SCALE

CONSTRUCTION SEQUENCE

		No. OF DAYS
1.	Obtain Grading Permit.	1
2.	Install Sediment Traps 1, 2 & 3, perimeter Dikes, Silt Fence & Stone Construction Entrance.	3
3.	Clear Area for Roadway Embankment Fill in Vicinity of S.W.M.	2
4.	Install structures S-1, I-2A & S-2 and all Connecting Pipes & Anti Seep Collars.	15
5.	Complete Embankment Fill Sta. 5+00 to 7+50 Install Storm Drains, S-8, M-9, I-15, S-3 & I-4, S-8 &S-3 to drain into traps #1 & 2.	15
6.	Complete grading site and install remainder of storm drains.	30
7.	All inlets to be kept open so as to drain to sediment traps #1 & 2.	1
8.	Construct Curb & Gutter, Sidewalk & Paving.	40
9.	Final grade and stabilize all disturbed areas.	15
10.	Remove temporary sediment control devices with approval of County Sediment control Inspector and stabilize.	5
11.	Traps #1 & 2 shall be cleaned out and area restored in accordance with the plans for water quality.	10

Reviewed for Howard S.C.D.
Name
and meets Technical Requirements
J. Helmig 2/7/89
Signature Date
U.S. Soil Conservation Service

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

R. Ziehm 2/7/89
Approved Date

DEVELOPER'S/BUILDER'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 Dept. 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."

Rodolph May Jr. 7/14/88
Signature of Developer/Builder Date

STATE OF MARYLAND G. NELSON CLARK NO. 7139 REGISTERED PROFESSIONAL ENGINEER
7-28-88

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.

G. Nelson Clark 7-28-88
G. Nelson Clark Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chief, Land Development Division	2/15/89 Date
Chief, Bureau of Highways	2/18/89 Date
Chief, Bureau of Engineering	2-21-89 Date

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING.

Chief, Division of Community Planning & Land Development	2-21-89 Date

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DESIGNED DAB	ROAD CONSTRUCTION PLANS SEDIMENT & EROSION CONTROL DETAILS	SCALE As Shown
DRAWN KIW	BRIGHTFIELD SECTION 1 AREA 1 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND	DRAWING 9 OF 9
CHECKED DAB		JOB NO. 85-053
DATE 7-27-88	FOR: KINGS MEADE LIMITED PARTNERSHIP 9030 Red Branch Rd. # 200 Columbia Md. 21045	FILE NO. 85-053-D

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