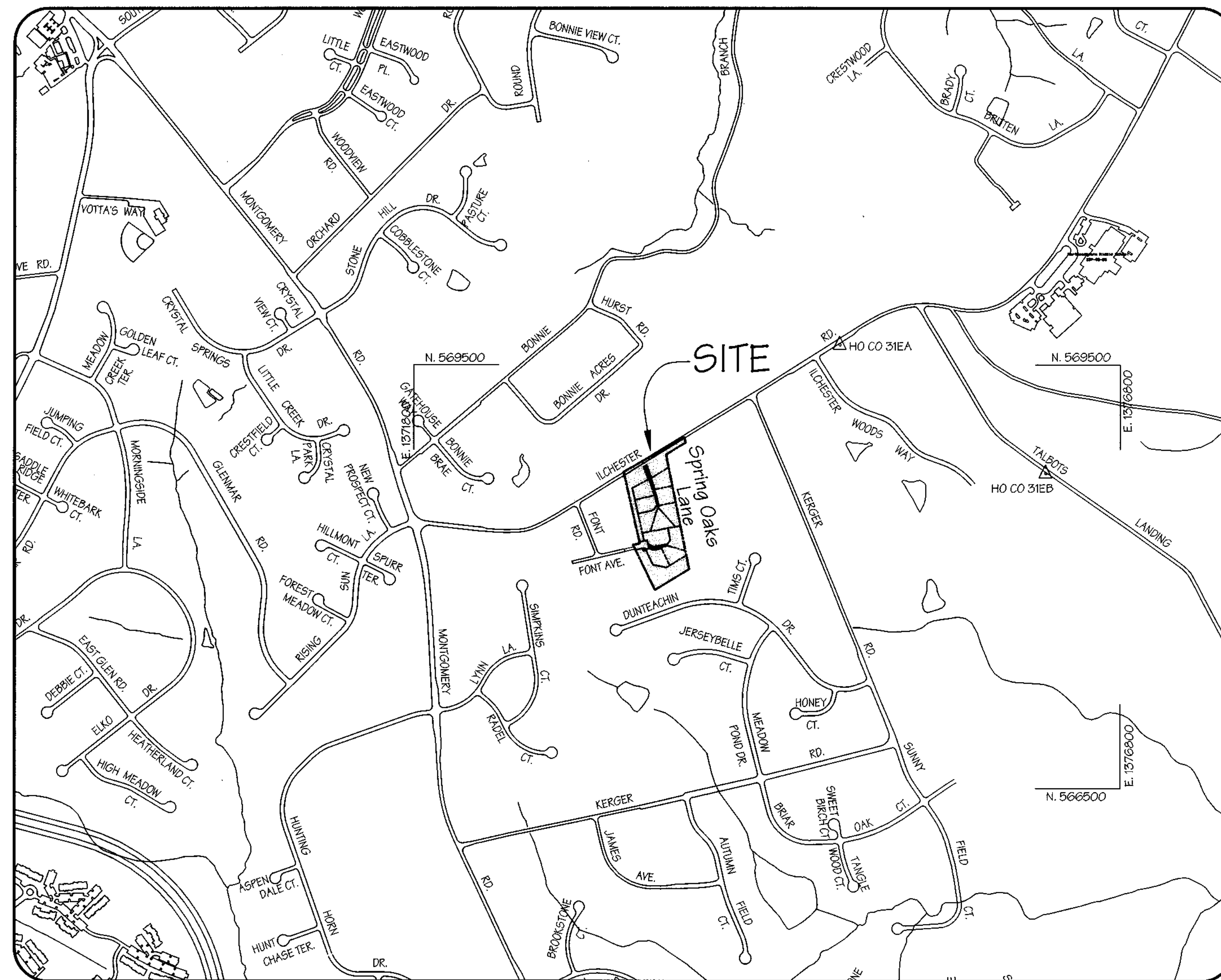


SHEET INDEX	
Sheet Number	Description
1	Cover Sheet
2	Plan and Profile - Spring Oaks Lane & Font Avenue Extension
3	Road Details
4	Storm Drain Profiles
5	Drainage Area Map
6	Grading and Sediment & Erosion Control Plan
7	Grading and Sediment & Erosion Control Plan - Details
8	Stormwater Management Details
9	Landscape & Forest Conservation Planting Plan
10	Landscape & Forest Conservation Planting Plan - Details



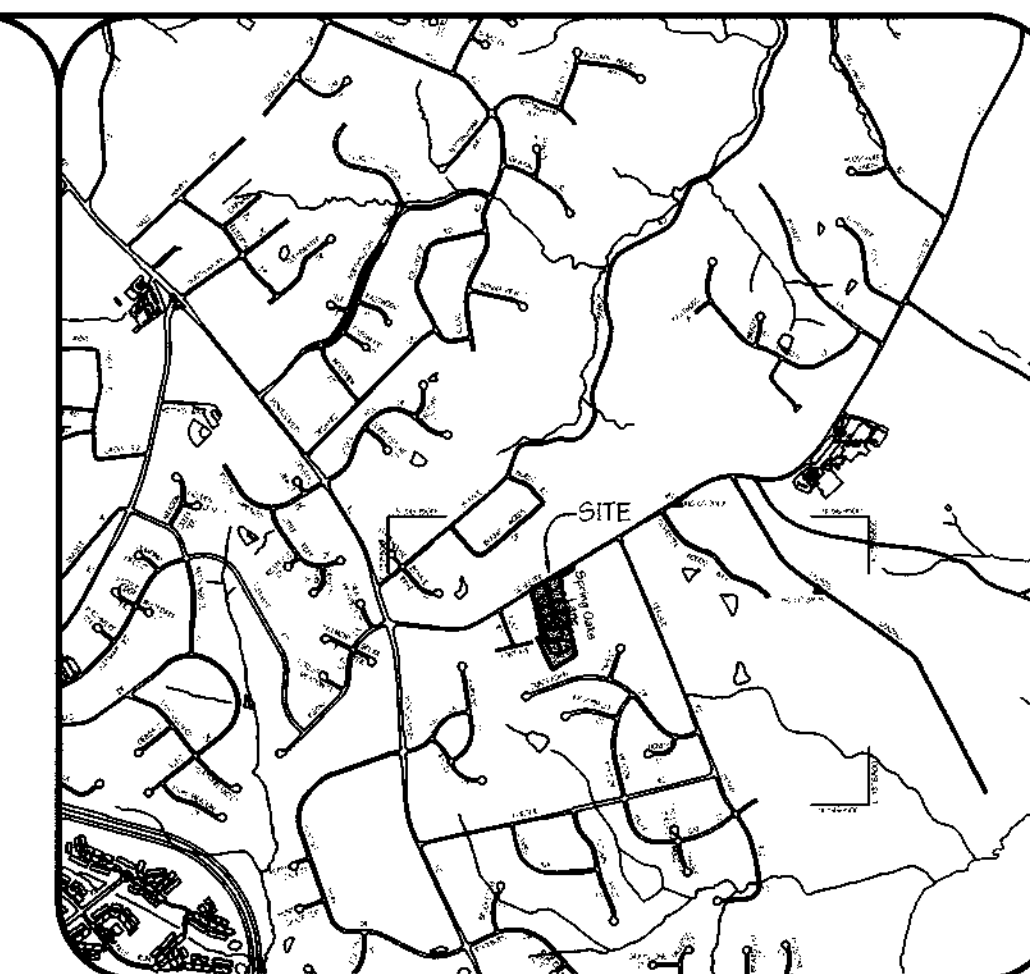
LOCATION MAP

Scale: 1" = 600'

**BENCHMARKS**

Howard County Monument # 31 EA  
Elevation: 469.604  
Standard stamped brass or aluminum disc on  
Concrete Monument; 0.3' Below Surface  
Located S.E. corner of intersection of Ilchester Rd.  
and Ilchester Woods Way 2' from sidewalk.

Howard County Monument # 31 EB  
Elevation: 453.398  
Standard stamped brass or aluminum disc on  
Concrete Monument; 0.3' Below Surface  
Located 19' from E Talbot Landing Rd.  
0.3 miles southeast of Ilchester Rd.  
85' from BGE tower.



VICINITY MAP

Scale: 1" = 2000'

**GENERAL NOTES**

- All aspects of the project are in conformance with the latest standards and specifications of Howard County Design Manual Vol. IV and MSHA standards & specifications unless waivers have been approved.
- The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection at (410) 313-1880 at least five (5) working days prior to the start of work.
- The contractor shall notify "Miss Utility" at 1-800-257-7777 at least forty-eight (48) hours prior to any excavation work.
- Project Background:
 

Location:	Elkridge, Maryland
Tax Map/Parcel:	Maps 31 / 217
Zoning:	R-20 (Residential: Single) per 10/18/93 Comprehensive Zoning Plan.
Election District:	1st
Previous Submittals:	500-1, P01-12
- 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.
- Any damage caused by the contractor to existing public right-of-way, existing paving, existing curb and gutter, existing utilities, etc. shall be corrected at the contractor's expense.
- The existing utilities shown hereon are located from field surveys and construction drawings of record. The approximate location of existing utilities are shown for the contractor's information and convenience. The contractor shall locate existing utilities to his own satisfaction and well in advance of any construction activities. Additionally, the contractor shall take all necessary precautions to protect all existing utilities and maintain uninterrupted service.
- The topography shown hereon is run by LDE, Inc., August, 2000.
- Horizontal and vertical datum's are related to the Maryland State Plane Coordinate System (NAD83) as projected from Howard County control stations No. 31 EA and No. 31 EB.
- The property shown hereon is based on a field run boundary survey performed by LDE, Inc. dated January 1999.
- The proposed Water and Sewer systems to be extensions of public water contracts #64-W & #511-W and sewer contract #418-S.
- The property is located within the Metropolitan District.
- All private use-in-common driveways shall meet the following specifications:
  - 14 foot width.
  - 6" compacted crusher run base with "tar and chip" coating.
  - Minimum turning radius of 45 feet.
  - Designed to support vehicles with a gross weight of 25 tons.
  - 12 feet of overhead clearance.
  - Maintained for all weather use.
  - Maximum grade is 15%, with the durable and sustained grade of 8%.
  - Where one (1) driveway serves more than one (1) lot, a house number sign must be placed at each lot entrance and a range of street address house numbers sign where the common driveway intersects with the main road.
- See sheet 7 for general construction sequence.
- 95% compaction in all fill areas shall be determined by AASHTO T-160.
- There are no existing contiguous slopes 25% or greater which are greater than 20,000 square feet within the boundaries of the site.
- See Forest Stand Delineation plan filed with 500-01 for steep slope analysis prepared by Dennis J. LaBare, M.S., & Associates dated May 5, 1999.
- The existing structure located on proposed Lot 8 will remain.
- The Sight Distance analysis was compiled as part of the Sketch Plan submission.
- The Traffic Study was completed by Robert L. Morris, Inc. dated May 12, 1999.
- Stormwater management for this development is provided in accordance with Design Manual Waiver approved on February 23, 2001, utilizing the 2000 Maryland Stormwater Design Manual Volumes I & II. Dry swales will be utilized for water quality management. Dry swales on Open Space Lots 12 & 13 are to be maintained by the Homeowners Association.
- The Use-in-Common drive and Private Access Place shall be improved to current standards within a 24' wide Use-in-Common Access Easement.
- The Use-in-Common Maintenance Agreements Shall be recorded immediately upon recordation of the plan.
- There are no wetlands or 100 Year floodplain located on this site per a report prepared by Dennis J. LaBare, M.S., & Associates dated May 25, 1999.
- There are no burial grounds, cemeteries, or historic structures located on this site.
- This project is grandfathered to the fourth edition of the Subdivision Regulations.

ROAD & STORM DRAIN CONSTRUCTION PLANS  
**SPRING OAKS**  
 1st Election District - Howard County, Maryland

By	Date	No.	Description
REVISIONS			

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 2/25/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 3/25/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PUBLIC WORKS

*[Signature]* 3-21-02  
 CHIEF, Bureau of Highways

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

*[Signature]* 2/1/02  
 NATURAL RESOURCE CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 2/1/02  
 HOWARD SOIL CONSERVATION DISTRICT

ENGINEER'S CERTIFICATE

I HEREBY 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 REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 11-8-01  
 SIGNATURE OF ENGINEER

DEVELOPER'S CERTIFICATE

I HAVE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY.

*[Signature]* 2-6-02  
 SIGNATURE OF DEVELOPER



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

DESIGNED SWC	Cover Sheet <b>SPRING OAKS</b>	SCALE As Shown
DRAWN J.D.R.		DRAWINGS 1 of 10
CHECKED SWC	Lots 1 Thru 11 & Open Space Lots 12 Thru 14	JOB NO. 98-090
DATE 8/2001	1st Election District - Howard County, Maryland Tax Map No. 31 - Grid No. 15 - Parcel 217 Previous Submittals: 500-01, P01-12	FILE NO. F02-22
OWNER/DEVELOPER	J.J.M., Inc. 17901 Shaffers Mill Road Mt. Airy, Maryland 21771 (410) 730-0810	



**NOTES:**

1. For street tree locations, see sheet 9.
2. All street trees and/or street signs shall be located 5 feet minimum from proposed drainage and utility structures.
3. For storm drain profiles refer to sheet 4.
4. All future driveway crossings within the Public R/W shall be Approved at the time of Building Permit.
5. There shall be a minimum of 20 feet between street lights and street signs.

**LEGEND:**

Central Refuse & Recycling Collection Pad - **CRRC** Pad

Drainage Flow

Prop. Lot Nos. Lot 2

BRL

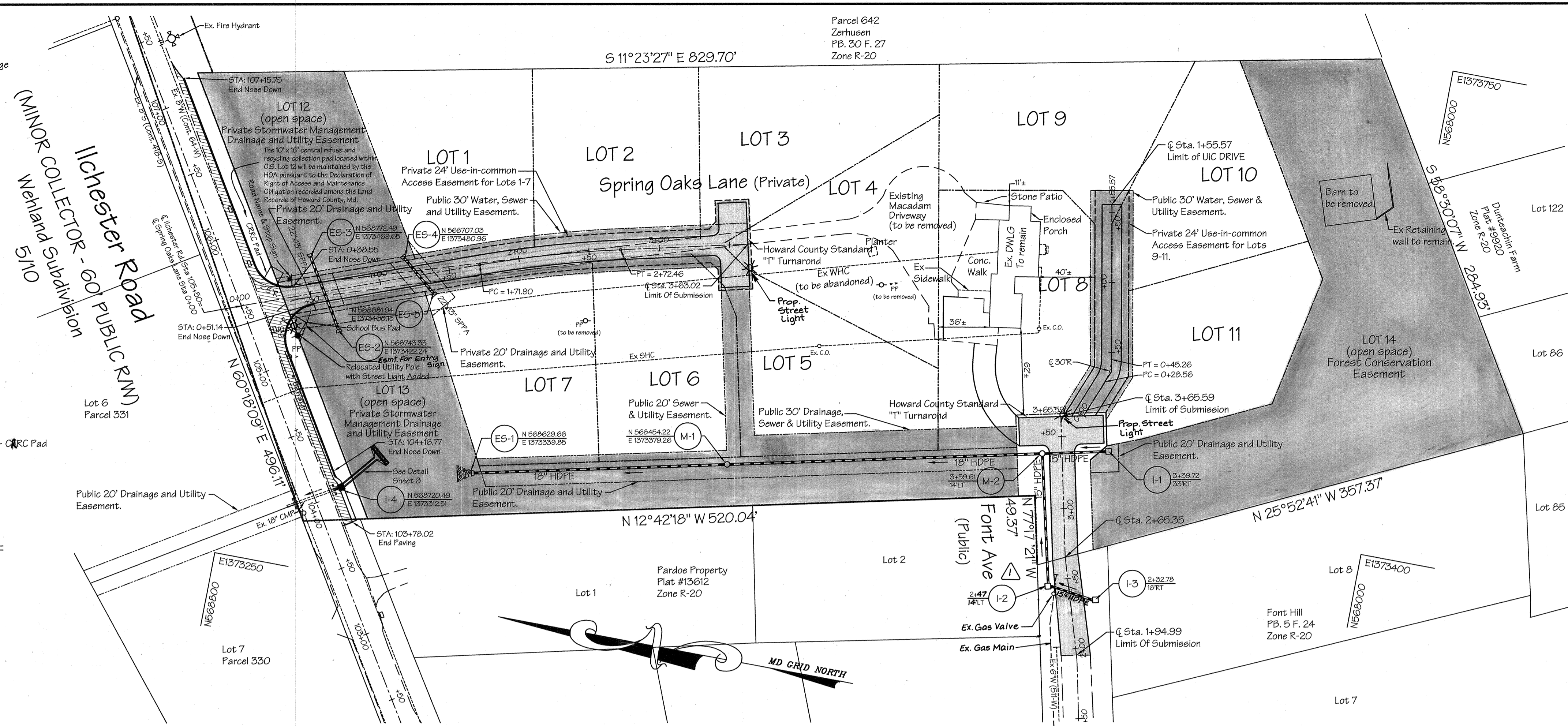
Standard Combination Curb & Gutter

**PAVING LEGEND:**

P-3 Paving Section (Howard County)

P-2 Paving Section (Howard County)

Existing Paving FOI-67



**PLAN**  
1" = 50'

CENTERLINE CURVE DATA					
Name & Station	Radius	Delta	Length	Tangent	Chord Bearing & Dist.
Spring Oaks Lane - 1+71.90 - 2+72.46	800'	7°12'-6"	100.55'	50.34'	S 16°-51'-37" E - 100.49'

STREET LIGHT TABLE						
Street Name	Symbol	Station	Offset	Lamp Type	Fixture Type	Pole Type
Ilchester Road		105+04	22' RT	250 W HPS VAPOR	POST TOP (cut off)	30" Brass Finish - 12' Pole Mount on enclosed ledgers post.
Spring Oaks Lane		3+64	18' RT	100 W HPS VAPOR	POST TOP (cut off)	Black Fiberglass Embedded 1.5" Dia.
Font Avenue		3+67	1' RT	100 W HPS VAPOR	POST TOP (cut off)	Black Fiberglass Embedded 1.5" Dia.

NOTE: The private street light on Spring Oaks Lane will require a Private Area Lighting (PAL) agreement with B&E.

**Spring Oaks Lane**

Station	Northing	Easting
INTX 0+00	N568814.31	E1373425.99
P.C. 1+71.90	N5688653.26	E1373486.08
P.T. 2+72.46	N5688557.09	E1373515.22
L.O.S. 3+63.02	N5688468.94	E1373536.00

**Font Ave.**

Station	Northing	Easting
L.O.S. 1+94.99	N5688185.15	E1373291.68
BEND 2+65.35	N5688205.98	E1373358.90
L.O.S. 3+65.59	N5688227.71	E1373456.75

APPROVED: Department of Planning & Zoning

*Judy Hamilton* 2/25/02  
Chief, Division of Land Development

*William DeWitt* 2/25/02  
Chief, Development Engineering Division MK

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

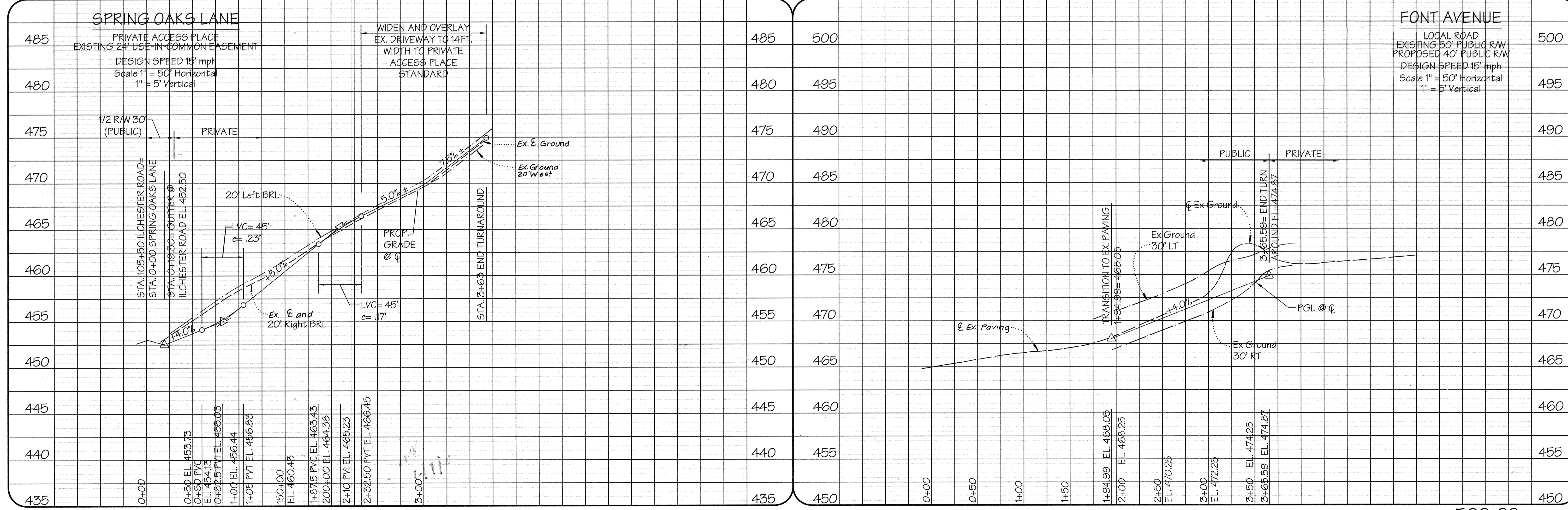
*Richard M. Dwork* 3-21-02  
Chief, Bureau of Highways MS



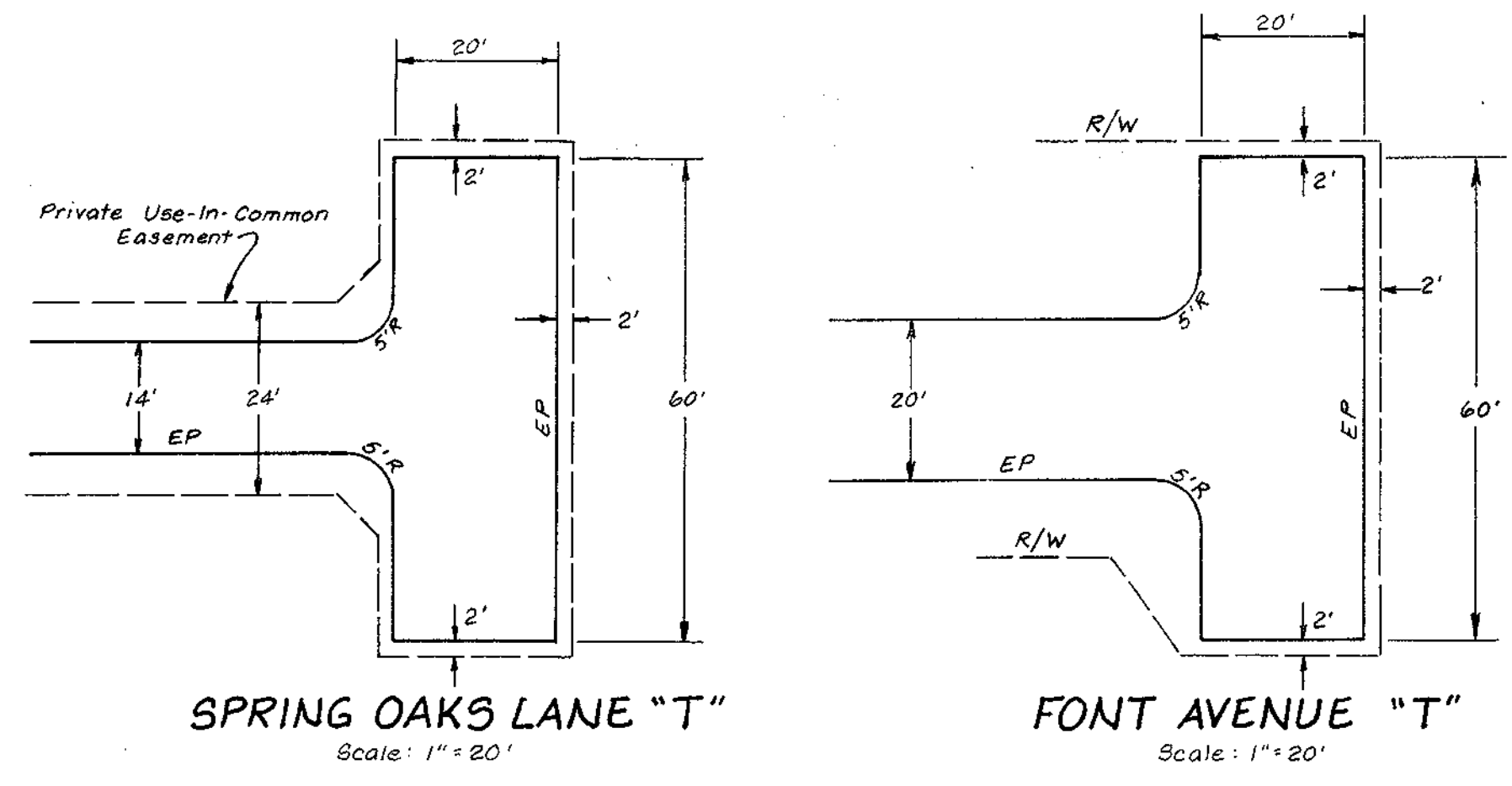
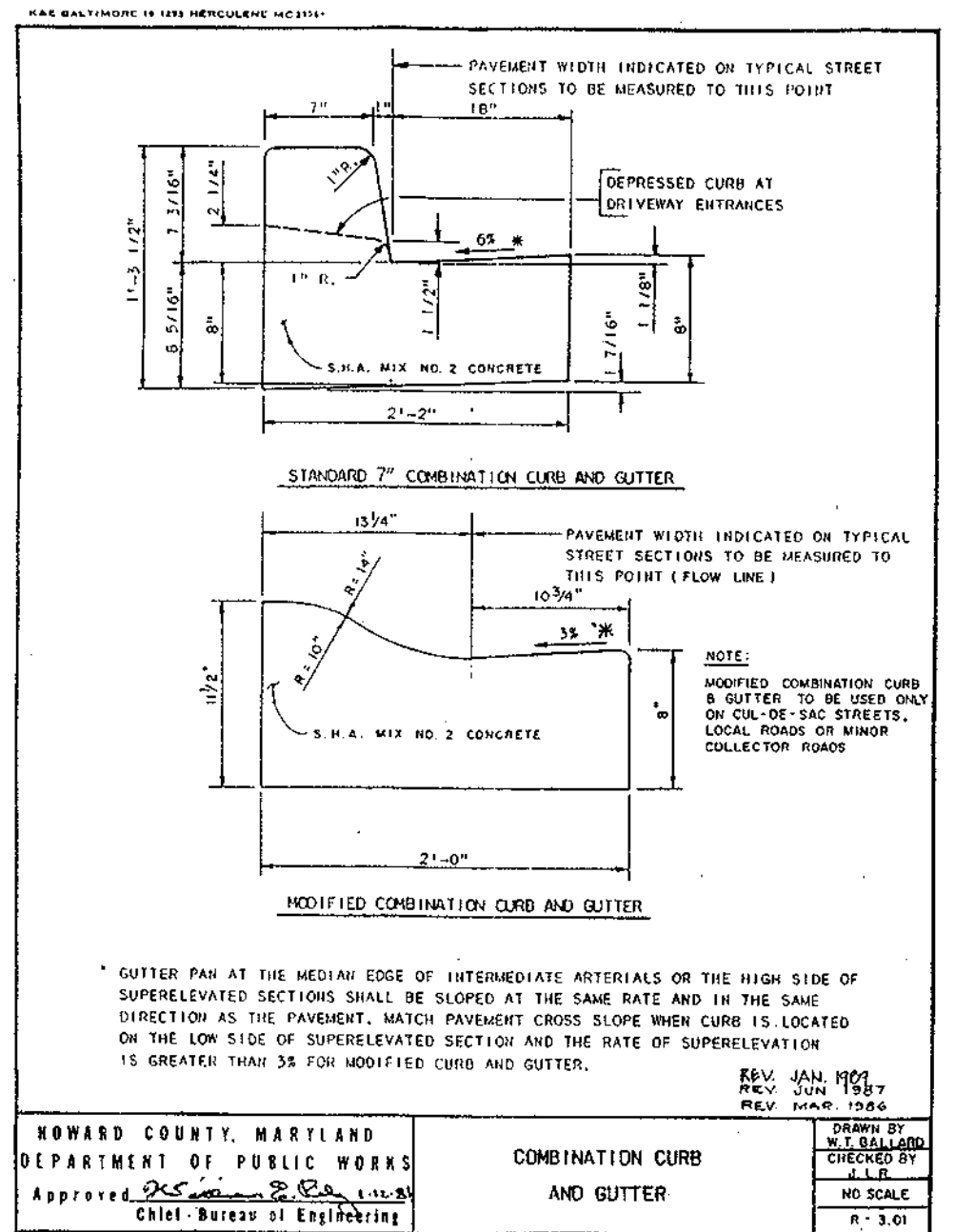
**LDE, INC.**  
9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED	S.W.C.	Plan and Profile	SCALE	As Shown
DRAWN	J.D.R.	<b>SPRING OAKS LANE &amp; FONT AVENUE</b>	DRAWING	2 of 10
CHECKED	S.W.C.	Lots 1 Thru 11 & Open Space Lots 12 Thru 14	JOB NO.	98-090
DATE	8/2001	1st Election District - Howard County, Maryland Tax Map No. 31 - Grid No. 15 - Parcels 217	PREVIOUS SUBMITTALS:	900-01, P01-12
OWNER/DEVELOPER	J.J.M., Inc.	17901 Shaffers Mill Road Mt. Airy, Maryland 21771 (410) 750-0810	FILE NO.	F02-22

By	Date	No.	Description
SC	4/24/03	1	Move I-2 due to gas conflict & future Lot 2. D/W







SECTION NUMBER	ROAD AND STREET CLASSIFICATION	PAVEMENT MATERIALS	
		FULL DEPTH BIT. CONC. ALTERNATE	GRAVELAR ORS. ALTERNATE
P-1	APARTMENTS AND COMMERCIAL INDUSTRIAL ZONES WITH HEAVY TRUCK TRAVELWAYS WITH HEAVY TRUCKS	1" BIT. CONC. SURFACE 4" BIT. CONC. BASE	2" BIT. CONC. SURFACE 4" GRADED AGGREGATE (BASE) (GAB)
P-2	RESIDENTIAL ZONES LOCAL CUL-DE-SAC STS. ALLEYS AND PRIVATE ROADS SERVING INDIVIDUAL LOTS	1 1/2" BIT. CONC. SURFACE 5" BIT. CONC. BASE	1 1/2" BIT. CONC. SURFACE 2 1/2" BIT. CONC. BASE 4" GRADED AGGREGATE (BASE) (GAB)
P-3	RESIDENTIAL ZONES MINOR AND MAJOR COLLECTORS COMMERCIAL-INDUSTRIAL ZONES LOCAL AND CUL-DE-SAC STREETS ALLEYS	1 1/2" BIT. CONC. SURFACE 5" BIT. CONC. BASE	1 1/2" BIT. CONC. SURFACE 4 1/2" BIT. CONC. BASE 5" GRADED AGGREGATE (BASE) (GAB)
P-4	COMMERCIAL INDUSTRIAL ZONES MINOR COLLECTOR	1 1/2" BIT. CONC. SURFACE 5" BIT. CONC. BASE	1 1/2" BIT. CONC. SURFACE 4 1/2" BIT. CONC. BASE 4" GRADED AGGREGATE (BASE) (GAB)

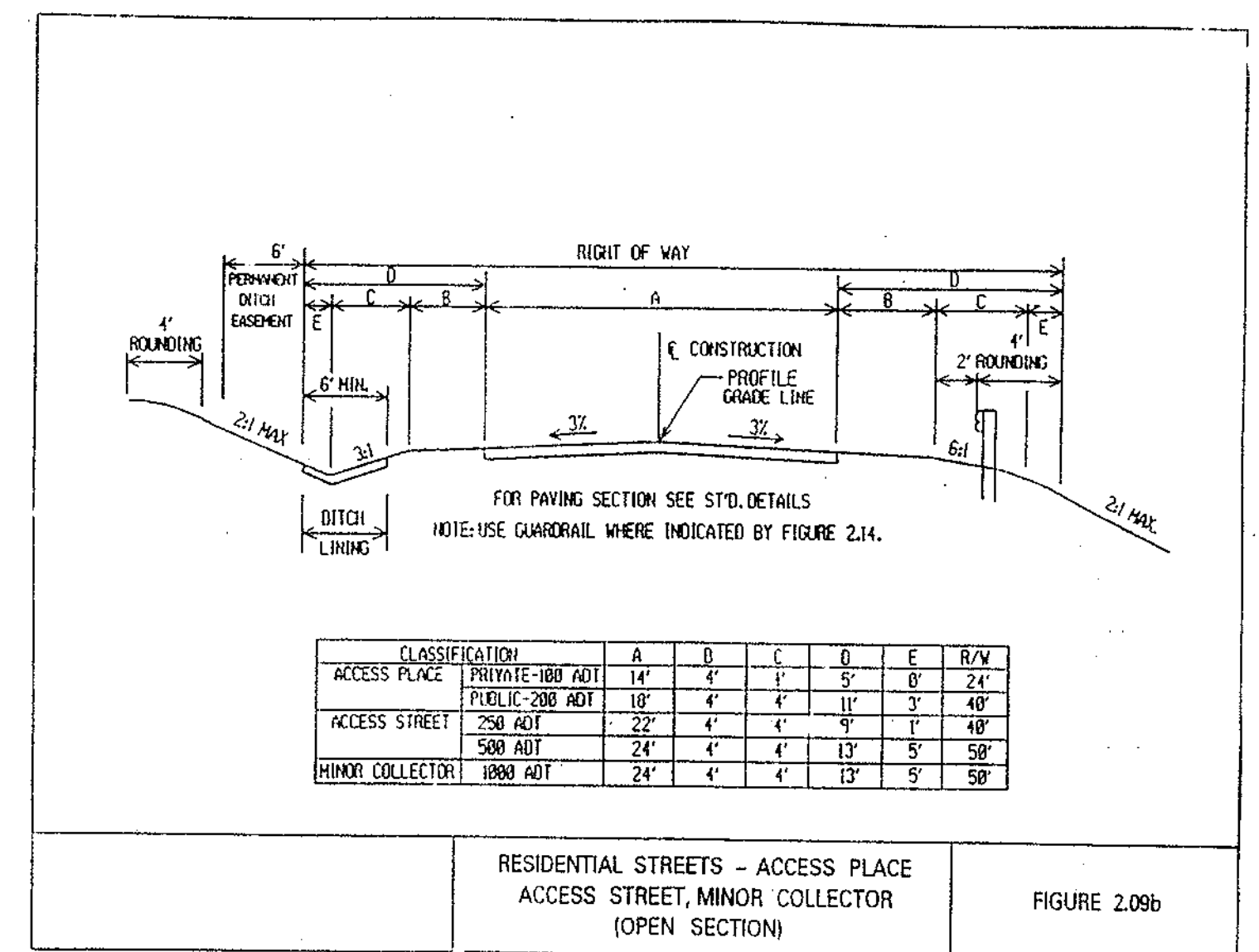
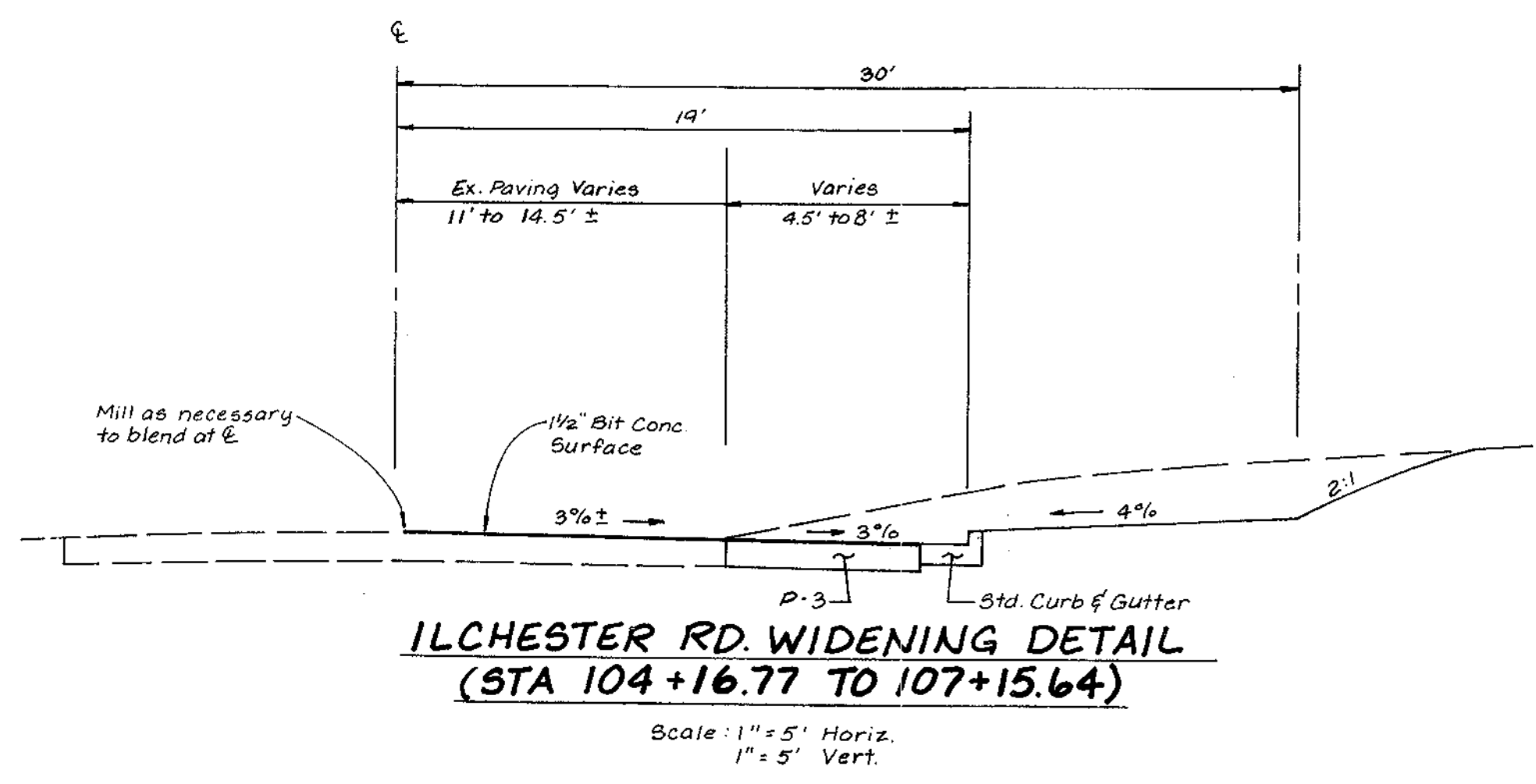
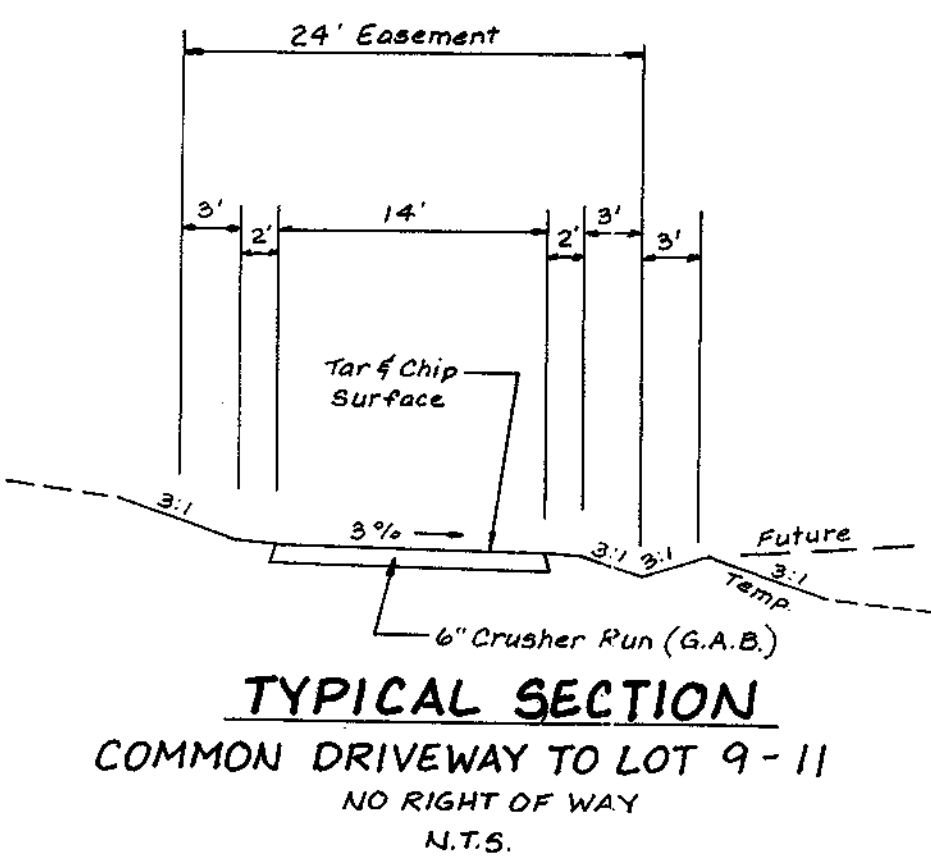
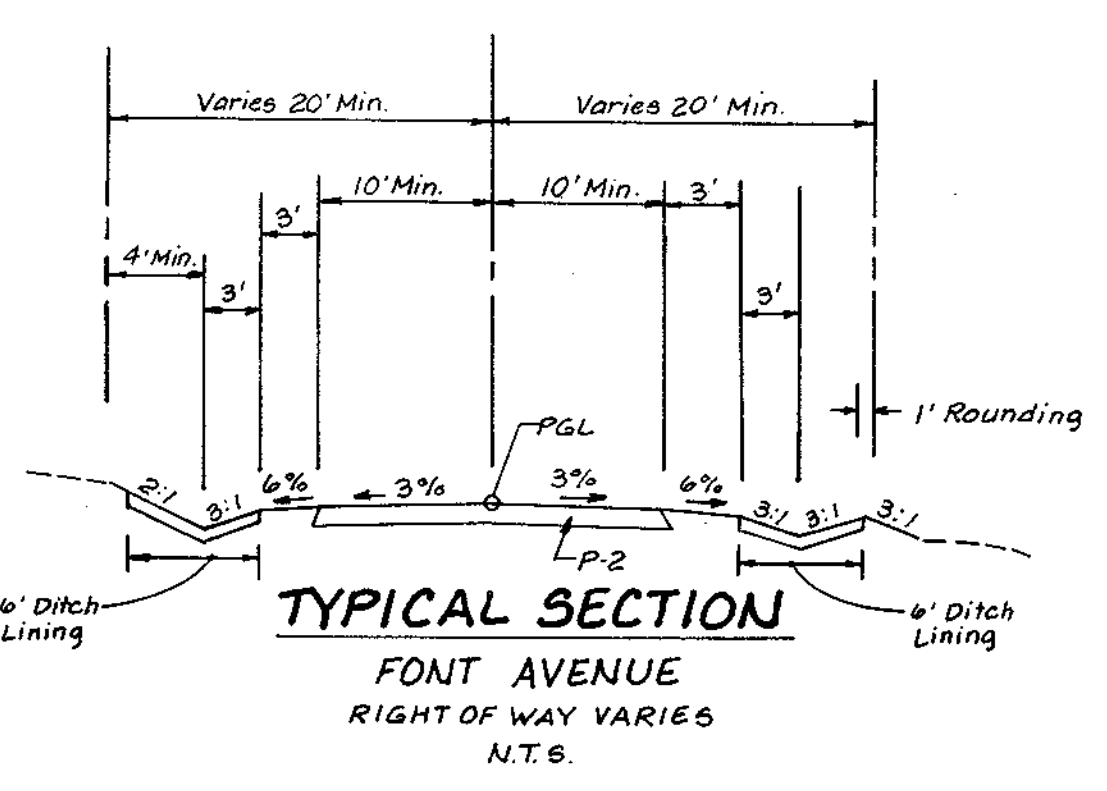
TRAVELWAYS ARE DEFINED AS THOSE LEADING TO THE PARKING DAYS  
HEAVY TRUCKS ARE DEFINED AS THOSE WITH 6 WHEEL OR MORE INCLUDING GARBAGE TRUCKS

REV. JAN 1994  
REV. OCT 1993

HOWARD COUNTY, MARYLAND  
DEPARTMENT OF PUBLIC WORKS  
Approved: *[Signature]* Chief, Bureau of Engng. Date: \_\_\_\_\_

PAVING SECTIONS  
P-1 THROUGH P-4

NO SCALE  
1" = 20'



TRAFFIC CONTROL SIGN LEGEND			
Symbol	Street Name	@ Station	Offset
4	Spring Oaks Lane		Rt-1 "Stop" Sign, 80"x80" Octagon, w/ Street Name Sign

By	Date	No.	Description

Road Name	Station	Class	R/W	Design Speed	Paving Section
Spring Oaks Lane	0+50.00 5+65.02	Private	24'	15 MPH	P-2
Font Avenue	1+94.99 3+65.89	Local	40'	15 MPH	P-2
Ilchester Road	103+78.30 107+15.75	Minor Collector	60'	40 MPH	P-3

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 3/5/02  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 7/25/02  
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PUBLIC WORKS

*[Signature]* 3-21-02  
CHIEF, BUREAU OF HIGHWAYS

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE

DATE: 3/27/02

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT

ENGINEER'S CERTIFICATE

I HEREBY 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 REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 2-6-02  
SIGNATURE OF ENGINEER

DEVELOPER'S CERTIFICATE

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OF THEIR AUTHORITY AS DEEMED NECESSARY.

*[Signature]* 2-6-02  
SIGNATURE OF DEVELOPER



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

DESIGNED: SWC  
DRAWN: CADD STB  
CHECKED: SWC  
DATE: 8/2001

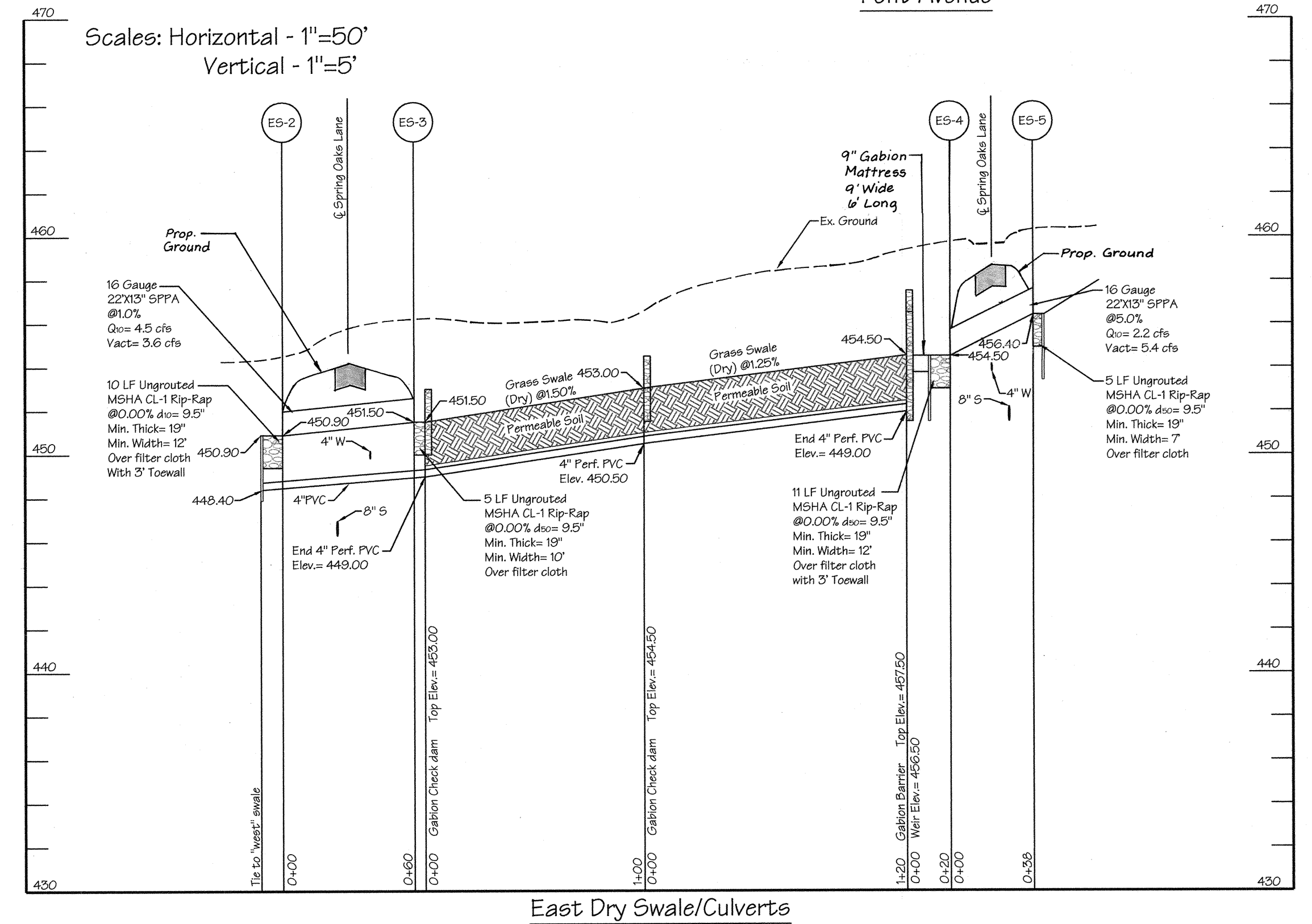
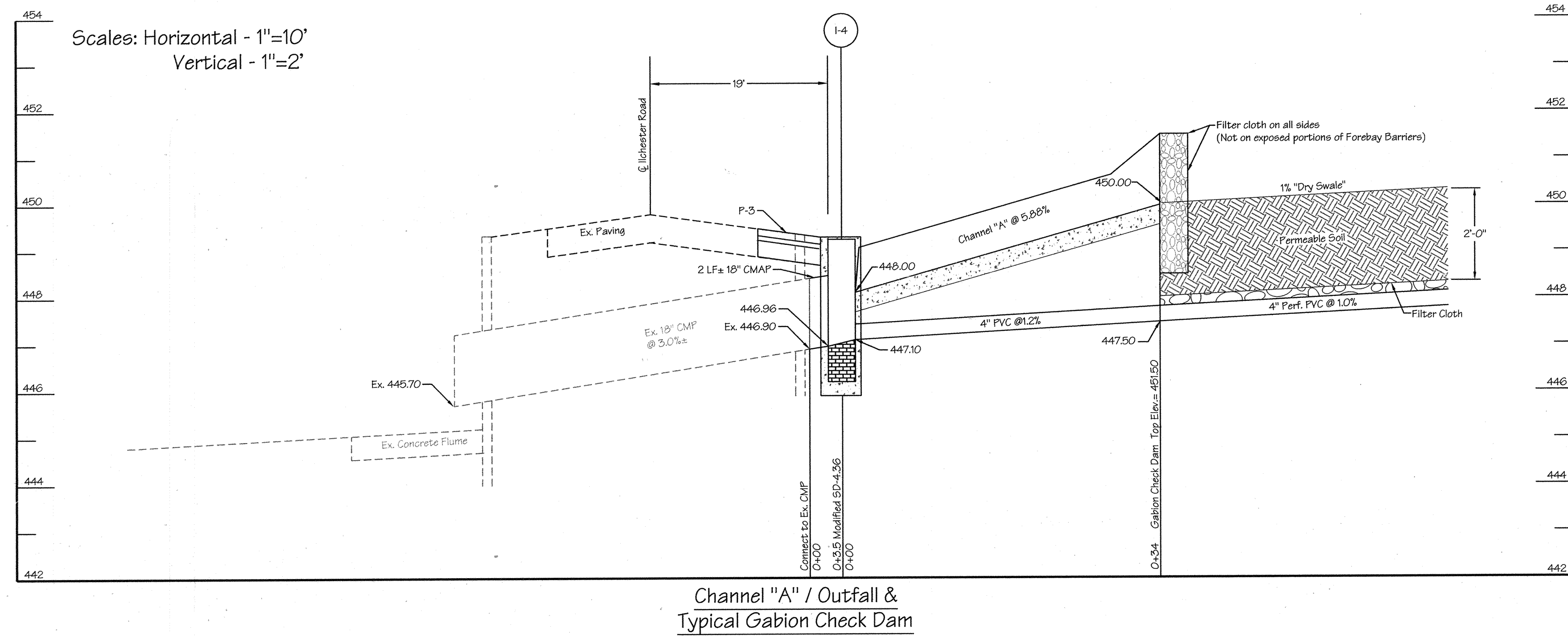
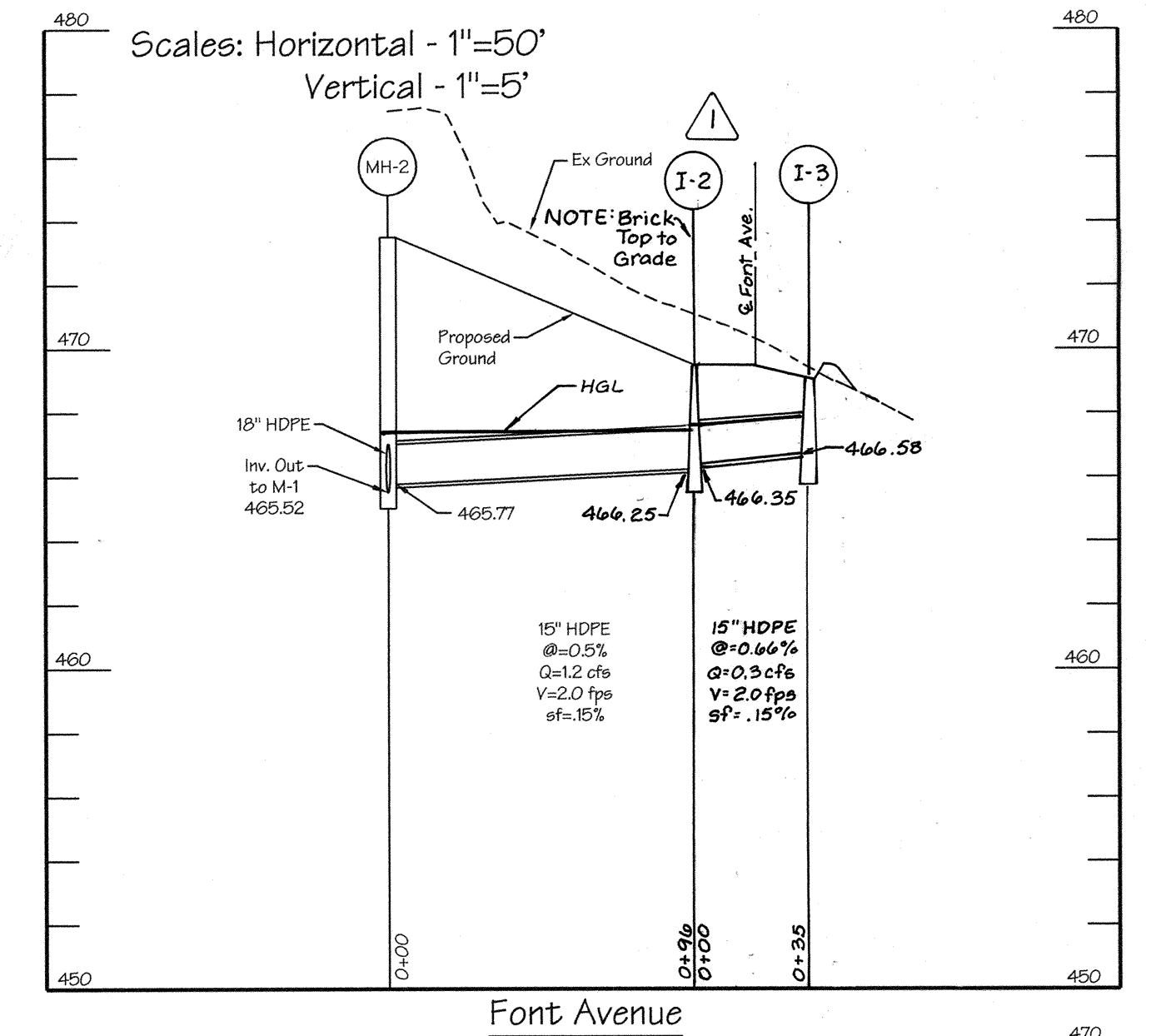
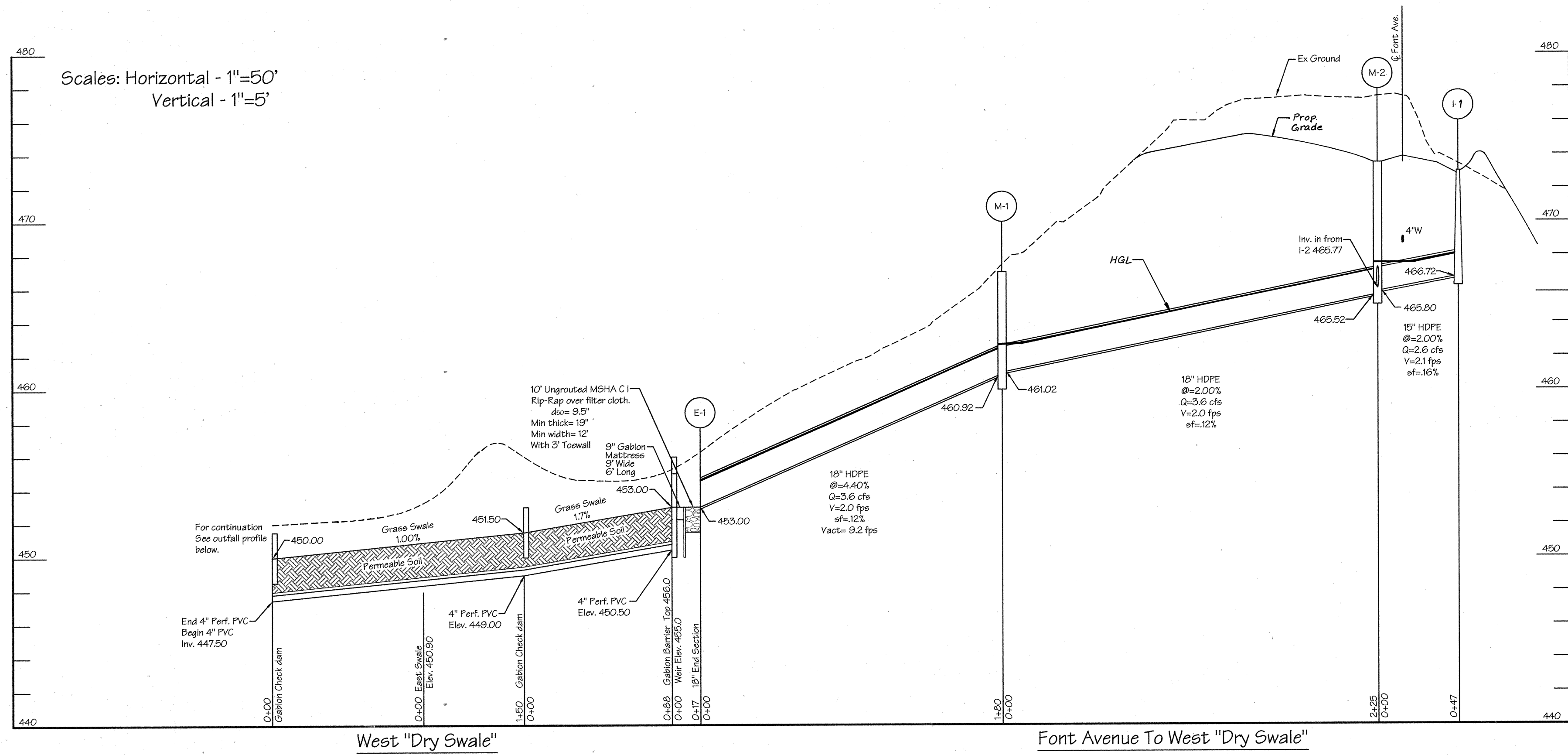
Road Details  
**SPRING OAKS**  
Lots 1 Thru 11 & Open Space  
Lots 12 Thru 14  
1st Election District - Howard County, Maryland  
Tax Map No. 31 - Grid No. 15 - Parcel 217  
Previous Submittals: 900-01, P01-12

OWNER/DEVELOPER: J.J.M., Inc.  
17301 Shaffers Mill Road  
Mt. Airy, Maryland 21771  
(410) 730-0810

SCALE: As Shown  
DRAWING: 3 of 10  
JOB NO.: 98-090  
FILE NO.: F02-22

STRUCTURE SCHEDULE							
Struc. No.	Type	Inv. In	Inv. Out	MH Top or Top Slab Elev	Detail	Location	Remarks
I-1	Inlet	466.35	466.12	473.00	SD 4.36	Font Ave. Sta. 3+43.33 RT	No Weir Downhill Side
I-2	Inlet	466.35	466.25	469.40	SD 4.36	Font Ave. Sta. 2+47.14 LT	No Weir Downhill Side
I-3	Inlet	-	466.58	469.00	SD 4.36	Font Ave. Sta. 2+35.18 RT	No Weir Downhill Side
I-4	Inlet	448.00*	446.96	449.26	Mod SD 4.36	lch. Rd. Sta. 10+04.62 21 RT	See Detail - Sheet B
M-1	Manhole	461.02	460.92	467.00	G 5.12	5' off PL 10' off Rear Cor. Lts 5&6	-
M-2	Manhole	466.77	465.52	473.50	G 5.12	Font Ave. Sta. 3+39.61 14 LT	-
ES-1	End Section	-	453.00	-	AB5-ES	5' off EW Rear Cor. L1 7	Or Equivalent
ES-2	End Section	-	450.90	-	SD 5.63	N 568743.33 E 1373422.24	-
ES-3	End Section	451.50	-	-	SD 5.63	N 568772.49 E 1373468.65	-
ES-4	End Section	-	454.50	-	SD 5.63	N 568707.09 E 1373480.96	-
ES-5	End Section	456.40	-	-	SD 5.63	N 568681.94 E 1373460.15	-

\* Concrete channel invert; 4" PVC Inv.= 447.10



By	Date	No.	Description
SC	4/24/03	1	Move I-2 due to gas conflict f future D/W adj. Lot 2

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* DATE: 2/5/02

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK

APPROVED: DEPARTMENT OF PUBLIC WORKS

*[Signature]* DATE: 3-21-02

CHIEF, BUREAU OF HIGHWAYS

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

*[Signature]* DATE: 2/17/02

NATURAL RESOURCE CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT DATE: \_\_\_\_\_

ENGINEER'S CERTIFICATE

I HEREBY 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 REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* DATE: 11-8-01

SIGNATURE OF ENGINEER

DEVELOPER'S CERTIFICATE

I WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY.

*[Signature]* DATE: 2-6-02

SIGNATURE OF DEVELOPER

STATE OF MARYLAND

PAUL W. COPELAND

PROFESSIONAL ENGINEER

11-8-01

LDE, INC.

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

Storm Drain Profiles

DESIGNED: S.W.C.

DRAWN: J.D.R.

CHECKED: S.W.C.

DATE: 8/2001

OWNER/DEVELOPER: J.J.M., Inc.  
17301 Shaffers Mill Road  
Mt. Airy, Maryland 21771  
(410) 730-0810

SCALE: As Shown

DRAWING: 4 of 10

JOB NO.: 98-090

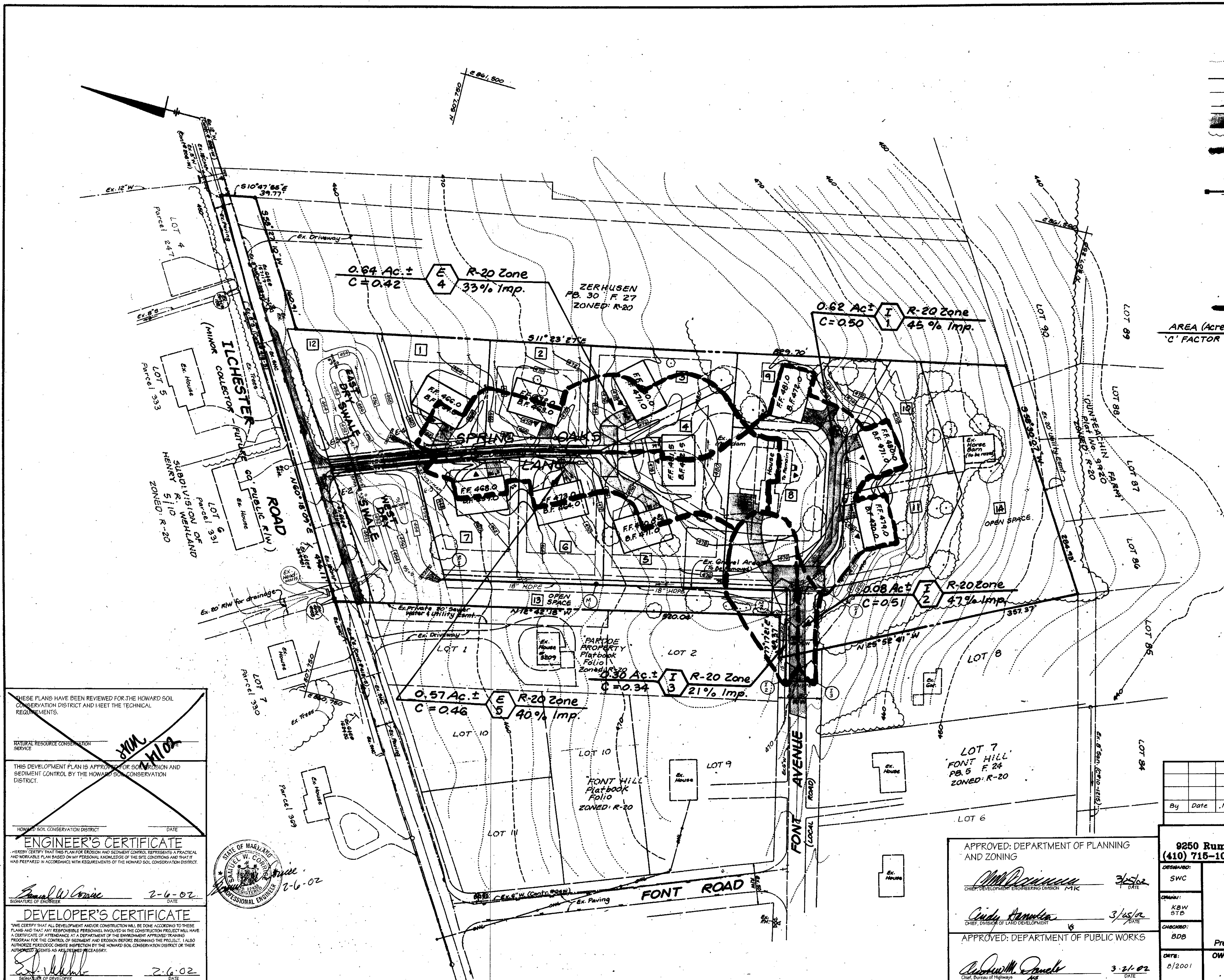
FILE NO.: F-02-22



**LEGEND**

- Ex. Ground
- Prop. Grade
- Ex. Paving
- Prop. Paving
- Ex. Tree Line
- Ex. Trees To Remain
- Ex. Storm Drain
- Prop. Storm Drain
- Lot Number Delineation
- Prop. Dwelling w/ Front Orientation
- Prop. Driveways
- Prop. Culverts
- DRAINAGE DIVIDE

AREA (Acres) <sup>3</sup> / INLET No. EX. ZONING  
 'C' FACTOR / % IMPERVIOUS



THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT

**ENGINEER'S CERTIFICATE**

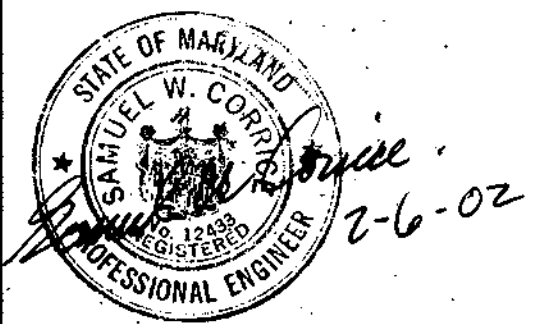
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Samuel W. Conice* 2-6-02  
 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 ALSO AUTHORIZE PERSONNEL TO BE INSPECTED BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED REPRESENTS AS REQUIRED NECESSARY.

*[Signature]* 2-6-02  
 SIGNATURE OF DEVELOPER DATE



APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 3/25/02  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION, PPK

*[Signature]* 3/15/02  
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PUBLIC WORKS

*[Signature]* 3-21-02  
 CHIEF, BUREAU OF HIGHWAYS

By	Date	No.	Description
REVISIONS			

**LDE, INC.**  
 9250 Rumsey Road, Suite 108, Columbia, MD. 21045  
 (410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

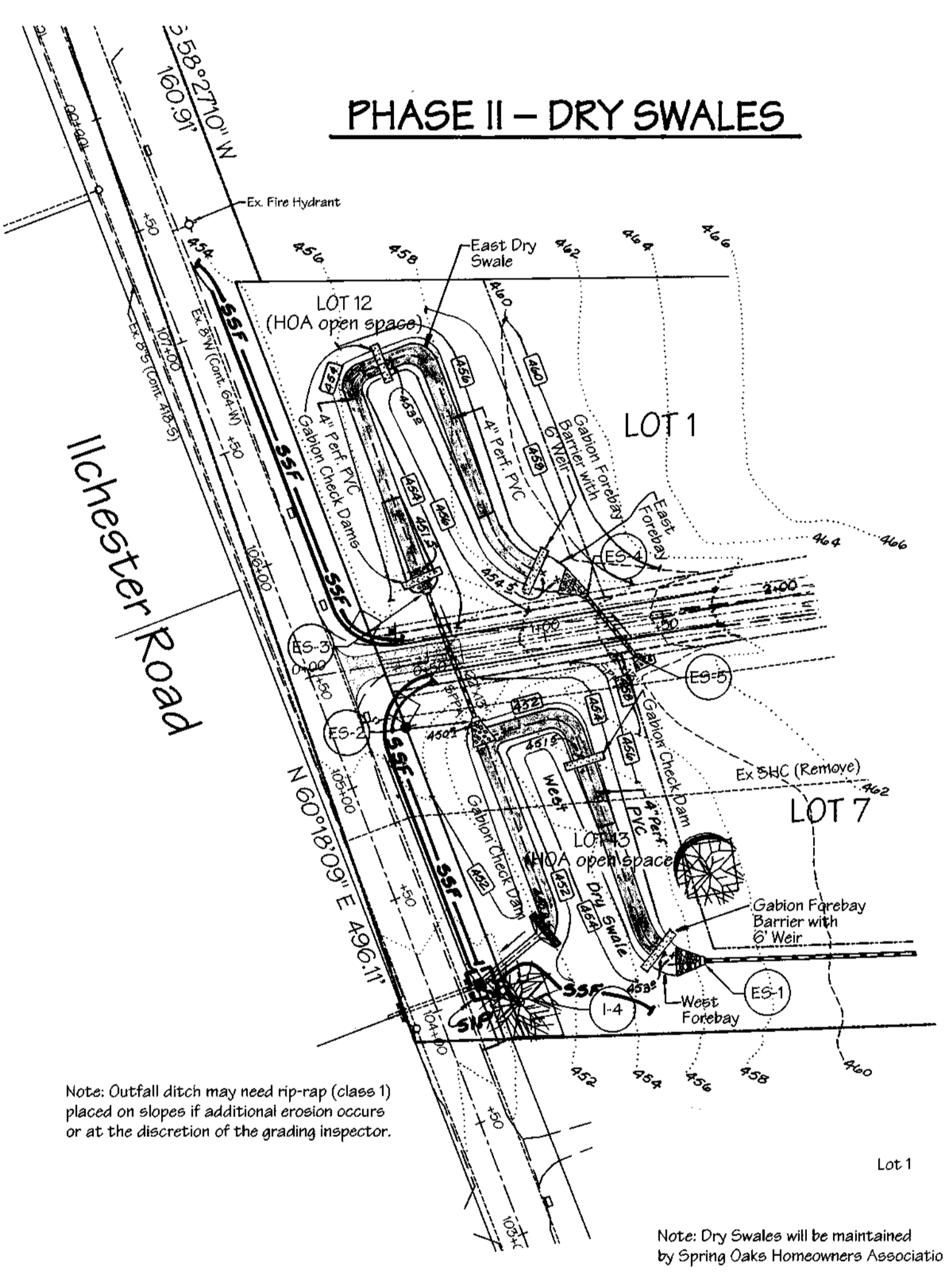
DESIGNED: SWC	SCALE: 1" = 50'
DRAWN: KBW STB	DRAWING: 5 of 10
CHECKED: BDB	LDE JOB NO. 98-090
DATE: 8/2001	FILE NO. F02-22

**STORM DRAIN DRAINAGE AREA MAP**  
**SPRING OAKS**  
 LOTS 1 THRU 11 & OPEN SPACE  
 LOTS 12 THRU 14  
 Tax Map 31 Grid 15 Parcel 217  
 1<sup>st</sup> Election District Howard County, MD  
 Previous Submittals: 9-00-01, P01-12

OWNER / DEVELOPER:  
 J.J.M., Inc.  
 17901 Shaffers Mill Road  
 Mt. Airy, Maryland 21771



**PHASE I**



- LEGEND**
- LIMIT OF DISTURBANCE ..... (dotted line)
  - WOODSLINE ~~~~~ (wavy line)
  - TREE PROTECTION FENCE — TPF — (line with 'T' symbols)
  - SUPER SILT FENCE — SSF — (line with 'S' symbols)
  - EXISTING CONTOUR ——— (solid line)
  - PROPOSED CONTOUR ——— (dashed line)
  - DRY SWALE ——— (thick solid line)

**OPERATION AND MAINTENANCE**

The Homeowners Association shall be responsible for trash removal and landscape maintenance of the Open Space Lots. This shall include mowing of all areas including side slopes of the "Dry Swales".

The Homeowners Association shall also be responsible for siltation removal in the Forebays and behind the Check Dams upon reaching a depth of 6 inches or more.

The Homeowners Association shall further be responsible for restoration or replacement of Forebay barriers, Check Dams, underdrains, dry swale soils or any other items deemed necessary by Howard County inspectors.

By	Date	No.	Description
REVISIONS			

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*[Signature]* 2/25/02  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 2/25/02  
CHIEF, DIVISION OF LAND DEVELOPMENT

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

*[Signature]* 2/7/02  
NATURAL RESOURCE CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 2/7/02  
HOWARD SOIL CONSERVATION DISTRICT

**ENGINEER'S CERTIFICATE**

I HEREBY 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 REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 11-8-01  
SIGNATURE OF ENGINEER

**DEVELOPER'S CERTIFICATE**

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY.

*[Signature]* 2-6-02  
SIGNATURE OF DEVELOPER



APPROVED: DEPARTMENT OF PUBLIC WORKS

*[Signature]* 3-21-02  
CHIEF, BUREAU OF HIGHWAYS

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

DESIGNED SWC	<b>SPRING OAKS</b> Lots 1 Thru 11 & Open Space Lots 12 Thru 14 1st Election District - Howard County, Maryland Tax Map No. 31 - Grid No. 15 - Parcels 277 Previous Submittals: 500-01, P01-12	SCALE 1"=50'
DRAWN J.D.R. STB		DRAWING 6 of 10
CHECKED SWC		JOB NO. 98-090
DATE 8/2001		OWNER/DEVELOPER J.J.M., Inc. 17901 Shaffers Mill Road Mt. Airy, Maryland 21771 (410) 730-0810

F:\land Projects\2255\p10\02\01\1132531.dwg, Grading and Sediment, 11/01/01 11:32:31 AM



**HOWARD SOIL CONSERVATION DISTRICT  
STANDARD SEDIMENT CONTROL NOTES**

- 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, (203-1850).
- 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.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within a 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1. It 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. I, Chapter 7, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL (Section G) for permanent seeding, soil, temporary seeding, and mulching. Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:
 

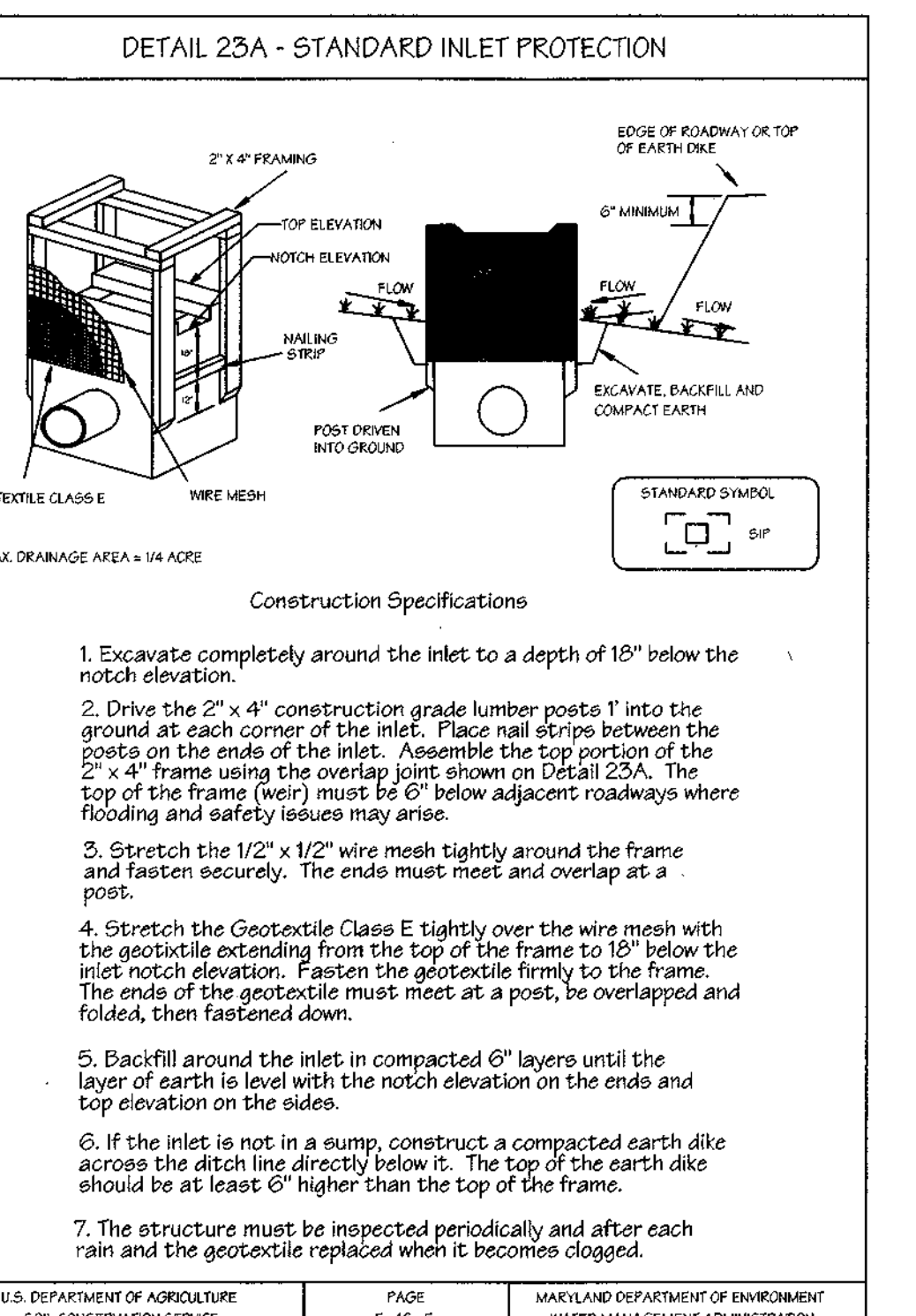
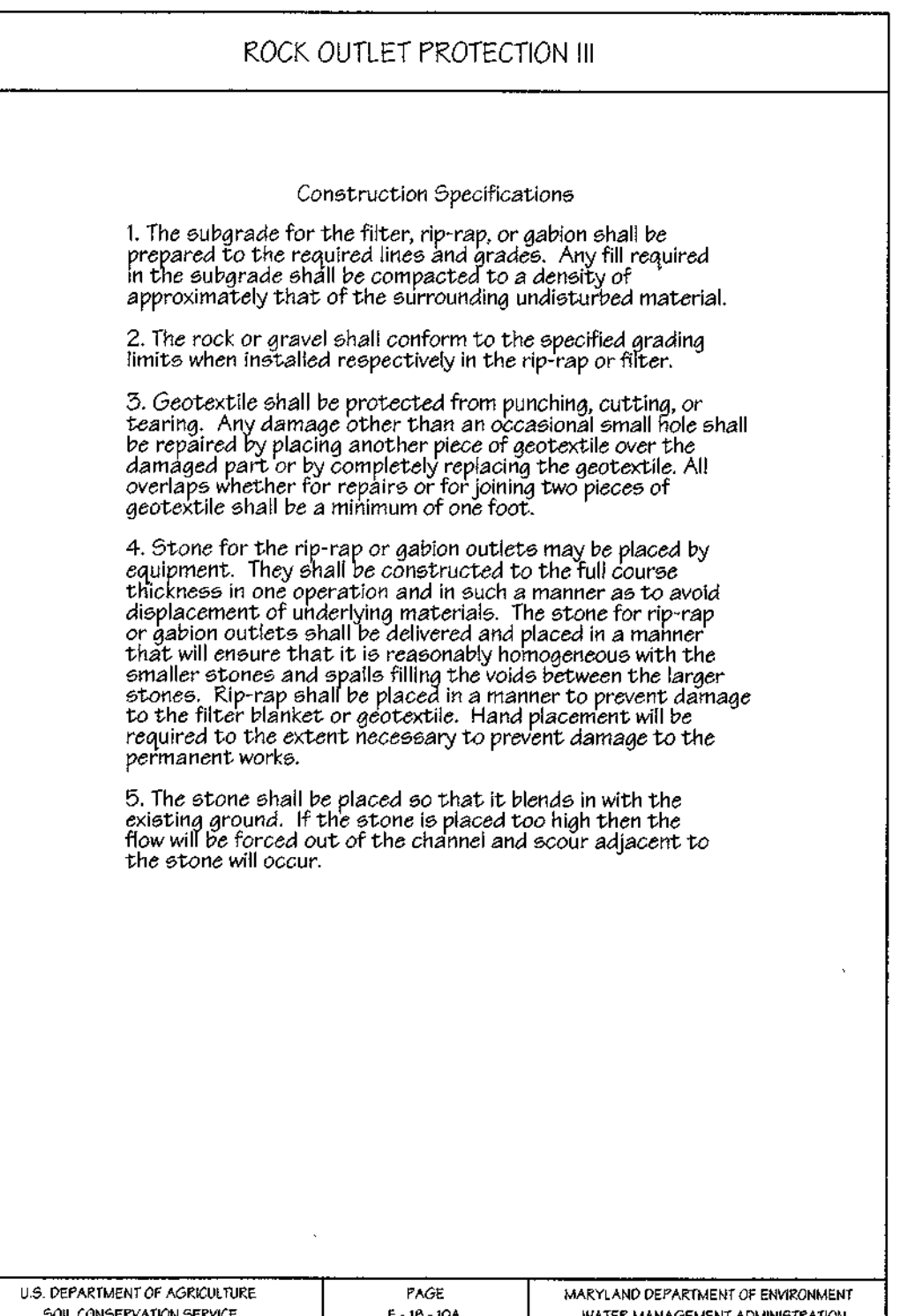
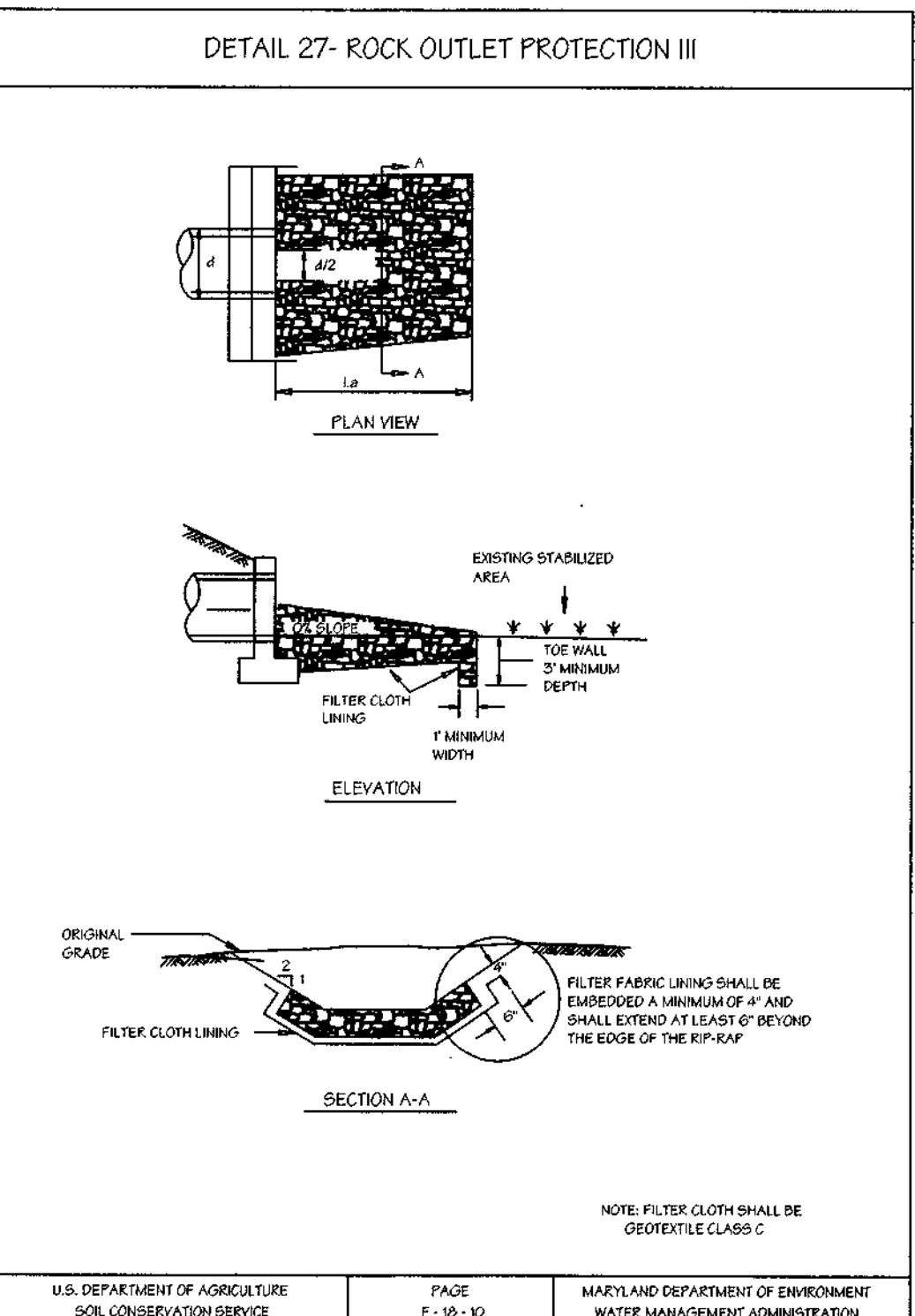
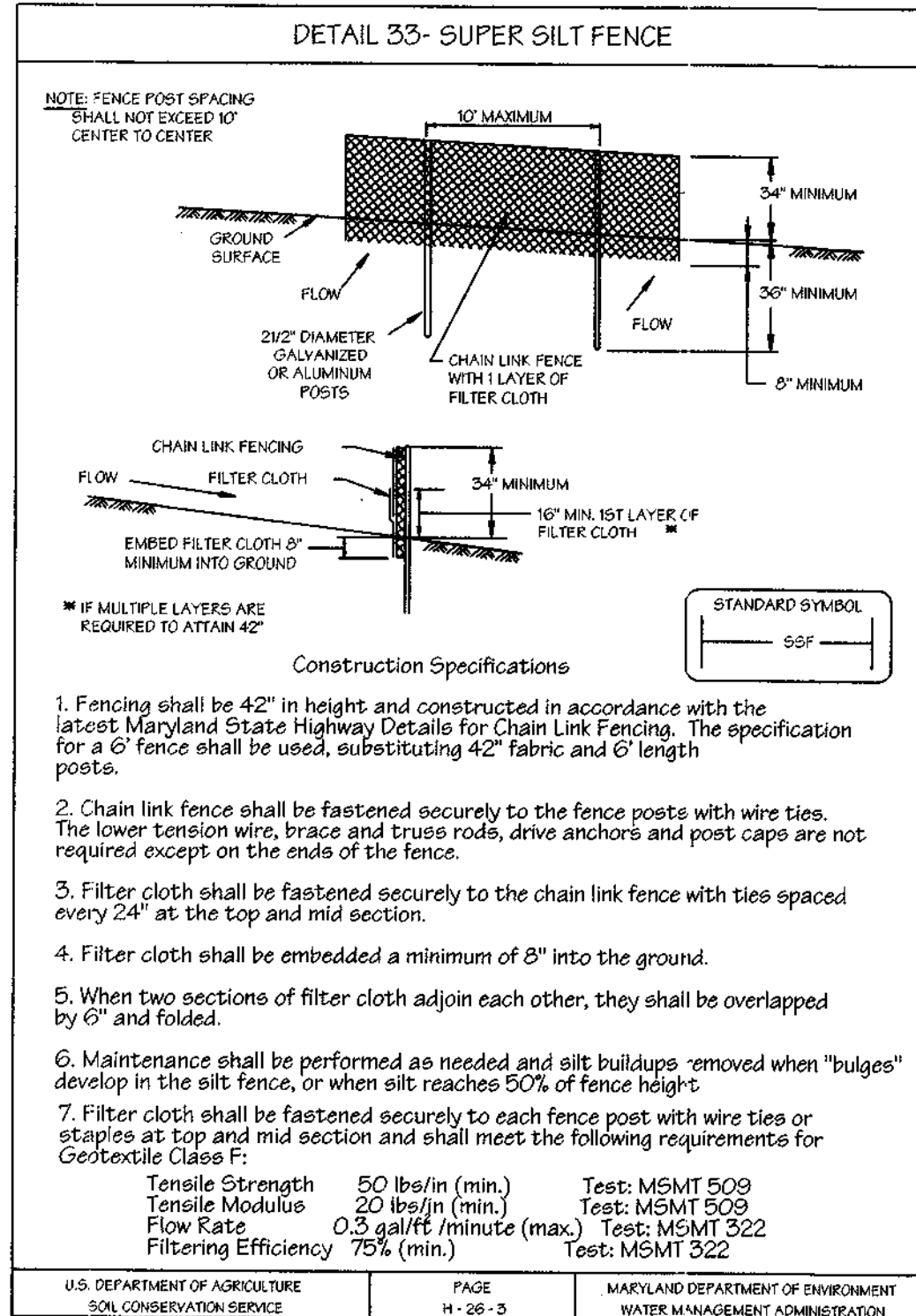
Total Area of Site	6.47	Acres
Area Disturbed	2.50	Acres
Area to be seeded or paved	0.34	Acres
Area to be vegetatively stabilized	2.16	Acres
Total Cur.	1500	Cu. Yds.
Total Fill	292	Cu. Yds.
Offsite waste/borrow area location	LOT 1	
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- 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.

**HOWARD SOIL CONSERVATION DISTRICT  
PERMANENT SEEDING NOTES**

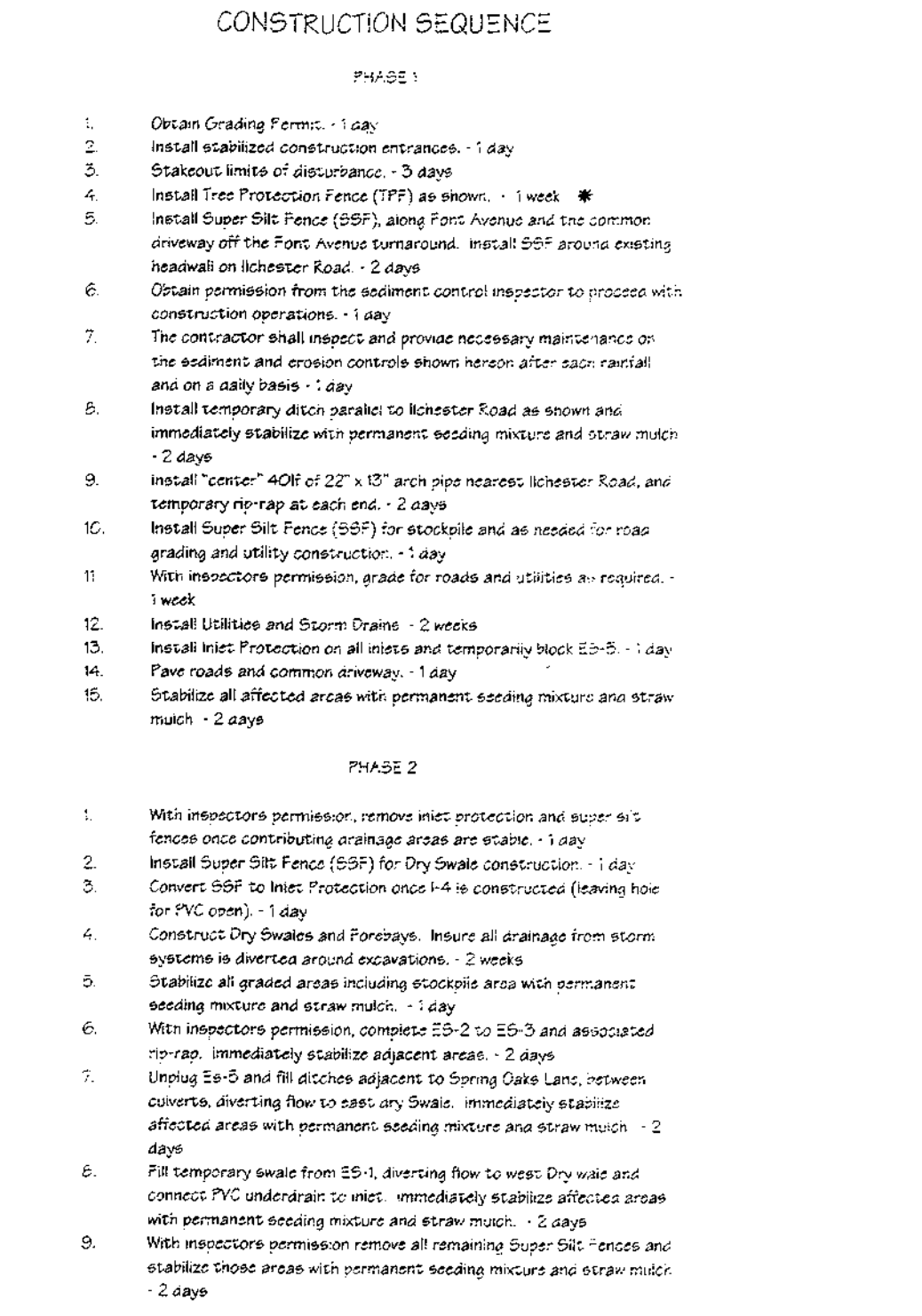
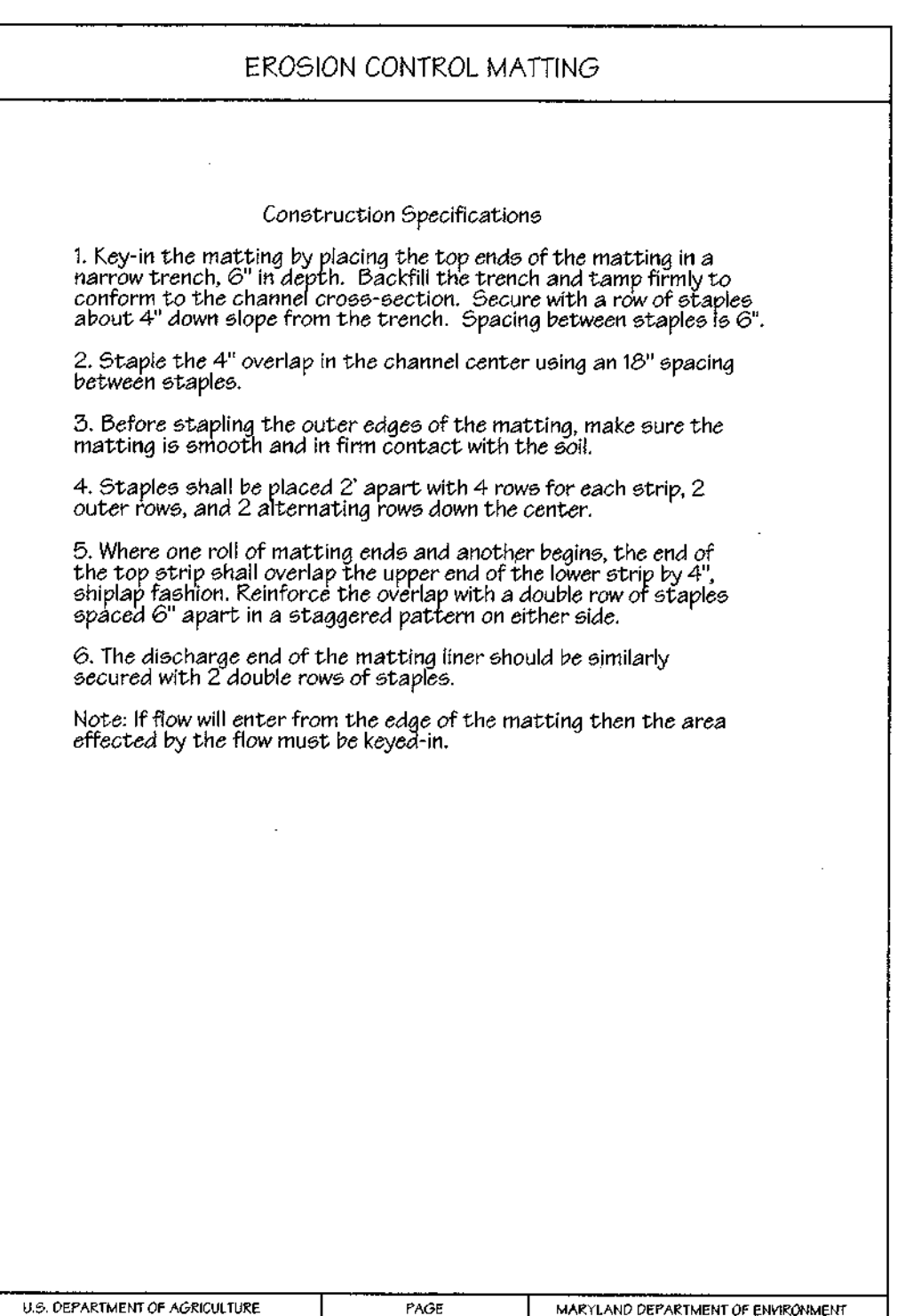
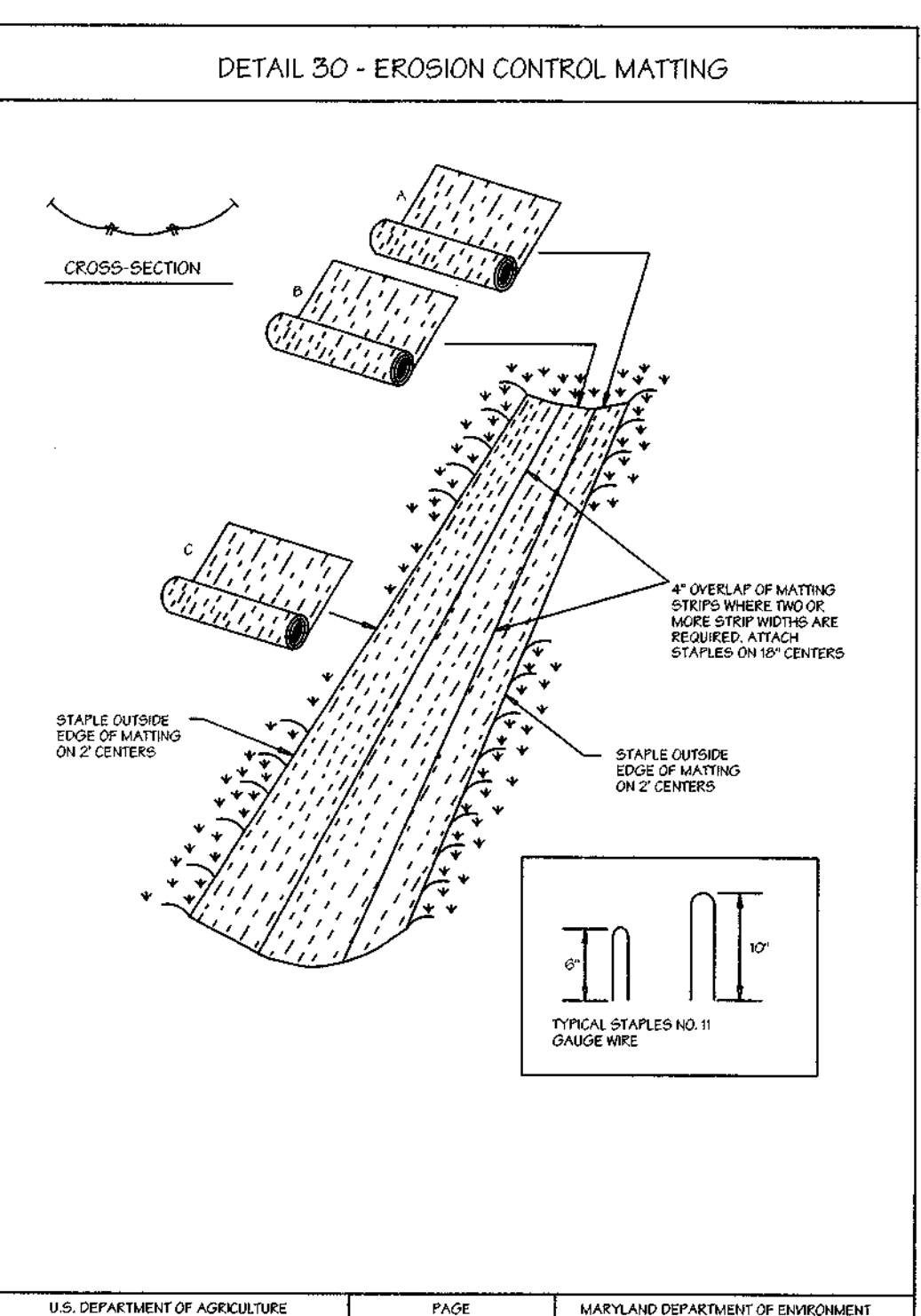
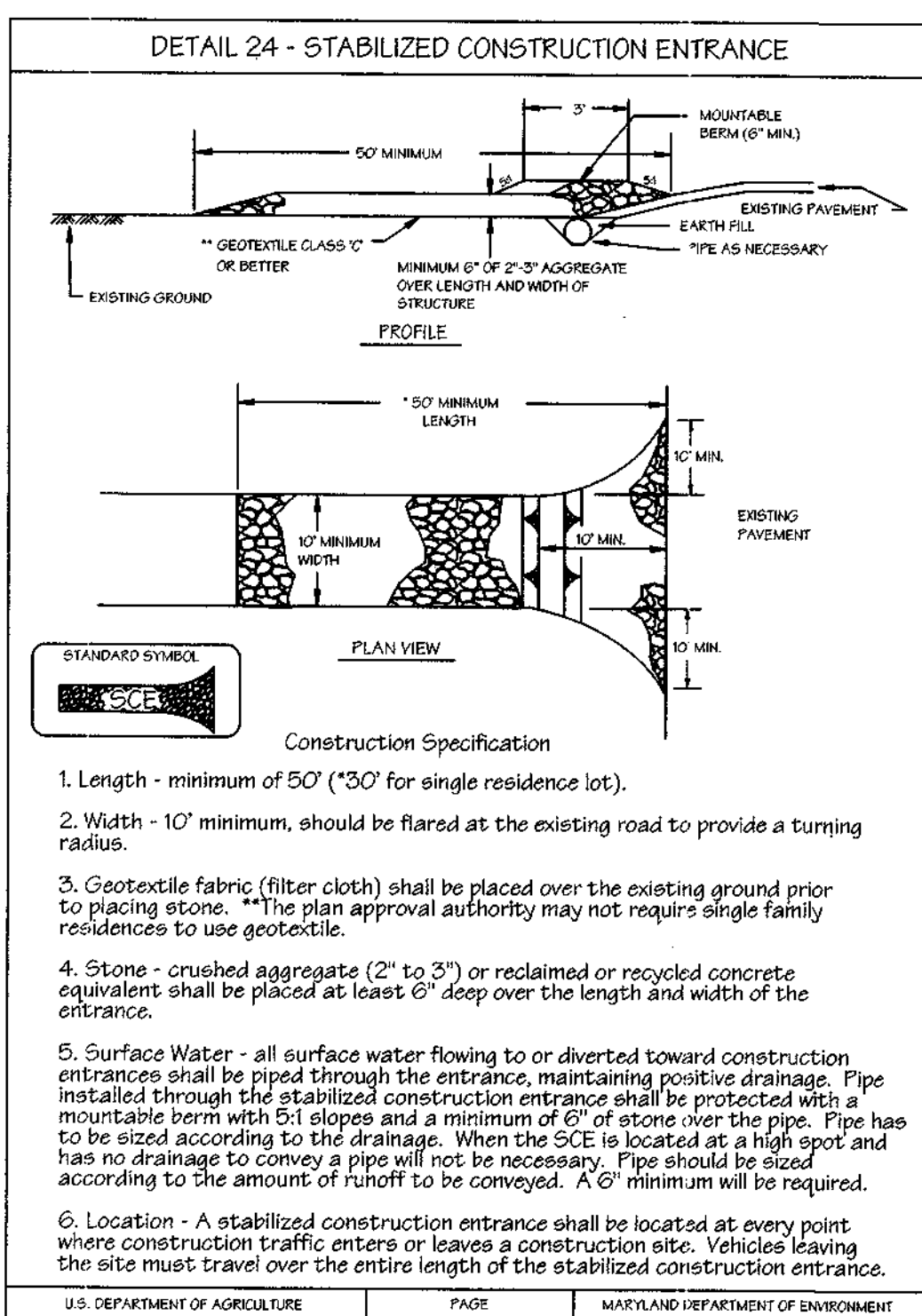
- Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
- SEEDBED PREPARATION:** Loosen upper three inches of soil by raking, disking, or other acceptable means before seeding, if not previously loosened.
- SOIL AMENDMENTS:** In lieu of soil test recommendations, use one of the following schedules:
- PREFERRED** -- Apply 2 tons per acre dolomitic limestone (32 lbs/1000sq. ft.) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000sq. ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 urea-form fertilizer (8 lbs/1000sq. ft.) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000sq. ft.) before seeding. Harrow or disk into upper three inches of soil.
  - ACCEPTABLE** -- Apply 2 tons per acre dolomitic limestone (32 lbs/1000sq. ft.) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000sq. ft.) before seeding. Harrow or 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 (14 lbs/1000sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs per acre (14 lbs/1000sq. ft.) of Kentucky 31 Tall Fescue and 2 lbs per acre (.05 lbs/1000sq. ft.) of creeping 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 per acre Kentucky 31 Tall Fescue and mulch 2 tons/acre well anchored straw.
- MULCHING** -- Apply 1/2 to 2 tons per acre (70 to 90 lbs/1000sq. ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000sq. ft.) of emulsified asphalt on flat areas. On slopes 6 feet or higher, use 348 gallons per acre (8 gal/1000sq. ft.) for anchoring.
- MAINTENANCE** -- Inspect all seeding areas and make needed repairs, replacements and reseedings.

**HOWARD SOIL CONSERVATION DISTRICT  
TEMPORARY SEEDING NOTES**

- Apply to graded or cleared areas likely to be not disturbed 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/1000sq. ft.)
- SEEDING** -- For periods March 1 thru April 30, and from August 15 thru October 15 seed with 2-1/2 bushels per acre of annual rye (3.2 lbs/1000sq. ft.). For the period May 1 thru August 14, seed with 3 lbs per acre of creeping lovegrass (.07 lbs/1000sq. 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 1/2 to 2 tons per acre (70 to 90 lbs/1000sq. ft.) of unrotted weed free small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000sq. ft.) of emulsified asphalt on flat areas. On slopes 6 feet or higher, use 348 gallons per acre (8 gal/1000sq. ft.) for anchoring.
- Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.



- 21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL**
- Definition**  
Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.
- Purpose**  
To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
- Conditions Where Practice Applies**
- This practice is limited to areas having 21 or flatter slopes where:
    - The texture of the exposed subsoil material is not adequate to produce vegetative growth.
    - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
    - The original soil to be vegetated contains material toxic to plant growth.
    - The soil is so acidic that treatment with limestone is not feasible.
  - For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.
- Construction and Material Specifications**
- Topsoil salvaged from the existing site may be provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS in cooperation with Maryland Agricultural Experiment Station.
  - Topsoil Specifications - Soil to be used as topsoil must meet the following:
    - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, rocks, trash, or other materials larger than 1/4" in diameter.
    - Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutgrass, pokeweed, thistle, or others as specified.
    - Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be applied at the rate of 4-8 tons/acre (200-400 pounds per 1000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following paragraphs.
  - For sites having disturbed areas under 5 acres:
    - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
  - For sites having disturbed areas over 5 acres:
    - On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
      - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
      - Organic content of topsoil shall be not less than 1.5 percent by weight.
      - No soil or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min) to permit dissipation of phytotoxic materials.
    - Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
    - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section 1 - Vegetative Stabilization Methods and Materials.
  - Topsoil Application
    - When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
    - Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 6" higher in elevation.
    - Topsoil shall be uniformly distributed in a 4" - 6" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that seeding or sodding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
    - Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.
    - Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:
      - Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:
        - Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
        - Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a PI of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
        - Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
      - Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lbs/1,000 square feet, and 1/3 the normal lime application rate.
- References/Guideline Specifications, Soil Preparation and Sodding, MD-VA, Pub.#1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes, Revised 1973.



By	Date	No.	Description
			REVISIONS

**APPROVED: DEPARTMENT OF PLANNING AND ZONING**

*Chie Development Engineering Division* 2/25/02  
*Chief, Division of Land Development* 3/25/02

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

*Jim Myers* 2/17/02  
 NATIONAL RESOURCE CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

*John Robertson* 2/17/02  
 HOWARD SOIL CONSERVATION DISTRICT

**ENGINEER'S CERTIFICATE**

I HEREBY 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 REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Barry W. Corliss* 2-6-02  
 SIGNATURE OF ENGINEER DATE

**DEVELOPER'S CERTIFICATE**

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PENNSYLVANIA INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS DEEMED NECESSARY.

*John Robertson* 2-6-02  
 SIGNATURE OF DEVELOPER DATE

STATE OF MARYLAND  
 JAMES W. CORLISS  
 PROFESSIONAL ENGINEER  
 2-6-02

**APPROVED: DEPARTMENT OF PUBLIC WORKS**

*Robert M. Daniels* 3-21-02  
 Chief, Bureau of Highways

**LDE, INC.**  
 9250 Rumsey Road, Suite 106, Columbia, MD. 21045  
 (410) 715-1070 (301) 536-3424 (410) 715-9540 (Fax)

DESIGNED SWC	Grading and Sediment & Erosion Control Plan - Details	SCALE No Scale
DRAWN CADD	SPRING OAKS Lots 1 thru 11 & Open Space Lots 12 thru 14	DRAWINGS 7 of 10
CHECKED SWC	1st Election District - Howard County, Maryland Tax Map No. 31 - Grid No. 15 - Parcelle 217	JOB NO. 98-090
DATE 8/2001	Previous Submittal: S00-01, P01-12	FILE NO. F02-22
	OWNER/DEVELOPER J.J.M., Inc. 17901 Shaffers Mill Road Mt. Airy, Maryland 21771 (410) 783-0810	





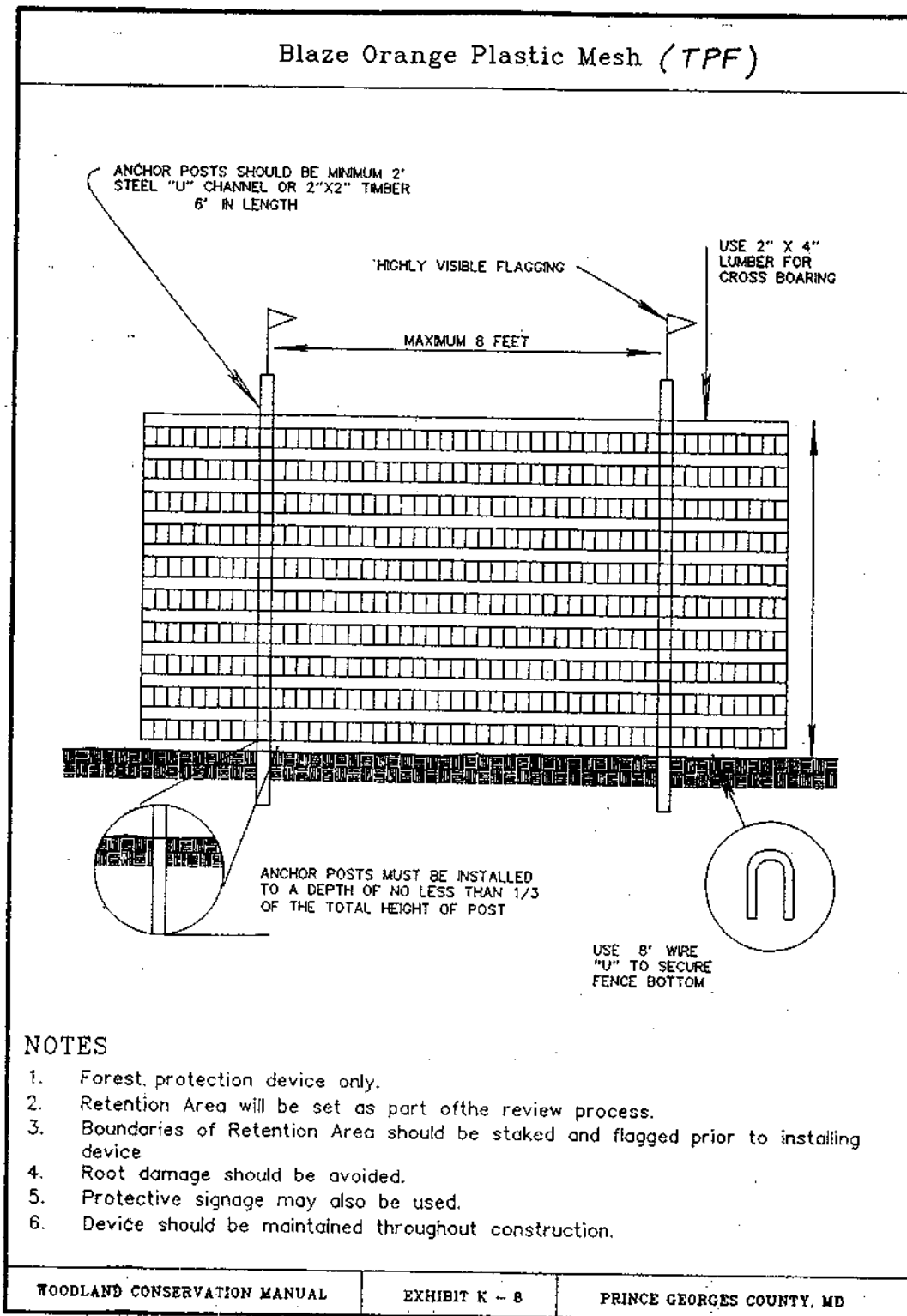






**GENERAL NOTES**

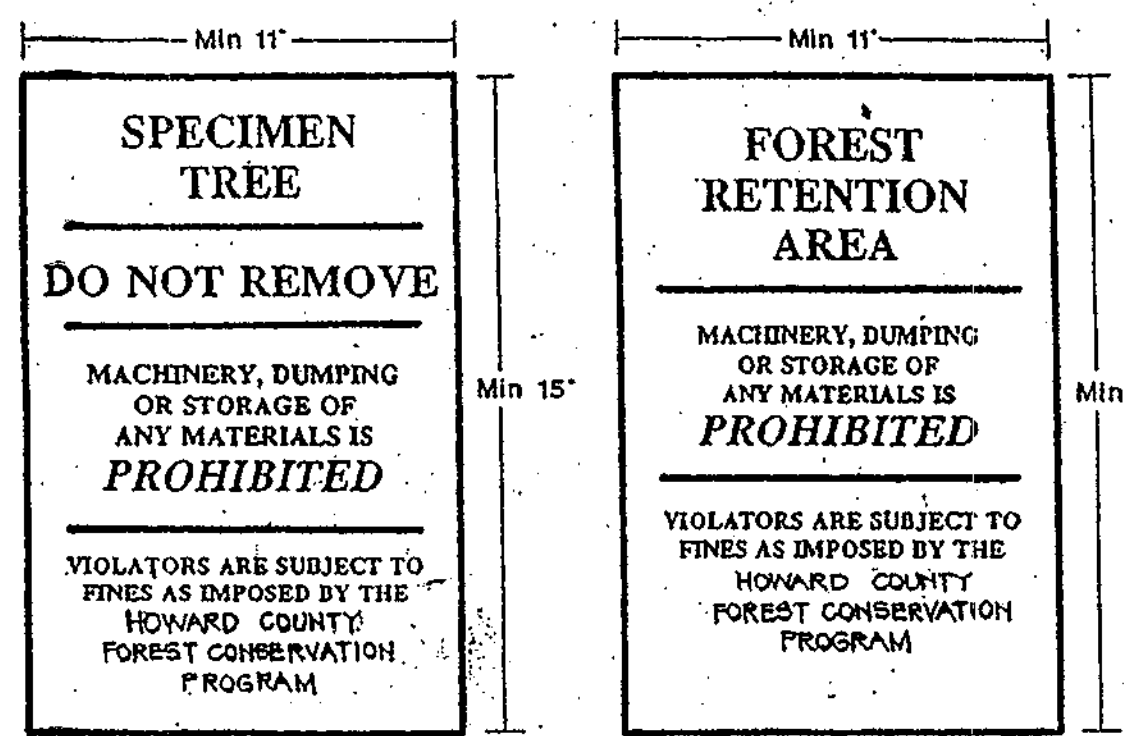
- This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code and Landscape Manual.
- Financial Surety for the required landscaping will be posted as part of the Department of Public Works Developer's Agreement. (See Note Sheet 9)
- The Forest Conservation requirements of Section 16.1202 of the Howard County Code for this project is 1.0 Acre of obligation which will be fulfilled by the retention of 0.6 Acres of existing forest and the afforestation planting of 0.4 Acres on-site.



NOTE: (TPF) = Tree Protection Fence

**FOREST CONSERVATION EASEMENT STANDARD NOTES:**

The Forest Conservation Easement has been established to fulfill the requirements of Section 16.1200 of the Howard County Code, Forest Conservation Act. No clearing, grading or construction is permitted within the Forest Conservation Easement; however, forest management practices as defined in the Deed of Forest Conservation Easement are allowed.



Signage

**STREET TREE PLANTING SCHEDULE (1 SHADE TREE PER 40 LF)**

SYMBOL	QUANTITY	NAME	SIZE	COMMENTS
⊕	32	QUERCUS RUBRIA NORTHERN RED OAK	2 1/2" CAL.	BFB

SYMBOL	QUANTITY	NAME	SIZE	COMMENTS
⊙	10	LIQUIDAM BAR STYRACIFLUA AMERICAN SWEET GUM	2 1/2" CAL.	BFB
⊖	11	ACER RUBRUM RED SUNSET	2 1/2" CAL.	BFB
⊗	26	PINUS STROBUS WHITE PINE	4'-6" HT.	BFB
⊕	26	CYPRESSUS CYPARIS LEYLANDI LEYLAND CYPRESS	4'-6" HT.	BFB
⊙	15	TAXUS MEDIA DENSIFORMIS DENSIFORMIS YEW	3'-4" HT. SPACE 3' MIN. 4' MAX.	CONTAINER/ REFUSE PAD (SEE DETAIL SHEET 9)

**LANDSCAPE EDGE PLANTING SCHEDULE**

SYMBOL	QUANTITY	NAME	SIZE	COMMENTS
⊙	10	LIQUIDAM BAR STYRACIFLUA AMERICAN SWEET GUM	2 1/2" CAL.	BFB
⊖	11	ACER RUBRUM RED SUNSET	2 1/2" CAL.	BFB
⊗	26	PINUS STROBUS WHITE PINE	4'-6" HT.	BFB
⊕	26	CYPRESSUS CYPARIS LEYLANDI LEYLAND CYPRESS	4'-6" HT.	BFB
⊙	15	TAXUS MEDIA DENSIFORMIS DENSIFORMIS YEW	3'-4" HT. SPACE 3' MIN. 4' MAX.	CONTAINER/ REFUSE PAD (SEE DETAIL SHEET 9)

**APPENDIX E  
FOREST CONSERVATION WORKSHEET**

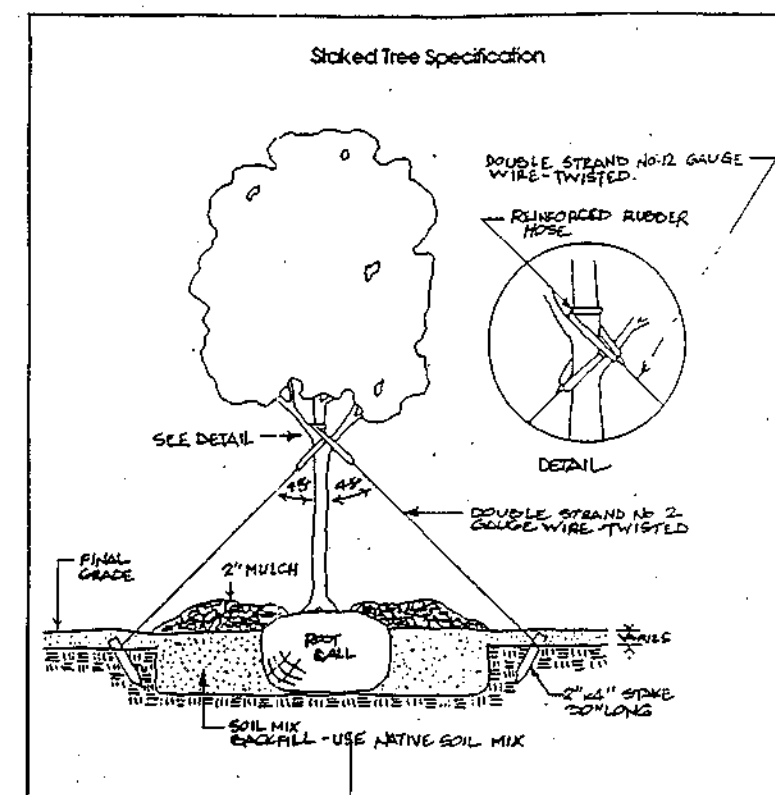
Category	Adjacent to Roadways	Adjacent to Perimeter Properties
Landscape Type	---	A
Linear Feet of Roadway Frontage/Perimeter	---	1809 LF
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	---	* Yes 1003 LF 806 LF (Net)
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)	---	---
Number of Plants Required Shade Trees Evergreen Trees Shrubs	---	* 30 (13 AREAS) --- --- --- CREDIT
Number of Plants Provided Shade Trees Evergreen Trees Other Trees (2:1 substitution) Shrubs (10:1 substitution) (Describe plant substitution credits below if needed)	---	13

Comments \_\_\_\_\_

Note: Complex projects may require expansion of the schedule to accommodate multiple land uses on-site or on adjacent properties.

**SCHEDULE D  
STORMWATER MANAGEMENT AREA LANDSCAPING**

Linear Feet of Perimeter	1014 LF
Number of Trees Required Shade Trees Evergreen Trees	20 26
Credit for Existing Vegetation (No, Yes and %)	Yes 120 LF 894 LF (Net)
Credit for Other Landscaping (No, Yes and %)	Credit for two shade retained. Remaining required plants relocated to Perimeter 1 and 4
Number of Trees Provided Shade Trees Evergreen Trees Other Trees (2:1 substitution)	--- 26 36 Evergreens + 2 = 18 Shade



Staking of trees may be used only when there is an area of high winds for trees taller than eight feet in height. Stakes and wires should be removed after the tree has been established.

**Forest Conservation Technique Area/Sq. Ft. Plant Density Plants Req'd.**

Afforestation w/ seedlings	17424	700 trees/ac. (8' x 8' spacing)	280 trees
----------------------------	-------	------------------------------------	-----------

NOTE: See Detail entitled "Typical Planting Afforestation Area" Sheet 9.

**AFFORESTATION PLANTING SCHEDULE**

QUANTITY	PLANT NAME
70	ACER RUBRUM RED MAPLE
70	PRUNUS SEROTINA BLACK CHERRY
70	LINDERA BENZOIN SPICEBUSH
70	JUNIPER VIRGINIANA RED CEDAR

ACRES (1/10 acre)

**I. BASIC SITE DATA**

Gross Site Area  
Area Within 100 Year Floodplain  
Area Within Agricultural Use and Preservation Parcel (If Applicable)  
Net Tract Area  
Land Use Category (R-RLD, R-RMD, R-S, C/UO, I)

6.5  
---  
---  
6.5  
6.5

**II. INFORMATION FOR CALCULATIONS**

A. Net Tract Area  
B. Reforestation Threshold (10 % x A)  
C. Afforestation Minimum (15 % x A)  
D. Existing Forest on Net Tract Area  
E. Forest Areas to Be Cleared  
F. Forest Areas to Be Retained

6.5  
1.3  
1.0  
0.6  
0  
0.6

**III. DETERMINING REQUIREMENTS: AFFORESTATION OR REFORESTATION**

**1. REFORESTATION**

If existing forest areas equal or exceed the afforestation minimum (if D equals or is more than C), and clearing of forest areas is proposed, reforestation requirements may apply.

GO TO SECTION IV

If existing forests exceed the afforestation minimum (if D equals or is more than C) and no clearing of existing forest resources is proposed, no reforestation is required. No further calculations are needed.

**2. AFFORESTATION**

If existing forest area are less than the afforestation minimum (if D is less than C), afforestation requirements apply.

GO TO SECTION V

**V. AFFORESTATION CALCULATIONS**

A. Net Tract Area  
B. Afforestation Minimum (15 % x A)  
C. Existing Forest on Net Tract Area  
D. Forest Areas to Be Cleared  
E. Forest Areas to Be Retained

6.5  
1.0  
0.6  
0  
0.6

**SELECT THE ALTERNATIVE THAT APPLIES:**

**1. No Clearing below the Minimum**

If existing forests are less than the afforestation minimum (if D is less than C) and no clearing is proposed, the following calculations apply:

Total afforestation required C - D **0.4**

Afforestation must make total forest area equal the minimum required.

**2. Clearing below the Minimum**

If existing forests are less than the afforestation minimum (if D is less than C) and clearing is proposed, the following calculations apply:

Afforestation for unreforested areas below minimum C - D

Afforestation for Clearing below Minimum E x 2

Total Afforestation Required (C - D) + (E x 2)

Afforestation requires the total forest area be equal to the minimum and it requires compensation for clearing.

**FOREST PROTECTION PROCEDURES - PRECONSTRUCTION PHASE**

Stress Reduction and Protection of Specimen Trees Isolated from Forest Retention Areas and General Forest Retention Areas (As They May Apply)

- The edge of the woods to be protected will be marked (staked or flagged) in the field per the limits of disturbance shown in the approved Final Construction Plans prior to the start of construction activity. All areas within protective fences are to be considered "off limits" to any construction activities. The protective fencing shall be installed at the outside edge of forested areas and specimen trees to be retained and should be combined with sediment control devices when possible. The limit of the critical root zone and therefore the location of the protective devices is to be determined as follows:  
  
Isolated Specimen Trees - 1.5 feet of protective radius per inch of DBH  
  
Edge of Forested Area - 1 foot of protective radius/inch of DBH or an eight foot protective radius, whichever ever is greater.

Isolated Specimen Trees - 1.5 feet of protective radius per inch of DBH  
Edge of Forested Area - 1 foot of protective radius/inch of DBH or an eight foot protective radius, whichever ever is greater.

- Construction activities expressly prohibited within the preservation areas are:

- Placing or stockpiling backfill or top soil in protected areas
- Falling trees into protected area
- Driving construction equipment into or through protected areas
- Burning in or in close proximity to protected areas
- Stacking or storing supplies of any kind
- Concrete wash-off areas
- Conducting trenching operations
- Grading beyond the limits of disturbance
- Parking vehicles or construction equipment
- Removal of root mat or topsoil
- Siting and construction of:
  - Utility lines
  - Access roads
  - Impervious surfaces
  - Stormwater management devices
  - Staging areas

- Protective fencing (see Figure "Protective Fencing") shall be the responsibility of the general contractor. The general contractor shall affix signs to the fencing at 25' minimum intervals indicating that these areas are "Forest Retention Area" or "Specimen Tree" (see Figures "Signage"). The general contractor shall take great care to assure the restricted areas are not violated and that root systems are protected from smothering, flooding, excessive wetting from de-watering operations, off-site run-off, spillage, and drainage or solutions containing materials hazardous to tree roots.

- The general contractor shall be responsible for any tree damaged or destroyed within the preservation areas whether caused by the contractor, his agents, employees, sub-contractors, or licensees.

- Foot traffic shall be kept to a minimum in the protective areas.

- All trees which are not to be preserved within fifty feet of any tree preservation areas are to be removed in a manner that will not damage those trees that are designated for preservation. It is highly recommended that tree stumps within this fifty foot area be ground out with a stump grinding machine to minimize damage.

- The general contractor shall designate a "wash out" area on-site for concrete trucks which will not drain toward a protected area.

- A pre-construction meeting shall be held with local authorities before any disturbance has taken place on site.

**FOREST PROTECTION PROCEDURES - CONSTRUCTION PHASE**

Forest and tree conditions should be monitored during construction and corrective measures taken when appropriate.

The following shall be monitored:

- Soil compaction
- Root injury - prune and monitor; consider crown reduction
- Limb injury - prune and monitor
- Flooded conditions - drain and monitor; correct problem
- Drought conditions - water and monitor; correct problem
- Other stress signs - determine reason, correct and monitor

**FOREST PROTECTION PROCEDURES - POST CONSTRUCTION PHASE**

The following measures shall be taken:

- Corrective measures if damages were incurred due to negligence:
  - Stress reduction
  - Removal of dead or dying trees. This may be done only if trees pose an immediate safety hazard
- Removal of temporary structures:
  - No burial of discarded materials will occur on-site within the conservation area
  - No open burning within 200 feet of a wooded area
  - All temporary forest protection structures will be removed after construction.
  - Remove temporary roads by removing stone or broadcasting mulch; pre-construction elevation should be maintained.
  - Aerate compacted soil.
  - Replant disturbed sites with trees, shrubs and/or herbaceous plants.
  - Retain signs for retention areas or specimen trees.
  - A County official shall inspect the entire site.

**LANDSCAPE PERIMETER SUMMARY**

EDGE NO.	LENGTH	TYPE	CREDIT	PLANTS REQUIRED	PLANTS PROVIDED
1	735 LF(495)	A	240 / 4 SHADE	12 SHADE (8 w/ clean)	8 SHADE
2	285 LF(0)	A	285 / 5 SHADE	5 SHADE (0 w/ clean)	0 SHADE
3	357 LF(41)	A	316 / 5 SHADE	6 SHADE (1 w/ clean)	1 SHADE
4	432 LF(270)	A	162 / 3 SHADE	7 SHADE (4 w/ clean)	4 SHADE 3 SHRUBS
SUB TOTAL:				1809 LF	
SWM 1				503 LF(503) B	10 SHADE 13 EVERGREEN (1)
SWM 2				511 LF(391) B	120 / 2 SHADE 10 SHADE (8 w/ clean) 13 EVERGREEN (2) 13 EV
SUB TOTAL:				1014 LF	20 SHADE 26 EVERGREEN

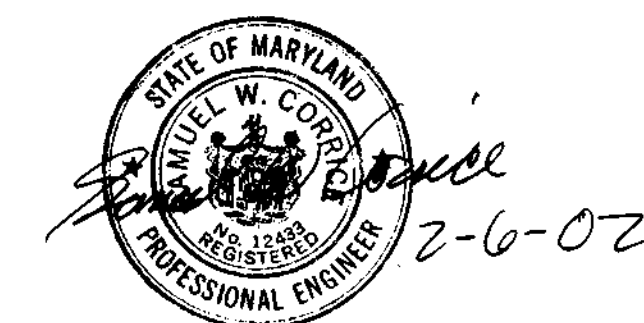
TOTAL PLANTS REQUIRED: 50 SHADE and 26 EVERGREEN, 3 SHRUBS  
(1) 20 EVERGREENS PROVIDED AT PERIMETER 1  
(2) 16 EVERGREENS PROVIDED AT PERIMETER 4

NOTE: Landscape planting is required around the private trash (12 Shrubs) Pad located at Ilchester Road at Spring Oaks Lane. (See Planting Detail Sheet 9)

**STREET TREE SUMMARY**

LOCATION / STREET NAME	LINEAR LENGTH	PLANTS REQUIRED	PLANTS PROVIDED
ILCHESTER ROAD	339 LF	8	8
FONT AVENUE *	286 LF(79 LF)+207	7	5
SPRING OAKS LANE	775 LF	19	19

\* CREDIT FOR 79 LF AFFORESTATION PLANTING



DENNIS J. LABARE, M.S., & ASSOCIATES  
Environmental Consulting Services  
3901 Flagstone Circle  
Randallstown, MD 21133

\* Wetland Delineation & Mapping  
\* Stream Assessment & Restoration  
\* Water Quality Monitoring  
\* Hydrogeologic Taxonomy  
\* Forest Stand Delineation  
\* Forest Conservation Plans  
Dennis J. Labare  
Qualified Professional, MDP/CA  
P/E No. (410) 922-7474

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division MK 3/25/02 DATE

Chief, Division of Land Development 3/25/02 DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

Chief, Bureau of Highways 3-21-02 DATE

**LDE, INC.**

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

DESIGNED: SWC	LANDSCAPE & FOREST CONSERVATION TABULATION and DETAILS	SCALE: As Shown
DRAWN: KBW STB	<b>SPRING OAKS</b>	DRAWING: 10 OF 10
CHECKED: BDB	LOTS 1 THRU 11 & OPEN SPACE LOTS 12 THRU 14	LDE Job No. 98-090
DATE: 8/2001	Tax Map 31 Grid 15 Parcel 217 1 <sup>st</sup> Election District Howard County, MD Previous Submittals: S00 - 01, P01-12	File No. F02-22
OWNER / DEVELOPER:	J.J.M., Inc. 17901 Shaffers Mill Road Mt. Airy, Maryland 21771	