GENERAL NOTES

1.) ALL WORK SHALL BE DONE IN ACCORDANCE WITH HOWARD CONTY STANDARDS, SPECIFICATIONS, AND DETAILS FOR CONSTRUCTION.
2.) ALL UTILITY COMPANIES MUST BE NOTIFIED 24 HOURS IN ADVANCE OF ANY CONSTRUCTION.
3.) ALL INLETS SHALL BE HOWARD COUNTY STANDARDS UNLESS OTHERWISE SHOWN. ALL "A" INLETS SHALL BE DEPRESSED.
4.) STORM DRAIN TRENCHES WITHIN ROAD RIGHTS-OF-WAYS SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY ROAD CODE.
5.) ANY DAMAGE, TO PUBLIC RIGHTS-OF-WAYS OR PAVING WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE
6.) CONTRACTOR TO NOTIFY THE HOWARD COUNTY DEPT. OF INSPECTION AT LEAST 3 DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS. TELEPHONE 792-7272
7.) ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN COMPLIANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, 1978 EDITION.
8.) DESIGN SHOWN HEREON IS BASED ON 1' AERIAL TOPOGRAPHY PREPARED BY MAPS INC.
9.) WATER AND SEWER SEDIMENT CONTROL SHOWN ON SHEETS 15, 16, AND 17 IS FOR INFORMATIONAL PURPOSES ONLY. SEE WATER AND SEWER CONTRACT # 24-1758 D FOR WATER AND SEWER SEDIMENT CONTROL.

DENOTES STREET LIGHT 250 WATT ON 30' POLE 2 TOTAL
DENOTES STREET LIGHT 175 WATT ON 12' POLE 6 TOTAL

BENCH MARKS

B.M. # 1 ELEV = 374.31

P.K. NAIL SET IN C&P # 5, 40' ± SOUTHEAST OF P.I. "H-2"
* SEE SHEET 2 FOR LOCATION.

B.M. # 2 ELEV. = 315.72

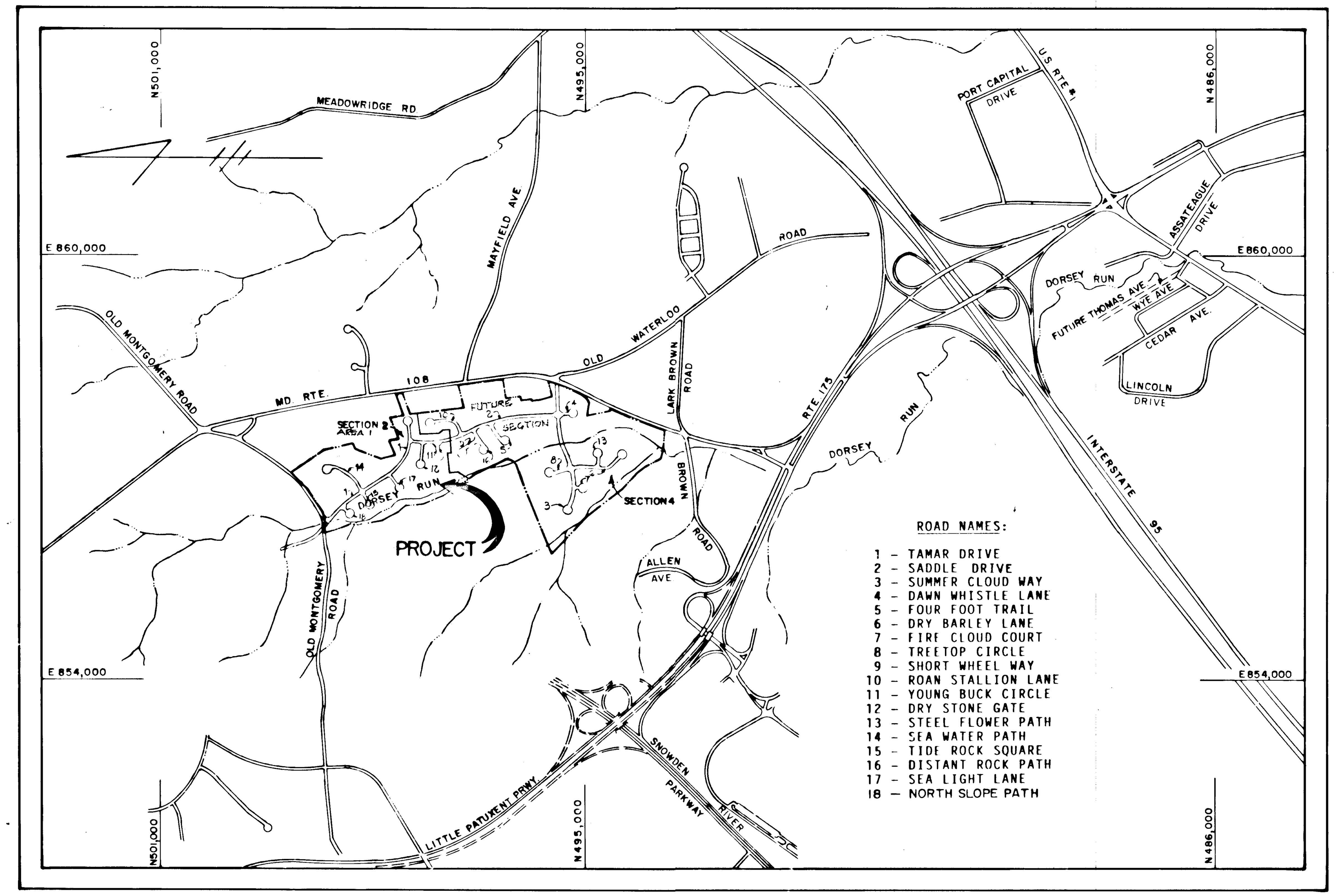
P.K. NAIL SET IN 30" OAK TREE BETWEEN TRAV. STA. H-9 & H-10; 150' SOUTH OF H-9
* SEE SHEET 7 FOR LOCATION.

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF ~~HIGHWAYS~~ ENGINEERING — DATE 1-22-88

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF ~~ENGINEERING~~ HIGHWAYS — DATE 1/21/88

APPROVED
OFFICE OF PLANNING AND ZONING
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 1/26/88

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF LAND DEVELOPMENT DIVISION — DATE 1-21-88



SCALE: 1" = 1200'

COLUMBIA
VILLAGE OF LONGREACH
SECTION 2 AREA 1
SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

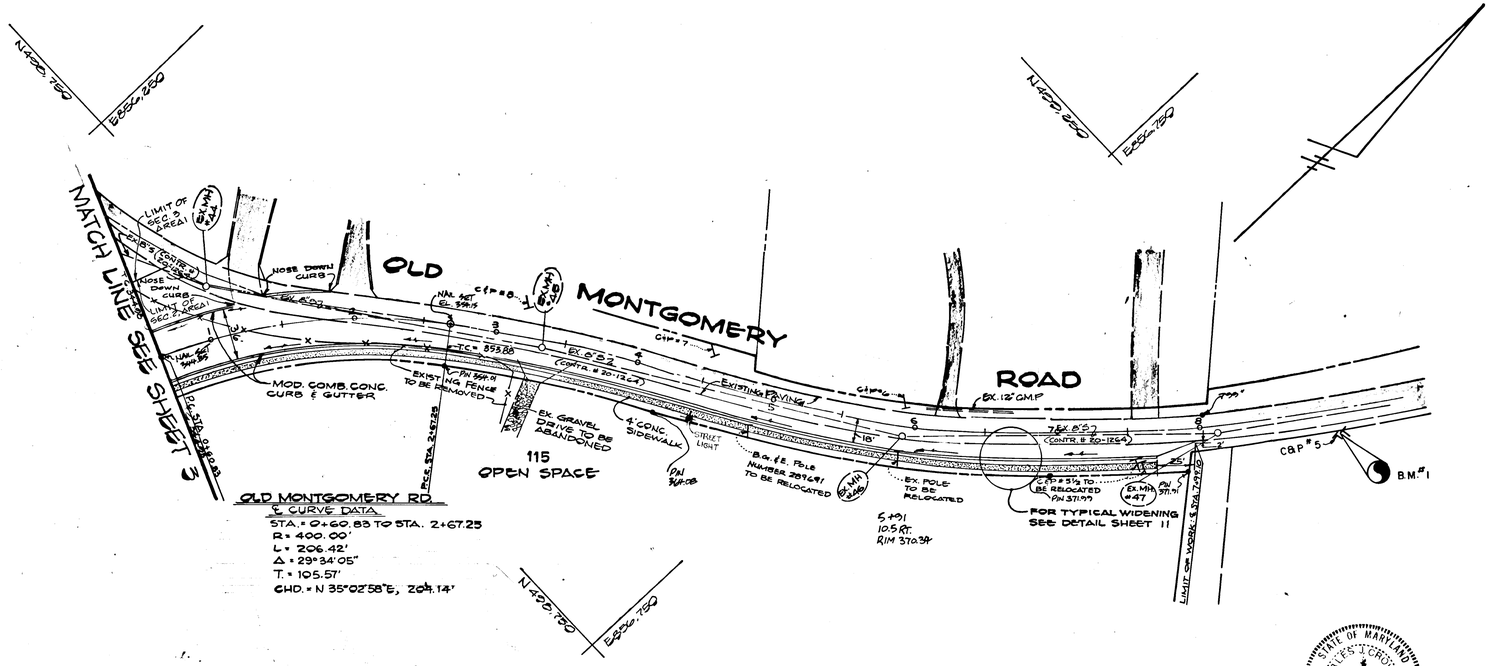
100

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERS & LAND SURVEYORS
8288 COURT AVENUE
ELLICOTT CITY, MARYLAND 21043

OWNER & DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

S87-39 P87-60

AS-BUILT JAN. 15, 1992 F88-78



APPROVED DEPARTMENT OF PUBLIC WORKS
CHIEF, LAND DEVELOPMENT DIVISION — DATE 11-21-88

APPROVED DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 1/21/88

APPROVED DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF ENGINEERING — DATE 1-22-88

APPROVED OFFICE OF PLANNING AND ZONING
DIRECTOR OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 1/26/88

PLAN: SURVEYED, PLOTTED, ALIGNMENT CHECKED, R/T OF WAY CHECKED, NOTE BOOK NO., BY, DATE

REVISION	DATE
Changed Top Of Curb & Ex. Ground Elevation	4-28-88

VILLAGE OF LONGREACH
SECTION 2 AREA 1
LOTS 1-117
6TH. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

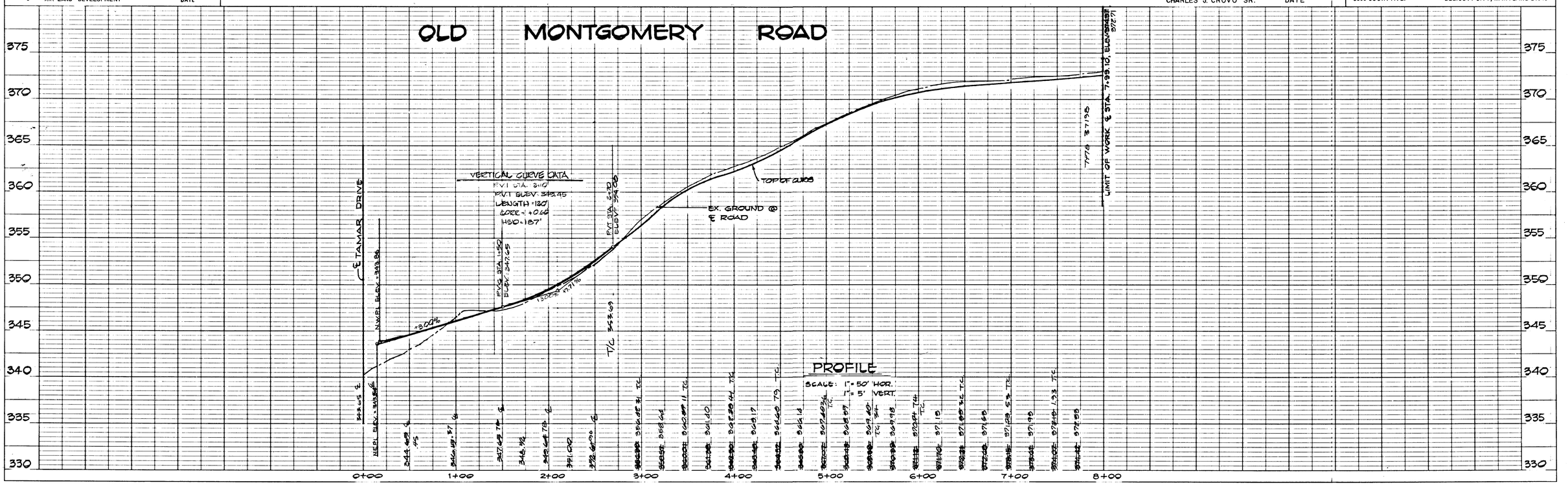
OLD MONTGOMERY ROAD
PLAN & PROFILE

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

SCALE AS SHOWN | DATE SEPT. 24, 1987 | DWG. NO. 2 OF 18
DES. R. ISAACS | DRN. D. PARRAN | CHK. C.J. CROVO

FISHER, COLLINS AND CARTER, INC.
CIVIL ENGINEERS AND LAND SURVEYORS
8388 COURT AVE. ELLICOTT CITY, MARYLAND 21043

STATE OF MARYLAND — CHARLES J. CROVO — No. 13208 — REGISTERED PROFESSIONAL ENGINEER
CHARLES J. CROVO SR. — DATE 11/1/87



PROFILE: SURVEYED, PLOTTED, GRADES CHECKED, B.M.'s NOTED, STRUCTURE NOTATIONS CHKD, NOTE BOOK NO., BY, DATE

F 88-78

AS-BUILT JAN. 15, 1992

PLAN | SURVEYED | DRAWN | ALIGNMENT CHECKED | RT. OF WAY CHECKED | NOTE BOOK NO. | BY | DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, LAND DEVELOPMENT DIVISION — DATE 1/21/88

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 1/21/88

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF ENGINEERING — DATE 1-22-88

APPROVED
OFFICE OF PLANNING AND ZONING
DIRECTOR OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 1/26/88

EX. PAVING TO BE REMOVED WITHIN THESE LIMITS. STABILIZE DISTURBED AREAS WITH SEED AND MULCH

OLD MONTGOMERY ROAD

MATCH LINE SEE THIS SHEET

EX. FENCE, EX. POLE, EX. PAVILION, EX. POLE, LIMIT OF WORK @ STA. 2+89

OLD MONTGOMERY ROAD RELOCATION
& CURVE DATA
@ STA. 1+71 TO @ STA. 8+85
R = 259.00
L = 1114.00
Δ = 55°01'48"
T = 587.25
CHD DIST. 1072.75'

NOTE: THE 6' GRASS SHOULDER SHALL TRANSITION FROM 6' TO THE EDGE OF EXISTING PAVING WITHIN THESE LIMITS @ STA. 1+71 TO 2+85.

MATCH LINE SEE THIS SHEET

OLD MONTGOMERY ROAD RELOCATION
& CURVE DATA
@ STA. 0+00 TO @ STA. 0+71
R = 600.00'
L = 71.00
Δ = 6°46.06"
T = 35.52
CHD DIST. 70.96'

NOTE:
THE CONTRACTOR SHALL TRANSITION THE PAVING WIDTH FROM 24' TO THE EXISTING PAVING LIMITS @ STA. 1+71 TO @ STA. 2+85

NOTE:
SEE SHEET 11 FOR OLD MONTGOMERY ROAD RELOCATION PROFILE AND TYPICAL SECTION

EX. PAVING TO BE REMOVED WITHIN THESE LIMITS. STABILIZE DISTURBED AREA WITH PERMANENT SEEDING
EX. FENCE TO BE REMOVED

OLD MONTGOMERY ROAD
6' GRASS SHOULDER
EX. PAVING
EX. FENCE
EX. POLE
SIDEWALK RAMP SEE DETAIL 'A' SHEET 11
18" CMP 16 Gauge (18')
SIDEWALK RAMP SEE DETAIL 'A' SHEET 11
RIP RAP APRON
EX. 12" C.M.P. TO BE REMOVED
MOD. COMB. CONC. CURB & GUTTER
4' CONC. SIDEWALK
DRIVE
MODIFIED COMB. CONC. CURB & GUTTER
LIMIT OF PAVING @ STA. 36+54.50
Limit Of Submission

DORSEY RUN
TAMAR DRIVE
117 OPEN SPACE
115 OPEN SPACE
50' R/W
EX. GUARDRAIL TO BE REMOVED
EX. GRAVEL DRIVE TO BE ABANDONED
EX. SUPPORT WALL
GRASS CHANNEL TO PROT. INV. & CENTER CULVERT
EX. 4'-7" C.M.P. TO BE REMOVED
NOTE: RELOCATE STREAM TO MEET FROST CULVERTS AND REGRADE AREA OF EX. STREAM
MATCH LINE SEE SHEET 2
LIMIT OF SECTION 2 AREA 1
OLD MONTGOMERY ROAD

PLAN
SCALE: 1" = 50'

TAMAR DRIVE
& CURVE DATA
STA. 41+73.28 TO 44+26.92
R = 650.00'
L = 253.64'
Δ = 22°21'27"
T = 128.45'
CHD. = N58°38'21"W
252.03'

TAMAR DRIVE
& CURVE DATA
STA. 39+48.06 TO 41+73.28
R = 590.00'
L = 225.85'
Δ = 21°57'02"
T = 114.90'
CHD. = N06°34'06"W
224.89'

STATE OF MARYLAND — CHARLES J. CROVO — No. 13204 — REGISTERED PROFESSIONAL ENGINEER
CHARLES J. CROVO SR. — DATE 10/1/87

VILLAGE OF LONGREACH
SECTION 2 AREA 1
LOTS 1-117
6TH. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TAMAR DRIVE

PLAN & PROFILE

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

SCALE AS SHOWN	DATE SEPT. 24, 1987	DWG. NO. 3 OF 18
DES. R. ISAACS	DRN. D. PARRAN	CHK. C. J. CROVO

FISHER, COLLINS AND CARTER, INC.
CIVIL ENGINEERS AND LAND SURVEYORS
8388 COURT AVE. ELLICOTT CITY, MARYLAND 21043

PROFILE | SURVEYED | DRAWN | GRADES CHECKED | B.M.'s NOTED | STRUCTURE NOTATIONS CHKD | NOTE BOOK NO. | BY | DATE

TAMAR DRIVE

MATCH LINE SEE SHEET 4 (℄ OLD MONTGOMERY ROAD STA. 0+00 - STA. 15+14.25)

EVC STA. 45+30.25 ELEV. = 344.88
INVERT ELEV. = 338.96
3+44.48
LIMIT OF SECTION 2 - AREA 1 @ STA. 44+52.25 ELEV. 344.29

VERTICAL CURVE DATA
PVI STA. 43+30.25
PVI ELEV. = 345.18
LENGTH = 110'
CORR. = +0.13
HSD = 175'

EVC STA. 40+20.25
ELEV. = 345.04
PVT STA. 39+50.25
ELEV. = 350.25

-1.00%
-5.00%
FUTURE GRADE
EX. GROUND @ ℄ ROAD
EX. GROUND @ LEFT B.R.L.
EX. GROUND @ RIGHT B.R.L.
P.G.L.

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

DRIVE

LIMIT OF PAVING @ STA. 36+54.50
PVT STA. 36+33.25
ELEV. = 355.68
LIMIT OF SECTION 3, AREA 1 @ STA. 36+00.00 ELEV. = 355.47

VERTICAL CURVE DATA
PVI STA. 34+00.25
PVI ELEV. = 358.18
LENGTH = 300'
CORR. = +2.06
HSD = 273'

EVC STA. 33+38.25
ELEV. = 360.39

1.60%
5.00%
2.1% MAX.
FUTURE GRADE
EX. GROUND @ FUTURE ℄ ROAD

370 365 360 355 350 345 340 335 330 325
45+00 44+00 43+00 42+00 41+00 40+00 39+00 38+00 37+00 36+00 35+00 34+00 33+00

F 88-78

AS-BUILT JAN. 15, 1992

HOUSE B101

SEAL LIGHT

RIM

4' CONC. WALK

TAMAR

F/C

TIDE ROCK

HOUSE B103

CONC. DRIVE

TAMAR

E 857,000

N 407,250

E 850,800

N 408,200

TAMAR DRIVE

E CURVE DATA
STA. 0+00.00 TO STA. 2+20.00
R = 609.00'
L = 160.00'
Δ = 15°03'11"
T = 80.46'
CHD = S 62°12'29"E
159.54'

SEE SHEET 5 FOR NORTH SLOPE PATH PLAN AND PROFILE

SEE SHEET 7 FOR TIDE ROCK SQUARE PLAN AND PROFILE

MATCH LINE SEE SHEET 7

MATCH LINE SEE SHEET 5

LIGHT LANE

SEA

TIDE ROCK SQUARE

TAMAR

WATER PATH

NORTH SLOPE PATH

DRIVE

MONTGOMERY ROAD

OLD

LIMIT OF SEC. 2 AREA 1

SEE SHEET 2 FOR OLD MONTGOMERY ROAD PLAN AND PROFILE

88 95 96 104 105 106 107 113 117 116 OPEN SPACE 38 37 36 6 5 4 3 2 1 115 OPEN SPACE

SIDEWALK RAMP SEE DETAIL "A" SHEET 11

TYPE "A" SIDEWALK RAMP DRWG. R-401

4' CONC. SIDEWALK

MOD. COMB. CONC. CURB & GUTTER

STREET LIGHT

STOP SIGN

85 MPH SPEED LIMIT SIGN

SAN MH 5+13.9 LT. RIM 365.39

SAN MH 3+09 11' LT. RIM 359.73

TAMAR DRIVE

E CURVE DATA
STA. 2+20.00 TO STA. 10+67.26
R = 913.37'
L = 847.26'
Δ = 53°08'23"
T = 455.21'
CHD = S 40°35'12"E
442.80'

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, LAND DEVELOPMENT DIVISION — DATE 1/21/88

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 1/21/88

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF ENGINEERING — DATE 1-22-88

APPROVED
OFFICE OF PLANNING AND ZONING
CHIEF, DIV. OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 1/26/88

PLAN — SURVEYED, PLOTTED, ALIGNMENT CHECKED, AS-BUILT NOTATIONS CHK'D — BY, DATE, NOTE BOOK NO.

PROFILE — SURVEYED, PLOTTED, GRADES CHECKED, AS-BUILT NOTATIONS CHK'D — BY, DATE, NOTE BOOK NO.

PLAN
SCALE: 1"=50'

CHARLES J. CROVO SR. — DATE 10/1/87

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

SWPE ELEV. = 364.90

E STA. 7+17.26 TAMAR DRIVE | STA. 0+00 TIDE ROCK SQUARE

B.E.P.I. ELEV. = 363.87

EX. GROUND @ ℄ ROAD

P.V.C. STA. 9+66
ELEV. 355.46

E STA. 0+67.26 TAMAR DRIVE
+ STA. 0+00 SEA LIGHT LANE
S.W.P.I. ELEV. = 345.20

N.E.P.I. ELEV. = 346.87
E STA. 7+19.26 TAMAR DRIVE
E STA. 0+20 SEA WATER PATH
N.W.P.I. ELEV. = 346.40

P.V.C. STA. 8+54
ELEV. 359.42

P.V.I. STA. 8+04
ELEV. 376.74

P.V.T. STA. 8+54
ELEV. 359.42

E STA. 2+20.00 TAMAR DRIVE
+ STA. 0+00 NORTH SLOPE PATH
S.W. P.I. ELEV. = 349.08

B.E.P.I. ELEV. = 350.76

VERTICAL CURVE DATA
P.V.I. STA. = 8+04
P.V.I. ELEV. = 376.74
LENGTH = 508'
B.E.D. 205'
CORR. 10.16'

VERTICAL CURVE DATA
P.V.I. STA. = 1+66
P.V.I. ELEV. = 342.02
LENGTH = 300'
CORR. = 4.05
H.E.D. = 219'

VERTICAL CURVE DATA
PVI STA 11+46
PVI ELEV. 335.46
LENGTH 500'
CORR. 8.13'
H.E.D. 210'

EX. GROUND @ RIGHT BUILDING RESTRICTION LINE

EX. GROUND @ LEFT BUILDING RESTRICTION LINE

SUMP STA. 0+48
E.E.P. = 345.68
N.E.P.I. ELEV. = 346.58

8.00%
-8.00%
-1.00%

VILLAGE OF LONGREACH
SECTION 2 AREA 1
LOTS 1-117
6TH. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TAMAR DRIVE

PLAN & PROFILE

OWNER AND DEVELOPER:
THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

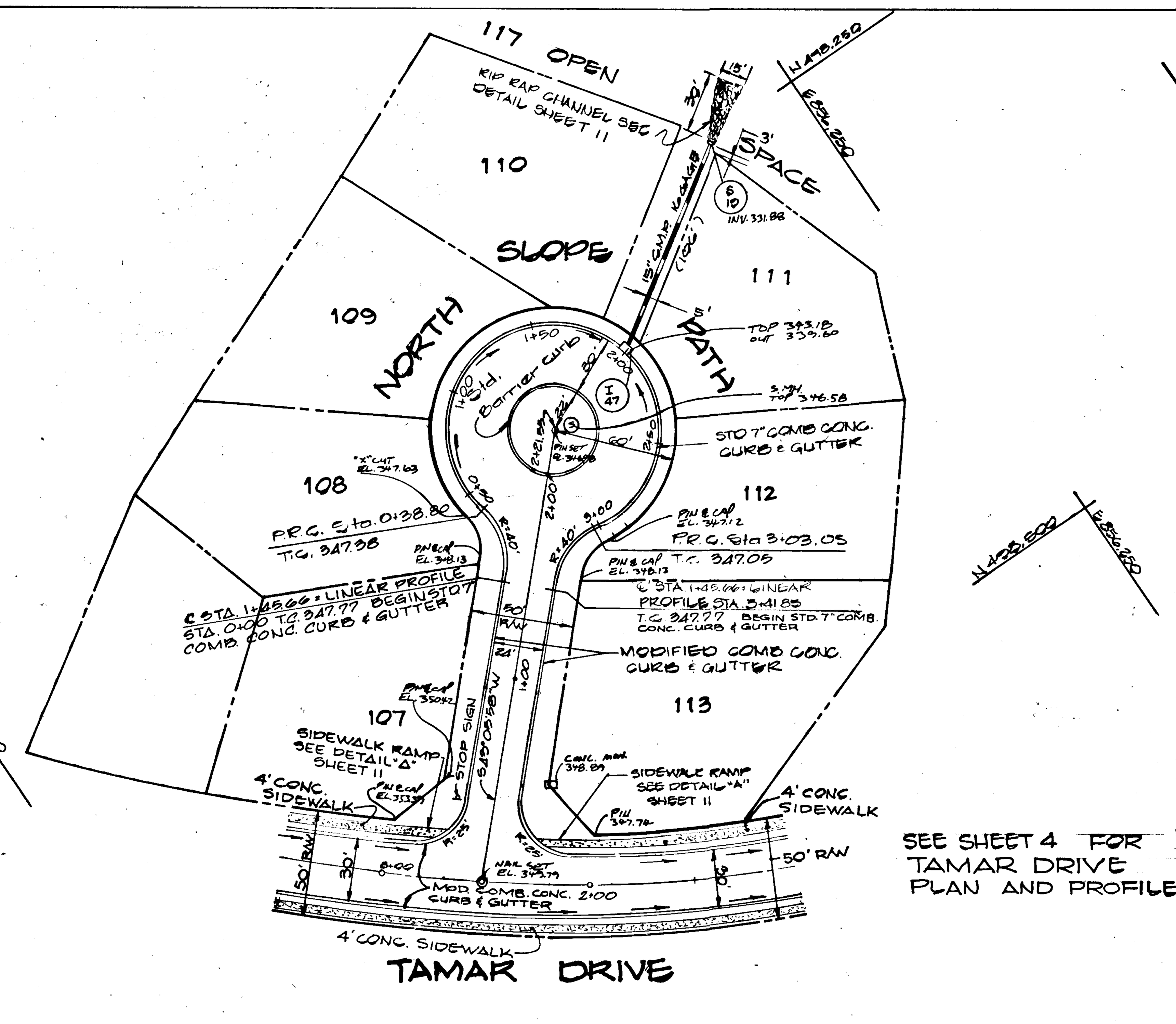
SCALE AS SHOWN	DATE SEPT. 24, 1987	DWG. NO. 4 OF 18
DES. R. ISAACS	DRN. D. PARRAN	CHK. C. J. CROVO

FISHER, COLLINS AND CARTER, INC.
CIVIL ENGINEERS AND LAND SURVEYORS
8388 COURT AVE. ELLICOTT CITY, MARYLAND 21043

F88-78

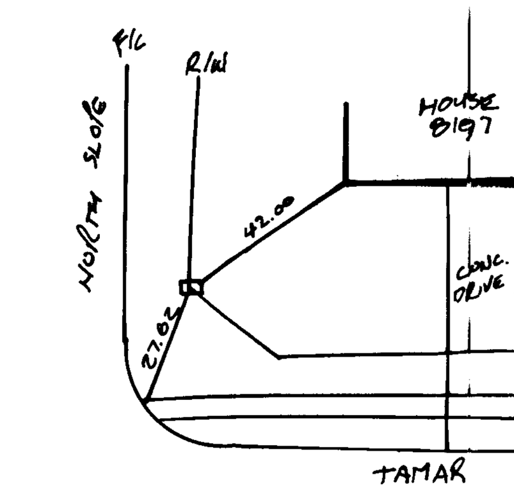
AS-BUILT JAN. 15, 1992

PLAN
NOTE BOOK
NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
BY
DATE



PLAN
scale: 1" = 50'

SEE SHEET 4 FOR TAMAR DRIVE PLAN AND PROFILE



APPROVED
DEPARTMENT OF PUBLIC WORKS
[signature] 1-4-88
CHIEF, LAND DEVELOPMENT DIVISION — DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
Granville W. Wehland 1/21/88
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
[signature] 1-22-88
CHIEF, BUREAU OF ENGINEERING — DATE

APPROVED
OFFICE OF PLANNING AND ZONING
Joseph Rutter 1/26/88
COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

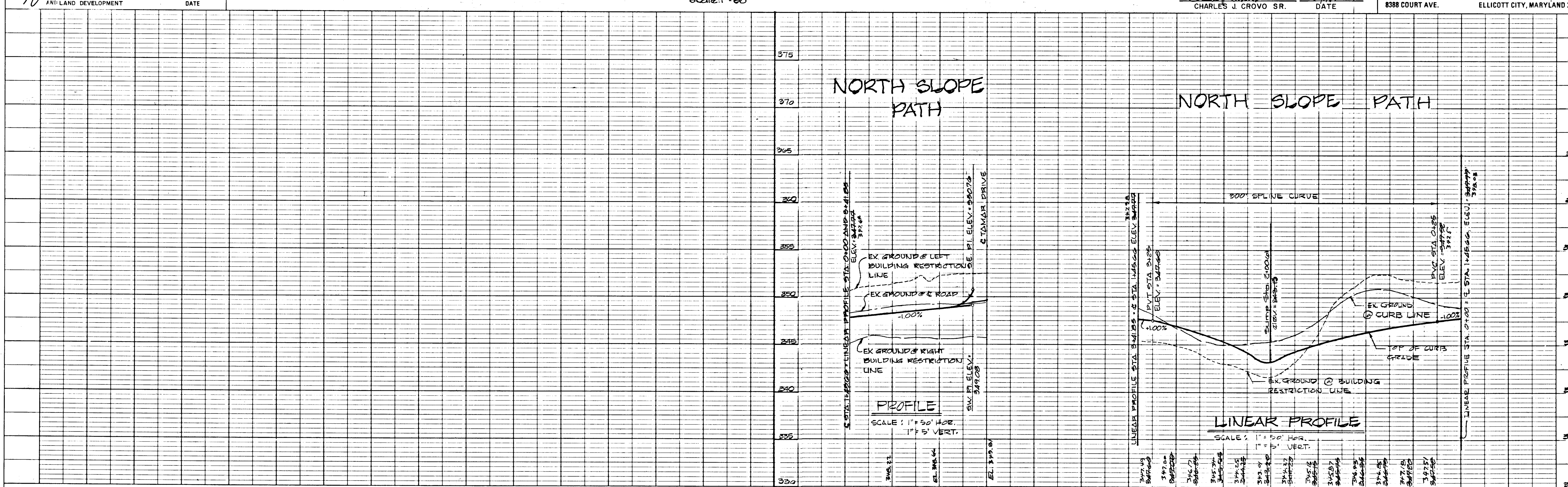
[seal: STATE OF MARYLAND — CHARLES J. CROVO, SR. — No 13204 — REGISTERED PROFESSIONAL ENGINEER]
CHARLES J. CROVO SR. — DATE 10/1/87

VILLAGE OF LONGREACH SECTION 2 AREA I LOTS 1-117 6TH. ELECTION DISTRICT HOWARD COUNTY, MARYLAND
NORTH SLOPE PATH PLAN & PROFILE
OWNER AND DEVELOPER THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044

SCALE AS SHOWN	DATE SEPT. 24, 1987	DWG. NO. 5 OF 18
DES. R. ISAACS	DRN. D. PARRAN	CHK. C. J. CROVO

FISHER, COLLINS AND CARTER, INC.
CIVIL ENGINEERS AND LAND SURVEYORS
8388 COURT AVE. ELLICOTT CITY, MARYLAND 21043

PROFILE
NOTE BOOK
NO.
SURVEYED
PLOTTED
GRADES CHECKED
B. M.s NOTED
STRUCTURE NOTAT'NS CH'KD
BY
DATE



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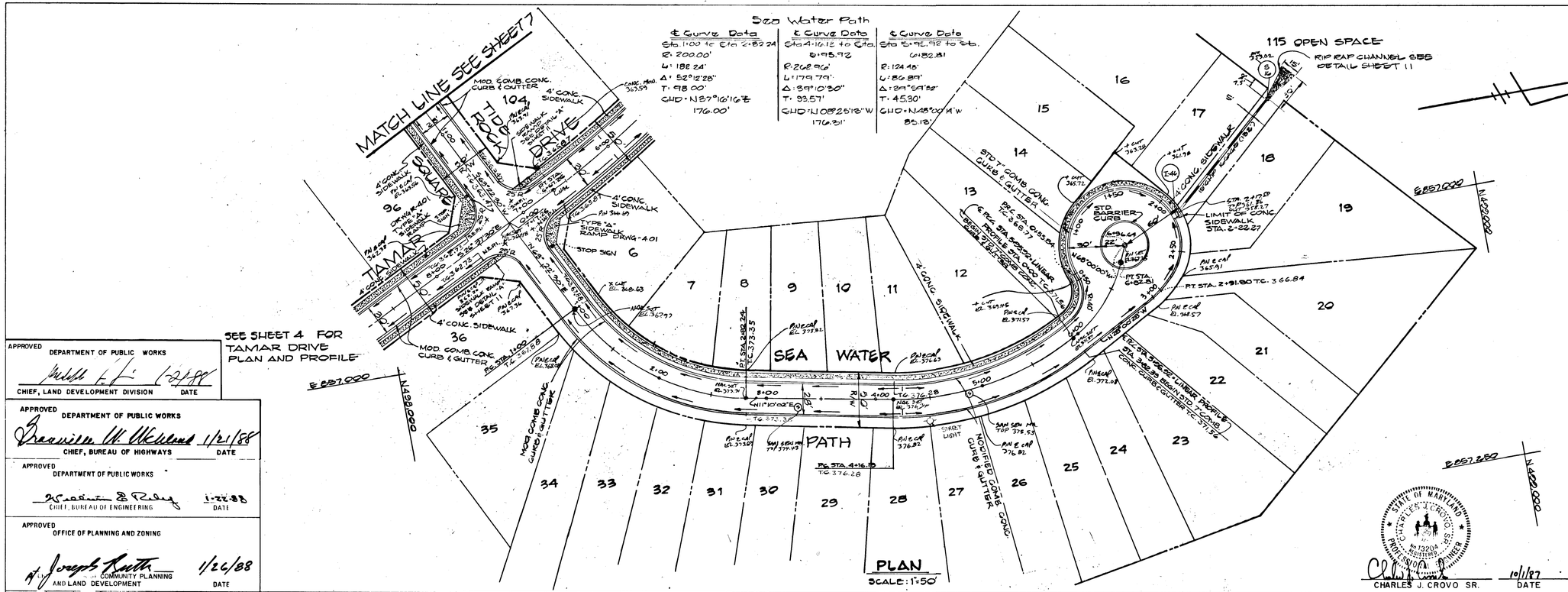
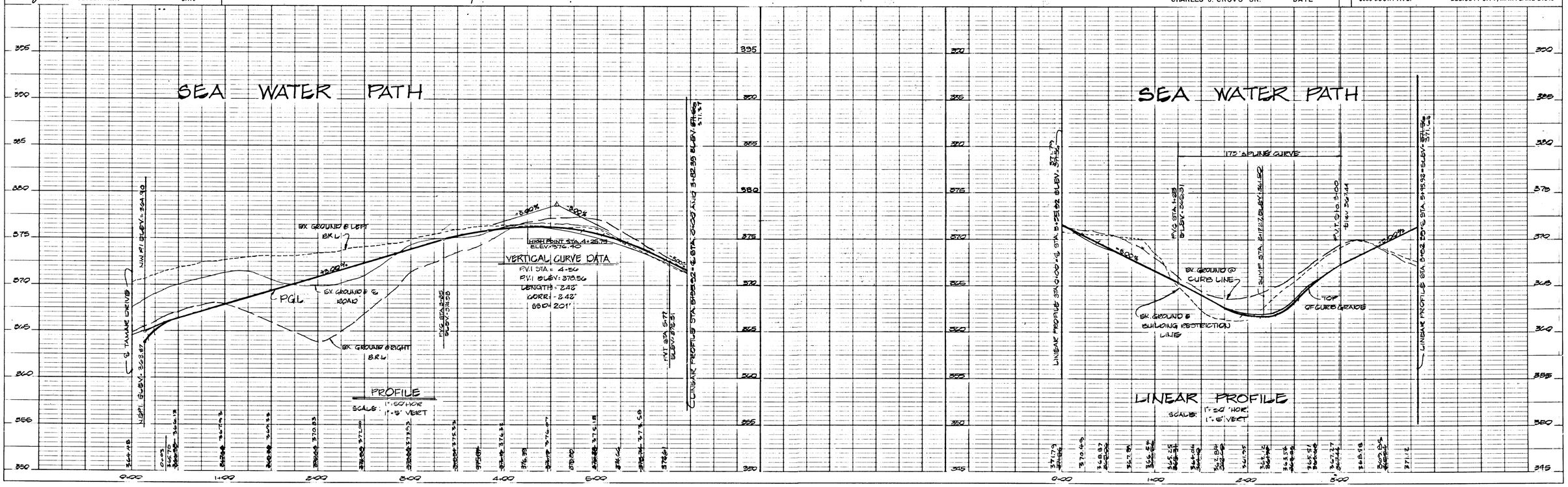
AS-BUILT JAN. 15, 1992





APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, LAND DEVELOPMENT DIVISION — DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — 1/21/88 DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF ENGINEERING — 1-22-88 DATE

APPROVED
OFFICE OF PLANNING AND ZONING
COMMUNITY PLANNING AND LAND DEVELOPMENT — 1/26/88 DATE

PLAN — SURVEYED; STAKED; GRADES CHECKED; ALIGNMENT CHECKED; R.W. MONUMENTS; STRUCTURE NOTATIONS CHKD; NOTE BOOK NO.; BY; DATE

PROFILE — SURVEYED; STAKED; GRADES CHECKED; R.W. MONUMENTS; STRUCTURE NOTATIONS CHKD; NOTE BOOK NO.; BY; DATE

VILLAGE OF LONGREACH
SECTION 2 AREA 1
LOTS 1-117
6TH. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SEA WATER PATH
PLAN & PROFILE

TIDE ROCK SQUARE
PLAN

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

SCALE AS SHOWN	DATE SEPT. 24, 1987	DWG. NO. 6 OF 18
DES. R. ISAACS	DRN. D. PARRAN	CHK. C. J. CROVO

FISHER, COLLINS AND CARTER, INC.
CIVIL ENGINEERS AND LAND SURVEYORS
8388 COURT AVE. ELLICOTT CITY, MARYLAND 21043

F88-78

AS-BUILT JAN. 15, 1992

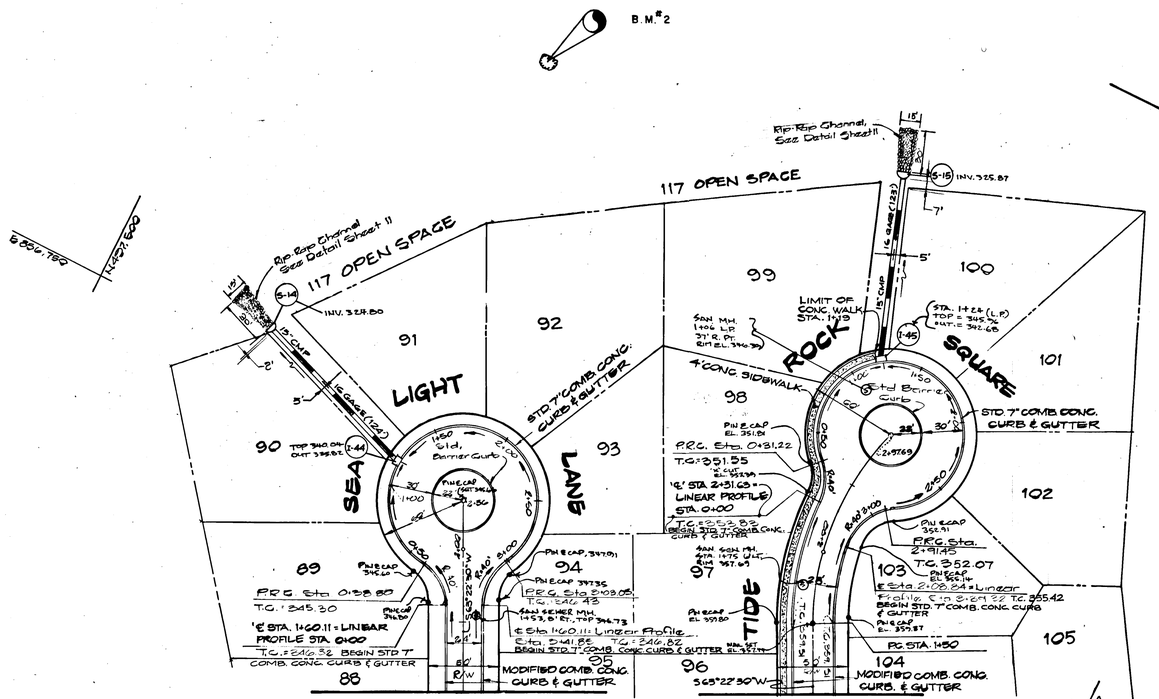
PLAN
SURVEYED
PLOTTED
CORRECT CHECKED
R/W & WAY NOTED
STRUCTURE NOTATNS CKD
NOTE BOOK
NO.
BY
DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, LAND DEVELOPMENT DIVISION — DATE 1-28-88

APPROVED
DEPARTMENT OF PUBLIC WORKS
Granville W. Wadsworth
CHIEF, BUREAU OF HIGHWAYS — DATE 1/25/88

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF ENGINEERING — DATE 1-22-88

APPROVED
OFFICE OF PLANNING AND ZONING
for Joseph Kuth
DIRECTOR OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 1/26/88



Tide Rock Square
℄ Curve Data
℄ Sta. 1+50 to ℄ Sta. 2+97.69
R = 190.00'
L = 147.69'
Δ = 44°-52'-18"
T = 77.80'
CHD = S 82°-38'-27" W 144.00'

VILLAGE OF LONGREACH
SECTION 2 AREA 1
LOTS 1-117
6TH. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TIDE ROCK SQUARE — PLAN & PROFILE
SEA LIGHT LANE — PLAN & PROFILE

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

SCALE AS SHOWN | DATE SEPT. 24, 1987 | DWG. NO. 7 OF 18
DES. R. ISAACS | DRN. D. PARRAN | CHK. C. J. CROVO

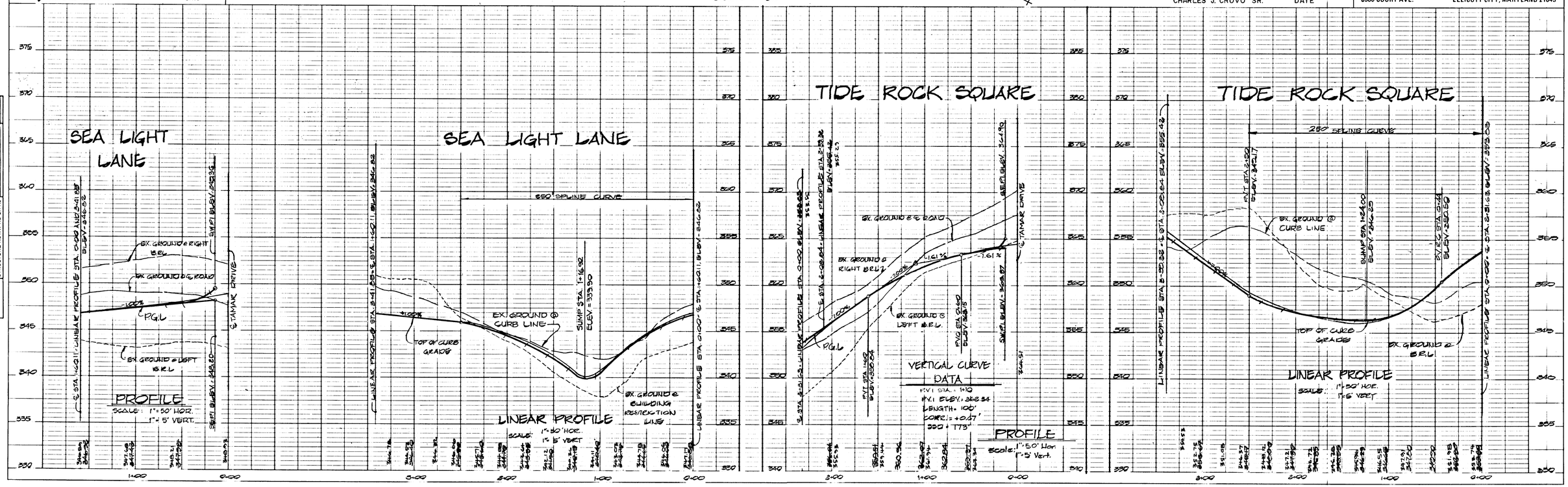
FISHER, COLLINS AND CARTER, INC.
CIVIL ENGINEERS AND LAND SURVEYORS
8388 COURT AVE. ELLICOTT CITY, MARYLAND 21043

STATE OF MARYLAND — CHARLES J. CROVO — No. 13208 — REGISTERED PROFESSIONAL ENGINEER

Charles J. Crovo
CHARLES J. CROVO SR. — DATE 10/1/87

PROFILE
SURVEYED
PLOTTED
CORRECT CHECKED
R/W & WAY NOTED
STRUCTURE NOTATNS CKD
NOTE BOOK
NO.
BY
DATE

100



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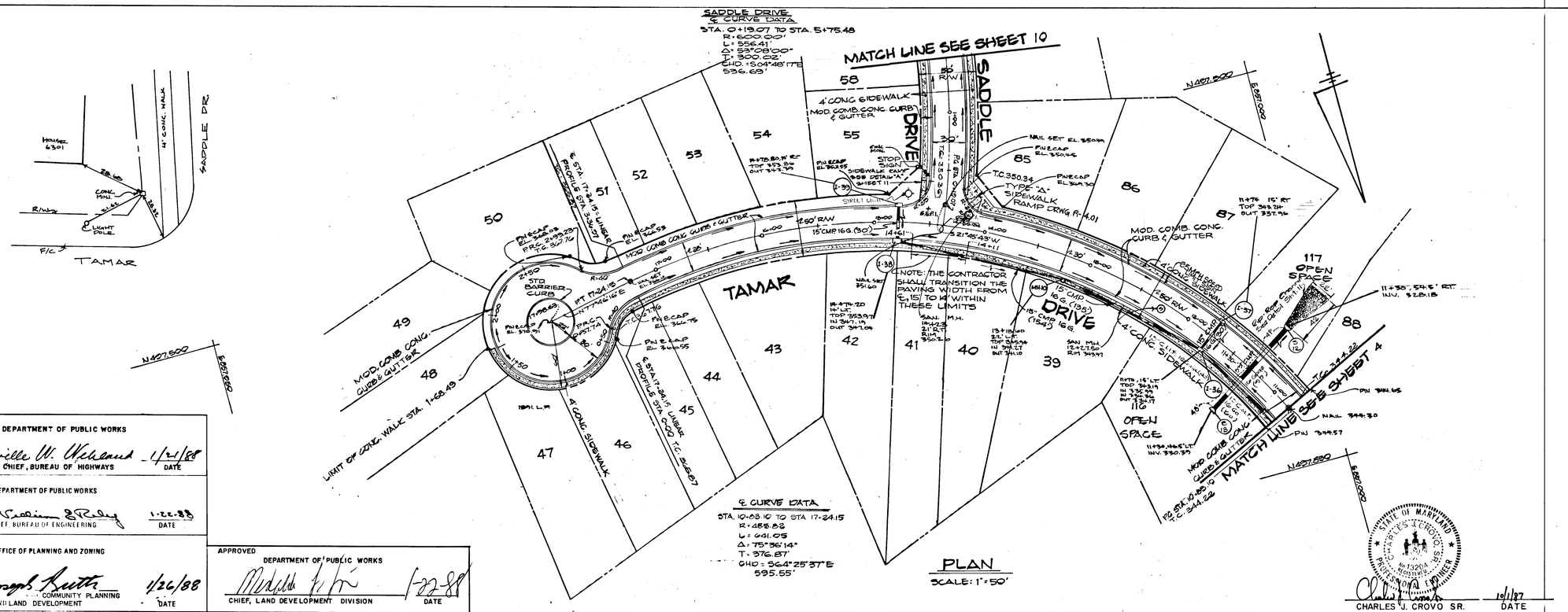
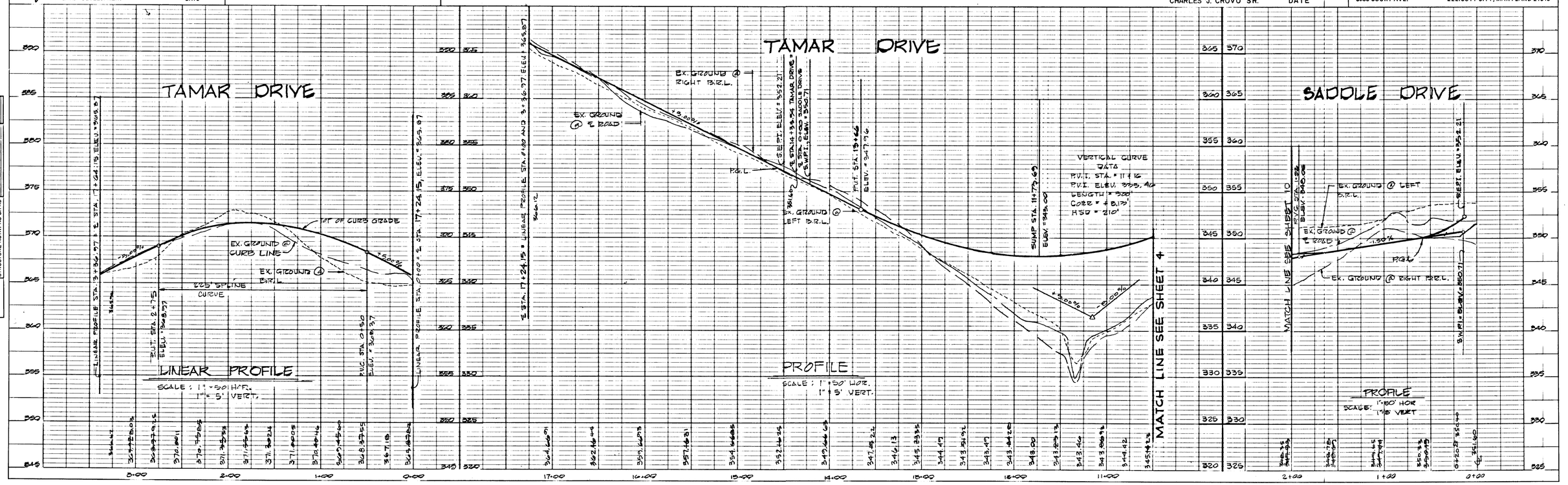
AS-BUILT JAN. 15, 1992





PLAN — SURVEYED, DRAWN, TRACED, CHECKED, NOTE BOOK NO., ALIGNMENT CHECKED, RT. OF WAY CHECKED, BY, DATE

PROFILE — SURVEYED, DRAWN, TRACED, CHECKED, NOTE BOOK NO., B. M.'s NOTED, STRUCTURE NOTATIONS CHKD, BY, DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
Granville W. Wehland — 1/21/88
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
1-22-88
CHIEF, BUREAU OF ENGINEERING — DATE

APPROVED
OFFICE OF PLANNING AND ZONING
Joseph Reitz — 1/26/88
COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
1-22-88
CHIEF, LAND DEVELOPMENT DIVISION — DATE

VILLAGE OF LONGREACH
SECTION 2 AREA I
LOTS 1-117
6TH. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TAMAR DRIVE	SADDLE DRIVE
PLAN & PROFILE	PLAN

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

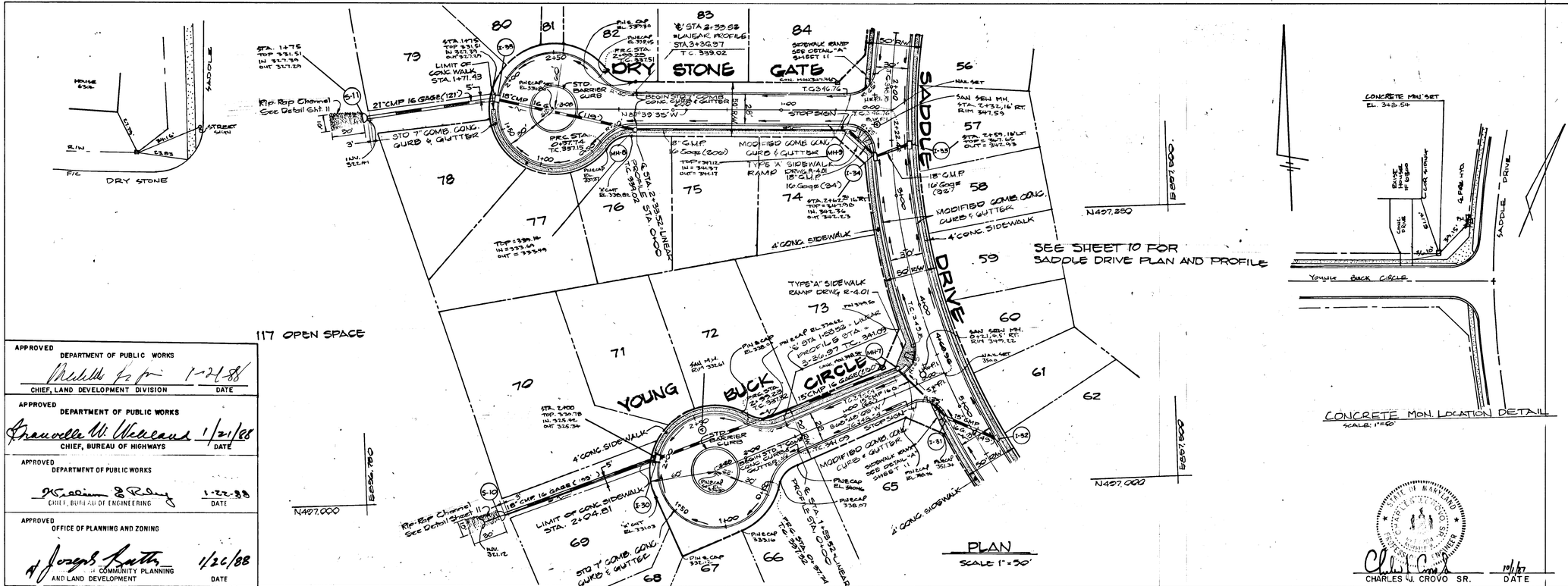
SCALE AS SHOWN	DATE SEPT. 24, 1987	DWG. NO. 8 OF 18
DES. R. ISAACS	DRN. D PARRAN	CHK. C. J. CROVO

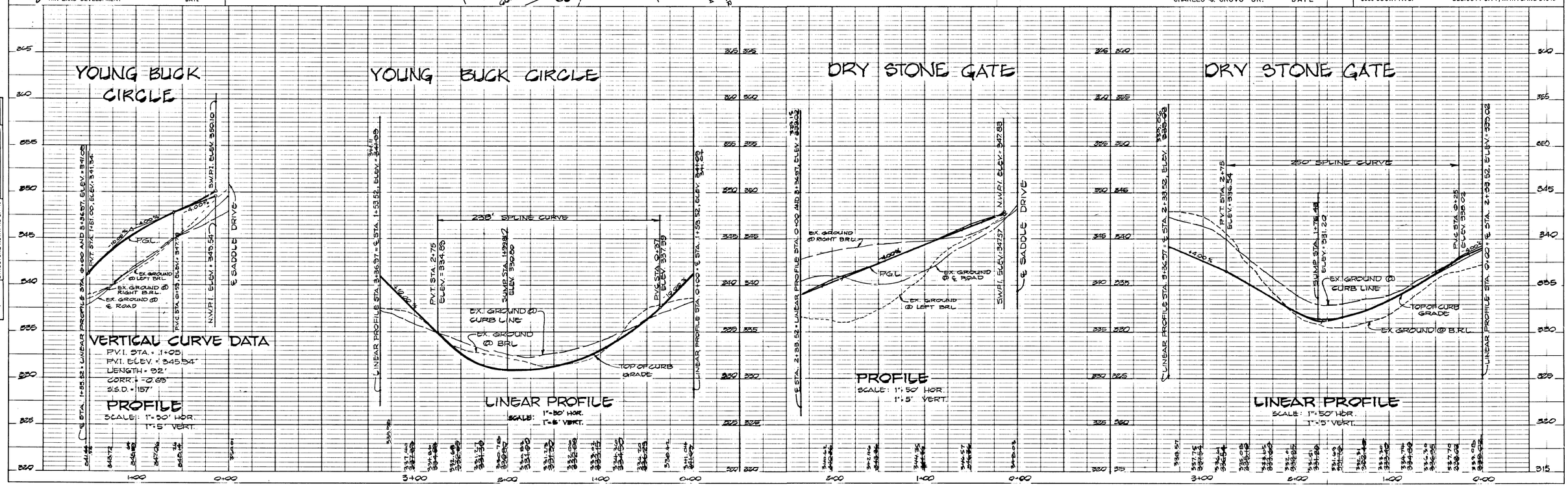
FISHER, COLLINS AND CARTER, INC.
CIVIL ENGINEERS AND LAND SURVEYORS
8388 COURT AVE. ELLICOTT CITY, MARYLAND 21043

100

F 88-78

AS-BUILT JAN 15, 1992





APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, LAND DEVELOPMENT DIVISION — DATE 1-21-88

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 1/21/88

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF ENGINEERING — DATE 1-22-88

APPROVED
OFFICE OF PLANNING AND ZONING
COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 1/26/88

VILLAGE OF LONGREACH
SECTION 2 AREA 1
LOTS 1 - 117
6TH. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DRY STONE GATE — PLAN & PROFILE
YOUNG BUCK CIRCLE — PLAN & PROFILE

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

SCALE AS SHOWN	DATE SEPT. 24, 1987	DWG. NO. 9 OF 18
DES. R. ISAACS	DRN. D. PARRAN	CHK. C. J. CROVO

FISHER, COLLINS AND CARTER, INC.
CIVIL ENGINEERS AND LAND SURVEYORS
8388 COURT AVE. ELLICOTT CITY, MARYLAND 21043

CHARLES J. CROVO SR. — DATE 10/1/87

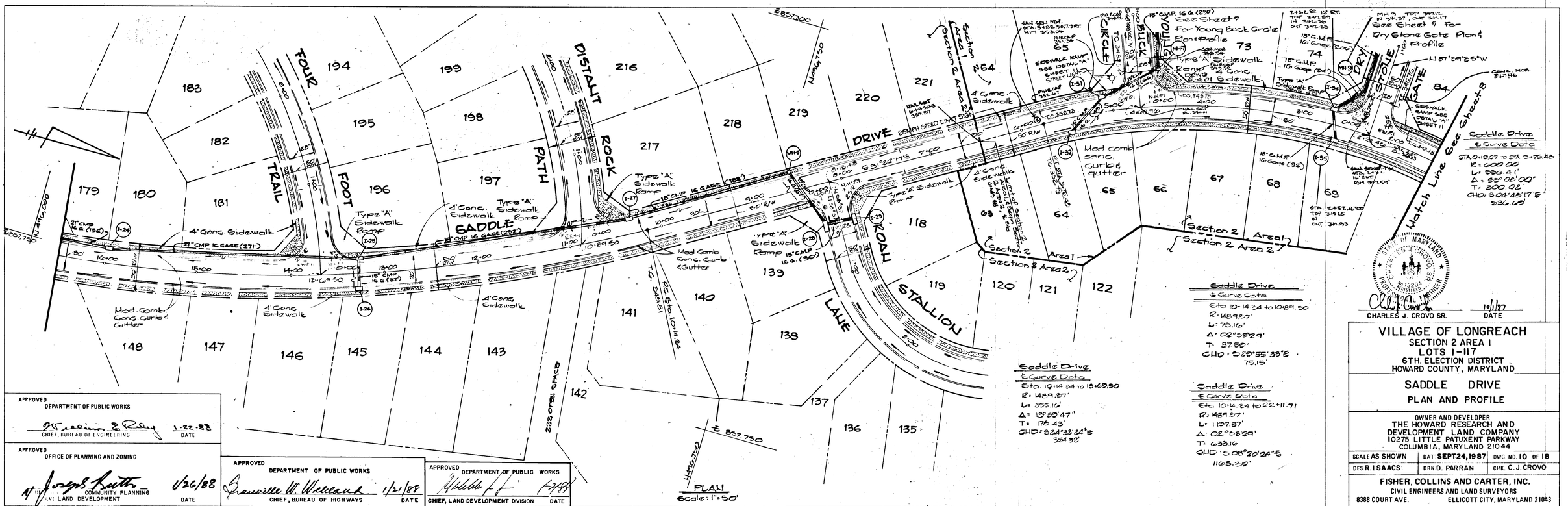
PLAN: SURVEYED, PLOTTED, CHECKED, ALIGNMENT CHECKED, R/W OF WAY CHECKED, NOTE BOOK NO., BY, DATE

PROFILE: SURVEYED, PLOTTED, CHECKED, B.M.'s NOTED, STRUCTURE NOTATNS CHK'D, NOTE BOOK NO., BY, DATE

100

F 88-78

AS-BUILT JAN. 15, 1992



APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF ENGINEERING — 1-22-88 DATE

APPROVED
OFFICE OF PLANNING AND ZONING
COMMUNITY PLANNING AND LAND DEVELOPMENT — 1/26/88 DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — 1/21/88 DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, LAND DEVELOPMENT DIVISION — DATE

STATE OF MARYLAND
CHARLES J. CROVO
No. 13204
REGISTERED PROFESSIONAL ENGINEER
CHARLES J. CROVO SR. — 10/1/87 DATE

VILLAGE OF LONGREACH
SECTION 2 AREA 1
LOTS 1-117
6TH. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SADDLE DRIVE
PLAN AND PROFILE

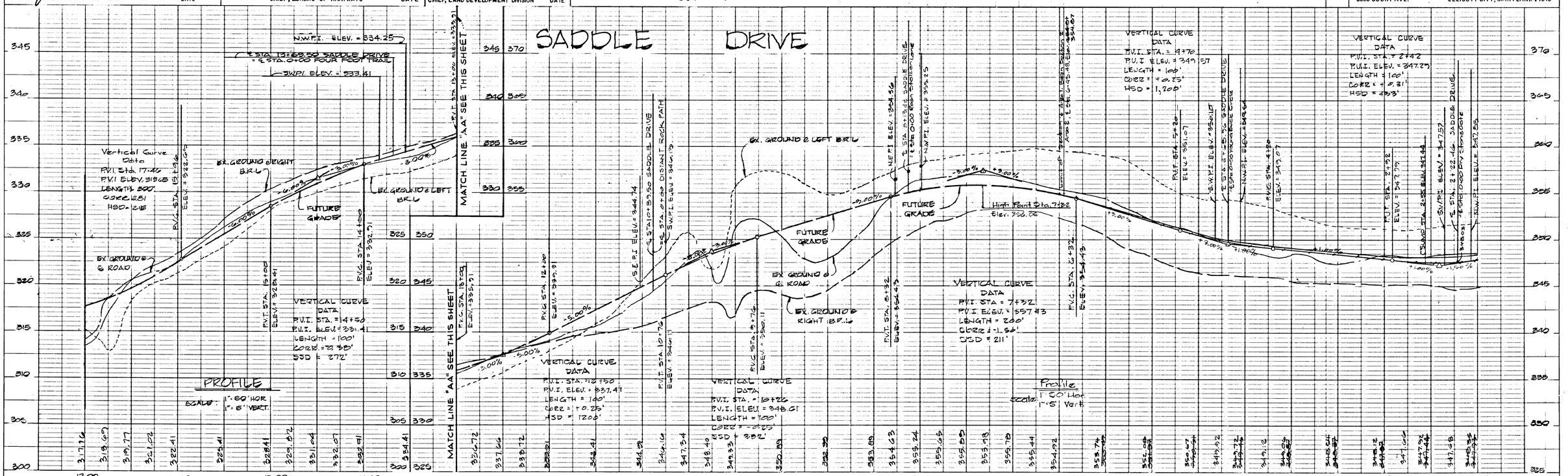
OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

SCALE AS SHOWN	DAT: SEPT 24, 1987	DWG NO. 10 OF 18
DES R. I SAACS	DRN D. PARRAN	CHK. C. J. CROVO

FISHER, COLLINS AND CARTER, INC.
CIVIL ENGINEERS AND LAND SURVEYORS
8388 COURT AVE. ELLICOTT CITY, MARYLAND 21043

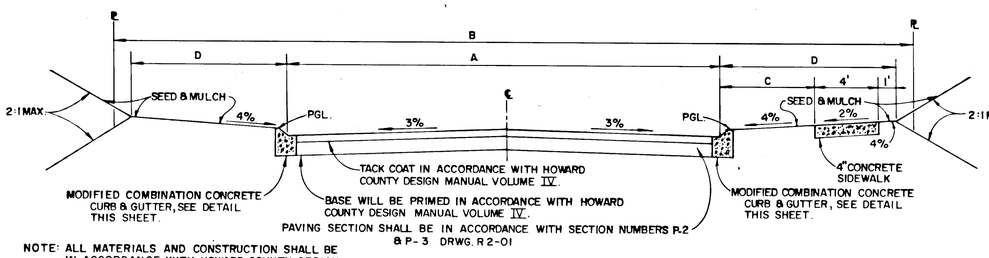
PLAN — DATE / BY / SURVEYED / DESIGNED / ALIGNMENT CHECKED / GRADES CHECKED / R/W NOTED / STRUCTURE NOTATIONS CHKD / NOTE BOOK NO. / PT. OF WAY CHECKED

PROFILE — DATE / BY / SURVEYED / DESIGNED / ALIGNMENT CHECKED / GRADES CHECKED / R/W NOTED / STRUCTURE NOTATIONS CHKD / NOTE BOOK NO.



AS-BUILT JAN. 15, 1992

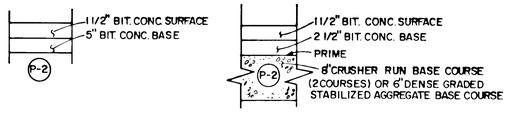
F 88-78



NOTE: ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.

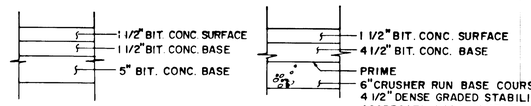
TYPICAL ROADWAY SECTION

NO SCALE



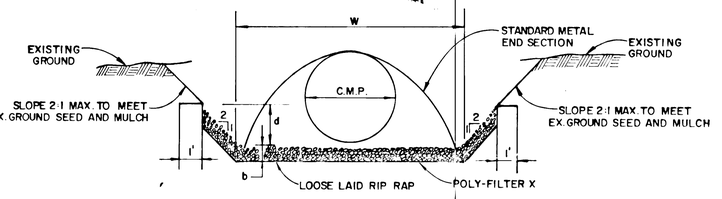
PAVING SECTION P-2

NO SCALE



PAVING SECTION P-3

NO SCALE

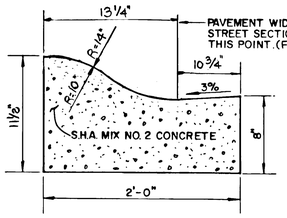


RIP RAP CHANNEL DETAIL

NO SCALE

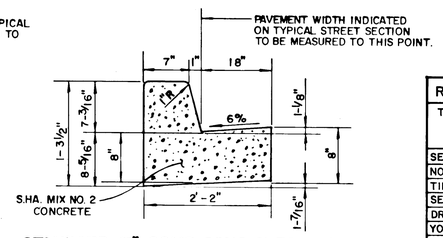
RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	AREA	WETTED PERIMETER	R	R 2/3	S	S 1/2	B	D	N	V	Q	RIP-RAP D50	SIZE DMAX	BLANKET THICKNESS
S-1	2.81	6.46'	.4342	.5718	1.00%	0.1000	4.0'	0.55'	.04	2.12'/SEC.	5.96 C.F.S.	6"	9"	14"
S-2	4.13	7.63'	.5412	.6628	0.50%	0.0707	4.5'	0.70'	.04	1.74'/SEC.	7.19 C.F.S.	6"	9"	14"
S-3	2.74	6.42'	.4276	.5660	0.50%	0.0707	4.0'	0.54'	.04	1.49'/SEC.	4.08 C.F.S.	6"	9"	14"
S-4	7.41	10.20'	.7259	.8069	0.50%	0.0707	6.0'	0.94'	.04	2.12'/SEC.	15.70 C.F.S.	6"	9"	14"
S-5	3.51	6.91'	.5048	.6355	0.50%	0.0707	4.0'	0.66'	.04	1.67'/SEC.	5.86 C.F.S.	6"	9"	14"
S-6	2.74	6.42'	.4276	.5660	0.50%	0.0707	4.0'	0.52'	.04	1.49'/SEC.	4.08 C.F.S.	6"	9"	14"
S-7	5.19	8.25'	.6291	.7331	0.50%	0.0707	4.5'	0.84'	.04	1.93'/SEC.	10.01 C.F.S.	6"	9"	14"
S-10	4.43	7.81'	.5672	.6839	0.50%	0.0707	4.5'	0.74'	.04	1.80'/SEC.	7.97 C.F.S.	6"	9"	14"
S-11	7.00	9.47'	.7392	.8167.	0.50%	0.0707	5.0'	1.00'	.04	2.15'/SEC.	15.05 C.F.S.	6"	9"	14"
S-14	2.62	6.32'	.4143	.5541	0.50%	0.0707	4.0'	0.52'	.04	1.46'/SEC.	3.81 C.F.S.	6"	9"	14"
S-15	3.18	6.73'	.4733	.6058	0.50%	0.0707	4.0'	0.61'	.04	1.59'/SEC.	5.06 C.F.S.	6"	9"	14"
S-16	3.45	6.91'	.4988	.6275	0.50%	0.0707	4.0'	0.65'	.04	1.65'/SEC.	5.69 C.F.S.	6"	9"	14"
S-19	2.87	6.50'	.4408	.5776	0.50%	0.0707	4.0'	0.56'	.04	1.52'/SEC.	4.35 C.F.S.	6"	9"	14"
S-20	8.71	10.79'	.8076	.8666	0.50%	0.0707	6.0'	1.07'	.04	2.28'/SEC.	19.82 C.F.S.	6"	9"	14"



MODIFIED COMBINATION CURB AND GUTTER

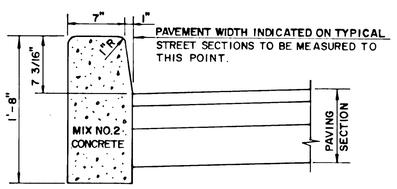
NO SCALE



STANDARD 7" COMB. CONC. CURB & GUTTER

NO SCALE

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	A	B	C	D	℄ STATION LIMITS	PAVING SECTION
TAMAR DRIVE	MINOR COLLECTOR	35 M.P.H.	NT	36'	60'	7'	12'	0+00 TO 0+55	P-3
	LOCAL ROAD	30 M.P.H.	NT	30'	50'	4'	9'	0+00 TO 14+35.94	P-2
	CUL-DE-SAC	30 M.P.H.	NT	28'	50'	4'	11'	14+35 TO 17+24.15	P-2
SEA WATER PATH	CUL-DE-SAC	30 M.P.H.	NT	28'	50'	4'	11'	0+00 TO 5+95.92	P-2
NORTH SLOPE PATH	CUL-DE-SAC	25 M.P.H.	NT	24'	50'	-	13'	0+00 TO 3+41.85	P-2
TIDE ROCK SQUARE	CUL-DE-SAC	25 M.P.H.	NT	28'	50'	4'	11'	0+00 TO 2+31.63	P-2
SEA LIGHT LANE	CUL-DE-SAC	25 M.P.H.	NT	24'	50'	-	13'	0+00 TO 1+60.11	P-2
DRY STONE GATE	CUL-DE-SAC	25 M.P.H.	NT	28'	50'	4'	11'	0+00 TO 2+33.52	P-2
YOUNG BUCK CIRCLE	CUL-DE-SAC	25 M.P.H.	NT	28'	50'	4'	11'	0+00 TO 1+53.52	P-2
SADDLE DRIVE	LOCAL ROAD	30 M.P.H.	NT	30'	50'	4'	9'	0+00 TO 6+45.48	P-2
OLD MONTGOMERY RD.	MINOR COLLECTOR	35 M.P.H.	NT	36'	60'	7'	12'	0+00 TO 7+74.10	P-3

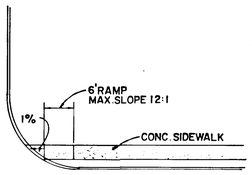


STANDARD BARRIER CURB

NO SCALE

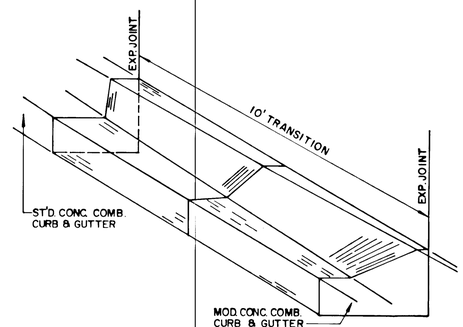
CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

1. The subgrade for the filter, riprap or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
3. Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
4. Stone for the riprap or gabion outlets may be placed by equipment. Both shall each be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will insure that it is reasonably homogenous with the smaller stones and spalls filling the voids between the larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.



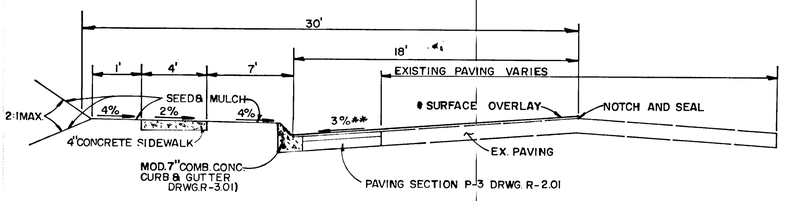
SIDEWALK RAMP DETAIL "A"

NO SCALE



CURB TRANSITION DETAIL

NO SCALE



TYPE OF TRAFFICWAY: MINOR COLLECTOR DESIGN SPEED: 35 MPH.
ZONED NT
℄ STA. LIMITS 2+25.00 TO 7+74.10

TYPICAL WIDENING SECTION ALONG OLD MONTGOMERY ROAD

* NOTE: SURFACE OVERLAY COURSE TO BE EQUAL TO SURFACE COURSE OF TYPICAL PAVING SECTION OF SUBDIVISION.

** NOTE: CONTRACTOR SHALL VARY CROSS SLOPE FROM ℄ STA. 6+80 TO ℄ STA. 7+75 TO PROVIDE POSITIVE DRAINAGE ALONG CURB LINE.

APPROVED
DEPARTMENT OF PUBLIC WORKS
Granville W. Wellman — CHIEF, BUREAU OF HIGHWAYS — 1/21/88 DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
Kristen S. Roy — CHIEF, BUREAU OF ENGINEERING — 1-22-88 DATE

APPROVED
OFFICE OF PLANNING AND ZONING
Joseph Rutter — CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — 1/26/88 DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF LAND DEVELOPMENT DIVISION — 1-21-88 DATE

REVISION	DATE
Added Cross Slope Note	4-28-88

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERS & LAND SURVEYORS
8388 COURT AVENUE
ELLICOTT CITY, MARYLAND 21043

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

STATE OF MARYLAND — CHARLES J. CROVO SR. — No. 13204 — REGISTERED PROFESSIONAL ENGINEER
Charles J. Crovo — 10/1/87 DATE

ROADWAY SECTIONS, NOTES AND DETAILS

VILLAGE OF LONGREACH

SECTION 2 AREA 1
LOTS 1-117
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN — SHEET 11 OF 18 SEPTEMBER, 24 1987

F 88-78

AS-BUILT JAN. 15, 1992

100

STRUCTURE SCHEDULE FOR SECTION 2 AREA 1

STRUCTURE	TYPE	INV. IN	INV. OUT	℄ TOP ELEV.	℄ ROAD STATION	REMARKS	
I-30	A-S	325.44 E	330.38 TB		L.P. STA. 1+99.81 YOUNG BUCK CIRCLE	S.D. 4.01	
I-31	A-S W/ DEFLECTORS	345.08 S	344.29 S2	350.99 1.79	S+12.00 SADDLE DRIVE @ 19℄	S.D. 4.01	4.83
I-32	A-S W/ DEFLECTORS	.....	346.76 S.D.4	351.92 E.O.B	5+47.96 SADDLE DRIVE @ 19℄	S.D. 4.01	4.83
I-33	A-S	327.38 S	327.18 S9	331.38 S1	L.P. STA. 1+ 5.00 DRY STONE GATE	S.D. 4.01	
I-34	A-S	342.51	342.26 S10	347.62 S3	2+68.08 SADDLE DRIVE @ 19℄	S.D. 4.01	
I-35	A-10	.....	343.01 S11	347.64 S5	2+97.00 SADDLE DRIVE @ 19℄	S.D. 4.02	
I-36	A-S 335.99	336.49	334.26 S12	343.00 T9	11+78.80 TAMAR DRIVE @ 15℄	S.D. 4.01	
I-37	A-S	.....	338.01 S14	343.20 S8	11+98.00 TAMAR DRIVE @ 15℄	S.D. 4.01	
I-38	A-S W/ DEFLECTORS	347.38 S.D.5	347.18 S15	353.64 T11	14+38.94 TAMAR DRIVE @ 14℄	S.D. 4.01	
I-39	A-S W/ DEFLECTORS	.....	348.68 S17	353.61 S4	14+78.94 TAMAR DRIVE @ 14℄	S.D. 4.01	4.83
I-40	A-S W/ DEFLECTORS	346.39 E.O.B	346.19 S.D.6	351.02 T1	9+22.00 TAMAR DRIVE @ 15℄	S.D. 4.01	4.83
I-41	A-S W/ DEFLECTORS	358.00	351.22 S18	351.02 T2	9+23.95 TAMAR DRIVE @ 15℄	S.D. 4.01	4.83
I-42	A-S W/ DEFLECTORS	360.38 E.O.B	360.18 S.D.7	366.37 T2	0+43.00 SEA WATER PATH @ 14℄	S.D. 4.01	4.83
I-43	A-S W/ DEFLECTORS	.....	361.32 S.D.8	366.37 T5	0+43.00 SEA WATER PATH @ 14℄	S.D. 4.01	4.83
I-44	A-S	.....	382.00 S.D.9	388.00 T6	L.P. STA. 1+16.92 SEA LIGHT LANE	S.D. 4.01	
I-45	A-S	.....	362.24 S20	368.75 T10	L.P. STA. 1+24.00 TIDE ROCK SQUARE	S.D. 4.01	
I-46	A-S	.....	358.08 S21	361.99 T14	L.P. STA. 2+17.47 SEA WATER PATH	S.D. 4.01	
I-47	A-S	.....	339.60 S22	343.16 T15	L.P. STA. 2+ 00.91 NORTH SLOPE PATH	S.D. 4.01	
I-48	A-S W/ DEFLECTORS	347.11 S.D.10	346.87 S.D.11	352.30 T13	5+09.90 TAMAR DRIVE @ 15℄ S	S.D. 4.01	4.83
I-49	A-S W/ DEFLECTORS	.....	347.79 S23	351.84 T12	2+82.50 TAMAR DRIVE @ 15℄ S	S.D. 4.01	4.83
I-50	A-S	334.14 S	334.24 S.D.12	343.68 B1	0+48.00 TAMAR DRIVE @ 15℄ E	S.D. 4.01	
I-51	A-S	336.24 S	336.14 S.D.13	343.68 T5	0+48.00 TAMAR DRIVE @ 15℄ E	S.D. 4.01	
I-52	A-S	338.44 S	338.24 S.D.14	344.49 B6	0+46.00 OLD MONTGOMERY ROAD @ 15℄	S.D. 4.01	
I-53	A-S	339.64 S	339.44 S.D.15	344.49 T4	0+46.00 OLD MONTGOMERY ROAD @ 15℄	S.D. 4.01	
I-54	A-S	.....	339.24 S.D.16	344.24 T7	14+68.26 TAMAR DRIVE @ 15℄	S.D. 4.01	

STRUCTURE	TYPE	INV. IN	INV. OUT	℄ TOP ELEV.	℄ ROAD STATION	REMARKS	
MH 6	STANDARD MANHOLE	343.45 S.D.17	343.25 S.D.18	348.77	1+77.10 TAMAR DRIVE @ 21℄ S.D.	G. S.01	
MH 7	STANDARD MANHOLE	343.24 S19	343.04 S.D.19	348.77	0+00.00 YOUNG BUCK CIRCLE @ 26℄ E	G. S.01	
MH 8	STANDARD MANHOLE	333.24 S24	333.04 S.D.20	339.77	L.P. STA. 0+1.50 DRY STONE GATE @ 21℄ S.D.	G. S.01	
MH 9	STANDARD MANHOLE	341.03 S27	340.83 S.D.21	346.72 5.50	0+40.00 DRY STONE GATE @ 26℄ E	G. S.01	
MH 10	STANDARD MANHOLE	341.24 S.D.22	341.04 S.D.23	346.72 5.50	13+18.00 TAMAR DRIVE @ 21℄ E 20'	G. S.01	
MH 11	STANDARD MANHOLE	358.00 T66	357.75 S.D.24	362.99 T9	7.50 TAMAR DRIVE @ 21℄ E 20'	G. S.01	
S-10	ST'D METAL END SECT.	321.70	321.69 S.D.25	323.20	⊕ 2℄ CORNER OF LOT 69 ... 23'	S.D. 5.61	
S-11	ST'D METAL END SECT.	322.50	322.30 S.D.26	324.25	⊕ 3℄ CORNER OF LOT 79 ... 1'	S.D. 5.61	
S-12	ST'D METAL END SECT.	329.35	328.24 S.D.27	331.10	℄ STA. 11+ 30 TAMAR DRIVE @ 49½℄ S.D. 5	S.D. 5.61	
S-13	ST'D METAL END SECT.	330.56	330.46 S.D.28	333.15	℄ STA. 11+ 30 TAMAR DRIVE @ 49½℄ E 46.5	S.D. 5.61	
S-14	ST'D METAL END SECT.	324.55	324.45 S.D.29	325.80	⊕ 2℄ CORNER OF LOT 90 ...	S.D. 5.61	
S-15	ST'D METAL END SECT.	325.85	325.65 S.D.30	326.81	⊕ 7℄ CORNER OF LOT 100 ...	S.D. 5.61	
S-16	ST'D METAL END SECT.	353.19	353.09 S.D.31	354.44	⊕ 9℄ CORNER OF LOT 17 ... 7.5	S.D. 5.61	
S-17	ST'D METAL END SECT.	332.00	331.80 S.D.32	334.75	12 @ 0+00.00 ℄ @ 20℄ TAMAR DRIVE 52.9	S.D. 5.61	
S-18	ST'D METAL END SECT.	337.34	337.14 S.D.33	339.85	⊕ 8 TH CORNER @ 34℄ TAMAR DRIVE	S.D. 5.61	
S-19	ST'D METAL END SEC.	332.00	331.80 S.D.34	333.25	⊕ 3℄ CORNER OF LOT 111 ...	S.D. 5.61	

APPROVED
DEPARTMENT OF PUBLIC WORKS
CHIEF, LAND DEVELOPMENT DIVISION — DATE 1-21-88

APPROVED
DEPARTMENT OF PUBLIC WORKS
Granville W. Wellman — 1/21/88
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS
Charles E. Crovo — 1-22-88
CHIEF, BUREAU OF ENGINEERING — DATE

APPROVED
OFFICE OF PLANNING AND ZONING
Leonard Smith — 1/26/88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

DRAINAGE AREA MAP
SCALE 1"=200

STRUCTURE SCHEDULE FOR SECTION 2 AREA 2 SECTION 4

STRUCTURE	TYPE	INV. IN	INV. OUT	℄ TOP ELEV.	℄ ROAD STATION	REMARKS	
I-1	A-S	303.70	303.45	308.95	L.P. STA 1+79.46 FIRE CLOUD COURT	S.D. 4.01	
I-2	A-S W/ DEFLECTORS	.....	320.53	324.48	18+03.09 SUMMER CLOUD WAY	S.D. 4.01 & 4.83	
I-3	A-S	.....	306.64	310.90	L.P. STA 1+76.01 DRY BARLEY LANE	S.D. 4.01	
I-4	A-S	.....	309.00	313.00	L.P. STA 1+73.08 STEEL FLOWER PATH	S.D. 4.01	
I-5	A-10 W/ DEFLECTORS	304.05	303.05	309.12	11+83.50 SUMMER CLOUD WAY	S.D. 4.02 & 4.83	
I-6	A-S W/ DEFLECTORS	.....	304.37	309.12	11+83.50 SUMMER CLOUD WAY	S.D. 4.01 & 4.83	
I-7	A-S W/ DEFLECTORS	313.25	313.00	321.84	0+43.00 TREETOP CIRCLE	S.D. 4.01 & 4.83	
I-8	A-10	314.32	314.07	321.84	0+43.00 TREETOP CIRCLE	S.D. 4.02	
I-9	A-10	315.85	315.60	321.62	15+33.77 SUMMER CLOUD WAY	S.D. 4.02	
I-10	A-S	316.47	316.22	321.62	15+33.77 SUMMER CLOUD WAY	S.D. 4.01	
I-11	A-S W/ DEFLECTORS	316.90	316.70	322.41	0+43.00 DRY BARLEY LANE	S.D. 4.01 & 4.83	
I-12	A-S W/ DEFLECTORS	.....	317.45	322.41	0+43.00 DRY BARLEY LANE	S.D. 4.01 & 4.83	
I-13	A-S	301.12	300.87	306.30	8+73.95 SUMMER CLOUD WAY	S.D. 4.01	
I-14	A-S	.....	301.60	306.30	8+73.95 SUMMER CLOUD WAY	S.D. 4.01	
I-15	A-S	301.25	301.00	306.50	L.P. STA. 1+43.43 DAWN WHISTLE LANE	S.D. 4.01	
I-16	A-S W/ DEFLECTORS	311.48	311.23	317.67	4+84.30 SUMMER CLOUD WAY	S.D. 4.01 & 4.83	
I-17	A-10	312.25	312.00	317.67	4+84.30 SUMMER CLOUD WAY	S.D. 4.02	
I-18	A-10	.....	314.90	319.58	3+05.00 SUMMER CLOUD WAY	S.D. 4.02	
I-19	A-S	.....	310.05	314.08	L.P. STA. 1+73.38 FOUR FOOT TRAIL	S.D. 4.01	
I-20	A-S	.....	310.50	314.50	L.P. STA. 1+87.67 DISTANT ROCK PATH	S.D. 4.01	
I-21	A-S	314.33	314.08	318.80	L.P. STA. 1+53.94 SHORT WHEEL WAY	S.D. 4.01	
I-21A	A-10	322.15	321.90	324.04	L.P. STA. 2+98.40 SHORT WHEEL WAY	S.D. 4.02	
I-21B	'B' INLET	.....	334.25	338.83	.....	S.D. 4.11	
I-22	A-S	311.50	311.40	315.45	18+36.00 SADDLE DRIVE	S.D. 4.01	
I-23	A-S	.....	311.75	315.45	18+36.00 SADDLE DRIVE	S.D. 4.01	
I-24	A-S W/ DEFLECTORS	317.75	317.50	322.59	15+97.00 SADDLE DRIVE	S.D. 4.01 & 4.83	
I-25	A-S W/ DEFLECTORS	329.50	329.00	335.03	13+29.25 SADDLE DRIVE	S.D. 4.01 & 4.83	
I-26	A-10 W/ DEFLECTORS	.....	329.82	335.03	13+29.25 SADDLE DRIVE	S.D. 4.02 & 4.83	
I-27	A-S W/ DEFLECTORS	347.75	347.50	348.15	10+31.09 SADDLE DRIVE	S.D. 4.01 & 4.83	
I-28	A-10	350.46	350.21	355.55	0+45.50 ROAN STALLION LANE	S.D. 4.02	
I-29	A-10	.....	350.75	355.55	0+45.50 ROAN STALLION LANE	S.D. 4.02	

STRUCTURE	TYPE	INV. IN	INV. OUT	℄ TOP ELEV.	℄ ROAD STATION	
MH 1	STANDARD MANHOLE	317.70	317.45	323.03	0+41.00 FIRE CLOUD COURT	G. S.01
MH 2	STANDARD MANHOLE	312.18	311.93	319.67	14+38.50 SUMMER CLOUD WAY	G. S.01
MH 3	STANDARD MANHOLE	310.59	310.34	324.58	0+40.50 DAWN WHISTLE LANE	G. S.01
MH 4	STANDARD MANHOLE	320.55	318.28	326.50	.....	G. S.01
MH 4A	STANDARD MANHOLE	327.50	327.25	334.31	.....	G. S.01
MH 5	STANDARD MANHOLE	347.75	347.50	353.98	8+53.50 SADDLE DRIVE	G. S.01
S-1	ST'D METAL END SECT.	299.95	299.89	301.20	.....	S.D. 5.61
S-2	ST'D METAL END SECT.	304.33	304.29	305.83	.....	S.D. 5.61
S-3	ST'D METAL END SECT.	296.10	295.90	297.35	.....	S.D. 5.61
S-4	ST'D METAL END SECT.	298.63	298.57	300.63	.....	S.D. 5.61
S-5	ST'D METAL END SECT.	303.30	303.19	304.55	.....	S.D. 5.61
S-6	ST'D METAL END SECT.	305.00	304.88	306.25	.....	S.D. 5.61
S-7	ST'D METAL END SECT.	310.20	312.12	311.70	.....	S.D. 5.61
S-8	ST'D METAL END SECT.	309.30	309.21	312.05	.....	S.D. 5.61
S-9	ST'D METAL END SECT.	311.10	311.01	313.76	.....	S.D. 5.61
S-20	ST'D METAL END SECT.	315.99	315.90	317.99	.....	S.D. 5.61
S-21	ST'D METAL END SECT.	334.36	334.25	335.50	.....	S.D. 5.61

DRAINAGE AREA MAP
VILLAGE OF LONGREACH
SECTION 2 AREA1, SECTION 2 AREA2 & SECTION4
LOTS 1-117, LOTS 118-225 & LOTS 1-63
6TH. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE : AS SHOWN — SHEET 12 OF 18 SEPTEMBER 24, 1987

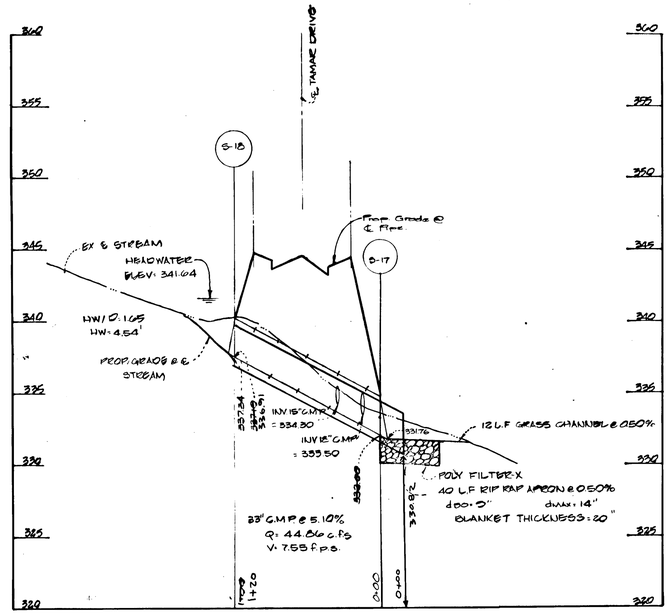
Charles J. Crovo Sr. — 1/27/88
CHARLES J. CROVO SR. — DATE

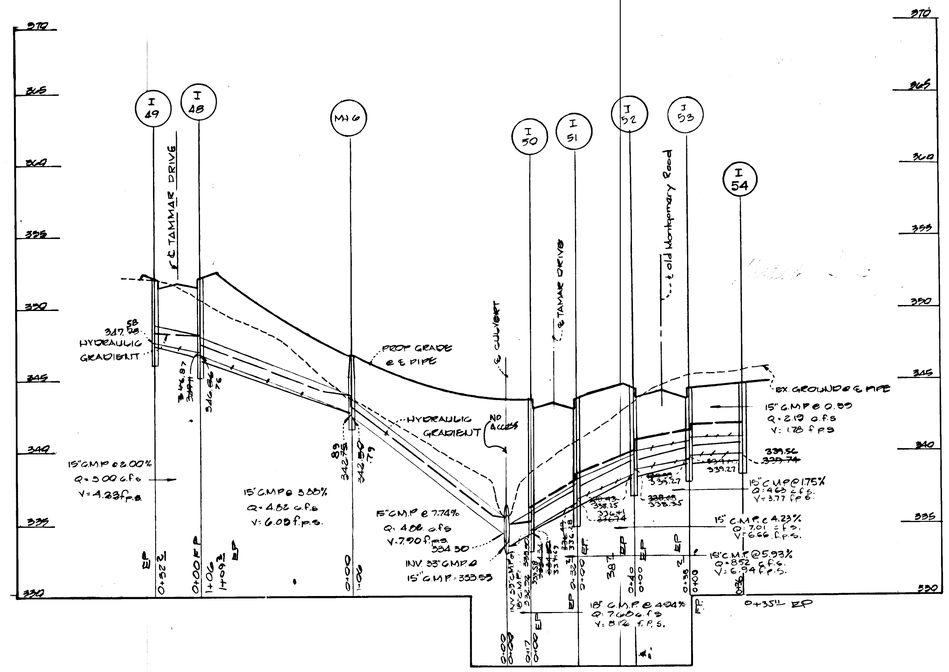
FISHER, COLLINS AND CARTER, INC.
CONSULTING ENGINEERS AND LAND SURVEYORS
8388 COURT AVENUE
ELLICOTT CITY, MARYLAND 21043
TELEPHONE (301) 461-2855

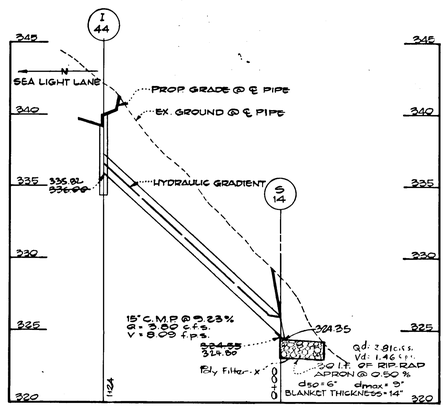
100

AS-BUILT JAN. 15, 1992

F88-78







FISHER, COLLINS AND CARTER, INC.
CIVIL ENGINEERS & LAND SURVEYORS
8388 COURT AVENUE
ELLICOTT CITY, MARYLAND 21043

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

APPROVED DEPARTMENT OF PUBLIC WORKS
CHIEF, LAND DEVELOPMENT DIVISION — DATE 1-24-88

APPROVED DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 1/21/88

APPROVED DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF ENGINEERING — DATE 1-22-88

APPROVED OFFICE OF PLANNING AND ZONING
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 1/26/88

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

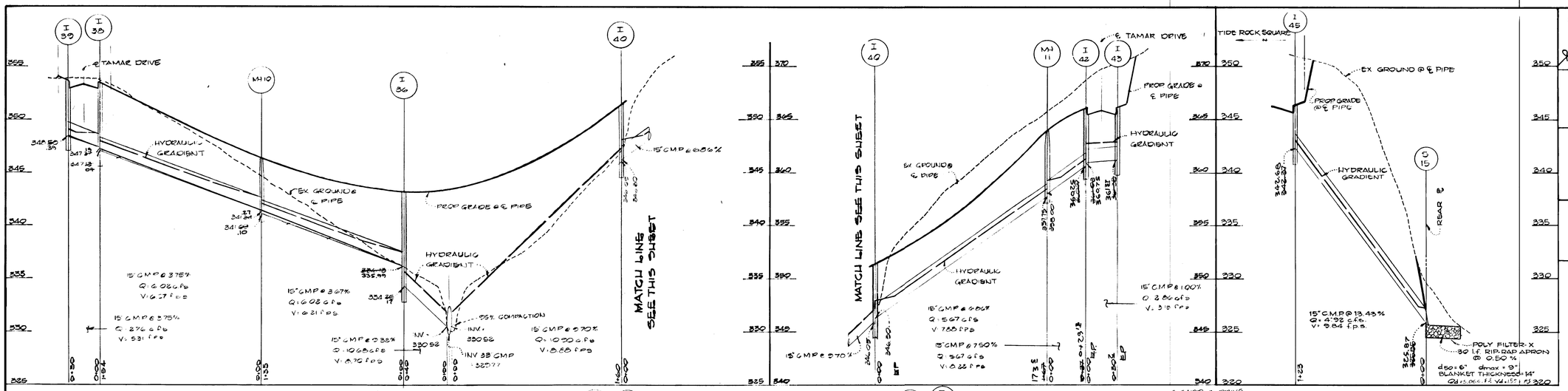
STATE OF MARYLAND — CHARLES J. CROVO SR. — PROFESSIONAL ENGINEER
CHARLES J. CROVO SR. — DATE 10/1/87

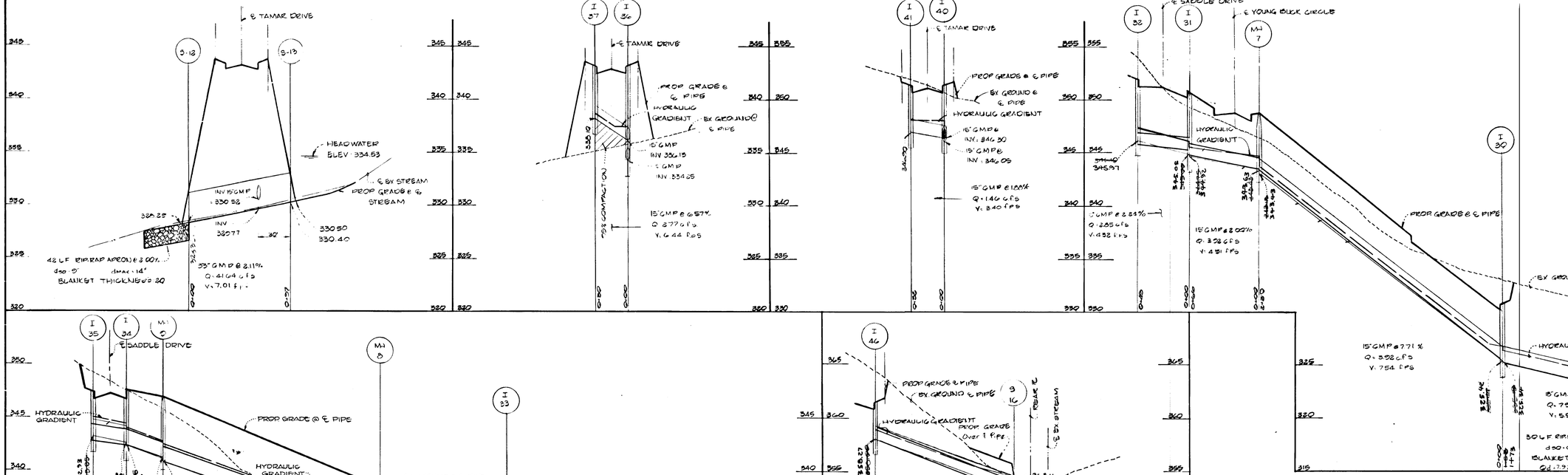
STORM DRAIN PROFILES
VILLAGE OF LONGREACH
SECTION 2 AREA 1
LOTS 1-117
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN — SHEET 13 OF 18 SEPTEMBER 24, 1987

AS-BUILT JAN. 15, 1992

F 88-78





FISHER, COLLINS AND CARTER, INC.
CIVIL ENGINEERS & LAND SURVEYORS
8388 COURT AVENUE
ELLICOTT CITY, MARYLAND 21043

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PROFILES
Scale: 1" = 50' Hor.
1" = 5' Vert.

CHARLES J. CROVO SR. — DATE 10/1/87

STORM DRAIN PROFILES
VILLAGE OF LONGREACH

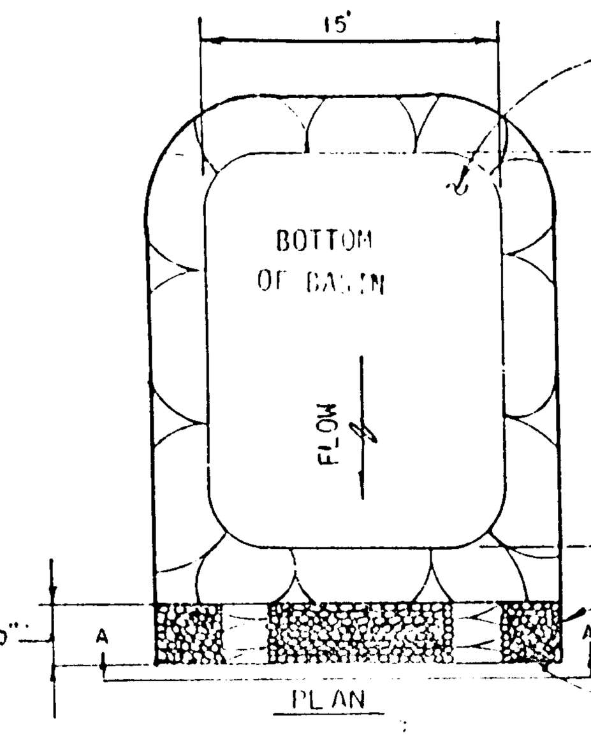
SECTION 2 AREA 1
LOTS 1-117
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN — SHEET 14 OF 18 SEPTEMBER 24, 1987

F 88-78

AS-BUILT JAN. 15, 1992

106



EXCAVATED SETTLING AND DEWATERING BASIN - 2' IN DEPTH

NOTE: ANY WATER PUMPED FROM WITHIN THE C.M.P.A.'S INSTALLATION AREA SHALL BE PUMPED INTO THE SETTLING AND DEWATERING BASIN; UNDER NO CIRCUMSTANCES, SHALL THE CONTRACTOR PUMP ANY WATER DIRECTLY INTO THE EXISTING STREAM.

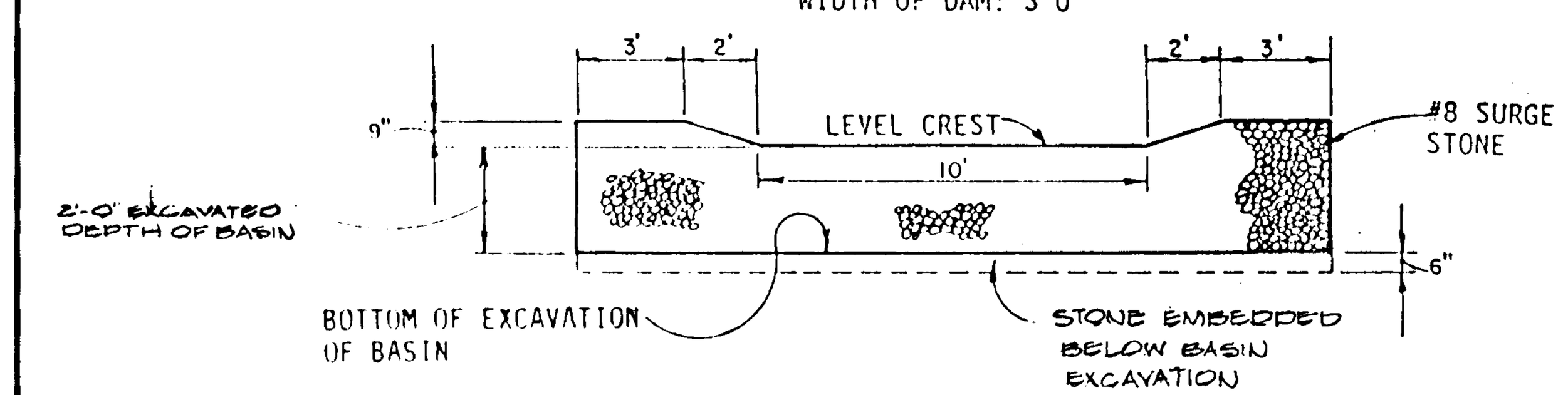
STONE OUTLET DAM SEE DETAIL THIS SHEET

8-INCH STONE FOR STONE OUTLET DAM

DETAIL: SETTLING & DEWATERING BASIN

NO SCALE

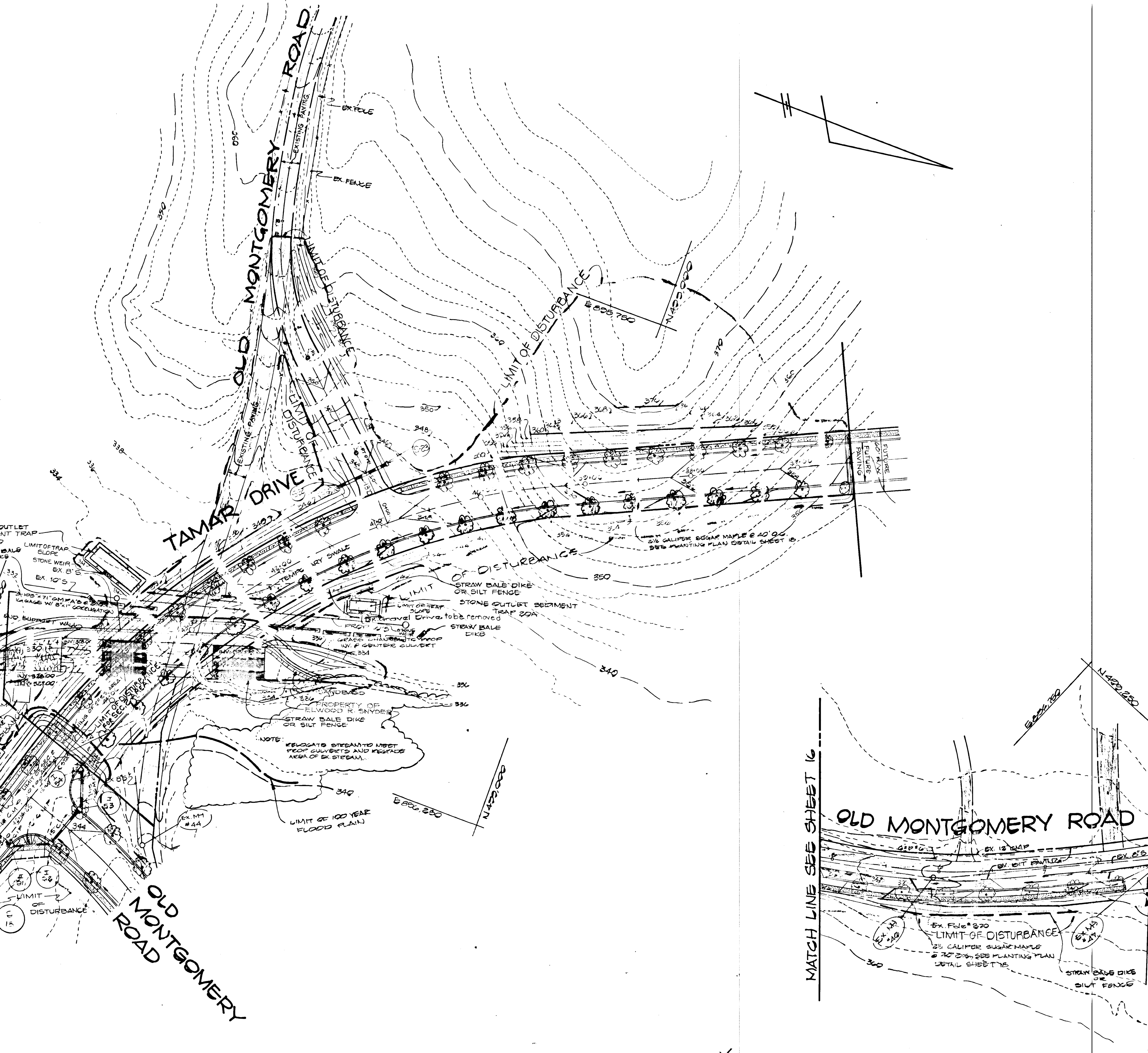
WIDTH OF DAM: 3'0"



SECTION A-A

DETAIL: STONE OUTLET DAM

@ SETTLING & DEWATERING BASIN
NO SCALE



PLAN
Scale: 1"=30'

ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF ENGINEER — 10/1/87 DATE

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY".

SIGNATURE OF DEVELOPER — 10-1-87 DATE

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

U.S. SOIL CONSERVATION DISTRICT — 1-20-88 DATE

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
APPROVED:

DISTRICT — 1/20/88 DATE
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF ENGINEERING — 1-22-88 DATE

APPROVED: OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — 1/26/88 DATE

APPROVED DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 1/21/88 DATE

APPROVED DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — 1-21-88 DATE

STREET TREE, GRADING, AND SEDIMENT CONTROL PLAN

VILLAGE OF LONGREACH

SECTION 2 AREA I
LOTS 1-117
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

STATE OF MARYLAND — CHARLES J. CROVO SR. — No. 13204 REGISTERED — PROFESSIONAL ENGINEER

CHARLES J. CROVO SR. — 10/1/87 DATE

SCALE AS SHOWN SHEET 15 OF 18 SEPTEMBER 24, 1987

FISHER, COLLINS AND CARTER, INC.
CIVIL ENGINEERS & LAND SURVEYORS
8388 COURT AVENUE
ELLICOTT CITY, MARYLAND 21043

AS-BUILT JAN. 15, 1992

F 88-78

100

STONE OUTLET SEDIMENT - TRAP DATA

TRAP #	DRAINAGE AREA	VOLUME REQUIRED	VOLUME PROVIDED	TOP DIMENSIONS	BOTTOM DIMENSIONS	SIDE SLOPES	DEPTH	BOTTOM ELEVATION	WEIR CREST ELEVATION	CLEANOUT ELEVATION	WEIR CREST "L" DIMENSION
1	1.6AC.±	107 CU.YDS.	109 CU.YDS.	60'X20'	54'X14'	1:1	3'	322.0	326.0	323.5	6.4'
2	1.8AC.±	120 CU.YDS.	120 CU.YDS.	70'X19'	64'X13'	1:1	3'	327.0	331.0	328.5	7.2'
3	1.3AC.±	87 CU.YDS.	90 CU.YDS.	50'X20'	44'X14'	1:1	3'	351.0	355.0	352.5	5.2'
4	3.0AC.±	200 CU.YDS.	208 CU.YDS.	100'X20'	93'X13'	1:1	3.5'	323.50	328.0	325.25	12.0'
5	1.4AC.±	93 CU.YDS.	94 CU.YDS.	52'X20'	46'X14'	1:1	3'	339.0	343.0	340.5	5.6'
6	0.8AC.±	53 CU.YDS.	54 CU.YDS.	31'X20'	25'X14'	1:1	3'	339.0	343.0	340.5	3.2'
2A	0.5AC.±	34 CU.YDS.	34 CU.YDS.	30'X14'	24'X8'	1:1	3'	333.0	337.0	334.5	2.0'
2B	0.5AC.±	34 CU.YDS.	34 CU.YDS.	30'X14'	24'X8'	1:1	3'	333.0	337.00	334.5	2.0'

NOTE: THE 8" SEWER IS SHOWN FOR THE PURPOSE OF SEDIMENT TRAP LOCATIONS.

NOTE: THE SEWER CONSTRUCTION SHOWN HEREON IS INCLUDED IN THE LIMITS OF DISTURBANCE.

ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Charles J. Crovo — 10/1/87
SIGNATURE OF ENGINEER — DATE

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY".

Gregory R. Klar — 10-1-87
SIGNATURE OF DEVELOPER — DATE

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

J. Helmz — 1-20-88
U.S.D.A. SOIL CONSERVATION DISTRICT — DATE

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
APPROVED:
Stephen L. Huber — 1/20/88
DIRECTOR, HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
William E. Ray — 1-22-88
CHIEF, BUREAU OF ENGINEERING — DATE

APPROVED: OFFICE OF PLANNING AND ZONING
Joseph Rutter — 1/26/88
DIRECTOR OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

APPROVED DEPARTMENT OF PUBLIC WORKS
Granville M. Wakefield — 1/21/88
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED DEPARTMENT OF PUBLIC WORKS
Charles Lee — 1-21-88
CHIEF, LAND DEVELOPMENT DIVISION — DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERS & LAND SURVEYORS
8388 COURT AVENUE
ELLICOTT CITY, MARYLAND 21043

PLAN
Scale: 1"=50'

STATE OF MARYLAND — CHARLES J. CROVO — REG. NO. 7963 — PROFESSIONAL ENGINEER

Charles J. Crovo, SR. — 10/1/87
CHARLES J. CROVO, SR. — DATE

STREET TREE, GRADING, AND SEDIMENT CONTROL PLAN

VILLAGE OF LONGREACH

SECTION 2 AREA 1
LOTS 1-117
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN — SHEET 16 OF 18 SEPTEMBER 24, 1987

AS-BUILT JAN. 15, 1992

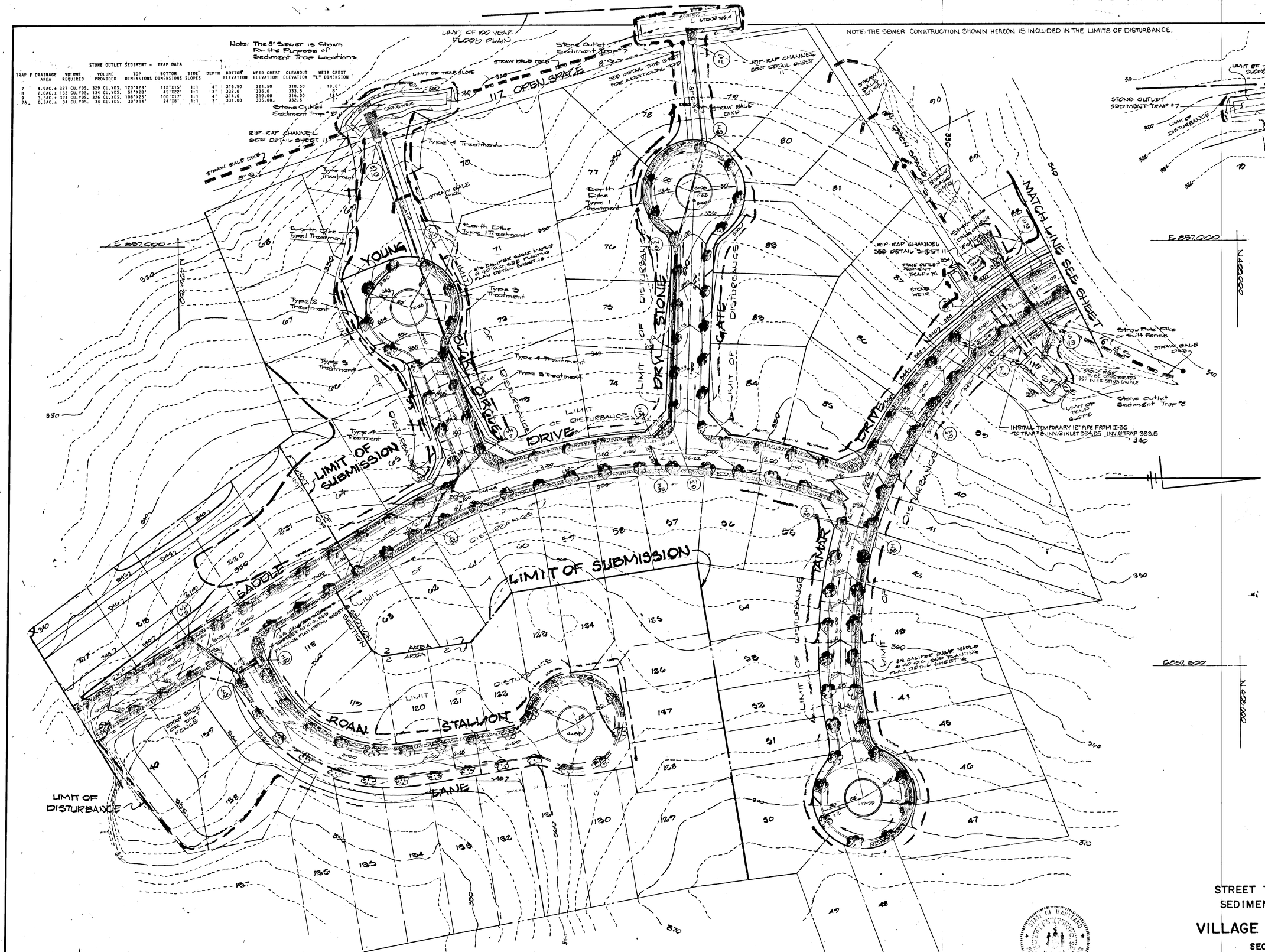
F 88-78

Note: The 8" Sewer is Shown For the Purpose of Sediment Trap Locations.

NOTE: THE SEWER CONSTRUCTION SHOWN HEREON IS INCLUDED IN THE LIMITS OF DISTURBANCE.

STONE OUTLET SEDIMENT - TRAP DATA

TRAP #	DRAINAGE AREA	VOLUME REQUIRED	VOLUME PROVIDED	TOP DIMENSIONS	BOTTOM DIMENSIONS	SIDE SLOPES	DEPTH	BOTTOM ELEVATION	WEIR CREST ELEVATION	CLEANOUT ELEVATION	WEIR CREST "L" DIMENSION
7	4.9AC.±	327 CU.YDS.	329 CU.YDS.	120'X23'	112'X15'	1:1	4'	316.50	321.50	318.50	19.6'
8	2.0AC.±	133 CU.YDS.	134 CU.YDS.	51'X28'	45'X22'	1:1	3'	332.0	336.0	333.5	8'
9	3.5AC.±	324 CU.YDS.	326 CU.YDS.	108'X25'	100'X17'	1:1	4'	314.0	319.00	316.00	14'
7A	0.5AC.±	34 CU.YDS.	34 CU.YDS.	30'X14'	24'X8'	1:1	3'	331.00	335.00	332.5	2'



ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF ENGINEER — DATE 10/1/87

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY".

SIGNATURE OF DEVELOPER — DATE 10-1-87

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

H. Hebner 1-20-88
H.C. SOIL CONSERVATION DISTRICT — DATE

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED:
Stephen K. Mullen 1/20/88
DISTRICT — DATE
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF ENGINEERING — DATE 1-22-88

APPROVED: OFFICE OF PLANNING AND ZONING

DIRECTOR, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 1/26/88

APPROVED DEPARTMENT OF PUBLIC WORKS

Granville W. Wetherall 1/21/88
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 1/29/88

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERS & LAND SURVEYORS
8388 COURT AVENUE
ELLICOTT CITY, MARYLAND 21043

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044

PLAN
Scale: 1"=50'

STATE OF MARYLAND — CHARLES J. CROVO SR. — 10/1/87

STREET TREE, GRADING, AND SEDIMENT CONTROL PLAN

VILLAGE OF LONGREACH

SECTION 2 AREA 1
LOTS 1-117
6TH. ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN — SHEET 17 OF 18 SEPTEMBER 24, 1987

AS-BUILT JAN. 15, 1992 F 88-78

PERMANENT SEEDING NOTES:

APPLY TO GRADED OR CLEARED AREA NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE-INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULE:

1) PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQUARE FT) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE-INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ.FT.).
2) ACCEPTABLE - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ.FT.) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE-INCHES OF SOIL.

SEEDING: FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 50 LBS PER ACRE (1.4 LBS/1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31, SEED WITH 60 LBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (.05 LBS/1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING: APPLY 1½ TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES:

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE-INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.)

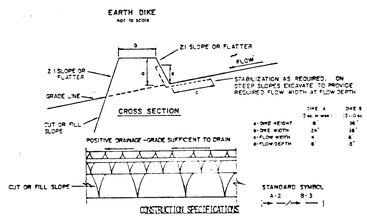
SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2½ BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ.FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OR USE SOD.

MULCHING: APPLY 1½ TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

EARTH DIKE

not to scale



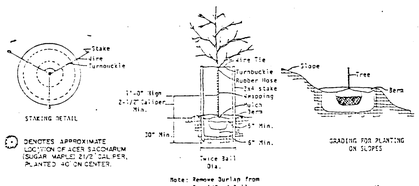
1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. FLOW SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 6-8"
4	8.1-20%	LINED RIP-RAP 6-8"	ENGINEERING DESIGN

A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
B. RIP-RAP TO BE 6-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.



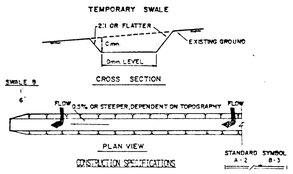
Note: Remove burlap from top of ball

TREE PLANTING DETAIL
NO SCALE

NOTE: CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND UTILITIES PRIOR TO DIGGING. FINAL LOCATIONS OF TREES MAY BE ADJUSTED SLIGHTLY TO ACCOMMODATE FIELD CONDITIONS. PLANTING PROCEDURES SHALL COMPLY WITH "LANDSCAPE SPECIFICATIONS FOR BALTIMORE-WASHINGTON METROPOLITAN AREAS". SUBSTITUTIONS TO THE ABOVE SPECIES MAY BE PERMITTED, PROVIDED THAT THE PLANTING IS IN ACCORDANCE WITH THE STREET TREE AND LANDSCAPE REQUIREMENTS AS SPECIFIED IN SECTION 16.131 OF THE HOWARD COUNTY SUBDIVISION REGULATIONS.

STREET TREES:
THE LOCATIONS, TYPE AND NUMBER OF TREES SHOWN ON THESE PLANS ARE TENTATIVE AND ARE USED FOR BOND PURPOSES ONLY. THE FINAL LOCATION AND VARIETY OF TREES MAY VARY TO ACCOMMODATE FIELD CONDITIONS AND BUILDERS LANDSCAPE PROGRAM. BOND RELEASE IS CONTINGENT UPON SECTION 16.131 OF THE HOWARD COUNTY SUBDIVISION REGULATIONS, AS APPROVED BY THE OFFICE OF PLANNING AND ZONING.

TEMPORARY SWALE



CONSTRUCTION SPECIFICATIONS

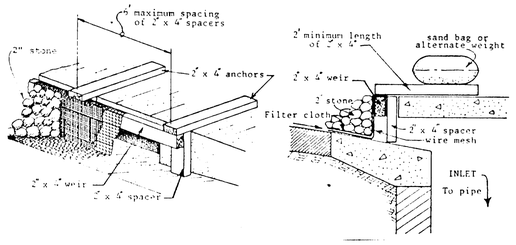
1. ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
5. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH WILL IMPEDE NORMAL FLOW.
6. FILLS SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED ON CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
8. STABILIZATION SHALL BE AS PER THE CHART BELOW:

FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	A (5 AC OR LESS)	B (5 AC - 10 AC)
1	0.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE OR EXCELSIOR
3	5.1-8.0%	SEED WITH JUTE OR EXCELSIOR; SOD	LINED RIP-RAP 6-8" RECYCLED CONCRETE EQUIVALENT
4	8.1-20%	LINED 6-8" RIP-RAP	ENGINEERED DESIGN

9. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

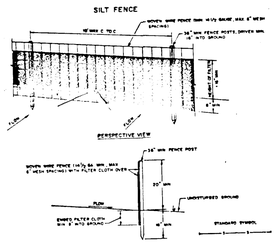
CURB INLET PROTECTION DETAIL



B. Curb Inlet Protection.

1. Attach a continuous piece of wire mesh (30" min. width by throat length plus 4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard drawing.
2. Place a piece of approved filter cloth (40-85 sieve) of the same dimensions as the wire mesh over the wire mesh and securely attach to the 2" x 4" weir.
3. Securely nail the 2" x 4" weir to 9" long vertical spacers to be located between the weir and inlet face (max. 6' apart).
4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations. These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.
5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.
6. Form the wire mesh and filter cloth to the concrete gutter and against the face of curb on both sides of the inlet. Place clean 2" stone over the wire mesh and filter fabric in such a manner as to prevent water from entering the inlet under or around the filter cloth.
7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
8. Assure that storm flow does not bypass inlet by installing temporary earth or asphalt dikes directing flow into inlet.

SILT FENCE



CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE AS SPECIFIED ABOVE. EVEN 20" SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

POSTS: STEEL EITHER T OR U TYPE OR HARDWOOD

FENCE: WOVEN WIRE, 14½ GA. MIN. 6" MAX. MESH SPACING

FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL

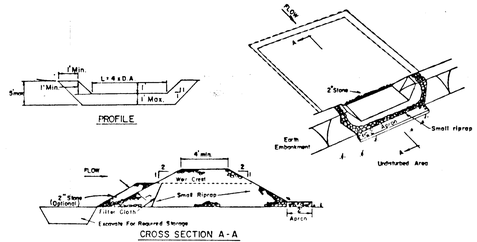
SEDIMENT CONTROL NOTES:

1) A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION (592-2437).
2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
3) FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7) SITE ANALYSIS:

TOTAL AREA OF SITE	49.417	ACRES
AREA DISTURBED	12.137	ACRES
AREA TO BE ROOFED OR PAVED	3.890	ACRES
AREA TO BE VEGETATIVELY STABILIZED	8.247	ACRES
TOTAL CUT	20,000	CU.YDS.
TOTAL FILL	20,000	CU.YDS.
OFF-SITE WASTE/BORROW AREA LOCATION	TO BE DETERMINED	

8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY CONSTRUCTING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9) ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY DPW SEDIMENT CONTROL INSPECTOR.
10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUISITED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

STONE OUTLET SEDIMENT TRAP V



OPTION: A one foot layer of 2" stone may be placed on the upstream side of the riprap in place of the embedded filter cloth.

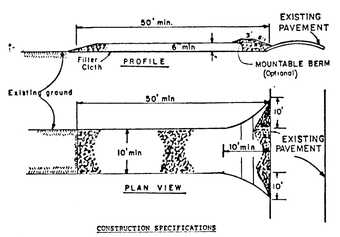
CONSTRUCTION SPECIFICATIONS FOR ST-V

1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
2. The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
3. All cut and fill slopes shall be 2:1 or flatter.
4. The stone used in the outlet shall be small riprap 4"-8" along with a 1' thickness of 2" aggregate placed on the up-grade side on the small riprap OR embedded filter cloth in the riprap.
5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to ½ the design depth of the trap.
6. The structure shall be inspected after each rain and repairs made as needed.
7. Construction operations shall be carried out in such a manner than erosion and water pollution is minimized.
8. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

Maximum Drainage Area: 5 Acres

STABILIZED CONSTRUCTION ENTRANCE

not to scale



CONSTRUCTION SPECIFICATIONS

1. Stone Size - Use 2" stone, or reclained or recycled concrete equivalent.
2. Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
3. Thickness - Not less than six (6) inches.
4. Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
6. Surface Water - All surface water flowing or diverted toward construction entrance shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
8. Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. Periodic inspection and needed maintenance shall be provided after each rain.

ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Charles J. Crovo Sr. — 10/1/87
SIGNATURE OF ENGINEER — DATE

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY".

Gregory D. Klar — 10-1-87
SIGNATURE OF DEVELOPER — DATE

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

J. Helm Jr — 1-20-88
U.S. SOIL CONSERVATION DISTRICT — DATE

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
APPROVED:

Stephen L. Fuller — 1/20/88
DISTRICT — DATE
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PUBLIC WORKS

William E. Ridey — 1-22-88
CHIEF, BUREAU OF ENGINEERING — DATE

APPROVED: OFFICE OF PLANNING AND ZONING

Joseph Rutter — 1/26/88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS

Granville W. Wescoat — 1/4/88
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS

[signature] — 1/28/88
CHIEF, LAND DEVELOPMENT DIVISION — DATE

CONSTRUCTION SEQUENCE:

1. OBTAIN GRADING PERMIT.
2. PLACE STONE CONSTRUCTION ENTRANCE AS SHOWN ON PLAN.
3. INSTALL SILT FENCE OR STRAW BALE DIKES AS SHOWN ON PLAN.
4. CONSTRUCT SEDIMENT TRAPS, EARTH DIKES AND TEMPORARY SWALES, STABILIZE WITH TEMPORARY SEEDING.
5. CONSTRUCT STORM DRAIN SYSTEM FROM S-12 TO S-13.
6. INSTALL SILT FENCE OR STRAW BALE DIKE ALONG UPGRADE SIDES OF THE EXCAVATION AT THE LIMITS OF DISTURBANCE-BOTH SIDES OF STREAM.
7. GRADE ROADS TO SUBGRADE AND CONSTRUCT STORM DRAIN SYSTEM.✱
8. CONSTRUCT CURB AND GUTTER AND INSTALL BASE COURSE.
9. SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT TRAPS WHEN THE CLEANOUT ELEVATION HAS BEEN REACHED.
10. THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON THE SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON. AFTER EACH RAINFALL AND ON A DAILY BASIS.
11. THE SEDIMENT TRAPS SHALL BE DEWATERED BY PUMPING. THE SEDIMENT FROM THE TRAPS SHALL BE PLACED UP-GRADE FROM THE SEDIMENT TRAPS IN SUCH A MANNER AS NOT TO INTERFERE WITH CONSTRUCTION OPERATIONS OR CAUSE EROSION DOWNGRADE FROM THE SEDIMENT TRAP.
12. REMOVE SEDIMENT FROM ROADWAYS AND DRESS STONE CONSTRUCTION ENTRANCE AS REQUIRED.
13. REMOVE INLET PROTECTION DEVICES AND FLUSH STORM DRAIN SYSTEM TO REMOVE ANY TRAPPED SEDIMENT. INSTALL RIP-RAP APRONS.
14. REMOVE STONE CONSTRUCTION ENTRANCE AND STRAW BALE DIKE/SILT FENCE, CLEAN BASE COURSE. APPLY TACK COAT TO BASE COURSE AND LAY SURFACE COURSE.
15. ALL DISTURBED AREAS DUE TO REMOVAL OF SEDIMENT CONTROL MEASURES SHALL BE GRADED AND STABILIZED WITH PERMANENT SEEDING MIXTURE.
16. COMPLETE DRAINAGE AREA STABILIZATION MUST BE ACHIEVED PRIOR TO SEDIMENT CONTROL REMOVAL.
✱7) INSTALL TEMPORARY 12" PIPE FROM I-36 TO TRAP #8, LIMIT OF WORK FOR TAMAR DRIVE & STA 44+59.25

STREET TREE, GRADING, AND SEDIMENT CONTROL PLAN

VILLAGE OF LONGREACH

SECTION 2 AREA 1
LOTS 1-117
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

STATE OF MARYLAND — CHARLES J. CROVO No. 4168 — REGISTERED PROFESSIONAL ENGINEER

Charles J. Crovo SR — 10/1/87
CHARLES J. CROVO SR — DATE

SCALE AS SHOWN — SHEET 18 OF 18 SEPTEMBER 24, 1987

AS-BUILT JAN. 15, 1992

F 88-78

FISHER, COLLINS AND CARTER INC.
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