REVISIONS

NOTE

1. THESE PLANS SUPERCEDE PREVIOUS PLANS FOR THE SAME SECTION OF HARPER'S FARM ROAD APPROVED DECEMBER 7, 1967
2. ALL DETAILS ARE FROM THE "ROAD CONSTRUCTION CODE AND STANDARD SPECIFICATIONS" ISSUED OR APPROVED BY HOWARD COUNTY AS REVISED IN AUGUST 1969
3. ALL ROAD CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY SPECIFICATIONS

COLUMBIA

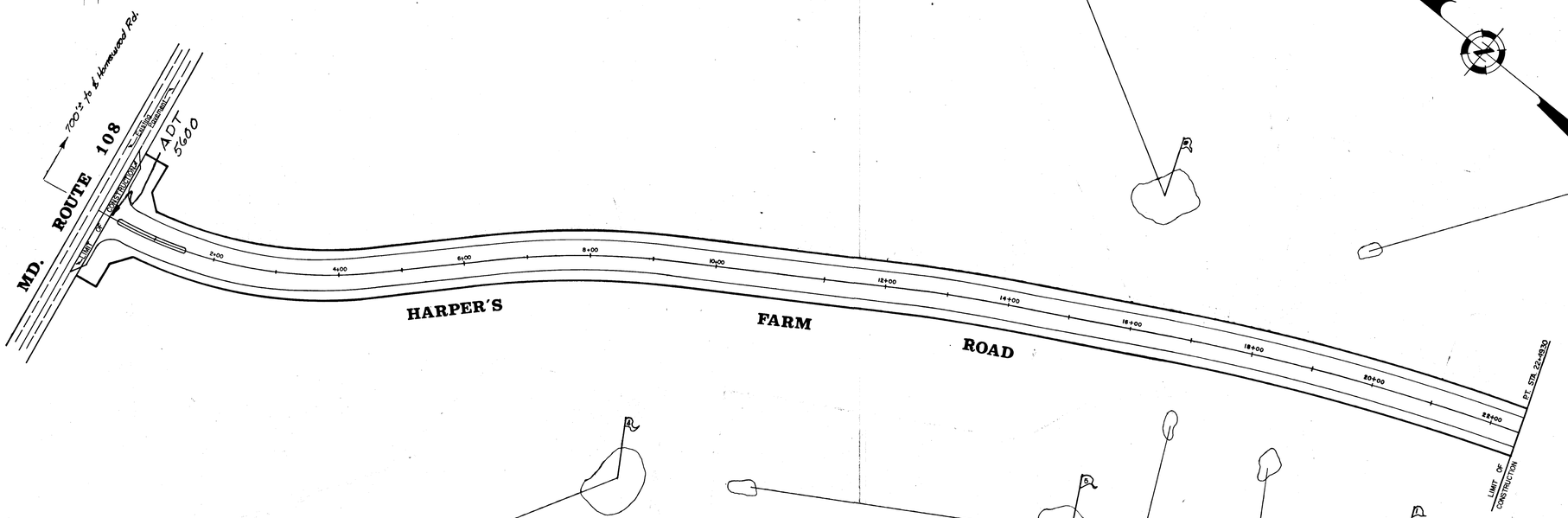
HOWARD COUNTY, MARYLAND
5th ELECTION DISTRICT

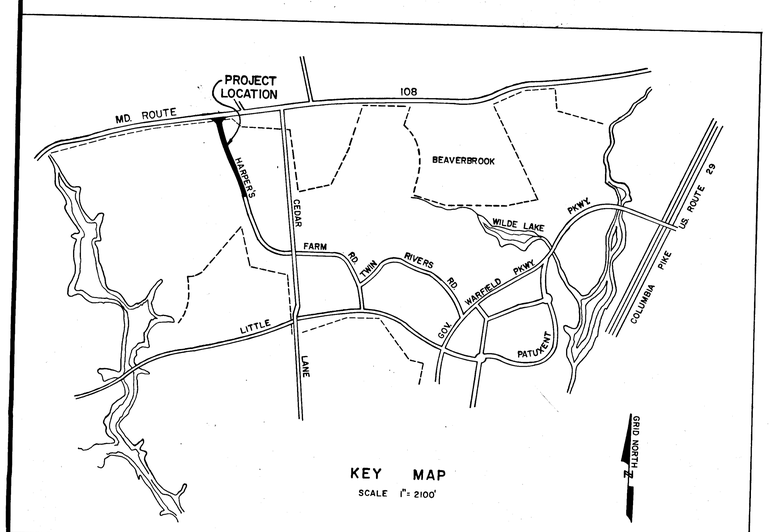
HARPER'S FARM ROAD

STA. 0+00 to STA. 22+49.30

SHEET INDEX

SHEET No.	DESCRIPTION
1.	TITLE SHEET
2.	HARPER'S FARM RD. STA. 0+00 – 12+74.61
3.	HARPER'S FARM RD. STA. 12+74.61-22+49.30
4.	ROADWAY DETAILS
5.	DRAINAGE AREA MAP





OWNER & DEVELOPER

THE HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF CROSS KEYS
BALTIMORE, MARYLAND

Scale: 1" = 100'

STATE OF MARYLAND — RICHARD P. BROWNE — REGISTERED PROFESSIONAL ENGINEER

RICHARD P. BROWNE ASSOCIATES
CONSULTING ENGINEERS - PLANNERS
COLUMBIA, MARYLAND

Richard P. Browne 27 JAN. 1969
RICHARD P. BROWNE P.E. & L.S. LIC. NO. 5238 STATE MD. — DATE

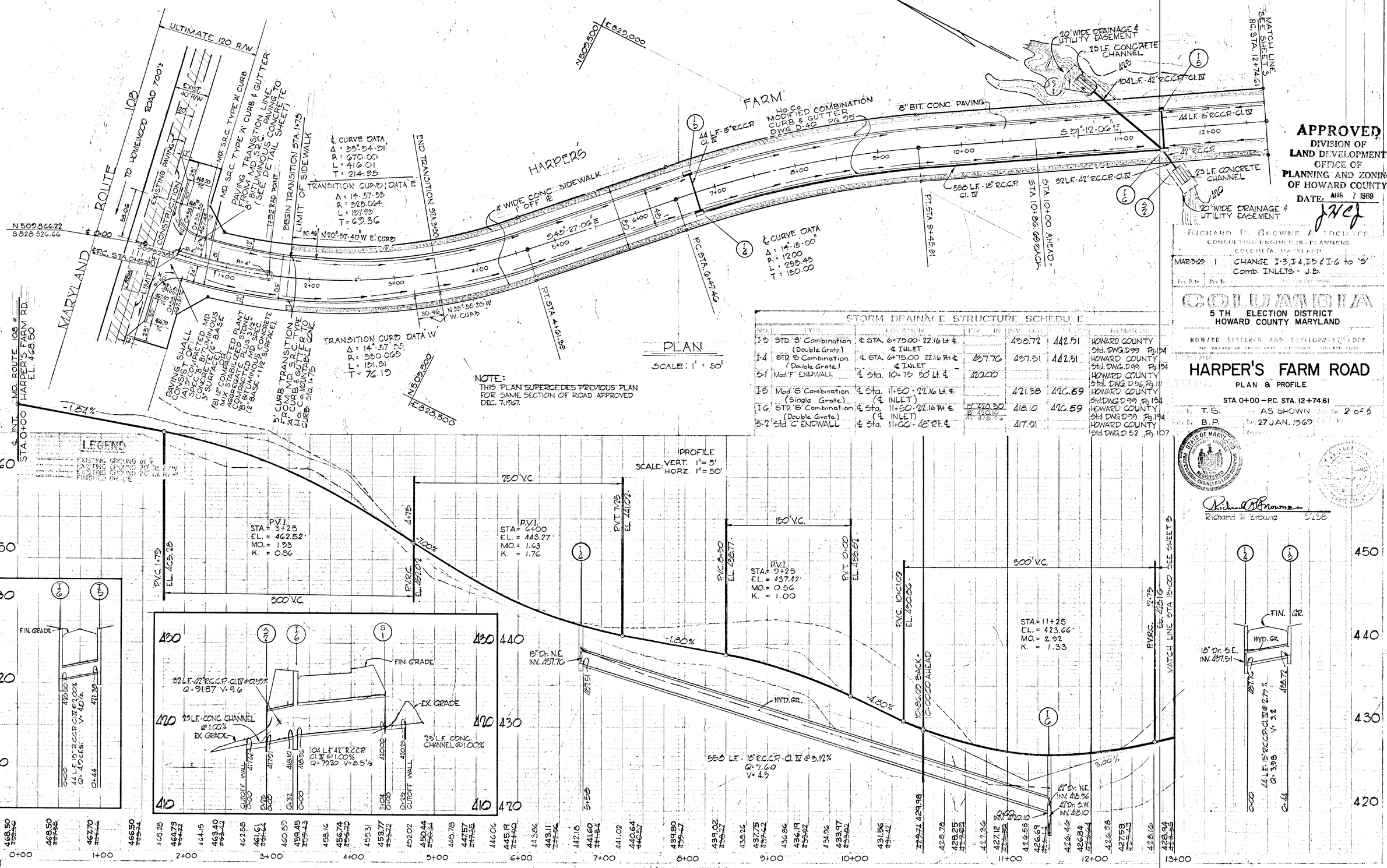
DEPARTMENT OF PUBLIC WORKS
Granville W. Wehland 8-5-69
CHIEF, BUREAU OF HIGHWAYS — DATE

OFFICE OF PLANNING AND ZONING
J. H. Clawson 8-7-69
CHIEF ENGINEER, DIVISION OF LAND DEV. — DATE

"As-Built" July 9, 1973

F-69-14

#101



NO.	TYPE	LOCATION	INV. IN	INV. OUT	℄	REMARKS
I-3	STD. 'S' Combination (Double Grate)	℄ STA. 6+75.00 - 22.16 LT. ℄ ℄ INLET		438.72	442.51	HOWARD COUNTY Std. DWG. D-99 Pg. 154
I-4	STD. 'S' Combination (Double Grate)	℄ STA. 6+75.00 22.16 RT. ℄ ℄ INLET	437.76	437.51	442.51	HOWARD COUNTY Std. DWG. D-99 Pg. 154
S-1	Mod. 'F' ENDWALL	℄ Sta. 10+75 50' LT. ℄	420.00			HOWARD COUNTY Std. DWG. D-96, Pg. 11
I-5	Mod. 'S' Combination (Single Grate)	℄ Sta. 11+50 - 22.16 LT. ℄ (℄ INLET)		421.38	426.59	HOWARD COUNTY Std. DWG. D-99 Pg. 154
I-6	STD. 'S' Combination (Double Grate)	℄ Sta. 11+50 - 22.16 RT. ℄ (℄ INLET)	IS 420.50 IR 419.50	418.10	426.59	HOWARD COUNTY Std. DWG. D-99 Pg. 154
S-2	Std. 'C' ENDWALL	℄ Sta. 11+00 - 48' RT. ℄		417.91		HOWARD COUNTY Std. DWG. D-52 Pg. 107

APPROVED
DIVISION OF LAND DEVELOPMENT
OFFICE OF PLANNING AND ZONING
OF HOWARD COUNTY
DATE: APR 7 1969

RICHARD E. BROWNE & ASSOCIATES
CONSULTING ENGINEERS - PLANNERS
COLUMBIA, MARYLAND

Rev. No.	Rev. Date	Revision
1	MAR 3 69	CHANGE I-3, I-4, I-5 & I-6 to 'S' Comb. INLETS - J.B.

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND
HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF CROSS KEYS - THE VILLAGE OF LAKE ELKHORN

HARPER'S FARM ROAD
PLAN & PROFILE
STA. 0+00 — P.C. STA. 12+74.61

T.S. AS SHOWN — 2 of 5
B.P. 27 JAN. 1969

STATE OF MARYLAND — RICHARD E. BROWNE — REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR

Richard E. Browne 5/28

"As-Built" July 3, 1973

F-69-14

#101

STORM DRAIN & STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INV. IN	INV. OUT	GRATE EL.	REMARKS
I-1	Std. '5' Combination (DOUBLE GRATE)	℄ STA. 16+00 22.16 Lt. ℄ (℄ INLET)	410.10	418.80	432.64	Ho.Co. Std. DWG D-99 Pg. 154
I-2	Std. '5' Combination (DOUBLE GRATE)	℄ STA. 16+00 22.16 Rt. ℄ (℄ INLET)	417.70	417.50	432.64	Ho.Co. Std. DWG D-99 Pg. 154
S-3	Mod. 'F' ENDWALL	℄ STA 16+25 55' Lt. ℄	420.00			HOWARD COUNTY STD. DWG. D86 Pg.111
S-4	STD 'C' ENDWALL	℄ STA 16+00 65' Rt. ℄		416.70		HOWARD COUNTY STD. DWG. D-92 Pg.107

APPROVED
DIVISION OF
LAND DEVELOPMENT
OFFICE OF
PLANNING AND ZONING
OF HOWARD COUNTY
DATE: AUG 7 1969

RICHARD P. BROWNE ASSOC.
CONSULTING ENGINEERS - PLANNERS
COLUMBIA, MARYLAND

Rev. Date	Rev. No.	Revision Description
MAR-3-00	1	REVISE PROFILE GRADE Sta. 13+00 to 20+15 CHANGE I-1 & I-2 to '5' Comb. INLETS - F.T.

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND
HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21210

HARPER'S FARM ROAD
PLAN & PROFILE
P.C. STA. 12+74.61 — P.T. STA. 22+49.30

Des.	T.S.	Scale	AS SHOWN
Drn.	B.P.	Date	27 JAN. 1969
Chk.	J.B.		

Sheet No. 3 of 5
C.E.P. No.
Project No.

STATE OF MARYLAND — RICHARD P. BROWNE — REGISTERED PROFESSIONAL ENGINEER & LAND SURVEYOR

Richard P. Browne 5238

N 508,750 E 823,500

MATCH LINE P.C. STA. 12+74.61

SEE SHEET 2

HO. CO. MODIFIED COMBINATION CURB AND GUTTER DWG. D-40 PG. 95

44 L.F. 30" R.C.C.P. Cl. IV

20' WIDE DRAINAGE & UTILITY ESMT.

20 L.F. CONCRETE CHAN.

S 27°45'39" E

℄ CURVE DATA
Δ = 03°26'27"
R = 2864.79
L = 172.04
T = 86.05

P.T. STA. 14+46.65

48 L.F. 30" R.C.C.P. Cl. IV

20' WIDE DRAINAGE & UTILITY ESMT.

20 L.F. CONCRETE CHAN.

420

P.C. STA. 16+70.92

NOTE:
THIS PLAN SUPERCEDES PREVIOUS PLAN FOR SAME SECTION OF ROAD APPROVED DEC. 7, 1967.

WARNING
26" HIGH PRESSURE GAS LINE. CONTRACTOR TO CONTACT THE BALTIMORE GAS AND ELECTRIC CO. 24 HOURS PRIOR TO CONSTRUCTION IN THIS AREA.

UNDERGROUND PIPELINE

8" BIT. CONC. PAVING

4' WIDE CONC. SIDEWALK 1' OFF P/L

BALTO. GAS & E. CO. 90' WIDE R/W LIBER 2324 FOLIO 18

℄ CURVE DATA
Δ = 37°32'22"
R = 08°44'38"
L = 578.88
T = 289.75

N 508,000 E 823,500

P.T. STA. 22+49.30

LIMIT OF CONSTRUCTION

S 15°01'01" E

EXISTING PAVING

NOTE:
GRADING & RESURFACING FOR THIS AREA TO BE DONE UNDER THIS CONTRACT UNDER THE DIRECTION OF THE ENGINEER IN THE FIELD.

PLAN
SCALE: 1" = 50'

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

LEGEND
EXISTING GROUND ℄
EXISTING GROUND 20' Lt. R/W
EXISTING GROUND 20' Rt. R/W
PROPOSED GRADE

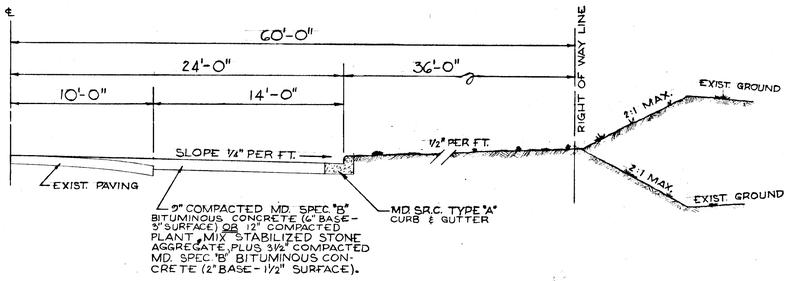
465' V.C.
P.V.I.
17+99.15
EL. 434.40
M.O. 3.78
K = 0.699
P.V.C. 15+50
EL. 431.91
P.V.C. 20+15
EL. 450.59
+7.50%
+1.00%
100' V.C.
P.V.I.
13+25
EL. 429.66
M.O. -0.25
K = 1.100
P.V.T. 13+75
EL. 430.16
MATCH LINE STA 13+00 SEE SHEET
STA 20+00 MATCH LINE THIS SHEET
GAS 26" LINE

610' V.C.
P.V.I.
STA. = 23+20
EL. = 473.47'
M.O. = 8.74
K. = 0.94
MATCH LINE THIS SHEET STA. 20+00
LIMIT OF CONSTRUCTION STA. 22+49.30

FIN GRADE
HYD. GR.
Ex. Grade
0+00 25 L.F. CONCRETE CHAN. @ 2.50% 420.00
0+25 57 L.F. 30" R.C.C.P. Cl. IV @ 48.78 V. 10.0' 417.70
0+82 44 L.F. 30" R.C.C.P. Cl. IV @ 27.27% 417.50
1+26 44 L.F. 30" R.C.C.P. Cl. IV @ 40.91% 416.70
1+70 20 L.F. CONCRETE CHAN. @ 0.20% 416.66

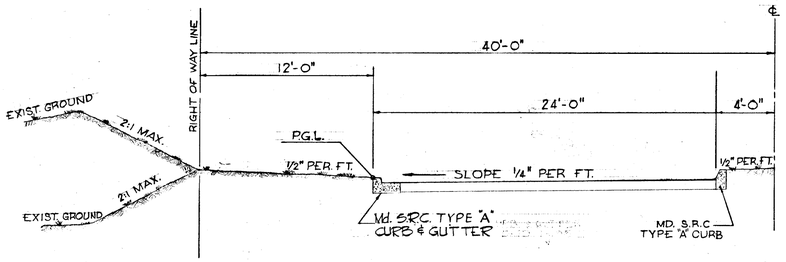
"As-Built" July 3, 1973

F-69-14



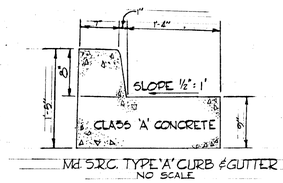
TYPICAL WIDENING OF RTE. 108

SCALE: 1" = 5'

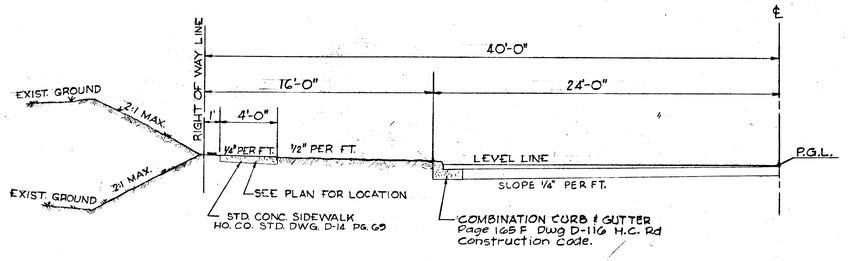


80' R.O.W. TYPICAL HALF - SECTION

SCALE: 1" = 5'

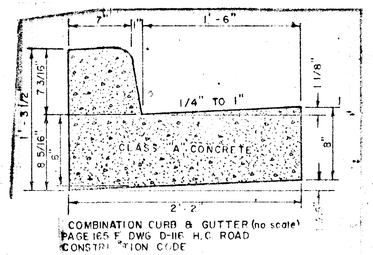


Md. S.R.C. TYPE 'A' CURB & GUTTER
NO SCALE

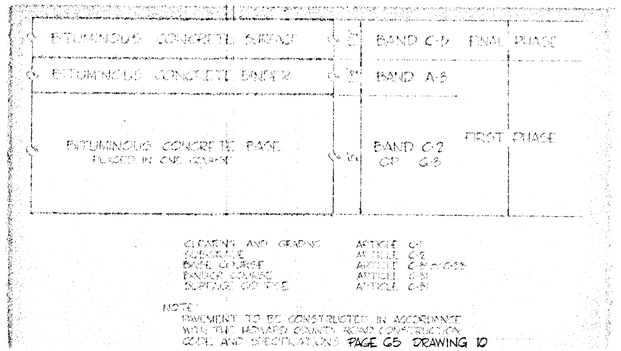


80' R.O.W. TYPICAL HALF - SECTION

SCALE: 1" = 5'



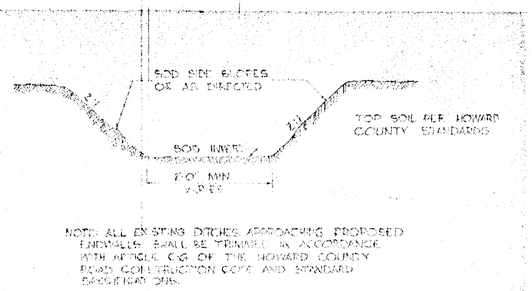
COMBINATION CURB & GUTTER (no scale)
PAGE 165 F DWG D-116 H.C. ROAD CONSTRUCTION CODE



NOTE:
PAVEMENT TO BE CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY ROAD CONSTRUCTION CODE AND SPECIFICATIONS PAGE G5 DRAWING 10

8" PAVEMENT DETAIL

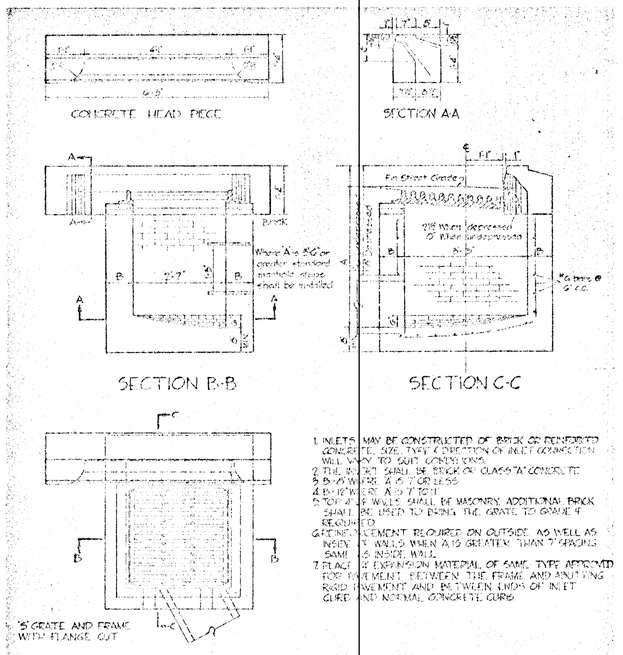
NO SCALE



NOTE: ALL EXISTING DITCHES APPROACHING PROPOSED HEADWALLS SHALL BE TRIMMED IN ACCORDANCE WITH ARTICLE C-6 OF THE HOWARD COUNTY ROAD CONSTRUCTION CODE AND STANDARD SPECIFICATIONS.

TYPICAL DRAINAGE DITCH

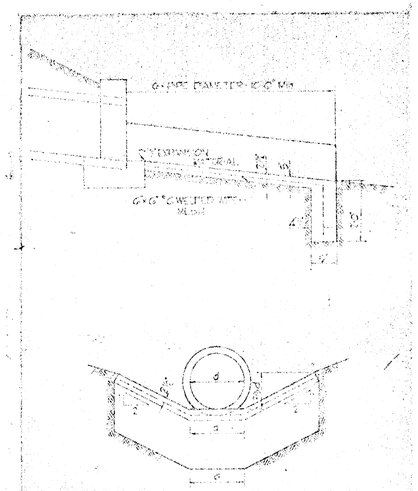
NO SCALE



MODIFIED 'S' COMBINATION INLET

NO SCALE

1. INLETS MAY BE CONSTRUCTED OF BRICK OR REINFORCED CONCRETE. SIZE, TYPE & DIRECTION OF INLET CONNECTION WILL VARY TO SUIT CONDITIONS.
2. THE BASE SHALL BE BRICK OR CLASS 'A' CONCRETE.
3. 8" WALLS WHERE A IS 7'-0" OR LESS.
4. 8"-12" WALLS WHERE A IS 7'-0" TO 11'.
5. TOP OF 8" WALLS SHALL BE MASONRY. ADDITIONAL BRICK SHALL BE USED TO BRING THE GRATE TO GRADE IF REQUIRED.
6. REINFORCEMENT REQUIRED ON OUTSIDE AS WELL AS INSIDE OF WALLS WHEN A IS GREATER THAN 7' SPACING SAME AS INSIDE WALL.
7. PLACE EXPANSION MATERIAL OF SAME TYPE APPROVED FOR PAVEMENT, BETWEEN THE FRAME AND ABUTTING ROAD PAVEMENT AND BETWEEN ENDS OF INLET CURB AND NORMAL CONCRETE CURB.



TYPICAL CONCRETE CHANNEL and CUTOFF WALL

NO SCALE

APPROVED

DIVISION OF LAND DEVELOPMENT
OFFICE OF PLANNING AND ZONING
OF HOWARD COUNTY

DATE: AUG 7, 1969

STATE OF MARYLAND — RICHARD P. BROWNE — REGISTERED — PROFESSIONAL ENGINEER AND LAND SURVEYOR

RICHARD P. BROWNE P.E. & L.S. # 5238

RICHARD P. BROWNE ASSOCIATES
CONSULTING ENGINEERS - PLANNERS
COLUMBIA, MARYLAND

Rev Date	Rev No	Revision Description

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21210

PROJECT AREA
HARPER'S FARM ROAD

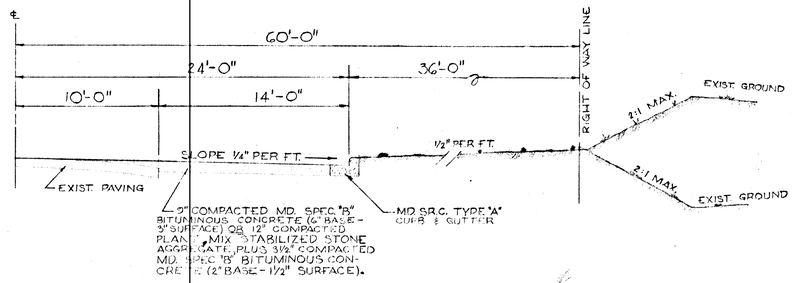
PROJECT TITLE
ROADWAY DETAILS

Des By T. S.	Scale AS SHOWN	Dwg No 4 of 5
Drn By	Date 27 JAN. 69	C.C.F. No
Chk By JB.	Approved	

"As-Built" July 3, 1973

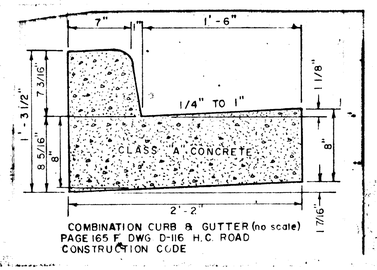
F-69-14

#101

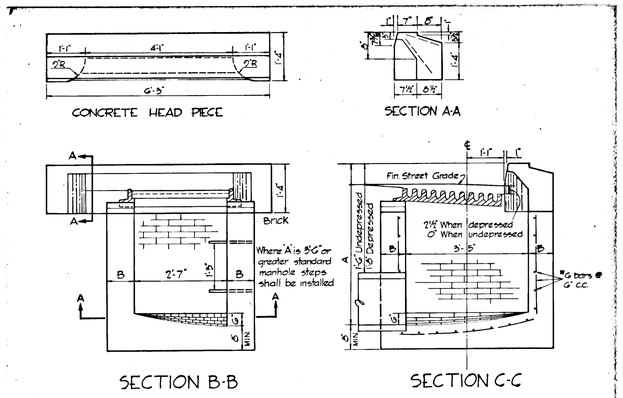


TYPICAL WIDENING OF RTE. 108

SCALE: 1"=5'



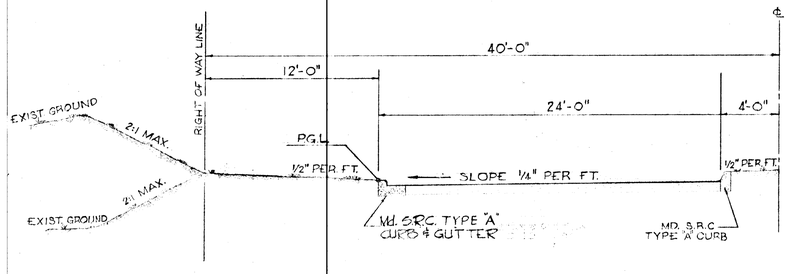
COMBINATION CURB & GUTTER (no scale)
PAGE 165 F. DWG. D-116 H.C. ROAD CONSTRUCTION CODE



1. INLETS MAY BE CONSTRUCTED OF BRICK OR REINFORCED CONCRETE. SIZE, TYPE & DIRECTION OF INLET CONNECTION WILL VARY TO SUIT CONDITIONS.
2. THE INVERT SHALL BE BRICK OR CLASS "A" CONCRETE
3. B-0 WHERE A IS 7' OR LESS
4. B-12" WHERE A IS 7' TO 11'
5. TOP 4' OF WALLS SHALL BE MASONRY. ADDITIONAL BRICK SHALL BE USED TO BRING THE GRATE TO GRADE IF REQUIRED.
6. REINFORCEMENT REQUIRED ON OUTSIDE AS WELL AS INSIDE OF WALLS WHEN 'A' IS GREATER THAN 7' SPACING SAME AS INSIDE WALL.
7. PLACE ½" EXPANSION MATERIAL OF SAME TYPE APPROVED FOR PAVEMENT, BETWEEN THE FRAME AND ABUTTING RIGID PAVEMENT AND BETWEEN ENDS OF INLET CURB AND NORMAL CONCRETE CURB.

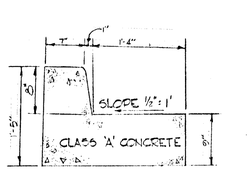
MODIFIED 'S' COMBINATION INLET

NO SCALE



80' R.O.W. TYPICAL HALF - SECTION

SCALE: 1"=5'



Md. S.R.C. TYPE 'A' CURB & GUTTER
NO SCALE

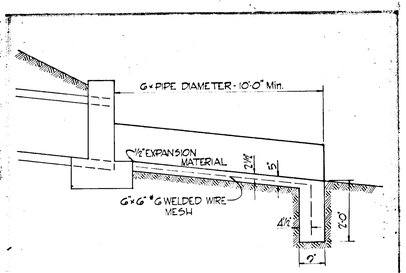
BITUMINOUS CONCRETE SURFACE	1½"	BAND C-3	FINAL PHASE
BITUMINOUS CONCRETE BINDER	1½"	BAND A-3	
BITUMINOUS CONCRETE BASE PLACED IN ONE COURSE	5"	BAND C-2 OR G-3	FIRST PHASE

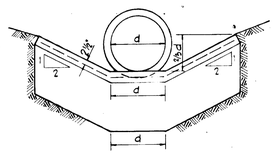
CLEARING AND GRADING	ARTICLE C-1
SUBGRADE	ARTICLE C-2
BASE COURSE	ARTICLE C-3 or C-33
BINDER COURSE	ARTICLE C-31
SURFACE COURSE	ARTICLE C-31

NOTE:
PAVEMENT TO BE CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY ROAD CONSTRUCTION CODE AND SPECIFICATIONS

8" PAVEMENT DETAIL

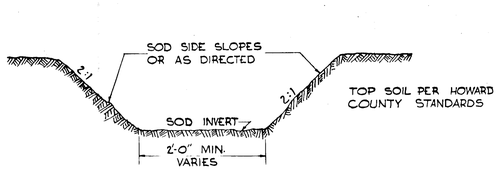
NO SCALE





TYPICAL CONCRETE CHANNEL and CUTOFF WALL

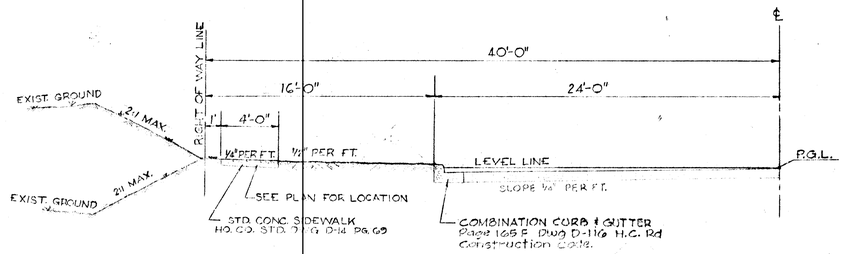
NO SCALE



NOTE: ALL EXISTING DITCHES APPROACHING PROPOSED ENDWALLS SHALL BE TRIMMED IN ACCORDANCE WITH ARTICLE C-6 OF THE HOWARD COUNTY ROAD CONSTRUCTION CODE AND STANDARD SPECIFICATIONS.

TYPICAL DRAINAGE DITCH

NO SCALE



80' R.O.W. TYPICAL HALF - SECTION

SCALE: 1"=5'

APPROVED
DIVISION OF
LAND DEVELOPMENT
OFFICE OF
PLANNING AND ZONING
OF HOWARD COUNTY
DATE: AUG 7 1969

RICHARD P. BROWNE P.E. & L.S. #3283

RICHARD P. BROWNE ASSOCIATES
CONSULTING ENGINEERS - PLANNERS
COLUMBIA, MARYLAND

Rev Date	Rev No	Revision Description

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND
OWNER AND DEVELOPER
HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF CROSS KEYS - BALTIMORE MARYLAND 21210

PROJECT AREA
HARPER'S FARM ROAD

PROJECT TITLE
ROADWAY DETAILS

Des By	Scale	Dwg No
Drn By	Date 2-7-69	C.C.F. No
Chk By	Approved	

"As-Built" July 3, 1973

F-69-14

#101

MARYLAND

ROUTE 108

HARPER'S FARM ROAD

1.18 Ac. C=0.06 — I-3 — 15" R.C.C.P.

2.04 Ac. C=0.4 — I-4 — 18" R.C.C.P.

.45 Ac. C=0.40 — I-1 — 42" R.C.C.P.

1.10 Ac. C=0.60 — I-5 — 42" R.C.C.P.

5.00 Ac. C=0.40 — I-6 — 42" R.C.C.P.

0.72 Ac. C=0.8 — I-2 — 30" R.C.C.P.

0.07 Ac. C=0.8 — I-1 — 30" R.C.C.P.

.30 Ac. C=0.2 — S-3

S-1 S-2 S-4

PLAN
SCALE: 1"=100'

"As-Built" July 3, 1973

F-69-14

#10

K&E CO. 10 X 10 IN. 5023

APPROVED
DIVISION OF
LAND DEVELOPMENT
OFFICE OF
PLANNING AND ZONING
OF HOWARD COUNTY
DATE: AUG 7 1969

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER & LAND SURVEYOR

Richard P Browne

RICHARD P. BROWNE P.E. & L.S. #5238

RICHARD P. BROWNE ASSOCIATES
CONSULTING ENGINEERS - PLANNERS
COLUMBIA, MARYLAND

Rev Date	Rev No	Revision Description

COLUMBIA

5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21210

PROJECT AREA
HARPER'S FARM ROAD

PROJECT TITLE
DRAINAGE AREA MAP

Des By T.S.	Scale AS SHOWN	Dwg No 5 of 5	
Drn By	Date 27 JAN. 69	C.C.F. No	
Chk By J.E.	Approved		