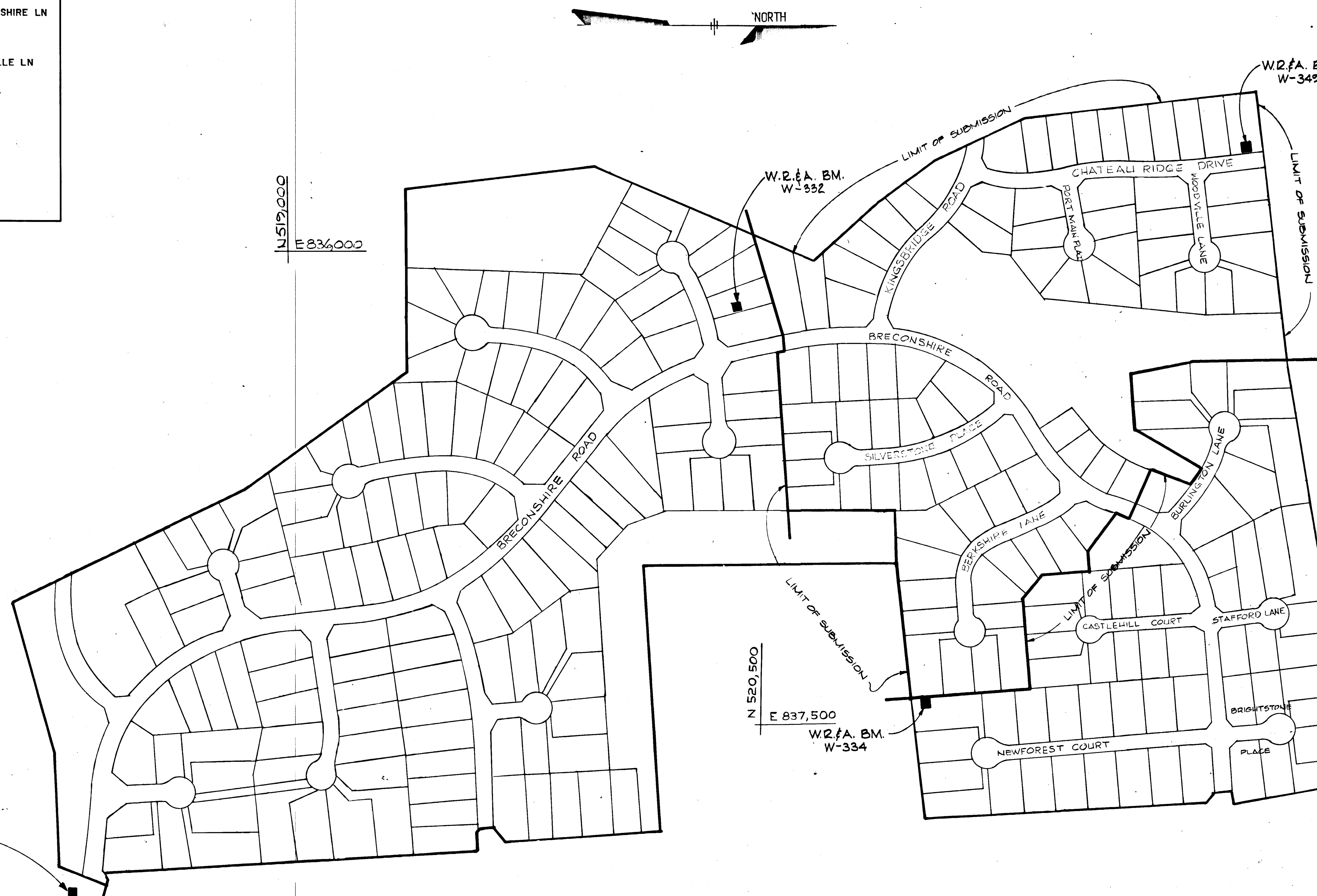
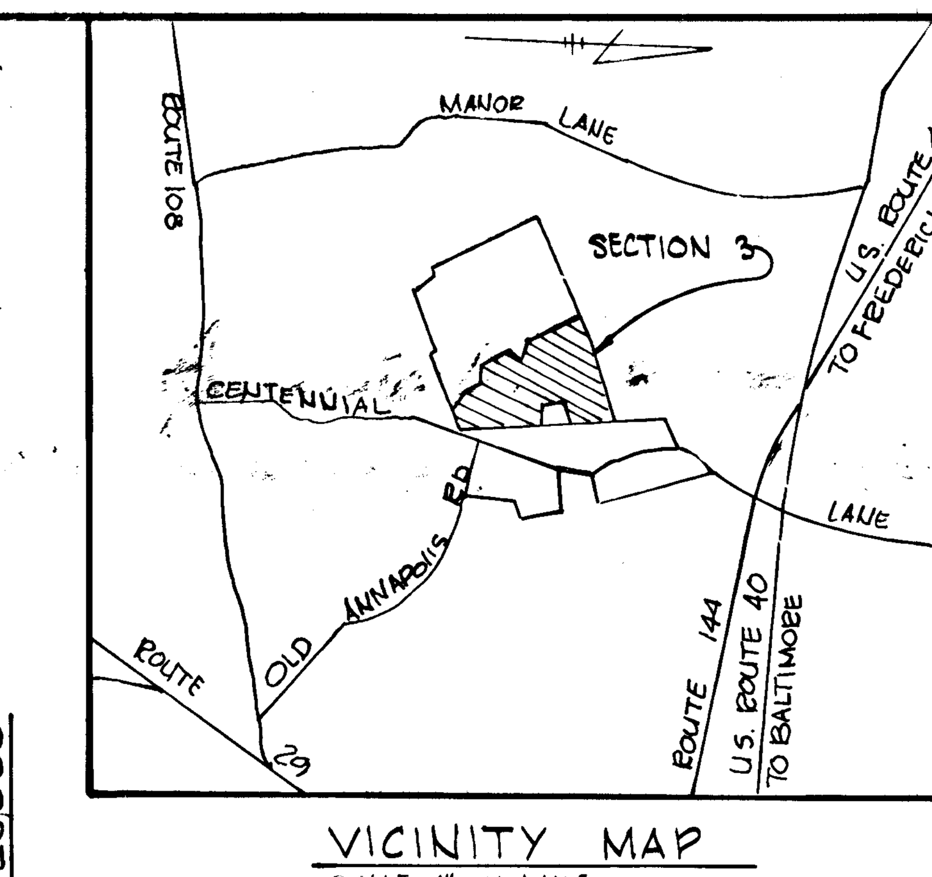


LOCATION PLAN

SCALE: 1" = 200'



VICINITY MAP

SCALE: 1" = ½ MILE

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY STANDARDS, SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
2. ALL UTILITY COMPANIES SHALL BE NOTIFIED 24 HOURS IN ADVANCE OF CONSTRUCTION.
3. ALL INLETS SHALL BE HOWARD COUNTY STANDARDS UNLESS OTHERWISE SHOWN.
4. ALL STREET CURB RETURNS SHALL HAVE A 25.0' RADII UNLESS OTHERWISE NOTED.
5. STORM DRAIN TRENCHES WITHIN ROAD RIGHTS-OF-WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE HOWARD COUNTY ROAD CODE.
6. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATIONS SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
7. THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES WHERE DIRECTED BY THE ENGINEER A MINIMUM OF TWO WEEKS IN ADVANCE OF ANY CONSTRUCTION.
8. TEMPORARY COMPACTED 18" HIGH EARTH FILL DIVERSION DIKES SHALL BE CONSTRUCTED ABOVE THE LIPS OF FILL SLOPES ON THE R.O.W. CONCURRENTLY WITH THE INITIAL GRADING AND DIRECTED TO UNDISTURBED SOD AREAS AT THE END OF EACH DAY.
9. CONTRACTOR TO NOTIFY THE HOWARD COUNTY DEPT. OF INSPECTIONS AND PERMITS AT LEAST 3-DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS. TELEPHONE NO. 792-2630.
10. ALL DISTURBED SLOPE AREAS TO BE STABILIZED AS SOON AS GRADING IS COMPLETED.
11. ALL REINFORCED CONCRETE FOR STORM DRAIN STRUCTURES SHALL HAVE A MINIMUM OF 28 DAYS STRENGTH OF 3500 P.S.I.
12. ALL SWALES AND SLOPES SHALL BE PERMANENTLY SEEDED. SEE THE SEED SPECIFICATIONS ON SHEET 16.
13. TRAFFIC CONTROL DEVICES AND THEIR INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 1984 REVISED EDITION.
14. STABILENKA (FILTER CLOTH T-100) OR EQUAL SHALL BE PLACED UNDER ALL STONE RIP-RAP (FULL WIDTH AND LENGTH OF STONE.)
15. STONE FOR RIP-RAP SHALL BE AS SPECIFIED ON THE DRAWINGS. ALL RIP-RAP SHALL BE UNPAVED.
16. STUBS FOR 6" P.V.C. UNDERDRAIN PIPE TO BE INSTALLED AT CENTER OF EACH WALL OF EVERY INLET.
17. LAMP POST - A 250-WATT MERCURY VAPORLAMP PENDANT MOUNTED FIXTURE ON A 30-FOOT BRONZE ALUMINUM POLE.
18. LAMP POST - A 175 WATT MODERN MERCURY VAPOR LAMP POST TOP FIXTURES ON A 12-FOOT BRONZE FIBERGLASS POLE.

BENCH MARKS

HOWARD COUNTY CONTROL POINT 3040001	CONCRETE MON. @ SURFACE - 25'±. E OF ℄ OF CENTENNIAL LANE. 70'± S. OF OLD ANNAPOLIS ROAD ELEV. 494.422
W.R.& A. BM. W-332	IRON PIPE (TRAVERSE POINT) - 140'± W. OF ℄ STA. 29+35± BRECONSHIRE ROAD ELEV. 449.16
W.R.& A. BM. W-349	IRON PIPE (TRAVERSE POINT) -35'± W OF ℄ OF CHATEAU RIDGE DRIVE ELEV. 449.87
W.R.& A. BM. W-334	IRON PIPE (TRAVERSE POINT) -255'± SE OF CENTER OF BULB BERKSHIRE LN. ELEV. 474.62

HORIZONTAL & VERTICAL CONTROL			
STATION	NORTH	EAST	ELEV.
3140002	522590.105	838530.841	445.77
3140001	523547.740	838056.376	436.43

R&C INDICATES 3' LONG 5/8" REBAR WITH CAP SET FLUSH WITH GROUND.

NOTE:
THE AS-BUILT INFORMATION SHOWN ON THESE DRAWINGS WAS DRAFTED BY FISHER, COLLINS & CARTER, INC..
THIS INFORMATION WAS TAKEN FROM THE AS-BUILT RED-LINED PRINTS PREPARED BY McKEE ASSOCIATES, DATED 6-19-91

STORM WATER MANAGEMENT FOR THIS PROJECT HAS BEEN PROVIDED IN BURLEIGH MANOR SECTION 3 AREA 5

Street Trees:
The location, 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 Howard County Subdivision Regulations, as approved by the Office of Planning and Zoning. The Type of hardwood trees to be used are Acer Rubron (Red Maple), Platanus Acerifolia (London Plane Tree) or Tilia Cordata (Little Leaf Linden). For Planting Detail see sheet 12.

REV.	DATE	REV. NO	REVISION DESCRIPTION

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 SAINT PAUL STREET
BALTIMORE, MARYLAND 21218
Thomas J. Shafer
THOMAS J. SHAFER P.E. No. 8457

OWNER
STEWART J. GREENEBAUM & THOMAS J. PELLERITO, TRUSTEES
BALTIMORE, MARYLAND

OFFICE OF PLANNING AND ZONING
Marsha J. McLaughlin 9-14-88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, LAND DEVELOPMENT DIVISION 9/13/88 DATE
Granville W. Wehland — CHIEF, BUREAU OF HIGHWAYS 9/13/88 DATE
William E. Riley — CHIEF, BUREAU OF ENGINEERING 9-14-88 DATE

BURLEIGH MANOR

SECTION 3 AREA 5
LOTS 523-601

ROAD CONSTRUCTION PLANS

2nd ELECTION DISTRICT OF HOWARD COUNTY, MD.
TAX MAP 23/24
DEVELOPER
ROSE / RICHMOND JOINT VENTURE
BALTIMORE, MARYLAND

SCALE: AS SHOWN DATE: 4/01/88

* NOTE: SEE SHEET 1 OF 23 FOR AS-BUILT INFORMATION DATED 24 JAN. 1992
F-89-134

CURVE DATA
BRECONSHIRE ROAD

STA 30+73.37 to P.T. 32+63.40
- Δ = 4°56′57″ — Tan. = 95.07′
- Arc = 190.03′ — Chord = 189.97′
- Rad = 2200.00′ — Chd Brg = N 6°22′34W

P.T. 32+63.40 to P.I. 33+73.40
- Δ = 10°30′15″ — Tan. = 55.16′
- Arc = 110.00′ — Chord = 109.85′
- Rad = 600.00′ — Chd Brg = N 1°21′02″E

P.I. 33+73.40 to P.I. 38+15.04
- Δ = 42°10′24″ — Tan = 231.36′
- Arc = 441.64′ — Chord = 431.74′
- Rad = 600.00′ — Chd Brg = N 27°41′22″E

P.I. 38+15.04 to P.T. 39+30.04
- Δ = 10°58′54″ — Tan = 57.68′
- Arc = 115.00′ — Chord = 114.82′
- Rad = 600.00′ — Chd Brg = N 54°16′01″E

P.C. 40+14.29 to P.I. 41+37.06
- Δ = 17°35′10″ — Tan = 61.87′
- Arc = 122.77′ — Chord = 122.29′
- Rad = 400.00′ — Chd. Brg = N 50°57′53″E

No.	TYPE	Top El.	Inv. In	Inv. Out	LOCATION	REMARKS
STORM DRAIN STRUCTURE SCHEDULE						
S-5	36″ End Section		434.13		See Plan & Profile	
MH-3	Standard 5′ MH	447.10	435.44	435.44	℄ MH Loc 19.00′ Lt ℄ Sta 38+80	
I-13	A-5 Inlet	442.70	436.35	436.10	℄ Inlet 17.83′ Lt ℄ Sta 34+22.89	
I-14	A-10 Inlet	442.70	437.47	437.27	℄ Inlet 17.67′ Rt ℄ Sta 34+22.89	
I-15	A-10 Inlet	444.64	440.01	439.76	℄ Inlet 17.67′ Rt ℄ Sta 32+11	
I-16	A-5 Inlet	444.64	439.96	439.96	℄ Inlet 17.67′ Lt ℄ Sta 32+11	
I-17	A-10 Inlet	442.98		437.35	℄ Inlet 17.67′ Rt ℄ Sta 75+35.94	
I-36	TYPE D	449.03		444.14	See Plan & Profile	
I-40	A-5 Inlet	445.95	441.50	441.30	℄ Inlet 17.67′ Rt ℄ Sta 30+80	
I-41	A-5 Inlet	445.95		441.84	℄ Inlet 17.67′ Lt ℄ Sta 30+80	
MH-8	Standard 4′	443.75		438.54	℄ MH Loc 20.0′ Rt ℄ Sta 33+14	
S-4	24″ End Section		434.20		℄ STRUCTURE 66′ Lt ℄ Sta 34+55	
I-20	4.01 A-5	444.85	436.91	436.71	℄ Inlet 17.83′ Lt ℄ Sta 40+90.06	
I-46	4.01 A-5	444.85	439.37	439.19	℄ Inlet 17.67′ Rt ℄ Sta 40+90.06	

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Ronald W. Lepson — 9/13/88
CHIEF, LAND DEVELOPMENT DIVISION — DATE

Granville W. Wehland — 9/13/88
CHIEF, BUREAU OF HIGHWAYS — DATE

William E. Riley — 9-14-88
CHIEF, BUREAU OF ENGINEERING — DATE

OFFICE OF PLANNING AND ZONING

Marsha S. McLaughlin — 9-14-88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA:
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE:
PLAN AND PROFILE
BRECONSHIRE ROAD

SCALE: 1″ = 50′ DATE: 4/1/88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

Thomas J. Shafer
THOMAS J. SHAFER
Registered Engineer
No. 8457

THOMAS J. SHAFER No. 8457

Keuffel & Esser Company
48 7024 Made in U.S.A.

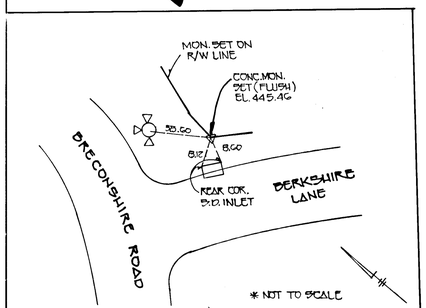
BRECONSHIRE ROAD Scales: 1″=5′V. 1″=50′H

SHEET 2 OF 23 F-88-240

AS-BUILT 24 JAN. 1992

STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	TOP EL	INV. IN	INV. OUT	LOCATION	REMARKS
I-21	A-10 Inlet width 2.5' Howard County Std. 6D.4.02	445.15	440.41	439.66	℄ Inlet 16.67' Rt. ℄ Sta. 0+50.27	
I-22	A-5 Inlet width 2.5' Howard County Std. 6D.4.01	445.14		440.69	℄ Inlet 16.67' Lt. ℄ Sta. 0+49.77	Provide inlet deflectors
I-23	A-5 Inlet width 2.5' Howard County Std 6D.4.01	461.94	457.50	457.25	℄ Inlet 16.67' Rt. ℄ Sta. 5+18.00	Provide inlet deflectors
I-24	Type "D" Inlet Howard County Std. 6D.4.11	465.33		459.78	See Plan & Profile	
I-25	A-5 Inlet width 2.5' Howard County Std. 6D.4.01	443.04	438.28	438.04	℄ Inlet 17.67' Lt. ℄ Sta. 43+25.00	
I-38	A-10 Inlet width 2.5' Howard County Std. 6D.4.02	443.04		438.62	℄ Inlet 17.67' Rt. ℄ Sta. 43+25.00	
I-45	A-5 Inlet width 2.5' Howard County Std. 6D.4.01	456.31	451.61	451.41	℄ Inlet 16.67' Rt. ℄ Sta. 3+90.00	Provide Inlet deflectors
I-47	A-5 Inlet width 2.5' Howard County Std. 6D.4.01	461.94		457.82	℄ Inlet 16.67' Lt. ℄ Sta. 5+18.00	Provide Inlet deflectors
I-48	A-5 Inlet width 2.5' Howard County Std. 6D.4.01	450.49		445.96	℄ Inlet 16.67' Lt. ℄ Sta. 2+53.52	Provide Inlet deflectors
MH-9	Standard 4' Howard Countrry Std. G-5.12	458.25	454.57	454.37	℄ MH 20.00' Rt. ℄ Sta. 4+53.00	
MH-10	Standard 4' Howard County Std. G-5.12	453.53	449.24	449.04	℄ MH 21.00' Rt. ℄ Sta. 3+29.00	
MH-11	Standard 4' Howard County Std. G-5.12	450.32	445.61	445.41	℄ MH 19.00' Rt. ℄ Sta. 2+53.52	
MH-12	Standard 4' Howard County Std. G-5.12	447.06	442.68	442.48	℄ MH 18.00' Rt. ℄ Sta. 1+34.00	
MH-14	Standard 5' Howard County Std G-5.13	443.99	437.43	437.43	℄ MH 20.00' Lt. ℄ Sta. 42+21.00	



BRECONSHIRE ROAD ℄ Curve Data

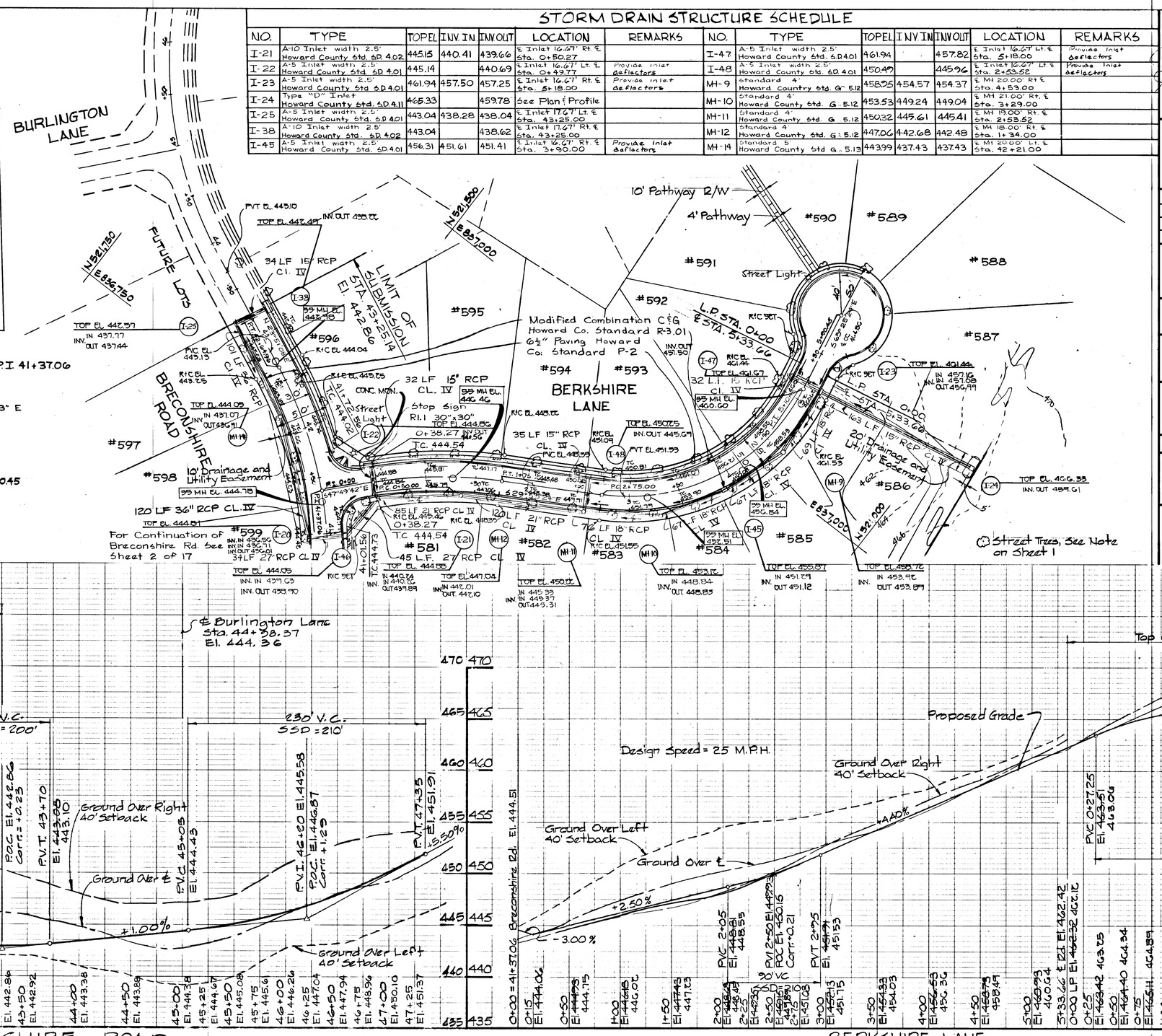
P.I. 41+37.06 to P.T. 42+64.96
Crd. = 127.36'
Arc. = 127.91'
Rad. = 400.00'
Brg. = N 39° 00' 40" E
Δ = 18° 19' 16"
Tan. = 64.50'

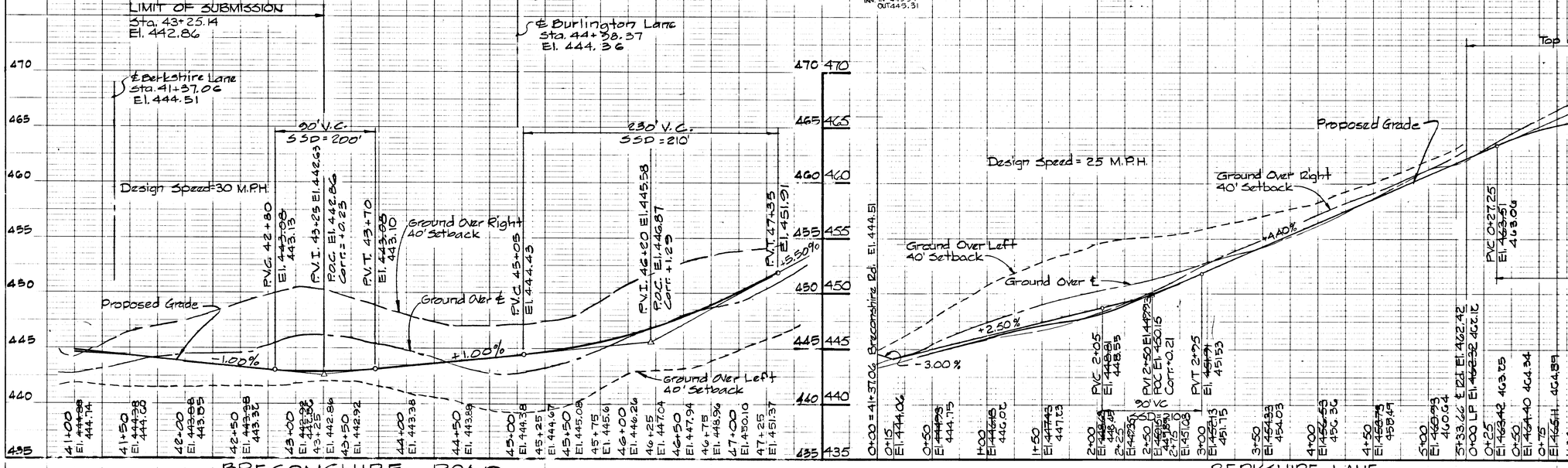
P.C. 40+14.29 to P.I 41+37.06
Crd. = 122.29'
Arc. = 122.77'
Rad. = 400.00'
Brg. = N 50° 57' 53" E
Δ = 17° 35' 09"
Tan. = 61.87'

BERKSHIRE LANE ℄ Curve Data

P.C. 0+50.00 to P.T. 1+78.00
Crd. = 124.49'
Arc. = 125.00'
Rad = 400.00'
Brg. = S 38° 52' 39" E
Δ = 17° 54' 18"
Tan. = 63.01'

P.C. 2+75.00 to P.T. 5+10.45
Crd. = 220.67'
Arc = 235.45'
Rad. = 190.00'
Brg = S 65° 25' 24" E
Δ = 71° 00' 00"
Tan = 135.55'





BRECONSHIRE ROAD
Scale: 1"=50' Hor.
1"=5' Ver

BERKSHIRE LANE
Scale: 1"=50' Hor
1"=5' Ver.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/13/88
CHIEF, BUREAU OF HIGHWAYS — DATE 9/13/88
CHIEF, BUREAU OF ENGINEERING — DATE 9/14/88

OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9-14-88

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA:
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE:
PLAN AND PROFILE
BRECONSHIRE ROAD & BERKSHIRE LANE

SCALE: 1"=50' DATE: 4/11/88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

THOMAS J. SHAFER
Registered Engineer
No. 8457

STATE OF MARYLAND — THOMAS JOSEPH SHAFER — No. 8457 — REGISTERED PROFESSIONAL ENGINEER

PLAN / PROFILE — SURVEYED, PLOTTED, DRAWN, CHECKED, STRUCTURE NOTATIONS CHECKED — NOTE BOOK — No.

Keuffel & Esser Company
48 7024 Made in U.S.A.

SHEET 3 OF 23
AS-BUILT
24 JANUARY 1992

F-88-240

CURVE DATA

KINGSBRIDGE ROAD

P.C. 68+66.95 to P.I. 69+67.00

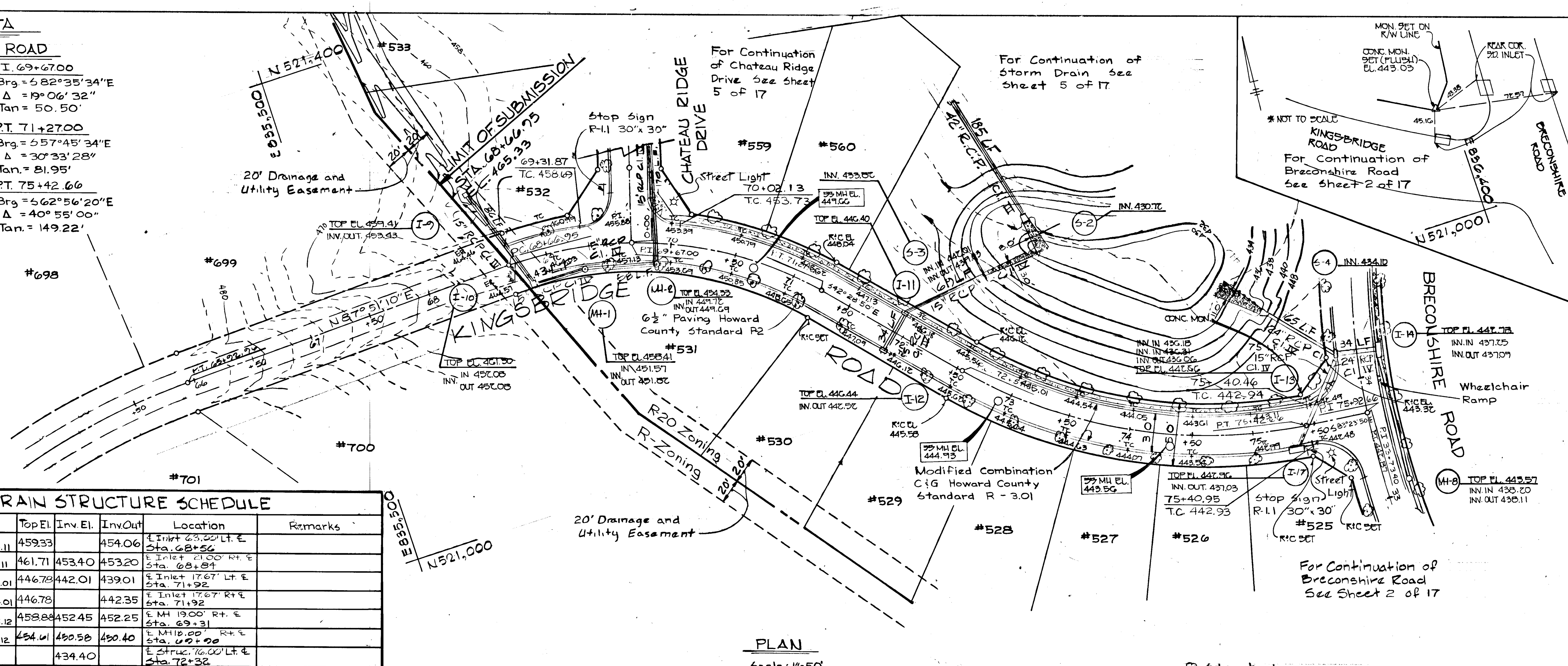
Crd. = 99.59' Brg. = S 82°35'34"E
Arc. = 100.05' Δ = 19°06'32"
Rad. = 300.00' Tan = 50.50'

P.I. 69+67.00 to P.T. 71+27.00

Crd. = 158.11' Brg. = S 57°45'34"E
Arc. = 160.00' Δ = 30°33'28"
Rad. = 300.00' Tan. = 81.95'

P.C. 72+57.00 to P.T. 75+42.66

Crd. = 279.62' Brg = S 62°56'20"E
Arc. = 285.65' Δ = 40°55'00"
Rad. = 400.00' Tan. = 149.22'



STORM DRAIN STRUCTURE SCHEDULE

No.	Type	Top El.	Inv. El.	Inv. Out	Location	Remarks
I-9	Type "D" Inlet Howard County Std. S.D.4.11	459.33		454.06	℄ Inlet 63.00' Lt. ℄ Sta. 68+56	
I-10	Type "D" Inlet Howard County Std. S.D.4.11	461.71	453.40	453.20	℄ Inlet 21.00' Rt. ℄ Sta. 68+84	
I-11	A-5 Inlet width 2.5' Howard County Std. S.D.4.01	446.78	442.01	439.01	℄ Inlet 17.67' Lt. ℄ Sta. 71+92	
I-12	A-5 Inlet width 2.5' Howard County Std. S.D.4.01	446.78		442.35	℄ Inlet 17.67' Rt ℄ Sta. 71+92	
MH-1	Standard 4' Howard County Std. G.5.12	458.88	452.45	452.25	℄ MH 19.00' Rt. ℄ Sta. 69+31	
MH-2	Standard 4' Howard County Std. G.5.12	454.61	450.58	450.40	℄ MH 18.00' Rt. ℄ Sta. 69+90	
S-3	15" End Section		434.40		℄ Struc. 76.00' Lt. ℄ Sta. 72+32	

PLAN

Scale: 1"=50'

Street trees, see note on sheet 1

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Signature / Title	Date
CHIEF, LAND DEVELOPMENT DIVISION	9/13/88
CHIEF, BUREAU OF HIGHWAYS	9/13/88
CHIEF, BUREAU OF ENGINEERING	9.14.88

OFFICE OF PLANNING AND ZONING

Signature / Title	Date
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	9-14-88

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA:
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE:
PLAN & PROFILE
KINGSBRIDGE ROAD

SCALE: 1"=50' DATE: 4/1/88

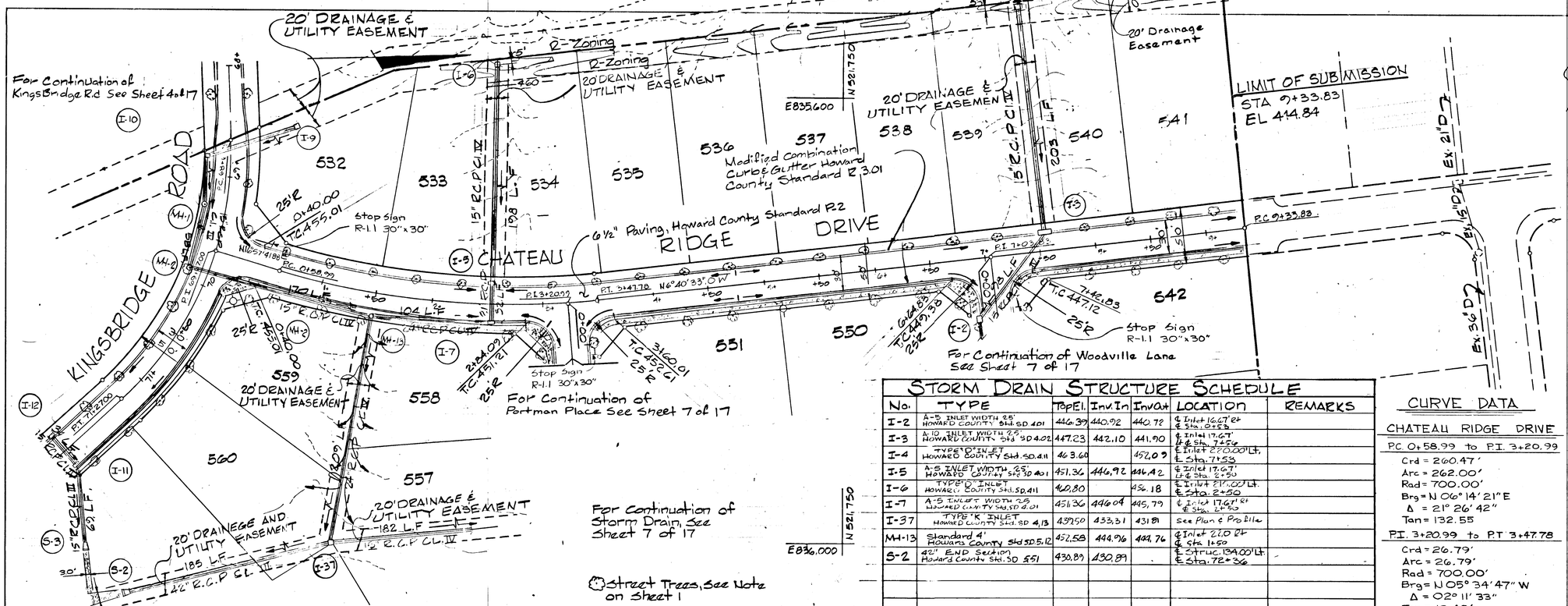
WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

THOMAS J. SHAFER
Registered Engineer
No. 8457

KINGSBRIDGE ROAD - PROFILE Scale: Hor. 1"=50' Vert. 1"=5'

AS-BUILT 24 JANUARY 1992

F-88-240



STORM DRAIN STRUCTURE SCHEDULE

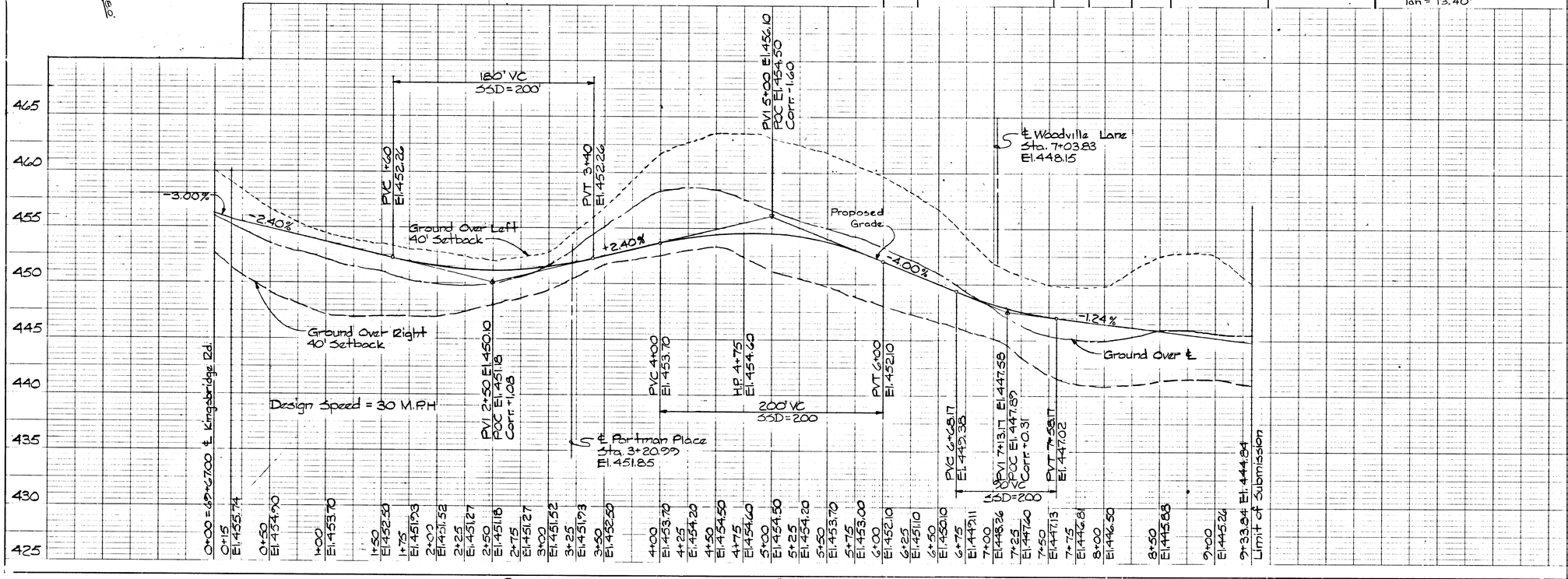
No.	TYPE	TopEl.	InvIn	InvOut	LOCATION	REMARKS
I-2	A-5 INLET WIDTH 2.5' HOWARD COUNTY Std. SD 4.01	446.39	440.92	440.72	℄ Inlet 16.67' Rt ℄ Sta. 0+53	
I-3	A-10 INLET WIDTH 2.5' HOWARD COUNTY Std. SD 4.02	447.23	442.10	441.90	℄ Inlet 17.67' Rt ℄ Sta. 7+56	
I-4	TYPE 'D' INLET HOWARD COUNTY Std. SD 4.11	463.60		452.09	℄ Inlet 220.00' Lt. ℄ Sta. 7+53	
I-5	A-5 INLET WIDTH 2.5' HOWARD COUNTY Std. SD 4.01	451.36	446.92	446.42	℄ Inlet 17.67' Lt. ℄ Sta. 2+50	
I-6	TYPE 'D' INLET HOWARD COUNTY Std. SD 4.11	460.80		456.18	℄ Inlet 21.00' Lt. ℄ Sta. 2+50	
I-7	A-5 INLET WIDTH 2.5' HOWARD COUNTY Std. SD 4.01	451.36	446.04	445.79	℄ Inlet 17.67' Rt ℄ Sta. 2+50	
I-37	TYPE 'K' INLET HOWARD COUNTY Std. SD 4.18	439.50	433.31	431.81	See Plan & Profile	
MH-13	Standard 4' HOWARD COUNTY Std. SD 5.12	452.58	444.96	444.76	℄ Inlet 22.0 Rt ℄ Sta. 1+50	
S-2	42" END Section Howard County Std. SD 5.51	430.89	430.89		℄ Struc. 134.00' Lt. ℄ Sta. 72+36	

CURVE DATA

CHATEAU RIDGE DRIVE

P.C. 0+58.99 to P.I. 3+20.99
Crd = 260.47'
Arc = 262.00'
Rad = 700.00'
Brg = N 06° 14' 21" E
Δ = 21° 26' 42"
Tan = 132.55

P.I. 3+20.99 to P.T 3+47.78
Crd = 26.79'
Arc = 26.79'
Rad = 700.00'
Brg = N 05° 34' 47" W
Δ = 02° 11' 33"
Tan = 13.40'



CHATEAU RIDGE DRIVE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION	DATE 9/13/88
CHIEF, BUREAU OF HIGHWAYS	DATE 9/13/88
CHIEF, BUREAU OF ENGINEERING	DATE 9-14-88

OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9-14-88

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA:
BURLEIGH MANOR
SECTION 2 AREA 5

PROJECT TITLE:
PLAN & PROFILE
CHATEAU RIDGE DRIVE

SCALE: 1" = 50' DATE: 4/1/88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

THOMAS J. SHAFER
Registered Engineer
No.

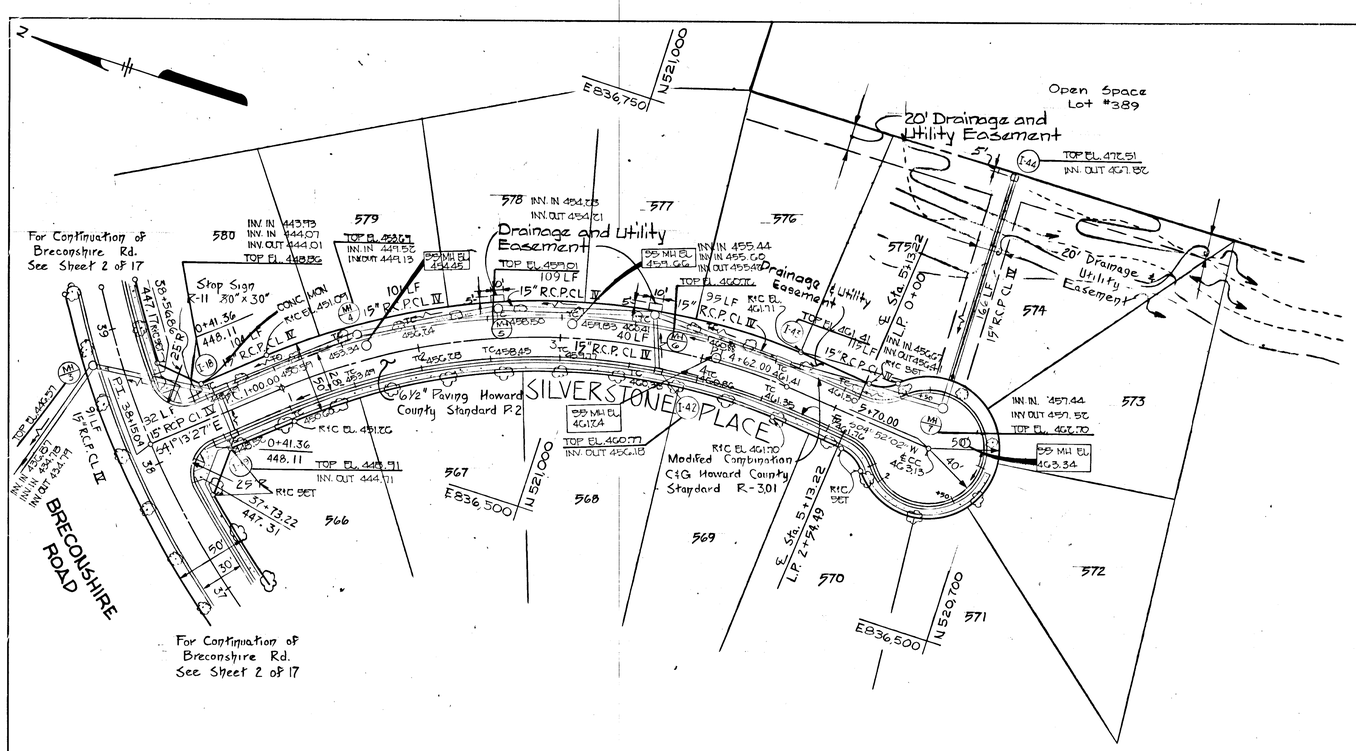
PLAN — SURVEYED, PLOTTED, NOTE BOOK, GRADES CHECKED, No., DATE, STRUCTURE NOTATIONS CHECKED

PROFILE — SURVEYED, PLOTTED, NOTE BOOK, GRADES CHECKED, No., DATE, STRUCTURE NOTATIONS CHECKED

121

F-88-240

* NOTE: SEE SHEET 5 OF 23 FOR AS-BUILT F-89-134 INFORMATION DATED 24 JAN. 1992



CURVE DATA
SILVERSTONE PLACE

P.C. 1+00.00 to P.T. 4+62.00

Δ = 46°05'29"
Arc = 362.00'
Rad = 450.00'
Tan = 191.437'
Chord = 352.318'
Chd. Brg. = S18°10'42"E

STORM DRAIN STRUCTURE SCHEDULE

No.	Type	Top El.	Inv. In	Inv. Out	Location	Remarks
I-18	A-10 Inlet width 2.5' Howard County Std. S.D.4.02	449.11	444.66	444.43	℄ Inlet 16.67' Lt. ℄ Sta. 0+58.36	Provide inlet deflectors
I-19	A-5 Inlet width 2.5' Howard County Std. S.D.4.01	449.06		444.75	℄ Inlet 16.67' Rt. ℄ Sta. 0+57.00	Provide inlet deflectors
I-42	A-5 Inlet width 2.5' Howard County Std. S.D.4.01	461.00		456.40	℄ Inlet 16.67' Rt. ℄ Sta. 3+72.00	
I-43	A-10 Inlet width 2.5' Howard County Std. S.D.4.02	461.82	456.97	456.77	℄ Inlet 16.67' Lt ℄ Sta. 4+55.00	
I-44	Type "D" Inlet Howard County Std. S.D.4.11	473.03		468.13	See Plan & Profile	
MH-4	Standard 4' Howard County Std. G.5.12	454.26	450.18	449.98	℄ MH 19.00' Lt. ℄ Sta. 1+60	
MH-5	Standard 4' Howard County Std. G.5.12	459.10	454.95	454.75	℄ MH 21.00' Lt. ℄ Sta. 2+59	
MH-6	Standard 4' Howard County Std. G.5.12	460.95	456.20	456.00	℄ MH 23.00' Lt. ℄ Sta. 3+63	
MH-7	Standard 4' Howard County Std. G.5.12	462.48	457.84	457.64	℄ MH 29.00' Lt. ℄ Sta. 5+68	

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Ronald Lepson 9/13/88
CHIEF, LAND DEVELOPMENT DIVISION DATE

Granville W. Wehland 9/13/88
CHIEF, BUREAU OF HIGHWAYS DATE

9-14-88
CHIEF, BUREAU OF ENGINEERING DATE

OFFICE OF PLANNING AND ZONING

9.14.88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA:
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE:
PLAN AND PROFILE
SILVERSTONE PLACE

SCALE: 1" = 50' DATE: 4/1/88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

Thomas J. Shafer
THOMAS J. SHAFER
Registered Engineer
No. 8457

SILVERSTONE PLACE Scale: 1" = 5' Ver. 1" = 50' Hor.

Keuffel & Esser Company

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

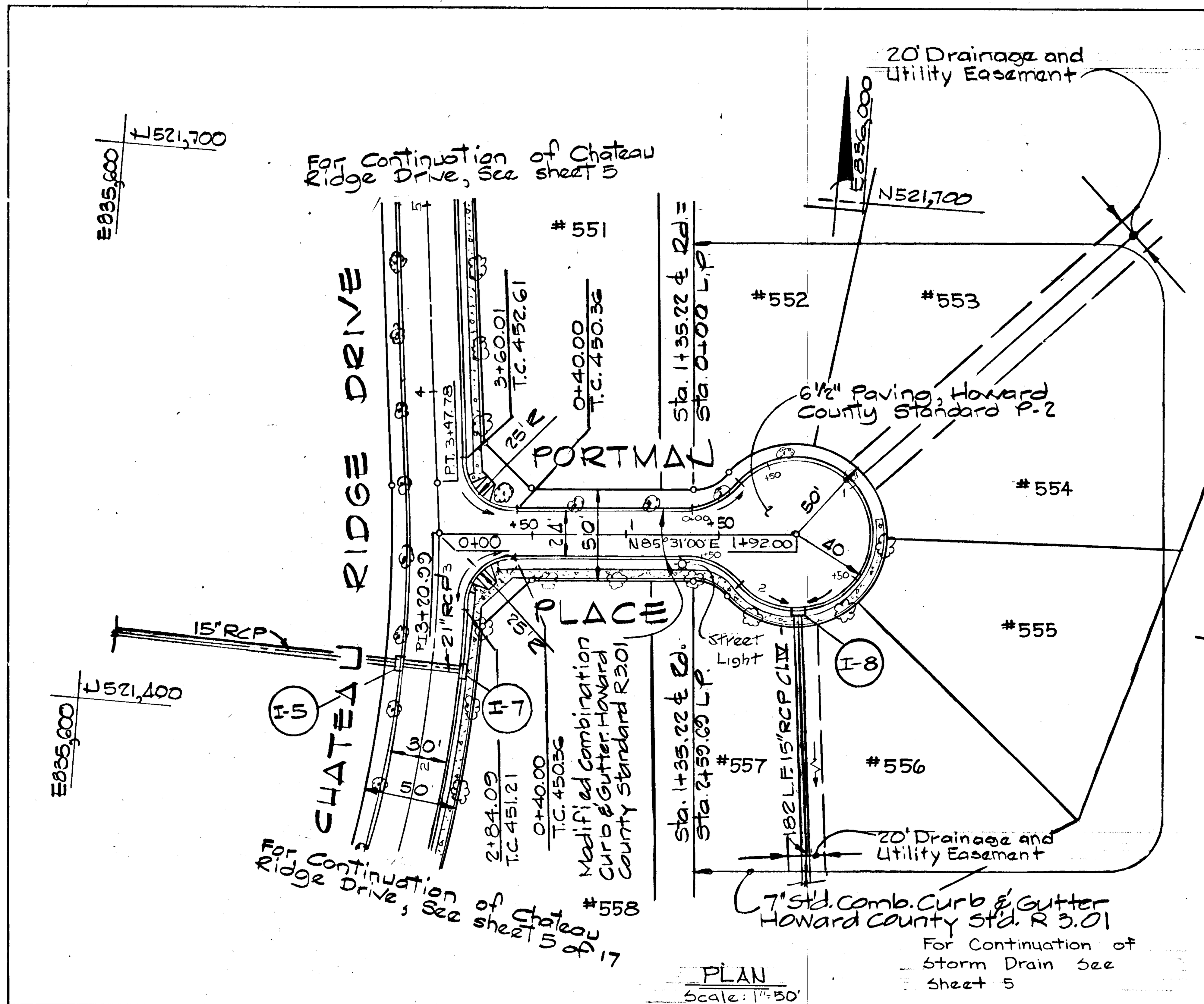
PROFILE
NOTE BOOK
No.
SURVEYED
PLOTTED
GRADES CHECKED
B.M.'S NOTED
STRUCTURE NOTATIONS CHECKED
BY
DATE

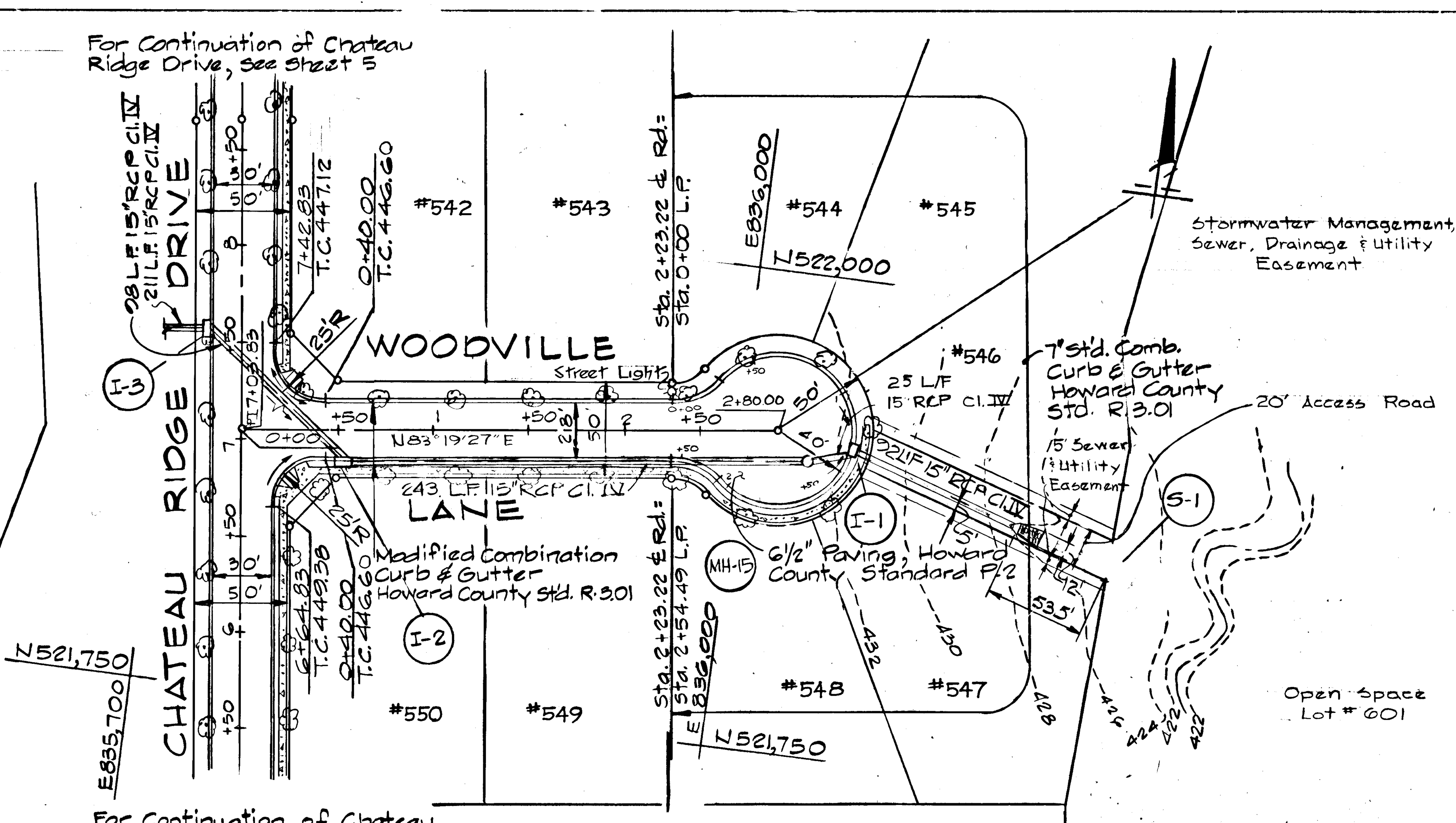
721

SHEET 6 OF 23

AS-BUILT
24 JAN. 1992

F-88-240





Street Trees, See Note on Sheet 1

STORM DRAIN STRUCTURE SCHEDULE

No.	Type	Top El.	Inv. In.	Inv. Out	Location	Remarks
I-1	A-5 Inlet width 2.5' Howard County Std SD4.01	430.55	426.94	426.69	L.P. 1+37.00	
I-2	A-5 Inlet width 2.5' Howard County Std. SD 4.01	446.39	440.92	440.72	¢ Inlet 16.67' Rt. ¢ 0+53	Provide deflectors
I-8	A-5 Inlet width 2.5' Howard County Std SD4.01	442.05		436.45	L.P. 1+82.57	
S-1	15" End Section Howard County Std. SD5.51		424.56		See Plan & Profile	
MH-15	Standard 4' Howard County Std. G 5.12	432.0	427.70	427.50	¢ Inlet 17.0' Rt @ ¢ Sta 2+95	

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Signature	Date
CHIEF, LAND DEVELOPMENT DIVISION	9/13/88
CHIEF, BUREAU OF HIGHWAYS	9/13/88
CHIEF, BUREAU OF ENGINEERING	9-14-88

OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9-14-88

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE/RICHMOND JOINT VENTURE

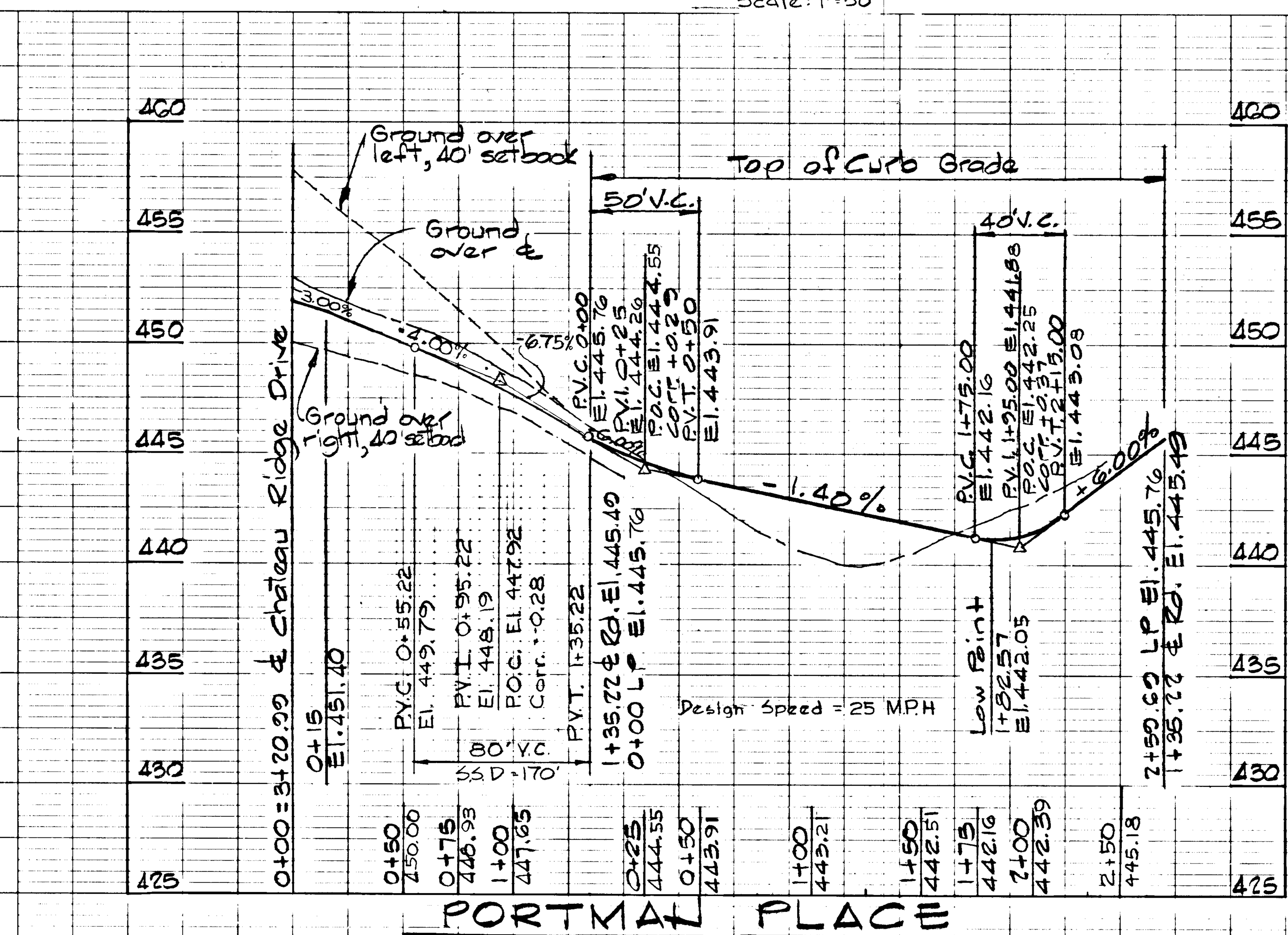
PROJECT AREA:
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE:
PLAN & PROFILE
PORTMAN PLACE &
WOODVILLE LANE

SCALE: 1"=50' DATE: 4/1/88

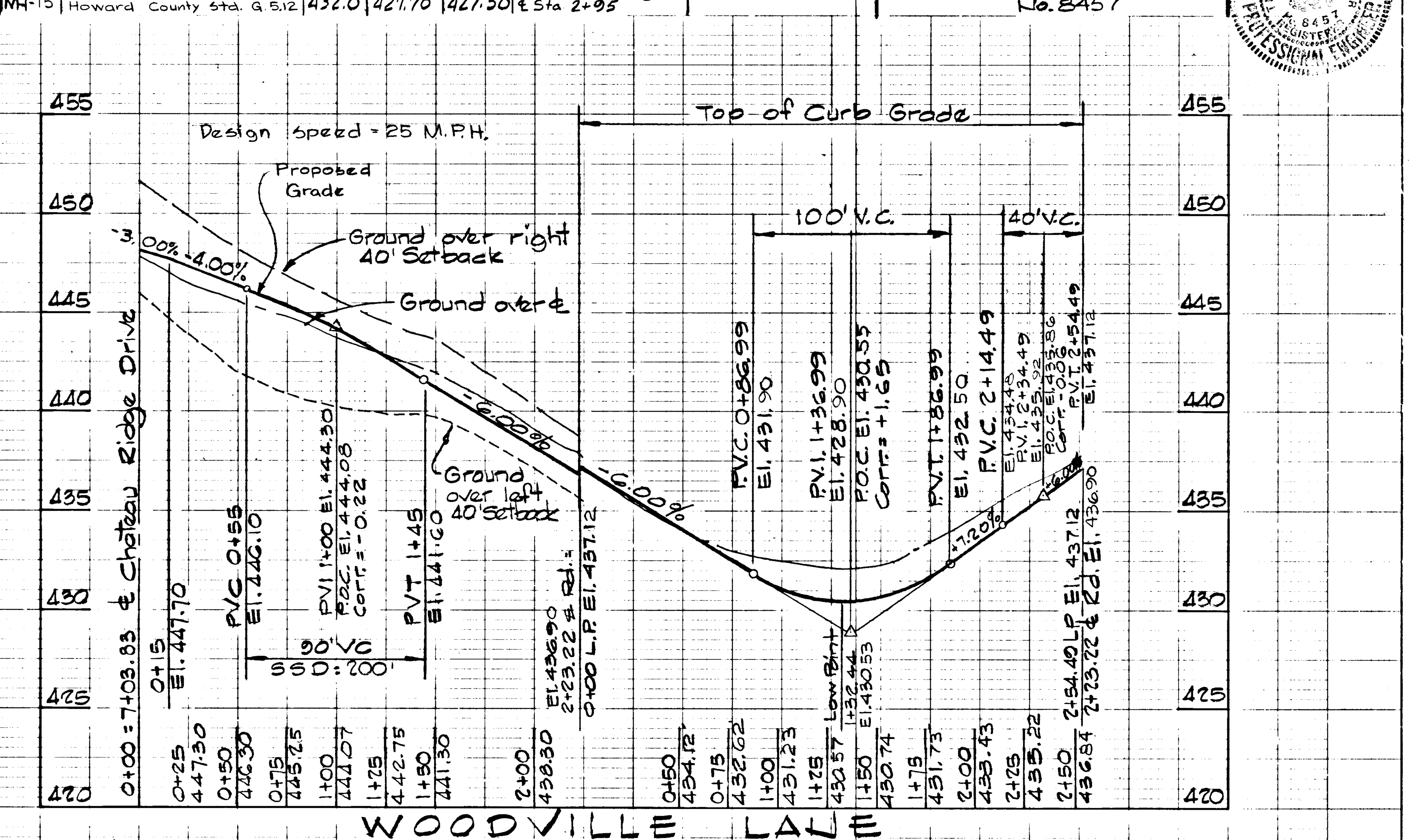
WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

THOMAS J. SHAFER
Registered Engineer
No. 8457



PORTMAN PLACE

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



WOODVILLE LANE

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

Keuffel & Esser Company

F-88-240

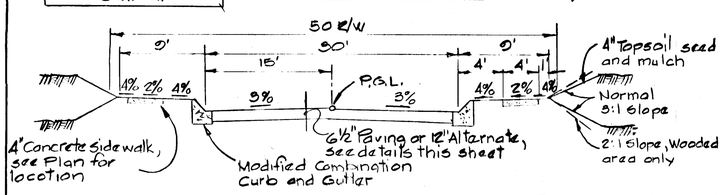
F-89-134 * NOTE: SEE SHEET 7 OF 23 FOR AS-BUILT INFORMATION DATED 24 JAN. 1992

121

DESIGN SPEED 30M.P.H.

LOCAL STREET

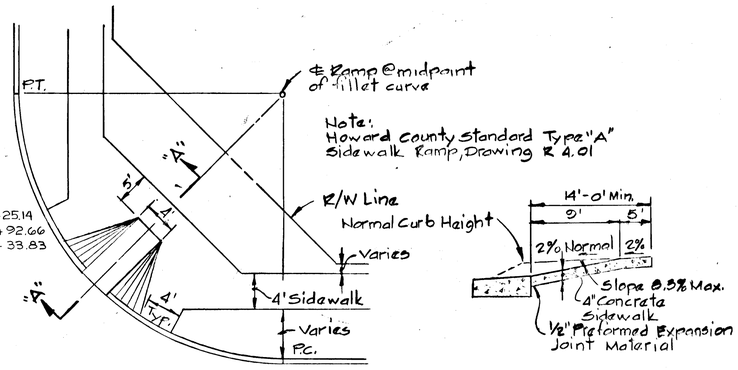
Zoning = S.F.L.D



TYPICAL SECTION

No Scale

Breconshire Rd.	30+73.37	to	43+25.14
Kingsbridge Rd.	69+00	to	75+92.66
Chateau Ridge Rd.	0+00	to	9+33.83



PLAN

SECTION "A-A"

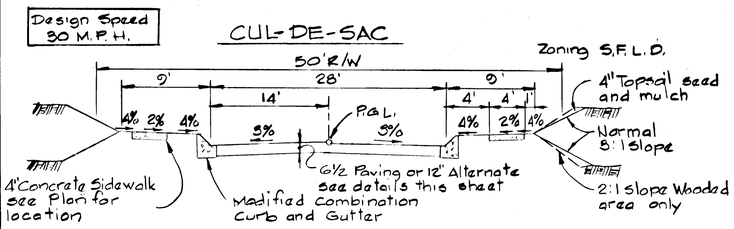
WHEEL CHAIR RAMP DETAIL

No Scale

Design Speed 30 M.P.H.

CUL-DE-SAC

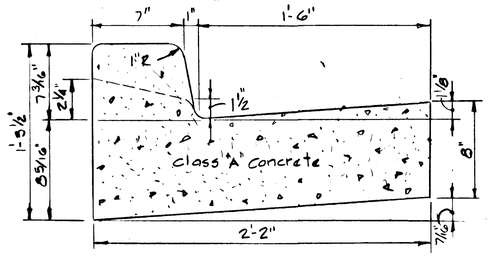
Zoning S.F.L.D.



TYPICAL SECTION

No Scale

Silverstone Pl.	0+00	to	5+70.00
Berkshire Ln.	0+00	to	5+90.45
Woodville Ln.	0+00	to	2+23.22



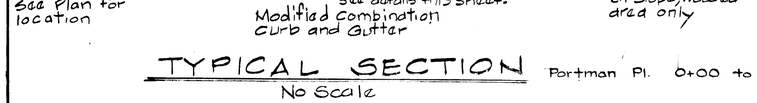
STANDARD 7" COMBINATION CURB & GUTTER

No Scale

Design Speed Not Applicable

CUL-DE-SAC

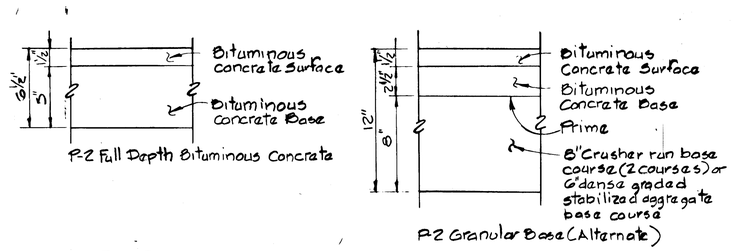
Zoning - S.F.L.D



TYPICAL SECTION

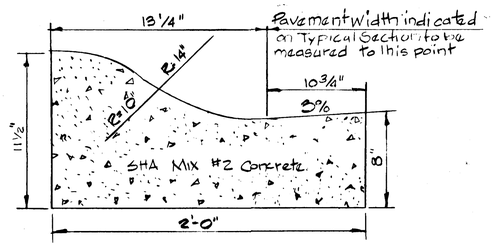
No Scale

Portman Pl. 0+00 to 1+35.22



TYPICAL PAVING SECTION

No Scale



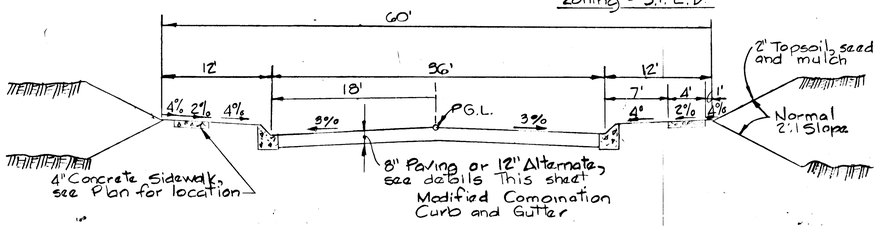
MODIFIED COMBINATION CURB & GUTTER

No Scale

Design Speed 35 MPH

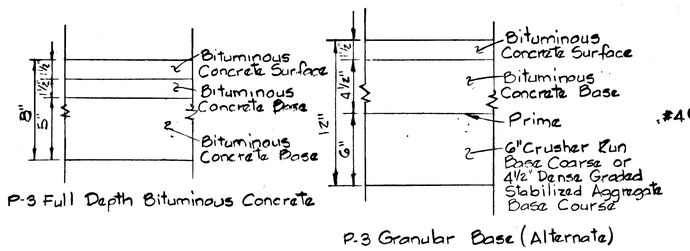
MINOR COLLECTOR

Zoning - S.F.L.D



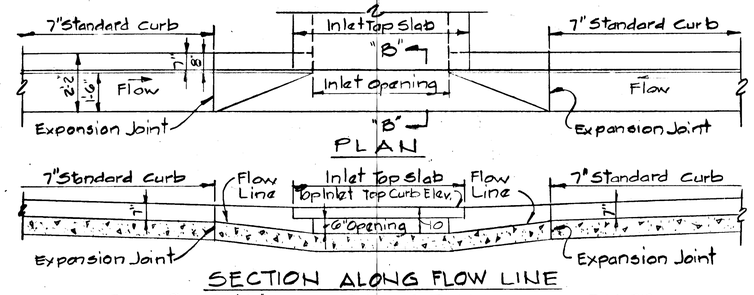
TYPICAL SECTION

No Scale



TYPICAL PAVING SECTION

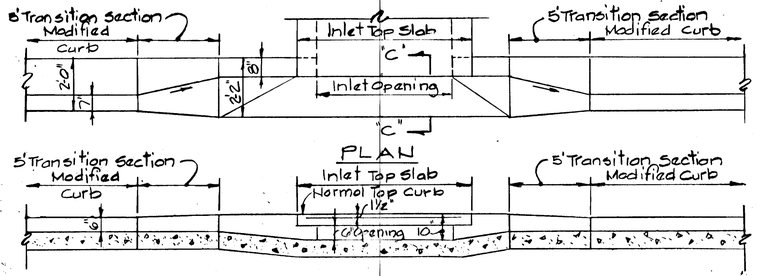
No Scale



PLAN

SECTION ALONG FLOW LINE

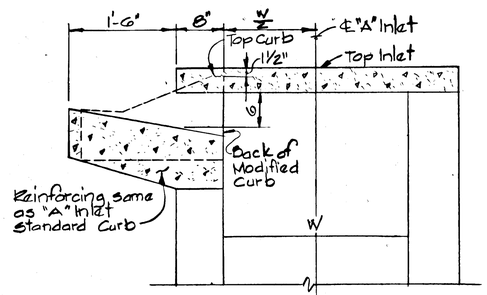
SUMPED "A" INLETS - STANDARD CURB



PLAN

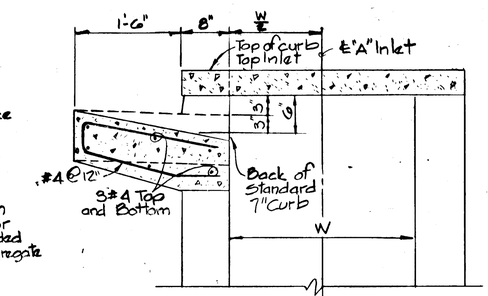
SECTION ALONG FLOW LINE

"A" INLETS - MODIFIED CURB



SECTION "C-C"

"A" INLET MODIFIED CURB



SECTION "B-B"

"A" INLET - STANDARD CURB

OFFICE OF PLANNING AND ZONING

5-14-88

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION	5/13/88 DATE
CHIEF, BUREAU OF HIGHWAYS	9/13/88 DATE
CHIEF, BUREAU OF ENGINEERING	9-14-88 DATE

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE / RICHMOND JOINT VENTURE

PROJECT AREA:
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE:
ROADWAY AND STORMDRAIN DETAILS

SCALE: AS SHOWN — DATE: 4/1/88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

THOMAS J. SHAFER
REGISTERED ENGINEER NO. 8457

F-88-240

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/13/88

CHIEF, BUREAU OF HIGHWAYS — DATE 9/13/88

CHIEF, BUREAU OF ENGINEERING — DATE 9.14.88

OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9-14-88

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR

2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA:
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE:
DRAINAGE AREA MAP

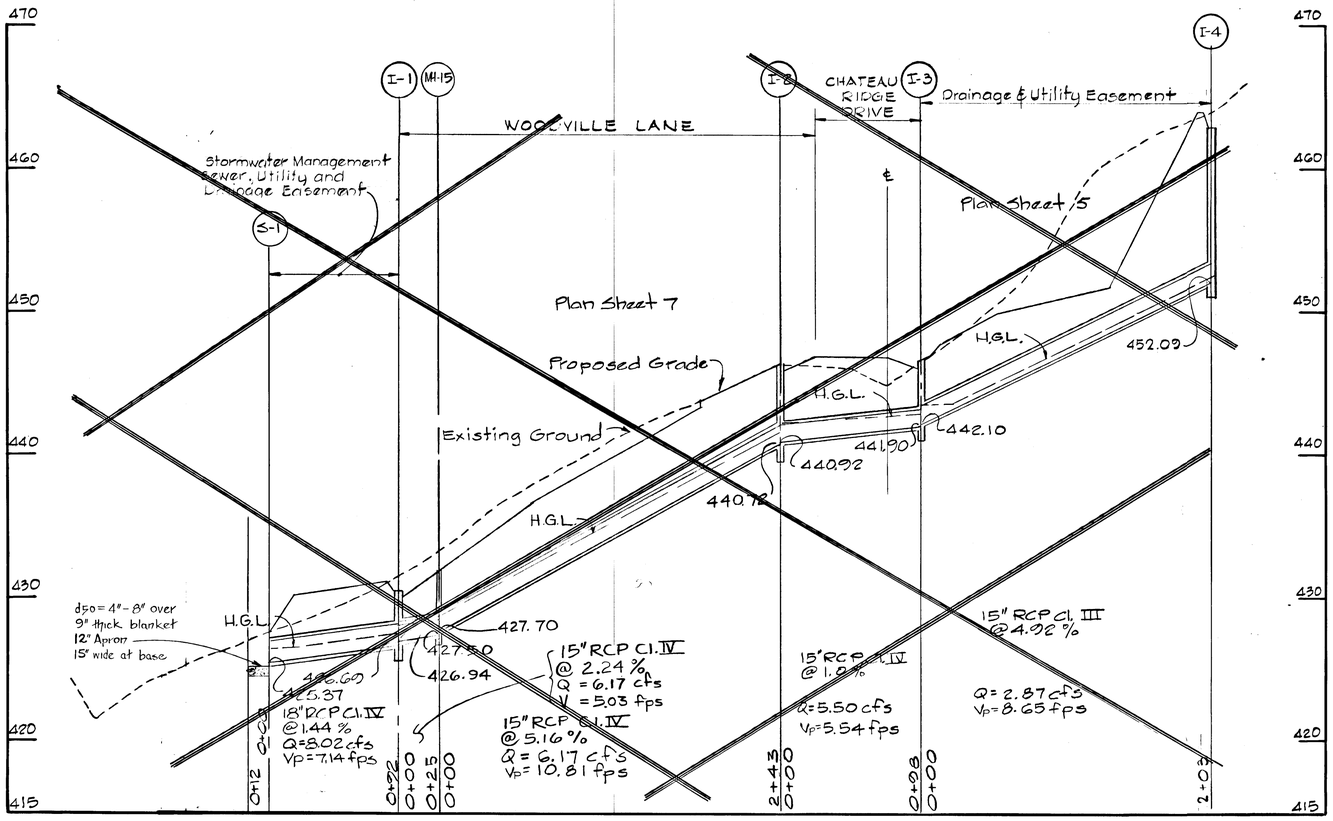
SCALE: 1" = 100' — DATE 4/1/88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

THOMAS J. SHAFER
REGISTERED ENGINEER NO 8457

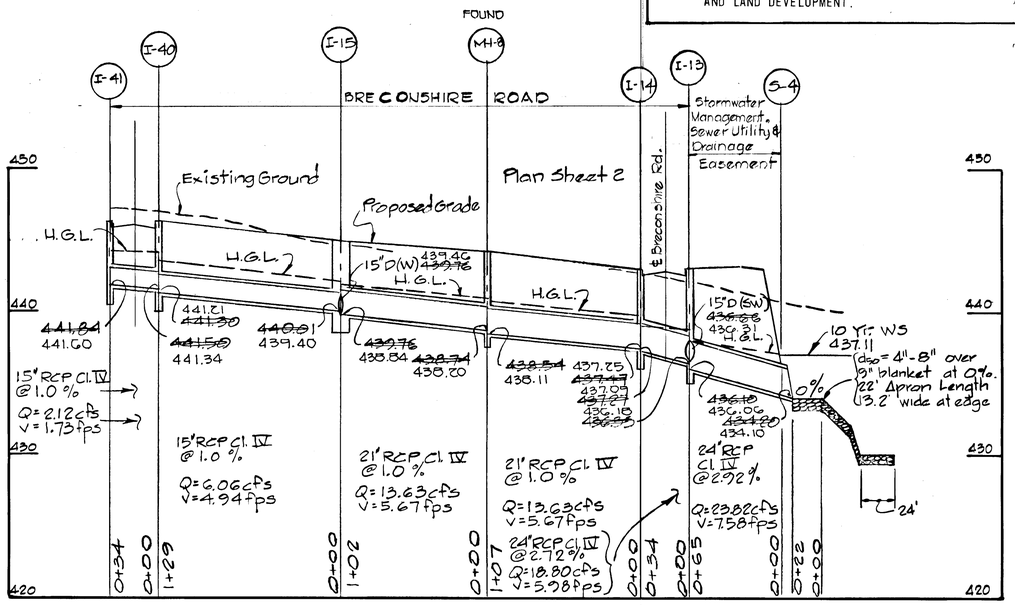
SHEET 9 OF 23 F-88-240

721



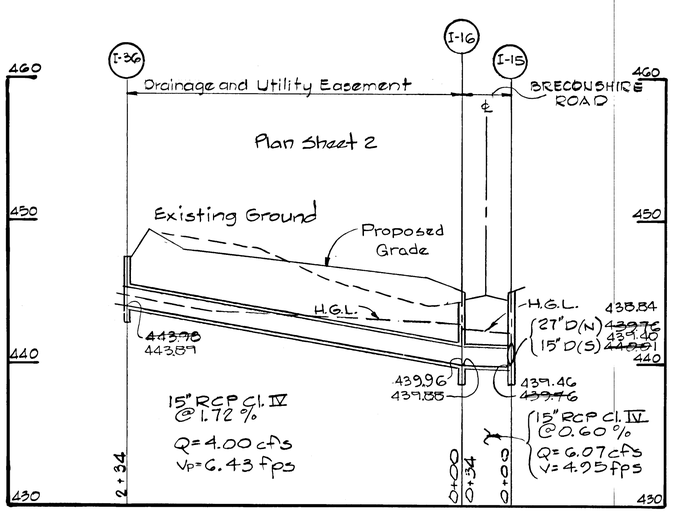
PROFILE

Scale : 1" = 50' H
1" = 5' V



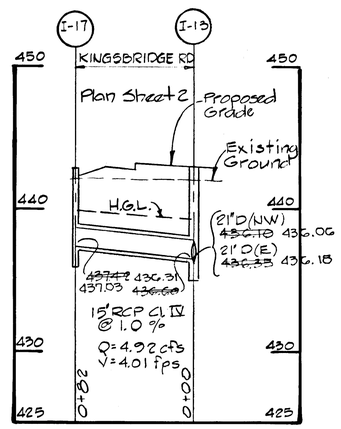
PROFILE

Scale : 1" = 50' H
1" = 5' V



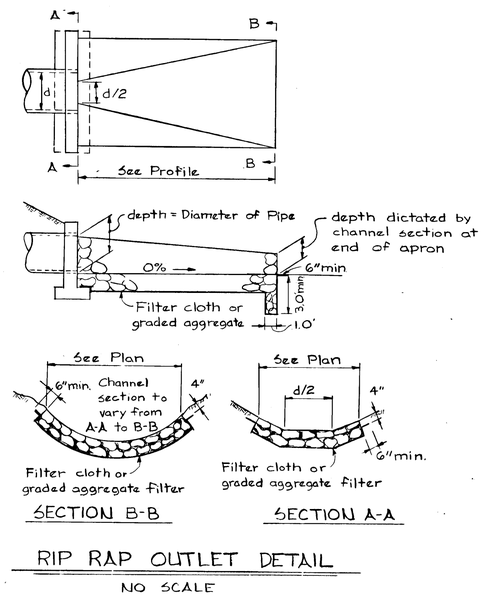
PROFILE

Scale : 1" = 50' H
1" = 5' V



PROFILE

Scale : 1" = 50' H
1" = 5' V



RIP RAP OUTLET DETAIL

NO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/13/88

CHIEF, BUREAU OF HIGHWAYS — DATE 9/13/88

CHIEF, BUREAU OF ENGINEERING — DATE 9-14-88

OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT. — DATE 9-19-88

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA:
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE:
STORM DRAIN PROFILES

SCALE: AS SHOWN — DATE: 4/1/88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

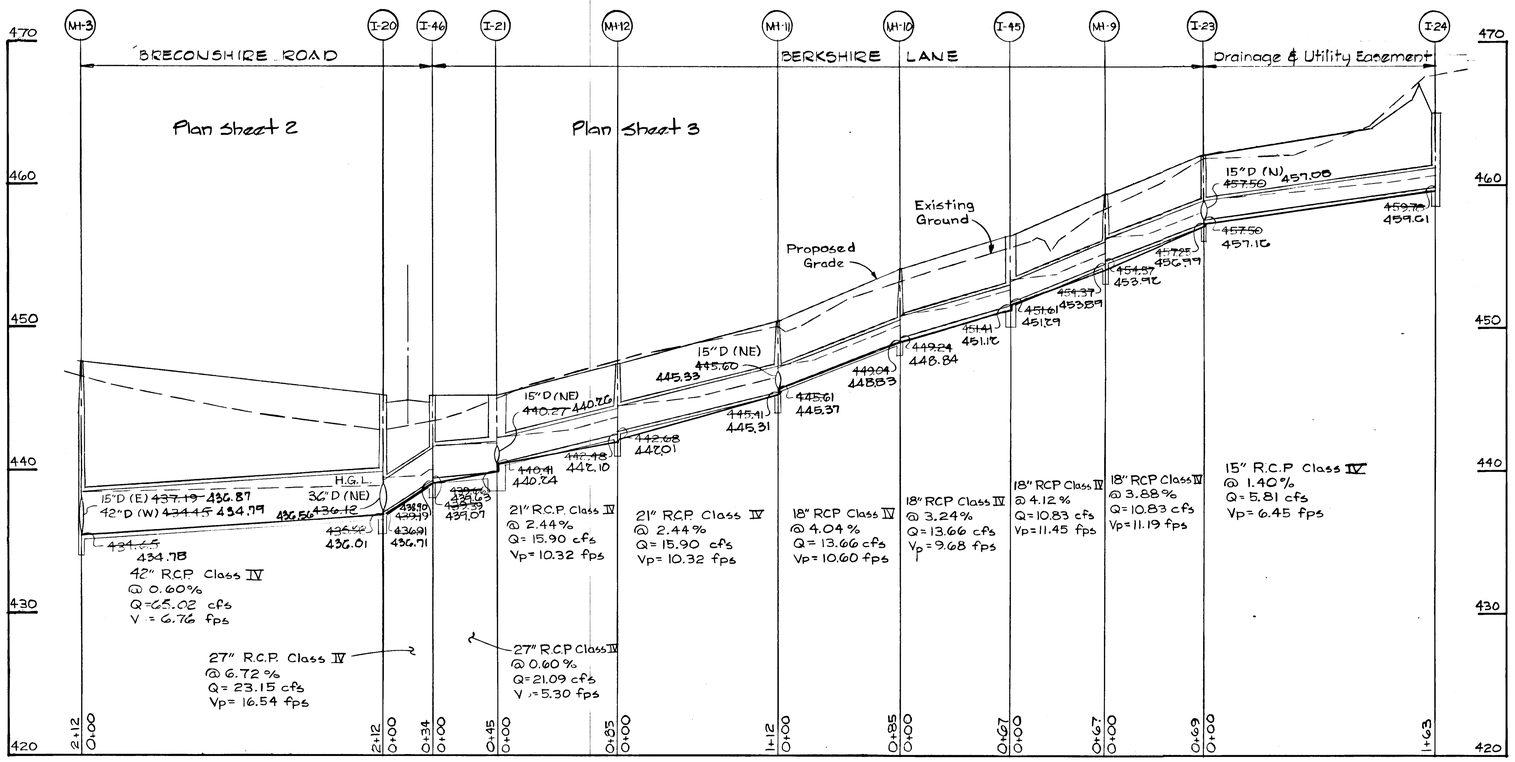
Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER NO. 8457

STATE OF MARYLAND — THOMAS JOSEPH SHAFER — No. 8457 — REGISTERED PROFESSIONAL ENGINEER

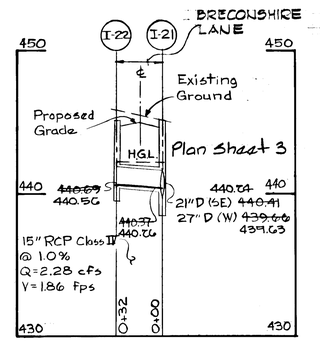
A0 PLOTTED 24 JAN 1992

SHEET 10 OF 23 F-88-240

721

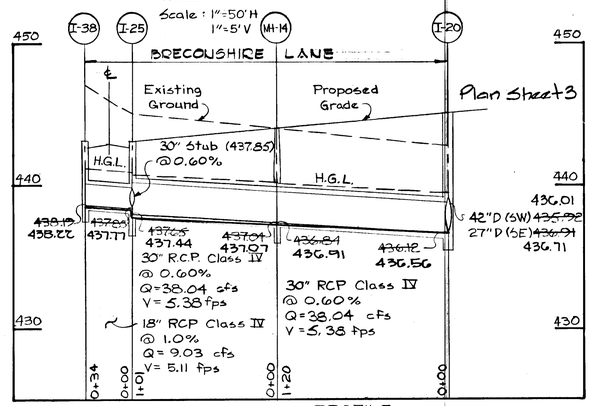


PROFILE



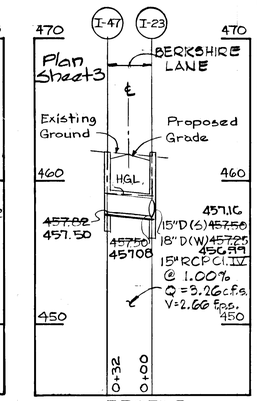
PROFILE

Scale : 1"=50'H
1"=5'V



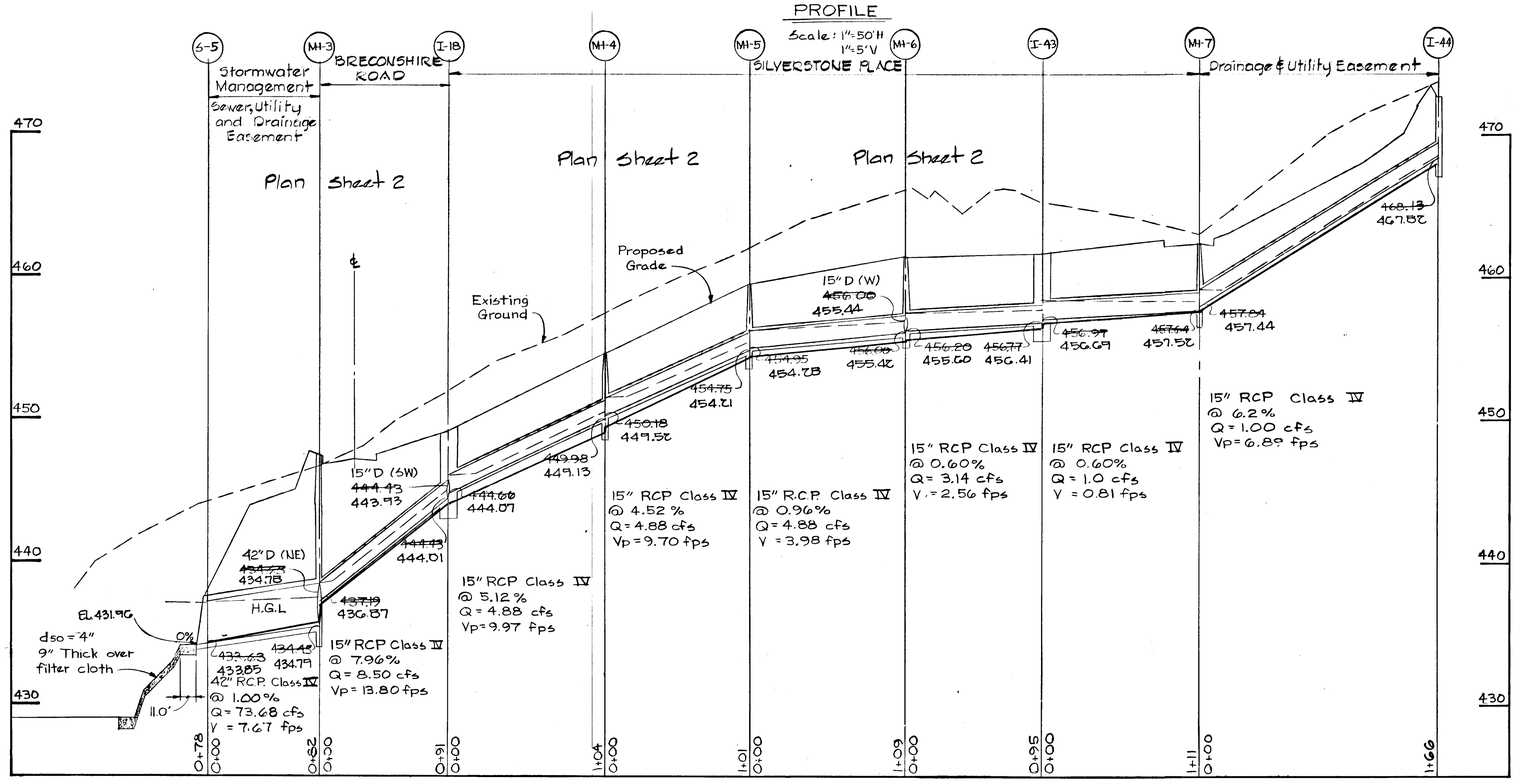
PROFILE

Scale: 1"=50'H
1"=5'V



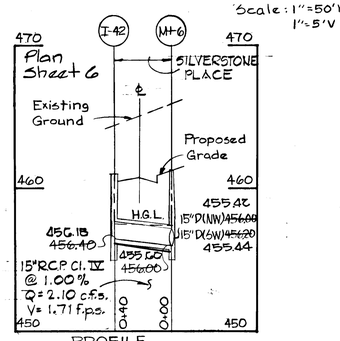
PROFILE

Scale: 1"=50'H
1"=5'V



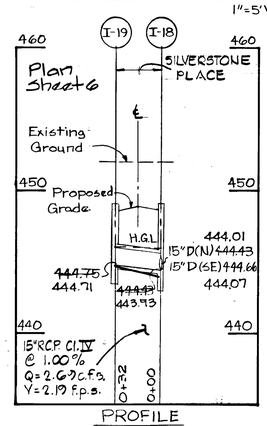
PROFILE

Scale: 1"=50'H
1"=5'V



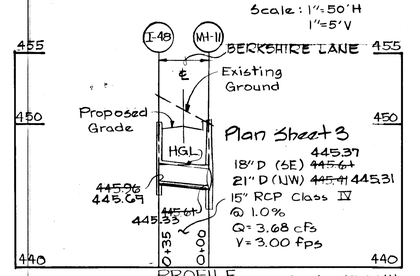
PROFILE

Scale: 1"=50'H
1"=5'V



PROFILE

Scale: 1"=50'H
1"=5'V



PROFILE

Scale: 1"=50'H
1"=5'V

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/15/88

CHIEF, BUREAU OF HIGHWAYS — DATE 9/13/88

CHIEF, BUREAU OF ENGINEERING — DATE 9-14-88

OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT. — DATE 8-17-88

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA:
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE:
STORM DRAIN PROFILES

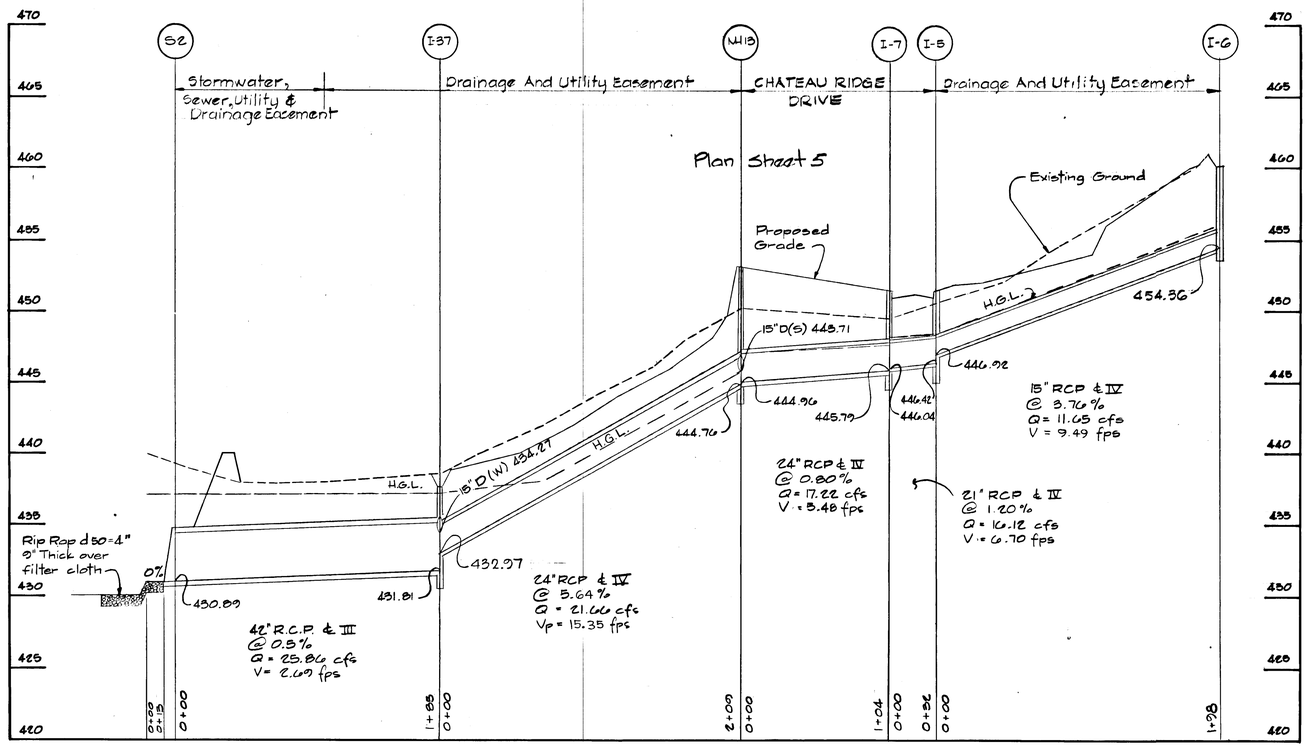
SCALE: AS SHOWN — DATE: 4/1/88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER NO. 8457

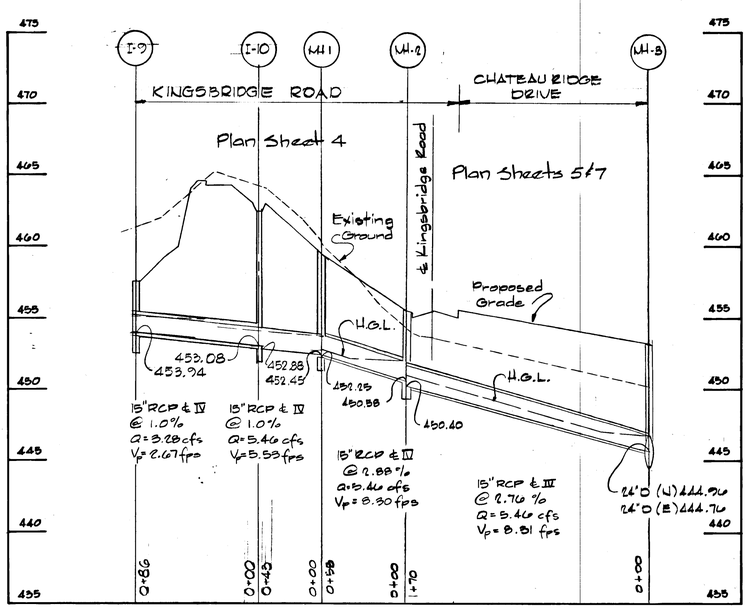
721

AS-BUILT 24 JAN. 1992



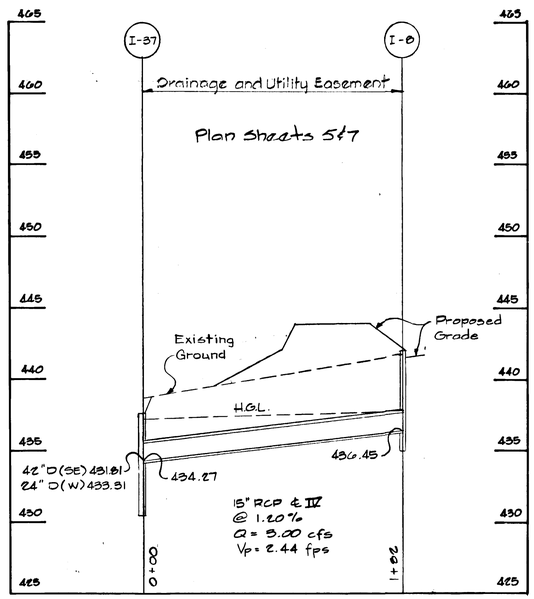
PROFILE

Scale : 1"=50' H
1"=5' V



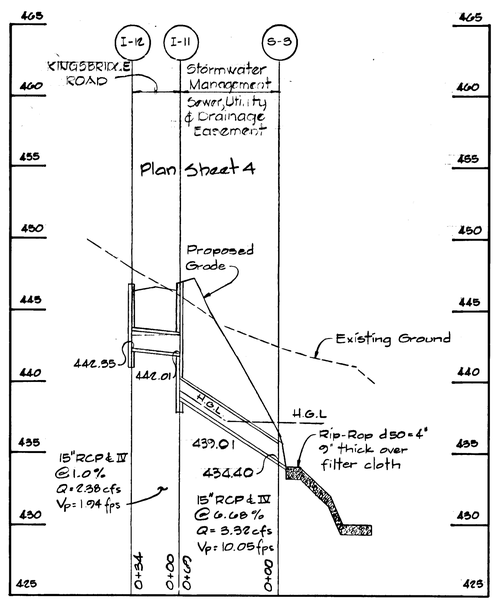
PROFILE

Scale : 1"=50' H
1"=5' V



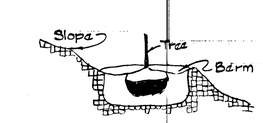
PROFILE

Scale : 1"=50' H
1"=5' V

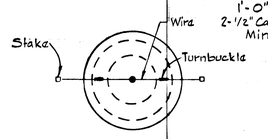


PROFILE

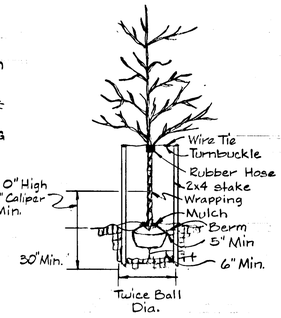
Scale : 1"=50' H
1"=5' V



GRADING FOR PLANTING ON SLOPES



STAKING DETAIL



Note: Remove Burlap from Top 1/3 of Ball

TREE PLANTING

PLANTING DETAIL
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/13/88

CHIEF, BUREAU OF HIGHWAYS — DATE 9/13/88

CHIEF, BUREAU OF ENGINEERING — DATE 9-14-88

APPROVED: OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9.14.88

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE
STORM DRAIN PROFILES

SCALE: AS SHOWN — DATE 4/1/88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER NO 8457

721

F-89-134 * NOTE: SEE SHEET 12 OF 23 FOR AS-BUILT INFORMATION. DATED 24 JAN. 1992

Trap No.	Existing Drainage Area (Stripping)	Graded Drainage Area	Trap Designed For
1	5.6 Ac.	5.6 Ac.	5.6 Ac.
2	1.3 Ac.	1.0 Ac.	14.4 Ac.
3	1.6 Ac.	3.6 Ac.	3.6 Ac.
4	37.7 Ac.	57.5 Ac.	57.5 Ac.
5	5.2 Ac.	0.3 Ac.	5.2 Ac.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/13/88

CHIEF, BUREAU OF HIGHWAYS — DATE 9/13/88

CHIEF, BUREAU OF ENGINEERING — DATE 9.14.88

OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9-14-88

SEQUENCE OF CONSTRUCTION

1. Obtain Grading Permit.
2. Construct Interim Stormwater Management Sediment Control Basin as per Stormwater Management Plans.
3. Clear and Grub for sediment and Erosion Control Measures and Devices.
4. Install and Stabilize all Sediment and Erosion Control Measures and Devices.
5. Strip and Rough Grade Limits of Construction.
6. Construct All Utilities.
7. Construct Permanent Storm Drainage System and Temporarily End Storm Drain Feeding into Sediment Trap #1.
8. Fine Grade Paved Areas. Construct Curb and Gutter and Paved Areas.
9. Seed Disturbed Areas within Right of Way. See Permanent Seeding Notes on Sheet 16.
10. Stabilize Site as per Temporary Seeding Specifications, See Notes on Sheet 19.
11. Remove Temporary Sediment Control Measures and Stabilize any remaining areas.
12. Convert Interim Stormwater Management Sediment Control Basin into Permanent Stormwater Management Pond as per Stormwater Management Plan.

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE:
DRAINAGE AREA MAP

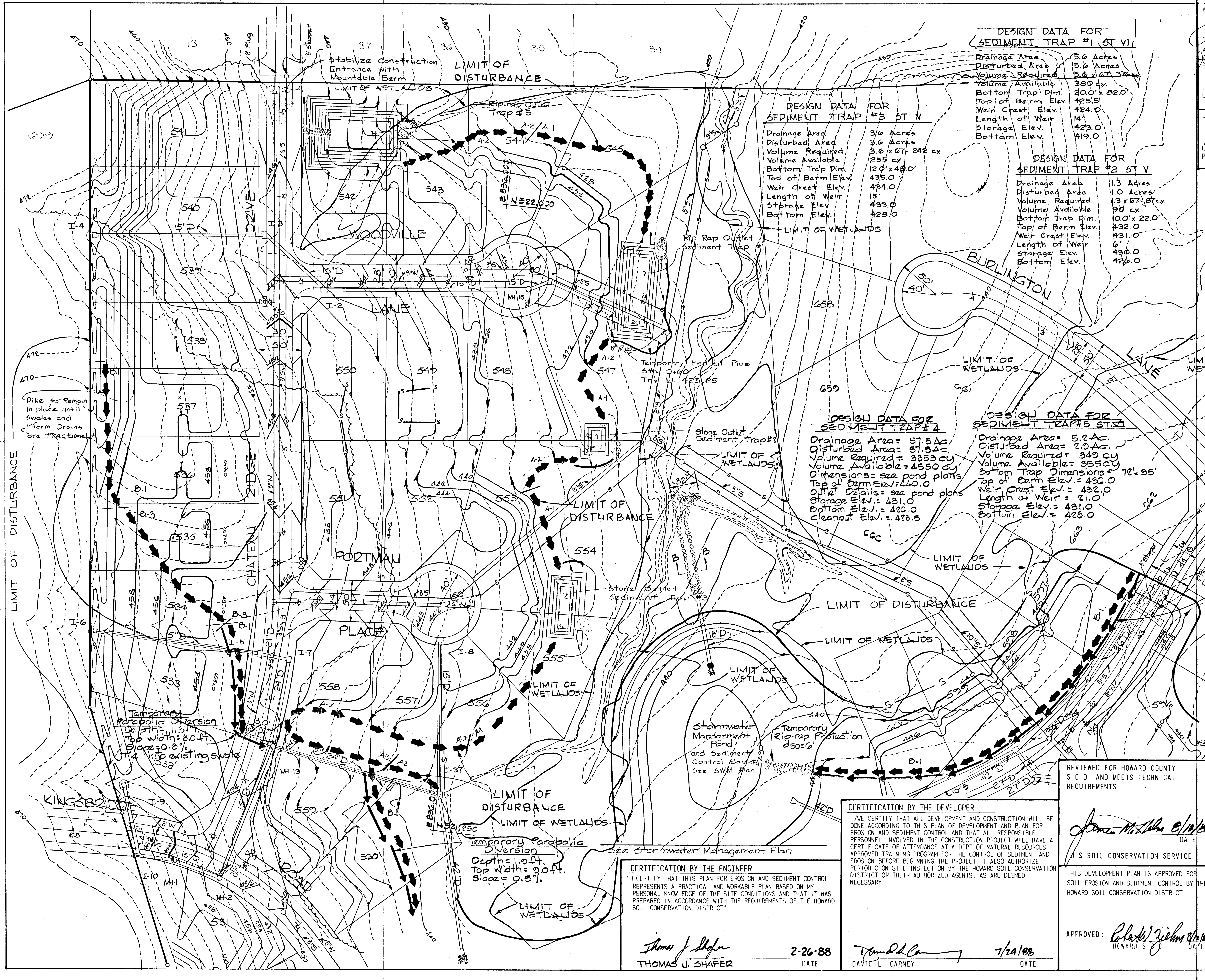
SCALE: 1" = 100' — DATE 4/1/88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

THOMAS J. SHAFER
REGISTERED ENGINEER NO 8457

721

F-88-240



DESIGN DATA FOR SEDIMENT TRAP #1 ST VI

Drainage Area	5.6 Acres
Disturbed Area	5.6 Acres
Volume Required	5.6 x 67 = 376 cy.
Volume Available	380 cy.
Bottom Trap Dim.	20.0' x 82.0'
Top of Berm Elev.	425.5
Weir Crest Elev.	424.0
Length of Weir	14'
Storage Elev.	423.0
Bottom Elev.	419.0

DESIGN DATA FOR SEDIMENT TRAP #3 ST V

Drainage Area	3.6 Acres
Disturbed Area	3.6 Acres
Volume Required	3.6 x 67 = 242 cy.
Volume Available	255 cy.
Bottom Trap Dim.	12.0' x 48.0'
Top of Berm Elev.	435.0
Weir Crest Elev.	434.0
Length of Weir	15'
Storage Elev.	433.0
Bottom Elev.	428.0

DESIGN DATA FOR SEDIMENT TRAP #2 ST V

Drainage Area	1.3 Acres
Disturbed Area	1.0 Acres
Volume Required	1.3 x 67 = 87 cy.
Volume Available	90 cy.
Bottom Trap Dim.	10.0' x 22.0'
Top of Berm Elev.	432.0
Weir Crest Elev.	431.0
Length of Weir	6'
Storage Elev.	430.0
Bottom Elev.	426.0

DESIGN DATA FOR SEDIMENT TRAP #4

Drainage Area = 57.5 Ac.
Disturbed Area = 57.5 Ac.
Volume Required = 3353 cy
Volume Available = 4550 cy
Dimensions = see pond plans
Top of Berm Elev. = 440.0
Outlet Details = see pond plans
Storage Elev. = 431.0
Bottom Elev. = 426.0
Cleanout Elev. = 428.5

DESIGN DATA FOR SEDIMENT TRAP #5 ST VI

Drainage Area = 5.2 Ac.
Disturbed Area = 2.9 Ac.
Volume Required = 349 cy
Volume Available = 355 cy
Bottom Trap Dimensions = 72' x 35'
Top of Berm Elev. = 436.0
Weir Crest Elev. = 432.0
Length of Weir = 21.0'
Storage Elev. = 431.0
Bottom Elev. = 428.0

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION	9/13/88 DATE
CHIEF, BUREAU OF HIGHWAYS	9/13/88 DATE
CHIEF, BUREAU OF ENGINEERING	9-14-88 DATE

OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — 9-14-88 DATE

CERTIFICATION BY THE ENGINEER

"I 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"

THOMAS J. SHAFER — 2-26-88 DATE

CERTIFICATION BY THE DEVELOPER

"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 PPOJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPT. 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

DAVID L CARNEY — 7/29/88 DATE

REVIEWED FOR HOWARD COUNTY S C D AND MEETS TECHNICAL REQUIREMENTS

8/12/88 DATE

U S SOIL CONSERVATION SERVICE

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

APPROVED: HOWARD S C D — 8/12/88 DATE

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR

2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA
BURLEIGH MANOR
SECTION 3 AREA 5

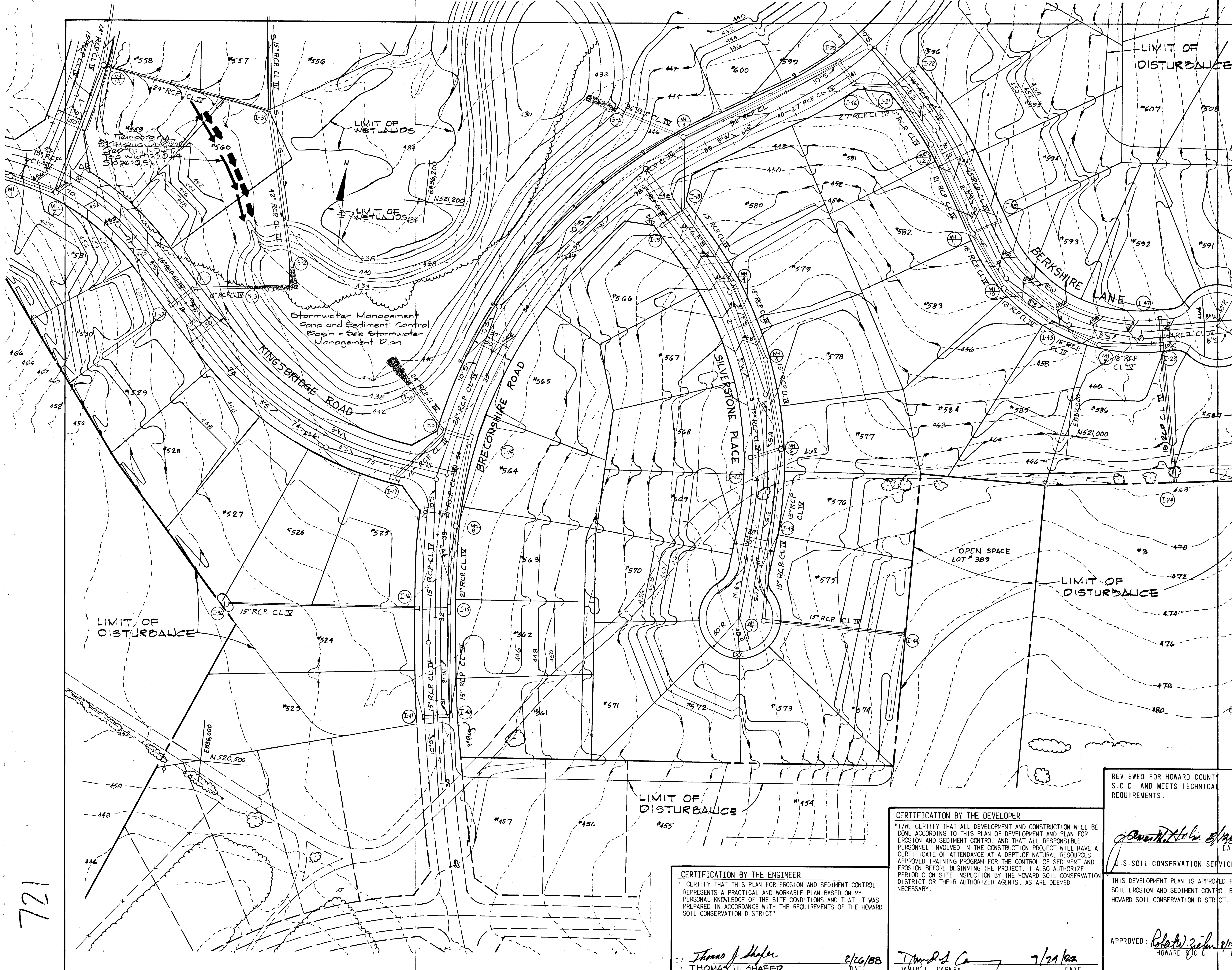
PROJECT TITLE
SEDIMENT CONTROL PLAN

SCALE 1" = 50' — DATE 4/1/88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

THOMAS J. SHAFER
REGISTERED ENGINEER NO 8457

721



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/12/88

CHIEF, BUREAU OF HIGHWAYS — DATE 9/13/88

CHIEF, BUREAU OF ENGINEERING — DATE 9-14-88

OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9-14-88

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE:
SEDIMENT CONTROL PLAN

SCALE: 1"=50' DATE: 4/1/88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

THOMAS J. SHAFER
REGISTERED ENGINEER NO. 8457

REVIEWED FOR HOWARD COUNTY S.C.D. AND MEETS TECHNICAL REQUIREMENTS.

U.S. SOIL CONSERVATION SERVICE — DATE

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

APPROVED: HOWARD S.C.D. — DATE 8/12/88

CERTIFICATION BY THE DEVELOPER

"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 DEPT. 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.

DAVID L. CARNEY — DATE 7/24/88

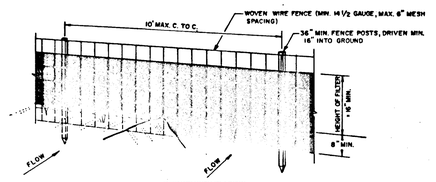
CERTIFICATION BY THE ENGINEER

"I 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"

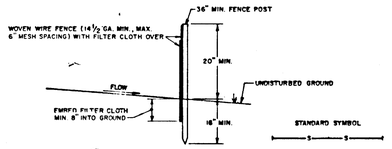
THOMAS J. SHAFER — DATE 2/26/88

SHEET 15 OF 23 F-88-240

SILT FENCE



PERSPECTIVE VIEW



SECTION

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 WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED 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 2" HARDWOOD

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

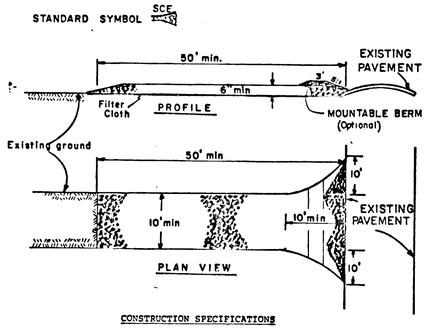
FILTER CLOTH: FILTER X, MIRAFI 100X, STABI-LINKA T140N OR APPROVED EQUAL

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	SILT FENCE	STANDARD DRAWING SF-1

STABILIZED CONSTRUCTION ENTRANCE
not to scale

STANDARD SYMBOL SCE



CONSTRUCTION SPECIFICATIONS

1. Stone Size - Use 2" stone, or reclaimed 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 entrances 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.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE College Park, Md.	STABILIZED CONSTRUCTION ENTRANCE	Standard Drawing SCE-1

PERMANENT SEEDING NOTES

Apply to graded or cleared areas 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.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules

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 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thre 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 well 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.

Matinenance - 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.

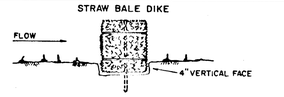
Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer. (14 lbs/1000 sq ft)

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.

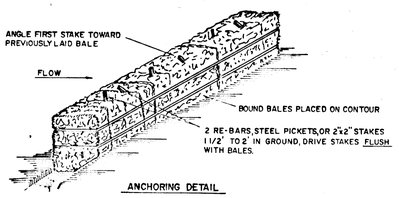
Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

STRAW BALE DIKE



BEDDING DETAIL

STANDARD SYMBOL SBD



ANCHORING DETAIL

CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHERP. STAKES SHALL RE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	STRAW BALE DIKE	STANDARD DRAWING SBD-1

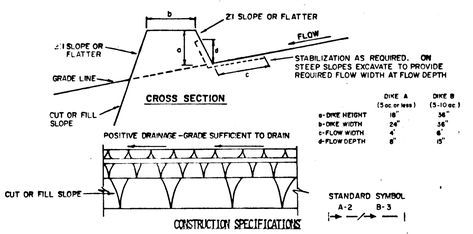
SEDIMENT CONTROL NOTES

1) A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)
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	42.8	Acres
Area Disturbed	37.8±	Acres
Area to be roofed or paved	7.9±	Acres
Area to be vegetatively stabilized	29.9±	Acres
Total Cut	82,970±	Cu. yds.
Total Fill	51,740±	Cu. yds.
Offsite waste/borrow area location		

8) Any sediment control practice which is disturbed by grading 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 requested 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.

EARTH DIKE
not to scale



	DIKE A (5 ac or less)	DIKE B (5-10 ac)
a-DIKE HEIGHT	18"	36"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	8"	15"

CONSTRUCTION SPECIFICATIONS

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. RUNOFF 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

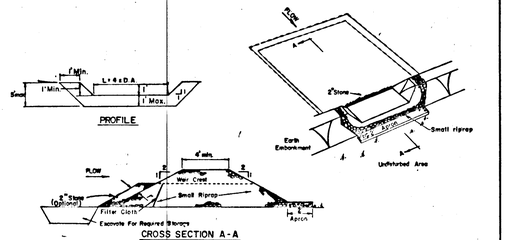
TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4-8"
4	8.1-20%	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

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 4-8 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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	EARTH DIKE	STANDARD DRAWING ED-1

STONE OUTLET SEDIMENT TRAP V



CROSS SECTION A-A

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 on 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 that 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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	STONE OUTLET SEDIMENT TRAP	STANDARD DRAWING ST-V

APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/12/88

CHIEF, BUREAU OF HIGHWAY — DATE 9/13/88

CHIEF, BUREAU OF ENGINEERING — DATE 9-14-88

OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9-14-88

CERTIFICATION BY THE ENGINEER

"I 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."

THOMAS J. SHAFER — 2/26/88 DATE

CERTIFICATION BY THE DEVELOPER

"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 DEPT. 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."

DAVID L. CARNEY — 7/29/88 DATE

REVIEWED FOR HOWARD COUNTY S.C.D. AND MEETS TECHNICAL REQUIREMENTS.

U.S SOIL CONSERVATION SERVICE — DATE 9/12/88

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

APPROVED: HOWARD S.C.D. — DATE 8/12/88

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE
SEDIMENT CONTROL DETAILS

SCALE: NO SCALE — DATE: 2/26/88

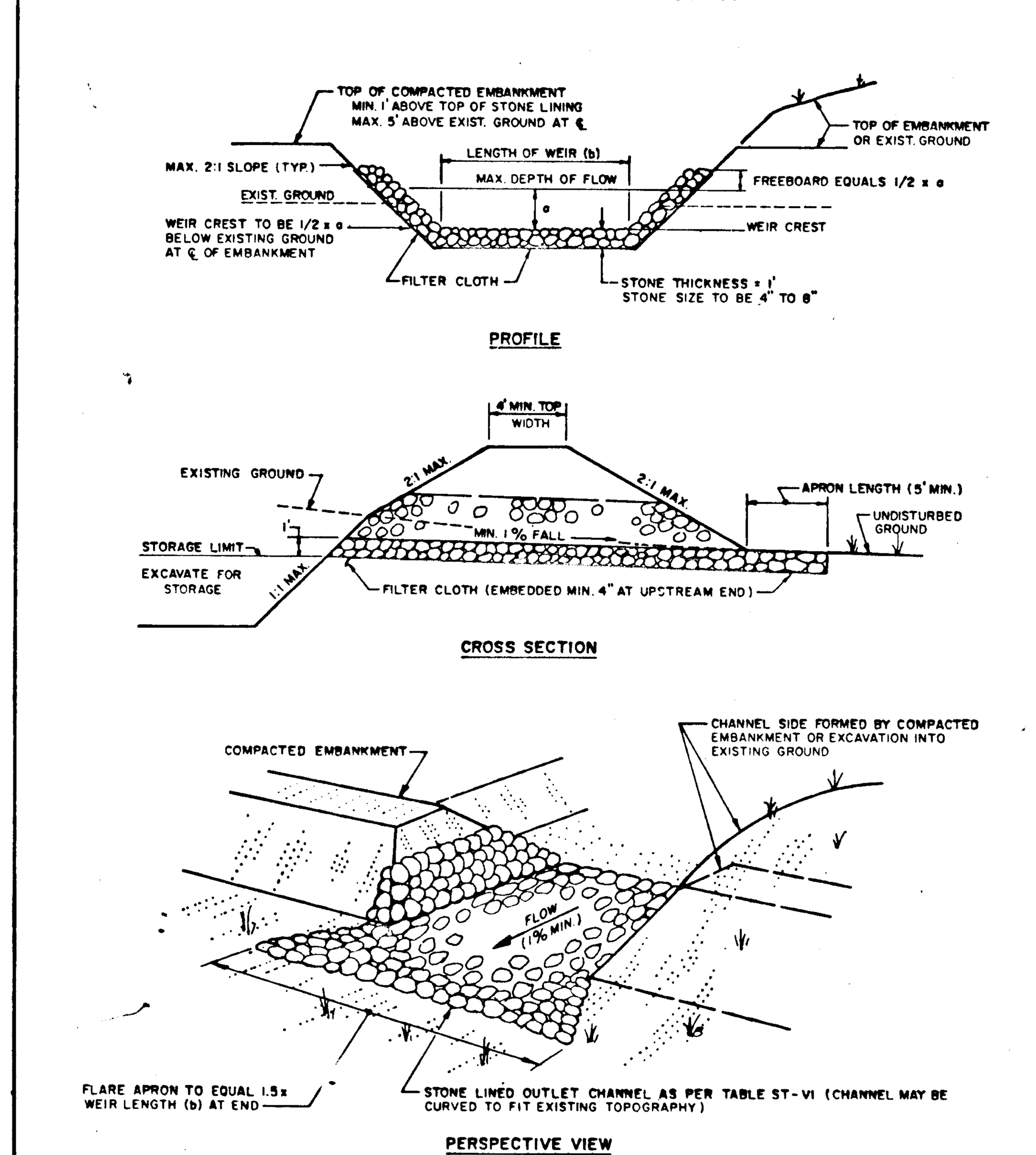
WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

THOMAS J. SHAFER
REGISTERED ENGINEER NO. 8457

721

F-88-240

RIPRAP OUTLET SEDIMENT TRAP ST-VI

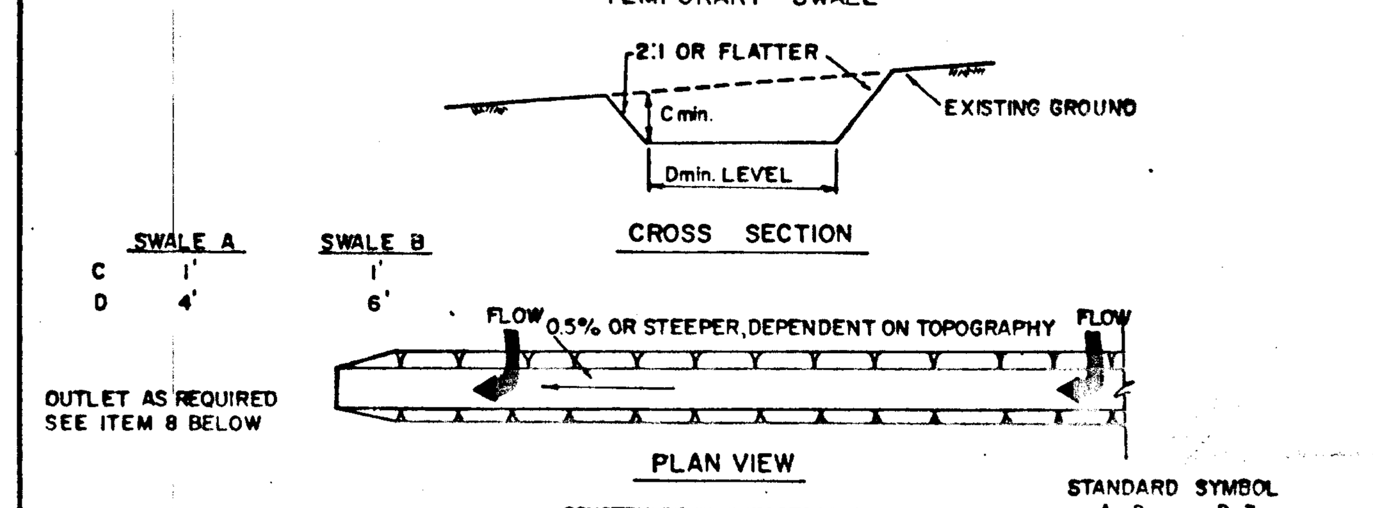


U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	RIPRAP OUTLET SEDIMENT TRAP	STANDARD DRAWING ST-VI

CONSTRUCTION SPECIFICATIONS FOR ST-VI

1. The 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 or 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. Maximum height of embankment shall be five (5) feet, measured at centerline of embankment.
3. All fill slopes shall be 2:1 or flatter; cut slopes 1:1 or flatter.
4. Elevation of the top of any dike directing water into trap must equal or exceed the height of embankment.
5. Storage area provided shall be figured by computing the volume available behind the outlet channel up to an elevation of one (1) foot below the level weir crest.
6. Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Sections of fabric must overlap at least one (1) foot with section nearest the entrance placed on top. Fabric shall be embedded at least six (6) inches into existing ground at entrance of outlet channel.
7. Stone used in the outlet channel shall be four (4) to eight(8) inches (riprap). To provide a filtering effect, a layer of filter cloth shall be embedded one (1) foot back into the upstream face of the outlet stone or a one (1) foot thick layer of two (2) inch or finer aggregate shall be placed on the upstream face of the outlet.
8. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
9. The structure shall be inspected after each rain and repaired as needed.
10. Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
11. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.
12. Drainage area for this practice is limited to 15 acres or less.

TEMPORARY SWALE



STANDARD SYMBOL A-2 B-3

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:

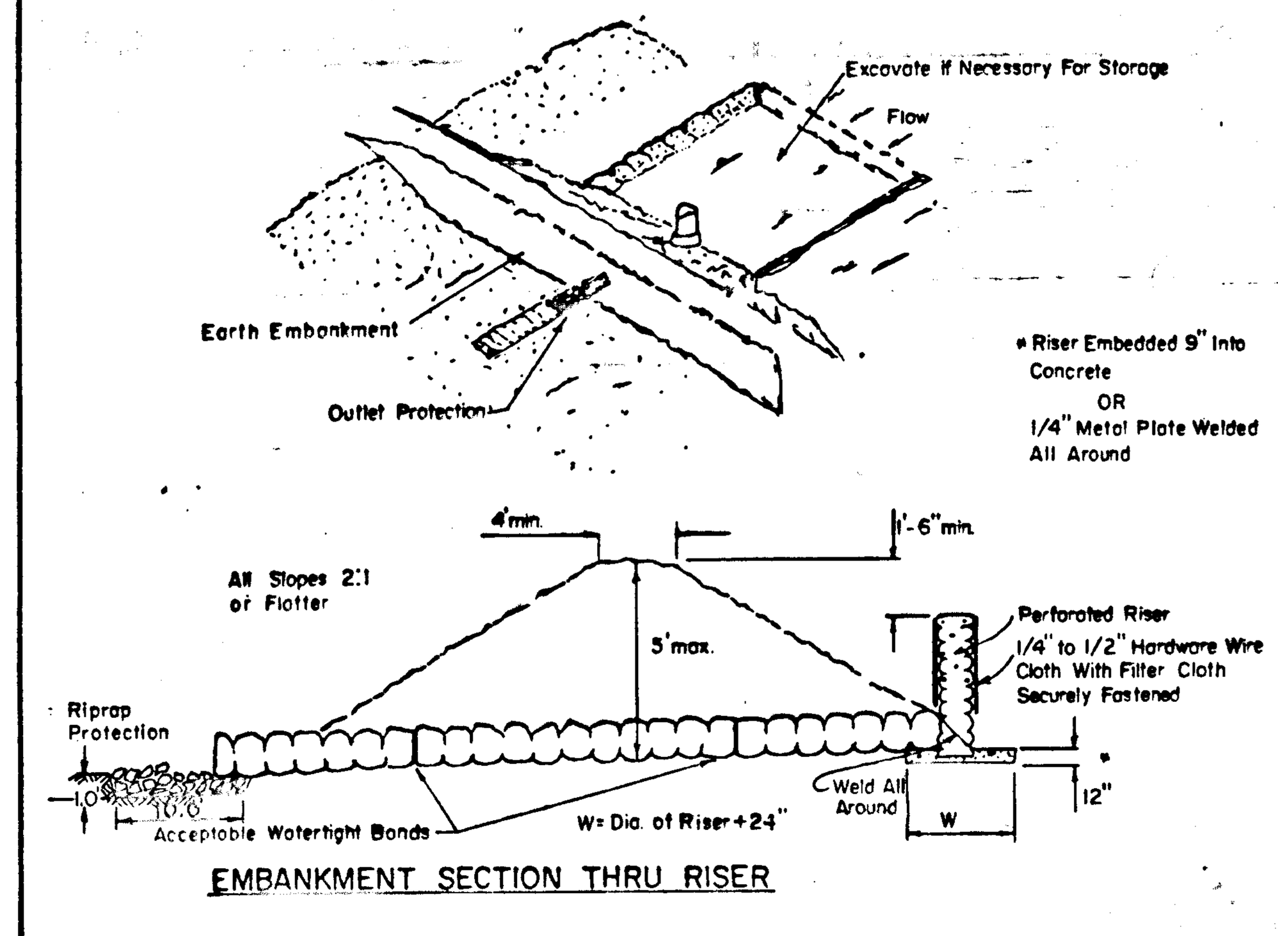
FLOW CHANNEL STABILIZATION

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 4-8" RECYCLED CONCRETE EQUIVALENT
4	8.1-20%	LINED 4-8" RIP-RAP	ENGINEERED DESIGN

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	TEMPORARY SWALE	STANDARD DRAWING TS-1

PIPE OUTLET SEDIMENT TRAP ST-I



SIZES OF PIPE NEEDED

Barrel Diameter ________.

Riser Diameter ________.

Note:

For Construction Specification see sheet 16.08

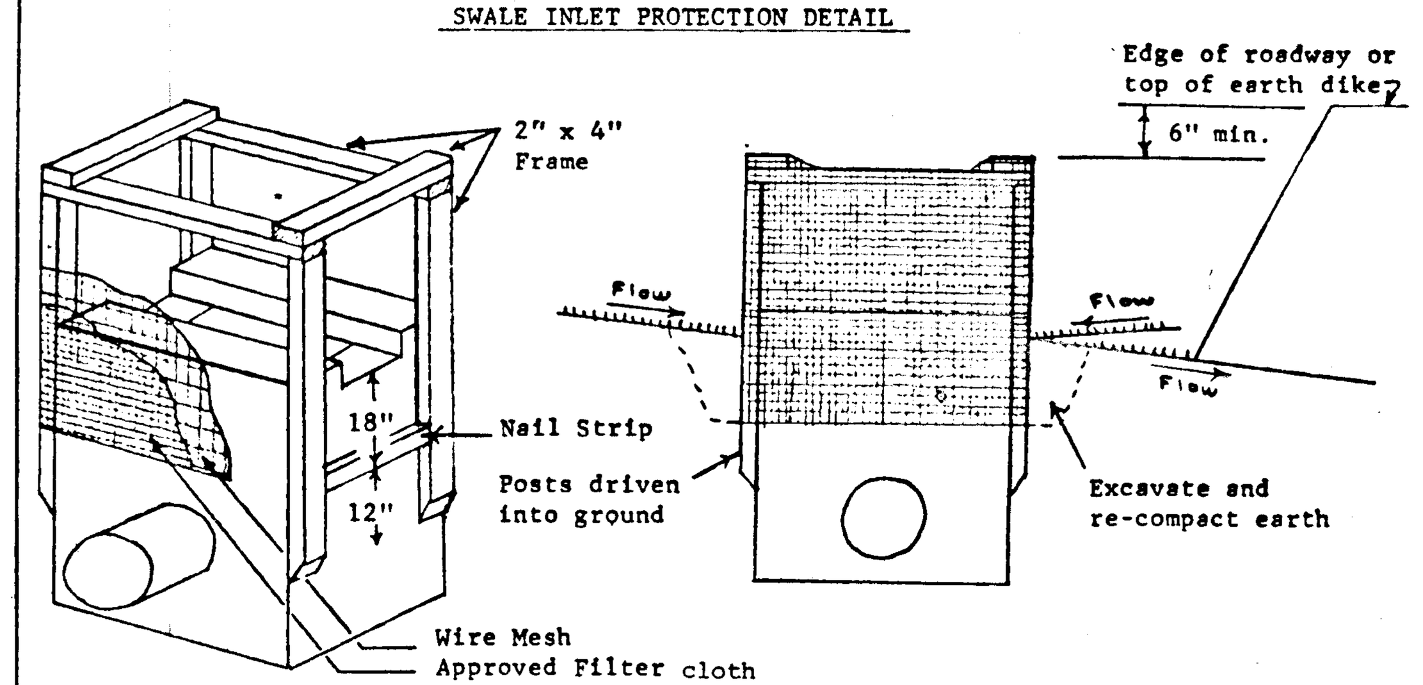
Max. Drainage Area: 5 Acres

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	PIPE OUTLET SEDIMENT TRAP	STANDARD DRAWING ST-I

Pipe Outlet Trap
CONSTRUCTION SPECIFICATION FOR ST-I

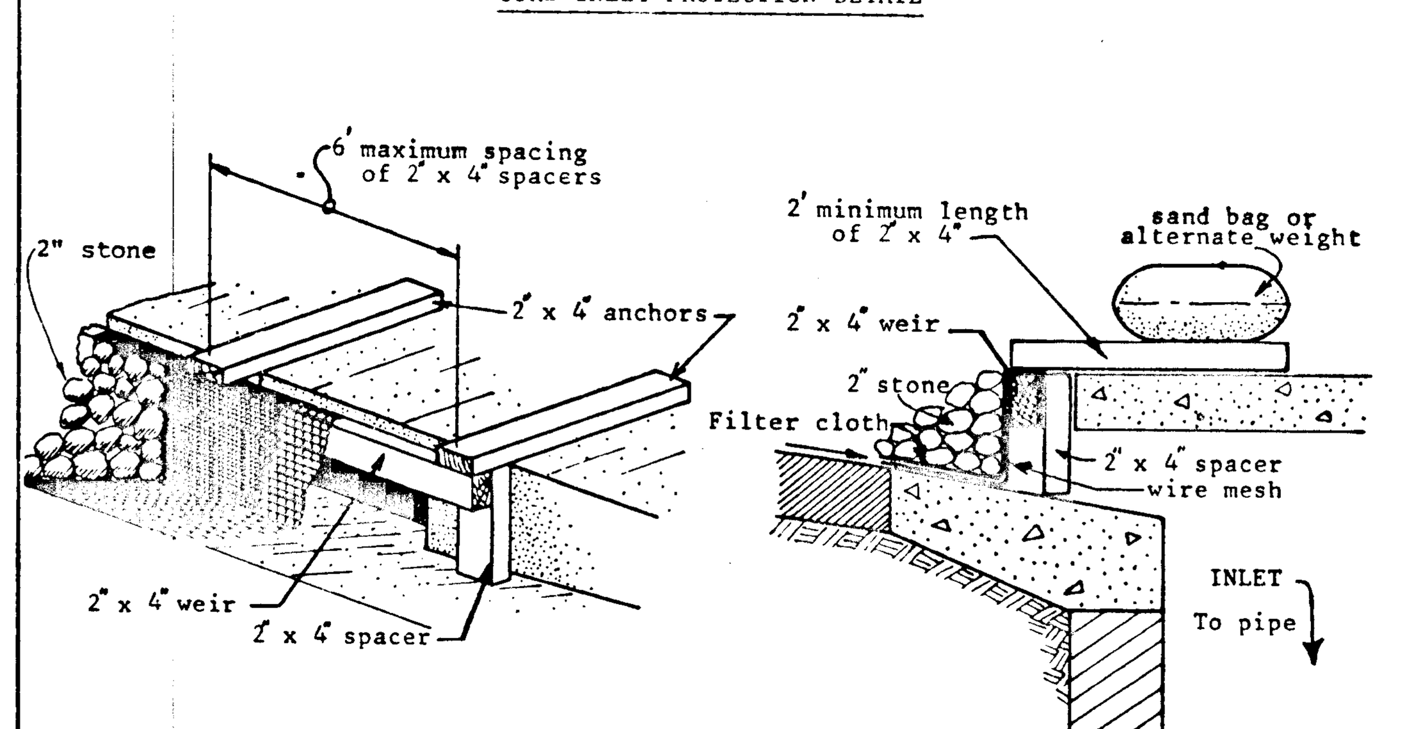
1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
2. The fill material for the embankment shall be free of roots or other woody vegetation as well as oversized stones, rocks, organic material, or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
3. Volume of sediment storage shall be 1800 cubic feet per acre of contributory drainage.
4. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
5. The structure shall be inspected after each rain and repairs made as needed.
6. Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
7. The structure shall be removed and area stabilized when the drainage area has been properly stabilized.
8. All fill slopes shall be 2:1 or flatter; cut slopes 1:1 or flatter.
9. All pipe connections shall be watertight.
10. The top 2/3 of the riser shall be perforated with one (1) inch diameter holes or slits spaced six(6) inches vertically and horizontally and placed in the concave portion of pipe. No holes will be allowed within six(6) inches of the horizontal barrel.
11. The riser shall be wrapped with 1/4 to 1/2 inch hardware cloth wire then wrapped with filter cloth (having an equivalent sieve size of 40 - 80). The filter cloth shall extend six (6) inches above the highest hole and six (6) inches below the lowest hole. Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent bypass.
12. Straps or connecting bands shall be used to hold the filter cloth and wire fabric in place. They shall be placed at the top and bottom of the cloth.
13. Fill material around the pipe spillway shall be hand compacted in four(4) inch layers. A minimum of two (2) feet of hand-compacted backfill shall be placed over the pipe spillway before crossing it with construction equipment.
14. The riser shall be anchored with either a concrete base or steel plate base to prevent flotation. For concrete bases the depth shall be 12 inches with the riser embedded nine (9) inches. A 1/4 inch minimum thickness steel plate shall be attached to the riser by a continuous weld around the bottom to form a watertight connection and then place two (2) feet of stone, gravel, or tamped earth on the plate.

SWALE INLET PROTECTION DETAIL



STANDARD SYMBOL

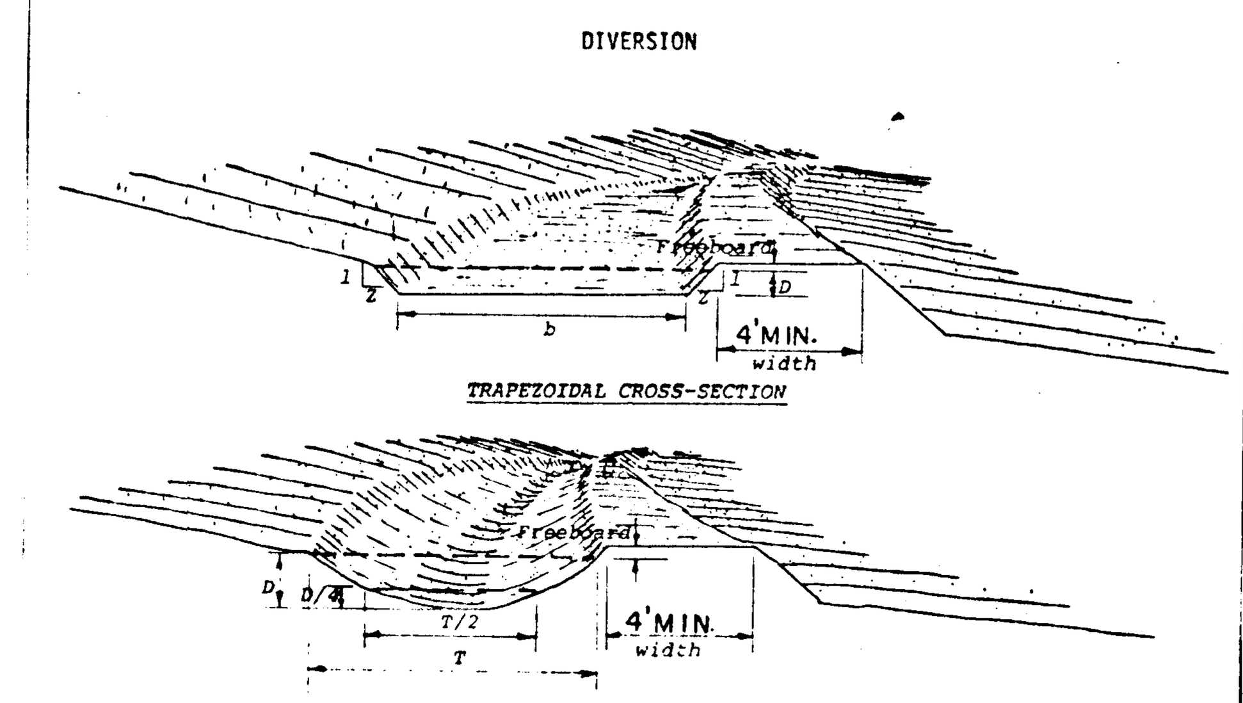
CURB INLET PROTECTION DETAIL



STANDARD SYMBOL

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	INLET PROTECTION DETAIL	STANDARD DRAWING IPD-1

DIVERSION



Construction Specifications

1. 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 diversion.
2. The diversion shall be excavated or shaped to line, grade, and cross section as required to meet the criteria specified herein, and be free of irregularities which will inpede normal flow.
3. Fills shall be compacted as needed to prevent unequal settlement that would cause damage in the completed diversion.
4. All earth removed and not needed in construction shall be spread or disposed of so that it will not interfere with the functioning of the diversion.
5. Stabilization shall be done according to the appropriate Standard and Specifications for Vegetative Practices.
   A. For design velocities of less than 3.5 ft. per sec., seeding and mulching may be used for the establishment of the vegetation. It is recommended that, when conditions permit, temporary diversions or other means be used to prevent water from entering the diversion during the establishment of the vegetation.
   B. For design velocities of more than 3.5 ft. per sec., the diversion shall be stabilized with sod, with seeding protected by jute or excelsior matting or with seeding and mulching including temporary diversion of water until the vegetation is established. See the Standard and Specifications for Protective Materials.

Standard Symbol ——→ ——→

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE College Park, Md.	DIVERSION	Standard Drawing GW-3

REVIEWED FOR HOWARD COUNTY S.C.D. AND MEETS TECHNICAL REQUIREMENTS.

James M. Nelson 8/12/88
U.S. SOIL CONSERVATION SERVICE — DATE

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

APPROVED: Robert W. Graham 8/12/88
HOWARD S.C.D. — DATE

CERTIFICATION BY THE DEVELOPER

"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 DEPT. 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."

David L. Carney 7/29/88
DAVID L. CARNEY — DATE

CERTIFICATION BY THE ENGINEER

"I 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."

Thomas J. Shafer 2/26/88
THOMAS J. SHAFER — DATE

APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Donald G. Hopson — CHIEF, LAND DEVELOPMENT DIVISION	9/13/88 DATE
Granville W. Wehland — CHIEF, BUREAU OF HIGHWAY	9/13/88 DATE
William E. Riley — CHIEF, BUREAU OF ENGINEERING	9-14-88 DATE

OFFICE OF PLANNING AND ZONING

Marsha J. McLaughlin 9-14-88
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPER
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE
SEDIMENT CONTROL DETAILS

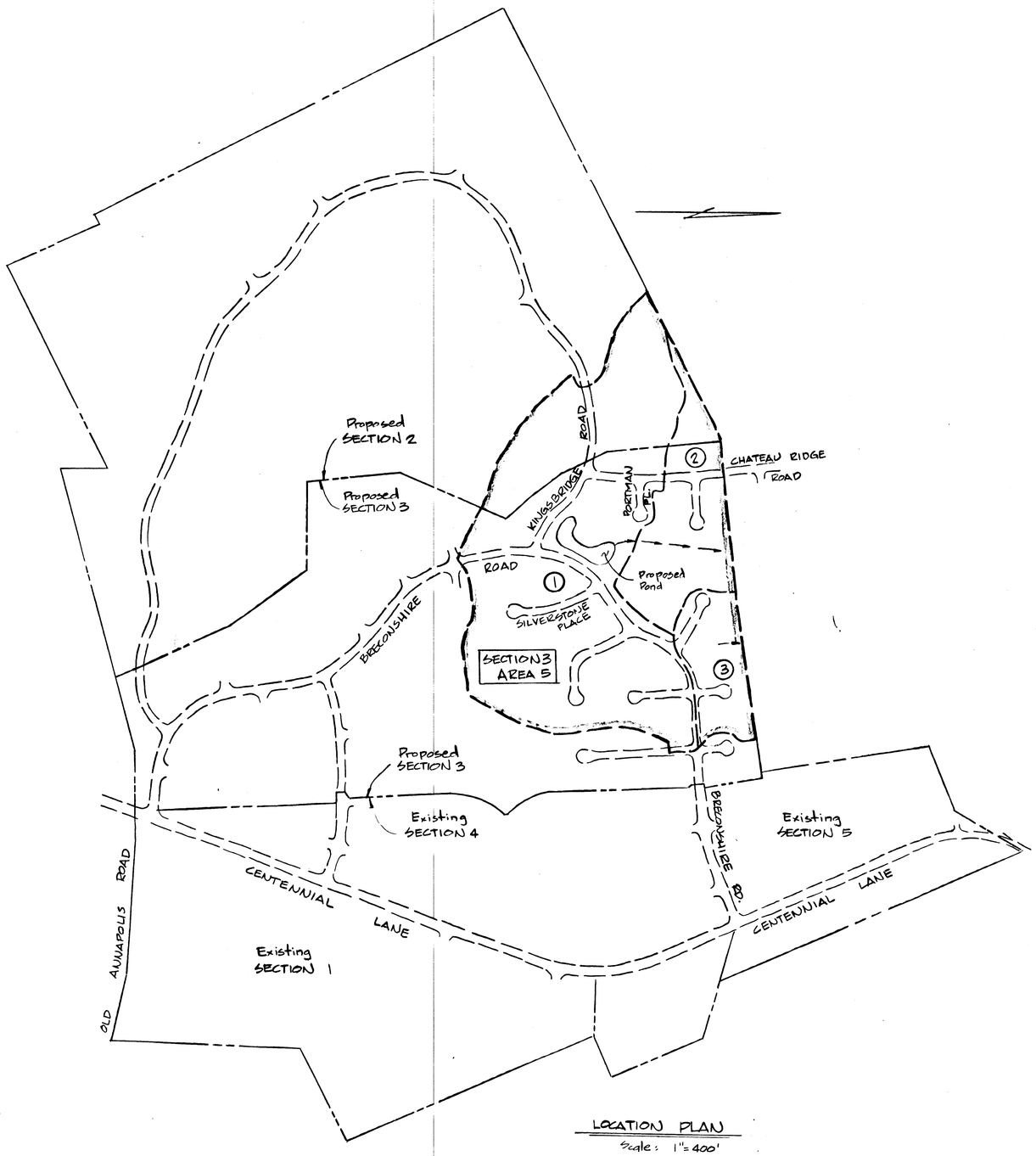
SCALE: NO SCALE — DATE: 2/26/88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER NO.

121

SHEET 17 OF 23 — F-88-240



LOCATION PLAN
Scale: 1"=400'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

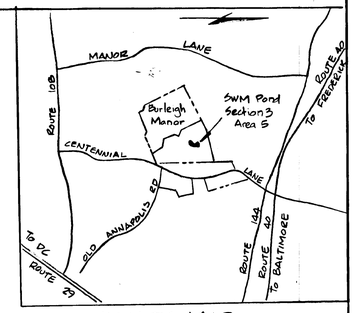
CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/13/88

CHIEF, BUREAU OF HIGHWAYS — DATE 9/13/88

CHIEF, BUREAU OF ENGINEERING — DATE 9-14-88

OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9-14-88



VICINITY MAP
1" = 1 Mile

SHEET INDEX

STORMWATER MANAGEMENT DATA

Storm	Stormwater Management Data @ Pond Qin (cfs)	Qout (cfs)	Elev. (ft)	Interim Stormwater Mngt. Data @ Pond (Phase I only) Qin (cfs)	Qout (cfs)	Elev. (ft)
2	47.6	2.48	434.76	56.3	2.7	435.10
10	128.6	15.4	437.11	134.5	18.4	437.23
100	239.6	113.7	438.47	237.7	118.7	438.51

Storm	Stormwater Management Data @ Design Point QPRE (cfs)	QPOST (cfs)	Interim Stormwater Mngt. Data @ Design Point (Phase I only) QPRE (cfs)	QINTERIM (cfs)
2	32.1	26.5	32.1	17.1
10	116.9	67.9	116.9	50.4
100	250.6	132.6	250.6	130.5

Miscellaneous Data

Total Drainage Area - Predevelopment	92.6 Ac
Total Drainage Area - Postdevelopment	91.8 Ac
Drainge Area to Pond only	65.2 Ac

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPMENT
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE
STORMWATER MANAGEMENT 3,5

SCALE: AS SHOWN — DATE 4-1-88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER NO 8457

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

U.S. SOIL CONSERVATION SERVICE — DATE 8/12/88

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: HOWARD S.C.D. — DATE 8/12/88

PLAN NUMBER

CERTIFICATION BY THE DEVELOPER

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT, POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS. AS ARE DEEMED NECESSARY DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION.

DAVID L. CARNEY — DATE 4/8/88

CERTIFICATION BY THE ENGINEER

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION".

THOMAS J. SHAFER — DATE 1-28-88

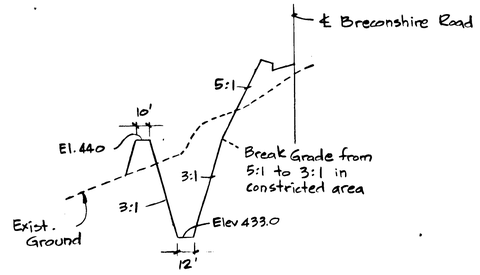
721

SHEET 1 OF 23

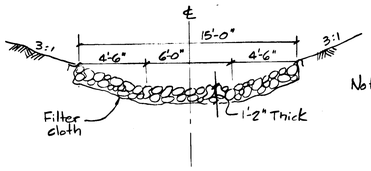
F-88-240

DAM CENTERLINE DATA

Point #	Station	Bearing (Chord)	Distance (Chord)	Radius	Arc
400	7+34.75				
410	6+24.91	N 47°31'09"E	109.843'		
412	5+99.04	N 88°31'09"E	78.727'	60.00'	85.87'
414	4+16.87	S 85°28'51"E	114.715'	100.00'	122.173'
415	3+83.24	N 59°31'09"E	33.625'		
417	2+95.71	N 28°10'29"E	83.229'	80.00'	87.530'
418	2+70.98	N 03°10'10"W	24.731'		
420	1+76.73	N 07°40'10"W	94.151'	600.00'	94.248'
421	1+32.92	N 12°10'10"W	43.812'		
423	0+19.47	N 13°49'50"E	109.593'	125.00'	113.447'
427	0+00	N 46°48'12"E	19.424'	80.00'	19.472'
425	1+20.15	S 83°11'48"E	109.175'	80.00'	120.154'
407	3+48.77	S 40°10'10"E	228.618'		

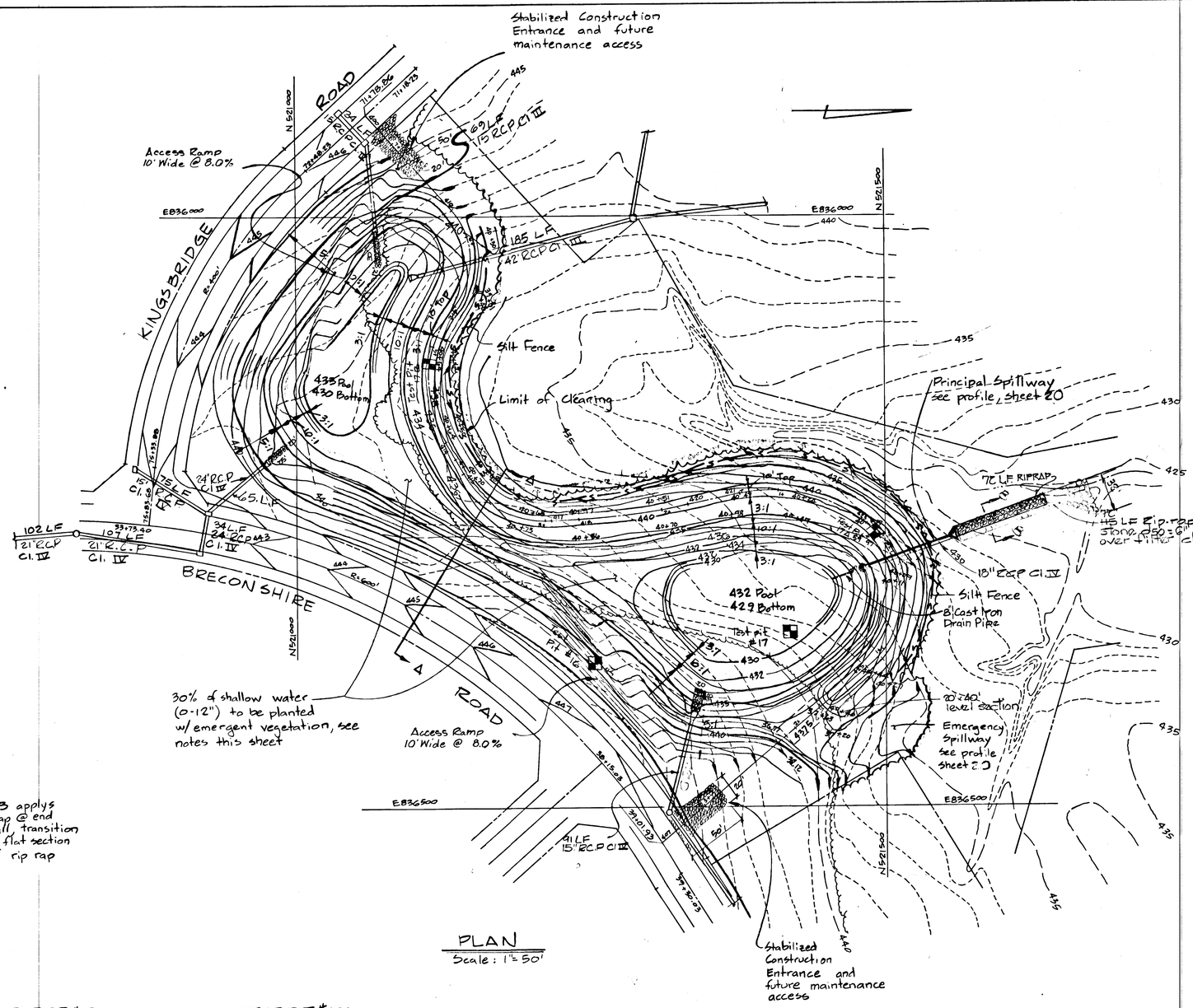


SECTION 'AA'
@ POND CONSTRICTION
Scales: H 1"=50'
V 1"=5'



SECTION 'BB'
Scale: 1"=5'-0"

Note: Section BB applys for Rip Rap @ end of headwall, transition to 32'-0" flat section @ end of rip rap



PLAN
Scale: 1"=50'

TEST PIT #17B

0.0'-0.8'	Topsoil
0.8'-3.5'	Grayish brown clayey silty sand w/trace of mica and rock fragments. (SC)
3.5'-7.5'	Green brown micaceous clayey silt (ML)
7.5'-11.0'	Orange brown micaceous silty sand w/rock fragments, trace of red clay (SM)

* No Ground Water Encountered.

TEST PIT #16

0-8"	Topsoil
8"-2'	Brown sandy (ML) clayey silt
2'-13'	Brown-white micaceous silty gravelly sand and Weathered rock
13'	Water (SM)

TEST PIT #17

0-1'	Topsoil
1'-5'	Light brown sandy silt (ML)
5'-13'	Gray weathered gravelly sandy silt, trace of clay
13'	Water (ML)

TEST PIT #17A

0.0'-0.5'	Topsoil
0.5'-5.0'	Grayish brown clayey silty sand with trace of mica and rock fragments (SC)
5.0'-6.5'	Green brown micaceous clayey silt (ML)
6.5'-11.0'	Orange brown micaceous silt (ML)

* Ground Water Encountered at 10.5'

SHALLOW WATER PLANTING NOTES

1. Approximately 30% of the shallow water area (0-12") shall be planted with emergent vegetation.
2. Plant species chosen for planting shall be dependent upon supply availability.
3. At least 2 primary (aggresive) wetland plant species shall be planted, they shall be selected from the following: Scirpus americanus, S. validus, Sagittaria latifolia.
4. As many as 3 secondary species shall also be planted, they shall be selected from the following: Acorus calamus, Cephalanthus occidentalis, Nuphar luteum, Peltandra virginica, Pontederia cordata.
5. Primary Species shall be planted 3' apart. Secondary species shall be planted at 40 clumps per acre with at least 5 plants per clump.
6. Planting, as outlined above, shall be performed in accordance with: "Guidelines for Constructing Wetland Stormwater Basins", Sediment and Stormwater Division, Water Resources Administration, Maryland Department of the Environment, March 1987.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/13/88

CHIEF, BUREAU OF HIGHWAYS — DATE 9/13/88

CHIEF, BUREAU OF ENGINEERING — DATE 9-12-88

OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9-14-88

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

U.S. SOIL CONSERVATION SERVICE — DATE 8/12/88

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: HOWARD S.C.D. — DATE 8/12/88

PLAN NUMBER

CERTIFICATION BY THE DEVELOPER

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT. POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS. AS ARE DEEMED NECESSARY DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION.

DAVID L. CARNEY — DATE 4/8/88

CERTIFICATION BY THE ENGINEER

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION".

THOMAS J. SHAFER — DATE 1-28-88

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPMENT
ROSE/RICHMOND JOINT VENTURE

SUBDIVISION NAME
BURLEIGH MANOR
SECTION 3 AREA 5

SHEET TITLE
STORMWATER MANAGEMENT 3,5

SCALE: AS SHOWN DATE: 1-1-88

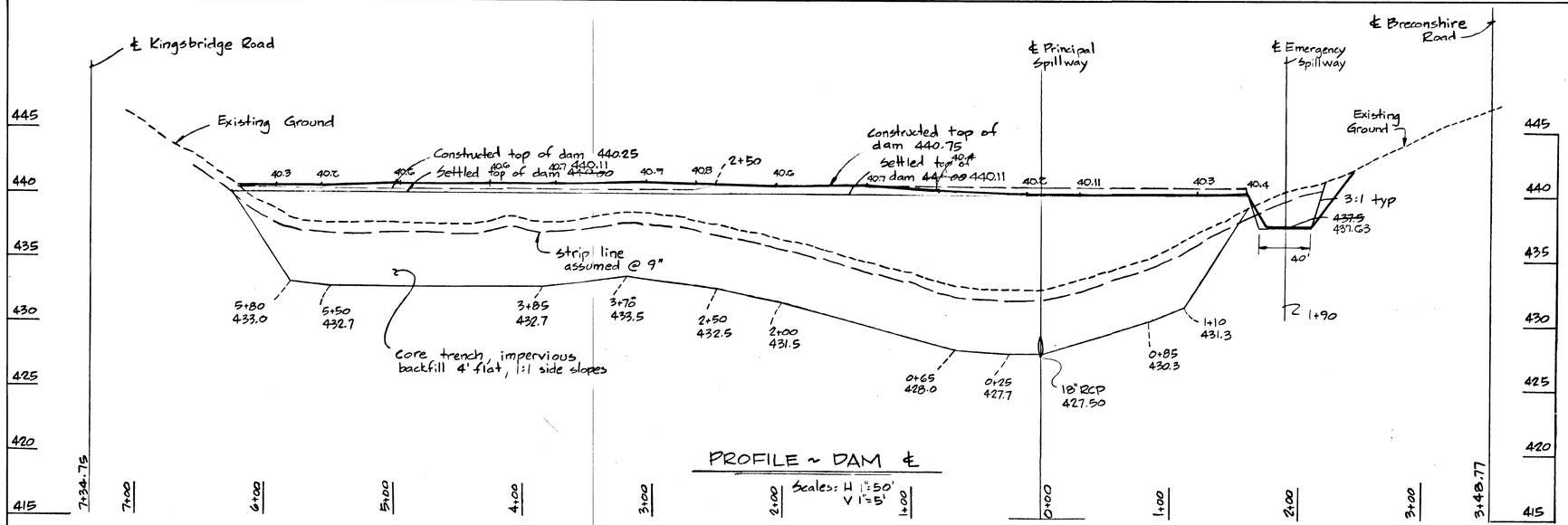
WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

THOMAS J. SHAFER 8457

24 JAN. 1992

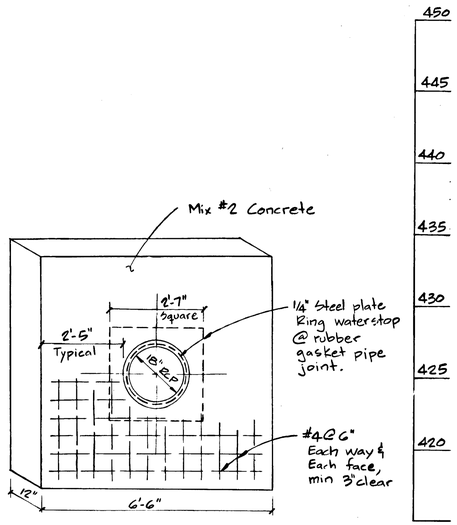
SHEET 19 OF 23 F-88-240

721



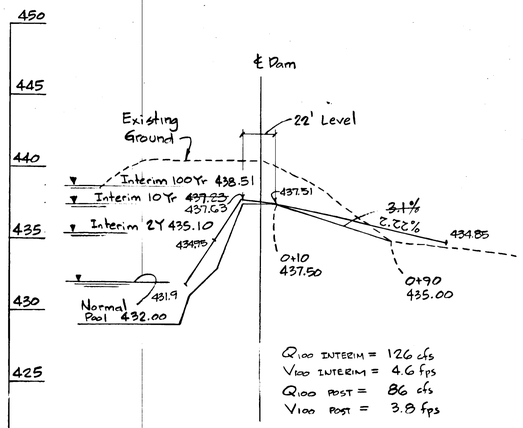
PROFILE ~ DAM ℄

Scales: H 1"=50'
V 1"=5'



DETAIL ~ ANTI SEEP COLLAR

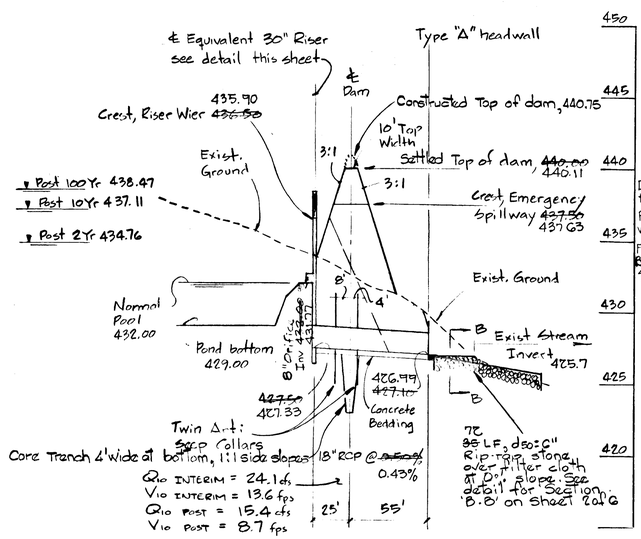
Scale: 1"=2'-0"



$Q_{100\ INTERIM}$ = 126 cfs
$V_{100\ INTERIM}$ = 4.6 fps
$Q_{100\ POST}$ = 86 cfs
$V_{100\ POST}$ = 3.8 fps

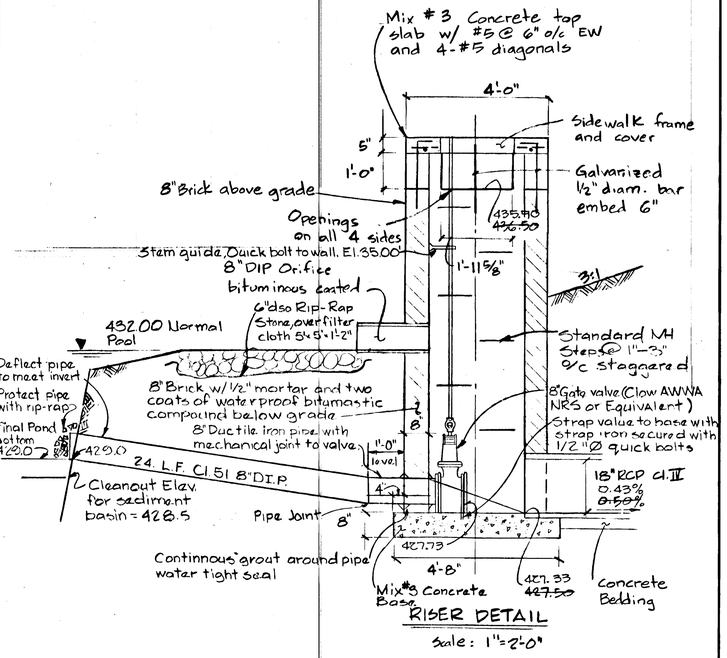
PROFILE ~ EMERGENCY SPILLWAY

Scales: H 1"=50'
V 1"=5'



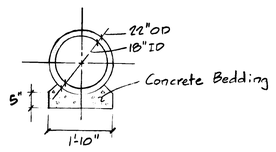
PROFILE ~ PRINCIPAL SPILLWAY

Scales: H 1"=50'
V 1"=5'



RISER DETAIL

Scale: 1"=2'-0"



DETAIL ~ BEDDING

Scale: 1"=2'-0"

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/13/88

CHIEF, BUREAU OF HIGHWAYS — DATE 9/13/88

CHIEF, BUREAU OF ENGINEERING — DATE 9.14.88

OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9-14-88

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

U.S. SOIL CONSERVATION SERVICE — DATE 8/12/88

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: Robert W. Zellmer HOWARD S.C.D. — DATE 8/12/88

PLAN NUMBER

CERTIFICATION BY THE DEVELOPER

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT. POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS. AS ARE DEEMED NECESSARY DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION.

DAVID L. CARNEY — DATE 4/8/88

CERTIFICATION BY THE ENGINEER

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION".

THOMAS J. SHAFER — DATE 1-28-88

24 JAN. 1998

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPMENT
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE
STORMWATER MANAGEMENT
3,5

SCALE AS SHOWN — DATE 4-1-88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

THOMAS J. SHAFER
REGISTERED ENGINEER NO 8457

SHEET 20 OF 23 F-88-240

721

CONSTRUCTION SPECIFICATIONS FOR PONDS

THESE SPECIFICATIONS ARE APPROPRIATE TO PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE 378.

I. SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1.

AREAS TO BE COVERED BY THE POND OR RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

II. EARTH FILL

MATERIAL

THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREA OR AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, OVERSIZE STONES, FROZEN OR OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE CONSTRUCTED TO AN ELEVATION WHICH PROVIDES FOR ANTICIPATED SETTLEMENT TO THE DESIGN ELEVATION. THE FILL HEIGHT ALL ALONG THE LENGTH OF THE EMBANKMENT SHALL BE INCREASED ABOVE THE DESIGN ELEVATION (INCLUDING FREEBOARD) AS SHOWN ON THE PLANS.

PLACEMENT

AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN 8-INCH MAXIMUM THICKNESS (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST POROUS BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT.

COMPACTION

THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION CAN BE OBTAINED WITH THE EQUIPMENT USED.

WHERE A MINIMUM REQUIRED DENSITY IS SPECIFIED, EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY AND IS TO BE CERTIFIED BY THE ENGINEER.

CUTOFF TRENCH

WHERE SPECIFIED, A CUTOFF TRENCH SHALL BE EXCAVATED ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE AS SHOWN ON THE DRAWINGS, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL MATERIAL FOR THE CUTOFF TRENCH SHALL BE THE MOST IMPERVIOUS MATERIAL AVAILABLE AND SHALL BE COMPACTED WITH EQUIPMENT OR ROLLER TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

III. STRUCTURAL BACKFILL

BACKFILL MATERIAL SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF TWENTY-FOUR INCHES OR GREATER OVER THE STRUCTURE OR PIPE.

IV. PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

A. CORRUGATED METAL PIPE

1. MATERIALS - (STEEL PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL BE GALVANIZED AND FULLY BITUMINOUS COATED AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A WITH WATERTIGHT COUPLING BANDS. ANY BITUMINOUS COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND.

   STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THE FOLLOWING COATINGS ARE COMMERCIALLY AVAILABLE: NEXON, PLASTI-COTE, BLAC-KLAD, AND BETH-CU-LOY. COATED CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M-245 AND M-246.

   MATERIALS-(ALUMINIZED STEEL PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274-79I WITH WATERTIGHT COUPLING BANDS OR FLANGES.

   MATERIALS-(ALUMINUM PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATERTIGHT COUPLING BANDS OR FLANGES. COUPLING BANDS, ANTI-SEEP COLLARS,END SECTIONS, ETC. MUST BE COMPOSED OF THE SAME MATERIAL AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE pH OF THE SURROUNDING SOILS SHALL BE LESS THAN 9 AND GREATER THAN 4.
2. CONNECTIONS - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATERTIGHT. THE DRAIN PIPE OR BARREL CONNECTION TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. WATERTIGHT COUPLING BANDS OR FLANGES SHALL BE USED AT ALL JOINTS ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATERTIGHT. DIMPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.
3. BEDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.
4. LAYING PIPE - THE PIPE SHALL BE PLACED WITH INSIDE CIRCUMFERENTIAL LAPS POINTING DOWNSTREAM AND WITH THE LONGITUDINAL LAPS AT THE SIDES.
5. BACKFILLING SHALL CONFORM TO STRUCTURAL BACKFILL AS SHOWN ABOVE.
6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

B. REINFORCED CONCRETE PIPE

1. MATERIALS - REINFORCED CONCRETE PIPE SHALL HAVE A RUBBER GASKET JOINT AND SHALL EQUAL OR EXCEED ASTM SPECIFICATION C-361. AN APPROVED EQUIVALENT IS AWWA SPECIFICATION C-301.
2. BEDDING - ALL REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING FOR THEIR ENTIRE LENGTH. THIS BEDDING SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 10% OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 3", OR AS SHOWN ON THE DRAWINGS.
3. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE.
4. BACKFILLING SHALL CONFORM TO STRUCTURAL BACKFILL AS SHOWN ABOVE.
5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

C. FOR PIPES OF OTHER MATERIALS, SPECIFIC SPECIFICATIONS SHALL BE SHOWN ON THE DRAWINGS.

V. CONCRETE

1. MATERIALS

a. CEMENT - NORMAL PORTLAND CEMENT SHALL CONFORM TO THE LATEST ASTM SPECIFICATION C-150.

b. WATER - THE WATER USED IN CONCRETE SHALL BE CLEAN, FREE FROM OIL, ACID, ALKALI, SCALES, ORGANIC MATTER OR OTHER OBJECTIONABLE SUBSTANCES.

c. SAND - THE SAND USED IN CONCRETE SHALL BE CLEAN, HARD, STRONG AND DURABLE, AND SHALL BE WELL GRADED WITH 100 PERCENT PASSING A ONE-QUARTER INCH SIEVE. LIMESTONE SAND SHALL NOT BE USED.

d. COARSE AGGREGATE - THE COARSE AGGREGATE SHALL BE CLEAN, HARD, STRONG AND DURABLE, AND FREE FROM CLAY OR DIRT. IT SHALL BE WELL GRADED WITH A MAXIMUM SIZE OF ONE AND ONE-HALF (1-1/2) INCHES.

e. REINFORCING STEEL - THE REINFORCING STEEL SHALL BE DEFORMED BARS OF INTERMEDIATE GRADE BILLET STEEL CONFORMING TO ASTM SPECIFICATION A-615.

2. DESIGN MIX - THE CONCRETE SHALL BE MIXED IN THE FOLLOWING PROPORTIONS, MEASURED BY WEIGHT. THE WATER-CEMENT RATIO SHALL BE 5-1/2 TO 6 U.S. GALLONS OF WATER PER 94 POUND BAG OF CEMENT. THE PROPORTION OF MATERIALS FOR THE TRIAL MIX SHALL BE 1:2:3-1/2. THE COMBINATION OF AGGREGATES MAY BE ADJUSTED TO PRODUCE A PLASTIC AND WORKABLE MIX THAT WILL NOT PRODUCE HARSHNESS IN PLACING OR HONEYCOMBING IN THE STRUCTURE.
3. MIXING - THE CONCRETE INGREDIENTS SHALL BE MIXED IN BATCH MIXERS UNTIL THE MIXTURE IS HOMOGENEOUS AND OF UNIFORM CONSISTENCY. THE MIXING OF EACH BATCH SHALL CONTINUE FOR NOT LESS THAN ONE AND ONE-HALF MINUTES AFTER ALL THE INGREDIENTS, EXCEPT THE FULL AMOUNT OF WATER, ARE IN THE MIXER. THE MINIMUM MIXING TIME IS PREDICTED ON PROPER CONTROL OF THE SPEED OF ROTATION OF THE MIXER AND OF THE INTRODUCTION OF THE MATERIALS, INCLUDING WATER, INTO THE MIXER. WATER SHALL BE ADDED PRIOR TO DURING, AND FOLLOWING THE MIXER-CHARGING OPERATIONS. EXCESSIVE OVERMIXING REQUIRING THE ADDITION OF WATER TO PRESERVE THE REQUIRED CONCRETE CONSISTENCY SHALL NOT BE PERMITTED. TRUCK MIXING WILL BE ALLOWED PROVIDED THAT THE USE OF THIS METHOD SHALL CAUSE NO VIOLATION OF ANY APPLICABLE PROVISIONS OF THE SPECIFICATIONS GIVEN HERE.
4. FORMS - THE FORMS SHALL HAVE SUFFICIENT STRENGTH AND RIGIDITY TO HOLD THE CONCRETE AND TO WITHSTAND THE NECESSARY PRESSURE, TAMPING, AND VIBRATION WITHOUT DEFLECTION FROM THE PRESCRIBED LINES. THEY SHALL BE MORTAR-TIGHT AND CONSTRUCTED SO THAT THEY CAN BE REMOVED WITHOUT HAMMERING OR PRYING AGAINST THE CONCRETE.

   THE INSIDE OF FORMS SHALL BE OILED WITH A NON-STAINING MINERAL OIL OR THOROUGHLY WETTED BEFORE CONCRET IS PLACE.

   FORMS MAY BE REMOVED 24 HOURS AFTER THE PLACEMENT OF CONCRETE. ALL WIRE TIES AND OTHER DEVICES USED SHALL BE RECESSED FROM THE SURFACE OF THE CONCRETE.
5. REINFORCING STEEL - ALL REINFORCING MATERIAL SHALL BE FREE OF DIRT, RUST, SCALE, OIL, PAINT OR ANY OTHER COATINGS. THE STEEL SHALL BE ACCURATELY PLACED AND SECURELY TIED AND BLOCKED INTO POSITION SO THAT NO MOVEMENT OF THE STEEL WILL OCCUR DURING PLACEMENT OF CONCRETE.
6. CONSOLIDATING - CONCRETE SHALL BE CONSOLIDATED WITH INTERNAL TYPE MECHANICAL VIBRATORS. VIBRATION SHALL BE SUPPLEMENTED BY SPADING AND HAND TAMPING AS NECESSARY TO INSURE SMOOTH AND DENSE CONCRETE ALONG FORM SURFACES, IN CORNERS, AND AROUND EMBEDDED ITEMS.
7. FINISHING - DEFECTIVE CONCRETE, HONEYCOMBED AREAS, VOIDS LEFT BY THE REMOVAL OF TIE RODS, RIDGES ON ALL CONCRETE SURFACES PERMANENTLY EXPOSED TO VIEW OR EXPOSED TO WATER ON THE FINISHED STRUCTURE, SHALL BE REPAIRED IMMEDIATELY AFTER THE REMOVAL OF FORMS. ALL VOIDS SHALL BE REAMED AND COMPLETELY FILLED WITH DRY-PATCHING MORTAR.
8. PROTECTION AND CURING - EXPOSED SURFACES OF CONCRETE SHALL BE PROTECTED FROM THE DIRECT RAYS OF THE SUN FOR AT LEAST THE FIRST THREE (3) DAYS. ALL CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST FOR AT LEAST TEN (10) DAYS AFTER BEING PLACED. MOISTURE MAY BE APPLIED BY SPRAYING OR SPRINKLING AS NECESSARY TO PREVENT THE CONCRETE FROM DRYING. CONCRETE SHALL NOT BE EXPOSED TO FREEZING DURING THE CURING PERIOD. CURING COMPOUNDS MAY ALSO BE USED.
9. PLACING TEMPERATURE - CONCRETE MAY NOT BE PLACED AT TEMPERATURES BELOW 37°F WITH THE TEMPERATURE FALLING, OR 34° WITH THE TEMPERATURE RISING.

VI. STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING (IF REQUIRED) IN ACCORDANCE WITH THE VEGETATIVE TREATMENT SPECIFICATIONS OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

VII. EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES TO BE EMPLOYED DURING THE CONSTRUCTION PROCESS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF LAND DEVELOPMENT DIVISION — DATE 9/13/88

CHIEF BUREAU OF HIGHWAYS — DATE 9/13/88

CHIEF BUREAU OF ENGINEERING — DATE 9-12-88

OFFICE OF PLANING AND ZONING

CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9-19-88

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

U.S. SOIL CONSERVATION SERVICE — DATE 8/12/88

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: HOWARD S.C.D. — DATE 8/12/88

PLAN NUMBER

CERTIFICATION BY THE DEVELOPER

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT, POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION".

DAVID L. CARNEY — DATE 4/8/88

CERTIFICATION BY THE ENGINEER

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION, AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION".

THOMAS J. SHAFER — DATE 1-28-88

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
RICHMOND AMERICAN

PROJECT AREA
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE
STORMWATER MANAGEMENT
3,5

SCALE: AS SHOWN — DATE 4-1-88

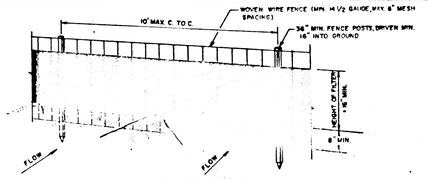
WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

THOMAS J. SHAFER
REGISTERED ENGINEER NO. 8457

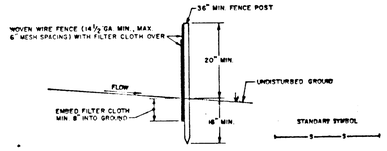
721

SHEET 21 OF 23

F-88-240



PERSPECTIVE VIEW



SECTION

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 WITH TIES SPACED EVERY 24" AT TOP AND MID 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.

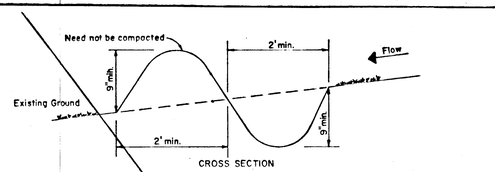
POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD

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

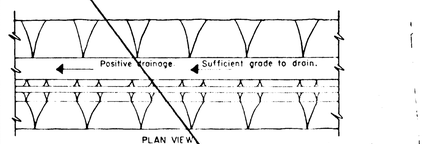
FILTER CLOTH: FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL

PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	SILT FENCE	STANDARD DRAWING SF-1



CROSS SECTION



PLAN VIEW

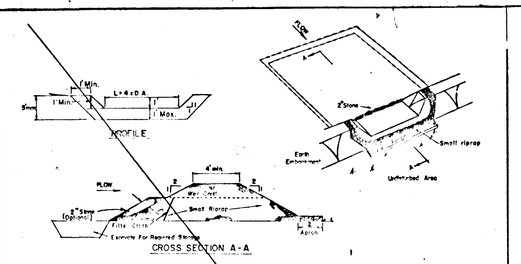
STANDARD SYMBOL

CONSTRUCTION SPECIFICATIONS

1. ALL PERIMETER DIKE/SWALE SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET.
2. DIVERTED RUNOFF FROM A DISTRUBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL OUTLET INTO AN UNDISTURBED STABILIZED AREA AT NON-EROSION VELOCITY.
4. THE SWALE SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE, AND CROSS SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED IN THE STANDARD.
5. STABILIZATION OF THE AREA DISTURBED BY THE DIKE AND SWALE SHALL BECOME IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SEED AND STRAW MULCH, AND SHALL BE DONE WITHIN 10 DAYS.
6. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

Max. Drainage Area Limit: 2 Acres

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	PERIMETER DIKE/SWALE NIC	Standard Drawing PDS-1



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 2% 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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND	STONE OUTLET SEDIMENT TRAP NIC	STANDARD DRAWING ST-V

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF LAND DEVELOPMENT DIVISION — DATE 9/13/88

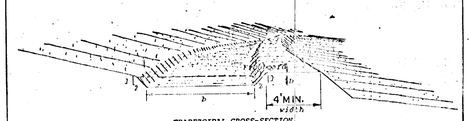
CHIEF BUREAU OF HIGHWAYS — DATE 9/13/88

CHIEF BUREAU OF ENGINEERING — DATE 9.14.88

OFFICE OF PLANNING AND ZONING

CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 9-19-88

DIVERSION



Construction Specifications

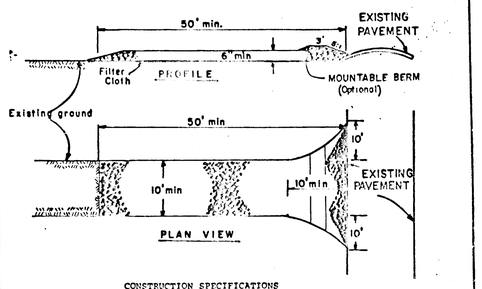
1. All trees, brush, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of the diversion.
2. The diversion shall be excavated or shaped to line, grade, and cross section as required to meet the criteria specified herein, and be free of irregularities which will impede normal flow.
3. Fills shall be compacted as needed to prevent unequal settlement that would cause damage in the completed diversion.
4. All earth removed and not needed in construction shall be spread or disposed of so that it will not interfere with the functioning of the diversion.
5. Stabilization shall be done according to the appropriate Standard and Specifications for Vegetative Practices.
   a. For design velocities of less than 3.5 ft. per sec., seeding and mulching may be used for the establishment of the vegetation. It is recommended that, when conditions permit, temporary diversions or other means be used to prevent water from entering the diversion during the establishment of the vegetation.
   b. For design velocities of more than 3.5 ft. per sec., the diversion shall be stabilized with sod, with seeding protected by jute or excelsior matting or with seeding and mulching including temporary diversion of water until the vegetation is established. See the Standard and Specifications for Protective Materials.

Standard Symbol ⟶

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE College Park, Md.	DIVERSION	Standard Drawing DIV-S

STABILIZED CONSTRUCTION ENTRANCE
not to scale

STANDARD SYMBOL SCE



CONSTRUCTION SPECIFICATIONS

1. Stone Size - Use 2" stone, or reclaimed 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 then 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 entrances 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 clearnout 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.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE College Park, Md.	STABILIZED CONSTRUCTION ENTRANCE	Standard Drawing SCE-1

SEDIMENT CONTROL NOTES

1) A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)

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	3.6 Acres
Area Disturbed	3.3 Acres
Area to be roofed or paved	NA Acres
Area to be vegetatively stabilized	2.6 Acres
Total Cut	22,400 Cu. yds.
Total Fill	5,600 Cu. yds.
Offsite waste/borrow area location:	Burleigh Manor Section 3 Area 5

8) Any sediment control practice which is disturbed by grading 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 requested 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.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas 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.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:

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 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thre 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 well 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.

Matinenance - 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.

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.

REVISION DATE	REV NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER AND DEVELOPER
RICHMOND AMERICAN

PROJECT AREA
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE
STORMWATER MANAGEMENT
3.5

SCALE AS SHOWN — DATE 4-1-88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION. SOIL EROSION AND SEDIMENT CONTROL.

James Mottelson 8/12/88
U.S. SOIL CONSERVATION SERVICE — DATE

THESE PLANS FOR SMALL POND CONSTRUCTION. SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: Robert W. Ziehm 8/12/88
HOWARD S.C.D. — DATE

PLAN NUMBER

CERTIFICATION BY THE DEVELOPER

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT. POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION".

DAVID L. CARNEY — 4/8/88 DATE

CERTIFICATION BY THE ENGINEER

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION, AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION".

Thomas J. Shafer — 1-28-88 DATE
THOMAS J. SHAFER

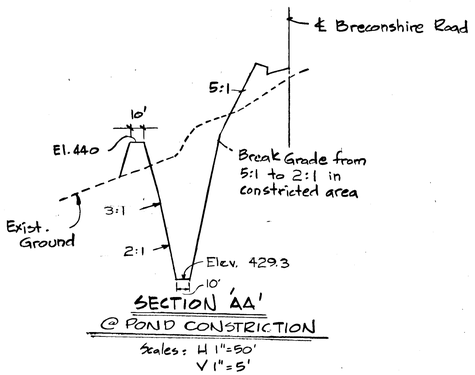
Thomas J. Shafer
THOMAS J. SHAFER
No. ENGINEER 8457

SHEET 22 OF 23 F-88-240

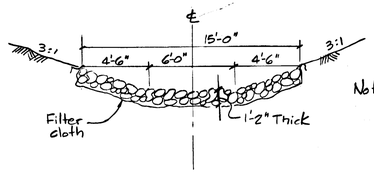
721

DAM CENTERLINE DATA

Point #	Station	Bearing (Chord)	Distance (Chord)	Radius	Arc
400	7+34.75				
410	6+24.91	N 47°31'09"E	109.843'		
412	5+39.04	N 88°31'09"E	78.727'	60.00'	85.87'
414	4+16.87	S 85°28'51"E	114.715'	100.00'	122.173'
415	3+83.24	N 59°31'09"E	33.625'		
417	2+95.71	N 28°10'29"E	83.229'	80.00'	87.530'
418	2+70.98	N 03°10'10"W	24.731'		
420	1+76.73	N 07°40'10"W	94.151'	600.00'	94.248'
421	1+32.92	N 12° 10' 10"W	43.812'		
423	0+19.47	N 13°49'50"E	109.593'	125.00'	113.447'
427	0+00	N 46°48'12"E	19.424'	80.00'	19.472'
425	1+20.15	S 83°11'48"E	109.175'	80.00'	120.154'
407	3+48.77	S 40°10'10"E	228.618'		

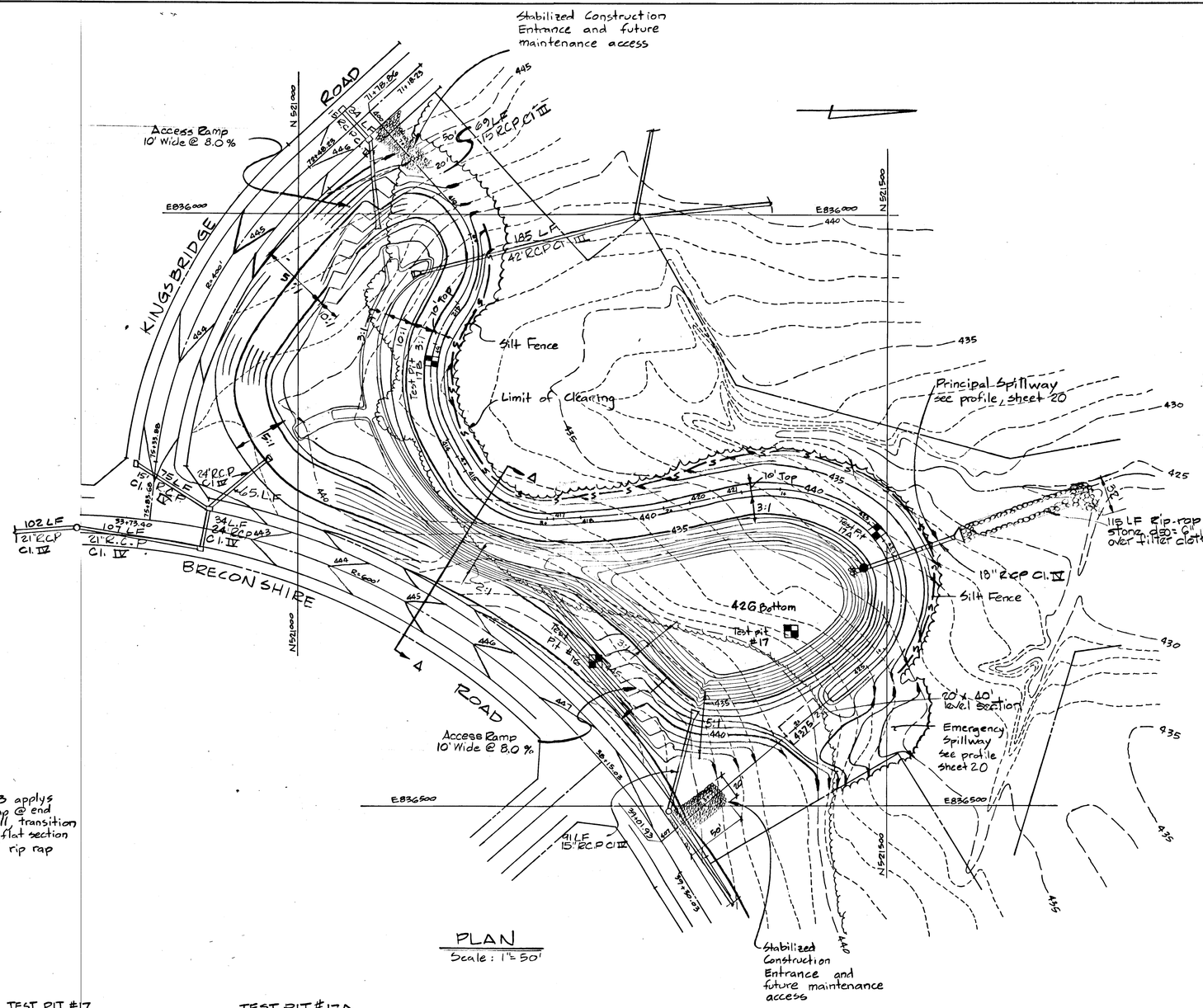


SECTION 'AA'
@ POND CONSTRICTION
Scales: H 1"=50'
V 1"=5'



Note: Section BB applys for Rip Rap @ end of headwall, transition to 32'-0" flat section @ end of rip rap

SECTION 'BB'
Scale: 1"=5'-0"



PLAN
Scale: 1"=50'

TEST PIT #17B

0.0'-0.8'	Topsoil
0.8'-3.5'	Grayish brown clayey silty sand w/trace (SC) of mica and rock fragments.
3.5'-7.5'	Green brown micaceous clayey silt (ML)
7.5'-11.0'	Orange brown micaceous silty sand w/rock fragments, trace of red clay (SM)

* No Ground Water Encountered.

TEST PIT #16

0-8"	Topsoil
8"-2'	Brown sandy (ML) clayey silt
2'-13'	Brown-white micaceous silty gravelly sand and Weathered rock
13'	Water (SM)

TEST PIT #17

0-1'	Topsoil
1'-5'	Light brown sandy silt (ML)
5'-13'	Gray weathered gravelly sandy silt, trace of clay
13'	Water (ML)

TEST PIT #17A

0.0'- 0.5'	Topsoil
0.5'- 5.0'	Grayish brown clayey silty sand with trace (SC) of mica and rock fragments
5.0'- 6.5'	Green brown micaceous clayey silt (ML)
6.5'- 11.0'	Orange brown micaceous silt (ML)

* Ground Water Encountered at 10.5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/13/88

CHIEF, BUREAU OF HIGHWAYS — DATE 9/13/88

CHIEF, BUREAU OF ENGINEERING — DATE 9-14-88

OFFICE OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE —

SEQUENCE OF CONSTRUCTION

1. Install sediment controls.
2. Clear construction area.
3. Construct embankment and spillways, grade pond according to Sediment Control Plan.
4. Seed and stabilize disturbed area.
5. Pond will provide sediment control for grading of lots and roads.
6. When entire site is stable, remove excess sediment from pond and grade according to Gradind Plan.
7. Seed disturbed areas and plant wetlands vegetation.
8. Remove sediment controls when site is stable.

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

U.S. SOIL CONSERVATION SERVICE — DATE 8/12/88

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: HOWARD S.C.D. — DATE 8/12/88

PLAN NUMBER

CERTIFICATION BY THE DEVELOPER

"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT, POND CONSTRUCTION AND EROSION AND SEDIMENT CONTROL. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS. AS ARE DEEMED NECESSARY DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION.

DAVID L. CARNEY — DATE 4/8/88

CERTIFICATION BY THE ENGINEER

"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH A RED-LINED "AS-BUILT" OF THE POND WITHIN 30-DAYS OF COMPLETION".

THOMAS J. SHAFER — DATE 1-28-88

REV. DATE	REV. NO.	REVISION DESCRIPTION

BURLEIGH MANOR
2nd ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DEVELOPMENT
ROSE/RICHMOND JOINT VENTURE

PROJECT AREA
BURLEIGH MANOR
SECTION 3 AREA 5

PROJECT TITLE
STORMWATER MANAGEMENT SEDIMENT CONTROL PLAN

SCALE: AS SHOWN — DATE 4-1-88

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND

THOMAS J. SHAFER
REGISTERED ENGINEER

721