REVISIONS

COLUMBIA

HOWARD COUNTY, MARYLAND

6th ELECTION DISTRICT

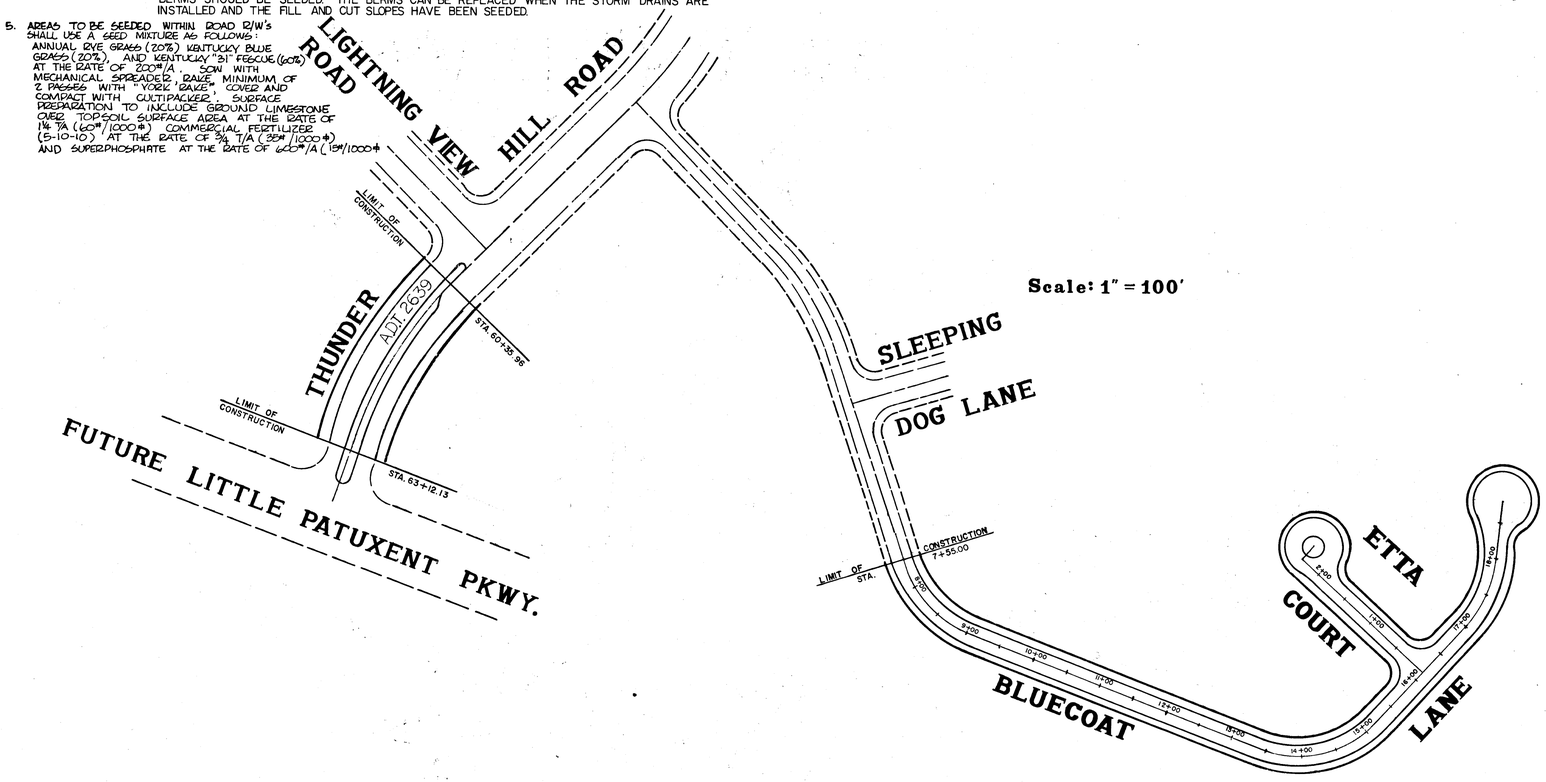
VILLAGE OF OAKLAND MILLS SEC. 1

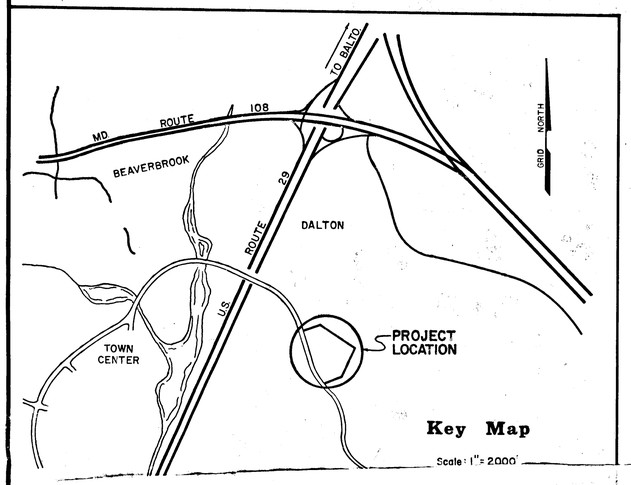
THUNDER HILL AREA 4, PART A

SHEET INDEX	
SHEET No.	DESCRIPTION
1.	TITLE SHEET
2.	BLUECOAT LANE STA. 7+55.00 – STA. 15+25
3.	BLUECOAT LANE STA. 15+25 – P.T. STA. 18+76.73
4.	ETTA COURT STA. 0+00 – STA. 2+30
5.	THUNDER HILL RD. STA. 60+35.96 – STA. 63+12.13
6.	ROADWAY DETAILS
7.	DRAINAGE AREA MAP

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. THUNDER HILL ROAD IS DESIGNED FOR 35 M.P.H. TRAFFIC SPEED IN ACCORDANCE WITH THE AASHO.
3. ALL OTHER ROADS ARE DESIGNED FOR 25 M.P.H. TRAFFIC SPEED IN ACCORDANCE WITH THE AASHO.
4. ALL FILL SLOPES AND CUT SLOPES IN THE EXCESS OF 4 VERTICAL FEET SHOULD BE BERMED WITH 18" HIGH DIVERSION BERMS TO HAVE POSITIVE GRADE TO TEMPORARILY CONSTRUCTED CHUTES. BERMS SHOULD BE SEEDED. THE BERMS CAN BE REPLACED WHEN THE STORM DRAINS ARE INSTALLED AND THE FILL AND CUT SLOPES HAVE BEEN SEEDED.
5. AREAS TO BE SEEDED WITHIN ROAD R/W's SHALL USE A SEED MIXTURE AS FOLLOWS: ANNUAL RYE GRASS (20%) KENTUCKY BLUE GRASS (20%), AND KENTUCKY "31" FESCUE (60%) AT THE RATE OF 200#/A. SOW WITH MECHANICAL SPREADER, RAKE MINIMUM OF 2 PASSES WITH "YORK" RAKE", COVER AND COMPACT WITH CULTIPACKER". SURFACE PREPARATION TO INCLUDE GROUND LIMESTONE OVER TOPSOIL SURFACE AREA AT THE RATE OF 1½ T/A (60#/1000#) COMMERCIAL FERTILIZER (5-10-10) AT THE RATE OF ¾ T/A (35#/1000#) AND SUPERPHOSPHATE AT THE RATE OF 600#/A (15#/1000#





OWNER & DEVELOPER

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

Certification by the Professional Engineer:

"I certify that the plan of development and the plan for control of silt and erosion meets the requirements, standards, and specifications of the Howard Soil Conservation District."

(SEAL) Richard P. Browne (Signature) P.E. & L.S. # 5238 — 19 Aug. 1969 (Date)

Certification by the developer:

"I certify that all development and/or construction will be done according to this plan of development and plan of silt and sediment control."

The Howard Research & Development Corporation
by: Thomas A. Garland, Agent (Signature) — 8-19-1969 (Date)

Signature block for approval by the Howard Soil Conservation District:

"This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District"

Reviewed Elmer F. Sauer, Dist. Conservationist — 8/6/69 (Date)

Approved Robert V. Young, Howard S.C.D. — 8/6/69 (Date)

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

Richard P. Browne 7-22-69
RICHARD P. BROWNE P.E. & L.S. LIC. NO. 5238 STATE MD — DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
C.M. Hickland, CHIEF, BUREAU OF HIGHWAYS — 4/4/70 DATE

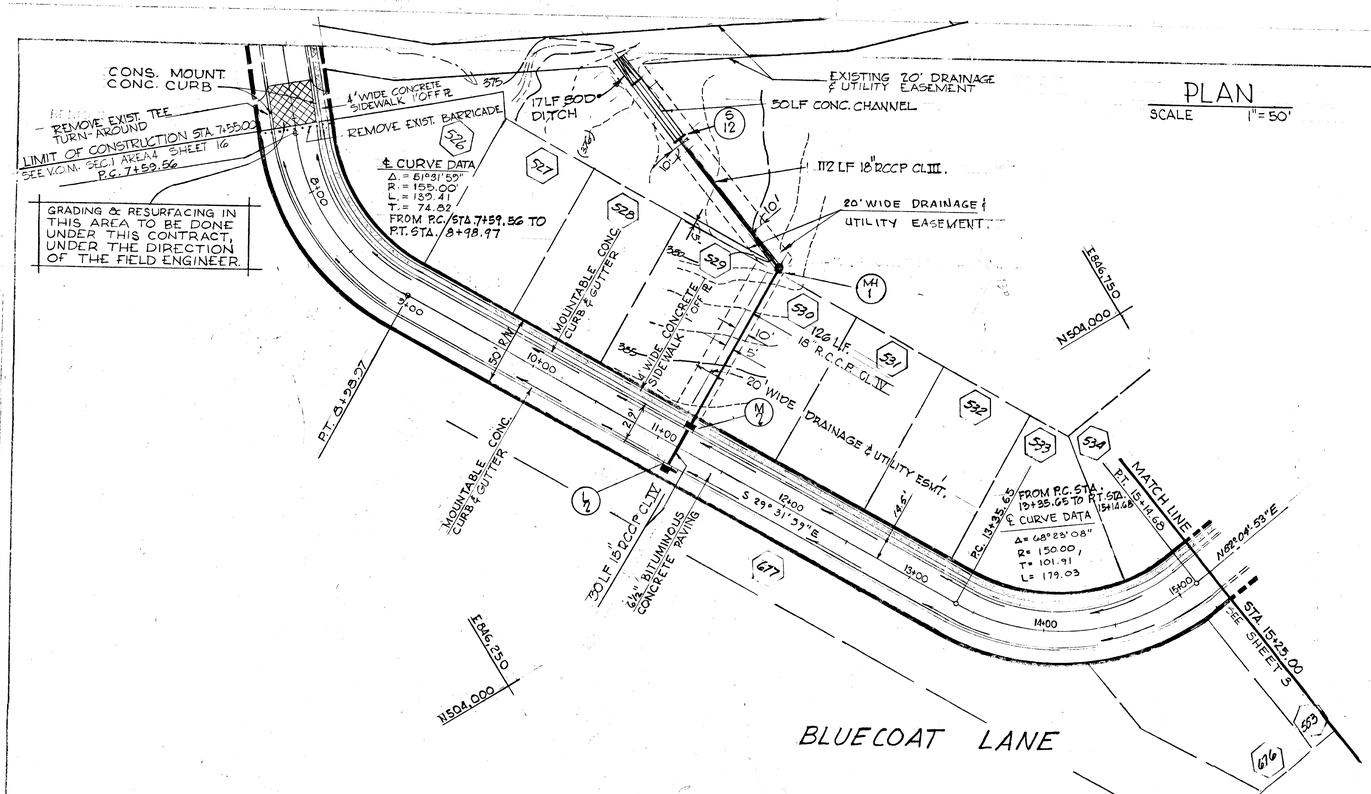
APPROVED: OFFICE OF PLANNING AND ZONING
J.W. Clawson, CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT — 5-4-70 DATE

AS-BUILT - SEPTEMBER 22, 70

#89

PLAN

SCALE 1" = 50'



STORM DRAINAGE STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INV. IN	INV. OUT	GRATE	REMARKS
I-2	B-10 INLET	UP- Sta. 11+72.13 Rt. ℄		386.60	391.05	Ho. Co. Std. Dwg D6-4B Pg. 119-B
		DOWN- Sta. 11+10.80 Rt. ℄			391.84	
M-2	A-5 INLET	Sta. 11+18.07 Lt. ℄ (4 INLET)	384.40	382.56	391.87	Ho. Co. Std. Dwg D6-4A Pg. 119-A
S-12	Std TYPE 'C' ENDWALL	AS SHOWN		375.87	—	Ho. Co. Std. Dwg. D-52 Pg. 107
MH-1	Std. MANHOLE	AS SHOWN	377.19	376.99	—	HO. CO. STD DRWG. D 103 Pg. 158

STATE OF MARYLAND — RICHARD P. BROWNE — NO. 5238 — REGISTERED — PROFESSIONAL ENGINEER & LAND SURVEYOR

Richard P. Browne 2-28-69
RICHARD P. BROWNE 5238 DATE

BROWNE-PANDULLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

Rev. Date	Rev. No.	Revision Description
20 JUNE 69	1	ADDITIONAL OUTFALL DRAIN MH 1 TO S-12 AS SHOWN.

COLUMBIA

6TH ELECTION DISTRICT — HOWARD COUNTY

HOWARD RESEARCH AND DEVELOPMENT CORP.
THE VILLAGE OF CROSS KEYS · RIVERSIDE · RUNNING SPRINGS

PROJECT AREA
VILLAGE OF OAKLAND MILLS SEC. I
THUNDER HILL AREA 4, PART A

PROFILE
BLUECOAT LANE
PLAN & PROFILE

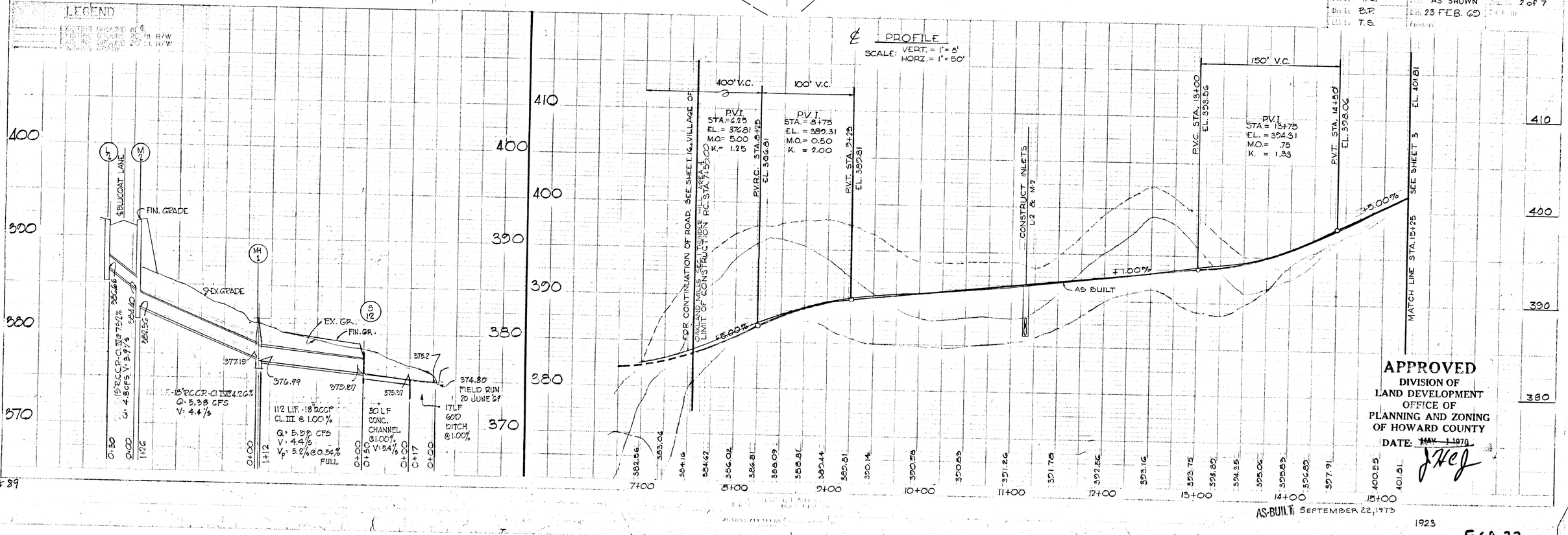
Des. by:	T.S.	Scale:	AS SHOWN
Dr. by:	B.P.	Date:	23 FEB. 69
Ck. by:	T.S.	Sheet No.	2 of 7

LEGEND

EXISTING GRADE @ ℄ & R/W
PROPOSED GRADE @ ℄ & R/W

℄ PROFILE

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



APPROVED
DIVISION OF LAND DEVELOPMENT
OFFICE OF PLANNING AND ZONING
OF HOWARD COUNTY
DATE: ~~MAY 1 1970~~

AS-BUILT SEPTEMBER 22, 1973

#89

1923

F 69-32

PLAN
SCALE 1"=50'

℄ CURVE DATA
Δ= 66° 28' 00"
R= 150.00'
L= 174.01'
T= 98.28'
FROM P.C. STA. 17+02.72
TO P.R.C. STA. 18+76.73

OPEN SPACE

20' WIDE DRAINAGE & UTILITY EASEMENT "A2" SEE ADJACENT PLAN

END SIDEWALK STA. 1+68 LT. 105'

ETTA COURT

SEE SHEET 4

MATCH LINE STA 0+50

MOUNTABLE CONC. CURB & GUTTER 4' WIDE CONC. SIDEWALK 1' OFF P.L.

P.C. STA. 17+02.72 L.P. 0.37.17

P.R.C. STA. 18+76.73 L.P. 0.37.17

MOUNTABLE CONC. CURB & GUTTER

6 1/2" BITUMINOUS CONCRETE PAVING

BEGIN TOP OF CURB PROFILE STA. 18+13.33 L.P. 0+00

MATCH LINE STA 15+25.00 SEE SHEET 2

℄ INT. 16+10.20 BLUECOAT LANE = 0+00 ETTA COURT

BLUECOAT LANE

N 503,750 E 846,500

503,750 E 847,150

504,000 E 847,250

CUL-DE-SAC CURVE DATA

FILLET
Δ= 60° 00' 00"
R= 35.50'
L= 37.17'
T= 20.50

CUL-DE-SAC
Δ= 261° 47' 13"
R= 30.50'
L= 180.48'
FROM STA. P.C. 0+37.17 TO P.R.C. 2+17.65

STORM DRAINAGE STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEV.	REMARKS
A2	A-10 INLET	L.P. STA. 1+73.68 (℄ INLET)		397.85	404.04	Ho.Co. Std. Dwg D64-A Pg. 119A
S-G	Std. TYPE "C" E.W.	L.P. Sta. 1+73.68 105' Rt. ℄		387.35		Ho.Co. Std. Dwg D-52 Pg. 107

PLAN
EASEMENT "A2"
SCALE: 1" = 50'

105 LF 15" RCCP CL III

20' WIDE DRAINAGE & UTILITY EASEMENT "A2"

S-G

85 CONC. CHANNEL

℄ ENDWALL

RICHARD P. BROWNE 5238 — 7-28-69 DATE

BROWNE-PANDULLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

Rev. Date	Rev. No.	Revision Description
20 JUNE 69	2	EXTEND CONC. CHANNEL OUTFALL S-6

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

PROJECT NAME
VILLAGE OF OAKLAND MILLS SEC. 1
THUNDER HILL — AREA 4, PART A

BLUECOAT LANE
PLAN & PROFILE

Des. By	W.K.	Scale	AS SHOWN
Drn. By	B.P.	Date	23 FEB. 69
Ck'd. By	W.K.	Approved	

Sheet No. 3 of 7
F.C.T. No.

LEGEND
EXISTING GROUND @ ℄
EXISTING GROUND 20' RT. R/W
EXISTING GROUND 20' LT. R/W
PROPOSED GRADE

℄ PROFILE

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

STA. 15+25.00 SHEET 2 — MATCH LINE

15+50 PVC EL.= 403.36

200' V.C.
P.V.I.
STA. = 16+50
EL. = 408.06
M.O. = 1.50
K. = 1.50

17+50 PVT EL.= 407.06

+5.00%

℄ INT. 16+10.20 BLUECOAT LANE = 0+00 ETTA COURT EL.= 405.24

TOP CURB PROFILE

BEGIN TOP CURB PROFILE = 0+00 T.C. EL. 406.36

TOP OF CURB PROFILE

AS BUILT -1.00%

50' V.C.
P.V.I.
STA. 1+75
EL. 404.61
M.O. 0.46
K= 1.83

50' V.C.
P.V.I.
STA. 2+25
EL. 405.04
M.O. 0.46
K= 1.83

P.V.C. 1+50 EL. 404.86

SUMP 1+77.52 EL. 404.77

P.V.R.C. 2+00 EL. 405.28

P.V.T. 2+50 EL. 406.10

END T. CURB PROFILE 2+66.84 = 18+10.57 ℄ EL. 406.36

-1.00%

END TOP CURB PROFILE 2+66.84 T.C. EL. 406.36

MATCH LINE

401.81 402.61 404.22 405.00 405.97 406.32 406.97 407.06 407.22 407.02 406.59 406.37 406.06 405.46 405.15 405.07 405.56 405.45 406.32

16+00 17+00 18+00 0+00 0+50 1+00 1+50 2+00 2+50

420 410 400 390

A2

405.00 FIN GRADE — EXISTING GROUND

FIN. GR.

2:1 SLOPE

℄ EXISTING STREAM

105 L.F. 15" R.C.C.P. CL. V @ 1.00% Q=51.0 cfs. Vp=12'/s 0.35 FULL

386.50

85 L.F. CONC. CHANNEL @ 1.00% V=5.46'/s

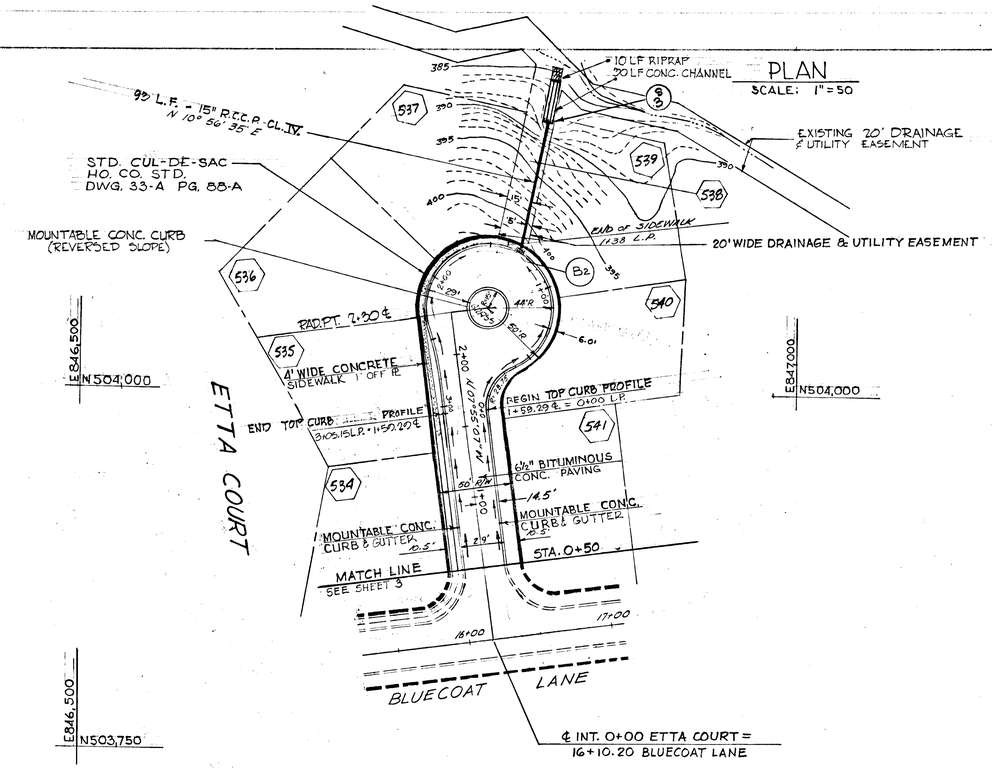
0+00 0+85

APPROVED
DIVISION OF LAND DEVELOPMENT OFFICE OF PLANNING AND ZONING OF HOWARD COUNTY
DATE MAY 1, 1973

AS-BUILT SEPTEMBER 22, 1973

FC9-32

#89



STORM DRAINAGE STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INV. IN	INV. OUT	R.C.C.P. CL. IV	REMARKS
B2	A-5 INLET	L.P. STA. 1+48.09		391.50	307.00	Ho.Co Std. Dwg. D64-A Pg. 119-A
S3	Std. TYPE 'C' E.W.	L.P. STA. 1+48.09 93' RT.		386.50		Ho.Co.Std. Dwg D-52 Pg. 107

RICHARD P. BROWNE 5238 — DATE 2-28-69

BROWNE, PANDULLO & ASSOCIATES
ENGINEERS
COLUMBIA, MARYLAND

Rev. Date	Rev. No.	Revision Description

COLUMBIA
MAY LAND
6TH ELECTION DISTRICT - HOWARD COUNTY

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

PROJECT NO. VILLAGE OF OAKLAND MILLS SEC. 1
THUNDER HILL AREA 4, PART A

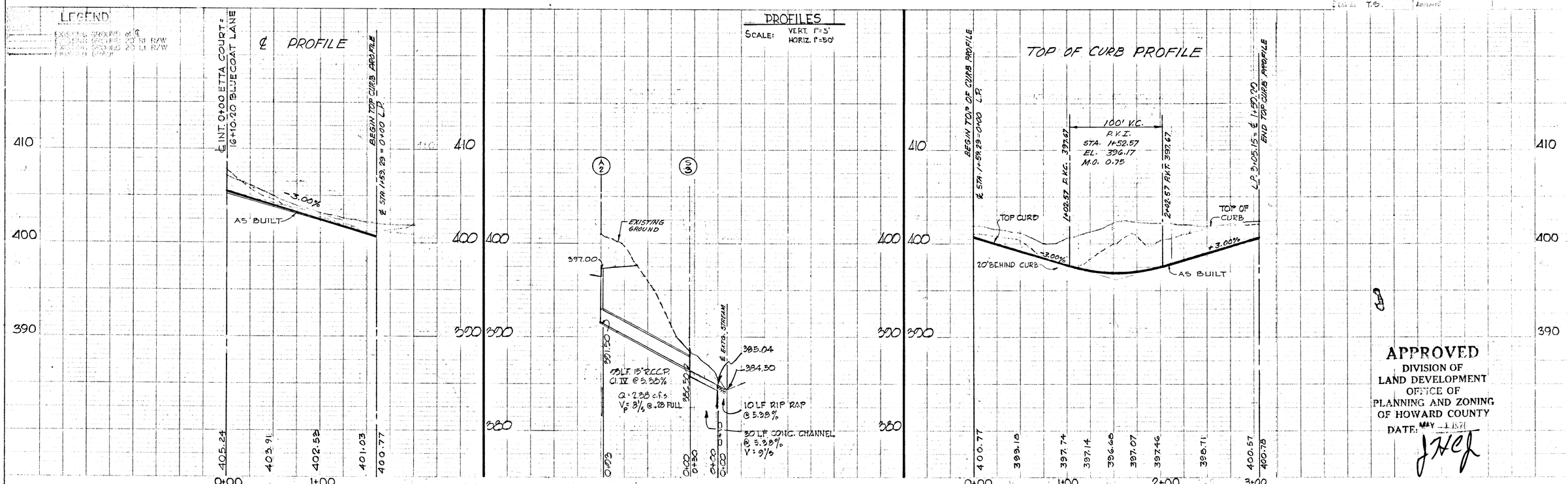
PROJECT TITLE ETTA COURT
PLAN & PROFILE

Des. by	W.K.	Scale AS SHOWN	Dwg. No. 4 of 7
Drn. by	B.P.	Date 25 FEB. 69	C.C. No.
Ckd. by	T.S.	Approved	

PLAN
PROFILE
DATE
BY
REVISED
NOTE ADDED
NOTE DELETED
AS BUILT
NO.

LEGEND
EXISTING GROUND ℄
EXISTING GROUND 25' R/W
EXISTING GROUND 25' R/W
PROPOSED GRADE

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

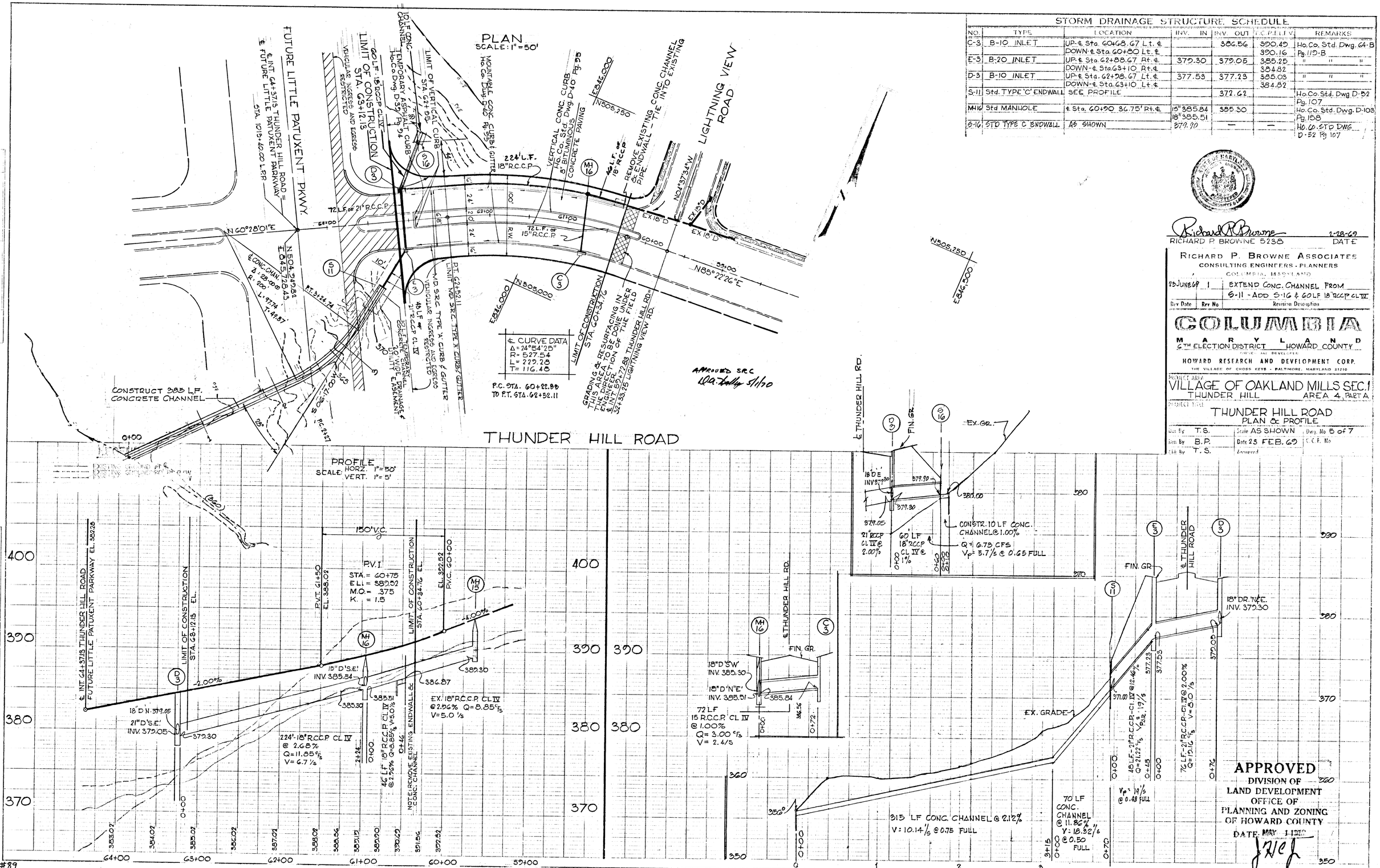


APPROVED
DIVISION OF LAND DEVELOPMENT
OFFICE OF PLANNING AND ZONING
OF HOWARD COUNTY
DATE: MAY - 1 1969

AS-BUILT, SEPTEMBER 22, 1973

#89

F69-32



STORM DRAINAGE STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	INV. IN	INV. OUT	T.C.P. ELEV.	REMARKS
C-3	B-10 INLET	UP-℄ Sta. 60+68.67 Lt. ℄		386.56	390.49	Ho. Co. Std. Dwg. 64-B
		DOWN-℄ Sta. 60+80 Lt. ℄			390.16	Pg. 119-B
E-3	B-20 INLET	UP-℄ Sta. 62+88.67 Rt. ℄	379.30	379.05	385.25	" " "
		DOWN-℄ Sta. 63+10 Rt. ℄			384.82	
D-3	B-10 INLET	UP-℄ Sta. 62+98.67 Lt. ℄	377.53	377.23	385.03	" " "
		DOWN-℄ Sta. 63+10 Lt. ℄			384.82	
S-11	Std. TYPE 'C' ENDWALL	SEE PROFILE		372.62		Ho. Co. Std. Dwg D-52 Pg. 107
MH16	Std MANHOLE	℄ Sta. 60+90 36.75' Rt. ℄	15" 385.84	385.30		Ho. Co. Std. Dwg. D-103 Pg. 158
			18" 385.51			
S-16	STD TYPE C ENDWALL	AS SHOWN	379.90	—	—	HO. CO. STD DWG. D-52 Pg 107

Richard P. Browne 2-28-69
RICHARD P. BROWNE 5238 DATE

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

Rev Date	Rev No	Revision Description
23 JUNE 69	1	EXTEND CONC. CHANNEL FROM S-11 - ADD S-16 & 60 LF 18" RCCP CL IV

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 SEC. 1
THUNDER HILL AREA 4, PART A

PROJECT TITLE
THUNDER HILL ROAD
PLAN & PROFILE

Dsn By T.S.	Scale AS SHOWN	Dwg. No 5 of 7	
Drn By B.P.	Date 23 FEB. 69	C.C.F. No	
Chk By T.S.	Approved		