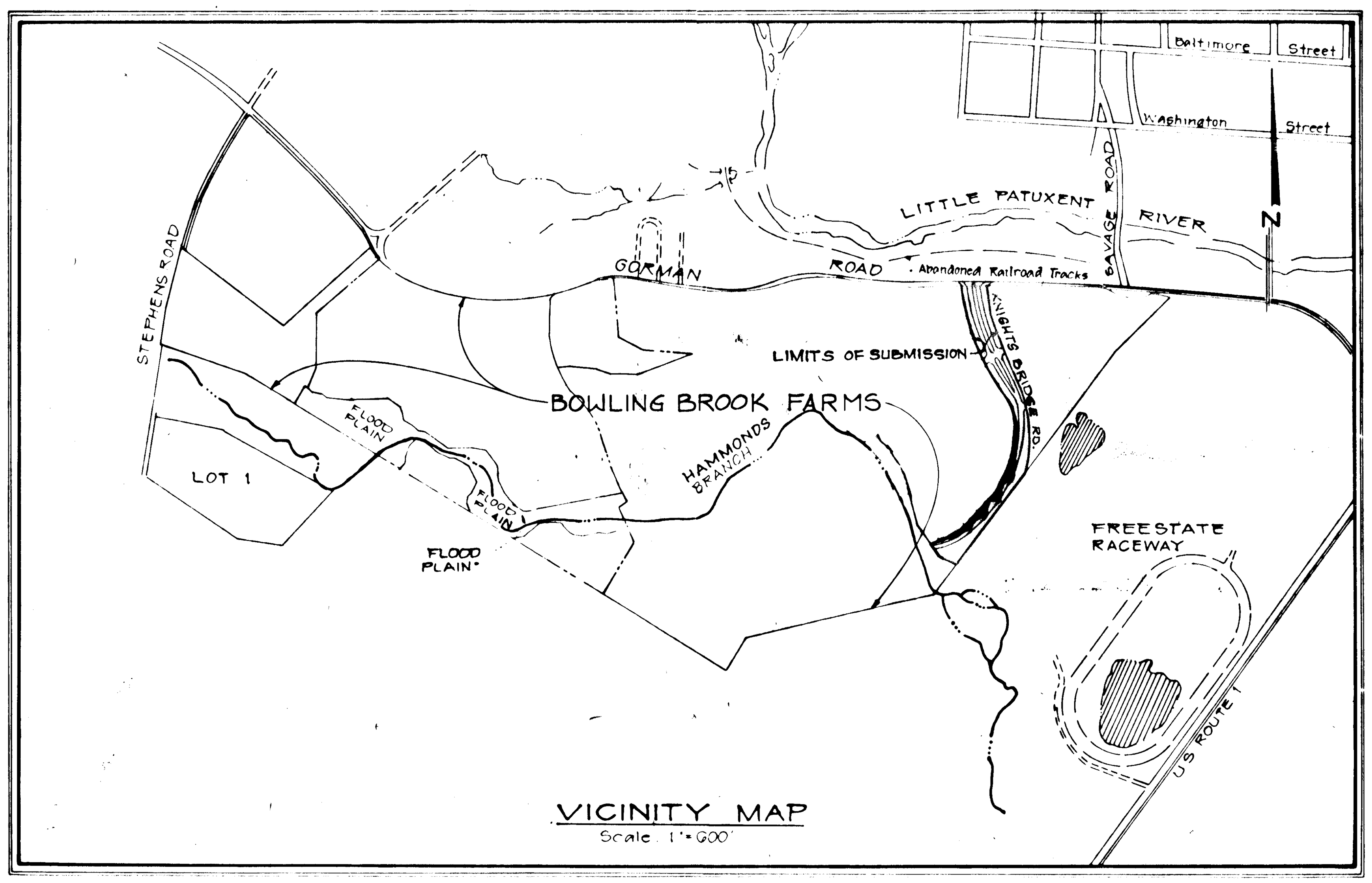
BOWLING BROOK FARMS
KNIGHTS BRIDGE ROAD

STRUCTURE SCHEDULE							
NO	TYPE	INV. IN	INV. OUT	UPPER END	LOWER END	HO.CO. STD.	℄ LOCATION
I-1	A-5 INLET 204.32 / 206.48	~~203.14 S~~ ~~206.03 W~~	203.38 ~~202.64~~	211.02 ~~210.49~~	210.93 ~~210.43~~	SD 4.01	℄ 0+75, 36'L
I-2	A-5 INLET	—	207.07 ~~206.75~~	210.59 ~~210.49~~	210.53 ~~210.43~~	SD 4.01	℄ 0+75, 36'R
I-3	A-5 INLET 207.33 / 208.23	~~206.20 S~~ ~~208.33 W~~	205.94 ~~205.70~~	213.13 ~~212.98~~	213.14 ~~212.93~~	SD 4.01	℄ 3+17.5, 36'L
I-4	A-5 INLET 209.48	~~209.55~~	209.04 ~~209.05~~	212.97 ~~212.98~~	212.92 ~~212.93~~	SD 4.01	℄ 3+17.5, 36'R
I-5	A-5 INLET 210.26 / 208.63	~~210.59 S~~ ~~208.53 W~~	208.63 ~~208.53~~	215.52 ~~215.49~~	215.36 ~~215.43~~	SD 4.01	℄ 5+62.5, 36'L
I-6	A-5 INLET 210.29	~~209.89~~	208.69 ~~208.59~~	215.54 ~~215.49~~	215.42 ~~215.43~~	SD 4.01	℄ 5+62.5, 36'R
I-7	A-5 INLET 215.54	~~215.45~~	214.64 ~~214.55~~	219.34 ~~219.32~~	219.34 ~~219.27~~	SD 4.01	℄ 9+20.5, 19'L
I-8	A-5 INLET	—	216.02 ~~215.83~~	219.34 ~~219.32~~	219.30 ~~219.27~~	SD 4.01	℄ 9+20.5, 19'R
I-9	A-5 w/deflector	—	209.84 ~~210.28~~	214.74 ~~214.48~~	213.94 ~~214.28~~	SD 4.01	℄ 14+52, 19'R
I-10	A-5 w/deflector 192.00	~~192.50~~	191.61 ~~191.75~~	196.10 ~~196.01~~	195.72 ~~195.70~~	SD 4.01	℄ 17+67.5, 19'R
I-11	A-5 w/deflector	190.98 ~~191.21~~	190.58 ~~190.71~~	196.04 ~~196.01~~	195.68 ~~195.70~~	SD 4.01	℄ 17+67.5, 19'L
* EX.MH	MANHOLE 201.11 / 201.71	~~201.75 W~~ ~~202.00 S~~	199.61 ~~200.25~~	—	—	—	See Plan
M-2	MANHOLE 213.43 / 213.43	~~213.39 W~~ ~~213.69 S~~	212.93 ~~212.89~~	218.33 ~~217.89~~	218.33 ~~217.83~~	SD. G-5.12	℄ 7+95
M-3	MANHOLE 207.57 / 207.67	~~208.00 N~~ ~~207.70 W~~	206.97 ~~207.20~~	211.57 ~~211.29~~	211.57 ~~211.05~~	S.D. G-5.12	℄ 15+10
M-4	MANHOLE	202.63 ~~202.80~~	201.73 ~~202.30~~	206.53 ~~206.21~~	206.53 ~~205.90~~	S.D. G-5.12	℄ 16+13
M-5	MANHOLE	183.24 ~~183.70~~	182.44 ~~181.40~~	188.94 ~~186.60~~	188.94 ~~186.40~~	S.D. G-5.13	See Plan
E-1	Flared End Section	181.04	181.10 ~~181.00~~	—	—	S.D. 5.52	See Plan

* CONTRUCTOR TO VERIFY LOCATION & INVERTS.



VICINITY MAP
Scale 1"=600'

GENERAL NOTES

1. THE APPROXIMATE LOCATION OF ALL UTILITIES IS SHOWN BASED ON INFORMATION OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR SHALL LOCATE, PROTECT AND SUPPORT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER/INSPECTOR, AT THE CONTRACTOR'S EXPENSE.
2. CONTRACTOR SHALL LOCATE EXISTING UTILITIES A MINIMUM OF TWO (2) WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS IN THE VICINITY OF PROPOSED UTILITIES AT HIS OWN EXPENSE.
3. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.

   STATE HIGHWAY ADMINISTRATION - 531-5533
   BALTIMORE GAS & ELECTRIC COMPANY - 561-2585 (CONTRACTOR SERVICES)
   BALTIMORE GAS & ELECTRIC COMPANY - 234-6313 (UNDERGROUND DAMAGE CONTROL)
   BALTIMORE GAS & ELECTRIC COMPANY - 298-9013 (TROUBLE SHOOTING)
   "MISS UTILITY" - 800-257-7777
   CHESAPEAKE & POTOMAC (C&P) TELEPHONE COMPANY - 725-9976
   BUREAU OF UTILITIES/HOWARD COUNTY - 992-2366
4. ALL DETAILS NOT SHOWN ON THE DRAWINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAILS.
5. ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH HOWARD COUNTY SPECIFICATIONS AND HOWARD COUNTY DESIGN MANUAL, VOLUME IV.
6. ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, LATEST EDITION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
7. TREES SHALL BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT POSSIBLE. TREES SIX INCH (6") DIAMETER OR GREATER (MEASURED FOUR FEET (4') ABOVE EXISTING GRADE) ADJACENT TO THE LIMITS OF CONSTRUCTION SHALL NOT BE REMOVED OR DAMAGED BY THE CONTRACTOR.
8. ALL HORIZONTAL AND VERTICAL CONTROLS ARE BASED ON MARYLAND STATE PLANE COORDINATES SYSTEM PROVIDED BY HOWARD COUNTY.
9. TOPOGRAPHY TAKEN FROM MAPS PREPARED BY PHOTOGRAMMETRY BY "AERIAL SURVEYS" IN 1984. TOPOGRAPHY FIELD CHECKED 1986.
10. ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS.
11. CLEAR ALL UTILITIES BY A MINIMUM OF 12" CLEAR, CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED. ANY COST INCURRED TO THE CONTRACTOR FOR TUNNELING OR BRACING AT POLES SHALL BE INCLUDED IN UNIT PRICES BID FOR EXCAVATION AND SHALL BE INCLUDED IN UNIT PRICES BID FOR EXCAVATION BACKFILL.
12. ALL PIPE BEDDING SHALL BE CLASS C.
13. ROAD RIGHT OF WAY INFORMATION IS SHOWN ON THE RECORD PLATS.
14. SPOT ELEVATIONS SHOWN ARE TOP OF CURB UNLESS OTHERWISE NOTED.
15. KNIGHTS BRIDGE ROAD DESIGN SPEED = 55 MPH
16. ZONING: RSA-8 for this submission

PLANT SCHEDULE

KEY	PLANT NAME	SIZE	QUANTITY	REMARKS
Z	ZELKOVA SERRATA "GREEN VASE" GREEN VASE ZELKOVA.	2 1/2"-3" CAL 12-14' HT.	36	
P	ACER PLATANOIDES "SUMMERSHADE" SUMMER SHADE MAPLE.	"	52	

LEGEND

PROPOSED STORM DRAIN — 230 15" RCP CL IV
PROPOSED CONTOURS
PROPOSED R/W
EXISTING CONTOURS — 214
LIMITS OF SUBMISSION
MANHOLE NUMBER — M-3
EASEMENT
HANDICAP RAMP — HCR

PAVING AND STORM DRAIN CONSTRUCTION PLANS
HOWARD COUNTY, MARYLAND

PIPE SCHEDULE			
DIA.	MATERIAL	CLASS	LENGTH (FT)
15"	RCP	V	216'
18"	RCP	IV	230'
18"	RCP	V	455'
21"	RCP	V	76'
24"	RCP	IV	95'
27"	RCP	IV	507'
27"	RCP	V	44'
15"	RCP	IV	54'

NOTES:

1. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO PLANTING (SEE NOTE #3 ABOVE).
2. ALL PLANT MATERIAL AND PLANTING SHALL BE IN ACCORDANCE WITH "AMERICAN STANDARD FOR NURSERY STOCK" BY THE A.A.N.
3. SUBSTITUTIONS MAY BE PERMITTED WITH THE APPROVAL OF THE LANDSCAPE ARCHITECT, (762-2220).
4. PLACE "GREEN VASE, ZELKOVA" AND "SUMMER SHADE MAPLE" AT THE CENTER BETWEEN THE CURB AND THE SIDEWALK ALONG THE ROADWAYS.

INDEX TO DRAWINGS

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENT
SIGNATURE — DATE 12-16-87

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY CONSERVATION DISTRICT.
APPROVED — HOWARD SCD — DATE 12-16-87

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Land Development Division — Date 1-5-87
Chief, Bureau of Highways — Date 1/6/88
Chief, Bureau of Engineering — Date 1.11.88

OWNER/DEVELOPER
GORMAN ROAD LIMITED PARTNERSHIP
C/O JAMES F. KNOTT DEVELOPMENT CORPORATION
110 WEST ROAD, SUITE 203
TOWSON, MARYLAND 21204
(801) 321-6436

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
Chief, Division of Land Development & COMMUNITY PLANNING — Date 2/22/88

NO.	DESCRIPTION	DATE	BY	APPROVED	DATE
	AS-BUILT REVISIONS		BP		5/7/91

REVISION APPROVED BY

STATE OF MARYLAND — RICHARD EDWARD TRAVERS — REGISTERED PROFESSIONAL ENGINEER — PROFESSIONAL SEAL

REVISED

TITLE SHEET

Patton Harris Rust and Associates
A Professional Corporation
Engineers, Surveyors, Planners and Landscape Architects
7609 Standish Place Rockville, Md. 20855 (301) 762-2220

BOWLING BROOK FARMS
KNIGHTS BRIDGE ROAD
A RESUBDIVISION OF BOLLING BROOKE, LOT 2
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SURVEY		DATE 10/8/87
DESIGN		
DRAWN		SHEET 1 OF 9
CHECKED		
SCALE C.I.		FILE NO. 2184-1-0

AS-BUILT F-88-40

PARCEL 'A' BOWLING BROOK FARMS

ZONE: RSA-8

KNIGHTS BRIDGE

50' B.R.L.

GORMAN ROAD

LOT 214

LOT 215
BOWLING BROOK FARMS
ZONE: RSA-8

PLAN: 1"=50'
PROFILE: 1"=50' HORIZ.
1"=5' VERT.

BRL = BUILDING RESTRICTION LINE. , RT.= RIGHT , LT.= LEFT

48+18.30 GORMAN RD=
0+00 KNIGHT BRIDGE RD
210

MATCH EX. PAV'T, CONC. S.W. AND C&G PER F-87-115

H.O. CO. GEODETIC SURVEY

BM# 29
60d NAIL IN 18" CEDAR
ELEV. = 225.98

(F-87-115)

LIMIT OF PAV'T AND C&G @ PT. OF CURB & GUTTER

27" RCP CL IV

18" RCP CL IV

15" RCP CL IV

54 L.F. OF PIPE FOR FUTURE CONNECTION BLOCK END OF PIPE W/ BRICK AND MORTAR

27 L.F. OF PIPE FOR FUTURE CONNECTION BLOCK END OF PIPE W/ BRICK AND MORTAR.

FOR CROSSWALK DETAIL SEE SHEET 5

216.23 CONC. MON SET

218.46 CONC. MON SET

NOTE:
@ STA. 4+80 RIGHT
PROVIDE 250 WATT MERCURY VAPOR LAMP PENDANT MOUNTED ON 30-FOOT GALVANIZED STEEL POLE

NOTE:
ALL SPOT ELEVATIONS ARE TOP OF CURB ELEVATIONS AND @ 45° OF DRIVEWAY RADII.

NOTE:
@ STA. 10+00 RIGHT
PROVIDE 250 WATT MERCURY VAPOR LAMP PENDENT MOUNTED ON 25-FOOT BRONZE ALUMINUM POLE.

10+00
25' LAMP

℄ CURVE DATA
PC. 0+64.01 to PT. 4+74.45
R= 950.00'
Δ= 28°45'14"
T= 208.47'
L= 410.44'
CHD= S 18°41'23"E 407.25'

℄ CURVE DATA
PC. 7+74.45 to PT. 13+24.45
R= 500.00'
Δ= 63°01'31"
T= 306.55'
L= 550.00'
CHD= S 0° 26'45"W 522.69'

BM# 57
60d NAIL IN 15" CEDAR 7± N. EAST
△= 1037 ELEV. 221.73

IPS 218.61

IPS 210.23

S 31° 57' 31" W 216'

MATCH LINE SEE SHEET 3

VICINITY MAP
SCALE 1" = 1500'

49,250E
72,600N

48,900E 73,250N

48,750E 72,750N

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Chief, Division of Land Development & COMMUNITY PLANNING — Date 2/22/88

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division — Date 1-5-87

Chief, Bureau of Highways — Date 1/6/87

Chief, Bureau of Engineering — Date 1-11-88

PROFILE

600' V.C.
550= 221.60'
E= 5.78'

BRL (RT.)

PROPOSED GRADE

EXISTING ℄ GRADE

BRL (LT.)

+1.00%

-6.88%

PARCEL 'A'

PARCEL 'B'

PARCEL 'C'

HIGH POINT

PVI=228.68

MATCH LINE SEE SHEET 3

0+00 = 181.63 GORMAN ROAD

℄ Sta. 0+97.00

5+16.45 = 0+00 FUTURE DRIVEWAY 'A'

0+00 FUTURE DRIVEWAY PARCEL 'B'

℄ Sta. 14+65

NO.	DESCRIPTION	DATE	APPROVED	DATE
1	AS-BUILT REVISIONS	BP		5/7/91

REVISION APPROVED BY

REVISED

PAVING & STORM DRAINAGE
CONSTRUCTION PLANS

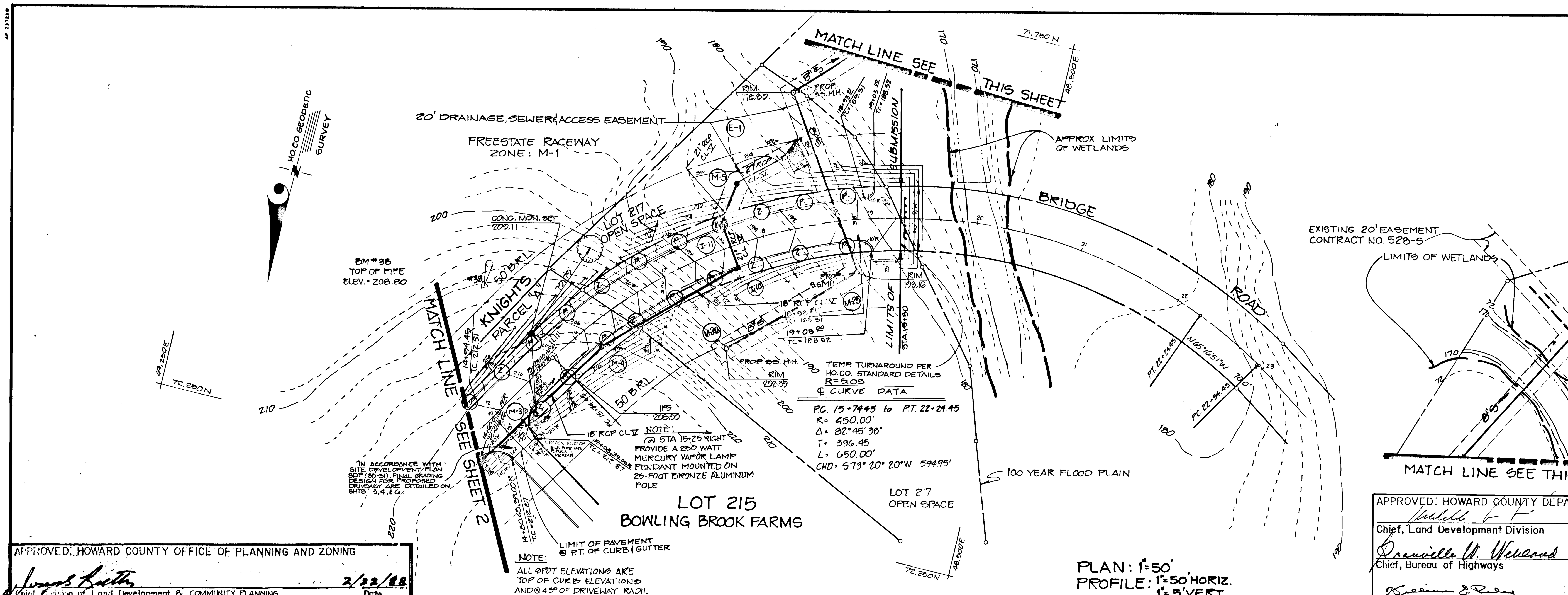
Patton Harris Rust and Associates
A Professional Corporation
Engineers, Surveyors, Planners and Landscape Architects
7609 Standish Place Rockville, Md. 20855 (301) 762-2220

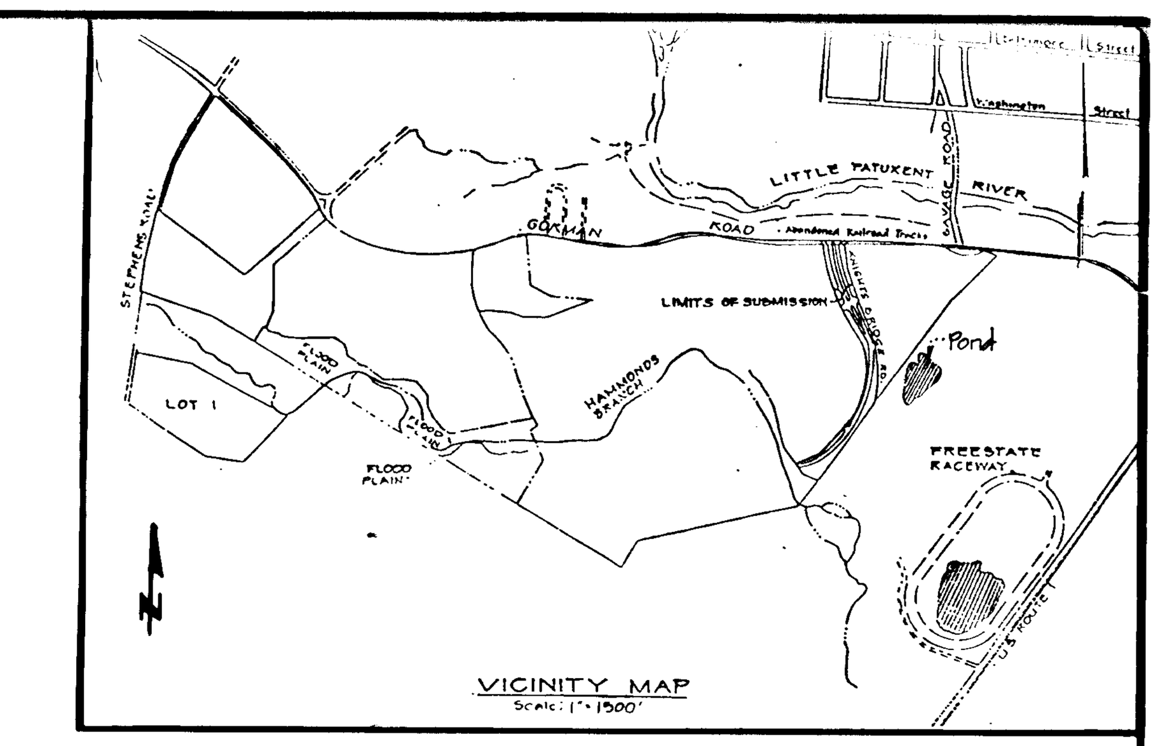
BOWLING BROOK FARMS
KNIGHTS BRIDGE ROAD
A RESUBDIVISION OF BOLLING BROOKE, LOT 2
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SURVEY PHR & A.	DATE 10/8/87
DESIGN MJK	
DRAWN JDW.	SHEET 2 OF 9
CHECKED	
SCALE 1"=50' C.I. 2'	FILE NO. 2184-1-0

AS-BUILT

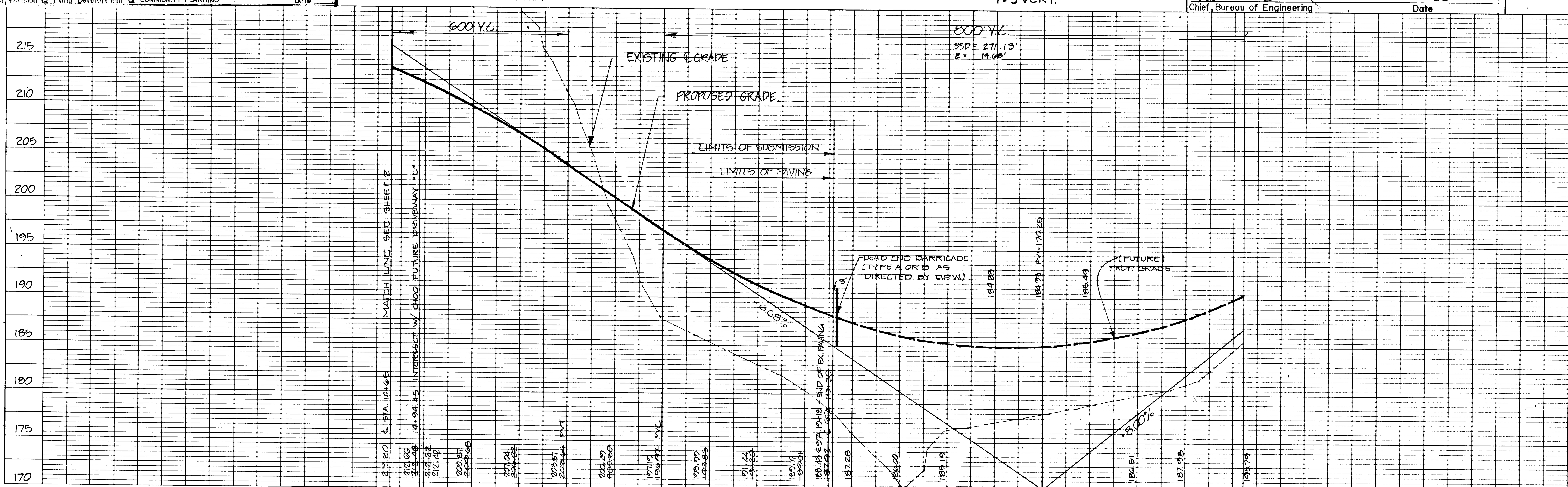
F-88-40





APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
2/22/88
Chief, Division of Land Development & COMMUNITY PLANNING — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
1-5-8? — Chief, Land Development Division — Date
1-6/88 — Chief, Bureau of Highways — Date
1-11-88 — Chief, Bureau of Engineering — Date



1	AS-BUILT REVISIONS	BP		5/7/91
NO.	DESCRIPTION	DATE	APPROVED	DATE

REVISION APPROVED BY

PROFESSIONAL SEAL

REVISED

PAVING & STORM DRAINAGE

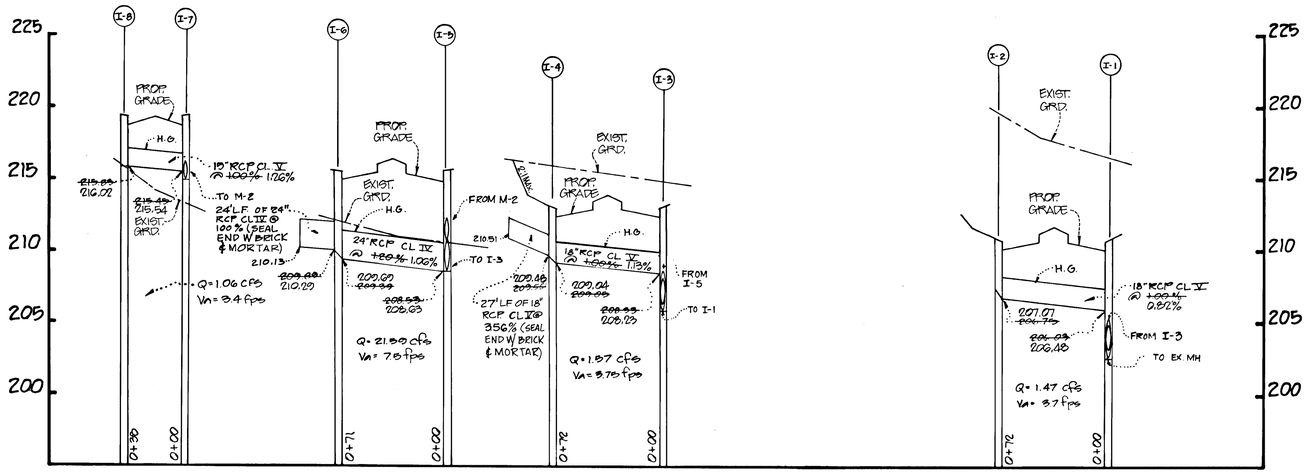
Patton Harris Rust and Associates
A Professional Corporation
Engineers, Surveyors, Planners and Landscape Architects
7609 Standish Place Rockville, Md. 20855 (301) 762-2220

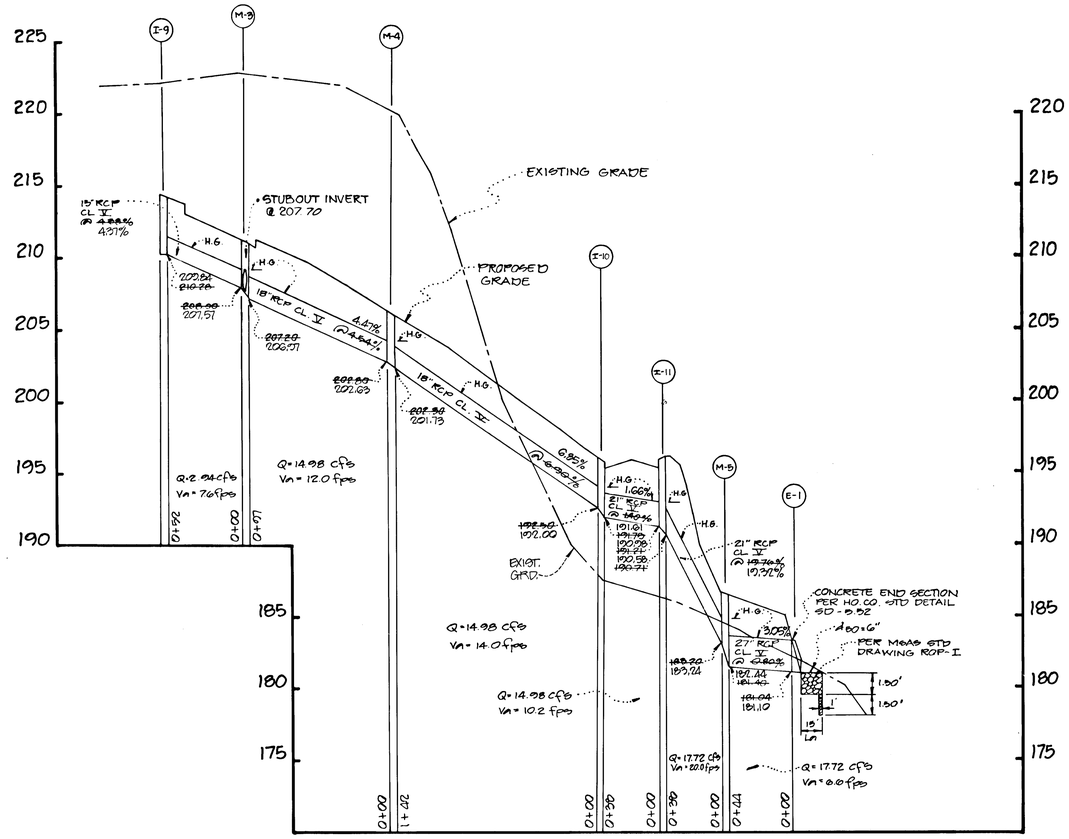
BOWLING BROOK FARMS
KNIGHTS BRIDGE ROAD
A RESUBDIVISION OF BOLLING BROOKE, LOT 2
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

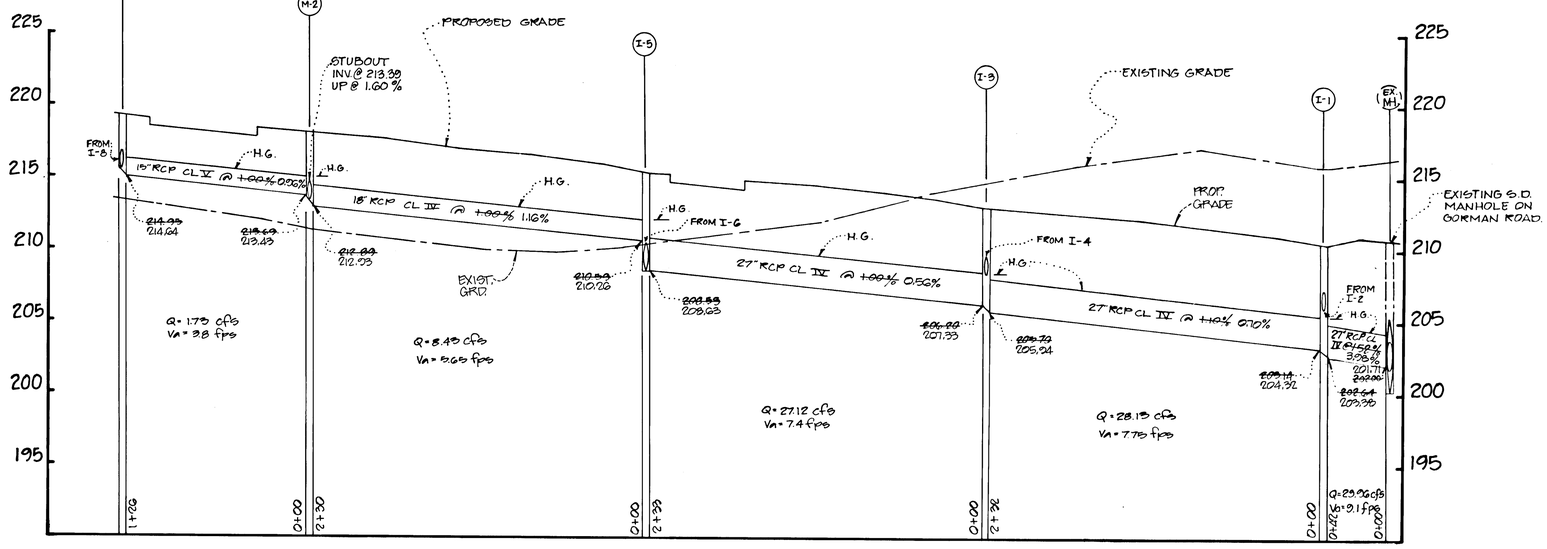
SURVEY		DATE	10/8/87
DESIGN	MJK		
DRAWN	JDW	SHEET	3 OF 9
CHECKED			
SCALE	1"=50'	FILE NO.	2184-1-0
C.I.	2'		

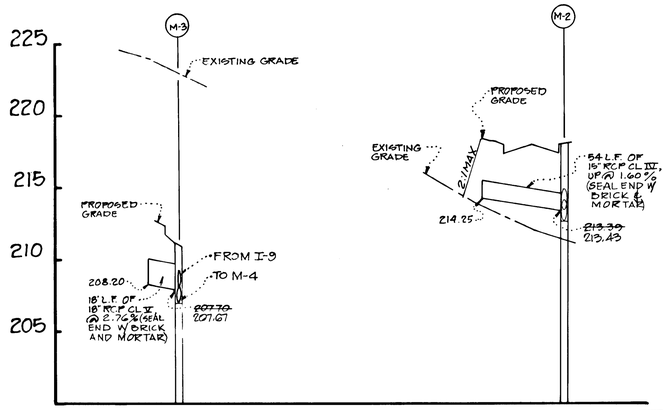
AS-BUILT

F-88-40









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

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Chief, Division of Land Development & COMMUNITY PLANNING — Date 2/22/88

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division — Date 1-5-88

Chief, Bureau of Highways — Date 1/6/88

Chief, Bureau of Engineering — Date 1-4-88

NO.	DESCRIPTION	DATE	APPROVED	DATE
1	AS-BUILT REVISIONS	BP		5/7/01

REVISION APPROVED BY

STATE OF MARYLAND — RICHARD EDWARD HARRIS — No. 21599 — PROFESSIONAL ENGINEER — PROFESSIONAL SEAL

REVISED

STORM DRAIN PROFILES

Patton Harris Rust and Associates
A Professional Corporation
Engineers, Surveyors, Planners and Landscape Architects
7609 Standish Place Rockville, Md. 20855 (301) 762-2220

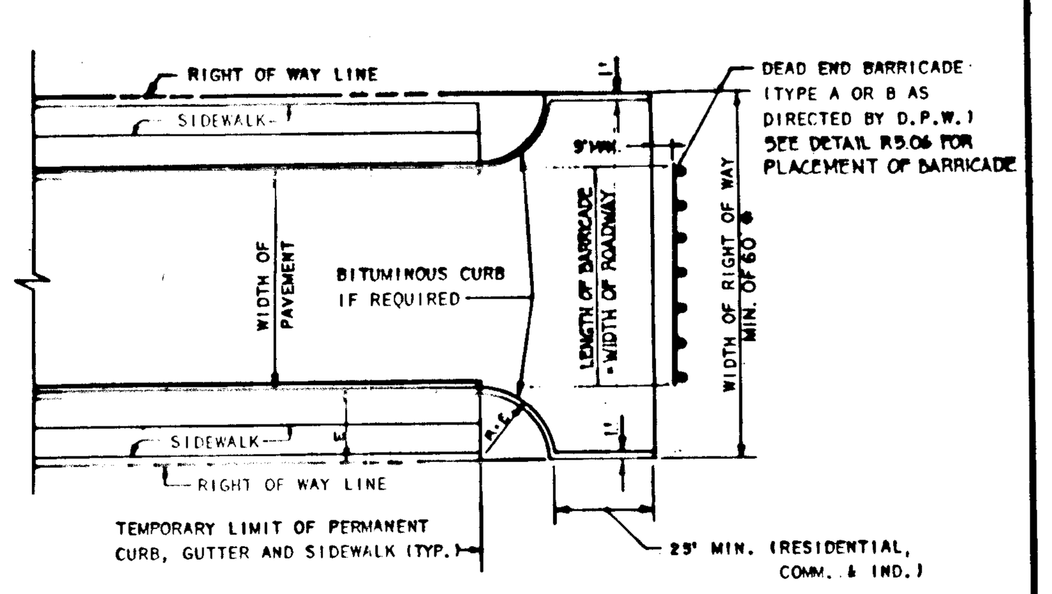
BOWLING BROOK FARMS

KNIGHTS BRIDGE ROAD
A RESUBDIVISION OF BOLLING BROOKE, LOT 2
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SURVEY P.H.R&A	DATE 10/8/87
DESIGN M.J.K.	
DRAWN J.D.W.	SHEET 4 OF 9
CHECKED	
SCALE C.I.	FILE NO. 2184-1-D

AS-BUILT

F-88-40

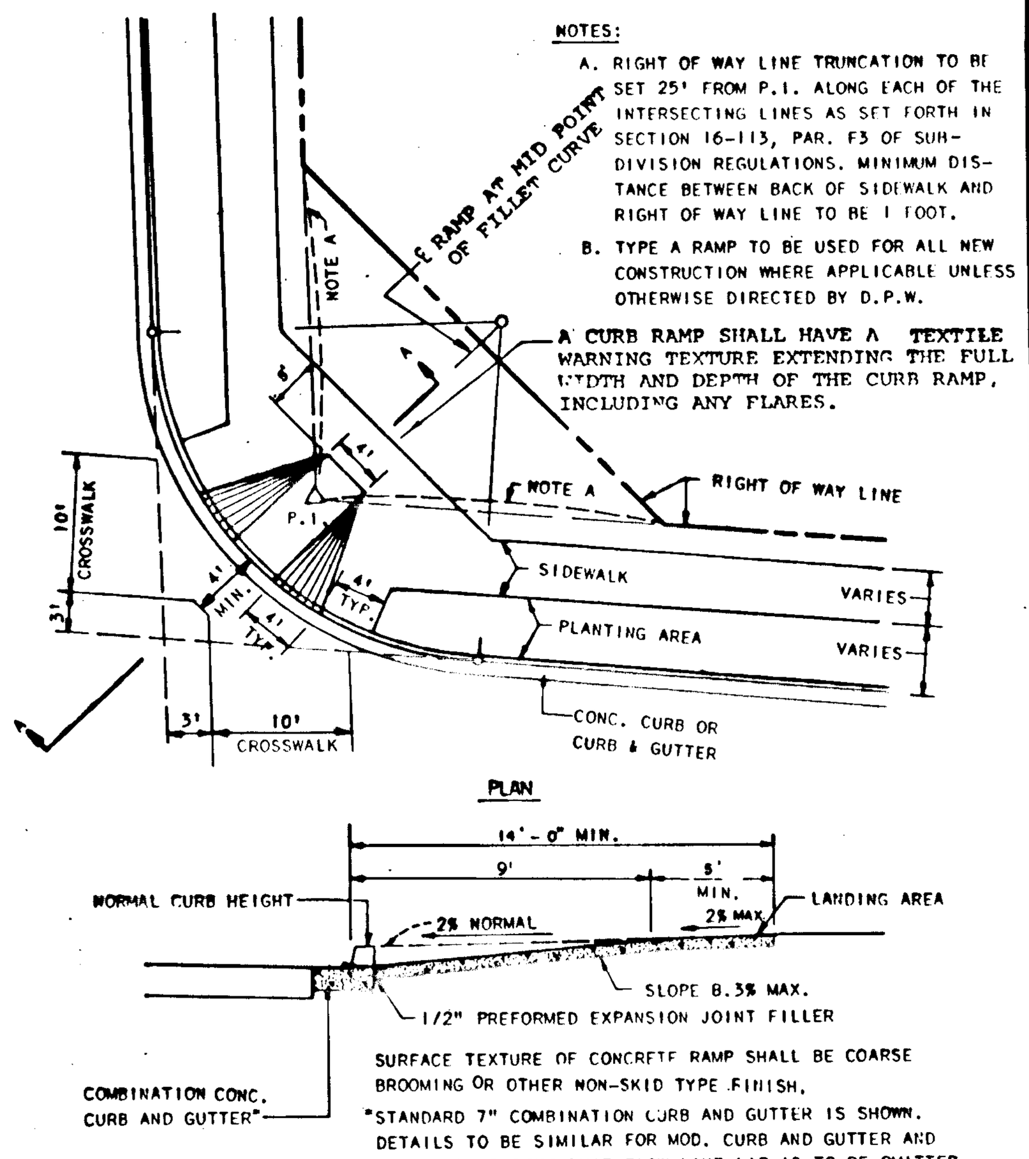


NOTES:

1. A TEE TURN-AROUND SHALL BE USED IN LIEU OF A CUL-DE-SAC ONLY IF THE STREET IS TO BE EXTENDED IN THE FUTURE.
2. BITUMINOUS CURB SHALL EXTEND AROUND THE TEE TURN-AROUND IF AND AS REQUIRED TO CONTROL CURB DRAINAGE FROM THE ROADWAY SECTION.
3. REFER TO STANDARD R-5.06 FOR TYPICAL ROADWAY PROFILE OF TEMPORARY LIMIT OF PAVING.
✱ FOR LOCAL ROADS, PROVIDE 5' REVERTIBLE EASEMENT EACH END OF THE TEE.
4. PROVIDE EASEMENTS AS REQUIRED FOR PLACEMENT OF BARRICADE AND ANY NECESSARY GRADING (SEE DETAIL R5.06)

REV. JAN. 1985

HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS Approved [signature] 1-12-81 Chief-Bureau of Engineering	TEMPORARY TEE TURN-AROUND	DRAWN BY W.T. BALLARD; CHECKED BY J.L.R.; NO SCALE; R-5.05



NOTES:

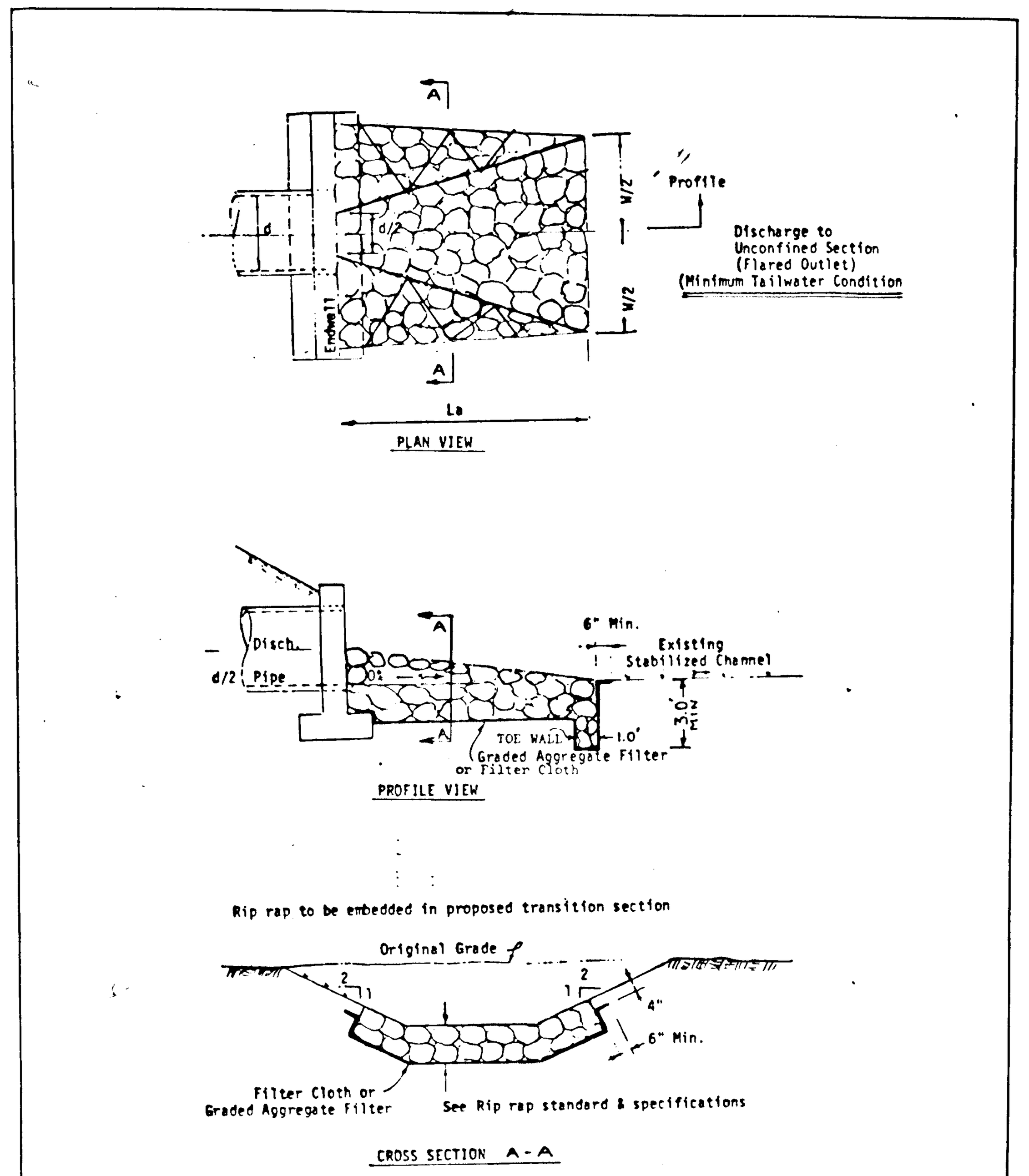
A. RIGHT OF WAY LINE TRUNCATION TO BE SET 25' FROM P.I. ALONG EACH OF THE INTERSECTING LINES AS SET FORTH IN SECTION 16-113, PAR. F3 OF SUB-DIVISION REGULATIONS. MINIMUM DISTANCE BETWEEN BACK OF SIDEWALK AND RIGHT OF WAY LINE TO BE 1 FOOT.
B. TYPE A RAMP TO BE USED FOR ALL NEW CONSTRUCTION WHERE APPLICABLE UNLESS OTHERWISE DIRECTED BY D.P.W.

SURFACE TEXTURE OF CONCRETE RAMP SHALL BE COARSE BROOMING OR OTHER NON-SKID TYPE FINISH.

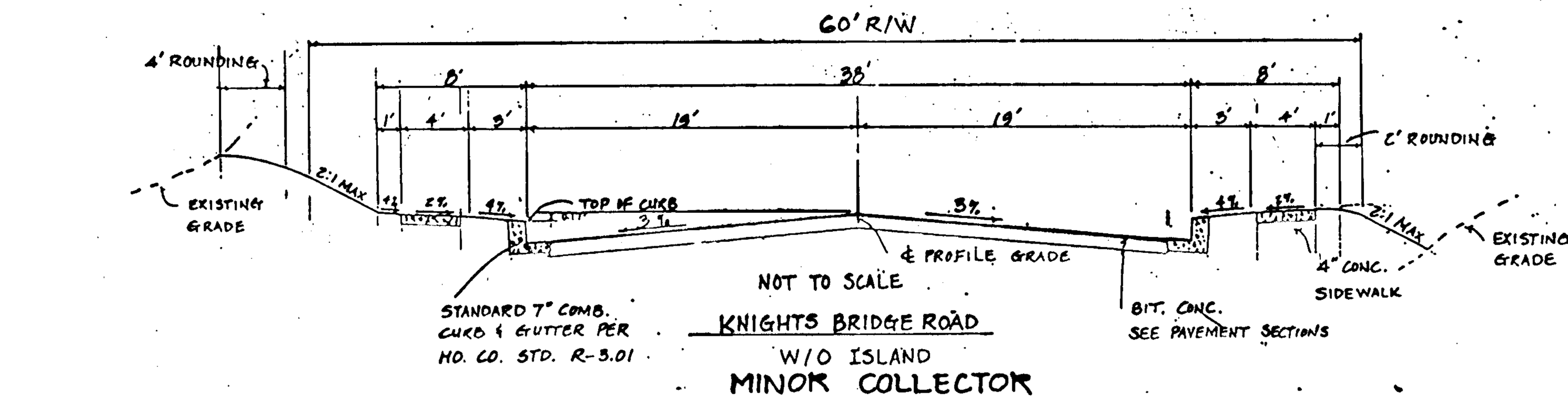
*STANDARD 7" COMBINATION CURB AND GUTTER IS SHOWN. DETAILS TO BE SIMILAR FOR MOD. CURB AND GUTTER AND BIT. CURB EXCEPT THAT FLOW LINE LIP IS TO BE OMITTED.

REV. MAR. 1986

HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS Approved [signature] 1-12-81 Chief-Bureau of Engineering	SIDEWALK RAMP TYPE A	DRAWN BY W.T. BALLARD; CHECKED BY J.L.R.; NO SCALE; R-4.01

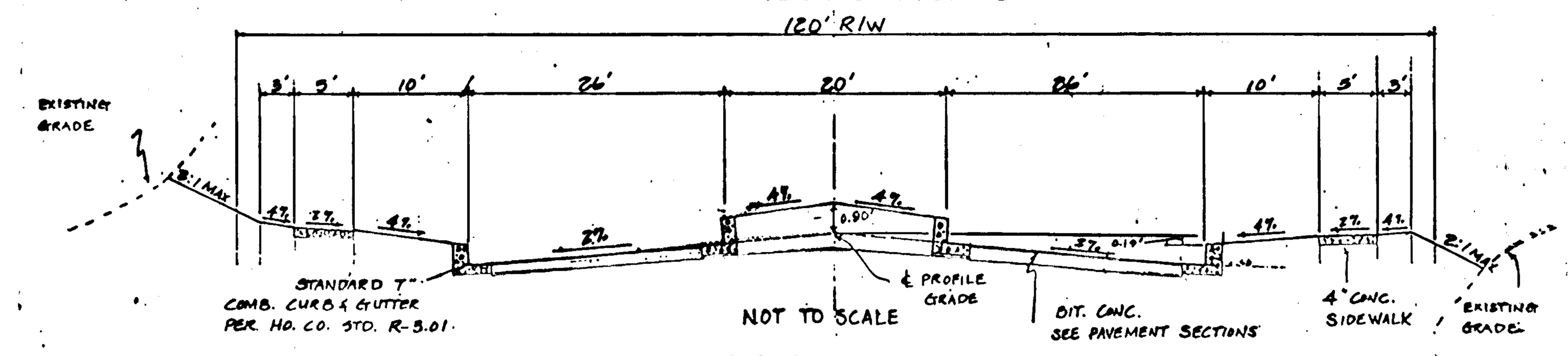


U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	RIPRAP OUTLET PROTECTION-I	STANDARD DRAWING ROP-1



KNIGHTS BRIDGE ROAD
W/O ISLAND
MINOR COLLECTOR

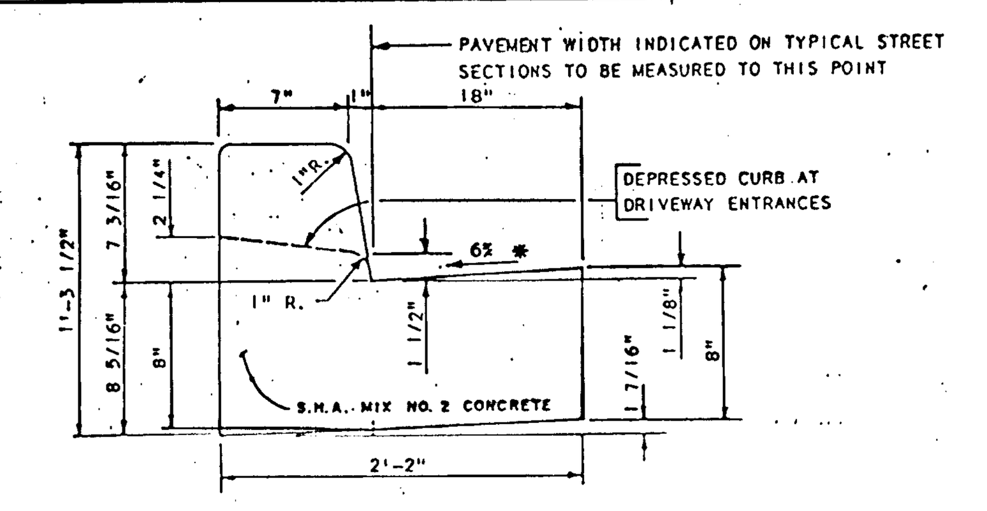
STA. 7+74.45 TO STA. 19+50
DESIGN SPEED = 40 MPH
ZONE: RSA-8



KNIGHTS BRIDGE ROAD
W/ ISLAND
MODIFIED MAJOR COLLECTOR

STA. 0+00 TO STA. 5+53.57
DESIGN SPEED = 40 M.P.H.
ZONE: RSA-8

RIGHT OF WAY VARIES BETWEEN
STA. 5+53.57 AND STA. 7+74.45
DESIGN SPEED = 40 M.P.H.
ZONE: RSA-8

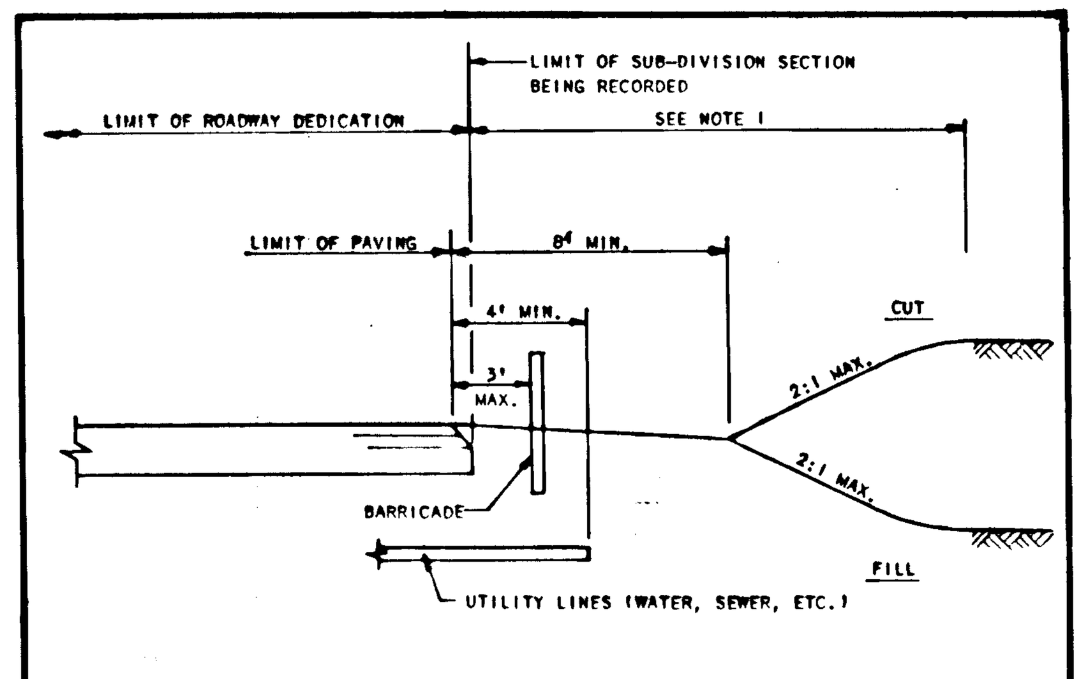


STANDARD 7" COMBINATION CURB AND GUTTER

* GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MODIFIED CURB AND GUTTER.

REV. MAR. 1986

HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS Approved [signature] 1-12-81 Chief-Bureau of Engineering	COMBINATION CURB AND GUTTER	DRAWN BY W.T. BALLARD; CHECKED BY J.L.R.; NO SCALE; R-3.01



NOTES:

1. GRADING, UTILITY EXTENSIONS, BARRICADE AND OTHER FACILITIES BEYOND THE PAVEMENT LIMIT SHALL BE PLACED ON THE LAND WHICH IS PART OF THE NEXT SECTION OF THE SAME SUB-DIVISION OR ON THE NEIGHBORING PROPERTY WHERE A MUTUAL AGREEMENT WITH THE OWNER THEREOF CAN BE OBTAINED.
2. PROVISIONS FOR HANDLING DRAINAGE, INCLUDING EROSION CONTROL FACILITIES, SHALL BE PLACED AT THE LIMIT OF WORK AS REQUIRED.

HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS Approved [signature] 1-12-81 Chief-Bureau of Engineering	TYPICAL ROADWAY PROFILE AT TEMPORARY LIMIT OF PAVING	DRAWN BY W.T. BALLARD; CHECKED BY J.L.R.; NO SCALE; R-5.06

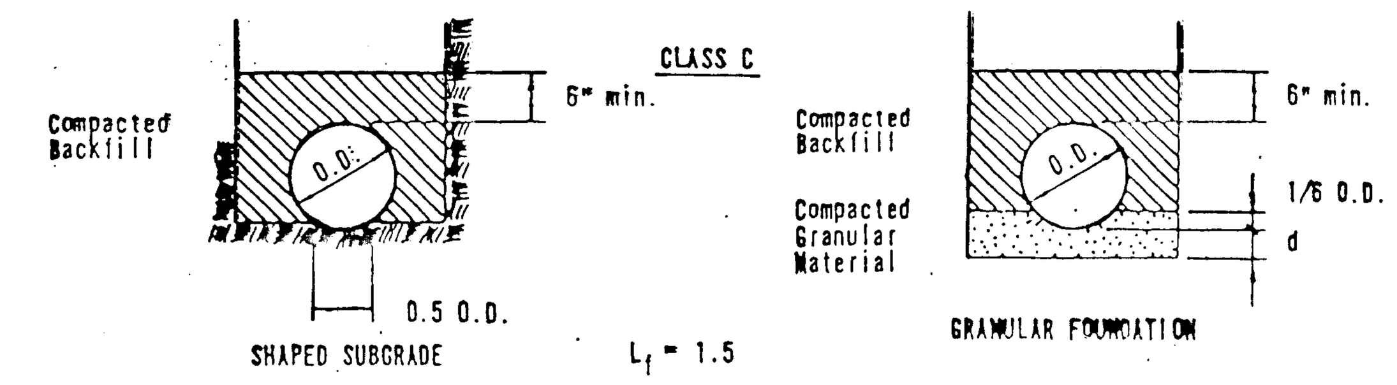
✱ USE P-3 FOR ALL PAVING SECTIONS.

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	PAVEMENT MATERIALS: FULL DEPTH BIT. CONC. ALTERNATE	PAVEMENT MATERIALS: GRANULAR BASE ALTERNATES
P-1	PARKING AREAS AND TRAVELWAYS APARTMENTS AND COMMERCIAL-INDUSTRIAL ZONES WITH NO HEAVY TRUCKS	1" BIT. CONC. SURFACE; 4" BIT. CONC. BASE	1" BIT. CONC. SURFACE; 2" BIT. CONC. BASE; PRIME; 5" CRUSHER RUN BASE COURSE OR 4" DENSE GRADED STABILIZED AGGREGATE BASE COURSE
P-2	RESIDENTIAL ZONES LOCAL, CUL-DE-SAC STS. ALLEYS AND PRIVATE ROADS SERVING INDIVIDUAL LOTS; PARKING AREAS APARTMENTS AND COMMERCIAL-INDUSTRIAL ZONES WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY*	1 1/2" BIT. CONC. SURFACE; 5" BIT. CONC. BASE	1 1/2" BIT. CONC. SURFACE; 2 1/2" BIT. CONC. BASE; PRIME; 8" CRUSHER RUN BASE COURSE (2 COURSES) OR 6" DENSE GRADED STABILIZED AGGREGATE BASE COURSE
✱ P-3	RESIDENTIAL ZONES MINOR AND MAJOR COLLECTORS; COMMERCIAL-INDUSTRIAL ZONES LOCAL AND CUL-DE-SAC STREETS ALLEYS; PARKING AREAS APARTMENTS AND COMMERCIAL-INDUSTRIAL ZONES WITH MORE THAN 10 HEAVY TRUCKS PER DAY*	1 1/2" BIT. CONC. SURFACE; 1 1/2" BIT. CONC. BASE; 5" BIT. CONC. BASE	1 1/2" BIT. CONC. SURFACE; 4 1/2" BIT. CONC. BASE; PRIME; 6" CRUSHER RUN BASE COURSE OR 4 1/2" DENSE GRADED STABILIZED AGGREGATE BASE COURSE
P-4	COMMERCIAL-INDUSTRIAL ZONES MINOR COLLECTOR	1 1/2" BIT. CONC. SURFACE; 3 1/2" BIT. CONC. BASE; 5" BIT. CONC. BASE	1 1/2" BIT. CONC. SURFACE; 1 1/2" BIT. CONC. BASE; 5" BIT. CONC. BASE; PRIME; 5" CRUSHER RUN BASE COURSE OR 4" DENSE GRADED STABILIZED AGGREGATE BASE CRSE.

* HEAVY TRUCKS DEFINED AS THOSE WITH 6 WHEELS OR MORE.

REV. JAN. 1982

HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS Approved [signature] 1-12-81 Chief-Bur. of Engr. Date	PAVING SECTIONS P-1 THROUGH P-4	DRAWN BY W.T. BALLARD; CHECKED BY J.L.R.; NO SCALE; R-2.01



DEPTH OF BEDDING MATERIAL BELOW PIPE	
D	d(min.)
27" & smaller	3"
30" thru 60"	4"
66" & larger	6"

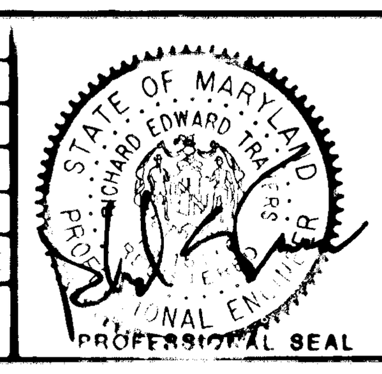
APPROVED: [signature] Chief. Bur. of Eng.	HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS PIPE BEDDING CLASSES	Figure 11.4; Date 5-15-78; Revised

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
[signature] 2/22/88
Chief, Division of Land Development & COMMUNITY PLANNING — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[signature] 1-5-87
Chief, Land Development Division — Date
[signature] 1/6/88
Chief, Bureau of Highways — Date
[signature] 1-11-88
Chief, Bureau of Engineering — Date

NO.	DESCRIPTION	DATE	APPROVED	DATE

REVISION APPROVED BY



REVISED

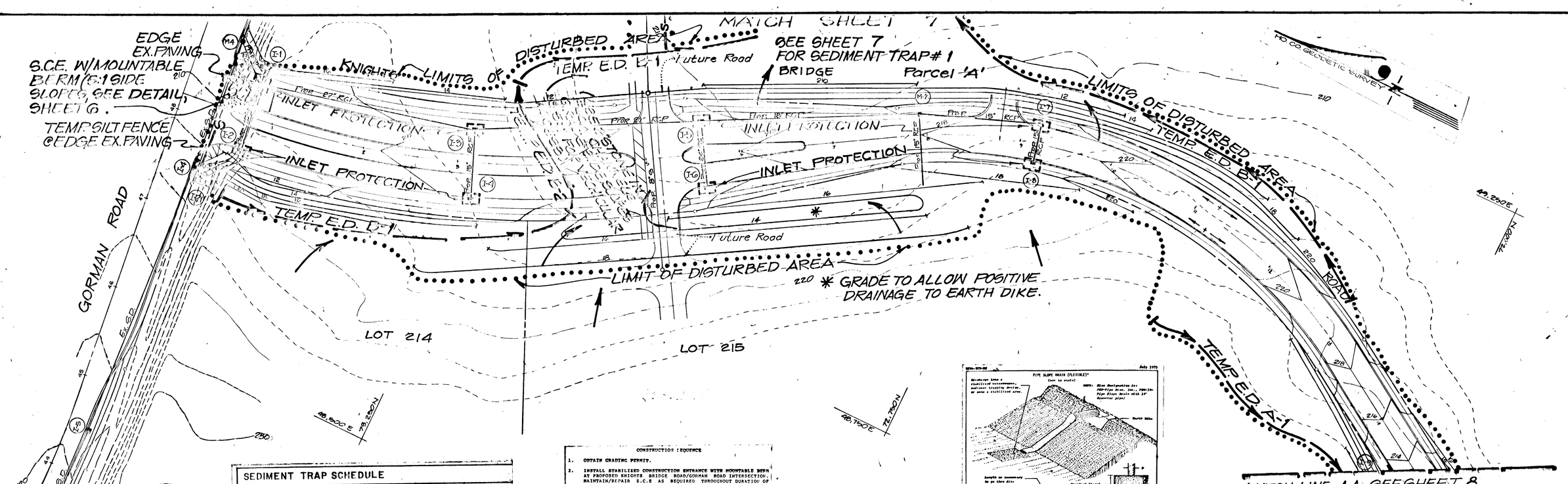
PAVING & STORM DRAIN DETAIL SHEET

Patton Harris Rust and Associates
A Professional Corporation
Engineers, Surveyors, Planners and Landscape Architects
7609 Standish Place Rockville, Md. 20855 (301) 762-2220

BOWLING BROOK FARMS
KNIGHTS BRIDGE ROAD
A RESUBDIVISION OF BOLLING BROOKE, LOT 2
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SURVEY P.H.R.&A.	DATE 10/8/87
DESIGN M.J.K.	
DRAWN	SHEET 5 OF 9
CHECKED	
SCALE AS SHOWN C.I.	FILE NO. 2184-1-0

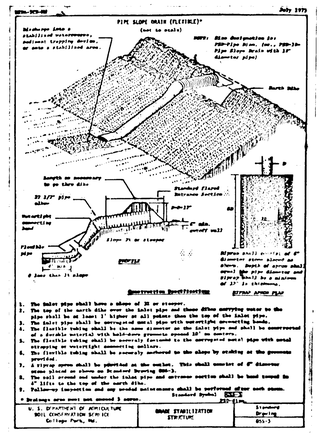
F-88-40



SEDIMENT TRAP SCHEDULE			
SEDIMENT TRAP #	1	2	
TYPE OF TRAP - STD & SPEC #	ST-VI	ST-VI	
DRAINAGE AREA (ACRES)	14.2	2.0	
STORAGE REQUIRED (FT^3)	25,560	5,220	
STORAGE PROVIDED (FT^3)	25,950	5,290	
BASE DIMENSIONS & ELEV.	93'x93' @ 201.00	43'x43' @ 167.25	
WEIR LENGTH & ELEV.	16' @ 205.50	6' @ 171.25	
STORAGE DEPTH	3'	3'	
EMBANKMENT HT. & TOP ELEV.	3' @ 209.00	2.5' @ 174.50	
MAX. DEPTH OF FLOW OVER WEIR	2.0'	1.5'	

CONSTRUCTION SEQUENCE

1. OBTAIN GRADING PERMIT.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM AT PROPOSED KNIGHTS BRIDGE ROAD/GORMAN ROAD INTERSECTION. MAINTAIN/REPAIR S.C.E AS REQUIRED THROUGHOUT DURATION OF CONSTRUCTION.
3. INSTALL SILT FENCE, STREAM DIVERSION AND ASSOCIATED UTILITY CROSSING DEVICES FOR CONSTRUCTION OF PROPOSED SANITARY SEWER OUTFALL.
4. CONSTRUCT TEMPORARY SEDIMENT TRAPS 1 AND 2, EARTH DIKES AND SILT FENCE ALONG EDGE OF EXISTING PAVEMENT AT GORMAN ROAD. BEGIN STREET GRADING.
5. CONSTRUCT SANITARY SEWER FROM EXISTING MANHOLE 1003 TO MANHOLES S6-A, S5 and S5. BACKFILL, STABILIZE THOSE AREAS NOT SUBJECT TO FURTHER DISTURBANCE, AND REMOVE STREAM PROTECTION DEVICES AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.
6. EARTH DIKE ACROSS KNIGHTS BRIDGE ROAD IN VICINITY OF STATION 4 + 00 SHALL REMAIN IN PLACE TO DIRECT FLOW TO SEDIMENT TRAP 1 UNTIL CONTRIBUTING DRAINAGE AREA IS STABILIZED. DELAY PAVING OPERATIONS IN THIS AREA AS REQUIRED.
7. PROTECT STORM DRAIN INLETS WHERE INDICATED.
8. COMPLETE STREET CONSTRUCTION AND PAVING OPERATIONS. STABILIZE ADJACENT CUT/FILL SLOPES PER SEDIMENT CONTROL AND SEEDING NOTES.
9. BEFORE REMOVING SEDIMENT TRAP 2, THOROUGHLY FLUSH STORM DRAIN SYSTEM FROM INLET STRUCTURE I-9 DOWN TO OUTFALL STRUCTURE E-1.
10. AS THEIR CONTRIBUTING DRAINAGE AREAS ARE BROUGHT TO FINAL GRADE AND STABILIZED, TEMPORARY SEDIMENT CONTROL MEASURES MAY BE REMOVED WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR AND REMAINING DISTURBED AREAS STABILIZED.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

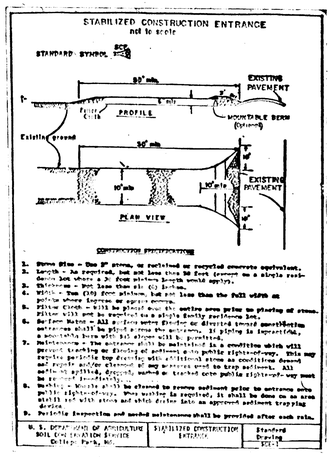
Chief, Land Development Division — Date 1-5-88

Chief, Bureau of Highways — Date 1/6/88

Chief, Bureau of Engineering — Date 1-11-88

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Chief, Division of Land Development & COMMUNITY PLANNING — Date 2/22/88



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.

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

Mulching — Apply 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.

Soil Amendments: Apply 60 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft).

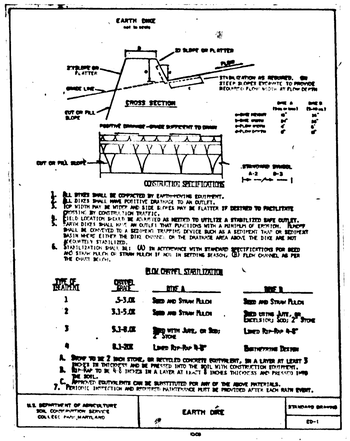
Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2½ bushel per acre of annual rye (3.2 lbs/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

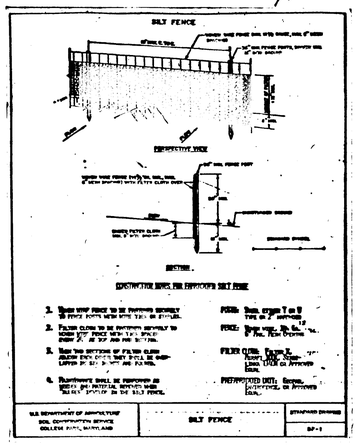
Mulching: Apply 1½ to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 ft or higher, use 348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

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. (992-2433)
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 calender 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 8.76 Acres
   Area Disturbed 8.76 Acres
   Area to be roofed or paved 2.42 Acres
   Area to be vegetatively established 6.36 Acres
   Total Cut _____ Cu. yds
   Total Fill _____ Cu. yds
   Offsite waste/borrow area location _____
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 controls 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.





THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET TECHNICAL REQUIREMENTS.

U.S. Soil Conservation Service — Date 12-16-87

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

APPROVED Howard S C D — Date 12-16-87

PLAN NUMBER _____

NO.	DESCRIPTION	DATE	APPROVED	DATE

REVISION APPROVED BY

STATE OF MARYLAND — EDWARD [illegible] — PROFESSIONAL ENGINEER — PROFESSIONAL SEAL

REVISED

EROSION AND SEDIMENT CONTROL PLAN

Patton Harris Rust and Associates
A Professional Corporation
Engineers, Surveyors, Planners and Landscape Architects
7609 Standish Place, Rockville, MD 20855 (301)762-2220

BOWLING BROOK FARMS
KNIGHTS BRIDGE ROAD
A RESUBDIVISION OF BOLLING BROOKE, LOT 2
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SURVEY	DATE 10-8-87
DESIGN J.P.C.	
DRAWN C.S.R.	SHEET 6 OF 9
CHECKED J.P.C.	
SCALE 1"=50' C.I. 2'	FILE NO. 2184-1-0

F-88-40

HOWARD COUNTY
913/357

GAGNON

GARBER
709/532

ALSOP
752/706

BOUNDS
230/156

HOWARD COUNTY
506/501

MATCH LINE THIS SHEET

E 49,750
N 73,750

THIS BUILT UNDER CONTRACT NO. 24-1702-D AND F-87-115

GORMAN ROAD

KNIGHT BRIDGE

SEE SHEET 8 FOR S.C. OF THIS AREA

Parcel 'A'

LOT 214

LOT 215

LIMITS OF DISTURBED AREA 25' WIDE

TEMP. SILT FENCE

Future Road

2-8'Stube Culverts

TEMP. SILT FENCE

SAFETY FENCE

LIMITS OF DISTURBED AREA

TEMP. SEDIMENT TRAP #1 TYPE ST-VI

201 CY

33'

33'

ROAD

MATCH SHEET 9

E 49,250
N 73,000

E 49,750
N 73,000

USE WPD 2.3 SANBAG/ STONE STREAM DIVERSION AND WPD 1.1 "DEWATERING BASINS" @ UTILITY CROSSING SEE DETAILS SHEET 6 of 9. ADJUST/REMOVE AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR.

NOTE: ALL CONSTRUCTION OF PERMANENT STREAM PROTECTION SHALL BE IN ACCORDANCE WITH THE CONTRACT NO. 24-1632-D

Gabion & rip-rap for stream protection - SEE CONTRACT NO. 24-1632-D FOR DETAILS OF STREAM and SEWER MAIN PROTECTION

EX 30"S

36"S EX.

Little Patuxent River

EXIST. SILT FENCE

RIP RAP OUTFALL PER F-87-115

TEMP SILT FENCE

60" RCP

48" RCP

LIMITS OF DISTURBED AREA 25' WIDE

MATCH LINE THIS SHEET

HO. CO. GEODETIC SURVEY

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division — Date 1-5-88

Chief, Bureau of Highways — Date 1/6/88

Chief, Bureau of Engineering — Date 1-11-88

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Director — Date 2/22/88

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET TECHNICAL REQUIREMENTS.

US Soil Conservation Service — Date 12-16-87

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

APPROVED Howard S C D — Date 12-16-87

PLAN NUMBER

NO.	DESCRIPTION	DATE	APPROVED	DATE

REVISION APPROVED BY

PROFESSIONAL SEAL

REVISED

EROSION AND SEDIMENT CONTROL PLAN

Patton Harris Rust and Associates
A Professional Corporation
Engineers, Surveyors, Planners and Landscape Architects
7609 Standish Place, Rockville, MD 20855 . (301)762-2220

BOWLING BROOK FARMS
KNIGHTS BRIDGE ROAD
A RESUBDIVISION OF BOLLING BROOKE, LOT 2
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SURVEY	DATE 10-8-87
DESIGN J.P.C.	
DRAWN C.S.R.	SHEET 7 OF 9
CHECKED J.P.C.	
SCALE 1" = 50' C.L.2	FILE NO. 2184-1-0

F-88-40

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division — Date 1-5-88

Chief, Bureau of Highways — Date 1/6/88

Chief, Bureau of Engineering — Date 1-11-88

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Chief, Division of Land Development & COMMUNITY PLANNING. — Date 2/22/88

Maryland SCS/WRA — April 1983

STANDARD AND SPECIFICATIONS
FOR
STORM DRAIN INLET PROTECTION

Definition

Filter cloth installed around inlets in the form of a fence or across an opening, thereby reducing sediment content of sediment laden water.

Purpose

To prevent sediment laden water from entering a storm drain system through inlets.

Conditions Where Practice Applies

This practice shall be used where the drainage area to an inlet is disturbed, it is not possible to temporarily divert the storm drain outfall into a sediment trapping device and watertight blocking of inlets is not advisable. It is not to be used in place of sediment trapping devices. This practice may be used in conjunction with storm drain diversion to help prevent siltation of pipes installed with a low slope angle.

Construction Specifications

I. Materials

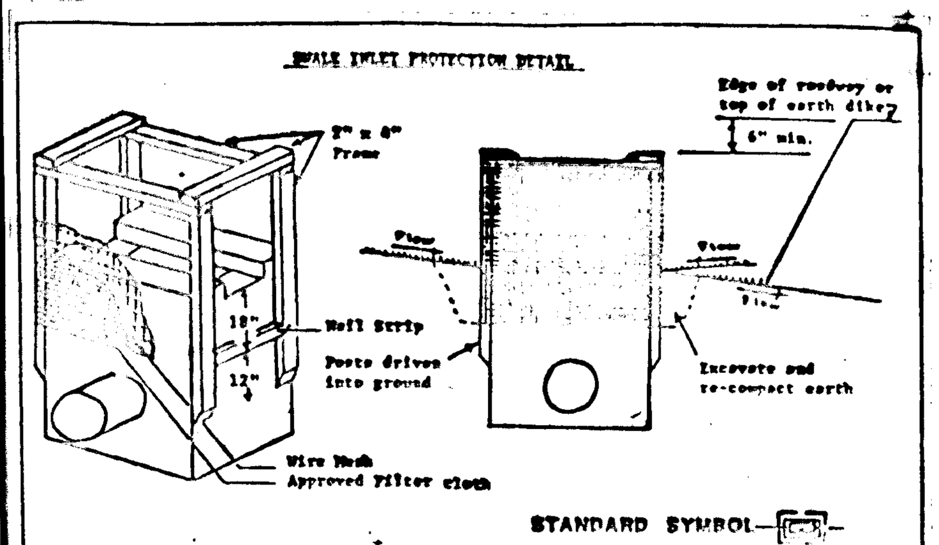
A. Wooden frame is to be constructed of 2" x 4" construction grade lumber.

B. Wire mesh must be of sufficient strength to support filter fabric, and stone for curb inlets, with water fully impounded against it.

C. Filter cloth must be of a type approved for this purpose; resistant to sunlight with sieve size, EOS, 40-85, to allow sufficient passage of water and removal of sediment.

D. Stone is to be 2" in size and clean, since fines would clog the cloth.

SWALE INLET PROTECTION DETAIL



II. Procedure

A. A swale, ditchline or yard inlet protection.

1. Excavate completely around inlet to a depth of 18" below notch elevation.

2. Drive 2 x 4 post 1' into ground at four corners of inlet. Place nail strips between posts on ends of inlet. Assemble top portion of 2 x 4 frame using overlap joint shown. Top of frame (weir) must be 6" below edge of roadway adjacent to inlet.

3. Stretch wire mesh tightly around frame and fasten securely. Ends must meet at post.

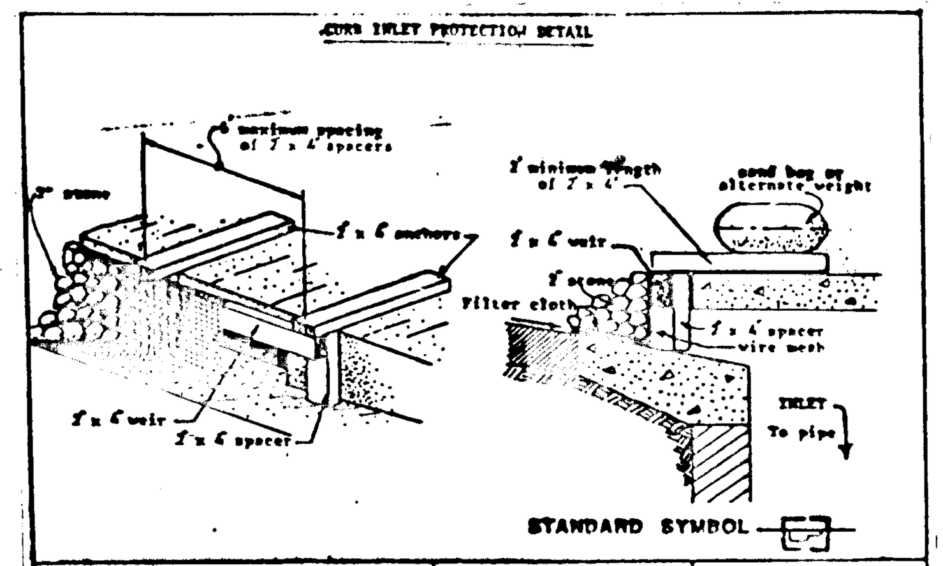
4. Stretch filter cloth tightly over wire mesh, the cloth must extend from top of frame to 18" below inlet notch elev. Fasten securely to frame. Ends must meet at post, be overlapped and folded, then fastened down.

5. Backfill around inlet in compacted 6" layers until layer of earth is even with notch elevation on ends and top elevation on sides.

6. If the inlet is not in a low point, construct a compacted earth dike in the ditchline below it. The top of this dike is to be at least 6" higher than the top of frame (weir).

7. This structure must be inspected frequently and the filter fabric replaced when clogged.

CURB INLET PROTECTION DETAIL



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	INLET PROTECTION DETAIL	STANDARD DRAWING IPD—1

B. Curb Inlet Protection.

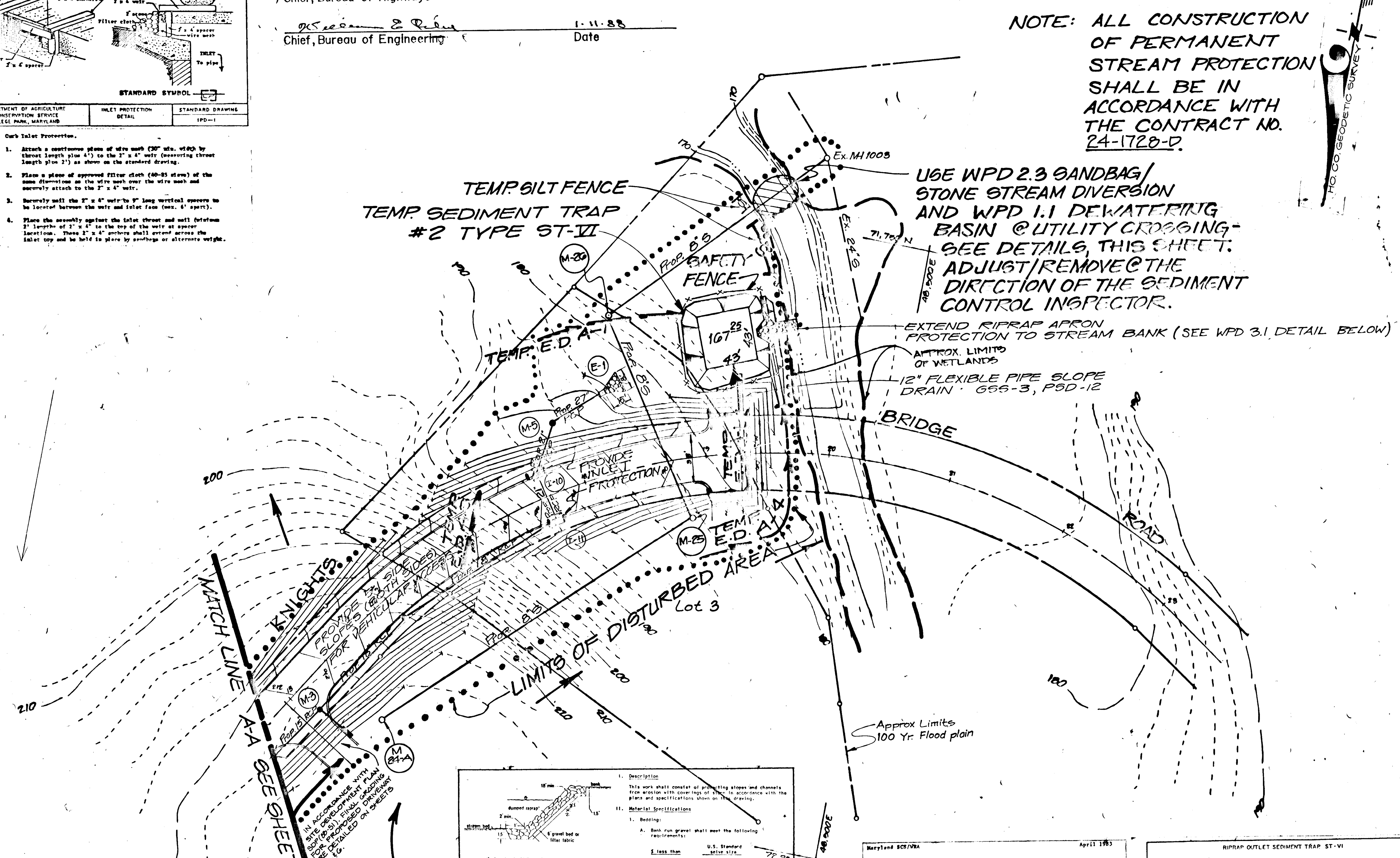
1. Attach a continuous piece of wire mesh (30" min. width by throat length plus 4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard drawing.

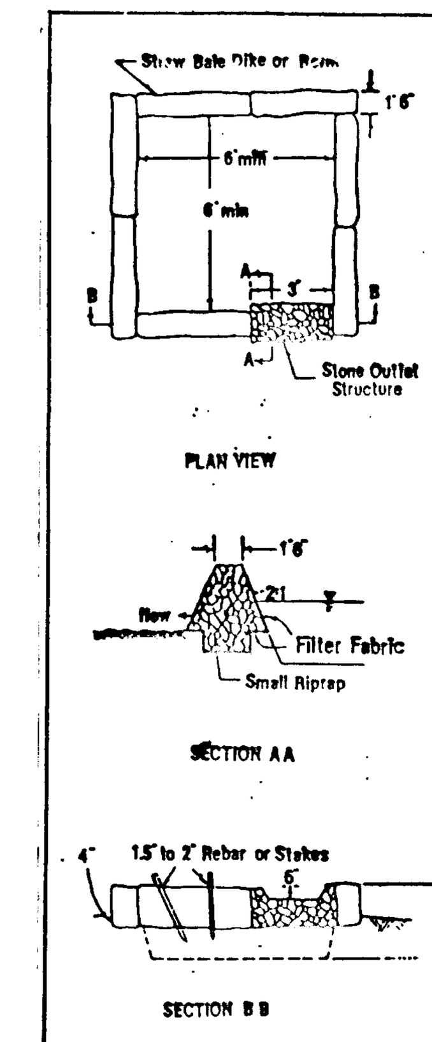
2. Place a piece of approved filter cloth (40-85 sieve) of the same dimensions as the wire mesh over the wire mesh and securely attach to the 2" x 4" weir.

3. Securely nail the 2" x 4" weir to 9" long vertical spacers to be located between the weir and inlet face (max. 6' apart).

4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations. These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.

NOTE: ALL CONSTRUCTION OF PERMANENT STREAM PROTECTION SHALL BE IN ACCORDANCE WITH THE CONTRACT NO. 24-1728-D.





1. Description

The work shall consist of the construction of a dewatering basin for the purpose of receiving sediment-laden water pumped from a construction site to allow filtration before the water re-enters the waterway.

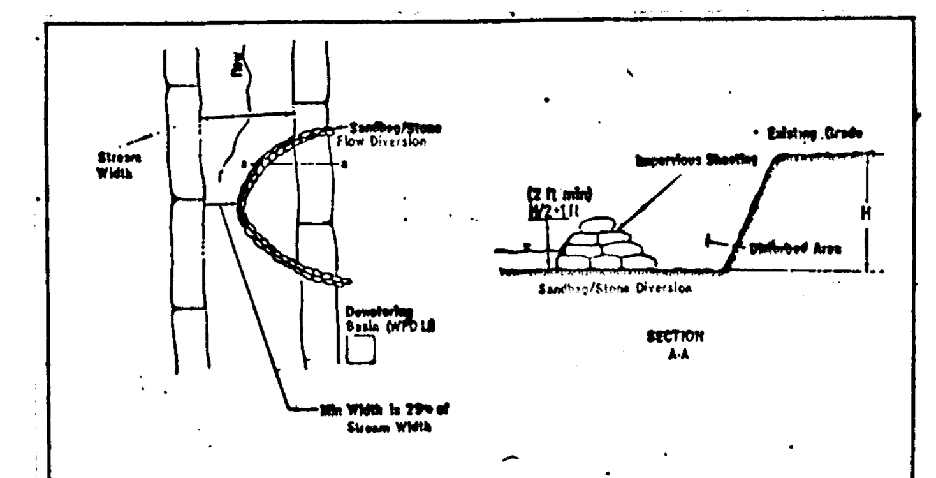
II. Material Specifications

1. Riprap: Riprap shall consist of 4-8 inch washed stone or gravel.
2. Filter Fabric: The filter cloth shall be a woven or nonwoven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric shall be inert to commonly encountered chemicals, hydro-carbons, mildew, and rot resistant. No. 6 stone (AASHTO 57) may be used on the inner-face for filtering instead of fabric.
3. Strawbales: Strawbales shall meet the criteria as specified in the Maryland Standards and Specifications for Soil Erosion and Sediment Control.

III. Construction Requirements

1. The contractor shall install all sediment and erosion control devices as the first order of business.
2. Excavated materials shall be stored such that sediments are prevented from entering the waterway; i.e., sediment perimeter controls may be necessary.
3. Excavated subsoil and topsoil shall be kept separate and replaced in their natural order.
4. Any dewatering of the construction area shall be filtered through a dewatering basin prior to entering the waterway.
5. The dewatering basin shall be excavated to a minimum depth of 3 feet.
6. Once the dewatering basin becomes filled to 1/2 of the excavated depth, accumulated sediment shall be removed and disposed of in a SCD approved disposal area outside the 100-year floodplain unless otherwise approved on the plans by the WRA.
7. Sediment control devices are to remain in place until all disturbed areas are stabilized and the inspecting authority approves their removal. All ground contours shall be returned to their original condition unless specifically approved otherwise by the Administration.

WATER RESOURCES ADMINISTRATION	Dewatering Basins	Approved On 1-24-86 Chief, Waterway Permits	WPD 1.1

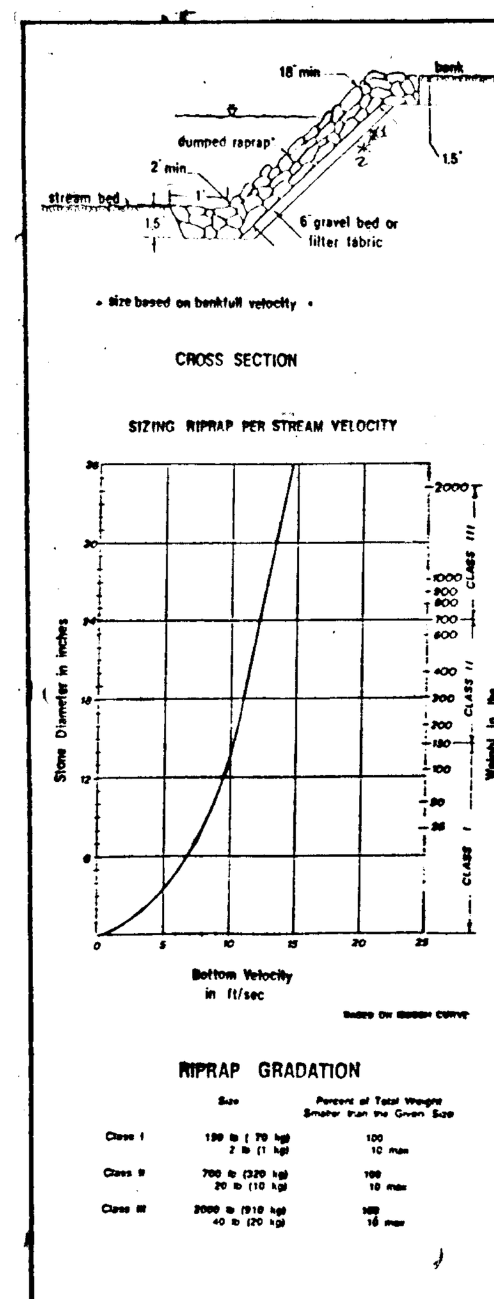


I. Description
The work shall consist of installing flow diversions for the purpose of erosion control when construction activities take place within the stream channel such as bank stabilization or bridge abutment construction.

II. Material Specifications
1. Sandbags: Sandbags shall consist of materials which are resistant to ultra-violet radiation, tearing and puncture and woven tightly enough to prevent leakage of fill material (i.e., sand, fine gravel, etc.).
2. Stone: Stone shall be washed and have a minimum diameter of 6 inches.
3. Sheeting: Sheeting shall consist of polyethylene or other material which is impervious and resistant to puncture and tearing.

III. Construction Requirements
1. All erosion and sediment control devices shall be installed as the first order of work.
2. The diversion structure shall be installed from upstream to downstream.
3. The height of the diversion structure shall be one half the distance from stream bed to stream bank plus one foot, as indicated on the cross-section view.
4. All excavated materials shall be disposed of in a SCD approved disposal area outside the 100-year floodplain unless otherwise approved on the plans by the WRA.
5. All dewatering of the construction area shall be pumped to a dewatering basin prior to re-entering the stream.
6. Sheeting shall be overlapped such that the upstream portion covers the downstream portion with at least an 18-inch overlap.
7. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.

WATER RESOURCES ADMINISTRATION	Sandbag/Stone Diversion	Approved On 1/24/86 Chief, Waterway Permits	WPD 2.3



I. Description

This work shall consist of protecting slopes and channels from erosion with coverings of stone in accordance with the plans and specifications shown on this drawing.

II. Material Specifications

1. Bedding:

A. Bank run gravel shall meet the following requirements:

% less than	U.S. Standard seive size
100	2 1/2 in
85 - 100	1 in
60 - 100	1/2 in
35 - 70	No. 10
20 - 50	No. 40
3 - 20	No. 200

B. Geotextile filter fabric shall meet the following requirements:

Tensile Strength	200 lbs.
Burst Strength	350 lbs.
Puncture Strength	70 lbs.
Permeability	.02 cm/sec
Elongation at Failure	30%
Minimum Lap Length	24 in

2. Riprap:

The maximum weight of stone shall be based upon the bankfull stream channel velocity, using the given chart. The gradation of the stone shall be as indicated.

III. Construction Requirements

1. The contractor shall install all sediment and erosion control devices as a first order of business.

2. Provisions must be made to anchor the riprap at the stream bed so as to provide protection against undermining. If this cannot be accomplished by extending the toe trench as indicated in Cross Section, an alternative method of protection must received prior written approval of the Administration.

3. Excavation for riprap shall be made in reasonably close conformity with the existing stream slope and bed.

4. A filter bedding is required under all riprap. Bedding material shall consist of either a bank run gravel or a geotextile filter fabric meeting the specifications of II. 1B above.

5. The placement of riprap shall begin with the toe. The larger stones shall be placed in the toe and along the outside edges of the limits of the slope and channel protection. The riprap shall be placed with suitable equipment in such a manner as to produce a reasonably graded mass of stones with zero drop height. The placing of stones that cause extensive segregation is not allowed.

6. Any excavation voids existing along the edges of the completed slope and channel protection shall be backfilled.

7. All disturbed areas shall be permanently stabilized in accordance with an approved sediment and erosion control plan.

WATER RESOURCES ADMINISTRATION	Riprap	Approved On 1/14/86 Chief, Waterway Permits	WPD 3.1

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 Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic onsite inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary."

R P Bosworth — Signature of Developer/Builder — 12/11/87 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.

Signature of Engineer — 12/11/87 Date

Maryland SCS/WRA — April 1983

CONSTRUCTION SPECIFICATIONS FOR ST-VI

1. The 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 or 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. Maximum height of embankment shall be five (5) feet, measured at centerline of embankment.

3. All fill slopes shall be 2:1 or flatter; cut slopes 1:1 or flatter.

4. Elevation of the top of any dike directing water into trap must equal or exceed the height of embankment.

5. Storage area provided shall be figured by computing the volume available behind the outlet channel up to an elevation of one (1) foot below the level weir crest.

6. Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Sections of fabric must overlap at least one (1) foot with section nearest the entrance placed on top. Fabric shall be embedded at least six (6) inches into existing ground at entrance of outlet channel.

7. Stone used in the outlet channel shall be four (4) to eight (8) inches (riprap). To provide a filtering effect, a layer of filter cloth shall be embedded one (1) foot back into the upstream face of the outlet stone or a one (1) foot thick layer of two (2) inch or finer aggregate shall be placed on the upstream face of the outlet.

8. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

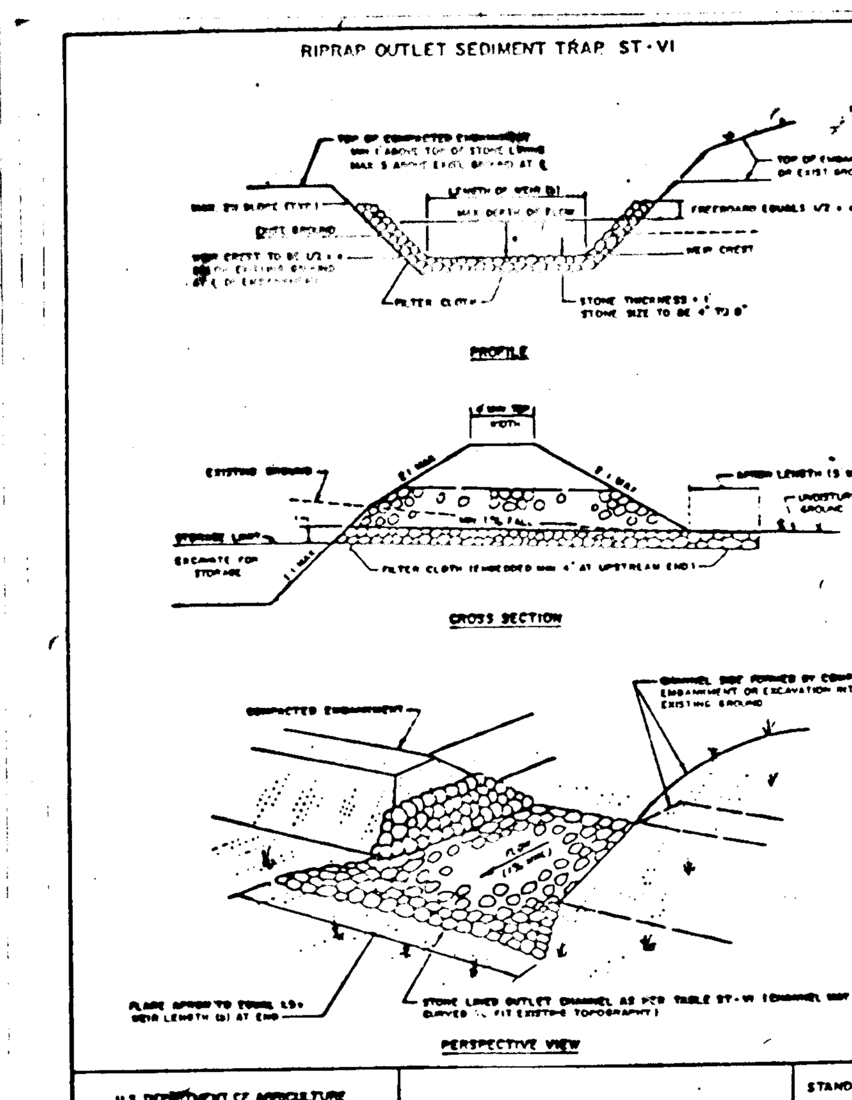
9. The structure shall be inspected after each rain and repaired as needed.

10. Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.

11. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

12. Drainage area for this practice is limited to 15 acres or less.

RIPRAP OUTLET SEDIMENT TRAP ST-VI



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	RIPRAP OUTLET SEDIMENT TRAP	STANDARD DRAWING ST-VI

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET TECHNICAL REQUIREMENTS.

U.S. Soil Conservation Service — 12-16-87 Date

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

APPROVED — Howard S C D — 12-16-87 Date

PLAN NUMBER ____________

NO.	DESCRIPTION	DATE		APPROVED	DATE

REVISION APPROVED BY

STATE OF MARYLAND — PROFESSIONAL ENGINEER — PROFESSIONAL SEAL

REVISED

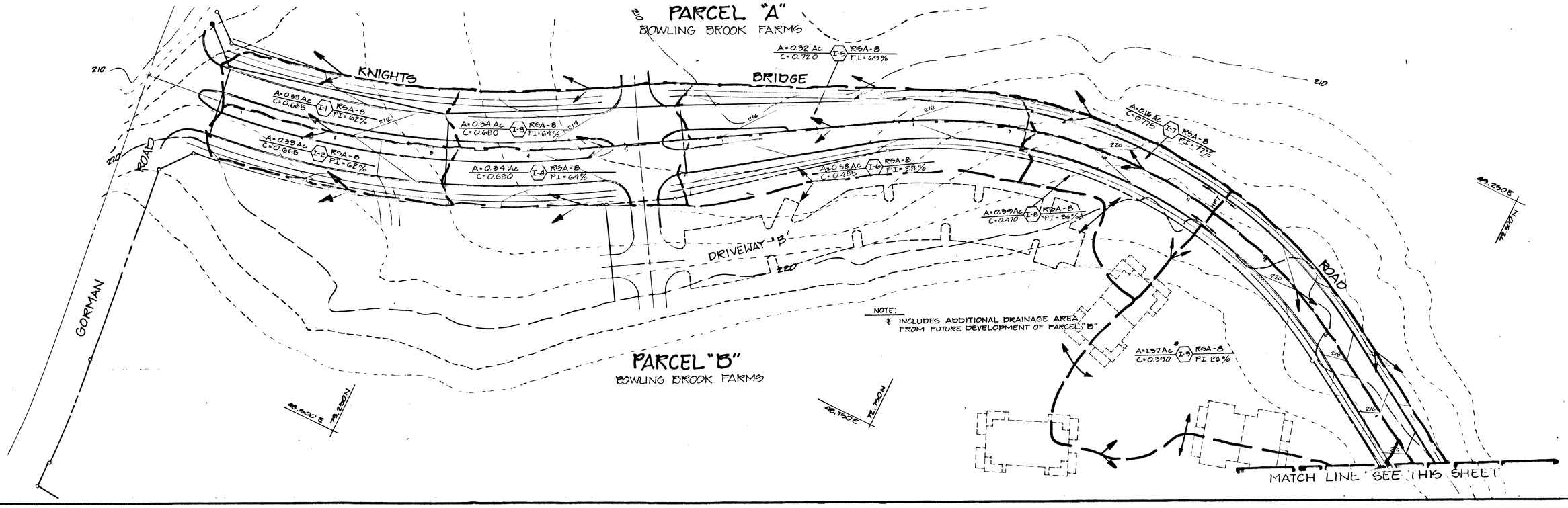
EROSION AND SEDIMENT CONTROL PLAN

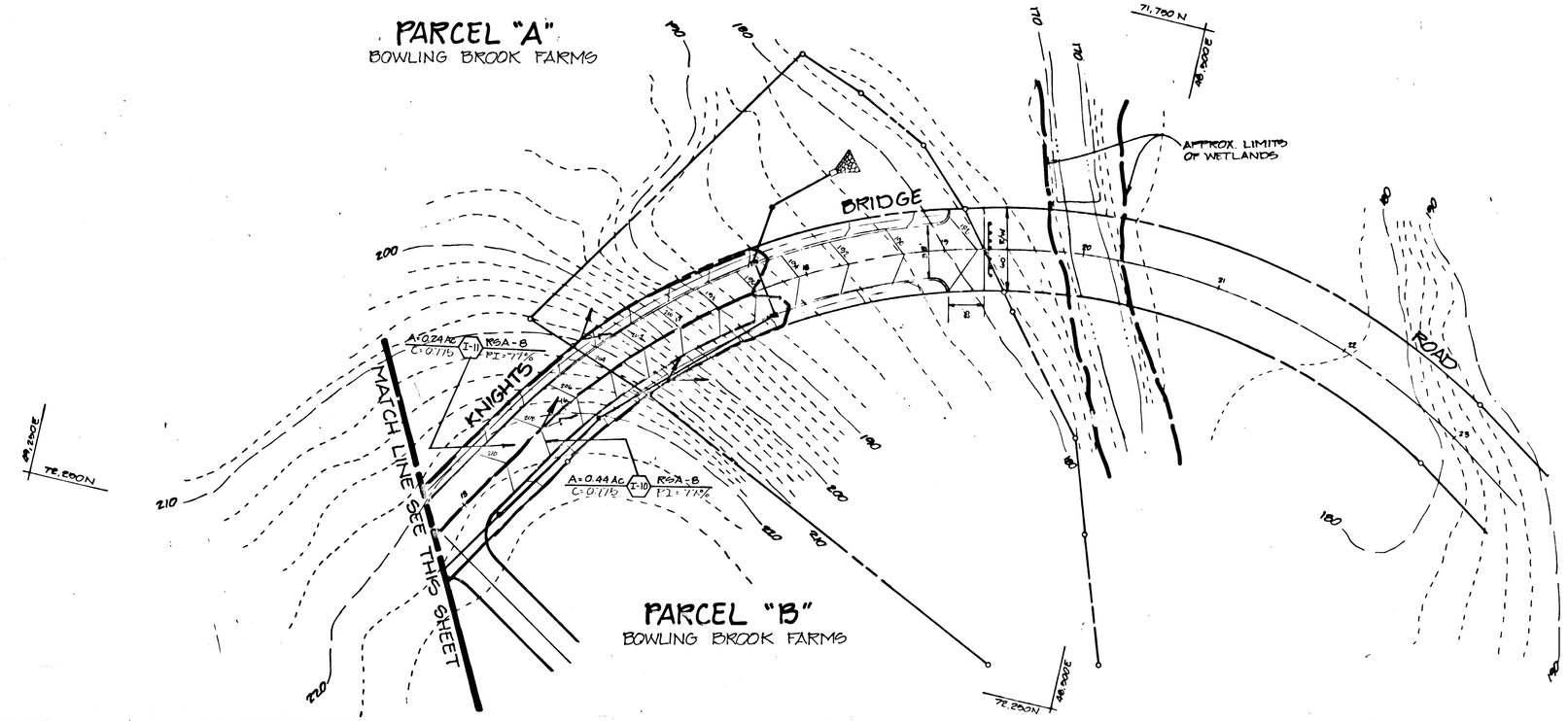
Patton Harris Rust and Associates
A Professional Corporation
Engineers, Surveyors, Planners and Landscape Architects
7609 Standish Place, Rockville, MD 20855 (301)762-2220

BOWLING BROOK FARMS
KNIGHTS BRIDGE ROAD
A RESUBDIVISION OF BOLLING BROOKE, LOT 2
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SURVEY		DATE	10-8-87
DESIGN	J.P.C		
DRAWN	C.S.R.	SHEET	8 OF 9
CHECKED	J.P.C.		
SCALE	1"=50'	FILE NO.	2184-1-0
C.I.	2'		

F-88-40





NOTE: 'C' FACTORS ARE DETERMINED BY APPLYING THE CALCULATED IMPERVIOUS AREAS TO FIGURE 6.09 ('C' FACTORS FOR CLAY SOILS) OF HOWARD COUNTY STORM DRAIN DESIGN MANUAL.

FOR DRAINAGE AREA I-9, THE DASHED BUILDINGS REFLECT THE ACTUAL FUTURE BUILDING LOCATION.

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Chief, Division of Land Development & COMMUNITY PLANNING — Date 2/22/88

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division — Date

Chief, Bureau of Highways — Date 1/6/88

Chief, Bureau of Engineering — Date 1-11-88

NO.	DESCRIPTION	DATE	APPROVED	DATE

REVISION APPROVED BY

PROFESSIONAL SEAL

REVISION

DRAINAGE AREA MAP

Patton Harris Rust and Associates
A Professional Corporation
Engineers, Surveyors, Planners and Landscape Architects
7609 STANDISH PLACE ROCKVILLE MD. 20855 (301) 762-2220

BOWLING BROOK FARMS
KNIGHTS BRIDGE ROAD
A RESUBDIVISION OF BOLLING BROOKE, LOT 2
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SURVEY BENCH	10/8/87
DESIGN M.J.K.	
DRAWN J.D.W.	SHEET 9 OF 9
CHECKED	
SCALE 1"=50' C.I. 2'	FILE NO. 2184-1-0

F-88-40