CONSTRUCTION PLAN FOR
STONE LAKE
LOTS 45 THRU 118
WEATHERED STONE WAY, STONE LANDING PATH GARNET ROCK GATE, RIVER GLADE RUN, DEEP WATER LANE AND SADDLEBACK PLACE

GENERAL NOTES

1. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
2. PROJECT BACKGROUND:
   LOCATION: GORMAN ROAD @ STEPHENS ROAD
   TAX MAP: 36-18, 37-13
   ZONING: R-ED
   ELECTION DISTRICT: 6
   GROSS AREA OF TRACT: 32.13 ACRES
3. SEE DEPARTMENT OF PLANNING & ZONING FILE NUMBERS:
   S 00-13, WP 00-88, WP 00-126, WP 01-60, PB 345, WP 01-94, F 01-117, P 01-15, F 01-185 & WP 02-50.
4. THE TOPOGRAPHY SHOWN HAS A 2' CONTOUR INTERVAL AND WAS DETERMINED BY : AIERL PHOTOGRAPHY BY DAFT, McCUNE & WALKER, SUMMER 1998.
5. PUBLIC WATER AND SEWER TO BE UTILIZED. SITE IS IN METROPOLITAN DISTRICT.
6. HORIZONTAL AND VERTICAL CONTROL BASED ON HOWARD COUNTY CONTROL STATIONS 47 EA & E4.
7. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM BEST AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THIS EXACT LOCATION AND ELEVATION OF THE MAINS BY DIGGING TEST PITS BY HAND AT ALL CROSSINGS WELL IN ADVANCE OF CONSTRUCTION. ANY DISCREPANCIES MUST BE COMMUNICATED TO THE ENGINEER AT ONCE.
8. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY AND MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
9. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS /DIVISION OF CONSTRUCTION INSPECTION AT 1 (410) 313 - 1880 AT LEAST FIVE (5) DAYS PRIOR TO THE START OF WORK.
10. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THE PLANS.

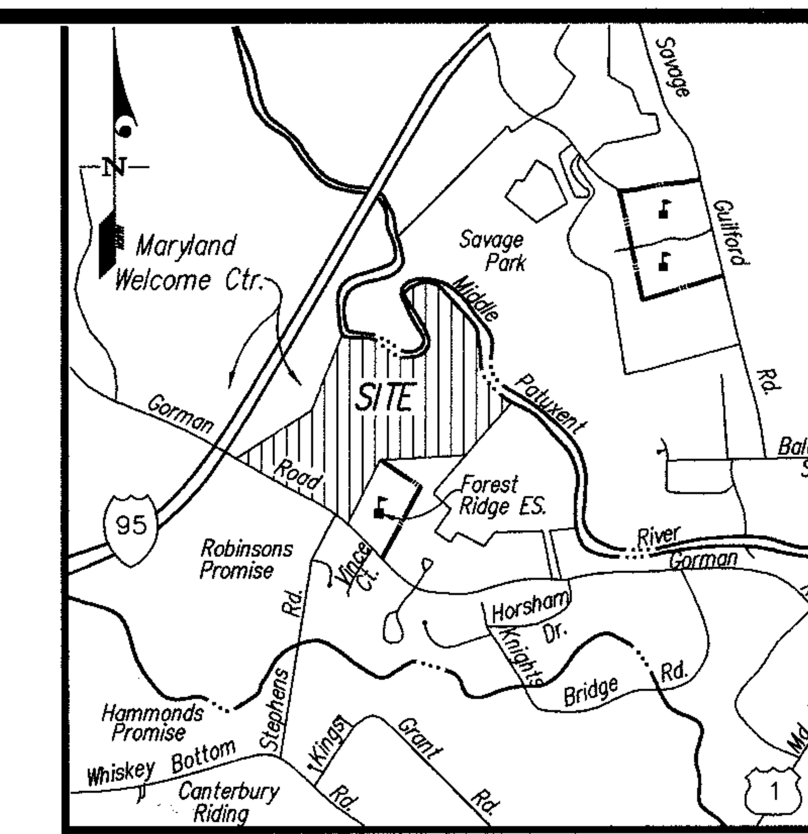
MISS UTILITY	1-800-257-7777
VERIZON	1-800-446-5266
HOWARD COUNTY BUREAU OF UTILITIES	410-313-4900
AT&T CABLE LOCATION DIVISION	393-3553
BALTIMORE GAS & ELECTRIC CO.	410-850-4620 & 410-787-9068

11. TYPES OF STORM DRAINS REFER TO THE STANDARD DETAILS OF HOWARD COUNTY AND MDSHA.
12. TRENCH COMPACTION FOR STORM DRAINS WITHIN ROADS AND STREET RIGHT - OF - WAYS LIMITS SHALL BE IN ACCORDANCE WITH "HOWARD COUNTY DESIGN MANUAL", VOL. IV, STANDARD G-2.01.
13. SEDIMENT CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH " 1994 MARYLAND STANDARDS AND SPECIFICATION FOR SOILS EROSION AND SEDIMENT CONTROL".
14. TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
15. STREET TREES SHALL BE PLANTED A MINIMUM OF FIVE (5) FEET FROM STORM DRAIN, WATERLINE OR SEWER PIPE MANHOLES; ALSO A MINIMUM OF TWENTY (20) FEET FROM STREET LIGHTS.
16. COMPACTION IN FILL AREAS SHALL BE IN ACCORDANCE WITH AASHTO T-180 OR AS APPROVED IN THE DESIGN MANUAL VOLUME IV.
17. WETLAND STREAM, STEEP SLOPE, AND FOREST COVER DELINEATION BY DAFT, McCUNE AND WALKER.
18. TRAFFIC STUDY WAS APPROVED AS PART OF THE SKETCH PLAN ON OCTOBER 10, 2000.
19. ALL ROADS IN THIS DEVELOPMENT ARE PRIVATE.
20. STREET TREE LOCATIONS SHOWN ARE TENTATIVE AND ARE TO BE USED FOR BOND PURPOSES ONLY. THE FINAL LOCATION AND VARIETY OF TREES MAY VARY TO ACCOMMODATE FIELD CONDITIONS AND BUILDERS LANDSCAPE PROGRAM.
21. LANDSCAPING FOR THIS PROJECT HAS BEEN PREPARED ACCORDING TO THE ALTERNATIVE COMPLIANCE PORTION OF THE LANDSCAPE MANUAL (CHAPTER VI).
22. THE 100-YEAR FLOOD PLAIN INFORMATION WAS TAKEN FROM AVAILABLE RECORDS AT DEVELOPMENT ENGINEERING DIVISION OF THE DEPARTMENT OF PLANNING AND ZONING.
23. DEVELOPMENT OF STONE LAKE UNDER THE CURRENT FOREST CONSERVATION ACT REQUIRES APPOXIMATELY 11.57 ACRES OF FOREST CLEARING, AND APPROXIMATELY 9.04 ACRES OF REFORESTATION. APPROXIMATELY 3.54 ACRES OF FOREST RETENTION CREDIT HAVE BEEN DERIVED FROM DEVELOPMENT OF EMERSON SECTIN 1, AND WILL BE USED TO PARTIALLY DEFRAY THE STONE LAKE REFORESTATION OBLIGATION; AS SUCH , A TOTAL OF 5.50 ACRES OF REFORESTAITION ARE PROVIDED UNDER THESE PLANS. THE F-01-177 PHASE OF THE PROJECT ENTAILED APPROXIMATELY 0.99 ACRES OF FOREST CLEARING , 12.96 ACRES OF FOREST RETENTION, AND APPROXIMATELY 4.81 ACRES OF REFORESTATION. THE F-01-204 PORTIONS OF THE PROJECT ENTAIL APPROXIMATELY 10.58 ACRES OF FOREST CLEARING, 5.94 ACRES OF FOREST RETENTOIN, AND 0.69 ACRES OF REFORESTATION. THE ENTIRE 5.50 ACRES OF REFORESTATION REQIREMENT WILL BE SATISFIED ON SITE AT THE LOCATIONS SHOWN ON THE FOREST CONSEVATION PLAN.
24. NOISE STUDY WAS APPROVED AS PART OF THE SKETCH PLAN OCTOBER 10, 2000.
25. A DETAILED GEOTECHNICAL STUDY HAS BEEN PERFORMED BY THE ROBERT B. BALTER COMPANY FOR DEVELOPMENT OF THIS SITE. THIS REPORT ESTABLISHES THE STRUCTURE SETBACK LINE (SSL) AS INDICATED ON THESE PLANS. COPIES OF THE REPORT ENTITLED "GEOTECHINACAL EVALUATION-SLOPE STABILITY AND STEEPAGE ANALYSIS, STONE LAKE SUBDIVISION, HOWARD COUNTY, MARYLAND, " DATED NOVEMBER 29, 2000 AND ADDENDUM DATED JANUARY 17, 2002 AREA AVAILABLE UPON REQUEST FROM THE ROBERT B. BALTER COMPANY.
26. ON AUGUST 11,2000, WP 00-88; WAIVER SECTION 16.116 b(1) AND (2) WAS GRANTED WHICH PROHIBITS GRADING OR CLEARING ON STEEP SLOPES OVER 25% IF THE CONTIGUOUS AREA IS MORE THAN 20,000 SQUARE FEET; AND SECTION16.116(C), WAS GRANTED, WHICH PROHIBITS GRADING OR CLEARING IN WETLANDS, WETLAND BUFFERS, STREAMS, STREAM BUFFERS AND FLOODPLAINS, SUBJECT TO FIVE CONDITIONS IN THE APPROVAL LETTER.
27. ON AUGUST 11,2000, WP 00-126; WAIVER OF SECTION 16.144 (C)(2) AND 16.114q(3) WAS GRANTED WHICH REQUIRES THAT A DEVELOPER SUBMIT ADDITIONAL INFORMATION TO THE SRC WITHIN 45 DAYS OF RECEIVING NOTICES TO DO SO OR THE PLAN WILL BE DENIED, SUBJECT TO ONE CONDITION IN THE APPROVAL LETTER.
28. ON JANUARY 16, 2001, WP 01-60; WAIVER OF SECTION 16.120 c (2) WAS GRANTED WHICH REQUIRES ALL LOTS TO HAVE FRONTAGE ON A PUBLIC ROAD; AND SECTION 16.120 c (4) WHICH LIMITS THE LENGTH OF A PRIVATE ROAD FOR SFA UNITS TO 200, SUBJECT TO ONE CONDITION IN THE APPROVAL LETTER.
29. ON, APRIL 3, 2001, WP 01-94, WAIVER OF SECTIONS 16.116 b (1) AND (2) WAS GRANTED WHICH CLEARING ON STEEP SLOPES OVER 25% AND GREATER THAN 20,000 SQUARE FEET IN CONTIGUOUS AREA, SUBJECT TO THREE CONDITIONS.
30. ON FEBRUARY 1, 2002 WP 02-50, WAIVER OF SECTION 16.116.b. (1) WAS GRANTED WHICH PROHIBITS GRADING AND CLEARING ON STEEP SLOPES GREATER THAN 25% FOR CONSTRUCTION OF A STORM DRAIN LINE AND OUTFALL BEHIND PROPOSED LOTS 56-58, SUBJECT TO ONE CONDITION IN THE APPROVAL LETTER.
31. DISTURBANCES TO THE EXISTING STEEP SLOPES AT THE RIM OF STORMWATER MANAGEMENT FACILITY NUMBER 2 IS A "NECESSARY DISTRUBANCE" BEING A REQUIREMENT OF THE HOWARD SOIL CONSERVATION SERVICE. THIS DISTURBANCE FOR CLEARING GRADING OPERATIONS AS INDICATED ON THESE PLANS IS TO STABILIZE THE EXISTING SLOPES.

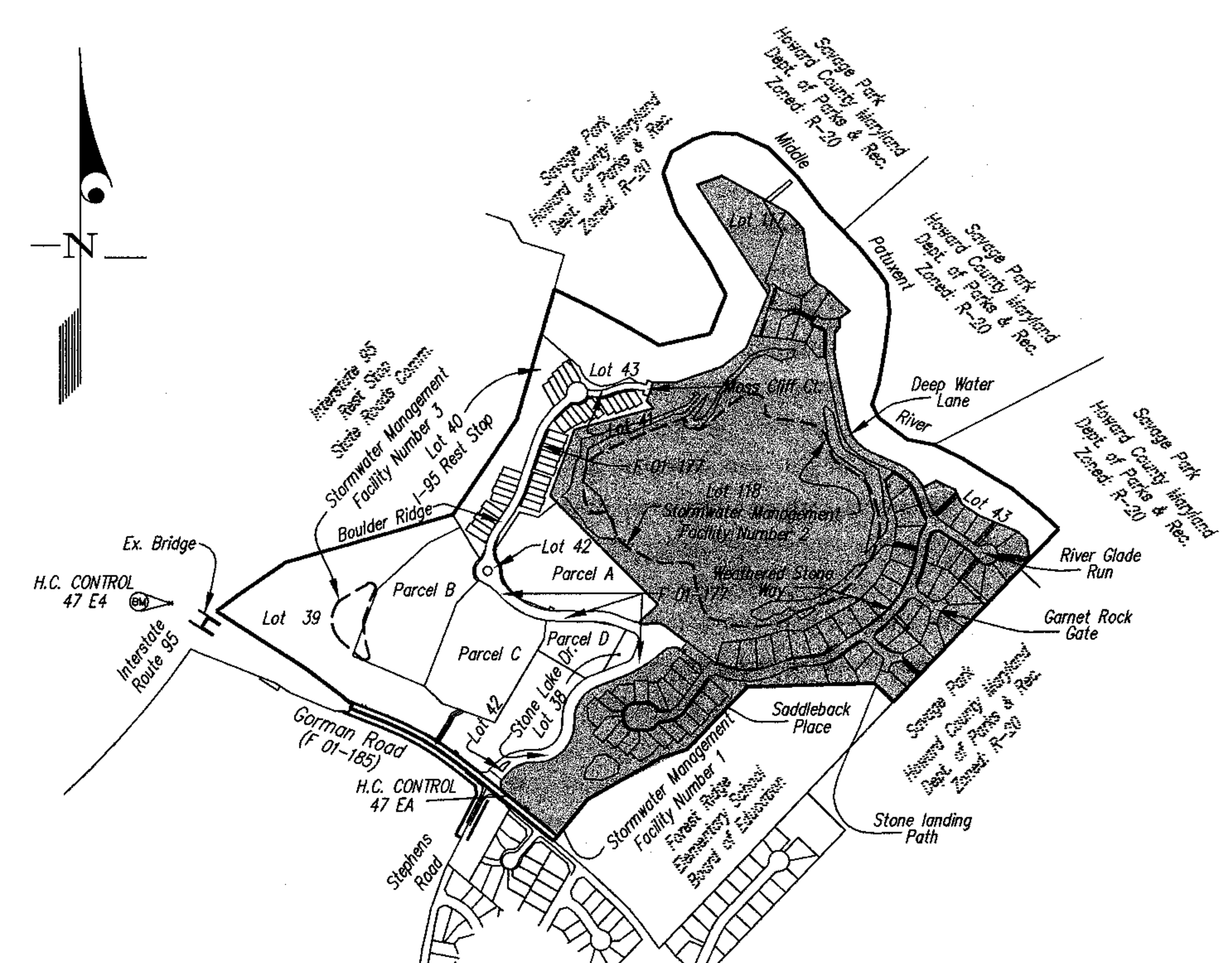
NO PROPOSED PUBLIC FACILITIES.
MAINTAINED BY HIGHWAYS.

LEGEND

- EXISTING STREET LIGHT
- PROPOSED STREET LIGHT
- ④ PROP. TOP OF CURB ELEVATION
- EX. 12"W — EXISTING WATER MAIN
- EX. 18"SD — EXISTING STORM DRAIN
- EXIST. CURB/CURB & GUTTER
- PROP. CURB & GUTTER
- EXISTING PAVING
- PROPOSED PAVING
- 396 — EXISTING CONTOUR
- 96 — PROPOSED CONTOUR
- EXISTING STREET TREES
- PROPOSED STREET TREES
- LIMIT OF SUBMISSION
- SSL — STRUCTURE SETBACK LINE



VICINITY MAP
1"=2000'



LOCATION PLAN & SHEET LAYOUT
SCALE: 1"=600'

CONTROL STATION	NORTHING	EASTING	ELEVATION
47 E4	535846.138	1355431.196	338.91
47 EA	535063.631	1357283.989	315.28

SHEET INDEX

1. COVER SHEET
2. Weathered Stone Way Station 0+89.87 to Station 10+88.22 and Stone Landing Path Station 0+00 to Station 2+29.56
3. Weathered Stone Way Station 10+88.22 to Station 17+10.36, Garnet Rock Gate Station 0+00 to Station 1+71.94, and River Glade Run Station 0+00 to Station 3+91.25
4. Deep Water Lane Station 0+00 to Station 11+68.12
5. Saddleback Place Station 0+00 to Station 4+83.55
6. Typical Road Details
7. Grading Plan~South
8. Grading Plan~East
9. Grading Plan~Outfall Area
10. Grading Plan~West
11. Grading Plan~Berm
12. Sediment Control Overview Plan
13. Sediment Control Plan~South
14. Sediment Control Plan~East
15. Sediment Control Plan~Outfall Area
16. Sediment Control Plan~West
17. Sediment Control Plan~Berm
18. Sediment Control Details
19. Sediment Control Details, Notes
20. Storm Drain Profiles
21. Storm Drain Profiles
22. Storm Drain Profiles
23. Storm Drain Profiles
24. Stormwater Management Facility 2 Plan & Details
25. Landscape Plan~South
26. Landscape Plan~East
27. Landscape Buffer Overview Plan
28. Landscape Detail Sheet
29. Storm Drain Drainage Area Map
30. Storm Drain Drainage Area Map
31. Forest Conservation Plan
32. Forest Conservation Plan
33. Forest Conservation Plan
34. Forest Conservation Plan
35. Forest Conservation Plan
36. Forest Conservation Plan
37. Forest Conservation Plan
38. Forest Conservation Plan

STORMWATER MANAGEMENT FOR STONE LAKE IS PROVIDED IN THREE FACILITIES:

1. FACILITY NUMBER 1 IS A DETENTION/RETENTION FACILITY (WET POND) THAT HAS BEEN REVIEWED AND APPROVED UNDER F 01-177. FACILITY NUMBER 1 IS TO BE OWNED BY THE HOMEOWNER'S ASSOCIATION AND MAINTAINED JOINTLY BY THE COUNTY AND THE HOMEOWNERS ASSOCIATION.
2. FACILITY NUMBER 3 IS A SHALLOW MARSH WATER QUALITY FACILITY (WET POND) THAT HAS BEEN REVIEWED AND APPROVED UNDER F 01-177. FACILITY NUMBER 3 IS TO BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION
3. FACILITY NUMBER 2 IS A DETENTION/RETENTION FACILITY (WET POND) THAT IS DETAILED IN THIS SET OF PLANS. FACILITY NUMBER 2 IS TO BE OWNED AND MAINTAINED BY HOMEOWNER'S ASSOCIATION.

NOTE: DEVELOPMENT OF THE F-01-204 PORTIONS OF STONE LAKE ENTAILS RETENTION OF 5.94 ACRES OF FOREST AND REFORESTATION OF 0.69 ACRES. A SURETY IN THE AMOUNT OF $ 66,777.48 is REQUIRED TO BOND THE RETENTION AND REFORESTATION AREAS.

APPROVED: HOWARD COUNTY DEPARTMENT OF ~~PUBLIC~~ WORKS
Private Roads ~~Drains~~ And SWM
Chief, ~~Bureau~~ of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[signature] HB 5/3/02
Chief, Division of Land Development — Date
[signature] 5/3/02
Chief, Development Engineering Division — Date

STATE OF MARYLAND — MICHAEL JAMES TRAPPER — No. 14093 — REGISTERED PROFESSIONAL ENGINEER [seal and signature]

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

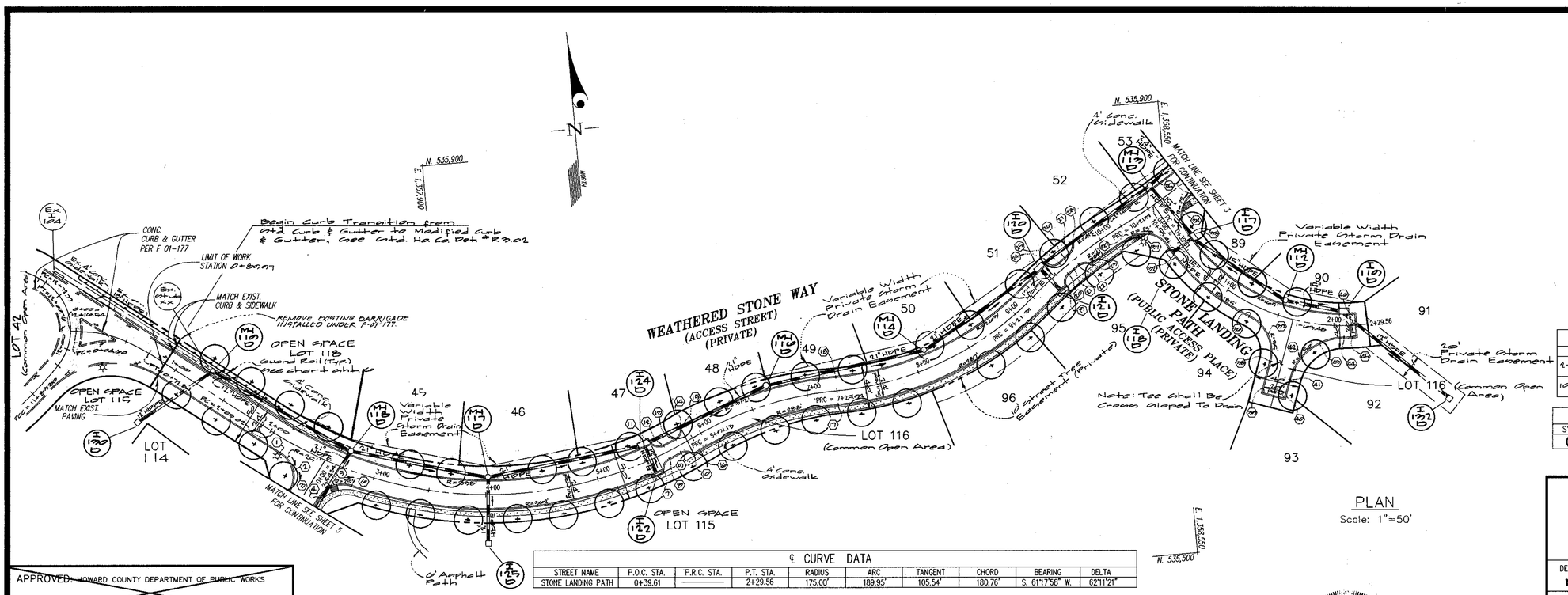
99140\design\99140CSP3.DWG	DES.	DRN. DCF/WSJ	CHK.

DATE	REVISION	BY	APP'R.

OWNER :
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
PH: 410-992-6089
ATTN: MR. BOB JENKINS

COVER SHEET
STONE LAKE
LOTS 45 THRU 118
~~PLAT No.~~
ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-ED	99140
DATE	TAX MAP - GRID	SHEET
DEC., 2001	47 - 9/10	1 OF 38



PLAN

Scale: 1"=50'

CURB ELEVATION TABLE			
PT. No.	STATION	OFFSET	ELEVATION
1	2+10.20	12' Right	202.84
2	2+35.44	10.48' Right	202.84
3	0+70.81	10' Right	202.83
4	0+31.56	10' Left	202.74
5	2+07.03	11.02' Right	202.05
6	2+82.01	12' Right	201.60
7	5+55.57	12' Right	200.16
8	5+64.37	6' Right	200.00
9	5+75.78	6' Right	200.30
10	5+88.57	12' Right	201.77
11	5+55.54	12' Left	200.14
12	5+65.10	6' Left	200.06
13	5+77.23	6' Left	200.25
14	5+88.70	12' Left	201.68
15	5+01.13	12' Left	202.52
16	5+01.13	12' Right	202.52
17	7+25.01	12' Right	202.10
18	7+25.01	12' Left	202.10
19	7+40.07	12' Right	202.10
20	0+58.57	6' Right	202.05
21	0+64.62	6' Right	202.71
22	0+72.67	6' Right	202.47
23	0+82.18	12' Right	202.01
24	0+52.03	12' Left	202.58

CURB ELEVATION TABLE			
PT. No.	STATION	OFFSET	ELEVATION
25	0+58.88	6' Left	202.05
26	0+64.03	6' Left	202.71
27	0+70.90	6' Left	202.48
28	0+72.22	12' Left	202.05
30	10+22.75	12' Right	200.20
31	10+30.13	10.12' Right	200.30
32	2+35.48	10' Right	200.80
33	2+35.48	10' Left	200.80
34	10+71.65	10.00' Right	200.00
35	10+80.22	12' Right	200.58
36	1+27.44	10' Right	202.02
37	1+47.78	10.10' Right	202.54
38	1+55.30	10.56' Right	202.10
39	1+50.33	0.00' Right	202.00
40	1+70.04	0.50' Right	202.00
41	1+71.18	0.40' Right	202.58
42	1+75.87	0.85' Right	202.30
43	1+80.07	6.08' Right	202.02
44	2+08.07	10' Right	202.74
45	2+18.05	10' Right	202.00
46	2+18.05	10' Left	202.00

STREET LIGHT SCHEDULE			
LOCATION	LAMP TYPE	MOUNTING	POLE TYPE
2+10 ~ 17' Right	100-W-Metal Halide	MODERN POST TOP FIXTURE	12' BRONZE ALUMINUM
10+30 ~ 20' Right	100-W-Metal Halide	MODERN POST TOP FIXTURE	12' BRONZE ALUMINUM

STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
(+)	Acer Sacharum / Green Mountain Sugar Maple	2"-2½" cal.	54	B & B Full Heads

℄ CURVE DATA									
STREET NAME	P.O.C. STA.	P.R.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
STONE LANDING PATH	0+39.61	———	2+29.56	175.00'	189.95'	105.54'	180.76'	S. 61°17'58" W.	62°11'21"

℄ CURVE DATA									
STREET NAME	P.C. STA.	P.R.C. STA.	P.R.C.. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
WEATHERED STONE WAY	2+07.02	5+01.13	———	350.00'	453.51'	264.89'	422.44'	S. 78°15'38" E.	74°14'23"
WEATHERED STONE WAY	———	5+01.13	7+25.02	300.00'	134.78'	68.55'	133.65	N. 76°51'45" E.	19°05'55"
WEATHERED STONE WAY	———	7+25.02	9+21.31	275.00'	195.39'	102.02'	191.31'	N. 69°22'43" E.	40°42'34"
WEATHERED STONE WAY	———	9+21.31	10+21.31	400.00'	100.00'	50.26'	99.74'	N. 34°54'10" E.	14°19'26"
WEATHERED STONE WAY	———	10+21.31	15+67.41	550.00'	546.10'	297.94'	523.94'	N. 34°54'10" E.	56°53'23"

APPROVED: ~~HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS~~

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 5/3/02

Chief, Development Engineering Division — Date 5/3/02

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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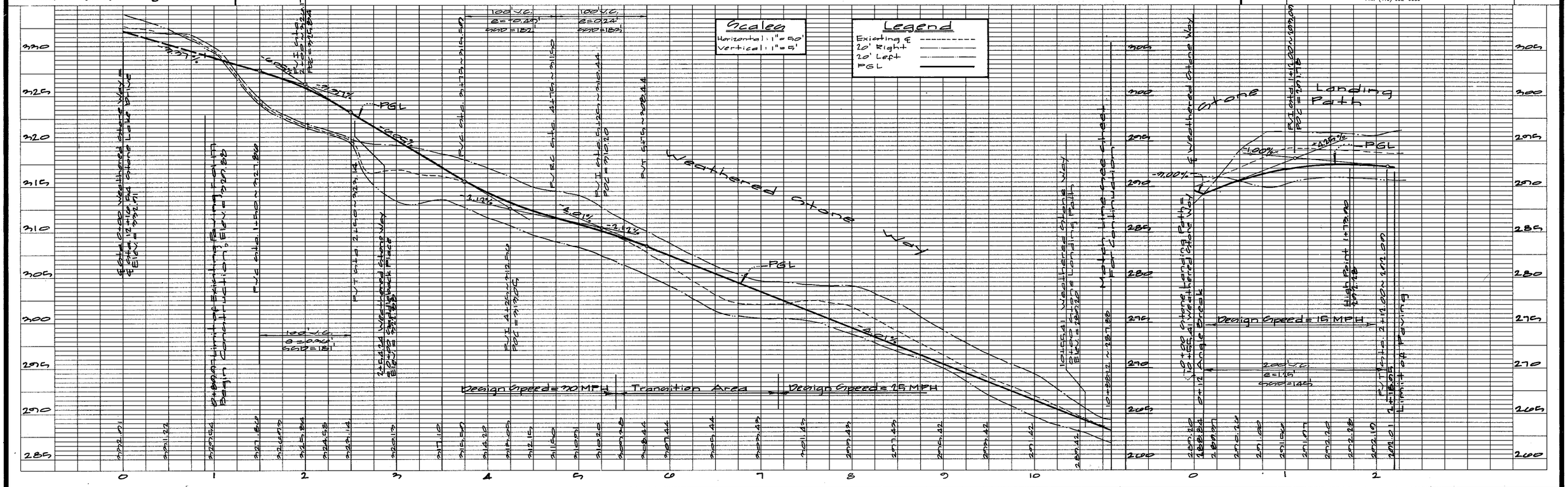
BURTONSVILLE, MARYLAND 20866
TEL.: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DESIGNED: RDT.
DRAWN: WSJ/CAD KLP
CHECKED: RDT.
DATE: Dec., 2001

ROAD CONSTRUCTION PLANS
STONE LAKE
WEATHERED STONE WAY
STATION 0+80.07 TO STATON 10+88.22
AND STONE LANDING PATH
STATION 0+00 TO STATION 2+29.56
ELECTION DISTRICT No.6
HOWARD COUNTY, MARYLAND

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
ATTN.: MR. BOB JENKINS
PH.: (410) 992-6089

SCALE: 1"=50'
DRAWING: 2 OF 2
ZONING: R-ED
JOB No.: 99140

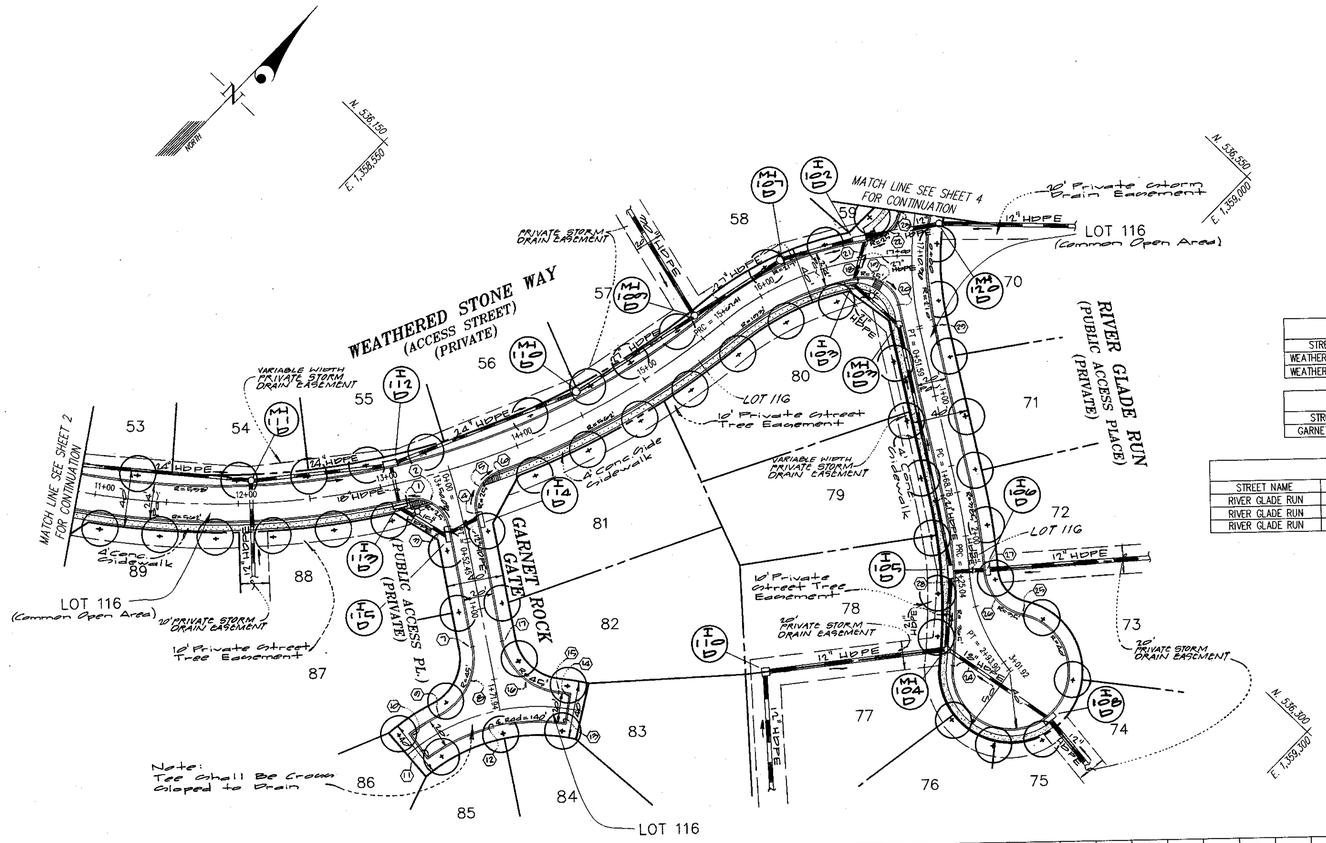


F-01-204

CURB ELEVATION TABLE			
PT. No.	STATION	OFFSET	ELEVATION
1	13+15.02	12' Right	278.72
2	0+20.10	17.19' Right	278.02
3	0+78.01	10' Right	277.32
4	0+77.70	10' Left	277.27
5	0+17.08	16.52' Left	276.08
6	13+81.75	12' Right	276.07
7	1+24.80	10' Right	277.18
8	1+51.82	18.77' Right	277.24
9	1+68.09	41.71' Right	277.71
10	1+76.71	104.00' Right	280.53
11	1+84.46	55.54' Right	281.13
12	1+84.12	40.88' Right	279.24
13	1+84.21	41.80' Left	279.39
14	1+77.77	41.40' Left	278.79
15	1+68.09	41.71' Left	278.71
16	1+51.82	18.77' Left	278.45
17	1+24.80	10' Left	278.18
18	10+72.27	12' Right	286.78
19	10+05.73	18.10' Right	286.42
20	0+77.70	10.77' Right	286.05
21	10+82.71	12' Left	286.47
22	0+15.04	16.56' Left	286.40
23	0+20.57	10' Left	286.70
24	2+78.45	20.45' Right	283.17
25	2+72.14	28.02' Left	283.38
26	2+40.64	41.80' Left	283.77
27	2+25.03	10' Left	284.15
28	2+25.03	10' RIGHT	284.15
29	0+51.50	10' Left	285.28

STREET LIGHT SCHEDULE			
LOCATION	LAMP TYPE	MOUNTING	POLE TYPE
10+20.68 ~ 27.50' RIGHT	100-W METAL HALIDE	MODERN POST TOP FIXTURE	12' BRONZE ALUMINUM
13+21.92 ~ 22.17' RIGHT	100-W METAL HALIDE	Modern Post Top Fixture	12' BRONZE ALUMINUM

STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
(+)	Acer Sacharum / Green Mountain Sugar Maple	2"-2½" cal.	54	B & B Full Heads



PLAN

Scale: 1"=50'

℄ CURVE DATA									
STREET NAME	P.R.C. STA.	P.R.C. STA.	P.O.C. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
WEATHERED STONE WAY	10+21.91	15+67.41	—	550.00'	546.10'	297.94'	523.94'	S. 34°54'10" E.	10°25'03"
WEATHERED STONE WAY	15+67.41	—	17+10.90	205.00'	142.95'	74.52'	140.07'	S. 26°26'04" W.	27°56'57"

℄ CURVE DATA								
STREET NAME	P.O.C. STA.	P.R.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
GARNET ROCK GATE	0+00	—	0+52.45	500.00'	52.45'	26.25'	52.42'	S. 57°53'47" E.	11°27'33"

℄ CURVE DATA										
STREET NAME	P.O.C. STA.	P.R.C. STA.	P.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
RIVER GLADE RUN	0+00	—	—	0+51.59	220.00'	51.59'	25.91'	51.47'	S. 50°10'32" E.	26°02'37"
RIVER GLADE RUN	—	2+25.04	1+68.78	—	375.00'	56.26'	28.18'	56.21'	S. 52°35'44" E.	08°35'46"
RIVER GLADE RUN	—	2+25.04	—	2+93.90	120.00'	68.86'	35.41'	67.92'	S. 64°44'09" E.	32°52'36"

STATE OF MARYLAND
MICHAEL JAMES MASTON
No. 14242
REGISTERED
PROFESSIONAL ENGINEER

Michael J. Maston

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hanuska — Date 5/3/02
Chief, Division of Land Development

Date 5/3/02
Chief, Development Engineering Division

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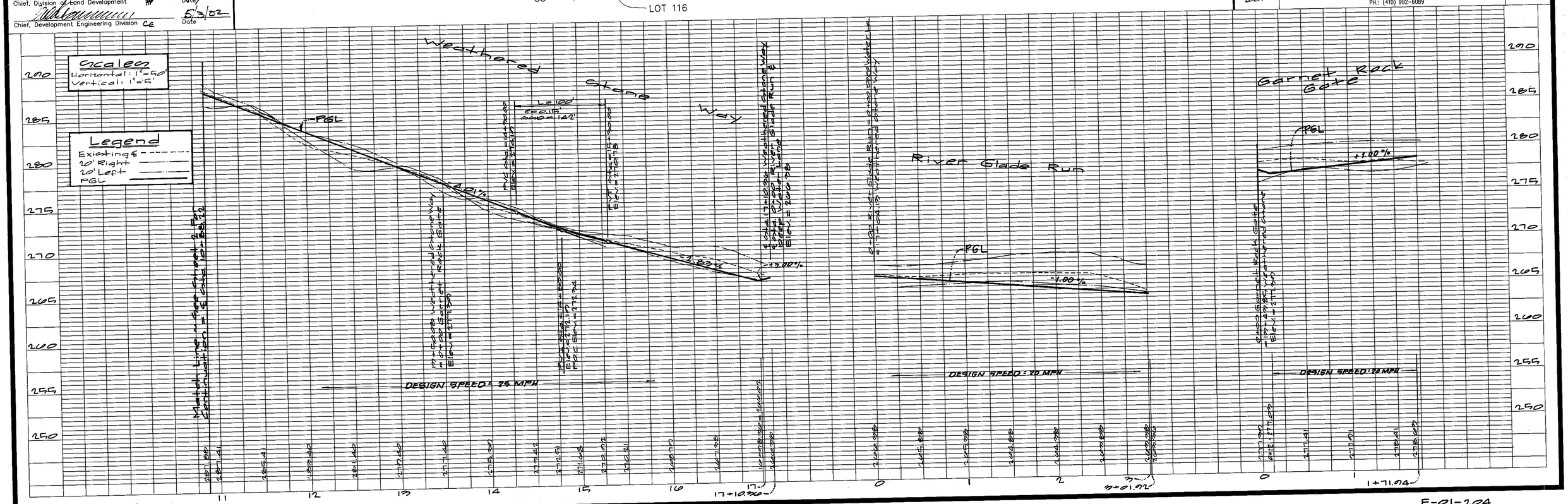
DESIGNED: rjt.
DRAWN: WSJ/CAD KLP
CHECKED: rjt.
DATE: Dec., 2001

ROAD CONSTRUCTION PLANS
STONE LAKE
WEATHERED STONE WAY
STATION 10+22.12 TO STATION 17+10.90
GARNET ROCK GATE (STATION 0+00 TO STATION 1+71.94)
RIVER GLADE RUN (STATION 0+00 TO 3+01.92)

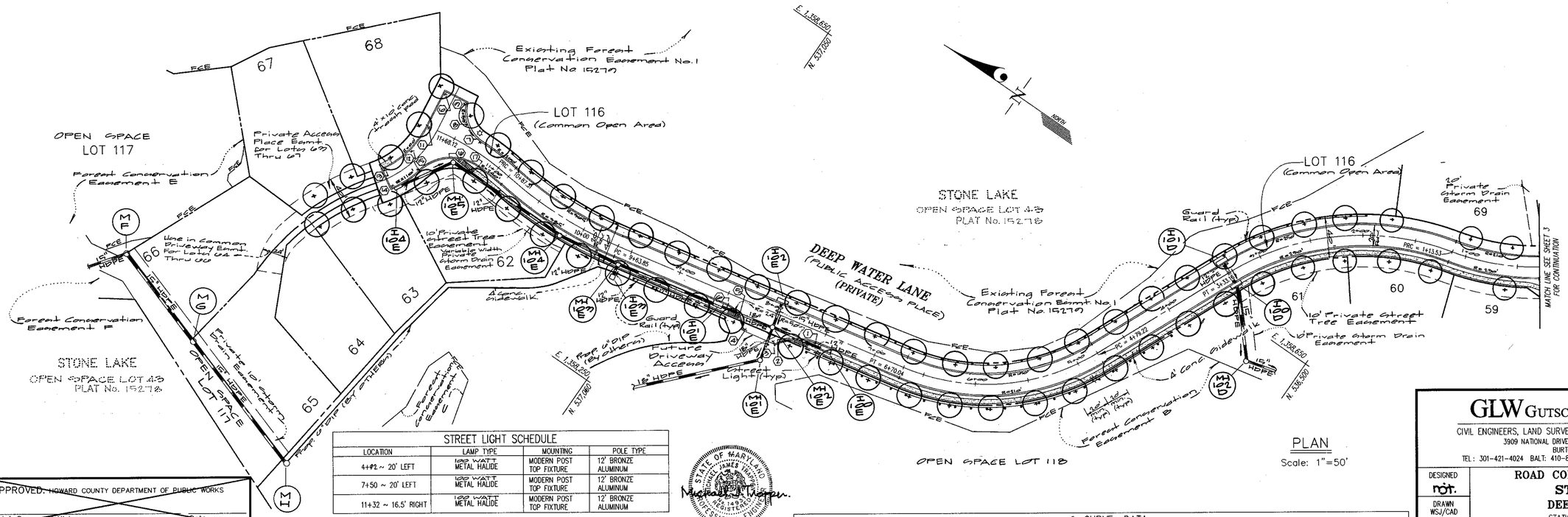
ELECTION DISTRICT No.6
HOWARD COUNTY, MARYLAND

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
ATTN.: MR. BOB JENKINS
PH.: (410) 992-6089

SCALE: 1"=50'
DRAWING: 3 OF 38
ZONING: R-ED
JOB No.: 99140



F-01-204



PLAN

Scale: 1"=50'

CURB ELEVATION TABLE			
PT. NO.	STATION	OFFSET	ELEVATION
1	7+55.14	10.0' Left	250.81
2	7+75.15	15.05' Left	250.30
3	7+91.45	17.77' Left	258.80
4	8+27.46	17.79' Left	258.82
5	8+91.07	14.80' Left	250.20
6	8+46.15	10.0' Left	250.58
7	11+27.46	10.0' Right	272.97
8	11+46.15	17.88' Right	272.71
9	11+55.32	15.00' Right	273.05
10	11+78.12	20.00' Right	273.42
11	11+78.12	30' Right	273.10
12	11+87.04	28.05' Left	273.03
13	11+97.05	25.98' Left	274.00
14	11+88.07	16.00' Left	273.74
15	11+68.05	41.05' Left	273.18
16	11+46.78	18.00' Left	272.68
17	11+10.11	10.0' Left	272.17

STREET LIGHT SCHEDULE			
LOCATION	LAMP TYPE	MOUNTING	POLE TYPE
4+92 ~ 20' LEFT	100 WATT METAL HALIDE	MODERN POST TOP FIXTURE	12' BRONZE ALUMINUM
7+50 ~ 20' LEFT	100 WATT METAL HALIDE	MODERN POST TOP FIXTURE	12' BRONZE ALUMINUM
11+32 ~ 16.5' RIGHT	100 WATT METAL HALIDE	MODERN POST TOP FIXTURE	12' BRONZE ALUMINUM

STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
⊕	Acer Sacharum / Green Mountain Sugar Maple	2"-2½" cal.	62	B & B Full Heads

STATE OF MARYLAND
MICHAEL JAMES TRAPP
No. 14994
REGISTERED PROFESSIONAL ENGINEER

℄ CURVE DATA										
STREET NAME	P.O.C. STA.	P.C. STA.	P.R.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
DEEP WATER LANE	0+00	—	1+13.53	—	220.00'	113.53'	58.06'	112.28'	N. 28°40'25" W.	29°34'05"
DEEP WATER LANE	—	—	1+13.53	3+33.16	240.00'	219.63'	118.18'	212.05'	N. 40°06'22" W.	52°25'59"
DEEP WATER LANE	—	4+79.22	—	6+70.04	200.00'	190.82'	103.97'	183.66'	N. 38°59'23" W.	54°39'56"
DEEP WATER LANE	—	9+63.85	10+87.31	—	375.00'	123.46'	62.29'	122.90'	N. 02°13'32" W.	18°51'46"
DEEP WATER LANE	—	—	10+87.31	11+68.12	250.00'	80.81'	40.76'	80.46'	S. 02°03'17" E.	18°31'16"

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 5/3/02

Chief, Development Engineering Division — Date 5/3/02

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DESIGNED: not.
DRAWN: WSJ/CAD KLP
CHECKED: not.
DATE: Dec., 2001

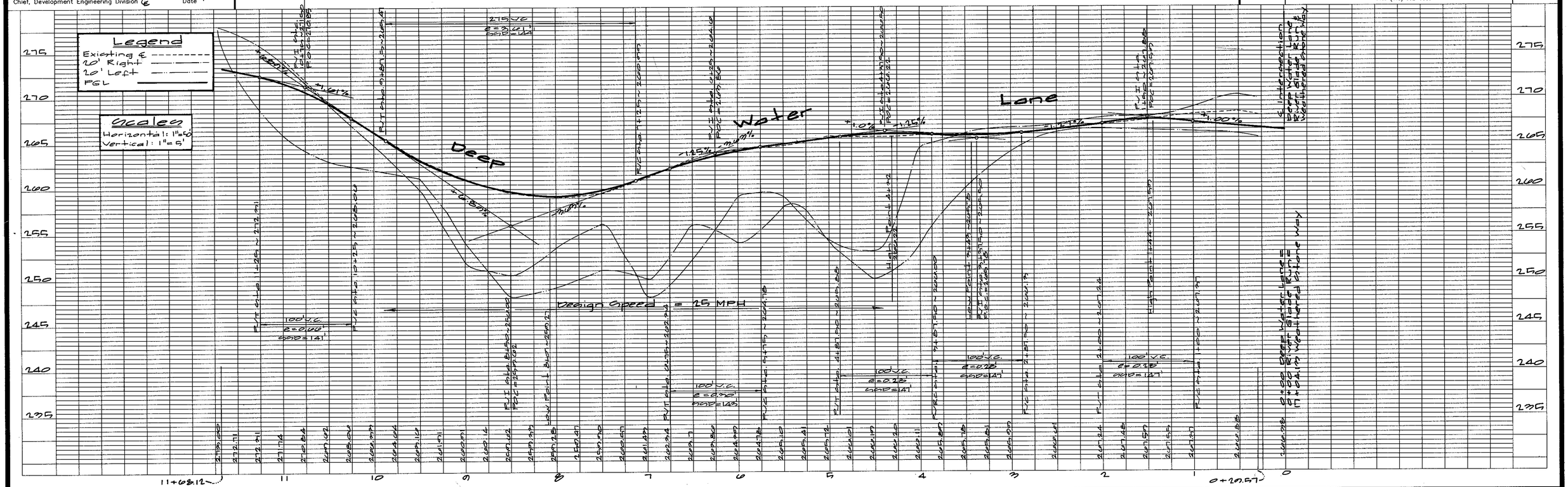
ROAD CONSTRUCTION PLANS
STONE LAKE
DEEP WATER LANE

STATION 0+29.57 TO 11+68.12

ELECTION DISTRICT No.6
HOWARD COUNTY, MARYLAND

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
ATTN.: MR. BOB JENKINS
PH.: (410) 992-6089

SCALE: AS SHOWN
DRAWING: 4 OF 38
ZONING: R-ED
JOB No.: 99140



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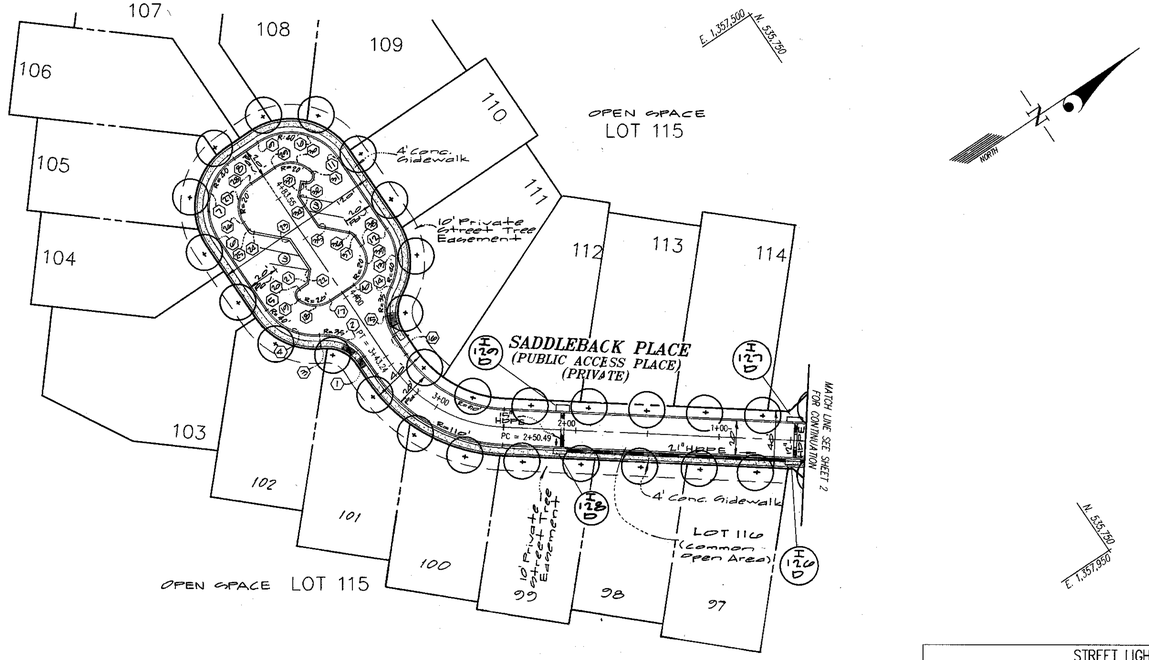

PLAN

Scale: 1"=50"

CURB ELEVATION TABLE			
PT. No	STATION	OFFSET	ELEVATION
33	4+85.68	17.36' Right	328.12
34	4+70.35	10.05' Right	328.16
35	4+69.73	10.05' Right	327.00
36	4+54.00	18.86' Right	327.30
37	4+52.30	32.0' Right	327.30
38	4+39.55	32.0' Right	327.24
39	4+07.41	24.16' Right	327.10
40	4+07.55	10.00' Right	326.95

CURB ELEVATION TABLE			
PT. No	STATION	OFFSET	ELEVATION
1	3+57.22	10' Left	326.10
2	3+75.20	15.03' Left	326.25
3	3+88.17	28.07' Left	326.41
4	4+01.80	44.15' Left	326.61
5	4+12.55	50' Left	326.84
6	4+29.55	50' Left	327.48
7	5+11.89	29.12' Left	327.70
8	5+12.55	10' Left	328.10
9	5+12.55	10' Right	328.10
10	5+11.89	28.18' Left	327.70
11	4+29.55	50' Right	327.48
12	4+12.55	50' Right	326.84
13	4+01.80	44.15' Right	326.62
14	3+88.17	28.07' Right	326.41
15	3+75.20	15.03' Right	326.25
16	3+57.22	10' Right	326.10
17	4+07.55	10' Left	326.05
18	4+07.94	21.71' Left	327.07
19	4+17.60	28.06' Left	327.10
20	4+22.89	24.16' Left	327.24
21	4+32.80	17.36' Left	327.48
22	4+39.15	10.05' Left	327.74
23	4+55.73	10.05' Left	327.00
24	4+73.00	28.86' Left	327.31
25	4+77.12	32' Left	327.32
26	4+39.55	32' Left	327.88
27	4+07.00	24.16' Left	328.04
28	5+07.55	10' Left	328.10
29	5+07.55	10' Right	328.10
30	4+08.41	23.98' Right	328.03
31	4+85.68	28.80' Right	327.87
32	4+81.40	21.50' Right	327.00

STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
⊙	Acer Sacharum / Green Mountain Sugar Maple	2"-2½" cal.	27	B & B Full Heads

STREET LIGHT SCHEDULE			
LOCATION	LAMP TYPE	MOUNTING	POLE TYPE
~~Not Location on This Sheet~~	100-W METAL HALIDE	MODERN POST TOP FIXTURE	12' BRONZE ALUMINUM

℄ CURVE DATA									
STREET NAME	P.O.C. STA.	P.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
SADDLEBACK PLACE	———	2+50.49	3+43.24	100.00'	100.00'	50.01'	89.46'	S. 63°04'02" W.	53°08'20"

STATE OF MARYLAND — JAMES T. SMITH — No. 19324 — REGISTERED PROFESSIONAL ENGINEER

APPROVED: ~~HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS~~

Chief, ~~Bureau of Highways~~ Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 5/3/02

Chief, Development Engineering Division — Date 5/3/02

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DESIGNED: RDT
DRAWN: WSJ/CAD, KLP
CHECKED: RDT
DATE: DEC., 2001

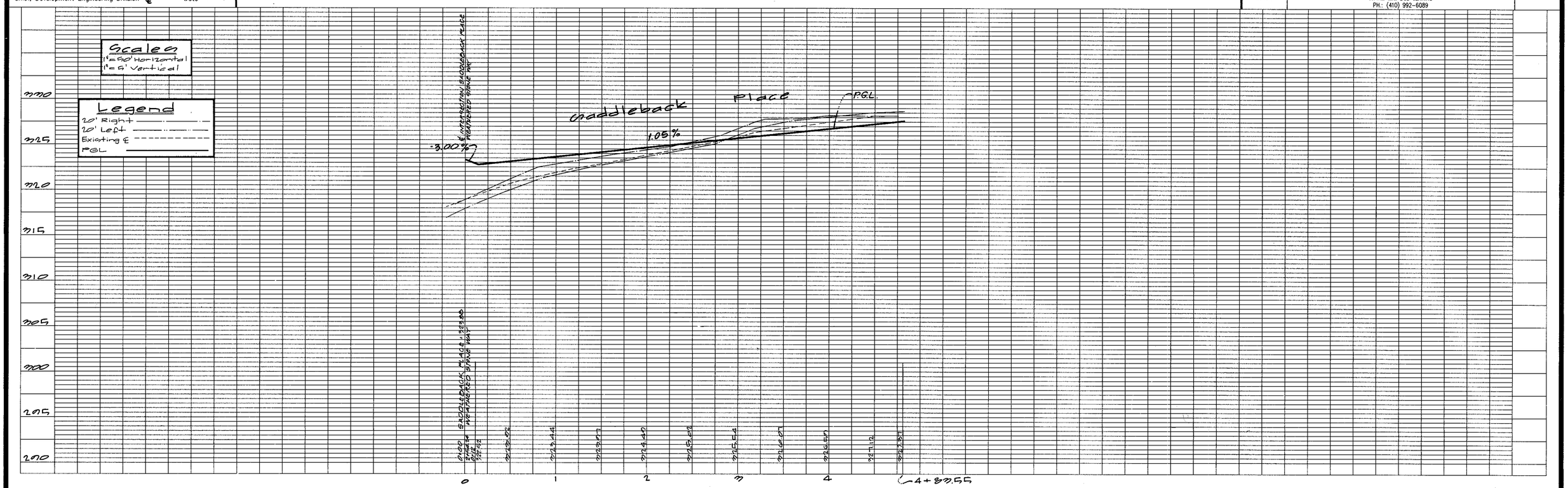
ROAD CONSTRUCTION PLANS
STONE LAKE
SADDLEBACK PLACE

STATION ~~0+00.00 to~~ 4+83.55

ELECTION DISTRICT No.6
HOWARD COUNTY, MARYLAND

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
ATTN.: MR. BOB JENKINS
PH.: (410) 992-6089

SCALE: 1"=50'
DRAWING: 5 OF 38
ZONING: R-ED
JOB No.: 99140



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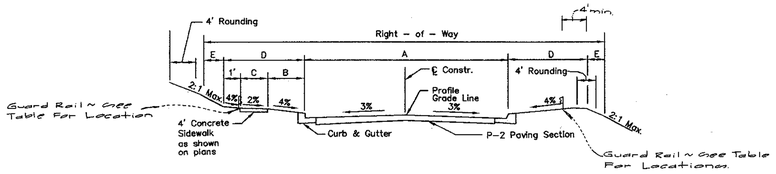


ROAD NAME	STATION	ROAD CLASSIFICATION*	DESIGN SPEED	A	B	C	D	E	R/W*	PAVING SECTION
WEATHERED STONE WAY	STA. 0+00.27 to STA. 5+91.13	ACCESS STREET-PUBLIC	30 MPH	24'	8'	4'	13'	0'	50'	P-2
WEATHERED STONE WAY	STA. 7+25.92 to STA. 17+04.13	ACCESS STREET-PUBLIC	25 MPH	24'	3'	4'	8'	0'	40'	P-2
SADDLEBACK PLACE	STA. 0+00 to STA. 3+57.22	PUBLIC ACCESS PLACE	20 MPH	20'	5'	4'	10'	0'	40'	P-2
STONE LANDING PATH	STA. 0+00 to STA. 2+18.95	PUBLIC ACCESS PLACE	15 MPH	20'	5'	4'	10'	0'	40'	P-2
RIVER GLADE RUN	STA. 0+00 to STA. 3+01.92	PUBLIC ACCESS PLACE	20 MPH	20'	5'	4'	10'	0'	40'	P-2
GARNET ROCK GATE	STA. 0+00 to STA. 1+71.94	PUBLIC ACCESS PLACE	20 MPH	20'	5'	4'	10'	0'	40'	P-2
DEEP WATER LANE	STA. 0+00 to STA. 11+68.12	PUBLIC ACCESS PLACE	20 MPH	20'	5'	4'	10'	0'	40'	P-2

NOTES:

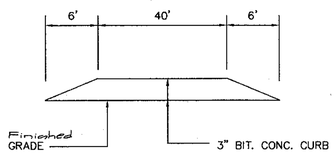
*ALL ROADS IN THIS SUBDIVISION WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.

ALL PROPOSED CURBS ARE TO BE MODIFIED CURB AND GUTTER, HOWARD COUNTY STANDARD R-3.01.

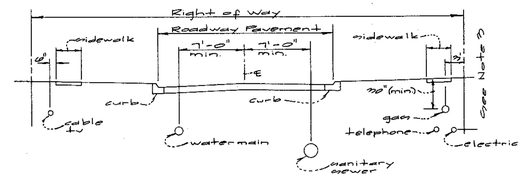
ALL PROPOSED PAVING IS TO BE P-2 PAVING SECTION.

Guard Rail Location	
Road Name	Station
Deep Water Lane	1+75 right to 11+00 right
Deep Water Lane	4+20 left to 7+40 left
Deep Water Lane	8+40 left to 9+50 left

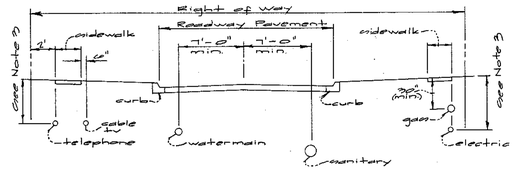
1. Provide guard rail w beam type 2 ~ end flair (Ho. Co. std. R7.17) from station 1+00 to 1+25.
2. Provide guard rail w beam type 2 ~ end flair (Ho. Co. std. R7.17) from station 10+00 to 9+25.
3. Provide guard rail w beam trail end anchorage (Ho. Co. std. R7.09) at stations 11+00 right, 4+20 left, 7+40 left and 8+40 left.



SECTION 'A-A'



Arrangement No. 1



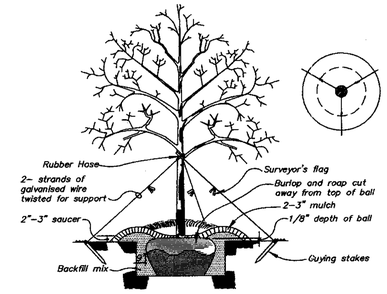
Arrangement No. 2

Notes

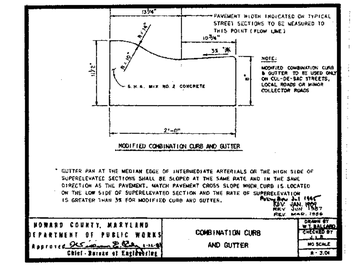
1. The Department of Public Works shall be consulted concerning the utility location arrangement for a given street project.
2. Gas, electric and telephone lines may be placed in the same trench at the option of the Baltimore, Gas & Electric Co. and Bell Atlantic.
3. Electric: 0-600V 24" cover, over 600V 30" cover
   Telephone: Main service 24" cover, residential connection 11" cover
   Cable tv: 11" cover

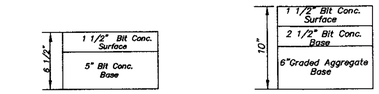
Guard Rail Location	
Road Name	Station
Stone Lake Drive	12+50 Right (Stone Lake Dr.)
Weathered Stone Way	10+25 Left (Weathered Stone Way)

1. Provide guard rail w/beam type 2 ~ end flair (Ho. Co. std. R7.17) from station 1+25 to 2+00 left (Weathered Stone Way).
2. Provide guard rail w/beam trail end anchorage (Ho. Co. std. R7.09) at station 12+50 Right (Stone Lake Dr.).



Typical Tree Guying Detail
N.T.S.



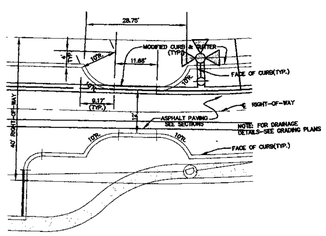


P-2 Full Depth Bituminous Concrete
N.T.S.

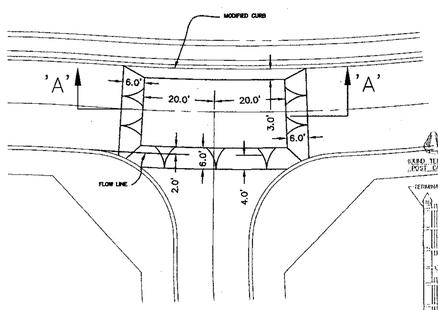
P-2 Granular Base (Alternate)
N.T.S.

Paving Sections
N.T.S.

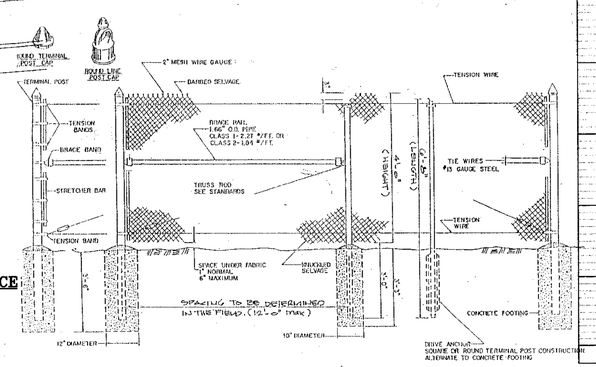
Note: Other equivalent paving sections may be approved where approved by a professional soils engineer.



TYPICAL SPEED CONTROL DEVICE
(SINGLE LANE SLOW POINT)
SCALE: 1"=20'



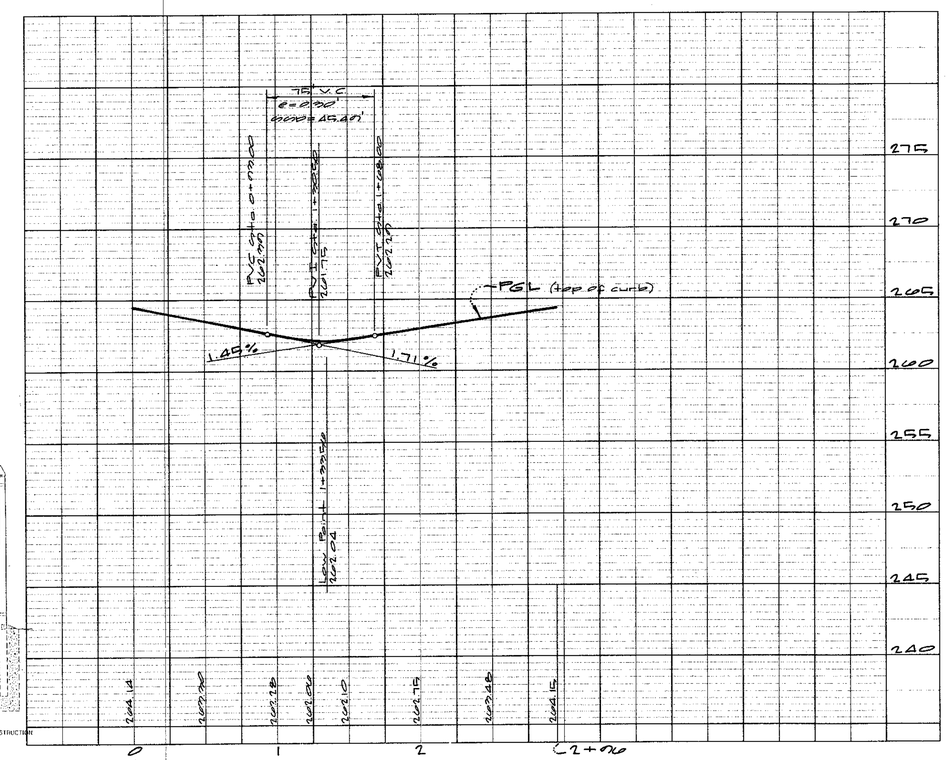
GARNET ROCK GATE & WEATHERED STONE WAY
RAISED INTERSECTION SPEED CONTROL DEVICE
SCALE: 1"=20'



Note: For location see Sheets 7-10.

NOTES:
1. ALL ROUND LINE POSTS TO BE CAPPED WITH LOOP CAPS. TENSION WIRE TO RUN THROUGH LOOPS. CAPS TO BE FASTENED TO ALL TERMINAL POSTS WITH TENSION BANDS.
2. FASTEN FABRIC TO TENSION WIRE WITH HOG RINGS @ 18"-O.C. (SECURED IN RE 12½ GAUGE GALVANIZED STEEL WIRE.
3. MATERIALS TO MEET REQUIREMENTS OF AASHTO M 181.

Safety Barrier Detail
not to scale



RIVER GLADE RUN
LINEAR CURB PROFILE - TOP OF CURB
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

APPROVED: ~~HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS~~
Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date 5/3/02
Chief, Development Engineering Division — Date 5/3/02

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL.: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186
DES. DRN. KLP CHK.

DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: BOB JENKINS
(410) 992-6089

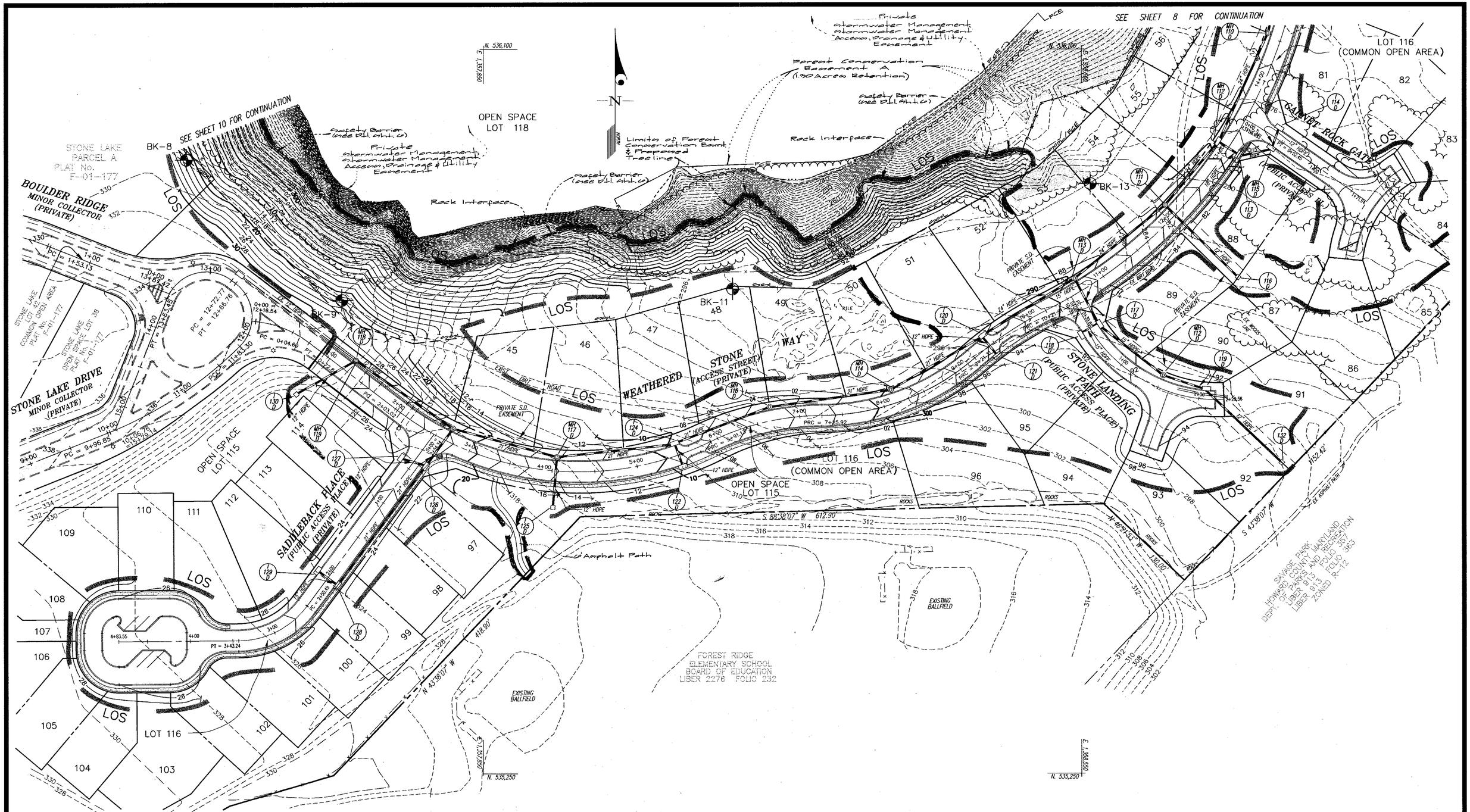
TYPICAL DETAIL SHEET

STONE LAKE
LOTS 45 THRU 118
PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-ED	99140
DATE	TAX MAP - GRID	SHEET
Dec., 2001	47-9/10	6 OF 38

F-01-204



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hamilton — 5/3/02
Chief, Division of Land Development — Date

5/3/02
Chief, Development Engineering Division — Date

STATE OF MARYLAND — JAMES TRUPPI — No. 14994 — REGISTERED PROFESSIONAL ENGINEER

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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DES. JJT | DRN. WSJ | CHK. JJT

DATE	REVISION	BY	APP'R.

PREPARED FOR :
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10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: BOB JENKINS
(410) 992-6089

GRADING PLAN ~ SOUTH

STONE LAKE
LOTS 45 THRU 118
PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP – GRID	SHEET
DEC., 2001	47-9/10	7 OF 38

F-01-204

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hamilton — Chief, Division of Land Development — Date 5/3/02

Chief, Development Engineering Division — Date 5/3/02

Michael J. Trapper — STATE OF MARYLAND — MICHAEL JAMES TRAPPER — No. 14931 — REGISTERED PROFESSIONAL ENGINEER

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES. MJT DRN. WAW/KLP CHK. MJT

DATE	REVISION	BY	APP'R.

PREPARED FOR :
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10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: BOB JENKINS
(410) 992-6089

GRADING PLAN – EAST

STONE LAKE
LOTS 45 THRU 118
PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP – GRID	SHEET
Dec., 2001	47-9/10	8 OF 38

F-01-204

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — 5/3/02 — Date

Chief, Development Engineering Division — 5/3/02 — Date

STATE OF MARYLAND — MICHAEL JAMES TROUTEN — REGISTERED PROFESSIONAL ENGINEER

GLW GUTSCHICK LITTLE & WEBER, P.A.
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TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES. — DRN. — CHK.

DATE	REVISION	BY	APP'R.

PREPARED FOR :
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
PH: 410-992-6089
ATTN: MR. BOB JENKINS

Grading Plan/Outfall Area

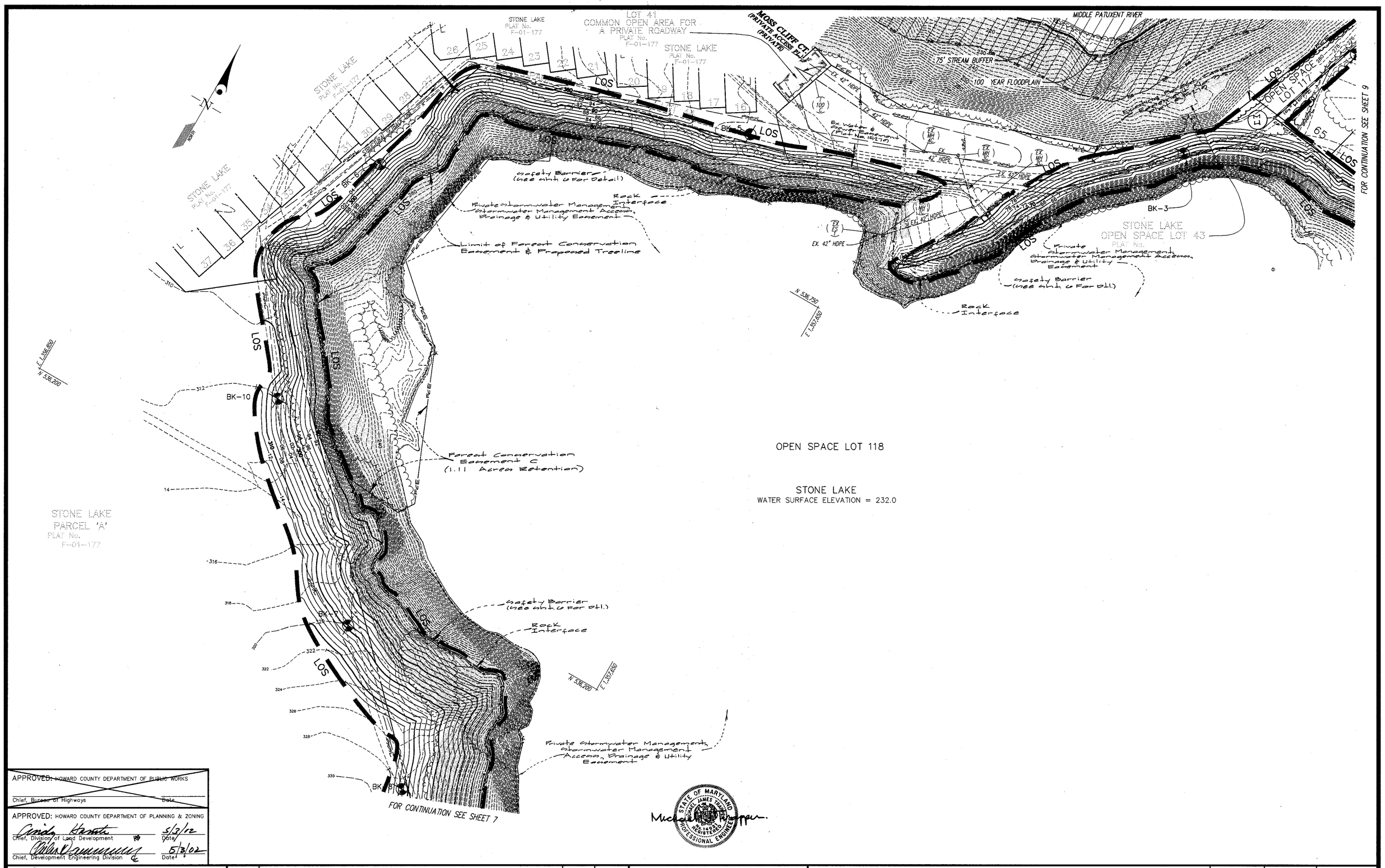
STONE LAKE

Lots 45 thru 118
Plat No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50	R-ED	99140
DATE	TAX MAP - GRID	SHEET
Dec., 2001	47- 9/10	9 OF 38

F-01-204



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 5/3/02

Chief, Development Engineering Division — Date 5/3/02

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL.: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES. DRN. WSJ CHK.

DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: BOB JENKINS
(410) 992-6089

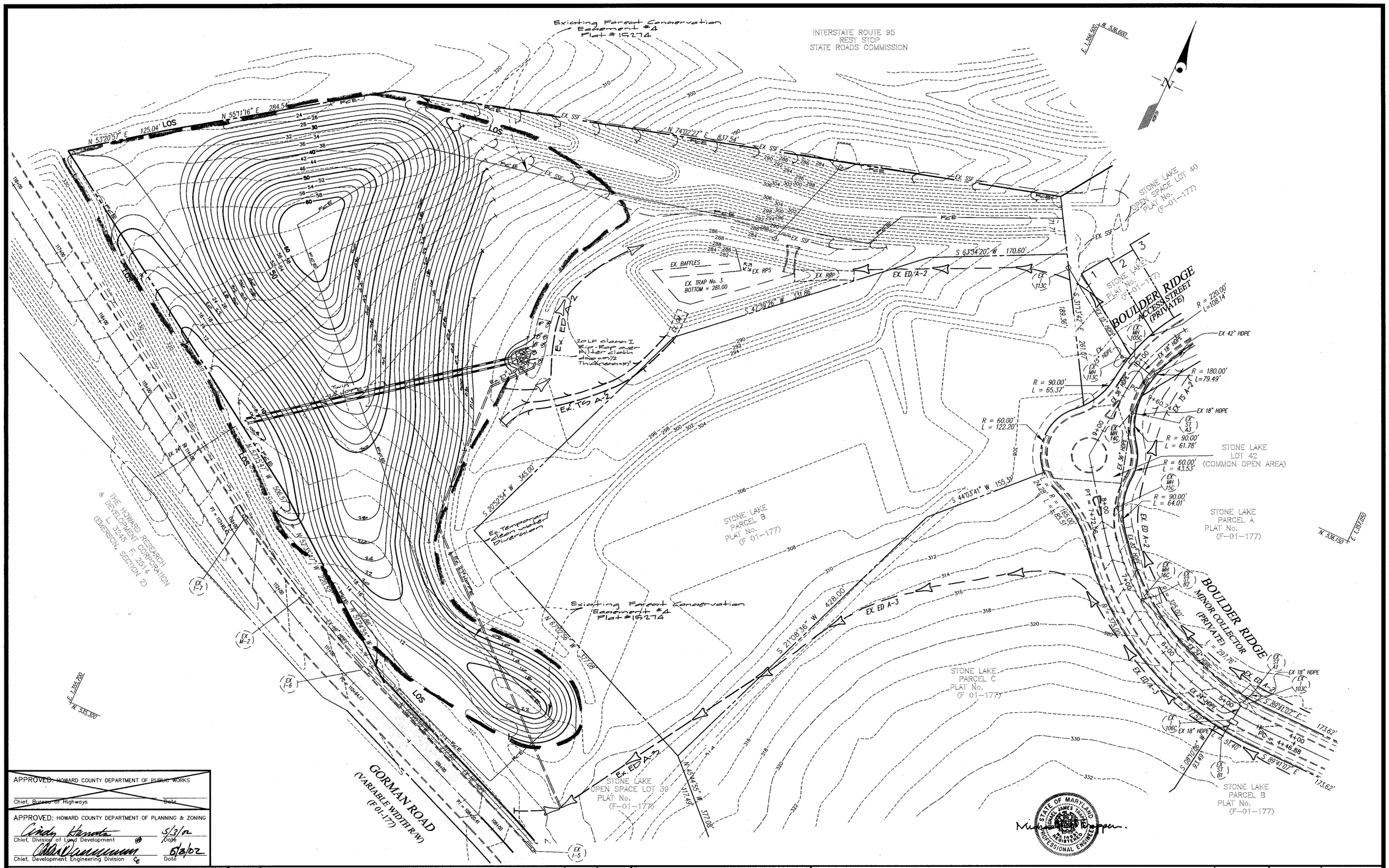
GRADING PLAN ~ WEST

STONE LAKE
LOTS 45 THRU 118
PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP – GRID	SHEET
DEC., 2001	47-9/10	10 OF 38

F-01-204



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hanuska — 5/3/02
Chief, Division of Land Development — Date

5/8/02
Chief, Development Engineering Division — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.

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TEL.: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES. DRN. CHK.

DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
PH: 410-992-6089
ATTN: MR. BOB JENKINS

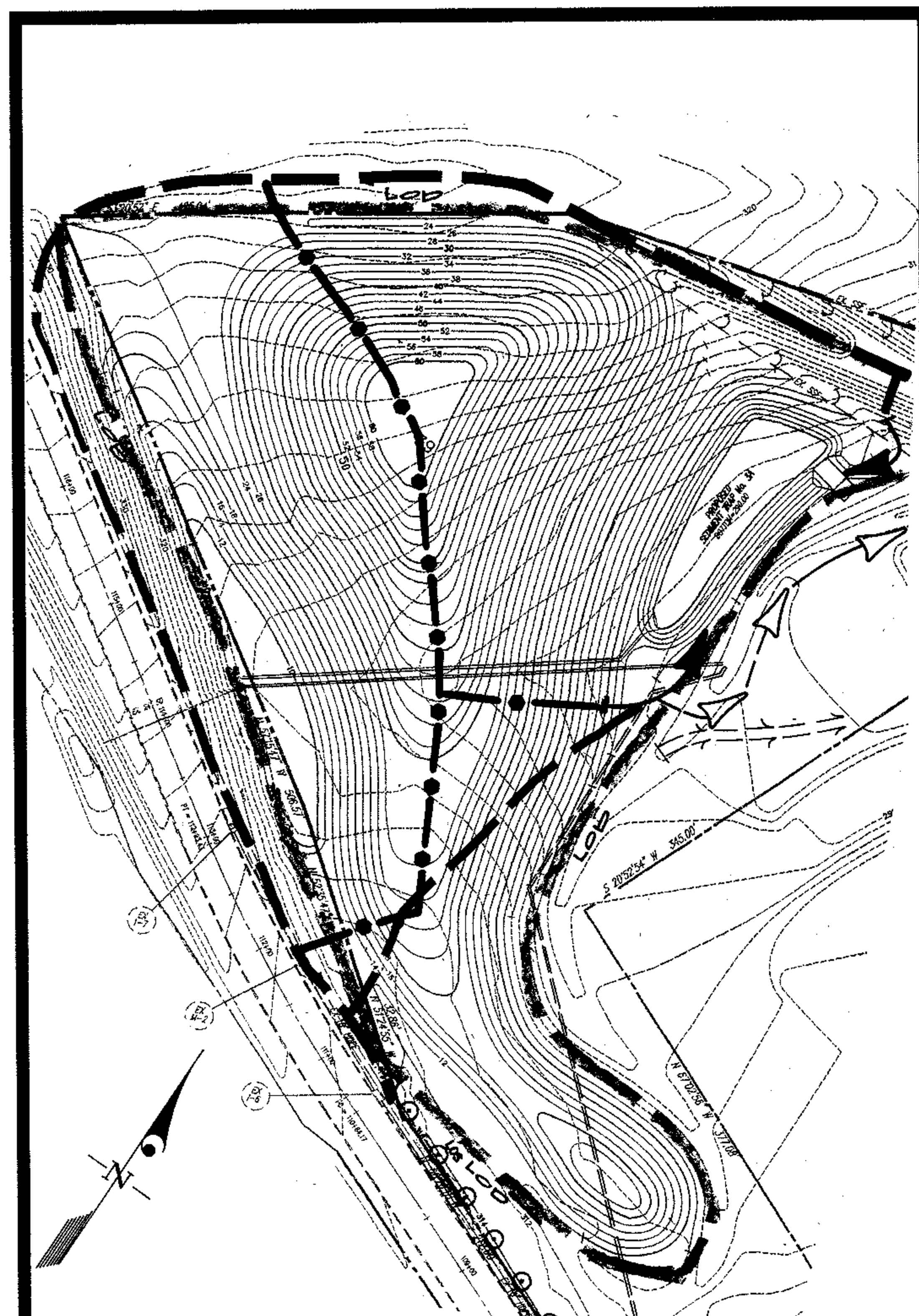
GRADING PLAN ~ BERM

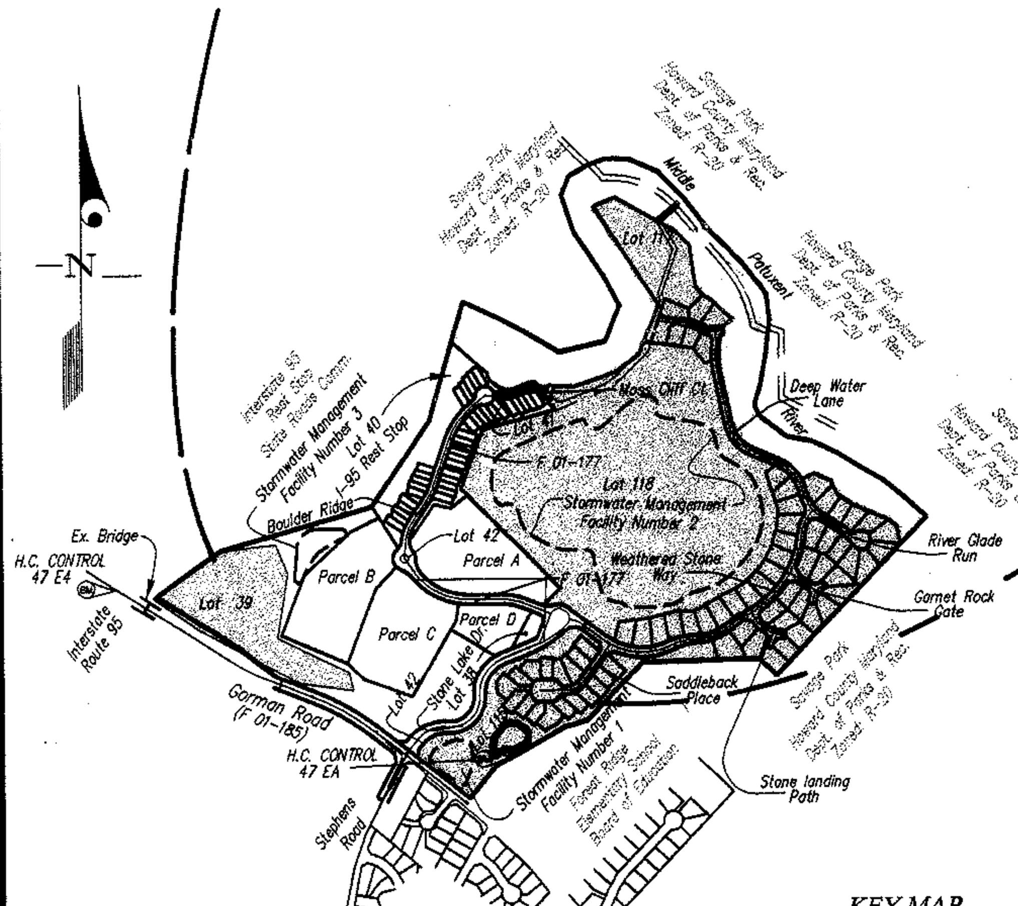
STONE LAKE
LOTS 45 THRU 118
PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

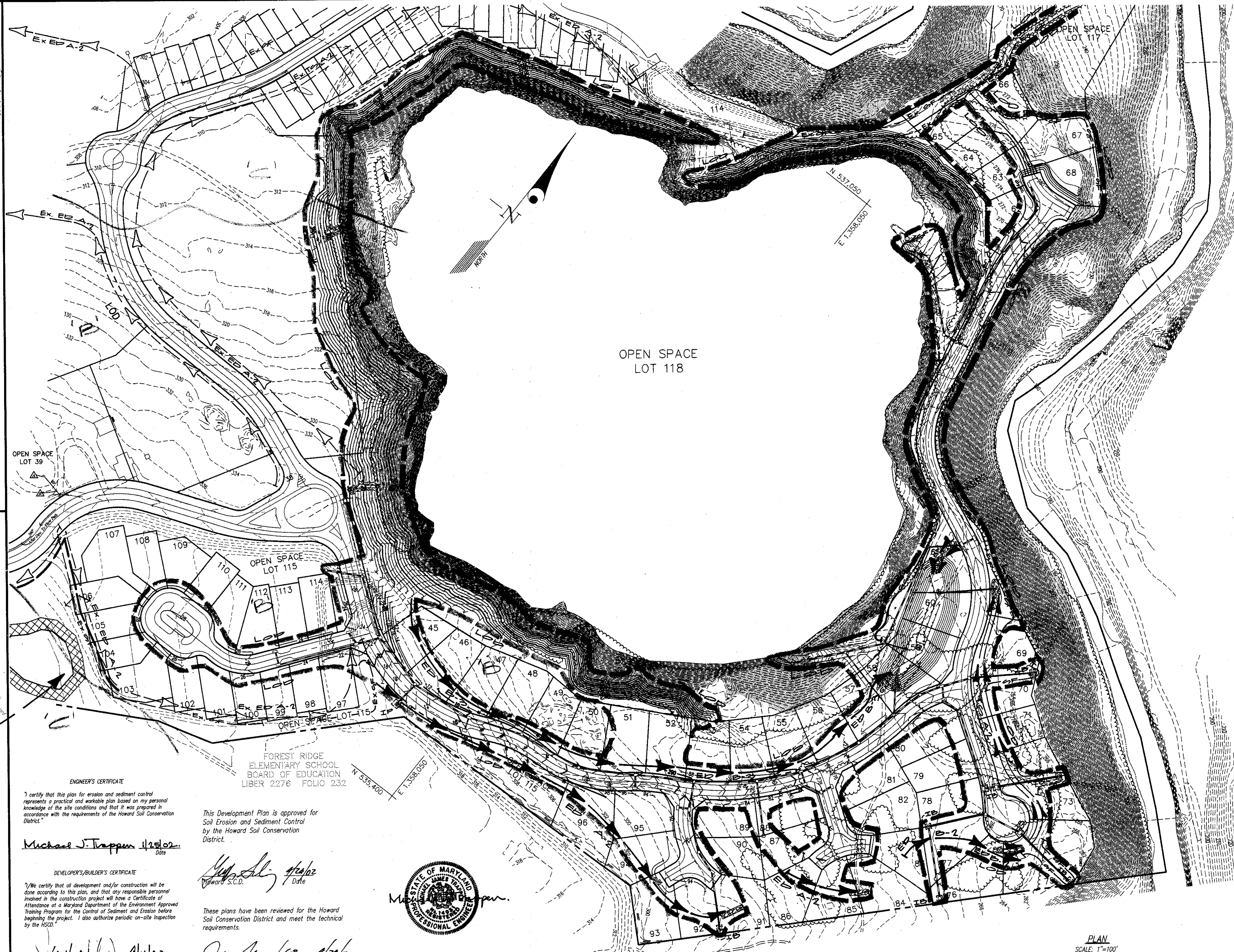
SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP – GRID	SHEET
DEC., 2001	47 – 9/10	11 OF 38

F-01-204





KEY MAP
NTS



PLAN
SCALE: 1"=100'

ENGINEER'S CERTIFICATE

"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."

Michael J. Trappen 1/25/02.
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or 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 Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the HSCD."

[signature] 4/11/02
Signature of Developer/Builder Date

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

[signature] 4/24/02
Howard S.C.D. Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.

[signature] / GB 4/24/02
Natural Resources Conservation Service Date

STATE OF MARYLAND — MICHAEL JAMES TRAPPEN — No. 14953 — REGISTERED PROFESSIONAL ENGINEER

Michael J. Trappen.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hamilton HB 5/3/02
Chief, Division of Land Development Date

[signature] CE 5/3/02
Chief, Development Engineering Division Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
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TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES. MCF DRN. MCF CHK. MJT.

DATE	REVISION	BY	APP'R.

PREPARED FOR :
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
PHONE: 410-992-6089
ATTN: MR. BOB JENKINS

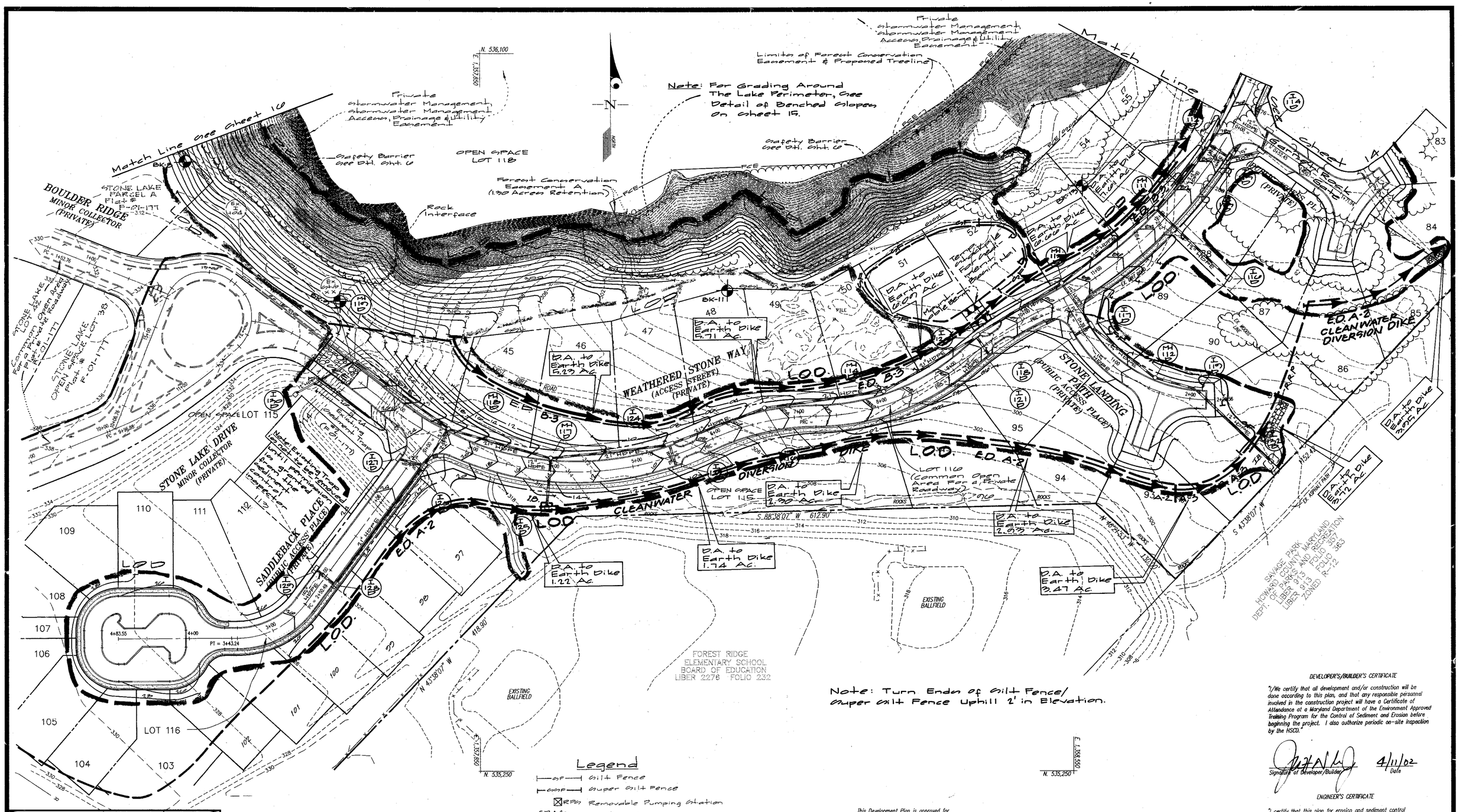
SEDIMENT CONTROL OVERVIEW PLAN

STONE LAKE
LOTS 45 THRU 118
PLAT No.

ELECTION DISTRICT No. 6 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-ED	99140
DATE	TAX MAP – GRID	SHEET
DEC., 2001	47 – 9/10	12 OF 38

F-01-204



Note: Turn Ends of Silt Fence/ Super Silt Fence Uphill 2' in Elevation.

Legend

- SF — Silt Fence
- SSF — Super Silt Fence
- RPS — Removable Pumping Station
- E.D. A-1 — Earth Dike
- SCE & SE — Stabilized Construction Entrance
- Temporary Swale
- Proposed Drainage Area Divide
- Existing Drainage Area Divide
- LOD — Limit of Disturbance
- Erosion Control Matting

APPROVED: ~~HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS~~

Chief, Bureau of Highways ~~Date~~

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 5/3/02

Chief, Development Engineering Division — Date 5/3/02

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

Howard S.C.D. — Date 4/30/02

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.

Natural Resources Conservation Service — Date 4/30/02

STATE OF MARYLAND — MICHAEL JAMES TRAPPEN — No. 14 — REGISTERED PROFESSIONAL ENGINEER

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or 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 Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the HSCD."

Signature of Developer/Builder — Date 4/11/02

ENGINEER'S CERTIFICATE

"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."

Michael J. Trappen — Date 6/19/01

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES. MCP DRN. MCP CHK. MJT

DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: BOB JENKINS
(410) 992-6089

SEDIMENT CONTROL PLAN ~ South

STONE LAKE

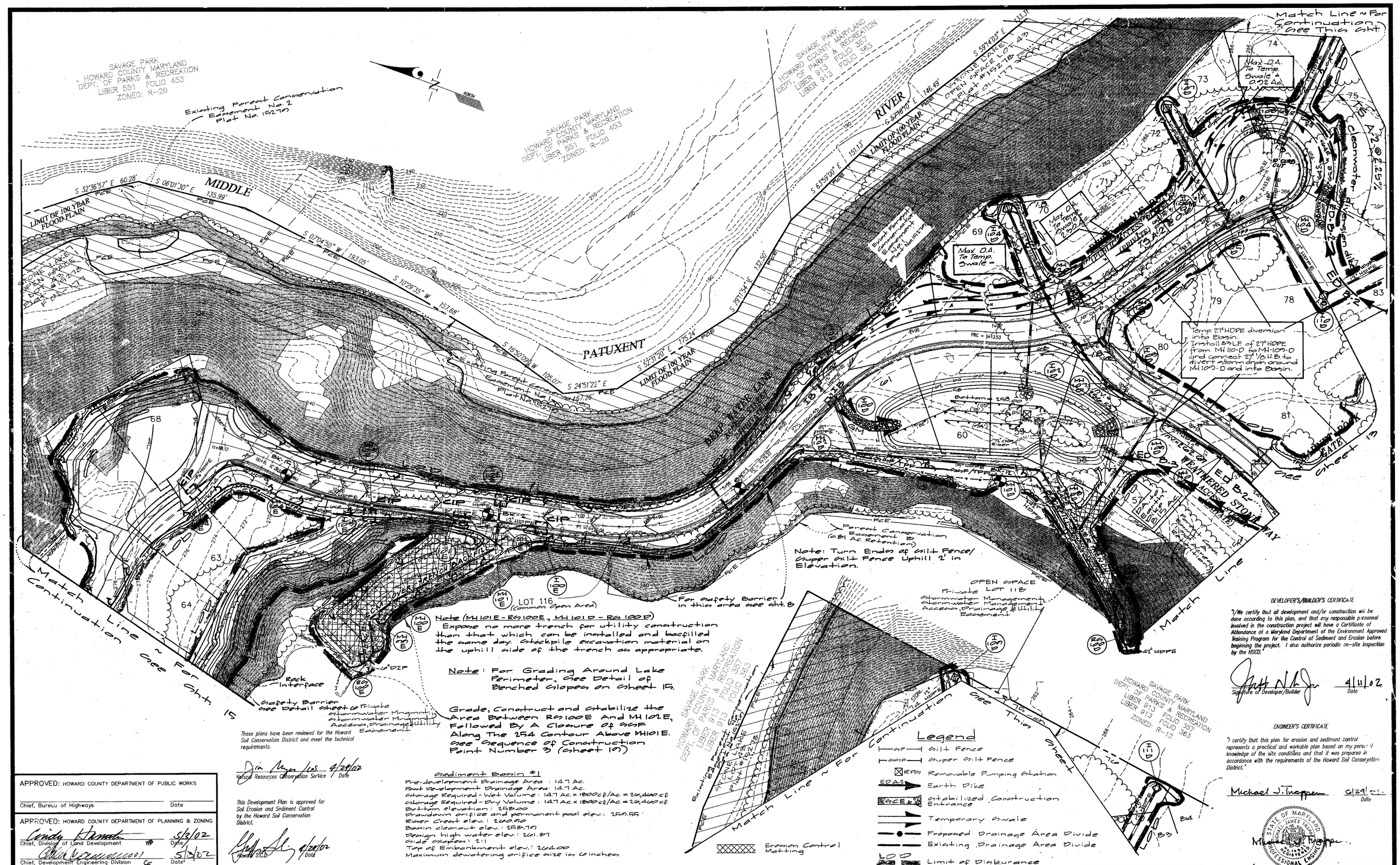
LOTS 45 THRU 118

PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP – GRID	SHEET
DEC., 2001	47-9/10	13 OF 38

F-01-204



These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.

Natural Resources Conservation Service / Date 4/26/02

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

Howard SCD / Date 4/26/02

Sediment Basin #1

Pre-development Drainage Area : 14.7 Ac.
Post Development Drainage Area: 14.7 Ac.
Storage Required - Wet Volume : 14.7 Ac. x 1800 cf/Ac. = 26,460 cf
Storage Required - Dry Volume : 14.7 Ac. x 1800 cf/Ac. = 26,460 cf
Bottom elevation : 258.00
Drawdown orifice and permanent pool elev.: 259.55
Riser Crest elev.: 260.00
Basin clearout elev.: 258.70
Design high water elev.: 261.87
Side slopes: 2:1
Top of Embankment elev.: 264.00
Maximum dewatering orifice size in inches

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or 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 Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the HSCD."

Signature of Developer/Builder — Date 4/11/02

ENGINEER'S CERTIFICATE

"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."

Michael J. Trueppen — Date 6/29/01

STATE OF MARYLAND — MICHAEL JAMES TRUEPPEN — No. 11664 — REGISTERED PROFESSIONAL ENGINEER

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 5/3/02

Chief, Development Engineering Division — Date 5/3/02

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES. | DRN. MCF MCF | CHK.

DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: BOB JENKINS
(410) 992-6089

SEDIMENT CONTROL PLAN ~ East

STONE LAKE
LOTS 45 THRU 118
PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP - GRID	SHEET
DEC., 2001	47-9/10	14 OF 38

F-01-204

DEVELOPER'S/BUILDER'S CERTIFICATE

"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 Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Eggineer to supervise pond construction and 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.

Signature of Developer/Builder — Date: 4/11/02

ENGINEER'S CERTIFICATE

"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/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Michael J. Trepper — Engineer's Signature — Date: 12/17/01

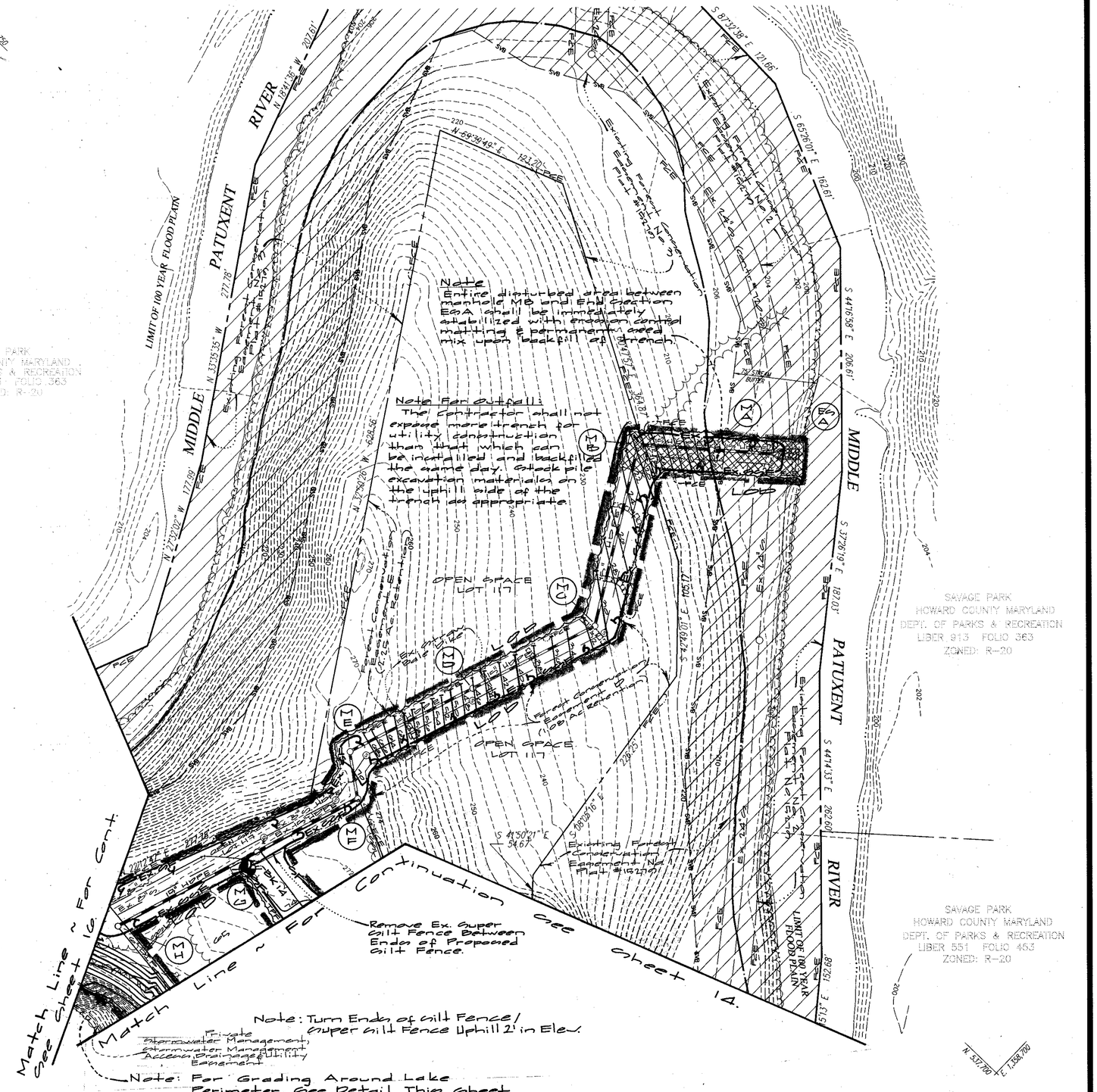
These Plans for ~~small pond construction~~, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

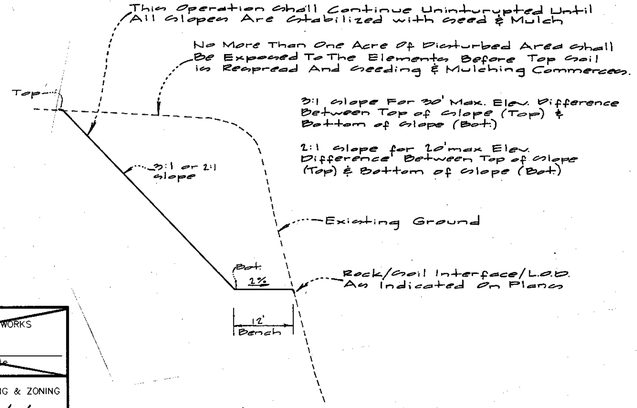
Howard Soil Conservation District — Date: 4/24/02

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.

Natural Resources Conservation Service — Date: 4/24/02

STATE OF MARYLAND — MICHAEL JAMES TREPPER — No. 14932 — REGISTERED PROFESSIONAL ENGINEER





Benched Slopes Detail
N.T.S.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development — Date: 5/3/02
Chief, Development Engineering Division — Date: 5/3/02

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186
DES. MCF DRN. KLP CHK. MJT.

DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
PH: 410-992-6089
ATTN: MR. BOB JENKINS

Sediment Control Plan (Outfall Area)

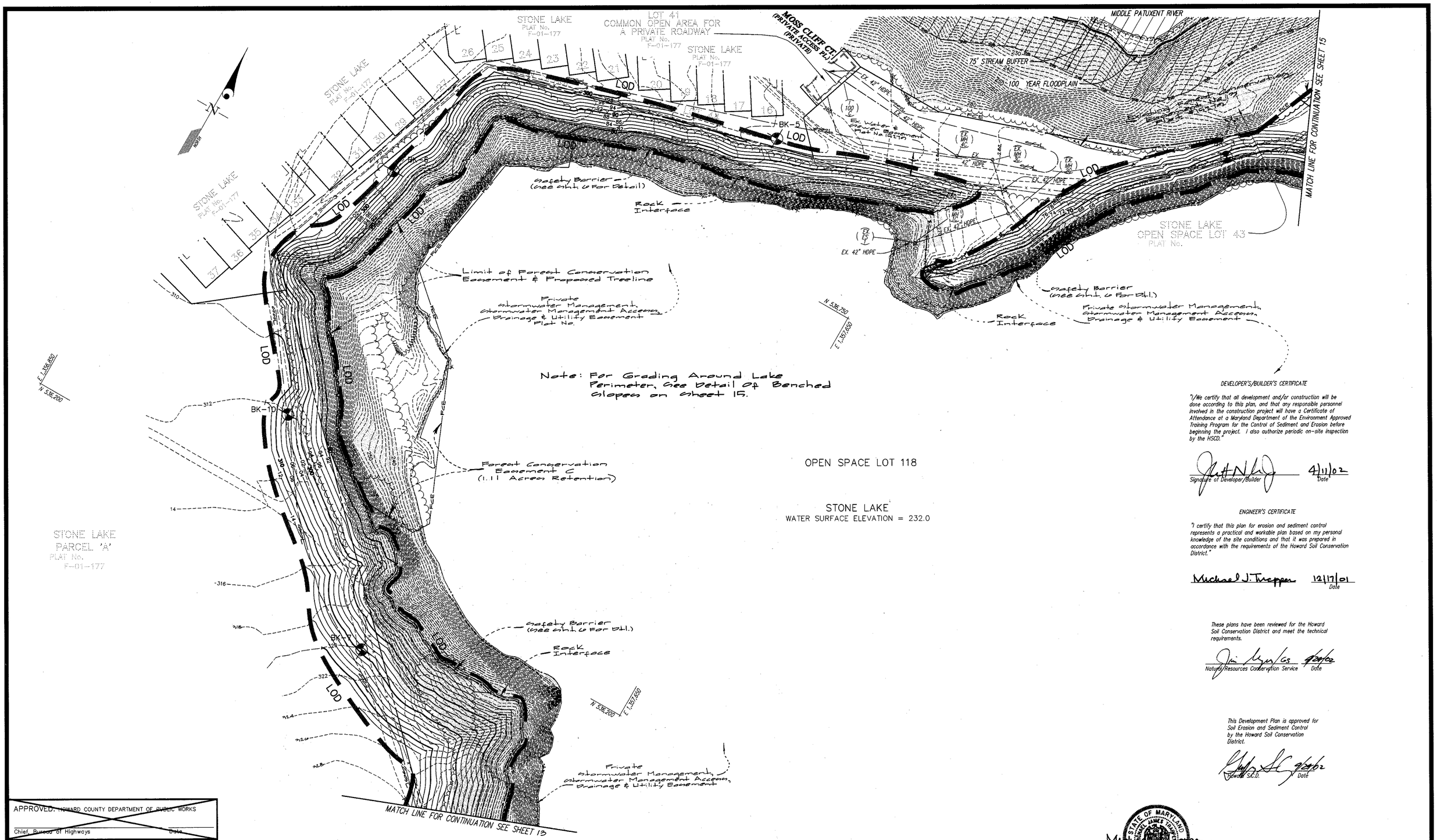
STONE LAKE

Lots 45 thru 118
Plat No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50	R-ED	99140
DATE Dec., 2001	TAX MAP - GRID 47- 9/10	SHEET 15 OF 38

F-01-204



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Signature of Developer/Builder — Date 4/11/02

ENGINEER'S CERTIFICATE

"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."

Michael J. Trepper — Date 12/17/01

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.

Natural Resources Conservation Service — Date 4/24/02

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

Howard S.C.D. — Date 4/24/02

STATE OF MARYLAND — MICHAEL JAMES TREPPER — No. 14193 — REGISTERED PROFESSIONAL ENGINEER

APPROVED: ~~HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS~~

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 5/3/02

Chief, Development Engineering Division — Date 5/3/02

GLW GUTSCHICK LITTLE & WEBER, P.A.

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DES. MCP | DRN. WSJ | CHK. TOT

DATE	REVISION	BY	APP'R.

PREPARED FOR:

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: BOB JENKINS
(410) 992-6089

SEDIMENT CONTROL PLAN ~ WEST

STONE LAKE

LOTS 45 THRU 118

PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
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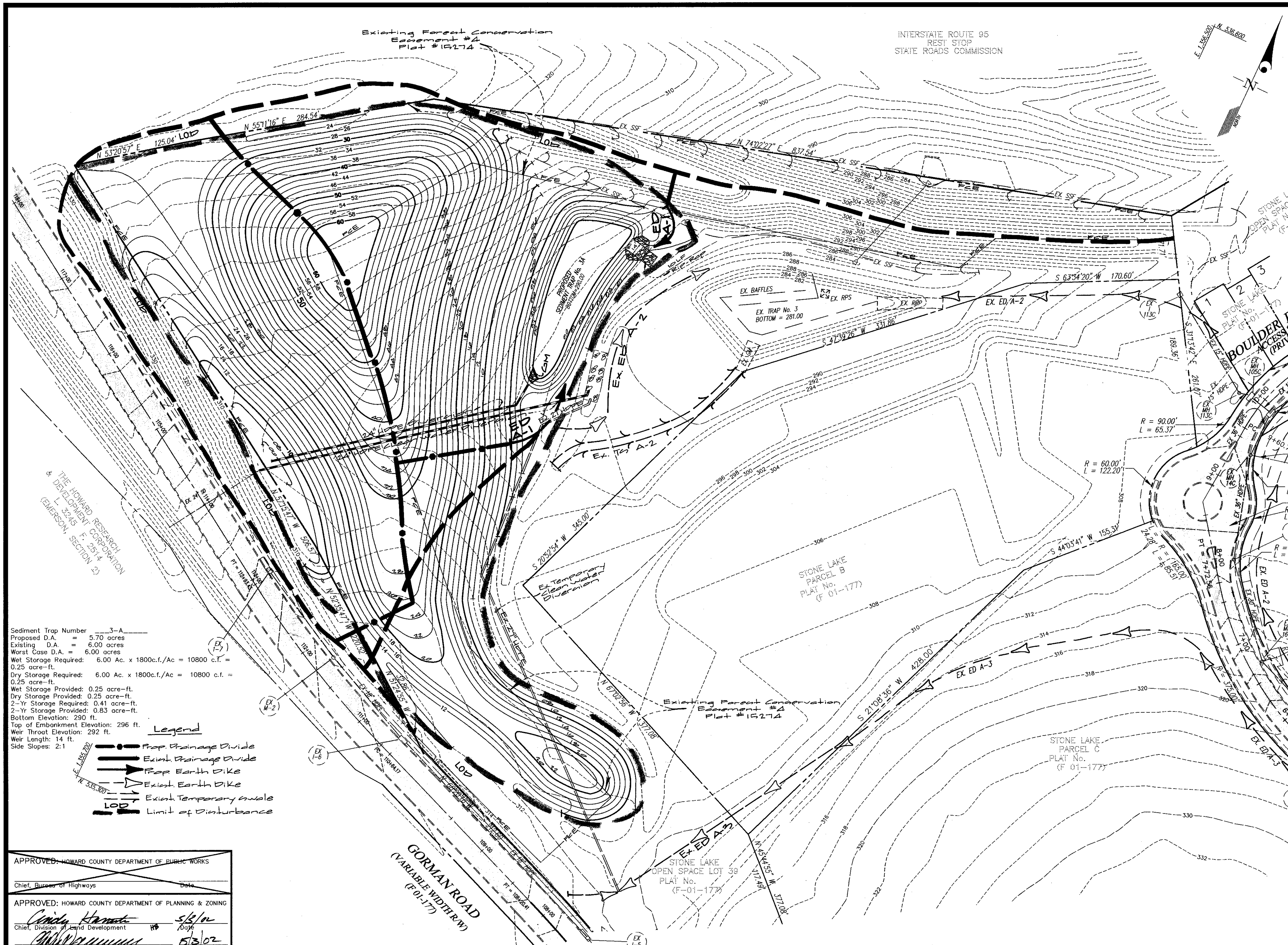
F-01-204



Sediment Trap Number ___3-A_____
Proposed D.A. = 5.70 acres
Existing D.A. = 6.00 acres
Worst Case D.A. = 6.00 acres
Wet Storage Required: 6.00 Ac. x 1800c.f./Ac = 10800 c.f. = 0.25 acre-ft.
Dry Storage Required: 6.00 Ac. x 1800c.f./Ac = 10800 c.f. = 0.25 acre-ft.
Wet Storage Provided: 0.25 acre-ft.
Dry Storage Provided: 0.25 acre-ft.
2-Yr Storage Required: 0.41 acre-ft.
2-Yr Storage Provided: 0.83 acre-ft.
Bottom Elevation: 290 ft.
Top of Embankment Elevation: 296 ft.
Weir Throat Elevation: 292 ft.
Weir Length: 14 ft.
Side Slopes: 2:1

Legend

- Prop. Drainage Divide
- Exist. Drainage Divide
- Prop. Earth Dike
- Exist. Earth Dike
- Exist. Temporary Swale
- LOD Limit of Disturbance

ENGINEER'S CERTIFICATE

"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."

Michael J. Trepper 12/17/01
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or 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 Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the HSCD."

Signature of Developer/Builder 4/11/02
Date

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

Howard S.C.D. 4/24/02
Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.

Natural Resources Conservation Service 4/24/02
Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hamilton 5/3/02
Chief, Division of Land Development Date

5/3/02
Chief, Development Engineering Division Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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DES. MCF DRN. MCF CHK. HJT

DATE	REVISION	BY	APP'R.

PREPARED FOR :
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
PH: 410-992-6089
ATTN: MR. BOB JENKINS

SEDIMENT CONTROL~ BERM

STONE LAKE
LOTS 45 THRU 118
PLAT No.

ELECTION DISTRICT No. 6 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
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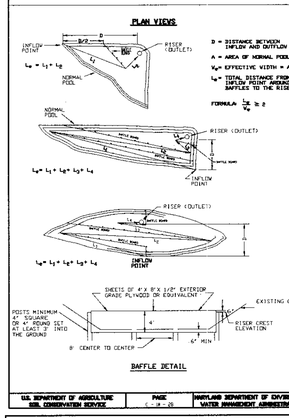
F-01-204

DETAIL 18 - SEDIMENT BASIN BAFFLES



D = DISTANCE BETWEEN INFLOW AND OUTFLOW

A = AREA OF NORMAL POOL

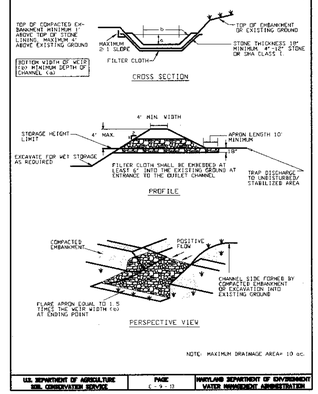
W_e = EFFECTIVE WIDTH = A/D

L_p = TOTAL DISTANCE FROM THE INFLOW POINT TO THE BAFFLES TO THE RISER

FORMULA: $\frac{L_p}{W_e} \geq 2$

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE - 18 - 26	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

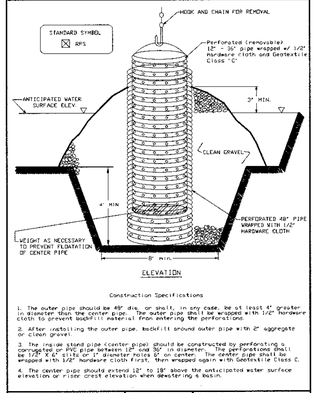
DETAIL 10 - RIP-RAP OUTLET SEDIMENT TRAP - ST III



NOTE: MAXIMUM DRAINAGE AREA= 10 ac.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE - 9 - 11	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 20A - REMOVABLE PUMPING STATION



Construction Specifications

1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.

2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.

3. The inner stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 30" in diameter. The perforations shall be 1/2" x 6" slits or 1" diameter holes 6" on center. The perforated pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class C.

4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering is desired.

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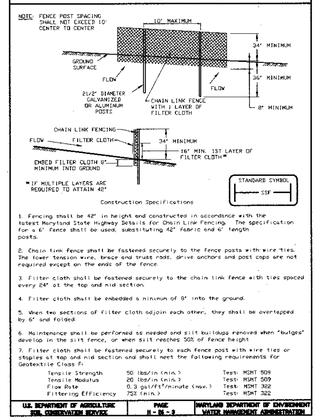
DETAIL 33 - SUPER SILT FENCE



Construction Specifications

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.

2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

4. Filter cloth shall be embedded a minimum of 8" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence or when silt reaches 50% of fence height.

7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft²/minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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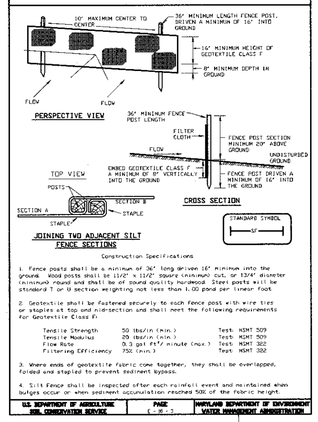
DETAIL 22 - SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.

2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft²/ minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fence height.

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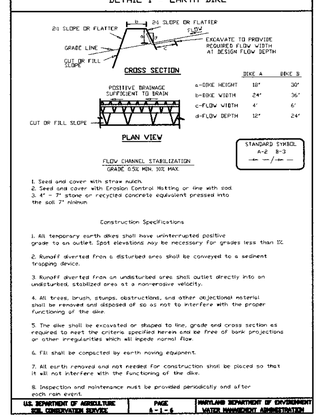
DETAIL 1 - EARTH DIKE



	DIKE A	DIKE B
a-DIKE HEIGHT	18"	30"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	12"	24"

1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil. 7" minimum.

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed stabilized area at a nonerosive velocity.

4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.

5. The dike 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. Fill shall be compacted by earth moving equipment.

7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.

8. Inspection and maintenance must be provided periodically and after each rain event.

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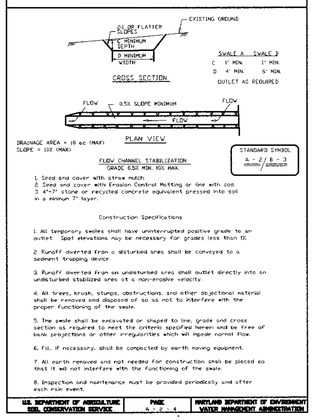
DETAIL 2 - TEMPORARY SWALE



1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4"-7" stone or recycled concrete equivalent pressed into soil in a minimum 7" layer.

Construction Specifications

1. All temporary swales shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed stabilized area at a nonerosive velocity.

4. All trees, brush, stumps, obstructions, and other objectional 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. Fill, if necessary, shall be compacted by earth moving equipment.

7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the swale.

8. Inspection and maintenance must be provided periodically and after each rain event.

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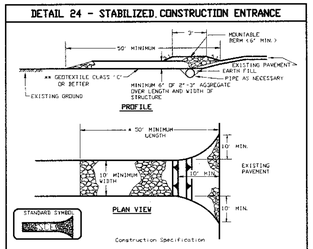
DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

1. Length - minimum of 50' (*30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.

4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

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RIP-RAP OUTLET SEDIMENT TRAP - ST III

Construction Specifications

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 4', measured at centerline of embankment.

3. All cut and fill slopes shall be 2:1 or flatter.

4. Elevation of the top of any dike directing water into trap must equal or exceed the height of trap embankment.

5. Storage area provided shall be figured by computing the volume measured from top of excavation. (For storage requirements see Table 10).

6. Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Section of fabric must overlap at least 1' with section nearest the entrance placed on top. Fabric shall be embedded at least 6" into existing ground at entrance of outlet channel.

7. Stone used in the outlet channel shall be 4" - 12" placed 18" thick.

8. Outlet - An outlet shall be provided, which includes a means of conveying the discharge in an erosion free manner to an existing stable channel. Protection against scour at the discharge end shall be provided as necessary.

9. Outlet channel must have positive drainage from the trap.

10. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/4 of the wet storage depth of the trap (1350 cf/ac). Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.

11. The structure shall be inspected periodically after each rain and repaired as needed.

12. Construction of trape shall be carried out in such a manner that sediment pollution is abated. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. Points of concentrated inflow shall be protected in accordance with Grade Stabilization Structure criteria. The remainder of the interior slopes should be stabilized (one time) with seed and mulch upon trap completion and monitored and maintained erosion free during the life of the trap.

13. The structure shall be dewatered by approved methods, removed and the area stabilized when the drainage area has been properly stabilized.

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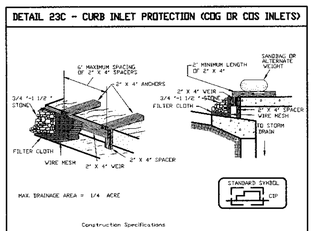
DETAIL 23C - CURB INLET PROTECTION (CDG OR CDS INLETS)



MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Attach a continuous piece of wire mesh (30" minimum 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 continuous piece of Geotextile Class C, the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.

3. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4' 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 3' beyond both ends of the throat opening.

6. Form the 1/2" x 1/2" wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4" x 1 1/2" stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.

7. The 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 the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

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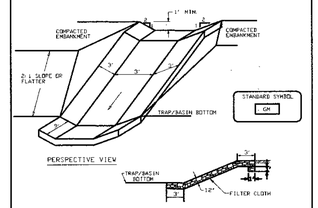
DETAIL 6 - GABION INFLOW PROTECTION



Construction Specifications

1. Gabion inflow protection shall be constructed of 9" x 3" x 9" gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.

2. Geotextile Class C shall be installed under all gabion baskets.

3. The stone used to fill the gabion baskets shall be 4" - 7".

4. Gabions shall be installed in accordance with manufacturers recommendations.

5. Gabion Inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

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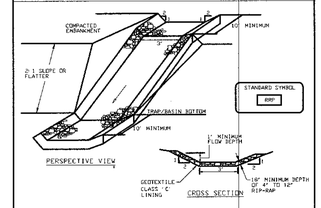
DETAIL 5 - RIP-RAP INFLOW PROTECTION



Construction Specifications

1. Riprap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min.) bottom width. The channel shall be lined with riprap to a depth of 18".

2. Filter cloth shall be installed under all riprap. Filter cloth shall be Geotextile Class C.

3. Entrance and exit sections shall be installed as shown on the detail section.

4. Riprap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.

5. Gabion Inflow Protection may be used in lieu of Riprap Inflow Protection.

6. Riprap should blend into existing ground.

7. Riprap Inflow Protection shall be used where the slope is between 4:1 and 10:1. For slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

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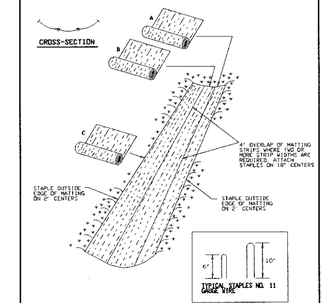
DETAIL 30 - EROSION CONTROL MATTING



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EROSION CONTROL MATTING

Construction Specifications

1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".

2. Staple the 4" overlap in the channel center using an 18" spacing between staples.

3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.

4. Staples shall be placed 2" apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.

5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 4" apart in a staggered pattern on either side.

6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area affected by the flow must be keyed-in.

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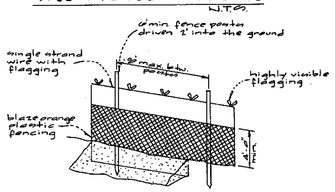
Tree Protection Fence

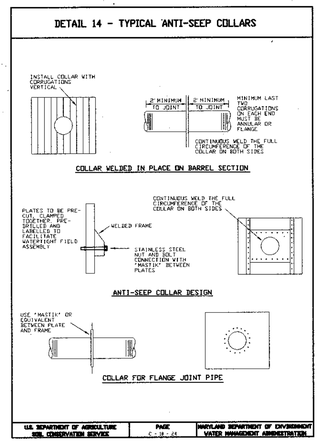
N.T.S.



Notes

1. Retention area will be not as part of review process.
2. Boundaries of Retention area should be staked prior to installing protective device.
3. Root damage should be avoided.

DETAIL 14 - TYPICAL ANTI-SEEP COLLARS



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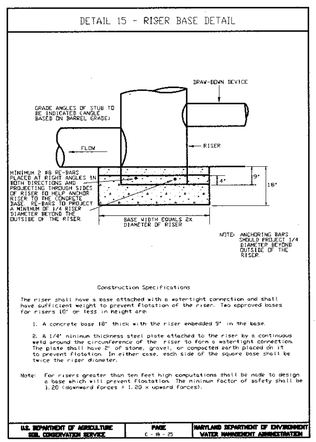
DETAIL 15 - RISER BASE DETAIL



Construction Specifications

The riser shall have a base attached with a watertight connection and shall have sufficient weight to prevent flotation of the riser. Two approved bases for risers 10" or less in height are:

1. A concrete base 16" thick with the riser embedded 9" in the base.

2. A 1/4" minimum thickness steel plate attached to the riser by a continuous weld around the circumference of the riser to form a watertight connection. The plate shall have 2" of stone, gravel, or compacted earth placed on it to prevent flotation. In either case, each side of the square base shall be twice the riser diameter.

Note: For risers greater than ten feet high computations shall be made to design a base which will prevent flotation. The minimum factor of safety shall be 1.20 (downward forces ÷ 1.20 > upward forces).

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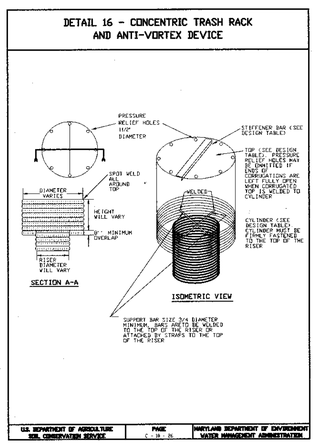
DETAIL 16 - CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE



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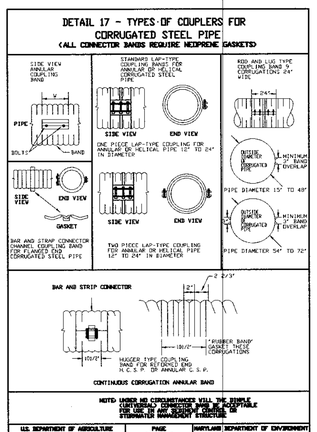
DETAIL 17 - TYPES OF COUPLERS FOR CORRUGATED STEEL PIPE

(ALL CONNECTOR BANDS REQUIRE NEOPRENE GASKETS)



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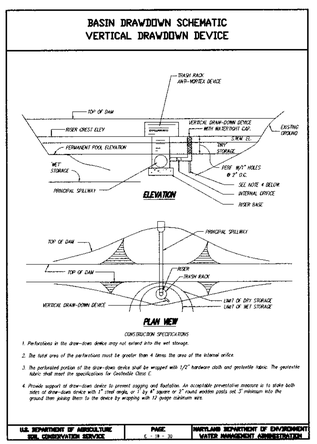
BASIN DRAWDOWN SCHEMATIC VERTICAL DRAWDOWN DEVICE



CONSTRUCTION SPECIFICATIONS

1. Perforations in the draw-down device may not extend into the wet storage.
2. The total area of the perforations must be greater than 4 times the area of the internal orifice.
3. The perforated portion of the draw-down device shall be wrapped with 1/2" hardware cloth and geotextile fabric. The geotextile fabric shall meet the specifications for Geotextile Class F.
4. Provide support to draw-down device to prevent sagging and flotation. An acceptable penetration measure is to state both sides of draw-down device with 1" steel angle, or 3 by 4" square or 2" round wooden posts set 2' minimum into the ground then joining them to the device by wrapping with 12 gauge stainless wire.

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ENGINEER'S CERTIFICATE

"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."

Michael J. Thagen 12/17/01
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or 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 Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the HSCD."

Signature of Developer/Builder 4/11/02
Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.

Natural Resources Conservation Service 4/26/02
Date

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

Howard S.C.D. 4/26/02
Date

APPROVED: ~~HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS~~

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — 5/3/01 Date

Chief, Development Engineering Division — 5/3/02 Date

STATE OF MARYLAND — MICHAEL JAMES THAGEN — No. 11471 — REGISTERED PROFESSIONAL ENGINEER

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

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DATE	REVISION	BY	APP'R.

PREPARED FOR :

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
PH: 410-992-6089
ATTN: MR. BOB JENKINS

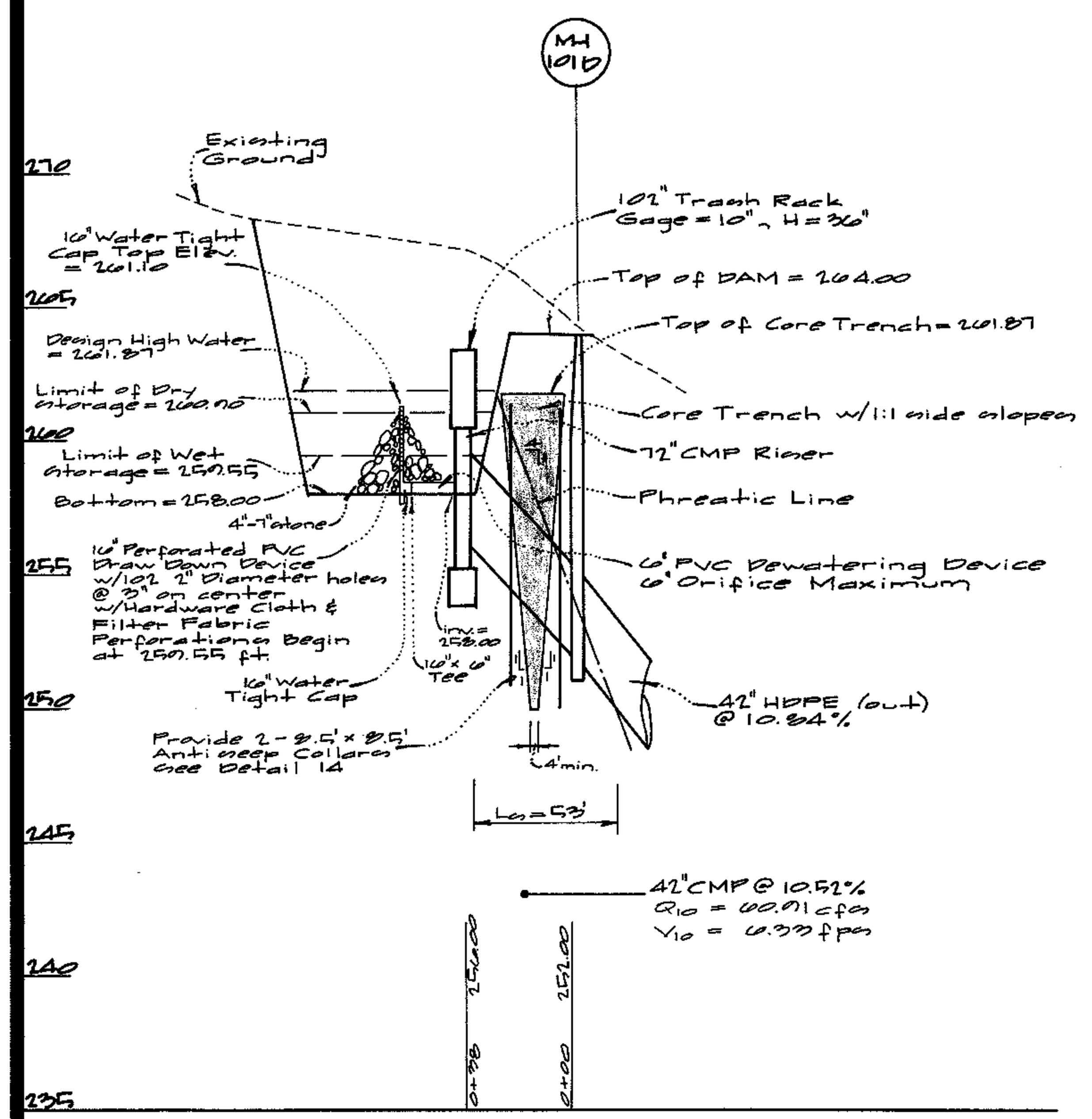
SEDIMENT CONTROL DETAILS

STONE LAKE
LOTS 45THRU 118
PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-ED	99140
DATE	TAX MAP - GRID	SHEET
DEC., 2001	47 - 9/10	18 OF 38

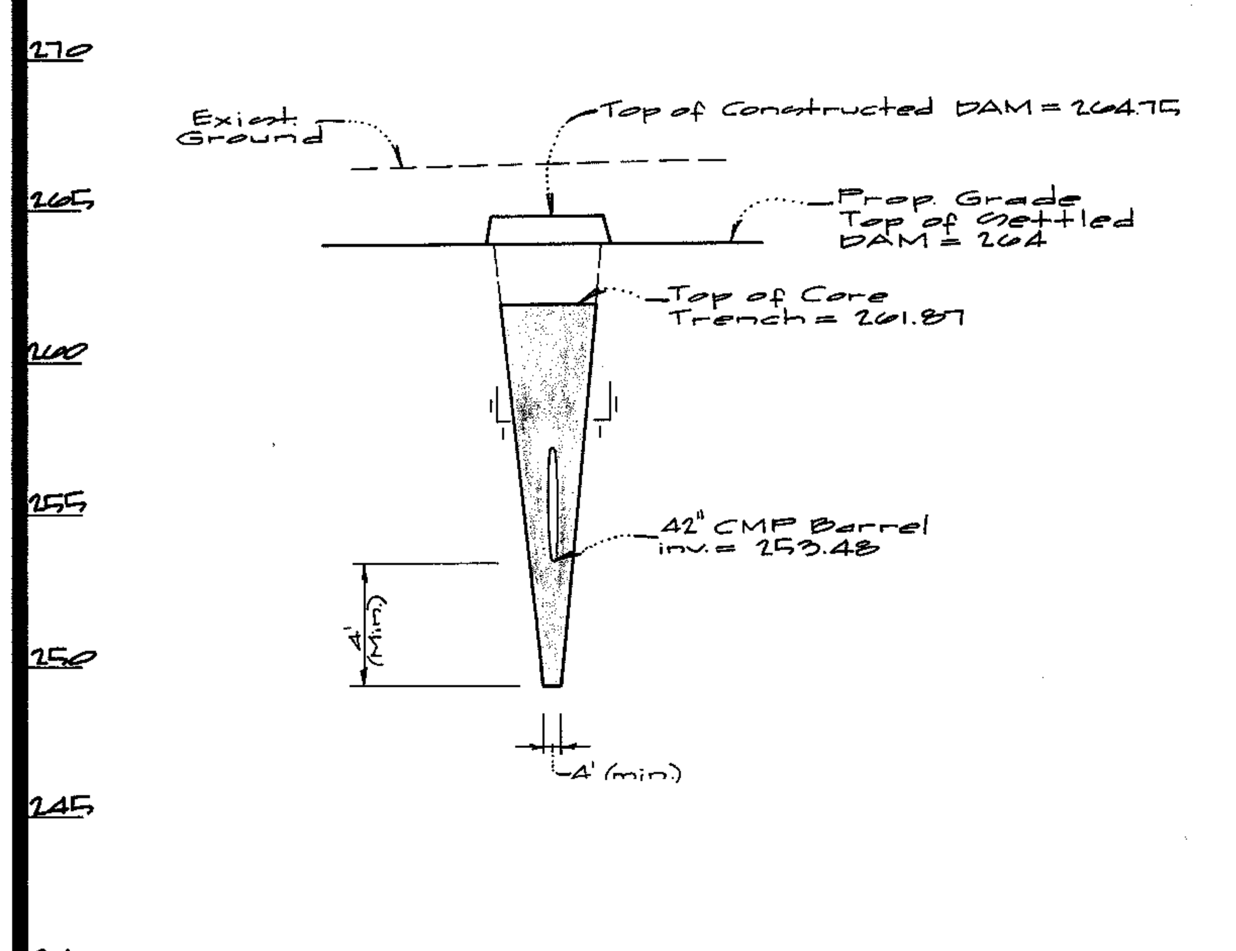
F-01-204



Sediment Basin #1

Section Thru Principal Spillway

scales: 1" = 50' Horz. 1" = 5' Vert.



Sediment Basin #1

Profile Along Dam

scales: 1" = 50' Horz. 1" = 5' Vert.

4.0 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STORM DRAIN DIVERSION

Definition

Temporary storm drain diversions redirect a storm drain system or outfall channel to discharge into a sediment trap or basin.

Purpose

To prevent sediment laden water conveyed by the storm drain system from reaching a watercourse or off-site property.

Conditions Where Practice Applies

One of the following practices or procedures shall be used to temporarily divert storm drain systems. A special exception may be given, at the discretion of the local plan approval agency, where site conditions make this procedure impossible.

Design Criteria

1. Construction of a sediment trap or basin below a permanent storm drain outfall: the storm drain system outfalls into a temporary basin or trap constructed below the permanent outfall channel.

2. In-line diversion of storm drain at an inlet or manhole: this diversion requires installing a pipe stub in the side of a manhole or inlet and temporarily blocking the permanent outfall pipe from that structure. A temporary outfall ditch or pipe may be used to convey storm flow from the stub to a sediment trap or basin. This method may be used just above a permanent outfall or prior to connecting into an existing storm drain system.

3. Delay completion of the permanent storm drain outfall and temporarily divert storm flow into a sediment basin or trap: an earth dike, swale or designed diversion, can be used depending on the drainage area, to direct flow into a sediment basin or trap.

4. Installation of a stormwater management basin early in the construction sequence: install temporary measures to allow use as a sediment basin. Because these structures are designed to receive storm drain outfalls, diversion should not be necessary.

5. Inlet protection is not required if storm drain diversions have been installed and are functioning properly.

A-4-1

Removal and Restoration

When the areas contributing sediment to the storm drain system have been stabilized, restore the system to its planned use.

The following removal and restoration procedure is recommended and must be included in the sequence of operations for the sediment control plan:

1. Flush the storm drain system prior to removal of the trap or basin to remove any accumulated sediment.
2. Establish a permanent stabilized outfall channel as noted on the plans.
3. For sites where an inlet was modified, plug the temporary pipe stub and open the permanent outfall pipe.
4. Remove the sediment control devices, such as traps, basins, dikes, swales, etc..
5. Restore the area to grades shown on the plan and stabilize with vegetative measures.
6. For basins that will be converted to stormwater management, remove the accumulated sediment, open the low flow orifice, and seed all disturbed areas in the basin to permanent vegetation.

Dust Control

Definition

Controlling dust blowing and movement on construction sites and roads.

Purpose

To prevent blowing and movement of dust from exposed soil surfaces, reduce on and off-site damage, health hazards, and improve traffic safety.

Conditions Where Practice Applies

This practice is applicable to areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

Specifications

Temporary Methods

1. Mulches – See standards for vegetative stabilization with mulches only. much should be crimped or tacked to prevent blowing.
2. Vegetative Cover – See standards for temporary vegetative cover.
3. Tillage – To roughen surface and bring clods to the surface. This is an emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12" apart, spring-toothed harrows, and similar plows are examples of equipment which may produce the desired effect.
4. Irrigation – This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist. Repeat as needed At no time should the site be irrigated to the point that runoff begins to flow.
5. Barriers – Solid board fences, silt fences, snow fences, straw bales, and similar material can be used to control air currents and soil blowing. Barriers placed at right angle to prevailing currents at intervals at about ten times their height are effective in controlling soil blowing.
6. Calcium Chloride – Apply at rates that will keep surface moist. May need treatment.

Permanent Methods

1. Permanent Vegetation – See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford valuable protection if left in place.
2. Topsoiling – Covering with less erosive soil material. See standards for top soil.
3. Stone – Cover surface with crushed stone or gravel.

References

1. Agriculture Handbook 346. Wind Erosion Forces in the United States and Their Use in Predicting Soil Loss.
2. Agriculture Information Bulletin 354. How to Control Wind Erosion, USDA_ARS.

STANDARD AND SPECIFICATIONS FOR TOPSOIL DEFINITION

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

PURPOSE

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

CONDITIONS WHERE PRACTICE APPLIES

I. This practice is limited to areas having 2:1 or flatter slopes where:
   a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplied of moisture and plant nutrients.
   c. The original soil to be vegetated contains material toxic to plant growth.
   d. The soil is so acidic that treatment with limestone is not feasible.

II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the respective soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.
   i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by a agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
   ii. Topsoil must be free of plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
   iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate if 4–8 tons/acre (200–400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

II. For sites having disturbed areas under 5 acres:
   i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization – Section 1 – Vegetative Stabilization Methods and Materials.

III. For sites having disturbed areas over 5 acres:
   i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
      a. pH for topsoil shall be between 6.0 and 7.5. If

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. (410) 131–1880

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 1994 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 and 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 seedings (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	:	69.8 Acres
Area Disturbed	:	27.1 Acres
Area to be roofed or paved	:	2.5 Acres
Area to be vegetatively stabilized	:	24.6 Acres
Total Cut	:	260,000 Cu. Yds.
Total Fill	:	260,000 Cu. Yds.
Off-site 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 control 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.

11. Trenches for the construction of utilities is limited to 3 pipe lengths or that which shall be backfilled and stabilized within one working day whichever is shorter.

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 (unless previously loosened).

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

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2–1/2 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 1–1/2 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 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

PERMANENT SEEDING NOTES

Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (unless 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 square feet) 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 unreaform 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 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 1–1/2 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.

Sequence of Construction

1. Obtain grading permit and arrange on-site pre-construction meeting with the Sediment Control Inspector (1 day)
2. Install stabilized construction entrance , and install clean water diversion dike adjacent to Forest Ridge Elementary School along the Southern boundary
3. Begin construction of Sediment Basin 1 and sediment Trap 3A. Install outfall storm drain structures to MH-101 D. Grade, construct, and stabilize the area between RS-100E and MH-102E, followed by a closure of the super silt fence along the 254 contour above MH-101E. Expose no more trench for utility construction than which can be installed, backfilled and permanently stabilized in one day. Stock pile excavated material on the up hill side of the trench as appropriate (1 week).
4. Complete construction of the sediment basin and trap and install necessary earth dikes and temporary swales as indicated on the plans. Install temporary 18-inch HDPE (temporary) at station 2+40 in Deep Water Lane.

   Install the two 24-inch HDPE diversion pipes permanent) for construction of the berm adjacent to Gorman Road. Connect the end of the existing 24-inch CMP to the end of the south 24-inch HDPE with a temporary water tight connection (clean water diversion).
   Install silt fence and super silt fence (1 week).
5. After permission is granted by the inspector, clear and grade the site (1 month).

   For the areas around the perimeter of the lake: The grading of the slopes shall be accomplished in such a manor as to minimize the run-off of sediment laden material into the lake. The operation shall proceed around the perimeter of the lake in a progressive manor such that no more than one acre of disturbed area is exposed to the elements before top soil is re-spread and seeding and mulching commences. This operation shall continue uninterrupted until all slopes are stabilized with seed and mulch.
6. Install remaining storm drain (1 month).
7. Install curb and gutter and base pave (2 months).
8. Stabilize site with grass seed and mulch (1 week).
9. When areas draining to sediment controls have been stabilized and permission is granted by the Sediment Control Inspector, remove and backfill the sediment basin and trap and remove all remaining sediment controls. Disconnect the existing 24-inch CMP and the 24-inch HDPE and remove back to the low point. Remove temporary diversion into the basin an complete the storm drain construction. (2 weeks)
10. Install landscaping and surface course pave the roadway (1 week).

SEDIMENT BASIN

Construction Specifications

1. Site Preparation: Perimeter sediment control devices must be installed prior to clearing and grubbing. Areas where the embankment is to be placed shall be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots or other objectionable material. The pool area shall not be cleared until completion of the dam embankment unless the pool area is to be used for borrow. In order to facilitate clean-out and restoration, the pool area (measured at the top of the pipe spillway) shall be cleared of all brush, trees, and other objectionable materials.

2. Cut-off Trench: A cut-off trench shall be excavated along the centerline of earth fill embankments. The minimum depth shall be four feet. The cut-off trench shall extend up both abutments to the riser crest elevation. The minimum bottom width shall be two feet, but wide enough to permit operation of excavation and compaction equipment. The side slopes shall be no steeper than 1:1. Compaction requirements shall be the same as those for the embankment. The trench shall be dewatered during the backfilling-compaction operations. For dewatering see Section D.

3. Embankment: The fill material shall be taken from approved areas shown on the plans. It shall be clean mineral soil free of roots, woody vegetation, oversized stones, rocks, or other objectionable material. Relatively pervious materials such as sand or gravel (Unified Soil Classes GW, GP, SW & SP) or organic materials (Unified Soil Classes OL and OH) shall not be placed in the embankment. Areas on which fill is to be placed shall be scarified prior to placement of fill. The fill material shall contain sufficient moisture so that it can be formed by hand into a ball without crumbling. If water can be squeezed out of the ball, it is too wet for proper compaction. Fill material shall be placed in six-inch to eight-inch thick continuous lifts over the entire length of the fill. Compaction shall be obtained by routing and hauling the construction equipment over the fill so that the entire surface of each layer of the fill is traversed by at least one wheel or tread track of the equipment or by the use of a compactor. **The embankment shall be constructed to an elevation 10 percent higher than the design height to allow for settlement.**

4. Principal Spillway: Steel risers shall be securely attached to the barrel or barrel stub by welding the full circumference making a watertight structural connection. Concrete risers shall be poured with the principal spillway in place or precast with voids around the principal spillway filled with concrete or shrink proof grout for watertight connection. The barrel stub must be attached to the riser at the same percent (angle) of grade as the outlet conduit. The connection between the riser and the riser base shall be watertight. All connections between barrel sections must be achieved by approved watertight band assemblies. The barrel and riser shall be placed on a firm, smooth foundation of impervious soil as the embankment is constructed. **Breaching the embankment to install the barrel is unacceptable.** Pervious materials such as sand, gravel, or crushed stone shall not be used as backfill around the pipe or anti-seep collars. The fill material around the pipe spillway shall be placed in four inch lifts and hand compacted under and around the pipe to at least the same density as the adjacent embankment. A depth of 1.5 times the pipe diameter (min.) shall be backfilled over the principal spillway and hand compacted before crossing it with construction equipment.

5. Emergency Spillway: **The emergency spillway shall be installed in undisturbed ground.** The achievement of planned elevations, grades, design width, entrance and exit channel slopes are critical to the successful operation of the emergency spillway and must be constructed within a tolerance of ± 0.2 feet.

6. Vegetative Treatment: Stabilize the embankment in accordance with the appropriate vegetative Standard and Specifications immediately following construction. In no case shall the embankment remain unstabilized for more than seven (7) days. Once constructed, the top and outside face of the embankment shall be stabilized with seed and mulch. The remainder of the interior slopes should be stabilized (one time) with seed and mulch upon basin completion and monitored and maintained erosion free during the life of the basin.

7. Safety: **Local requirements concerning fencing and signs shall be met, warning the public of hazards of soft sediment and floodwater.**

8. Maintenance: Repair all damage caused by soil erosion and construction equipment at or before the end of each working day. Sediment shall be removed from the basin when it reaches the specified distance below the top of the riser as shown on the riser. This sediment shall be placed in such a manner that it will not erode from the site. The sediment shall not be deposited downstream from the embankment, adjacent to a stream or floodplain. Disposal areas must be stabilized.

9. Final Disposal: When temporary structures have served their intended purpose and the contributing drainage area has been properly stabilized, the embankment and resulting sediment deposits are to be leveled or otherwise disposed of in accordance with the approved sediment control plan. The proposed use of a sediment basin site will often dictate final disposition of the basin and any sediment contained therein. If the site is scheduled for future construction, then the basin material and trapped sediments must be removed and safely disposed of and the basin shall be backfilled with a structural fill. When the basin area is to remain open space, the pond may be pumped dry (using methods in Section D - Dewatering), graded, and back filled.

10. Conversion to Stormwater Management Structure: After permanent stabilization of all disturbed contributory drainage areas, temporary sediment basins, if initially built and certified to meet permanent standards, may be converted to permanent stormwater management structures. To convert the basin from temporary to permanent use, the outlet structure must be modified in accordance with approved stormwater management design plans. Additional grading may also be necessary to provide the required storage volume in the basin. **Conversion can only take place after all disturbed areas have been permanently stabilized to the satisfaction of the inspection authority and storm drains have been flushed.**

STATE OF MARYLAND — MICHAEL JAMES TRAPPEN — No. 14931 — REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S CERTIFICATE

"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."

Michael J. Trappen — 4/10/02 — Date

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or 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 Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the HSCD."

Signature of Developer/Builder — 4/11/02 — Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.

Natural Resources Conservation Service — 4/24/02 — Date

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

Howard S.C.D. — 4/24/02 — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — 5/3/02 — Date

Chief, Development Engineering Division — 5/3/02 — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
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TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES. MJT DRN. MJT CHK. MJT

DATE	REVISION	BY	APP'R.

PREPARED FOR :

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
PH: 410-992-6089
ATTN: MR. BOB JENKINS

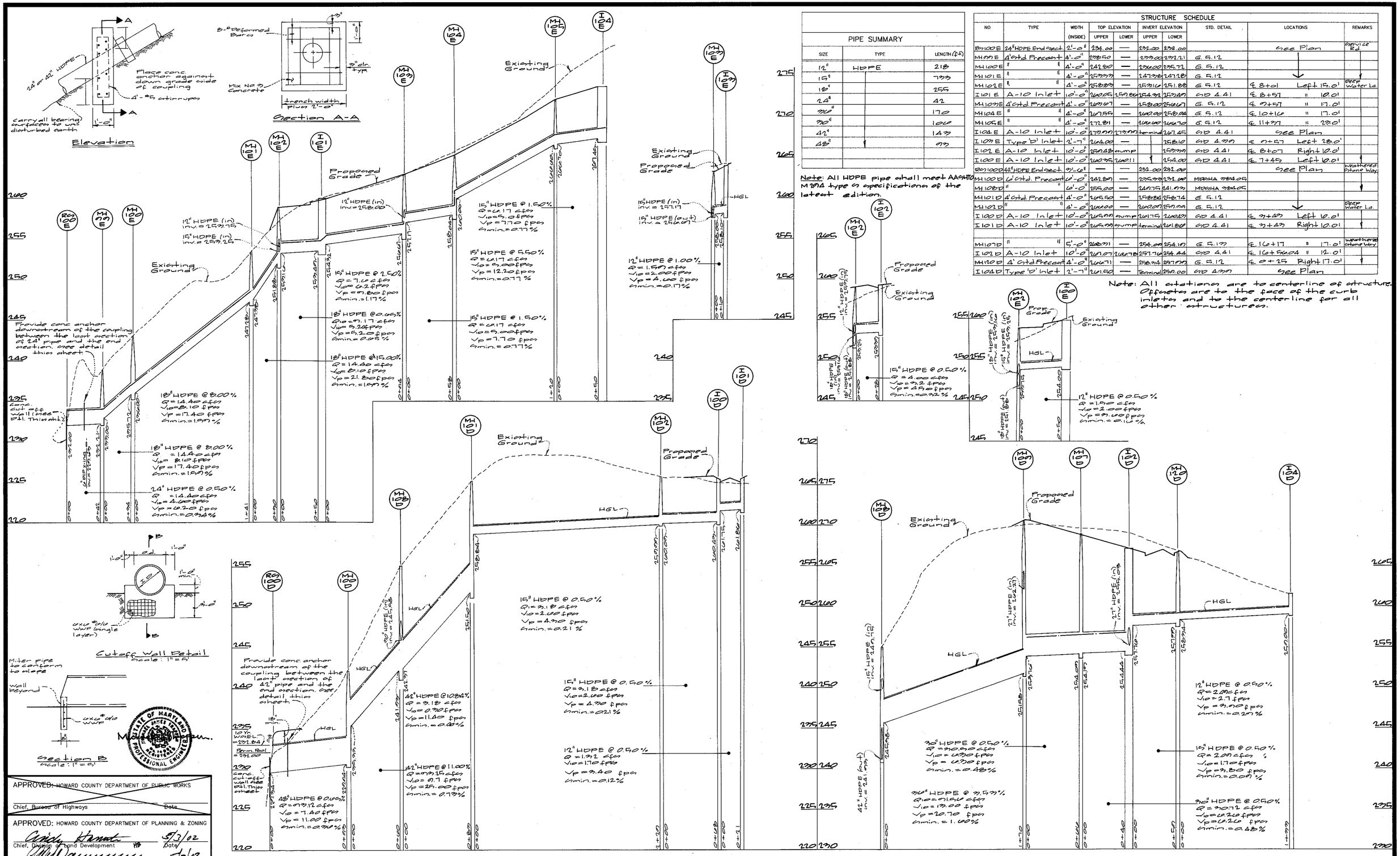
SEDIMENT CONTROL DETAILS & NOTES

STONE LAKE
LOTS 45 THRU 118
PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-ED	99140
DATE	TAX MAP – GRID	SHEET
DEC., 2001	47-9/10	19 OF 38

F-01-204



PIPE SUMMARY		
SIZE	TYPE	LENGTH (LF)
12"	HDPE	218
15"		733
18"		255
24"		42
30"		170
36"		100
42"		143
48"		63

Note: All HDPE pipe shall meet AASHTO M294 type S specifications of the latest edition.

STRUCTURE SCHEDULE									
NO	TYPE	WIDTH (INSIDE)	TOP ELEVATION UPPER	TOP ELEVATION LOWER	INVERT ELEVATION UPPER	INVERT ELEVATION LOWER	STD. DETAIL	LOCATIONS	REMARKS
RC100E	24" HDPE End Sect	2'-0"	254.00	—	252.00	252.00		See Plan	Service Rd
MH99E	4' Std. Precast	4'-0"	257.50	—	253.00	252.21	G.5.12	↓	
MH100E	" "	4'-0"	257.80	—	252.00	255.72	G.5.12		
MH101E	" "	4'-0"	257.77	—	247.78	247.78	G.5.12	↓	Deep Water La
MH102E	" "	4'-0"	258.83	—	253.10	251.88	G.5.12	℄ 8+01 Left 15.0'	
I101E	A-10 Inlet	10'-0"	260.05	259.80	254.97	253.47	STD 4.41	℄ 8+57 " 10.0'	
MH103E	4' Std. Precast	4'-0"	260.67	—	258.00	256.67	G.5.12	℄ 9+57 " 17.0'	
MH104E	" "	4'-0"	261.55	—	260.00	258.84	G.5.12	℄ 10+16 " 17.0'	
MH105E	" "	4'-0"	262.81	—	260.00	260.70	G.5.12	℄ 11+37 " 23.0'	
I104E	A-10 Inlet	10'-0"	263.00	263.00	terminal	261.45	STD 4.41	See Plan	
I103E	Type 'B' Inlet	2'-7"	264.00	—		258.10	STD 4.99	℄ 9+57 Left 28.0'	
I102E	A-10 Inlet	10'-0"	259.48	sump		259.00	STD 4.41	℄ 8+07 Right 10.0'	
I100E	A-10 Inlet	10'-0"	260.75	260.11		254.00	STD 4.41	℄ 7+45 Left 10.0'	
RC100D	48" HDPE End Sect	23'-6"	—	—	232.00	232.00		See Plan	Weathered Stone Way
MH100D	6' Std. Precast	10'-0"	262.80	—	235.00	232.00	MDSHA 384.05		
MH102D	" "	6'-0"	255.00	—	240.75	241.03	MDSHA 384.05	↓	
MH101D	4' Std. Precast	4'-0"	265.50	—	258.82	258.74	G.5.12		
MH102D	" "	4'-0"	260.00	—	260.07	257.00	G.5.12	↓	Deep Water La
I100D	A-10 Inlet	10'-0"	265.00	sump	260.75	260.07	STD 4.41	℄ 9+49 Left 10.0'	
I101D	A-10 Inlet	10'-0"	265.00	sump	terminal	261.80	STD 4.41	℄ 9+49 Right 10.0'	
MH107D	" "	5'-0"	268.71	—	254.00	254.10	G.5.12	℄ 16+17 " 17.0'	Weathered Stone Way
I102D	A-10 Inlet	10'-0"	261.07	260.78	257.76	254.44	STD 4.41	℄ 16+56.04 " 12.0'	
MH110D	4' Std. Precast	4'-0"	268.71	—	258.74	257.00	G.5.12	℄ 9+15 Right 17.0'	
I104D	Type 'B' Inlet	2'-7"	261.50	—	terminal	259.00	STD 4.99	See Plan	

Note: All stations are to centerline of structure. Offsets are to the face of the curb inlets and to the centerline for all other structures.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 5/3/02

Chief, Development Engineering Division — Date 5/3/02

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DES. DRN. CHK. DATE REVISION BY APP'R.

PREPARED FOR:
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10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: BOB JENKINS
(410) 992-6089

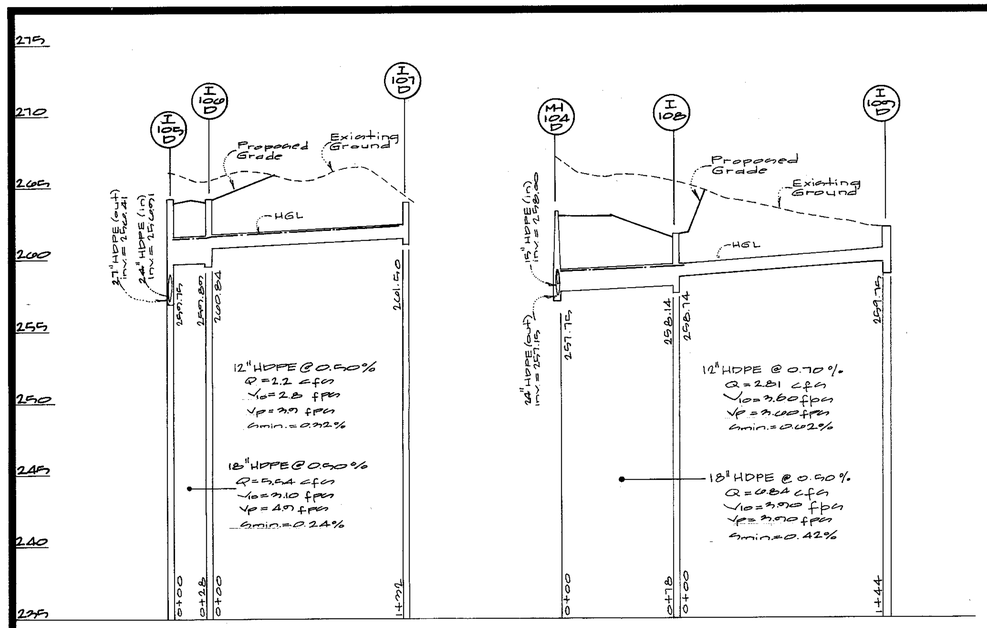
STORM DRAIN PROFILES & SCHEDULES

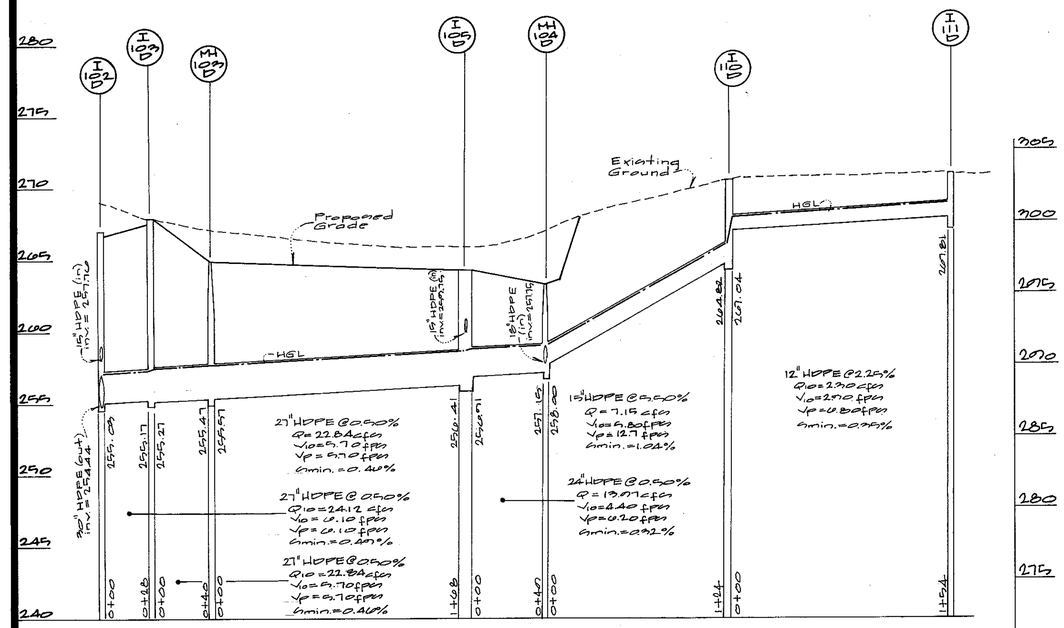
STONE LAKE
LOTS 45 THRU 118
PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-ED	99140
Date	Tax Map-Grid	sheet
Dec., 2001	47-9/10	20 OF 38

F-01-204



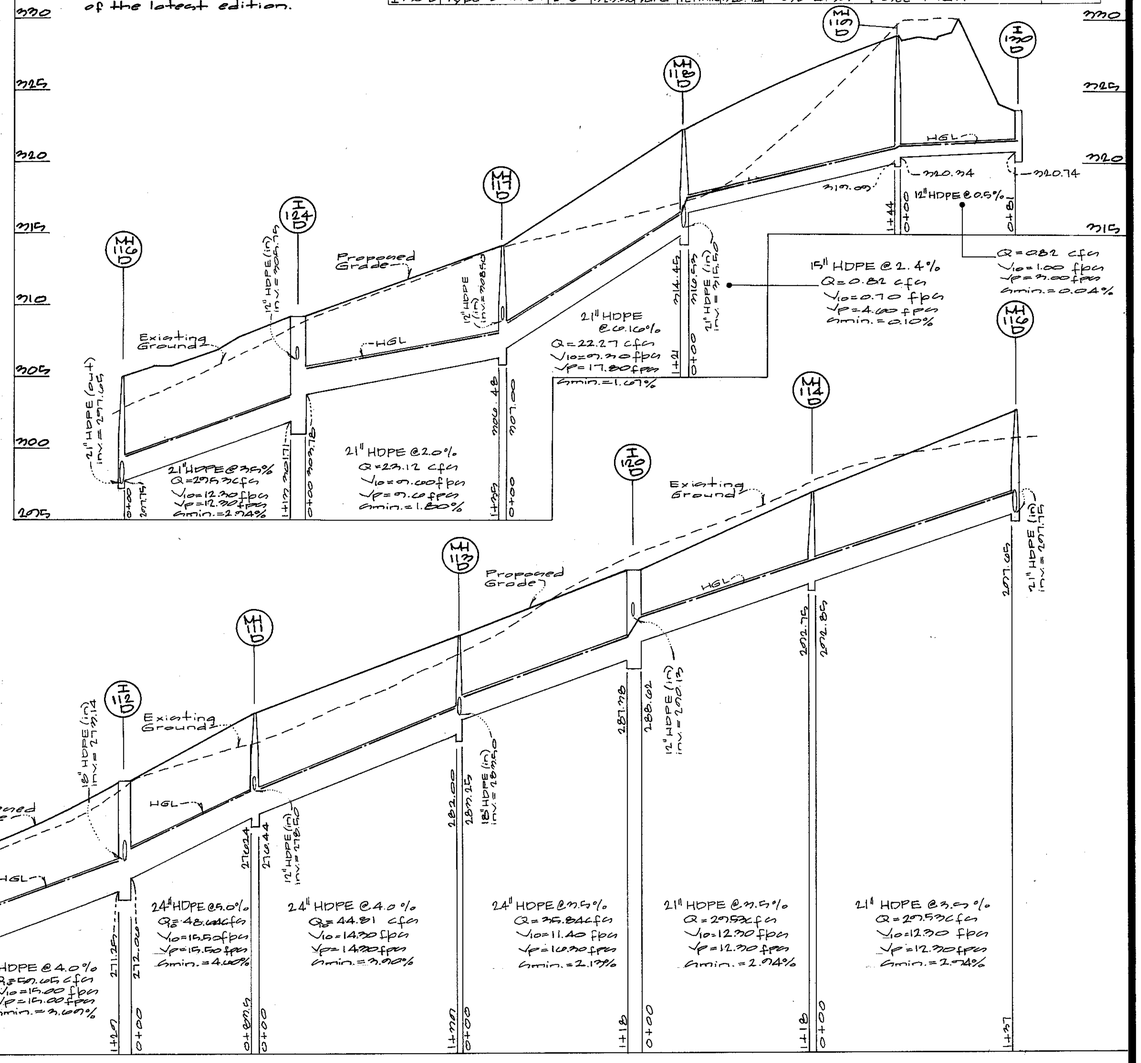


PIPE SUMMARY		
SIZE	TYPE	LENGTH (LF)
12"	HDPE	511
15"	HDPE	208
18"	HDPE	100
21"	HDPE	604
24"	HDPE	370
27"	HDPE	458

Note:
All stations are to centerline of structure. Offsets are to the face of the curb inlets and to the centerline for all other structures.

Note:
All HDPE pipe shall meet AASHTO M 294 type S specifications of the latest edition.

STRUCTURE SCHEDULE									
NO	TYPE	WIDTH (INSIDE)	TOP ELEVATION UPPER	TOP ELEVATION LOWER	INVERT ELEVATION UPPER	INVERT ELEVATION LOWER	STD. DETAIL	LOCATIONS	REMARKS
I 105D	A-10 Inlet	10'-0"	264.44	264.94	259.75	259.41	STD 4.41	℄ 2+25.04 Right 10.0'	River Glade Run
I 106D	A-10 Inlet	10'-0"	264.44	264.94	260.84	259.80	" "	℄ 2+25.04 Left 10.0'	" "
I 107D	Type 'D' Inlet	2'-7"	264.00	yard	terminal	261.50	STD 4.390	See Plan	
MH 104D	4' std. Precast	4'-0"	257.60	—	256.00	257.15	G. 5.12	℄ 2+60 Right 28.0'	River Glade Run
I 110D	Type 'D' Inlet	2'-7"	270.58	yard	267.04	264.82	STD 4.390	See Plan	
I 111D	Type 'D' Inlet	2'-7"	270.55	yard	terminal	267.81	" "	" "	
I 108D	A-10 Inlet	10'-0"	267.27	sump	258.74	258.14	STD 4.41	1+99.50	Linear Curb Profile
I 109D	Type 'D' Inlet	2'-7"	261.50	yard	terminal	259.75	STD 4.390	See Plan	
MH 103D	4' std. Precast	4'-0"	260.11	—	255.57	255.47	G. 5.12	℄ 0+45 Right 19.0'	River Glade Run
I 103D	A-10 Inlet	10'-0"	267.07	267.57	255.27	255.17	STD 4.41	℄ 10+50.04 Right 12.0'	Weathered Stone Way
MH 100D	5' std. Precast	5'-0"	270.00	—	262.27	251.58	G. 5.12	℄ 15+48 " 17.0'	
MH 102D	5' std. Precast	5'-0"	272.10	—	266.00	265.00	" "	℄ 14+48 " 17.0'	
I 112D	A-10' Inlet	10'-0"	270.50	270.00	272.80	271.25	STD 4.41	℄ 19+10 " 12.0'	
MH 111D	4' std. Precast	4'-0"	280.01	—	278.50	277.24	G. 5.12	℄ 12+04 " 17.0'	
MH 113D	4' std. Precast	4'-0"	280.00	—	282.00	280.50	" "	℄ 10+41 " 17.0'	
I 120D	A-10 Inlet	10'-0"	290.18	290.68	290.19	289.78	STD 4.41	℄ 8+91.21 " 12.0'	
MH 114D	4' std. Precast	4'-0"	297.27	—	297.85	297.75	G. 5.12	℄ 8+07 " 17.0'	
MH 116D	4' std. Precast	4'-0"	305.19	—	307.75	307.65	" "	℄ 0+61 " 17.0'	
I 124D	A-10 Inlet	10'-0"	310.00	310.50	305.75	305.71	STD 4.41	℄ 5+41.91 " 12.0'	
MH 117D	4' std. Precast	4'-0"	314.42	—	308.50	308.48	G. 5.12	℄ 3+96 " 17.0'	
MH 118D	4' std. Precast	4'-0"	312.18	—	314.55	314.45	" "	℄ 2+66 " 17.0'	
MH 119D	4' std. Precast	4'-0"	312.10	—	312.00	312.00	" "	℄ 1+06 " 17.0'	
I 122D	Type 'D' Inlet	2'-0"	312.50	yard	terminal	312.74	STD 4.390	See Plan	



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hewitt — 5/3/02
Chief, Division of Land Development — Date

5/3/02
Chief, Development Engineering Division — Date

STATE OF MARYLAND — JAMES T. SMITH — No. 14822 — REGISTERED PROFESSIONAL ENGINEER

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186
DES. BJM DRN. WEJ CHK. MJT.

DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: BOB JENKINS
(410) 992-6089

STORM DRAIN PROFILES & SCHEDULES

STONE LAKE
LOTS 45 THRU 118
PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-ED	99140
DATE	Tax Map-Grid	sheet
Dec., 2001	47-9/10	21 OF 28

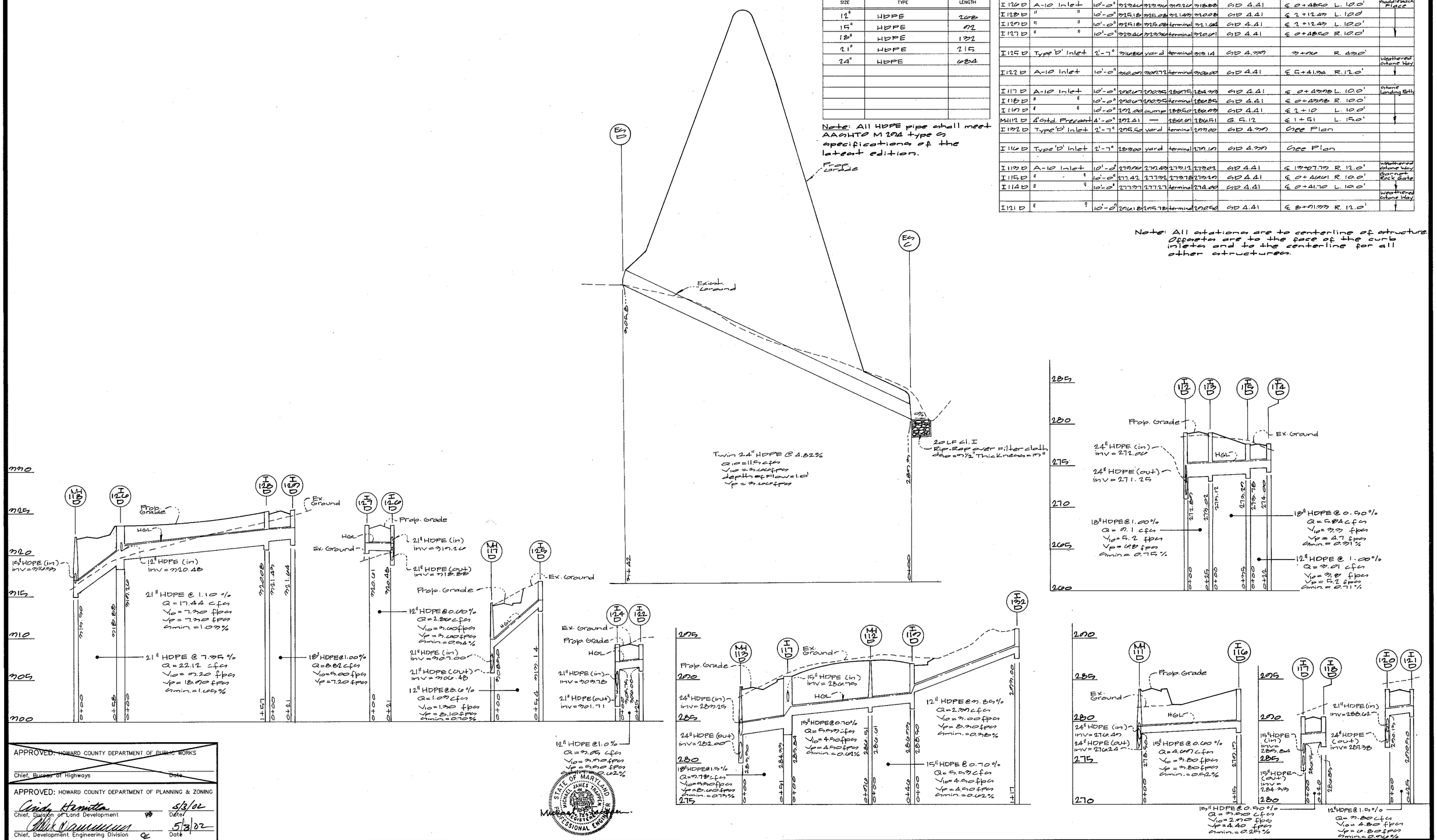
F-01-204

PIPE SUMMARY		
SIZE	TYPE	LENGTH
12"	HDPE	208
15"	HDPE	172
18"	HDPE	132
21"	HDPE	215
24"	HDPE	684

Note: All HDPE pipe shall meet AASHTO M 294 type S specifications of the latest edition.

STRUCTURE SCHEDULE									
NO	TYPE	WIDTH (INSIDE)	TOP ELEVATION UPPER	TOP ELEVATION LOWER	INVERT ELEVATION UPPER	INVERT ELEVATION LOWER	STD. DETAIL	LOCATIONS	REMARKS
I 126 D	A-10 Inlet	10'-0"	272.24	272.24	270.24	268.88	STD 4.41	℄ 0+48.50 L. 10.0'	Paddleback Piece
I 128 D	" "	10'-0"	275.18	275.08	272.49	272.08	STD 4.41	℄ 2+12.49 L. 10.0'	
I 129 D	" "	10'-0"	275.18	275.08	terminal	271.08	STD 4.41	℄ 2+12.49 L. 10.0'	
I 127 D	" "	10'-0"	273.24	273.24	terminal	272.01	STD 4.41	℄ 0+48.50 R. 10.0'	
I 125 D	Type 'D' Inlet	2'-7"	276.84	yard	terminal	273.14	STD 4.77	77+00 R. 43.0'	
									Weathered Stone Way
I 122 D	A-10 Inlet	10'-0"	270.07	269.77	terminal	272.00	STD 4.41	℄ 5+41.34 R. 12.0'	
I 117 D	A-10 Inlet	10'-0"	282.07	280.75	280.75	284.77	STD 4.41	℄ 0+43.78 L. 10.0'	Stone Landing Path
I 118 D	" "	10'-0"	282.07	280.75	terminal	280.85	STD 4.41	℄ 0+43.78 R. 10.0'	
I 119 D	" "	10'-0"	277.00	sump	280.50	280.77	STD 4.41	℄ 1+10 L. 10.0'	
MH 112 D	4' Std. Precast	4'-0"	277.41	—	280.01	280.51	G. 5.12	℄ 1+51 L. 15.0'	
I 131 D	Type 'D' Inlet	2'-7"	275.50	yard	terminal	277.00	STD 4.77	See Plan	
I 116 D	Type 'D' Inlet	2'-7"	283.00	yard	terminal	279.17	STD 4.77	See Plan	
I 113 D	A-10 Inlet	10'-0"	279.00	277.43	277.12	277.02	STD 4.41	℄ 1+07.77 R. 12.0'	Weathered Stone Way
I 115 D	" "	10'-0"	277.42	277.02	277.78	277.20	STD 4.41	℄ 0+46.01 R. 10.0'	Garrett Rock Gate
I 114 D	" "	10'-0"	277.77	277.27	terminal	274.00	STD 4.41	℄ 0+41.70 L. 10.0'	
									Weathered Stone Way
I 121 D	" "	10'-0"	276.18	275.78	terminal	276.50	STD 4.41	℄ 2+01.77 R. 12.0'	

Note: All stations are to centerline of structure. Offsets are to the face of the curb inlets and to the centerline for all other structures.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hamilton — 5/3/02
Chief, Division of Land Development — Date

5/3/02
Chief, Development Engineering Division — Date

STATE OF MARYLAND — MICHAEL JAMES TRAPPER — REGISTERED PROFESSIONAL ENGINEER

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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DES. BJM DRN. WBJ CHK. MJT

DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: BOB JENKINS
(410) 992-6089

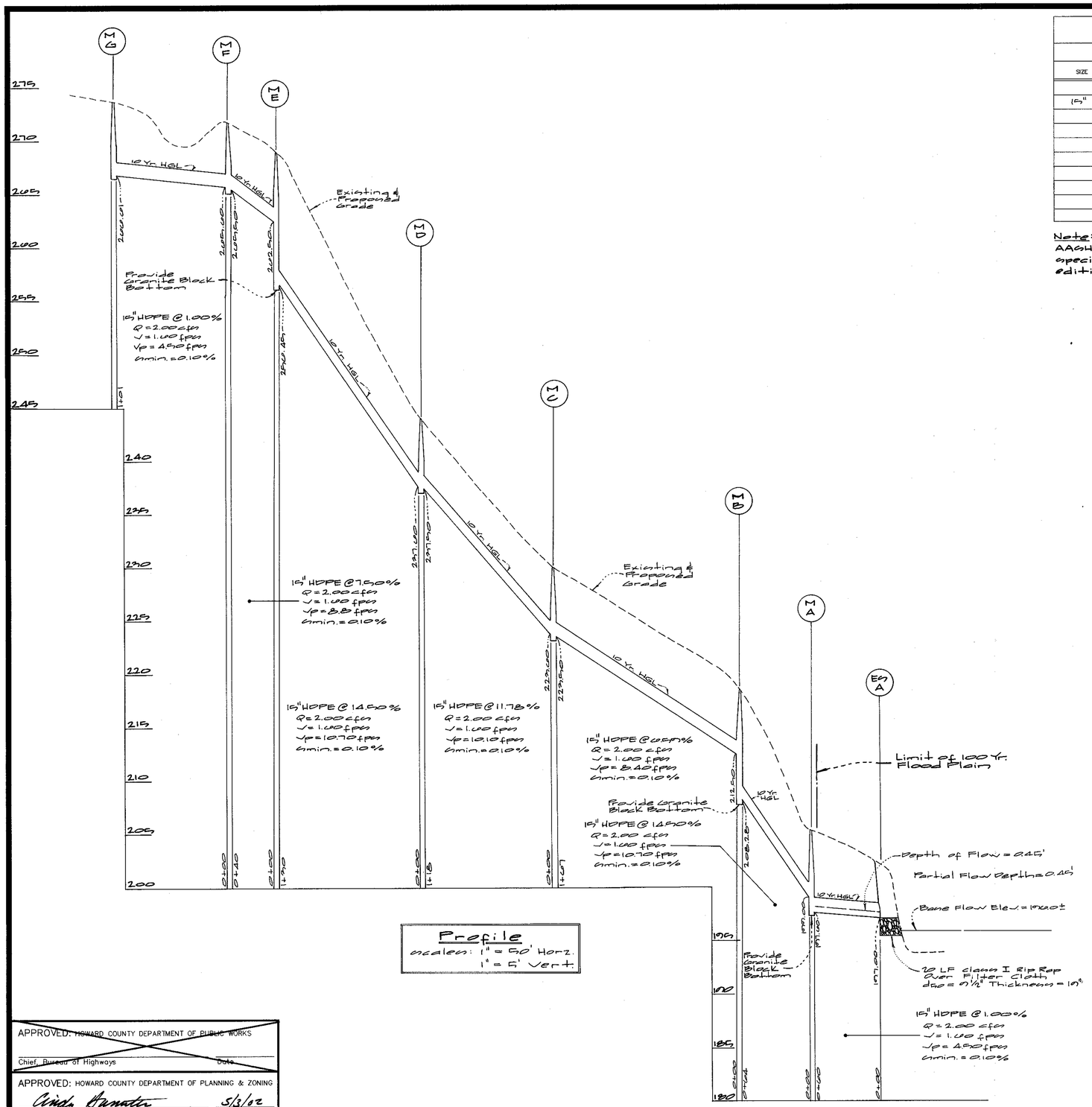
STORM DRAIN PROFILES & SCHEDULES

STONE LAKE
LOTS 45 THRU 118
PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-ED	99140
Date	Tax Map-Grid	sheet
Dec., 2001	47-9/10	22 OF 38

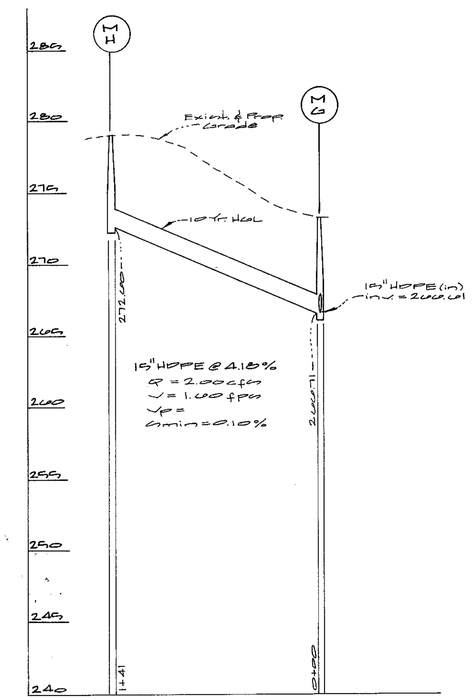
F-01-204



PIPE SUMMARY		
SIZE	TYPE	LENGTH
15"	HDPE	832.1'

Note: All HDPE pipe shall meet AASHTO M 294 type S specification of the latest edition.

STRUCTURE SCHEDULE									
NO	TYPE	WIDTH (INSIDE)	TOP ELEVATION UPPER	TOP ELEVATION LOWER	INVERT ELEVATION UPPER	INVERT ELEVATION LOWER	STD. DETAIL	LOCATIONS	REMARKS
M-A	Manhole	4'	200.00		197.00	197.00	Co. Std. 2.12	See Plan	
M-B			217.00		212.50	208.28			
M-C			231.00		225.00	223.50			
M-D			245.00		237.00	237.50			
M-E			265.00		262.50	256.45			
M-F			267.00		264.00	260.50			
M-G	Manhole	4'	279.10		266.71	266.01	Co. Std. 2.12		
M-H	Manhole	4'	279.00	—	272.00	Co. Std. 2.12			
EG-A	End Section	—	—	—	—	197.00	Co. Std. 5.01	See Plan	



APPROVED: ~~HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS~~

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Barnatchez — 5/3/02
Chief, Division of Land Development — Date

5/3/02
Chief, Development Engineering Division — Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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DES. DRN. CHK.

DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: BOB JENKINS
(410) 992-6089

STORM DRAIN PROFILES & SCHEDULES

STONE LAKE
Lots 45 thru 118
Plat No.

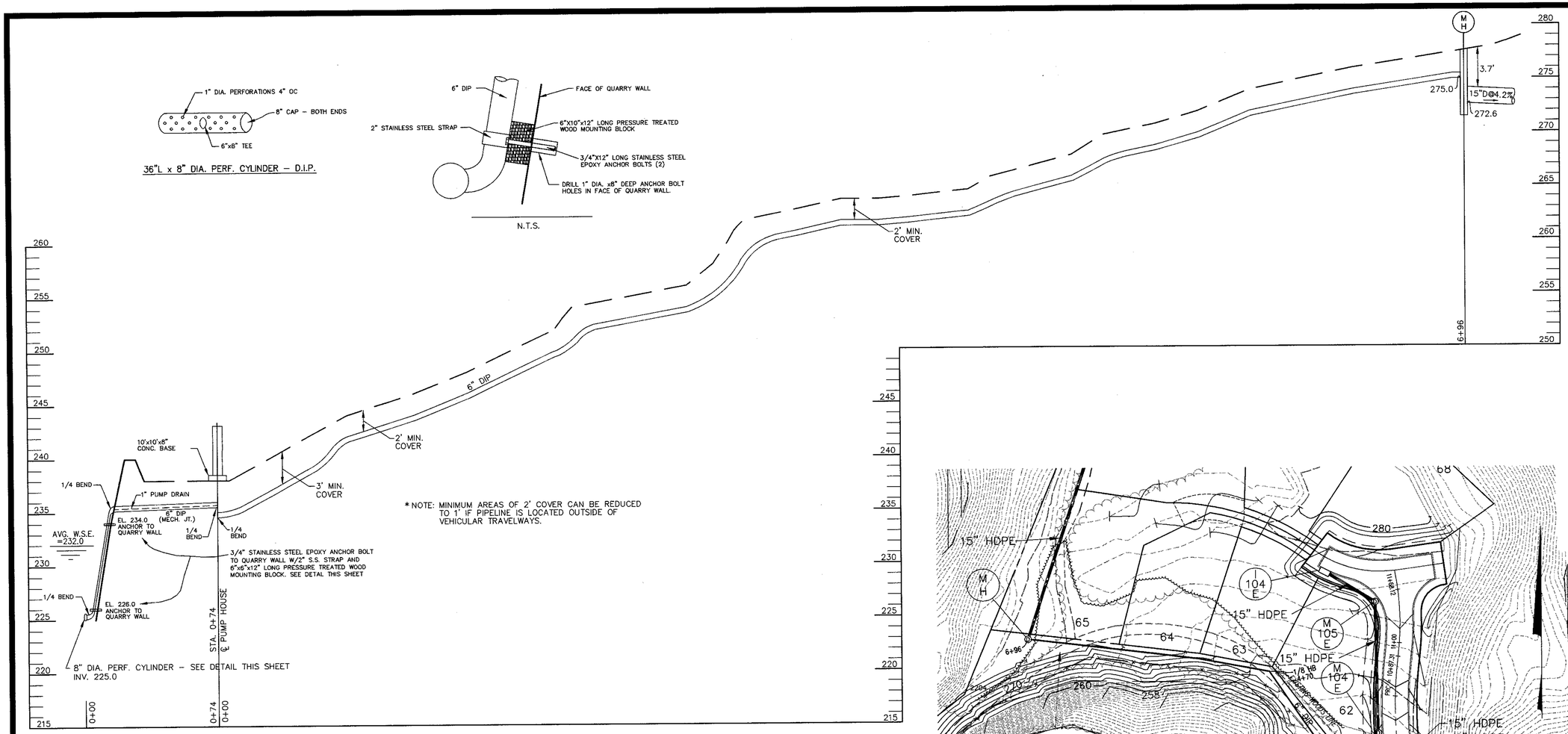
ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-ED	99140
Dec., 2001	47-9/10	23 OF 38

F-01-204

36"L x 8" DIA. PERF. CYLINDER – D.I.P.

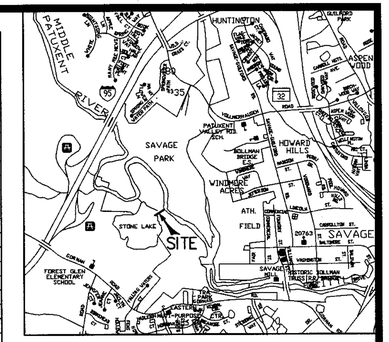
N.T.S.



*NOTE: MINIMUM AREAS OF 2' COVER CAN BE REDUCED TO 1' IF PIPELINE IS LOCATED OUTSIDE OF VEHICULAR TRAVELWAYS.

PIPELINE PROFILE

SCALE: HORIZ. 1"=30' VERT. 1"=5'

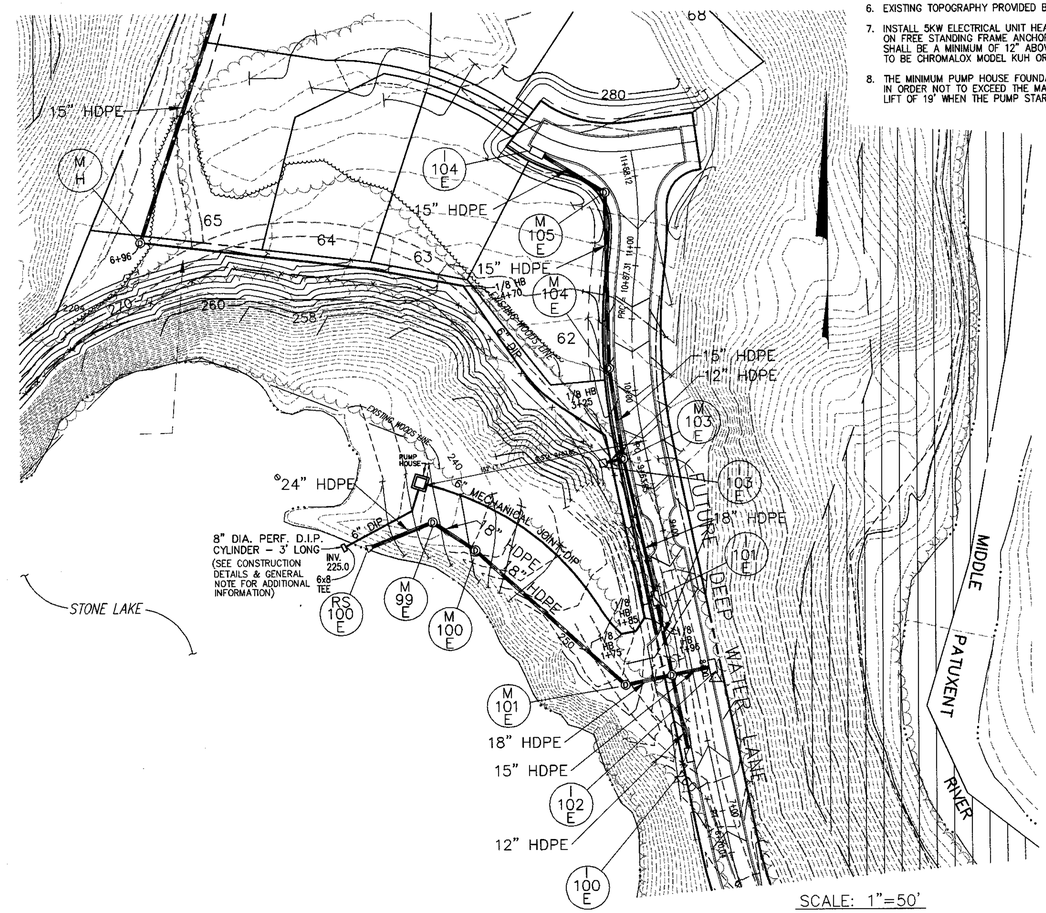


LOCATION MAP

SCALE: 1"=2000'

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY STANDARD AND SPECIFICATIONS IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
4. THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, BUREAU OF UTILITIES AT (410) 313-4900 AT LEAST FIVE WORKING DAYS PRIOR TO STARTING ANY EXCAVATION WORK.
5. ADDITIONAL INFORMATION AVAILABLE FROM PREVIOUS SUBMISSIONS UNDER HOWARD CO. FILE NOS.:
6. EXISTING TOPOGRAPHY PROVIDED BY DMW, INC. JULY, 1998
7. INSTALL 5KW ELECTRICAL UNIT HEATER W/ INTEGRAL THERMOSTAT ON FREE STANDING FRAME ANCHORED TO CONCRETE BASE. HEATER SHALL BE A MINIMUM OF 12" ABOVE CONCRETE BASE. UNIT HEATER TO BE CHROMALOX MODEL KUH OR APPROVED EQUAL, 5KW, 480V, 3ø.
8. THE MINIMUM PUMP HOUSE FOUNDATION ELEVATION SHALL BE 245.0' IN ORDER NOT TO EXCEED THE MANUFACTURERS PRIMING SUCTION LIFT OF 19' WHEN THE PUMP START CYCLE BEGINS.



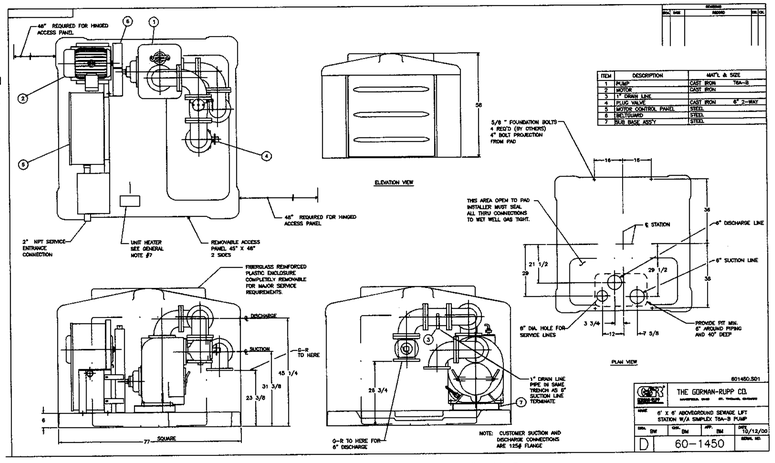
SCALE: 1"=50'

NOTE:

PRE-FABRICATED AND PRE-ASSEMBLED PUMP STATION TO BE AS MANUFACTURED BY THE GORMAN-RUPP COMPANY OF MANSFIELD, OHIO OR EQUAL. PUMP STATION ENCLOSURE TO BE 6 FEET WIDE BY 6 FEET DEEP BY 4 FEET HIGH, CONSTRUCTED OF FIBERGLASS PANELS WHICH ARE INDIVIDUALLY REMOVABLE FOR PROPER MAINTENANCE OF THE INTERNAL EQUIPMENT. PUMP STATION STRUCTURE TO BE GREEN IN COLOR. PUMP STATION SYSTEM TO BE COMPLETE WITH A SINGLE GORMAN RUPP MODEL T6A60-B SELF-PRIMING CENTRIFUGAL SOLIDS HANDLING PUMP, FULLY PRE-PIPED AND PRE-WIRED ON SKID WITH INTEGRAL PUMP CONTROL PANEL. PUMP TO BE BELT DRIVEN BY 30HP, 460 VOLT, 3 PHASE ELECTRIC MOTOR, SERVICE FACTOR 1.15, WITH THE ASSEMBLY TO BE RATED FOR 500 GALLONS PER MINUTE FLOW AT A TOTAL HEAD OF 75 FEET. PUMP TO BE CAPABLE OF SELF PRIMING AT A SUCTION LIFT OF 10 VERTICAL FEET AND NPSHA OF 19 FEET OR MORE AT PUMP START CONDITION. PUMP STATION TO BE SUITABLE FOR SINGLE POINT ELECTRICAL POWER CONNECTION. PROVIDE STANDARD SHOP DRAWINGS FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION.

SEQUENCE OF OPERATION:

AN AUTOMATIC TIMER AND A TRANSDUCER LEVEL SENSING SYSTEM DICTATE PUMP OPERATION. THE TIMER WILL RUN THE PUMP FOR ONE HOUR EACH WEEK, FIELD ADJUSTABLE. THE TRANSDUCER SYSTEM WILL ENERGIZE THE PUMP WHEN THE WATER REACHES AN ELEVATION OF 232.5 FEET. THE PUMP WILL SHUT OFF WHEN THE WATER LEVEL REACHES A LEVEL OF 232.0 FEET. THE CONTROLS SHALL INCORPORATE A HIGH LEVEL ALARM AT 233.5 FEET. THE CONTROLS SHALL BE FIELD ADJUSTABLE.



PUMP HOUSE DETAILS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 5/3/02

Chief, Development Engineering Division — Date 5/3/02

CENTURY ENGINEERING, INC.
CONSULTING ENGINEERS, PLANNERS
32 WEST ROAD
TOWSON, MARYLAND 21204
PH 410-823-8070 FAX 410-823-2184

DES. G.R.K. P.F.J. | DRN. M.L.A. | CHK. G.R.K.

DATE	REVISION	BY	APP'R.
2/20/02	ANCHOR DETAIL, SEQUENCE OF OPERATION, REVISED STORM DRAIN PIPE SIZE	MCA	

PREPARED FOR:

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: BOB JENKINS
(410) 992-6089

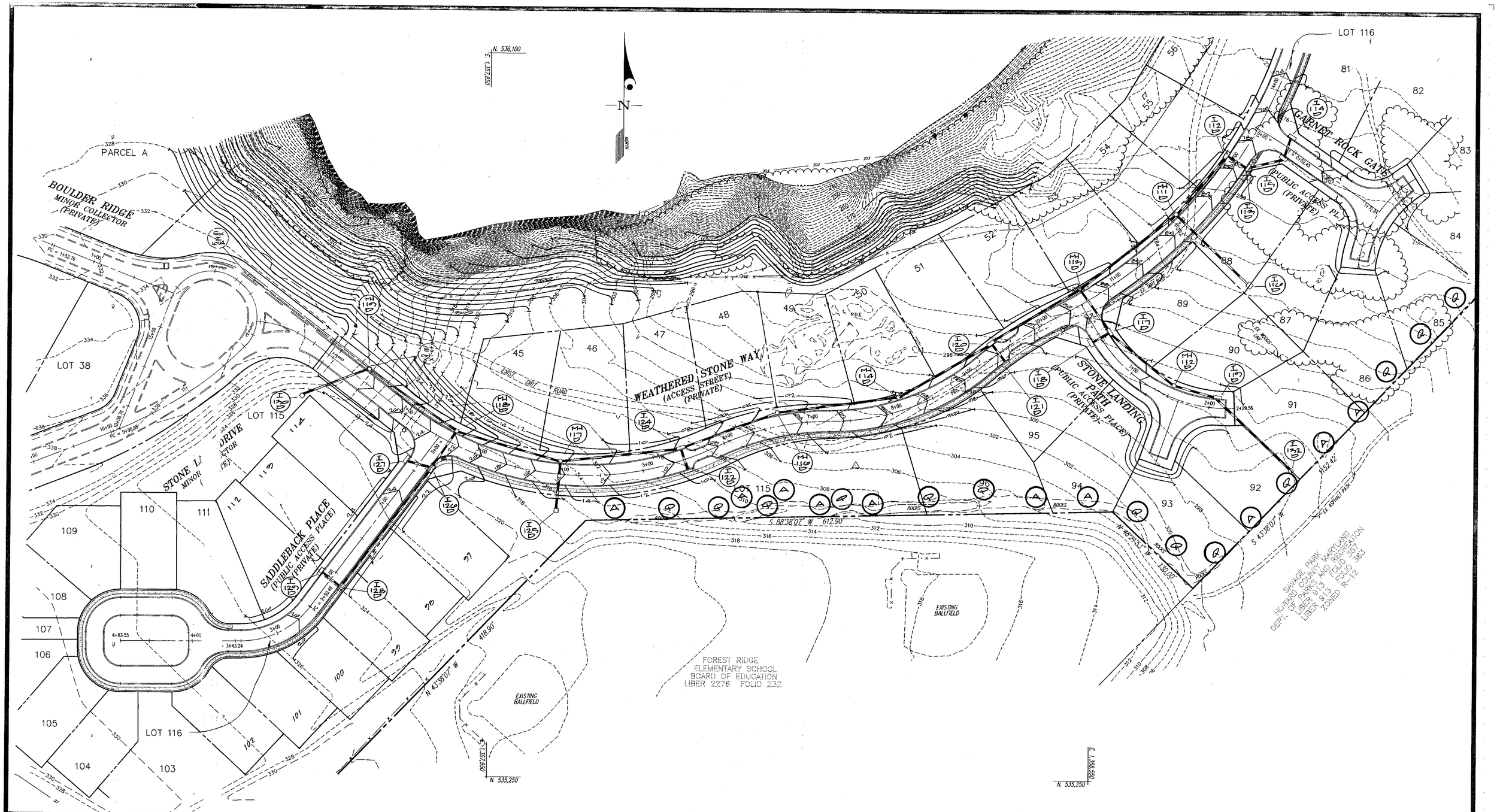
PIPING PLAN, PROFILE AND DETAILS

STONE LAKE
SWM FACILITY #2 PLAN AND PROFILE

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	C. E. I. FILE No.
AS SHOWN	R-ED	20152.00
FEB., 2002	47-9/10	24 OF 38

F-01-204



APPROVED: ~~HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS~~

Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZO

Chief, Division of Land Development Date 5/2/02

Chief, Development Engineering Division Date 5/3/02

STATE OF MARYLAND
MICHAEL JAMES TRAPPER
No. 22052
PROFESSIONAL ENGINEER

NOTE: FOR LANDSCAPE PURPOSES ONLY.

GLW GUTSCHICK LITTLE & WEBER, P.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCH
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-

DES. DRN. DATE

DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: BOB JENKINS
(410) 992-6089

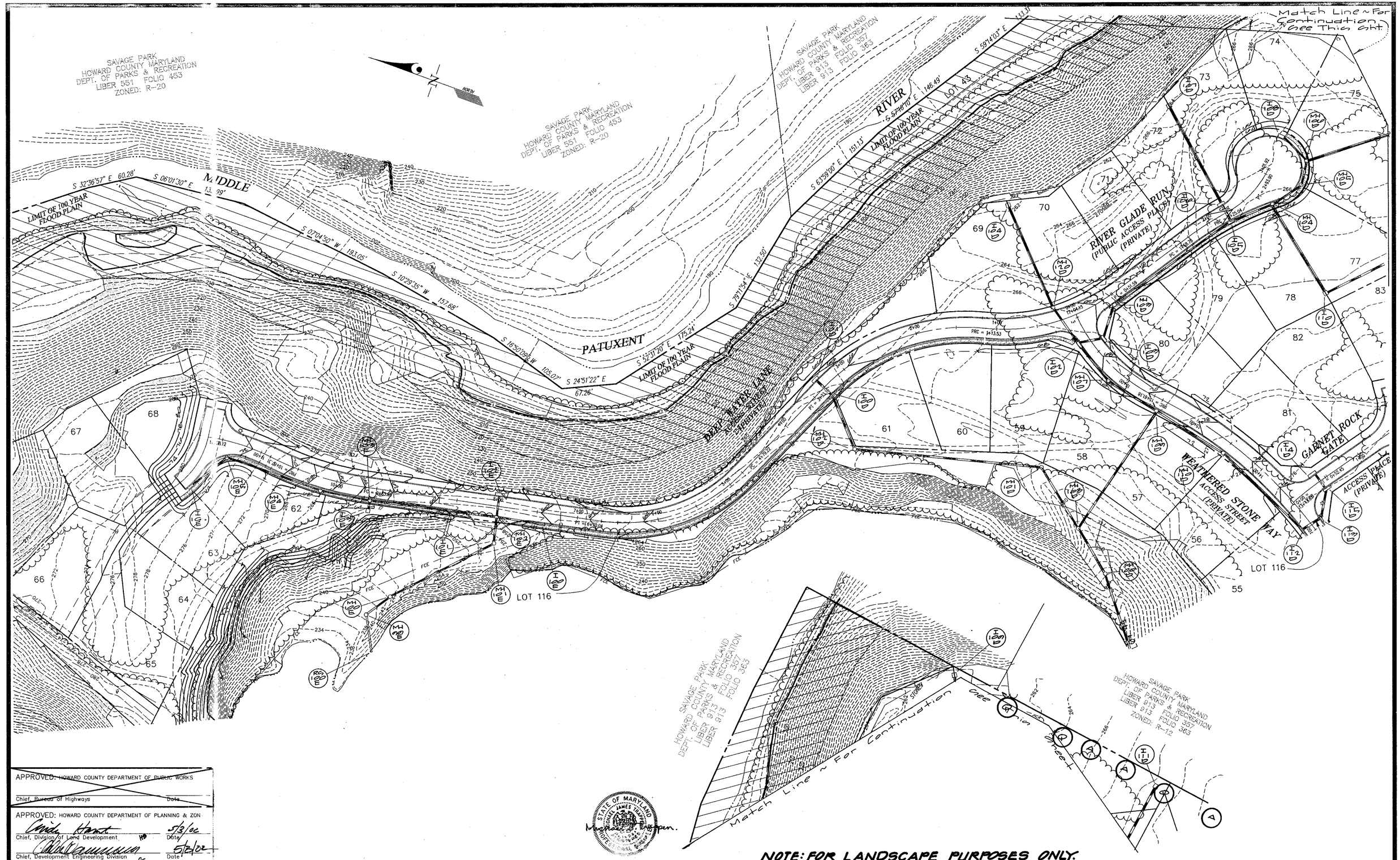
Landscape Plan ~ South

STONE LAKE
LOTS 45 THRU 118
PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP – GRID	SHEET
December, 2001	47-9/10	25 OF 38

F-01-204



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZON

Chief, Division of Land Development Date 5/3/02

Chief, Development Engineering Division Date 5/2/02

NOTE: FOR LANDSCAPE PURPOSES ONLY.

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4183

DES. DRN. CHK.

DATE	REVISION	BY	APP'R.

PREPARED FOR:

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: BOB JENKINS
(410) 992-6089

Landscape Plan ~ East

STONE LAKE
LOTS 45 THRU 118
PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP – GRID	SHEET
Dec., 2001	47-9/10	20 OF 30

F-01-204

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 5/3/02

Chief, Development Engineering Division — Date 5/3/02

GLW GUTSCHICK LITTLE & WEBER, P.A.

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BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES. LMM | DRN. LMM | CHK. TOT

DATE	REVISION	BY	APP'R.

PREPARED FOR:

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
PH: 410-992-6084
ATTN: MR. BOB JENKINS

LANDSCAPE BUFFER OVERVIEW

STONE LAKE

LOTS 45 THRU 118

PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=200'	R-ED	99140
DATE	TAX MAP - GRID	SHEET
Dec., 2001	47 - 9/10	27 of 38

F-01-204

SCHEDULE A Sec. 16.124 (2)i PERIMETER LANDSCAPE EDGE Category				
	Adj. to Perimeter Property			
Perimeter	2	3	4B	
Landscape Buffer Type	A	A	A	
Linear Feet of Roadway/ Perimeter Frontage	4799	1152	750	
Credit for Ex. Vegetation (Yes, No, Linear Feet) (describe below if needed)	YES 4799	YES 200	NO	
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (describe below if needed)	NO	NO	NO	
Number of Plants Required Shade Trees Evergreen Trees Shrubs	 0 0 0	 16 0 0	 13 0 0	
Number of Plants Provided Shade Trees Evergreen Trees Other Trees (2:1 subst.) Shrubs (10:1 subst.) (describe plant substitution credits below if needed)	 0	 16	 13	
— Alternative Compliance...exceeds county req. —				

Schedule "A" Number of Shade trees for bonding: 29 x $300.00 = $8,700.00

Financial surety for the required landscaping has been posted as part of the DPW Developer's Agreement in the amount of $ 8,700.00

Internal landscaping for SDP Lots is deferred Until Site Plan

APPROVED: ~~HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS~~

Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development Date 5/3/02

Chief, Development Engineering Division Date 5/3/02

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE – SUITE 250 – BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES. LMM | DRN. LMM | CHK. RDT

DATE	REVISION	BY	APP'R.

PLANT LIST

SYMBOL	QTY.	NAMES (BOTANICAL / SCIENTIFIC)	SIZE	ROOT	COMMENTS
SHADE TREES					
A	13	Acer rubrum 'October Sunset' October Sunset Maple	2 1/2-3" Cal.	B&B	
Q	16	Quercus palustris Pin Oak	2 1/2-3" Cal.	B&B	

LANDSCAPING NOTES

1. This plan has been prepared in accordance with Section 16.124 of the Howard County Code and Chapter VI (Alternative Compliance) of the Howard County Landscape Manual.
2. Contractor shall notify all utilities at least (5) five days before starting work. All General Notes, especially those regarding utilities, on Sheet 1 shall apply.
3. Field verify underground utility locations and existing conditions before starting planting work. Contact engineer / landscape architect if any relocations are required.
4. Plant quantities shown on Plant List are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on the plan and those shown on the plant list, the quantities on the plan shall take precedence.
5. All plant material shall be full, heavy, well formed, and symmetrical, and conform to the A.A.N. Specifications, and be installed in accordance with project specifications.
6. No substitution shall be made without written consent of the owner or his representative.
7. All areas disturbed by construction activities but not otherwise planted, paved, or mulched shall be seeded or sodded in accordance with the project specifications.
8. The contractor shall notify the owner in writing if he/she encounters soil drainage conditions which may be detrimental to the growth of the plants.
9. All exposed earth within limits of planting beds shall be mulched with shredded hardwood mulch per Planting Details.
10. "Schedule A – Perimeter Landscape Edge" is provided for landscape surety calculation purposes only. Financial surety for the required landscaping shall be posted with the grading permit in the amount of $ 8,700.00
11. Planting provided:
    Shade Trees (proposed): 29
    Ornamental Trees: 0
    Evergreen Trees (proposed): 0

PLANT MATERIALS AND PLANTING METHODS

A. Plant Materials

The landscape contractor shall furnish and install and/or dig, ball, burlap and transplant all of the plant materials called for on drawings and/or listed in the Plant Schedule.

1. Plant Names

   Plant names used in the Plant Schedule shall conform with "Standardized Plant Names," latest edition.

2. Plant Standards

   All plant material shall be equal to or better than the requirements of the "USA Standard for Nursery Stock" latest edition, as published by the American Association of Nurserymen (hereafter referred to as AAN Standards). All plants shall be typical of their species and variety, shall have a normal habit of growth and shall be first quality, sound, vigorous, well-branched and with healthy, well-furnished root systems. They shall be free of disease, insect pests and mechanical injuries.

   All plants shall be nursery grown and shall have been grown under the same climate conditions as the location of this project for at least two years before planting. Neither heeled-in plants nor plants from cold storage will be accepted.

3. Plant Measurements

   All plants shall conform to the measurements specified in the Plant Schedule as approved by the ARC.

   a. Caliper measurements shall be taken six inches (6") above grade for trees under four-inch (4") caliper and twelve (12") above grade for trees four inches (4") in caliper and over.

   b. Minimum branching height for all trees shall be six feet (6'), maximum eight feet (8').

   c. Minimum size for planting shade trees shall be 3-3?" caliper, 14' - 16' in height.

   d. Minimum size for planting minor or intermediate focus trees (pines, crabapples, etc.) shall be 3"-3?" caliper, 10'-12' in height.

   e. Minimum size for planting shrubs shall be 18" - 24" spread unless noted otherwise.

   f. Caliper, height, spread and size of ball shall be generally as follows:

CALIPER	HEIGHT	SPREAD	SIZE OF BALL
3" - 3.5"	14'-16'	6'-8'	32" diameter
3.5"- 4"	14'-16'	8'-10'	36" diameter
4" - 4.5"	16'-18'	8'-10'	40" diameter
4.5"- 5"	16'-17'	10'-12'	44" diameter
5" - 5.5"	16'-20'	10'-12'	48" diameter
5.5"- 6"	18'-20'	12'-14'	52" diameter

   All plant material shall generally average the median for the size ranges indicated above as indicated in the "AAN Standards".

4. Plant Identification

   Legible labels shall be attached to all shade trees, minor trees, specimen shrubs and bundles or boxes of other plant material giving the botanical and common names, size and quantity of each. Each shipment of plants shall bear certificates of inspection as required by Federal, State and County authorities.

5. Plant Inspection

   The ARC may, upon request by the builder or developer, at least ten (10) days prior to the installation of any proposed plant material, inspect all proposed plant material at the source of origin.

B. Planting Methods

All proposed plant materials that meet the specifications in Section A are to be planted in accordance with the following methods during the proper planting seasons as described in the following:

1. Planting Seasons

   The planting of deciduous trees, shrubs and vines shall be from March 1st to June 15th and from September 15th to December 15th. Planting of deciduous material may be continued during the winter months providing there is no frost in the ground and frost-free topsoil planting mixtures are used.

   The planting of evergreen material shall be from March 15th to June 15th and from August 15th to December 1st. No planting shall be done when ground is frozen or excessively moist. No frozen or wet topsoil shall be used at any time.

2. Digging

   All plant material shall be dug, balled and burlapped (B+B) in accordance with the "AAN Standards".

3. Excavation of Plant Pits

   The landscaping contractor shall excavate all plant pits, vine pits, hedge trenches and shrub beds in accordance with the following schedule.

   a. Locations of all proposed plant material shall be staked and approved in the field by the landscape architect before any of the proposed plant material is installed by the landscape contractor.

   b. All pits shall be generally circular in outline, vertical sides; depth shall not be less than 6" deeper than the root ball, diameter shall not be less than two times the diameter of the root ball as set forth in the following schedule.

   c. If areas are designated as shrub beds or hedge trenches, they shall be excavated to at least 18" depth minimum. Areas designated for ground covers and vines shall be excavated to at least 12" in depth minimum.

   d. Diameter and depth of tree pits shall generally be as follows:

PLANT SIZE	ROOT BALL	PIT DIAMETER	PIT DEPTH
3" - 3.5"cal.	32"	64"	28"
3.5"- 4" cal.	36"	72"	32"
4" - 4.5"cal.	40"	80"	36"
4.5"- 5" cal.	44"	88"	40"
5" - 5.5"cal.	48"	96"	44"
5.5"- 6" cal.	52"	104"	48"

   A 20% compaction figure of the soil to be removed is assumed and will be allowed in calculation of extra topsoil. The tabulated pit sizes are for purposes of uniform calculation and shall not override the specified depths below the bottoms of the root balls.

4. Staking, Guying and Wrapping

   All plant material shall be staked or guyed, and wrapped in accordance with the following specifications:

   a. Stakes: Shall be sound wood 2" x 2" rough sawn oak or similar durable woods, or lengths, minimum 7'-0" for major trees and 5'-0" minimum for minor trees.

   b. Wire and Cable: Wire shall be #10 ga. galvanized or bethanized annealed steel wire. For trees over 3" caliper, provide 5/16" turn buckles, eye and eye with 4" take-up. For trees over 5" caliper, provide 3/16", 7 strand cable cadmium plated steel, with galvanized "eye" thimbles of wire and hose on trees up to 3" in caliper.

   c. Hose: Shall be new, 2 ply reinforced rubber hose, minimum 1/2" I.D. "Plastic Lock Ties" or "Paul's Trees Braces" may be used in place of wire and hose on trees up to 3" in caliper.

   d. All trees under 3" in caliper are to be planted and staked in accordance with the attached "Typical Tree Staking Detail". All trees over 3" in caliper are to be planted and guyed in accordance with the attached "Typical Tree Guying Detail".

5. Plant Pruning, Edging and Mulching

   a. Each tree, shrub or vine shall be pruned in an appropriate manner to its particular requirements, in accordance with accepted standard practice. Broken or bruised branches shall be removed with clean cuts flush with the adjacent trunk or branches. All cuts over 1" in diameter shall be painted with an approved antiseptic tree wound dressing.

   b. All trenches and shrub beds shall be edged and cultivated to the lines shown on the drawing. The areas around isolated plants shall be edged and cultivated to the full diameter of the pit. Sod which has been removed and stacked shall be used to trim the edges of all excavated areas to the neat lines of the plant pit saucers, the edges of shrub areas, hedge trenches and vine pockets.

   c. After cultivation, all plant materials shall be mulched with a 2" layer of fine, shredded pine bark, peat moss, or another approved material over the entire area of the bed or saucer.

6. Plant Inspection and Acceptance

   The ARC shall be responsible for inspecting all planting projects on a periodic basis to assure that all work is proceeding in accordance with the approved plans and specifications.

7. Plant Guarantee

   All plant material shall be guaranteed for the duration of one full growing season, after final inspection and acceptance of the work in the planting project. Plants shall be alive and in satisfactory growing condition at the end of the guarantee period.

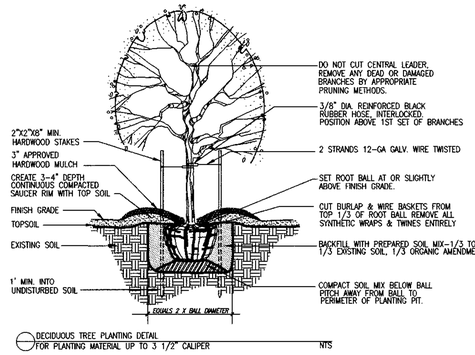
   a. For this purpose, the "growing season" shall be that period between the end of the "Spring" planting season, and the commencement of the "Fall" planting season.

   b. Guarantee for planting performed after the specified end of the "Spring" planting season, shall be extended through the end of the next following "Spring" planting season.

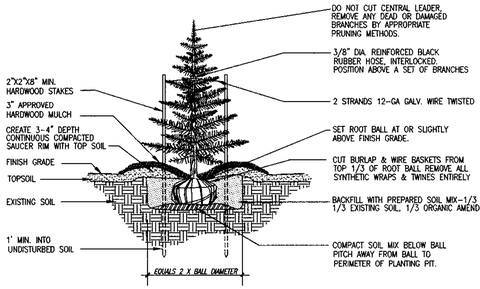
Sodding

All sodding shall be in accordance to the "Landscape Specification Guidelines for Baltimore-Washington metropolitan Areas" latest edition, approved by the Landscape Contractors Association of Metropolitan Washington and the American Society of Landscape Architects.

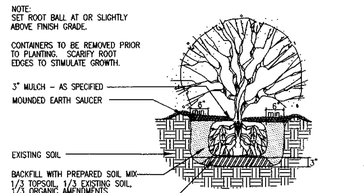
All sod shall be strongly rooted sod, not less than two years old and free of weeds and undesirable native grasses. Provide only sod capable of growth development when planted and in strips not more than 18" wide x 4" long. Provide sod composed principally of improved strain Kentucky bluegrass, such as, Columbia, Victa, or Escort.



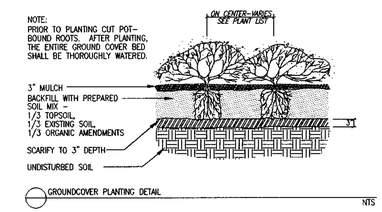
DECIDUOUS TREE PLANTING DETAIL
FOR PLANTING MATERIAL UP TO 3 1/2" CALIPER — NTS



EVERGREEN TREE PLANTING DETAIL — NTS



SHRUB PLANTING DETAIL — NTS



GROUNDCOVER PLANTING DETAIL — NTS

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
PH: 410-992-6089
ATTN: MR. BOB JENKINS

LANDSCAPE NOTES & DETAILS

STONE LAKE
LOTS 45 THRU 118
PLAT No.

6TH ELECTION DISTRICT *HOWARD COUNTY, MARYLAND*

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-ED	99140
DATE	TAX MAP - GRID	SHEET
Dec., 2001	47 - 9/10	28 OF 38

F-01-104

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 5/8/02

Chief, Development Engineering Division — Date 5/8/02

STATE OF MARYLAND — MICHAEL JAMES TRAPP — No. 23341 — PROFESSIONAL ENGINEER

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DES. BJM DRN. MJT

DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
ATTN: BOB JENKINS
(410) 992-6089

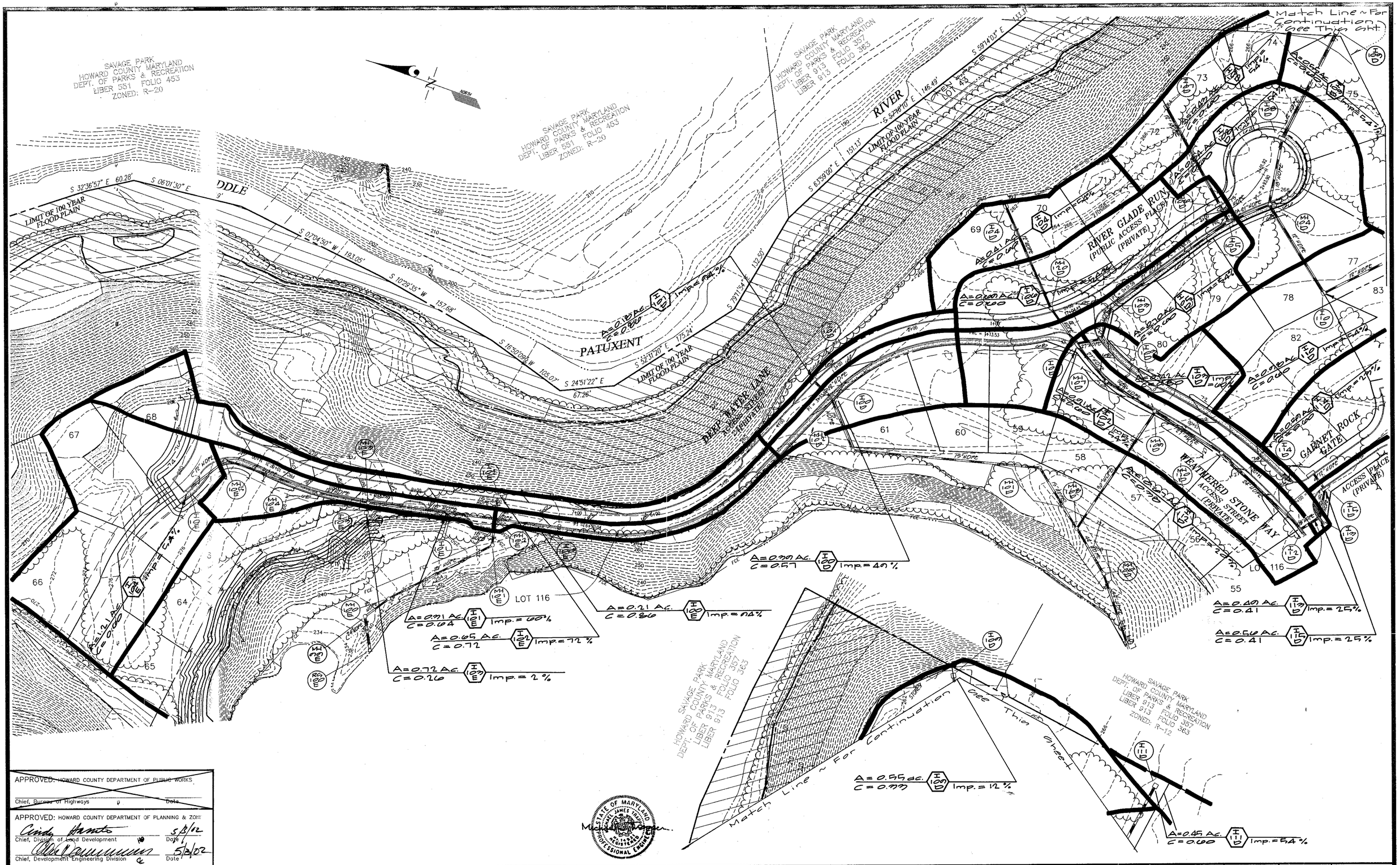
Storm Drain Drainage Area Map ~ South

STONE LAKE
LOTS 45 THRU 118
PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP – GRID	SHEET
Dec., 2001	47-9/10	207 OF 238

F-01-204



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways — Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development — Date 5/3/02

Chief, Development Engineering Division — Date 5/3/02

STATE OF MARYLAND — MICHAEL JAMES TROPPER — No. 24348 — REGISTERED PROFESSIONAL ENGINEER

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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DES. BJW DRN. MT.

DATE	REVISION	BY	APP'R.

PREPARED FOR:

THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PKWY.
COLUMBIA, MD 21044
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(410) 992-6089

Storm Drain Drainage Area Map ~ East

STONE LAKE
LOTS 45 THRU 116
PLAT No.

ELECTION DISTRICT No. 6 — HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP – GRID	SHEET
Dec., 2001	47-9/10	30 OF 38

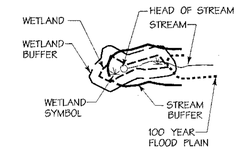
F-01-204

SPECIMEN TREES

1	White Oak	38.0" Diam.
2	White Oak	36.5" Diam.
3	White Oak	35.0" Diam.
4	White Oak	36.0" Diam.
5	White Oak	34.0" Diam.
6	White Oak	39.0" Diam.
7	White Oak	33.5" Diam.
8	White Oak	32.0" Diam.
9	White Oak	31.5" Diam.
10	White Oak	31.5" Diam.
11	Black Oak	42.0" Diam.
12	Black Oak	38.0" Diam.
13	White Oak	33.0" Diam.
14	White Oak	33.5" Diam.

Legend

- FOREST PROTECTION SIGN
- FOREST PROTECTION FENCE
- SLOPES >25%
- SLOPES 15%-25%
- LIMIT OF DISTURBANCE
- FOREST CONSERVATION EASEMENT (PHASE 2)
- FUTURE REFORESTATION AREA
- FOREST CONSERVATION EASEMENT (PHASE 1)
- PHASE LIMIT
- SCRUB/SHRUB/HEDGEROW OR TREE GROUP
- REFORESTATION AREAS
- FOREST CLEARING (PHASE 2)
- QUARRY CLEARING
- FOREST CLEARING (PHASE 1)
- FOREST EDGE
- SPECIMEN TREE
- PERIMETER LANDSCAPE TREE (REFER TO G.W. LANDSCAPE PLAN)



GOALS AND OBJECTIVES

The goals and objectives of this Final Forest Conservation Plan are to provide for short-term forest retention area protection, and to provide for reforestation to offset all proposed forest clearing for the project.

A total of approximately 11.57 acres of forest clearing (8.14 acres outside of the quarry; 3.43 acres associated with the quarry reclamation) are necessary for development of the site and reclamation of the quarry. The 8.14 acres of clearing outside the quarry generates a 8.18 acre reforestation requirement (based on standard Forest Conservation Worksheet calculations). The additional 3.43 acres of clearing within the quarry generates a 0.86 acre reforestation requirement (based on the negotiated 0.25:1 replacement ratio approved by MD DNR). In total, approximately 9.04 acres of reforestation are required.

Approximately 3.54 acres of additional forest retention credit have been derived from development of Emerson Section 1 (F-01-140) and will be used to partially defray the reforestation requirement for Stone Lake (7.08 acres excess retention x 0.5 = 3.54 acres of credit). The remaining 5.50 acre reforestation requirement for Stone Lake will be satisfied on-site at the locations shown hereon.

Short-term forest retention area protection will be accomplished by identifying those areas and indicating the locations of forest protection fencing and signage. Establishing these short-term protection measures prior to any earth-moving activities will help ensure that these areas will not be disturbed during construction activities.

Areas shown hereon as "Future Forest Conservation Area" may be reforested at a later date to satisfy potential reforestation requirements for other projects. Protective easements will be established at that time. Minimum width requirements for forest conservation easements within in the quarry reclamation area are satisfied by measuring 35' widths along the ground surface, as opposed to measuring areally.

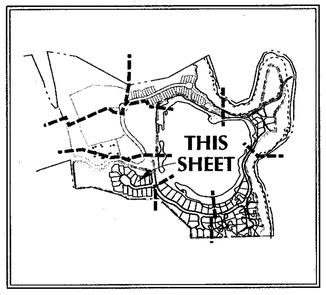
EASEMENT TABULATION CHART

Forest Conservation Easement	Type	Gross Area	Floodplain	Non-Forested	Net Retention/ Reforestation Area
A	Retention	1.30 AC.	0.0 AC.	0.16 AC.	1.14 AC.
B	Retention	0.81 AC.	0.0 AC.	0.11 AC.	0.70 AC.
C	Retention	1.11 AC.	0.0 AC.	0.34 AC.	0.77 AC.
D	Retention	1.08 AC	0.0 AC.	0.00 AC	1.08 AC
E	Retention	2.25 AC	0.0 AC.	0.00 AC	2.25 AC
F	Reforestation	.69 AC	0.0 AC.	0.00 AC	0.69 AC
TOTAL		7.24 AC	0.0 AC.	0.61 AC	6.63 AC

SURETY NOTE:

Development of the F-01-204 portions of Stone Lake entails retention of 5.94 acres of forest and reforestation of 0.69 acres. A surety in the amount of $66,777.48 is required to bond the retention and reforestation areas.

NOTE: SOME PORTIONS OF THE FOREST CONSERVATION EASEMENTS WERE ACCEPTED AS MEETING THE MIN. 35' WIDTH, AS MEASURED ALONG THE SLOPE OF THE HILL.



INDEX MAP
NOT TO SCALE

4-18-02
Date

STATE OF MARYLAND — MELANIE MAGEE — No. 651 — REGISTERED — LANDSCAPE ARCHITECT

Landscape Architect

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/2/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/3/02

Date	No.	Revision Description

STONE LAKE PHASE 2

OWNER/ DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
10275 Little Patuxent Parkway
Columbia, Maryland 21044

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME	SECTION/ AREA	LOT/PARCEL #
STONE LAKE		P/O P. 837, P. 3, P. 462

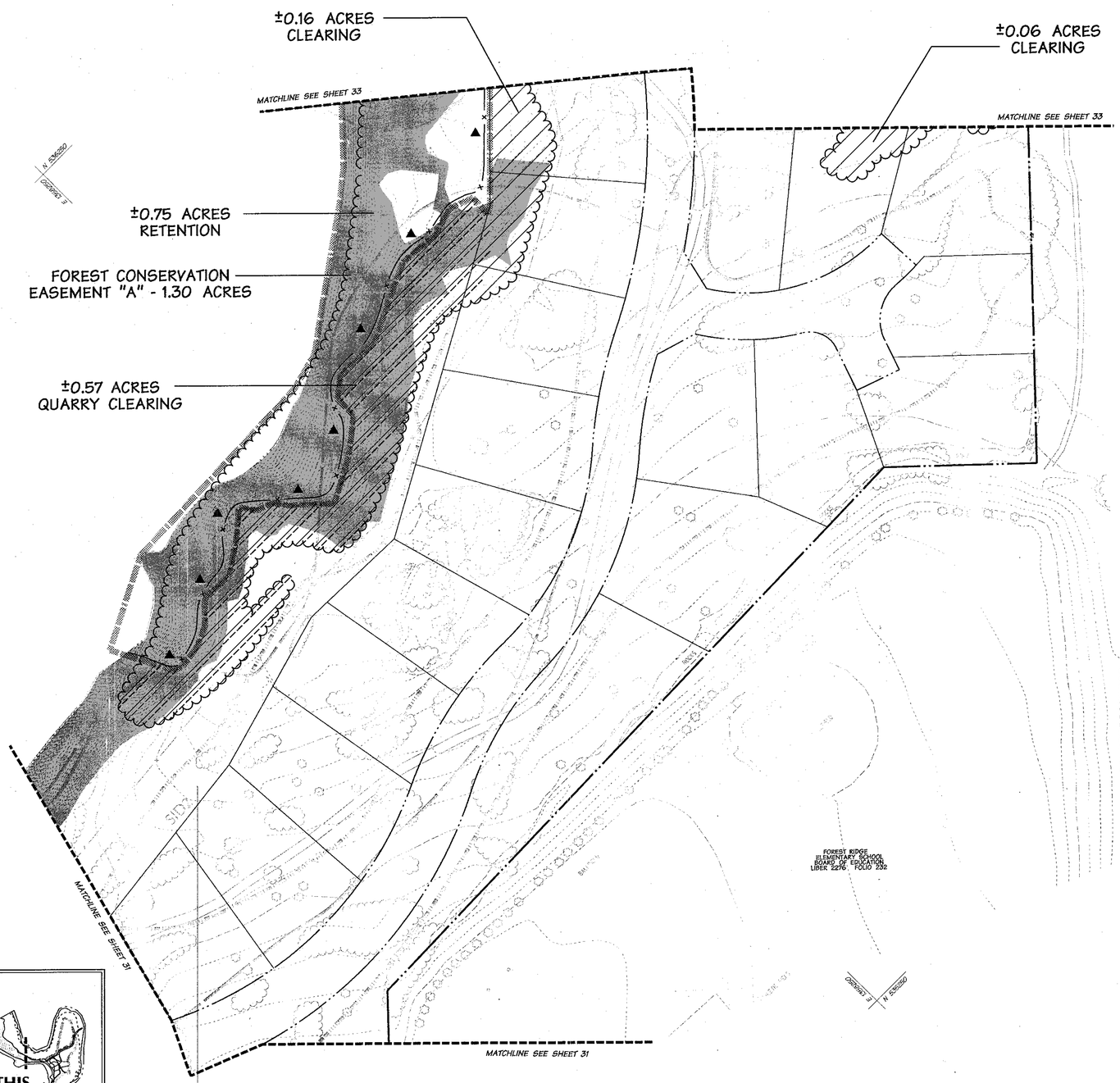
PLAT# OR LIP	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
		RED	47	6 TH	-

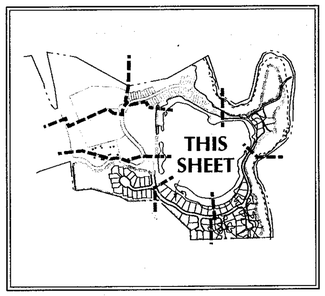
WATER CODE - SEWER CODE -

TITLE
FINAL FOREST CONSERVATION PLAN

Drn By:	BKC	Scale:	1"=50'	Proj. No.	95054.E2
Des By:	HRD	Date:	4-17-02		
Chk By:		Approved:			

F-01-204





INDEX MAP
NOT TO SCALE

Legend

- FOREST PROTECTION SIGN
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- LIMIT OF DISTURBANCE
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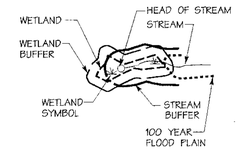

FOREST CONSERVATION CALCULATIONS

BASIC SITE DATA	ACRES (N/O)
GROSS SITE AREA	136.7
AREA WITHIN 100 YEAR FLOODPLAIN	7.16
AREA WITHIN EXISTING SANITARY SEWER EASEMENT	0.33
NET TRACT AREA	129.21
LAND USE CATEGORY	RED

INFORMATION FOR CALCULATIONS	
A. NET TRACT AREA	129.21
B. REFORESTATION THRESHOLD (20% x A)	25.84
C. AFFORESTATION MINIMUM (15% x A)	19.38
D. EXISTING FOREST ON NET TRACT AREA	30.47
* E. FOREST AREAS TO BE CLEARED	8.14
** F. FOREST AREAS TO BE RETAINED	22.33

REFORESTATION CALCULATIONS	
A. NET TRACT AREA	129.21
B. REFORESTATION THRESHOLD (20% x A)	25.84
C. EXISTING FOREST ON NET TRACT AREA	30.47
D. FOREST AREAS TO BE CLEARED	8.14
E. FOREST AREAS TO BE RETAINED	22.33
F. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD	4.63
G. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD	3.51
H. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD	0.0

CLEARING ABOVE THE THRESHOLD ONLY

IF FOREST AREAS TO BE RETAINED ARE GREATER THAN THE REFORESTATION THRESHOLD (IF E IS GREATER THAN B), THE FOLLOWING CALCULATIONS APPLY:

REFORESTATION FOR CLEARING ABOVE THRESHOLD F x .14	1.16
REFORESTATION FOR CLEARING BELOW THRESHOLD G x 2	7.02
TOTAL REFORESTATION REQUIRED (F x .14) + (G x 2)	8.18
CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD	0.0
*** REFORESTATION REQUIRED	8.18 ACRES *
REFORESTATION PROVIDED	5.50 ACRES
POTENTIAL FUTURE REFORESTATION	0.87 ACRES
TOTAL	6.37 ACRES

* 3.43± ACRES OF ADDITIONAL FOREST CLEARING ARE ASSOCIATED WITH THE QUARRY RECLAMATION FOR A TOTAL OF FOREST AREAS TO BE CLEARED OF 11.57 ACRES IS PROPOSED. (8.14+3.43=11.57)

** A TOTAL OF FOREST AREAS TO BE RETAINED OF 18.90 ACRES IS PROPOSED (30.47-11.57=18.90), 12.96± ACRES WERE RETAINED UNDER F-01-177, THIS PLAN PROPOSES RETENTION OF AN ADDITIONAL 5.94± ACRES OF FOREST.

*** 3.43± ACRES OF ADDITIONAL FOREST CLEARING ASSOCIATED WITH THE QUARRY RECLAMATION GENERATES AN ADDITIONAL 0.86 ACRES OF REFORESTATION REQUIREMENT FOR A TOTAL OF 9.04 ACRES OF REFORESTATION (8.18+0.86=9.04). THIS REFORESTATION REQUIREMENT IS REDUCED BY 3.54 ACRES BY THE FOREST RETENTION CREDIT FROM EMERSON 1 (F-01-140) FOR A TOTAL OF REFORESTATION REQUIRED OF 5.50 ACRES (9.04-3.54=5.50).

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/3/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/2/02

Date	No.	Revision Description

STONE LAKE PHASE 2

OWNER/ DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
10275 Little Patuxent Parkway
Columbia, Maryland 21044

4.18.02
Date

STATE OF MARYLAND — MELANIE MOSER — LANDSCAPE ARCHITECT — 561 — LICENSED

Landscape Architect

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL #
STONE LAKE		P/O P. 837, P. 3, P. 462

PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
		RED	47	6 TH	-

WATER CODE	SEWER CODE
-	-

TITLE
FINAL FOREST CONSERVATION PLAN

Drn By: BKC	Scale: 1"=50'	Proj. No. 95054.E2	
Des By: HRD	Date: 4-17-02		
Chk By:	Approved:	32 of 38	

F-01-204

±1.37 ACRES
EXISTING FLOODPLAIN

±1.08 ACRES
CLEARING

±0.76 ACRES
CLEARING

±1.23 ACRES
CLEARING

±0.15 ACRES
CLEARING

±0.70 ACRES
RETENTION

±0.29 ACRES
CLEARING

±1.30 ACRES
CLEARING

FOREST CONSERVATION
EASEMENT "B" - 0.81 ACRES

FOREST CONSERVATION
EASEMENT "A" (CONT.)

±0.39 ACRES
RETENTION

SAVAGE PARK
HOWARD COUNTY MARYLAND
DEPT. OF PARKS & RECREATION
LIBER 551 FOLIO 453
ZONED: R-20

SAVAGE PARK
HOWARD COUNTY MARYLAND
DEPT. OF PARKS & RECREATION
LIBER 913 FOLIO 357
LIBER 913 FOLIO 363

SAVAGE PARK
HOWARD COUNTY MARYLAND
DEPT. OF PARKS & RECREATION
LIBER 913 FOLIO 357
LIBER 913 FOLIO 363
ZONED R-12

MATCHLINE SEE SHEET 34

MATCHLINE SEE SHEET 32

MATCHLINE SEE SHEET 32

PHASE 1
PHASE 2

PHASE 1
PHASE 2

FCE B

E 1,286,000
N 537,000

E 1,286,500
N 536,500

E 1,287,000
N 536,000

THIS SHEET

INDEX MAP
NOT TO SCALE

Legend

- FOREST PROTECTION SIGN
- FOREST PROTECTION FENCE
- SLOPES >25%
- SLOPES 15%-25%
- LIMIT OF DISTURBANCE
- FOREST CONSERVATION EASEMENT (PHASE 2)
- FUTURE REFORESTATION AREA
- FOREST CONSERVATION EASEMENT (PHASE 1)
- PHASE LIMIT
- SCRUB/SHRUB/HEDGEROW OR TREE GROUP
- REFORESTATION AREAS
- FOREST CLEARING (PHASE 2)
- QUARRY CLEARING
- FOREST CLEARING (PHASE 1)
- SPECIMEN TREE
- FOREST EDGE

WETLAND
WETLAND BUFFER
WETLAND SYMBOL
HEAD OF STREAM
STREAM
STREAM BUFFER
100 YEAR FLOOD PLAIN

4-18-02
Date

STATE OF MARYLAND
MELANIE MOSER
No. 551
LANDSCAPE ARCHITECT

Landscape Architect

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/3/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/3/02

Date	No.	Revision Description

STONE LAKE
PHASE 2

OWNER/ DEVELOPER:
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Fax 296 4705

SUBDIVISION NAME	SECTION/ AREA	LOT/PARCEL #
STONE LAKE		P/O P. 537, P. 3, P. 462

PLAT# OR LT	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
		RED	47	6 TH	-

WATER CODE - SEWER CODE -

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F-01-204

±1.02 ACRES
EX. SAN. SEW. EASEMENT
±0.33 ACRES OUTSIDE FLOODPLAIN
±0.69 ACRES INSIDE FLOODPLAIN

SAVAGE PARK
HOWARD COUNTY MARYLAND
DEPT. OF PARKS & RECREATION
LIBER 913 FOLIO 363
ZONED: R-20

FOREST CONSERVATION
EASEMENT #2 (PHASE 1)

SAVAGE PARK
HOWARD COUNTY, MARYLAND
DEPT. OF PARKS & RECREATION
LIBER 581 FOLIO 453
ZONED: R-20

±4.93 ACRES
EXISTING FLOODPLAIN

PHASE 1
PHASE 2

FOREST CONSERVATION
EASEMENT "E" - 2.25 ACRES

±2.25 ACRES
RETENTION

FOREST CONSERVATION
EASEMENT "D" - 1.08 ACRES

±1.08 ACRES
RETENTION

MATCHLINE SEE SHEET 33

±1.76 ACRES
CLEARING

±0.25 ACRES
CLEARING

SAVAGE PARK
HOWARD COUNTY MARYLAND
DEPT. OF PARKS & RECREATION
LIBER 913 FOLIO 363
ZONED: R-20

FOREST CONSERVATION
EASEMENT #3 (PHASE 1)

±3.98 ACRES
RETENTION

±0.11 ACRES
CLEARING

±0.62 ACRES
QUARRY CLEARING

±0.33 ACRES
CLEARING

MATCHLINE SEE SHEET 35

THIS SHEET

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NOT TO SCALE

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WETLAND BUFFER
WETLAND SYMBOL
HEAD OF STREAM
STREAM
STREAM BUFFER
100 YEAR FLOOD PLAIN

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/7/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/8/02

Date	No.	Revision Description

STONE LAKE
PHASE 2

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Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME	SECTION/ AREA	LOT/PARCEL #
STONE LAKE		P/O P. 837, P. 3, P. 462

PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELEC. DISTRICT	CENSUS TRACT
		RED	47	6 TH	-

WATER CODE - SEWER CODE -

4.18.02
Date

STATE OF MARYLAND
MELANIE MOORE
No. 561
LANDSCAPE ARCHITECT

Landscape Architect

TITLE
FINAL FOREST CONSERVATION PLAN

Drn By: BKC	Scale: 1"=50'	Proj. No. 95054.E2	
Des By: HRD	Date: 4-17-02		
Chk By:	Approved:	34 of 38	

F-01-204

±0.86 ACRES
EXISTING FLOODPLAIN

INTERSTATE ROUTE 95
BEING BUILT
STATE ROADS COMMISSION

MATCHLINE SEE SHEET 36

MATCHLINE SEE SHEET 37

MATCHLINE SEE SHEET 37

MATCHLINE SEE SHEET 34

PATUXENT RIVER

HOWARD SAVAGE PARK AND
DEPT. OF RECREATION
AND PARKS

FOREST CONSERVATION
EASEMENT #3 (CONT.)
±3.00 ACRES RETENTION

PHASE 2
PHASE 1

±1.02 ACRES
QUARRY CLEARING

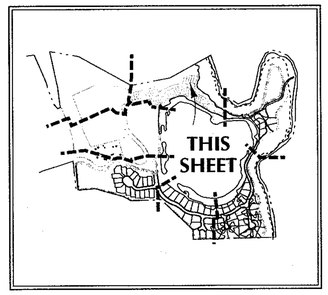
±0.29 ACRES
RETENTION

±0.01 ACRES
CLEARING

FOREST CONSERVATION
EASEMENT "C" - 1.11 ACRES

±0.10 ACRES
CLEARING

±0.33 ACRES
QUARRY CLEARING



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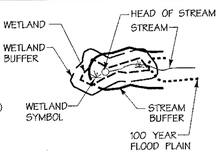
- FOREST CLEARING (PHASE 1)
- REFORESTATION AREAS



4-18-02
Date

STATE OF MARYLAND
WELLANIE MOSER
No. 661
LANDSCAPE ARCHITECT

Landscape Architect

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/3/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/3/02

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STONE LAKE
PHASE 2

OWNER/ DEVELOPER:
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Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME	SECTION/ AREA	LOT/PARCEL #
STONE LAKE		P/O P, 837, P. 3, P. 462

PLAT# OR LF	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
		RED	47	6 TH	-

WATER CODE	SEWER CODE
-	-

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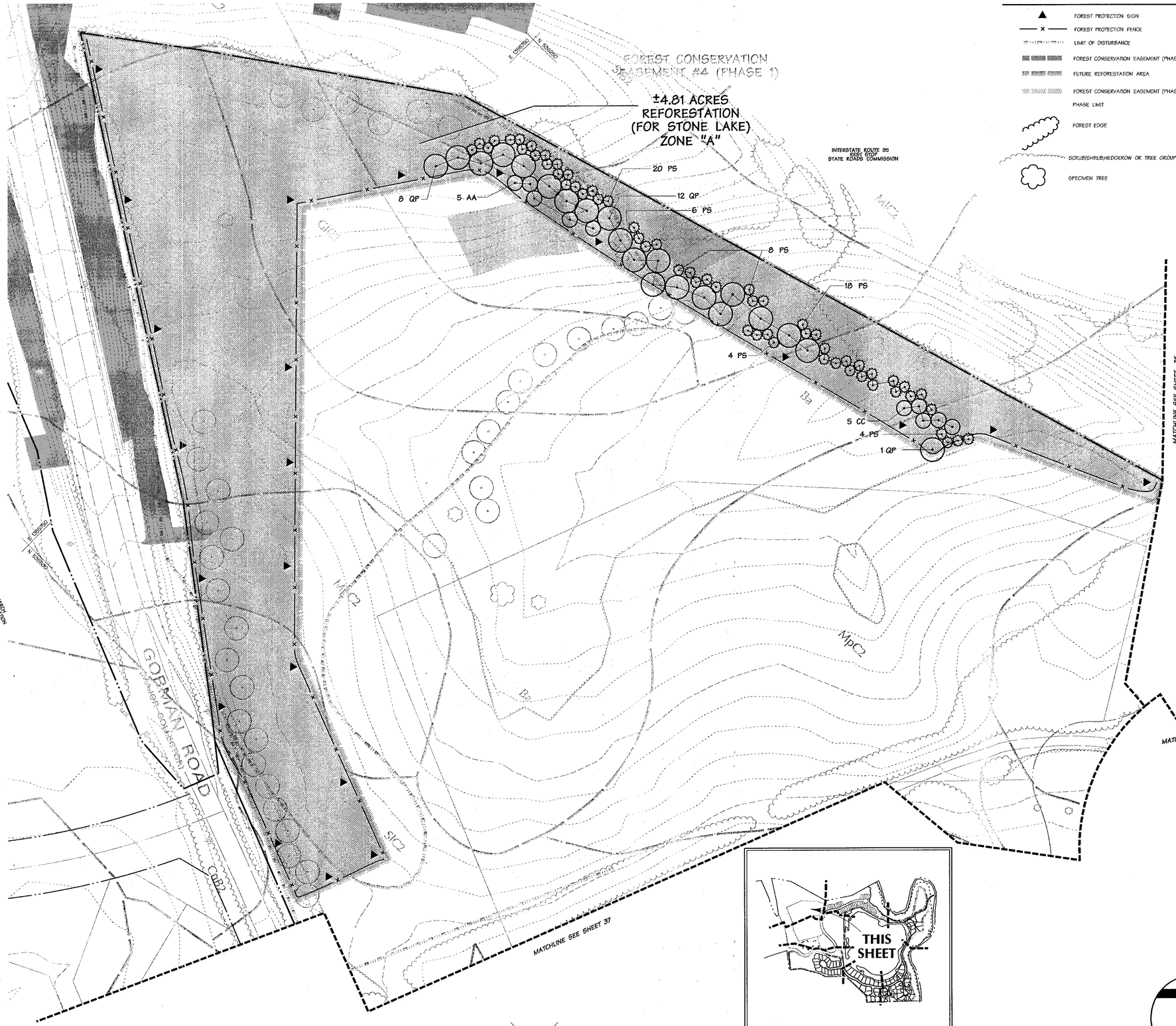
Drn By:	BKC	Scale:	1"=50'	Proj. No.	96054.E2
Des By:	HRD	Date:	4-17-02		
Chk By:		Approved:			35 of 38

F-01-204



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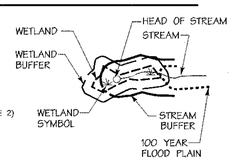
- REFORESTATION AREAS
- PERIMETER LANDSCAPE TREE (REFER TO GLW LANDSCAPE PLAN) (20% CREDIT TOWARDS REFORESTATION)
- ACOUSTICAL MOUND PLANTING (100% CREDIT TOWARDS REFORESTATION)



ZONE "A" LARGE CALIPER PLANT LIST*

QTY	SYM	BOTANICAL NAME/ COMMON NAME	SIZE	REMARKS
LARGE TREES				
21	QP	QUERCUS PALUSTRIS PIN OAK	2 1/2" - 3" CAL. 10-12' HT.	B & B**
UNDERSTORY TREES				
5	AA	AMELANCHIER ARBOREA SHADBUSH	8'-10" HT.	B & B**
5	CC	CERCIS CANADENSIS EASTERN REDBUD	8'-10" HT.	B & B**
EVERGREEN TREES				
60	PS	PINUS STROBUS EASTERN WHITE PINE	6'-8' HT.	B & B** NATURAL

* REFER TO SHEET 46 OF 46 FOR 1" CALIPER PLANT LIST

** REFER TO LANDSCAPE PLANTING PLAN BY GUTSCHICK, LITTLE & WEBER FOR LARGE CALIPER TREE PLANTING SPECIFICATIONS AND DETAILS

INDEX MAP
NOT TO SCALE

4·18·02
Date

STATE OF MARYLAND
MELANIE MOSER
No. 561
LANDSCAPE ARCHITECT

Landscape Architect

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/3/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/3/02

Date	No.	Revision Description

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410 296 3333
Fax 296 4705

SUBDIVISION NAME	SECTION/ AREA	LOT/PARCEL #
STONE LAKE		P/O P. 837, P. 3, P. 482

PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
		RED	47	6 TH	-

WATER CODE	SEWER CODE
-	-

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Drn By: BKC	Scale: 1"=50'	Proj. No. 95054.E2	
Des By: HRD	Date: 4-17-02		
Chk By:	Approved:		36 of 38

F-01-204

MATCHLINE SEE SHEET 35

MATCHLINE SEE SHEET 36

MATCHLINE SEE SHEET 31

MATCHLINE SEE SHEET 31

±0.48 ACRES RETENTION

±0.21 ACRES QUARRY CLEARING

FOREST CONSERVATION EASEMENT "C" (CONT.)

±0.25 ACRES QUARRY CLEARING

PHASE 1

PHASE 2

#4 #5 #6 #7 #8 #9 #10 #11 #12 #13 #14

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WETLAND
WETLAND BUFFER
WETLAND SYMBOL
HEAD OF STREAM
STREAM
STREAM BUFFER
100 YEAR FLOOD PLAIN

THIS SHEET

INDEX MAP
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE

HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/3/02

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/3/02

4-18-02
Date

STATE OF MARYLAND — WELAINE ANDER — No. 681 — LANDSCAPE ARCHITECT

Landscape Architect

Date	No.	Revision Description

STONE LAKE PHASE 2

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THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
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SUBDIVISION NAME	SECTION/ AREA	LOT/PARCEL #
STONE LAKE		P/O P. 837, P. 3, P. 462

PLAT# OR LF	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
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WATER CODE - SEWER CODE -

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Chk By:	Approved:	37 of 38	

F-01-204

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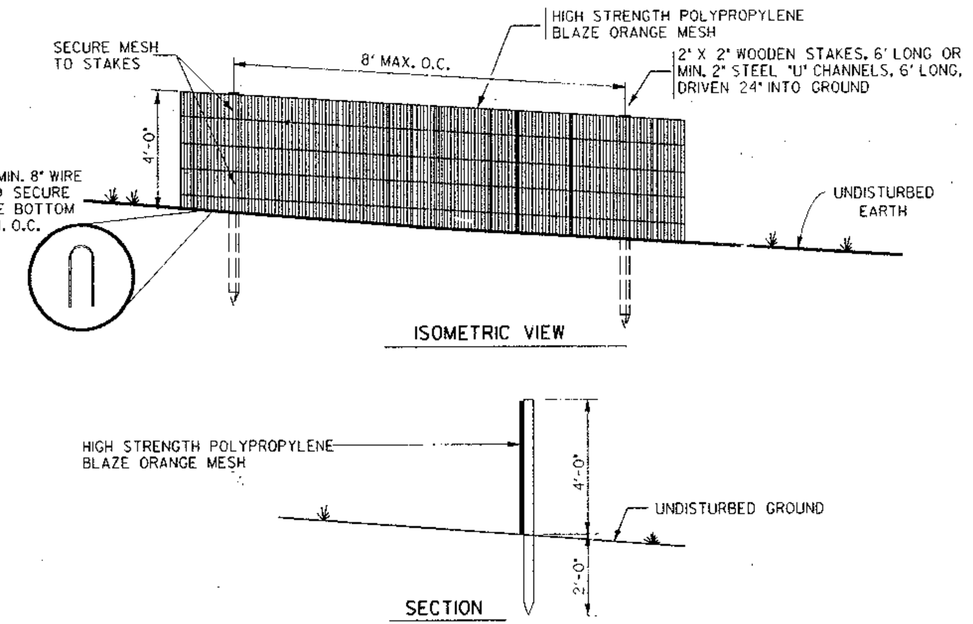


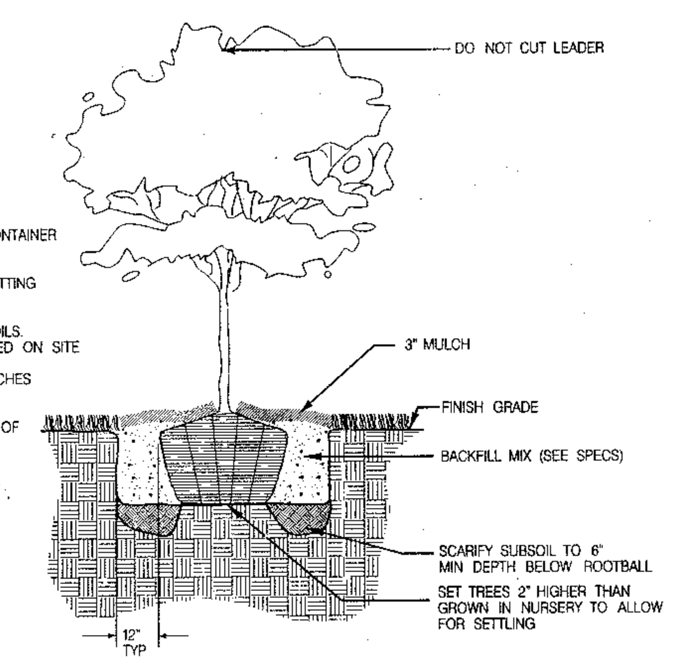
NOTES:
1. THIS DETAIL IS FOR FOREST PROTECTION DEVICE ONLY
2. FOREST RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS
3. BOUNDARIES OF FOREST RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING THE DEVICE
4. ROOT DAMAGE SHALL BE AVOIDED
5. PROTECTION SIGNAGE MAY ALSO BE USED
6. FOREST PROTECTION FENCE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION

Forest Protection Fence*
Not To Scale

* WHERE SUPER SILT FENCE (S.S.F.) IS TO BE INSTALLED ADJACENT TO FOREST RETENTION AREAS, ATTACH HIGH VISIBILITY TAPE OR FLAGGING TO THE TOP EDGE OF S.S.F. AT 5' INTERVALS AND USE S.S.F. IN LIEU OF BLAZE ORANGE FENCE. TEMPORARY FOREST PROTECTION SIGNAGE MAY BE ATTACHED TO S.S.F.

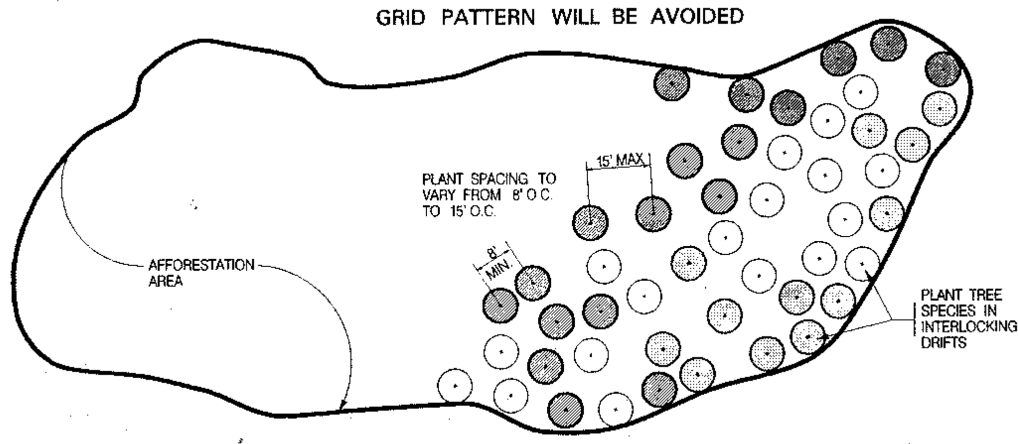
PLANTING PROCEDURES FOR ALL CONTAINER GROWN TREES AND SHRUBS:

1. REMOVE THE PLANT EITHER BY CUTTING OR INVERTING THE CONTAINER
2. GENTLY LOOSEN ROOTS FROM SOILS. ROOTS MAY NOT BE CUT OR TRIMMED ON SITE
3. PLANT SHRUB OR TREE 1 TO 2 INCHES ABOVE THE EXISTING GRADE
4. APPLY 2 TO 3 INCH THICK LAYER OF SHREDDED HARDWOOD MULCH

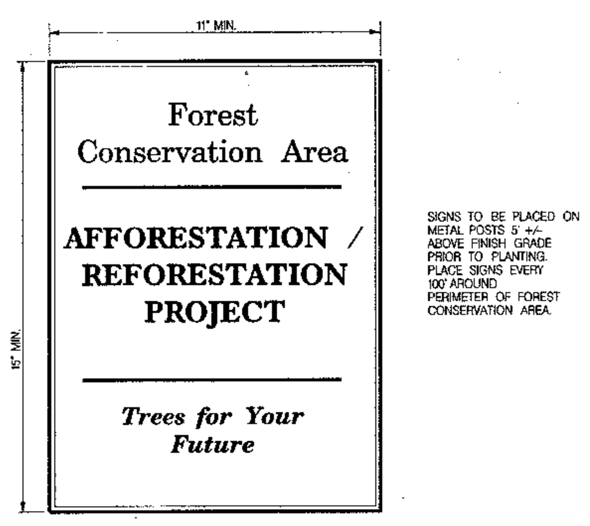


Typical Tree Planting (For container grown)
Not To Scale

GRID PATTERN WILL BE AVOIDED

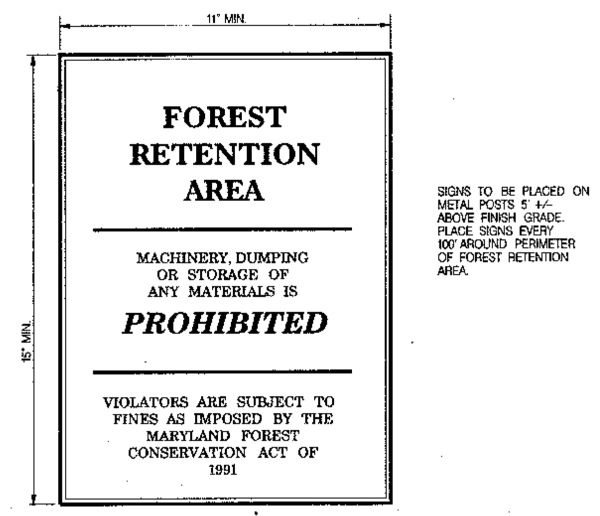


Planting Design Schematic
Not To Scale
(FOR 1" CALIPER STOCK)



SIGNS TO BE PLACED ON METAL POSTS 5' +/- ABOVE FINISH GRADE PRIOR TO PLANTING. PLACE SIGNS EVERY 100' AROUND PERIMETER OF FOREST CONSERVATION AREA.

Permanent Signage
Not To Scale



SIGNS TO BE PLACED ON METAL POSTS 5' +/- ABOVE FINISH GRADE. PLACE SIGNS EVERY 100' AROUND PERIMETER OF FOREST RETENTION AREA.

SIGNS MAY NOT BE ATTACHED TO TREES.

Temporary Signage
Not To Scale

FOREST RETENTION

Tree retention/Soil Protection areas will be delineated with temporary signage as appropriate. See Temporary Signage Detail prior to the beginning of any construction activity. Attachment of signs to trees is prohibited.

Forest protection fencing and retention area signage to be installed during later phases of construction where grading has not been indicated.

PRECONSTRUCTION MEETING/CONSTRUCTION PERIOD PRACTICES

Before construction begins, a required preconstruction meeting shall be held. The principle contractors, engineer, Howard County Inspectors and a qualified forest professional familiar with the plan shall be present. All items pertaining to forest retention, tree preservation, and construction period practices shall be discussed.

Any changes to the plan due to on-site conditions must be approved by the Howard County Department of Planning and Zoning.

No grading, excavation, utility placement, sediment and erosion control activities, or vehicular traffic will occur within forest retention areas.

Storage of equipment and materials shall not be permitted in the forest retention areas.

There will be no burial or disposal of discarded material on-site within the retention area.

There will be no open burning within 100 feet of woodlands.

Temporary structures including, but not limited to construction trailers, sanitary facilities, etc. shall not be placed within the forest retention areas.

Employee parking shall not be permitted in the forest retention areas.

POST CONSTRUCTION MANAGEMENT/MAINTENANCE BY CONTRACTOR

All dead trees or tree limbs which pose an immediate safety hazard will be felled. Trees dropped within the forest retention area will not be removed.

All temporary forest protection structures will be removed after construction and permanent signage will be placed where indicated on the plan.

A 2-year Contractor's Maintenance and Monitoring Period shall begin at mobilization. Seventy five percent survivorship must be guaranteed for this period. The site shall be inspected at the end of the two year period to ascertain survivorship and provide for replacement if necessary.

The Contractor's maintenance of new planting shall consist of watering, cultivating, weeding, and mulching as necessary to insure survival.

Contractor shall protect planting areas and plants at all times against damage of all kinds for duration of maintenance period. Maintenance includes temporary protection barriers and signs as required for protection. If any plants become damaged or injured, because sufficient protection was not provided, treat or replace as directed by Landscape Architect at no additional cost to Owner.

ALL FOREST RETENTION & REFORESTATION AREAS SHOWN ON THIS PLAN TO BE PLACED IN FOREST CONSERVATION EASEMENT (POTENTIAL REFORESTATION AREA NOT INCLUDED)

STANDARDS AND SPECIFICATIONS FOR PLANTING

1. PLANT MATERIAL SELECTION

A. Nursery grown plant materials greater than 1" caliper should meet or exceed the requirements of the American Nurserymen Specifications, i.e. should be typical of the species and variety, have a normal habit of growth, be first quality, sound, vigorous, well-branched, have healthy, well furnished root systems, and be free of disease, insect pests and mechanical injuries.

B. Planting stock less than 1" caliper should meet the following standards:

Seedling/whips:

Hardwoods – 1/4" to 1/2" caliper with roots not less than 8" long
Shrubs – 1/8" or larger caliper with 8" root system.

2. PLANTING SITE PREPARATION

Soils shall not be disturbed outside the area necessary for planting individual specimens and the removal of exotic invasive plant material. These areas should be stabilized as shown on the temporary seeding notes on sheet 8.

3. PLANTING PERIOD

All material shall be planted between September 15 and May 31. Material shall not be installed when ground is frozen.

4. PLANT MATERIAL STORAGE

Plants should be planted within 24 hours of delivery if possible. Plant material which are left unplanted for more than 24 hours shall be protected from direct sun and weather and kept moist. Nursery stock should not be left unplanted for more than two weeks.

5. ON-SITE INSPECTION

Prior to planting, planting stock shall be inspected by the landscape architect or other qualified professional familiar with this plan. Plant material not conforming to standard nurseryman specifications for size, form, vigor, roots, trunk wounds, insects and disease should be replaced.

6. TOPSOIL FOR PLANTING SOIL

A. On-site material or imported from same source as topsoil used on site for finish grading.

1. Uniform composition, free of subsoil, clay lumps, stones, stumps, roots or similar objects larger than 1 inch.

2. Topsoil must be free of plants or plant parts of bermudagrass, quackgrass, Johnsongrass, nutsedge, poison ivy, Canada thistle, or others as specified.

3. All topsoil shall be tested by a recognized laboratory for pH and soluble salts. A pH of 4.5 to 7.5 is required. Soluble salts shall not be higher than 500 parts per million.

7. ADDITIVE FOR BACKFILL MIX

A. Wood Residuals:

1. Source shall be well composted, not chemically treated.

2. Physical properties – grading:

U.S. Sieve	Dry Weight Percent Passing
3/8"	100
1/4"	90 – 100
No. 8	70 – 100
No. 35	0 – 30

3. Organic content by ash analysis: 90 – 100 percent dry weight

4. Chemistry:

Range

a. Saturation Extract Conductivity (EC) — Nil – 3.5
b. Reaction (pH) — 3.0 – 5.5

5. Salinity: Maximum saturation extract conductivity 1.0 millimhos per cm at 25 degrees centigrade.

B. Sand

1. Physical Properties – Grading:

U.S. Sieve	Dry Weight Percent Passing
No. 4	100
No. 10	95 – 100
No. 18	90 – 100
No. 35	65 – 100
No. 60	0 – 50
No. 140	0 – 20
No. 270	0 – 7

2. Chemistry:

Saturation Extract Conductivity (EC) — Nil – 3.0
Sodium Absorption Ratio (SAR) — Nil – 6.0
Boron – ppm in saturation extract solution — Nil – 1.0
Reaction (pH) — 6.0 – 7.5
Available calcium – sodium acetate extractable – ppm — Nil – 2000 dry weight

C. Treble Superphosphate: Commercial product containing 19 to 20 percent available phosphoric acid.

8. MULCH

A. Shredded long fiber hardwood.

B. Mulch shall have been shredded within the last six (6) months.

9. PLANTING MIX

A. Planting mix shall be prepared at approved on-site staging area using approved on-site existing soil. Mix minimum quantities of 20 cubic yards or sufficient mix for entire job if less than 20 cubic yards is required.

B. Thoroughly mixed in the following proportions for tree and shrub planting mix:

.5 cy Existing soil
.2 cy Sharp sand
.3 cy Wood residuals
4.5 lbs. Treble superphosphate
5 lbs. Dolomite limestone (eliminate for acid loving plants)

10. LAYOUT AND EXCAVATION OF PLANTING AREAS

A. Plants shall be placed in each zone at random locations shown at spacing as indicated on the plan.

B. The Landscape Architect or qualified professional will check location of plants in the field and shall adjust to exact position before planting begins.

C. Subsoil shall not be worked when moisture content is so great that excessive compaction will occur, nor when it is so dry that clods will not readily break. Water shall be applied, if necessary, to bring soil to an optimum moisture content before tilling and planting.

D. Tree pits shall not be excavated more than 24 hours in advance of planting operation. Tree pits shall be excavated to the following dimensions

Excavation for	Width	Depth
Canned Trees	Can + 12 in.	Can + 4 in.
B&B Trees	Ball + 12 in.	Ball + 4 in.

E. Excavate shrub pits to the following depths:

Excavation for	Width	Depth
Shrubs	Ball or Can + 8 in.	Can + 4 in., not less than 12 in.

11. PREPARING PLANT MATERIALS FOR PLANTING

A. Container stock shall be removed carefully after cans have been cut on two sides with approved cutter. Do not use spade to cut cans. Do not lift or handle container plants by tops, stems or trunks at any time.

B. Do not bind or handle any plant with wire or rope at any time so as to damage bark or break branches. Lift and handle plants only from bottom of ball

C. Balled and burlapped (B&B) plants shall have firm balls of earth. Plants moved with a ball will not be accepted if the ball is cracked or broken before or during planting operations. B&B material shall be dug only when dormant. Pre-dug stored B&B material shall be inspected and approved at the storage site

D. Do not force roots for bare rooted trees into excavated pits – custom dig pits to receive roots without deformation.

12. MIXING

A. Mix soil base, amendments and chemical additives by mechanical means.

B. Soil and sand bases shall be completely pulverized and free of lumps or aggregated material. Moisture content of base materials shall not be such that chemical granular or pelletized additives become dissolved during the mixing process.

C. Mix media in quantities of not less than 20 cubic yards or mix total quantity required if less than 50 cubic yards. The Contractor shall be responsible for continuity between batches.

D. Contaminating backfill mix with unmixed soil in backfill mixing lots shall be avoided.

13. INSTALLATION OF PLANT MATERIAL

A. Scarify the walls and bottom of all plant pits immediately prior to the placement of plant and backfill mix. The Contractor shall remove all glazing of soil caused by an auger or mechanical hole digger.

B. Wells around trees and shrubs: after planting is complete, form a soil well 3 inches high around each plant, extending to the outer limit of the plant pit in accordance with planting details shown on the Drawings.

C. Smooth planted areas to conform to specified grades after full settlement as occurred. Contractor shall bear final responsibility for proper surface drainage of planted areas. Any discrepancy in the drawings or specifications, obstructions on the site, or prior work done by another party, which Contractor feels precludes establishing proper drainage, shall be brought to the attention of the Landscape Architect in writing.

D. Water all plants immediately again after planting.

E. Spread mulch in required areas to the compacted depth of 2 inches.

GUARANTEE:

A MINIMUM SURVIVAL RATE OF 75% IS TO BE GUARANTEED BY THE CONTRACTOR AT THE END OF THE TWO YEAR MAINTENANCE PERIOD.

ZONE "A"
*Reforestation Area Planting Plan**
(1" Caliper Stock)

780 – 1" trees required

Species	Size	Spacing	Quantity	Tolerance	Remarks
Liriodendron tulipifera	1" Caliper B.Root/Cont. Grown	15" o.c./rndm	200	I	FACU
Acer rubrum	1" Caliper B.Root/Cont. Grown	15" o.c./rndm	150	I-VT	FAC
Fraxinus pennsylvanicum	1" Caliper B.Root/Cont. Grown	15" o.c./rndm	150	I-MT	FACW
Quercus alba	1" Caliper B.Root/Cont. Grown	15" o.c./rndm	180	I	FAC
Nyssa sylvatica	1" Caliper B.Root/Cont. Grown	15" o.c./rndm	100	T	FAC
TOTALS			780		

* REFER TO SHEET 44 OF 46 FOR LARGE CALIPER PLANT LIST FOR ZONE "A"

ZONE "B"
Reforestation Area Planting Plan
(1" Caliper Stock)

138 – 1" trees required

Species	Size	Spacing	Quantity	Tolerance	Remarks
Platanus occidentalis	1" Caliper B.Root/Cont. Grown	15" o.c./rndm	30	I	FACW
Acer rubrum	1" Caliper B.Root/Cont. Grown	15" o.c./rndm	27	I-VT	FAC
Fraxinus pennsylvanicum	1" Caliper B.Root/Cont. Grown	15" o.c./rndm	27	I-MT	FACW
Quercus palustris	1" Caliper B.Root/Cont. Grown	15" o.c./rndm	26	I	FACW
Nyssa sylvatica	1" Caliper B.Root/Cont. Grown	15" o.c./rndm	28	T	FAC
TOTALS			138		

NOTE:

1. THE PRECISE LOCATION OF PLANT MASSINGS WILL BE LOCATED IN THE FIELD BY LANDSCAPE ARCHITECT.

2. GRID PATTERNS WILL BE AVOIDED

3. PLANT MATERIAL MAY BE GROUPED IN CLUSTERS OF NO MORE THAN 5 TO 7 WHIPS OF THE SAME PLANT. PLANTS WILL BE INSTALLED IN A RANDOM FASHION.

APPROVED: HOWARD COUNTY DEPT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 5/3/02 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 5/3/02 DATE

Date	No.	Revision Description

4.18.02
Date

STATE OF MARYLAND · MELANIE MOSER · LANDSCAPE ARCHITECT · 561

Landscape Architect

STONE LAKE
PHASE 2

OWNER/ DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
10275 Little Patuxent Parkway
Columbia, Maryland 21044

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME	SECTION/ AREA	LOT/PARCEL #
STONE LAKE		P/O P.837, P.3, P.462

PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
		RED	47	6 TH	-

WATER CODE: - | SEWER CODE: -

TITLE
FINAL FOREST CONSERVATION PLAN

Drn By: BKC	Scale: 1"=50'	Proj. No. 95054.E2
Des By: HRD	Date: 4-17-02	
Chk By:	Approved:	38 of 38

F-01-204