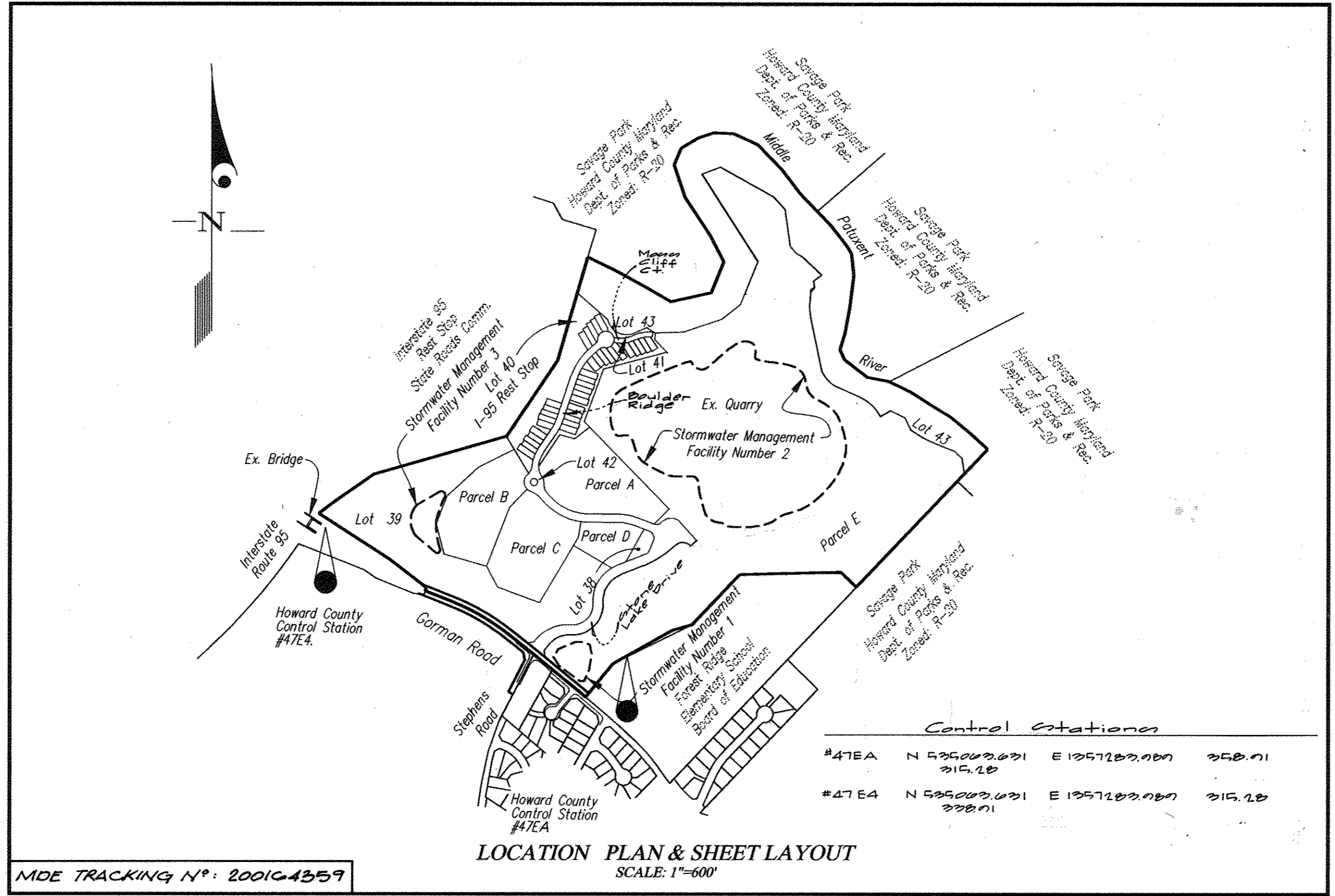
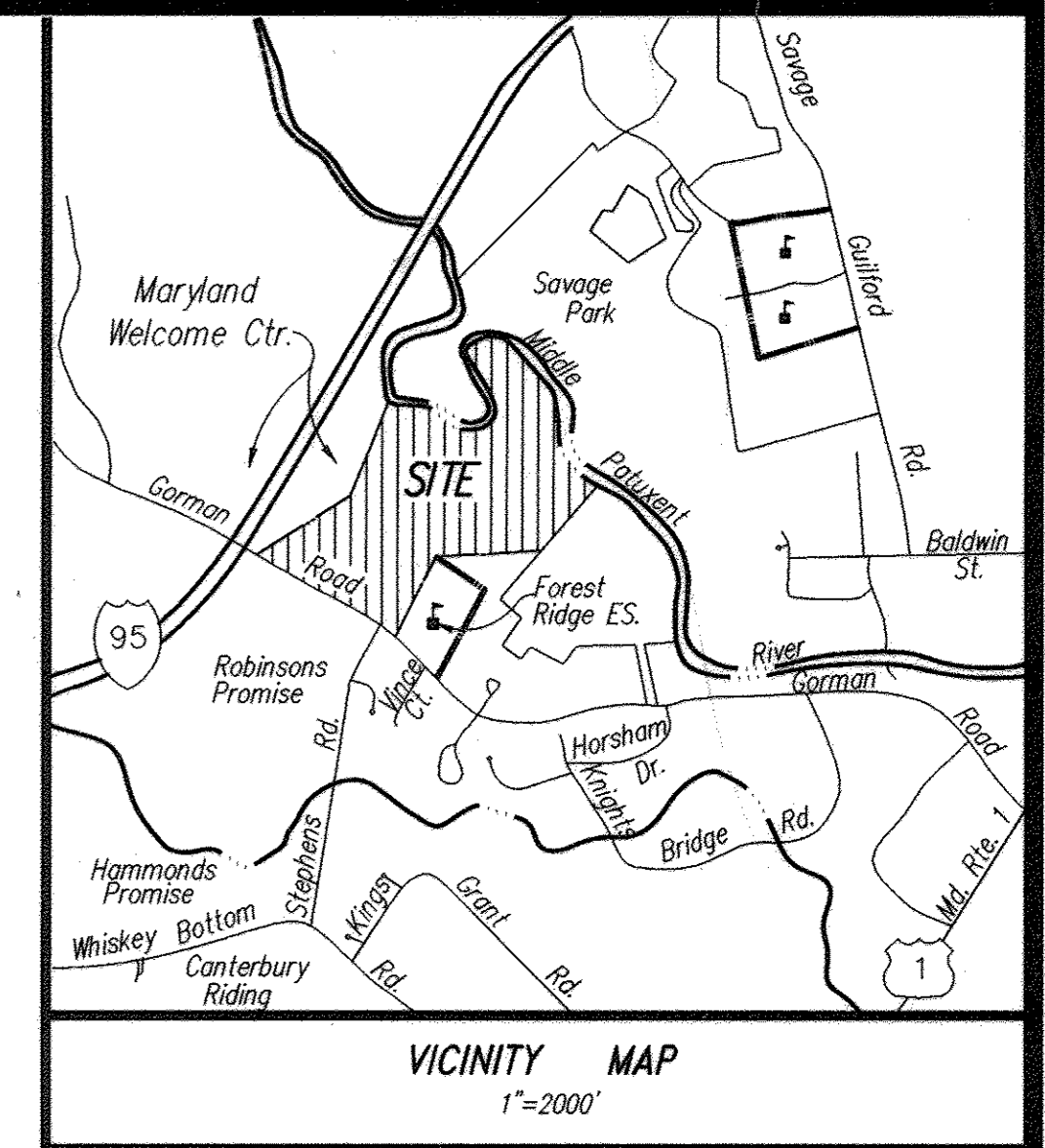


GENERAL NOTES

- THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- PROJECT BACKGROUND:
LOCATION: GORMAN ROAD @ STEPHENS ROAD
TAX MAP: 36-18, 37-13
ZONING: R-ED
ELECTION DISTRICT: 6
GROSS AREA OF TRACT: 136.7 ACRES
- SEE DEPARTMENT OF PLANNING & ZONING FILE NUMBERS:
S 00-13, WP 00-88, WP 00-126, WP 01-60, PB 345 & WP 01-94, P 01-15, F-01-185
- THE TOPOGRAPHY SHOWN HAS A 2' CONTOUR INTERVAL AND WAS DETERMINED BY: AERIAL PHOTOGRAPHY BY DAFT, McCUNE & WALKER, SUMMER 1998.
- PUBLIC WATER AND SEWER TO BE UTILIZED.
SITE IS IN METROPOLITAN DISTRICT.
- HORIZONTAL AND VERTICAL CONTROL BASED ON HOWARD COUNTY CONTROL STATIONS 47 EA & 47 EA.
- INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM BEST AVAILABLE RECORDS. THE CONTRACTOR MUST DETERMINE THE 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.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY AND MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- 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.
- 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

CONSTRUCTION PLAN FOR STONE LAKE LOTS 1 THRU 44 PARCELS 'A' THRU 'E' STONE LAKE DRIVE, BOULDER RIDGE AND MOSS CLIFF COURT

- LEGEND
- EXISTING STREET LIGHT
 - PROPOSED STREET LIGHT
 - PROP. TOP OF CURB ELEVATION
 - EXISTING WATER MAIN
 - EXISTING STORM DRAIN
 - EXIST. CURB/CURB & GUTTER
 - PROP. CURB & GUTTER
 - EXISTING PAVING
 - PROPOSED PAVING
 - EXISTING CONTOUR
 - PROPOSED CONTOUR
 - EXISTING STREET TREES
 - PROPOSED STREET TREES
 - Limit of Submission
 - Structure Setback Line
 - Forest Conservation Emt.



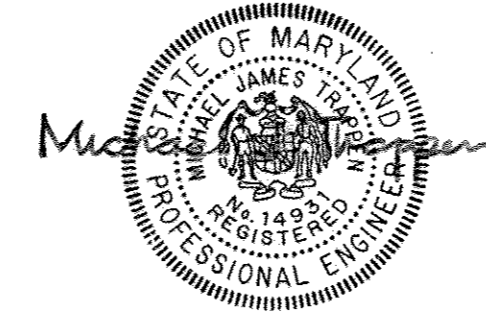
SHEET INDEX

- COVER SHEET
- STONE LAKE DRIVE STATION 0+00 TO STATION 9+50
- STONE LAKE DRIVE STATION 9+50 TO STATION 15+27.14 AND BOULDER RIDGE STATION 0+00 TO STATION 7+48
- BOULDER RIDGE STATION 7+48 TO STATION 14+05.07
- BOULDER RIDGE STATION 14+05.07 TO STATION 18+56.30 AND MOSS CLIFF COURT STATION 0+00 TO STATION 2+84.56
- TYPICAL ROAD DETAILS AND WEATHERED STONE WAY FUTURE PROFILE
- GRADING AND STORMWATER MANAGEMENT FACILITY 1 PLAN-ENTRY AREA
- GRADING AND STORMWATER MANAGEMENT FACILITY 3 PLAN-PARCEL E AND BERM AREA
- GRADING PLAN-SOUTH TOWNHOUSE AREA
- GRADING PLAN-NORTH TOWNHOUSE AREA
- GRADING PLAN-OUTFALL AREA
- SEDIMENT CONTROL PLAN-ENTRY AREA
- SEDIMENT CONTROL PLAN-PARCEL E AND BERM AREA
- SEDIMENT CONTROL PLAN-SOUTH TOWNHOUSE AREA
- SEDIMENT CONTROL PLAN-NORTH TOWNHOUSE AREA
- SEDIMENT CONTROL PLAN-OUTFALL AREA
- SEDIMENT CONTROL DETAILS
- SEDIMENT CONTROL DETAILS
- SEDIMENT CONTROL OVERVIEW PLAN
- STORMWATER MANAGEMENT FACILITIES 1 DETAILS
- STORMWATER MANAGEMENT FACILITIES 3 DETAILS
- STORMWATER MANAGEMENT FACILITY 3 PLANTING PLAN AND DETAILS
- SEDIMENT CONTROL AND STORMWATER MANAGEMENT NOTES AND SEQUENCE OF CONSTRUCTION
- STORM DRAIN PROFILES
- STORM DRAIN PROFILES
- STORM DRAIN DRAINAGE AREA MAP
- STORM DRAIN DRAINAGE AREA MAP
- STORM DRAIN DRAINAGE AREA MAP
- LANDSCAPE PLAN-ENTRY PLAN
- LANDSCAPE PLAN-PARCEL E AND BERM AREA
- LANDSCAPE PLAN-SOUTH TOWNHOUSE AREA
- LANDSCAPE PLAN-NORTH TOWNHOUSE AREA
- LANDSCAPE DETAIL SHEET
- PRE-DEVELOPED SWM DRAINAGE AREA MAP
- PRE-DEVELOPED SWM DRAINAGE AREA MAP
- POST-DEVELOPED SWM DRAINAGE AREA MAP
- POST-DEVELOPED SWM DRAINAGE AREA MAP
- Forest Conservation Plan
- Forest Conservation Plan
- Forest Conservation Plan
- Forest Conservation Plan
- Forest Conservation Plan
- Forest Conservation Plan
- Forest Conservation Plan
- Forest Conservation Plan

- TYPES OF STORM DRAINS REFER TO THE STANDARD DETAILS OF HOWARD COUNTY AND MSHA.
- 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.
- SEDIMENT CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH "1994 MARYLAND STANDARDS AND SPECIFICATION FOR SOILS EROSION AND SEDIMENT CONTROL".
- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- 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.
- COMPACTION IN FILL AREAS SHALL BE IN ACCORDANCE WITH AASHTO T-180 OR AS APPROVED IN THE DESIGN MANUAL VOLUME IV.
- WETLAND STREAM, STEEP SLOPE, AND FOREST COVER DELINEATION BY DAFT, McCUNE AND WALKER.
- TRAFFIC STUDY WAS APPROVED AS PART OF THE SKETCH PLAN ON OCT. 12, 2000
- ALL ROADS IN THIS DEVELOPMENT ARE PRIVATE.
- 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.
- LANDSCAPING FOR THIS PROJECT HAS BEEN PREPARED ACCORDING TO THE ALTERNATIVE COMPLIANCE PORTION OF THE LANDSCAPE MANUAL (CHAPTER VI).
- THE 100-YEAR FLOOD PLAIN INFORMATION WAS TAKEN FROM AVAILABLE RECORDS AT DEVELOPMENT ENGINEERING DIVISION OF THE DEPARTMENT OF PLANNING AND ZONING.
- Development of this portion of Stone Lake under the current Forest Conservation Act requires the clearing of approximately 200 ac of forest. No reforestation requirement is generated by this clearing. The reforestation area shown on the Forest Conservation Plan is in anticipation of future forest clearing associated with later phases of development. Reforestation obligations for future development phases will be addressed cumulatively on a separate Forest Conservation Plan.
- 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 SECTION 16.116(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. THE APPROVAL OF THIS WAIVER ALLOWS GRADING & REMOVAL OF VEGETATIVE COVER ON THE EXISTING STREAM BUFFER AND WITHIN THE FLOOD PLAIN FOR THE INSTALLATION OF THE PROPOSED CONNECTION TO THE EXISTING SANITARY SEWER. GRADING AND REMOVAL OF THE VEGETATIVE COVER ON THE EXISTING STEEP SLOPE FOR THE PURPOSES OF AN OUTFALL FOR THE STORM DRAIN SYSTEM TO THE LAKE AS INDICATED ON THESE PLANS.
- ON AUGUST 11, 2000, WP 00-126; WAIVER OF SECTION 16.144 (C)(2) AND 16.114(c)(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.
- 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.
- 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. THE APPROVAL OF THE WAIVER ALLOWS GRADING ON LOTS INDICATED ON F-01-204.
- THE PROPOSED STORM DRAIN SYSTEM AS SHOWN ON THESE PLANS IS PRIVATE AND WILL BE OWNED & MAINTAINED BY THE HOME OWNER'S ASSOCIATION.
- STORMWATER FACILITIES NUMBERS 1 & 3 AS SHOWN ON THESE PLANS ARE TO BE PRIVATELY OWNED & MAINTAINED.
- NOISE STUDY WAS APPROVED AS A PART OF THE SKETCH PLAN ON OCTOBER 10, 2000.
- SCHEDULE A & D LANDSCAPING FOR PARCEL E WILL BE PROVIDED AS A PART OF THE RESUBDIVISION OF PARCEL E UNDER F-01-184.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
N/A No Public Facilities
 Chief, Bureau of Highways *AS* Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Andy Hamata 2/14/02
 Chief, Division of Land Development Date
[Signature] 2/14/02
 Chief, Development Engineering Division E Date



NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
Scott Shanaberger 2/17/02
 © SCOTT SHANABERGER SHANABERGER & LANE

GLW GUTSCHICK LITTLE & WEBER, P.A. CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK BURTONSVILLE, MARYLAND 20886 TEL: 301-421-4024 FAX: 301-989-2524 FAX: 301-421-4186	DES.	DRN. DCF	CHK. MS	DATE	REVISION	BY	APPR.	OWNER: THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MD 21044 PH: 410-392-6089 ATTN: MR. DOB JENKINS	COVER SHEET STONE LAKE PARCELS 'A' THRU 'E' LOTS 1 THRU 44 572 FOLIO 430	SCALE AS SHOWN	ZONING R-ED	G. L. W. FILE No. 99140
				October 2001				ELECTION DISTRICT No. 6	HOWARD COUNTY, MARYLAND	TAX MAP - GRID 47 - 9/10	SHEET 1 OF 40	

Note: For Street Lights at the Intersection of Stone Lake Drive & Gorman Road, See F-01-185.

STEPHENS ROAD MAJOR COLLECTOR (PUBLIC)
Limit of Construction F-01-185

Match Ex. Curb data to Lot 14 at Street Opposite

EX (M-1)

EX (H-1)

Curb Elevation Table

Pt. No.	Station	Offset	Elev.
1	0+22.25	12' Right	309.01
2	0+57.10	30' Right	309.71
3	1+42.10	30' Right	309.51
4	2+13.72	15' Right	309.04
5	2+59.15	12' Right	314.88
6	2+59.15	12' Left	314.88
7	2+59.20	12' Left	311.80
8	2+59.20	12' Left	309.45
9	1+50.00	10' Left	309.00
10	1+00.00	10' Left	309.02
11	0+50.70	30' Left	304.05
12	0+22.70	41' Left	304.90
13	0+22.19	41' Right	309.81
14	0+44.24	12' Right	309.00
15	0+51.24	8' Right	304.17
16	0+75.54	8' Right	304.02
17	0+81.54	1' Right	305.10
18	0+75.54	6' Left	304.72
19	0+70.00	6' Left	304.24
20	0+30.00	12' Right	309.59
21	1+01.47	2' Right	309.70
22	1+00.00	2' Left	309.74
23	1+00.00	2' Right	309.10
24	1+27.87	12' Right	309.15
25	1+25.87	12' Right	309.07
26	1+00.00	6' Left	307.74
27	1+03.47	2' Right	308.09

Curb Elevation Table

Pt. No.	Station	Offset	Elev.
28	1+00.00	2' Left	309.10
29	1+25.70	2' Left	309.10
30	1+25.70	2' Left	309.10
31	1+01.47	1' Left	309.10
32	1+01.47	1' Left	309.10

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways

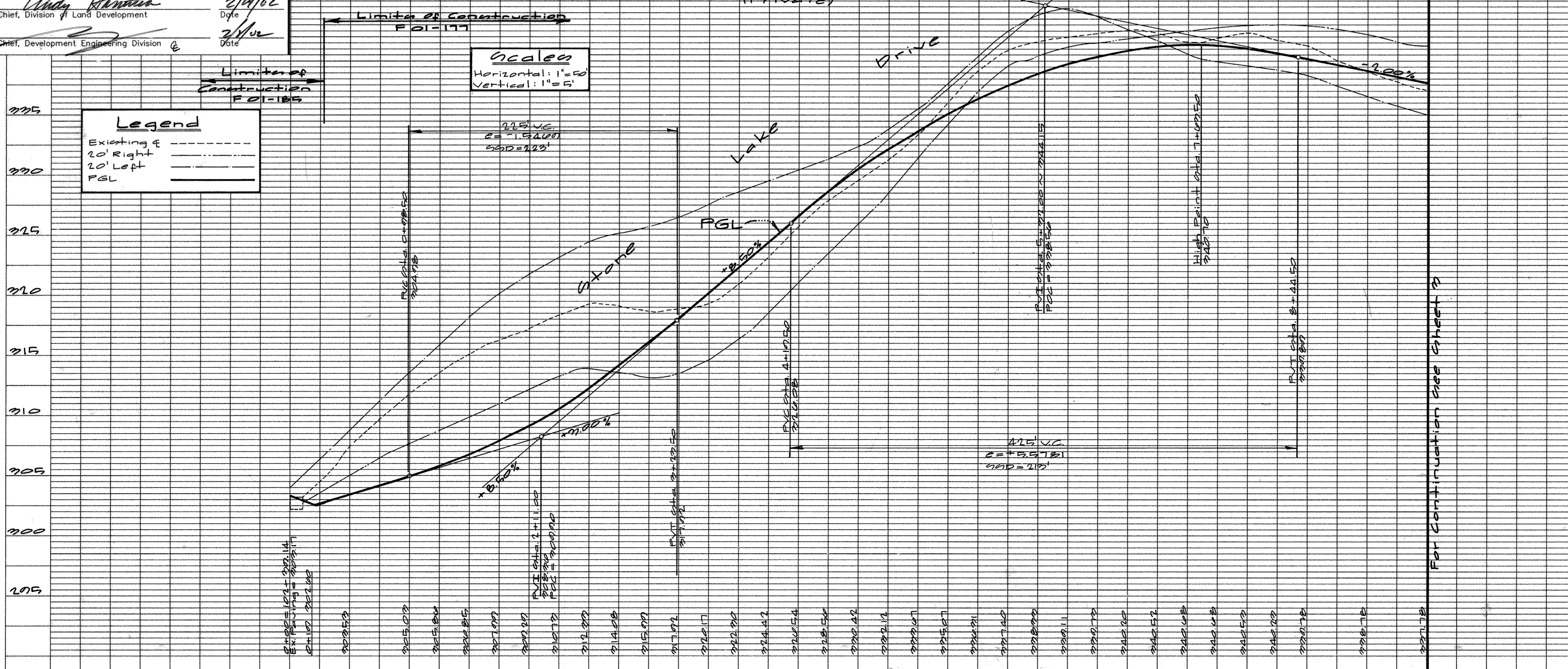
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development

Chief, Development Engineering Division

Design Speed 75 MPH

Minor Collector (Private)



STREET NAME	P.O.C. STA.	P.R.C. STA.	P.R.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
Stone Lake Drive	1+08.29	2+81.10			175.00'	175.08'	95.66'	167.87'	N 67°55'55" E	57°19'22"
Stone Lake Drive		2+81.10	5+49.50		155.00'	270.48'	184.86'	237.44'	N 46°36'09" E	99°58'54"
Stone Lake Drive			5+49.50	7+99.86	200.00'	250.37'	144.57'	234.33'	N 46°28'26" E	71°43'28"

Legend

- Existing & 10' Right
- 10' Left
- PGL

Scale
Horizontal: 1"=50'
Vertical: 1"=5'

LOCATION	LAMP TYPE	MOUNTING	POLE TYPE
4+19 @ 17' RIGHT	100-W Metal Halide	Acorn Arm Top Fixture	12' BRONZE ALUMINUM
6+65 @ 17' LEFT	100-W Metal Halide	Acorn Arm Top Fixture	12' BRONZE ALUMINUM

SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
(+)	Acer Saccharum / Green Mountain Sugar Maple	2"-2 1/2" cal.	45	B & B Full Heads

Michael J. Trapp

GLWGUTSCHICK 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 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

ROAD CONSTRUCTION PLANS

STONE LAKE

Stone Lake Drive
STATION 0+00 TO 9+50

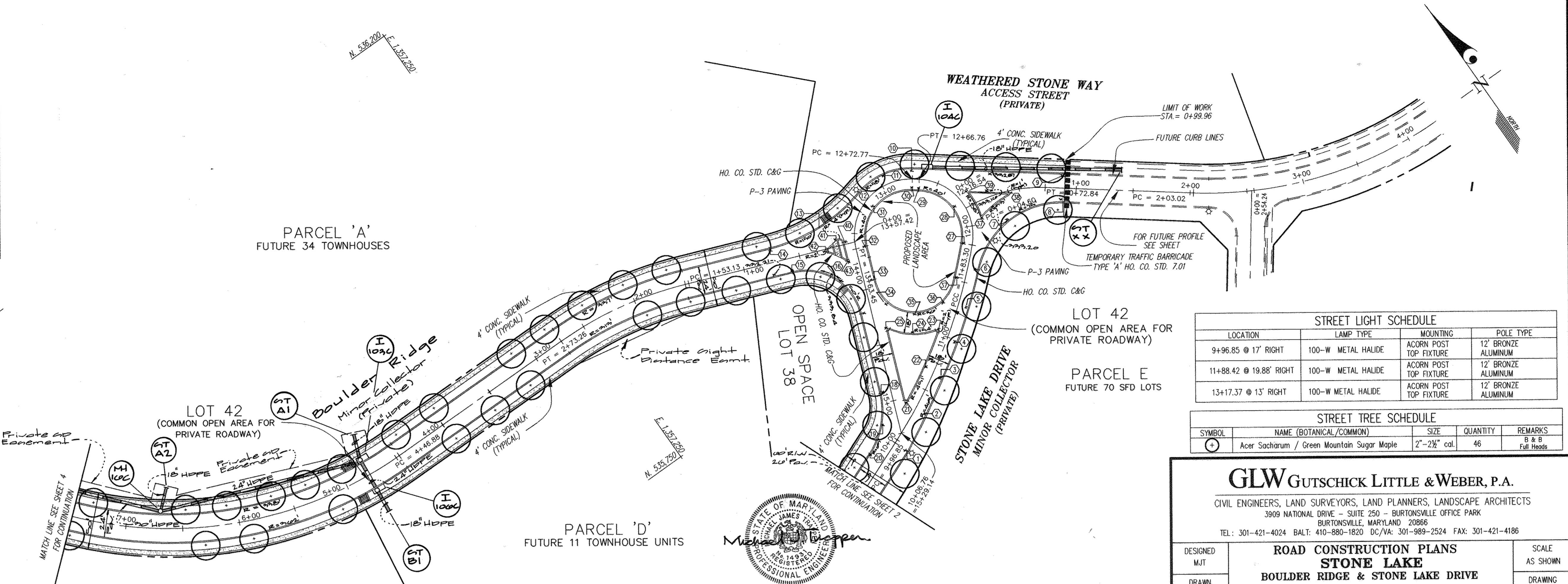
ELECTION DISTRICT No. 6
HOWARD COUNTY, MARYLAND
PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
ATTN: MR. BOB JENKINS
PH: (410) 992-6089

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

SCOTT SHANBERGER
SWANBERGER & LANE

PT. No.	STATION	OFFSET	ELEVATION
1	9+96.85	13' RIGHT	337.14
2	10+29.92	10.56' RIGHT	336.43
3	10+63.19	9' RIGHT	335.82
4	10+96.54	9' RIGHT	335.15
5	11+29.90	9' RIGHT	334.48
6	11+63.35	9' RIGHT	333.86
7	0+34.00	24.61' RIGHT	333.17
8	0+89.97	12' RIGHT	331.10
9	0+89.97	12' LEFT	331.10
10	12+73.75	9' RIGHT	333.05
11	12+95.56	9' RIGHT	333.13
12	13+17.37	9' RIGHT	333.29
13	0+27.48	19.39' RIGHT	333.94
14	0+74.12	12' RIGHT	332.81
15	0+59.37	12' LEFT	333.31
16	0+24.02	24.02' LEFT	334.26
17	14+19.43	9' RIGHT	334.92
18	14+30.96	9' RIGHT	336.24
19	15+17.44	14.69' RIGHT	336.84
20	9+76.63	13' LEFT	337.43
21	10+42.40	10.28' LEFT	337.73
22	10+77.59	9' LEFT	336.50

PT. No.	STATION	OFFSET	ELEVATION
23	11+12.72	10.15' LEFT	335.54
24	14+47.05	30.46' LEFT	336.41
25	14+37.77	10.11' LEFT	335.89
26	11+62.28	9' LEFT	334.48
27	11+83.30	9' LEFT	334.16
28	12+25.05	9' LEFT	333.75
29	12+66.80	9' LEFT	333.64
30	12+72.82	9' LEFT	333.64
31	13+18.14	9' LEFT	333.89
32	13+63.22	9' LEFT	334.48
33	13+93.26	9' LEFT	335.04
34	14+17.51	16.68' LEFT	335.53
35	14+30.41	38.27' LEFT	336.01
36	11+29.03	13.79' RIGHT	335.24
37	12+05.20	9.52' RIGHT	333.29
38	0+40.86	2.66' RIGHT	333.11
39	12+25.98	2.66' RIGHT	333.13
40	13+56.57	9.58' RIGHT	333.76
41	13+54.37	15.61' RIGHT	333.87
42	13+60.46	25.85' RIGHT	334.17
43	13+71.78	9.62' RIGHT	334.02



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways *N/A* Date _____

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development *Cindy Hamilton* Date *2/14/12*

Chief, Development Engineering Division *[Signature]* Date *2/14/12*

STREET NAME	P.O.C. STA.	P.C.C. STA.	P.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
STONE LAKE DRIVE	9+96.85	11+83.30			460.00'	186.45'	94.52'	185.18'	N.56°43'27"E	23°13'26"
STONE LAKE DRIVE				12+66.76	49.00'	83.46'	55.96'	73.73'	N.03°40'49"W	97°35'07"
STONE LAKE DRIVE			12+72.77	13+63.45	49.00'	90.68'	65.07'	78.28'	N.74°30'36"W	106°02'03"
WEATHERED STONE WAY			0+40.60	0+72.04	125.00'	58.98'	30.38'	58.13'	S.58°39'54"E	33°47'35"
BOULDER RIDGE	1+52.76			2+72.89	325.00'	120.13'	60.76'	119.45'	N.79°05'46"W	21°10'42"
BOULDER RIDGE	4+46.51			7+72.19	350.00'	325.68'	175.70'	314.06'	N.63°01'41"W	53°18'52"

LOCATION	LAMP TYPE	MOUNTING	POLE TYPE
9+96.85 @ 17' RIGHT	100-W METAL HALIDE	ACORN POST TOP FIXTURE	12" BRONZE ALUMINUM
11+88.42 @ 19.88' RIGHT	100-W METAL HALIDE	ACORN POST TOP FIXTURE	12" BRONZE ALUMINUM
13+17.37 @ 13' RIGHT	100-W METAL HALIDE	ACORN POST TOP FIXTURE	12" BRONZE ALUMINUM

SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
(+)	Acer Saccharum / Green Mountain Sugar Maple	2"-2 1/2" cal.	46	Full Heads

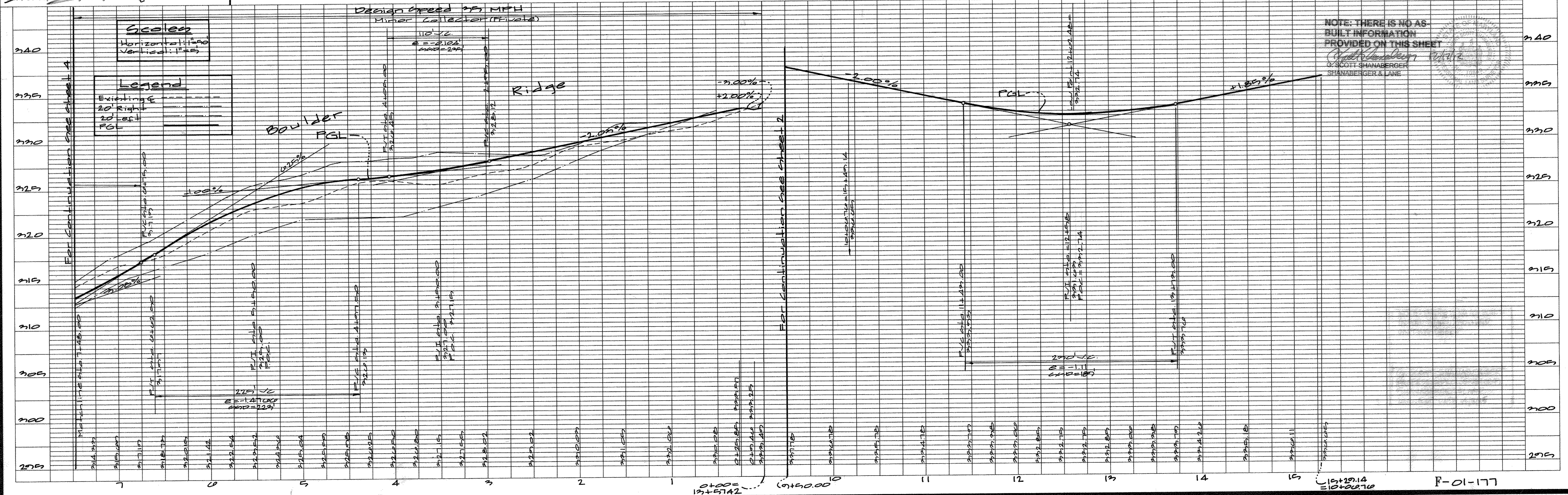
GLW GUTSCHICK LITTLE & WEBER, P.A.
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 TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

ROAD CONSTRUCTION PLANS
STONE LAKE
BOULDER RIDGE & STONE LAKE DRIVE
 STATION 0+00 TO 7+48.00
 STATION 9+50 TO 15+29.14
 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

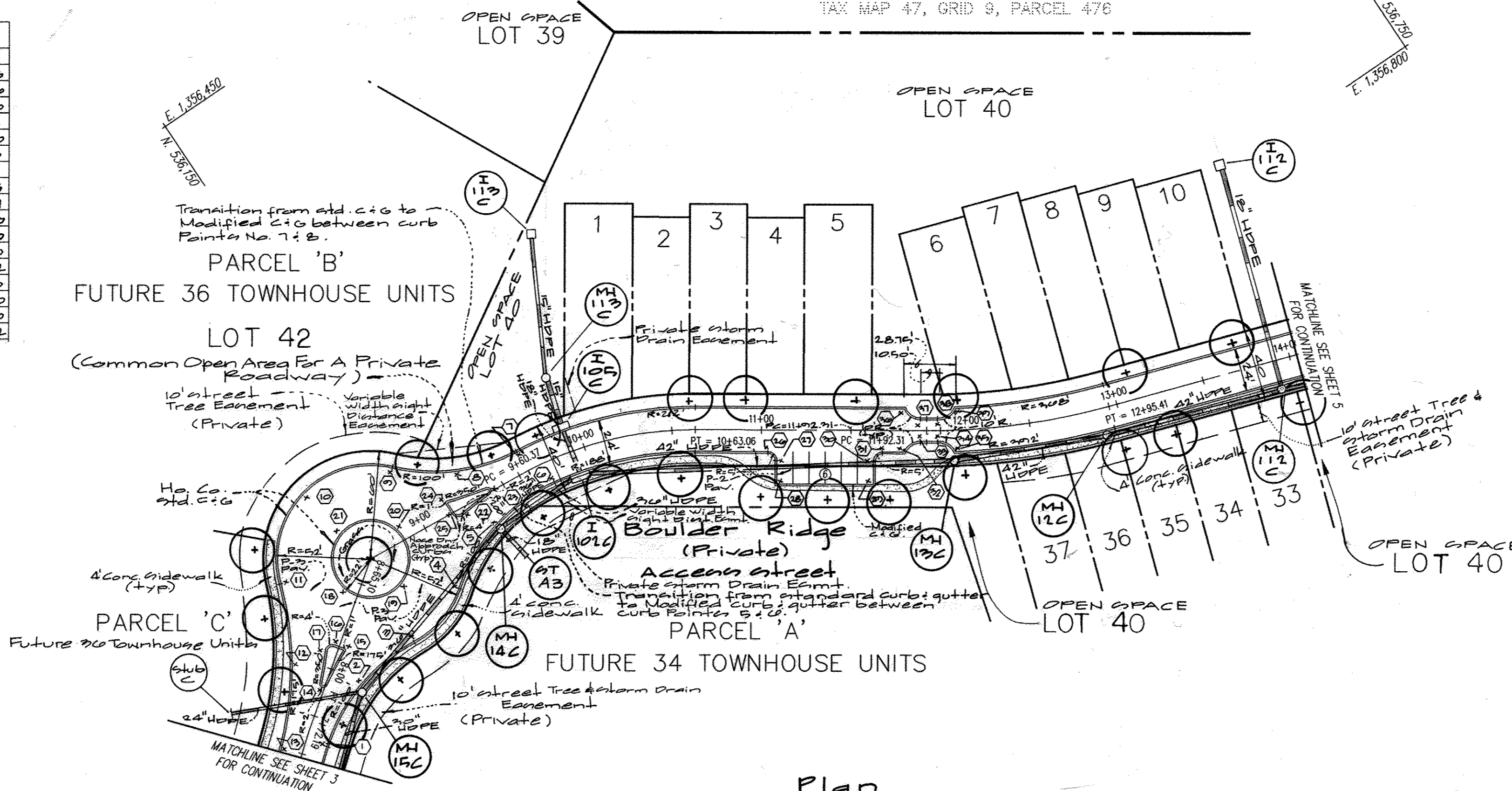
DESIGNED: MJT
 DRAWN: WSJ/CAD
 CHECKED: *[Signature]*
 DATE: OCT., 2001

SCALE: AS SHOWN
 DRAWING: 3 OF 40
 ZONING: R-ED
 JOB No.: 99140



PT. No.	STATION	OFFSET	ELEVATION
1	7+58.01	12' Right	310.11
2	7+58.02	12' Right	310.04
3	8+20.07	20' Right	310.94
4	9+20.15	20' Right	310.62
5	9+25.12	17' Right	310.42
6	9+26.00	17' Right	310.22
7	9+25.24	17' Left	310.23
8	9+20.52	17' Left	310.20
9	9+20.07	20' Left	310.12
10	8+25.10	20' Left	310.25
11	8+25.10	22.5' Left	311.59
12	7+58.13	12' Left	312.02
13	7+47.01	12' Left	312.55
14	7+28.00	12' Left	312.01
15	6+12.04	20' Right	311.52
16	6+12.10	22.5' Left	311.02
17	6+28.02	22.5' Left	311.89
18	6+44.41	17' Left	312.00
19	6+51.00	12' Right	310.87
20	6+58.01	12' Left	310.23
21	—	12' Left	311.12
22	6+21.07	27.4' Right	310.80

PT. No.	STATION	OFFSET	ELEVATION
23	9+42.02	20' Left	310.23
24	9+17.05	10' Left	310.80
25	9+17.10	21' Right	310.80
26	11+22.70	17' Right	310.74
27	11+22.70	17' Right	310.20
28	11+22.70	20' Right	310.40
29	11+22.70	20' Right	310.81
30	11+22.70	17' Right	310.55
31	11+22.70	17' Right	310.47
32	11+22.70	17' Right	310.50
33	11+22.02	2' Right	310.60
34	11+22.54	2' Right	310.70
35	12+22.00	12' Right	310.52
36	11+22.70	12' Left	310.50
37	11+22.02	2' Left	310.70
38	11+22.54	2' Left	310.70
39	12+22.00	12' Left	310.52



Plan
Scale: 1" = 50'

Michael J. Tropp
Professional Engineer

STREET LIGHT SCHEDULE			
LOCATION	LAMP TYPE	MOUNTING	POLE TYPE
—	100-W Metal Halide	Acorn Flood TOP FIXTURE	12' BRONZE ALUMINUM

STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
⊙	Acer Saccharum / Green Mountain Sugar Maple	2"-2 1/2" cal.	27	B & B Full Heads

CURVE DATA							
STREET NAME	P.C. STA.	P.R.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD
Boulder Ridge	9+60.37	—	10+63.06	200.00'	102.69'	52.50'	101.56'
Boulder Ridge	11+92.31	—	12+95.41	380.00'	103.10'	51.87'	102.78'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
N/A
Chief, Bureau of Highways
Date: _____

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cathy Hamilton
Chief, Division of Land Development
Date: 2/14/02

Chief, Development Engineering Division
Date: 2/14/02

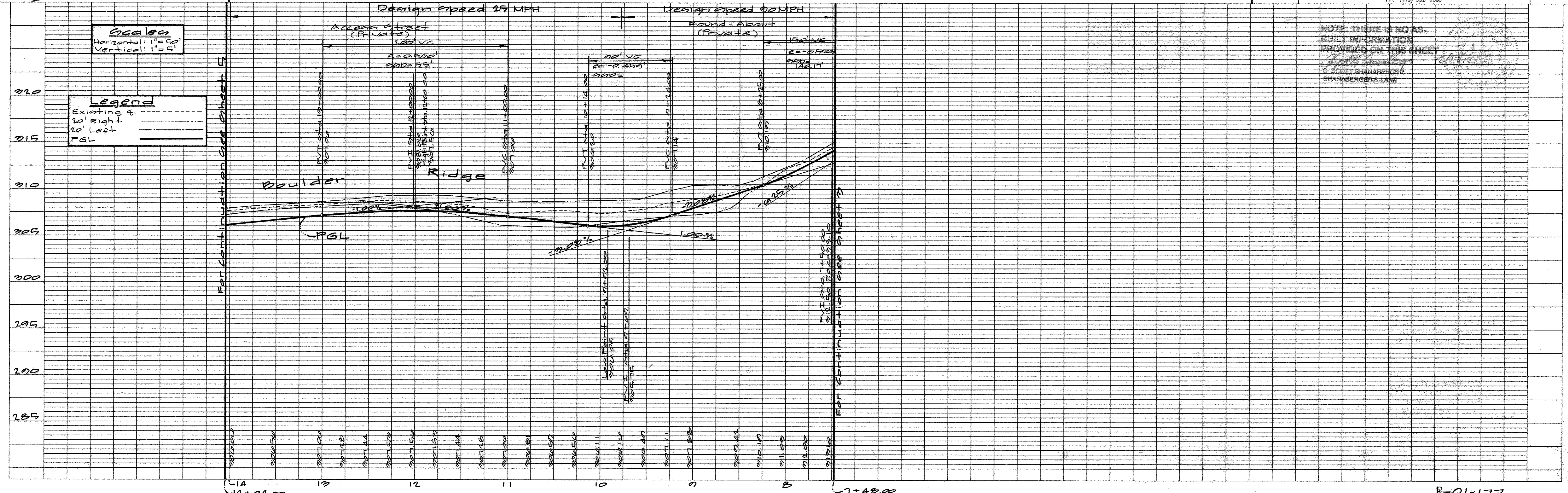
GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20886
TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

ROAD CONSTRUCTION PLANS
STONE LAKE
Boulder Ridge
STATION 7+48.00 TO 14+04.00
ELECTION DISTRICT No. 6
HOWARD COUNTY, MARYLAND

DESIGNED: MJT
DRAWN: WSJ/CAD
CHECKED: hjt
DATE: Oct., 2001

SCALE: AS SHOWN
DRAWING: 4 OF 40
ZONING: R-ED
JOB No.: 99140

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
ATTN: MR. BOB JENKINS
PH: (410) 992-6099

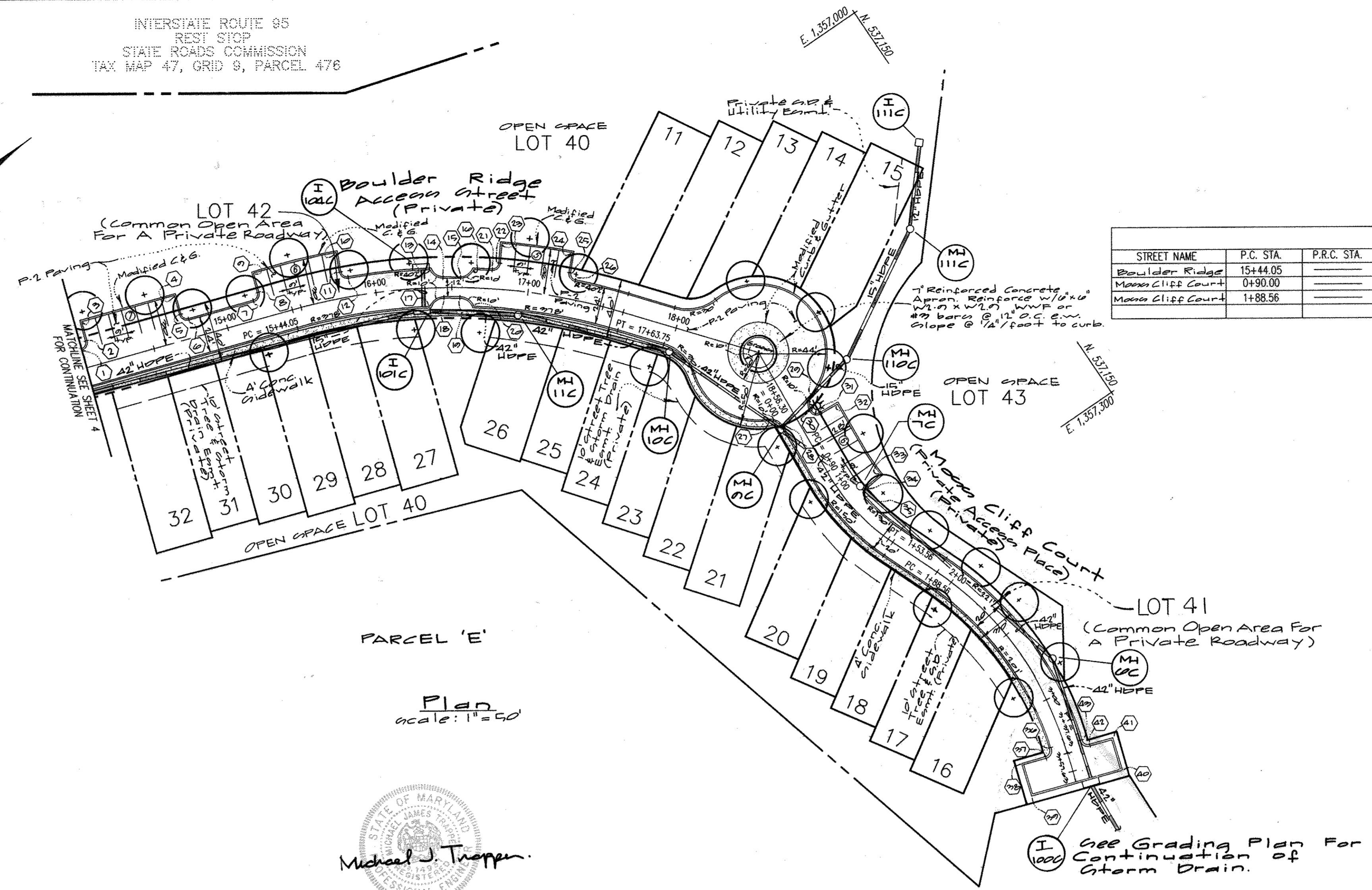


NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
G. SCOTT SHANBERGER
SHANBERGER & LANE

INTERSTATE ROUTE 95
REST STOP
STATE ROADS COMMISSION
TAX MAP 47, GRID 9, PARCEL 476

CURB ELEVATION TABLE			
PT. No.	STATION	OFFSET	ELEVATION
1	14+24.00	1' Left	205.97
2	14+27.00	1' Left	206.70
3	14+27.00	2' Left	206.50
4	14+27.00	3' Left	205.40
5	14+72.00	1' Left	205.42
6	14+72.00	2' Left	205.15
7	15+21.05	1' Left	204.81
8	15+24.05	1' Left	204.80
9	15+24.05	2' Left	205.12
10	15+78.00	2' Left	204.50
11	15+78.00	3' Left	204.22
12	15+83.77	1' Left	204.18
13	16+24.70	1' Left	203.07
14	16+24.70	2' Left	203.77
15	16+55.72	1' Left	203.04
16	16+55.72	2' Left	203.27
17	16+55.72	3' Left	203.07
18	16+55.72	4' Left	203.07
19	16+55.72	5' Left	203.07
20	16+55.72	6' Left	203.07
21	16+55.72	7' Left	203.07
22	16+55.72	8' Left	203.07

CURB ELEVATION TABLE			
PT. No.	STATION	OFFSET	ELEVATION
13	16+82.48	2' Left	202.58
14	17+22.74	2' Left	202.14
15	17+24.02	1' Left	202.88
16	17+22.82	1' Left	202.72
17	0+40.87	10' Right	200.27
18	0+50.10	10' Right	200.21
19	0+40.87	10' Left	200.58
20	0+50.10	10' Left	200.22
21	0+55.10	15' Left	200.22
22	0+55.10	18' Left	200.48
23	1+12.06	18' Left	207.07
24	1+12.06	15' Left	206.81
25	1+10.54	10' Left	206.14
26	2+22.25	10' Right	200.00
27	2+27.02	15' Right	200.70
28	2+27.02	20' Right	200.72
29	2+27.02	25' Right	200.72
30	2+27.02	30' Right	200.72
31	2+27.02	35' Right	200.72
32	2+27.02	40' Right	200.72
33	2+27.02	45' Right	200.72
34	2+27.02	50' Right	200.72
35	2+27.02	55' Right	200.72
36	2+27.02	60' Right	200.72
37	2+27.02	65' Right	200.72
38	2+27.02	70' Right	200.72
39	2+27.02	75' Right	200.72
40	2+27.02	80' Right	200.72
41	2+27.02	85' Right	200.72
42	2+27.02	90' Right	200.72
43	2+27.02	95' Right	200.72
44	2+27.02	100' Right	200.72



CURVE DATA									
STREET NAME	P.C. STA.	P.R.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
Boulder Ridge	15+44.05	17+63.75	17+63.75	390.00'	219.70'	112.85'	216.81'	N.34°42'13"E	32°16'35"
Moon Cliff Court	0+90.00	1+59.56	1+59.56	140.00'	63.56'	32.34'	63.01'	N.81°05'35"E	26°00'40"
Moon Cliff Court	1+88.56	2+84.50	2+84.50	211.00'	96.00'	48.85'	95.17'	N.81°07'18"E	26°04'06"

STREET LIGHT SCHEDULE			
LOCATION	LAMP TYPE	MOUNTING	POLE TYPE
0+50 @ 15' Left	100-W Metal Halide	Acorn Mount Top Fixture	12' BRONZE ALUMINUM

STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
⊕	Acer Saccharum / Green Mountain Sugar Maple	2"-2 1/2" cal.	28	8 & B Full Heads

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

ROAD CONSTRUCTION PLANS
STONE LAKE
Boulder Ridge and Moon Cliff Ct
Boulder Ridge - STATION 14+04 TO 18+56.36
Moon Cliff Court - STATION 0+00 TO 2+84.56
ELECTION DISTRICT No. 6
HOWARD COUNTY, MARYLAND

DESIGNED: MJT
DRAWN: WSA/CAD, KLP
CHECKED: Mjt
DATE: 2-1-2001

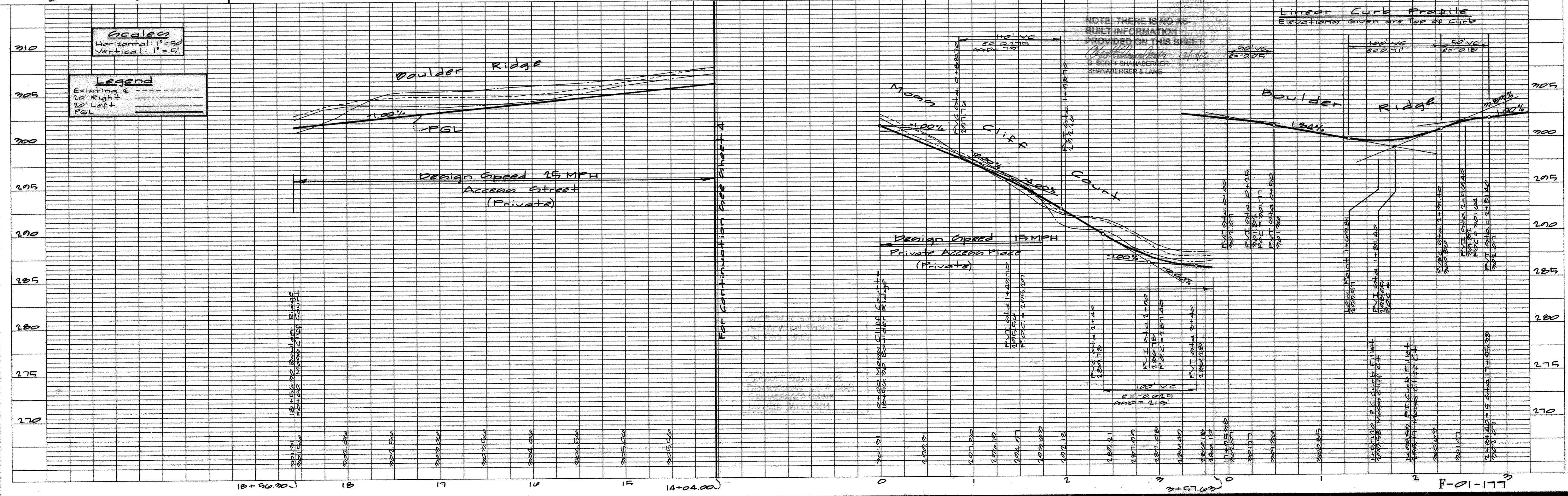
SCALE: AS SHOWN
DRAWING: 5 OF 40
ZONING: R-ED
JOB No.: 99140

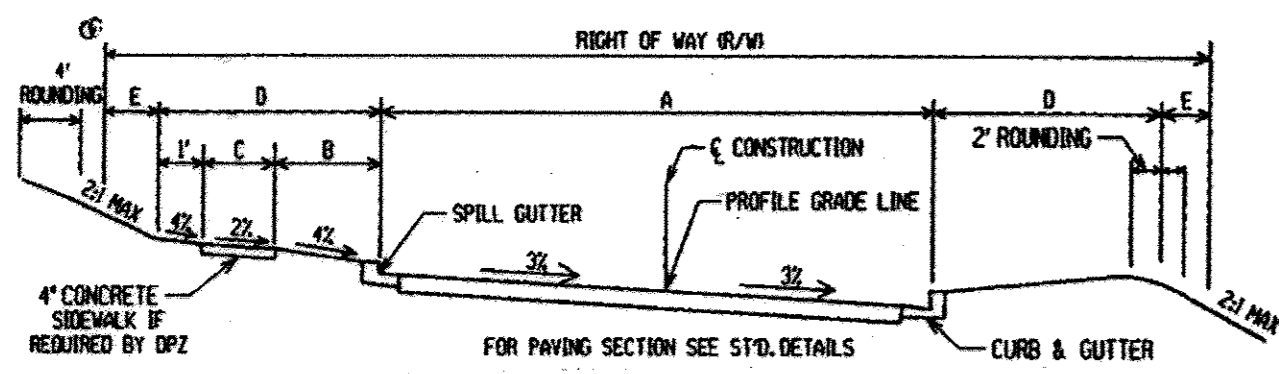
PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
ATTN: MR. BOB JENKINS
PH: (410) 992-6089

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
N/A
Chief, Bureau of Highways MS Date

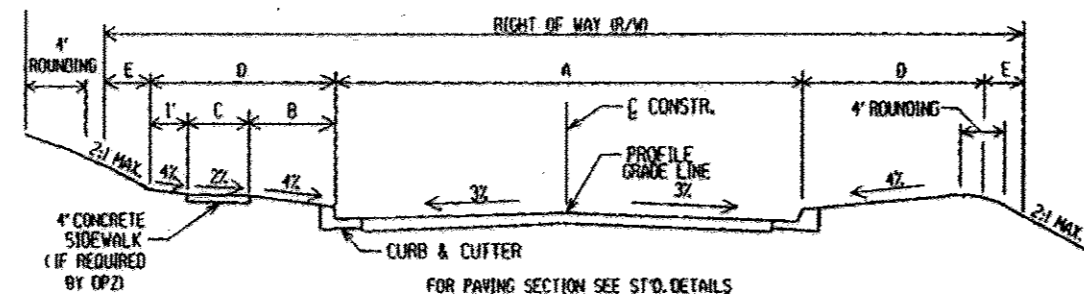
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 2/14/02
Chief, Division of Land Development Date

Chief, Development Engineering Division G Date





Typical Section
Moss Cliff Court

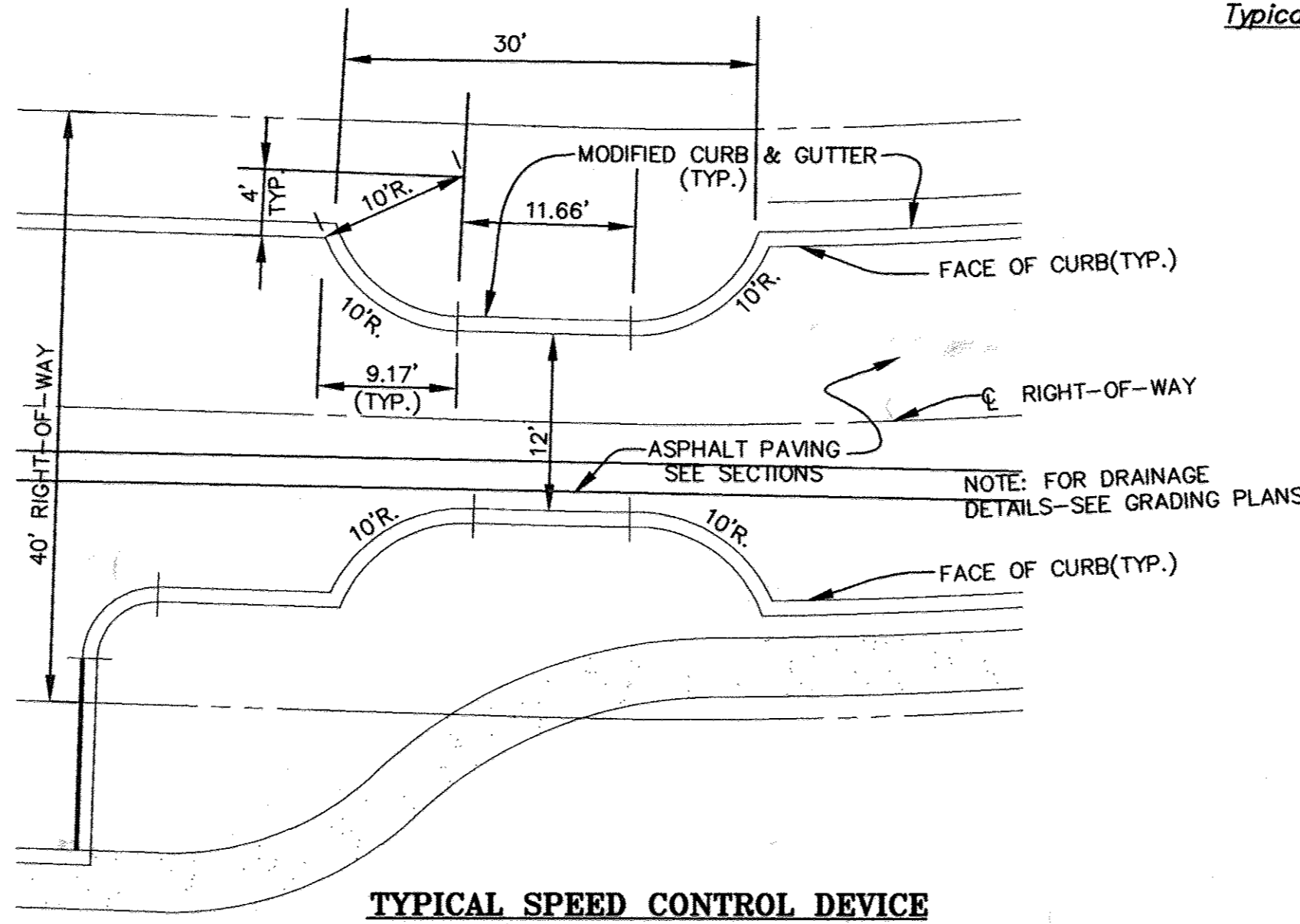


Typical Section
Stone Lake Drive & Boulder Ridge

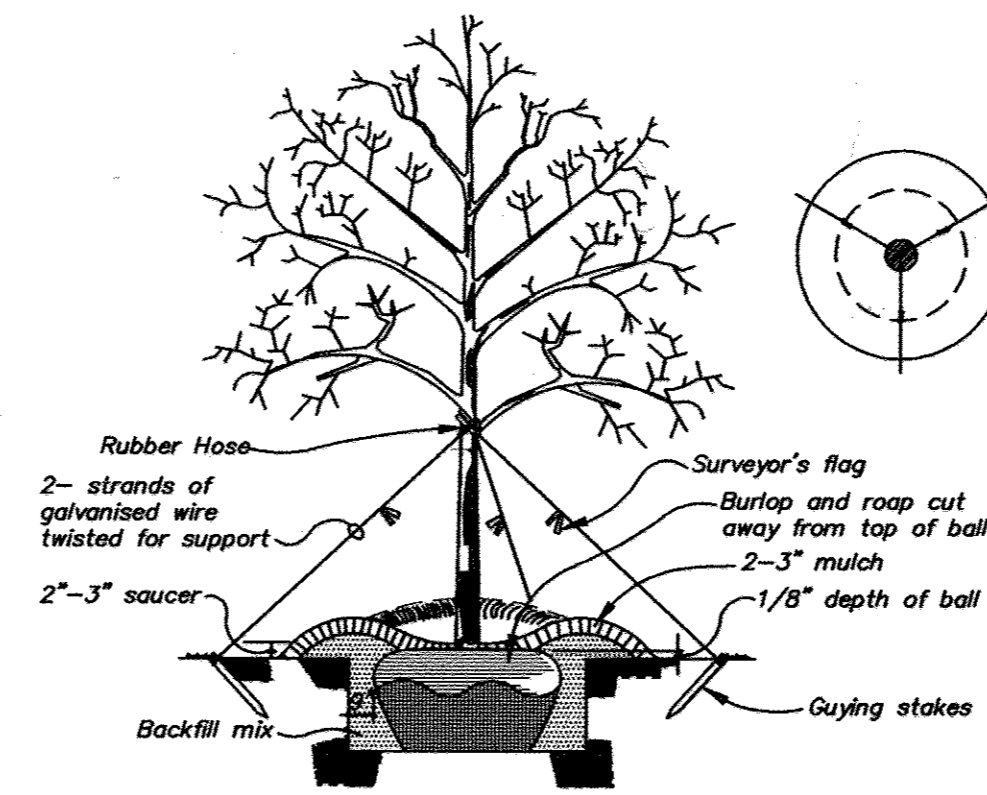
Road Name	Station	Road Classification*	Design Speed	A	B	C	D	E	R/W*	Paving Section
Moss Cliff Court	Sta. 0+00 to Sta. 2+84.56	Access Place - Public	15 mph	20'	0'	4'	5'	0'	30'	P-2

Road Name	Station	Road Classification*	Design Speed	A	B	C	D	E	R/W*	Paving Section
Stone Lake Drive	Sta. 2+83.15 to Sta. 9+70.23	Minor Collector	35 mph	26'	12'	4'	17'	0'	60'	P-3
Boulder Ridge	Sta. 0+59.00 to Sta. 7+47.61	Minor Collector	35 mph	24'	8'	4'	13'	0'	50'	P-3
Boulder Ridge	Sta. 9+76.60 to Sta. 17+95.38	Access Street	25 mph	24'	3'	4'	8'	0'	40'	P-2

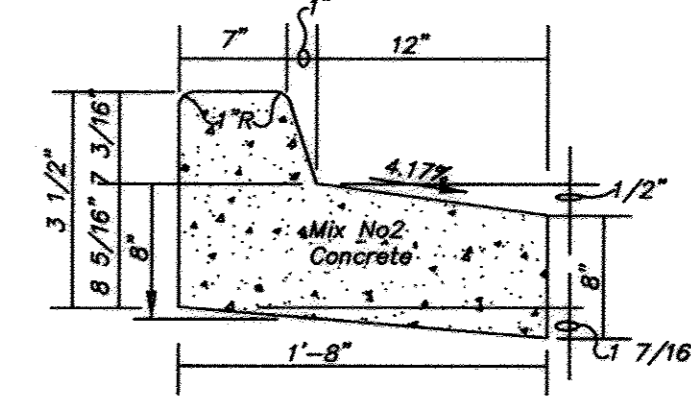
* All roads in this subdivision will be privately owned and maintained by the Homeowner's Association



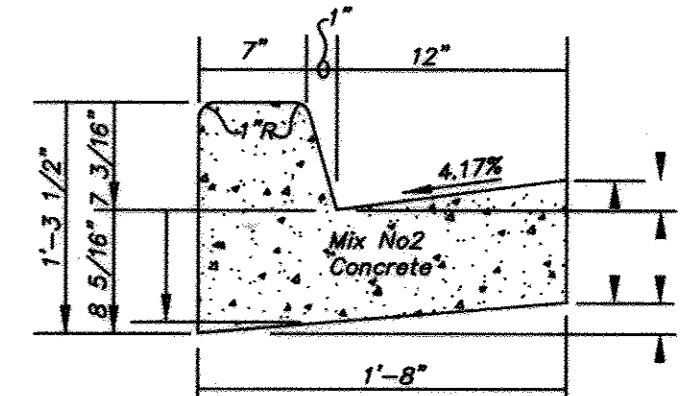
TYPICAL SPEED CONTROL DEVICE
(SINGLE LANE SLOW POINT)
SCALE: 1"=10'



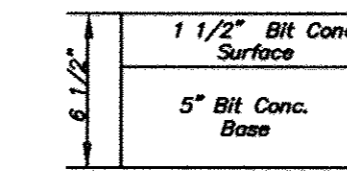
Typical Tree Guying Detail
N.T.S.



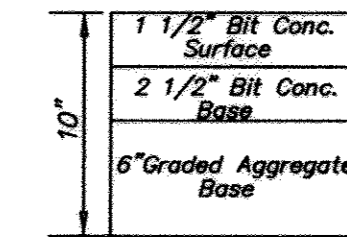
Reverse 7" Combination
Curb & Gutter
N.T.S.



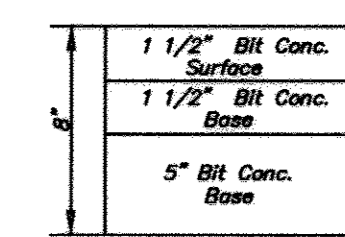
Standard 7" Combination
Curb & Gutter
N.T.S.



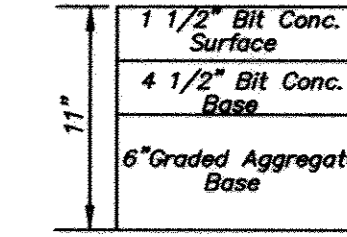
P-2 Full Depth
Bituminous Concrete
N.T.S.



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



P-3 Full Depth
Bituminous Concrete
N.T.S.



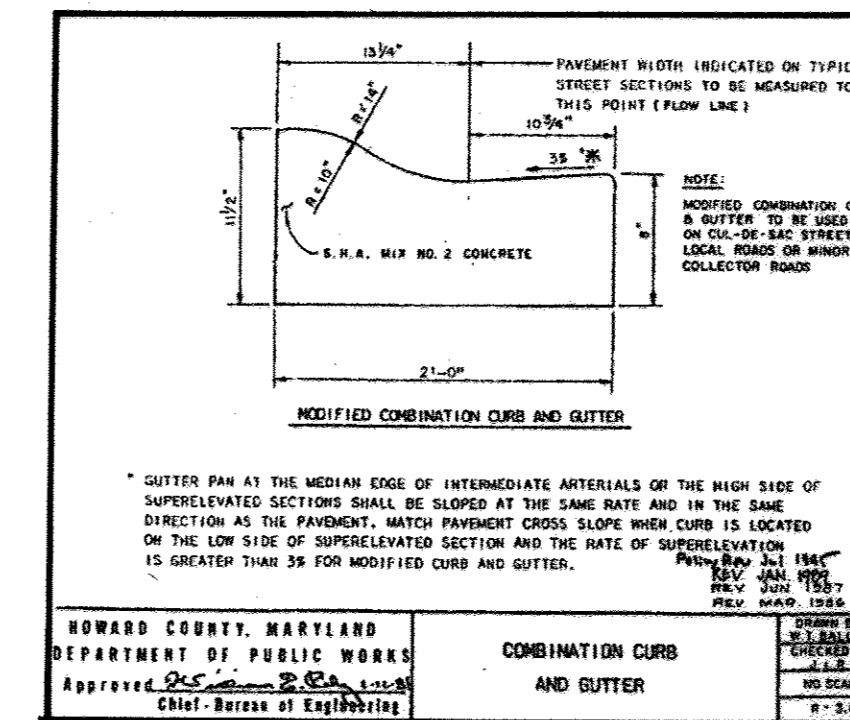
P-3 Granular
Base (Alternate)
N.T.S.

Paving Sections
N.T.S.

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

Paving Sections
N.T.S.

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



NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.
G. SCOTT SHANABERGER
SHANABERGER & LANE



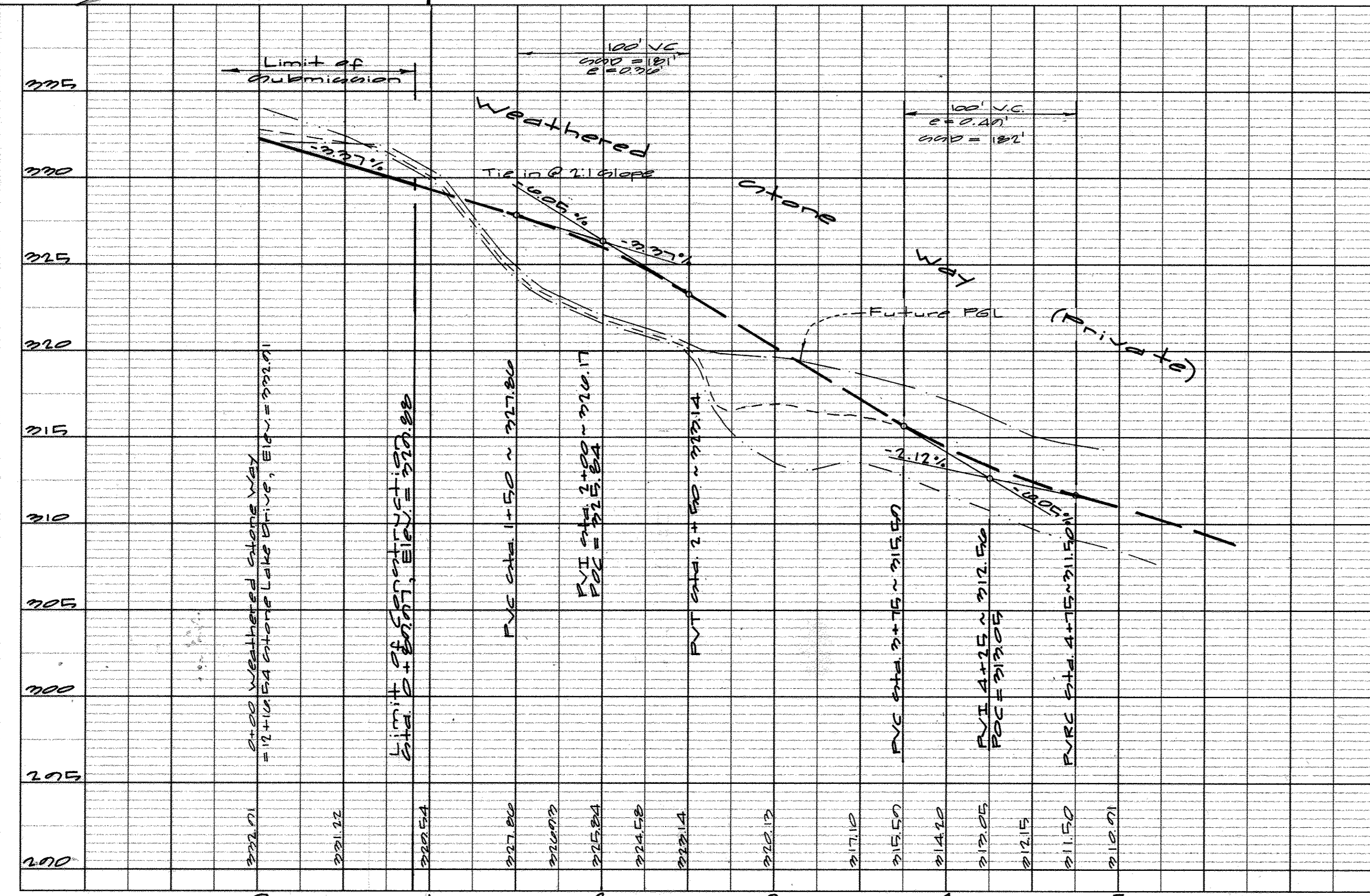
GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20886
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DESIGNED MJT	ROAD CONSTRUCTION PLANS STONE LAKE TYPICAL DETAILS	SCALE AS SHOWN
DRAWN WSJ/CAD		DRAWING 0 OF 40
CHECKED not	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	ZONING R-ED
DATE Oct, 2001		JOB NO. 99140

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

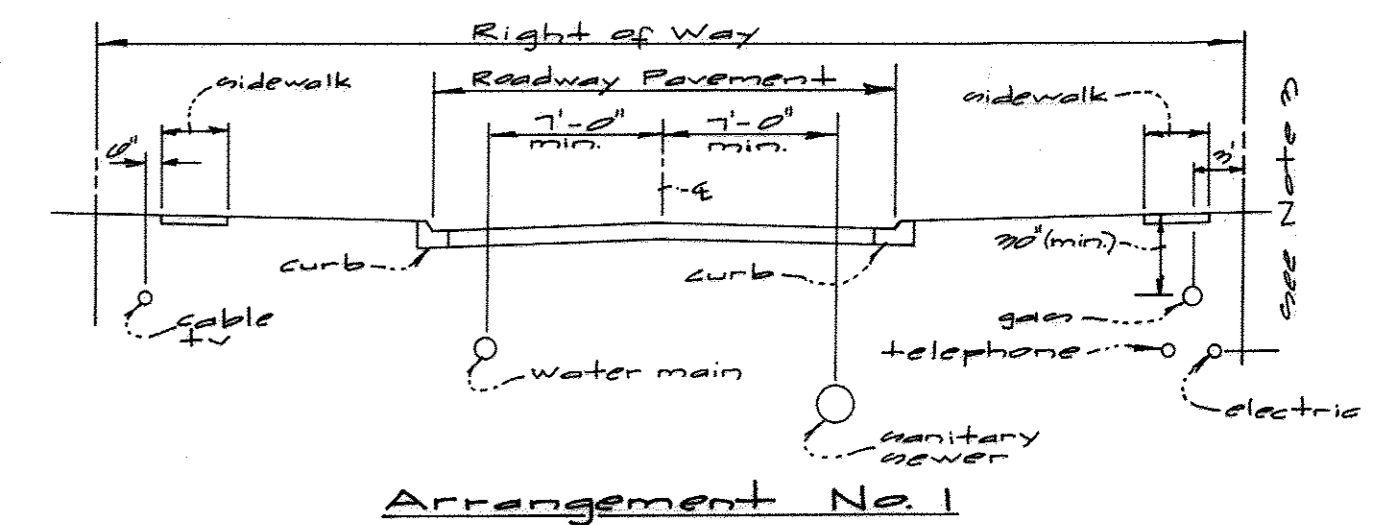
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Linda Hamilton
Chief, Division of Land Development Date 2/14/02

Chief, Development Engineering Division Date

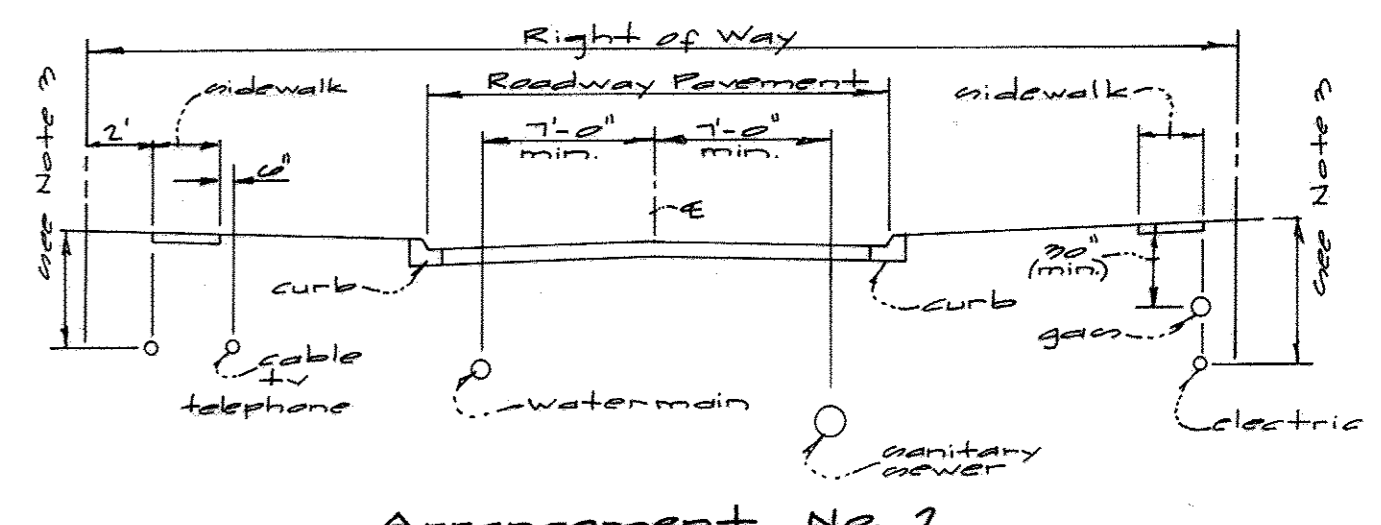


LEGEND

- EXISTING @
- 20' RIGHT
- 20' LEFT
- PGL



Arrangement No. 1



Arrangement No. 2

Notes

- The Department of Public Works shall be consulted concerning the utility location arrangement for a given street project.
- Gas, electric and telephone lines may be placed in the same trench at the option of the Baltimore Gas & Electric Co and Bell Atlantic.
- Electric: 0-400V 24" cover, over 400V 36" cover.
Telephone: Main service, 24" cover, residential connection 18" cover.
Cable TV: 18" cover.

Normal Locations of Public Utilities Cleared Section
Ho. Co. Maryland
Dept. of Public Works
Volume III, Reader & Bridges
Figure 2.15



PARCEL C
FUTURE 34 TOWNHOUSE UNITS

PARCEL A
Future 34 Townhouse Units

PARCEL D
Future 11 Townhouse Units

Parcel E
Future 70 and 72 Lots

STEPHENS ROAD
(MAJOR COLLECTOR)

SHANTHA COURT

Stone Lake
Minor (Private) Collector Drive

FOREST RIDGE
ELEMENTARY SCHOOL
BOARD OF EDUCATION
LIBER 2276 FOLIO 232
ZONED: R-12

Stormwater Management Notes

- Water quantity control is provided by a hazard class A detention/retention facility.
- Water quality is provided by the retention portion of the facility per section 6.7.7.B of the Design Manual.
- This facility has an embankment that is less than 6 feet and the storage of the design high water is less than 40,000 cubic feet; therefore is exempt from the MD-37B standards.
- This facility will be privately owned and maintained by Howard County.
- Summary Table:

SWM Facility # 1					Drainage Area to Design Point		
Storm (yr)	Inflow (cfs)	Release (cfs)	Elev. (ft)	Storage (cu ft)	Storm (yr)	Pre-Developed Release Rate (cfs)	Post-Developed Release Rate (cfs)
2	12.00	1.09	294.00	20,000	2	2.97	7.02
10	29.24	20.41	295.45	34,110	10	25.00	26.25
100	75.18	39.20	299.74	40,000	100	51.00	40.00

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.

G. Scott Shanaberger (DATE) 2/11/02
G. SCOTT SHANABERGER / SHANABERGER & LAMIE
PROFESSIONAL L.S. #10949 LIC. EXP. 4/14

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Andy Hamber 2/14/02
Chief, Division of Land Development Date

Chief, Development Engineering Division 2/11/02 Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20886
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

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

STONE LAKE
PARCELS 'A' THRU 'E'
LOTS 1 THRU 44
LIBER 572 FOLIO 430

ELECTION DISTRICT No. 6

SCALE
1"=50'

ZONING
R-ED

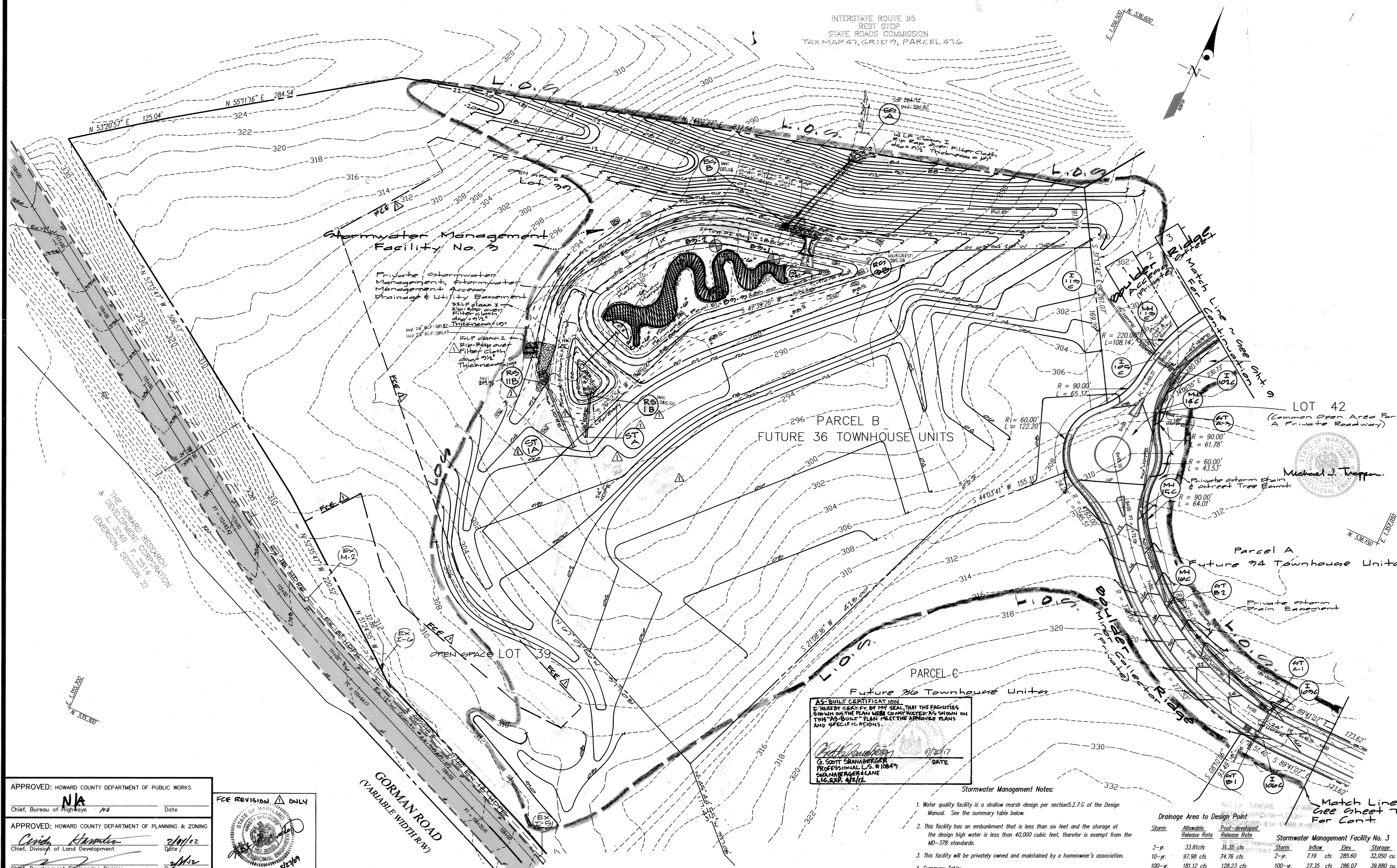
G. L. W. FILE No.
99140

DATE
October, 2001

TAX MAP - GRID
47 - 9/10

SHEET
7 OF 46

HOWARD COUNTY, MARYLAND



LOT 42
(Common Open Area For
A Private Roadway)

Michael J. Tropp
Professional Engineer

AS-BUILT CERTIFICATION
I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES
SHOWN ON THE PLAN WERE CONSTRUCTED AS SHOWN ON
THIS "AS-BUILT" PLAN MEETING THE APPROVED PLANS
AND SPECIFICATIONS.
G. Scott Shanaberger
G. SCOTT SHANABERGER
PROFESSIONAL L.S. # 10849
SHANABERGER PLANE
LIC. EXP. 4/2/12

Stormwater Management Notes:

1. Water quality facility is a shallow marsh design per section 5.2.7.6 of the Design Manual. See the summary table below.
2. This facility has an embankment that is less than six feet and the storage at the design high water is less than 40,000 cubic feet, therefore is exempt from the MD-378 standards.
3. This facility will be privately owned and maintained by a homeowner's association.
4. Summary Table:

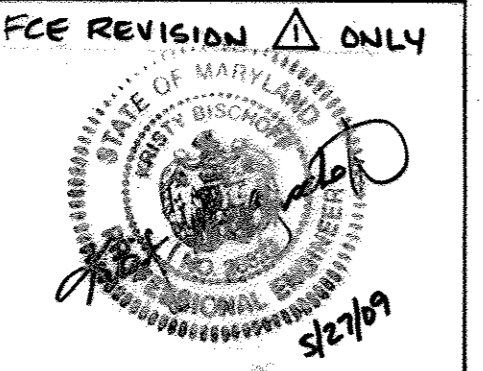
Drainage Area to Design Point

Storm	Release Rate		Stormwater Management Facility No. 3			
	Allowable	Post-developed	Storm	Inflow	Elev.	Storage
2-yr.	33.81 cfs	31.35 cfs	2-yr.	7.19 cfs	285.60	32,050 cu. ft.
10-yr.	97.98 cfs	74.76 cfs	10-yr.	27.35 cfs	286.07	39,880 cu. ft.
100-yr.	181.12 cfs	128.23 cfs	100-yr.	27.35 cfs	286.07	39,880 cu. ft.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways
N/A
Date: *NS*

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development
Cathy Hamrick
Date: *2/10/02*

Chief, Development Engineering Division
[Signature]
Date: *2/1/02*



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

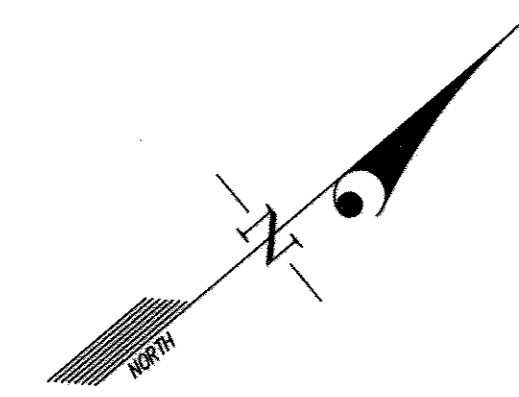
DATE	REVISION	BY	APP'R.
5-27-09	FCE REVISION (SHEETS 9, 13 + 44 ONLY)	DMW	
7/21/11	Revise storm Drain Parcel BA	gt	

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
PH: 410-982-6089
ATTN: MR. BOB JENKINS

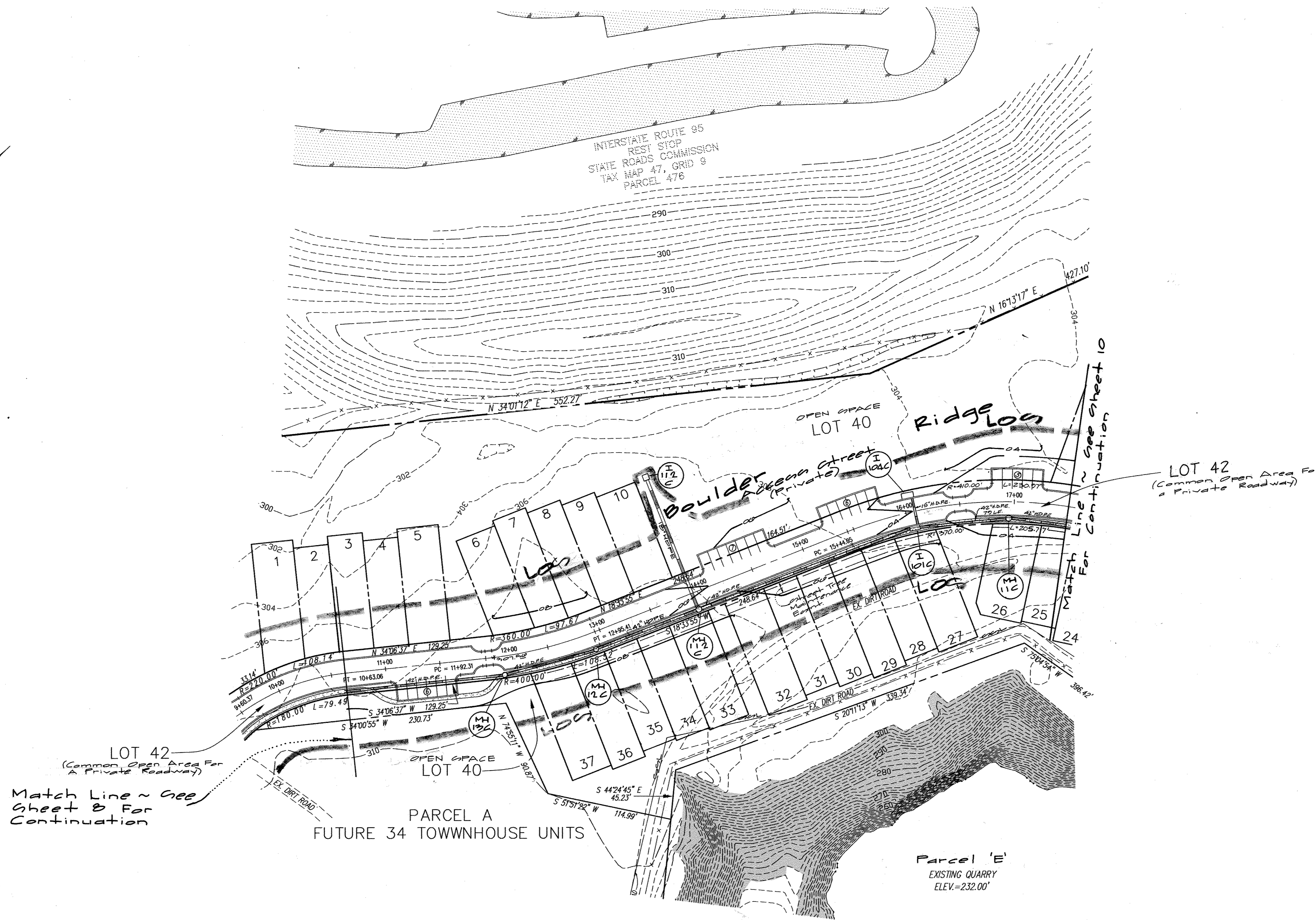
GRADING PLAN
STONE LAKE
PARCELS 'A' THRU 'E'
LOTS 1 THRU 44
LIBER 572 FOLIO 430

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP - GRID	SHEET
October 2001	47 - 9/10	8 OF 40

E. 1,256,000
N. 336,700



N. 572,550
E. 1,357,200



LOT 42
(Common Open Area For
A Private Roadway)
Match Line ~ See
Sheet B For
Continuation

LOT 42
(Common Open Area For
A Private Roadway)
See Sheet 10
Match Line For
Continuation

PARCEL A
FUTURE 34 TOWNHOUSE UNITS

Parcel 'E'
EXISTING QUARRY
ELEV.=232.00'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways *N/A* Date _____
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development *Cristy Hamada* 2/14/02 Date
Chief, Development Engineering Division *AM* Date

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
Professional Engineer Seal: G. SCOTT SHANABERGER, SHANABERGER & LANE

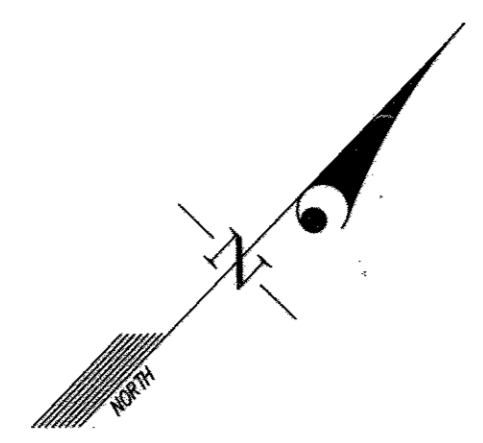
GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

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
STONE LAKE
PARCELS 'A' THRU 'E'
LOTS 1 THRU 44
LIBER 572 FOLIO 430
ELECTION DISTRICT No. 6
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP - GRID	SHEET
October 2001	47 - 9/10	9 OF 40



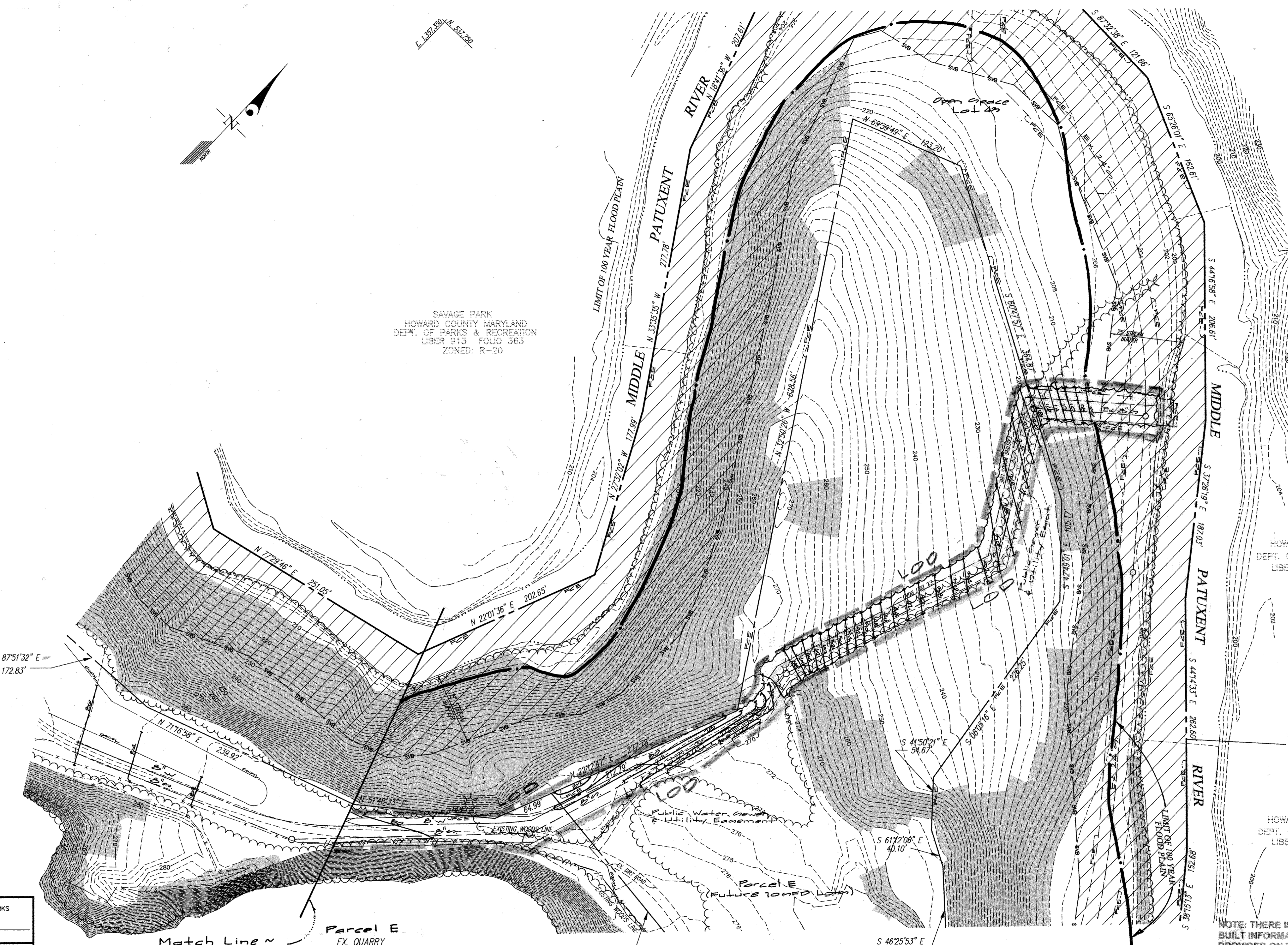
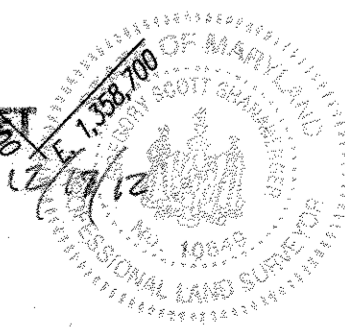
SAVAGE PARK
 HOWARD COUNTY MARYLAND
 DEPT. OF PARKS & RECREATION
 LIBER 913 FOLIO 363
 ZONED: R-20

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

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

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

SCOTT SHANABERGER
 SHANABERGER & LANE



Match Line ~
 See Sheet 10 For
 Continuation

Parcel E
 EX. QUARRY
 ELEV.=232.00

S 83°07'41" E
 194.97'

S 46°25'53" E
 164.74'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways N/A Date _____
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development Cindy Hamada 2/14/02
 Chief, Development Engineering Division [Signature] Date _____

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 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

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
 PARCELS 'A' THRU 'E'
 LOTS 1 THRU 44
 LIBER 572 FOLIO 430

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP - GRID	SHEET
Feb., 2001	47- 9/10	11 OF 40

DESIGN	DATE	REVISION	BY	APP'R.

ELECTION DISTRICT No. 6

HOWARD COUNTY, MARYLAND

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.

Michael J. Troppa 12/20/01
 Signature of Developer/Builder Date

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. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District.

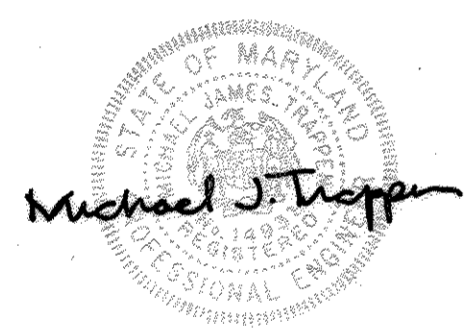
Michael J. Troppa 12/20/01
 Engineer's Signature Date

These Plans, erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Michael J. Troppa 12/20/02
 Howard Soil Conservation District Date

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

Michael J. Troppa 12/20/02
 Natural Resources Conservation Service Date



Stone/Rip Rap Outlet Sediment Trap #1*
 Before Development DA = 4.50 Ac
 After Development DA = 0.10 Ac

Storage Requirements
 Temp GWM = 21,275 c.f.
 Sediment Control = 14,500 c.f.
 Storage Provided = 25,000 c.f.
 Top of Dam Elev. = 202.00
 Bottom Elev. = 201.00
 Cleanout Elev. = 202.40
 Wet Volume Elev. = 203.40
 Dry Volume Elev. = 205.17
 Temp GWM Elev. = 205.04
 Weir Crest Elev. = 200.00
 Before Development Q₂ = 4.4 cfs
 After Development Q₂ = 14.5 cfs
 Managed Q₂ = 2.34 cfs

*Ex. Trap #1 was constructed under F-01-125

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development *Condy Hammon* 12/14/02 Date

Chief, Development Engineering Division *Mr* Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20886
 TEL: 301-421-4024 FAX: 301-421-4198

THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
 L 3245 F 2514

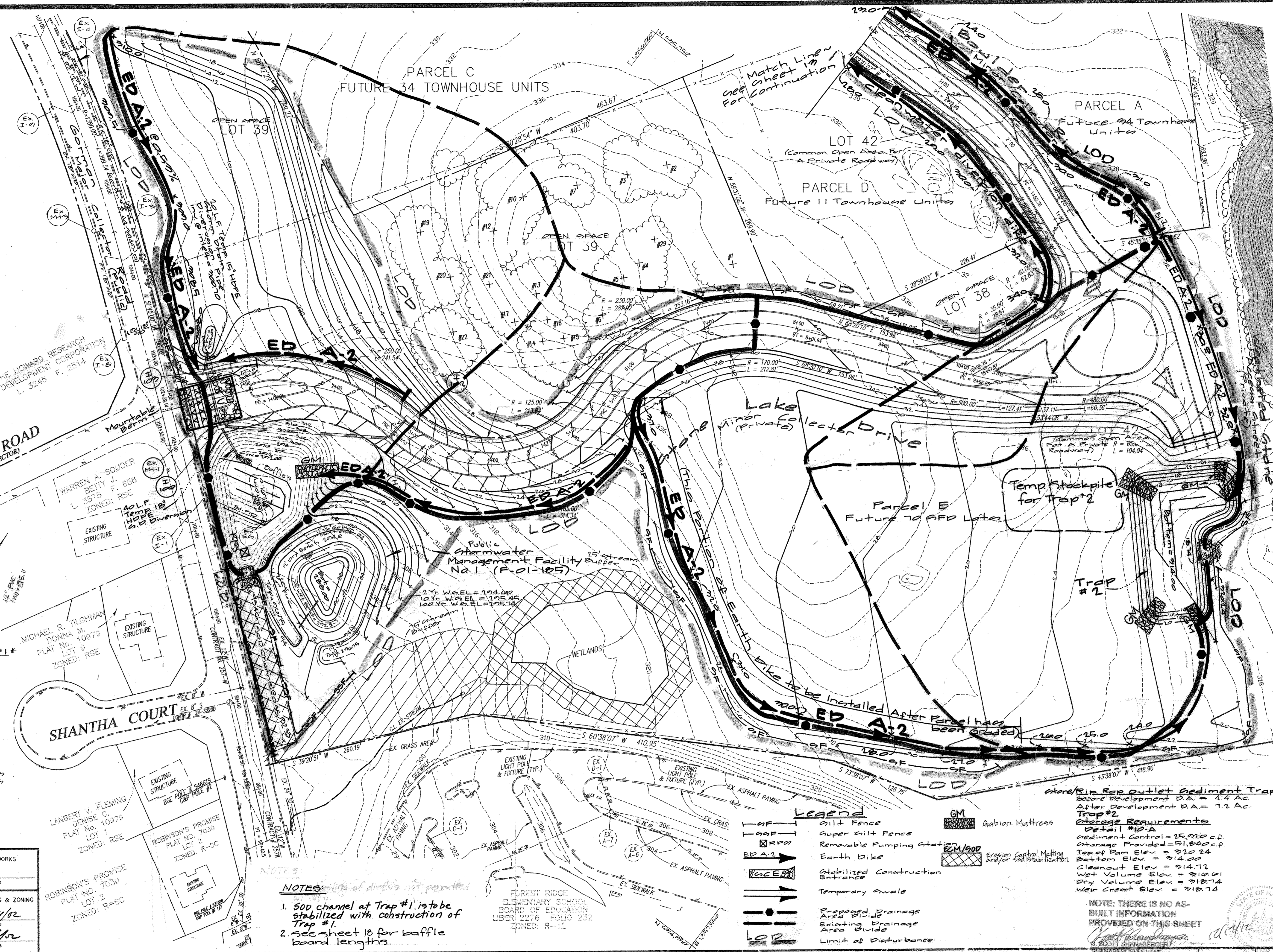
MICHAEL R. TILGHMAN
 DONNA M. PLATT No. 10979
 LOT 9 ZONED: R-SE

LANBERT V. FLEMING
 DENISE C. PLATT No. 10979
 LOT 1 ZONED: R-SE

ROBINSON'S PROMISE
 PLAT No. 7030
 ZONED: R-SC

ROBINSON'S PROMISE
 PLAT No. 7030
 ZONED: R-SC

**PARCEL C
 FUTURE 34 TOWNHOUSE UNITS**



- NOTES:**
- 500 channel at Trap #1 is to be stabilized with construction of Trap #1.
 - See sheet 18 for baffle board lengths.

LEGEND

- Gilt Fence
- Super Gilt Fence
- RPPS Removable Pumping Station
- EDA#2 Earth Dike
- VCC#2 Stabilized Construction Entrance
- Temporary Swale
- Proposed Drainage Area Divide
- Existing Drainage Area Divide
- Limit of Disturbance
- GM Gabion Mattress
- ECM/500 Erosion Control Matting and/or Sed. Stabilization

Stone/Rip Rap Outlet Sediment Trap #2-IV
 Before Development DA = 4.4 Ac
 After Development DA = 7.2 Ac

Trap #2 Storage Requirements
 Detail #10-A
 Sediment Control = 25,020 c.f.
 Storage Provided = 51,800 c.f.
 Top of Dam Elev. = 210.24
 Bottom Elev. = 214.00
 Cleanout Elev. = 214.72
 Wet Volume Elev. = 216.01
 Dry Volume Elev. = 218.74
 Weir Crest Elev. = 218.74

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

Scott Shanaberger
 SCOTT SHANABERGER

PREPARED FOR:
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 10275 LIT. C PATUXENT PARKWAY
 CC144BA, MD 21044
 PH. 410-992-5089
 ATTN: Mr. BOB JENKINS

**Stone Lake
 PARCELS 'A' THRU 'E'
 LOTS 1 THRU 44**

DATE	TAX MAP - GRID	SHEET
October, 2001	47 - 9/10	12 OF 40

INTERSTATE ROUTE 95
RES' STOP
STATE ROADS COMMISSION
TAX MAP 47, GRID 9, PARCEL 476

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.

Michael J. Trapp 4/30/01
Engineer's Signature Date

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.

Signature of Developer/Builder Date

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

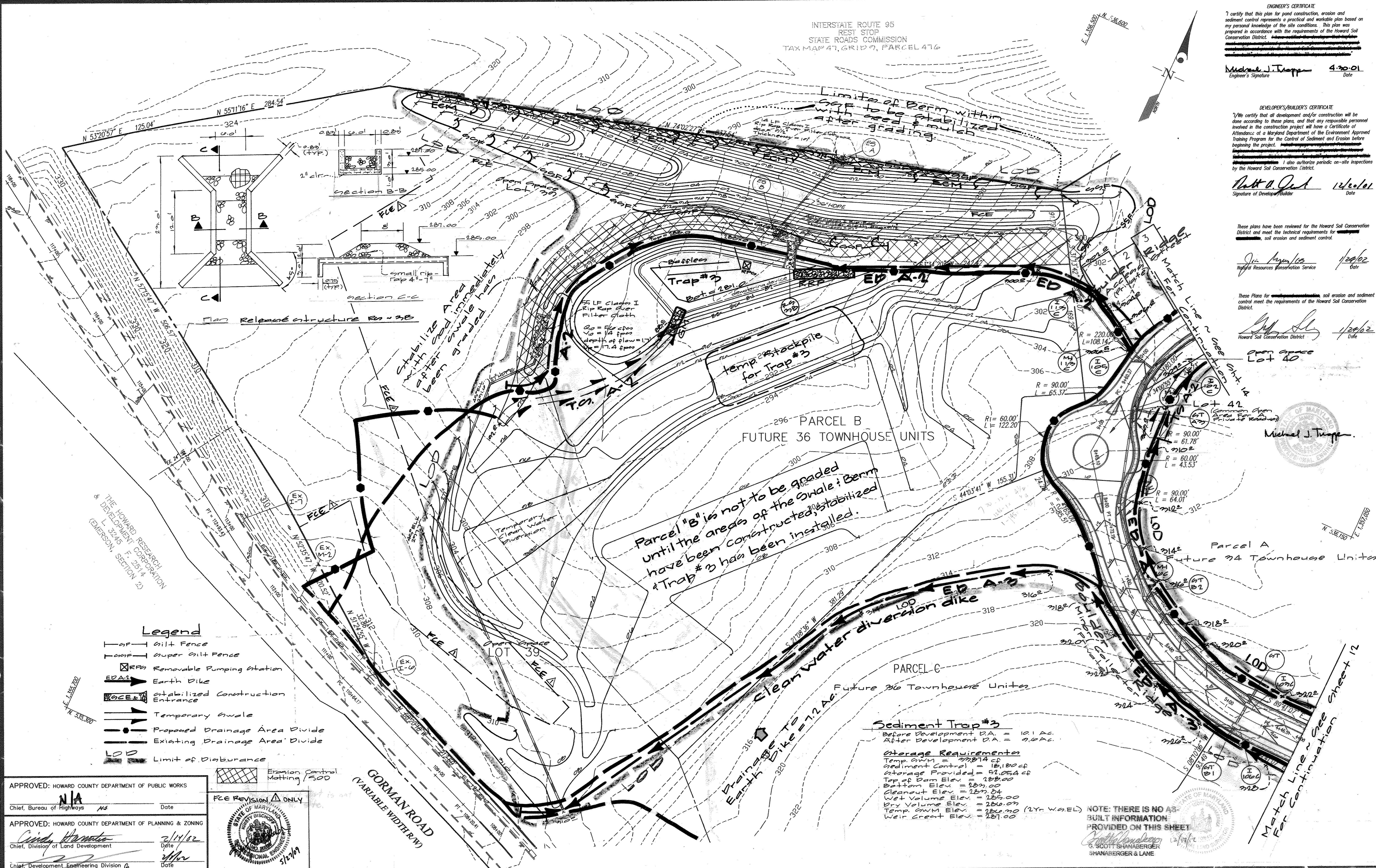
Signature of Natural Resources Conservation Service Date

These Plans for erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Signature of Howard Soil Conservation District Date

Open Space Lot 40

Signature of Michael J. Trapp



- Legend**
- Gilt Fence
 - Super Gilt Fence
 - ⊠ Removable Pumping Station
 - Earth Dike
 - Stabilized Construction Entrance
 - Temporary Swale
 - Proposed Drainage Area Divide
 - Existing Drainage Area Divide
 - Limit of Disturbance
 - Erosion Control Matting (500)

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton
Chief, Division of Land Development
Date

Chief, Development Engineering Division
Date

FCE REVISION ONLY
STATE OF MARYLAND
BUREAU OF ENGINEERING
5/21/01

Sediment Trap #3
Before Development D.A. = 101 Ac.
After Development D.A. = 9.92 Ac.

Storage Requirements
Temp. GWM = 22,874 cf
Sediment Control = 18,100 cf
Storage Provided = 57,054 cf
Top of Dam Elev. = 280.00
Bottom Elev. = 280.00
Clearout Elev. = 280.00
Wet Volume Elev. = 285.00
Dry Volume Elev. = 280.00
Temp. GWM Elev. = 280.00 (2Yr. W.O.E.L.)
Weir Crest Elev. = 281.00

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
SCOTT SHANBERGER & LANE

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3809 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20886
TEL: 301-421-4024 BALT. 410-980-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

5-21-01 FCE REVISION (SHEETS 8, 13 & 44 ONLY)	DMW	BY	APPR.
DATE	REVISION	BY	APPR.

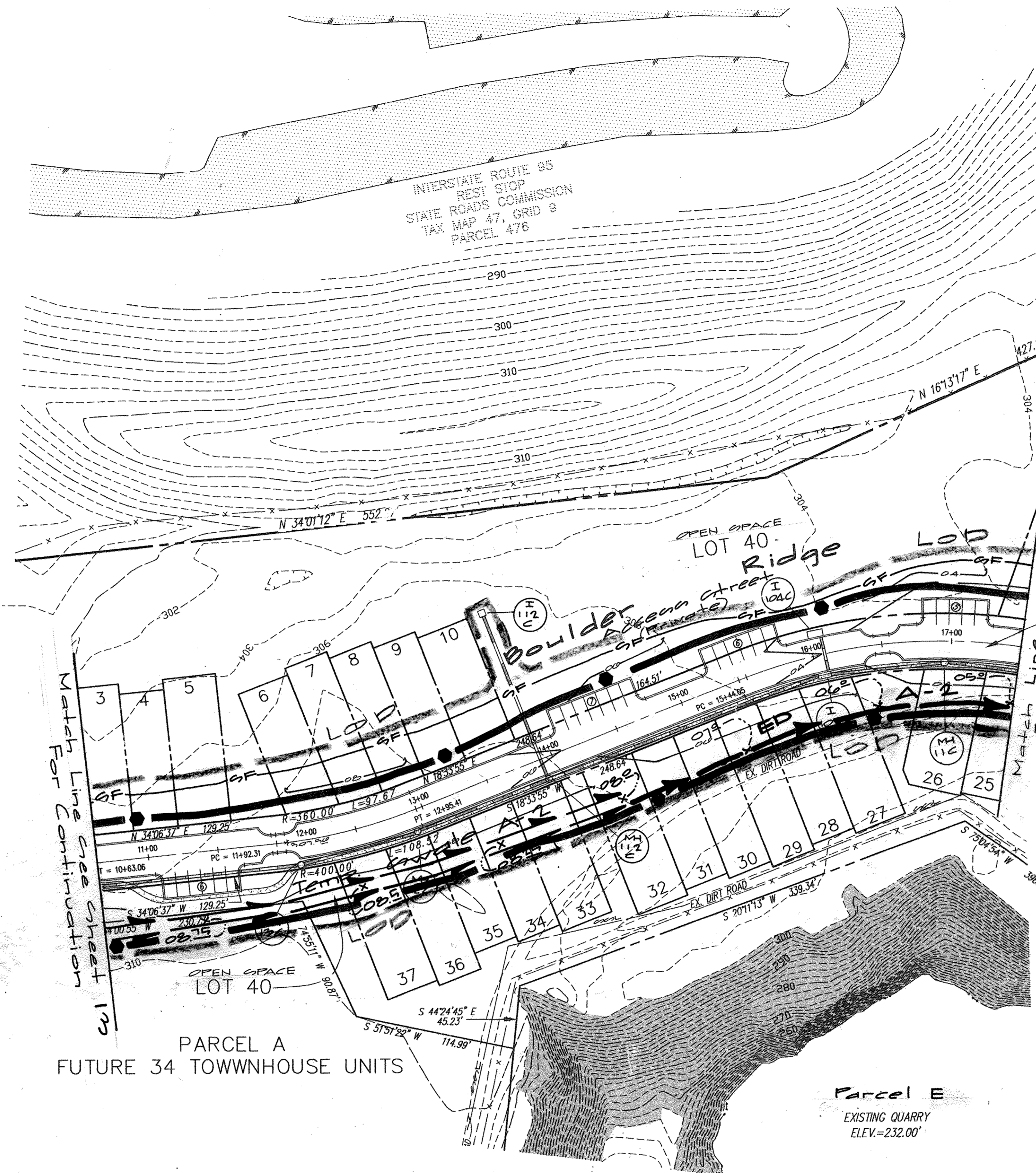
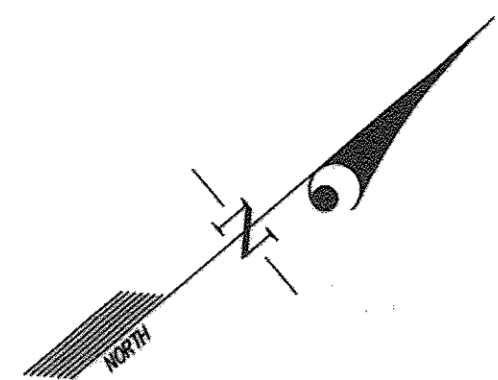
PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUENT PARKWAY
COLUMBIA, MD 21044
PH: 410-992-6089
ATTN: MR. BOB JENNINS

Erosion Control Plan
STONE LAKE
PARCELS 'A' THRU 'E'
LOTS 1 THRU 44
ELECTION DISTRICT No. 6

SCALE 1"=50'	ZONING R-ED	G. L. W. FILE NO. 99140
DATE October 2001	TAX MAP - GRID 47 - 9/10	SHEET 17 OF 40

F-01-177

C. 1,386,000
N. 535,200



N. 535,200
E. 1,387,200

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 also authorize periodic on-site inspections by the Howard Soil Conservation District.

Scott A. Paul
 Signature of Developer/Builder
 Date

ENGINEER'S CERTIFICATE
 I certify that this plan for ~~sediment~~ 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.

Michael J. Treppner
 Engineer's Signature
 Date

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



Michael J. Treppner
 Howard Soil Conservation District
 Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for ~~sediment~~ soil erosion and sediment control.

Jin Kim
 Natural Resources Conservation Service
 Date

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
G. Scott Shanaberger
 G. SCOTT SHANABERGER
 SHANABERGER & LANE

- Legend**
- Gilt Fence
 - Earth Dike
 - Temporary Swale
 - Proposed Drainage Area Divide
 - Limit of Disturbance

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
N/A
 Chief, Bureau of Highways
 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chris Hanrahan
 Chief, Division of Land Development
 Date 2/1/02

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

DATE	REVISION	BY	APPR.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MD 21044
 PH: 410-992-0089
 ATTN: MR. BOB JEHKINS

Sediment Control Plan
STONE LAKE
 PARCELS 'S' 'A' THRU 'E'
 LOTS 1 THRU 44
 LIBER 572 FOLIO 430
 ELECTION DISTRICT No. 6

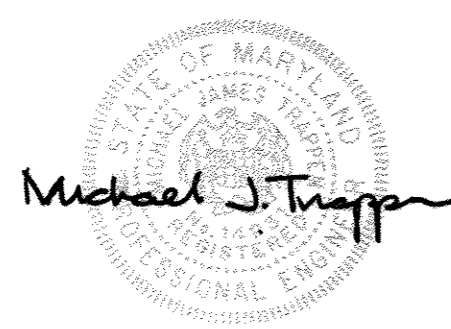
SCALE	ZONING	G. L. W. P.F. No.
1"=50'	R-ED	99140
DATE	TAX MAP - GRID	SHEET
October 2001	47 - 9/10	14 OF 40

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 person 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.

Matt A. Oak 1/20/01
 Signature of Developer/Builder Date

ENGINEER'S CERTIFICATE
 I certify that this plan for ~~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.

Michael J. Tripp 4/20/01
 Engineer's Signature Date



- Legend**
- GFI — Gilt Fence
 - LOD — Limit of Disturbance
 - GGF — Super Gilt Fence
 - ▣ SBD Straw Bale Dike

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

John S. ... 1/20/02
 Howard Soil Conservation District Date

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

Jim Myers/CS 1/20/02
 Natural Resources/Conservation Service Date

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

NOTE FOR OUTFALL:
 The Contractor shall not expose more trench for utility construction than that which can be installed and backfilled the same day. Stockpile excavation materials on the uphill side of the trench as appropriate.

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

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

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
Scott Shanaberger
 G. SCOTT SHANABERGER
 SHANABERGER & LANE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
N/A
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamrick 2/11/02
 Chief, Division of Land Development Date

[Signature] 2/11/02
 Chief, Development Engineering Division Date

Match Line - See sheet 15 For Continuation

Parcel E
 EX. QUARRY
 ELEV. = 232.00

GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20886
 TEL: 301-421-4024 FAX: 301-421-4115

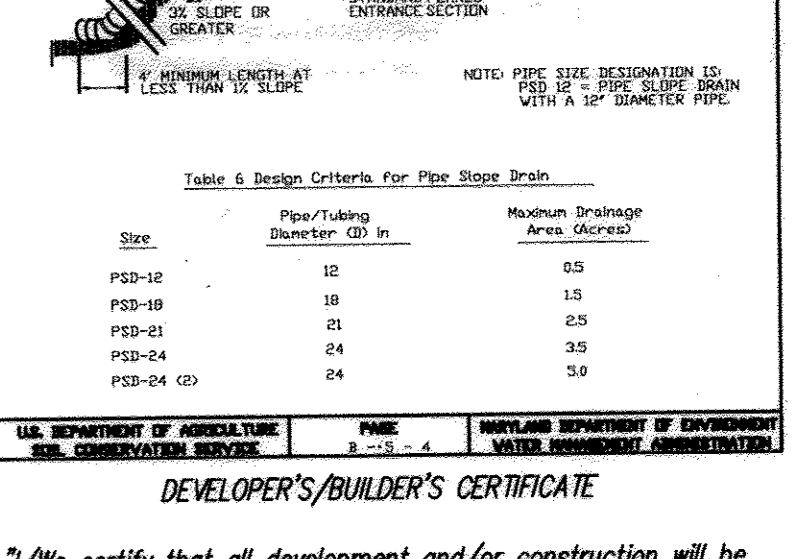
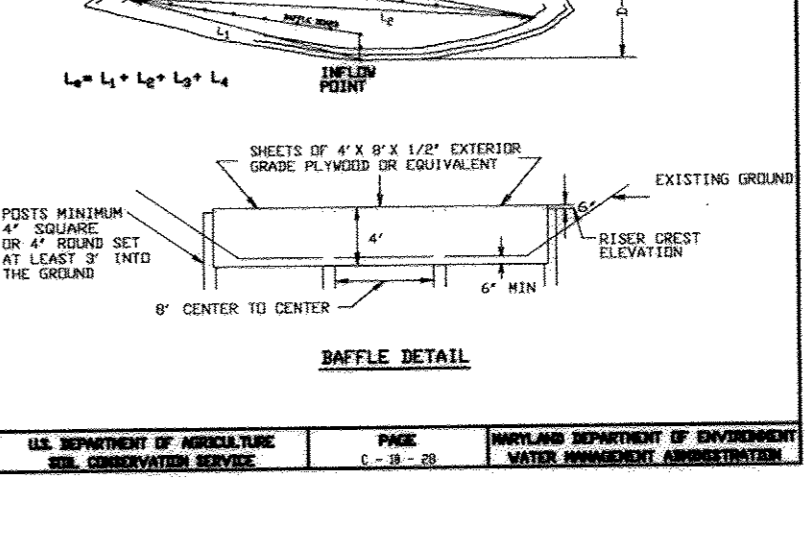
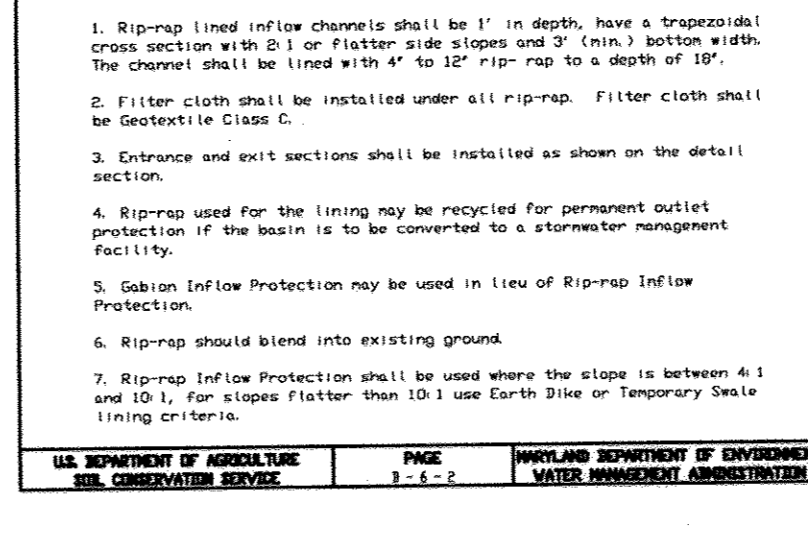
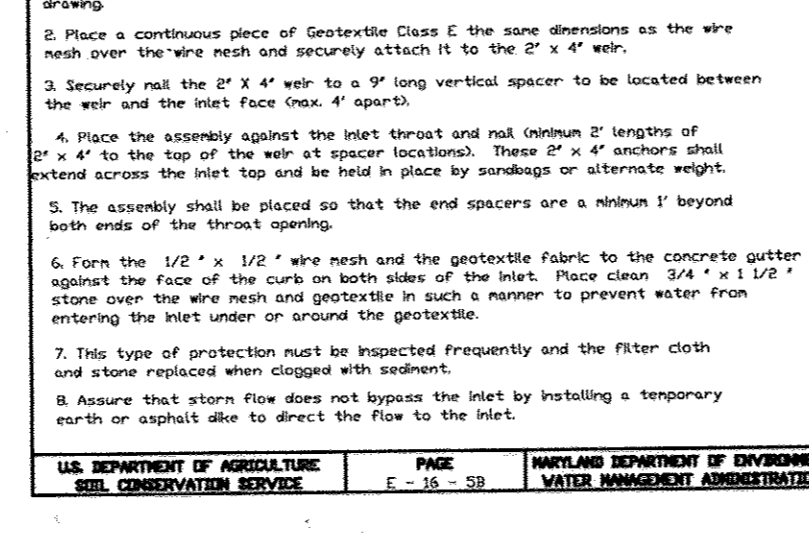
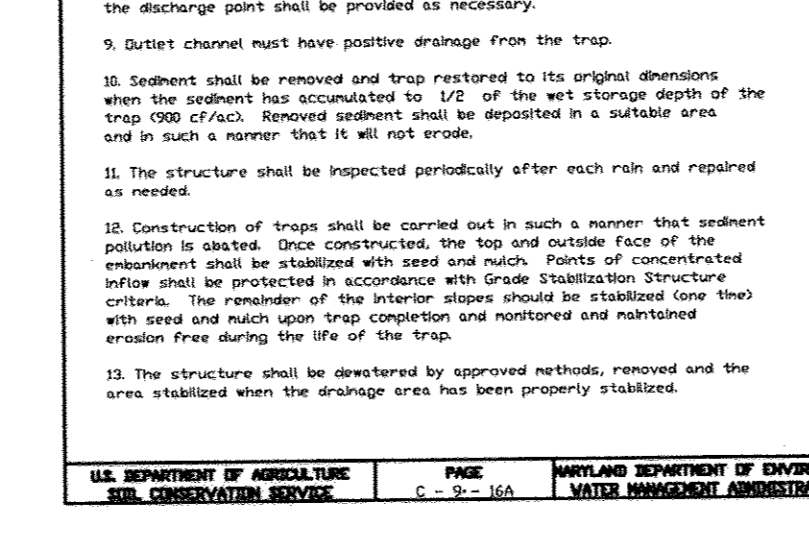
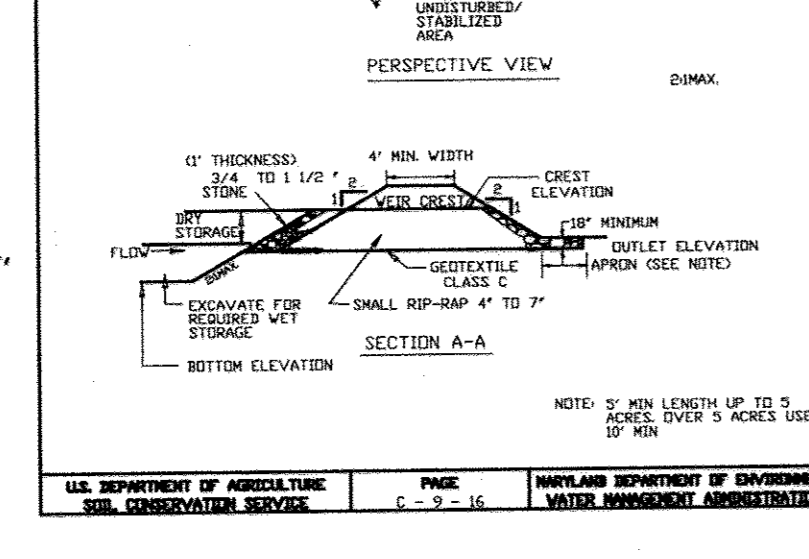
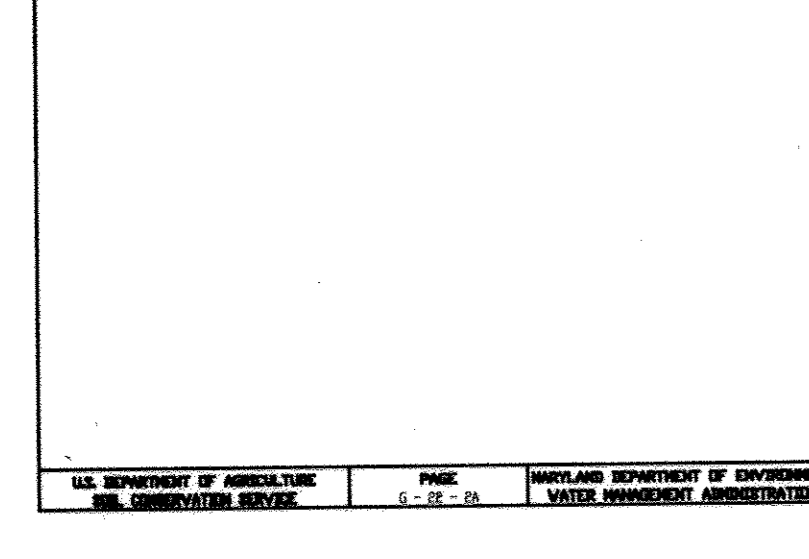
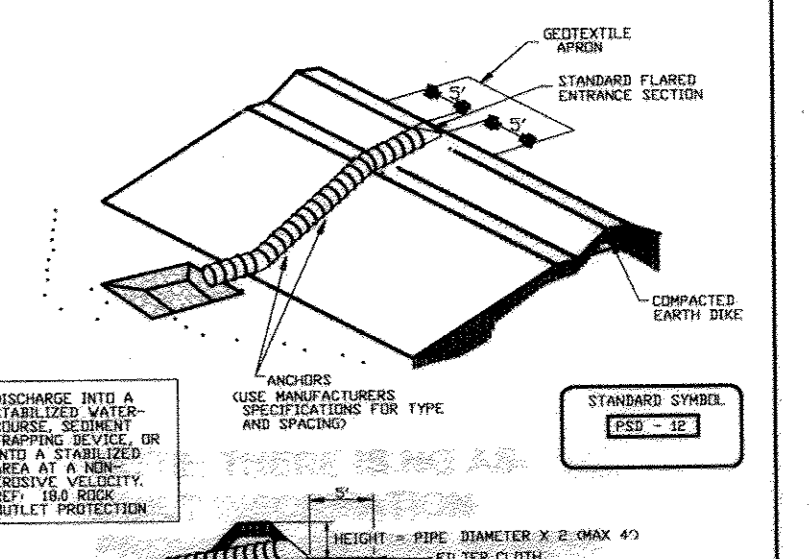
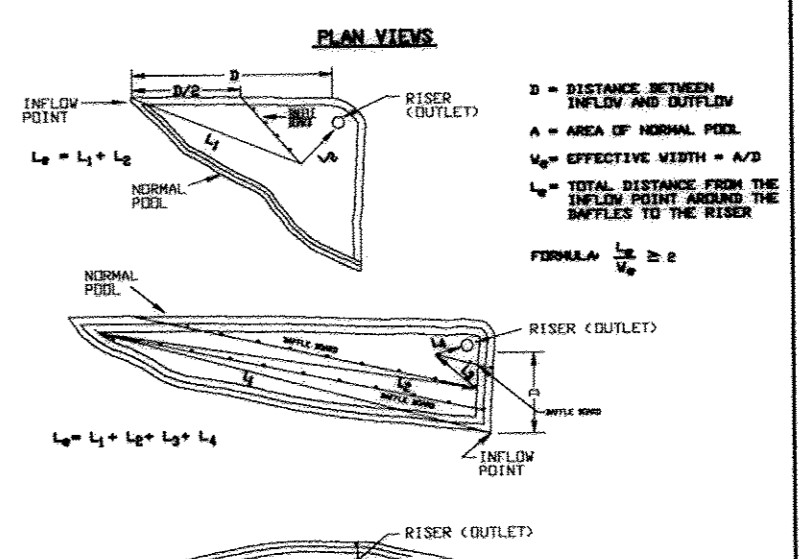
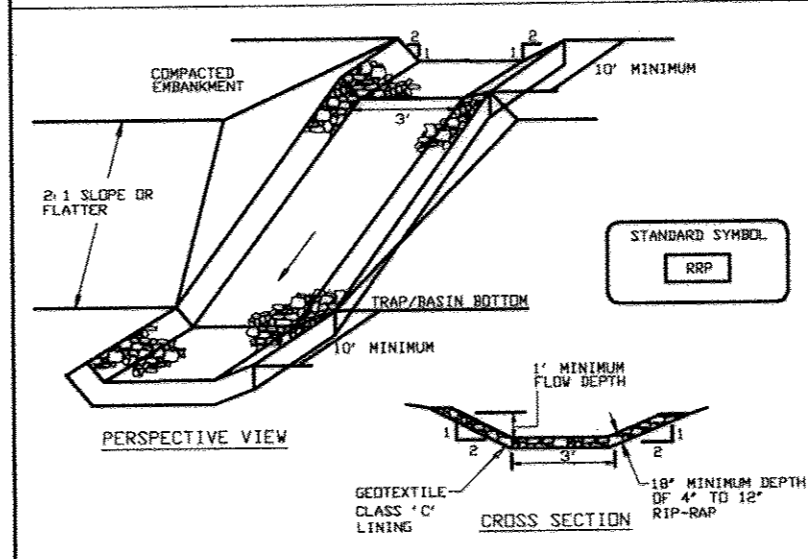
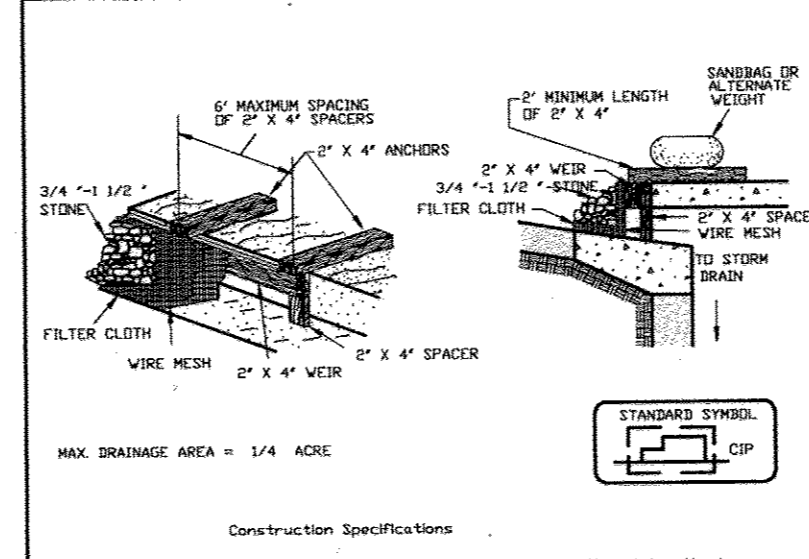
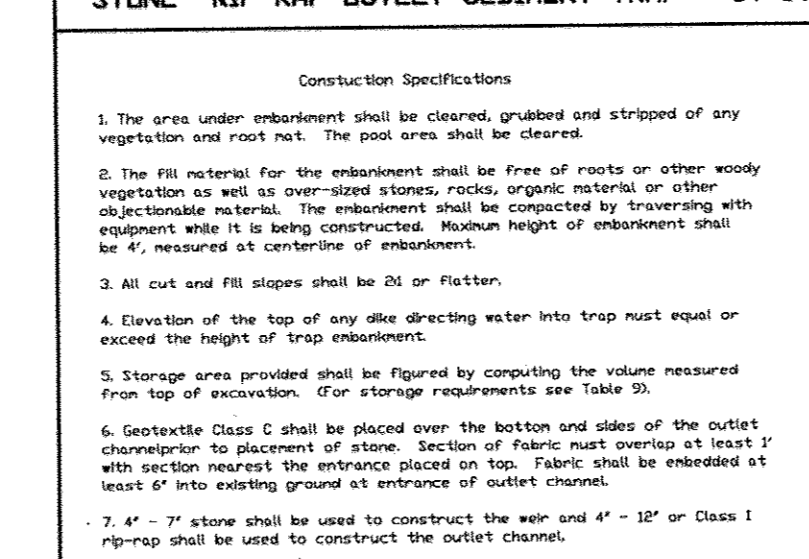
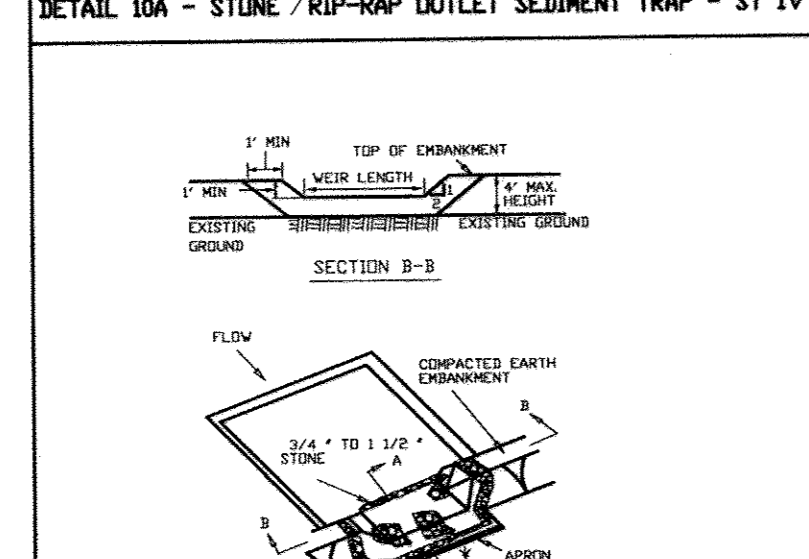
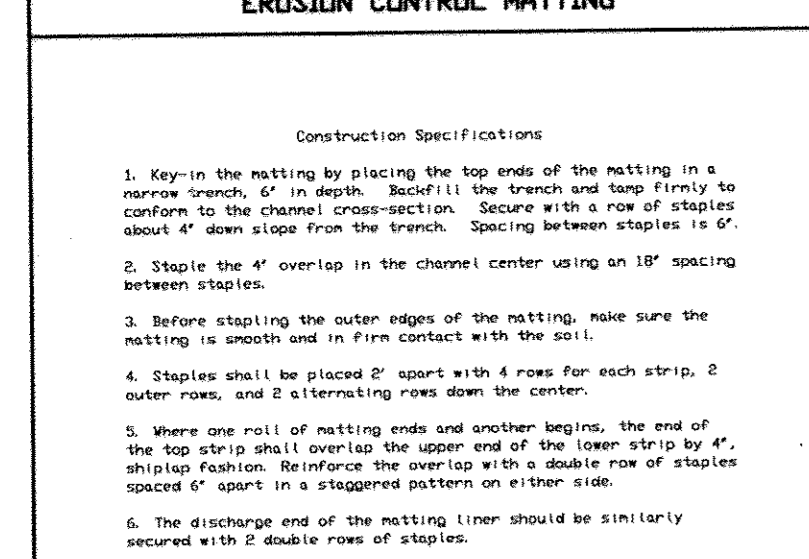
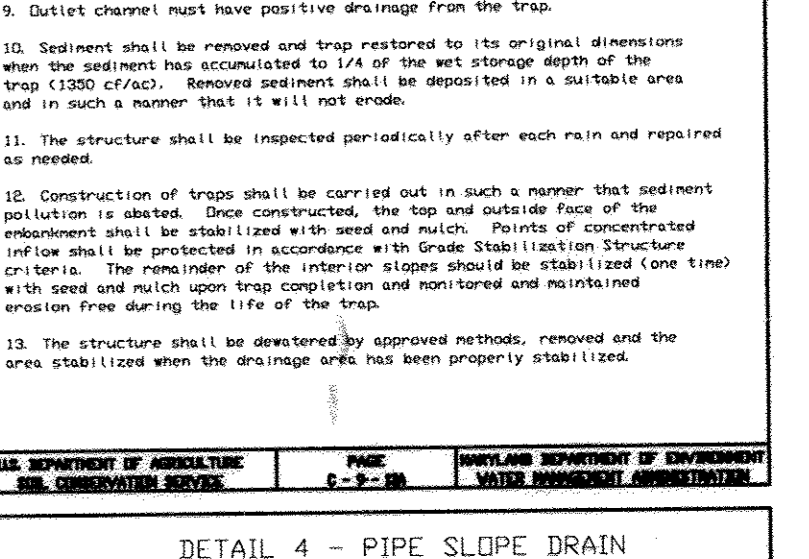
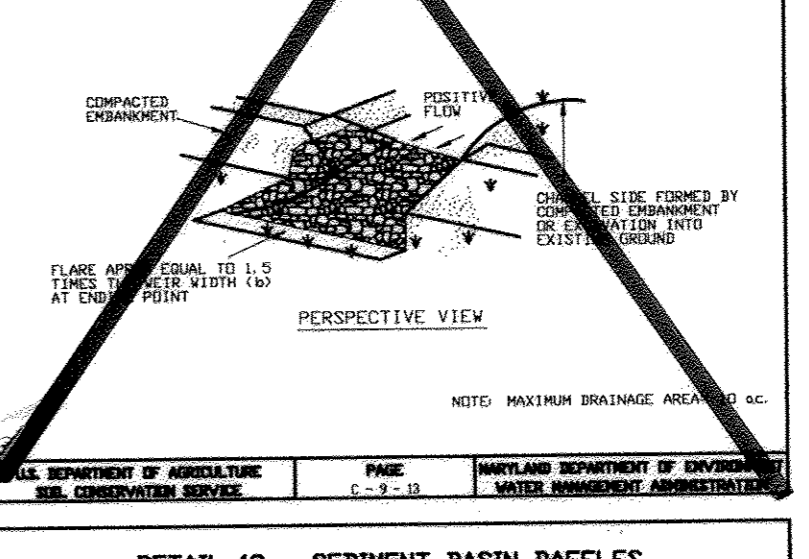
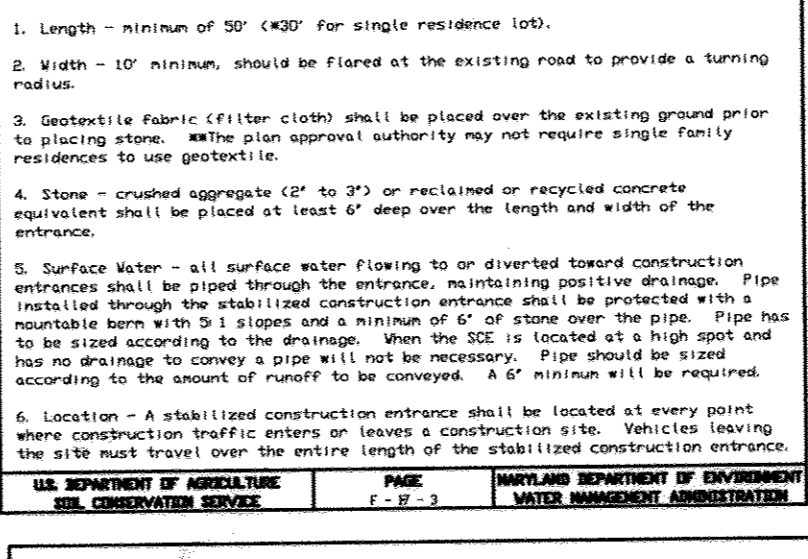
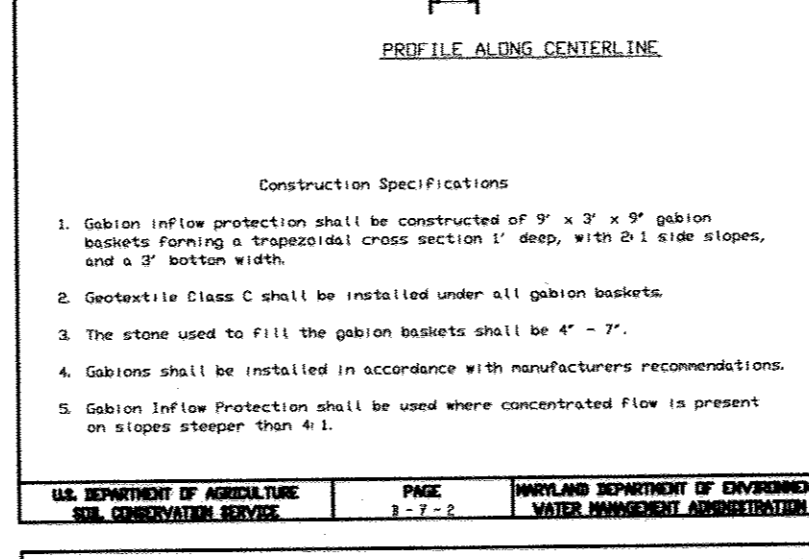
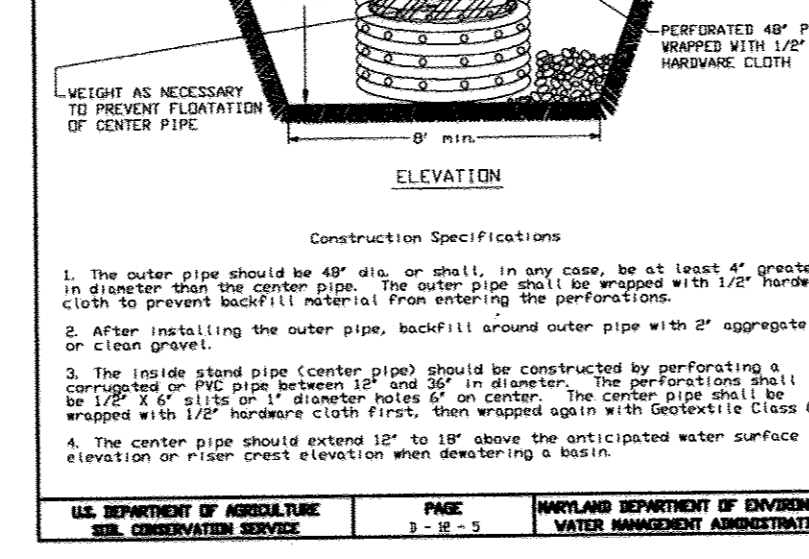
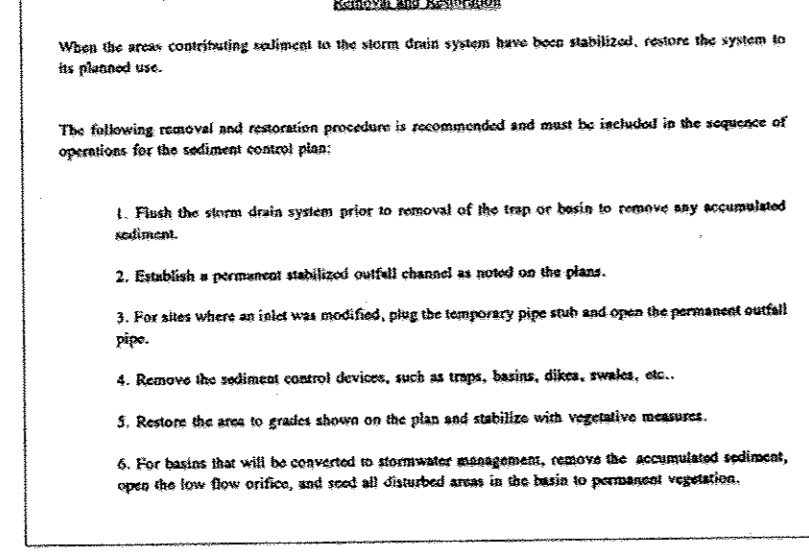
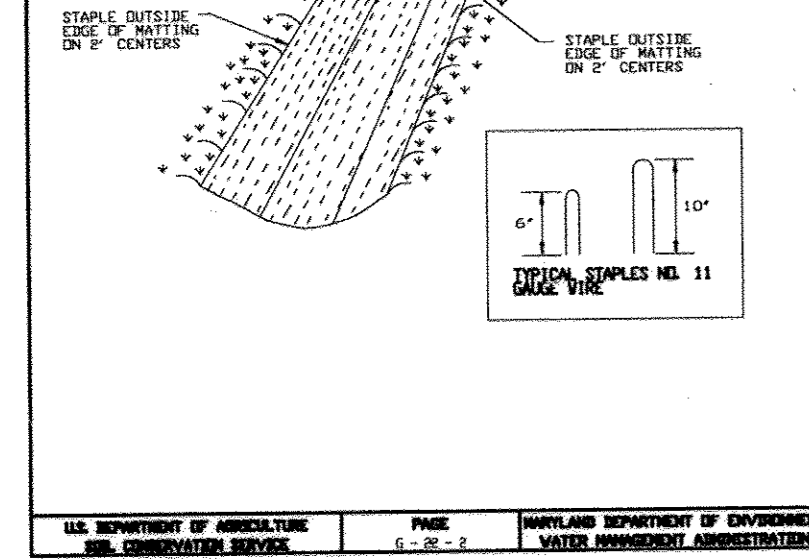
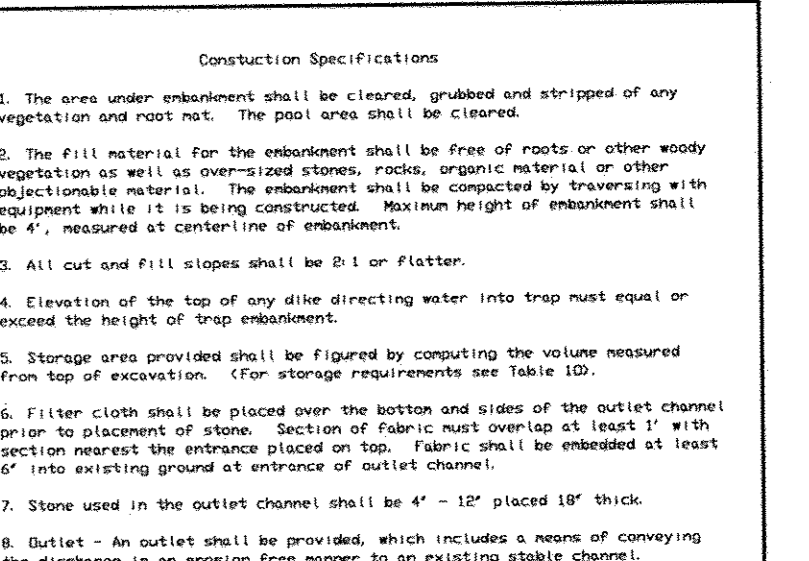
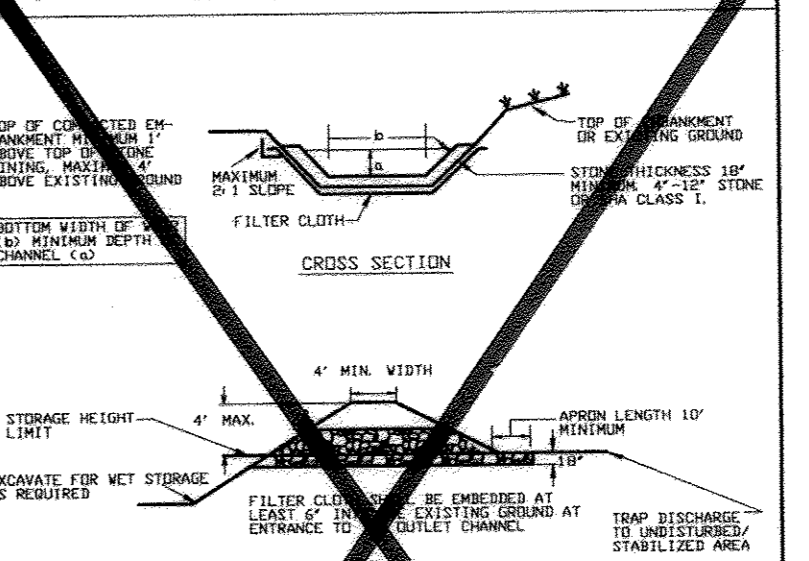
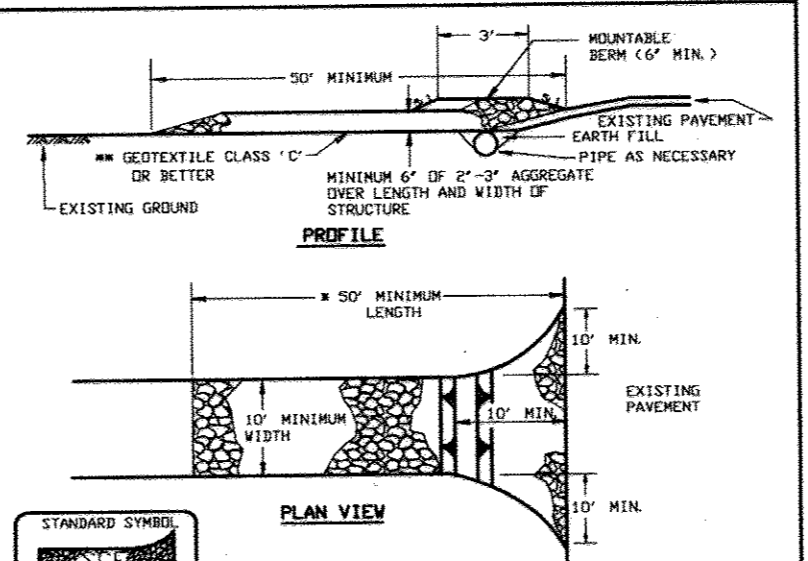
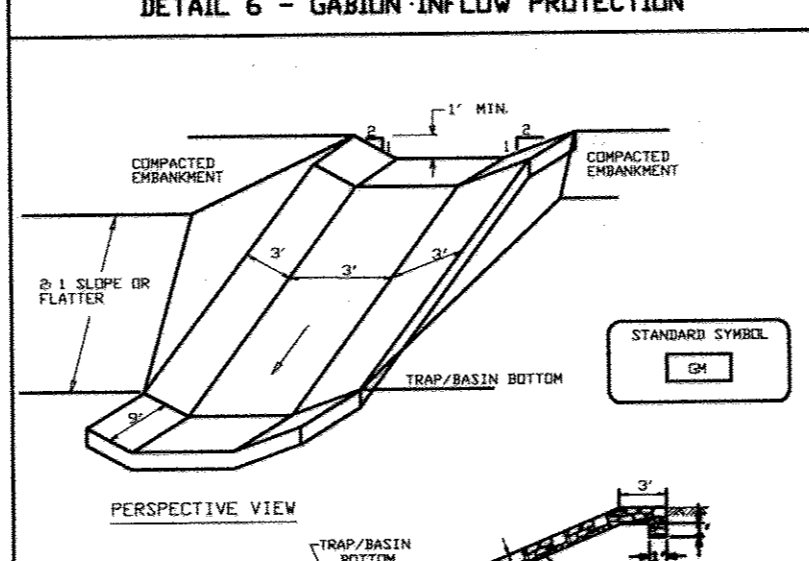
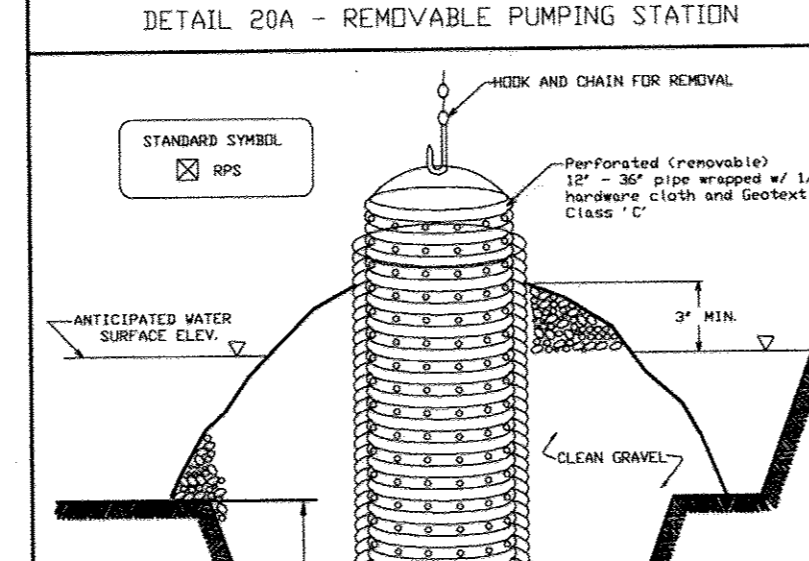
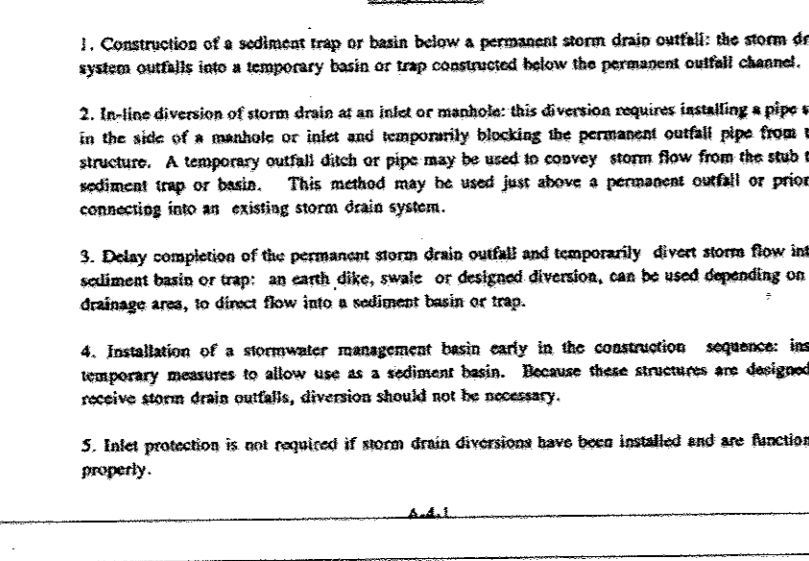
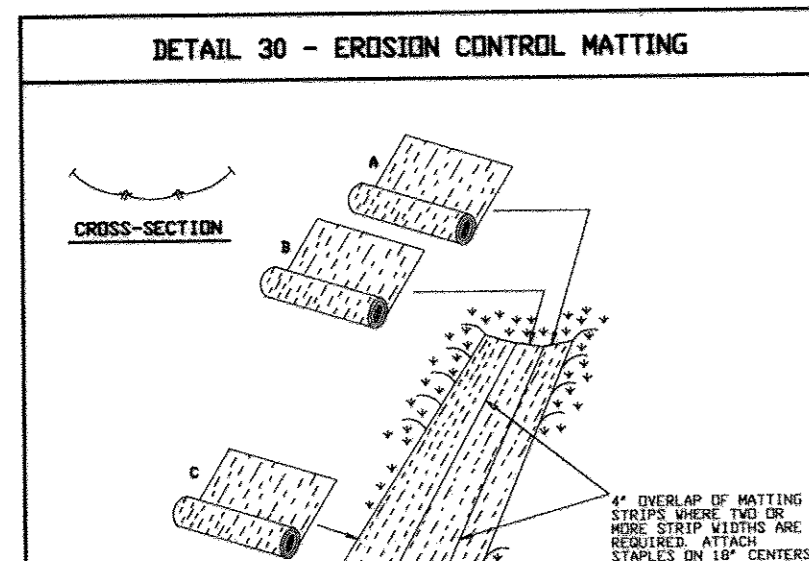
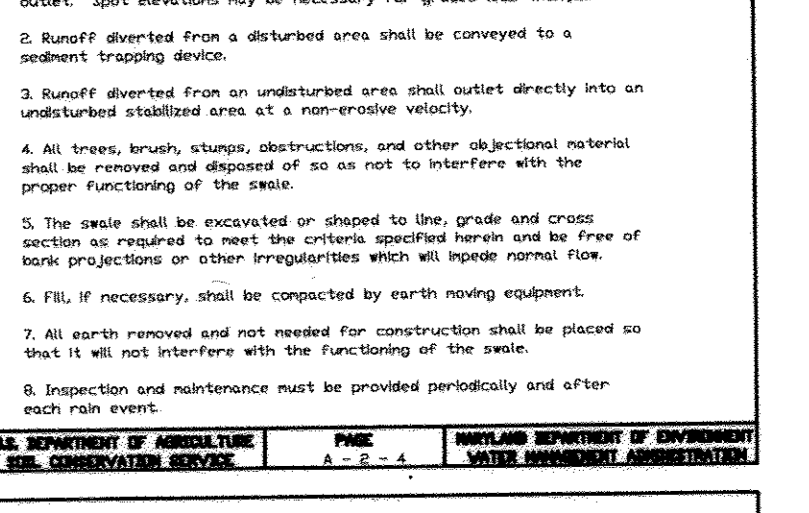
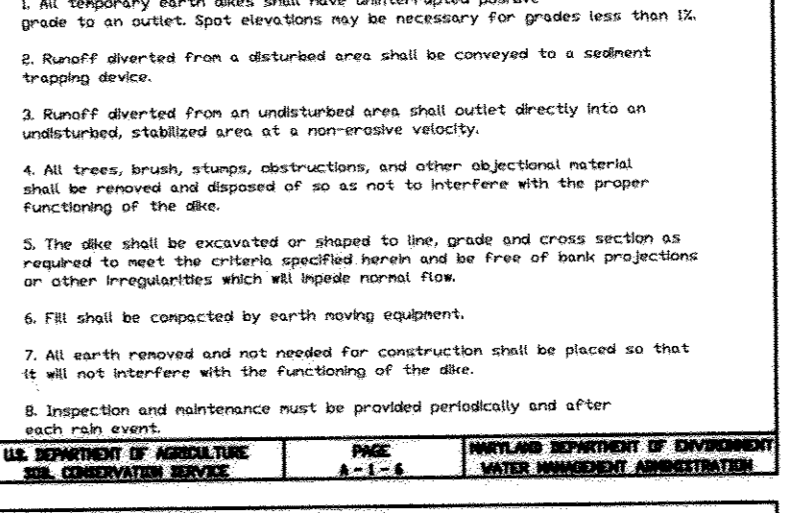
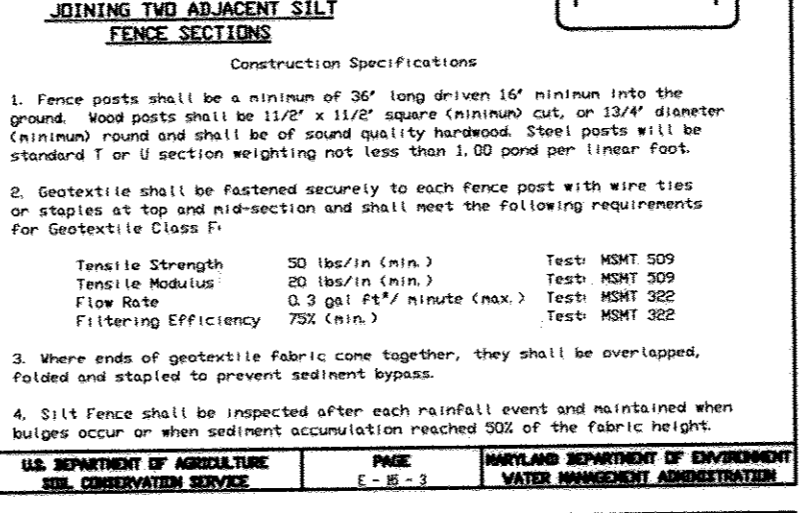
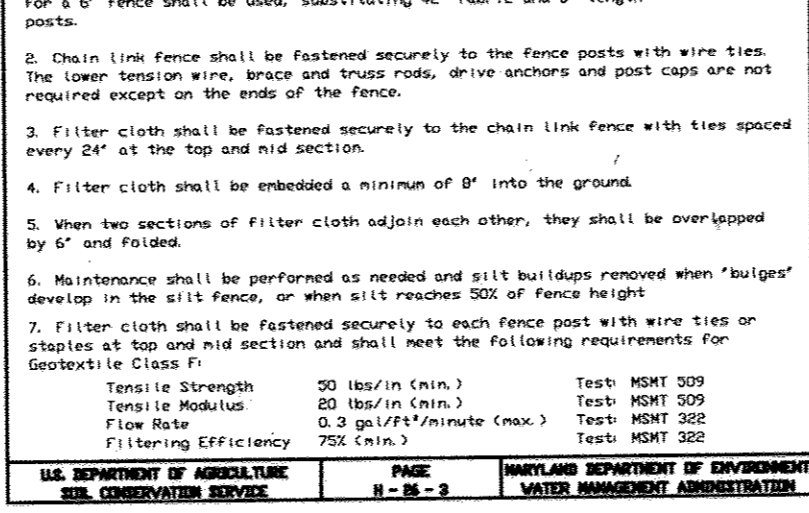
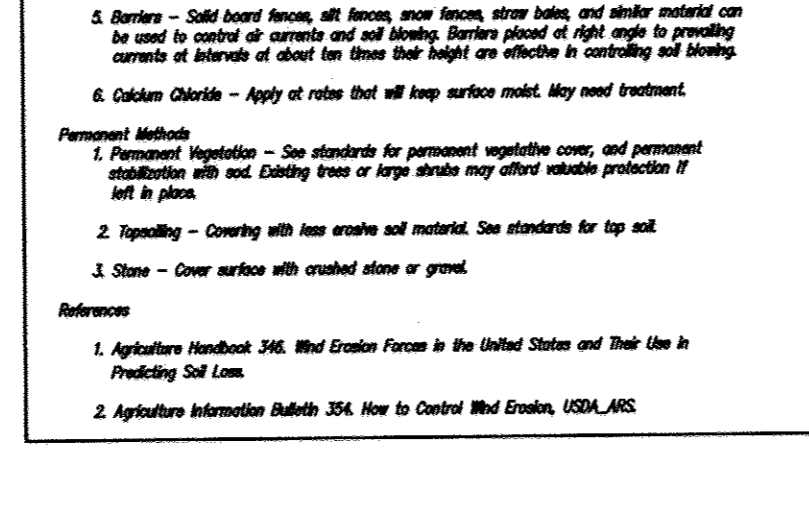
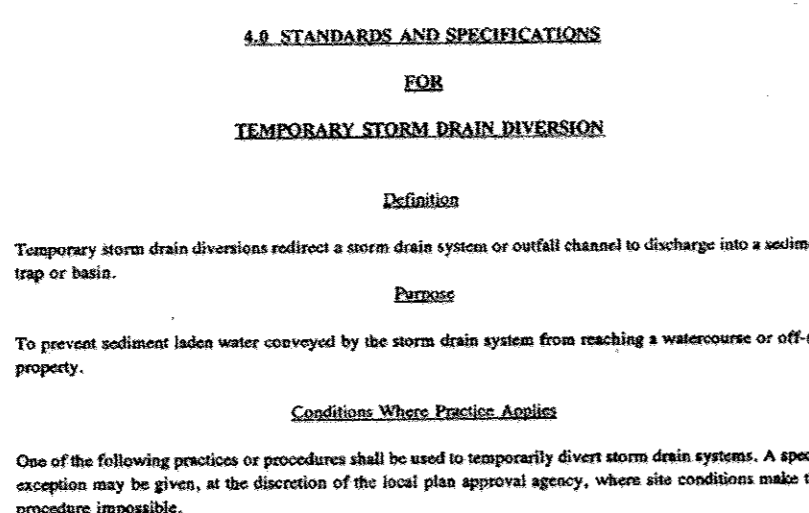
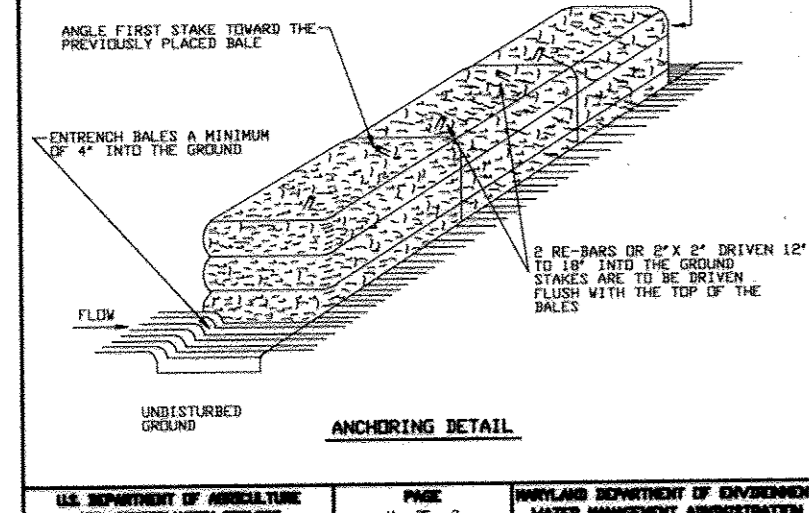
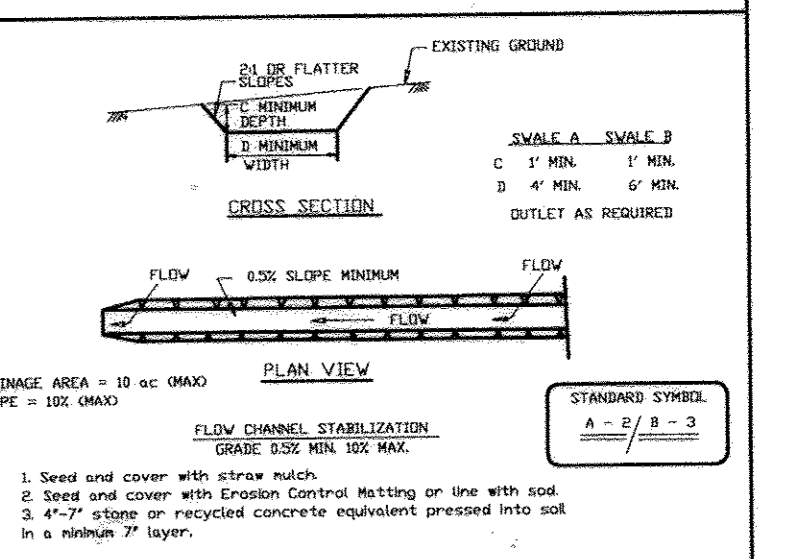
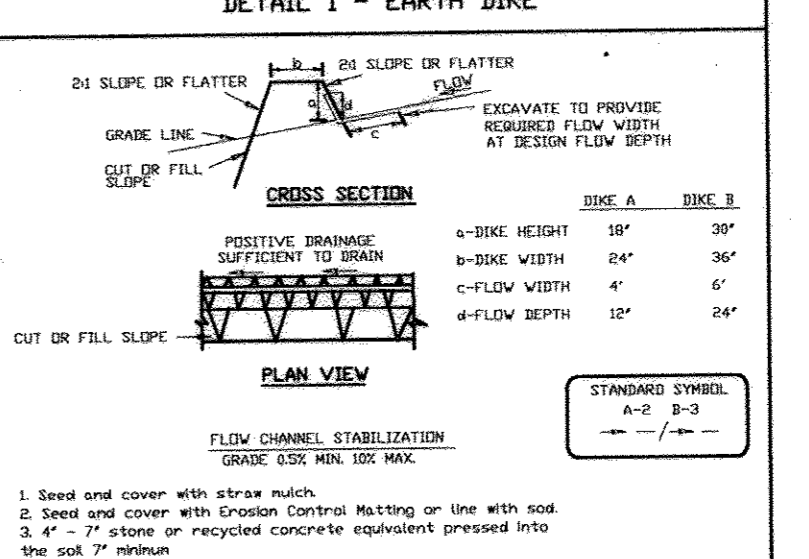
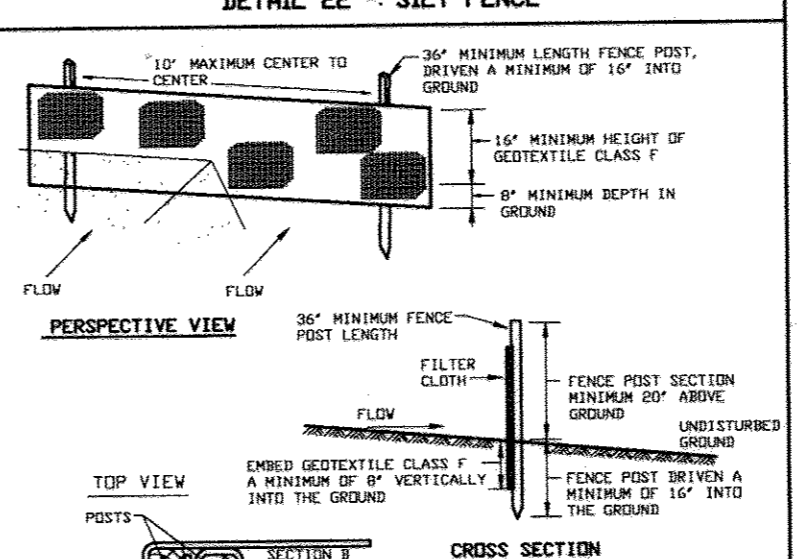
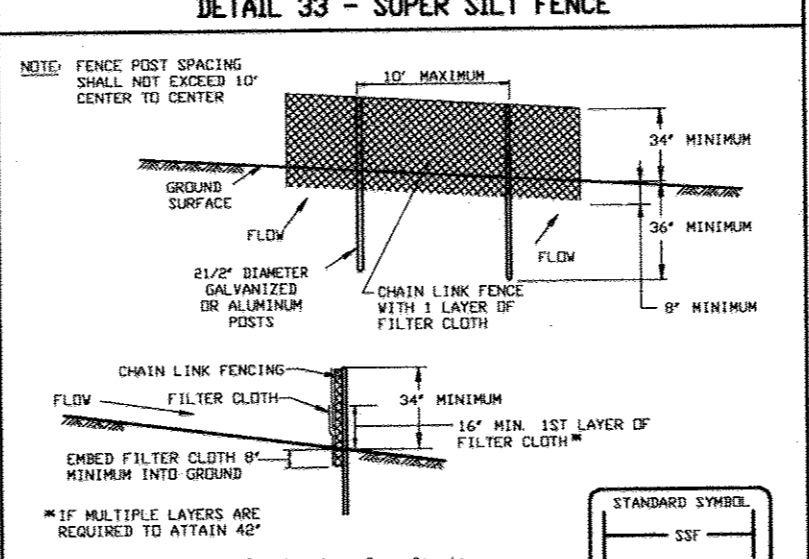
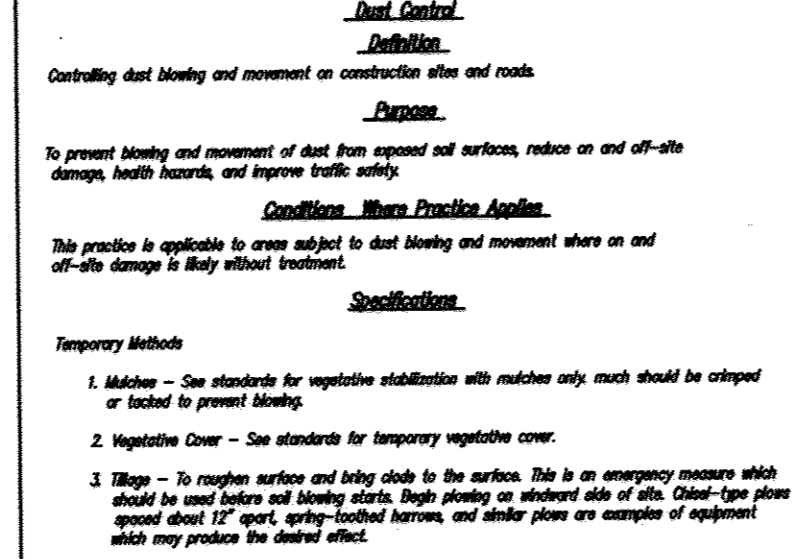
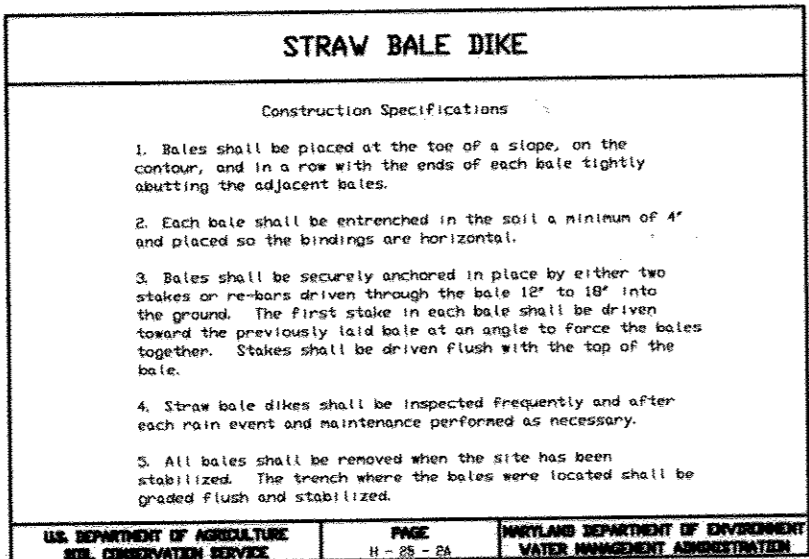
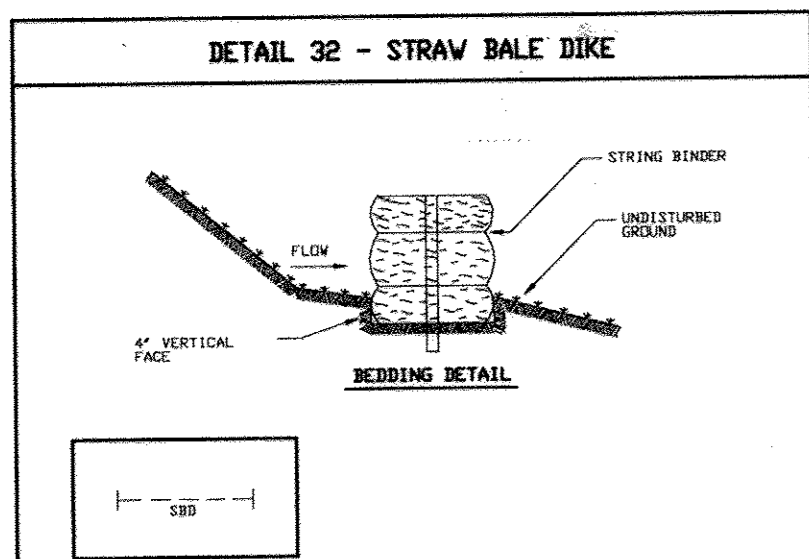
DATE	REVISION	BY	APPR.

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-OUTFALL AREA
STONE LAKE
 PARCELS 'A' THRU 'E'
 LOTS 1 THRU 44
 LIBER 572 FOLIO 430
 ELECTION DISTRICT No. 6

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP - GRID	SHEET
Oct, 2001	47- 9/10	16 OF 40

HOWARD COUNTY, MARYLAND



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

Chief, Development Engineering Division
 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development
 Date

Chief, Development Engineering Division
 Date

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

SCOTT SHANBERGER
 SHANBERGER & LANE

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

Signature: [Signature]
 Date: 1/26/01

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

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GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 220 - BURTNSVILLE OFFICE PARK
 BURTNSVILLE, MARYLAND 20866
 TEL: 301-421-4024 FAX: 410-880-1820 DC/WA: 301-989-2524 FAX: 301-421-4188

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DATE	TAX MAP - GRID	SHEET
Oct., 2001	47 - 9/10	17 OF 40

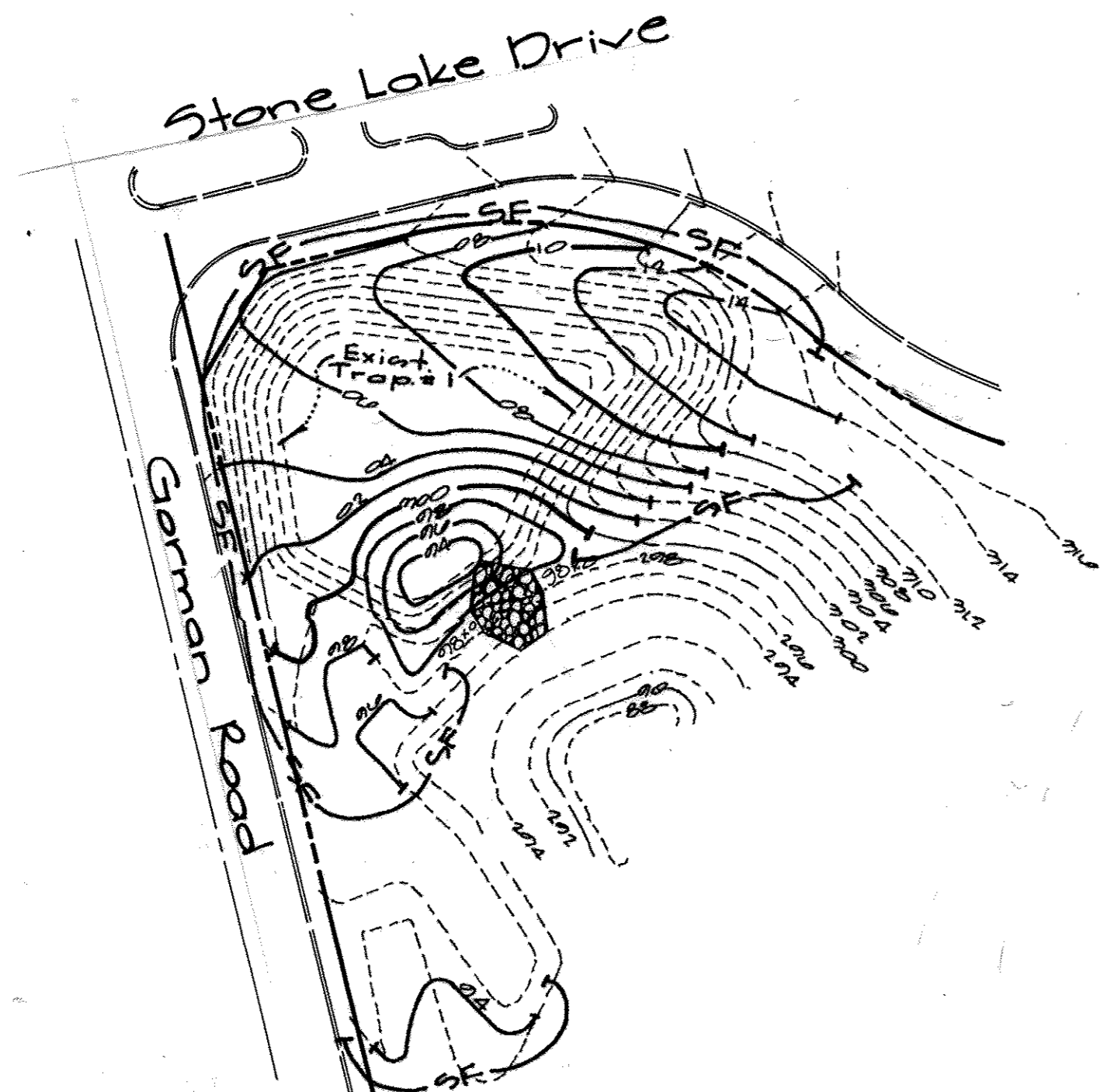
PREPARED FOR:
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 10275 LITTLE PATUEN PARKWAY
 COLUMBIA, MD 21044
 PH: 410-992-6027
 ATTN: MR. AL EDWARDS

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 COLUMBIA, MD 21044
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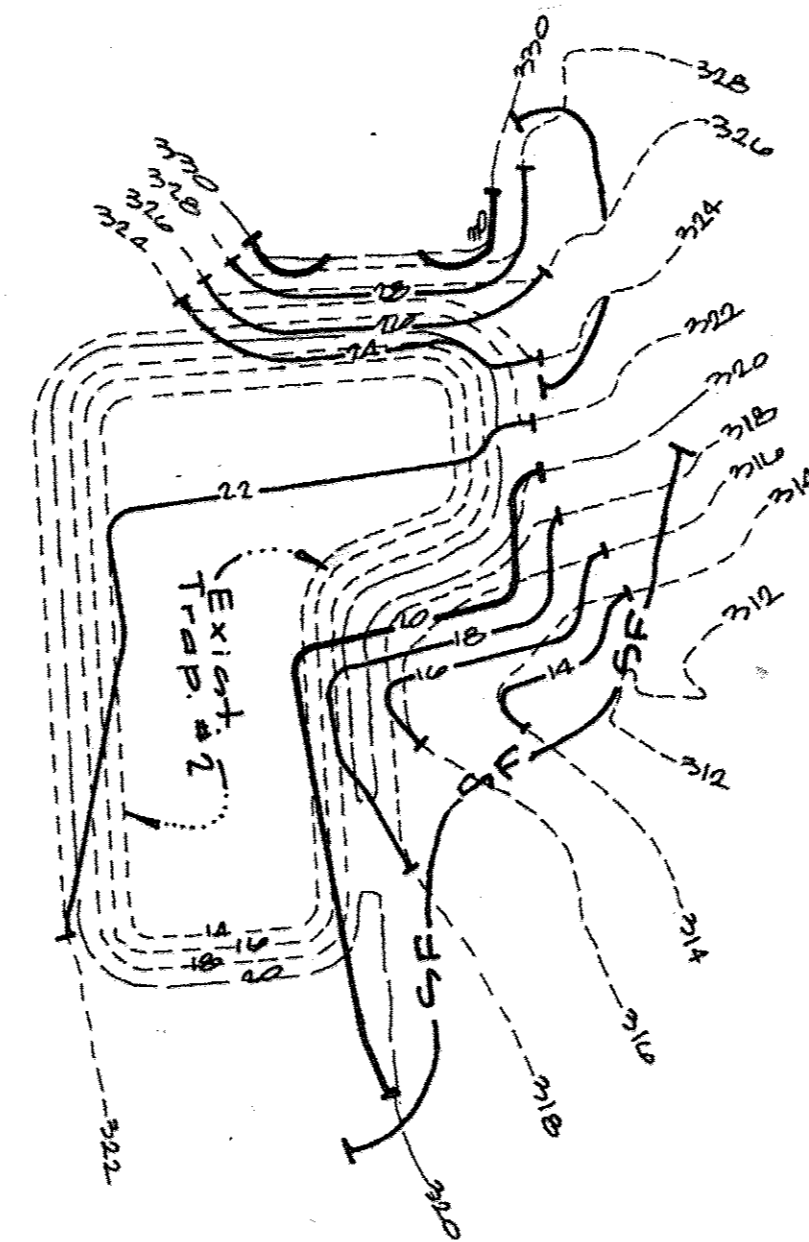
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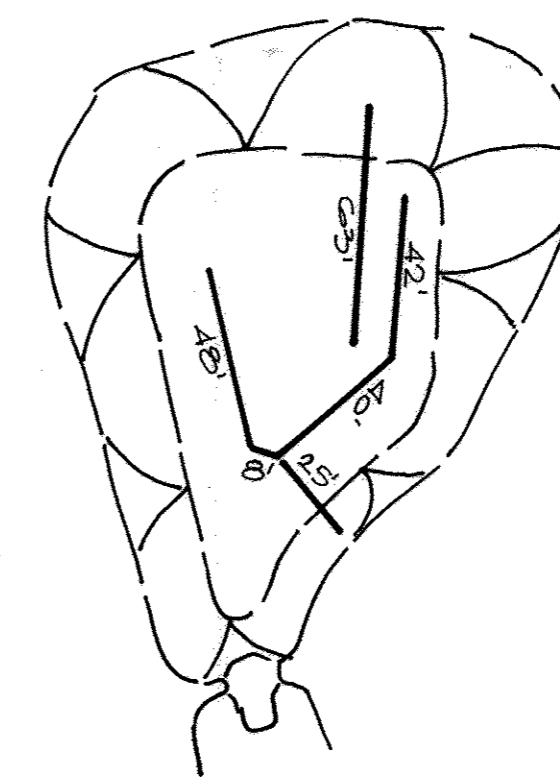
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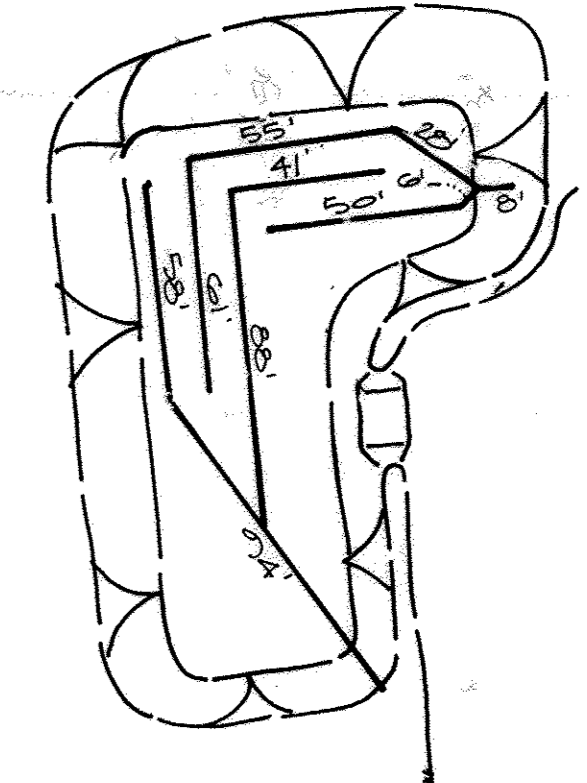
Trap Restoration Detail ~ Trap #1
Scale: 1" = 50'



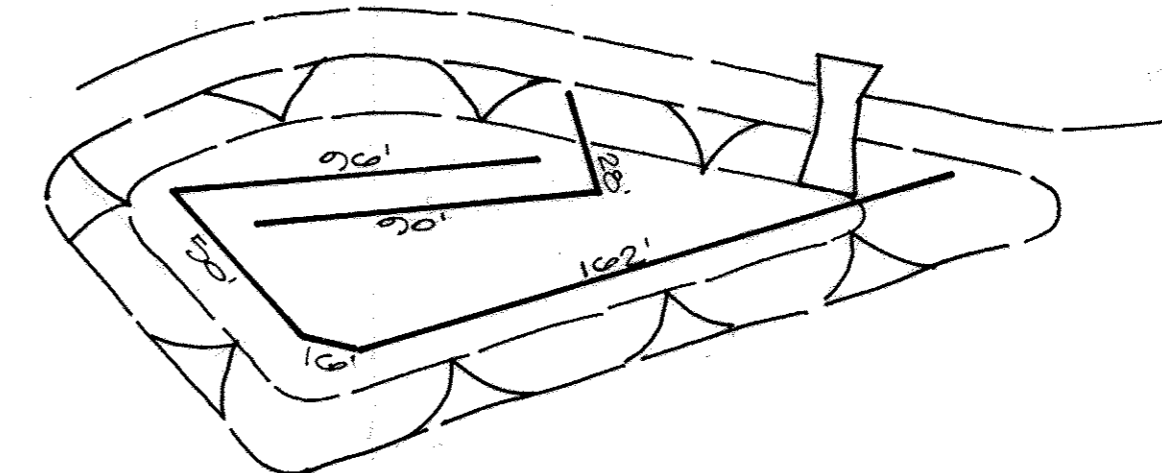
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Scale: 1" = 50'



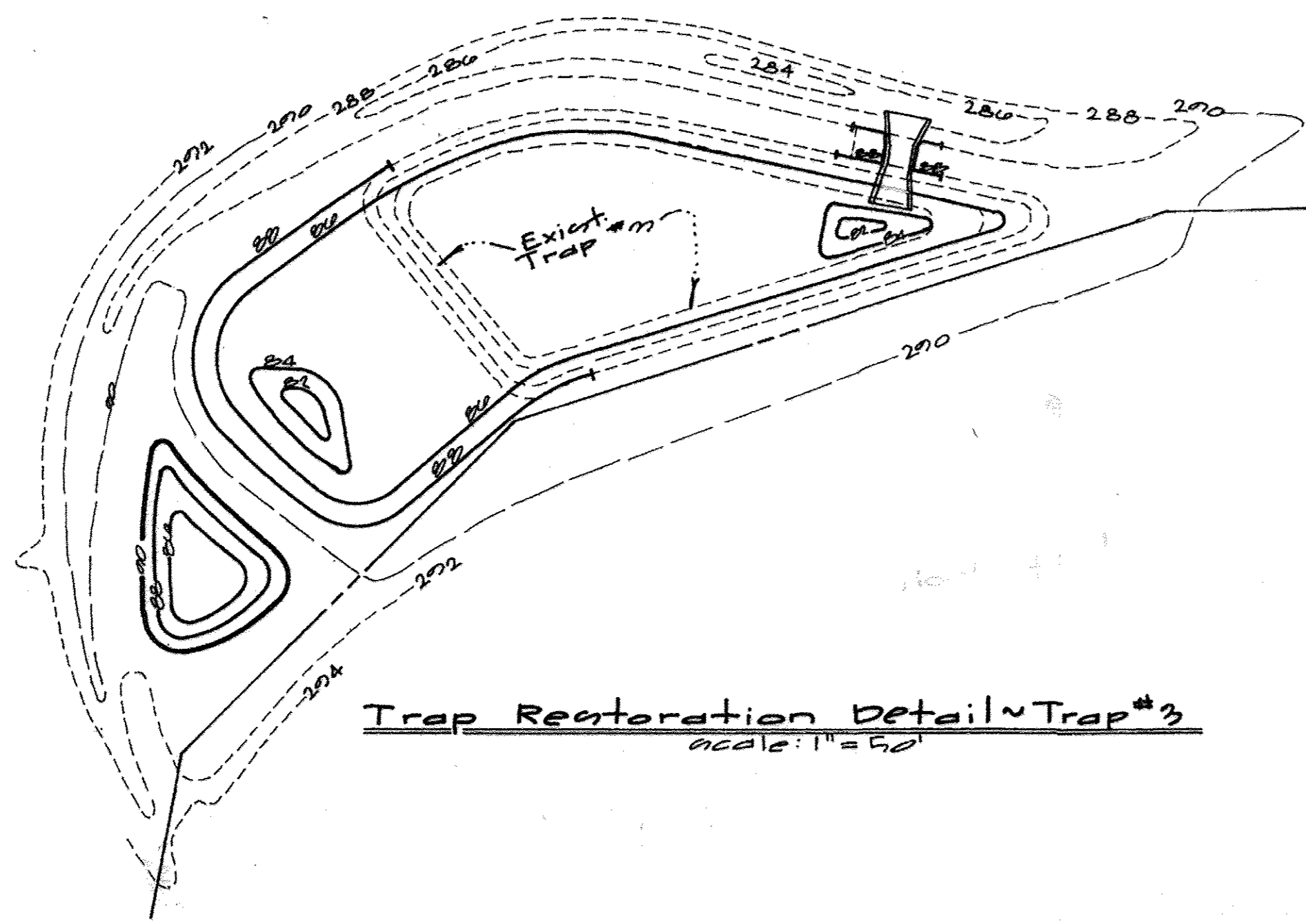
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for Trap #1
N.T.S.



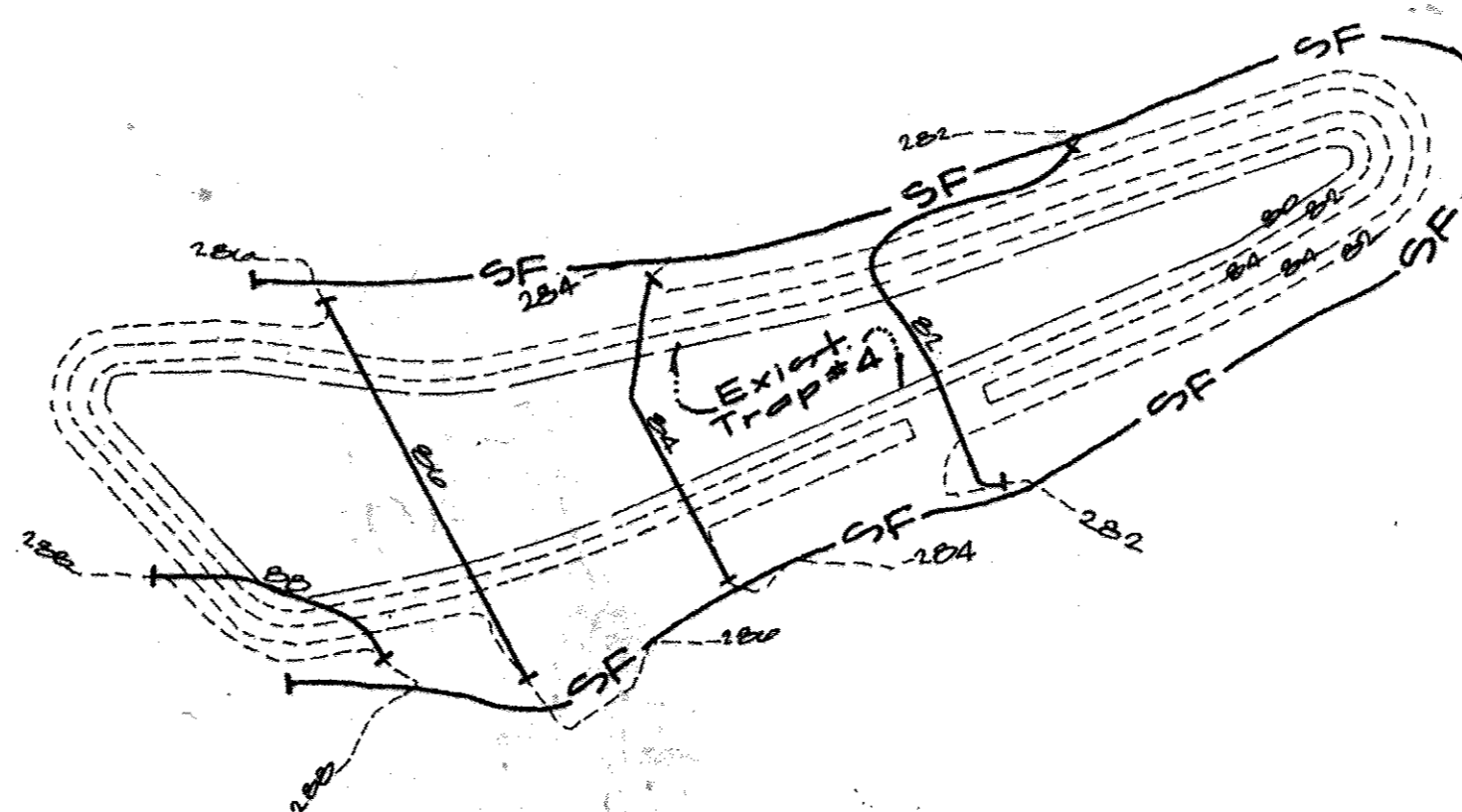
Baffle Board Detail
for Trap #2
N.T.S.



Baffle Board Detail
for Trap #3
N.T.S.



Trap Restoration Detail ~ Trap #3
Scale: 1" = 50'



Trap Restoration Detail ~ Trap #4
Scale: 1" = 50'

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
G. SCOTT SHANABERGER
SHANABERGER & LANE



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
N/A
Chief, Bureau of Highways
Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton
Chief, Division of Land Development
Date 2/14/02

Chief, Development Engineering Division
Date 2/14/02

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.
Jim Noyes / 02 1/24/02
Natural Resources Conservator Service Date

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.
M. J. Tropper / 02 1/24/02
Howard S.C.D. Date

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. Tropper 1/20/02
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.
Robert A. Deak 12/20/01
Signature of Developer/Builder Date

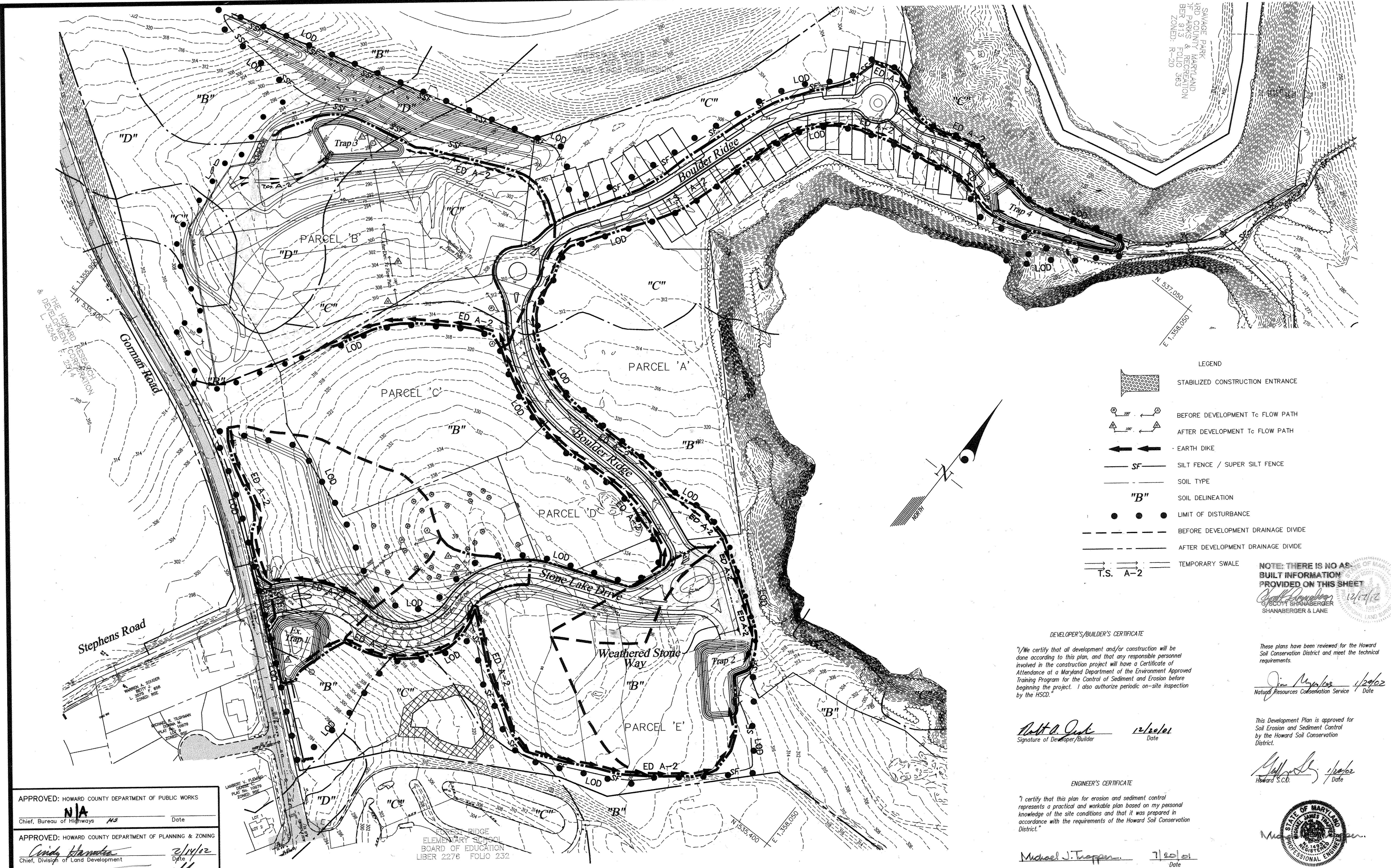
GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONTVILLE OFFICE PARK
BURTONTVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4188

DATE	REVISION	BY	APP'R.

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

SEDIMENT CONTROL DETAILS
STONE LAKE PARCELS 'A' THRU 'E'
LOTS 1 THRU 4A
LIBER 572 FOLIO 430
ELECTION DISTRICT No. 6
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-ED	99140
DATE	TAX MAP - GRID	SHEET
2001	47-9/10	18 OF 40



STONE LAKE PARK
 4RD COUNTY, MARYLAND
 3RD PARKS & RECREATION
 BEB 913 FOLIO 232
 ZONED: R-ED

- LEGEND
- STABILIZED CONSTRUCTION ENTRANCE
 - BEFORE DEVELOPMENT TO FLOW PATH
 - AFTER DEVELOPMENT TO FLOW PATH
 - EARTH DIKE
 - SILT FENCE / SUPER SILT FENCE
 - SOIL TYPE
 - "B" SOIL DELINEATION
 - LIMIT OF DISTURBANCE
 - BEFORE DEVELOPMENT DRAINAGE DIVIDE
 - AFTER DEVELOPMENT DRAINAGE DIVIDE
 - TEMPORARY SWALE

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

Scott Shanaberger
 G. SCOTT SHANABERGER
 SHANABERGER & LANE

DEVELOPER'S/BUILDER'S CERTIFICATE

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Robert A. Jank 12/20/01
 Signature of Developer/Builder Date

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

Jim Myles 1/29/02
 Natural Resources Conservation Service Date

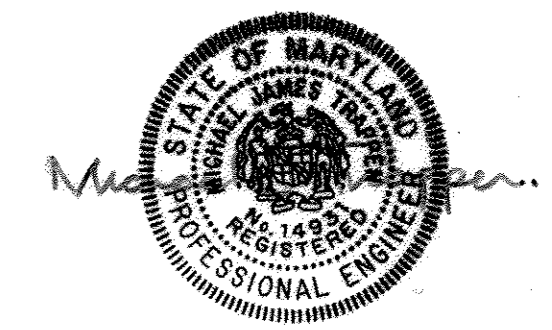
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Michael J. Tropp 1/29/02
 Howard S.C.D. Date

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. Tropp 7/20/01
 Date



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways *NIA* Date
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development *Cindy Hanania* 2/14/02 Date
 Chief, Development Engineering Division *CE* 2/14/02 Date

WEATHERED STONE RIDGE
 ELEMENTARY SCHOOL
 BOARD OF EDUCATION
 LIBER 2276 FOLIO 232

GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20986
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

PREPARED FOR:
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MD 21044
 PHONE: 410-992-5089
 ATTN: MR. BOB JENKINS

SEDIMENT CONTROL OVERVIEW PLAN

STONE LAKE
 PARCELS 'A' THRU 'E'
 LOTS 1 THRU 4

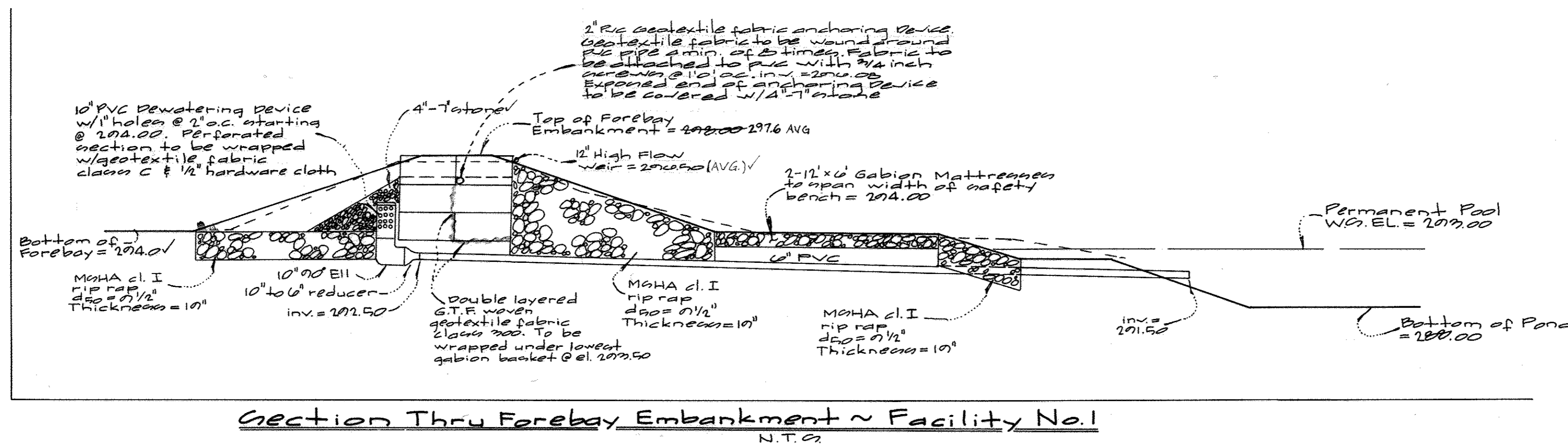
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1"=100'	R-ED	99140
DATE	TAX MAP - GRID	SHEET
Oct, 2001	47 - 9/10	19 OF 40

DATE	REVISION	BY	APP'R.

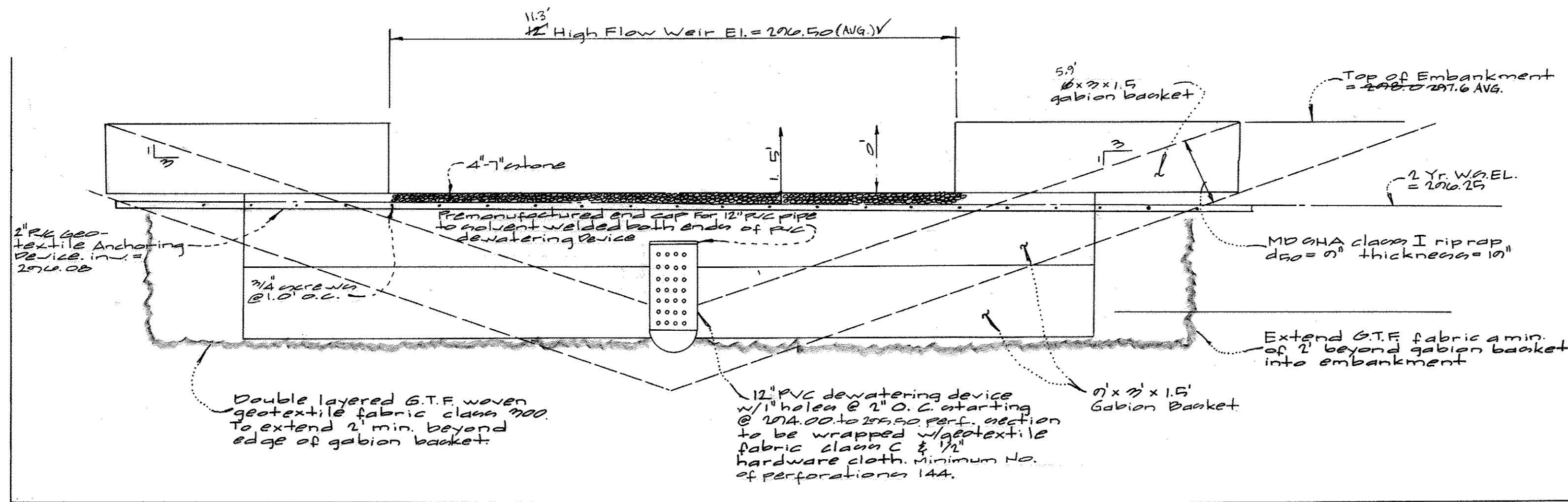
ELECTION DISTRICT No. 6

HOWARD COUNTY, MARYLAND

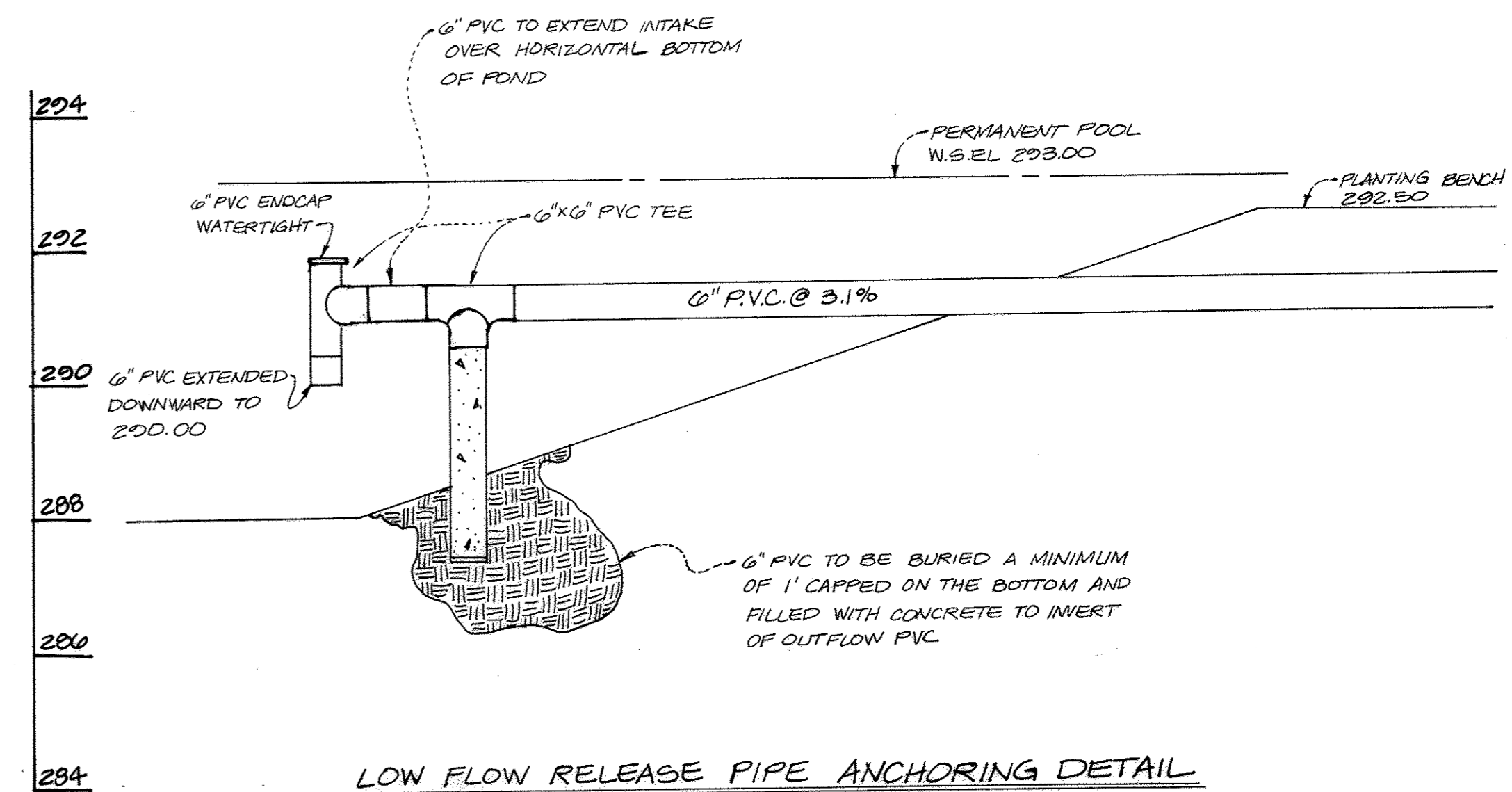
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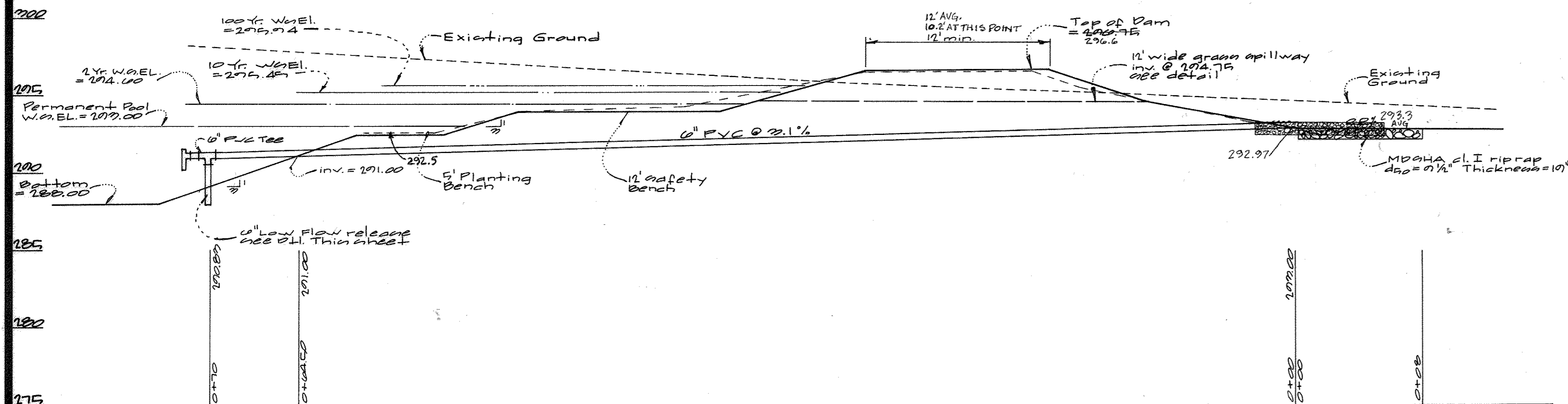
Section Thru Forebay Embankment ~ Facility No.1
N.T.S.



Forebay Elevation Gabion Basket & Dewatering Device Detail ~ Facility No.1
N.T.S.



LOW FLOW RELEASE PIPE ANCHORING DETAIL
SCALE 1/4\"/>



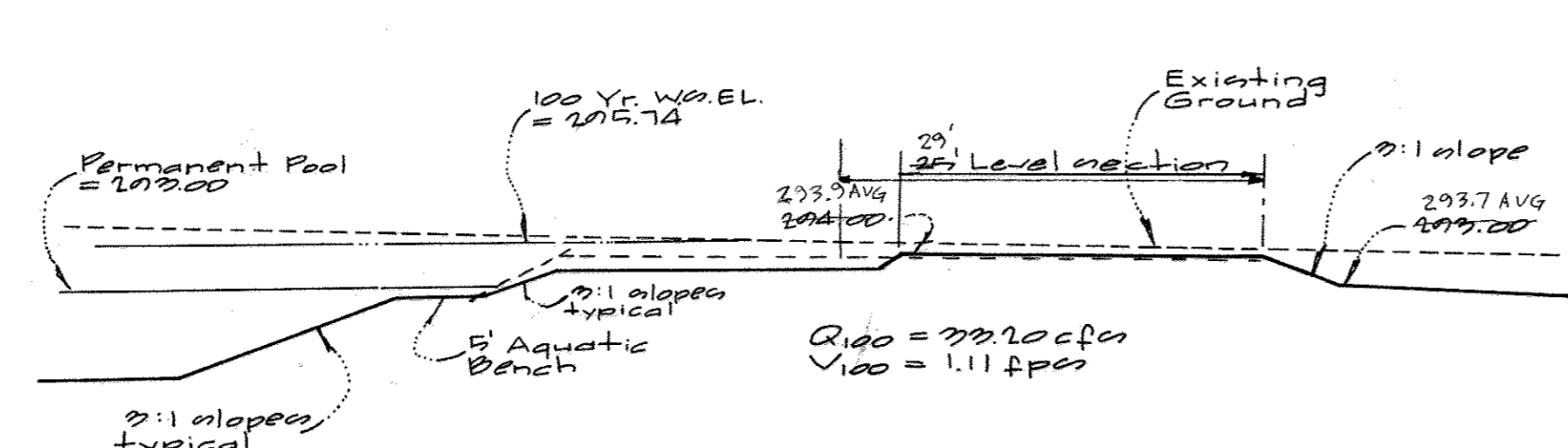
Profile Thru DAM Along Low Flow Release ~ Facility No.1
SCALE: 1\"/>

AS-BUILT CERTIFICATION
 I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED ACCORDING TO THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.
 [Signature] DATE 4/2/14
 G. SCOTT SHANBERGER
 PROFESSIONAL L.S. # 10849
 U.C. EXP. 4/2/2014
 SHANBERGER & LAW

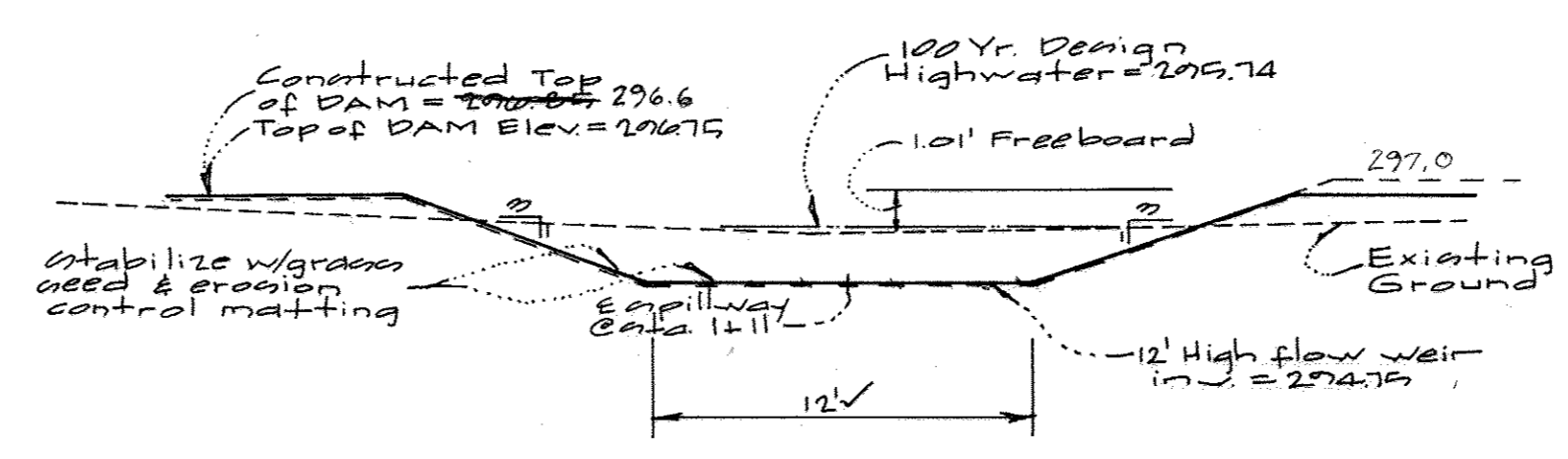
[Seal of Michael J. Tripper, Professional Engineer, State of Maryland]
 Michael J. Tripper

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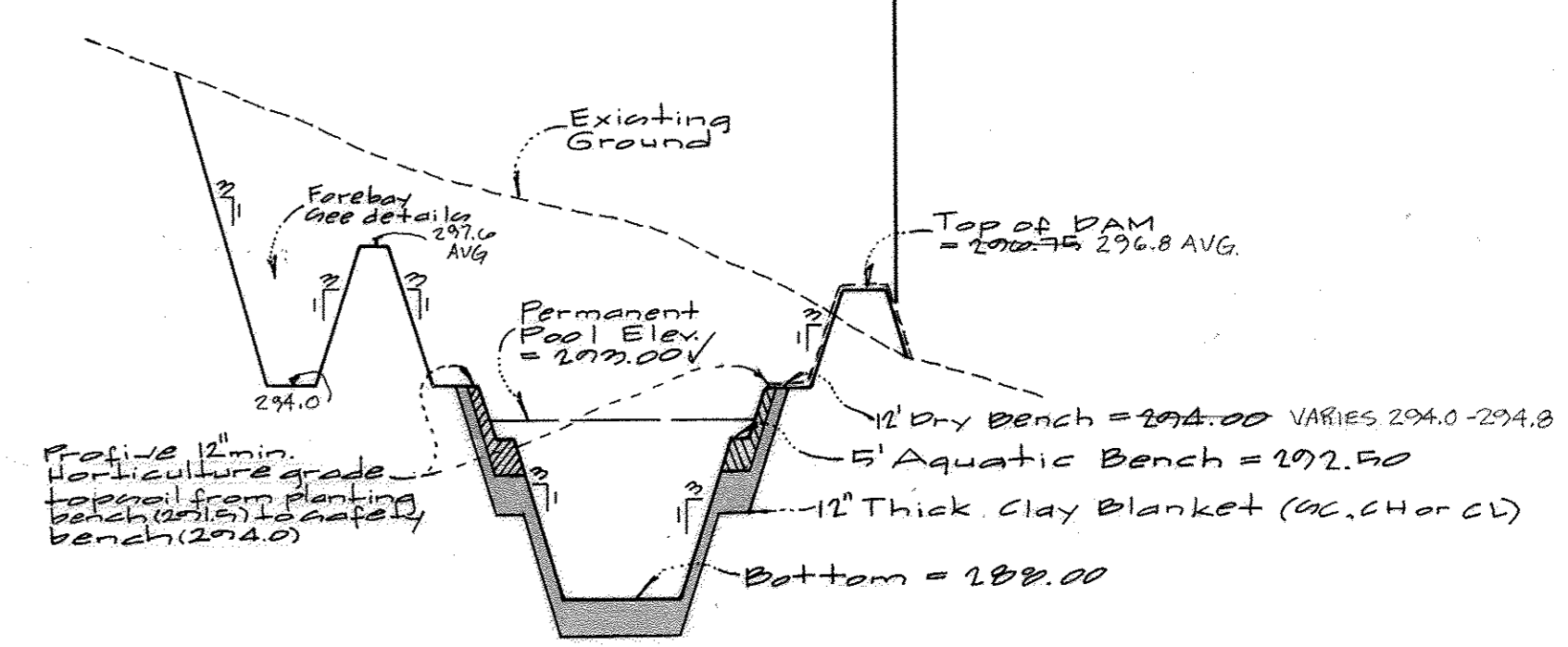
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways [Signature] Date
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development [Signature] Date
 Chief, Development Engineering Division [Signature] Date



Profile Along E of Emergency Spillway ~ Facility No.1



Cross Section of Emergency Spillway ~ Facility No.1



Section Thru Facility No.1 & Forebay

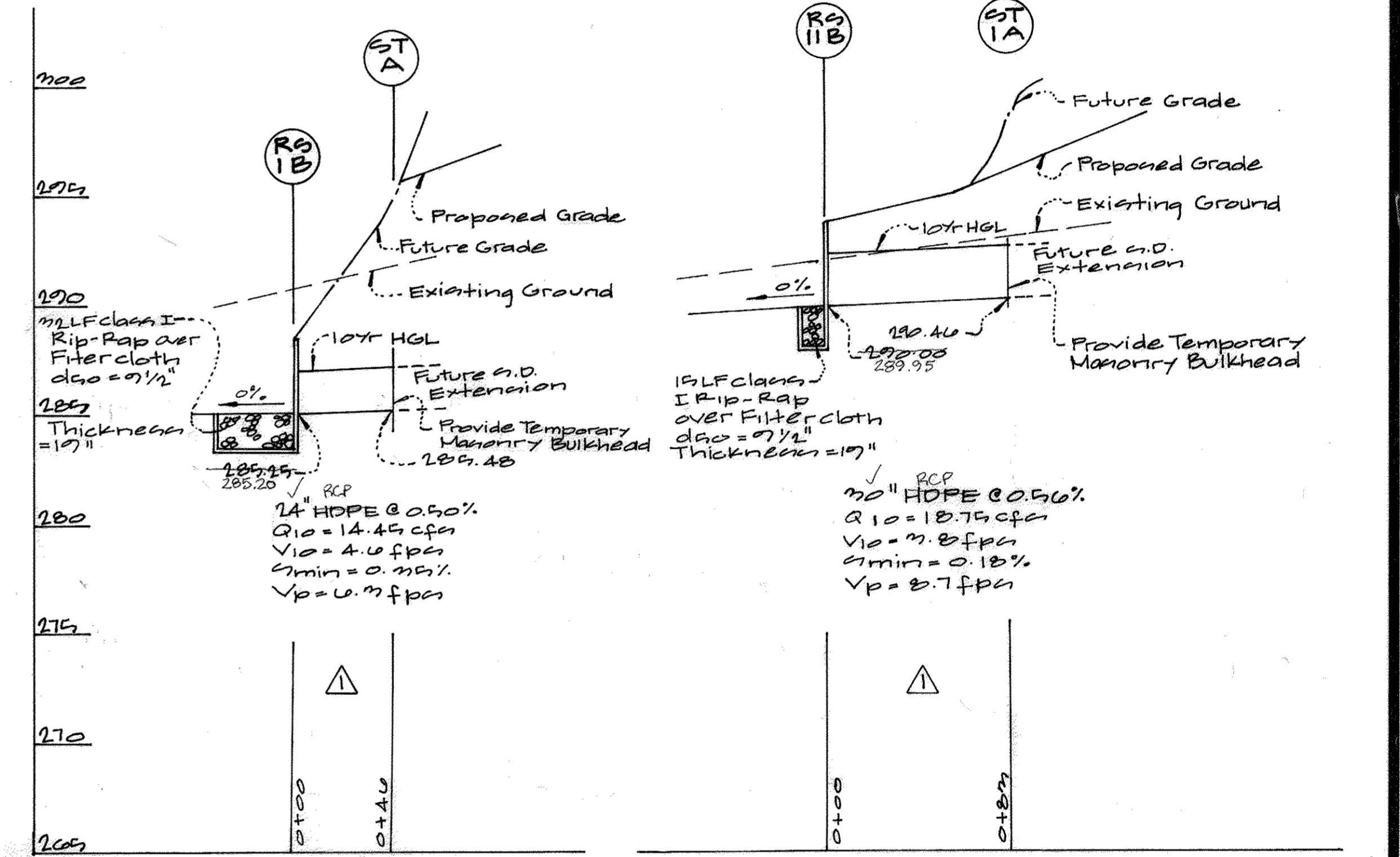
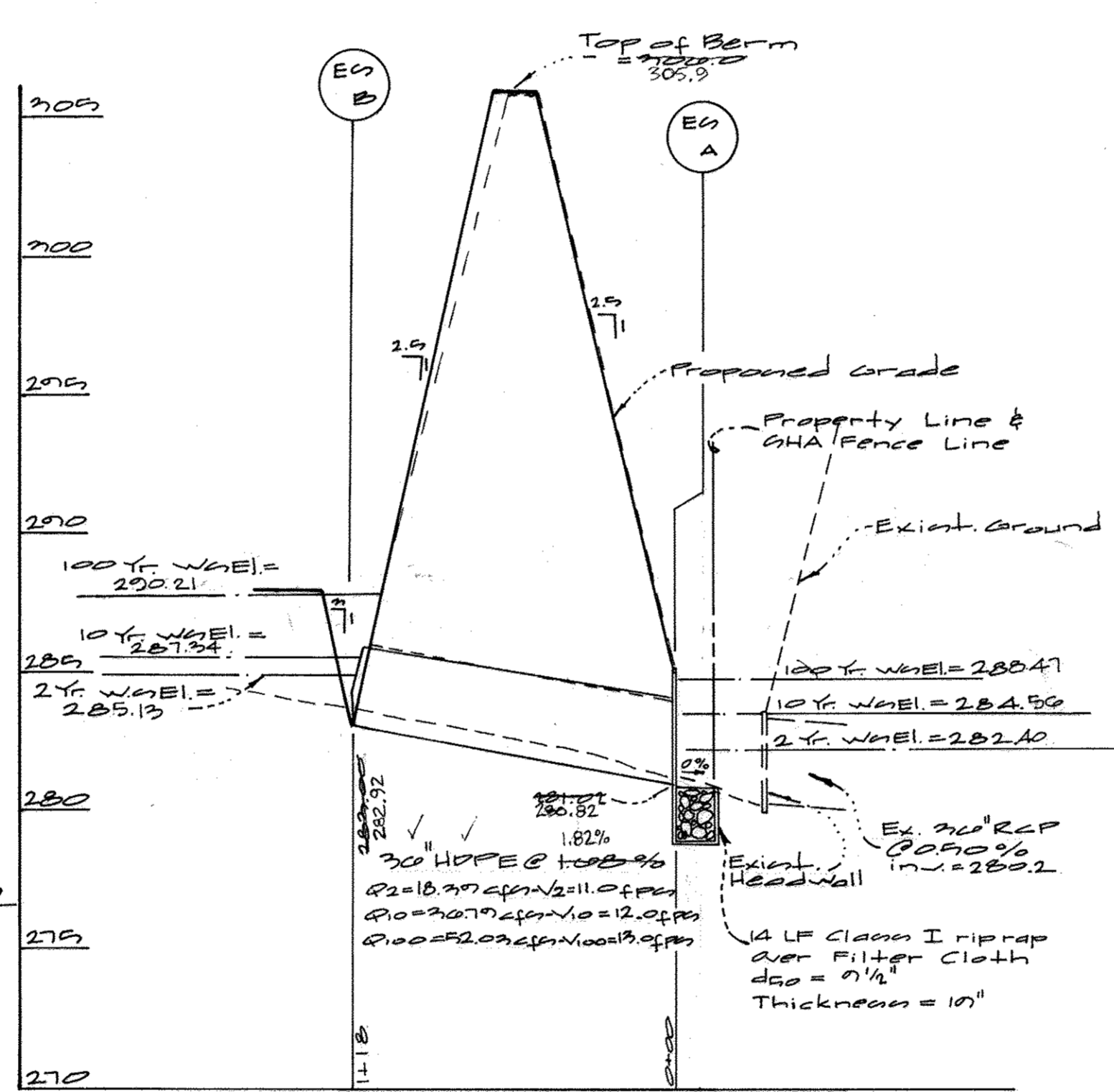
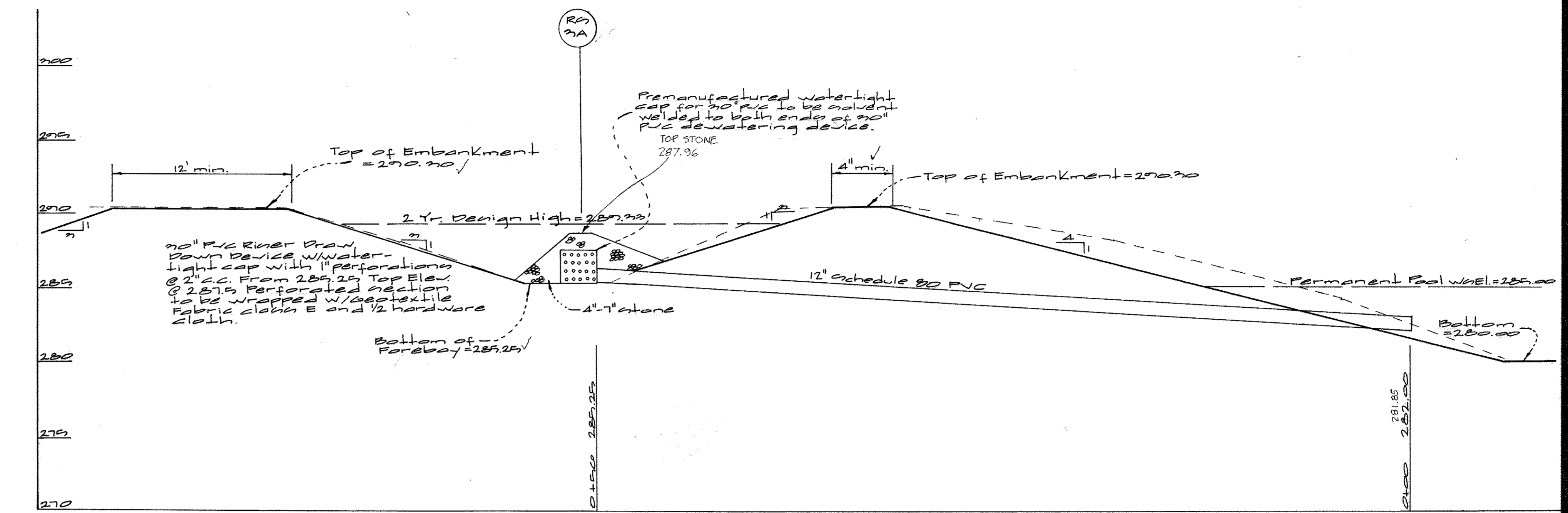
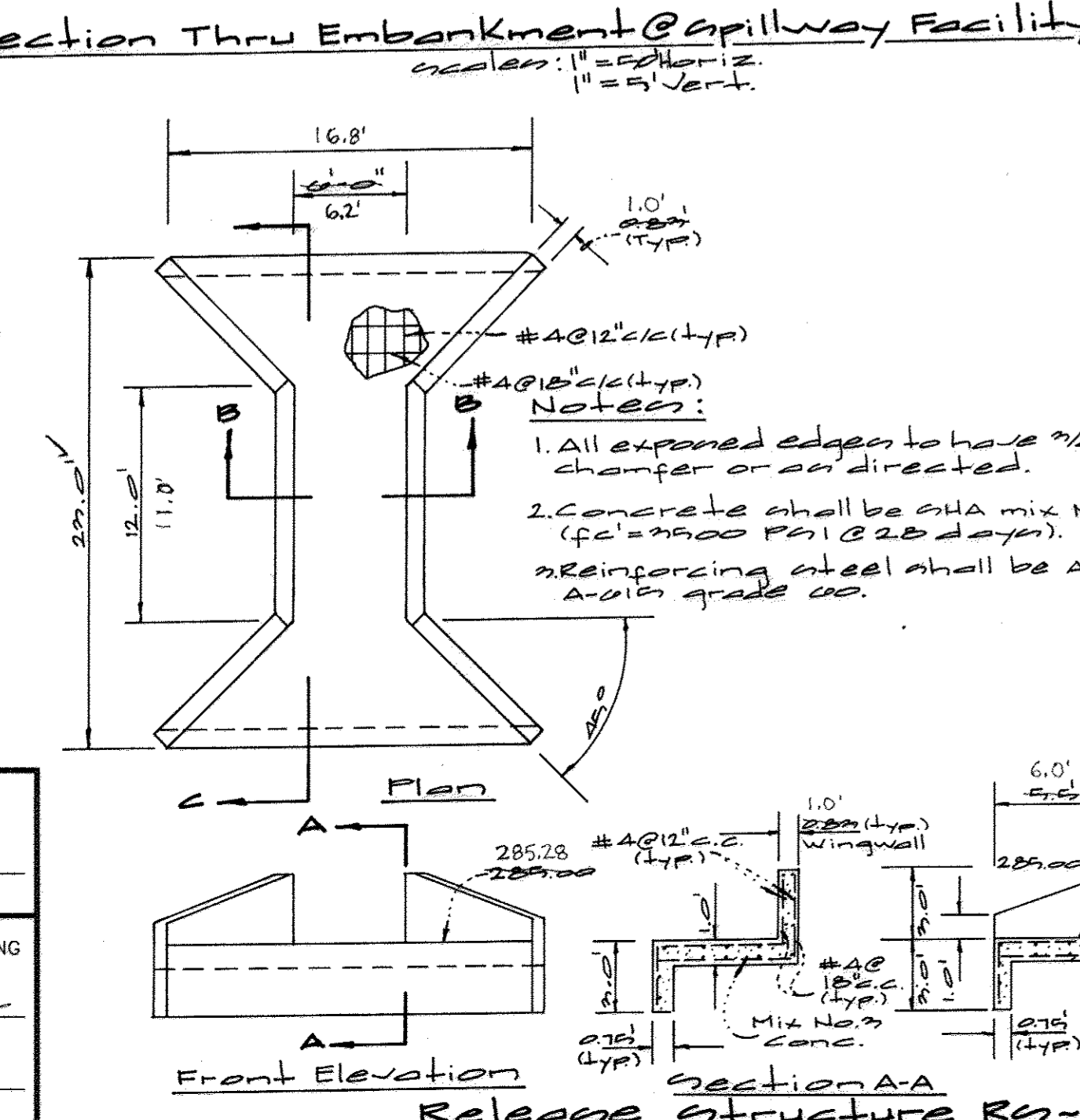
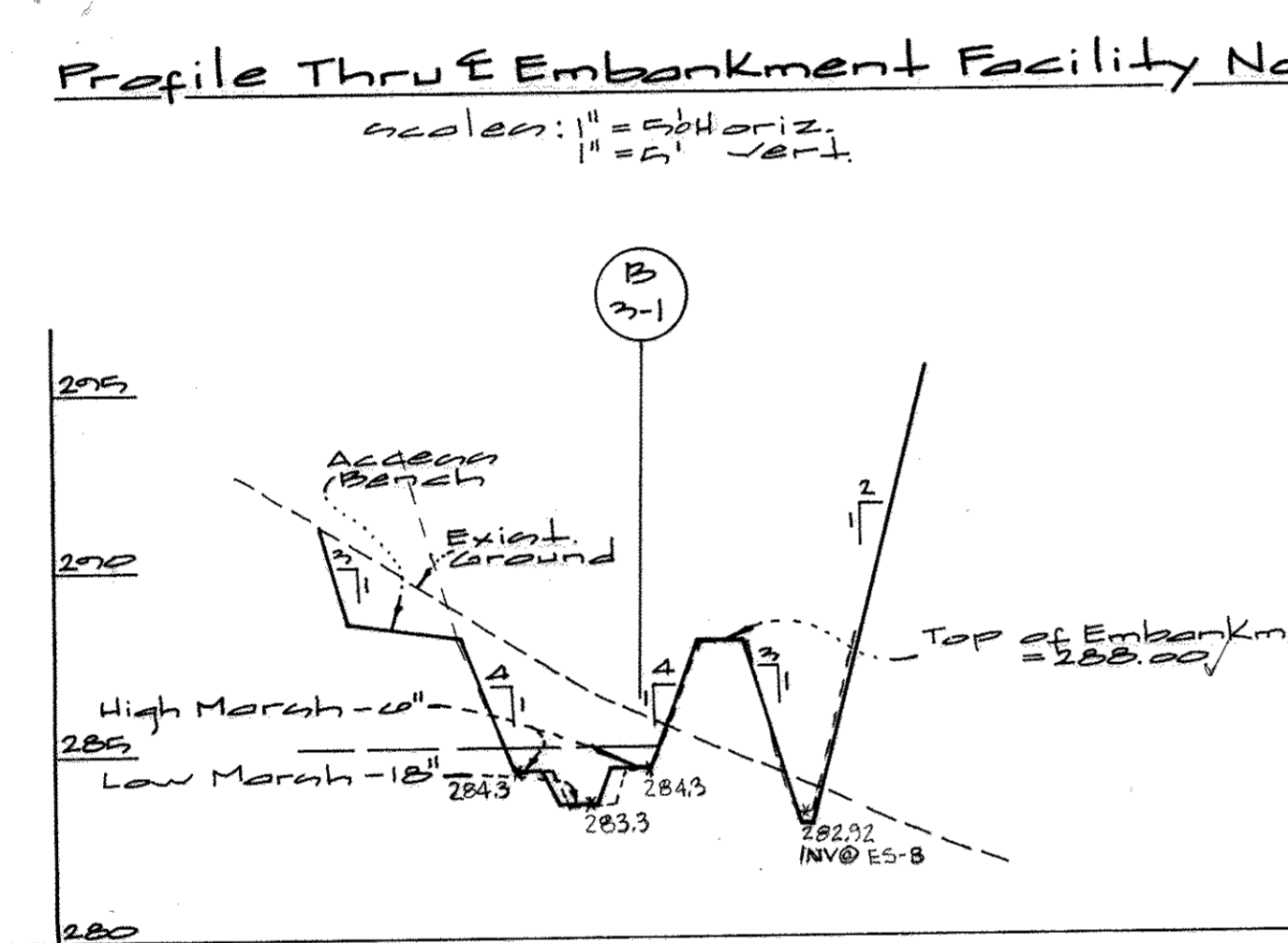
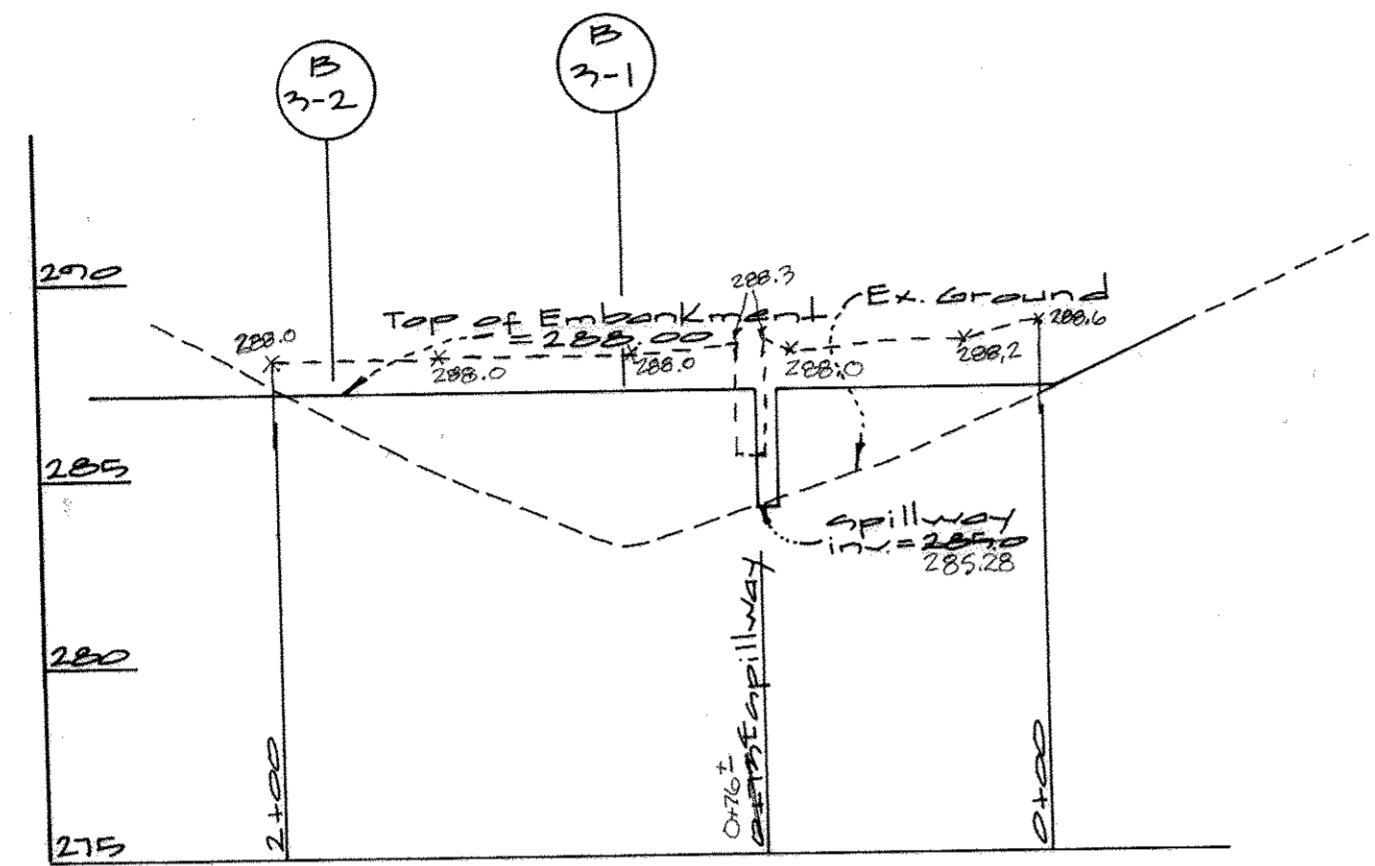
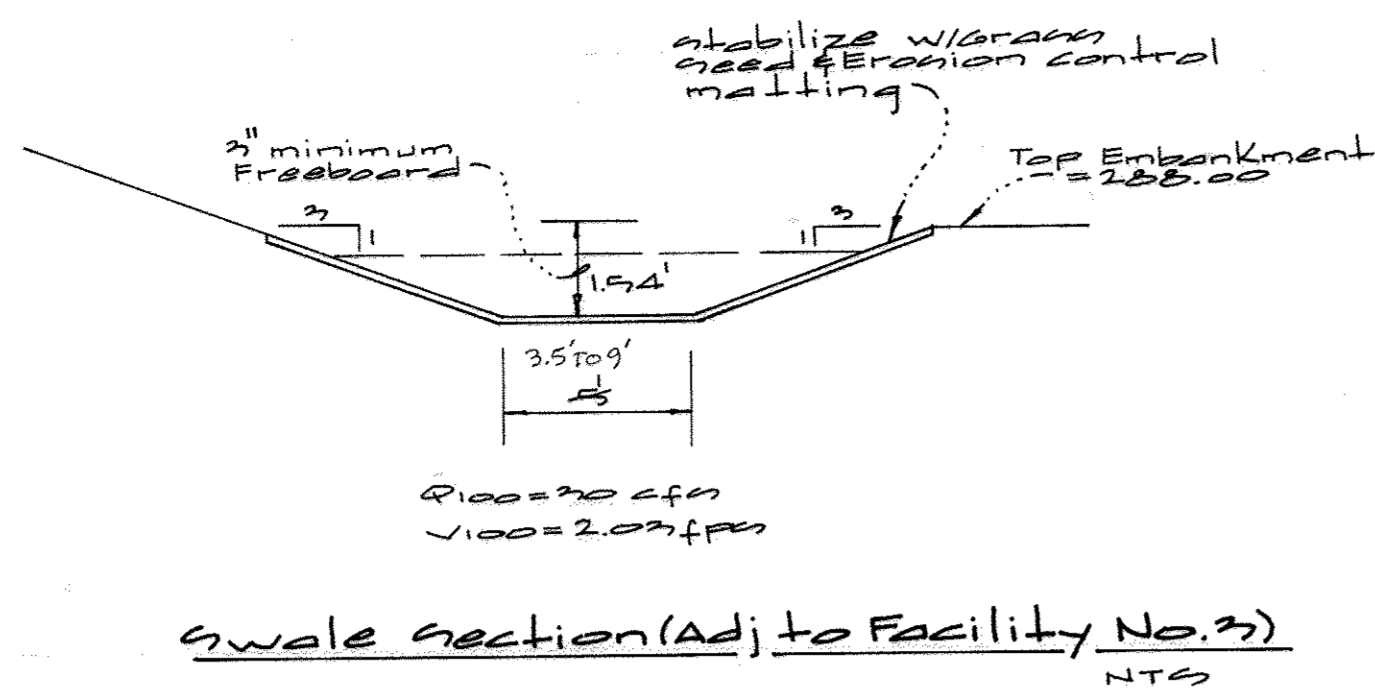
GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3009 NATIONAL DRIVE - SUITE 200 - BURTONTVILLE OFFICE PARK
 BURTONTVILLE, MARYLAND 20868
 TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APP'R.

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

Stormwater Management Facility No.1 Details
STONE LAKE
 PARCELS 'A' THRU 'E'
 LOTS 1 THRU 44
 LIBER 572 FOLIO 430
 ELECTION DISTRICT No. 6
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-ED	99140
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Oct., 2001	47-9/10	20 OF 40



Size	Type	Length
30"	HDPE	89 LF
24"	HDPE	46 LF
20"	HDPE	118 LF

No.	Type	Width		Top Elevation		Invert Elevation		Std. Detail	Locations	Remarks
		(Inside)	(Outside)	Upper	Lower	Upper	Lower			
RA-1B	Type A Headwall							See Detail 5-11	See Plan	
RA-11B	Type A Headwall							See Detail 5-11	"	
ES-A	Headwall							See Detail 5-11	"	
ES-B	End Section							See MFG D110	"	

AS-BUILT CERTIFICATION
I HEREBY CERTIFY BY MY SEAL THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEETING THE APPROVED PLANS AND SPECIFICATIONS

Scott Shandberger
G. SCOTT SHANDBERGER
PROFESSIONAL L.S.#10849
DATE: 10/2/2001
SHANDBERGER & LAMIE

Michael J. Trupper
Professional Engineer
No. 10849

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways: *N/A* Date: _____
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development: *Cindy Krasner* Date: 2/14/02
Chief, Development Engineering Division: *CE* Date: _____

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONVILLE OFFICE PARK
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TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-889-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.
7/21/11	Remove etc. 2 Detail, Remove Profiles Es-2B, Es-3A, Es-3, Add New Profiles	Jt.	

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

STORMWATER MANAGEMENT FACILITY 3 DETAILS
STONE LAKE
PARCELS 'A' THRU 'E'
LOTS 1 THRU 4A
LIBER 572 FOLIO 430
ELECTION DISTRICT No. 6

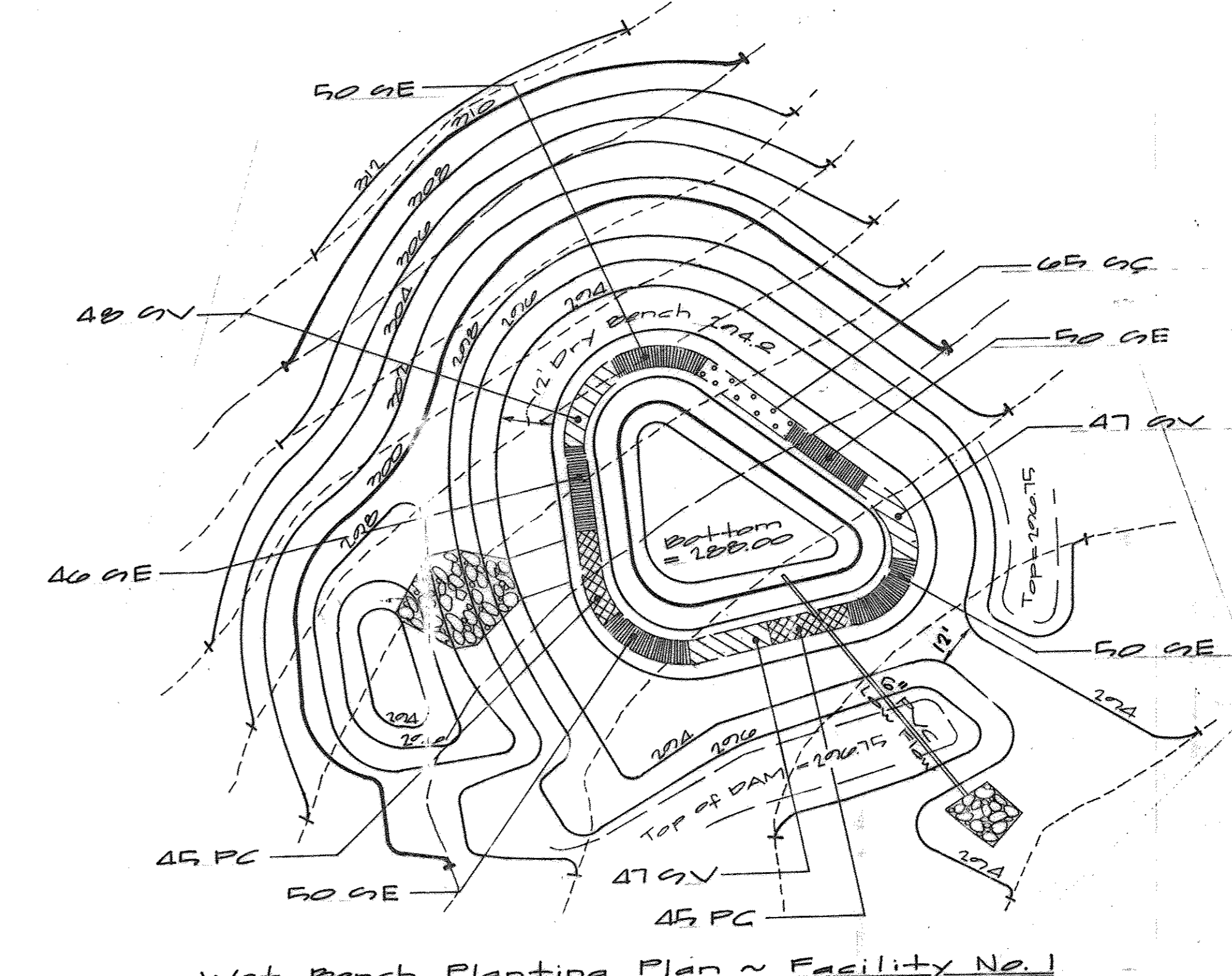
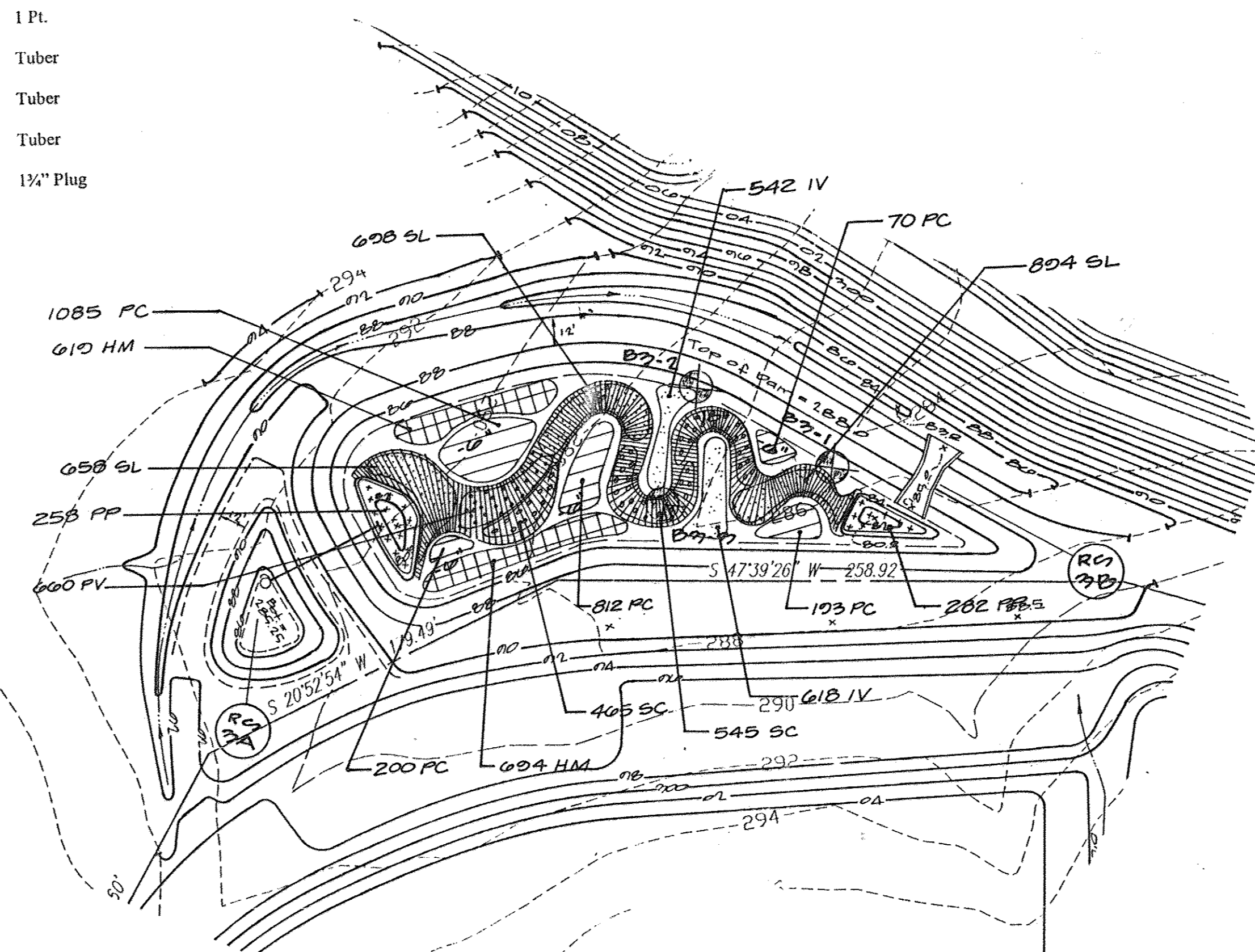
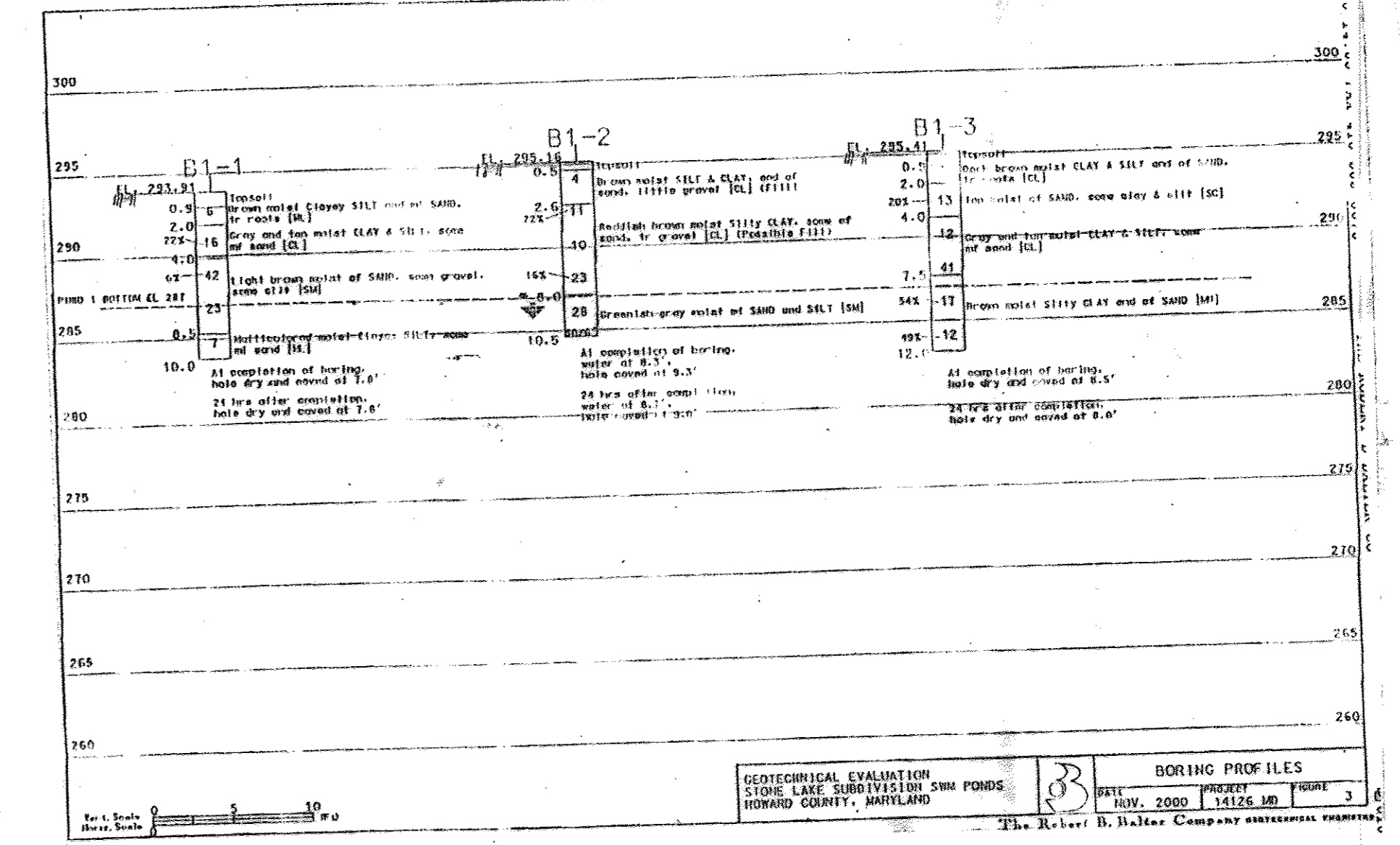
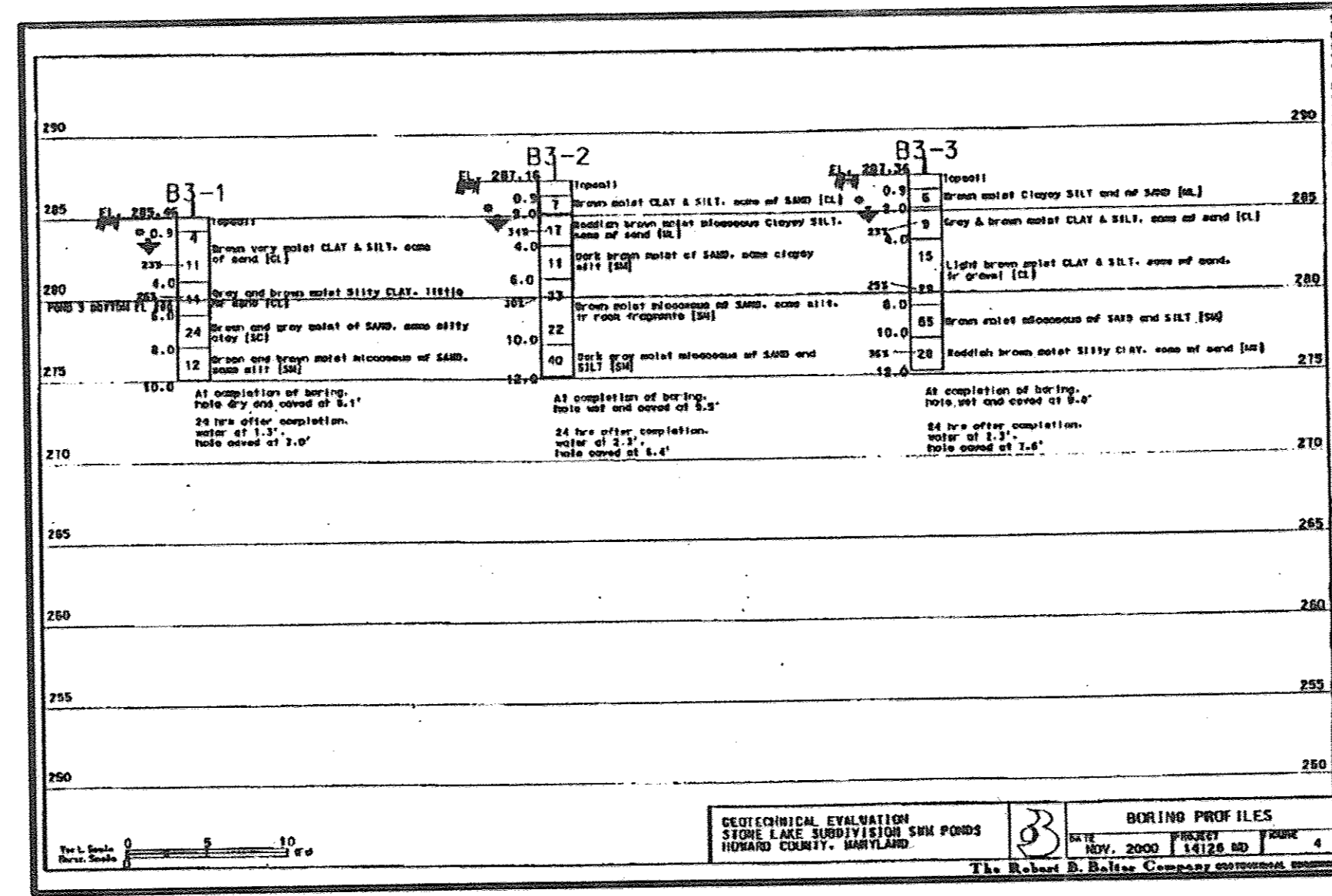
SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-ED	99140
DATE	TAX MAP - GRID	SHEET
Oct., 2001	47-9/10	21 OF 40

SWM POND PLANTING NOTES

- Upon conversion of sediment control pond to stormwater management pond, the contractor shall remove any stones, debris, or construction material larger than two inches (2") in any dimension. The ponds be flooded and left undisturbed for a period of 10 day prior to planting.
- One ounce of 18-6-25 slow release fertilizer shall be incorporated into the soil for each plant at the time of planting.
- Soil shall be saturated with water during and after planting, or the planting area may be completely flooded at this time (wet planting). Planting soil shall be firmly pressed around to prevent floatation.
- The source of all aquatic and emergent plants shall be approved by the owner or landscape architect prior to ordering. These plants shall be grown in pots (container specified) or nursery growing beds (bare root specified) for a minimum of 12 months prior to installation and shall have been wet cultivated during the entire period.
- All plant material shall be guaranteed for a period of one year after formal acceptance. Plants which have greater than 33% dieback or have not grown so as to emerge from the water surface shall be replaced at the next planting season.
- Remove litter and debris as required during the first growing season and at the beginning of the second growing season.

SHALLOW MARSH PLANTING FOR FACILITY No. 3

Key	Qty	Name (Botanical/Common Name)	Remarks
IV	1,160	Iris versicolor/Blue Flag	Tuber
PC	2,360	Ponederia cordata/Pickerelweed	Tuber
PP	540	Potamageton pectinatus/Pondweed	1 Pt.
SL	2,250	Sagittaria latifolia/Duck Potato	Tuber
SC	1,010	Saururus cernuus/Lizard's Tail	Tuber
PV	1,280	Peltandra virginicum/Arrow Arum	Tuber
HM	1,313	Hibiscus moscheutos/ Marsh Hibiscus	1 3/4" Plug



LEGEND

[Symbol]	IRIS VERSICOLOR/ BLUE FLAG
[Symbol]	PONLEDERIA CORDATA/ PICKERELWEED
[Symbol]	POTAMAGETON PECTINATUS/ PONDWEED
[Symbol]	SAGITTARIA LATIFALIA/ DUCK POTATO
[Symbol]	SAURURUS CERNUUS/ LIZARD'S TAIL
[Symbol]	PELTANDRA VIRGINICUM/ ARROW ARUM
[Symbol]	HIBISCUS MOSCHELIOTOS/ MARSH HIBISCUS

Legend

[Symbol]	Pickerel Weed/ Ponederia Cordata
[Symbol]	Lizard Tail/ Saururus Cernuus
[Symbol]	Giant Bur-reed/ Sparganium Eurycarpum
[Symbol]	Soft Stem Bulrush/ Scirpus Validus

Wet Bench Planting For Facility No. 1

Key	Qty	Name (Common/Botanical)	Remarks
PC	100	Pickerel Weed/Ponederia	Bare Root @ 15" OC ±
OC	05	Lizard's Tail/Saururus cernuus	Bare Root @ 15" OC ±
OE	200	Giant Bur-reed/Sparganium Eurycarpum	Bare Root @ 15" OC ±
OV	100	Soft Stem Bulrush/Scirpus Validus	Bare Root @ 15" OC ±

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highways
Date: 2/14/12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chief, Division of Land Development
Date: 2/14/12

Chief, Development Engineering Division



NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
G. SCOTT SHANABERGER
SHANABERGER & LANE

GLW GUTSCHICK LITTLE & WEBER, A. CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
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PREPARED FOR: THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 ATTN: BOB JENKINS (410) 992-6089

STORMWATER MANAGEMENT FACILITY 3 PLANTING PLANS & DETAILS

STONE LAKE PARCELS 'A' THRU 'E' LOTS 1 THRU 4 4 LIBER 372 FOLIO 430

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-ED	99140
DAIL	TAX MAP - GRID	SHEET
Oct., 2001	47-9/10	22 OF 40

HOWARD COUNTY, MARYLAND

CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds facility number 1&2. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

Materials - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6" frozen or other objectionable materials.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 3-inch thick (before compaction) layers which are to be continuous over the entire length of the fill.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one track tread of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller.

When required by the retaining agency the minimum required density shall not be less than 92% of maximum dry density with a moisture content within ±2% of the optimum.

Embankment Care - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

Pipe Details

All pipes shall be circular in cross section.

Corroded Metal Pipe - All of the following criteria shall apply for corroded metal pipe:

1. Materials - (Polymer Coated steel pipe) - Steel pipes with polymer coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with waterproof coupling bands or flanges.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Chief, Division of Land Development

Chief, Development Engineering Division

GLW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS

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Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-198 or M-211 with waterproof coupling bands or flanges.

Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled as adequate number of corrugations to accommodate the bandwidth.

Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length.

Backfilling shall conform to "Structure Backfill".

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

Plastic Pipe - The following criteria shall apply for plastic pipe: 1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.

Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

Backfilling shall conform to "Structure Backfill".

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

Concrete - Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

Rock Riprap - Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextiles shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

Core of Water during Construction - All work on permanent structures shall be carried out in areas free from water. The contractor shall construct and maintain all ditches, levees, cofferdams, drainage channels, and stream diversions necessary to protect the area to be occupied by the permanent works.

Stabilization - All borrow areas shall be graded to provide proper drainage and left in a slightly condition.

Erosion and Sediment Control - Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized.

OPERATION AND MAINTENANCE - An operation and maintenance plan in accordance with Local or State Regulations will be prepared for all ponds.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with waterproof coupling bands or flanges.

Connections - All connections with pipes must be completely watertight.

Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length.

Backfilling shall conform to "Structure Backfill".

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

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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 vegetation growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

SCOPE - This practice is limited to areas having 2:1 or flatter slopes where:

1. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.

2. 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.

3. The original soil to be vegetated contains material toxic to plant growth.

4. The soil is so acidic that treatment with limestone is not feasible.

5. For the purposes of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization.

CONSTRUCTION AND MATERIAL SPECIFICATIONS - 1. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications.

2. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority.

3. Topsoil must be free of plant parts such as Bermuda grass, quackgrass, johnsongrass, nutsedge, poison ivy, thistle, or others as specified.

4. 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.

5. Site Analysis: Total Area of Site: 136.7 Acres; Area Disturbed: 28.31 Acres; Area to be roofed or paved: 2.50 Acres; Area to be vegetatively stabilized: 25.81 Acres.

6. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

7. Additional sediment control must be provided, if deemed necessary by the Howard County DPW Sediment Control Inspector.

8. 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.

9. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4".

10. When topsoiling, maintain needed erosion and sediment control practices such as diversion, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.

11. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, about 4" - 8" higher in elevation.

12. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4".

13. Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage.

14. Topsoil shall not be placed where the topsoil or subsoil is frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

15. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below.

16. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:

17. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.

18. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0.

19. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.

20. Composted sludge shall be amended with a potassium fertilizer applied at a rate of 4lb/1,000 square feet, and 1/3 the normal lime application rate.

21. 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.

22. 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 and revisions thereto.

23. Following initial soil disturbance or redistribution, 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.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.

Seeded 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 October 15, seed with 2-1/2 bushel per acre of annual ryegrass (3.2 lbs./1000 sq.ft.).

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 October 15, seed with 2-1/2 bushel per acre of annual ryegrass (3.2 lbs./1000 sq.ft.).

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PERMANENT SEEDING NOTES

Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.

Seeded Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (unless previously loosened).

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OPERATIONS AND MAINTENANCE GUIDELINES

Operations: 1. Owner shall keep accurate records of inspections and maintenance type repairs.

2. Owner shall make a visual inspection of the facility at least twice a year. Once in the summer after the facility has been mowed and during the winter when the vegetation is inactive.

3. If a severe problem develops, the owner shall contact a Professional Engineer to assess the problem and make a suggestion to remedy the situation.

Maintenance: During the semi-annual visual inspections, the following items must be checked and documented by the owner:

1. Spillways and Outlet Device: Pipes - check for sagging, misalignment, gaps at joints, cracks, leaks, and wear along inside surface of pipes.

2. Forebay and Spillway - check for stone & wire mesh deterioration or loss and spillway failure.

3. Rip Rap Outlet - check for stone deterioration or stone loss.

4. Dewatering Device - remove blockages.

5. Vegetation - proper vegetative cover is required on all embankments. The owner shall follow proper seeding specifications for reseeding.

6. Trees and Brush - trees and brush shall be removed from the embankment. Stumps can be removed by using skidsteer.

7. Mowing - mowing is necessary to control the establishment of woody growth and to maintain the vegetative cover.

8. Seepage - the following warning signs should be looked for when inspecting for seepage problems: cracks (longitudinal and vertical), soft spots or boggy areas on downstream embankment, seepage along downstream toe of embankment.

9. Stability - large cracks, slides, sloughing and excessive settlement are signs of embankment instability and a need for repair.

10. Rodents - check for burrows, which can lead to seepage, and remove rodents.

11. Trenches for the construction of utilities is limited to 3 pipe lengths or that which shall be backfilled and stabilized within 1 working day, whichever is shorter.

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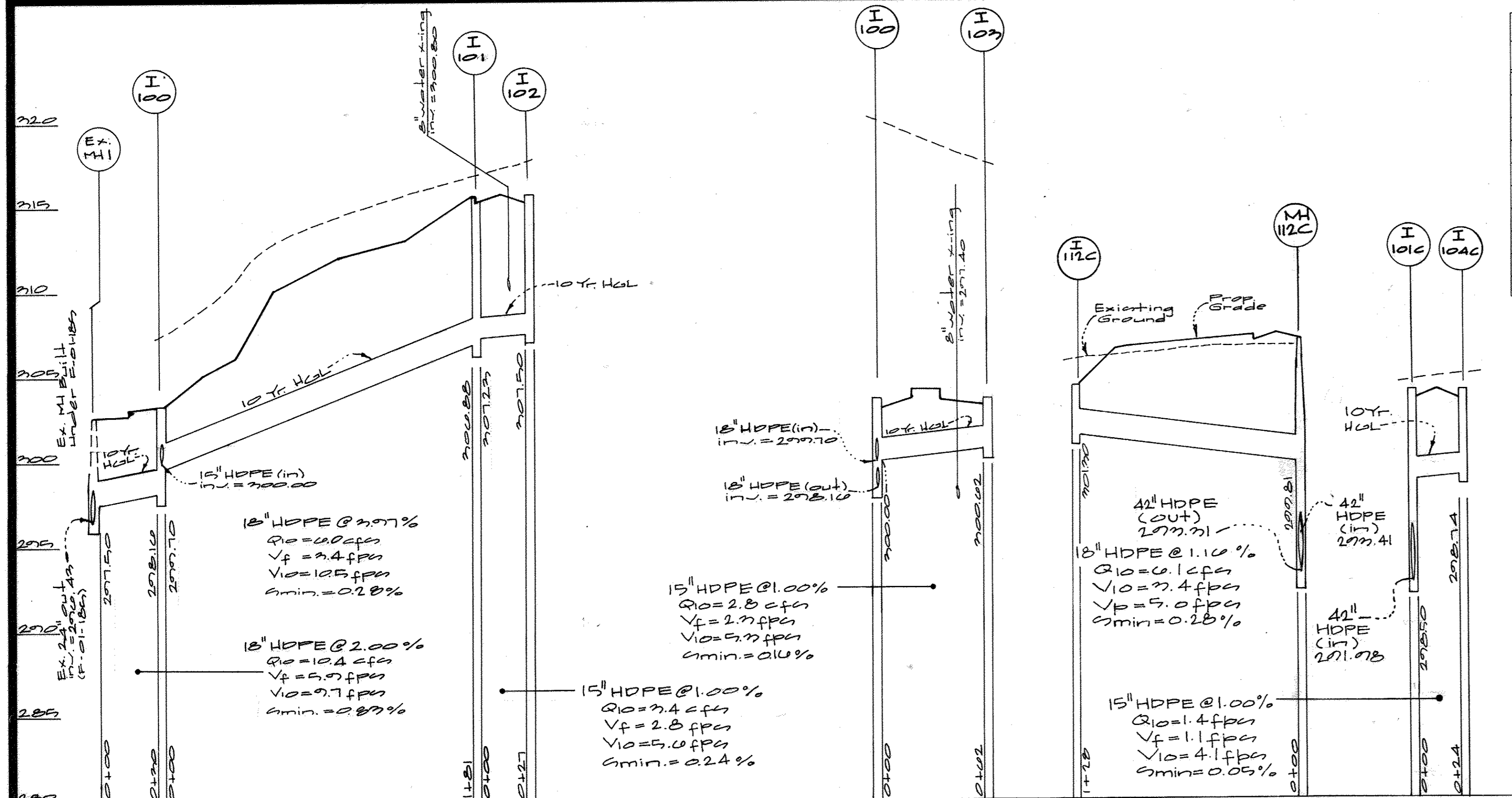
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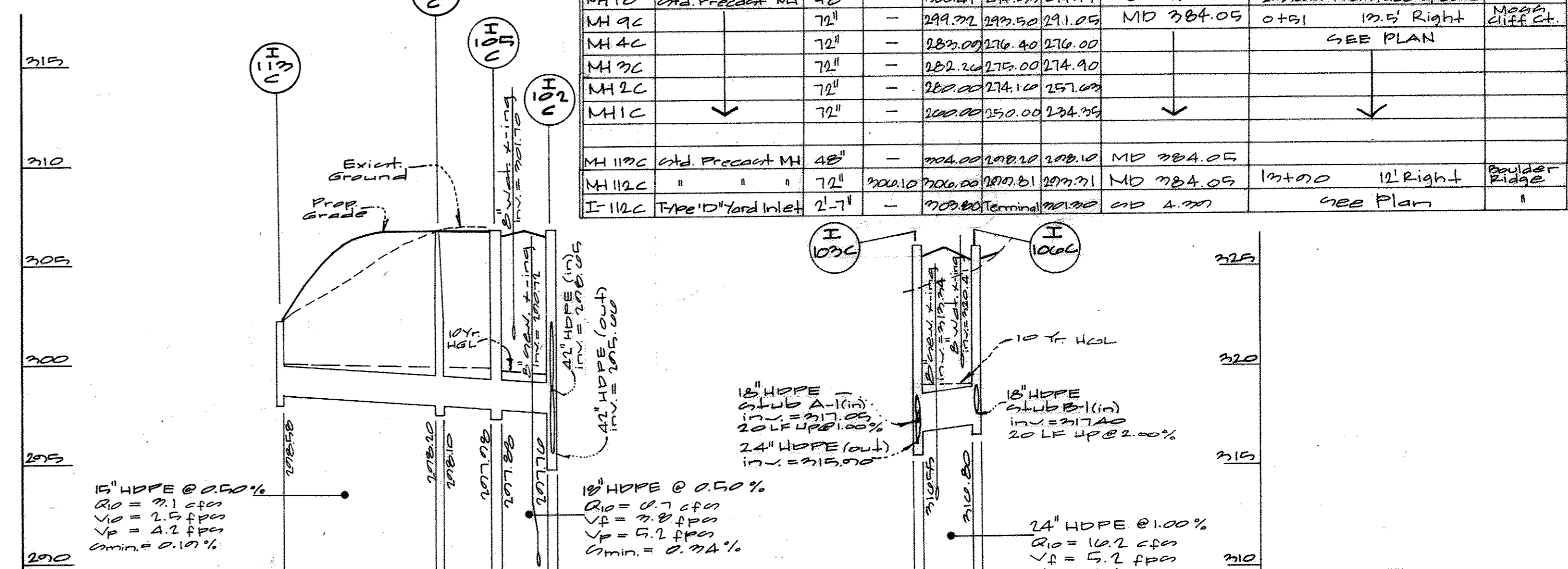
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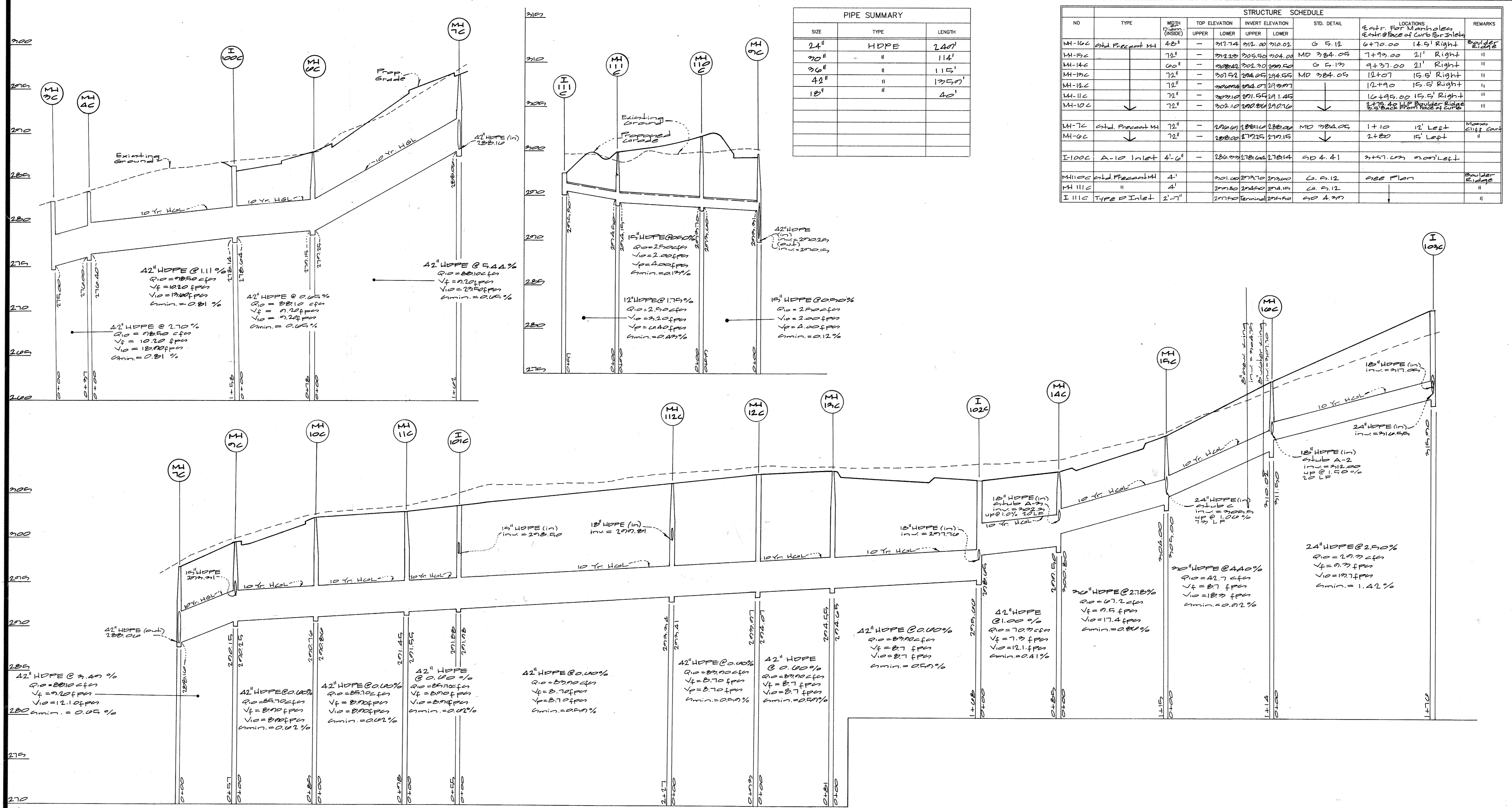
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SIZE	TYPE	LENGTH
15"	HDPE	213'
18"	"	533'
24"	"	25'
42"	"	201'

NO	TYPE	WIDTH (INSIDE)	TOP ELEVATION		INVERT ELEVATION		STD. DETAIL	LOCATIONS	REMARKS
			UPPER	LOWER	UPPER	LOWER			
I-100	A-10	2'-0"	293.74	293.44	290.00	293.10	SD 4.41	0+20.10 30' Right	
I-101	"	2'-0"	295.60	294.90	291.25	290.88	MD 374.62	2+21.10 12' "	
I-102	"	2'-0"	295.60	294.90	-	291.50	MD 374.62	2+21.34 12' "	
I-103	"	2'-0"	293.71	293.41	-	290.62	SD 4.41	0+60.85 30' Left	
I-104	"	2'-0"	-	293.04	-	292.83	SD 4.41	12+62.48 9' "	
I-106C	"	2'-0"	295.77	295.07	291.40	291.80	MD 374.62	5+24.00 12' "	Boulder
I-107C	"	2'-0"	295.77	295.07	291.05	291.90	MD 374.62	5+24.00 12' Right	
I-108C	"	2'-0"	-	296.05	294.05	295.00	MD 374.62	5+72.00 12' Left	
I-109C	Type D' yard inlet	2'-7"	-	292.00	terminal	292.58	SD 4.37	see Plan	
I-110C	A-10	2'-0"	294.07	293.77	291.80	291.88	MD 374.62	10+24.00 12' Right	
I-111C	A-10	2'-0"	293.77	293.47	291.80	291.88	SD 4.41	10+24.00 12' Left	
MH 10	std. Precast MH	48"	-	294.41	294.65	294.19	G 5.12	1+19.80 LEP Boulder Ridge 2.5' back from face of curb	Moist. cliff ct.
MH 9C	"	72"	-	299.71	299.50	291.05	MD 384.05	0+91.12 12' Right	
MH 4C	"	72"	-	283.00	276.40	276.00	-	SEE PLAN	
MH 3C	"	72"	-	282.20	275.00	274.90	-	-	
MH 2C	"	72"	-	280.00	274.10	257.00	-	-	
MH 1C	"	72"	-	280.00	255.00	234.35	-	-	
MH 112C	std. Precast MH	48"	-	294.00	293.30	293.10	MD 384.05	12+70.00 12' Right	Boulder
MH 12C	"	72"	290.10	290.00	290.81	299.71	MD 384.05	12+70.00 12' Right	Boulder
I-112C	Type D' yard inlet	2'-7"	-	292.00	terminal	292.58	SD 4.37	see Plan	





PIPE SUMMARY		
SIZE	TYPE	LENGTH
24"	HDPE	240'
30"	"	114'
36"	"	115'
42"	"	1750'
18"	"	42'

STRUCTURE SCHEDULE										
NO	TYPE	WDTH (INSIDE)	TOP ELEVATION		INVERT ELEVATION		STD. DETAIL	LOCATIONS		REMARKS
			UPPER	LOWER	UPPER	LOWER		Entr. For Manholes	Exit @ Face of Curbs/Inlets	
MH-16C	Std. Precast MH	48"	-	217.74	212.00	210.02	G 5.12	6+70.00	14.5' Right	Shoulder Edge
MH-15C	"	72"	-	212.22	205.50	204.00	MD 384.05	7+99.00	21' Right	"
MH-14C	"	60"	-	208.42	202.70	200.50	G 5.12	9+37.00	21' Right	"
MH-13C	"	72"	-	201.52	194.05	194.55	MD 384.05	12+07	15.5' Right	"
MH-12C	"	72"	-	200.44	194.05	191.97	"	12+90	15.5' Right	"
MH-11C	"	72"	-	207.10	191.54	191.45	"	16+95.00	15.5' Right	"
MH-10C	"	72"	-	202.10	190.84	190.76	"	17+42	15.5' Right	2' Back From Face of Curbs
MH-7C	Std. Precast MH	72"	-	226.01	188.10	188.00	MD 384.05	1+10	12' Left	Manhole Elevation
MH-6C	"	72"	-	228.00	179.25	179.15	"	2+20	15' Left	"
I-100C	A-10 Inlet	4'-6"	-	280.77	278.00	278.14	SD 4.41	2+57.00	0.00' Left	"
MH-110C	Std. Precast MH	4'	-	201.00	200.70	200.60	G 5.12	0+22	Plan	Shoulder Edge
MH-111C	"	4'	-	200.80	200.50	200.45	G 5.12	"	"	"
I-111C	Type B Inlet	2'-7"	-	200.50	Terminal	200.50	SD 4.30	"	"	"

Profile
 scales: 1" = 50' horiz.
 1" = 5' vert.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 N/A
 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development
 Cindy Hamilton
 Date

Chief, Development Engineering Division

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
 G. SCOTT SHANBERGER
 SHANBERGER & LANE

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 Michael J. Troppa

GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONTVILLE OFFICE PARK
 BURTONTVILLE, MARYLAND 20886
 TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-988-2524 FAX: 301-421-4186

DESIGN	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

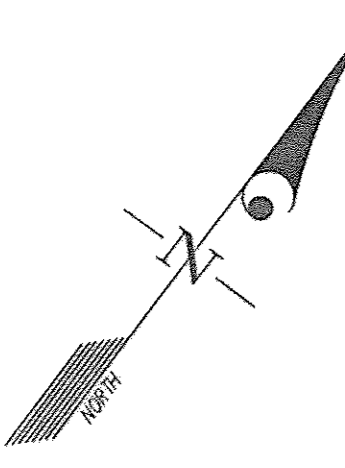
STORM DRAIN PROFILES
 STONE LAKE
 PARCELS 'A' THRU 'E'
 LOTS 1 THRU 4.4
 LIBER 572 FOLIO 430
 ELECTION DISTRICT No. 6

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-ED	99140
02/2001	47-9/10	25 OF 40



THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
L 3245 F. 2514

STEPHENS ROAD
(MAJOR COLLECTOR)



WARREN A. SOUDER
BETTY J. F. 658
L 3575 F. 858
ZONED: R-SE

MICHAEL R. TILGHMAN
DONNA M. 10979
LOT 9
ZONED: R-SE

SHANTHA COURT

LANBERT V. FLEHING
DENISE C. 10979
PLAT NO. 7030
LOT 1
ZONED: R-SE

ROBINSON'S PROMISE
PLAT NO. 7030
LOT 2
ZONED: R-SC

FOREST RIDGE
ELEMENTARY SCHOOL
BOARD OF EDUCATION
LIBER 2276 FOLIO 232
ZONED: R-12

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

- Stormwater Management Notes**
1. Water quantity control is provided by a hazard class A detention/retention facility.
 2. Water quality is provided by the retention portion of the facility per section 10.7.B of the Design Manual.
 3. This facility has an embankment that is less than 60 feet and the storage of the design high water is less than 40,000 cubic feet, therefore is exempt from the MD-97B standards.
 4. This facility will be privately owned and maintained by a homeowner's association.
 5. Summary Table:

SNM Facility # 1					
Inflow (cfs)	Release (cfs)	Elev.	Storage (cu ft)	Storm	Re-Developed
2	1.68	1.04	244.00	24,000	24,000
10	24.24	20.9	245.45	24,116	24,116
100	25.18	20.20	249.74	40,000	40,000

Drainage Area to Design Point		
Storm	Re-Developed	Re-Developed
(cfs)	Release Rate (cfs)	Release Rate (cfs)
2	1.97	2,002
10	25.10	26,250
100	25.60	40,000

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
N/A
Chief, Bureau of Highways
Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamrick
Chief, Division of Land Development
Date 2/14/02

Chief, Development Engineering Division
Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTNSVILLE OFFICE PARK
BURTNSVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-959-2524 FAX: 301-421-4186

DATE	REVISION	BY	APPR.

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

STORM DRAIN DRAINAGE AREA MAP
STONE LAKE
PARCELS 'A' THRU 'E'
LOTS 1 THRU 44
ELECTION DISTRICT No. 6
HOWARD COUNTY, MARYLAND

SCALE
1"=50'

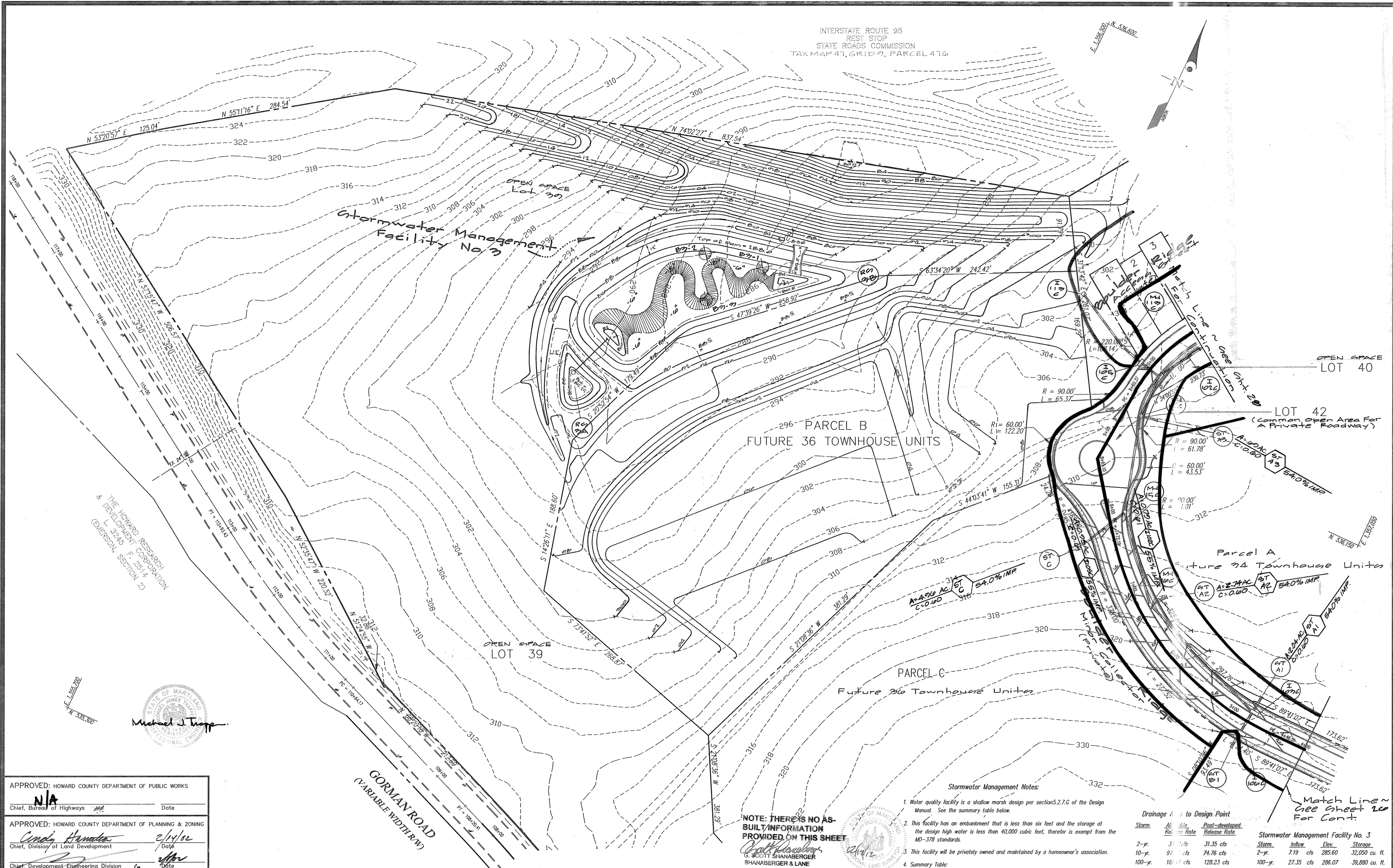
ZONING
R-ED

G. L. W. FILE NO.
99140

DATE
October, 2001

TAX MAP - GRID
47 - 9/10

SHEET
20 OF 40



Michael J. Trapp
Professional Engineer
No. 1104417

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
N/A
Chief, Bureau of Highways
Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hanada
Chief, Division of Land Development
Date 2/14/02

Chief, Development Engineering Division
Date

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
S. SCOTT SHANABERGER
SHANABERGER & LANE

Stormwater Management Notes:

1. Water quality facility is a shallow marsh design per section 5.2.7.6 of the Design Manual. See the summary table below.
2. This facility has an embankment that is less than six feet and the storage at the design high water is less than 40,000 cubic feet, therefore is exempt from the MD-376 standards.
3. This facility will be privately owned and maintained by a homeowner's association.
4. Summary Table:

Drainage Area to Design Point

Storm	All Site Release Rate	Post-developed Release Rate
2-yr.	31.1 cfs	31.35 cfs
10-yr.	97.7 cfs	74.76 cfs
100-yr.	181.7 cfs	128.23 cfs

Stormwater Management Facility No. 3

Storm	Inflow	Elev.	Storage
2-yr.	7.19 cfs	285.60	32,050 cu. ft.
100-yr.	27.35 cfs	286.07	39,880 cu. ft.

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 BAL: 410-889-1820 DC/VA: 301-589-2524 FAX: 301-421-4186

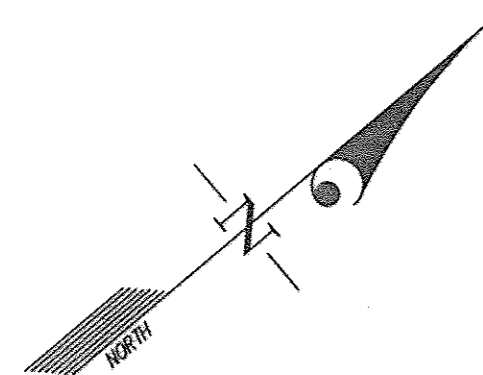
DATE	REVISION	BY	APPR.

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

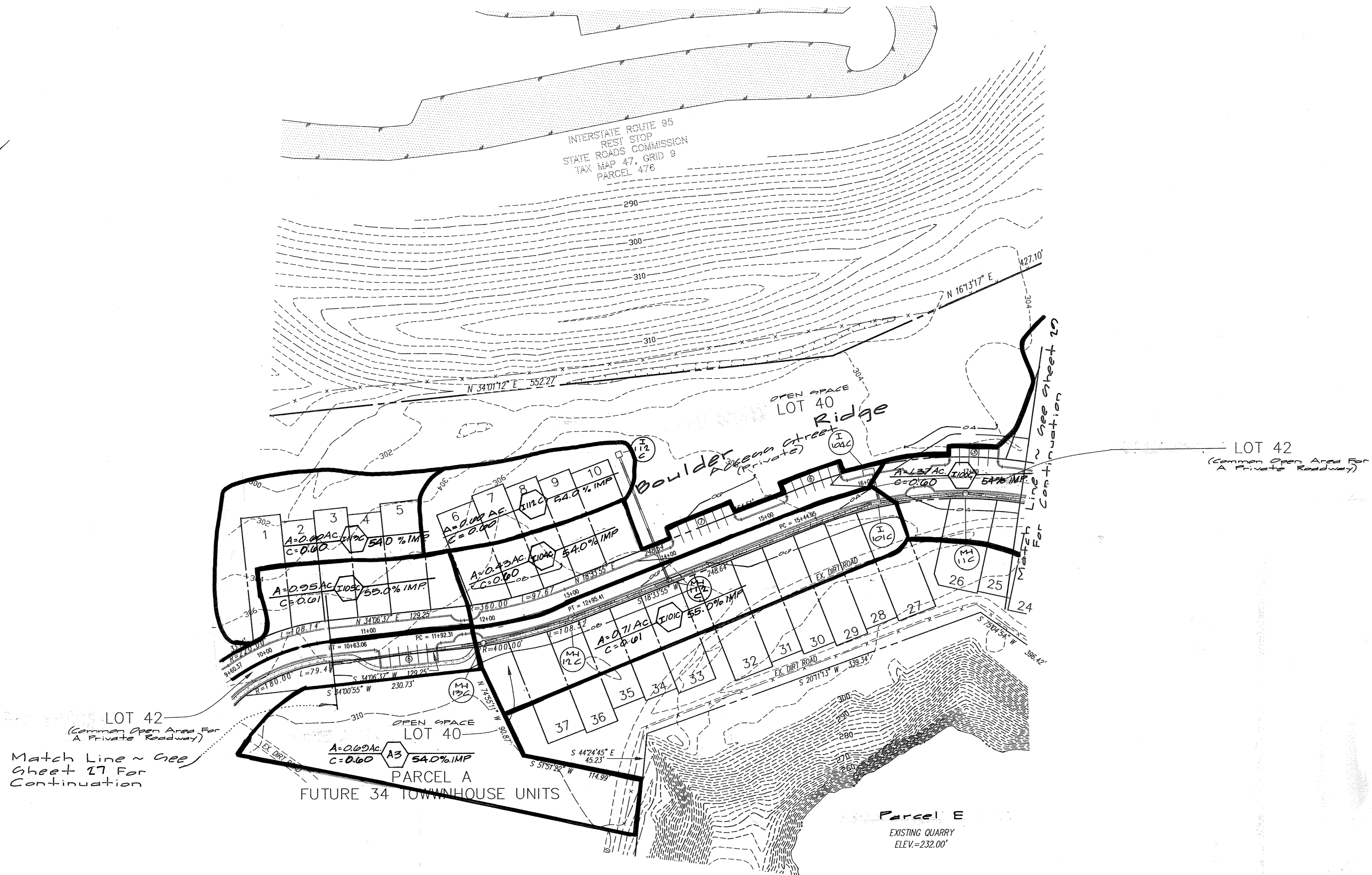
STORM DRAIN DRAINAGE AREA MAP
STONE LAKE
PARCELS 'A' THRU 'E'
LOTS 1 THRU 44
ELECTION DISTRICT No. 6

SCALE 1"=50'
ZONING R-ED
G. L. W. FILE No. 99140
DATE October, 2001
TAX MAP - GRID 47 - 9/10
SHEET 27 OF 40
HOWARD COUNTY, MARYLAND

E. 1,356,090
N. 336,200



N. 537,350
E. 1,357,200



Michael J. Trepp

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways *N/A* Date _____
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development *Chris Hamble* 2/14/02 Date
 Chief, Development Engineering Division *CE* 2/14/02 Date

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
 SHANABERGER & LANE

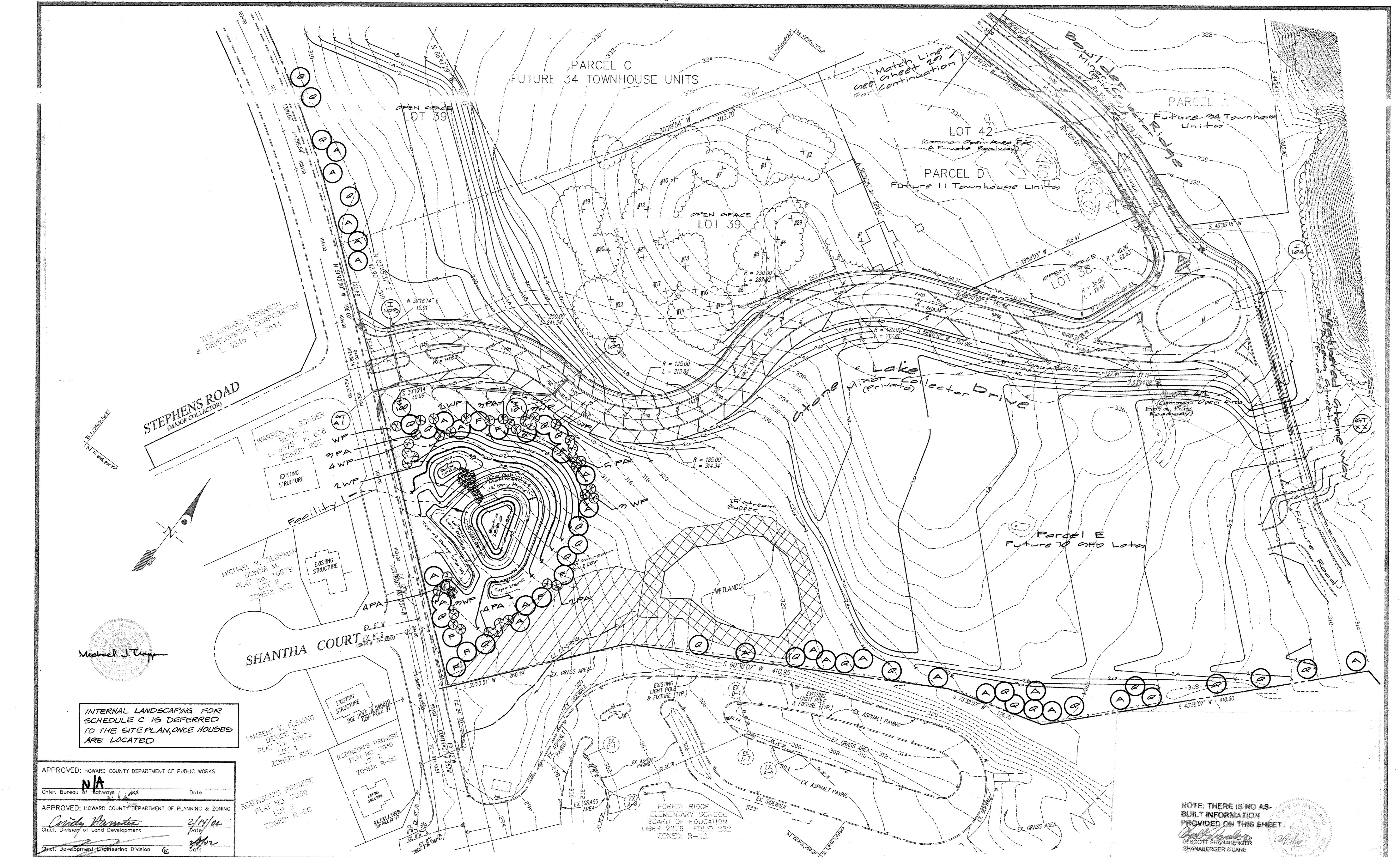
GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3900 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20866
 TEL: 301-421-4024 BAL: 410-880-1820 DC/VA: 301-959-2524 FAX: 301-421-4186

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

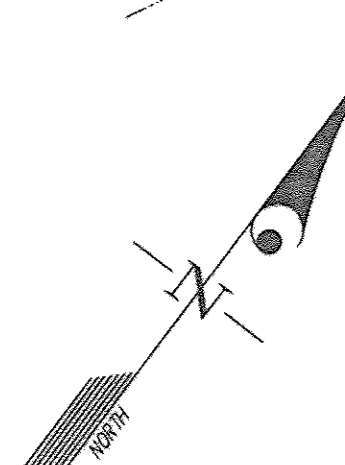
STORM DRAIN DRAINAGE AREA MAP
 STONE LAKE
 PARCELS 'A' THRU 'E'
 LOTS 1 THRU 44
 LIBER 572 FOLIO 430
 ELECTION DISTRICT No. 6
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP - GRID	SHEET
October, 2001	47 - 9/10	20 OF 40



THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
L. 3245 F. 2514

STEPHENS ROAD
(MAJOR COLLECTOR)



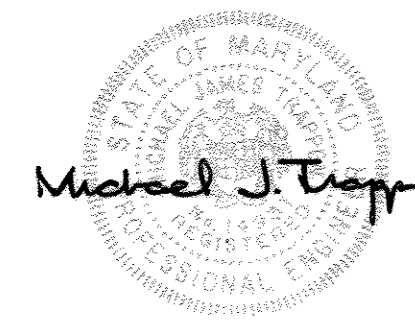
MICHAEL R. TILGHMAN
DONNA M.
PLAT No. 10979
LOT 9
ZONED: RSE

SHANTHA COURT
EX. 8' W
EX. 8' S
CORNER # 24-3200

LANBERT V. FLEISHING
DENISE C.
PLAT No. 10979
LOT 1
ZONED: RSE

ROBINSON'S PROMISE
PLAT No. 7030
LOT 2
ZONED: R-SC

FOREST RIDGE
ELEMENTARY SCHOOL
BOARD OF EDUCATION
LIBER 2276 FOLIO 232
ZONED: R-12



INTERNAL LANDSCAPING FOR SCHEDULE C IS DEFERRED TO THE SITE PLAN, ONCE HOUSES ARE LOCATED

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
N/A
Chief, Bureau of Highways
Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Ramirez
Chief, Division of Land Development
2/14/02
Date

Chief, Development Engineering Division
Date

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
Scott Shanaberger
OF SCOTT SHANABERGER
SHANABERGER & LANE



GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONVILLE OFFICE PARK
BURTONVILLE, MARYLAND 20866
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-889-2524 FAX: 301-421-4188

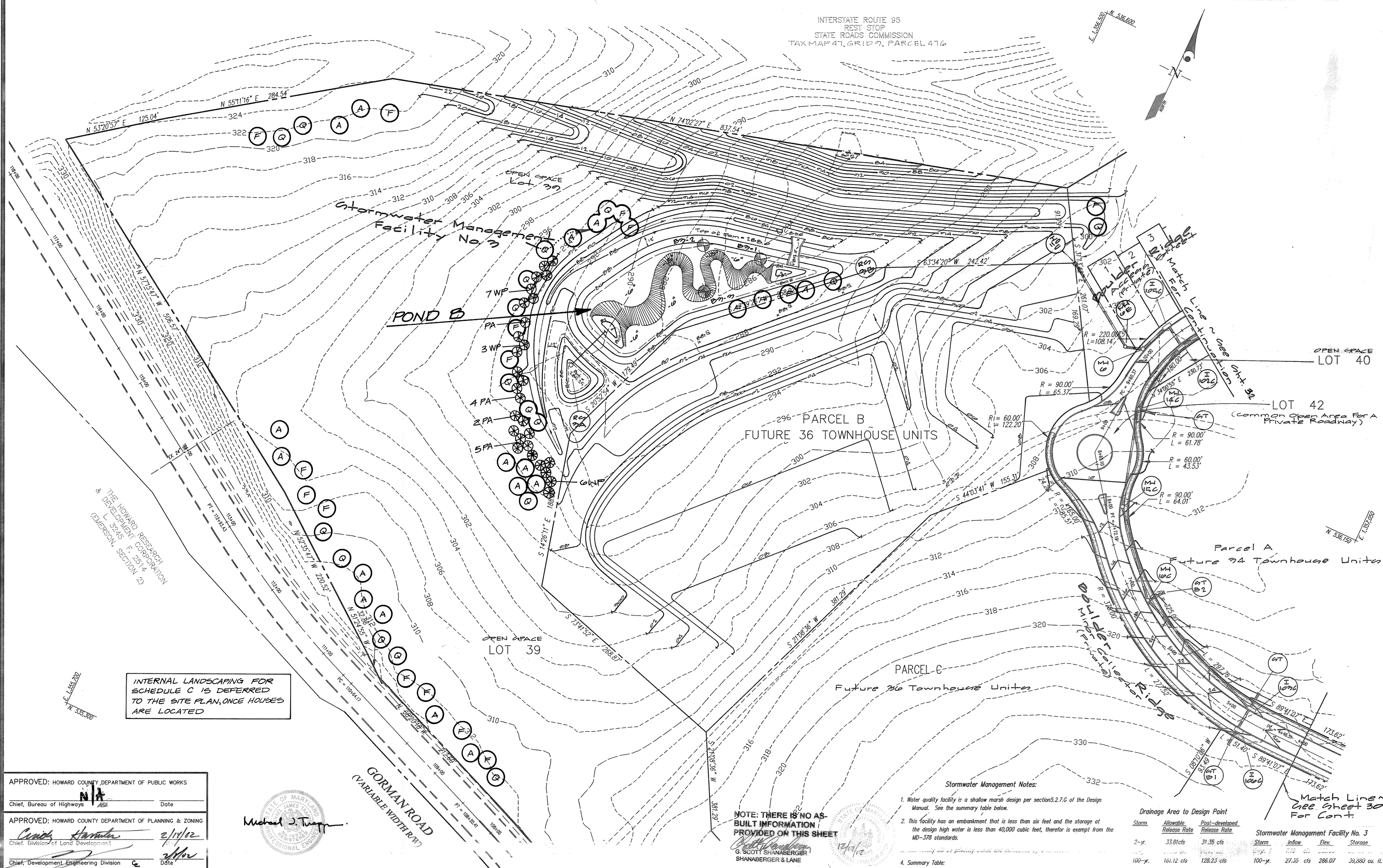
DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MD 21044
PH: 410-992-6080
ATTN: MR. BOB JENKINS

LANDSCAPE PLAN - ENTRY AREA
STONE LAKE
PARCELS 'A' THRU 'E'
LOTS 1 THRU 44
ELECTION DISTRICT No. 6

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP - GRID	SHEET
October, 2001	47 - 9/10	30 OF 40

HOWARD COUNTY, MARYLAND



INTERNAL LANDSCAPING FOR SCHEDULE C IS DEFERRED TO THE SITE PLAN, ONCE HOUSES ARE LOCATED

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

Stormwater Management Notes:

1. Water quality facility is a shallow marsh design per section 5.2.7.G of the Design Manual. See the summary table below.
2. This facility has an embankment that is less than six feet and the storage at the design high water is less than 40,000 cubic feet, therefore is exempt from the MD-378 standards.
3. Summary Table:

Drainage Area to Design Point

Storm	Allowable Release Rate	Post-developed Release Rate
2-yr.	33.81 cfs	31.35 cfs
100-yr.	161.12 cfs	128.23 cfs

Stormwater Management Facility No. 3			
Storm	Inflow	Elev.	Storage
2-yr.	7.70 cfs	286.07	
100-yr.	27.35 cfs	286.07	39,880 cu. ft.

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Development Engineering Division
Date

Michael J. Trapp
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 FAX: 301-421-4186

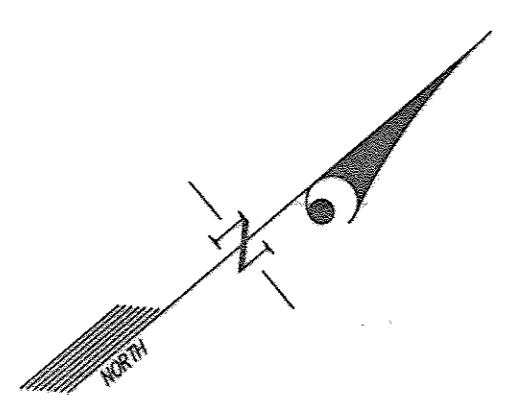
DATE	REVISION	BY	APPR.

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

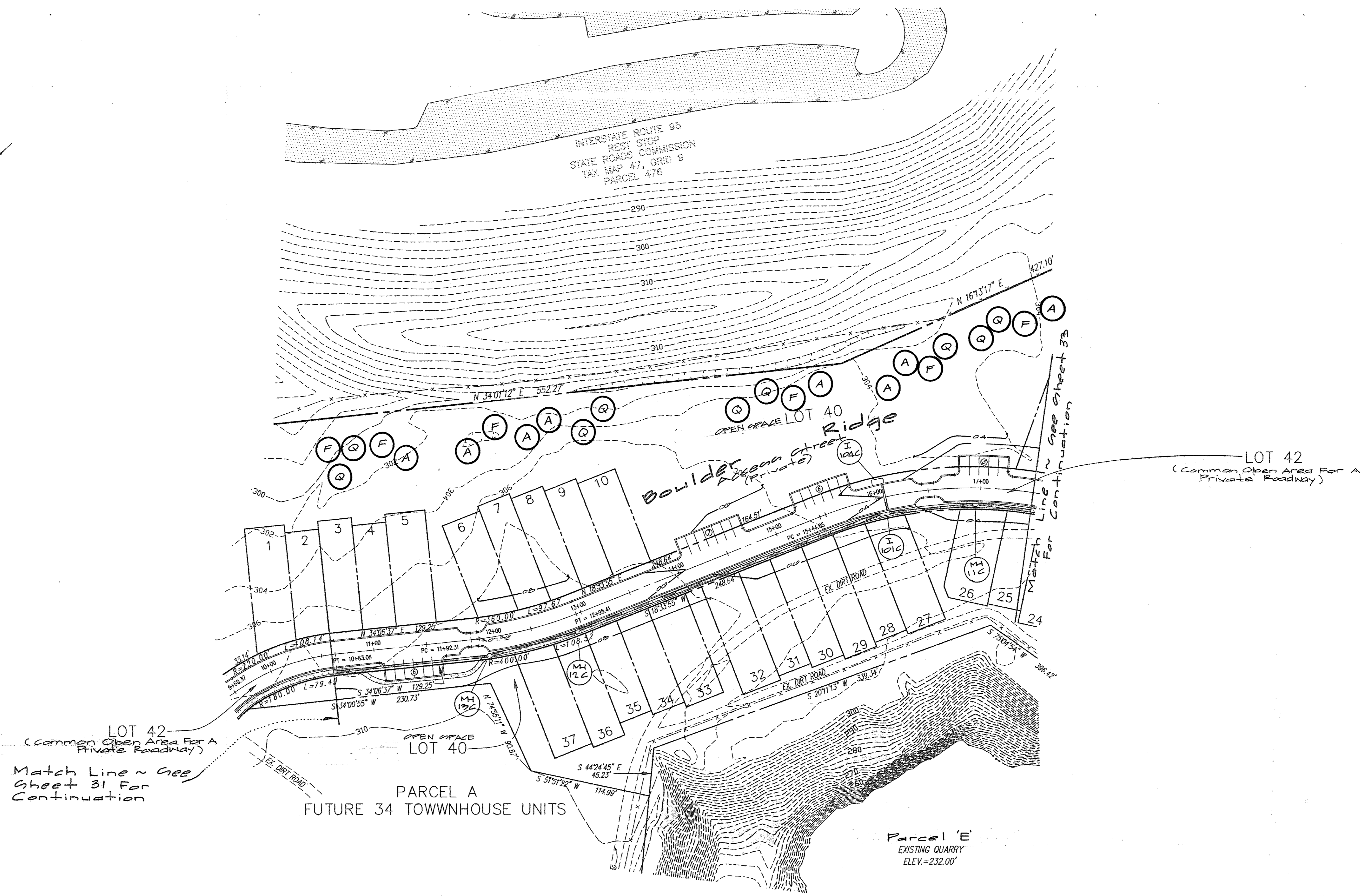
LANDSCAPE PLAN - PARCELS A & BERM AREA
STONE LAKE
PARCELS 'A' THRU 'E'
LOTS 1 THRU 4A
ELECTION DISTRICT No. 6
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP - GRID	SHEET
October, 2001	47 - 9/10	31 OF 40

N 36.200
E 335.287



N 337.350
E 1,357.200



LOT 42
(Common Open Area For A Private Roadway)
Match Line ~ See Sheet 31 For Continuation

PARCEL A
FUTURE 34 TOWNHOUSE UNITS

Parcel 'E'
EXISTING QUARRY
ELEV. = 232.00'

LOT 42
(Common Open Area For A Private Roadway)

INTERNAL LANDSCAPING FOR SCHEDULE C IS DEFERRED TO THE SITE PLAN, ONCE HOUSES ARE LOCATED.

Michael J. Trapp

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

Chief, Development Engineering Division
Date

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

Shanaberger & Lane
SCOTT SHANABERGER
SHANABERGER & LANE

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20886
TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4188

NO.	DATE	REVISION	BY	APPR.

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

LANDSCAPE PLAN - SOUTH TOWNHOUSE AREA

STONE LAKE
PARCELS 'A' THRU 'E'
LOTS 1 THRU 44
LIBER 572 FOLIO 430

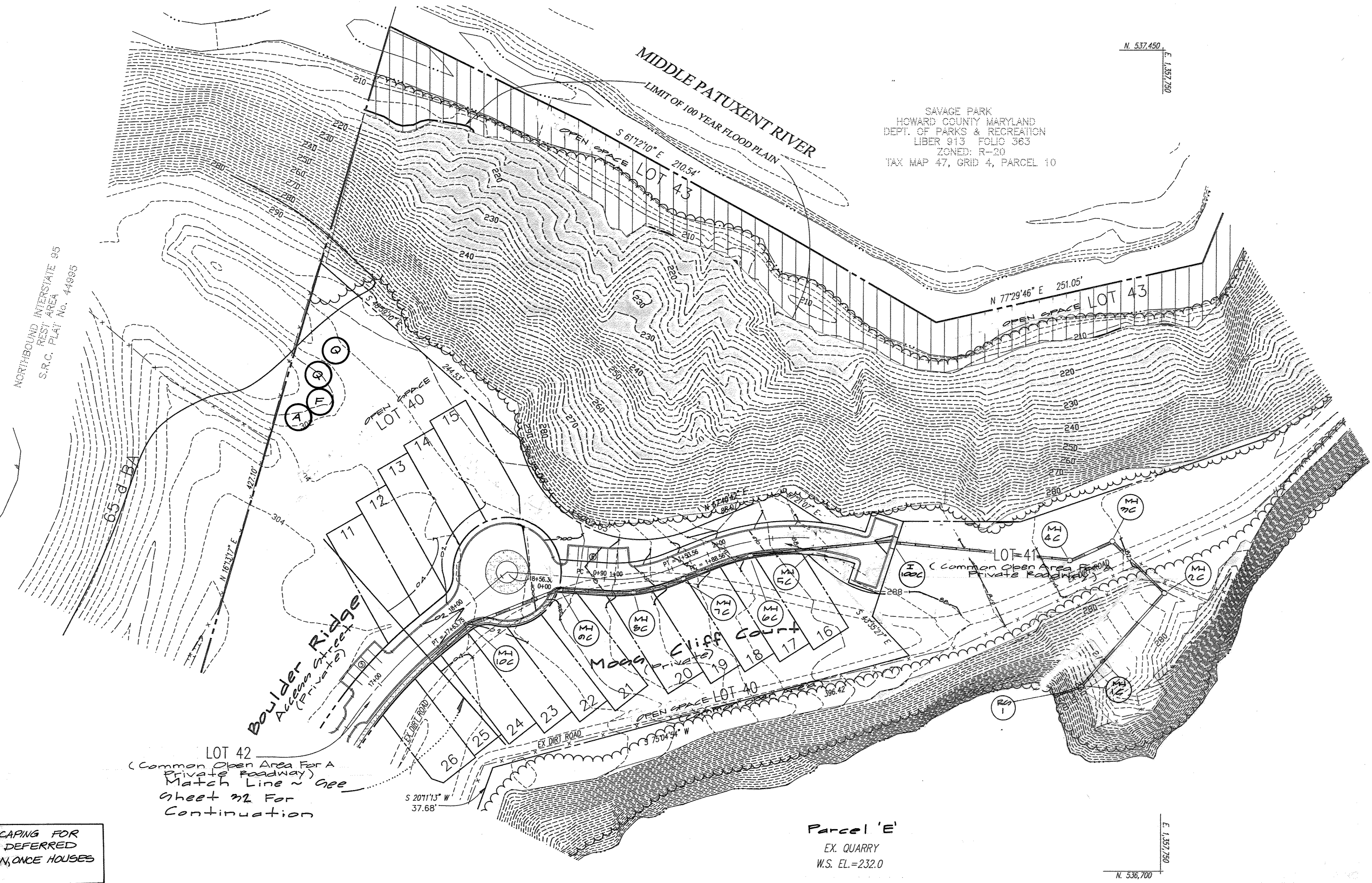
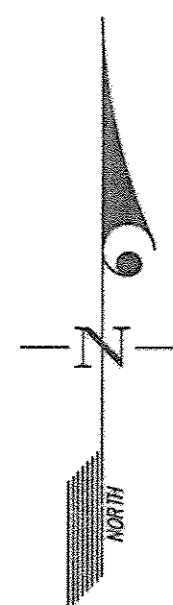
ELECTION DISTRICT No. 6

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP - GRID	SHEET
October, 2001	47 - 9/10	22 OF 40

HOWARD COUNTY, MARYLAND

E. 1,356,350
N. 537,450

N. 537,450
E. 1,357,790



SAVAGE PARK
HOWARD COUNTY MARYLAND
DEPT. OF PARKS & RECREATION
LIBER 913 FOLIO 363
ZONED: R-20
TAX MAP 47, GRID 4, PARCEL 10

NORTHBOUND INTERSTATE 85
S.R.C. PLAN NO. 44885

LOT 42
(Common Open Area For A
Private Roadway)
Match Line ~ See
Sheet 22 For
Continuation

INTERNAL LANDSCAPING FOR
SCHEDULE C IS DEFERRED
TO THE SITE PLAN, ONCE HOUSES
ARE LOCATED

Parcel 'E'
EX. QUARRY
W.S. EL. = 232.0

E. 1,357,790
N. 536,700

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
NJA
Chief, Bureau of Highways
Date
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Coady Hamilton
Chief, Division of Land Development
Date
Chief, Development-Engineering Division
Date

Michael J. Tropp
Professional Engineer

NOTE: THERE IS NO
BUILT INFORMATION
PROVIDED ON THIS SHEET
S. SCOTT SHANBERGER
SHANBERGER & LANE



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: 410-680-1820 DC/VA: 301-989-2524 FAX: 301-421-4188

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

LANDSCAPE PLAN - NORTH TOWNHOUSE AREA
STONE LAKE
PARCELS 'A' THRU 'E'
LOTS 1 THRU 44
LIBER 572 FOLIO 430
ELECTION DISTRICT No. 6
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	R-ED	99140
DATE	TAX MAP - GRID	SHEET
October 2001	47 - 9/10	22 OF 40

SCHEDULE A Sec. 16.124 (2)1 PERIMETER LANDSCAPE EDGE Category		Adj. to Roadways	Adj. to Perimeter Property	
Perimeter		5	1	4A
Landscape Buffer Type		A	A	A
Linear Feet of Roadway/Perimeter Frontage		1952	2310	1217
Credit for Ex. Vegetation (Yes, No, Linear Feet) (describe below if needed)		NO	YES 220	NO
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (describe below if needed)		NO	NO	NO
Number of Plants Required		32	34	20
Shade Trees		0	0	0
Evergreen Trees		0	0	0
Shrubs		0	0	0
Number of Plants Provided		33	35	23
Shade Trees		0	0	0
Evergreen Trees		0	0	0
Other Trees (2:1 subst.)		33	35	23
Shrubs (10:1 subst.)		0	0	0
(describe plant substitution credits below if needed)		— Alternative Compliance... exceeds county req. —		

SCHEDULE D Sec. 16.124 (2)1 STORMWATER MANAGEMENT AREA LANDSCAPING	FACILITY 1	FACILITY 3
Linear Feet of Perimeter:	913 LINEAR FEET	1120 LINEAR FEET
Number of Trees Required	Buffer B: 1: 50 Shade Trees 40 Evergreen Trees	Buffer B: 50 Shade Trees 40 Evergreen Trees
Shade Trees	18 Shade Trees	22 Shade Trees
Evergreen Trees	25 Evergreen Trees	28 Evergreen Trees
Credit for Other Vegetation (No, Yes, and %)	NO	NO
Credit for Existing Vegetation (No, Yes, and %)	NO	NO
Number of Trees Provided	NO	NO
Shade Trees	21 Shade Trees	23 Shade Trees
Evergreen Trees	40 Evergreen Trees	28 Evergreen Trees

Schedule 'A' Number of Shade Trees for bonding: 86 x \$300 = \$25,800.00
 Schedule 'D' Number of shade trees for bonding: 40 x \$300 = \$12,000.00
 Schedule 'D' Number of evergreen trees for bonding: 51 x \$150 = \$7,650.00
TOTAL LANDSCAPE SURETY REQUIRED WITH DEVELOPER'S AGREEMENT: = \$45,450.00

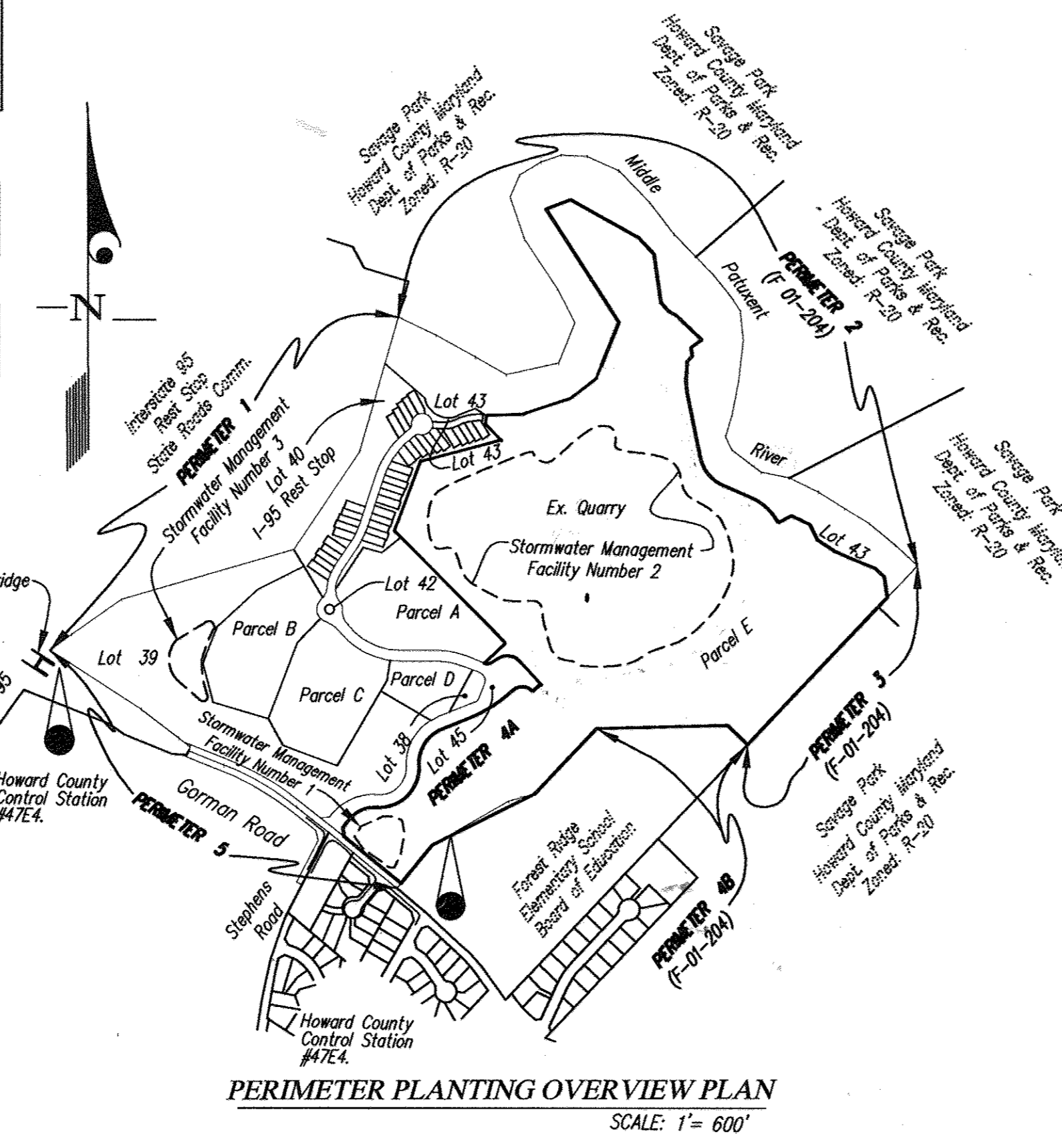
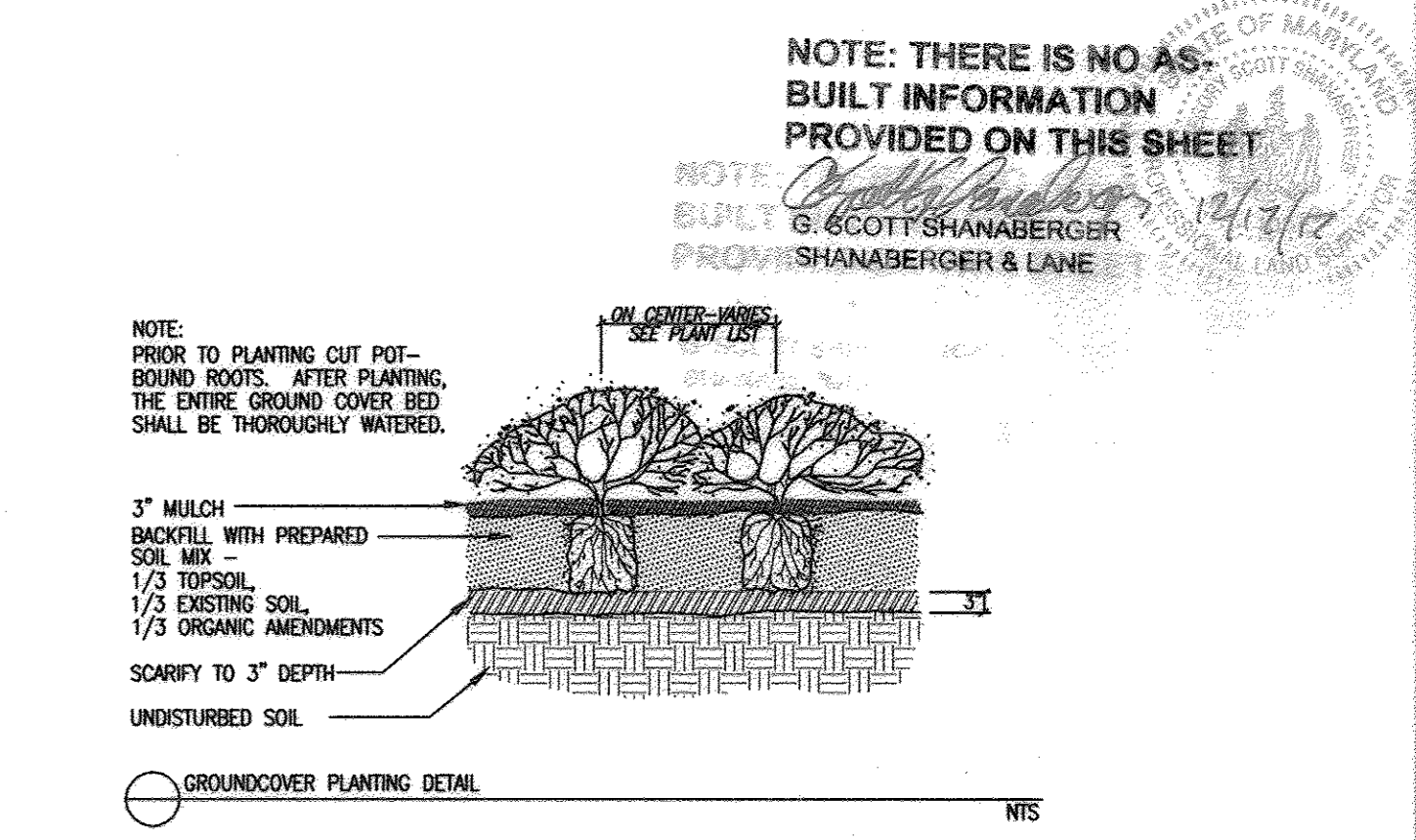
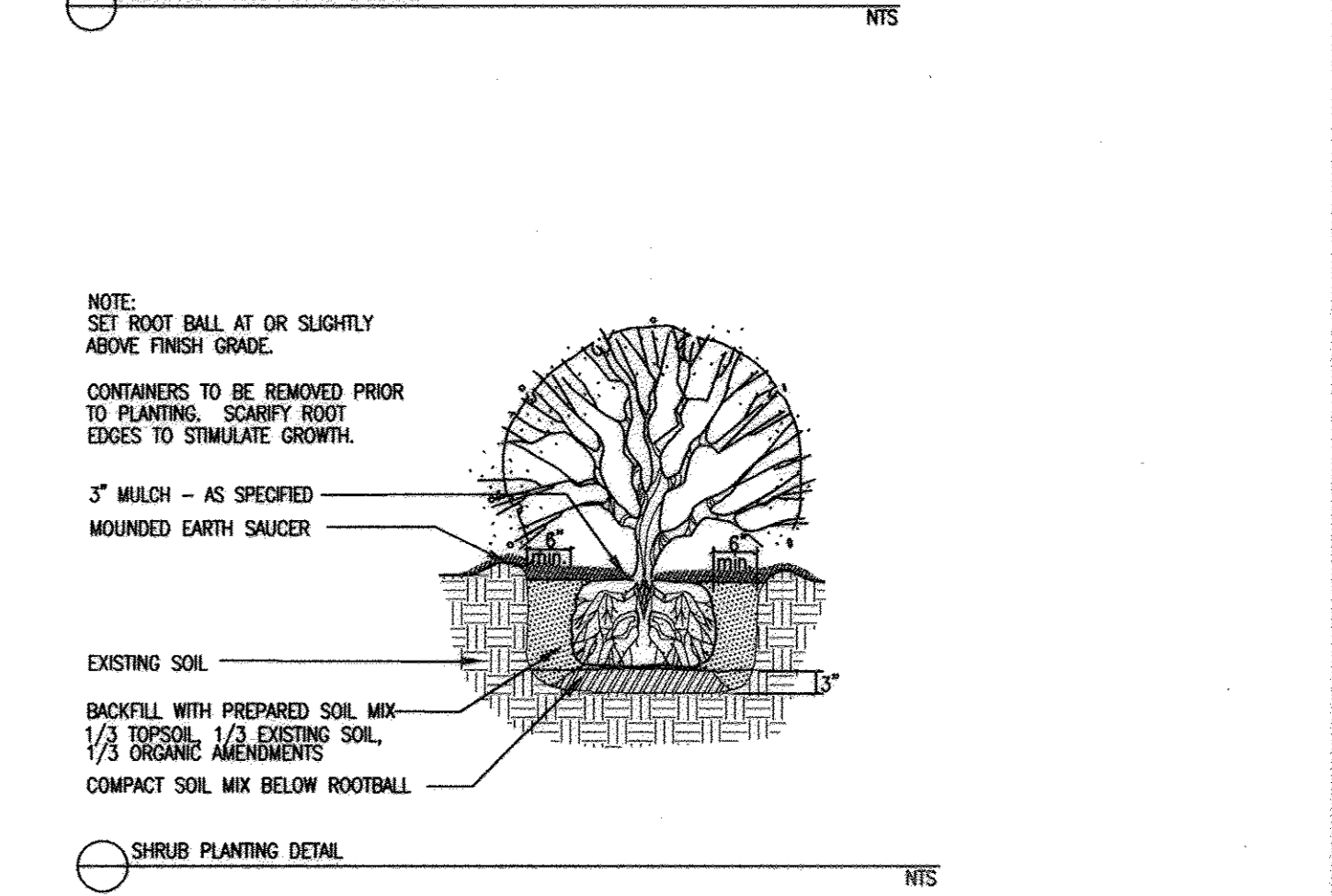
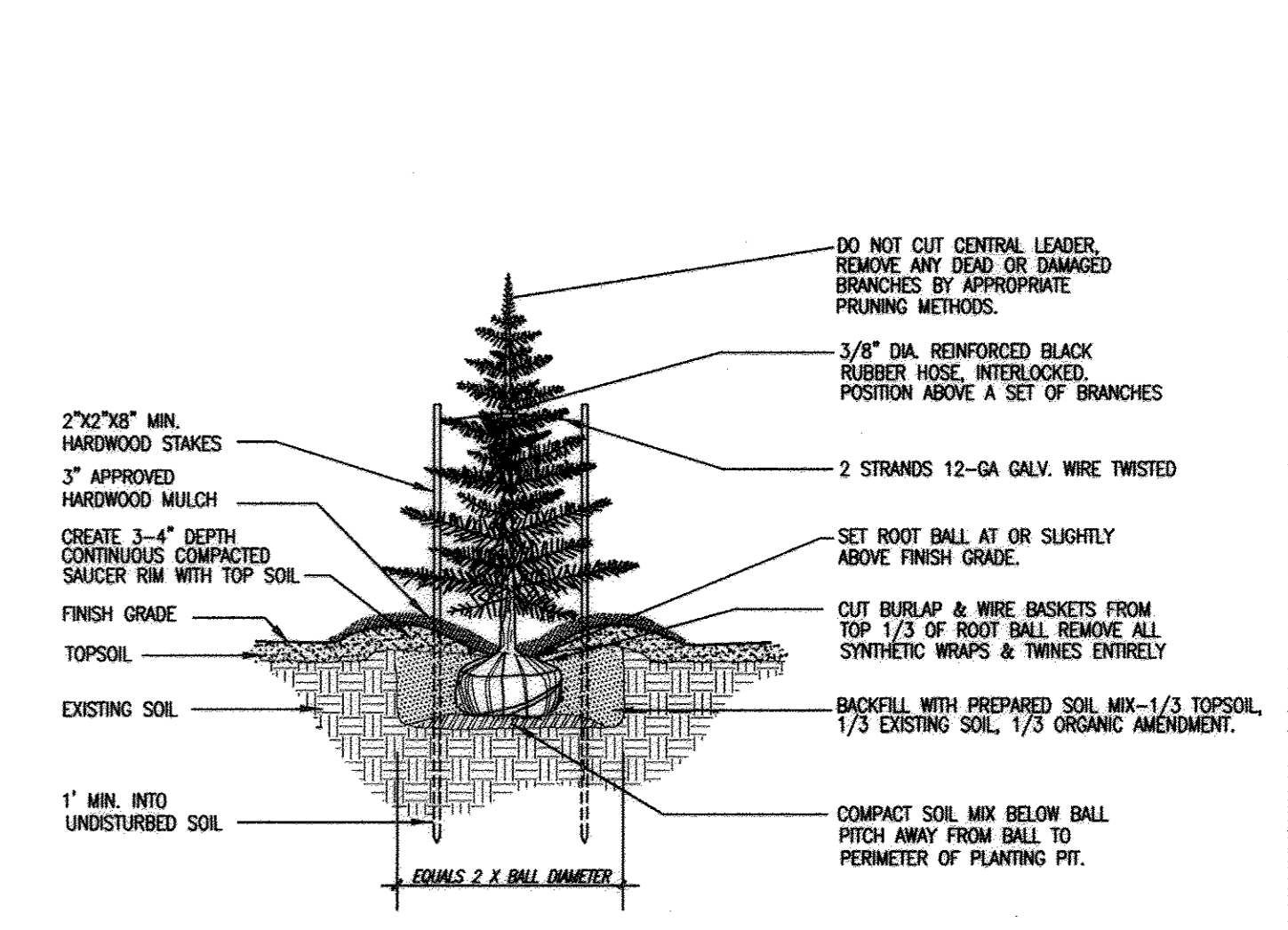
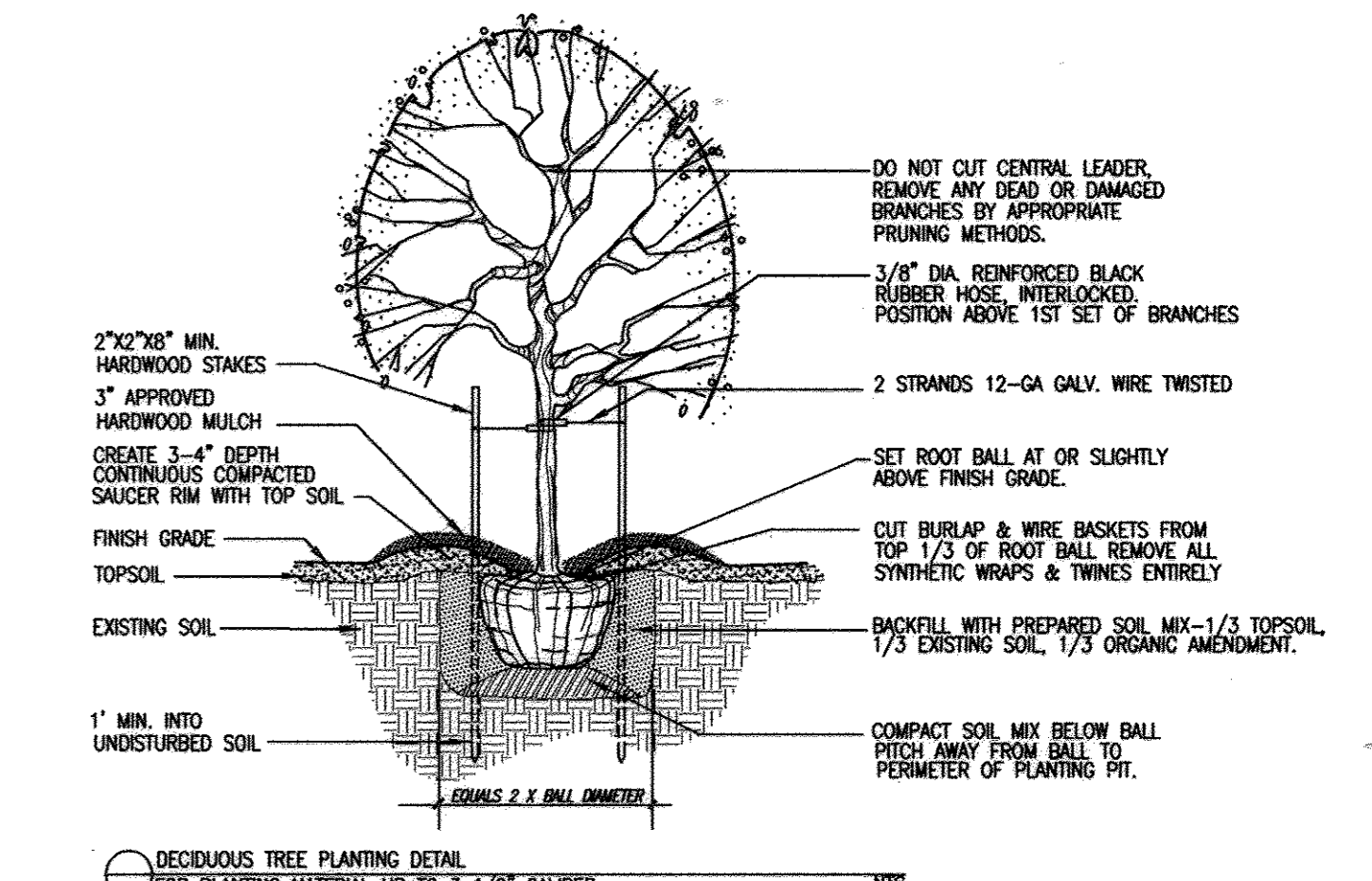
Financial surety for the required landscaping has been posted as part of the DPW Developer's Agreement in the amount of **\$45,450.00**
 Internal landscaping for SFA lots on this plan is deferred until Site Plan.

Note: Schedule A and D Landscaping for Parcel E will be provided as a part of the re-subdivision of Parcel E under F-01-204.

SYMBOL	QTY.	NAMES (BOTANICAL / SCIENTIFIC)	SIZE	ROOT	COMMENTS
SHADE TREES					
A*	49	Acer rubrum 'October Sunset'	2 2 1/2" Cal.	B&B	
F	31	Fraxinus pennsylvanica 'Summit'	2 1/2-3" Cal.	B&B	
Q	55	Quercus palustris Pin Oak	2 1/2-3" Cal.	B&B	
EVERGREEN TREES					
PA	30	Picea abies Norway Spruce	8'-10' Ht.	B&B	
WP	38	Pinus strobus White Pine	8'-10' Ht.	B&B	

- LANDSCAPING NOTES**
- 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.
 - 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.
 - Field verify underground utility locations and existing conditions before starting planting work. Contact engineer / landscape architect if any relocations are required.
 - 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 plant list shall take precedence.
 - 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.
 - No substitution shall be made without written consent of the owner or his representative.
 - All areas disturbed by construction activities but not otherwise planted, paved, or mulched shall be seeded or sodded in accordance with the project specifications.
 - 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.
 - All exposed earth within limits of planting beds shall be mulched with shredded hardwood mulch per planting details.
 - "Schedule A - Perimeter Landscape Edge; and "Schedule D - Stormwater Management Area Landscaping" are provided for landscape surety calculation purposes only. Financial surety for the required landscaping shall be posted with the developer agreement in the amount of \$45,450.00.
 - Planting provided:
Shade Trees (proposed): 135
Ornamental Trees: 0
Evergreen Trees (proposed): 68

- PLANT MATERIALS AND PLANTING METHODS**
- A. Plant Materials
- The landscape contractor shall furnish and install and/or dig, ball, burlap and transport all of the plant materials called for on drawings and/or listed in the Plant Schedule.
- Plant Names**
Plant names used in the Plant Schedule shall conform with "Standardized Plant Names," latest edition.
 - 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.
 - 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 1/2" caliper, 14'-16' in height.
- d. Minimum size for planting minor or intermediate focus trees (pines, crabapples, etc.) shall be 3"-3 1/2" 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 1/2" | 14'-16' | 6'-8' | 32" diameter |
| 3 1/2" - 4" | 16'-18' | 8'-10' | 36" diameter |
| 4" - 4 1/2" | 18'-20' | 8'-10' | 40" diameter |
| 4 1/2" - 5" | 18'-17' | 10'-12' | 44" diameter |
| 5" - 5 1/2" | 18'-20' | 10'-12' | 48" diameter |
| 5 1/2" - 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".
- 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, plant and quantity of each. Each shipment of plants shall bear certificates of inspection as required by Federal, State and County authorities.
 - 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:
- 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.
 - Digging**
All plant material shall be dug, balled and burlapped (B&B) in accordance with the "AAN Standards".
 - 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:
 - 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.
 - 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.
- Soil 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.
- Staking, Guying and Wrapping**
All plant material shall be staked or guyed, and wrapped in accordance with the following specifications:
 - 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.
 - Wire and Cable: Wire shall be #10 galv. galvanized or bethanzined 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.
 - 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.
 - 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.
 - 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.
 - 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.
 - 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.
 - 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.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 Date: 2/1/04

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development
 Date: 2/1/04

Chief, Development Engineering Division
 Date: 2/1/04



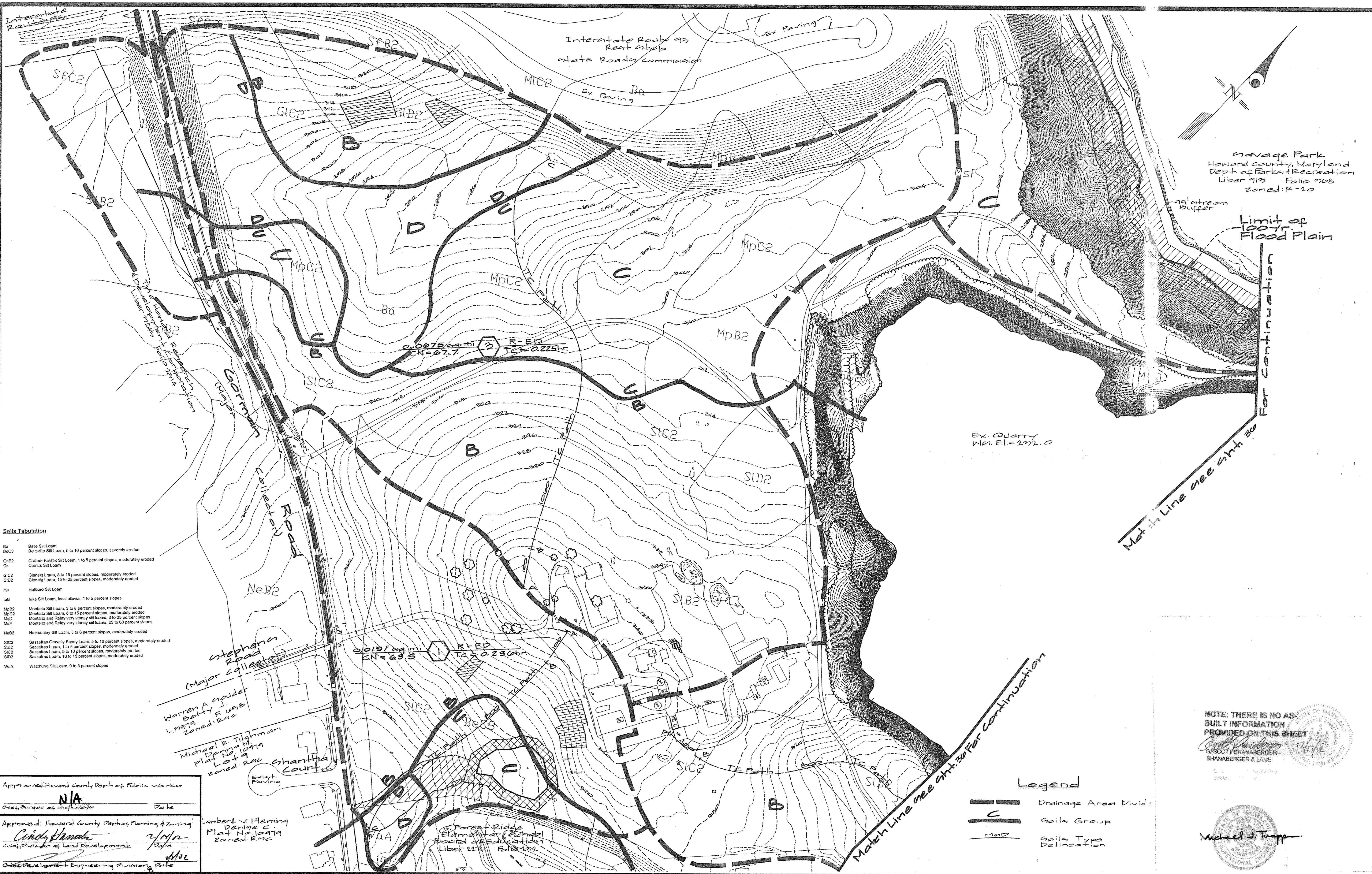
GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTNSVILLE OFFICE PARK
 BURTNSVILLE, MARYLAND 20866
 TEL: 301-421-4024 BALT. 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

DATE	REVISION	BY	APP'R.

PREPARED FOR:
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 10275 LITTLE PATENT PARKWAY
 COLUMIA, MD 21044
 PH: 410-992-6009
 ATTN: MR. BOB JENKINS

LANDSCAPE NOTES, DETAILS & OVERVIEW PLAN
STONE LAKE
PARCEL "A" THRU "E"
LOTS 1 THRU 4A
LIBER 572 FOLIO 430
 6TH ELECTION DISTRICT
 SCALE: AS SHOWN
 DATE: Oct., 2001
 ZONING: R-ED
 TAX MAP - GRID: 47 - 9/10

SCALE	ZONING	G. L. W. FILE NO.
AS SHOWN	R-ED	99140
DATE	TAX MAP - GRID	SHEET
Oct., 2001	47 - 9/10	24 OF 40



Savage Park
 Howard County, Maryland
 Dept. of Parks & Recreation
 Liber 912 Folio 208
 Zoned: R-20

Limit of
 100-yr.
 Flood Plain

Match Line see Sht. 36 For Continuation

Ex. Quarry
 W. El. = 272.0

Soils Tabulation

Ba	Belle Silt Loam
BeC3	Beltville Silt Loam, 5 to 10 percent slopes, severely eroded
CeB2	Chillum-Fairfax Silt Loam, 1 to 5 percent slopes, moderately eroded
Cs	Conus Silt Loam
GlC2	Glenely Loam, 8 to 15 percent slopes, moderately eroded
GlD2	Glenely Loam, 15 to 25 percent slopes, moderately eroded
Ha	Hatboro Silt Loam
IuB	Iuka Silt Loam, local alluvial, 1 to 5 percent slopes
MpB2	Montalto Silt Loam, 3 to 8 percent slopes, moderately eroded
MpC2	Montalto Silt Loam, 8 to 15 percent slopes, moderately eroded
MaD	Montalto and Relay very stoney silt loams, 3 to 25 percent slopes
MaF	Montalto and Relay very stoney silt loams, 25 to 60 percent slopes
NeB2	Neshaminy Silt Loam, 3 to 8 percent slopes, moderately eroded
SIC2	Sassafras Gravelly Sandy Loam, 5 to 10 percent slopes, moderately eroded
SIB2	Sassafras Loam, 1 to 5 percent slopes, moderately eroded
SIC2	Sassafras Loam, 5 to 10 percent slopes, moderately eroded
SID2	Sassafras Loam, 10 to 15 percent slopes, moderately eroded
WaA	Watchung Silt Loam, 0 to 3 percent slopes

Approved: Howard County Dept. of Public Works
NIA
 Chief, Bureau of Highwayways Date

Approved: Howard County Dept. of Planning & Zoning
Cindy Hanab
 Chief, Division of Land Development Date

Approved: Lambert V. Fleming
 Denise C.
 Plat No. 10919
 Zoned: R-OC

Legend

	Drainage Area Division
	Soils Group
	Soils Type Delineation

NOTE: THERE IS NO AS
 BUILT INFORMATION
 PROVIDED ON THIS SHEET

Scott Shanaberger
 G. SCOTT SHANABERGER
 SHANABERGER & LAKE

Michael J. Trapp

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: 301-421-4188

DATE	REVISION	BY	APPR.

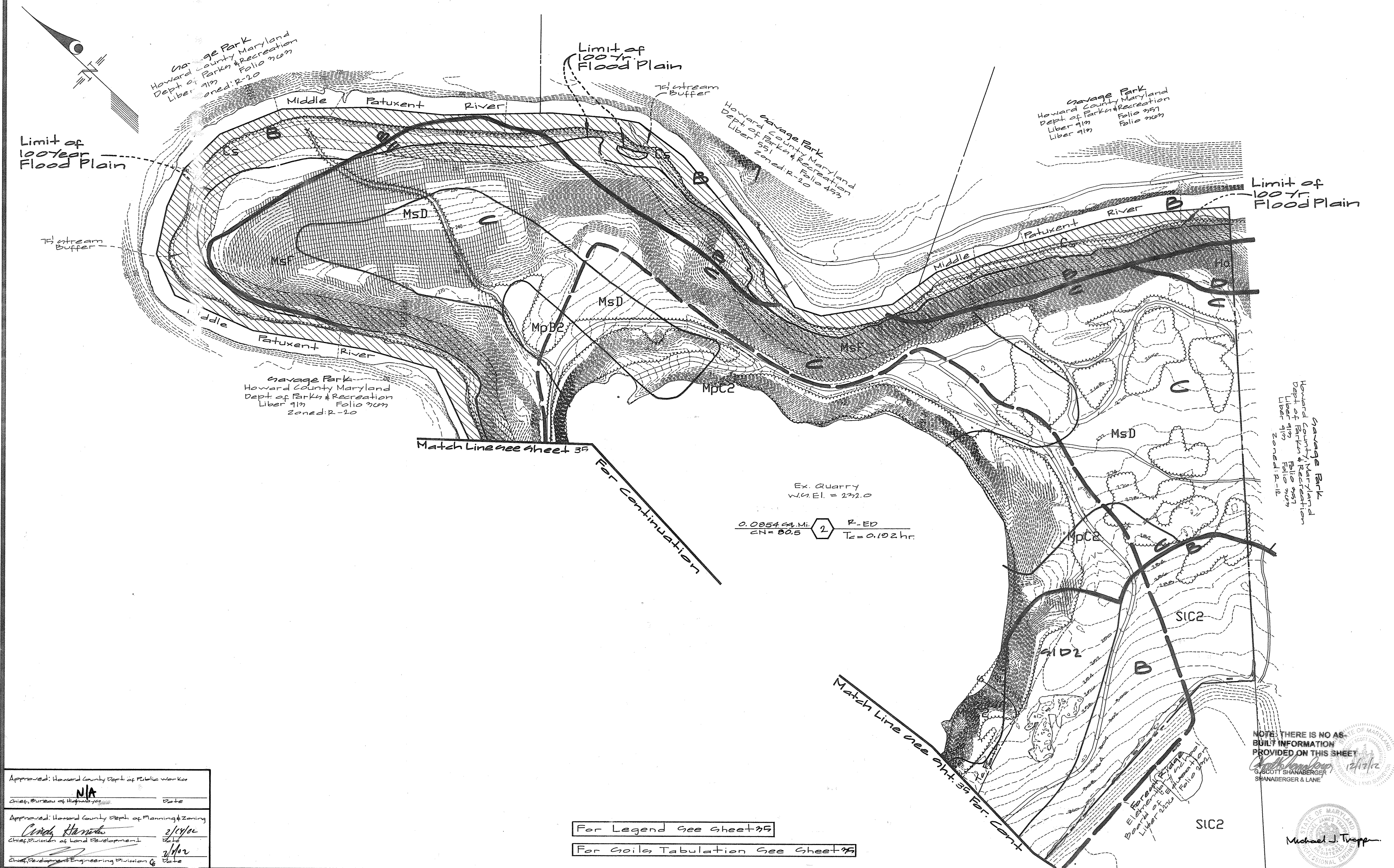
Owner:
 The Howard Research
 & Development Corporation
 10215 Little Patuxent Pkwy
 Columbia, Maryland 21044
 Attn: Bob Jenkins
 Phone: (410) 992-6089

PRE-DEVELOPED SWM DRAINAGE AREA MAP

STONE LAKE
 PARCELS 'A' THRU 'E'
 LOTS 1 THRU 44
 LIBER 572 FOLIO 480

ELECTION DISTRICT No. 6

SCALE	ZONING	G. L. W. FILE No.
1"=100'	R-ED	99140
DATE	TAX MAP - GRID	SHEET
Oct., 2001	47 - 9/10	35 OF 40



Approved: Howard County Dept. of Public Works
 Chief, Bureau of Highways
 Date

Approved: Howard County Dept. of Planning & Zoning
 Chief, Division of Land Development
 Date

Chief, Development Engineering Division
 Date

For Legend See Sheet 35
 For Soils Tabulation See Sheet 36

Ex. Quarry
 W. El. = 232.0
 $\frac{0.0854 \text{ mi.}}{CN = 80.5} \quad R-ED \quad T_c = 0.102 \text{ hr.}$

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
 G. SCOTT SHANABERGER
 SHANABERGER & LANE

Michael J. Tropp

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 FAX: 301-421-4196

DATE	REVISION	BY	APP'R.

Owner:
 The Howard Research & Development Corporation
 10475 Little Patuxent Pkwy.
 Columbia, Maryland 21044
 Attn: Bob Jenkins
 Phone: (410) 442-0000

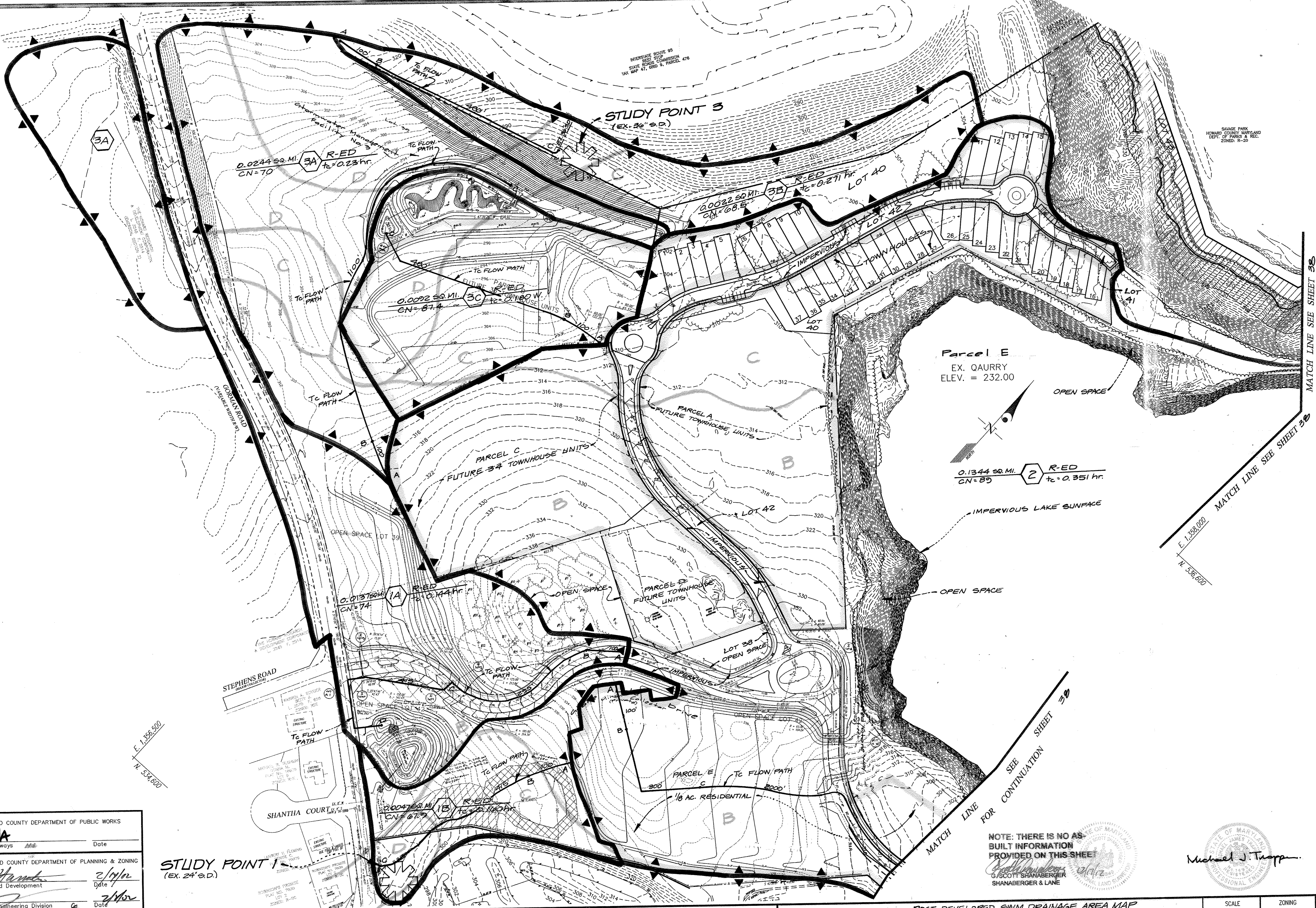
PRE-DEVELOPED SWM DRAINAGE AREA MAP

STONE LAKE
 PARCELS A' THRU 'E'
 LOTS 1 THRU 44
 LIBER 572 FOLIO 430

ELECTION DISTRICT No. 6

HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=100'	R-ED	99140
DATE	TAX MAP - GRID	SHEET
Oct., 2001	47 - 9/10	30 OF 40



INTERSTATE ROUTE 95
 STATE ROAD COMMISSION
 TAX MAP #1, GRID 9, PARCEL 476

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

STUDY POINT 3
 (EX. 26' S.D.)

0.0244 SQ. MI. 3A R-ED
 CN=70 $t_c = 0.23$ hr.

0.0022 SQ. MI. 3B R-ED
 CN=68.5 $t_c = 0.271$ hr.

0.0022 SQ. MI. 3C R-ED
 CN=67.4 $t_c = 0.271$ hr.

Parcel E
 EX. QUARRY
 ELEV. = 232.00

0.1344 SQ. MI. 2 R-ED
 CN=89 $t_c = 0.351$ hr.

0.0137 SQ. MI. 1A R-ED
 CN=74 $t_c = 0.144$ hr.

0.0047 SQ. MI. 1B R-ED
 CN=67.9 $t_c = 0.100$ hr.

STUDY POINT 1
 (EX. 24' S.D.)

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

G. SCOTT SHANABERGER
 SHANABERGER & LANE

Michael J. Tropp

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Chief, Division of Land Development

Chief, Development Engineering Division

GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, LAND SURVEYORS, LAND PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK
 BURTONSVILLE, MARYLAND 20886
 TEL: 301-421-4024 BALT: 410-880-1820 DC/VA: 301-989-2524 FAX: 301-421-4186

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

POST-DEVELOPED SWM DRAINAGE AREA MAP

STONE LAKE
 PARCELS 'A' THRU 'E'
 LOTS 1 THRU 44
 LIBER 572 FOLIO 410

SCALE 1"=100'	ZONING R-ED	G. L. W. FILE No. 99140
DATE Oct., 2001	TAX MAP - GRID 47-9/10	SHEET 37 OF 40

DESIGN	DATE	REVISION	BY	APP'R.

ELECTION DISTRICT No. 6

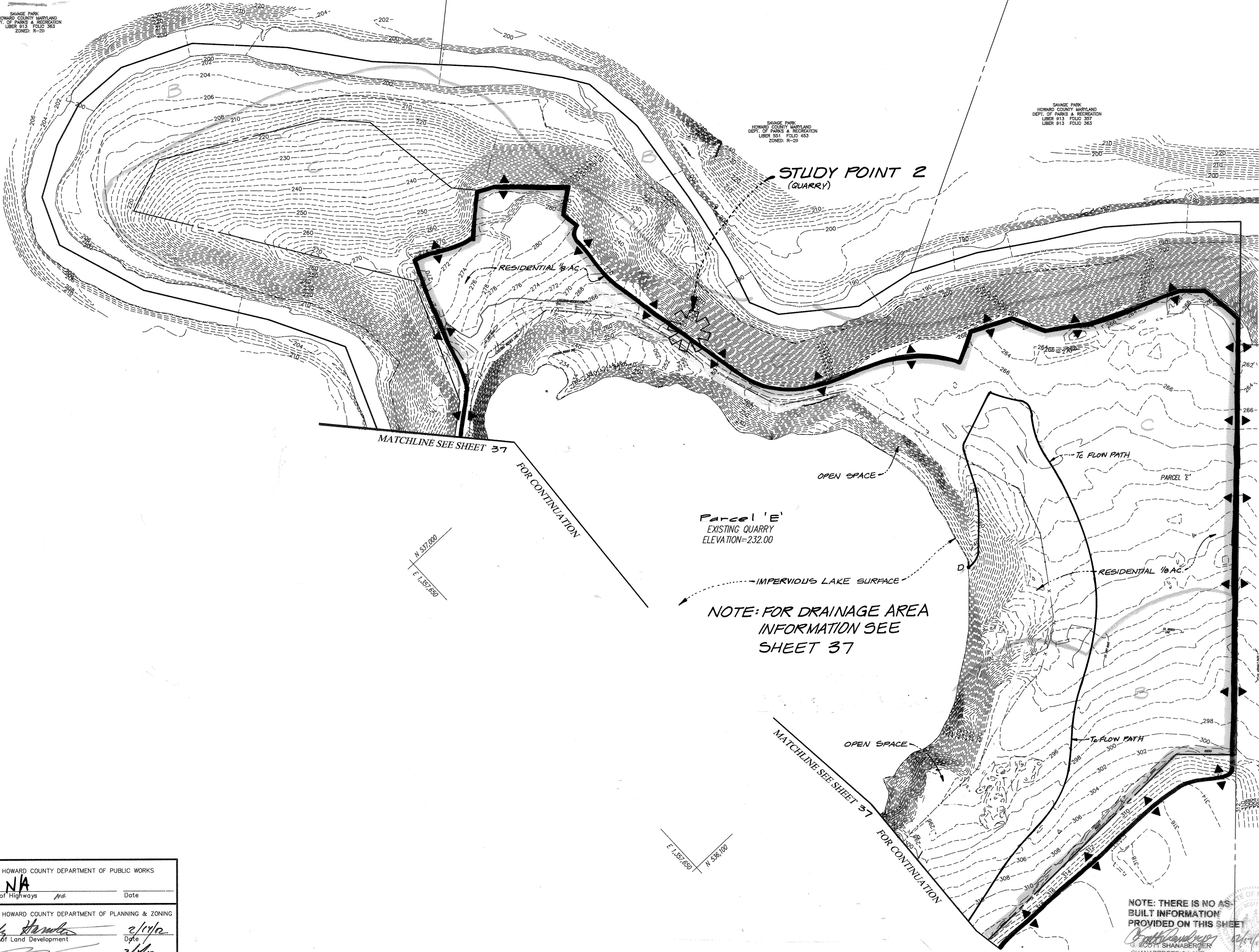
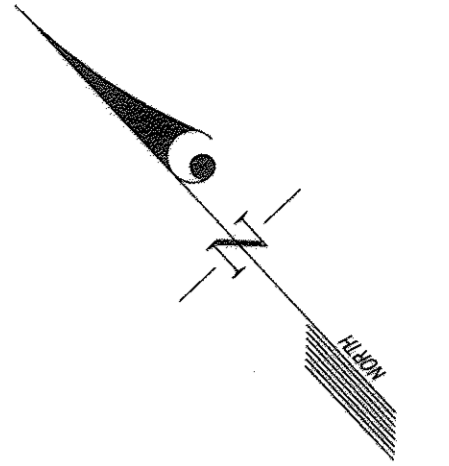
HOWARD CO., MD, MARYLAND

F-01-177

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

SAVAGE PARK
HOWARD COUNTY MARYLAND
DEPT. OF PARKS & RECREATION
LIBER 931 FOLIO 453
ZONED: R-20

SAVAGE PARK
HOWARD COUNTY MARYLAND
DEPT. OF PARKS & RECREATION
LIBER 913 FOLIO 367
LIBER 913 FOLIO 363



NOTE: FOR DRAINAGE AREA INFORMATION SEE SHEET 37

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Charles Hamble 2/17/10
 Chief, Division of Land Development
 Date

Chief, Development Engineering Division
[Signature] 2/10/10
 Date

Michael J. Tropp
 STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 No. 10000

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: 301-988-2524 FAX: 301-421-4186

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

POST-DEVELOPED SWM DRAINAGE AREA MAP
STONE LAKE
 PARCELS 'A' THRU 'E'
 LOTS 1 THRU 44
 572 FOLIO 430
 ELECTION DISTRICT No. 6

SCALE	ZONING	G. L. W. FILE No.
1"=100'	R-ED	99140
DATE	TAX MAP - GRID	SHEET
Oct, 2001	47-9/10	78 OF 40

HOWARD COUNTY, MARYLAND

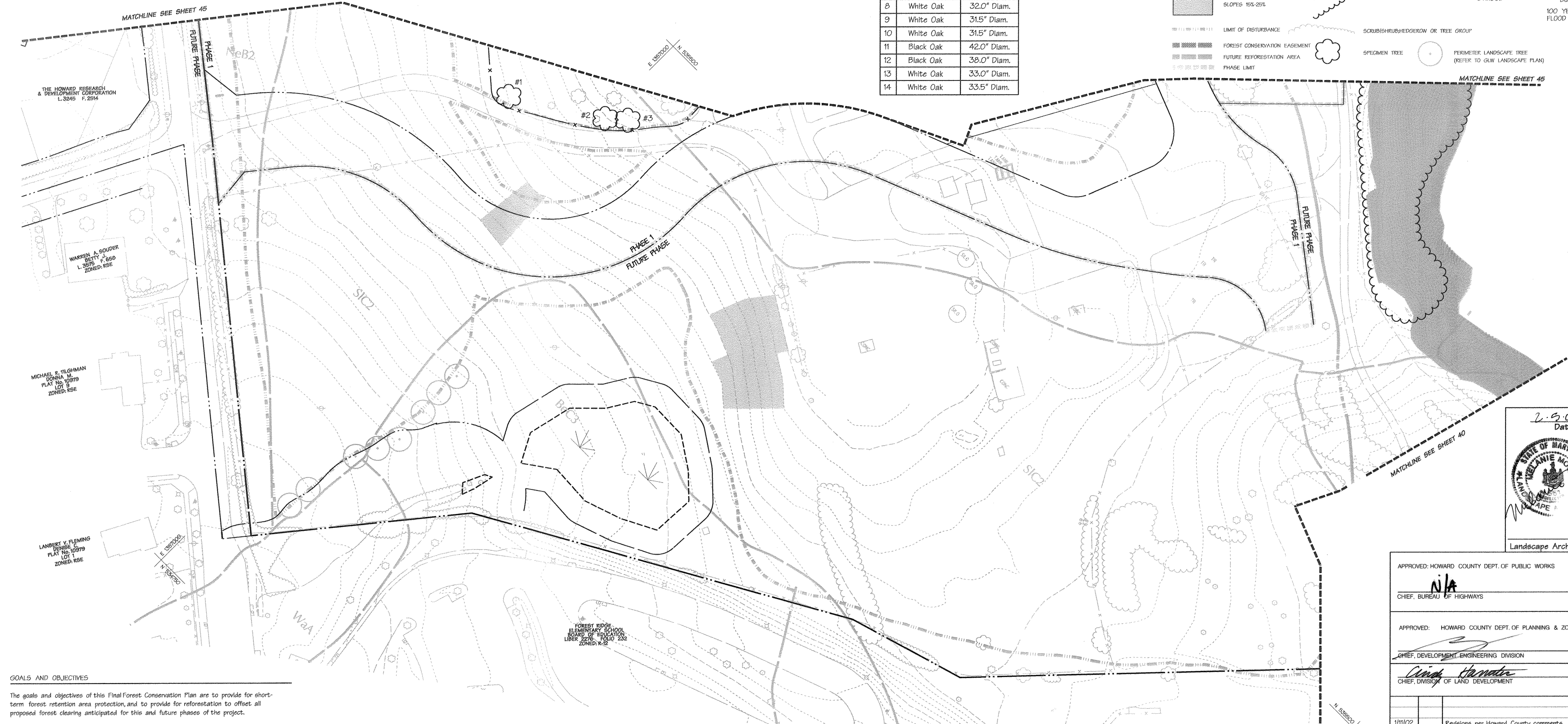
99140DAM.dwg 4-30-01 9:24:56 am EST

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
 FUTURE REFORESTATION AREA
 PHASE LIMIT
 REFORESTATION AREAS
 FOREST CLEARING
 FOREST EDGE
 SCRUBSHRUBHEDGEROW OR TREE GROUP
 SPECIMEN TREE
 PERIMETER LANDSCAPE TREE (REFER TO LWP LANDSCAPE PLAN)
 WETLAND BUFFER
 WETLAND SYMBOL
 HEAD OF STREAM
 STREAM
 STREAM BUFFER
 100 YEAR FLOOD PLAIN



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 anticipated for this and future phases of the project.

Development of Stone Lake - Phase 1 under the current Forest Conservation Act requires the clearing of approximately 0.99 acres of existing forest; no reforestation requirement is generated by this first phase of development.

We anticipate that a total of approximately 10.69 acres of forest clearing (7.87 acres outside of the quarry; 2.82 acres associated with the quarry reclamation) will be necessary for future development phases. The anticipated 7.87 acres of clearing outside the quarry generates a 7.64 acre reforestation requirement (based on standard Forest Conservation Worksheet calculations). The additional 2.82 acres of clearing anticipated within the quarry generates a 0.71 acre reforestation requirement (based on the negotiated 0.25:1 replacement ratio approved by MD DNR). In total, approximately 8.35 acres of reforestation are required for all phases of Stone Lake.

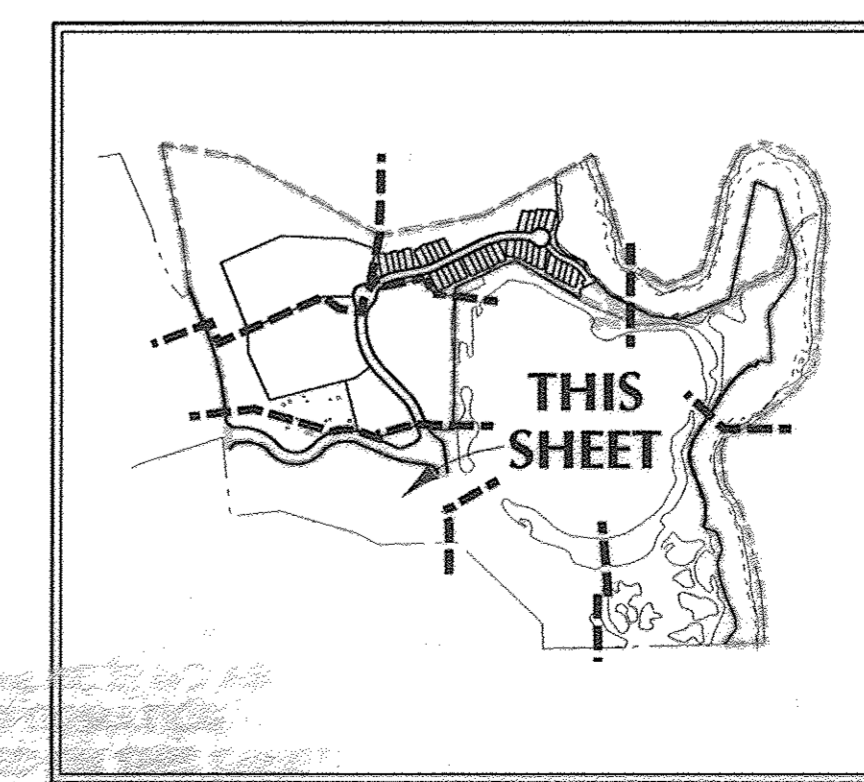
Approximately 3.54 acres of additional forest retention has been derived from development of Emerson Section 1 (F-01-140) and will be used to partially defray the reforestation requirement for Stone Lake (7.08 acres excess retention x 0.5 = 3.54 acres of credit). The remaining 4.81 acre reforestation requirement for Stone Lake will be satisfied on-site at the location 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.

EASEMENT TABULATION CHART

Forest Conservation Easement	Type	Gross Area	Floodplain	Net Area
1	Retention	7.73 AC.	1.8 AC.	5.93 AC.
2	Retention	1.96 AC.	1.9 AC.	0.06 AC.
3	Retention	9.98 AC.	2.8 AC.	7.18 AC.
4	Reforestation	4.81 AC.	0.0 AC.	4.81 AC.
TOTAL		24.48 AC.	6.5 AC.	17.98 AC.



NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

G. SCOTT SHANABERGER
SHANABERGER & LANE

2-9-02
Date

Landscape Architect

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
 N/A
 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE
 2/11/02
 DATE
 2/11/02
 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

Date	No.	Revision Description
1/11/02		Revisions per Howard County comments

STONE LAKE PHASE 1

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 STONE LAKE	SECTION AREA P10	LOT/PARCEL # P. 037, P. 3, P. 462
PLAT OF 14' TRIG. # RED 47	ZONING MAP G TH	ELECT. DISTRICT G TH
WATER CODE	SEWER CODE	

TITLE
FINAL FOREST CONSERVATION PLAN

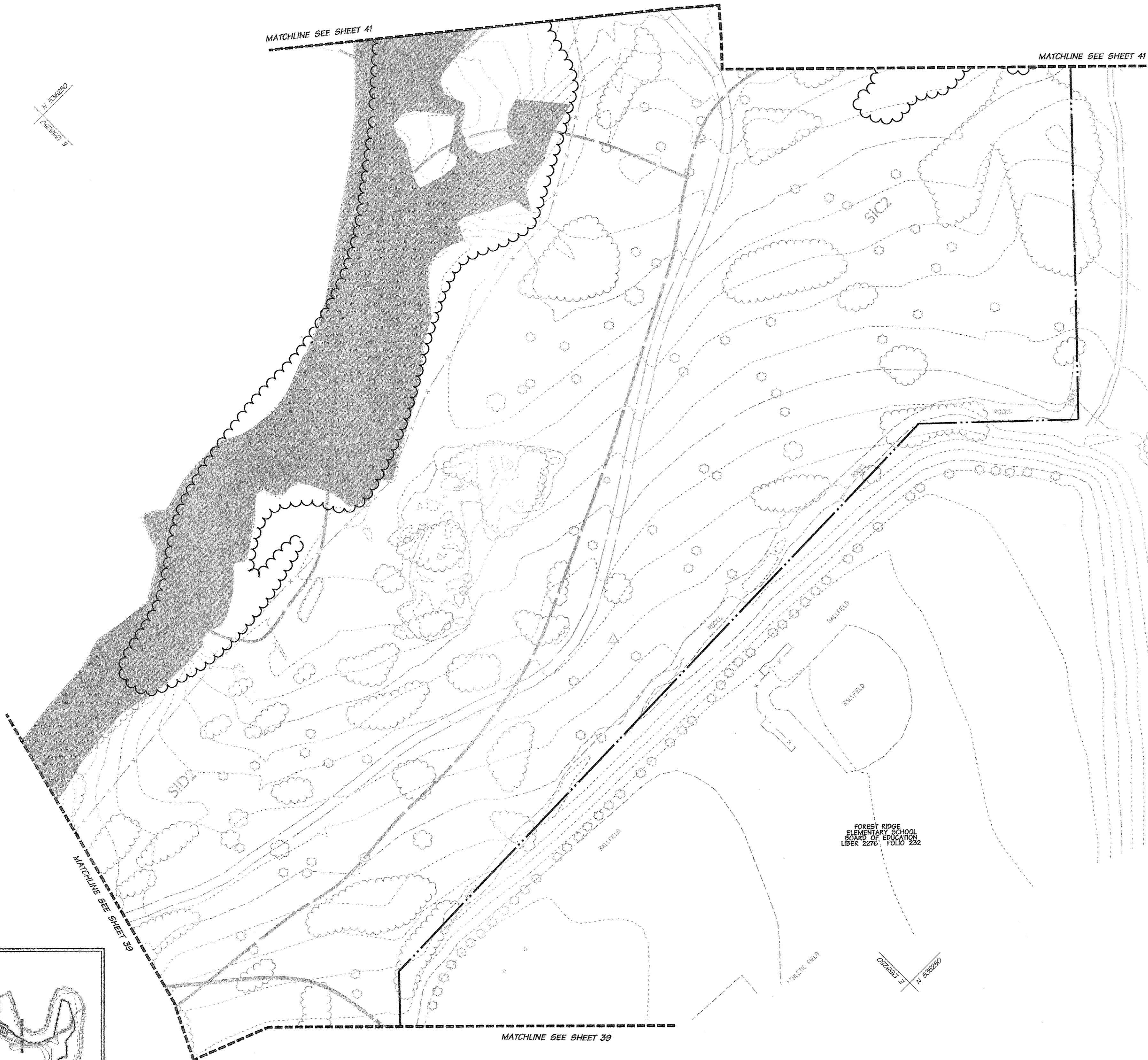
Drawn By: BKC Scale: 1"=50' Proj. No. 95054-E2
 Des. By: HRD Date: 12-19-01
 Chk. By: Approved: 39 of 46

Legend

- ▲ FOREST PROTECTION SIGN
- x — FOREST PROTECTION FENCE
- ▒ SLOPES >25%
- ▒ SLOPES 15%-25%
- LIMIT OF DISTURBANCE
- ▒ FOREST CONSERVATION EASEMENT
- ▒ FUTURE REFORESTATION AREA
- PHASE LIMIT
- ▒ REFORESTATION AREAS
- ▒ FOREST CLEARING
- ☁ FOREST EDGE
- ☁ SCRUBSHRUB/HEDGEROW OR TREE GROUP
- ☁ SPECIMEN TREE
- WETLAND BUFFER
- WETLAND SYMBOL
- HEAD OF STREAM
- STREAM
- STREAM BUFFER
- 100 YEAR FLOOD PLAN

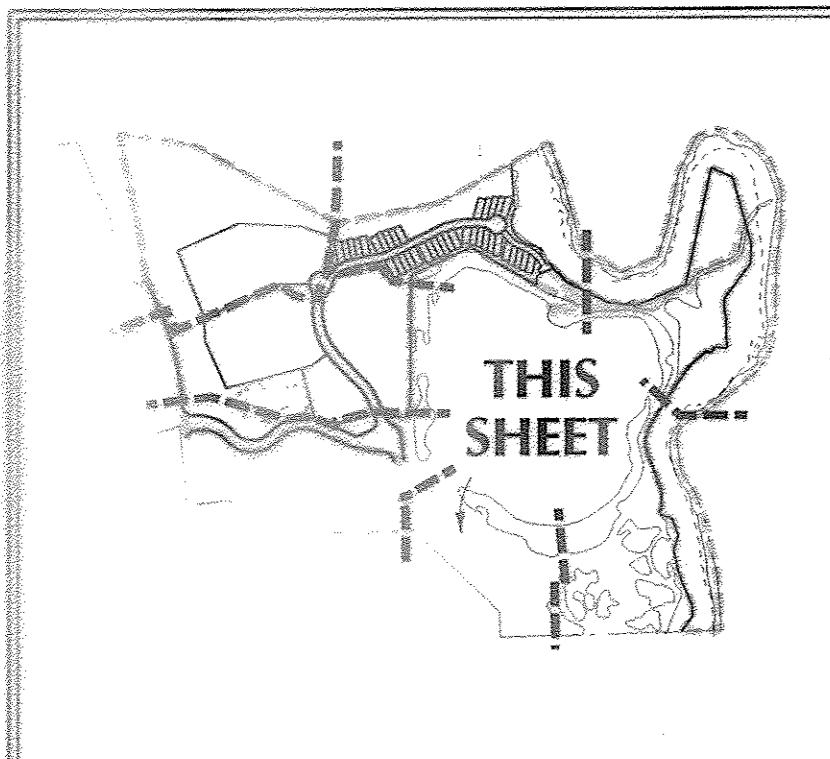
FOREST CONSERVATION CALCULATIONS

BASIC SITE DATA	ACRES (NET)
GRASS SITE AREA	60.05
AREA WITHIN 100-YEAR FLOODPLAIN	7.50
AREA WITHIN EXISTING SANITARY SEWER EASEMENT	0.0
NET TRACT AREA	60.87
LAND USE CATEGORY	RED
INFORMATION FOR CALCULATIONS	
A. NET TRACT AREA	60.87
B. REFORESTATION THRESHOLD (20% x A)	12.18
C. AFFORESTATION MINIMUM (15% x A)	9.13
D. EXISTING FOREST ON NET TRACT AREA	13.95
E. FOREST AREAS TO BE CLEARED	0.99
F. FOREST AREAS TO BE RETAINED	12.96
REFORESTATION CALCULATIONS	
A. NET TRACT AREA	60.87
B. REFORESTATION THRESHOLD (20% x A)	12.18
C. EXISTING FOREST ON NET TRACT AREA	13.95
D. FOREST AREAS TO BE CLEARED	0.99
E. FOREST AREAS TO BE RETAINED	12.96
F. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD	0.99
G. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD	0.0
H. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD	0.78
CLEARING ABOVE THE THRESHOLD ONLY	
IF FOREST AREAS TO BE RETAINED ARE GREATER THAN THE REFORESTATION THRESHOLD (F IS GREATER THAN B), THE FOLLOWING CALCULATIONS APPLY:	
REFORESTATION FOR CLEARING ABOVE THRESHOLD	0.25
REFORESTATION FOR CLEARING BELOW THRESHOLD	0.0
TOTAL REFORESTATION REQUIRED	0.25
CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD	0.78
REFORESTATION REQUIRED	0.0 ACRES
REFORESTATION PROVIDED	4.81 ACRES
POTENTIAL FUTURE REFORESTATION	3.60 ACRES
TOTAL	8.41 ACRES



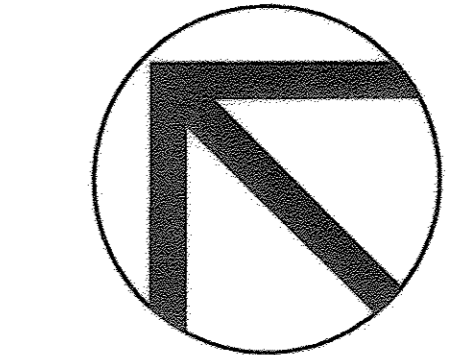
SAVAGE PARK
HOWARD COUNTY MARYLAND
DEPT. OF PARKS AND RECREATION
LIBER 815 FOLIO 527
LIBER 816 FOLIO 365
ZONED R-10

FOREST RIDGE
ELEMENTARY SCHOOL
BOARD OF EDUCATION
LIBER 2276 FOLIO 222



INDEX MAP
NOT TO SCALE

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
G. SCOTT SHANABERGER
SHANABERGER & LANE



2.5.02
Date
Landscape Architect

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
N/A
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
2/14/02
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

2/14/02
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Date	No.	Revision Description
1/11/02		Revisions per Howard County comments

STONE LAKE PHASE 1

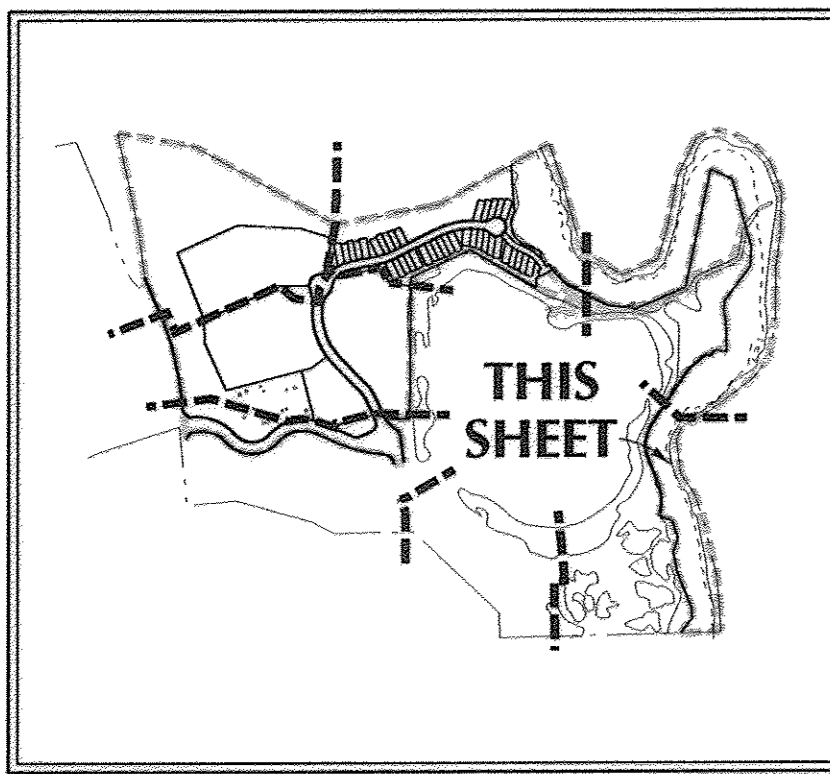
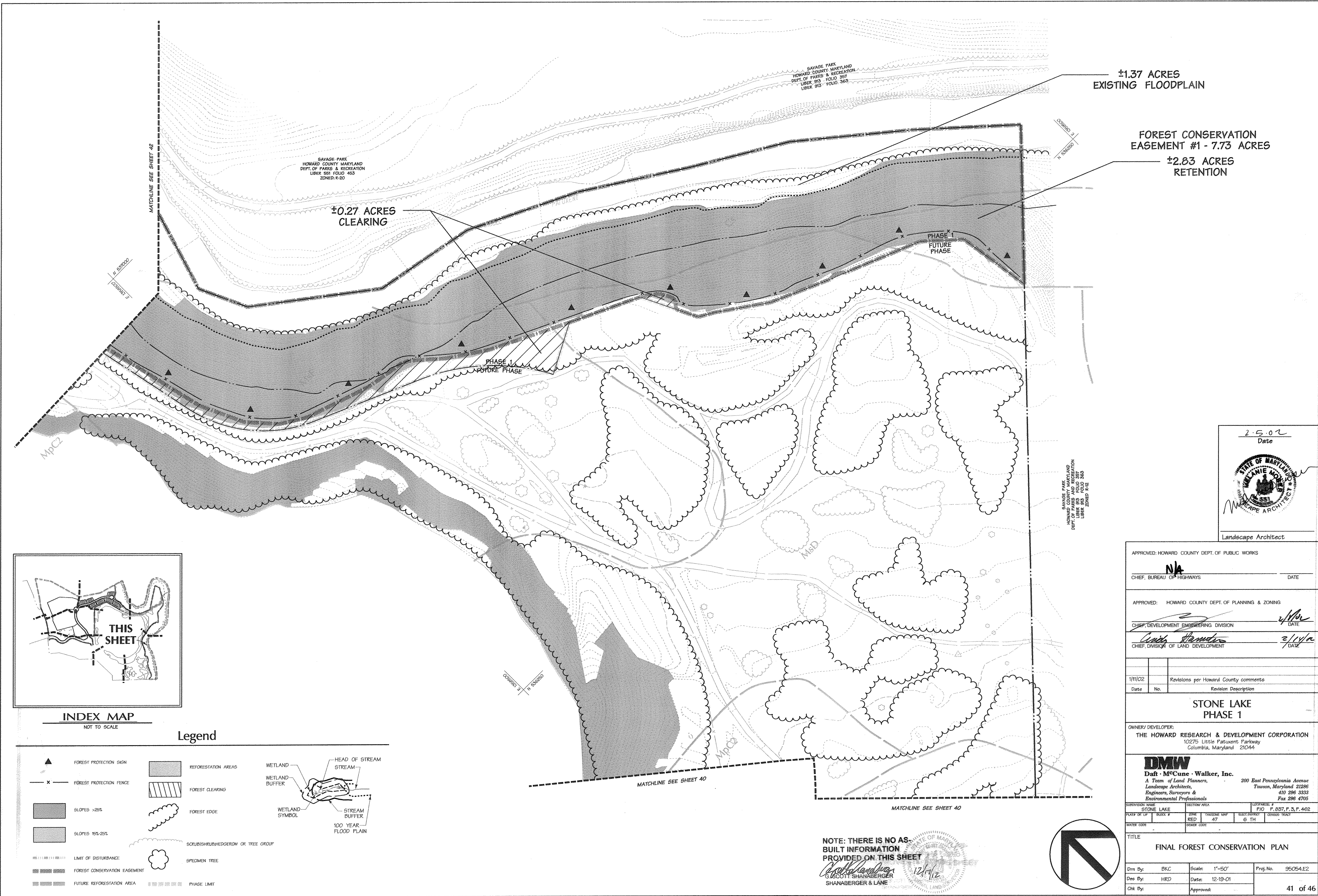
OWNER/ DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
10275 Little Patuxent Parkway
Columbia, Maryland 21044

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

SECTION NAME	SECTION AREA	LOT/FACILITY
STONE LAKE		P. 837, P. 3, P. 4E2
PLAT OR LOT	BLOCK #	ZONE
		RED 47
WATER CODE	SEWER CODE	
		6 TH

TITLE
FINAL FOREST CONSERVATION PLAN

Des By: BKC	Scale: 1"=50'	Proj. No. 95054-E2
Des By: HRD	Date: 12-19-01	
Chk By:	Approved:	40 of 46



INDEX MAP
NOT TO SCALE

Legend

- ▲ FOREST PROTECTION SIGN
- x — FOREST PROTECTION FENCE
- ▒ SLOPES >25%
- ▒ SLOPES 15%-25%
- ▒ LIMIT OF DISTURBANCE
- ▒ FOREST CONSERVATION EASEMENT
- ▒ FUTURE REFORESTATION AREA
- ▒ REFORESTATION AREAS
- ▒ FOREST CLEARING
- ▒ FOREST EDGE
- ▒ SCRUB/SHRUB/HERDGERON OR TREE GROUP
- ▒ SPECIMEN TREE
- ▒ PHASE LIMIT
- WETLAND
- WETLAND BUFFER
- WETLAND SYMBOL
- HEAD OF STREAM
- STREAM
- STREAM BUFFER
- 100 YEAR FLOOD PLAIN

±1.37 ACRES
EXISTING FLOODPLAIN

FOREST CONSERVATION
EASEMENT #1 - 7.73 ACRES

±2.83 ACRES
RETENTION

±0.27 ACRES
CLEARING

PHASE 1
FUTURE PHASE

PHASE 1
FUTURE PHASE

2-5-02
Date



Landscape Architect

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS NA DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 2/1/02 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT 2/14/02 DATE

Date	No.	Revision Description
1/11/02		Revisions per Howard County comments

STONE LAKE PHASE 1
 OWNER/ DEVELOPER:
 THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
 10275 Little Patuxent Parkway
 Columbia, Maryland 21044

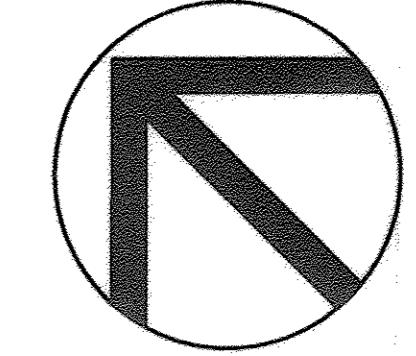
DMW
 Daft - McCune - Walker, Inc.
 A Firm of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
 200 East Pennsylvania Avenue
 Towson, Maryland 21286
 410 296 3333
 Fax 296 4705

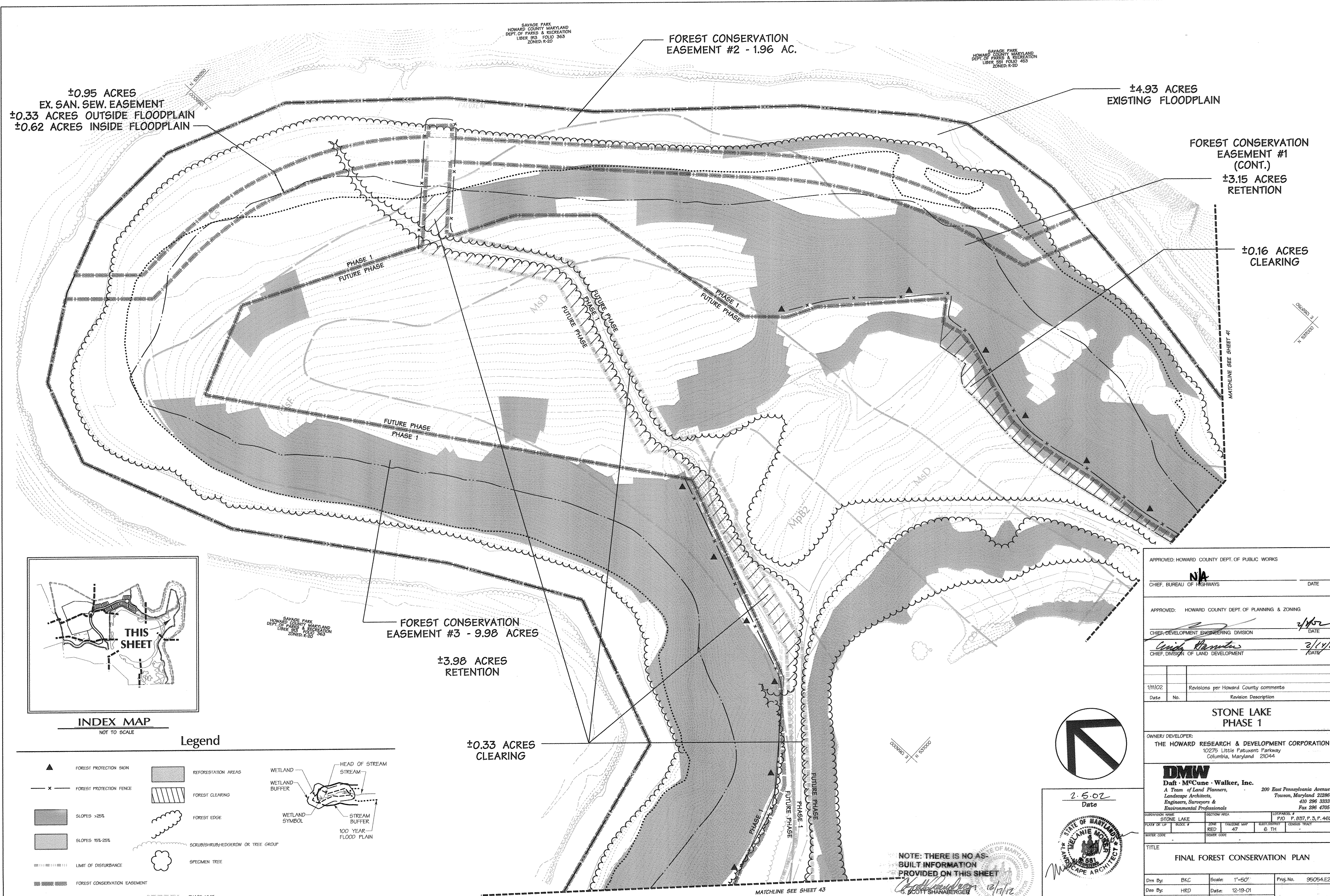
DIVISION NAME: STONE LAKE	SECTION AREA: 47	LOT/FACILITY #
PLAT# OF LA: RED	TAXMAP MAP: 6 TH	CENSUS TRACT
WATER CODE:	SEWER CODE:	

TITLE
FINAL FOREST CONSERVATION PLAN

Des By: BKC	Scale: 1"=50'	Proj. No: 95054-E2
Chk By: HRD	Date: 12-19-01	
Approved:		41 of 46

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
 G. SCOTT SHANBERGER
 SHANBERGER & LANE





±0.95 ACRES
EX. SAN. SEW. EASEMENT
±0.33 ACRES OUTSIDE FLOODPLAIN
±0.62 ACRES INSIDE FLOODPLAIN

FOREST CONSERVATION
EASEMENT #2 - 1.96 AC.

±4.93 ACRES
EXISTING FLOODPLAIN

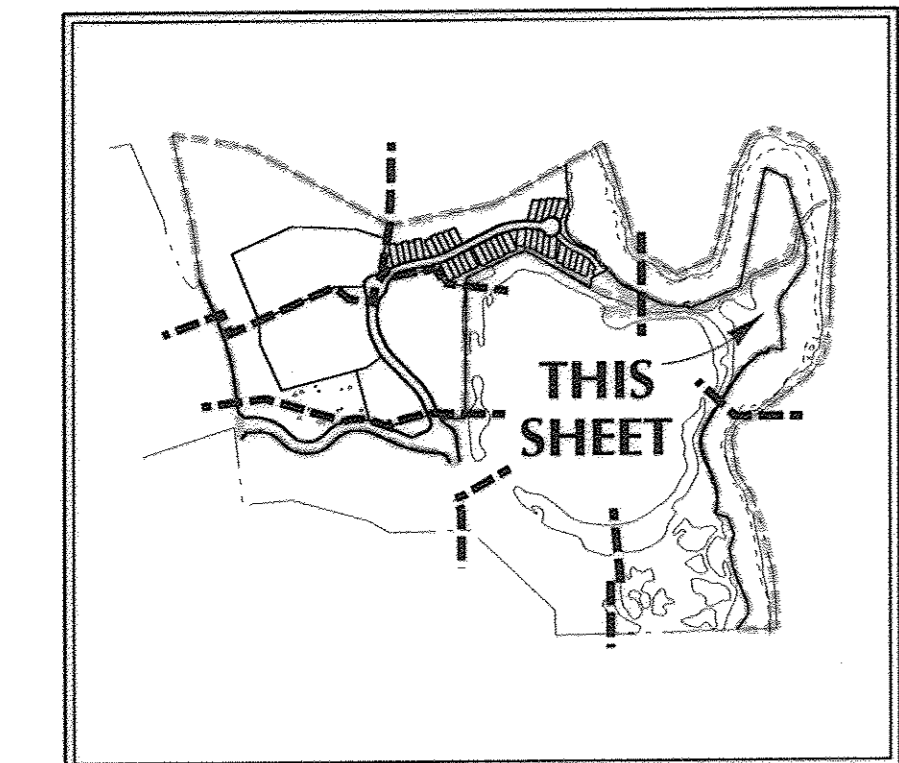
FOREST CONSERVATION
EASEMENT #1
(CONT.)
±3.15 ACRES
RETENTION

±0.16 ACRES
CLEARING

FOREST CONSERVATION
EASEMENT #3 - 9.98 ACRES

±3.98 ACRES
RETENTION

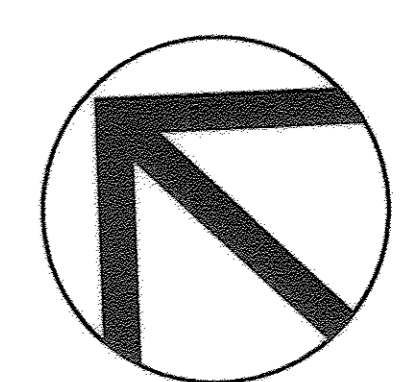
±0.33 ACRES
CLEARING



INDEX MAP
NOT TO SCALE

Legend

- ▲ FOREST PROTECTION SIGN
- x — FOREST PROTECTION FENCE
- SLOPES >25%
- SLOPES 15%-25%
- LIMIT OF DISTURBANCE
- FOREST CONSERVATION EASEMENT
- FUTURE REFORESTATION AREA
- REFORESTATION AREAS
- ▨ FOREST CLEARING
- FOREST EDGE
- SCRUB/SHRUB/EDGE/ROW OR TREE GROUP
- PHASE LIMIT
- WETLAND BUFFER
- WETLAND SYMBOL
- HEAD OF STREAM
- STREAM BUFFER
- 100 YEAR FLOOD PLAIN
- SPECIMEN TREE



2.5.02
Date

Landscape Architect

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

SHANBERGER & LANE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS
DATE: NA

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 2/14/02

APPROVED: CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 2/14/02

Date	No.	Revision Description
1/11/02		Revisions per Howard County comments

STONE LAKE
PHASE 1

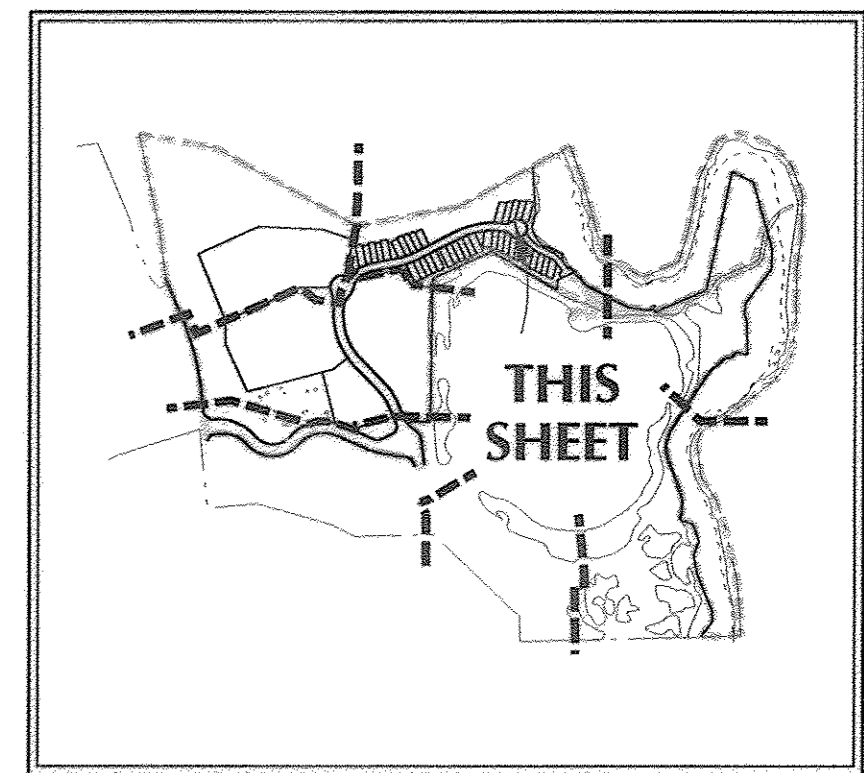
OWNER/DEVELOPER:
THE HOWARD RESEARCH & DEVELOPMENT CORPORATION
10275 Little Patuxent Parkway
Columbia, Maryland 21044

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

SECTION	DATE	BY	APP. BY
DESIGN			
CONSTRUCTION			

TITLE: FINAL FOREST CONSERVATION PLAN

Drawn By: BKC	Scale: 1"=50'	Proj. No.: 95054.E2
Des. By: HRD	Date: 12-19-01	
Chk. By:	Approved:	42 of 46



INDEX MAP
NOT TO SCALE

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

2.5.02
Date

Landscape Architect

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS
NA
DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT-ENGINEERING DIVISION
[Signature] 2/1/02
DATE

Cindy Hamstra 2/11/02
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE

Date	No.	Revision Description
1/11/02		Revisions per Howard County comments

STONE LAKE
PHASE 1

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
410 298 3333
Fax: 298 4795

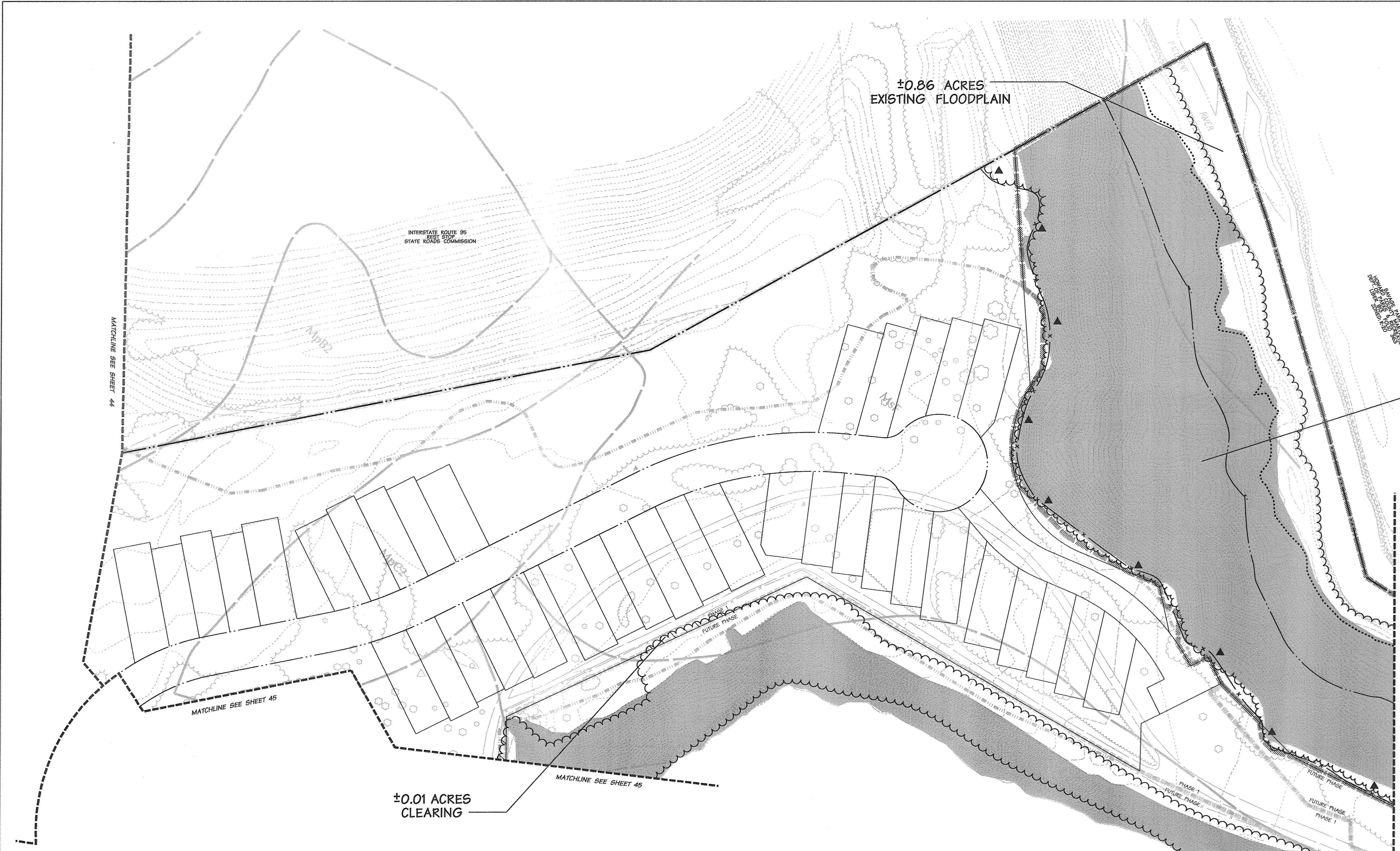
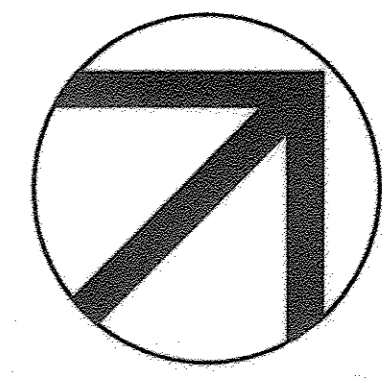
PROVISION NAME	SECTION AREA	LOT/FACEL #
STONE LAKE		P/O P. 827, P. 3, P. 482
PLAT/ OR CLP	TRUCK #	DATE
	RED 47	6 TH
WATER CODE	SEWER CODE	

TITLE
FINAL FOREST CONSERVATION PLAN

Drn By: BKC	Scale: 1"=50'	Proj. No. 95054.E2
Des By: HRD	Date: 12-19-01	
Chk By:	Approved:	43 of 46

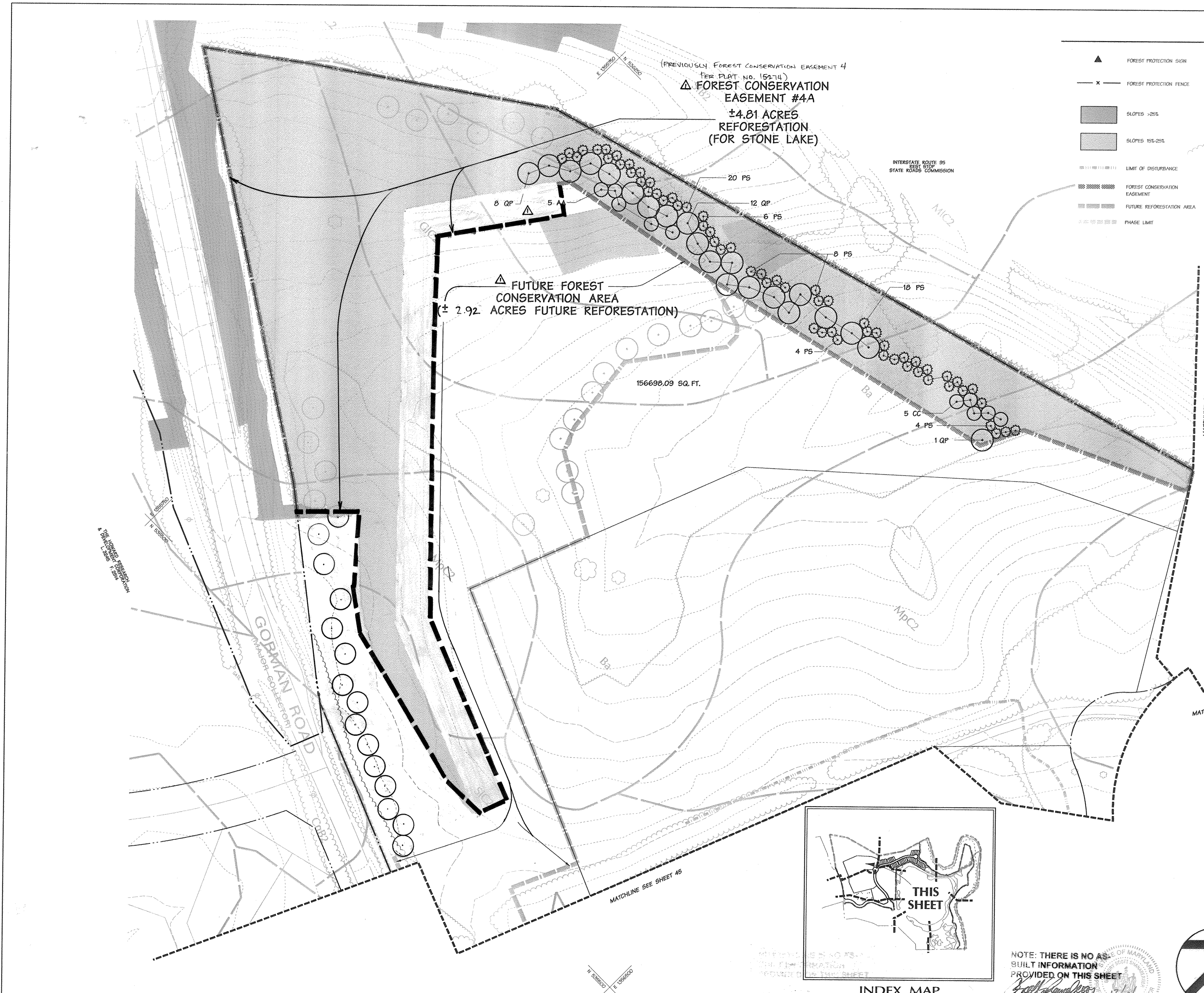
NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

[Signature]
G. SCOTT SHANABERGER
SHANABERGER & LANE



Legend

- ▲ FOREST PROTECTION SIGN
- X — FOREST PROTECTION FENCE
- SLOPES >25%
- SLOPES 15%-25%
- LIMIT OF DISTURBANCE
- ▨ FOREST CONSERVATION EASEMENT
- ▨ FUTURE REFORESTATION AREA
- ▨ PHASE LIMIT
- ▨ REFORESTATION AREAS
- ▨ FOREST CLEARING
- FOREST EDGE
- SCRUBSHRUB/HEDGEROW OR TREE GROUP
- SPECIMEN TREE
- WETLAND
- WETLAND BUFFER
- WETLAND SYMBOL
- HEAD OF STREAM
- STREAM
- STREAM BUFFER
- 100 YEAR FLOOD PLAIN



Legend

- FOREST PROTECTION SIGN
- FOREST PROTECTION FENCE
- SLOPES >25%
- SLOPES 15%-25%
- LIMIT OF DISTURBANCE
- FOREST CONSERVATION EASEMENT
- FUTURE REFORESTATION AREA
- PHASE LIMIT
- RESTORATION AREAS
- FOREST CLEARING
- FOREST EDGE
- SCRUB/SHRUB/HEDGE/ROW OR TREE GROUP
- SPECIMEN TREE
- PERIMETER LANDSCAPE TREE (REFER TO GLW LANDSCAPE PLAN) (20% CREDIT TOWARDS REFORESTATION)
- ACOUSTICAL MOUND PLANTING (100% CREDIT TOWARDS REFORESTATION)
- WETLAND BUFFER
- WETLAND SYMBOL
- HEAD OF STREAM
- STREAM
- STREAM BUFFER
- 100 YEAR FLOOD PLAIN

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

REVISION ONLY

2.5.02
Date

Landscape Architect

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

N/A
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

[Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 2/1/02

[Signature]
CHIEF, DIVISION OF LAND DEVELOPMENT DATE 2/1/02

5-27-01 REVISIONS (SHEETS 8, 13 & 44 ONLY)
 1/1/02 Revisions per Howard County comments

Date	No.	Revision Description

STONE LAKE PHASE 1

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

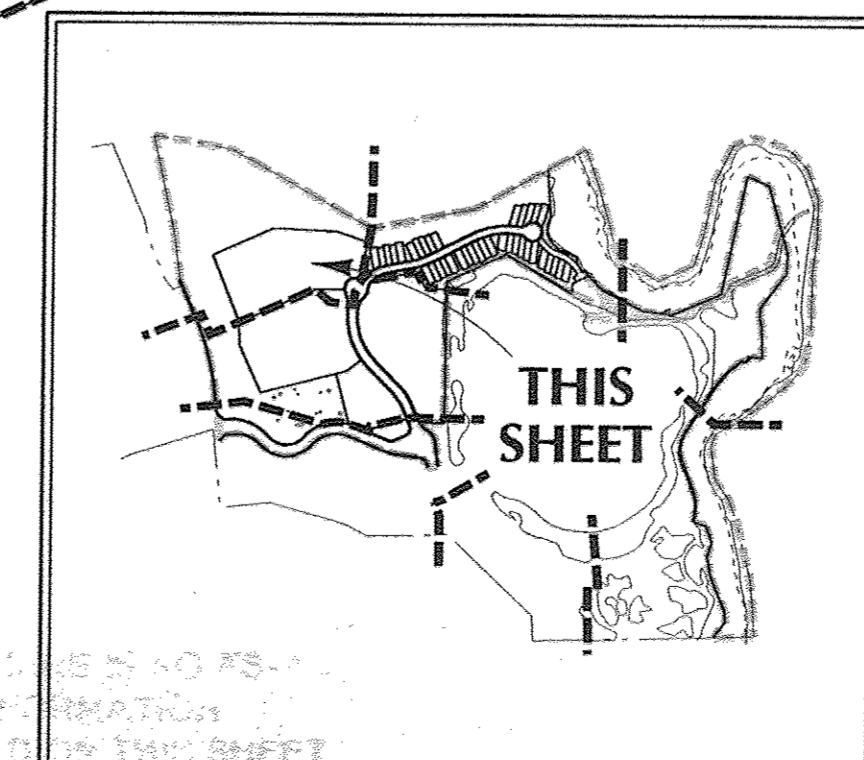
200 East Pennsylvania Avenue
 Towson, Maryland 21286
 410 296 3333
 Fax 296 4705

SECTION NAME	SECTION AREA	LOT/PARCEL #
STONE LAKE	P/O P. 837, P. 3, P. 4 & 2	

TITLE
FINAL FOREST CONSERVATION PLAN

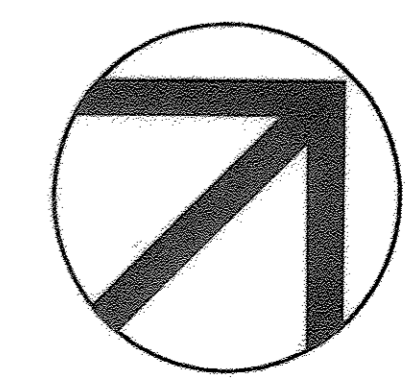
Des Pw	Scale	Date	Proj. No.
BKC	1"=50'	12-19-01	95054.E2
HRD			

44 of 46



NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

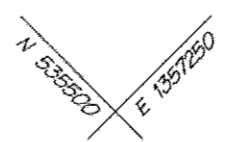
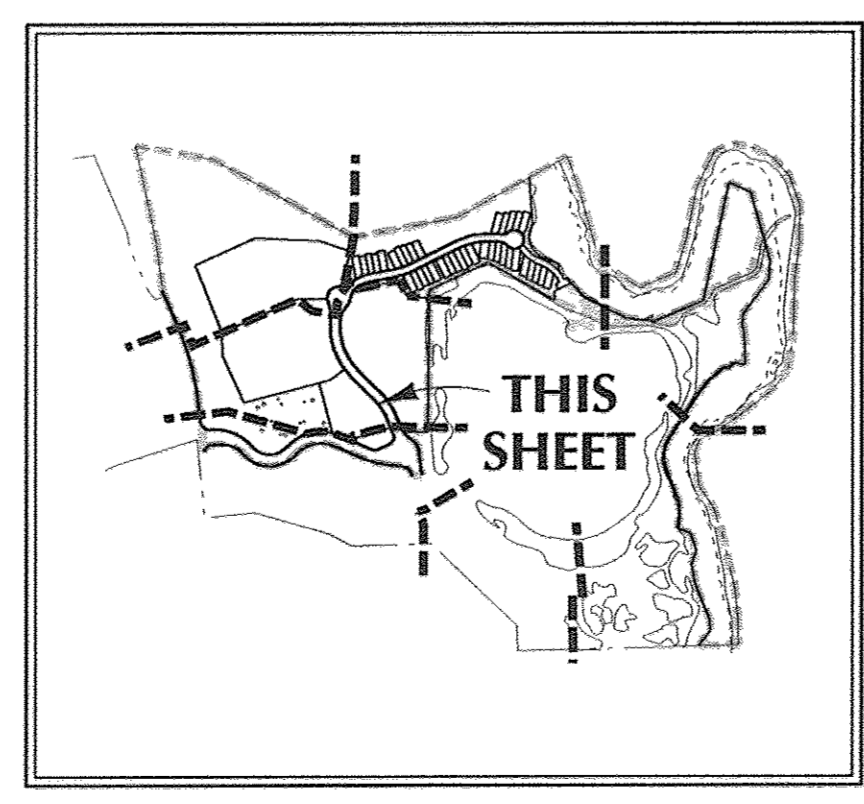
[Signature]
 SHANBERGER & LANE





Legend

	FOREST PROTECTION SIGN		REFORESTATION AREAS		WETLAND		HEAD OF STREAM
	FOREST PROTECTION FENCE		FOREST CLEARING		WETLAND BUFFER		STREAM
	SLOPES >25%		FOREST EDGE		WETLAND SYMBOL		STREAM BUFFER
	SLOPES 15%-25%		SCRUBSHRUB/HEDGE/ROW OR TREE GROUP		100 YEAR FLOOD PLAIN		
	LIMIT OF DISTURBANCE		SPECIMEN TREE				
	FOREST CONSERVATION EASEMENT						
	FUTURE REFORESTATION AREA						
	PHASE LIMIT						



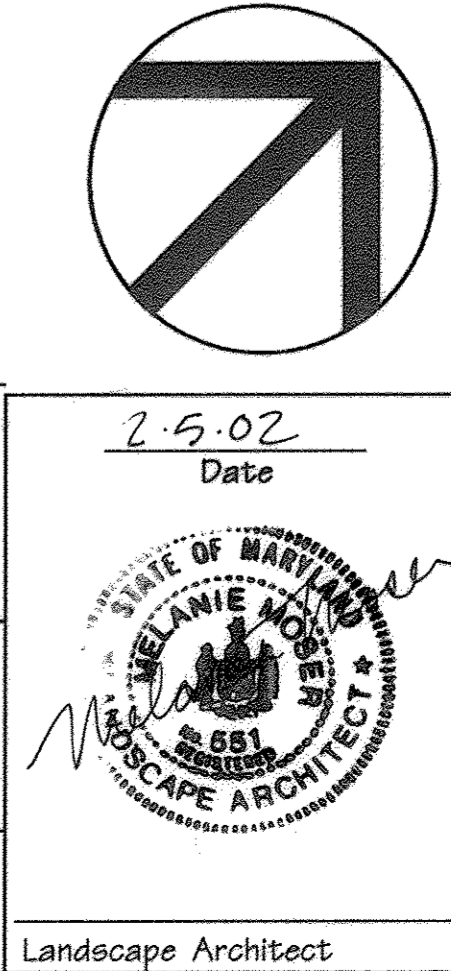
NOTE: THERE IS NO AS BUILT INFORMATION PROVIDED ON THIS SHEET

G. Scott Shanaberger
 G. SCOTT SHANABERGER
 SHANABERGER & LANE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
 CHIEF, BUREAU OF HIGHWAYS
 DATE: N/A

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 2/16/02

APPROVED: *Melanie Moore*
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 2/16/02



1/11/02	Revisions per Howard County comments
Date	No. Revision Description
STONE LAKE PHASE 1	
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	
SECTION NAME: STONE LAKE	SECTION AREA: PLO, P. 237, P. 3, P. 462
PLAT OF LOT: FLOOR 2	ZONE: RED 47
WATER CODE: 6 TH	ELECT DISTRICT: 6 TH
TITLE: FINAL FOREST CONSERVATION PLAN	
Drn By: BKC	Scale: 1"=50'
Des By: HRD	Date: 12-19-01
Chk By: <i>Melanie Moore</i>	Approved: _____
Landscape Architect	

0.12 ACRES CLEARING

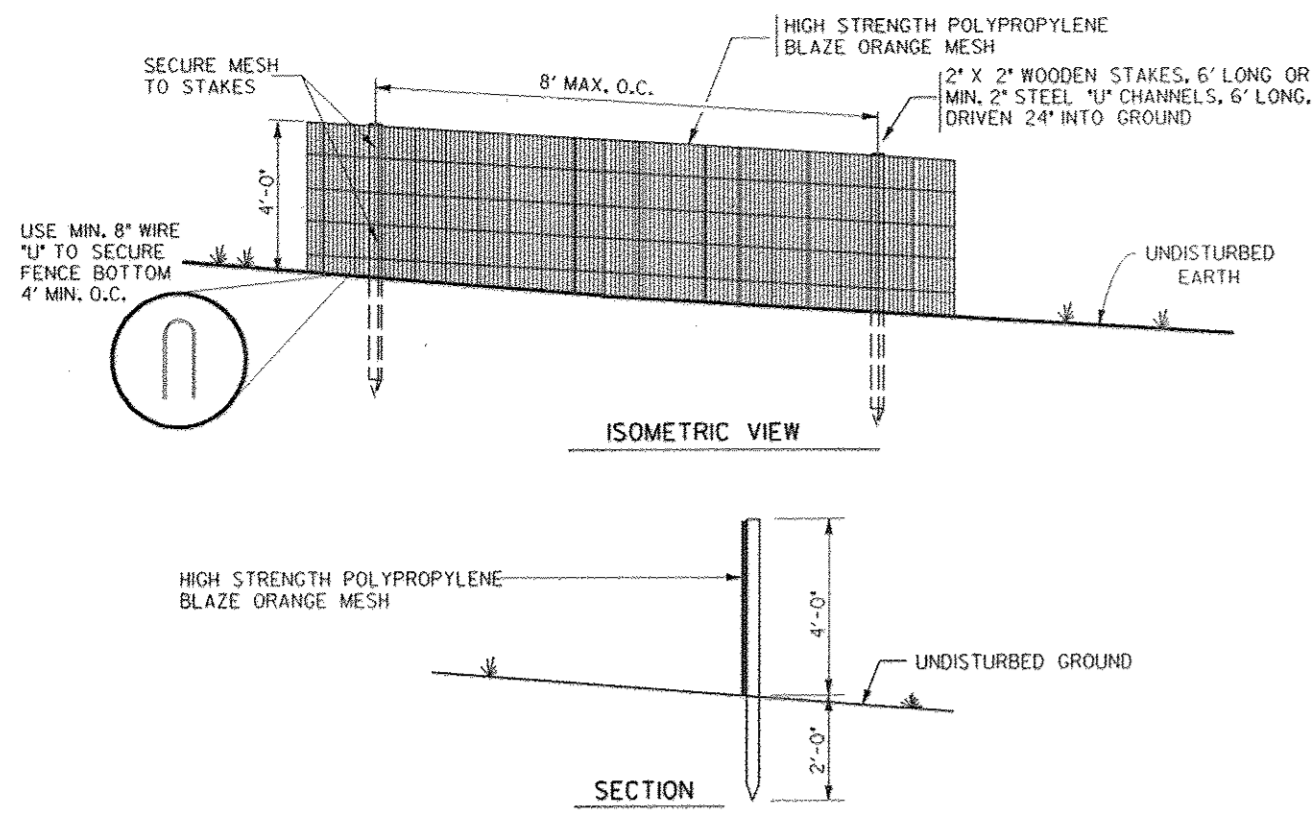
FOREST CONSERVATION AREA (CONT.)

MATCHLINE SEE SHEET 44

MATCHLINE SEE SHEET 43

MATCHLINE SEE SHEET 39

MATCHLINE SEE SHEET 39



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

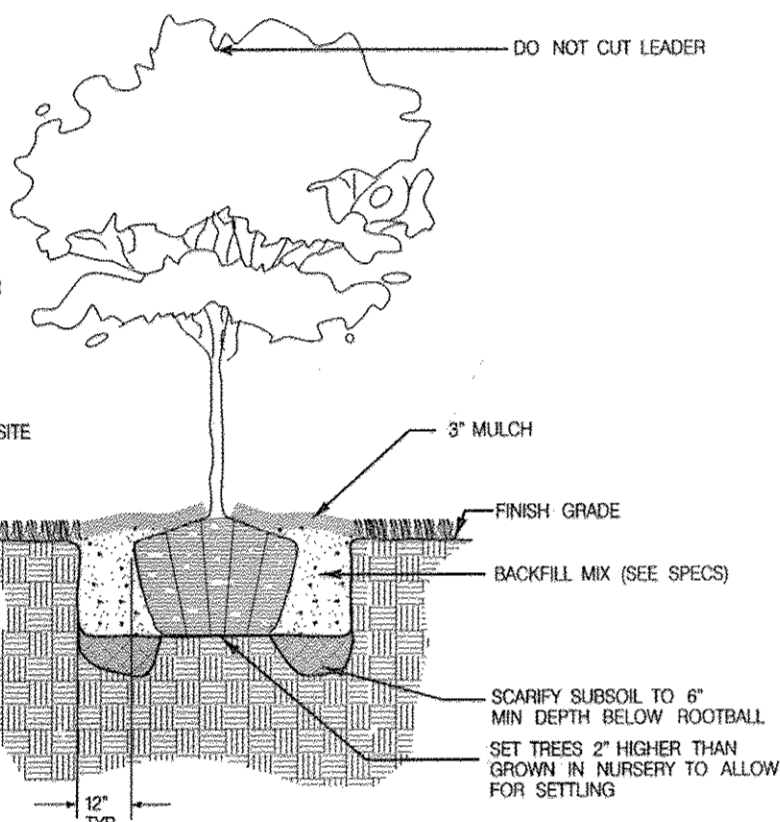
Forest Protection Fence

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.

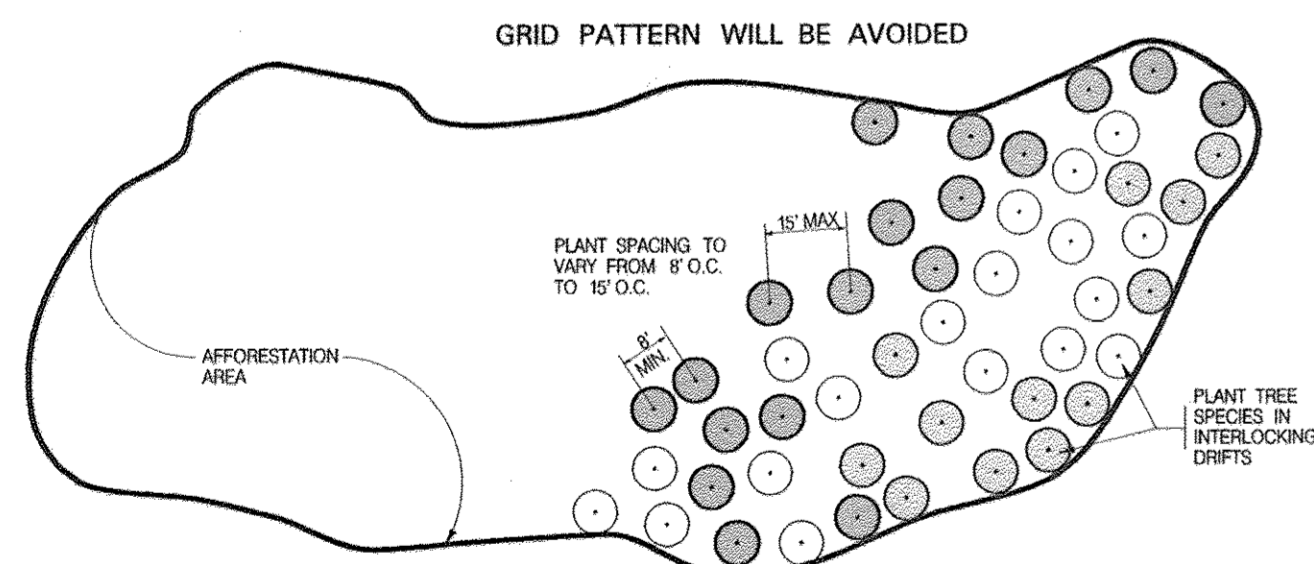
PLANTING PROCEDURES FOR ALL CONTAINER GROWN TREES AND SHRUBS:

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



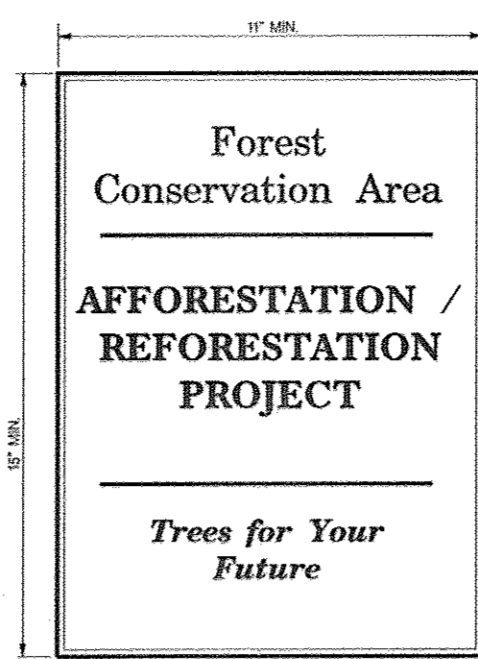
Typical Tree Planting (For container grown)

Not To Scale



Planting Design Schematic

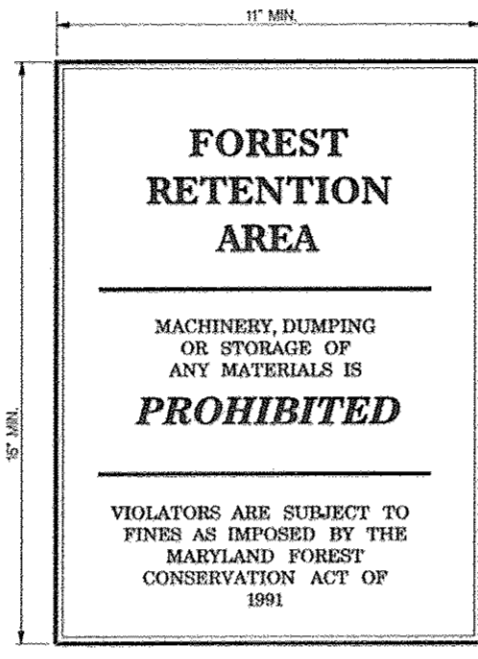
Not To Scale (FOR 1\"/>



Permanent Signage

Not To Scale

SIGNS TO BE PLACED ON METAL POSTS 6\"/>



Temporary Signage

Not To Scale

SIGNS TO BE PLACED ON METAL POSTS 6\"/>

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 principal contractor, engineer, Howard County Inspector 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 areas. 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 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\"/>

B. Planting stock less than 1\"/>

Seedlings: Handwoods - 1/4\"/>

Shrubs - 1/4\"/>

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 established as shown on the temporary seeding notes on sheet 6.

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

- On-site material or imported from same source as topsoil used on site for finish grading.
- Uniform composition, free of subsoil, clay lumps, stones, stumps, roots or similar objects larger than 1 inch.
- Topsoil must be free of plants or plant parts of bermudagrass, quackgrass, Johnsongrass, nutgrass, polypogon, Canada thistle, or others as specified.
- 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:

- Source shall be well composted, not chemically treated.
- Physical properties - grading:

U.S. Sieve	Dry Weight Percent Passing
3/8"	100
1/2"	95 - 100
No. 8	70 - 100
No. 35	0 - 30

- Organic content by ash analysis: 90 - 100 percent dry weight
- Chemistry:

Soil	NI	NI
Saturation Extract Conductivity (EC)	NI	3.0
Sodium Absorption Ratio (SAR)	NI	6.0
Boron - ppm in saturation extract solution	NI	1.0
Reaction (pH)	6.0 - 7.5	
Available calcium - sodium acetate extractable - ppm	NI	2000

B. Sand

- 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. 100	0 - 20
No. 200	0 - 7

2. Chemistry:

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

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

8. MULCH

- Shredded long fiber hardwood.
- Mulch shall have been shredded within the last six (6) months.

9. PLANTING MIX

- 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. Less than 20 cubic yards is required.
- 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 lb. Treble superphosphate
 - 5 lb. Dolomite limestone (granulate for acid loving plants)

10. LAYOUT AND EXCAVATION OF PLANTING AREAS

- Plants shall be placed in each zone at random locations shown at spacing as indicated on the plan.
- The Landscape Architect or qualified professional will check location of plants in the field and shall adjust to exact position before planting begins.
- 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 staking and planting.
- 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
Container Trees	Can + 12 in.	Can + 4 in.
B&B Trees	Ball + 12 in.	Ball + 4 in.
- 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

- Container stock shall be removed carefully after care have been cut on two sides with approved outer. Do not use spade to cut cans. Do not lift or handle container plants by tops, stems or trunks at any time.
- 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.
- Ball 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.
- Do not force roots for bare rooted trees into excavated pits - custom dig pits to receive roots without deformation.

12. MIXING

- Mix soil base, amendments and chemical additives by mechanical means.
- 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 granules or pelletized additives become dissolved during the mixing process.
- 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.
- Contaminating backfill mix with unmoist soil in backfill mixing lots shall be avoided.

13. INSTALLATION OF PLANT MATERIAL

- Secure 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.
- 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.
- Smooth planted areas to conform to specified grade after full settlement as occurred. Contractor shall bear final responsibility for proper surface drainage of planted areas. Any discrepancy in the drainage or specifications, constructions on the site, or prior work done by another party, which Contractor tests, produces establishing proper drainage, shall be brought to the attention of the Landscape Architect in writing.
- Water all plants immediately again after planting.
- 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.

Reforestation Area Planting Plan* (1\"/>

780 - 1\"/>

Species	Size	Spacing	Quantity	Tolerance	Remarks
<i>Liriodendron tulipifera</i>	1\"/>				
<i>Acer rubrum</i>	1\"/>				
<i>Fraxinus pennsylvanicum</i>	1\"/>				
<i>Quercus alba</i>	1\"/>				
<i>Nyssa sylvatica</i>	1\"/>				
TOTALS			780		

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

NOTE:

- THE PRECISE LOCATION OF PLANT MASSINGS WILL BE LOCATED IN THE FIELD BY LANDSCAPE ARCHITECT.
- GRID PATTERNS WILL BE AVOIDED
- 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
 N/A
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
 2/1/02
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

CHIEF, DIVISION OF LAND DEVELOPMENT
 2/1/02
 DATE

Date	No.	Revision Description
1/11/02		Revisions per Howard County comments

STONE LAKE PHASE 1

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: STONE LAKE SECTION AREA: LOT/PARCEL # P.O. 837, P. 2, P. 462
 PLAT OF LOT: 1 BOOK: 7 ZONE: RED 47 ELEC. SURVEY: G TH CONDUIT: -
 WATER CODE: REWER CODE:

TITLE: **FINAL FOREST CONSERVATION PLAN**

Drn By: BKC	Scale: 1"=50'	Proj. No. 95054.E2
Des By: HRD	Date: 12-19-01	
Chk By:	Approved:	46 of 46

NOTE: THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET
 G. SCOTT SHANBERGER
 SHANBERGER & LANE
 Landscape Architect

