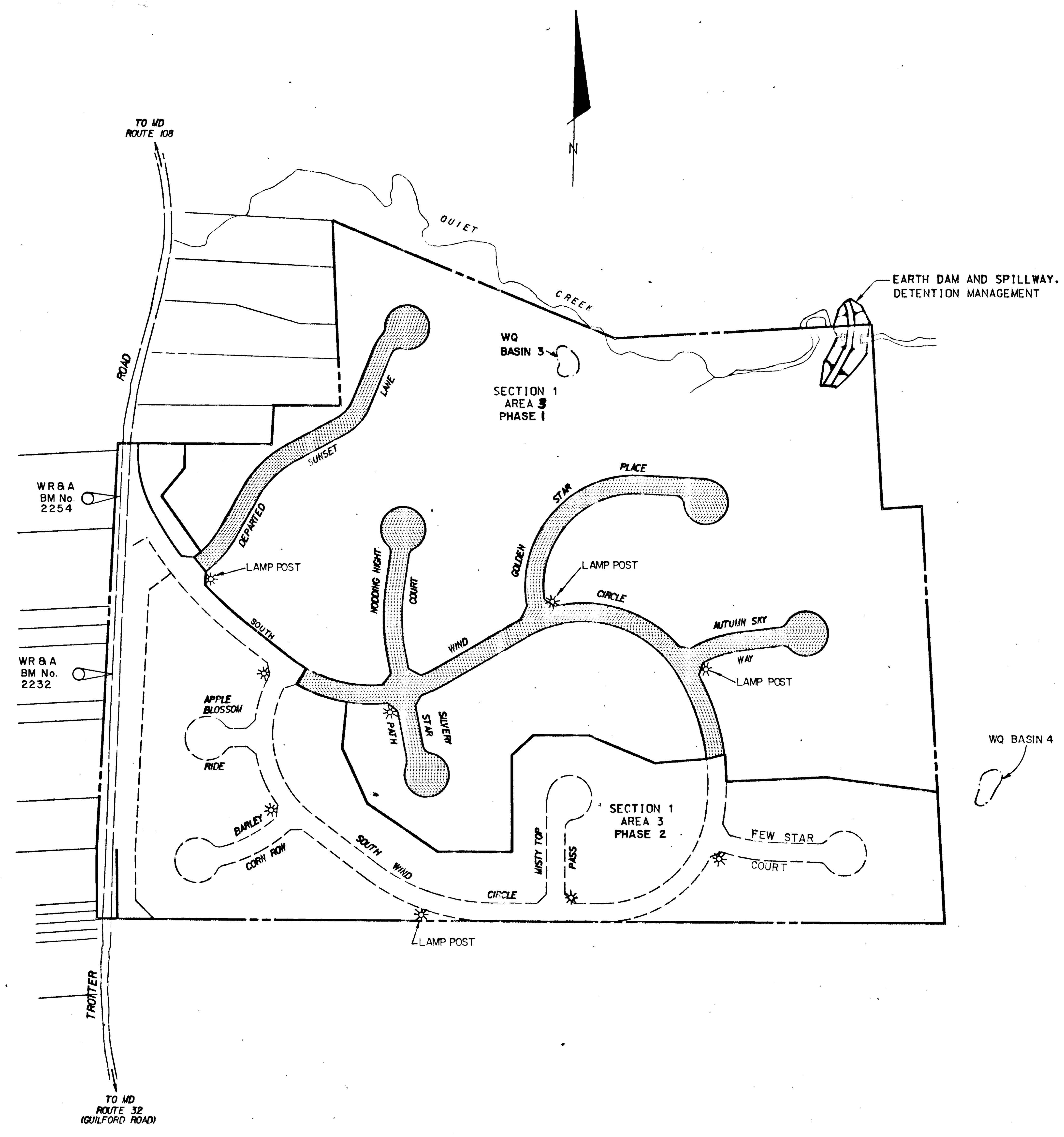
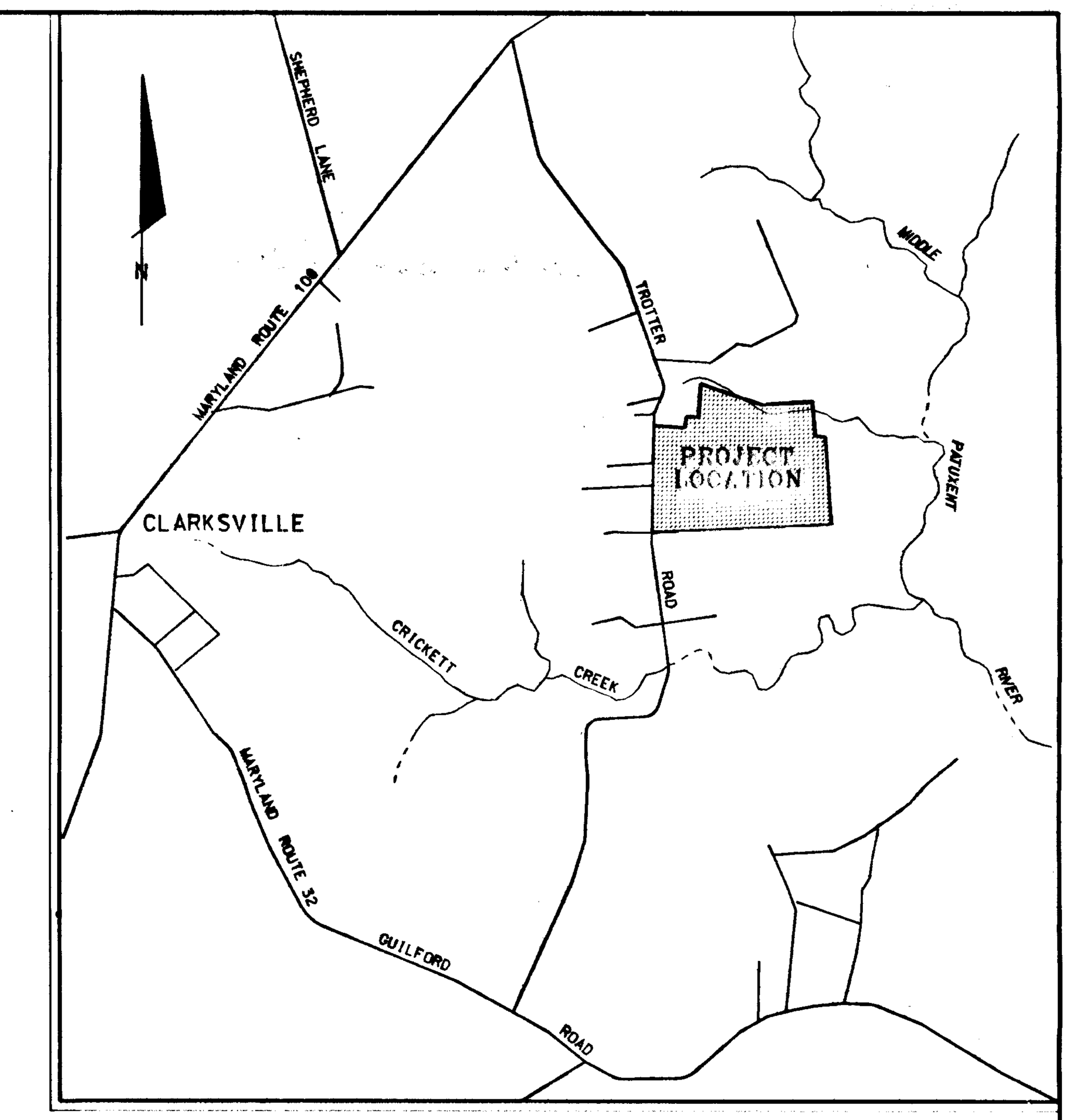
SHEET INDEX



LOCATION MAP

SCALE: 1"= 200'



VICINITY MAP

SCALE: 1"= 2000'

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH 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 STANDARD UNLESS OTHERWISE SHOWN.
4. ALL STREET CURB RETURNS SHALL HAVE A 30.0 RADII UNLESS OTHERWISE NOTED.
5. STORM DRAIN TRENCHES WITHIN ROAD RIGHT-OF-WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUEL, VOLUME IV.
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 DEPARTMENT OF INSPECTIONS AND PERMITS AT LEAST 3 DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS. TELEPHONE NO. 313-2436.
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. **UNLESS OTHERWISE NOTED.**
12. ALL SWALES AND SLOPES SHALL BE PERMANENTLY SEEDED. SEE THE SEED SPECIFICATIONS ON SHEET
13. TRAFFIC CONTROL DEVICES AND THEIR INSTALLLATION SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 1988 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. LAMP POST - 100 WATT HIGH PRESSURE SODIUM VAPOR PENDANTS MOUNTED AT 14' HEIGHT ON FIBER GLASS BRONZE POLES NO LESS THAN 3' BEHIND FACE OF CURB.
17. REINFORCING STEEL SPECIFICATIONS: FY=60,000 P.S.I.

STREET TREES

THE LOCATIONS AND TYPE 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 ACCOMODATE FIELD CONDITIONS AND BUILDERS LANDSCAPE PROGRAM. BOND RELEASE IS CONTINGENT UPON SECTION 16.131 OF THE HOWARD COUNTY SUBDIVISION REGULATIONS, AS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING.

BENCH MARKS

WR&A BM NO.M2254 -CAP AND REBAR AT WEST SIDE EDGE OF TROTTER ROAD APPROXIMATELY 175 FEET SOUTH OF EXISTING DRIVEWAY (RHODES PROPERTY) ELEV.409.00

WR&A BM NO.M2232 -CAP AND REBAR AT WEST SIDE EDGE OF TROTTER ROAD APPROXIMATELY 28 FEET FROM GAS & ELECTRIC POWER POLE NO. 170221 ELEV.430.43

DATE	NO.	REVISION
June 12, 1991	1	Removed Detention Basin 4

COLUMBIA
VILLAGE OF RIVER HILL
SECTION I AREA 3
PHASE I
ROAD CONSTRUCTION PLANS

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION

COLUMBIA, MARYLAND
5TH ELECTION DISTRICT OF
HOWARD COUNTY, MARYLAND

DATE: 4/1/91 SCALE: AS SHOWN

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION	DATE 4/22/91
CHIEF, BUREAU OF HIGHWAYS	DATE 4/19/91
CHIEF, BUREAU OF ENGINEERING	DATE 4-23-91

DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	DATE 4/23/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 SAINT PAUL STREET
BALTIMORE, MARYLAND 21218

THOMAS J. SHAFER
REGISTERED ENGINEER NO. 8457

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
COLUMBIA, MARYLAND

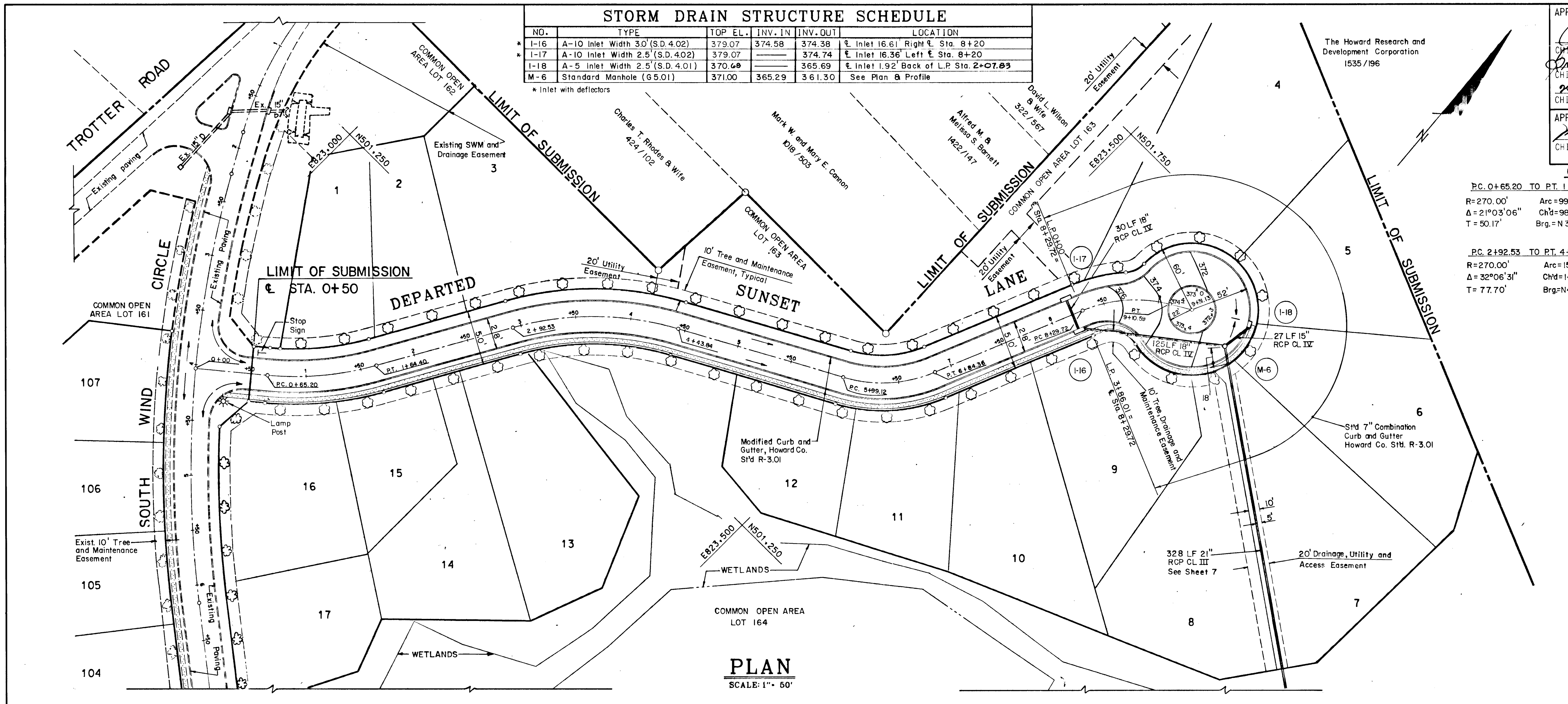
F91-98

4817

STORM DRAIN STRUCTURE SCHEDULE

	NO.	TYPE	TOP EL.	INV. IN	INV. OUT	LOCATION
*	I-16	A-10 Inlet Width 3.0' (S.D. 4.02)	379.07	374.58	374.38	℄ Inlet 16.61' Right ℄ Sta. 8+20
*	I-17	A-10 Inlet Width 2.5' (S.D. 4.02)	379.07	———	374.74	℄ Inlet 16.36' Left ℄ Sta. 8+20
	I-18	A-5 Inlet Width 2.5' (S.D. 4.01)	370.68	———	365.69	℄ Inlet 1.92' Back of L.P. Sta. 2+07.83
	M-6	Standard Manhole (G5.01)	371.00	365.29	361.30	See Plan & Profile

* Inlet with deflectors



CURVE DATA

P.C. 0+65.20 TO P.T. 1+64.40
R = 270.00' Arc = 99.20'
Δ = 21°03'06" Ch'd = 98.65'
T = 50.17' Brg. = N 39°52'44" E

P.C. 5+99.12 TO P.T. 6+84.36
R = 125.00' Arc = 85.24'
Δ = 39°04'10" Ch'd = 83.59'
T = 44.35' Brg. = N 41°55'37" E

P.C. 2+92.53 TO P.T. 4+43.84
R = 270.00' Arc = 151.31'
Δ = 32°06'31" Ch'd = 149.34'
T = 77.70' Brg. = N45°24'27" E

P.C. 8+29.72 TO P.T. 9+10.59
R = 125.00' Arc = 80.87'
Δ = 37°04'03" Ch'd = 79.47'
T = 41.91' Brg. = N40°55'33" E

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Signature	Date
CHIEF, LAND DEVELOPMENT DIVISION	4/22/91
CHIEF, BUREAU OF HIGHWAYS	4/9/91
CHIEF, BUREAU OF ENGINEERING	4-23-91

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature	Date
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	4/29/91

REV. DATE	REV. NO.	REVISION DESCRIPTION
June 12, 1991	1	Revised I-18 Location, Linear Profile

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION I AREA 3 PHASE I

PROJECT TITLE:
PLAN AND PROFILE DEPARTED SUNSET LANE

SCALE: AS SHOWN DATE: 4/1/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

PROFILE - DEPARTED SUNSET LANE

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

DESIGN SPEED = 25 MPH

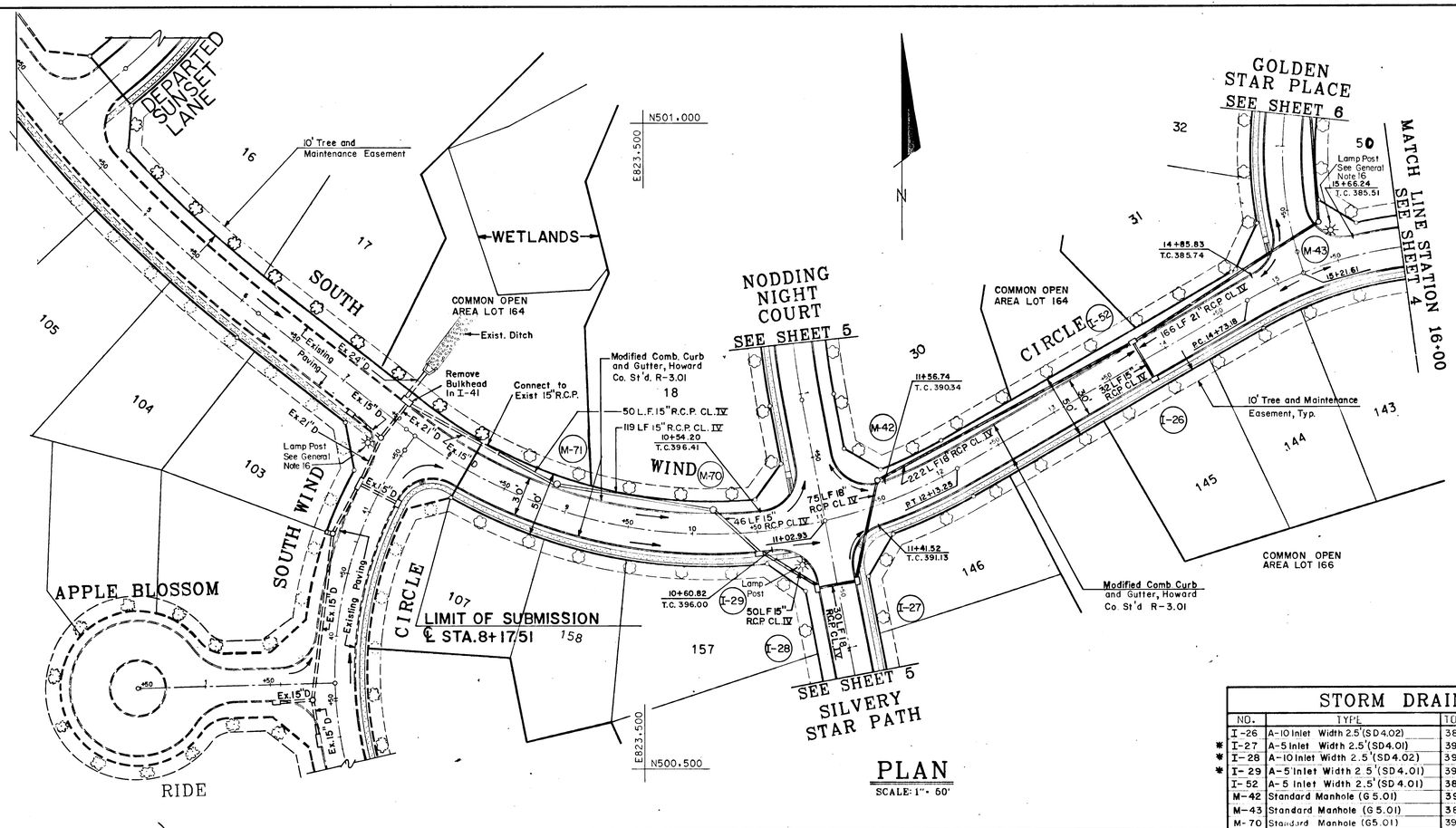
℄ ROAD STATION	COORDINATES
9+31.13 DEPARTED SUNSET LANE	N 501676.513 E 823651.143

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Alan M. Tennyson 4/22/91
CHIEF, LAND DEVELOPMENT DIVISION DATE
Granville W. Wehland 4/9/91
CHIEF, BUREAU OF HIGHWAYS DATE
4-23-91
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

4/29/91
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE



PLAN
SCALE: 1" = 50'

CURVE DATA

8+17.51 TO P.I. 11+02.93
R = 380.00' Arc = 285.42'
Δ = 43°02'07" Ch'd = 278.76'
T = 149.82' Ch'd Brg. = S 81°46'46"

PI 11+02.93 TO PI 12+13.25
R = 380.00' Arc = 110.32'
Δ = 16°38'02" Ch'd = 109.93
T = 55.55' Ch'd Brg. = N 68°23'10"E

PC 14+73.18 TO PI 15+21.61
R = 325.00 Arc = 48.43'
Δ = 8°32'17" Ch'd = 48.38'
T = 24.26' Ch'd Brg. = N 64°19'17"E

℄ ROAD STATION	COORDINATES
11+02.93 SOUTH WIND CIRCLE	N 500692.109 E 823639.550
15+21.61 SOUTH WIND CIRCLE	N 500883.251 E 824010.629

REV. DATE	REV. NO.	REVISION DESCRIPTION

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH
AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION I AREA 3 PHASE I

PROJECT TITLE:
SOUTH WIND CIRCLE
STATION 8+17.51 TO STATION 16+00

SCALE: AS SHOWN DATE: 4/1/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

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

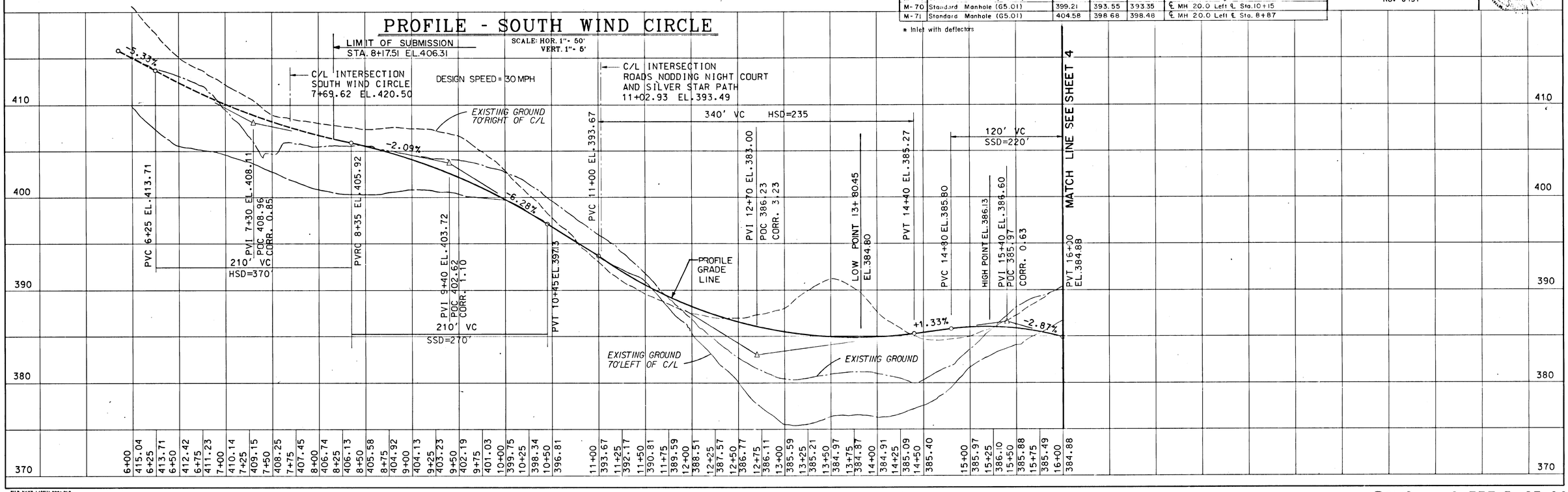
STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	TOP EL.	INV. IN	INV. OUT	LOCATION
I-26	A-10 Inlet Width 2.5'(SD4.02)	384.94	———	379.59	℄ Inlet 17.36' Right ℄ Sta. 13+80.45
* I-27	A-5 Inlet Width 2.5'(SD4.01)	394.44	389.14	388.94	℄ Inlet 16.36' Left ℄ Sta. 0+50
* I-28	A-10 Inlet Width 2.5'(SD4.02)	394.44	389.50	389.30	℄ Inlet 16.36' Right ℄ Sta. 0+50
* I-29	A-5 Inlet Width 2.5'(SD4.01)	396.95	391.58	391.38	℄ Inlet 17.36' Right ℄ Sta. 10+50
I-52	A-5 Inlet Width 2.5'(SD4.01)	384.94	379.42	379.17	℄ Inlet 17.36' Left ℄ Sta. 13+80.45
M-42	Standard Manhole (G5.01)	390.74	385.03	384.83	℄ MH 20.0 Left ℄ Sta. 11+52
M-43	Standard Manhole (G5.01)	385.05	376.40	376.20	℄ MH 22.0 Right ℄ Sta. 0+36
M-70	Standard Manhole (G5.01)	399.21	393.55	393.35	℄ MH 20.0 Left ℄ Sta. 10+15
M-71	Standard Manhole (G5.01)	404.58	398.68	398.48	℄ MH 20.0 Left ℄ Sta. 8+87

* Inlet with deflectors

PROFILE - SOUTH WIND CIRCLE

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



FILE NAME \40611\RDSA.PLF

1457

F91-98

CURVE DATA

P.I. 15+21.61 TO P.C.C. 19+79.02

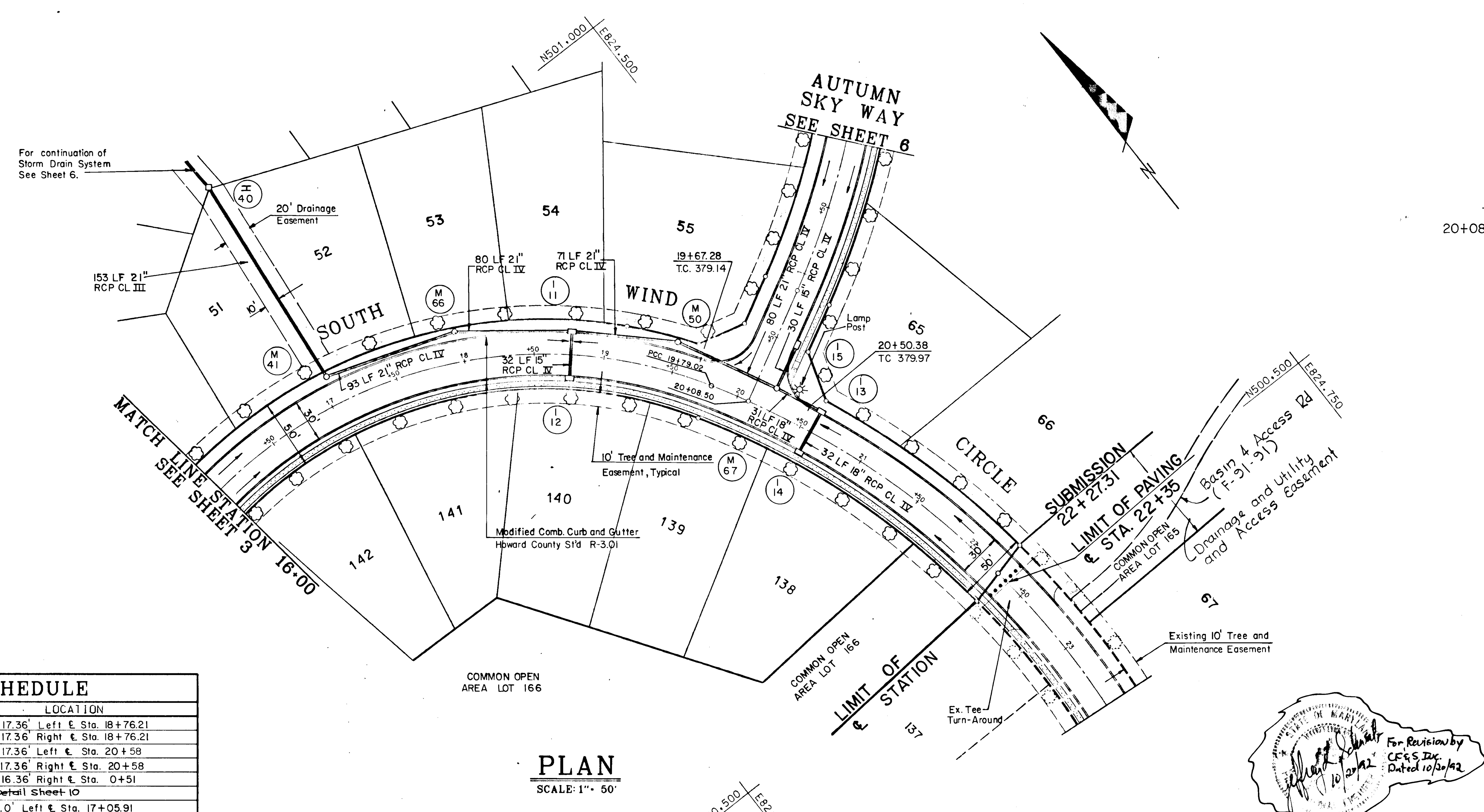
R = 325.00' ARC = 457.41'
Δ = 80°38'07" Ch'd = 420.57'
T = 275.79' Brg. = S 71°04'32"E

P.C.C. 19+79.02 TO P.I. 20+08.50

R = 600.00' ARC = 29.48'
Δ = 02°48'54" Ch'd = 29.48'
T = 14.74' Brg. = S 29°21'01"E

P.I. 20+08.50 TO 22+27.31

R = 600.00' ARC = 218.81'
Δ = 20°53'41" Ch'd = 217.60'
T = 110.63' Brg. = S 17°29'43"E



PLAN
SCALE: 1" = 50'

℄ ROAD STATION	COORDINATES
20+08.50 SOUTH WIND CIRCLE	N 500763.878 E 824397.597

STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	TOP EL.	INV. IN	INV. OUT	LOCATION
I-11	A-5 Inlet Width 2.5' (S.D. 4.01)	378.69	372.41	342.21	℄ Inlet 17.36' Left ℄ Sta. 18+76.21
I-12	A-5 Inlet Width 2.5' (S.D. 4.01)	378.69	———	374.00	℄ Inlet 17.36' Right ℄ Sta. 18+76.21
I-13	A-5 Inlet Width 2.5' (S.D. 4.01)	380.32	375.44	375.24	℄ Inlet 17.36' Left ℄ Sta. 20+58
* I-14	A-10 Inlet Width 2.5' (S.D. 4.02)	380.32	———	375.61	℄ Inlet 17.36' Right ℄ Sta. 20+58
* I-15	A-5 Inlet Width 2.5' (S.D. 4.01)	380.51	———	376.07	℄ Inlet 16.36' Right ℄ Sta. 0+51
I-40	Mod. Yard Inlet (S.D. 4.14)	367.00	361.60	361.40	See Detail Sheet 10
M-41	Standard Manhole (G 5.01)	381.95	370.40	370.20	℄ MH 21.0' Left ℄ Sta. 17+05.91
M-66	Standard Manhole (G 5.01)	379.51	371.79	371.59	℄ MH 22.0' Left ℄ Sta. 17+95
M-50	Standard Manhole (G 5.01)	379.22	373.03	372.83	℄ MH 22.0' Left ℄ Sta. 19+48
M-67	Standard Manhole (G 5.01)	379.97	373.65	373.40	℄ MH 17.0' Left ℄ Sta. 20+23

* Inlet with deflectors

PROFILE - SOUTH WIND CIRCLE

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Signature	Title	Date
Alan M. Tenner	CHIEF, LAND DEVELOPMENT DIVISION	4/22/91
Granville W. Wehland	CHIEF, BUREAU OF HIGHWAYS	4/9/91
[signature]	CHIEF, BUREAU OF ENGINEERING	4-23-91

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature	Title	Date
[signature]	CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	4/29/91

REV. DATE	REV. NO.	REVISION DESCRIPTION
10-20-92	2	Rev. M-40 to Inlet (I-40) by CF&S Inc.
June 12, 1991	1	Revised M-40 in Structure Schedule

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION I AREA 3 PHASE I

PROJECT TITLE:
PLAN AND PROFILE
SOUTH WIND CIRCLE
STATION 16+00 TO STATION 22+27.31

SCALE: AS SHOWN DATE: 4/1/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

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

FILE NAME \40011\ SD4A.PLF

1487

STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	TOP EL.	INV. IN	INV. OUT	LOCATION
I-19	A-10 Inlet Width 2.5'(S.D. 4.02)	379.00	———	371.00	℄ Inlet 1.92' back of L.P. Sta 2+30.11

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

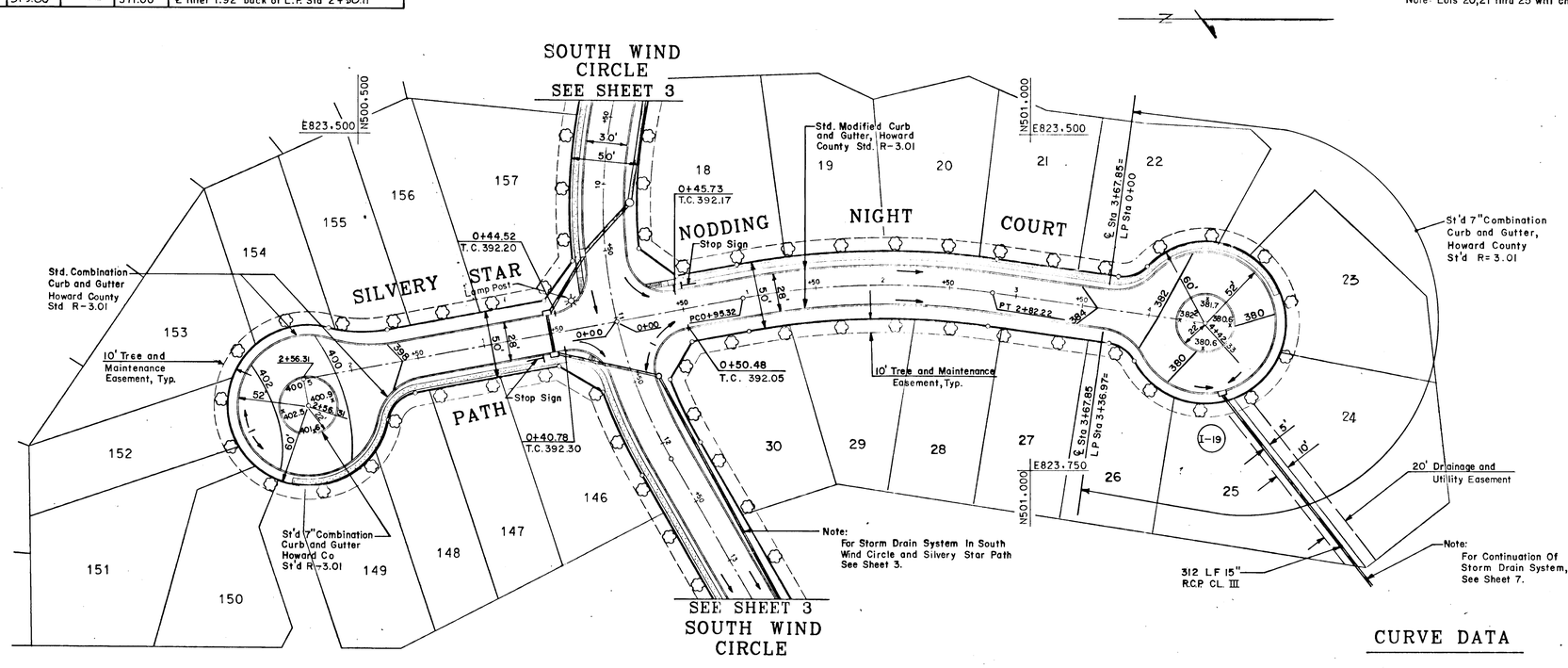
CHIEF, LAND DEVELOPMENT DIVISION — DATE 4/29/91

CHIEF, BUREAU OF HIGHWAYS — DATE 4/9/91

CHIEF, BUREAU OF ENGINEERING — DATE 4.23.91

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 4/23/91



Note: Lots 20,21 thru 25 will change

℄ ROAD STATION	COORDINATES
2+56.31 SILVERY STAR PATH	N 500459.877 E 823683.252
4+42.33 NODDING NIGHT COURT	N 501130.267 E 823639.765

CURVE DATA

PC 0+95.32 TO PT 2+82.22

R=575.00'
Δ=18°37'26"
T=94.28'
Arc=186.90'
Ch'd=186.08'
Ch'd Brg=N 01°20'44"W

PLAN

SCALE: 1"= 50'

REV. DATE	REV. NO.	REVISION DESCRIPTION
June 12, 1991	1	Revised I-19 Location, Linear Profile
		Revised Lot Lines 146/147 and 156/157

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION 1 AREA 3 PHASE I

PROJECT TITLE:
PLAN AND PROFILE
NODDING NIGHT COURT AND
SILVERY STAR PATH

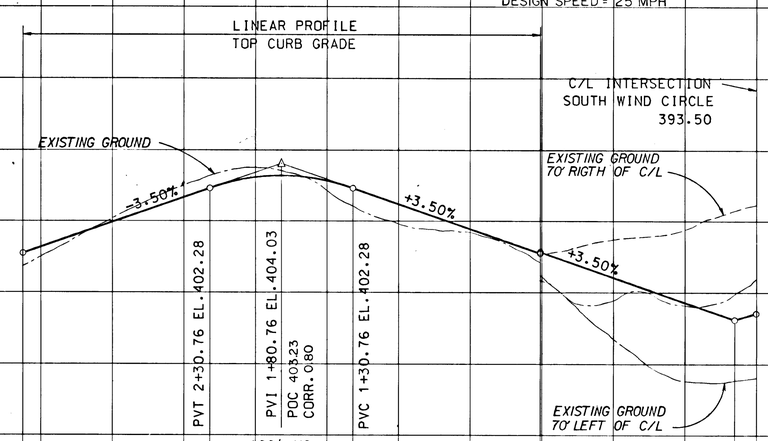
SCALE: AS SHOWN DATE: 4/1/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

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

PROFILE - SILVERY STAR PATH

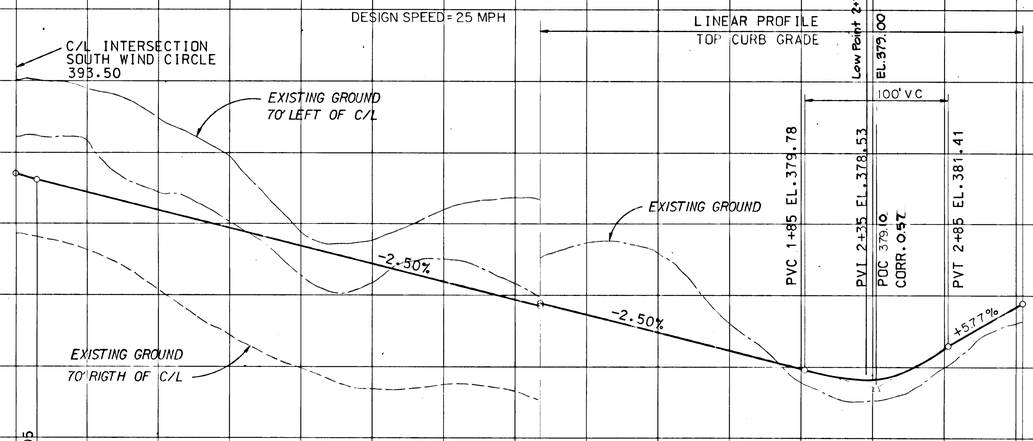
SCALE: HOR. 1"= 50'
VERT. 1"= 5'
DESIGN SPEED = 25 MPH



1+50.82 PGL EL. 397.80
3+61.51 LP EL. 397.70
3+50 398.10
3+25 398.98
3+00 399.85
2+75 400.73
2+50 401.61
2+25 402.47
2+00 403.02
1+75 403.14
1+50 402.82
1+25 402.08
1+00 401.20
0+75 400.33
0+50 399.45
0+25 398.58
0+00 LP EL. 397.70
1+50.82 PGL EL. 397.80
1+00 396.02
0+50 394.27
0+00 393.50

PROFILE - NODDING NIGHT COURT

SCALE: HOR. 1"= 50'
VERT. 1"= 5'
DESIGN SPEED = 25 MPH



0+00 393.50
0+50 392.18
1+00 390.93
1+50 389.68
2+00 388.43
2+50 387.18
3+00 385.93
3+50 384.68
3+67.85 PGL EL. 384.23
0+00 LP EL. 384.41
0+25 383.78
0+50 383.16
0+75 382.53
1+00 381.91
1+25 381.28
1+50 380.66
1+75 380.03
2+00 379.49
2+25 379.10
2+50 379.80
2+75 380.88
3+00 382.28
3+00 393.72
3+36.97 LP EL. 384.41
3+67.85 PGL EL. 384.23

0+15 393.05
0+00 393.05

1480

STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	TOP EL.	INV. IN	INV. OUT	LOCATION
I-50	A-5 Inlet Width 3.0' (S.D. 4.01)	381.48	373.55	373.30	℄ Inlet 16.61' Right ℄ Sta. 1+50
*I-51	A-5 Inlet Width 3.0' (S.D. 4.01)	376.11	367.50	365.70	℄ Inlet 16.61' Right ℄ Sta. 2+70
I-66	A-10 Inlet Width 2.5' (S.D. 4.02)	356.65	—	351.96	℄ Inlet 1.92' Back of L.P. Sta. 1+10
M-45	Special Manhole (See Sht 9 of 20)	364.01	350.60	350.17	℄ MH 18.0' Right ℄ Sta. 4+60.83
M-52	Special Manhole (See Sht 9 of 20)	372.63	349.46	348.96	℄ MH 16.77' Left ℄ Sta. 3+23.89
M-53	Standard Manhole (G 5.02)	357.00	345.10	344.90	See Plan & Profile
M-65	Standard Manhole (G 5.01)	357.80	351.72	351.52	See Plan & Profile

* Inlet with deflectors

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 4/22/91

CHIEF, BUREAU OF HIGHWAYS — DATE 4/9/91

CHIEF, BUREAU OF ENGINEERING — DATE 4-23-91

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 4/23/91

℄ ROAD STATION	COORDINATES
6+26.96 GOLDEN STAR PLACE	N 501239.110 E 824368.203
3+18.63 AUTUMN SKY WAY	N 500902.000 E 824683.500

N501,000 E825,000

Note: For Storm Drain System in Common Open Area Lot 164, See Sheet 7.

N501,250 E823,750

N501,000 E823,750

Std Modified Comb. Curb and Gutter, Howard Co. Std R-3.01.

Std 7" Combination Curb and Gutter, Howard Co. Std R-3.01

Std Modified Curb and Gutter Howard Co. Std R-3.01

Std 7" Combination Curb and Gutter, Howard Co. Std R3.01

10' Tree and Maintenance Easement, Typical

10' Tree, Drainage and Maintenance Easement

10' Tree and Maintenance Easement, Typical

20' Drainage Easement

10' Drainage Easement

Stop Sign

Lamp Post See General Note 16

Note: For Storm Drain System in South Wind Circle, See Sheets 3 and 4.

191 LF 36" RCP CL III

169 LF 24" RCP CL IV

33 LF 24" RCP CL IV

60 LF 24" RCP CL IV

146 LF 21" RCP CL III

108 LF 24" RCP CL IV

101 LF 21" RCP CL IV

0+51.54 TC 384.37

0+35.94 TC 384.87

0+43.33 TC 380.00

0+43.33 TC 380.00

M-7 M-53 M-52 M-45 M-65 I-66 I-51 I-40 I-50 M-43

GOLDEN STAR PLACE

SOUTH WIND CIRCLE

AUTUMN SKY WAY

PLAN

SCALE: 1" = 50'

SEE SHEET 4

SEE SHEET 4

CURVE DATA

PC 0+16.66 TO PCC 5+41.96
R= 275.00' Arc= 525.30'
Δ= 109°26'44" Ch'd = 449.00'
T= 388.72' Brg. = N 38°18'28"E

PCC 5+41.96 TO 6+26.96
R= 450.00' Arc = 85.00'
Δ= 10°49'21" Ch'd = 84.87'
T= 42.63' Brg.= S 81°33'29" E

PC 0+86.68 TO PT 2+08.58
R= 550.00' Arc = 121.91'
Δ= 12°42'00" Ch'd = 121.66'
T= 61.21' Brg.= N 55°42'26"E

For Recordation CF&S, Inc. dated 10/8/92 only

REV. DATE	REV. NO.	REVISION DESCRIPTION
10-20-92	1	Rev. M-40 to I-40 by CF&S, Inc.

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION I AREA 3 PHASE I

PROJECT TITLE:
PLAN AND PROFILE
GOLDEN STAR PLACE AND AUTUMN SKY WAY

SCALE: AS SHOWN DATE: 4/1/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

PROFILE - GOLDEN STAR PLACE

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

EXISTING GROUND 70' RIGHT OF C/L

EXISTING GROUND 70' LEFT OF C/L

0+15 EL. 385.65 -3.21% PVC 1+60 EL. 381.00 PVI 2+25 EL. 378.91 POC 378.39 CORR. 0.52 130' VC SSD = 275' PVT 2+90 EL. 374.74 -6.42% PVC 4+25 EL. 366.07 100' VC HSD = 360' PVI 4+75 EL. 362.86 POC 363.13 CORR. 0.27 PVT 5+25 EL. 360.71 -4.29% PGL EL. 359.75 0+00 LP EL. 359.93 PVC 0+35 EL. 358.43 PVI 0+85 EL. 356.28 POC 356.95 CORR. 0.67 1+10 LOW POINT 356.65 PVT 1+35 EL. 356.83 LINEAR PROFILE TOP CURB GRADE 100' VC +1.09% PVC 2+96.65 EL. 358.59 EXISTING GROUND PVI 3+21.65 EL. 358.86 POC 359.26 CORR. 0.40 60' VC +3.57% PVT 3+46.65 EL. 359.93 5+47.46 PGL EL. 359.75

PROFILE - AUTUMN SKY WAY

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

EXISTING GROUND 70' RIGHT OF C/L

EXISTING GROUND 70' LEFT OF C/L

0+15 EL. 379.23 +3.11% PGL 2+44.15 EL. 386.35 LP 0+00 EL. 386.25 PVC 1+00 EL. 389.35 LINEAR PROFILE TOP CURB GRADE EXISTING GROUND HIGH POINT 1+57 EL. 390.24 PVI 1+50 EL. 390.91 POC 390.23 CORR. 0.68 100' VC PVT 2+00 EL. 389.74 -2.33% PVC 2+56.97 EL. 388.42 80' VC PVI 2+96.97 EL. 387.49 POC 387.39 CORR. 0.10 -3.11% PVT PL 3+36.97 EL. 386.25 PGL 2+44.15 EL. 386.35

1487

F-91-98 SHEET 6 OF 20

STORM DRAIN STRUCTURE SCHEDULE

NO.	TYPE	TOP E.L.	INV. IN	INV. OUT	LOCATION
* M-5	Standard Manhole (G 5.05)	353.60	343.69	343.49	See Plan & Profile, See detail this sheet
M-7	Standard Manhole (G 5.02)	356.40	344.55	344.15	See Plan & Profile
S-2	Type "O" Headwall (S.D. 5.41)	345.25	342.00	342.00	See Plan & Profile, See Sheet 20 of 20
S-12	Type "O" Headwall (S.D. 5.41)	350.90	346.13	346.13	See Plan & Profile

* SEE PLAN OF MANHOLE THIS SHEET

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

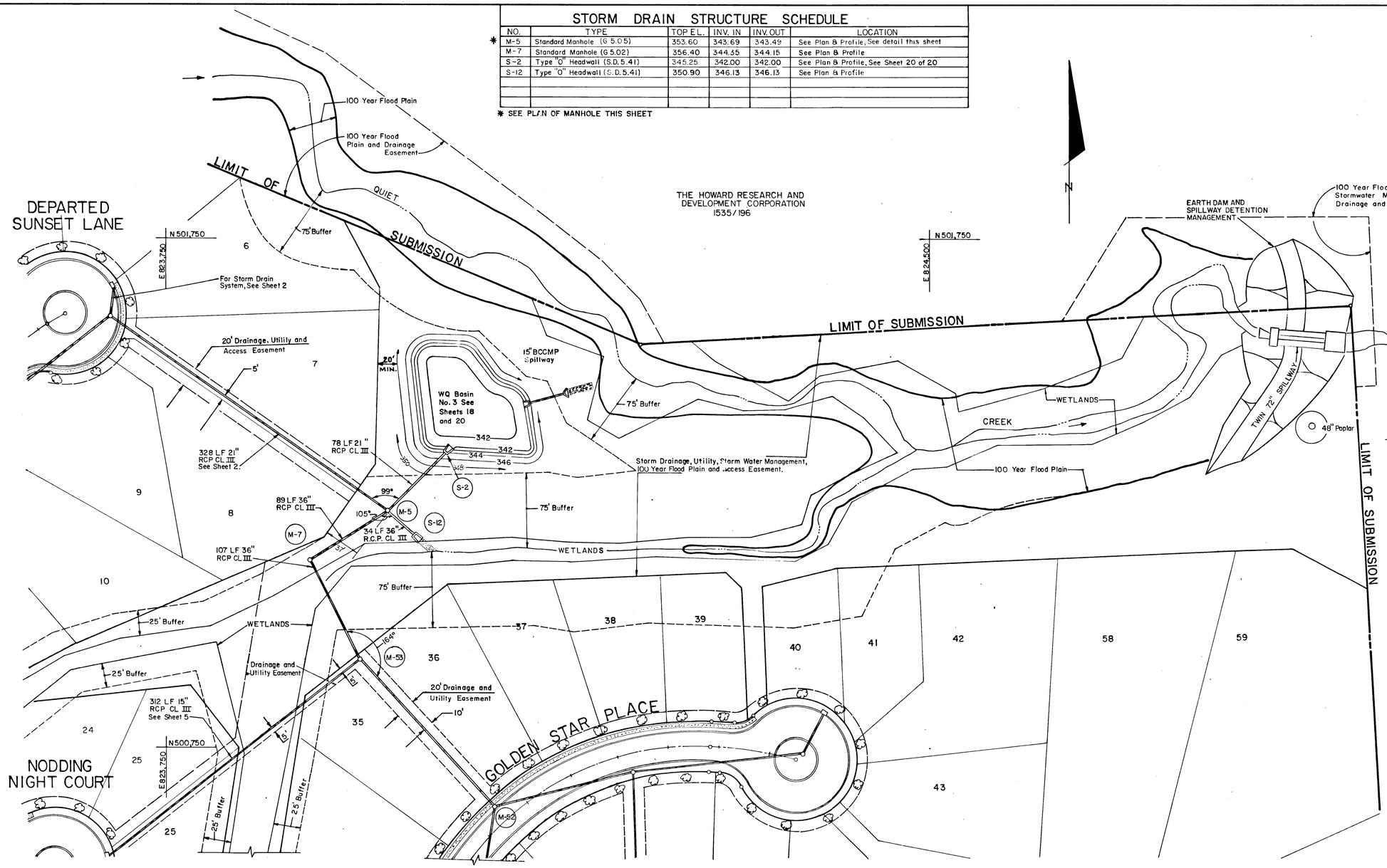
CHIEF, LAND DEVELOPMENT DIVISION — DATE 4/22/91

CHIEF, BUREAU OF HIGHWAYS — DATE 4/9/91

CHIEF, BUREAU OF ENGINEERING — DATE 4-22-91

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 4/23/91

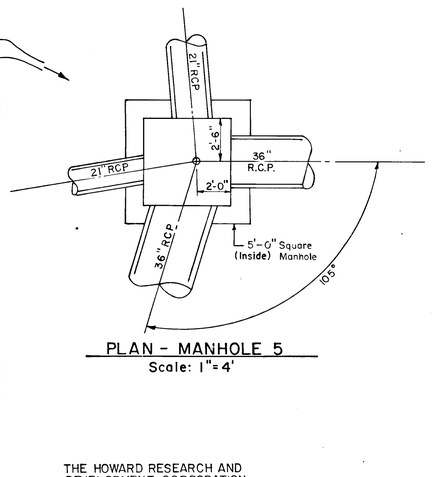


Note: For storm drain system in Nodding Night Court, see sheet 5.

Note: Lots 24 and 25 will change

Note: For storm drain system in Golden Star Place, see sheet 6.

PLAN
SCALE: 1" = 50'



PLAN - MANHOLE 5
Scale: 1" = 4'

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION 1535/196

REV. DATE	REV. NO.	REVISION DESCRIPTION

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION 1 AREA 3 PHASE 1

PROJECT TITLE:
PLAN
COMMON OPEN AREA LOT 164

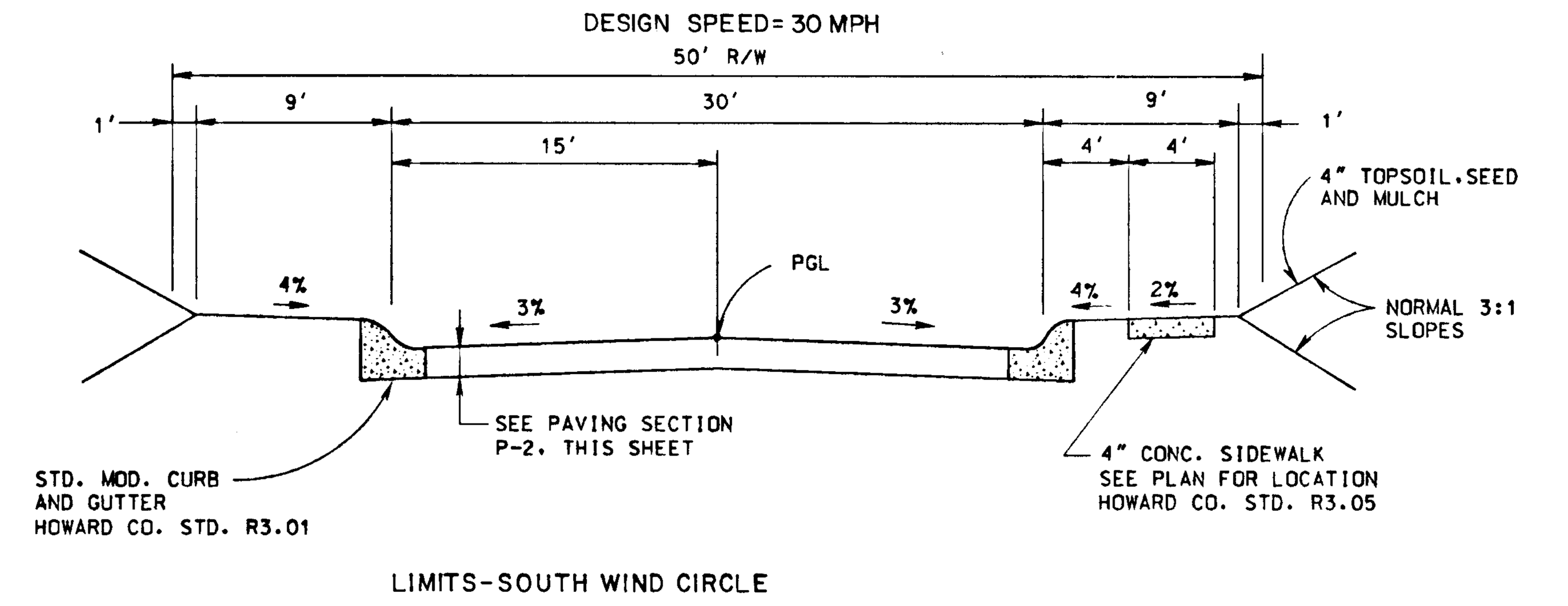
SCALE: AS SHOWN DATE: 4/1/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

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

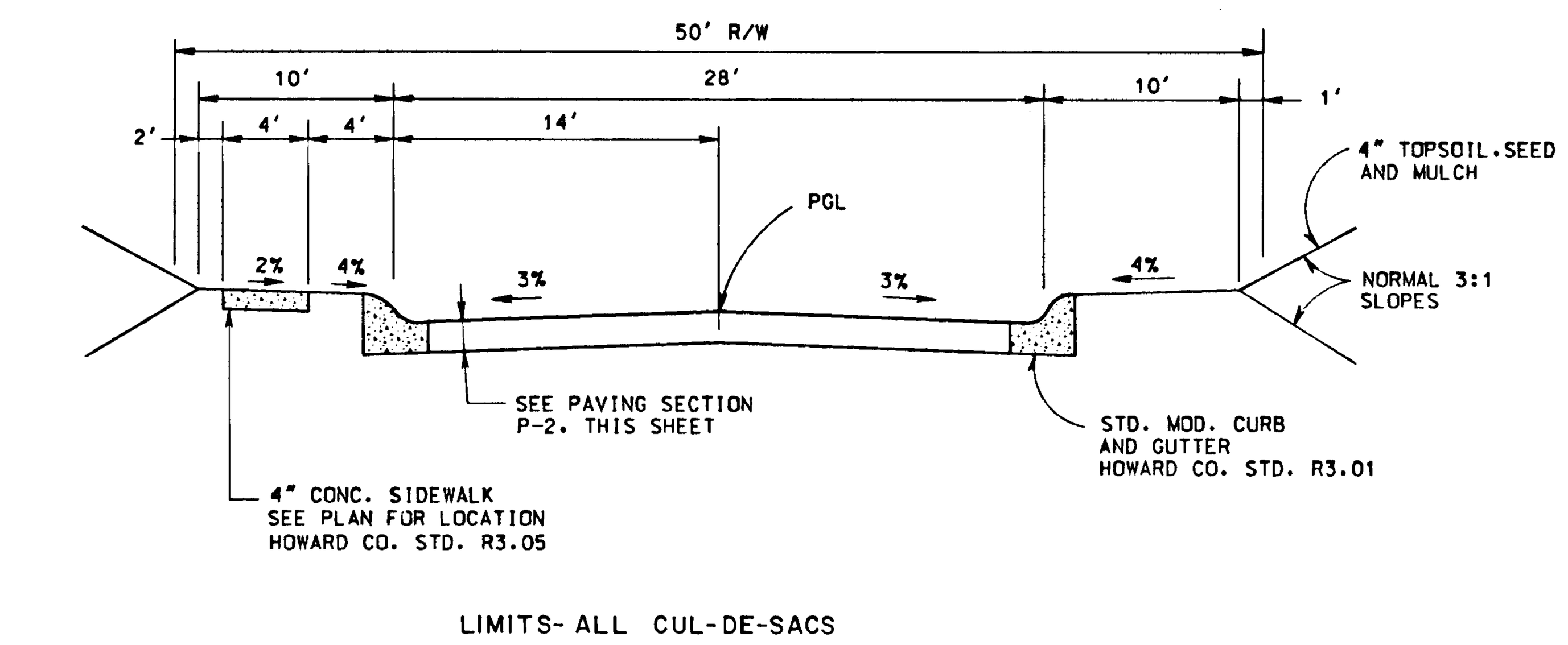
F91.98 SHEET 7 OF 20

14187



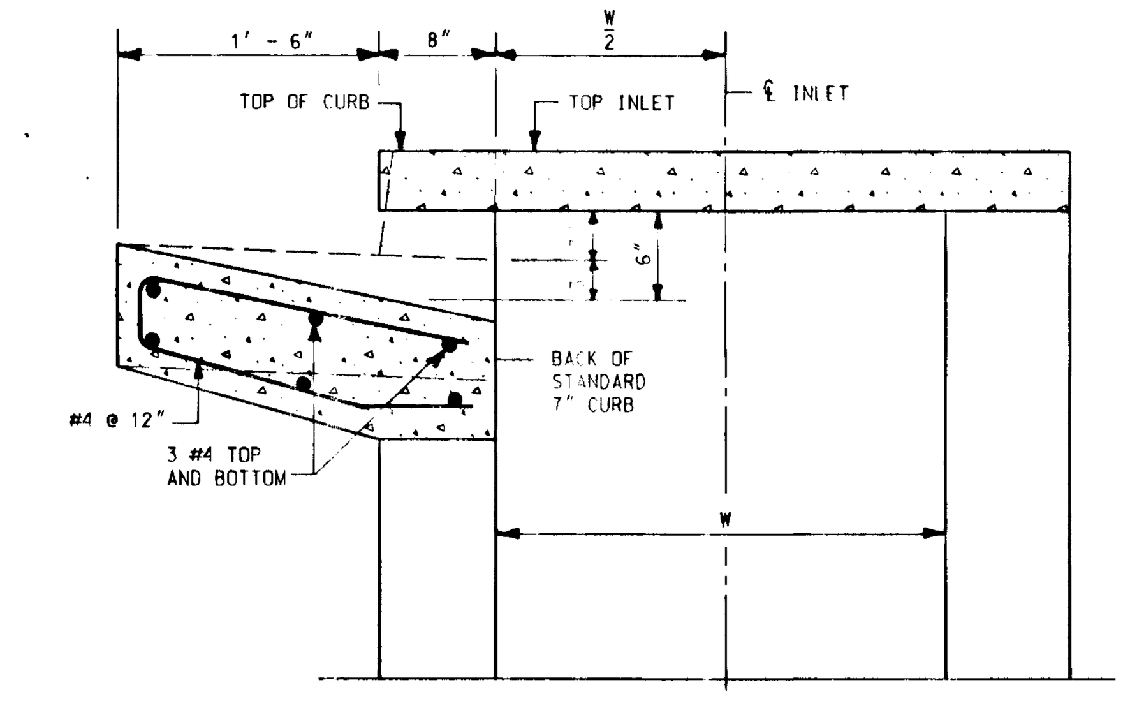
TYPICAL SECTION 30' ROADWAY-50' R/W

NO SCALE



TYPICAL SECTION 28' ROADWAY-50' R/W

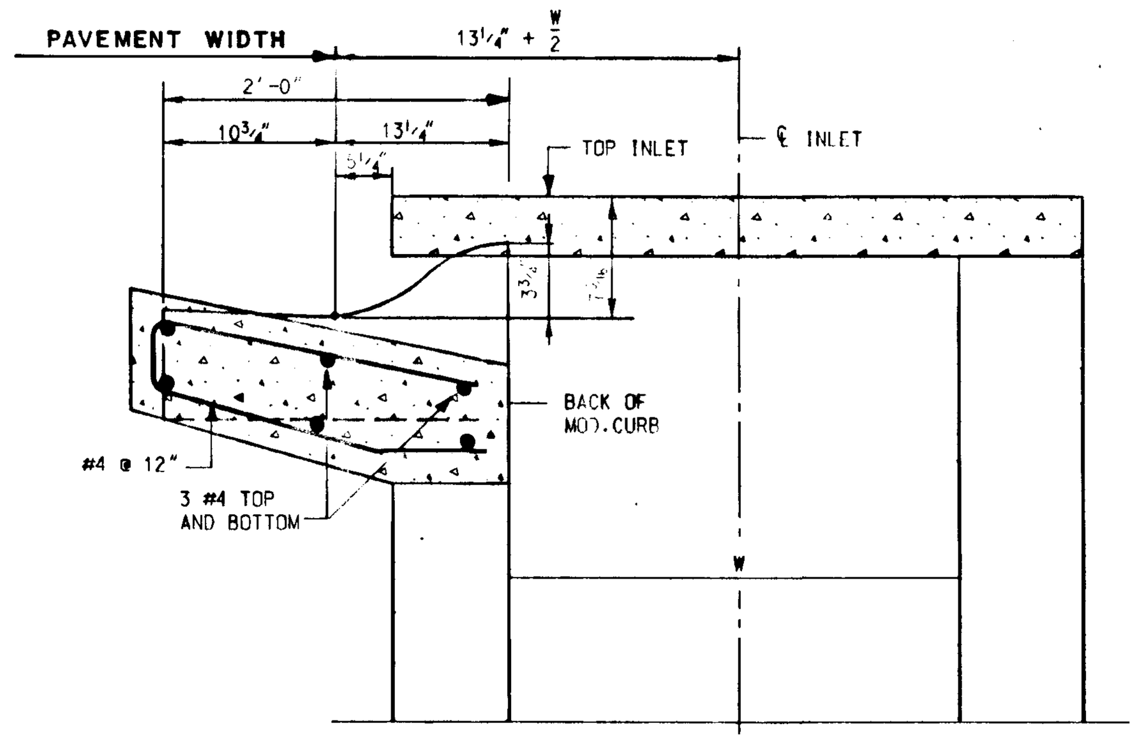
NO SCALE



SECTION "A"-"A"

"A" INLET - STANDARD CURB

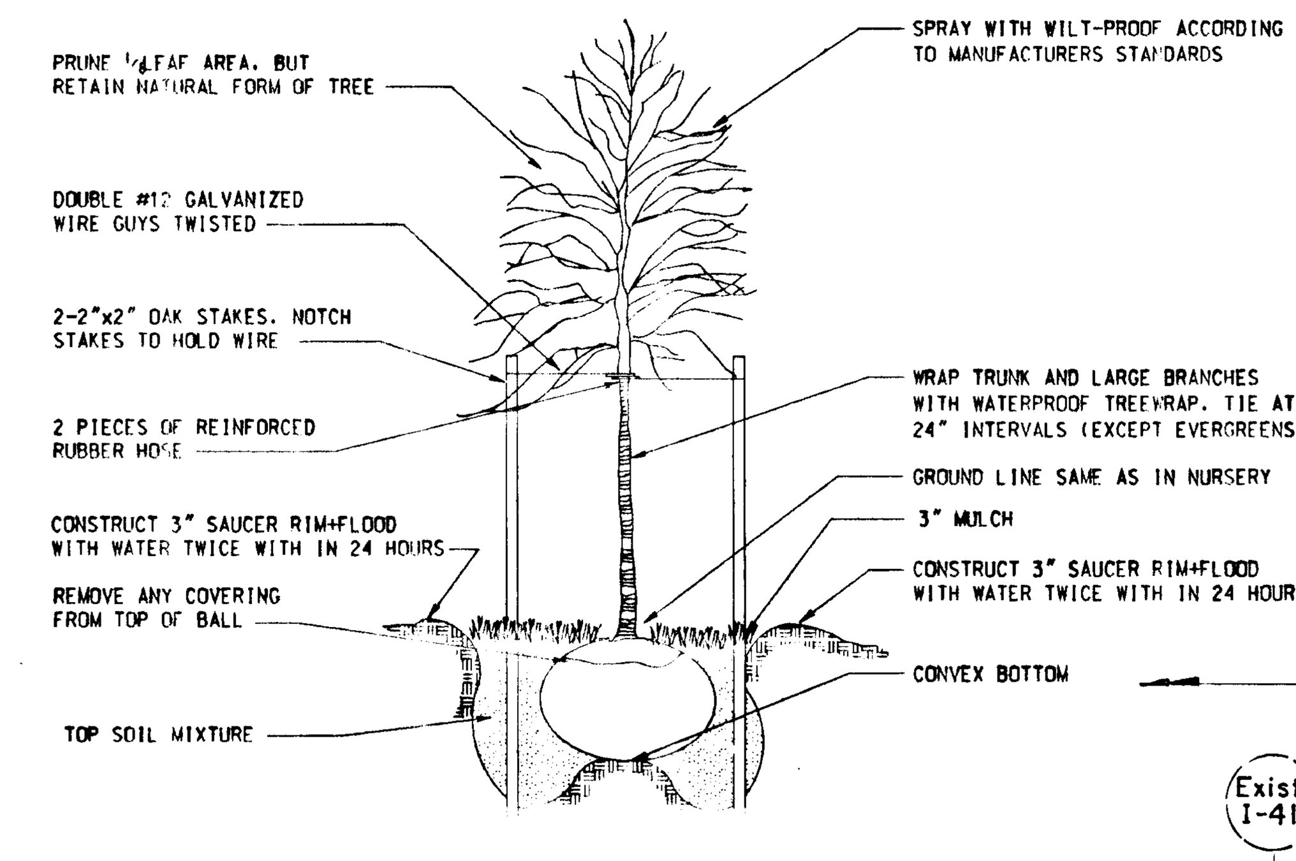
NO SCALE



SECTION "B"-"B"

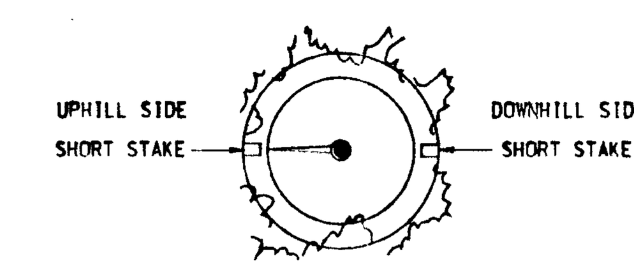
"A" INLET MODIFIED CURB

NO SCALE

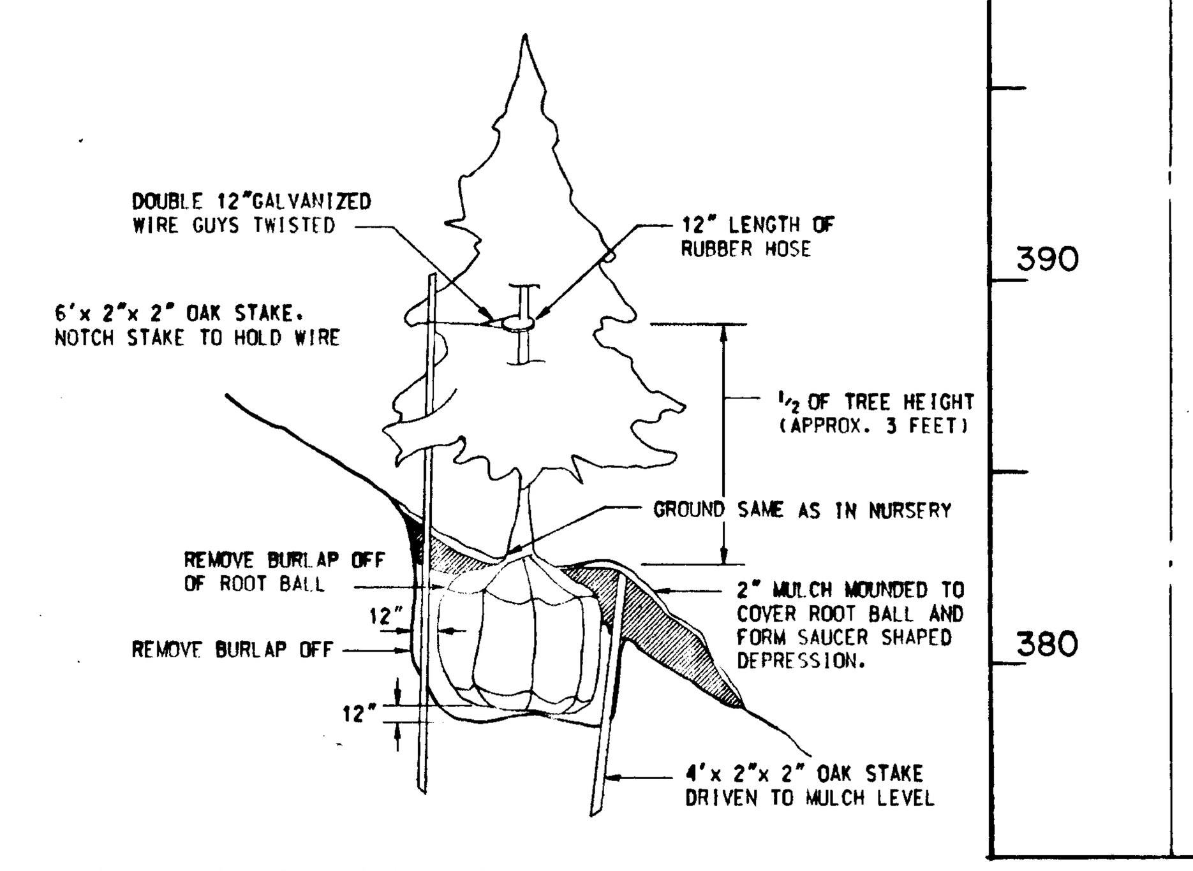


TREE PLANTING DETAIL

NO SCALE



PLAN VIEW

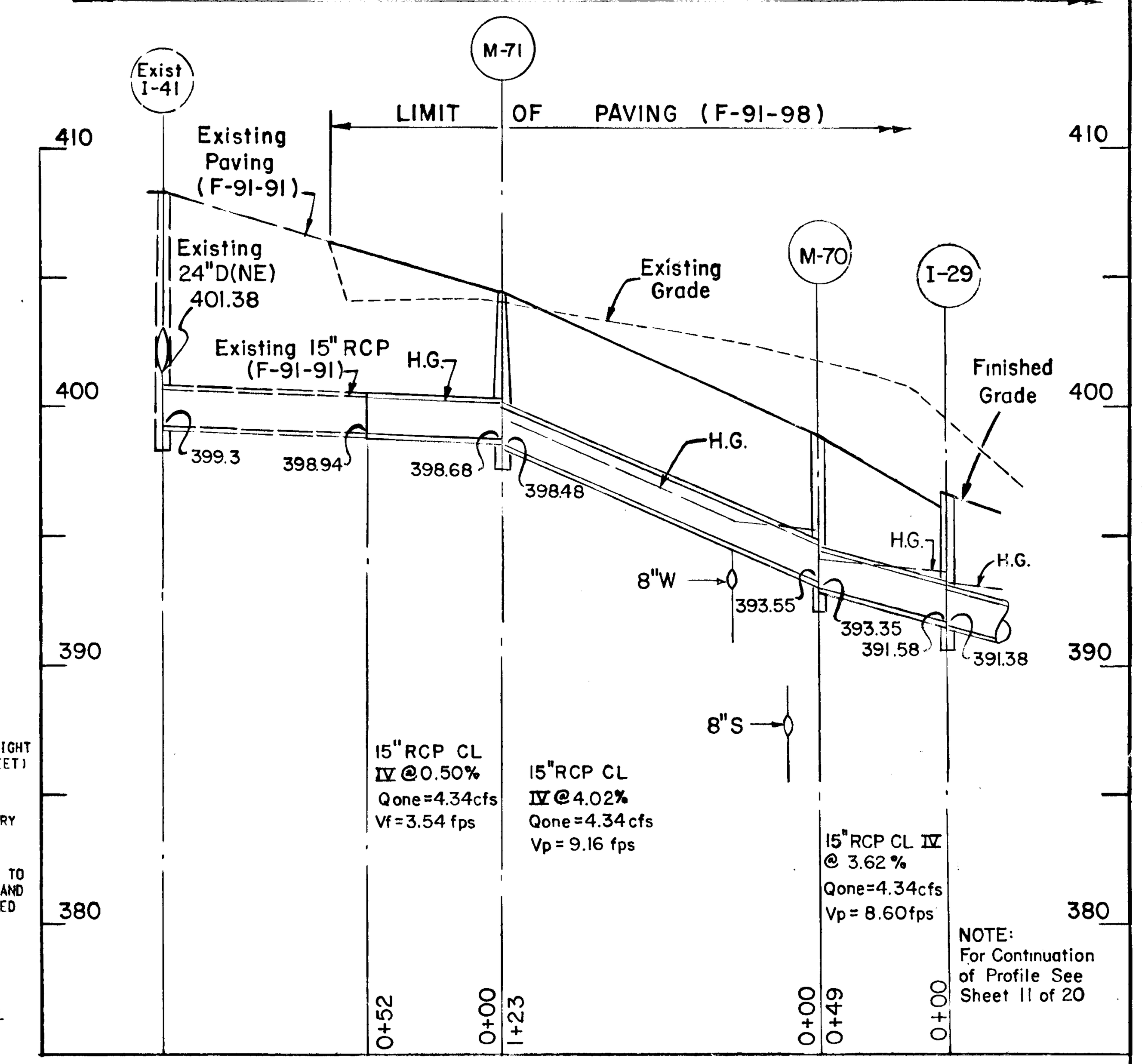


PLANTING DETAIL FOR STEEP SLOPE

NO SCALE

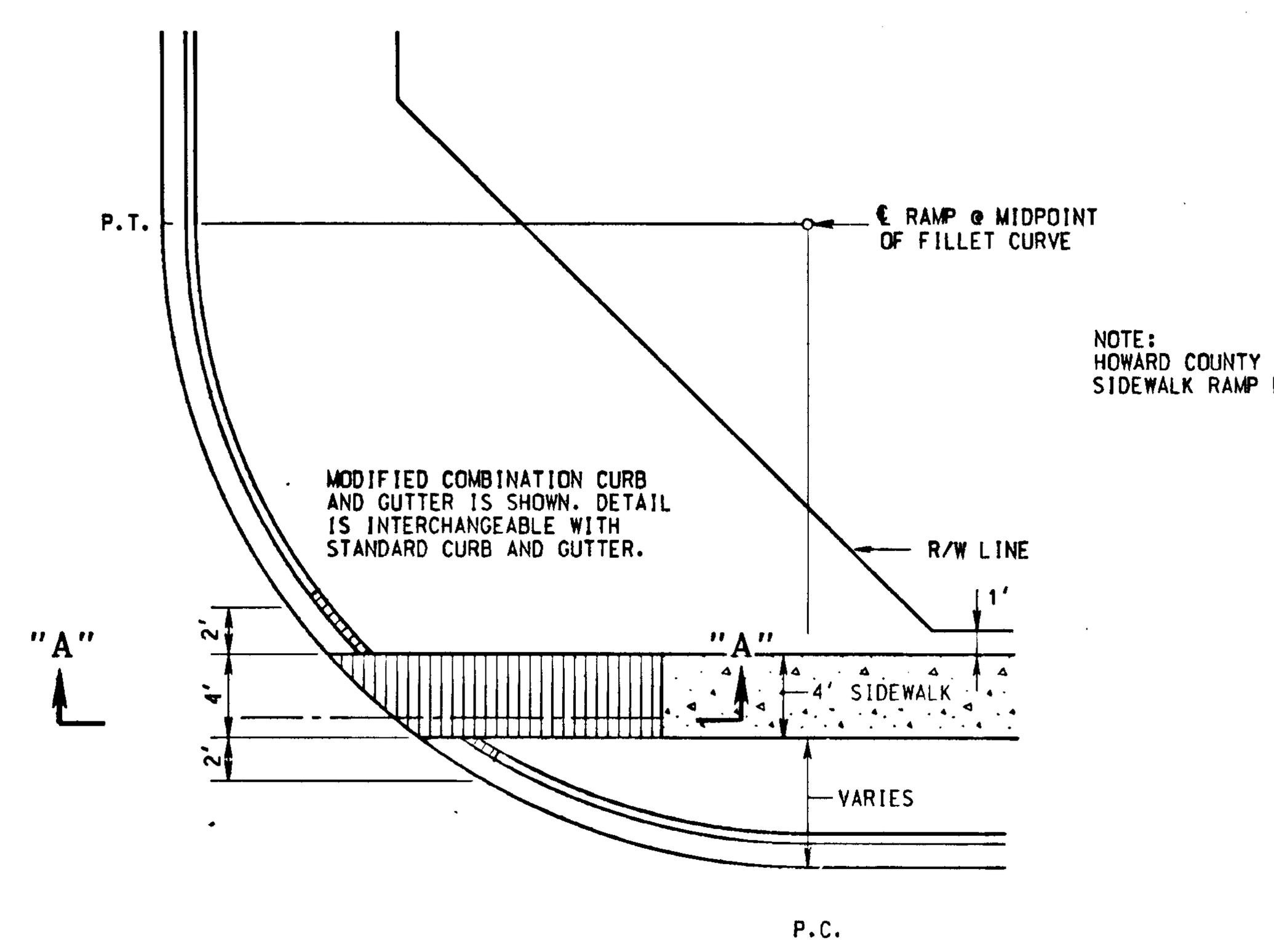
QUANTITY OF TREES	COMMON NAME	BOTANICAL NAME	HEIGHT
205	PIN OAK	QUERCUS PALUSTRIS	10'

SOUTH WIND CIRCLE



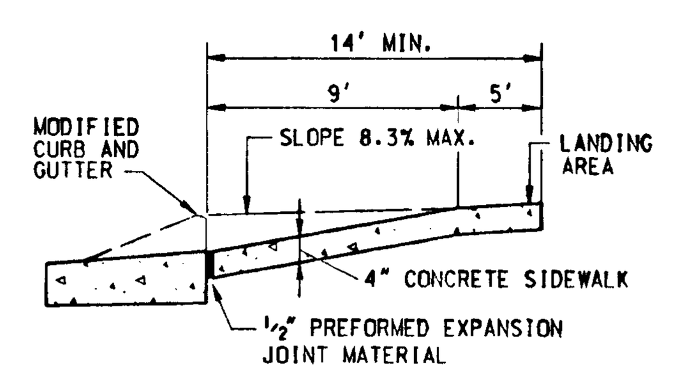
STORM DRAIN PROFILE

SCALE : HOR 1"=50', VER 1"=5'



PLAN

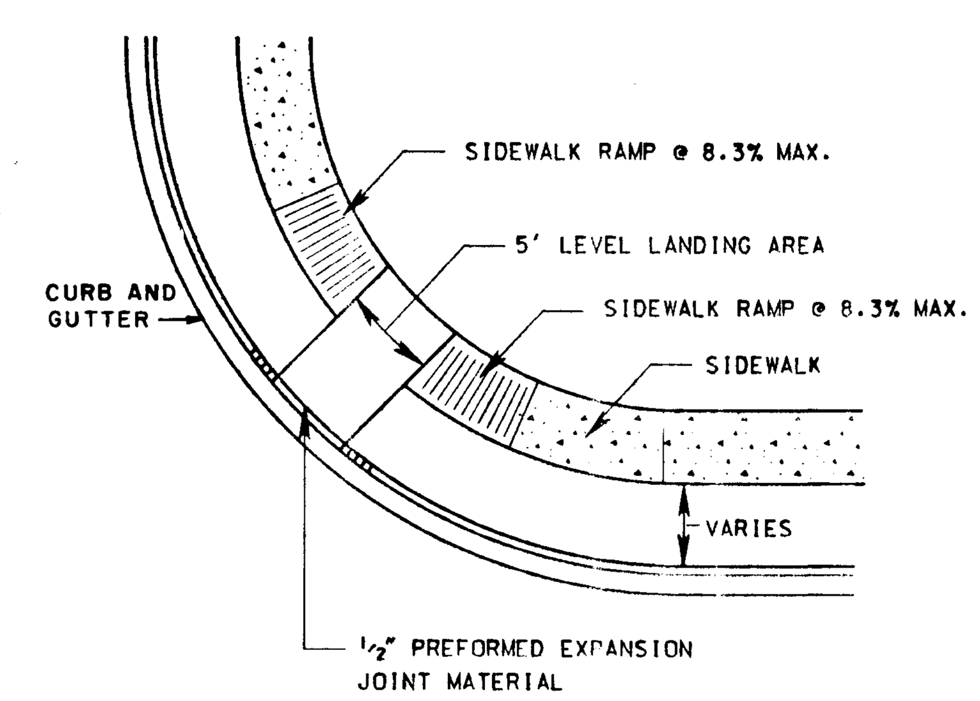
NOTE:
HOWARD COUNTY STANDARD TYPE "A" SIDEWALK RAMP DRAWING R4.01.



SECTION "A"-"A"

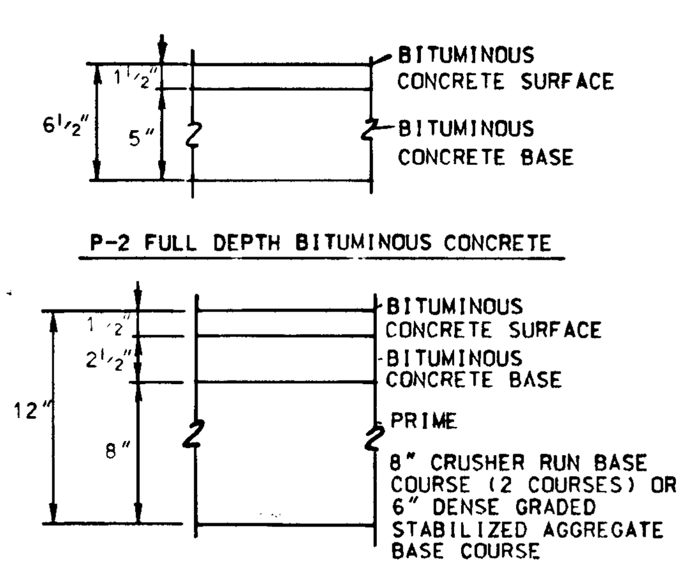
HANDICAP RAMP DETAILS

NO SCALE



CORNER HANDICAP RAMP

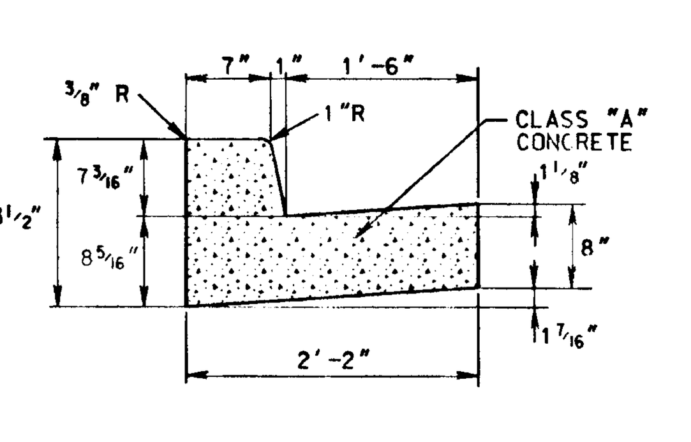
NO SCALE



TYPICAL PAVING SECTION

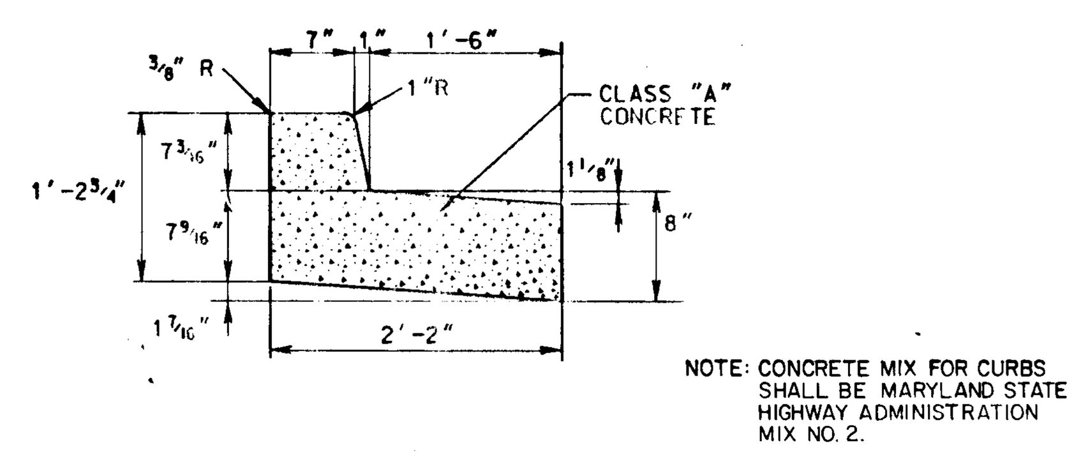
NO SCALE

NOTES:
1. BASE WILL BE PRIMED IN ACCORDANCE WITH ARTICLE 33.03 AS PROVIDED IN THE MD. S.H.A. SPECIFICATIONS.
2. A TRACK COAT WILL BE APPLIED IN ACCORDANCE WITH SECTION 33.03-3 AS PROVIDED IN THE MD. S.H.A. SPECIFICATIONS.



STANDARD 7" COMBINATION CURB AND GUTTER

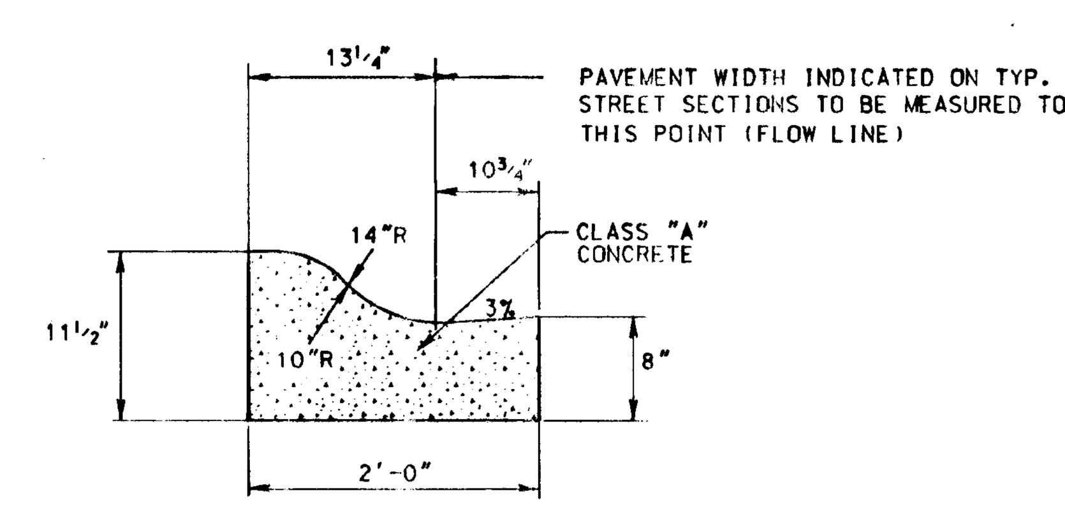
NO SCALE



REVERSE 7" COMBINATION CURB AND GUTTER

NO SCALE

NOTE: CONCRETE MIX FOR CURBS SHALL BE MARYLAND STATE HIGHWAY ADMINISTRATION MIX NO. 2.



MOD. COMBINATION CURB AND GUTTER

NO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, LAND DEVELOPMENT DIVISION — DATE 4/22/91
CHIEF, BUREAU OF HIGHWAYS — DATE 4/9/91
CHIEF, BUREAU OF ENGINEERING — DATE 4-23-91

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 4/23/91

REV. DATE	REV. NO.	REVISION DESCRIPTION

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION I AREA 3 PHASE I

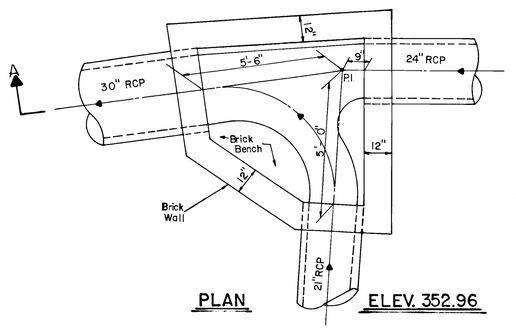
PROJECT TITLE:
ROADWAY DETAILS

SCALE: AS SHOWN DATE: 4/1/91

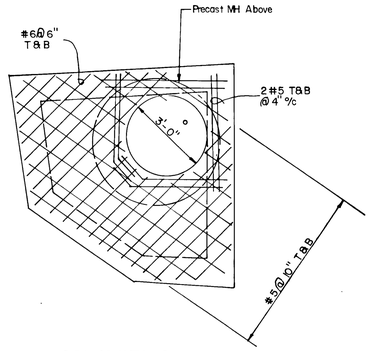
WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

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

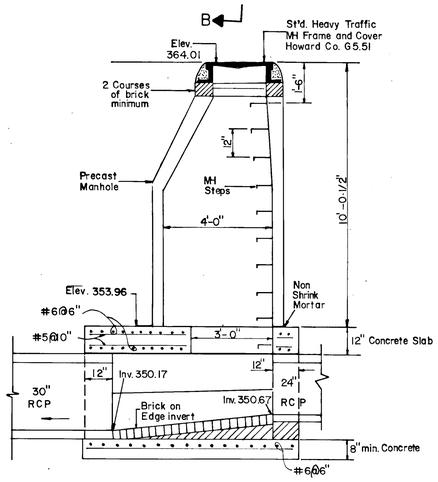
1487



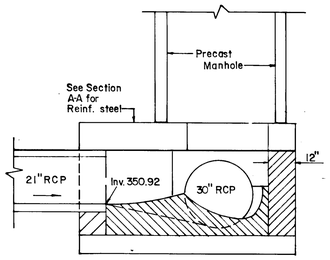
PLAN ELEV. 352.96



CONCRETE SLAB ELEV. 353.96

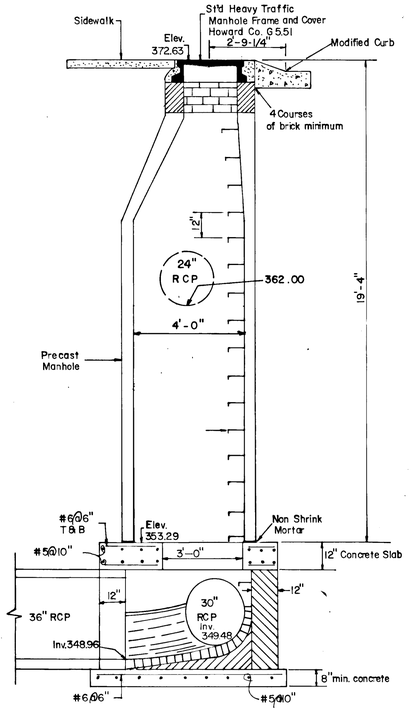


SECTION A-A

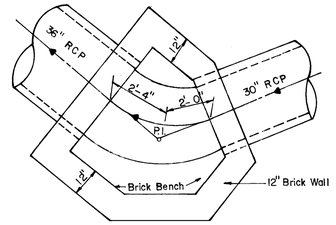


SECTION B-B

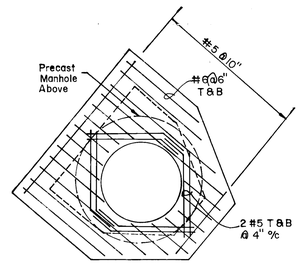
DETAIL M-45
SCALE: 3/8" = 1'-0"



SECTION C-C



PLAN ELEV. 352.29



CONCRETE SLAB ELEV. 353.29

DETAIL M-52
SCALE: 3/8" = 1'-0"

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 4/22/91

CHIEF, BUREAU OF HIGHWAYS — DATE 4/9/91

CHIEF, BUREAU OF ENGINEERING — DATE 4-23-91

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 4/29/91

REV. DATE	REV. NO.	REVISION DESCRIPTION

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH
AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION I AREA 3 PHASE I

PROJECT TITLE:
STORM DRAIN DETAILS

SCALE: AS SHOWN DATE: 4/11/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

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

1487

F-91-98 SHEET 9 OF 20

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

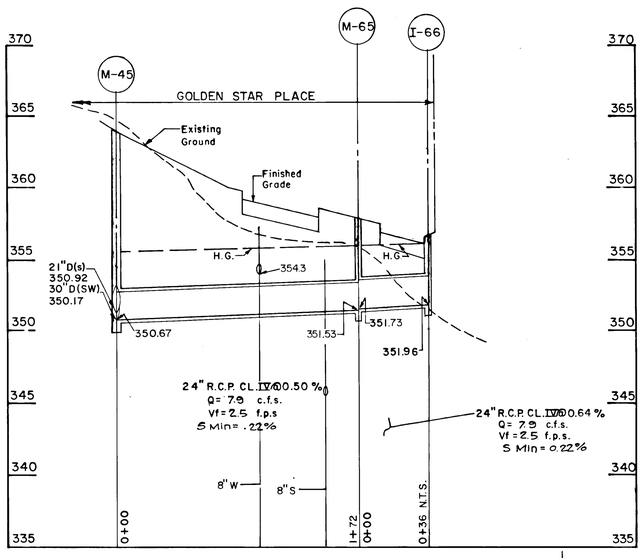
CHIEF, LAND DEVELOPMENT DIVISION — DATE 4/22/91

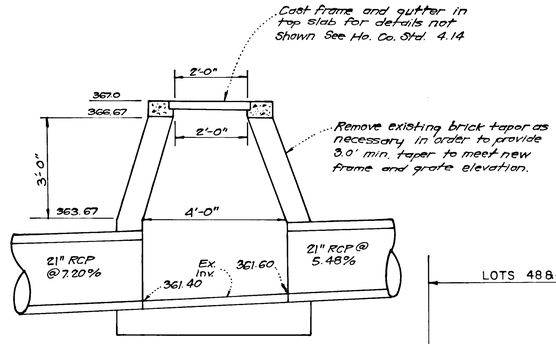
CHIEF, BUREAU OF HIGHWAYS — DATE 4/19/91

CHIEF, BUREAU OF ENGINEERING — DATE 4-23-91

APPROVED: DEPARTMENT OF PLANNING AND ZONING

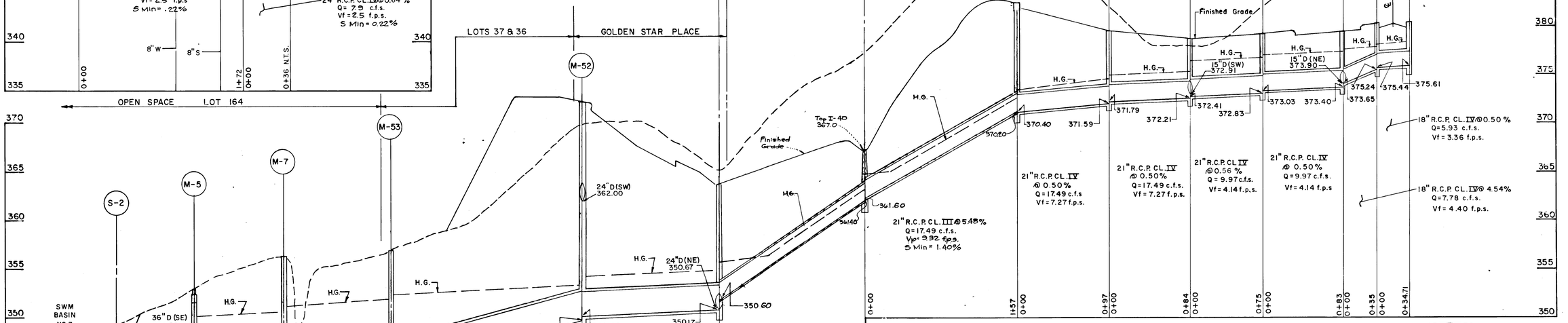
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 4/23/91

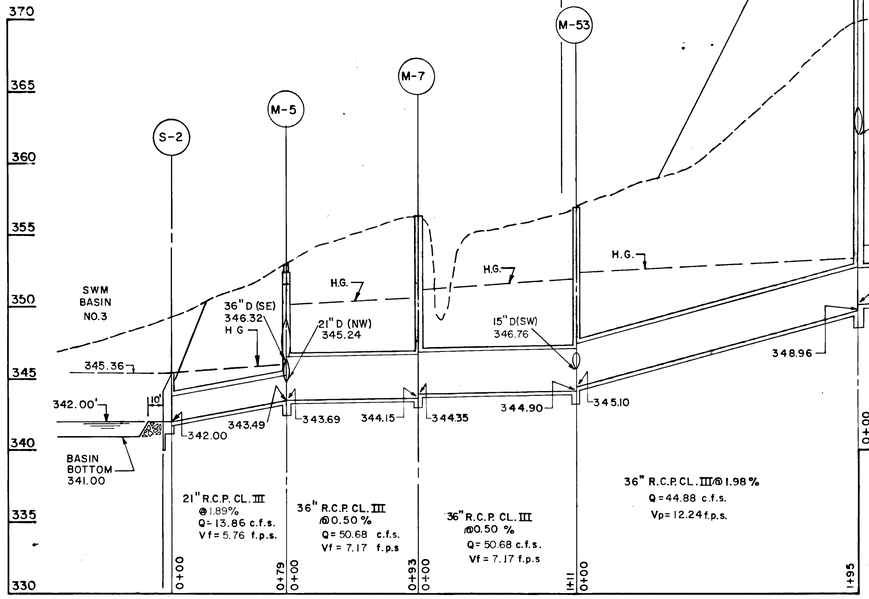




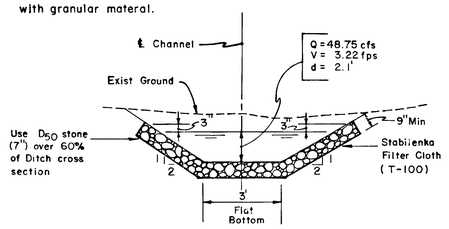
DETAIL NEW INLET I-40

Scale: 1" = 2'
(Formerly M-40)

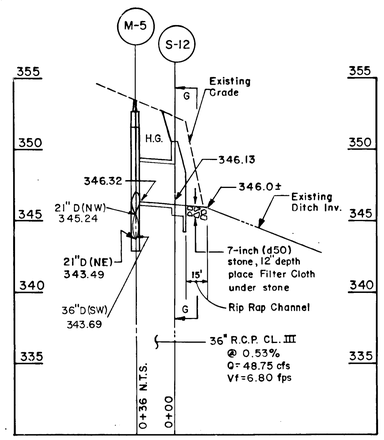


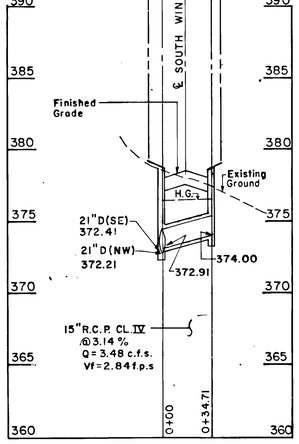


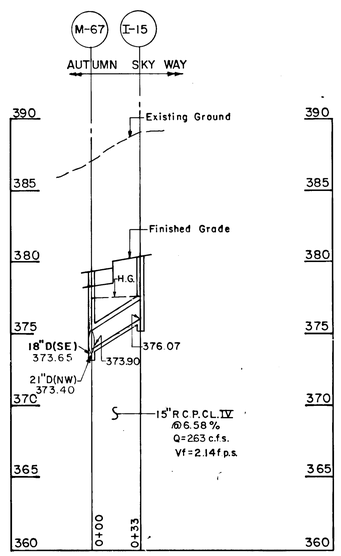
Note:
The type of bedding used for storm drain pipe shall be class c, shaped subgrade. If rock is encounted, the trench invert should be over excavated 6" and the over excavation of 6" refilled with granular mateal.



SECTION G-G
NO SCALE







For Revision by CF&S, Inc. dated 10/20/92 only.

REV. DATE	REV. NO.	REVISION DESCRIPTION
10-20-92	2	Rev. M-40 to I-40, Added detail of I-40, Rev. Inv. elev. of M-45, I-40 and M-41 by CF&S. Inc.
		Changed Grade, M-53 to M52
June(1991)	1	Revised Profile M 45 to M-41

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION 1 AREA 3 PHASE I

PROJECT TITLE:
STORM DRAIN PROFILES

SCALE: HOR 1"=50' VER 1"=5' DATE: 4/1/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

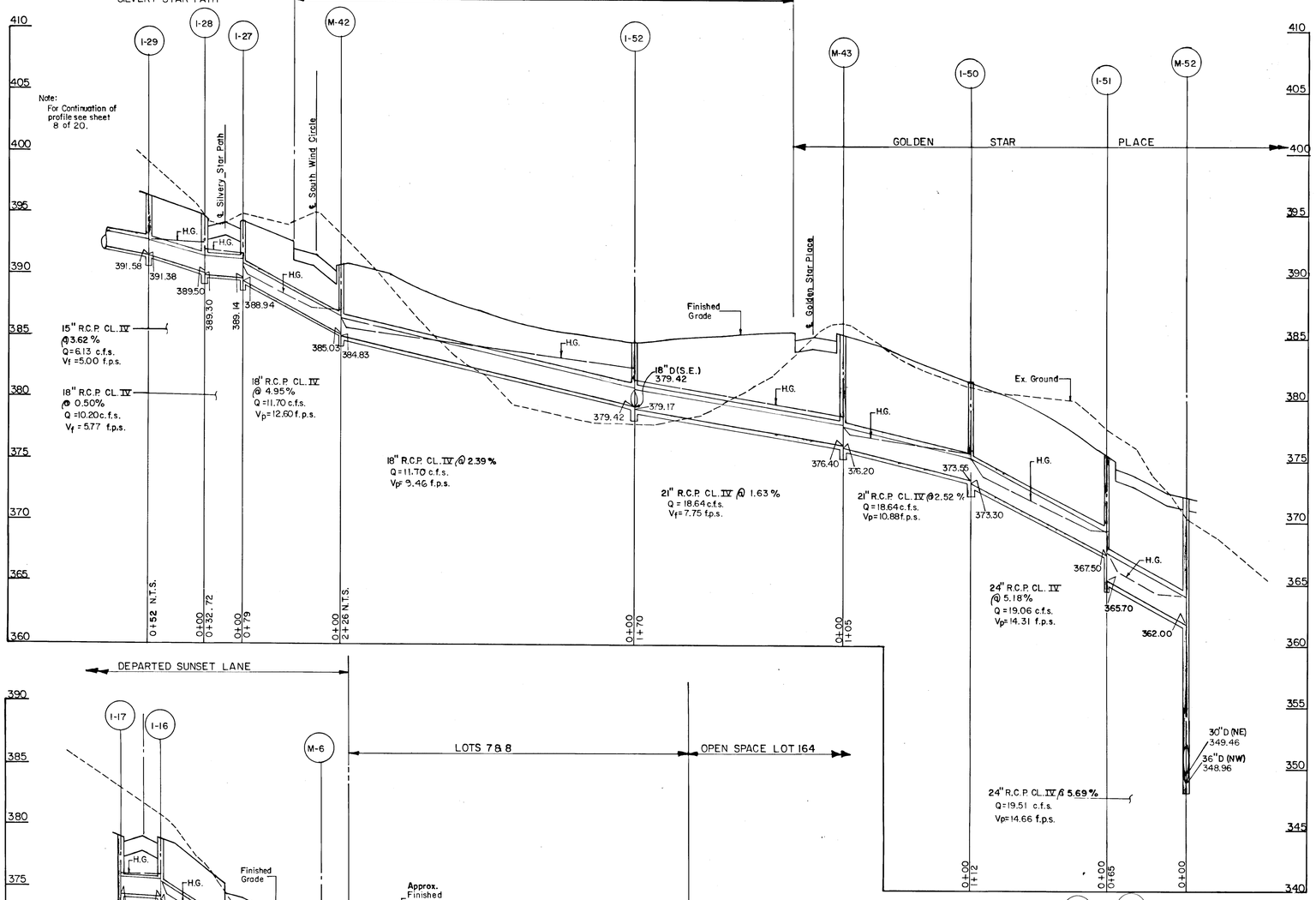
Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

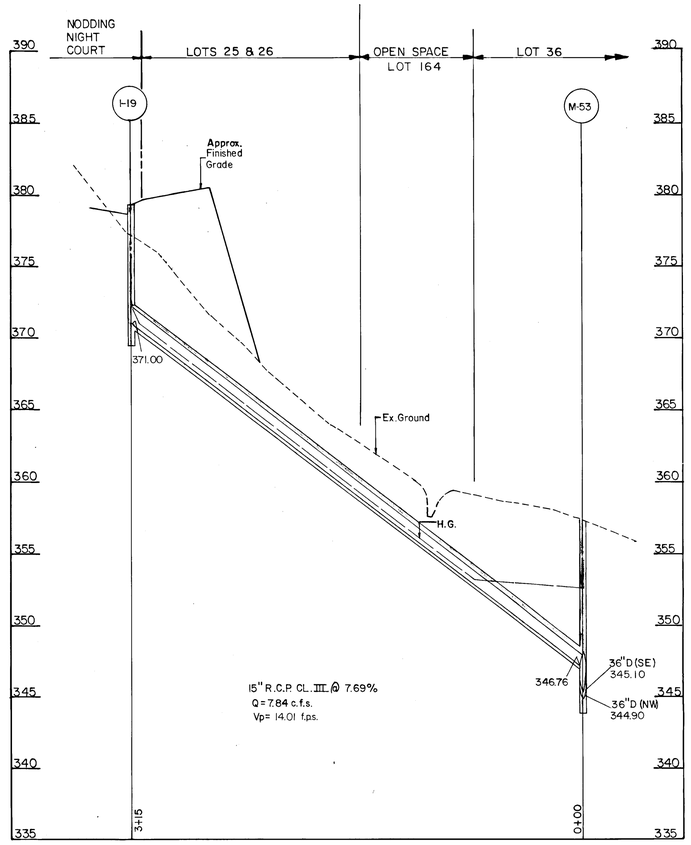
6941

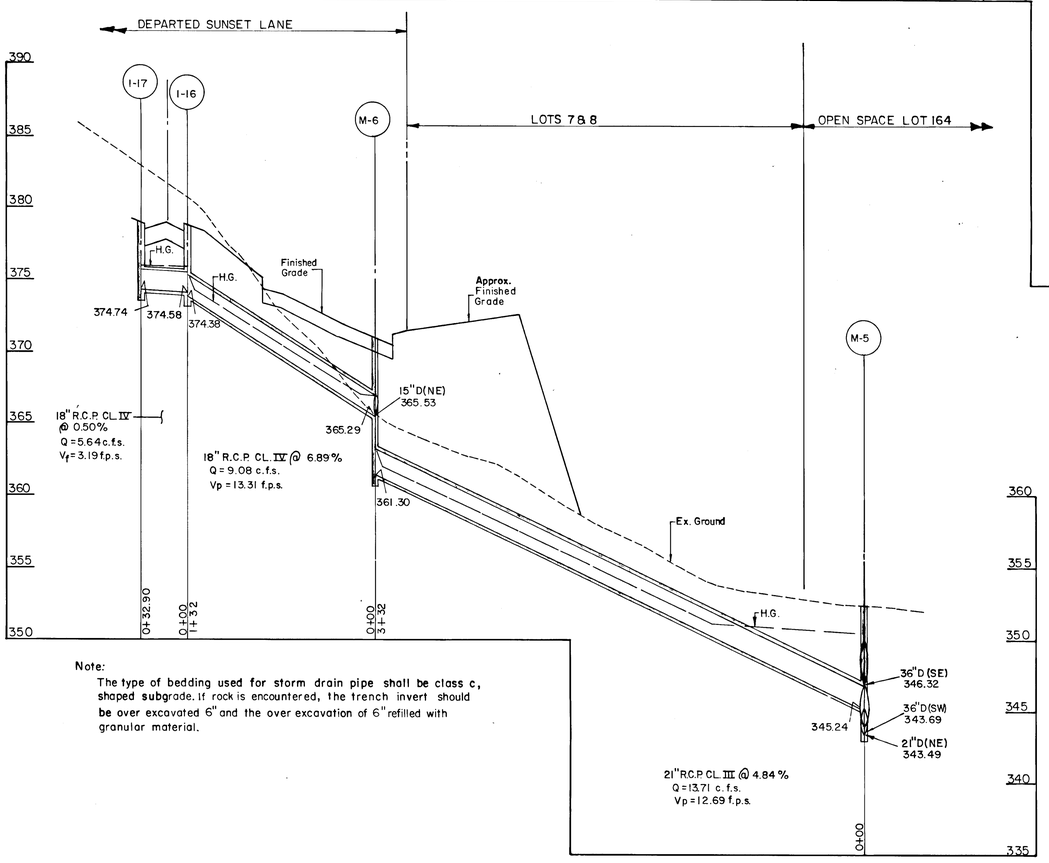
FILE NAME \40811\

F-91-98 SHEET 10 OF 20

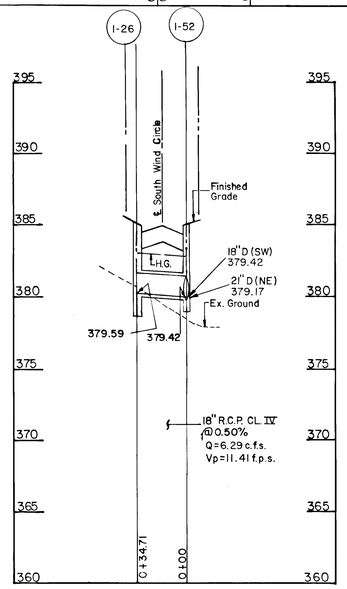
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
CHIEF, LAND DEVELOPMENT DIVISION	DATE 4/24/91
CHIEF, BUREAU OF HIGHWAYS	DATE 4/9/91
CHIEF, BUREAU OF ENGINEERING	DATE 4-23-91
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT cm	DATE 4/23/91

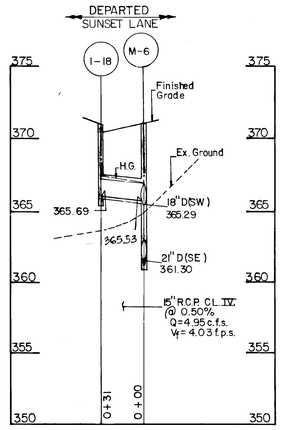






Note:
The type of bedding used for storm drain pipe shall be class c, shaped subgrade. If rock is encountered, the trench invert should be over excavated 6" and the over excavation of 6" refilled with granular material.





REV. DATE	REV. NO.	REVISION DESCRIPTION

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION I AREA 3 PHASE I

PROJECT TITLE:
STORM DRAIN PROFILES

SCALE: HOR. 1"=50' VER. 1"=5' DATE: 4/1/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

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

14497

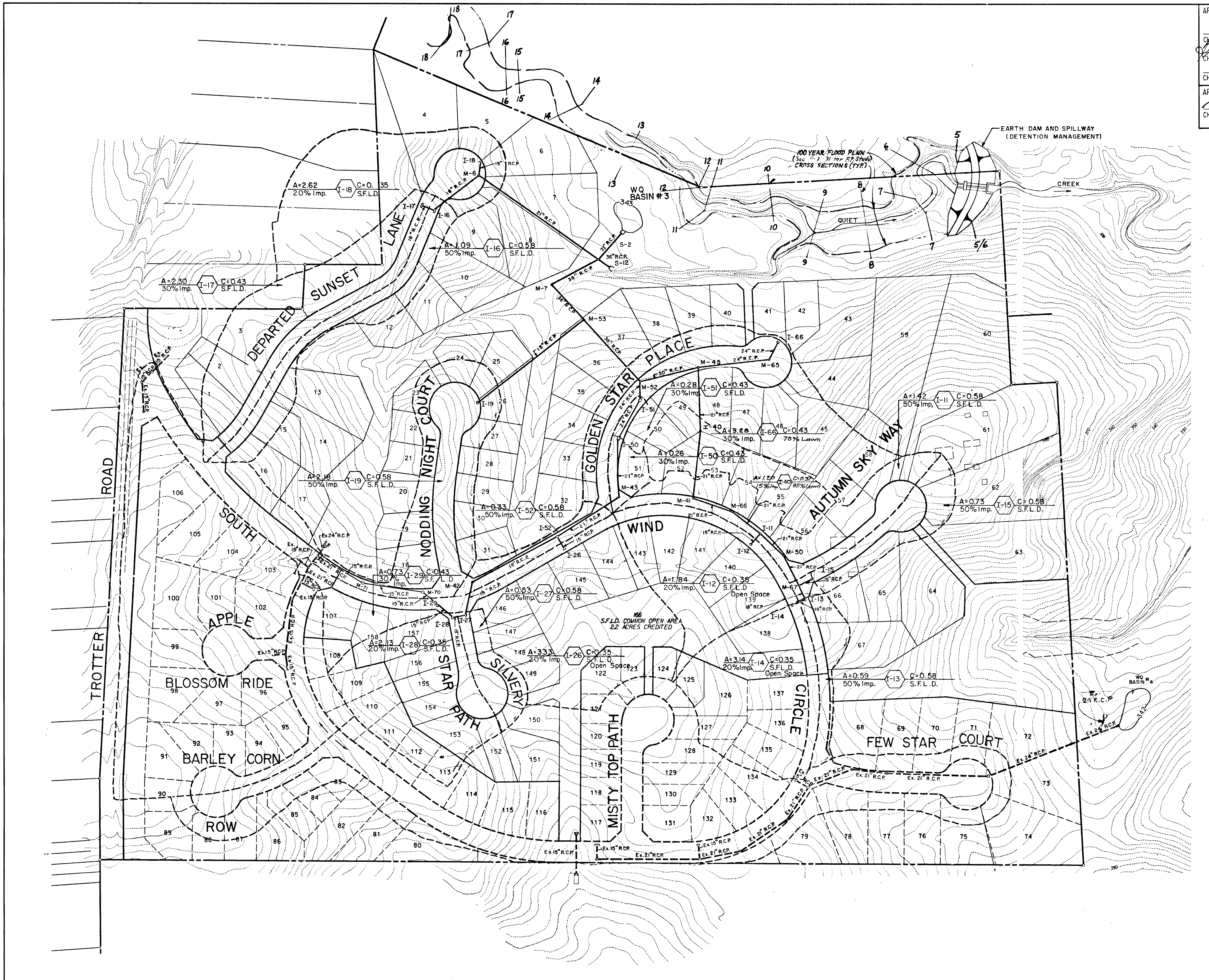
F-91-98 SHEET 11 OF 20

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Signature	Date
CHIEF, LAND DEVELOPMENT DIVISION	4/22/91
CHIEF, BUREAU OF HIGHWAYS	4/9/91
CHIEF, BUREAU OF ENGINEERING	4-23-91

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Signature	Date
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	4/25/91



REV. DATE	REV. NO.	REVISION DESCRIPTION
10-20-92	2	Added Area I-40; Rev. Area I-66 by CFES
June 1991	1	Removed Basin 6

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH
AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION 1 AREA 3 PHASE I

PROJECT TITLE:
STORM DRAIN
DRAINAGE AREA MAP

SCALE: 1" = 100' DATE: 4/1/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

F91-98 SHEET 12 OF 20

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
CHIEF, LAND DEVELOPMENT DIVISION	DATE 4/23/91
CHIEF, BUREAU OF HIGHWAYS	DATE 4/9/91
CHIEF, BUREAU OF ENGINEERING	DATE 4-23-91
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	DATE 4/23/91

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT.
2. PLACE STABILIZED CONSTRUCTION ENTRANCES.
3. CLEAR AND GRUB AREAS FOR WQ BASIN NO. 3 AND SEDIMENT CONTROL FACILITIES ONLY.
4. INSTALL DIKES, SILT FENCES AND SEDIMENT TRAPS. CONSTRUCT WQ BASIN NO. 3.
5. STRIP AND GRADE THE SITE AS SHOWN ON SHEETS 14,15 AND 16.
6. INSTALL STORM DRAINS AND UTILITIES. ALL INLETS ARE TO BE PROTECTED.
7. COMPLETE ROAD CONSTRUCTION AND STABILIZE ALL DISTURBED AREAS.
8. AFTER APPROVAL BY THE SEDIMENT CONTROL INSPECTOR, SEDIMENT CONTROL FACILITIES MAY BE REMOVED.

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. (313-2437)

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 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 WARINGS SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52) TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

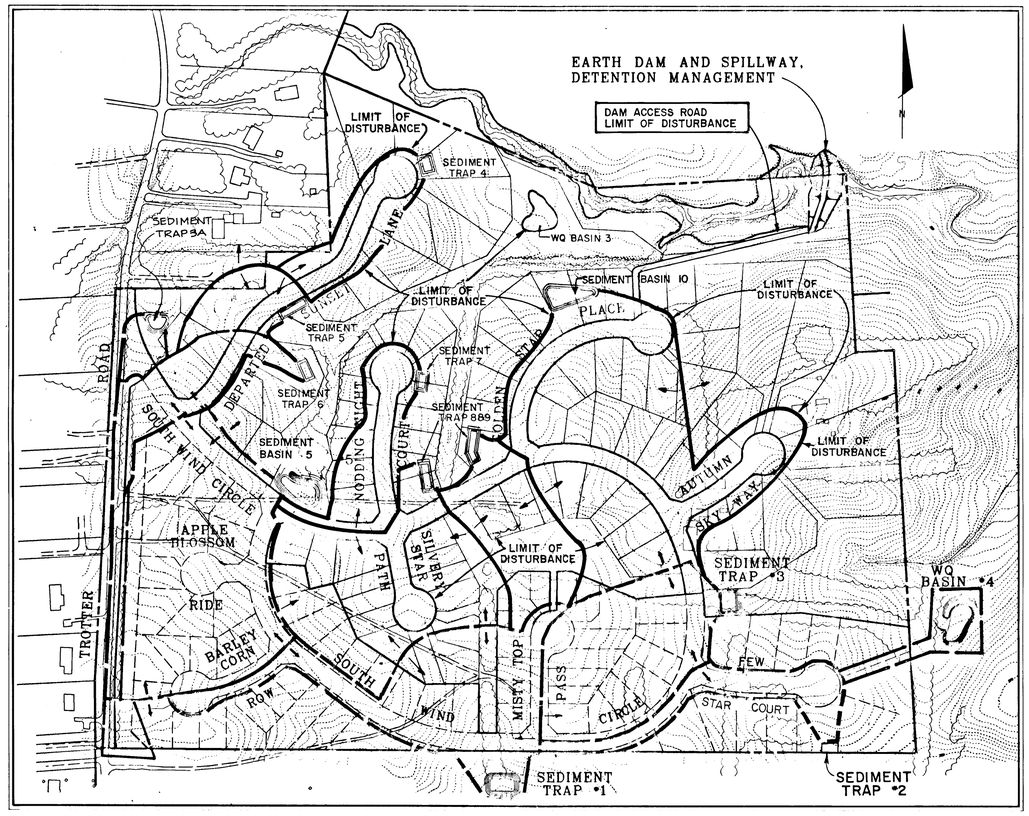
7) SITE ANALYSIS:

TOTAL AREA OF SITE	49 ACRES
AREA DISTURBED	18 ACRES
AREA TO BE ROOFED OR PAVED	3 ACRES
AREA TO BE VEGETATIVELY STABILIZED	12 ACRES
TOTAL CUT	47,000 CU. YDS.
TOTAL FILL	47,000 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 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.



SEDIMENT CONTROL DRAINAGE AREA MAP

SCALE: 1" = 200'

SEDIMENT TRAP DESIGN DATA

SEDIMENT TRAP #4

TRAP TYPE = RIP RAP	OUTLET VI
DRAINAGE AREA	= 1.4 ACRES
STORAGE REQUIRED	= 0.06 AF
STORAGE PROVIDED	= 0.06 AF
OUTLET LENGTH	= 6'
WEIR CREST ELEV.	= 357.00
TOP BERM ELEV.	= 359.00
SEDIMENT ELEV.	= 356.00
BOTTOM ELEV.	= 353.00
DEPTH	= 4.0'

SEDIMENT TRAP #5

TRAP TYPE = RIP RAP	OUTLET VI
DRAINAGE AREA	= 2.3 ACRES
STORAGE REQUIRED	= 0.09 AF
STORAGE PROVIDED	= 0.10 AF
OUTLET LENGTH	= 10'
WEIR CREST ELEV.	= 388.00
TOP BERM ELEV.	= 390.00
SEDIMENT ELEV.	= 387.00
BOTTOM ELEV.	= 383.50
DEPTH	= 5.0'

SEDIMENT TRAP #6

TRAP TYPE = RIP RAP	OUTLET VI
DRAINAGE AREA	= 1.3 ACRES
STORAGE REQUIRED	= 0.05 AF
STORAGE PROVIDED	= 0.06 AF
OUTLET LENGTH	= 6'
WEIR CREST ELEV.	= 384.00
TOP BERM ELEV.	= 386.00
SEDIMENT ELEV.	= 383.00
BOTTOM ELEV.	= 380.00
DEPTH	= 4.0'

SEDIMENT TRAP #7

TRAP TYPE = RIP RAP	OUTLET VI
DRAINAGE AREA	= 1.5 ACRES
STORAGE REQUIRED	= 0.06 AF
STORAGE PROVIDED	= 0.06 AF
OUTLET LENGTH	= 8'
WEIR CREST ELEV.	= 370.00
TOP BERM ELEV.	= 372.00
SEDIMENT ELEV.	= 369.00
BOTTOM ELEV.	= 364.00
DEPTH	= 6.0'

SEDIMENT TRAP #8

TRAP TYPE = RIP RAP	OUTLET VI
DRAINAGE AREA	= 4.5 ACRES
STORAGE REQUIRED	= 0.19 AF
STORAGE PROVIDED	= 0.20AF
OUTLET LENGTH	= 18'
WEIR CREST ELEV.	= 377.00
TOP BERM ELEV.	= 379.00
SEDIMENT ELEV.	= 376.00
BOTTOM ELEV.	= 371.00
DEPTH	= 6.0'

SEDIMENT TRAP #9

TRAP TYPE = RIP RAP	OUTLET VI
DRAINAGE AREA	= 3.1 ACRES
STORAGE REQUIRED	= 0.13 AF
STORAGE PROVIDED	= 0.17 AF
OUTLET LENGTH	= 12'
WEIR CREST ELEV.	= 373.00
TOP BERM ELEV.	= 376.00
SEDIMENT ELEV.	= 372.00
BOTTOM ELEV.	= 368.00
DEPTH	= 5.0'

SEDIMENT TRAP #10

TRAP TYPE = RIP RAP	OUTLET VI
DRAINAGE AREA	= 10.5 ACRES
STORAGE REQUIRED	= 0.44 AF
STORAGE PROVIDED	= 0.44 AF
OUTLET LENGTH	= 40'
WEIR CREST ELEV.	= 350.00
TOP BERM ELEV.	= 352.00
SEDIMENT ELEV.	= 349.00
BOTTOM ELEV.	= 342.00
DEPTH	8.0'

REV. DATE	REV. NO.	REVISION DESCRIPTION
June, 1991	1	Removed Basin 6, Added Trap 9A

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH
AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION I AREA 3 PHASE I

PROJECT TITLE:
SEDIMENT CONTROL
DRAINAGE AREA MAP

SCALE: AS SHOWN DATE: 4/1/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

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

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

U.S. SOIL CONSERVATION SERVICE — DATE 4/3/91

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

HOWARD S.C.D. — DATE 4/4/91

BY THE DEVELOPER:
"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT 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".

DATE 12-5-90

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 P.E. NO. 8457 — DATE 12/3/90

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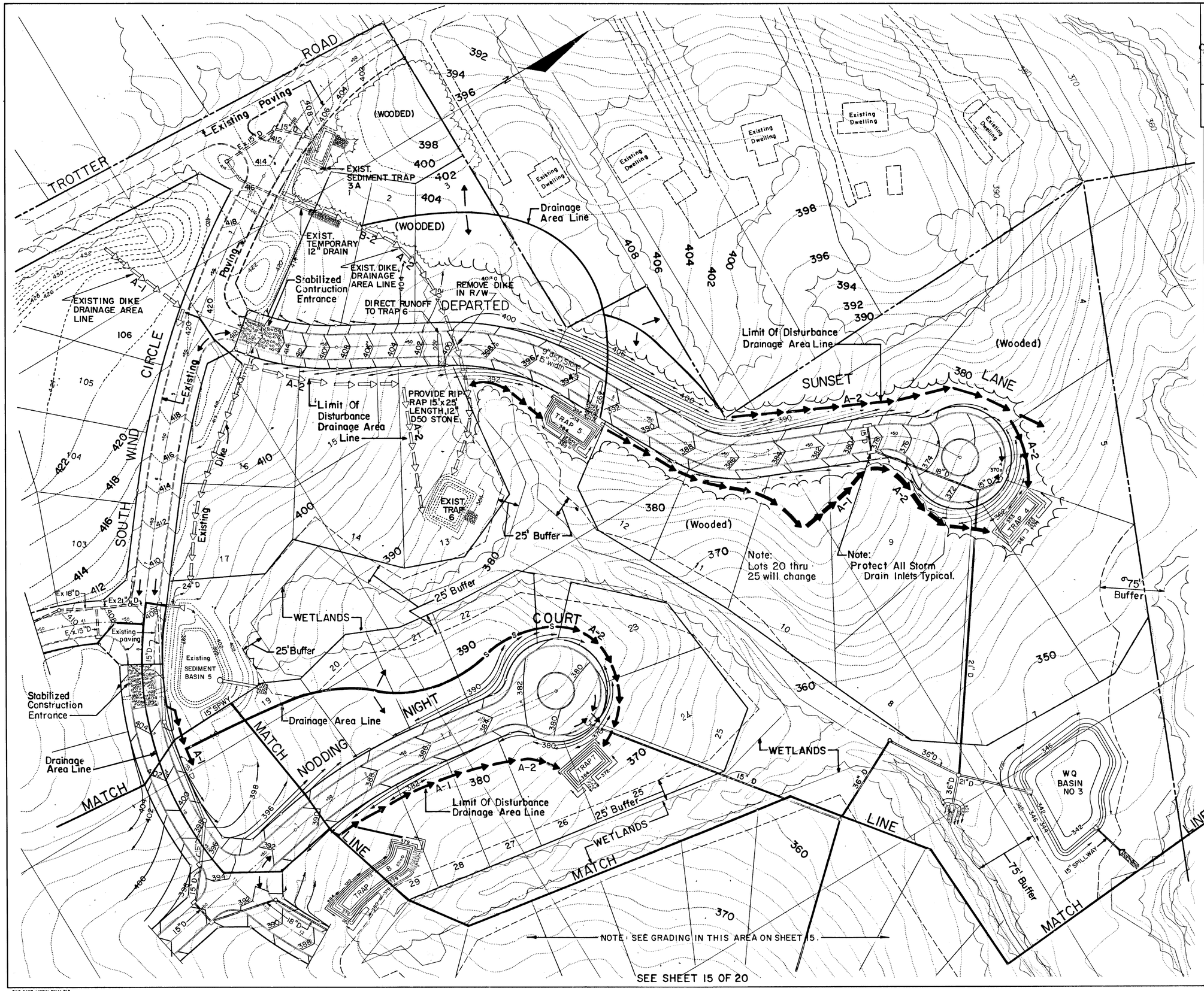
F91-98 SHEET 13 OF 20



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 4/2/91

CHIEF, BUREAU OF HIGHWAYS — DATE 4/9/91

CHIEF, BUREAU OF ENGINEERING — DATE 4-23-91

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 3/28/91

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 P.E. NO. 8657 — DATE 12/3/90

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT 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".

JOSEPH H. NECKER JR. — DATE 12-5-90

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

U.S. SOIL CONSERVATION SERVICE — DATE 4/4/91

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

HOWARD S.C.D. — DATE 4/4/91

REV. DATE	REV. NO.	REVISION DESCRIPTION
June 1991	1	Removed Basin 6, Added exist. Trap 3A, Made Trap 6 existing, Added grading along Trotter Rd.

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION 1 AREA 3 PHASE I

PROJECT TITLE:
GRADING AND SEDIMENT CONTROL PLAN

SCALE: 1"= 50' DATE: 4/1/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

F91-98 SHEET 14 OF 20

1371

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 4/22/91

CHIEF, BUREAU OF HIGHWAYS — DATE 4/9/91

CHIEF, BUREAU OF ENGINEERING — DATE 4-23-91

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 4/23/91

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. Shaffer — 12/3/90

THOMAS J. SHAFFER P.E. NO. 8457 — DATE

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT 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".

J. H. Necker Jr. — 12-5-90

JOSEPH H. NECKER JR. — DATE

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

U.S. SOIL CONSERVATION SERVICE — DATE 4/4/91

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

Robert W. Zielke — HOWARD S.C.D. — DATE 4/4/91

REV. DATE	REV. NO.	REVISION DESCRIPTION
June 12, 1991	1	Added grading (Lots 32-37), Revised Dike, Enlarged Trap 10

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION 1 AREA 3 PHASE I

PROJECT TITLE:
GRADING AND SEDIMENT CONTROL PLAN

SCALE: 1"= 50' DATE: 4/1/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

Thomas J. Shaffer
THOMAS J. SHAFFER
REGISTERED ENGINEER
NO. 8457

SEE SHEET 14 OF 20

SEE SHEET 16 OF 20

14/87

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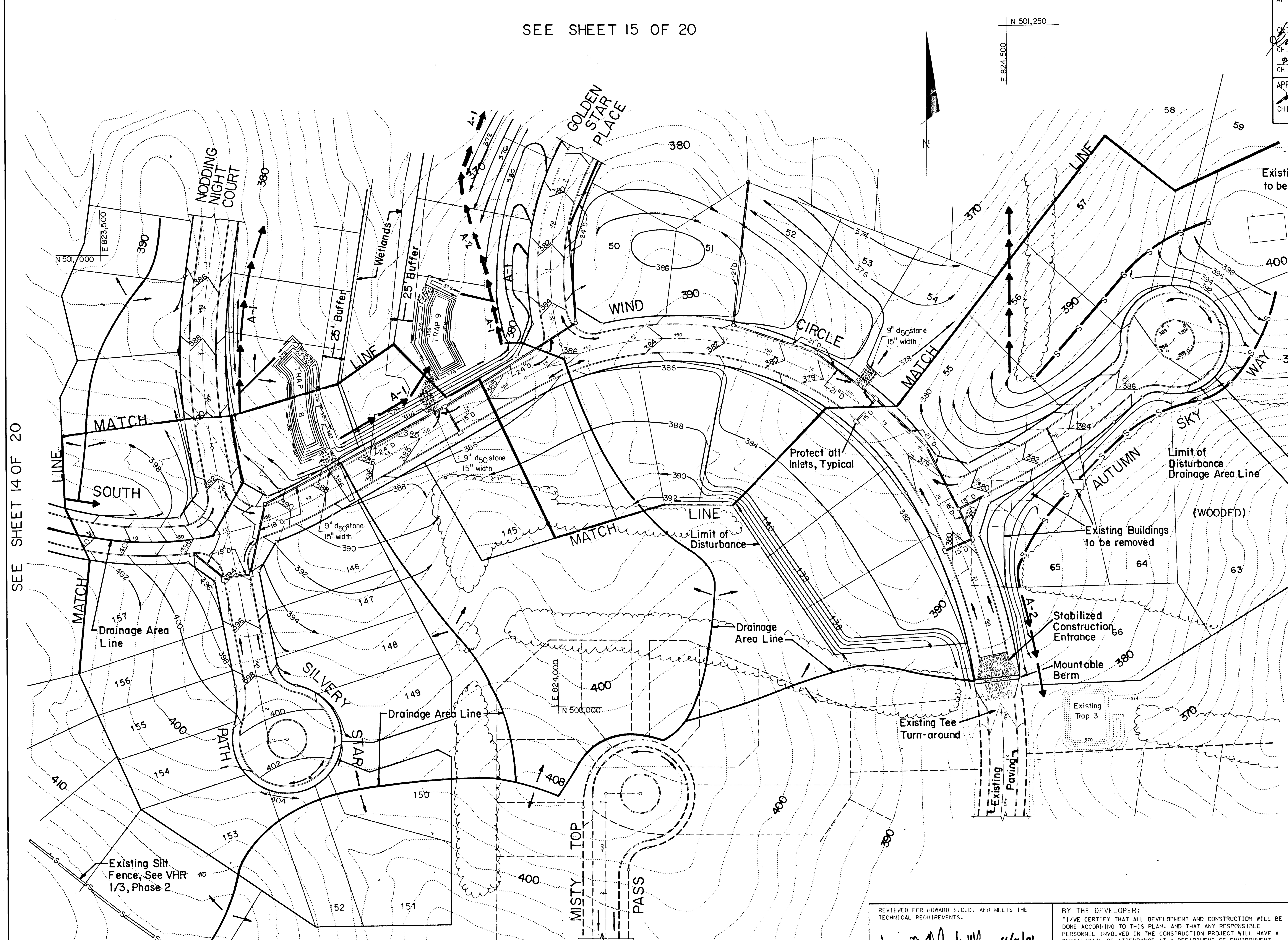
SEE SHEET 15 OF 20

SEE SHEET 14 OF 20



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 4/22/91

CHIEF, BUREAU OF HIGHWAYS — DATE 4/9/91

CHIEF, BUREAU OF ENGINEERING — DATE 4-23-91

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 4/29/91

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 P.E. NO. 8457 — DATE 12/3/90

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

U.S. SOIL CONSERVATION SERVICE — DATE 4/9/91

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

HOWARD S.C.D. — DATE 4/4/91

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT 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".

JOSEPH H. NECKER JR. — DATE 12-5-90

REV. DATE	REV. NO.	REVISION DESCRIPTION
June 12, 1991	1	Revised Dike. Added grading on lots Golden Star Place

COLUMBIA

5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH
AND DEVELOPMENT CORPORATION

PROJECT AREA:

VILLAGE OF RIVER HILL
SECTION I AREA 3 PHASE I

PROJECT TITLE:

GRADING AND SEDIMENT CONTROL PLAN

SCALE: 1" = 50" DATE: 4/1/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

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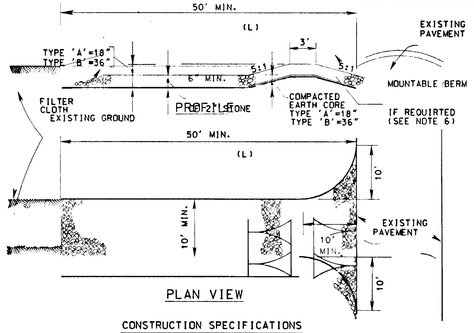


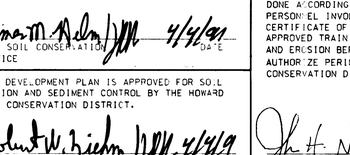
PLAN VIEW

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 RIGHT-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 RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO A APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STANDARD SYMBOL: S.C.E.

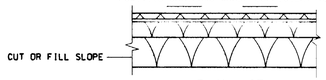
STABILIZED CONSTRUCTION ENTRANCE



CROSS SECTION

	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"

POSITIVE DRAINAGE-GRADE SUFFICIENT TO DRAIN



PLAN VIEW

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	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, SOD, 2" STONE
2	3.1-5.0%	SEED WITH JUTE, OR SOD, 2" STONE	LINED RIP-RAP 4-8"
4	8.1-20%	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

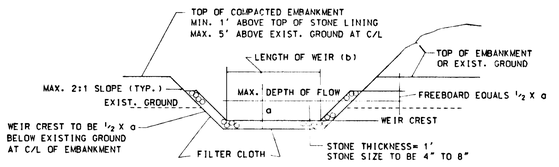
A. STONE TO BE 2 INCH STONE OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 6 INCHES THICKNESS AND PRESSED INTO THE SOIL.
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

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

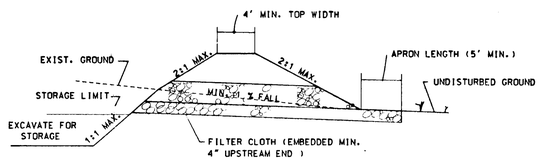
STANDARD SYMBOL: A-2 / B-3

EARTH DIKE

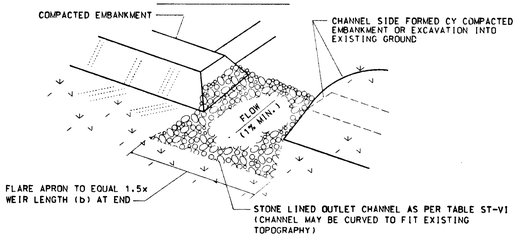
RIPRAP OUTLET SEDIMENT TRAP ST-V1



PROFILE



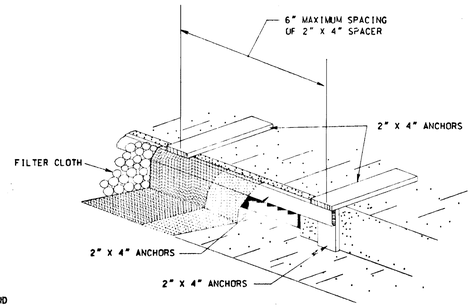
CROSS SECTION



PERSPECTIVE VIEW

CONSTRUCTION SPECIFICATIONS FOR ST-V1

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 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 OR 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.

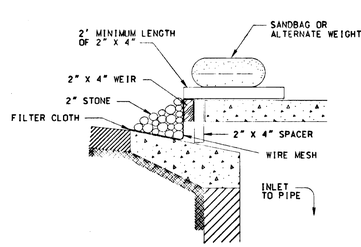


PERSPECTIVE VIEW

CURB INLET PROTECTION

1. ATTACH A CONTINUOUS PIECE OF WIRE MESH (30" MIN. WIDTH BY THROAT LENGTH PLUS 4') TO THE 2" X 4" WEIR (MEASURING THROAT LENGTH PLUS 2') AS SHOWN ON THE STANDARD DRAWING.
2. PLACE A PIECE OF APPROVED FILTER CLOTH (40-85 SIEVE) OF THE SAME DIMENSIONS AS THE WIRE MESH OVER THE WIRE MESH AND SECURELY ATTACH TO THE 2" X 4" WEIR.
3. SECURELY NAIL THE 2" X 4" WEIR TO 9" LONG VERTICAL SPACERS TO BE LOCATED BETWEEN THE WEIR AND INLET FACE (MAX. 6' APART).
4. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL (MINIMUM 2' LENGTHS OF 2" X 4" TO THE TOP OF THE WEIR AT SPACER LOCATIONS. THESE 2" X 4" ANCHORS SHALL EXTEND ACROSS THE INLET TOP AND BE HELD IN PLACE BY SANDBAGS OR ALTERNATE WEIGHT.
5. THE ASSEMBLY SHALL BE PLACED SO THAT THE END SPACERS ARE A MINIMUM 1' BEYOND BOTH ENDS OF THE THROAT OPENING.
6. FORM THE WIRE MESH AND FILTER CLOTH TO THE CONCRETE GUTTER AND AGAINST THE FACE OF CURB ON BOTH SIDES OF THE INLET. PLACE CLEAN 2" STONE OVER THE WIRE MESH AND FILTER FABRIC IN SUCH A MANNER AS TO PREVENT WATER FROM ENTERING THE INLET UNDER OR AROUND THE FILTER CLOTH.
7. THIS TYPE OF PROTECTION MUST BE INSPECTED FREQUENTLY AND THE FILTER CLOTH AND STONE REPLACED WHEN CLOGGED WITH SEDIMENT.
8. ASSURE THAT STORM FLOW DOES NOT BYPASS INLET BY INSTALLING TEMPORARY EARTH OR ASPHALT DIKES DIRECTING FLOW INTO INLET.

CURB INLET PROTECTION



SECTION

PERMANENT SEEDING

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

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

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

1) PREFERRED - APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ 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 THRU JULY 31, SEED WITH 60 LBS KENTUCKY 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.

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

TEMPORARY SEEDING

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

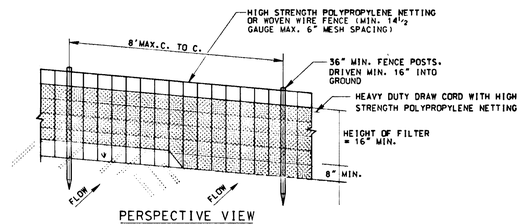
SEEDBED PREPARATION: LOOSEN UPPER THREE (3) INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING. IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS PER ACRE 10-10-10 FERTILIZER. (14LBS/1000 SQ FT) AND ONE TON PER ACRE OR 46LBS/1000 SQ FT OF DOLOMITIC LIMESTONE.

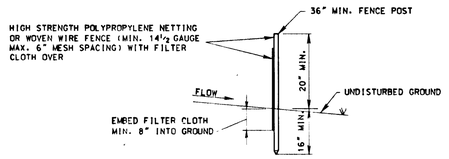
SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2½ BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ FT). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT 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/ 100 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ACHORING TOOL OR 218 GAL PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT OR HIGHTER. 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 TEMPORARY SEEDING SPECIFICATIONS NOT COVERED.



PERSPECTIVE VIEW



SECTION

CONSTRUCTION SPECIFICATIONS

1. HIGH STRENGTH POLYPROPYLENE NETTING OR WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES	POST:	STEEL EITHER T OR U TYPE OR 1"x 1"x 1" HARWOOD
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.	FENCE:	WOVEN WIRE, 14. GA 6" MAX. MESH OPENING OR HIGH STRENGTH POLYPROPYLENE NETTING
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED.	FILTER CLOTH:	FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.	PRE-FABRICATED UNIT:	GEOFAB, ENVIROFENCE OR APPROVED EQUAL.

STANDARD SYMBOL: S S

SILT FENCE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 4/22/91

CHIEF, BUREAU OF HIGHWAYS — DATE 4/9/91

CHIEF, BUREAU OF ENGINEERING — DATE 4-23-91

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 4/29/91

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

U.S. SOIL CONSERVATION SERVICE — DATE 4/5/91

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

HOWARD S.C.D. — DATE 4/4/91

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT 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".

DATE 12-5-90

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 P.E. NO. 8457 — DATE 12/3/90

REV. DATE	REV. NO.	REVISION DESCRIPTION

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION 1 AREA 3 PHASE I

PROJECT TITLE:
SEDIMENT CONTROL DETAILS

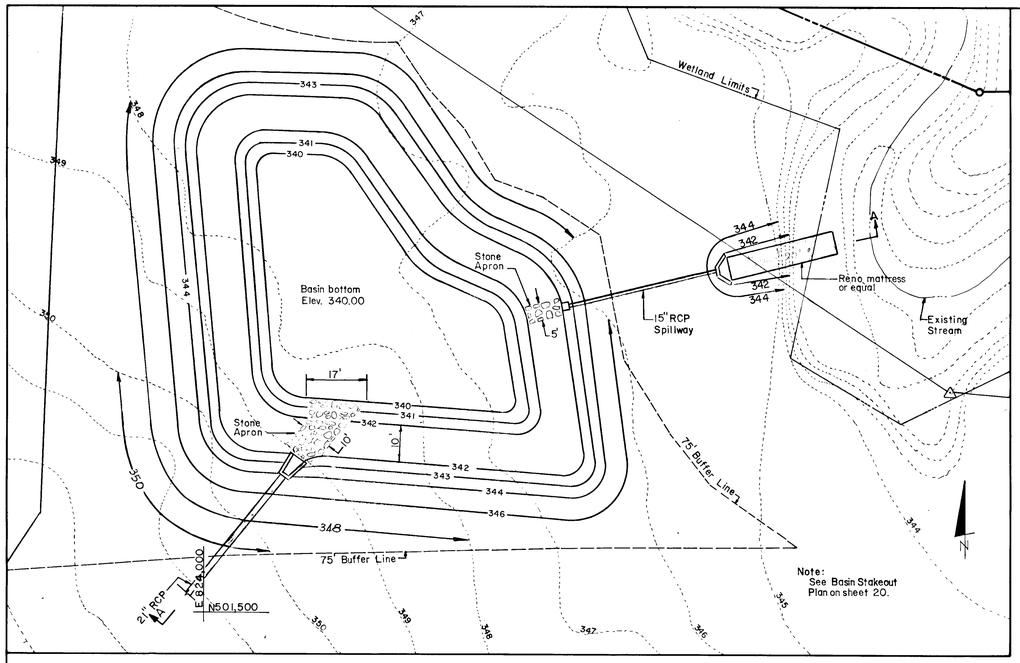
SCALE: AS SHOWN DATE: 4/...

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

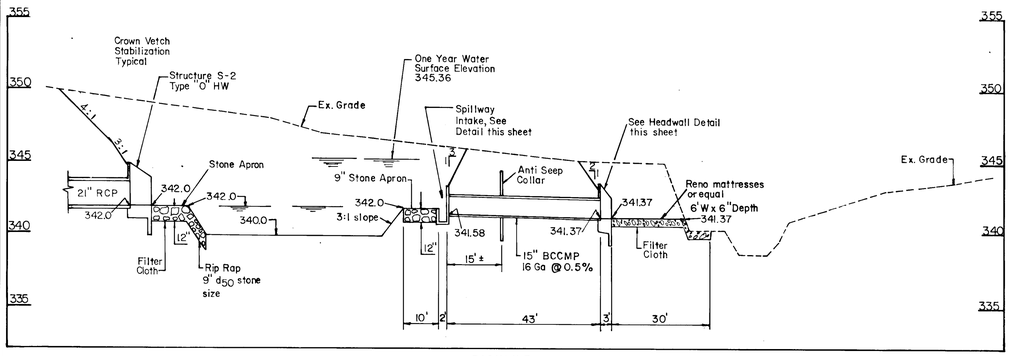
Thomas J. Shafer
THOMAS J. SHAFER
REGISTERED ENGINEER
NO. 8457

14487

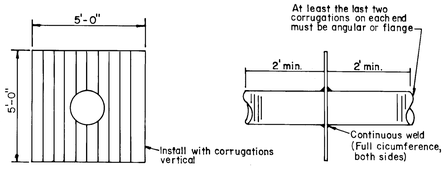
F91-98 SHEET 17 OF 20



BASIN NO. 3 - EXCAVATED BASIN
SCALE: 1" = 20'



BASIN #3
PROFILE A-A
SCALE: 1"=20' H ; 1"=5' V



COLLAR WELDED IN PLACE ON BARREL SECTION
NO SCALE

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTICICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ~~SHALL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION~~. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JOSEPH H. NECKER JR. — DATE 12-5-90

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

U.S. SOIL CONSERVATION SERVICE — DATE 4/4/91

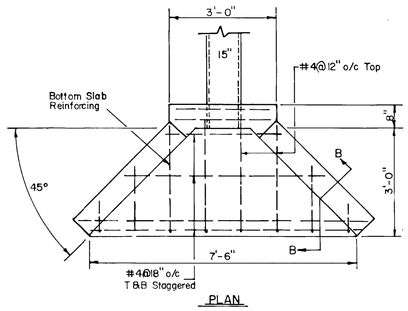
THESE PLANS FOR ~~SWM POND CONSTRUCTION~~, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 4/4/91

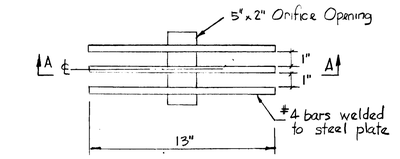
BY THE ENGINEER:

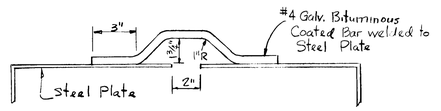
"I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. ~~I FURTHER STATE THAT THE ENGINEER SHALL BE MADE AWARE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.~~"

THOMAS J SHAFER
Registration No. 8457 — DATE 12/3/90



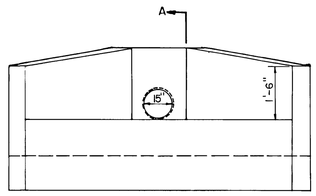
PLAN



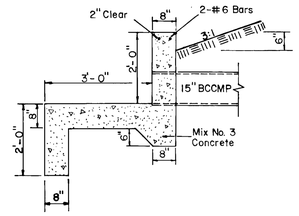


SECTION AA

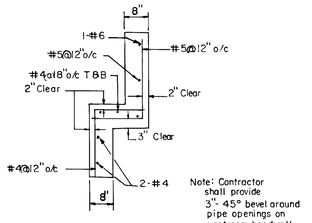
TRASH RACK DETAILS
Scale 1" = 5"



FRONT ELEVATION



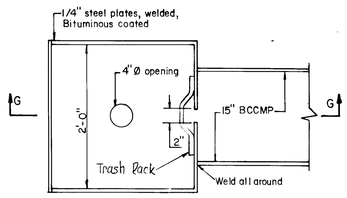
SECTION A-A



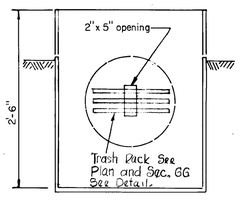
Note: Contractor shall provide 3"- 45° bevel around pipe openings on upstream headwall.

SECTION B-B

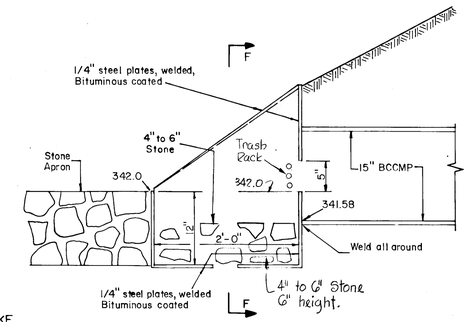
HEADWALL DETAILS - TYPE "A"
SCALE: 1"=2'



PLAN

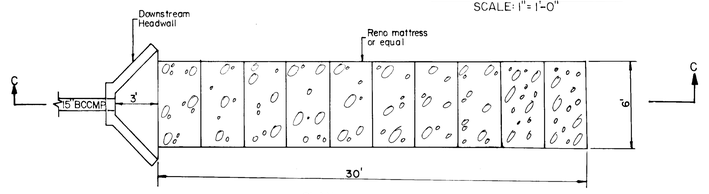


SECTION

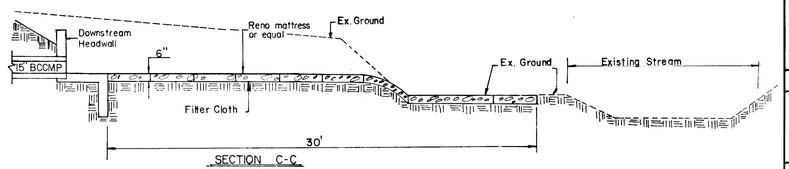


SECTION G-G

DETAIL SPILLWAY INTAKE
SCALE: 1"= 1'-0"



PLAN



SECTION C-C

GABION DETAILS
SCALE: 1"=5'

REV. DATE	REV. NO.	REVISION DESCRIPTION

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH
AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION I AREA 3 PHASE I

PROJECT TITLE:
WQ BASIN #3, PLAN AND DETAILS

SCALE: AS SHOWN DATE: 4/1/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 4/22/91

CHIEF, BUREAU OF HIGHWAYS — DATE 4/9/91

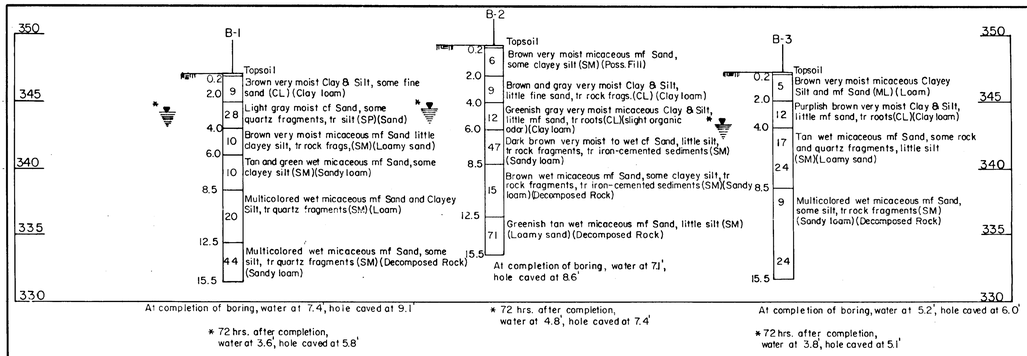
CHIEF, BUREAU OF ENGINEERING — DATE 4-23-91

APPROVED: DEPARTMENT OF PLANNING AND ZONING

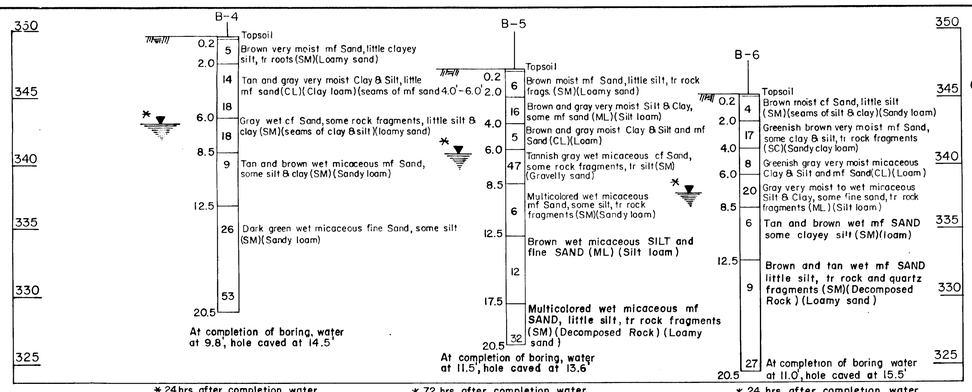
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 4/23/91

1487

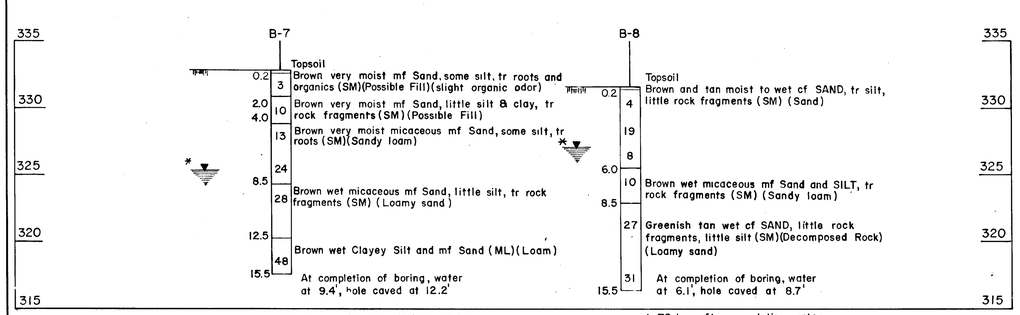
1-91-98 SHEET 18 OF 20



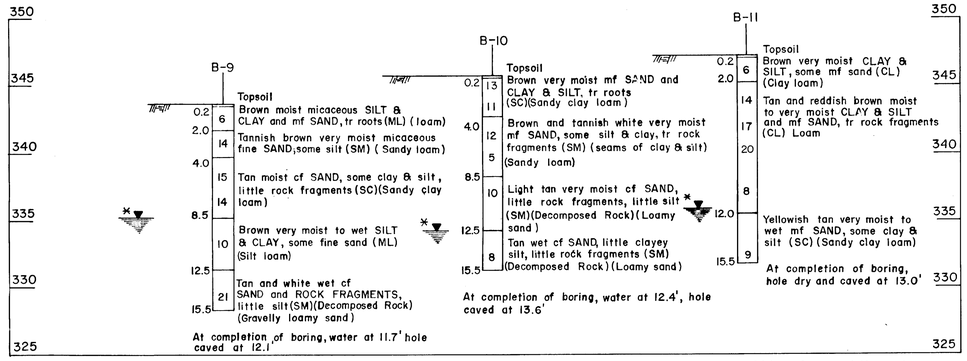
SECTION A-A



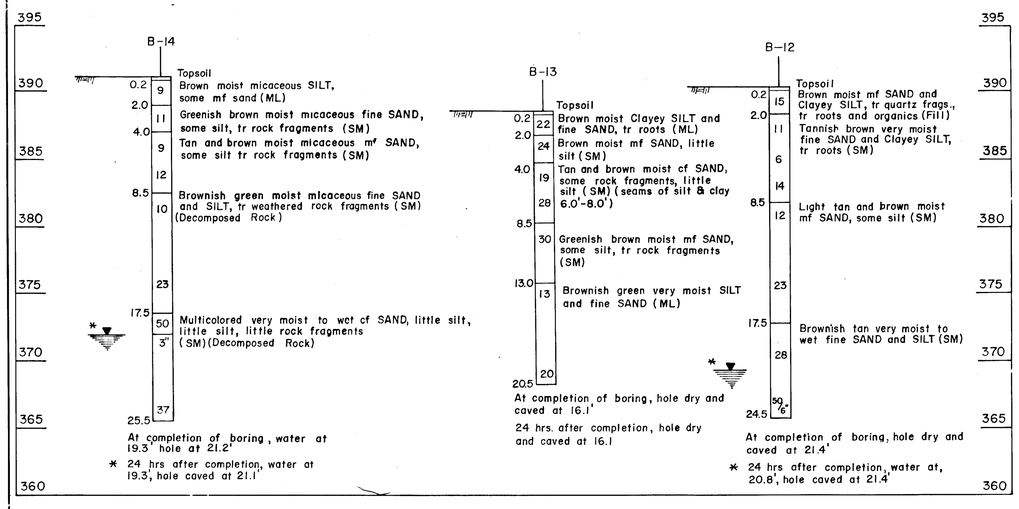
SECTION B-B



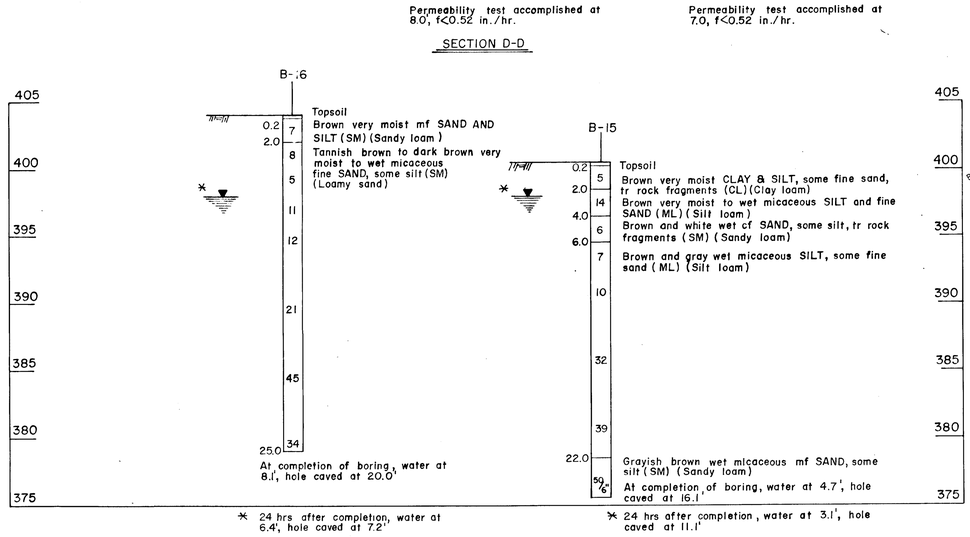
SECTION C-C



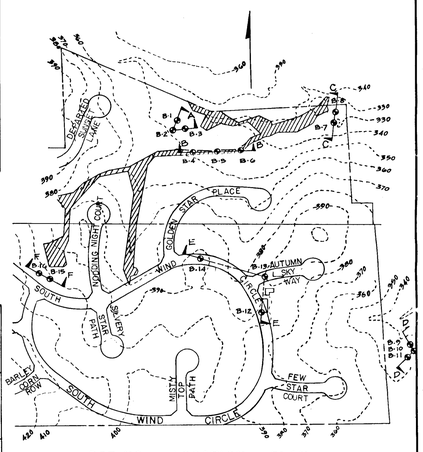
SECTION D-D



SECTION E-E



SECTION F-F



BORING LOCATION PLAN
N.T.S.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE 4/10/91

CHIEF, BUREAU OF HIGHWAYS — DATE 4/9/91

CHIEF, BUREAU OF ENGINEERING — DATE 4-23-91

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT — DATE 4/29/91

REV. DATE	REV. NO.	REVISION DESCRIPTION

COLUMBIA
5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION 1 AREA 3 PHASE I

PROJECT TITLE:
BORINGS

SCALE: —— DATE: 4/11/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

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

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTICICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. ~~I WILL~~ PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 90 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JOSEPH H. NECKER JR — DATE 12-5-90

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 4/4/91

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 4/4/91

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 AN "AS-BUILT" PLAN OF THE POND WITHIN 90 DAYS OF COMPLETION.~~"

Thomas J. Shafer — 12/3/90
THOMAS J SHAFER — DATE
Registration No. 8457

F 91.98 SHEET 19 OF 20

STORMWATER MANAGEMENT
CONSTRUCTION SPECIFICATIONS

1. SITE PREPARATION

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, rocks 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 SWM Ponds and earth dam 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 limits of the dam and reservior 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.

2. EARTH FILL

MATERIAL
The fill material shall be taken from approved desgnated 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 rollers to assure maximum density and minimum permeability.

3. 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.

4. 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 coating are commercially available: Nexon, Plastic-cote, Blac-Klad and Beth-cu-loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

2. CONNECTION-All connections with pipes must be completely watertight. Watertight coupling bands are not considered to be watertight.

3. BEDDING-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-Backfilling shall conform to structureal backfill as shown above.

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

5. CONCRETE

1. MATERAILS
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, orgnaic 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.

5. CONCRETE - Continued

1. MATERIALS
D. COARSE AGGREGATE-The corse aggregate shall be clean, hard, strong and durable, and free from 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 or rail 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 combination of aggregates may be adjusted to produce a plastic and workable mix that will not produce harshness in placing or honey-combing 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 fill 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 material, 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 concrete is placed.
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 occure 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, bridges on all concrete surfaces permanently exposed to view or exposed to water on the finsihed 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 the sun for at least the first three (3) days. All concrete shall be kept continously 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 degrees with the temperature falling, or 34° with the temperature rising.

6. 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.

7. 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. See sheets 18 and 19

PERMANENT SEEDING

ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS:

1. SEEDED PREPARATION: Loosen upper 3 inches of soil by raking, discing or other acceptable means before seeding.

2. SOIL AMENDMENTS: Apply 2 tons per acre Dolomitic limestone (92 lbs./1,000 sq. ft.) and 600 lbs. per acre 0-20 fertilizer (14lbs./1,000 sq. ft.) Harrow or disc lime and fertilizer into uppper three inches of soil. At time of seeding, apply 400 lbs. per acre (9.2 lbs./1,000 sq. ft.) of 38-0-0 Ureaform fertilizer and 500 lbs per acre (11.5 lbs/1,000 sq. ft.) of 10-20-20 fertilizer.

3. SEEDING: For the periods March 1 thru April 30 and August 1 thru October 15, see with 45lbs. per acre (1.4 lbs/1,000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, see with 45 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (.05 lbs./1,000 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 see 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.

4. EROSION CONTROL FABRIC: "HOLD GRO", Gulf State Pater Corporation, P.O.B. NO. 3199 Tuscaloosa, Alabama, 34504, or an approved equal. Install as recommended by the manufacturer.

5. MAINTENANCE: Inspect all seeded areas and make needed repairs, replacement and reseedings.

6. Add Crown Vetch Liquminous Seed to mixture on 2:1 and 3:1 slopes, Seed mixture shall be sown at the rate of 45 pounds/acre with Crown Vetch sown at 15 pound/acre. Inoculant for Crown Vetch shall be at the rate of 6.7 oz. Powder or liquid culture per 20 pounds Crown Vetch. Seed inoculated with liquid culture shall be sown within 24 hours after treatment: Seed incoculated with powdered culture shall be sown within 48 hours after treatment. The seeding contractor may elect to apply the inoculated Legume Seed dry and in a separate operation prior to applying an aqueous mixture, or he may apply them in the aqueous mixture with the seed and commercial fertilizer using four times the quantity of inoculum recommeded for dry leguminous seed application.

8. COUPLING BANDS, ANTI-SEEP COLLARS, ETC.

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 miles in thickness.

9. CONNECTIONS

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. 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.

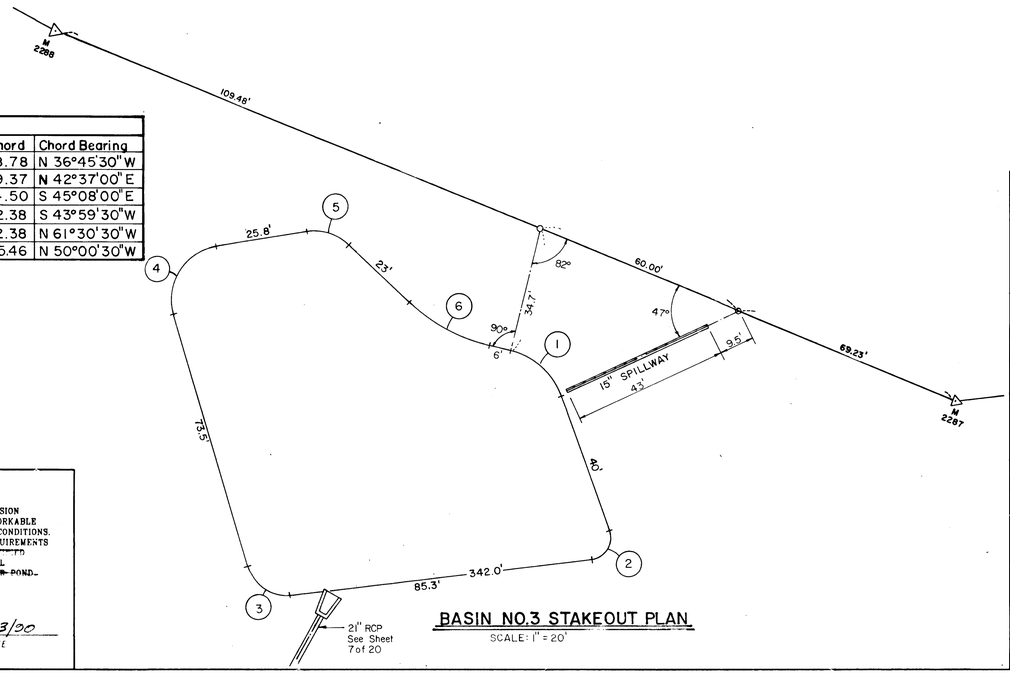
All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 48" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket; and a 12" wide hugger type band with O-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 48" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24".

Helically corrugated pipe shall have either continuously welded seems or have lock seams.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
CHIEF, LAND DEVELOPMENT DIVISION	DATE 4/4/91
CHIEF, BUREAU OF HIGHWAYS	DATE 4/9/91
CHIEF, BUREAU OF ENGINEERING	DATE 4-23-91

APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT	DATE 3/23/91

BASIN NO. 3						
NO.	Radius	Delta	Arc	Tan	Chord	Chord Bearing
1	20.00	56°00' 00"	19.55	10.63	18.78	N 36°45'30"W
2	6.00	102°45' 00"	10.76	7.51	9.37	N 42°37'00"E
3	11.00	81°45' 00"	15.69	9.52	14.50	S 45°08'00"E
4	15.00	96°30' 00"	25.26	16.81	22.38	S 43°59'30"W
5	14.00	52°30' 00"	12.83	6.90	12.38	N 61°30'30"W
6	50.00	29°30' 00"	25.74	13.16	25.46	N 50°00'30"W



BASIN NO.3 STAKEOUT PLAN
SCALE: 1" = 20'

BY THE DEVELOPER:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE DELEGATED SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

JOSEPH H NECKER JR. — DATE 12-5-90

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

U.S. SOIL CONSERVATION — DATE 4/4/91

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

HOWARD SOIL CONSERVATION — DATE 4/4/91

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 FURTHER ~~CERTIFY~~ THAT ~~THE DEVELOPER HAS BEEN AUTHORIZED TO PROVIDE~~ I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

Thomas J Shafer — 12/3/90
THOMAS J SHAFER
Registration No. 8457

REV. DATE	REV. NO.	REVISION DESCRIPTION

5TH ELECTION DISTRICT
HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER
THE HOWARD RESEARCH
AND DEVELOPMENT CORPORATION

PROJECT AREA:
VILLAGE OF RIVER HILL
SECTION I AREA 3 PHASE I

PROJECT TITLE:
SWM CONSTRUCTION SPECIFICATIONS
BASIN NO.3 STAKEOUT PLAN

SCALE: AS SHOWN DATE: 4/1/91

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
BALTIMORE, MARYLAND 21218

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

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