Site Development Plan for Montpelier Research Park

Howard County Maryland

Sheet Index

ADDRESS CHART

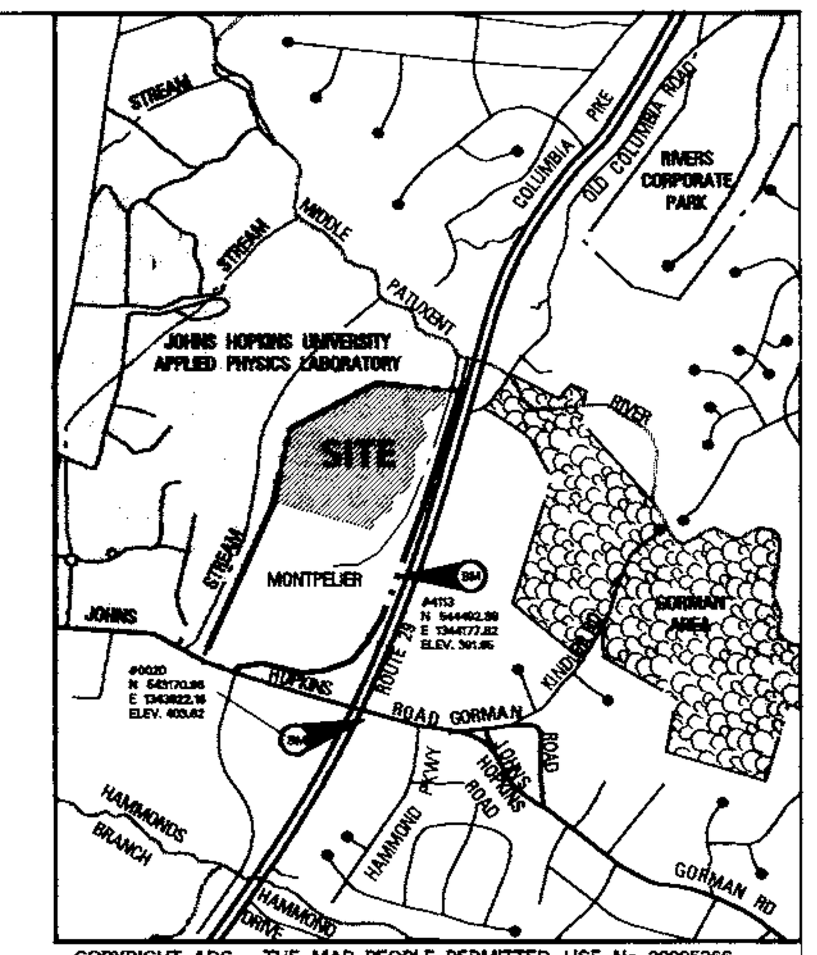
LOT NUMBER	STREET ADDRESS
PARCEL E-1	7701 MONTPELIER RD.
PARCEL G-1	7751 MONTPELIER RD.
PARCEL G-2	7797 MONTPELIER RD.

Name	Bearing	Distance	Name	Bearing	Distance
L1	N 09° 34'00" W	29.01'	L27	N 30° 49'36" W	28.67'
L2	N 18° 07'11" E	34.60'	L28	N 53° 15'34" W	16.48'
L3	N 06° 34'20" W	17.47'	L29	N 45° 43'48" E	22.14'
L4	N 26° 13'58" W	18.43'	L30	N 51° 36'23" E	25.13'
L5	N 43° 55'23" W	84.16'	L31	N 40° 55'26" E	14.98'
L6	N 72° 55'53" W	41.76'	L32	N 06° 17'36" E	17.37'
L7	N 15° 01'59" E	13.11'	L33	N 11° 45'25" W	11.24'
L8	N 00° 13'29" W	11.22'	L34	N 20° 36'48" W	15.18'
L9	N 11° 27'39" W	31.15'	L35	N 36° 48'21" W	27.06'
L10	N 37° 42'02" W	42.36'	L36	N 07° 31'16" W	22.28'
L11	N 65° 44'42" E	22.41'	L37	N 02° 34'26" E	22.00'
L12	N 54° 59'27" E	15.07'	L38	N 32° 32'01" E	22.77'
L13	N 35° 25'17" E	12.38'	L39	N 53° 23'16" E	25.61'
L14	N 08° 24'29" E	16.39'	L40	N 42° 52'00" E	15.65'
L15	N 05° 49'14" W	28.35'	L41	S 65° 35'24" E	32.88'
L16	N 00° 54'58" W	59.86'	L42	N 87° 55'55" E	20.20'
L17	N 09° 57'45" E	54.34'	L43	N 70° 11'39" E	23.71'
L18	N 68° 33'54" E	14.81'	L44	N 66° 08'18" E	54.04'
L19	N 53° 14'37" E	28.54'	L45	N 60° 11'33" E	38.42'
L20	N 33° 32'29" E	22.86'	L46	N 50° 50'19" E	39.48'
L21	N 81° 53'55" E	41.04'	L47	N 39° 58'58" E	23.69'
L22	N 11° 52'02" E	17.46'	L48	N 30° 50'28" E	24.21'
L23	N 03° 11'04" E	32.65'	L49	N 48° 42'53" E	133.40'
L24	N 53° 41'44" W	17.59'	L50	S 01° 45'00" W	264.56'
L25	N 77° 57'51" W	20.79'	L51	N 73° 00'22" W	272.89'
L26	N 70° 59'12" W	36.24'	L52	N 25° 14'12" E	316.44'
			L53	S 78° 32'54" E	212.07'

CURVE TABLE

NAME	DELTA	RADIUS	LENGTH	BEARING	CHORD	TANGENT
C1	02° 45'59"	1713.76'	82.75'	S 36° 23'23" W	82.74'	41.38'
C2	04° 36'45"	1362.39'	109.68'	S 35° 58'37" W	109.65'	54.87'
C3	76° 42' 33"	80.00'	107.11'	N 52° 22' 47" E	99.28'	63.30'
C4	58° 29' 58"	105.00'	107.21'	N 43° 16'29" E	102.61'	58.80'
C5	47° 27'50"	130.00'	107.69'	N 37° 45'25" E	104.64'	57.15'
C7	41° 37'54"	550.00'	399.63'	S 43° 45'07" W	390.90'	209.10'
C8	01° 29'51"	550.00'	14.37'	S 65° 18'59" W	14.37'	7.19'
C9	50° 27' 14"	500.00'	440.29'	S 40° 59'18" W	426.21'	235.57'

NOTE: THERE IS NO C6



NORTH

LOCATION MAP

SCALE: 1" = 2000'

HORIZONTAL CONTROL

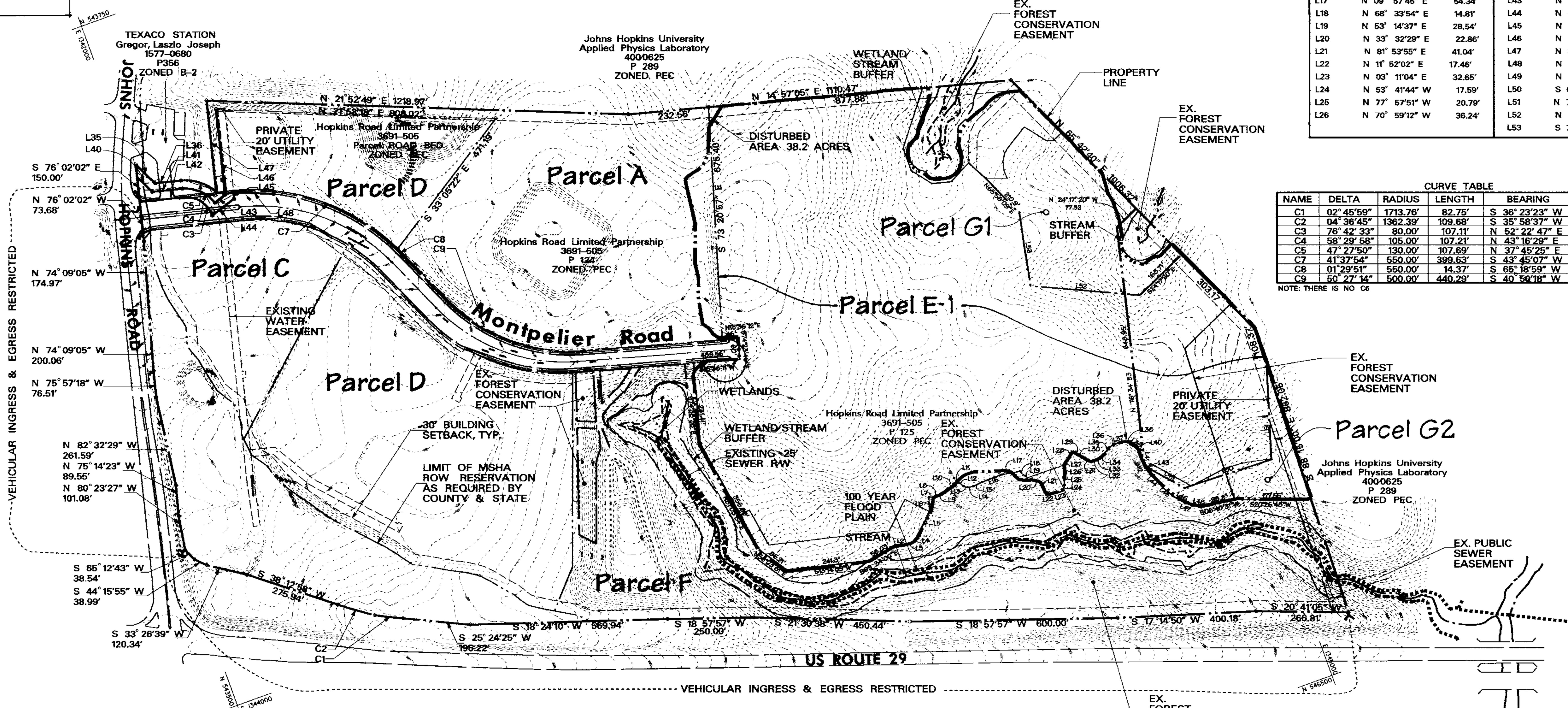
THE COURSES AND COORDINATES SHOWN HEREON ARE BASED UPON THE NAD 83 MARYLAND COORDINATE SYSTEM AND ARE DERIVED FROM THE FOLLOWING HOWARD COUNTY SURVEY CONTROL STATIONS:

NO.	NORTH	EAST
0020	543170.96	1343822.16
4113	544492.88	1344177.82
41EA	544825.81	1339217.44
41EB	546222.26	1337778.18

VERTICAL CONTROL

ELEVATIONS SHOWN HEREON ARE REFERRED TO THE NATIONAL GEODETIC VERTICAL DATUM (NVD29) WITH LOCAL REFERENCE TO HOWARD COUNTY SURVEY CONTROL STATIONS:

NO.	ELEVATION
0020	403.62
4113	391.65
41EA	407.73



Overall Property Outline

Scale: 1" = 200'

NORTH

Site Analysis Data Chart

1. General Site Data
   a. Present Zoning: PEC
   b. Applicable DPZ File References: BA 96-31 E, WP97-21, PB 190, VP 86-64, WP98-37 WP 91-93, ZB 802 & 767, S 86-47, FDP #1, SDP 88-197, SDP 89-88, WP 98-12, F-98-45, SDP98-11 F99-191.
   c. Proposed Use of Site or Structure(s): UNDETERMINED – MASS GRADING ONLY
   d. Proposed Water and Sewer Systems: X Public –
   e. Water and Sewer contract number 34-3654D

2. Area Tabulation
   a. Total Project Area: ± 39.068 Acres (Indicate by Section and Area As Shown on Final Plat or As Shown on Deed)
   b. Net Area of Site: 39.068 Acres (Indicate by Section and Area As Shown on Final Plat)
   c. Area of This Plan Submission: 39.068 Acres
   d. Limit of Disturbed Area: 38.20 Acres
   e. Building Coverage of Site: N/A Acres and 0 % of Gross Area (Proposed)

4. Open Space Data: N /A

5. Parking Space Data N /A

General Notes

1. All construction shall be performed in accordance with the latest standards and specifications of Howard County, plus MSHA standards and specifications if applicable or as specified.

2. Approximate location of existing utilities are based solely on available records. Contractor shall verify the location of any utilities which may be impacted by the work. The contractor shall take all necessary precautions to protect the existing utilities and maintain uninterrupted service. Any damage incurred due to contractors operation shall be repaired immediately at the contractor's expense.

3. The contractor shall test pit existing utilities at least five (5) days before starting work shown on these drawings to verify their location and elevation. The contractor shall notify the engineer immediately if location of utilities is other than shown.

4. The contractor shall notify 'Miss Utility' at 1-800-257-7777 at least 48 hours prior to any excavation work being done, and shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.

5. Any damage caused by the Contractor to existing public right-of-way, existing paving, existing curb and gutter, existing utilities, etc. shall be repaired at the Contractors expense.

6. Topography derived from aerial photogrammetry by Photogrammetric Data Services in June 1986. Stream crossing sections field run by DMW in May, 1997.

7. All hydraulic data is for the 10-year storm unless otherwise noted.

8. The subsurface exploration and geotechnical engineering analysis for this project was made by Hillis Carnes, Inc. on February, 1999.

9. All fill areas shall be compacted to a minimum of 95% of the maximum dry density as determined and verified in accordance with AASHTO T-180.

10. The coordinates shown hereon are based upon the Howard County geodetic control which is based upon the NAD83 Maryland Coordination System. Howard County monument nos. 0020, 4113, 41EA, 41EB were used for this project (See Location Map).

11. Storm water management quantity and quality is provided by wetland pond system.

12. 100 year floodplain limits per DMW floodplain study. Wetland delineation on Jan. 29, 1988 by Environs: jurisdictional determination reconfirmed by Corps of Engineers in April 1996.

13. There are no known cemeteries or burial grounds on this site.

14. No traffic study is required for this project.

15. Electric, gas, cable and telephone lines designed by others.

16. WP98.12 granted on 8-22-97 for deferral of landscaping requirements to Final and/or Site Development Plans and for waiver of Sketch & Preliminary Plan for initial stage of subdivision.

7-29-99
Date

STATE OF MARYLAND — PROFESSIONAL ENGINEER — No. 10551

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 8/10/99 DATE

DIRECTOR — 8/11/99 DATE

Date	No.	Revision Description
8-18-99	1	REVISED TITLE BLOCK AND PARCELS, AND MONTPELIER ROAD CUL-DE-SAC.

Montpelier
PARCELS E-1, G-1, G-2.
Research Park
HOWARD COUNTY MARYLAND

OWNER/DEVELOPER: HOPKINS ROAD LIMITED PARTNERSHIP
9030 RED BRANCH ROAD, SUITE 200 COLUMBIA, MD 21045

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue, Towson, Maryland 21286, 410 296 3333, Fax 296 4705

SUBDIVISION NAME	SECTION/AREA	PARCEL #
Montpelier		E1, G-1, G-2.

PLAT#	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
13229-13234	17	PEC	41	5th	6051.02

WATER CODE	SEWER CODE
E 21	6440000

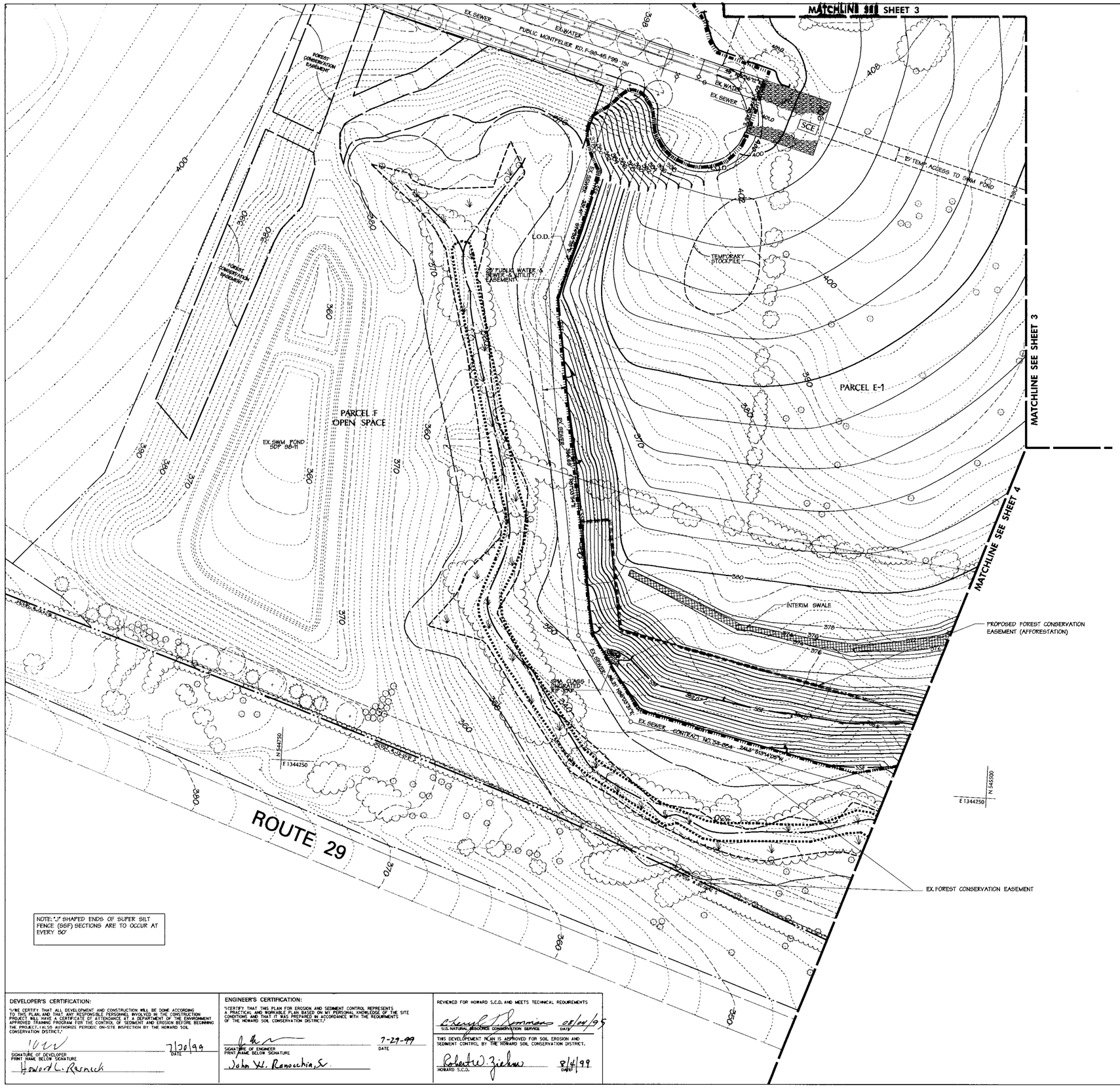
TITLE

COVER SHEET

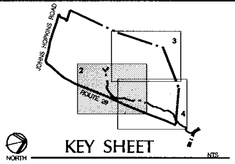
Des By: ADL	Scale: As Shown	Proj. No. 941717B
Drn By: ADL	Date: 7-6-99	1 OF 16
Chk By:	Approved:	

SDP 99-92

Thu Jul 29 17:50:08 1999 n:\941717b\parcel.dwg only\941717b.tsl



NOTE: "J" SHAPED ENDS OF SUPER SILT FENCE (SSF) SECTIONS ARE TO OCCUR AT EVERY 50'



LEGEND

SYMBOL	DESCRIPTION
	STREAM
SSF	SUPER SILT FENCE
	EXISTING CONTOURS
	EXISTING TREES/ TREE LINE
	WETLAND/STREAM BUFFER
	WETLAND
400	PROPOSED CONTOURS
	FLOODPLAIN
	LIMIT OF DISTURBANCE
25'	EXISTING 25' WIDE UTILITY EASEMENT
SF	SILT FENCE
SCE	
	EROSION CONTROL MATTING

DEVELOPER'S CERTIFICATION:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 7/26/99
PRINT NAME BELOW SIGNATURE
Howard L. Rasnick

ENGINEER'S CERTIFICATION:

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

SIGNATURE OF ENGINEER — DATE 7-29-99
PRINT NAME BELOW SIGNATURE
John W. Ranocchia, Sr.

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

U.S. NATURAL RESOURCES CONSERVATION SERVICE — DATE 08/04/99

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

Robert W. Jichus — 8/4/99
HOWARD S.C.D. — DATE

7-29-99
Date

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/16/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/6/99

DIRECTOR — DATE 8/11/99

Date	No.	Revision Description
8-18-99	1	REVISED TITLE BLOCK, PARCEL DESIGNATIONS AND MONTPELIER RD. R.O.W. & GRADING

Montpelier

PARCELS E-1, G-1, G-2

Research Park

HOWARD COUNTY MARYLAND

OWNER/DEVELOPER: HOPKINS ROAD LIMITED PARTNERSHIP
9030 RED BRANCH ROAD, SUITE 200 COLUMBIA, MD 21045

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue, Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME		SECTION/AREA		PARCEL #
Montpelier				E-1, G-1, G-2
PLAT#	BLOCK # / ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
13229-13234	17 / PEC	41	5th	6051.02
WATER CODE		SEWER CODE		
E 21		6440000		

TITLE

SE SITE GRADING & SEDIMENT & EROSION CONTROL

Des By: ZAL	Scale: 1" = 50'	Proj. No. 941717B	
Drn By: ADL	Date: 7-6-99	2 OF 16	
Chk By:	Approved:		

SDP 99-92

Thu Jul 29 15:05:25 1999 m:\941717\figures\ site only\941717b.dwg

EXISTING PIPE OUTLET SEDIMENT TRAP PER SDP-98-11 TO REMAIN DURING INITIAL GRADING. TRAP TO BE REMOVED FOR MASS GRADING WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR, AFTER DRAINAGE AREA TO IT HAS BEEN STABILIZED.

NOTE: "J" SHAPED ENDS OF SUPER SILT FENCE (SSF) SECTIONS ARE TO OCCUR AT EVERY 50'

INSPECTION SCHEDULE

1. Prior notification shall be given to the engineer so that inspections may be made at the following stages:
   - (1) Upon completion of excavation to subfoundation and where required, installation of structural supports or reinforcement for structures, including but not limited to:
     - (i) Core trenches for structural embankments
     - (ii) Inlet-outlet structures and anti-seep structures, watertight connectors on pipes and
     - (iii) Trenches for enclosed storm drainage facilities.
   - (2) During placement of structural fill, reinforcing and concrete, and installation of piping and catch basins
   - (3) During backfill of foundations and trenches
   - (4) During embankment construction and
   - (5) Upon completion of final grading and establishment of permanent stabilization.

   No work shall proceed until the engineer inspects and approves the work previously completed.
2. Geotechnical compaction testing of the facility embankment is required. Certification must be provided to the designated engineer in charge of the as-built.
3. A copy of all material supply tickets must be given to the designated engineer in charge of the as-built.

MAINTENANCE SCHEDULE

1. The facility shall be inspected twice annually, March and September, in accordance with the checklist and requirements contained within USDA, SCS "Standards and Specifications for Ponds" (MD-378). The pond owner(s) and any heirs, successors, or assigns shall be responsible for the safety of the pond and the continued operation, surveillance, inspection, and maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.
2. Vegetated cover shall be maintained at all times.
3. Rills on the slopes of the dam and washed in the earth spillway shall be filled with suitable material and thoroughly compacted. These areas shall be reseeded or resodded, limed, and fertilized as needed.
4. All appurtenances shall be kept free of trash.
5. Sediment shall be remove from forebays when the depth exceeds 1'
6. Trash and debris shall be removed as necessary
7. Vegetation on embankment and access bench shall not exceed 18" in height.

ESC TRAP TABLE

TRAP NUMBER		1
TRAP TYPE		P.O.S.T.
EXISTING DRAINAGE AREA AC.		3.90
INTERIM DRAINAGE AREA AC.		N/A
PROPOSED DRAINAGE AREA AC.		3.90
STORAGE REQUIRED C.F.	WET	7,020
	DRY	7,020
	TOTAL	14,040
STORAGE PROVIDED C.F.	WET	8,640
	DRY	8,640
	TOTAL	17,280
EXISTING GROUND ELEV.		396.00
TOP EMBANKMENT ELEV.		396.00
RISER CREST ELEV.		394.85
WET STORAGE /OUTLET ELEV.		393.64
CLEANOUT ELEV.		392.82
BOTTOM ELEV.		392.00
DEPTH OF CHANNEL		N/A
OUTLET WIDTH		N/A
BOTTOM DIMENSION		167' X 43'
TRAP SIDE SLOPES		2 : 1
TRAP DEPTH	WET	1.64
	DRY	1.21
	TOTAL	2.85
BARREL DIAMETER		21"
RISER DIAMETER		27"
WET STORAGE ZONE ELEV.	392.00 – 393.64	
DRY STORAGE ZONE ELEV.	393.64 – 394.85	
DIMENSION FROM CLEANOUT ELEV. TO RISER TOP		2.6'
START PERFORATIONS AT ELEVATION		393.64

SUMMARY TABLE FOR BASIN #7

BASIN NUMBER		1
EXISTING DRAINAGE AREA AC.		8.7
INTERIM DRAINAGE AREA AC.		27.3
PROPOSED DRAINAGE AREA AC.		29.5
STORAGE REQUIRED C.F.	WET	49,140
	DRY	49,140
	TOTAL	98,280
@ ELEV. 337.0	WET	108,543
STORAGE PROVIDED C.F.	DRY	142,488
	TOTAL	251,031
EXISTING GROUND ELEV.		340.0
TOP EMBANKMENT ELEV.		344.3
RISER CREST ELEV.		339.4
WET STORAGE / ELEV.		337.0
CLEANOUT ELEV.		334.66
BOTTOM ELEV.		332.5
Q INTO BASIN C.F.S. 10YR		144.01
Q OUT BARREL C.F.S. 10YR		12.33
BASIN DEPTH	WET	4.5
	DRY	2.4
	TOTAL	6.9
DESIGN HIGHWATER 100 yr. Clogged		342.26
FREEBOARD PROVIDED		2.0'
BASIN SIDE SLOPES		3:1
BARREL DIAMETER		48"
RISER DIMENSIONS		6X6
WET STORAGE ZONE ELEV.	332.5-337.0	
DRY STORAGE ZONE ELEV.	337-339.4	
BOTTOM DIMENSION	AS SHOWN	
DIMENSION FROM CLEANOUT ELEV. TO RISER TOP	7.94'	
START PERFORATIONS AT ELEVATION	337.0	

DESIGN FLOW SUMMARY

TRAP 1/STUDY POINT 2	2 YEAR
EXISTING PEAK (CFS)	1.28
PROPOSED PEAK (CFS)	0.37

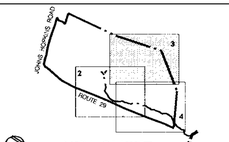
DESIGN FLOW SUMMARY

BASIN 1/STUDY POINT 4	2 YEAR	10 YEAR	100 YEAR
PROPOSED INFLOW (CFS)	83.77	144.01	209.67
EX. @ STUDY PT#4	2.40	12.20	27.11
PROPOSED OUTFLOW (CFS) @ STUDY PT. #4	1.98	10.05	67.29
WATER SURFACE ELEVATION (FT.)	339.30	340.56	341.52

NOTE:
IF UNSUITABLE PERVIOUS MATERIAL IS ENCOUNTERED AT TIME OF CUTOFF TRENCH INSTALLATION DEEPER THAN 4 FEET, IT WILL BE NECESSARY TO EXTEND THE CUTOFF TRENCH DOWN UNTIL SUITABLE MATERIAL IS ENCOUNTERED AS DETERMINED BY A GEOTECHNICAL ENGINEER. FILL MATERIAL FOR THE CUTOFF TRENCH AND IMPERVIOUS CORE SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL ENGINEER.

NOTE:
STORMWATER MANAGEMENT FACILITY SHALL BE PRIVATELY MAINTAINED BY HOA.

NOTE:
NO WOODY VEGETATION ALLOWED WITHIN 20' OF EMBANKMENT



KEY SHEET

NORTH NTS

LEGEND

SYMBOL	DESCRIPTION
	STREAM
SSF	SUPER SILT FENCE
	EXISTING CONTOURS
	EXISTING TREES/ TREE LINE
	WETLAND/STREAM BUFFER
	WETLAND
400	PROPOSED CONTOURS
	FLOODPLAIN
	LIMIT OF DISTURBANCE
25'	EXISTING 25' WIDE UTILITY EASEMENT
	SOIL BORING
	GMIP
	EROSION CONTROL MATTING

7-29-99
Date

STATE OF MARYLAND — JOHN W. RANCONETTA — No. 12557 — PROFESSIONAL ENGINEER

Professional Engr. No. 12557

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/11/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/11/99

DIRECTOR — DATE 8/11/99

Date	No.	Revision Description
8-18-99	1	REV. TITLE BLOCK, PARCEL DESIGNATIONS

Montpelier

PARCELS E-1, G-1, G-2

Research Park

HOWARD COUNTY MARYLAND

OWNER/DEVELOPER: HOPKINS ROAD LIMITED PARTNERSHIP
9030 RED BRANCH ROAD, SUITE 200 COLUMBIA, MD 21045

DMW
Daft - McCune - Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME	SECTION/AREA		PARCEL #
Montpelier			E-1, G-1, G-2
PLAT# 13229-13234	BLOCK # 17	ZONE PEC	TAX/ZONE MAP 41
ELECT. DISTRICT 5th	CENSUS TRACT 6051.02		
WATER CODE E 21	SEWER CODE 6440000		

TITLE
NW SITE GRADING, SEDIMENT & EROSION CONTROL PLAN

Des By: ZAL	Scale: 1" = 50'	Proj. No. 941717B	
Drn By: ADL	Date: 7-6-99	3	OF 16
Chk By:	Approved:		

SDP 99-92

Thu Jul 29 17:40:27 1999 R:\941717\Parcel.e&g only\941717b.dwt

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE — DATE 08/04/99

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: HOWARD SOIL CONSERVATION DISTRICT — DATE 8/4/99

PLAN NUMBER:

DEVELOPERS 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 ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF DEVELOPER — DATE 7/26/99
PRINT NAME BELOW SIGNATURE
Howard L. Roesnick

ENGINEERS CERTIFICATE:

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I/WE ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT. I/WE SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

SIGNATURE OF ENGINEER — DATE 7-29-99
PRINT NAME BELOW SIGNATURE
John W. Rancochia, Sr.

MATCHLINE SEE SHEET 2

MATCHLINE SEE SHEET 4

MATCHLINE SEE SHEET 2

NORTH

Johns Hopkins University Applied Physics Laboratory 40078/25 P 289

MATCHLINE SEE SHEET 3

MATCHLINE SEE SHEET 2

E 1344000
N 545550

PARCEL E

TEMPORARY STOCKPILE

TEMP. CULVERT CULVERT CROSSING 1 35 LF 27" CMP

INTERIM SWALE

EXISTING FOREST CONSERVATION EASEMENT

MAXIMUM DA TO PSD 3.3 AC.

MAXIMUM DA TO PSD 3.3 AC

SHA CL1 UNGROUTED RIP-RAP

EX. FOREST CONS. EASEMENT

NOTE: FILL TO BE PLACED TO DRAIN TO SWALE WHERE POSSIBLE

PARCEL G

Parcel G2

TRAP 0F SIZE 82'42'4' DEEP TO BE MAINTAINED AT THE END 0F EACH WORKING DAY BEHIND PIPE SLOPE.

ED A-3

NOTE: PSD 8 EARTH DIKE TO REMAIN UNTIL PERMANENT SD DIRECTS FLOW TO THE SWM FACILITY ADJUST PIPE SLOPE DRAIN TO MATCH FILL.

JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY 400 /0625 P 289

PARCEL F OPEN SPACE

E 1344250
N 545750

Parcel G2

NOTE: SUPER SILT FENCE ALONG PROPERTY LINE (3 CURLS TO BE PLACED @ 50' INTERVALS BEFORE FILL IS PLACED.

SEE FILL SLOPE CONSTRUCTION DETAIL SHEET 6 FOR PLACEMENT AND PSD.

EX FOREST CONSERVATION EASEMENT

NOTE: SUPER SILT FENCE 3 CURLS TO BE PLACED BEFORE FILL HAS BEEN INSTALLED

9" RENO MATTRESS 12' WIDE SLOPE PROTECTION 4"-7" STONE

5' SHA CL1 UNGROUTED RIP RAP @ TOE OF MATTRESS (SEE DETAIL)

SHA CL1 UNGROUTED RIP-RAP

PROPOSED FOREST CONSERVATION EASEMENT (AFFORESTATION).

NOTE: ADD SUPER SILT FENCE ALONG BACKS OF BENCHES 3 CURL UPS EVERY 100'

9" RENO MATTRESS 12' WIDE SLOPE PROTECTION 4"-7" STONE

PROPOSED 20' PRIVATE SHC EASEMENT

EX 25' SEWER & UTILITY EASEMENT

ROUTE 29

N 545500
E 1344750

NOTE: "J" SHAPED ENDS OF SUPER SILT FENCE (SSF) SECTIONS ARE TO OCCUR AT EVERY 50'

NORTH

KEY SHEET

LEGEND

SYMBOL	DESCRIPTION
	STREAM
SSF	SUPER SILT FENCE
	EXISTING CONTOURS
	EXISTING TREES/ TREE LINE
	WETLAND/STREAM BUFFER
	WETLAND
400	PROPOSED CONTOURS
	FLOODPLAIN
	LIMIT OF DISTURBANCE
25'	EXISTING 25' WIDE UTILITY EASEMENT
SF	SF SILT FENCE
	EROSION CONTROL MATTING
	MAXIMUM DRAINAGE AREA.
	EARTH DIKE A-3
	EROSION CONTROL MATTING.

DEVELOPER'S CERTIFICATION:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL MAKE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 7/30/99
PRINT NAME BELOW SIGNATURE
Howard L. Resnick

ENGINEER'S CERTIFICATION:

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

SIGNATURE OF ENGINEER — DATE 7-29-99
PRINT NAME BELOW SIGNATURE
John W. Ranocchia, Sr.

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 08/04/99

THIS DEVELOPEMENT PLAN IS RECOMMENDED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD S.C.D. — DATE 8/4/99

7-29-99
Date

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/5/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/16/99

DIRECTOR — DATE 8/11/99

Date	No.	Revision Description
8-18-99	1	REVISE TITLE BLOCK AND PARCEL G-2 GRADING AND SEDIMENT AND EROSION CONTROLS.

Montpelier

PARCELS E-1, G-1, G-2

Research Park

HOWARD COUNTY MARYLAND

OWNER/DEVELOPER: HOPKINS ROAD LIMITED PARTNERSHIP
9030 RED BRANCH ROAD, SUITE 200 COLUMBIA, MD 21045

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue, Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME	SECTION/AREA			PARCEL #
Montpelier				E-1, G-1, G-2
PLAT #	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
13229-13234	17	PEC	41	5th	6051.02
WATER CODE			SEWER CODE	
E 21			6440000	

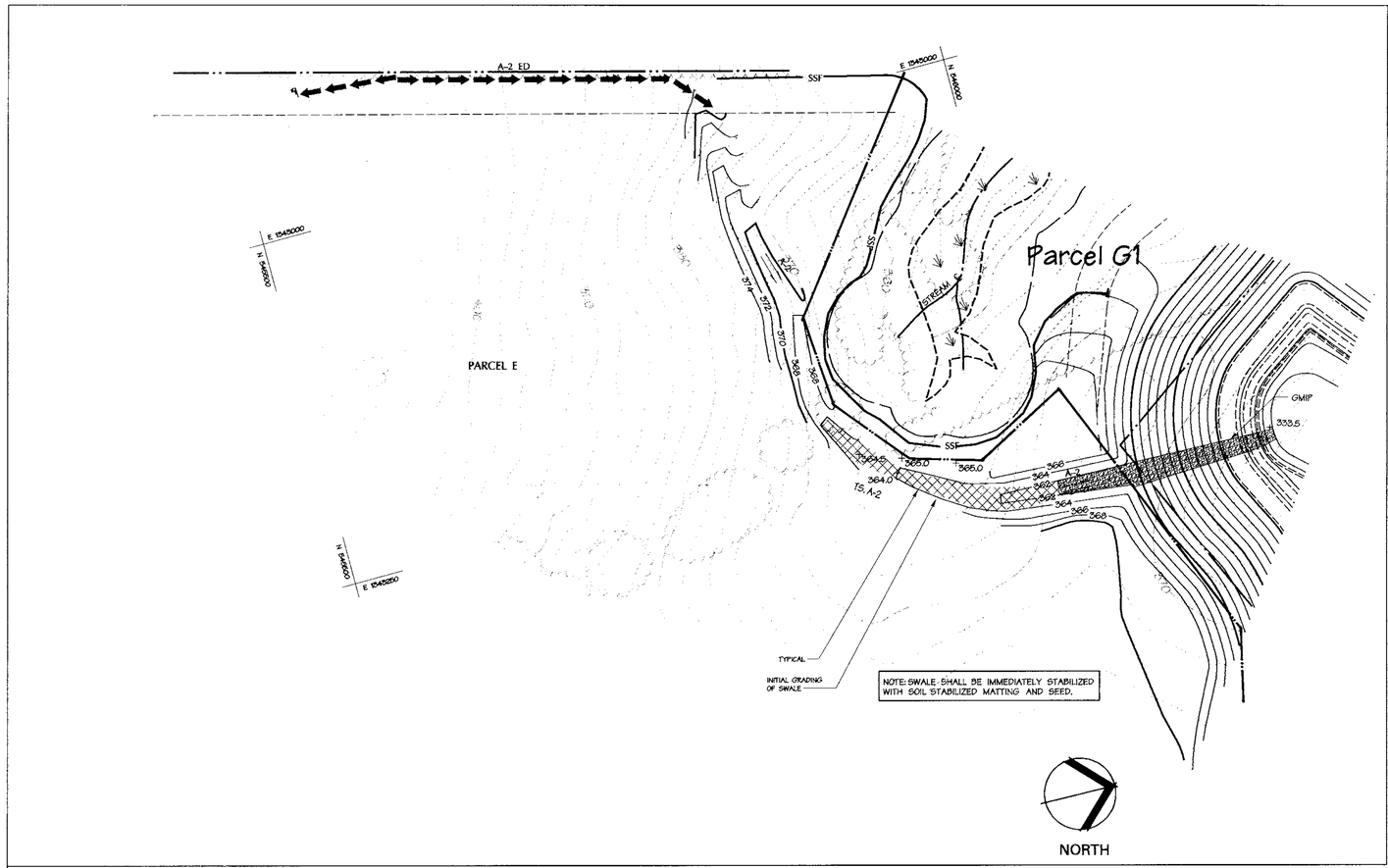
TITLE

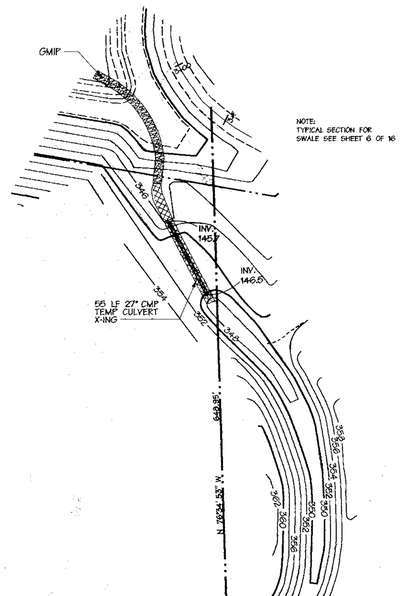
NE SITE GRADING & SEDIMENT & EROSION CONTROL PLAN

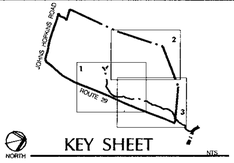
Des By: ZAL	Scale: 1" = 50'	Proj. No. 941717B
Drn By: ADL	Date: 7-6-99	4 OF 16
Chk By:	Approved:	

SDP 99-92

Thu Jul 29 17:29:27 1999 n:\941717\parcel.dgn orb\941717.mw2

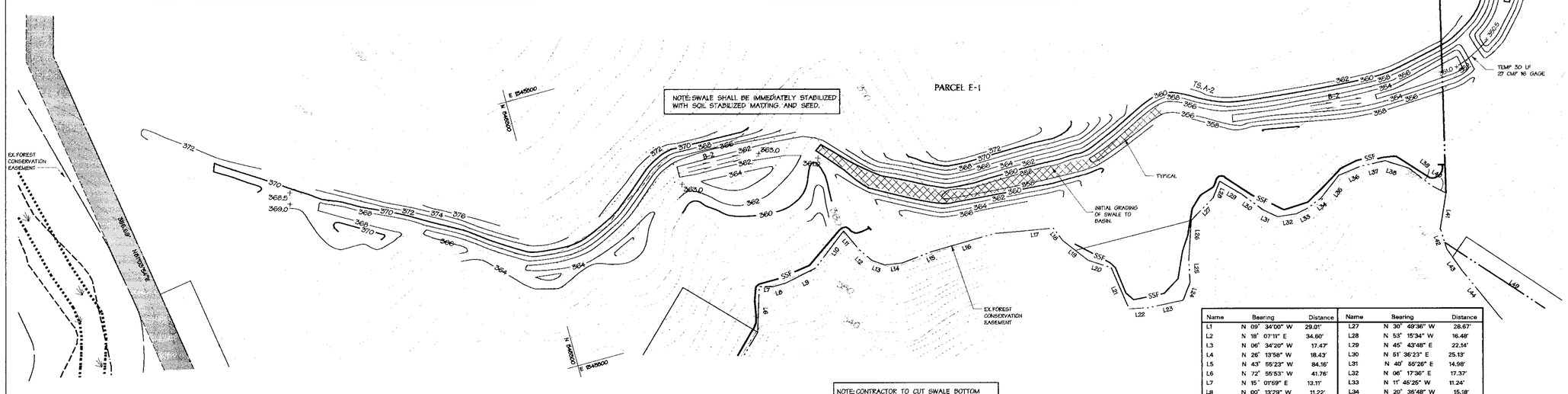






LEGEND

SYMBOL	DESCRIPTION
	STREAM
	EXISTING CONTOURS
	EXISTING TREES/ TREE LINE
	WETLAND/STREAM BUFFER
	WETLAND
400	PROPOSED CONTOURS
	A-2 DIKE
	GMIP
	TS A-2 -- TEMPORARY SWALE
	EROSION CONTROL MATTING



Name	Bearing	Distance	Name	Bearing	Distance
L1	N 09° 34'00" W	29.01'	L27	N 30° 49'36" W	28.67'
L2	N 18° 07'11" E	34.60'	L28	N 53° 15'34" W	16.48'
L3	N 06° 34'20" W	17.47'	L29	N 45° 43'48" E	22.14'
L4	N 26° 13'58" W	18.43'	L30	N 51° 36'23" E	25.13'
L5	N 43° 55'23" W	84.16'	L31	N 40° 55'26" E	14.98'
L6	N 72° 55'53" W	41.76'	L32	N 06° 17'36" E	17.37'
L7	N 15° 01'59" E	13.11'	L33	N 11° 46'25" W	11.24'
L8	N 00° 13'29" W	11.22'	L34	N 20° 36'48" W	15.18'
L9	N 11° 27'39" W	31.15'	L35	N 36° 48'21" W	27.06'
L10	N 37° 42'02" W	42.36'	L36	N 07° 31'16" W	22.28'
L11	N 65° 44'42" E	22.41'	L37	N 02° 34'26" E	22.00'
L12	N 54° 59'27" E	15.07'	L38	N 32° 32'01" E	22.77'
L13	N 35° 25'17" E	12.38'	L39	N 53° 23'16" E	25.61'
L14	N 08° 24'29" E	16.39'	L40	N 42° 52'00" E	15.65'
L15	N 05° 49'14" W	28.35'	L41	S 65° 35'24" E	21.88'
L16	N 00° 54'58" W	59.86'	L42	N 87° 55'55" E	20.20'
L17	N 09° 57'45" E	54.34'	L43	N 70° 11'39" E	23.71'
L18	N 68° 33'54" E	14.81'	L44	N 66° 08'18" E	54.04'
L19	N 53° 14'37" E	28.54'	L45	N 60° 11'33" E	38.42'
L20	N 33° 32'29" E	22.86'	L46	N 50° 50'19" E	39.48'
L21	N 81° 53'55" E	41.04'	L47	N 39° 58'58" E	23.69'
L22	N 11° 52'02" E	17.46'	L48	N 30° 50'28" E	24.21'
L23	N 03° 11'04" E	32.65'	L49	N 48° 42'53" E	133.40'
L24	N 53° 41'44" W	17.59'	L50	S 01° 45'00" W	264.56'
L25	N 77° 57'51" W	20.79'	L51	N 73° 00'22" W	272.89'
L26	N 70° 59'12" W	36.24'	L52	N 25° 14'12" E	316.44'
			L53	S 78° 32'54" E	212.07'

DEVELOPER'S CERTIFICATION:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 7/26/99
PRINT NAME BELOW SIGNATURE
Howard L. Rasnick

ENGINEER'S CERTIFICATION:

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

SIGNATURE OF ENGINEER — DATE 7-29-99
PRINT NAME BELOW SIGNATURE
John W. Ranovchia, Jr.

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS
U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 08/04/99

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD S.C.D. — DATE 8/4/99

STATE OF MARYLAND — JOHN W. RANOVCHIA, JR. — No. 10951 — REGISTERED PROFESSIONAL ENGINEER

NORTH

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/16/99
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/16/99
DIRECTOR — DATE 8/11/99

Date	No.	Revision Description
8-18-99	1	REV. TITLE BLOCK, PARCEL DESIGNATIONS.

Montpelier

PARCELS E-1, G-1, G-2

Research Park

HOWARD COUNTY MARYLAND

OWNER/DEVELOPER: HOPKINS ROAD LIMITED PARTNERSHIP
9030 RED BRANCH ROAD, SUITE 200 COLUMBIA, MD 21045

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME	SECTION/AREA		PARCEL #
Montpelier			E-1, G-1, G-2
PLAT #	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
13229-13234	17	PEC	41	5th	6051.02
WATER CODE	SEWER CODE				
E 21	6440000				

TITLE

PHASE 1 SEDIMENT & EROSION CONTROL

Des By: ZAL	Scale: 1" = 50'	Proj. No. 941717B
Drn By: ADL	Date: 7-6-99	5 OF 16
Chk By:	Approved:	

SDP 99-92

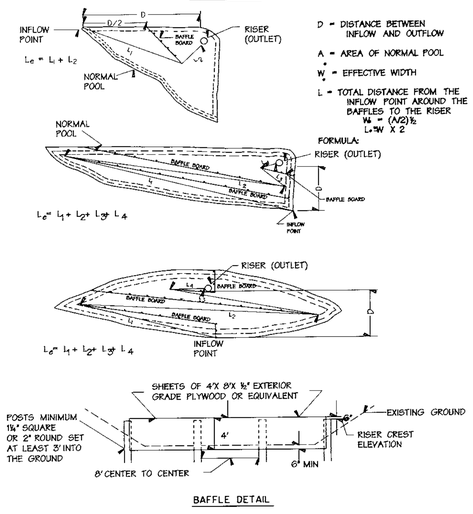
Thu Jul 29 17:50:44 1999 n:\941717b\parcel.e&g only\941717b.dwg

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT. _____ 7 DAYS
2. CONSTRUCT PROPOSED SWM POND/ SEDIMENT BASIN. INSTALL SUPER SILT FENCE ALONG WEST SIDE OF THE SITE AND BELOW BASIN, AND CLEAN OUT EXISTING SEDIMENT TRAP. _____ 90 DAYS
3. INSTALL SWALE IN ACCORDANCE WITH PHASE I SEDIMENT CONTROL PLAN SHEET 5 AND IMMEDIATELY STABILIZE. _____ 14 DAYS
4. INSTALL REMAINING SEDIMENT CONTROL MEASURES. _____ 14 DAYS
5. CLEAR AND MASS GRADE SITE. FILL SLOPES ALONG EASTERN PORTION OF SITE _____ 30 DAYS
6. AFTER SITE HAS BEEN MASS GRADED AND SEEDED, CONSTRUCT INTERIM SWALE AND IMMEDIATELY STABILIZE. ADJUST GMP AS NECESSARY TO MEET INTERIM SWALE. _____ 14 DAYS
7. UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTION CONVERT SEDIMENT BASIN TO SWM POND AND REMOVE SEDIMENT CONTROL MEASURES. _____ 3 DAYS

NOTE: UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE EXISTING TRAP AND INSTALL SILT FENCE UNTIL AREA IS STABILIZED.

Sequence of Construction



BAFFLE DETAIL

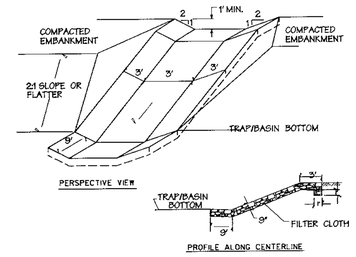
Sediment Trap & Basin Baffles

Not to Scale

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

C - 10 - 28

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION



Construction Specifications

1. Gabion inflow protection shall be constructed of 9' x 3' x 3' gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.
2. Geotextile Class C shall be installed under all gabion baskets.
3. The stone used to fill the gabion baskets shall be 4" - 7".
4. Gabions shall be installed in accordance with manufacturers recommendations.
5. Gabion inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

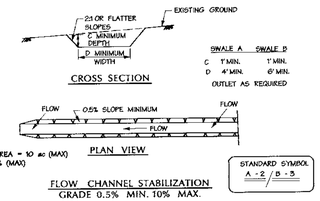
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

D - 7 - 2

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

Gabion Inflow Protection

Not to Scale



FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX.

1. SEED AND COVER WITH STRAW MULCH.
2. SEED AND COVER WITH EROSION CONTROL MATTING OR LINE WITH SOD.
3. 4"-7" STONE OR RECYCLED CONCRETE EQUIVALENT PRESSED INTO SOIL IN A MINIMUM 7" LAYER.

CONSTRUCTION SPECIFICATIONS

1. ALL TEMPORARY SWALES SHALL HAVE UNINTERRUPTED POSITIVE GRADE TO AN OUTLET. SPOT ELEVATIONS MAY BE NECESSARY FOR GRADES LESS THAN 1%
2. RUNOFF DIVERTED FROM A DISTURBED AREA SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE.
3. RUNOFF DIVERTED FROM AN UNDISTURBED AREA SHALL OUTLET DIRECTLY INTO AN UNDISTURBED STABILIZED AREA AT A NON-EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONAL MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE SWALE.
5. THE SWALE 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.
6. FILL IF NECESSARY, SHALL BE COMPACTED BY EARTH MOVING EQUIPMENT.
7. ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE SWALE.
8. INSPECTION AND MAINTENANCE MUST BE PROVIDED PERIODICALLY AND AFTER EACH RAIN EVENT.

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

A - 2 - 4

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

Temporary Swale

Not to Scale

20.0 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

I. This practice is limited to areas having 2:1 or flatter slopes where:

a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.

b. 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.

c. The original soil to be vegetated contains material toxic to plant growth.

d. The soil is so acidic that treatment with limestone is not feasible.

II. 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

I. Topsoil salvaged from the existing site may be used 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-SCS in cooperation with Maryland Agricultural Experimental Station.

II. Topsoil Specifications - Soil to be used as topsoil must meet the following:

i. 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 mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slags, coarse fragments, gravel sticks, roots, trash, and other materials larger 1 1/2 inch in diameter.

ii. Topsoil must be free of plants or plant parts such as Bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.

iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 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 procedures.

ii. For sites having disturbed areas under 5 acres:

i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

iii. For sites having disturbed areas over 5 acres:

i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:

a. 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.

b. Organic contents of topsoil shall be not less than 1.5 percent by weight.

c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.

or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic 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.

ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization- Section I- Vegetative Stabilization Methods and Materials.

V. Topsoil Application

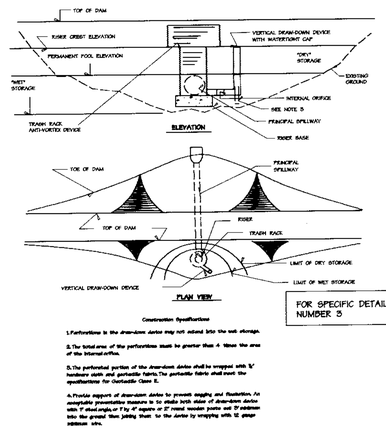
i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Stop Silt Fence and Sediment Traps and Basins.

ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.

iii. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding 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.

iv. 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.

Top Soil Specifications



FOR SPECIFIC DETAIL SEE SHEET OF 10 OF 10 NUMBER 3

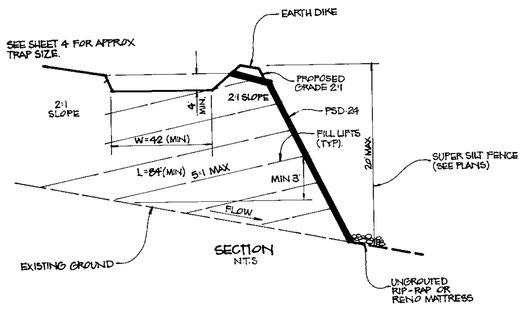
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

C-10-29

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

Basin Drawn Schematic Vertical Draw-Down Device

Not to Scale

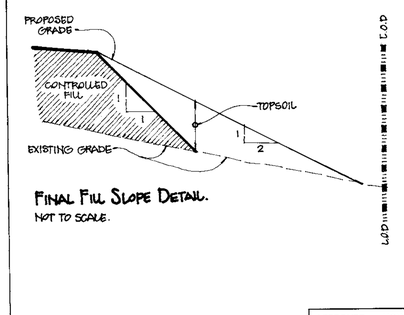


CONSTRUCTION SPECIFICATIONS

1. INSTALL SILT FENCE OR SUPER SILT FENCE.
2. PLACE FILL LIFTS
3. STABILIZE DOWNSTREAM FACE OF SLOPE IMMEDIATELY FOLLOWING COMPLETION OF FILL SLOPE.
4. PERIODIC INSPECTION & REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EA RAIN EVENT.
5. CONTRACTOR TO INSTALL CL. I UNGROUTED RIP RAP AND PIPE SLOPE DRAIN WHERE SHOWN ON PLAN TO DRAIN BENCHES AND PROTECT SLOPES. PIPE SLOPE DRAIN SHALL BE ADJUSTED AS FILL IS INCREASED.
6. AT THE END OF THE WORKING DAY DIRECT FLOW TO THE PSD.
7. SEE STD. G20-7.

FILL SLOPE CONSTRUCTION

NOT TO SCALE



FINAL FILL SLOPE DETAIL.
NOT TO SCALE.

DEVELOPER'S CERTIFICATION:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER
PRINT NAME BELOW SIGNATURE
Howard L. Rensch

7/20/99
DATE

ENGINEER'S CERTIFICATION:

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

SIGNATURE OF ENGINEER
PRINT NAME BELOW SIGNATURE
John W. Ranochia, Sr.

7-29-99
DATE

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 08/04/99

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

HOWARD S.C.D. — DATE 8/4/1999

7-29-99
Date

Professional Engr. No. 14551

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/3/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/10/99

DIRECTOR — DATE 8/11/99

Date	No.	Revision Description
8-10-99	1	REV. TITLE BLOCK AND ADDED DETAIL.

Montpelier

PARCELS E-1.G-1.G-2

Research Park

HOWARD COUNTY MARYLAND

OWNER/DEVELOPER: HOPKINS ROAD LIMITED PARTNERSHIP
9030 RED BRANCH ROAD, SUITE 200 COLUMBIA, MD 21045

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

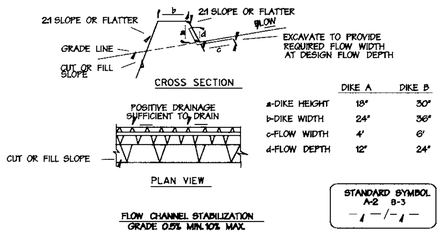
SUBDIVISION NAME: Montpelier		SECTION/AREA		PARCEL # E-1.G-1.G-2	
PLAT # 13229-13234	BLOCK # 17	ZONE PEC	TAX/ZONE MAP 41	ELECT. DISTRICT 5th	CENSUS TRACT 6051.02
WATER CODE E 21		SEWER CODE 6440000			

TITLE: SEDIMENT & EROSION CONTROL DETAILS

Des By: ZAL	Scale: 1" = 50'	Proj. No. 941717B	
Drn By: ADL	Date: 7-6-99	6	OF 16
Chk By:	Approved:		

SDP 99-92

Thu Jul 29 17:05:56 1999 m:\941717\plan\cal.obj only\941717b.exc



	DIKE A	DIKE B
a-DIKE HEIGHT	18"	30"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	12"	24"

STANDARD SYMBOL
A-2 B-3

FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX

1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
5. 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.
6. Fill shall be compacted by earth moving equipment.
7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
8. Inspection and maintenance must be provided periodically and after each rain event.

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

A - 1 - 6

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

Earth Dike

Not to Scale

1. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS PRIOR TO THE START OF ANY CONSTRUCTION (992-2457).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
   A. SEVEN CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1
   B. FOURTEEN DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL.1, CHAPTER 12, OF THE "HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR PERMANENT SEEDINGS, SOD, TEMPORARY SEEDING, AND MULCHING (SECTION G). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

TOTAL AREA OF SITE	39.088 ACRES
AREA DISTURBED	38.2 ACRES
AREA TO BE ROOFED OR PAVED	0 ACRES
AREA TO BE VEGETATIVELY STABILIZED	38.2 ACRES
TOTAL CUT	234,000 CUBIC YARDS
TOTAL FILL	234,000 CUBIC YARDS
OFF-SITE WASTE/BORROW AREA LOCATION	WASTE = NA

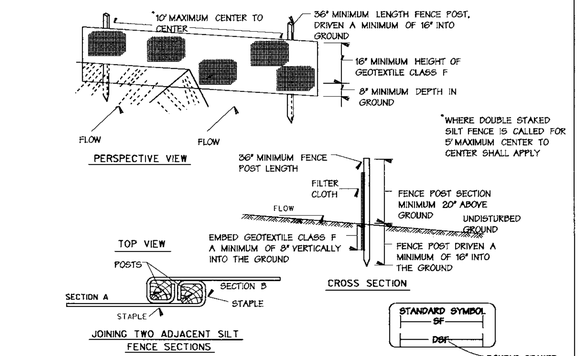
8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY DPW SEDIMENT CONTROL INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

E - 15 - 3

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

Howard County Sediment Control General Notes



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1½" x 1½" square (minimum) cut, or 1¾" 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 pond per linear foot.
2. 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/minute (max.)	Test: MSTM 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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

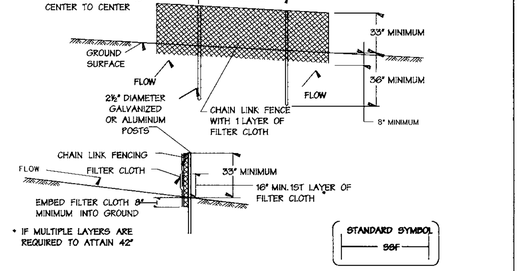
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

E - 15 - 3

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

Silt Fence

Not to Scale



Construction Specifications

1. Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway (SHA) Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
2. The posts do not need to be set in concrete.
3. Chain link fence shall be fastened securely to the fence posts with wire ties or staples. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence. The chain link fencing shall be six (6) guage or heavier.
4. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
5. Filter cloth shall be embedded a minimum of 8" into the ground.
6. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
7. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

H - 26 - 3

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

Super Silt Fence

Not to Scale

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:
1. PREFERRED - APPLY 2 TONS PER ACRES DOLOMITIC LIMESTONE (92 LBS/1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS/1000 SQ.FT.)
2. ACCEPTABLE - APPLY 2 TONS PER ACRES DOLOMITIC LIMESTONE (92 LBS/1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE (1.4 LBS/1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU JULY 31 SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (.05 LBS/1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY: OPTION (1) - 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) - USE SOD. OPTION (3) - SEED WITH 60 LBS/ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATIONS USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

MAINTENANCE - INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDING.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION - LOOSEN UPPER THREE INCHES OF SOIL BE RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

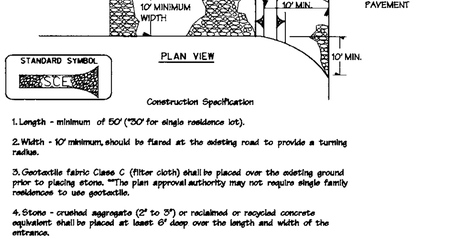
SOIL AMENDMENTS - APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.)

SEEDING - FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 15 OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ.FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ.FT.) OF UNROTTED WEED FREE SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FT. OR HIGHER, USE 348 GAL. PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

Temporary And Permanent Seeding Notes



Construction Specification

1. Length - minimum of 50' (*30' for single residence lot).
2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.
3. Geotextile fabric Class C (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.
4. 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.
5. 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.
6. 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.

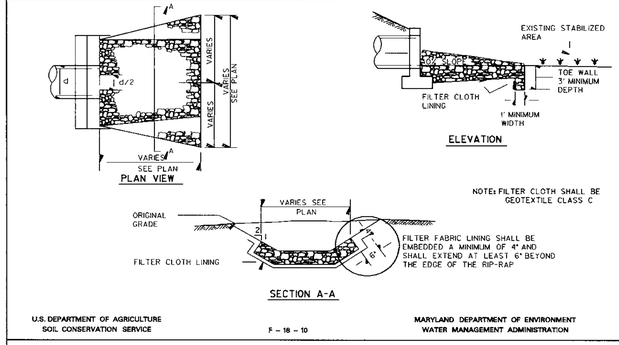
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

F - 17 - 3

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

Stabilized Construction Entrance

Not to Scale



U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

F - 18 - 10

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

Stone Outlet Protection III

NOT TO SCALE

Construction Specifications

1. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
3. Geotextile class C shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blankets or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

F - 18 - 8A, 9A, 10A

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

Stone Outlet Protection Specifications

DEVELOPER'S CERTIFICATION:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 7/30/99
PRINT NAME BELOW SIGNATURE
Howard C. Rernech

ENGINEER'S CERTIFICATION:

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

SIGNATURE OF ENGINEER — DATE 7-29-99
PRINT NAME BELOW SIGNATURE
John W. Ranacchio, Sr.

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 08/04/99

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

HOWARD S.C.D. — DATE 8/4/99

1-29-99
Date

STATE OF MARYLAND — JOHN W. RANACCHIO, SR. — No. 10551 — REGISTERED PROFESSIONAL ENGINEER

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/10/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/10/99

DIRECTOR — DATE 8/11/99

Date	No.	Revision Description
8-18-99	1	REV. TITLE BLOCK.

Montpelier
PARCELS E-1.G-1.G-2
Research Park
HOWARD COUNTY MARYLAND

OWNER/DEVELOPER: HOPKINS ROAD LIMITED PARTNERSHIP
9030 RED BRANCH ROAD, SUITE 200 COLUMBIA, MD 21045

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME: Montpelier		SECTION/AREA			PARCEL #: E-1.G-1.G-2
PLAT #	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
13229-13234	17	PEC	41	5th	6051.02
WATER CODE: E 21		SEWER CODE: 6440000			

TITLE: SEDIMENT & EROSION CONTROL DETAILS

Des By: ZAL	Scale: 1" = 50'	Proj. No. 941717B	
Drn By: ADL	Date: 7-6-99	7	OF 16
Chk By:	Approved:		

SDP 99-92

Thu Jul 29 10:10:45 1999 n:\941717\parcel.dwg cmj\941717b.sec

DUST CONTROL SPECIFICATIONS

TEMPORARY METHODS:

1. MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING.
2. VEGETATIVE COVER - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.
3. TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12 INCHES APART, SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
4. IRRIGATION - THIS IS GENERALLY DONE AS AN AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THE RUNOFF BEGINS TO FLOW.
5. BARRIERS - SOLID BOARD FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE AFFECTIVE IN CONTROLLING SOIL BLOWING.
6. CALCIUM CHLORIDE - APPLY AT A RATE THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.

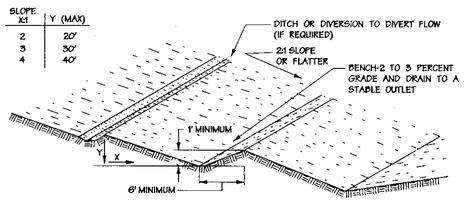
PERMANENT METHODS:

1. PERMANENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVER, AND PERMANENT STABILIZATION WITH SOD. EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
2. TOPSOILING - COVERING WITH LESS EROSIVE SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
3. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE — H - 50 - 1 — MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

Dust Control Specifications

Not To Scale



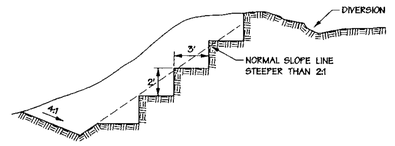
CONSTRUCTION SPECIFICATIONS

1. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE , SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC., SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
2. ALL FILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 8" IN THICKNESS.
3. EXCEPT FOR APPROVED LANDFILLS OF NONSTRUCTURAL FILLS, FILL MATERIAL SHALL BE FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
4. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL SLOPES OR STRUCTURAL FILLS. FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION.
5. ALL BENCHES SHALL BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
6. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVAL METHODS.
7. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE — F - 19 - 3 — MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

Benched Slopes

Not To Scale



TYPICAL SECTION

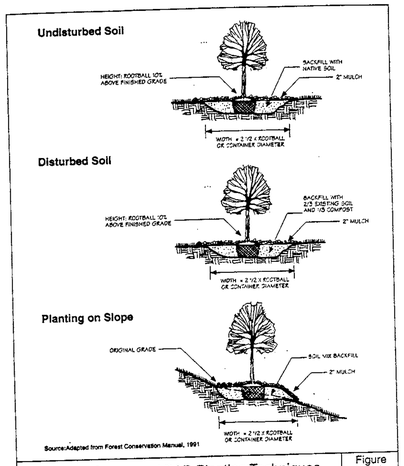
CONSTRUCTION SPECIFICATIONS

1. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC., SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
2. ALL FILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 8" IN THICKNESS.
3. EXCEPT FOR APPROVED LANDFILLS OR NONSTRUCTURAL FILLS, FILL MATERIAL SHALL BE FREE OF BRUSH, RUBBISH, ROCKS, LOGS, STUMPS, BUILDING DEBRIS AND OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
4. FROZEN MATERIAL OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILL SLOPES OR STRUCTURAL FILLS. FILL SHALL NOT BE PLACED ON A FROZEN FOUNDATION.
5. ALL BENCHES SHALL BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
6. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVAL METHODS.
7. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING THE FINISHED GRADING.

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE — F - 19 - 3A — MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

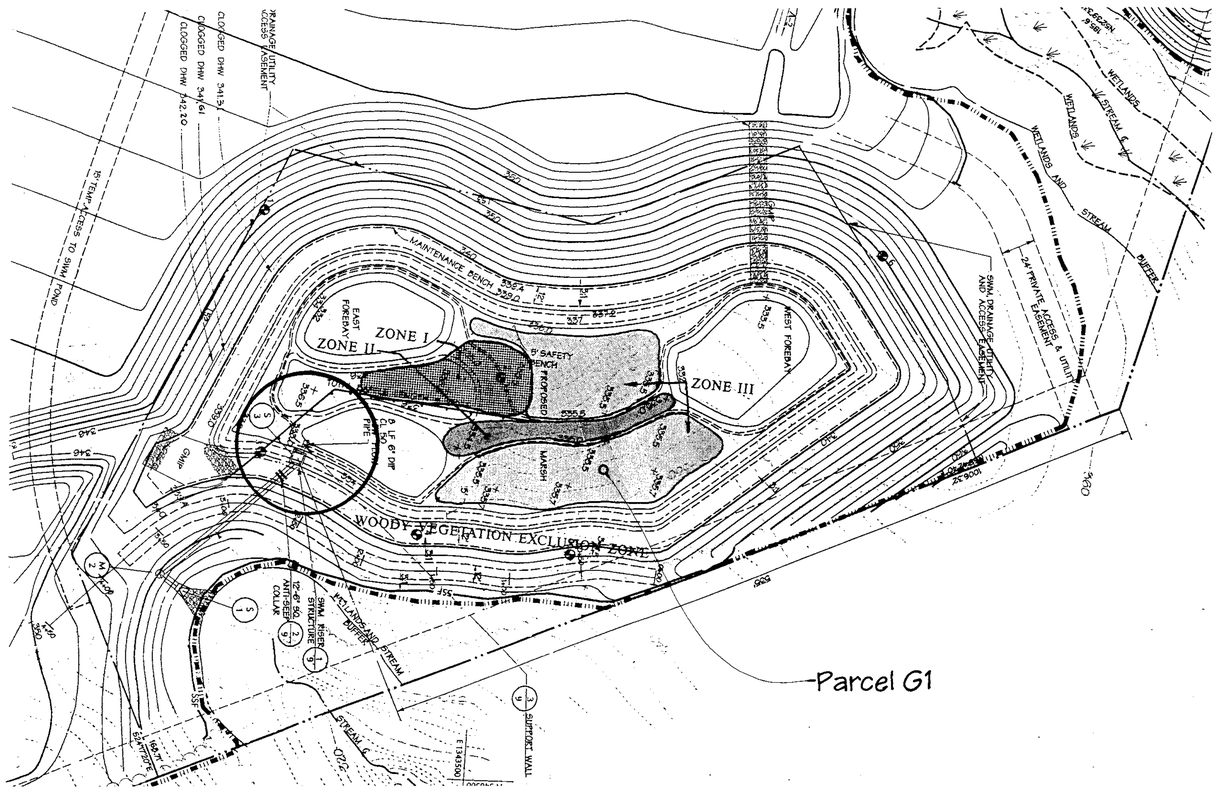
Serrated Slopes

Not To Scale



Source: Adapted from Forest Conservation Manual, 1991

Container Grown and B&B Planting Techniques — Figure C-16



Parcel G1

ZONE I- 3,900± s.f.

QUANTITY	COMMON NAME	BOTANICAL NAME	CONDITION	REMARKS	IND. STATUS
6	swamp white oak	*Quercus bicolor*	2 ½" - 3" caliper	11' o.c./random	FACW
6	river birch	*Betula nigra*	2 ½" - 3" caliper	11' o.c./random	FACW
15	highbush blueberry	*Vaccinium corymbosum*	24" tall cont. grown	6-8' o.c./random	FACW
15	smooth arrowwood	*Viburnum dentatum*	24" tall cont. grown	6-8' o.c./random	FAC
20	soft rush	*Juncus effusus*	1 qt. pot	5' o.c.	FACW

ZONE II- 2,400± s.f.

QUANTITY	COMMON NAME	BOTANICAL NAME	CONDITION	REMARKS	IND. STATUS
25	highbush blueberry	*Vaccinium corymbosum*	24" tall cont. grown	6-8' o.c./random	FACW
25	possom haw	*Viburnum nudum*	24" tall cont. grown	6-8' o.c./random	OBL
10	soft stem bulrush	*Scirpus validus*	1 qt. pot	6' o.c.	OBL
10	woolgrass	*Scirpus cyperinus*	1 qt. pot	6' o.c.	FACW

ZONE III- herbs only WETLAND AREA- 12,800 s.f.

QUANTITY	COMMON NAME	BOTANICAL NAME	CONDITION	REMARKS	IND. STATUS
30	soft stem bulrush	*Scirpus validus*	1 qt. pot	6' o.c.	OBL
30	woolgrass	*Scirpus cyperinus*	1 qt. pot	6' o.c.	FACW
30	bladder sedge	*Carex intumescens*	1 qt. pot	6' o.c.	FACW
30	lurid sedge	*Carex lurida*	1 qt. pot	6' o.c.	OBL
30	soft rush	*Juncus effusus*	1 qt. pot	6' o.c.	FACW

* Split plant material evenly between both Zone II areas and plant in a random fashion.

Note: Dormant rhizomes of herbaceous plant material may be used only if planted during the dormant season.

Growing bare root herbaceous plants may be used only if panted in the early part of the growing season (i.e. March 21- May 15).

Grid pattern to be avoided. Minimum spacing indicated as guideline only. Plants should be installed on a random "natural" arrangement. Herbaceous plant material may be clumped in groups of 5 to 7.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/3/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/18/99

DIRECTOR — DATE 8/16/99

Date	No.	Revision Description
8-18-99	1	REV. TITLE BLOCK AND PARCEL DESIGNATIONS.

Montpelier
Research Park
HOWARD COUNTY MARYLAND
PARCELS E-1, G-1, G-2

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue, Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME: Montpelier		SECTION/AREA	LOT/PARCEL #: E-1, G-1, G2
PLAT # OR L/F: 13249-13234	BLOCK #: 17	ZONE: PEC	TAX/ZONE MAP: 41
ELECT. DISTRICT: 5th	CENSUS TRACT: 6051.02		
WATER CODE: E 21	SEWER CODE: 6440000		

TITLE: SEDIMENT & EROSION CONTROL DETAILS

Des By: ZAL	Scale: 1" = 50'	Proj. No. 941717B	
Drn By: ADL	Date: 7-6-99	8 OF 16	
Chk By:	Approved:		

SDP 99-92

DEVELOPER'S CERTIFICATION:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 7/20/99
PRINT NAME BELOW SIGNATURE
Howard L. Rasmuson

ENGINEER'S CERTIFICATION:

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

SIGNATURE OF ENGINEER — DATE 7/29/99
PRINT NAME BELOW SIGNATURE
John W. Ranocchia, Sr.

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

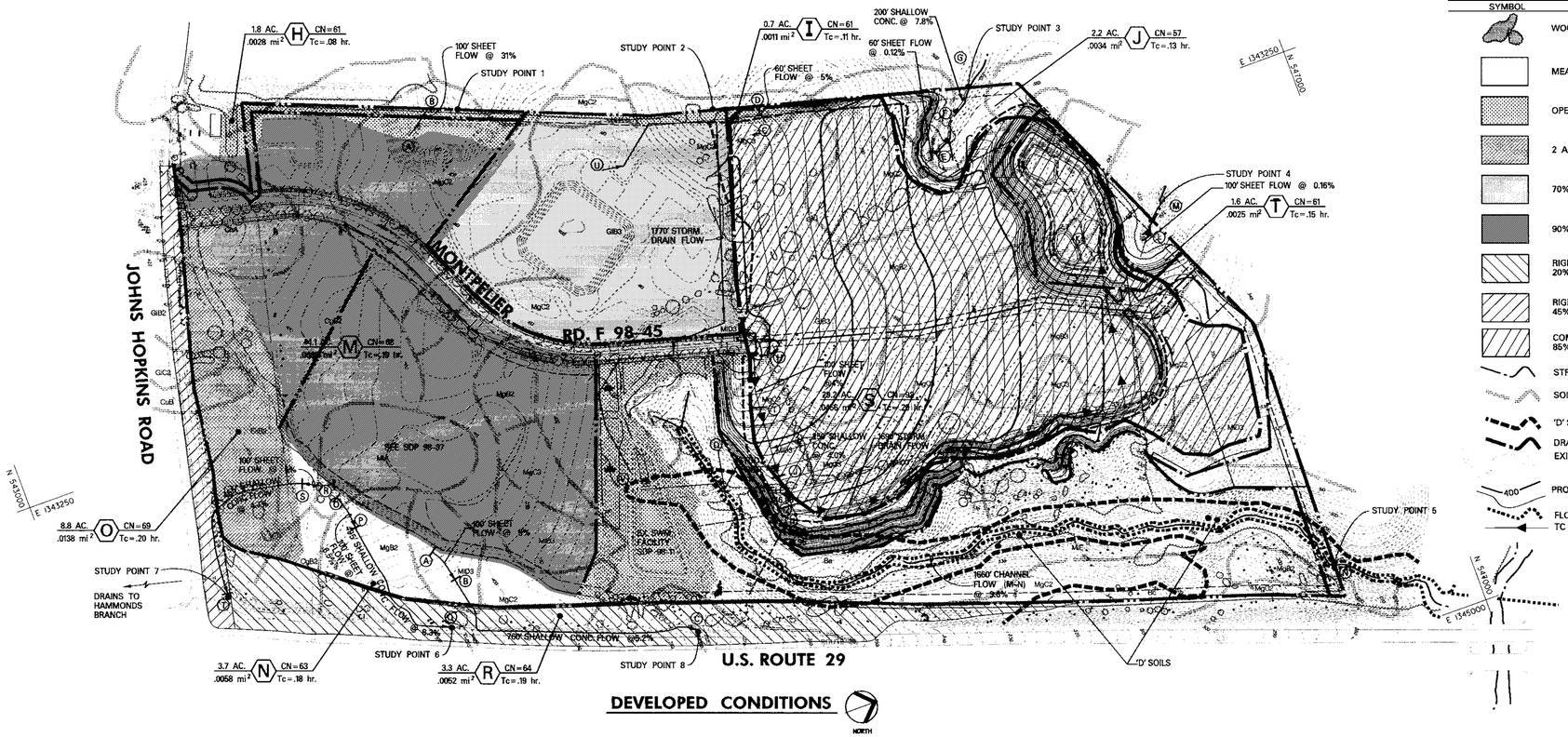
U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 08/04/99

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

HOWARD S.C.D. — DATE 8/4/99

7-29-99
Date

Professional Engr. No.

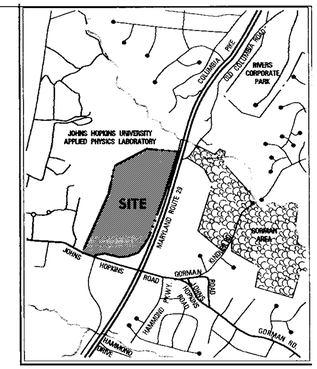


DEVELOPED CONDITIONS

NORTH

DEVELOPED CONDITIONS LAND USE LEGEND

SYMBOL	DESCRIPTION
	WOODS
	MEADOW
	OPEN SPACE
	2 ACRE LOTS
	70% IMPERVIOUS
	90% IMPERVIOUS
	RIGHT-OF-WAY, 20% IMPERVIOUS
	RIGHT-OF-WAY, 45% IMPERVIOUS
	COMMERCIAL, 85% IMPERVIOUS
	STREAM
	SOILS
	'D' SOILS
	DRAINAGE AREA
	EXISTING CONTOURS
400	PROPOSED CONTOURS
	FLOOD PLAIN
	TC PATH



NORTH

LOCATION MAP

SCALE: 1" = 2000'

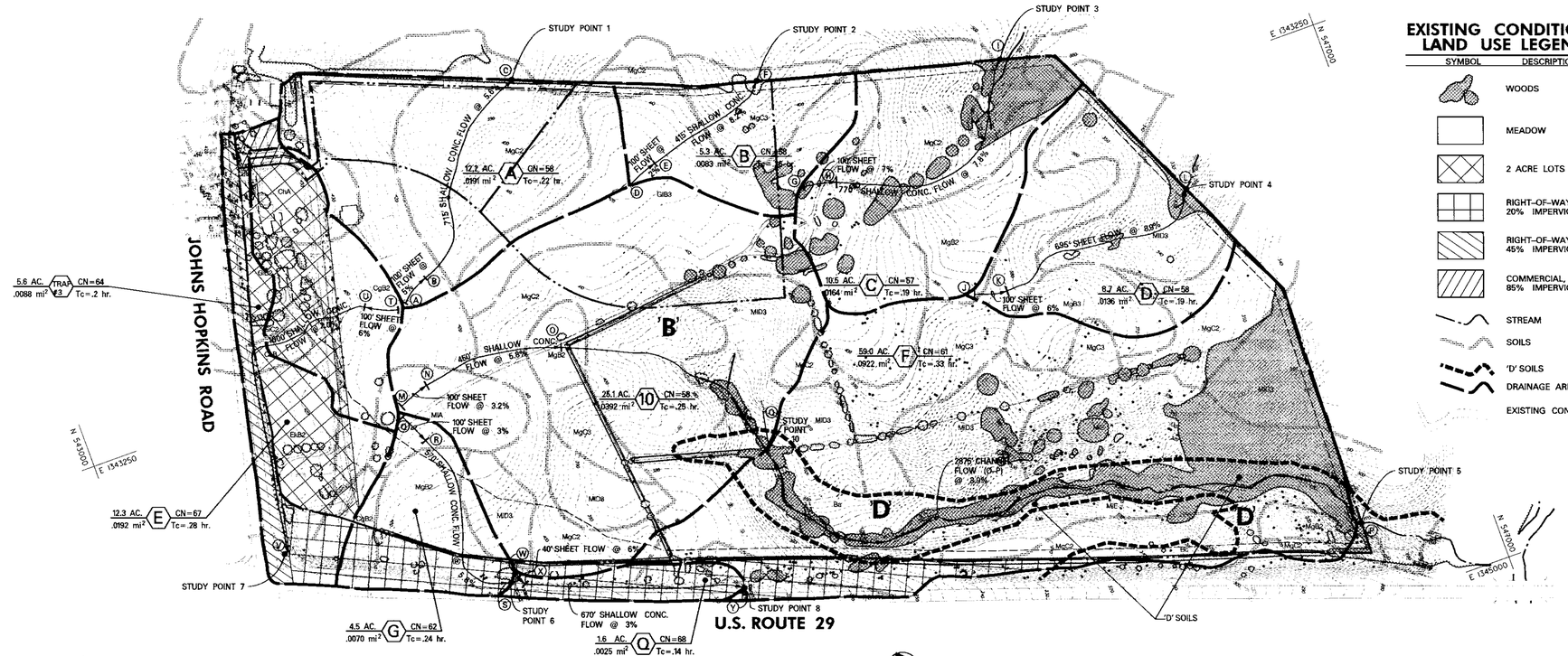
STORMWATER MANAGEMENT SUMMARY

Pond 1	2-Year	10-Year	100-Year
Proposed Inflow (cfs)	89.06	153.20	223.13
Allowable Release (cfs)	N/A	N/A	N/A
Proposed Outflow (cfs)	1.65	9.76	65.72
Water Surface Elevation (ft)	339.30	340.56	341.52
Storage Provided (AC – ft)	4.0	6.4	8.4

Structure Type	EXTENDED DETENTION, SHALLOW MARSH
Structure Classification	A
Structure Location	Urban
Watershed Area to Facility (Ac.)	29.5
Maximum Height of Fill (ft.)	8
Minimum Top of Dam Width (ft.)	12
Freeboard Provided (ft.)	2.0

Study Point 4

	2-Year	10-Year
Existing Peak (cfs)	2.4	12.2
Proposed Peak (cfs)	1.98	10.05
Temp SWM	2.41	



EXISTING CONDITIONS

NORTH

EXISTING CONDITIONS LAND USE LEGEND

SYMBOL	DESCRIPTION
	WOODS
	MEADOW
	2 ACRE LOTS
	RIGHT-OF-WAY, 20% IMPERVIOUS
	RIGHT-OF-WAY, 45% IMPERVIOUS
	COMMERCIAL, 85% IMPERVIOUS
	STREAM
	SOILS
	'D' SOILS
	DRAINAGE AREA
	EXISTING CONTOURS

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/17/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/16/99

DIRECTOR — DATE 8/11/99

Date	No.	Revision Description
8-16-99	1	REV. TITLE BLOCK.

Montpelier

PARCELS E-1, G-1, G-2

Research Park

HOWARD COUNTY MARYLAND

OWNER/DEVELOPER: HOPKINS ROAD LIMITED PARTNERSHIP
9030 RED BRANCH ROAD, SUITE 200 COLUMBIA, MD 21045

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME			SECTION/AREA		PARCEL #
Montpelier					E-1, G-1, G-2
PLAT #	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
13229-13234	17	PEC	41	5th	6051.02
WATER CODE			SEWER CODE		
E 21			6440000		

7-29-99
Date

STATE OF MARYLAND — JOHN W. McCUNE — No. 15551 — PROFESSIONAL ENGINEER

Professional Engr. No. 15551

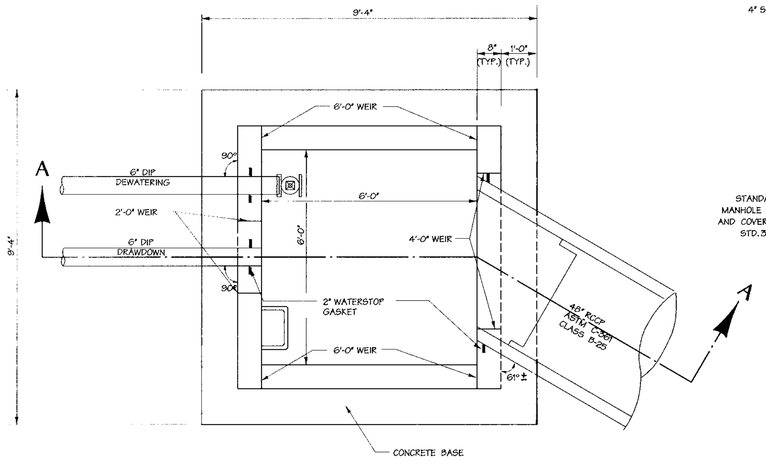
TITLE

STORMWATER MANAGEMENT DRAINAGE AREA MAPS

Des By: ZAL	Scale: 1" = 200'	Proj. No. 941717B	
Drn By: ADL	Date: 7-6-99	9	OF 16
Chk By:	Approved:		

SDP 99-92

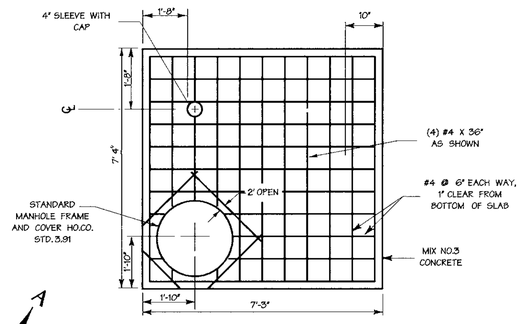
Thu Jul 29 15:51:12 1999 n:\941717\plan\el.dwg only\941717b.dxb



1 Riser Structure

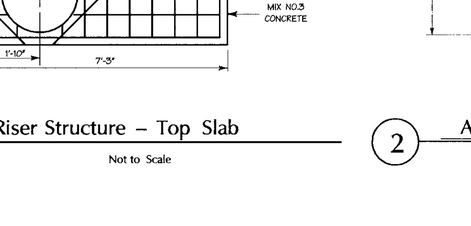
Scale: 1" = 1/2

NOTE: ALL CONCRETE CONSTRUCTION TO BE SHA MIX NO.3 F.C.=3000 PSI MINIMUM.



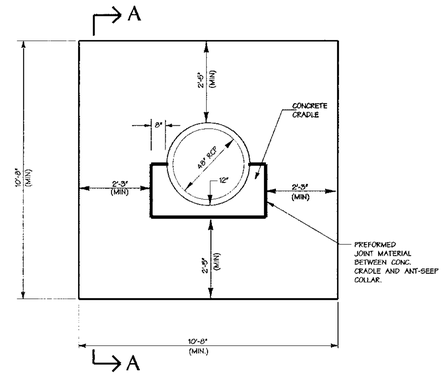
Riser Structure – Top Slab

Not to Scale



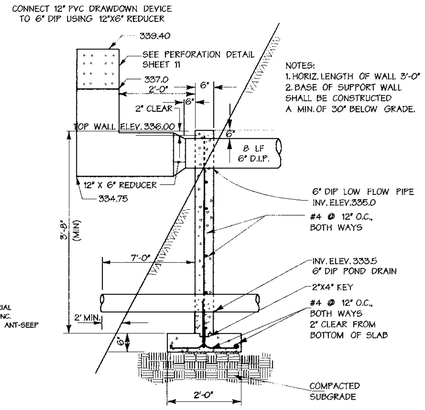
Key Way Detail

Not to Scale



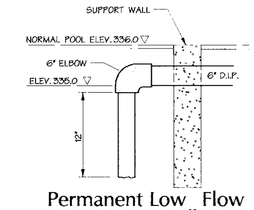
2 Anti–Seep Collar–Elevation

Not to Scale



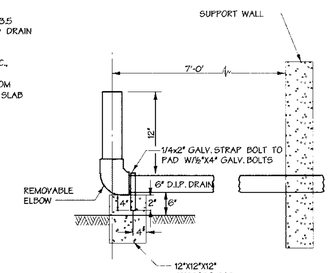
3 Support Wall Detail & Temp. Dewatering Device

Not to Scale



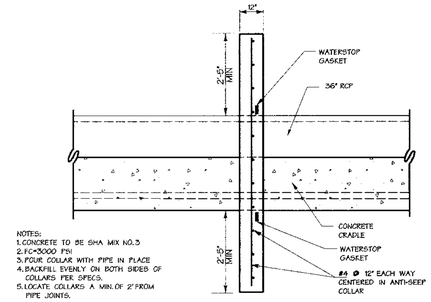
Permanent Low Flow Turn–Down Elbow

Not to Scale



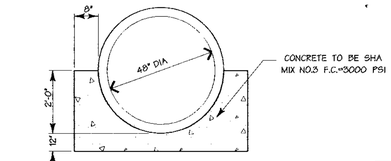
Turn–Up Pond Drain Elebow

Not to Scale



Anti–seep Collar–Section A–A

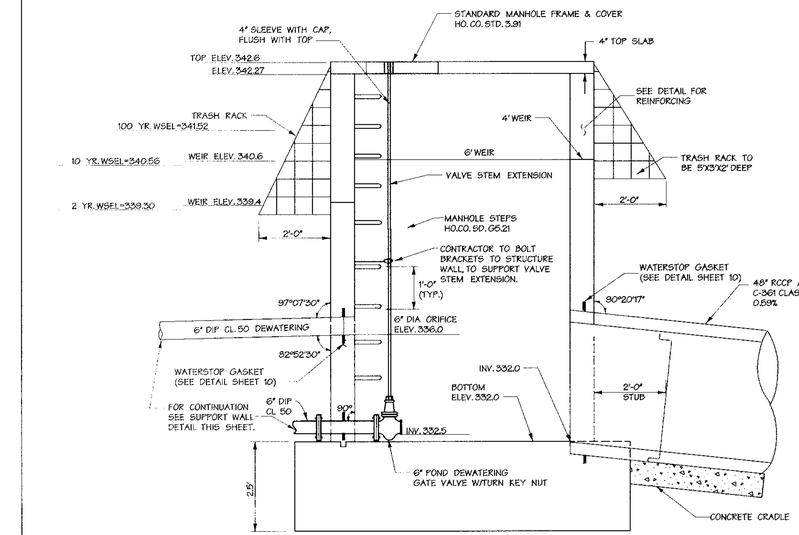
Not to Scale



4 A–2 Cradle

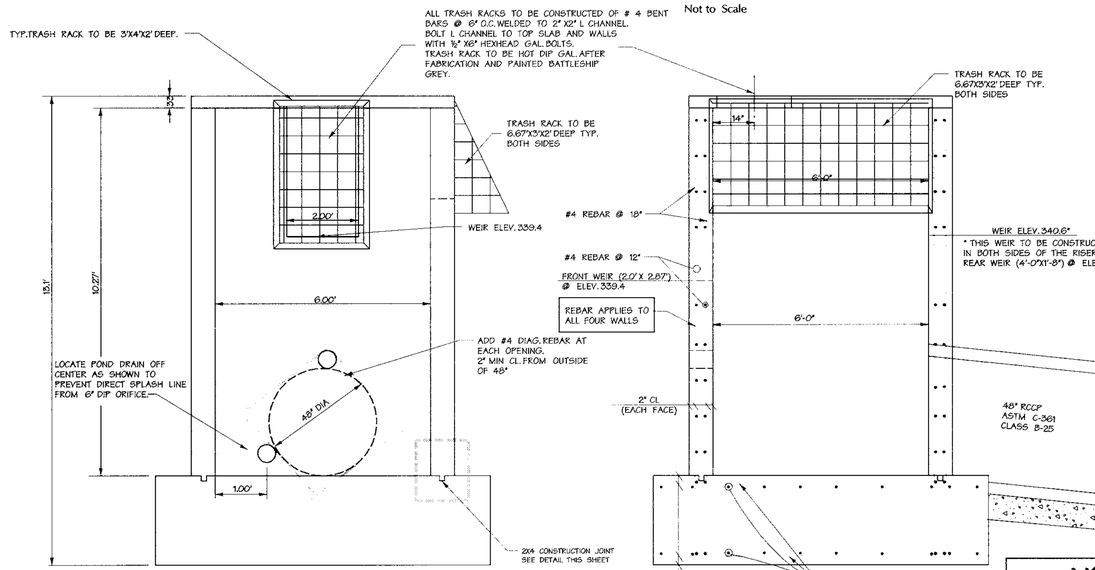
Not to Scale

ALL TRASH RACKS TO BE CONSTRUCTED OF # 4 BENT BARS @ 6" O.C. WELDED TO 2" X2" L CHANNEL. BOLT L CHANNEL TO TOP SLAB AND WALLS WITH 5/8" X6" HEXHEAD GAL. BOLTS. TRASH RACK TO BE HOT DIP GAL. AFTER FABRICATION AND PAINTED BATTLESHIP GREY.



Section A–A

Scale: 1" = 1/2



Front View

Scale: 1" = 1/2

Side View

Scale: 1" = 1/2

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

Craig E. Simmons 8/4/99

U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE — DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: Robert W. Zielman 8/4/99

HOWARD SOIL CONSERVATION DISTRICT — DATE

PLAN NUMBER

DEVELOPERS 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 ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF DEVELOPER — DATE 7/29/99

PRINT NAME BELOW SIGNATURE: Robert L. Ramachia

ENGINEERS CERTIFICATE:

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

SIGNATURE OF ENGINEER — DATE 7/29/99

PRINT NAME BELOW SIGNATURE: John W. Ramachia Sr.

7-29-99
Date

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/11/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/10/99

DIRECTOR — DATE 8/11/99

Date	No.	Revision Description
8-10-99	1	REV. TITLE BLOCK.

Montpelier

PARCELS E-1, G-1, G-2

Research Park

HOWARD COUNTY MARYLAND

OWNER/DEVELOPER: HOPKINS ROAD LIMITED PARTNERSHIP
9030 RED BRANCH ROAD, SUITE 200 COLUMBIA, MD 21045

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

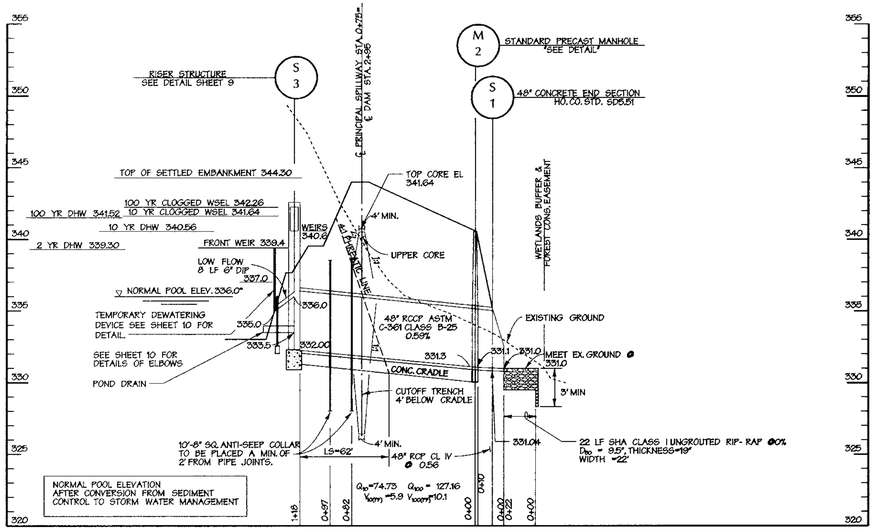
SUBDIVISION NAME				SECTION/AREA		PARCEL #
Montpelier						E-1, G-1, G-2
PLAT #	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT		CENSUS TRACT
13229-13234	17	PEC	41	5th		6051.02
WATER CODE			SEWER CODE			
E 21			6440000			

TITLE
STORMWATER MANAGEMENT DETAILS

Des By: ZAL	Scale: 1" = 50'	Proj. No. 941717B	
Drn By: ADL	Date: 7-6-99	10	OF 15
Chk By:	Approved:		

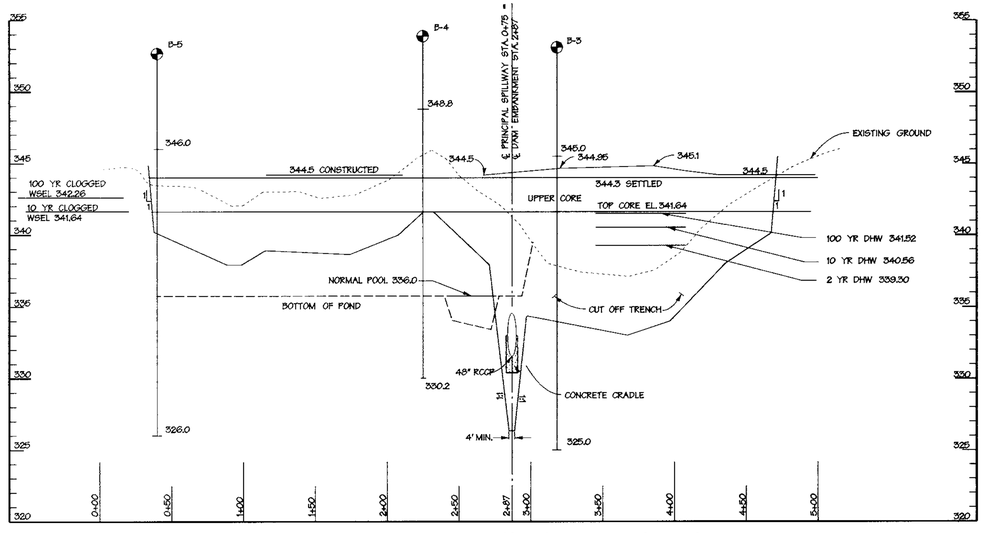
SDP 99-92

Thu Jul 29 10:13:41 1999 m:\941717\fg\parcel.dsg only\941717b.swf



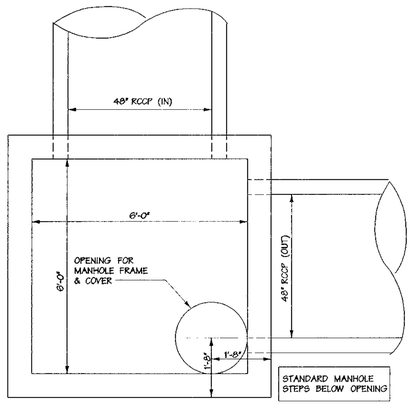
Principal Spillway Profile

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



Profile Along Centerline of Dam

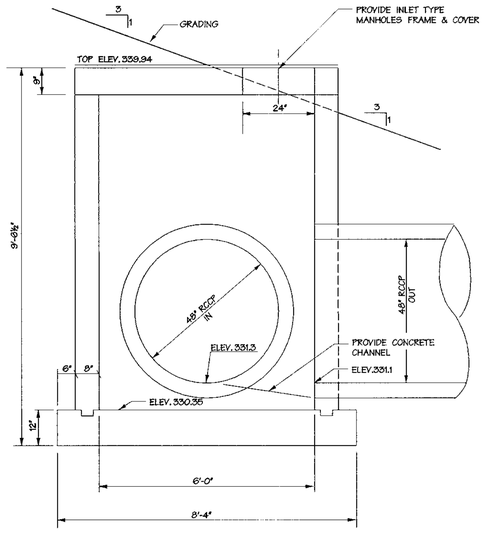
SCALE: HORZ.: 1" = 50'
VERT: 1" = 5'



Top Slab

SCALE: 1" = 1/2'

PROVIDE STD. MANHOLE STEPS

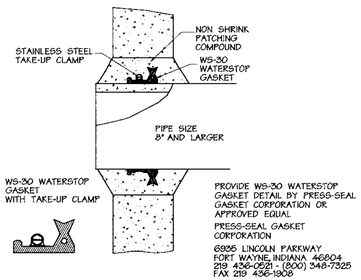


NOTE: REINFORCING TO BE PER DETAIL FOR STRUCTURE S-3

CONCRETE CONSTRUCTION TO BE SHA MIX NO.3 F.C.=3000 PSI MINIMUM

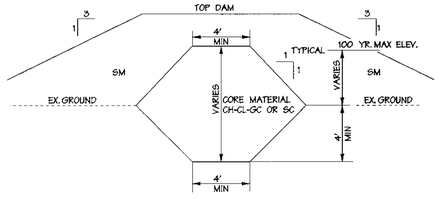
Detail Structure M-2

SCALE: 1" = 1/2'



Waterstop Gasket Detail

Not to Scale



Zone Fill for Cut Off Trench

SCALE: 1" = 5'-0"

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

USDA, NATURAL RESOURCES CONSERVATION SERVICE — DATE 08/04/99

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: Robert W. Helms — HOWARD SOIL CONSERVATION DISTRICT — DATE 8/4/99

PLAN NUMBER

DEVELOPERS 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 ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF DEVELOPER — DATE 7/30/99
PRINT NAME BELOW SIGNATURE Howard L. Bernath

ENGINEERS CERTIFICATE:

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

SIGNATURE OF ENGINEER — DATE 7/29/99
PRINT NAME BELOW SIGNATURE John W. Ranocchia, Jr.

7-29-99
Date

Professional Engr. No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/11/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/11/99

DIRECTOR — DATE 8/11/99

Date	No.	Revision Description
8-10-99	1	REV. TITLE BLOCK.

Montpelier

PARCELS E-1, G-1, G-2

Research Park

HOWARD COUNTY MARYLAND

OWNER/DEVELOPER: HOPKINS ROAD LIMITED PARTNERSHIP
9030 RED BRANCH ROAD, SUITE 200 COLUMBIA, MD 21045

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue, Towson, Maryland 21286
410 296 3333 Fax 296 4705

SUBDIVISION NAME	SECTION/AREA			PARCEL #
Montpelier				E-1, G-1, G-2
PLAT #	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
13229-13234	17	PEC	41	5th	6051.02
WATER CODE			SEWER CODE	
E 21			6440000	

TITLE

STORMWATER MANAGEMENT PROFILES

Des By: ZAL	Scale: 1" = 50'	Proj. No. 941717B	
Drn By: ADL	Date: 7-6-99	11	OF 16
Chk By:	Approved:		

SDP 99-92

Thu Jul 29 17:08:19 1999 m:\941717b\parcel.mdg only\941717b.dwg

STORMWATER MANAGEMENT POND GENERAL CONSTRUCTION SPECIFICATIONS

1. GENERAL

ALL STORMWATER MANAGEMENT FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH PRINCE GEORGE'S COUNTY'S "STORMWATER MANAGEMENT DESIGN MANUAL (1991)" AND THE S.C.S. MARYLAND "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378, 1992).

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD PRACTICE MD-378. ALL REFERENCES TO ASTM AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

2. SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 50 FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

3. EARTH FILL

MATERIAL. THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREA. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH OR CL. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL ENGINEER.

PLACEMENT. AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION. THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF THE EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

ALL COMPACTION IS TO BE NOT LESS THAN 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO SPECIFICATION T-99 (STANDARD PROCTOR) WITH A MOISTURE CONTENT WITHIN ± 2 PERCENT OF OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

CUTOFF TRENCH AND IMPERVIOUS CORE. THE CUTOFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FIVE FEET. THE DEPTH SHALL BE AT LEAST 5 FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE TOP WIDTH OF THE IMPERVIOUS CORE SHALL BE 5 FEET MINIMUM. THE HEIGHT OF THE CORE SHALL BE AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE CORE SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

4. STRUCTURAL BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED 4 INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN 4 FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24 INCHES OR GREATER OVER THE STRUCTURE OR PIPE.

5. REMOVAL AND REPLACEMENT OF DEFECTIVE FILL

FILL PLACED AT DENSITIES LOWER THAN SPECIFIED MINIMUM DENSITY OR AT MOISTURE CONTENTS OUTSIDE THE SPECIFIED ACCEPTABLE RANGE OF MOISTURE CONTENT OR OTHERWISE NOT CONFORMING TO THE REQUIREMENTS OF THE SPECIFICATIONS SHALL BE REWORKED TO MEET THE REQUIREMENTS OR REMOVED AND REPLACED BY ACCEPTABLE FILL. THE BOTTOMS OF SUCH EXCAVATIONS SHALL BE FINISHED FLAT OR GENTLY CURVING AND AT THE SIDES OF SUCH EXCAVATIONS THE ADJACENT SOUND FILL SHALL BE TRIMMED TO A SLOPE NOT STEEPER THAN 3 FEET HORIZONTALLY TO 1 FOOT VERTICALLY EXTENDING FROM THE BOTTOM OF THE EXCAVATION TO THE FILL SURFACE.

6. PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION. ALL PERFORATED PIPE SHALL HAVE A MINIMUM OF 3.31 SQUARE INCHES OF OPENING PER SQUARE FOOT OF PIPE SURFACE (EX. 30 3/8 INCH HOLES PER SQUARE FOOT). PERFORATIONS ARE TO BE UNIFORMLY SPACED AROUND THE FULL PERIPHERY OF THE PIPE. ANY HOLES BLOCKED OR PARTIALLY BLOCKED BY BITUMINOUS COATING SHALL BE OPENED PRIOR TO INSTALLATION.

REINFORCED CONCRETE PIPE. ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

1. MATERIALS - REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM DESIGNATION C-361.

2. CRADLE - ALL REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE CRADLE FOR THEIR ENTIRE LENGTH. THIS CRADLE SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 50 PERCENT OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6 INCHES, OR AS SHOWN ON THE DRAWINGS.

3. LAYING PIPE - BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE CRADLE SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 3 FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURAL BACKFILL".

5. CONNECTIONS - ALL CONNECTIONS (TO ANTI-SEEP COLLARS, RISER, ETC.) SHALL BE WATERTIGHT.

6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

7. DUCTILE IRON PIPE

1. ALL PIPES TO BE CLASS 50 WITH TYTON JOINTS.
2. ALL FITTINGS SHALL BE IN ACCORDANCE WITH AWWA C-153.

8. CAST-IN-PLACE CONCRETE STRUCTURES

1. SPECIFICATIONS: MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION (SHA) "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS", OCTOBER, 1993 EDITION, FOR MATERIALS AND CONSTRUCTION, INCLUDING ALL INTERIM SPECIFICATIONS.

AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES", DATED 1989, FOR DESIGN, INCLUDING ALL INTERIM SPECIFICATIONS. CONCRETE DESIGN BY THE "SERVICE LOAD DESIGN METHOD".

2. CONCRETE: SHALL MEET THE REQUIREMENTS OF SHA SECTIONS 414 AND 902, MIX NO. 3

3. CONTRACTOR SHALL SUPPLY MIX DESIGN FOR APPROVAL PRIOR TO APPLICATION. LOAD AND MIX TICKETS SHALL BE SUPPLIED FOR EACH TRUCK DELIVERY. NO PARTIAL FIELD MIXES SHALL BE ALLOWED.

ALL CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS. DESIGN FC = 1,200 PSI.

ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" X 3/4". ALL CONSTRUCTION KEYS ARE SHOWN NOMINAL SIZE.

4. REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60. WHERE NOT INDICATED, BAR LAP SPLICES SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATIONS. THE MINIMUM CONCRETE COVER SHALL BE 2 INCHES UNLESS OTHERWISE NOTED. DESIGN FS = 24,000 PSI.

5. FOUNDATION: PRESUMED SOIL BEARING CAPACITY = 2,500 PSF. THE ENGINEER MUST APPROVE ALL FOUNDATIONS PRIOR TO CONCRETE PLACEMENT. IF UNSUITABLE MATERIAL IS ENCOUNTERED, THE MATERIAL SHALL BE UNDERCUT AND BACKFILLED WITH STRUCTURAL BACKFILL.

9. ROCK RIP-RAP

ROCK RIP-RAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 901.02.

THE RIP-RAP SHALL BE PLACED TO THE REQUIRED THICKNESS IN ONE OPERATION. THE ROCK SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL INSURE THE RIP-RAP IN PLACE SHALL BE REASONABLY HOMOGENEOUS WITH THE LARGER ROCKS UNIFORMLY DISTRIBUTED AND FIRMLY IN CONTACT ONE TO ANOTHER WITH THE SMALLER ROCKS FILLING THE VOIDS BETWEEN THE LARGER ROCKS. FILTER CLOTH SHALL BE PLACED UNDER ALL RIP-RAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09.

10. CARE OF WATER DURING CONSTRUCTION

ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM THE VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION, AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED OR DIRECTED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURE. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM OF REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER TO SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

11. STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE MARYLAND SOIL CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

12. EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES TO BE EMPLOYED DURING THE CONSTRUCTION PROCESS.

ALL DISTURBED AREAS SHALL BE CONTROLLED BY AN EROSION AND SEDIMENT CONTROL PLAN WHICH HAS BEEN APPROVED BY THE PRINCE GEORGE'S COUNTY SOIL CONSERVATION DISTRICT (P.G.S.C.D.) AND THE PRINCE GEORGE'S COUNTY DEPARTMENT OF ENVIRONMENTAL RESOURCES.

12. SEEDING

SEEDING, FERTILIZING AND MULCHING SHALL BE AS FOLLOWS:

SEED MIX:
50% KENBLUE KENTUCKY BLUEGRASS
40% PENNLAWN CREEPING RED FESCUE
10% STREAKER REDTOP
APPLIED AT A RATE OF 150 LBS. PER ACRE.
(OR)
REBEL II TALL FESCUE (125 LBS. PER ACRE)
PENNFINE PERENNIAL RYEGRASS (15 LBS. PER ACRE)
KENBLUE KENTUCKY BLUEGRASS (10 LBS. PER ACRE)
(OR)
PENNLAWN CREEPING RED FESCUE (70 LBS. PER ACRE)
AURORA HARD FESCUE (50 LBS. PER ACRE)
COMMON WHITE CLOVER (6 LBS. PER ACRE)
WINTER RYE (45 LBS. PER ACRE)

OPTIMUM SEEDING DATES: MARCH 1 TO APRIL 30.

LIME: 2 TONS/ACRE DOLOMITIC LIMESTONE.

FERTILIZER: 600 LBS./ACRE 10-10-10 FERTILIZER BEFORE SEEDING.
400 LBS./ACRE 30-0-0 UREAFORM FERTILIZER AT TIME OF SEEDING.

MULCH: STRAW AT 4,000 LBS. PER ACRE.

ANCHORING: MULCHING TOOL OR EMULSIFIED ASPHALT BINDER AT A RATE OF 8 GAL. PER 1,000 SQUARE FEET.

14. FILTER CLOTH

ALL FILTER CLOTH SHALL CONFORM TO MIRAFI 140N, DUPONT TYPAR 3341 OR 3401, SUPAC 5P, AMOCO 4551 OR APPROVED EQUAL.

15. CONSTRUCTION INSPECTION BY DESIGNATED ENGINEERS

THE CONSTRUCTION OF THE POND AND EMBANKMENT, AND CERTIFICATION THAT THE POND AND EMBANKMENT HAVE BEEN BUILT IN ACCORDANCE WITH THE PLANS SHALL BE UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER. THE ENGINEER SHALL BE NOTIFIED SUFFICIENTLY IN ADVANCE OF CONSTRUCTION IN ORDER THAT ARRANGEMENTS CAN BE MADE FOR (1) INSPECTION OF PIPE TRENCH AND BEDDING, (2) INSPECTION OF RISER AND ANTI-SEEP COLLARS AND (3) SUPERVISION OF EMBANKMENT CONSTRUCTION AND COMPACTION TESTING. THE ENGINEER SHALL DIRECT THE HANDLING OF WATER DURING CONSTRUCTION, MINOR CHANGES NOT AFFECTING THE INTEGRITY OF THE DAM IN ORDER TO COMPENSATE FOR UNUSUAL SOIL CONDITIONS, AND THE REMOVAL AND REPLACEMENT OF DEFECTIVE FILL.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. — RECORD OF SOIL EXPLORATION (Page 1 of 1)

Project Name Montpelier II SWM — Location Howard County, Maryland — Boring # B-1 — Job # 97021D
Datum —; Surf. Elev. —; Date Started 02-02-99. Sampler: Hammer Wt. 140 Lbs.; Hammer Drop 30 Inches; Pipe Size 2.0 Inches OD; Hole Diameter 8"; Rock Core Dia. -; Boring Method HSA; Foreman Dale Price; Inspector —; Date Completed 02-02-99

Soil Description (Color, Moisture, Density, Size, Proportion)	Stra. Depth	Con	Blows/6"	No.	Rec.	Boring & Sampling Notes
SURFACE	0.0					
Brown, moist, very loose to medium dense, micaceous silty sand (SM)		D	2-3-2	1	10"	10" Topsoil
		D	3-2-2	2	12"	No groundwater encountered
		D	2-2-2	3	12"	Caved in at 5.9' at Completion
		D	4-6-7	4	12"	
		D	7-10-11	5	18"	
Brown, moist, medium dense, micaceous sandy silt (ML)	13.0	D	6-7-10	6	12"	
Tan, moist, very dense, sand with rock fragments (SM)	18.0	D	50/1"	7	1"	
Refusal at 20.0'	20.0					

Ground water depth: At completion Dry ft.; After 24 hr Dry ft.; After — ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. — RECORD OF SOIL EXPLORATION (Page 1 of 1)

Project Name Montpelier II SWM — Location Howard County, Maryland — Boring # B-2 — Job # 97021D
Date Started 02-02-99. Hammer Wt. 140 Lbs.; Hammer Drop 30 Inches; Pipe Size 2.0 Inches OD; Hole Diameter 8"; Rock Core Dia. -; Boring Method HSA; Foreman Dale Price; Date Completed 02-02-99

Soil Description	Stra. Depth	Con	Blows/6"	No.	Rec.	Boring & Sampling Notes
SURFACE	0.0					
Brown to gray/brown, moist, loose to very dense, micaceous silty sand with rock fragments (SM)		D	3-3-4	1	18"	8" Topsoil
		D	4-4-4	2	14"	No groundwater encountered
		D	5-6-7	3	14"	Caved in at 11.8' at Completion
		D	6-8-8	4	12"	
		D	6-7-10	5	18"	
		D	50/2"	6	2"	
		D	50/1"	7	1"	
Refusal at 20.5'	20.5					

Ground water depth: At completion Dry ft.; After 24 hr Dry ft.; After — ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. — RECORD OF SOIL EXPLORATION (Page 1 of 1)

Project Name Montpelier II SWM — Location Howard County, Maryland — Boring # B-3 — Job # 97021D
Date Started 02-02-99. Hammer Wt. 140 Lbs.; Hammer Drop 30 Inches; Pipe Size 2.0 Inches OD; Hole Diameter 8"; Rock Core Dia. -; Boring Method HSA; Foreman Dale Price; Date Completed 02-02-99

Soil Description	Stra. Depth	Con	Blows/6"	No.	Rec.	Boring & Sampling Notes
SURFACE	0.0					
Brown, very moist, medium dense micaceous silt, some rock fragments (ML)	1.5	D	3-5-6	1	4"	8" Topsoil
Brown to gray, moist, loose to very dense, micaceous silty sand (SM)		D	4-5-5	2	12"	No groundwater encountered
		D	6-7-6	3	12"	Caved in at 10.1' at Completion
		D	9-17-22	4	10"	
		D	50/2"	5	2"	
		D	50/4"	6	4"	
		D	15-14-37	7	12"	
Bottom of Test Hole at 20.0'	20.0					

Ground water depth: At completion Dry ft.; After 24 hr Dry ft.; After — ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. — RECORD OF SOIL EXPLORATION (Page 1 of 1)

Project Name Montpelier II SWM — Location Howard County, Maryland — Boring # B-4 — Job # 97021D
Date Started 02-02-99. Hammer Wt. 140 Lbs.; Hammer Drop 30 Inches; Pipe Size 2.0 Inches OD; Hole Diameter 8"; Rock Core Dia. -; Boring Method HSA; Foreman Dale Price; Date Completed 02-02-99

Soil Description	Stra. Depth	Con	Blows/6"	No.	Rec.	Boring & Sampling Notes
SURFACE	0.0					
Brown, moist, loose, sandy silt with mica and rock fragments (ML)	2.5	D	4-2-7	1	10"	8" Topsoil
Brown, moist, loose to very dense, micaceous silty sand/sandy silt (SM-ML)		D	4-3-3	2	12"	No groundwater encountered
		D	3-4-4	3	14"	Caved in at 8.7' at Completion
		D	5-7-8	4	14"	
		D	7-8-11	5	18"	
Refusal at 13.0'	13.0	L	50/0"	6	0"	

Ground water depth: At completion Dry ft.; After 24 hr Dry ft.; After — ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. — RECORD OF SOIL EXPLORATION (Page 1 of 1)

Project Name Montpelier II SWM — Location Howard County, Maryland — Boring # B-5 — Job # 07021D
Date Started 02-02-99. Hammer Wt. 140 Lbs.; Hammer Drop 30 Inches; Pipe Size 2.0 Inches OD; Hole Diameter 8"; Rock Core Dia. -; Boring Method HSA; Foreman Dale Price; Date Completed 02-02-99

Soil Description	Stra. Depth	Con	Blows/6"	No.	Rec.	Boring & Sampling Notes
SURFACE	0.0					
Brown, very moist, very loose, micaceous sandy silt (ML)	2.0	D	1-2-2	1	10"	8" Topsoil
Brown, moist, loose to very dense micaceous silty sand with rock fragments (SM)		D	3-4-4	2	14"	No groundwater encountered
		D	3-5-6	3	15"	Caved in at 10.8' at Completion
		D	6-7-8	4	14"	
		D	8-10-13	5	12"	
		D	11-28-50/3"	6	10"	
Refusal at 18.6'	18.6	D	50/1"	7	1"	

Ground water depth: At completion Dry ft.; After 24 hr Dry ft.; After — ft.

HILLIS - CARNES ENGINEERING ASSOCIATES, INC. — RECORD OF SOIL EXPLORATION (Page 1 of 1)

Project Name Montpelier II SWM — Location Howard County, Maryland — Boring # B-6 — Job # 97021D
Date Started 02-02-99. Hammer Wt. 140 Lbs.; Hammer Drop 30 Inches; Pipe Size 2.0 Inches OD; Hole Diameter 8"; Rock Core Dia. -; Boring Method HSA; Foreman Dale Price; Date Completed 02-02-99

Soil Description	Stra. Depth	Con	Blows/6"	No.	Rec.	Boring & Sampling Notes
SURFACE	0.0					
Brown, moist, medium dense micaceous sandy silt (ML)	2.0	D	2-4-10	1	10"	8" Topsoil
Brown/gray, moist, very dense, micaceous silty sand with rock fragments (SM)		D	50/6"	2	5"	No groundwater encountered
		D	50/3"	3	3"	Caved in at 8.4' at Completion
		D	50/3"	4	3"	
		D	50/2"	5	2"	
		D	50/1"	6	1"	
Refusal at 15.0'	15.0					

Ground water depth: At completion Dry ft.; After 24 hr Dry ft.; After — ft.

Legend (each log): SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED. PT-PRESSED SHELBY TUBE; CA-CONTINUOUS FLIGHT AUGER; RC-ROCK CORE. SAMPLE CONDITIONS: D-DISINTEGRATED; I-INTACT; U-UNDISTURBED; L-LOST. BORING METHOD: HSA-HOLLOW STEM AUGERS; CFA-CONT. FLIGHT AUGERS; DC-DRIVING CASING; MD-MUD DRILLING.
STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
Cheryl [illegible] 08/04/99
U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE — DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF HOWARD SOIL CONSERVATION DISTRICT.
APPROVED: [signature] 8/4/99
HOWARD SOIL CONSERVATION DISTRICT — DATE
PLAN NUMBER

DEVELOPERS 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 ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
[signature] 7/20/99
SIGNATURE OF DEVELOPER — DATE
PRINT NAME BELOW SIGNATURE Howard [illegible] Berneck (?)

ENGINEERS CERTIFICATE:
I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.
[signature] 2/19/99 (?)
SIGNATURE OF ENGINEER — DATE
PRINT NAME BELOW SIGNATURE John W. Ranocchia Jr. (?)

2/19/99 (?)
Date
[Seal: STATE OF MARYLAND — PROFESSIONAL ENGINEER]
Professional Engr No. 10551

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
[signature] 8/5/99 — CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE
[signature] 8/10/99 — CHIEF, DIVISION OF LAND DEVELOPMENT — DATE R
[signature] 8/11/99 — DIRECTOR — DATE

Date	No.	Revision Description
8-18-99	1	REV. TITLE BLOCK

Montpelier Research Park
HOWARD COUNTY MARYLAND
PARCELS E-1, G-1, G-2

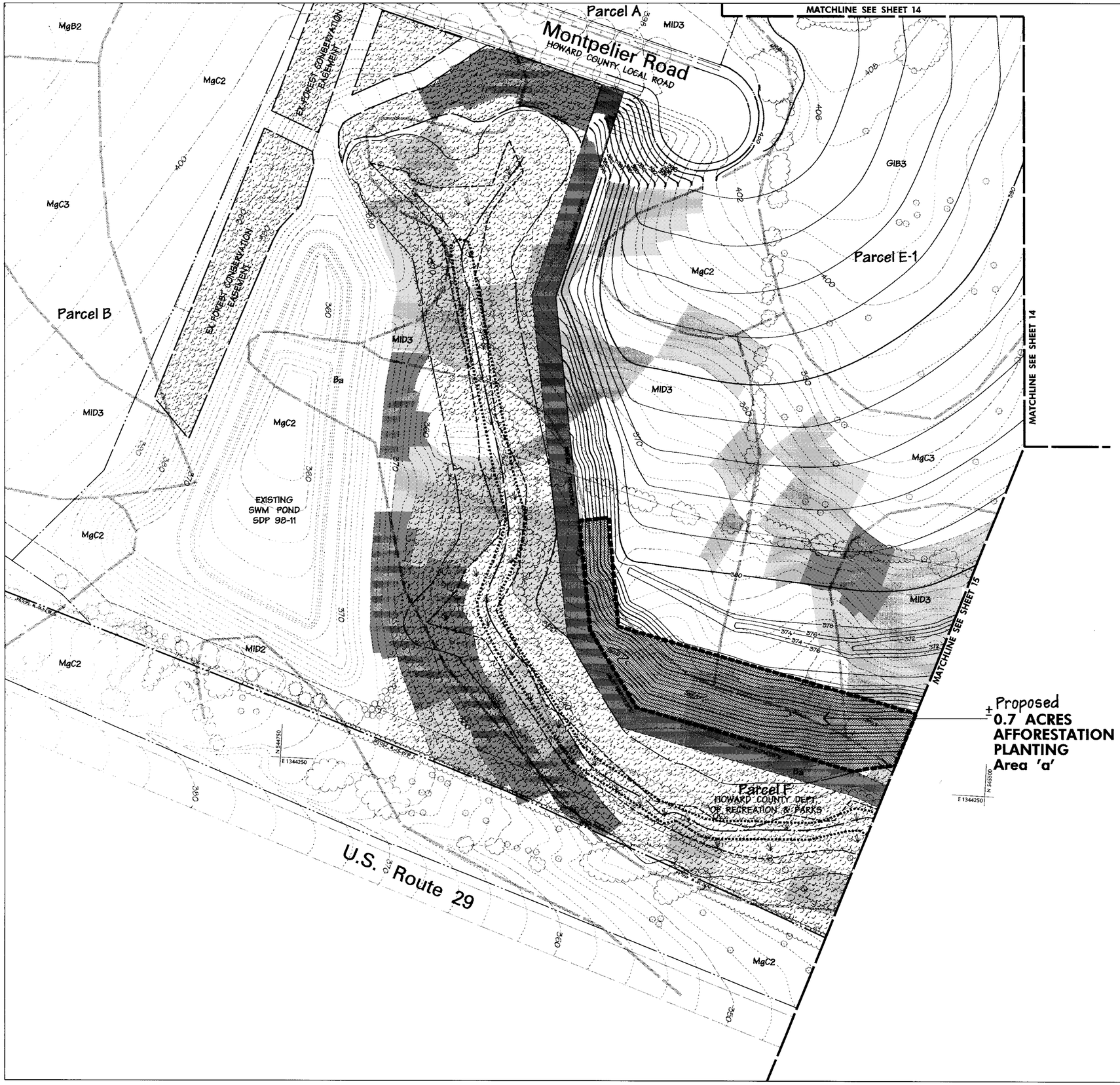
DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue, Towson, Maryland 21286
410 296 3333
Fax 296 4705

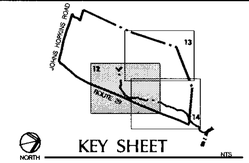
SUBDIVISION NAME: Montpelier	SECTION/AREA		LOT/PARCEL #: E-1, G-1, G2
PLAT # OR L/F: 13229-13234 (?); BLOCK #: 17; ZONE: PEC	TAX/ZONE MAP: 41	ELECT. DISTRICT: 5th	CENSUS TRACT: 6051.02
WATER CODE: E 21	SEWER CODE: 6440000		

TITLE: SWM SPECIFICATIONS AND SOIL BORING LOGS

Des By: ZAL	Scale: 1" = 50'	Proj. No. 941717B
Drn By: ADL	Date: 7-6-99	12 OF 16
Chk By: JJB (?)	Approved:	

SDP 99.92





NOTE:
1. THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTRY 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.

2. SEE SHEET 15 FOR AFFORESTATION PLANTING SPECIFICATIONS, DETAILS & NOTES.

3. SUPER SILT FENCE WILL ALSO ACT AS TREE PROTECTION FOR EXISTING FOREST AREAS.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/31/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/18/99

DIRECTOR — DATE 8/11/99

Date	No.	Revision Description
8-18-99	1	REV. TITLE BLOCK. PARCEL DESIGNATIONS AND AFFORESTATION PLANTINGS AREAS AND ROAD CUL-DE-SAC AND GRADING.

Montpelier

PARCELS E-1, G-1 & G-2

Research Park

HOWARD COUNTY MARYLAND

OWNER/DEVELOPER: HOPKINS ROAD LIMITED PARTNERSHIP
9030 RED BRANCH ROAD, SUITE 200 COLUMBIA, MD 21045

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

7.29.99
Date

STATE OF MARYLAND — MELANIE MOSER — LANDSCAPE ARCHITECT — NO. 551 — REGISTERED

Landscape Architect No. 551

SUBDIVISION NAME: Montpelier	SECTION/AREA		PARCEL #: E-1, G-1, G-2
PLAT # 13229-13234	BLOCK # 17	ZONE PEC	TAX/ZONE MAP 41
ELECT. DISTRICT 5th	CENSUS TRACT 6051.02		
WATER CODE E 21	SEWER CODE 6440000		

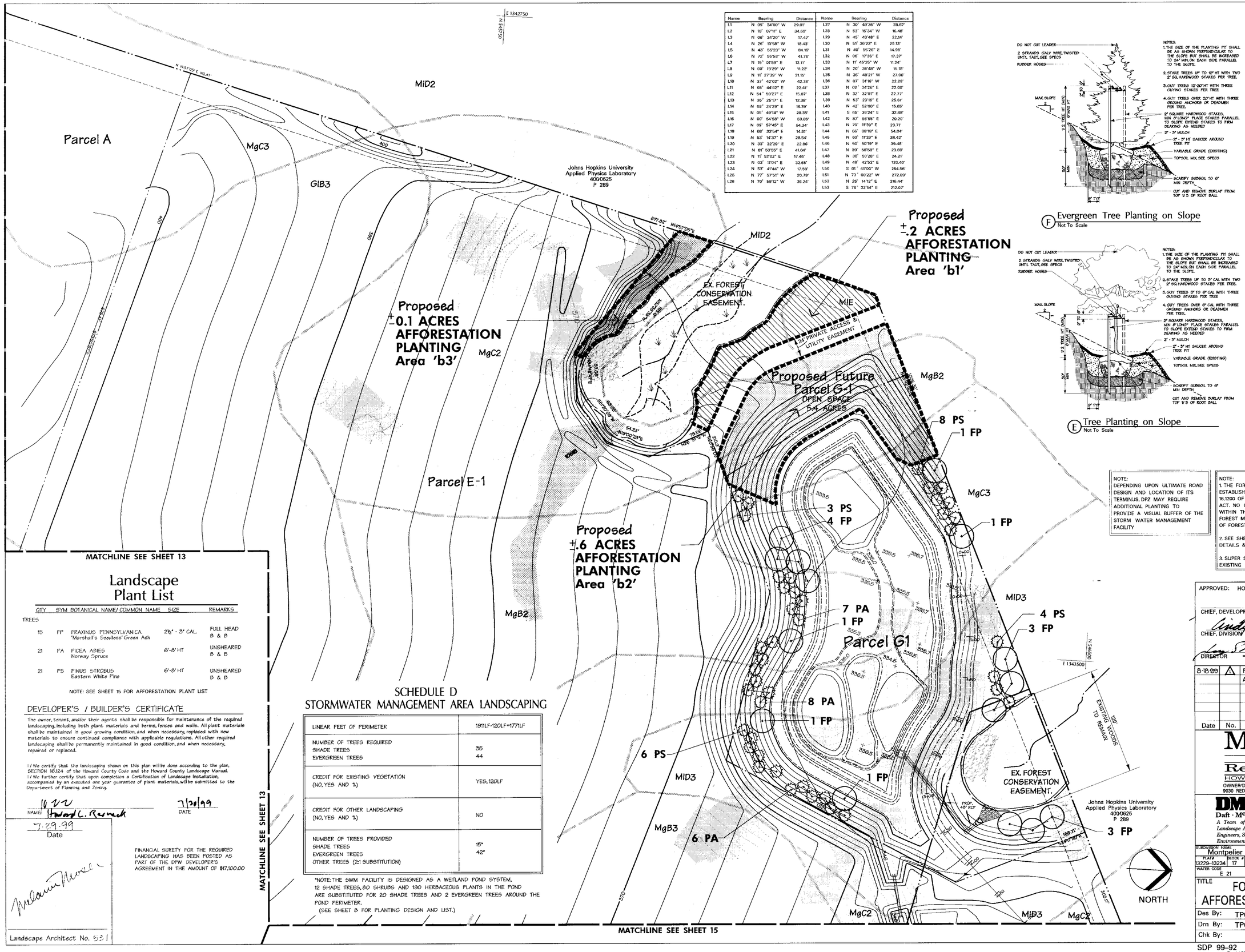
TITLE: FOREST CONSERVATION / AFFORESTATION PLAN

Des By: TPC	Scale: 1" = 50'	Proj. No. 941717B	
Drn By: TPC	Date: 7-6-99	13 OF 16	
Chk By:	Approved:		

SDP 99-92

Thu Jul 29 10:06:29 1999 m:\941717\parcel.dwg m:\941717\fct

Name	Bearing	Distance	Name	Bearing	Distance
L1	N 09° 54'00" W	29.01'	L27	N 30° 49'36" W	28.67'
L2	N 18° 07'11" E	34.60'	L28	N 53° 15'34" W	16.48'
L3	N 06° 34'20" W	17.47'	L29	N 45° 43'48" E	22.14'
L4	N 26° 13'58" W	18.43'	L30	N 51° 36'23" E	25.13'
L5	N 43° 55'23" W	84.16'	L31	N 46° 55'26" E	14.98'
L6	N 72° 55'53" W	41.76'	L32	N 06° 17'36" E	17.37'
L7	N 15° 01'59" E	13.11'	L33	N 11° 45'25" W	11.24'
L8	N 00° 13'29" W	11.22'	L34	N 20° 36'48" W	15.18'
L9	N 11° 27'39" W	31.15'	L35	N 36° 48'21" W	27.06'
L10	N 37° 42'02" W	42.38'	L36	N 07° 31'16" W	22.28'
L11	N 66° 44'42" E	22.41'	L37	N 02° 34'26" E	22.00'
L12	N 54° 59'27" E	15.07'	L38	N 32° 32'01" E	22.77'
L13	N 35° 25'17" E	12.38'	L39	N 53° 23'16" E	25.61'
L14	N 08° 24'29" E	18.39'	L40	N 42° 52'00" E	15.65'
L15	N 05° 49'14" W	28.35'	L41	S 65° 35'24" E	32.88'
L16	N 00° 54'58" W	69.86'	L42	N 87° 59'55" E	20.20'
L17	N 09° 57'45" E	54.34'	L43	N 70° 11'39" E	23.71'
L18	N 68° 33'54" E	14.81'	L44	N 66° 08'18" E	54.04'
L19	N 53° 16'37" E	28.54'	L45	N 60° 11'33" E	38.42'
L20	N 33° 32'29" E	22.86'	L46	N 50° 50'19" E	39.48'
L21	N 81° 53'55" E	41.04'	L47	N 39° 58'58" E	23.69'
L22	N 11° 57'02" E	17.46'	L48	N 30° 50'28" E	24.21'
L23	N 03° 11'04" E	32.65'	L49	N 48° 42'33" E	133.40'
L24	N 53° 41'44" W	17.59'	L50	S 01° 45'00" W	364.56'
L25	N 77° 57'51" W	20.79'	L51	N 73° 00'22" W	272.89'
L26	N 70° 59'12" W	36.24'	L52	N 25° 14'12" E	316.44'
			L53	S 78° 32'54" E	212.07'



DO NOT CUT LEADER
2 STRANDS GALV WIRE, TWISTED UNTIL TAUT, SEE SPECS
RUBBER HOSES
MAX SLOPE
2'
2'-10"
6' MAX HT
1/2 TREE HT (MIN)
30" MIN
2" TYP

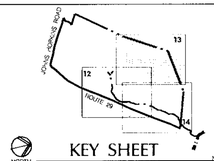
NOTES:
1. THE SIZE OF THE PLANTING PIT SHALL BE AS SHOWN PERPENDICULAR TO THE SLOPE BUT SHALL BE INCREASED TO 24" MIN. ON EACH SIDE PARALLEL TO THE SLOPE.
2. STAKE TREES UP TO 12' HT WITH TWO 2" SQ. HARDWOOD STAKES PER TREE.
3. GUY TREES 12'-20' HT WITH THREE GUYING STAKES PER TREE.
4. GUY TREES OVER 20' HT WITH THREE GROUND ANCHORS OR DEADMEN PER TREE.
2" SQUARE HARDWOOD STAKES, MIN. 8' LONG* PLACE STAKES PARALLEL TO SLOPE EXTEND STAKES TO FIRM BEARING AS NEEDED
2" - 3" MULCH
2" - 3" HT SAUCER AROUND TREE PIT
VARIABLE GRADE (EXISTING)
TOPSOIL MIX, SEE SPECS
SCARIFY SUBSOIL TO 6" MIN. DEPTH.
CUT AND REMOVE BURLAP FROM TOP 1/3 OF ROOT BALL

F Evergreen Tree Planting on Slope
Not To Scale

DO NOT CUT LEADER
2 STRANDS GALV WIRE, TWISTED UNTIL TAUT, SEE SPECS
RUBBER HOSES
MAX SLOPE
2'
2'-0"
6' MAX HT
1/2 TREE HT (MIN)
30" MIN
2" TYP

NOTES:
1. THE SIZE OF THE PLANTING PIT SHALL BE AS SHOWN PERPENDICULAR TO THE SLOPE BUT SHALL BE INCREASED TO 24" MIN. ON EACH SIDE PARALLEL TO THE SLOPE.
2. STAKE TREES UP TO 3" CAL WITH TWO 2" SQ. HARDWOOD STAKES PER TREE.
3. GUY TREES 3" TO 6" CAL WITH THREE GUYING STAKES PER TREE
4. GUY TREES OVER 6" CAL WITH THREE GROUND ANCHORS OR DEADMEN PER TREE.
2" SQUARE HARDWOOD STAKES, MIN. 8' LONG* PLACE STAKES PARALLEL TO SLOPE EXTEND STAKES TO FIRM BEARING AS NEEDED
2" - 3" MULCH
2" - 3" HT SAUCER AROUND TREE PIT
VARIABLE GRADE (EXISTING)
TOPSOIL MIX, SEE SPECS
SCARIFY SUBSOIL TO 6" MIN. DEPTH.
CUT AND REMOVE BURLAP FROM TOP 1/3 OF ROOT BALL

E Tree Planting on Slope
Not To Scale



KEY SHEET
NTS

LEGEND

SYMBOL	DESCRIPTION
	SLOPES = >25%
	SLOPE = 15%-25%
	STREAM
MID3 MgC3	SOILS
	EXISTING CONTOURS
	EXISTING TREES/ TREE LINE
	WETLAND/STREAM BUFFER
	WETLAND
400	PROPOSED CONTOURS
	FLOODPLAIN
	LIMIT OF DISTURBANCE
25'	EXISTING 25' WIDE PUBLIC WATER, SEWER & UTILITY EASEMENT
	PROPOSED FOREST CONSERVATION EASEMENT
	EXISTING FOREST CONSERVATION EASEMENTS

NOTE:
DEPENDING UPON ULTIMATE ROAD DESIGN AND LOCATION OF ITS TERMINUS, DPZ MAY REQUIRE ADDITIONAL PLANTING TO PROVIDE A VISUAL BUFFER OF THE STORM WATER MANAGEMENT FACILITY

NOTE:
1. THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTRY 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.

2. SEE SHEET 15 FOR AFFORESTATION PLANTING SPECIFICATIONS, DETAILS & NOTES.

3. SUPER SILT FENCE WILL ALSO ACT AS TREE PROTECTION FOR EXISTING FOREST AREAS.

Landscape Plant List

QTY	SYM	BOTANICAL NAME/ COMMON NAME	SIZE	REMARKS
TREES				
15	FP	FRAXINUS PENNSYLVANICA 'Marshall's Seedless' Green Ash	2½" - 3" CAL.	FULL HEAD B & B
21	PA	PICEA ABIES Norway Spruce	6'-8' HT	UNSHEARED B & B
21	PS	PINUS STROBUS Eastern White Pine	6'-8' HT	UNSHEARED B & B

NOTE: SEE SHEET 15 FOR AFFORESTATION PLANT LIST

DEVELOPER'S / BUILDER'S CERTIFICATE

The owner, tenant, and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced.

I / We certify that the landscaping shown on this plan will be done according to the plan, SECTION 16.124 of the Howard County Code and the Howard County Landscape Manual. I / We further certify that upon completion a Certification of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

NAME Howard L. Rennick — DATE 7/20/99

7.29.99
Date

Landscape Architect No. 531

FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF $17,100.00

SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	1911LF-120LF=1771LF
NUMBER OF TREES REQUIRED SHADE TREES EVERGREEN TREES	 35 44
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	YES, 120LF
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF TREES PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION)	 15* 42*

*NOTE: THE SWM FACILITY IS DESIGNED AS A WETLAND POND SYSTEM, 12 SHADE TREES, 80 SHRUBS AND 190 HERBACEOUS PLANTS IN THE POND ARE SUBSTITUTED FOR 20 SHADE TREES AND 2 EVERGREEN TREES AROUND THE POND PERIMETER. (SEE SHEET 8 FOR PLANTING DESIGN AND LIST.)

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/5/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/10/99

DIRECTOR — DATE 8/11/99

Date	No.	Revision Description
8-18-99	1	REV. TITLE BLOCK, PARCEL DESIGNATIONS AND AFFORESTATION PLANTING AREAS.

Montpelier
PARCELS E-1, G-1 & G-2
Research Park
HOWARD COUNTY MARYLAND
OWNER/DEVELOPER: HOPKINS ROAD LIMITED PARTNERSHIP
9030 RED BRANCH ROAD, SUITE 200 COLUMBIA, MD 21045

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME	SECTION/AREA	PARCEL #
Montpelier		E-1, G-1 & G-2

PLAT #	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
13229-13234	17	PEC	41	5th	6051.02

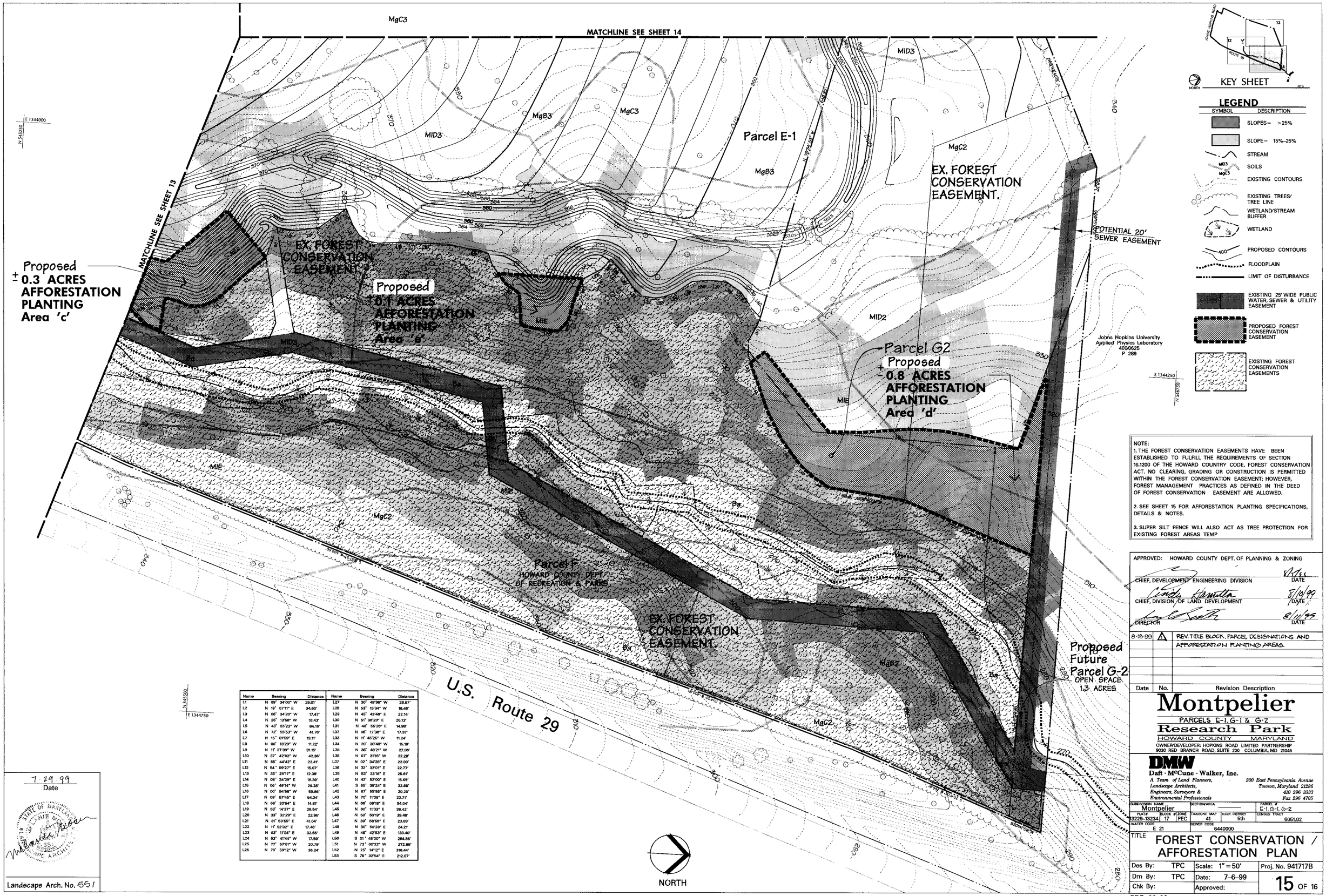
WATER CODE	SEWER CODE
E 21	6440000

TITLE
FOREST CONSERVATION / AFFORESTATION/ LANDSCAPE PLAN

Des By: TPC	Scale: 1"=50'	Proj. No. 941717B	
Drn By: TPC	Date: 7-6-99	14	OF 16
Chk By:	Approved:		

SDP 99-92

Thu Jul 29 17:00:14 1999 s:\941\941717\fc2



Name	Bearing	Distance
L1	N 09° 34'00" W	29.01'
L2	N 18° 07'11" E	34.60'
L3	N 06° 34'20" W	17.47'
L4	N 26° 13'58" W	18.43'
L5	N 43° 55'23" W	84.18'
L6	N 72° 55'53" W	41.76'
L7	N 16° 01'59" E	13.11'
L8	N 00° 13'29" W	11.22'
L9	N 11° 27'39" W	31.15'
L10	N 37° 42'02" W	42.36'
L11	N 65° 44'42" E	22.41'
L12	N 84° 59'27" E	15.07'
L13	N 35° 25'17" E	12.38'
L14	N 08° 24'29" E	16.39'
L15	N 06° 49'14" W	28.35'
L16	N 00° 54'58" W	59.86'
L17	N 09° 57'45" E	54.34'
L18	N 68° 33'54" E	14.81'
L19	N 53° 14'37" E	28.54'
L20	N 33° 32'29" E	22.86'
L21	N 81° 53'58" E	41.04'
L22	N 11° 52'02" E	17.46'
L23	N 03° 11'04" E	32.65'
L24	N 53° 41'44" W	17.59'
L25	N 77° 57'51" W	20.79'
L26	N 70° 59'12" W	36.24'

Name	Bearing	Distance
L27	N 30° 49'36" W	28.67'
L28	N 53° 15'34" W	16.48'
L29	N 45° 43'48" E	22.16'
L30	N 51° 36'23" E	25.13'
L31	N 40° 55'26" E	14.98'
L32	N 06° 17'38" E	17.37'
L33	N 11° 45'25" W	11.24'
L34	N 70° 36'48" W	15.18'
L35	N 36° 48'21" W	27.06'
L36	N 07° 31'16" W	22.28'
L37	N 02° 34'26" E	22.00'
L38	N 32° 33'01" E	22.77'
L39	N 53° 23'16" E	26.61'
L40	N 42° 52'00" E	15.65'
L41	S 65° 35'24" E	32.88'
L42	N 87° 55'55" E	20.20'
L43	N 70° 11'39" E	23.21'
L44	N 68° 08'18" E	54.04'
L45	N 60° 11'33" E	38.42'
L46	N 50° 60'19" E	39.48'
L47	N 39° 58'58" E	23.69'
L48	N 30° 50'28" E	24.21'
L49	N 48° 42'53" E	133.40'
L50	S 01° 45'00" W	264.66'
L51	N 73° 00'22" W	272.89'
L52	N 25° 14'12" E	318.44'
L53	S 78° 32'54" E	212.07'

NOTE:
1. THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTRY 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.

2. SEE SHEET 15 FOR AFFORESTATION PLANTING SPECIFICATIONS, DETAILS & NOTES.

3. SUPER SILT FENCE WILL ALSO ACT AS TREE PROTECTION FOR EXISTING FOREST AREAS TEMP

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/16/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/10/99

DIRECTOR — DATE 8/16/99

Date	No.	Revision Description
8-18-99	1	REV. TITLE BLOCK, PARCEL DESIGNATIONS AND AFFORESTATION PLANTING AREAS.

Montpelier

PARCELS E-1, G-1 & G-2

Research Park

HOWARD COUNTY MARYLAND

OWNER/DEVELOPER: HOPKINS ROAD LIMITED PARTNERSHIP
9030 RED BRANCH ROAD, SUITE 200 COLUMBIA, MD 21045

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME	SECTION/AREA		PARCEL #
Montpelier			E-1, G-1, G-2
PLAT #	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
13229-13234	17	PEC	41	5th	6051.02
WATER CODE		SEWER CODE	
E 21		6440000	

TITLE: FOREST CONSERVATION / AFFORESTATION PLAN

Des By: TPC	Scale: 1" = 50'	Proj. No. 941717B	
Drn By: TPC	Date: 7-6-99	15 OF 16	
Chk By:	Approved:		

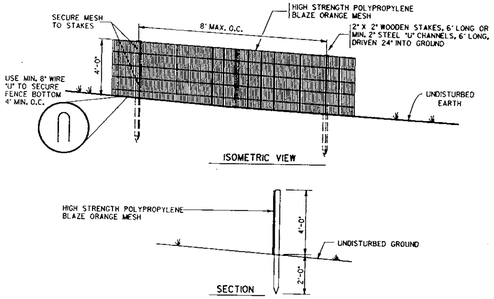
SDP 99-92

7-29-99
Date

STATE OF MARYLAND — TERRENCE P. MCCUNE — No. 551 — REGISTERED LANDSCAPE ARCHITECT

Landscape Arch. No. 551

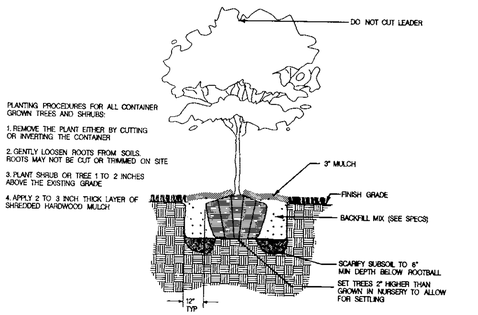
Thu Jul 29 19:09:09 1999 m:\941717b\parcel.dwg only941717b.fd5



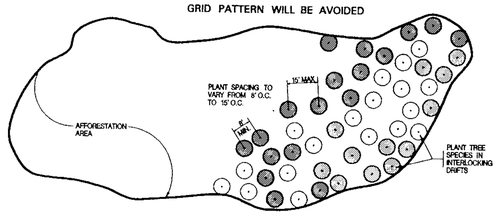
NOTES:

1. THIS DETAIL IS FOR FOREST PROTECTION DEVICE ONLY
2. FOREST RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS
3. BOUNDARIES OF FOREST RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING THE DEVICE
4. ROOT DAMAGE SHALL BE AVOIDED
5. PROTECTION SIGNAGE MAY ALSO BE USED
6. FOREST PROTECTION FENCE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION

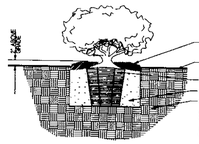
Forest Protection Fence
Not To Scale



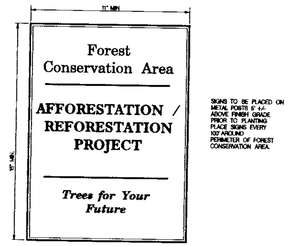
Typical Tree Planting (For container grown)
Not To Scale



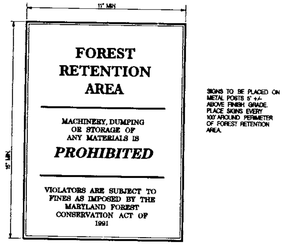
Planting Design Schematic
Not To Scale



Planting of Container Grown Material
Not To Scale



Permanent Signage
Not To Scale



Temporary Signage
Not To Scale

GOALS & OBJECTIVES

The objective of this plan is to complete Forest Conservation Plan requirements for the Montpelier site by establishing a permanent location for "Potential Afforestation Areas" as they were previously designated.

A Forest Conservation Easement will be placed on all afforestation /reforestation areas.

FOREST RETENTION

Tree retention/Soil Protection areas will be delineated with temporary signage as appropriate. See Temporary Signage Detail prior to the beginning of any construction activity. Attachment of signs to trees is prohibited

Forest protection fencing and retention area signage to be installed where grading has been indicated.

PRECONSTRUCTION MEETING/CONSTRUCTION PERIOD PRACTICES

Before construction begins, a required preconstruction meeting shall be held. The principle contractors, engineer, Howard County inspectors and a qualified forest professional familiar with the plan shall be present. All items pertaining to forest retention, tree preservation, and construction period practices shall be discussed.

Any changes to the plan due to on-site conditions must be approved by the Howard County Department of Planning and Zoning.

No grading, excavation, utility placement, sediment and erosion control activities, or vehicular traffic will occur within forest retention areas.

Storage of equipment and materials shall not be permitted in the forest retention areas.

There will be no burial or disposal of discarded material on-site within the retention area.

There will be no open burning within 100 feet of woodlands.

Temporary structures including, but not limited to construction trailers, sanitary facilities, etc. shall not be placed within the forest retention areas.

Employee parking shall not be permitted in the forest retention areas.

POST CONSTRUCTION MANAGEMENT/MAINTENANCE BY CONTRACTOR

All dead trees or tree limbs which pose an immediate safety hazard will be felled. Trees dropped within the forest retention area will not be removed.

All temporary forest protection structures will be removed after construction and permanent signage will be placed where indicated on the plan.

A 2-year Contractor's Maintenance and Monitoring Period shall begin at mobilization. Seventy five percent survivorship must be guaranteed for this period. The site shall be inspected at the end of the two year period to ascertain survivorship and provide for replacement if necessary.

The Contractor's maintenance of new planting shall consist of watering, cultivating, weeding, and mulching as necessary to insure survival.

Contractor shall protect planting areas and plants at all times against damage of all kinds for duration of maintenance period. Maintenance includes temporary protection barriers and signs as required for protection. If any plants become damaged or injured, because sufficient protection was not provided, treat or replace as directed by Landscape Architect at no additional cost to Owner.

ALL AFFORESTATION AREAS SHOWN ON THIS PLAN TO BE PLACED IN FOREST CONSERVATION EASEMENT.

STANDARDS AND SPECIFICATIONS FOR PLANTING

1. PLANT MATERIAL SELECTION

A. Nursery grown plant materials greater than 1" caliper should meet or exceed the requirements of the American Nurserymen Specifications, i.e. should be typical of the species and variety, have a normal habit of growth, be first quality, sound, vigorous, well-branched, have healthy, well furnished root systems, and be free of disease, insect pests and mechanical injuries.

B. Planting stock less than 1" caliper should meet the following standards:

Seedling/whips:

Hardwoods – 14" to 12" caliper with roots not less than 6" long
Shrubs – 16" or larger caliper with 8" root system.

2. PLANTING SITE PREPARATION

Soils shall not be disturbed outside the area necessary for planting individual specimens and the removal of exotic invasive plant material. These areas should be stabilized as shown on the temporary seeding notes on sheet 8.

3.PLANTING PERIOD

All material shall be planted between September 15 and May 31. Material shall not be installed when ground is frozen.

4.PLANT MATERIAL STORAGE

Plants should be planted within 24 hours of delivery if possible. Plant material which are left unplanted for more than 24 hours shall be protected from direct sun and weather and kept moist. Nursery stock should not be left unplanted for more than two weeks.

5.ON-SITE INSPECTION

Prior to planting, planting stock shall be inspected by the landscape architect or other qualified professional familiar with this plan. Plant material not conforming to standard nurseryman specifications for size, form, vigor, roots, trunk wounds, insects and disease should be replaced.

6.TOPSOIL FOR PLANTING SOIL

A. On-site material or imported from same source as topsoil used on site for finish grading.

1. Uniform composition, free of subsoil, clay lumps, stones, stumps, roots or similar objects larger than 1 inch.

2. Topsoil must be free of plants or plant parts of bermudagrass, quackgrass, Johnsongrass, nutsedge, poison ivy, Canada thistle, or others as specified.

3. All topsoil shall be tested by a recognized laboratory for pH and soluble salts. A pH of 4.5 to 7.5 is required. Soluble salts shall not be higher than 500 parts per million.

7. ADDITIVE FOR BACKFILL MIX

A. Wood Residuals:

1. Source shall be well composted, not chemically treated.

2. Physical properties – grading:

U.S. Sieve	Dry Weight Percent Passing
3/8"	100
1/4"	90 – 100
No. 8	70 – 100
No. 35	0 – 30

3. Organic content by ash analysis: 90 – 100 percent dry weight

4. Chemistry:

Range

a. Saturation Extract Conductivity (EC) ——— Nil – 3.5
b. Reaction (pH) ——— 3.0 – 5.5

5. Salinity: Maximum saturation extract conductivity 1.0 millimhos per cm at 25 degrees centigrade.

B. Sand

1. Physical Properties – Grading:

U.S. Sieve	Dry Weight Percent Passing
No. 4	100
No. 10	95 – 100
No. 18	80 – 100
No. 35	65 – 100
No. 60	0 – 50
No. 140	0 – 20
No. 270	0 – 7

2. Chemistry:

Saturation Extract Conductivity (EC) ——— Nil – 3.0
Sodium Absorption Ratio (SAR) ——— Nil – 6.0
Boron – ppm in saturation extract solution ——— Nil – 1.0
Reaction (pH) ——— 6.0 – 7.5
Available calcium – sodium acetate extractable – ppm ——— Nil – 2000 dry weight

C. Treble Superphosphate: Commercial product containing 19 to 20 percent available phosphoric acid.

8. MULCH

A. Shredded long fiber hardwood.

B. Mulch shall have been shredded within the last six (6) months.

9. PLANTING MIX

A. Planting mix shall be prepared at approved on-site staging area using approved on-site existing soil. Mix minimum quantities of 20 cubic yards or sufficient mix for entire job if less than 20 cubic yards is required.

B.Thoroughly mixed in the following proportions for tree and shrub planting mix:

.5 cy Existing soil
.2 cy Sharp sand
.3 cy Wood residuals
4.5 lbs Treble superphosphate
5 lbs Dolomite limestone (eliminate for acid loving plants)

10. LAYOUT AND EXCAVATION OF PLANTING AREAS

A. Plants shall be placed in each zone at random locations shown at spacing as indicated on the plan.

B. The Landscape Architect or qualified professional will check location of plants in the field and shall adjust to exact position before planting begins.

C. Subsoil shall not be worked when moisture content is so great that excessive compaction will occur, nor when it is so dry that clods will not readily break. Water shall be applied, if necessary, to bring soil to an optimum moisture content before tilling and planting.

D. Tree pits shall not be excavated more than 24 hours in advance of planting operation. Tree pits shall be excavated to the following dimensions:

Excavation for	Width	Depth
Canned Trees	Can + 12 in.	Can + 4 in.
B&B Trees	Ball + 12 in.	Ball + 4 in.

E. Excavate shrub pits to the following depths:

Excavation for	Width	Depth
Shrubs	Ball or Can + 8 in.	Can + 4 in., not less than 12 in.

11. PREPARING PLANT MATERIALS FOR PLANTING

A. Container stock shall be removed carefully after cans have been cut on two sides with approved cutter. Do not use spade to cut cans. Do not lift or handle container plants by tops, stems or trunks at any time.

B. Do not bind or handle any plant with wire or rope at any time so as to damage bark or break branches. Lift and handle plants only from bottom of ball.

C. Balled and burlapped (B&B) plants shall have firm balls of earth. Plants moved with a ball will not be accepted if the ball is cracked or broken before or during planting operations. B&B materials shall be dug only when dormant. Pre-dug stored B&B material shall be inspected and approved at the storage site.

D. Do not force roots for bare rooted trees into excavated pits – custom dig pits to receive roots without deformation.

12. MIXING

A. Mix soil base, amendments and chemical additives by mechanical means.

B. Soil and sand bases shall be completely pulverized and free of lumps or aggregated material. Moisture content of base materials shall not be such that chemical granular or pelletized additives become dissolved during the mixing process.

C. Mix media in quantities of not less than 20 cubic yards or mix total quantity required if less than 50 cubic yards. The Contractor shall be responsible for continuity between batches.

D. Contaminating backfill mix with unmixed soil in backfilling lots shall be avoided.

13. INSTALLATION OF CONTAINERIZED PLANT MATERIAL

A. Scarify the walls and bottom of all plant pits immediately prior to the placement of plant and backfill mix. The Contractor shall remove all glazing of soil caused by an auger or mechanical hole digger.

B. Place B&B plants carefully in the prepared planting pit. Do not disturb root ball or untie twine or roping until backfill settlement is complete and tree is staked, if applicable. Fill planting pit by flooding each 6 inches of backfill for ball's greater than 24 inch diameter. Fill plant pits with soil mix to depth to receive plant root ball, so that top of ball is 2 inches above finished grade. Wrap trunks with double layer of tree wrap.

C. Wells around trees and shrubs: after planting is complete, form a soil well 3 inches high around each plant, extending to the outer limit of the plant pit in accordance with planting details shown on the Drawings.

D. Smooth planted areas to conform to specified grades after full settlement as occurred. Contractor shall bear final responsibility for proper surface drainage of planted areas. Any discrepancy in the drawings or specifications, obstructions on the site, or prior work done by another party, which Contractor feels precludes establishing proper drainage, shall be brought to the attention of the Landscape Architect in writing.

E. Water all plants immediately again after planting.

F. Spread mulch in required areas to the compacted depth of 2 inches.

GUARANTEE:

A MINIMUM SURVIVAL RATE OF 75% IS TO BE GUARANTEED BY THE DEVELOPER AT THE END OF THE TWO YEAR MAINTENANCE PERIOD.

NOTE: BASED ON THE ADDITIONAL 2.8 ACRES OF AFFORESTATION PROVIDED ON THESE PLANS, ALL FOREST CONSERVATION OBLIGATIONS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE HAVE BEEN ADDRESSED FOR THIS DEVELOPMENT.

Reforestation Planting

Species	Size	Spacing	Quantity
Acer rubrum	24" whips /Cont.	8'-11' mdm	75
Prunus serotina	24" whips /Cont.	8'-11' mdm	75
Fraxinus pennsylvanicum	24" whips /Cont.	8'-11' mdm	75
Quercus alba	24" whips /Cont.	8'-11' mdm	75
Amelanchier arborea	24" whips /Cont.	8'-11' mdm	75
Liriodendron tulipifera	24" whips /Cont.	8'-11' mdm	75
Juglans nigra	24" whips /Cont.	8'-11' mdm	75
Quercus coccinea	24" whips /Cont.	8'-11' mdm	75
Sassafras albidum	24" whips /Cont.	8'-11' mdm	75
Viburnum prunifolium	24" whips /Cont.	8'-11' mdm	75
Lindera benzoin	24" whips /Cont.	8'-11' mdm	80
Hamamelis virginiana	24" whips /Cont.	8'-11' mdm	75
Viburnum acerifolium	24" whips /Cont.	8'-11' mdm	75
		Total	980

NOTE:

1. THE PRECISE LOCATION OF PLANT MASSINGS WILL BE LOCATED IN THE FIELD BY LANDSCAPE ARCHITECT.
2. GRID PATTERNS WILL BE AVOIDED
3. PLANT MATERIAL MAY BE GROUPED IN CLUSTERS OF NO MORE THAN 5 TO 7 WHIPS OF THE SAME PLANT. PLANTS WILL BE INSTALLED IN A RANDOM FASHION.

Conditions and Management Practices for Working in Nontidal Wetlands and Buffers

A. REMOVE EXCAVATED MATERIAL, CONSTRUCTION MATERIAL OR DEBRIS TO AN UPLAND DISPOSAL AREA OUTSIDE OF ANY WATERWAY, FLOODPLAIN, NONTIDAL WETLAND, OR BUFFER;

B. IF BACKFILL IS OBTAINED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.

C. PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF THE NONTIDAL WETLAND;

D. MAINTAIN THE HYDROLOGIC REGIME OF NONTIDAL WETLANDS OUTSIDE THE LIMITS OF DISTURBANCE.

E. RECTIFY ANY NONTIDAL WETLANDS AND BUFFERS TEMPORARILY IMPACTED BY THE PERMITTED ACTIVITY. ALL STABILIZATION IN THE WETLAND AND BUFFER SHALL BE OF THE FOLLOWING RECOMMENDED SPECIES: ANNUAL RYEGRASS (Lolium multiflorum), MILLET (Setaria Italica), OATS (Uniola sp.) AND /OR RYE (Secale cereale). OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN THE WETLAND OR BUFFER. ALL TEMPORARY FILLS SHALL BE REMOVED IN THEIR ENTIRETY ON OR BEFORE THE COMPLETION OF CONSTRUCTION;

F. TO PROTECT IMPORTANT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM AS FOLLOWS:

USE I WATERS. IN-STREAM WORK MAY NOT BE CONDUCTED DURING THE PERIOD MARCH 1 – JUNE 15 INCLUSIVE, DURING ANY YEAR.

G. NO REMOVAL OF VEGETATION, GRADING, FILLING, DRAINING, OR OTHER ALTERATION OF THE NONTIDAL WETLANDS OR BUFFER OUTSIDE THE LIMITS OF DISTURBANCE SHALL OCCUR WITHOUT WRITTEN AUTHORIZATION FROM THE WATER MANAGEMENT ADMINISTRATION.

7.29.99
Date

Landscape Architect No. 551

Forest Conservation Worksheet

1. BASIC SITE DATA
Gross Site Area ——— 104.6 Acres
Area within 100 year floodplain ——— 1.3 Acres
Area within MSHA row reservation ——— 7.3 Acres
Net tract area ——— 96.3 Acres
Land use category: (H-RLD, R-RMD, R-S, CSO,I) ——— PEC

2. INFORMATION FOR CALCULATIONS
a. Net tract area ——— 96.3 Acres
b. Reforestation threshold 15% x A ——— 14.5 Acres
c. Afforestation threshold 15% x A ——— 14.5 Acres
d. Existing forest on net tract area ——— 7.5 Acres
e. Forest areas to be cleared ——— 3.5 Acres
f. Forest areas to be retained ——— 3.7 Acres

3. DETERMINING REQUIREMENTS: AFFORESTATION OR REFORESTATION
AFFORESTATION: If existing forest areas are less than the afforestation minimum (#3 is less than C), afforestation requirements apply.

4. AFFORESTATION CALULATIONS
a. Net tract area ——— 96.3 Acres
b. Afforestation minimum 15% x A ——— 14.5 Acres
c. Existing forest on net tract area ——— 7.5 Acres
d. Forest areas to be cleared ——— 3.5 Acres
e. Forest areas to be retained ——— 3.7 Acres

Clearing below the Minimum

If existing forests are less than the afforestation minimum (#3 is less than C) and clearing is proposed, the flowing calculations apply:

Afforestation for unforested areas below minimum C-D ——— 8.8 Acres
afforestation for clearing below minimum Ex2 ——— 7.5 Acres
Total afforestation required C-D + Ex2 ——— 14.4 Acres

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

Forest Conservation Summary

14.4± Acres Afforestation/Reforestation Required
~~10.4±~~ Acres ~~Afforestation~~/Reforestation on Site Under SDP 98-11
2.8± Acres Afforestation/Reforestation on Site Under ~~SDP 99-92~~ F-99-191
1.2± Acres Fee In-Lieu (Paid)

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/5/99
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/10/99
DIRECTOR — DATE 8/11/99

Date	No.	Revision Description
8-10-99	1	REV. TITLE BLOCK

Montpelier
PARCELS E-1, G-1 & G-2
Research Park
HOWARD COUNTY MARYLAND

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME	SECTION/AREA		PARCEL #
Montpelier			E-1, G-1, G-2
PLAT # 13229-13234	BLOCK # 17	ZONE PEC	TAX/ZONE MAP 41
ELECT. DISTRICT 5th	CENSUS TRACT 6051.02		
WATER CODE E 21	SEWER CODE 6440000		

TITLE: FOREST CONSERVATION/ AFFORESTATION DETAILS & NOTES

Des By: JAR	Scale: As Shown	Proj. No. 941717B	
Drn By: TPC	Date: 7-6-99	16 OF 16	
Chk By:	Approved:		

SDP 99-92

MATCHLINE SEE SHEET 3

MATCHLINE SEE SHEET 2

E 1344000
N 545250

PARCEL E

TEMPORARY STOCKPILE

TEMP. CULVERT CULVERT CROSSING 35 LF 27" CMP

INTERIM SWALE

EX FOREST CONS. EASEMENT

SHA CL1 UNGROUTED RIP-RAP

NOTE: FILL TO BE PLACED TO DRAIN TO SWALE WHERE POSSIBLE

PARCEL E OPEN SPACE

EX FOREST CONSERVATION EASEMENT

LOD

NOTE: SUPER SILT FENCE 3' CURLS TO BE PLACED BEFORE FILL HAS BEEN INSTALLED

9" RENO MATTRESS 12' WIDE SLOPE PROTECTION 4"-7" STONE

5' SHA CL1 UNGROUTED RIP RAP @ TOE OF MATTRESS (SEE DETAIL)

NOTE: ADD SUPER SILT FENCE ALONG BACKS OF BENCHES 3 CURL UPS EVERY 100'

9" RENO MATTRESS 12' WIDE SLOPE PROTECTION 4"-7" STONE

EX 25' SEWER & UTILITY EASEMENT

PROPOSED 20' PRIVATE SHC EASEMENT

EX FOREST CONSERVATION EASEMENT

MAXIMUM DA TO PSD 3.3 AC.

MAXIMUM DA TO PSD 3.3 AC.

PARCEL G

Parcel G2

TRAP 2'H SIZE 82'x12.9' DEEP TO BE MAINTAINED AT THE END OF EACH WORKING DAY BEHIND PIPE SLOPE.

NOTE: PSD & EARTH DIKE TO REMAIN UNTIL PERMANENT SD DIRECTS FLOW TO THE SWM FACILITY ADJUST PIPE SLOPE DRAIN TO MATCH FILL.

ED A-3

INV 916.0

JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY 400/0625 P 289

E 1344250
N 546750

Parcel G2

NOTE: SUPER SILT FENCE ALONG PROPERTY LINE (3' CURLS TO BE PLACED @ 50' INTERVALS BEFORE FILL IS PLACED.

SEE FILL SLOPE CONSTRUCTION DETAIL SHEET 6 FOR PLACEMENT AND PSD.

PROPOSED FOREST CONSERVATION EASEMENT (AFFORESTATION).

ROUTE 29

E 1344750
N 545590

NOTE: "J" SHAPED ENDS OF SUPER SILT FENCE (SSF) SECTIONS ARE TO OCCUR AT EVERY 50'

NORTH

KEY SHEET

NTS

LEGEND

SYMBOL	DESCRIPTION
	STREAM
SSF	SUPER SILT FENCE
	EXISTING CONTOURS
	EXISTING TREES/ TREE LINE
	WETLAND/STREAM BUFFER
	WETLAND
400	PROPOSED CONTOURS
	FLOODPLAIN
	LIMIT OF DISTURBANCE
25'	EXISTING 25' WIDE UTILITY EASEMENT
SF	SF SILT FENCE
	EROSION CONTROL MATTING
	MAXIMUM DRAINAGE AREA.
	EARTH DIKE A-3
	EROSION CONTROL MATTING.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/5/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/10/99

DIRECTOR — DATE 8/11/99

Date	No.	Revision Description
8-18-99	1	REVISE TITLE BLOCK AND PARCEL G-2 GRADING AND SEDIMENT AND EROSION CONTROLS.
	2	REVISE GRADING AND SEDIMENT & EROSION CONTROLS.

Montpelier

PARCELS E-1, G-1, G-2

Research Park

HOWARD COUNTY MARYLAND

OWNER/DEVELOPER: HOPKINS ROAD LIMITED PARTNERSHIP
9030 RED BRANCH ROAD, SUITE 200 COLUMBIA, MD 21045

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME		SECTION/AREA		PARCEL #
Montpelier				E-1, G-1, G-2
PLAT#	BLOCK # / ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
13229-13234	17 / PEC	41	5th	6051.02
WATER CODE		SEWER CODE		
E 21		6440000		

TITLE

NE SITE GRADING & SEDIMENT & EROSION CONTROL PLAN

Des By: ZAL	Scale: 1" = 50'	Proj. No. 941717B
Drn By: ADL	Date: 7-6-99	4 OF 16
Chk By:	Approved:	

SDP 99-92

Thu Jul 29 17:29:27 1999 n:\941717\f\parcel e&g only\941717sw2

DEVELOPER'S CERTIFICATION:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER — DATE 7/30/99
PRINT NAME BELOW SIGNATURE
Howard L. Rernch

ENGINEER'S CERTIFICATION:

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

SIGNATURE OF ENGINEER — DATE 7-29-99
PRINT NAME BELOW SIGNATURE
John W. Ranocchia, Sr.

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS

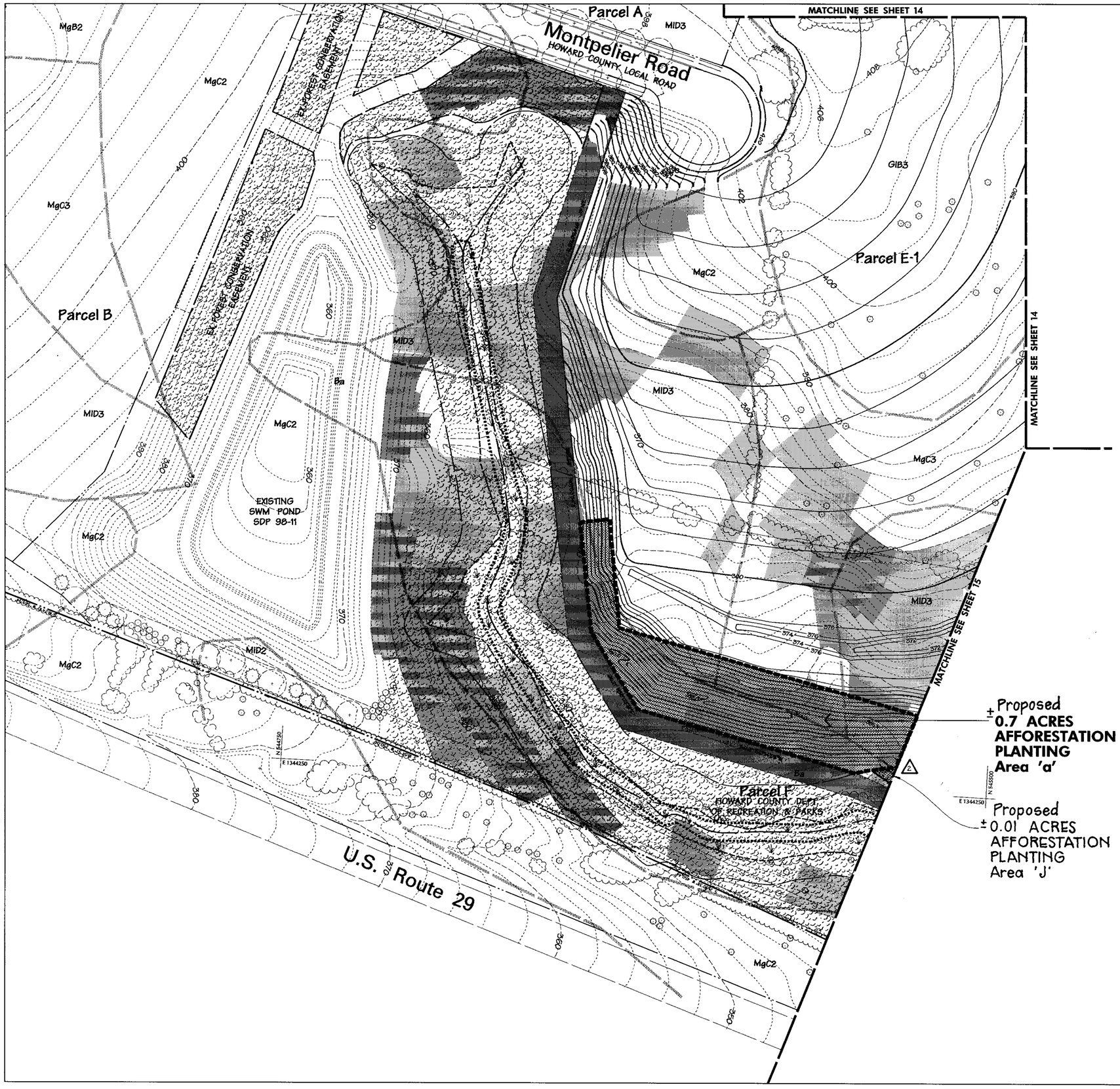
U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 08/04/99

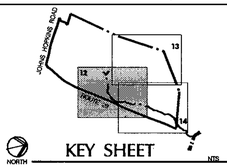
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD S.C.D. — DATE 8/4/99

7-29-99
Date

Professional Engr. No. 10551





LEGEND

SYMBOL	DESCRIPTION
	SLOPES = >25%
	SLOPE = 15%-25%
	STREAM
MID3 MgC3	SOILS
	EXISTING CONTOURS
	EXISTING TREES/ TREE LINE
	WETLAND/STREAM BUFFER
	WETLAND
400	PROPOSED CONTOURS
	FLOODPLAIN
	LIMIT OF DISTURBANCE
	EXISTING 25' WIDE PUBLIC WATER, SEWER & UTILITY EASEMENT
	PROPOSED FOREST CONSERVATION EASEMENT
	EXISTING FOREST CONSERVATION EASEMENTS

NOTE:
1. THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTRY 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.

2. SEE SHEET 15 FOR AFFORESTATION PLANTING SPECIFICATIONS, DETAILS & NOTES.

3. SUPER SILT FENCE WILL ALSO ACT AS TREE PROTECTION FOR EXISTING FOREST AREAS.

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/5/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/10/99

DIRECTOR — DATE 8/11/99

Date	No.	Revision Description
8-18-99	1	REV. TITLE BLOCK. PARCEL DESIGNATIONS AND AFFORESTATION PLANTINGS AREAS AND ROAD CUL-DE-SAC AND GRADING.
12-14-99	2	REV. AFFORESTATION PLANTING AREAS

Montpelier

PARCELS E-1, G-1 & G-2

Research Park

HOWARD COUNTY MARYLAND

OWNER/DEVELOPER: HOPKINS ROAD LIMITED PARTNERSHIP
9030 RED BRANCH ROAD, SUITE 200 COLUMBIA, MD 21045

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

7.29.99
Date

STATE OF MARYLAND — MELANIE MORRIS — No. 551 — LANDSCAPE ARCHITECT

Landscape Architect No. 551

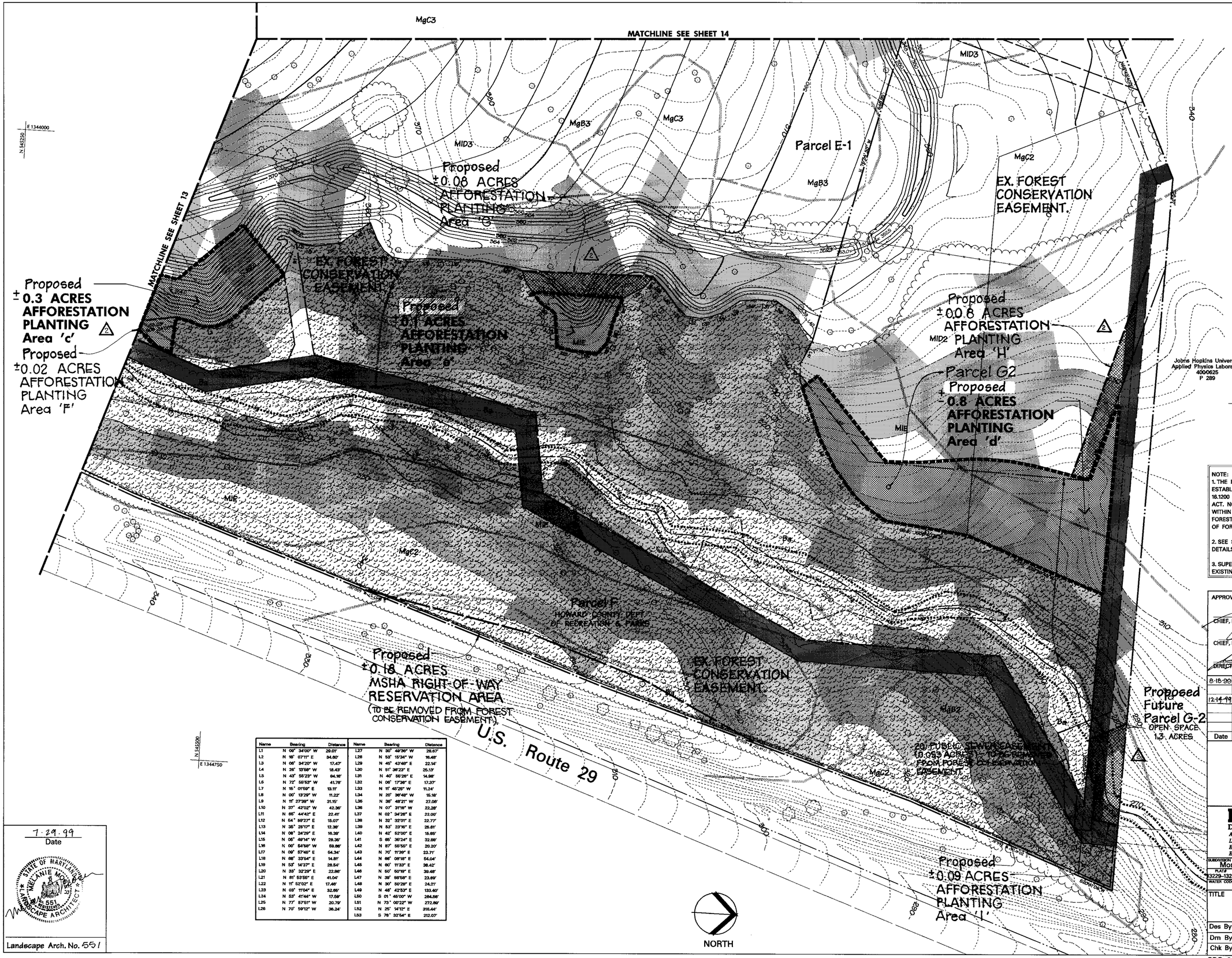
SUBDIVISION NAME		SECTION/AREA		PARCEL #
Montpelier				E-1, G-1, G-2
PLAT #	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
13229-13234	17	PEC	41	5th	6051.02
WATER CODE		SEWER CODE		
E 21		6440000		

TITLE **FOREST CONSERVATION / AFFORESTATION PLAN**

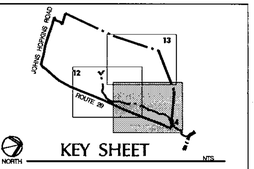
Des By: TPC	Scale: 1" = 50'	Proj. No. 941717B	
Drn By: TPC	Date: 7-6-99	13 OF 16	
Chk By:	Approved:		

SDP 99-92

Thu Jul 29 15:06:29 1999 m:\941717\parcel.dwg only\941717b.fct



Name	Bearing	Distance	Name	Bearing	Distance
L1	N 06° 34'00" W	29.01'	L27	N 30° 49'36" W	28.67'
L2	N 18° 07'11" E	34.60'	L28	N 53° 15'34" W	16.48'
L3	N 06° 54'20" W	17.47'	L29	N 45° 43'49" E	22.14'
L4	N 26° 13'58" W	18.43'	L30	N 51° 39'22" E	26.13'
L5	N 43° 55'23" W	84.16'	L31	N 40° 56'26" E	14.98'
L6	N 72° 55'53" W	41.76'	L32	N 06° 17'36" E	17.37'
L7	N 16° 01'59" E	13.11'	L33	N 11° 46'26" W	11.24'
L8	N 00° 13'29" W	11.22'	L34	N 20° 36'48" W	16.18'
L9	N 11° 27'39" W	31.15'	L35	N 36° 49'21" W	27.08'
L10	N 37° 42'02" W	42.36'	L36	N 07° 37'16" W	22.28'
L11	N 85° 44'42" E	22.41'	L37	N 02° 34'26" E	22.00'
L12	N 54° 69'27" E	15.07'	L38	N 32° 32'01" E	22.77'
L13	N 35° 25'12" E	12.36'	L39	N 53° 23'16" E	25.81'
L14	N 08° 24'29" E	16.38'	L40	N 42° 52'00" E	15.85'
L15	N 05° 49'14" W	28.36'	L41	S 65° 36'24" E	32.88'
L16	N 00° 54'58" W	59.86'	L42	N 87° 55'55" E	20.20'
L17	N 09° 57'45" E	64.34'	L43	N 70° 11'39" E	23.71'
L18	N 86° 33'54" E	14.87'	L44	N 66° 08'16" E	54.04'
L19	N 53° 14'37" E	28.54'	L45	N 80° 11'33" E	38.42'
L20	N 33° 32'29" E	22.86'	L46	N 50° 50'19" E	39.48'
L21	N 81° 53'55" E	41.04'	L47	N 39° 58'58" E	23.69'
L22	N 11° 52'02" E	17.46'	L48	N 30° 50'29" E	24.21'
L23	N 03° 11'04" E	32.86'	L49	N 48° 42'53" E	133.40'
L24	N 53° 41'44" W	17.59'	L50	S 01° 46'00" W	284.58'
L25	N 77° 57'51" W	20.79'	L51	N 73° 00'22" W	272.86'
L26	N 70° 59'12" W	36.24'	L52	N 25° 14'12" E	316.44'
			L53	S 78° 32'54" E	212.07'



LEGEND

SYMBOL	DESCRIPTION
	SLOPES = >25%
	SLOPE = 15%-25%
	STREAM
MID3 MgC3	SOILS
	EXISTING CONTOURS
	EXISTING TREES/ TREE LINE
	WETLAND/STREAM BUFFER
	WETLAND
400	PROPOSED CONTOURS
	FLOODPLAIN
	LIMIT OF DISTURBANCE
	EXISTING 25' WIDE PUBLIC WATER, SEWER & UTILITY EASEMENT
	PROPOSED FOREST CONSERVATION EASEMENT
	EXISTING FOREST CONSERVATION EASEMENTS

NOTE:
1. THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTRY 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.

2. SEE SHEET 15 FOR AFFORESTATION PLANTING SPECIFICATIONS, DETAILS & NOTES.

3. SUPER SILT FENCE WILL ALSO ACT AS TREE PROTECTION FOR EXISTING FOREST AREAS TEMP

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8/11/99

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/10/99

DIRECTOR — DATE 8/11/99

Date	No.	Revision Description
8-18-99	1	REV. TITLE BLOCK, PARCEL DESIGNATIONS AND AFFORESTATION PLANTING AREAS.
12-14-99	2	REV. AFFORESTATION PLANTING AREAS & EASEMENT.

Montpelier

PARCELS E-1, G-1 & G-2

Research Park

HOWARD COUNTY MARYLAND

OWNER/DEVELOPER: HOPKINS ROAD LIMITED PARTNERSHIP
9030 RED BRANCH ROAD, SUITE 200 COLUMBIA, MD 21045

DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME	SECTION/AREA			PARCEL #
Montpelier				E-1, G-1, G-2
PLAT #	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
3229-13234	17	PEC	41	5th	6051.02
WATER CODE		SEWER CODE		
E 21		6440000		

TITLE: FOREST CONSERVATION / AFFORESTATION PLAN

Des By: TPC	Scale: 1" = 50'	Proj. No. 941717B	
Drn By: TPC	Date: 7-6-99	15 OF 16	
Chk By:	Approved:		

SDP 99-92

7.29.99
Date

STATE OF MARYLAND
MELANIE MOORE
No. 551
LANDSCAPE ARCHITECT

Landscape Arch. No. 551

Thu Jul 29 15:09:09 1999 n:\941717\fp\parcel.dwg mlyb941717b.tc5