

REVISIONS

COLUMBIA

HOWARD COUNTY, MARYLAND
6TH ELECTION DISTRICT

ROAD CONSTRUCTION PLANS VILLAGE OF OAKLAND MILLS SEC. I THUNDER HILL AREA 4

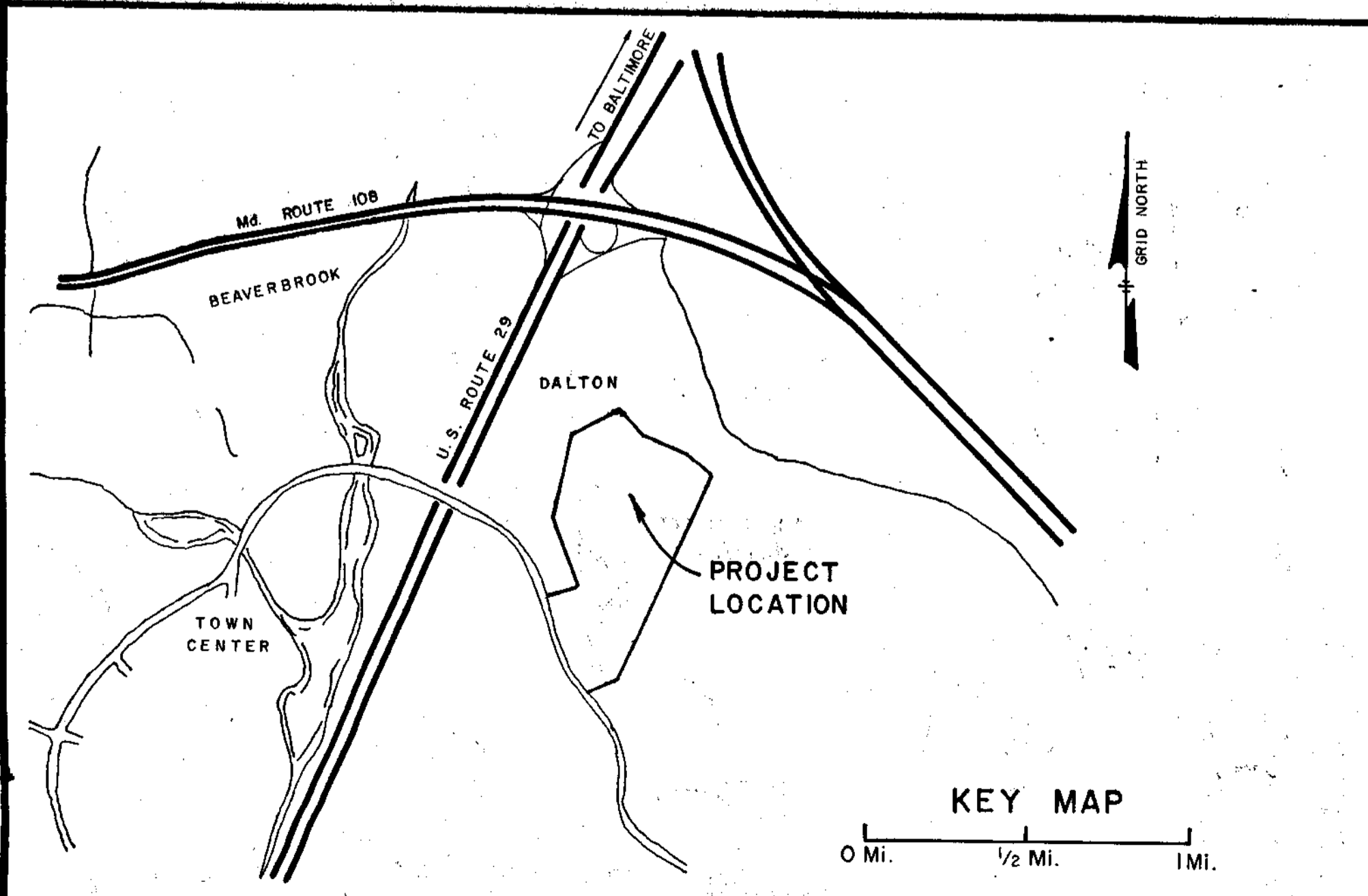
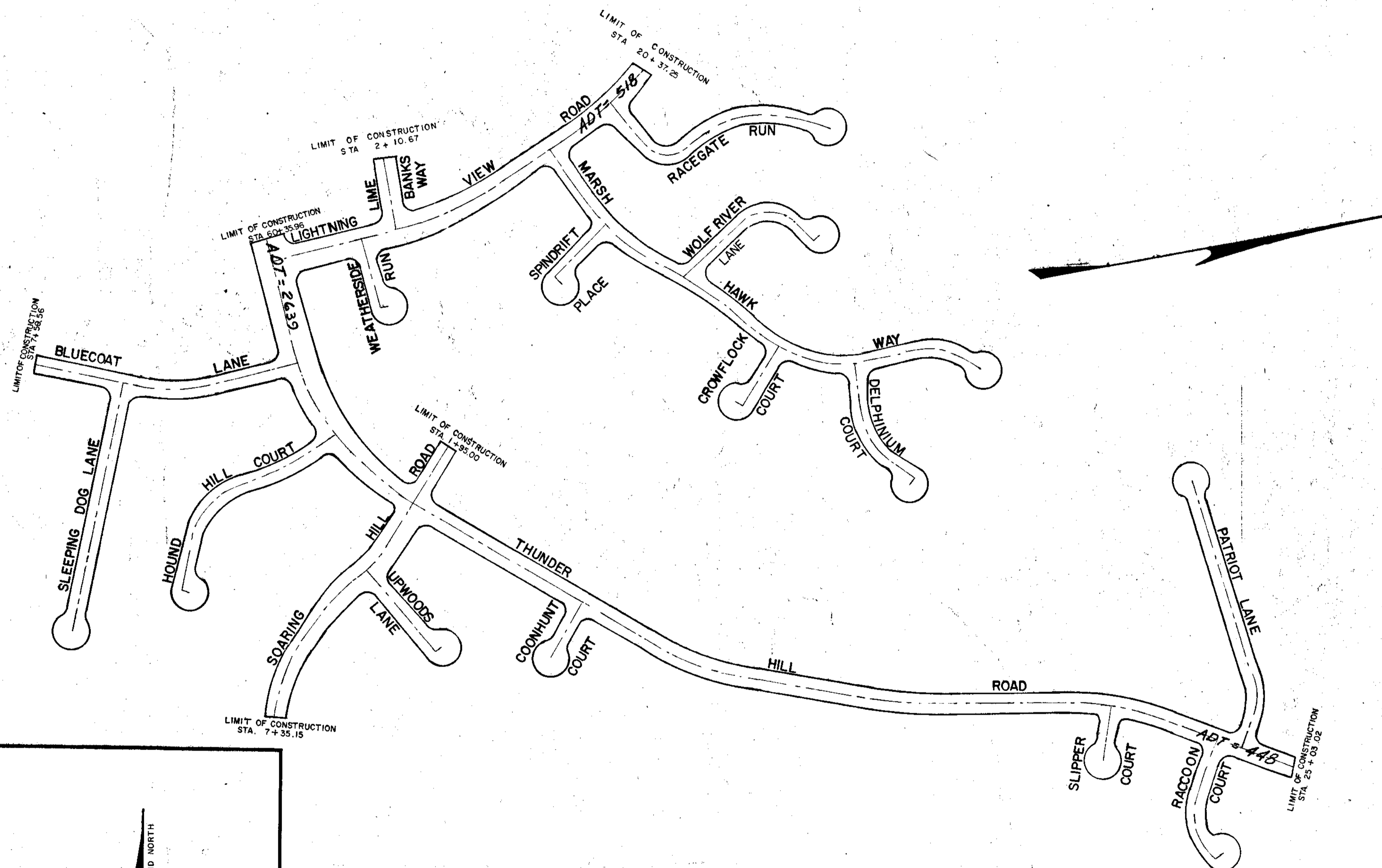
NOTES

1. ALL DETAILS ARE FROM THE ROAD CONSTRUCTION CODE AND STANDARD SPECIFICATIONS ISSUED OR APPROVED BY THE COUNTY COMMISSIONERS AND THE HOWARD COUNTY ROAD DEPARTMENT.

2. ALL ROADS ARE DESIGNED FOR 25mph TRAFFIC SPEED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIAL STANDARDS.

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1.	TITLE SHEET
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4.	LIGHTNING VIEW ROAD AND WEATHERSIDE RUN
5.	RACEGATE RUN
6.	MARSH HAWK WAY
7.	SPINDRIFT PLACE AND CROWFLOCK COURT
8.	WOLF RIVER LANE
9.	DELPHINIUM COURT
10.	LIME BANKS WAY
11.	THUNDER HILL ROAD
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24.	DETAILS
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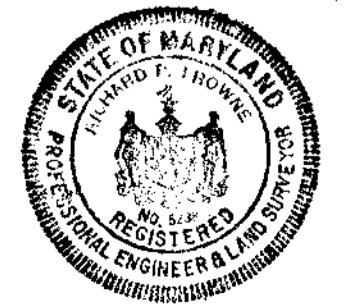


APPROVED HOWARD COUNTY PLANNING COMM.	<i>[Signature]</i>	3-13-69
CHIEF ENGINEER		DATE
APPROVED HOWARD COUNTY ROADS DEPT.	<i>[Signature]</i>	3-13-69
ROADS SUPERINTENDENT		DATE
APPROVED HOWARD COUNTY METROPOLITAN COMM.	<i>[Signature]</i>	3-13-69
CHIEF ENGINEER		DATE

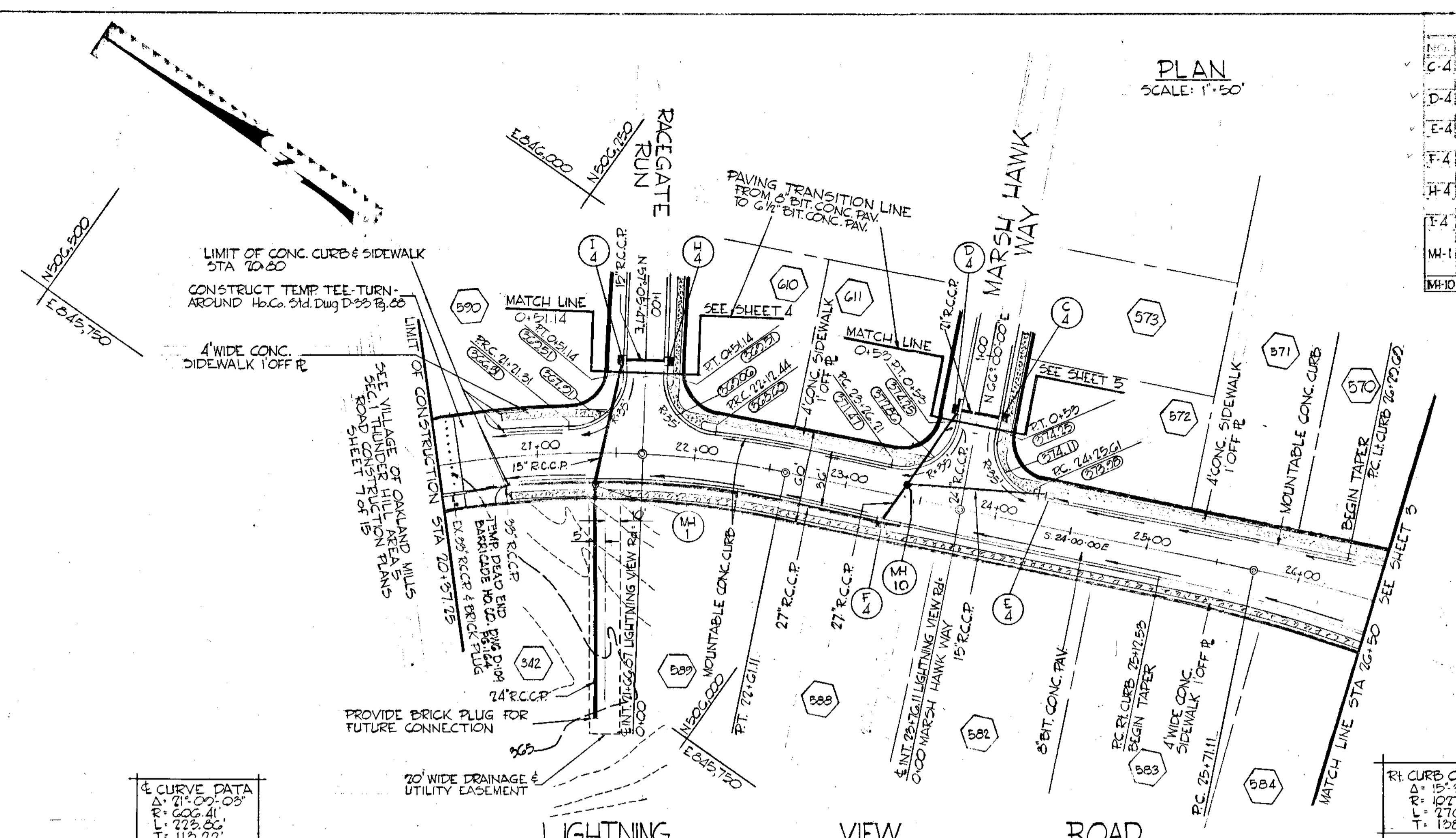
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF CROSS KEYS
BALTIMORE, MARYLAND

BROWNE-PANDOLLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

[Signature] 5238



PLAN
SCALE: 1"=50'



NO.	TYPE	LOCATION	INVERT	OUTLET	ELEVATION	REMARKS
C-4	A-5 INLET	Sta. 0+00.55 R. MARSH HAWK WAY (INLET)	366.58	366.88	374.72	SEE DETAIL
D-4	B-10 INLET	UP Sta. 0+00.55 R. MARSH HAWK WAY DOWN Sta. 0+05.11	367.06	367.71	374.80	"
E-4	B-15 INLET	UP Sta. 2+44.73 LIGHTNING VIEW ROAD DOWN Sta. 2+49.11	366.00	370.24	374.60	"
F-4	B-15 INLET	UP Sta. 23+43.55 LIGHTNING VIEW ROAD DOWN Sta. 23+45.55 R. VIEW ROAD	366.00	365.23	372.02	"
H-4	A-5 INLET	Sta. 0+00 RACEGATE RUN (INLET)	364.00	364.40	370.03	"
I-4	A-5 INLET	Sta. 0+00 RACEGATE RUN (INLET)	364.00	364.40	370.03	"
M-1	STD. MANHOLE	Sta. 21+40-21+38 R. LIGHTNING VIEW ROAD	367.04	-	-	Ho. Co. Std. DWG-D-103 Pg. 153
M-10	STD. MANHOLE	Sta. 23+38-7 LT. LIGHTNING VIEW ROAD	366.97	-	-	Ho. Co. Std. DWG-D-103 Pg. 153



RICHARD P. BROWNE
5238

APPROVED
PLANNING COMMISSION
DATE: 3/13/67
J. J. [Signature]

10-31-65 1 CHANGE OFFSET RT M-1
COLUMBIA
7th ELECTION DISTRICT HOWARD COUNTY
HOWARD RESEARCH AND DEVELOPMENT CORE
VILLAGE OF OAKLAND MILLS SECTION 1
THUNDER HILL AREA 4
LIGHTNING VIEW ROAD
PLAN & PROFILE
T.S. AS SHOWN 2 OF 27
B.P. DATE 10-11-60

CURVE DATA

Δ: 21° 00' 00"
R: 606.41
L: 773.86'
T: 112.22'

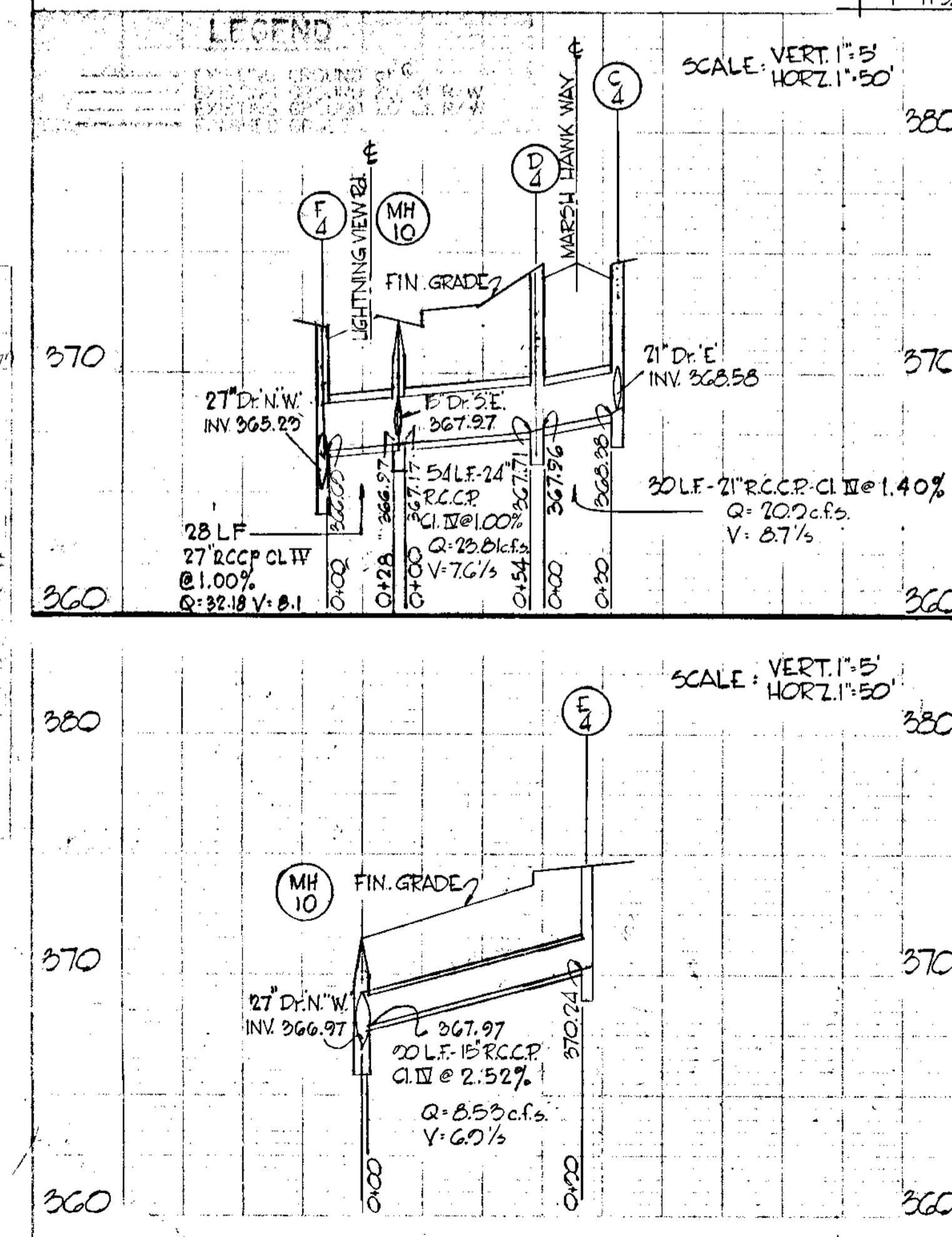
RT CURB CURVE DATA

Δ: 15° 25' 20"
R: 1071.25'
L: 276.25'
T: 128.98'

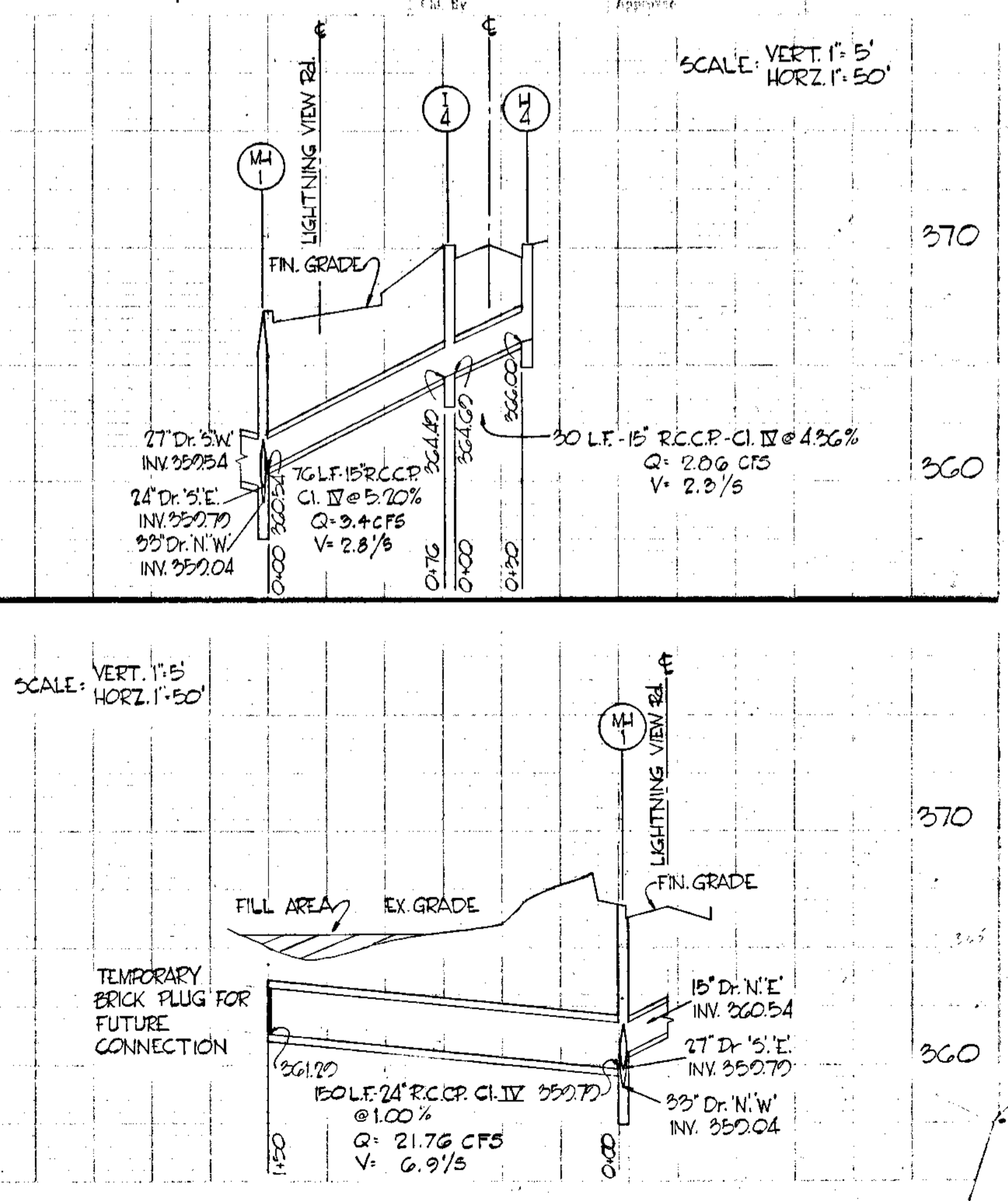
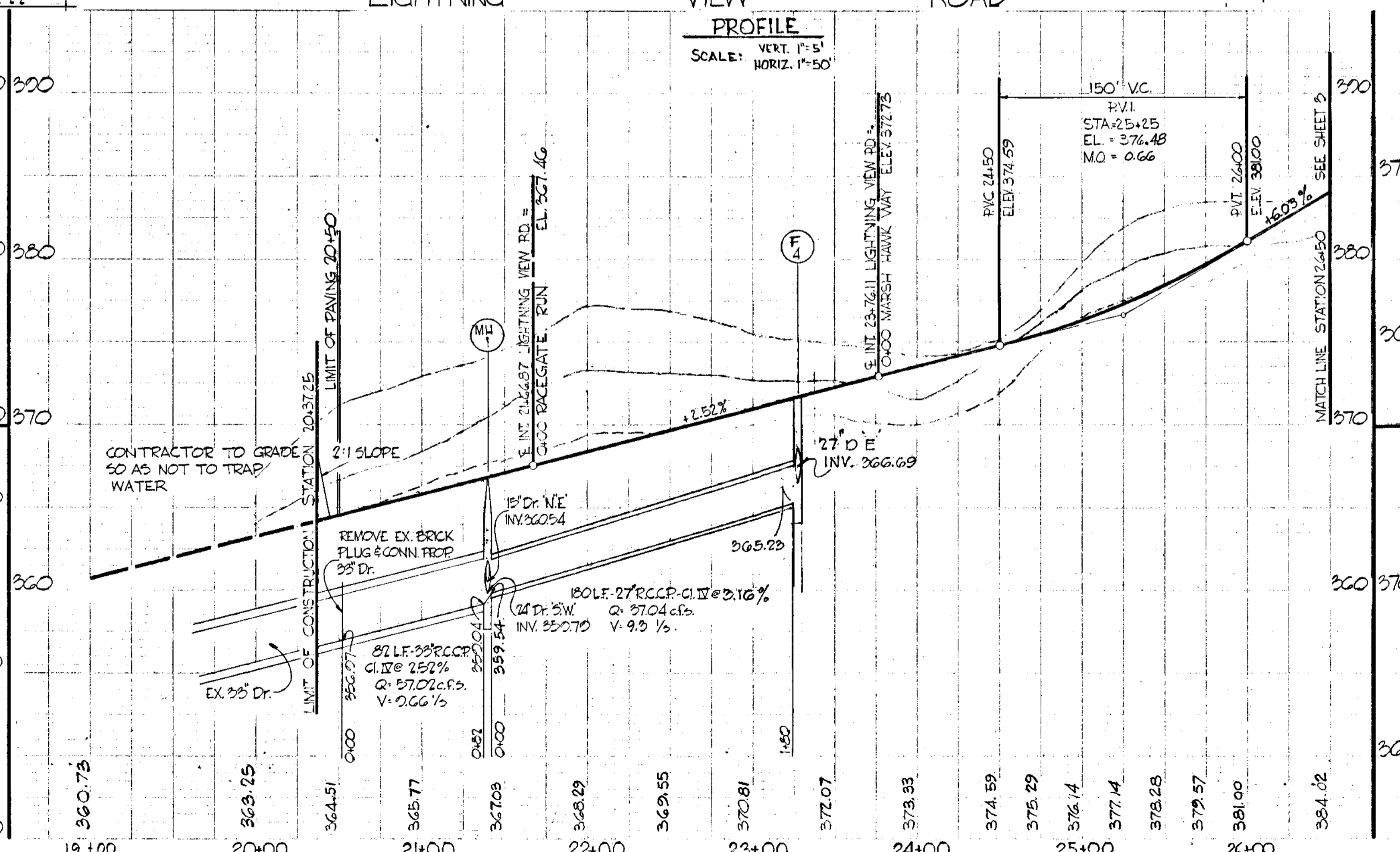
LT CURB CURVE DATA

Δ: 10° 22' 26"
R: 790.22'
L: 246.00'
T: 124.64'

LEGEND

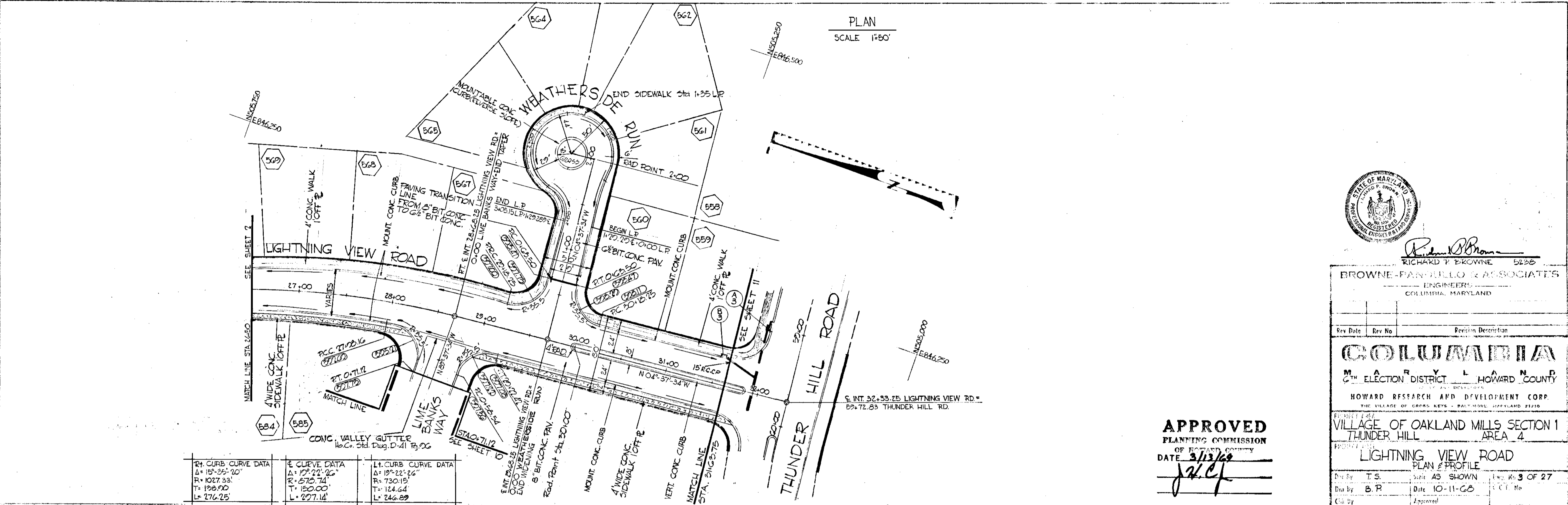


PROFILE



PLAN
 DATE: 3/13/69
 DRAWN BY: B.P.
 CHECKED BY: J.P.C.

PROFILE
 DATE: 3/13/69
 DRAWN BY: B.P.
 CHECKED BY: J.P.C.



Rt. CURB CURVE DATA	Lt. CURB CURVE DATA	Lt. CURB CURVE DATA
Δ = 157°35'20"	Δ = 102°27'26"	Δ = 102°27'26"
R = 1027.33'	R = 573.74'	R = 730.15'
T = 128.00'	T = 150.00'	T = 124.64'
L = 276.25'	L = 297.14'	L = 246.89'

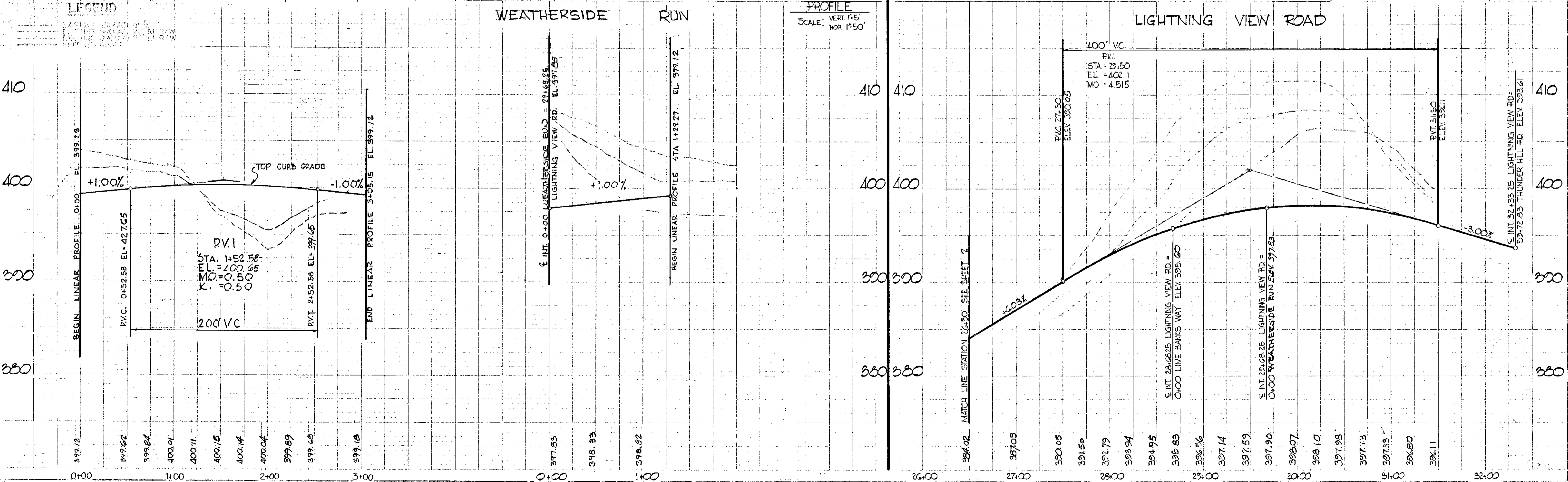


BROWNE-FANDELLO & ASSOCIATES
 ENGINEERS
 COLUMBIA, MARYLAND

Rev. Date: Rev. No: Revision Description:
COLUMBIA
 6TH ELECTION DISTRICT HOWARD COUNTY
 HOWARD RESEARCH AND DEVELOPMENT CORP.
 THE VILLAGE OF OAKLAND MILLS - BALTIMORE, MARYLAND 21210

VILLAGE OF OAKLAND MILLS SECTION 1
 THUNDER HILL AREA 4
LIGHTNING VIEW ROAD
 PLAN & PROFILE
 Drawn by: T.S. Scale: AS SHOWN Page No: 3 OF 27
 Date: 10-11-68
 Checked by: B.P. Date: 10-11-68 Date: 3/13/69

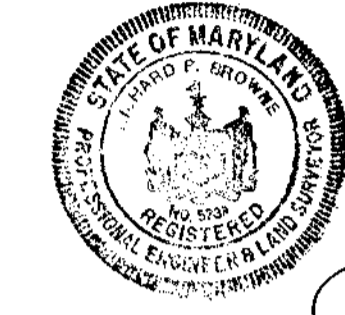
APPROVED
 PLANNING COMMISSION
 OF HOWARD COUNTY
 DATE: 3/13/69
 J.P.C.



89 0+00 1+00 2+00 3+00 0+00 1+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00

STORM DRAINAGE STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INV. IN	INV. OUT	C.F. LEV.	REMARKS
0-4	A-B INLET	LP Sta. 1+34.63 (E INLET)		354.50	360.01	SEE DETAIL SHEET
2-0	STD. TYPE 'C' ENDWALL	SEE PLAN		348.50		No. Co. Std. Drawg. D-52 Pg. 107



BROWNE-PANDULLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

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

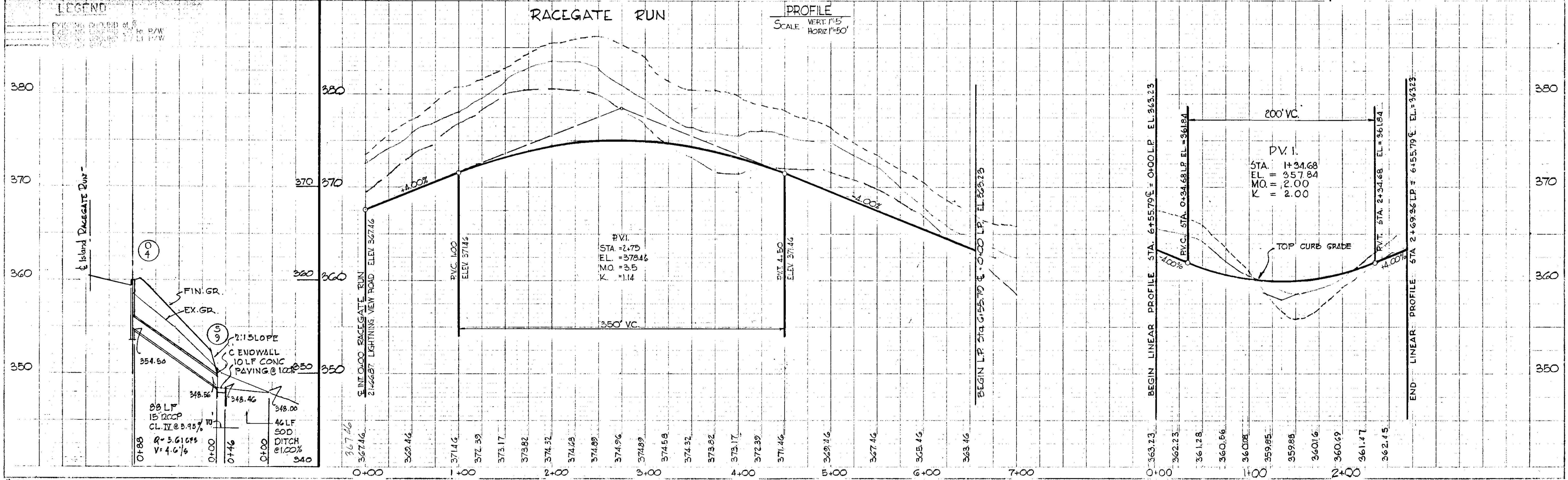
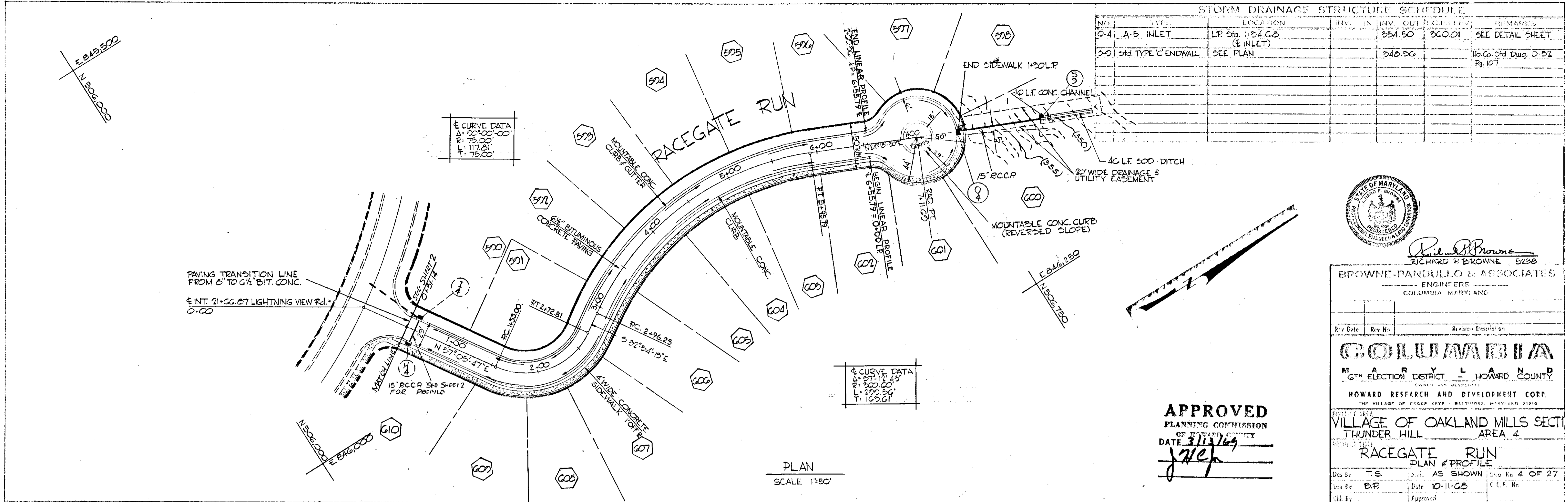
COLUMBIA
Nth Ath ELECTION DISTRICT - HOWARD COUNTY
HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF OAKLAND MILLS SECTION

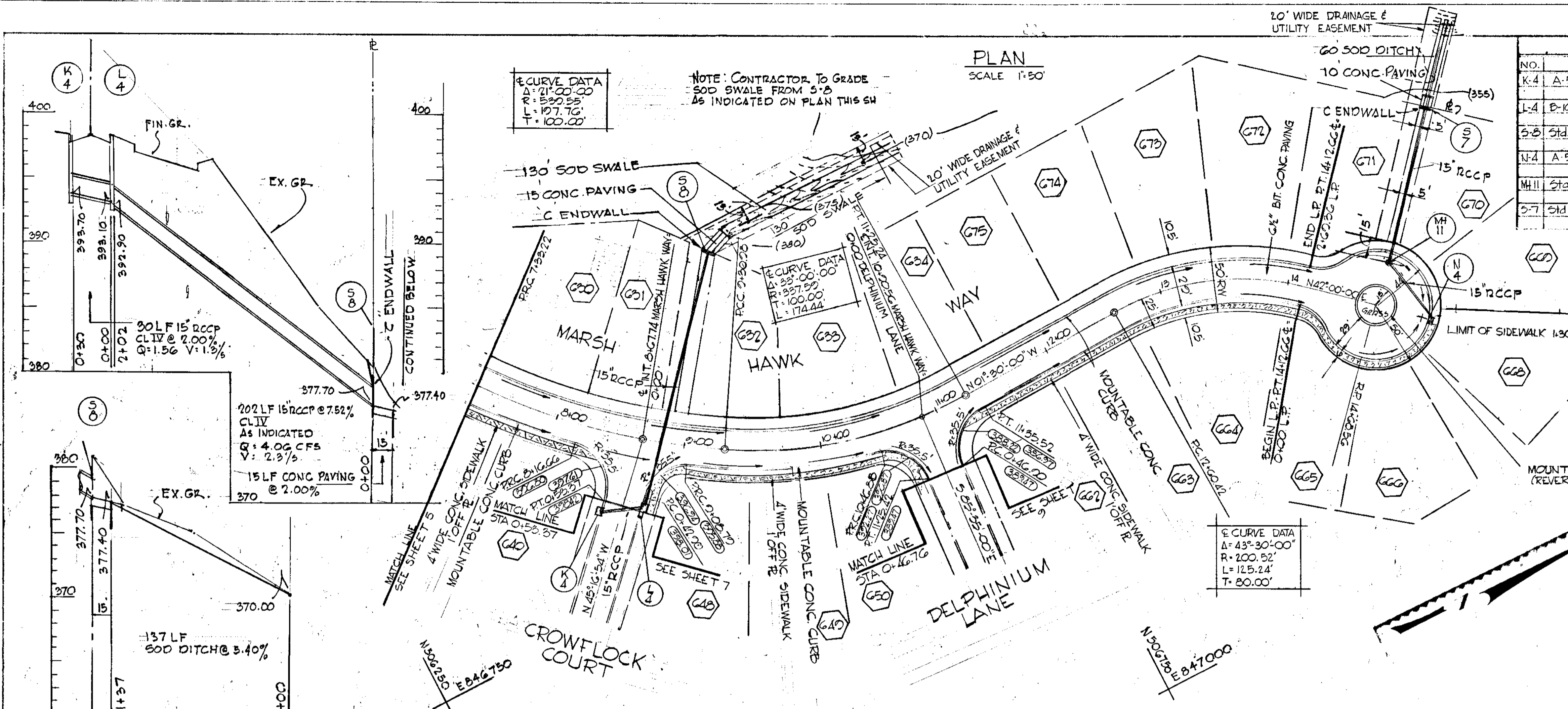
VILLAGE OF OAKLAND MILLS SECTION
THUNDER HILL AREA 4

RACEGATE RUN
PLAN & PROFILE

Des. By: T.S. Date: AS SHOWN Draw No. 4 OF 27
Inv. By: B.P. Date: 10-11-68 C.E.F. No. _____
Chk. By: _____ Approved: _____

APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE: 3/13/69
J. H. P.





STORM DRAINAGE STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	I.C. PILE	REMARKS
K-4	A-5 INLET	E Sta. 0+61.20 RT. & (E INLET)	323.70	326.91		SEE DETAIL SHEET
L-4	B-10 INLET	UP. Sta. 0+00.70 LT. & DOWN. Sta. 0+58.27 RT. &	323.10	322.00	322.24	" " "
S-5	Std. TYPE C' ENDWALL	SEE PLAN		377.70		Ho Co Std. Dwg. D-52 Pg. 107
M-4	A-5 INLET	LP. Sta. 1+34.68 (E INLET)	356.88	361.20		SEE DETAIL SHEET
MH II	Std. MANHOLE	LP. Sta. 2+00.00	355.88	355.68		Ho Co Std. Dwg. D-103 Pg. 158
S-7	Std. TYPE C' ENDWALL	SEE PLAN		353.40		Ho Co Std. Dwg. D-52 Pg. 107



BROWNE-PANDULLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

31 Oct 68 | REMOVE 3.5' DIMENSION FROM PLAN
Rev Date | Rev No | Revision Description

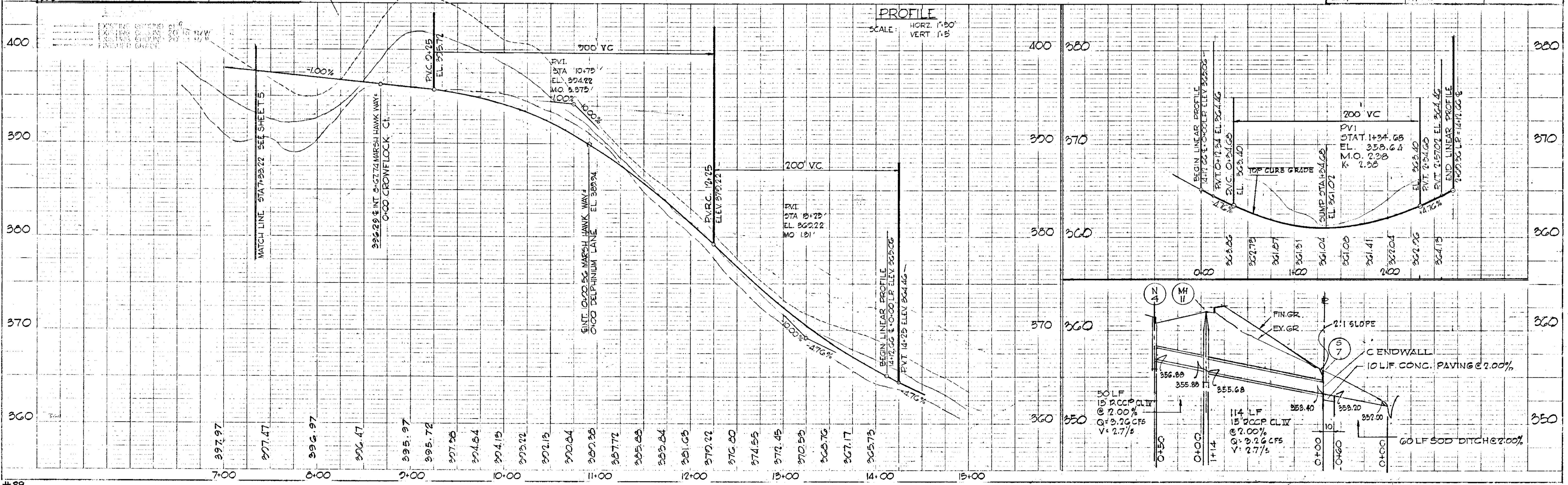
COLUMBIA
MARYLAND
6TH ELECTION DISTRICT HOWARD COUNTY
HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21210

PROJECT AREA:
VILLAGE OF OAKLAND MILLS
SEC. 1 THUNDER HILL AREA 4

PROJECT TITLE:
PLAN & PROFILE
MARSH HAWK WAY

Des By: T.S. Scale: AS SHOWN Day No: 6 of 27
Dwn By: F.T. Date: 10-11-68 C.C.F. No:
Chk By: Approved

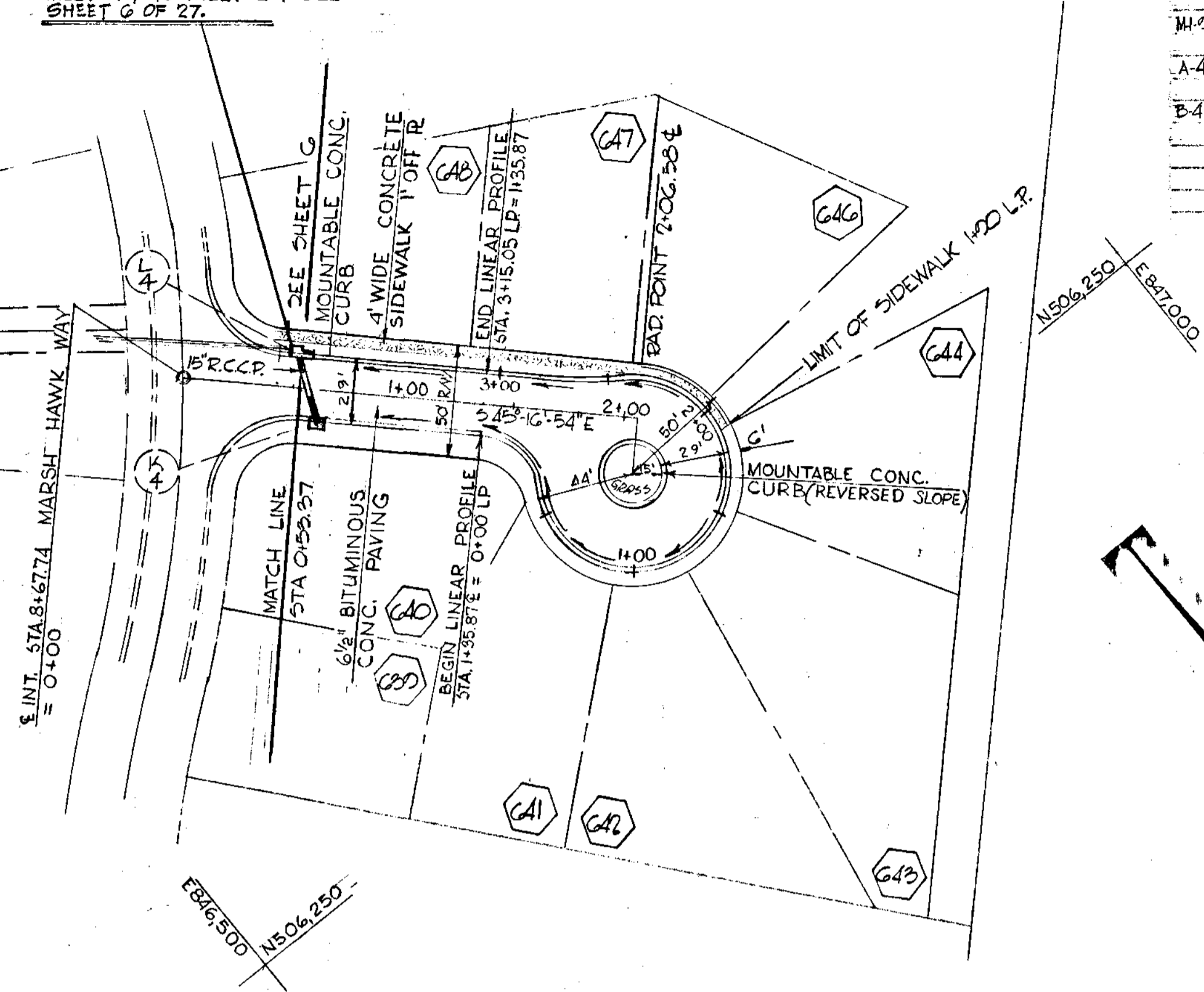
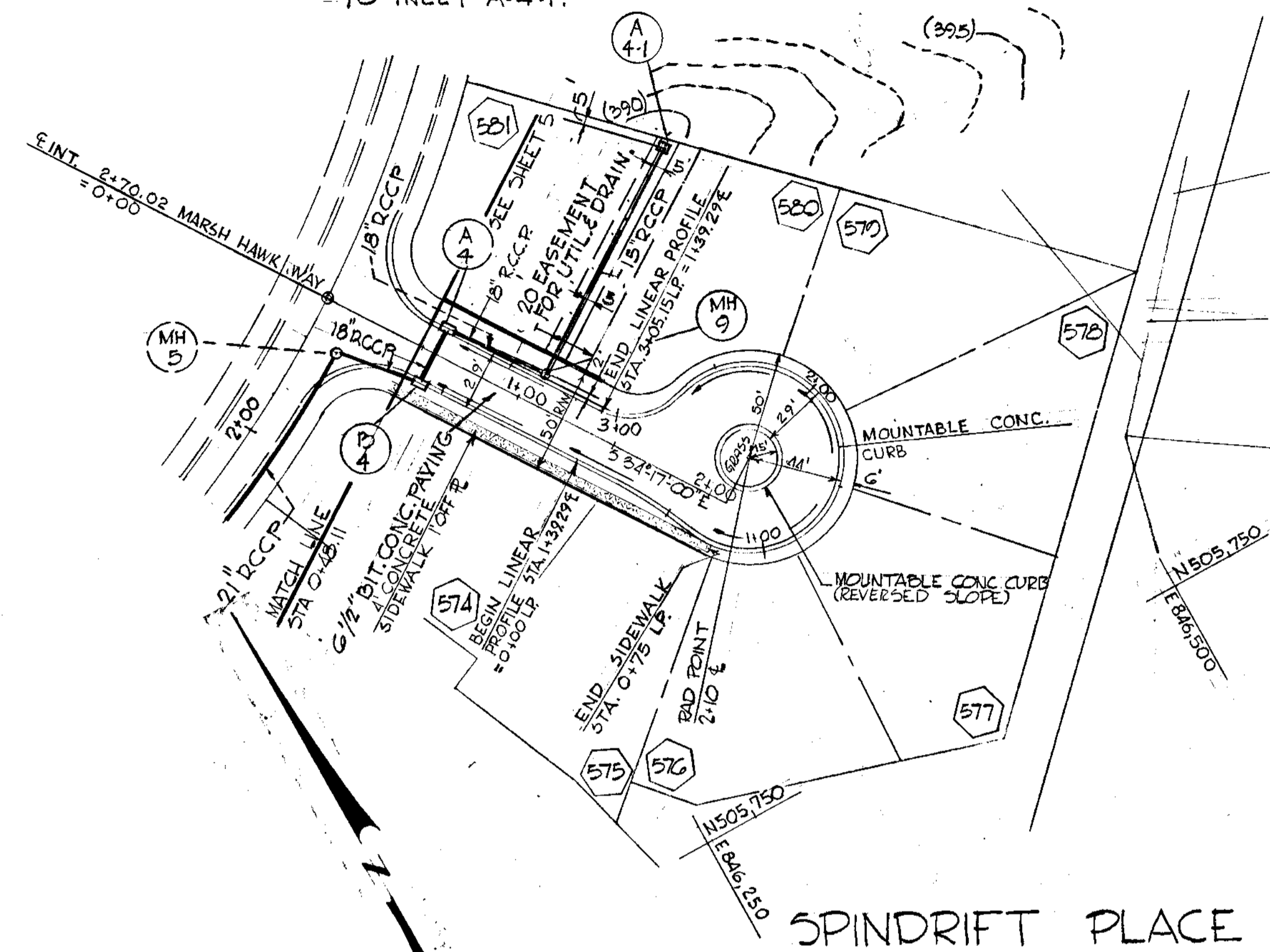
APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE 3/13/69
J.P. Cl...



NOTE: CONTRACTOR TO GRADE TO INSURE POSITIVE DRAINAGE TO INLET A-4-1.

NOTE: OPENINGS ON N.E. & E. SIDES 'D' INLET A-4-1.

NOTE: FOR DRAINAGE PROFILE INLET K-4 TO INLET L-4 SEE SHEET G OF 27.



STORM DRAINAGE STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	TC PIPE	REMARKS
A-4-1	HOWARD CO. TYPE 'D'	SEE PLAN				Ho. Co. Std. Dwg. D-65 Pg. 120
MH-9	SH. MANHOLE	Sta. 1408.11-1725 LI. E	380.63	380.49		Ho. Co. Std. Dwg. D103 Pg. 158
A-4	A-5 INLET	Sta. 0+55.04-14. E (E INLET)	379.45	379.20	385.82	SEE DETAIL SHEET
B-4	A-5 INLET	Sta. 0+55.04-14. E (E INLET)	378.00	377.80	385.82	" " "

APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE: 3/13/69
JHC



BROWNE-PANDOLLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

10-21-68 1 CHANGE OFFSET LI. MH-9
Rev. Date Rev. No. Revision Description

COLUMBIA
GENERAL ENGINEERING & ARCHITECTURE
1100 BROADWAY, BALTIMORE, MARYLAND 21202

VILLAGE OF OAKLAND MILLS, SECT. 1
THUNDER HILL AREA 4

SPINDRIFT PL. & CROWFLOCK CT.
PLAN & PROFILE

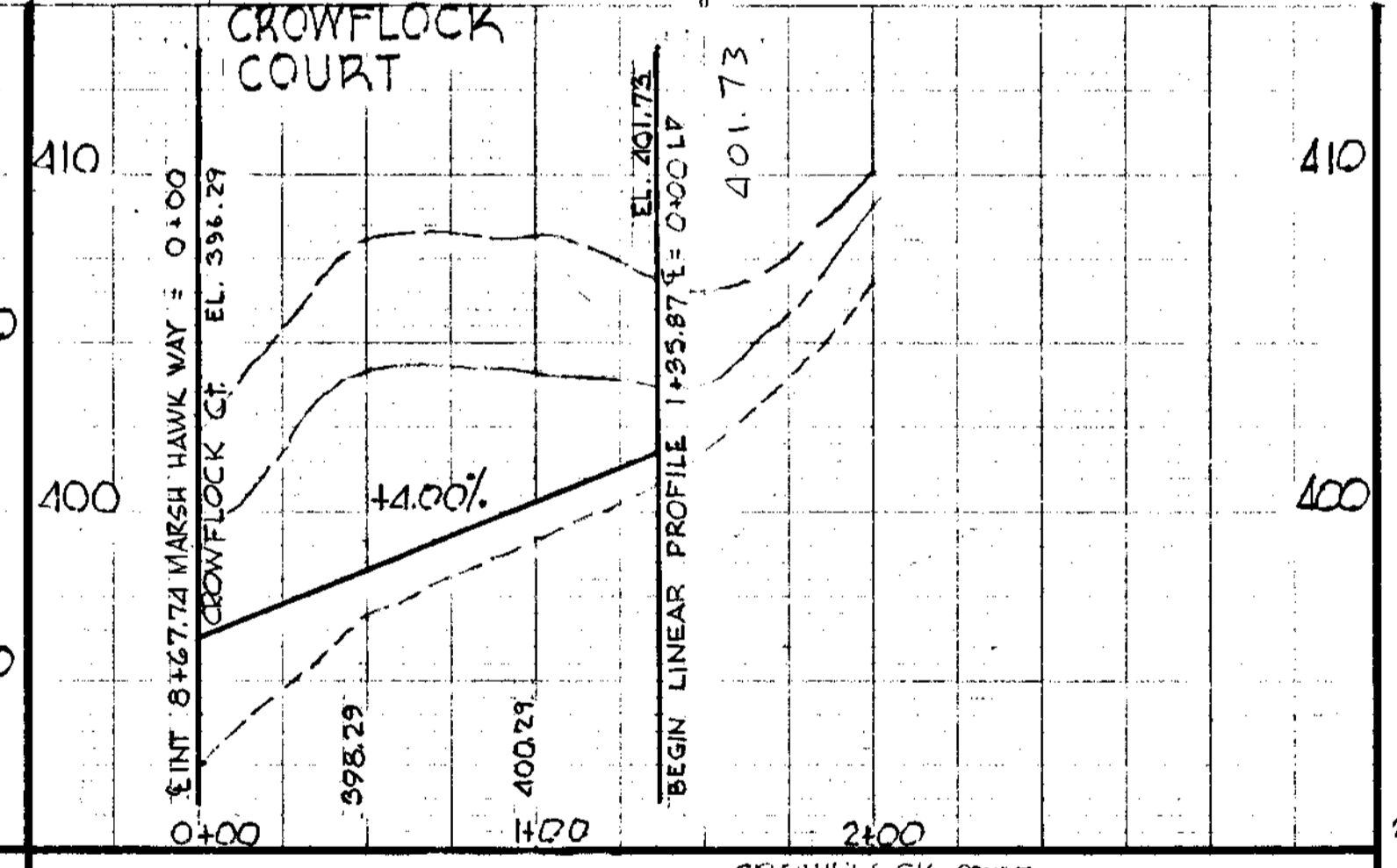
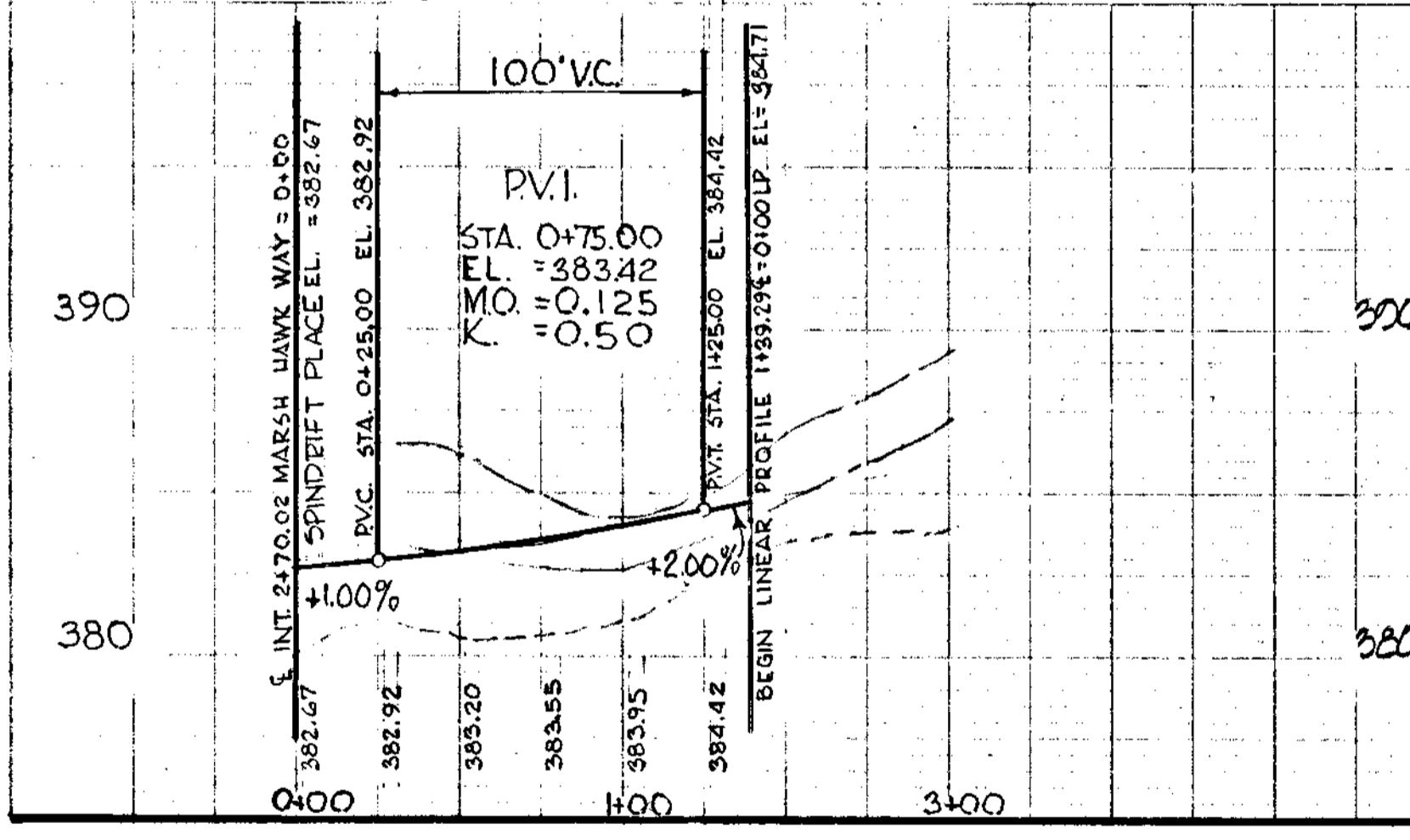
Des. By: T.S. Scale: AS SHOWN Sheet No. 7 of 27
Dwn. By: B.P. Date: 10-11-68 C.E. Ho.
Chk. By: Approved

SPINDRIFT PLACE

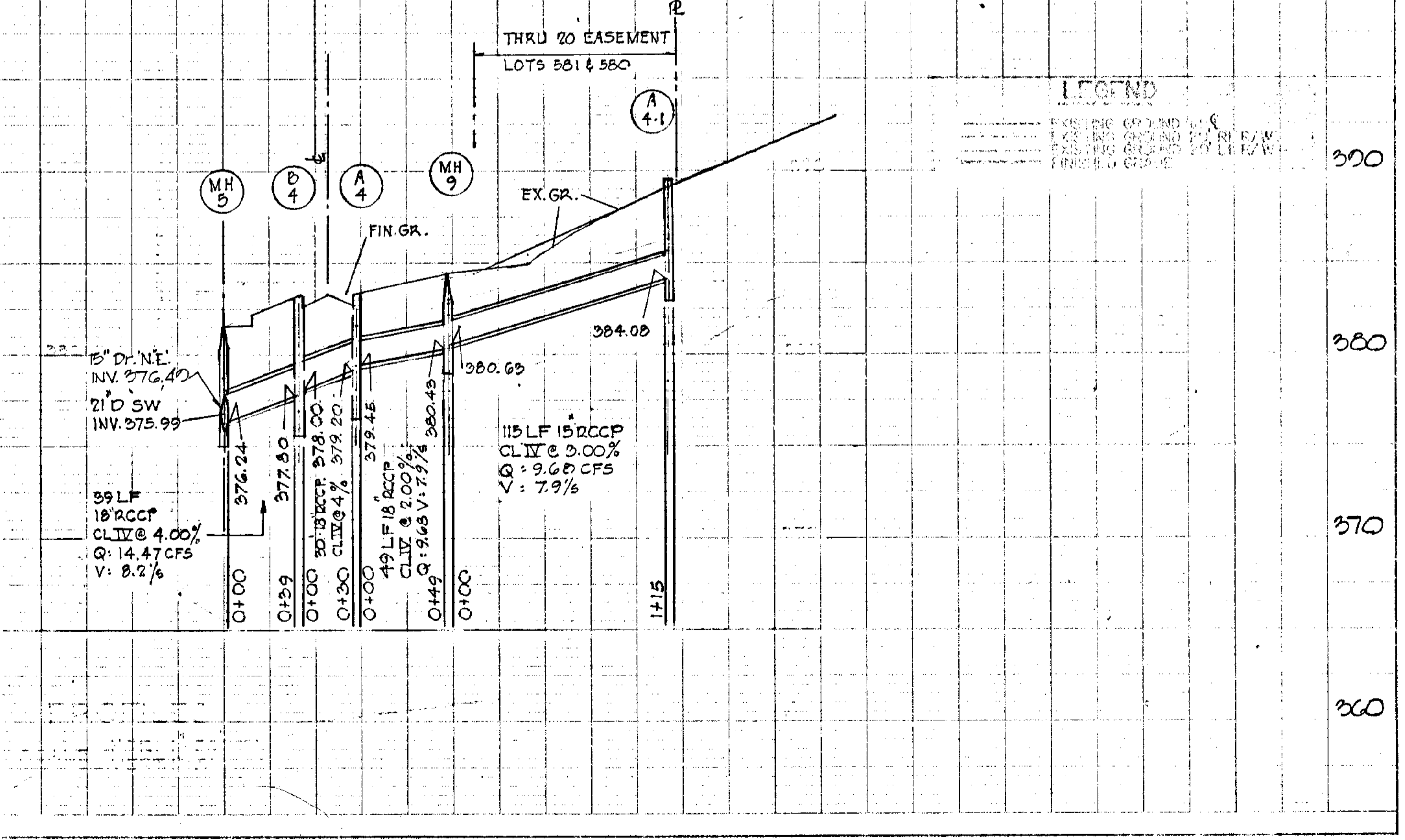
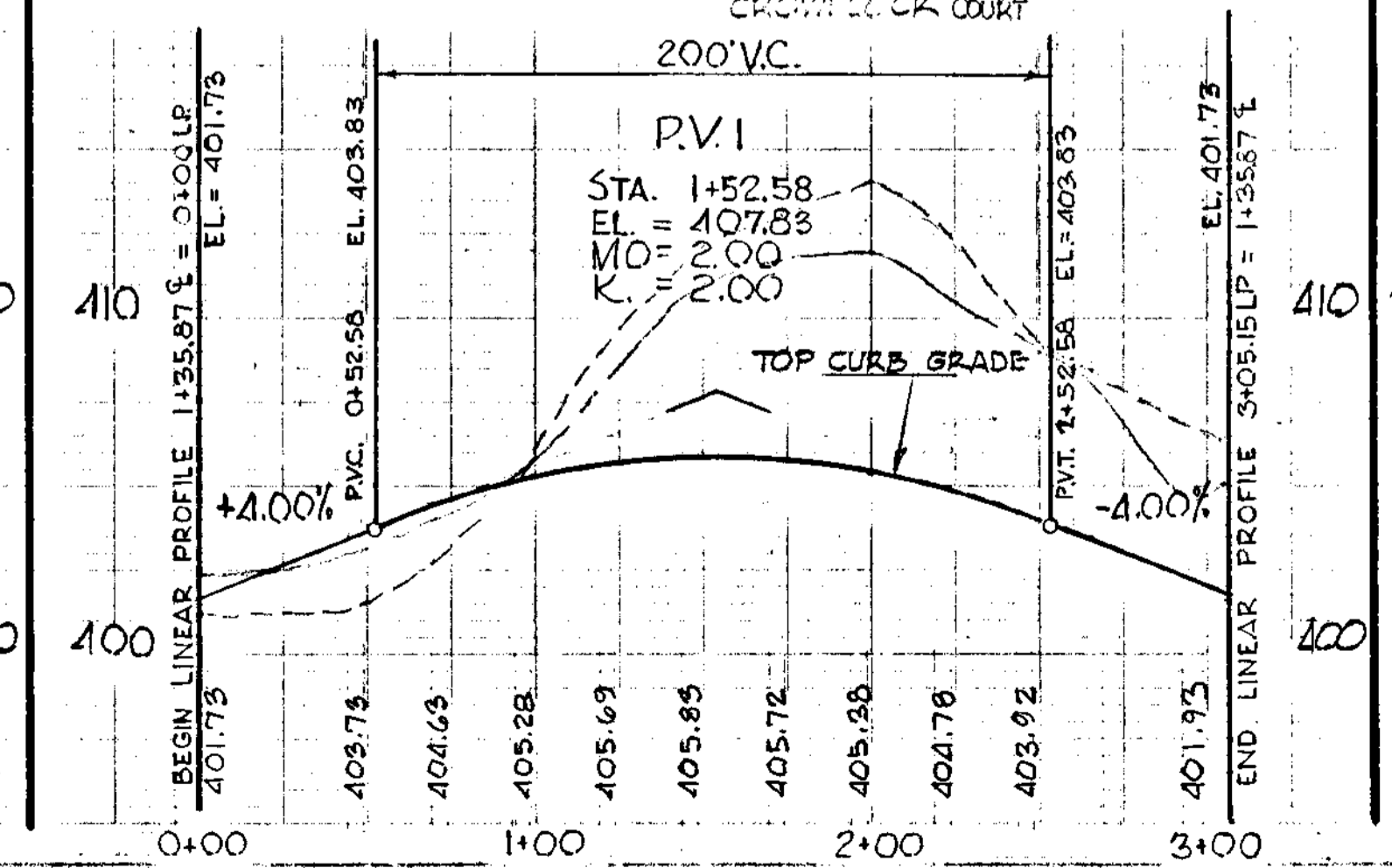
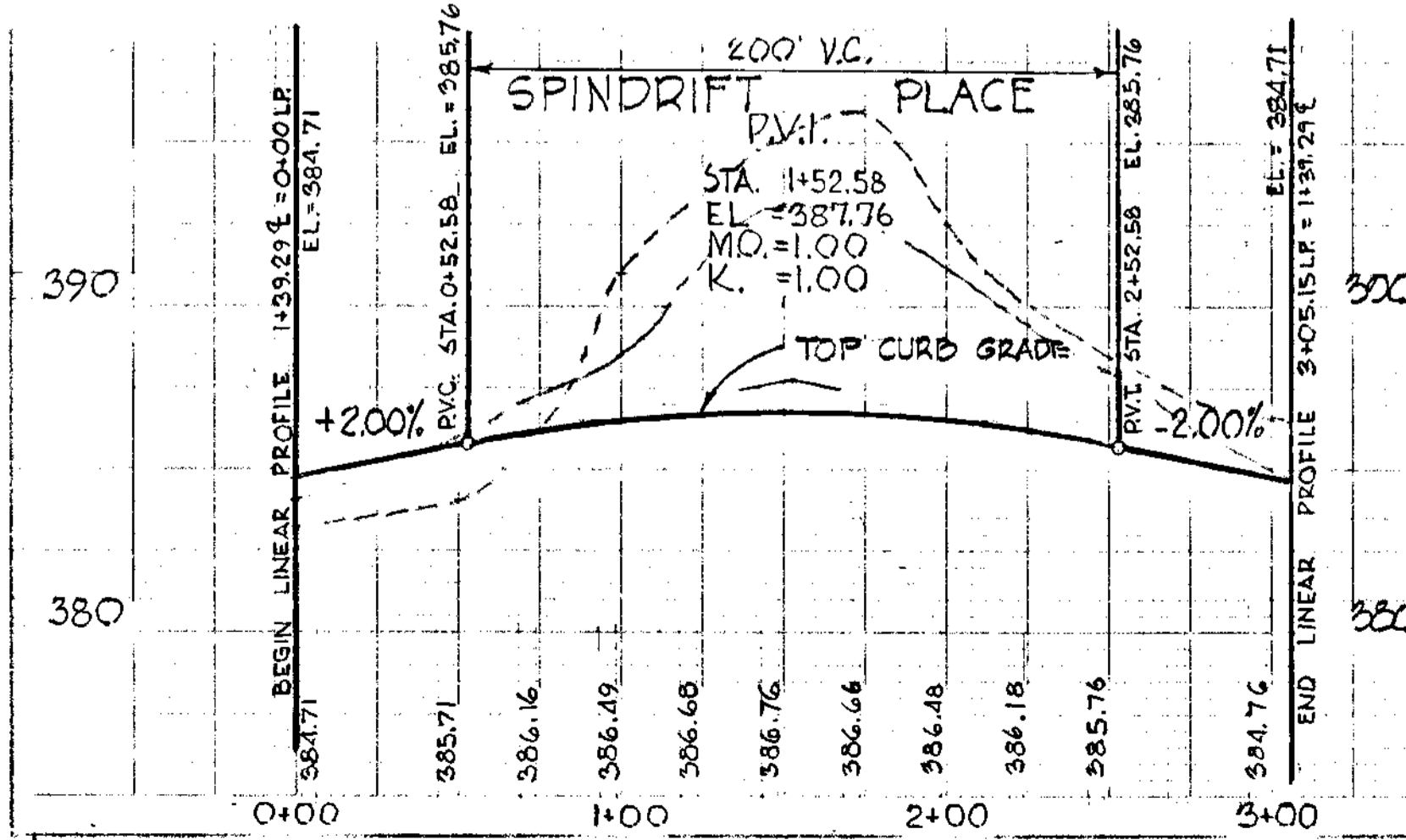
SPINDRIFT PLACE
PLAN
SCALE 1"=50'

CROWFLOCK COURT

CROWFLOCK COURT
PLAN
SCALE 1"=50'



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



LEGEND

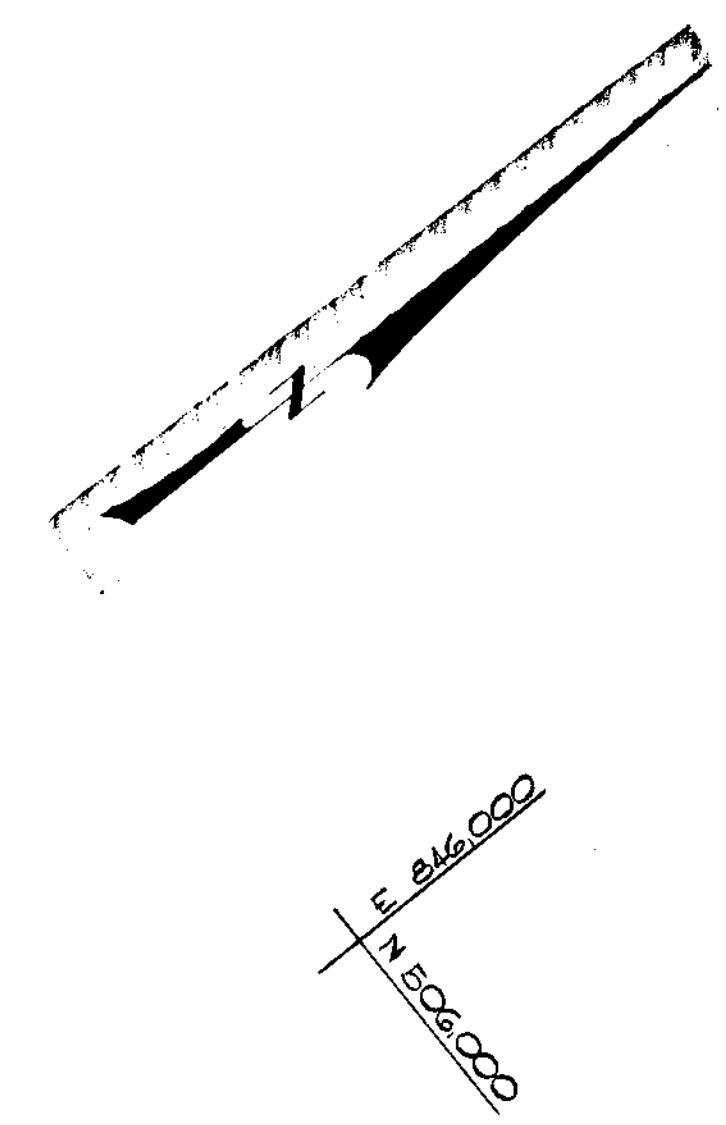
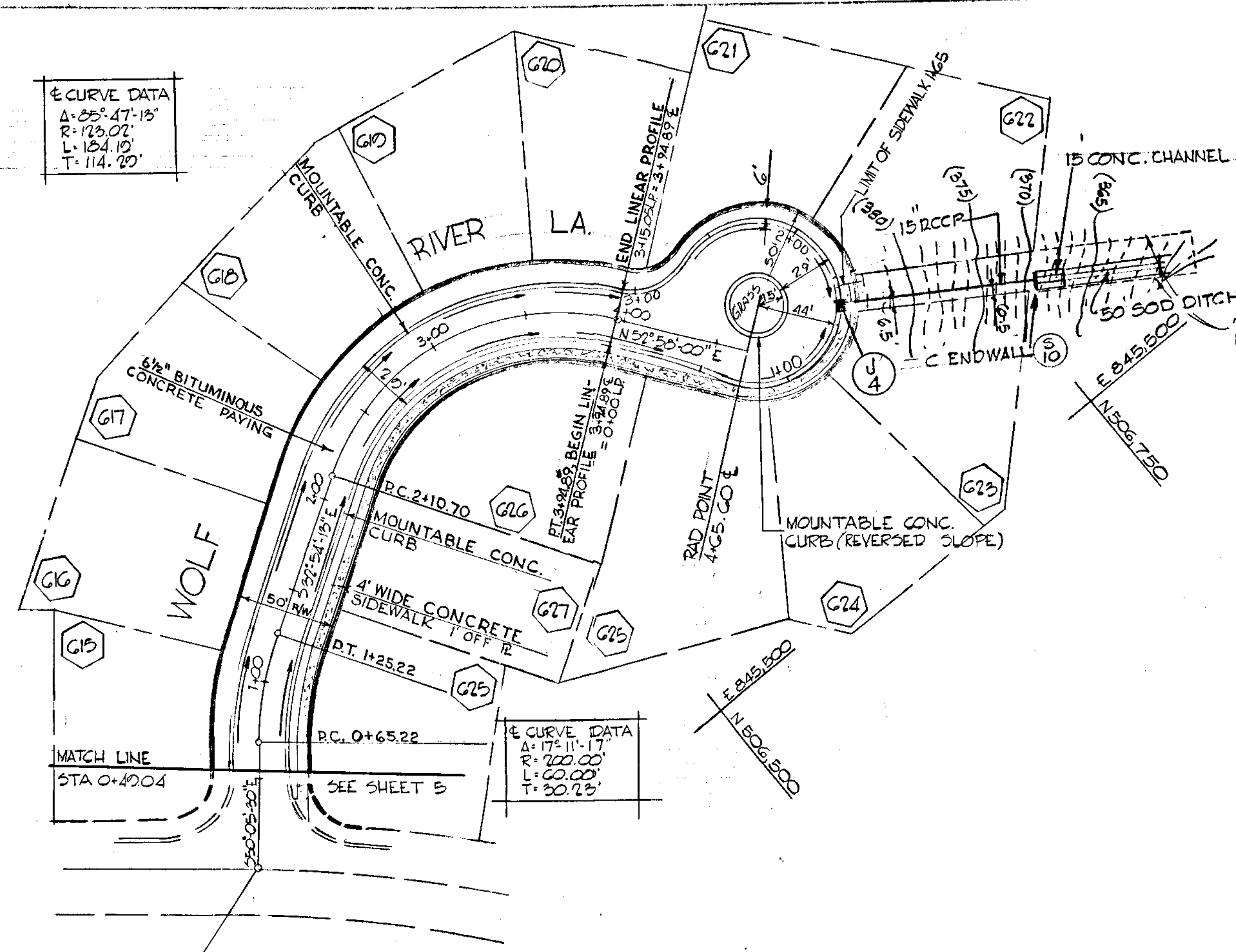
EXISTING GRADE
PROPOSED GRADE
PROPOSED STORM DRAINAGE
PROPOSED CURB

STORM DRAINAGE STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INLET	INLET	OUTLET	REMARKS
J-4	A-5 INLET	1+52.58 L.P. (E INLET)		376.95	321.84	SEE DETAIL SHEET
S-10	3rd TYPE 'C' ENDWALL	SEE PLAN		369.15		No. Co. Std. Dig. D-52 Pg. 107

☉ CURVE DATA
A = 55° 17' 15"
R = 123.02'
L = 124.15'
T = 114.20'

☉ CURVE DATA
A = 175° 11'
R = 200.00'
L = 60.00'
T = 20.23'



Richard P. Browne
RICHARD P. BROWNE 5238

BROWNE, FANDELLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

Rev. Date | Rev. No. | Revision Description

COLUMBIA
6TH ELECTION DISTRICT - HOWARD COUNTY
HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF CROSS KEYS, FARMERS MARKET BLDG.

APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE 3/13/69
J.P.C.

PROJECT: VILLAGE OF OAKLAND MILLS SECT. 1
THUNDER HILL AREA 4

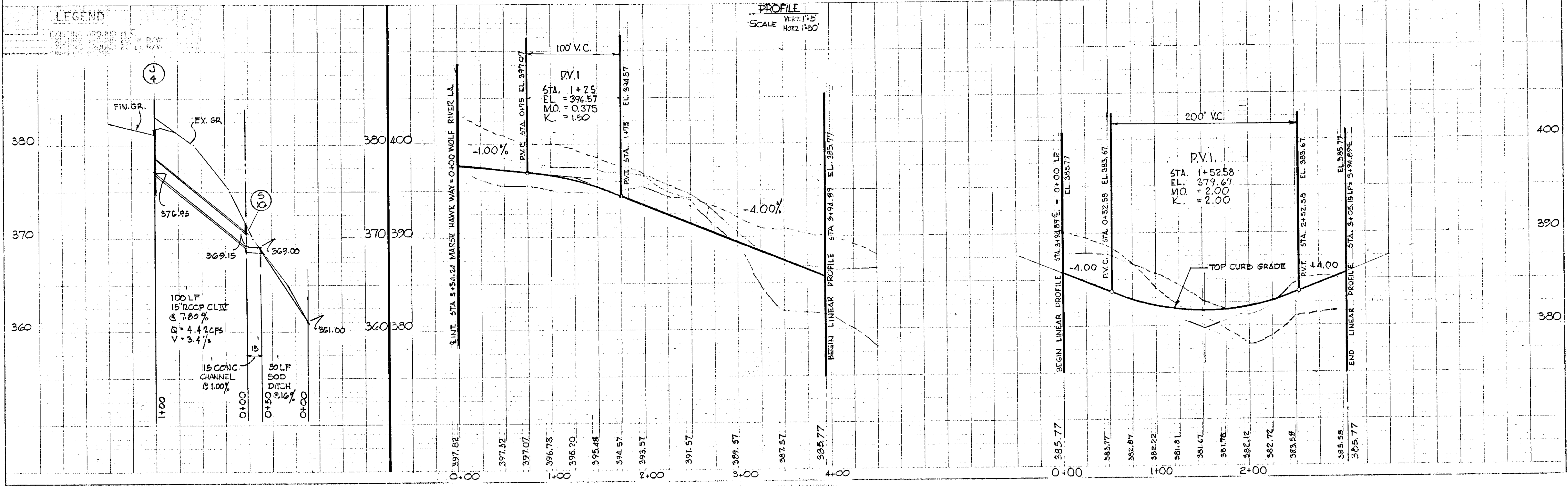
PLAN & PROFILE
WOLF RIVER LANE

Des. By: T.S. Scale: AS SHOWN Page: No. 8 OF 27
Dwn. By: B.P. Date: 10-11-68 C.C.F. No.
Chk. By: Approved

PLAN
SCALE 1"=50'

INT. STA. 5+54.74 MARSH HAWK WAY =
0+00 WOLF RIVER LANE

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

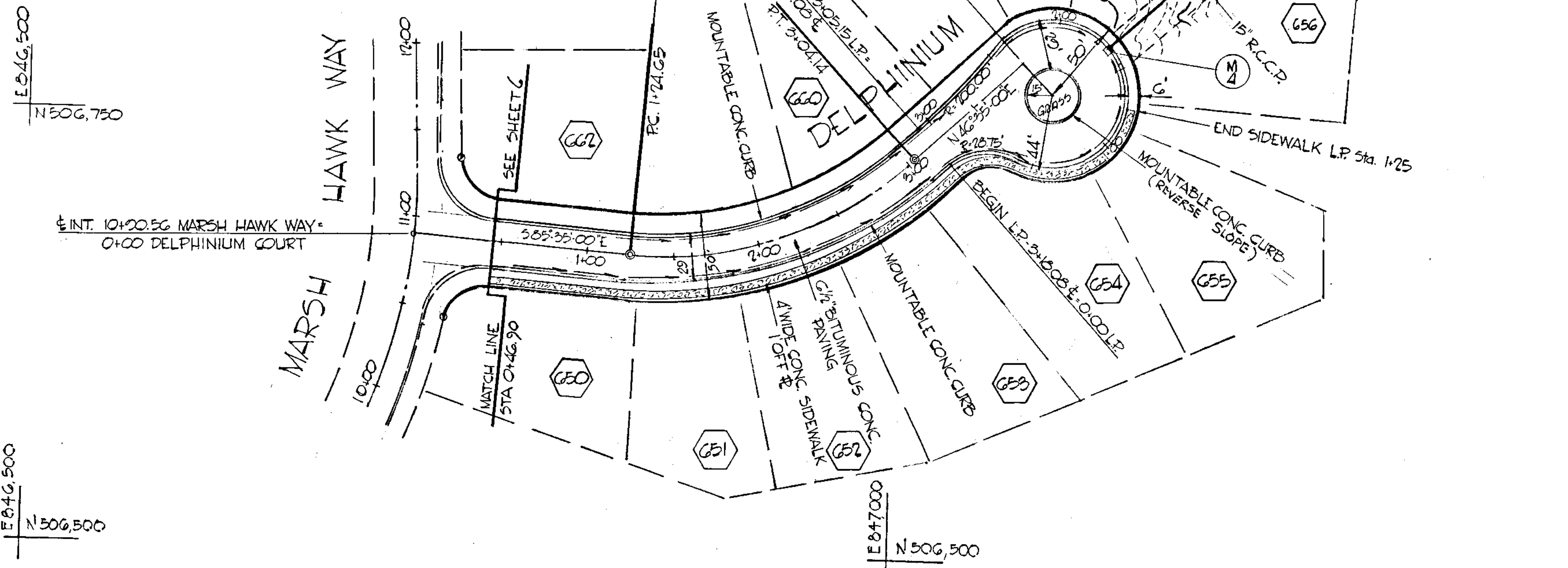


LEGEND

FIN. GR.
EX. GR.
100 LF 15' RCCP CLIV @ 7.80%
D = 4.42 CFS
V = 3.4/s
15' CONC. CHANNEL @ 1.00%
50 LF SOD DITCH @ 1.6%

PLAN
SCALE 1" = 50'

CURVE DATA
 $\Delta = 47^{\circ}50'00''$
 $R = 215.00'$
 $L = 172.47'$
 $E = 25.95'$



STORM DRAINAGE STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	C. P. ELEV.	REMARKS
M-4	A-B INLET	L.P. Sta. 1424.06 (E INLET)		380.51	385.54	SEE DETAIL SHEET
S-2	5th TYPE 'C' ENDWALL	SEE PLAN		364.16		H.C. Std. Dwg D-52 Pg. 107



Richard F. Browne
 RICHARD F. BROWNE 5238

BROWNE-PANDULLO & ASSOCIATES
 ENGINEERS
 COLUMBIA, MARYLAND

Rev. Date: Rev. No: Restr. Description:

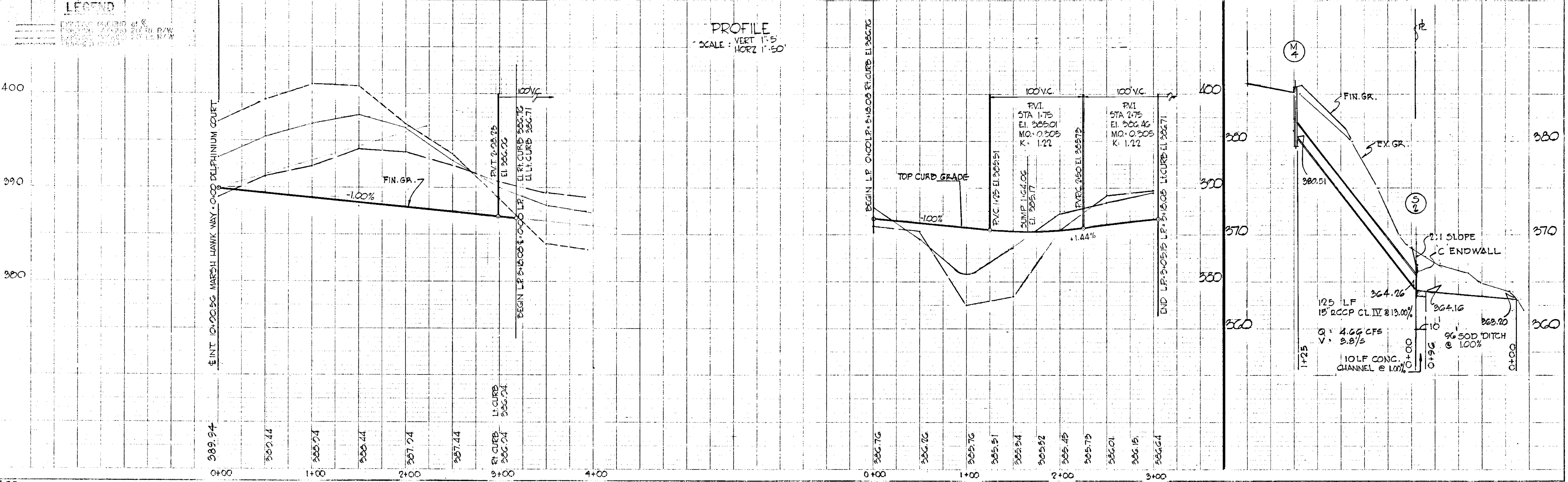
COLUMBIA
 14TH ELECTION DISTRICT, HOWARD COUNTY
 HOWARD RESEARCH AND DEVELOPMENT CORP.
 THE VILLAGE OF OAKLAND MILLS, BETHESDA, MARYLAND 20810

VILLAGE OF OAKLAND MILLS SEC. 1
 THUNDER HILL AREA 4
 PLAN & PROFILE
 DELPHINIUM COURT

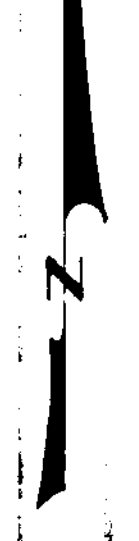
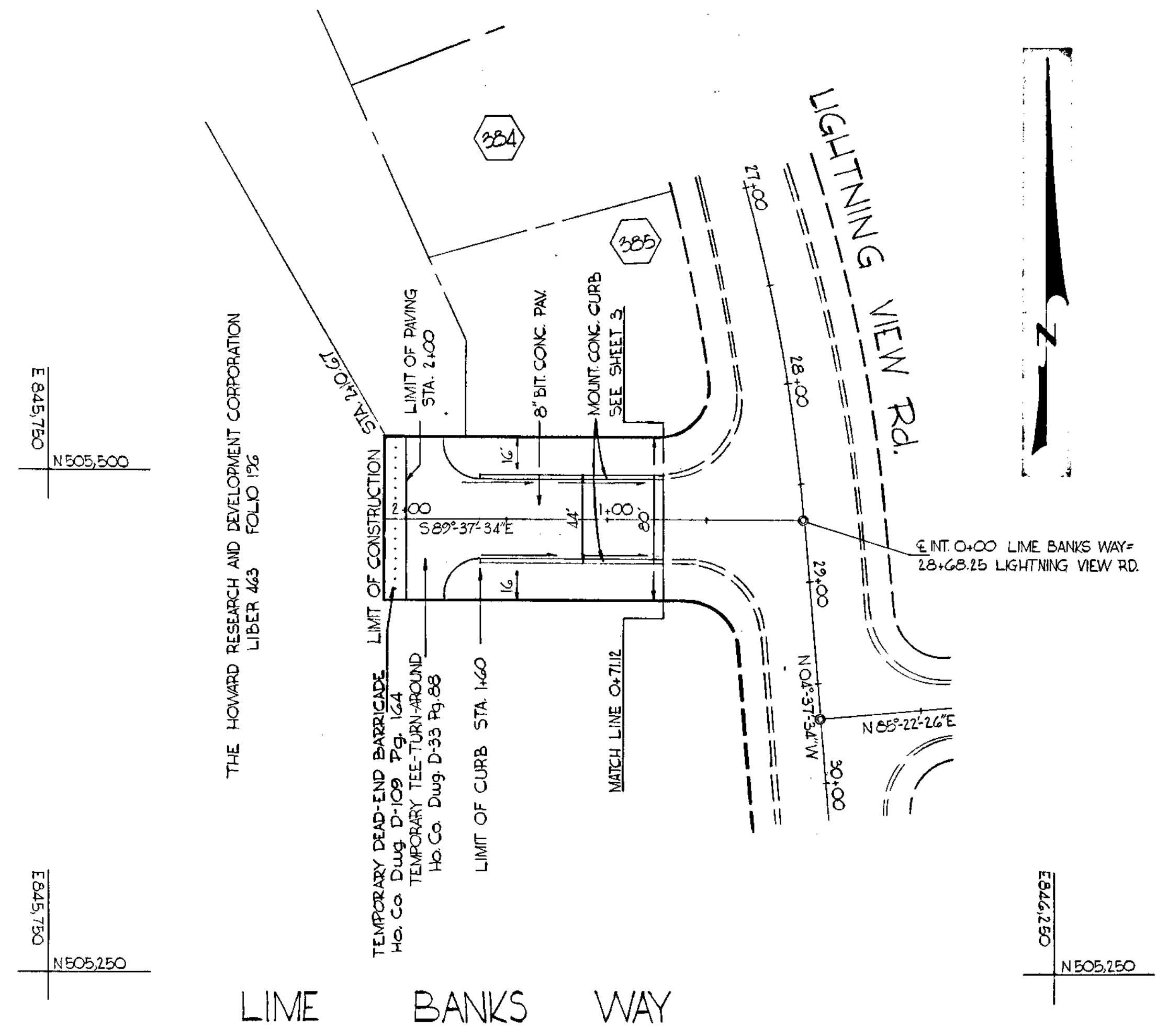
Des. By: T.S. Scale: AS SHOWN Sheet No. 9 of 27
 Dra. By: B.P. Date: 10-11-68 C.E. No.
 Chk. By: Approved:

APPROVED
 PLANNING COMMISSION
 OF HOWARD COUNTY
 DATE 3/13/69
J. J. [Signature]

LEGEND
 FINISH GRADE
 EXISTING GRADE
 PROPOSED GRADE
 PROPOSED CURB GRADE



PLAN
SCALE 1"=50'



THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
LIBER 443 FOLIO 126



Richard P. Browne
RICHARD P. BROWNE 5238

BROWNE-PANDULLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE 3/13/69
JWC

PROJECT TITLE
LIME BANKS WAY
PLAN & PROFILE

DESIGNED BY T.S. DRAWN BY J.P.B. CHECKED BY Approved

PROJECT LOCATION
VILLAGE OF OAKLAND MILLS SECTION I
THUNDER HILL AREA 4

DATE 10-11-68

PLAN No 10 OF 27

DATE 10-11-68

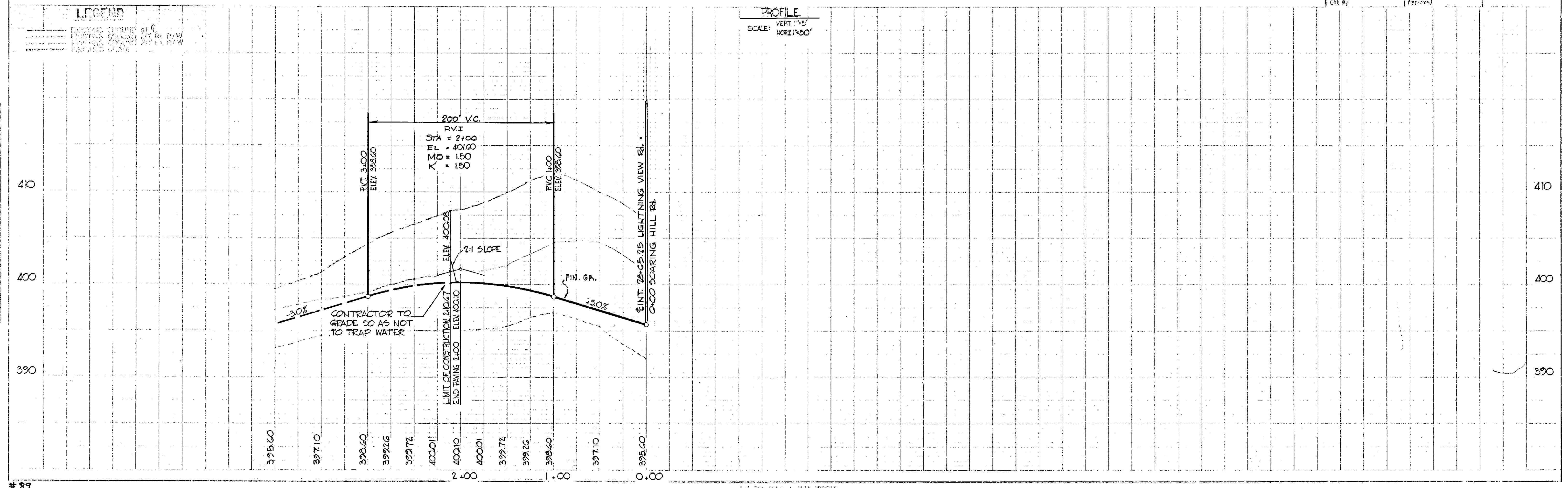
DATE 10-11-68

DATE 10-11-68

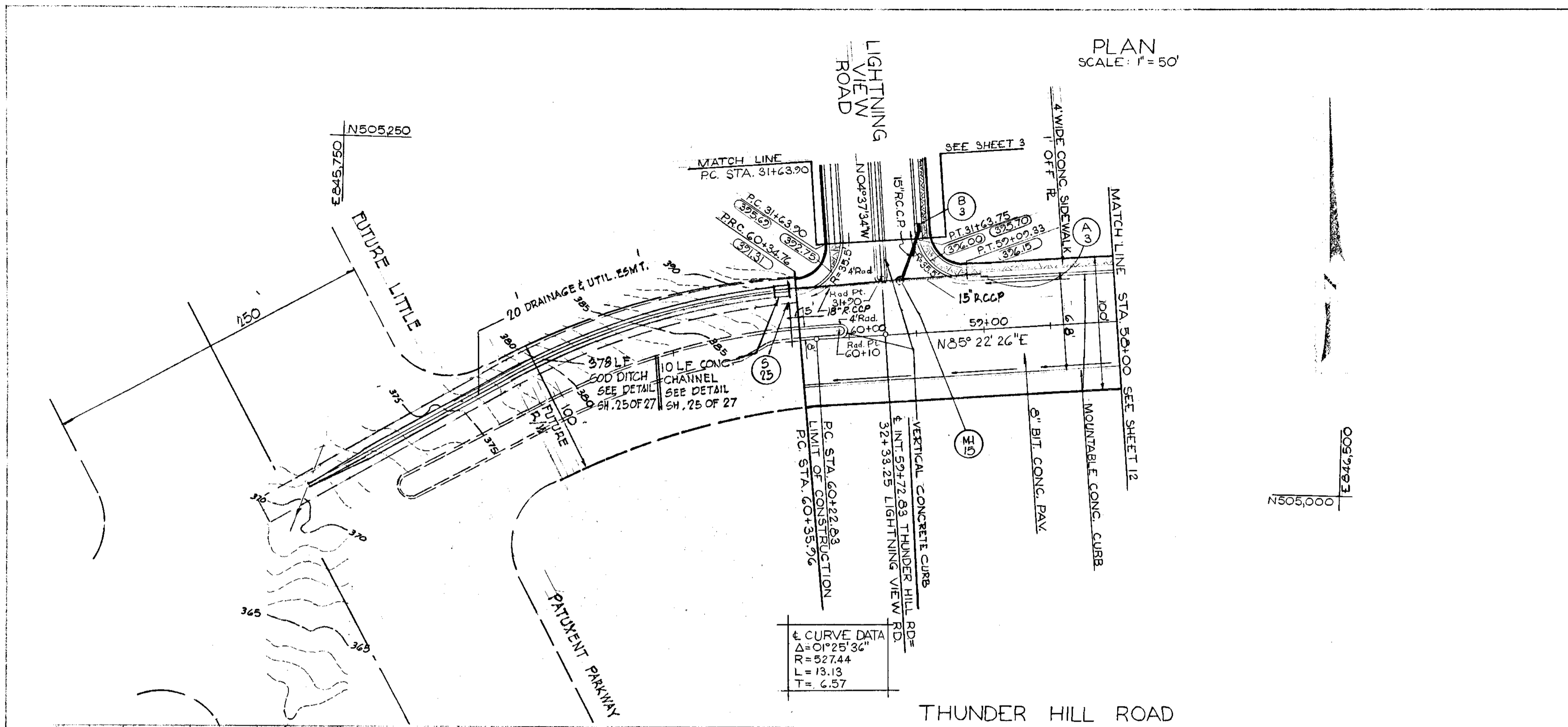
DATE 10-11-68

DATE 10-11-68

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



LEGEND



NO.	TYPE	LOCATION	INV. IN	INV. OUT	C.F.F. LEV.	REMARKS
A-3	B-10 INLET	UP-E Sta 59+07.24 E	390.75	396.24		SEE DETAIL SHEET
B-3	A-B INLET	DOWN E Sta 58+98.33 RT E (E INLET)	390.54	396.02		
MHS	STD MANHOLE	E Sta 59+60 36.75 RT E	389.55	389.30		HO. CO STD DWG. D-108 PG. 15B
2-25	STD. TYPE C ENDWALL	SEE PLAN	386.87	-		HO. CO STD. DWG. D-52 Pg. 107



Richard P. Browne
 RICHARD P. BROWNE 5235
 BROWNE-PANDULLO & ASSOCIATES
 ENGINEERS
 COLUMBIA, MARYLAND

12-5-68 1 REVISED LIMIT OF SUBMISSION
 Rev Date Rev No Revision Description

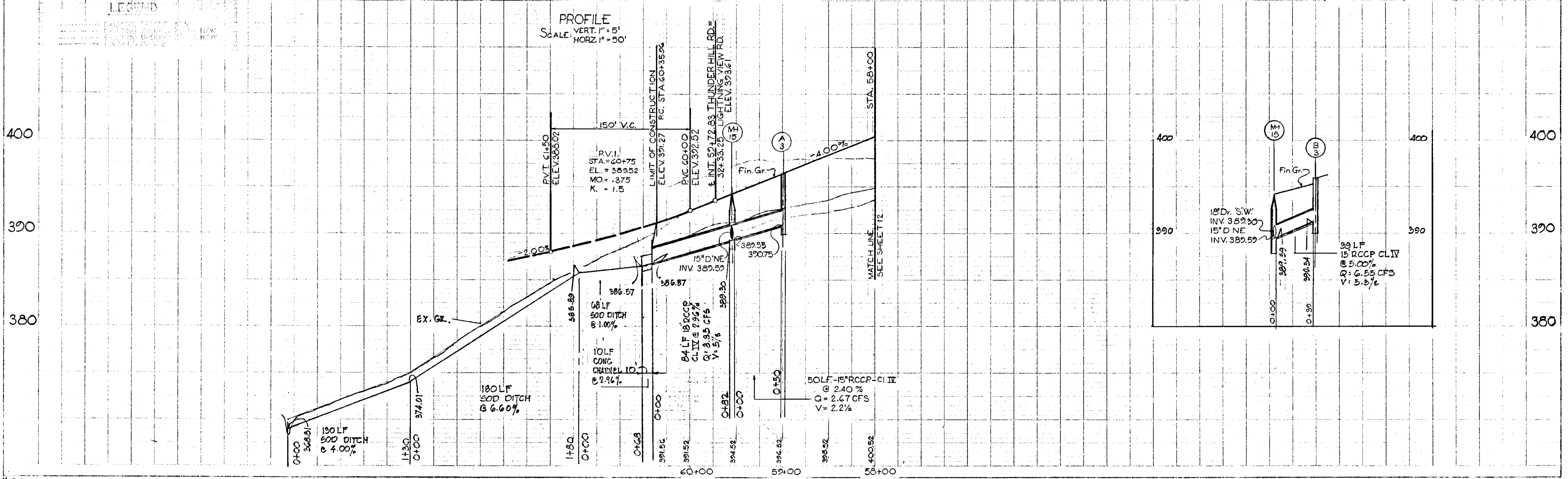
COLUMBIA
 2ND ELECTION DISTRICT HOWARD COUNTY
 HOWARD RESEARCH AND DEVELOPMENT CORP.
 THE VILLAGE OF OAKLAND MILLS - BALTIMORE, MARYLAND 21210

PROJECT AREA
 VILLAGE OF OAKLAND MILLS SEC. 1
 THUNDER HILL AREA 4

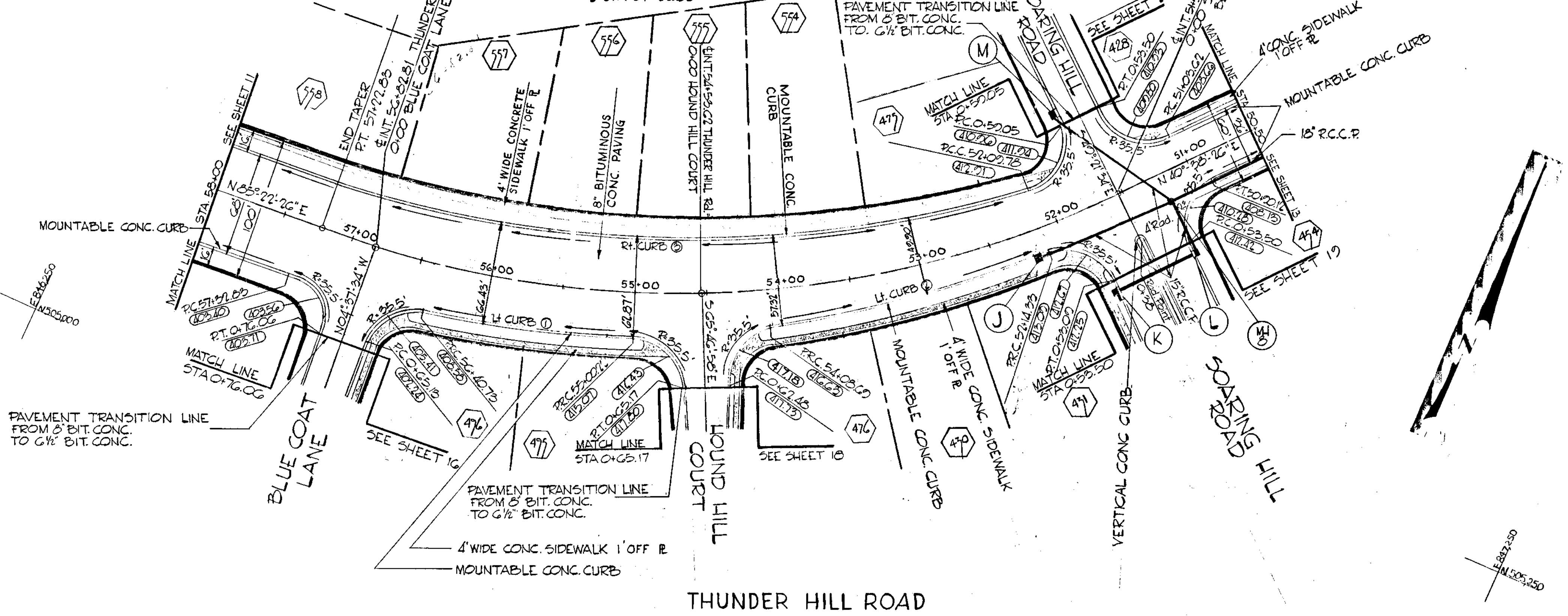
PROJECT TITLE
 THUNDER HILL ROAD
 PLAN & PROFILE

Des. By T.S. Scale AS SHOWN Date No 11 OF 27
 Con. By B.P. Date 10-11-68 C.C.F. No
 Ck. By Approved

APPROVED
 PLANNING COMMISSION
 OF HOWARD COUNTY
 DATE 3/13/69
J. J. [Signature]



BEGIN TAPER # STA 51+14.75	R CURB @ CURVE DATA Δ: 75° 55' 24" R: 407.76' L: 500.00' T: 750.00'	END TAPER # STA 57+22.85	U CURB @ CURVE DATA Δ: 11° 55' 00" R: 707.67' L: 146.25' T: 750.00'	BEGIN TAPER # STA 51+01.55	U CURB @ CURVE DATA Δ: 16° 16' 46" R: 707.67' L: 201.11' T: 61.24'
-------------------------------	---	-----------------------------	---	-------------------------------	--



THUNDER HILL ROAD
PLAN
SCALE: 1" = 50'

STORM DRAINAGE STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	PIPE DIA.	REMARKS
J	A-5 INLET	Sta. 57+22.20 GO Lt. E (E INLET)	408.75	414.50		SEE DETAIL SHEET
K	B-10 INLET	UP - Sta. 0+60.42 Rt. E DOWN - Sta. 0+50.00 Rt. E	408.04	412.51		" " "
L	A-5 INLET	Sta. 0+67.76 Lt. E (E INLET)	406.72	412.67		" " "
M	A-5 INLET	Sta. 0+67.72 Lt. E (E INLET)	406.45	411.17		" " "
MH-3	34" MANHOLE	Sta. 51+20.22 75' Lt. E	404.99	404.74		Ho Co Std. Dwg D-103 Pg 156



Richard P. Browne
RICHARD P. BROWNE 5238

BROWNE-PANDULLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

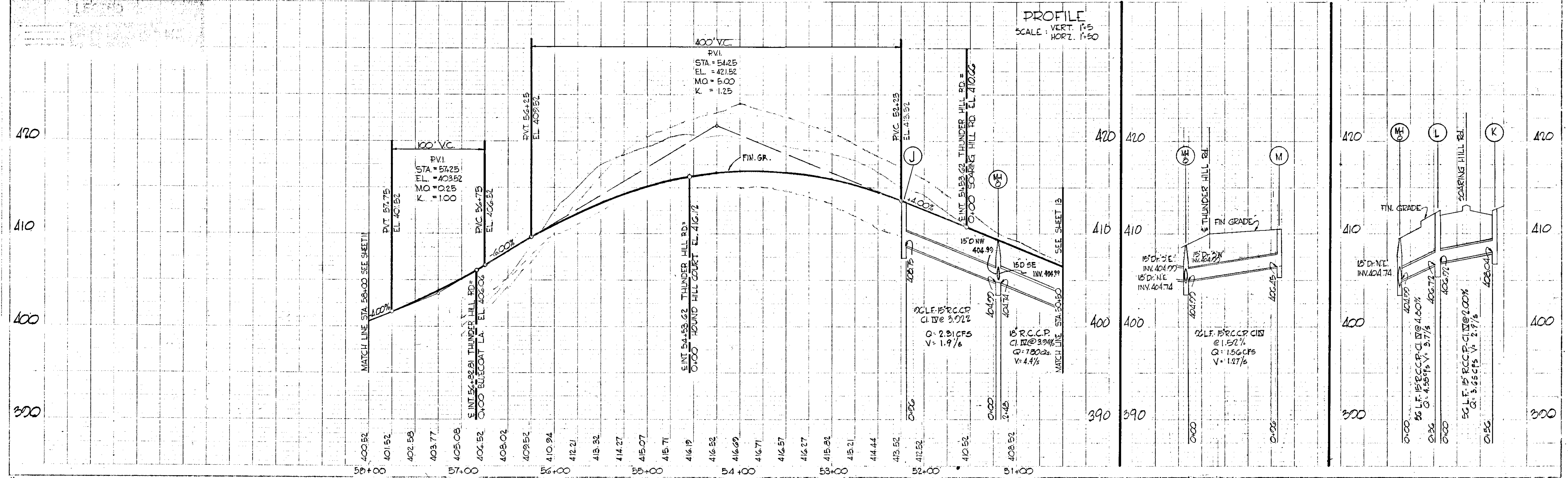
11-26-08 2 CHANGE-BEGIN TAPER STATIONS
10-21-08 1 CHANGE OFFSET MH-3
Rev. No. 1

COLUMBIA
MARYLAND
6TH ELECTION DISTRICT - HOWARD COUNTY
HOWARD RESEARCH AND DEVELOPMENT CORP
THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21250

VILLAGE OF OAKLAND MILLS SECT I
THUNDER HILL AREA 4
THUNDER HILL ROAD
PLAN & PROFILE

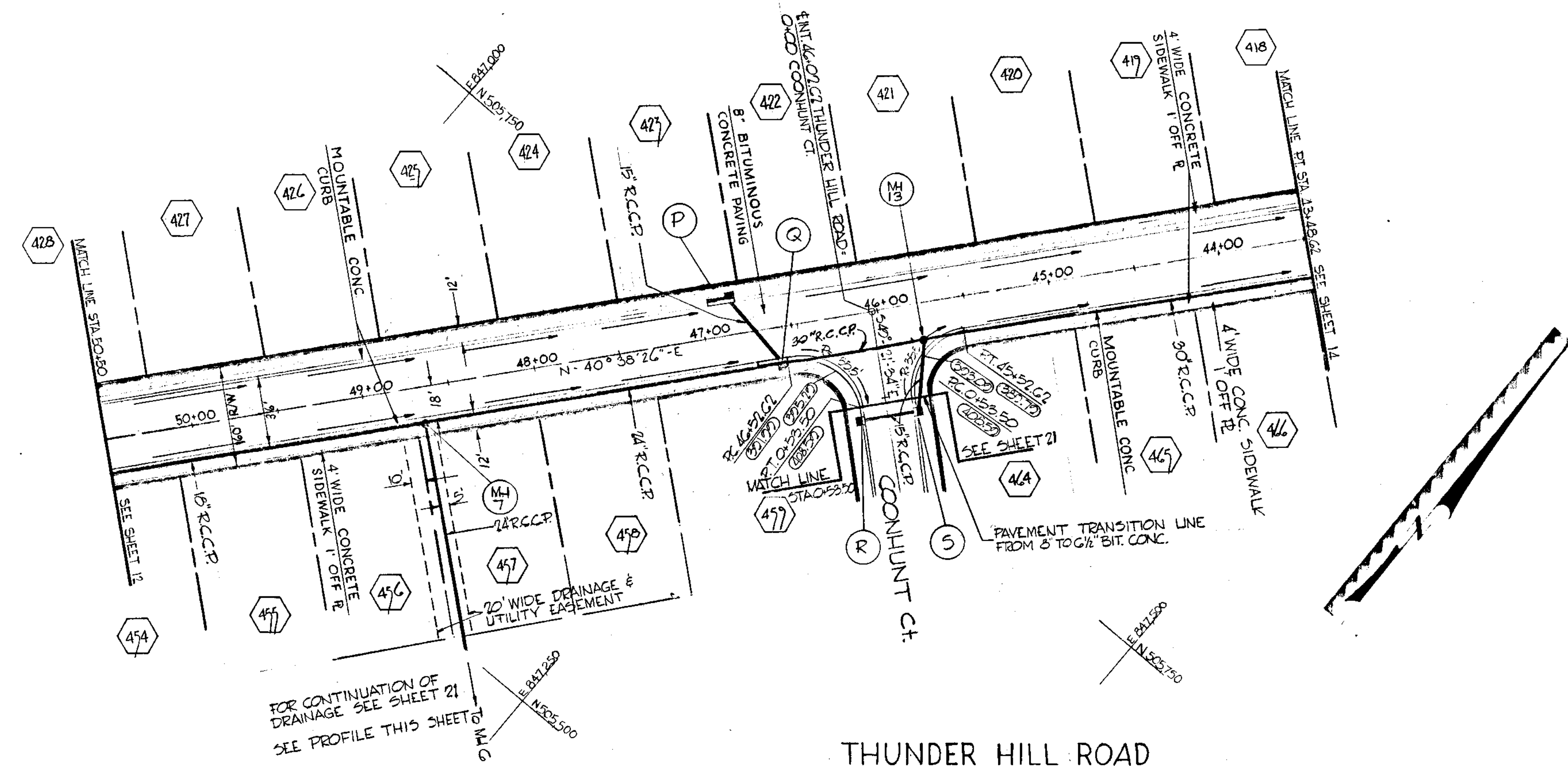
Des. By: T.S. Scale: AS SHOWN Date: 12-01-07
Rev. By: B.P. Date: 10-11-08
Appr'd: [Signature]

APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE: 3/13/09
[Signature]



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

STORM DRAINAGE STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	V.C. ELEV.	REMARKS
P	B-15 INLET	UP & Sta. 46+22.83-RI &	385.76	392.14	392.76	SEE DETAIL SHEET
MH-7	STD. DROP MANHOLE	DOWN & Sta. 46+80-RI &	15' 384.82	390.19		HO. CO. STD. DWG. D104 P. 150
Q	B-15 INLET	UP & Sta. 46+75.05-LI &	24' 384.93	385.85	392.65	SEE DETAIL SHEET
R	A-5 INLET	DOWN & Sta. 46+57.02-LI &	15' 384.88	387.65	392.87	" " "
S	A-5 INLET	Sta. 0+61.33 RI &		385.89	392.88	" " "
		(E INLET)				
		Sta. 0+61.33 LI &		385.89	392.88	" " "
		(E INLET)				
MH-3	STD. MANHOLE	E Sta. 45+75 21.25' LI &	15' 383.41	382.63		HO. CO. STD. DWG. D103 PAGE 158



THUNDER HILL ROAD
PLAN
SCALE 1" = 50'

STATE OF MARYLAND
RICHARD P. BROWNE 5238
BROWNE-PANDULLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

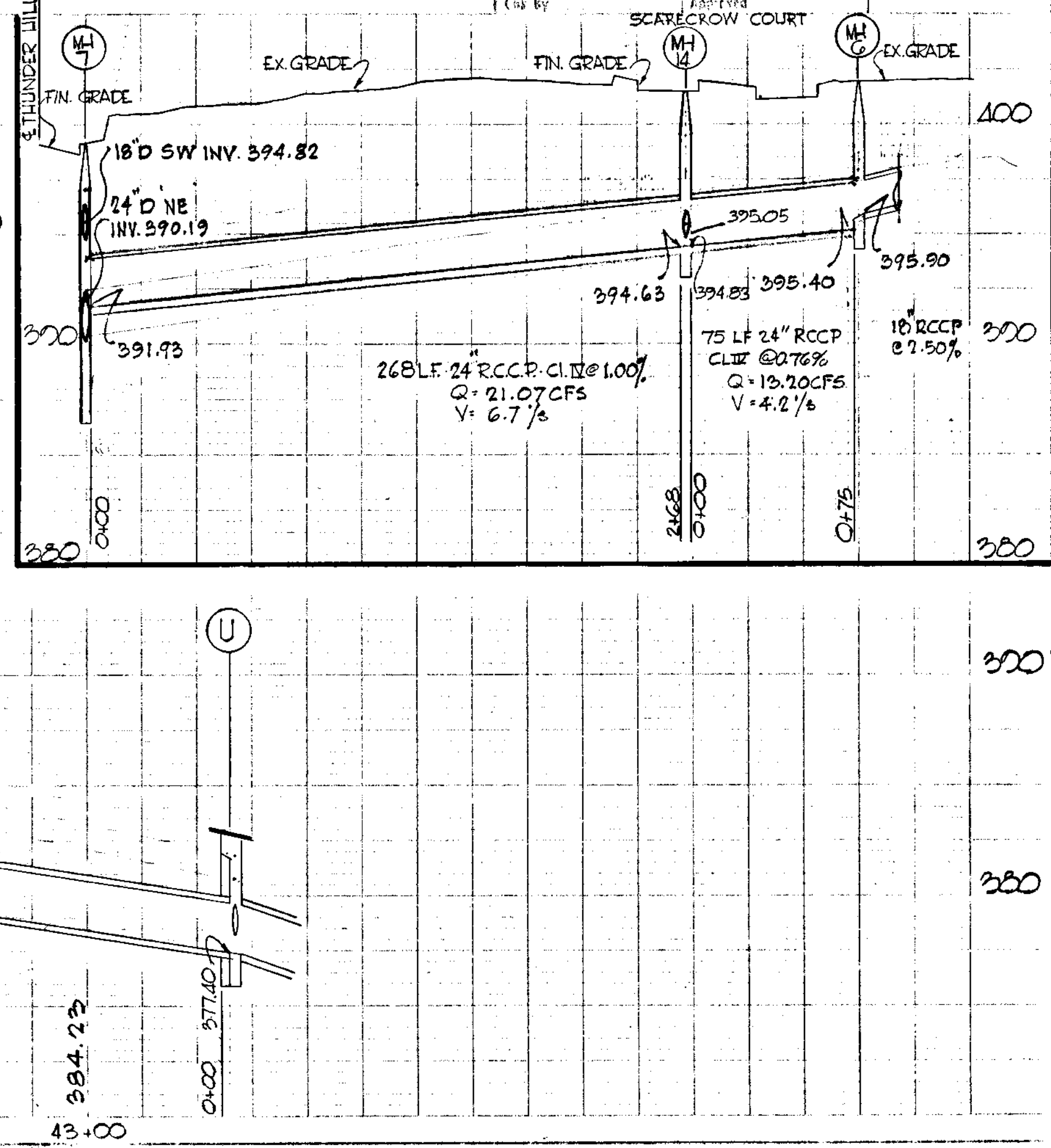
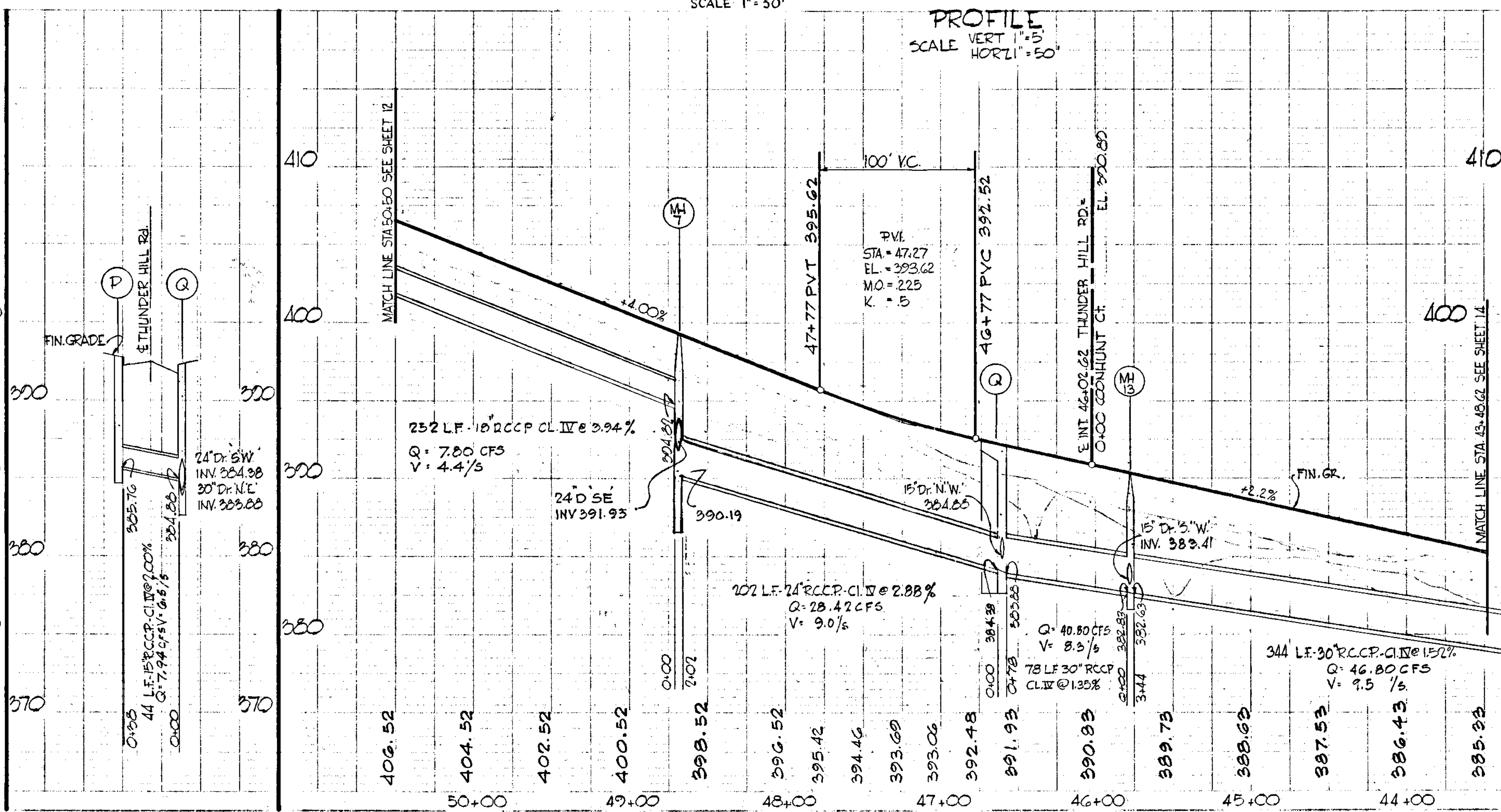
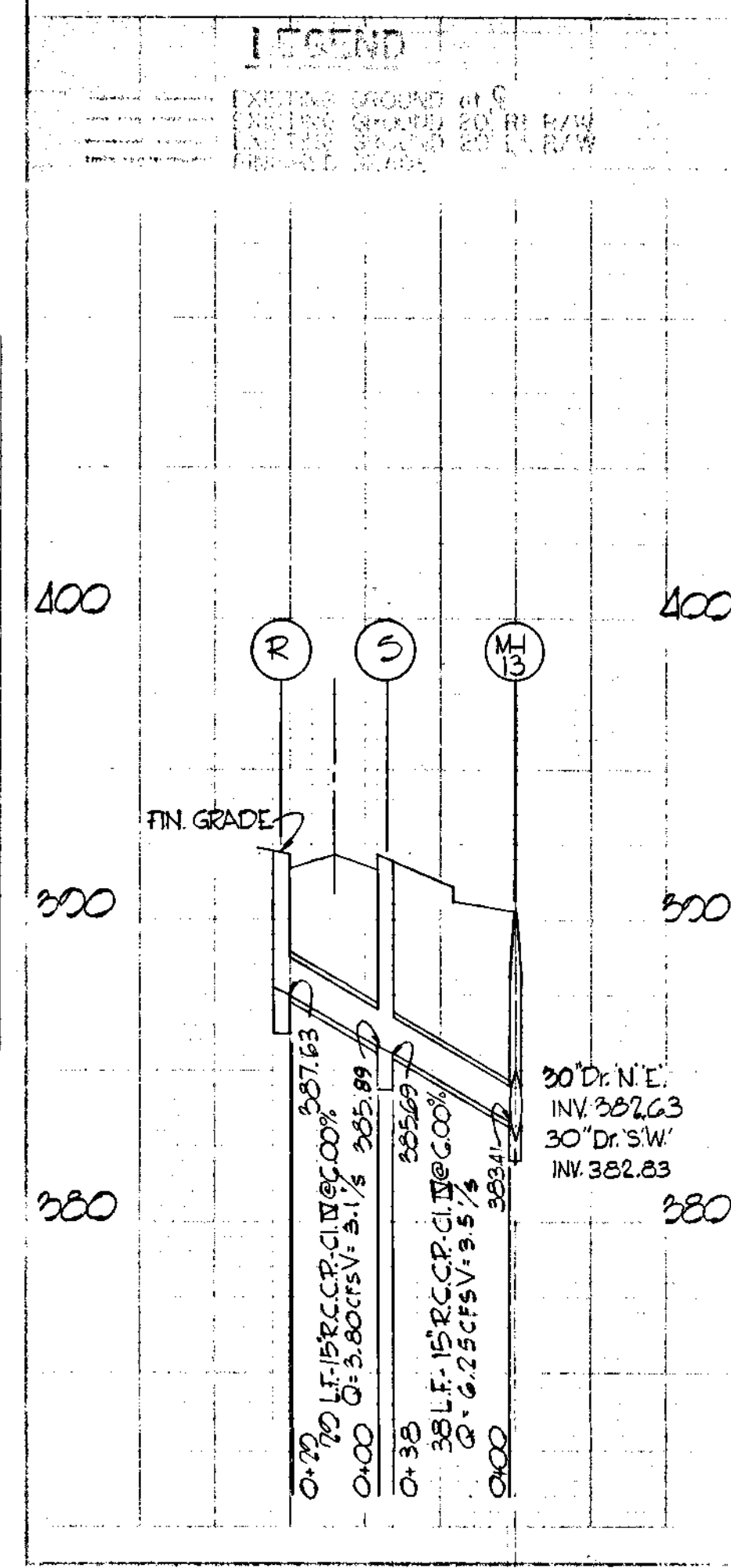
10-31-63 1 CHANGE OFFSET MH-7, MH-15
Rev. Date: Res. No. Revision Description

COLUMBIA
M^{ARYLAND} ELECTION DISTRICT - HOWARD COUNTY
HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF OAKLAND MILLS - BALTIMORE, MARYLAND 21210

APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE 3/11/67
J.P.C.

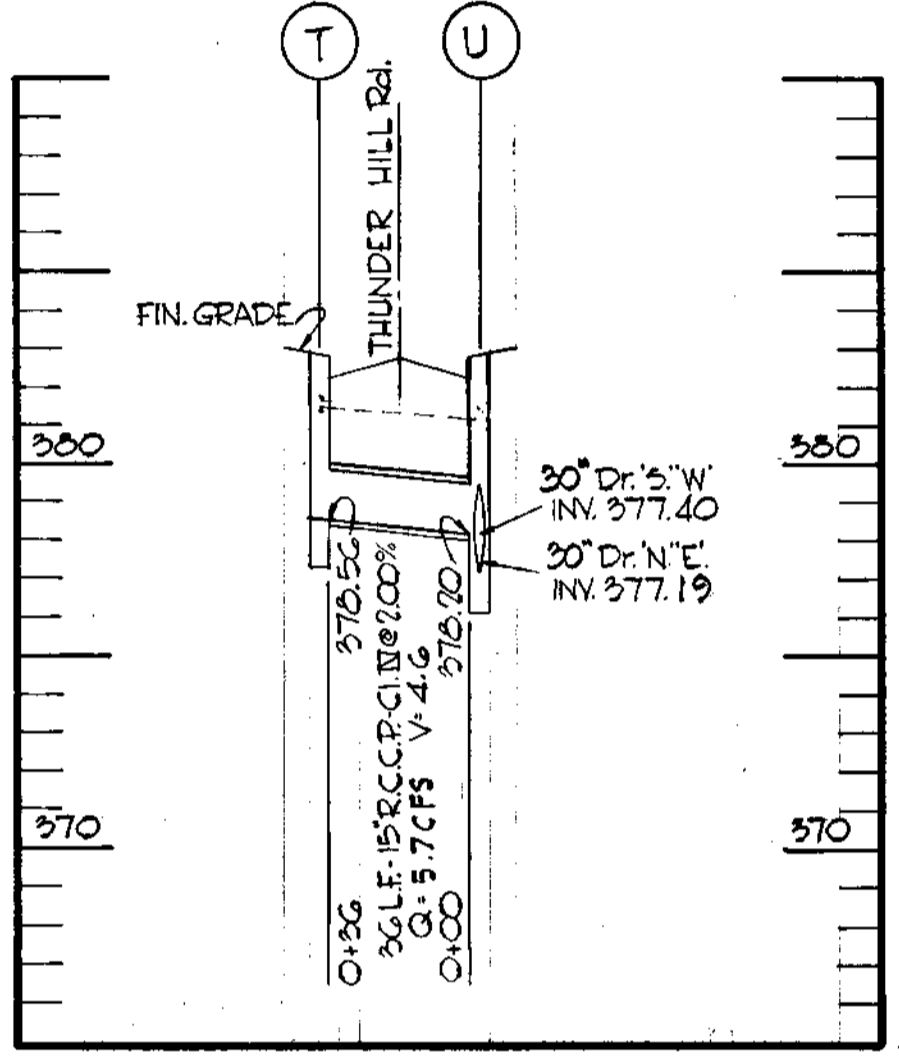
VILLAGE OF OAKLAND MILLS SECT I
THUNDER HILL AREA 4
PROJECT TITLE: THUNDER HILL ROAD
PLAN & PROFILE

Prep. By: T.S. Scale: AS SHOWN Plot No: 13 OF 27
Des. By: B.P. Date: 10-11-63 C.I. No.
Chk. By: SCARBOROUGH COURT



PLAN
SCALE: 1" = 50'

NO.	TYPE	LOCATION	INV. IN	INV. OUT	REMARKS
F	B-10 INLET	UP-@ Sta. 35+51.85 Lt. E DOWN-@ Sta. 35+62.16 Lt. E	360.92	367.64	SEE DETAIL SHEET
G	A-5 INLET	@ Sta. 35+60 Rt. E (E INLET)	370.70	367.10	" " "
H	A-10 INLET	@ Sta. 39+02.78 Lt. E (E INLET)	370.72	377.00	" " "
I	A-10 INLET	@ Sta. 39+02.78 Rt. E (E INLET)	370.00	368.72	" " "
U	B-10 INLET	UP-@ Sta. 42+41.83 Lt. E DOWN-@ Sta. 42+40 Lt. E	377.19	369.11	" " "
T	B-15 INLET	UP-@ Sta. 42+46.33 Rt. E DOWN-@ Sta. 42+30 Rt. E	378.56	369.82	" " "



E 847.250
N 506.000

MATCH LINE STA 43+48.62
SEE SHEET 13

THUNDER HILL

60' WIDE DRAINAGE & UTILITY EASEMENT

4' WIDE CONC. SIDEWALK 1' OFF R.

OPEN SPACE

E 847.500
N 506.900

FT. 375.500
21" RCCP

MOUNTABLE CONC. CURB

ROAD

MATCH LINE STA 35+06.45
SEE SHEET 15



RICHARD P. BROWNE
5238

ENGINEERS
COLUMBIA, MARYLAND

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

COLUMBIA
MARYLAND
8TH ELECTION DISTRICT HOWARD COUNTY

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

PROJECT AREA:
VILLAGE OF OAKLAND MILLS SECT 1
THUNDER HILL AREA 4

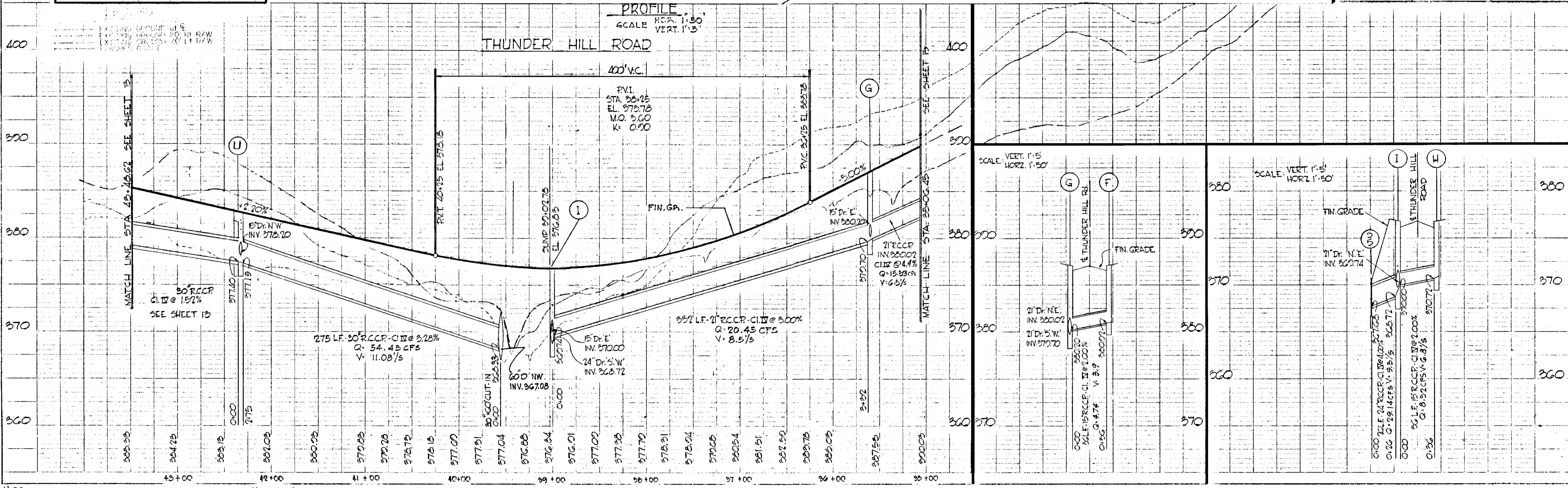
PROJECT TITLE:
PLAN & PROFILE
THUNDER HILL ROAD

Prepared By: TS Scale: AS SHOWN Date: 10-11-68 Draw. No. 14 of 27
Checked By: TG Date: 10-11-68 C.C.F. No.
Approved By: [Signature]

APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE 3/13/69

NOTE:
SEE SHEETS 29 & 30
FOR STRUCTURE DETAILS OF 3-60" RCCP.

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



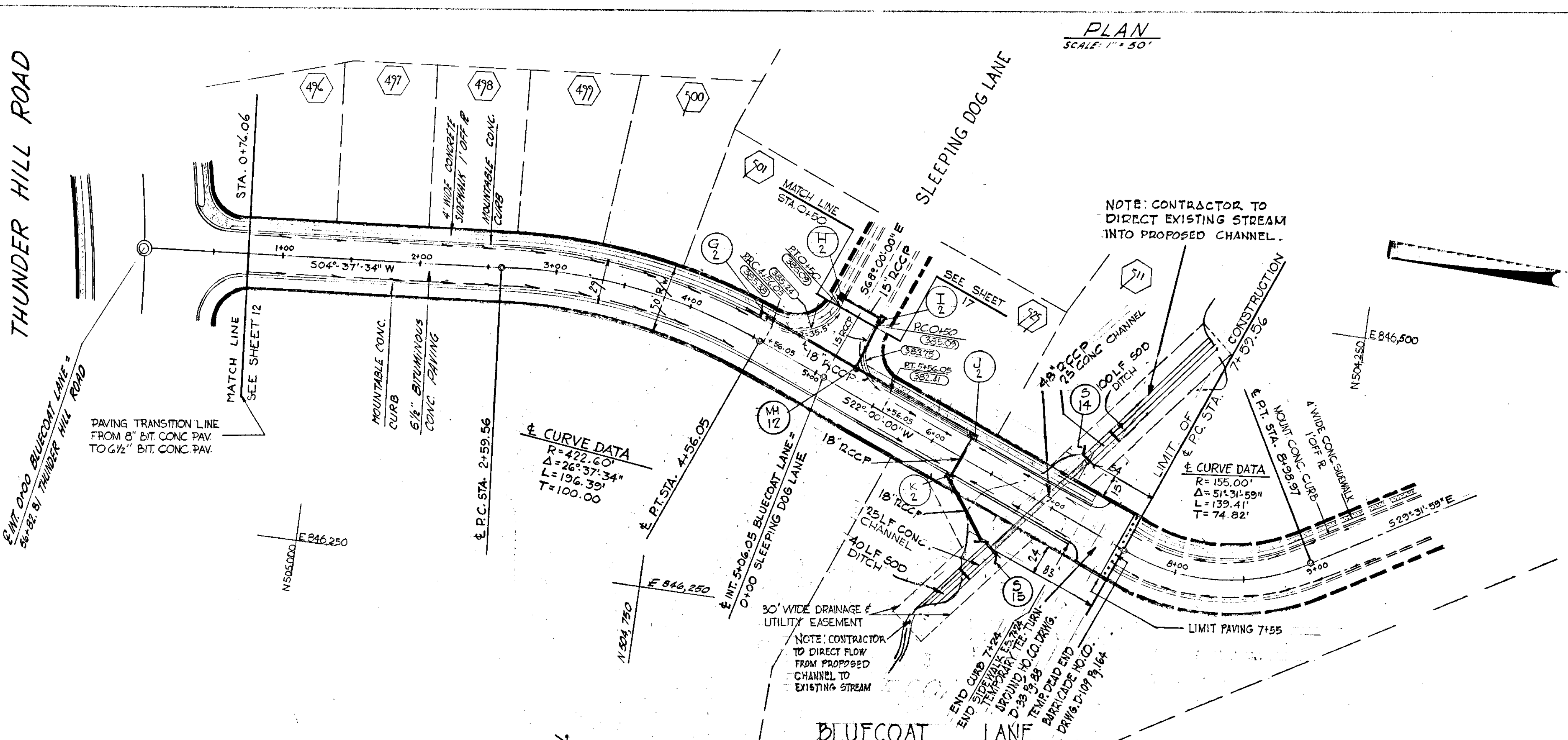
#89
A = .98
B = .75
C = .72
D = .74

A = .7
B = -
C = .42
D = .20 - .22
132

HALL L. HAINES
ENGINEER & ARCHT.
1000 ALPHEUS ST. BALTIMORE, MD.

THUNDER HILL ROAD

PAVING TRANSITION LINE FROM 8" BIT CONC PAV TO 6 1/2" BIT CONC PAV.



PLAN SCALE: 1" = 50'

STORM DRAINAGE STRUCTURE SCHEDULE						
ID	TYPE	LOCATION	INV. IN	INV. OUT	CL. FILE	REMARKS
I-2	A-5 INLET	ST. STA. 0+58 RT. C (E INLET)	379.51	379.21	385.50	SEE DETAIL
H-2	A-5 INLET	ST. STA. 0+58 LT. C (E INLET)		380.41	385.50	SEE DETAIL
J-2	A-5 INLET	ST. STA. 6+25 LT. C (E INLET)	375.00	374.80	381.98	SEE DETAIL
K-2	A-5 INLET	ST. STA. 6+25 RT. C (E INLET)	374.20	374.00	381.98	SEE DETAIL
G-2	B-15 INLET	ST. STA. 4+33.67 UP (E INLET)		380.90	386.04	SEE DETAIL
B-15	STD. B-48 HEADWALL	ST. STA. 4+50 DOWN AS SHOWN			368.67	HO. CO. STD. DRWG. D-48 PAGE 103
S-14	STD. B-48 HEADWALL	AS SHOWN		370.40		HO. CO. STD. DRWG. D-48 PAGE 103
MH-2	STD. MANHOLE	ST. STA. 5+20.55 17.25' LT. C	378.62	378.42		HO. CO. STD. DRWG. D103 PAGE 158



BROWNE-PANDULLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

12-5-68 2 REVISED LIMIT OF SUBMISSION
10-31-68 1 CHANGE OFFSET M4-12

COLUMBIA
6TH ELECTION DISTRICT
HOWARD COUNTY, MD

HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF CHESAPEAKE KEYS - PASTERSVILLE, MARYLAND 21210

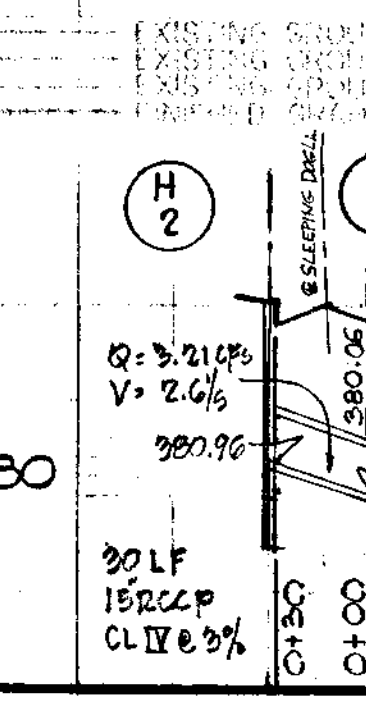
APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE 3/13/69
JAC

VILLAGE OF OAKLAND MILLS SECT 1
THUNDER HILL AREA 4

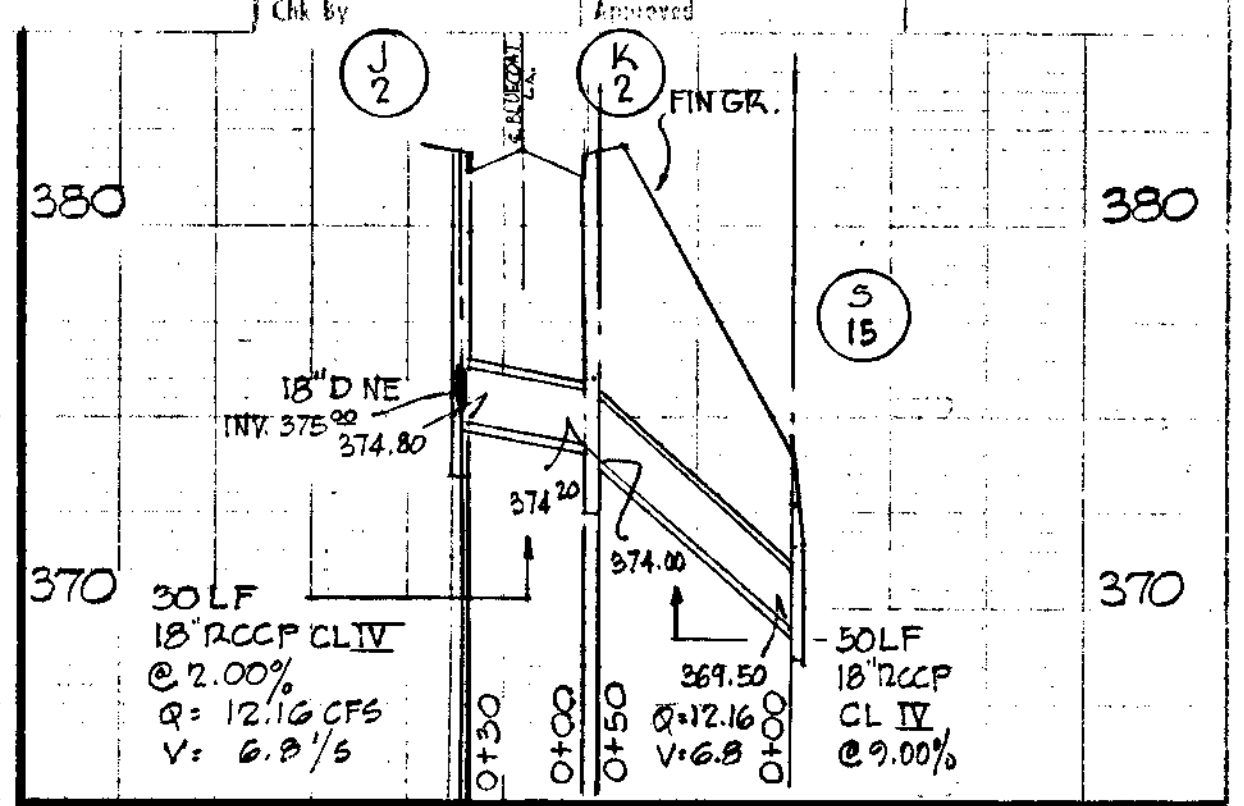
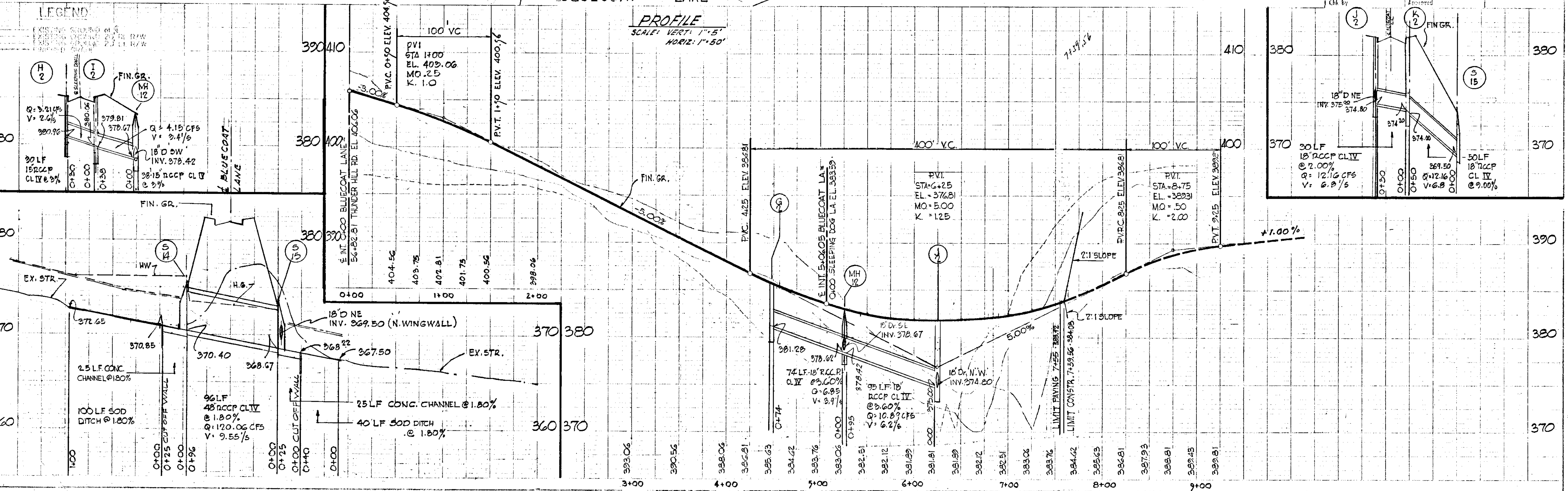
BLUECOAT LANE
PLAN & PROFILE

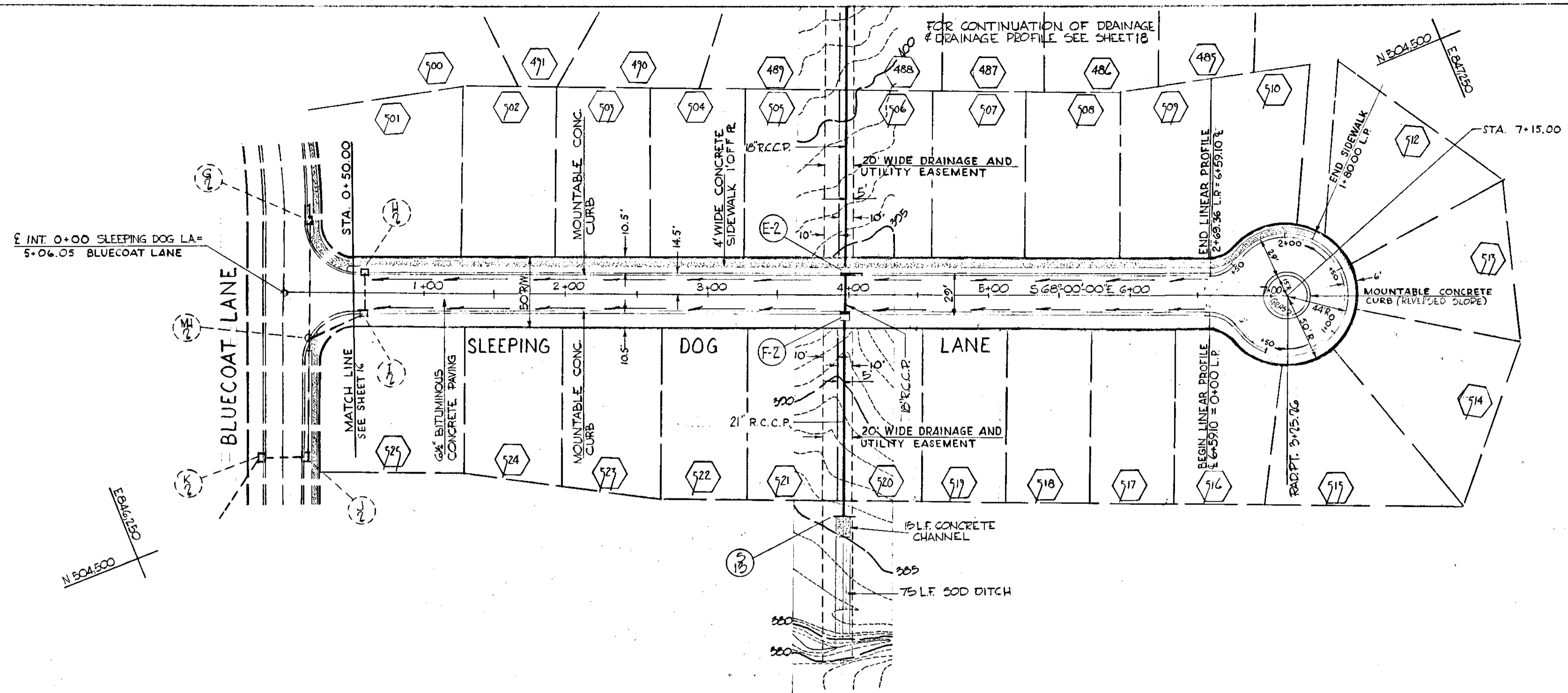
Prep. By: T.S. Scale: AS SHOWN Page No. 16 OF 27
Des. By: B.P. Date: 10-11-68 C.C.F. No.
Chk. By: Approved

LEGEND



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

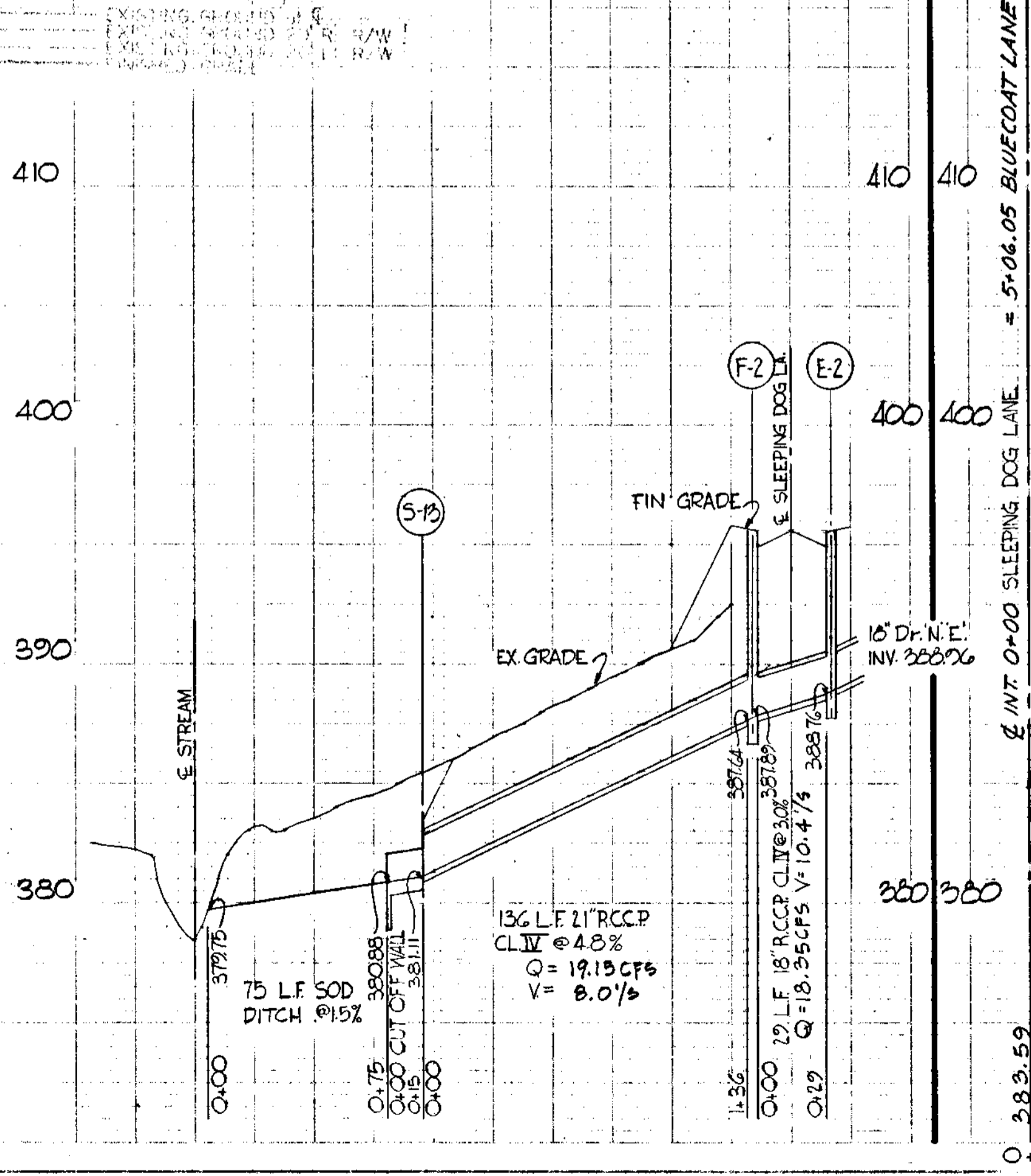





NO.	TYPE	LOCATION	INVERT	OUTLET	GRADE	REMARKS
E-2	B-15 INLET	UP STA. 4+06.26 LT. E	388.76	388.76	375.05	SEE DETAIL SHEET
F-2	A-5 INLET	DOWN STA. 3+24.23 LT. E (E OF INLET) (E OF INLET)	387.89	387.64	375.01	SEE DETAIL SHEET
S-15	SH TYPE C' ENDWALL	Sta 3+28.10 - 15' RT. E				Ho. Co. Std. Dwg. D-52 Pg. 107

PLAN
SCALE 1"=50'

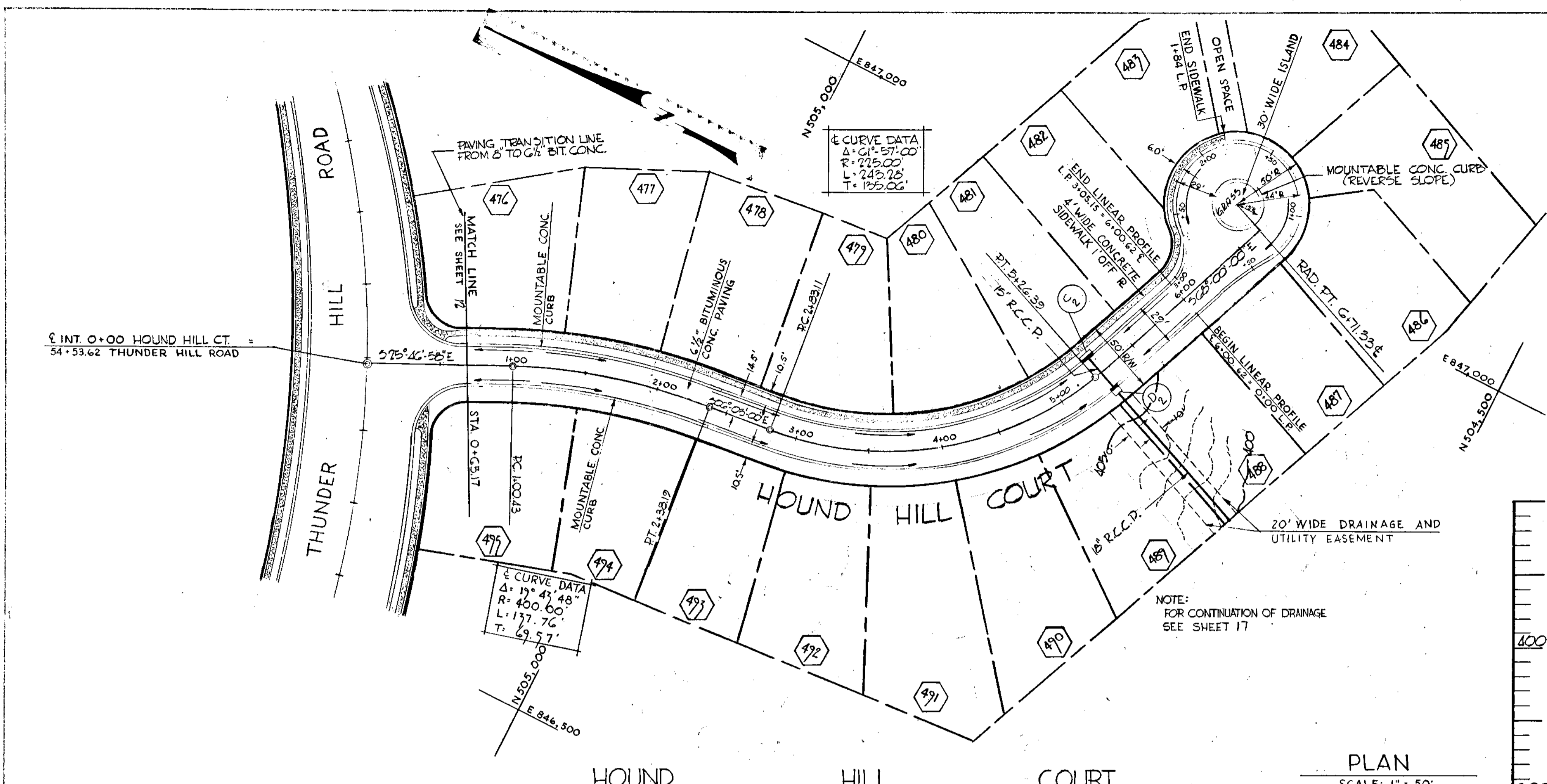
LEGEND



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

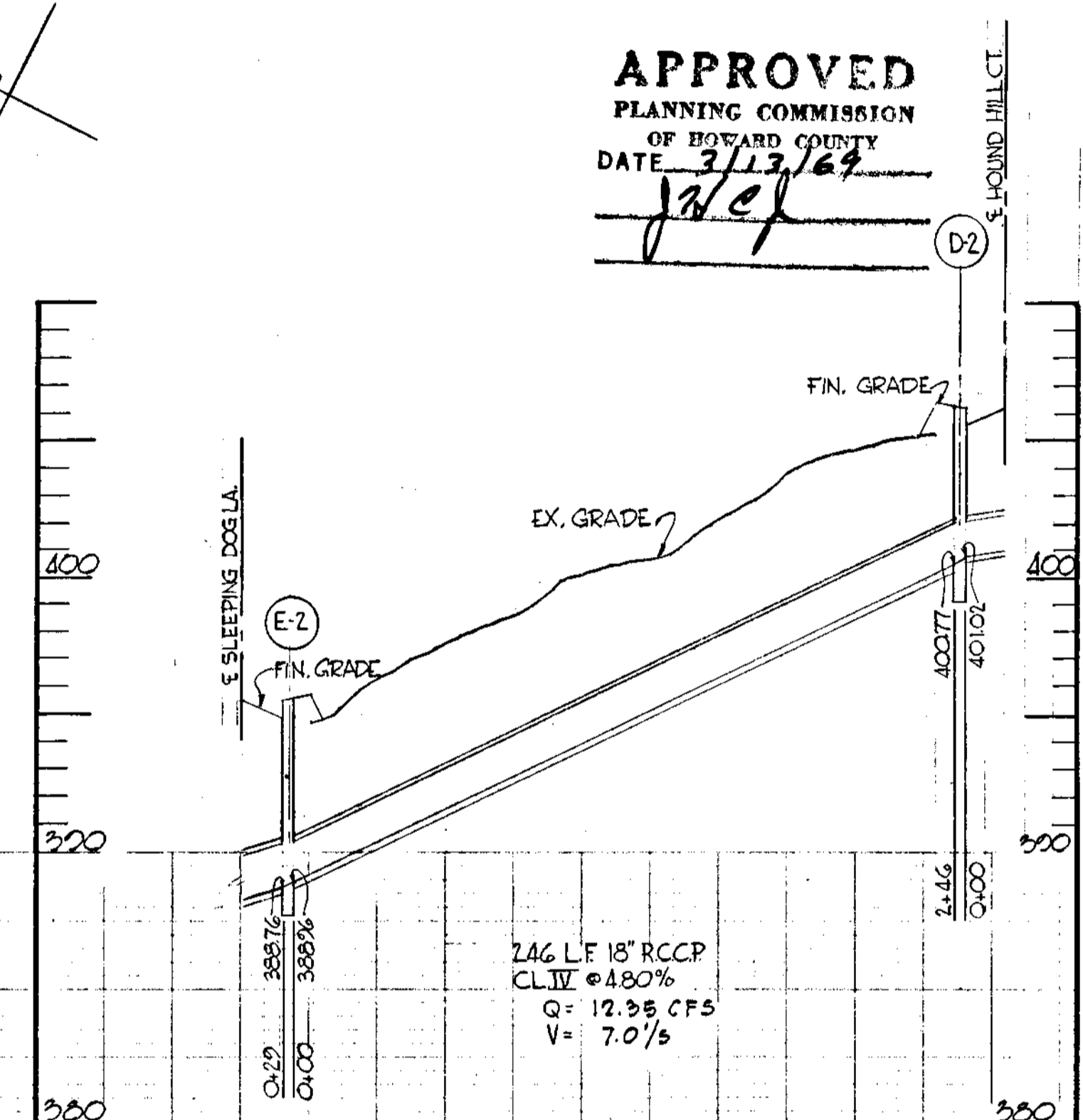

BROWNE-PANDULLO & ASSOCIATES
 ENGINEERS
 COLUMBIA, MARYLAND
 PROJECT NO. 10-11-68
 REVISION DESCRIPTION
COLUMBIA
 Mth ELECTION DISTRICT HOWARD COUNTY
 HOWARD RESEARCH AND DEVELOPMENT COPP
 THE VILLAGE OF CROSS KEYS - BALTIMORE MARYLAND 21210
 PROJECT AREA
 VILLAGE OF OAKLAND MILLS SECT. 1
 THUNDER HILL AREA 4
 PROJECT TITLE
SLEEPING DOG LANE
 PLAN & PROFILE
 DES. BY T.S. SCALE AS SHOWN (SHEET NO. 17 OF 27)
 DIA. BY B.P. DATE 10-11-68 C.C.F. NO.
 CHK. BY Approved

APPROVED
 PLANNING COMMISSION
 OF HOWARD COUNTY
 DATE 3/13/69
J. K. [Signature]



STORM DRAINAGE STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INV. IN	INV. OUT	C.C. ELEV.	REMARKS
C-2	A-10 INLET	E STA. 5+29.43 (E OF INLET)	401.46	406.58		SEE DETAIL SHEET
D-2	A-5 INLET	E STA. 5+29.43 (E OF INLET)	401.02	400.77	406.58	SEE DETAIL SHEET



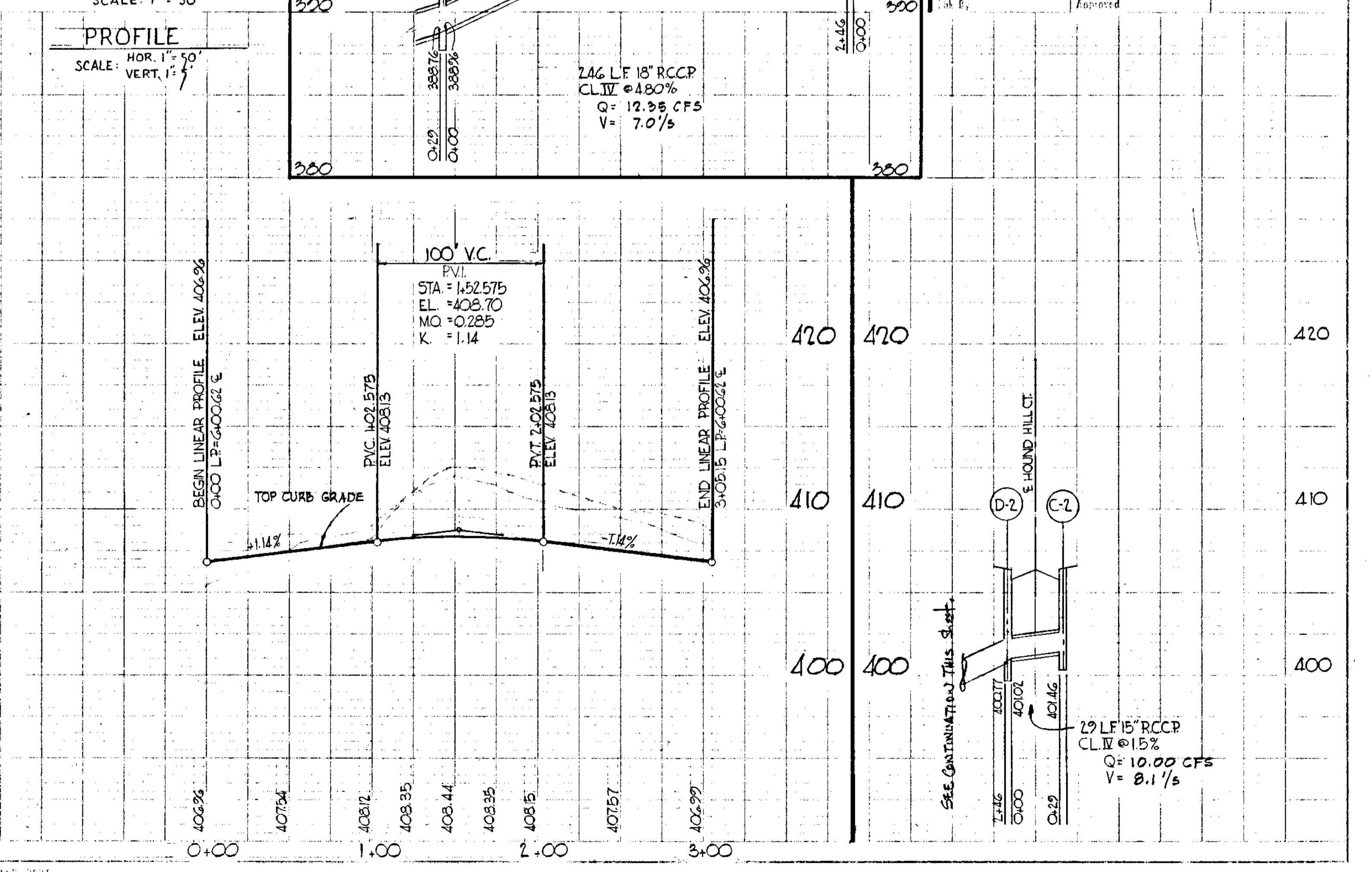
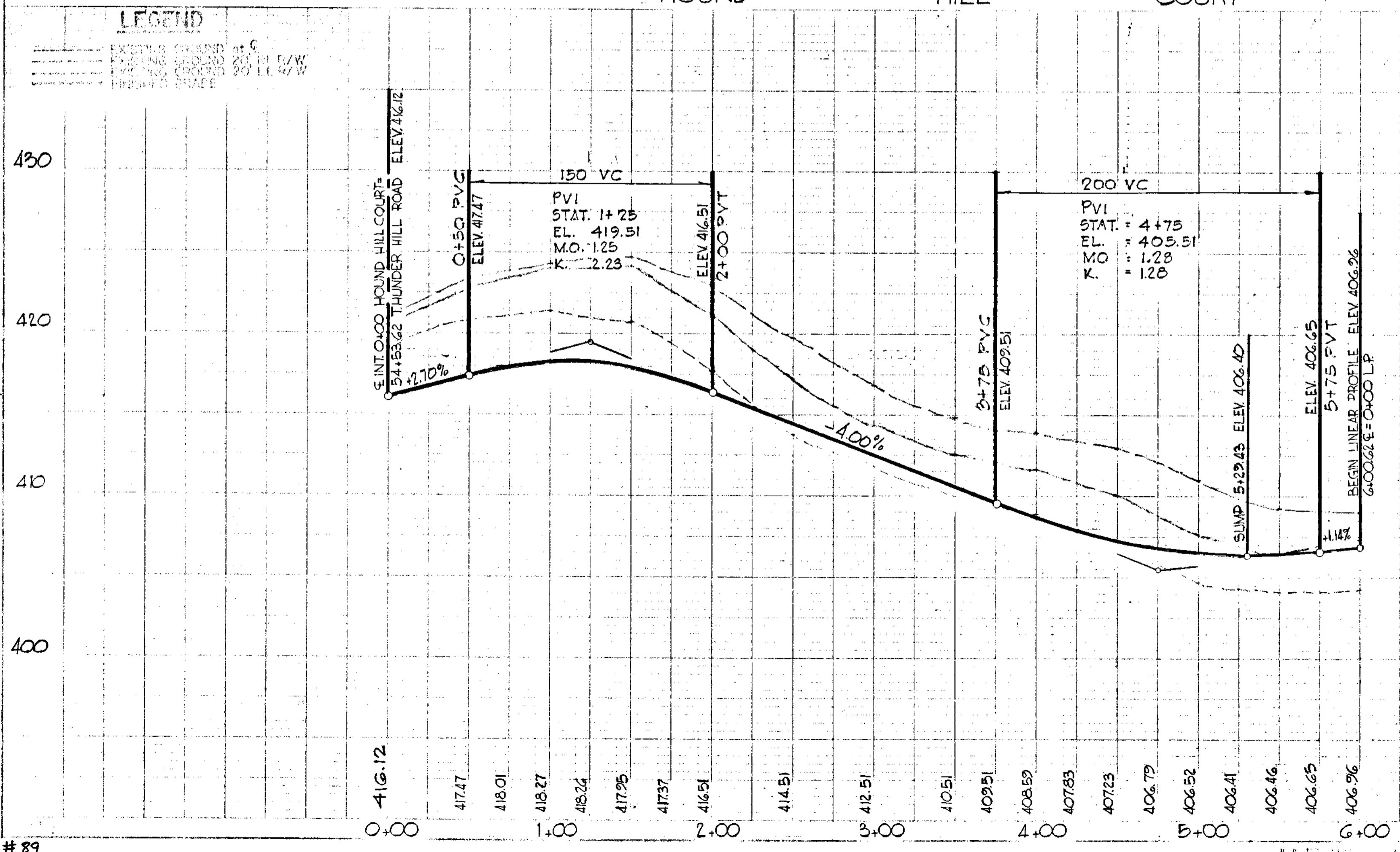
APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE 3/13/69
JAC

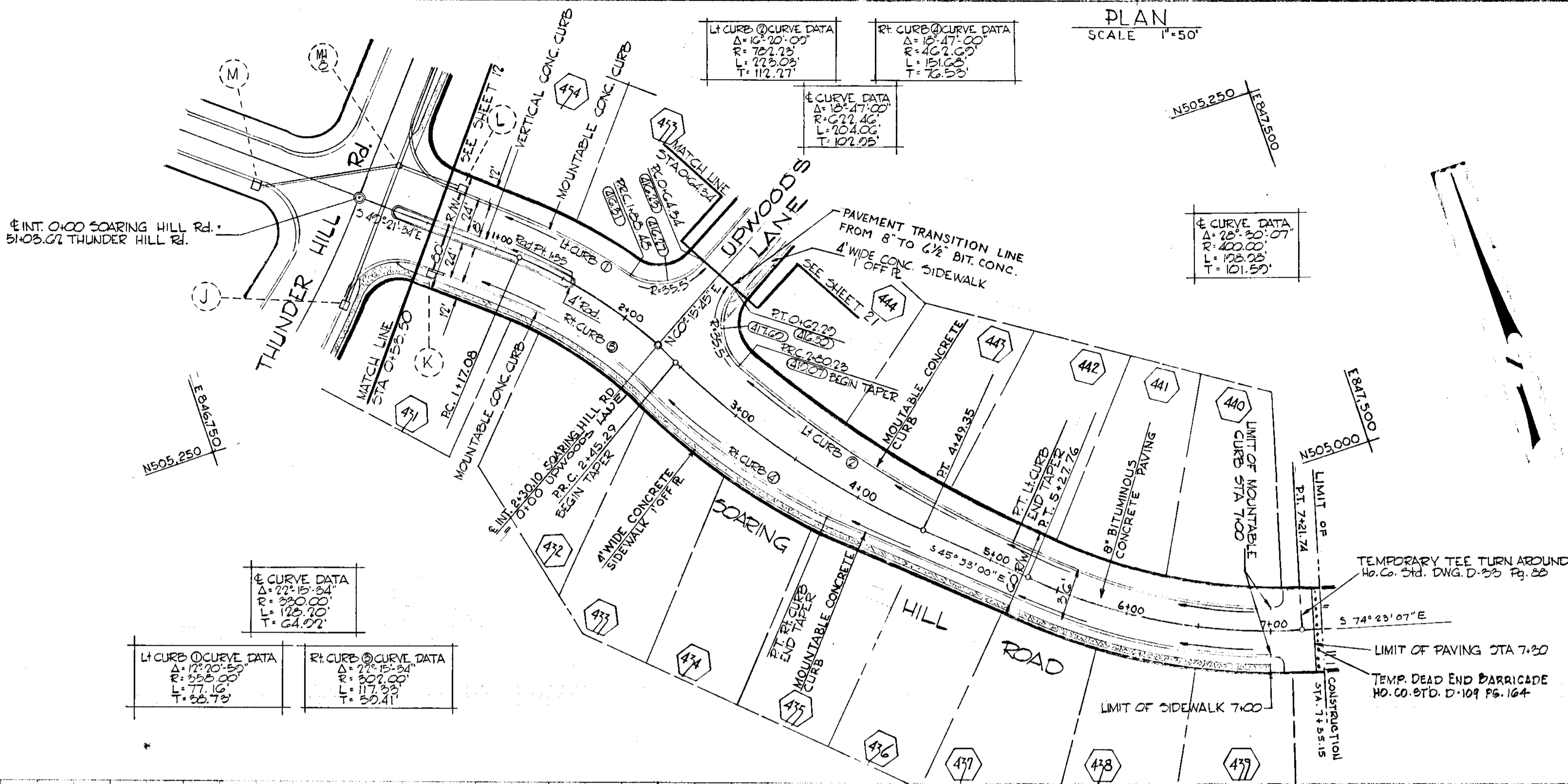
COLUMBIA
MARYLAND
6TH ELECTION DISTRICT - HOWARD COUNTY
HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF OAKLAND MILLS - BALTIMORE, MARYLAND 21210

**VILLAGE OF OAKLAND MILLS SECT. I
THUNDER HILL AREA 4**

**HOUND HILL COURT
PLAN & PROFILE**

TS
AS SHOWN
10-11-68
18 OF 27
C.E. No.





STORM DRAINAGE STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INV. IN	INV. OUT	C.P. ELEV.	REMARKS

RICHARD P. BROWNE
5238

BROWNE-PANDULLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

NOV 5 '68 1 REVISE GRADE - SOARING HILL ROAD

COLUMBIA

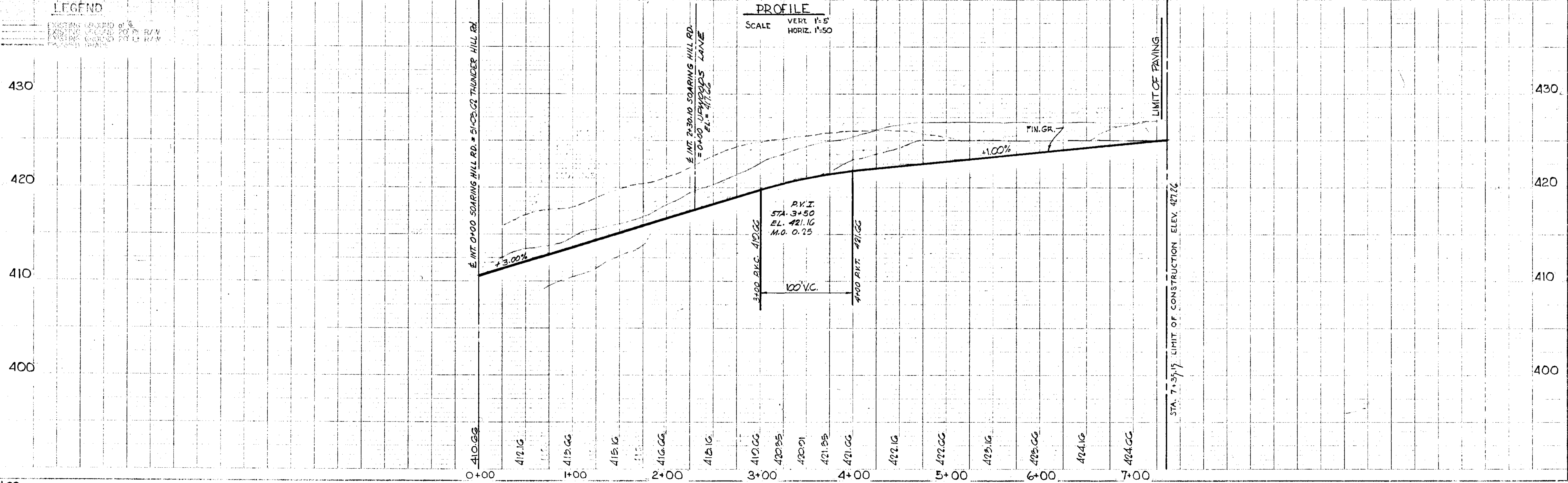
6TH ELECTION DISTRICT - HOWARD COUNTY
HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21210

VILLAGE OF OAKLAND MILLS SECT. I THUNDER HILL AREA 4

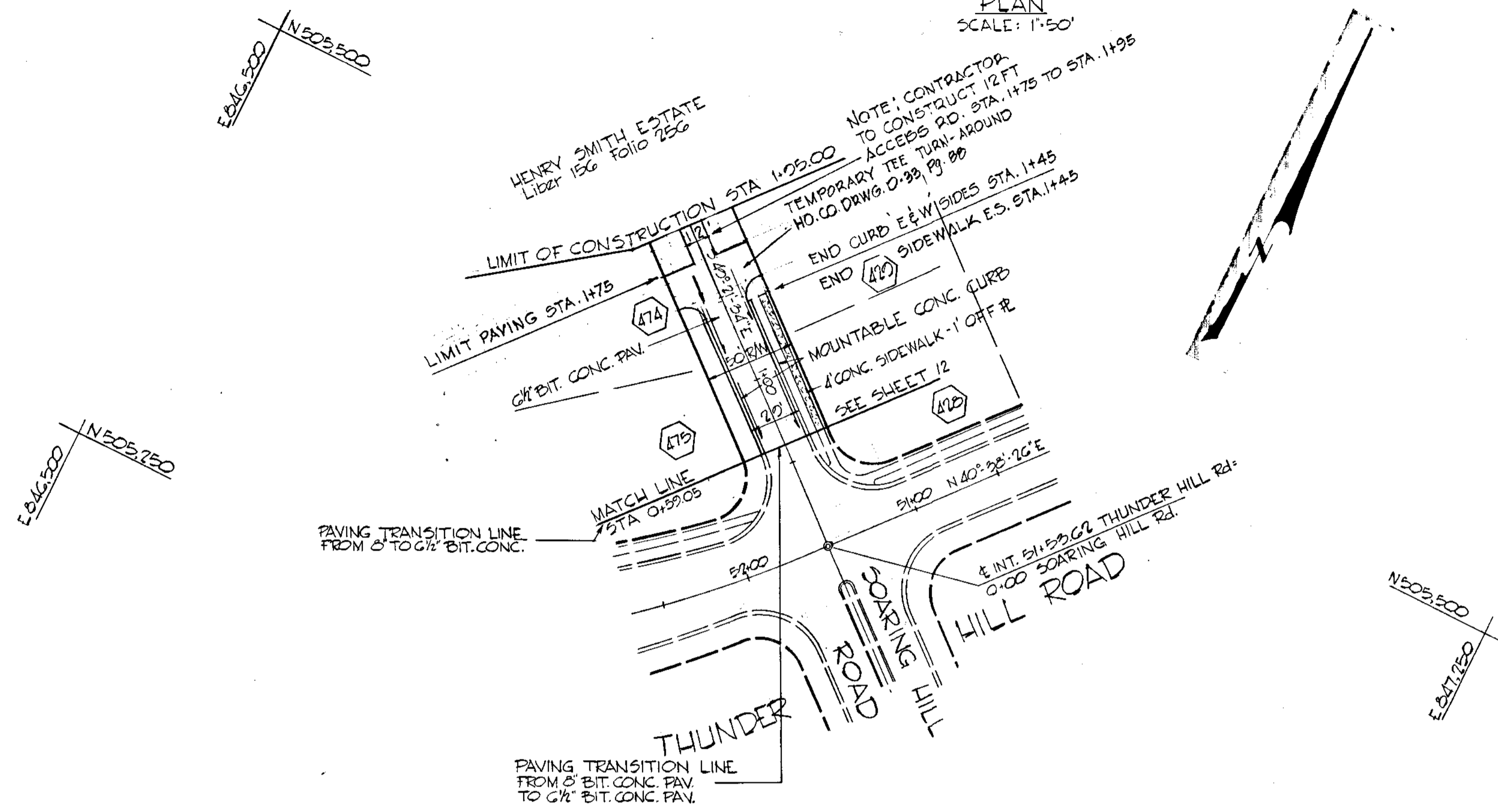
SOARING HILL ROAD PLAN & PROFILE

Des. By: T.S.	Scale: AS SHOWN	Date: 10-11-68	Sheet No. 19 OF 27
Drawn By: B.P.	Date: 10-11-68	CCF No.	
Chk. By: J.N.E.F.	Approved: <i>[Signature]</i>		

APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE 3/13/69
[Signature]



PLAN
SCALE: 1"=50'

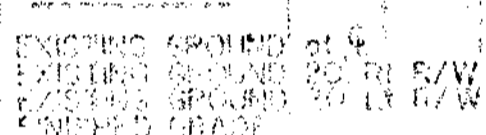


Richard P. Browne
RICHARD P. BROWNE 5238

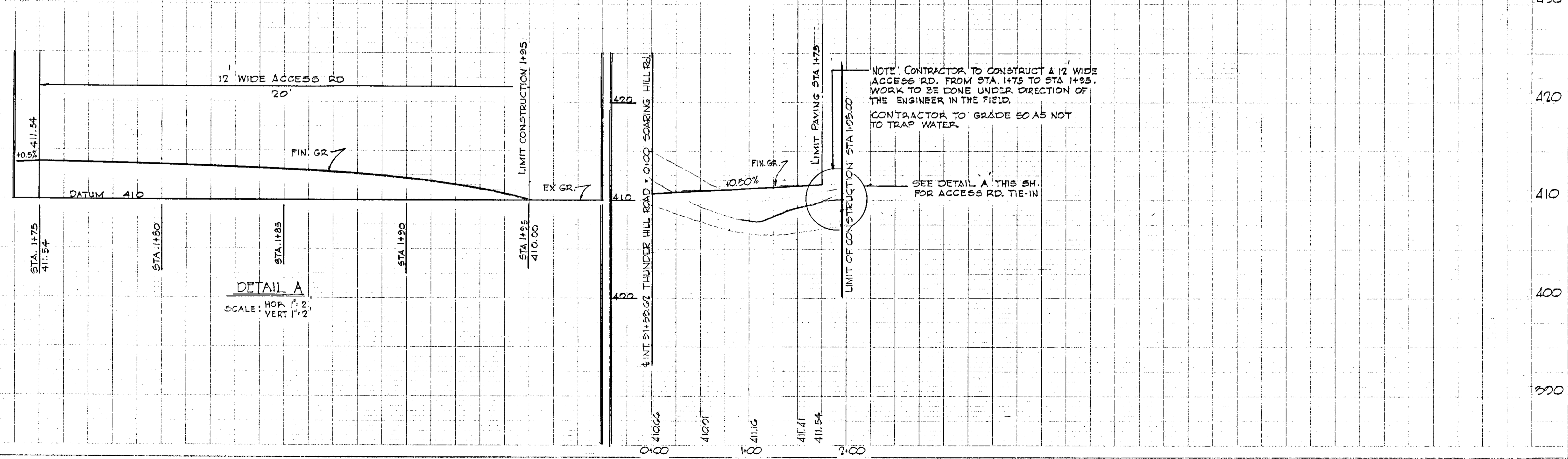
Rev. Date	Rev. No.	Revision Description
COLUMBIA		
M A R Y L A N D 4TH ELECTION DISTRICT HOWARD COUNTY		
HOWARD RESEARCH AND DEVELOPMENT CORP. THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21210		
VILLAGE OF OAKLAND MILLS SEC 1 THUNDER HILL AREA 4		
PLAN & PROFILE SOARING HILL ROAD		
By T.S.	Scale AS SHOWN	Sheet No 20 OF 27
By F.T.	Date 10-11-68	CCF No
By	Approved	

APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE 3/13/69
J. H. [Signature]

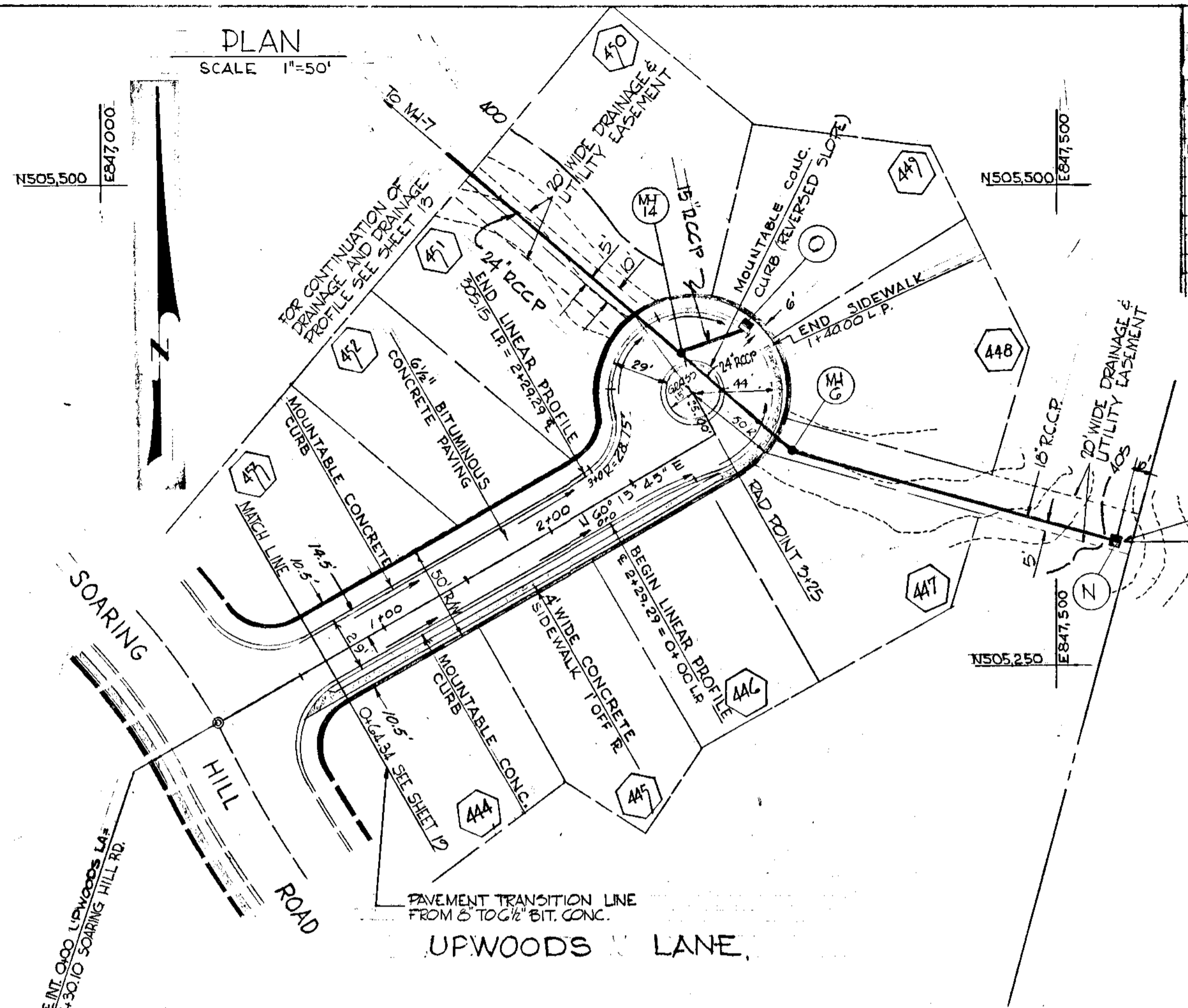
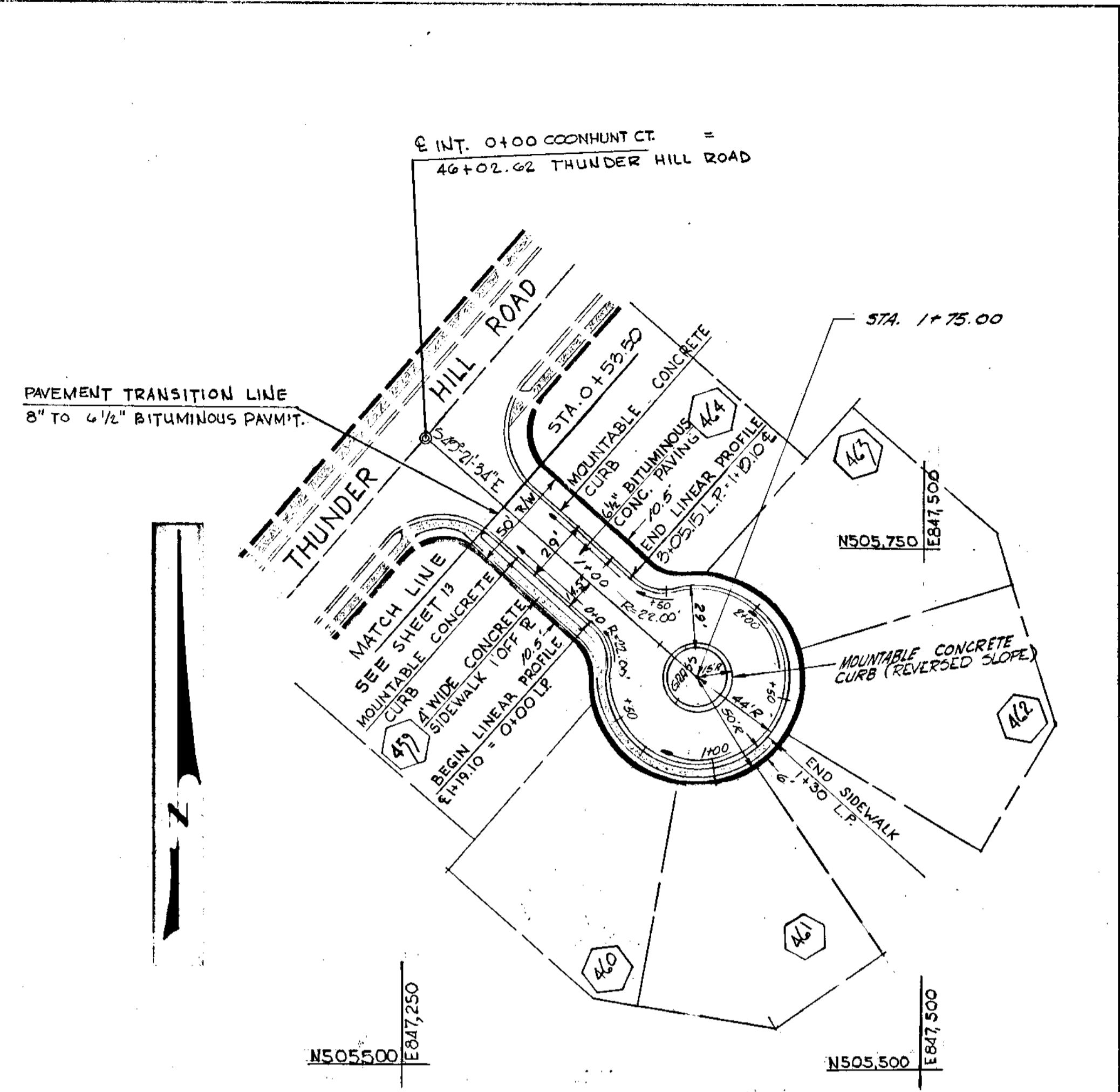
LEGEND



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



DETAIL A
SCALE: HORZ. 1"=2'
VERT. 1"=2'



STORM DRAINAGE STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	DIAMETER	REMARKS
O	A-10 INLET	L.P. STA. 1+52.575 (E INLET)	395.75	401.12		SEE DETAIL SHEET
N	GLASS C INLET	SEE PLAN		400.70		Ho. Co. Std. Dwg. D.G.C. Pa. 110-C
MAG	STD. MANHOLE	SEE PLAN	15' 395.90	24' 395.40		HO. CO. STD. DRWG. D103 PAGE 158
MH4	STD. MANHOLE	SEE PLAN	24' 394.83	24' 394.63		HO. CO. STD. DRWG. D103 PAGE 158

NOTES
 CONTRACTOR TO GRADE TO INSURE POSITIVE DRAINAGE TO INLET 'N'
 OPENINGS ON N.E., S.E. & S.W. SIDES OF INLET 'N'



Richard P. Browne
 RICHARD P. BROWNE 5238

BROWNE-PANDULLO & ASSOCIATES
 ENGINEERS
 COLUMBIA, MARYLAND

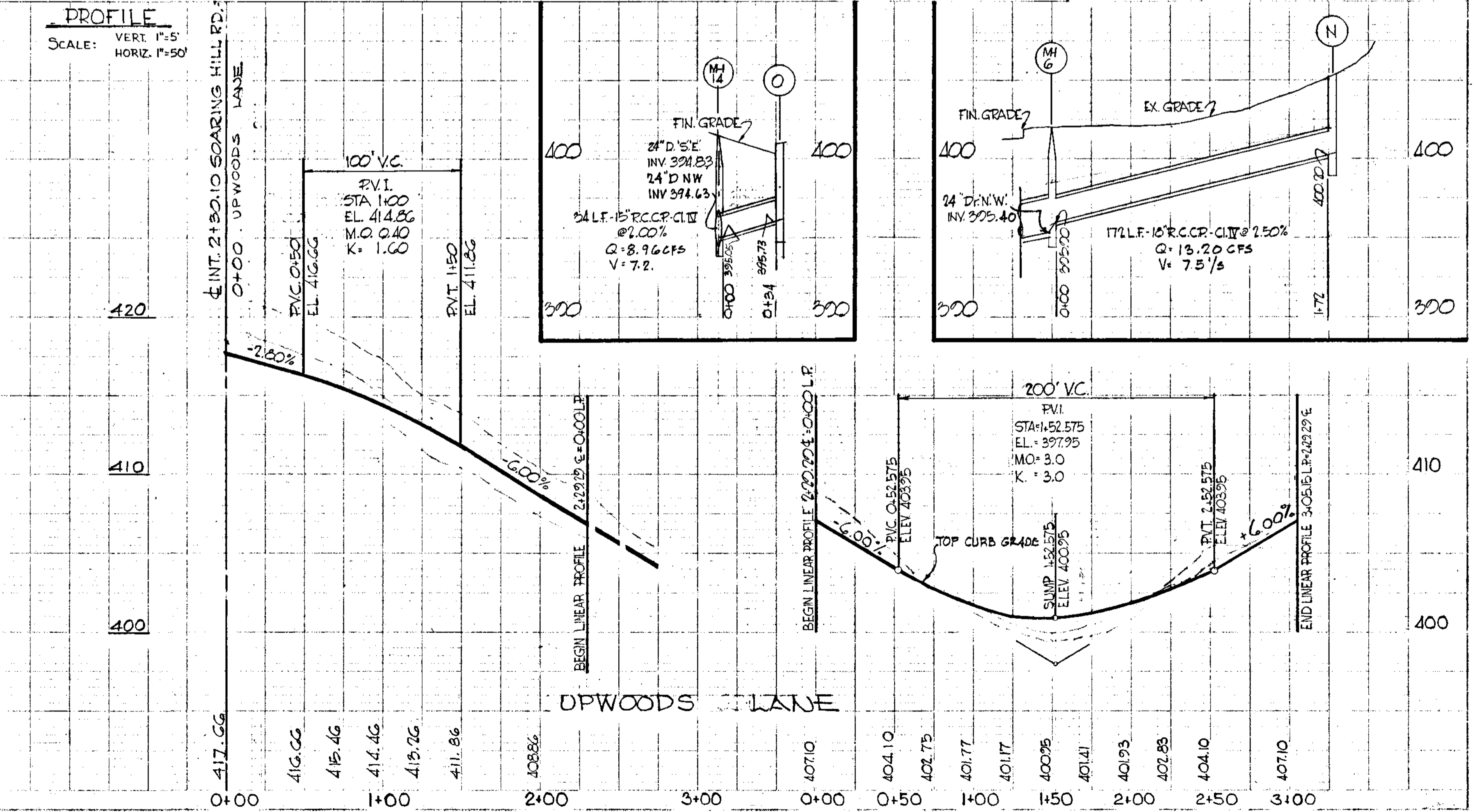
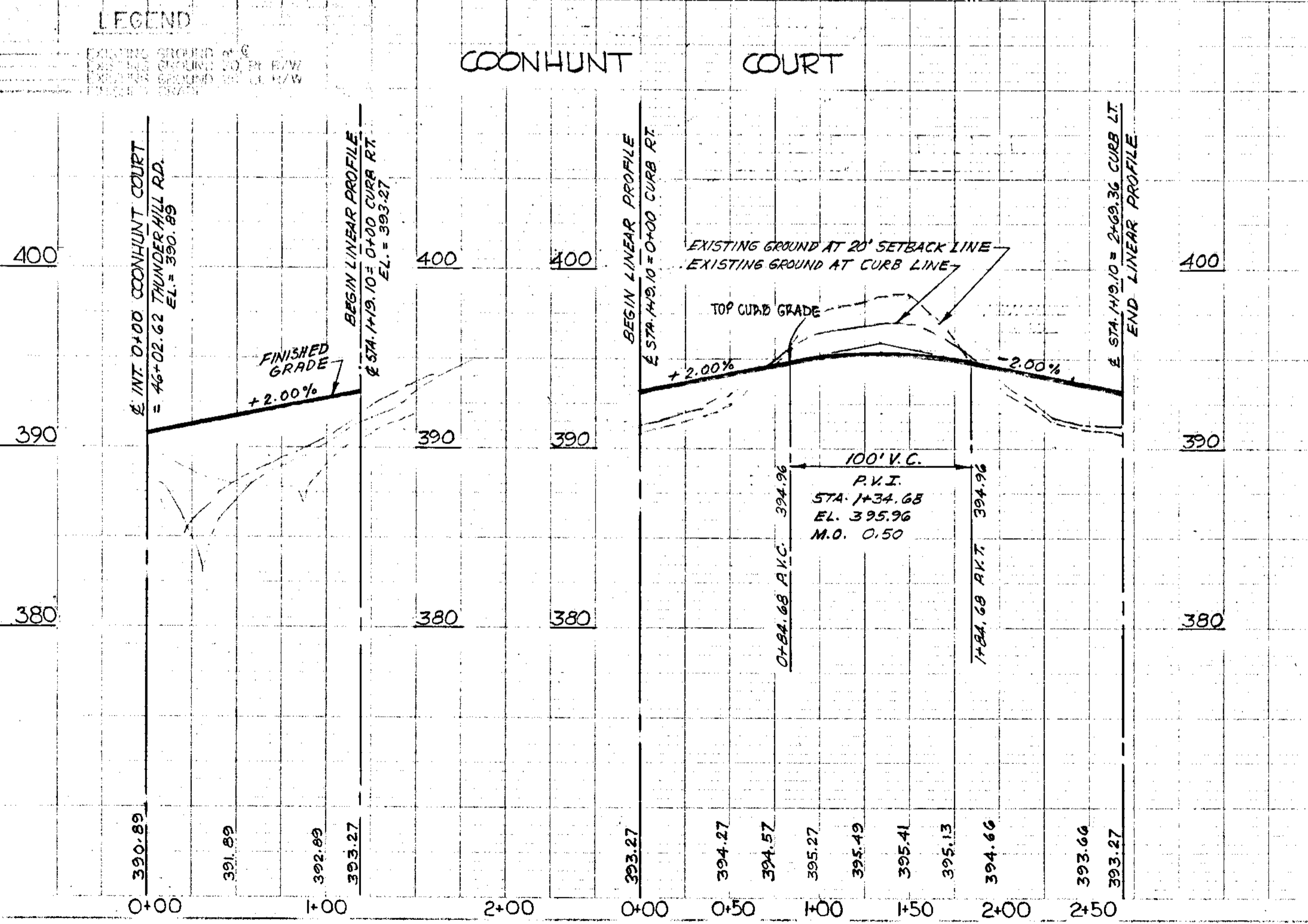
NOV/5/68 1 REVISE GRADE - UPWOODS LANE
 Rev. Date Rev. No. Reason For Revision

COLUMBIA
 MARYLAND
 6TH ELECTION DISTRICT - HOWARD COUNTY
 HOWARD RESEARCH AND DEVELOPMENT CORP.
 THE VILLAGE OF OAKLAND HILLS, PATENTED, MARYLAND 21210

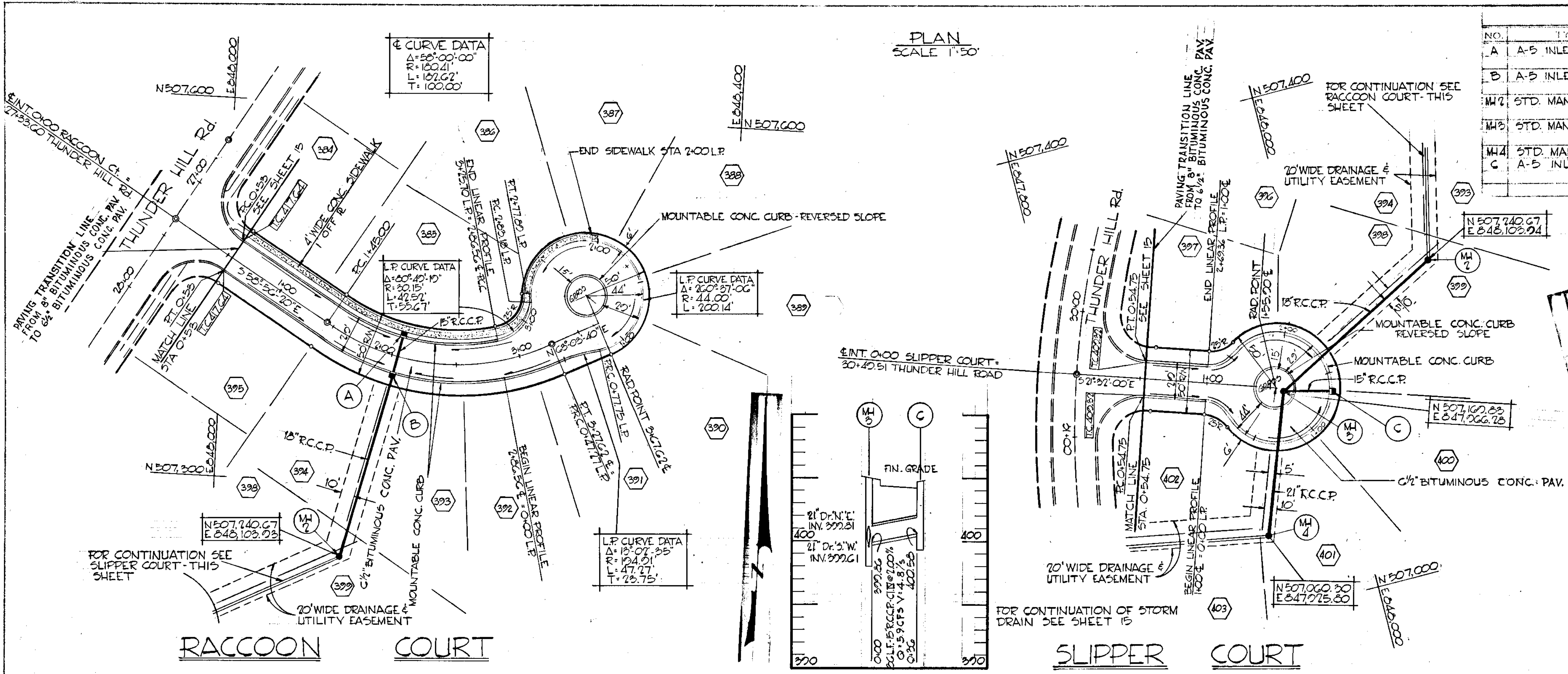
VILLAGE OF OAKLAND HILLS SECT. I
 THUNDER HILL AREA 4
 COONHUNT COURT & UPWOODS LANE
 PLAN & PROFILE

Des. By T.S. Scale A6 SHOWN Sheet No. 21 OF 27
 Drawn By B.P. Date 10-11-68 C.C.F. No.
 Checked By Approved

APPROVED
 PLANNING COMMISSION
 OF HOWARD COUNTY
 DATE 3/22/69
J.H.C.



PLAN SCALE 1"=50'



NO.	TYPE	LOCATION	INV. IN	INV. OUT	FIN. LEVEL	REMARKS
A	A-5 INLET	Sta. 2+04.76 L.H. & (INLET) RACCOON COURT	409.50	414.03		SEE DETAIL SHEET
B	A-5 INLET	Sta. 2+04.76 R.H. & (INLET) RACCOON COURT	408.92	408.67	414.03	"
MH 2	STD. MANHOLE	SEE PLAN	401.51	401.91		Ho. Co. Std. Dwg. D-103 Pg. 158
MH 3	STD. MANHOLE	SEE PLAN	399.80	399.61		Ho. Co. Std. Dwg. D-103 Pg. 158
MH 4	STD. MANHOLE	SEE PLAN	399.81	398.77		Ho. Co. Std. Dwg. D-103 Pg. 158
C	A-5 INLET	L.P. Sta. 1+34.68 SLIPPER CT. (& INLET)	398.47	400.58	404.82	SEE DETAIL SHEET



RICHARD P. BROWNE 5238

ENGINEERS
COLUMBIA, MARYLAND

DATE: 10-11-68

REV. NO. 1

REVISION DESCRIPTION

COLUMBIA

14TH ELECTION DISTRICT - HOWARD COUNTY

HOWARD RESEARCH AND DEVELOPMENT CORP.

VILLAGE OF OAKLAND MILLS - SECT 1
THUNDER HILL AREA 4

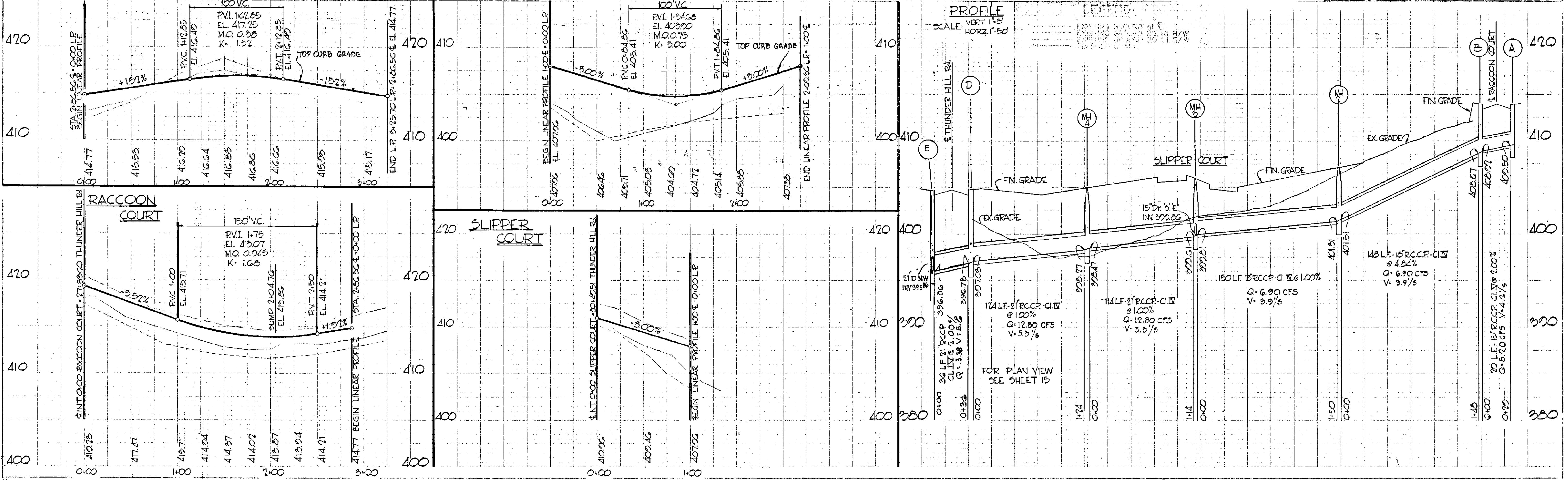
PLAN & PROFILE
RACCOON Ct. AND SLIPPER Ct.

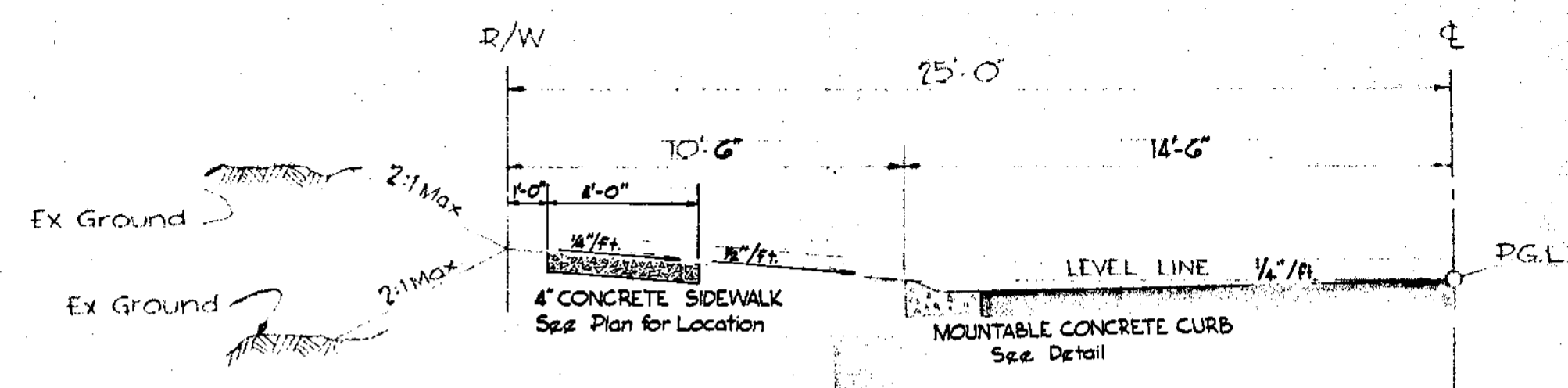
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DRAWN BY: F.T. DATE: 10-11-68

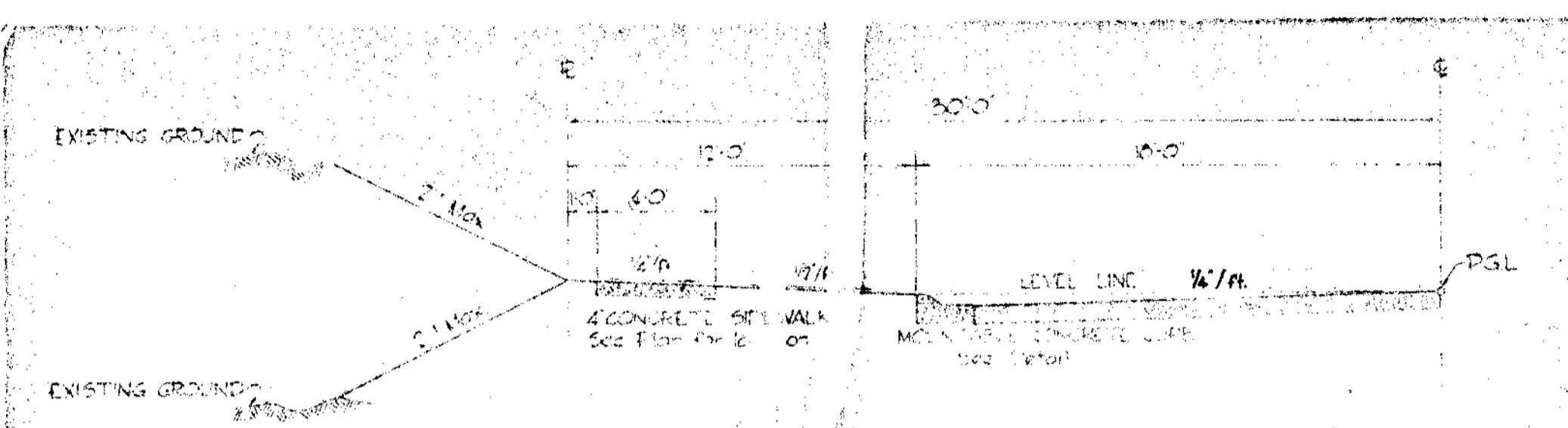
CHECKED BY: S. DATE: 10-11-68

APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE: 3/23/69

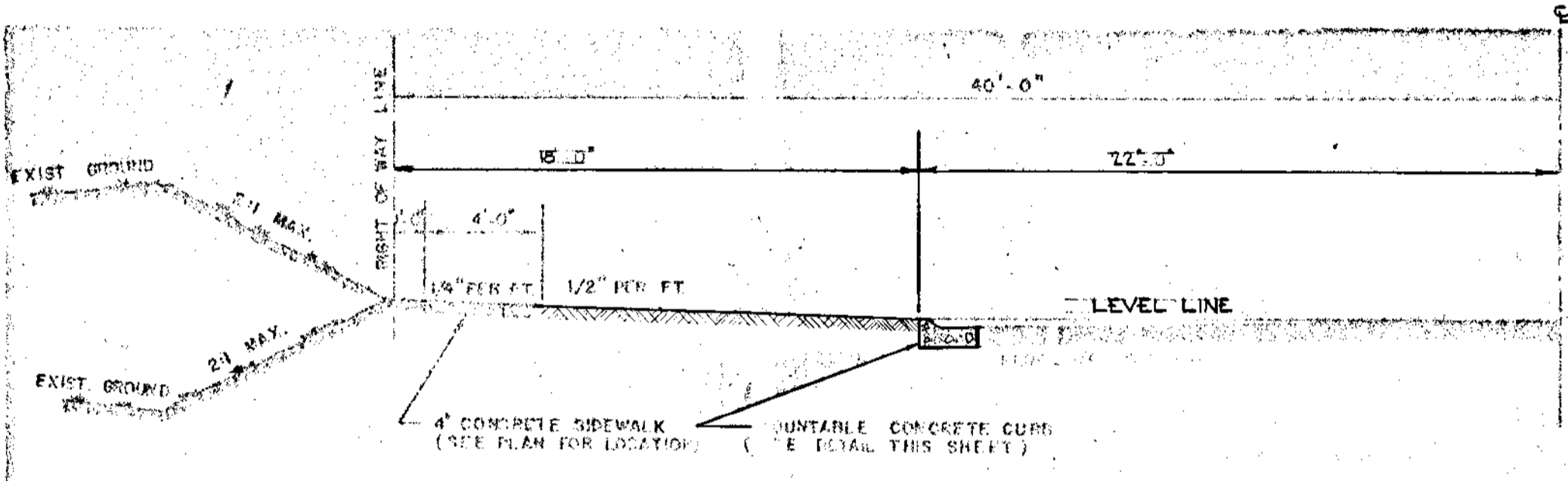




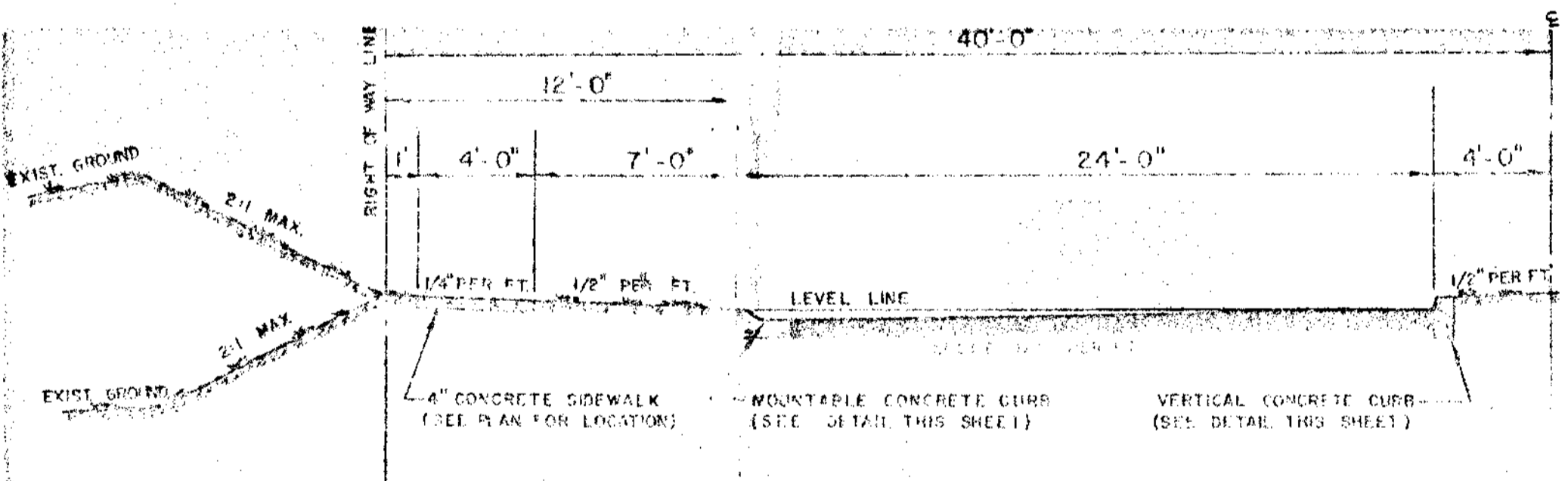
50' ROW TYPICAL L HALF-SECTION
SCALE: 1" = 5'



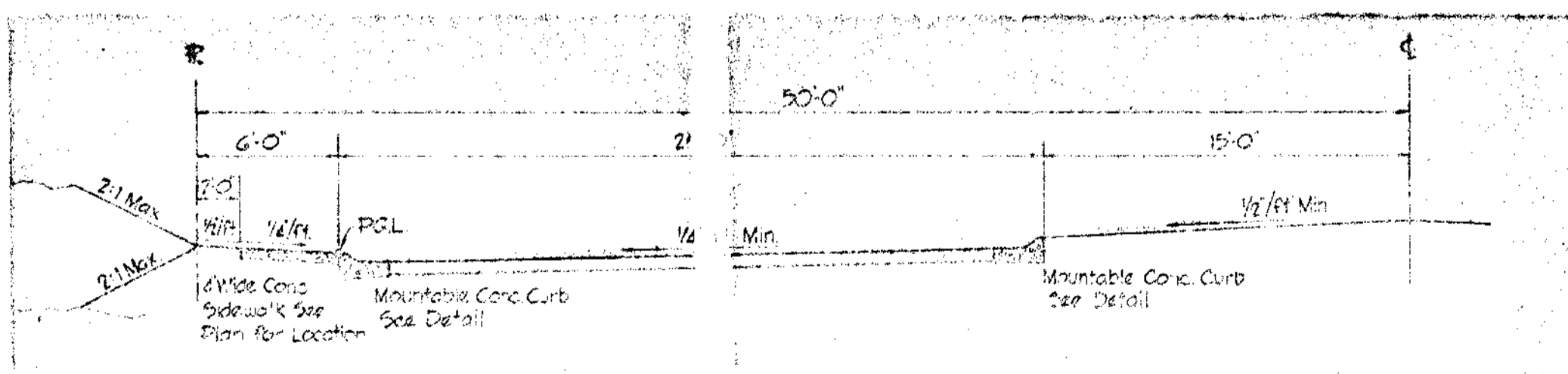
60' ROW TYPICAL HALF-SECTION
SCALE: 1" = 5'



80' ROW TYPICAL HALF-SECTION
SCALE: 1" = 5'



80' R.O.W. TYPICAL HALF-SECTION
SCALE: 1" = 5'



TYPICAL CUL-DE-SAC HALF-SECTION
NO SCALE

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

CLEARING AND GRADING
SUBGRADE
BASE COURSE
BINDER COURSE
SURFACE COURSE

ARTICLE C-1
ARTICLE C-2
ARTICLE C-3 OR C-3A
ARTICLE C-3B
ARTICLE C-3C

NOTE:
PAVEMENT TO BE CONSTRUCTED IN ACCORDANCE
WITH THE HOWARD COUNTY ROAD CONSTRUCTION
CODE AND SPECIFICATIONS LANE DIB. 18105

8" PAVEMENT DETAIL
NO SCALE

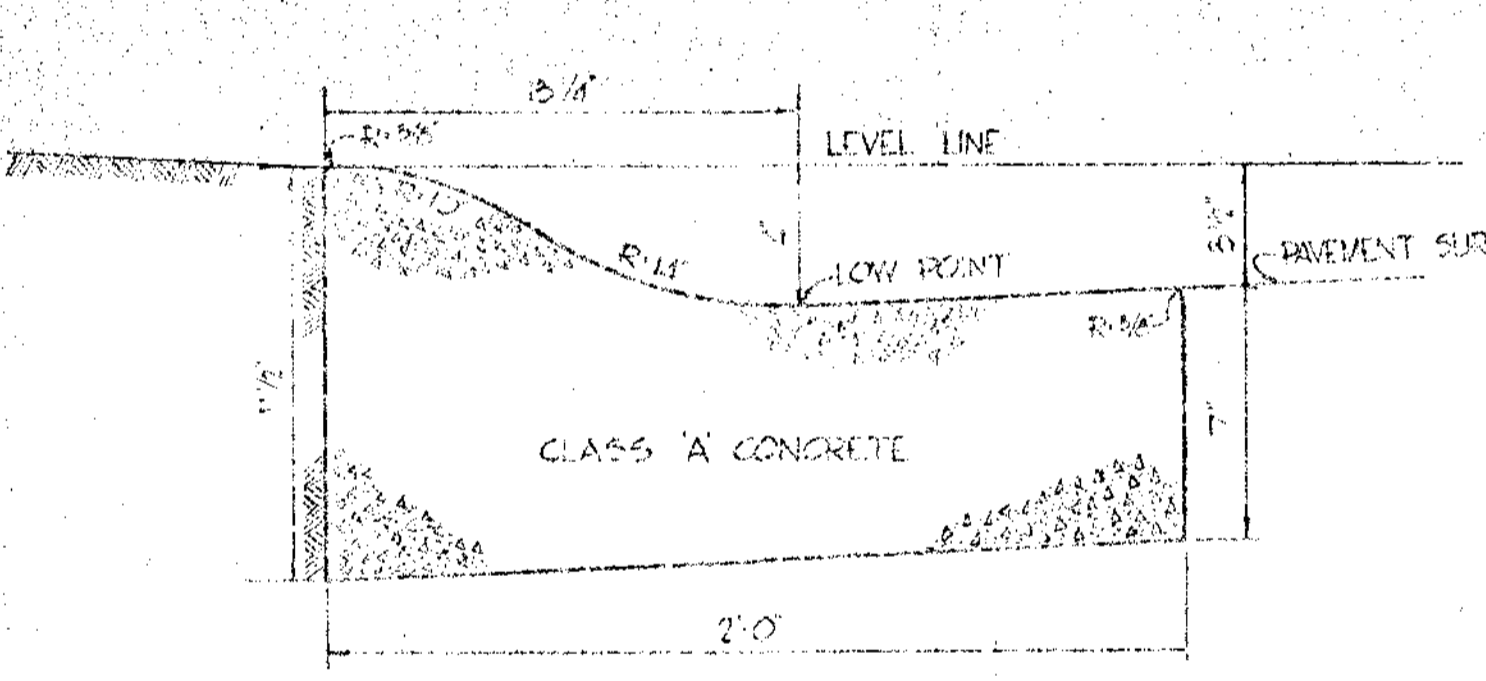
BITUMINOUS CONCRETE SURFACE	3"	BAND C-3	FINAL PHASE
BITUMINOUS CONCRETE BASE PLACED IN ONE COURSE	4"	BAND C-2 OR C-3	FIRST PHASE

CLEARING AND GRADING
SUBGRADE
BASE COURSE
SURFACE COURSE

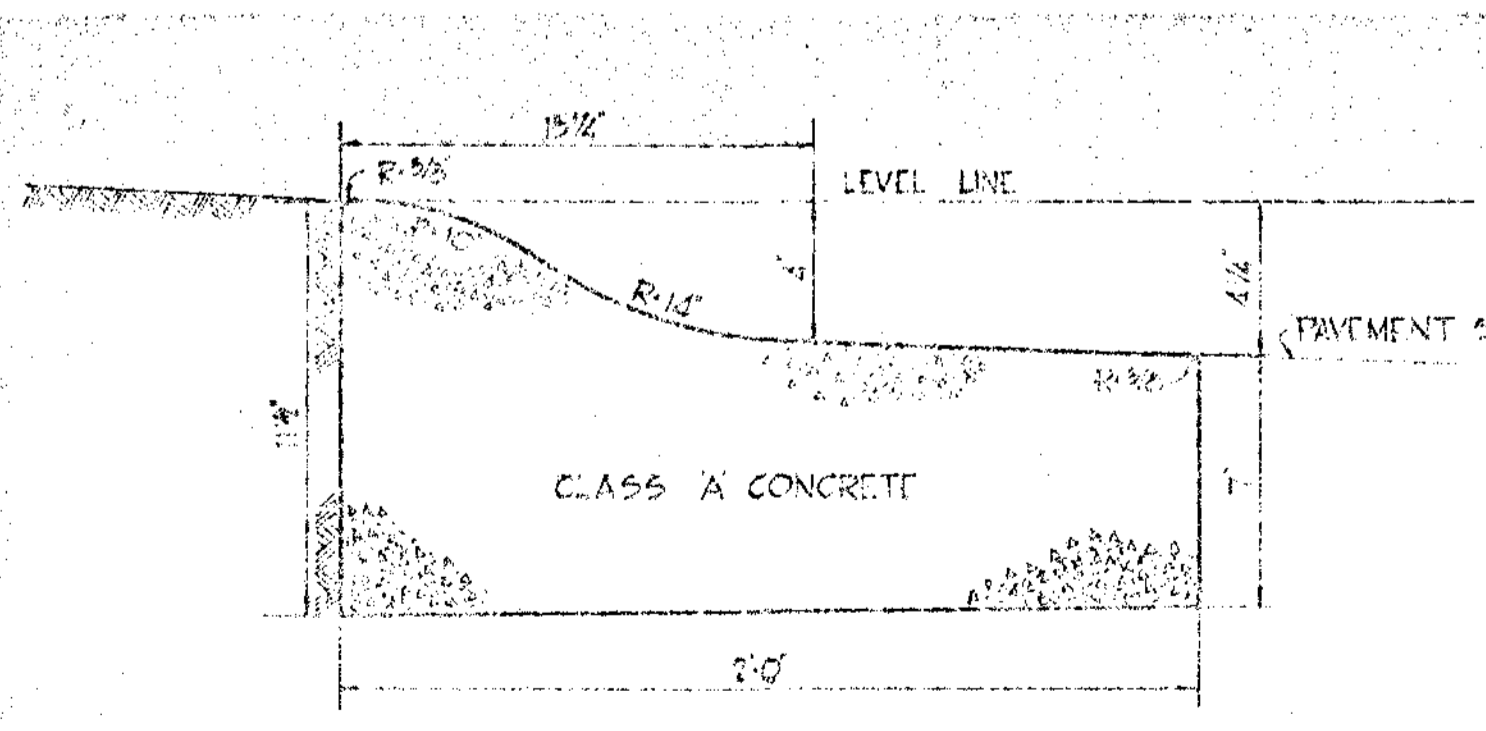
ARTICLE C-1
ARTICLE C-2
ARTICLE C-3 OR C-3B
ARTICLE C-3C

NOTE:
PAVEMENT TO BE CONSTRUCTED IN ACCORDANCE
WITH THE HOWARD COUNTY ROAD CONSTRUCTION
CODE AND SPECIFICATIONS LANE DIB. 18105

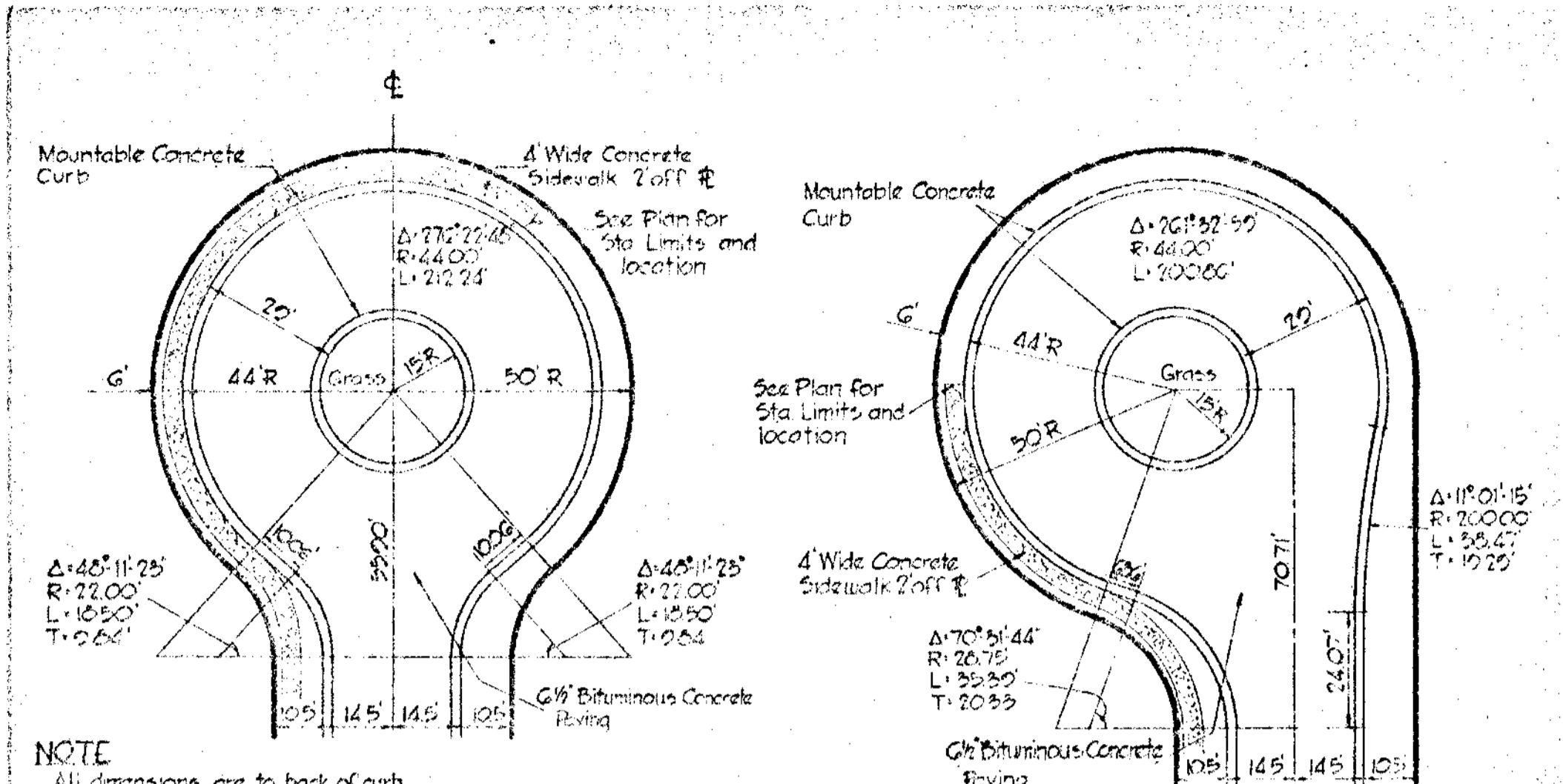
6 1/2" PAVEMENT DETAIL
NO SCALE



MOUNTABLE CONCRETE CURB
NO SCALE



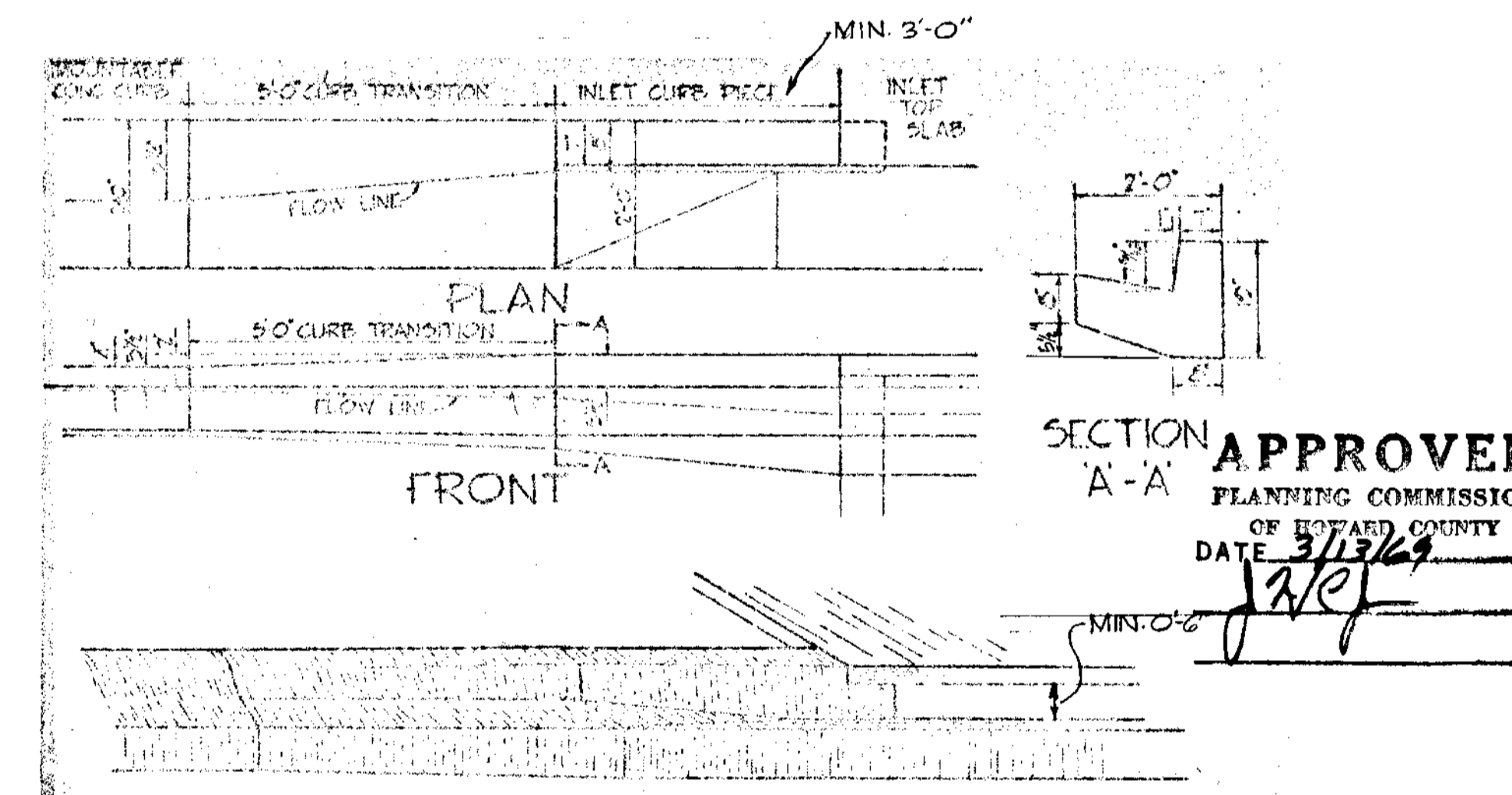
MOUNTABLE CONCRETE CURB
FOR CUL-DE-SAC ISLANDS
NO SCALE



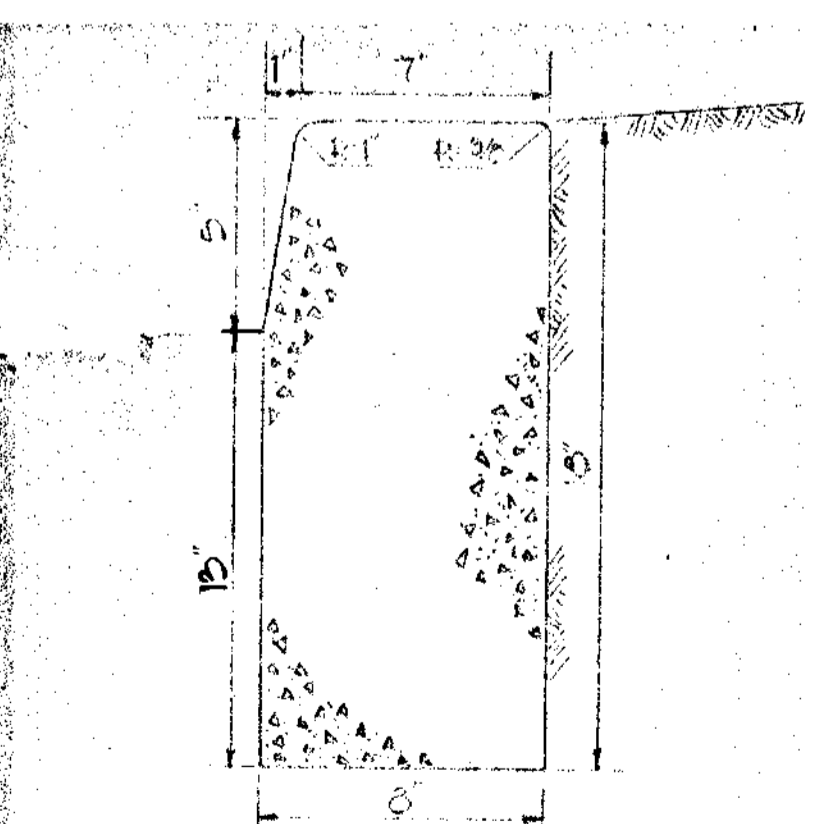
NOTE:
All dimensions are to back of curb
Total length 260.36

NOTE:
All dimensions are to back of curb
Total length 303.15

DETAIL 'A' DETAIL 'B'
TYPICAL CUL-DE-SAC DETAILS
SCALE: 1" = 30'



5' CURB TRANSITION
(TO BE PRECAST)



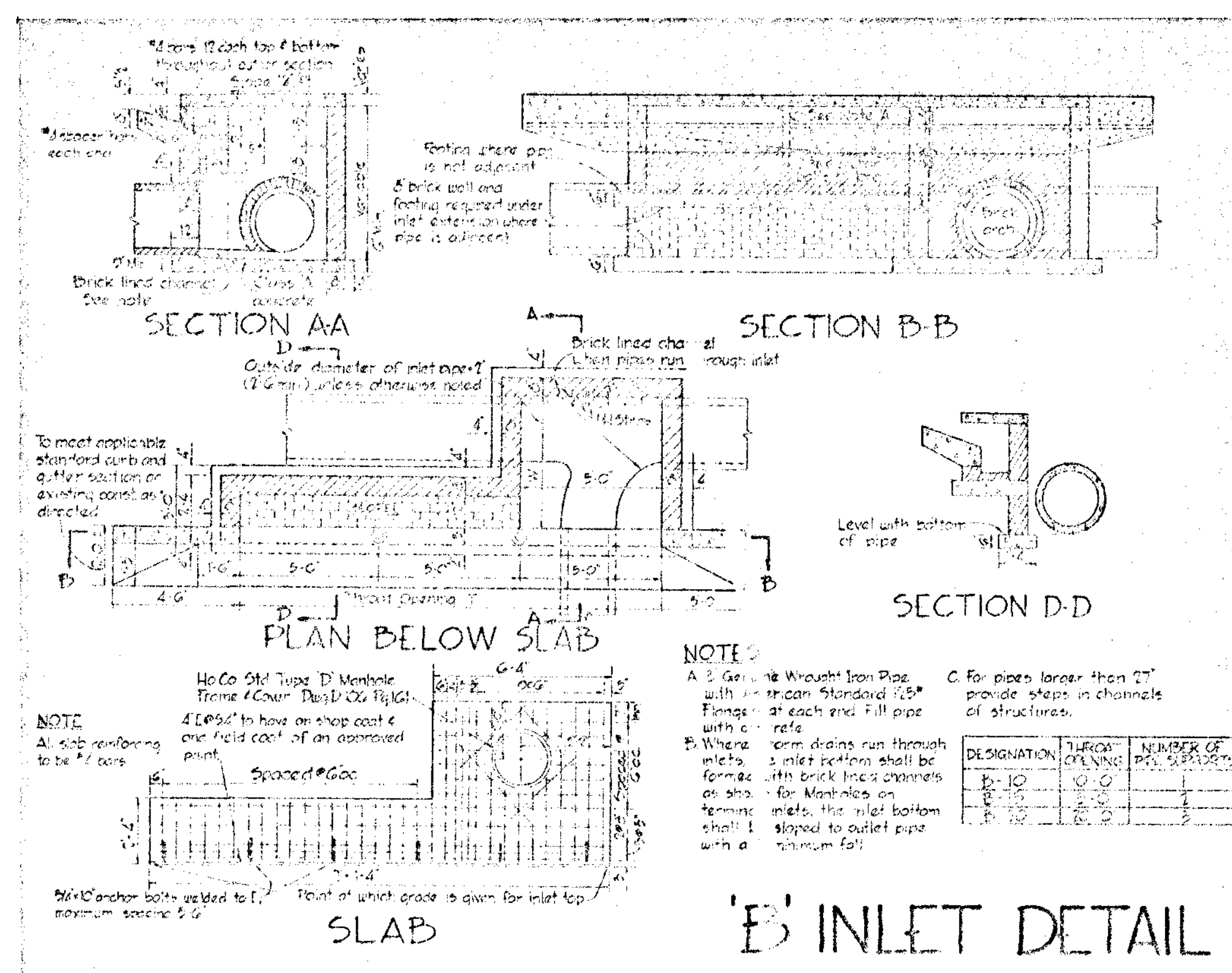
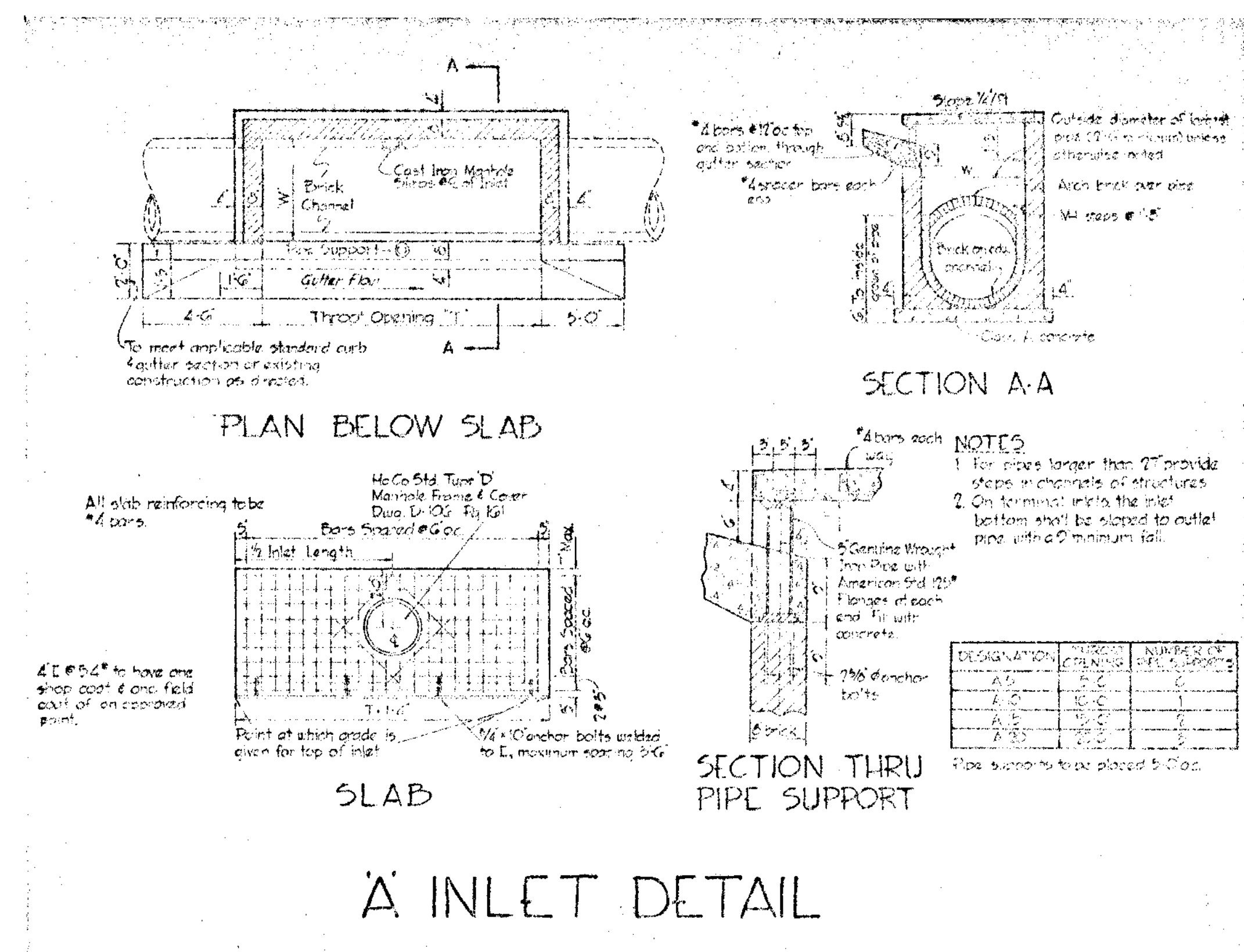
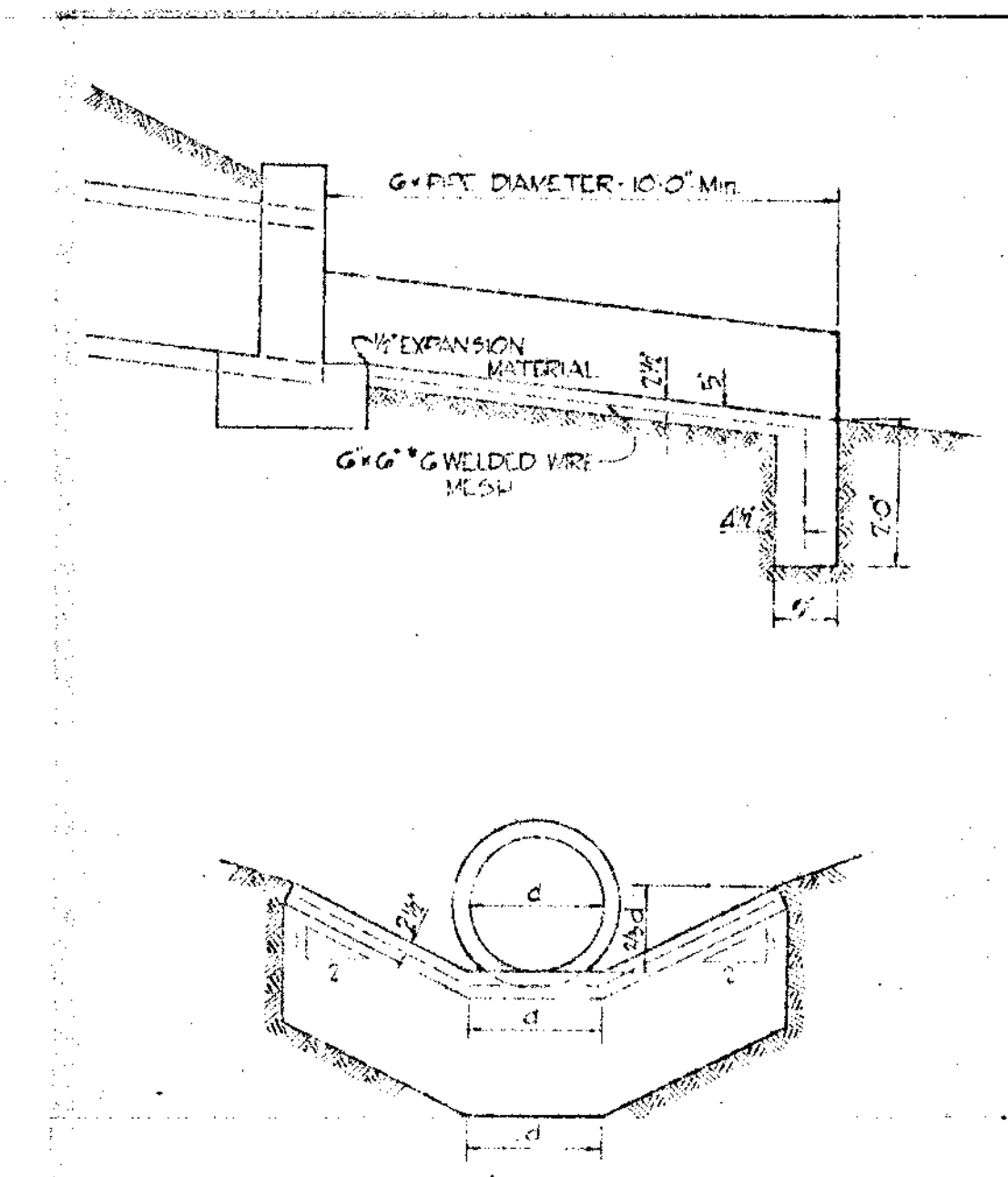
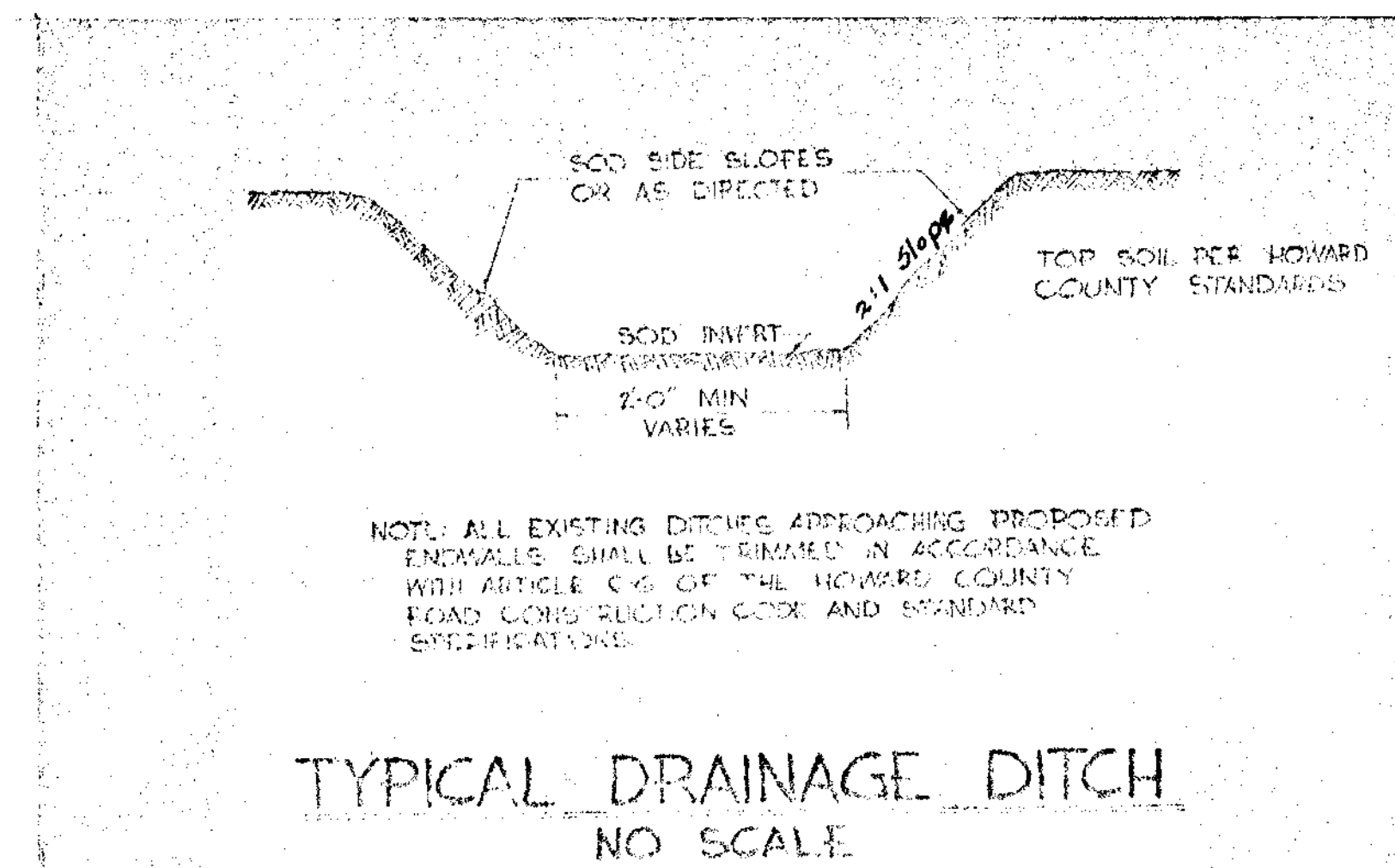
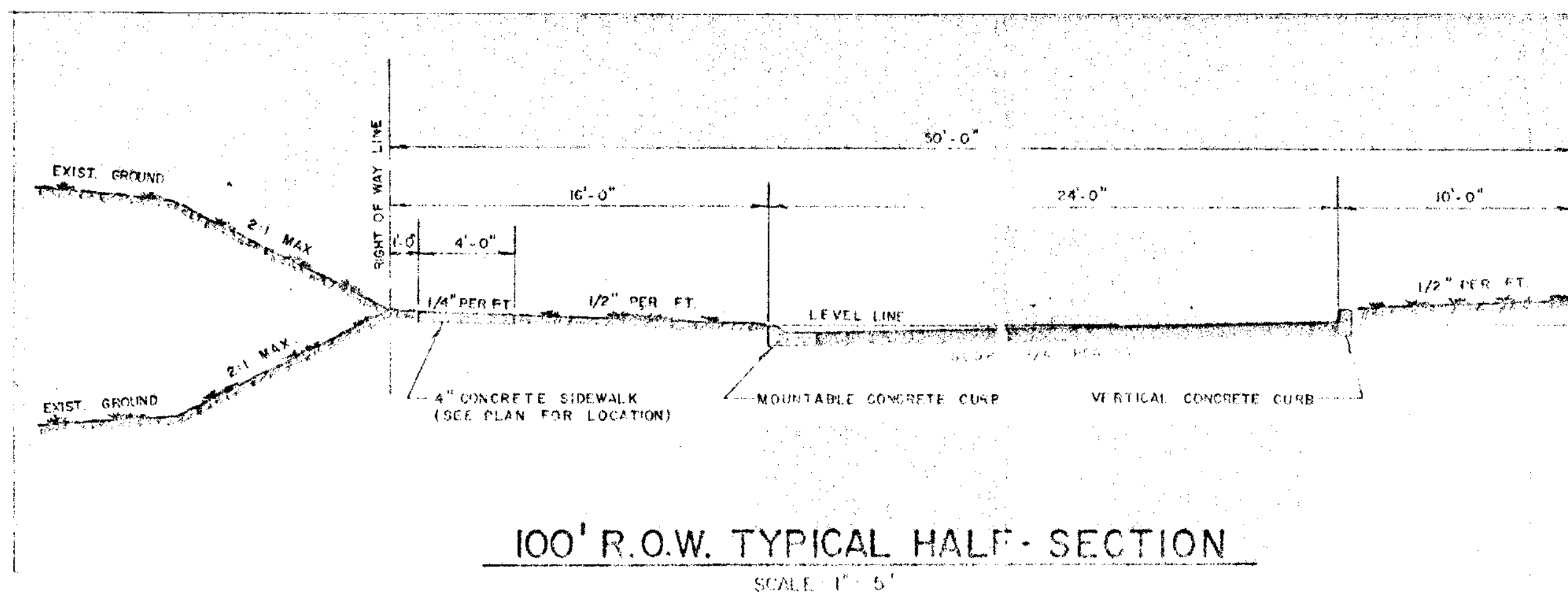
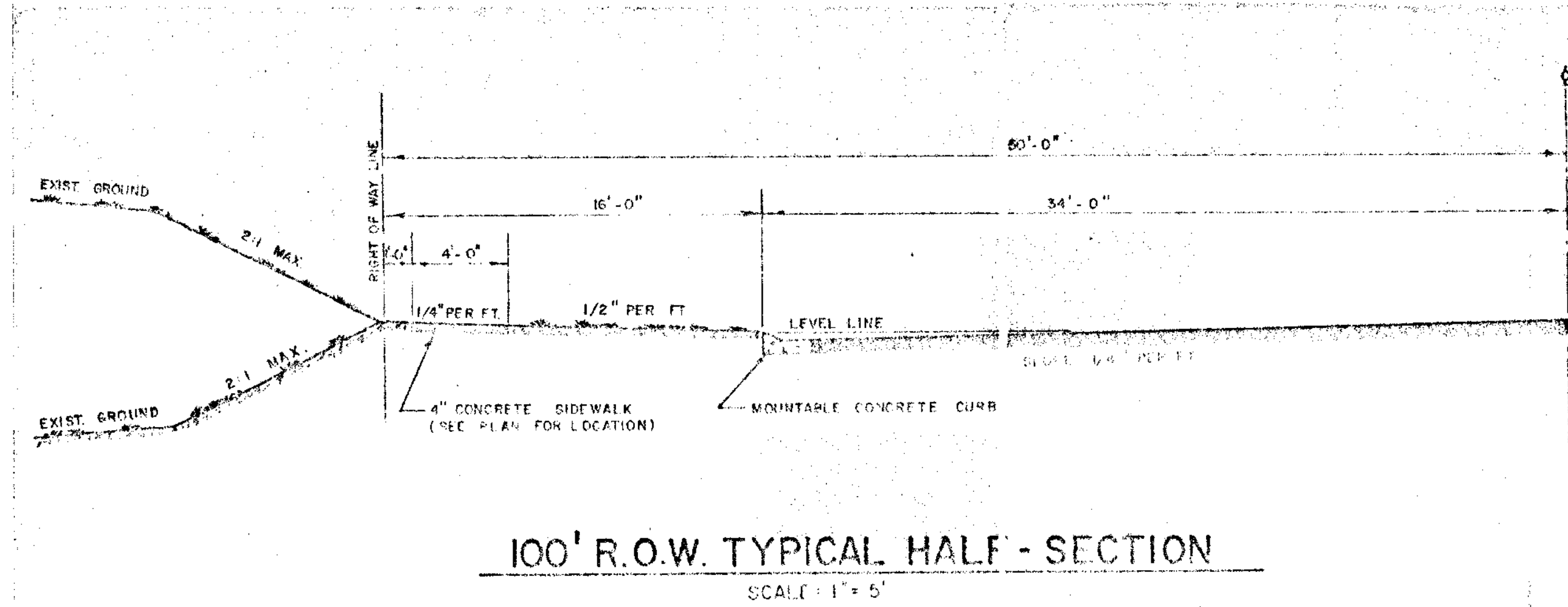
VERTICAL CONCRETE CURB
NO SCALE

APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE 3/13/69
[Signature]



Richard P. Browne
5238

BROWNE-PANDULLO & ASSOCIATES ENGINEERS COLUMBIA, MARYLAND		
Rev Date	Rev No	Revision Description
COLUMBIA 6TH ELECTION DISTRICT HOWARD COUNTY M A R Y L A N D		
OWNER AND DEVELOPER HOWARD RESEARCH AND DEVELOPMENT CORP. THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21210		
PROJECT AREA VILLAGE OF OAKLAND MILLS SEC. 1 THUNDER HILL AREA 4		
PROJECT TITLE DETAILS		
Des By	Scale AS SHOWN	Dwg No 24 of 27
Drn By	Date 10-11-68	C.C.F. No
CHK By	Approved	



APPROVED
PLANNING COMMISSION
OF HOWARD COUNTY
DATE 3/13/69
J. J. J.
RICHARD P. BROWNE 5238

BROWNE-PANDULLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

Rev Date	Rev No	Revision Description

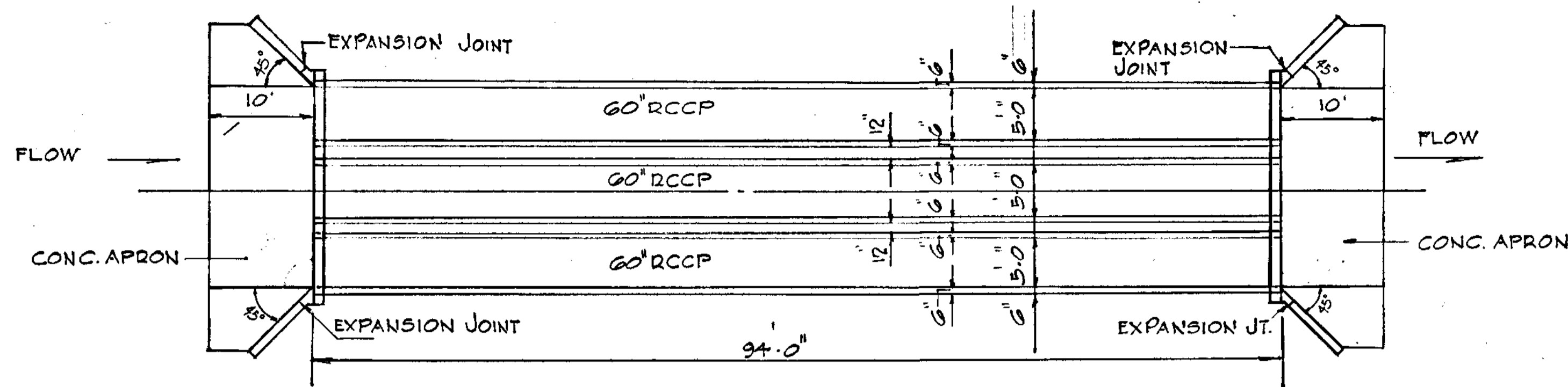
COLUMBIA
6th ELECTION DISTRICT VILLAGE OF OAKLAND HILL AREA 4
OWNER AND DEVELOPER
HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21210

PROJECT AREA
**VILLAGE OF OAKLAND HILLS SEC 1
THUNDER HILL AREA 4**

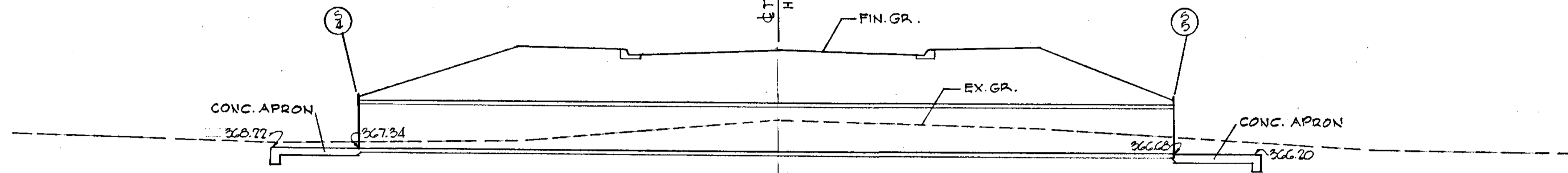
PROJECT TITLE
DETAILS

Des By: BR Scale AS SHOWN Dwg No 25 of 27
Drn By: F.T. & J.B. Date 10-11-68 C.C.F. No
Chk By: Approved

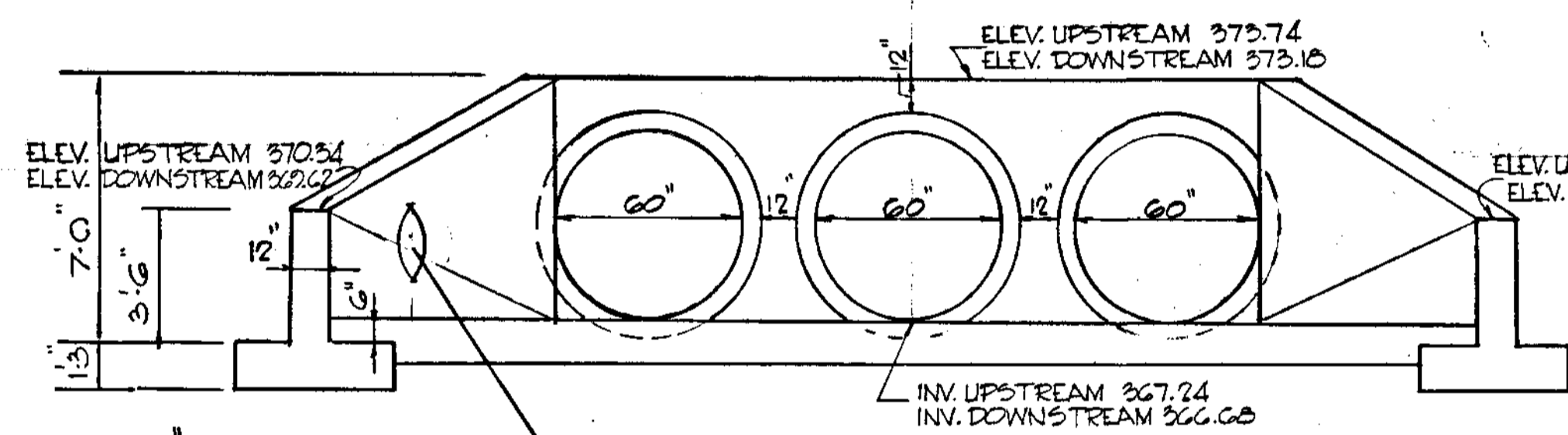
GENERAL NOTES:
LOADING: H 20 S-16-44
REINFORCING: REINFORCEMENT SHALL BE INTERMEDIATE GRADE DEFORMED BARS OF BILLET STEEL CONFORMING A.S.T.M. SPECS. A-15 & A-305.
CONCRETE: ALL CONC. SHALL BE CLASS 'A' 3000 PSI 28 DAY STRENGTH. CONC. SHALL CONFORM TO ASTM SPECS. C-39, G-17 & C-175 ALL EXPOSED SURFACES SHALL HAVE A CLASS 1 RUBBED FINISH, OTHER SURFACES SHALL BE AN ORDINARY SURFACE FINISH,
CHAMFER: ALL EXPOSED SURFACES SHALL BE CHAMFERED 3/4" x 3/4".



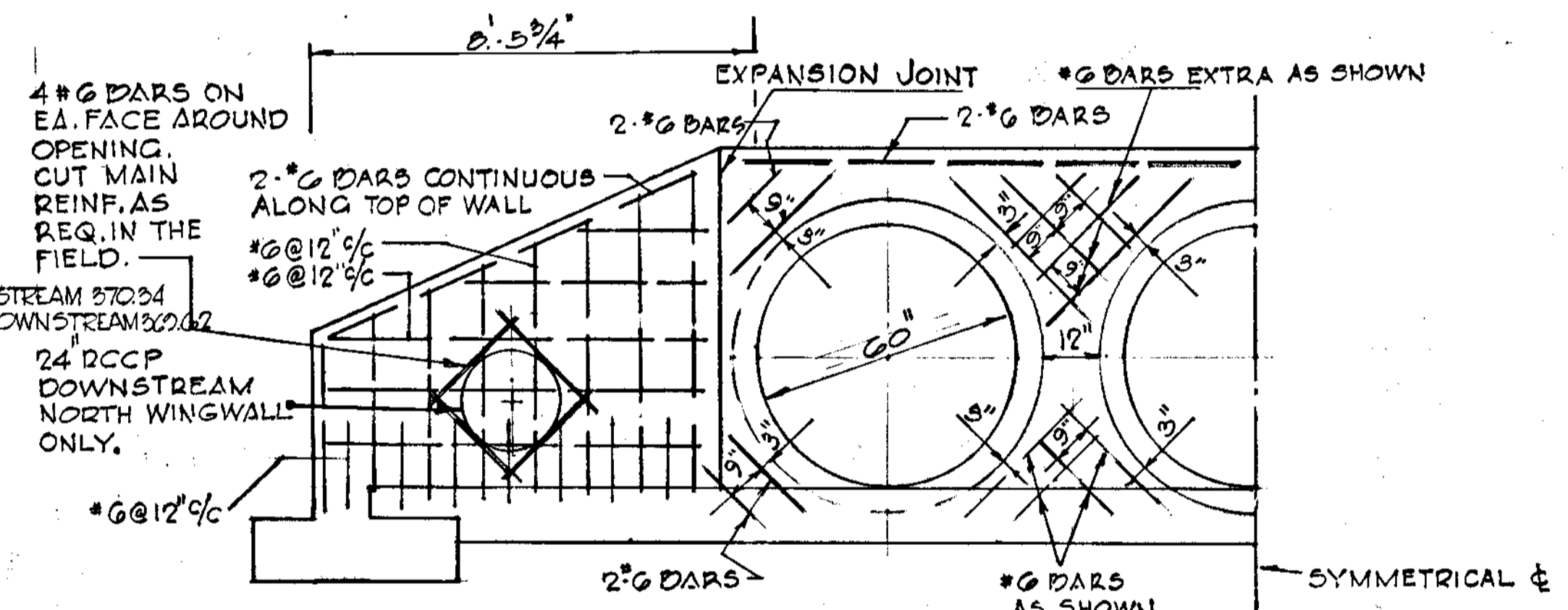
PLAN
SCALE: 1/8"=1'-0"



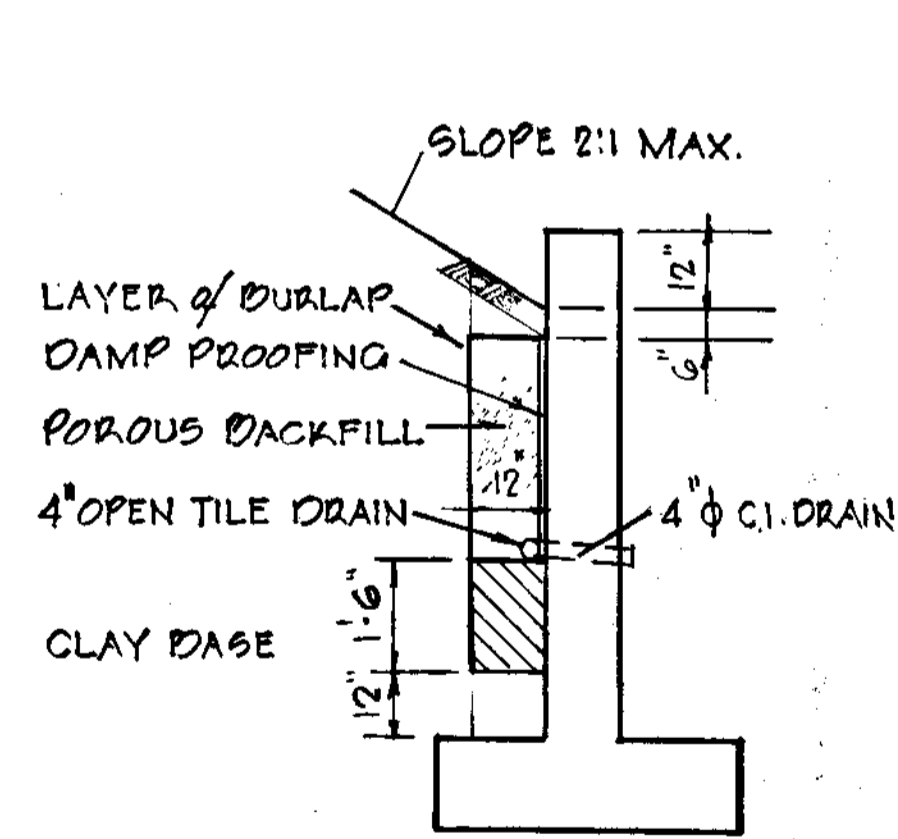
SECTION AT CHANNEL CENTER
SCALE: 1/8"=1'-0"



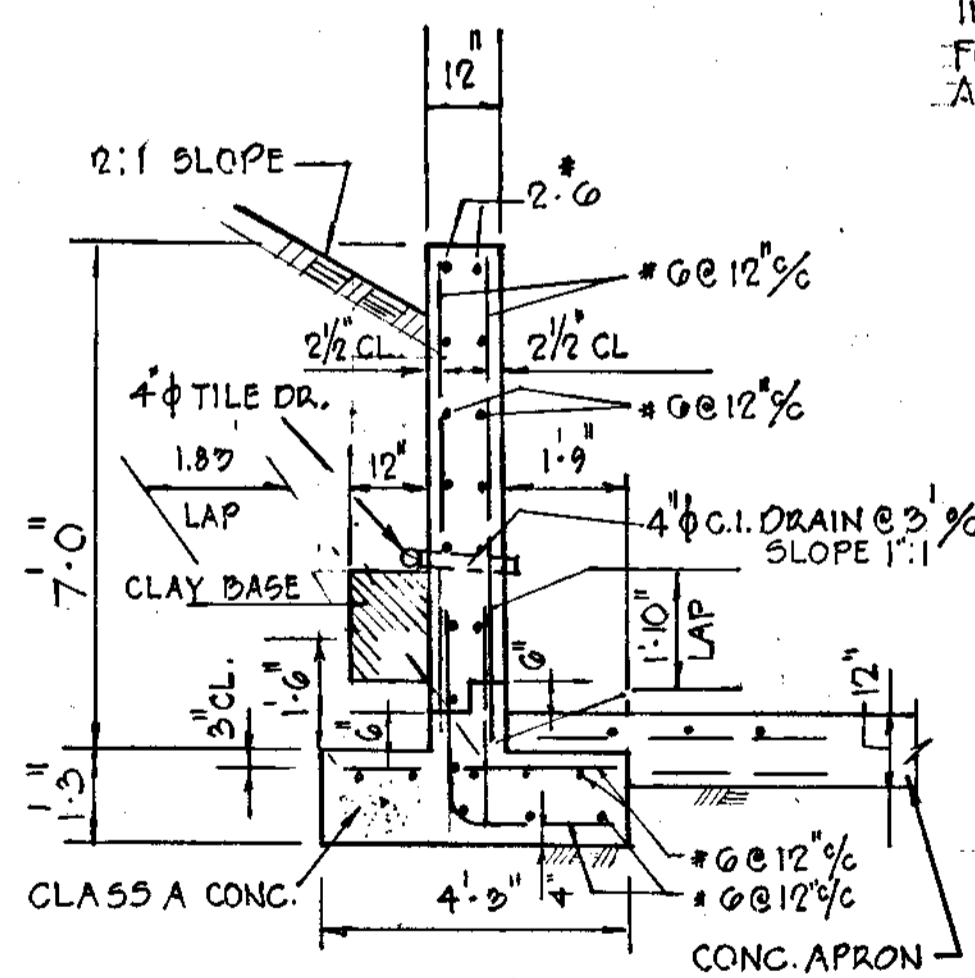
ELEVATION
UPSTREAM & DOWNSTREAM
SCALE: 1/4"=1'-0"



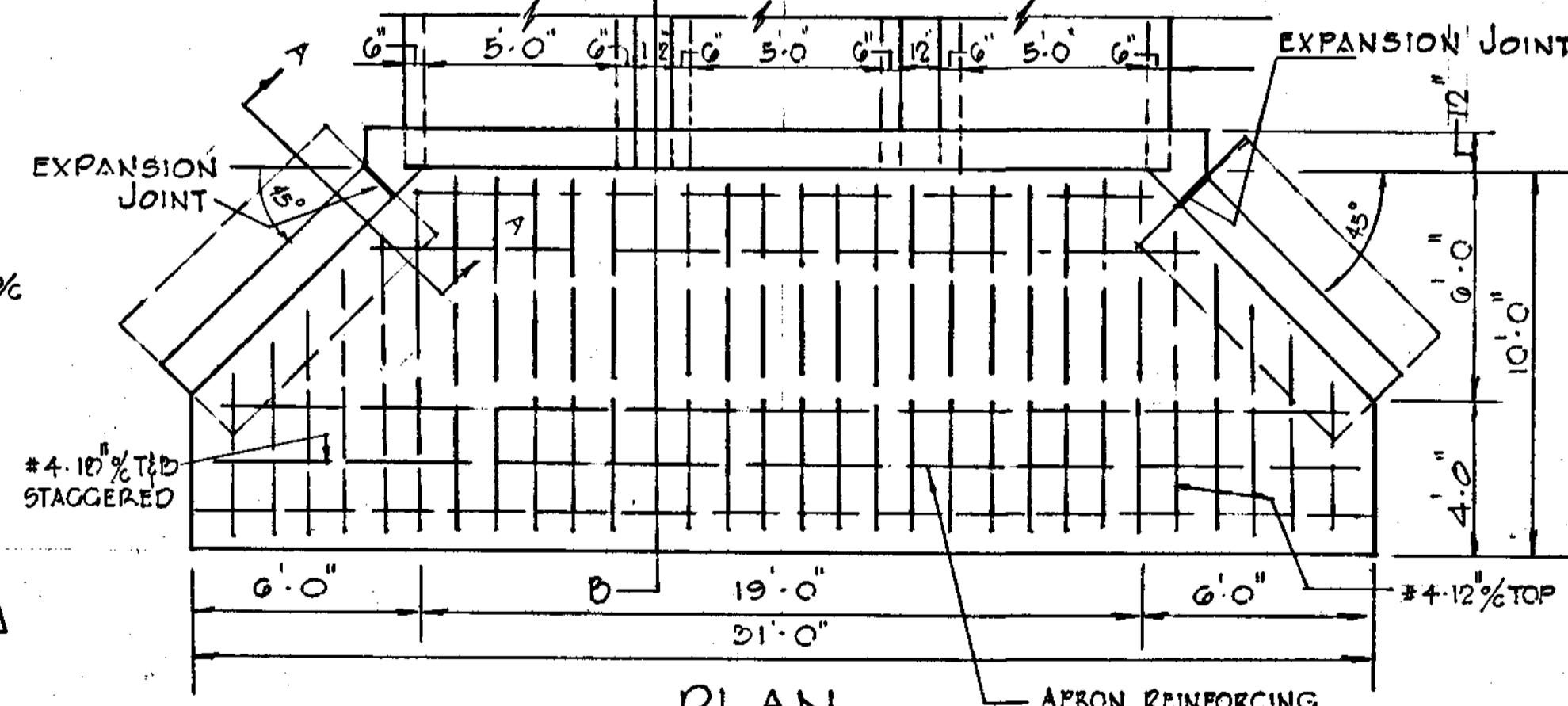
1/2 SECTION
WINGWALL & HEADWALL
UPSTREAM & DOWNSTREAM
SCALE: 3/8"=1'-0"



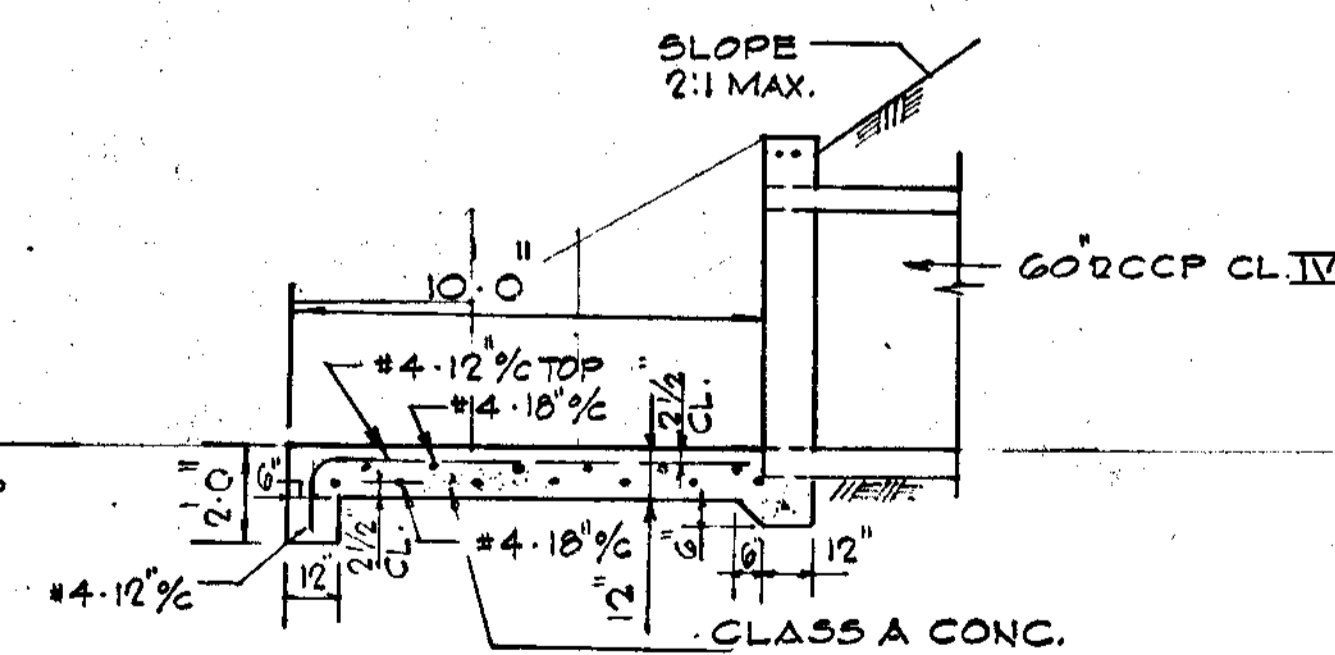
TYPICAL WALL
BACKFILL SECT.
SCALE: 3/8"=1'-0"



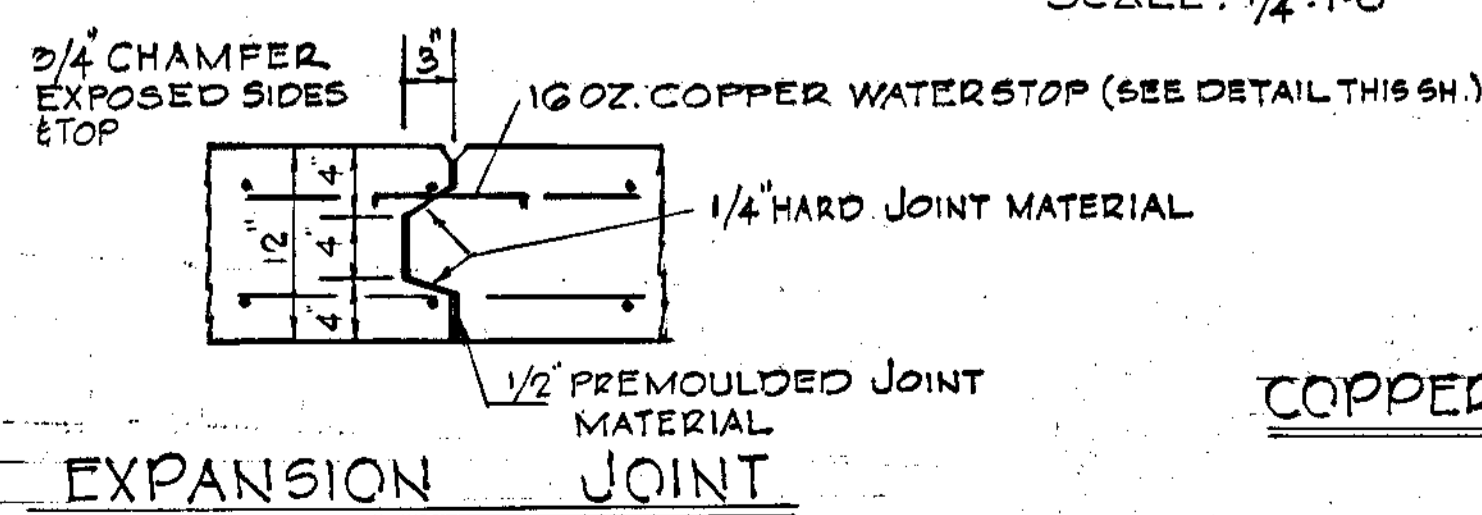
SECTION A-A
SCALE: 3/8"=1'-0"



PLAN
SCALE: 1/4"=1'-0"



SECTION B-B
SCALE: 1/4"=1'-0"



EXPANSION JOINT
DETAIL
SCALE: 1"=1'-0"

COPPER WATERSTOP DETAIL
SCALE: 1"=1'-0"

APPROVED
 PLANNING COMMISSION
 OF HOWARD COUNTY
 DATE 3/13/69
 [Signature]

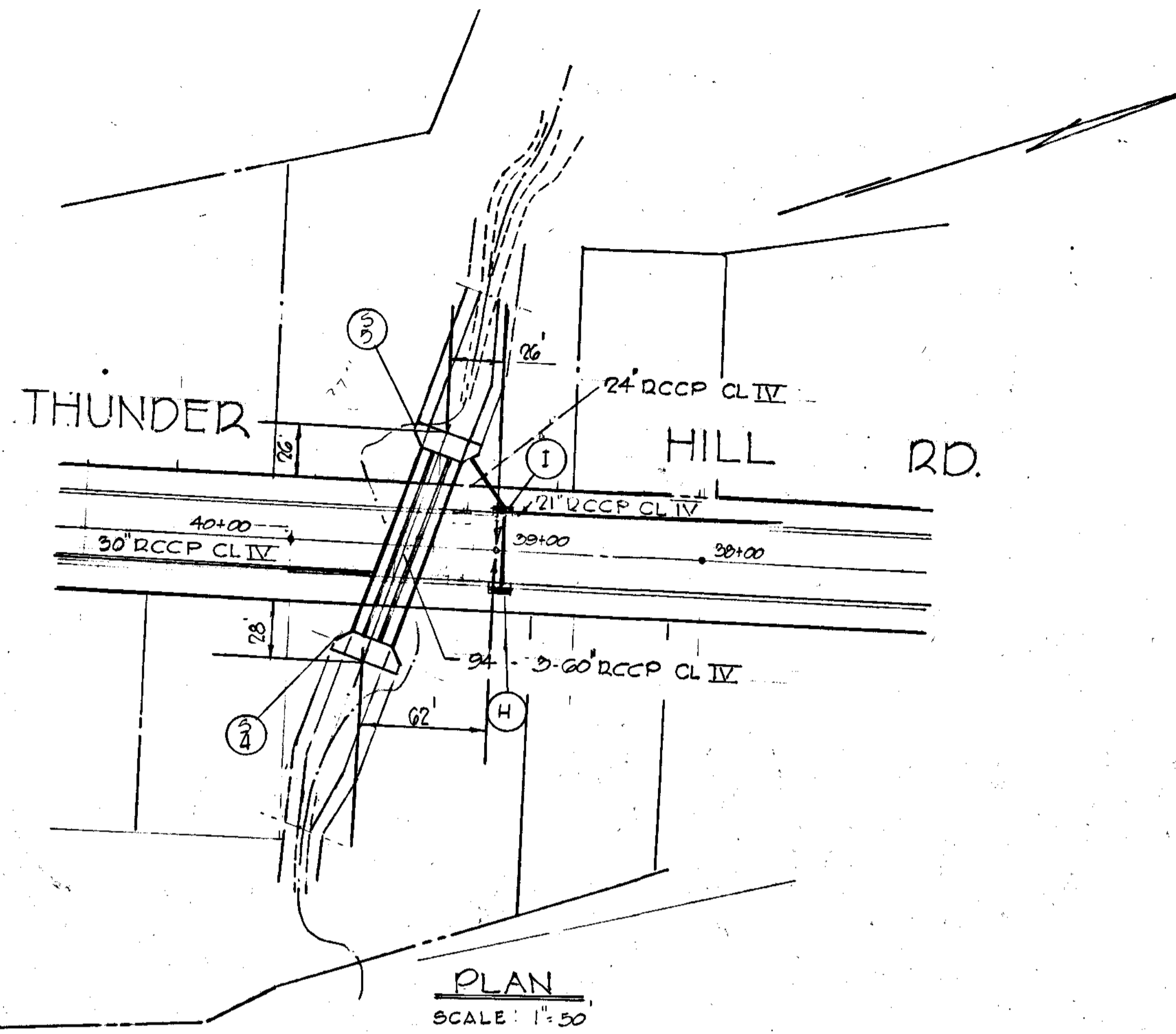


RICHARD P. BROWNE
 5138

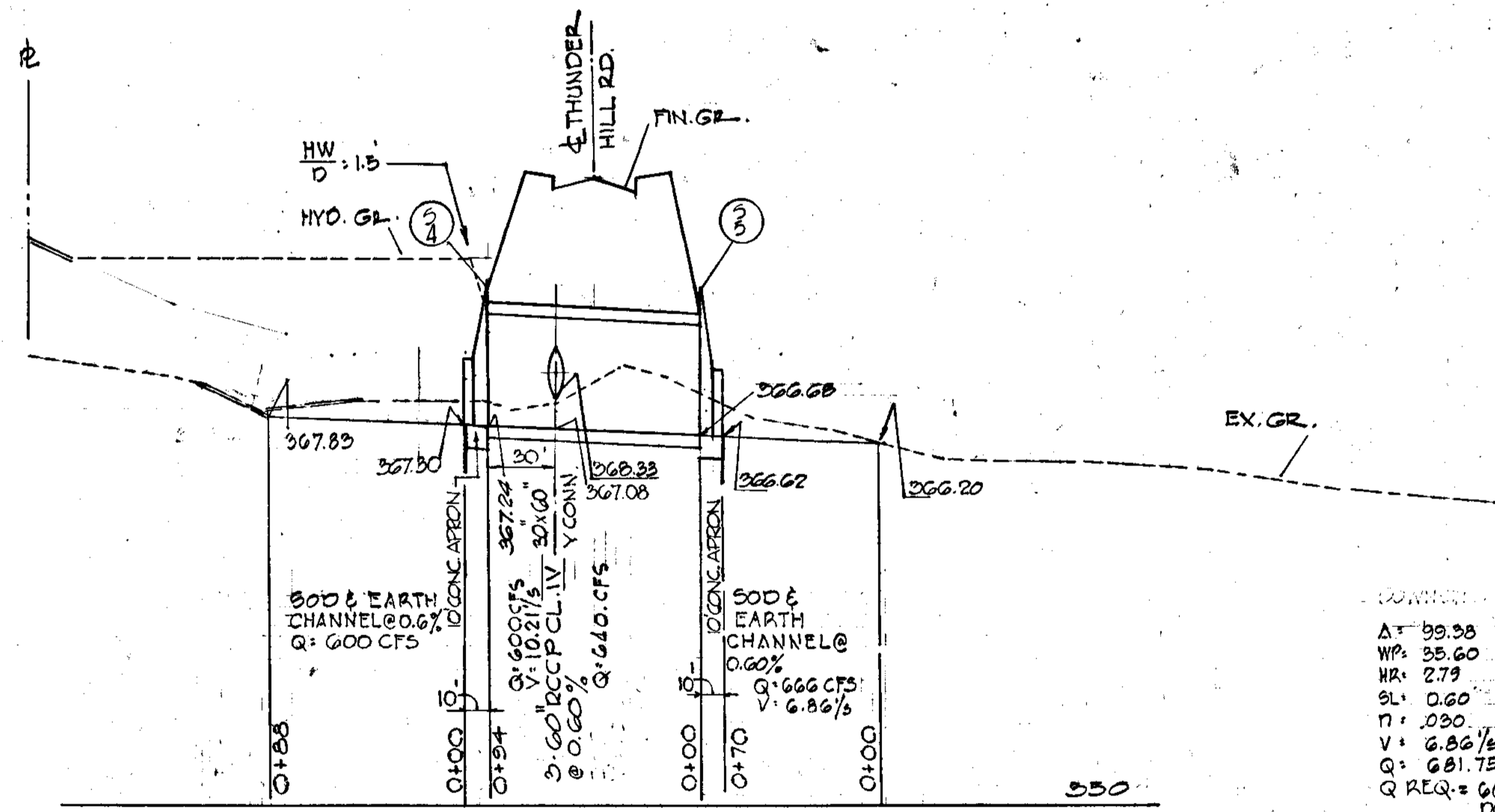
BROWNE-PANDULLO & ASSOCIATES
 ENGINEERS
 COLUMBIA, MARYLAND

Rev Date	Rev No	Revision Description

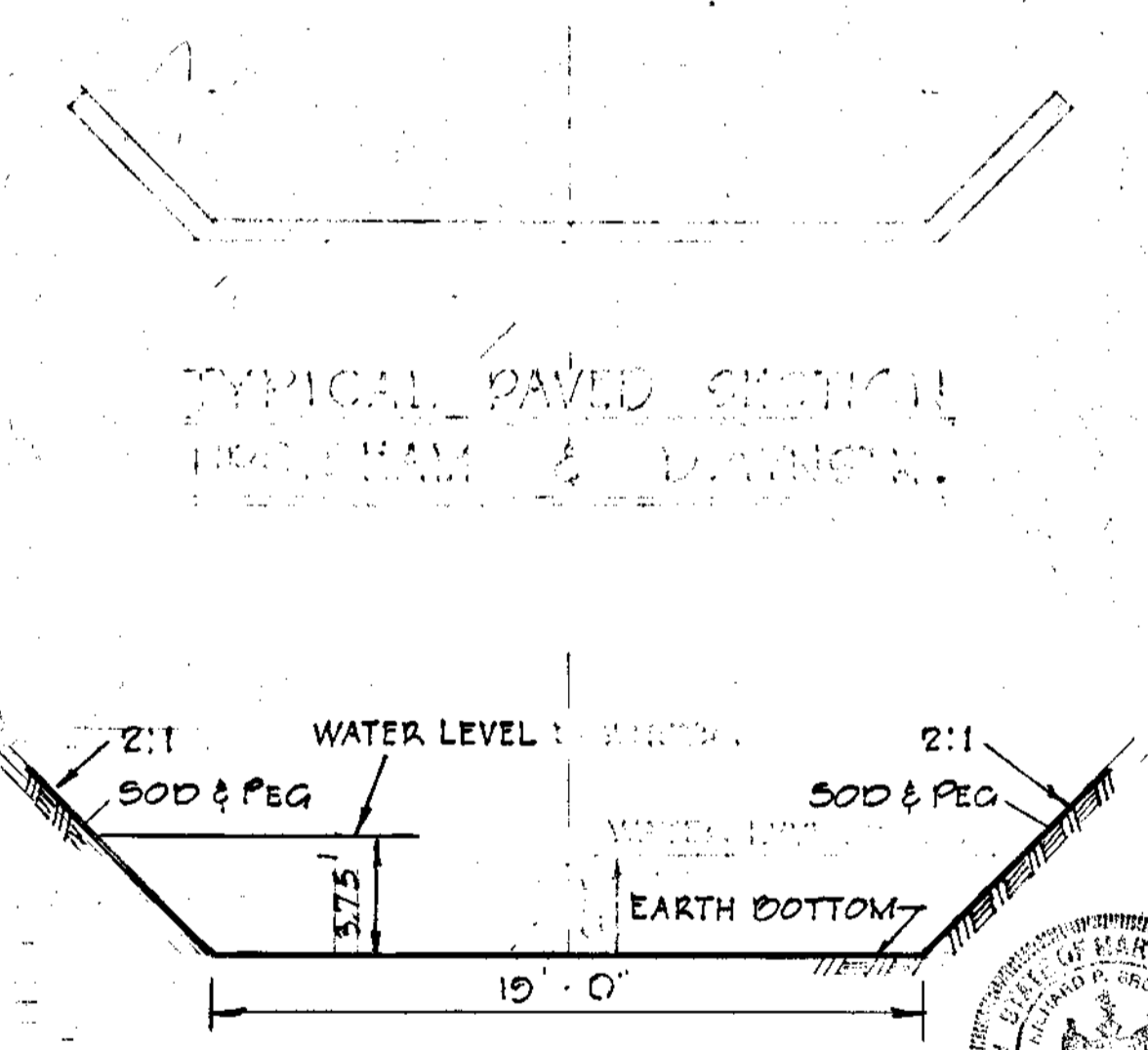
COLUMBIA
 MARYLAND
 OWNER AND DEVELOPER
 HOWARD RESEARCH AND DEVELOPMENT CORP.
 THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21210
 PROJECT AREA VILLAGE OF OAKLAND MILLS
 SECTION I AREA 4
 PROJECT TITLE STRUCTURAL DETAILS
 3-60" RCCP THUNDER HILL RD.
 Des By TKS Scale AS SHOWN Dwg No 26 of 27
 Drn By TKS Date 10-11-68 C.C.F. No
 Chk By S Approved



PLAN
SCALE: 1"=50'



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



DOWNSTREAM
 AT: 39.38
 WP: 35.60
 NR: 2.79
 SL: 0.60
 N: 0.20
 V: 6.86 1/2
 Q: 681.75 CFS
 Q REQ. = 665.76 CFS
 DOWNSTR.
 Q REQ. = 600 CFS
 UPSTREAM

TYPICAL GODED SECTION
UPSTREAM & DOWNSTR.

SCALE: 1"=5'

APPROVED
 PLANNING COMMISSION
 OF HOWARD COUNTY
 DATE: 3/13/69
J.W.E.J.



Richard P. Browne
 RICHARD P. BROWNE 5238

BROWNE-PANUELLO & 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 4		
PROJECT TITLE PLAN & PROFILE 3.60" RCCP - THUNDER HILL RD.		
Des By TKS	Scale As Shown	Dwg No 27 of 27
Drn By TKS	Date 10-11-68	C.C.F. No
Chk By S	Approved	