Final Construction Plans for Montpelier Research Park

Howard County Maryland

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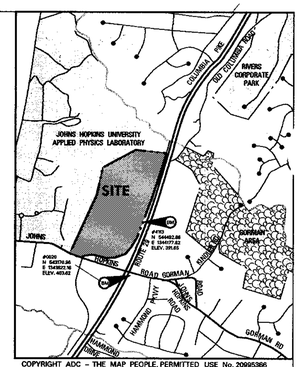

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NORTH

LOCATION MAP
SCALE: 1" = 2000'

HORIZONTAL CONTROL

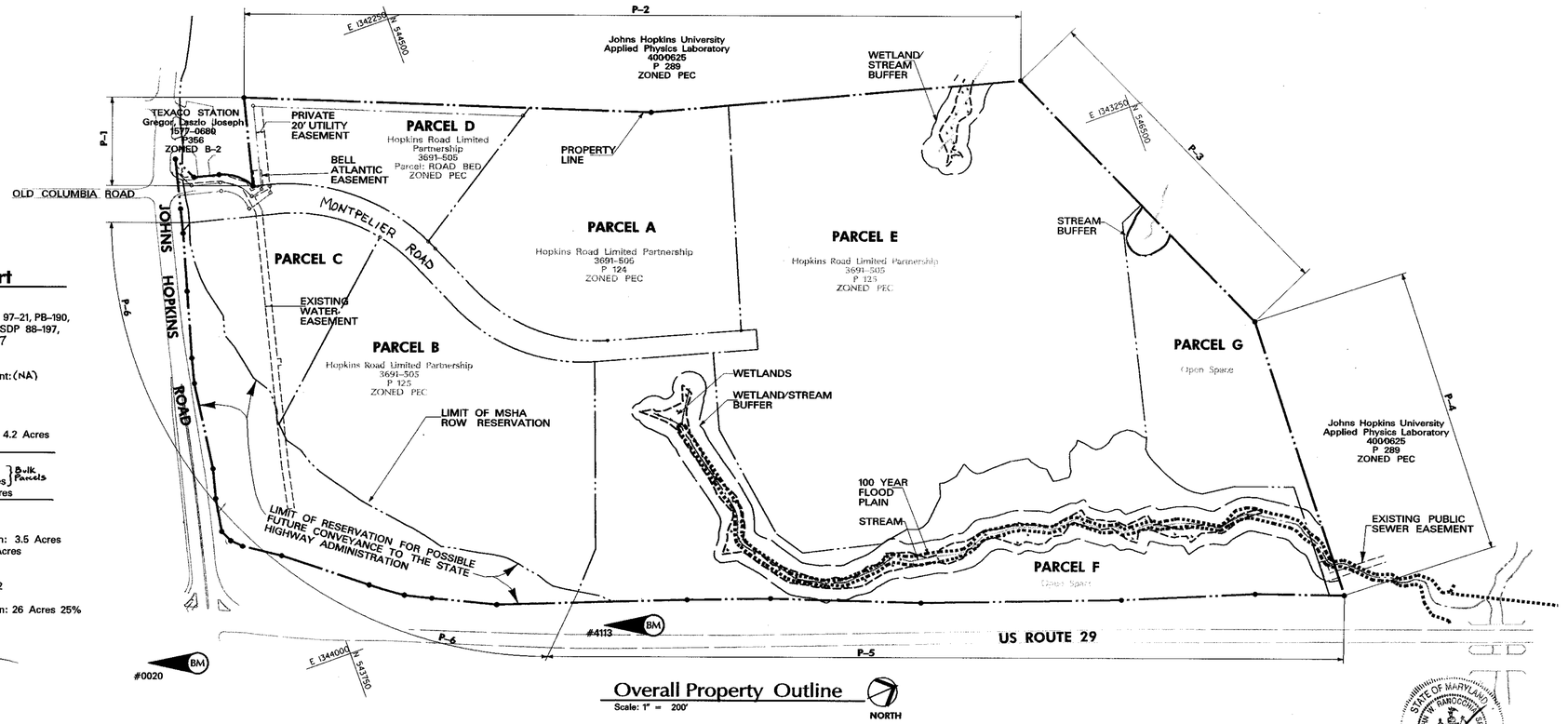
THE COURSES AND COORDINATES SHOWN HEREON ARE BASED UPON THE NAD 83 MARYLAND COORDINATE SYSTEM AND ARE DERIVED FROM THE FOLLOWING HOWARD COUNTY SURVEY CONTROL STATIONS:

NO.	NORTH	EAST
0020	543170.96	1343822.16
4113	544492.88	1344177.82

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



Overall Property Outline
Scale: 1" = 200'
NORTH

Site Analysis Data Chart

1. General Site Data
a. Present Zoning: Planned Employment Center
b. Applicable DPZ File Reference: BA96-31, WP 97-21, PB-190, vp 86-64, wp 91-93, ZB 802 & 767, FDP #1, SDP 88-197, SDP 89-88, SDP 98-011, WP 98-12, WP 98-37
c. Proposed Use of Site: Employment Center
d. Proposed Water and Sewer System: Public
e. Any Other Information Which May Be Relevant: (NA)

2. Area Tabulation
a. Total Area of Site: 104 Acres
b. Area of 100-Year Floodplain: +/- 1.9 Acres
c. Area of Steep Slopes (25% or Greater): +/- 4.2 Acres
d. Net Area of Site: 97.9 Acres
e. Area of This Plan Submission: 104 Acres
f. Area of Proposed Building Lots: 67.35 Acres } Bulk Parcels
g. Area of Proposed Open Space Lots: 26 Acres } Bulk Parcels
h. Area of Proposed Preservation Parcels: 0 Acres
i. Area of Bulk Parcels: 93.5 Acres
j. Area of Proposed Public Roads: 3.5 Acres
k. Area of Proposed Private Roads: 0 Acres
l. Area of Proposed Public Road R/W Dedication: 3.5 Acres
m. Other Area: MSHA R/W Reservation 7.15 Acres

3. Open Space Data
a. Total Number of Open Space Lots Proposed: 2
b. Open Space Required: 26 Acres 25%
c. Total Open space Provided on this submission: 26 Acres 25%

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 on contract numbers 44-1160 and 30-1757-d, and supplemented with field survey by DMW in August 1997. 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 contractor's 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. Contact Bell Atlantic: See Note, Sheet 3/11.

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 at 2' intervals is based on the mass grading shown on SDP-98-011, aerial photogrammetry by Photogrammetric Data Services in June 1986, and by supplementary topo along Johns Hopkins Road by DMW in August 1997.

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

8. Existing public water and sewer contract number (44-1160, 30-1757-d). Water and sewer are Public, Contract Number (34-3654-D). Drainage area is the Middle Patuxent.

9. The subsurface exploration and geotechnical engineering analysis for this project was made by Hillis Carnes, Inc. on Jan 31, 1997.

10. 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.

11. 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, were used for this project (See Location Map).

12. Storm water management quantity and quality for Parcels A,B,C and D is provided by a retention facility per SPD-98-011. Stormwater Management for the North end of the site will be provided in a separate facility at the time of development.

13. 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.

14. There are no known cemeteries or burial grounds on this site. However, upon discovery of any evidence of burials or graves, the developer will be subject to section 16.1305 of the Howard County Subdivision and Land Development Regulations.

15. The traffic study was prepared by Cunningham & Assoc. dated October 1997. The improvements shown on these plans are for Phase 1 only as shown in the report.

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

17. State & Federal permit tracking number 199765674.

18. 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 inital stage of subdivision.

19. There are no noise studies required for this project.

20. Waivers to the Howard County Design Manual Volume III include a waiver to the typical section for a minor arterial, waiver to the 670' radius requirement for a minor arterial, and a waiver to the intersection spacing requirement at Montpelier Road and Johns Hopkins Road. APPROVED OCT. 23, 1997.

21. Provide handicap ramps where shown in plan. See Howard County Std. Detail R-4.01 and R-4.02.

22. Trench compaction for storm drains within the road or street right of way limits shall be in accordance with Howard County Design Manual Volume IV, Std. No. G-2.01.

23. Sag and Crest vertical curves were designed in accordance with Howard County Design Manual Volume III.

24. Street trees in accordance with Subdivision and Land Development Regulations, section 16.124 AND SECTION 2.12.2, HOWARD COUNTY DESIGN MANUAL VOL. III.

25. Street lights will be required in this development in accordance with the Design Manual. Street light placement and the type of fixture and pole selected shall be in accordance with the latest Howard County Design Manual, Volume III (1993) and as modified by "Guidelines for Street Lights in Residential Developments (June 1993). The June 1993 policy includes guidelines for lateral and longitudinal placement. A minimum spacing of 20' shall be maintained between any street light and any tree.

26. The contractor shall maintain traffic at all times.

27. Unless otherwise noted, dimensions from the curb are measured from face of curb.

28. Erosion and Sediment Controls are provided by SDP-98-011. They are to be refurbished and maintained to their approved condition.

29. P-1, P-2, and P-3 are landscape edges adjacent to perimeter properties; P-6 is a landscape edge adjacent to road right-of-way. The landscape type will be determined and provided on the site developement plan for each adjoining parcel. P-4 and P-5 perimeters are open space / environmental parcels, and may obtain credit for existing vegetation.

NORTH

AS-BUILT

11-21-97
Date

STATE OF MARYLAND MAX KANTNER 16872 REGISTERED PROFESSIONAL ENGINEER

Professional Engr. No. 16872

F-98-45

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 3-2-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/4/98

CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH — DATE 3/9/98

Date	No.	Revision Description

Montpelier 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

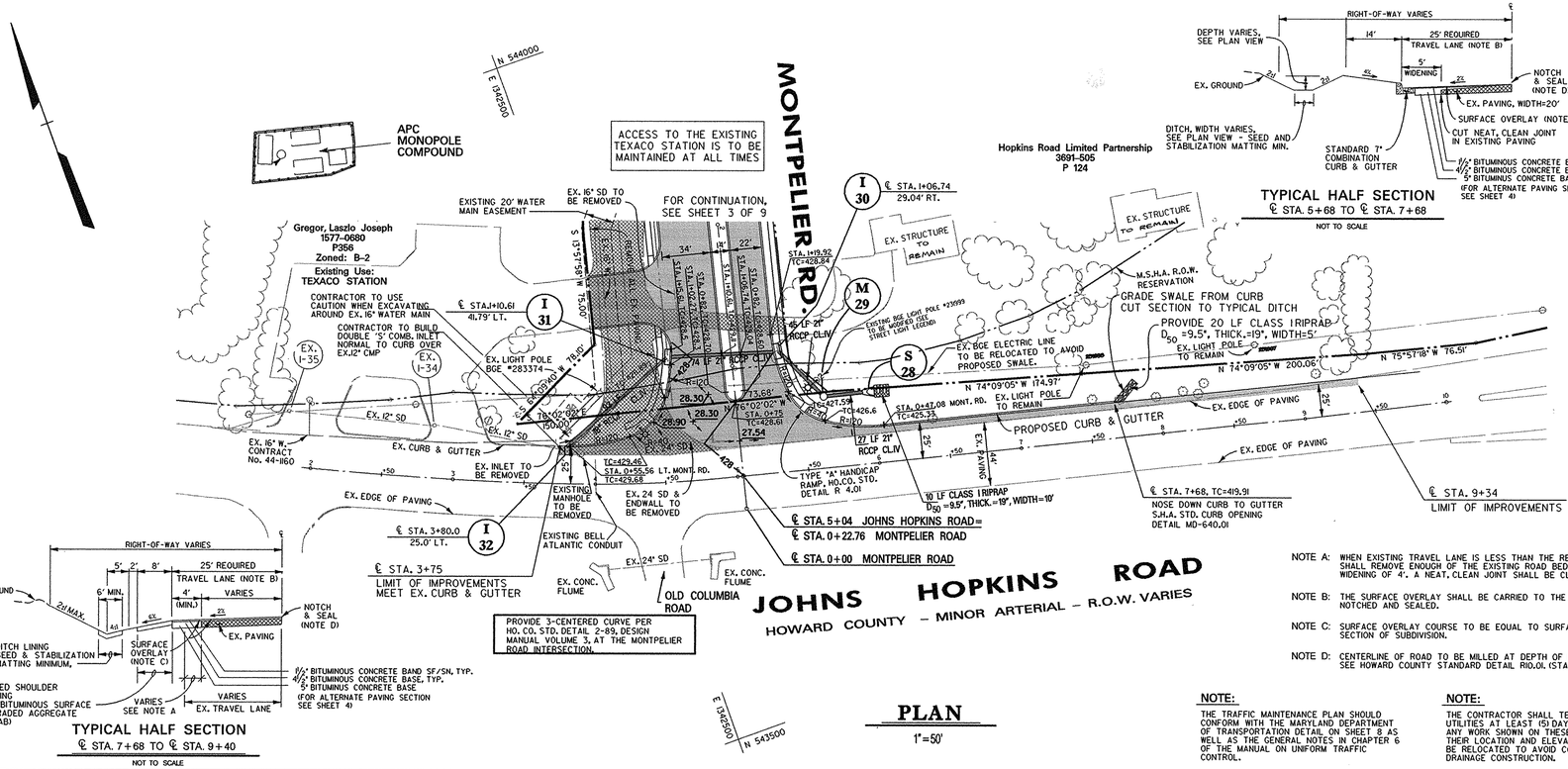
SUBDIVISION NAME		SECTION/AREA		LOT/PARCEL #
Montpelier				124,125, & ROAD BED
PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
L.3691,F505	17	PEC	41	5th	6051.02
WATER CODE		SEWER CODE		
E 21		6440000		

TITLE

COVER SHEET

Des By: ZAL	Scale: As Shown	Proj. No. 941712a
Drn By: TPC, MSS	Date: JAN. 28, 1998	1 OF 11
Chk By:	Approved:	

FriNov 21 12:52:05 1997 d:\941712a\941712a.tsl



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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 1/30/98

DEVELOPER'S CERTIFICATION:

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO PLAN, AND THAT ALL 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 1/28/98
PRINT NAME BELOW SIGNATURE
Howard L. Research

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 1/15/98
PRINT NAME BELOW SIGNATURE
Edmund F. Haile

1/15/98
Date

STATE OF MARYLAND
EDMUND F. HAILE
No. 3860
REGISTERED
PROFESSIONAL ENGINEER

Professional Engr. No. 3860

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

HOWARD S.C.D. — DATE 1/30/98

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 3-2-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/4/98 JC

CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH — DATE 3/9/98 JC

Date	No.	Revision Description

Montpelier Research Park

HOWARD COUNTY MARYLAND

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

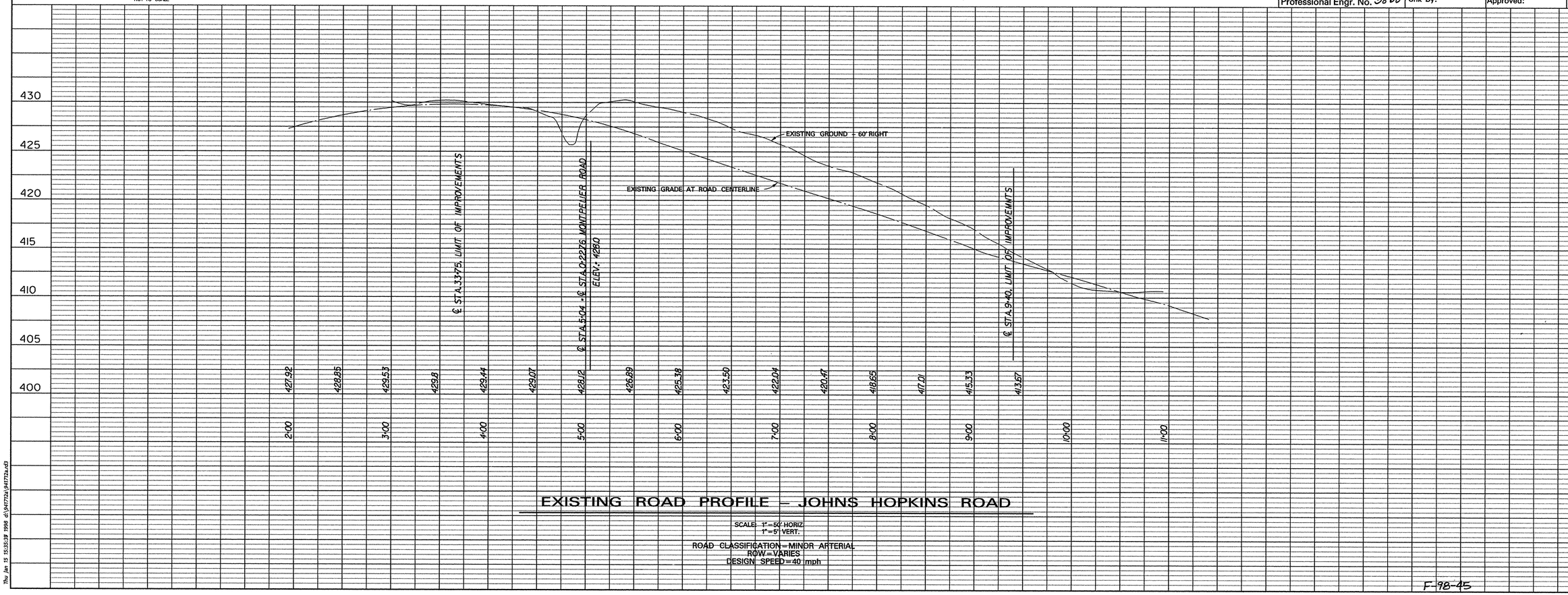
DMW
Daft · McCune · Walker, Inc.
A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
Towson, Maryland 21286
410 296 3333
Fax 296 4705

SUBDIVISION NAME		SECTION/AREA		LOT/PARCEL #
Montpelier				124,125, & ROAD BED
PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
L.3691,F505	17	PEC	41	5th	6051.02
WATER CODE		SEWER CODE		
E 21		6440000		

TITLE

JOHN HOPKINS ROAD ROAD CONSTRUCTION PLANS

Des By: ZAL	Scale: As Shown	Proj. No. 941712a
Drn By: MSS	Date: Jan. 28, 1998	2 OF 11
Chk By:	Approved:	



EXISTING ROAD PROFILE – JOHNS HOPKINS ROAD

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

ROAD CLASSIFICATION = MINOR ARTERIAL
ROW = VARIES
DESIGN SPEED = 40 mph

F-98-45

Thu Jan 15 15:35:39 1998 d:\941712a\941712a.dg

Thu Jan 15 15:35:40 1998 d:\941712a\941712a.dg

CONTRACTOR TO USE CAUTION WHEN EXCAVATING AROUND EX. 16" WATER MAIN

CONTRACTOR TO BUILD DOUBLE 'S' COMB. INLET NORMAL TO CURB. BUILD OVER AND CONNECT TO EX.12" CMP

Gregor, Laszlo Joseph
1577-0680
P356

EX. STORM DRAIN & INLET TO BE REMOVED

℄ STA. 3+80.00
25.00' LT.

EXISTING SEPTIC FIELD

BELL ATLANTIC VAULT

BELL ATLANTIC EASEMENT

BELL ATLANTIC MANHOLE

BELL ATLANTIC CONDUIT

EX. PAVING TO BE REMOVED

PROVIDE DRIVEWAY APRON AT STA. 3+07 PER HO. CO. STD. DETAIL R6.01

NOTES:
1. ACCESS TO THE VAULT TO REMAIN OPEN AT ALL TIMES.
2. CONTRACTOR TO TEST PIT BY HAND EXISTING BELL ATLANTIC CONDUIT PRIOR TO CONSTRUCTION.
3. APPROVED BELL ATLANTIC CONTRACTOR TO ADJUST MANHOLE AS NECESSARY TO MEET PROPOSED GRADE.
PERMISSION TO CONSTRUCT IN EASEMENT BY LETTER DATED 3/12/98

EXISTING MANHOLE TO BE REMOVED

EX. PAVING TO BE REMOVED

TYPE 'A' HANDICAP RAMP NO. CO. STD. DETAIL R4.01

℄ STA. 0+43.31
BEGIN PROP. PAVING

℄ STA. 0+00
MONTPELIER ROAD

JOHNS HOPKINS ROAD

SEE SHEET 1 OF 3 FOR CONTINUATION

EX. PAVING

℄ STA. 5+04
JOHNS HOPKINS ROAD=
℄ STA. 0+22.76
MONTPELIER ROAD

TYPE 'A' HANDICAP RAMP NO. CO. STD. DETAIL R4.01

℄ STA. 0+75
BEGIN ISLAND
TC=428.64

45 LF 18" RCCP CL.IV

EXISTING DRIVE

EX. PAVING TO BE REMOVED

REMOVE EXISTING DRIVE

℄ STA. 1+06.77
29.04' RT.

EXISTING BGE LIGHT POLE #23999 TO BE MOVED (SEE STREET LIGHT LEGEND)

TYPE 'B' HANDICAP RAMPS, HO. CO. STD. DETAIL R4.02

PROP. REVERSE CURB & GUTTER

EX. 16" W

20' WATER & UTILITY EASEMENT

PROVIDE TEMPORARY DRIVEWAY CONNECTION TO THE EXISTING DRIVE

EX. DRIVE TO REMAIN

EX. 16" W

PC ℄ STA. 3+60.69
END ISLAND
TC=429.57

℄ STA. 4+35.00
30.83' RT.

℄ STA. 4+35.00
38.94' LT.

PC CURB
STA. 3+32.13
TC=429.15

SIDEWALK IS 1' INSIDE ROW LINE

STA.3+53.69
TC=429.54

STA.3+53.69
TC=429.54

61 LF 15" RCCP CL.IV

200 LF 18" RCCP CL.IV

PROPOSED 4' SIDEWALK

PROPOSED CURB & GUTTER

10' Drainage and Utility Easement

PC CURB
STA. 3+64.05
TC=428.95

℄ STA. 6+50.00
29.99' RT.

43 LF 18" RCCP CL.IV

℄ STA. 6+97.47
34.37' RT.

97 LF 27" RCCP CL.IV

Parcel D
Hopkins Road Limited Partnership
3691-505
Parcel: Road Bed

℄ STA. 8+19.80
29.82' LT.

E 1342750
N 545500

Parcel A
Hopkins Road Limited Partnership
3691-505
P 124

PCC CURB, STA. 8+29.97
TC=415.18

PCC ℄ STA. 8+29.97

PT CURB, STA. 8+43.30
TC=416.84

PT ℄ STA. 8+43.30

N 545500

E 1343000

6 LF 4" RCCP CL.IV

29 LF 36" RCCP CL.IV

80' R/W

N 6°00'56" E

55' PAVING

PROPOSED 4' SIDEWALK

Parcel B
Hopkins Road Limited Partnership
3691-505
P 125

℄ STA. 8+19.80
29.91' RT.

PCC CURB STA. 8+29.97 TC=415.18

PT CURB STA. 8+43.30 TC=416.84

MATCH LINE - SEE SHEET 4 OF 9

MONTPELIER ROAD

PLAN
1"=50'

STREET LIGHT TABLE

DWG NO.	STREET NAME	STATION	OFFSET	FIXTURE/ POLE TYPE	COMMENTS
2 OF 9	JOHNS HOPKINS ROAD	4+32	40 LT.	1	ANGLE ARM AS SHOWN ON PLAN
3 OF 9	MONTPELIER ROAD	0+85	57' RT.	2	"
3 OF 9	MONTPELIER ROAD	1+19	57' LT.	1	"
3 OF 9	MONTPELIER ROAD	2+25	34' RT.	1	"
3 OF 9	MONTPELIER ROAD	3+50	45' LT.	1	"
3 OF 9	MONTPELIER ROAD	5+00	39' LT.	1	"
3 OF 9	MONTPELIER ROAD	6+50	34' LT.	1	"
3 OF 9	MONTPELIER ROAD	8+00	32' LT.	1	"
3 OF 9	MONTPELIER ROAD	9+50	32' RT.	1	"
4 OF 9	MONTPELIER ROAD	8+00	31' LT.	1	"
4 OF 9	MONTPELIER ROAD	12+50	29' RT.	1	"
4 OF 9	MONTPELIER ROAD	13+90	25' LT.	1	"
4 OF 9	MONTPELIER ROAD	15+50	22' LT.	1	"
4 OF 9	MONTPELIER ROAD	17+00	22' LT.	1	"
4 OF 9	MONTPELIER ROAD	18+20	22' LT.	1	"

STREET LIGHT LEGEND

1 ☼ 250-WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12' ARM.

2 ☼ 250-WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED ON EXISTING BGE POLE # 23999 USING A 20' ARM.

☼ 150 WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12' ARM.

℄ CURVE DATA

NAME	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	50°35'36.8"	531.45'	469.28'	251.18	L=454.18 N 39°15'46" E
②	01°29'51"	510.00'	13.329'	6.665	L=13.329 N 65°18'30" E

CURB CURVE DATA FOR PAVING TRANSITION

NAME	DELTA	RADIUS	LENGTH	TANGENT	CHORD
③	50°35'37"	499.838'	441.369'	236.238	L=427.169 N39°15'46"E
④	50°35'37"	595.913'	526.206'	281.646	L=509.276 N39°15'46"E
⑤	01°29'51"	482.50'	12.611	6.306	L=12.610 N65°18'30"E
⑥	01°29'51"	537.50'	14.048	7.024	L=14.048 N65°18'30"E

RIGHT- OF -WAY VARIES

STANDARD 7" COMBINATION CURB & GUTTER ON 3" CRUSHER RUN BASE, TYP.

1' 4' 6' 34' 14' 22' 6' 4' 1'

EX. GROUND

2%MAX. 2%MAX.

SIDEWALK LOCATION VARIES (SEE PLAN VIEW)

PGL

STANDARD 7" COMBINATION CURB & GUTTER REVERSE SLOPE ON 3" CRUSHER RUN BASE, TYP.

STANDARD 7" COMBINATION CURB & GUTTER ON 3" CRUSHER RUN BASE, TYP.

WALK

2%MAX. 2%MAX.

1½" BITUMINOUS CONCRETE BAND SF/SN, TYP.
4½" BITUMINOUS CONCRETE BASE, TYP.
5" BITUMINOUS CONCRETE BASE
(FOR ALTERNATE PAVING SECTION SEE SHEET 4)

DESIGN SPEED = 40 MPH
ROAD CLASS= MINOR ARTERIAL

TYPICAL PAVING SECTION FOR DIVIDED ROADWAY
℄ STA. 0+75 TO ℄ STA. 3+60.69

NOT TO SCALE

80' RIGHT-OF-WAY

STANDARD 7" COMBINATION CURB & GUTTER ON 3" CRUSHER RUN BASE, TYP.

4' 7.5' 55' PAVING 7.5' 4'

EX. GROUND

2%MAX. 2%MAX.

PGL

2% 2%

WALK

2%MAX. 2%MAX.

1½" BITUMINOUS CONCRETE BAND SF/SN, TYP.
4½" BITUMINOUS CONCRETE BASE, TYP.
5" BITUMINOUS CONCRETE BASE
(FOR ALTERNATE PAVING SECTION SEE SHEET 4)

DESIGN SPEED = 40 MPH
ROAD CLASS= MINOR ARTERIAL

STANDARD 7" COMBINATION CURB & GUTTER ON 3" CRUSHER RUN BASE, TYP.

TYPICAL UNDIVIDED SECTION
℄ STA. 8+43.30 TO ℄ STA. 15+00.18

NOT TO SCALE

NOTE:
A BIOLOGIC ROOT INHIBITOR BARRIER OR PHYSICAL CONTAINER BARRIER SHALL BE INSTALLED AT MONTPELIER ROAD, STATION 0+75 TO STATION 3+60.69

4/15/98
Date

STATE OF MARYLAND
EDMUND P. HAILE
No. 9980
REGISTERED
PROFESSIONAL ENGINEER

Professional Engr. No. 3860

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 3-2-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/4/98

CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH — DATE 3/9/98

Date	No.	Revision Description

Montpelier
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

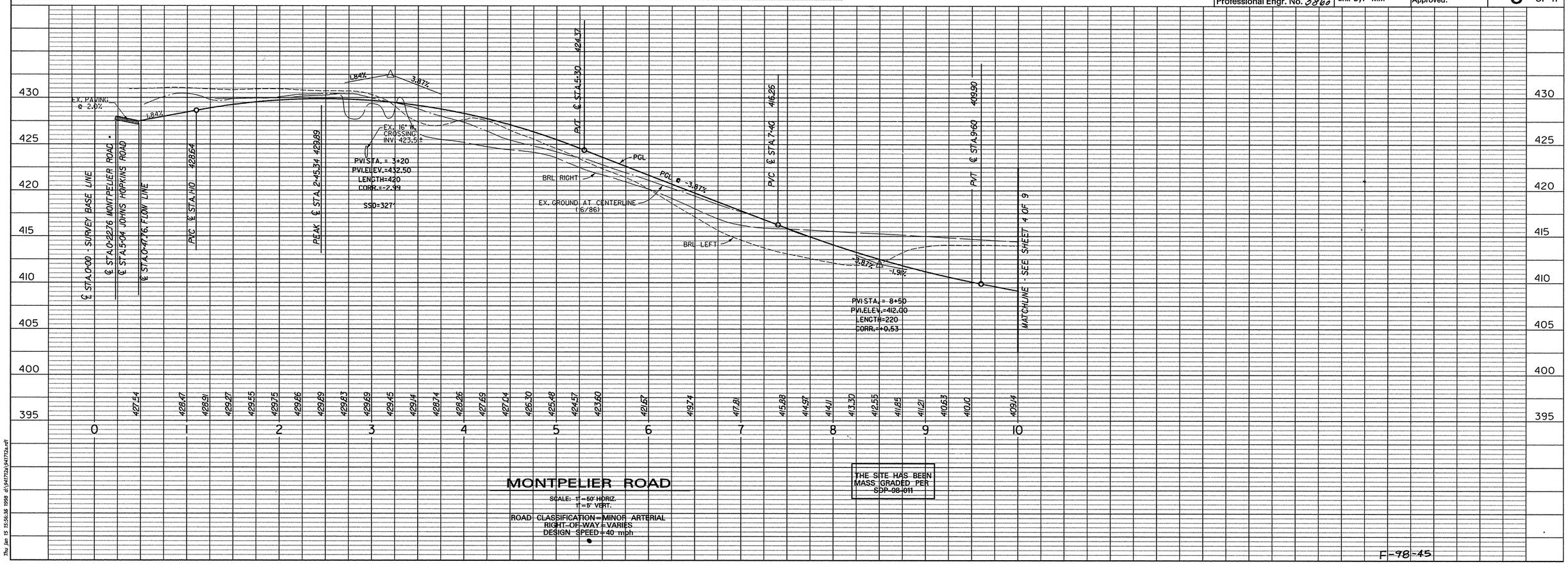
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL #
Montpelier		124,125, & ROAD BED

PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
L3691,F505	17	PEC	41	5th	6051.02

WATER CODE	SEWER CODE
E 21	6440000

TITLE
MONTPELIER ROAD
ROAD CONSTRUCTION PLANS

Des By: ZAL	Scale: As Shown	Proj. No. 941712a
Drn By: TPC, MSS	Date: Jan.28, 1998	3 OF 11
Chk By: MM	Approved:	



MONTPELIER ROAD

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

ROAD CLASSIFICATION=MINOR ARTERIAL
RIGHT-OF-WAY=VARIES
DESIGN SPEED=40 mph

THE SITE HAS BEEN MASS GRADED PER SDP-98-011

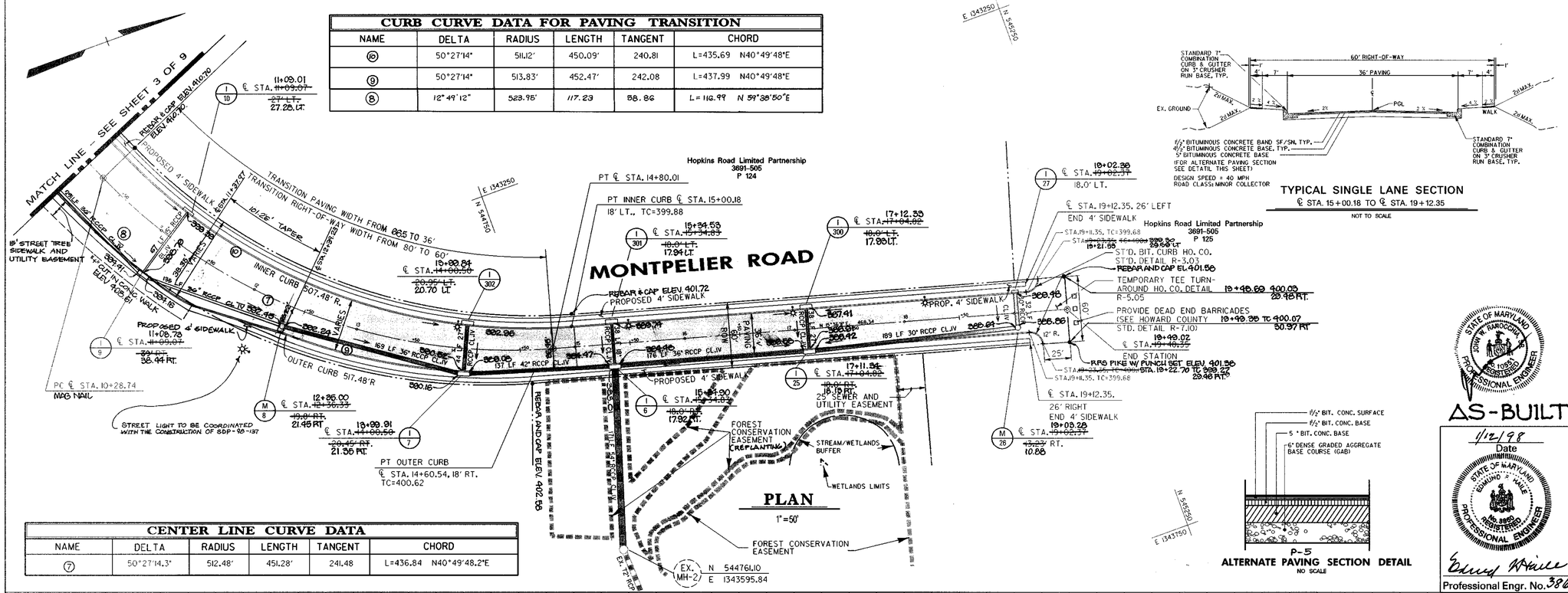
F-98-45

Thu Jan 15 15:56:38 1998 d:\941712a\941712a.dgn

Thu Jan 15 15:56:37 1998 d:\941712a\941712a.dgn

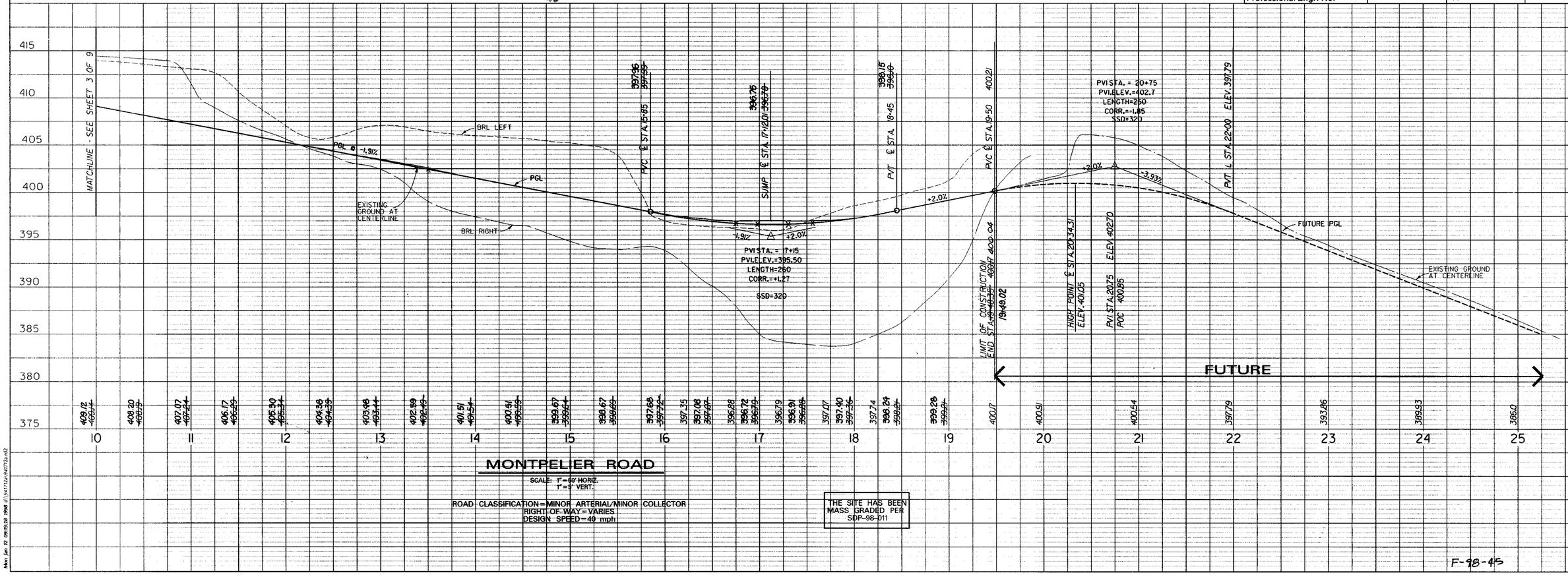
CURB CURVE DATA FOR PAVING TRANSITION

NAME	DELTA	RADIUS	LENGTH	TANGENT	CHORD
⑱	50°27'14"	511.12'	450.09'	240.81	L=435.69 N40°49'48"E
⑨	50°27'14"	513.83'	452.47'	242.08	L=437.99 N40°49'48"E
⑧	12°49'12"	523.95'	117.23	58.86	L=116.99 N 59°36'50"E



CENTER LINE CURVE DATA

NAME	DELTA	RADIUS	LENGTH	TANGENT	CHORD
⑦	50°27'14.3"	512.48'	451.28'	241.48	L=436.84 N40°49'48.2"E



F-98-45

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 3-2-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/4/98

CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH — DATE 3/19/98

Date	No.	Revision Description
8-25-98	2	REVISE PAVING WIDTH DIMENSION.
5-19-98	1	REVISED ROAD WIDTH, SIDEWALK, STREET LIGHT & STORM DRAIN

Montpelier Research Park

HOWARD COUNTY MARYLAND

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

STATE OF MARYLAND — JOHN M. BARCOMBE — No. 19552 — REGISTERED PROFESSIONAL ENGINEER

AS-BUILT

1/12/98 Date

STATE OF MARYLAND — EDMUND S. HAILE — No. 19865 — REGISTERED PROFESSIONAL ENGINEER

Professional Engr. No. 3866

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

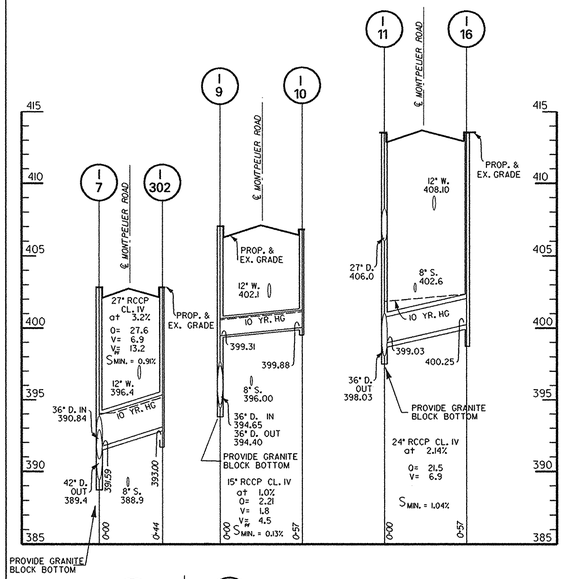
SUBDIVISION NAME				SECTION/AREA			LOT/PARCEL
Montpelier							124,125, & ROAD BED
PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT		
L3691,F505	17	PEC	41	5th	6051.02		
WATER CODE			SEWER CODE				
E 21			6440000				

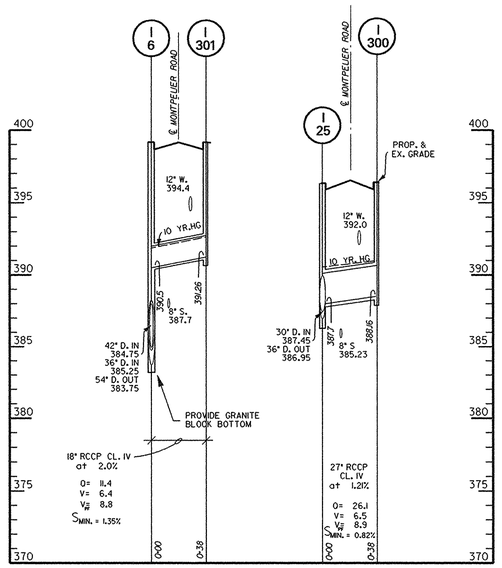
TITLE

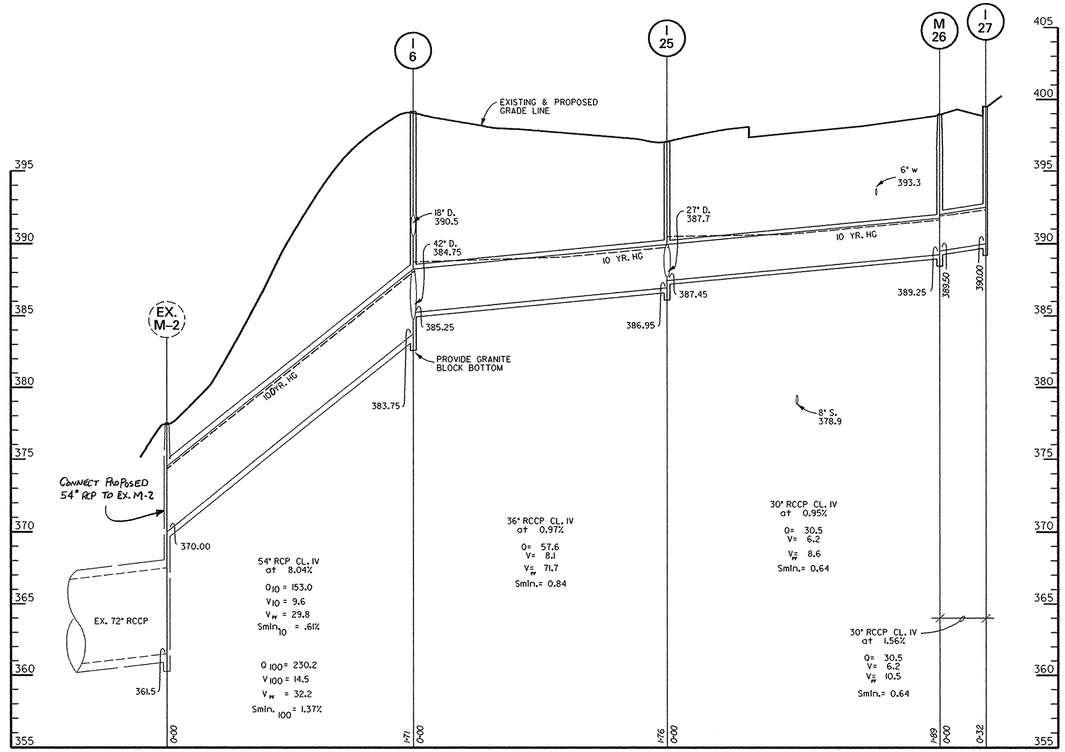
MONTPELIER ROAD
ROAD CONSTRUCTION PLANS

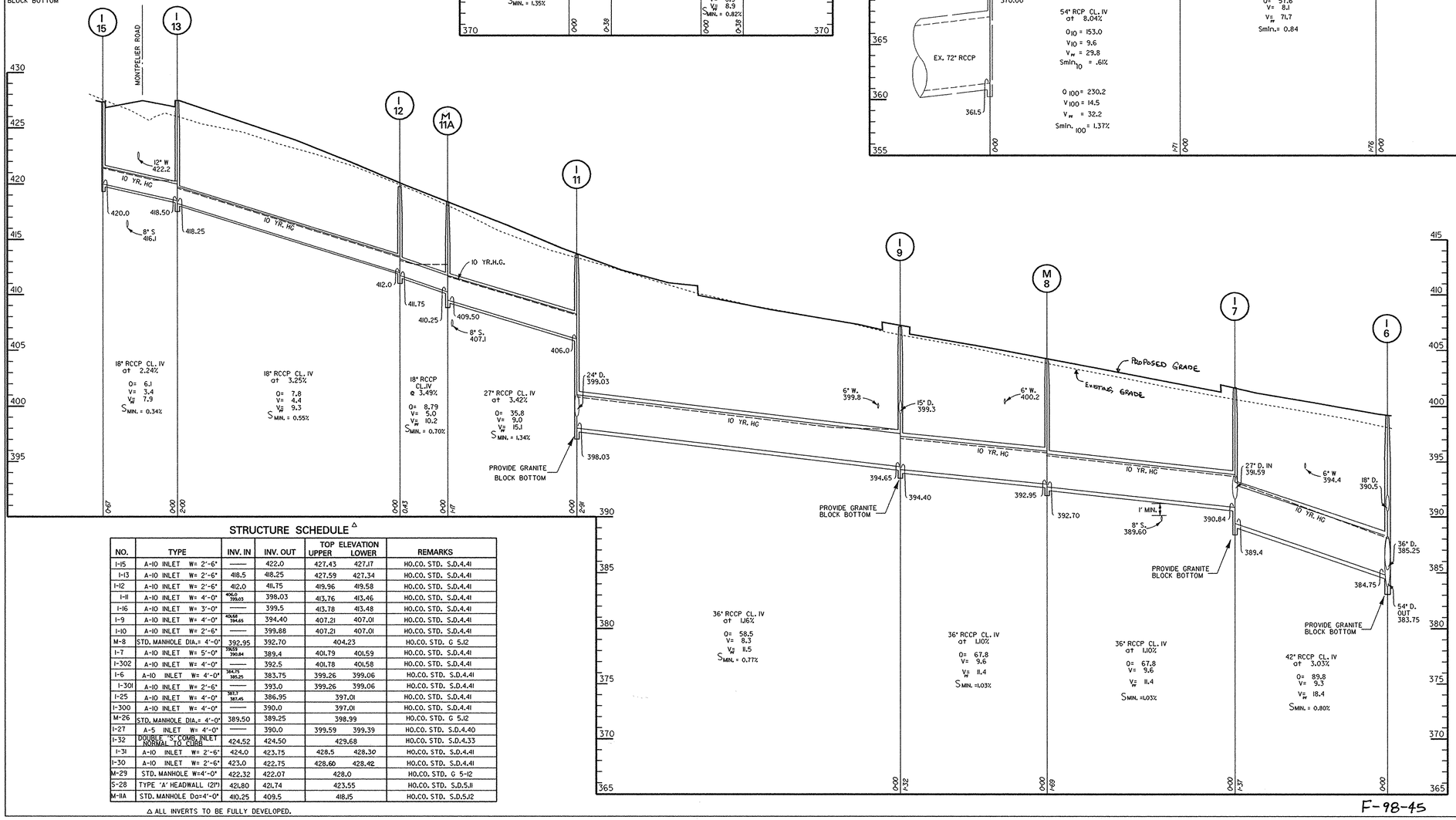
Des By: ZAL	Scale: As Shown	Proj. No. 941712a
Drn By: TPC, MSS	Date: Jan. 28, 1998	4 OF 11
Chk By: MM	Approved:	

Mon Jan 12 09:59:39 1998 d:\941712a\941712a-r02









STRUCTURE SCHEDULE △

NO.	TYPE	INV. IN	INV. OUT	TOP ELEVATION UPPER	TOP ELEVATION LOWER	REMARKS
I-15	A-10 INLET W= 2'-6"	——	422.0	427.43	427.17	HO.CO. STD. S.D.4.41
I-13	A-10 INLET W= 2'-6"	418.5	418.25	427.59	427.34	HO.CO. STD. S.D.4.41
I-12	A-10 INLET W= 2'-6"	412.0	411.75	419.96	419.58	HO.CO. STD. S.D.4.41
I-11	A-10 INLET W= 4'-0"	406.0 399.03	398.03	413.76	413.46	HO.CO. STD. S.D.4.41
I-16	A-10 INLET W= 3'-0"	——	399.5	413.78	413.48	HO.CO. STD. S.D.4.41
I-9	A-10 INLET W= 4'-0"	400.65 394.65	394.40	407.21	407.01	HO.CO. STD. S.D.4.41
I-10	A-10 INLET W= 2'-6"	——	399.88	407.21	407.01	HO.CO. STD. S.D.4.41
M-8	STD. MANHOLE DIA.= 4'-0"	392.95	392.70	404.23		HO.CO. STD. G 5.12
I-7	A-10 INLET W= 5'-0"	394.9 390.84	389.4	401.79	401.59	HO.CO. STD. S.D.4.41
I-302	A-10 INLET W= 4'-0"	——	392.5	401.78	401.58	HO.CO. STD. S.D.4.41
I-6	A-10 INLET W= 4'-0"	384.75 385.25	383.75	399.26	399.06	HO.CO. STD. S.D.4.41
I-301	A-10 INLET W= 2'-6"	——	393.0	399.26	399.06	HO.CO. STD. S.D.4.41
I-25	A-10 INLET W= 4'-0"	387.7 387.45	386.95	397.01		HO.CO. STD. S.D.4.41
I-300	A-10 INLET W= 4'-0"	——	390.0	397.01		HO.CO. STD. S.D.4.41
M-26	STD. MANHOLE DIA.= 4'-0"	389.50	389.25	398.99		HO.CO. STD. G 5.12
I-27	A-5 INLET W= 4'-0"	——	390.0	399.59	399.39	HO.CO. STD. S.D.4.40
I-32	DOUBLE 'S' COMB. INLET NORMAL TO CURB	424.52	424.50	429.68		HO.CO. STD. S.D.4.33
I-31	A-10 INLET W= 2'-6"	424.0	423.75	428.5	428.30	HO.CO. STD. S.D.4.41
I-30	A-10 INLET W= 2'-6"	423.0	422.75	428.60	428.42	HO.CO. STD. S.D.4.41
M-29	STD. MANHOLE W=4'-0"	422.32	422.07	428.0		HO.CO. STD. G 5-12
S-28	TYPE 'A' HEADWALL (21")	421.80	421.74	423.55		HO.CO. STD. S.D.5.11
M-11A	STD. MANHOLE Do=4'-0"	410.25	409.5	418.15		HO.CO. STD. S.D.5.12

△ ALL INVERTS TO BE FULLY DEVELOPED.

F-98-45

PROFILE

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

1/12/98
Date

STATE OF MARYLAND
EDMUND F. HALE
No. 3860
REGISTERED
PROFESSIONAL ENGINEER

Professional Engr. No. 3860

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 3-2-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/4/98

CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH — DATE 3/9/98

Date	No.	Revision Description

Montpelier
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	LOT/PARCEL #
Montpelier		124,125, & ROAD BED

PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
L3691,F505	17	PEC	41	5th	6051.02

WATER CODE	SEWER CODE
E 21	6440000

TITLE

MONTPELIER ROAD STORM DRAIN PROFILES

Des By: ZAL	Scale: As Shown	Proj. No. 941712a
Drn By: ZAL, MSS	Date: Jan. 28, 1998	5 OF 11
Chk By:	Approved:	

F-98-45

Mon Jan 12 15:47:04 1998

Gregor, Laszlo Joseph
1577-0680
P356

Hopkins Road Limited Partnership
3691-505
Parcel: Road Bed

Hopkins Road Limited Partnership
3691-505
P 126

Area=0.37 ac. C=.88 F 90% Imp.
Area=0.71 ac. C=.80 80% Imp.
Area=0.24 ac. C=.24 5% Imp.
Area=0.70 ac. C=.73 A 70% Imp.
Area=0.79 ac. C=.76 75% Imp.
Area=0.43 ac. C=.88 90% Imp.
Area=0.32 ac. C=.84 B 85% Imp.
Area=0.27 ac. C=.88 C 90% Imp.
Area=0.21 ac. C=.84 D 85% Imp.
Area=0.31 ac. C=.65 G 65% Imp.
Area=0.63 ac. C=.54
Area=0.42 ac. C=.69
Area=0.86 ac. C=.65 60 % Imp.
Area=0.19 ac. C=.95 100% Imp.
Area=0.11 ac. C=.95 100% Imp.
Area=0.37 ac. C=.69 H 65% Imp.
Area=0.18 ac. C=.73 70% Imp.
Area=0.63 ac. C=.50 I 50% Imp.
Area=0.63 ac. C=.43 30% Imp.
Area=4.4 ac. C=.84 E 85% Imp.
Area=0.34 ac. C=.60 K 65 % Imp.
Area=0.38 ac. C=.61 55% Imp.
Area=1.10 ac. C=.76 75% Imp.
Area=0.41 ac. C=.65 L 60% Imp.
Area=0.16 ac. C=.88 Q 90 % Imp.
Area=0.11 ac. C=.96 75% Imp.
Area=0.80 ac. C=.73 70% Imp.
Area=0.04 ac. C=.95 100% Imp.
Area=0.97 ac. C=.73 70 % Imp.
Area=0.32 ac. C=.84 85 % Imp.
Area=0.21 ac. C=.73 70 % Imp.
Area=0.48 ac. C=.88 90% Imp.
Area=0.21 ac. C=.73 70% Imp.
Area=0.43 ac. C=.65 60 % Imp.
Area=0.43 ac. C=.65 60% Imp.
Area=0.07 ac. C=.95 100% Imp.
Area=0.23 ac. C=.95 100% Imp.
Area=0.06 ac. C=.65 60% Imp.
Area=0.26 ac. C=.91 95% Imp.
Area=0.56 ac. C=.80 80% Imp.
Area=0.18 ac. C=.73 70% Imp.
Area=1.09 ac. C=.50 Q 40 % Imp.
Area=0.17 ac. C=.58 M 50 % Imp.
Area=0.43 ac. C=.80 P 80 % Imp.
Area=0.79 ac. C=.73 70% Imp.
Area=0.22 ac. C=.80 80 % Imp.
Area=0.18 ac. C=.95 60% Imp.
Area=0.09 ac. C=.65 60% Imp.
Area=0.08 ac. C=.76 75 % Imp.
Area=0.44 ac. C=.58 50 % Imp.
Area=0.67 ac. C=.50 40 % Imp.
Area=5.26 ac. C=.84 N 85 % Imp.
Area=.21 C=.88 I-35 90% Imp.
Area=.24 C=.88 I-34 90% Imp.
Area=0.11 ac. C=.76 I-32 75% Imp.
Area=.35 C=.88 I-31 90% Imp.
Area=.12 C=.88 I-30 90% Imp.

MATCH LINE SEE THIS SHEET BELOW
MATCH LINE SEE THIS SHEET ABOVE
FUTURE STORM DRAINAGE
FUTURE S.D.
EX. 24" RCP
ROAD OF STREAM
N 544001
E 1342150
N 544750
E 1343500
N 545250
E 1342150
JOHNS HOPKINS ROAD

DRAINAGE AREA MAP
Scale: 1" = 60'

DRAINAGE AREA MAP
Scale: 1" = 60'

AS-BUILT F-98-45

4/4/98
Date

Professional Engr. No. 3860

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 3-2-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/4/98
CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH — DATE 3/9/98

Date	No.	Revision Description

Montpelier
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

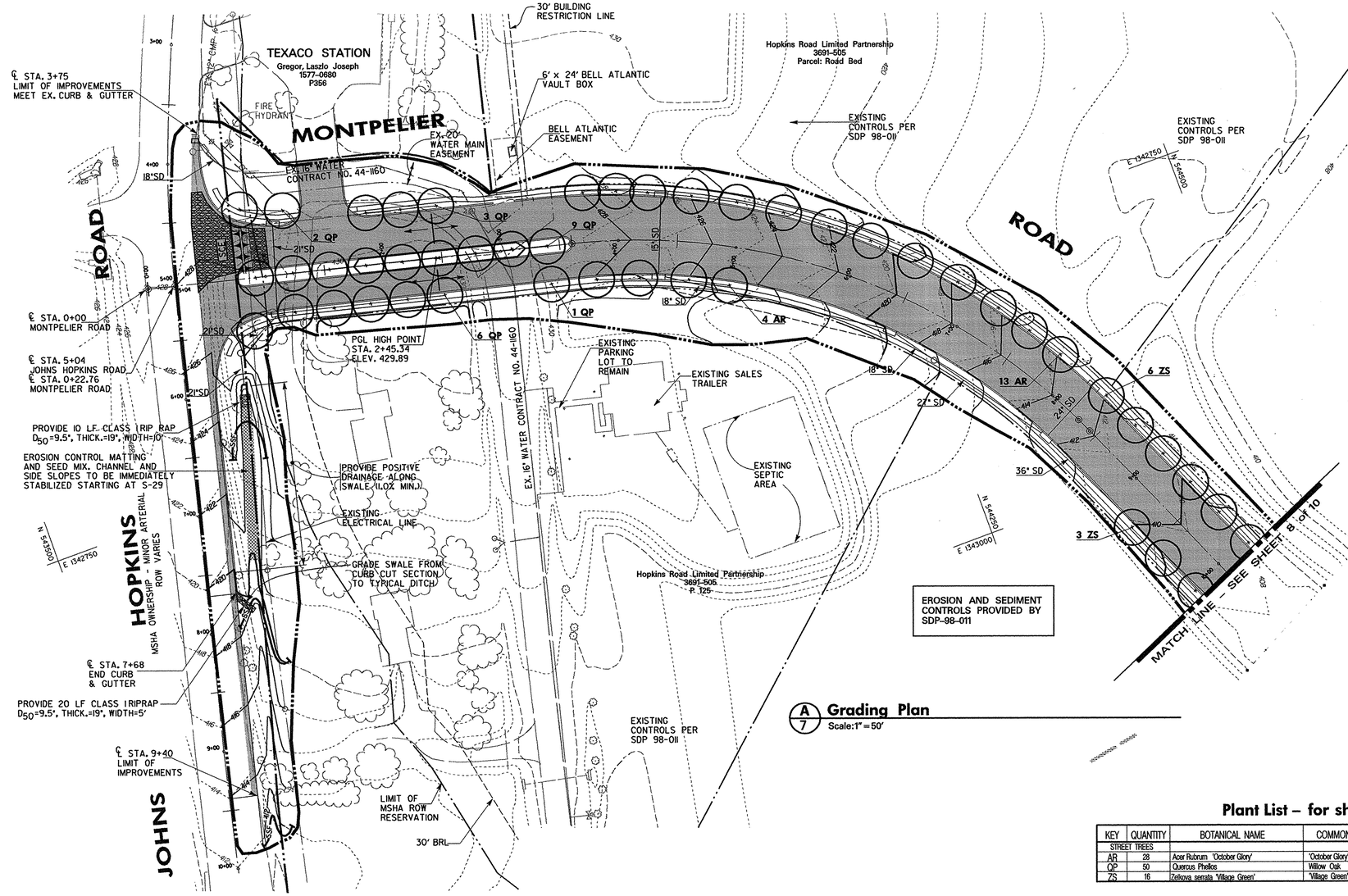
SUBDIVISION NAME: Montpelier	SECTION/AREA		LOT#/PARCEL #: 124,125, & ROAD BED
PLAT# OR L/F: L3691,F505	BLOCK #: 17	ZONE: PEC	TAX/ZONE MAP: 41
ELEC. DISTRICT: 5th	CENSUS TRACT: 6051.02		
WATER CODE: E 21	SEWER CODE: 6440000		

TITLE: DRAINAGE AREA MAP

Des By: ZAL	Scale: 1" = 60'	Proj. No. 941712a	
Drn By: TPC, MSS	Date: JAN. 28, 1998	6	OF 11
Chk By:	Approved:		

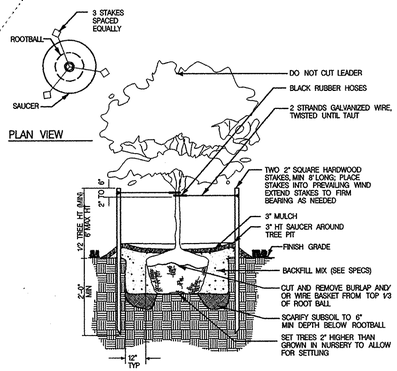
Fri Dec 19 11:26:05 1997 d:\941712\941712a.dwl

F-98-45



A 7 Grading Plan

Scale: 1" = 50'



D 7 Street Tree Planting

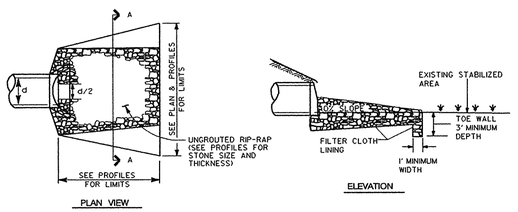
Not to Scale

LEGEND

SYMBOL	DESCRIPTION
400	PROPOSED CONTOURS
	STREAM
	EXISTING CONTOURS
	EXISTING TREES / TREE LINE
SSF	SUPER SILT FENCE
	LIMIT OF DISTURBANCE
SCE	STABILIZED CONSTRUCTION ENTRANCE
	EROSION CONTROL MATTING

Plant List – for sheets 7 & 8

KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	REMARKS
STREET TREES						
AR	28	Acer Rubrum 'October Glory'	'October Glory' Red Maple	2 1/2"-3" cal	B&B	Full Head
QP	50	Quercus Phellos	Willow Oak	2 1/2"-3" cal	B&B	Full Head
ZS	16	Zelkova serrata 'Village Green'	'Village Green' Zelkova	2 1/2"-3" cal	B&B	Full Head



B 7 Stone Outlet Protection III

Not to Scale

Stone Outlet Protection Specifications

Construction Specifications

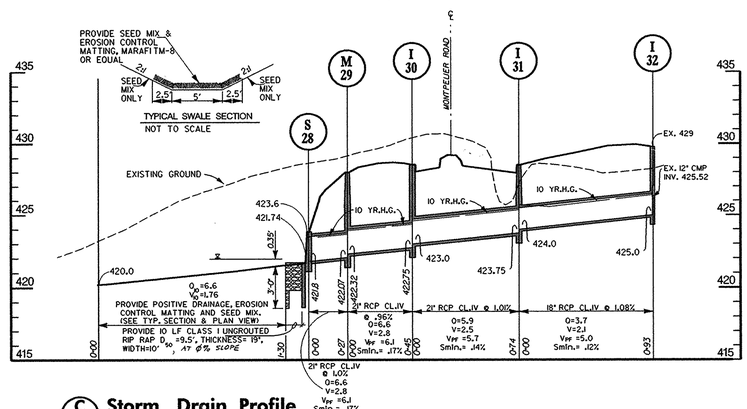
1. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.

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 blanket 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.



C 7 Storm Drain Profile

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

1/15/98
Date

STATE OF MARYLAND
EDMUND F. HAILE
No. 3560
REGISTERED
PROFESSIONAL ENGINEER

Professional Engr. No. 3560

F-98-45

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 1/20/98

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

HOWARD S.C.D. — DATE 1/16/98

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 1/12/98
PRINT NAME BELOW SIGNATURE
Howard L. Rutnick

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 1/15/98
PRINT NAME BELOW SIGNATURE
Edmund F. Haile

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 3-2-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/4/98

CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH — DATE 3/19/98

Date	No.	Revision Description

Montpelier 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	LOT/PARCEL #
Montpelier		124,125, & ROAD BED
PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
L.3691,F.505	17	PEC	41	5th	6051.02
WATER CODE		SEWER CODE			
E 21		6440000			

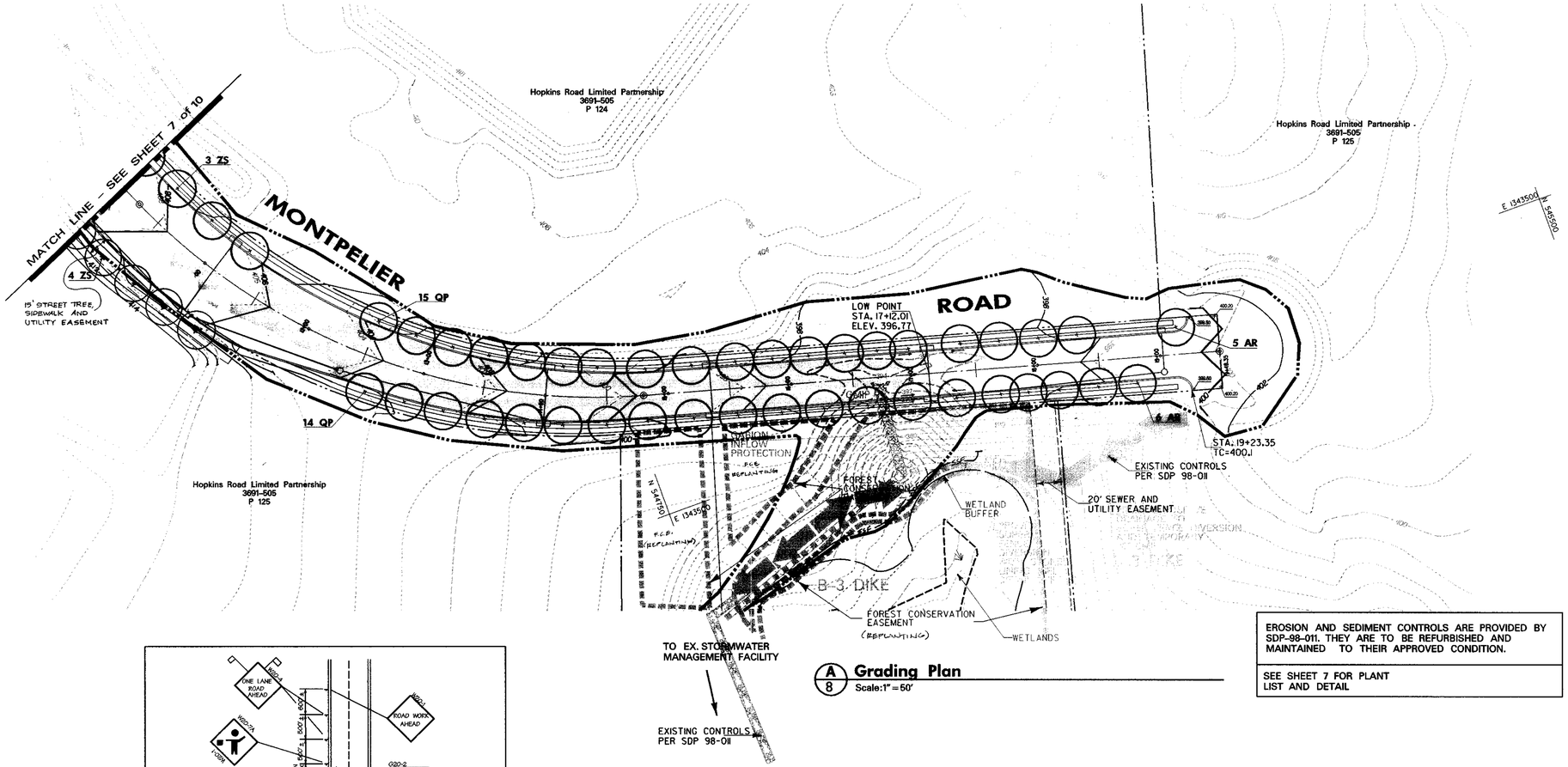
TITLE

ROAD GRADING, STREET TREE, EROSION & SEDIMENT CONTROL

Des By: ZAL	Scale: As Shown	Proj. No. 941712a
Drn By: TPC, MSS	Date: JAN. 28, 1998	7 OF 11
Chk By:	Approved:	

Thu Jan 15 17:30:22 1998 d:\941712a\941712a.dgn

F-98-45



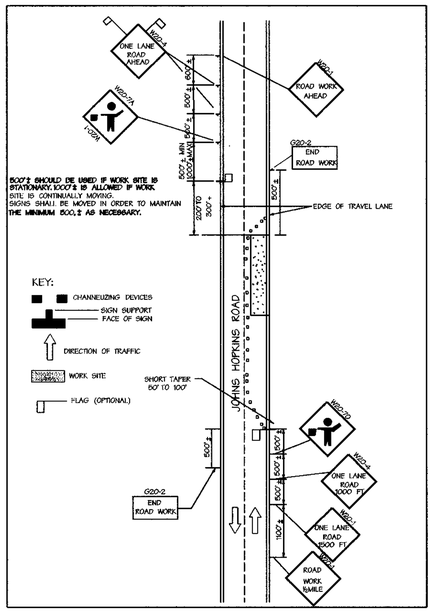
LEGEND

SYMBOL	DESCRIPTION
400	PROPOSED CONTOURS
	STREAM
	EXISTING CONTOURS
	EXISTING TREES/ TREE LINE
SSF	SUPER SILT FENCE
	LIMIT OF DISTURBANCE
SCE	STABILIZED CONSTRUCTION ENTRANCE

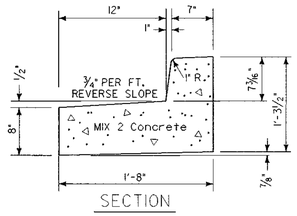
A 8 Grading Plan
Scale: 1" = 50'

EROSION AND SEDIMENT CONTROLS ARE PROVIDED BY SDP-98-011. THEY ARE TO BE REFURBISHED AND MAINTAINED TO THEIR APPROVED CONDITION.

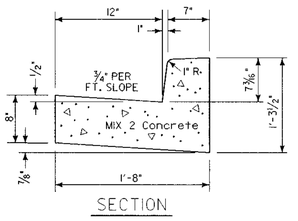
SEE SHEET 7 FOR PLANT LIST AND DETAIL



MODIFIED FLAGGING OPERATION DETAIL FOR SHOULDER WORK
Not to Scale



7" REVERSE COMBINATION CURB AND GUTTER



7" STANDARD COMBINATION CURB AND GUTTER

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 1/28/98
PRINT NAME BELOW SIGNATURE
Howard L. Reisch

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 1/27/98
PRINT NAME BELOW SIGNATURE
Edmund F. Haile

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

U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 1/30/98

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

HOWARD S.C.D. — DATE 1/30/98

NORTH F-98-45

AS-BUILT
1/27/99
Date

STATE OF MARYLAND EDMUND F. HAILE No. 3860 REGISTERED PROFESSIONAL ENGINEER
Professional Engr. No. 3860

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 3-2-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/4/98
CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH — DATE 3/9/98

Date	No.	Revision Description
5-13-98	1	REVISED GRADING & STREET TREES

Montpelier Research Park
HOWARD COUNTY MARYLAND

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

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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
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SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL #
Montpelier		124,125, & ROAD BED

PLAT # OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
L.3691,F.505	17	PEC	41	5th	6051.02

WATER CODE	SEWER CODE
E 21	6440000

TITLE
ROAD GRADING, STREET TREE, EROSION & SEDIMENT CONTROL

Des By: ZAL	Scale: As Shown	Proj. No. 941712a
Drn By: TPC, MSS	Date: JAN. 28, 1998	8 OF 11
Chk By:	Approved:	

Fri Nov 21 14:14:06 1997 — d:\941712a\941712a.dgn — F-98-45

Heavy Duty Stabilized Construction Entrance

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 (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 10" 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 10" 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- 4

MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION

Temporary And Permanent Seeding Notes

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 TOMS 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 ASPHLAT 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.

Super 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

Howard County Sediment Control General Notes

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 (992-2437).

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. I, 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	104.0 ACRES
AREA DISTURBED	5.8 ACRES
AREA TO BE ROOFED OR PAVED	2.7 ACRES
AREA TO BE VEGETATIVELY STABILIZED	3.1 ACRES
TOTAL CUT	1490 CUBIC YARDS
TOTAL FILL	200 CUBIC YARDS
OFF-SITE WASTE/BORROW AREA LOCATION WASTE = ~~NA~~ ON-SITE OR SITE WITH AN ACTIVE GRADING PERMIT.	

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.

Topsoil Specifications

FOR SEDIMENT CONTROL /STABILIZATION PURPOSES

21.0 STANDARD AND SPECIFICATIONS
FOR
TOPSOIL

Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

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.

d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of 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, Slop 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.

Landscape Specifications

SEE SHEET SHEET 7 & 8 FOR PLANTING PLAN

1. The contractor shall review engineering plans to become thoroughly familiar with the grading.

2. All equipment and tools shall be placed so as not to interfere or hinder the vehicular traffic flow.

3. The contractor shall coordinate with the general contractor regarding timing of installation of plant material.

4. The contractor shall insure that his work does not interrupt established or projected drainage patterns.

5. During planting operations, excess waste materials shall be promptly and frequently removed from the site.

6. Call Miss Utility a minimum of three days prior to any excavation. The contractor is advised of the existence of underground utilities on the site. Their exact location shall be verified in the field with the owner or general contractor prior to the commencement of any digging operations. In the event they are uncovered, the contractor shall be held responsible for all damage to utilities and such damage shall not result in any additional expenses to the owner. Any damage to unreported lines shall not be the responsibility of the contractor.

7. If utility lines are encountered in excavation of tree pits, other locations for trees shall be made by the contractor without additional compensation. No changes of location shall be made without approval of the landscape architect.

8. In the event of variation between quantities shown on the plant list and the plans, the plans shall control. The contractor is responsible for verifying all plant quantities prior to the commencement of work. All discrepancies shall be reported to the landscape architect for clarification prior to bidding. The contractor shall furnish plant material in sizes as specified in the plant list.

9. Plants shall be located as shown on the drawings or as designated in the field.

10. Plants shall conform to current "American Standards for Nursery Stock" by American Association of Nurserymen (AAN), particularly with regard to size, growth, size of ball, and density of branch structure. Plant material shall be tagged at the source by the landscape architect unless this requirement is specifically waived.

11. All plants (B&B or container) shall be properly identified by weather-proof labels securely attached thereto before delivery to project site. Labels shall identify plants by name, species, and size. Labels shall not be removed until the final inspection by the landscape architect or agent in charge.

12. Any material and/or work may be rejected by the landscape architect if it does not meet the requirements of the specifications. All rejected materials shall be removed from the site by the contractor.

13. No substitutions shall be made without written consent of the owner or landscape architect.

14. The landscape architect or owner shall have the right, at any stage of the operations, to reject any and all work and material which, in his opinion, does not meet the requirements of these plans and specifications.

15. The contractor shall be wholly responsible for stability and conditions of all trees and shrubs and shall be legally liable for any damage caused by instability of any plant materials. Staking of all trees shall be done utilizing a method agreed upon by the landscape architect, as indicated on the this sheet.

16. Maintenance shall begin after each plant has been installed and shall continue until 90 days after final acceptance by the architect or owner representative. Maintenance includes watering, pruning, weeding, fertilizing, mulching, replacement of sick or dead plants, and any other care necessary for the proper growth of the plant material. The contractor must be able to provide continued maintenance if requested by the owner.

17. Upon completion af all landscaping, an acceptance of the work shall be held. The contractor shall notify the landscape architect or owner for scheduling the inspection at least seven (7) days prior to the anticipated inspection date.

18. All trees shall be guaranteed for 12 months from the date of acceptance. All shrubs shall be guaranteed for 12 months from the date of acceptance. Replacement plants used shall be guaranteed for an additional 90 days.

19. The contractor shall dispose of stumps and major roots of all plants to be removed. Any depressions caused by removal operations shall be refilled with fertile, friable soil placed and compacted so as to reestablish proper grade for new planting and/or lawn areas.

20. All disturbed areas of the site not planted shall be fine graded and seeded.

Sequence of Construction

SEQUENCE	NUMBER OF DAYS
1. OBTAIN A GRADING PERMIT.	7
2. REFURBISH AND MAINTAIN CONTROLS IN ACCORDANCE WITH SDP-98-011	14
3. INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES AND STABLILIZE	21
4. CONSTRUCT STORM DRAINAGE	21
5. CONSTRUCT UTILITIES.	60
6. CLEAR AND GRUB AND ROUGH GRADE TYPICAL SECTION ALONG JOHNS HOPKINS ROAD.	14
7. FINE GRADE AND CONSTRUCT PAVING	60
8. STABILIZE ALL AREAS IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS.	14
9. UPON APPROVAL OF THE SEDIMENT AND EROSION CONTROL INSPECTOR, REMOVE ALL EROSION CONTROL MEASURES AND STABILIZE.	7
10. PROVIDE STREET TREES AND REMAINING LANDSCAPING.	14

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] 1/28/98
SIGNATURE OF DEVELOPER — DATE
PRINT NAME BELOW SIGNATURE
Howard L. Remick

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] 1/27/98
SIGNATURE OF ENGINEER — DATE
PRINT NAME BELOW SIGNATURE
Edmund F. Haile

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

Cheryl Simmons / GS. 1/30/98
U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE

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

[signature] 1/30/98
HOWARD S.C.D. — DATE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

[signature] 3-2-98
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

[signature] 3/4/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Cindy Hamilton 3/17/98
CHIEF, DIVISION OF LAND DEVELOPMENT ~~& RESEARCH~~ — DATE

Date	No.	Revision Description

STATE OF MARYLAND — JOHN W. RANOCCHIA, SR. — No. 10851 — REGISTERED PROFESSIONAL ENGINEER

AS-BUILT
1/27/98
Date

STATE OF MARYLAND — EDMUND F. HAILE — No. 3860 — REGISTERED PROFESSIONAL ENGINEER

[signature]
Professional Engr. No. 3860

F-98-45

Montpelier 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		LOT/PARCEL #
Montpelier			124,125, & ROAD BED

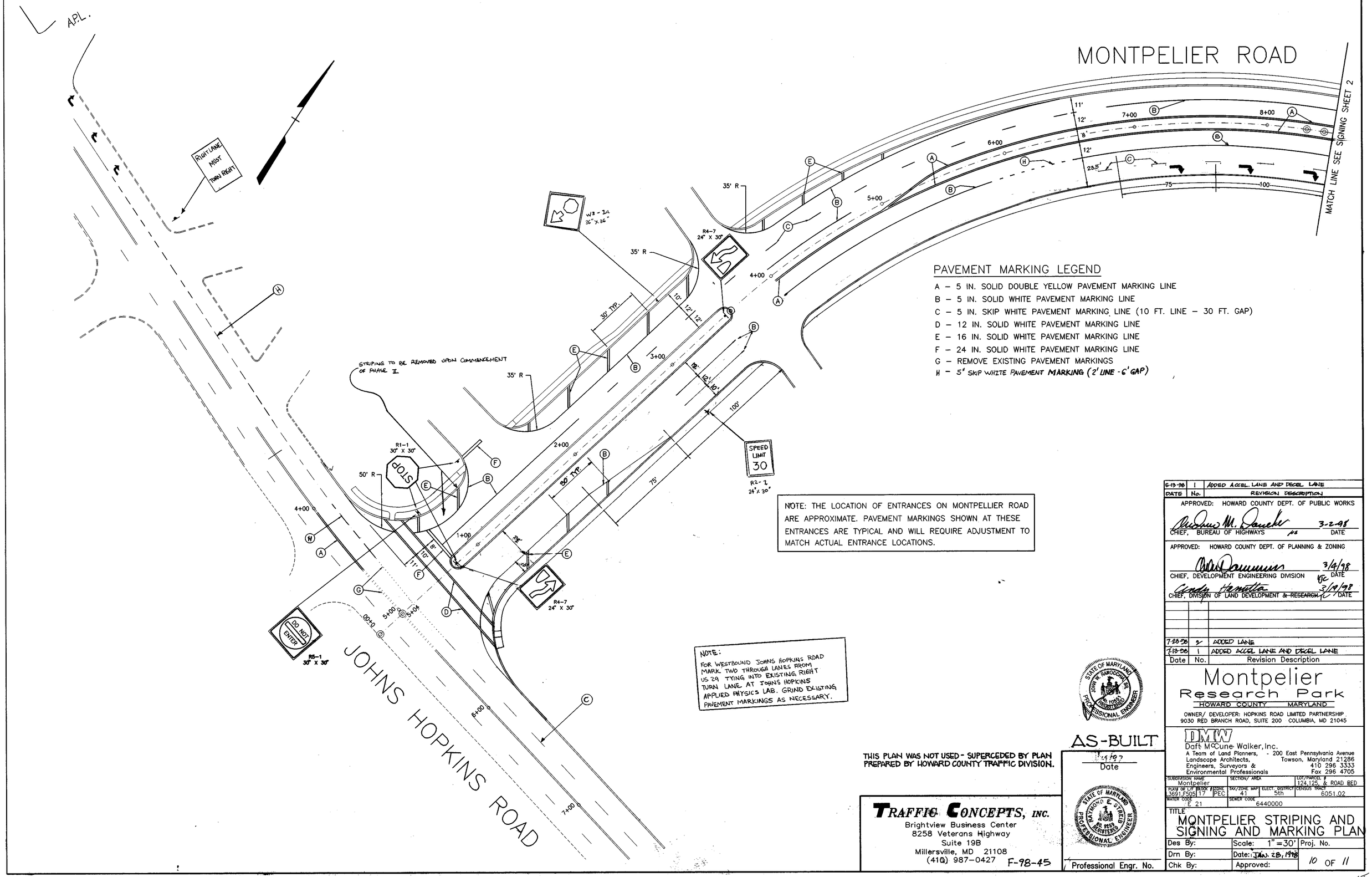
PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
L3691,F505	17	PEC	41	5th	6051.02

WATER CODE	SEWER CODE
E 21	6440000

TITLE
EROSION AND SEDIMENT CONTROL DETAILS

Des By: ZAL	Scale: No Scale	Proj. No. 941712a
Drn By: TPC, MSS	Date: JAN. 28, 1998	9 OF 11
Chk By:	Approved:	

Fri Nov 21 12:14:47 1997 d:\941712a\941712a.dtl F-98-45



PAVEMENT MARKING LEGEND

A – 5 IN. SOLID DOUBLE YELLOW PAVEMENT MARKING LINE
B – 5 IN. SOLID WHITE PAVEMENT MARKING LINE
C – 5 IN. SKIP WHITE PAVEMENT MARKING LINE (10 FT. LINE – 30 FT. GAP)
D – 12 IN. SOLID WHITE PAVEMENT MARKING LINE
E – 16 IN. SOLID WHITE PAVEMENT MARKING LINE
F – 24 IN. SOLID WHITE PAVEMENT MARKING LINE
G – REMOVE EXISTING PAVEMENT MARKINGS
H – 5" SKIP WHITE PAVEMENT MARKING (2' LINE - 6' GAP)

NOTE: THE LOCATION OF ENTRANCES ON MONTPELLIER ROAD ARE APPROXIMATE. PAVEMENT MARKINGS SHOWN AT THESE ENTRANCES ARE TYPICAL AND WILL REQUIRE ADJUSTMENT TO MATCH ACTUAL ENTRANCE LOCATIONS.

NOTE:
FOR WESTBOUND JOHNS HOPKINS ROAD MARK TWO THROUGH LANES FROM US 29 TYING INTO EXISTING RIGHT TURN LANE AT JOHNS HOPKINS APPLIED PHYSICS LAB. GRIND EXISTING PAVEMENT MARKINGS AS NECESSARY.

THIS PLAN WAS NOT USED - SUPERCEDED BY PLAN PREPARED BY HOWARD COUNTY TRAFFIC DIVISION.

AS-BUILT
Date

TRAFFIC CONCEPTS, INC.
Brightview Business Center
8258 Veterans Highway
Suite 19B
Millersville, MD 21108
(410) 987-0427
F-98-45

Professional Engr. No.

DATE	No.	REVISION DESCRIPTION
5-13-98	1	ADDED ACCEL. LANE AND DECEL LANE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 3-2-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/4/98
CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH — DATE 3/19/98

Date	No.	Revision Description
7-23-98	2	ADDED LANE
7-13-98	1	ADDED ACCEL LANE AND DECEL LANE

Montpelier 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	LOT/PARCEL #
Montpelier		124,125, & ROAD BED

PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
3691,F505	17	PEC	41	5th	6051.02

WATER CODE	SEWER CODE
E 21	6440000

TITLE
MONTPELIER STRIPING AND SIGNING AND MARKING PLAN

Des By:	Scale: 1"=30'	Proj. No.
Drn By:	Date: JAN. 28, 1998	10 OF 11
Chk By:	Approved:	

F-98-45

PAVEMENT MARKING LEGEND

A – 5 IN. SOLID DOUBLE YELLOW PAVEMENT MARKING LINE
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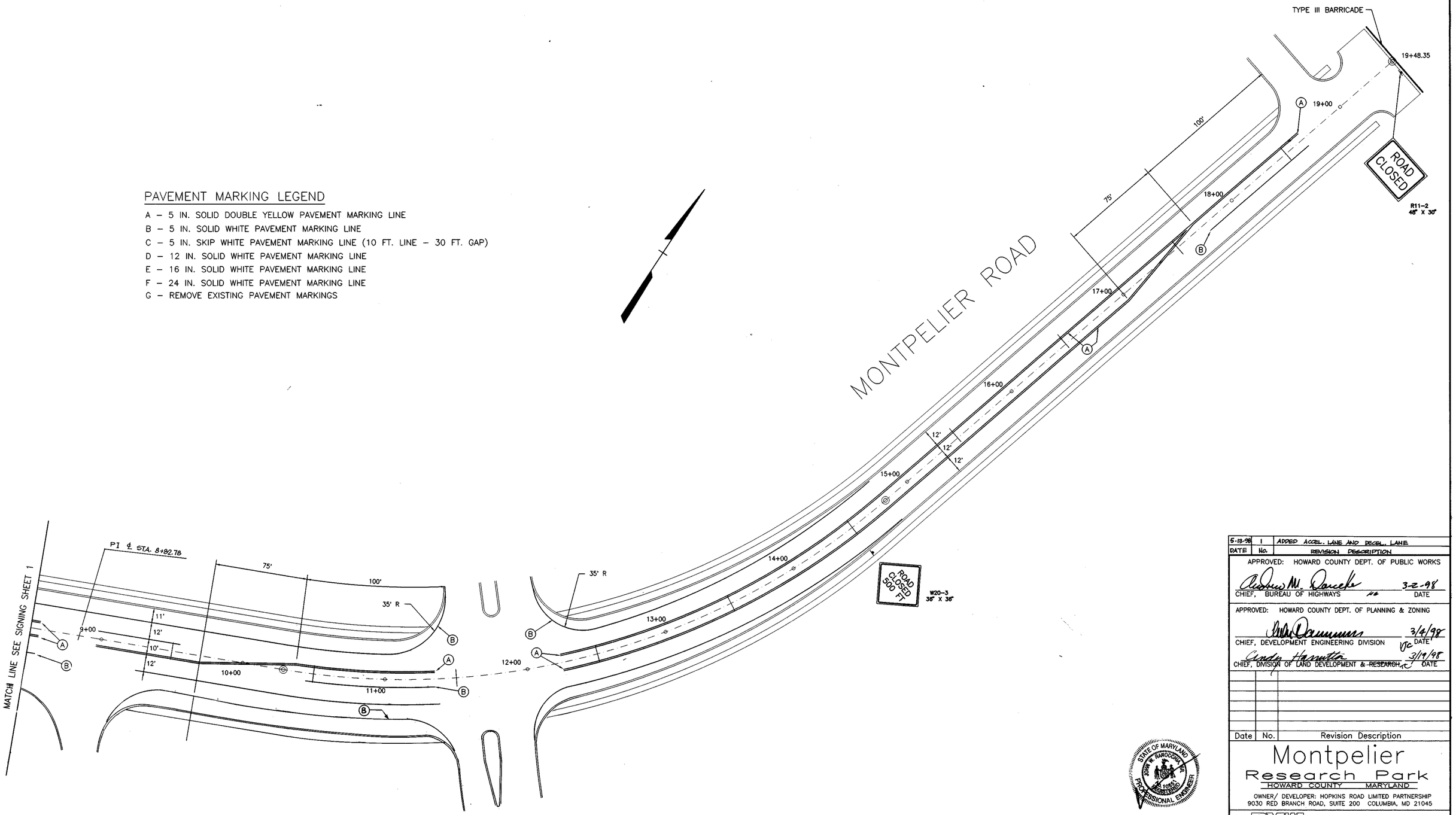


NOTE: THE LOCATION OF ENTRANCES ON MONTPELLIER ROAD ARE APPROXIMATE. PAVEMENT MARKINGS SHOWN AT THESE ENTRANCES ARE TYPICAL AND WILL REQUIRE ADJUSTMENT TO MATCH ACTUAL ENTRANCE LOCATIONS.

THIS PLAN WAS NOT USED - SUPERCEDED BY PLAN PREPARED BY HOWARD COUNTY TRAFFIC DIVISION.

AS-BUILT

11/29/97
Date

STATE OF MARYLAND
JOHN W. RANOCCHIA, JR.
NO. 10651
REGISTERED
PROFESSIONAL ENGINEER

STATE OF MARYLAND
RAYMOND E. STREIB
NO. 9269
REGISTERED
PROFESSIONAL ENGINEER

Professional Engr. No.

TRAFFIC CONCEPTS, INC.
Brightview Business Center
8258 Veterans Highway
Suite 19B
Millersville, MD 21108
(410) 987-0427

F-98-45

DATE	No.	REVISION DESCRIPTION
5-13-98	1	ADDED ACCEL. LANE AND DECEL. LANE

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS

Andrew M. Darcke — 3-2-98
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

[signature] — 3/4/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Cindy Hamilton — 3/19/98
CHIEF, DIVISION OF LAND DEVELOPMENT & ~~RESEARCH~~ — DATE

Date	No.	Revision Description

Montpelier 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	LOT/PARCEL #
Montpelier		124,125, & ROAD BED

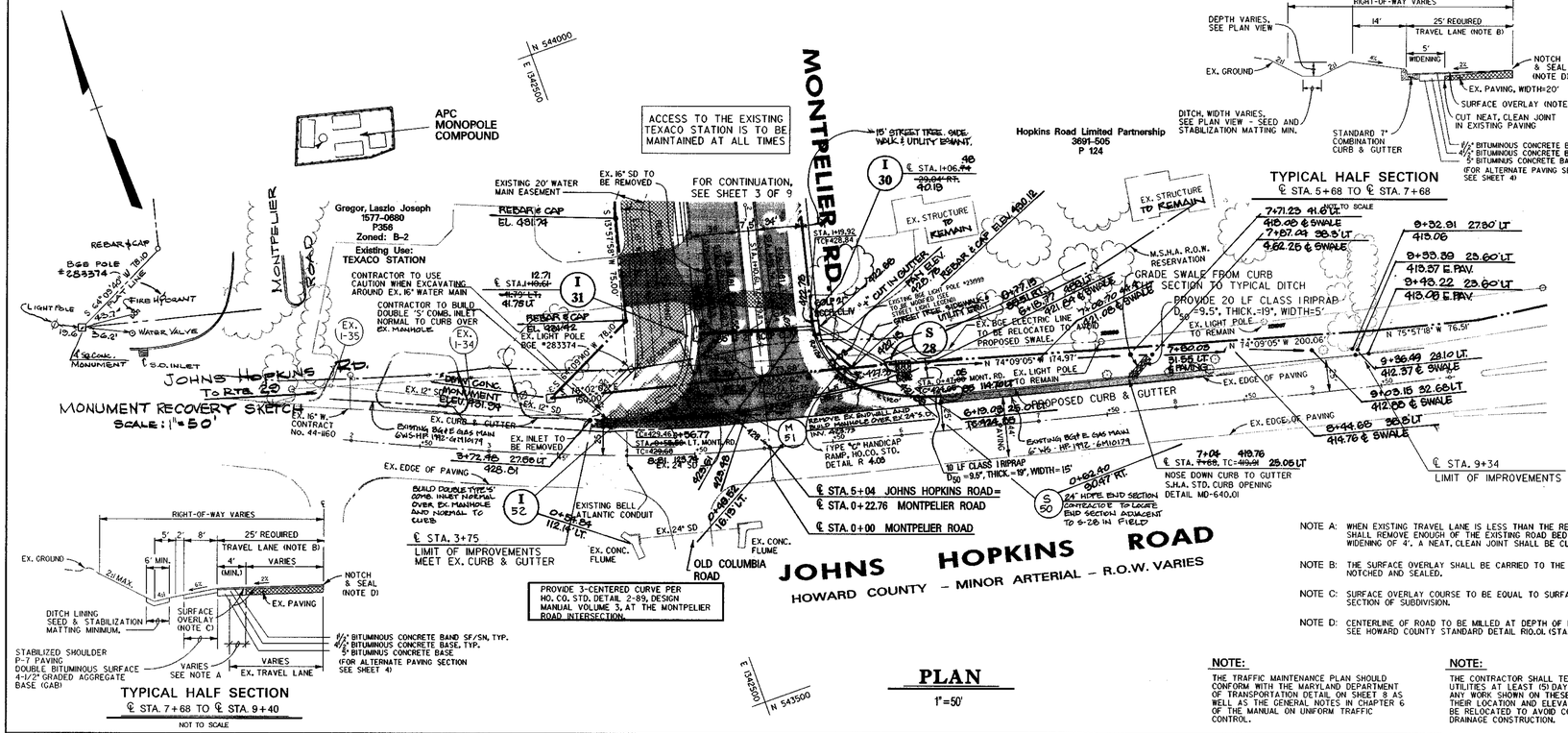
PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
L3691,F505	17	PEC	41	5th	6051.02

WATER CODE	SEWER CODE
E 21	6440000

TITLE
MONTPELIER STRIPING AND SIGNING AND MARKING PLAN

Des By:	Scale: 1"=30'	Proj. No.
Drn By:	Date: JAN. 28 1998	11 OF 11
Chk By:	Approved:	

F-98-45


APC
MONOPOLE
COMPOUND
ACCESS TO THE EXISTING TEXACO STATION IS TO BE MAINTAINED AT ALL TIMES
MONTPELIER RD.
MONTPELIER ROAD
JOHNS HOPKINS RD.
To RTE 29
Gregor, Laszlo Joseph
1577-0880
P358
Zoned: B-2
Existing Use:
TEXACO STATION
Hopkins Road Limited Partnership
3691-505
P 124
FOR CONTINUATION, SEE SHEET 3 OF 9
EXISTING 20' WATER MAIN EASEMENT
EX. 16" SD TO BE REMOVED
CONTRACTOR TO USE CAUTION WHEN EXCAVATING AROUND EX. 16" WATER MAIN
CONTRACTOR TO BUILD DOUBLE 5' COMB. INLET NORMAL TO CURB OVER EX. MANHOLE
EX. 12" SD
EX. CURB & GUTTER
EX. INLET TO BE REMOVED
EX. 24" SD
EX. EDGE OF PAVING
EX. CONC. FLUME
OLD COLUMBIA ROAD
EXISTING BELL ATLANTIC CONDUIT
EX. STRUCTURE TO REMAIN
EX. LIGHT POLE TO REMAIN
EX. ELECTRIC LINE TO BE RELOCATED TO PROPOSED SWALE.
M.S.H.A. R.O.W. RESERVATION
GRADE SWALE FROM CURB SECTION TO TYPICAL DITCH
PROVIDE 20 LF CLASS I RIPRAP
PROPOSED CURB & GUTTER
EX. EDGE OF PAVING
REMOVE EX. END SECTION AND BUILD MANHOLE OVER EX. 24" S.D.
TYPE "A" HANDICAP RAMP, HO.CO. STD. DETAIL # 4.09
10 LF CLASS I RIPRAP
24" HDPE END SECTION CONFORMING TO LOCAL END SECTION ADJACENT TO S-28 IN FIELD
NOSE DOWN CURB TO GUTTER S.H.A. STD. CURB OPENING DETAIL MD-640.01
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PLAN

1" = 50'

STREET LIGHT TABLE

DWG NO.	STREET NAME	STATION	OFFSET	FIXTURE/ POLE TYPE	COMMENTS
2 OF 9	JOHNS HOPKINS ROAD	4+32	40 LT.	1	ANGLE ARM AS SHOWN ON PLAN
3 OF 9	MONTPELIER ROAD	0+83	57' RT.	2	"
3 OF 9	MONTPELIER ROAD	1+79	57' LT.		"
3 OF 9	MONTPELIER ROAD	2+25	34' RT.		"
3 OF 9	MONTPELIER ROAD	3+50	45' LT.		"
3 OF 9	MONTPELIER ROAD	5+00	39' LT.		"
3 OF 9	MONTPELIER ROAD	6+50	34' LT.		"
3 OF 9	MONTPELIER ROAD	8+00	32' LT.		"
3 OF 9	MONTPELIER ROAD	9+50	49' RT.		"
4 OF 9	MONTPELIER ROAD	11+00	48' LT.		"
4 OF 9	MONTPELIER ROAD	12+13	54' RT.		"
4 OF 9	MONTPELIER ROAD	13+90	25' LT.		"
4 OF 9	MONTPELIER ROAD	15+50	22' LT.		"
4 OF 9	MONTPELIER ROAD	17+00	22' LT.		"
4 OF 9	MONTPELIER ROAD	18+20	22' LT.		"

STREET LIGHT LEGEND

1 250-WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12' ARM.

2 250-WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED ON EXISTING BGE POLE # 231999 USING A 20' ARM.

150 WATT HPS VAPOR PENDANT FIXTURE (CUTOFF) MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE USING A 12' ARM.

℄ CURVE DATA

NAME	DELTA	RADIUS	LENGTH	TANGENT	CHORD
①	50°35'36.8"	531.45'	469.28'	251.18	L=454.18 N 39°15'46" E
②	01°29'51"	510.00'	13.329'	6.665	L=13.329 N 65°18'30" E

CURB CURVE DATA FOR PAVING TRANSITION

NAME	DELTA	RADIUS	LENGTH	TANGENT	CHORD
④	50°35'37"	595.913'	526.206'	281.646	L=509.276 N39°15'46"E
⑤	50°35'37"		434.84	232.74	L=420.85 N39°15'46"E
⑦	01°29'51"	537.50'	14.048	7.024	L=14.048 N65°18'30"E
⑥	01°29'51"	471.00'	12.31	6.16	L=12.31 N65°18'30"E

TYPICAL PAVING SECTION FOR DIVIDED ROADWAY

℄ STA. 0+75 TO ℄ STA. 3+60.69

NOT TO SCALE

TYPICAL UNDIVIDED SECTION

℄ STA. 8+43.30 TO ℄ STA. 15+00.18

NOT TO SCALE

NOTE:
A BIOLOGIC ROOT INHIBITOR BARRIER OR PHYSICAL CONTAINER BARRIER SHALL BE INSTALLED AT MONTPELIER ROAD, STATION 0+75 TO STATION 3+60.69

AS-BUILT

1/15/98
Date

Professional Engr. No. 3860

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — 3-2-98 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — 3/4/98 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT ~~& RESEARCH~~ — 3/19/98 DATE

Date	No.	Revision Description
1/15/99	3	REVISED STORM DRAIN LAYOUT AND CENTER MEDIAN
8/25/98	2	REVISED ROAD WIDTH, SIDEWALK, STREETLIGHTS AND STORM DRAINS.
5/15/98	1	REVISED ROAD WIDTH, SIDEWALK, STREET LIGHTS & STORM DRAINS.

Montpelier 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	LOT/PARCEL #
Montpelier		124,125, & ROAD BED

PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
L3691,F505	17	PEC	41	5th	6051.02

WATER CODE: E 21 — SEWER CODE: 6440000

TITLE
MONTPELIER ROAD
ROAD CONSTRUCTION PLANS

Des By: ZAL	Scale: As Shown	Proj. No. 941712a
Drn By: TPC, MSS	Date: Jan.28, 1998	3 OF 11
Chk By: MM	Approved:	

MONTPELIER ROAD

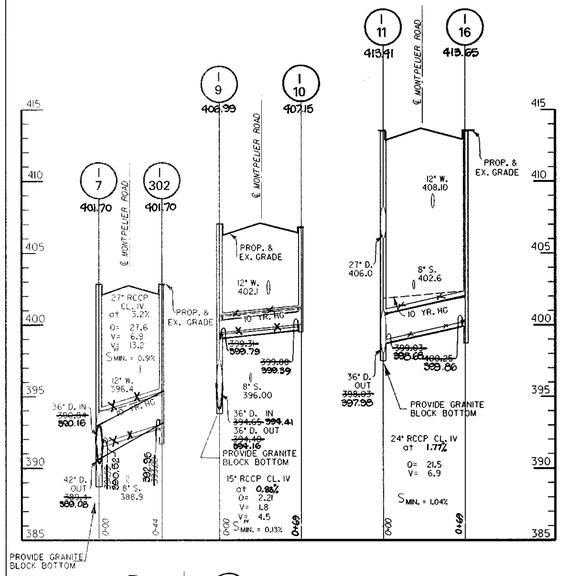
SCALE: 1"=50' HORIZ. 1"=5' VERT.

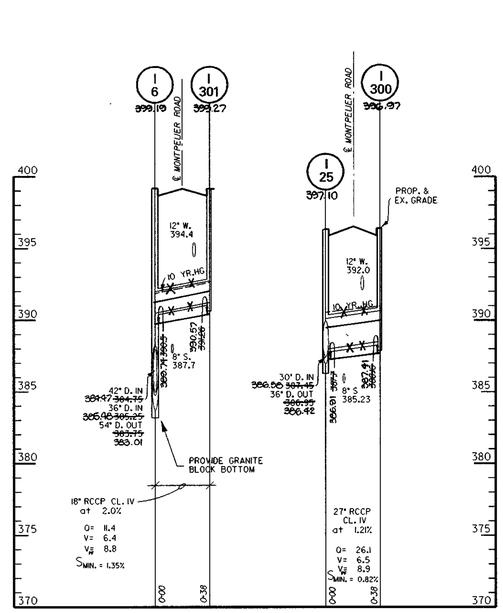
ROAD CLASSIFICATION=MINOR ARTERIAL
RIGHT-OF-WAY=VARIES
DESIGN SPEED=40 mph

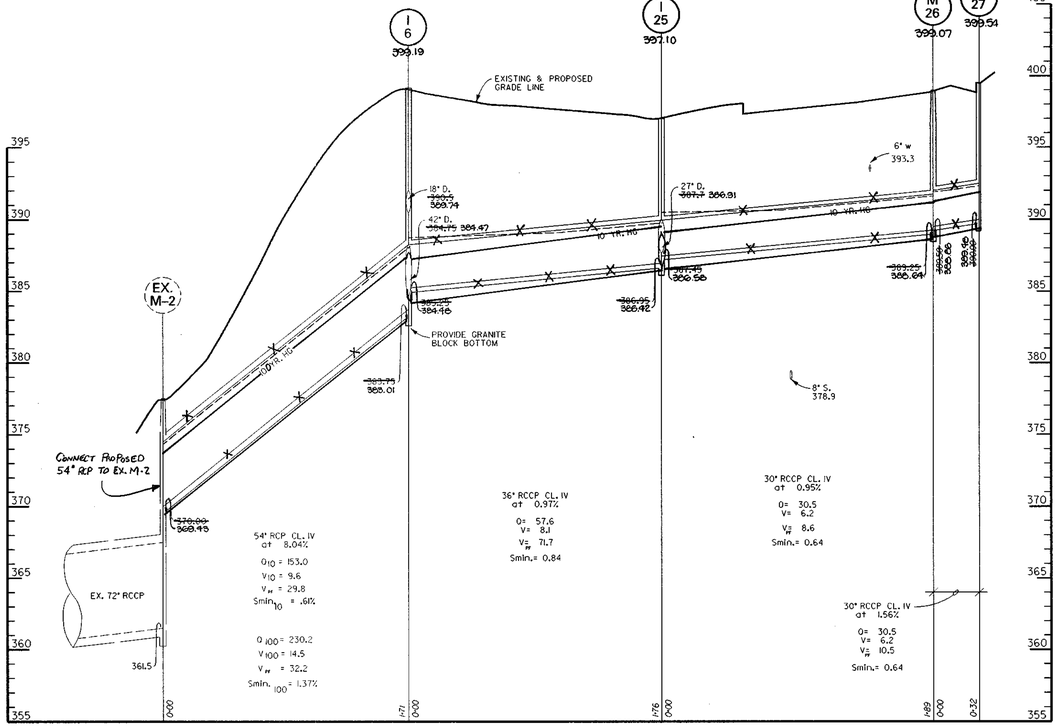
THE SITE HAS BEEN MASS GRADED PER SDP-98-011

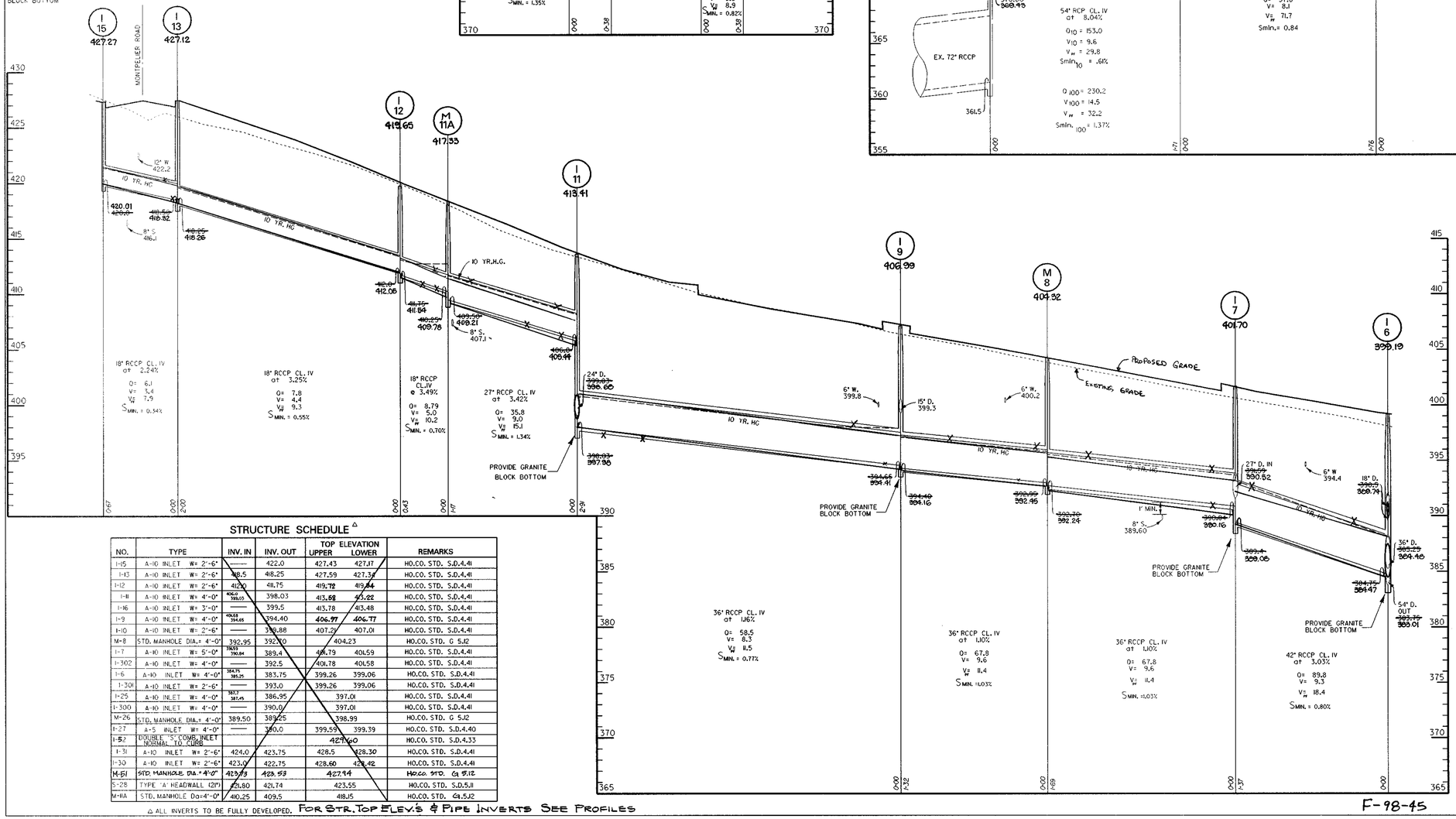
F-98-45

Thu Jan 15 15:56:37 1998 d:\941712a\941712a.rd1









STRUCTURE SCHEDULE △

NO.	TYPE	INV. IN	INV. OUT	TOP ELEVATION UPPER	TOP ELEVATION LOWER	REMARKS
I-15	A-10 INLET W= 2'-6"	——	422.0	427.43	427.17	HO.CO. STD. S.D.4.41
I-13	A-10 INLET W= 2'-6"	418.5	418.25	427.59	427.34	HO.CO. STD. S.D.4.41
I-12	A-10 INLET W= 2'-6"	412.00	411.75	419.72	419.64	HO.CO. STD. S.D.4.41
I-11	A-10 INLET W= 4'-0"	406.0 / 399.05	398.03	413.68	413.22	HO.CO. STD. S.D.4.41
I-16	A-10 INLET W= 3'-0"	——	399.5	413.78	413.48	HO.CO. STD. S.D.4.41
I-9	A-10 INLET W= 4'-0"	406.65 / 394.65	394.40	406.97	406.77	HO.CO. STD. S.D.4.41
I-10	A-10 INLET W= 2'-6"	——	398.88	407.21	407.01	HO.CO. STD. S.D.4.41
M-8	STD. MANHOLE DIA.= 4'-0"	392.95	392.70	404.23		HO.CO. STD. G 5.12
I-7	A-10 INLET W= 5'-0"	393.5 / 390.84	389.4	401.79	401.59	HO.CO. STD. S.D.4.41
I-302	A-10 INLET W= 4'-0"	——	392.5	401.78	401.58	HO.CO. STD. S.D.4.41
I-6	A-10 INLET W= 4'-0"	384.75 / 385.25	383.75	399.26	399.06	HO.CO. STD. S.D.4.41
I-301	A-10 INLET W= 2'-6"	——	393.0	399.26	399.06	HO.CO. STD. S.D.4.41
I-25	A-10 INLET W= 4'-0"	387.7 / 387.45	386.95		397.01	HO.CO. STD. S.D.4.41
I-300	A-10 INLET W= 4'-0"	——	390.0		397.01	HO.CO. STD. S.D.4.41
M-26	STD. MANHOLE DIA.= 4'-0"	389.50	389.25		398.99	HO.CO. STD. G 5.12
I-27	A-5 INLET W= 4'-0"	——	390.0	399.59	399.39	HO.CO. STD. S.D.4.40
I-52	DOUBLE 'S' COMB. INLET NORMAL TO CURB			424.60		HO.CO. STD. S.D.4.33
I-31	A-10 INLET W= 2'-6"	424.0	423.75	428.5	428.30	HO.CO. STD. S.D.4.41
I-30	A-10 INLET W= 2'-6"	423.0	422.75	428.60	428.42	HO.CO. STD. S.D.4.41
M-51	STD. MANHOLE DIA.= 4'-0"	423.73	423.53	427.94		HO.CO. STD. G 5.12
S-28	TYPE 'A' HEADWALL (12")	421.80	421.74		423.55	HO.CO. STD. S.D.5.11
M-11A	STD. MANHOLE DIA.=4'-0"	410.25	409.5		418.15	HO.CO. STD. G 5.12

△ ALL INVERTS TO BE FULLY DEVELOPED. FOR STR. TOP ELEV.'S & PIPE INVERTS SEE PROFILES

F-98-45

AS-BUILT
PROFILE
SCALE: HORIZ. 1"=50'
VERT. 1"=5'

1/12/98
Date

STATE OF MARYLAND
EDMUND F. HALE
No. 9999
REGISTERED
PROFESSIONAL ENGINEER

Professional Engr. No. 3866

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 3-2-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/4/98
CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH — DATE 3/4/98

Date	No.	Revision Description
1-15-99	3	REVISED STRUCTURE SCHEDULE
7-20-98	2	REVISED STRUCTURE SCHEDULE
5-18-98	1	REVISED PROFILE LENGTHS AND INLETS TOPS

Montpelier Research Park
HOWARD COUNTY MARYLAND

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A Team of Land Planners, Landscape Architects, Engineers, Surveyors & Environmental Professionals
200 East Pennsylvania Avenue
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410 296 3333
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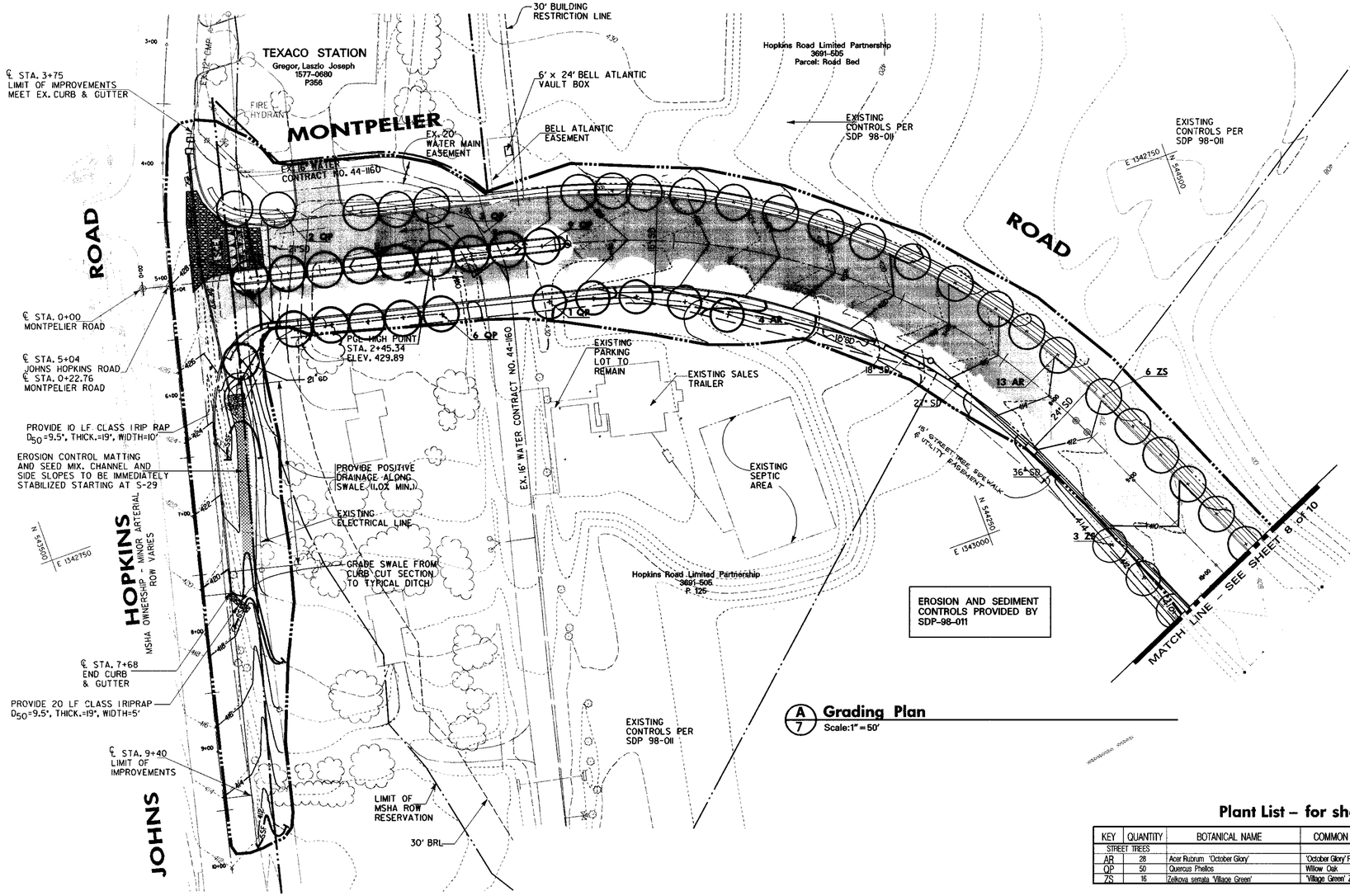
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL #
Montpelier		124,125, & ROAD BED
PLAT# OR LF / BLOCK # / ZONE	TAX/ZONE MAP / ELECT. DISTRICT	CENSUS TRACT
L3691,F505 / 17 / PEC	41 / 5th	6051.02
WATER CODE	SEWER CODE	
E 21	6440000	

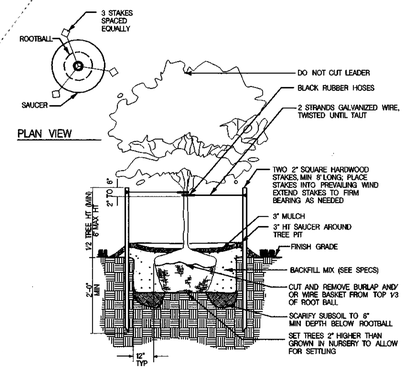
TITLE
MONTPELIER ROAD STORM DRAIN PROFILES

Des By: ZAL	Scale: As Shown	Proj. No. 941712a	
Drn By: ZAL, MSS	Date: Jan. 28, 1998	5	OF 11
Chk By:	Approved:		

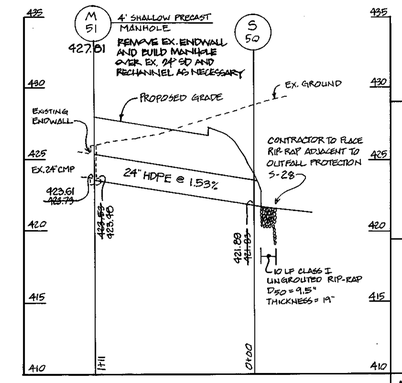
Mon Jan 12 11:47:04 1998 F-98-45



A 7 Grading Plan
Scale: 1" = 50'

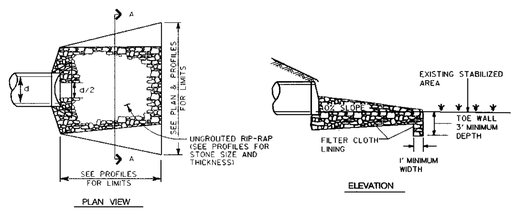


D 7 Street Tree Planting
Not to Scale



Plant List – for sheets 7 & 8

KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	REMARKS
STREET TREES						
AR	28	Acer Rubrum 'October Glory'	'October Glory' Red Maple	2 1/2"-3" cal	B&B	Full Head
QP	50	Quercus Phellos	Willow Oak	2 1/2"-3" cal	B&B	Full Head
ZS	16	Zelkova serrata 'Village Green'	'Village Green' Zelkova	2 1/2"-3" cal	B&B	Full Head



B 7 Stone Outlet Protection III
Not to Scale

Stone Outlet Protection Specifications

Construction Specifications

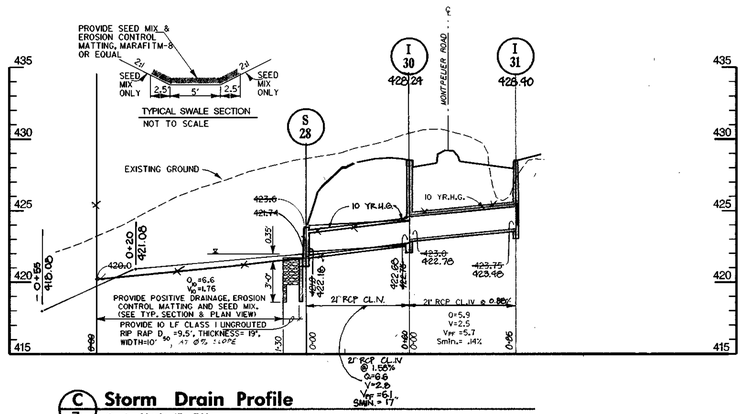
1. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.

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 blanket 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.



C 7 Storm Drain Profile
Scale: Horiz. 1" = 50'
Vert. 1" = 5'

F-98-45

STATE OF MARYLAND — JOHN W. RANCOCAS JR. — No. 10903 — REGISTERED PROFESSIONAL ENGINEER

AS-BUILT
1/N/98
Date

STATE OF MARYLAND — EDMUND F. HAILE — No. 3860 — REGISTERED PROFESSIONAL ENGINEER

Professional Engr. No. 3860

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS
U.S. NATURAL RESOURCE CONSERVATION SERVICE — DATE 1/26/98

THIS DEVELOPEMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD S.C.D.C. — DATE 1/26/98

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 1/15/98
PRINT NAME BELOW SIGNATURE
Howard L. Rusnak

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 1/15/98
PRINT NAME BELOW SIGNATURE
Edmund F. Haile

APPROVED: HOWARD COUNTY DEPT. OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — DATE 3-2-98

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/4/98
CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH — DATE 3/1/98

Date	No.	Revision Description
1-15-98	3	REVISED STORM DRAIN PROFILES
7-25-97	2	REVISED ROAD GRADING/STR. TREES & STORM DRAIN PROFILES
5-13-97	1	REVISED ROAD GRADING & STREET TREES

Montpelier Research Park

HOWARD COUNTY MARYLAND

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SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL #
Montpelier		124,125, & ROAD BED

PLAT# OR L/F	BLOCK #	ZONE	TAX/ZONE MAP	ELECT. DISTRICT	CENSUS TRACT
L3691,F505	17	PEC	41	5th	6051.02

WATER CODE: E 21 — SEWER CODE: 6440000

TITLE
ROAD GRADING, STREET TREE, EROSION & SEDIMENT CONTROL

Des By: ZAL	Scale: As Shown	Proj. No. 941712a
Drn By: TPC, MSS	Date: JAN. 28, 1998	7 OF 11
Chk By:	Approved:	

Thu Jan 15 17:00:22 1998 d:\941712a\941712a.dgn

F-98-45