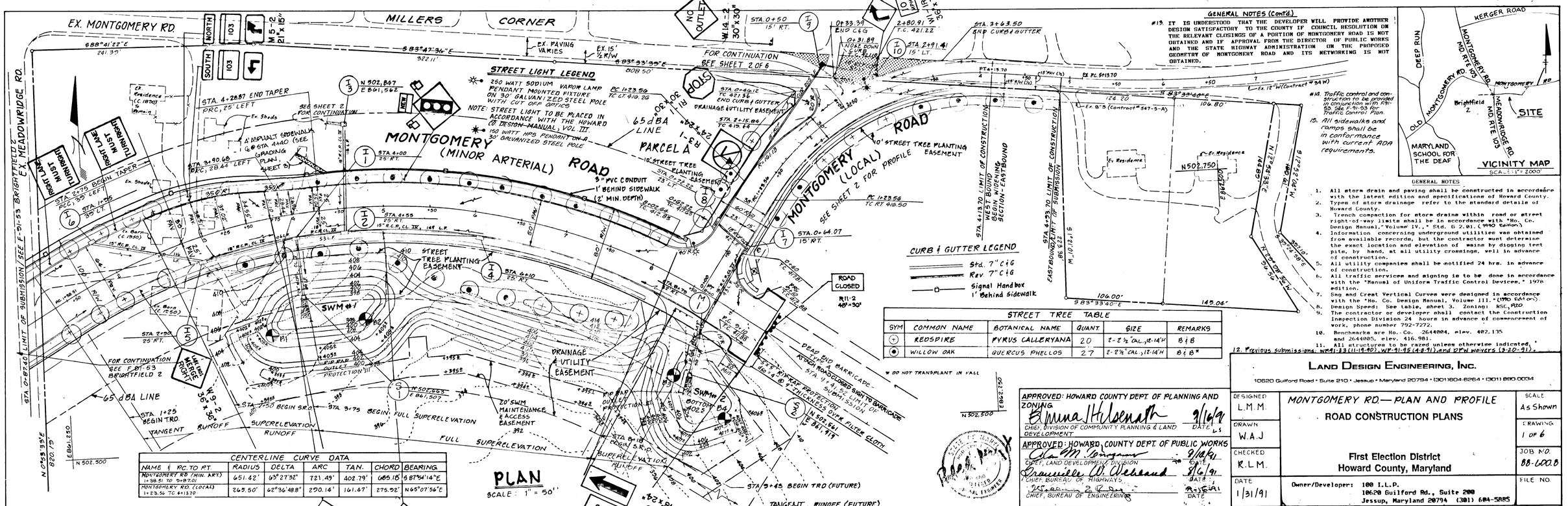


STREET LIGHT LEGEND

- ☀ 250 WATT SODIUM VAPOR LAMP PENDANT MOUNTED FIXTURE ON 30' GALVANIZED STEEL POLE WITH CUT OFF OPTICS

NOTE: STREET LIGHT TO BE PLACED IN ACCORDANCE WITH THE HOWARD CO. ~~DESIGN MANUAL~~, VOL. III.

- ✳ 150 WATT HPS PENDANT ~~ON A~~ 30' GALVANIZED STEEL POLE

CURB & GUTTER LEGEND

- Std. 7" C&G
- Rev. 7" C&G
- Signal Handbox 1' Behind Sidewalk

CENTERLINE CURVE DATA						
NAME & P.C. TO P.T.	RADIUS	DELTA	ARC	TAN.	CHORD	BEARING
MONTGOMERY RD (MIN. ART.) 1+38.51 TO 5+87.01	651.42'	63°27'32"	721.49'	402.79'	685.18'	S 87°54'14"E
MONTGOMERY RD. (LOCAL) 1+23.56 TO 4+13.70	265.50'	62°36'48.8"	290.14'	161.47'	275.92'	N 65°07'56"E

STREET TREE TABLE					
SYM	COMMON NAME	BOTANICAL NAME	QUANT.	SIZE	REMARKS
⊕	REDSPIRE	PYRUS CALLERYANA	20	2-2½" CAL., 12-14'H	B&B
●	WILLOW OAK	QUERCUS PHELLOS	27	2-2½" CAL., 12-14'H	B&B*

* DO NOT TRANSPLANT IN FALL

GENERAL NOTES (Cont'd.)

#13. IT IS UNDERSTOOD THAT THE DEVELOPER WILL PROVIDE ANOTHER DESIGN SATISFACTORY TO THE COUNTY IF COUNCIL RESOLUTION ON THE RELEVANT CLOSINGS OF A PORTION OF MONTGOMERY ROAD IS NOT OBTAINED AND IF APPROVAL FROM THE DIRECTOR OF PUBLIC WORKS AND THE STATE HIGHWAY ADMINISTRATION ON THE PROPOSED GEOMETRY OF MONTGOMERY ROAD AND ITS NETWORKING IS NOT OBTAINED.

#14. Traffic control and construction to be provided in conjunction with F91-53. See F-91-53 for Traffic Control Plan.

15. All sidewalks and ramps shall be in conformance with current ADA requirements.

VICINITY MAP
SCALE: 1" = 2000'

GENERAL NOTES

1. All storm drain and paving shall be constructed in accordance with the latest edition and specifications of Howard County.
2. Types of storm drainage refer to the standard details of Howard County.
3. Trench compaction for storm drains within road or street right-of-way limits shall be in accordance with "Ho. Co. Design Manual, Volume IV.," Std. G 2.01. (1990 Edition)
4. Information concerning underground utilities was obtained from available records, but the contractor must determine the exact location and elevation of mains by digging test pits, by hand, at all utility crossings, well in advance of construction.
5. All utility companies shall be notified 24 hrs. in advance of construction.
6. All traffic services and signing is to be done in accordance with the "Manual of Uniform Traffic Control Devices," 1978 edition.
7. Sag and Crest Vertical Curves were designed in accordance with the "Ho. Co. Design Manual, Volume III." (1990 Edition).
8. Design Speed: See table, sheet 3. Zoning: RSC, R20.
9. The contractor or developer shall contact the Construction Inspection Division 24 hours in advance of commencement of work, phone number 792-7272.
10. Benchmarks are Ho. Co. 2644004, elev. 402.135 and 2644005, elev. 416.981.
11. All structures to be razed unless otherwise indicated.
12. Previous submissions: WP-91-33 (11-19-90), WP-91-95 (4-8-91), and DPW waivers (3-20-91).

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Elmina J. Hilsenrath 9/16/91
CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT — DATE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
9/12/91
CHIEF, LAND DEVELOPMENT DIVISION — DATE
Granville W. Wehland 8/6/91
CHIEF, BUREAU OF HIGHWAYS — DATE
8/5/91
CHIEF, BUREAU OF ENGINEERING — DATE

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER

LAND DESIGN ENGINEERING, INC.
10620 Guilford Road • Suite 210 • Jessup • Maryland 20794 • (301)604-6264 • (301) 880-0034

DESIGNED L.M.M.	MONTGOMERY RD.— PLAN AND PROFILE ROAD CONSTRUCTION PLANS	SCALE As Shown
DRAWN W.A.J		DRAWING 1 OF 6
CHECKED R.L.M.	First Election District Howard County, Maryland	JOB NO. 88-600.8
DATE 1/31/91	Owner/Developer: 100 I.L.P. 10620 Guilford Rd., Suite 200 Jessup, Maryland 20794 (301) 604-5885	FILE NO.

REVISIONS		
NO.	DATE	DESCRIPTION
1	10/94	Widen Mont. Rd. (Local) R/W & Paving for turn lanes. Revise street name— Millers Corner

SUPERELEVATION DATA			
STA.	℄ ELEV.	TC (RT.)	TC (LT.)
1+25	409.99	410.07	409.79
1+50	409.49	409.57	409.45
2+00	408.49	408.57	408.75
2+50	407.49	407.57	408.07
3+00	406.66	406.74	407.55
3+50	406.16	406.24	407.29
3+75	406.03	406.11	407.23
8+18	411.84	411.92	412.92
8+50	411.93	412.01	412.88
8+60	411.94	412.02	412.85
9+00	411.85	411.93	412.60

W4-2 36"×36"
W13 24"×24" (TYP.)
W1-1L 36"×36"
W14-5 30"×15"

MONTGOMERY ROAD (MINOR ARTERIAL)

VERTICAL CURVE DATA
PVI STA. = 4+00
PVI ELEV. = 404.49
POC ELEV. = 405.99
LVC = 300'
CORR. = +1.50
HSD = 320'

VERTICAL CURVE DATA
PVI STA = 8+60
PVI ELEV. = 413.69
POC ELEV. = 411.94
LVC = 350
CORR. = -1.75
SSD = 320'

PROFILE SCALE: 1" = 50' HORIZ., 1" = 5' VERT

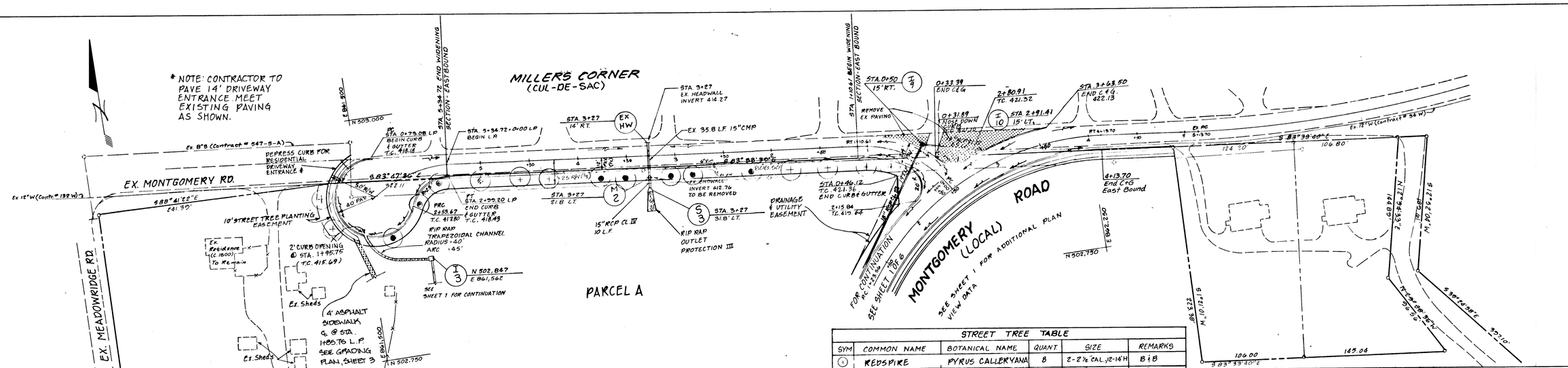
PLAN — NOTE BOOK — No. — SURVEYED — PLOTTED — ALIGNMENT CHECKED — R/W CHECKED — BY — DATE

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

466

HIGHWAY FEDERAL AID SHEET
PLATE 1-SINGLE PLAN AND PROFILE-FULL LINE
TELEDYNE
PRINTED IN U.S.A.

F-91-125



PLAN

SCALE: 1" = 50'

CENTERLINE CURVE DATA						
NAME & P.C. TO P.T.	RADIUS	DELTA	ARC	TAN.	CHORD	BEARING
SHADY OAK LANE 0+00. TO 1+10.61	115.92'	54°40'19.5"	110.61	59.92'	106.47'	N 56°13'29.8" W

STREET TREE TABLE					
SYM	COMMON NAME	BOTANICAL NAME	QUANT.	SIZE	REMARKS
⊕	REDSPIRE	PYRUS CALLERYANA	8	2-2½" CAL., 12-14' H	B & B
⦿	WILLOW OAK	QUERCUS PHELLOS	9	2-2½" CAL., 12-14' H	B & B *

* DO NOT TRANSPLANT IN FALL

CURB & GUTTER LEGEND

═══ Std. 7" C & G

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

[illegible] 9/16/91
CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT — DATE
LS

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

[illegible] 9/12/91
CHIEF, LAND DEVELOPMENT DIVISION — DATE

Granville W. Wehland 8/6/91
CHIEF, BUREAU OF HIGHWAYS — DATE

[illegible]
CHIEF, BUREAU OF ENGINEERING — DATE

LAND DESIGN ENGINEERING, INC.
10620 Guilford Road • Suite 210 • Jessup • Maryland 20794 • (301)604-6264 • (301) 880-0034

DESIGNED L.M.M.	MILLERS CORNER — PLAN AND PROFILE MONTGOMERY RD. — PROFILE ROAD CONSTRUCTION PLANS	SCALE As Shown
DRAWN W.A.J.		DRAWING 2 OF 6
CHECKED R.L.M.	First Election District Howard County, Maryland	JOB NO. 88-600.8
DATE 1/31/91	Owner/Developer: 100 I.L.P. 10620 Guilford Rd., Suite 200 Jessup, Maryland 20794 (301) 604-5885	FILE NO.

REVISIONS		
NO	DATE	DESCRIPTION
1	10/94	Revise street name Millers Corner
2	1-10-95	Revise Montgomery Road Grades, Millers Corner Landing

MILLERS CORNER
(CUL-DE-SAC)

MONTGOMERY ROAD
(LOCAL)
℄ SEE SHEET 1 FOR PLAN VIEW

VERTICAL CURVE DATA
PVI STA = 0+62.50
PVI ELEV = 422.20
POC ELEV = 421.50
LVC = 90'
CORR = -0.70

VERTICAL CURVE DATA
PVI STA = 2+00
PVI ELEV = 415.51
POC ELEV = 415.71
LVC = 25'
CORR. = +0.20

VERTICAL CURVE DATA
PVI STA. = 2+74.20
PVI ELEV = 418.68
POC ELEV = 418.52
LVC = 25'
CORR. = -0.16

VERTICAL CURVE DATA
PVI STA. = 3+12.50
PVI ELEV. = 423.15
POC ELEV. = 421.80
LVC = 225.00'
CORR. = -1.35
SSD = 150'

PROFILE SCALE: 1" = 50' HORIZ., 1" = 5' VERT.

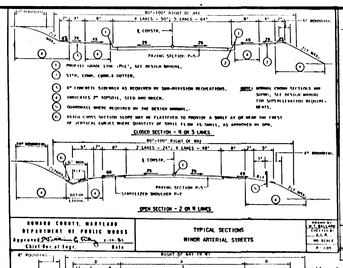
PLAN
NOTE BOOK
No.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
BY
DATE

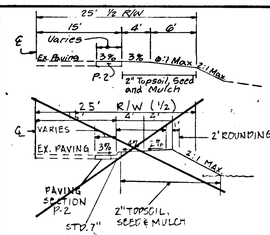
PROFILE
NOTE BOOK
No.
SURVEYED
PLOTTED
GRADES CHECKED
B.M.'s NOTED
STRUCTURE NOTATIONS CHECKED
BY
DATE

466

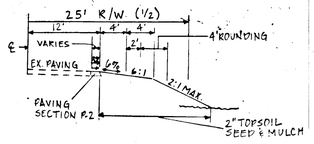
F-91-125

ROAD NAME	STATION	PAVING SECTION	DESIGN SPEED	CLASS	ZONING	R/W	A	B	C	D	PGL LOCATION
MONTGOMERY ROAD	0+00 TO 9+10.00	P-5	40	MINOR ARTERIAL	RSC	80'-100'	50'-64'	8'	4'	30'-36'	FINISHED GRADE AT CENTERLINE
MONTGOMERY ROAD	0+00 TO 4+13.70	P-2	30	LOCAL STREET	RSC, R-20	50'	30'	4'	4'	9	TOP OF CURB
MILLERS CORNER	0+00 TO 5+34.72	P-2	30	CUL-DE-SAC	RSC	25' (½ R/W)	12' (½)	—	—	13'	TOP OF CURB, OR AS INDICATED



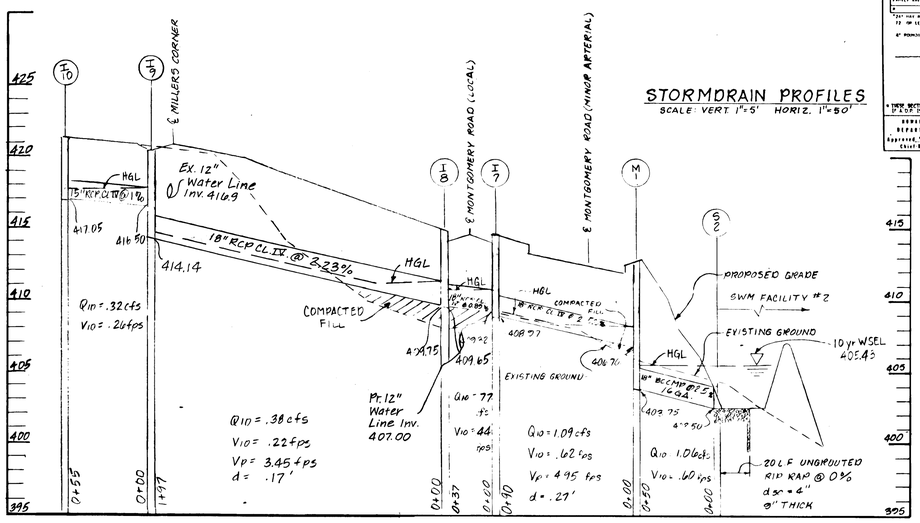


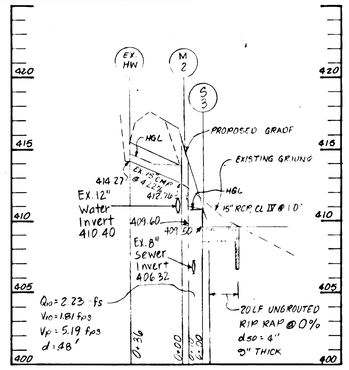
TYPICAL WIDENING SECTION-
MONTGOMERY ROAD (LOCAL)
STA. 4+13.70 TO STA. 4+93.70
NO SCALE



TYPICAL WIDENING SECTION-
MILLERS CORNER (CUL-DE-SAC)
STA. 1+10.61 TO STA. 5+34.72
NO SCALE

STORMDRAIN PROFILES
SCALE: VERT. 1"=5' HORIZ. 1"=50'



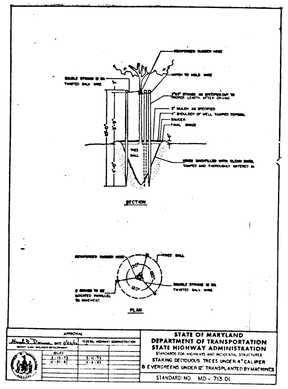


RIP-RAP CHANNEL DESIGN DATA

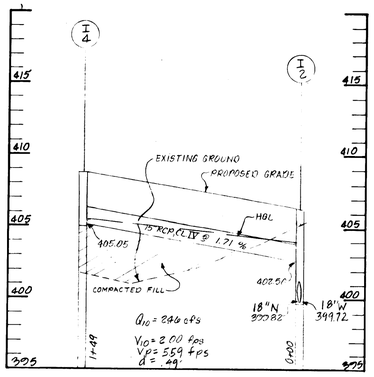
Structure	Pipe Size	Q10 (cfs)	d50	Thickness	Length	Width
S-1	24"	11.83	4"	9"	20'	5.2'
S-2	18"	1.06	4"	9"	20'	4.3'
S-3	15"	2.23	4"	9"	20'	3.7'

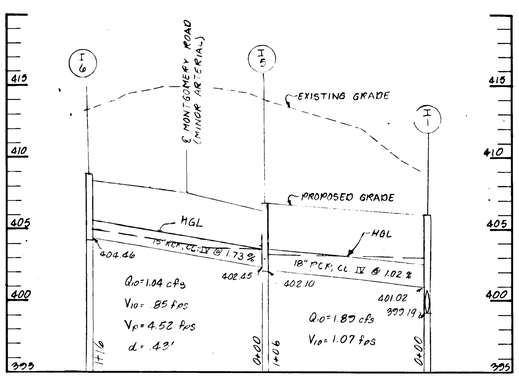
STRUCTURE SCHEDULE

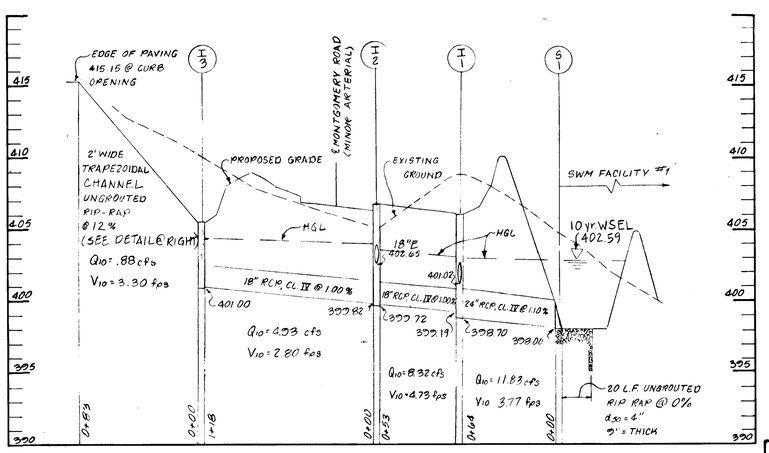
No.	Type	Inv. In	Inv. Out	Top Elevation Upper	Top Elevation Lower	Remarks	Location
I-1	A-5	401.75 402.19	398.70	406.07 (Sump)		SD 4.01	4+00 MONTGOMERY RD. 25' RT. (MINOR ARTERIAL)
I-2	A-10	402.65 399.82	399.72	406.31	406.23	SD 4.02	4+13.6 MONTGOMERY RD 25' RT. (MINOR ARTERIAL)
I-3	D	——	401.00	405.50 (Sump)		SD 4.11 OPENINGS ALL SIDES	See Plan
I-4	A-10	——	405.05	408.28	408.66	SD 4.02	4+13 MONTGOMERY RD. 25' RT. (MINOR ARTERIAL)
I-5	A-5	402.45	402.10	406.03	406.83	SD 4.01	2+00 MONTGOMERY RD. 25' RT (MINOR ARTERIAL)
I-6	A-5	——	404.46	408.03	408.73	SD 4.01	1+05 MONTGOMERY RD. 39' LT. (MINOR ARTERIAL)
I-7	A-5	409.32	409.01	413.34	414.15	SD 4.01	0+14.51 MONTGOMERY RD (LOCAL) 15' LT.
I-8	A-10	409.75	409.65	414.60	414.25	SD 4.02	0+10.25 MONTGOMERY RD. (LOCAL) 23' RT.
Ex HW	——	——	414.27	415.50 (Sump)		——	5+77.14 RT SHADY OAK LANE
M-1	Std. MH	406.10	403.15	412.28		G 5.12	8+75 37' RT MONTGOMERY ROAD (MINOR ARTERIAL)
M-2	Std MH	412.76	409.25	414.50		G 5.12	5+27.21 RT. SHADY OAK LANE
S-1	Concrete End Section		398.00	400.00		SD 5.51	See Plan
S-2	Metal End Section		402.50	404.00		SD 5.61	See Plan
S-3	Concrete End Section		409.50	410.40		SD 5.51	5+27.21 RT. SHADY OAK LANE
I-9	D	416.50	414.14	420.38		SD 4.11 OPENINGS ALL SIDES	0+20.15 RT. SHADY OAK LANE
I-10	A-5	——	417.05	421.55	421.45	SD 4.01	2+71.41 15' LT. MONTGOMERY RD (LOCAL)

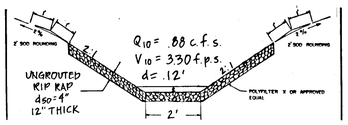


NOTE: STREET TREES SHALL BE PLANTED A MINIMUM OF 4' FROM SIDEWALKS.









RIP RAP TRAPEZOIDAL CHANNEL
NO SCALE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT — DATE 9/16/91

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/18/91
CHIEF, BUREAU OF HIGHWAYS — DATE 8/6/91
CHIEF, BUREAU OF ENGINEERING — DATE 9-16-91

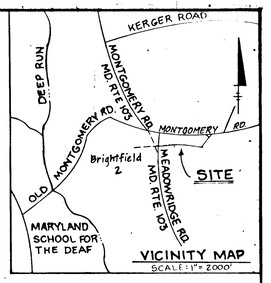
BY	REVISION	DATE
2	Revised Montgomery Road Widening Section, I-10 Elevation	1-10-95
LM	PROFILE & STRUCTURE SCHEDULE - LOWER INVERT AT I-9, WATER LINES SHOWN	5-24-92
1	Revise storm drains I-9 to I-7	10/94

LAND DESIGN ENGINEERING, INC.
10620 Guilford Road • Suite 210 • Jessup • Maryland 20794 • (301)604-6264 • (301) 880-0034

DESIGNED L.M.M.	ROAD CONSTRUCTION DETAILS AND STORM DRAIN PROFILES ROAD CONSTRUCTION PLANS First Election District Howard County, Maryland	SCALE As Shown
DRAWN W.A.J.		DRAWING 3 OF 6
CHECKED R.L.M.		JOB NO. 88-600.B
DATE 1/31/91	Owner/Developer: 100 I.L.P. 10620 Guilford Rd., Suite 200 Jessup, Maryland 20794 (301) 604-5885	FILE NO.

F-91-125

906



APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Thomas Hebenrath 9/16/91

CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT — DATE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

9/18/91

CHIEF, LAND DEVELOPMENT DIVISION — DATE

Granville W. Wehland 8/6/91

CHIEF BUREAU OF HIGHWAYS — DATE

CHIEF, BUREAU OF ENGINEERING — DATE

Rodolph L. May

REVISIONS		
NO.	DATE	DESCRIPTION
1	10/94	Revise street name - Millers Corner
		Widen Mont. Rd. (Local) R/W & Paving for turn lanes.

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

James M. Helm 8/1/91

U.S. Soil Conservation Service — Date

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

Robert W. Zielin 8/1/91

Howard Soil Conservation District — Date

By the Developer:

"I certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

John F. Liparini 7/1/91

Signature of Developer — Date

John F. Liparini

By the Engineer:

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as built" plan of the pond within 30 days of completion."

7/1/91

Signature of Engineer — Date

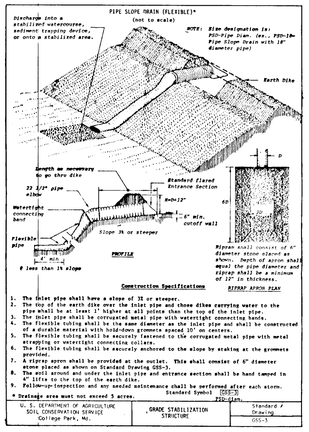
Rodolph L. May, Jr.

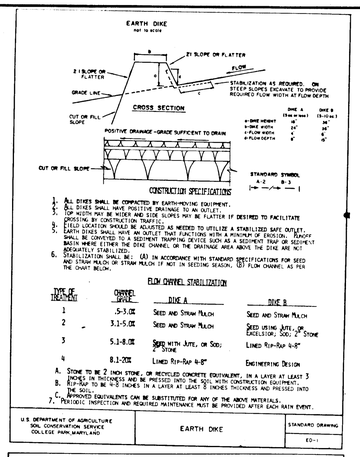
LAND DESIGN ENGINEERING, INC.

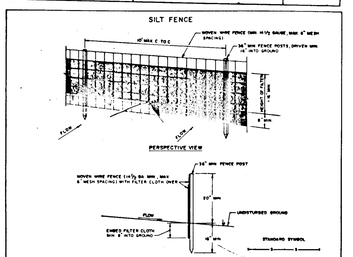
10620 Guilford Road • Suite 210 • Jessup • Maryland 20794 • (301)604-6264 • (301) 880-0034

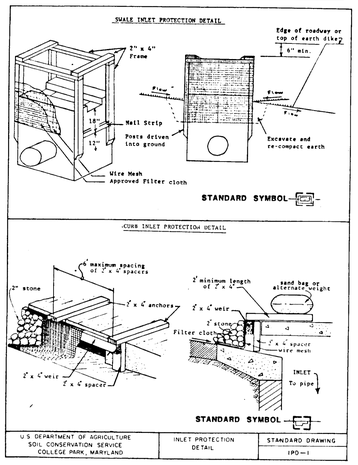
DESIGNED L.M.M.	SEDIMENT & EROSION CONTROL AND GRADING PLAN / DRAINAGE AREA MAP ROAD CONSTRUCTION PLANS	SCALE 1" = 50
DRAWN L.M.M.		DRAWING 4 OF 6
CHECKED R.L.M.	First Election District Howard County, Maryland	JOB NO. 88-600.8
DATE 1/31/91	Owner/Developer: 100 I.L.P. 10620 Guilford Rd., Suite 200 Jessup, Maryland 20794 (301) 604-5885	FILE NO.

F-91-125









PERMANENT SEEDING NOTES

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

Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding.

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

1) Preferred – Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square ft) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq ft).

2) Acceptable – Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil.

Seeding – For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) Sod with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching – Apply 1½ to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring.

Maintenance – Inspect all seeded areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES

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

Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding.

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

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2½ bushel per acre of annual rye (3.2 lbs/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1½ to 2 tons per acre 670 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes, 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.

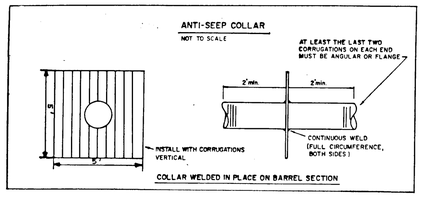
Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

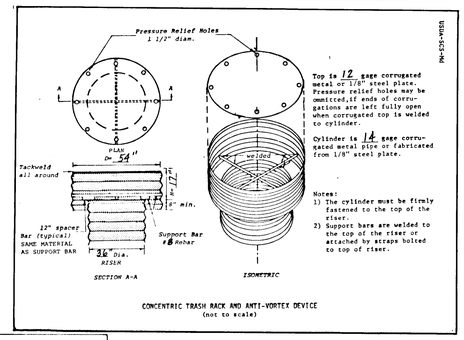
SEDIMENT CONTROL NOTES:

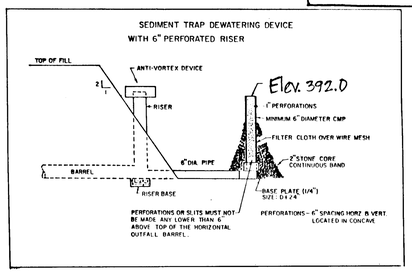
1. A minimum of 24 hours notice must be given to the Howard County Office of Inspections and Permits prior to the start of any construction. (410-313-1877).
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control.
3. Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter embankments, control structures, dikes, perimeter slopes and all slopes greater than 3:1
b) 14 days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol.1, Chapter 101 of the Howard County Design Manual, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 Maryland Standards and Specifications for Soil Erosion Control for permanent seedings (Sec.51) sod (Sec.54) temporary seeding (Sec.50) and mulching (Sec.5c) Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:
a) Total Area of Site 2.06 Acres
b) Area Disturbed 10.82 Acres
c) Area to be roofed or paved 1.62 Acres
d) Area to be vegetatively stabilized 9.20 Acres
e) Total Cut 23,307 cu.yds. (includes 10% compaction)
f) Total Fill 31,107 cu.yds.
g) Offsite waste/borrow area location Brightfield2 F91-53
8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment control must be provided if deemed necessary by the Howard County DPW Sediment Control Inspector.
10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

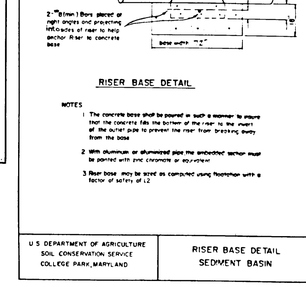
TEMPORARY SEDIMENT BASIN	
Drainage Area (Ac.)	13.03
Storage Req'd (CY)	873
Storage Provided (CY) *	2420
Storage Elevation (FT)	391.0
Storage Depth (FT)	3.5
Weir Length (FT)	16.0
Bottom Elev. (FT)	387.5
Cleanout Elev. (FT)	388.4
Riser Crest Elev. (FT.)	392.0
Emerg. Spillway Elev. (FT.)	393.0
Top Elev. (FT.)	395.5
2 yr. WSEL, Discharge	392.05, .84 c.f.s.
10 yr. WSEL, Discharge	392.73, 17.66 c.f.s.

* at 1' below crest







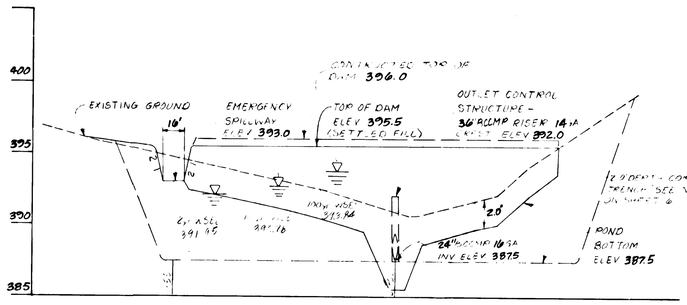


RISER BASE DETAIL

NOTES

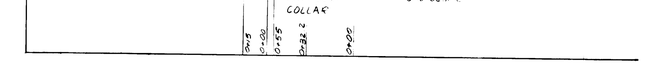
1. The concrete base shall be poured in such a manner to ensure that the concrete fills the bottom of the riser so that the invert of the outlet pipe is prevent the riser from bursting away from the base.
2. With aluminum or aluminized pipe the anchorage section must be painted with zinc chromate or equivalent.
3. Riser base may be sized as computed using floatation with a factor of safety of 1.2

U.S DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND
RISER BASE DETAIL SEDIMENT BASIN



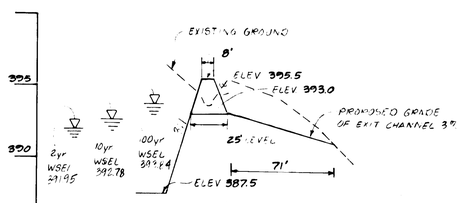
PROFILE - TOP OF DAM

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



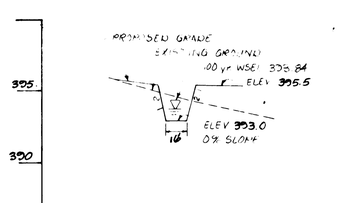
PROFILE THROUGH PRINCIPAL SPILLWAY

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



PROFILE THROUGH EMERGENCY SPILLWAY

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



CROSS SECTION OF EMERGENCY SPILLWAY

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

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
Emma Hakenwerth 9/6/91
CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT — DATE
LS

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, LAND DEVELOPMENT DIVISION — DATE 9/9/91
Granville W. Wakeland 9/6/91
CHIEF, BUREAU OF HIGHWAYS — DATE
William E. Ray 9/16/91
CHIEF, BUREAU OF ENGINEERING — DATE

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.
James M. Helm 8/1/91
U.S. Soil Conservation Service — Date

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
Robert W. Zirkle 8/1/91
Howard Soil Conservation District — Date

By the Developer:
"I certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."
John F. Liparini 7/1/91
Signature of Developer — Date
John F. Liparini

By the Engineer:
"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as built" plan of the pond within 30 days of completion."
Rodolph L. May Jr. 7/1/91
Signature of Engineer — Date
Rodolph L. May, Jr.

LAND DESIGN ENGINEERING, INC.
10620 Guilford Road • Suite 210 • Jessup • Maryland 20794 • (301)604-6264 • (301) 880 0034

DESIGNED L.M.M.	SEDIMENT & EROSION CONTROL DETAILS
DRAWN W.A.J.	ROAD CONSTRUCTION PLANS
CHECKED R.L.M.	First Election District Howard County, Maryland
DATE 1/31/91	Owner/Developer: 100 I.L.P. 10620 Guilford Rd., Suite 200 Jessup, Maryland 20794 (301) 604-5885
SCALE AS SHOWN	
DRAWING 5 OF 6	
JOB NO 88-6008	
FILE NO	

F-91-125

CONSTRUCTION SPECIFICATIONS

I. SITE PREPARATION

Areas under the embankment and structural works shall be cleared, grubbed and the topsoil stripped to remove all trees, vegetation, roots or other objectionable material. To facilitate clean out and restoration, it is recommended that the permanent pool area be cleared of all brush and trees.

II. EARTH FILL

Material

The fill material shall be taken from approved designated borrow area or areas. It shall be free from roots, stumps, wood, rubbish, oversize stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased at least 10 percent above the design elevation (including freeboard) unless otherwise shown on the plans.

Placement

Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 8-inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream portions of the embankment.

Compaction

The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture so that it can be formed into a ball without crumbling. If water can be squeezed out of the ball, it is too wet to compact properly.

Core Trench

Where specified, a core trench shall be excavated along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill material for the core trench shall be the most impervious material available and shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

III. STRUCTURAL BACKFILL

Backfill material shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall the contractor drive equipment over any part of a concrete structure or pipe unless there is a compacted fill of twenty-four inches or greater over the structure or pipe.

IV. PIPE CONDUITS

A. CORRUGATED METAL PIPE

1. Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

   Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHO Specification M-196 or M-211 with watertight coupling bands. Coupling bands, anti-seep collars, end sections, etc. must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be less than 9 and greater than 4.

   Helically corrugated pipe in addition to the requirements above shall have either continuously welded seams or have lock seams which are caulked with a neoprene bead.

2. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around. Watertight coupling bands shall be used at all joints. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight.
3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
4. Laying pipe - The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides.
5. Backfilling shall conform to structural backfill as shown above.
6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

B. REINFORCED CONCRETE PIPE

1. Materials - Reinforced concrete pipe shall have a rubber gasket joint and shall equal or exceed ASTM Specification C-361. Approved equivalents are AWWA Specification C-300, 301, and 302.
2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its diameter with a minimum thickness of 3". W.S.S.C. low cradle bedding is an approved equivalent.
3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed on the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe.
4. Backfilling shall conform to structural backfill as shown above.
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

V. CONCRETE

Concrete shall meet minimum requirements set forth in Maryland State Highway Administration Specifications for Materials, Highways, Bridges, and Incidental Structures, Article 20.07 (Portland Cement Concrete Mixtures), Class A-1, or P-1.

VI. STABILIZATION

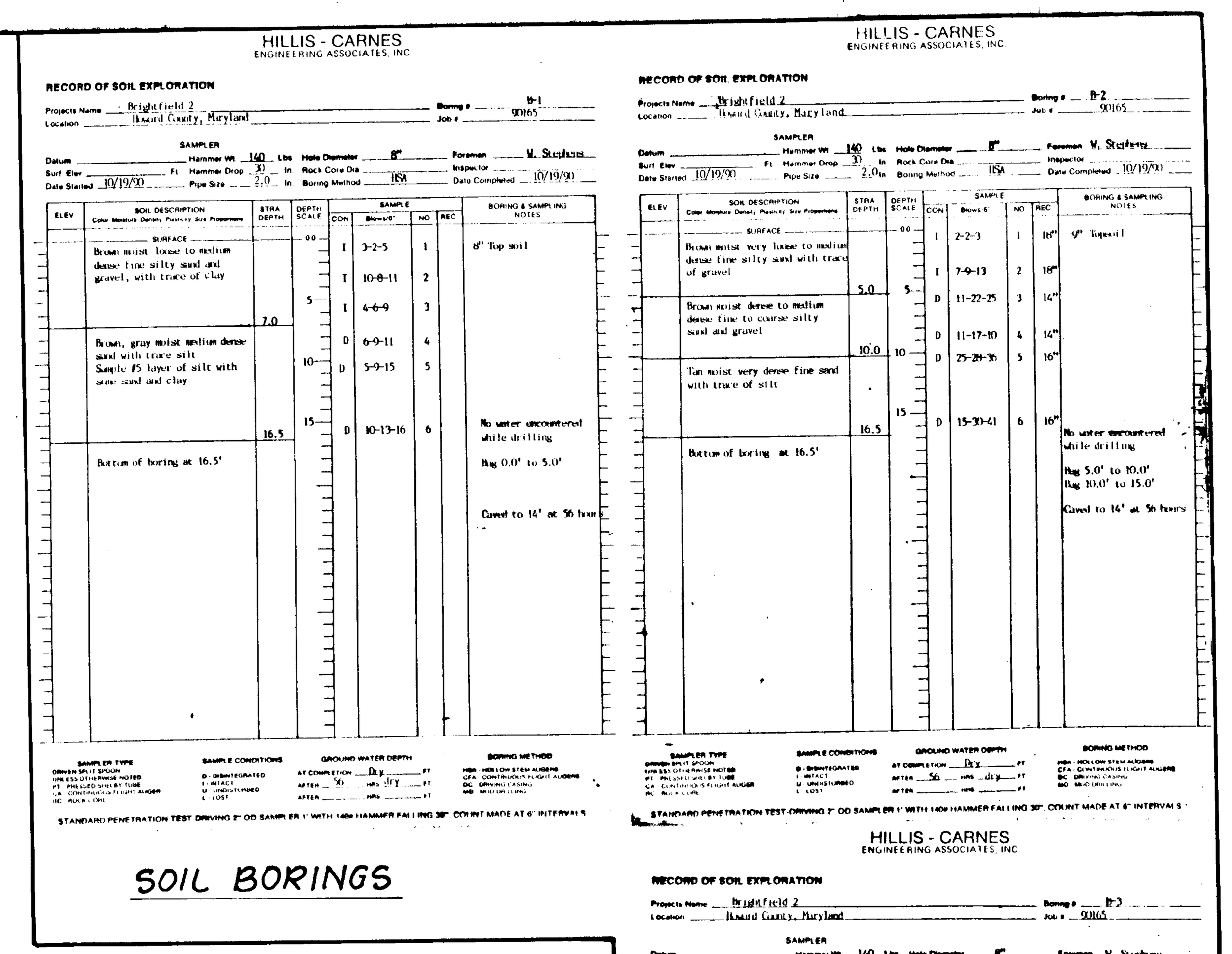
All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway and borrow areas shall be stabilized by seeding and applying straw mulch in accordance with Standards and Specifications for Soil Erosion and Sediment Control in Urbanizing Areas immediately after finish grading.

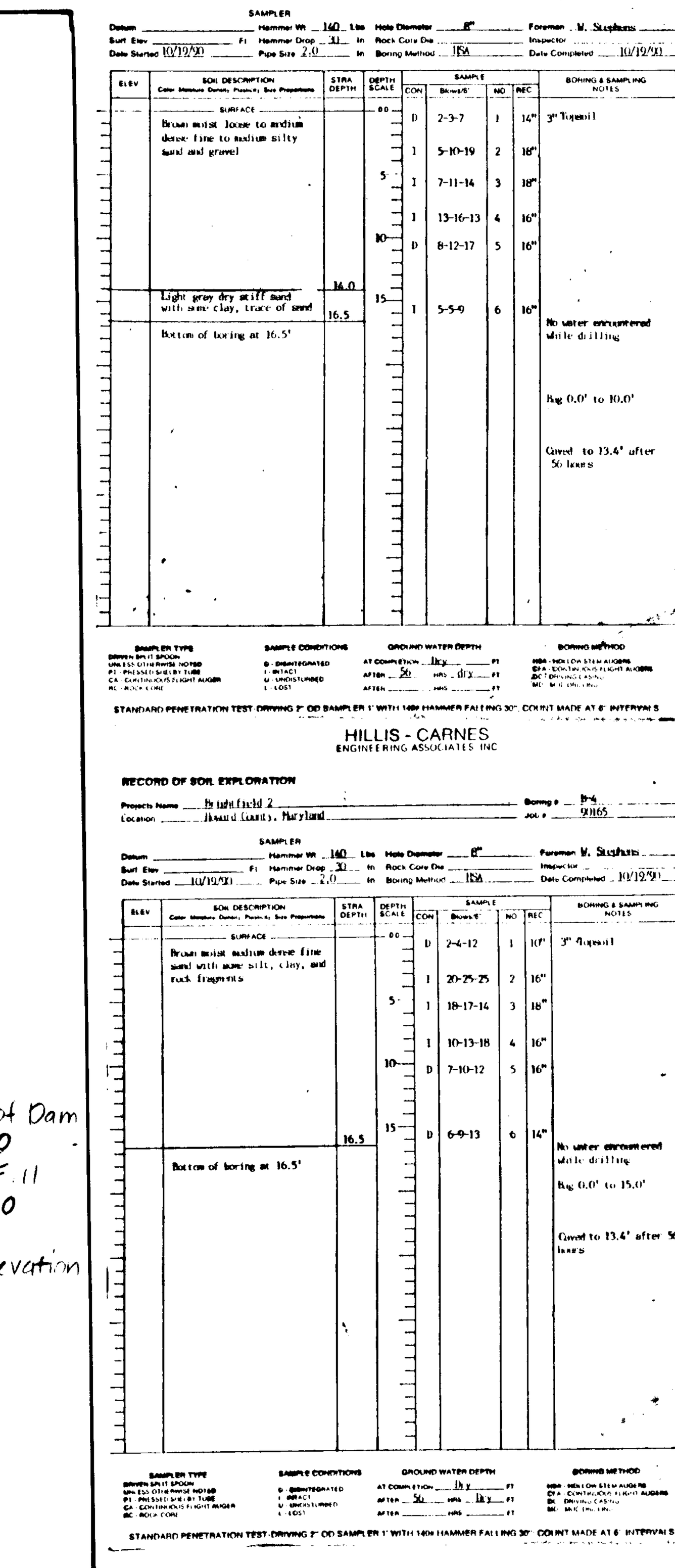
SWM Note: Matting shall be provided for emergency spillways and exit channels.

SEQUENCE OF CONSTRUCTION

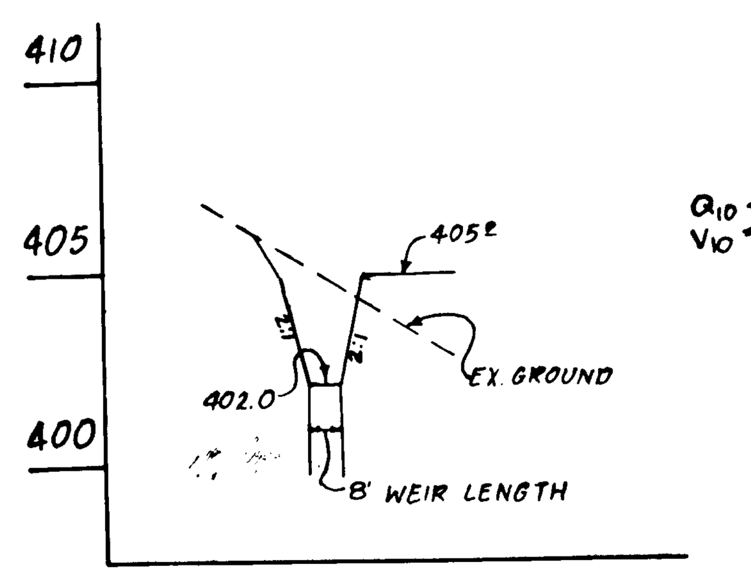
		DAYS
1.	Obtain grading permit.	5
2.	Install sediment basin, dikes, and silt fences, and stabilize disturbed areas.	10
3.	Grade site.	10
4.	Install storm drains except I-1 to S-1 reach and M-1 to S-2 reach. Install temporary pipes from I-1 and from M-1 as shown. Construct remaining utilities.	15
5.	Install curb and gutter, base paving. Stabilize all remaining disturbed areas.	10
6.	Excavate SWM facilities 1 and 2 to one foot above final bottom grade, except as required to install remaining storm drain system. Stabilize.	5
7.	After obtaining permission from E/S inspector, install remaining storm drain system, removing temporary pipe; stabilize any remaining disturbed areas.	5
8.	Excavate to final pond bottoms and till to depth of 8" minimum; stabilize. With approval of sediment constrol inspector, remove sediment basin and all other sediment control devices. Grade SWM maintenance and access easement as shown on sheet 1 when restoring grades while removing sediment basin. Stabilize immediately.	10

Note: This plan to be implemented in conjunction with the approved TCP for F 91-53.



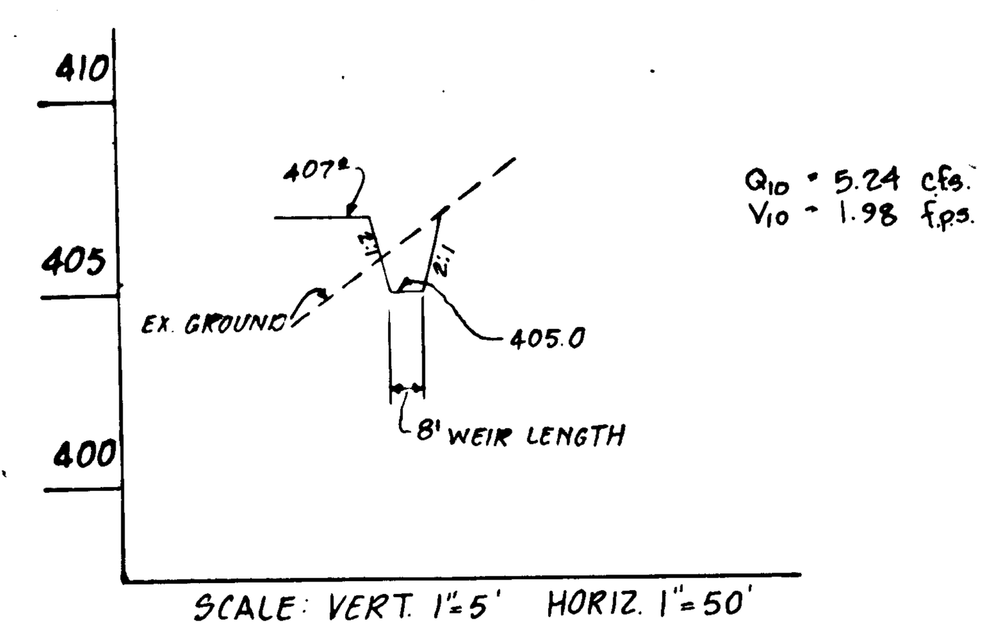


CROSS SECTION - SPILLWAY SWM #1



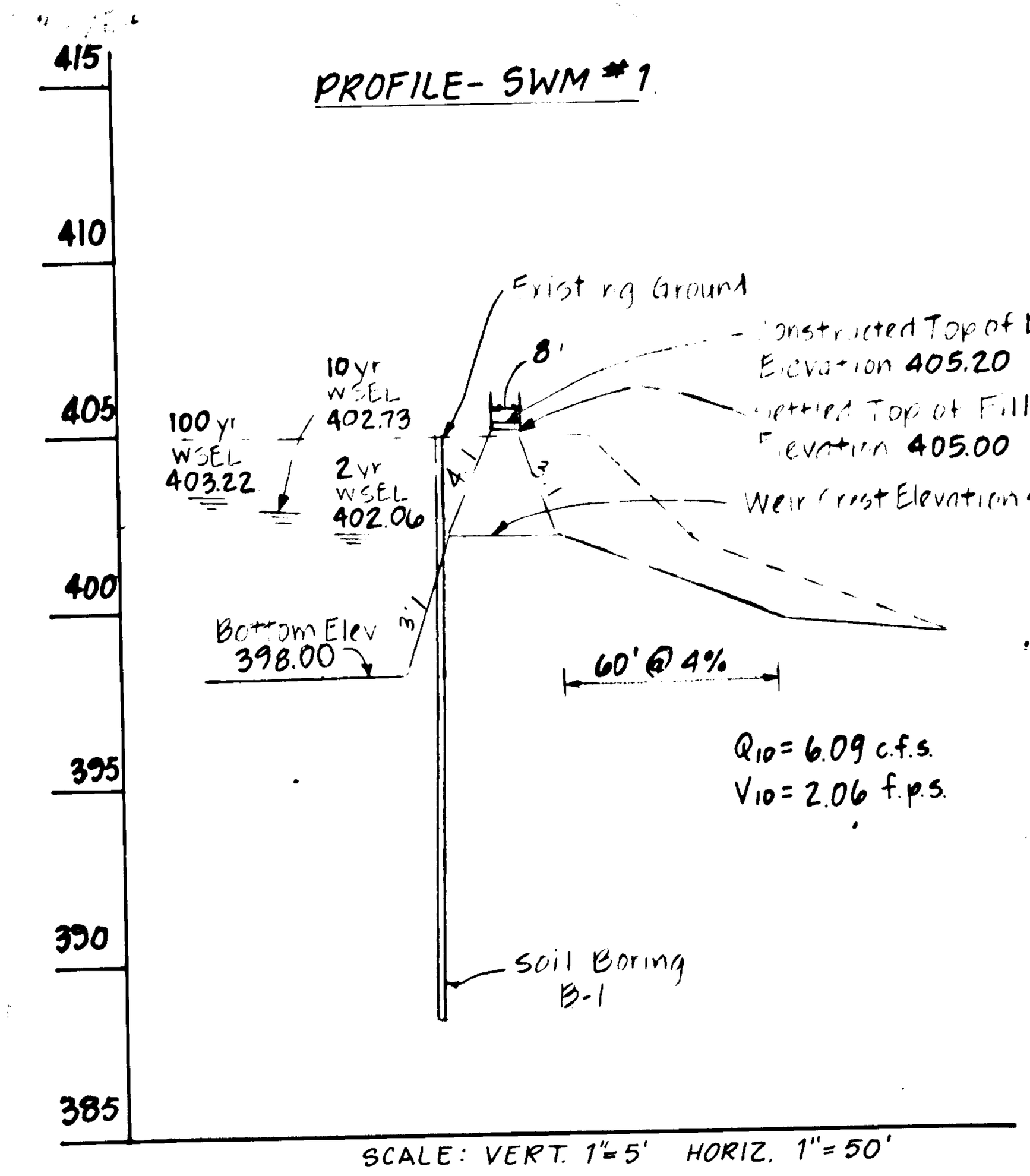
SCALE: VERT. 1"=5' HORIZ. 1"=50'

CROSS SECTION - SPILLWAY SWM #2



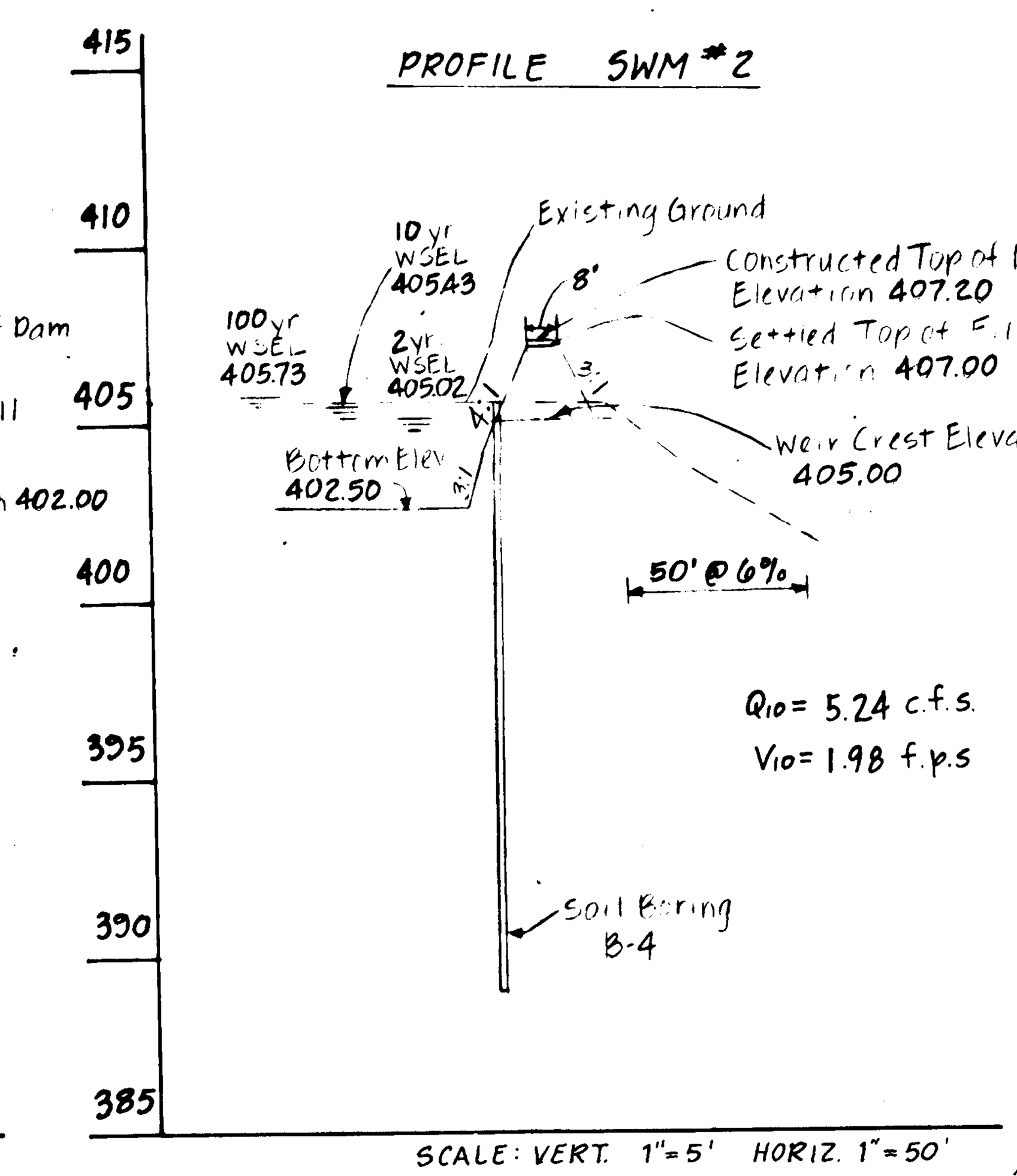
SCALE: VERT. 1"=5' HORIZ. 1"=50'

PROFILE - SWM #1



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

PROFILE SWM #2



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

By the Developer:

"I certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Signature of Developer: John F. Liparini — Date: 7/1/91

By the Engineer:

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "as built" plan of the pond within 30 days of completion."

Signature of Engineer: Rodolph L. May, Jr. — Date: 7/1/91

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

U.S. Soil Conservation Service — Date: 8/1/91

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

Howard Soil Conservation District — Date: 8/1/91

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT — DATE: 9/16/91

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, LAND DEVELOPMENT DIVISION — DATE: 9/14/91

CHIEF, BUREAU OF HIGHWAYS — DATE: 8/6/91

CHIEF, BUREAU OF ENGINEERING — DATE: 9-16-91

LAND DESIGN ENGINEERING, INC.

10620 Guilford Road • Suite 210 • Jessup • Maryland 20794 • (301)604-6264 • (301) 880-0034

DESIGNED	STORMWATER MANAGEMENT DETAILS ROAD CONSTRUCTION PLANS	SCALE
L.M.M.		As Shown
DRAWN		DRAWING
W.A.J.		6 of 6
CHECKED	First Election District Howard County, Maryland	JOB NO
R.L.M.		88-600.8
DATE	Owner/Developer: 100 I.L.P. 10620 Guilford Rd., Suite 200 Jessup, Maryland 20794 (301) 604-5885	FILE NO
1/31/91		

F-91-125

486