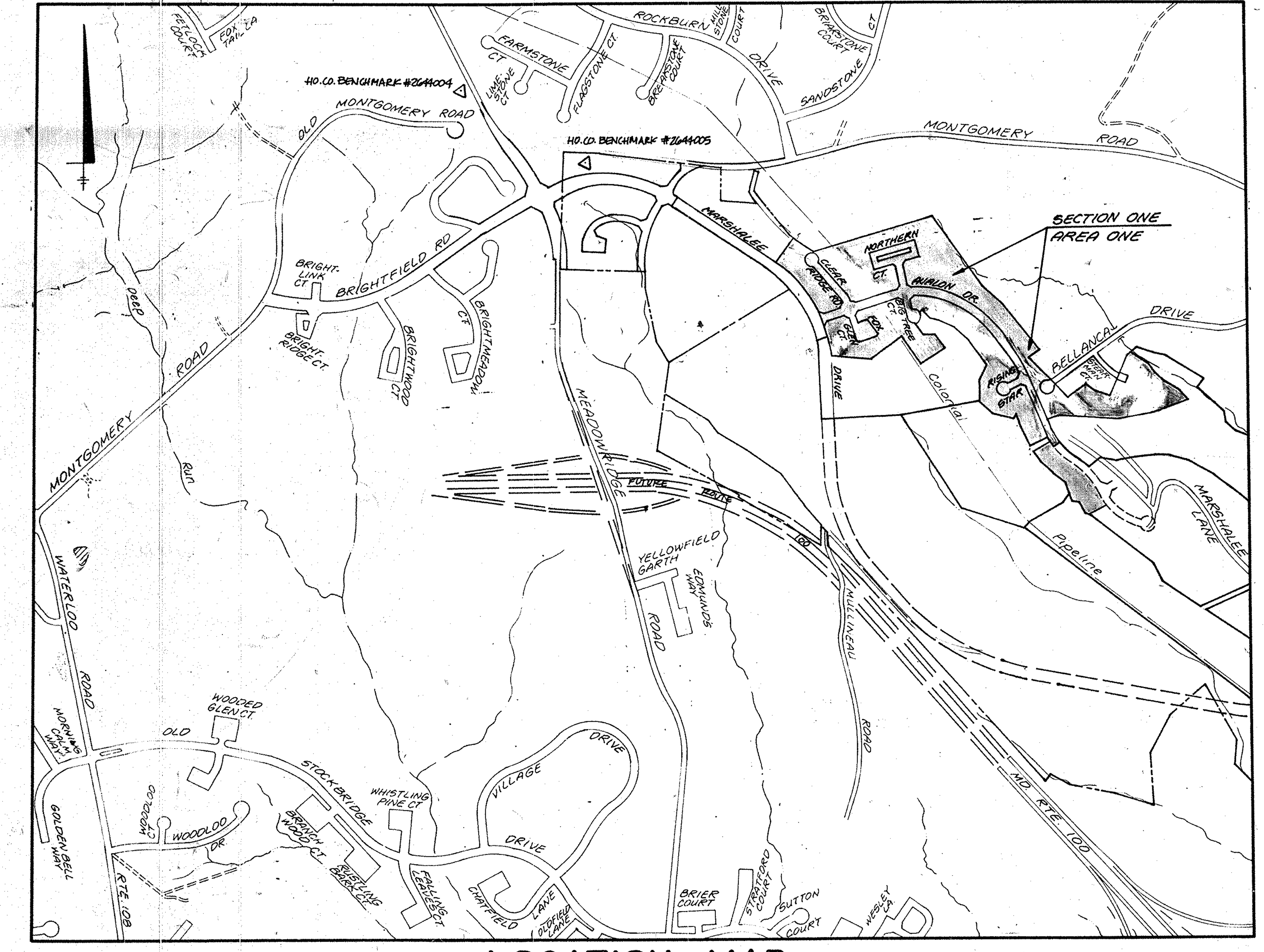
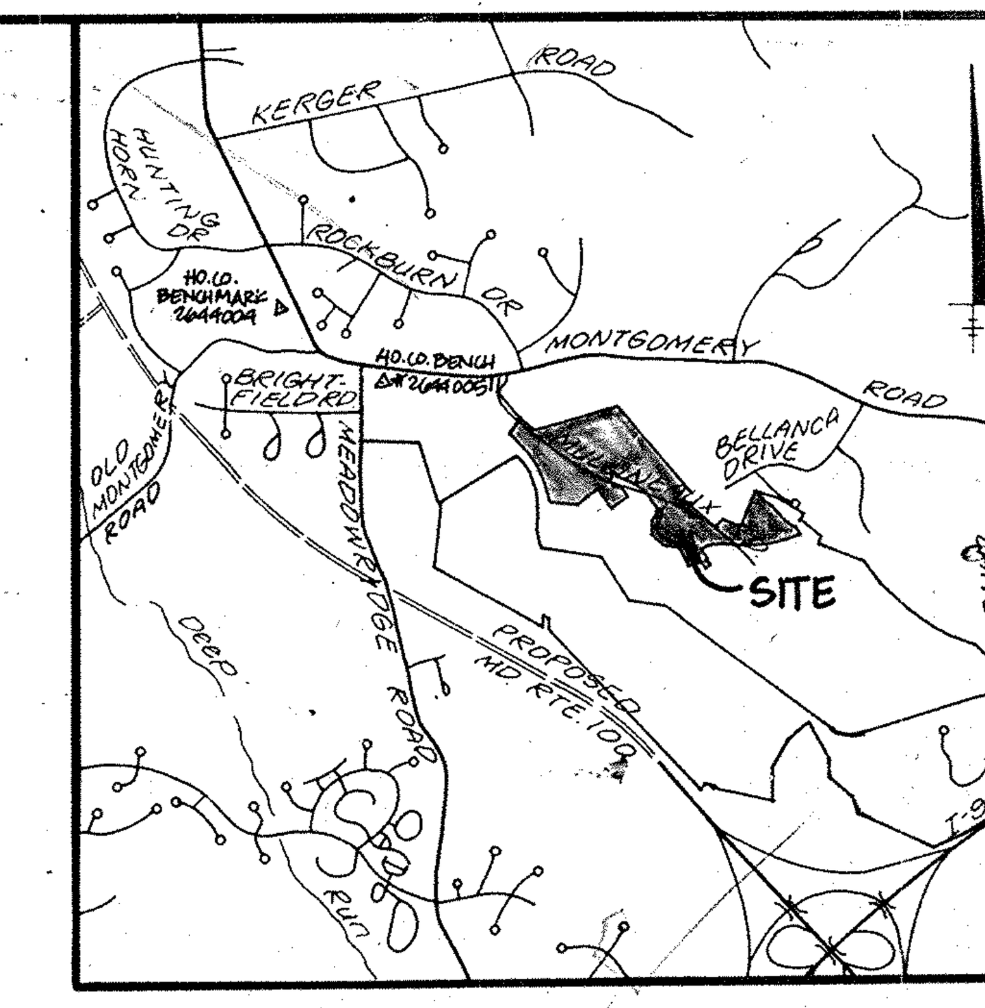
INDEX OF SHEETS



LOCATION MAP
Scale: 1" = 600'

BENCHMARK

Ho. Co. Mon. # 2644004 El. 402.135
Ho. Co. Mon. # 2644005 El. 416.981
Description
Ho. Co. MON. # 2644005 El. 416.981
Concrete monumento 2' Below Surface south side montgomery Road east of meadow Ridge Road
Ho. Co. mon. # 2644004 El. 402.135
Concrete monument 0.1' Below Surface SW corner of Intersection Route 103 and Old montgomery Road.



VICINITY MAP
Scale: 1" = 2,000'

NOTES:

1. All construction shall be in accordance with the latest standards and specifications of Howard County. Volume IV
2. The contractor shall notify the Department of Public Works/Bureau of Construction Inspection division at (301) 313-1880, at least 24 hours prior to the start of work.
3. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least forty-eight (48) hours prior to any excavation work.
4. Project Background:
   Location: Elkridge, Tax Map: 37, Parcels: 38,P/O 80,529,542,640,643
   Zoning: RSC (Residential: Single Cluster)
   ZB/BA Ref: ZB 877 R & M, PB 284, RES 188
   Election District: 1st
   Section/Area: One/One
   Total Tract Area: 150.43 Ac. plus/minus
   Section/Area: 150.43 Ac. plus/minus
   Number of Proposed Lots: 119 (20 SFA, 85 SFD, 14 OS)
   Number of Proposed Parcels: 1 Buildable
   Previous Submittals: WP91-33, F91-125, S93-02, P93-11,SDP93-75, SDP93-105
5. 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 asphalt.
6. Light poles and fixtures for street lights shall be in accordance with the latest Howard County Design Manual, Volume III, Roads and Bridges.
7. Storm drain trenches within the public road right-of-way shall be backfilled and compacted in accordance with the Howard County Standard Specifications and Details - Design Manual Volume IV.
8. Any damage to existing public right-of-way, existing paving, existing curb and gutter, existing utilities, etc. shall be corrected at the contractors expense.
9. 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 contractors information and convenience. The contractor shall locate existing utilities to his own satisfaction and well in advance of any construction activities. Additionally, the contractor shall take all necessary precautions to protect all existing utilities and maintain uninterrupted service.
10. The topography shown hereon is compiled from photogrammetric aerial survey, supplemented with field run data prepared by Land Design Engineering, Inc. June, 1992.
11. 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).
12. Public water and public sewer are available to the site by means of extensions.
    Water: Contract No. 14-3334-D
    Sewer: Contract No. 14-3334-D
13. Temporary stormwater management is provided by detention. Permanent stormwater management is by retention & detention, Privately owned and maintained.
14. Wetlands delineation by Exploration Research, Inc. dated 1992, approved by U.S.A.C.E. June, 1992.
15. Noise study compiled by Land Design Engineering, Inc. approved 12/31/92 P-93-11
16. Floodplain analyzed by Land Design Engineering, Inc. February, 1993 based on field run data from 1992 and 1993 (P93-11).
17. Traffic study compiled by Lee Cunningham & Associates, Inc. dated November, 1992 as part of S93-02 approval.
18. Geotechnical report compiled by Geo-Technology Associates, Inc. dated December 30, 1992 and May 3, 1993, as part of P93-11 and SDP 93-105. and Hillis Carnes dated 1/18/94 and 1/19/94.
19. Water quality is provided in SWM Facilities. Uncontrolled areas are managed by dry wells see Sheet 7.
20. 401 Permit # RP91-00469-7 exp. 8/1/95
    WQ Permit # 92-WQ-0313 exp. 10/1/94
21. Waiver Petition WP 93-29 for roads to exceed 1200' section 16.113(c)(10) approved 12-23-92. Waiver request WP 93-86 to waive section 16.115 B2 to provide 20' minimum frontage for lot areas under 40,000 square feet; waive section 16.115B to front lots on a public or private road not exceeding 200' section 16.115C, that no more than 2 pipestem lots may have adjoining driveways; section 16.116C, grading adjacent to wetlands shall not be permitted, approved March 18, 1993. Waiver Petition WP91-33 section 16.119(A) approved Nov. 19, 1990 to waive sketch plan procedures, Section 16.121 (a)(1) Road improve-

21. (cont.) -ments at Route 103 and meadowridge Road, Waiver Petition WP 92-143 to waive section 16.113 (c)(3) Stearman Court around denied March 26 1992
22. Water quality for uncontrolled runoff is required to be examined for applicability during site development plan stage.
23. 95% compaction in all fill areas shall be determined as per AASHTO-180
24. Sidewalks and sidewalk ramps shall be in accordance with current ADA requirements.

25. WP 94-118 To waive Section 16.123(a)(2) to permit grading to be performed under valid permit without an approved site development plan and 16.155(9)(2) to permit the issuance of a grading permit prior to the approval of a site development plan for residential development, denied July 28, 1994.
26. WP 94-110 To waive Section 16.119 (f)(2) to permit a shared residential driveway that will serve two existing SFD dwellings on Parcels 32 and 33 to have direct access to a minor arterial highway (Marshalee Drive) for a limited duration, denied August 17, 1994.
27. Sheets 1-6 of these plans reflect resubdivision F-96-57. The revised lot lines and lot numbers apply to all sheets of this plan.

ROAD & STORM DRAIN CONSTRUCTION PLANS

LYNDWOOD MANOR

SECTION ONE AREA ONE

1st ELECTION DISTRICT HOWARD COUNTY, MARYLAND

NOTE: 1/8/16 - CAPITAL PROJECT D-1160 REVISED THE CONCRETE CONTROL STRUCTURE IN SWM POND #2 TO MEET CURRENT STANDARDS BY RAISING THE WEIR ELEVATION AND TOP OF STRUCTURE AND RAISING THE INLET PIPE TO ACCOMODATE WATER QUALITY STORAGE. THERE WAS ALSO MINOR REGRADING

BY	REVISIONS	DATE
HOCO	ADD CIP PROJ. REV. NOTE	1/8/16
LDE	AMEND "INDEX OF SHEETS", RENUMBER TITLE BLOCK	4/97
LDE	Added note "27" & Revised Lot Nos. in title Block	2-12-96

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 begining the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Signature of Developer — 9/18/97 — Date

ENGINEER'S CERTIFICATE

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature of Engineer — Date

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

U.S. Soil Conservation Service — Date

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

Howard Soil Conservation District — Date

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

Chief, Land Development Division — 9/22/94 — Date

Chief, Bureau of Engineering — 9/22/94 — Date

Chief, Bureau of Highways — 9-15-94 — Date

APPROVED: Department of Planning and Zoning

Chief, Division of Land Development and Research — 9/23/94 — Date

STATE OF MARYLAND — 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	TITLE SHEET LYNDWOOD MANOR SECTION ONE AREA ONE Lots: 64, 89, 105-114, 121-123, 141-163, 178, 273-336 ~~LOT 58 THRU LOT 181~~ Tax Map 37 Part of Parcels 643, 38, 640 1st Election District Howard County, MD. Previous Submittals: ZB877 R&M, WP91-33, F91-125, SDP93-75, RES 188, S93-02, PB284, P93-11, SDP 93-105	Scale: As Shown
Drawn: WJ		Drawing 1 of 28
Checked: RM		Job No. 92-176.4
Date: 7/94	Owner / Developer 100 INVESTMENT LIMITED PARTNERSHIP 8835-P Columbia 100 Parkway Columbia Maryland 21045 (410)730-0810	File No. F94-29

F-94-29

1708

LOCATION

Road Station Avalon Drive 2+77 23'LT

Road Station Avalon Drive 6+96 23'LT

LIGHTING LEGEND

100 Watt High Pressure Sodium Vapor Traditionaire Post Top Fixture mounted on a 14' Black Fiberglass embedded Pole.

Note:
1) Elevation for Colonial Pipelines established during test pitting 7-15-93 by LDE and Colonial Pipeline.
2) For Street Tree Locations See Sheet 23 & 24
3) For Storm Drain Profiles and Structure Schedule See Sheets 8, 9
4) see sheet 7 of 28 for street light and street sign location table.
5) All street trees and/or street signs shall be located 5' min. from proposed drainage and utility structures.
6) There should be a minimum of 20' between street lights and street trees.

CENTERLINE CURVE DATA

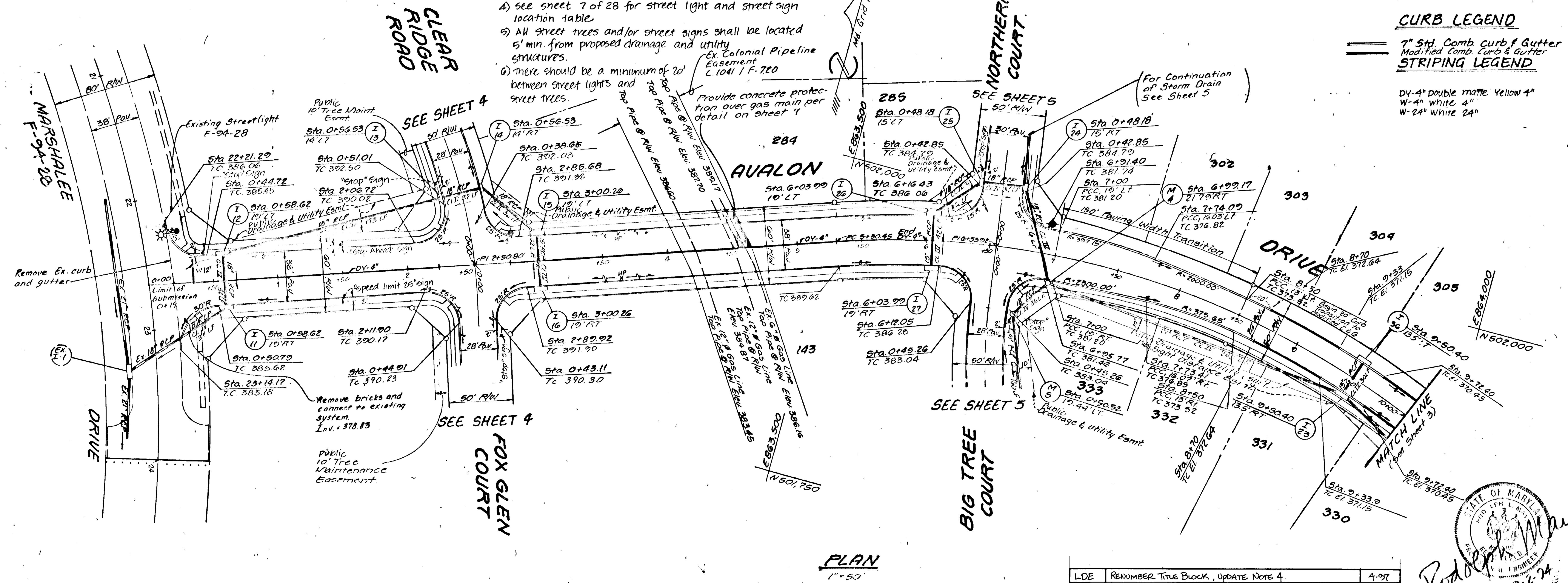
NAME AND STATION	RADIUS	DELTA	ARC	TAN	CHORD	BEARING
AVALON DRIVE 5+30.45 TO 13+48.68	650.00'	72°07'31"	818.23'	473.34'	765.27'	S72°56'18"E

CURB LEGEND

7" Std. Comb. Curb & Gutter
Modified Comb. Curb & Gutter

STRIPING LEGEND

DY-4" Double matte Yellow 4"
W-4" White 4"
W-24" White 24"



NOISE BERM SCHEDULE

ROAD	STATION	OFFSET	TOP WIDTH	ELEV.
BERM 3				
MARSHALEE DRIVE	17+95	90' LT	2'	406
MARSHALEE DRIVE	18+38	75' LT	2'	406
MARSHALEE DRIVE	18+83	65' LT	2'	404
MARSHALEE DRIVE	18+91	69' LT	2'	403
MARSHALEE DRIVE	20+14	71' LT	2'	403
MARSHALEE DRIVE	20+84	70' LT	2'	403
MARSHALEE DRIVE	21+96	90' LT	2'	403
MARSHALEE DRIVE	22+17	192' LT	2'	402
BERM 4				
MARSHALEE DRIVE	23+20	98' LT	2'	392.5
MARSHALEE DRIVE	23+71	93' LT	2'	392.5
MARSHALEE DRIVE	24+31	71' LT	2'	387

APPROVED: Department of Planning and Zoning.

Chief, Division of Land Development and Research — 9/23/94 Date

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

Chief Land Development Division — 9/22/94 Date

Chief, Bureau of Engineering — 9/22/94 Date

Chief, Bureau of Highways — 9-15-94 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
TO	ROAD CONSTRUCTION PLANS AVALON DRIVE	As Shown
DRAWN	LYNDWOOD MANOR	DRAWING
WJ	SECTION ONE AREA ONE	2 of 28
CHECKED		JOB NO.
RM		92-176.4
DATE		FILE NO.
7/94	S93-02, P93-11	F94-29

BY	REVISION	DATE
LDE	Renumber Title Block, Update Note 4.	4-97
LDE	Revise Number of Lots & Lot Numbers	2-12-96
LDE	Revised C & G from Standard to Modified along Avalon Dr	8-15-95

VERTICAL CURVE DATA

LVC = 400'
SSD = 267'
e = 3.24

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

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

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

1708

F-94-29

BY	REVISION	DATE
L.D.E	Revised C&G from Std. to Modified along Avalon Dr.	8-15-95
L.O.E.	Revise Number of Lots & Lot Numbers	2-12-96
L.D.E	Revised Storm Drain & Add Pond #2	4-97

APPROVED: Department of Planning and Zoning.

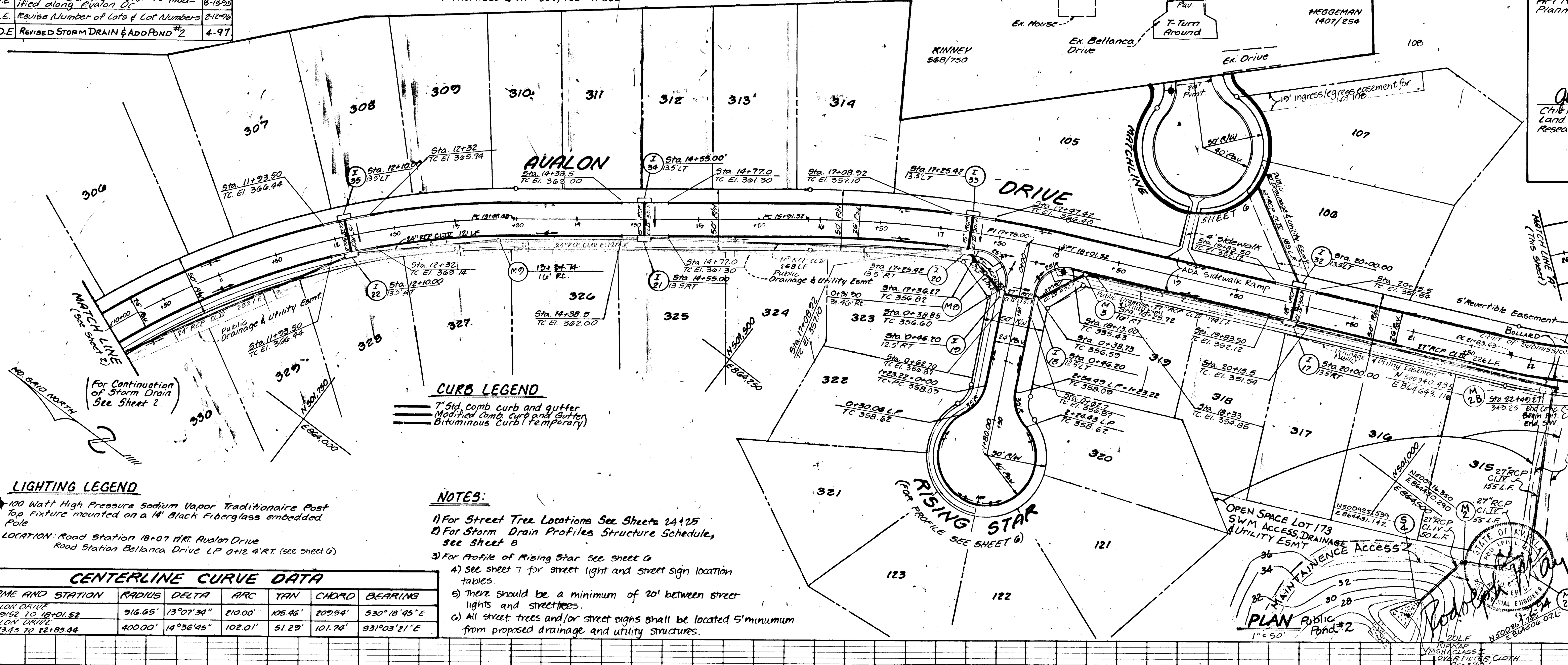
Jim Irvin [signature] 9/23/94
Chief, Division of Land Development and Research — Date

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

[signature] 9/22/94
Chief, Land Development Division — Date

C. E. Walton acting 9/22/94
Chief, Bureau of Engineering — Date

Andrew M. Daniels 9-15-94
Chief, Bureau of Highways — Date



CURB LEGEND

- 7" Std. comb. curb and gutter
- Modified Comb. Curb and Gutter
- Bituminous Curb (temporary)

LIGHTING LEGEND

- 100 Watt High Pressure Sodium Vapor Traditionaire Post Top Fixture mounted on a 14' Black Fiberglass embedded Pole.

LOCATION: Road Station 18+07 17'RT. Avalon Drive
Road Station Bellanca Drive LP 0+12 4'RT. (see sheet 6)

NOTES:

1) For Street Tree Locations See Sheets 24 & 25
2) For Storm Drain Profiles Structure Schedule, See Sheet 8
3) For Profile of Rising Star see sheet 6
4) See sheet 7 for street light and street sign location tables.
5) There should be a minimum of 20' between street lights and streettrees.
6) All street trees and/or street signs shall be located 5' minumum from proposed drainage and utility structures.

CENTERLINE CURVE DATA

NAME AND STATION	RADIUS	DELTA	ARC	TAN	CHORD	BEARING
AVALON DRIVE 15+91.52 TO 18+01.52	916.65'	13°07'34"	210.00'	105.46'	209.54'	S30°18'45"E
AVALON DRIVE 21+83.43 TO 22+85.44	400.00'	14°36'45"	102.01'	51.29'	101.74'	S31°03'21"E

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 AVALON DRIVE & RISING STAR LYNDWOOD MANOR SECTION ONE, AREA ONE	SCALE: As Shown
DRAWN: WJ		DRAWING: 3 of 28
CHECKED: RM	S93-02, P93-11	JOB NO. 92-176.4
DATE: 7/94	Owner/Developer 100 INVESTMENT LIMITED PARTNERSHIP 8835-P Columbia 100 Parkway Columbia Maryland 21045 (410) 730-0810	FILE NO. F94-29

VERTICAL CURVE DATA

PVI Sta. = 20+85
PVI Elev. = 360.19
LVC = 100'
SSD = 210'
K = 30

1708

F-94-29

CENTERLINE CURVE DATA

NAME AND PC TO PT	RADIUS	DELTA	ARC	TAN	CHORD	BEARING
CLEAR RIDGE ROAD 0+00 TO 1+40.20	420.00	19°07'33"	140.20	70.76	139.55	N31°26'51"W
FOX GLEN COURT 0+00 TO 0+30.84	420.00	04°12'26"	30.84	15.43	30.83	S19°46'51"E

LIGHTING LEGEND

100 Watt High Pressure Sodium Vapor Traditionaire Post Top Fixture mounted on a 14' Black Fiberglass embedded Pole.

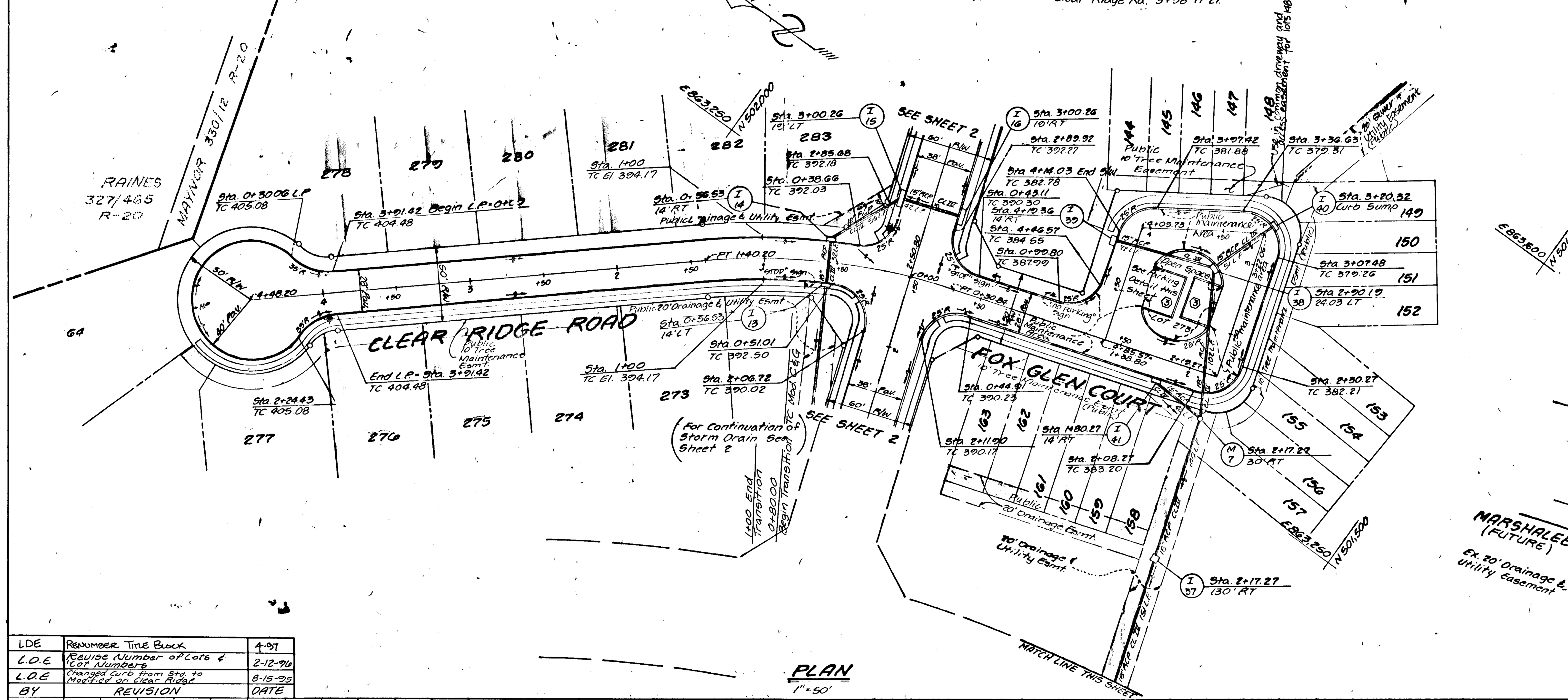
LOCATION: Road Station Avalon Drive 2+77 23' LT.
Clear Ridge Rd. 3+98 17' LT.

CURB LEGEND

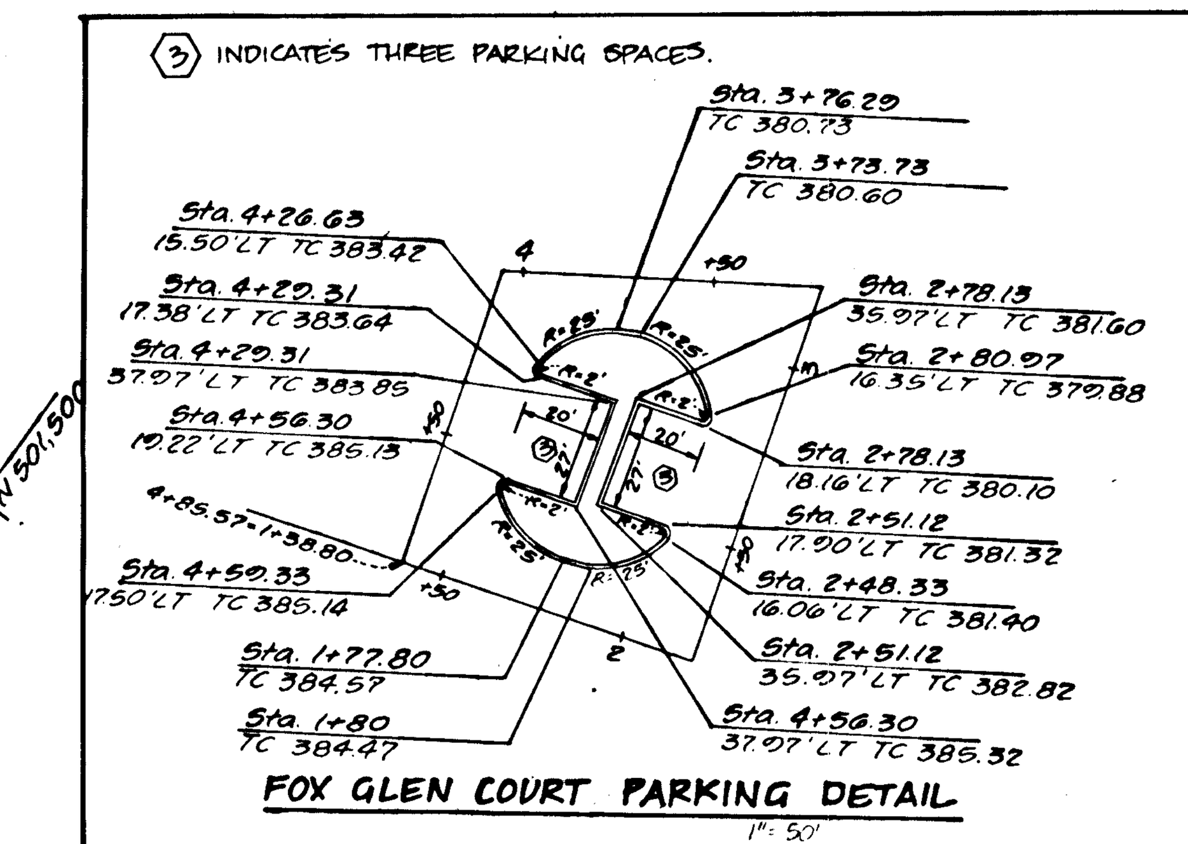
7" Std. Comb. Curb and Gutter
Modified Comb. Curb & Gutter

NOTES:

1) For Street Tree Locations, See Sheet 23
2) For Storm Drain Profiles and Structure Schedule See Sheet 8 & 9
3) All street trees and/or street signs shall be located 5' minimum from proposed drainage and utility structures.
4) See sheet 7 for street light and street sign location table.
5) There should be a minimum of 20' between street lights and street trees.



PLAN
1"=50'



FOX GLEN COURT PARKING DETAIL
1"=50'

BY	REVISION	DATE
LDE	Renumber Title Block	4-97
L.O.E	Revise Number of Lots & Lot Numbers	2-12-96
L.O.E	Changed Curb from Std. to Modified on Clear Ridge	8-15-95

APPROVED: Department of Planning and Zoning.
Chief, Division of Land Development and Research — 9/23/94 Date

APPROVED: Department of Public Works for Storm Drainage Systems and Roads.
Chief, Land Development Division — 8/22/94 Date
Chief, Bureau of Engineering — 9/22/94 Date
Chief, Bureau of Highways — 9-15-94 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	ROAD CONSTRUCTION PLANS	SCALE
TD	CLEAR RIDGE ROAD & FOX GLEN COURT	As Shown
DRAWN	LYNWOOD MANOR	DRAWING
WJ	SECTION ONE AREA ONE	4 of 28
CHECKED		JOB NO.
RM	S93-02, P93-11	92-176.4
DATE	Owner / Developer: 100 INVESTMENT LIMITED PARTNERSHIP, 8835-P Columbia 100 Parkway, Columbia Maryland 21045 (410)730-0810	FILE NO.
7/94		F94-29

PLAN AND PROFILE

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

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F-94-29

CENTERLINE CURVE DATA

NAME AND STATION	RADIUS	DELTA	ARC	TAN	CHORD	BEARING
NORTHERN COURT 1+03.32 TO 2+10.87	800.00'	8°10'07"	116.15'	58.18'	116.05'	N12°16'37"W
BIG TREE COURT 0+98.26 TO 1+08.26	400.00'	8°35'40"	60.00'	30.06'	59.94'	S12°04'53"E
BIG TREE COURT 1+08.97 TO 1+78.71	109.22'	35°32'15"	67.74'	35.00'	66.66'	S34°28'51"E
NORTHERN COURT 0+82.50 TO 2+00.31	37.50'	180°00'00"	117.81'	—	75.00'	N16°26'11"W
NORTHERN COURT 4+10.31 TO 5+28.12	37.50'	180°00'00"	117.81'	—	75.00'	S16°26'11"E

LIGHTING LEGEND

100 Watt High Pressure Sodium Vapor Traditionaire Post Top Fixture mounted on a 14' Black Fiberglass embedded Pole.

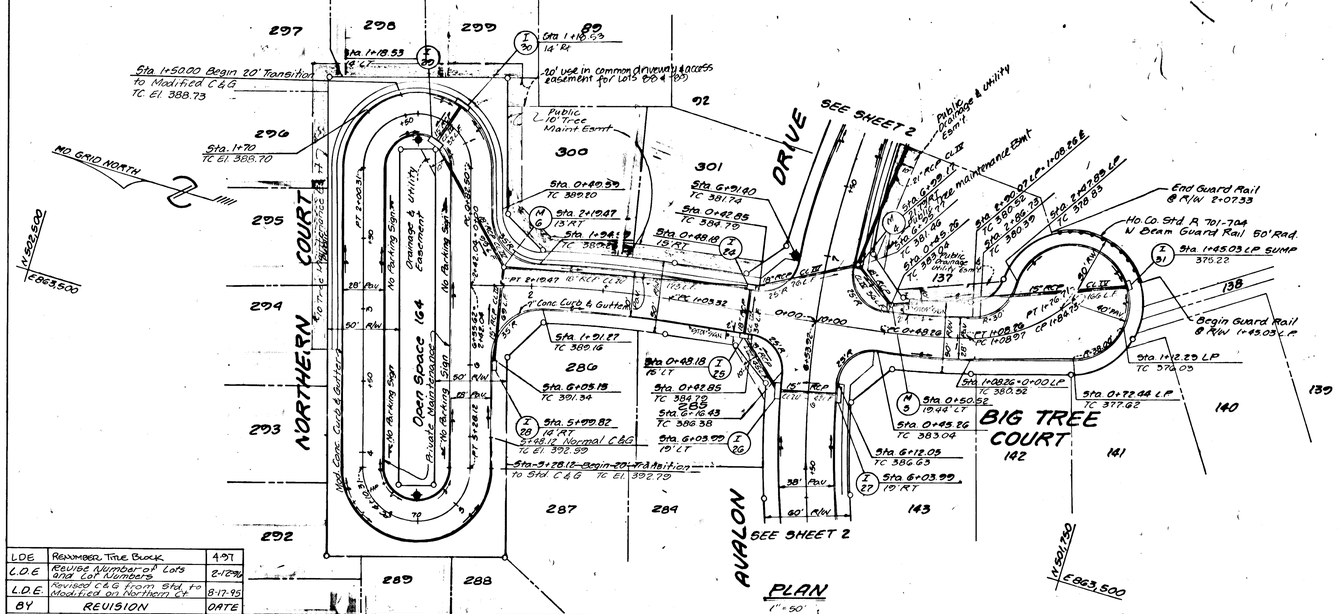
LOCATION: Road Station Avalon Drive 6+04 23' LT
Road Station Northern Court LP 1+43 17' LT
Road Station Northern Court LP 4+70 17' LT

CURB LEGEND

7" Std Comb. Curb and Gutter
Modified Comb. Curb & Gutter

NOTES:

1) For Street Tree Locations, See Sheet 2A
2) For Storm Drain Profiles and Structure Schedule See Sheet 8 & 9
3) See Sheet 7 for street light and street sign location tables
4) All street trees and/or street signs shall be located 5' minimum from proposed drainage and utility structures.
5) There should be 20' minimum between street lights and street trees.



BY	REVISION	DATE
LDE	Renumber Title Block	4-97
L.D.E	Revise Number of Lots and Lot Numbers	2-1-96
L.D.E	Revised C&G from Std. to Modified on Northern Ct	8-17-95

PLAN — SURVEYED, PLOTTED, COMPUTATIONS CHECKED, NOTE BOOK, ATTORNEY CHECKED, No., BY, DATE, RE. OF PLAT CHECKED

APPROVED: Department of Planning and Zoning

Chief, Division of Land Development and Research — 9/23/94 Date

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

Chief, Land Development Division — 9/20/94 Date

C. E. Cable acting — 9/22/94
Chief, Bureau of Engineering Date

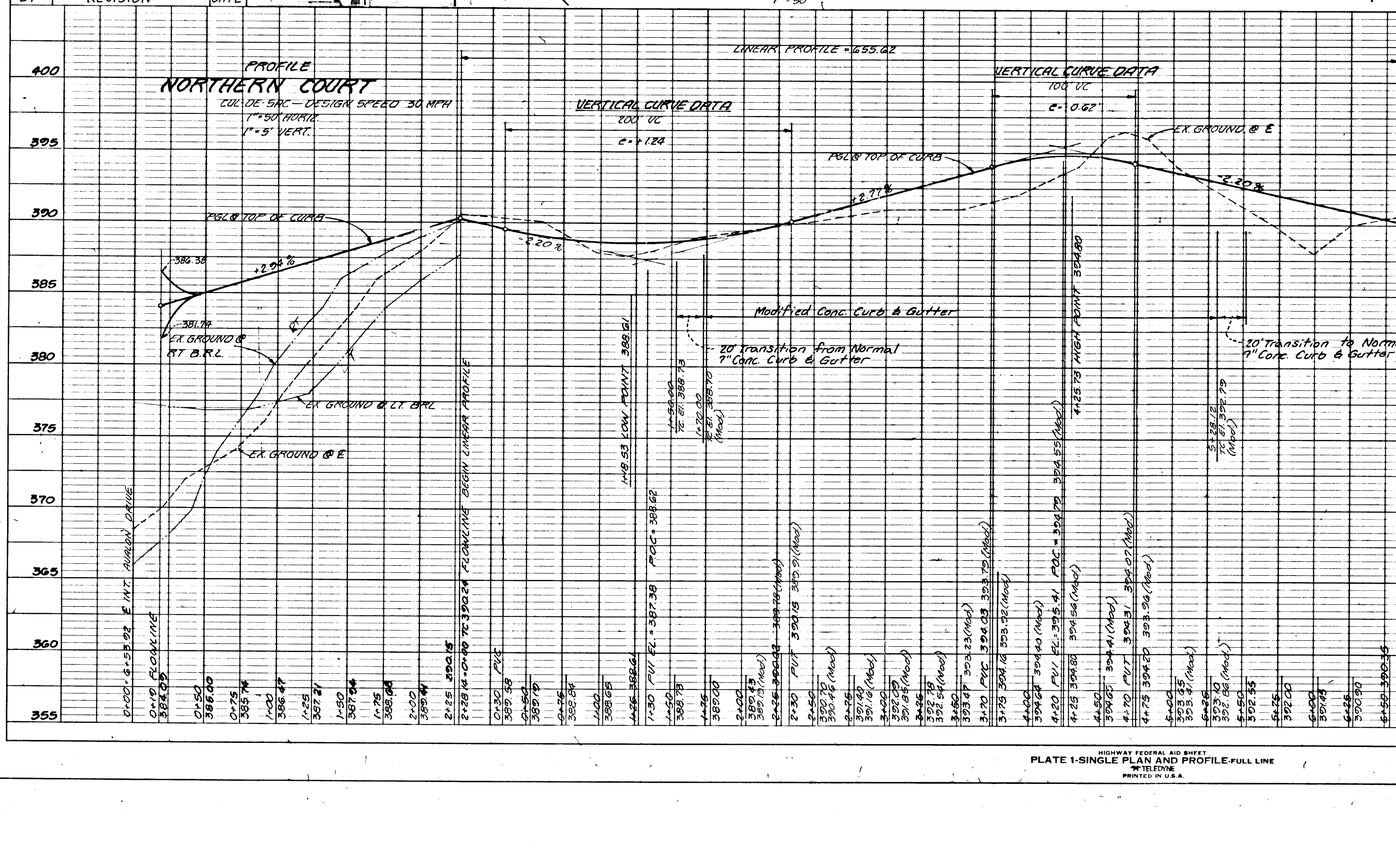
Andrew M. Downs — 9-15-94
Chief, Bureau of Highways Date

STATE OF MARYLAND — ROBERT T. MAY — PROFESSIONAL ENGINEER
9-2-94

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 NORTHERN COURT & BIG TREE COURT LYNDWOOD MANOR SECTION ONE AREA ONE	SCALE As Shown
DRAWN WJ		DRAWING 5 of 28
CHECKED RM	S 93-02, P 93-11	JOB NO. 92-170.A
DATE 7/94	Owner / Developer: 100 INVESTMENT LIMITED PARTNERSHIP 8835-P Columbia 100 Parkway Columbia Maryland 21045 (410) 730-0810	FILE NO. FDA-29

PROFILE — SURVEYED, PLOTTED, COMPUTATIONS CHECKED, NOTE BOOK, E.M.I. NOTED, No., STRUCTURE NOTATIONS CHECKED, BY, DATE



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HIGHWAY FEDERAL AID SHEET
PLATE 1-SINGLE PLAN AND PROFILE-FULL LINE
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PROFILE 1" = 50' HORIZ. 1" = 5' VERT.

F-94-29

CENTERLINE CURVE DATA

NAME AND STATION	RADIUS	DELTA	ARC	TAN	CHORD	BEARING
BELLANCA DRIVE 23+06.99 TO 23+85.42	445.95'	10°04'36"	78.43'	39.32	78.33'	S50°10'55"W
STEARMAN COURT 1+26 TC 2+43.63	200.00'	33°41'51"	117.63'	60.57'	115.94'	S51°37'42"E

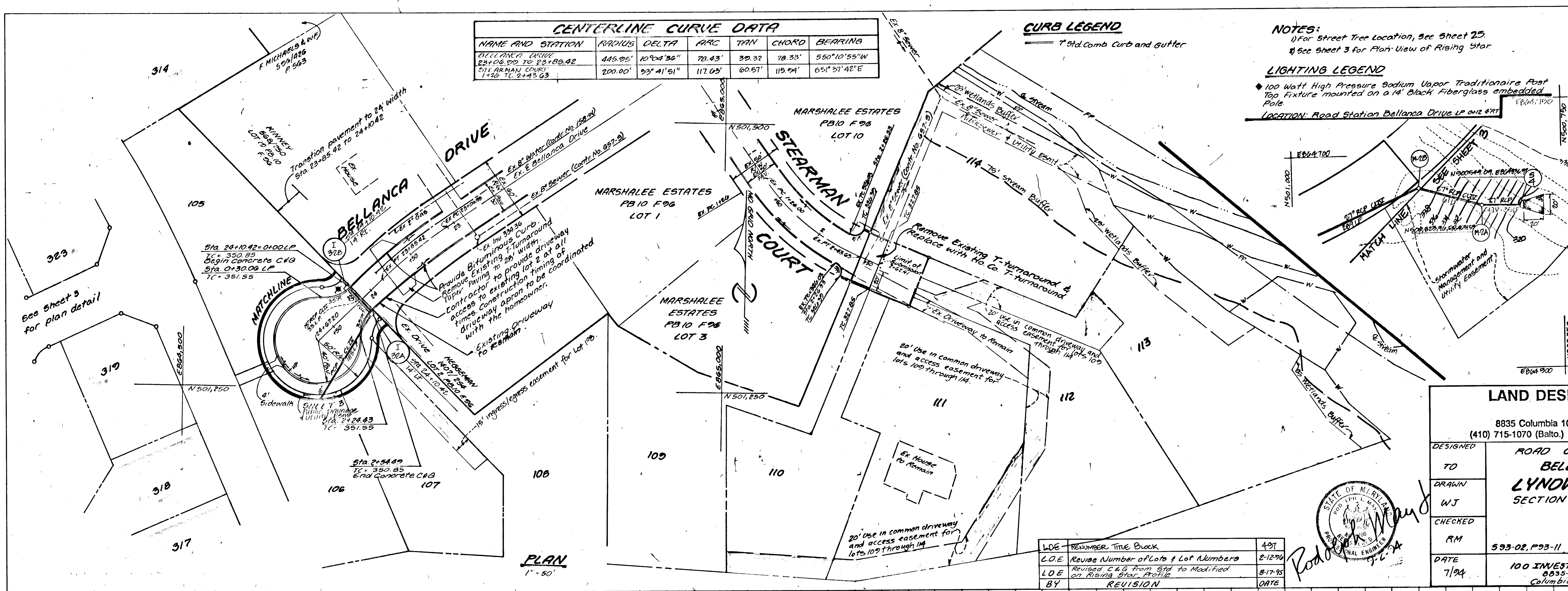
CURB LEGEND

7" Std. Comb. Curb and Gutter

NOTES:
1) For Street Tree Location, See Sheet 25.
2) See Sheet 3 for Plan View of Rising Star

LIGHTING LEGEND

◆ 100 Watt High Pressure Sodium Vapor Traditionaire Post Top Fixture mounted on a 14' Black Fiberglass embedded Pole.
LOCATION: Road Station Bellanca Drive LP 0+12 4'RT



LDE	RENUMBER TITLE BLOCK	4/97	
L.D.E.	Revise Number of Lots & Lot Numbers	2-12-96	
LDE	Revised C&G from Std. to Modified on Rising Star Profile	8-17-95	
BY	REVISION	DATE	

APPROVED: Department of planning and zoning

Gina Zimmerman 9/23/94
Chief, Division of Land Development and Research — Date

APPROVED: Department of Public works for storm Drainage systems and Roads

9/22/94
Chief, Land Development Division — Date

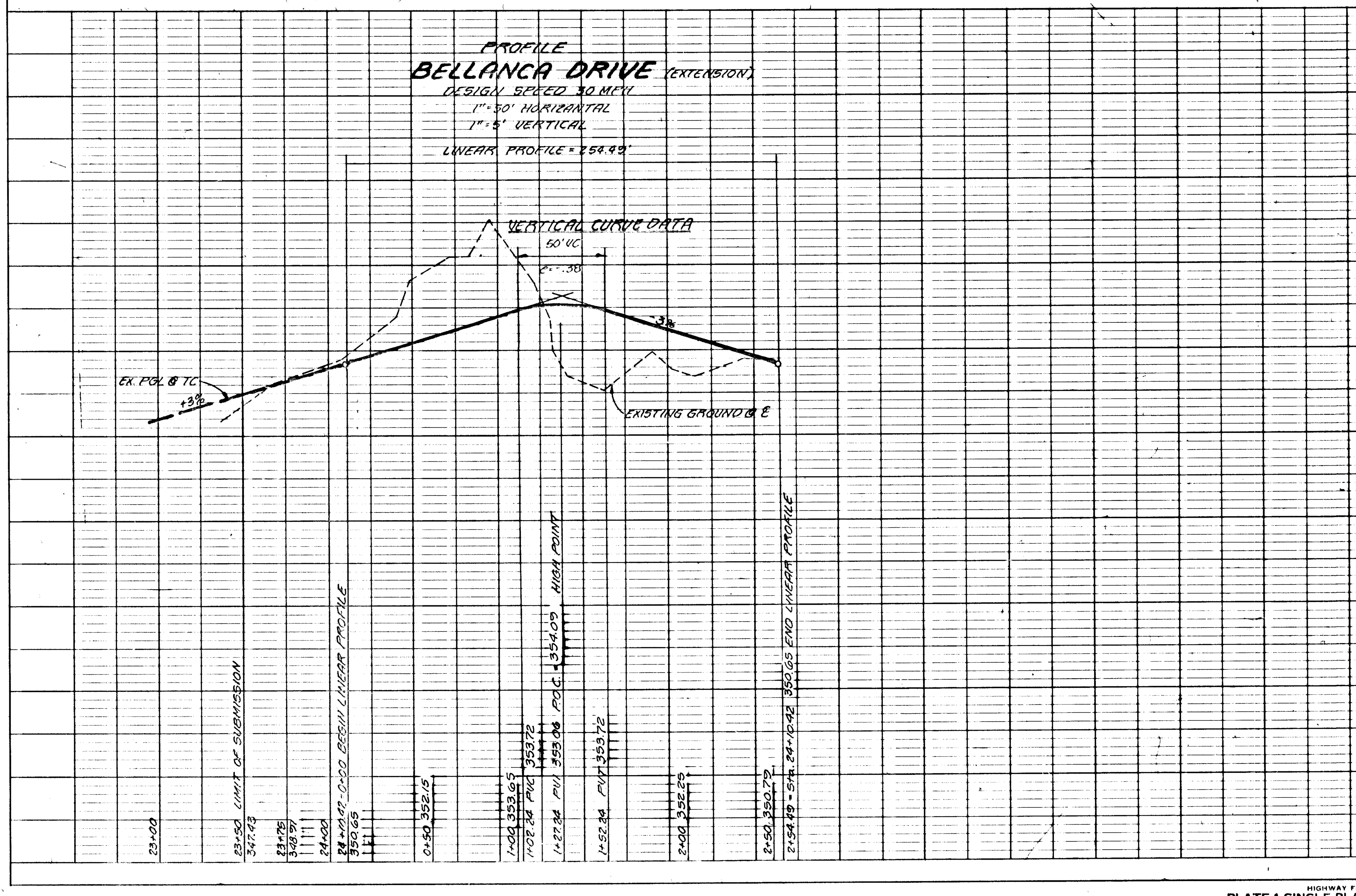
C. E. Zalts, acting 9/22/94
Chief, Bureau of Engineering — Date

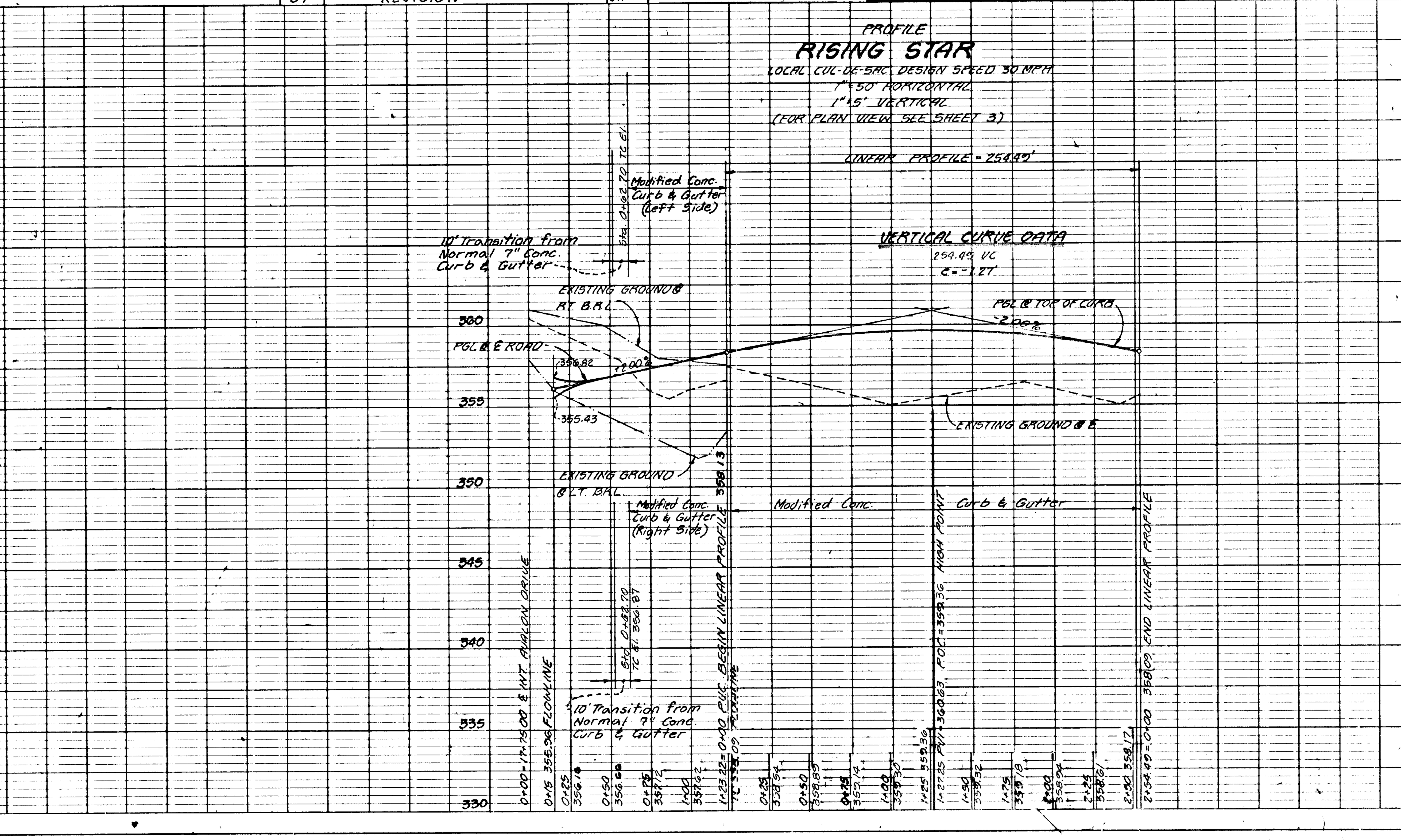
Andrew M. Dunker 9-15-94
Chief, Bureau of Highways — Date

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 TO	ROAD CONSTRUCTION PLANS **BELLANCA DRIVE** **LYNOWOOD MANOR** SECTION ONE AREA ONE	SCALE As Shown
DRAWN WJ		DRAWING 6 of 28
CHECKED RM	S93-02, P93-11	JOB No. 92-176.4
DATE 7/94	Owner / Developer 100 INVESTMENT LIMITED PARTNERSHIP 8835-P Columbia 100 Parkway Columbia Maryland 21045 (410) 730-0810	FILE No. F94-29

STATE OF MARYLAND — RODOLPH L. MAY — REGISTERED PROFESSIONAL ENGINEER
Rodolph L. May 9-6-94





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

1708

F-94-29

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	PAVEMENT MATERIALS: FULL DEPTH BIT. CONC. ALTERNATE	PAVEMENT MATERIALS: GRANULAR BASE ALTERNATES
P-1	TRAFFIC WAYS: ARTERIALS AND COMMERCIAL & INDUSTRIAL ZONES WITH NO HEAVY TRUCKS. TRAVEL WAYS FOR APARTMENTS AND COMMERCIAL & INDUSTRIAL ZONES WITH NO HEAVY TRUCKS.	1" BIT. CONC. SURFACE; 4" BIT. CONC. BASE; PRIME; 5" CRUSHER RUN BASE COURSE OR 4" DENSE GRADED STABILIZED WITH AN APPROVED BASE COURSE	1 1/2" BIT. CONC. SURFACE; 2 1/2" BIT. CONC. BASE; PRIME; 6" CRUSHER RUN BASE COURSE; 12 COURSES OF 6" DENSE GRADED STABILIZED AGGREGATE BASE COURSE
P-2	RESIDENTIAL ZONES: LOCAL, CUL-DE-SAC STS. ALLEYS AND PRIVATE ROADS SERVING INDIVIDUAL LOTS. TRAVEL WAYS: APARTMENTS AND COMMERCIAL & INDUSTRIAL ZONES WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY*	1 1/2" BIT. CONC. SURFACE; 5" BIT. CONC. BASE	1 1/2" BIT. CONC. SURFACE; 2 1/2" BIT. CONC. BASE; PRIME; 6" CRUSHER RUN BASE COURSE; 12 COURSES OF 6" DENSE GRADED STABILIZED AGGREGATE BASE COURSE
P-3	RESIDENTIAL ZONES: MINOR AND MAJOR COLLECTORS. COMMERCIAL & INDUSTRIAL ZONES: LOCAL AND CUL-DE-SAC STREETS. TRAVEL WAYS: APARTMENTS AND COMMERCIAL & INDUSTRIAL ZONES WITH MORE THAN 10 HEAVY TRUCKS PER DAY*	1 1/2" BIT. CONC. SURFACE; 3 1/2" BIT. CONC. BASE	1 1/2" BIT. CONC. SURFACE; 4 1/2" BIT. CONC. BASE; PRIME; 5" BIT. CONC. BASE; PRIME; 6" CRUSHER RUN BASE COURSE
P-4	COMMERCIAL & INDUSTRIAL ZONES: MINOR COLLECTOR	1 1/2" BIT. CONC. SURFACE; 5 1/2" BIT. CONC. BASE	1 1/2" BIT. CONC. SURFACE; 6" BIT. CONC. BASE; PRIME; 6" CRUSHER RUN BASE COURSE OR 4" DENSE GRADED STABILIZED AGGREGATE BASE COURSE

* TRAVEL WAYS ARE DEFINED AS THE PAVEMENT LEADING TO THE PARKING BAYS.
** HEAVY TRUCKS ARE DEFINED AS THOSE WITH 6 WHEELS OR MORE INCLUDING GARBAGE TRUCKS.

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved 9/Carl Balsley 1-10-91
Chief-Bur. of Engr. Date

PAVING SECTIONS P-2 THROUGH P-3

REV. JAN 1998 (P-1 DELETED)
DRAWN BY: R.L.B.
CHECKED BY: G.A.N.
NO SCALE
P-1/3

Note: Micaceous Subgraders Require the use of Either of the Aggregate Base Pavement Section as Shown on the Pavement Section Table

NOTES:
1. A TEMPORARY TURN-AROUND SHALL BE USED ON A DEAD END STREET WHICH IS TO BE EXTENDED IN THE FUTURE.
2. A TEMPORARY CURB SHALL EXTEND AROUND THE TEE TURN-AROUND AT BOTH ENDS AND ADJACENT TO CENTRAL CURB BACKUP FROM THE ROADWAY SECTION.
3. PROVIDE TO STANDARD R-3.06 FOR TYPICAL ROADWAY PAVING AT TEMPORARY LIMIT OF PAVING.
4. PROVIDE RIGHT-OF-WAY EASEMENT FOR CONSTRUCTION.
5. PROVIDE EASEMENTS AS REQUIRED FOR PLACEMENT OF PAVEMENT BARRICADE AND ANY NECESSARY GRADING SEE DETAIL R-3.06 I

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved 9/Carl Balsley 1-10-91
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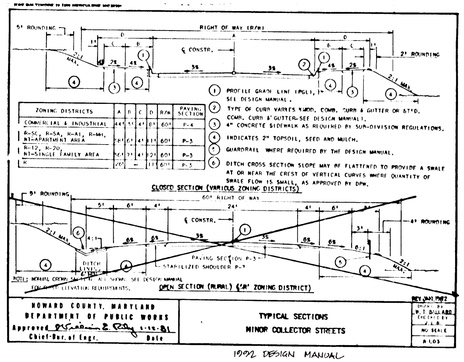
TEMPORARY TEE TURN-AROUND

DRAWN BY: A.D.N.
CHECKED BY: G.A.N.
SCALE: 1/16" = 1'-0"
R-3.06

1992 DESIGN MANUAL



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DEPARTMENT OF PUBLIC WORKS
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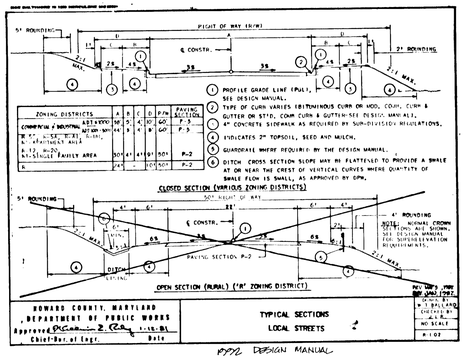
Chief-Bur. of Engr. Date

TYPICAL SECTIONS MINOR COLLECTOR STREETS

REV. JAN 1998 (P-1 DELETED)
DRAWN BY: R.L.B.
CHECKED BY: G.A.N.
NO SCALE
R-1.03

1992 DESIGN MANUAL



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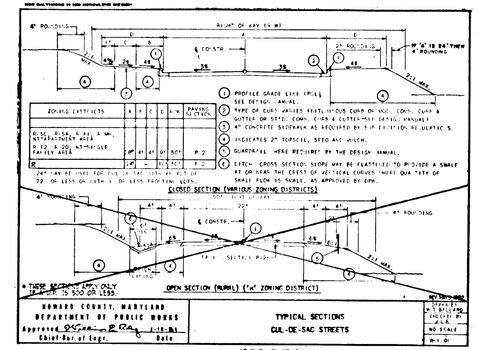
TYPICAL SECTIONS LOCAL STREETS

REV. JAN 1998 (P-1 DELETED)
DRAWN BY: R.L.B.
CHECKED BY: G.A.N.
NO SCALE
R-1.02

1992 DESIGN MANUAL



HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
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Chief-Bur. of Engr. Date

TYPICAL SECTIONS CUL-DE-SAC STREETS

REV. JAN 1998 (P-1 DELETED)
DRAWN BY: R.L.B.
CHECKED BY: G.A.N.
NO SCALE
R-1.01

1992 DESIGN MANUAL

ROAD NAME	STA. TO STA	CLASS	R/W	DES. SPD	P/V SECT.	ZONE	A	B	C	D	DESIGN MANUAL
TWIN OAK DRIVE	0+00 TO 6+59.90	MINOR COLLECTOR	60'	35 MPH	P-3	RSC	38'	6'	4'	11'	1992
TWIN OAK DRIVE	6+59.90 TO 22+85.44	LOCAL	50'	30 MPH	P-2	RSC	26'	5'	4'	10'	1992
NORTHERN COURT	0+00 TO END	CUL-DE-SAC	50'	30 MPH	P-2	RSC	*	*	*	*	1992
FOX GLEN COURT	0+00 TO END	CUL-DE-SAC	50'	30 MPH	P-2	RSC	28'	4'	4'	9'	1992
GLEN ROAD POND	0+00 TO END	CUL-DE-SAC	50'	30 MPH	P-2	RSC	28'	4'	4'	9'	1992
OLD TREE COURT	0+00 TO END	CUL-DE-SAC	50'	30 MPH	P-2	RSC	28'	4'	4'	9'	1992
BELFRANCH DRIVE	23+50 TO END	CUL-DE-SAC	50'	30 MPH	P-2	RSC	28'	4'	4'	9'	1992
RISING STAR	0+00 TO END	CUL-DE-SAC	50'	30 MPH	P-2	RSC	24'	5'	4'	10'	1994

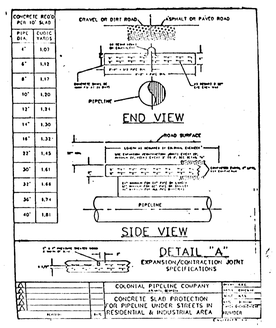
* See Plan View Sheet 5 of 26.

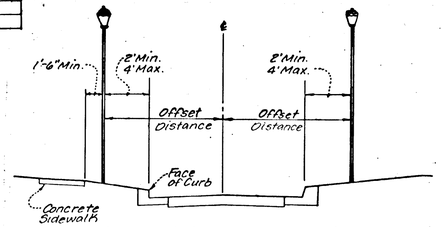
STREET LIGHT LEGEND

ROAD NAME	STA.	LAMP TYPE	POST TYPE	POLE TYPE	OFFSET
AVALON DRIVE	2+77	100 WHPS	Traditionaire Post Top	14' black Fiberglass Pole	23' LT
AVALON DRIVE	6+90	"	"	"	23' LT
AVALON DRIVE	19+07	"	"	"	17' RT
DEAD FURROW	3+08	"	"	"	17' LT
NORTHERN CT	LP 1+43	"	"	"	17' LT
NORTHERN CT	LP 4+70	"	"	"	17' LT
BELLANCA DR	LP 0+12	"	"	"	4' RT

STREET SIGN LOCATION TABLE

SYMBOL	STREET NAME	@ STATION	OFFSET	TYPE
◀	AVALON DRIVE	0+80	21' LT	R1-1 "STOP" SIGN, 30"x30" OCTAGON
◀	AVALON DRIVE	1+50	21' LT	W3-1a "STOP AHEAD" SIGN, 36"x36" DIAMOND
◀	AVALON DRIVE	1+50	21' RT	R2-1 "SPEED LIMIT 25" SIGN, 24"x 30" RECTANGLE
◀	DEAD FURROW	0+10	16' LT	R1-1 "STOP" SIGN, 30" X 30" OCTAGON
◀	FOX GLEN COURT	0+50	16' LT	R1-1 "STOP" SIGN, 30" X 30" OCTAGON
◀	NORTHERN COURT	0+50	17' LT	R1-1 "STOP" SIGN, 30" X 30" OCTAGON
◀	OLD TREE COURT	0+50	16' LT	R1-1 "STOP" SIGN, 30" x 30" OCTAGON
▲	FOX GLEN COURT	0+95	16' LT	"NO PARKING" SIGN



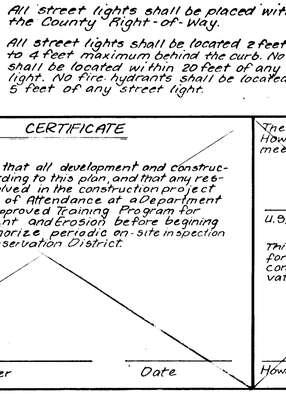


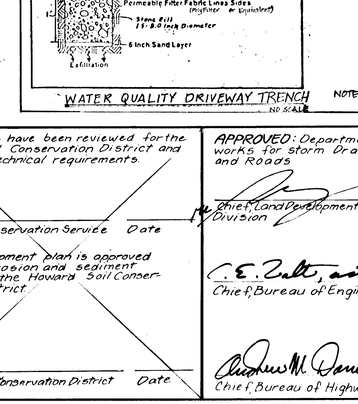
STREET LIGHT LOCATION DETAIL

Not To Scale

STREET LIGHTING NOTES:

1. All street lights shall be placed within the County "Right-of-Way.
2. All street lights shall be located 2 feet minimum to 4 feet maximum behind the curb. No trees shall be located within 20 feet of any street light. No fire hydrants shall be located within 5 feet of any street light.





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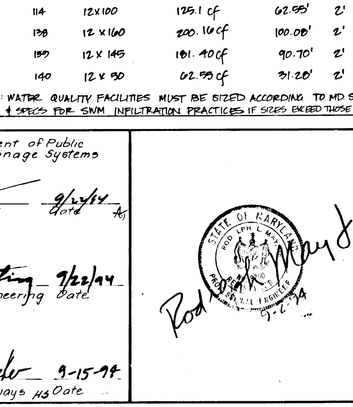
DEPARTMENT OF PUBLIC WORKS
Approved 9/Carl Balsley 1-10-91
Chief-Bureau of Engineering

CURBS

DRAWN BY: R.L.B.
CHECKED BY: G.A.N.
NO SCALE
R-3.03



* GUTTER FLAT AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AND IN THE SAME DIRECTION AS THE PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MODIFIED CURB AND GUTTER.

REV. JAN 1998
REV. MAY 1994

HOWARD COUNTY, MARYLAND
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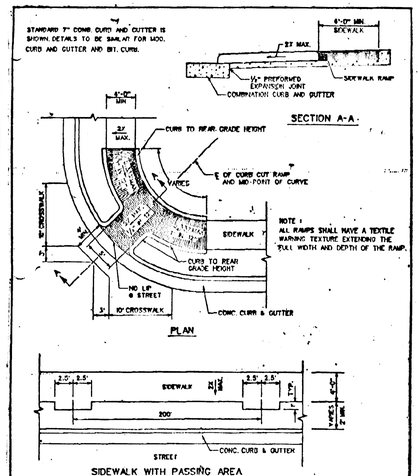
COMBINATION CURB AND GUTTER

DRAWN BY: R.L.B.
CHECKED BY: G.A.N.
NO SCALE
R-3.01



HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
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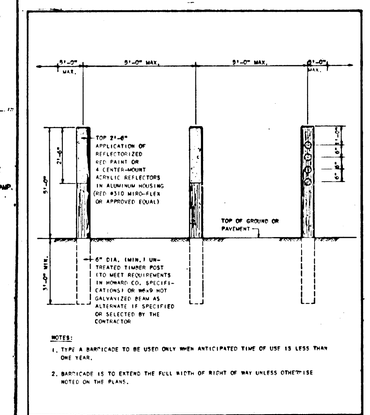
Chief-Bureau of Engineering

SIDEWALK RAMP TYPE A

DRAWN BY: Y.P.
CHK.: W.M.H.
NO SCALE
R - 4.01



NOTES:
1. TYPE A BARRICADE TO BE USED ONLY WHEN ANTICIPATED TIME OF USE IS LESS THAN ONE YEAR.
2. BARRICADE IS TO EXTEND THE FULL WIDTH OF RIGHT OF WAY UNLESS OTHERWISE NOTED ON THE PLANS.

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
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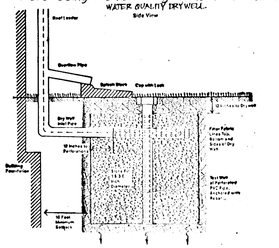
Chief-Bureau of Engineering

DEAD END BARRICADE TYPE A

DRAWN BY: R.L.B.
CHECKED BY: G.A.N.
SCALE: 1/2" = 1'-0"
R - 3.10

All lots with roof drainage which does not drain to the street must have dry wells sized using the following formula - roof area x 0.5"/24 - required dry well volume

DRY WELL DIMENSIONS



WATER QUALITY DRIVEWAY TRENCH
NO SCALE

SFD LARGEST HOUSE SIZE 2000 SF
2000 SF x 0.5" = 83.33 FT², 83.33 FT²/0.40 VOID RATIO = 209 FT³ REQUIRED STORAGE PER LOT
USING 4' DEPTH, DIMENSIONS = 7.65' x 7.25', OR IF TWO 5.25'x5.25' EA.

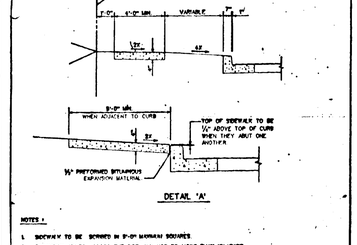
SFA LARGEST HOUSE SIZE 404 SF
404 SF x 0.5" = 20.16 FT², 20.16 FT²/0.40 VOID RATIO = 50.4 FT³ REQUIRED STORAGE PER LOT
USING 4' DEPTH, DIMENSIONS = 3.6' x 3.0'

WATER QUALITY DRYWELLS REQUIRED
SFD LOTS 112, 113, 114, 138, 139 & 140
SFA LOTS 144 - 157 INCLUSIVE

DRIVEWAY TRENCH DATA

LOT #	DRIVEWAY AREA	X 0.5" (REQ. STORAGE) = ? FT³	DIMENSIONS (L)	(W)
110	16' X 200	333.0 CF	166.8'	2'
112	16 X 40	66.72 CF	33.30'	2'
113	12' X 250	312.75 CF	156.38'	2'
114	12' X 100	125.1 CF	62.85'	2'
138	12' X 160	200.16 CF	100.08'	2'
139	12' X 145	181.40 CF	90.70'	2'
140	12' X 90	62.59 CF	31.20'	2'

NOTE: WATER QUALITY FACILITIES MUST BE SIZED ACCORDING TO MD SIDS. & SPECS FOR SWM INFILTRATION PRACTICES IF SIZES EXCEED THOSE SHOWN

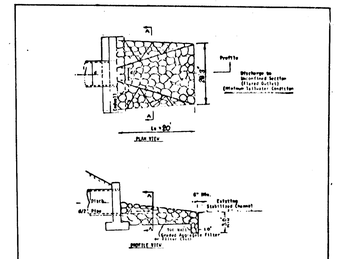


NOTES:
1. SIDEWALK TO BE SLOPED IN 5'-0" MINIMUM SECTIONS
2. EXPANSION JOINTS ACROSS THE SIDEWALK NOT TO MORE THAN 10' APART.
3. ½" PREFORMED BITUMINOUS EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT ½" BELOW SURFACE OF SIDEWALK.
4. CONCRETE TO BE MIX NO. 2
5. WHEN SIDEWALK ABUTS CURB, WALK SHALL BE ½" ABOVE CURB WITH ½" PREFORMED BITUMINOUS EXPANSION MATERIAL BETWEEN SIDEWALK AND CURB.
6. ON LONGITUDINAL SIDEWALK GRADES OF 5% OR GREATER, A CONCRETE HEADER, 8" THICK AND 8" DEEP BELOW THE NORMAL 4" SIDEWALK THICKNESS SHALL BE CONSTRUCTED FOR THE FULL WIDTH OF THE SIDEWALK AT INTERVALS OF 48 FEET. THE HEADERS SHALL BE PLACED AT EXPANSION JOINT LOCATIONS AND SHALL BE MONOLITHIC WITH THE SIDEWALK.
7. SIDEWALK WIDTH ADJACENT TO CURB SHALL BE 5'-0" MIN.
8. SIDEWALK LOCATED 2' OR MORE FROM CURB MAY BE 4'-0" IN WIDTH WITH A 8'x5' PAVED SECTION PLACED 200' APART.

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved 9/Carl Balsley 1-10-91
Chief-Bureau of Engineering

CONCRETE SIDEWALK

DRAWN BY: Y.P.
CHK.: W.M.H.
NO SCALE
R - 3.05



U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
COLLEGE PARK, MARYLAND

RIPRAP OUTLET PROTECTION-1

STANDARD DRAWING NO. MD-378-1

LDE	RENUMBERED SHEET	1-97
LOE	Remove "X" from Modified Curb & Gutter Detail	8-17-98
BY	REVISION	DATE

ENGINEER'S CERTIFICATE

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

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 at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before begining the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Signature of Developer — Date

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

U.S. Soil Conservation Service — Date

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

Howard Soil Conservation District — Date

APPROVED: Department of Public works for storm Drainage Systems and Roads

Chief, Land Development Division — 9/15/94 Date

C. E. Zalto, acting — 9/22/94
Chief, Bureau of Engineering — Date

Andrew M. Daneker — 9-15-94
Chief, Bureau of Highways — Date

STATE OF MARYLAND — ROD LEE MAYO — REGISTERED PROFESSIONAL ENGINEER — 9-2-94

APPROVED: Department of Planning and Zoning

Gina Fiumimarra — 7/23/94
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	TO/ES
DRAWN	GL/WJ
CHECKED	RM
DATE	7/94

ROAD DETAILS

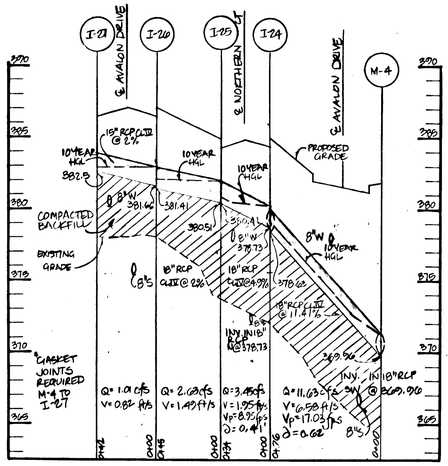
LYNDWOOD MANOR
SECTION ONE AREA ONE

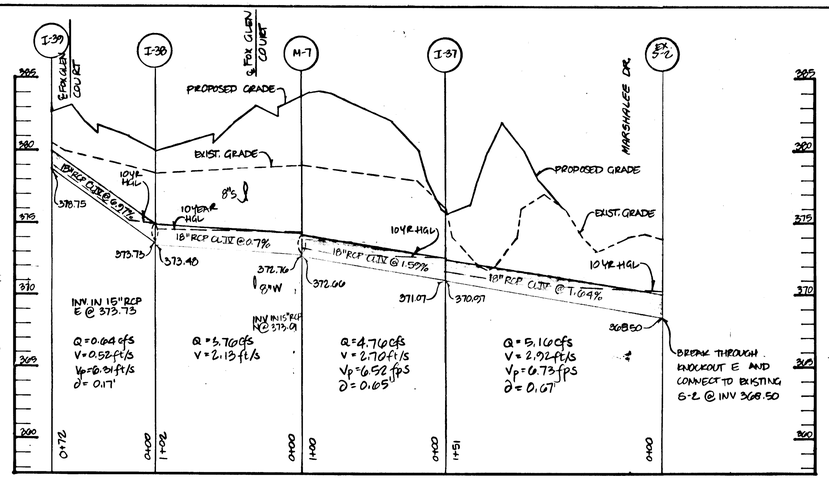
SCALE	As Shown
DRAWING	7 of 28
JOB NO.	92-176.2
FILE NO.	FDA-20

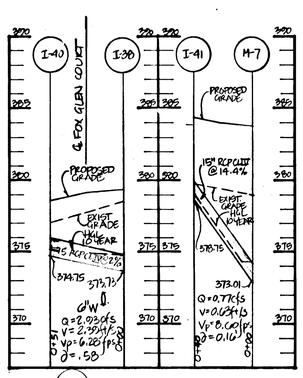
OWNER / DEVELOPER
100 INVESTMENT LIMITED PARTNERSHIP
8835-P Columbia 100 Parkway
Columbia Maryland 21045 (410) 730-0810

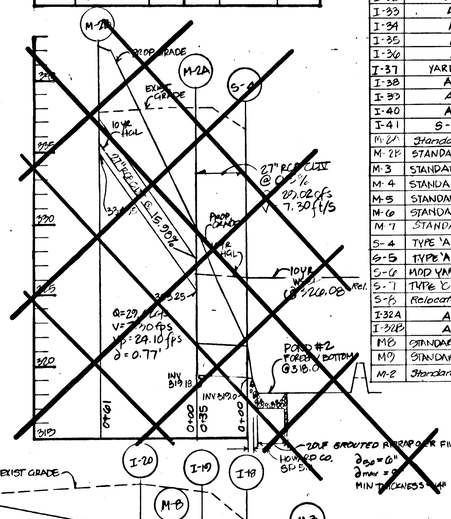
1708

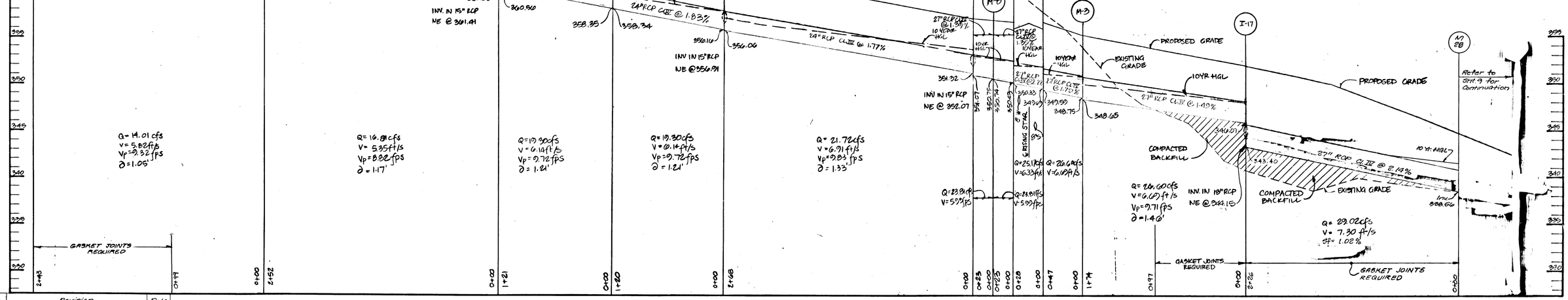
F-94-29











STRUCTURE SCHEDULE

NO	TYPE	INV. IN	INV OUT	TOP ELEVATION UPPER	TOP ELEVATION LOWER	DETAIL	LOCATION
I-11	A-10	380.00	379.96	386.0	385.68	SD4.02	0+58.02 / 19'RT; AVALON DRIVE
I-12	A-10	381.0	380.90	386.0	385.68	SD4.02	0+58.02 / 19'LT; AVALON DRIVE
I-13	A-10	385.30	385.20	393.05	392.68	SD4.02	0+59.51 / 14'LT; CLEAR RIDGE ROAD
I-14	A-10	386.04	385.94	393.05	392.68	SD4.02	0+59.51 / 14'RT; CLEAR RIDGE ROAD
I-15	A-10	387.16	387.41	392.03	391.96	SD4.02	3+00.26 / 10'LT; AVALON DRIVE
I-16	A-10	386.07	388.28	392.03	391.96	SD4.02	3+00.26 / 10'RT; AVALON DRIVE
I-17	A-5	344.15	343.40	352.10	351.99	CD4.01	2+0.00 / 13'RT; AVALON DRIVE
I-18	A-10	349.69	349.59	356.92	356.70	SD4.02	0+49.37 / 12'LT ; RISING STAR
I-19	A-10	350.43	350.33	356.92	356.70	GDA.02	0+49.37 / 12'RT ; RISING STAR
I-20	A-10	351.07	351.07	357.12	356.92	SP4.02	17+25.92 / 19'RT ; AVALON DRIVE
I-21	A-10	356.06	356.06	362.02	361.82	SD4.02	14+55 / 15'RT ; AVALON DRIVE
I-22	A-10	361.41	360.56	366.47	366.26	SD4.02	12+10 / 13'RT ; AVALON DRIVE
I-23	A-10	365.20	364.54	371.18	370.97	SD4.02	9+50.40 / 13'RT ; AVALON DRIVE
I-24	A-5	378.72	378.63	385.09	384.86	SD4.01	0+48.18 / 15'RT ; NORTHERN COURT
I-25	A-5	380.51	380.41	385.09	384.86	SD4.01	0+48.18 / 15'LT ; NORTHERN COURT
I-26	A-10	381.66	381.41	388.03	387.82	SD4.02	6+03.93 / 19'LT ; AVALON DRIVE
I-27	A-10	—	382.5	388.03	387.82	SD4.02	6+03.93 / 19'RT ; AVALON DRIVE
I-28	A-10	—	387.25	391.65	391.40	SD4.02	5+90.65 / 14'RT ; NORTHERN COURT
I-29	SUMP A-10	383.61	383.36		388.61	SD4.02	14+18.52 SUMP @ LP ; 14'LT ; NORTHERN CT
I-30	SUMP A-10	—	384.25		389.61	SD4.02	14+18.52 SUMP @ LP ; 14'RT ; NORTHERN CT
I-31	SUMP A-5	—	371.5		375.22	SD4.01	14+45.02 SUMP @ LP, @ @ TREE CT.
I-32	A-5	—	374.75	382.10	381.90	SD4.01	10+00 / 18'LT ; AVALON DRIVE
I-33	A-10	—	352.75	357.12	356.92	SD4.02	17+25.92 / 13'LT ; AVALON DRIVE
I-34	A-10	—	357.75	362.02	361.82	SD4.02	14+55 / 12'LT ; AVALON DRIVE
I-35	A-10	—	362.25	366.46	366.27	SD4.02	12+10 / 13'LT ; AVALON DRIVE
I-36	A-10	—	366.75	371.17	370.98	SD4.02	9+50.40 / 13'LT ; AVALON DRIVE
I-37	YARD INLET 'D'	371.07	370.97		374.85	MDSD 4.39	2+17.27 / 30'RT / THROAT ALT 3 SLOPES LINTOLS ALL SIDES
I-38	A-5	373.75 / 373.73	373.48		379.18	SD4.01	2+50.19 / 24.25'LT ; SUMP @ LP, FOX GLEN COURT
I-39	A-10	—	378.75	383.84	383.64	SD4.02	4+22.53 / 14'RT ; FOX GLEN COURT
I-40	A-5	—	374.75		379.18	SD4.01	3+20.32 SUMP @ LP, FOX GLEN COURT
I-41	S-COMB	—	378.75	384.71	384.22	SD4.32	1+80.27 / 14'RT ; FOX GLEN COURT
M-1	Standard MANHOLE	331.41	331.31		336.00	GS.13	N.500867.795 , E.864506.071
M-2A	STANDARD MANHOLE	338.56	337.50		344.50	GS.13	N.500940.435 , E.864443.110
M-3	STANDARD MANHOLE	348.75	348.65		358.3	GS.13	18+23.72 / 17.5 RT ; AVALON DRIVE
M-4	STANDARD MANHOLE	360.06(E)	360.71		381.36	GS.13	6+93.17 / 21.73'RT ; AVALON DRIVE
M-5	STANDARD MANHOLE	370.65	370.40		383.05	GS.13	0+80.52 / 19.4'LT ; BIG TREE COURT
M-6	STANDARD MANHOLE	382.70 / 382.0	381.90		389.48	GS.13	2+19.47 / 13'RT ; NORTHERN COURT
M-7	STANDARD MANHOLE	373.01 / 372.76	372.66		383.14	GS.13	2+11.71 / 30'RT ; FOX GLEN COURT
S-4	TYPE 'A' HEADWALL	319.00	324.00		327.75	SD 5.11	N.500726.989, E.864321.142
S-5	TYPE 'A' HEADWALL	307.80	307.80		310.80	SD 5.11	N500549.09, E864336.92
S-6	MOD YARD INLET 'D'		308.0		313.33	See detail sheet 22 of 28	N500575.99, E864344.44
S-7	TYPE 'C' ENDWALL	322.00	322.00		324.00	SD5.21	N.500814.177, E.864214.299
S-8	Relocated INLET 'D'	323.50	323.30		328.88	See detail sheet 22 of 28	N.500885.660, E.864265.583
I-32A	A-5	245.50	245.40	349.32	349.16	SD4.01	24+10.42 / 14'RT BELLANCA DR.
I-32B	A-5	—	245.75	349.32	349.16	SD4.01	24+10.42 / 14'LT BELLANCA DR.
M8	STANDARD MANHOLE	350.75	350.74		356.92	GS.13	0+31.37 / 31.46 FT RISING STAR
M9	STANDARD MANHOLE	350.35	350.34		364.63	GS.13	13+34.74 / 10'FT AVALON DRIVE
M-8	Standard Manhole	330.21	330.11		337.00	GS.13	N.500916.850 E.864480.290

By	Revision	Date
L.D.E.	Add Storm Drain W 28, Revise Schedule	4/97

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.

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 at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before begining the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Signature of Developer — Date

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

U.S. Soil Conservation Service — Date

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

Howard Soil Conservation District — Date

APPROVED: Department of Public Works for storm drainage systems and Roads.

Chief, Land Development Division — Date 9/19/94

Chief, Bureau of Engineering — Date 9/22/94

Chief, Bureau of Highways — Date 9-15-94

APPROVED: Department of Planning and Zoning

Chief, Division of Land Development and Research — Date 9/23/94

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER — 9-2-94

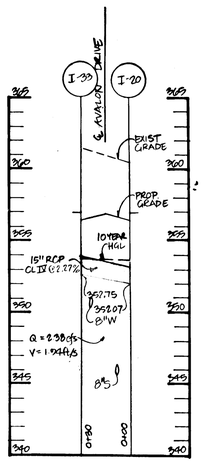
LAND DESIGN ENGINEERING, INC.

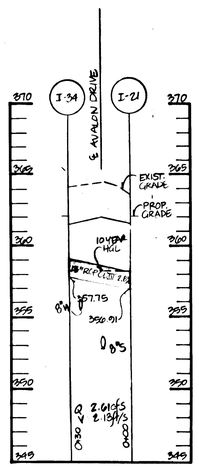
8835 Columbia 100 Parkway, Unit N, Columbia, MD 21045
(410) 715-1070 (Balto.) (301) 596-3424 (Wash.) (410) 715-0681 (Fax)

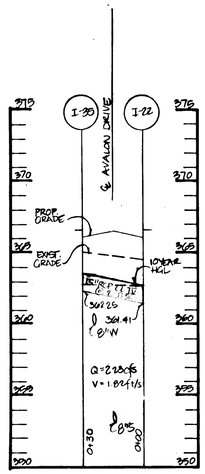
DESIGNED EOS	STORM DRAIN PROFILES	SCALE 1"=5' Vert. 1"=50' Horiz.
DRAWN GL	LYNDWOOD MANOR SECTION ONE AREA ONE	DRAWING B of 28
CHECKED RM		JOB No. 92-176.9
DATE 7/94	Owner / Developer 100 INVESTMENT LIMITED PARTNERSHIP 8835-P Columbia 100 Parkway Columbia Maryland 21045 (410)730-0810	FILE No. F92-89

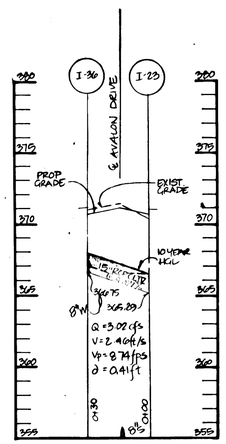
1708

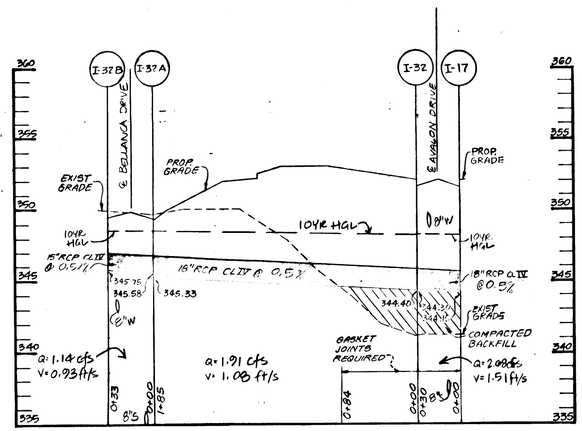
9-94-29

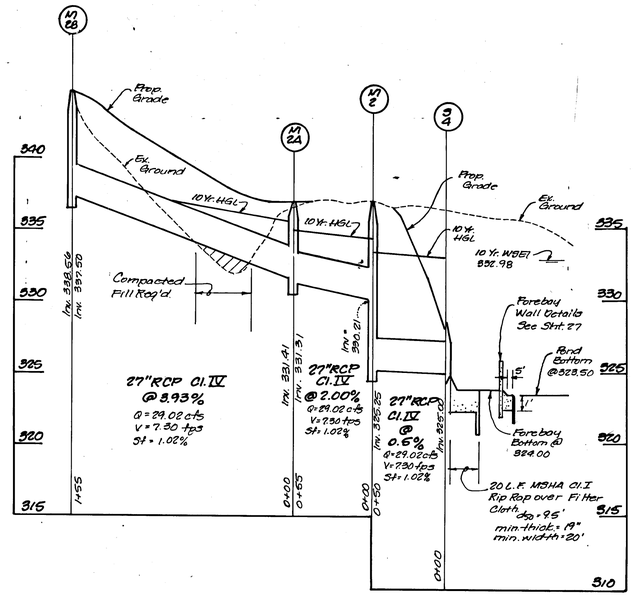


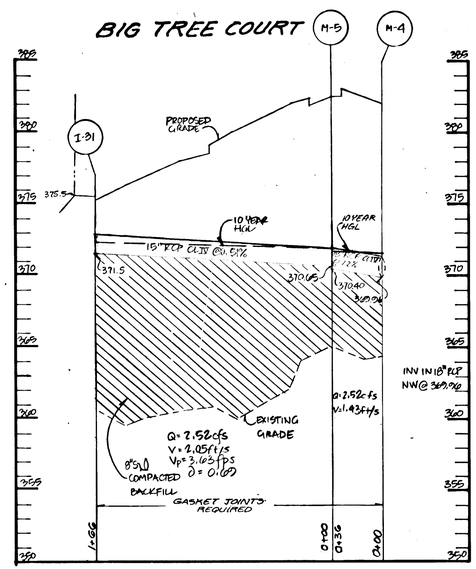


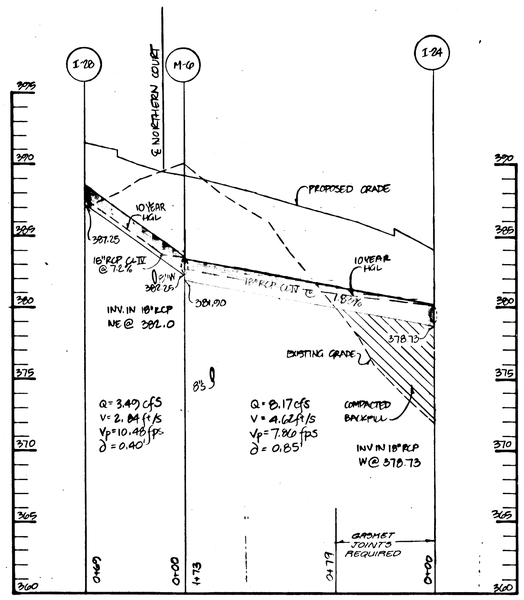


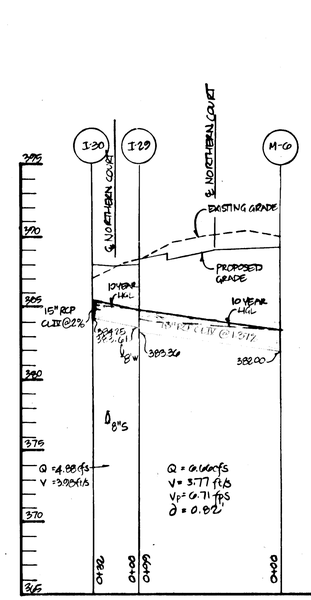


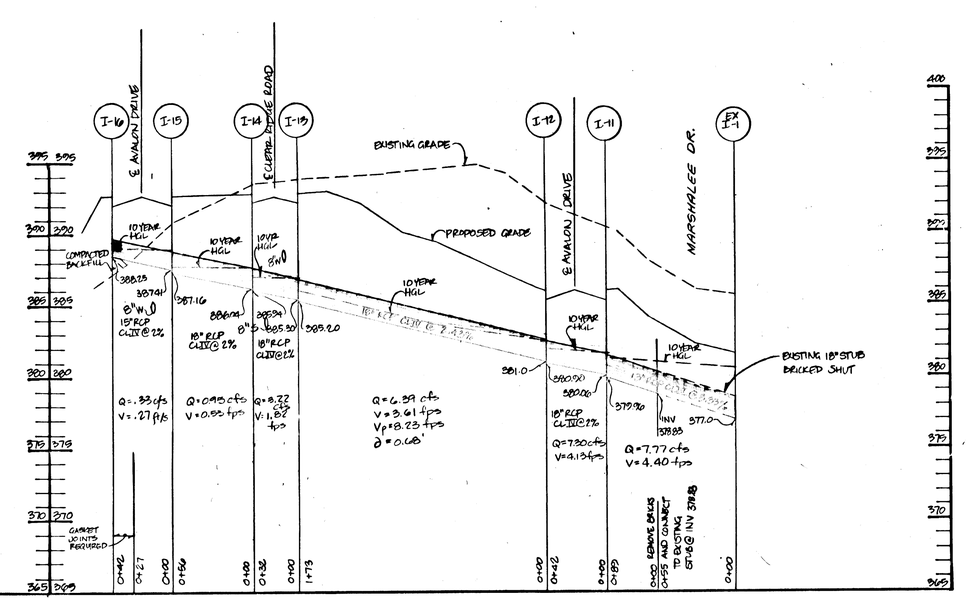












By	Revision	Date
L.O.E.	Add M-2B — 3A	4/97

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.

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 at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before begining the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Signature of Developer — Date

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

U.S Soil Conservation Service — Date

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

Howard Soil Conservation District — Date

APPROVED: Department of Public works for Storm Drainage systems and Roads.

Chief, Land Development Division — 9/29/97 Date

Chief, Bureau of Engineering — 9/22/94 Date

Chief, Bureau of Highways — 9-15-94 Date

APPROVED: Department of planning and Zoning

Chief, Division of Land Development and research. — 9/23/94 Date

STATE OF MARYLAND — PROFESSIONAL ENGINEER

LAND DESIGN ENGINEERING, INC.

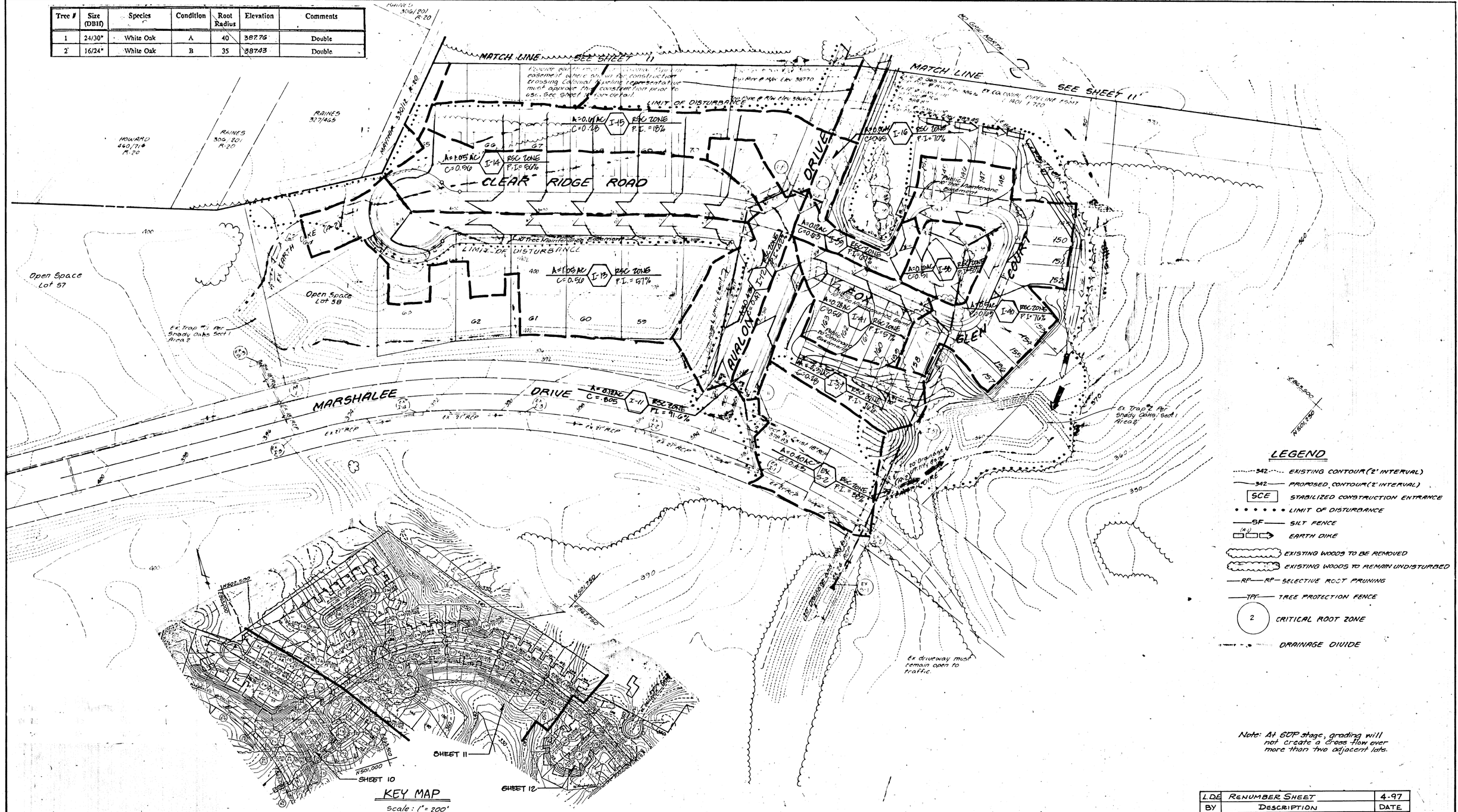
8835 Columbia 100 Parkway, Unit N, Columbia, MD 21045
(410) 715-1070 (Balto.) (301) 596-3424 (Wash.) (410) 715-0681 (Fax)

DESIGNED EOS	STORM DRAIN PROFILES	SCALE 1"=5' Vert 1"=60' Horiz.
DRAWN GL	LYNDWOOD MANOR SECTION ONE AREA ONE	DRAWING 9 of 28
CHECKED RM		JOB No. 92-1704
DATE 7/94	Owner / Developer 100 INVESTMENT LIMITED PARTNERSHIP 8835 S. Columbia 100 Parkway Columbia Maryland 21045 (410)730-0810	FILE No. F94-29

F-94-29

801

Tree #	Size (DBH)	Species	Condition	Root Radius	Elevation	Comments
1	24/30"	White Oak	A	40	387.76	Double
2	16/24"	White Oak	B	35	387.43	Double



LEGEND

- 342 EXISTING CONTOUR (2' INTERVAL)
- 342 PROPOSED CONTOUR (2' INTERVAL)
- SCE STABILIZED CONSTRUCTION ENTRANCE
- LIMIT OF DISTURBANCE
- SF SILT FENCE
- EARTH DIKE
- EXISTING WOODS TO BE REMOVED
- EXISTING WOODS TO REMAIN UNDISTURBED
- RP RP SELECTIVE ROOT PRUNING
- TPF TREE PROTECTION FENCE
- 2 CRITICAL ROOT ZONE
- DRAINAGE DIVIDE

Note: At SDP stage, grading will not create a cross flow over more than two adjacent lots.

LDE	RENUMBER SHEET	4-97
BY	DESCRIPTION	DATE
	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.

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 at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before begining the project. I also authorize periodic on site inspection by the Howard Soil Conservation District.

Signature of Developer — 9/13/93 Date

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

US Soil Conservation Service — Date

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

Howard Soil Conservation District — Date

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

Chief, Land Development Division — 9/22/94 Date

C.E. Dalle acting — 9/22/94
Chief, Bureau of Engineering Date

Andrew M. Gaeta — 9-15-94
Chief, Bureau of Highways HS Date

APPROVED: Department of Planning and Zoning

Gina Fournaris — 9/23/94 Date
Chief, Division of Land Development and Research

Patrick Marks — STATE OF MARYLAND — NO. 9100 — REGISTERED PROFESSIONAL ENGINEER

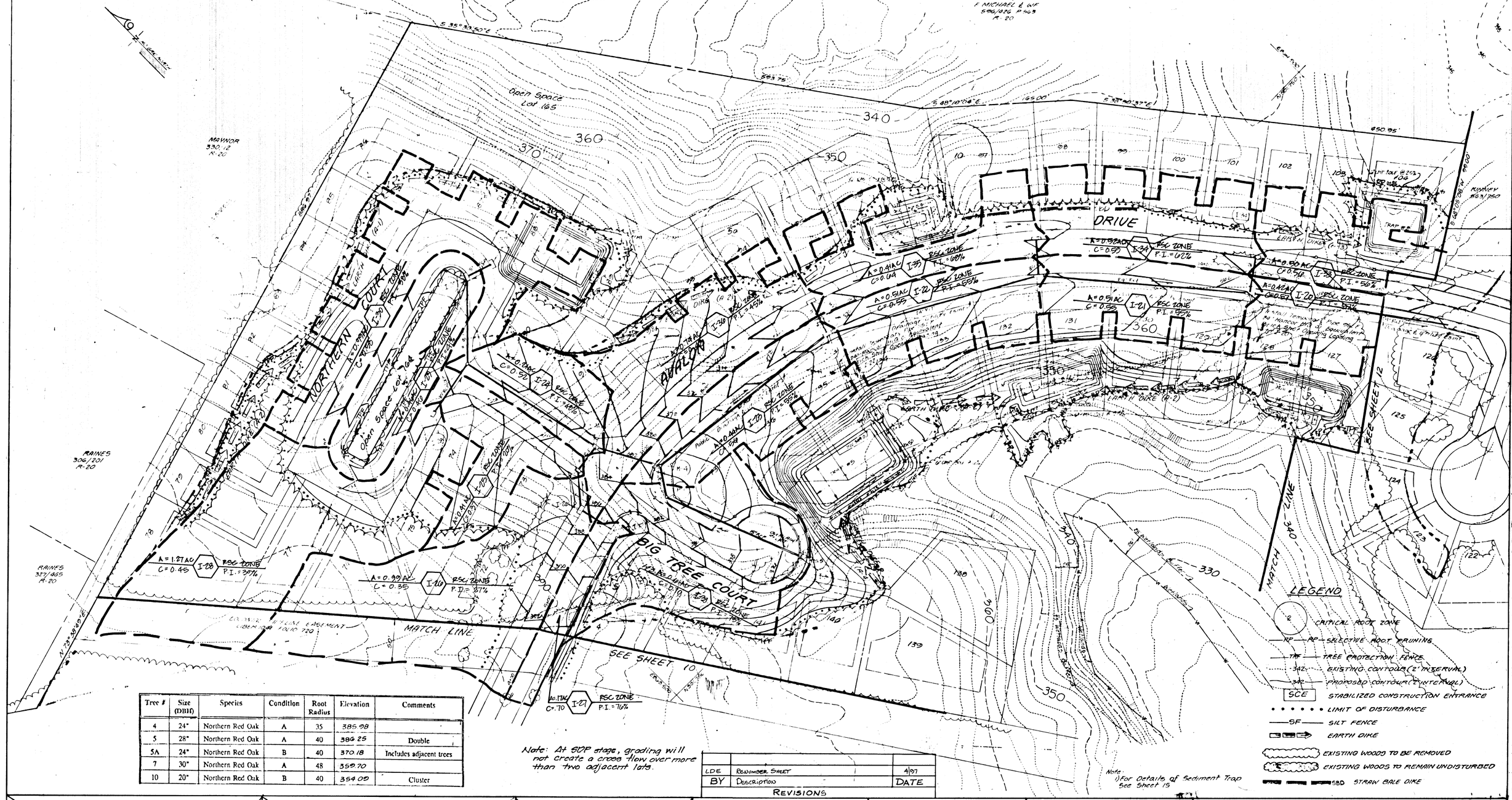
LAND DESIGN ENGINEERING, INC.

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

DESIGNED TO	DRAINAGE AREA MAP	SCALE 1"=50'
DRAWN GL	LYNDWOOD MANOR SECTION ONE AREA ONE	DRAWING NO. 10 of 28
CHECKED RM		JOB NO 92-176.4
DATE 7/04	OWNER / DEVELOPER 100 INVESTMENT LIMITED PARTNERSHIP 8835-P Columbia 100 Parkway Columbia Maryland 21045 (410)730-0910	FILE NO F-94-29

1708

F-94-29



Tree #	Size (DBH)	Species	Condition	Root Radius	Elevation	Comments
4	24"	Northern Red Oak	A	35	385.98	
5	28"	Northern Red Oak	A	40	386.25	Double
5A	24"	Northern Red Oak	B	40	370.18	Includes adjacent trees
7	30"	Northern Red Oak	A	48	359.70	
10	20"	Northern Red Oak	B	40	354.00	Cluster

Note: At SDP stage, grading will not create a cross flow over more than two adjacent lots.

Note:
1) For Details of Sediment Trap See Sheet 15

LDE	RENUMBER SHEET	4/07
BY	DESCRIPTION	DATE

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.

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 at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before begining the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Signature of Developer — 9/17/93 Date

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

US Soil Conservation Service — Date

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

Howard Soil Conservation District — Date

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

Chief, Land Development Division — 9/9/94

Chief, Bureau of Engineering — 9/22/94 Date

Chief, Bureau of Highways — 9-15-94 Date

APPROVED: Department of Planning and Zoning

Chief, Division Land Development and Research — 9/23/94 Date

STATE OF MARYLAND — PAUL G. MAY — No. 9150 — REGISTERED 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/GS	DRAINAGE AREA MAP	SCALE 1"=50'
DRAWN GL	LYNDWOOD MANOR SECTION ONE AREA ONE	DRAWING 11 of 28
CHECKED RM		JOB NO 92176.4
DATE 7/94	Owner / Developer: 100 INVESTMENT LIMITED PARTNERSHIP 8835-P Columbia 100 Parkway Columbia Maryland 21045 (410)730-0810	FILE NO F94-29

F-94-29

1708

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

U.S. Soil Conservation Service — Date

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

Howard Soil Conservation District — Date

By the Engineer:

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature of Engineer — Date

BY	REVISION	DATE
L.D.E.	ADD POND #2 - RENUMBER SHEET	4/97

By the Developer

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

Signature of Developer — Date 9/17/97

APPROVED: Department of Planning and Zoning

Chief, Division of Land Development and Research — 9/23/94 Date

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

Chief, Land Development Division — 9/22/97 Date

Chief, Bureau of Engineering — 9/22/94 Date

Chief, Bureau of Highways — 9-15-94 Date

LAND DESIGN ENGINEERING, INC.

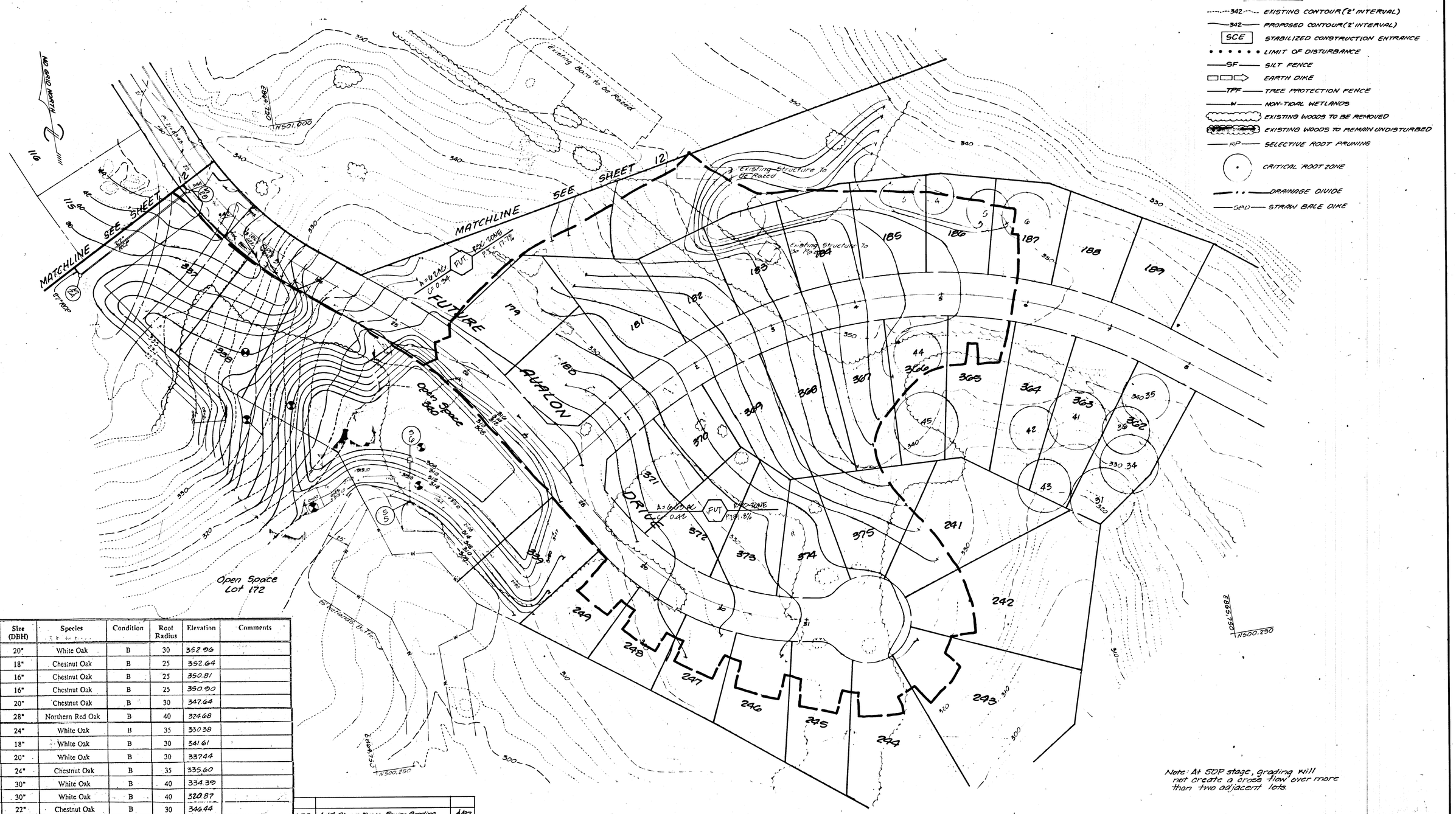
8835 Columbia 100 Parkway, Unit N, Columbia, MD 21045
(410) 715-1070 (Balto.) (301) 596-3424 (Wash.) (410) 715-0681 (Fax)

DESIGNED TO/LS	DRAINAGE AREA MAP	SCALE 1"=50'
DRAWN GL	LYNOWOOD MANOR SECTION ONE AREA ONE	DRAWING 12 of 28
CHECKED RM		JOB NO 92-176.4
DATE 7/94	Owner/Developer 100 INVESTMENT LIMITED PARTNERSHIP	FILE NO F-4 2)

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER NO. 8700

F-94-29

1708



Tree #	Size (DBH)	Species	Condition	Root Radius	Elevation	Comments
1	20"	White Oak	B	30	352.06	
3	18"	Chestnut Oak	B	25	352.64	
4	16"	Chestnut Oak	B	25	350.81	
5	16"	Chestnut Oak	B	25	350.90	
6	20"	Chestnut Oak	B	30	347.64	
31	28"	Northern Red Oak	B	40	324.68	
34	24"	White Oak	B	35	330.38	
35	18"	White Oak	B	30	341.61	
36	20"	White Oak	B	30	337.44	
41	24"	Chestnut Oak	B	35	335.60	
42	30"	White Oak	B	40	334.30	
43	30"	White Oak	B	40	320.87	
44	22"	Chestnut Oak	B	30	346.44	
45	30"	Northern Red Oak	B	40	341.25	

L.D.E.	Add Storm Drain, Revise Grading	4/97
By	Revision	Date

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.

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.

Signature of Developer — Date

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

U.S Soil Conservation Service — Date

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

Howard Soil Conservation District — Date

APPROVED Department of Public Works for Storm Drainage Systems and Roads

Chief, Land Development Division — 9/w/94 Date

C.E. Colton, acting — 9/22/94 Date
Chief, Bureau of Engineering

Andrew M. Zoueler — 9-15-94 Date
Chief, Bureau of Highways

APPROVED Department of Planning and Zoning

Chief, Division of Land Development and Research — 9/23/94 Date

STATE OF MARYLAND — ROD LEE LYNCH — No. 9900 — PROFESSIONAL ENGINEER
9-2-94

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)

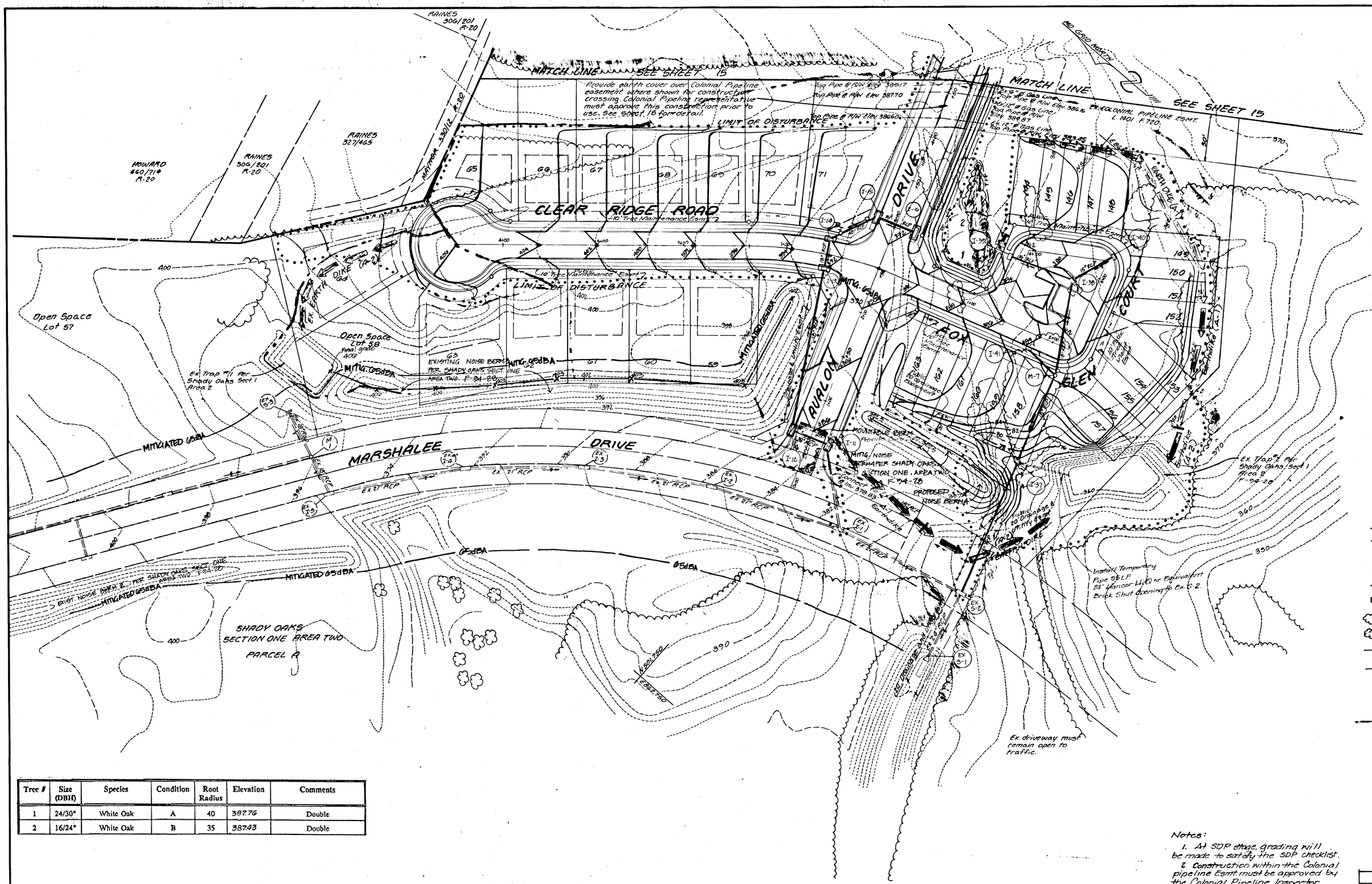
DRAINAGE AREA MAP
LYNDWOOD MANOR
SECTION ONE AREA ONE

DESIGNED	BS
DRAWN	GL
CHECKED	RM
DATE	7/94
SCALE	1"=50'
DRAWING No.	13 of 28
JOB No	92-176.4
FILE No	F94-29

OWNER / DEVELOPER
100 INVESTMENT LIMITED PARTNERSHIP
8835-P Columbia 100 Parkway
Columbia, Maryland 21045 (410) 730-0810

F-94-29

1708



VICINITY MAP

Scale: 1" = 2,000'

Tree #	Size (DBH)	Species	Condition	Root Radius	Elevation	Comments
1	24/30"	White Oak	A	40	387.76	Double
2	16/24"	White Oak	B	35	387.43	Double

LEGEND

- 342 EXISTING CONTOUR (2' INTERVAL)
- 342 PROPOSED CONTOUR (2' INTERVAL)
- SCE STABILIZED CONSTRUCTION ENTRANCE
- LIMIT OF DISTURBANCE
- SF SILT FENCE
- EARTH DIKE
- EXISTING WOODS TO BE REMOVED
- EXISTING WOODS TO REMAIN UNDISTURBED
- RP RP SELECTIVE ROOT PRUNING
- TPF TREE PROTECTION FENCE
- 2 CRITICAL ROOT ZONE
- DRAINAGE DIVIDE
- INLET PROTECTION

Notes:

1. At SDP stage, grading will be made to satisfy the SDP checklist.
2. Construction within the Colonial pipeline Esmt. must be approved by the Colonial Pipeline Inspector.
   Note: 1) For Details of Sediment Trap See Sheet 19
3. Contractor will construct noise berms if not built under F-94-20.

L.D.E.	RENUMBER SHEET	4-97
BY	DESCRIPTION	DATE

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.

Rodolph May Jr 9-2-94
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 at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before begining the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

I/We 9/6/94
Signature of Developer Date

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

U.S. Soil Conservation Service Date

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

Howard Soil Conservation District Date

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

Chief, Land Development Division — Date 9/22/94

C. E. Culler acting — Chief, Bureau of Engineering — Date 9/22/94

Chief, Bureau of Highways — Date 9-15-94

APPROVED: Department of planning and Zoning

Chief, Division of Land Development and Research — Date 9/23/94

Rodolph May Jr 9-2-94

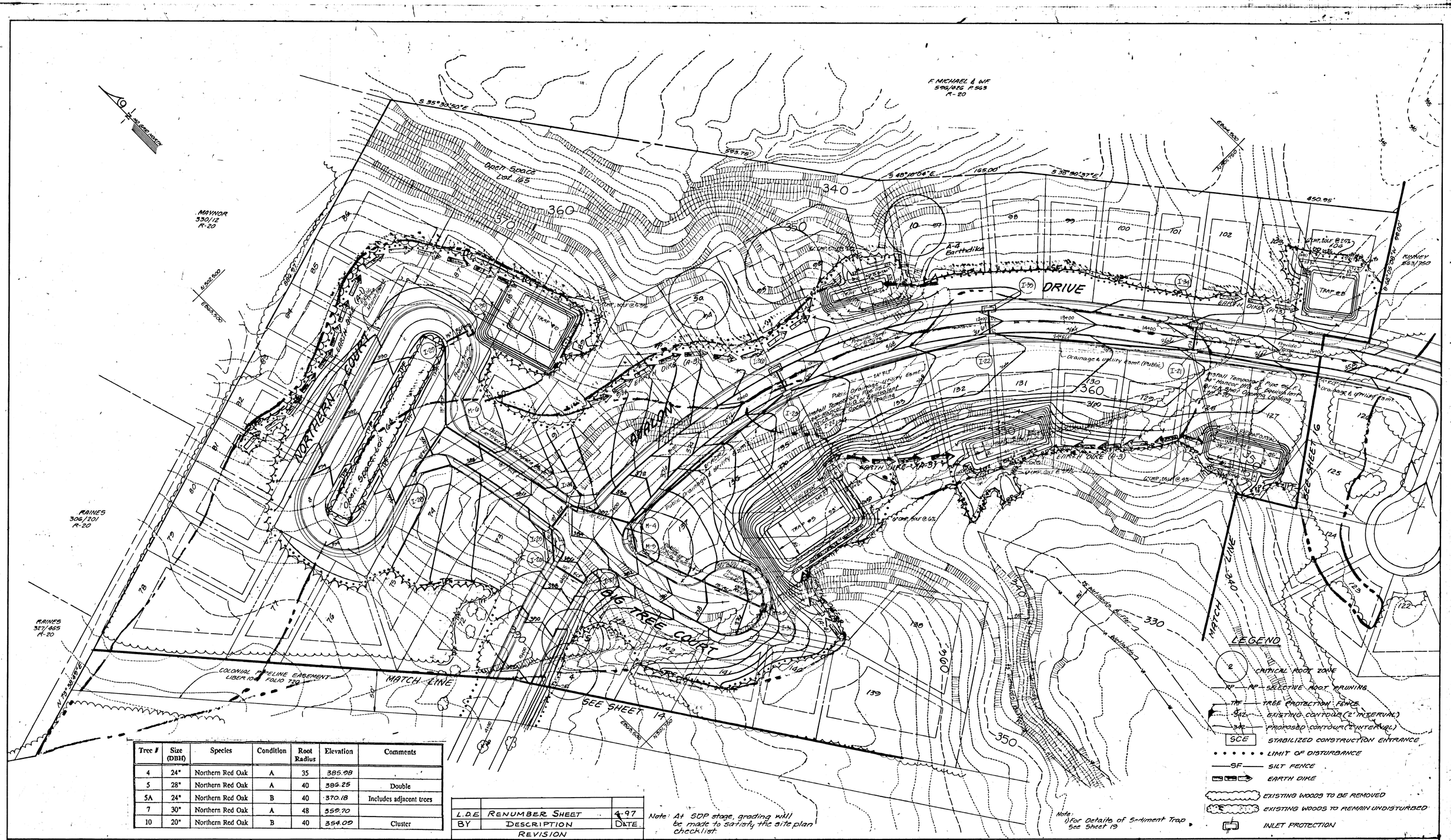
LAND DESIGN ENGINEERING, INC.

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

DESIGNED TO	GRADING & SEDIMENT AND EROSION CONTROL PLAN	SCALE 1"=50'
DRAWN GL	LYNDWOOD MANOR SECTION ONE AREA ONE	DRAWING 14 of 28
CHECKED RM		JOB No. 92-176-A
DATE 7/94	Owner / Developer 100 INVESTMENT LIMITED PARTNERSHIP 8835-P Columbia 100 Parkway Columbia Maryland 21045 (410)730-0810	FILE No. F94-29

F-94-29

1708



Tree #	Size (DBH)	Species	Condition	Root Radius	Elevation	Comments
4	24"	Northern Red Oak	A	35	385.98	
5	28"	Northern Red Oak	A	40	386.25	Double
5A	24"	Northern Red Oak	B	40	370.18	Includes adjacent trees
7	30"	Northern Red Oak	A	48	359.70	
10	20"	Northern Red Oak	B	40	354.00	Cluster

L.D.E.	RENUMBER SHEET	4-97
BY	DESCRIPTION	DATE
	REVISION	

Note: At SDP stage, grading will be made to satisfy the site plan checklist.

LEGEND

- CRITICAL ROOT ZONE
- RP — RP — SELECTIVE ROOT PRUNING
- TPF — TREE PROTECTION FENCE
- 340 — EXISTING CONTOUR (2' INTERVAL)
- 340 — PROPOSED CONTOUR (2' INTERVAL)
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- • • • • • LIMIT OF DISTURBANCE
- SF — SILT FENCE
- EARTH DIKE
- EXISTING WOODS TO BE REMOVED
- EXISTING WOODS TO REMAIN UNDISTURBED
- INLET PROTECTION

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.

Rodolph Mayt — 9-2-94
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 at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before begining the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

[signature] — 9/16/94
Signature of Developer — Date

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

Patricia Englehart — 9/8/94
U.S. Soil Conservation Service — Date

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

[signature] — 9/8/94
Howard Soil Conservation District — Date

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

[signature] — 9/22/94
Chief, Land Development Division — Date

C. E. Dalton, acting — 9/22/94
Chief, Bureau of Engineering — Date

APPROVED: Department of Planning and Zoning

Qiina Zhuanmani — 9/23/94
Chief, Division of Land Development and Research — Date

[signature] — 9-15-94
Chief, Bureau of Highways — Date

STATE OF MARYLAND — RODOLPH MAYT — 21795 — REGISTERED 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/EL	GRADING & SEDIMENT AND EROSION CONTROL PLAN
DRAWN GL	LYNDWOOD MANOR
CHECKED RM	SECTION ONE AREA ONE
DATE 7/94	Owner / Developer: 100 INVESTMENT LIMITED PARTNERSHIP, 8835-P Columbia 100 Parkway, Columbia Maryland 21045 (410)730-0810
SCALE	1"=50'
DRAWING	15 of 28
JOB NO	92-176,A
FILE NO	F-94-29

1708

F-94-29

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

Patricia Engle /cs. 9/8/94
U.S. Soil Conservation Service — Date

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

9/8/94
Howard Soil Conservation District — Date

By the Engineer:

I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Rodolph May J 9-2-94
Signature of Engineer — Date

BY	REVISION	DATE
L.D.E.	ADD POND #2, REVISE GRADING	4/97

By the Developer:

I/we certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before begining the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

9/6/94
Signature of Developer — Date

APPROVED: Department of Planning and Zoning.

9/23/94
Chief, Division of Land Development and Research — Date

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

9/22/94
Chief, Land Development Division — Date

9/22/94
Chief, Bureau of Engineering — Date

9-15-94
Chief, Bureau of Highways — 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 TO/ES	GRADING & SEDIMENT AND EROSION CONTROL PLAN	SCALE 1"=50'
DRAWN GL	LYNWOOD MANOR SECTION ONE AREA ONE	DRAWING 16 of 28
CHECKED RM		JOB NO. 92-176.4
DATE 7/94	Owner / Developer: 100 INVESTMENT LIMITED PARTNERSHIP, 8835-P Columbia 100 Parkway, Columbia Maryland 21045 (410) 730-0810	FILE NO. F94-29

F-94-29

1708

NOTE: ALL FILL IN RIGHT-OF-WAY FROM AVALON DRIVE STATION 29+00 TO 18+00 WILL BE TESTED TO 95% COMPACTION.

Tree #	Size (DBH)	Species	Condition	Root Radius	Elevation	Comments
1	20"	White Oak	B	30	352.96	
3	18"	Chestnut Oak	B	25	352.64	
4	16"	Chestnut Oak	B	25	350.81	
5	16"	Chestnut Oak	B	25	350.90	
6	20"	Chestnut Oak	B	30	347.64	
31	28"	Northern Red Oak	B	40	324.68	
34	24"	White Oak	B	35	330.38	
35	18"	White Oak	B	30	341.61	
36	20"	White Oak	B	30	337.44	
41	24"	Chestnut Oak	B	35	335.60	
42	30"	White Oak	B	40	334.30	
43	30"	White Oak	B	40	329.87	
44	22"	Chestnut Oak	B	30	346.44	
45	30"	Northern Red Oak	B	40	341.25	

L.D.E.	Revise Grading & Add Storm Drain	4/97
By	Revision	date

Note: In an area where excavation is shown within a future road right of way excavation must be made no closer than one (1) foot of the final subgrade. See F-94-94 for road profiles. Where fill is proposed within the road right-of-way, the fill shall be a minimum of two (2) feet below the final road sub-grade. See F-94-94 for road profiles.

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.

Rodolph Mayf — 9-2-94
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.L.W — 9/6/94
Signature of Developer — Date

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

Patrick Eagle /GS — 9/9/94
U.S. Soil Conservation Service — Date

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

Howard Soil Conservation District — 9/9/94 Date

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

Chief, Land Development Division — 9/22/94 Date

C. E. Colter, acting — 9/22/94
Chief, Bureau of Engineering — Date

Andrew M. Demuth — 9-15-94
Chief, Bureau of Highways MS — Date

APPROVED: Department of Planning and Zoning

Chris Hummel — 9/23/94
Chief, Division of Land Development and Research — Date

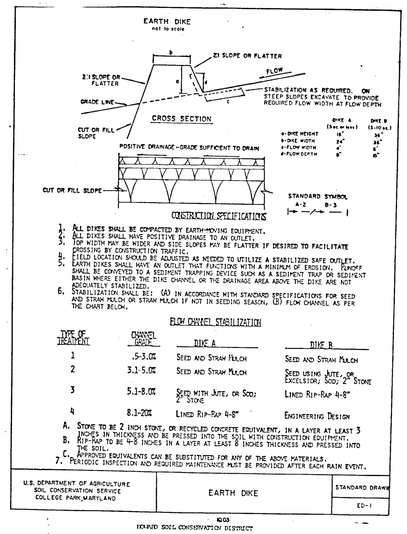
Rodolph Mayf

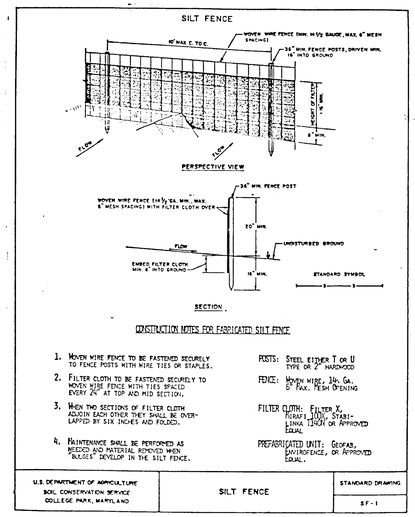
LAND DESIGN ENGINEERING, INC.
8835 Columbia 100 Parkway, Unit N, Columbia, MD 21045
(410) 715-1070 (Balto.) (301) 596-3424 (Wash.) (410) 715-0681 (Fax)

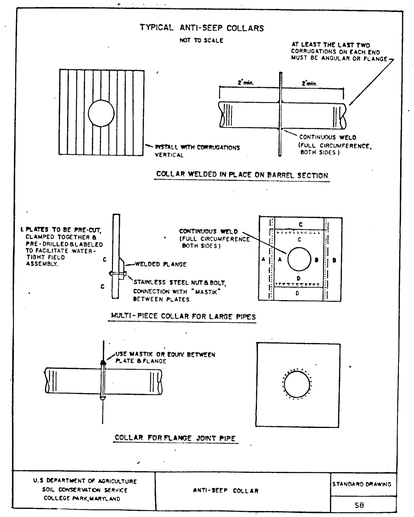
DESIGNED ES	GRADING & SEDIMENT AND EROSION CONTROL PLAN	SCALE 1"=50'
DRAWN WJ	LYNDWOOD MANOR	DRAWING 17 of 28
CHECKED RM	SECTION ONE AREA ONE	JOB NO. 92-176-4
DATE 7/94	Owner / Developer: 100 INVESTMENT LIMITED PARTNERSHIP, 8835-P Columbia 100 Parkway, Columbia, Maryland 21045 (410) 730-0810	FILE NO. F94-29

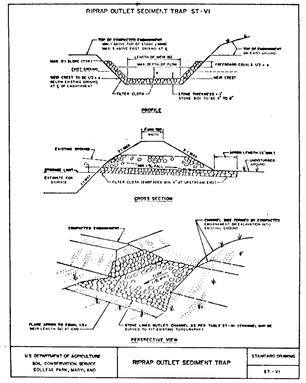
F-94-29

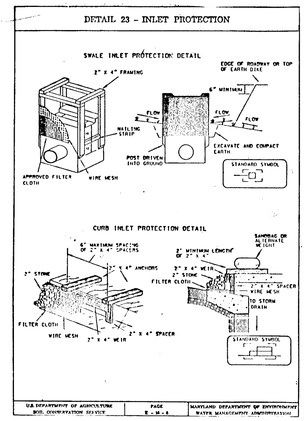
1708





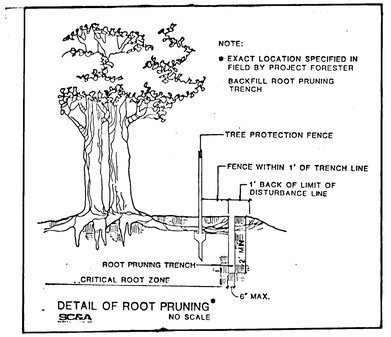


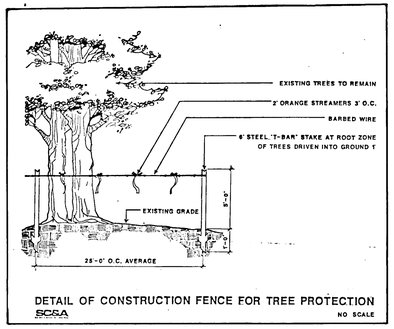


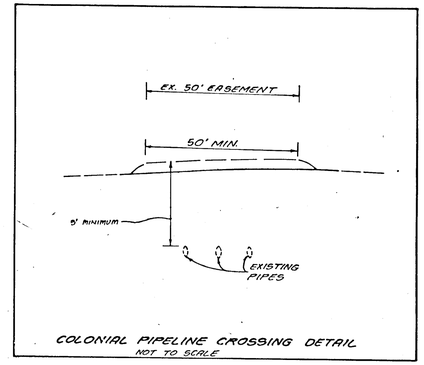


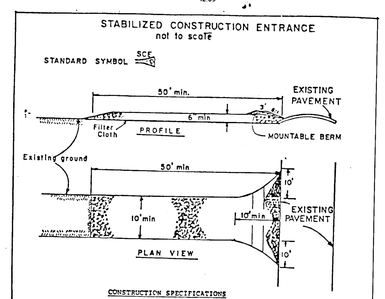
CONSTRUCTION SEQUENCE

1. Obtain Grading Permit (1 day)
2. Install stabilized construction entrance. (1 day)
3. Stakeout limits of disturbance. (3 days)
4. Walk limits of disturbance with project forester and adjust limits as required. See Sheet 18 of 26 for Tree Protection Notes. Install tree protection fence and begin root pruning. (1 week)
5. Inspect any controls previously installed under other contracts within the limits of disturbance and make necessary repairs or maintenance. (3 days)
6. Install silt fence and straw bale dikes at limit of disturbance where shown hereon or as directed by Sediment Control Inspector. (2 days)
7. Construct sediment basins, sediment traps, sediment basins, and diversion dikes. Regrade existing Trap #1 and Trap #2 to original dimensions. (2 weeks)
8. Grade site. (3 weeks)
9. Install utilities and temporary pipes which empty into sediment traps. Brick closed pipe openings where shown. (1 week)
10. Repair diversion dikes damaged by utility installation and stabilize with permanent seeding mixture and straw mulch. (1 days)
11. Sediment shall be removed from sediment traps when the cleanout elevation has been reached. (1 day)
12. 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)
13. The sediment traps shall be dewatered by pumping. The accumulated sediment from the traps shall be placed up grade from the traps in such a manner as not to interfere with construction operations or cause erosion down grade from the traps. (1 day)
14. Install curb and gutter and paving. (3 weeks)
15. Install guardrail and sidewalks. (2 weeks)
16. Complete any grading and stabilize disturbed areas with permanent seeding mixture and straw mulch. (2 weeks)
17. After all upgrade areas from stormwater management facilities #2 and #3 have been stabilized and permission has been given by the Sediment Control Inspector, flush the storm drain system and sediment traps, and open permanent storm drain system. (1 week)
18. Remove temporary pipes and brick shut temporary openings. (2 days)
19. After permission has been given by Sediment Control Inspector, backfill sediment traps. (1 week)
20. Fine grade sediment basin #3 to permanent stormwater management facility specifications (see Sheet 28. Convert riser to permanent specifications by removing temporary dewatering device and installing clapper valves, seal temporary 8" orifice at INV 308.40 remove bricks from weir openings, install trash rack, and add concrete for ULTIMATE WIERS (See Sht 28) (1 week).
21. 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)









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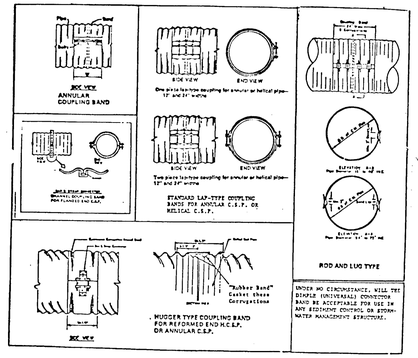


TREE PROTECTION NOTES

1. PRE-CONSTRUCTION MEETING TO INCLUDE EDUCATIONAL SLIDE PRESENTATION ON TREE PROTECTION MEASURES TO BE EMPLOYED.
2. 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.
3. CLEARING LIMITS ARE TO BE FIELD ADJUSTED BY THE PROJECT FORESTER FOR TREE PRESERVATION PRIOR TO ANY SITE WORK.
4. NO SITE PREPARATION WORK SHALL BEGIN IN AREAS WHERE TREE TREATMENT AND PRESERVATION MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.
5. THE SEQUENCE OF TREE TREATMENT AND PRESERVATION MEASURES SHALL BE:
   - A. STAKE-OUT OF LIMITS OF DISTURBANCE
   - B. SELECTIVE PRUNING AND CHEMICAL TREATMENT OF SIGNIFICANT TREES TO BE AFFECTED BY CONSTRUCTION
   - C. ROOT PRUNING
   - D. TREE PROTECTION FENCING
   - E. TREE PROTECTION SIGNAGE INSTALLATION
   - F. COMMENCEMENT OF CLEARING OPERATION
6. TREE PROTECTION FENCING SHALL BE MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING CONSTRUCTION.

10-03
HOWARD SOIL CONSERVATION DISTRICT
STANDARD SEDIMENT CONTROL NOTES

1) 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. Phone (880-3490)
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 most current "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", and revisions thereto.
3) Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4) All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5) All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 51), and (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6) All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7) Site Analysis:
   Total Area of Site 150.43 Acres
   Area Disturbed 25.3 Acres
   Area to be roofed or paved 4.4±4 Acres
   Area to be vegetatively stabilized 20.9± Acres
   Total Cut 64,500 Cu. Yds.
   Total Fill 92,464 Cu. Yds.
   Offsite waste/borrow area location PARTS PREVIOUS SUBMISSIONS
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 Sediment Control Inspector.
10) On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
11) Trenches for the construction of utilities is limited to three pipe lengths or that which can be back filled and stabilized within one working day, whichever is shorter.

REV 1/91
HOWARD SOIL CONSERVATION DISTRICT
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, 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 acres dolomitic limestone (92 lbs/1000 sq. ft.) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.) before seeding. Harrow or disk 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 of disk into upper three inches of soil.

Seeding -- For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq. ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) - 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) - Use sod. Option (3) - Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching -- Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 210 gallons per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 240 gallons per acre (6 gal/1000 sq. ft.) for anchoring.

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

Mulching: -- Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of unrotted wool free small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 210 gal per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 8 ft. or higher, use 240 gal per acre (6 gal/1000 sq. ft.) for anchoring.

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

REV 1/91

LDE	Update Construction Sequence	Rev. No. 4-97
BY	DESCRIPTION	DATE
	REVISION	

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.

Rodolph Mayd — 9-2-94
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 at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before begining the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

W. W — 9/6/94
Signature of Developer — Date

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

Patricia English 9/9/94
U.S. Soil Conservation Service — Date

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

9/9/94
Howard Soil Conservation District — Date

APPROVED: Department of Public works for storm Drainage systems and Roads

9/22/94
Chief, Land Development Division — Date

9/22/94
Chief, Bureau of Engineering — Date

9-15-94
Chief, Bureau of Highways — Date

Rodolph Mayd 9-2-94

APPROVED: Department of Planning and Zoning

9/23/94
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 EOS	GRADING & SEDIMENT AND EROSION CONTROL DETAILS	SCALE As Shown
DRAWN WJ/GL	LYNDWOOD MANOR SECTION ONE AREA ONE	DRAWING 18 OF 28
CHECKED AM		JOB No. 92-176A
DATE 7/94	Owner/Developer 100 INVESTMENT LIMITED PARTNERSHIP 8835-F Columbia 100 Parkway Columbia Maryland 21045 (410)730-0810	FILE No. F94-29

F-94-29

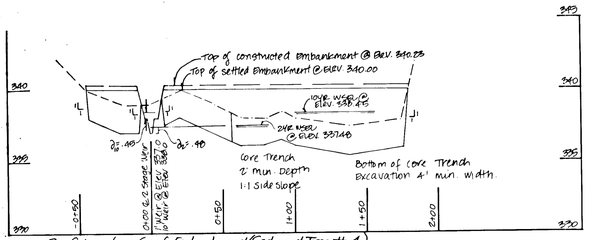
8071

REVISION			
BY	N°	DESCRIPTION	DATE
LDE	1	RENUMBER SHEET	4-97

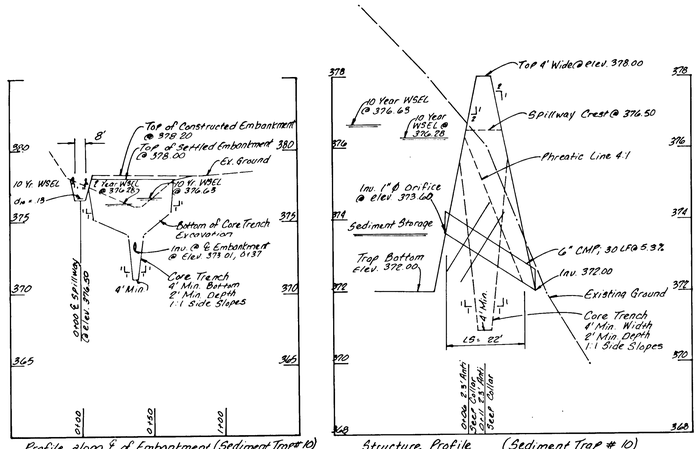
TRAP SCHEDULE

Trap No.	Max. D.A. Acres	Stor. Reqd. ft^3	Stor. Prov. ft^3	Stor. Elev.	Stor. Depth ft.	Weir Length ft.	Bottom Elev.	Clean. Elev.	Crest Elev.	Top Elev.	Trap Size	2 Year Elev.	10 Year Elev.	Type
Ex. 1	1.28	2304	2778	393.5	1.5	5	392	392.6	395	369.5	30x50*	N/A	N/A	ST-VI
Ex. 2	4.36	7848	11050	363	3	12	360	361.10	363	365	See Plan	N/A	N/A	ST-VI
4	4.01	7218	7902	335.5	1.5	1/10	334	334.50	337/338	340	48x100*	337.48	338.45	ST-VI
5	4.74	8532	8656	349.8	1.8	12	348	348.75	352.6	354.1	46x93*	352.46	353.07	ST-VI
6	1.61	2898	2980.5	341.5	1.5	5	340	340.60	344	345.5	20x83*	343.77	344.38	ST-VI
7	0.87	1566	2355	345	1	5	344	344.26	346.2	348	24x85*	345.93	346.36	ST-VI
8	0.99	1782	2346	349	1	4	348	348.31	351	352.5	42x50*	350.49	351.23	ST-VI
9	0.54	972	1014	353.4	1.4	4	352	352.55	356	357.2	8x62*	355.40	356.08	ST-VI
10	2.55	4590	4717	373.6	1.6	8	372	372.64	376.5	378	See Plan	376.28	376.63	ST-VI

* Indicates Bottom Dimensions

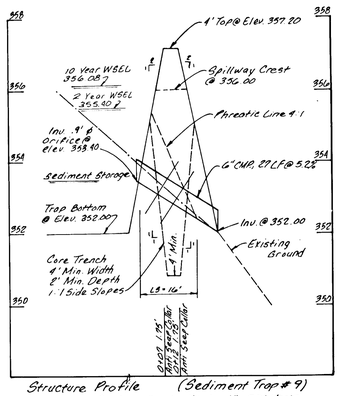


Profile along ℄ of Embankment (Sediment Trap #4)
Scale: 1"=5' Vert, 1"=50' Horiz.

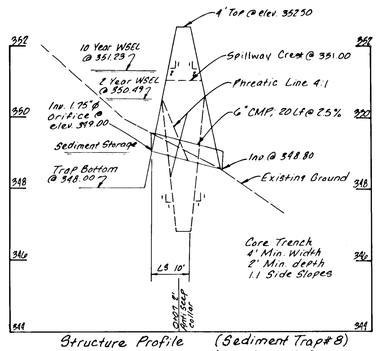


Profile along ℄ of Embankment (Sediment Trap #10)
Scale: 1"=5' Vert, 1"=50' Horiz.

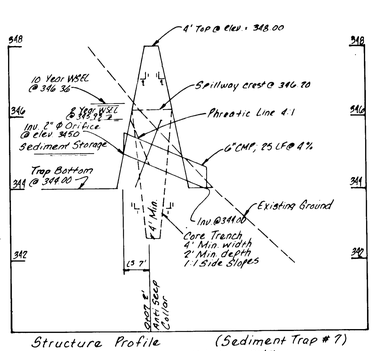
Structure Profile (Sediment Trap # 10)
Scale 1" = 2' Vert., 1" = 20' Horiz.



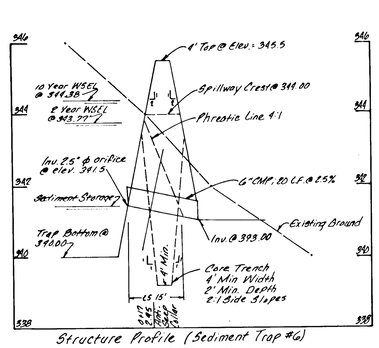
Structure Profile (Sediment Trap # 9)
Scale: 1"= 2' Vert, 1"= 20' Horiz.



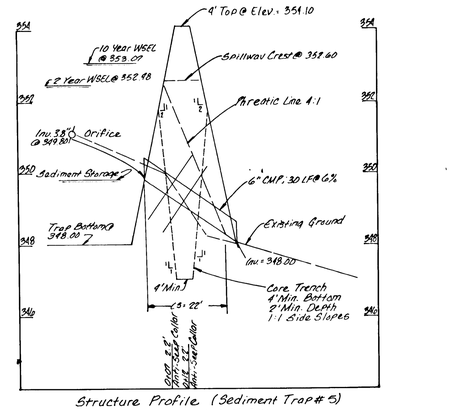
Structure Profile (Sediment Trap #8)
Scale: 1" = 2' Vert, 1" = 20' Horiz.



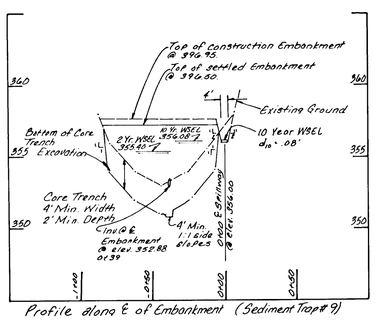
Structure Profile (Sediment Trap # 7)
Scale: 1"= 2' Vert, 1"= 20' Horiz.



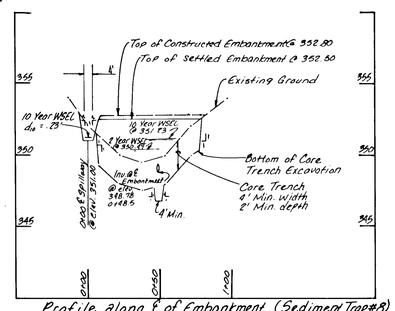
Structure Profile (Sediment Trap #6)
Scale: 1" = 2' Vert, 1" = 20' Horiz.



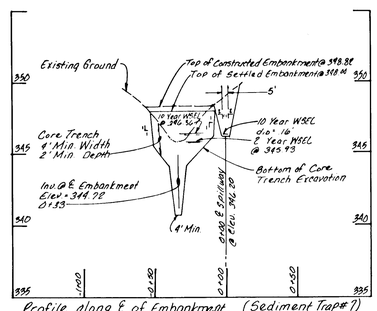
Structure Profile (Sediment Trap # 5)
Scale: 1"= 2' Vert, 1"= 20' Horiz.



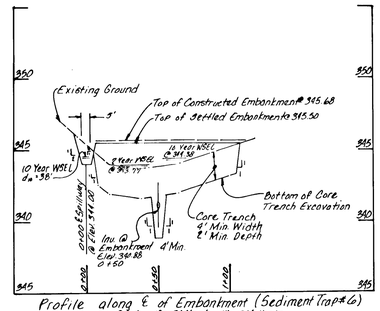
Profile along ℄ of Embankment (Sediment Trap #9)



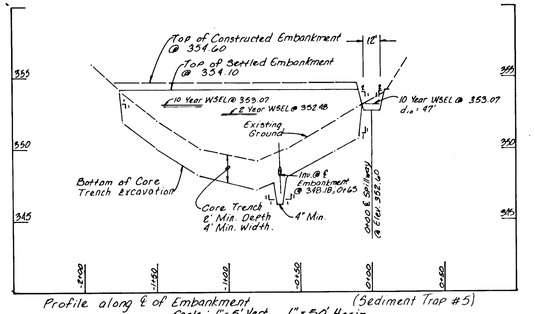
Profile along ℄ of Embankment (Sediment Trap #8)
Scale 1" = 5' Vert, 1" = 50' Horiz.



Profile along ℄ of Embankment (Sediment Trap #7)
Scale 1" = 5' Vert, 1" = 50' Horiz.



Profile along ℄ of Embankment (Sediment Trap #6)
Scale 1" = 5' Vert., 1" = 50' Horiz.



Profile along ℄ of Embankment (Sediment Trap #5)
Scale: 1"= 5' Vert., 1"= 50' Horiz.

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.

Rodolph Mayt — 9-2-94
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 at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before begining the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

M. L. W — 9/6/94
Signature of Developer — Date

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

Patricia Englehart — 9/8/94
U.S. Soil Conservation Service — Date

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

Griffin Schley — 9/8/94
Howard Soil Conservation District — Date

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

Chief, Land Development Division — 9/16/94 — Date

C. E. Dalton, acting — 9/22/94
Chief, Bureau of Engineering — Date

Andrew M. Demuth — 9-15-94
Chief, Bureau of Highways — Date

Rodolph Mayt — 9-2-94

APPROVED: Department of Planning and Zoning

Gina Fennamy — 9/23/94
Chief, Division of Land Development and Research — Date

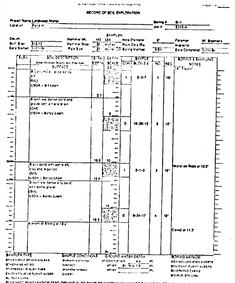
LAND DESIGN ENGINEERING, INC.
8835 Columbia 100 Parkway, Unit N, Columbia, MD 21045
(410) 715-1070 (Balto.) (301) 596-3424 (Wash.) (410) 715-0681 (Fax)

DESIGNED EOS	GRADING & SEDIMENT AND EROSION CONTROL DETAILS	SCALE As Shown
DRAWN MLM	LYNDWOOD MANOR SECTION ONE AREA ONE	DRAWING 19 of 28
CHECKED RM		JOB NO. 93-1764
DATE 7/94	Owner / Developer 100 INVESTMENT LIMITED PARTNERSHIP 8835-D Columbia 100 Parkway Columbia Maryland 21045 (410)730-0810	F.C.C. No. F94-29

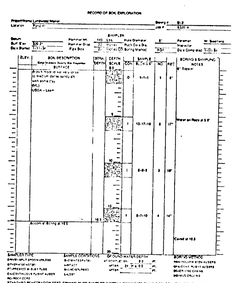
P-94-219

1708

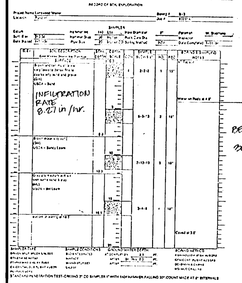
SOIL BORING B-1

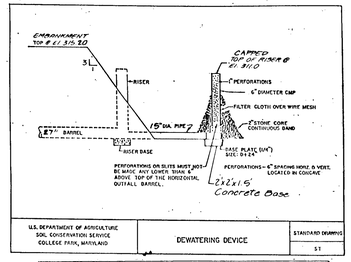


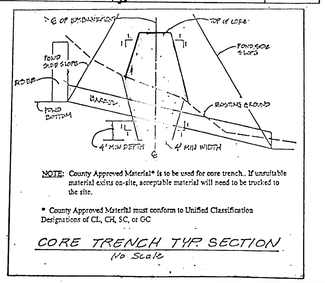
SOIL BORING B-2

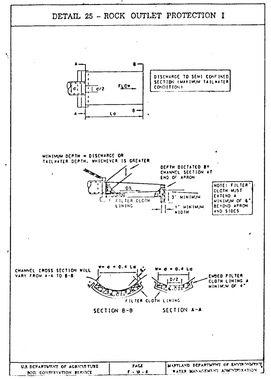


SOIL BORING B-3







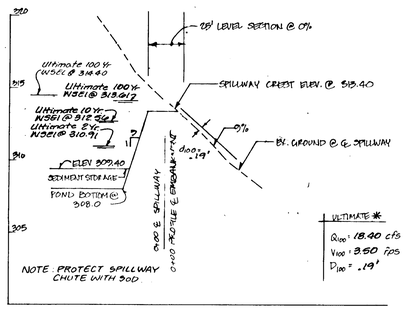


Sediment Basin # 3 Schedule

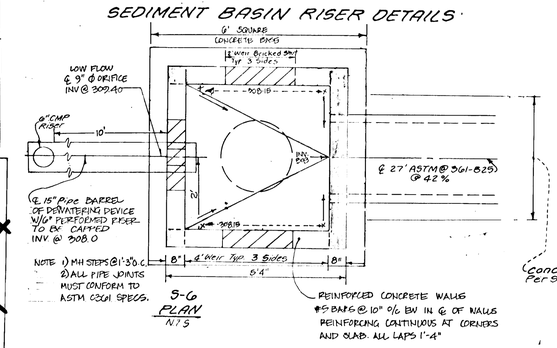
Basin No.	Max. D.A. Acres	Stor. Reqd. ft^3	Stor. Prov. ft^3	Stor. Elev.	Stor. Depth ft.	Weir Length ft.	Bottom Elev.	Clean. Elev.	Crest Elev.	Top Elev.	Basin Size
3	12.63	22734	23807	309.40	1.4	26	308	308.60	312	315.40	See Plan

PROFILE ALONG ℄ EMERGENCY SPILLWAY

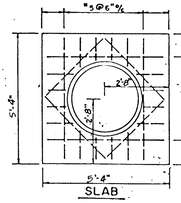
SCALE: 1"=50' HORIZ.
1"=5' VERT.
POND #3

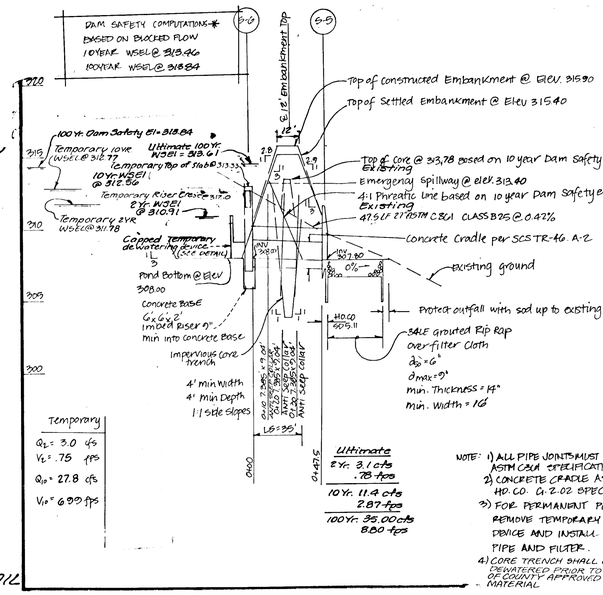


POND #3
SEDIMENT BASIN RISER DETAILS



RISER FRAME & COVER DETAIL (NTS)



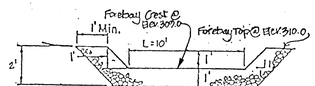


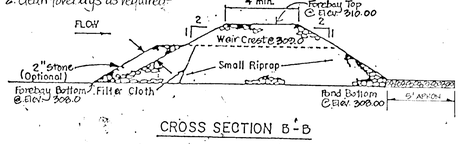
POND #3
PROFILE ALONG BARREL

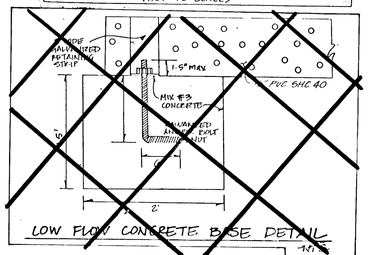
Scale: 1"=5' Vert.
1"=50' Horz.

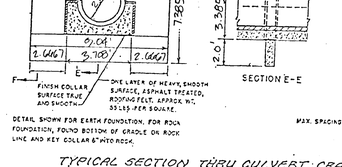
MAINTENANCE SCHEDULE

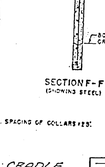
1. Inspect Basins after Signif-icant rainfall event, or annually
2. Clean forebays as required

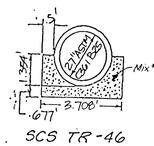






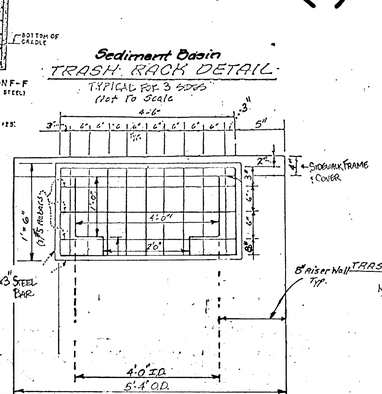


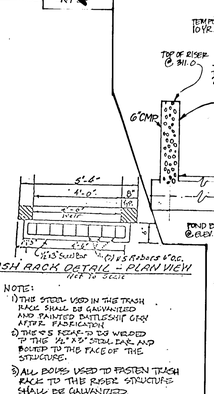




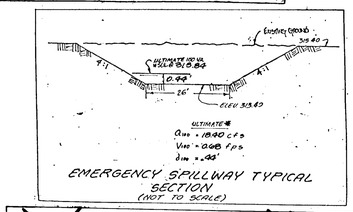
Sediment Basin
TRASH RACK DETAIL

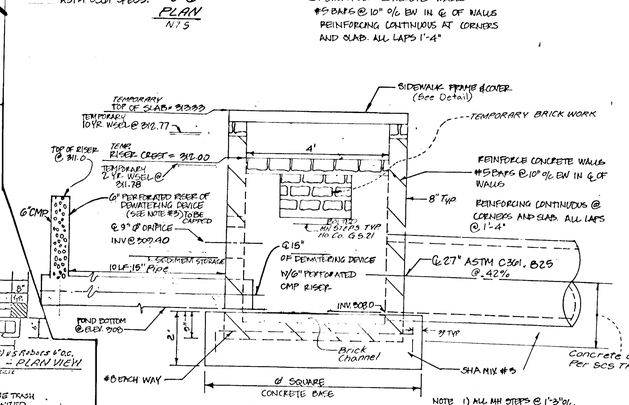
TYPICAL FOR 3 SIDES
Not To Scale

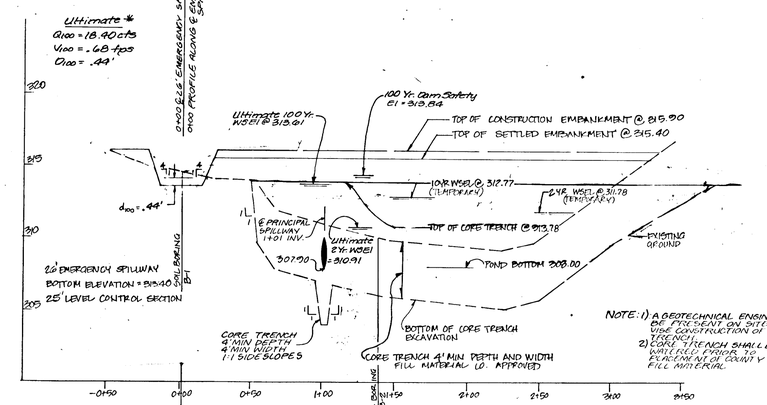




NOTE:
1) THE STEEL USED IN THE TRASH RACK SHALL BE GALVANIZED AND PAINTED BATTLESHIP GRAY AFTER FABRICATION
2) THE ½"ø STEEL TO BE WELDED TO THE 1½"x3" STEEL BAR, AND BOLTED TO THE FACE OF THE STRUCTURE.
3) ALL BOLTS USED TO FASTEN TRASH RACK TO THE BASIC STRUCTURE SHALL BE GALVANIZED







PROFILE ALONG ℄ OF EMBANKMENT (SEDIMENT BASIN/SWM FACILITY #3)

Scale: 1"=5' vert.
1"=50' Horz.

L.D.E.	Update Per New Layout	2/97
By	Revision	Date

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.

Rodolph Mayt — 9-2-94
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.

I.W.I. W — 9/6/94
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.

Patricia Eagle for GS — 9/8/94
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. Zirkin for GS — 9/12/94
Howard Soil Conservation District — Date

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

Chief, Land Development Division — 9/21/94 Date

C. E. Balto acting — 9/22/94
Chief, Bureau of Engineering — Date

Chief, Bureau of Highways — 9-15-94 Date

APPROVED: Department of Planning and Zoning

Gina Swaim acting — 9/23/94
Chief, Division of Land Development and Research — Date

Rodolph Mayt 9-2-94

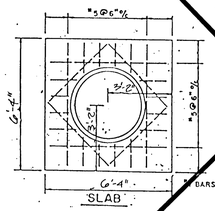
LAND DESIGN ENGINEERING, INC.

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

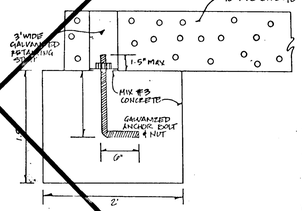
DESIGNED EG	STORMWATER MANAGEMENT DETAILS POND #3	SCALE AS SHOWN
DRAWN WJ	LYNDWOOD MANOR SECTION ONE AREA ONE	DRAWING 20 OF 28
CHECKED RM		JOB No. 92-176.4
DATE 7/94	Owner / Developer: 100 INVESTMENT LIMITED PARTNERSHIP 8835-P Columbia 100 Parkway Columbia, Maryland 21045 (410) 730-0810	FILE No. F94-29

80% 1

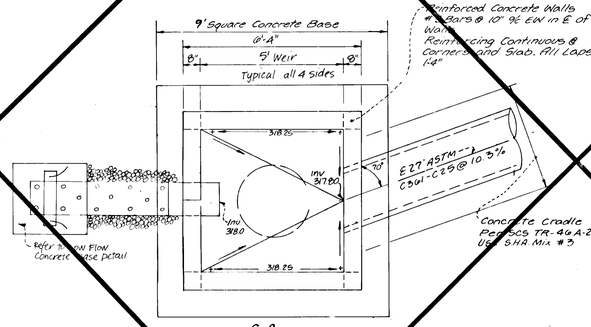
SEDIMENT BASIN / SWM FACILITY RISER DETAILS
POND #2



SIDEWALK FRAME & COVER DETAIL
N.T.S.

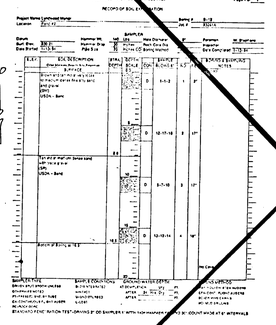


LOW FLOW CONCRETE BASE DETAIL

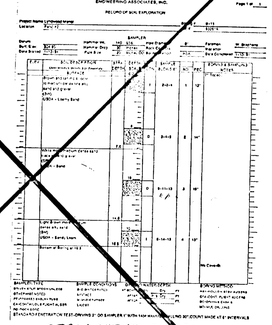


S-8
PLAN
N.T.S.

SOIL BORING B-12

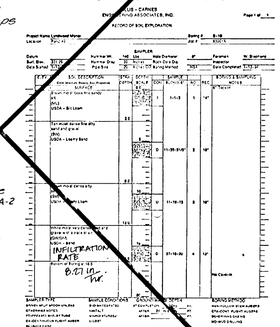


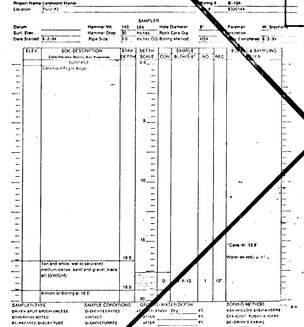
SOIL BORING B-11



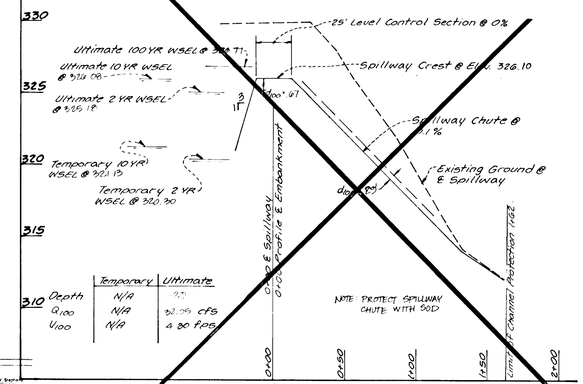
BEARING STRENGTH 3000 PSF

SOIL BORING B-10

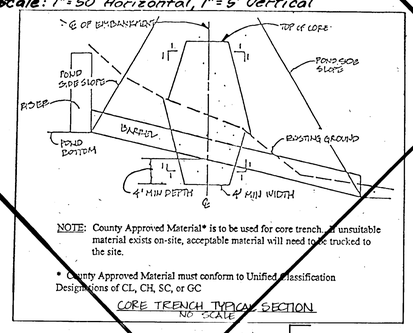




REVISION		
BY	DESCRIPTION	DATE
LDE	SEE SHEET 27 - REMINDER SHEET	4-97



PROFILE ALONG ℄ EMERGENCY SPILLWAY
(POND #2)
Scale: 1"=50' Horizontal, 1"=5' Vertical



NOTE: County Approved Material* is to be used for core trench. If unsuitable material exists on-site, acceptable material will need to be trucked to the site.

* County Approved Material must conform to Unified Classification Designations of CL, CH, SC, or GC

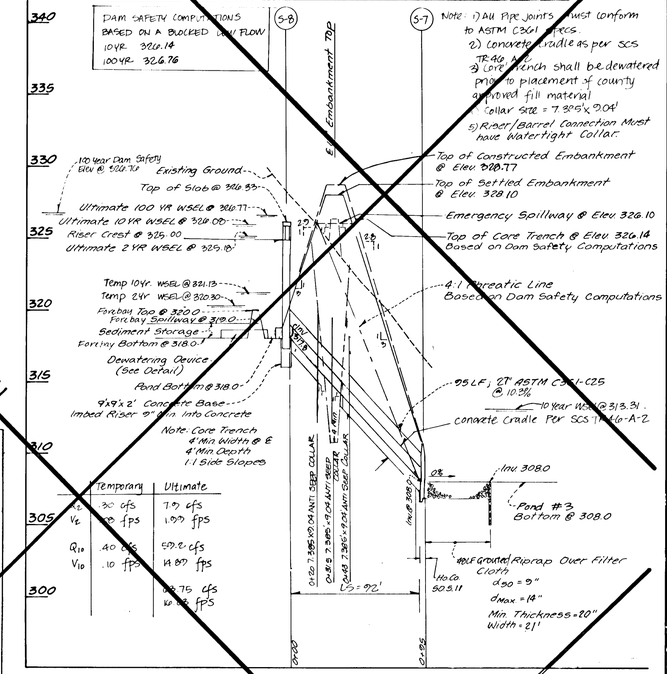
CORE TRENCH TYPICAL SECTION
NO SCALE

Sediment Basin # 2 Schedule

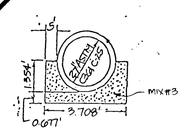
Basin No.	Max. I.A. Acres	Stor. Reqd. ft^3	Stor. Prov. ft^3	Stor. Elev.	Stor. Depth ft.	Weir Length ft.	Bottom Elev.	Clean. Elev.	Crest Elev.	Top Elev.	Basin Size
2	1.21	2688.75	2953.25	319	1	22	318	318.30	325	328	See Plan

DAM SAFETY COMPUTATIONS
BASED ON A BLOCKED LOW FLOW
10 YR. 326.14
100 YR. 326.76

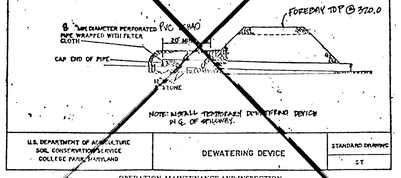
Note: 1) DR Pipe Joints must conform to ASTM C361 specs
2) Concrete cradle as per SCS TR-46 specs
3) Core trench shall be dewatered prior to placement of county approved fill material
Collar Size = 7.90'x 7.04'
4) Riser/barrel connection must have watertight collar.



PROFILE ALONG BARREL
(SEDIMENT BASIN/SWM FACILITY #2)
1"=5' VERTICAL
1"=50' HORIZONTAL

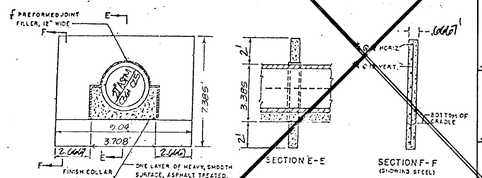


SCS TR-46
A-2 CRADLE
Not To Scale



OPERATION, MAINTENANCE AND INSPECTION

Inspection of the pond(s) shown hereon shall be performed at least annually, in accordance with the checklist of requirements contained within USDA, SCS "Standards And Specification 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.



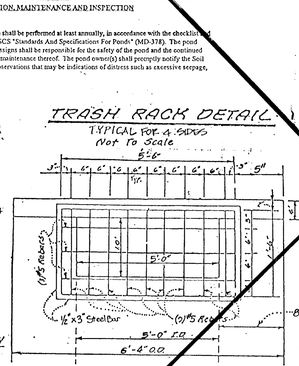
DETAIL SHOWN FOR EARTH FOUNDATION. FOR ROCK FOUNDATION, POUND BOTTOM OF CRADLE ON RIDGE LINE AND KEY COLLAR 6" INTO ROCK.

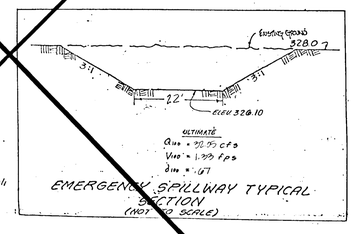
MAX. SPACING OF COLLARS 12.5'

TYPICAL SECTION THRU CULVERT, CRADLE — AND ANTI-SEEP COLLAR
Not To Scale

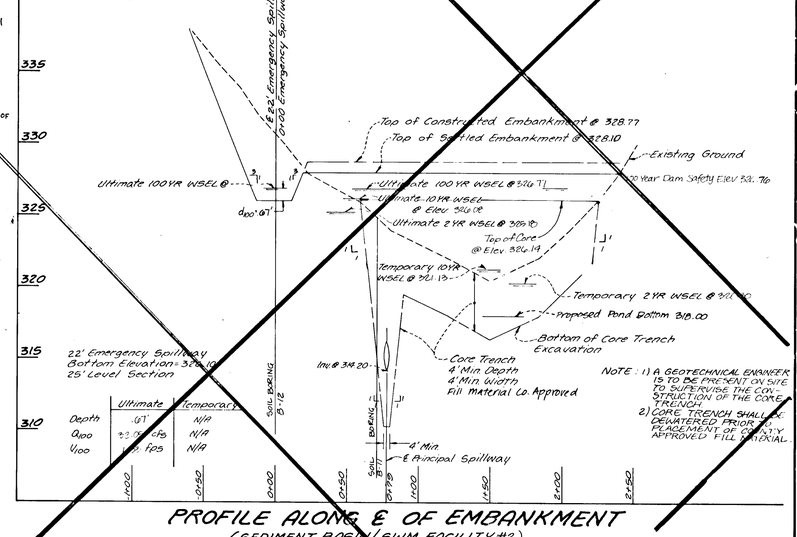
TRASH RACK DETAIL
TYPICAL FOR 4.5DA'S
Not To Scale

NOTES:
1) THE STEEL USED IN THE TRASH RACK SHALL BE GALVANIZED AND PAINTED BATTLESHIP GREY - MINE FABRICATION.
2) THE #5 RODS TO BE WELDED TO THE 1/2" x 5" STEEL BAR AND BOLTED TO THE FACE OF THE STRUCTURE.
3) ALL BOLTS USED TO FASTEN TRASH RACK TO THIS BASIC STRUCTURE SHALL BE GALVANIZED.





EMERGENCY SPILLWAY TYPICAL SECTION
(NOT TO SCALE)



NOTE: 1) A GEOTECHNICAL ENGINEER IS TO BE PRESENT ON SITE TO SUPERVISE THE CONSTRUCTION OF THE CORE TRENCH.
2) CORE TRENCH SHALL BE DEWATERED PRIOR TO PLACEMENT OF COUNTY APPROVED FILL MATERIAL

PROFILE ALONG ℄ OF EMBANKMENT
(SEDIMENT BASIN/SWM FACILITY #2)

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.

Rodolph Mayt 9-2-94
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.

[signature] 9/6/94
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.

Patricia Earley 9/8/94
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. Zieh 9/8/94
Howard Soil Conservation District Date

APPROVED: Department of Public works for Storm Drainage Systems and Roads.

[signature] 9/22/94
Chief, Land Development Division Date

C.E. Dalton-Ashley 9/22/94
Chief, Bureau of Engineering Date

[signature] 9-15-94
Chief, Bureau of Highways Date

APPROVED: Department of Planning and Zoning

Gloria Krumrine 9/23/94
Chief, Division of Land Development and Research Date

STATE OF MARYLAND — ROBERT MAYT — 9-2-94

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	STORMWATER MANAGEMENT DETAILS POND #2	SCALE AS SHOWN	
DRAWN WJ	FOR SUBSTITUTE SHEET: SEE SHT. 27 of 28	DRAWING 21 of 28	
CHECKED RM	LYNDWOOD MANOR SECTION ONE AREA ONE	JOB NO 92-176-4	
DATE 7/94	Owner / Developer 100 INVESTMENT LIMITED PARTNERSHIP 8835-P Columbia 100 Parkway Columbia, Maryland 21045 (410) 730-0810	FILE NO F-94-29	

1708

F-94-29

SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for 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 objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.

Areas to be covered by the 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 stormwater 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 thick (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 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 be 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 the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

Cut Off Trench - The cutoff trench shall be excavated into impervious 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 operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 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. Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings or an approved equal may be used: Nexon, Plasti-Cote, Blac-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

   Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum 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 AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. 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 between 4 and 9.

2. 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.

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. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

   All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 24" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket; and a 12" wide hugger type band with 0-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 24" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24".

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

4. 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.

5. Backfilling shall conform to "Structure Backfill."

6. 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 bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361.

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 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 all spaces under the pipe are 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.

Polyvinyl Chloride (PVC) Pipe - All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.

2. Joints and connections to anti-seep collars shall 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. 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 609, Mix No. 3

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 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 areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

Stabilization

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

Erosion and Sediment Control

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

OPERATION AND MAINTENANCE SCHEDULE
OF HOME OWNERS ASSOCIATION OWNED AND MAINTAINED
STORMWATER MANAGEMENT FACILITY
EXTENDED DETENTION POND
POND #2

HOME OWNERS ASSOCIATION'S MAINTENANCE RESPONSIBILITIES:

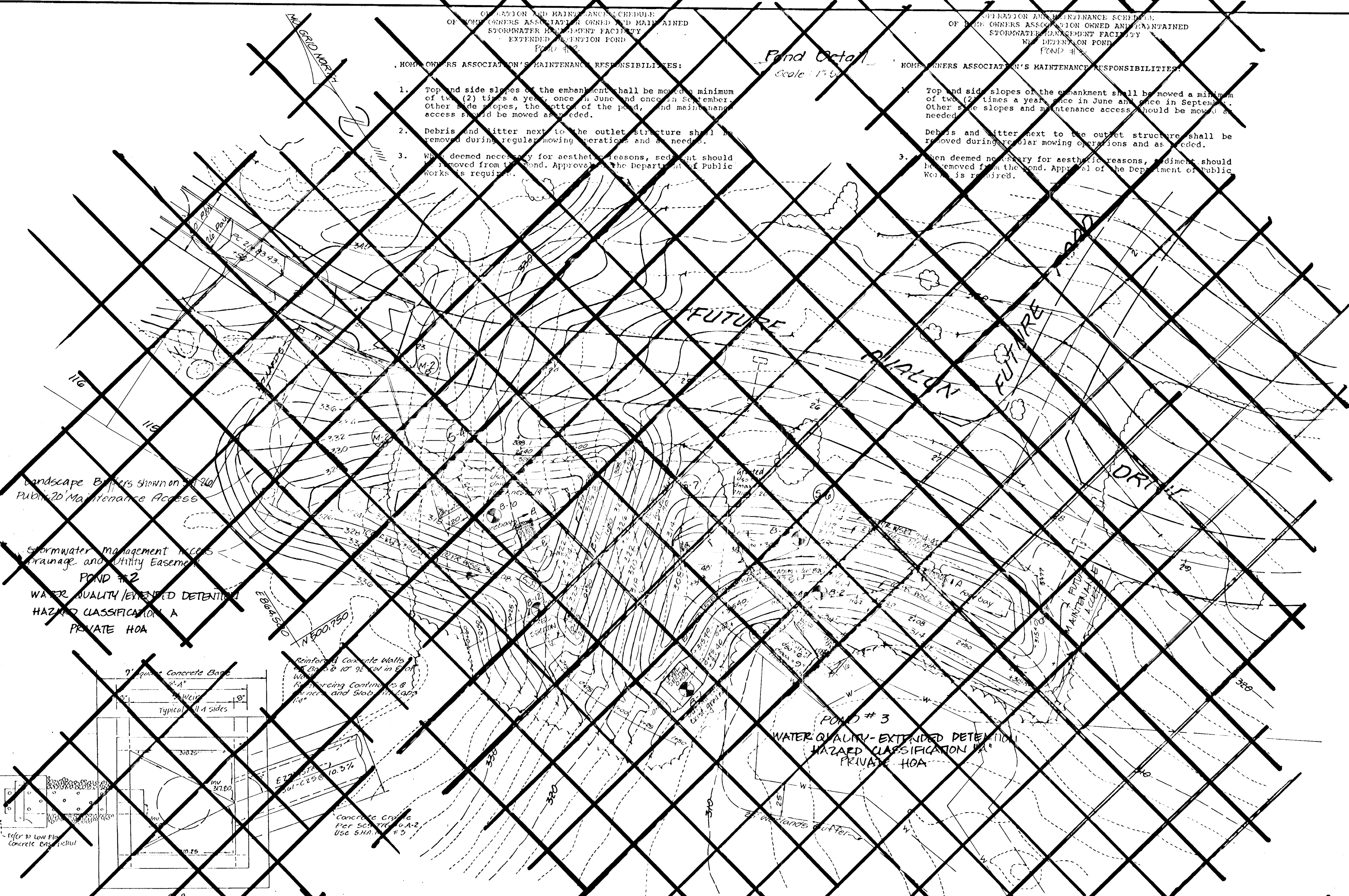
1. Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes, the bottom of the pond, and maintenance access should be mowed as needed.
2. Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
3. When deemed necessary for aesthetic reasons, sediment should be removed from the pond. Approval of the Department of Public Works is required.

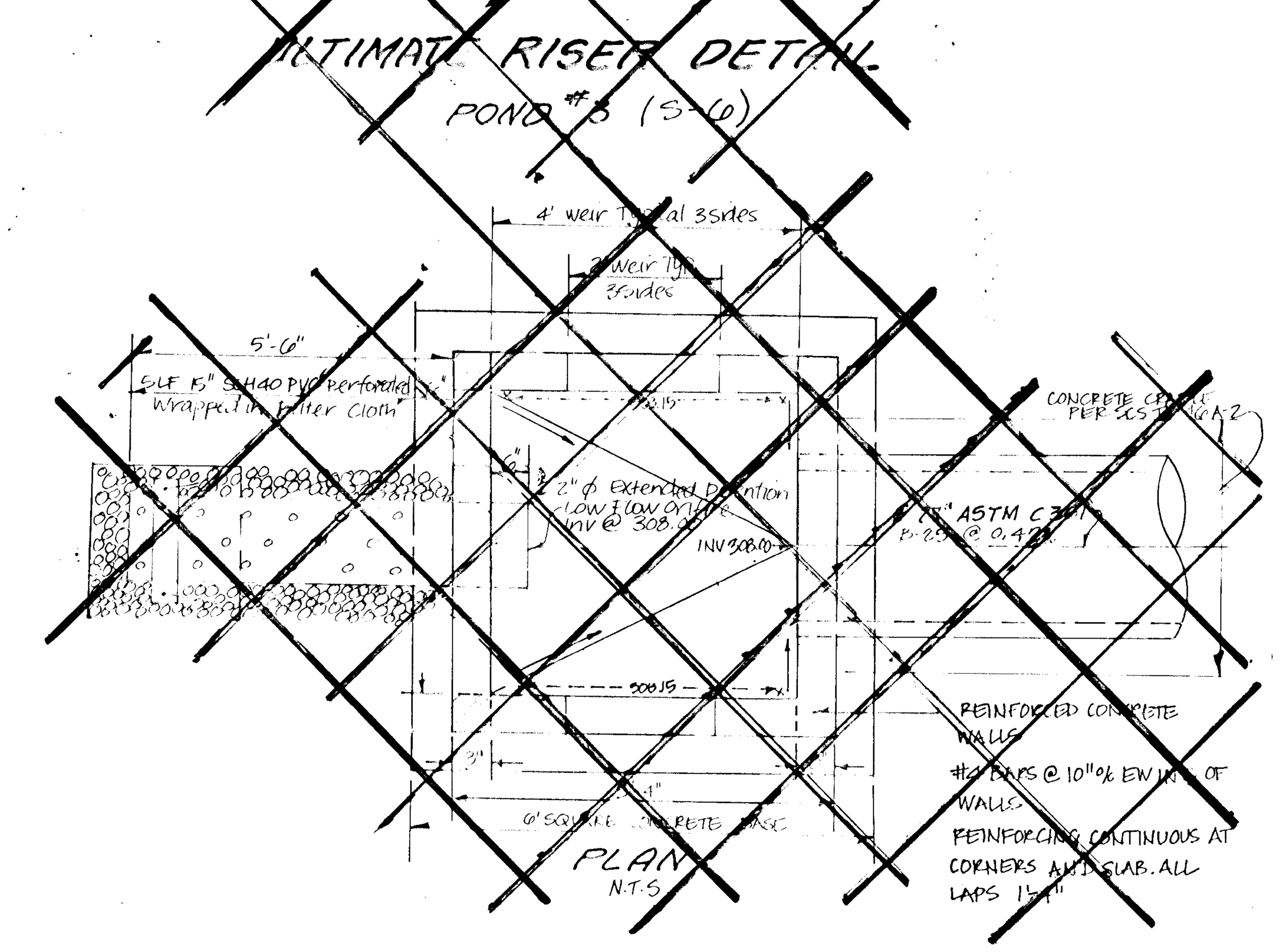
OPERATION AND MAINTENANCE SCHEDULE
OF HOME OWNERS ASSOCIATION OWNED AND MAINTAINED
STORMWATER MANAGEMENT FACILITY
WET DETENTION POND
POND #3

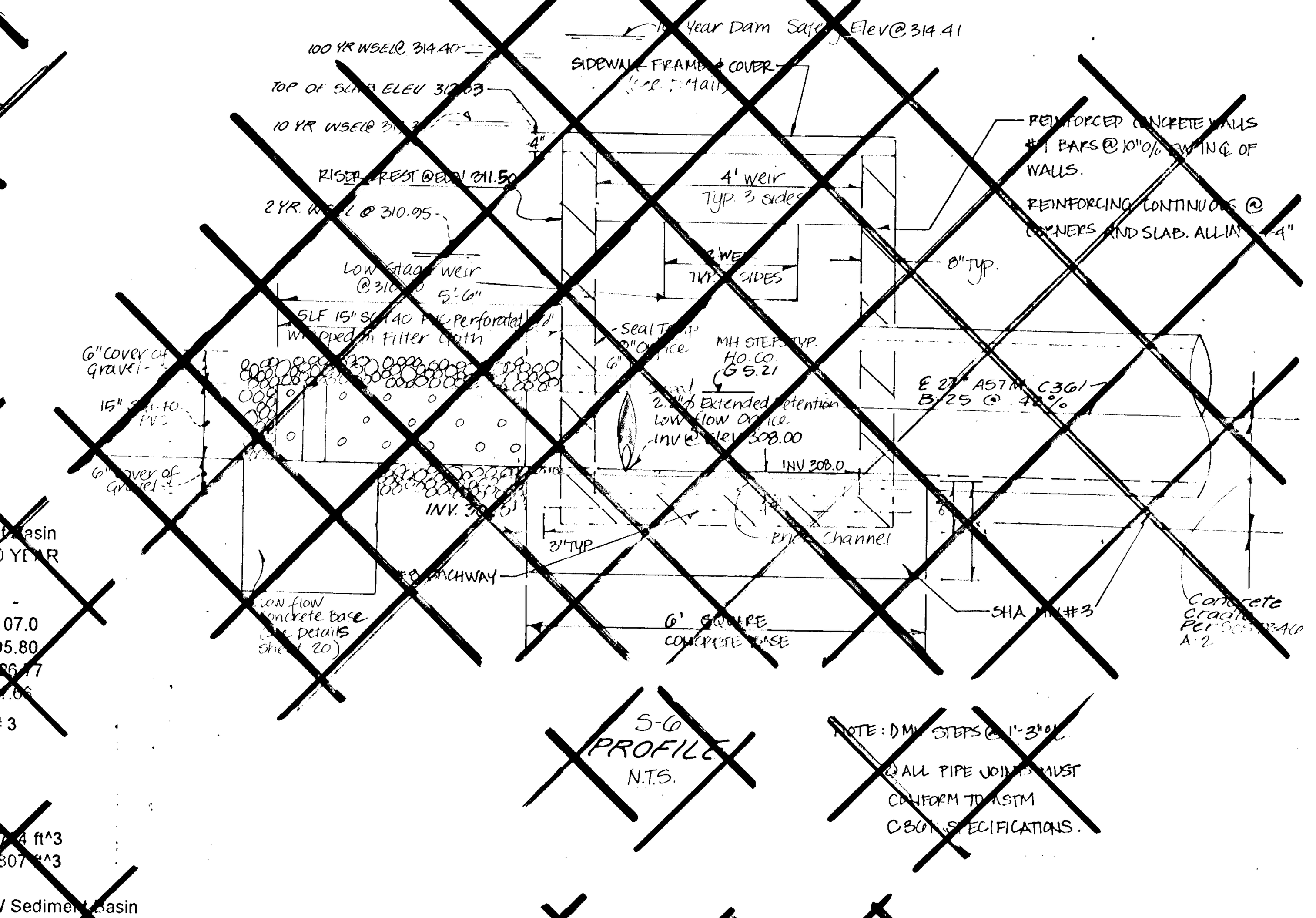
HOME OWNERS ASSOCIATION'S MAINTENANCE RESPONSIBILITIES:

1. Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes and maintenance access should be mowed as needed.
2. Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.
3. When deemed necessary for aesthetic reasons, sediment should be removed from the pond. Approval of the Department of Public Works is required.

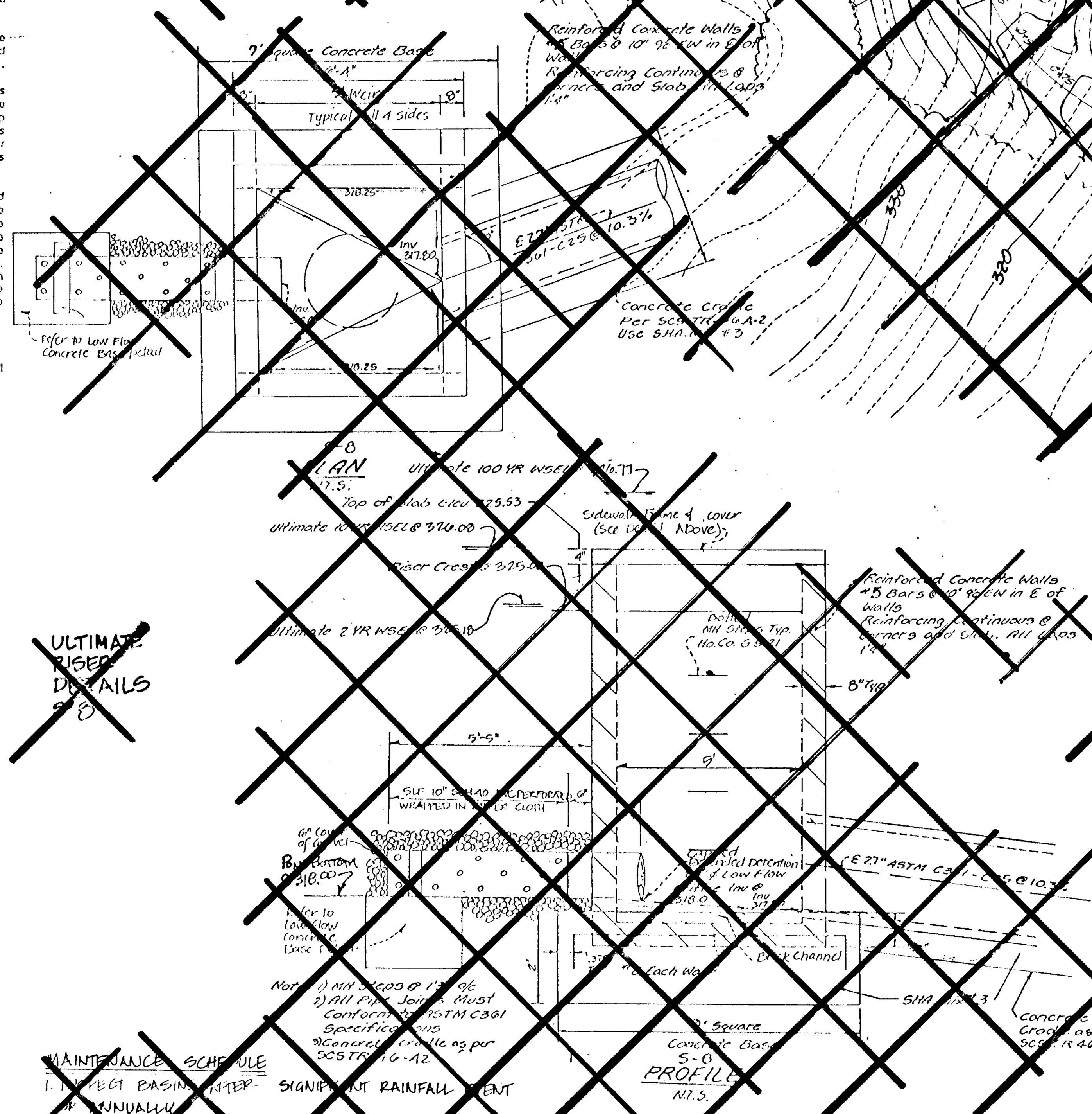
REVISIONS		
BY	DESCRIPTION	DATE
LDE	SEE SHEET 28 · RENUMBER SHEET	4-97





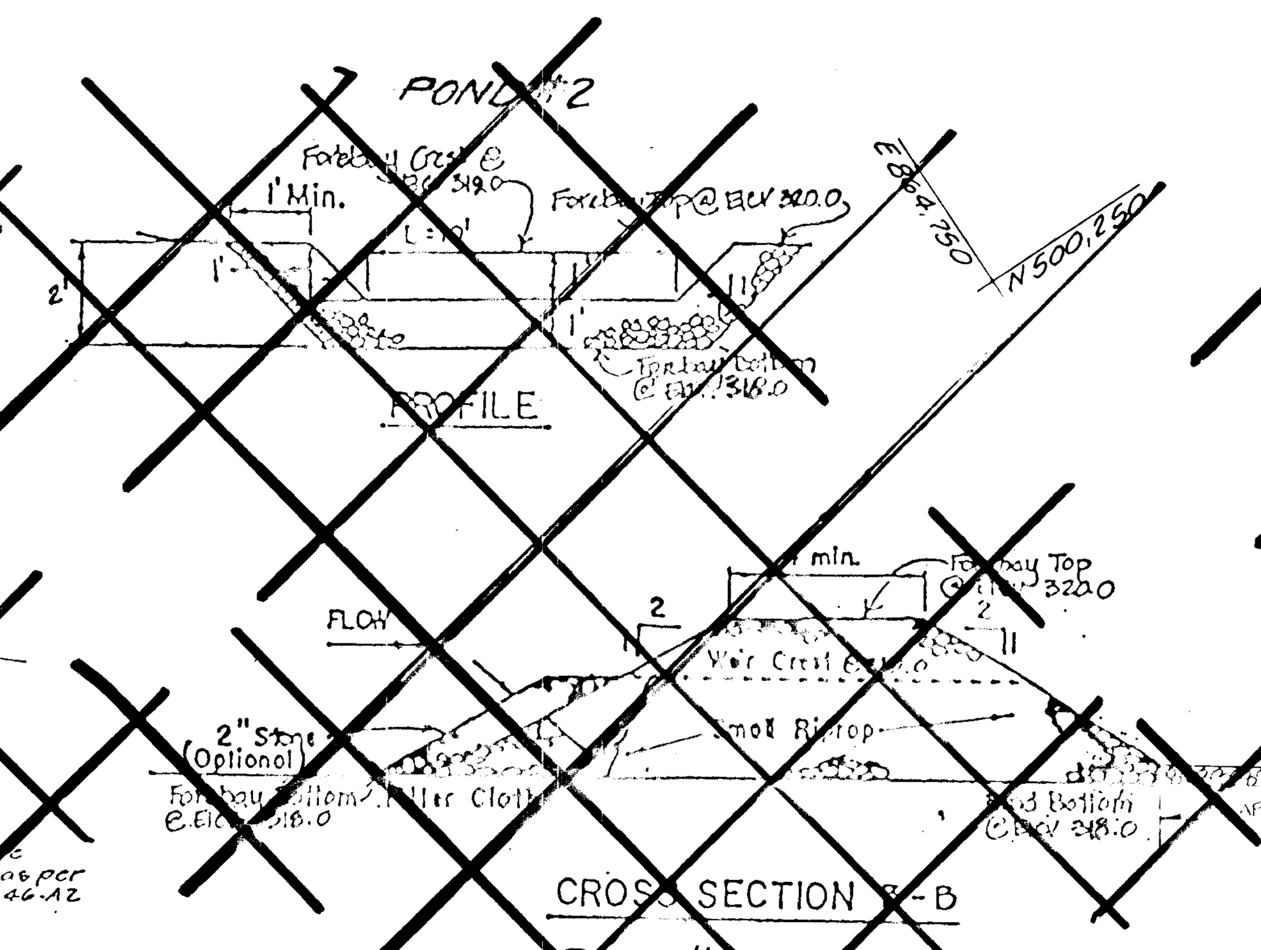


Note: In an area where excavation is shown within a future road right of way excavation must be made no closer than one (1) foot of the final subgrade. See F-94-94 for road profiles. Where fill is proposed within the road right-of-way, the fill shall be a minimum of two (2) feet below the final sub-grade. See F-94-94 for road profiles.



ULTIMATE RISER DETAILS S-8

MAINTENANCE SCHEDULE
1. INSPECT BASINS AFTER SIGNIFICANT RAINFALL EVENT OR ANNUALLY
2. CLEAN FOREBAYS AS REQUIRED.



SUMMARY TABLE Pond # 2

Drainage Area = 17.68 Acres
Top of Facility @ Elev. 328.00
Invert of Facility @ Elev. 318.0
Volume of Sediment Storage Required = 2178[illegible] ft^3
Volume of Sediment Storage Provided = 2650.5 ft^3

SWM Pond / Sediment Basin		2 YEAR	10 YEAR	100 YEAR
Allowable Release	(cfs)	-	-	-
Computed Inflow	(cfs)	33.80	67.90	107.0
Facility Discharge	(cfs)	7.90	59.20	95.80
Elevation at Discharge		325.18	326.08	326.77
Storage at Elevation	(AC\FT)	[illegible]	1.41	[illegible]

SUMMARY TABLE Pond # 3

Drainage Area to Facility = 7.30 Acres
Top of Facility @ Elev. 315.40
Invert of Facility @ Elev. 308.0
Volume of Sediment Storage Required = 22[illegible]4 ft^3
Volume of Sediment Storage Provided = [illegible]807 ft^3

SWM Pond / Sediment Basin		2 YEAR	10 YEAR	100 YEAR
Allowable Release	(cfs)	7.40	[illegible]	85.30
Computed Inflow	(cfs)	13.90	[illegible]	135.4
Facility Discharge	(cfs)	8.10	44.70	124.30
Elevation at Discharge		310.95	313.31	314.40
Storage at Elevation	(AC\FT)	[illegible]	1.29	[illegible]

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.

Rodolph Mayf — 9-2-94
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.

[signature] — 9/6/94
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.

[signature] — 9/8/94
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.

[signature] — 9/8/94
Howard Soil Conservation District — Date

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

[signature] — 9/27/94
Chief, Land Development Division — Date

[signature] — 9/22/94
Chief, Bureau of Engineering — Date

[signature] — 9-15-94
Chief, Bureau of Highways HS — Date

APPROVED: Department of Planning and Zoning

[signature] — 9/23/94
Chief, Division of Land Development and Research — Date

[Professional Engineer seal, State of Maryland] Rodolph Mayf 9-2-94

LAND DESIGN ENGINEERING, INC.

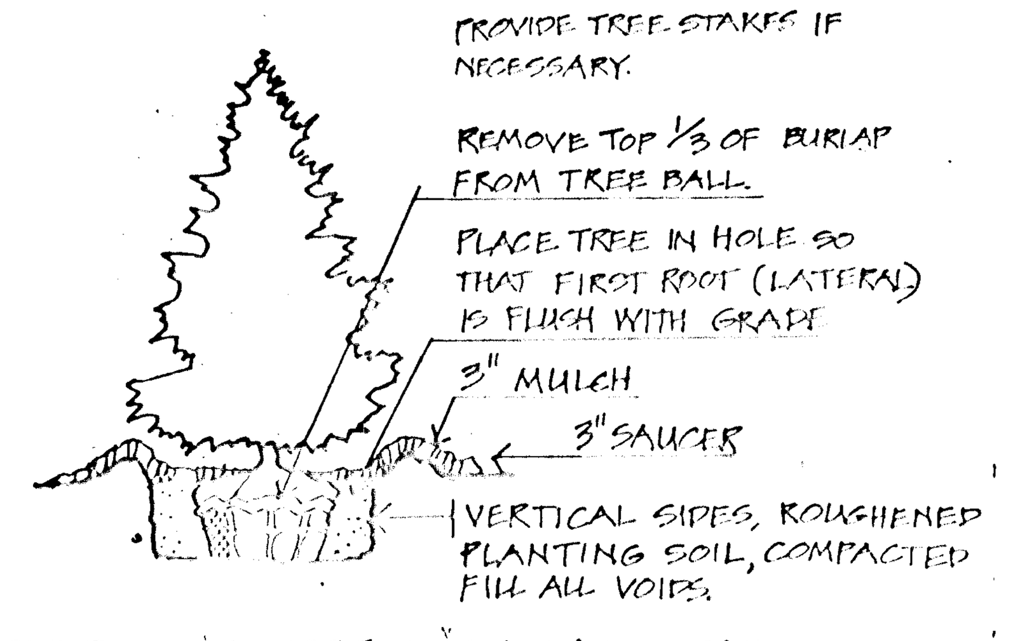
8835 Columbia 100 Parkway, Unit N, Columbia, MD 21045
(410) 715-1070 (Balto.) (301) 596-3424 (Wash.) (410) 715-0681 (Fax)

DESIGNED ES	STORMWATER MANAGEMENT DETAILS	SCALE AS SHOWN
DRAWN WJ	For Subsititute Sheet: See Sheet 28 of 28	DRAWING 22 OF 28
CHECKED RM	LYNDWOOD MANOR SECTION ONE AREA ONE	JOB No. 92-176.4
DATE 7/94	Owner / Developer 100 INVESTMENT LIMITED PARTNERSHIP 8835-P Columbia 100 Parkway Columbia, Maryland 21045 (410) 730-0810	FILE No. F94-29

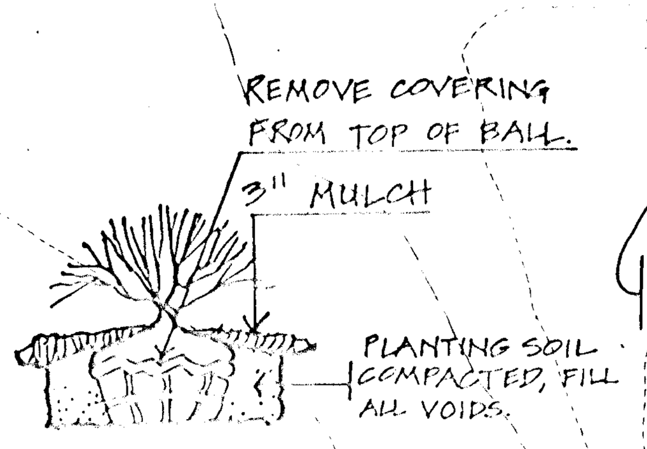
F-94-29

1708

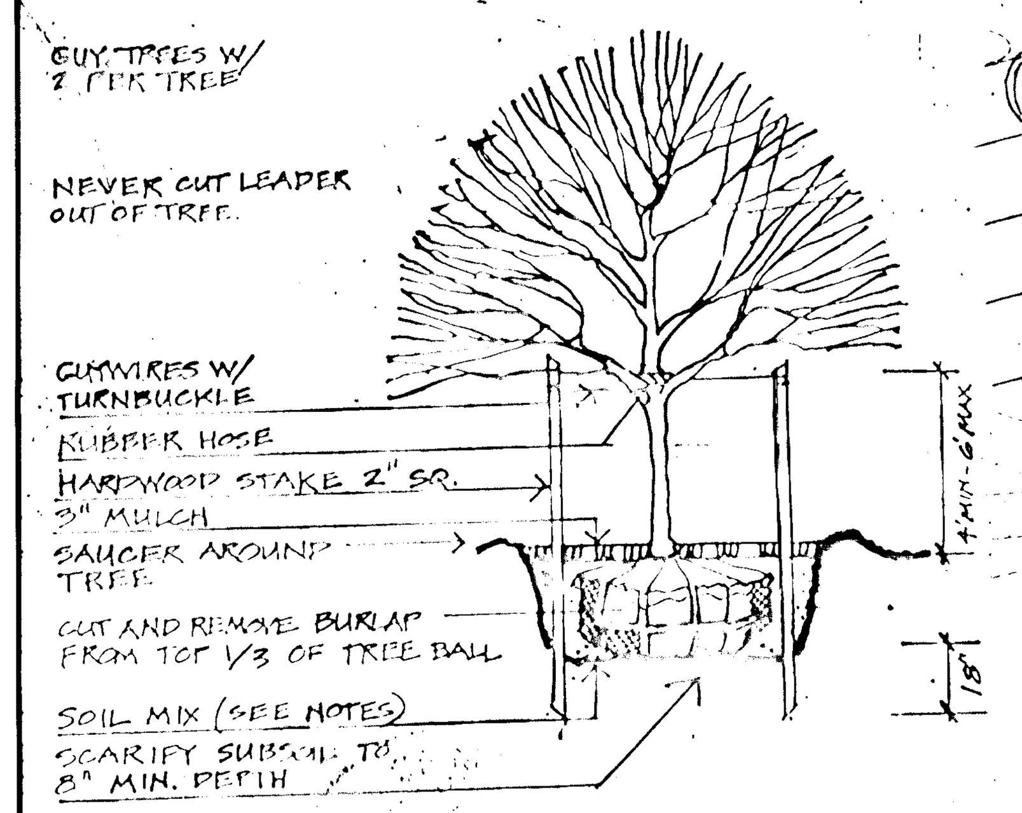
PLANTING DETAILS



EVERGREEN TREE PLANTING DETAIL
N.T.S.

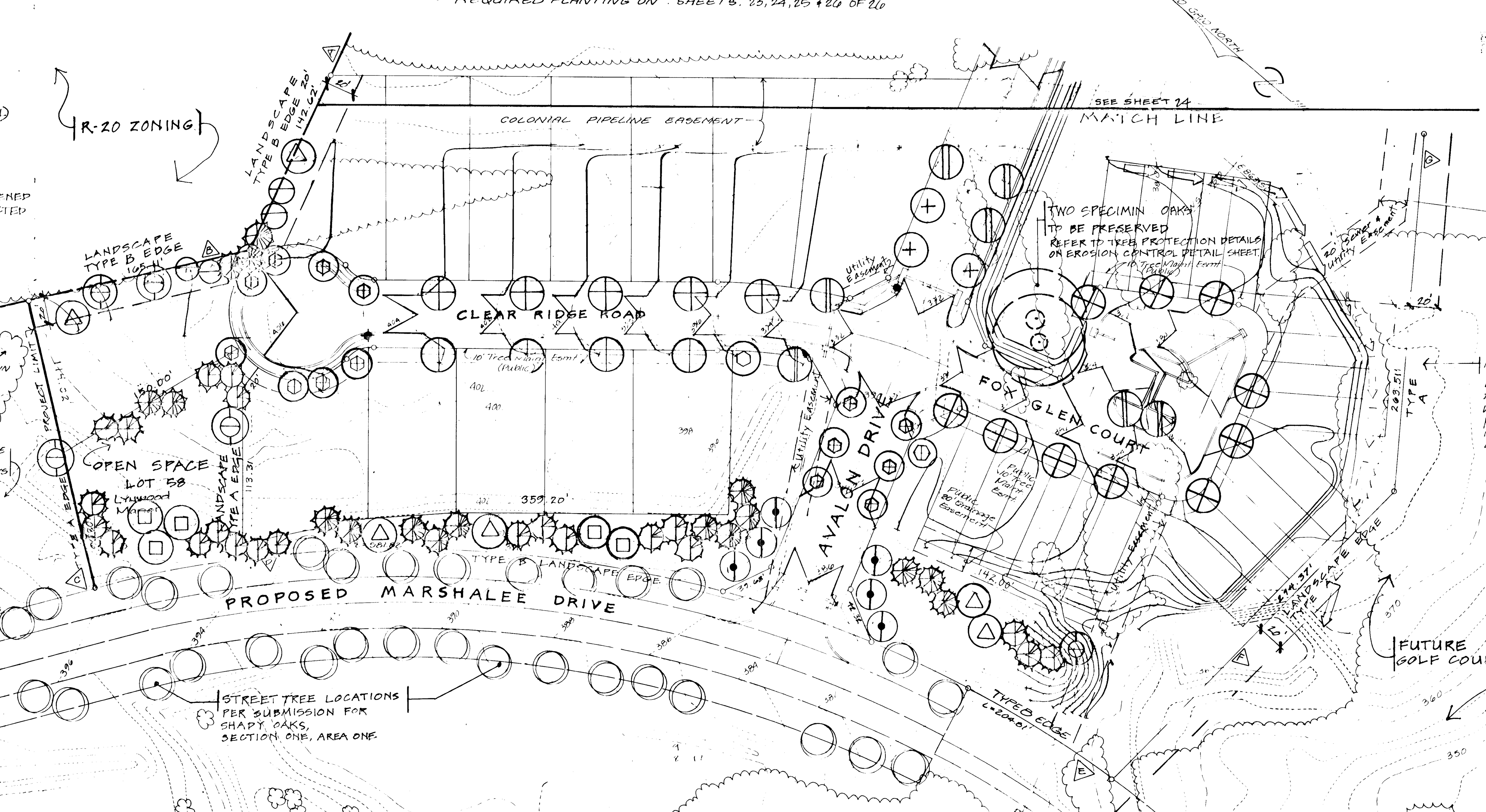


SHRUB PLANTING DETAIL
N.T.S.



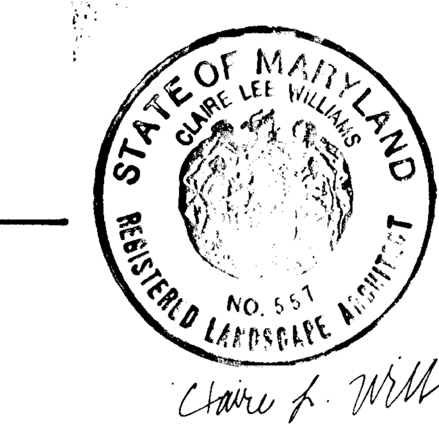
DECIDUOUS TREE PLANTING DETAIL
N.T.S.

NOTE: THE OWNER/DEVELOPER IS RESPONSIBLE FOR ALL REQUIRED PLANTING ON SHEETS 23, 24, 25 & 26 OF 26



NOTE: Landscape Perimeter Plantings for Edges F & G will be bonded under this plan. Specific plant locations shall be integrated with future golf course design.

Note: There shall be a minimum of 20' between street lights and street trees.



PLANTING NOTES

GENERAL:

1. Notify "Miss Utility" 72 hours prior to the installation of all plant material.
2. Plant installation must conform to the minimum standards cited in the latest edition of *Landscape Specification Guidelines*, published by the Landscape Contractor's Association.
3. Plants to be located in the field by the owner or the owner's representative. Notify owner 72 hrs. in advance of planting.
4. A *Certification of Landscape Installation* is required as per the *Howard County Landscape Ordinance*.
5. Contact Landscape Architect regarding the substitution of plant material.
6. The number, size and location of plants shall not be changed. Substitutions must be included in the recommended plant list as per *Howard County Landscape Ordinance*.
7. Street tree locations have been shown wherever possible. Drive aprons of proposed units may not allow a traditional placement of trees.

STREET TREE NOTES:

8. Biologic root inhibitor barrier or containment shall be installed for trees planted closer than 3 feet to sidewalk.
9. Trees shall be placed 30 feet (min.) from all sign and intersections when planting occurs between sidewalk and curb.
10. 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.
11. Street Tree planting must conform to the *Subdivision and Land Development Regulations* and the Department of Public Works' Design Manual of Howard County.

PLANTING:

12. 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.
13. Tree pits shall be backfilled with 60% topsoil, 25% peat and 15% sand with one pound of 10-10-10 fertilizer per pit.
14. Topsoil shall be sandy loam soil, free from noxious weeds or grasses, roots, clay lumps, stones, sticks, etc. Peat moss shall be commercial with pH 4.5 to 5.5, free of woody material or harmful minerals.
15. 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.
16. Maintain the site in an orderly manner. Streets and sidewalks shall be swept clean. All rejected or dead materials shall be immediately removed from the site.

MAINTENANCE AND GUARANTEES:

17. Plant material to be alive and healthy at the time of the guarantee period specified as per the *Howard County Landscape Ordinance*.
18. Maintenance shall begin immediately after planting and continue to the end of the guarantee period.
19. Maintenance consists of pruning, watering, weeding, re-mulching, resetting plants to proper grades as needed and repairing guys and stakes as needed.
20. This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard Code and Landscape Manual.
21. Financial Surety for the required landscaping has been posted as part of the DPW Developers agreement in the amount of $12,700.00.

NOTE: PLANT LISTS ARE PROVIDED FOR THE CONTRACTORS' CONVENIENCE. IF DISCREPANCIES EXIST, REFER TO DRAWINGS.

PERIMETER LANDSCAPE EDGE

PROPERTY LINE	LENGTH	LANDSCAPE TYPE
A	142.62'	B
B	165.11'	B
C	217.08'	A
D	581.82'	B
E	204.81'	B
F	294.37'	A*
G	263.51'	A*
* PROPERTY LINES F&G UNDER THIS PLAN.	WILL BE BONDED	
TYPE A	TOTAL: 774.8'	
TYPE B	TOTAL: 1,094.3'	

SCHEDULE A
PERIMETER LANDSCAPE EDGE

Category	Adjacent to Roadways	Adjacent to Perimeter Properties
Landscape Type	B	A
Linear Feet of Roadway Frontage/Perimeter	1,094.3'	774.8'
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	NO	NO
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)	NO	NO
Number of Plants Required: Shade Trees / Evergreen Trees / Shrubs	21 / 27	12 TREES / 0 / 0
Number of Plants Provided: Shade Trees / Evergreen Trees / Other Trees (2:1 substitution) / Shrubs (10:1 substitution) (Describe plant substitution credits below if needed)	18 / 36 / 4	3 SHADE TREES *

Comments: Type B, Evergreens & Ornamental trees substituted at 2:1
* Specific plant types and locations to be integrated with future golf course design.

SCHEDULE B
PARKING LOT INTERNAL LANDSCAPING

Number of Parking Spaces	4
Number of Trees Required	1
Number of Trees Provided: Shade Trees / Other Trees (2:1 substitution)	2

SCHEDULE C
RESIDENTIAL DEVELOPMENT INTERNAL LANDSCAPING

Number of Dwelling Units	TO BE COMPLETED ON THE SITE DEVELOPMENT PLAN
Number of Trees Required (1:DU SFA; 1:3 DU APTS)	
Number of Trees Provided: Shade Trees / Other Trees (2:1 substitution)	

SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

Linear Feet of Perimeter	REFER TO SHEET 26 of 26 FOR THIS SCHEDULE
Number of Trees Required: Shade Trees / Evergreen Trees	
Credit for Existing Vegetation (No, Yes and %)	
Credit for Other Landscaping (No, Yes and %)	
Number of Trees Provided: Shade Trees / Evergreen Trees / Other Trees (2:1 substitution)	

PLANT LIST PERIMETER LANDSCAPE

NO.	KEY	QUAN.	PLANT NAME	SIZE	COND.	REMARKS
1		7	*Crataegus virdis 'Winter King'* Winter King Hawthorn	1.5-2" CAL	B&B	FULL 20' O. C.
2		28	*Cedrus deodara* Deodar Cedar	6-8' HT	B&B	12'-15' O. C.
3		12	*Fraxinus americana 'Autumn Purple* Autumn Purple White Ash	2.5-3" CAL	B&B	FULL
4		12	*Magnolia Stellata* Star Magnolia	6-8' HT	B&B	12'-15' O. C.
5		52	*Pinus strobus* White Pine	6-8' HT	B&B	12'-15' O. C.
6		12	*Quercus palustris 'Sovereign'* Sovereign Pin Oak	2.5-3" CAL	B&B	FULL
7		14	*Prunus yedoensis* Yoshino Cherry Also used as a Street Tree.	1.5-2" CAL	B&B	As Shown
8			~~*Forsythia suspensa var 'sieboldii'* Siebold Weeping Forsythia~~	~~2-2.5' HT~~	~~B&B~~	~~4' O. C.~~
9			~~*Rhus copallina* Flameleaf Sumac~~	~~18-24" HT~~	~~CONT.~~	~~4' O. C.~~
		8	QUERCUS RUBRA NORTH RED OAK	2.5-3" CAL	B&B	FULL

PLANT LIST STREET TREES

NO.	KEY	QUAN.	PLANT NAME	SIZE	COND.	REMARKS
1		18	*Acer rubrum 'Red Sunset'* Red Sunset Red Maple	2.5-3" CAL	B&B	FULL 40' O. C.
2		14	*Acer saccharum 'Green Mountain'* *Green Mountain Sugar Maple* Note: May also be a Perimeter tree	2.5-3" CAL	B&B	FULL 40' O. C.
3		10	*Cladrastis lutea* American Yellowwood	2.5-3" CAL	B&B	FULL 35-40'
4		29	*Fraxinus pennsylvanica 'Marshall's Seedless'* *Marshall's Seedless Green Ash*	2.5-3" CAL	B&B	FULL 40' O. C.
5		18	*Ginkgo biloba 'Autumn Gold'* Autumn Gold Ginkgo	2.5-3" CAL	B&B	FULL Male only
6			~~*Gleditsia tricanthos inermis 'Imperial'* Imperial Thornless Honey Locust~~	~~2.5-3" CAL~~	~~B&B~~	FULL
7		23	*Platanus x acerifolia 'Columbia'* Columbia London Plane	2.5-3" CAL	B&B	40' O.C. or as shown
8		24	*Prunus sargentii* Sargent Cherry	2.5-3' CAL	B&B	30' O.C. MAX
9		20	*Quercus rubra* Northern Red Oak	2.5-3' CAL	B&B	FULL
10		21	*Zelkova serrata* 'Village Green' Village Green Japanese Zelkova	2.5-3' CAL	B&B	FULL
			STREET TREE LOCATIONS PER SHADY OAKS' SUBMISSION SECTION ONE AREA ONE			

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.

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 at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before begining the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Signature of Developer Date

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

U.S. Soil Conservation Service Date

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

Howard Soil Conservation District Date

APPROVED: Department of Public Works

Chief, Storm Drainage Systems Division 9/22/94

Chief, Bureau of Engineering 9/22/94

Chief, Bureau of Highways 9-15-94

APPROVED: Department of Planning and Zoning

Chief, Division of Land Development and Research 9/23/94

REVISIONS		
BY	DESCRIPTION	DATE
L.DE	UPDATE PLANT LISTS & SCHEDULE, RENUMBER SHEET	4-97

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)

LANDSCAPE PLAN
LYNDWOOD MANOR
SECTION ONE AREA ONE

DESIGNED	CLW
DRAWN	CLW
CHECKED	ES/GL
DATE	7/94
SCALE	1"=50'
DRAWING	23 OF 28
JOB NO.	92-176.4
	F94-29

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

F-94-29

1708

EXISTING VEGETATION (WOODS) TO REMAIN. REFER TO FOREST CONS. PLAN

J MAYNOR
330/12
R-20

J RAINES
306/201
R-20

E MICHAEL & WF
590/0176 P 563
R-20

PERIMETER LANDSCAPE EDGE

PROPERTY LINE	LENGTH	LANDSCAPE TYPE
A	450.9'	A
B	165.0'	A
C	593.7'	A
D	806.9'	A
E	200.0'	A
F	110.0'	A
G	88.2'	A
H	101.3'	A
I	93.81'	A
J	27.5'	A
K	78.5'	A
L	599.88'	A
M	99.00'	B

EXISTING TREES TO REMAIN

TYPE A

S 35°30'50" E 593.78'

S 48°10'04" E 165.00'

S 38°40'37" E 450.95'

TYPE B

S 68°35'58" W 99.00'

AVALON DRIVE

NORTHERN COURT

BIG TREE COURT

TO BE REMOVED

SEDIMENT POND TO BE REMOVED

SEDIMENT PONDS TO BE REMOVED

EXISTING TREES TO REMAIN

WETLAND TO REMAIN

TYPE A - LANDSCAPE EDGE 220'

MATCH LINE SEE SHEET 23

COLONIAL PIPELINE EASEMENT LIBER 1041 FOLIO 720

N 73°30'10" E

NOTE: REFER TO DRAWING 23 OF 28 FOR ALL PLANT LISTS & SPECIFICATIONS

SCHEDULE A
PERIMETER LANDSCAPE EDGE

Category	Adjacent to Roadways	Adjacent to Perimeter Properties	
Landscape Type	N/A	A	B
Linear Feet of Roadway Frontage/Perimeter		1107'	99'
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)		YES 270'	YES 99'
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)		0	0
Number of Plants Required: Shade Trees		0	0
Evergreen Trees			
Shrubs			
Number of Plants Provided: Shade Trees		0	0
Evergreen Trees			
Other Trees (2:1 substitution)			
Shrubs (10:1 substitution)			
(Describe plant substitution credits below if needed)			

Comments: Existing Trees fulfill landscaping requirements

STATE OF MARYLAND
CLAIRE L. WILLIAMS
No. 551
REGISTERED LANDSCAPE ARCHITECT

Claire L. Williams 9.2.94

DEVELOPER'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.

Signature of Engineer Date

ENGINEER'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 begining the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.

Signature of Developer Date

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

US Soil Conservation Service Date

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

Howard Soil Conservation District Date

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

Land Development 9/15/94 Date

Chief, Bureau of Engineering 9-22-94 Date

Chief, Bureau of Highways 9-15-94 Date

APPROVED: Department of Planning and Zoning

Chief, Division of Land Development and Research 9/23/94 Date

REVISIONS		
BY	DESCRIPTION	DATE
LDE	RENUMBERED SHEET	4-97

LAND DESIGN ENGINEERING, INC.
10620 Guilford Road • Suite 210 • Jessup • Maryland 20794
(301) 604-6264 (Wash.) (410) 880-0034 (Balto.) (301) 604-6735 (Fax.)

DESIGNED CLW
DRAWN CLW
CHECKED BJL
DATE 7/94

LANDSCAPE PLAN
LYNDWOOD MANOR
SECTION ONE AREA ONE

SCALE 1" = 50'
DRAWING 24 OF 28
JOB NO 92-1764
FILE NO F94-79

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

1708

F-94-79

PERIMETER LANDSCAPE EDGE

PROPERTY LINE	LENGTH	LANDSCAPE TYPE
A	837.93'	A
B	138.46' SEE SHEET 26	A
C	737.31	A
D	282.26'	A
E	539.90'	A
F	31.75	B
G	141.00'	B REAR YARD
H	125.00'	B REAR YARD
I	99.90'	B REAR YARD
J	155.44'	B REAR YARD
K	344.99'	B REAR YARD
L	31.65'	B REAR YARD
TYPE A	TOTAL 2535.86 LIN. FEET	
TYPE B	TOTAL 997.42 LIN. FEET	
* EXCLUDES 50' R.O.W.		

SCHEDULE A
PERIMETER LANDSCAPE EDGE

Category	Adjacent to Roadways	Adjacent to Perimeter Properties	
Landscape Type	B	A	B
Linear Feet of Roadway Frontage/Perimeter	231.6'	2397.4'	997.4
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	0	YES 1377.8	YES 111.75
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)	0	NO	NO
Number of Plants Required Shade Trees / Evergreen Trees / Shrubs	4 / 5	17	18 / 22
Number of Plants Provided Shade Trees / Evergreen Trees / Other Trees (2:1 substitution) / Shrubs (10:1 substitution) (Describe plant substitution credits below if needed)	4 / 5 / 1	17 To be bonded	15 Shade / 8 EV. / 22 Other / 0 Shrubs

TYPE B AT PERIMETER
Comments: 997.4 - 111.75 = 885, Type B Adjacent PL to Perimeter 15 Shade Trees + 16 Ornamentals : 18 Shade Trees 16 Ornamentals + 8 Evergreens : 22 Evergreens
TYPE A: 2397' - 1377' = 1019' - 17 Shade Trees
Specific plants & locations to be integrated w/ Golf Course

BY	REVISION	DATE
L.D.E	ADD POND #2, Update PLANTING	4/97
	RENUMBER SHEET	

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

Howard Soil Conservation District Date

By the Engineer:
I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature of Engineer Date

By the Developer:
I/we certify that all development and construction will be done according to this plan and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of 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.

Signature of Developer Date

APPROVED: Department of Planning and Zoning

Gina Irvinmany 9/23/94
Chief, Division of Land Development and Research Date

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

Chief Land Development Division 9/22/94 Date

C. E. Zalk, acting 9/22/94
Chief, Bureau of Engineering Date

Andrew M. Daniels 9-15-94
Chief Bureau of Highways HS Date

LAND DESIGN ENGINEERING, INC.
10620 Guilford Road · Suite 210 · Jessup · Maryland 20794
(301) 604-6264 (Wash.) (410) 880-0034 (Balto.) (301) 604-6735 (Fax.)

LANDSCAPE PLAN
LYNDWOOD MANOR
SECTION ONE AREA ONE

DESIGNED: CLW
DRAWN: CLW
CHECKED: BS/GL
DATE: 7/94

Owner, Developer
100. INVESTMENT LIMITED PARTNERSHIP
8835 Columbia 100 Parkway
Columbia, Maryland 21045

SCALE: 1" = 50'
DRAWING: 25 OF 28
JOB NO: 92-176.4
FILE NO: F94-29

F94-29

1708

Claire K. Williams 9-2-94

Tree #	Size (DBH)	Species	Condition	Root Radius	Elevation	Comments
1	20"	White Oak	B	30	352.06	
3	18"	Chestnut Oak	B	25	352.64	
4	16"	Chestnut Oak	B	25	350.81	
5	16"	Chestnut Oak	B	25	350.90	
6	20"	Chestnut Oak	B	30	347.64	
31	28"	Northern Red Oak	B	40	324.68	
34	24"	White Oak	B	35	330.38	
35	18"	White Oak	B	30	341.61	
36	20"	White Oak	B	30	337.44	
41	24"	Chestnut Oak	B	35	335.60	
42	30"	White Oak	B	40	334.30	
43	30"	White Oak	B	40	329.87	
44	22"	Chestnut Oak	B	30	346.44	
45	30"	Northern Red Oak	B	40	341.25	

By	Description	Date
L.D.E.	Update grading, Ammend. Sch. D & A. Relocate SWM#2	4/97

Revisions

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.

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.

Signature of Developer — Date

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

U.S. Soil Conservation Service — Date

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

Howard Soil Conservation District — Date

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

Chief, Land Development Division — Date 9/22/94

Chief, Bureau of Engineering — Date 9/22/94

Chief, Bureau of Highways — Date 9-15-94

APPROVED: Department of Planning and Zoning

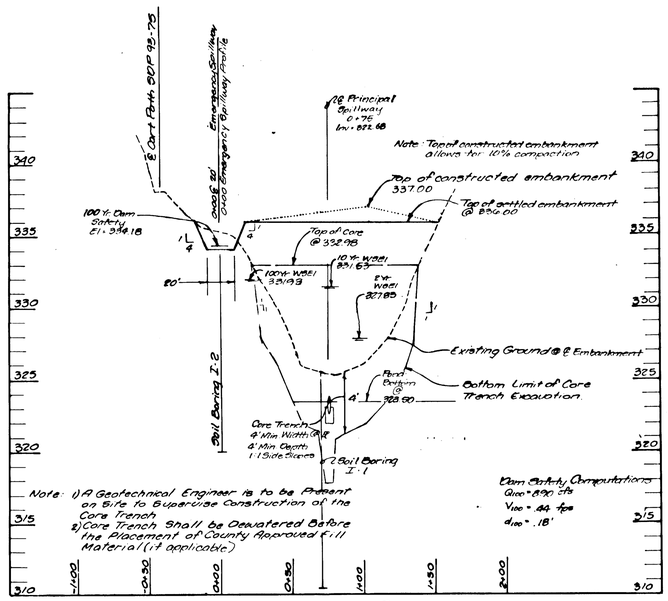
Gina Swinnam — 9/23/94
Chief, Division of Land Development — Date

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)

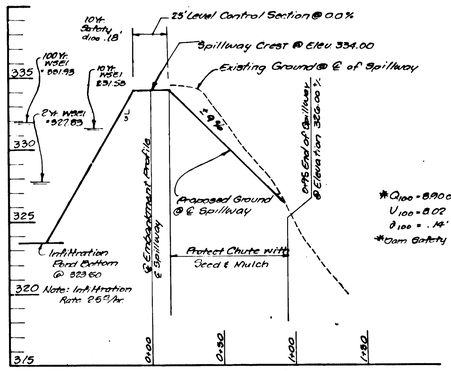
DESIGNED CLW	LANDSCAPE PLAN	SCALE 1"=50'
DRAWN CLW	LYNDWOOD MANOR	SHEET NO. 8 of 28
CHECKED BS/CLW	SECTION ONE AREA ONE	JOB NO. 92-176-1
DATE 1/10/95	OWNER / DEVELOPER 100 INVESTMENT LIMITED PARTNERSHIP 8835 Columbia 100 Parkway Columbia, Maryland 21045 (410) 730-8800	TAX MAP NO. 47 PARCEL 20

1708



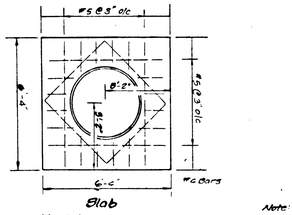
PROFILE ALONG ℄ OF EMBANKMENT INFILTRATION POND #2

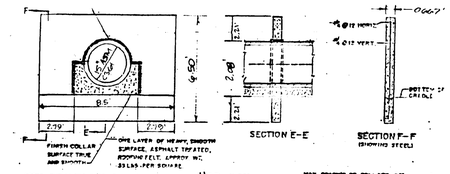
Scale: 1" = 50' Horiz.
1" = 5' Vert.

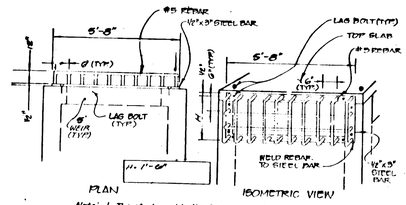


PROFILE ALONG ℄ EMERGENCY SPILLWAY

Scale: 1" = 50' Horiz.
1" = 5' Vert.



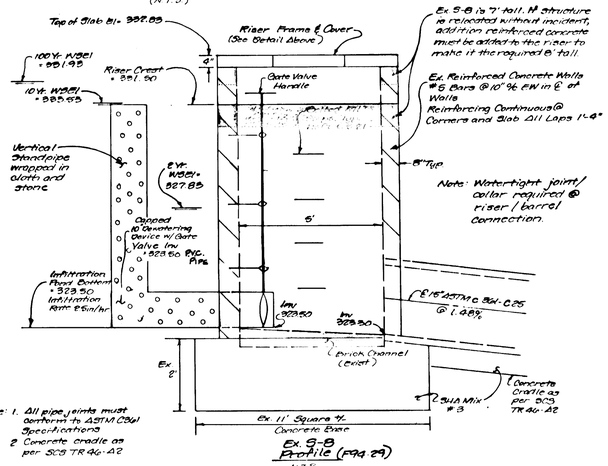




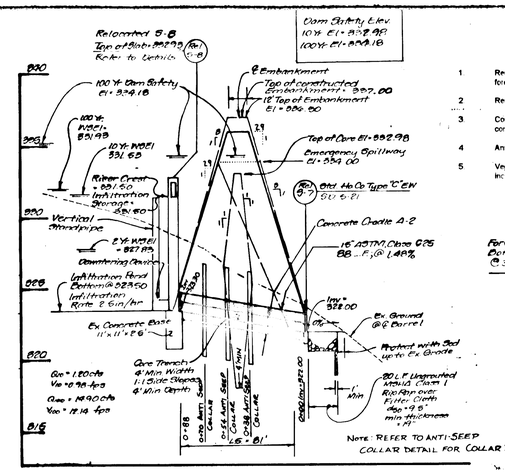
Note: 1. The steel used in the trash rack shall be galvanized and painted battleship grey after fabrication.
2. The #5 rebar to be welded to the 1/2" x 3" steel bar and butted to the face of the structure.
3. All bolts used to fasten trash rack to the riser structure shall be galvanized.

TRASH RACK DETAIL

(N.T.S.)

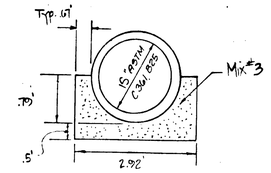


Note: 1. All pipe joints must conform to ASTM C361 Specifications
2. Concrete cradle as per SCS TR 46 - A2



Profile Along ℄ Barrel

Scale 1" = 50' Horiz.
1" = 5' Vert.



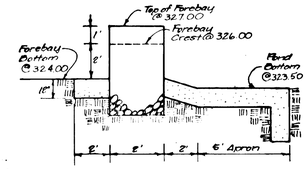
SCS TR-46 A-2 CRADLE

Not To Scale

Operation and Maintenance Schedule

Stormwater Management Facility
Infiltration Pond

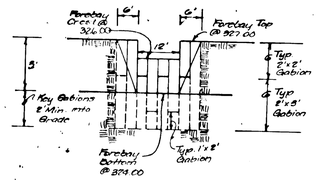
1. Removal of silt shall occur when the accumulation exceeds four (4) inches in the forebay.
2. Removal of accumulated paper, trash, and debris as needed.
3. Corrective maintenance is required any time the forebay does not drain down completely within 96 hours. (i.e. no standing water allowed.)
4. Annual inspection and repair of the structure shall be conducted by the County.
5. Vegetation on the embankment top and faces shall not be allowed to exceed 18 inches in height at any time.



Section 'A-A'

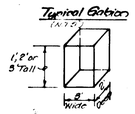
1"=4'

Notes: 1. All wire used in Gabion Construction shall be galvanized.
2. Filter cloth shall be placed whenever gabion contacts soil.
3. Stone shall be clean, 6"-8" in size.



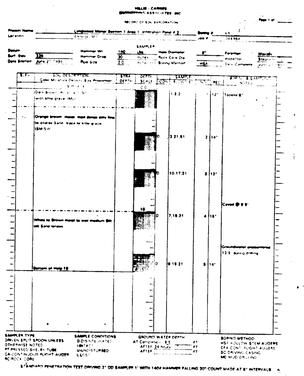
Section Thru Forebay Gabion Embankment

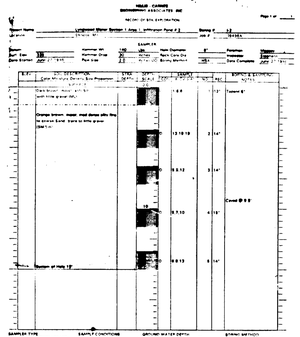
(N.T.S.)

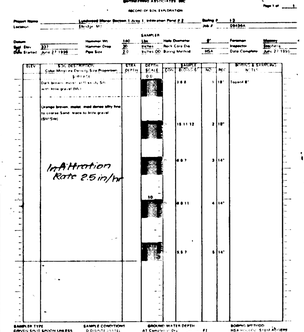


Typical Gabion

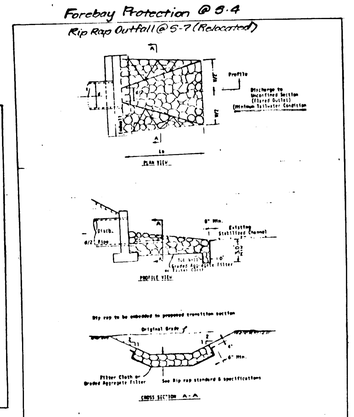
(N.T.S.)

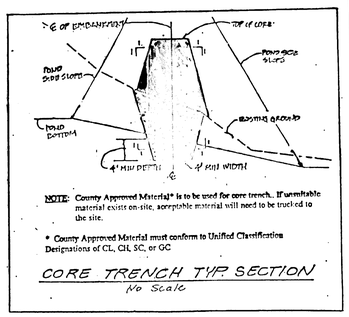






Note: Existing S-8 is to be relocated to the location as shown hereon. If the existing structure S-8 is broken in transit, the contractor shall contact the engineer.





NOTE: County Approved Material* is to be used for core trench. If unsuitable material exists on-site, acceptable material will need to be trucked to the site.

* County Approved Material must conform to Unified Classification Designations of CL, CH, SC, or GC

CORE TRENCH TYP. SECTION

No Scale

SUMMARY TABLE

Public Infiltration POND # 2
Hazard Classification "A"
Drainage Area = 13.89 Acres
Water Quality Management = Infiltration
Water Quantity Management = Detention / Infiltration

		Infiltration / SWM Pond 2 Year	10 Year	100 Year
Total Existing		.18	67	121
Unmanaged Flow	(cfs)	4.70	14.00	25.90
Acceptable Release	(cfs)	8.80	49.00	N/A
Computed Inflow	(cfs)	24.10	90.60	81.00
Facility Discharge	(cfs)	0.0	1.00	18.10
Elevation at Discharge		327.85	331.58	331.93
Storage at Elevation	(AC\FT)	1.29	3.14	3.37
Total Developed	(cfs)	7	19	62

OPERATION, MAINTENANCE, AND INSPECTION

Inspection of the pond shown hereon 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 their 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.

1708

Approved: Howard County Department of Planning and Zoning

Chief, Division of Land Development and Research — Date 3/19/97

Chief, Development Engineering Division — Date 3/25/97

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

Chief, Bureau of Highways — Date 3/31/97

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

Natural Resourse Conservation Service — Date 3/12/97

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

Howard Soil Conservation District — Date 3/26/97

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.

STATE OF MARYLAND — BRUCE DAVID BURTON — No. 19168 — REGISTERED PROFESSIONAL ENGINEER

Bruce D. Burton — 3/4/97

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.

Signature of Developer — Date 2/4/97

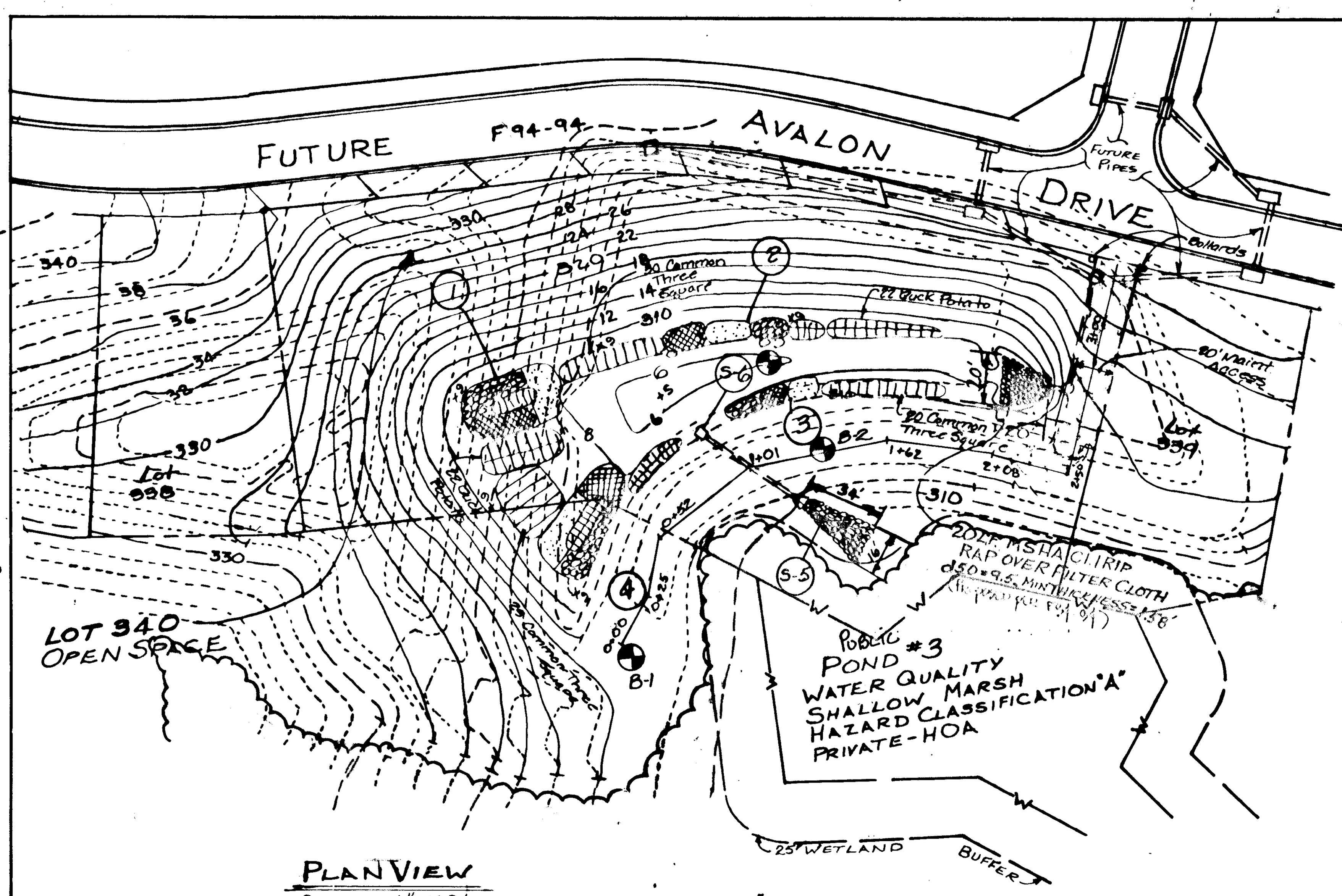
STATE OF MARYLAND — BRUCE DAVID BURTON — No. 19168 — REGISTERED PROFESSIONAL ENGINEER

Bruce D. Burton 3/4/97

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED E.D.S.	STORMWATER MANAGEMENT DETAILS Pond # 2	SCALE As Shown
DRAWN B.D.B.	LYNDWOOD MANOR Section One - Area One	DRAWING 27 of 28
CHECKED B.D.B.		JOB NO. 95-058
DATE Feb. 1997	Owner/Developer 100 Investment Limited Partnership 8835 Columbia 100 Parkway, Unit P Columbia, Maryland 21045 (410) 730-0810	FILE NO. F94-29

F-94-29



PLAN VIEW
SCALE : 1" = 50'

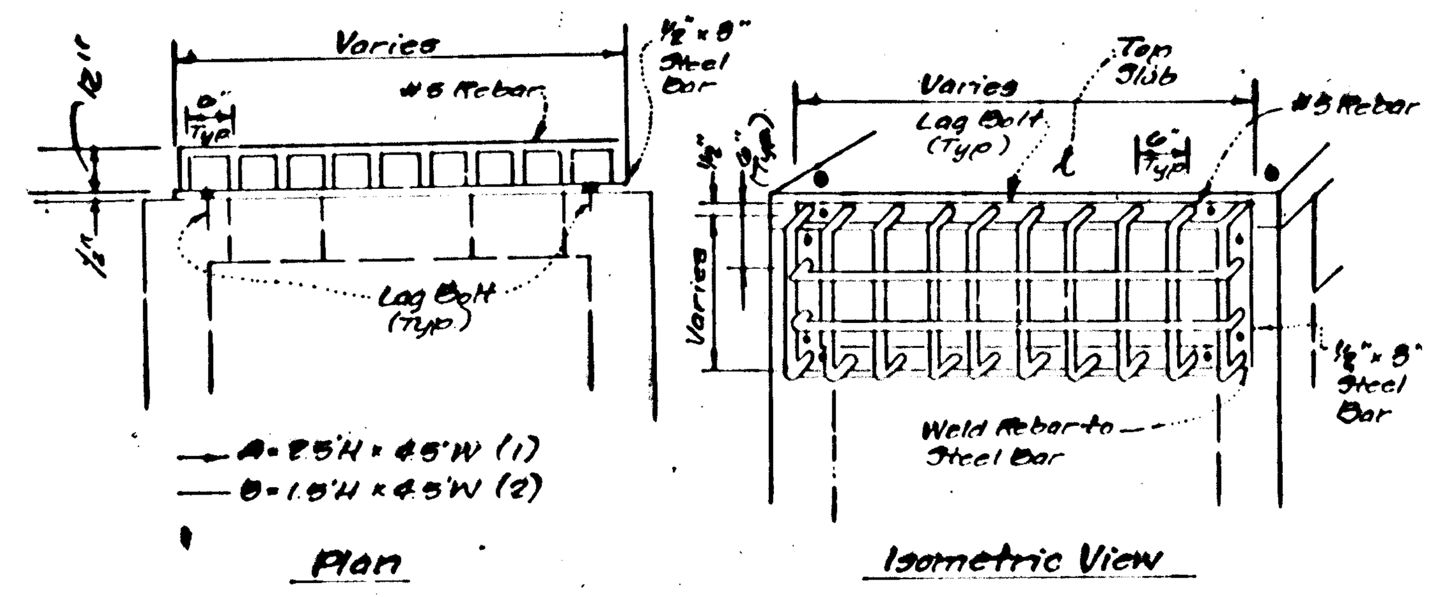
NOTE: ① SHALLOW MARSH PLANTINGS SHOWN HEREON SHALL BE PLANTED AT THE COMPLETION OF THE CONVERSION FROM SEDIMENT BASIN TO SWM POND; PER DETAILS & GRADING SHOWN ON THIS SHEET.

② FINAL CONSTRUCTION OF THE SHALLOW MARSH FACILITY WILL BE BASED ON THIS (F94-29) ROAD CONSTRUCTION DRAWINGS.

Shallow Marsh Plantings List

Name	Total #	# per Section
Sagittaria latifolia Duck Potato	104	Sect. 1 - 0 Sect. 2 - 22 Sect. 3 - 0 Sect. 4 - 30
Scirpus americanus Common Three Square	117	Sect. 1 - 20 Sect. 2 - 0 Sect. 3 - 22 Sect. 4 - 0
Pontederia cordata Pickerelweed	96	Sect. 1 - 20 Sect. 2 - 22 Sect. 3 - 24 Sect. 4 - 30
Saururus cernuus Lizard's Tail	106	Sect. 1 - 20 Sect. 2 - 24 Sect. 3 - 22 Sect. 4 - 40
Peltandra virginica Arrow Arum	94	Sect. 1 - 20 Sect. 2 - 22 Sect. 3 - 22 Sect. 4 - 30

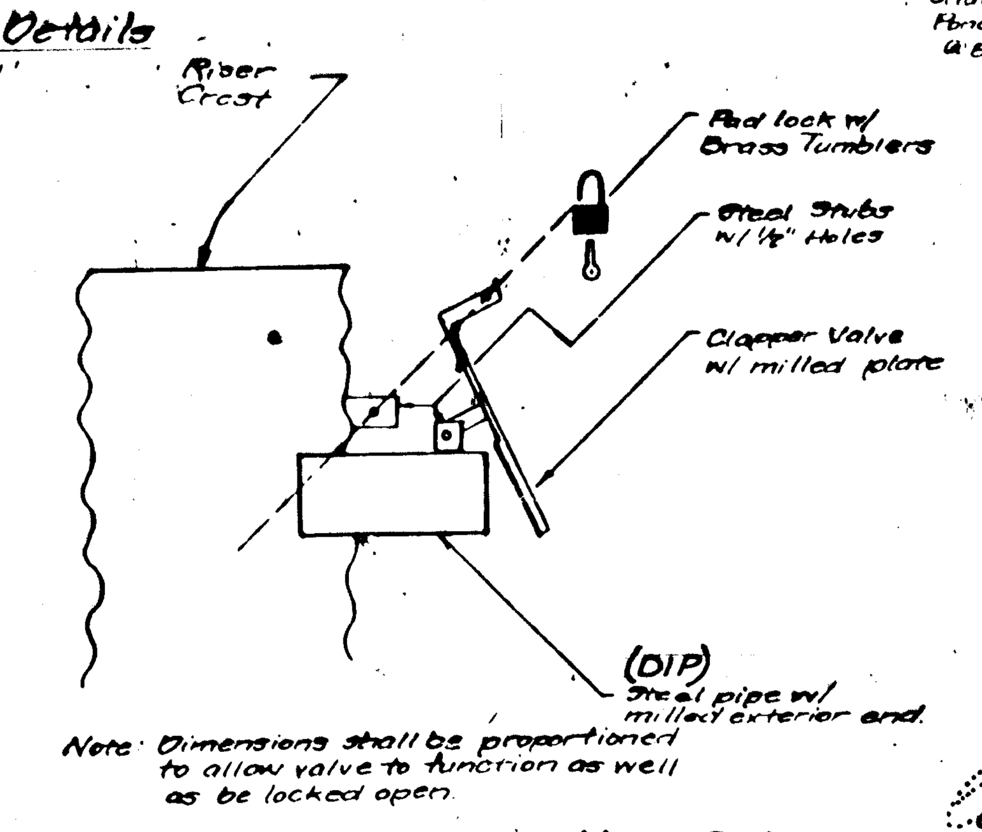
NOTE: Buffer plantings as well as street tree plantings are shown on F94-94.



Plan   Isometric View

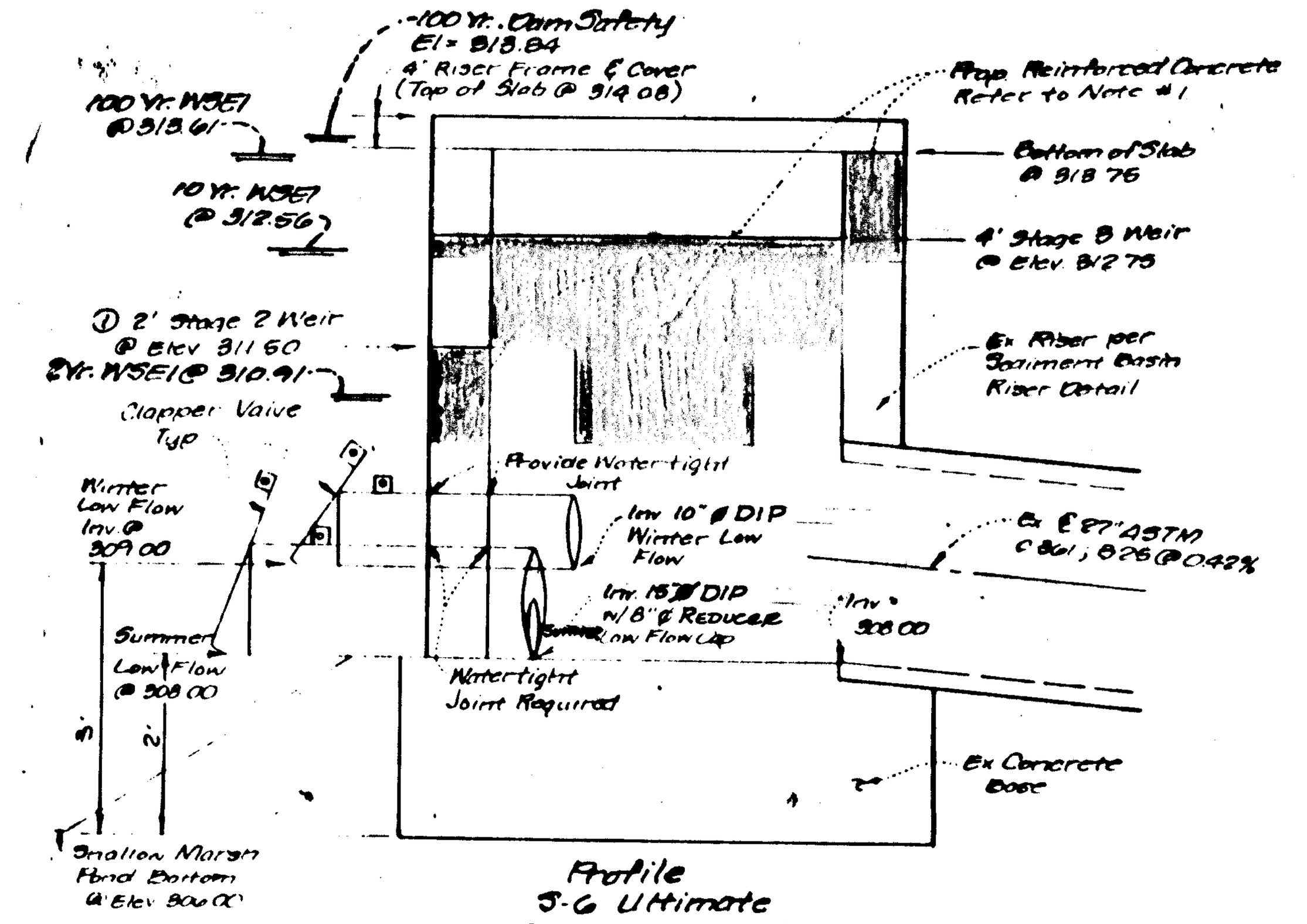
Note: 1. The steel used in the trash rack shall be galvanized and painted battleship grey after fabrication.
2. The #5 rebar to be welded to the ½" x 3" steel bar and bolted to the face of the structure.
3. All bolts used to fasten trash rack to the riser structure shall be galvanized.
4. Replace sediment basin trash racks per size A and B.

Trash Rack Details
Scale ½" = 1'

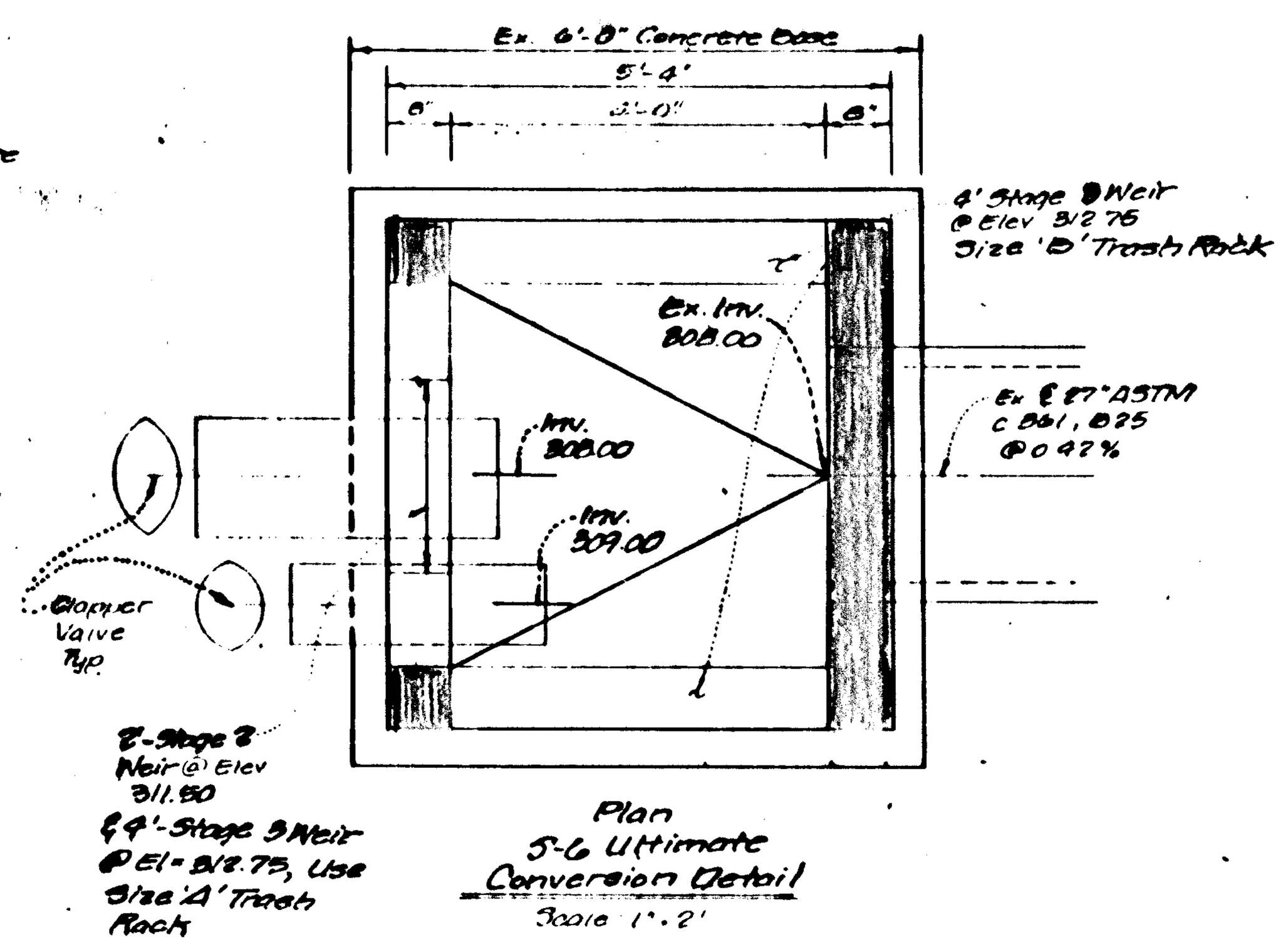


Note: Dimensions shall be proportioned to allow valve to function as well as be locked open.

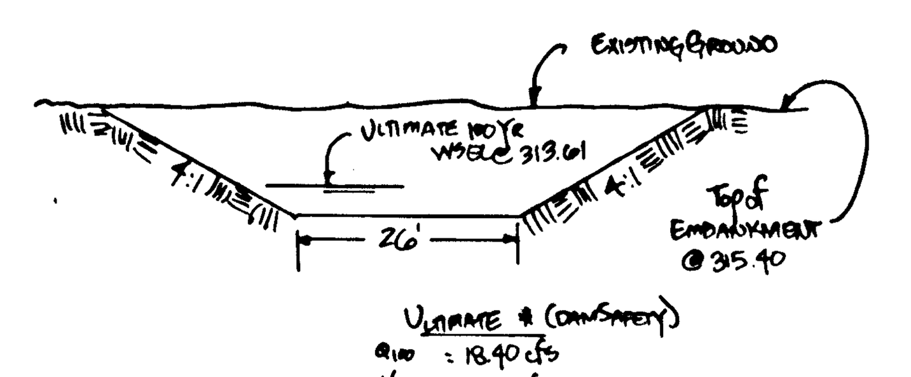
Side View - Clapper Valve Option
(N.T.S.)



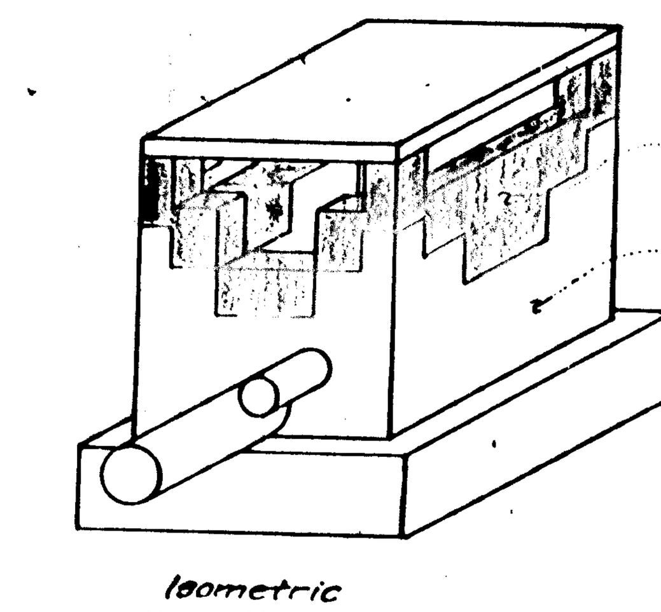
Profile
5-6 Ultimate Conversion Detail
Scale 1" = 2'



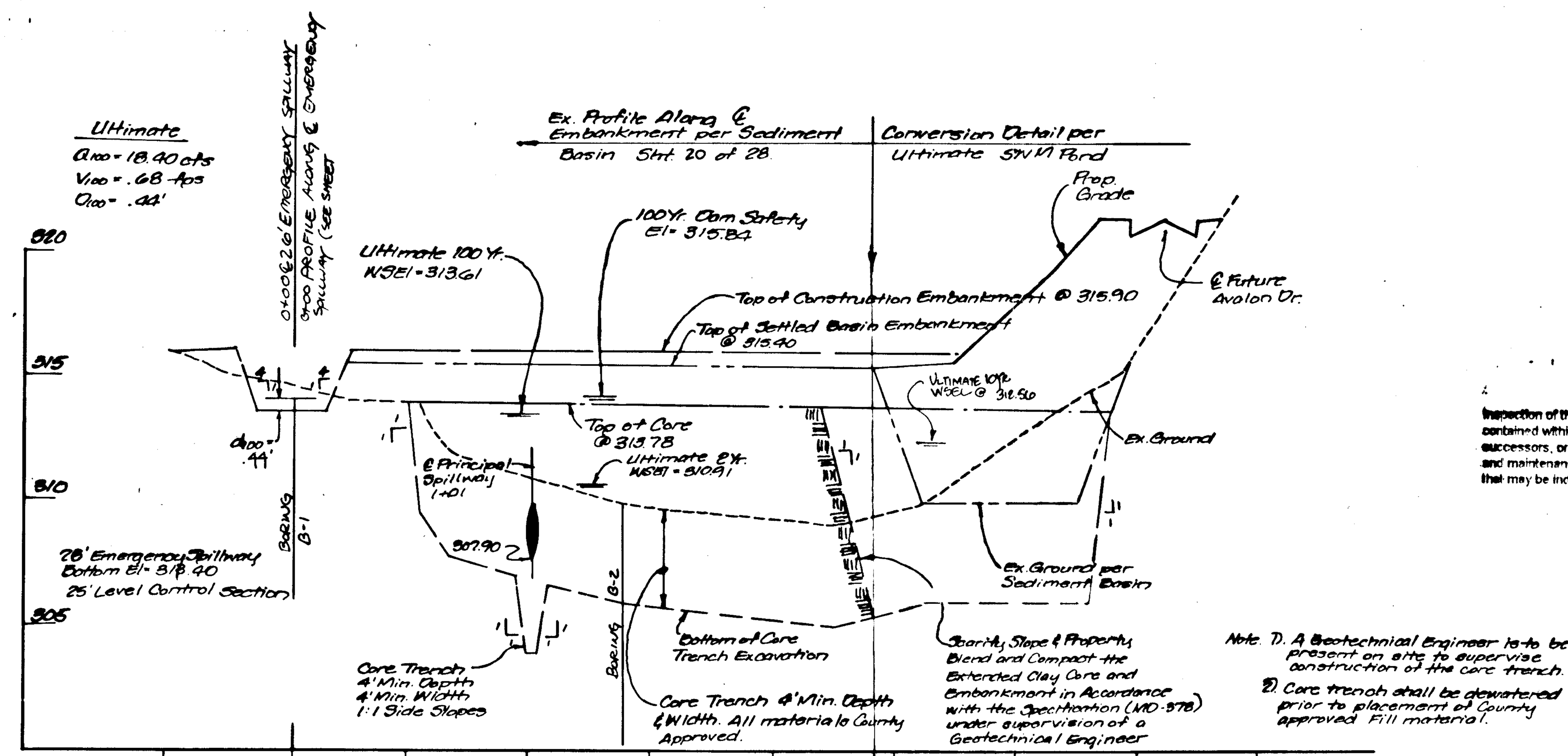
Plan
5-6 Ultimate Conversion Detail
Scale 1" = 2'



EMERGENCY SPILLWAY TYPICAL SECTION
(N.T.S.)



Isometric
5-6 Ultimate Conversion Detail
Scale 1" = 4'



Note: 1. A Geotechnical Engineer is to be present on site to supervise construction of the core trench.
2. Core trench shall be dewatered prior to placement of County approved fill material.

Profile Along ℄ Embankment (Ultimate SWM Pond)
Scale: Hor.: 1" = 50'
Vert.: 1" = 5'

OPERATION, MAINTENANCE, AND INSPECTION

Inspection of the pond shown hereon 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 their 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.

MAINTENANCE REQUIREMENTS:

a. REMOVAL OF SILT WHEN ACCUMULATION EXCEEDS FOUR (4) INCHES IN THE FOREBAY.
b. REMOVAL OF ACCUMULATED PAPER, TRASH, AND DEBRIS AS NECESSARY.
c. VEGETATION GROWING ON THE EMBANKMENT TOP OR FACES IS NOT ALLOWED TO EXCEED 18 INCHES IN HEIGHT AT ANY TIME.
d. ANNUAL INSPECTION AND REPAIR OF THE STRUCTURE.
e. CORRECTIVE MAINTENANCE IS REQUIRED ANY TIME FOREBAY DOES NOT DRAIN DOWN TO THE DESIGNED SURFACE ELEVATION WITHIN 60 HOURS.

SUMMARY TABLE

POND #3 / Shallow Marsh
Hazard Classification "A"
Drainage Area = 12.04 Acres
Top of Facility = 315.40
Invert of Facility = 30

		SWM POND 2 Year	10 Year	100 Year
Acceptable Release	(cfs)	3	14	-
Computed Inflow	(cfs)	23	48	75
Facility Discharge	(cfs)	3	11	45
Elevation at Discharge		310.91	312.56	313.61
Storage at Elevation	(AC\FT)	0.68	1.38	1.9

Approved: Howard County Department of Planning and Zoning

Richard Blood 3/19/97
Chief, Division of Land Development ~~and Research~~ — Date

[signature] 3/25/97
Chief, Development Engineering Division — Date

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

Howard Shirk for 3/21/97
Chief, Bureau of Highways — Date

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

Cheryl Simmons/GS 3/12/97
Natural Resourse Conservation Service — Date

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

Robert W. Zicker/GS 3/10/97
Howard Soil Conservation District — Date

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 3/4/97
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.

[signature] 3/4/97
Signature of Developer — Date

Bruce D. Burton 3/4/97
(Seal: State of Maryland, Bruce David Burton, No. 19184, Registered Professional Engineer)

LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED E.D.S.	Ultimate POND #3 Details	SCALE As Shown
DRAWN S.L. E.D.S. BEI	LYNDWOOD MANOR Section One – Area One	DRAWING 28 of 28
CHECKED B.D.B.		JOB NO. 95–058
DATE Mar. 1997	Owner/Developer 100 Investment Limited Partnership 8835 Columbia 100 Parkway, Unit P Columbia, Maryland 21045 (410) 730–0810	FILE NO. F94–29

F-94-29

1708