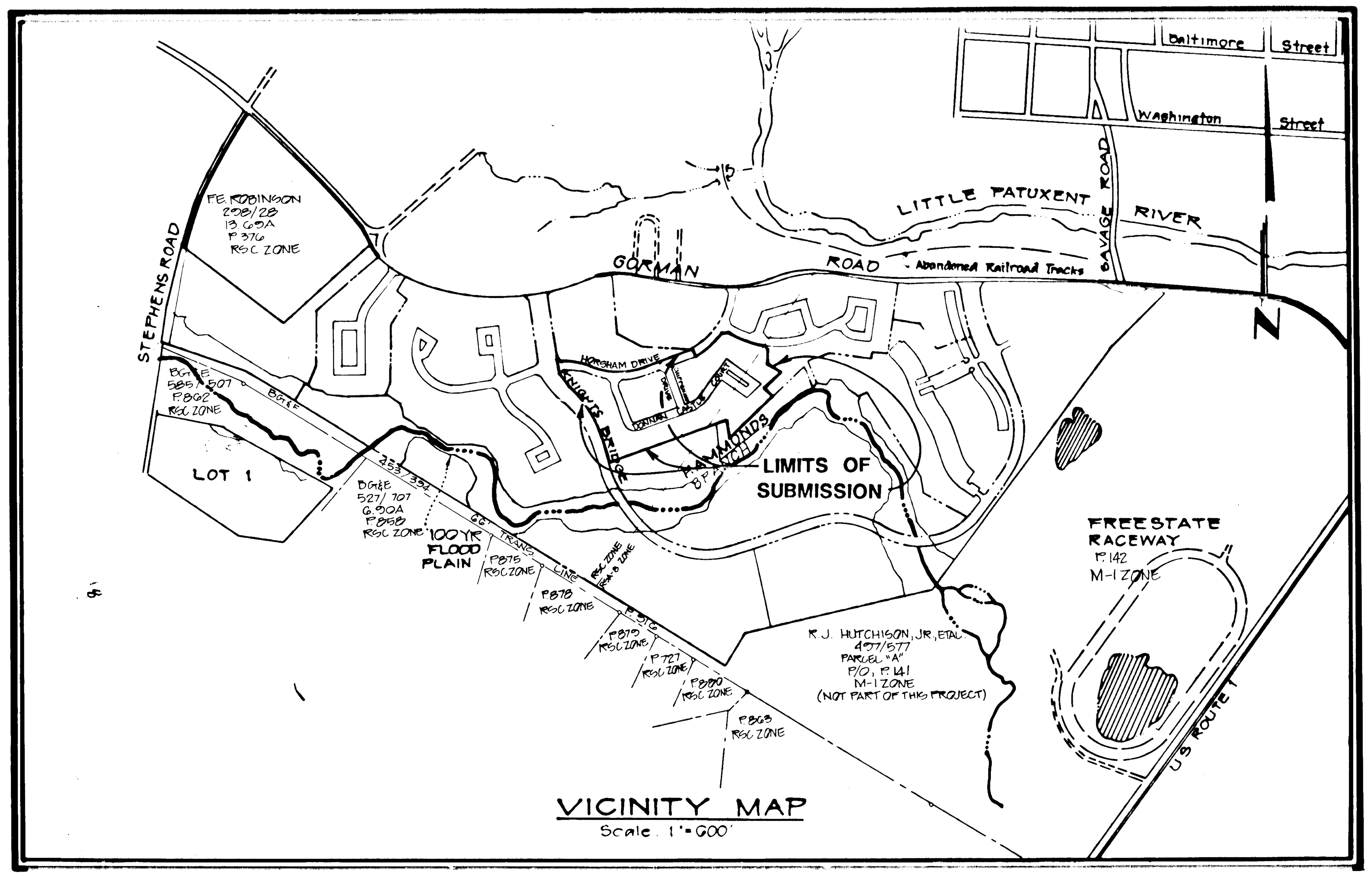
BOWLING BROOK FARMS
PARCEL G
(LOTS 1 THRU 100)

STRUCTURE SCHEDULE							
NO.	TYPE	INV. IN	INV. OUT	UPPER END	LOWER END	HO. CO. STD.	℄ LOCATION
I-1	A-5 W/DEFLECTOR	~~256.20~~ 255.67	~~255.70~~ 255.62	~~260.40~~ 260.30	~~260.20~~ 260.05	SD-4.01	7+59,15'R (HOR)
I-2	A-5W/DEFLECTOR	~~253.60~~ 253.74	~~253.10~~ 252.86	~~256.81~~ 256.64	~~256.62~~ 256.44	SD-4.01	0+47.5,14'R (CH.)
I-3	A-5 W/DEFLECTOR	—	~~244.60~~ 243.99	~~248.50~~ 248.45	~~248.35~~ 248.32	SD-4.01	2+59.5,14'L (CH.)
I-4	A-5 W/DEFLECTOR 244.56 243.75	~~244.95N~~ ~~244.40 E~~	~~243.40~~ 243.35	~~248.50~~ 248.26	~~248.33~~ 248.03	SD-4.01	2+59.5,14'R (CH.)
I-5	A-10W/DEFLECTOR	~~242.84~~ 242.45	~~242.09~~ 241.75	~~249.22~~ 249.15	~~248.93~~ 248.75	SD-4.02	6+17, 14'L (DON.)
I-6	A-10W/DEFLECTOR	—	~~252.60~~ 252.78	~~256.56~~ 256.37	~~256.26~~ 256.12	SD-4.02	3+78, 14'R (DON.)
I-7	A-5W/DEFLECTOR 241.31 244.64	~~241.37N~~ ~~244.60W~~	~~240.60~~ 240.65	~~248.75~~ 247.94	~~248.04~~ 247.89	SD-4.01	6+45, 14'R (DON.)
I-8	A-5W/DEFLECTOR	—	~~236.50~~ 235.78	~~240.24~~ 240.05	~~240.09~~ 239.91	SD-4.01	9+08.00,14'L (DON)
I-9	A-5W/DEFLECTOR 234.85 234.28	~~235.30N~~ ~~234.56W~~	~~232.50~~ 232.35	~~238.92~~ 238.68	~~238.77~~ 238.33	SD-4.01	9+51, 14'R (DON.)
I-10	A-5	~~227.40~~ 227.00	~~226.70~~ 226.21	~~231.30~~ 231.26	~~231.27~~ 231.15	SD-4.01	12+30.5, 14'R (DON.)
I-11	A-5	~~225.09~~ 224.46	~~224.52~~ 223.76	~~230.80~~ 230.69	~~230.80~~ 230.43	SD-4.01	SEE PLAN
M-1	MANHOLE	~~238.37~~ 237.81	~~237.87~~ 237.61	~~243.98~~ 244.31	~~242.83~~ 244.31	G-5.11	7+67.93,25'R (DON)
E-1	END SECTION	~~199.00~~ 199.90	~~199.00~~ 199.90	~~198.50~~ 199.52	~~198.50~~ 199.52	SD-5.52	SEE PLAN (DON.)
M-2	MANHOLE	~~201.00~~ 200.62	~~199.94~~ 199.82	~~208.52~~ 208.62	~~208.52~~ 208.62	G-5.11	SEE PLAN
M-3	MANHOLE	~~263.02~~ 263.68	~~262.52~~ 263.53	~~271.50~~ 272.98	~~271.50~~ 272.98	G-5.11	13+32, 30'R (HOR.)

(HOR.) - HORSHAM DRIVE
(CH.) - CHIPPENHAM DRIVE
(DON.) - DONNAN CASTLE COURT

PIPE SCHEDULE			
DIAMETER	MATERIAL	CLASS	LENGTH (FT)
15"	CMP		617'
21"	CMP		39'
24"	CMP		44'
27"	CMP		710'
36"	CMP		6'
24"	RCP	IV	101'



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. SHADED AREAS INDICATE WATER, SEWER, UTILITY, DRAINAGE AND/OR ACCESS EASEMENT(S).

LANDSCAPING 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 RADIUS POINTS ON THE PARKING ISLANDS AND 2' BEHIND THE SIDEWALK.
5. PLACE "REGENT SCHOLAR TREE", "GREENSPIRE LINDEN", AND "HEDGE MAPLE" 3' BEHIND SIDEWALK.

PLANT SCHEDULE

KEY	PLANT NAME	SIZE	QUANTITY	REMARKS
Z	ZELKOVA SERRATA "GREEN VASE" GREEN VASE ZELKOVA	2 1/2"-3" CAL 12-14' HT.	35	B & B
P	ACER PLATANOIDES "SUMMERSHADE" SUMMER SHADE MAPLE		33	
S	SOPHORA JAPONICA "REGENT" REGENT SCHOLAR TREE		17	
T	TILIA CORDATA "GREENSPIRE" GREENSPIRE LINDEN		18	
C	ACER CAMPESTRE HEDGE MAPLE		12	

LEGEND

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

PAVING AND STORM DRAIN CONSTRUCTION PLANS

HOWARD COUNTY, MARYLAND

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Marsha S. McLaughlin — 8-5-88
Chief, Division of Community Planning & Land Development — Date

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENT
James M. Helm — 7/26/88
SIGNATURE — DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY CONSERVATION DISTRICT.
APPROVED Stephen L. Ahler — 7/26/88
HOWARD SCD — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Land Development Division — Date 8/2/88
Chief, Bureau of Highways (Acting) — Date 7/29/88
Chief, Bureau of Engineering — Date 8-2-88

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

INDEX TO DRAWINGS

NO.	DESCRIPTION	DATE			APPROVED	DATE
5	AS-BUILT REVISIONS		BP			5-6-91
4	REDLINE REVISIONS		MK			10-27-88
3	REVISIONS FROM DPW COMMENTS FROM 6/16					6/28/88
2	2ND SUBMISSION TO HO.CO.		M.K			5/2/88
1	ISSUED TO HOCO					3-2-88

REVISION APPROVED BY

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

REVISED

TITLE SHEET

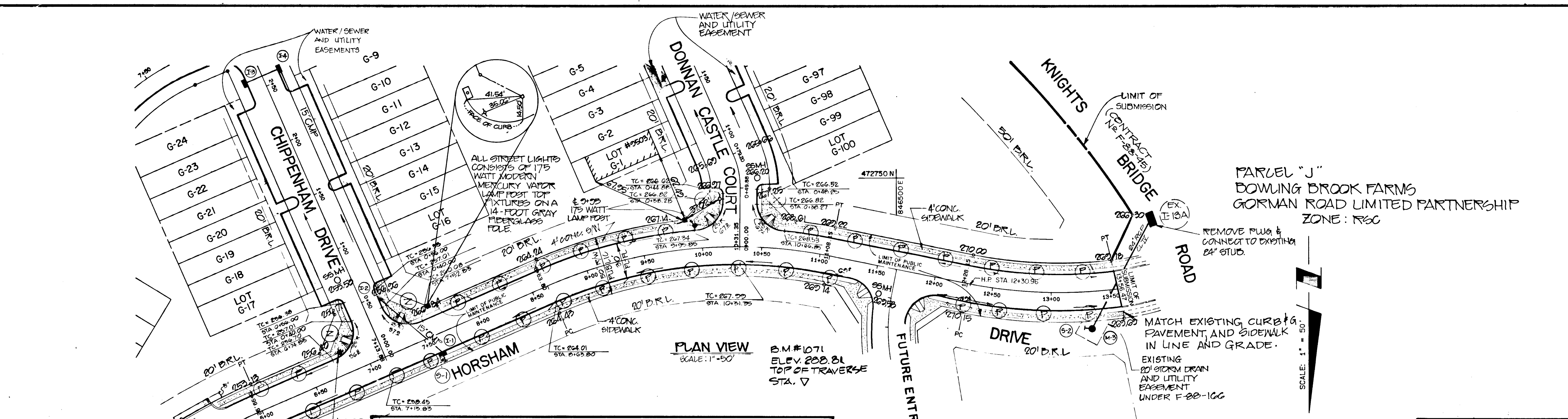
Patton Harris Rust and Associates
A Professional Corporation
Engineers, Surveyors, Planners and Landscape Architects
7609 Standish Place Rockville, Maryland 20855 (301)762-2220

BOWLING BROOK FARMS
PARCEL G , PARCEL H
SECTION 4 AREA 1
LOTS G-1 THRU G-102
A RESUBDIVISION OF LOT 216 BOWLING BROOK FARMS
SIXTH ELECTION DISTRICT
TAX MAP 47 — PARCEL 141
L.1394 — F.632

SURVEY	DATE 3-3-88
DESIGN M.J.K.	
DRAWN P.A.	SHEET
CHECKED	1 OF 10
SCALE AS SHOWN C.I.	FILE NO. 2184-1-7

AS-BUILT

1271



CENTER LINE CURVE DATA

PC Sta.	to PT Sta.	RADIUS	△	ARC	TAN	CHORD	CHORD BEARING
5+37.45	5+99.92	450.00	7° 57' 15"	62.47	31.29	62.42	S62° 26' 41" W
8+63.80	11+08.15	400.00	35° 00' 00"	244.35	162.12	240.56	S83° 55' 19" W
12+28.15	13+56.47	400.00	18° 22' 48"	128.32	64.72	127.77	N87° 46' 05" W

CENTERLINE LINE DATA

STA.	TO STA.	BEARING	DISTANCE (ft)
5+99.92	7+13.83	S66° 25'19"W	113.91
7+13.83	8+63.80	S66° 25'19"W	149.97
11+08.15	12+28.15	N78° 34'41"W	120.00

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division	Date 8/2/88
Chief, Bureau of Highways	Date 7/29/88
Chief, Bureau of Engineering	Date 8-2-88

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Chief, Division of Community Planning & Land Development	Date 8-5-88

OWNER/DEVELOPER
GORMAN ROAD LIMITED PARTNERSHIP
C/O JAMES F. KNOTT DEVELOPMENT CORPORATION
110 WEST ROAD, SUITE 203
TOWSON, MARYLAND 21204

PROFILE LEGEND
LEFT BRL
RIGHT BRL
PROPOSED GRADE
EXISTING GRADE

NO.	DESCRIPTION	BY	DATE
5	AS-BUILT REVISIONS	BP	5-6-91
4	REDLINE REVISIONS	MK	10-27-88
3	REVISIONS FROM DPW COMMENTS FROM 6/10		6/28/88
2	2ND SUBMISSION TO HO. CO.	MK	5/2/88
1	ISSUED TO HOCO		3-3-88

REVISION APPROVED BY

STATE OF MARYLAND · RICHARD EDWARD TRAVERS · No. 15136 · REGISTERED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

REVISED

PAVING AND STORM DRAIN PLAN AND PROFILE HORSHAM DRIVE

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

BOWLING BROOK FARMS
PARCEL G, PARCEL H
SECTION 4 AREA I
LOTS G-1 THRU G-102
A RESUBDIVISION OF LOT 216 BOWLING BROOK FARMS
SIXTH ELECTION DISTRICT
TAX MAP 47 PARCEL 141
L. 1394 F. 632

SURVEY PHR&A	DATE 3-3-88
DESIGN MJK	
DRAWN BLP/CSR	SHEET 2 OF 10
CHECKED	
SCALE AS SHOWN C.I.—	FILE NO. 2184-1-7

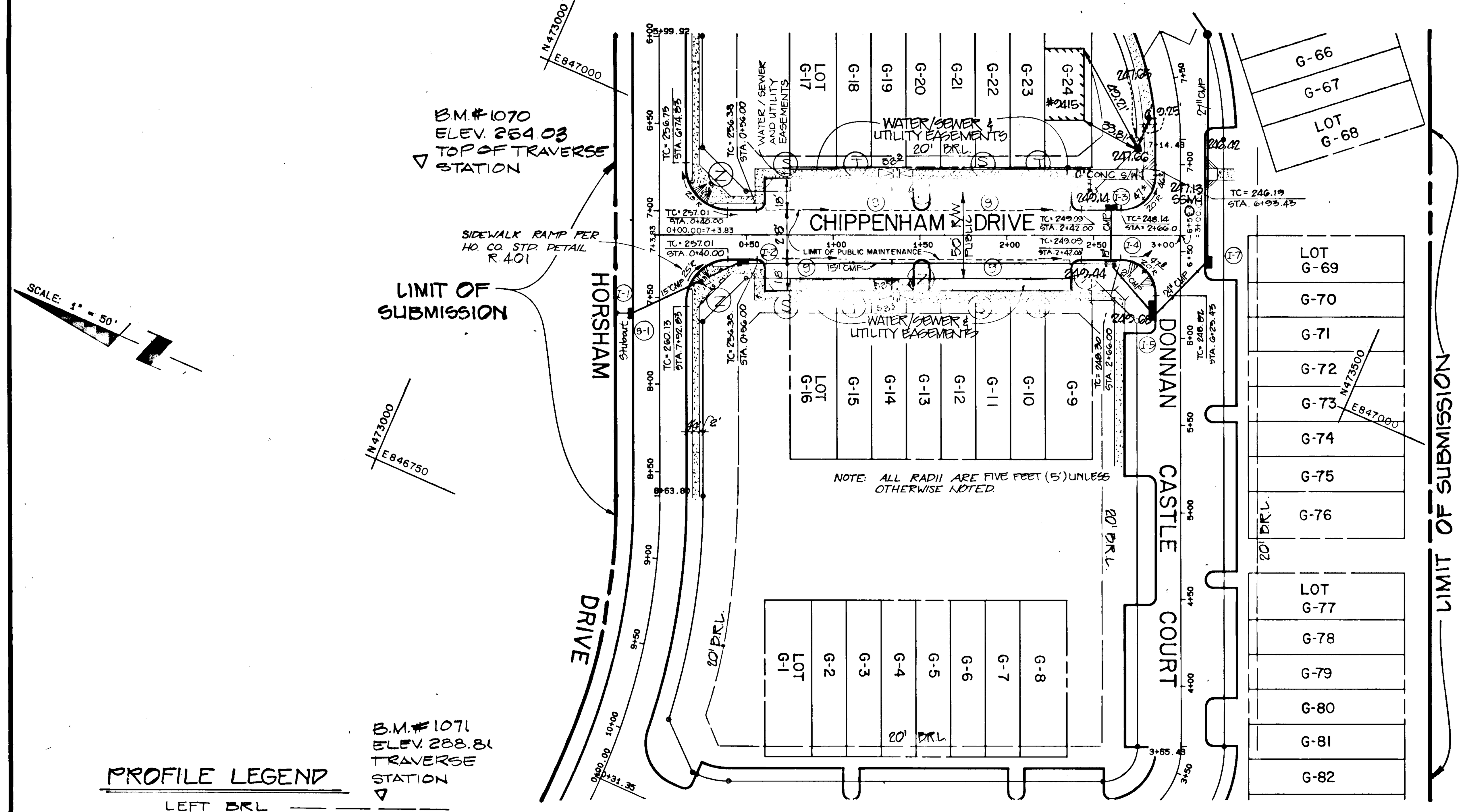
AS-BUILT

F-88-114

1271

B.M.#1070
ELEV. 264.03
TOP OF TRAVERSE
▽ STATION

LIMIT OF SUBMISSION



B.M.#1071
ELEV. 288.81
TRAVERSE
STATION
▽

PROFILE LEGEND

LEFT BRL
RIGHT BRL
PROPOSED GRADE
EXISTING GRADE

PLAN VIEW
SCALE: 1"=50'

CENTERLINE LINE DATA			
STA. TO	STA.	BEARING	DISTANCE (ft)
0+00	3+00	S23°34'41"	300.00

OWNER/DEVELOPER
GORMAN ROAD LIMITED PARTNERSHIP
C/O JAMES F. KNOTT DEVELOPMENT CORPORATION
110 WEST ROAD, SUITE 203
TOWSON, MARYLAND 21204

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[signature]	8/2/88
Chief, Land Development Division	Date
[signature] Acting	7/29/88
Chief, Bureau of Highways	Date
[signature]	8.2.88
Chief, Bureau of Engineering	Date

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

[signature]	8.5.88
Chief, Division of Community Planning & Land Development	Date

NO.	DESCRIPTION		DATE	APPROVED	DATE
5	AS-BUILT REVISIONS	BP			5-6-91
4	REDLINE REVISIONS	MK			10/27/88
3	REVISIONS FROM DPW COMMENTS FROM 2ND SUBMISSION				6/20/88
2	2ND SUBMISSION TO HO CO	MK			5/2/88
1	ISSUED TO HOCO				3.3.88

REVISION APPROVED BY

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

REVISED

PAVING AND STORM DRAIN PLAN AND PROFILE CHIPPENHAM DRIVE

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

BOWLING BROOK FARMS
PARCEL G, PARCEL H
SECTION 4 AREA 1
LOTS G-1 THRU G-102
A RESUBDIVISION OF LOT 216 BOWLING BROOK FARMS
SIXTH ELECTION DISTRICT
TAX MAP 47 PARCEL 141
L.1394 F.632

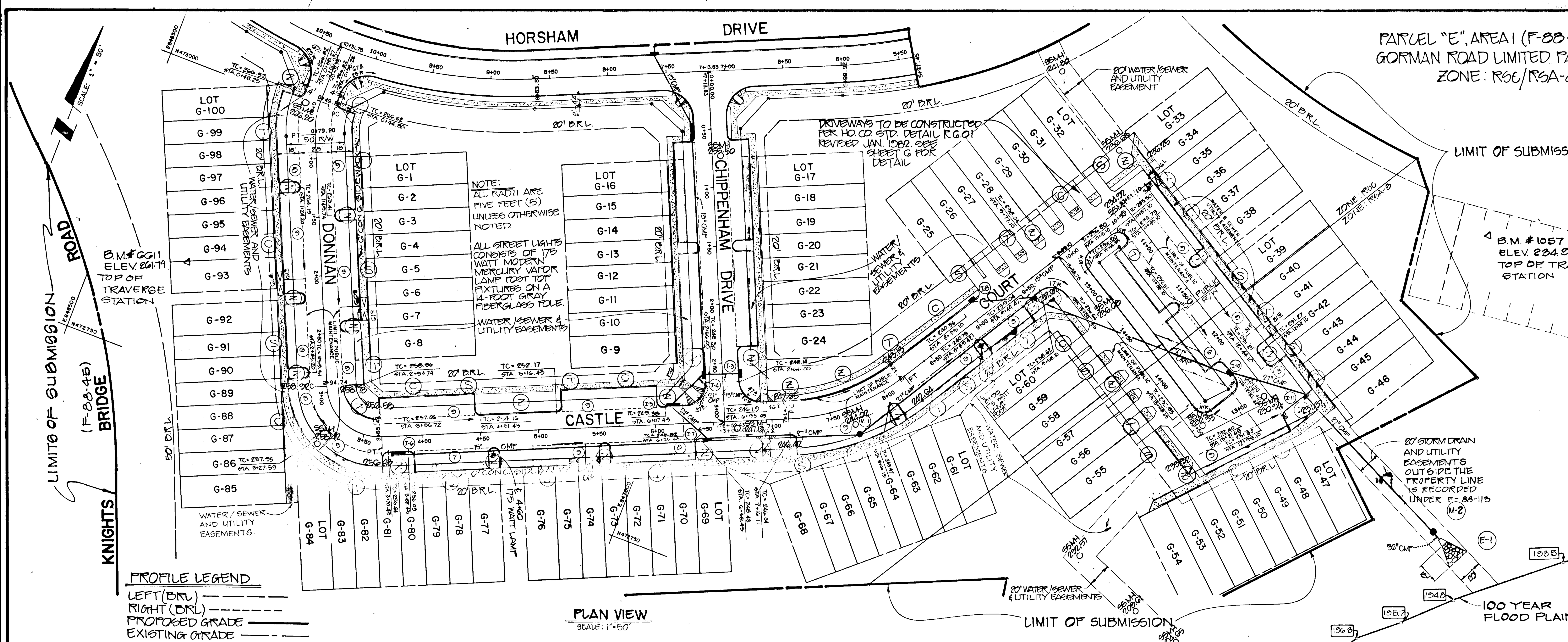
SURVEY	PHR&A	DATE	3-3-88
DESIGN	MJK		
DRAWN	CN2	SHEET	3 OF 10
CHECKED			
SCALE	AS SHOWN	FILE NO.	2184-1-7
C.I.			

AS-BUILT

PARCEL "E", AREA I (F-88-113)
GORMAN ROAD LIMITED PARTNERSHIP
ZONE: R5E/R5A-8

OWNER/DEVELOPER

GORMAN ROAD LIMITED PARTNERSHIP
C/O JAMES F. KNOTT DEVELOPMENT CORPORATION
110 WEST ROAD, SUITE 203
TOWSON, MARYLAND 21204



CENTERLINE LINE DATA

STA.	TO STA.	BEARING	DISTANCE (ft)
0+00	0+49.88	S0° 25'19"W	49.88
0+79.20	2+94.74	S23° 34'41"E	215.54
3+65.43	6+59.43	N66° 25'19"E	294.00
6+59.43	7+14.43	N66° 25'19"E	55.00
8+21.42	9+89.10	N31° 23'30"E	167.68
9+89.10	10+61.10	N31° 23'30"E	72.00
10+61.10	12+70.09	S58° 36'30"E	208.98
12+70.09	13+43.40	S42° 16'04"W	73.32
13+43.40	15+38.55	N58° 36'30"W	195.15

CENTERLINE CURVE DATA

PC STA.	TO PT STA.	RADIUS		ARC	TAN	CHORD	CHORD BEARING
0+49.88	0+79.20	70.00	24° 00'00"	29.32	14.88	29.11	S11° 34'41"E
2+94.74	3+65.43	45.00	90° 00'00"	70.69	45.00	63.64	S68° 34'41"E
7+14.43	8+21.42	175.00	35° 01'48"	106.99	55.23	105.33	N48° 54'24"E

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division — Date 8/2/88

Chief, Bureau of Highways — Date 7/29/88

Chief, Bureau of Engineering — Date 8.2.88

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Chief, Division of Community Planning & Land Development — Date

NO.	DESCRIPTION	DATE	RVSD BY	RFV BY	APPROVED	DATE
5	AS-BUILT REVISIONS		BP			5-6-91
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2	2ND SUBMISSION TO HO.CO.		M.K.			5/2/88
1	ISSUED TO HOCO.					3-3-88

REVISION APPROVED BY

STATE OF MARYLAND — RICHARD EDWARD TRAVERS — REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL SEAL

REVISED

PAVING AND STORM DRAIN PLAN AND PROFILE DONNAN CASTLE COURT

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

BOWLING BROOK FARMS
PARCEL G, PARCEL H
SECTION 4 AREA I
LOTS G-1 THRU G-102
A RESUBDIVISION OF LOT 216 BOWLING BROOK FARMS
SIXTH ELECTION DISTRICT
TAX MAP 47 — PARCEL 141
L. 1394 — F. 632

SURVEY	P.H.R.&A.
DESIGN	M.J.K.
DRAWN	C.N.Z.
CHECKED	
SCALE	AS SHOWN
C.I.	
DATE	3-3-88
SHEET	4 OF 10
FILE NO.	2184-1-7

AS-BUILT

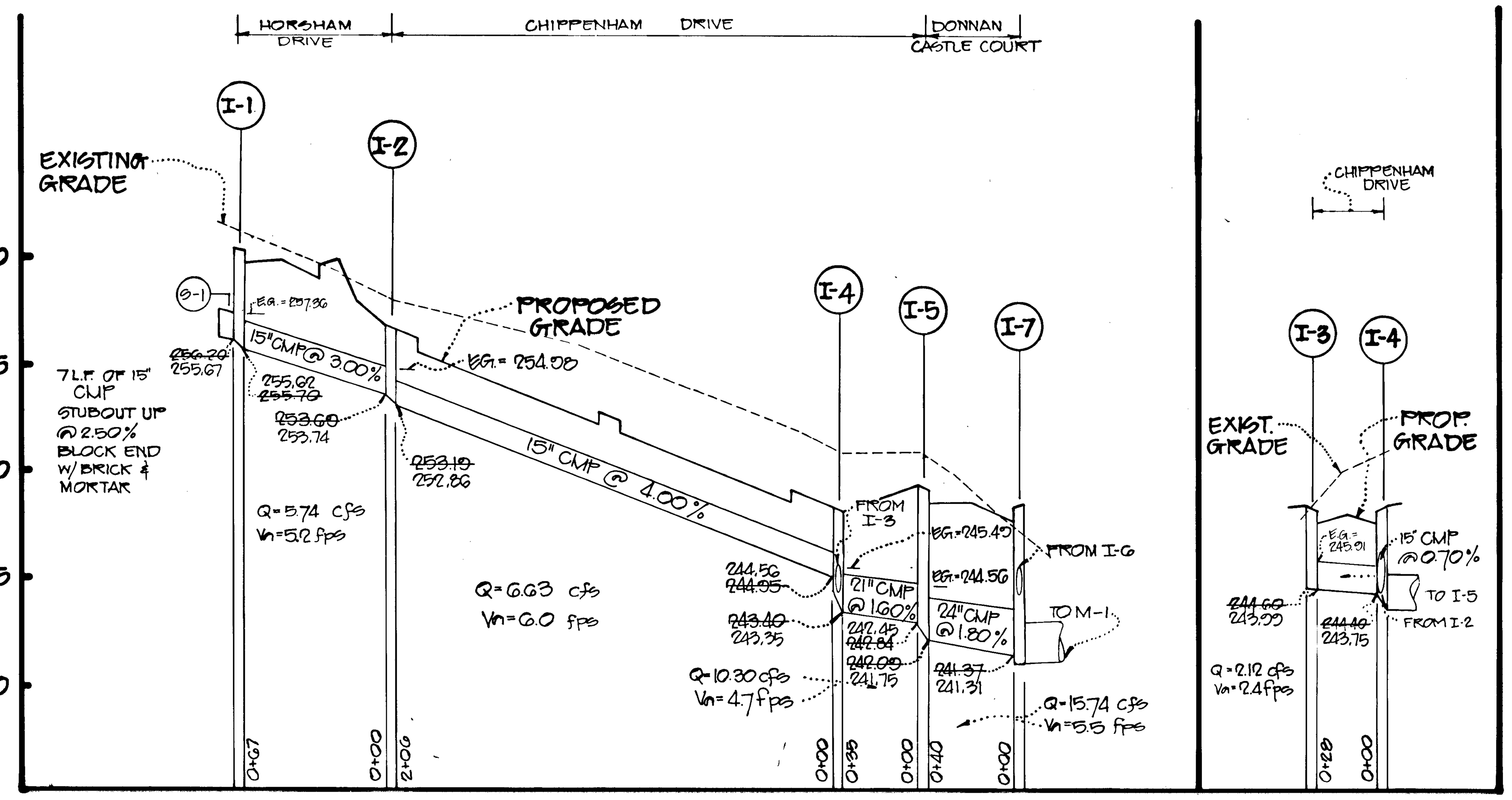
1271

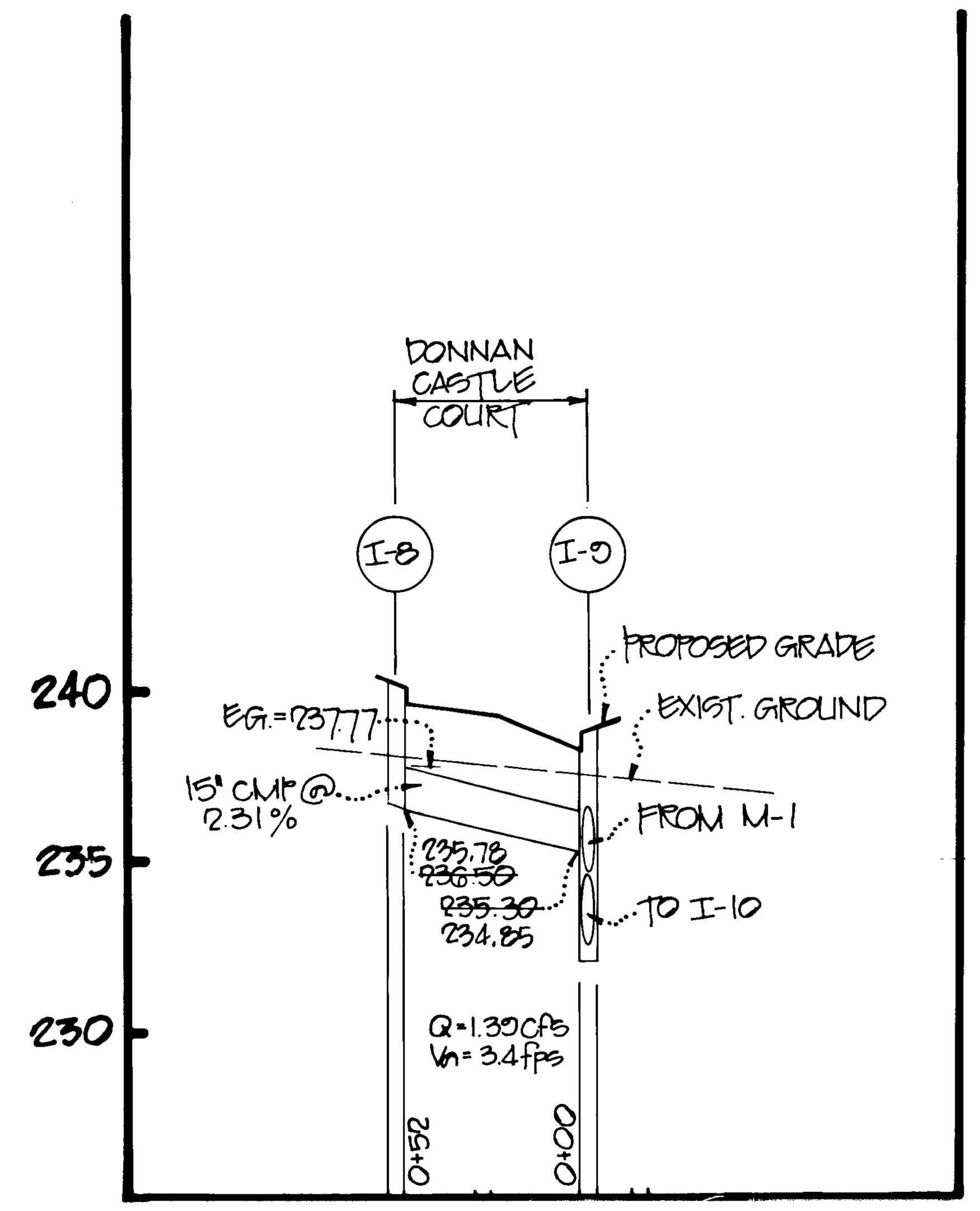
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division	8/2/88 Date
Chief, Bureau of Highways (Acting)	7/29/88 Date
Chief, Bureau of Engineering	8-2-88 Date

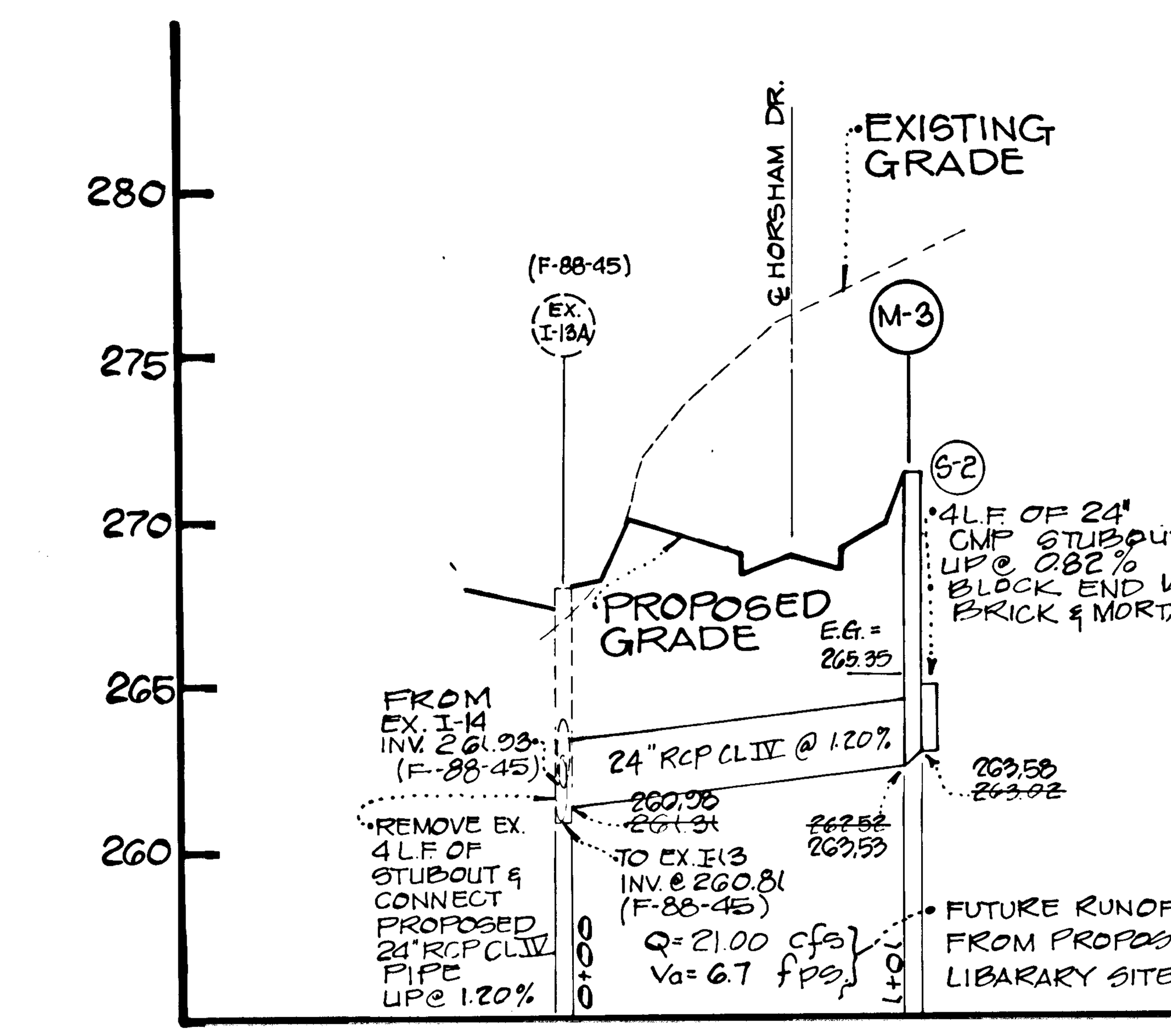
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

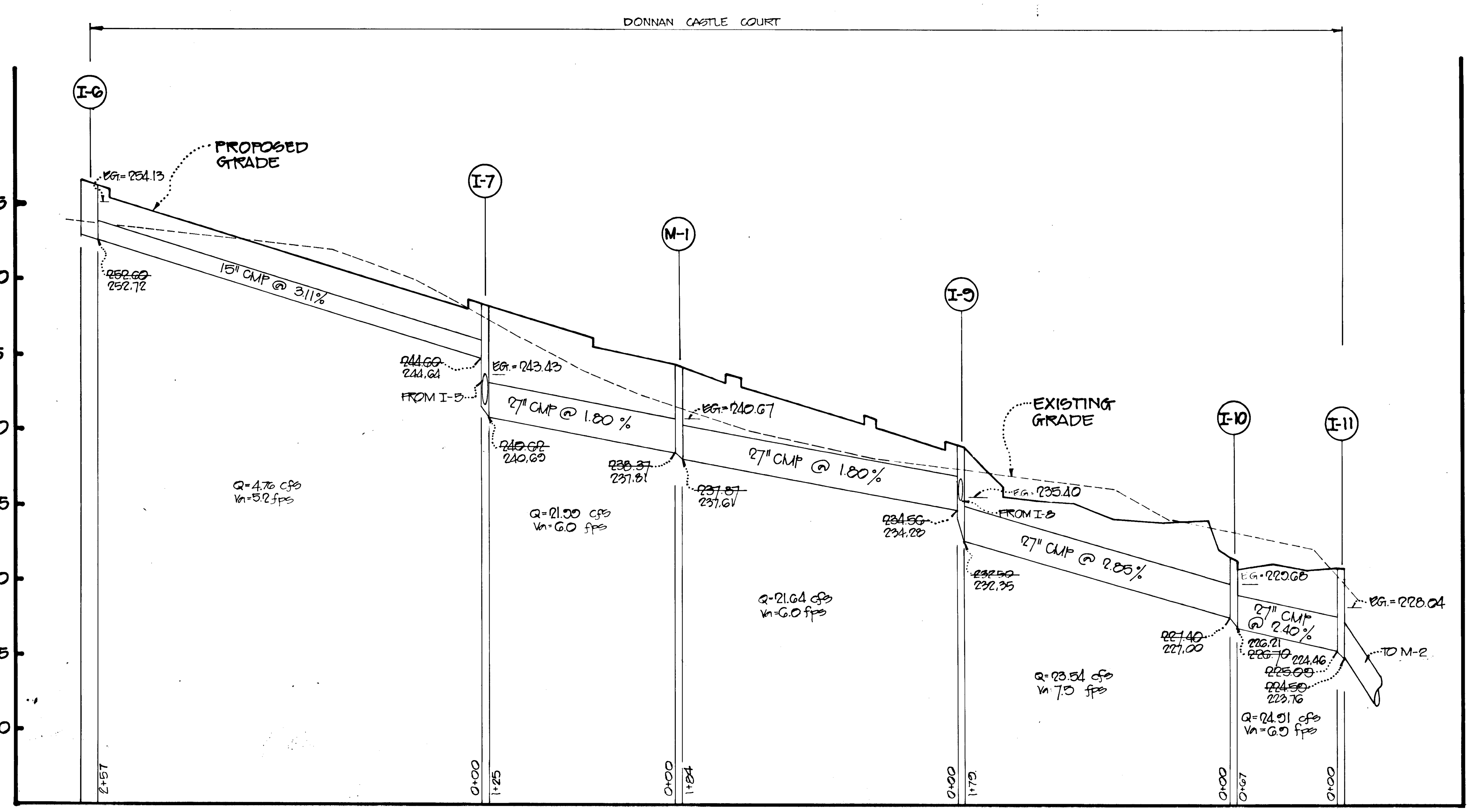
Chief, Division of Community Planning & Land Development	8-5-88 Date

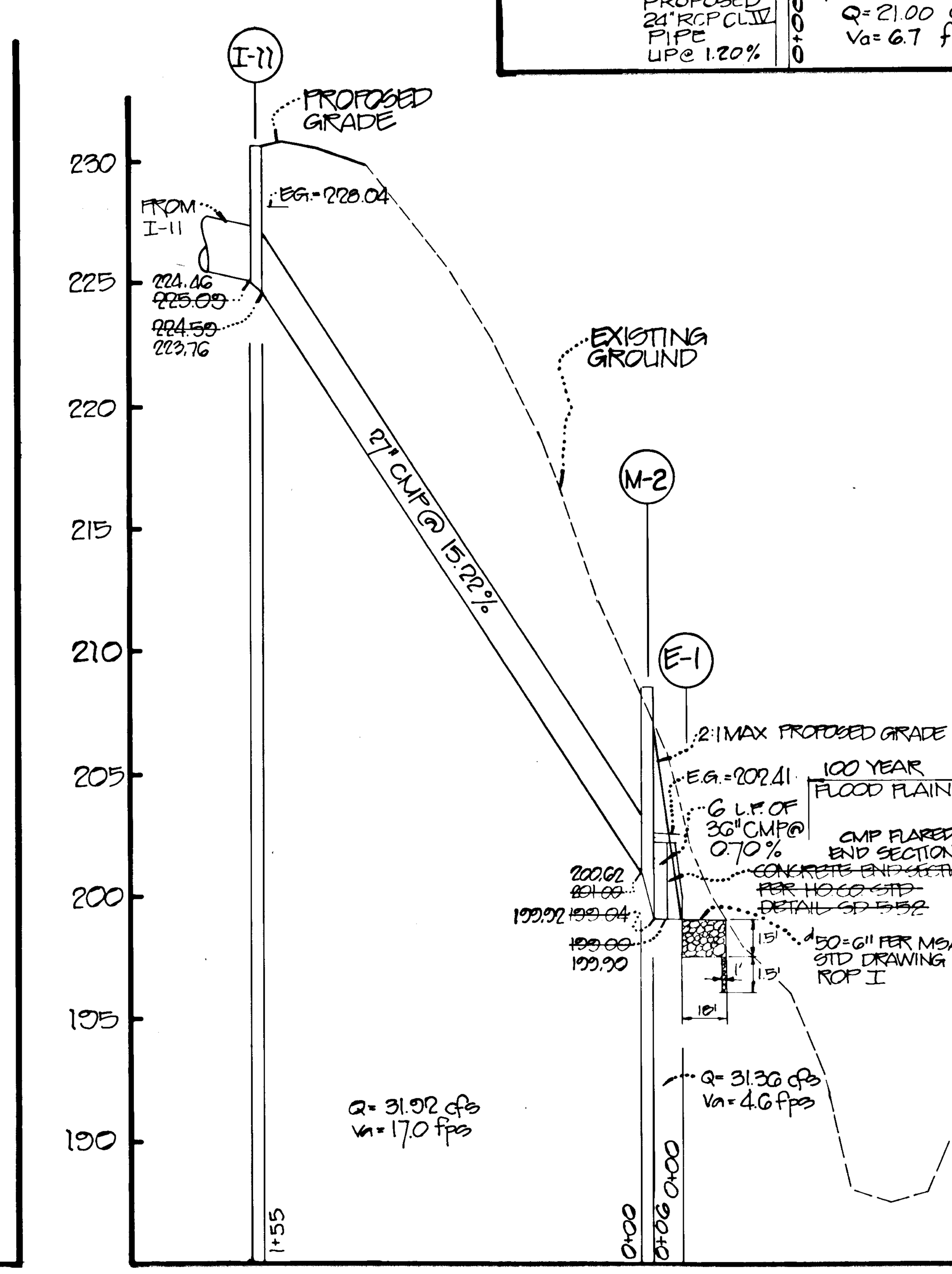




PROFILE SCALE
1"= 50' HORIZ.
1"= 5' VERT.







NOTE:
FOR ALL STORM DRAIN PIPES USE CLASS C PIPE BEDDING PER HOWARD COUNTY STORM DRAIN DESIGN MANUAL VOLUME I, FIGURE 11.4 (FOR DETAIL SEE SHEET 6)

OWNER/DEVELOPER

GORMAN ROAD LIMITED PARTNERSHIP
C/O JAMES F. KNOTT DEVELOPMENT CORPORATION
110 WEST ROAD, SUITE 203
TOWSON, MARYLAND 21204

NO.	DESCRIPTION			DATE
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2	2ND SUBMISSION TO HOCO	MK		5/12/88
1	ISSUED TO HOCO			3-3-88

REVISION APPROVED BY — APPROVED — DATE

STATE OF MARYLAND — 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, Maryland 20855 (301)762-2220

BOWLING BROOK FARMS
PARCEL G, PARCEL H
SECTION 4 AREA 1
LOTS G-1 THRU G-102
A RESUBDIVISION OF LOT 216 BOWLING BROOK FARMS
SIXTH ELECTION DISTRICT
TAX MAP 47 PARCEL 141
L.1394 F.632

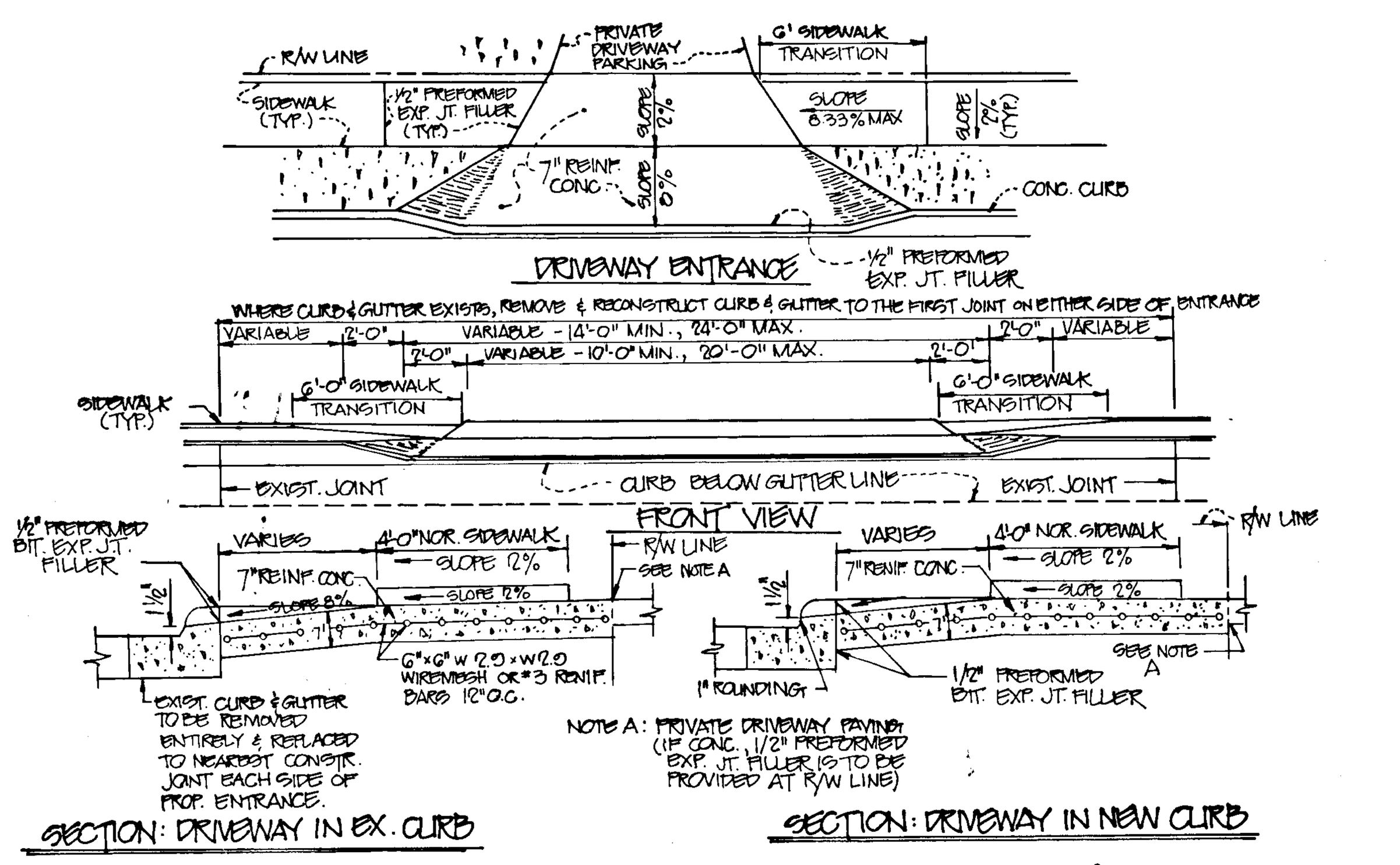
SURVEY	DATE 3-3-88
DESIGN M.J.K.	
DRAWN J.D.W.	SHEET 5 of 10
CHECKED	
SCALE AS SHOWN C.I.	FILE NO. 2184-1-7

AS-BUILT

1271

*NOTE: USE SECTION P-2 FOR ALL PARKING AND ROADWAY PAVING.

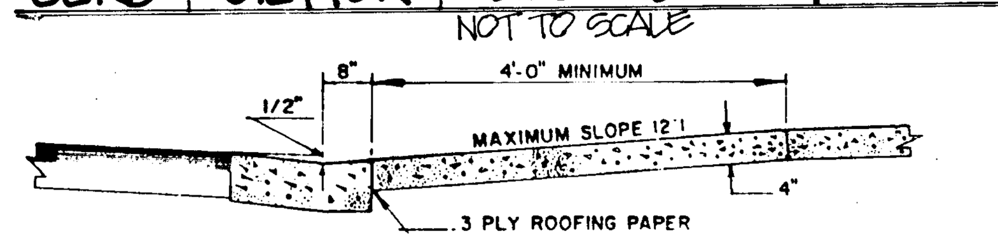
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	PAVEMENT MATERIALS: FULL DEPTH BIT. CONC. ALTERNATE	PAVEMENT MATERIALS: GRANULAR BASE ALTERNATES
P-1	PARKING AREAS AND TRAVELWAYS APARTMENTS AND COMMERCIAL-INDUSTRIAL ZONES WITH NO HEAVY TRUCKS	1" BIT. CONC. SURFACE; 4" BIT. CONC. BASE	1" BIT. CONC. SURFACE; 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) OF 6" DENSE GRADED STABILIZED AGGREGATE BASE COURSE



RESIDENTIAL DRIVEWAY ENTRANCE CLOSED SECTION WITH STANDARD 7" COMBINATION CURB & GUTTER & SIDEWALK SET BACK FROM CURB

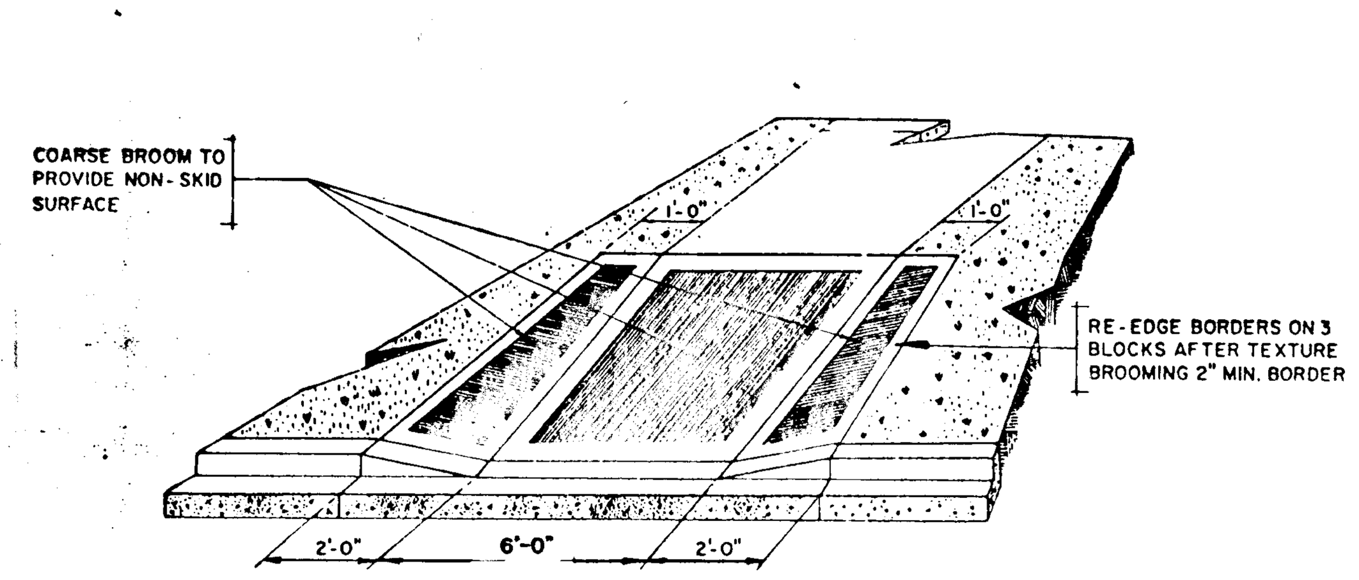
NOT TO SCALE

R-6.01

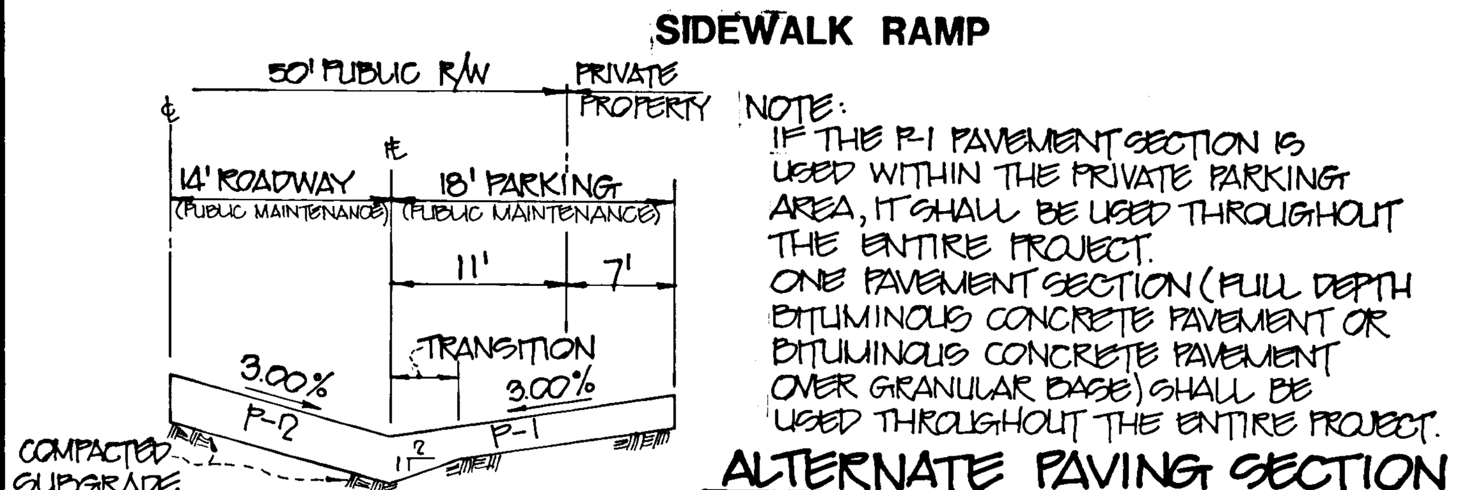


SECTION "A-A"

NOT TO SCALE



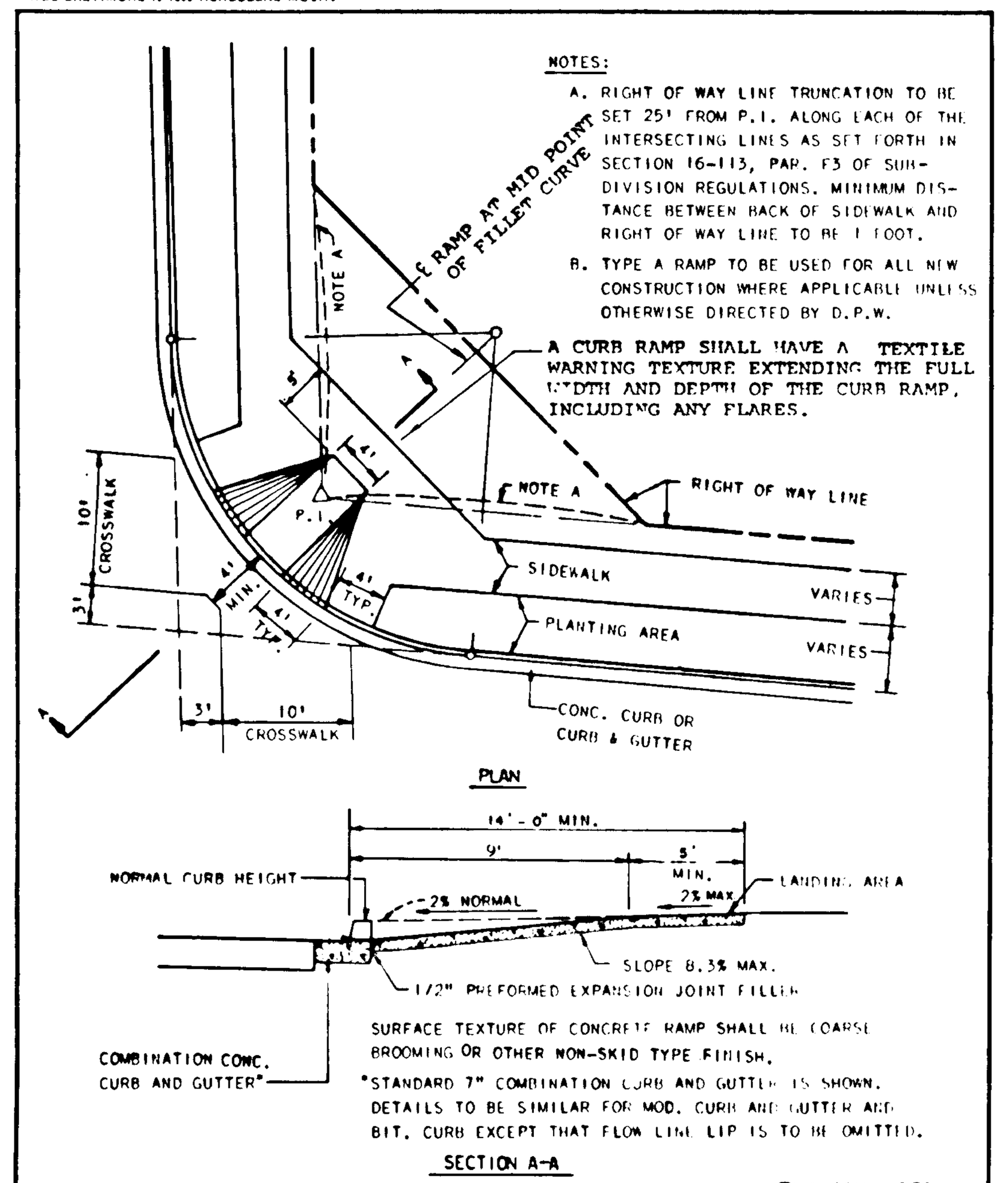
SIDEWALK RAMP



NOTE: IF THE P-1 PAVEMENT SECTION IS USED WITHIN THE PRIVATE PARKING AREA, IT SHALL BE USED THROUGHOUT THE ENTIRE PROJECT. ONE PAVEMENT SECTION (FULL DEPTH BITUMINOUS CONCRETE PAVEMENT OR BITUMINOUS CONCRETE PAVEMENT OVER GRANULAR BASE) SHALL BE USED THROUGHOUT THE ENTIRE PROJECT.

ALTERNATE PAVING SECTION

NOT TO SCALE



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 SUBDIVISION 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.

A CURB RAMP SHALL HAVE A TEXTILE WARNING TEXTURE EXTENDING THE FULL WIDTH AND DEPTH OF THE CURB RAMP, INCLUDING ANY FLARES.

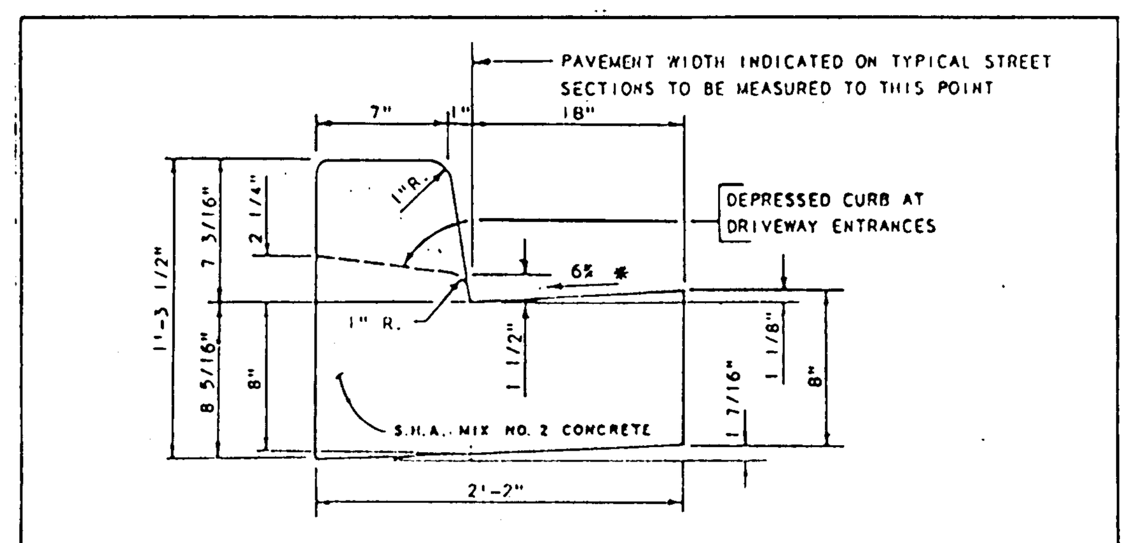
SURFACE TEXTURE OF CONCRETE RAMP SHALL BE COARSE BROOMING OR OTHER NON-SKID TYPE FINISH.

*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.

SECTION A-A

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

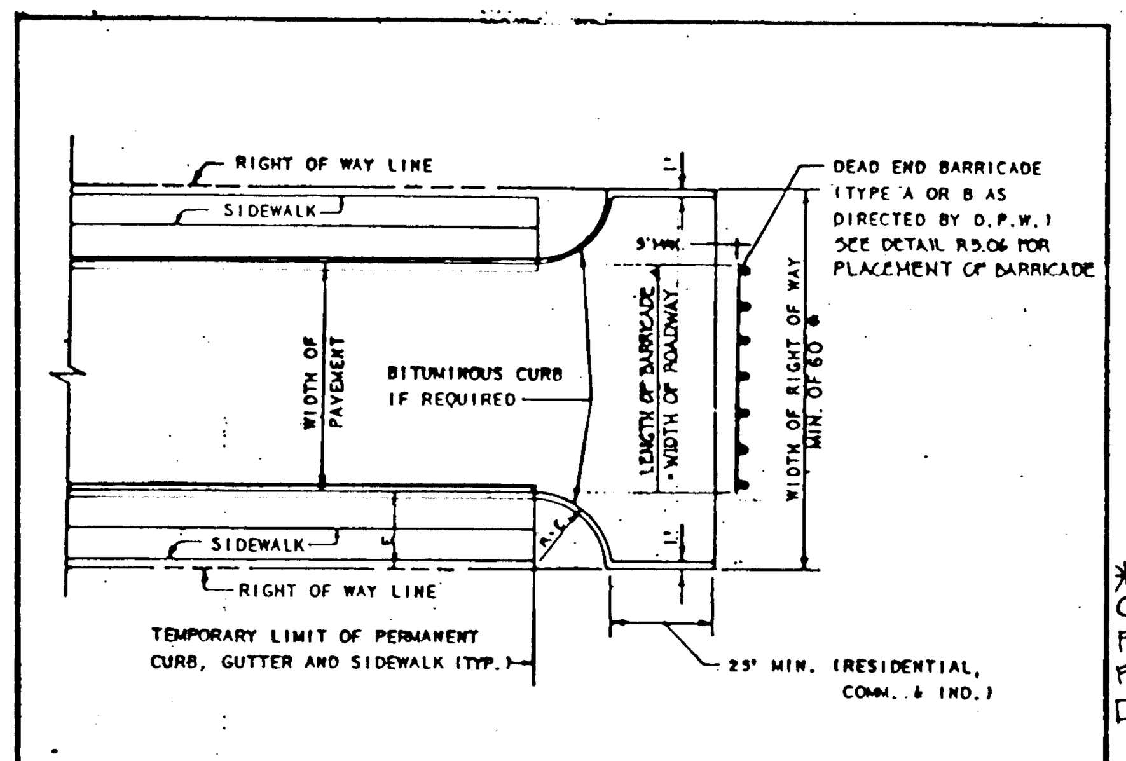


STANDARD 7" COMBINATION CURB AND GUTTER

* 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



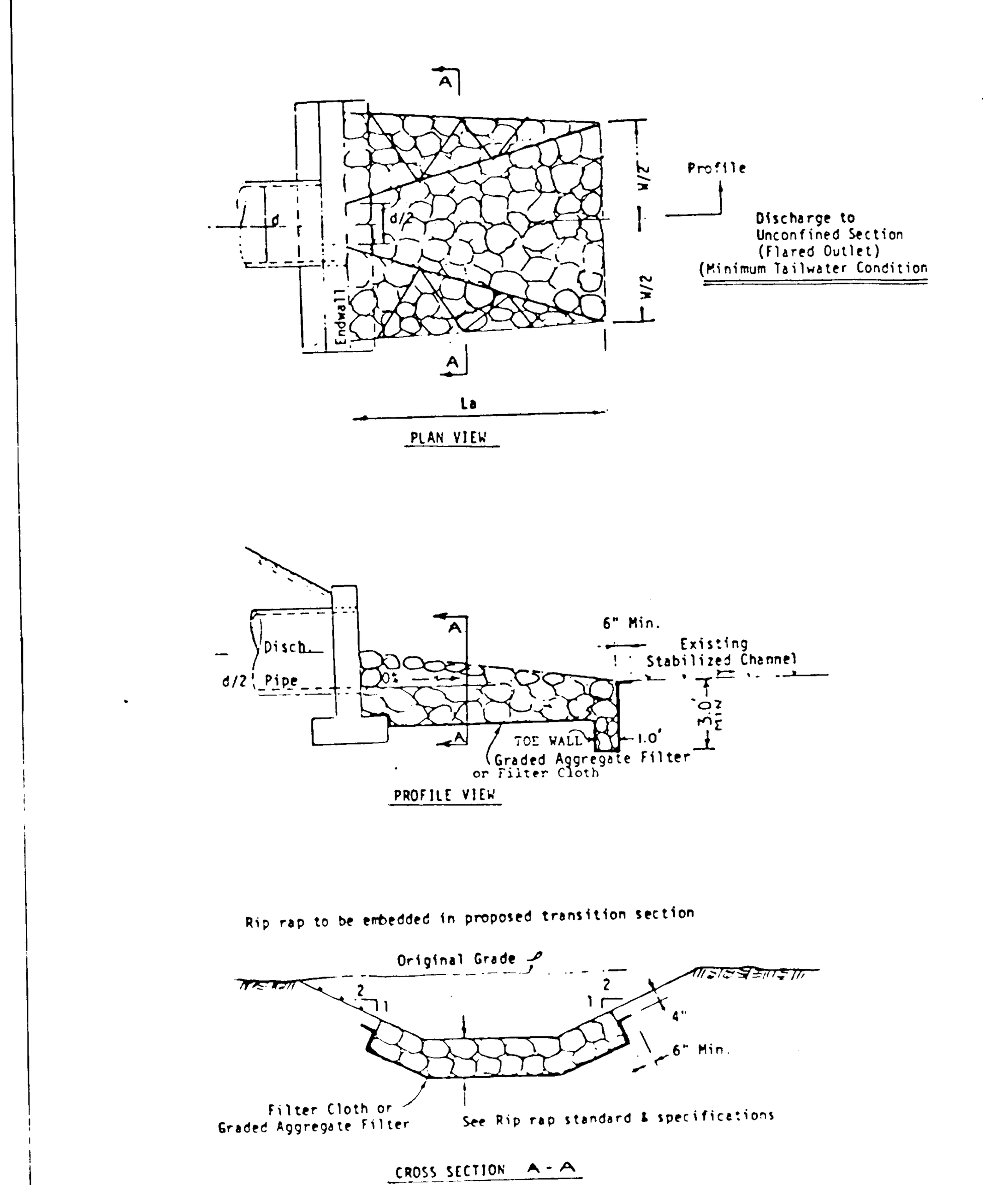
NOTES:

1. 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

*NOTE USE CLASS "C" PIPE BEDDING FOR ALL STORM DRAIN PIPES.



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

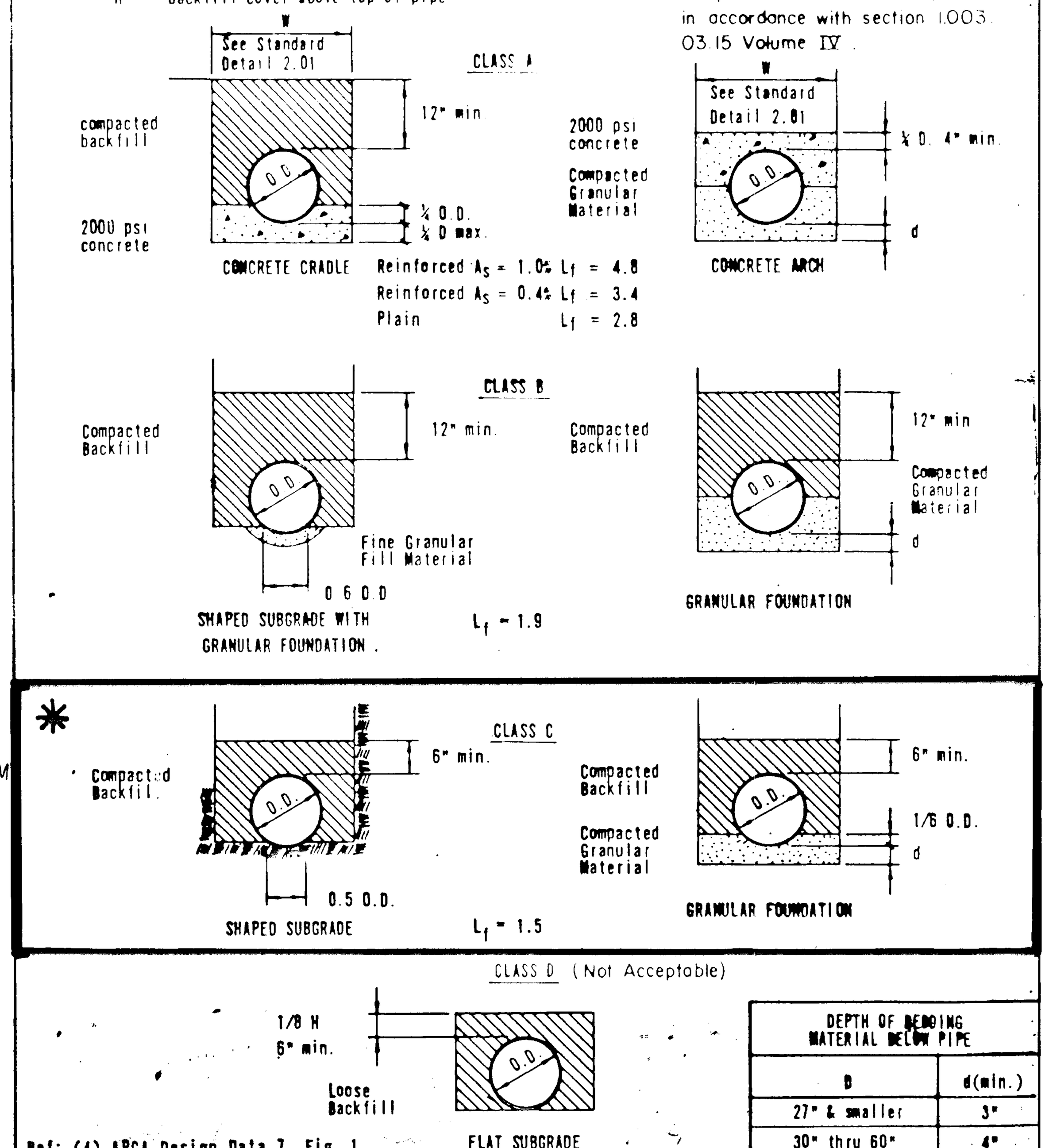
38 07

LEGEND

- O.D. Outside Diameter
- D Inside Diameter
- d depth of bedding material below pipe
- H backfill cover above top of pipe

NOTES:

1. For rock or other incompressible materials, the trench should be overexcavated a minimum of 6 inches and refilled with granular material
2. Compacted Backfill shall be placed in accordance with section 1.003 03.15 Volume IV.

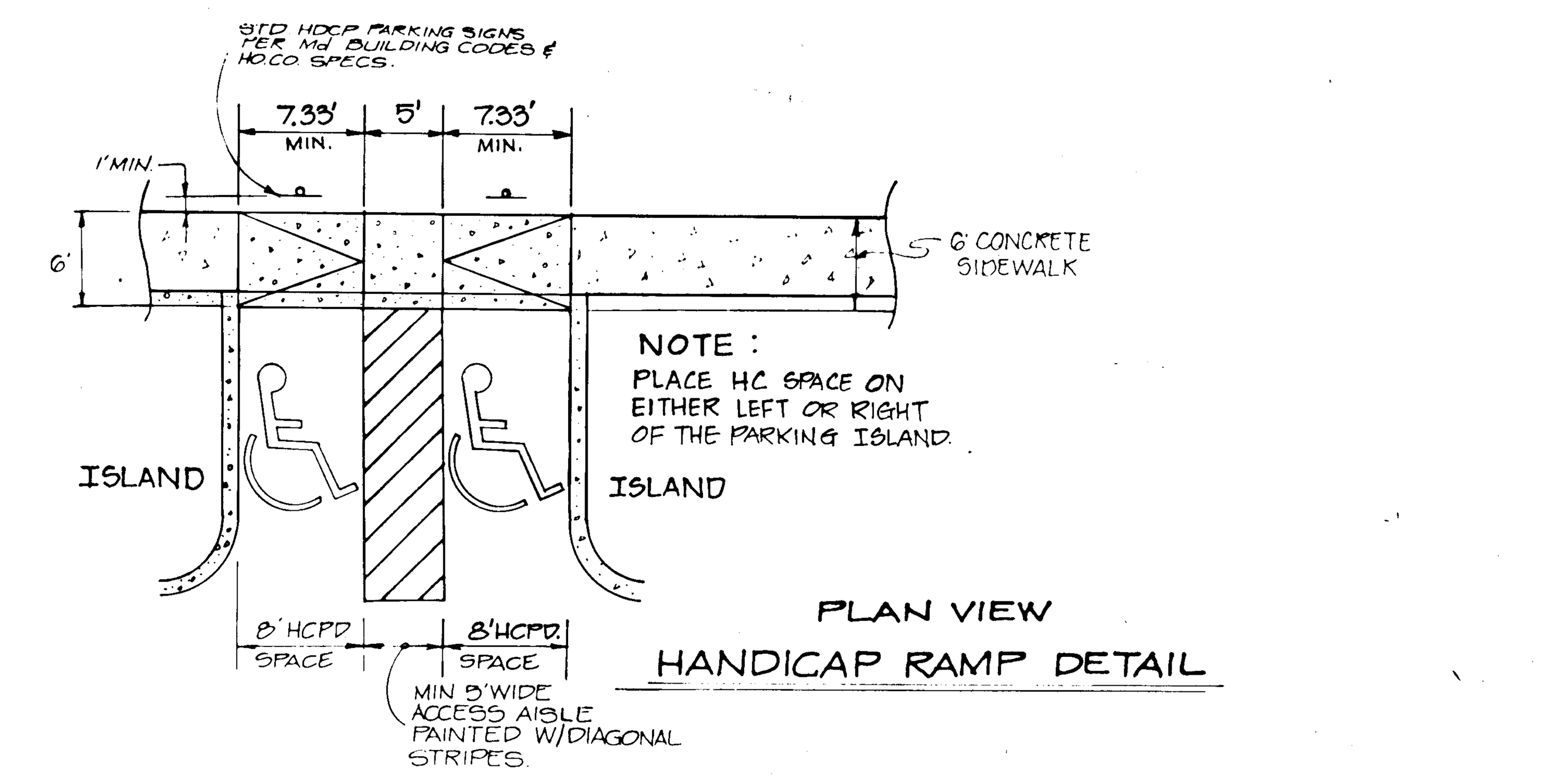


DEPTH OF BEDDING MATERIAL BELOW PIPE	
D	d(min.)
27" & smaller	3"
30" thru 60"	4"
66" & larger	6"

Ref: (4) APCA Design Data 7, Fig. 1 Modified by Purdum & Jeschke

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

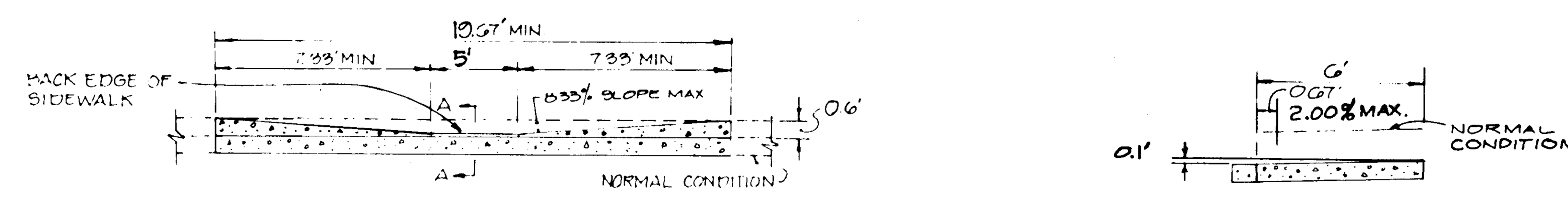
June 14, 1983



NOTE: PLACE HC SPACE ON EITHER LEFT OR RIGHT OF THE PARKING ISLAND.

PLAN VIEW

HANDICAP RAMP DETAIL

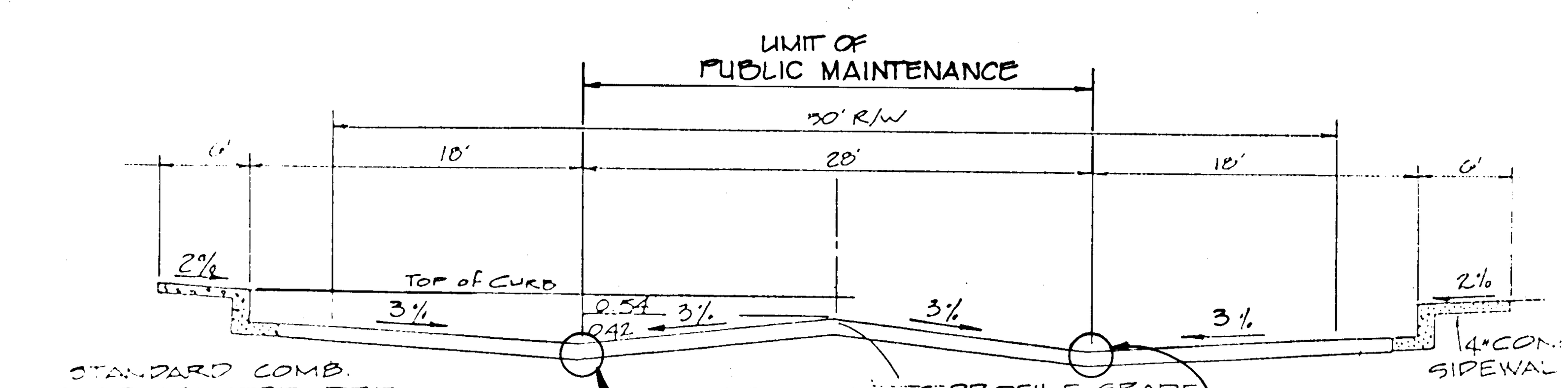


ELEVATION

NOT TO SCALE

SECTION A-A

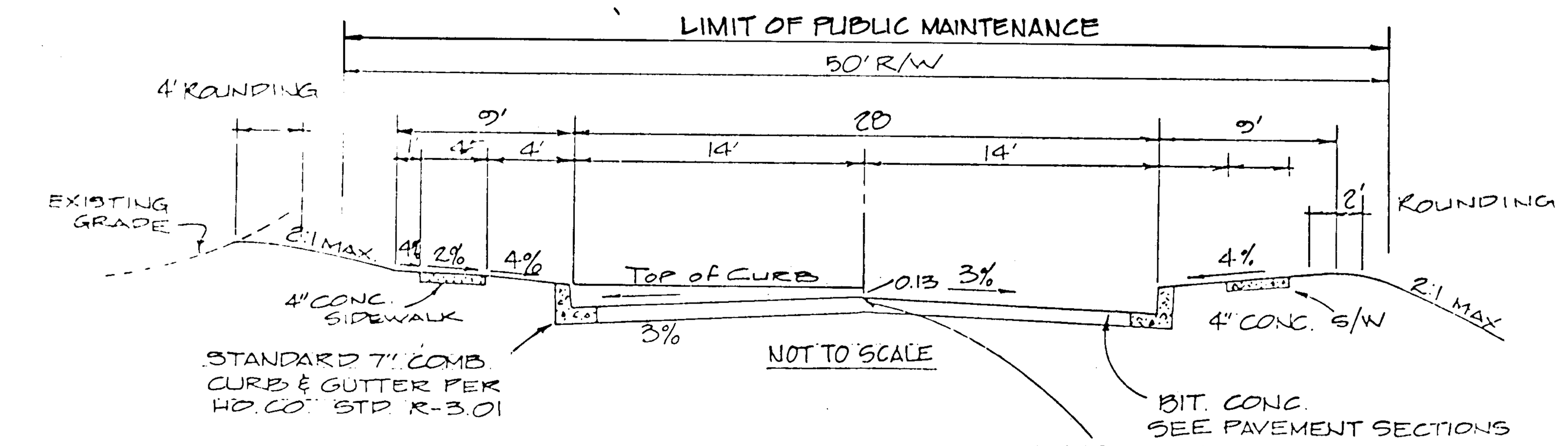
NOT TO SCALE



DONNAN CASTLE COURT & CHIPPENHAM DRIVE

CUL-DE-SAC STREET

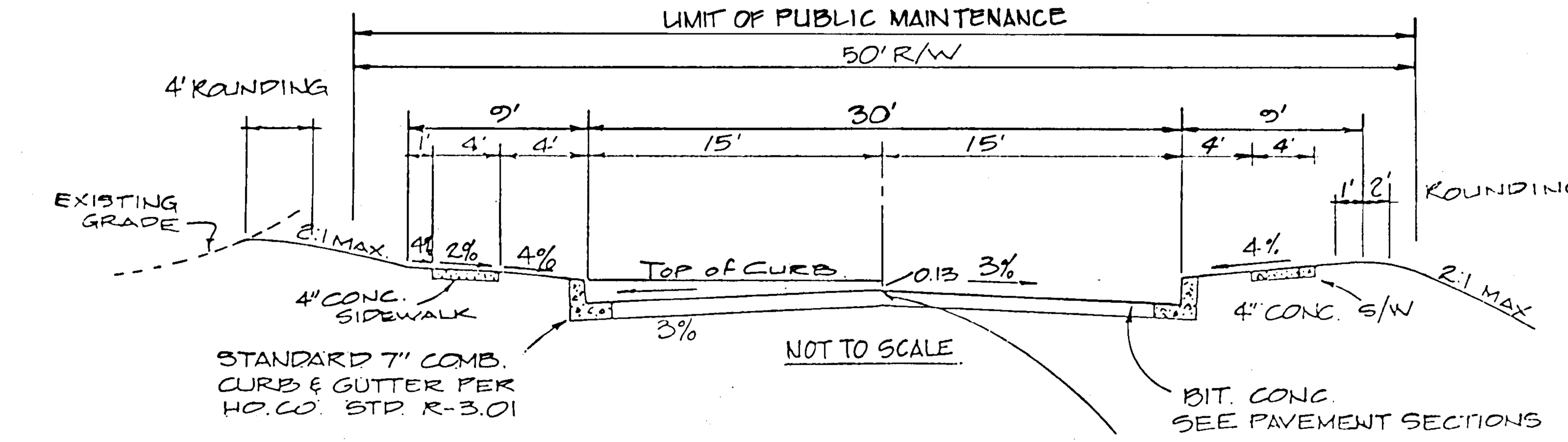
DESIGN SPEED = 30MPH



DONNAN CASTLE COURT (STA 0+00 TO STA 15+38.75) & CHIPPENHAM DRIVE (STA. 0+00 TO STA 3+00)

CUL-DE-SAC STREET

DESIGN SPEED = 30MPH



HORSHAM DRIVE

LOCAL STREET

DESIGN SPEEN = 30MPH

(STA.5+37.45 TO STA.13+56.47)

OWNER/DEVELOPER

GORMAN ROAD LIMITED PARTNERSHIP
C/O JAMES F. KNOTT DEVELOPMENT CORPORATION
110 WEST ROAD, SUITE 203
TOWSON, MARYLAND 21204

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

(signature)	8/2/88
Chief, Land Development Division	Date
(signature)	7/29/88
Chief, Bureau of Highways	Date
(signature)	8-3-88
Chief, Bureau of Engineering	Date

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

(signature)	8-5-88
Chief, Division of Community Planning & Land Development	Date

NO.	DESCRIPTION	DATE	RVSD BY	REV BY	APPROVED	DATE
4	REDLINE REVISIONS		MK			10-27-88
3	REVISIONS FROM DPW COMMENTS FROM 6/16					6/28/88
2	2ND SUBMISSION TO HO. CO.		M.K.			5/2/88
1	ISSUED TO HOCO					3-3-88

REVISION APPROVED BY

STATE OF MARYLAND RICHARD EDWARD TRAVERS 15136 REGISTERED PROFESSIONAL ENGINEER

PROFESSIONAL SEAL

REVISED

DETAIL SHEET (PAVING AND STORM DRAIN)

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

BOWLING BROOK FARMS

PARCEL G, PARCEL H
SECTION 4 AREA 1
LOTS G-1 THRU G-102
A RESUBDIVISION OF LOT 216 BOWLING BROOK FARMS
SIXTH ELECTION DISTRICT
TAX MAP 47 PARCEL 141
L.1394 F.632

SURVEY	DATE 3-3-88
DESIGN	
DRAWN	SHEET 6 OF 10
CHECKED	
SCALE AS SHOWN C.I.	FILE NO. 2184-1-7

127

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	15.1	Acres
Area Disturbed	11.4	Acres
Area to be roofed or paved	6.0	Acres
Area to be vegetatively stabilized	5.4	Acres
Total Cut	36,065	Cu. yds
Total Fill	38,406	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.

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 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 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.

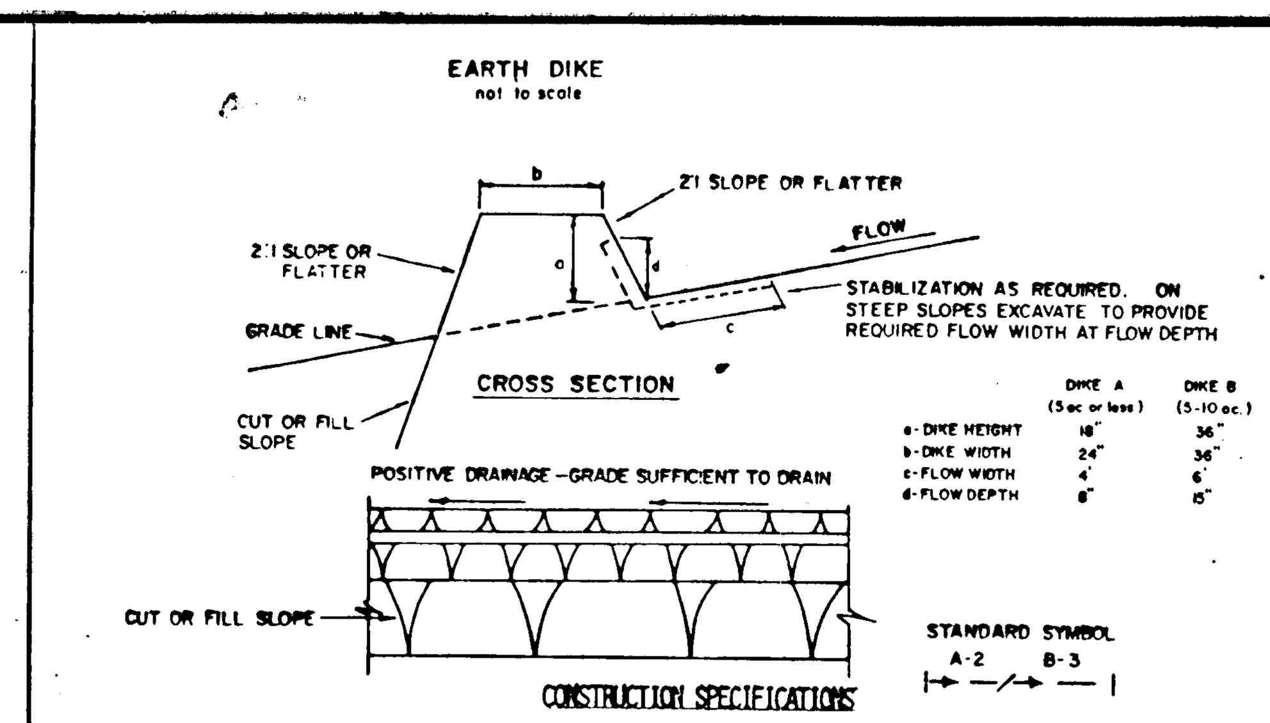
Soil Amendments: Apply 60 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft).

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.

EARTH DIKE
not to scale



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 THE CHART BELOW.

FLOW CHANNEL STABILIZATION

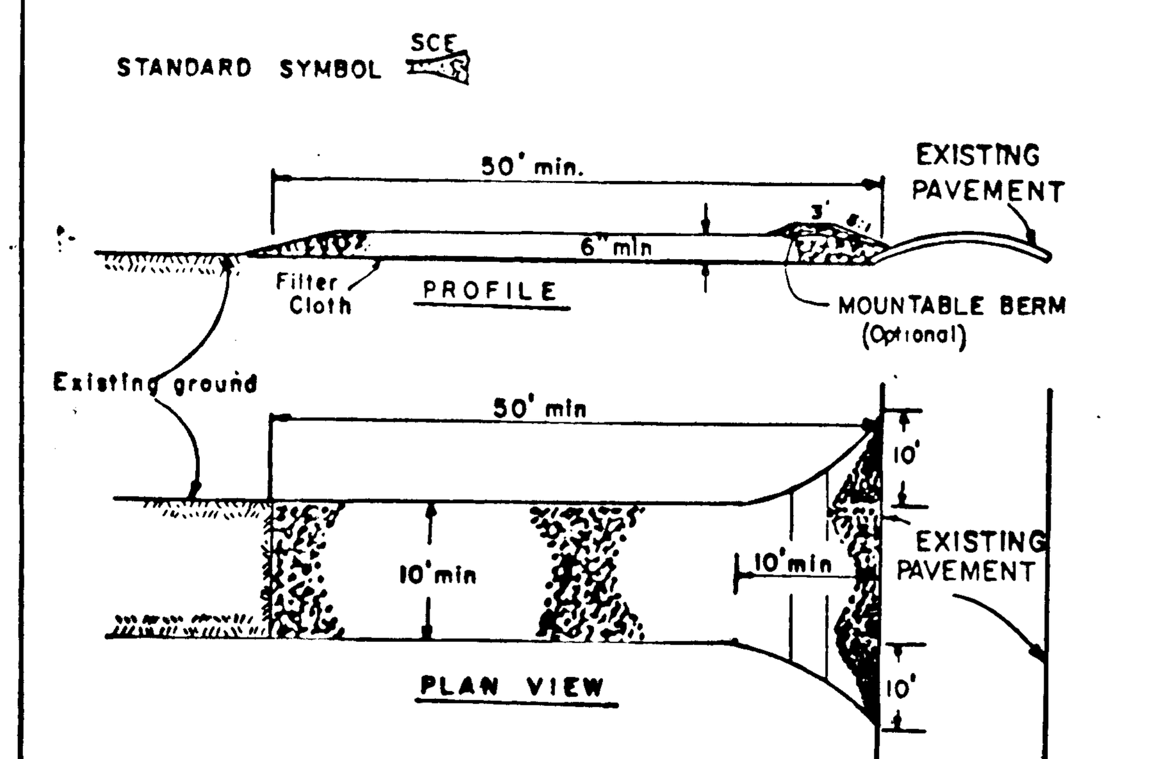
TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4-8"
4	8.1-20%	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	EARTH DIKE	STANDARD DRAWING ED-1

STABILIZED CONSTRUCTION ENTRANCE
not to 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.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE College Park, Md.	STABILIZED CONSTRUCTION ENTRANCE	Standard Drawing SCE-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."

Kim T. von Poue (signature) — 7/21/88

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.

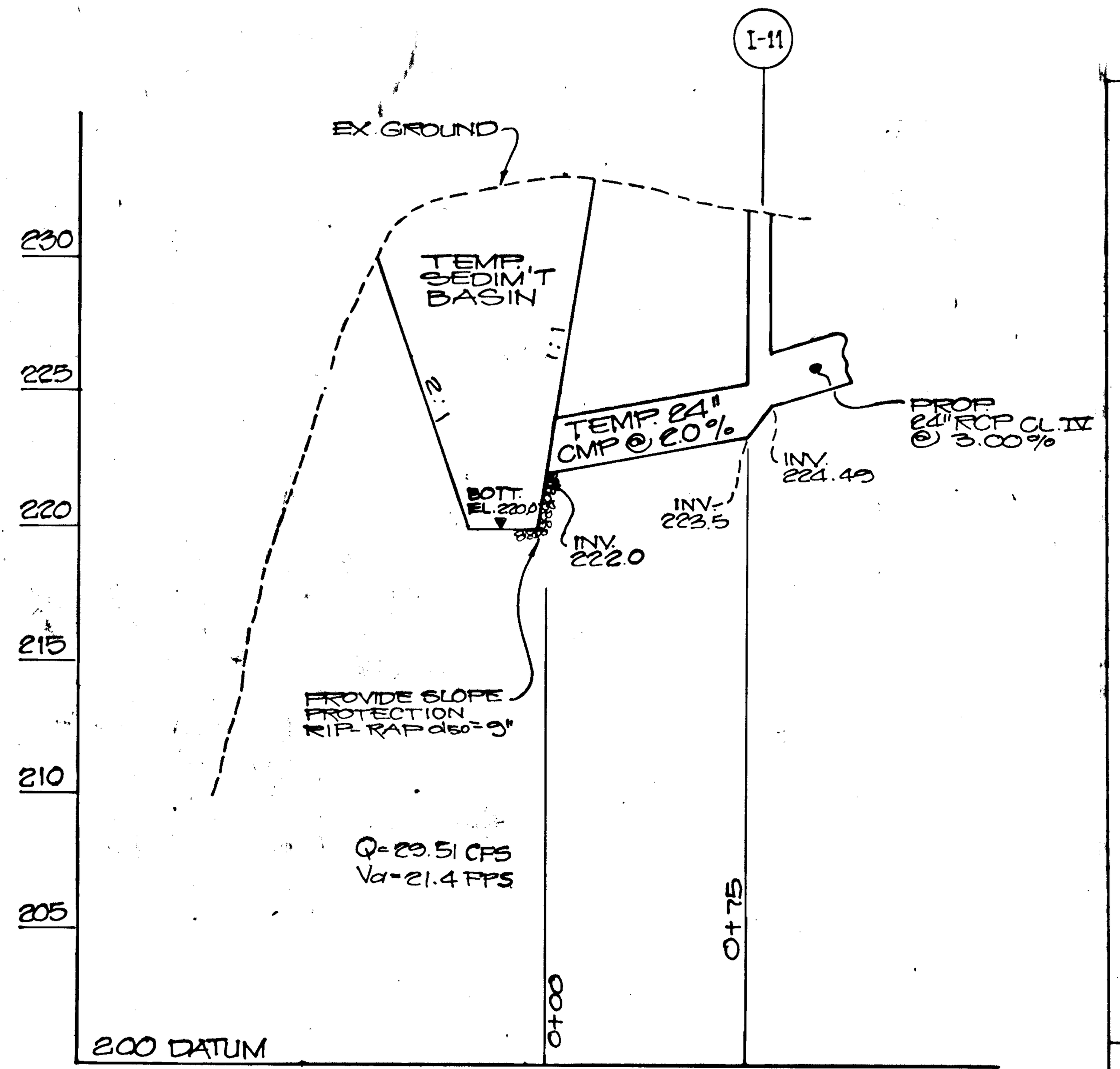
(signature) 7/21/

Signature of Engineer — Date

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER

SEQUENCE OF CONSTRUCTION

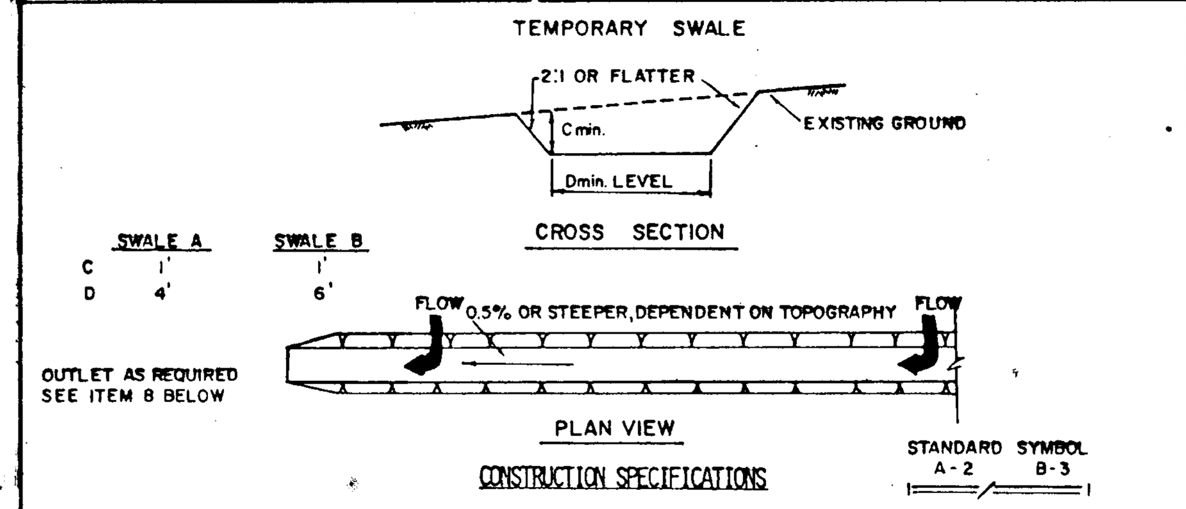
1. OBTAIN REVISED GRADING PERMIT
2. MAINTAIN EXISTING SEDIMENT CONTROL MEASURES IN PLACE FROM ROUGH GRADING OPERATIONS, GP-88-65. (NOTE: REMOVAL OF INTERIOR EARTH DIKE SHALL BE DONE UNDER THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR
3. CONSTRUCT SANITARY SEWER, WATER MAINS AND STORM DRAINS AS INDICATED ON PLANS. CONSTRUCT TEMPORARY DIVERSIONS AS SHOWN ON PLAN.
4. CONSTRUCT REMAINING UNDERGROUND UTILITIES, PAVE STREETS AND PARKING AREAS
5. APPLY TEMPORARY AND/OR PERMANENT VEGETATIVE STABILIZATION TO DISTURBED AREAS NOT SUBJECT TO IMMEDIATE CONSTRUCTION AS REQUIRED BY THE SEEDING NOTES ON THIS SHEET
6. AS THEIR CONTRIBUTING DRAINAGE AREAS ARE BROUGHT TO FINAL GRADE AND STABILIZED, REMOVE SEDIMENT CONTROL MEASURES AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR



TEMP. 24" CMP PROFILE FOR EROSION and SEDIMENT CONTROL

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

TEMPORARY SWALE



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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	TEMPORARY SWALE	STANDARD DRAWING TS-1

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

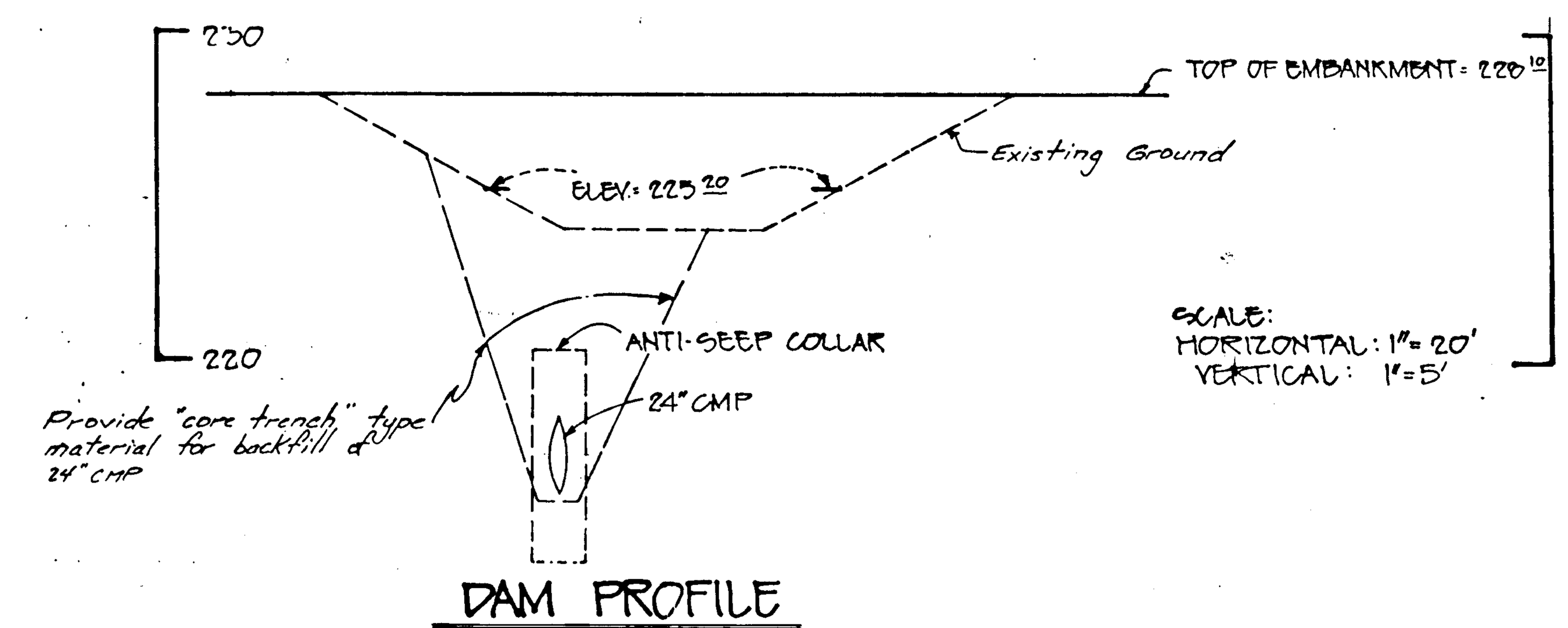
(signature) — 8-5-88
Chief, Division of Community Planning & Land Development — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

(signature) — 8/2/88
Chief, Land Development Division — Date

(signature) — 7/29/88
Chief, Bureau of Highways — Date

(signature) — 8-2-88
Chief, Bureau of Engineering — Date



DAM PROFILE

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

(signature) — 7/26/88
U.S. Soil Conservation Service — Date

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

APPROVED (signature) — 7/26/88
Howard S.C.D. — Date

PLAN NUMBER ______

OWNER/DEVELOPER

GORMAN ROAD LIMITED PARTNERSHIP
C/O JAMES F. KNOTT DEVELOPMENT CORPORATION
110 WEST ROAD, SUITE 203
TOWSON, MARYLAND 21204

THIS PLAN FOR STREET AND UTILITY CONSTRUCTION ONLY.

NO.	DESCRIPTION	DATE	RVSD BY	RFV BY	APPROVED	DATE
4	REVISIONS PER HSCD COMMENTS					7/21/88
3	REVISIONS FROM DPW COMMENTS FROM 6/16					6/28/88
2	2ND SUBMISSION TO HO. CO.		M.K.			5/2/88
1	ISSUED TO HOCO					3-3-8

REVISION APPROVED BY

PROFESSIONAL SEAL

REVISED

DETAIL SHEET (EROSION AND SEDIMENT CONTROL)

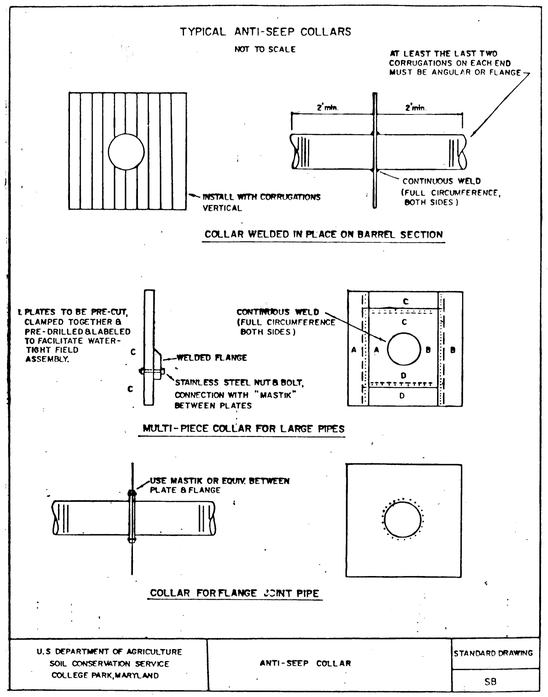
Patton Harris Rust and Associates
A Professional Corporation
Engineers, Surveyors, Planners and Landscape Architects
7609 Standish Place Rockville, Maryland 20855 (301)762-2220

BOWLING BROOK FARMS
PARCEL G, PARCEL H
SECTION 4 AREA I
LOTS G-1 THRU G-102
A RESUBDIVISION OF LOT 216 BOWLING BROOK FARMS
SIXTH ELECTION DISTRICT
TAX MAP 47 — PARCEL 141
L.1394 — F.632

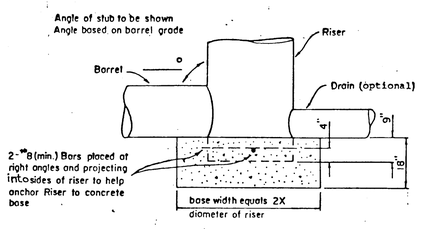
SURVEY	PHR&A	DATE	3-3-88
DESIGN	EIC		
DRAWN	EIC	SHEET	7 OF 10
CHECKED			
SCALE	AS SHOWN	FILE NO.	2184-1-7
C.I.	—		

1271

PARCELS G & H



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	ANTI-SEEP COLLAR	STANDARD DRAWING SB



RISER BASE DETAIL

NOTES:

1. The concrete base shall be poured in such a manner to insure that the concrete fills the bottom of the riser to the invert of the outlet pipe to prevent the riser from breaking away from the base.
2. With aluminum or aluminized pipe, the embedded section must be painted with zinc chromate or equivalent.
3. Riser base may be sized as computed using floatation with a factor of safety of 1.2.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	RISER BASE DETAIL SEDIMENT BASIN

CONSTRUCTION SPECIFICATIONS

Site Preparation

Areas under the embankment shall be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots or other objectionable material. In order to facilitate clean-out and restoration, the pool area (measured at the top of the pipe spillway) will be cleared of all brush, trees, and other objectionable materials.

~~Cut-off-Trench~~

~~A cut-off trench shall be excavated along the centerline of earth fill embankments. The minimum depth shall be two feet. The cut-off trench shall extend up both abutments to the riser crest elevation. The minimum bottom width shall be four feet, but wide enough to permit operation of excavation and compaction equipment. The side slopes shall be no steeper than 1:1. Compaction requirements shall be the same as those for embankment. The trench shall be dewatered during the backfilling-compaction operations.~~

Embankment

The fill material shall be taken from approved areas shown on the plans. It shall be clean mineral soil free of roots, woody vegetation, oversized stones, rocks, or other objectionable material. Relatively pervious materials such as sand or gravel (Unified Soil Classes GW, GP, SW & SP) shall not be placed in the embankment. Areas on which fill is to be placed shall be scarified prior to placement of fill. The fill material shall contain sufficient moisture so that it can be formed by hand into a ball without crumbling. If water can be squeezed out of the ball, it is too wet for proper compaction. Fill material shall be placed six-inch to eight-inch thick continuous layers over the entire length of the fill. Compaction shall be obtained by routing and hauling the construction equipment over the fill so that the entire surface of each layer of the fill is traversed by at least one wheel or tread track of the equipment or by the use of a compactor. The embankment shall be constructed to an elevation 10 percent higher than the design height to allow for settlement.

Pipe Spillways

The riser shall be securely attached to the barrel or barrel stub by welding the full circumference making a watertight structural connection. The barrel stub must be attached to the riser at the same percent (angle) of grade as the outlet conduit. The connection between the riser and the riser base shall be watertight. All connections between barrel sections must be achieved by approved watertight band assemblies. (See page 18.22 for details.) The barrel and riser shall be placed on a firm, smooth foundation of impervious soil. Pervious materials such as sand, gravel, or crushed stone shall not be used as backfill around the pipe or anti-seep collars. The fill material around the pipe spillway shall be placed in four inch layers and compacted under and around the pipe to at least the same density as the adjacent embankment.

A minimum depth of two feet of hand compacted backfill shall be placed over the pipe spillway before crossing it with construction equipment. Steel base plates on risers shall have at least 2-1/2 feet of compacted earth, stone or gravel placed over it to prevent flotation.

~~Emergency Spillway~~

~~The emergency spillway shall be installed in undisturbed ground. The achievement of planned elevations, grades, design width, entrance and exit channel slopes are critical to the successful operation of the emergency spillway and must be constructed within a tolerance of ± 0.2 feet.~~

Vegetative Treatment

Stabilize the embankment ~~and emergency spillway~~ in accordance with the appropriate vegetative Standard and Specifications immediately following construction. In no case shall the embankment remain unstabilized for more than seven(7) days.

Erosion and Pollution Control

Construction operations shall be carried out in such a manner that erosion and water pollution will be minimized. State and local laws shall be complied with concerning pollution abatement.

Safety

State and local requirements shall be met concerning fencing and signs, warning the public of hazards of soft sediment and floodwater.

Maintenance

1. Repair all damages caused by soil erosion and construction equipment at or before the end of each working day.
2. Sediment shall be removed from the basin when it reaches the specified distance below the top of the riser. This sediment shall be placed in such a manner that it will not erode from the site. The sediment shall not be deposited downstream from the embankment, adjacent to a stream or flood plain.

Final Disposal

When temporary structures have served their intended purpose and the contributing drainage area has been properly stabilized, the embankment and resulting sediment deposits are to be leveled or otherwise disposed of in accordance with the approved sediment control plan. The proposed use of a sediment basin site will often dictate final disposition of the basin and any sediment contained therein. If the site is scheduled for future construction, then the basin material and trapped sediments must be removed, safely disposed of, and backfilled with a structural fill. When the basin area is to remain open space the pond may be pumped dry, graded and back filled.

TEMPORARY SEDIMENT BASIN DESIGN DATA SHEET

Computed by KAR Date 6/5/88
Checked by _____ Date _____

Project Bowling Brook Farms 2184-1-7
Basin # 1 Location Parcel G north of Hemmeth Branch
Total Area draining to basin, 8 Acres.

BASIN VOLUME DESIGN

1. Min. required vol. = 67 cu. yds. x 8.0 ac. drainage = 536 cu. yds.
2. Vol. of basin = _____ = 567 cu. yds.
3. Excavate 600+ cu. yds. to obtain required capacity.
   Min. vol. before cleanout = 27 cu. yds. x 8.0 ac. drainage = 216 cu. yds.
   Elevation corresponding to scheduled time to clean out 222.00
   Distance below top of riser 2.0

DESIGN OF SPILLWAYS

Runoff

4. $Q_{p_{10}}$ = 435 cfs (EFH, Ch. 2 or other appropriate method, attach runoff computation sheet).

Pipe Spillway (Q_{ps})

5. Min. pipe spillway capacity, Q_{ps} = 0.2 x — ac. drainage = — cfs.
   Note: If there is no emergency spillway, then req'd. $Q_{ps} = Q_p$ = 43.5 cfs.
6. H = 25 ft. Barrel length = 110 ft.
7. Barrel: Diam. 24 inches; Q_{ps} = (Q) 55.2 x (cor. fac.) 1.00 = 425 cfs.
8. Riser: Diam. 42 inches; Length 2 ft.; h = 12 ft.
9. Trash Rack: Diam. 60 inches; H= 27 inches.

Emergency Spillway Design

10. Emergency Spillway Flow, $Q_{es} = Q_p - Q_{ps}$ = — — = — cfs.
11. Width — ft. H_e — ft.
    Entrance channel slope _____
    Exit channel slope _____

ANTI-SEEP COLLAR DESIGN (If Required)

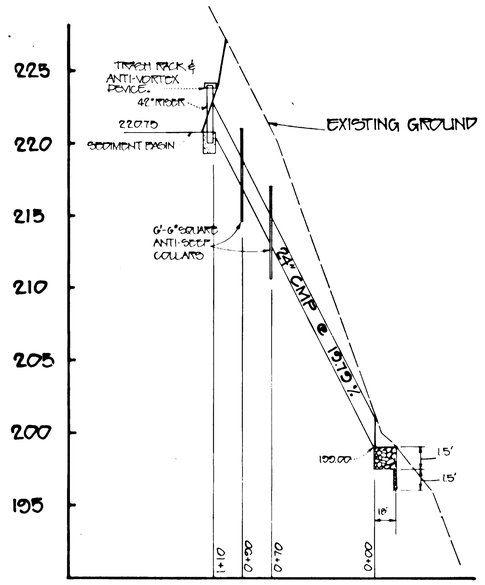
12. y = 2 ft.; x = 2 :1; pipe slope = 20 %, L_s = 40 ft.
    Use 2 collars, 6 " 6 square; projection = 2.25 ft.

DESIGN ELEVATIONS

13. Riser Crest = 224.0 Design High Water = 225.2
    Em. Spwy. Crest = N/A Top of Dam = 226.0

RUNOFF COMPUTATION

Q = CIA
C = 0.85
I = 64"/hr. (BASE ON t_c = 11 MIN. FROM SHA GI.1-402.1 FOR OVERLAND FLOW: L = 800' & N = 0.10)
A = 8.0 AC.
Q = 0.85 x 64 x 8.0 = 435 cfs.



TEMPORARY OUTFALL PIPE PROFILE
SCALE
HORIZ.: 1" = 50'
VERT: 1" = 5'

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."

Kim T. von Paris — 7/21/88
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 Conservatior District.

7/21/88
Signature of Engineer — Date

STATE OF MARYLAND · HOWARD EDWARD TRAVERS · No. 13150 · REGISTERED PROFESSIONAL ENGINEER

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division — 8/2/88 Date
Chief, Bureau of Highways — 7/29/88 Date
Chief, Bureau of Engineering — 8-2-88 Date

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Chief, Division of Community Planning & Land Development — 8-5-88 Date

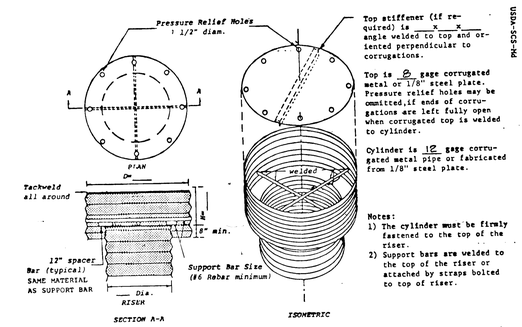
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET TECHNICAL REQUIREMENTS.

U.S. Soil Conservation Service — 7/26/88 Date

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

APPROVED Howard S C D — 7/26/88 Date

PLAN NUMBER _____



CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE
(not to scale)

NO.	DESCRIPTION	DATE	APPROVED	DATE
2	REVISIONS PER HCDS COMMENTS			7/21/88
1	REVISIONS FROM DPW COMMENTS FROM G/G			6/29/88

REVISION APPROVED BY

PROFESSIONAL SEAL

REVISED

EROSION AND SEDIMENT CONTROL DETAILS

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

BOWLING BROOK FARMS
PARCEL G, PARCEL H
SECTION 4 AREA 1
LOTS G-1 THRU G-102
A RESUBDIVISION OF LOT 216 BOWLING BROOK FARMS
SIXTH ELECTION DISTRICT
TAX MAP 47 PARCEL 141
L. 1394 F. 632

SURVEY	DATE 3-3-88
DESIGN K.O'R.	
DRAWN F.C.	SHEET 8 OF 10
CHECKED	
SCALE AS SHOWN C.I.	FILE NO 2184-1-7

1271

EXISTING
SEDIMENT TRAP # 5
(RIPRAP OUTLET ST V/)

EXISTING DRAINAGE AREA:	5.5 AC.
DEVELOPED DRAINAGE AREA:	6.0 AC.
TOP OF EMBANKMENT ELEVATION:	223.5
CREST ELEVATION:	218.5'
CREST LENGTH:	14.0'
DEPTH OF FLOW:	2.0'
STORAGE DEPTH:	3.0'
BOTTOM ELEVATION:	214.8
AVERAGE BOTTOM DIMENSIONS:	AS SHOWN
APPROXIMATE STORAGE VOLUME PROVIDED:	14,750 FT³
REQUIRED STORAGE VOLUME:	10,800 FT³
SIDE SLOPES:	2:1

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

James M. Helm — 7/26/88
US Soil Conservation Service — Date

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

APPROVED Stephen L. Shuler — 7/26/88
Howard S C D — Date

PLAN NUMBER________

THIS PLAN IS TO BE USED FOR THE CONSTRUCTION AND MAINTENANCE OF SEDIMENT CONTROL MEASURES ONLY

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."

Kim T. von Daus — 7/21/88
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.

[signature] 7/2[illegible]
Signature of Engineer — Date

STATE OF MARYLAND RICHARD EDWARD TRAVERS No. 15136 REGISTERED PROFESSIONAL ENGINEER

OWNER/DEVELOPER

GORMAN ROAD LIMITED PARTNERSHIP
C/O JAMES F. KNOTT DEVELOPMENT CORPORATION
110 WEST ROAD, SUITE 203
TOWSON, MARYLAND 21204

THIS PLAN FOR STREET AND UTILITY CONSTRUCTION ONLY.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Ronald W. Lepson — 8/2/88
Chief, Land Development Division — Date

Charles H. McLaughlin, Acting — 7/29/88
Chief, Bureau of Highways — Date

William E. Riley — 8-2-88
Chief, Bureau of Engineering — Date

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Marsha S. McLaughlin — 8-5-88
Chief, Division of Community Planning & Land Development — Date

NO.	DESCRIPTION	DATE			APPROVED	DATE
4	REVISIONS PER HSCD COMMENTS					7/21/88
3	REVISIONS FROM DPW COMMENTS FROM 6/16					6/20/88
2	2ND SUBMISSION TO HO. CO.	M.K.				5/2/88
1	ISSUED TO HOCO					3-3-88

REVISION APPROVED BY

PROFESSIONAL SEAL

EROSION AND SEDIMENT CONTROL PLAN

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

BOWLING BROOK FARMS
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SURVEY PHR&A	DATE 3-3-88
DESIGN	
DRAWN EIC.	SHEET 9 OF 10
CHECKED	
SCALE: 1"=50' C.I. 2'	FILE NO. 2184-1-7

PARCELS G & H

1271

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING

Chief, Division of Community Planning & Land Development — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Land Development Division — Date 8/2/88

Chief, Bureau of Highways — Date 7/29/88

Chief, Bureau of Engineering — Date 8-2-88

OWNER/DEVELOPER

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

OWNER/DEVELOPER

GORMAN ROAD LIMITED PARTNERSHIP
C/O JAMES F. KNOTT DEVELOPMENT CORPORATION
110 WEST ROAD, SUITE 203
TOWSON, MARYLAND 21204

NO.	DESCRIPTION	DATE			APPROVED	DATE
3	REDLINE REVISIONS	MK				10/27/88
2	[illegible]	MK				8/2/88
1	[illegible]					3-3-88

REVISION APPROVED BY

PROFESSIONAL SEAL

REVISED

DRAINAGE AREA MAP

Patton Harris Rust and Associates
A Professional Corporation
Engineers, Surveyors, Planners and Landscape Architects
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BOWLING BROOK FARMS
PARCEL G, PARCEL H
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SURVEY	PHR&A	DATE	3-3-88
DESIGN	M.J.K.		
DRAWN	J.D.W.	SHEET	10 OF 10
CHECKED			
SCALE	1"=50'	FILE NO.	2134-1-7
C.I.	2'		

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