

**LEGEND**

- MAJOR WATERSHED AREA LIMITS
- ..... INTERMEDIATE WATERSHED AREA LIMITS
- (A1) INTERMEDIATE WATERSHED DESIGNATION

**DRAINAGE SYSTEM "A" :**

- A-1 = 0.20± ACRES    A-7 = 5.73± ACRES
- A-2 = 2.16± ACRES    A-8 = 0.82± ACRES
- A-3 = 1.90± ACRES    A-9 = 0.30± ACRES
- A-4 = 0.21± ACRES    A-10 = 0.47± ACRES
- A-5 = 0.70± ACRES
- A-6 = 0.38± ACRES

**DRAINAGE SYSTEM "B" :**

- B-1 = 1.40± ACRES    B-4 = 0.36± ACRES
- B-2 = 4.06± ACRES    B-5 = 1.05± ACRES
- B-3 = 0.23± ACRES    B-6 = 3.62± ACRES

**DRAINAGE SYSTEM "C" :**

- C-1 = 3.96    C-4 = 0.90    C-7 = 2.60
- C-2 = 8.58    C-5 = 1.68    C-8 = 0.17
- C-3 = 0.33    C-6 = 0.23    C-9 = 1.54

**DRAINAGE SYSTEM "D" :**

- D-1 = 2.60± ACRES    D-4 = 0.35± ACRES
- D-2 = 2.58± ACRES    D-5 = 2.45± ACRES
- D-3 = 1.12± ACRES    D-6 = 0.49± ACRES

**APPROVED**  
 PLANNING COMMISSION  
 OF HOWARD COUNTY  
 DATE 12/16/68  
*J.H.C.*

**BROWNE-PANDULLO & ASSOCIATES**  
 ENGINEERS  
 COLUMBIA, MARYLAND

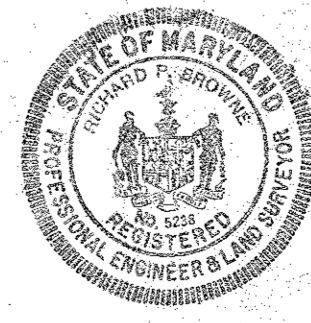
Rev Date	Rev No	Revision Description

**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  
 THUNDER HILL AREA 2

PROJECT TITLE  
**DRAINAGE MAP**

Des By: W.J.K.	Scale: 1" = 100'	Dwg. No. 2 OF 16
Dir By: J.C.	Date:	C.C.F. No.
Chk By:	Approved:	

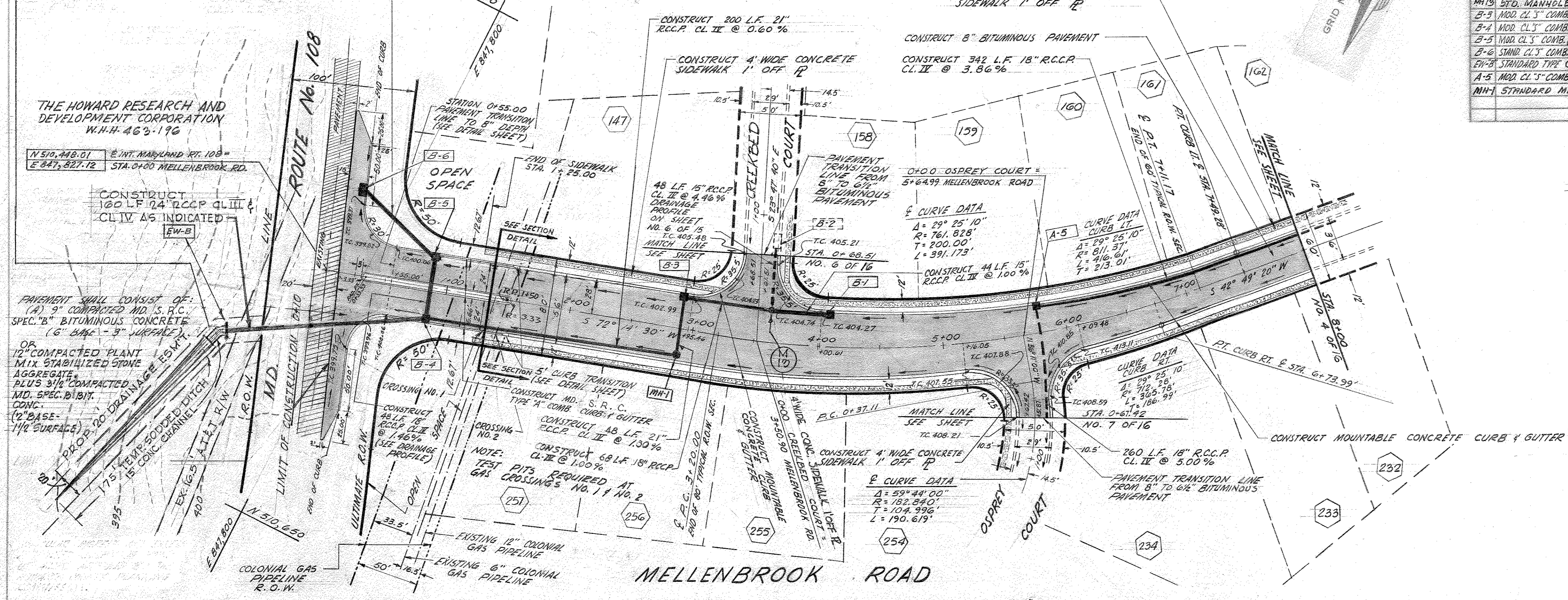


*Richard J. Brown*

NOTE: LOCATION OF OUTFALL DITCH, ENDWALL & PORTION OF PIPE IS TEMPORARY PENDING FUTURE DESIGN OF ROUTE NO. 108 (BY OTHERS)

CONSTRUCT 78 L.F. 18" R.C.C.P. CL. II @ 0.60% R.C.C.P. CL. II @ 0.60%

**PLAN**  
SCALE: 1" = 50'



STORM DRAINAGE STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	T.C. PELEV	REMARKS
B-1	MOD. CL. 5" COMB. (SINGLE GR.)	STA. 4+10.00, 2154' LT. OF E				SEE DETAIL SH. 14 OF 16
MH-9	STD. MANHOLE	STA. 3+63.00, 26.00' LT. OF E	399.98	399.19		HO. CO. STD. DRWG. D-109 P. 156
B-2	MOD. CL. 5" COMB. (SINGLE GR.)	STA. 2+90.00, 28.00' LT. OF E	398.45	398.12	403.22	SEE DETAIL SH. 14 OF 16
B-4	MOD. CL. 5" COMB. (SINGLE GR.)	STA. 0+26.54, 28.00' RT. OF E	396.30	394.17	400.75	"
B-5	MOD. CL. 5" COMB. (SINGLE GR.)	STA. 0+26.54, 28.00' LT. OF E	395.25	395.05	400.75	"
B-6	STAND. CL. 5" COMB. (DOUBLE GR.)	STA. 0+25.00, 70.00' LT. OF E			400.12	DEPRESSIO-SEE DETAIL SH. 14 OF 16
EW-3	STANDARD TYPE C ENDWALL	AS SHOWN		391.80		HO. CO. STD. DRWG. D-109 P. 107
A-5	MOD. CL. 5" COMB. (SINGLE GR.)	STA. 5+80.00, 23.00' LT. OF E	406.80	405.00	411.42	SEE DETAIL SH. 14 OF 16
MH-1	STANDARD MANHOLE	STA. 2+50.00, 24.00' LT. OF E	397.70	397.50		HO. CO. STD. DRWG. D-109 P. 156

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-PANDULLO & ASSOCIATES**  
ENGINEERS  
COLUMBIA, MARYLAND

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

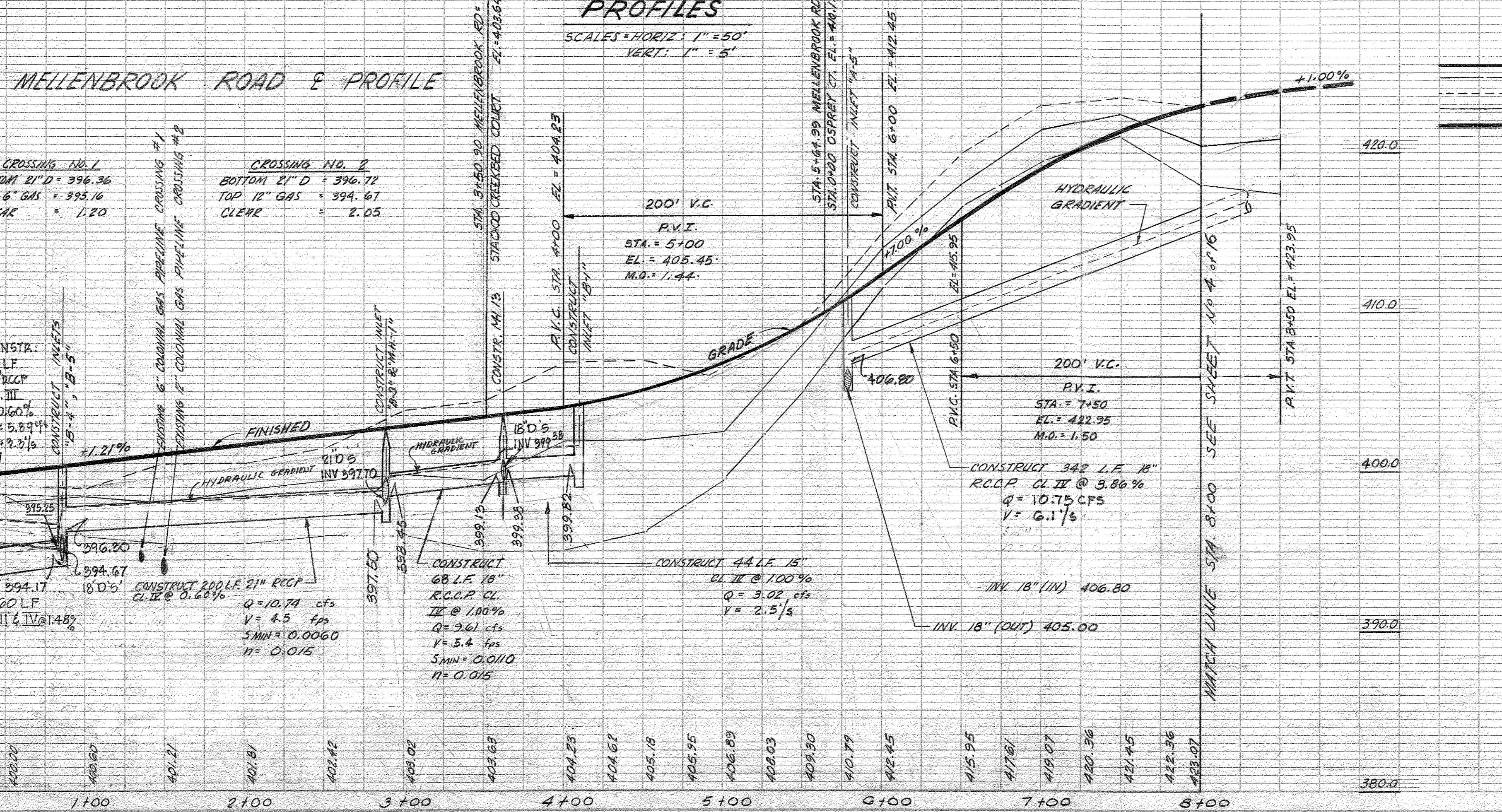
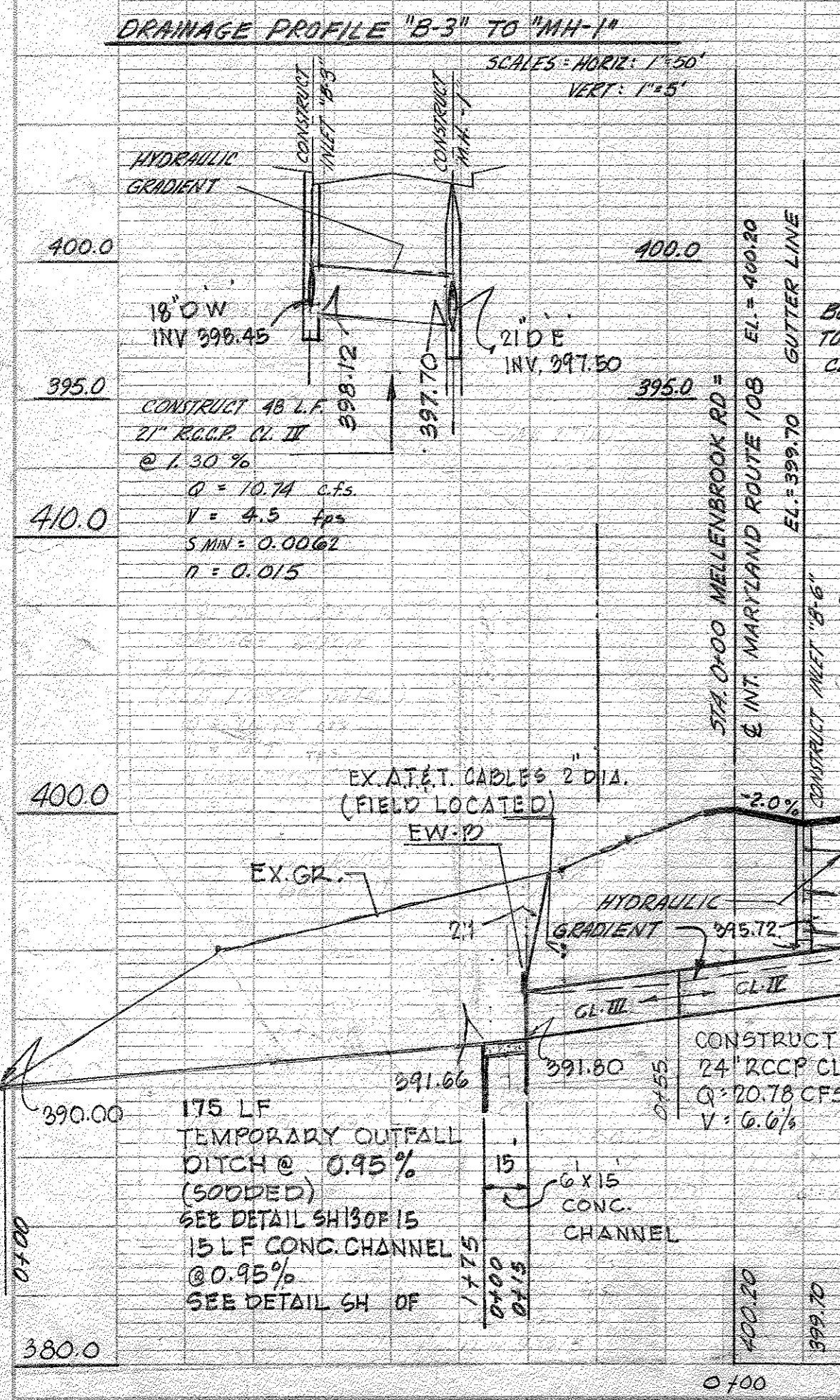
**COLUMBIA**  
6TH ELECTION DISTRICT HOWARD COUNTY  
OWNER AND DEVELOPER

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

PROJECT AREA:  
VILLAGE OF OAKLAND MILLS SECTION I  
THUNDER HILL AREA 2

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

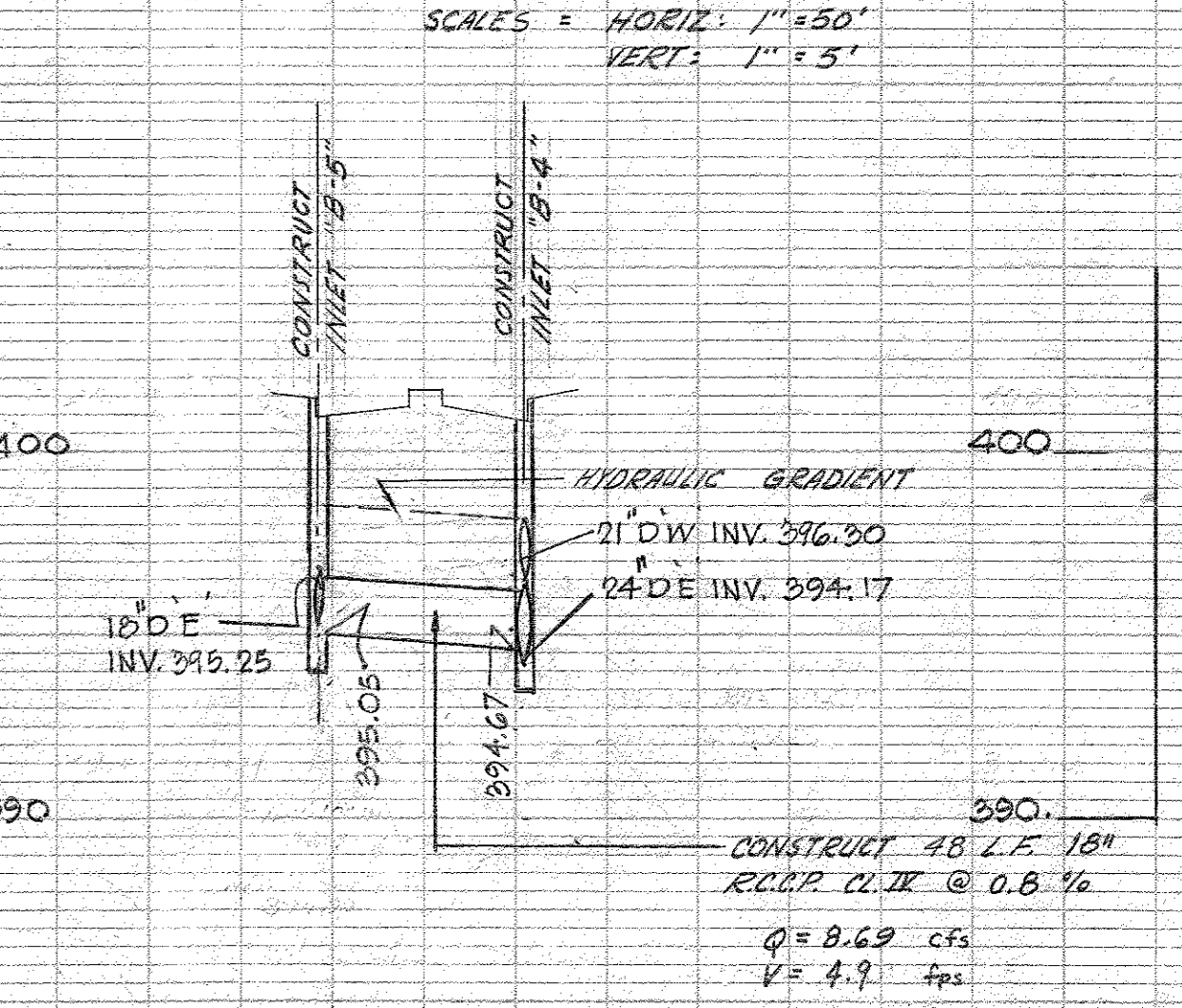
Des. By: *[Signature]*    Scale: AS SHOWN    Dwg. No. 3 OF 16  
Dwn. By: J.V.M.    Date: JUNE 15, 1968    C.C.F. No.  
Chk. By:    Approved



**LEGEND**

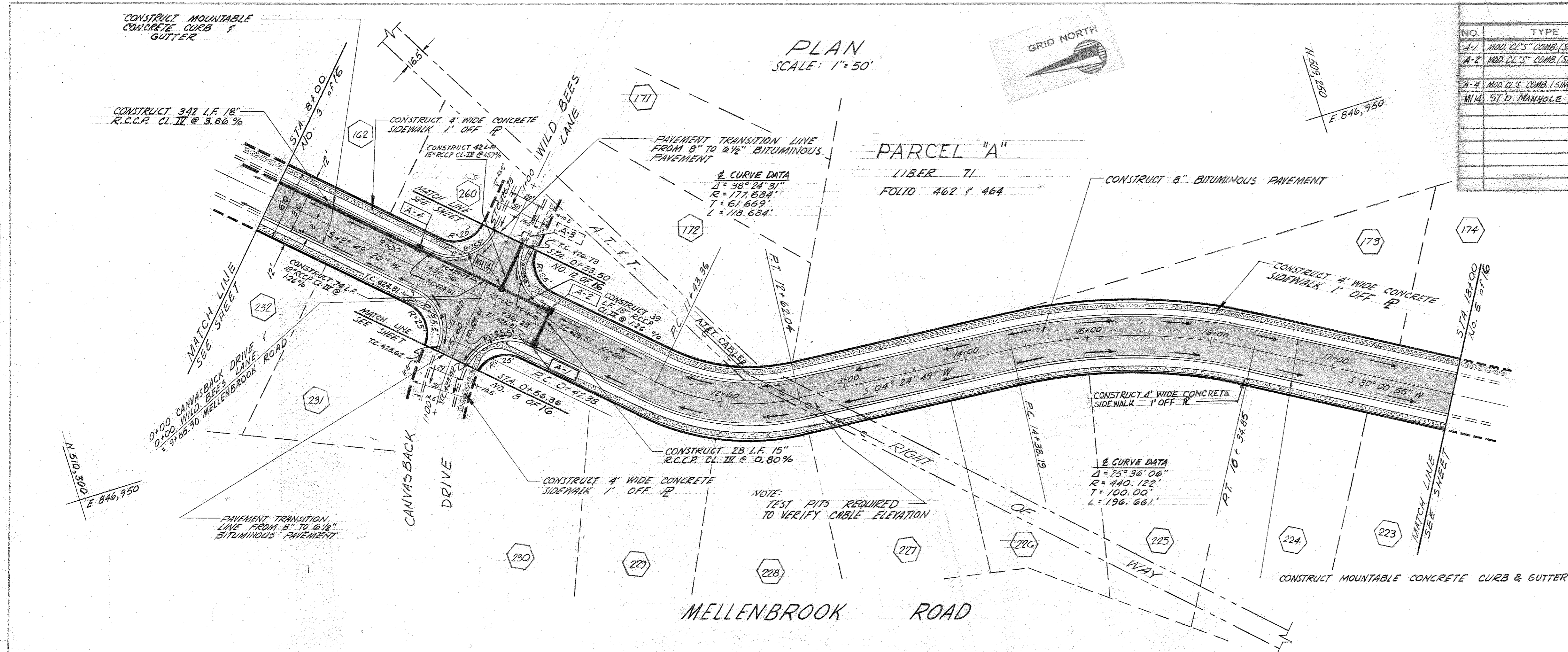
- EXISTING GROUND 25' RT. R.O.W.
- EXISTING GROUND 25' LT. R.O.W.
- EXISTING GROUND ON &
- FINISHED GRADE

**DRAINAGE PROFILE "B-4" TO "B-5"**



DATE	
BY	
NO.	
DATE	
BY	
NO.	
DATE	
BY	
NO.	

DATE	
BY	
NO.	
DATE	
BY	
NO.	
DATE	
BY	
NO.	



STORM DRAINAGE STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	T.C.P. ELEV.	REMARKS
A-1	MOD. CL. 5" CONB. (SINGLE GR.)	STA. 10+43.00, 18.00' LT. OF R	422.13	426.19	426.19	SEE DETAIL SH 14 OF 16
A-2	MOD. CL. 5" CONB. (SINGLE GR.)	STA. 10+43.00, 18.00' LT. OF R	421.91	421.66	426.19	"
A-4	MOD. CL. 5" CONB. (SINGLE GR.)	STA. 9+24.00, 18.00' LT. OF R	430.15	420.00	425.00	SEE DETAIL SH 14 OF 16
M.H.	57" D. MANHOLE	STA. 11+00.00, 12.50' LT. OF R	421.53	421.00	—	HO. CO. STD. DRAWG. D103 19158

**APPROVED**  
PLANNING COMMISSION  
OF HOWARD COUNTY  
DATE 12/19/68  
*J. J. J.*

**BROWNE-PANDULLO & ASSOCIATES**  
ENGINEERS  
COLUMBIA, MARYLAND

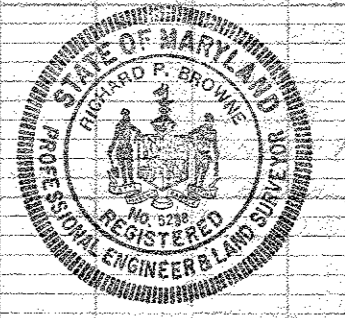
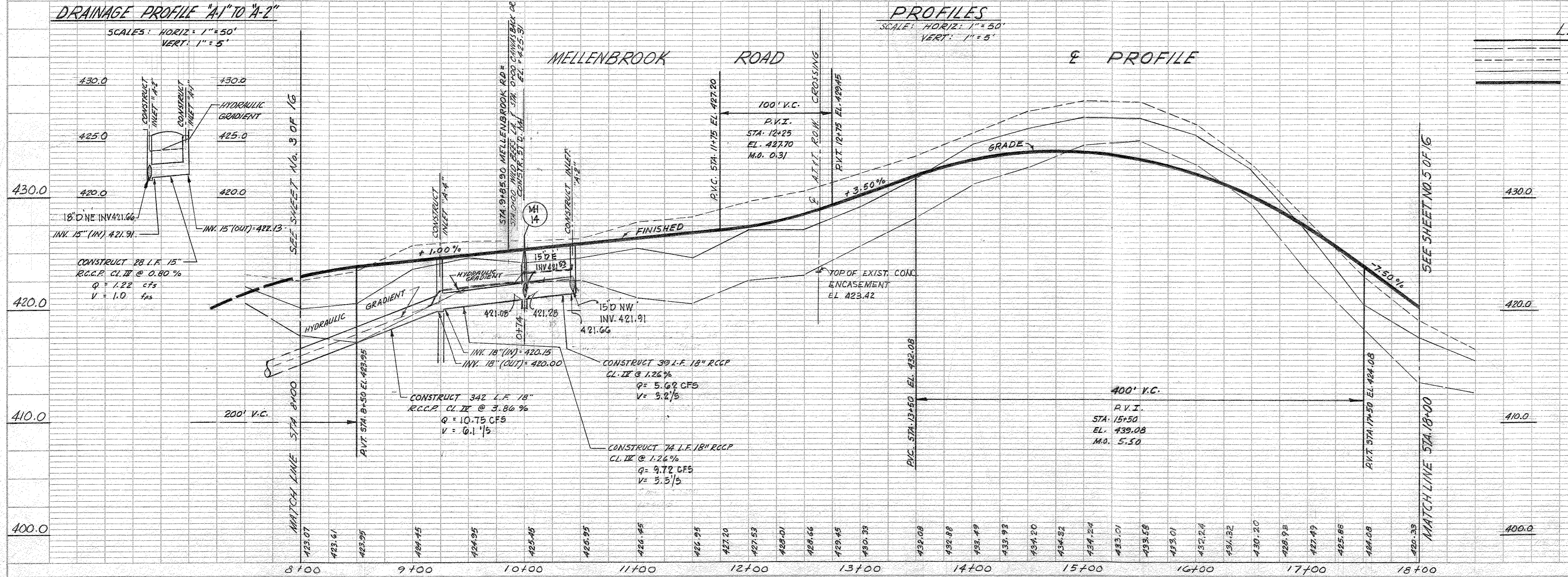
Rev. Date:    Rev. No:    Revision Description:

**COLUMBIA**  
MARYLAND  
5TH ELECTION DISTRICT HOWARD COUNTY  
OWNER AND DEVELOPER  
HOWARD RESEARCH AND DEVELOPMENT CORP.  
THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21212

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

PROJECT TITLE  
PLAN & PROFILE  
MELLENBROOK ROAD 8+00-18+00

Des. By: *W.K.*    Scale: AS SHOWN    Dwg. No: 4 OF 16  
Dwn. By: *J.V.M.*    Date: JUNE 15, 1968    C.C.F. No:  
Chk. By:    Approved



*Richard P. Brown*

STORM DRAINAGE STRUCTURE SCHEDULE							
NO.	TYPE	LOCATION	INV.	IN	OUT	T.C. PELEV.	REMARKS
C-6	MOD. CL. 5" COMB. (SINGLE GR.)	STA. 21+06.88, 18.0' RT OF E	---	399.50	404.61	---	SEE DETAIL SH 14 of 16
C-7	MOD. CL. 5" COMB. (SINGLE GR.)	STA. 21+06.88, 18.0' LT OF E	399.00	396.75	404.61	---	DEPRESSED "
MH-2	STANDARD MANHOLE	STA. 21+50.88, 14.0' LT OF E	399.50	397.82	---	---	NO CO. ST. DRNG D-109 P. 128
MH-3	STANDARD MANHOLE	STA. 25+50.00, 14.0' LT OF E	394.20	394.10	---	---	" " "
C-8	MOD. CL. 5" COMB. (SINGLE GR.)	STA. 27+30.00, 18.0' RT OF E	---	388.04	393.14	---	SEE DETAIL SH 14 of 16
C-9	MOD. CL. 5" COMB. (SINGLE GR.)	STA. 27+30.00, 18.0' LT OF E	397.82	386.70	393.14	---	DEPRESSED "
C-7	27x15" WYE FITTING	STA. 22+50	397.37	396.87	---	---	" " "
C-7A	MOD. CL. 5" COMB. (S.G.)	STA. 22+44	---	398.87	403.22	---	SEE DETAIL SH 14 of 16

**PLAN**  
SCALE: 1" = 50'



HOWARD COUNTY BOARD OF EDUCATION  
LIBER W.H.H. 392  
FOLIO 732

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

**BROWNE-PANDULLO & ASSOCIATES**  
ENGINEERS  
COLUMBIA, MARYLAND

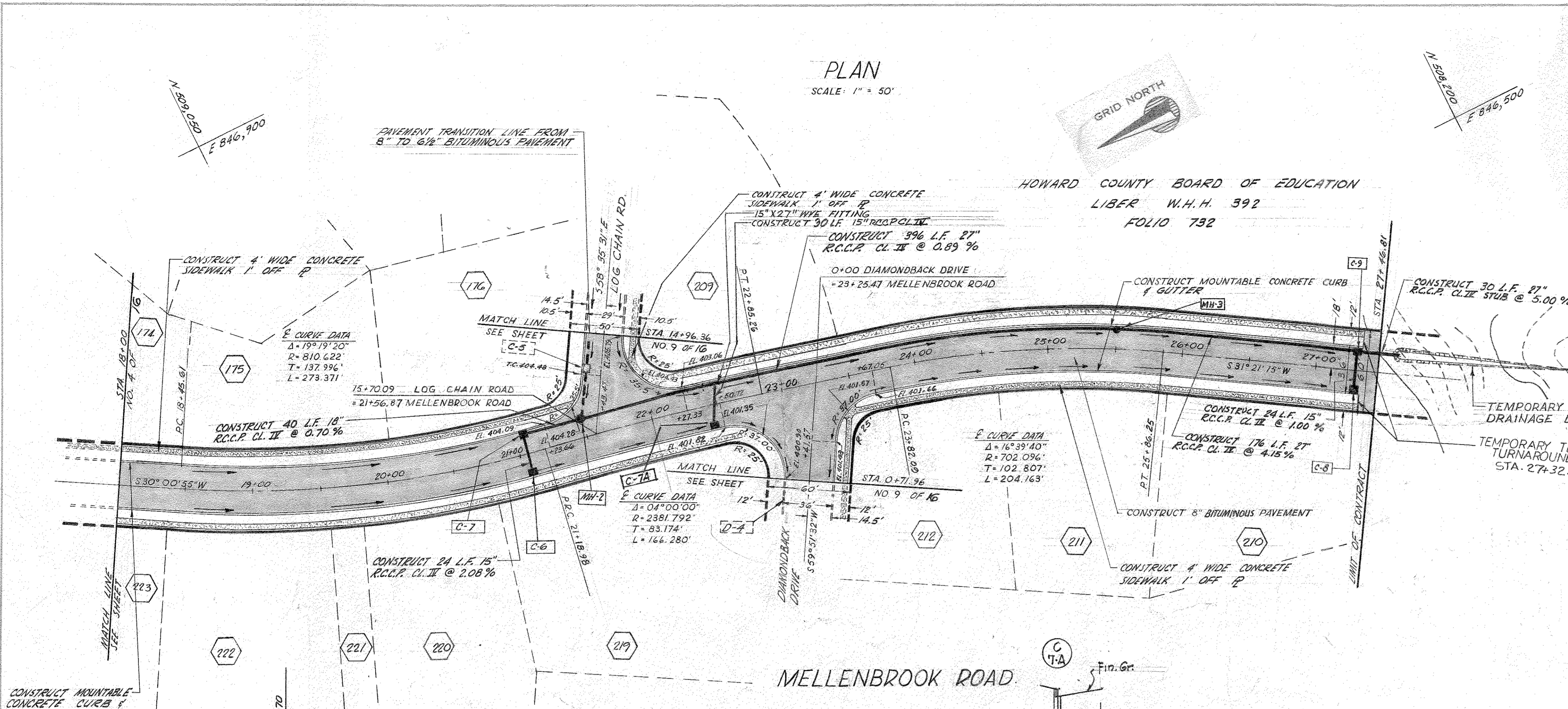
Rev Date	Rev No	Revision Description

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

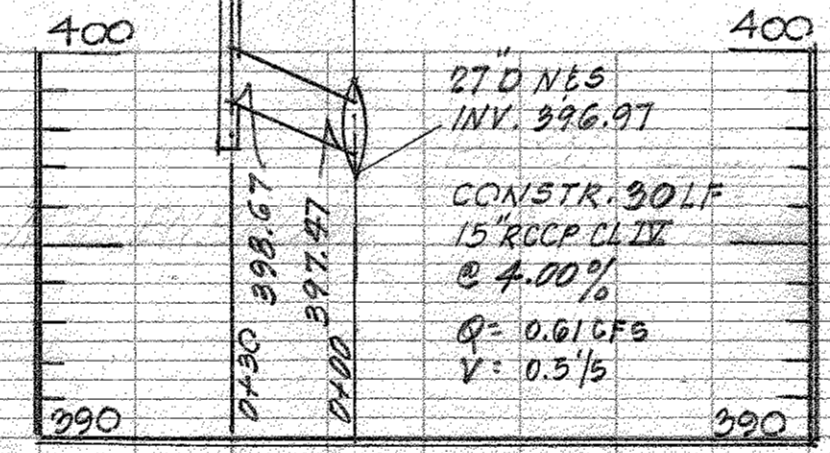
PROJECT AREA  
VILLAGE OF OAKLAND HILLS SECTION 1  
THUNDER HILL AREA 2

PROJECT TITLE  
PLAN & PROFILE  
MELLENBROOK ROAD 18+00 - 27+46.81

Des By	WJK	Scale	AS SHOWN	Dwg. No	5 of 16
Drn By	J.C.	Date	JUNE 15, 1968	C.C.F. No	
Chk By		Approved			



**PROFILES**  
SCALE: HORIZ: 1" = 50'  
VERT: 1" = 5'

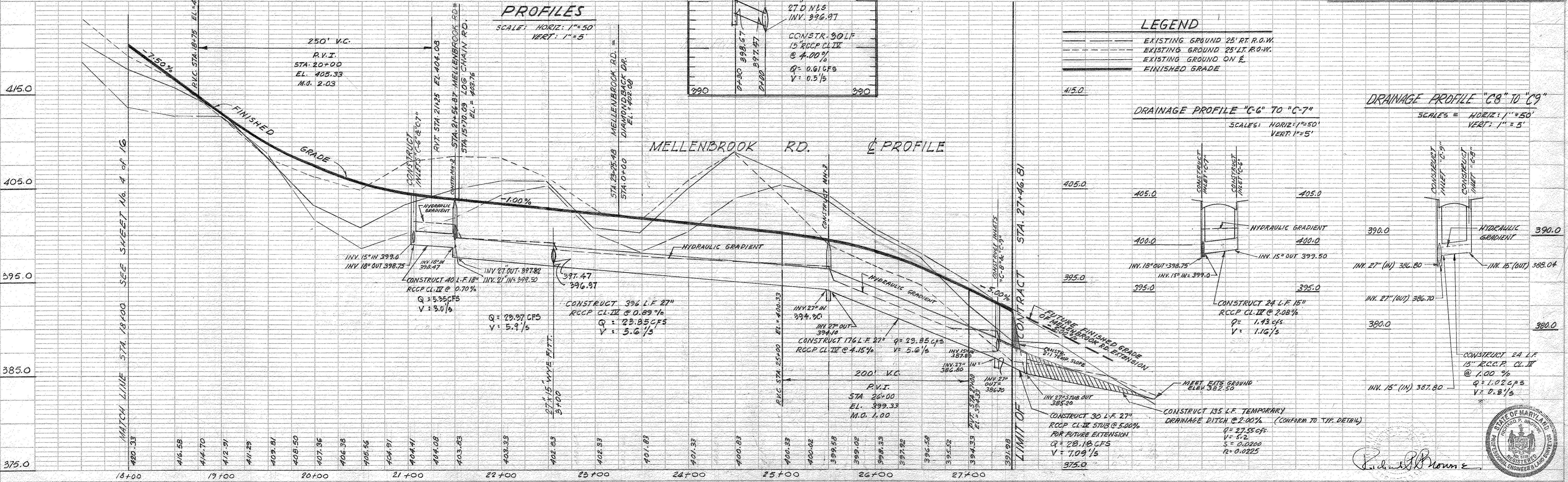


**LEGEND**

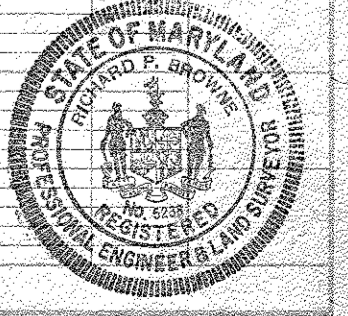
- EXISTING GROUND 25' RT. R.O.W.
- EXISTING GROUND 25' LT. R.O.W.
- EXISTING GROUND ON E
- FINISHED GRADE

**DRAINAGE PROFILE "C-6" TO "C-7"**  
SCALE: HORIZ: 1" = 50'  
VERT: 1" = 5'

**DRAINAGE PROFILE "C-8" TO "C-9"**  
SCALE: HORIZ: 1" = 50'  
VERT: 1" = 5'



*Richard Brown*

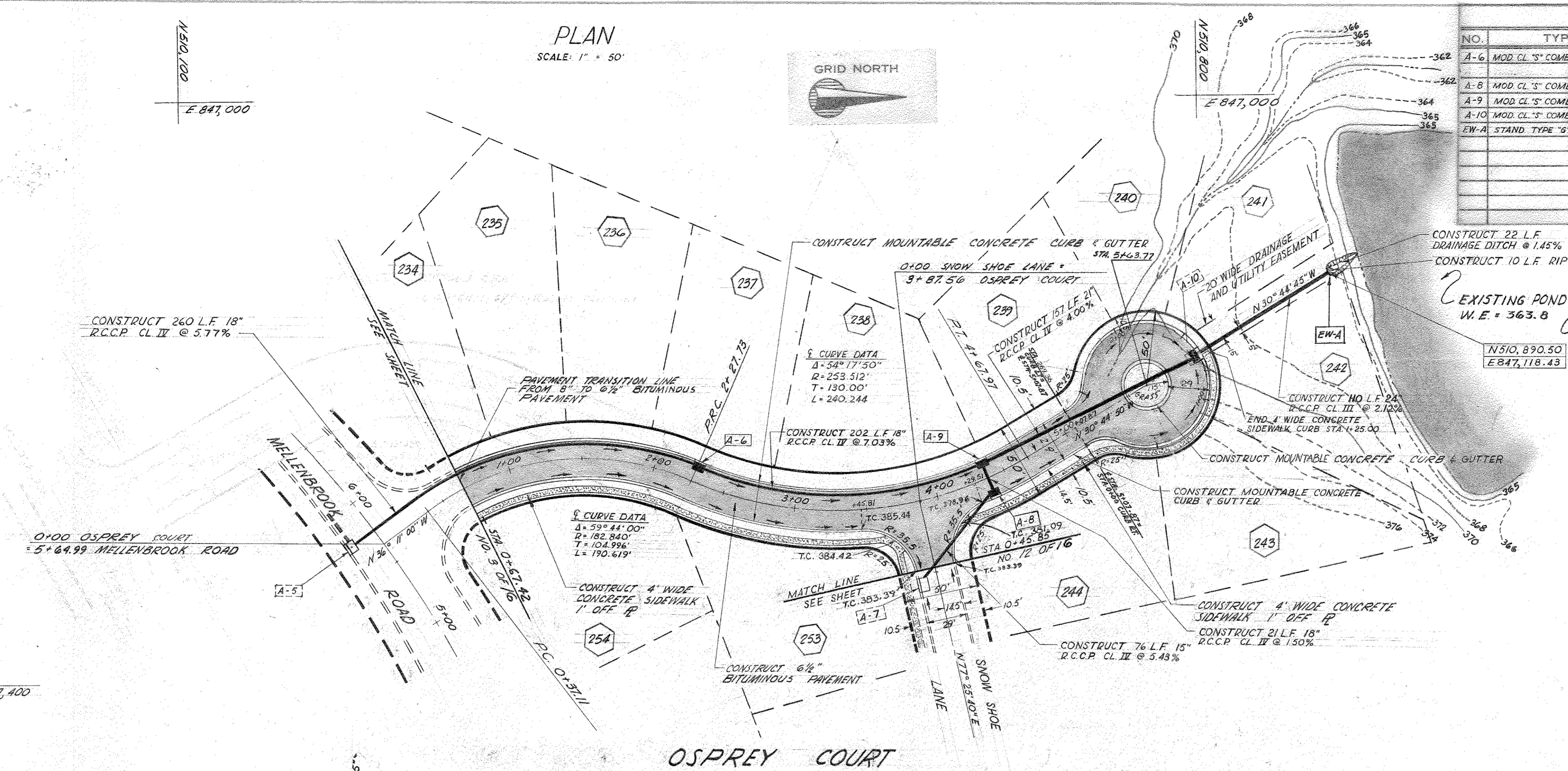
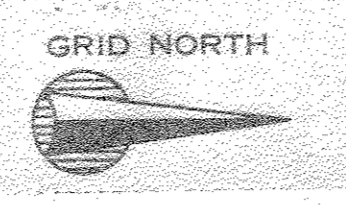




PLAN SURVEYED, PLOTTED, CHECKED, NOTE BOOK NO. DATE BY

PROFILE SURVEYED, PLOTTED, CHECKED, NOTE BOOK NO. DATE BY

**PLAN**  
SCALE: 1" = 50'



STORM DRAINAGE STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	T.C.P. ELEV.	REMARKS
A-6	MOD. CL. 5" COMB. (SINGLE GRATE)	STA. 2+27.73, 14.5' LT. OF E	390.00	387.80	395.01	SEE DETAIL SH. 14 OF 16
A-8	MOD. CL. 5" COMB. (SINGLE GRATE)	STA. 4+37.00, 14.5' RT. OF E	373.87	373.62	379.01	SEE DETAIL SH. 14 OF 16
A-9	MOD. CL. 5" COMB. (SINGLE GRATE)	STA. 4+37.00, 14.5' LT. OF E	373.91	373.06	379.01	" " " "
A-10	MOD. CL. 5" COMB. (SINGLE GRATE)	STA. 1+34.68 CURB STA.	366.78	366.45	373.28	" " " "
EW-A	STAND. TYPE "S" ENDWALL	AS SHOWN				" " " "

**APPROVED**  
 PLANNING COMMISSION  
 OF HOWARD COUNTY  
 DATE 12/16/68  
*J.P.E.*

**BROWNE-PANDULLO & ASSOCIATES**  
 ENGINEERS  
 COLUMBIA, MARYLAND

Rev. Date:      Rev. No:      Revision Description:

**COLUMBIA**  
 MARYLAND  
 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  
 THUNDER HILL AREA 2

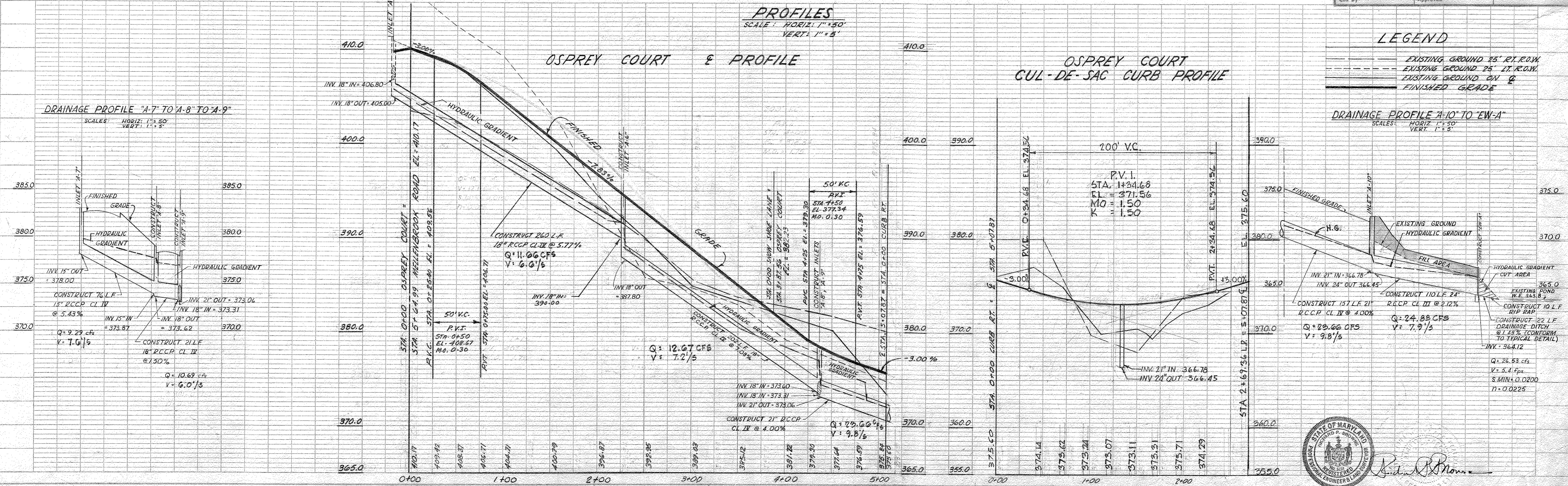
PROJECT TITLE:  
 PLAN & PROFILE  
 OSPREY COURT

Des. By: *W.P.K.*      Scale: AS SHOWN      Dwg. No. 7 of 16  
 Dwn. By: *J.C.*      Date: JUNE 15, 1968      C.C.F. No.  
 Chk. By:      Approved

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

**OSPREY COURT & PROFILE**

**OSPREY COURT CUL-DE-SAC CURB PROFILE**



**LEGEND**

- EXISTING GROUND 25' RT. R.O.W.
- EXISTING GROUND 25' LT. R.O.W.
- EXISTING GROUND ON G
- FINISHED GRADE



FILE No. 1923

F-68-46





STORM DRAINAGE STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INV. IN	INV. OUT	T.C.P. ELEV.	REMARKS
C-2	MOD. CL. "S" COMB. (SINGLE GRATE)	STA. 12+30.69 14.5' RT. OF P.	406.30	406.05	411.10	DEPRESSED: SEE DETAIL
C-3	MOD. CL. "S" COMB. (SINGLE GRATE)	STA. 13+45.00 14.5'		405.00	409.85	DEPRESSED: SH 14 of 16
C-4	MOD. CL. "S" COMB. (SINGLE GRATE)	STA. 13+45.00 14.5'	403.30	403.35	409.85	"
C-5	MOD. CL. "S" COMB. (SINGLE GRATE)	STA. 15+20.00 14.5' RT. OF P.	400.60	400.40	405.41	"

APPROVED  
PLANNING COMMISSION  
OF HOWARD COUNTY  
DATE 12/16/68  
*J.W.C.*

**BROWNE-PANDULLO & ASSOCIATES**  
ENGINEERS  
COLUMBIA, MARYLAND

Rev. Date    Rev. No.    Revision Description

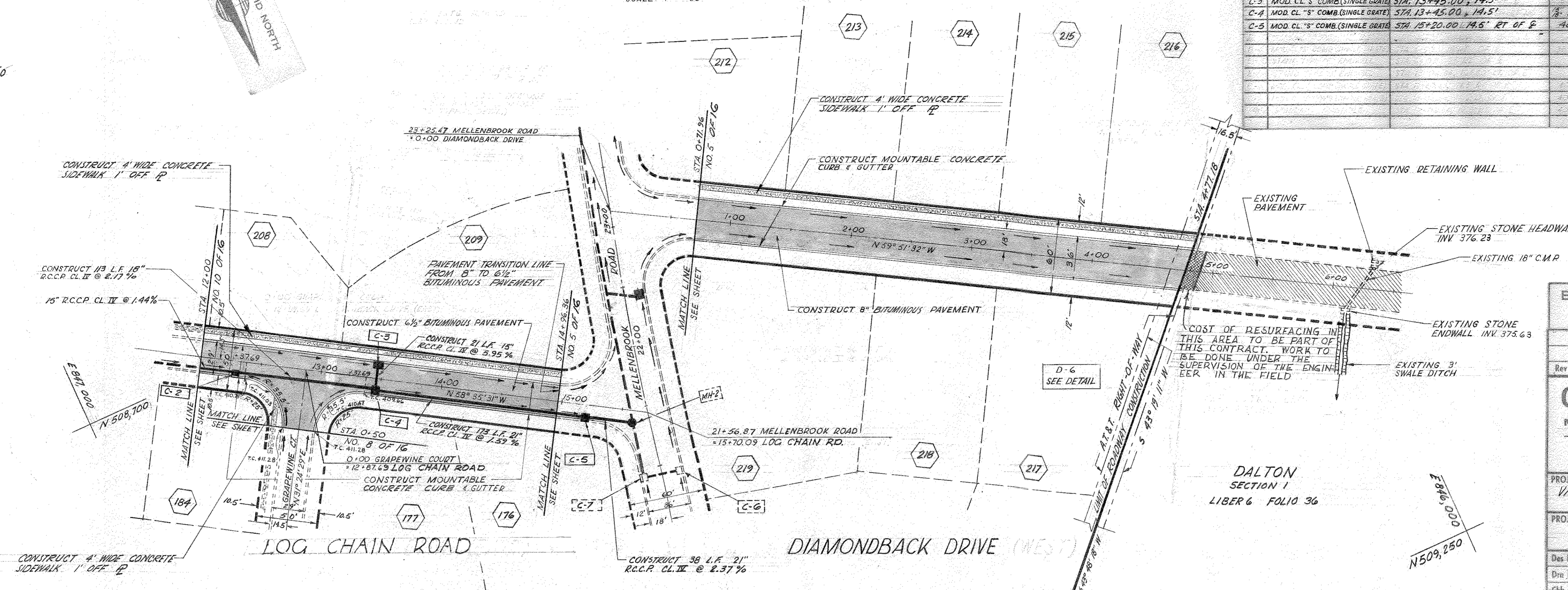
**COLUMBIA**  
MARYLAND  
6TH ELECTION DISTRICT HOWARD COUNTY  
OWNER AND DEVELOPER  
HOWARD RESEARCH AND DEVELOPMENT CORP.  
THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21210

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

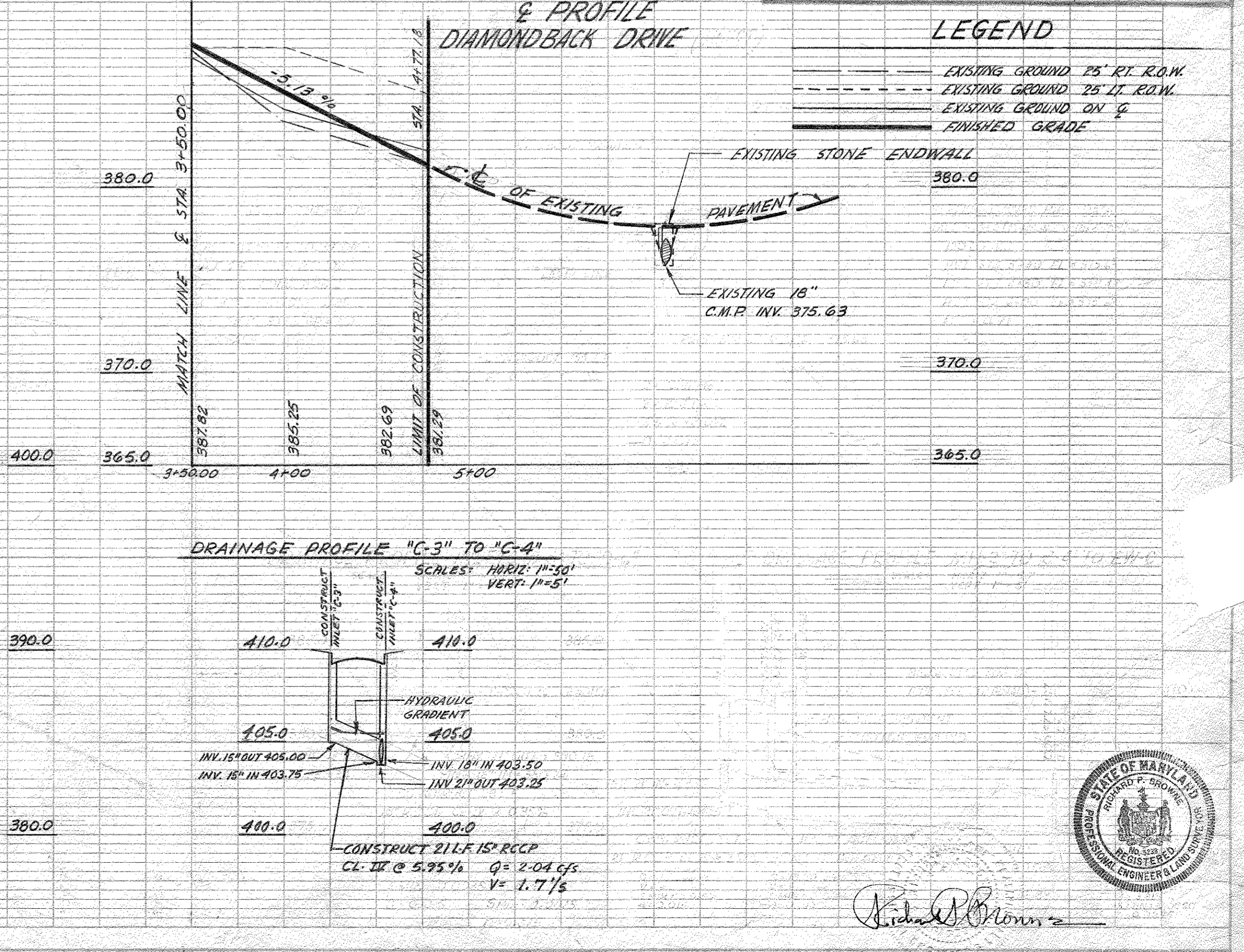
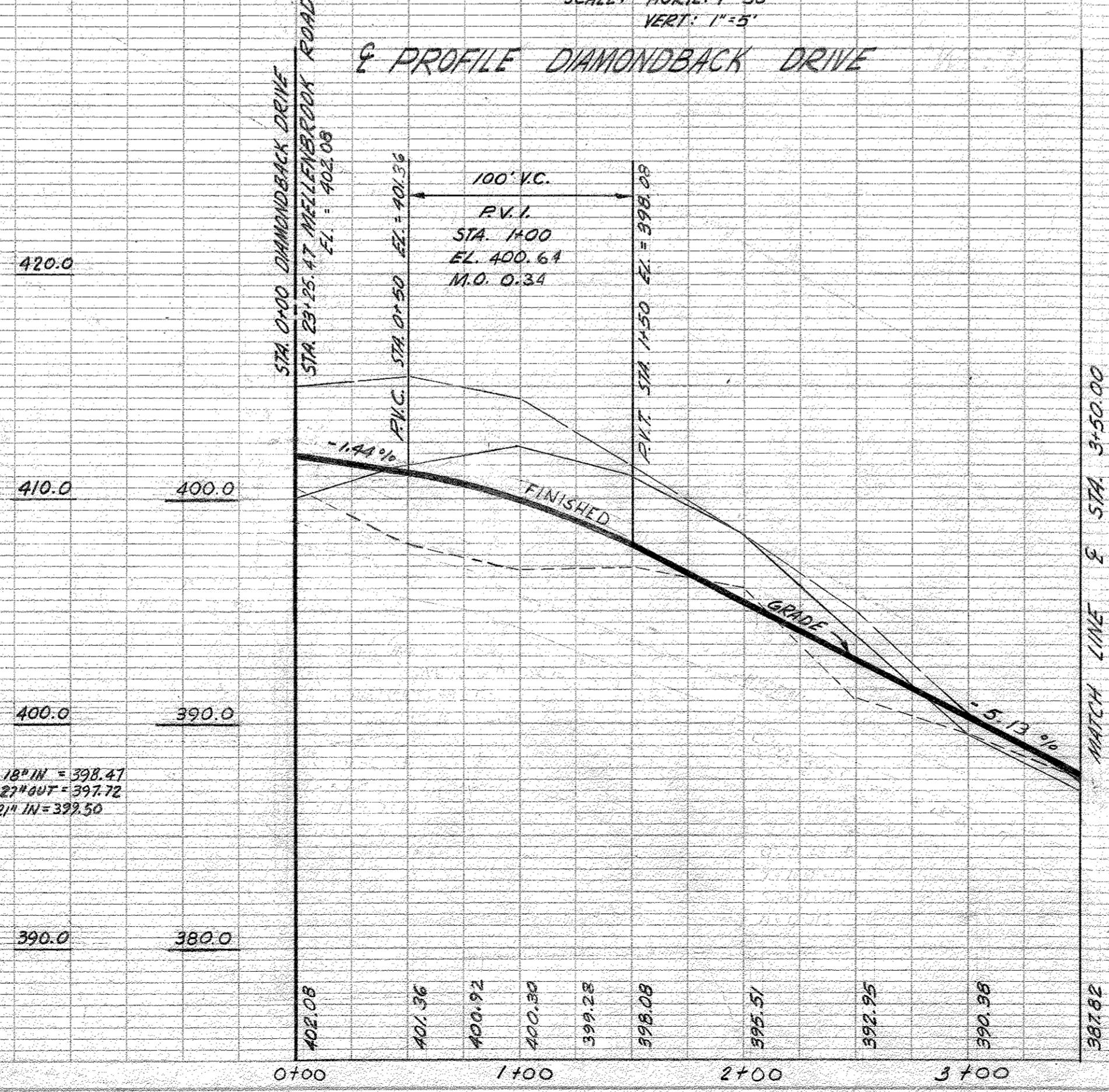
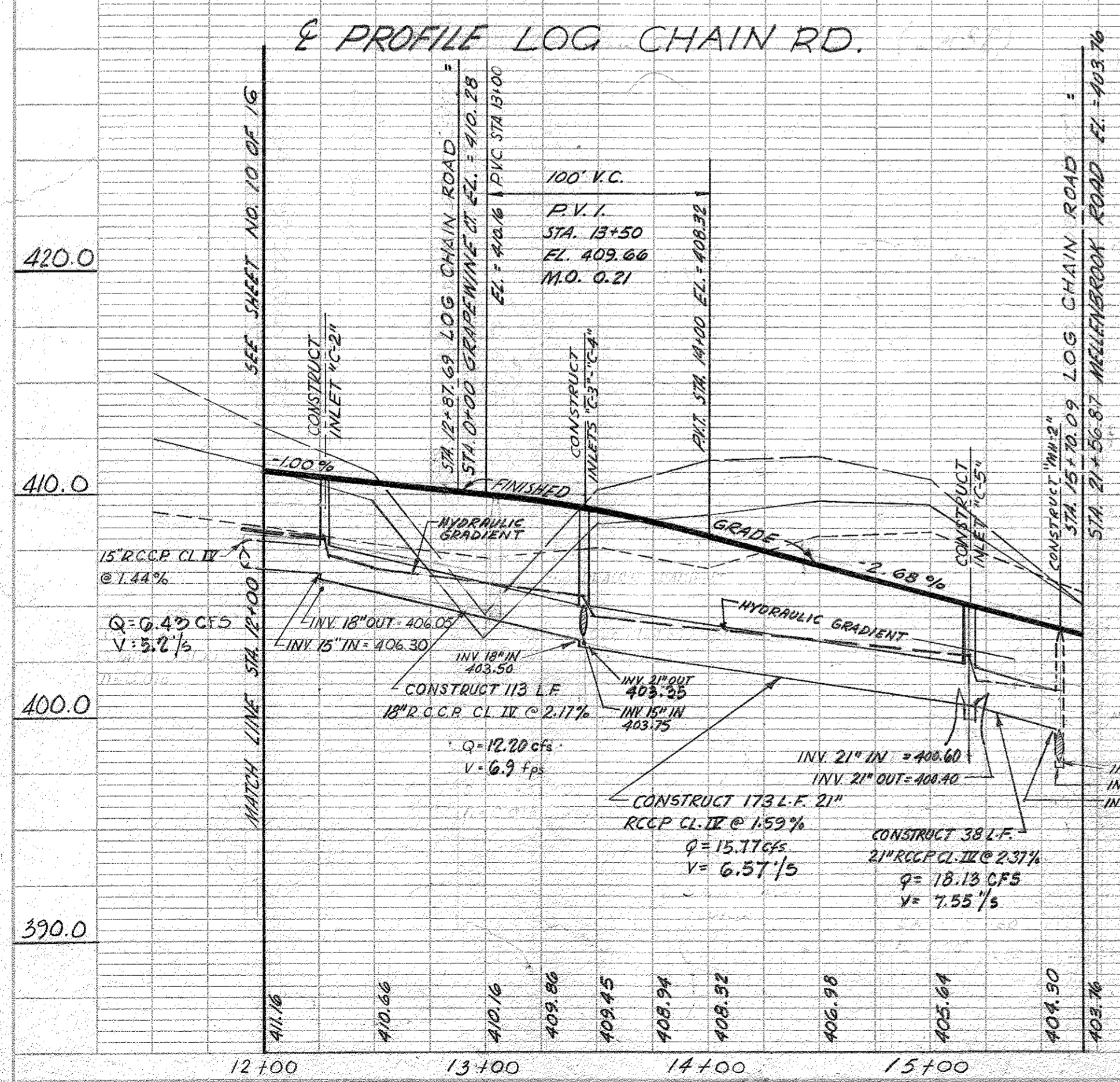
PROJECT TITLE  
PLAN & PROFILE  
LOG CHAIN RD. & DIAMONDBACK DR.

Des. By *WJK*    Scale AS SHOWN    Dwg. No. 9 of 16  
Dwn. By *J.C.*    Date JUNE 15, 1968    C.C.F. No.  
Chk. By    Approved

PLAN  
SCALE: 1" = 50'

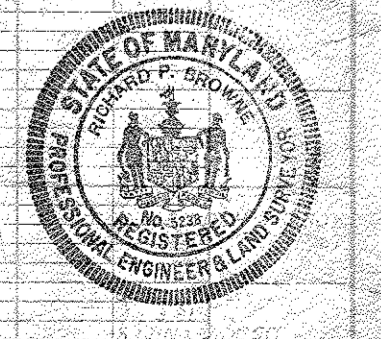


PROFILES  
SCALE: HORIZ. 1" = 50'  
VERT. 1" = 5'



LEGEND

- EXISTING GROUND 75' RT. R.O.M.
- EXISTING GROUND 25' LT. R.O.M.
- EXISTING GROUND ON P.
- FINISHED GRADE
- EXISTING STONE ENDWALL
- EXISTING 18" C.M.P. INV. 375.63
- EXISTING 3' SWALE DITCH
- EXISTING STONE ENDWALL INV. 375.63
- EXISTING PAVEMENT



*Richard P. Brown*





DATE	
BY	
SURVEYED	
PLOTTED	
NOTE BOOK	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
NOTE BOOK	
NO.	

STORM DRAINAGE STRUCTURE SCHEDULE						
NO.	TYPE	LOCATION	INV. IN	INV. OUT	T.C. PELEV.	REMARKS
A-2	STAND. CL'S CMB. (DOUBLE CURB)	STA. 0+55.00, 14.50' RT. OF C.	-	378.00	383.34	No. 6.5' DIA. DRWG. D109 P. 168
A-3	MOD. CL'S CMB. (SINGLE CURB)	STA. 0+80.00, 14.50' RT. OF C.	-	422.00	427.22	DEPRESSED SEE DETAIL SH. 14 OF 16

**APPROVED**  
 PLANNING COMMISSION  
 OF HOWARD COUNTY  
 DATE: 12/16/68  
*JHC*

**BROWNE-PANDULLO & ASSOCIATES**  
 ENGINEERS  
 COLUMBIA, MARYLAND

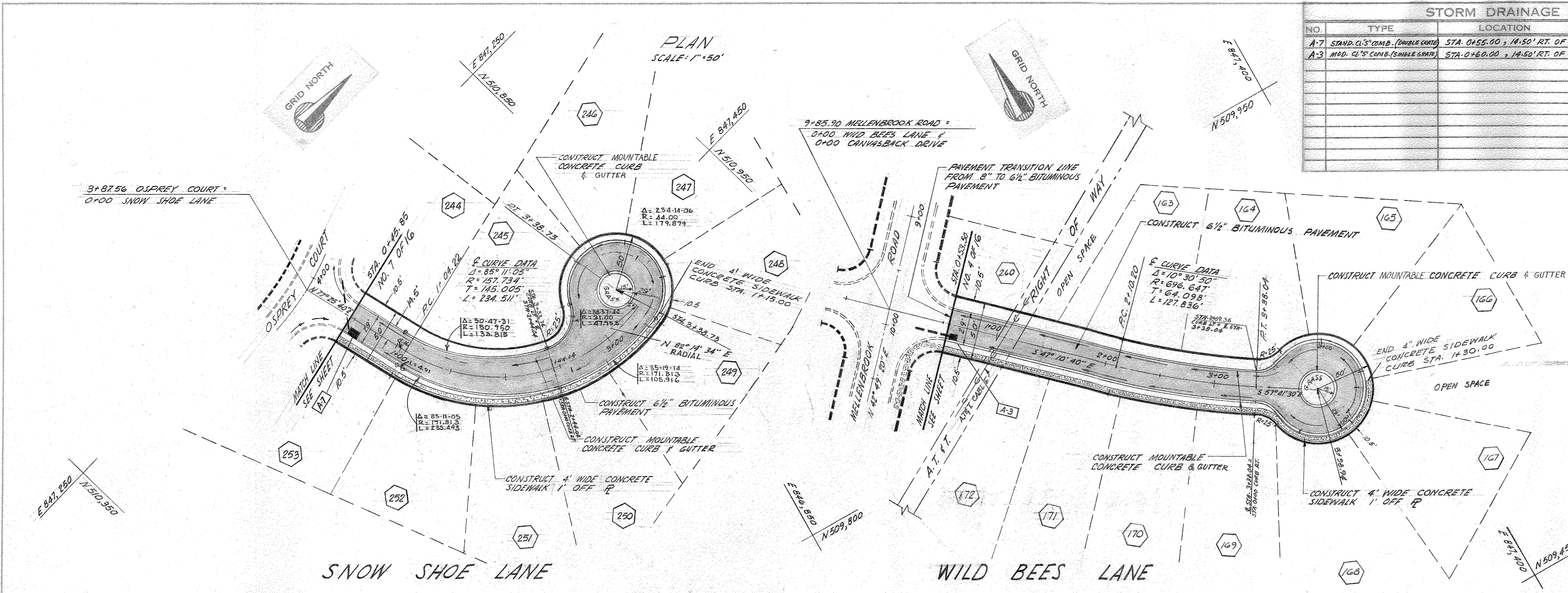
Rev. Date:    Rev. No:    Revision Description:

**COLUMBIA**  
 MARYLAND  
 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  
 THUNDER HILL AREA 2

PROJECT TITLE:  
 PLAN & PROFILE  
 SNOW SHOE LANE & WILD BEES LANE

Des. By: *WJE*    Scale: AS SHOWN    Dwg. No: 12 OF 16  
 Dwn. By: *J.D.L.*    Date: JUNE 15, 1968    C.C.F. No:  
 Chk. By:    Approved:



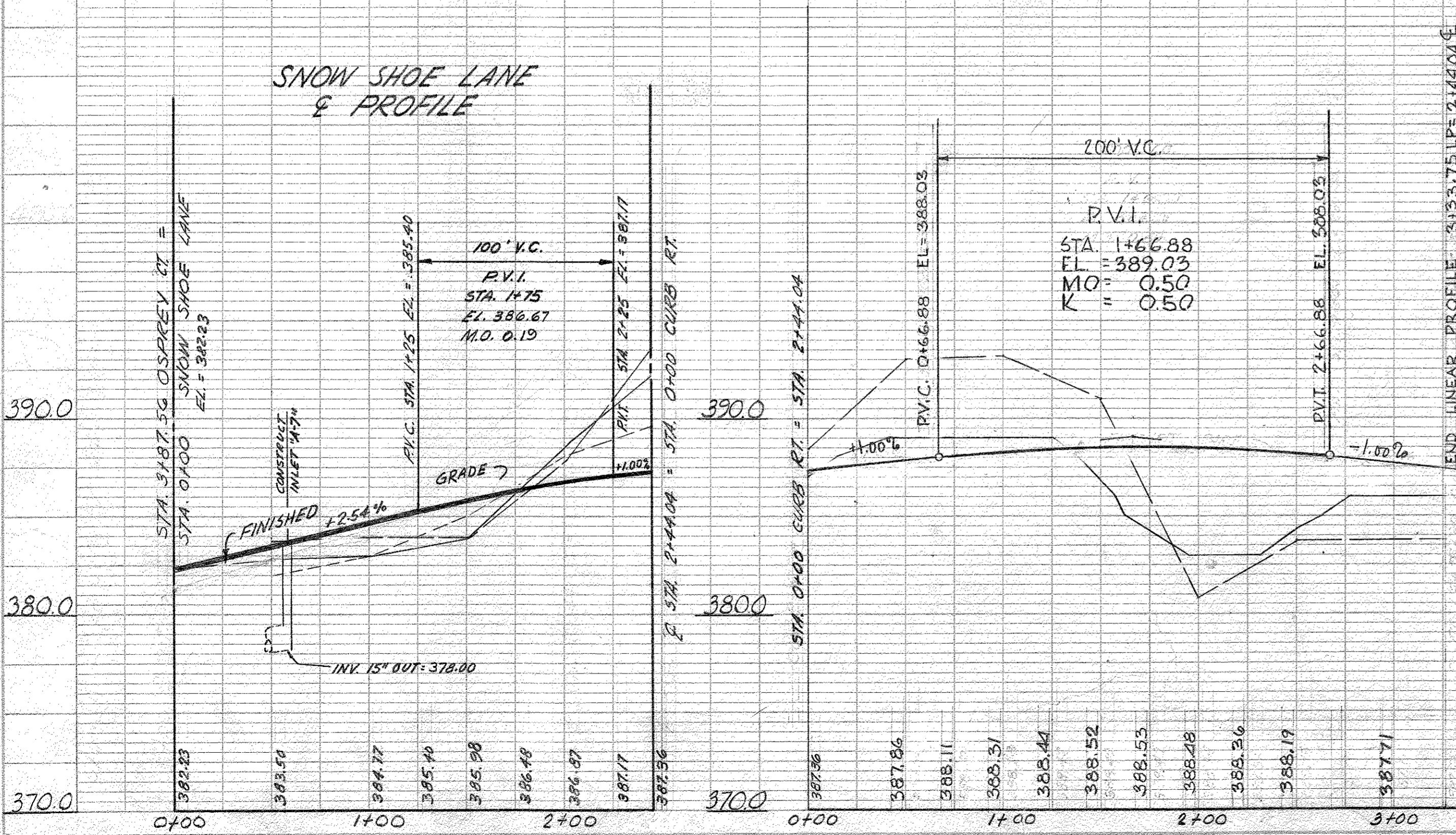
**LEGEND**

- EXISTING GROUND 25 FT. R.O.W.
- EXISTING GROUND 15 FT. R.O.W.
- EXISTING GROUND ON Q
- FINISHED GRADE

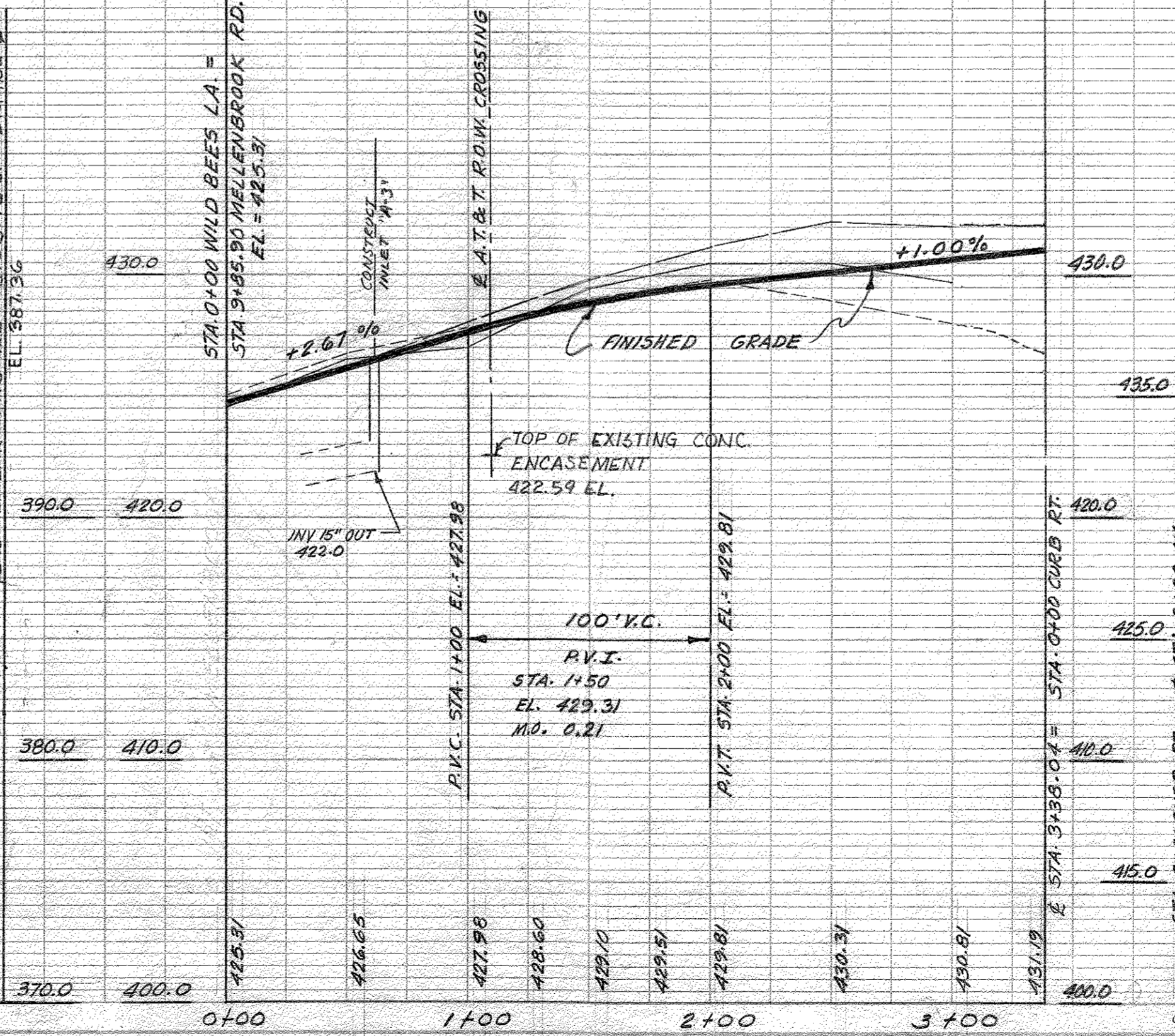
**PROFILES**

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

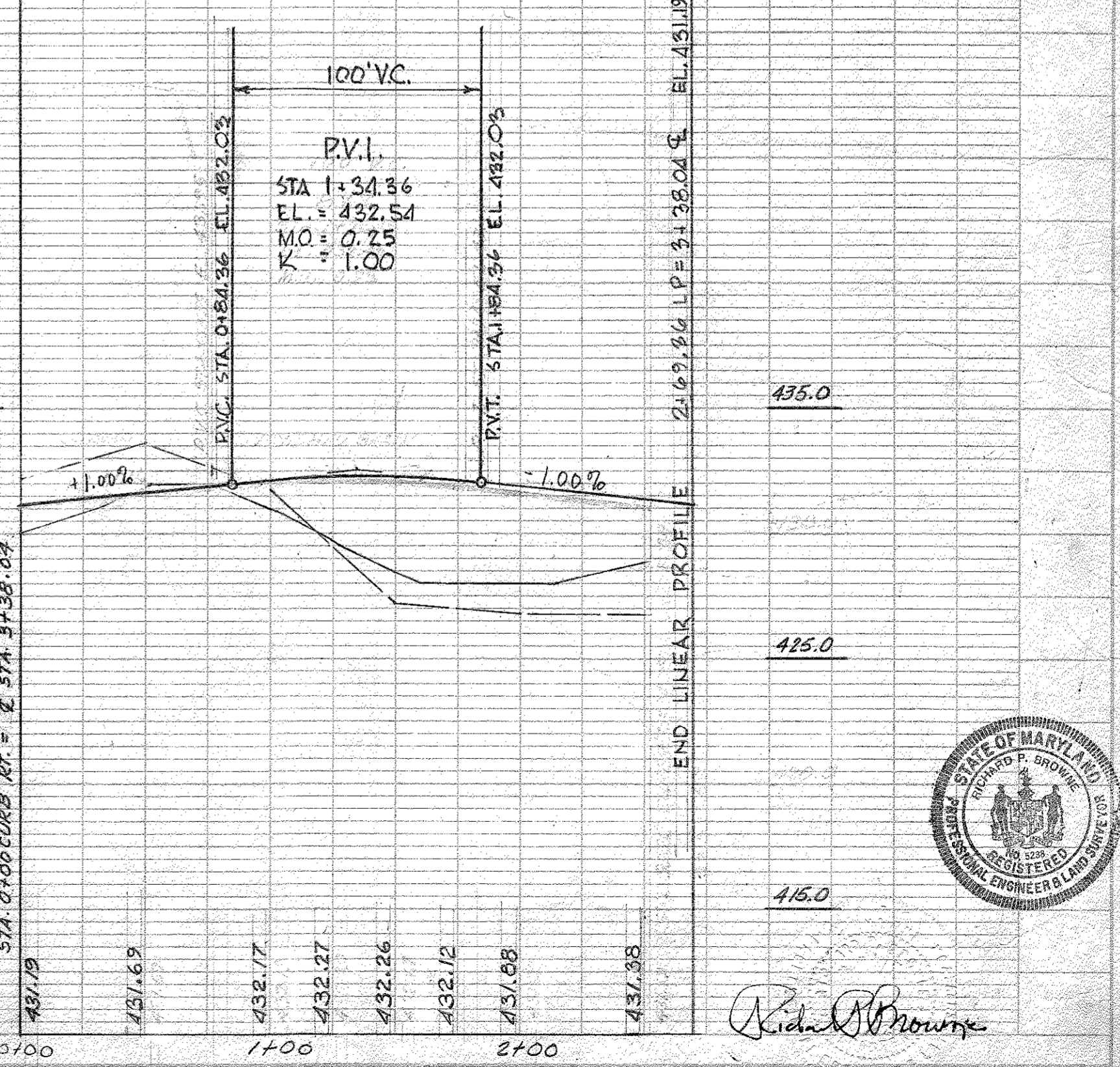
**SNOW SHOE LANE  
 CUL-DE-SAC CURB PROFILE**



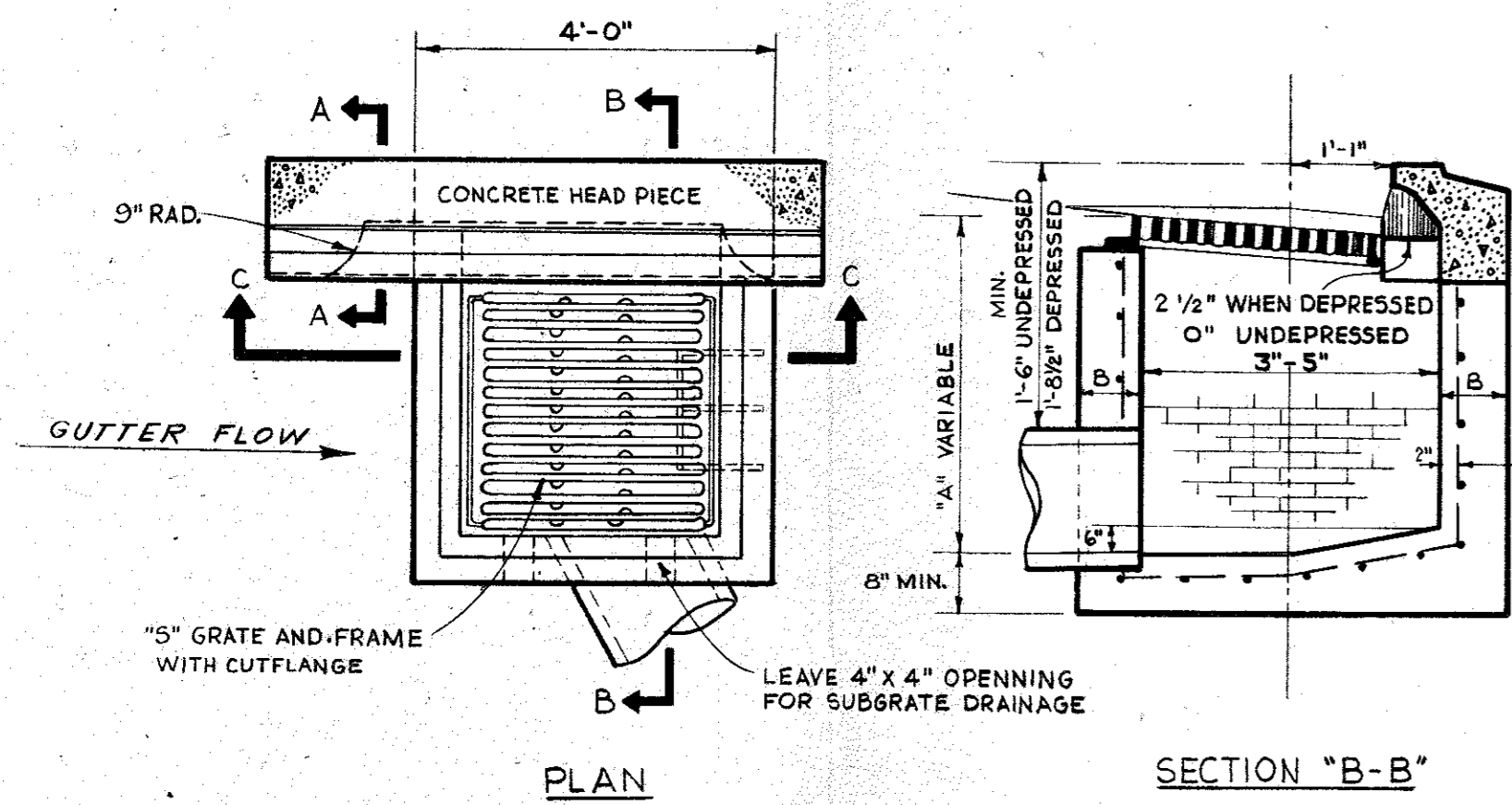
**WILD BEES LANE  
 & PROFILE**



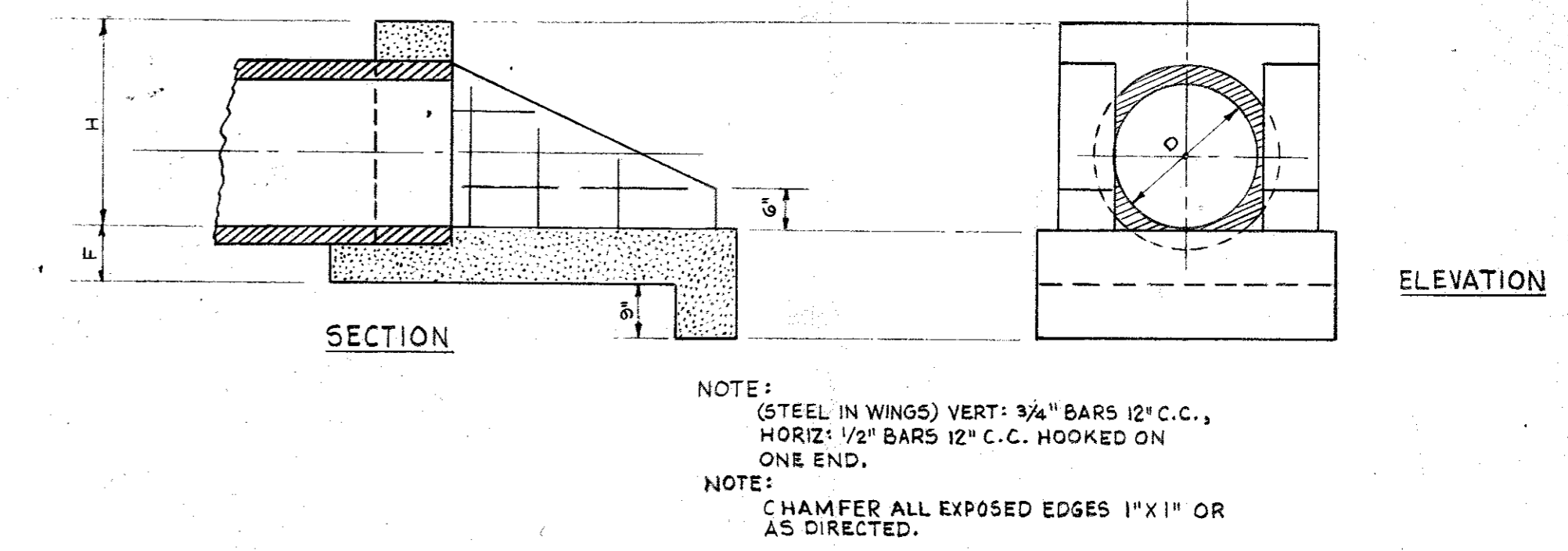
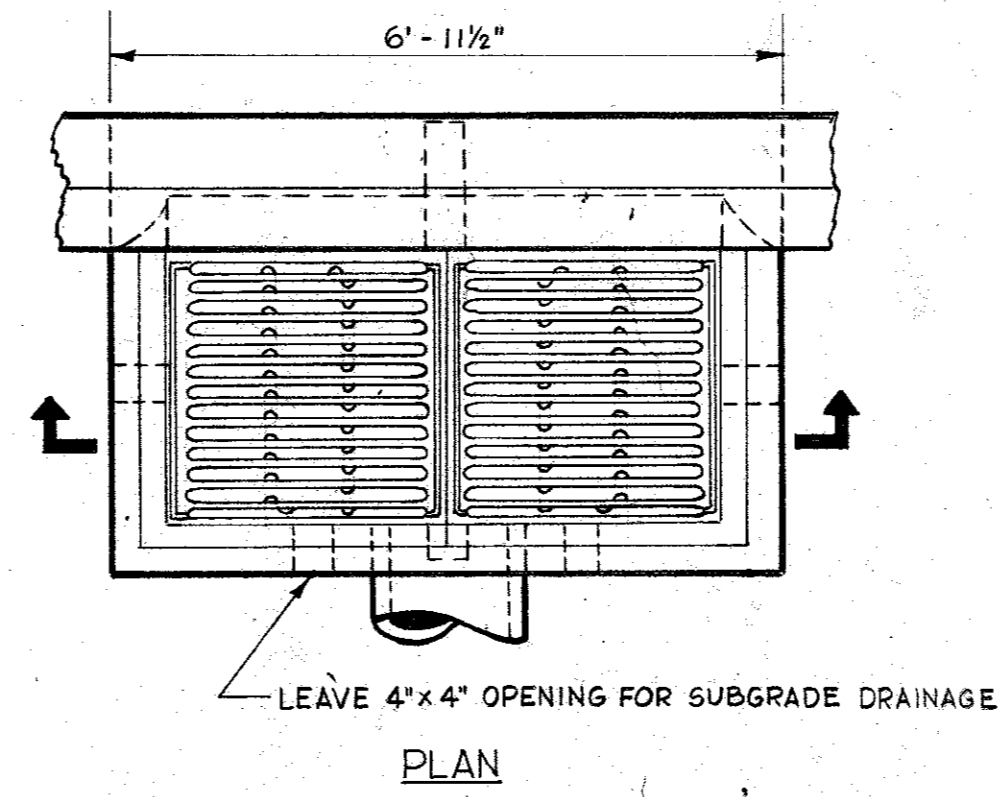
**WILD BEES LANE  
 CUL-DE-SAC CURB PROFILE**





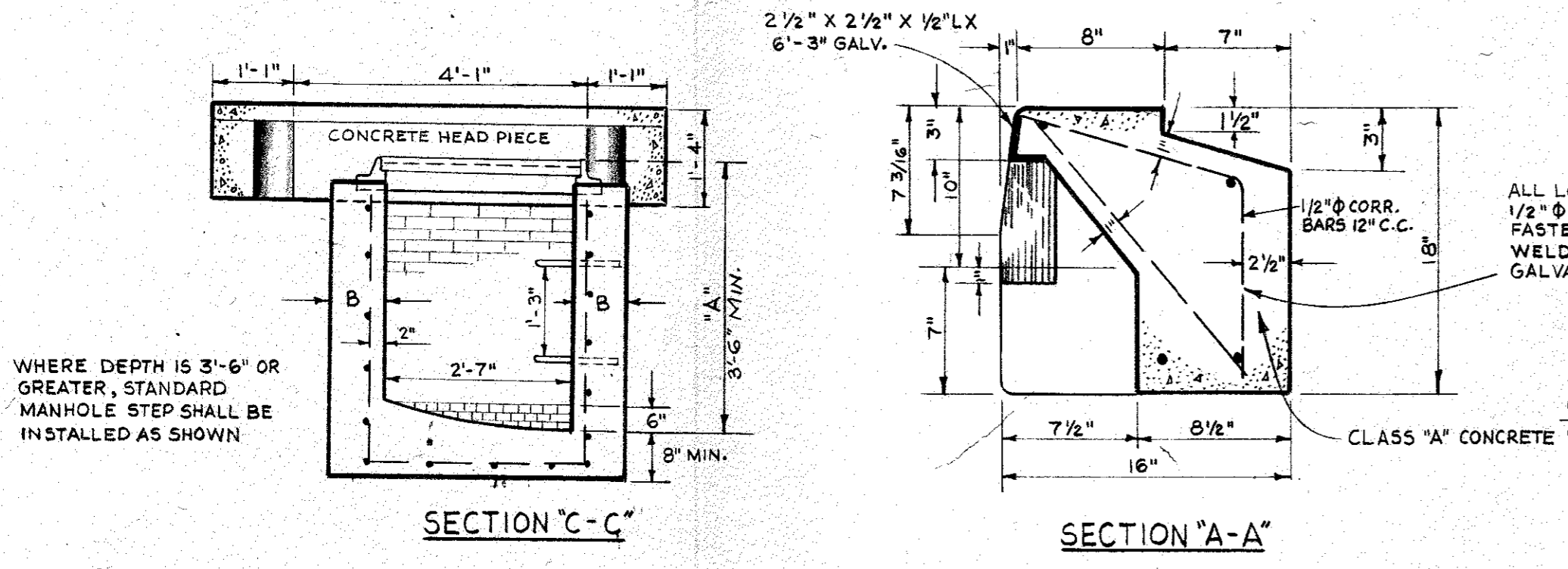
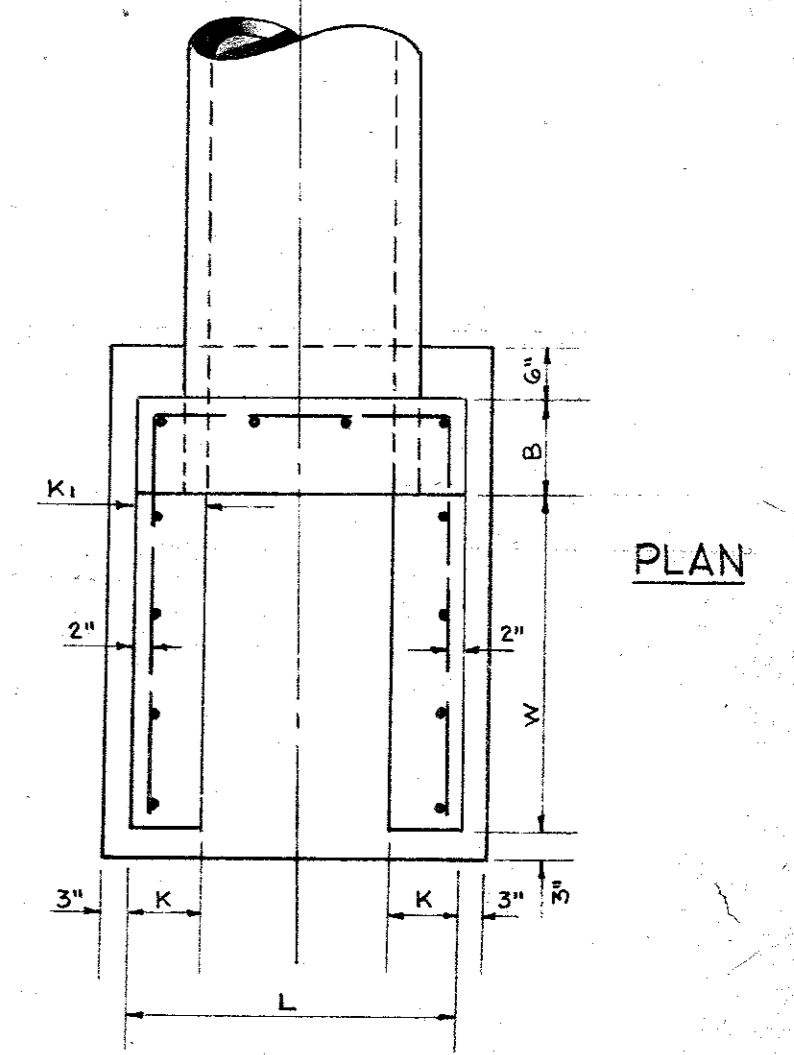


- NOTES:
1. INLETS MAY BE CONSTRUCTED OF REINFORCED CONCRETE OR BRICK. SIZE, TYPE & DIRECTION OF INLET CONNECTION WILL VARY TO SUIT CONDITIONS.
  2. THE INVERT SHALL BE BRICK OR PLAIN, CLASS "A" CONCRETE.
  3.  $B = 2'$  WHERE  $A$  IS  $7'$  OR LESS
  4.  $B = 12'$  WHERE  $A$  IS  $7'$  TO  $11'$
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



- NOTE:  
(STEEL IN WINGS) VERT:  $3/4"$  BARS  $12"$  C.C.,  
HORIZ:  $1/2"$  BARS  $12"$  C.C. HOOKED ON ONE END.  
NOTE:  
CHAMFER ALL EXPOSED EDGES  $1" \times 1"$  OR AS DIRECTED.

OPENING D	AREA SQ. FT.	DIMENSIONS FOR CONCRETE						QUANTITIES	
		ENDWALL	WINGS				CONC. CU. YDS.	STEEL LBS.	
12"	0.79	2'-0"	9"	1'-7"	1'-4"	6"	6"	0.36	34
15"	1.23	2'-3"	9"	1'-11"	1'-11"	6"	6"	0.47	37
16"	1.39	2'-4"	9"	1'-11"	2'-0"	6"	6"	0.50	38
18"	1.78	2'-6"	9"	2'-2"	2'-6"	6"	6"	0.61	53
24"	3.14	3'-6"	12"	2'-0"	3'-6"	9"	9"	1.17	71
30"	4.91	4'-0"	12"	3'-4"	4'-3"	9"	9"	1.62	91
36"	7.07	4'-6"	12"	3'-10"	5'-8"	9"	9"	2.12	116
42"	9.62	5'-6"	12"	4'-5"	6'-9"	12"	12"	3.15	141
48"	12.57	6'-0"	12"	4'-11"	7'-0"	12"	12"	3.88	174

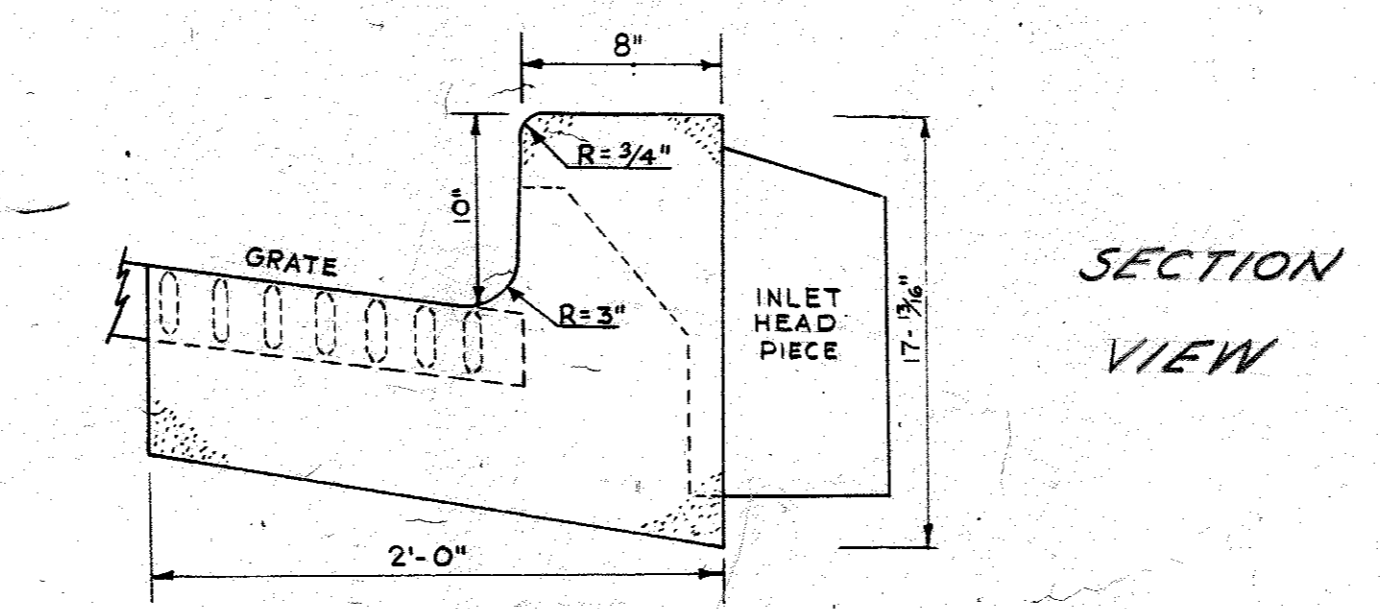
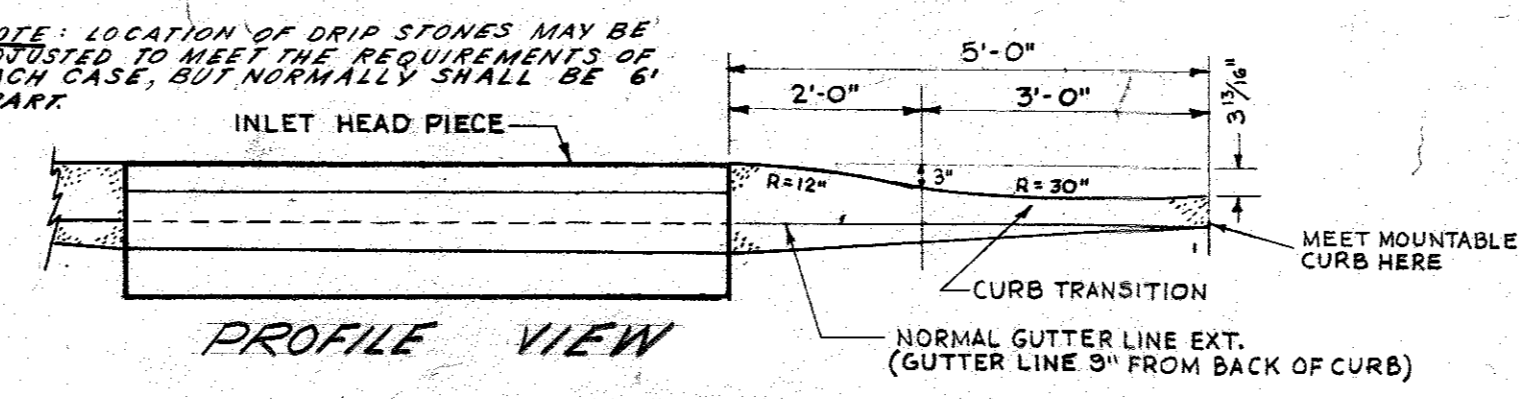
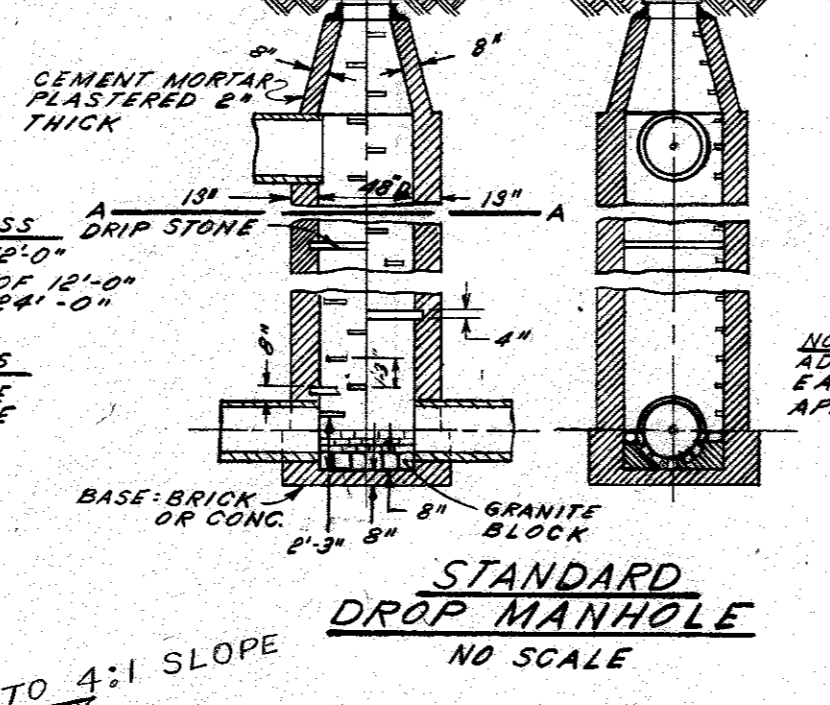
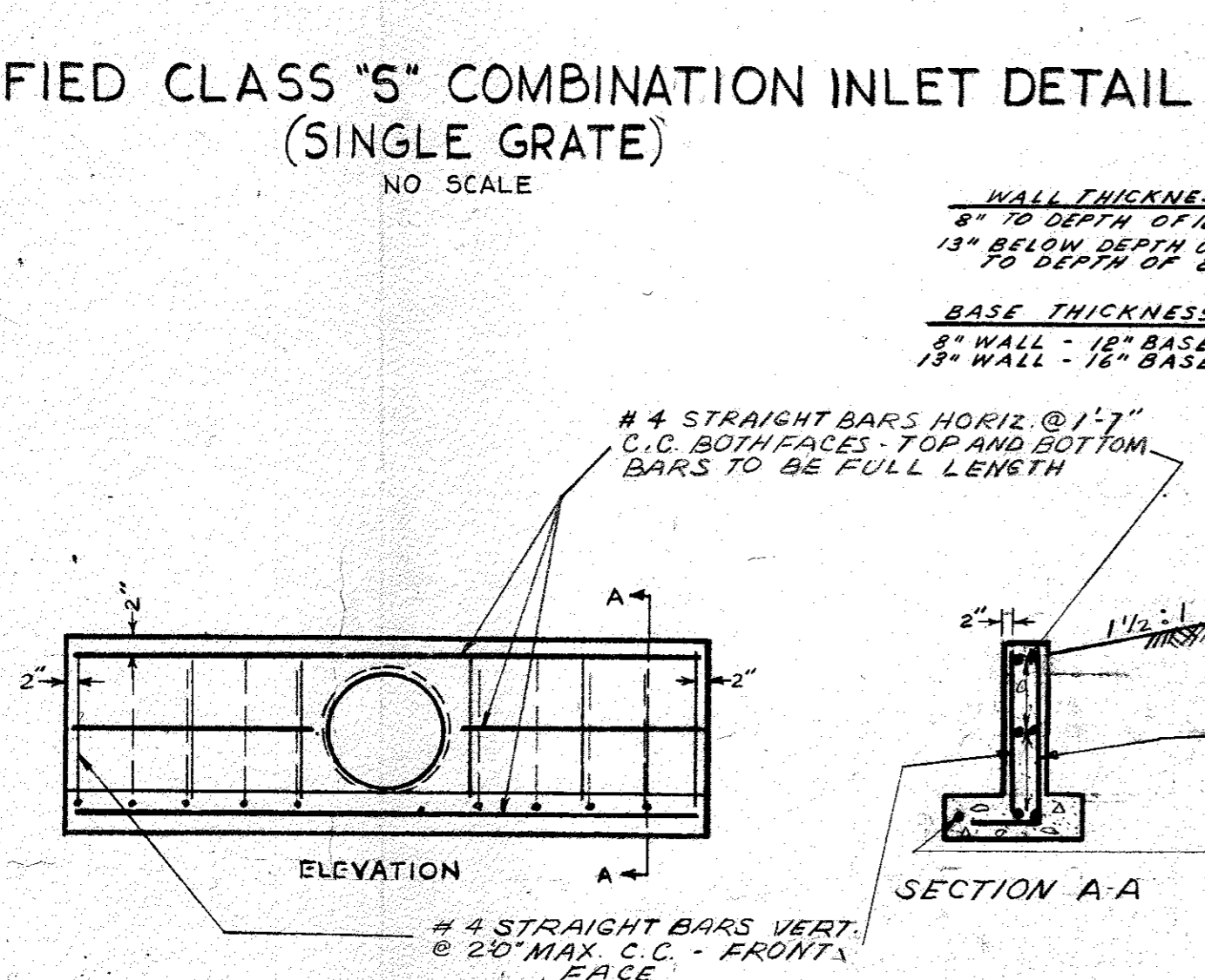


ALL LONGITUDINAL BARS 6' LONG  
 $1/2"$   $\phi$  CORR. ANCHOR BARS,  $24"$  C.C. -  
FASTEN TO ANGLE WITH  $1/4"$  FILLET  
WELD ALL AROUND BEFORE  
GALVANIZING

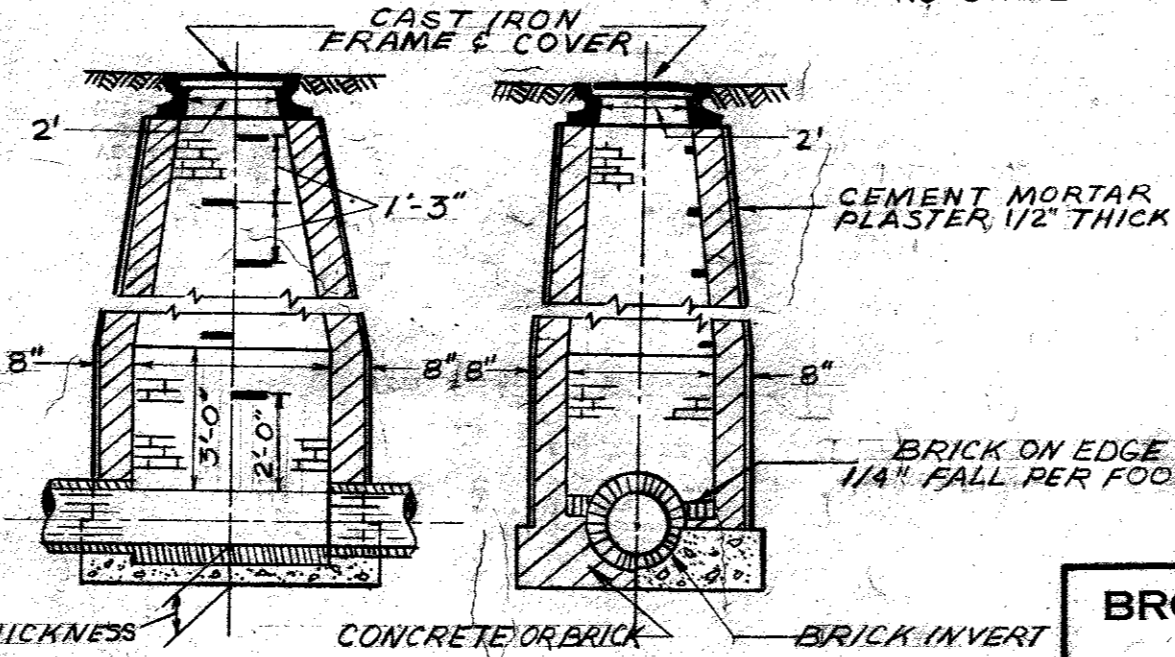
DETAIL  
STANDARD CLASS "S" COMBINATION INLET  
(DOUBLE GRATE)  
NO SCALE

STANDARD TYPE "G" ENDWALL  
NO SCALE

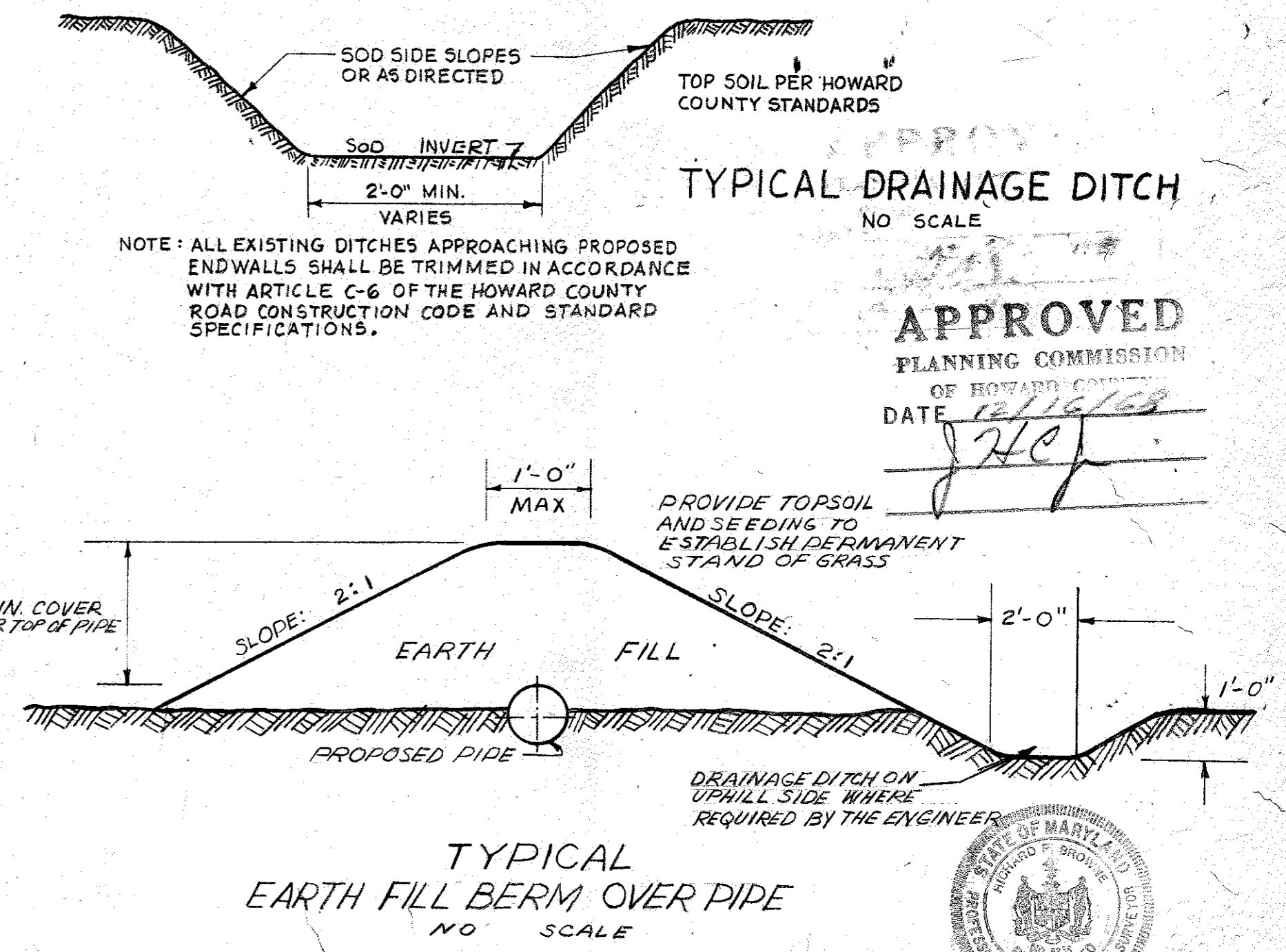
MODIFIED CLASS "S" COMBINATION INLET DETAIL  
(SINGLE GRATE)  
NO SCALE



DETAIL OF MOUNTABLE CURB TRANSITION TO INLET CURB PIECE  
NO SCALE



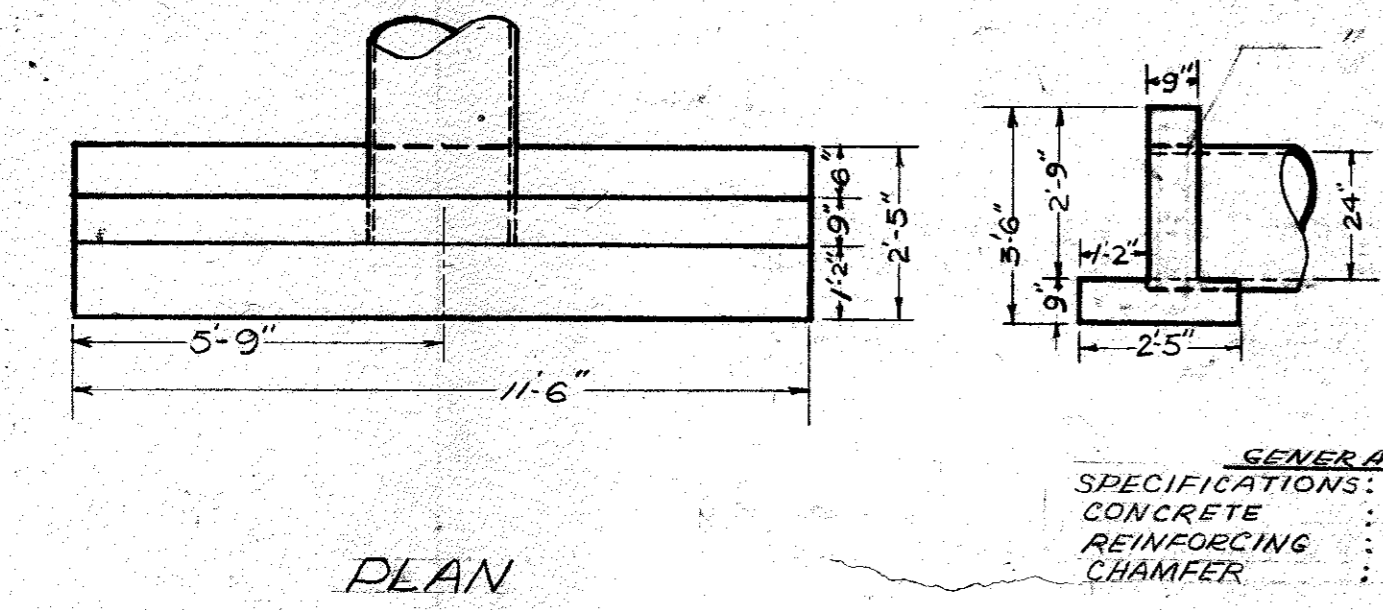
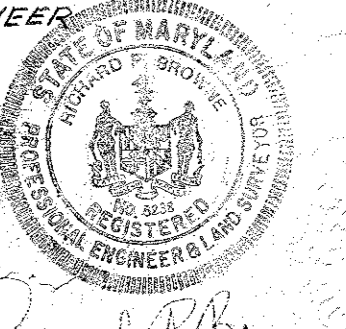
STANDARD MANHOLE DETAIL  
NO SCALE



TYPICAL DRAINAGE DITCH  
NO SCALE

TYPICAL EARTH FILL BERM OVER PIPE  
NO SCALE

APPROVED  
PLANNING COMMISSION  
OF HOWARD COUNTY  
DATE 12/16/68  
JWC



STANDARD TYPE "C" ENDWALL

GENERAL NOTES  
SPECIFICATIONS: LATEST S.R.C.  
CONCRETE: SEE S.R.C. SPECS.  
REINFORCING: DEFORMED STEEL BARS #4  
CHAMFER: ALL EXPOSED EDGES  $1" \times 1"$

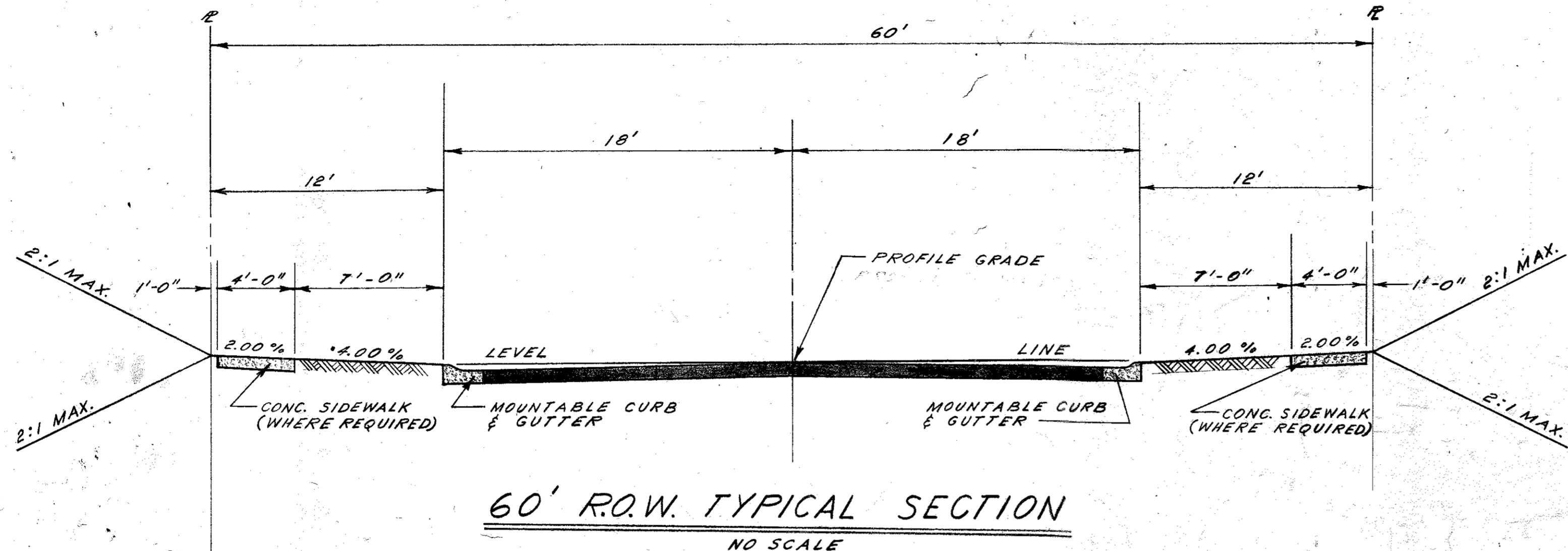
BROWNE-PANDULLO & ASSOCIATES  
ENGINEERS  
COLUMBIA, MARYLAND

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

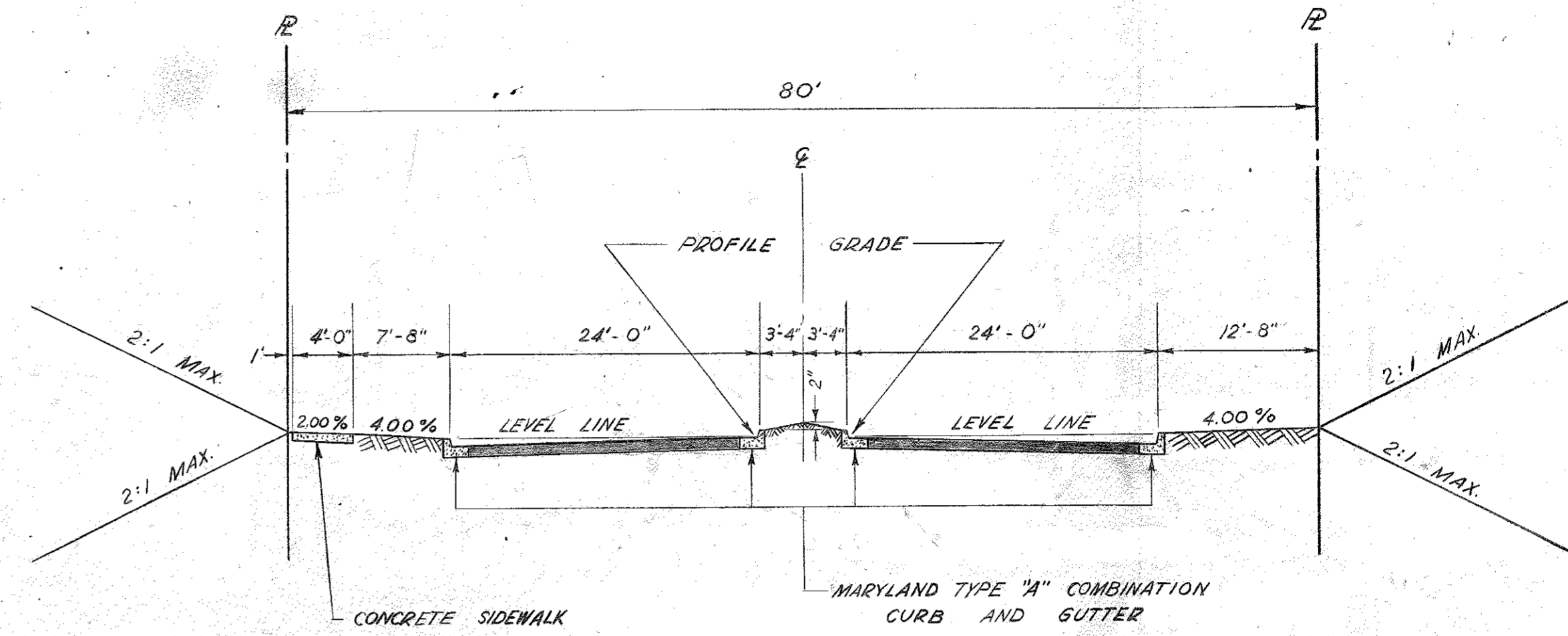
PROJECT AREA  
VILLAGE of OAKLAND MILLS SECT. 1  
THUNDER HILL AREA 2

PROJECT TITLE  
**DRAINAGE DETAILS**

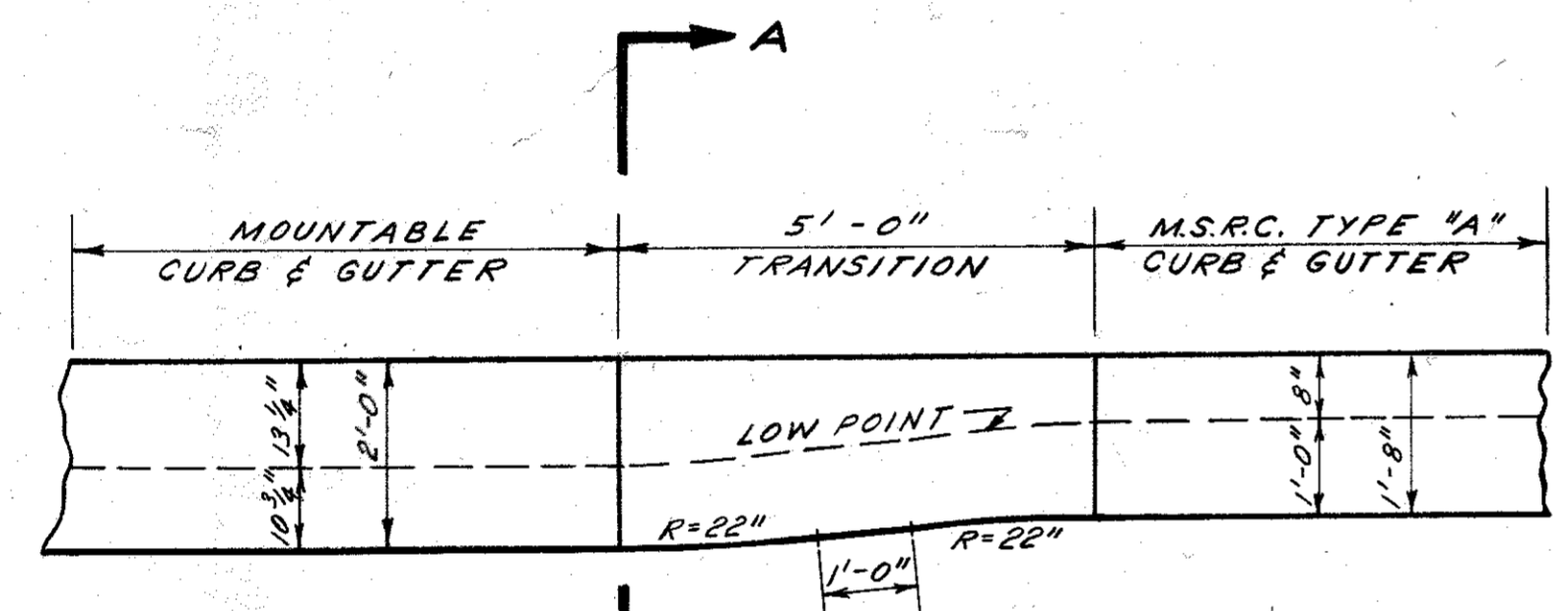
Des By W.J.K. Scale AS SHOWN Dwg. No 14 OF 16  
Dwn By W.J.K. Date JUNE 15, 1968 C.C.F. No  
Chk By WJK Approved



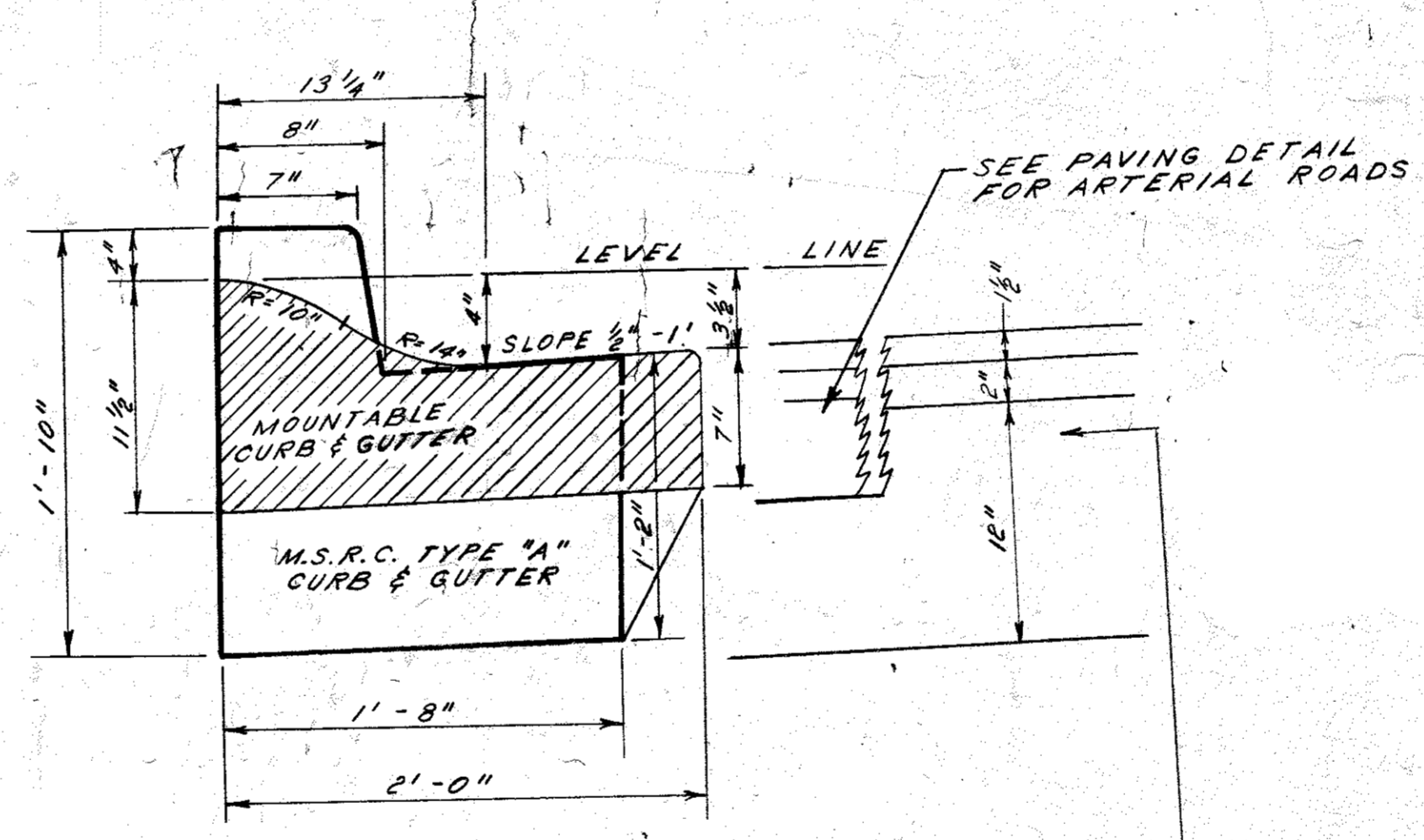
**60' R.O.W. TYPICAL SECTION**  
NO SCALE



**80' R.O.W. SECTION**  
NO SCALE

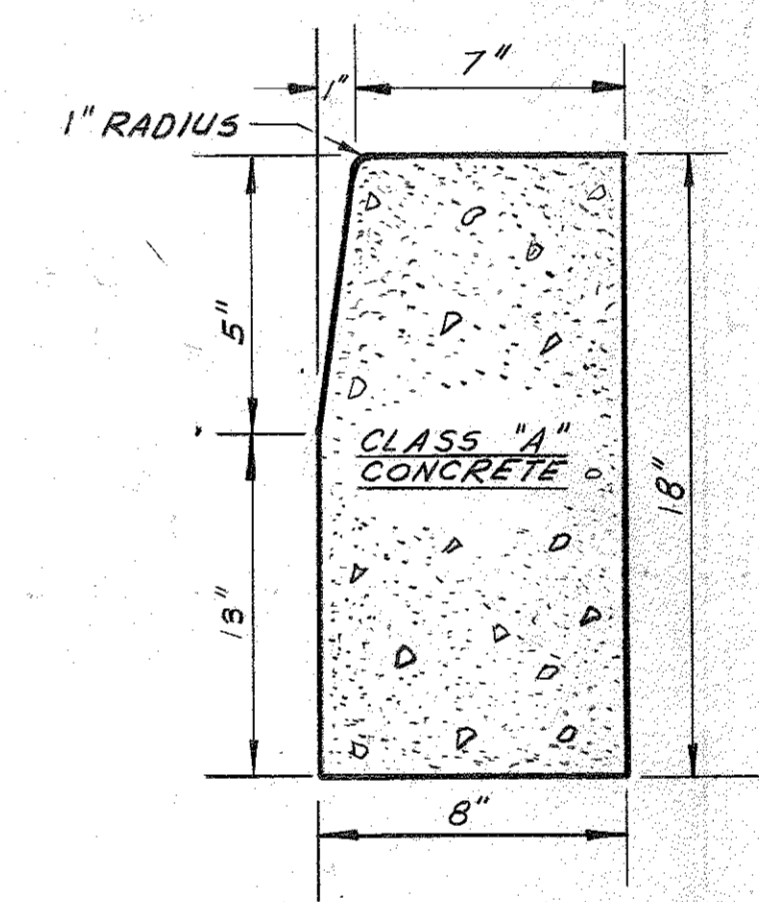


**PLAN**



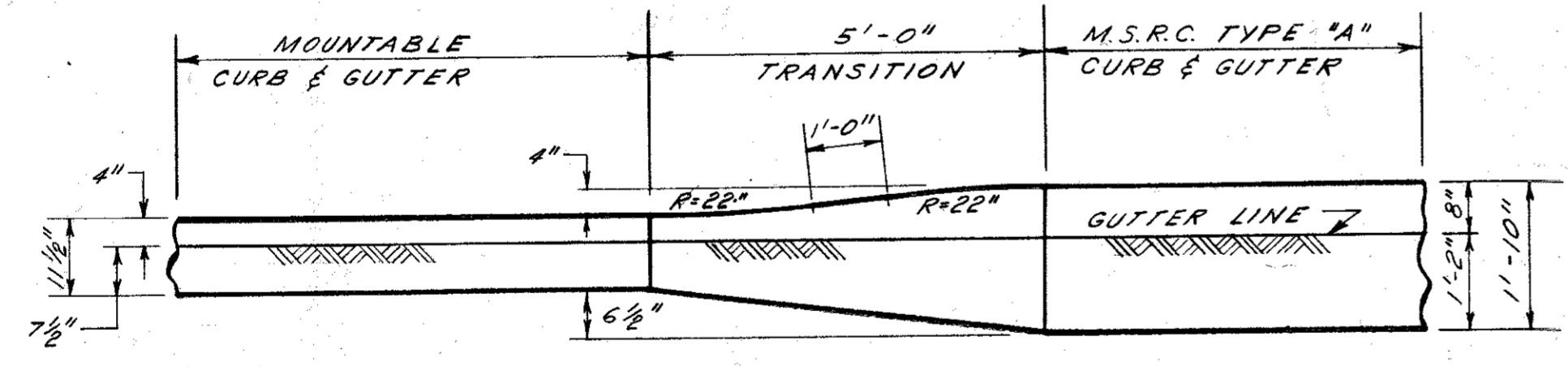
**SECTION A-A**

12" COMPACTED PLANT MIX STABILIZED STONE AGGREGATE PLUS 3/12" COMPACTED MD. SPEC. "B" BITUMINOUS CONCRETE (2" BASE - 1 1/2" SURFACE) (TO BE PLACED WHEN USING MARYLAND TYPE "A" CURB OR WHERE DIRECTED ON PLANS)

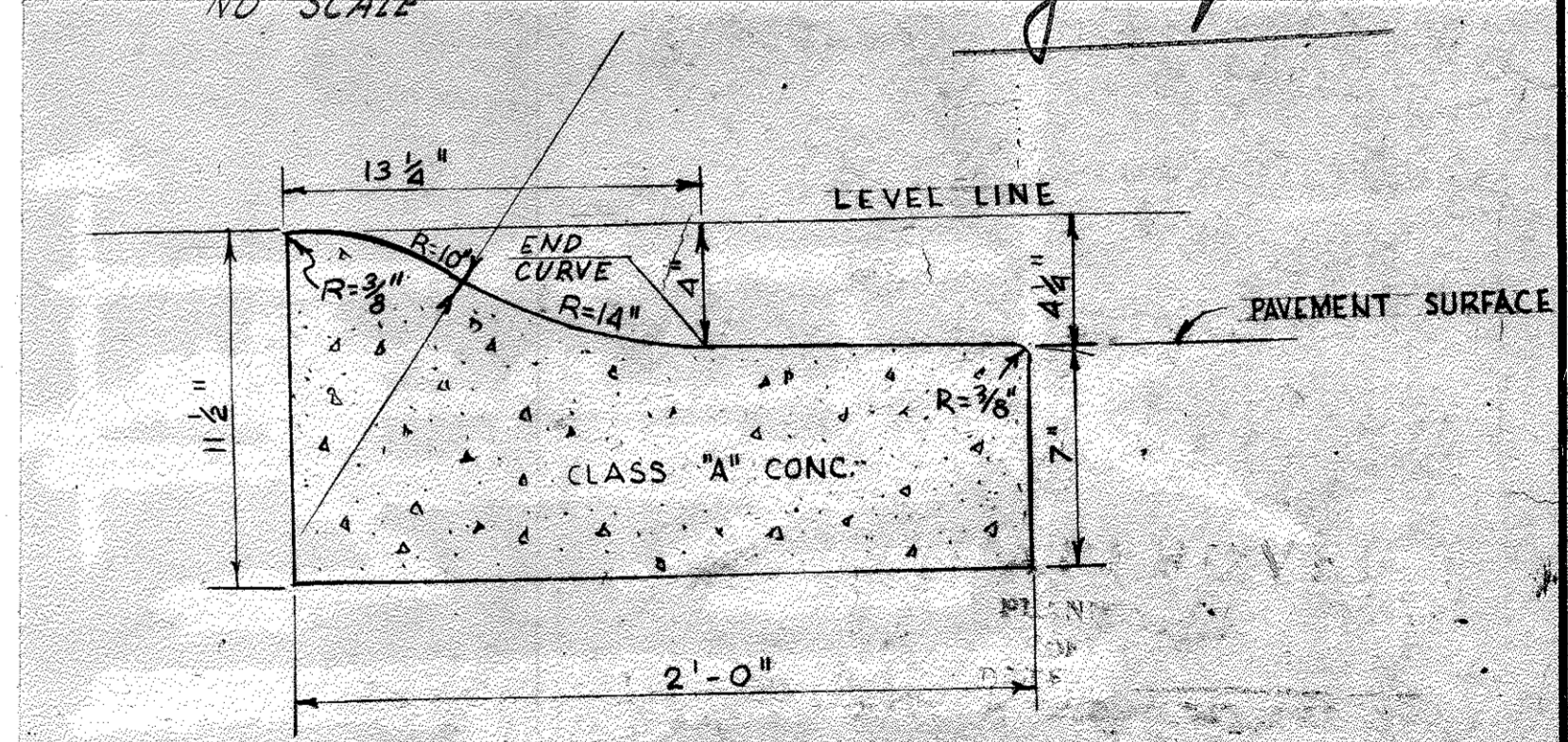


**VERTICAL CURB**  
NO SCALE

**APPROVED**  
PLANNING COMMISSION  
OF HOWARD COUNTY  
DATE 12/16/68  
*JWK*

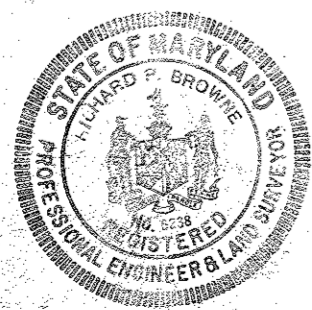


**ELEVATION**



**MOUNTABLE CURB & GUTTER FOR CUL-DE-SAC ISLANDS**  
NO SCALE

**MOUNTABLE CONCRETE CURB & GUTTER  
TRANSITION TO MARYLAND STATE ROADS  
COMMISSION TYPE "A" CONCRETE CURB  
& GUTTER**  
NO SCALE

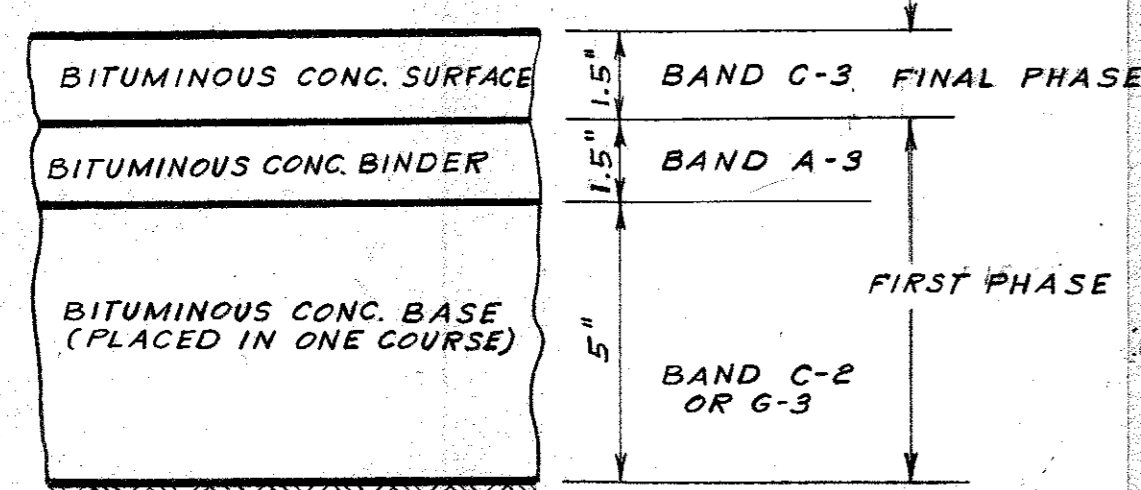


*Richard P. Brown*

**BROWNE-PANDULLO & ASSOCIATES**  
ENGINEERS  
COLUMBIA, MARYLAND

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

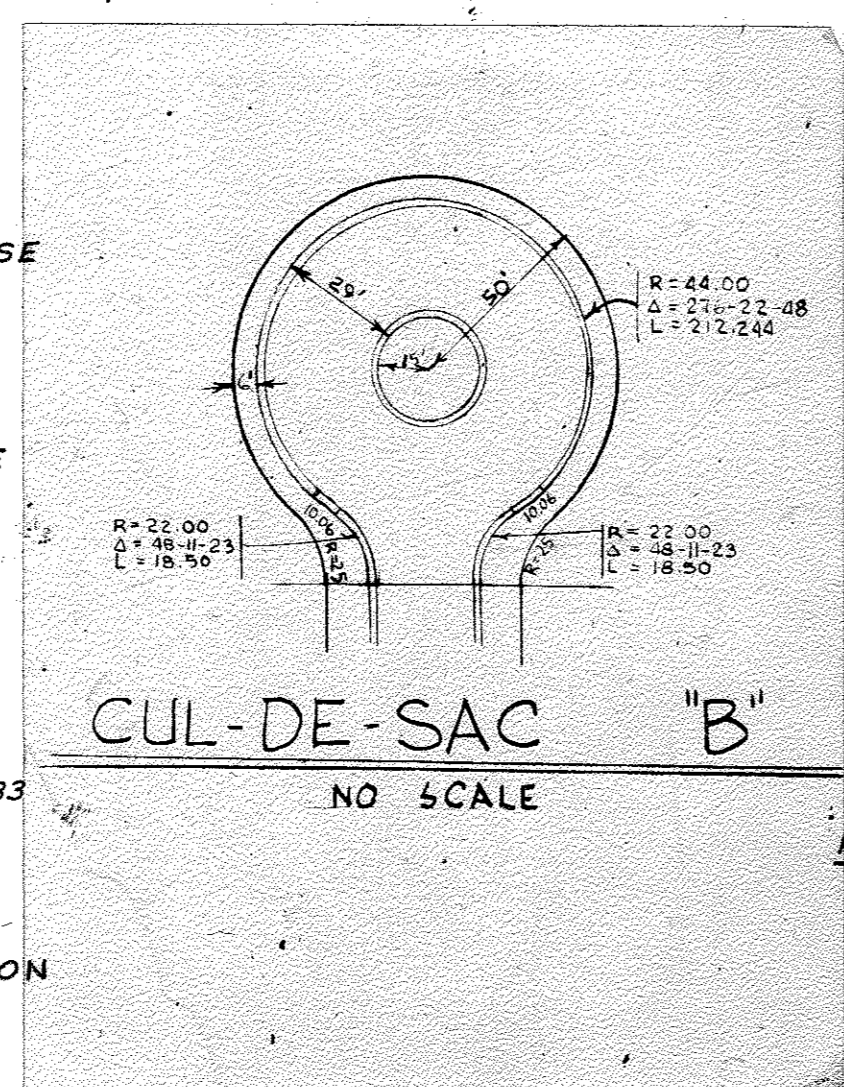
PROJECT AREA VILLAGE of OAKLAND MILLS SECT. I THUNDER HILL AREA 2	
PROJECT TITLE <b>ROADWAY DETAILS</b>	
Des By W.J.K.	Scale AS SHOWN
Drn By F.A.S.	Date JUNE 15, 1968
Chk By WJK	Approved
Dwg. No 15 OF 16	C.C.F. No



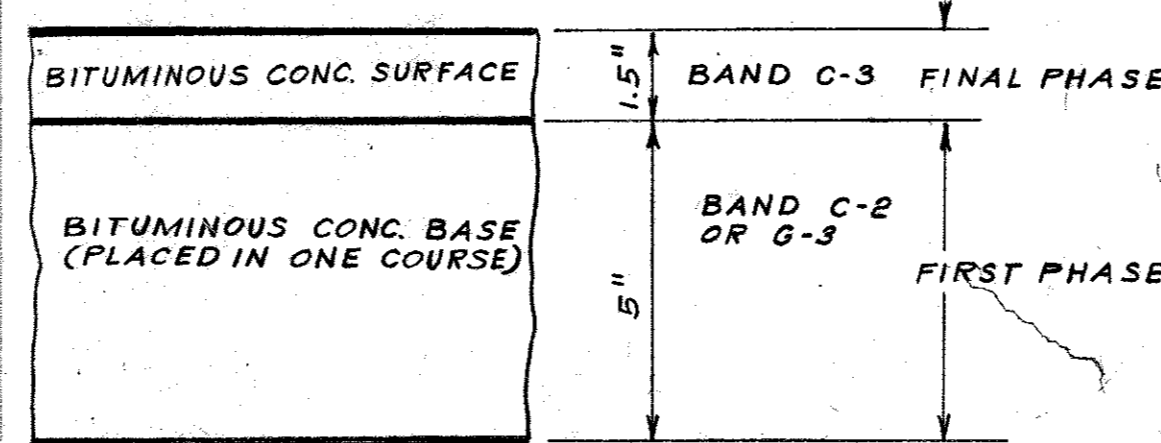
CLEARING & GRADING — ARTICLE C-1  
 SUBGRADE — ARTICLE C-2  
 BASE COURSE — ARTICLE C-31 OR C-33  
 BINDER COURSE — ARTICLE C-31  
 SURFACE COURSE — ARTICLE C-31

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

**ARTERIAL RESIDENTIAL STREET**  
 NO SCALE  
 D-113 PAGE 165 C



**CUL-DE-SAC "B"**  
 NO SCALE

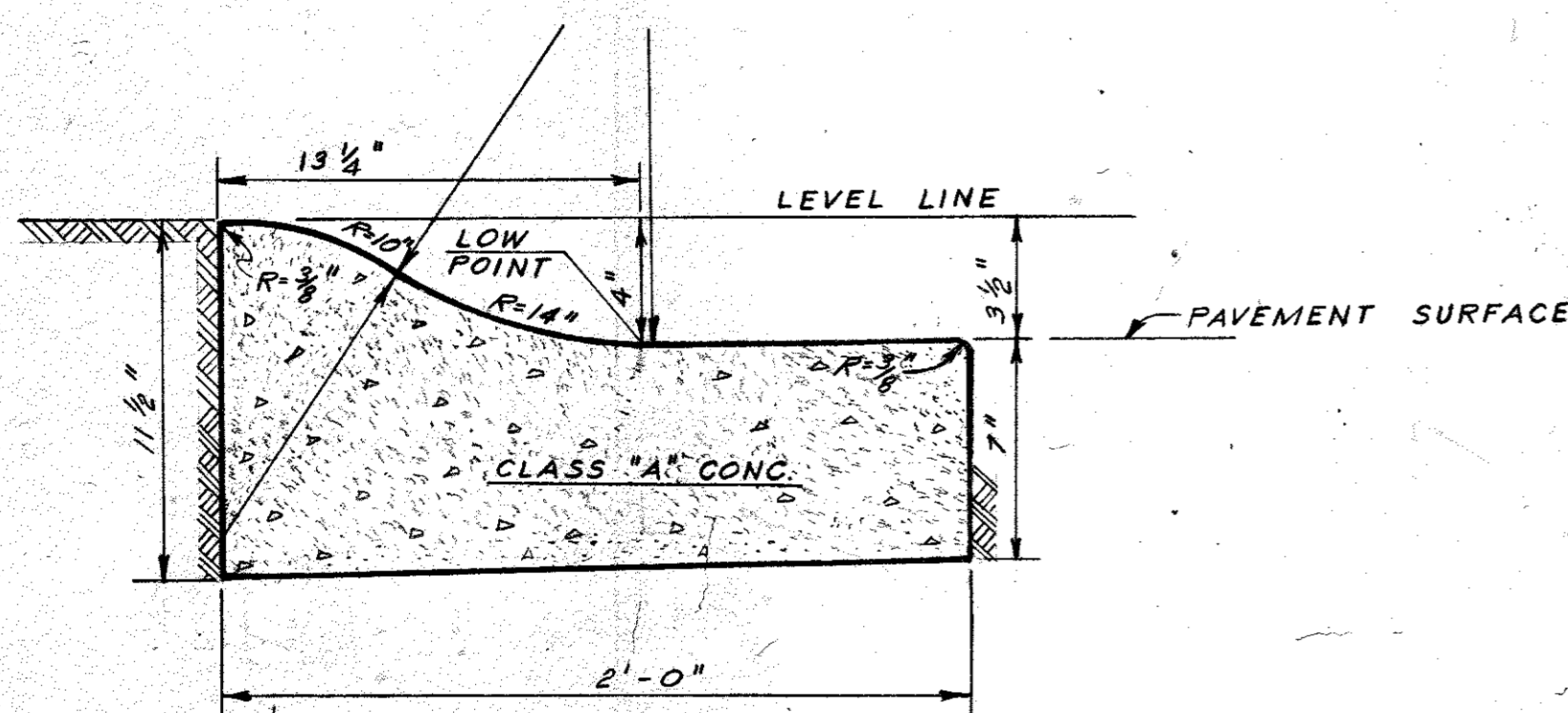


CLEARING & GRADING — ARTICLE C-1  
 SUBGRADE — ARTICLE C-2  
 BASE COURSE — ARTICLE C-31 OR C-33  
 SURFACE COURSE — ARTICLE C-31

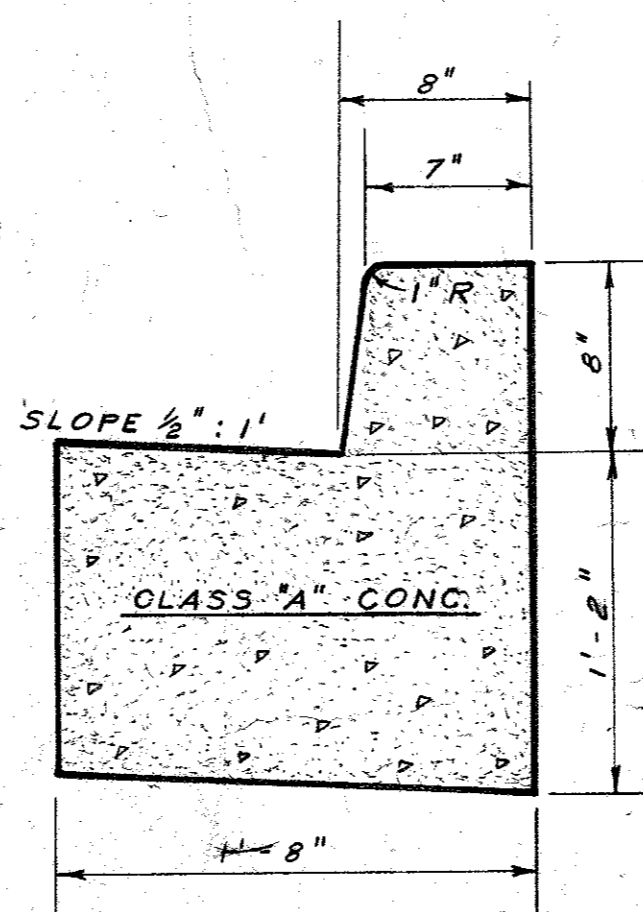
NOTE: PAVEMENT TO BE CONSTRUCTED IN ACCORDANCE WITH THE HOWARD COUNTY ROAD CONSTRUCTION CODE & SPECIFICATIONS.

**LOCAL RESIDENTIAL STREET**  
 NO SCALE  
 D-114 PAGE 165 D

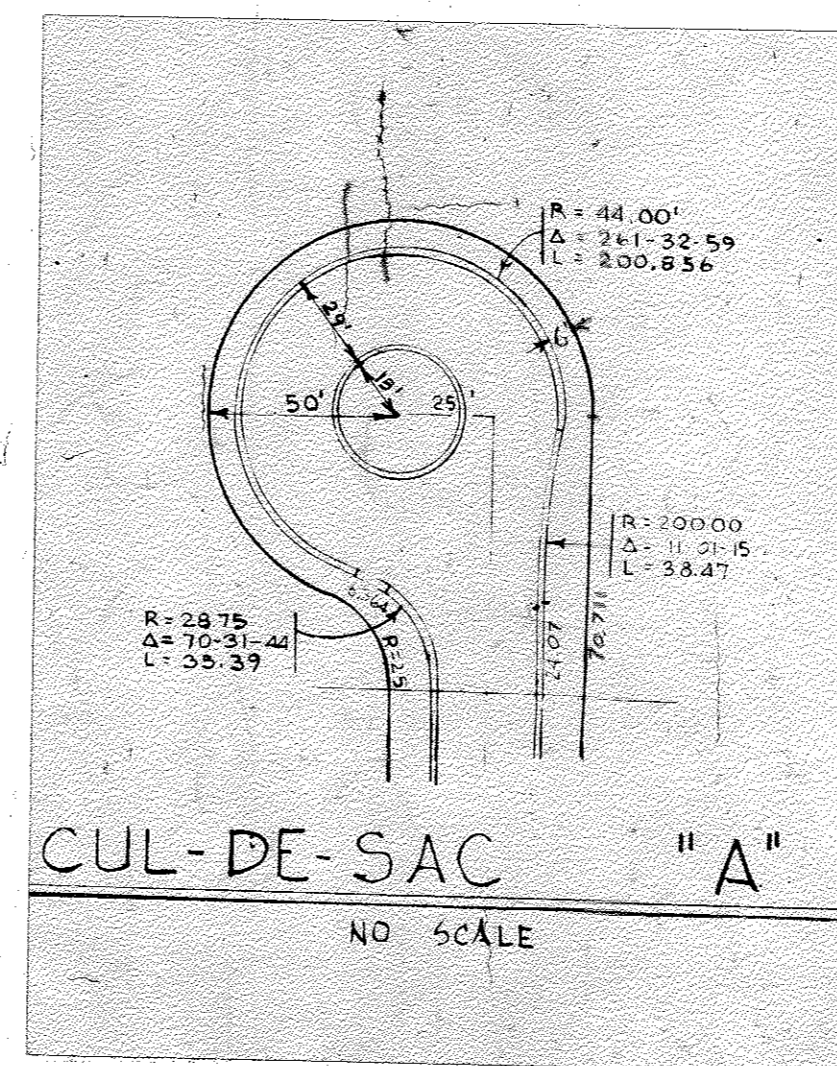
**PAVEMENT SECTION**



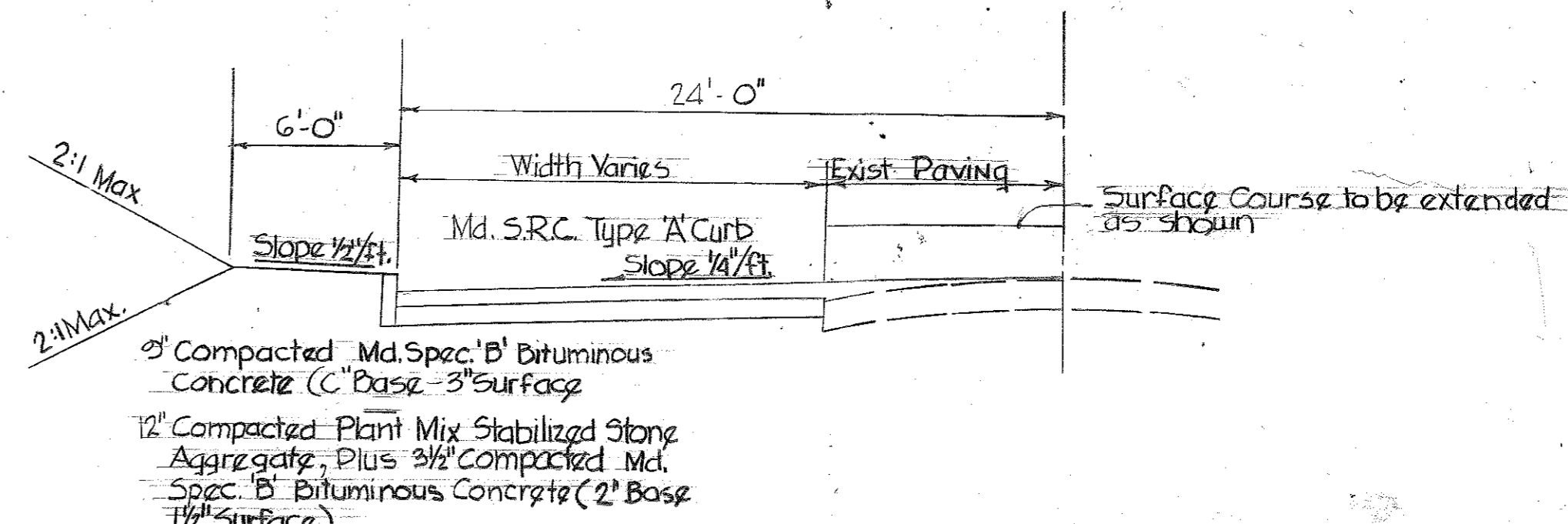
**MOUNTABLE CURB & GUTTER**  
 NO SCALE



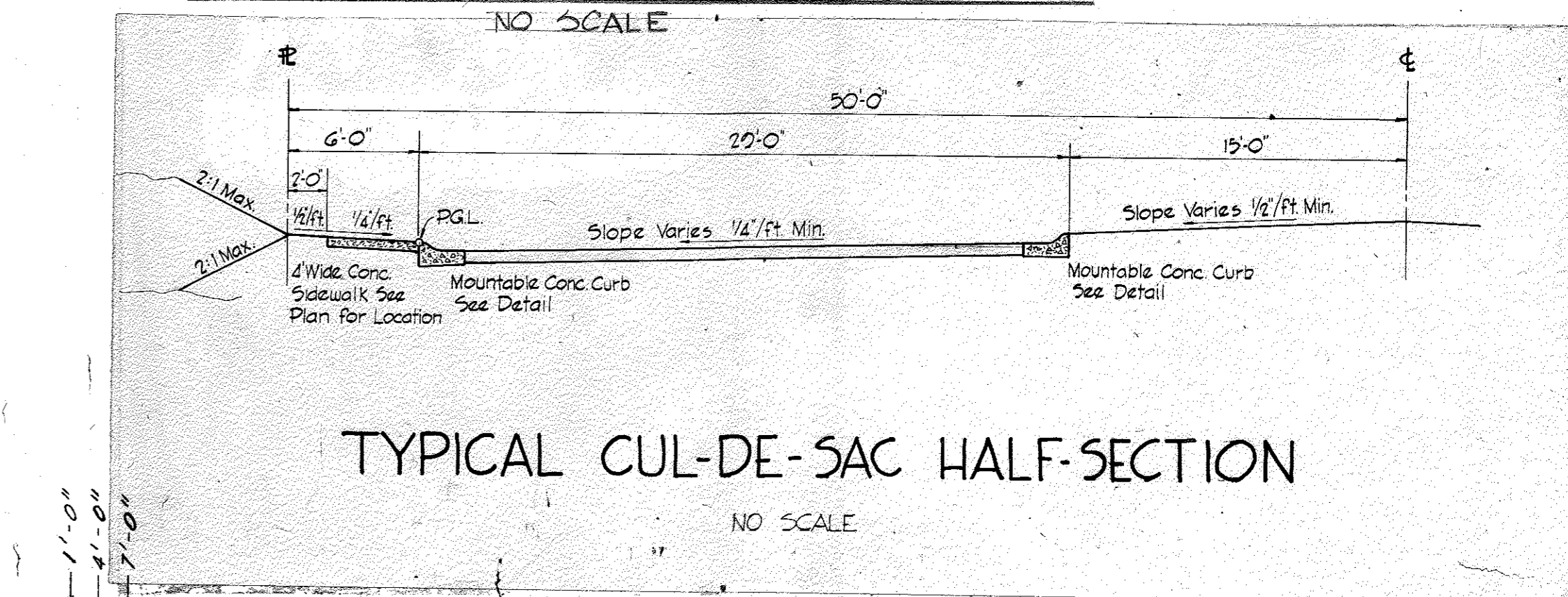
**MARYLAND STATE ROADS COMMISSION  
 TYPE "A" COMBINATION CONCRETE CURB  
 & GUTTER**  
 NO SCALE



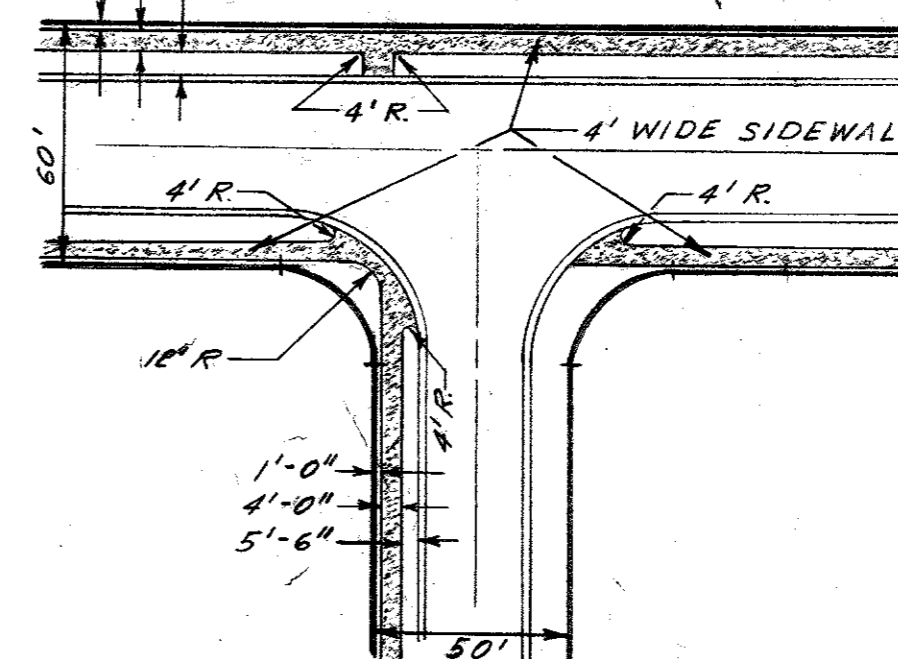
**CUL-DE-SAC "A"**  
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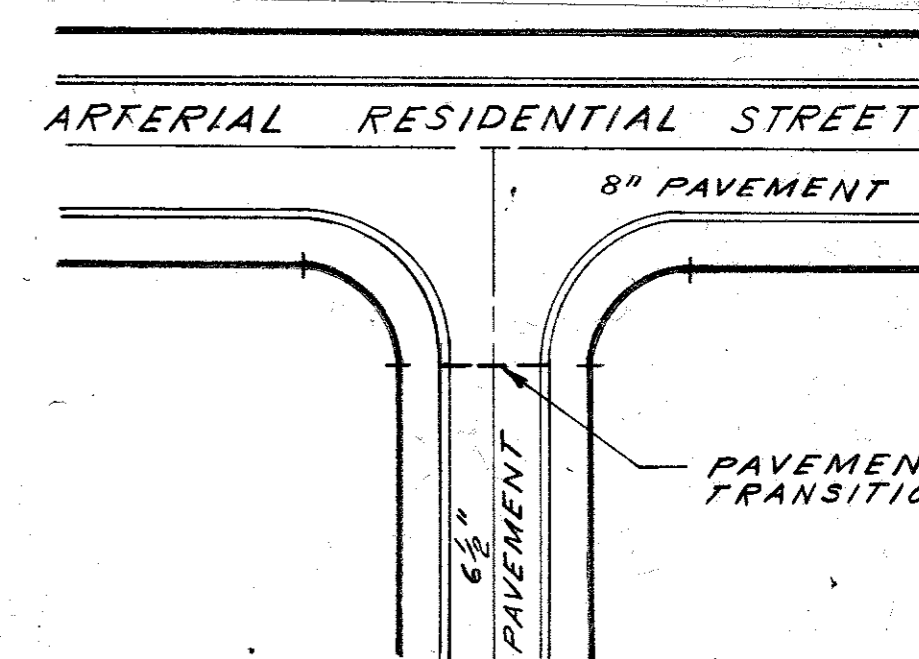
**TYPICAL 1/2 SECTION RTG. 108**  
 NO SCALE



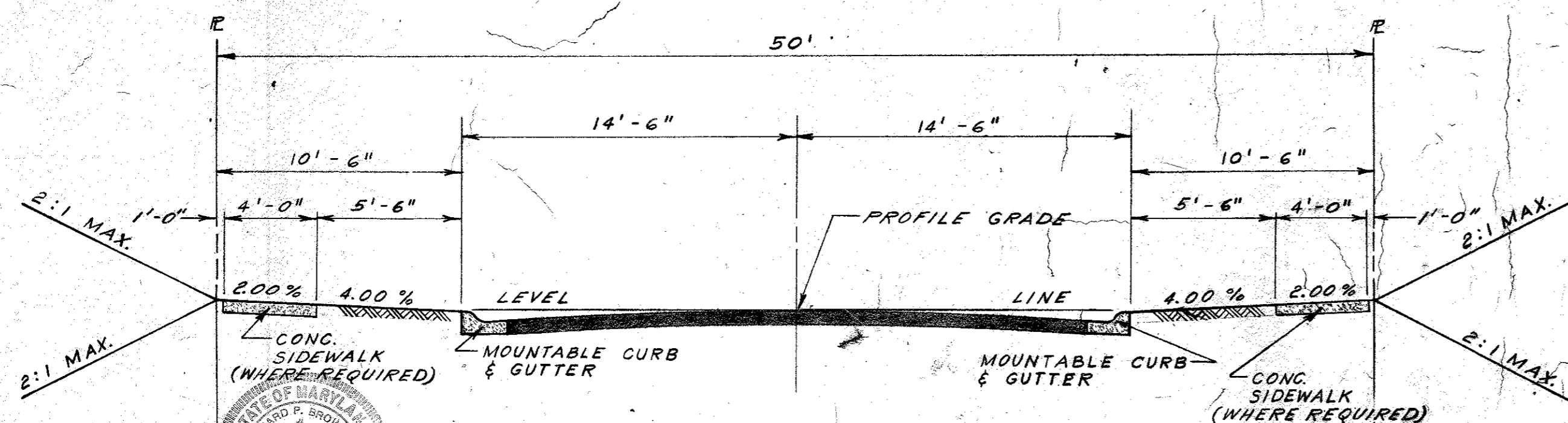
**TYPICAL CUL-DE-SAC HALF-SECTION**  
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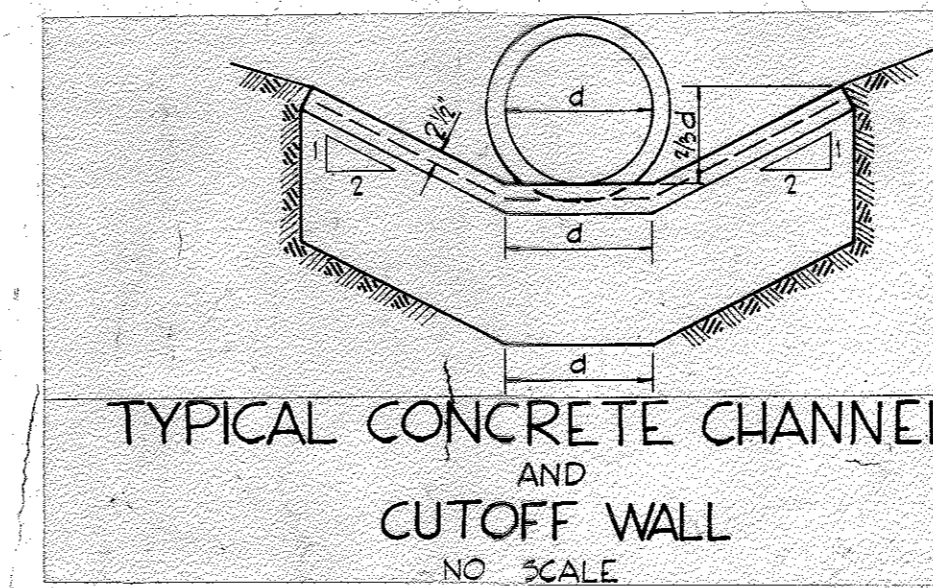
**TYPICAL SIDEWALK DETAIL  
 AT INTERSECTIONS**  
 NO SCALE



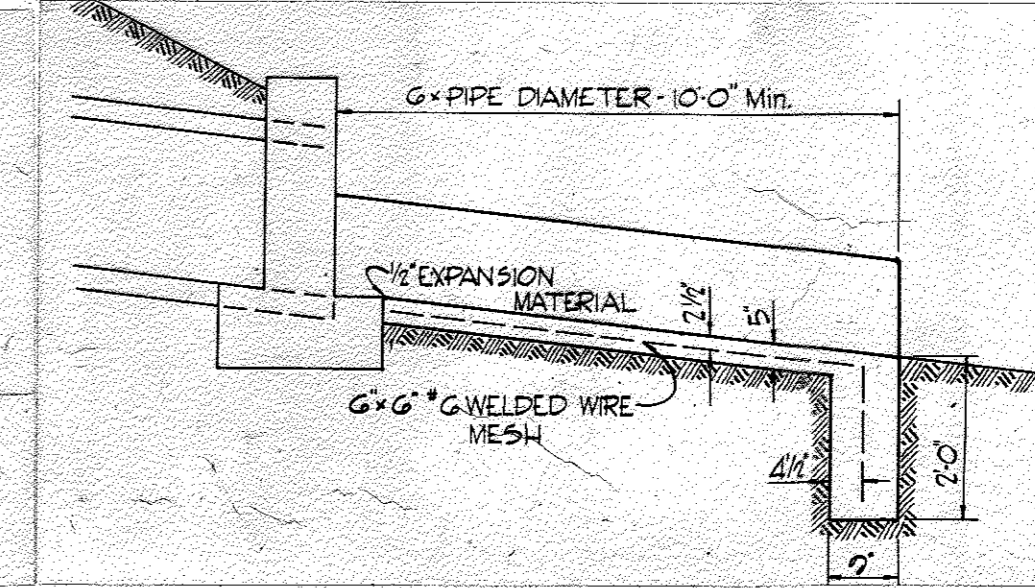
**TYPICAL PAVEMENT  
 TRANSITION DETAIL**  
 NO SCALE



**50' R.O.W. TYPICAL SECTION**  
 NO SCALE



**TYPICAL CONCRETE CHANNEL  
 AND CUTOFF WALL**  
 NO SCALE



**TYPICAL CONCRETE CHANNEL  
 AND CUTOFF WALL**  
 NO SCALE

APPROVED  
 PLANNING COMMISSION  
 OF HOWARD COUNTY  
 DATE: 12/16/68  
 J. N. P.

PROJECT AREA VILLAGE OF OAKLAND MILLS SECTION I THUNDER HILL AREA 2		PROJECT TITLE ROADWAY DETAILS	
Des By W.J.K.	Scale AS SHOWN	Dwg. No 16 OF 16	
Des By F.A.S.	Date JUNE 13, 1968	C.C.F. No	
Chk By WJK	Approved		

BROWNE-PANDULLO & ASSOCIATES ENGINEERS COLUMBIA, MARYLAND	
Rev Date	Rev No
Revision Description	

<b>COLUMBIA</b> 6TH ELECTION DISTRICT HOWARD COUNTY OWNER AND DEVELOPER	
HOWARD RESEARCH AND DEVELOPMENT CORP. THE VILLAGE OF CROSS KEYS - BALTIMORE, MARYLAND 21210	