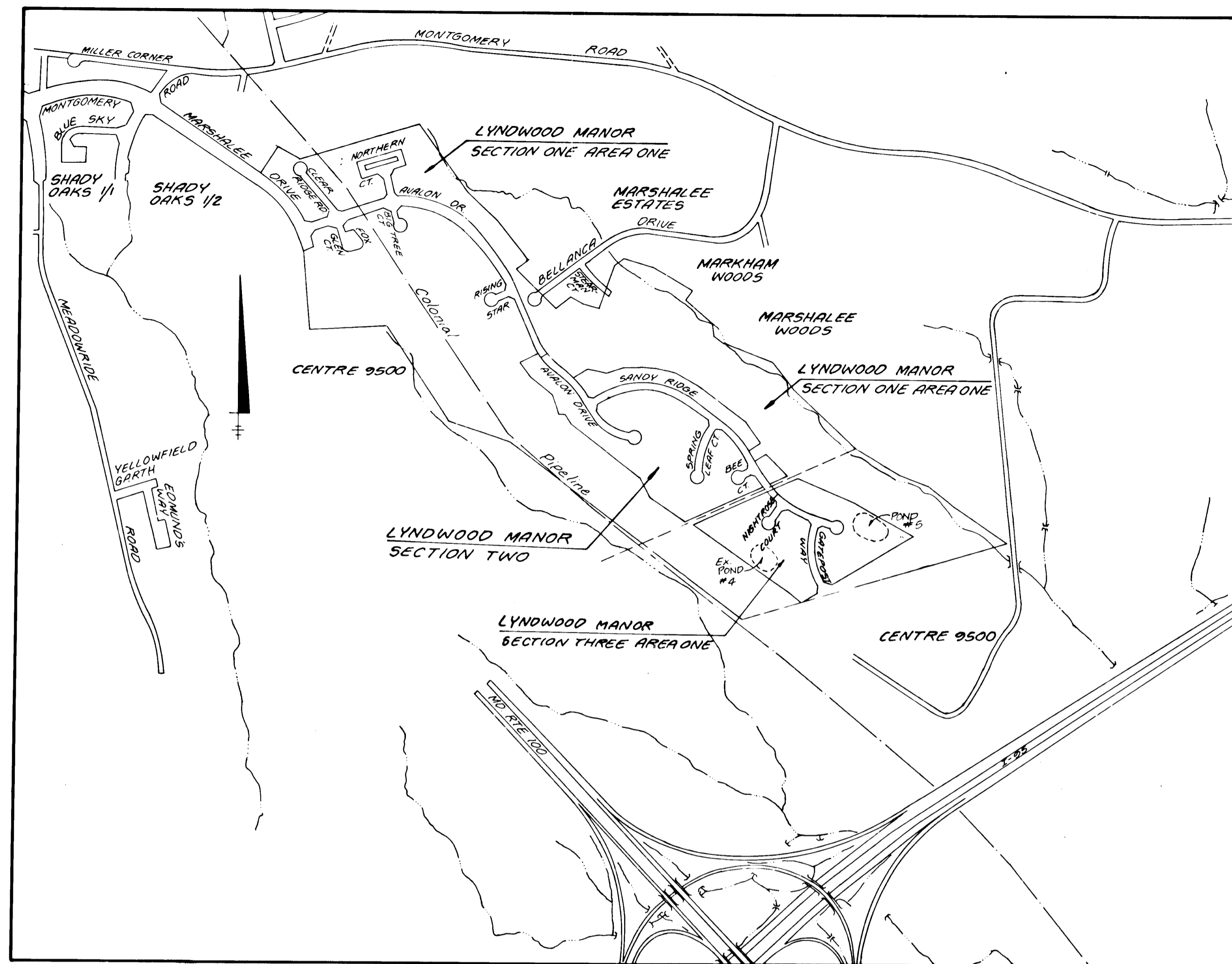


INDEX OF SHEETS	
SHEET NO.	TITLE
1	TITLE SHEET
2	PLAN AND PROFILE - SANDY RIDGE & NIGHTROSE CT
3	PLAN AND PROFILE - GATEPOST WAY
4	ROAD DETAILS
5	GRADING & SEDIMENT AND EROSION CONTROL PLAN
6	GRADING & SEDIMENT AND EROSION CONTROL DETAILS
7	DRAINAGE AREA MAP
8	STORM DRAIN PROFILES
9	STORMWATER MANAGEMENT PLAN
10	STORMWATER MANAGEMENT DETAILS
11	LANDSCAPE PLAN



LOCATION MAP  
Scale 1" = 600'

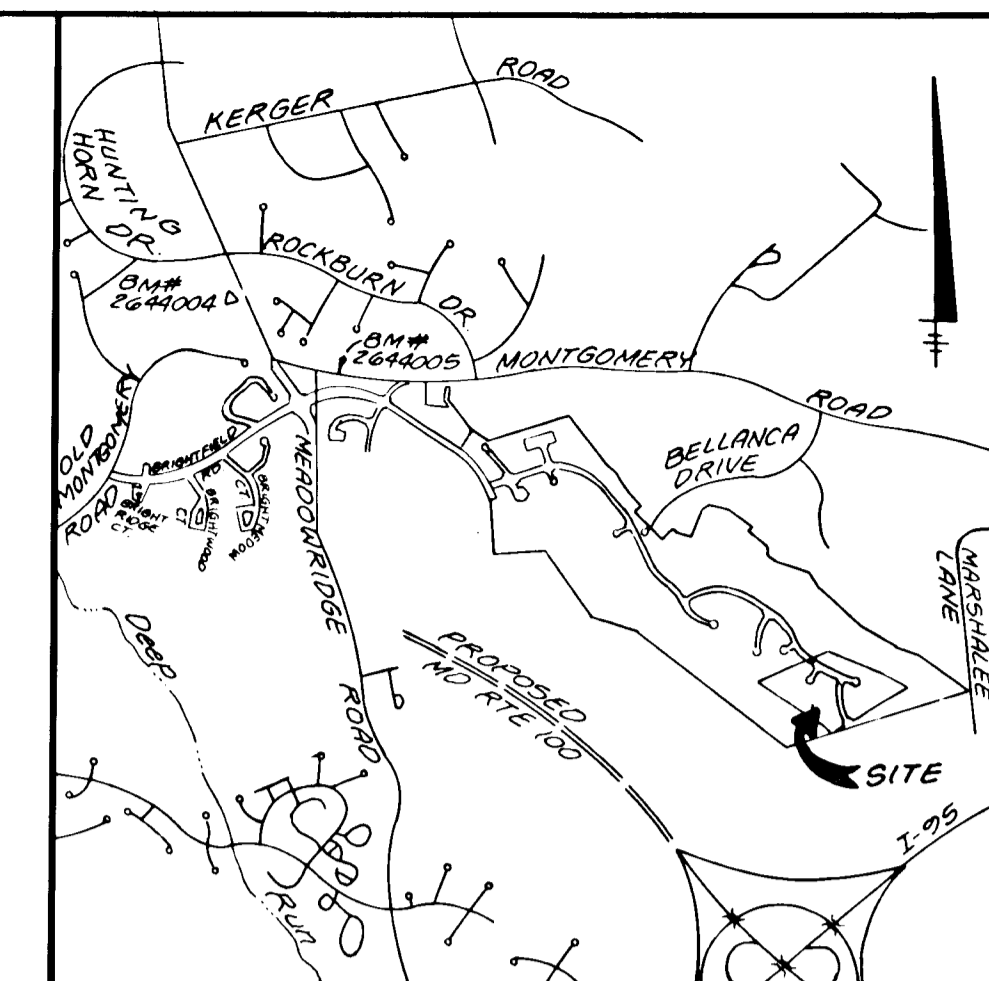
**BENCHMARK**

Ho Co Mon # 2644004 El 402.135  
Ho Co Mon # 2644005 El 416.981

**DESCRIPTION**

Ho Co Mon # 2644004 El 416.981  
Concrete Monument 2' Below Surface  
South Side Montgomery Road East  
Of Meadow Ridge Road

Ho Co Mon # 2644004 El 402.135  
Concrete Monument 1' Below Surface  
SW Corner Of Intersection Rte 103 and  
Old Montgomery Road.



VICINITY MAP  
Scale 1" = 2000'

**NOTES**

- All construction shall be in accordance with the latest standards and specifications of Howard County, Volume IV.
- The contractor shall notify the Department of Public Works/Bureau of Construction Inspection Division at (410) 313-1800 at least twenty-four (24) hours prior to the start of work.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least forty-eight (48) hours prior to any excavation work.
- Project background:  
Location: Elkridge, Tax Map 37, Parcel 38, PID 80, 529, 542, 640, 643  
Zoning: RSC (Residential Single Cluster)  
SDBA Ref: ZB88A Ref. ZB 877 R&M, PB 284, RES 188  
Election District: 1st  
Section/Area: Three One  
Total Tract Area: 150.43 ac. plus/minus  
Section/Area: 15.4141 ac. plus/minus  
No. of Proposed Lots: 21 (19 STD, 2 OS)  
Previous Submittals: WPS-33, F94-125, 593-02, P93-11, SDP93-75, SDP93-105, F94-27, F94-28, F94-29
- Traffic control devices, markings, and signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any signs.
- Light poles and fixtures for street lights shall be in accordance with the latest Howard County Design Manual, Volume II, Roads and Bridges.
- Storm drain trenches within the public road right-of-way shall be banked and compacted in accordance with the Howard County Standard Specifications and Details, Design Manual Volume IV.
- Any damage to existing public right-of-way, existing paving, existing curb and gutter, existing utilities, etc. shall be corrected at the contractor's expense.
- The existing utilities shown hereon are located from field surveys and construction drawings of record. The approximate location of existing utilities are shown for the contractor's information and convenience. The contractor shall locate existing utilities to his own satisfaction and in advance of any construction activities. Additionally, the contractor shall take all necessary precautions to protect all existing utilities and maintain uninterrupted service.
- The topography shown hereon is compiled from photogrammetric aerial survey dated March 16, 1986 by Dewberry & Davis, supplemented with field run data prepared by Land Design Engineering, Inc., June 1992.
- Horizontal and vertical datums are related to the Maryland State Plane Coordinate system as projected from Howard County Control Stations No. 2644004 and No. 2644005 (NAD 27).
- Public water and public sewer are available to the site by means of extensions.  
Water: Contract No. 14-3359-D  
Sewer: Contract No. 14-3359-D
- Temporary stormwater management is provided by detention. Permanent stormwater management is by infiltration.
- Wetlands delineation by Exploration Research, Inc. dated 1992, approved by United States Army Corps of Engineers June, 1992.
- Noise study compiled by Land Design Engineering, Inc. as part of P93-11 approval.
- Footprint analyzed by Land Design Engineering, Inc. February, 1993 based on field run data from 1992 and 1993 (P93-11).
- Traffic study compiled by Lee Cunningham & Associates, Inc. dated November, 1992 as part of 593-02 approval, and F94-25.
- Geotechnical reports compiled by H&S Carries for existing Pond #4 constructed under F94-94 dated February 21, 1994 and for proposed pond #5 dated March 17, 1994.
- 401 Permit #P91-0049-7, exp. August 1, 1995.  
404 Permit #92-142-0313, exp. July 29, 1996.
- Waiver Petition WPS-29 for roads to exceed 1200' Section 16.113(c)(1)(D) approved December 23, 1992. Waiver request WPS-50 to waive Section 16.115(b)(2) to provide 20' minimum footage for lot areas under 40,000 square feet, waive Section 16.115(b) to front lots on a public or private road not exceeding 200' Section 16.115(c), that no more than two (2) premises lots may have adjoining driveways, Section 16.115(c), parking areas and lot extensions shall not be permitted, approved March 18, 1993.
- All hydraulic data is for the 10-year storm unless otherwise noted.
- All existing grades are from survey data March 16, 1986, or proposed grades shown on previous Final Plans.
- 95% compaction in fill areas shall be determined by ASSHTO T-180.
- Sidewalks and sidewalk ramps shall be designed in accordance with current ADA requirements.

# ROAD & STORM DRAIN CONSTRUCTION PLANS

## LYNDWOOD MANOR

### SECTION THREE AREA ONE

1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND

1708  
1071

**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.

*BRUCE D. BURTON*  
Signature of Engineer  
5/22/95  
Date

**DEVELOPER'S CERTIFICATE**

I/we certify that all development and construction will be done according to this plan and that any responsible personnel involved in the construction project will have a certificate of Attendance at a Department of 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 Howard Soil Conservation District.

*Robert W. Zielke*  
Signature of Developer  
3/21/94  
Date

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

*Robert W. Zielke* 5/30/95  
Date  
Howard Soil Conservation District

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

*Robert W. Zielke* 5/30/95  
Date  
Howard Soil Conservation District

APPROVED Department of Public Works for Storm Drainage Systems and Roads

*Chad Deamans* 7/13/95  
Date  
Chief, Land Development Division

*Paul J. Spon* 7/13/95  
Date  
Chief, Bureau of Engineering

*Robert M. Daniels* 6-6-95  
Date  
Chief, Bureau of Highways

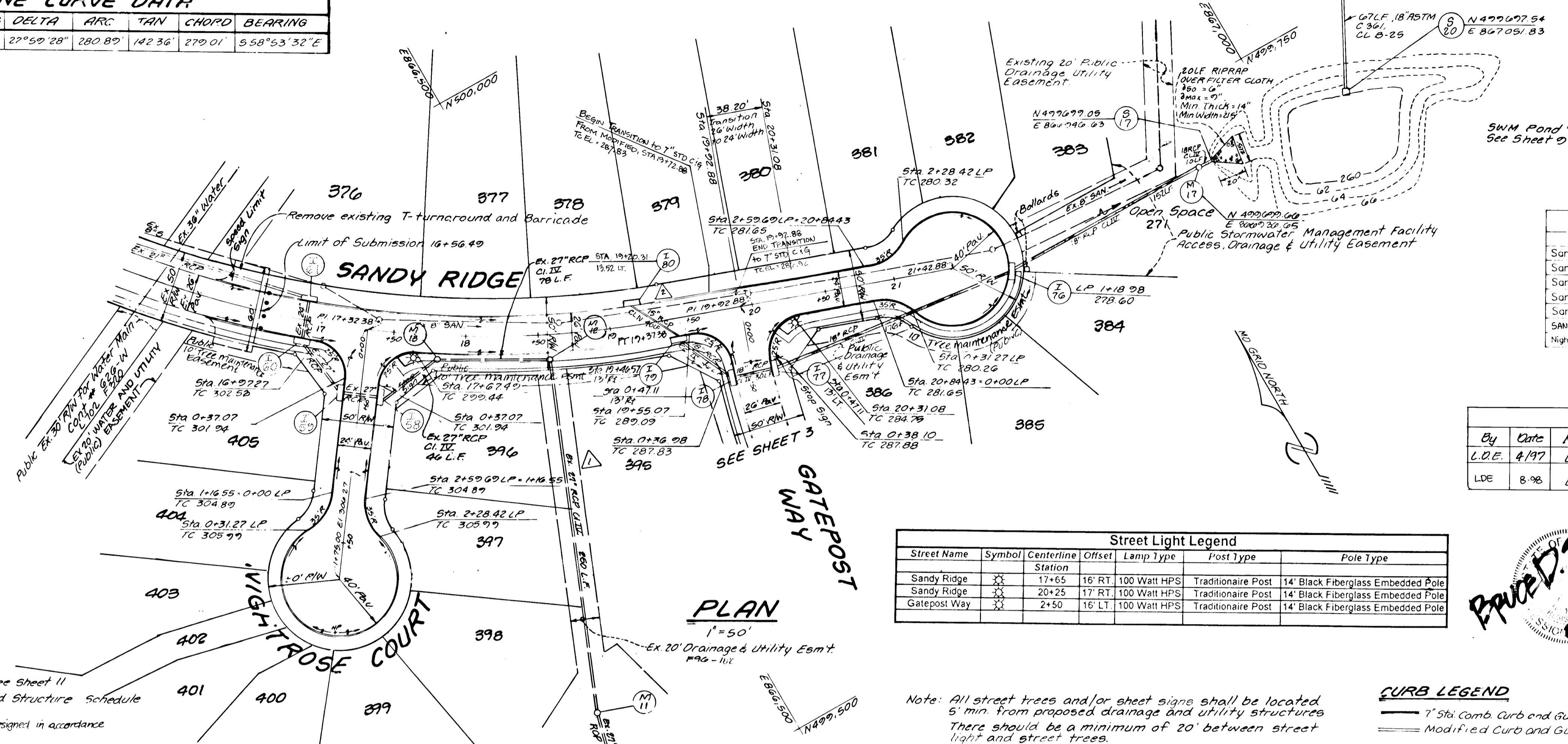
APPROVED Department of Planning and Zoning

*Qina Stummario* 7/17/95  
Date  
Chief, Division of Planning and Research

*BRUCE D. BURTON*  
5/22/95

LAND DESIGN ENGINEERING, INC.		
8835 Columbia 100 Parkway, Unit N, Columbia, MD 21045 (410) 715-1070 (Balt.) (301) 596-3424 (Wash.) (410) 715-0681 (Fax)		
DESIGNED TO	TITLE SHEET	SCALE
BY	LYNDWOOD MANOR SECTION THREE AREA ONE	AS SHOWN
CHECKED BY	Tax Map 37 Part of Parcels 643, 38, 640	DRAWING
DATE	1st Election District Howard County, MD	1 OF 11
	P-2005 Submittals ZB877 REM, WP 91-33, F94-125, 504-93-75, RES 188, 5-93-02, PB 284, 11-93-11, SDP 93-105	JOB NO.
	100 INVESTMENT LIMITED PARTNERSHIP	92-176-10
	8835 P Columbia 100 Parkway	FILE NO.
	Columbia, Maryland 21045 (410) 730-0810	FDA-95

CENTERLINE CURVE DATA					
NAME AND STATION	RADIUS	DELTA	ARC	TAN	CHORD BEARING
SANDY RIDGE 16+56.49 TO 19+37.38	100.00	27°59'28"	280.89	142.36	279.01 S58°53'32"E



Road	Station	TC Elev	Remarks
Sandy Ridge	16+72.43	303.41	Begin Trans. to 7" Std.
Sandy Ridge	17+10.93	301.72	End Trans. from 7" Std.
Sandy Ridge	17+67.49	299.44	Begin 20" Trans. to Mod.
Sandy Ridge	17+87.49	298.26	End 20" Trans. to Mod.
Sandy Ridge	19+72.86	297.83	Begin Trans. FROM MOD.
SANDY RIDGE	19+92.88	296.92	END TRANS. TO 7" STD.
Nightrose Court	0+62.07	302.71	End Trans. from 7" Std.

By	Date	NO	Description
L.D.E.	4/97	1	Revise Lot Lines, # & Ex Storm Drain Layout
L.D.E.	8/98	2	REVISE INLET RD LOCATIONS; CURB & GUTTER TRANSITION LOCATION

Street Name	Symbol	Centerline Station	Offset	Lamp Type	Post Type	Pole Type
Sandy Ridge	⊗	17+65	16' RT	100 Watt HPS	Traditionaire Post	14' Black Fiberglass Embedded Pole
Sandy Ridge	⊗	20+25	17' RT	100 Watt HPS	Traditionaire Post	14' Black Fiberglass Embedded Pole
Gatepost Way	⊗	2+50	16' LT	100 Watt HPS	Traditionaire Post	14' Black Fiberglass Embedded Pole

—	7" Sta Comb. Curb and Gutter
—	Modified Curb and Gutter

Note: All street trees and/or street signs shall be located 5' min from proposed drainage and utility structures. There should be a minimum of 20' between street light and street trees.

NOTES:  
 1) For Street Tree Locations, See Sheet 11  
 2) For Storm Drain Profiles and Structure Schedule See Sheet 8  
 3) Sidewalks and Ramps shall be designed in accordance with the ADA requirements.

APPROVED: Department of Planning and Zoning

*Gina Summerville* 7/17/95  
 Chief, Division of Land Development and Research

APPROVED: Department of Public Works for Storm Drainage Systems and Roads

*Chris Dammann* 7/13/95  
 Chief, Land Development Division

*Robert J. Span* 7/13/95  
 Chief, Bureau of Engineering

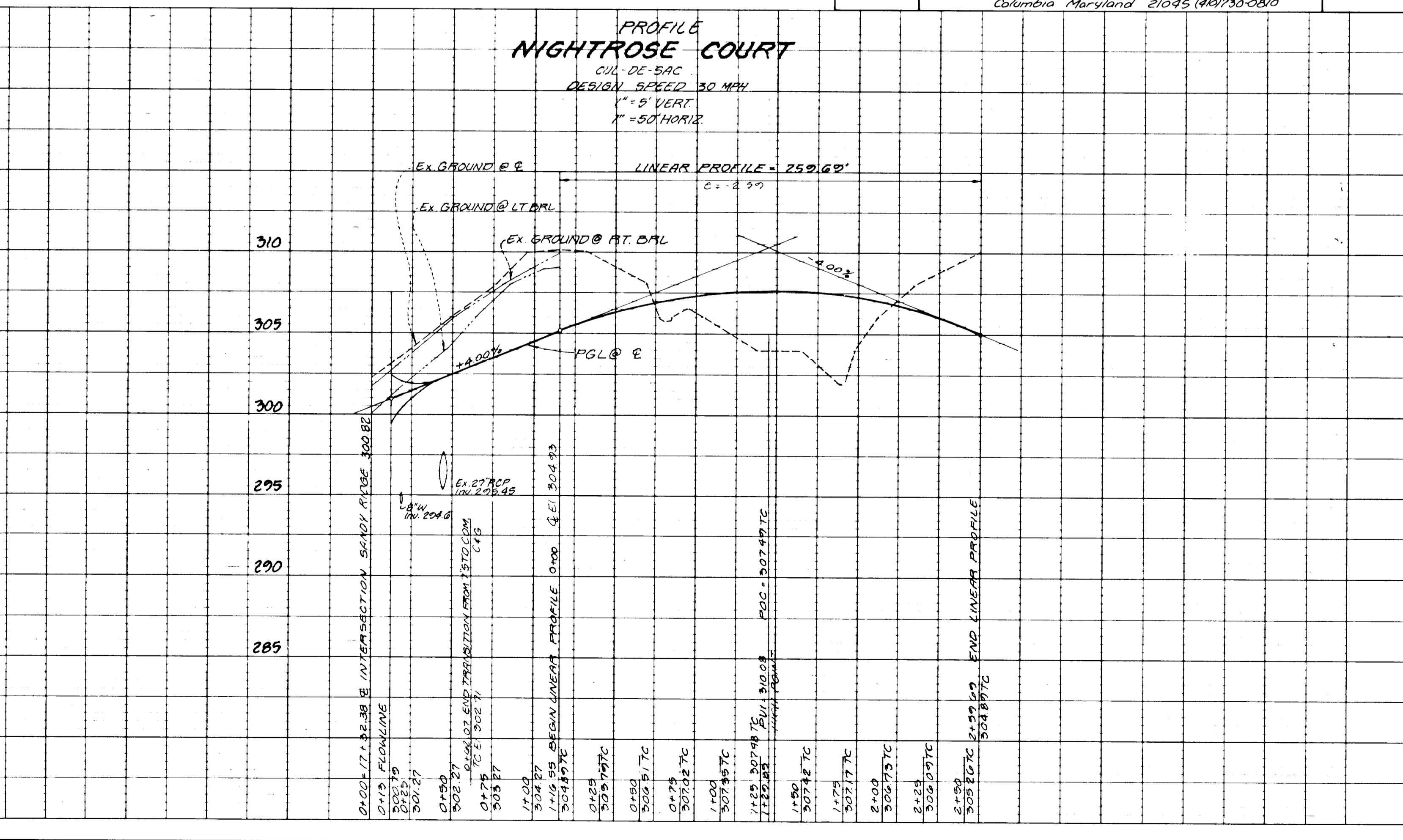
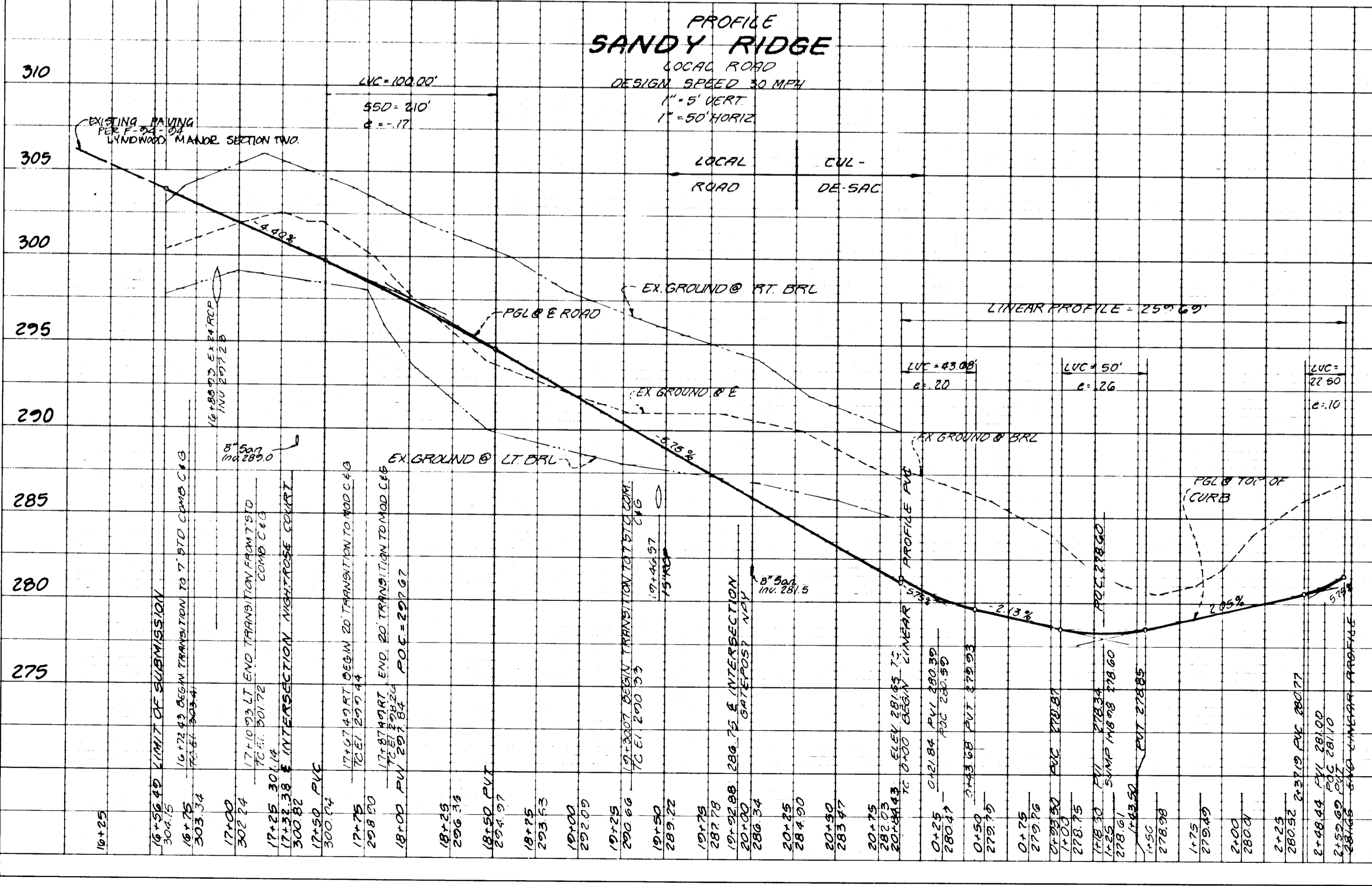
*Richard M. Cavale* 6-6-95  
 Chief, Bureau of Highways

LAND DESIGN ENGINEERING, INC.

8835 Columbia 100 Parkway, Unit N, Columbia, MD 21045  
 (410) 715-1070 (Balto.) (301) 596-3424 (Wash.) (410) 715-0681 (Fax)

DESIGNED	SCALE
T.O./E.S.	AS SHOWN
DRAWN	DRAWING
W.J./S.D.	2 of 11
CHECKED	JOB NO.
RM	02-176.6
DATE	FILE NO.
12/94	F94-95

ROAD CONSTRUCTION PLANS  
**SANDY RIDGE & NIGHTROSE COURT**  
**LYNDWOOD MANOR**  
 SECTION THREE AREA ONE  
 Tax Map 37 Part of Parcels 643, 38, 640  
 1st Election District Howard County, MD  
 S 93-02, P 03-11



17021

CENTERLINE CURVE DATA						
NAME AND STATION	RADIUS	DELTA	ARC	TAN	CHORD	BEARING
GATEPOST WAY 0+23.88 TO 4+84.30	500.00'	50°30'09"	440.72	235.83	474.50'	S 05°38'21"E

Street Light Legend						
Street Name	Symbol	Centerline Station	Offset	Lamp Type	Post Type	Pole Type
Sandy Ridge	⊗	17+65	16' RT	100 Watt HPS	Traditionaire Post	14" Black Fiberglass Embedded Pole
Sandy Ridge	⊗	20+25	17' RT	100 Watt HPS	Traditionaire Post	14" Black Fiberglass Embedded Pole
Gatepost Way	⊗	2+50	16' LT	100 Watt HPS	Traditionaire Post	14" Black Fiberglass Embedded Pole

Curb Transition Table			
Road	Station	TC Elev	Remarks
Gatepost Way	0+63.61	288.65	End Trans. to Mod.
Gatepost Way	4+73.88	291.29	Begin Trans. to 7" Std.

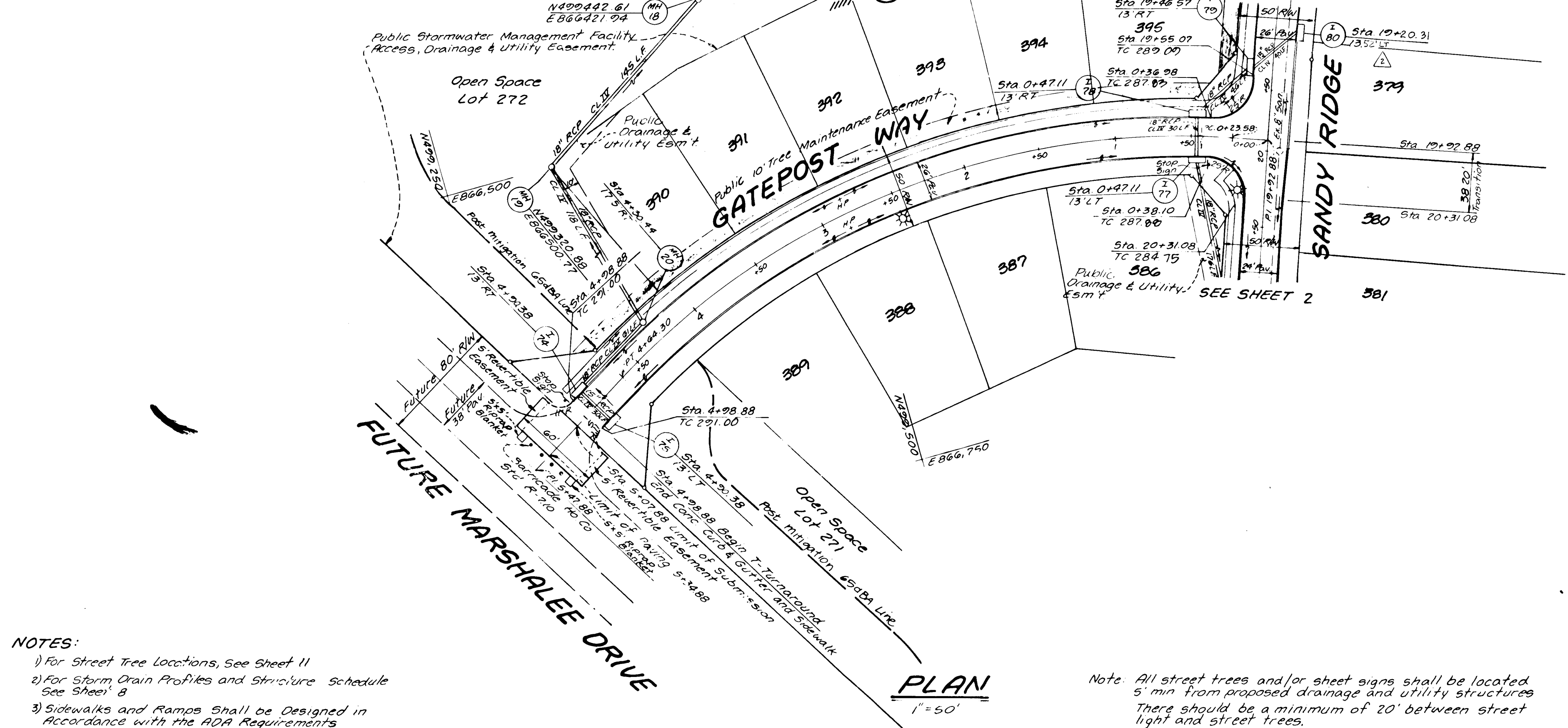
Revision			
By	Date	NO	Description
LDE	4-97	1	Revise Lot Layout & NOS
LDE	8-98	2	Revise WEST SIDE LOCATIONS: CURB, GUTTER, SHADINGS / SYMBOLS

APPROVED: Department of Planning and Zoning  
 Date: 7/17/95  
 Chief, Division of Land Development and Research

APPROVED: Department of Public Works for Storm Drainage Systems and Roads  
 Date: 7/12/95  
 Chief, Land Development Division

Date: 7/13/95  
 Chief, Bureau of Engineering

Date: 6-6-95  
 Chief, Bureau of Highways



- NOTES:
- 1) For Street Tree Locations, See Sheet 11
  - 2) For Storm Drain Profiles and Structure Schedule See Sheet 8
  - 3) Sidewalks and Ramps Shall be Designed in Accordance with the ADA Requirements

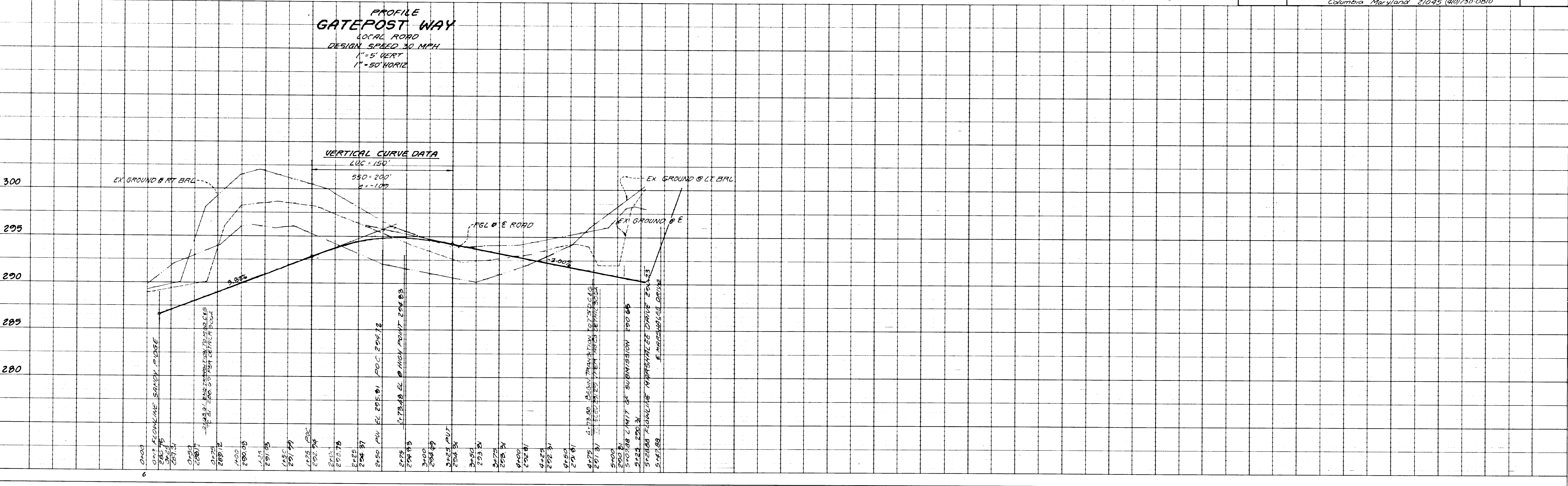
Note: All street trees and/or sheet signs shall be located 5' min from proposed drainage and utility structures. There should be a minimum of 20' between street light and street trees.

BRUCE D. BURTON  
 5/22/95  
 PROFESSIONAL ENGINEER

**LAND DESIGN ENGINEERING, INC.**  
 8835 Columbia 100 Parkway, Unit N, Columbia, MD 21045  
 (410) 715-1070 (Balto.) (301) 596-3424 (Wash.) (410) 715-0681 (Fax)

DESIGNED TO	ROAD CONSTRUCTION PLANS	SCALE AS SHOWN
DRAWN BY	GATEPOST WAY	DRAWING 3 of 11
CHECKED BY	LYNDWOOD MANOR	JOB NO. 92-176 G
DATE	SECTION THREE AREA ONE Tax Map 37 Part of Parcels 683, 38, 640 1st Election District Howard County, MD 5-23-02, P 23-11	FILE NO. F94-95

OWNER / DEVELOPER  
 100 INVESTMENT LIMITED PARTNERSHIP  
 2835 E. Columbia 100 Parkway  
 Columbia Maryland 21045 (410) 750-0810



PROFILE  
 GATEPOST WAY  
 LOCAL ROAD  
 DESIGN SPEED 30 MPH  
 1" = 5' VERT  
 1" = 50' HORIZ

VERTICAL CURVE DATA  
 LVC = 150'

1201

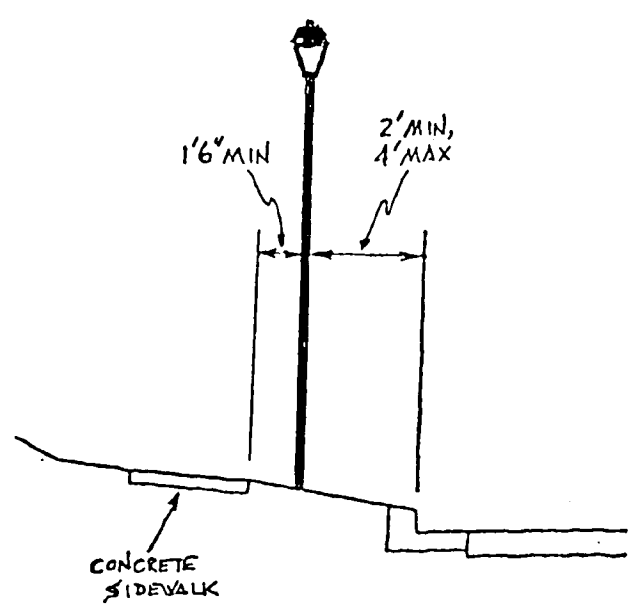
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	PAVEMENT MATERIALS	GRANULAR BASE ALTERNATES
P-1	TRAVELWAYS AND COMMERCIAL INDUSTRIAL ZONES WITH HEAVY TRUCKS	1 1/2" BIT. CONC. SURFACE 4" BIT. CONC. BASE	12" 1/2" BIT. SURFACE 2" BIT. CONC. BASE 5" COMPACTED GRANULAR STABILIZED
P-2	RESIDENTIAL ZONES LOCAL OR 1/2 MILE ALLEYS AND PRIVATE ROADS SERVING INDIVIDUAL HOMES	1 1/2" BIT. CONC. SURFACE 5" BIT. CONC. BASE	12" 1/2" BIT. CONC. SURFACE 2" BIT. CONC. BASE 5" COMPACTED GRANULAR STABILIZED
P-3	ALLIANCE ZONES WITH HEAVY TRUCK COLLECTIONS COMMERCIAL INDUSTRIAL ZONES LOCAL AND SUBURBAN STREETS	1 1/2" BIT. CONC. SURFACE 4" BIT. CONC. BASE	12" 1/2" BIT. CONC. SURFACE 2" BIT. CONC. BASE 5" COMPACTED GRANULAR STABILIZED
P-4	COMMERCIAL INDUSTRIAL ZONES WITH HEAVY TRUCKS	1 1/2" BIT. CONC. SURFACE 4" BIT. CONC. BASE	12" 1/2" BIT. CONC. SURFACE 2" BIT. CONC. BASE 5" COMPACTED GRANULAR STABILIZED

ROAD NAME	STA TO STA	CLASS/R/W	DES. SFP	PAV. SECT.	ZONE	A	B	C	D
SANDY RIDGE	10+50.00 TO 10+90.00	LOCAL	50'	30MPH P-1	RSC	26'	5'	4'	10'
SANDY RIDGE	19+90.00 TO 21+42.00	CUL-DE-SAC	50'	30MPH P-2	RSC	24'	5'	4'	10'
NIGHTROSE COURT	0+00 TO END	CUL-DE-SAC	50'	30MPH P-2	RSC	24'	5'	4'	10'
GATEPOST WAY	0+00 TO END	LOCAL	90'	30MPH P-2	RSC	26'	5'	4'	10'

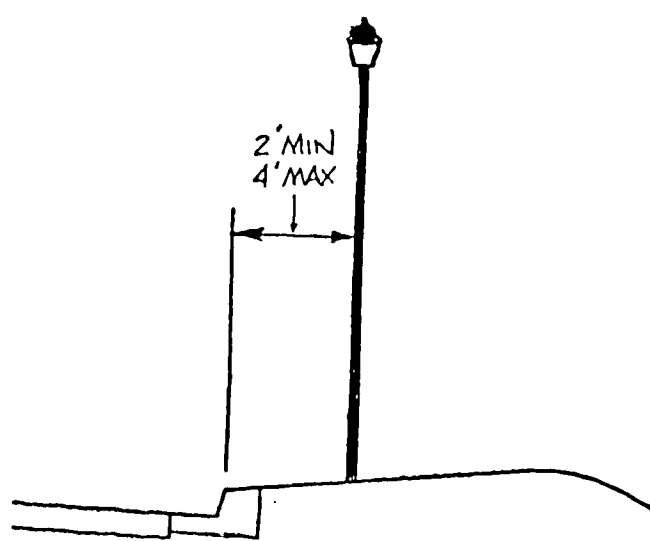
### PLACEMENT OF STREET LIGHTS

• LATERAL: (May 1993)

1- WITH CONCRETE SIDEWALK:

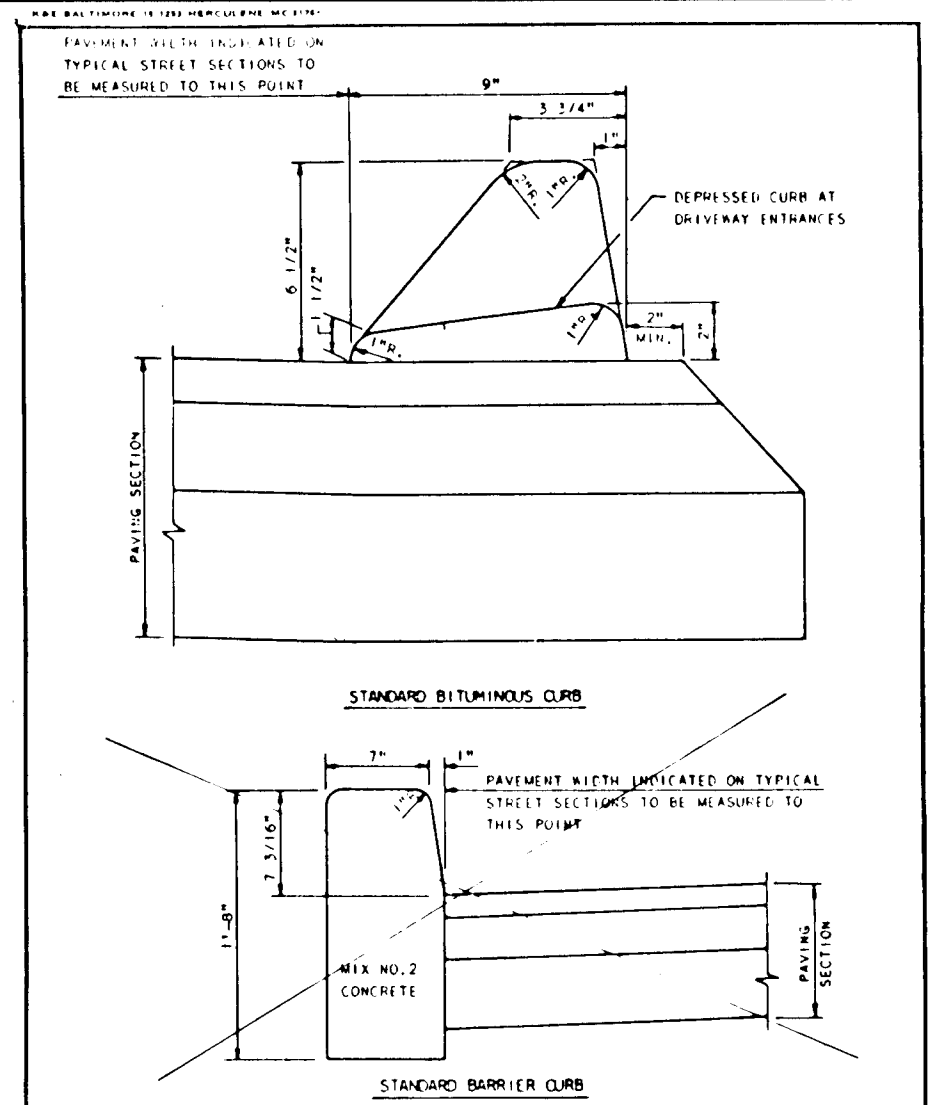


2- WITH NO SIDEWALK:

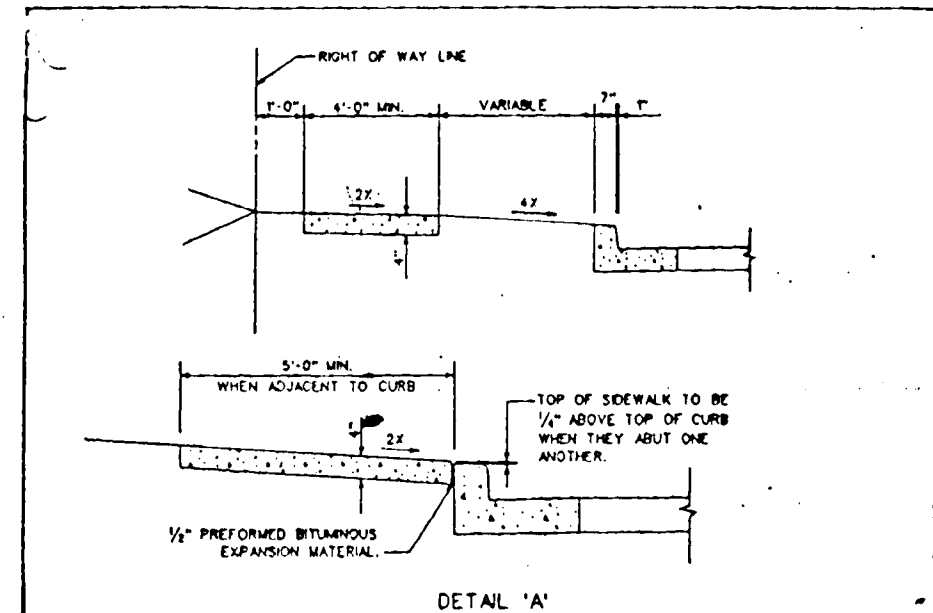


### Street Light Legend

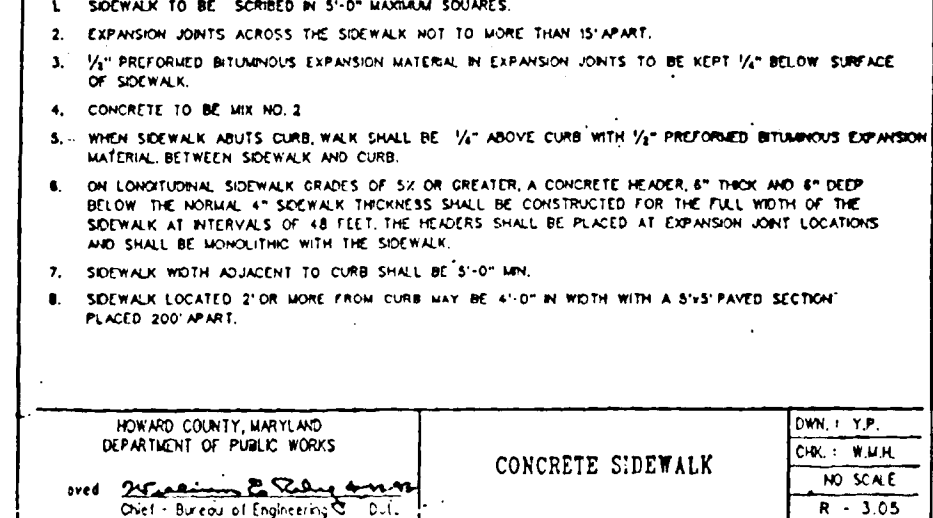
Street Name	Symbol	Centerline Station	Offset	Lamp Type	Post Type	Pole Type
Sandy Ridge	⊕	17+65	16' RT	100 Watt HPS	Traditionaire Post	14" Black Fiberglass Embedded Pole
Sandy Ridge	⊕	20+25	17' RT	100 Watt HPS	Traditionaire Post	14" Black Fiberglass Embedded Pole
Gatepost Way	⊕	2+50	16' LT	100 Watt HPS	Traditionaire Post	14" Black Fiberglass Embedded Pole



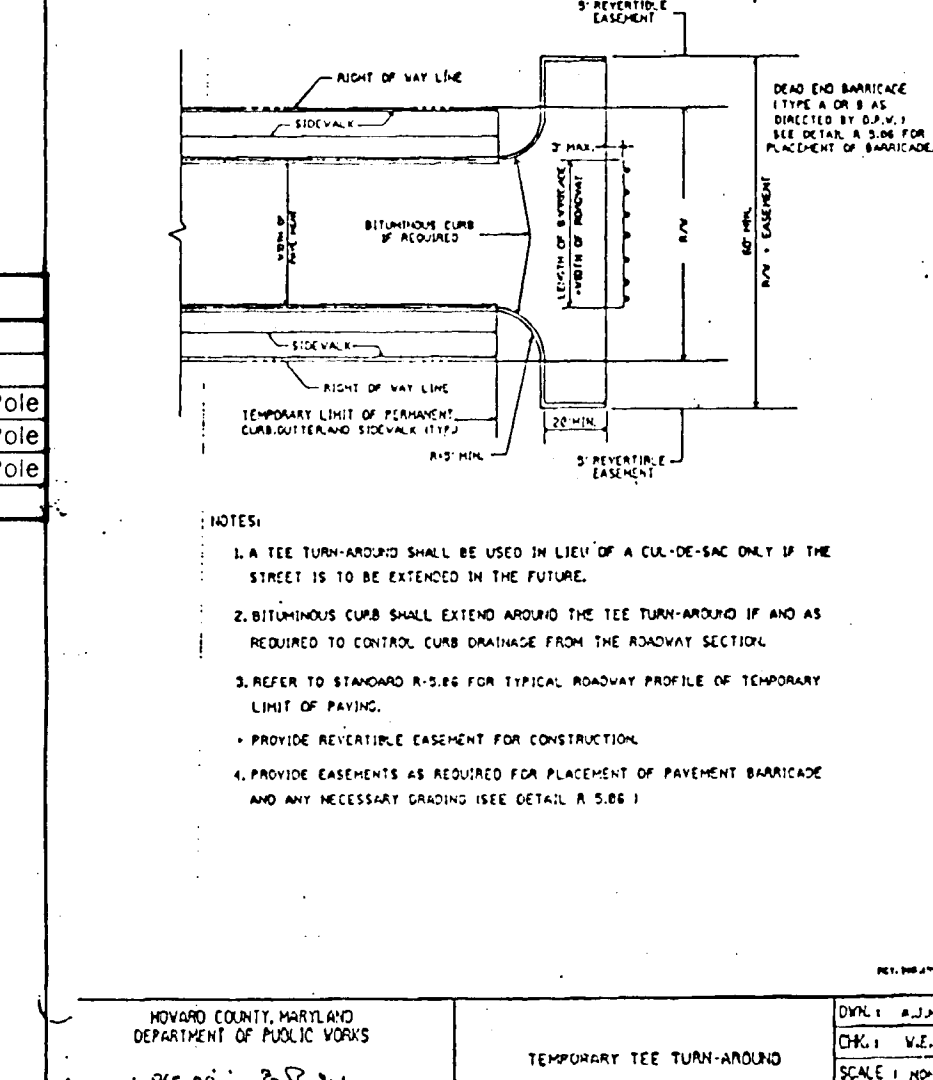
STANDARD BITUMINOUS CURB AND GUTTER



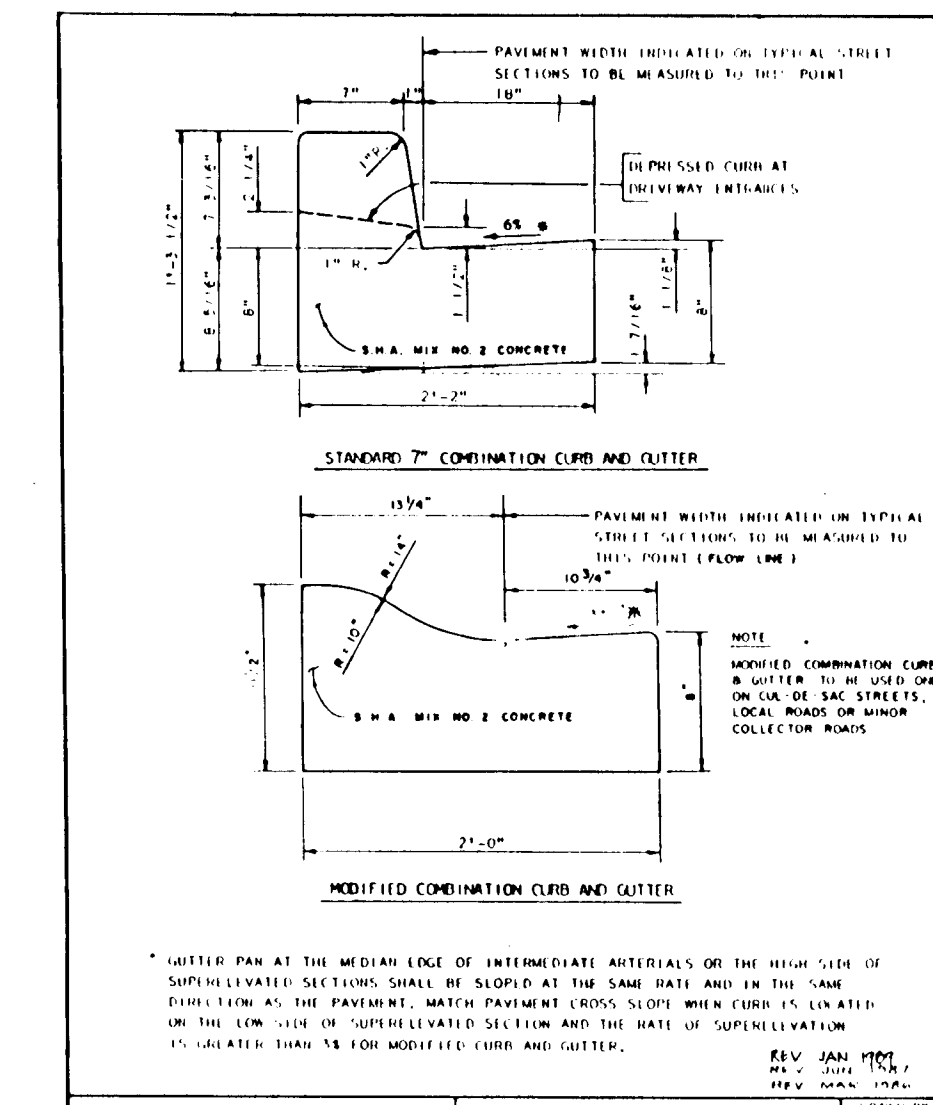
STANDARD BARRIER CURB



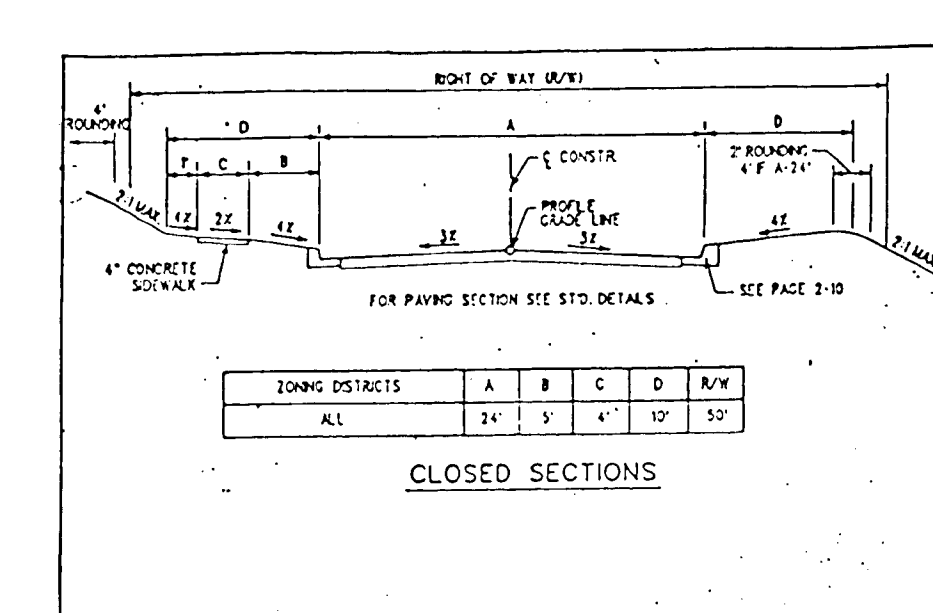
CONCRETE SIDEWALK



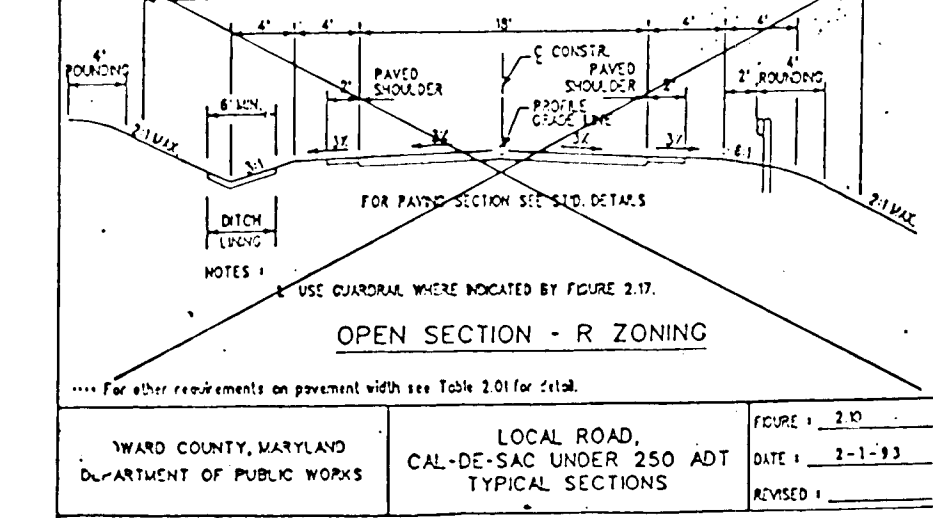
TEMPORARY TEE TURN-AROUND



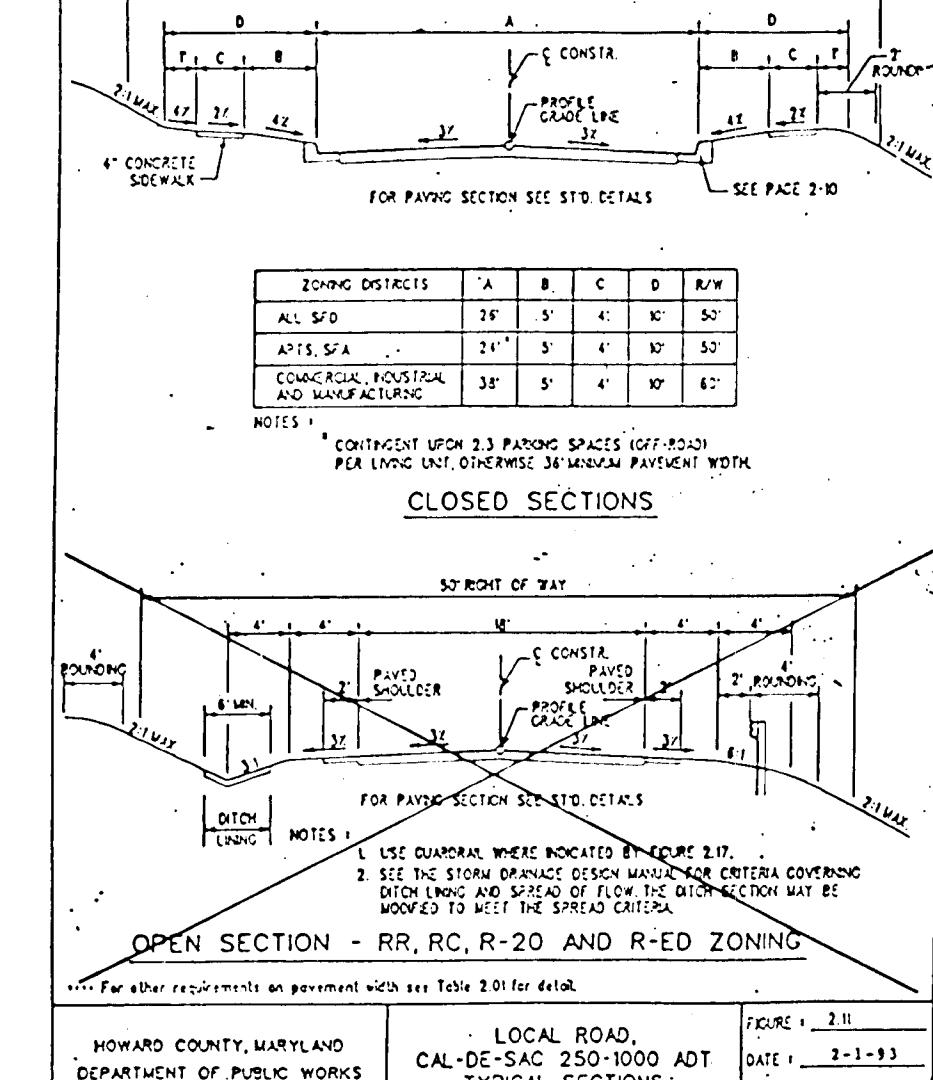
STANDARD 2nd COMBINATION CURB AND GUTTER



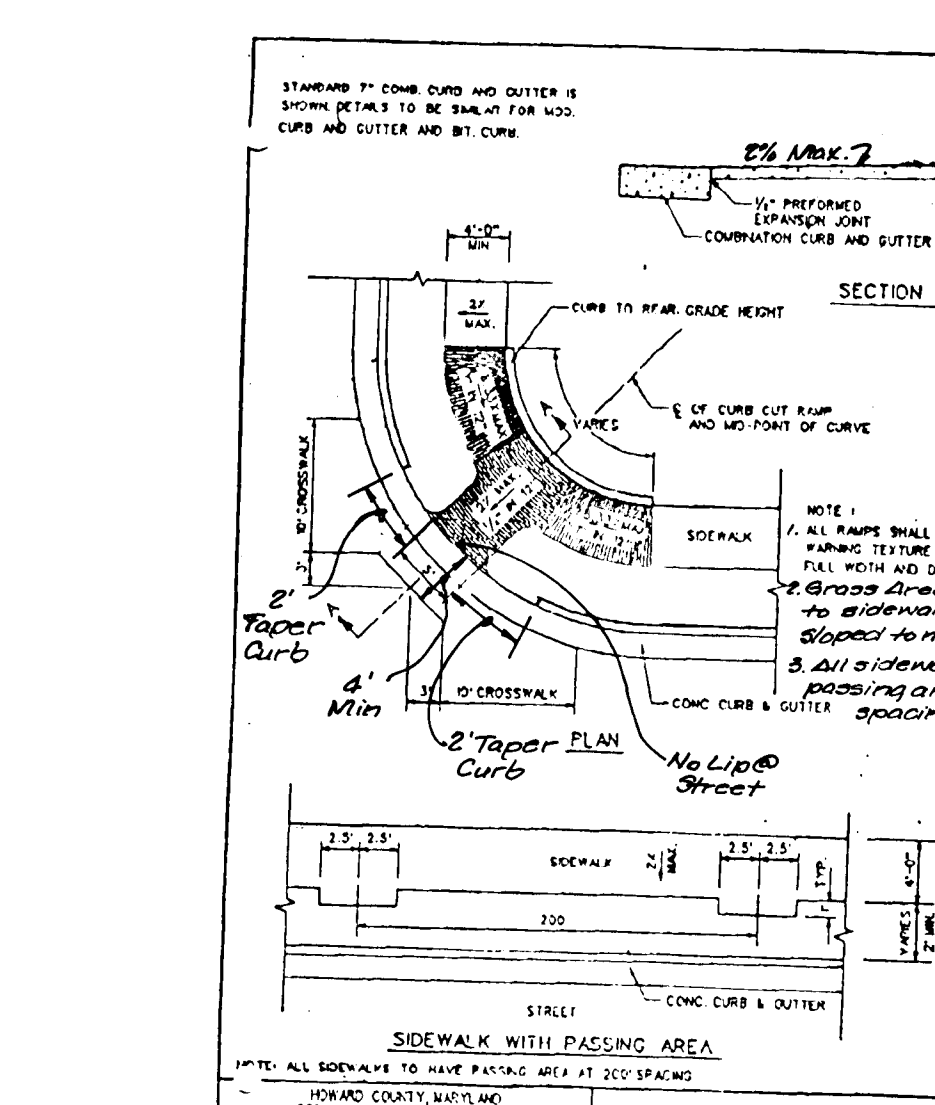
MODIFIED COMBINATION CURB AND GUTTER



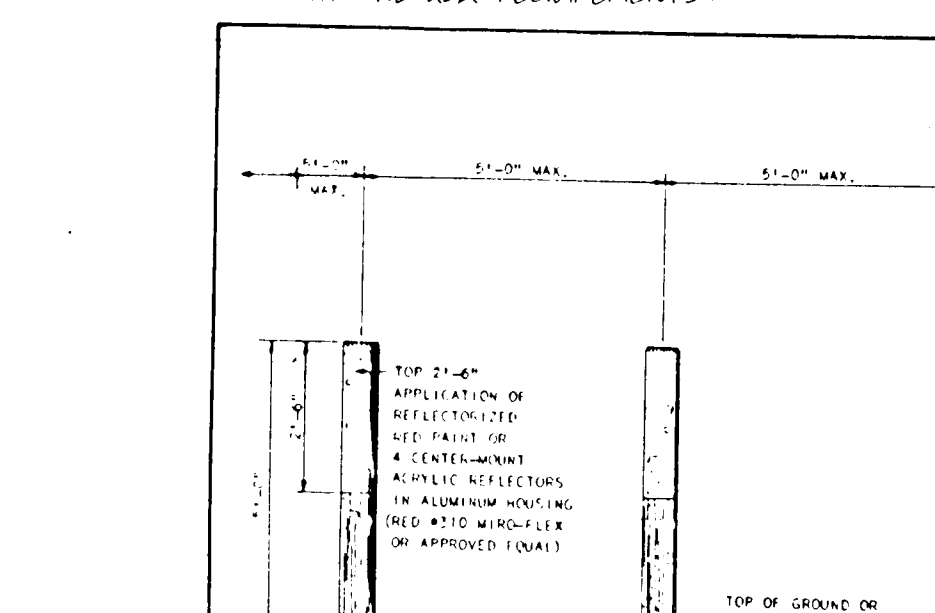
CLOSED SECTIONS



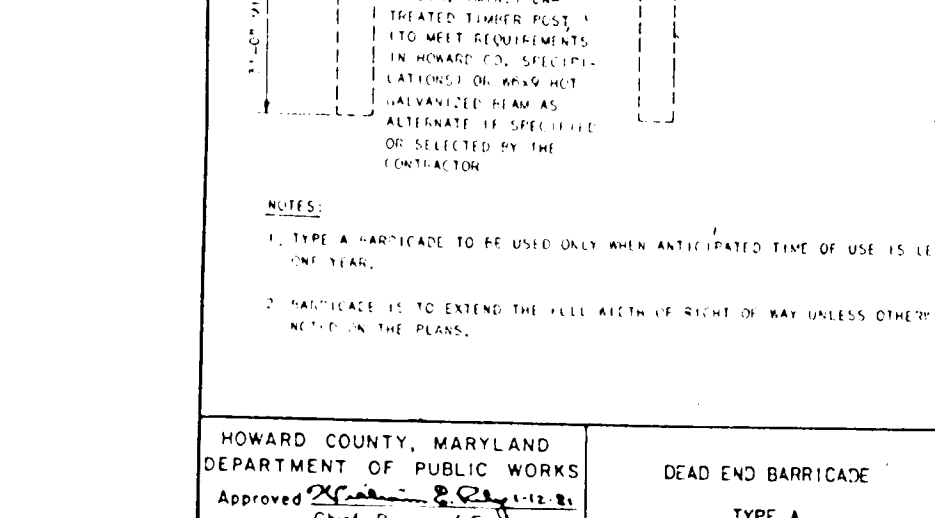
OPEN SECTION - R ZONING



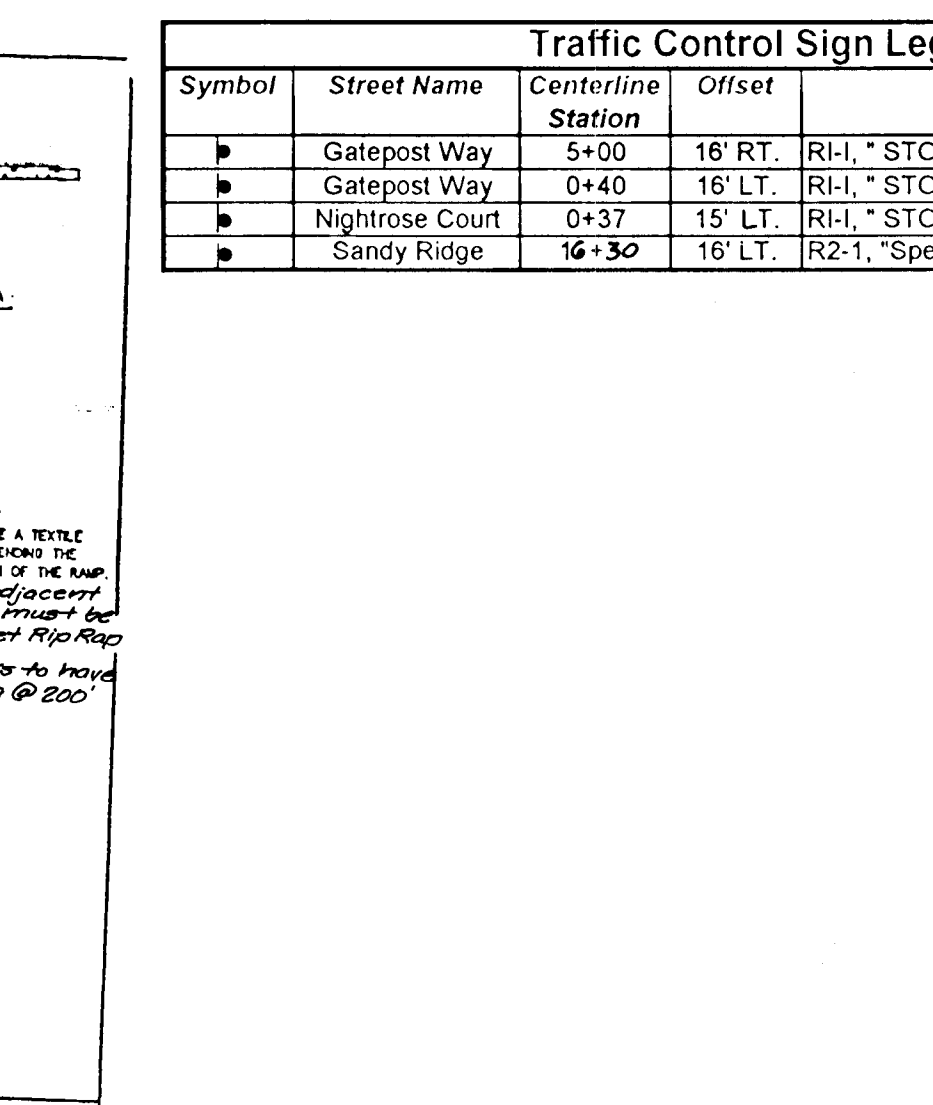
SIDEWALK WITH PASSING AREA



DEAD END BARRICADE



STORM DRAIN OUTLET PROTECTION



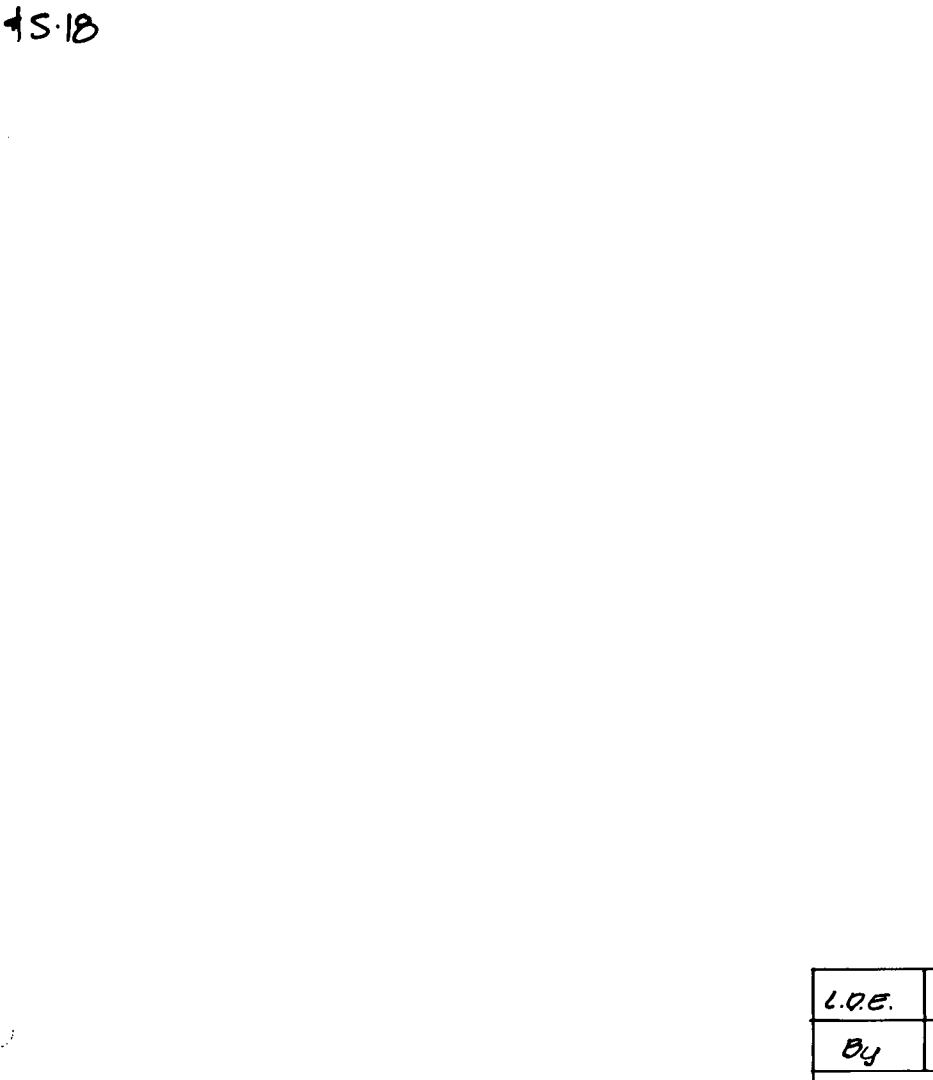
STANDARD BARRIER CURB



STANDARD BARRIER CURB

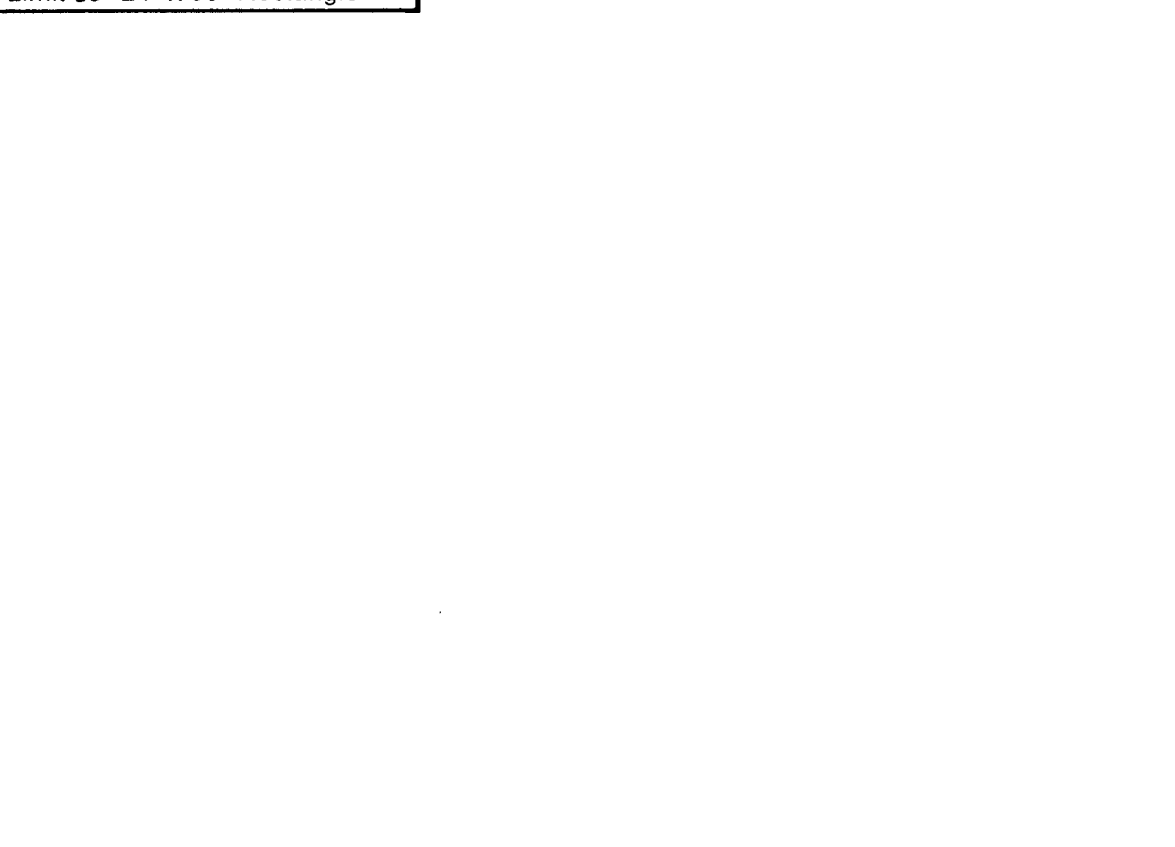


STANDARD BARRIER CURB



STANDARD BARRIER CURB

Symbol	Street Name	Centerline Station	Offset	Type
⊕	Gatepost Way	5+00	16' RT	R1-1, "STOP" Sign, 30" x 30" Octagon
⊕	Gatepost Way	0+40	16' LT	R1-1, "STOP" Sign, 30" x 30" Octagon
⊕	Nightrose Court	0+37	15' LT	R1-1, "STOP" Sign, 30" x 30" Octagon
⊕	Sandy Ridge	16+30	16' LT	R2-1, "Speed Limit 25" 24" x 30" Rectangle



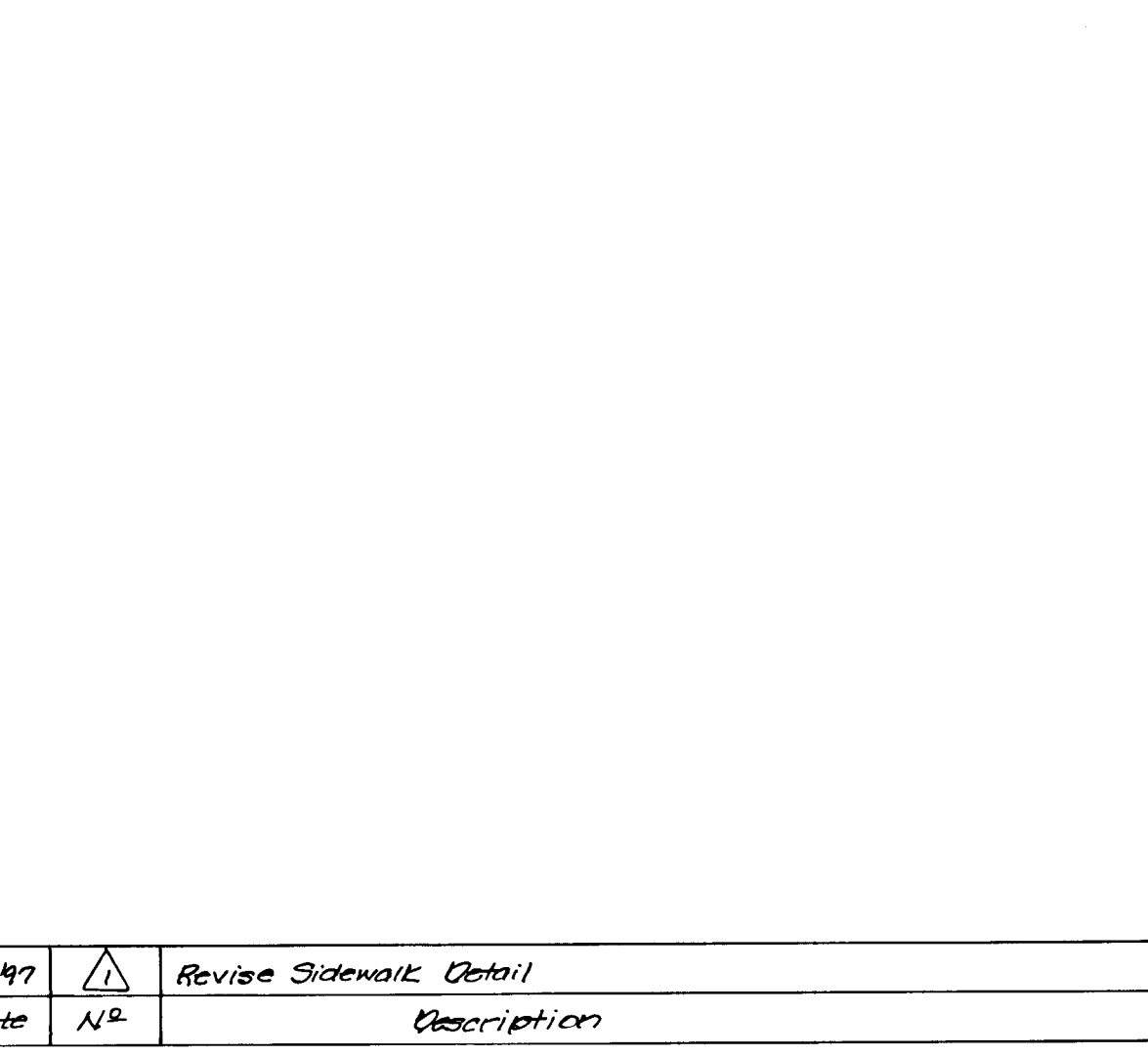
STANDARD BARRIER CURB



STANDARD BARRIER CURB



STANDARD BARRIER CURB



STANDARD BARRIER CURB

**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.

**BRUCE D. BURTON** 5/22/95  
Signature of Engineer Date

**DEVELOPER'S CERTIFICATE**

If we certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a certificate of Attendance at a Department of 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 Howard Soil Conservation District.

**W. J. N.** 3/21/94  
Signature of Developer Date

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

**Patricia E. Sparks** 5/21/95  
U.S. Soil Conservation Service Date

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

**Robert W. Ziehm** 5/30/95  
Howard Soil Conservation District Date

APPROVED: Department of Public Works for Storm Drainage Systems and Roads

**Mike Dammann** 7/2/95  
Chief, Land Development Division Date

APPROVED: Department of Public Works for Storm Drainage Systems and Roads

**Paul Seppan** 7/13/95  
Chief, Bureau of Engineering Date

APPROVED: Department of Planning and Zoning

**Quina Summerville** 7/17/95  
Chief, Division of Land Development and Research Date

**LAND DESIGN ENGINEERING, INC.**

8835 Columbia 100 Parkway, Unit N, Columbia, MD 21045  
(410) 715-1070 (Balto.) (301) 596-3424 (Wash.) (410) 715-0681 (Fax)

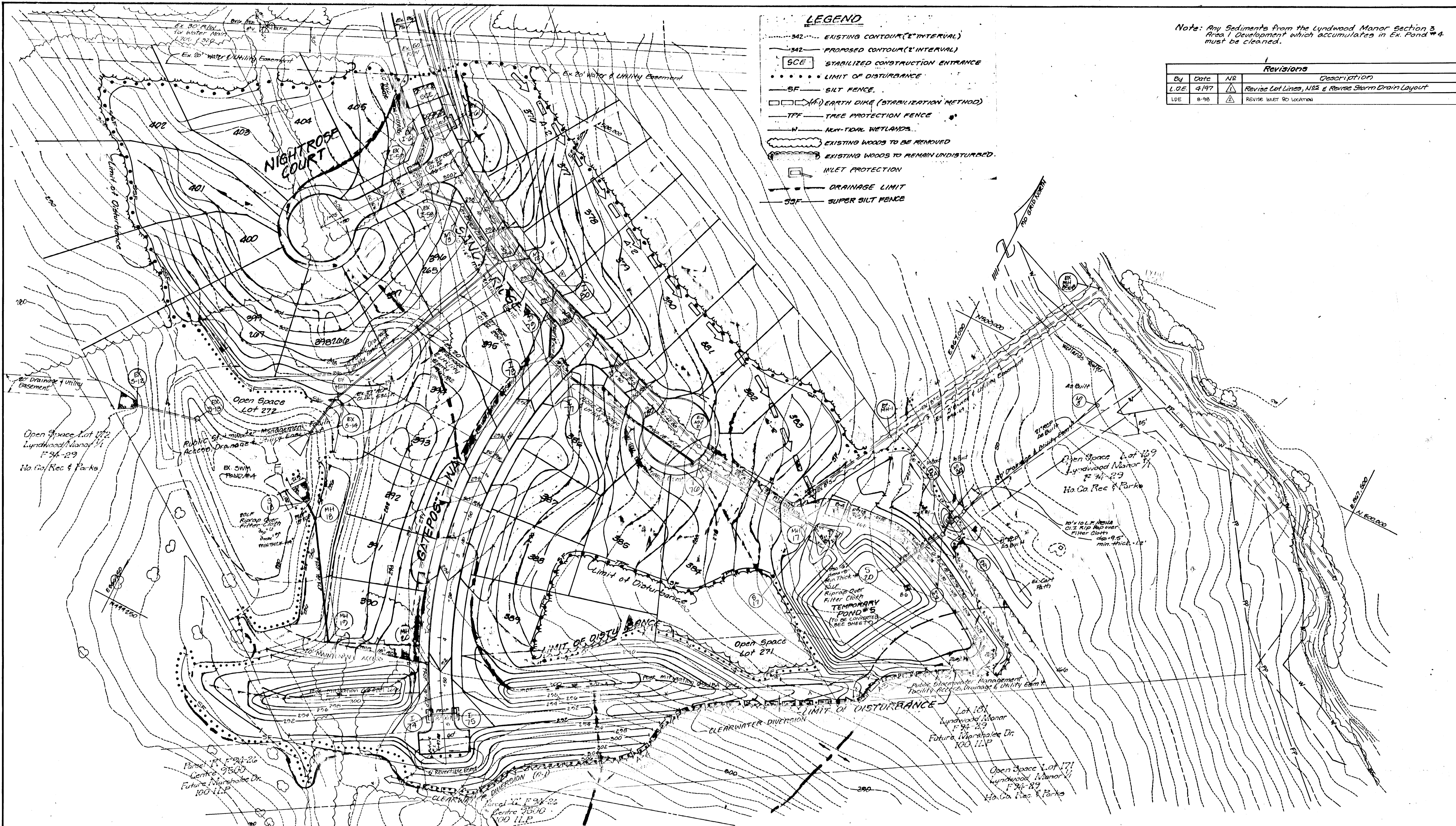
DESIGNED: **GL** AS SHOWN

DRAWN: **GL** DRAWING 4 of 11

CHECKED: **RM** JOB NO. 92-176 G

DATE: 12/94 FILE NO. 100 INVESTMENT LIMITED PARTNERSHIP 8835-F Columbia 100 Parkway Columbia, Maryland 21045 (410) 730-0810

**BRUCE D. BURTON** 5/22/95



Note: Any Sediments from the Lyndwood Manor Section 3 Area 1 Development which accumulates in Ex. Pond #4 must be cleaned.

Revisions			
By	Date	NR	Description
LDE	4/97	△	Revise Lot Lines, NBS & Revise Storm Drain Layout
LDE	8-98	△	REVISE INLET RO LOCATION

**ENGINEER'S CERTIFICATE**

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

**BRUCE D. BURTON** 5/22/95  
 Signature of Engineer Date

**DEVELOPER'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 Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by Howard Soil Conservation District.

**W.F. A.** 3/21/94  
 Signature of Developer Date

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

**Patricia Ingr** 5/30/95  
 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. Zielinski** 5/30/95  
 Howard Soil Conservation District Date

APPROVED: Department of Public Works for Storm Drainage Systems and Roads

**John Daneman** 7/1/95  
 Chief, Land Development Division Date

**Paul W. Jenson** 7/13/95  
 Chief, Bureau of Engineering Date

**Richard M. Daniels** 6-6-95  
 Chief, Bureau of Highways Date

APPROVED: Department of Planning and Zoning

**Anna Sturman** 7/1/95  
 Chief, Division of Land Development and Research Date

**LAND DESIGN ENGINEERING, INC.**

8835 Columbia 100 Parkway, Unit N, Columbia, MD 21045  
 (410) 715-1070 (Balto.) (301) 596-3424 (Wash.) (410) 715-0681 (Fax)

DESIGNED	SCALE
TD/ES	1" = 50'
DRAWN	DRAWING
WJ/GL	5 OF 11
CHECKED	JOB NO.
RM	92-176.6
DATE	FILE NO.
12/94	F94-95

**GRADING & SEDIMENT AND EROSION CONTROL PLAN**

**LYNDWOOD MANOR SECTION THREE AREA ONE**

Tax Map 37 Part of Parcels 643, 38, 640  
 1st Election District Howard County, MD

OWNER: THE BELLEGEAR  
 100 INVESTMENT LIMITED PARTNERSHIP  
 8835-F Columbia 100 Parkway  
 Columbia, Maryland 21045 (410) 730-0810

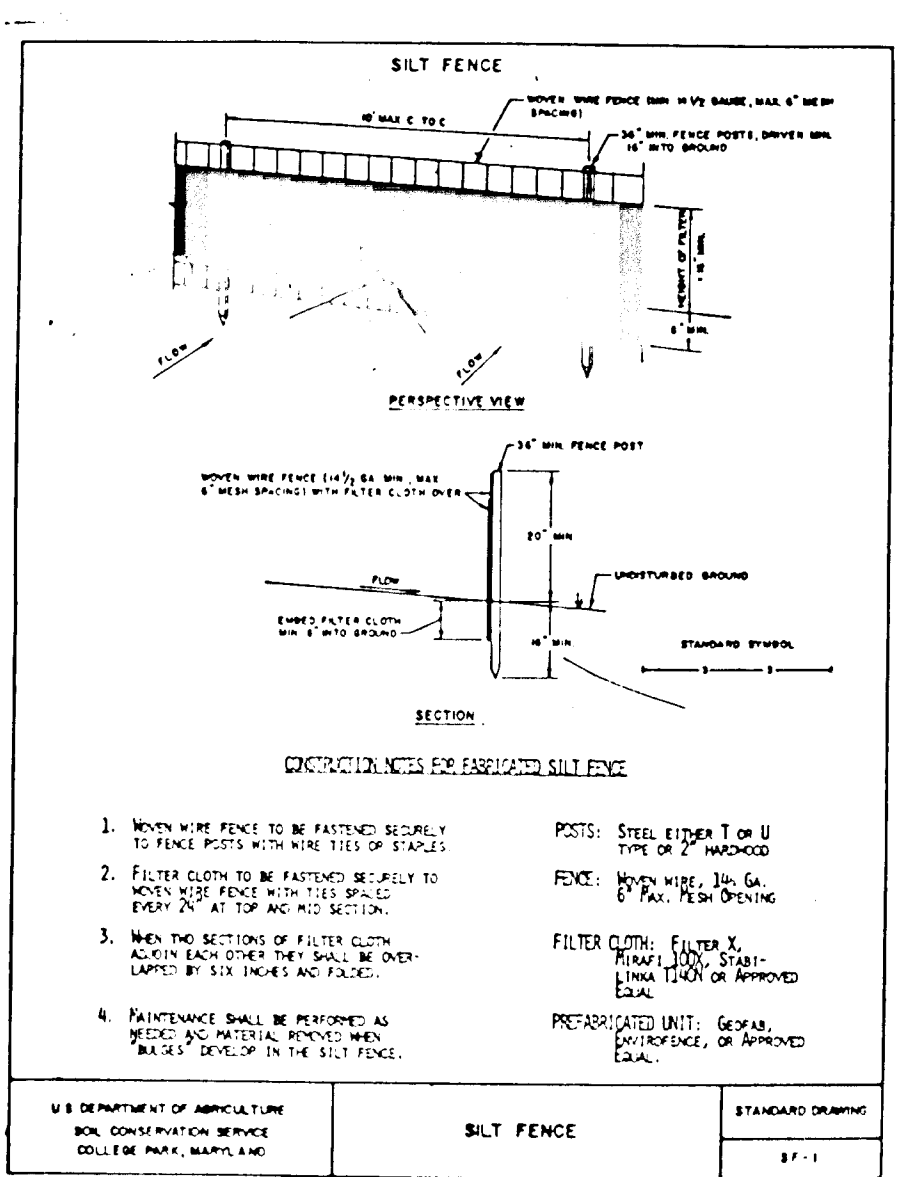
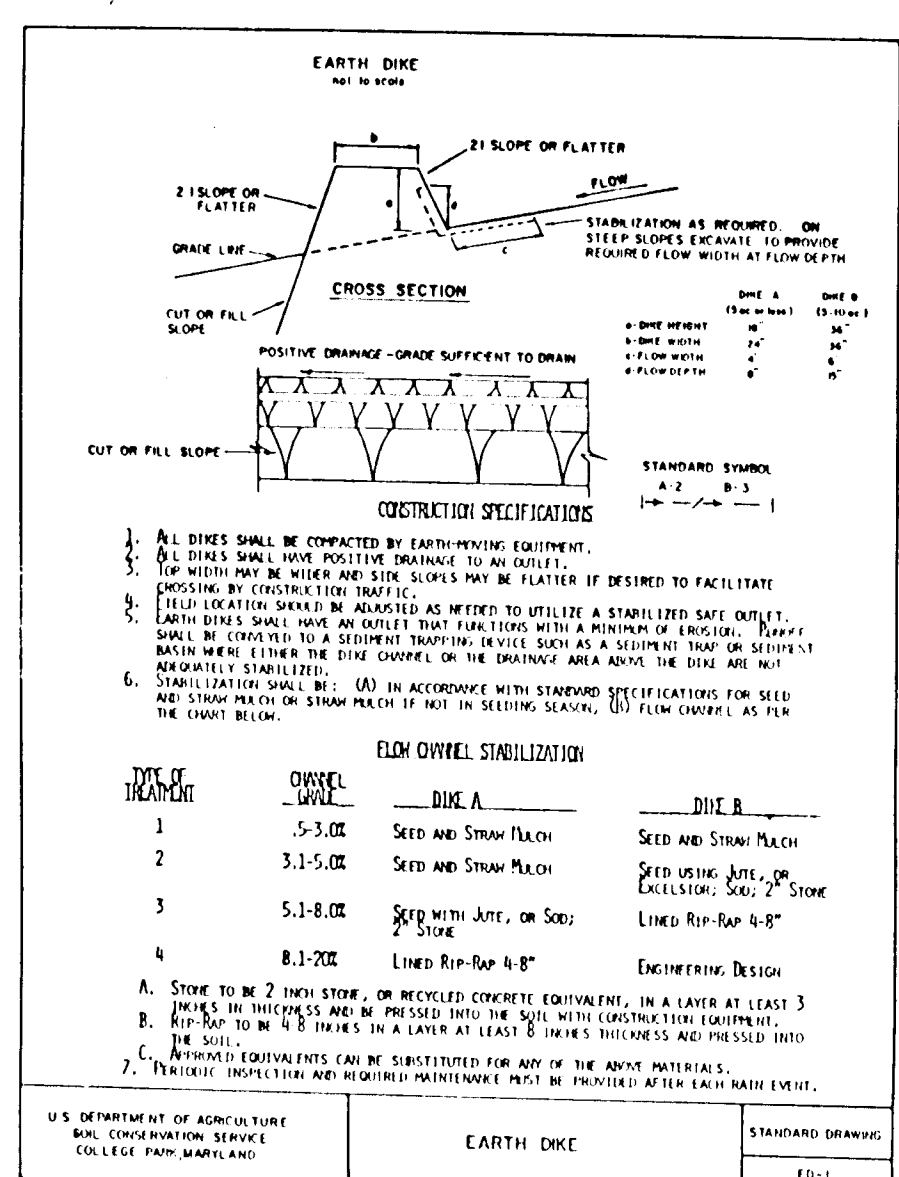
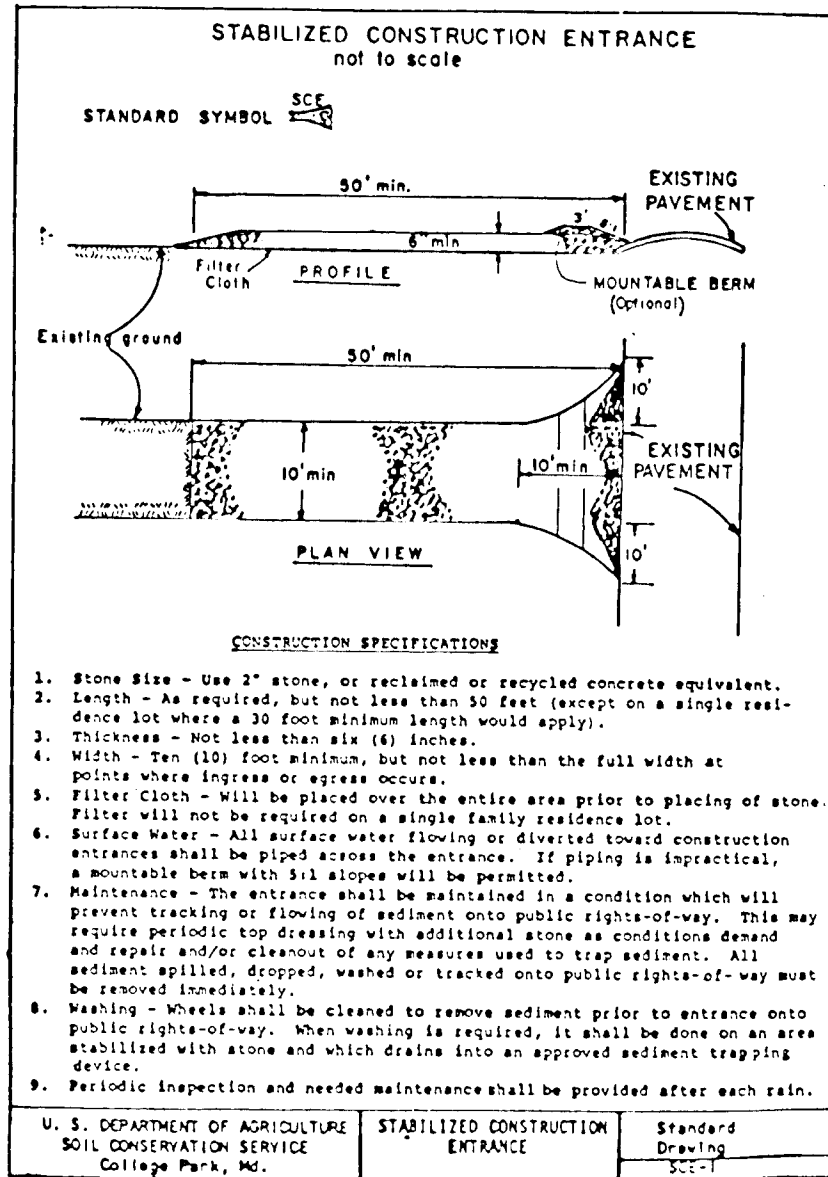
1708

HOWARD SOIL CONSERVATION DISTRICT  
STANDARD SYMBOLS

- A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction, (19-1-1995).
- All vegetation and structural practices are to be installed according to the provisions of this plan and are to be in accordance with the most current "HIGHLAND STORMWATER AND SEDIMENTATION CONTROL DESIGN SPECIFICATIONS", and revisions thereto.
- Following initial soil disturbance or earth disturbance, permanent or temporary stabilization shall be completed within: (a) 7 calendar days for all permanent sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1; (b) 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/ditches shall be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HIGHLAND COUNTY DEPARTMENT OF STORM DRAINAGE.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1993 HIGHLAND STORMWATER AND SEDIMENTATION CONTROL DESIGN SPECIFICATIONS AND SUBSEQUENT REVISED SPECIFICATIONS FOR SOIL STABILIZATION AND EROSION CONTROL (See Sec. 50) and existing (See 52). Temporary stabilization with silt alone can only be done when recommended seeding rates do not allow for proper germination and establishment of grasses.
- 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.
- Site Analysis:  
Total Area of Site: 15.44 Acres  
Area Disturbed: 7.23 Acres  
Area to be reseeded or planted: 2.44 Acres  
Area to be vegetatively stabilized: 4.79 Acres  
Total Dist.: 7.23 Acres  
Total Plant: 20,000  
Off-site waste/discard area: 100,000 lbs  
REV 1/93
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- 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, building or grading inspection requests may not be authorized until this initial approval by the inspection agency is made.
- Trenches for the reconnection of utilities is limited to three pipe lengths or that which can be back filled and stabilized within one working day, whichever is shorter.

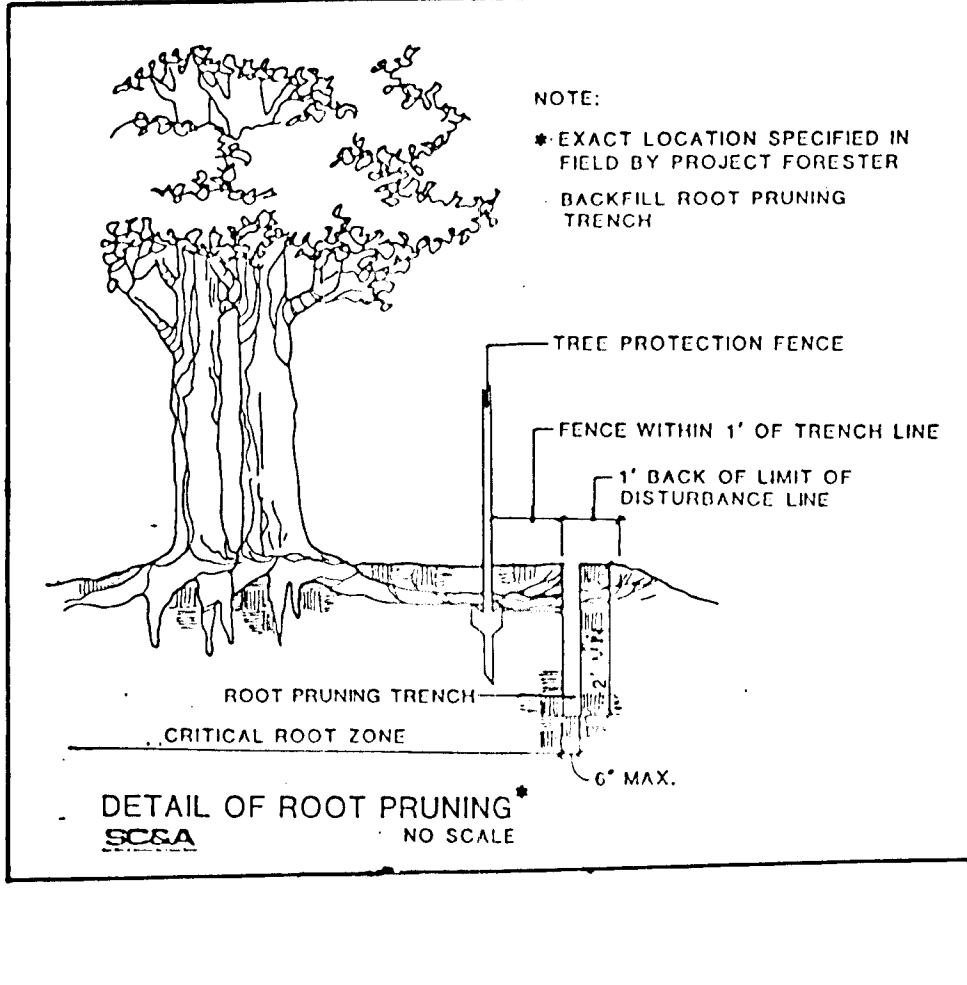
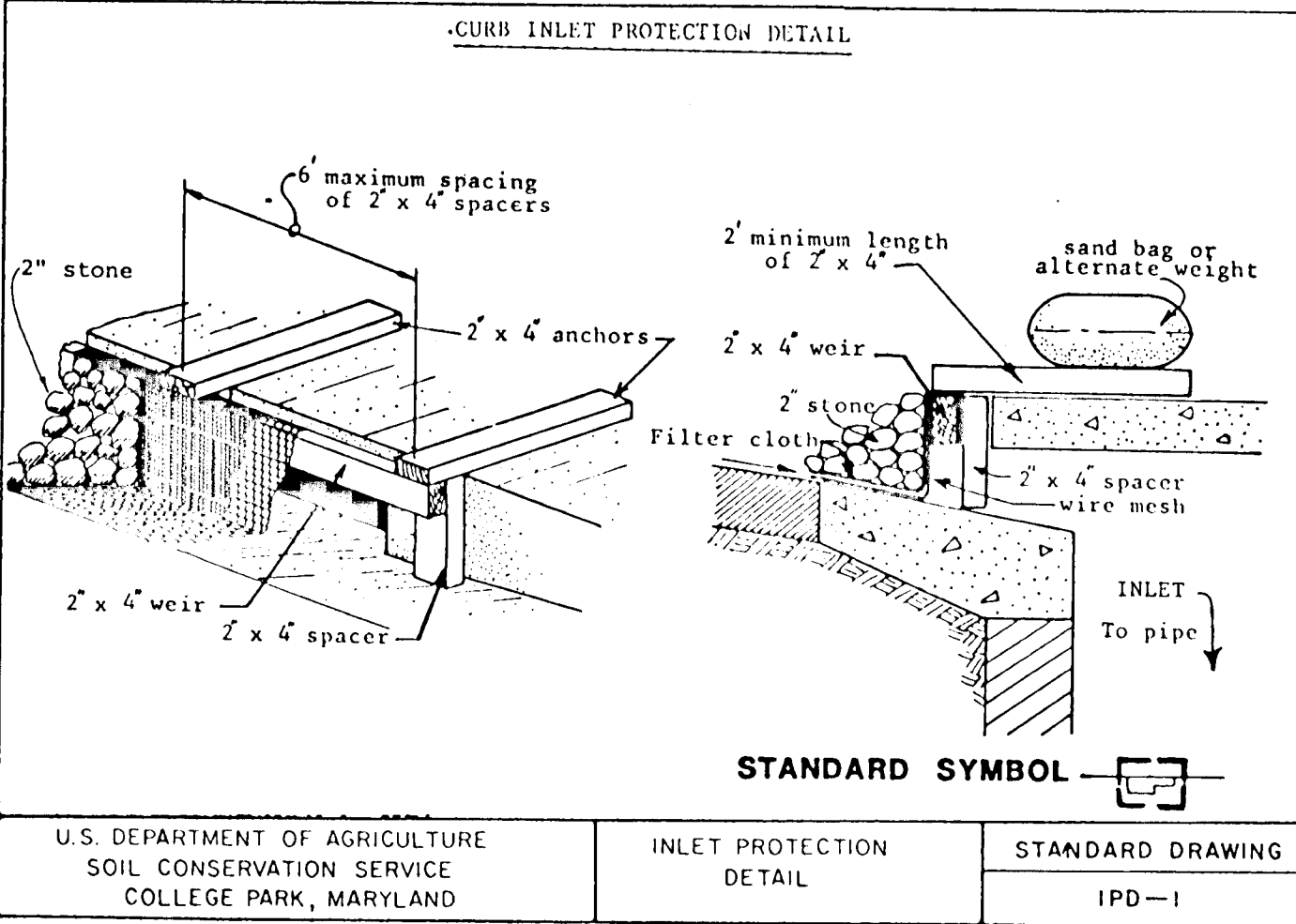
HOWARD SOIL CONSERVATION DISTRICT  
STANDARD SYMBOLS

- Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
- Soil Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.
- Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:  
1) Preferred - Apply 2 tons per acre of 10-10-10 fertilizer (10 lbs/1000 sq. ft.) and 600 lbs per acre of 10-10-10 fertilizer (10 lbs/1000 sq. ft.) before seeding. Normal or Acid Soil: Apply 2 tons per acre of 10-10-10 fertilizer (10 lbs/1000 sq. ft.) and 1000 lbs per acre of 10-10-10 fertilizer (10 lbs/1000 sq. ft.) before seeding. Heavy or Acid Soil: Apply 2 tons per acre of 10-10-10 fertilizer (10 lbs/1000 sq. ft.) and 1000 lbs per acre of 10-10-10 fertilizer (10 lbs/1000 sq. ft.) before seeding. Heavy or Acid Soil: Apply 2 tons per acre of 10-10-10 fertilizer (10 lbs/1000 sq. ft.) and 1000 lbs per acre of 10-10-10 fertilizer (10 lbs/1000 sq. ft.) before seeding. Heavy or Acid Soil: Apply 2 tons per acre of 10-10-10 fertilizer (10 lbs/1000 sq. ft.) and 1000 lbs per acre of 10-10-10 fertilizer (10 lbs/1000 sq. ft.) before seeding.
- Seeding - For the period March 1 thru April 30, and August 1 thru October 15, seed with 20 lbs/1000 sq. ft. of annual ryegrass (3.2 lbs/1000 sq. ft.) for the period May 1 thru July 31, seed with 20 lbs/1000 sq. ft. of annual ryegrass (3.2 lbs/1000 sq. ft.) for the period August 1 thru October 15, seed with 20 lbs/1000 sq. ft. of annual ryegrass (3.2 lbs/1000 sq. ft.) for the period November 1 thru February 28, percent site by seeding 2 tons per acre of well aerated straw mulch and seed as soon as possible in the spring, or use seed.
- Mulching - Apply 1-1/2 to 2 tons per acre (18 to 24 lbs/1000 sq. ft.) of untreated wood from small grain areas immediately after seeding. For seed mulch immediately after application using mulch spreading tool or 210 gals per acre (5 gals/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 0 feet or higher, use 300 gals per acre (6 gals/1000 sq. ft.) for anchoring.
- Maintenance - Inspect all seeding areas and note needed repairs, replacements and reseeding.
- Apply to graded or cleared areas likely to be restabilized where a short-term vegetative cover is needed.
- Soil Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.
- Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).
- Seeding - For the period March 1 thru April 30 and from August 15 thru October 15, seed with 20 lbs/1000 sq. ft. of annual ryegrass (3.2 lbs/1000 sq. ft.). For the period May 1 thru August 14, seed with 20 lbs/1000 sq. ft. of annual ryegrass (3.2 lbs/1000 sq. ft.). For the period November 1 thru February 28, percent site by seeding 2 tons per acre of well aerated straw mulch and seed as soon as possible in the spring, or use seed.
- Mulching - Apply 1-1/2 to 2 tons per acre (18 to 24 lbs/1000 sq. ft.) of untreated wood from small grain areas immediately after seeding. For seed mulch immediately after application using mulch spreading tool or 210 gals per acre (5 gals/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 0 feet or higher, use 300 gals per acre (6 gals/1000 sq. ft.) for anchoring.
- Refer to the 1993 HIGHLAND STORMWATER AND SEDIMENTATION CONTROL DESIGN SPECIFICATIONS FOR SOIL STABILIZATION AND EROSION CONTROL, for additional rates and methods not covered.



TREE PROTECTION NOTES

- PRE-CONSTRUCTION MEETINGS TO INCLUDE EDUCATIONAL SLIDE PRESENTATION ON TREE PROTECTION MEASURES TO BE EMPLOYED.
- LOCATION OF MATERIALS STORAGE, EQUIPMENT ACCESS, STOCKPILING, CONSTRUCTION PARKING AND CONCRETE WASHOUTS TO BE DESIGNATED ON A CONSTRUCTION STRATEGY PLAN FOR TREE PROTECTION PRIOR TO START UP.
- CLEARING LIMITS ARE TO BE FIELD ADJUSTED BY THE PROJECT FORESTER FOR TREE PRESERVATION PRIOR TO ANY SITE WORK.
- NO SITE PREPARATION WORK SHALL BEGIN IN AREAS WHERE TREE TREATMENT AND PRESERVATION MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.
- THE SEQUENCE OF TREE TREATMENT AND PRESERVATION MEASURES SHALL BE:
  - STAKE OUT OF LIMITS OF DISTURBANCE
  - SELECTIVE PRUNING AND CHEMICAL TREATMENT OF SIGNIFICANT TREES TO BE AFFECTED BY CONSTRUCTION
  - ROOT PRUNING
  - TREE PROTECTION FENCING
  - TREE PROTECTION SIGNAGE INSTALLATION
  - COMMENCEMENT OF CLEARING OPERATION
- TREE PROTECTION FENCING SHALL BE MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING CONSTRUCTION.



- CONSTRUCTION SEQUENCE
- Obtain Grading Permit - 1 day
  - Install stabilized construction entrance - 1 day
  - Stakeout limits of disturbance - 3 days
  - Walk limits of disturbance with project forester and adjust limits as required - 1 day
  - Install silt fence at limit of disturbance where shown hereon or as directed by Sediment Control Inspector - 3 days
  - Clear and grub site - 1 day
  - After stripping operations have been completed, the subgrade material should be proof rolled or dynamic cone penetrometer tested for stability - 3 days
  - Construct sediment basin facility #5 to MD-378 specifications and diversion dikes - 2 weeks
  - Grade site after permission is granted by Sediment Control Inspector - 2 weeks
  - Install utilities - 2 weeks
  - Repair diversion dikes damaged by utility installation and stabilize with permanent seeding mixture and straw mulch - 1 day
  - The contractor shall inspect and provide necessary maintenance on the sediment and erosion control structures shown hereon after each rainfall and on a daily basis - 1 day
  - Install curb and gutter paving - 2 weeks
  - Install sidewalks - 2 weeks
  - Complete any grading and stabilize disturbed areas with permanent seeding mixture and straw mulch - 1 week
  - After all upgrade areas from sediment basin #5 have been stabilized and permission has been given by the Sediment Control Inspector, flush the storm drain system into basin #5 - 1 day
  - Fine grade sediment basin #5 to permanent stormwater management facility specifications (See Sheet 9). Convert riser to permanent specifications by removing temporary dewatering device, closing its orifice and opening the permanent low flow orifice. - 3 days
  - After permission has been given by Sediment Control Inspector, remove silt fence and stabilize disturbed areas with permanent seeding mixture and straw mulch - 1 week

LOE 4/97  
By NS Date  
Description  
Revisions  
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. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as built" plan of the pond within 30 days of completion.  
Signature of Engineer: BRUCE D. BURTON  
Date: 5/22/95

DEVELOPER'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 Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard County Soil Conservation District with an "as built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections of the Howard Soil Conservation District.  
Signature of Developer: WEA  
Date: 3/21/94

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for the small pond construction, soil erosion and sediment control.  
Patricia Cash  
U.S. Soil Conservation Service  
Date: 5/20/95

APPROVED: Department of Public Works for Storm Drainage Systems and Roads  
Chief, Land Development Division  
Date: 7/12/95

APPROVED: Department of Planning and Zoning  
Date: 7/17/95

BRUCE D. BURTON  
5/22/95

LAND DESIGN ENGINEERING, INC.  
8835 Columbia 100 Parkway, Unit N, Columbia, MD 21045  
(410) 715-1070 (Baltimore) (301) 596-3424 (Wash.) (410) 715-0681 (Fax)  
SCALE: As Shown  
DRAWING: 6 OF 11  
VOC No: 02-176.6  
FILE No: F94-095  
100 INVESTMENT LIMITED PARTNERSHIP  
8835-P Columbia 100 Parkway  
Columbia, Maryland 21045 (410) 730-0810

Revisions		Description
Ex	Date	No
L.D.E.	4/97	1
L.D.E.	8/98	2



Notes: 1. The Site Development Plan will show grading of the site in accordance with the drainage pattern shown on this sheet.  
 2. All roof and impervious areas for the proposed dwellings constructed on Lots 252-257 shall drain to the proposed road, Bandy Ridge. If the Site Development Plan proposes a different drainage pattern, then a drywell or other management facility shall be constructed to provide water quality and quantity (i.e. dry well). Construction of such facility shall be the responsibility of the builder.

**Barrett D. Burton**  
 5/22/95

1703

**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.  
**Barrett D. Burton**  
 Signature of Engineer  
 5/22/95  
 Date

**DEVELOPER'S CERTIFICATE**  
 I/We certify that all development and construction will be done according to this plan and that any responsible personnel involved in the construction project will have a certificate of Attendance of a 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 Howard Soil Conservation District.  
**W. J. [Signature]**  
 Signature of Developer  
 3/21/94  
 Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.  
**Patricia Cash** 5/30/94  
 U.S. Soil Conservation Service Date  
 This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.  
**Robert J. Zielinski** 5/25/95  
 Howard Soil Conservation District Date

APPROVED: Department of Public Works for Storm Drainage Systems and Roads  
**John [Signature]** 7/12/95  
 Chief, Land Development Division Date  
**Paul [Signature]** 7/13/95  
 Chief, Bureau of Engineering Date  
**Richard M. Daniels** 6-6-95  
 Chief, Bureau of Highways Date

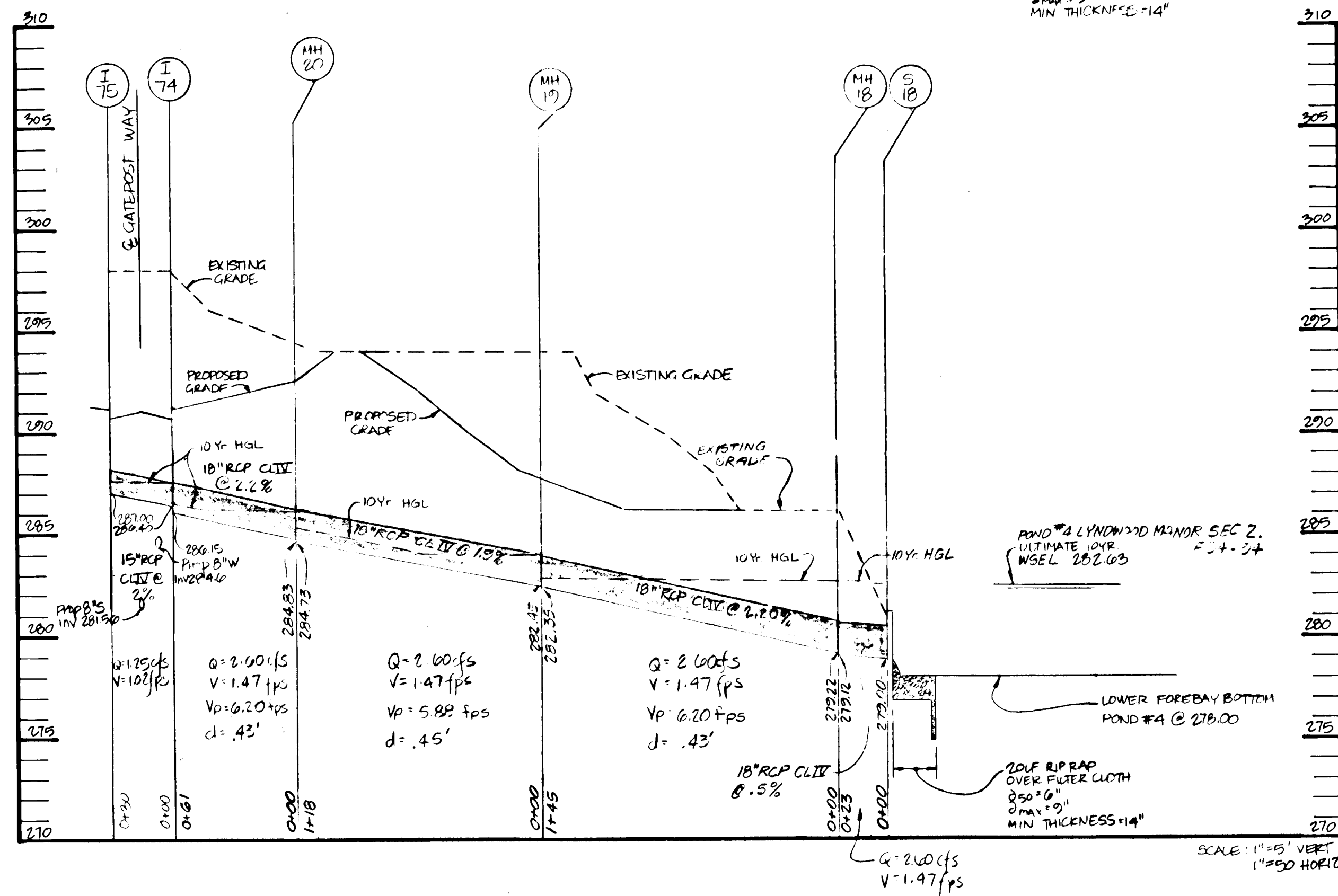
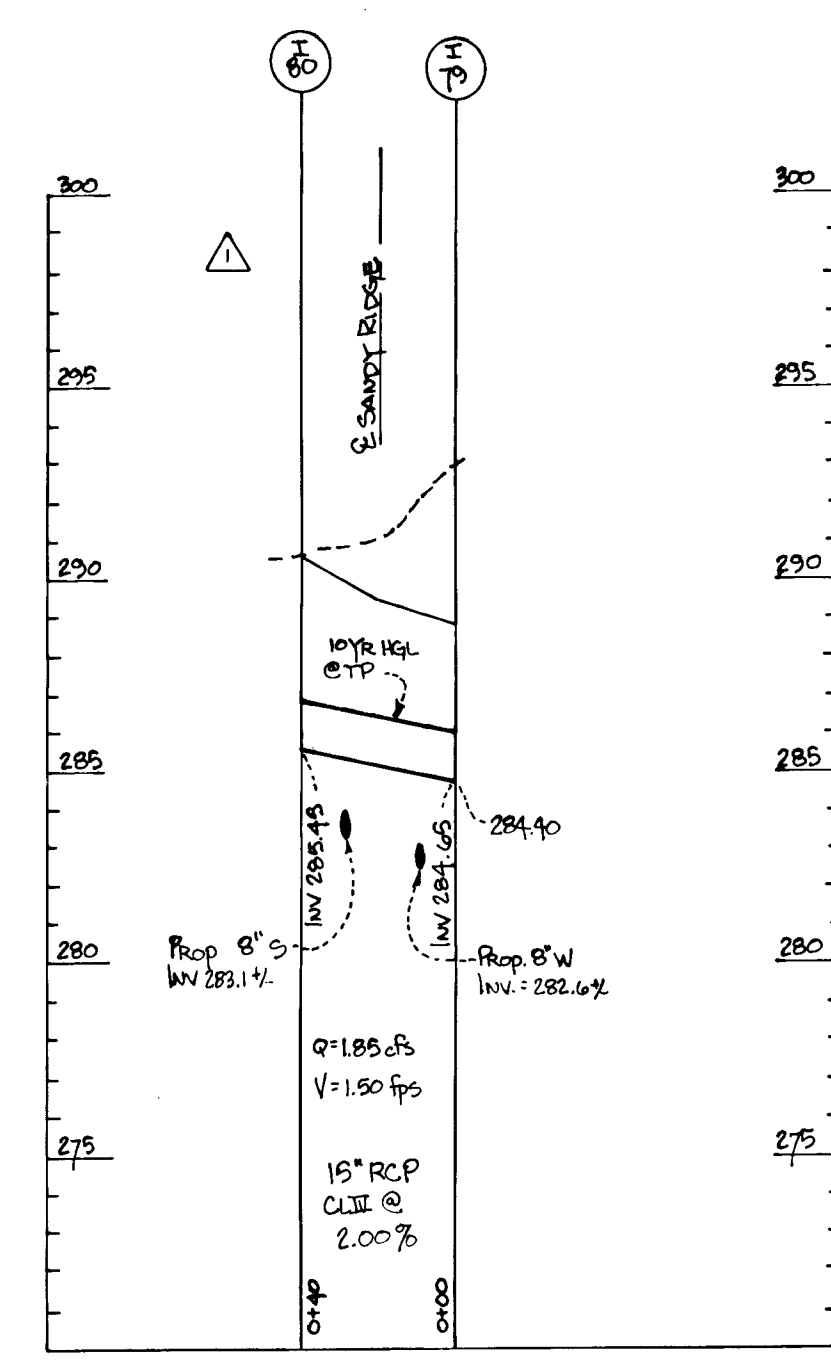
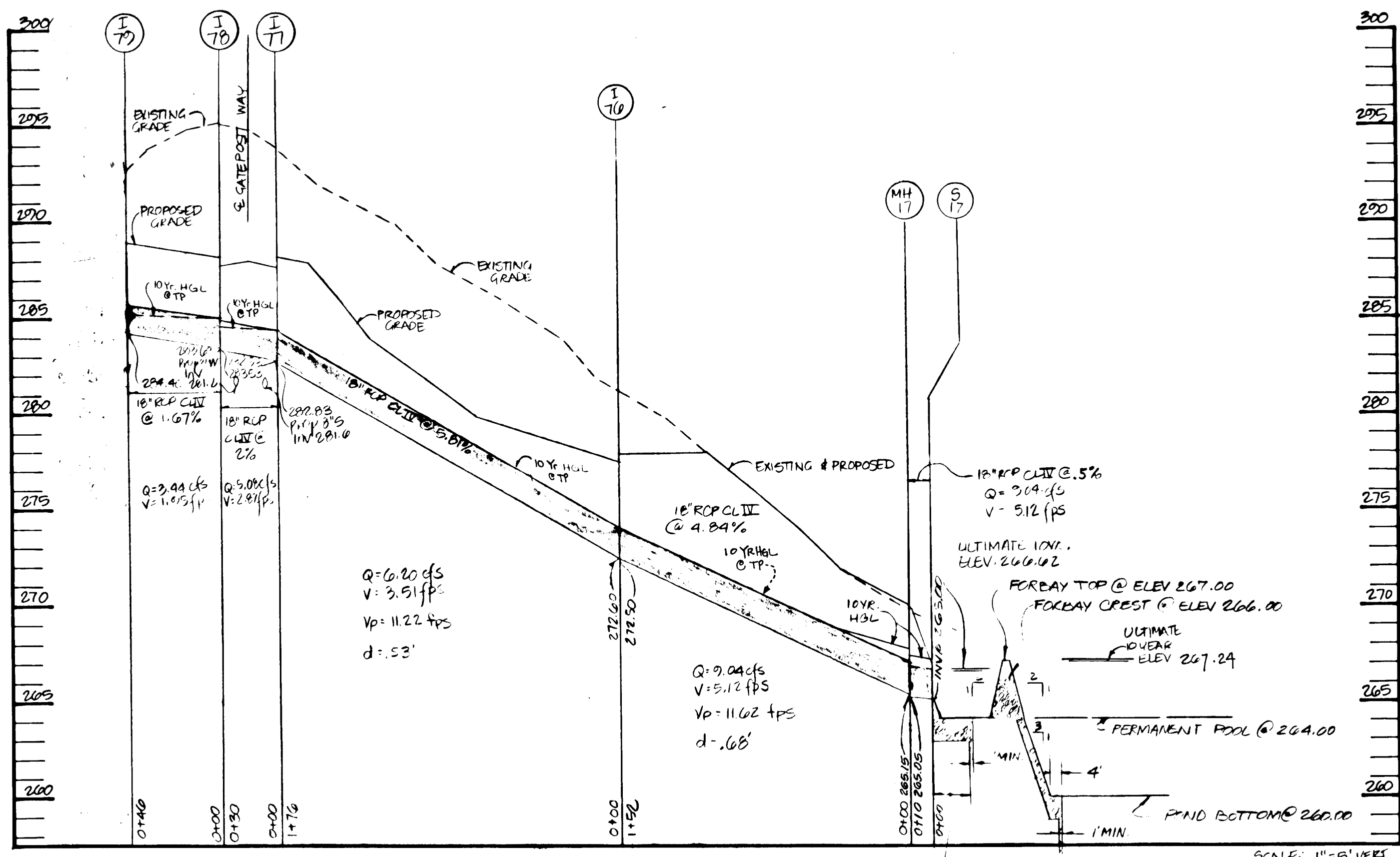
APPROVED: Department of Planning and Zoning  
**Anna [Signature]** 7/17/95  
 Chief, Division of Land Development and Research Date

**LAND DESIGN ENGINEERING, INC.**  
 8835 Columbia 100 Parkway, Unit N, Columbia, MD 21045  
 (410) 715-1070 (Balto.) (301) 596-3424 (Wash.) (410) 715-0681 (Fax)

DESIGNED	ES	SCALE	1"=50'
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CHECKED	RM	JOB NO.	92-176.0
DATE	12/94	FILE NO.	F94-95

**DRAINAGE AREA MAP**  
**LYNDWOOD MANOR**  
**SECTION THREE AREA ONE**  
 Tax Map 37 Part of Parcels 643, 38, 640  
 1st Election District Howard County, MD  
 owner / Developer  
**100 INVESTMENT LIMITED PARTNERSHIP**  
 8835-P Columbia 100 Parkway  
 Columbia, Maryland 21045 (410) 730-0810  
 F-94-95

STRUCTURE SCHEDULE						
NUMBER	TYPE	INV. IN	INV. OUT	UPPER	LOWER	LOCATION
I-74	A-10	286.40	286.15	291.65	281.43	SD 4.02 4+71.38, 13'RT., GATEPOST WAY
I-75	A-10	-	287.00	291.65	281.43	SD 4.02 4+71.38, 13'LT., GATEPOST WAY
I-76	A-10 SUMP	272.60	272.50	278.63	-	SD 4.02 1+18.97 SUMP, SANDY RIDGE
I-77	A-10	282.93	282.83	288.42	288.01	SD 4.02 0+47.11, 13'LT., GATEPOST WAY
I-78	A-10	283.63	283.53	288.43	288.00	SD 4.02 0+47.11, 13'RT., GATEPOST WAY
I-79	A-10	284.65	284.40	289.89	289.26	SD 4.02 19+46.57, 13'RT., SANDY RIDGE
I-80	A-10	-	285.45	291.01	290.44	SD 4.02 19+20.31, 13'LT., SANDY RIDGE
M-17	STD. MANHOLE	265.75	265.05	269.50	-	G 5.12 N 499699.66 E 866936.65
M-18	STD. MANHOLE	279.22	279.12	283.00	-	G 5.12 N 499442.61 E 866421.94
M-19	STD. MANHOLE	282.45	282.35	287.50	-	G 5.12 N 499312.40 E 866506.26
M-20	STD. MANHOLE	284.83	284.73	292.50	-	G 5.12 N 499360.22 E 866609.85
S-17	TYPE C ENDWALL	265.00	-	267.25	-	SD 5.21 N 499699.66 E 866940.63
S-18	TYPE C ENDWALL	279.00	-	281.25	-	SD 5.21 N 499456.32 E 866403.47
S-19	TYPE C ENDWALL	258.00	258.00	259.75	-	SD 5.21 N 499759.12 E 867084.40
S-20	SEE DETAIL SHT. 9	260.00	259.90	267.33	-	SHEET 9 N 499677.54 E 867051.85



1708

**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.  
 Bruce D. Burton  
 Signature of Engineer  
 6/22/95  
 Date

**DEVELOPER'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 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 Howard Soil Conservation District.  
 WZ N  
 Signature of Developer  
 3/21/94  
 Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.  
 Patricia Erb  
 Chief, Land Conservation Service  
 Date 4/30/95

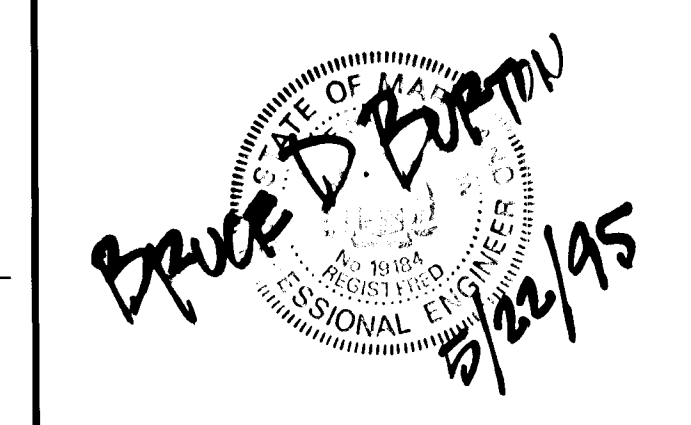
This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.  
 Robert W. Ziehm  
 Chief, Bureau of Engineering  
 Date 5/30/95

APPROVED: Department of Public Works for Storm Drainage Systems and Roads  
 Chief, Land Development Division  
 Date 7/12/95

APPROVED: Department of Planning and Zoning  
 Chief, Bureau of Engineering  
 Date 7/13/95

APPROVED: Department of Planning and Zoning  
 Chief, Bureau of Engineering  
 Date 7/17/95

APPROVED: Department of Planning and Zoning  
 Chief, Bureau of Highways  
 Date 6-6-95



REVISIONS

DESIGNED	EDS
CHECKED	RM
DATE	12/94

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 (410) 715-1070 (Balt.) (301) 596-3424 (Wash.) (410) 715-0681 (Fax)

**STORM DRAIN PROFILES**

**LYNDWOOD MANOR**  
 SECTION THREE AREA ONE  
 Tax Map 37 Part of Parcels 643, 38, 640  
 1st Election District Howard County, MD.

Scale: 1"=5' Vert, 1"=50' Horiz  
 Drawing: B of 11  
 Job No: 92-176.6  
 File No: F94-95



**SPECIFICATIONS**

These specifications are appropriate to all ponds within the scope of the Standard Practice MD-378. 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 obstructions shall be removed. Channel banks and steep breaks shall be sloped to a steeper than 1:1.

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. For dry streamwater management ponds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

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**

**Material:** 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. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

**Placement:** Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch lifts (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

**Compaction:** The movement of the hauling and spreading equipment over the fill shall be controlled.

**1. Materials - (Steel Pipe)** This pipe and its appurtenances shall be galvanized and fully bluminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bluminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings or an approved equal may be used: Nepon, Plast-Core, Blac-Koat, and Blac-Gu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

**2. Coupling bands and anti-seep collars, and 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 material at least 24 mils in thickness.

**3. 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 be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

**4. Backfilling** shall conform to "Structure Backfill".

**5. 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 608, M&M 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 905.

The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth 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 919.12.

**Care of Water during Construction**

All work on permanent structures shall be carried out in a free flow from water. The Contractor shall construct

so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not so wet that water can be squeezed out.

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within 2% of optimum. Each layer of fill shall be compacted as necessary to obtain that density, and it is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

**Out of Trench:** The cutoff trench shall be excavated into riprap material 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 below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers or hand tampers to assure maximum density and minimum permeability.

**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. 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 exert a pressure greater than four feet, under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

**Pipe Conduits**

All pipes shall be circular in cross section.

**Corrugated Metal Pipe:** All of the following criteria shall apply for corrugated metal pipe:

**1. neoprene gasket:** and a 1/2" wugger type band with 6" ring gaskets having a minimum diameter of 1/2" greater than the pipe diameter. Pipes 24" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and nuts. A 1/2" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24".

**2. Helicly corrugated pipe** shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

**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. Backfilling** shall conform to "Structure Backfill".

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

**Reinforced Concrete Pipe:** All of the following criteria shall apply for reinforced concrete pipe:

**1. Materials:** Reinforced concrete pipe shall have all and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-381.

**2. Bedding:** All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. The bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.

**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 for the entire line, the bedding shall be placed so that it spaces under the pipe is filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.

**4. Backfilling** shall conform to "Structure Backfill".

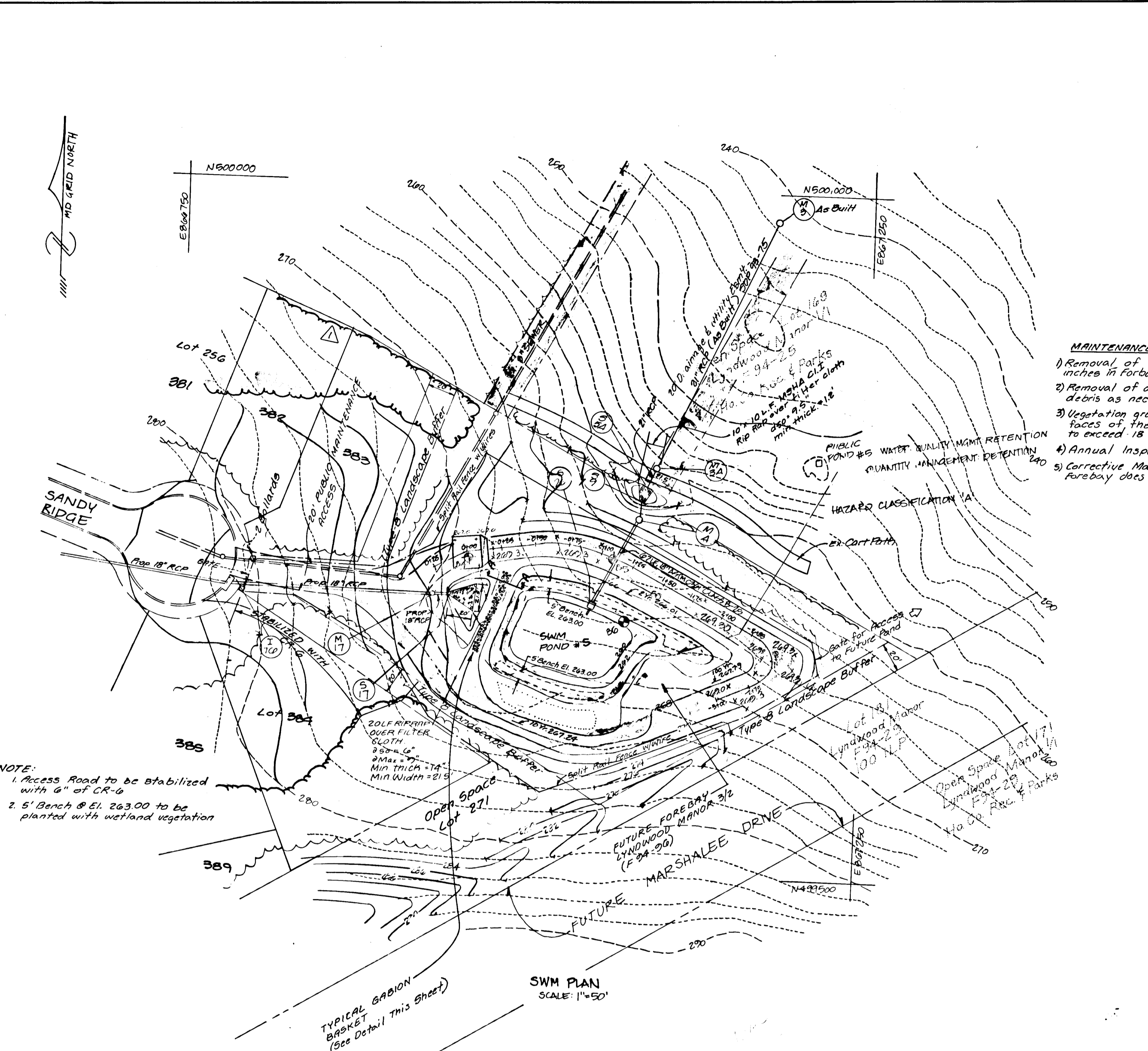
**5. Other details** (anti-seep collars, valves, etc.) shall be as shown on the drawings.

**Embankment and Settlement Control**

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spot and borrow areas, and terms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Maryland Soil Conservation Service Standards and Specifications for Critical Area Planting (MD-342) as shown on the accompanying drawings.

**Construction Operations**

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.



**NOTE:**  
1. Access Road to be stabilized with 6" of CR-6  
2. 5' Bench @ El. 263.00 to be planted with wetland vegetation

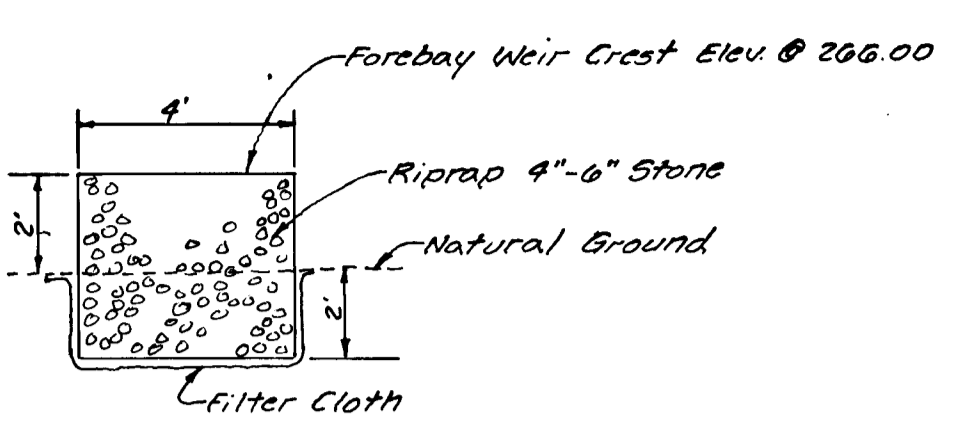
**TYPICAL GABION BASKET (See Detail This Sheet)**

**ULTIMATE POND SPILLWAY TYPICAL SECTION (N.T.S.)**



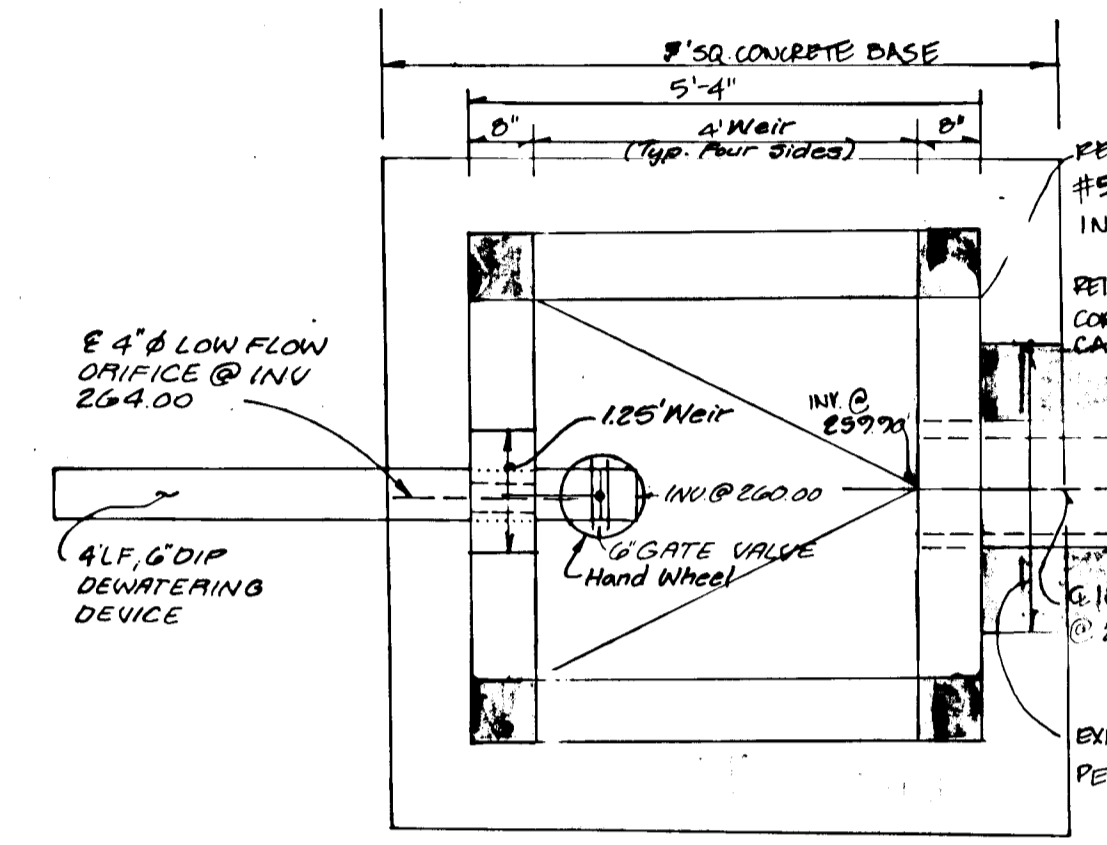
$d_{100} = 0.49'$   
 $Q_{100} = 17.00 \text{ cfs}$   
 $V_{100} = 0.77 \text{ fps}$

**GABION BASKET DETAIL**



**CROSS SECTION A-A**

**5-20 ULTIMATE POND RISER DETAILS PLAN: N.T.S.**

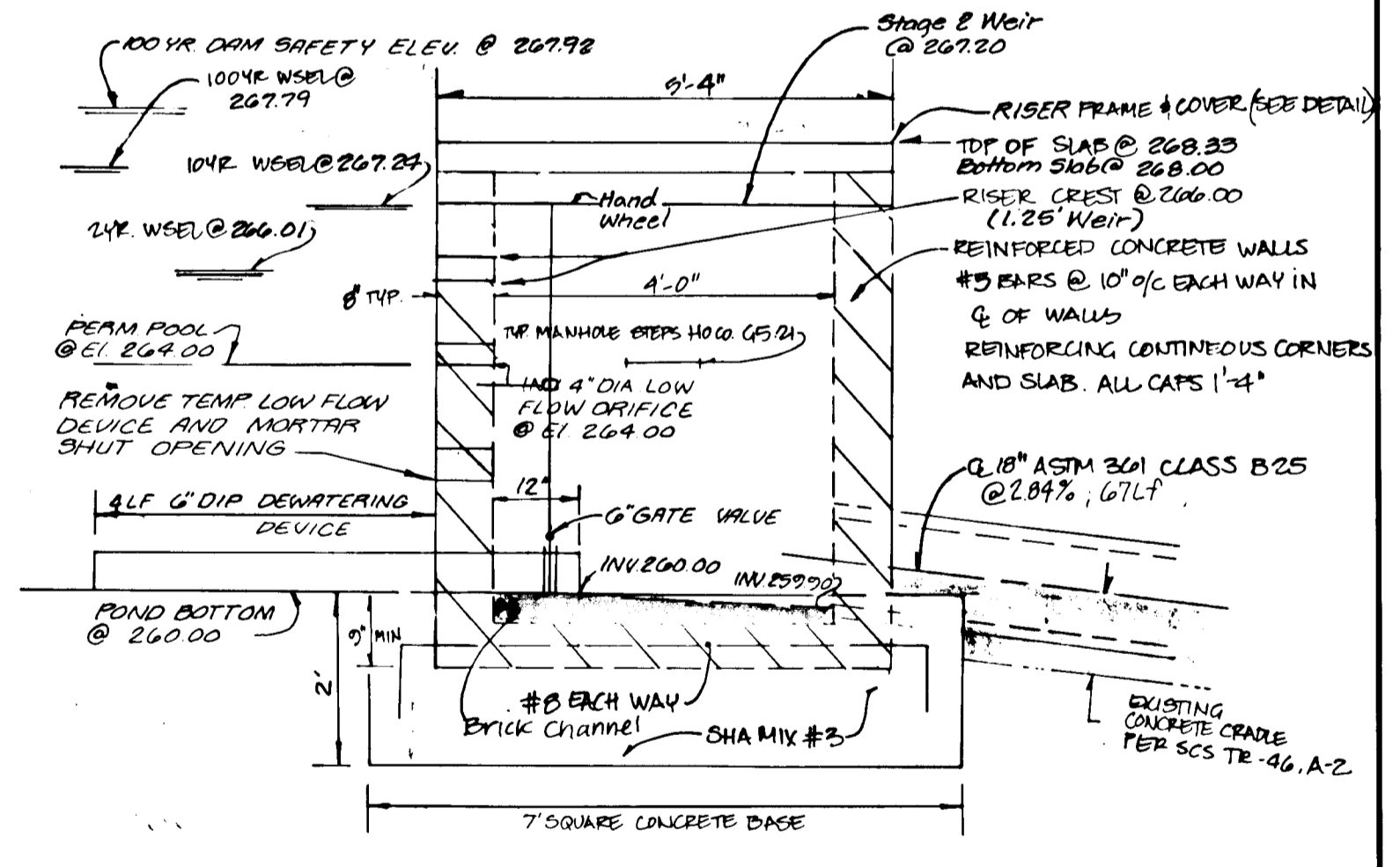


**SUMMARY TABLE**

Drainage Area = 9.33 Acres

	SWM POND		
	2 YEAR	10 YEAR	100 YEAR
Allowable Release (cfs)	0.60	7.20	24.80
Computed Inflow (cfs)	14.10	38.60	52.00
Facility Discharge (cfs)	0.60	6.80	38.00
Elevation at Discharge	264.01	267.24	267.74
Storage at Elevation (ACFT)	0.61	0.99	1.84

**5-20 ULTIMATE POND RISER DETAIL PROFILE: N.T.S.**



Note: For Planting in Landscape Buffer See Landscape Plan sheet 11.

L.O.E.	Date	Revised	Description
4/97			Revise Lot Lines, Area & SWM Details
5/1			

**ENGINEER'S CERTIFICATE**

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

**Bruce D. Burton** 5/22/95  
Signature of Engineer Date

**DEVELOPER'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 Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by Howard Soil Conservation District.

**John A.** 3/21/94  
Signature of Developer 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.

**Robert W. Ziehm** 5/30/95  
Howard Soil Conservation District Date

APPROVED: Department of Public Works for Storm Drainage Systems and Roads

**Paul D. Saxon** 7/13/95  
Chief, Bureau of Engineering Date

APPROVED: Department of Planning and Zoning

**Anna J. Williams** 7/17/95  
Chief, Division of Planning and Zoning Date

**BRUCE D. BURTON** 5/22/95  
Professional Engineer

**LAND DESIGN ENGINEERING, INC.**

8835 Columbia 100 Parkway, Unit N, Columbia, MD 21045  
(410) 715-1070 (Baito) (301) 596-3424 (Wash.) (410) 715-0681 (Fax)

DESIGNED	ES/TD	SCALE
STORMWATER MANAGEMENT PLAN		AS SHOWN
DRAWN	AL	DRAWING
LINDWOOD MANOR		9 OF 11
CHECKED	RM	JOB No.
Tax Map 37 Part of Parcels #43, 38, 640		92-176-G
DATE	12/94	FILE No.
100 INVESTMENT LIMITED PARTNERSHIP		FD4-95
8835 Columbia 100 Parkway		
Columbia, Maryland 21045 (410) 730-0810		

RECORD OF SOIL EXPLORATION

DATE	NO.	DEPTH (FT)	SOIL TYPE	WATER TABLE (FT)	REMARKS
10-10-11	1	0-1	...	...	...
10-10-11	2	1-2	...	...	...
10-10-11	3	2-3	...	...	...
10-10-11	4	3-4	...	...	...
10-10-11	5	4-5	...	...	...
10-10-11	6	5-6	...	...	...
10-10-11	7	6-7	...	...	...
10-10-11	8	7-8	...	...	...
10-10-11	9	8-9	...	...	...
10-10-11	10	9-10	...	...	...

RECORD OF SOIL EXPLORATION

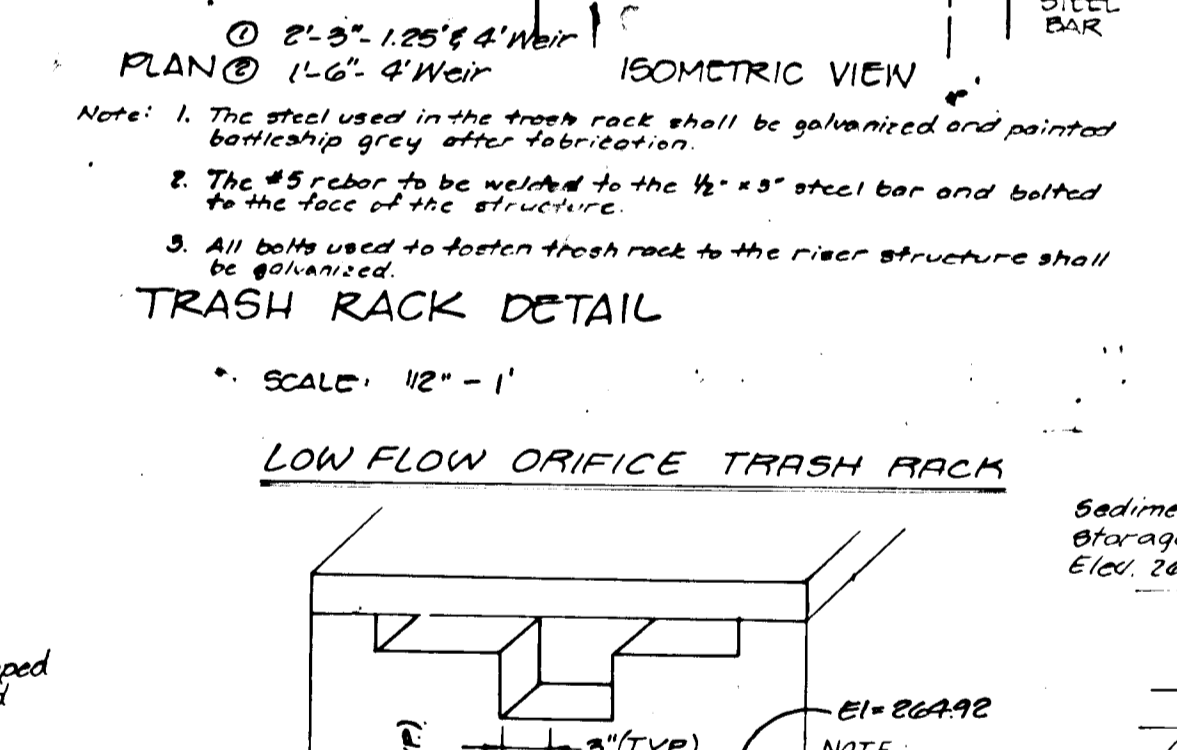
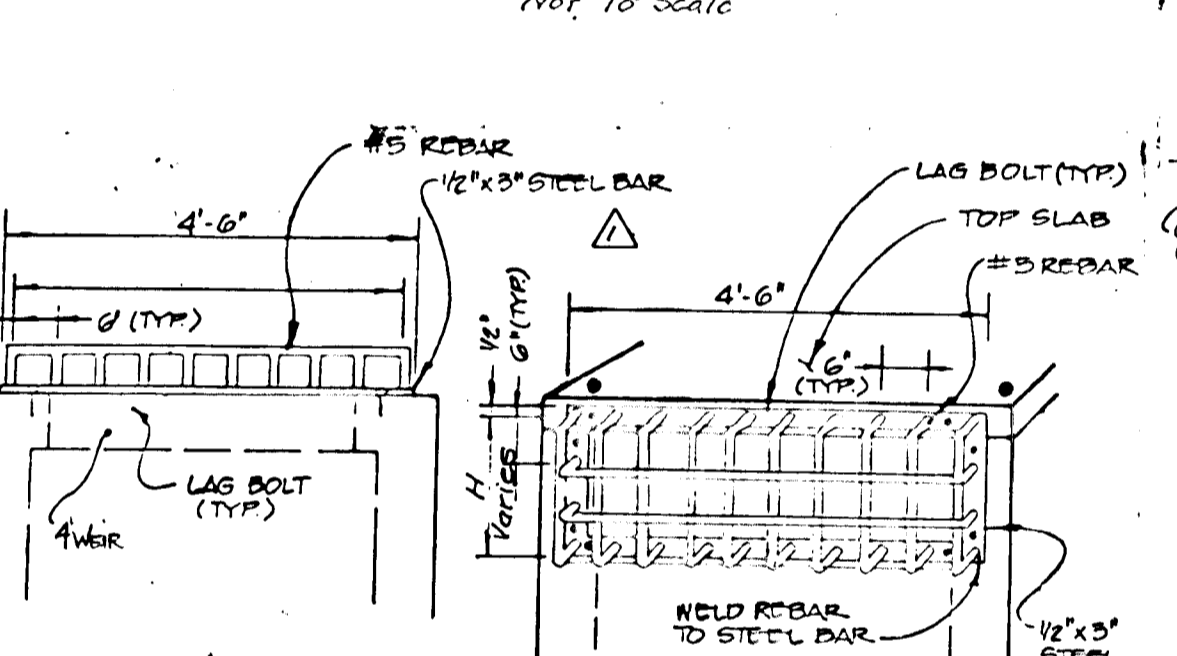
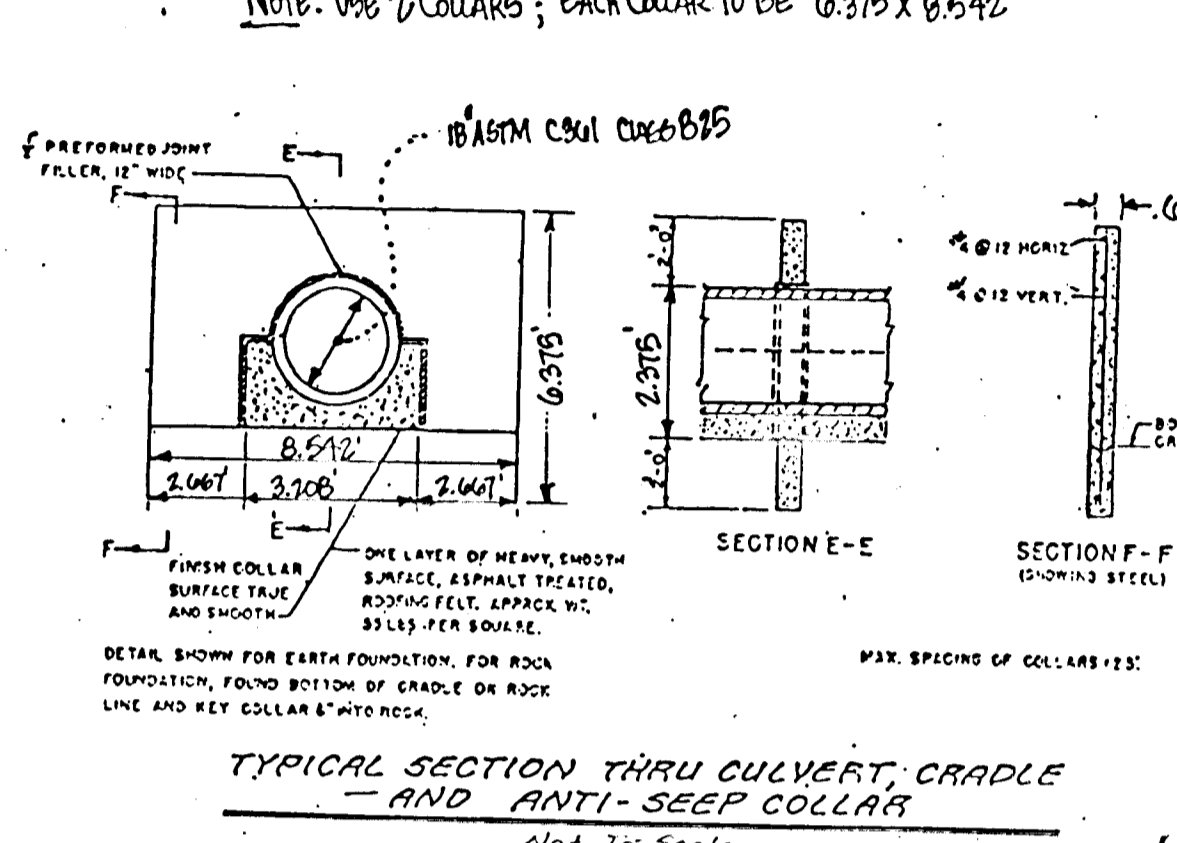
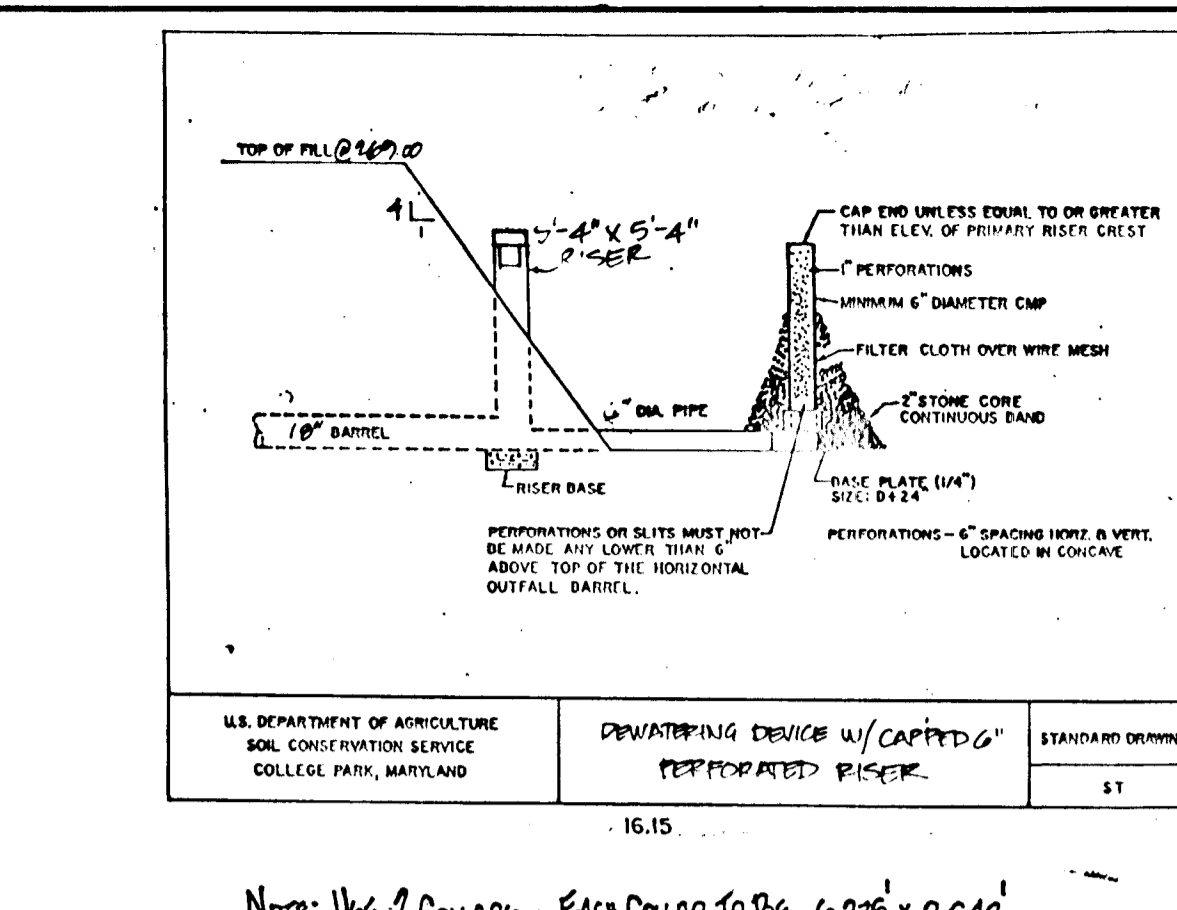
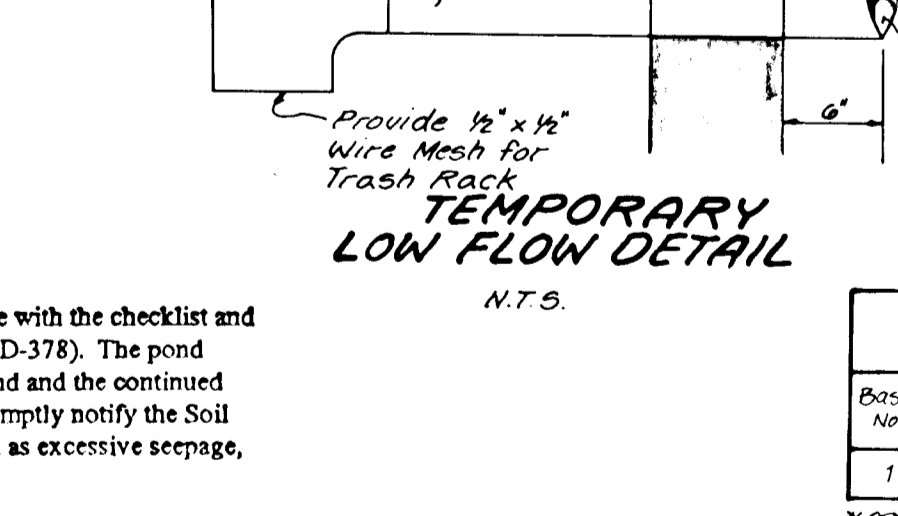
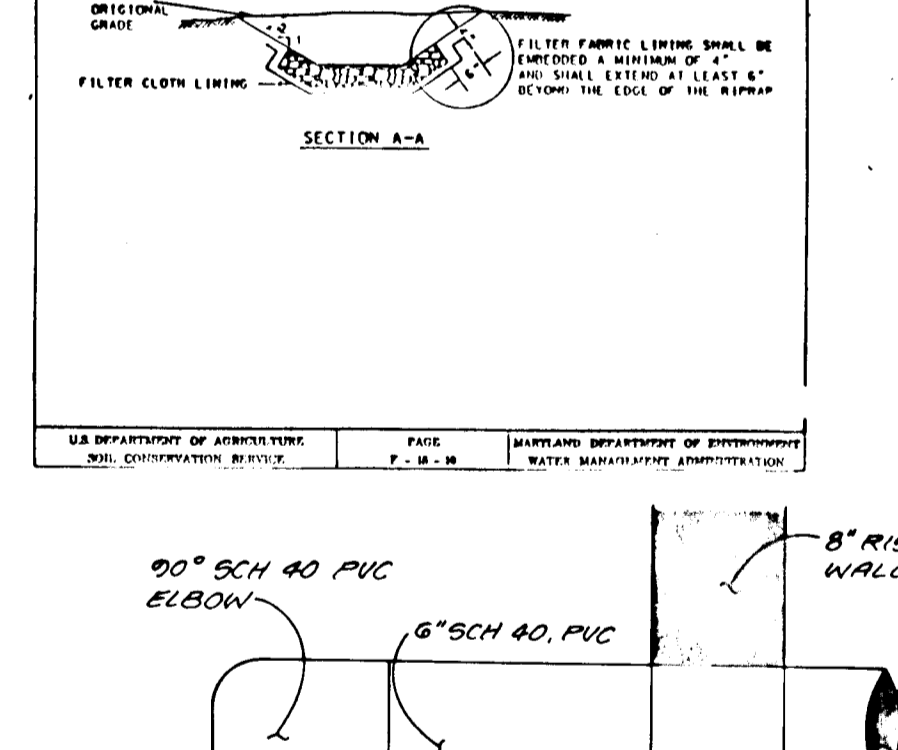
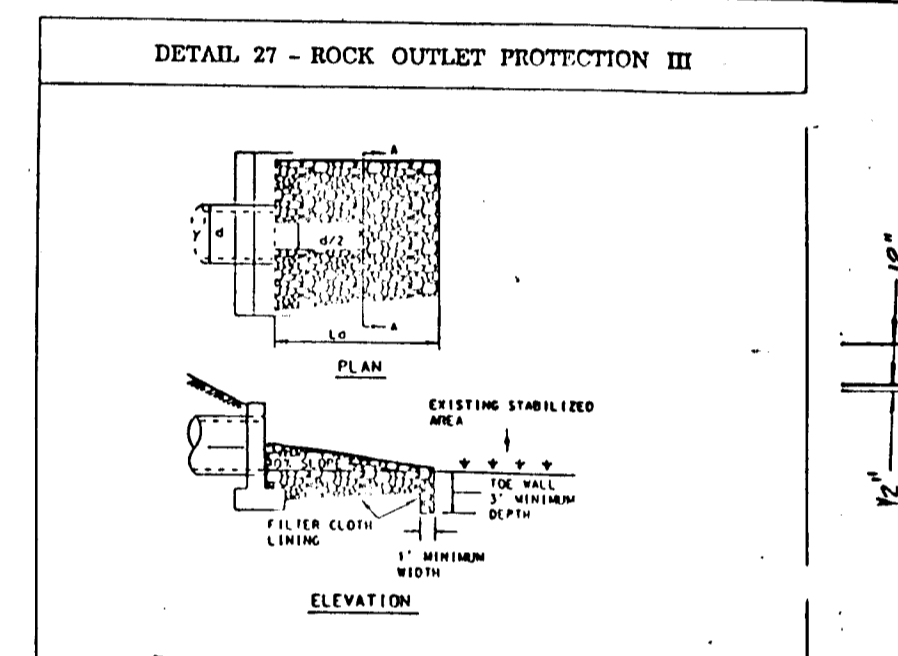
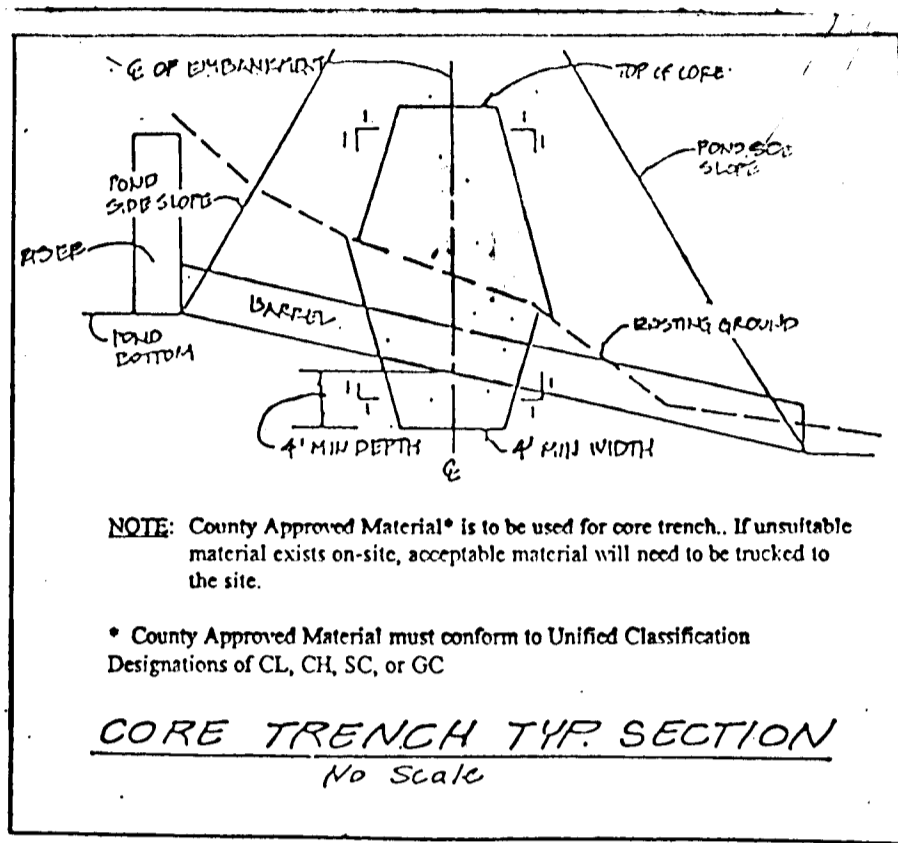
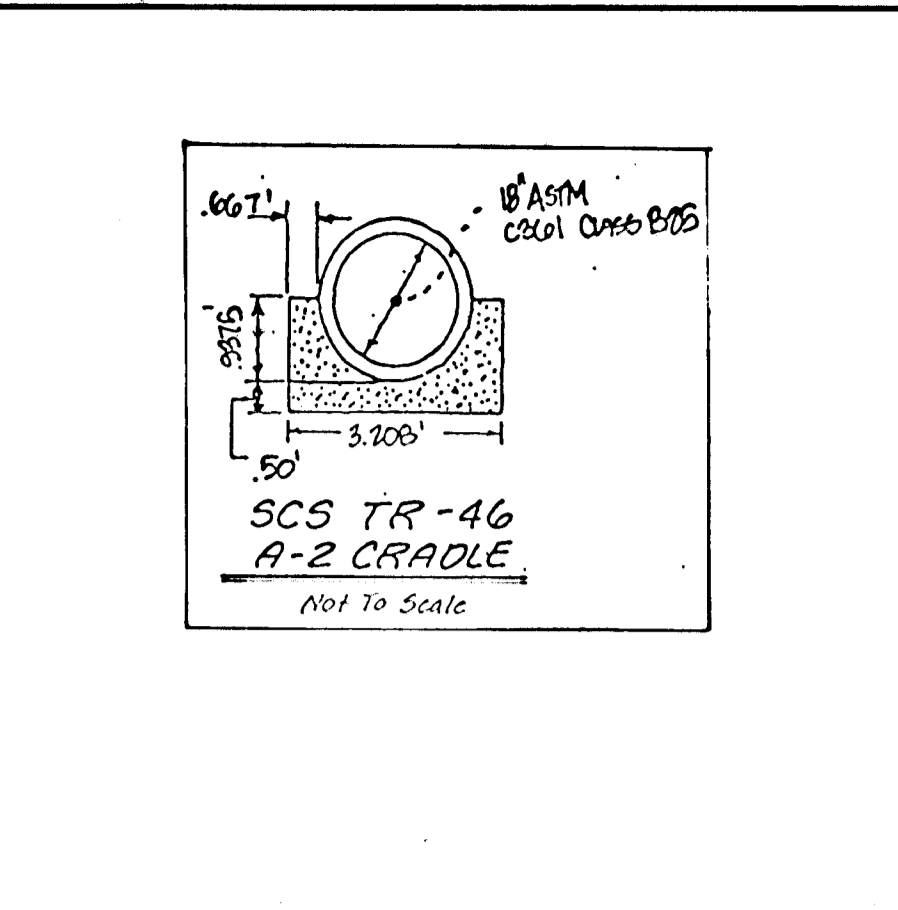
DATE	NO.	DEPTH (FT)	SOIL TYPE	WATER TABLE (FT)	REMARKS
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10-10-11	12	11-12	...	...	...
10-10-11	13	12-13	...	...	...
10-10-11	14	13-14	...	...	...
10-10-11	15	14-15	...	...	...
10-10-11	16	15-16	...	...	...
10-10-11	17	16-17	...	...	...
10-10-11	18	17-18	...	...	...
10-10-11	19	18-19	...	...	...
10-10-11	20	19-20	...	...	...

RECORD OF SOIL EXPLORATION

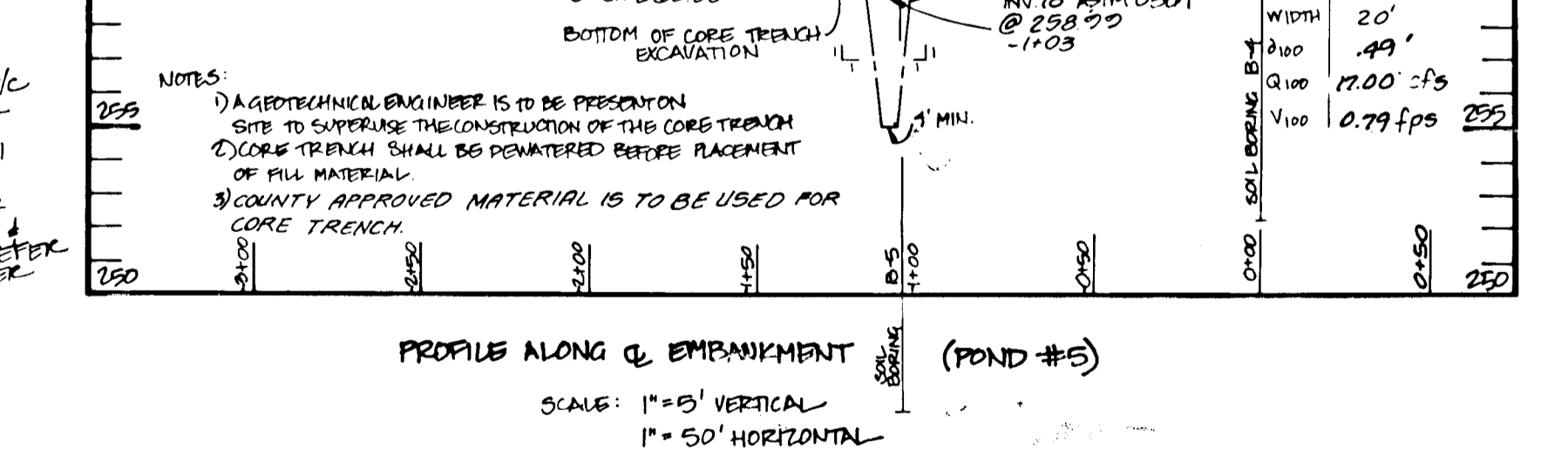
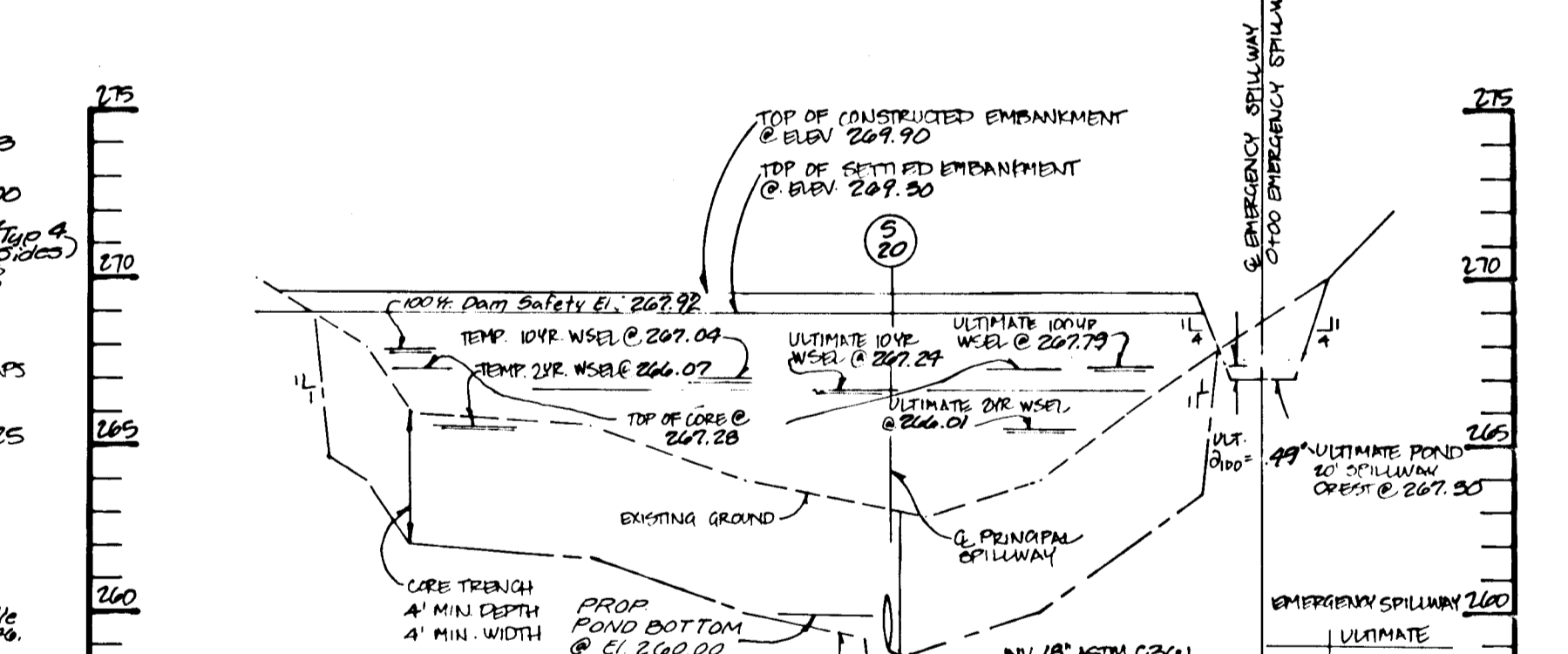
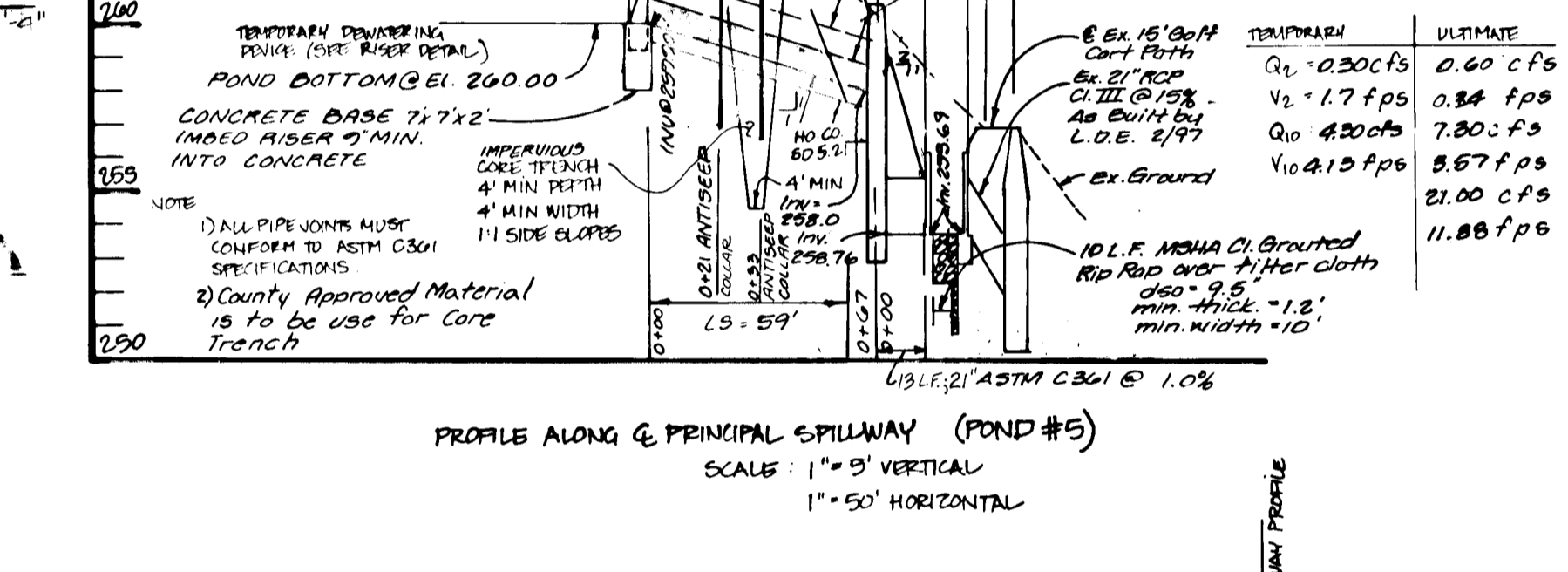
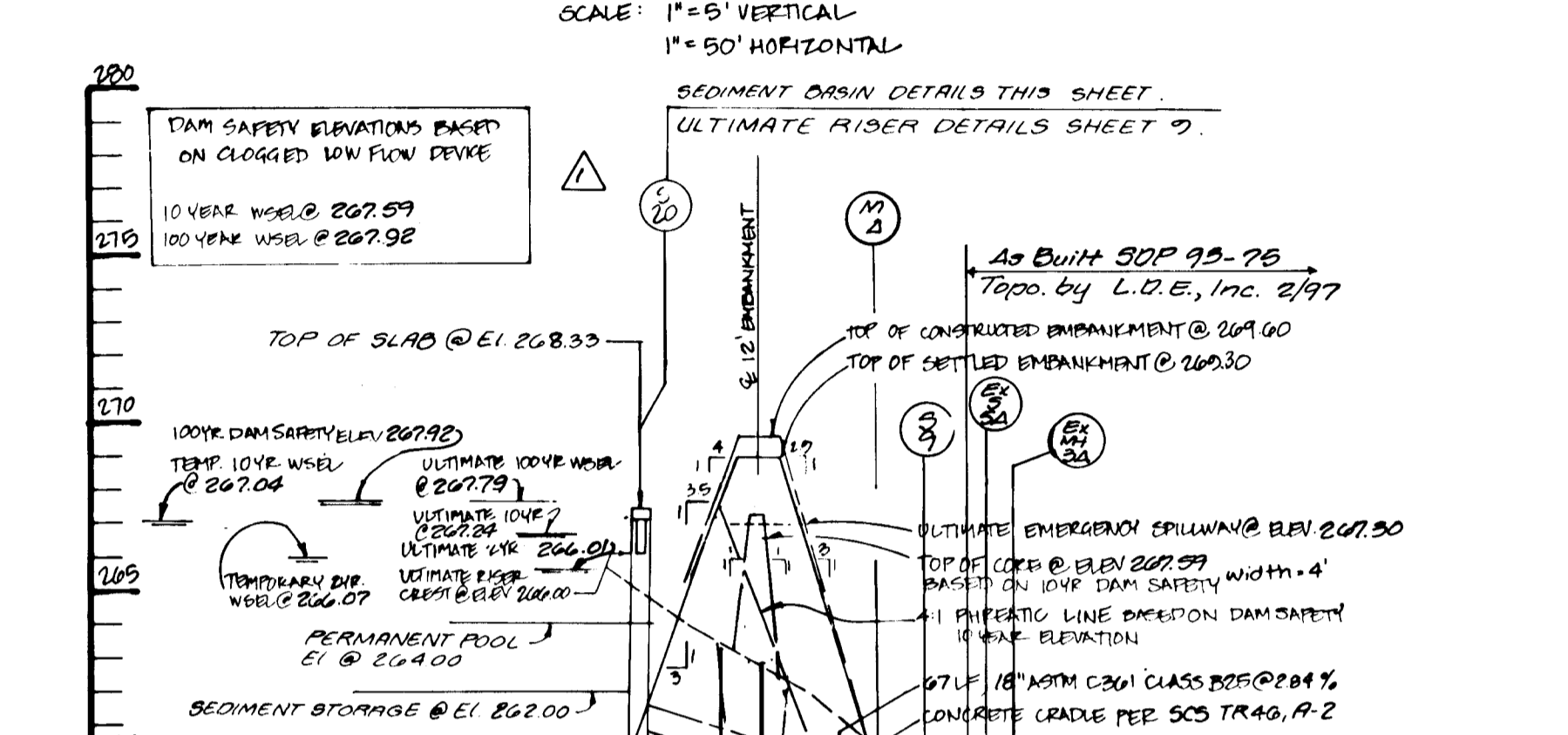
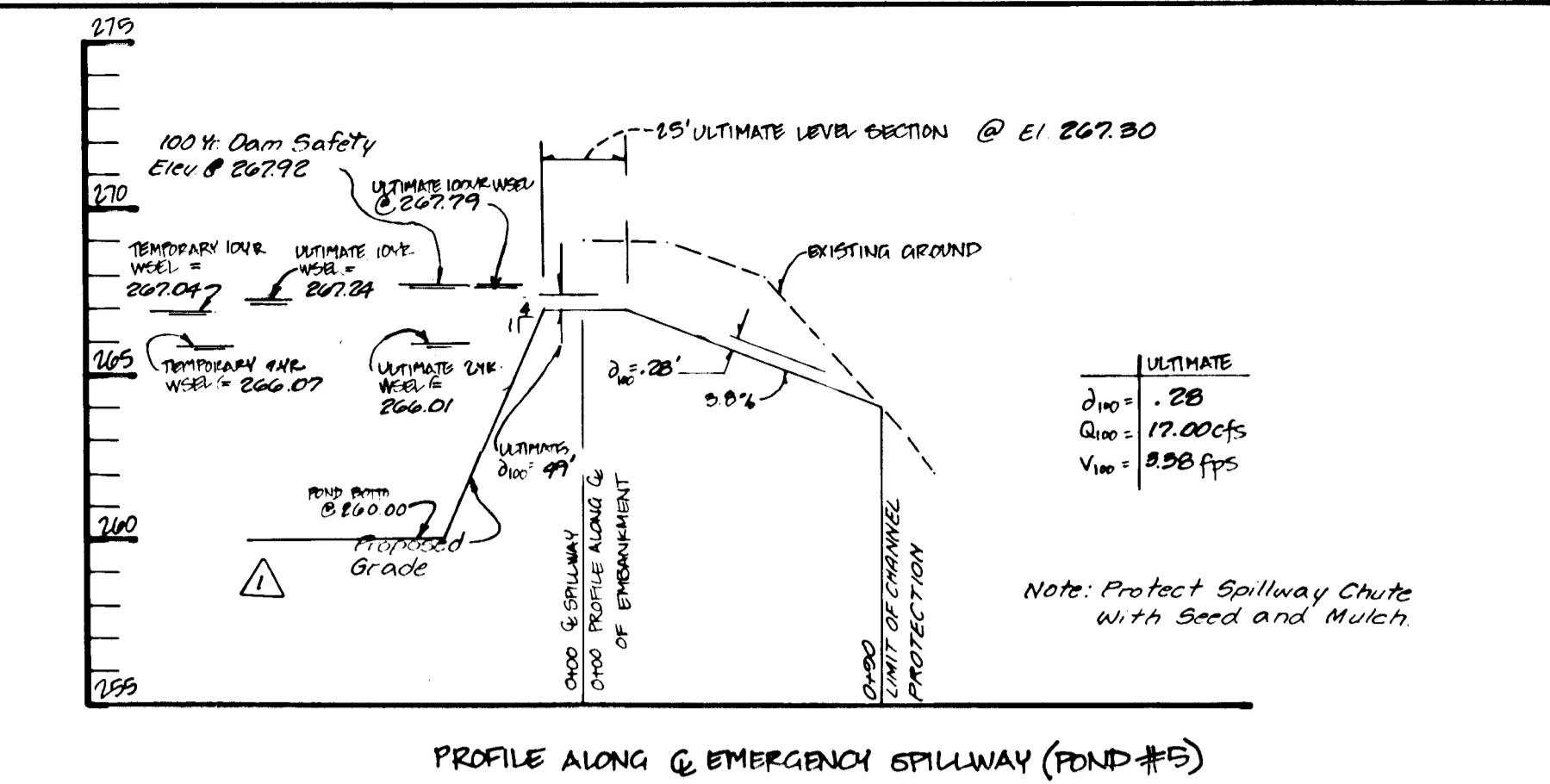
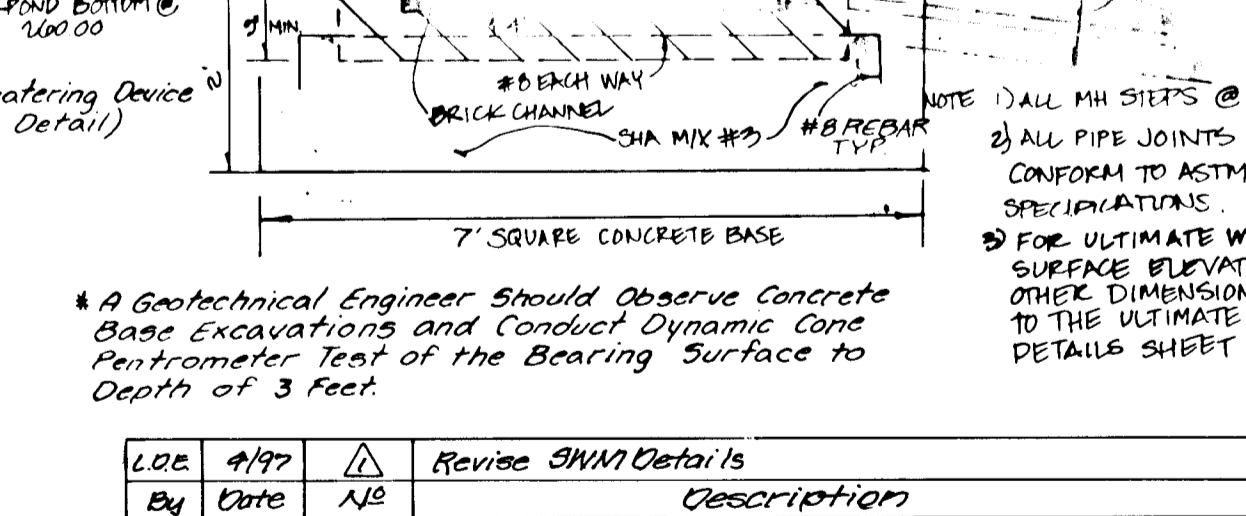
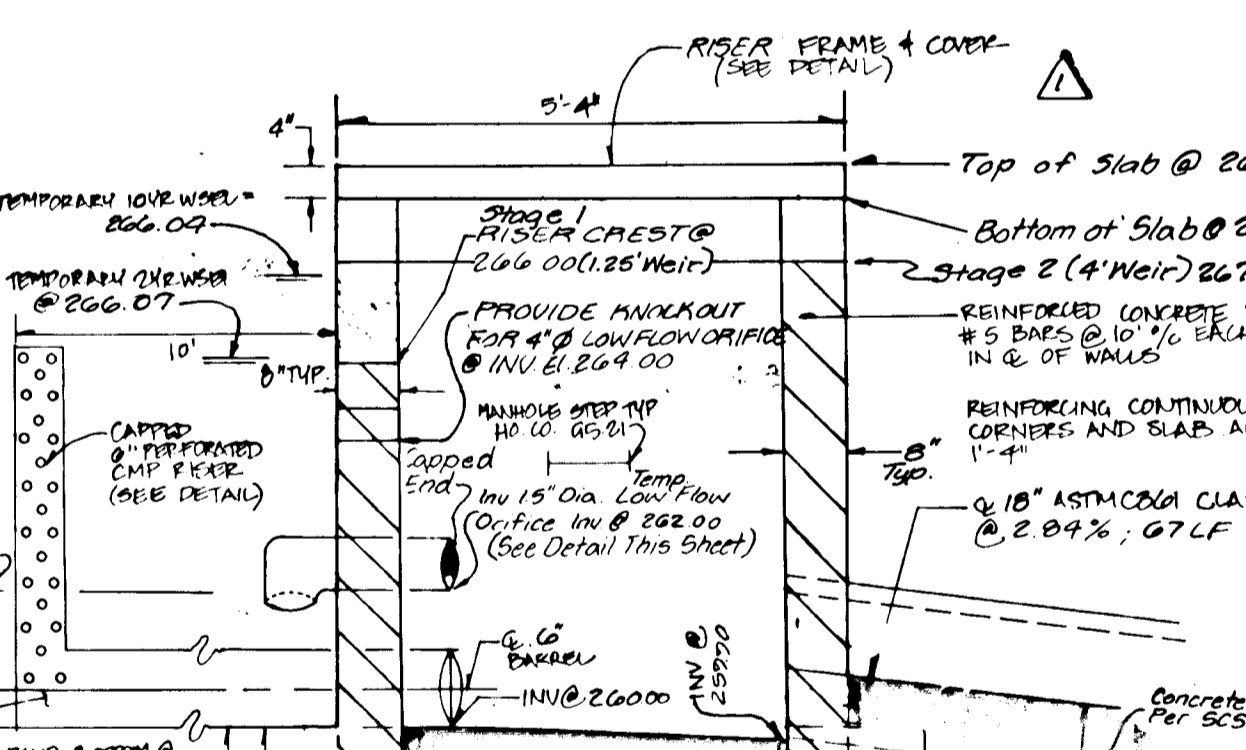
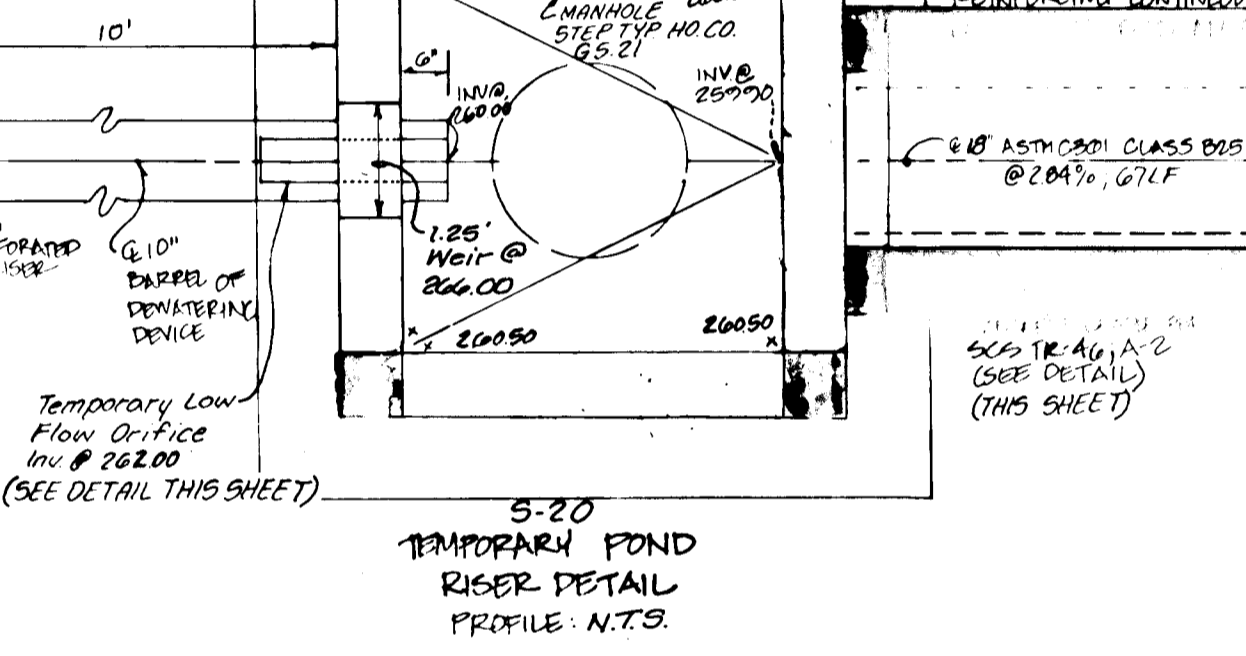
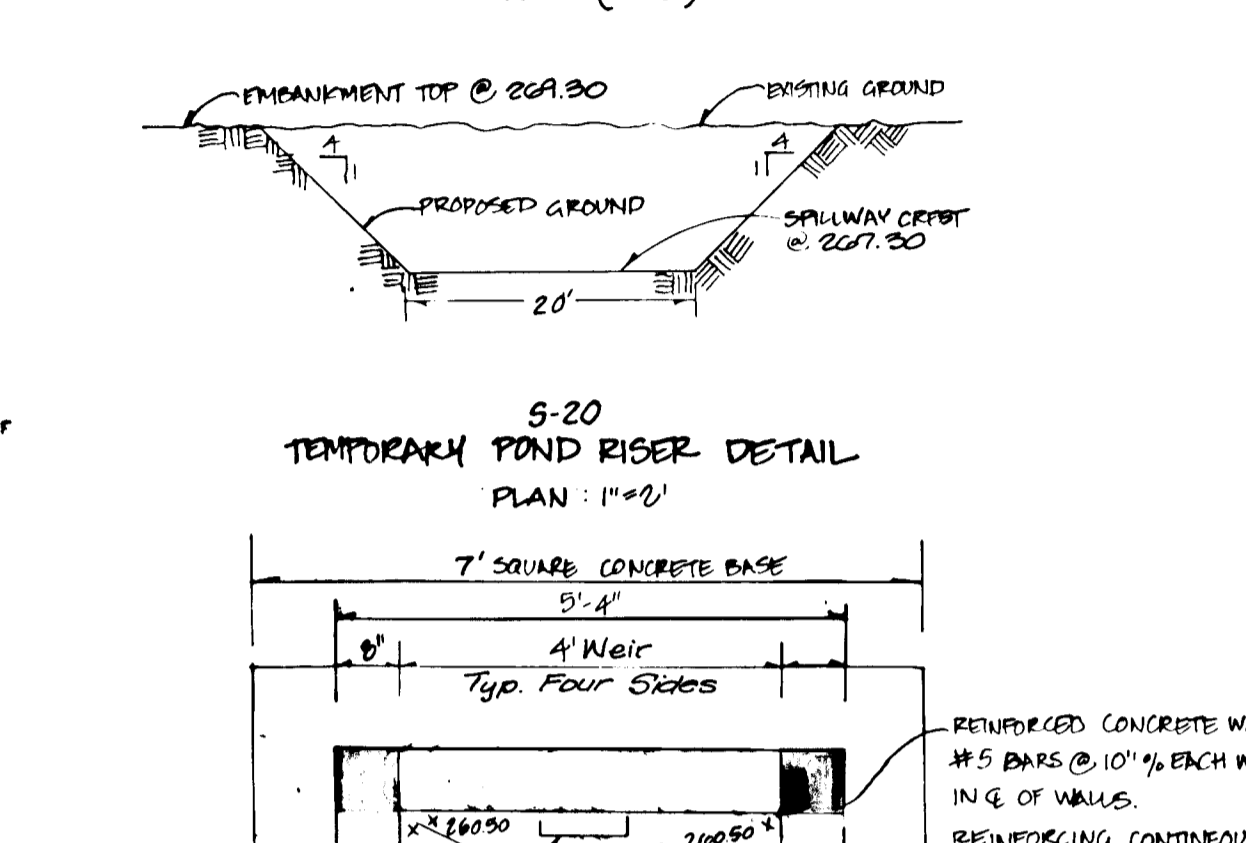
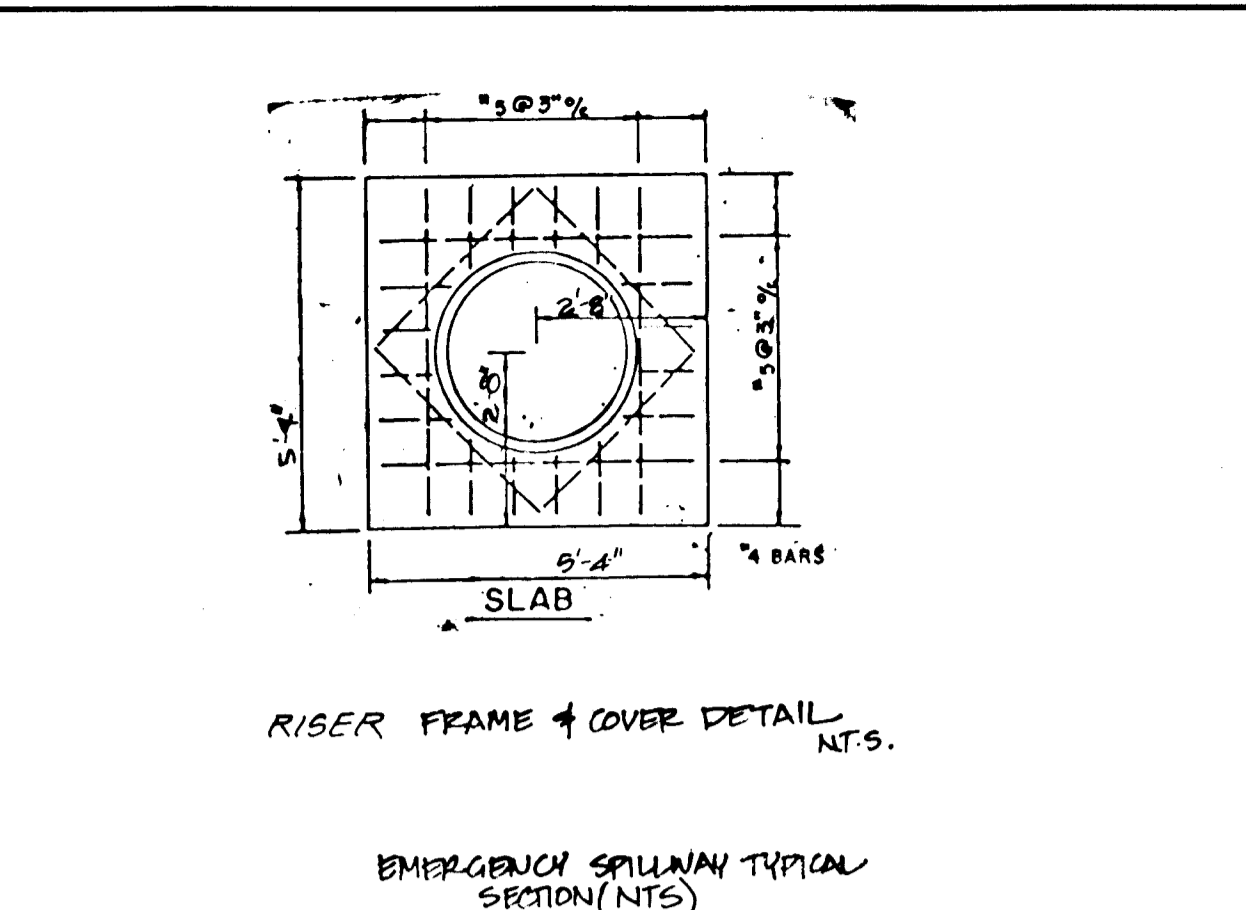
DATE	NO.	DEPTH (FT)	SOIL TYPE	WATER TABLE (FT)	REMARKS
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10-10-11	22	21-22	...	...	...
10-10-11	23	22-23	...	...	...
10-10-11	24	23-24	...	...	...
10-10-11	25	24-25	...	...	...
10-10-11	26	25-26	...	...	...
10-10-11	27	26-27	...	...	...
10-10-11	28	27-28	...	...	...
10-10-11	29	28-29	...	...	...
10-10-11	30	29-30	...	...	...

OPERATION, MAINTENANCE AND INSPECTION

Inspection of the pond(s) shown herein shall be performed at least annually, in accordance with the checklist and requirements contained within USDA, SCS "Standards and Specifications For Ponds" (MD-378). The pond owner(s) and any heirs, successors, or assigns shall be responsible for the safety of the pond and the continued operation, surveillance, inspection, and maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.



Basin No.	Max D.A.	Stor. Req'd	Stor. Prov.	Stor. Elev.	Stor. Depth	Weir Length	Bottom Elev.	Clearout Elev.	Crest Elev.	Top Elev.	Outlet Size
1	0.77	15766 Ft <sup>3</sup>	16175 Ft <sup>3</sup>	262.00	2'	20'	268.00	260.00	267.00	269.40	*



ENGINEER'S CERTIFICATE

I certify that the plan for pond construction, erosion and sediment control, and site conditions are in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

**Bruce D. Burton** 5/22/95  
Signature of Engineer Date

DEVELOPER'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 Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by Howard Soil Conservation District.

**W.J.N.** 3/21/94  
Signature of Developer 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.

**Robert Zielman** 5/20/95  
Howard Soil Conservation District Date

APPROVED: Department of Public Works for Storm Drainage Systems and Roads

**John Dammers** 7/21/95  
Chief, Land Development Division

**Paul C. Egan** 7/13/95  
Chief, Bureau of Engineering

**Andrew M. Rucker** 6-6-95  
Chief, Bureau of Highways

APPROVED: Department of Planning and Zoning

**Qumal Sarumany** 7/17/95  
Chief, Division of Land Development and Research

LAND DESIGN ENGINEERING, INC.

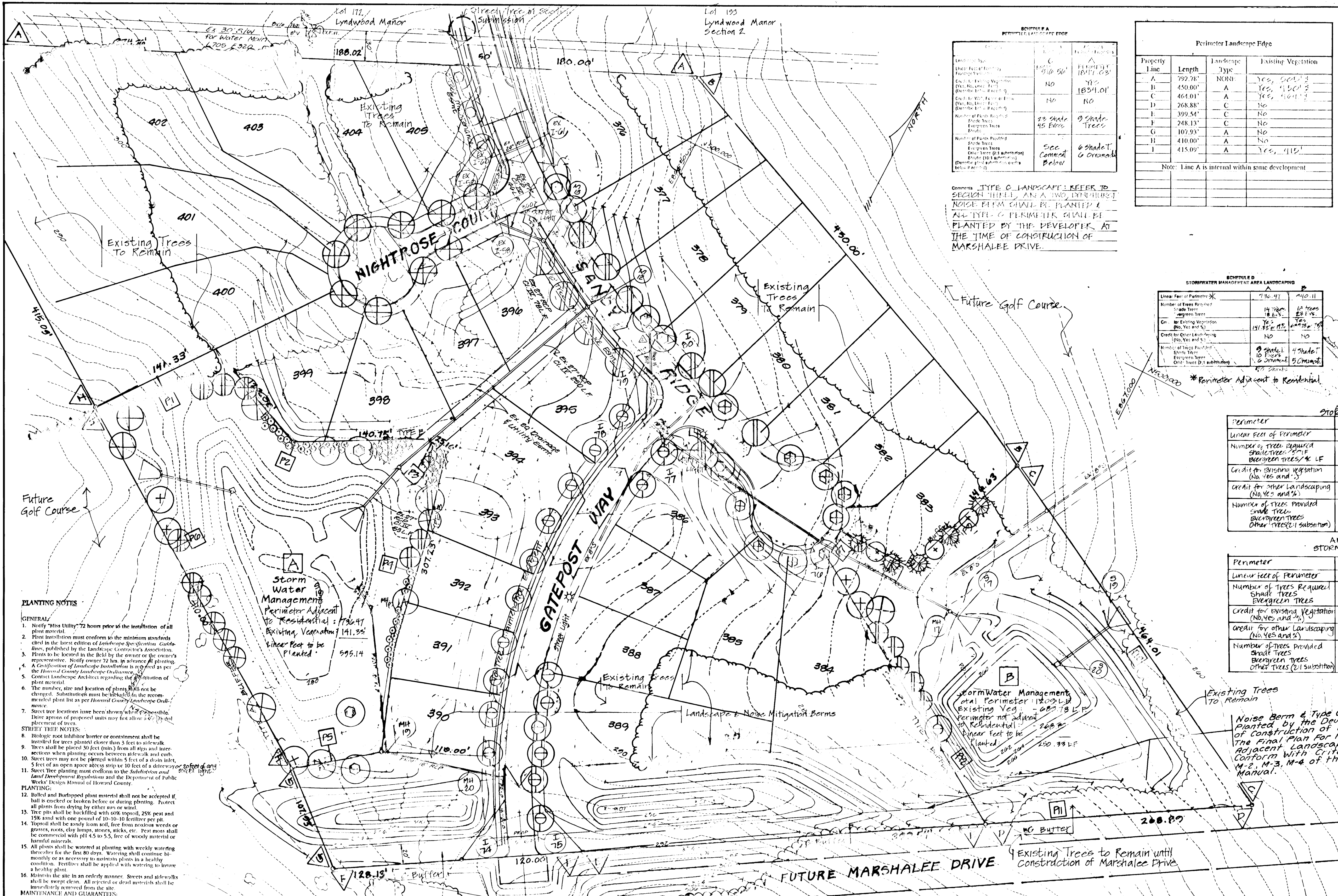
8835 Columbia 100 Parkway, Unit N, Columbia, MD 21045  
(410) 715-1070 (Balto.) (301) 596-3424 (Wash.) (410) 715-0681 (Fax)

DESIGNED: ES  
DRAWN: GL  
CHECKED: RM  
DATE: 4/95

SCALE: AS SHOWN  
DRAWING: 10 OF 11  
JOB No.: 92-176.0  
FILE No.: F04-095

PROJECT: 100 INVESTMENT LIMITED PARTNERSHIP  
8835-Columbia 100 Parkway  
Columbia, Maryland 21045 (410) 730-0810

F-94-95



**SECTION A PERIMETER LANDSCAPE EDGE**

Property Line	Length	Landscaping Type	Existing Vegetation
A	792.78'	NORM	Yes, 100%
B	450.00'	A	Yes, 100%
C	464.01'	A	Yes, 100%
D	768.88'	C	No
E	399.54'	C	No
F	748.13'	C	No
G	102.93'	A	No
H	410.00'	A	No
I	415.09'	A	Yes, 100%

Notes: Line A is internal within some development.

**SECTION B STORMWATER MANAGEMENT AREA LANDSCAPING**

Line	Perimeter	Length	Landscaping Type	Existing Vegetation
1	140.75'	140.75'	A	Yes, 100%
2	141.33'	141.33'	A	Yes, 100%
3	141.33'	141.33'	A	Yes, 100%
4	141.33'	141.33'	A	Yes, 100%
5	141.33'	141.33'	A	Yes, 100%
6	141.33'	141.33'	A	Yes, 100%
7	141.33'	141.33'	A	Yes, 100%
8	141.33'	141.33'	A	Yes, 100%
9	141.33'	141.33'	A	Yes, 100%
10	141.33'	141.33'	A	Yes, 100%
11	141.33'	141.33'	A	Yes, 100%
12	141.33'	141.33'	A	Yes, 100%
13	141.33'	141.33'	A	Yes, 100%
14	141.33'	141.33'	A	Yes, 100%
15	141.33'	141.33'	A	Yes, 100%
16	141.33'	141.33'	A	Yes, 100%
17	141.33'	141.33'	A	Yes, 100%
18	141.33'	141.33'	A	Yes, 100%
19	141.33'	141.33'	A	Yes, 100%
20	141.33'	141.33'	A	Yes, 100%
21	141.33'	141.33'	A	Yes, 100%
22	141.33'	141.33'	A	Yes, 100%
23	141.33'	141.33'	A	Yes, 100%
24	141.33'	141.33'	A	Yes, 100%
25	141.33'	141.33'	A	Yes, 100%
26	141.33'	141.33'	A	Yes, 100%
27	141.33'	141.33'	A	Yes, 100%
28	141.33'	141.33'	A	Yes, 100%
29	141.33'	141.33'	A	Yes, 100%
30	141.33'	141.33'	A	Yes, 100%
31	141.33'	141.33'	A	Yes, 100%
32	141.33'	141.33'	A	Yes, 100%
33	141.33'	141.33'	A	Yes, 100%
34	141.33'	141.33'	A	Yes, 100%
35	141.33'	141.33'	A	Yes, 100%
36	141.33'	141.33'	A	Yes, 100%
37	141.33'	141.33'	A	Yes, 100%
38	141.33'	141.33'	A	Yes, 100%
39	141.33'	141.33'	A	Yes, 100%
40	141.33'	141.33'	A	Yes, 100%

**PLANT LIST**

No	Key	Quan.	Plant Name	Size	Cond.	Remarks
1	(1)	12	Acer rubrum 'Red Sunset'	2.5-3' CAL	B&B	FULL 40' O.C.
2	(2)	17	Crataegus villosa 'Winter King'	1.5-2' CAL	B&B	FULL 20' O.C.
3	(3)		Winter King Hawthorn	CAL	B&B	FULL 20' O.C.
4	(4)	14	Ilex opaca 'Marshall's Seedless'	2.5-3' CAL	B&B	FULL 40' O.C.
5	(5)		Marshall's Seedless Green Ash	2.5-3' CAL	B&B	FULL 40' O.C.
6	(6)	15	Taxodium distichum 'Sicholdii'	2-2.5' HT.	B&B	4' O.C.
7	(7)	12	Pinus strobus	6-8' HT.	B&B	10-15' O.C.
8	(8)	9	Platanus x acciifolia 'Columbia'	2.5-3' CAL	B&B	FULL 40' O.C.
9	(9)		Columbia London Plane	2.5-3' CAL	B&B	FULL 30' O.C.
10	(10)	19	Prunus serotina	2.5-3' CAL	B&B	FULL 40' O.C.
11	(11)	10	Prunus yedoensis	1.5-2' CAL	B&B	FULL 40' O.C.
12	(12)		Yoshino Cherry	2.5-3' CAL	B&B	FULL 40' O.C.
13	(13)	40	Quercus palustris 'Sovereign'	2.5-3' CAL	B&B	FULL 40' O.C.
			'Sovereign' Pin Oak	2.5-3' CAL	B&B	FULL 40' O.C.
			Quercus rubra	2.5-3' CAL	B&B	FULL 40' O.C.
			Northern Red Oak	2.5-3' CAL	B&B	FULL 40' O.C.
			Rhus copallina	18-24' HT.	CONT.	4' O.C.
			Flameleaf Sumac	2-2.5' HT.	B&B or CONT.	5' O.C.
			Viburnum dentatum	2-2.5' HT.	B&B or CONT.	5' O.C.
			Arrowwood Viburnum	2-2.5' HT.	B&B or CONT.	5' O.C.

- PLANTING NOTES**
- Notify Miss Utility 72 hours prior to the installation of all plant material.
  - Plant installation must conform to the minimum standards listed in the latest edition of the *Standard Specification for Landscaping*, published by the Landscape Contractors' Association.
  - Plants to be located in the field by the owner or the owner's representative. Notify owner 72 hrs. in advance of planting.
  - A Certificate of Landscape Installation is required as per the *Howard County Landscape Ordinance*.
  - Contact Landscape Architect regarding the installation of plant material.
  - The number, size and location of plants shall not be changed. Substitution must be indicated in the recommended plant list as per *Howard County Landscape Ordinance*.
  - Street tree locations have been shown with 2' x 2' x 10' placement of trees.
  - Biologic root inhibitor barrier or containment shall be installed for trees planted closer than 3 feet to sidewalk.
  - Trees shall be placed 30 feet (min.) from all signs and intersections when planting occurs between sidewalk and curb.
  - Street trees may not be planted within 5 feet of a drain inlet.
  - 5 feet of an open space access strip or 10 feet of a driveway shall be maintained.
  - Street tree planting must conform to the *Subdivision and Land Development Regulations* and the *Department of Public Works' Design Manual for Howard County*.
- PLANTING:**
- Balled and burlapped plant material shall not be accepted if ball is cracked or broken before or during planting. Protect all plants from drying by either sun or wind.
  - Tree pits shall be backfilled with 50% topsoil, 25% peat and 25% sand with one pound of 10-10-10 fertilizer per pit.
  - Topsoil shall be sandy loam soil, free from weeds or grasses, moss, clay lumps, stones, sticks, etc. Peat moss shall be commercial with pH 4.5 to 5.5, free of woody material or harmful material.
  - All plants shall be watered at planting with weekly watering thereafter for the first 80 days. Watering shall continue bi-monthly or as necessary to maintain plants in a healthy condition. Fertilizer shall be applied with watering to insure a healthy plant.
  - Maintain the site in an orderly manner. Streets and sidewalks shall be swept clean. All rejected or dead material shall be immediately removed from the site.
- MAINTENANCE AND GUARANTEES:**
- Plant material to be alive and healthy at the time of the guarantee period specified as per the *Howard County Landscape Ordinance*.
  - Maintenance shall begin immediately after planting and continue to the end of the guarantee period.
  - Maintenance consists of pruning, watering, weeding, re-mulching, resetting plants to proper grade as needed and replacing girders and stakes as needed.

Stormwater Management Perimeter Adjacent to Residential: 736.47' Existing Vegetation: 141.33' Linear Feet to be Planted: 595.14'

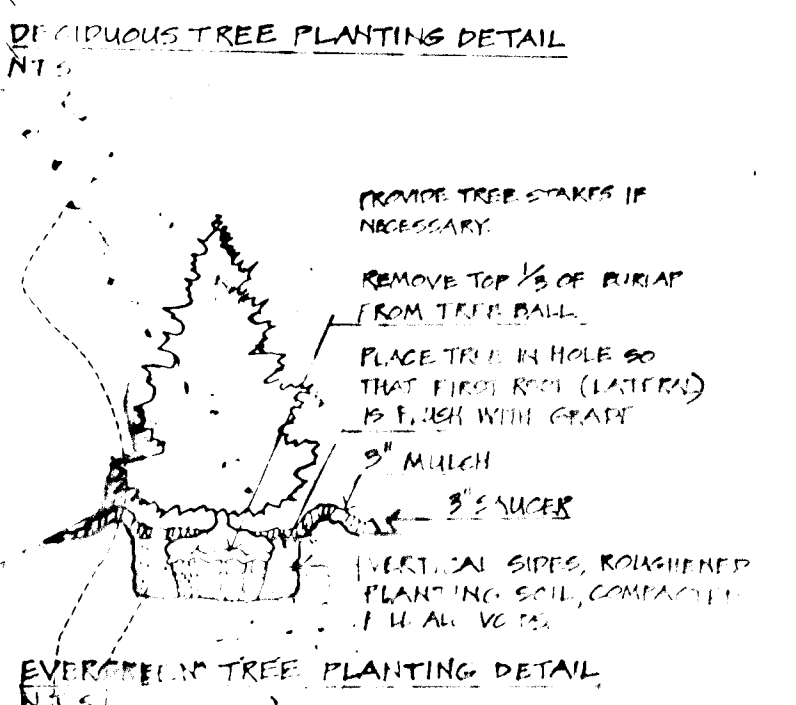
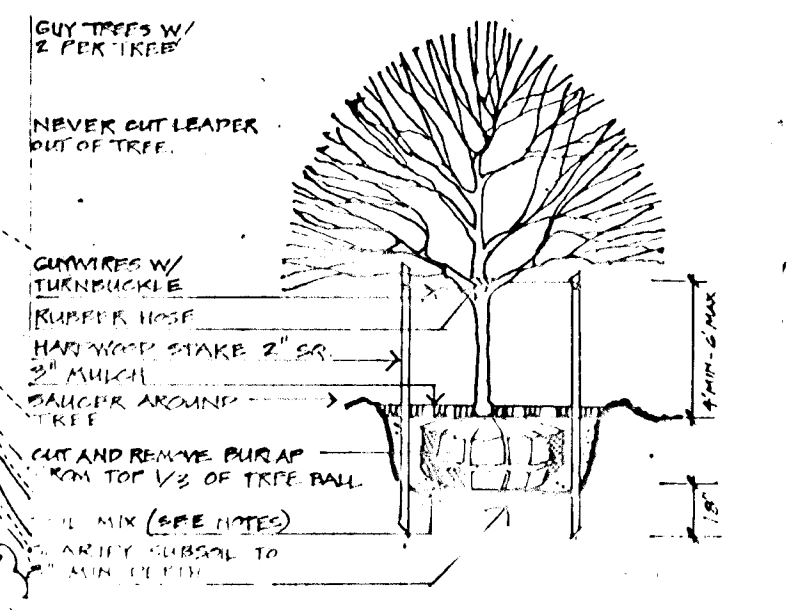
Stormwater Management Perimeter Adjacent to Residential: 1002.14' Existing Vegetation: 282.18' Linear Feet to be Planted: 720.00'

**AREA A STORMWATER MANAGEMENT AREA**

Perimeter	P1	P2	P3	P4	P5	P6
Linear feet of Perimeter	141.3	267.7	25.1	207.9	90	410
Number of Trees Required	2	6	0	8	1	1
Number of Trees Provided	3	0	0	1	2	3
Credit for Existing Vegetation (No. Yes and %)	NO	NO	NO	NO	NO	NO
Credit for Other Landscaping (No. Yes and %)	NO	NO	NO	NO	NO	NO
Number of Trees Provided (Other Trees (2' Substitution))	3	0	0	1	2	3

**AREA B STORMWATER MANAGEMENT AREA**

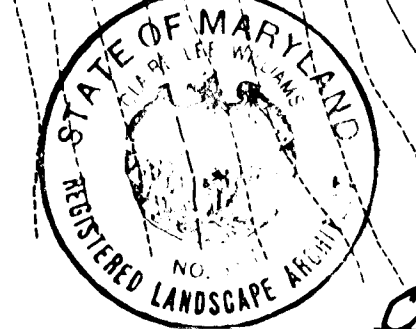
Perimeter	P7	P8	P9	P10	P11	P12
Linear feet of Perimeter	21.36	79.18	146.69	464.01	267.92	222.7
Number of Trees Required	0	1	3	9	11	4
Number of Trees Provided	0	1	2	0	4	4
Credit for Existing Vegetation (No. Yes and %)	NO	YES 100%	YES 66%	YES 100%	NO	NO
Credit for Other Landscaping (No. Yes and %)	NO	NO	NO	NO	NO	NO
Number of Trees Provided (Other Trees (2' Substitution))	0	1	2	0	4	4



**Revisions**

LDE	Date	Description
8/98		REVISE HOLE TO LOCATION
4/97		REVISE LOT LINES, NOTES & EXISTING DRAIN LAYOUT, AND NOTES ON 2' x 10' PLANTING HOLE, SHADERS & CONES.

Notes: 1) This plan has been prepared in accordance with the provisions of section 16.12 of the Howard County Code and the Landscape Manual. Financial security for the required Landscaping has been posted as part of the DPW developers agreement in the amount of \$14,700.00.



Claire L. Williams

**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.

**Bruce D. Burton** 5/22/95  
Signature of Engineer Date

**DEVELOPER'S CERTIFICATE**

I/we certify that all development and construction will be done according to this plan and that any responsible personnel involved in the construction project will have a certificate of Attendance of a 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 Howard Soil Conservation District.

**W. J. M.** 3/21/94  
Signature of Developer Date

APPROVED Department of Public Works for Storm Drainage Systems and Roads

**Robert W. Ziehm** 5/30/95  
Chief, Land Development Division Date

APPROVED Department of Planning and Zoning

**Robert W. Ziehm** 5/30/95  
Chief, Bureau of Engineering Date

APPROVED Department of Planning and Zoning

**Robert W. Ziehm** 5/30/95  
Chief, Bureau of Engineering Date

**LAND DESIGN ENGINEERING, INC.**

8835 Columbia 100 Parkway, Unit N, Columbia, MD 21045  
(410) 715-1070 (Baltimore) (301) 596-3424 (Washington) (410) 715-0681 (Fax)

DESIGNED: CLW  
DRAWN: CA  
CHECKED: CLW  
DATE: 12/94

**LANDSCAPE PLAN**  
**LYNDWOOD MANOR**  
**SECTION THREE AREA ONE**  
Tax Map 37 Part of Parcel 443, 38, 640  
1st Election District Howard County, MD.

SCALE: 1"=50'  
DRAWING: 11 of 11  
SHEET NO: 92-176-6  
FILE NO: F94-95

1708