

COLUMBIA

HOWARD COUNTY, MARYLAND

CONSTRUCTION PLANS

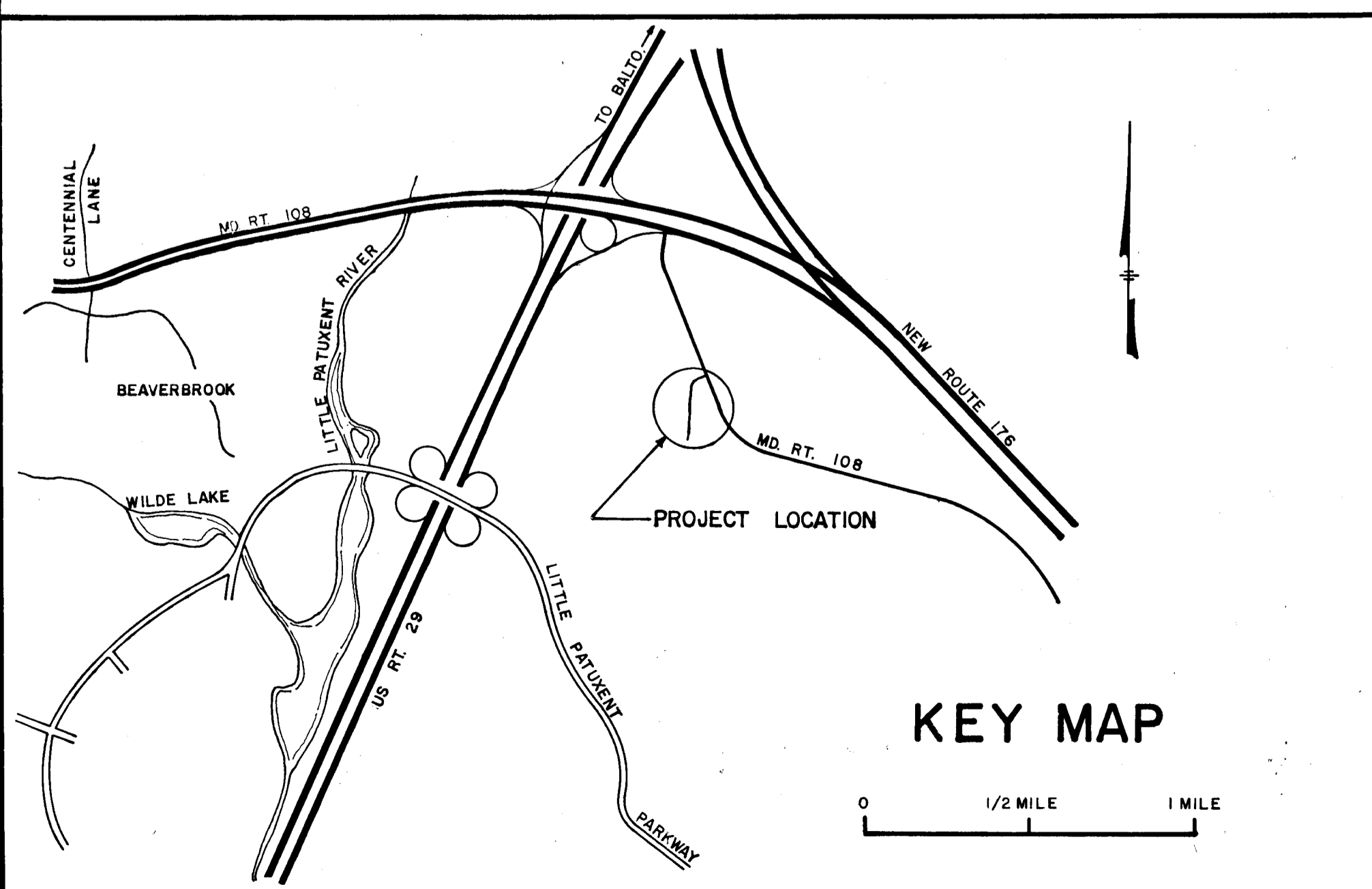
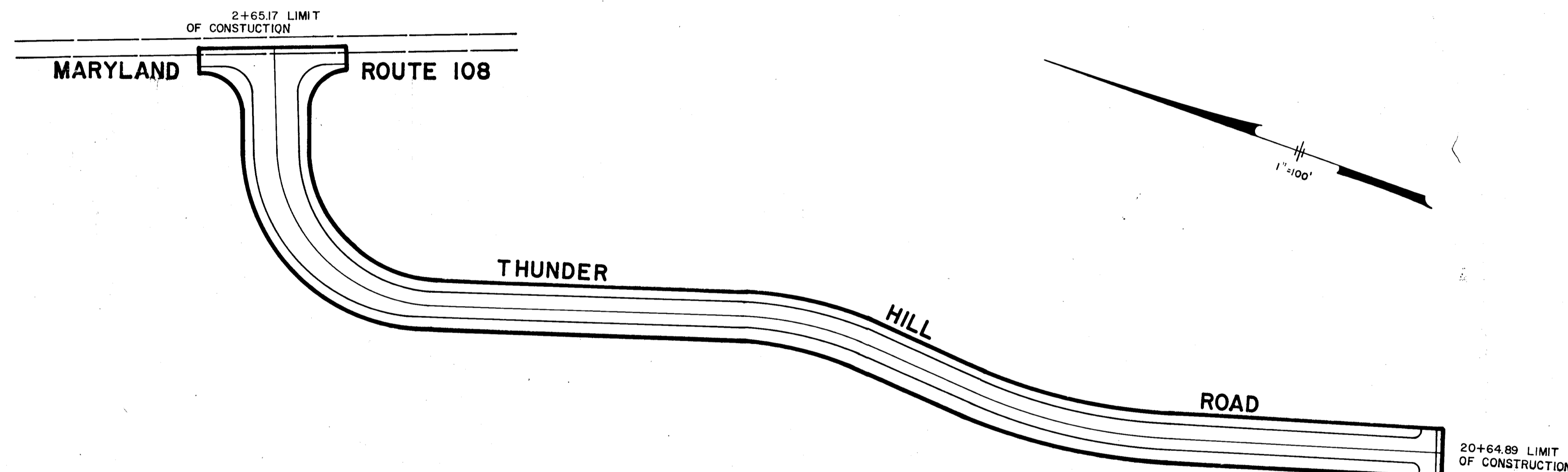
VILLAGE OF OAKLAND MILLS SEC. 1, AREA 3
ELECTION DISTRICT 6

SHEET INDEX

SHEET No	DESCRIPTION
1.	TITLE SHEET
2.	PLAN & PROFILE
3.	THUNDER HILL ROAD STA. 2+65.17 TO 8+50
4.	THUNDER HILL ROAD STA. 8+50 TO 17+24.89
5.	THUNDER HILL ROAD STA. 17+24.89 TO 20+64.89
6.	PLAN & PROFILE EASEMENT 'G'
7.	ROADWAY DETAILS
8.	DRAINAGE AREA MAP
9.	ULTIMATE CLOSED DRAINAGE THRU EX. 20' E.S.M.T.

NOTES:

1. THUNDER HILL ROAD IS DESIGNED FOR 35 MPH. TRAFFIC SPEED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIAL STANDARDS.
2. ALL DETAILS ARE FROM "ROAD CONSTRUCTION CODE AND STANDARD SPECIFICATIONS" ISSUED OR APPROVED BY THE COUNTY COMMISSIONERS OR THE HOWARD COUNTY ROAD DEPARTMENT.
3. BEFORE CONSTRUCTING CURBS AND SIDEWALKS CONTRACTORS SHALL NOTIFY THE HOWARD RESEARCH DEVELOPMENT CORPORATION, ENGINEERING AND LAND DEPARTMENT, FOR CUT LOCATIONS OF FUTURE STREET INTERSECTIONS.



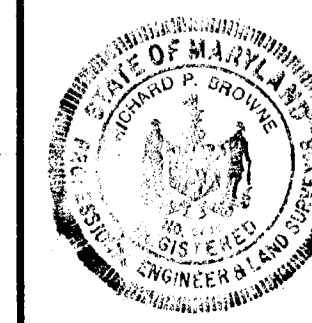
APPROVED HOWARD COUNTY PLANNING COMM.
J. M. [Signature] 9-25-68
 CHIEF ENGINEER DATE

APPROVED HOWARD COUNTY ROADS DEPT.
[Signature] 9-25-68
 ROADS SUPERINTENDENT DATE

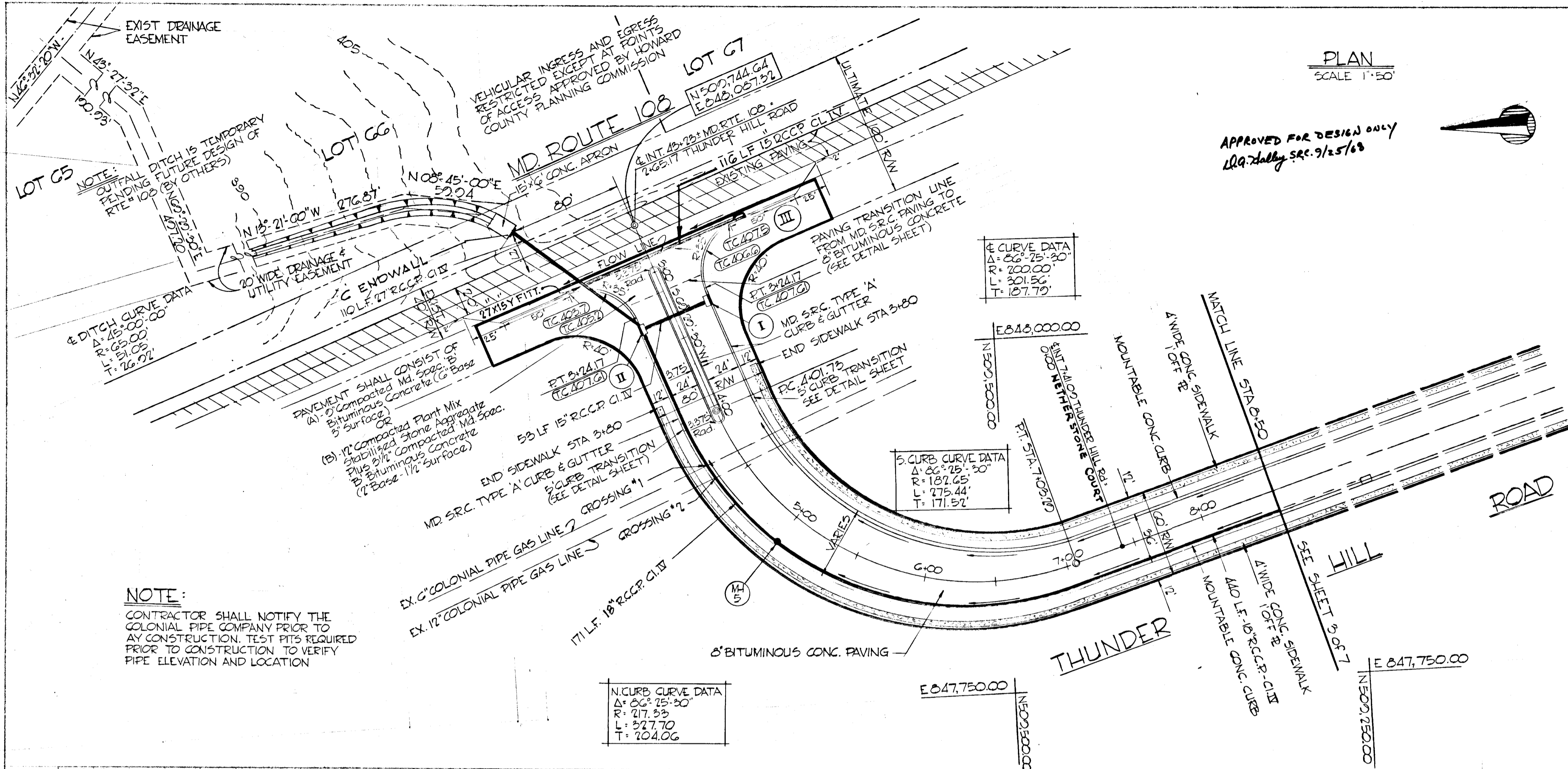
APPROVED HOWARD COUNTY METROPOLITAN COMM.
[Signature] 9-23-68
 CHIEF ENGINEER DATE

BROWNE-PANJULLO & ASSOCIATES
 ENGINEERS
 COLUMBIA, MARYLAND

Richard P. Browne 5238



ESTIMATE OF QUANTITIES			
ITEM	DESCRIPTION	UNIT	QUANTITY



NO.	TYPE	LOCATION	INV. IN	INV. OUT	REMARKS
I	5' D. 5' COMB. INLET (DOUBLE GRATE)	STA 3+57.13 - 25.67' L.T. E	402.83	407.73	HOWARD COUNTY DWG. D-09 PG. 154
II	5' D. 5' COMB. INLET (DOUBLE GRATE)	STA 3+57.13 - 25.67' R.T. E	401.52	399.65	HOWARD COUNTY DWG. D-09 PG. 154
III	STD. DROP MANHOLE	STA 3+00 - 25.67' R.T. E	400.50	406.00	HOWARD COUNTY DWG. D-104 PG. 150
ENW	STD. TYPE 'C' ENDWALL	AS SHOWN ON PLAN		399.67	HOWARD COUNTY DWG. D-52 PG. 107
III	5' D. 5' COMB. INLET (DOUBLE GRATE)	STA. 42+50.7 THUNDER HILL - 14' L.T. E	403.38	407.88	HOWARD COUNTY DWG. D-52 PG. 154

NOTE:
CONTRACTOR SHALL NOTIFY THE COLONIAL PIPE COMPANY PRIOR TO ANY CONSTRUCTION. TEST PITS REQUIRED PRIOR TO CONSTRUCTION TO VERIFY PIPE ELEVATION AND LOCATION.

BROWNE-FANDULLO & ASSOCIATES ENGINEERS - COLUMBIA, MARYLAND

7/23/68 Storm Drain, RT 108

APPROVED
PLANNING COMMISSION OF HOWARD COUNTY
DATE: SEP 23 1968

GOVERNMENT
M. A. R. Y. L. A. N. D.
4TH ELECTION DISTRICT - HOWARD COUNTY

HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF OAKLAND MILLS - FARMINGDALE, MARYLAND 21110

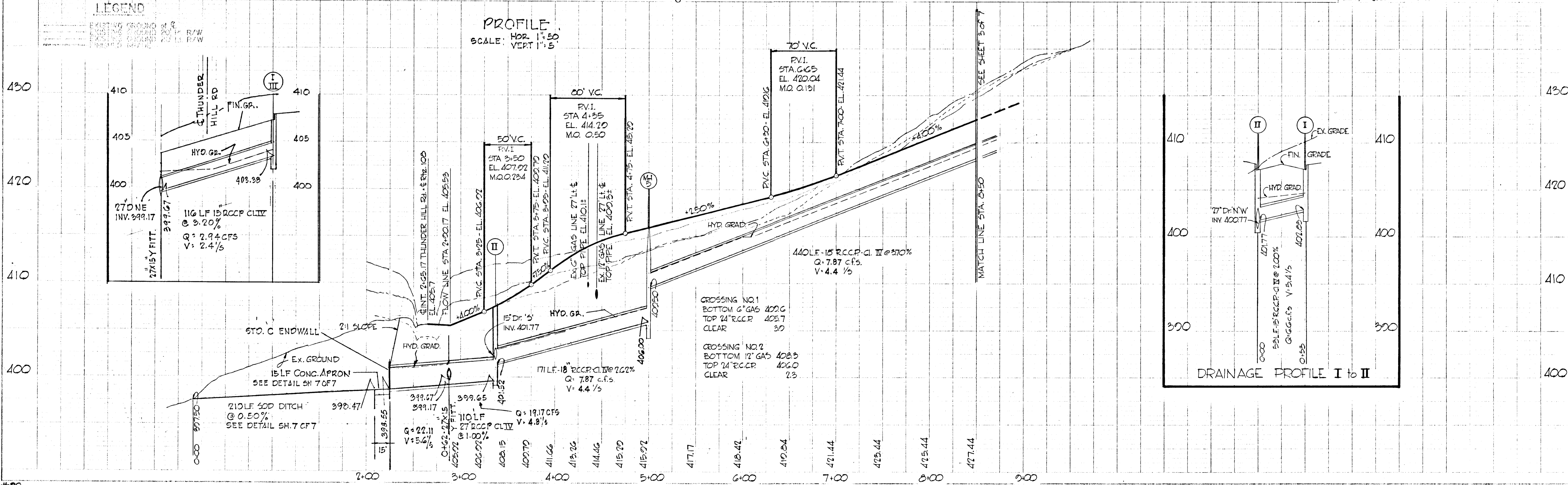
VILLAGE OF OAKLAND MILLS SECTION I - AREA 3

PROJECT: PLAN & PROFILE THUNDER HILL ROAD

Scale AS SHOWN Sheet 2 of 8

Drawn By J.B. & F.T. Date MARCH 1, 1968

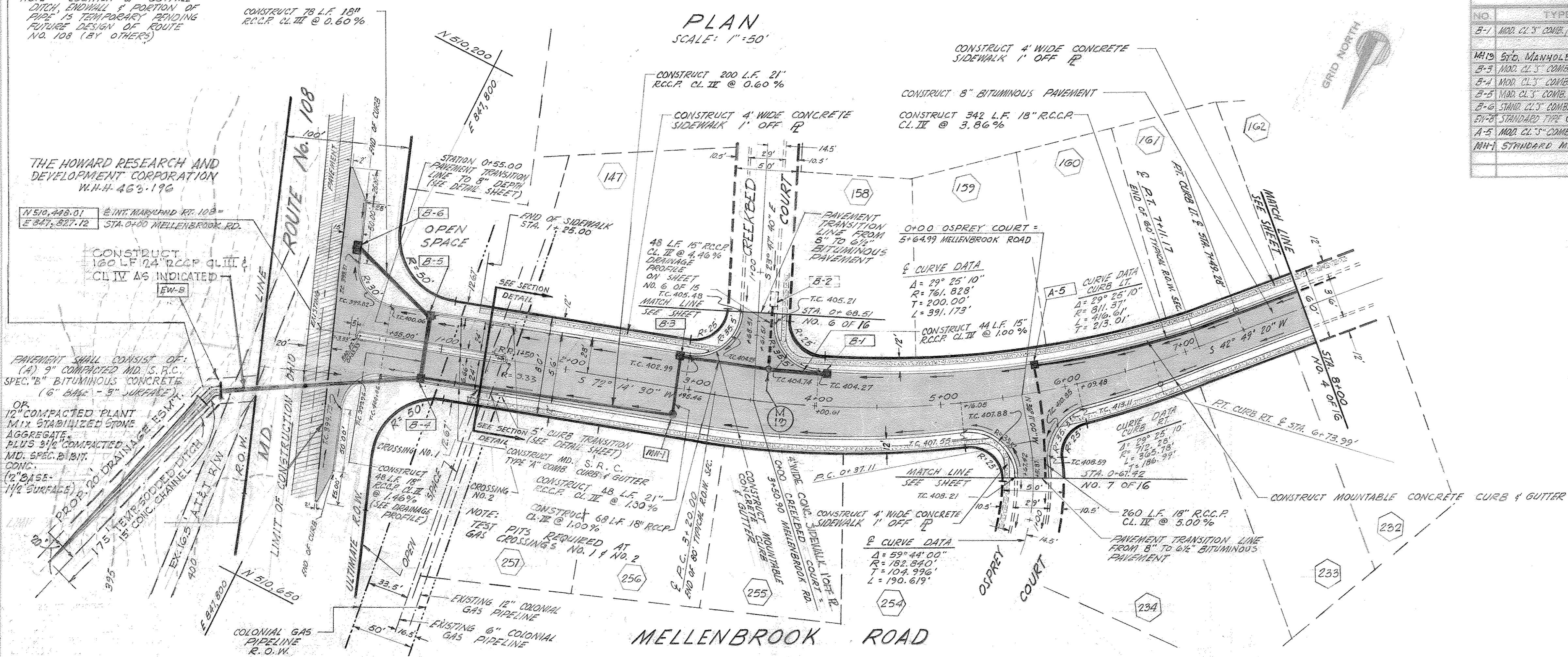
Checked By J.D.



NOTE: LOCATION OF OUTFALL DITCH ENDWALL & PORTION OF ROAD IS TEMPORARILY BEING FUTURE DESIGN OF ROUTE NO. 108 (BY OTHERS)

STORM DRAINAGE STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	T.C.P. ELEV.	REMARKS
B-1	MOD. CL. 3' CORR. (SINGLE GR.)	STA. 4+10.00, 21.59' LT. OF P	399.82	404.66		SEE DETAIL SH. 14 OF 16
MH-5	STD. MANHOLE	STA. 3+63.00, 26.00' LT. OF P	399.98	399.13		HO. CO. STD. DRWG. 0-105 OF 158
B-2	MOD. CL. 3' CORR. (SINGLE GR.)	STA. 2+90.00, 28.00' LT. OF P	398.45	398.12	403.22	SEE DETAIL SH. 14 OF 16
B-3	MOD. CL. 3' CORR. (SINGLE GR.)	STA. 0+86.54, 28.00' LT. OF P	396.30	394.17	400.75	"
B-4	MOD. CL. 3' CORR. (SINGLE GR.)	STA. 0+86.54, 28.00' LT. OF P	395.25	395.05	400.75	"
B-5	STAND. CL. 3' CORR. (DOUBLE GR.)	STA. 0+25.00, 70.00' LT. OF P	395.78	400.12		DEPRESSIO - SEE DETAIL SH. 14 OF 16
B-6	STANDARD TYPE C ENDWALL	AS SHOWN	391.80			HO. CO. STD. DRWG. 0-105 OF 158
A-5	MOD. CL. 3' CORR. (SINGLE GR.)	STA. 5+80.00, 25.00' LT. OF P	406.80	405.00	411.42	SEE DETAIL SH. 14 OF 16
MH-4	STANDARD MANHOLE	STA. 2+90.00, 24.00' LT. OF P	397.70	397.50		HO. CO. STD. DRWG. 0-105 OF 158

VEHICULAR INGRESS AND EGRESS TO MARYLAND ROUTE 108 IS RESTRICTED EXCEPT AT POINTS OF ACCESS APPROVED BY THE HOWARD COUNTY PLANNING COMMISSION



APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE 12/16/68
[Signature]

BROWNE-PANUOLLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

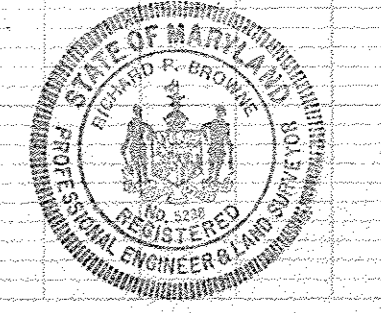
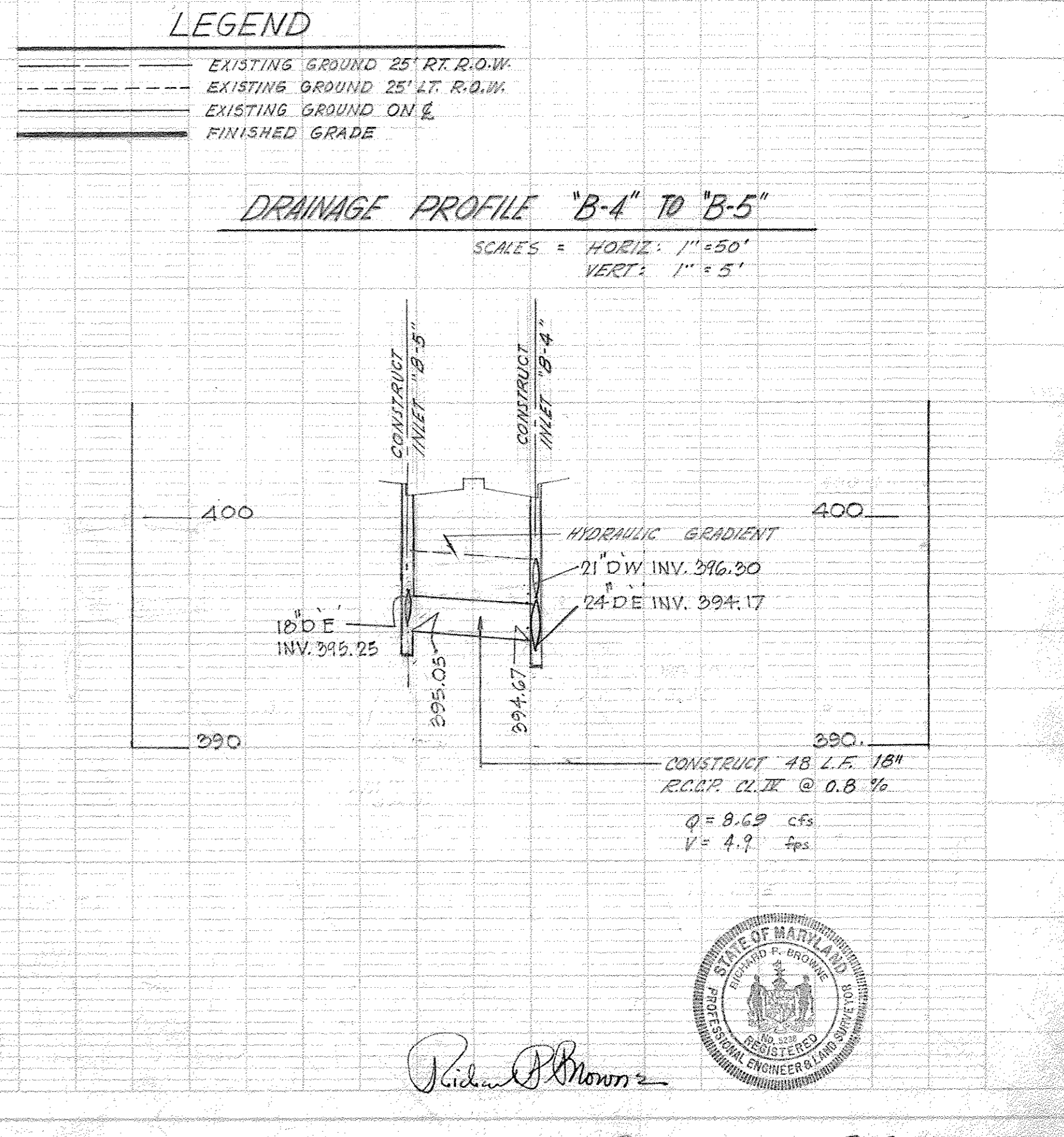
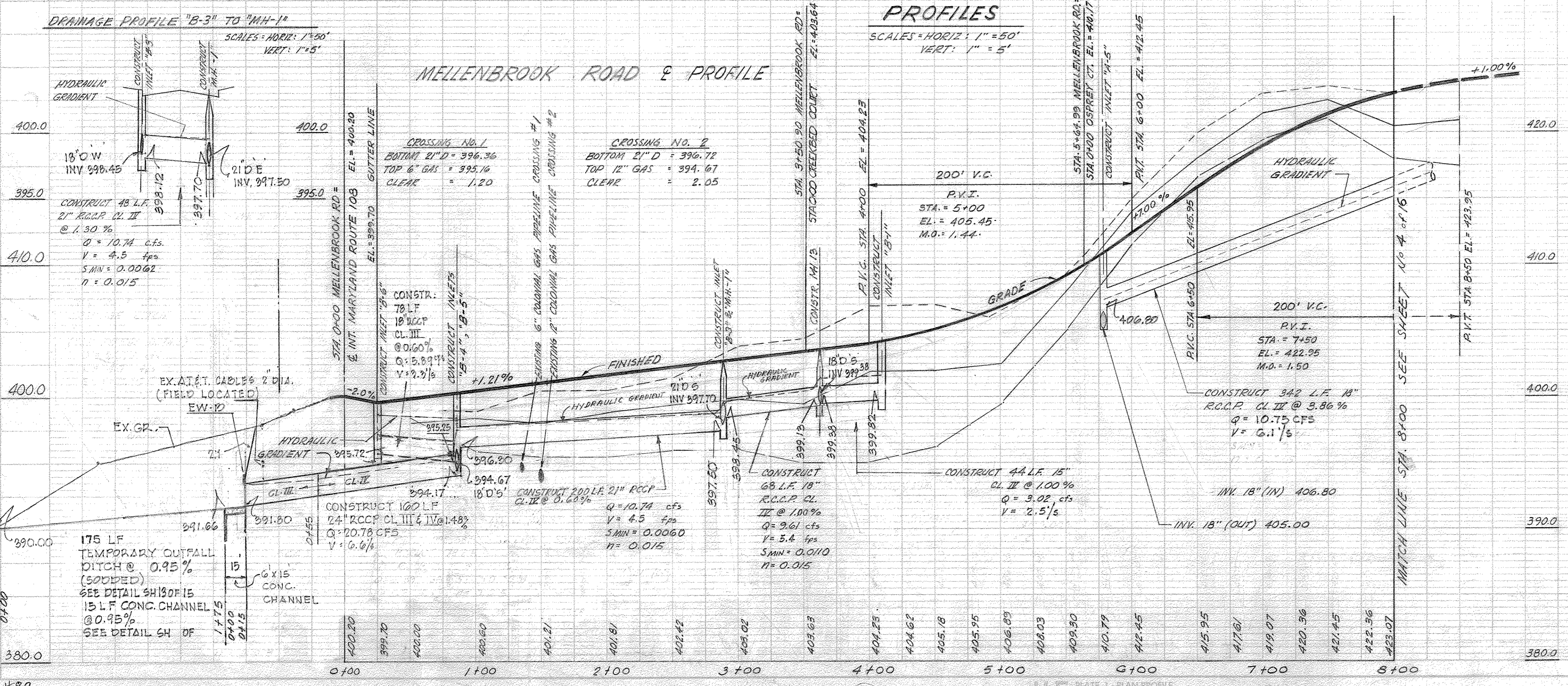
Rev. Date: Rev. No: Revision Description:

COLUMBIA
6TH ELECTION DISTRICT, HOWARD COUNTY
OWNER AND DEVELOPER
HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF OAKLAND MILLS - BALTIMORE, MARYLAND 21218

PROJECT AREA
VILLAGE OF OAKLAND MILLS SECTION 1
THUNDER HILL AREA 2

PROJECT TITLE
PLAN & PROFILE
MELLENBROOK ROAD 0+00 - 8+00

Des. By: *WJK* Scale: AS SHOWN Dwg. No: 3 OF 16
Dwn. By: *J.V.M.* Date: JUNE 15, 1968 C.C.F. No:
Chk. By: Approved



PLAN
SCALE: 1"=50'

CURVE DATA
Δ=20°04'10"
R=700.41'
L=247.44'
T=125.00'

CURVE DATA
Δ=20°04'10"
R=700.41'
L=247.44'
T=125.00'

STORM DRAINAGE STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	INVERT ELEV.	REMARKS
F-2	STD. 5 COMB. INLET (DIB - GRATE)	STA 0+4.00 - 10' RT. E		425.75	430.33	SEE Ho. Co. 5th DRWG. 99 PAGE #154
G-7	STD. 5 COMB. INLET (DIB - GRATE)	STA 14+61.20 - 18' RT. E	418.40	418.30	417.21	SEE Ho. Co. 5th DRWG. 99 PAGE #154
G-8	STD. 5 COMB. INLET (DIB - GRATE)	STA 14+61.20 - 18' LT. E	412.21	412.16	417.21	" " " "
M-1	STD. MANHOLE	STA 16+77.27 - 11' LT. E	404.32	403.32		Ho. Co. DRWG. DRWG 103 PAGE #158

BROWNE-PANDULLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

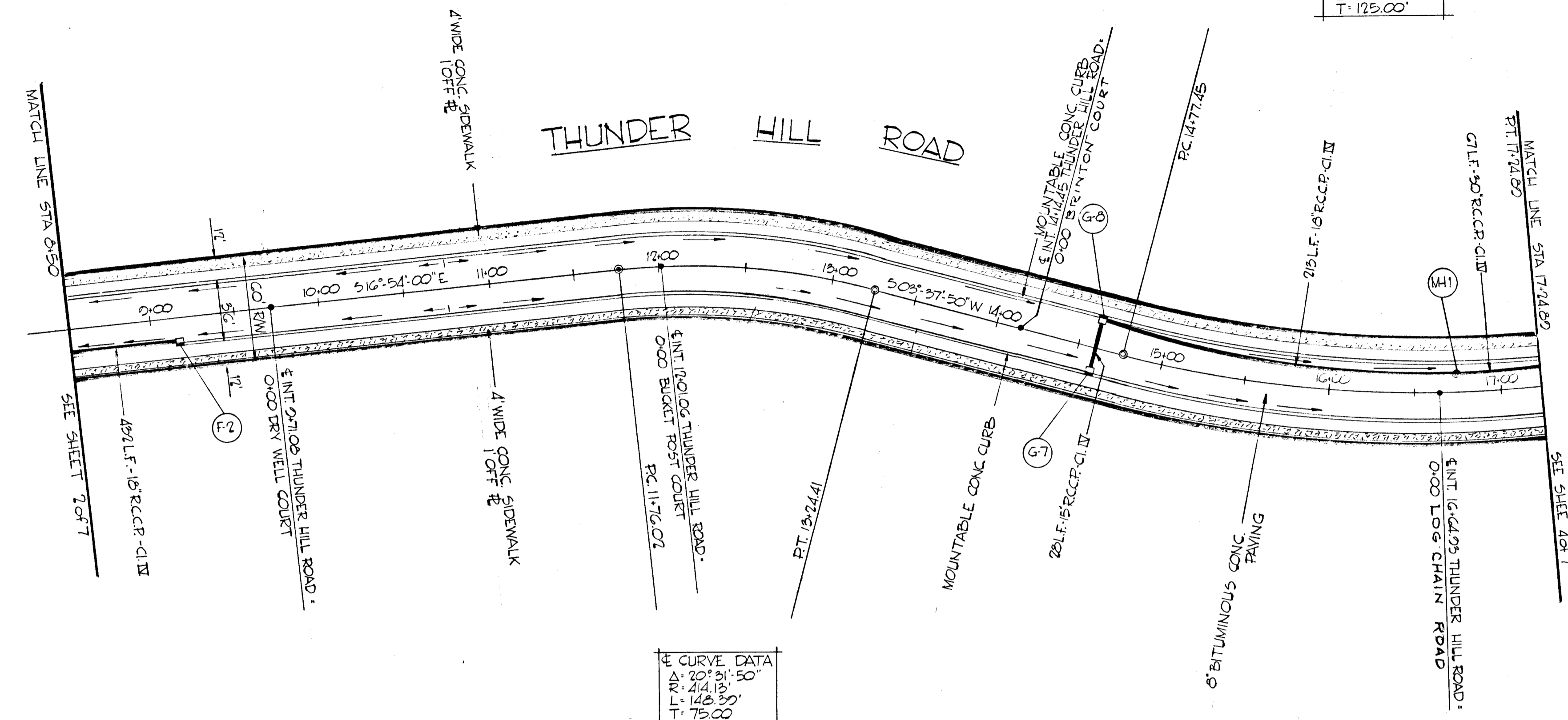
Rev. Date: Rev. No.: Revision Description:

COLUMBIA
M. A. R. V. L. A. N. D.
HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21210

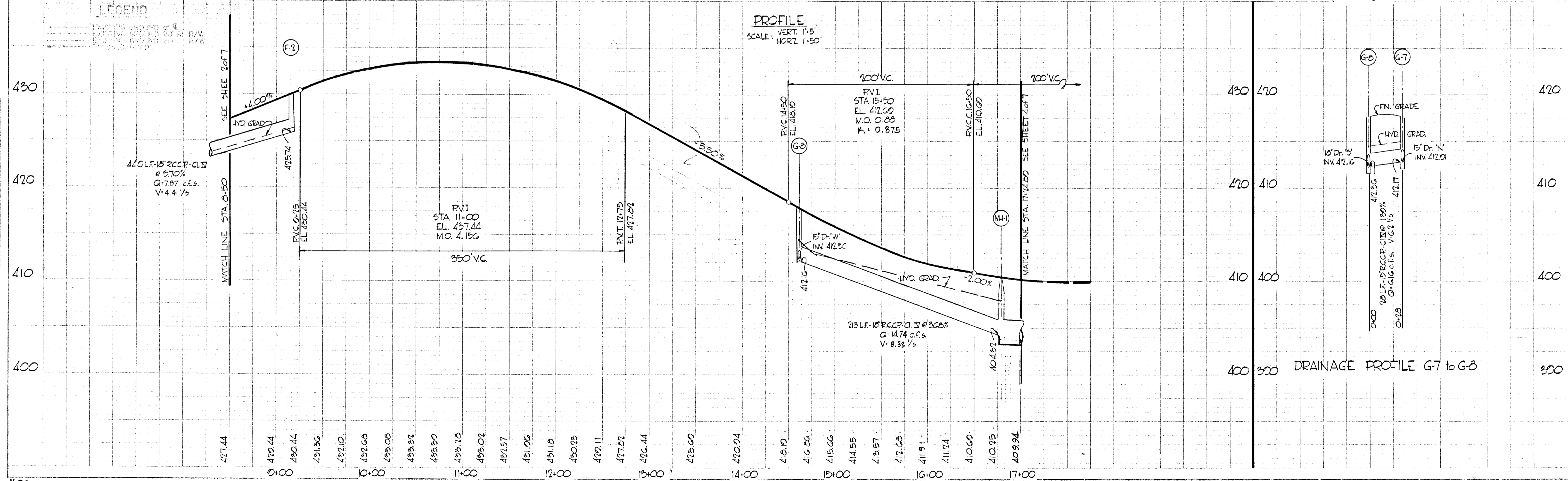
VILLAGE OF OAKLAND MILLS
SECTION 1 AREA 3
PLAN & PROFILE
THUNDER HILL ROAD

Des. By: W.J.K. Scale: AS SHOWN Date: MARCH 1, 1968
Chk. By: J.D. Approved

APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE: SEP 25 1968

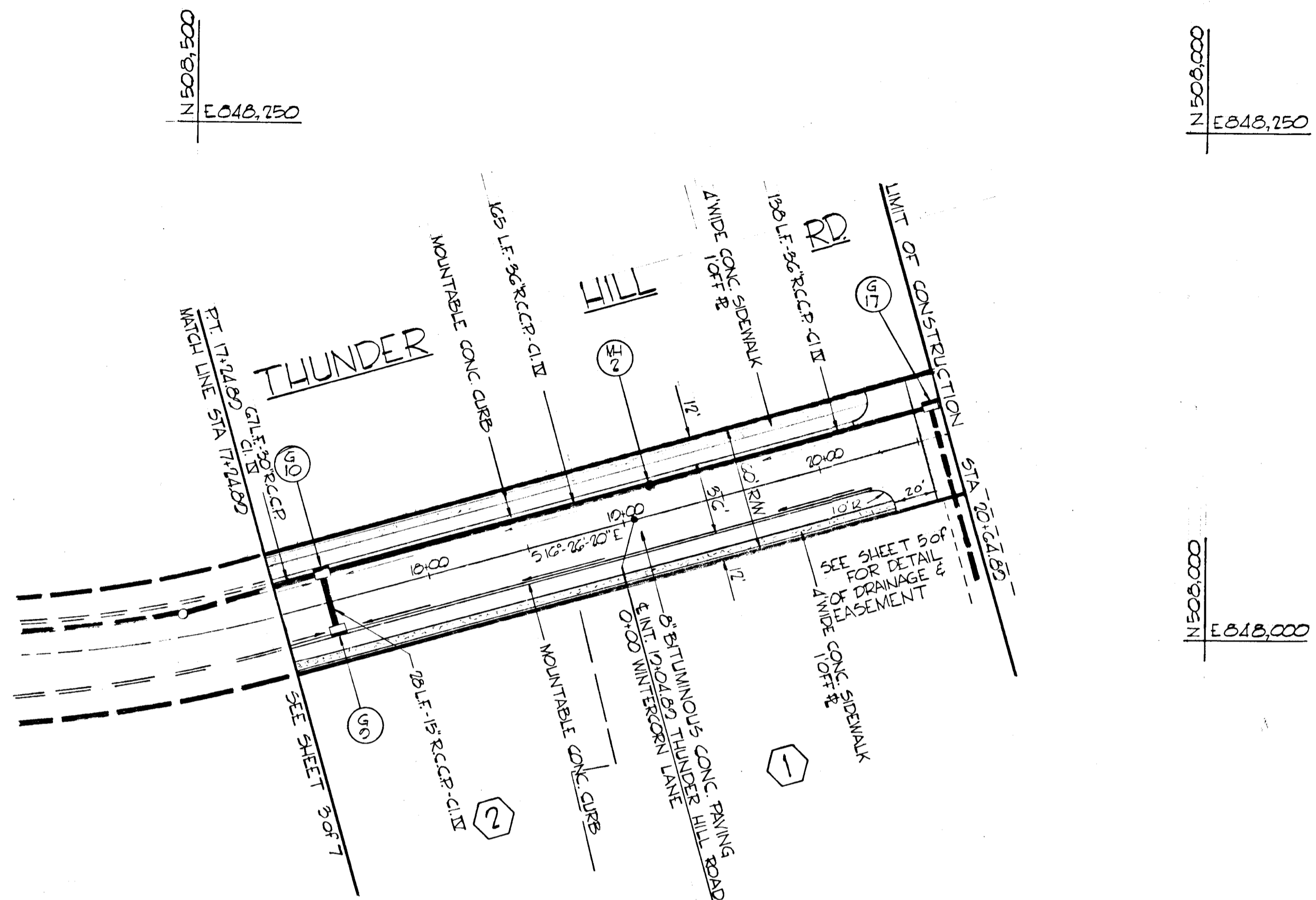


PROFILE
SCALE: VERT. 1"=5'
HORIZ. 1"=50'



DRAINAGE PROFILE G-7 to G-8

PLAN
SCALE 1"=50'



STORM DRAINAGE STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	TO PIPE	REMARKS
G-9	MOD. 8 COMB. INLET (SINGLE GRATE)	STA 17+50-18' R/L		402.00	410.02	SEE DETAIL SH. 12 of 14
G-10	MOD. 5 COMB. INLET (SINGLE GRATE)	STA 17+50-18' L/R	402.00	402.49	410.02	" " " "
M-2	STD. MANHOLE	STA 19+10.44-18' L/R	402.05	401.55		HOWARD COUNTY DWG. D-105 PG. 150
G-17	STD. 3' COMB. INLET (DOUBLE GRATE)	STA 20+62.03-18' L/R	401.10	400.70	415.16	HO COUNTY DWG. D-105 PG. 154

APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE SEP 25 1968
J. J. [Signature]

BROWNE-PANDULLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

Rev. Date: Rev. No: Revision Description:

COLUMBIA
M A R Y L A N D
6TH ELECTION DISTRICT - HOWARD COUNTY
HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21210

PROJECT AREA
VILLAGE OF OAKLAND MILLS
SECTION 1, AREA 3

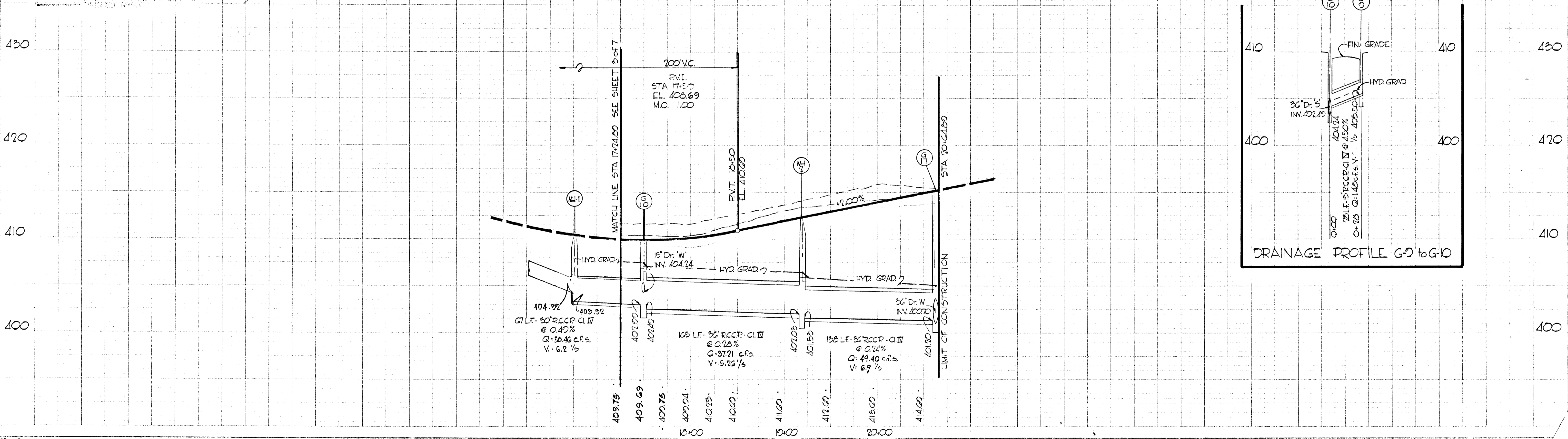
PROJECT TITLE
PLAN & PROFILE
THUNDER HILL ROAD

Des. By: T.S. Scale: AS SHOWN Sheet No: 4 of 8
D. by: J.B. & F.T. Date: MARCH 1, 1968 C.C.F. No.
Ch. By: T.S. Approved:

LEGEND

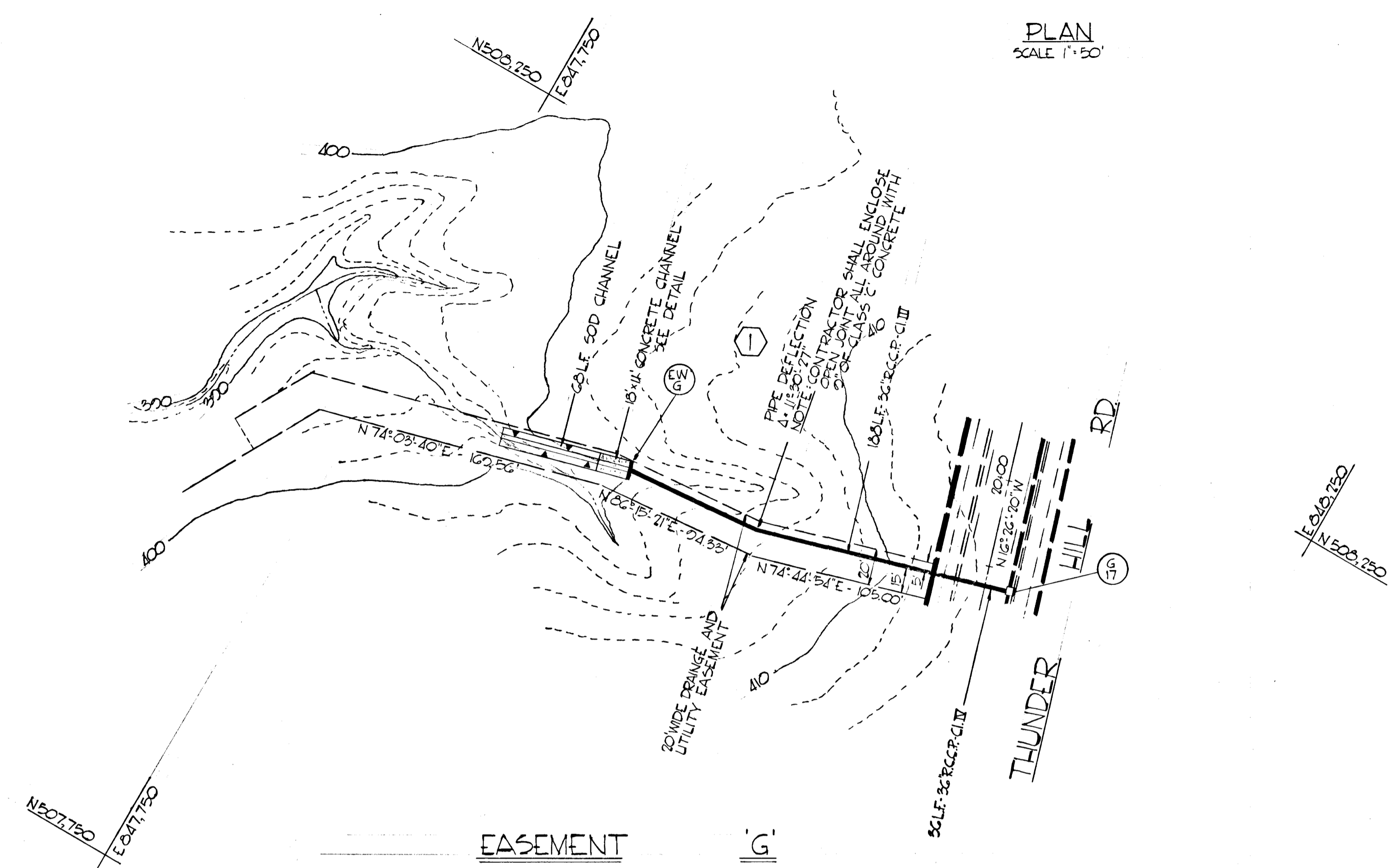
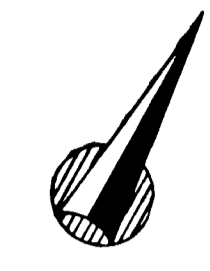
- EXISTING GROUND
- PROPOSED GROUND
- EXISTING GRADE
- PROPOSED GRADE
- EXISTING CURB
- PROPOSED CURB
- EXISTING SIDEWALK
- PROPOSED SIDEWALK

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



PLAN
 DATE: _____
 DRAWN BY: _____
 CHECKED BY: _____
 NO. _____

PROFILE
 DATE: _____
 DRAWN BY: _____
 CHECKED BY: _____
 NO. _____



PLAN
 SCALE 1"=50'

STORM DRAINAGE STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	C.C.F. FEET	REMARKS
EW6	STD 'G' ENDWALL	AS SHOWN ON PLAN			400.00	HOWARD COUNTY PNG. D-52 PG. 107

APPROVED
 PLANNING COMMISSION
 OF HOWARD COUNTY
 DATE: SEP 25 1968
J. J. Ch...

BROWNE-PANDULLO & ASSOCIATES
 ENGINEERS
 COLUMBIA, MARYLAND

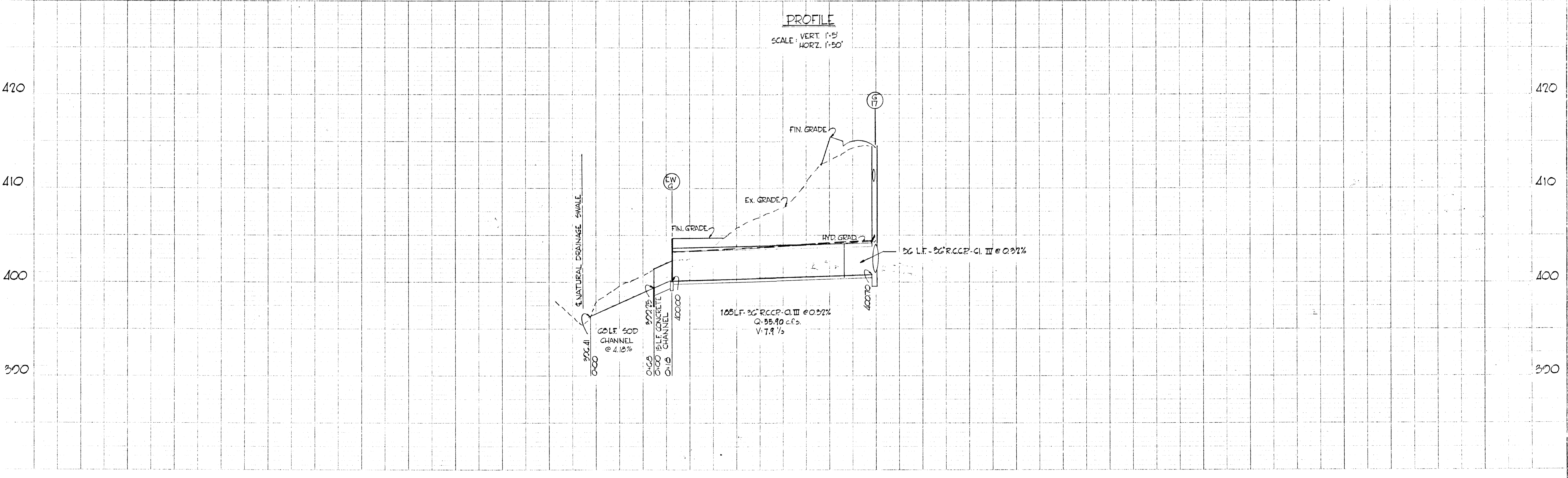
Proj. No. _____ Rev. No. _____ Revision Description _____

COLUMBIA
 14TH ELECTION DISTRICT - HOWARD COUNTY
 HOWARD RESEARCH AND DEVELOPMENT CORP.
 THE VILLAGE OF GROSS WOODS - BALTIMORE, MARYLAND 21210

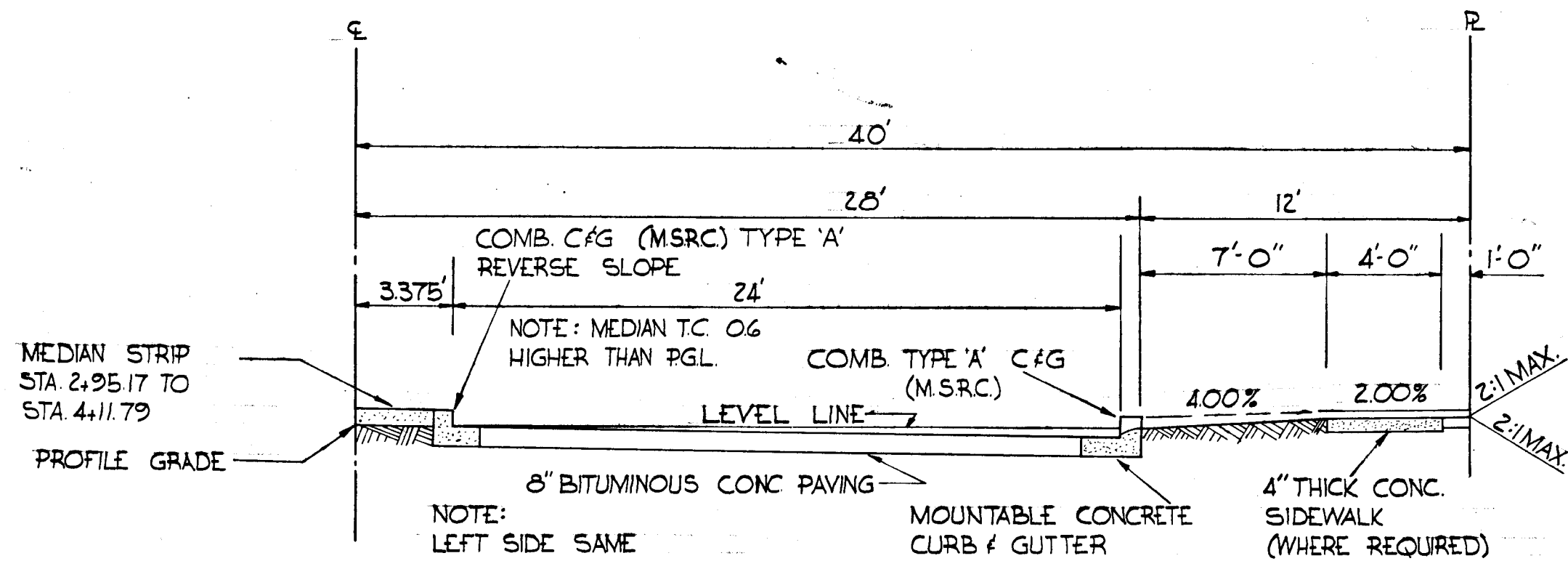
Project Area: **VILLAGE OF OAKLAND MILLS**
 SECTION 1, AREA 3

Project Title: **PLAN & PROFILE EASEMENT "G"**

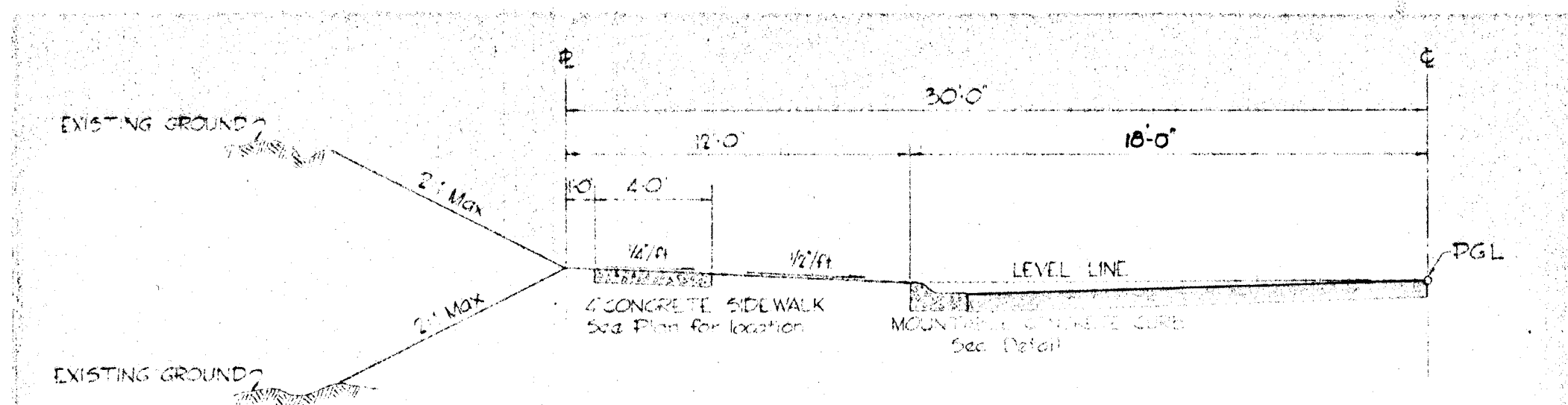
Drawn By: WJK Date: AS SHOWN Draw. No. 5 of 8
 Check By: J.B. & F.T. Date: MARCH 1, 1968 C.C.F. No. _____
 CH. By: TS Approved



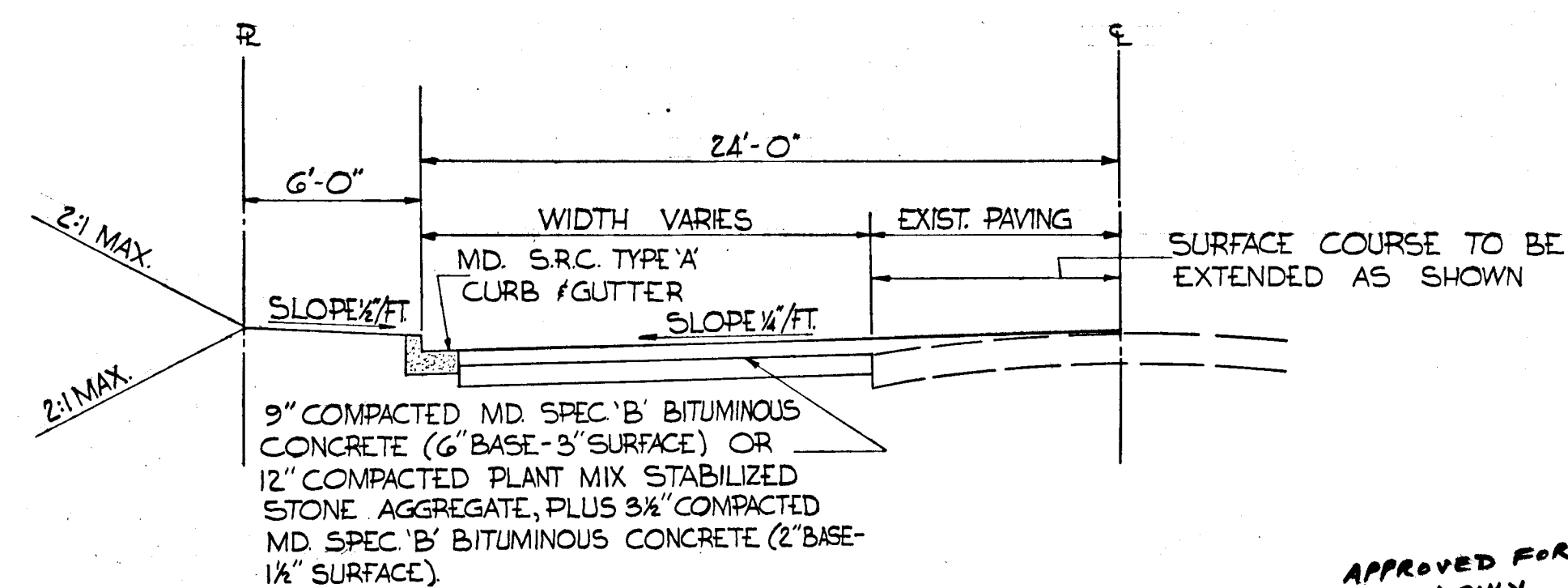
PROFILE
 SCALE VERT. 1"=5'
 HORZ. 1"=50'



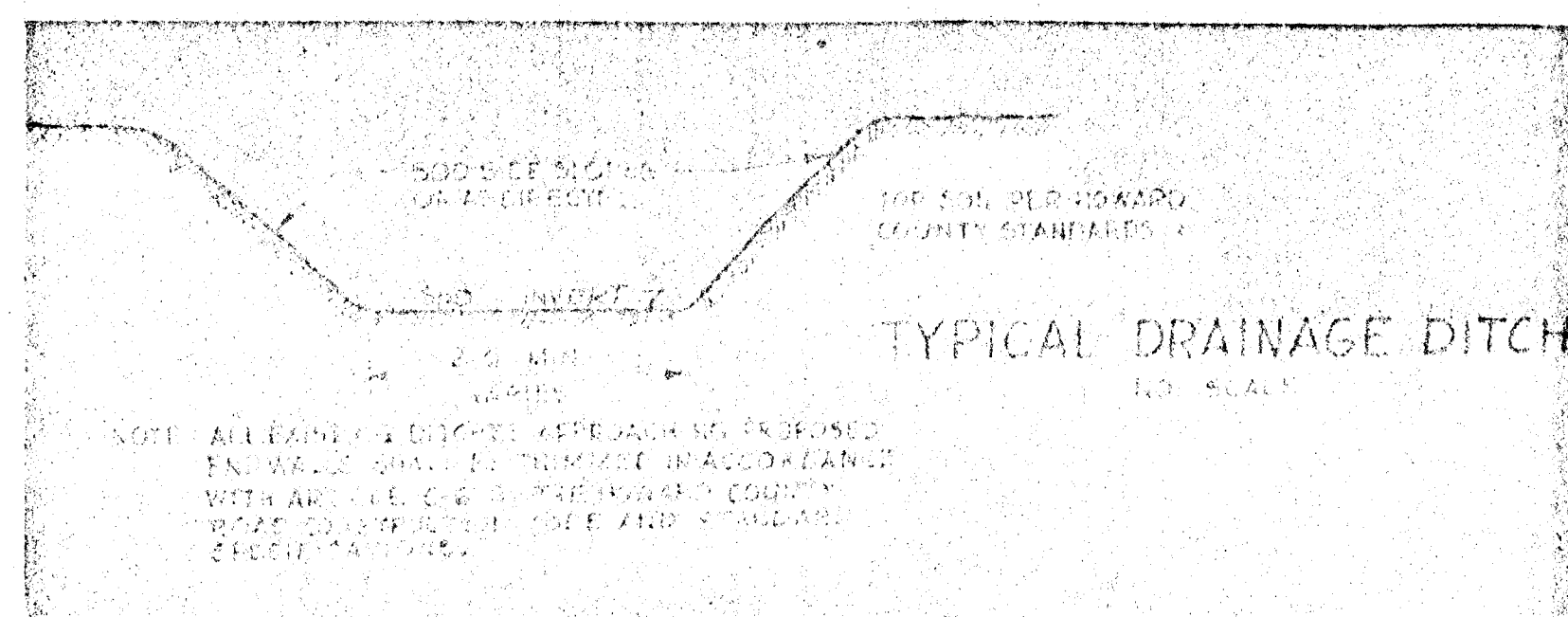
80' R.O.W. TYPICAL HALF SECTION
NO SCALE



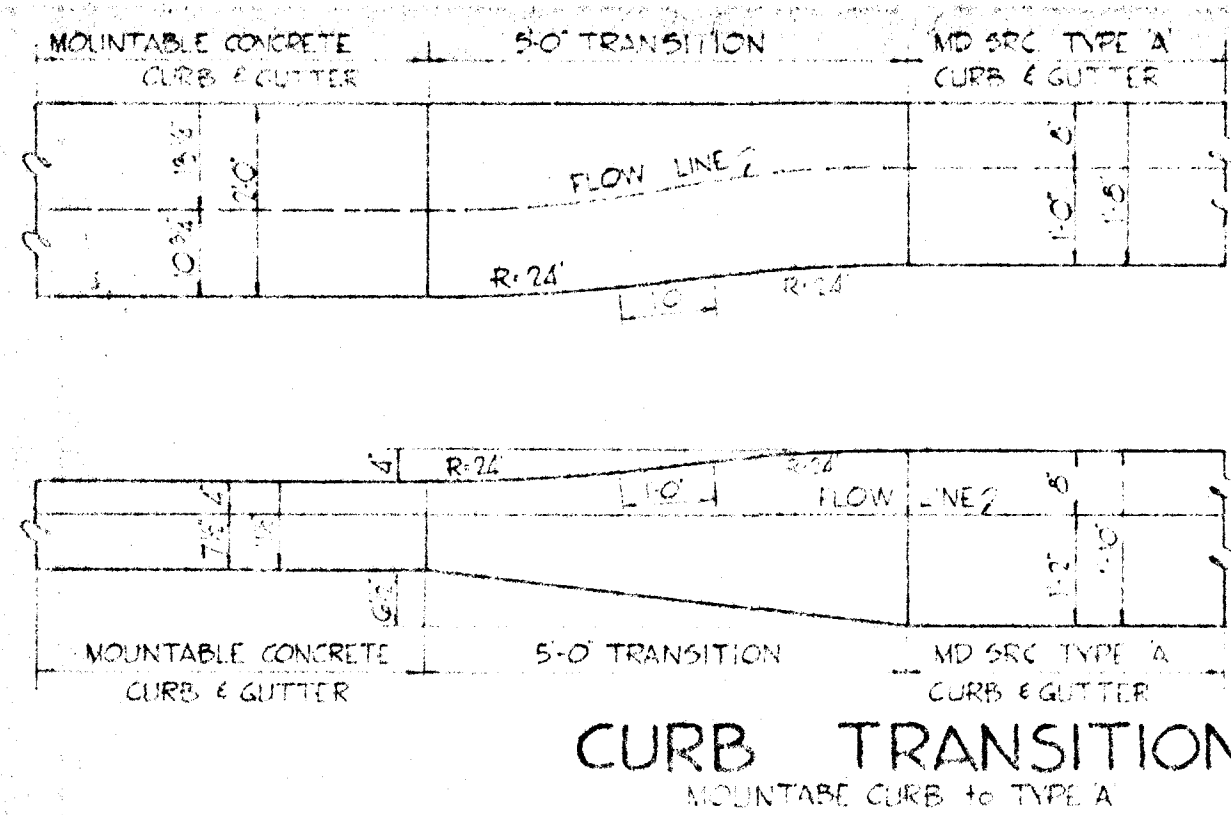
60' R.O.W. TYPICAL HALF-SECTION
SCALE 1/8"



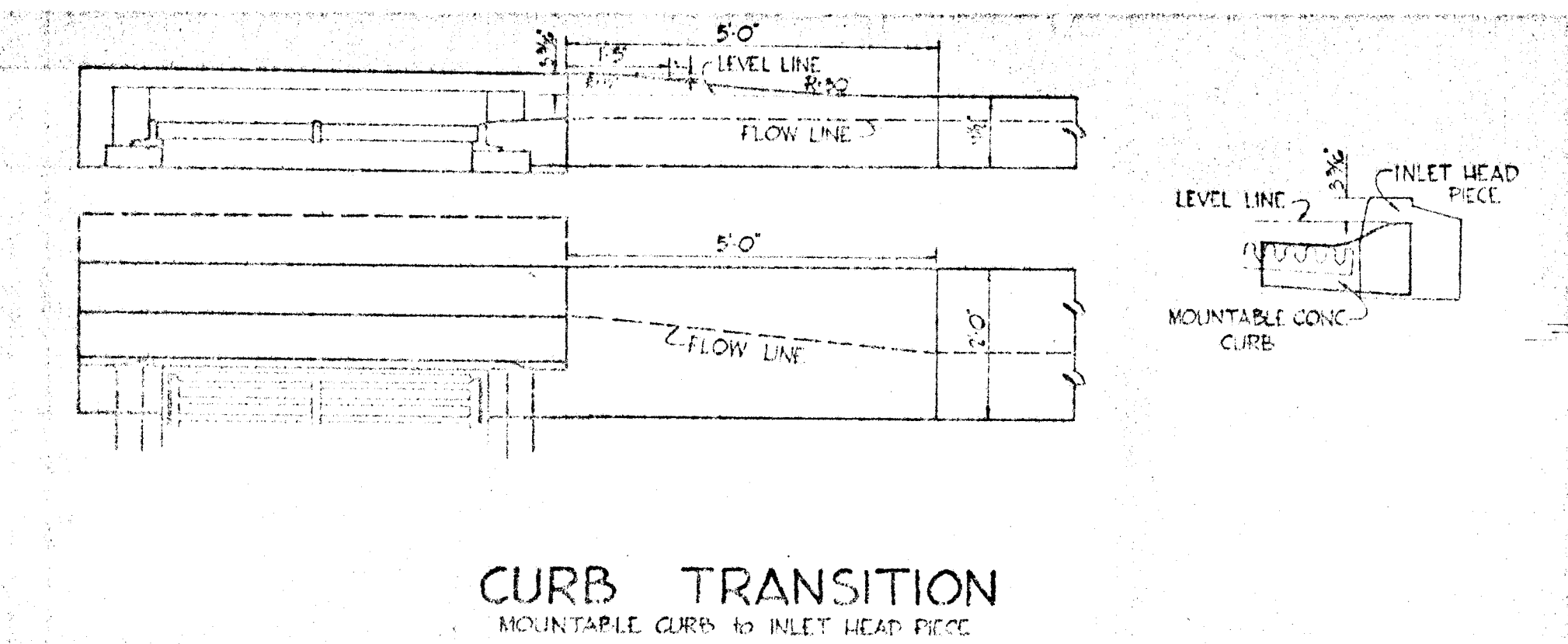
TYPICAL WIDENING OF RTE. 108
NO SCALE



TYPICAL DRAINAGE DITCH
NO SCALE



CURB TRANSITION
MOUNTABLE CURB to TYPE A



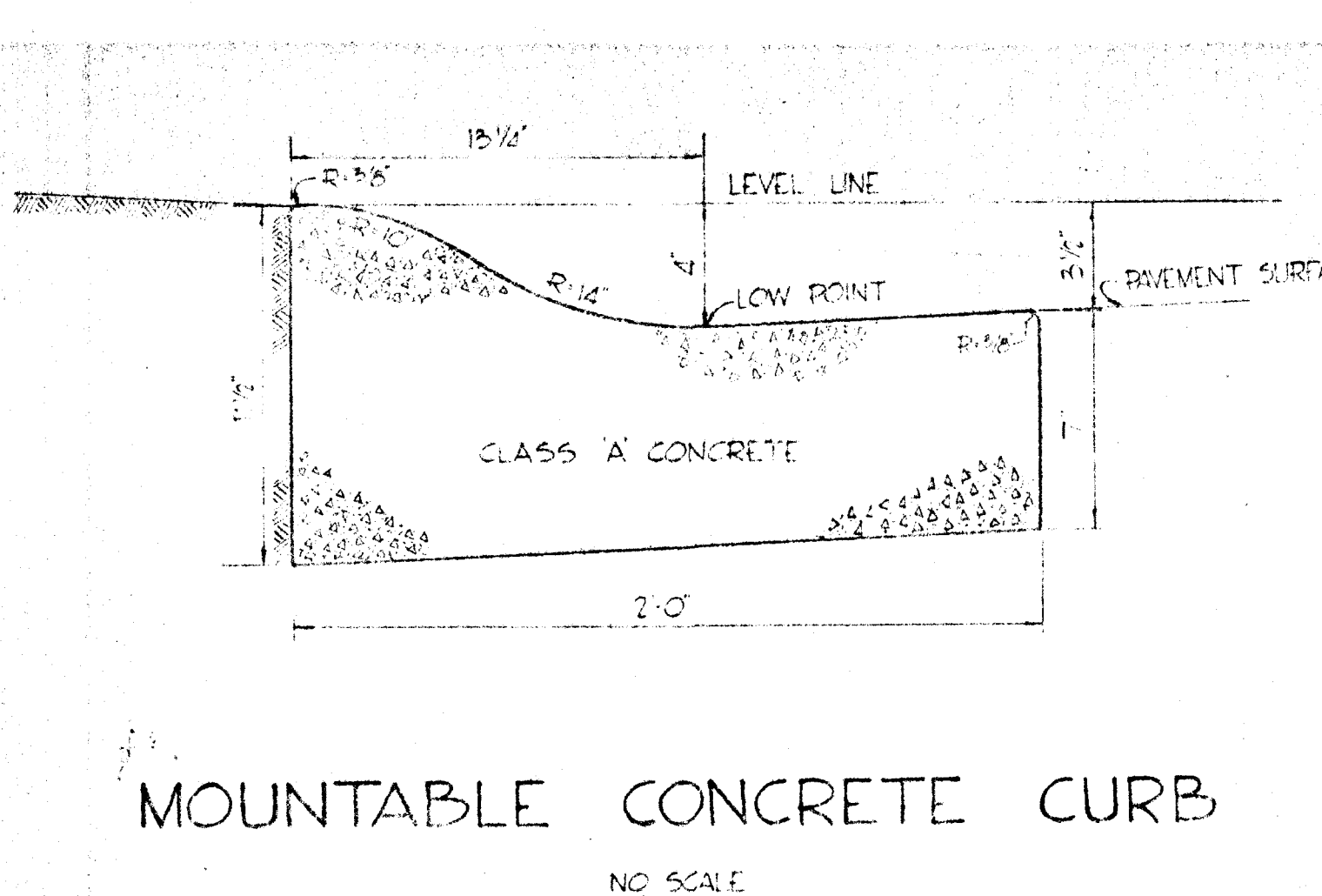
CURB TRANSITION
MOUNTABLE CURB to INLET HEAD PIECE

BITUMINOUS CONCRETE SURFACE	1/2"	BAND C-5	FINAL PHASE
BITUMINOUS CONCRETE BINDER	3/8"	BAND A-3	
BITUMINOUS CONCRETE BASE PLACED IN ONE COURSE	1 1/4"	BAND C-2 OR G-5	FIRST PHASE

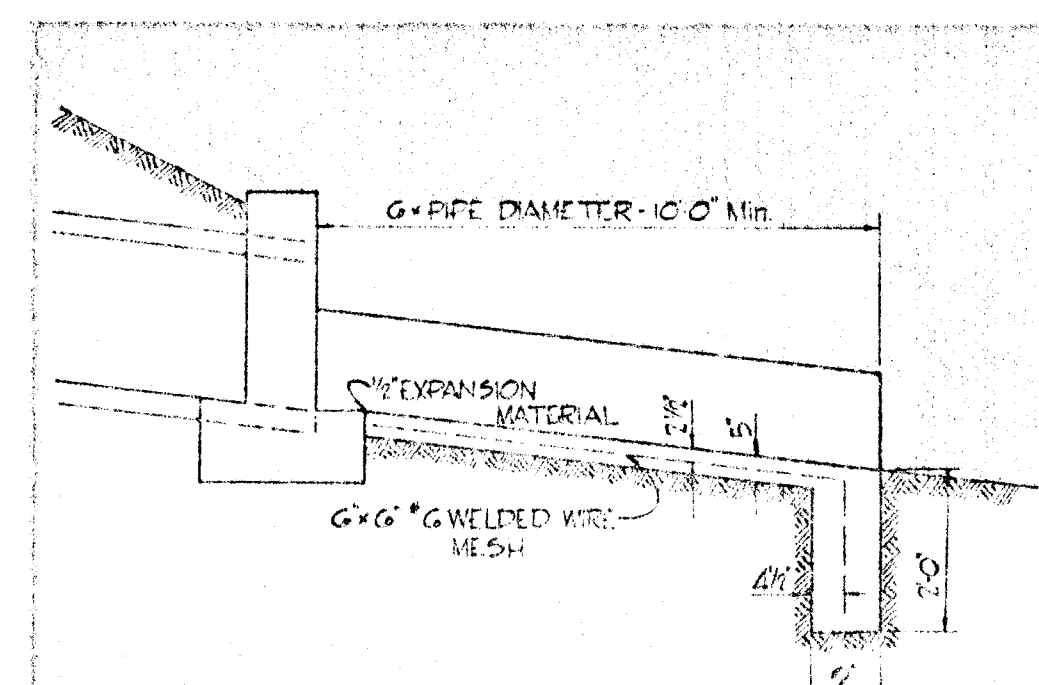
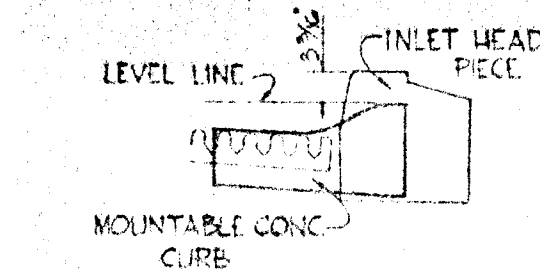
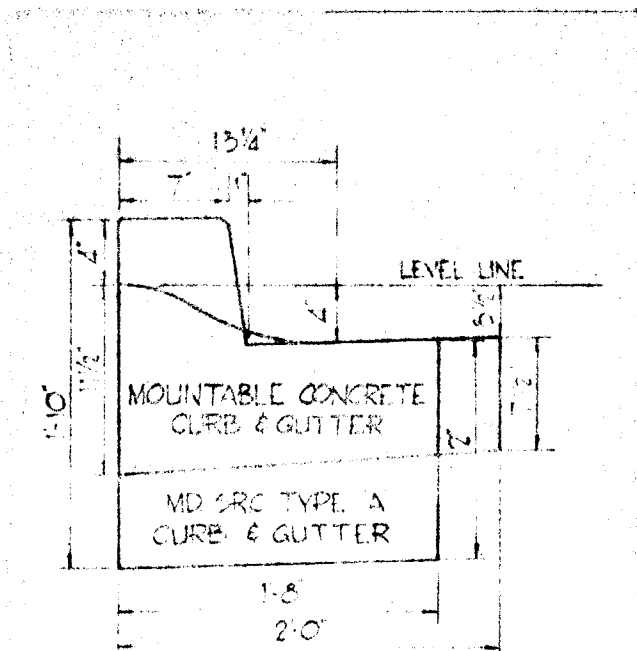
CLEARING AND GRADING: ARTICLE C-1
 SUBGRADE: ARTICLE C-2
 BASE COURSE: ARTICLE C-3 OR C-2B
 BINDER COURSE: ARTICLE C-3
 SURFACE COURSE: ARTICLE C-5

8" PAVEMENT DETAIL
NO SCALE

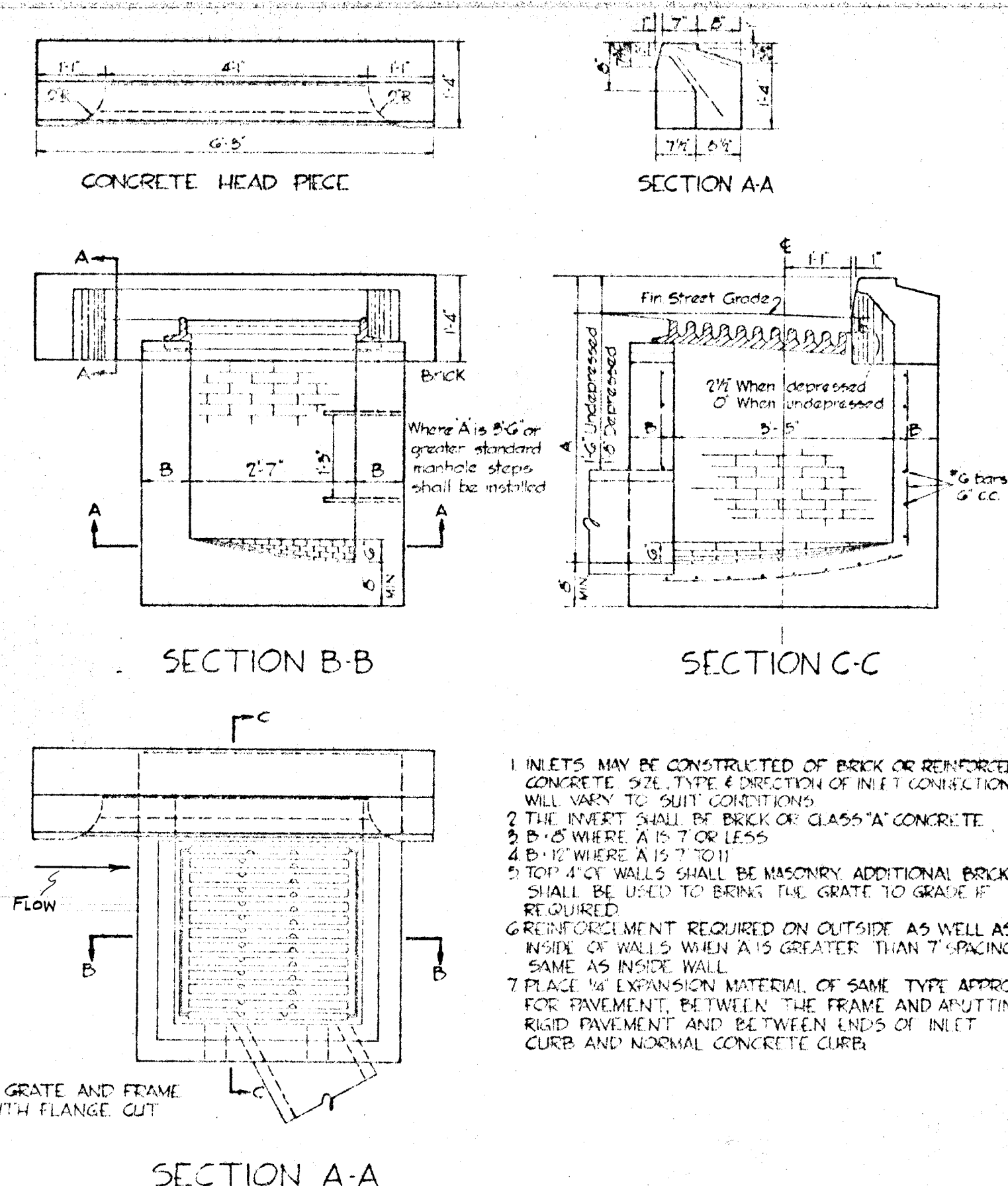
NOTE:
 PAVEMENT TO BE CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY ROAD CONSTRUCTION CODE AND SPECIFICATIONS DWG D-15 R-1025



MOUNTABLE CONCRETE CURB
NO SCALE



TYPICAL CONCRETE CHANNEL AND CUTOFF WALL
NO SCALE



MODIFIED 'S' COMBINATION INLET
NO SCALE

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

APPROVED
 PLANNING COMMISSION
 OF HOWARD COUNTY
 DATE SEP 2 1968
[Signature]

BROWNE-PANDULLO & ASSOCIATES ENGINEERS COLUMBIA, MARYLAND		
Rev Date	Rev No	Revision Description
COLUMBIA		
M ⁶ TH A ¹ LECTION DISTRICT V ¹ L L ¹ HOWARD COUNTY D		
OWNER AND DEVELOPER: HOWARD RESEARCH AND DEVELOPMENT CORP. THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21210		
PROJECT AREA VILLAGE OF OAKLAND MILLS SECTION 1 - AREA B		
PROJECT TITLE ROADWAY DETAILS		
Des By FT	Scale AS SHOWN	Dwg No G OF B
Drn By J.B. #FT	Date JUNE 26, 1968	C.C.F. No
Chk By TS	Approved	



Richard P. Browne 5258

BROWNE-PANDULLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

Rev. Date	Rev. No.	Revision Description

COLUMBIA
MARYLAND

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

PROJECT AREA
VILLAGE OF OAKLAND MILLS
SECTION 1 AREA 3

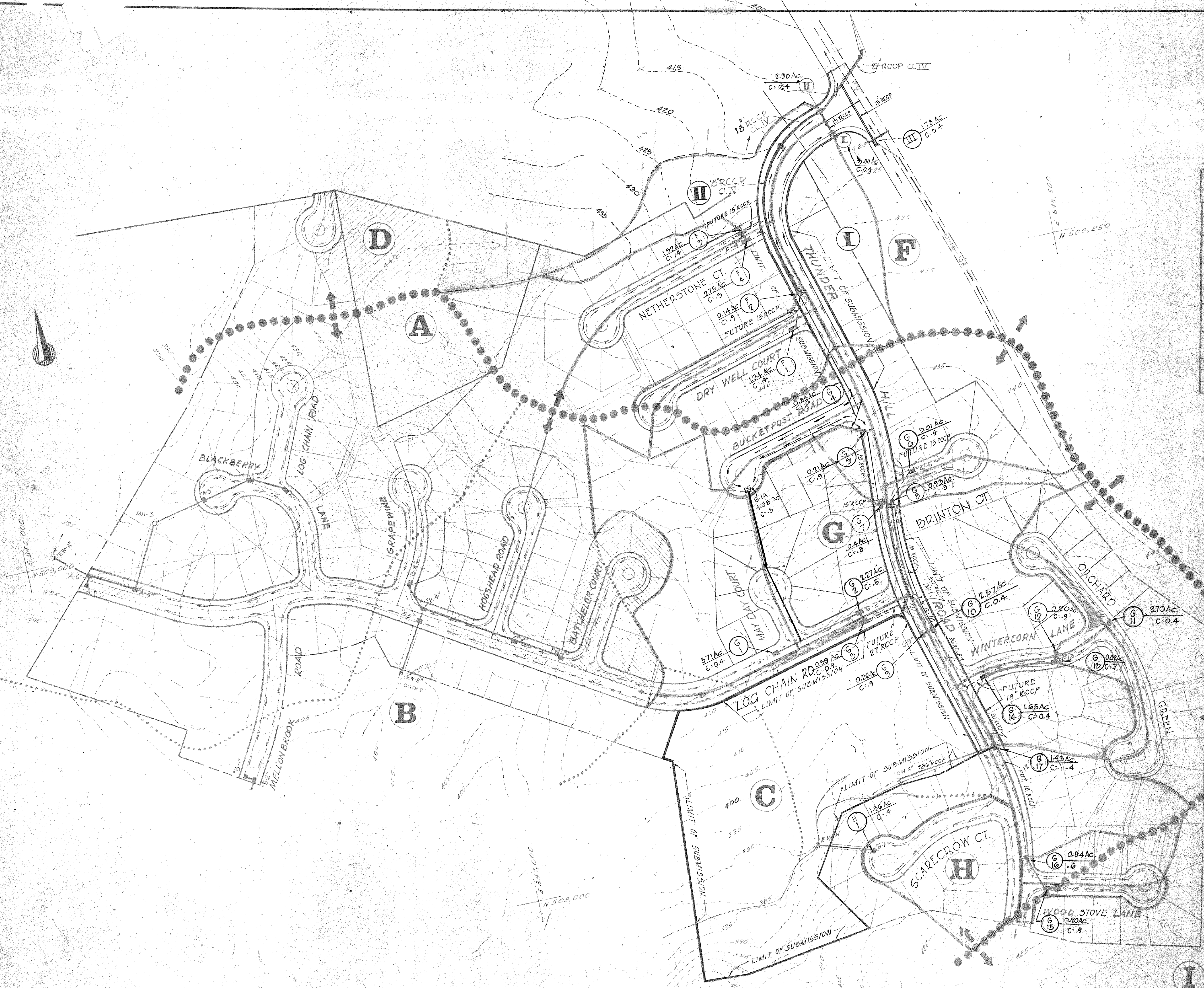
PROJECT TITLE
DRAINAGE MAP

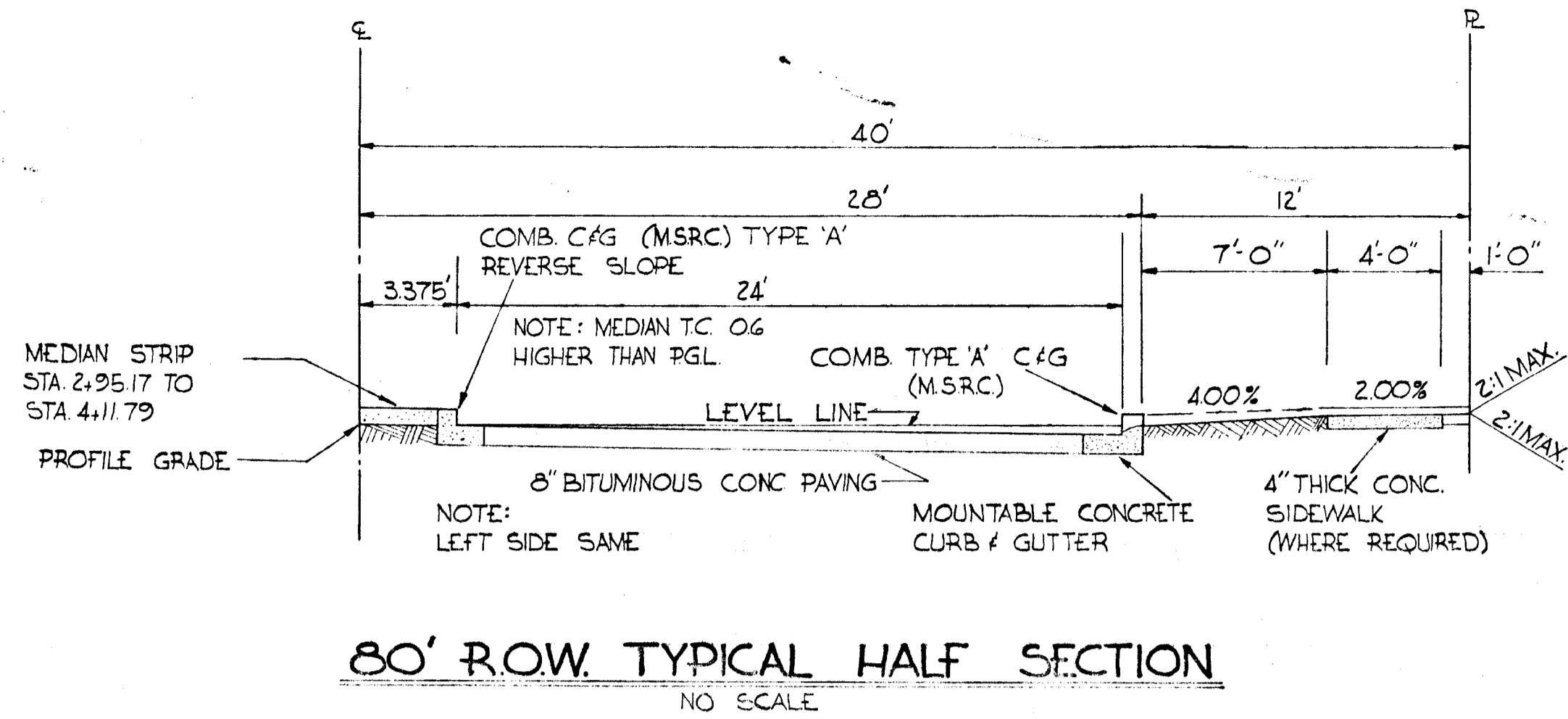
Des. By	W.D.K.	Scale	1" = 100'	Dwg. No.	7 OF 8
Drn. By	F.A.S.	Date	1 MAR. 68	C.C.F. No.	
Clk. By	W.K.	Approved			

- LEGEND**
- LIMIT OF MAJOR WATERSHED AREA
 - " " INTERMEDIATE "
 - X WATERSHED DESIGNATION
 - VALLEY OR STREAM LINE

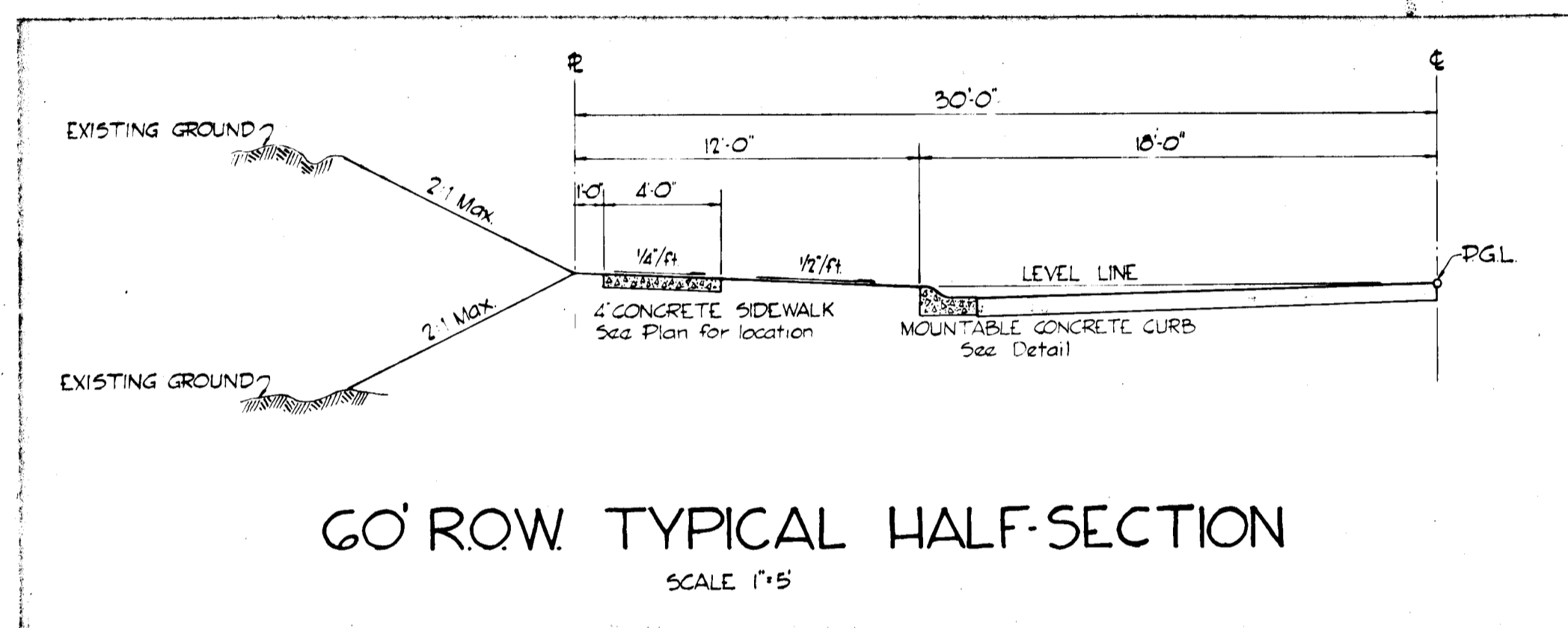
APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE

J.W.C.
9/25/68

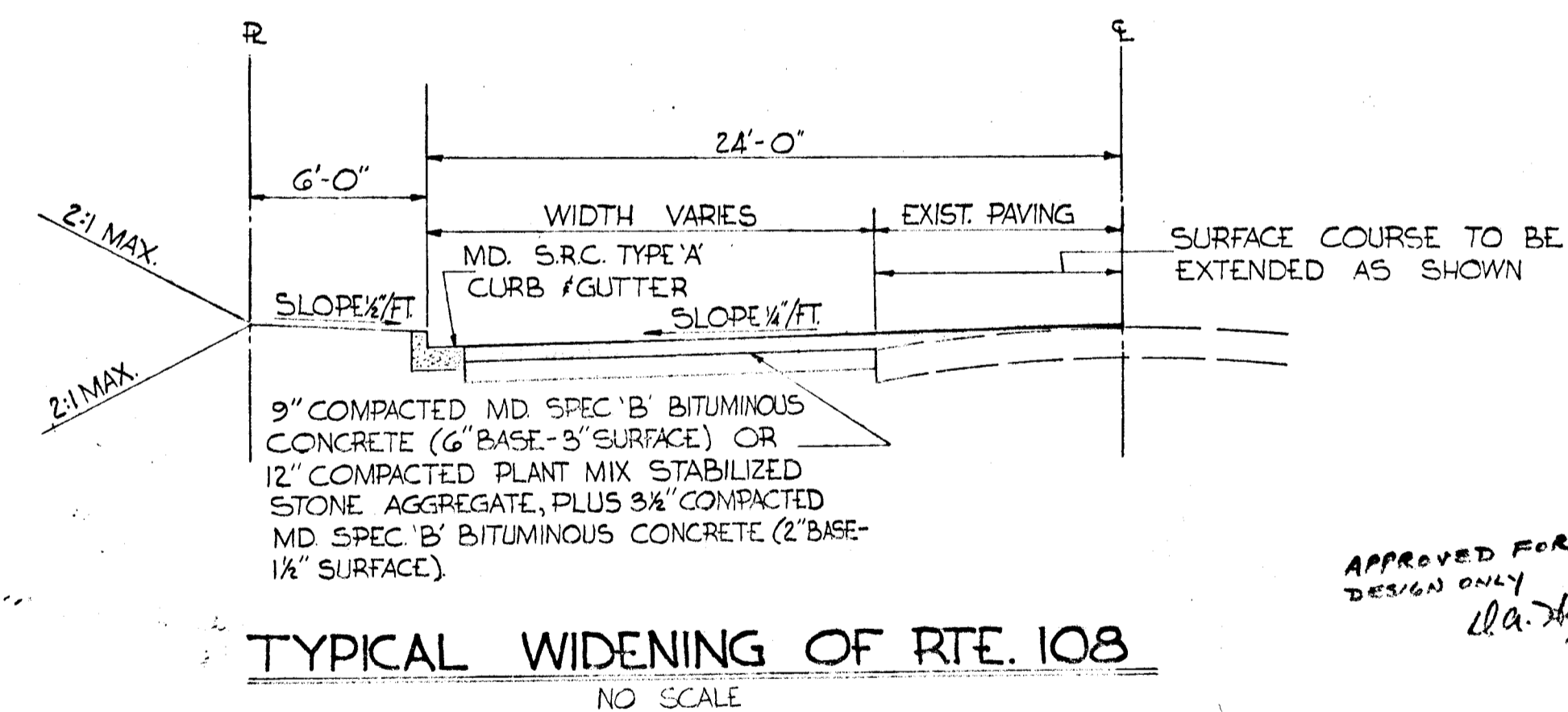




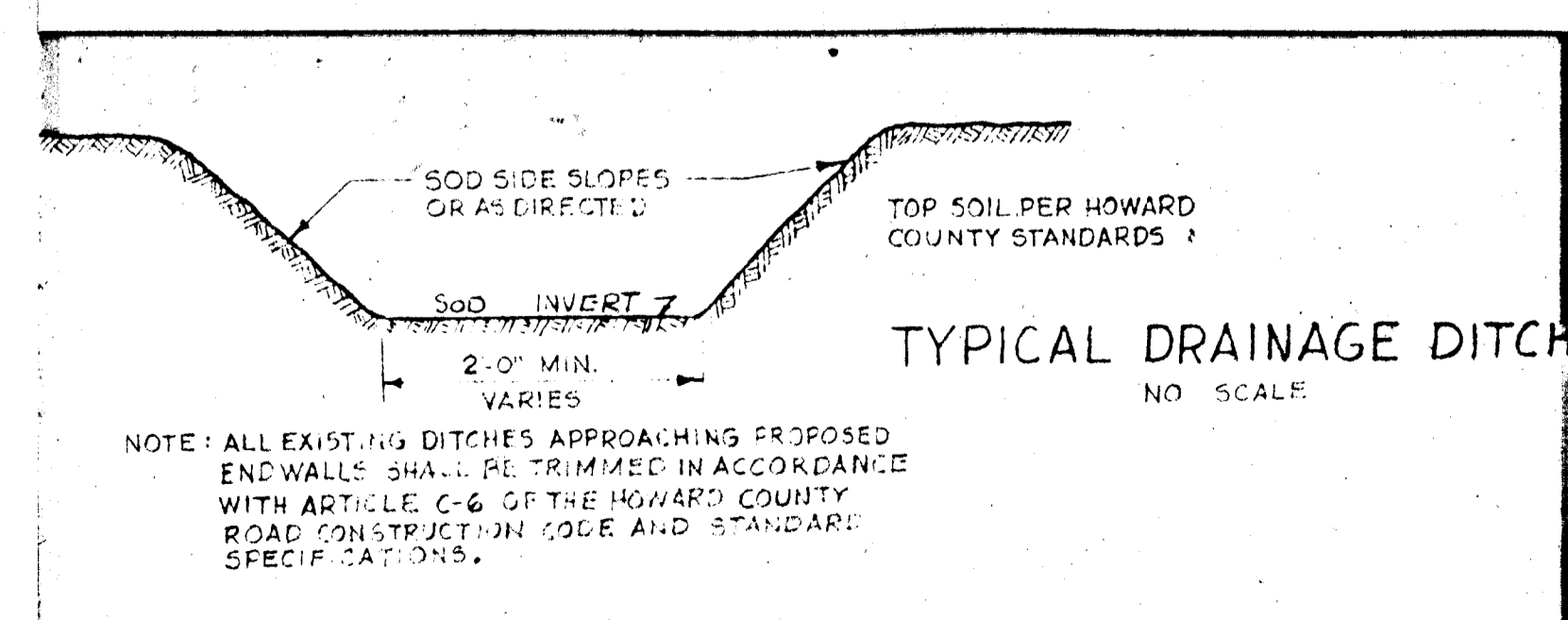
80' ROW TYPICAL HALF SECTION
NO SCALE



60' ROW TYPICAL HALF-SECTION
SCALE 1"=5'

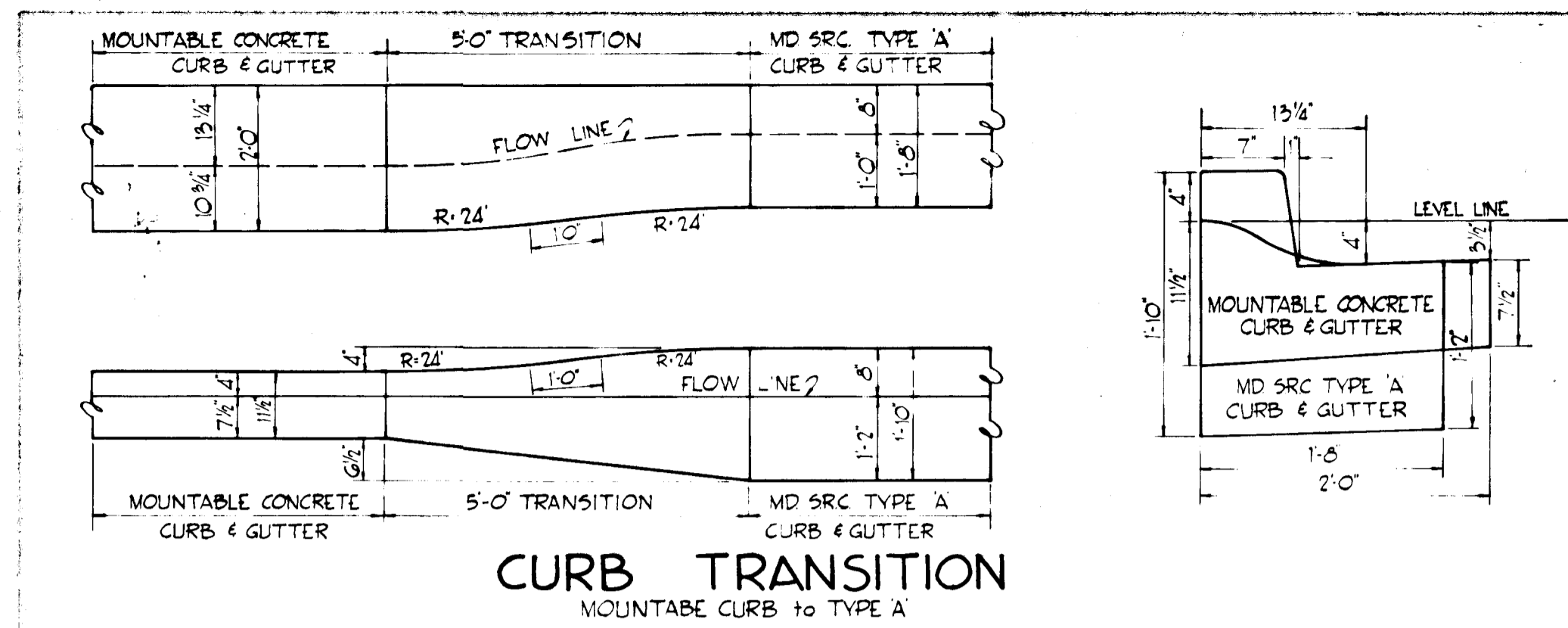


TYPICAL WIDENING OF RTE. 108
NO SCALE

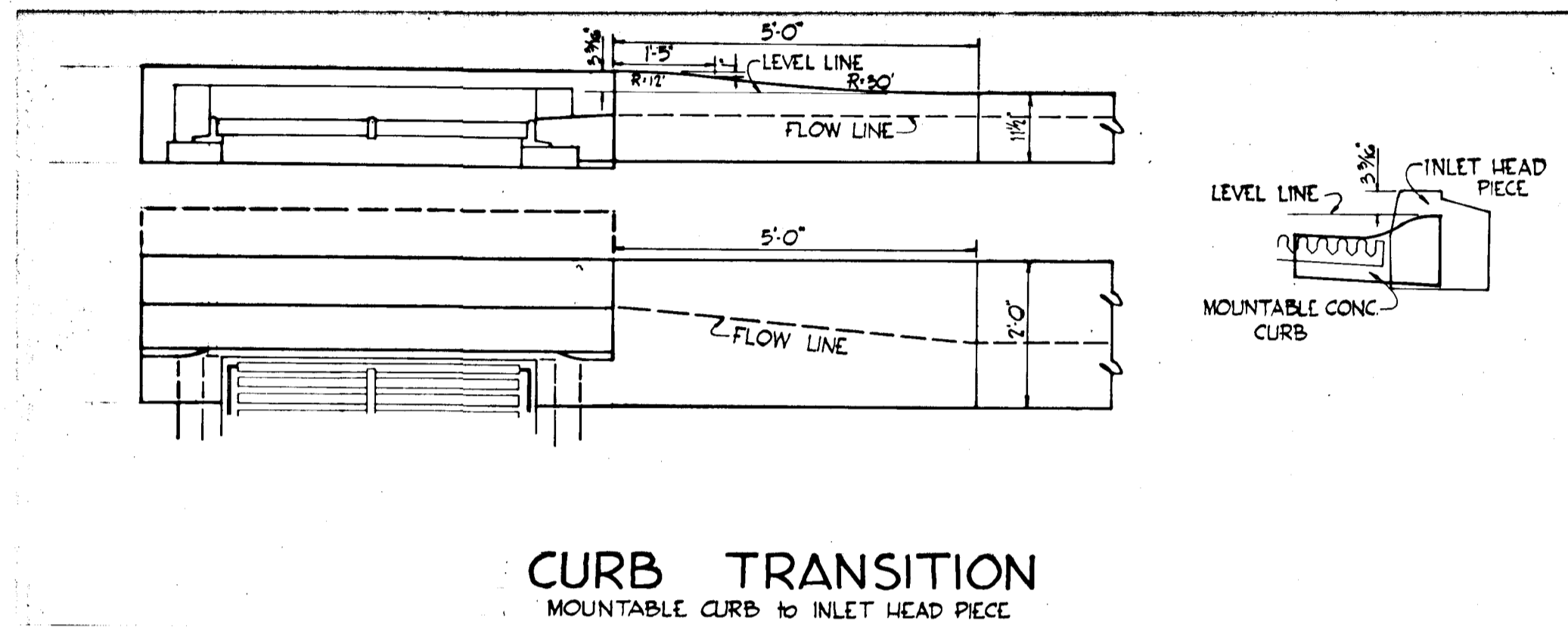


NOTE: ALL EXISTING DITCHES APPROACHING PROPOSED END WALLS SHALL BE TRIMMED IN ACCORDANCE WITH ARTICLE C-6 OF THE HOWARD COUNTY ROAD CONSTRUCTION CODE AND STANDARD SPECIFICATIONS.

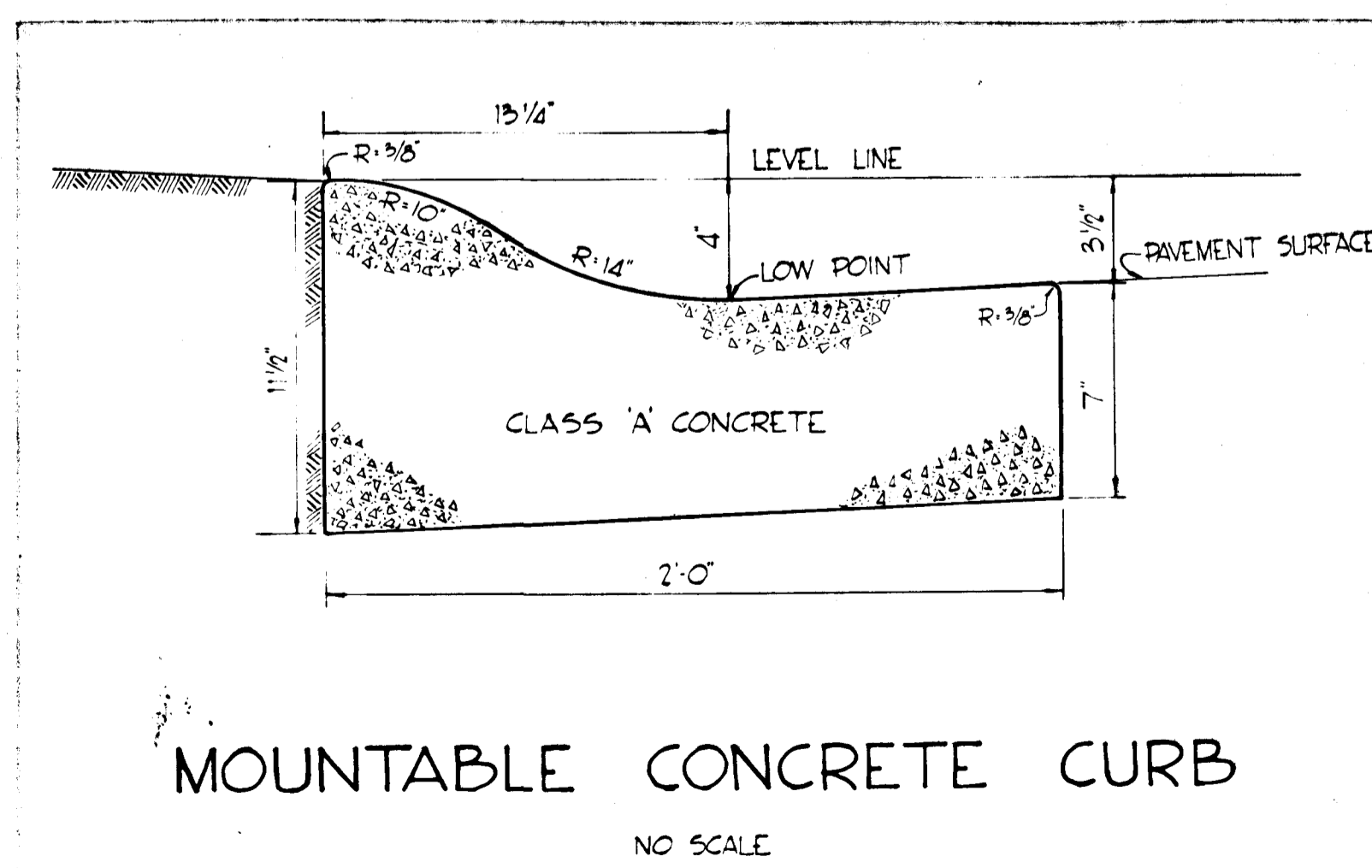
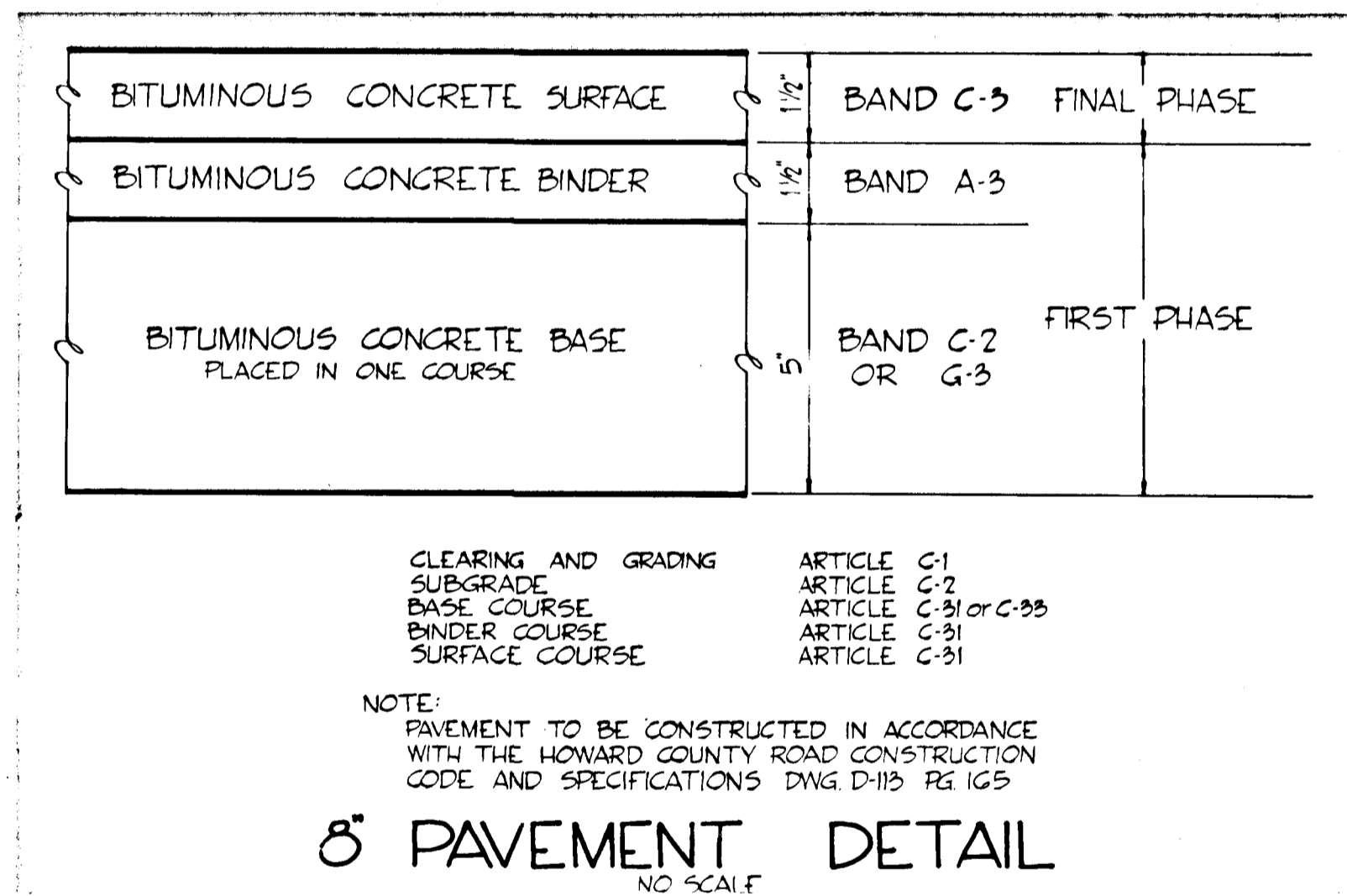
TYPICAL DRAINAGE DITCH
NO SCALE



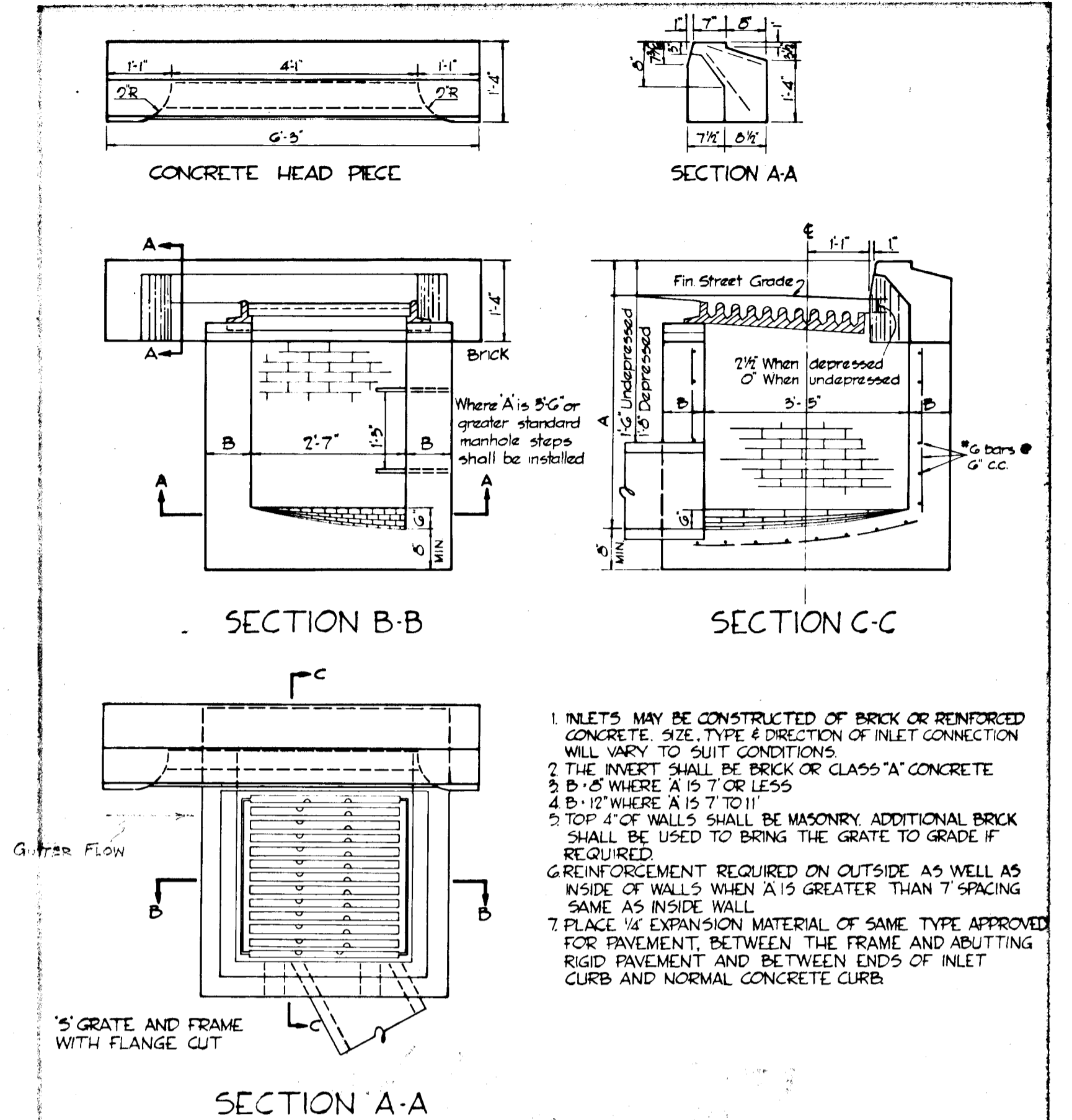
CURB TRANSITION
MOUNTABLE CURB TO TYPE 'A'



CURB TRANSITION
MOUNTABLE CURB TO INLET HEAD PIECE

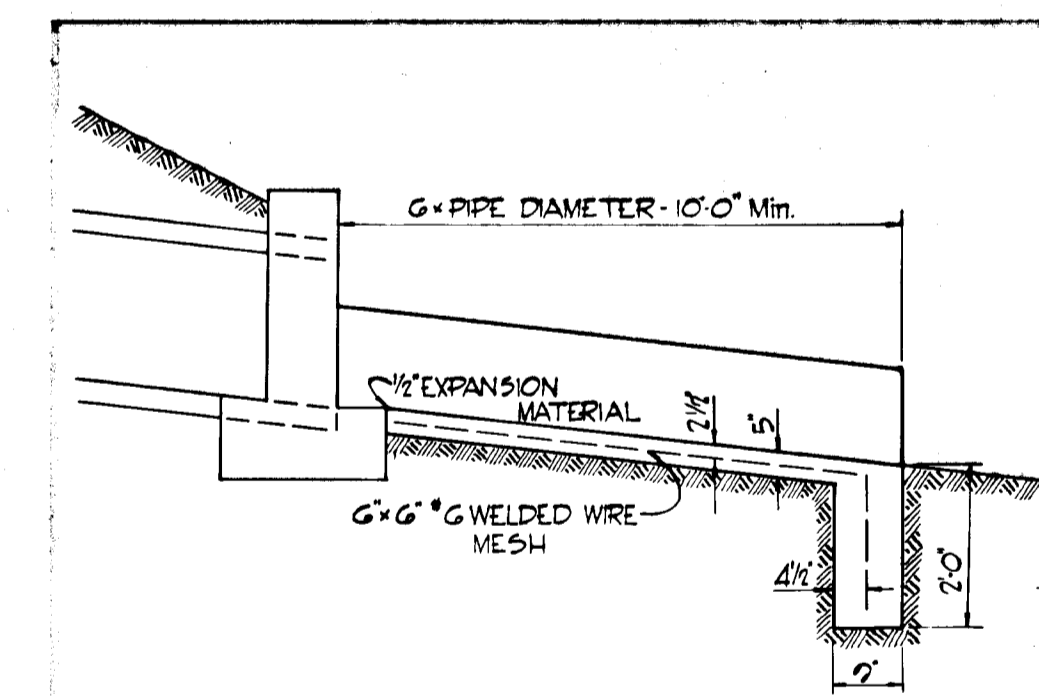


MOUNTABLE CONCRETE CURB
NO SCALE



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 INVERT SHALL BE BRICK OR CLASS 'A' CONCRETE.
3. B SHALL BE 5' WHERE A IS 7' OR LESS.
4. B SHALL BE 12' WHERE A IS 7' TO 11'.
5. TOP 2" 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 1/2" EXPANSION MATERIAL OF SAME TYPE APPROVED FOR PAVEMENT, BETWEEN THE FRAME AND ADJUTING RIGID PAVEMENT AND BETWEEN ENDS OF INLET CURB AND NORMAL CONCRETE CURB.



TYPICAL CONCRETE CHANNEL AND CUTOFF WALL
NO SCALE

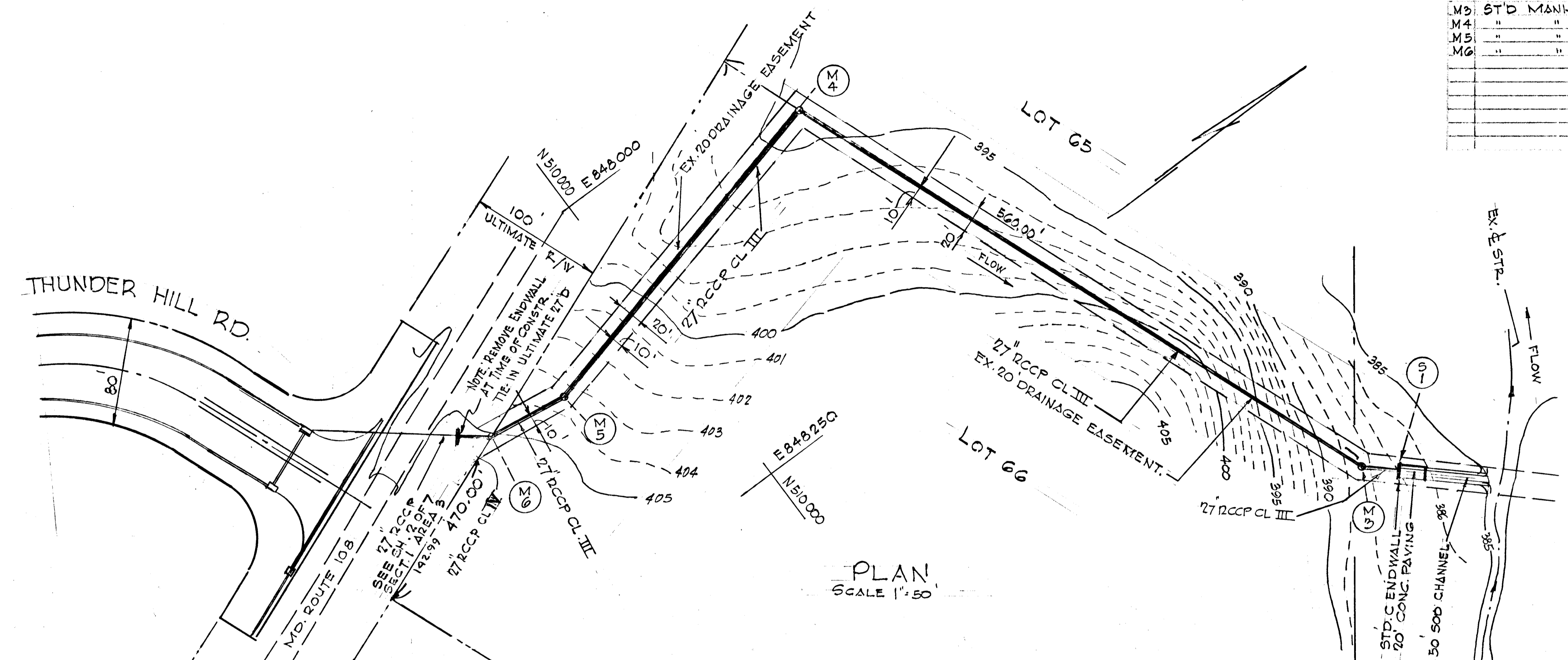
APPROVED
 PLANNING COMMISSION
 OF HOWARD COUNTY
 DATE: SEP 2 1968

BROWNE-PANDULLO & ASSOCIATES ENGINEERS COLUMBIA, MARYLAND			
Rev Date	Rev No	Revision Description	
COLUMBIA			
6TH ELECTION DISTRICT HOWARD COUNTY			
OWNER AND DEVELOPER HOWARD RESEARCH AND DEVELOPMENT CORP. THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21210			
PROJECT AREA VILLAGE OF OAKLAND MILLS SECTION 1 - AREA B			
PROJECT TITLE ROADWAY DETAILS			
Des By	Scale AS SHOWN	Dwg No 6 OF 8	
Drn By J.B. EFT	Date JUNE 26, 1968	C.C.F. No	
Chk By J.S.	Approved		

PLAN
 DATE: 2/2/68
 NOTE: BOOK CHANGES CHECKED
 NO. OF REVISIONS: 0
 NO. OF WAY CHECKS: 0

PROFILE
 DATE: 2/2/68
 NOTE: BOOK CHANGES CHECKED
 NO. OF REVISIONS: 0
 NO. OF WAY CHECKS: 0

STORM DRAINAGE STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	REMARKS
S1	STD. C ENDWALL	As SHOWN	"	"	388.13	HO. CO. STD. D-52 E-107
M3	STD. MANHOLE	"	"	"	388.40	HO. CO. STD. D-103 E-159
M4	"	"	"	"	388.03	"
M5	"	"	"	"	387.27	"
M6	"	"	"	"	388.12	"



PLAN
 SCALE 1" = 50'

APPROVED
 PLANNING COMMISSION
 OF HOWARD COUNTY
 DATE: SEP 2 5 1968
[Signature]

Rev. Date: Rev. No: Revision Description:

COLUMBIA
 MARYLAND

HOWARD RESEARCH AND DEVELOPMENT CORP.
 THE VILLAGE OF OAKLAND MILLS, BALTIMORE, MARYLAND 21210

VILLAGE OF OAKLAND MILLS
 SEC. 1 AREA 3

PROJECT: **ULTIMATE CLOSED DRAINAGE THRU EX. 20 FT. DRAINAGE ESM'T.**

Drawn By: TKB Date: As SHOWN Date: 8 OF 8
 Date: 6 SEPT 68
 Checked By: S Approved:

