

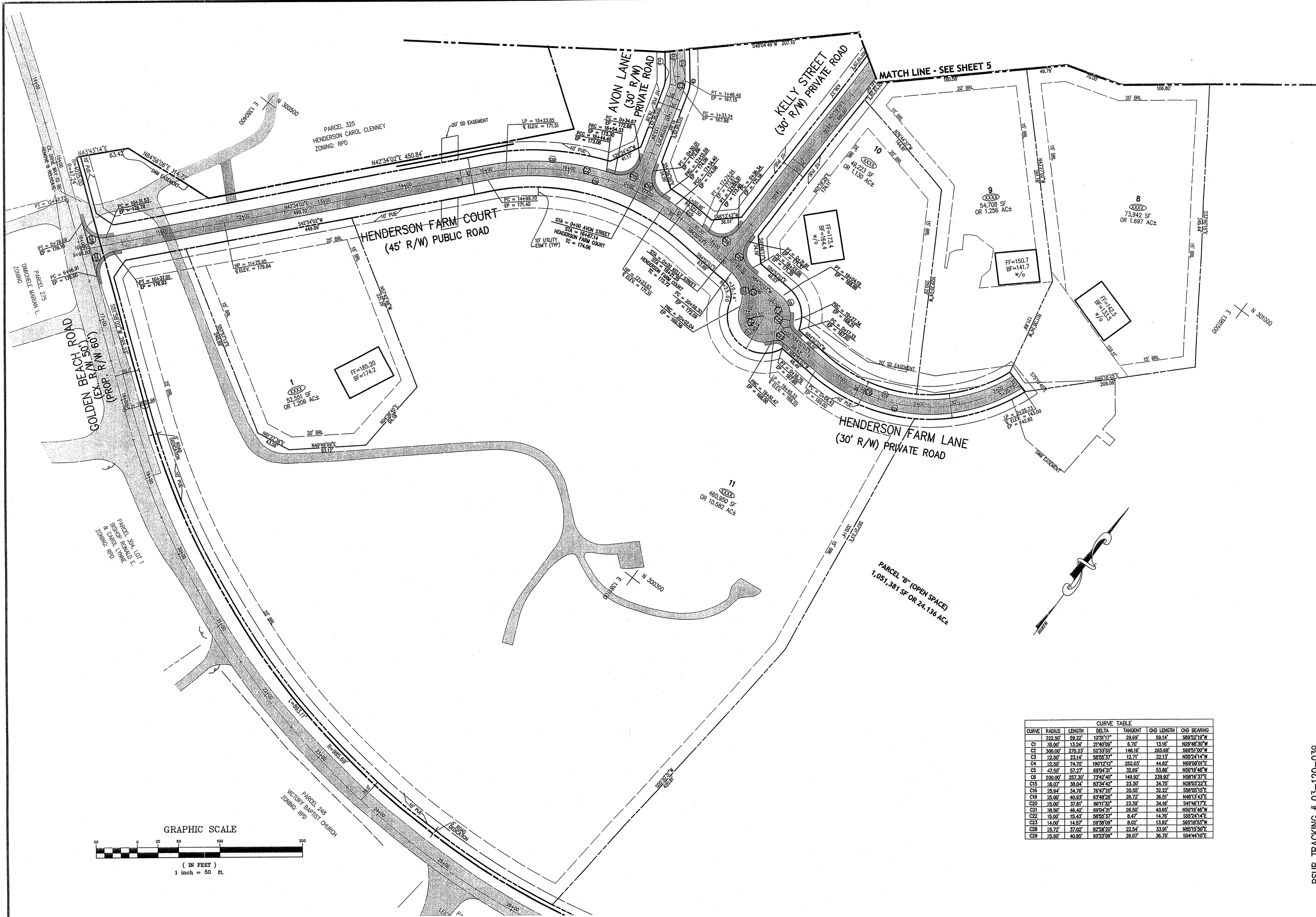


PSUB TRACKING # 03-120-039

OVERALL PLAN						DESIGN		DCM						ENGINEERS • PLANNERS • SURVEYORS 44425 Pecten Court - Suite 153 Columbia, MD 21046 Phone: (301) 883-6333 FAX: (301) 883-7460				
HENDERSON FARM						OWNER	FA									MARK	DATE	DESCRIPTION
FOR LOTS 1-11 & PARCELS A-K						CHECKED	PHM											
FIFTH ELECTION DISTRICT						DATE	JAN. 2005											
TAX MAP 4, GRIDS, AS PART OF PARCEL 10						SCALE	1" = 100'											
ST. MARY'S COUNTY, MARYLAND						SHEET NO.		2 OF 29										
OWNER						DEVELOPER												
JANE G. HENDERSON						SOUTHERN DEVELOPERS, LLC												
P.O. BOX 88, MECHANICSVILLE MD, 20659						539 BERNFIELD RD, SUITE 2, SEVERNA PARK MD, 21146												
PHONE: 410-886-8177						PHONE: 410-975-0901 - FAX: 410-975-0905												



CURVE TABLE									
CURVE	RADIUS	LENGTH	DELTA	TANGENT	CHD LENGTH	CHD BEARING			
C1	322.50	59.22	10°31'17"	29.69	59.14	S89°52'19"W			
C2	300.00	276.23	52°33'55"	148.16	265.68	S68°51'00"W			
C3	22.50	23.14	58°55'37"	12.71	22.13	N55°24'14"E			
C4	22.50	74.70	190°22'12"	252.03	44.82	N69°08'01"E			
C5	47.50	57.27	69°04'31"	32.69	53.86	N50°19'48"W			
C6	200.00	257.30	73°42'40"	149.92	239.92	N58°16'37"E			
C15	26.07	38.04	83°34'42"	23.30	34.75	N28°03'22"E			
C16	26.94	34.78	76°47'20"	20.55	32.22	S66°05'15"E			
C19	25.00	40.93	93°48'28"	26.72	36.51	N48°13'43"E			
C20	25.00	37.61	86°11'32"	23.39	34.16	S41°46'17"E			
C21	38.50	46.42	69°04'31"	26.50	43.65	N50°19'48"W			
C22	15.00	15.43	58°55'37"	8.47	14.76	S55°24'14"E			
C23	14.00	14.57	59°38'09"	8.02	13.92	S65°18'53"W			
C28	25.72	37.02	82°28'20"	22.54	33.91	N85°15'50"E			
C29	25.80	40.85	90°23'09"	28.07	36.75	S04°44'10"E			

PSUB TRACKING # 03-120-039

GEOMETRIC LAYOUT

HENDERSON FARM

FOR LOTS 1-11 & PARCELS A-K

FIFTH ELECTION DISTRICT

TAX MAP 4 GRIDS, AS PART OF PARCEL 10

ST. MARY'S COUNTY, MARYLAND

DESIGN

DCM

DRAWN

FA

CHECKED

PHM

DATE

JAN. 2005

SCALE

1" = 50'

SHEET NO.

3 OF 29

OWNER

JANE G. HENDERSON

539 BENFIELD RD. SUITE 2 SEVERNA PARK MD. 21466

PHONE: 410-595-6001 - FAX: 410-595-6005

DEVELOPER

SOUTHERN DEVELOPERS, LLC

REVISIONS

MARK

DATE

DESCRIPTION

DAYTECH ENGINEERING, LLC

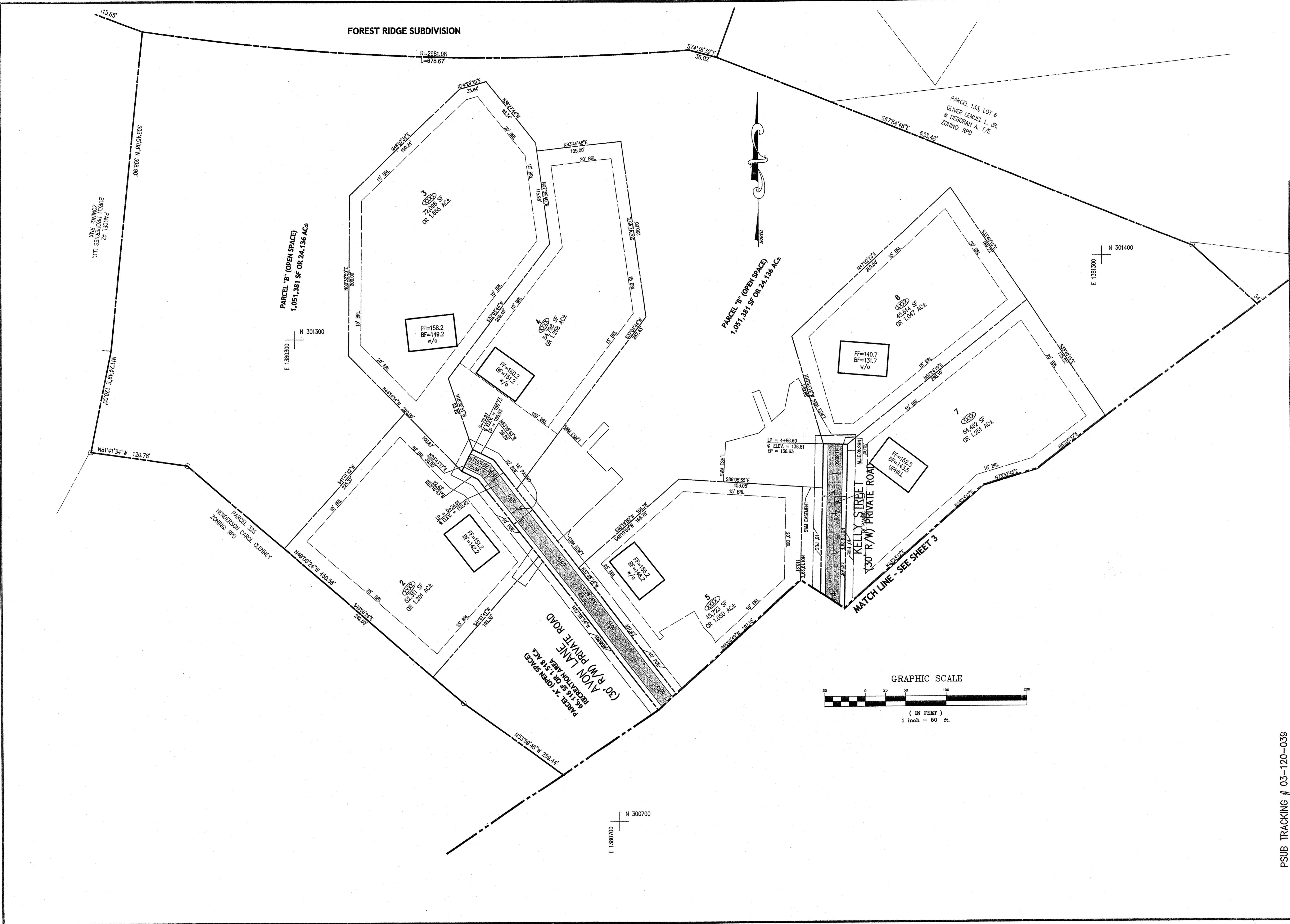
ENGINEERS • PLANNERS • SURVEYORS

44425 Pecan Court - Suite 153

Calverton, MD 20618

Phone: (301) 853-3333

Fax: (301) 853-7460



PSUB TRACKING # 03-120-039

GEOMETRIC LAYOUT  
HENDERSON FARM  
FOR LOTS 1, 11 & PARCELS A-K  
TAX MAP 4, CITIES AS PART OF PARCEL 10  
ST. MARY'S COUNTY, MARYLAND

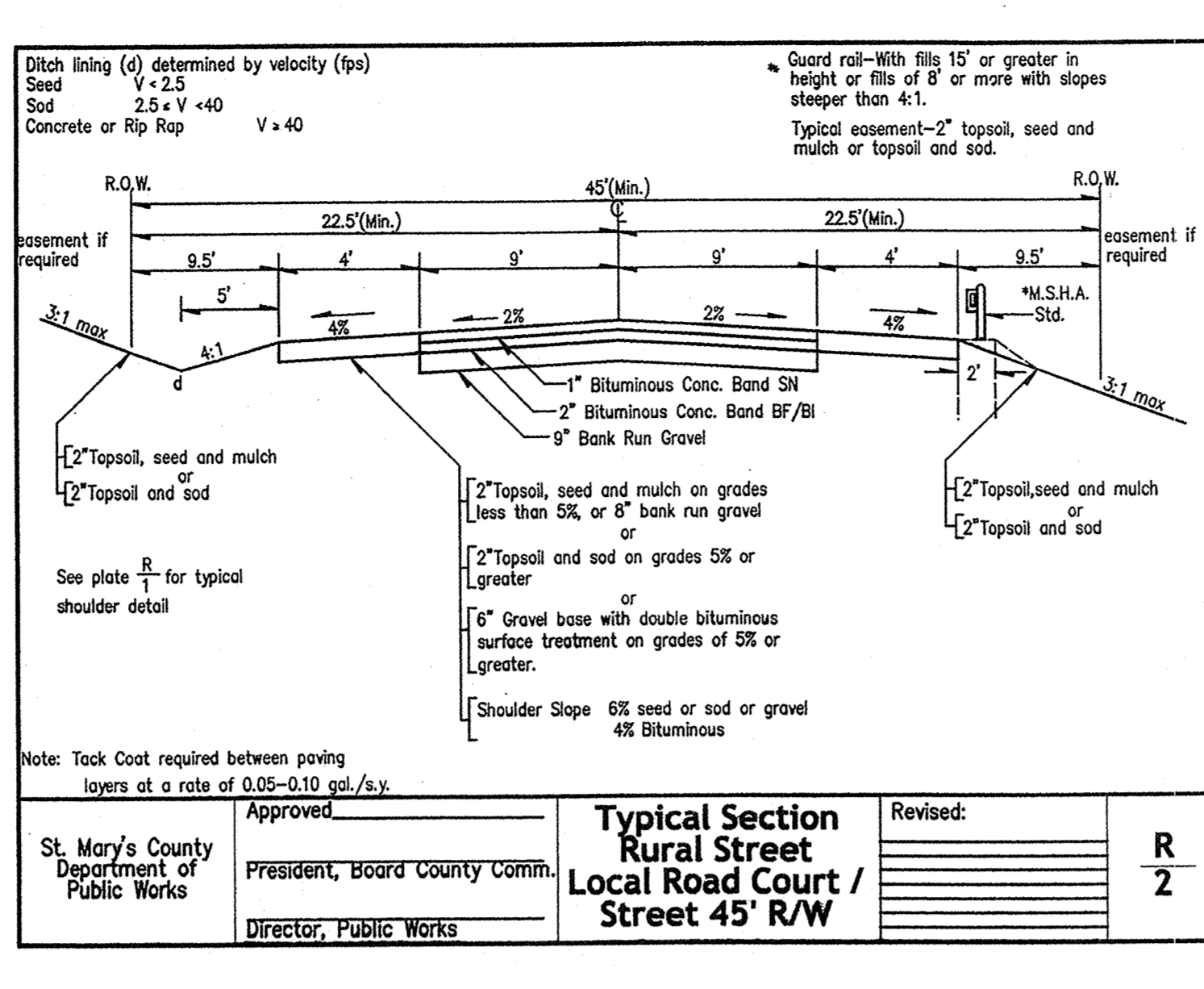
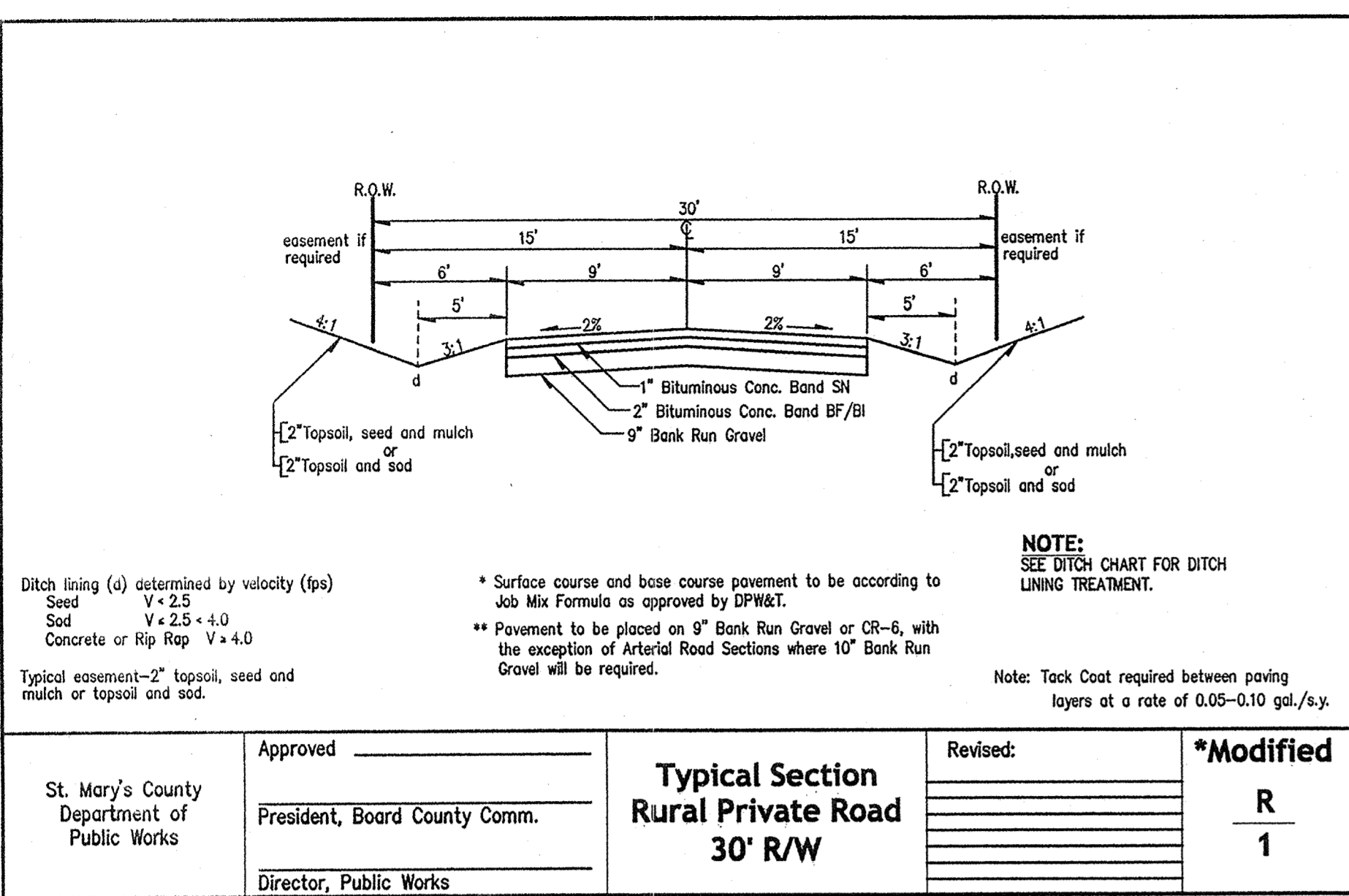
OWNER  
JANE G. HENDERSON  
P.O. BOX 88, MECHANICVILLE MD, 20659  
PHONE: 410-886-9177

DEVELOPER  
SOUTHERN DEVELOPERS, LLC  
539 BERFIELD RD, SUITE 2, SEVERNA PARK MD, 21146  
PHONE: 410-886-9177

REVISIONS  
MARK DATE DESCRIPTION

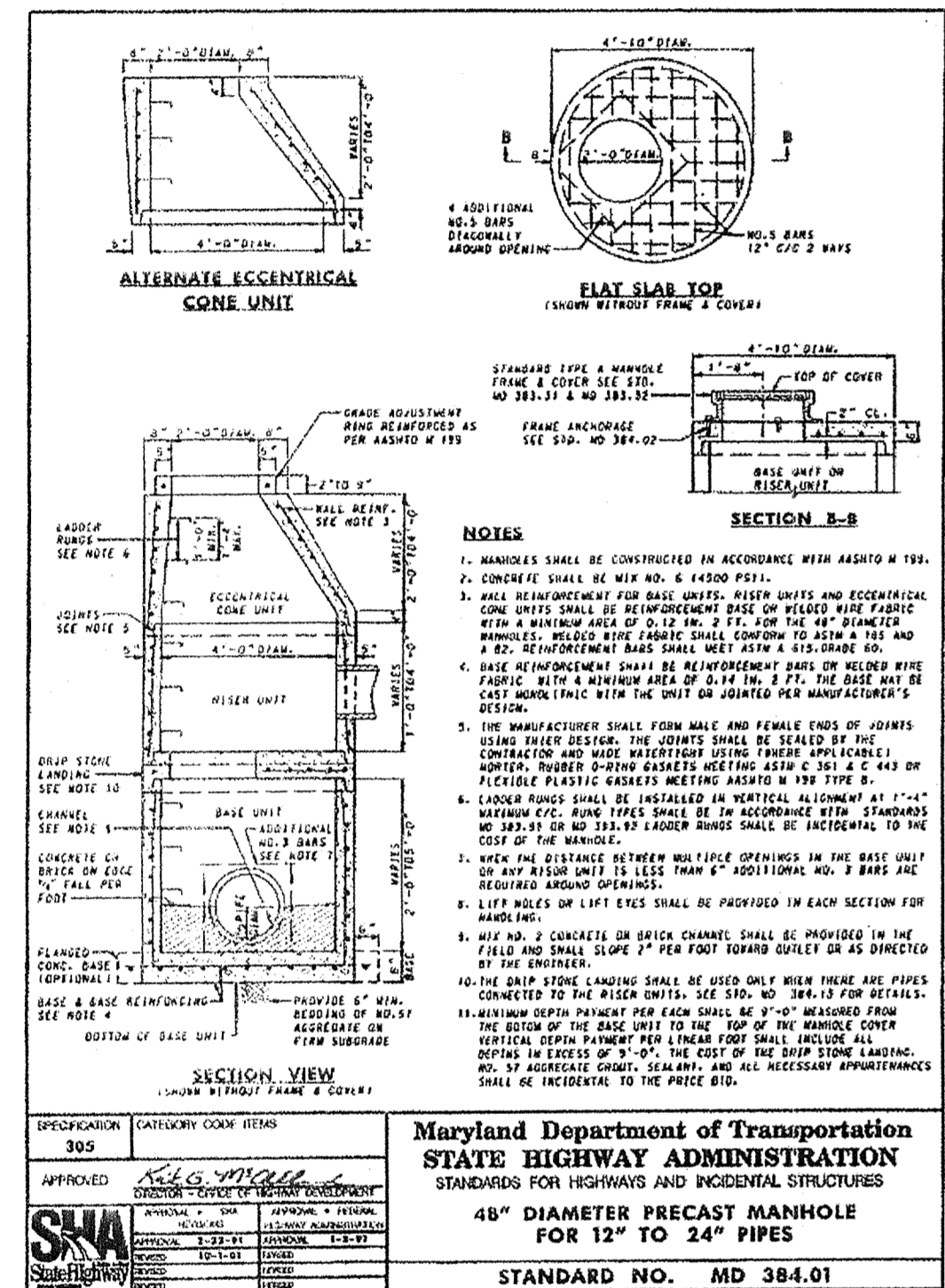
DAYTECH ENGINEERING, LLC  
ENGINEERS • PLANNERS • SURVEYORS  
44028 Reisterstown Rd., Suite 103  
Pikesville, MD 21113  
Phone: (410) 863-0333 FAX: (410) 863-7460

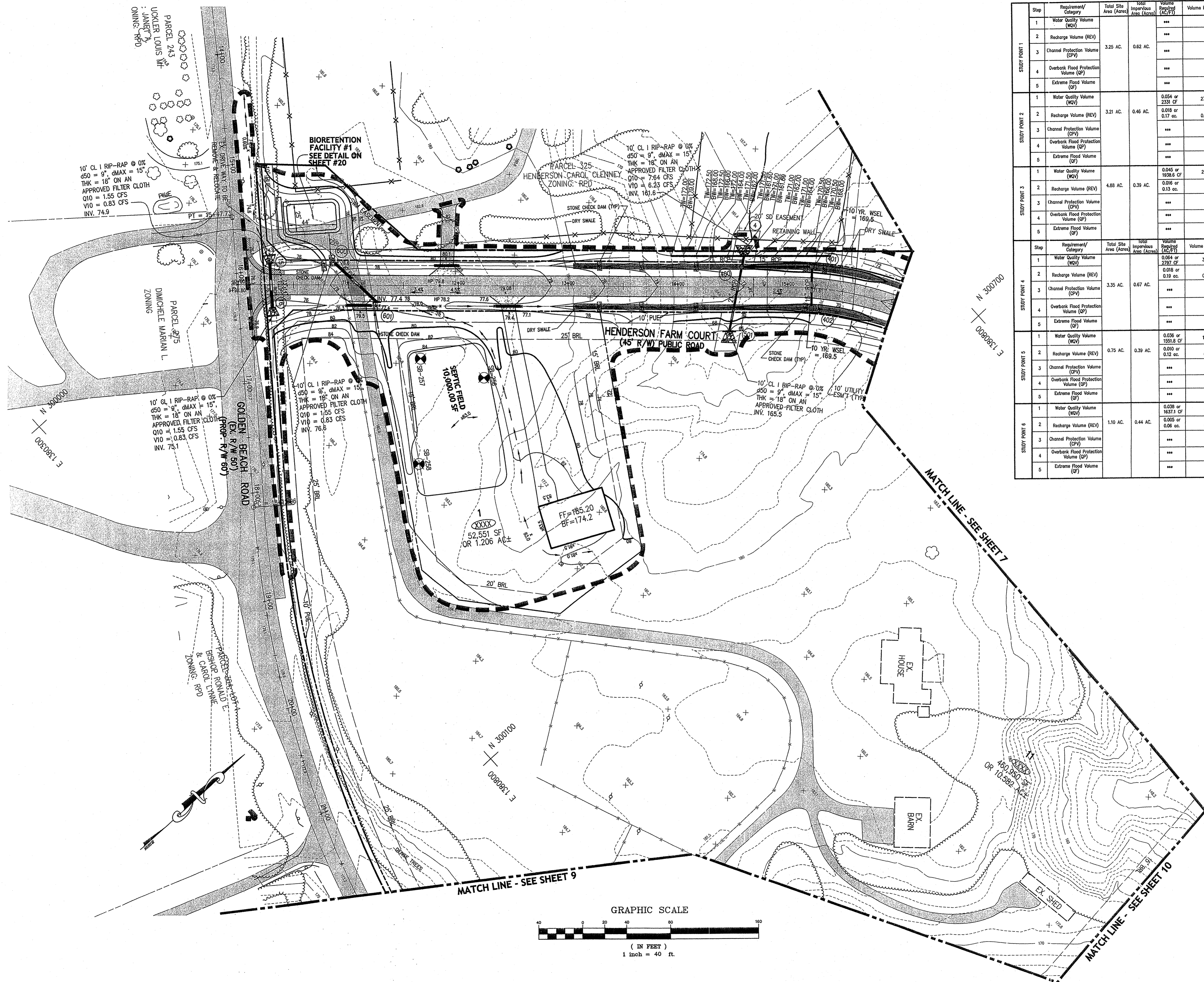
DCM  
FA  
PHM  
JAN. 2005  
SCALE 1" = 50'  
SHEET NO. 4 OF 29



## ROAD CONSTRUCTION NOTES

- THE SPECIFICATIONS FOR THIS PROJECT SHALL BE THOSE OF THE MARYLAND STATE HIGHWAY ADMINISTRATION TITLED "STANDARD SPECIFICATIONS FOR CONSTRUCTION MATERIALS", JANUARY 2001 AS CURRENTLY AMENDED WITH THE FOLLOWING EXCEPTIONS: SN AND BF PAVEMENT MIX, USE 1982 SPECIFICATIONS; BF, SF AND SC PAVEMENT MIX, USE OCTOBER 1993 SPECIFICATIONS.
- NO CONSTRUCTION (i.e. GRADING, ETC.) OR THE INSTALLATION OF UTILITIES WILL BE PERMITTED IN THE BED OF ANY PROPOSED STREET UNTIL THE STREET GRADE HAS BEEN OFFICIALLY ESTABLISHED, PLAT OF THE SAME APPROVED BY THE DEPT. OF PUBLIC WORKS AND TRANSPORTATION.
- TRAFFIC CONTROL SIGNS AND STREET NAME SIGNS MUST BE INSTALLED UPON COMPLETION OF THE BASE ASPHALT COURSE. THE CONTRACTOR/DEVELOPER WILL BE RESPONSIBLE FOR MAINTENANCE SYSTEM. SHEETING SHALL BE "HIGH INTENSITY" UNLESS OTHERWISE NOTED. SIGN CONSTRUCTION AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" AS CURRENTLY AMENDED.
- SAMPLING OF MATERIALS (BANK RUN GRAVEL, ETC.) SHALL BE DONE IN ACCORDANCE WITH THE ST. MARY'S COUNTY SUBDIVISION ROAD CONSTRUCTION AND INSPECTION PROCEDURES AS DIRECTED BY THE DEPT. OF PUBLIC WORKS AND TRANSPORTATION TO INSURE COMPLIANCE WITH THE CURRENT MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS.
- STABILIZATION OF ALL DRAINAGE CHANNELS, ROAD SHOULDERS, SLOPES AND OTHER DISTURBED AREAS WILL BE COMPLETED PRIOR TO ACCEPTANCE OF THE ROAD INTO THE ST. MARY'S COUNTY HIGHWAY MAINTENANCE SYSTEM.
- ALL CORRUGATED METAL PIPES WILL BE GALVANIZED, MINIMUM 14 GAUGE (ARCH TYPE RECOMMENDED) WITH STANDARD END SECTIONS (SHA STD. NO. 370.01 AND 371.01). ALL REINFORCED CONCRETE PIPE SHALL BE MINIMUM CLASS IV. ALL REINFORCED PIPE END SECTIONS SHALL BE IN ACCORDANCE WITH SHA STD. NO. 368.03 AND 368.04.
- STONE OR RIPRAP SHALL BE CLASS I AS PER MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS, SECTION 901.02.01 AS CURRENTLY AMENDED.
- ALL RIPRAP IS TO BE PLACED ON DRY FILTER CLOTH. FILTER CLOTH SHALL MEET THE REQUIREMENTS OF SECTION 921.09 OF THE MARYLAND SHA SPECIFICATIONS AS CURRENTLY AMENDED.
- SOD OR SEED MIXTURES USED IN LINING DRAINAGE CHANNELS SHALL BE KENTUCKY 31 TALL FESCUE, UNLESS OTHERWISE DIRECTED BY THE DEPT. OF PUBLIC WORKS AND TRANSPORTATION, AND SHALL BE IN ACCORDANCE WITH MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS, SECTION 920.04.
- GUARDRAIL IS TO BE PROVIDED ALONG ALL FILLS OF 15 FEET IN HEIGHT OR GREATER, WITH SLOPES STEEPER THAN 3:1, AND/OR AS OTHERWISE RECOMMENDED IN THE ROADSIDE DESIGN GUIDE.
- ROADWAY CENTER LINE AND EDGE MARKINGS SHALL BE PLACED ON ALL ROADS CLASSIFIED AS A MAJOR COLLECTOR OR HIGHER. TRANSVERSE MARKINGS, SYMBOLS, AND WORD MARKING SHALL BE THERMOPLASTIC. ALL STRIPING SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND ALL MATERIALS SHALL MEET THE REQUIREMENTS OF THE MARYLAND STATE HIGHWAY ADMINISTRATION SPECIFICATIONS.
- SOILS FOUND TO BE UNSUITABLE FOR CONSTRUCTION SHALL BE EXCAVATED AND REMOVED AS ENCOUNTERED DURING CONSTRUCTION OF ROAD.
- AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT ST. MARY'S COUNTY DEPT. OF PUBLIC WORKS AND TRANSPORTATION AT 301-863-8400.
- ATTENTION IS CALLED TO PUBLIC SERVICE COMMISSION ORDER NO. 60838, CHAPTER 863, EFFECTIVE DATE AUGUST 1, 1974, AND SECTION 28A, ARTICLE 78 OF THE ANNOTATED CODE OF MARYLAND, 1994, REGARDING THE PROTECTION OF UNDERGROUND UTILITIES AND THE RESPONSIBILITY OF THE CONTRACTOR CONTAINED THEREIN. THE CONTRACTOR SHALL CONTACT OTHER UTILITY COMPANIES WHICH OPERATE IN THE AREA AND NOT IN THE "MISS UTILITY" PROGRAM.





	Step	Requirement/ Category	Total Site Area (Acres)	Total Impervious Area (Acres)	Volume Required (AC/FT)	Volume Provided (AC/FT)	Remarks
STUDY POINT 1	1	Water Quality Volume (WQV)	3.25 AC.	0.62 AC.	***	***	Not required, bypassing existing area thru site.
	2	Recharge Volume (REV)			***	***	Not required, bypassing existing area thru site.
	3	Channel Protection Volume (CPV)			***	***	Not required, bypassing existing area thru site.
	4	Overbank Flood Protection Volume (OF)			***	***	The 10 year is safely conveyed thru culvert.
	5	Extreme Flood Volume (EF)			***	***	The 100 year is safely conveyed thru culvert.
STUDY POINT 2	1	Water Quality Volume (WQV)	3.21 AC.	0.46 AC.	0.054 or 2331 CF	2797 CF	Provided a bioretention facility that provides WQv.
	2	Recharge Volume (REV)			0.018 or 0.17 cc.	0.17 cc.	Provided a grass channel that provides Rev.
	3	Channel Protection Volume (CPV)			***	***	Volume is not needed due to the 1 year storm event is less than 2.0 cfs.
	4	Overbank Flood Protection Volume (OF)			***	***	The 10 year is safely bypassed by the bioretention facility
	5	Extreme Flood Volume (EF)			***	***	The 100 year is safely bypassed by the bioretention facility
STUDY POINT 3	1	Water Quality Volume (WQV)	4.88 AC.	0.39 AC.	0.045 or 1938.6 CF	2326.3 CF	Provided a bioretention facility that provides WQv.
	2	Recharge Volume (REV)			0.016 or 0.13 cc.	0.13 cc.	Provided a grass channel that provides Rev.
	3	Channel Protection Volume (CPV)			***	***	Volume is not needed due to the 1 year storm event is less than 2.0 cfs.
	4	Overbank Flood Protection Volume (OF)			***	***	The 10 year is safely bypassed by the bioretention facility
	5	Extreme Flood Volume (EF)			***	***	The 100 year is safely bypassed by the bioretention facility
STUDY POINT 4	Step	Requirement/ Category	Total Site Area (Acres)	Total Impervious Area (Acres)	Volume Required (AC/FT)	Volume Provided (AC/FT)	Remarks
	1	Water Quality Volume (WQV)	3.35 AC.	0.67 AC.	0.064 or 2927 CF	3356.3 CF	Provided a bioretention facility that provides WQv.
	2	Recharge Volume (REV)			0.018 or 0.19 cc.	0.19 cc.	Provided a grass channel that provides Rev.
	3	Channel Protection Volume (CPV)			***	***	Used Grass Channel Credit provides Rev.
	4	Overbank Flood Protection Volume (OF)			***	***	The 10 year is safely bypassed by the bioretention facility
	5	Extreme Flood Volume (EF)			***	***	The 100 year is safely bypassed by the bioretention facility
STUDY POINT 5	1	Water Quality Volume (WQV)	0.75 AC.	0.39 AC.	0.036 or 1591.8 CF	1530 CF	Provided dry swales that provides WQv.
	2	Recharge Volume (REV)			0.010 or 0.12 cc.	0.12 cc.	Used Grass Channel Credit provides Rev.
	3	Channel Protection Volume (CPV)			***	***	Volume is not needed due to the 1 year storm event is less than 2.0 cfs.
	4	Overbank Flood Protection Volume (OF)			***	***	The 10 year is safely conveyed thru dry swale and into SD system
	5	Extreme Flood Volume (EF)			***	***	The 100 year is safely conveyed thru dry swale and into SD system
STUDY POINT 6	1	Water Quality Volume (WQV)	1.10 AC.	0.44 AC.	0.038 or 1637.1 CF	1664.6 CF	Provided a bioretention facility that provides WQv.
	2	Recharge Volume (REV)			0.005 or 0.06 cc.	0.06 cc.	Used Grass Channel Credit provides Rev.
	3	Channel Protection Volume (CPV)			***	***	Volume is not needed due to the 1 year storm event is less than 2.0 cfs.
	4	Overbank Flood Protection Volume (OF)			***	***	The 10 year is safely conveyed by the bioretention facility
	5	Extreme Flood Volume (EF)			***	***	The 100 year is safely conveyed by the bioretention facility

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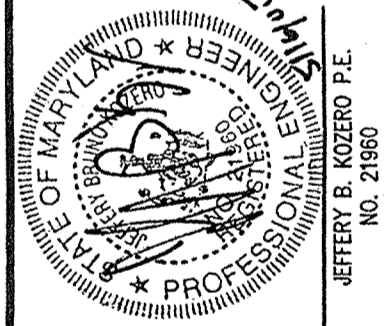
PSUB TRACKING # 03-120-039

SITE AND UTILITY PLAN  
HENDERSON FARM  
FOR LOTS 1, 11 & PARCELS A-K  
TAX MAP 4 GR05 AS PART OF PARCEL 10  
ST. MARY'S COUNTY, MARYLAND

OWNER  
JANE G. HENDERSON  
P.O. BOX 88, MECHANICSVILLE, MD. 20659  
PHONE: 410-898-8177

DEVELOPER  
SOUTHERN DEVELOPERS, LLC  
539 BELFIELD RD., SUITE 2, SEVERNA PARK, MD. 21146  
PHONE: 410-976-6001 - FAX: 410-979-0905

REVISION	DATE	DESCRIPTION



**DAYTECH ENGINEERING, LLC**  
ENGINEERS • PLANNERS • SURVEYORS  
44205 Peach Court - Suite 153  
Columbia, MD 21046  
Phone: (301) 863-0333 FAX: (301) 863-7460





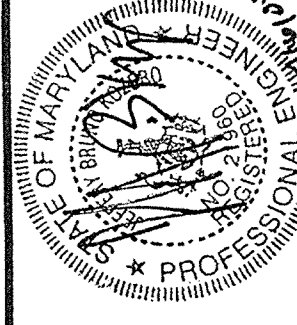
**SITE AND UTILITY  
HENDERSON FARM  
FOR LOTS 1-11 & PARCELS A-K**

<b>OWNER</b> <b>JANE G. HENDERSON</b> P.O. BOX 86, MECHANICSVILLE MD. 20659 PHONE: 410-998-9177	<b>DEVELOPER</b> <b>SOUTHERN DEVELOPERS, LLC</b> 539 BENFIELD RD, SUITE 2, SEVERNA PARK MD. 21144 PHONE: 410-975-0801 ~ FAX: 410-979-0805
--	--

SCALE  
1" = 40'

SHEET NO.  
10 OF 29

DESIGN	DCM
DRAFT	FA
CHECKED	PHM
DATE	JAN. 2005
SCALE	1" = 40'
SHEET NO.	



JEFFERY B. KOZERO P.E.  
NO. 21960

**DAY TECH**  
**ENGINEERING, LLC**  
ENGINEERS • PLANNERS • SURVEYORS

44425 Pecan Court - Suite 133  
California, MD 20619  
Phone: (301) 863-0333 FAX: (301) 863-7466



# INSPECTION PROCEDURES

THE DEVELOPER SHALL REQUEST THAT THE INSPECTION AGENCY FOR SEDIMENT AND EROSION CONTROL APPROVE WORK COMPLETED AT THE STAGES OF CONSTRUCTION SPECIFIED BELOW IN ACCORDANCE WITH THE APPROVED SEDIMENT AND EROSION CONTROL PLAN, AND THE GRADING OR BUILDING PERMIT:

(i) ON ALL SITES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF THE INSTALLATION OF PERIMETER SEDIMENT AND EROSION 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; AND,

(ii) APPROVAL SHALL BE REQUESTED UPON FINAL STABILIZATION OF ALL SITES BEFORE REMOVAL OF SEDIMENT AND EROSION CONTROLS.

(iii) CONTRACTOR SHALL NOTIFY M.D.E., ENFORCEMENT DIVISION, AT LEAST 48 HOURS PRIOR TO COMMENCING CLEARING OR GRADING AT (410)444-3400 OR M.D.E., SEDIMENT AND STORMWATER ADMINISTRATION, 1800 WASHINGTON BLVD., 4TH FLOOR, SUITE 440, BALTIMORE, MARYLAND 21230-1708

REVISIONS	
MARK	DESCRIPTION

**DAYTECH ENGINEERING, LLC**  
ENGINEERS • PLANNERS • SURVEYORS  
44425 Reem Court - Suite 103  
Jennings, MD 21074  
Phone: (301) 863-0333 FAX: (301) 863-1460



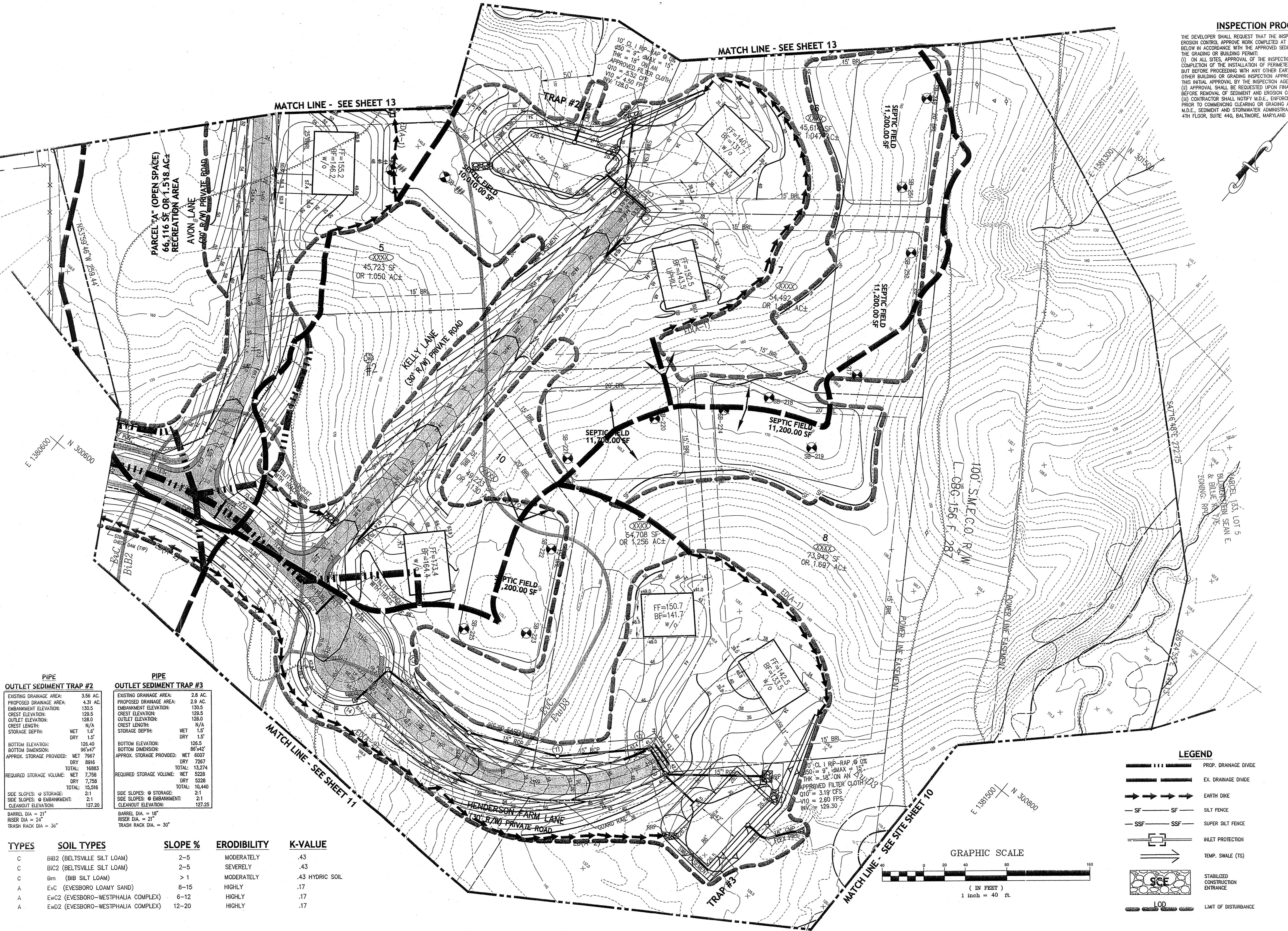
DESIGN	DATE	BY	CHKD	DATE	BY

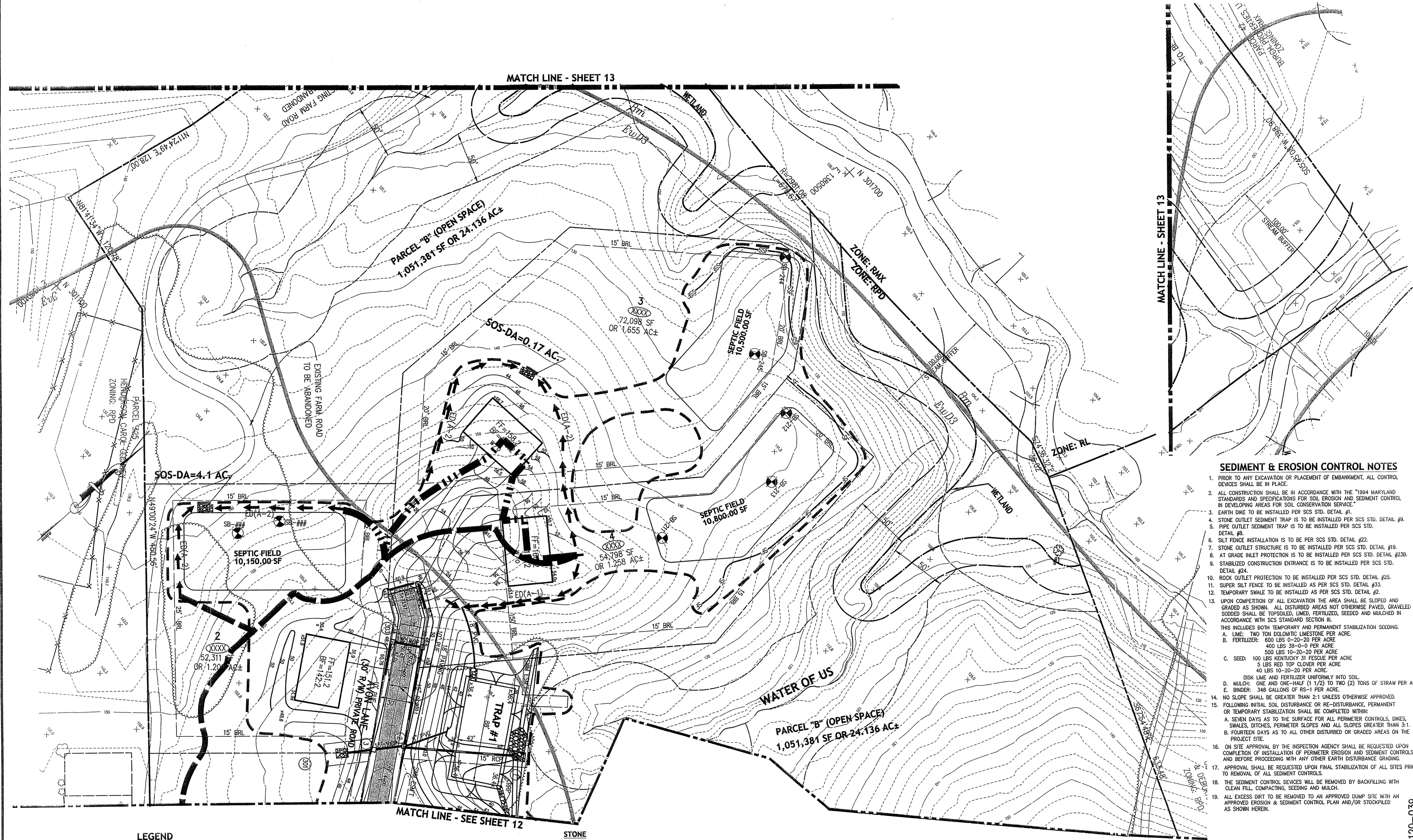
**OWNER**  
JANE C. HENDERSON  
P.O. BOX 86  
MIDDLETON, MD 20659  
PHONE: 410-395-2017

**DEVELOPER**  
SOUTHERN DEVELOPERS, LLC  
539 BRIDLE PATH RD., SUITE 200  
FARMERSVILLE, MD 21048  
PHONE: 410-395-2017

**GRADING AND SEDIMENT CONTROL PLAN**  
**HENDERSON FARM**  
**FOR LOTS 1-11 & PARCELS A-K**  
FIFTH ELECTION DISTRICT  
TAX MAP 4, GRIDS, AS PART OF PARCEL 10  
ST. MARY'S COUNTY, MARYLAND

PSUB TRACKING # 03-120-039





LEGEND

	PROP. DRAINAGE DIVIDE
	EX. DRAINAGE DIVIDE
	EARTH DIKE
	SILT FENCE
	SUPER SILT FENCE
	INLET PROTECTION
	TEMP. SWALE (TS)
	STABILIZED CONSTRUCTION ENTRANCE
	LOD
	LIMIT OF DISTURBANCE

INSPECTION PROCEDURES

THE DEVELOPER SHALL REQUEST THAT THE INSPECTION AGENCY FOR SEDIMENT AND EROSION CONTROL APPROVE WORK COMPLETED AT THE STAGES OF CONSTRUCTION SPECIFIED BELOW IN ACCORDANCE WITH THE APPROVED SEDIMENT AND EROSION CONTROL PLAN, AND THE GRADING OR BUILDING PERMIT:

(i) ON ALL SITES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF THE INSTALLATION OF PERIMETER SEDIMENT AND EROSION 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; AND,

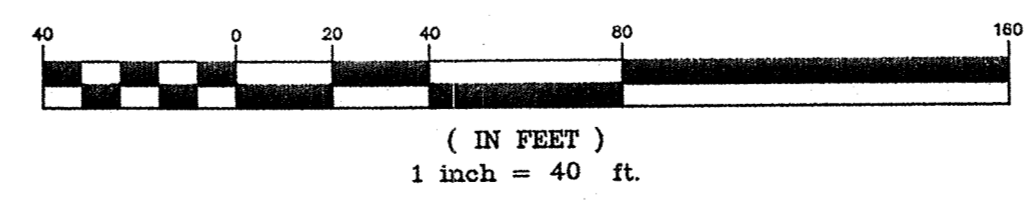
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STONE OUTLET SEDIMENT TRAP #1

EXISTING DRAINAGE AREA:	3.2 AC.
PROPOSED DRAINAGE AREA:	3.5 AC.
EMBANKMENT ELEVATION:	140.5
CREST ELEVATION:	138.5
OUTLET ELEVATION:	138.0
CREST LENGTH:	16'
STORAGE DEPTH:	WET 1.6'
	DRY 1.5'
BOTTOM ELEVATION:	136.4
BOTTOM DIMENSION:	88' x 42'
APPROX. STORAGE PROVIDED:	WET 6,596
	DRY 7,509
TOTAL:	14,104
REQUIRED STORAGE VOLUME:	WET 6,300
	DRY 6,300
TOTAL:	12,600
SIDE SLOPES: @ STORAGE:	2:1
SIDE SLOPES: @ EMBANKMENT:	2:1
CLEANOUT ELEVATION:	137.20

GRAPHIC SCALE



TYPES	SOIL TYPES	SLOPE %	ERODIBILITY	K-VALUE
C	BIB2 (BELTSVILLE SILT LOAM)	2-5	MODERATELY	.43
C	BIC2 (BELTSVILLE SILT LOAM)	2-5	SEVERELY	.43
C	Bm (BIB SILT LOAM)	> 1	MODERATELY	.43 HYDRIC SOIL
A	EVC (EVESBORO LOAMY SAND)	8-15	HIGHLY	.17
A	EW2 (EVESBORO-WESTPHALIA COMPLEX)	6-12	HIGHLY	.17
A	EW2 (EVESBORO-WESTPHALIA COMPLEX)	12-20	HIGHLY	.17

SEDIMENT & EROSION CONTROL NOTES

- PRIOR TO ANY EXCAVATION OR PLACEMENT OF EMBANKMENT, ALL CONTROL DEVICES SHALL BE IN PLACE.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL IN DEVELOPING AREAS FOR SOIL CONSERVATION SERVICE.
- EARTH DIKE TO BE INSTALLED PER SCS STD. DETAIL #1.
- STONE OUTLET SEDIMENT TRAP IS TO BE INSTALLED PER SCS STD. DETAIL #9.
- PIPE OUTLET SEDIMENT TRAP IS TO BE INSTALLED PER SCS STD. DETAIL #8.
- SILT FENCE INSTALLATION IS TO BE PER SCS STD. DETAIL #22.
- STONE OUTLET STRUCTURE IS TO BE INSTALLED PER SCS STD. DETAIL #19.
- AT GRADE INLET PROTECTION IS TO BE INSTALLED PER SCS STD. DETAIL #23b.
- STABILIZED CONSTRUCTION ENTRANCE IS TO BE INSTALLED PER SCS STD. DETAIL #24.
- ROCK OUTLET PROTECTION TO BE INSTALLED PER SCS STD. DETAIL #25.
- SUPER SILT FENCE TO BE INSTALLED AS PER SCS STD. DETAIL #33.
- TEMPORARY SWALE TO BE INSTALLED AS PER SCS STD. DETAIL #2.
- UPON COMPLETION OF ALL EXCAVATION THE AREA SHALL BE SLOPED AND GRADED AS SHOWN. ALL DISTURBED AREAS NOT OTHERWISE PAVED, GRAVELED OR SEEDED SHALL BE TOPSOILED, LIMED, FERTILIZED, SEEDED AND MULCHED IN ACCORDANCE WITH SCS STANDARD SECTION III.
- THIS INCLUDES BOTH TEMPORARY AND PERMANENT STABILIZATION SEEDING.
  - A. LIME: TWO TON DOLOMITIC LIMESTONE PER ACRE.
  - B. FERTILIZER: 500 LBS 0-20-20 PER ACRE.
    - 400 LBS 38-0-0 PER ACRE
    - 500 LBS 10-20-20 PER ACRE
    - 5 LBS RED TOP CLOVER PER ACRE
    - 40 LBS 10-20-20 PER ACRE.
  - C. SEED: 100 LBS KENTUCKY 31 FESCUE PER ACRE.
    - 5 LBS RED TOP CLOVER PER ACRE
    - 40 LBS 10-20-20 PER ACRE.
  - D. MULCH: ONE AND ONE-HALF (1 1/2) TO TWO (2) TONS OF STRAW PER ACRE.
  - E. BINDER: 348 GALLONS OF RS-1 PER ACRE.
- NO SLOPE SHALL BE GREATER THAN 2:1 UNLESS OTHERWISE APPROVED.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
  - A. SEVEN DAYS AS TO THE SURFACE FOR ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1.
  - B. FOURTEEN DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ON SITE APPROVAL BY THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS AND BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE GRADING.
- APPROVAL SHALL BE REQUESTED UPON FINAL STABILIZATION OF ALL SITES PRIOR TO REMOVAL OF ALL SEDIMENT CONTROLS.
- THE SEDIMENT CONTROL DEVICES WILL BE REMOVED BY BACKFILLING WITH CLEAN FILL, COMPACTING, SEEDING AND MULCH.
- ALL EXCESS DIRT TO BE REMOVED TO AN APPROVED DUMP SITE WITH AN APPROVED EROSION & SEDIMENT CONTROL PLAN AND/OR STOCKPILED AS SHOWN HEREIN.

PSUB TRACKING # 03-120-039

GRADING AND SEDIMENT CONTROL PLAN

HENDERSON FARM

FOR LOTS 1-11 & PARCELS A-K

FIFTH ELECTION DISTRICT

TAX MAP 4, COND. AS PART OF PARCEL 10

ST. MARY'S COUNTY, MARYLAND

OWNER

JANE C. HENDERSON

530 BAYVIEW DRIVE, SUITE 205

PHOENIX, ARIZONA 85006

PHONE: 410-975-0901 - FAX: 410-975-0905

DEVELOPER

SOUTHERN DEVELOPERS, LLC

530 BAYVIEW DRIVE, SUITE 205

PHOENIX, ARIZONA 85006

PHONE: 410-975-0901 - FAX: 410-975-0905

DCM

FA

PHM

DATE

JAN. 2005

SCALE

DESIGN

DRAWN

CHECKED

DATE

JAN. 2005

SCALE

NO. 21860

JEFFREY K. HENDERSON, P.E.

PROFESSIONAL ENGINEER

STATE OF MARYLAND

NO. 21860

JEFFREY K. HENDERSON, P.E.

DAYTECH ENGINEERING, LLC

ENGINEERS • PLANNERS • SURVEYORS

44425 Pocomtuck Court, Suite 153

PO Box 153, Pocomoke, MD 20686

Phone: (301) 863-0333

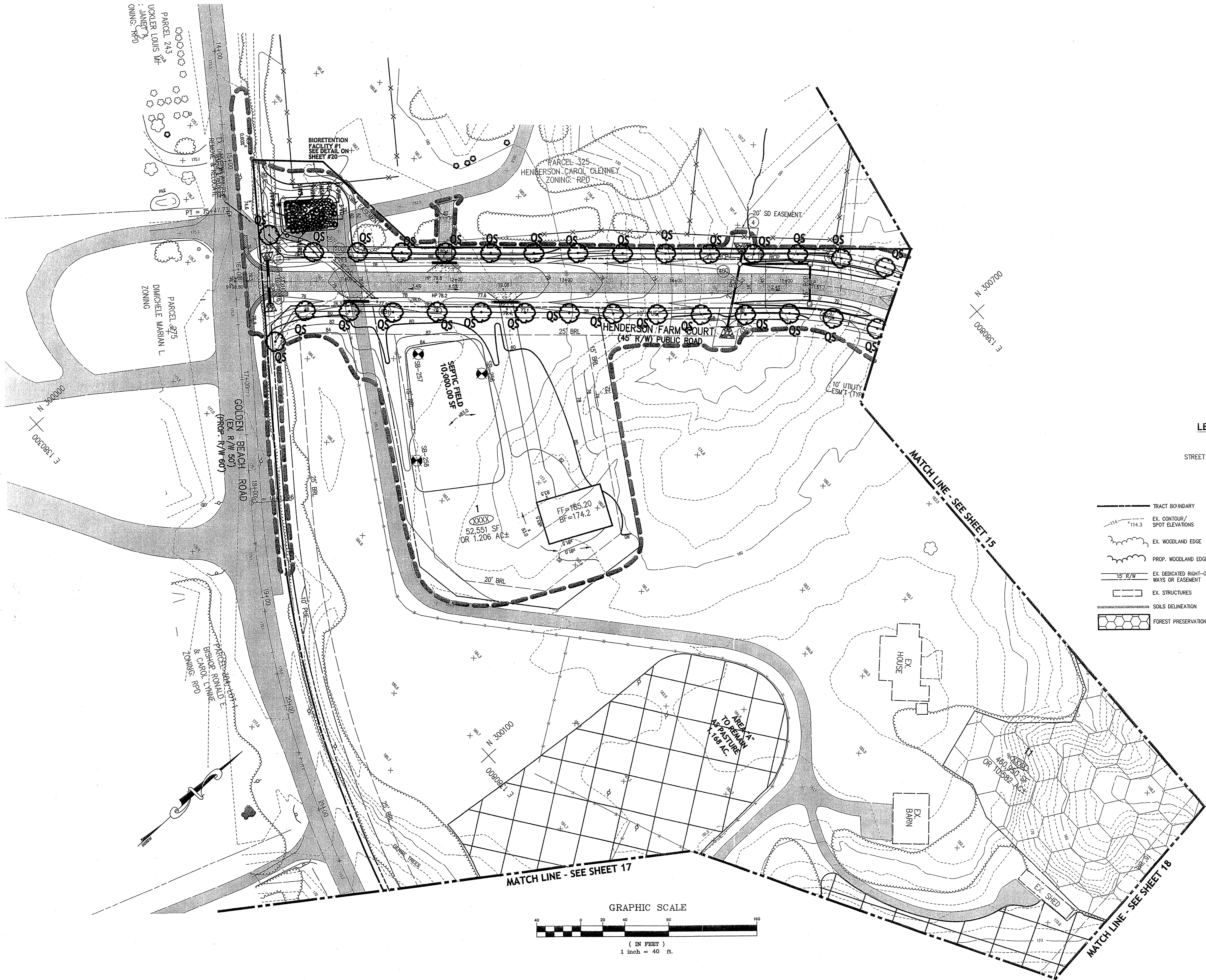
Fax: (301) 863-7460

REVISIONS

MARK

DATE

DESCRIPTION



LEGEND

STREET TREE

LEGEND

- |   |  |
|---|--|
| TRACT BOUNDARY                          | 100 YEAR FLOOD PLAIN (FEMA) w/ 50' SETBACK |
| EX. CONTOUR/ SPOT ELEVATIONS            | PROP. CONTOURS                             |
| EX. WOODLAND EDGE                       | EX. STREAMS                                |
| PROP. WOODLAND EDGE                     | EX. STREAM BUFFER                          |
| EX. DEDICATED RIGHT-OF-WAYS OR EASEMENT | APPROX. EDGE OF NON-TIDAL WETLANDS         |
| EX. STRUCTURES                          | WETLANDS 25' BUFFER                        |
| SOILS DELINEATION                       | LIMIT OF DISTURBANCE                       |
| FOREST PRESERVATION AREA                |  |

PSUB TRACKING # 03-120-039

LANDSCAPE & FOREST CONSERVATION PLAN

HENDERSON FARM

FOR LOTS 1-11 & PARCELS A-K

FIFTH ELECTION DISTRICT

TAX MAP 4 GRIDS, AS PART OF PARCEL 10

ST. MARY'S COUNTY, MARYLAND

PERSON

DCM

DRFT

FA

CHECKED

PHM

DATE

JAN. 2005

SCALE

1" = 40'

SHEET NO.

14 OF 29

OWNER

JANE G. HENDERSON

P.O. BOX 86, MECHANICSVILLE, MD. 20659

PHONE: 410-582-5177

DEVELOPER

SOUTHERN DEVELOPERS, LLC

PROJECT

539 BENTLEY RD., SUITE 2, SEVERNA PARK, MD. 21446

PARCEL 10-575-039-1-10-575-039-039

REGISTERED

PROFESSIONAL

NO. 6634

STATE OF MARYLAND

REGISTERED

PROFESSIONAL

NO. 6634

REGISTERED

PROFESSIONAL

DAYTECH ENGINEERING, LLC

ENGINEERS • PLANNERS • SURVEYORS

44425 Paces Court, Suite 153

44425 Paces Court, Suite 153

44425 Paces Court, Suite 153

44425 Paces Court, Suite 153

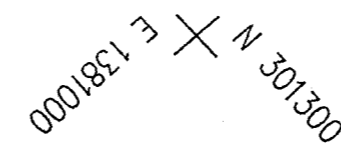
REVISIONS

MARK

DATE















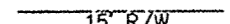
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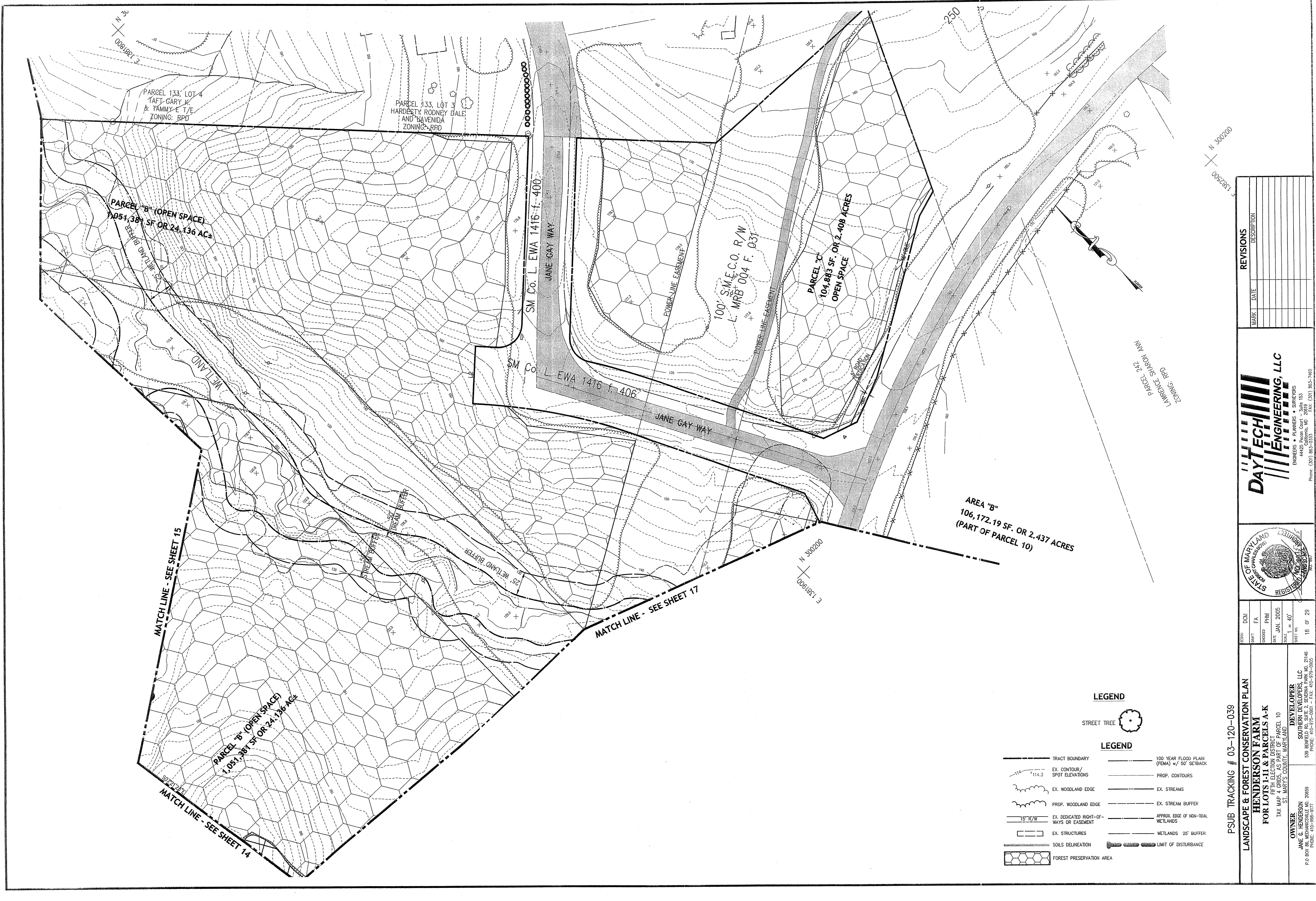
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STREET TREE 

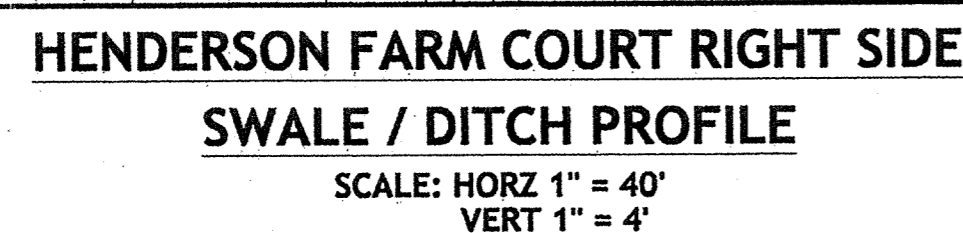
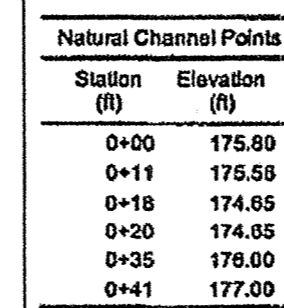
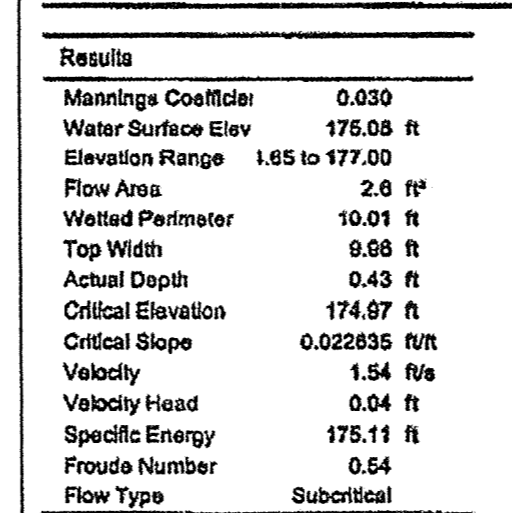
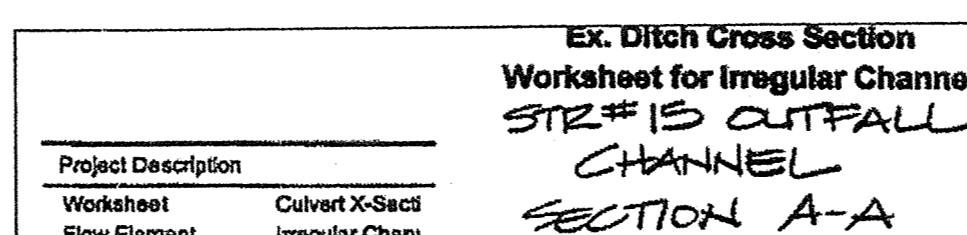
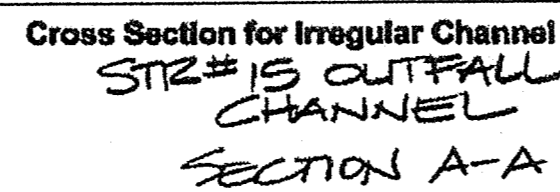
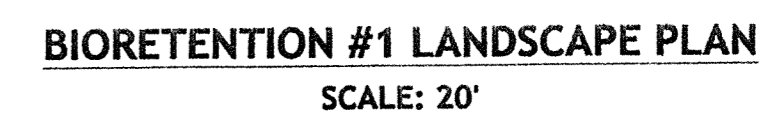
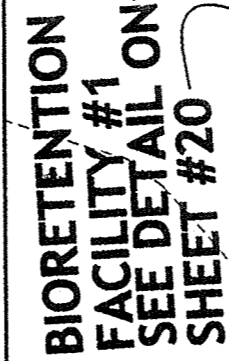
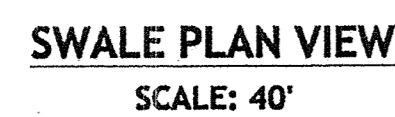
	TRACT BOUNDARY		100 YEAR FLOOD PLAIN (FEMA) w/ 50' SETBACK
	EX. CONTOUR/ SPOT ELEVATIONS		PROP. CONTOURS
	EX. WOODLAND EDGE		EX. STREAMS
	PROP. WOODLAND EDGE		EX. STREAM BUFFER
	EX. DEDICATED RIGHT-OF- WAYS OR EASEMENT		APPROX. EDGE OF NON-TIDAL WETLANDS
	EX. STRUCTURES		WETLANDS 25' BUFFER
	SOILS DELINEATION		LIMIT OF DISTURBANCE
	FOREST PRESERVATION AREA		

LANDSCAPE & FOREST CONSERVATION PLAN		DOM		<div>STATE OF MARYLAND BRIAN CHARLES DODD REGISTERED PROFESSIONAL ARCHITECT NO. 000</div>
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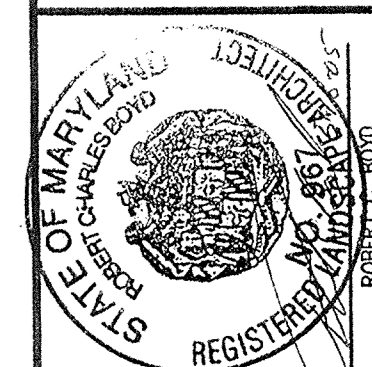






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**DAYTECH**  
ENGINEERS • PLANNERS • SURVEYORS  
44425 Peach Court • Suite 153



DESIGN	DCM
DRAFT	FA
CHECKED	PHM
DATE	JAN. 2005
SCALE	AS SHOWN
SHEET NO.	

PSUB TRACKING # 03-120-039

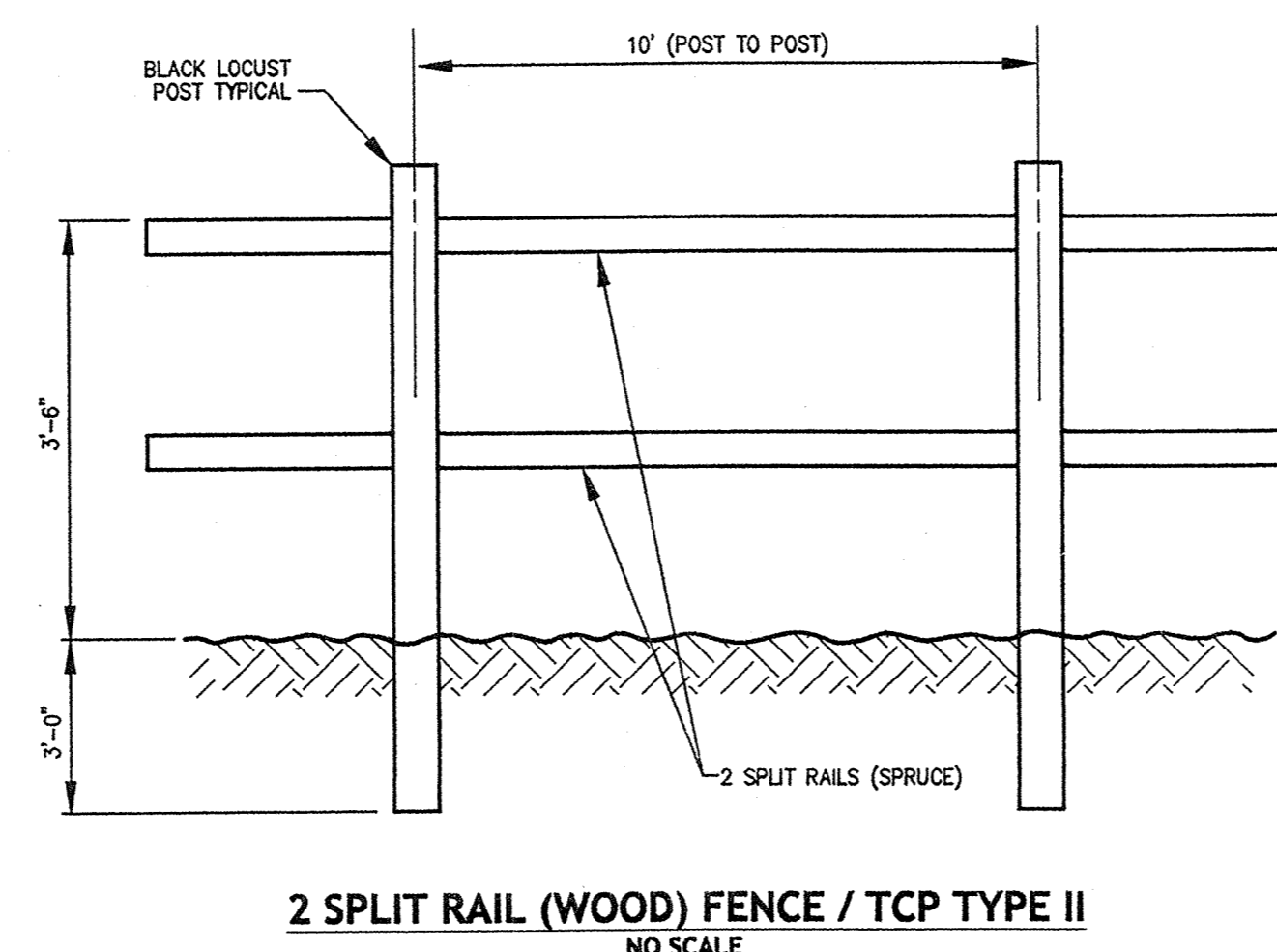
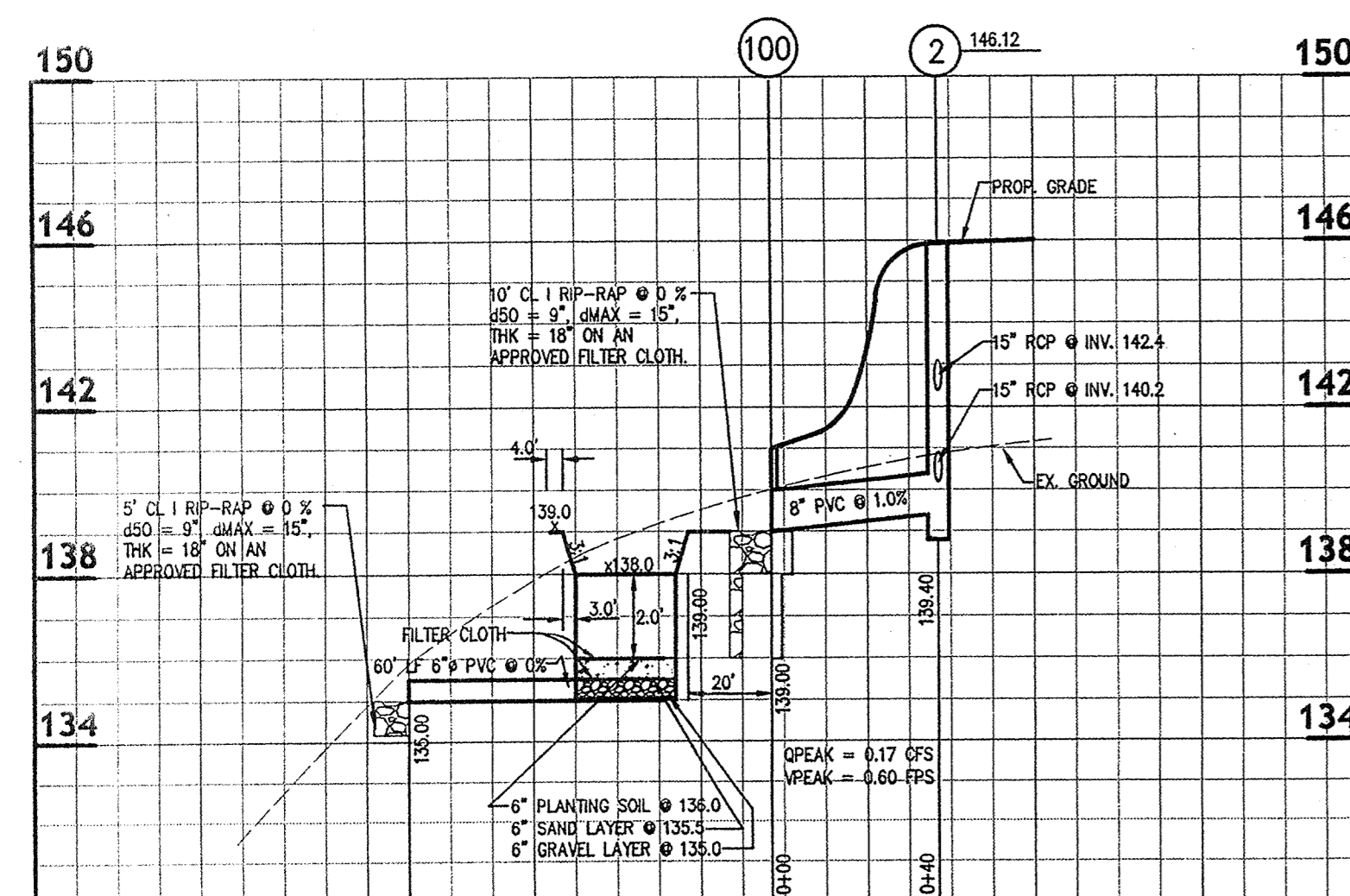
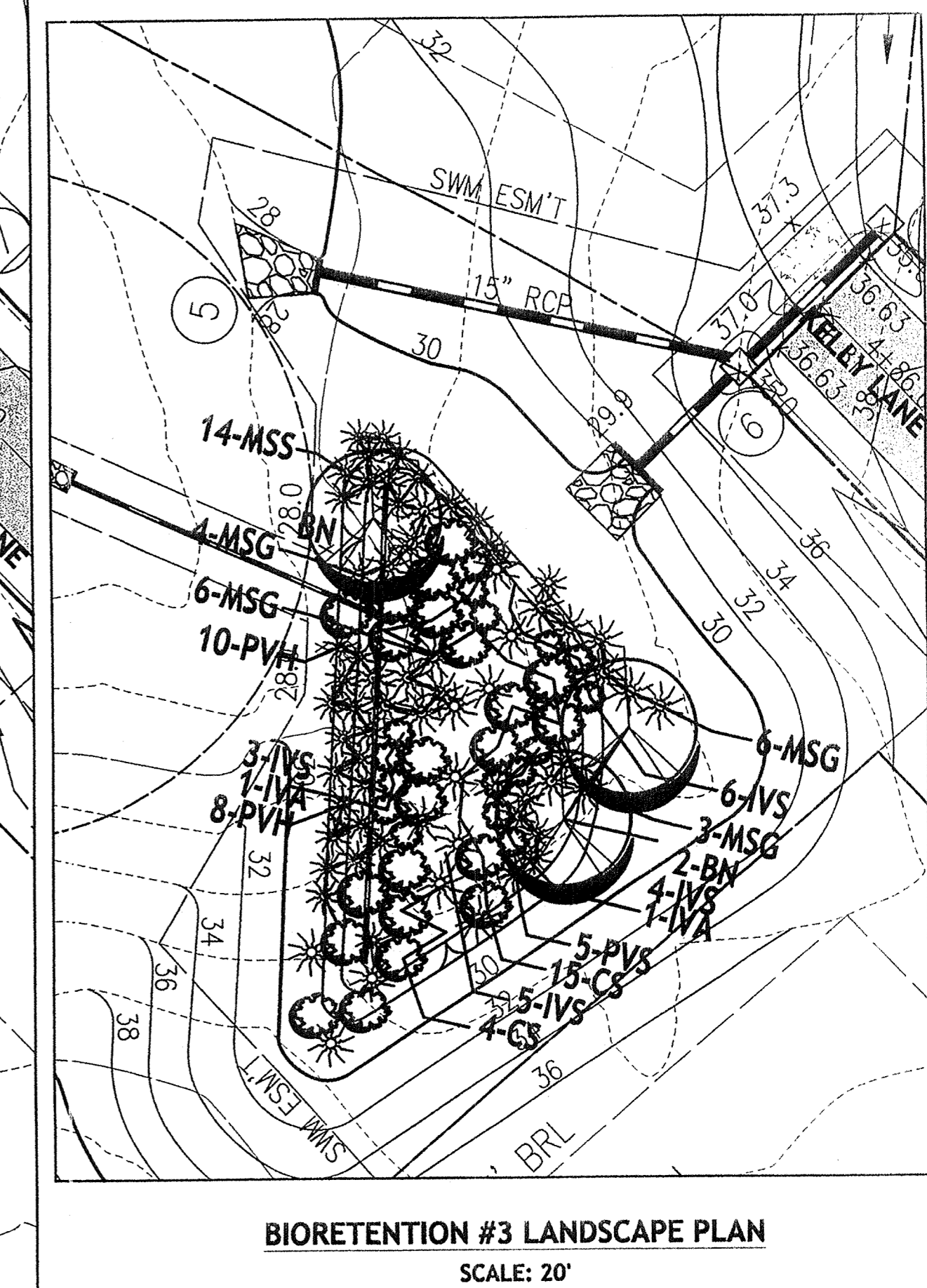
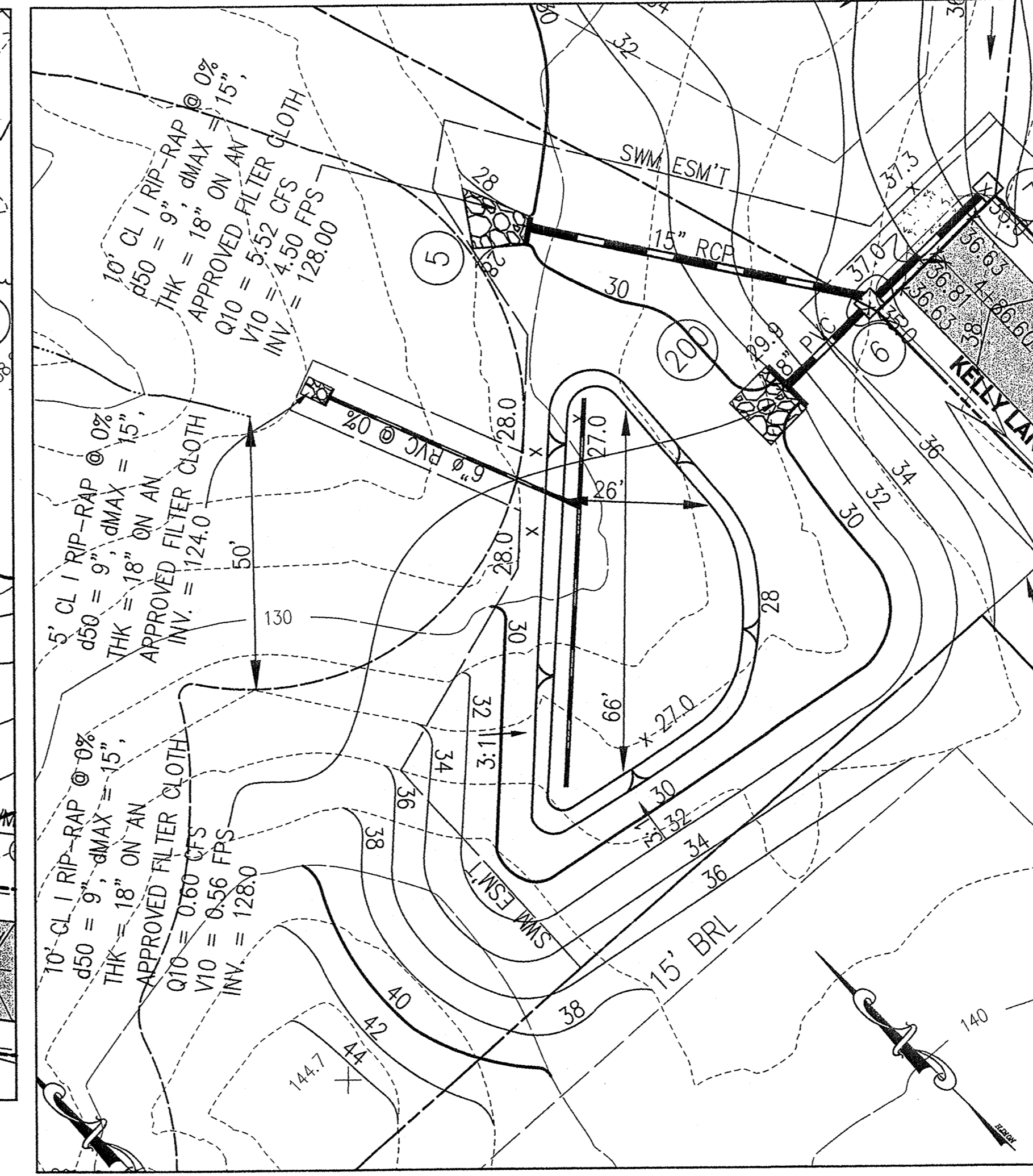
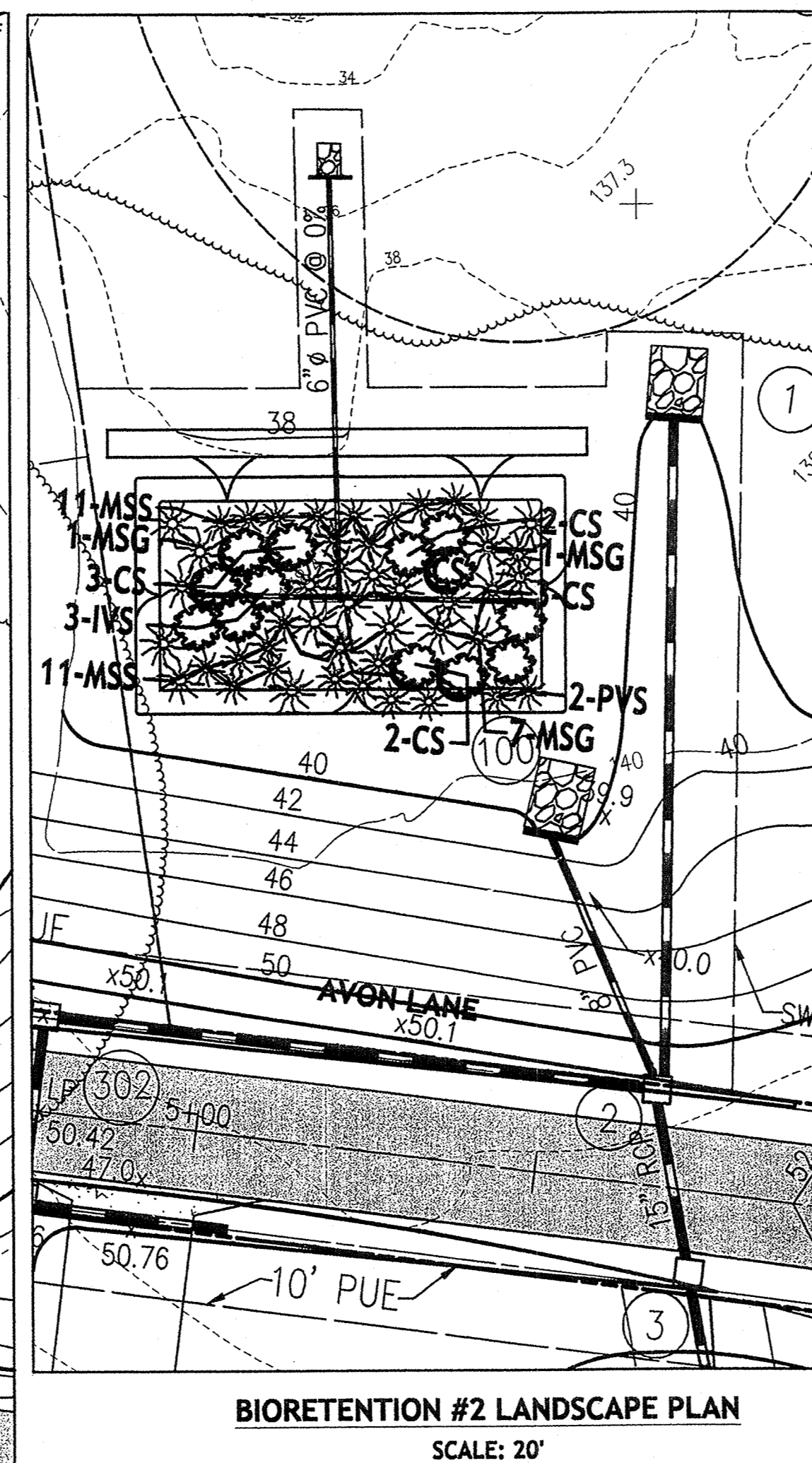
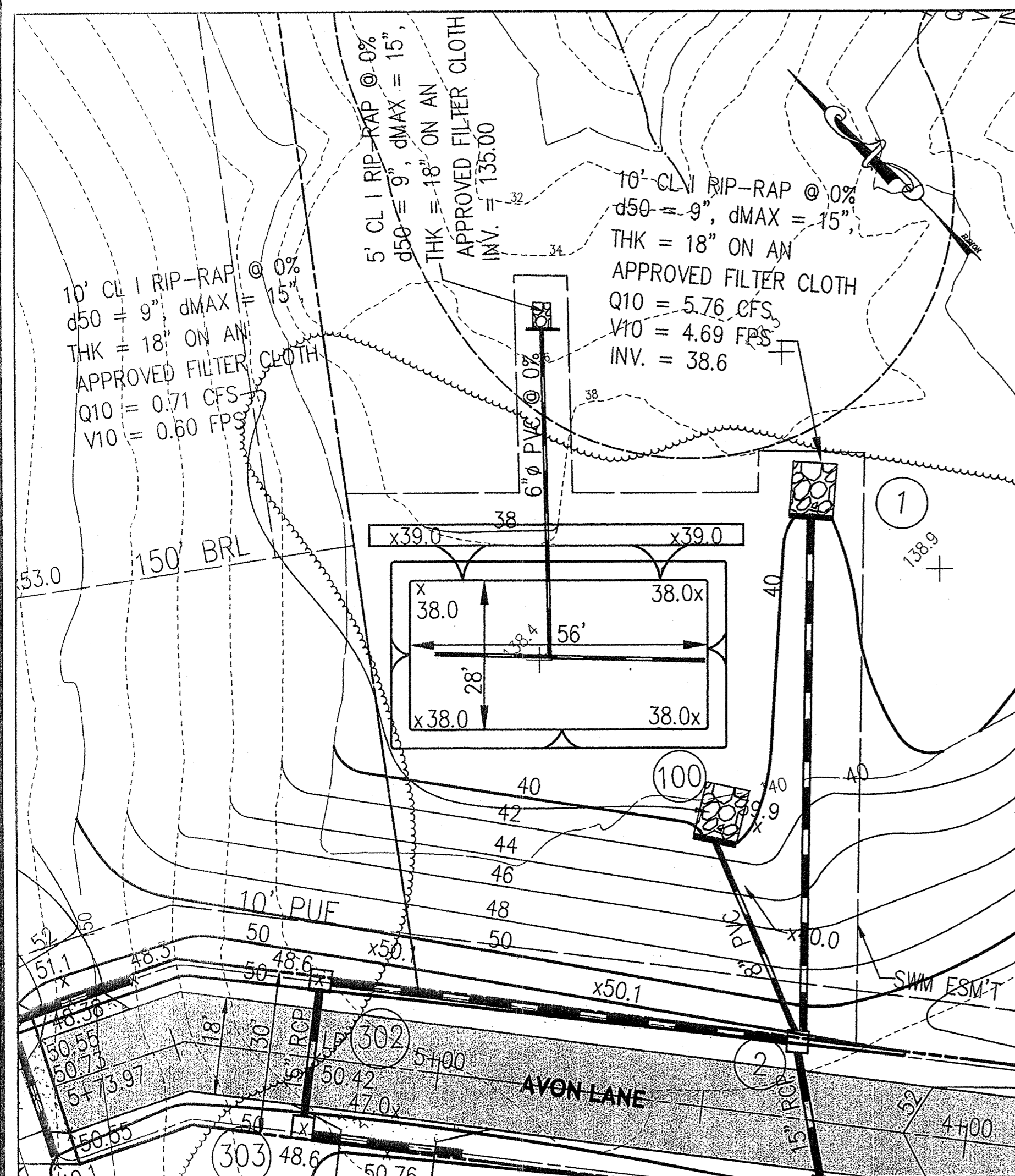
**EXHIBIT A-1  
SECTION PLAN & DETAILS, SWALE PROFILE  
HENDERSON FARM  
FOR LOTS 1-11 & PARCELS A-K**

OWNER	DEVELOPER
JANE G. HENDERSON	SOUTHERN DEVELOPERS, LLC

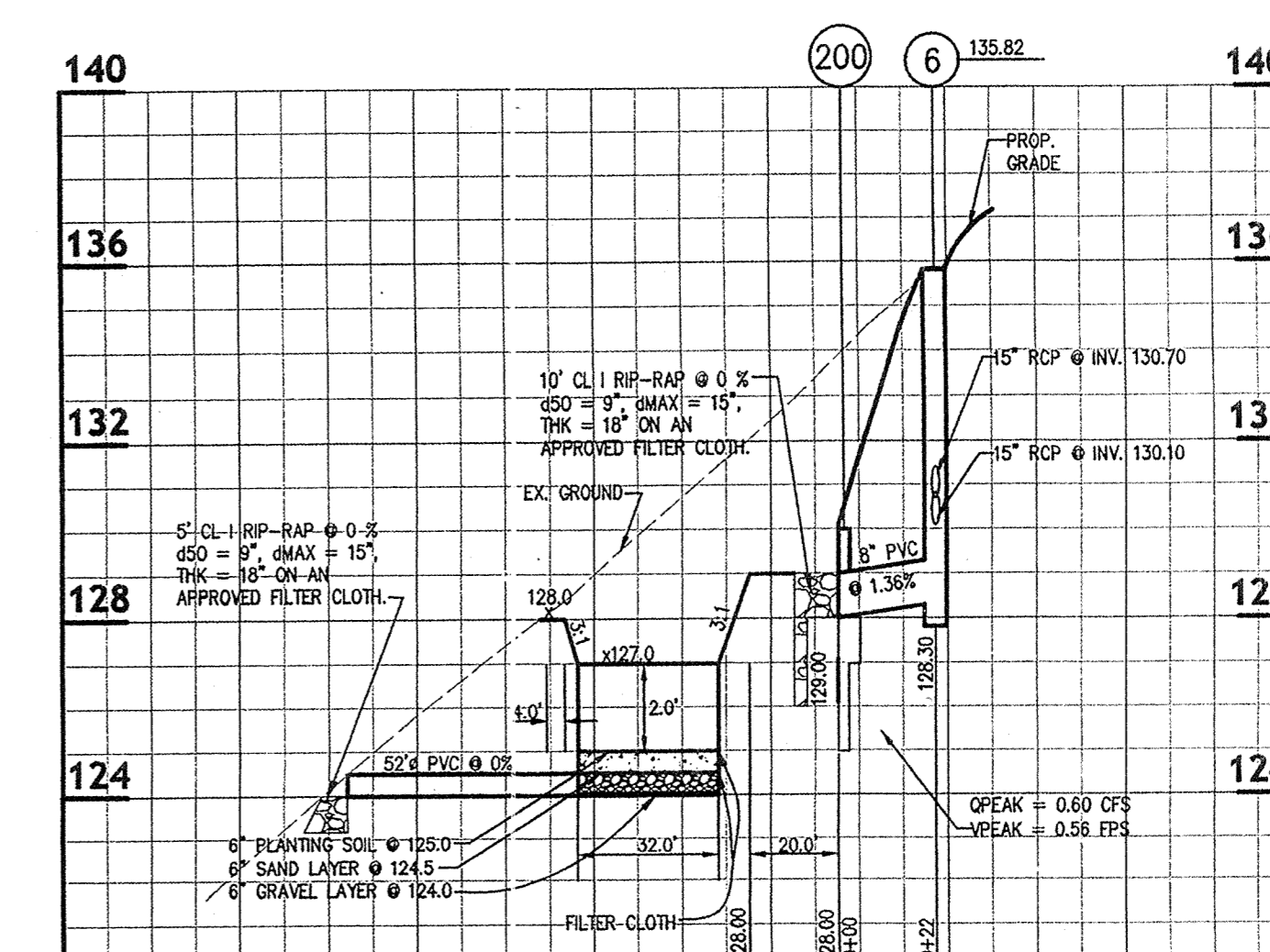
**JANE G. HENDERSON**  
**SOUTHERN DEVELOPERS, LLC**

44425 Pecan Court - Suite 153  
California, MD 20619

44425 Pecan Court - Suite 153  
California, MD 20619

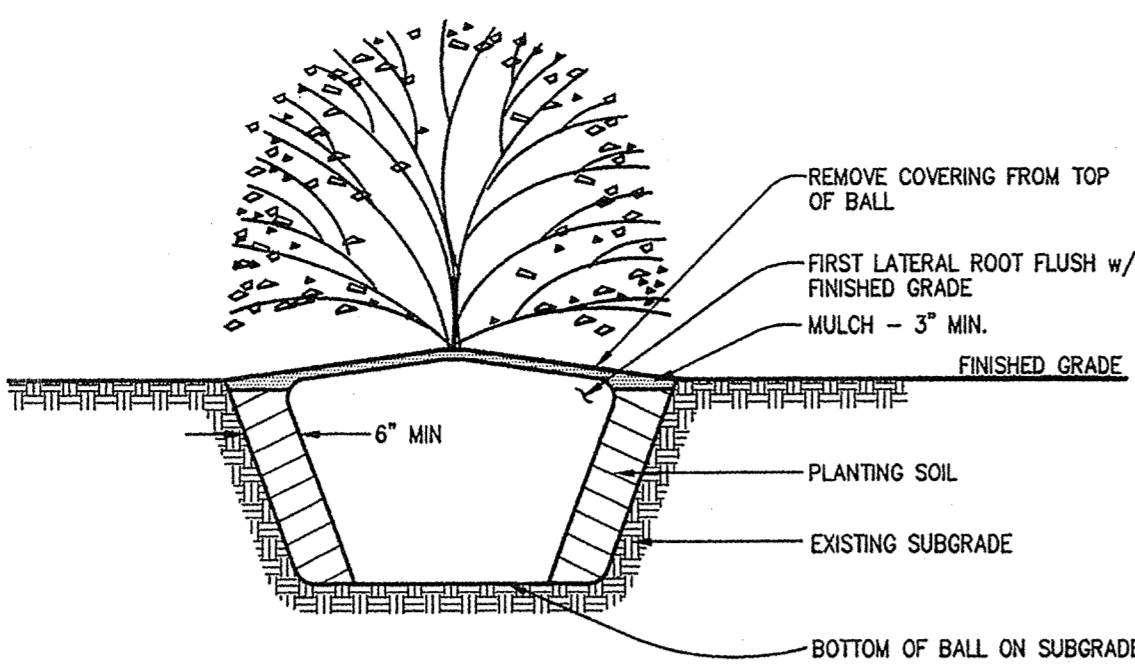


- ## LEGEND
- |                        |  |
|------------------------|--|
| ORNAMENTAL STREET TREE |  |
| STREET TREE            |  |
| SHADE TREE             |  |
| EVERGREEN TREE         |  |
| ORNAMENTAL             |  |
| SHRUB                  |  |
| EVERGREEN SHRUB        |  |
| DAYLILLY               |  |
| STREET LIGHT           |  |

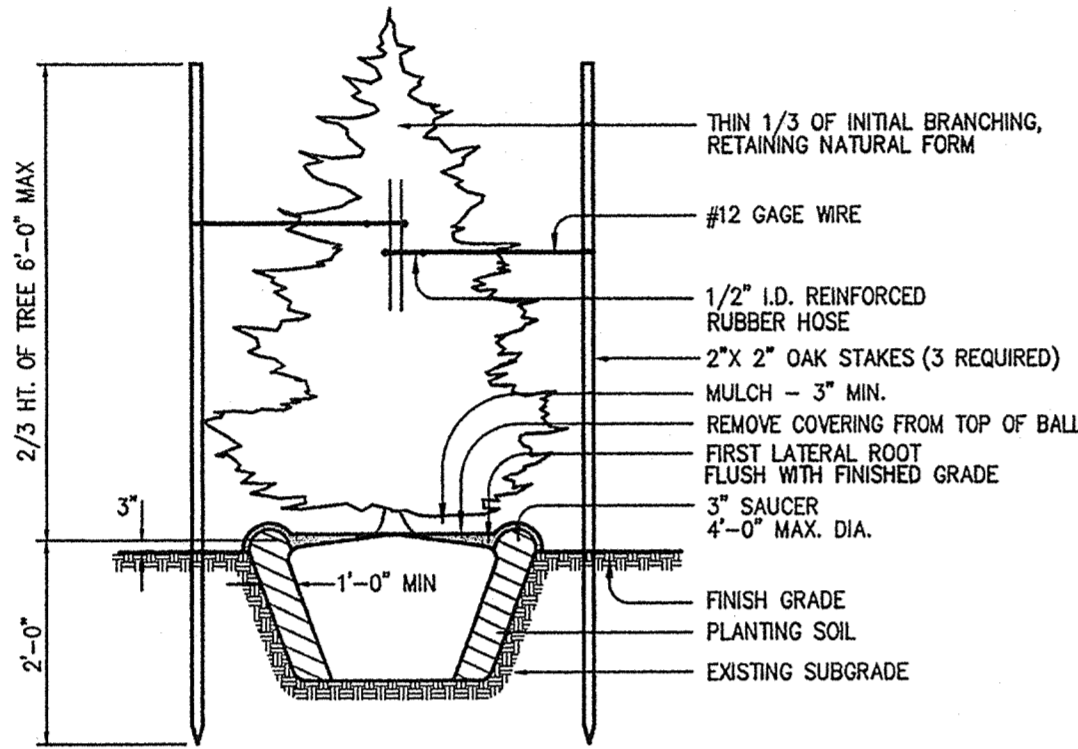
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SPECIFICATIONS FOR BIORETENTION FACILITIES

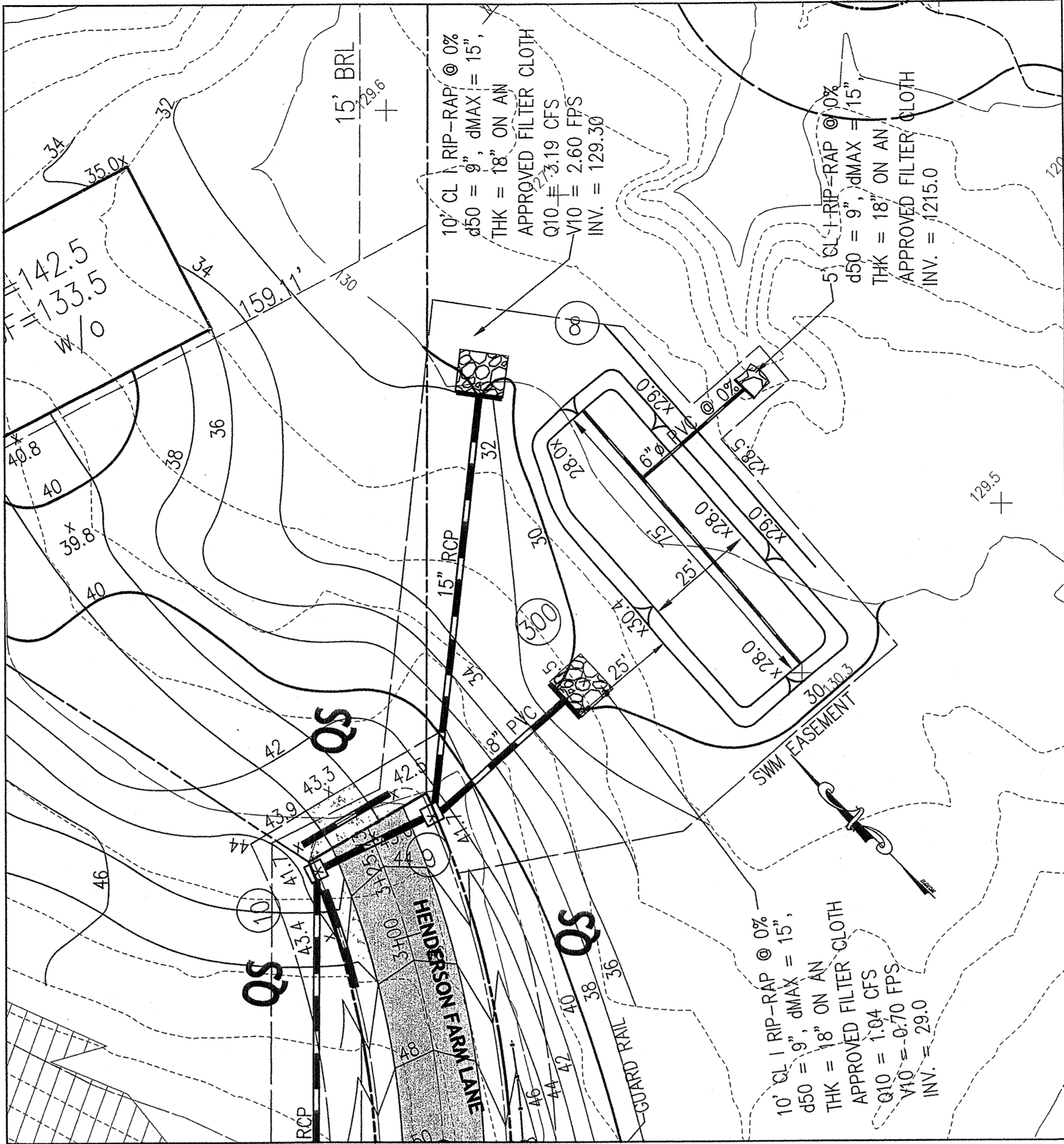
1. MATERIAL SPECIFICATIONS FROM MDE 2000 SIM DESIGN MANUAL. THE ALLOWABLE MATERIALS TO BE USED IN BIORETENTION AREA ARE DETAILED IN TABLE B.3.2.
2. PLANTING SOIL. THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE BIORETENTION AREA THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HURDLE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUD GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05. THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:  
pH RANGE: 5.2-7.0  
ORGANIC MATTER: 1.5-4% (BY WEIGHT)  
MAGNESIUM: 35 lb/ac  
PHOSPHORUS (PHOSPHATE - P<sub>2</sub>O<sub>5</sub>): 75 lb/ac  
POTASSIUM (POTASH - K<sub>2</sub>O): 85 lb/ac  
SOLUBLE SALTS: NOT TO EXCEED 500 ppm
- ALL BIORETENTION AREAS SHALL HAVE A MINIMUM OF ONE TEST. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR pH, PHOSPHORUS, AND POTASSIUM AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE TOPSOIL WAS EXCAVATED.
- SINCE DIFFERENT LABS CALIBRATE THEIR TESTING EQUIPMENT DIFFERENTLY, ALL TESTING RESULTS SHALL COME FROM THE SAME TESTING FACILITY.
- SHOULD THE pH FALL OUT OF THE ACCEPTABLE RANGE, IT MAY BE MODIFIED (HIGHER) WITH LIME OR (LOWER) WITH IRON SULFATE PLUS SULFUR.
3. COMPACTION. IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF THE BIORETENTION AREA AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF BIORETENTION AREAS ARE EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE. COMPACTION CAN BE ALLEVATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHisel, PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO RETRACTURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.
- ROTOILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY. BACKFILLING THE OPTIONAL SAND FILTER LAYER. PUMP ANY POONED WATER BEFORE PREPARING (ROTOILLING) BASE.
- WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE.
- WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
4. PLANT MATERIAL. RECOMMENDED PLANT MATERIAL FOR BIORETENTION AREAS CAN BE FOUND IN APPENDIX 1, SECTION A.2.3.
5. PLANT INSTALLATION. MULCH SHOULD BE PLACED TO A UNIFORM THICKNESS OF 2" TO 3". SHREDDED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. FINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE.
- ROOT STOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8" OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION.
- TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL.
- GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLOTS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.
- THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFECTS, OR AT MINIMUM, IMPEDS THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.
6. UNDERDRAINS. UNDERDRAINS ARE TO BE PLACED ON A 3'-0" WIDE SECTION OF FILTER CLOTH. PIPE IS PLACED NEXT, FOLLOWED BY THE GRAVEL BEDDING. THE ENDS OF UNDERDRAIN PIPES NOT TERMINATING IN AN OBSERVATION WELL SHALL BE CAPPED.
- THE MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).
7. MISCELLANEOUS. THE BIORETENTION FACILITY MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.



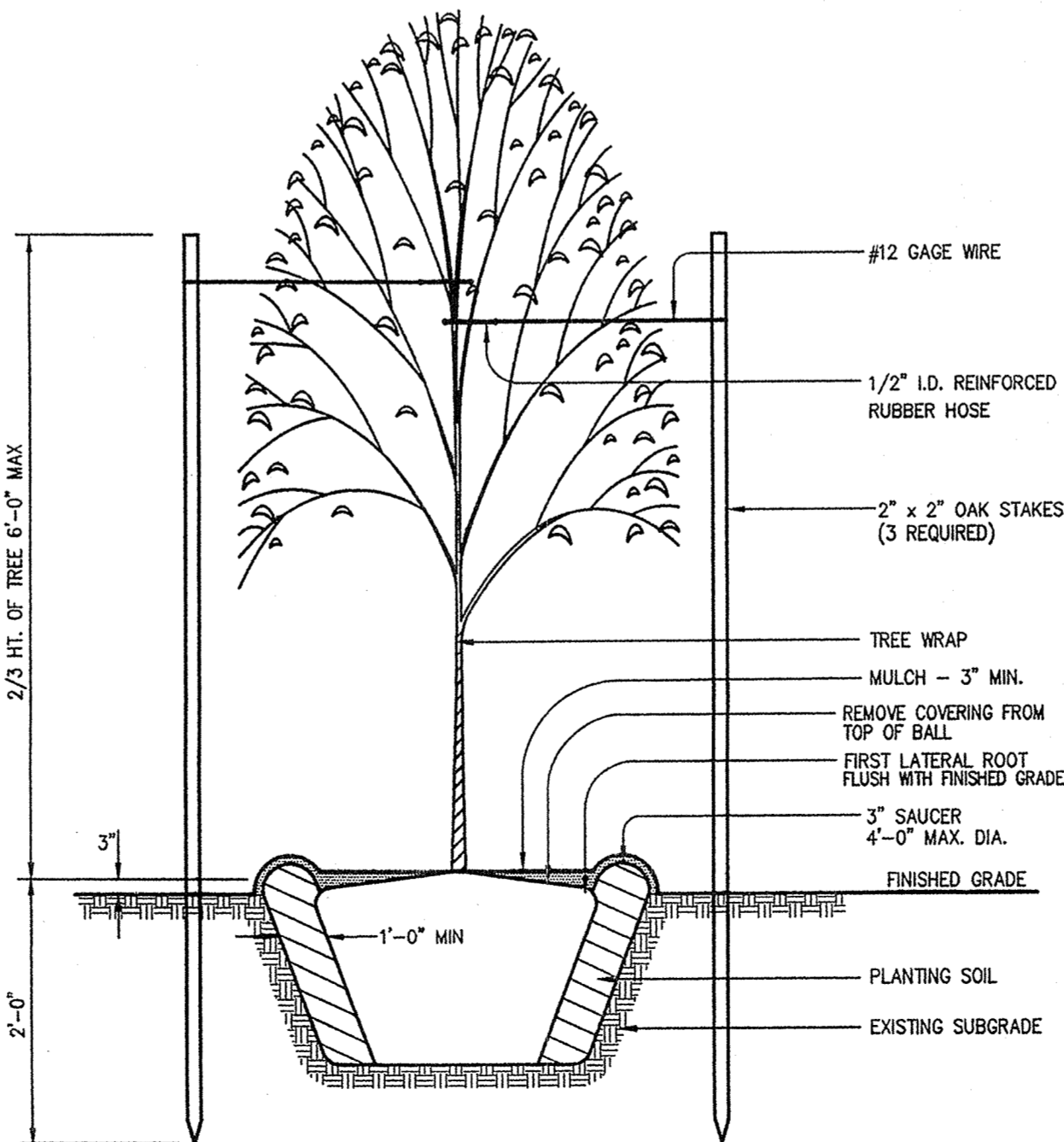
SHRUB PLANTING DETAIL  
NOT TO SCALE



EVERGREEN PLANTING DETAIL  
NOT TO SCALE



BIORETENTION PLAN  
SCALE: 20'



TREE PLANTING DETAIL - 2 1/2" - 3" CAL.  
NOT TO SCALE

LEGEND

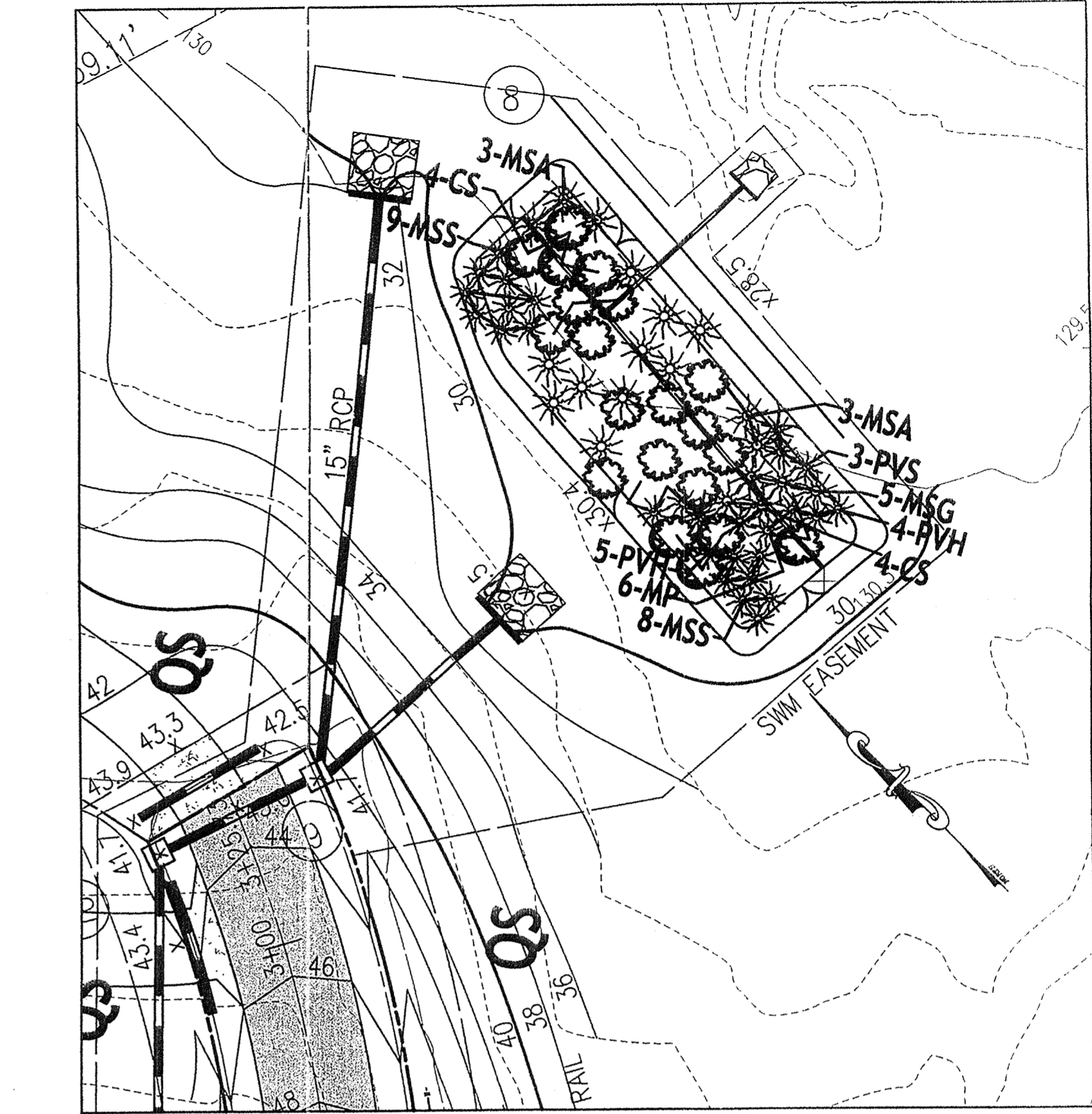
- ORNAMENTAL STREET TREE
- STREET TREE
- SHADE TREE
- EVERGREEN TREE
- ORNAMENTAL
- SHRUB
- EVERGREEN SHRUB
- DAYLILY
- STREET LIGHT

PLANT LIST

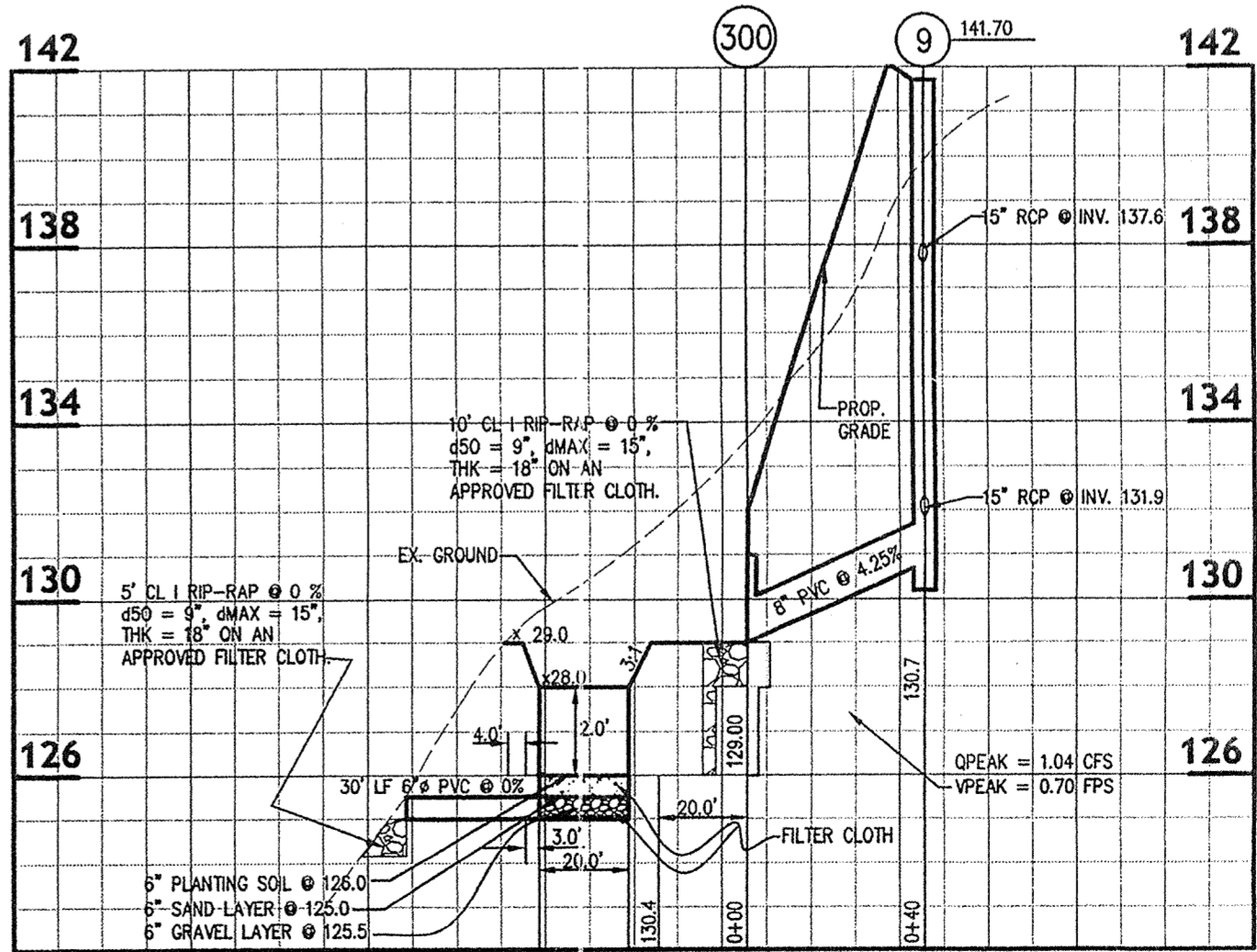
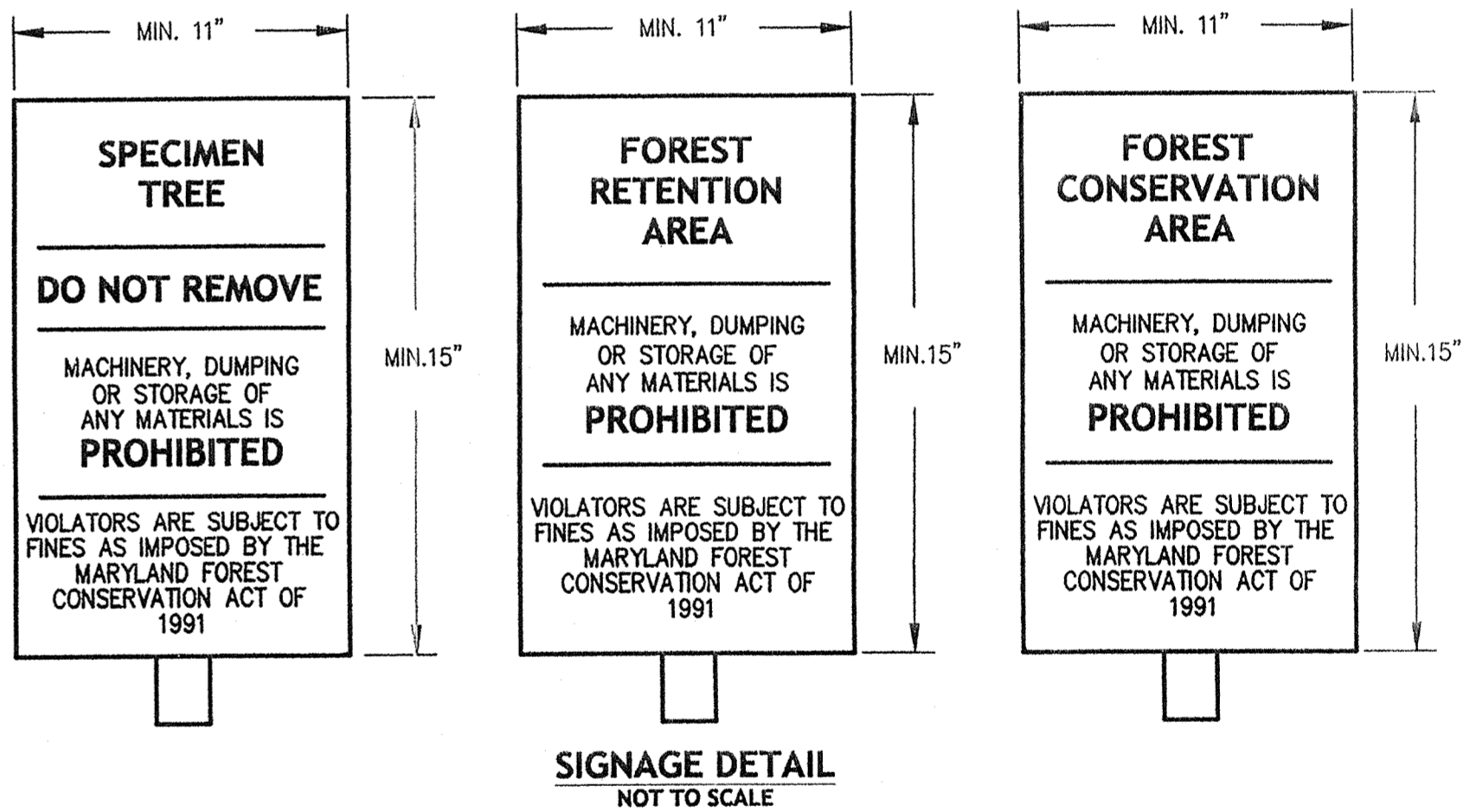
KEY	QUAN	BOTANICAL \ COMMON NAME	SIZE	SPACING	ROOT
QP	30	Quercus phellos\Willow Oak	1 1/2-1 3/4" Cal	As Shown	B&B
QR	24	Quercus rubra\Red Oak	1 1/2-1 3/4" Cal	As Shown	B&B
QS	59	Quercus shumardi \Shumard Oak	1 1/2-1 3/4" Cal	As Shown	B&B
TOTAL	113				

HENDERSON FARM  
BIORETENTION PLANTS - COST ESTIMATE

KEY	QUAN	BOTANICAL \ COMMON NAME	ZONE	SIZE	SPACING	ROOT	UNIT COST	TOTAL PRICE
BN	3	Betula nigra 'Heritage'	(2,3),4	6-8"	AS SHOWN	B & B	\$100.00	\$300.00
CSB	39	Cornus sericea f. baileyi \ Bailey's Red Twig Dogwood	(2,3)	2-2 1/2" SP	8' o.c.	#3 CONT	\$30.00	\$1,170.00
HH	19	Hemerocallis 'Happy Returns' \ 'Happy Returns' Daylily	(3,4,5)	4" POT	18" o.c.		\$5.00	\$95.00
IVA	3	Ilex verticillata x 'Appollo' \ 'Appollo' Winterberry	(2,3)	2-2 1/2" SP	8' o.c.	#3 CONT	\$30.00	\$90.00
IVS	25	Ilex verticillata 'Sparkleberry' \ 'Sparkleberry' Winterberry	(2,3)	2-2 1/2" SP	8' o.c.	#3 CONT	\$30.00	\$750.00
MP	6	Myrica pennsylvanica \ Northern Bayberry	(2,3)	2-2 1/2" SP	5' o.c.	#3 CONT	\$30.00	\$180.00
MSA	18	Miscanthus sinensis 'Adagio' \ 'Adagio' Miscanthus	(3,4,5)	#1 CONT	4' o.c.		\$5.00	\$90.00
MSG	33	Miscanthus sinensis 'Adagio' \ 'Adagio' Miscanthus	(3,4,5)	#1 CONT	4' o.c.		\$5.00	\$165.00
MSS	33	Miscanthus sinensis 'Adagio' \ 'Adagio' Miscanthus	(3,4,5)	#1 CONT	4' o.c.		\$5.00	\$285.00
PVH	28	Panicum virgatum 'Heavy Metal' \ 'Heavy Metal' Switchgrass	(2,3)	#1 CONT	3' o.c.		\$5.00	\$140.00
PVS	24	Panicum virgatum 'Shenandoah' \ 'Shenandoah' Switchgrass	(2,3)	#1 CONT	3' o.c.		\$5.00	\$120.00
RFG	11	Rudbeckia fulgida speciosa 'Goldstrum' \ 'Black Eyed Susan'	4,5,6	#1 CONT	24" o.c.		\$5.00	\$55.00
VD	5	Viburnum dentatum \ Arrowwood Viburnum	(2,3)	3-4" SP	5' o.c.	#3 CONT	\$30.00	\$150.00
262	TOTAL							\$3,560.00



BIORETENTION LANDSCAPE PLAN  
SCALE: 20'



BIORETENTION SP #4  
SCALE: HORIZ 1" = 40'  
VERT 1" = 4'

PSUB TRACKING # 03-120-039

SWA BIORETENTION PLAN AND DETAILS

HENDERSON FARM

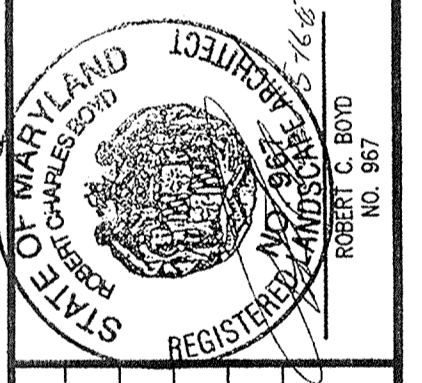
FOR LOTS 1-11 & PARCELS A-K

FIFTH ELECTION DISTRICT

TAX MAP 4 GRIDS, AS PART OF PARCEL 10

ST. MARY'S COUNTY, MARYLAND

REVISION	DATE	DESCRIPTION



**DAYTECH ENGINEERING, LLC**

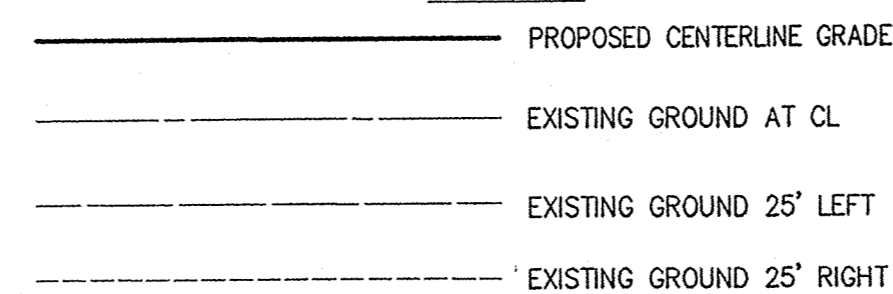
ENGINEERS • PLANNERS • SURVEYORS

4425 Penn Court - Suite 153  
California, MD 20819  
Phone: (301) 853-1333 FAX: (301) 853-7460

REVISIONS	MARK	DATE	DESCRIPTION

**OWNER**  
JANE G. HENDERSON  
P.O. BOX 86, MECHANICVILLE, MD 20659  
PHONE: 410-588-8177

**DEVELOPER**  
SOUTHERN DEVELOPERS, LLC  
539 BENEFIELD RD., SUITE 2, SILVERDALE PARK, MD 21146  
PHONE: 410-575-0801 - FAX: 410-575-0805



1. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THESE PLANS AND THE ST. MARY'S COUNTY STANDARD SPECIFICATIONS FOR WATER AND SEWERAGE CONSTRUCTION.
2. PVC 3000 WALLED SEWER PIPE AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF ASTM D1784, ASTM D3034.
3. PVC RIBBED WALL SEWER PIPE AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF ASTM D1784, ASTM D3034 AND F794.
4. PVC WATER MAIN PRESSURE PIPE SHALL CONFORM TO THE REQUIREMENTS OF AWWA C-300, CLASS 150 MINIMUM.
5. PVC FORCE MAIN LOW PRESSURE PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-2241.
6. DUCTILE IRON PRESSURE PIPE (DIP) AND FITTINGS SHALL EQUAL OR EXCEED AWWA SPECIFICATION C-151 OR C-110, AS APPLICABLE.
7. BEFORE JOINTS ARE MADE, EACH PIPE LENGTH SHALL BE WELL BEDDED IN A SOLID FOUNDATION. NO PIPE LENGTH SHALL BE BROUGHT INTO POSITION UNTIL THE PRECEDING PIPE LENGTH HAS BEEN PROPERLY EMBEDDED BY BOTH HAUNCHING AND INITIAL BACKFILL.
8. ALL PIPE SHALL BE CLEANED BEFORE THEY ARE LAID AND SHALL BE KEPT CLEAN UNTIL ACCEPTANCE OF THE COMPLETED WORK BY METCOM. OPEN ENDS OF PIPE SHALL BE FITTED WITH WATER TIGHT STOPPERS TO PREVENT ENTRANCE OF FOREIGN MATTER WHEN PIPE-LAYING OPERATIONS ARE INTERRUPTED.
9. PIPE JOINTS SHALL BE BELL/RING WITH INTEGRALLY MOLDED BELL ASSEMBLY SHALL BE IN ACCORDANCE TO PIPE MANUFACTURERS RECOMMENDATIONS; PIPE JOINTS SHALL NOT BE MADE UNDER WATER. THE JOINTS SHALL BE CAREFULLY INSPECTED FOR LEAKS AND TIGHTNESS.
10. TRENCH BACKFILL SHALL BE DONE WITH SELECT BACKFILL MATERIAL DEFINED AS GRAVEL OR BANK-RUN GRAVEL THAT WILL PASS THROUGH A ONE (1") INCH SIEVE. THE BACKFILL MATERIAL SHALL BE CAREFULLY DEPOSITED IN THE TRENCH IN 30 (6") INCH CONCRETE FILL LIFTS, TO A HEIGHT OF ONE (1') FOOT ABOVE THE TOP OF THE PIPE.
11. GRAVITY SEWERS SHALL BE TESTED WITH AIR PRESSURE AT 5 PSI FOR A PERIOD OF THIRTY (30) MINUTES WITH A (0) PRESSURE DECREASE.
12. SEWER FORCE MAINS SHALL BE FILLED WITH CLEAN WATER AFTER THE LOWEST PRESSURE TEST HAS BEEN DONE. 10 PSI MEASURED AT THE LOW POINT IN THE LINE. MUST HOLD CONSTANT FOR A PERIOD OF THIRTY (30) MINUTES.
13. AUTOMATIC AIR RELIEF VALVES SHALL BE PROVIDED AT HIGH POINTS IN THE DRAINAGE DISTRIBUTION SYSTEM, WHEN APPLICABLE, AS DIRECTED BY THE ENGINEER.



**HENDERSON FARM COURT PLAN & PROFILE**

**HENDERSON FARM**

**FOR LOTS 1-11 & PARCELS A-K**

117 BELLEVILLE RD. N. PARCEL 10  
TAX MAP 15-1-1-1-1-1-1-1-1-1-1  
ST. MARY'S COUNTY, MARYLAND

**OWNER**

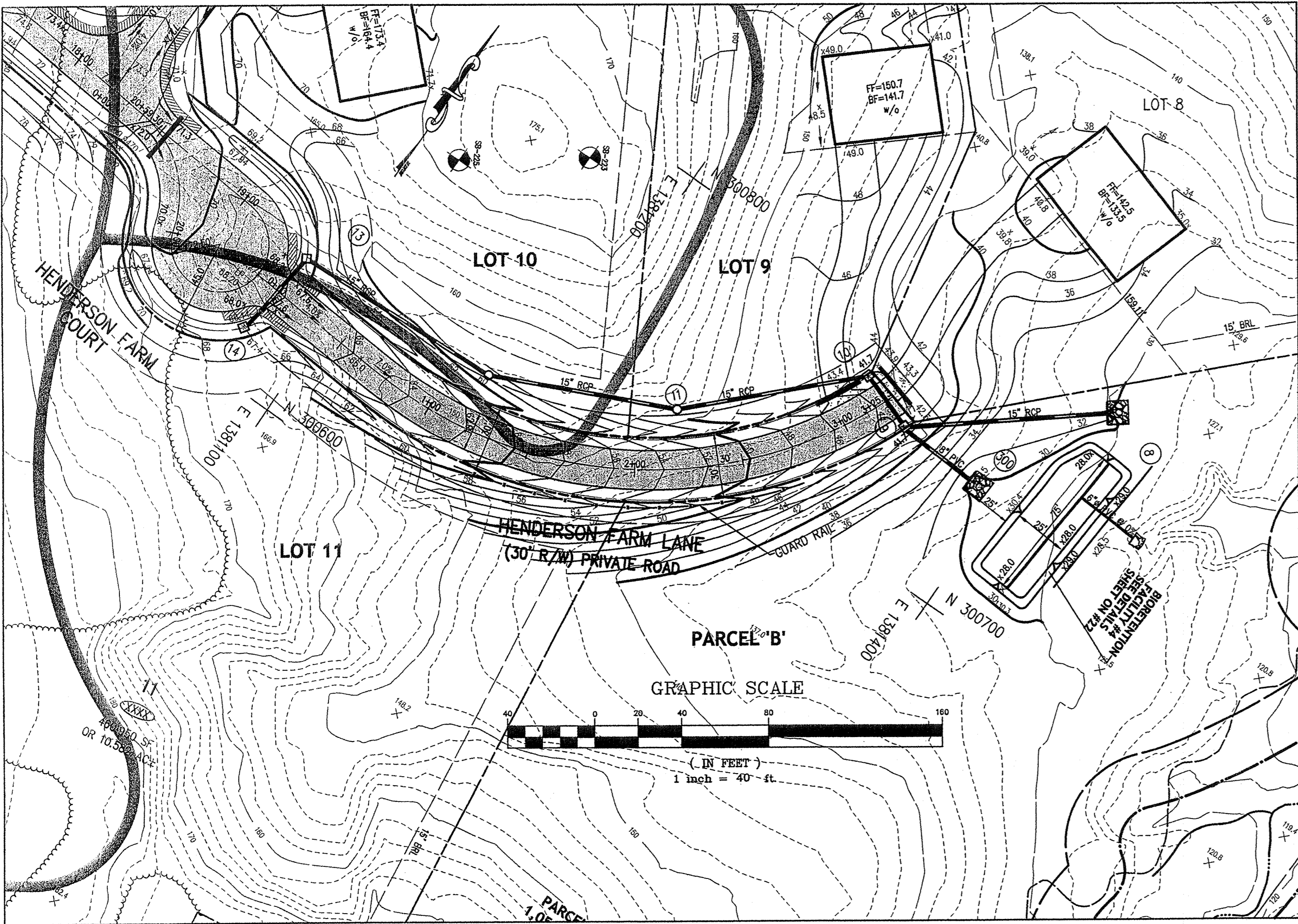
JANE G. HENDERSON  
P.O. BOX 66, MECHANICSVILLE MD. 20659

**DEVELOPER**

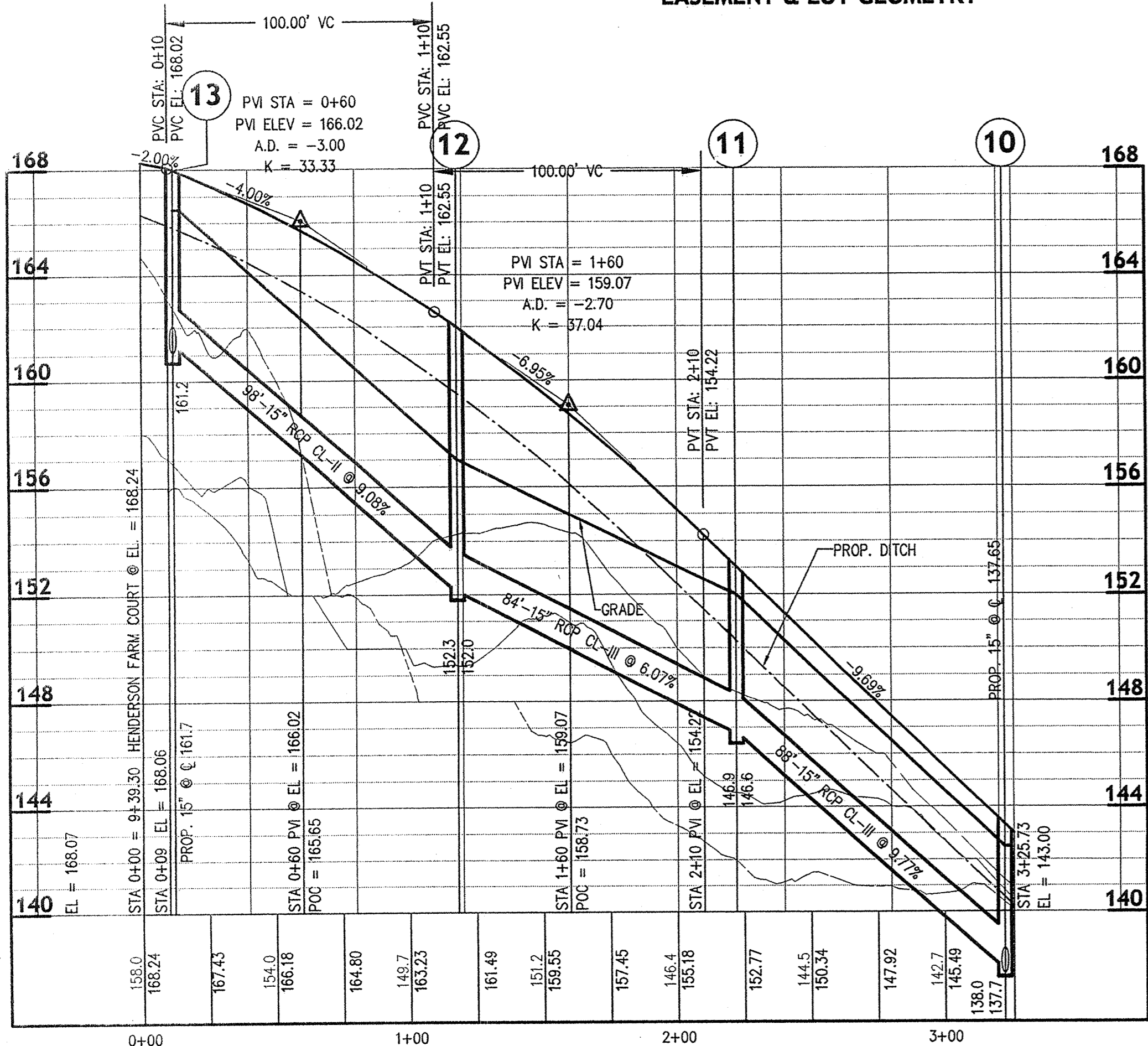
SOUTHERN DEVELOPERS, LLC  
539 BELLEVILLE RD. SUITE 2, SEVERN PARK MD. 21146

PSUB TRACKING # 03-120-039





NOTE: SEE GEOMETRIC LAYOUT PLAN FOR ROAD,  
EASEMENT & LOT GEOMETRY



HENDERSON FARM LANE

SCALE: HORIZ 1" = 40'  
VERT 1" = 4'

GENERAL NOTES

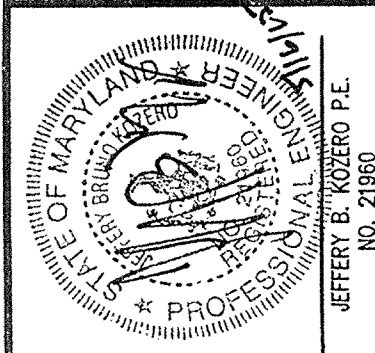
1. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THESE PLANS AND THE ST. MARY'S COUNTY STANDARD SPECIFICATIONS FOR WATER AND SEWERAGE CONSTRUCTION.
2. PVC SMOOTH WALLED SEWER PIPE AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF ASTM D1784 AND ASTM D3034.
3. PVC RIBBED WALL SEWER PIPE AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF ASTM D1784, ASTM D3034 AND F794.
4. PVC WATER MAIN PRESSURE PIPE SHALL CONFORM TO THE REQUIREMENTS OF AWWA C-900, CLASS 150 MINIMUM.
5. PVC FORCE MAIN LOW PRESSURE PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-2241.
6. DUCTILE IRON PRESSURE PIPE (D.I.P.) AND FITTINGS SHALL EQUAL OR EXCEED AWWA SPECIFICATIONS C-151 OR C-110, AS APPLICABLE.
7. BEFORE JOINTS ARE MADE, EACH PIPE LENGTH SHALL BE WELL BEDDED ON A SOLID FOUNDATION. NO PIPE LENGTH SHALL BE BROUGHT INTO POSITION UNTIL THE PRECEDING PIPE LENGTH HAS BEEN PROPERLY EMBEDDED BY BOTH HAUNCHING AND INITIAL BACKFILL.
8. ALL PIPES SHALL BE CLEANED BEFORE THEY ARE LAID AND SHALL BE KEPT CLEAN UNTIL ACCEPTANCE OF THE COMPLETED WORK BY METCOM. OPEN ENDS OF PIPE SHALL BE FITTED WITH WATER TIGHT STOPPERS TO PREVENT ENTRANCE OF FOREIGN MATTER WHEN PIPE-LAYING OPERATIONS ARE INTERRUPTED.
9. PIPE JOINTS SHALL BE BELL/RING WITH INTEGRALLY MOLDED BELL ASSEMBLY SHALL BE IN ACCORDANCE TO PIPE MANUFACTURER'S RECOMMENDATIONS. PIPE JOINTS SHALL NOT BE MADE UNDER WATER AND SHALL BE CAREFULLY CONSTRUCTED TO INSURE WATER-TIGHTNESS.
10. TRENCH BACKFILLING SHALL BE DONE WITH SELECT BACKFILL MATERIAL DEFINED AS GRAVEL OR BANK-RUN GRAVEL THAT WILL PASS THROUGH A ONE (1") INCH SIEVE. THE BACKFILL MATERIAL SHALL BE CAREFULLY DEPOSITED IN THE TRENCH IN SIX (6") INCH COMPACTED FILL LIFTS, TO A HEIGHT OF ONE (1') FOOT ABOVE THE TOP OF THE PIPE.
11. GRAVITY SEWERS SHALL BE TESTED WITH AIR PRESSURE AT 5 PSI FOR A PERIOD OF THIRTY (30) MINUTES WITH A (0) PRESSURE DECREASE.
12. SEWER FORCE MAINS SHALL BE FILLED WITH CLEAN WATER AFTER WHICH A HYDROSTATIC PRESSURE OF 100 PSI, MEASURED AT THE LOW POINT IN THE LINE, MUST HOLD CONSTANT FOR A PERIOD OF THIRTY (30) MINUTES.
13. AUTOMATIC AIR RELIEF VALVES SHALL BE PROVIDED AT HIGH POINTS IN THE DISTRIBUTION SYSTEM, WHERE APPLICABLE, AS DIRECTED BY THE ENGINEER.

LEGEND

- PROPOSED CENTERLINE GRADE
- EXISTING GROUND AT CL
- EXISTING GROUND 25' LEFT
- EXISTING GROUND 25' RIGHT

REVISIONS	
MARK	DESCRIPTION

**DAYTECH ENGINEERING, LLC**  
ENGINEERS • PLANNERS • SURVEYORS  
44425 Paxon Court - Suite 153  
P.O. Box 153  
St. Mary's County, MD 20686  
Phone: (301) 863-0333 Fax: (301) 863-7460



DESIGN	DCM

PSUB TRACKING # 03-120-039

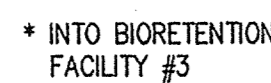
**HENDERSON FARM LANE PLAN AND PROFILE**  
**HENDERSON FARM**  
**FOR LOTS 1-11 & PARCELS A-K**  
FIFTH ELECTION DISTRICT  
TAX MAP 4 GRIDS, AS PART OF PARCEL 10  
ST. MARY'S COUNTY, MARYLAND

**OWNER**  
JANE G. HENDERSON  
P.O. BOX 20659  
ST. MARY'S COUNTY, MARYLAND 20686  
PHONE: 410-588-9777

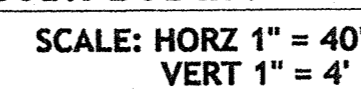
**DEVELOPER**  
SOUTHERN DEVELOPERS, LLC  
530 BRIDGEWAY  
ANNAPOLIS, MD 21403-3146  
PHONE: 410-975-0501 FAX: 410-979-0605

25 OF 29





<p><b>HENDERSON FARM</b>  <b>FOR LOTS 1-11 &amp; PARCELS A-K</b>          FIFTH ELECTION DISTRICT          TAX MAP 4 GRD05, AS PART OF PARCEL 10          ST. MARY'S COUNTY, MARYLAND</p>	<p><b>OWNER</b>  <b>JANE C. HENDERSON</b>          P.O. BOX 806          NEWBURN, MD 20656</p>	<p><b>DEVELOPER</b>  <b>SOUTHERN DEVELOPERS, LLC</b>          539 SOUTH EIGHTH AVE., SUITE 21146          WASHINGTON, DC 20004          PHONE: 410-976-9901 FAX: 410-976-9905</p>
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### DETAIL 5 - RIPRAP INFLOW PROTECTION

**Construction Specifications**

- Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3" (min.) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 18".
- Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
- Entrance and exit sections shall be installed as shown on the detail section.
- Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.
- Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.
- Rip-rap should blend into existing ground.
- Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

### DETAIL 23A - STANDARD INLET PROTECTION

**Construction Specifications**

- Excavate completely around the inlet to a depth of 18" below the notch elevation.
- Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.
- Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.
- Stretch the Geotextile Class E tightly over the wire mesh with the geotextile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.
- Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.
- If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.
- The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

### DETAIL 8 - PIPE OUTLET SEDIMENT TRAP - ST I

**Construction Specifications**

- The area under the embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
- The fill material for the embankment shall be free of roots or other woody vegetation as well as oversized stones, rocks, organic material, or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
- The total trap volume as measured from the bottom to riser crest elevation shall be 3600 cubic feet per acre of drainage area (see Table 9). The top of embankment must be  $\geq 1'$  above the riser crest elevation.
- Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one half of the wet storage depth of the trap (900cf/ac). The sediment shall be deposited in a suitable area and in such a manner that it will not erode.
- The structure shall be inspected periodically and after each rain and repairs made as necessary.

### DETAIL 1 - EARTH DIKE

**Construction Specifications**

- All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
- Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
- Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
- All trees, brush, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
- The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
- Fill shall be compacted by earth moving equipment.
- All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
- Inspection and maintenance must be provided periodically and after each rain event.

### DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

**CONSTRUCTION SPECIFICATION**

- LENGTH - MINIMUM OF 50' (\*30' FOR SINGLE RESIDENCE LOT).
- WIDTH - 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE. \*\*THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE.
- STONE - CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
- SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED.
- LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

### SILT FENCE SPECIFICATIONS

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

### DETAIL 22 - SILT FENCE

**Construction Specifications**

- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
- Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft <sup>2</sup> / minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
- Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

### DETAIL 19 - STONE OUTLET STRUCTURE

**Construction Specifications**

- Crushed stone shall be used. Gravel may be used if crushed stone is not available. The stone shall be 2" - 3" in size.
- The crest of the stone dike shall be at least 6" lower than the lowest elevation of the top of the earth dike and shall be level.
- The stone outlet structure shall be embedded into the soil a minimum of 4".
- The minimum length of the crest of the stone outlet structure shall be 6".
- The stone outlet structure shall be inspected after each rain. Stone shall be replaced when the structure ceases to function and ponding results.
- The baffle board shall be extended one foot into the dike, staked and embedded 4" into the existing ground.
- The drainage area to this structure shall be less than 1/2 acre.

### DETAIL 33 - SUPER SILT FENCE

**Construction Specifications**

Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6 foot fence shall be used, substituting 42 inch fabric and 6 foot length posts.

- The poles do not need to set in concrete.
- Chain link fence shall be fastened securely to the fence posts with wire ties or staples.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- Filter cloth shall be embedded a minimum of 6" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence.

### SUPER SILT FENCE DESIGN CRITERIA

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

#### REVISIONS

MARK	DATE	DESCRIPTION

#### SEDIMENT CONTROL DETAILS AND NOTES

HENDERSON FARM  
FOR LOTS 1, 11 & PARCELS A-K  
TAX MAP 4 CROS. AS PART OF PARCEL 10  
ST. MARYS COUNTY, MARYLAND

DEVELOPER  
SOUTHERN DEVELOPERS, LLC  
535 BENFIELD RD, SUITE 2, SEVERNA PARK MD, 20659  
PHONE: 410-998-9177

OWNER  
JANE G. HENDERSON  
P.O. BOX 55, SEVERNA PARK MD, 20659  
PHONE: 410-998-9177

#### DAYTECH ENGINEERING, LLC

ENGINEERS • PLANNERS • SURVEYORS  
44428 Peach Court • Suite 153  
California, MD 20619  
Phone: (301) 953-0333 FAX: (301) 953-7460

STATE OF MARYLAND  
JEFFERY B. ZIMMERMAN  
PROFESSIONAL ENGINEER  
NO. 21680

DESIGN	CHK	FA	PHM	DATE	SCALE	SHEET NO.	OF
				JAN. 2005		23	29

