

GENERAL NOTES

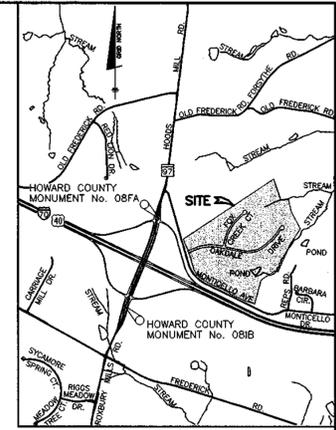
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARD AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- PROJECT BACKGROUND:
 LOCATION: TAX MAP: 8, BLOCK 18, PARCEL 110
 ZONING: RC-DEO
 ELECTION DISTRICT: 4th
 TOTAL TRACT AREA: 103.13± AC.
 NUMBER OF PROPOSED LOTS: 49
 NUMBER OF PROPOSED OPEN SPACE LOT: 1
 NUMBER OF PROPOSED NON-BUILDABLE PRESERVATION PARCELS: 2
 NUMBER OF PROPOSED NON-BUILDABLE PARCELS: 3
 NUMBER OF PROPOSED BUILDABLE PRESERVATION PARCELS: 2
 DPZ REFERENCE FILE: WP-99-24, SP-99-01, RE-00-01
 PRELIMINARY EQUIVALENT SKETCH PLAN APPROVED ON FEB. 1, 1999.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- TOPOGRAPHY SHOWN HEREON WAS TAKEN FROM FIELD RUN SURVEY DONE BY TSA GROUP, INC., DATED 6/97 AND SUPPLEMENTED WITH TOPOGRAPHIC FILE INFORMATION PURCHASED FROM HOWARD COUNTY GEOGRAPHICAL INFORMATION SERVICES. CONTOURS SHOWN ARE 2 FOOT INTERVALS. COORDINATES ARE HAD 83, MARYLAND STATE PLAN GRID AS PROJECTED BY HOWARD CO. GEODETIC CONTROL STATIONS Nos. 08FA AND 0818.
- THE PROJECT IS NOT WITHIN THE METROPOLITAN DISTRICT, WATER AND SEWER FOR THIS PROJECT SHALL BE PRIVATE AND WILL BE PROVIDED ON THE LOTS.
- WATER QUALITY AND QUANTITY TREATMENT FOR THE PROPOSED ROADWAY AND LOTS IS BEING PROVIDED BY EXTENDED DETENTION AND RETENTION FACILITIES. THESE FACILITIES WILL BE PRIVATELY OWNED AND JOINTLY MAINTAINED BY HOWARD COUNTY AND THE HOMEOWNERS ASSOCIATION.
- THE FLOODPLAIN LIMIT SHOWN HAS BEEN CALCULATED BY TSA GROUP, INC., DATED JUNE, 1998, AND APPROVED ON FEB. 1, 1999 (SP-99-01).
- WETLAND LIMITS SHOWN HEREON ARE BASED ON A DELINEATION BY ECO-SCIENCE PROFESSIONALS, INC., DATED JULY, 1998 AND WAS APPROVED ON FEB. 1, 1999.
- ADEQUATE PUBLIC FACILITIES ORDNANCE TRAFFIC ANALYSIS WAS PREPARED BY LEE CUNNINGHAM & ASSOCIATES, DATED JULY, 1998 AND APPROVED ON FEB. 1, 1999.
- NOISE STUDY WAS PREPARED BY BENCHMARK ENGINEERING, INC. AND DATED SEPT. 3, 1998 AND APPROVED FEB. 1, 1999 (SP-99-01).
- THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY HILLS-CARNEE AND ASSOCIATES, DATED JUNE, 1998.
- EXISTING UTILITIES SHOWN ARE TAKEN FROM RECORD INFORMATION AND FIELD LOCATIONS. CONTRACTOR TO VERIFY LOCATION PRIOR TO STARTING CONSTRUCTION.
- FOREST STAND DELINEATION WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC., DATED JULY, 1998 AND APPROVED ON FEB. 1, 1999 (SP-99-01).
- NO DISTURBANCE SHALL OCCUR IN THE WETLANDS, 25' WETLAND BUFFER, 75' STREAM BUFFER, OR 100-YEAR FLOODPLAIN LIMITS EXCEPT AS APPROVED AS A PART OF THESE PLANS.
- A SIGHT DISTANCE ANALYSIS FOR MONTICELLO AVENUE AND OAKDALE DRIVE WAS PROVIDED TO THE DEVELOPMENT ENGINEERING DIVISION AND APPROVED AS PART OF THE PRELIMINARY EQUIVALENT SKETCH PLAN (SP-99-01).
- TO THE BEST OF OWNERS KNOWLEDGE, THERE ARE NO CEMETERY LOCATIONS ONSITE.
- ALL SEWERAGE EASEMENTS LOCATED WITHIN 50 FEET OF THE PROPOSED ROADWAY MUST BE STAKED OUT PRIOR TO SITE GRADING. GRADING OPERATION MUST BE SUPERVISED BY THE APPLICANT TO INSURE NO GRADING TAKES PLACE WITHIN 20 FEET OF SEWERAGE EASEMENT WITHOUT PRIOR NOTIFICATION TO THE HOWARD COUNTY HEALTH DEPARTMENT.
- DRIVEWAYS THAT SERVE ONE RESIDENCE SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY. DRIVEWAYS THAT SERVE MULTIPLE RESIDENCES SHALL BE PROVIDED PRIOR TO BUILDING PERMIT ISSUANCE IN ORDER TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 a) WIDTH - 12' (14' SERVING MORE THAN ONE RESIDENCE).
 b) SURFACE - 6" OF COMPACT CRUSHER RUN BASE WITH TAR AND CHIP COATING.
 c) GEOMETRY - MAX. 15% GRADE, MAX. 10% GRADE CHANGE AND MIN. 45' TURNING RADIUS.
 d) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
 e) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
 f) STRUCTURE CLEARANCES - MINIMUM 12 FEET.
 g) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE.
- ALL ROAD FILLS SHALL BE COMPACTED TO 95% AS DETERMINED BY AASHTO T-190, ON NOVEMBER 3, 1998. THE DIRECTOR OF THE DEPARTMENT OF PLANNING AND ZONING REVIEWED AND DENIED WAIVER PETITION (WP-99-24), A WAIVER TO SECTION 16.120(b)(5) TO ALLOW NOISE LEVELS ADJACENT TO A PROPOSED DWELLING TO EXCEED THE STANDARDS SET IN THE DESIGN MANUAL. AS A CONSEQUENCE OF WP-99-24, RESIDENTIAL DEVELOPMENT ON PRESERVATION PARCEL "D" IS PERMITTED ONLY IN THE VICINITY OF OAKDALE DRIVE AND NOT WITHIN THE NOISE ZONE ASSOCIATED WITH I-70 UNLESS ADEQUATE NOISE MITIGATION IS PROVIDED. THE MARYLAND DEPARTMENT OF THE ENVIRONMENT APPLICATION TRACKING No. IS 99-NI-0115/199982677. THE WMA No. IS 99-PD-2024.
- THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN THE AREA OF ANY OVERHEAD POWERLINES.
- FOREST CONSERVATION OBLIGATIONS ARE MET BY 100 AC. RETENTION ON-SITE (\$49,000.00) PLUS 16.8 AC. RETENTION OFF-SITE (\$263,102.00) FOR A TOTAL DEVELOPER'S AGREEMENT SURETY FOR FOREST CONSERVATION OF \$312,102.00.
- LANDSCAPE SURETY WITH DEVELOPER'S AGREEMENT IS IN THE AMOUNT OF \$59,800.00.

MONTICELLO

4th ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

FINAL ROAD, STORMWATER MANAGEMENT AND STORM DRAINAGE CONSTRUCTION PLAN



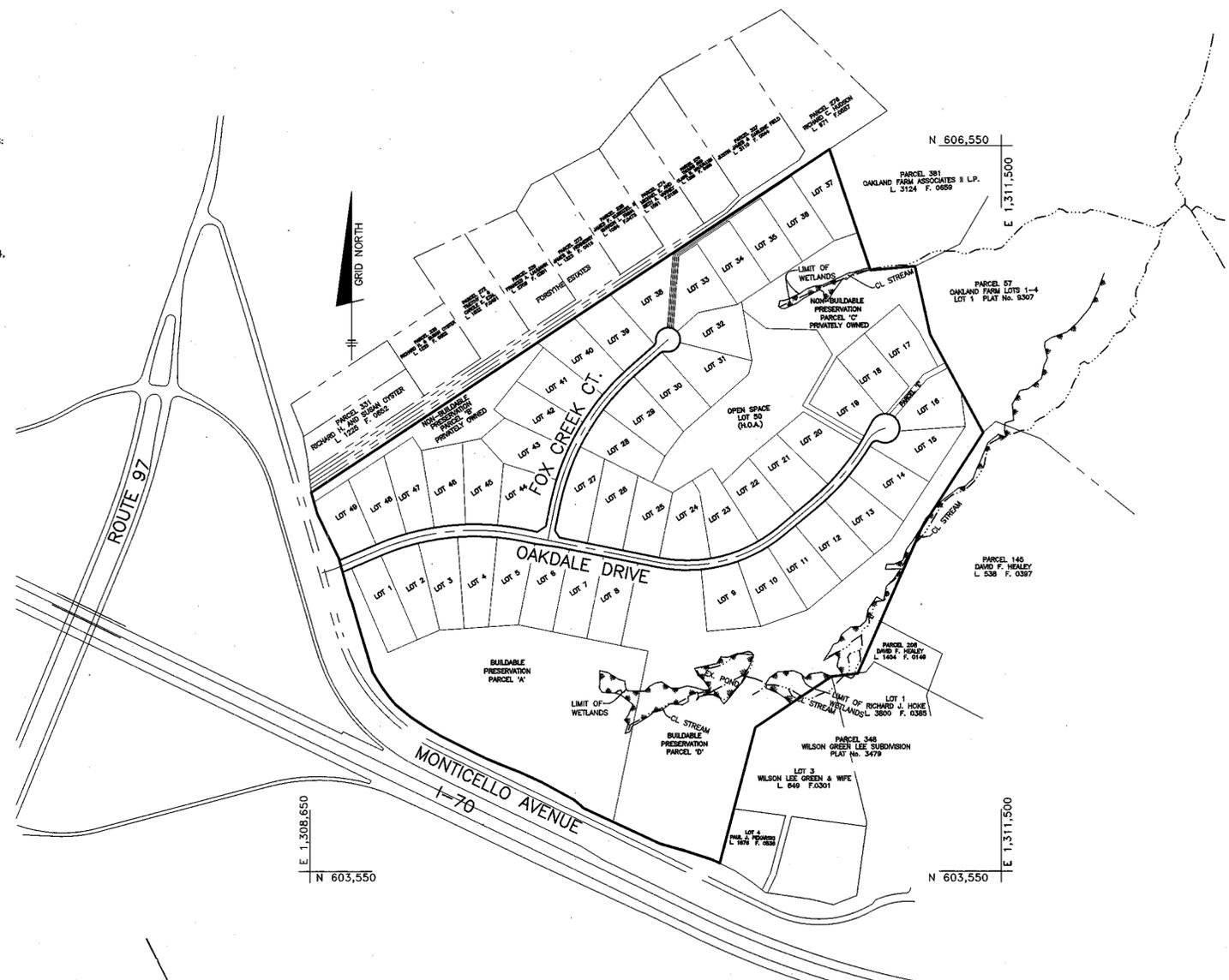
VICINITY MAP
SCALE: 1" = 200'

BENCHMARK (NAD83)
 Ho Co. No. 08FA
 STAMPED BRASS DISK SET ON TOP OF CONCRETE BASE IN THE MEDIAN OF ROUTE 97, NORTH OF THE ENTRANCE AND EXIT RAMPS TO WESTBOUND INTERSTATE I-70 AND 50.4' NORTH OF AN I-70 SIGN, 10.8' WEST OF THE EDGE OF PAVING, 26.8' EAST OF THE "X" CUT IN CENTER OF GUARD RAIL POST AND 108' FROM THE NORTH END OF THE GUARD RAIL.
 N 605,728.9924' E 1,308,071.0550' ELEV. 624.75'

Ho Co. No. 0818
 STAMPED BRASS DISK SET ON TOP OF CONCRETE BASE IN THE MEDIAN OF ROUTE 97, SOUTH OF THE ENTRANCE AND EXIT RAMPS TO EASTBOUND INTERSTATE I-70 AND 78.8' NORTH OF THE SOUTH END OF THE GUARD RAIL 15.4' EAST OF THE EDGE OF PAVING, 36.9' WEST OF THE GUARD RAIL AND 57.7' SOUTHWEST OF A GUARD RAIL POST.
 N 603,342.5001' E 1,307,205.8326' ELEV. 596.55'

RIGHT OF WAY ELEVATION CHART NAD 83

R/W PT. NO.	DESCRIPTION	ELEVATION
200	CONC. MON. SET	637.21'
201	REBAR & CAP	640.58'
202	REBAR & CAP	638.54'
203	CONC. MON. SET	639.44'
204	REBAR & CAP	639.86'
205	REBAR & CAP	639.61'
206	REBAR & CAP	634.91'
207	REBAR & CAP	623.89'
208	P.K. NAIL SET	624.18'
209	P.K. NAIL SET	624.06'
210	REBAR & CAP	624.09'
211	REBAR & CAP	634.86'
212	REBAR & CAP	639.25'
213	REBAR & CAP	639.76'
214	REBAR & CAP	640.60'
215	REBAR & CAP	626.54'
216	REBAR & CAP	613.95'
217	REBAR & CAP	604.73'
218	REBAR & CAP	587.32'
219	REBAR & CAP	585.60'
220	REBAR & CAP	584.76'
221	REBAR & CAP	586.85'
222	REBAR & CAP	604.91'
223	REBAR & CAP	614.57'
224	REBAR & CAP	626.52'
225	REBAR & CAP	640.26'
226	REBAR & CAP	640.36'
227	REBAR & CAP	638.27'
228	REBAR & CAP	641.51'
229	REBAR & CAP	636.76'



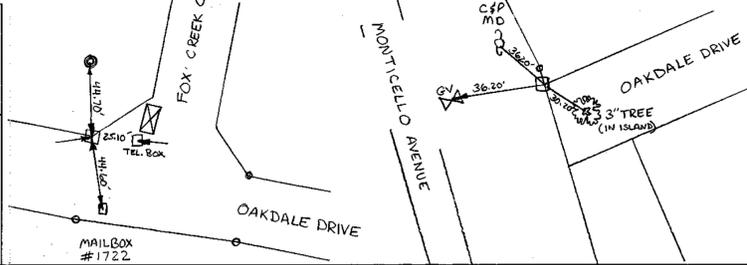
SHEET INDEX

SHEET NO.	DESCRIPTION
1	COVER SHEET
2-4	ROAD AND STORM DRAIN PLAN
5-6	ROAD PROFILES
7-9	STORM DRAIN PROFILES
10-12	GRADING AND SEDIMENT & EROSION CONTROL PLAN
13	SEDIMENT AND EROSION CONTROL NOTES & DETAILS
14	STORM DRAIN DRAINAGE AREA MAP
15-16	STORM WATER MANAGEMENT NOTES AND DETAILS
17	SEDIMENT AND EROSION CONTROL & STORMWATER MANAGEMENT NOTES AND DETAILS
18	NOISE MITIGATION NOTES AND DETAILS
19	LANDSCAPE PLAN
20	FOREST CONSERVATION PLAN
21	FOREST CONSERVATION AND LANDSCAPE NOTES & DETAILS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Quate 9/14/99
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Andy Hamlet 9/27/99
 CHIEF, DIVISION OF LAND DEVELOPMENT

Bill Damunian 9/22/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION MK



LOCATION PLAN
SCALE: 1" = 300'



2-19-03 REVISED PER AS-BUILT CONDITIONS

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8460 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6644

OWNER/DEVELOPER:
 HOODS MILL CORPORATION
 C/O P.O. BOX 417
 ELLICOTT CITY, MD 21041
 410-465-4244

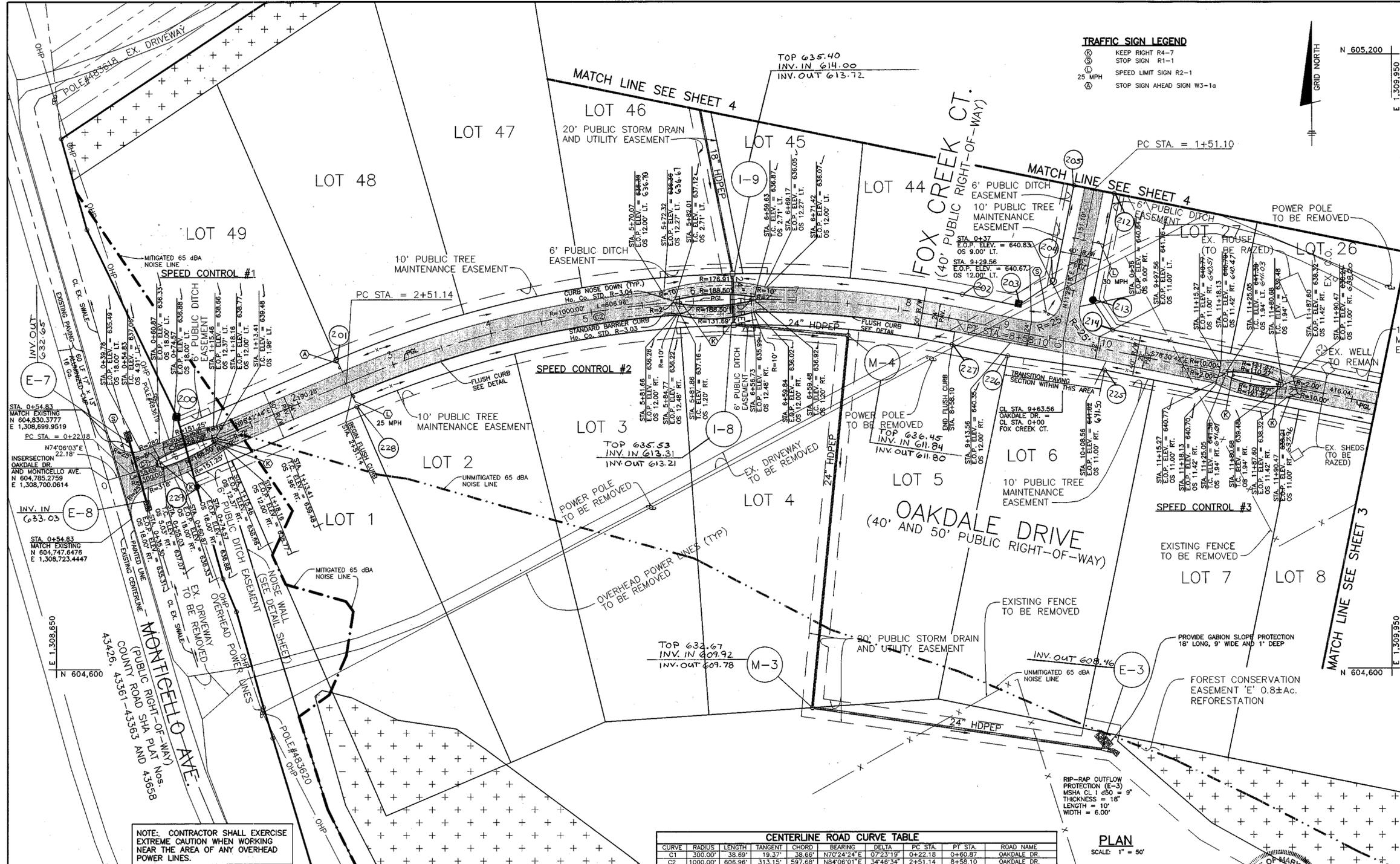
PROJECT:
MONTICELLO
 LOTS 1-50, PRESERVATION PARCELS "A" THRU "D" AND NON-BUILDABLE PARCEL "E"

LOCATION:
 TAX MAP 8 - BLOCK 18 - PARCEL 110
 4TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE:
COVER SHEET
 WP-99-24 SP-99-01

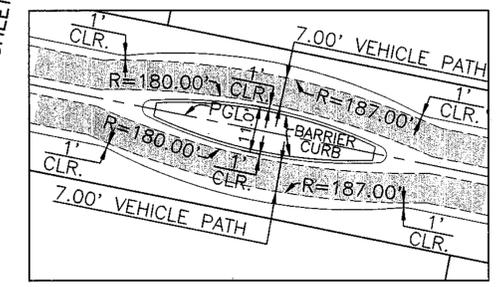
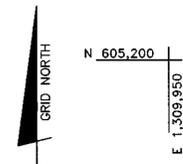
DATE: MARCH, 1998 **PROJECT NO.:** 1122

DESIGN: JMC **DRAFT:** JMC **SCALE:** AS SHOWN **DRAWING** 1 **OF** 21

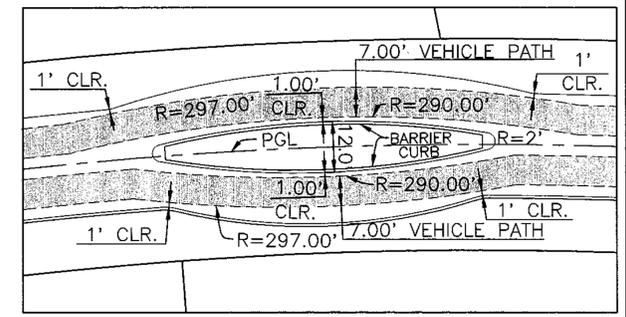


TRAFFIC SIGN LEGEND

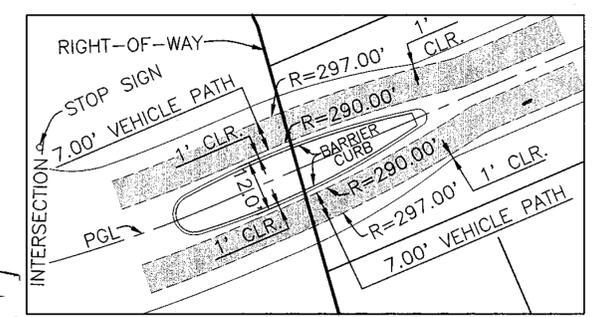
- KEEP RIGHT R4-7
- STOP SIGN R1-1
- 25 MPH SPEED LIMIT SIGN R2-1
- STOP SIGN AHEAD SIGN W3-10



SPEED CONTROL #3
SCALE: 1" = 20'



SPEED CONTROL #2
SCALE: 1" = 20'



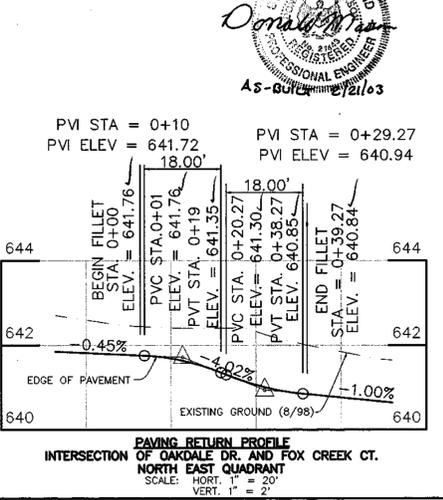
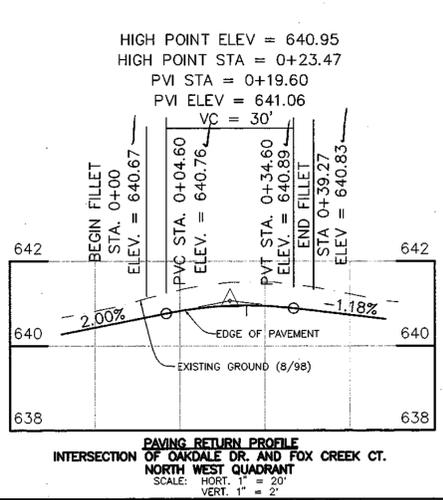
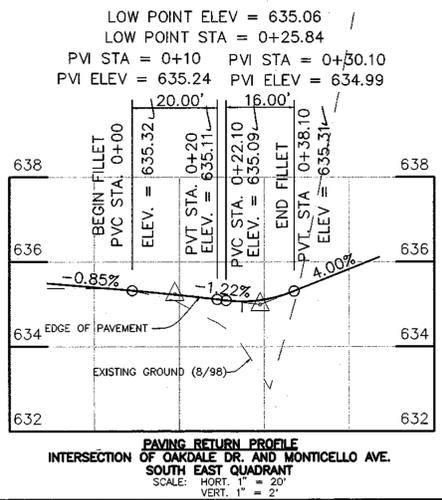
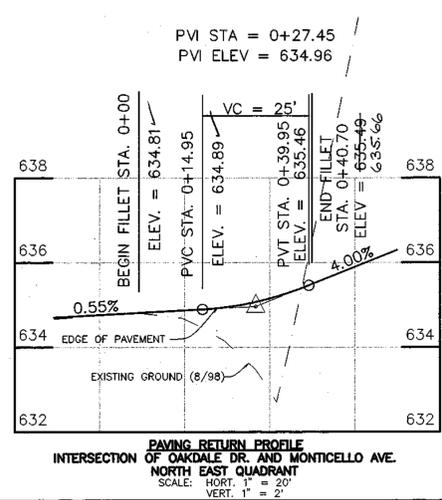
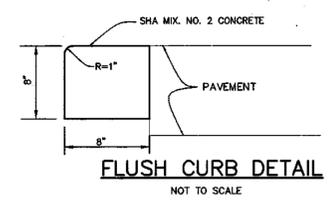
SPEED CONTROL #1
SCALE: 1" = 20'

CENTERLINE ROAD CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA	PC STA.	PT STA.	ROAD NAME
C1	300.00'	38.69'	19.37'	38.68'	N70°24'24"E	07°23'19"	0+22.18	0+60.87	OAKDALE DR.
C2	1000.00'	606.36'	313.15'	597.68'	N84°06'01"E	34°48'34"	2+51.14	6+38.10	OAKDALE DR.

PLAN
SCALE: 1" = 50'

NOTE: CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING NEAR THE AREA OF ANY OVERHEAD POWER LINES.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. ... 9/18/99
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy ... 7/27/99
CHIEF, DIVISION OF LAND DEVELOPMENT

Chris ... 9/22/99
CHIEF, CIVIL ENGINEERING DIVISION



NO.	DATE	REVISION
2-19-03		REVISED PER AS-BUILT CONDITIONS

BENCHMARK ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644

OWNER/DEVELOPER: HOODS MILL CORPORATION
C/O P.O. BOX 417
ELLICOTT CITY, MD 21041
410-465-4244

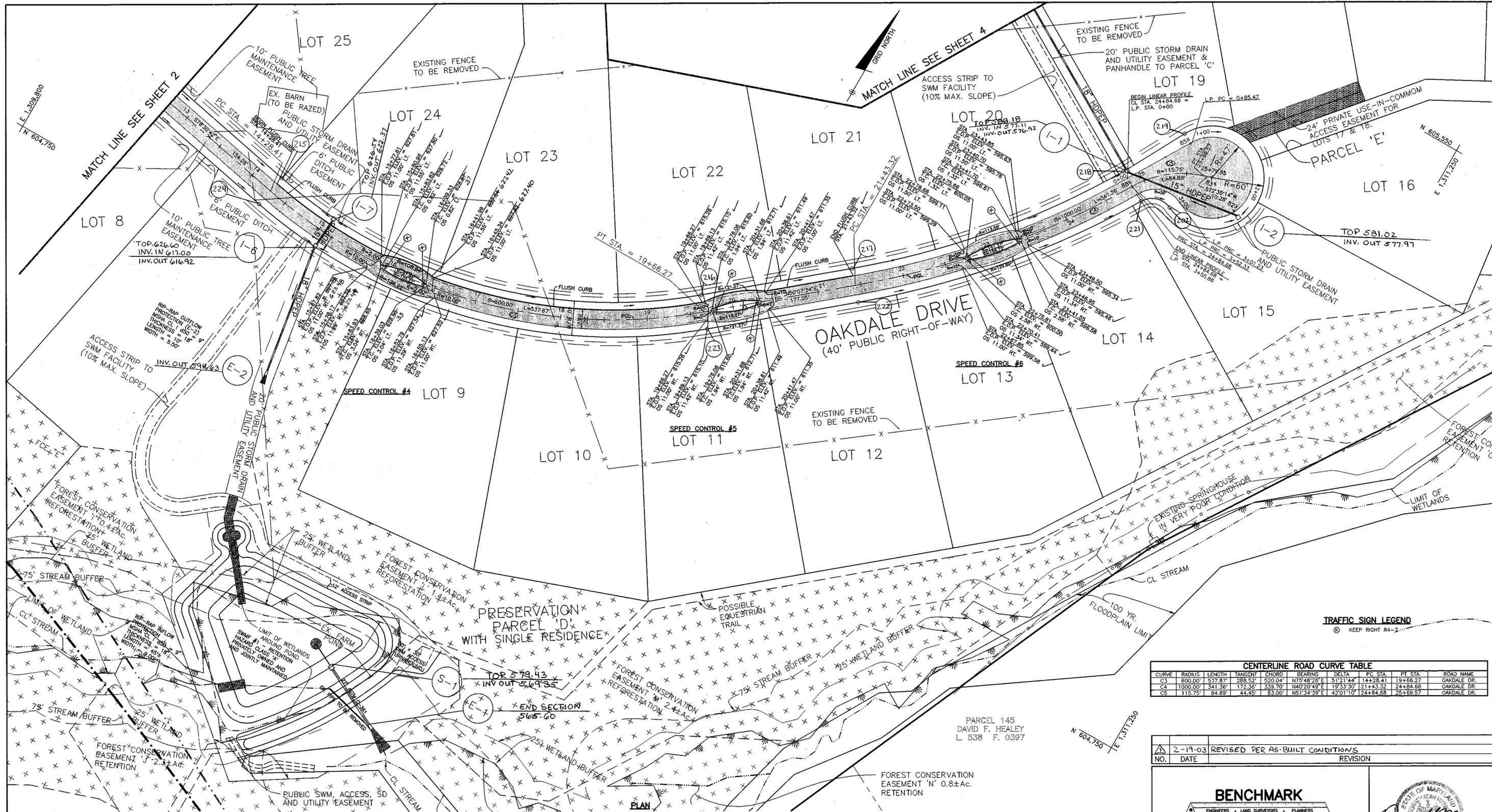
PROJECT: **MONTICELLO**
LOTS 1-50, PRESERVATION PARCELS "A" THRU "D" AND NON-BUILDABLE PARCEL "E"

LOCATION: TAX MAP 8 - BLOCK 18 - PARCEL 110
4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: **ROAD AND STORM DRAIN PLAN**
WP-99-24 SP-99-01

DATE: MARCH, 1999 PROJECT NO. 1122
SCALE: AS SHOWN DRAWING 2 OF 21

DESIGN: JMC DRAFT: JMC



CENTERLINE ROAD CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA	PC STA.	PT STA.	ROAD NAME
C3	600.00'	537.87'	288.52'	520.04'	N75°48'26"E	51°21'44"	14+28.41	19+66.27	OAKDALE DR.
C4	1000.00'	341.36'	172.36'	339.70'	N40°20'49"E	109°33'50"	21+43.32	24+84.68	OAKDALE DR.
C5	115.75'	84.89'	44.45'	83.00'	N51°34'39"E	42°01'10"	24+84.68	25+69.57	OAKDALE DR.

TRAFFIC SIGN LEGEND

⊙	KEEP RIGHT R4-2
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 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6644

Donald M. Man
 PROFESSIONAL ENGINEER
 STATE OF MARYLAND

OWNER/DEVELOPER:
 HOODS MILL CORPORATION
 C/O P.O. BOX 417
 ELLICOTT CITY, MD 21041
 410-465-4244

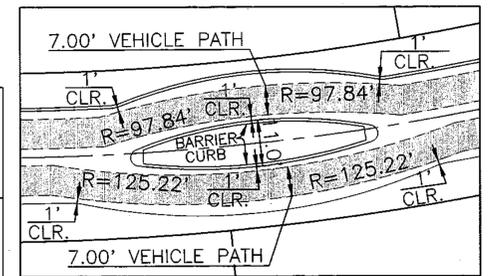
PROJECT:
MONTICELLO
 LOTS 1-50, PRESERVATION PARCELS "A" THRU "D"
 AND NON-BUILDABLE PARCEL "E"

LOCATION:
 TAX MAP 8 - BLOCK 18 - PARCEL 110
 4TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

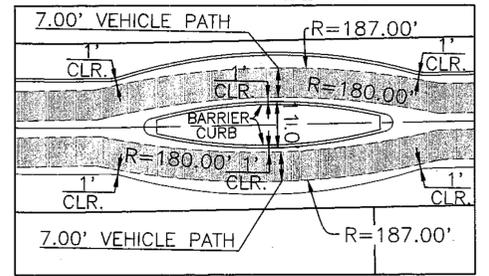
TITLE:
ROAD AND STORM DRAIN PLAN
 WP-99-24 SP-99-01

DATE: MARCH, 1999 PROJECT NO. 1122
 SCALE: AS SHOWN DRAWING 3 OF 21

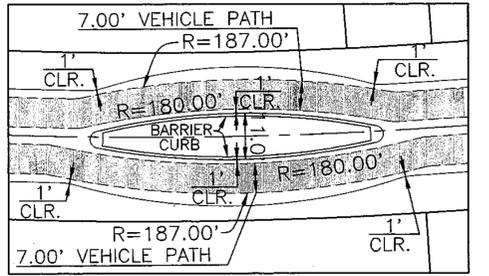
DESIGN: JMC DRAFT: JMC



SPEED CONTROL #4
 SCALE: 1" = 20'



SPEED CONTROL #5
 SCALE: 1" = 20'



SPEED CONTROL #6
 SCALE: 1" = 20'

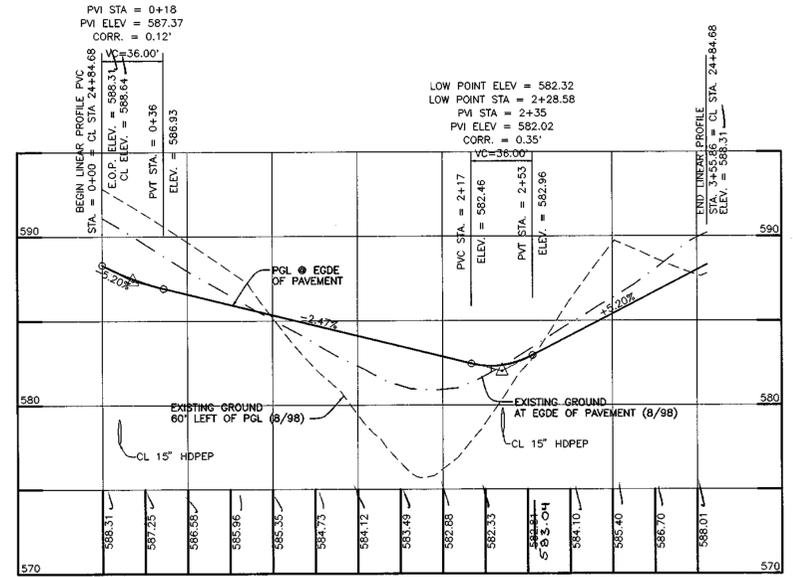
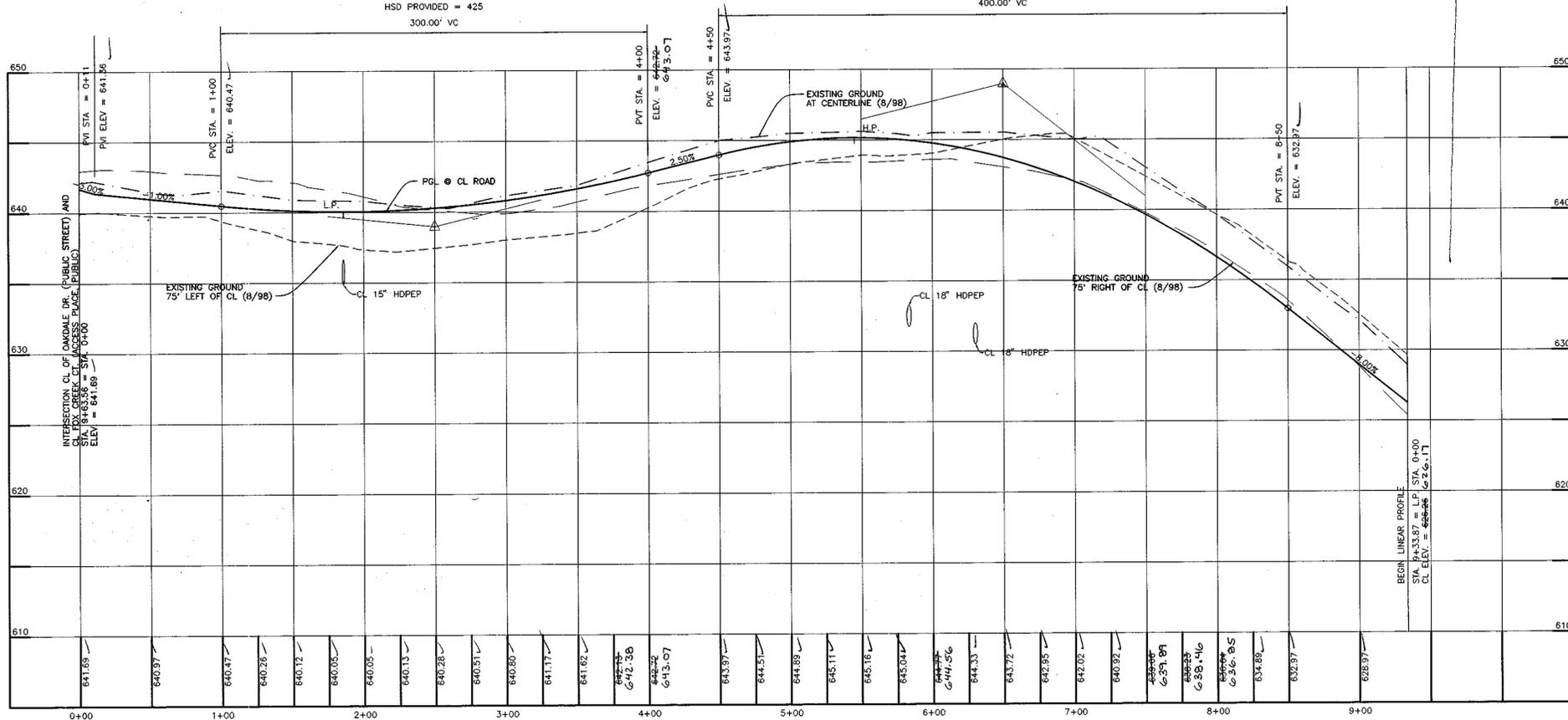
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 9-14-99
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 9/21/99
 CHIEF, DIVISION OF LAND DEVELOPMENT

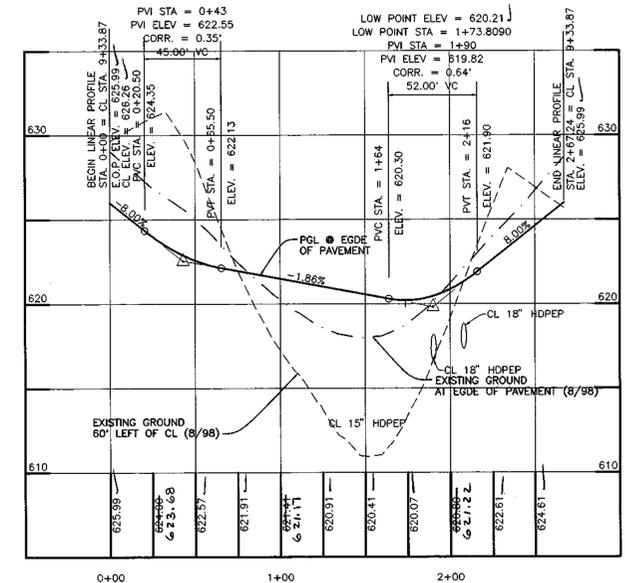
Chris Damann 9/21/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

LOW POINT ELEV = 640.04
 HIGH POINT STA = 1+85.71
 PVI STA = 2+50
 PVI ELEV = 638.97
 CORR. = 1.31'
 HSD REQUIRED = 200
 HSD PROVIDED = 425
 300.00' VC

HIGH POINT ELEV = 645.16
 HIGH POINT STA = 5+45.24
 PVI STA = 6+50
 PVI ELEV = 640.97
 A.D. = -10.50
 SSD REQUIRED = 200
 MIN. LENGTH OF VC = 210'
 400.00' VC



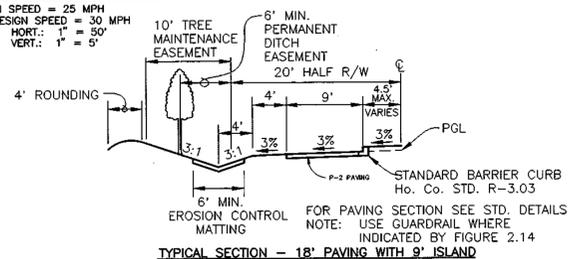
PROFILE OAKDALE DR. LINEAR PROFILE
 SCALE: HORT.: 1" = 50'
 VERT.: 1" = 5'



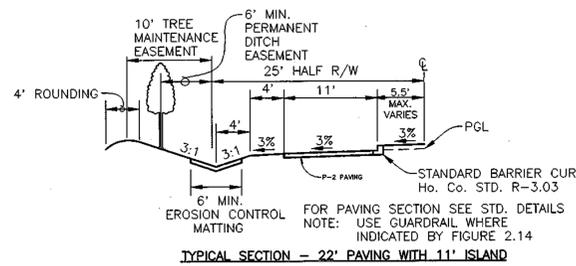
PROFILE FOX CREEK CT. LINEAR PROFILE
 SCALE: HORT.: 1" = 50'
 VERT.: 1" = 5'

PROFILE FOX CREEK CT.

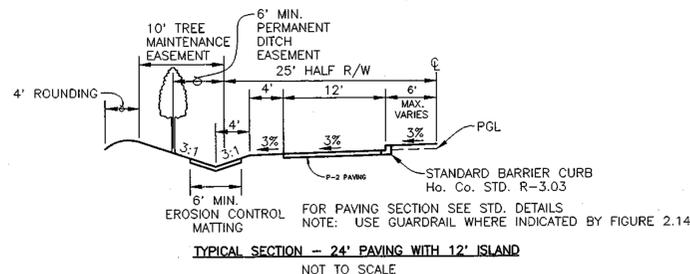
DESIGN SPEED = 25 MPH
 VERTICAL DESIGN SPEED = 30 MPH
 SCALE: HORT.: 1" = 50'
 VERT.: 1" = 5'



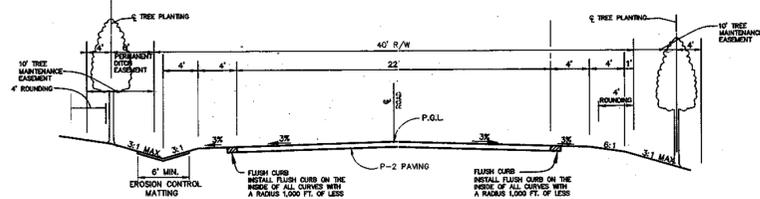
TYPICAL SECTION - 18' PAVING WITH 9' ISLAND
 NOT TO SCALE



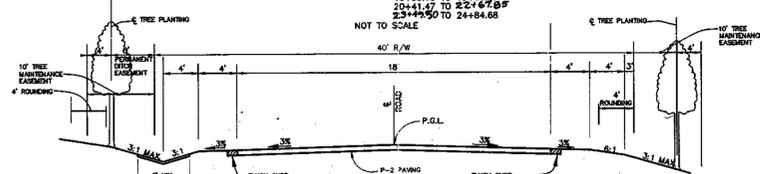
TYPICAL SECTION - 22' PAVING WITH 11' ISLAND
 NOT TO SCALE



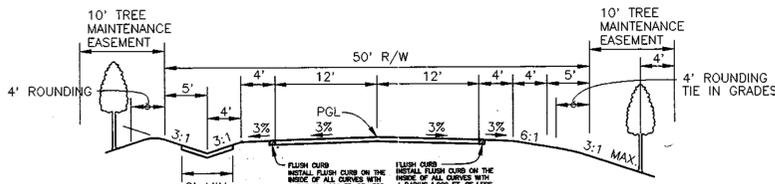
TYPICAL SECTION - 24' PAVING WITH 12' ISLAND
 NOT TO SCALE



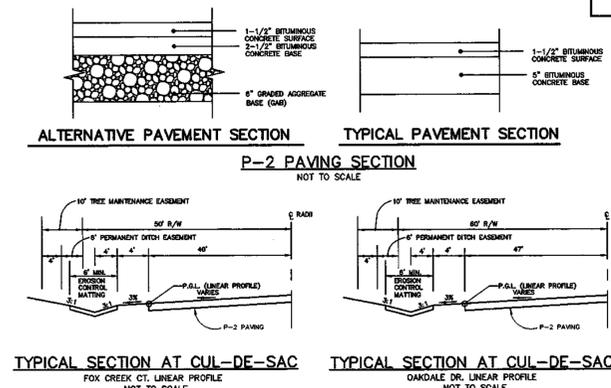
TYPICAL ROADWAY SECTION (DESIGN SPEED: 25 MPH)
 (ACCESS STREET - 250 ADT OR LESS)



TYPICAL ROADWAY SECTION (DESIGN SPEED: 25 MPH)
 (ACCESS PLACE - 200 ADT OR LESS)



TYPICAL ROADWAY SECTION (DESIGN SPEED: 30 MPH)
 (ACCESS STREET - 300 ADT OR LESS)



ALTERNATIVE PAVEMENT SECTION TYPICAL PAVEMENT SECTION
 P-2 PAVING SECTION
 NOT TO SCALE

TYPICAL SECTION AT CUL-DE-SAC TYPICAL SECTION AT CUL-DE-SAC
 FOX CREEK CT. LINEAR PROFILE OAKDALE DR. LINEAR PROFILE
 NOT TO SCALE

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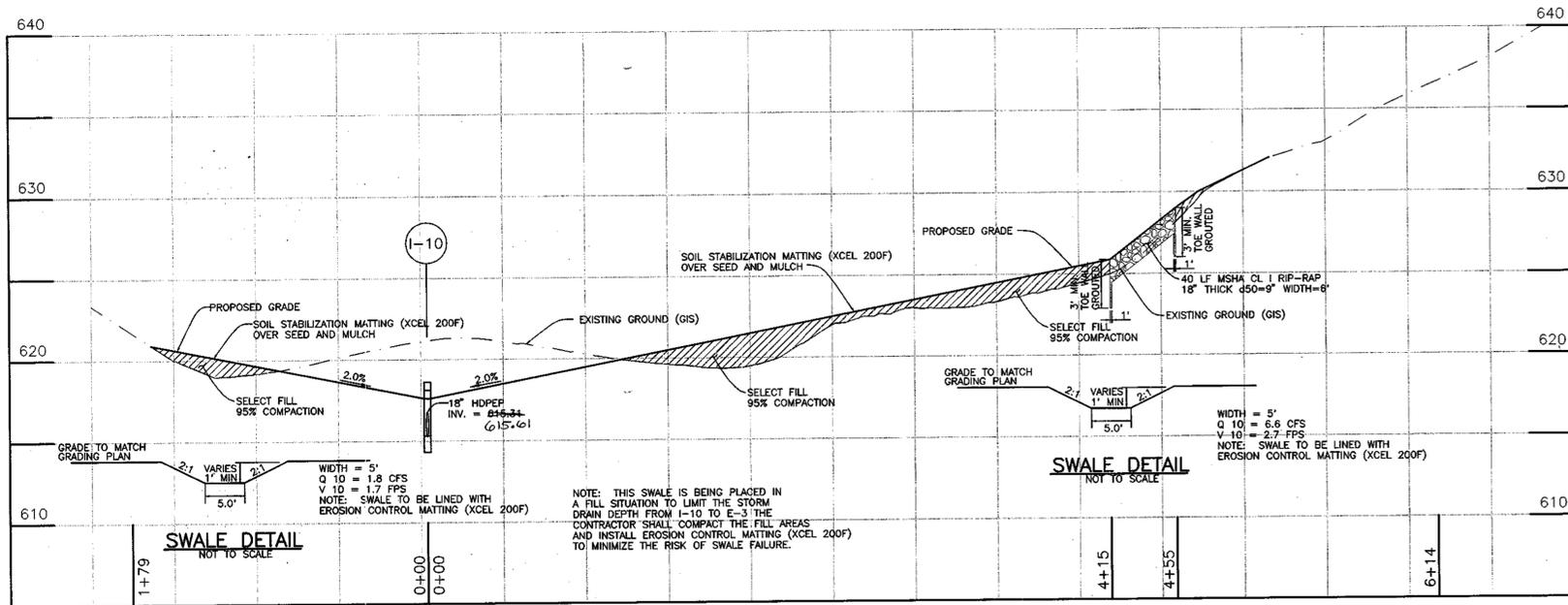
BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6644

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Quake 9-19-99
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamner 9/2/99
 CHIEF, DIVISION OF LAND DEVELOPMENT

John W. ... 9/2/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

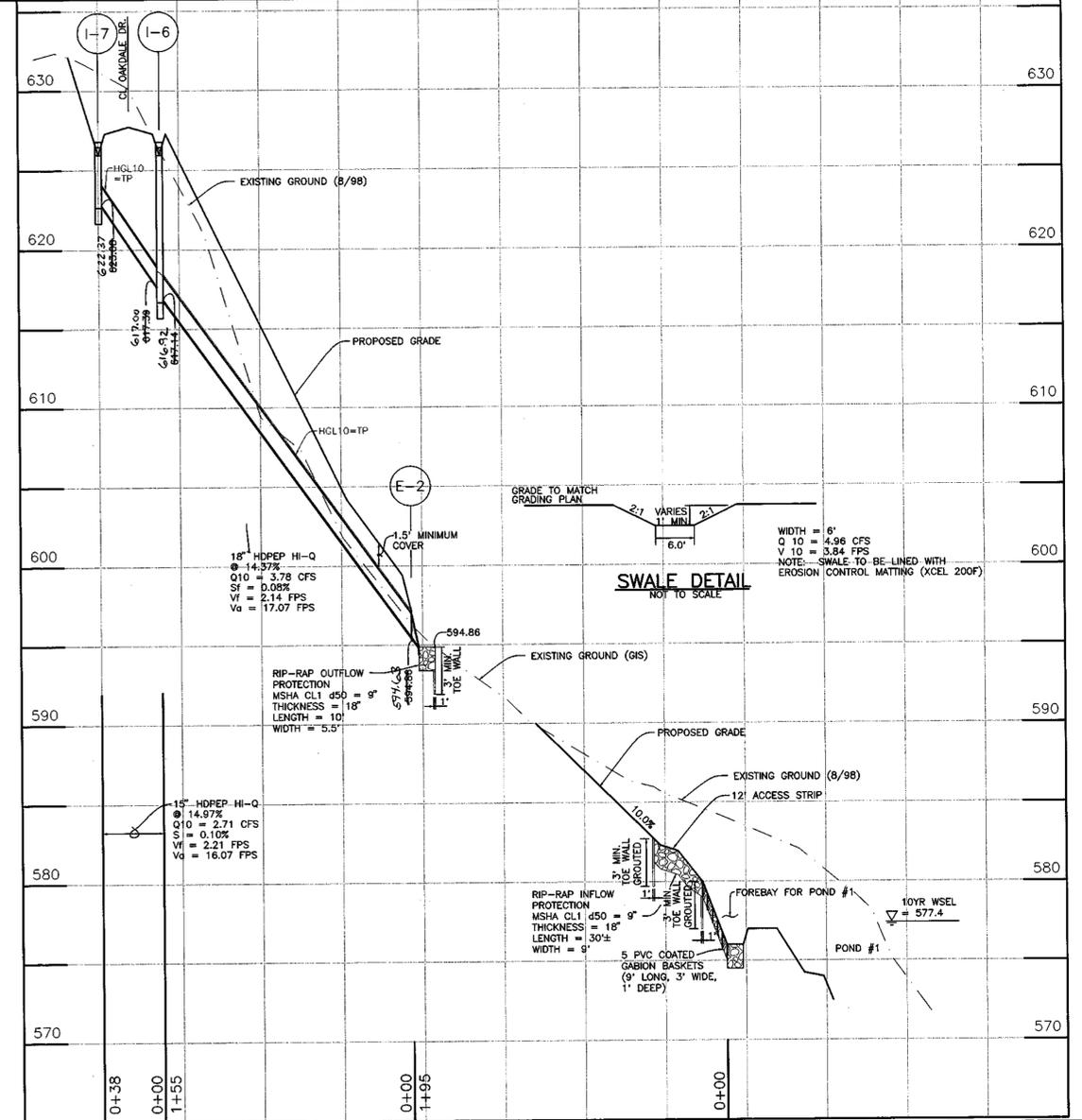
OWNER/DEVELOPER: HOODS MILL CORPORATION C/O P.O. BOX 417 ELLICOTT CITY, MD 21041 410-465-4244	PROJECT: MONTECELLO LOTS 1-50, PRESERVATION PARCELS "A" THRU "D" AND NON-BUILDABLE PARCEL "E"
LOCATION: TAX MAP 8 - BLOCK 18 - PARCEL 110 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: ROAD PROFILES WP-99-24 SP-99-01
DATE: MARCH, 1999	PROJECT NO. 1122
DESIGN: JMC	DRAFT: JMC
SCALE: AS SHOWN	DRAWING 6 OF 21



SWALE DETAIL
NOT TO SCALE

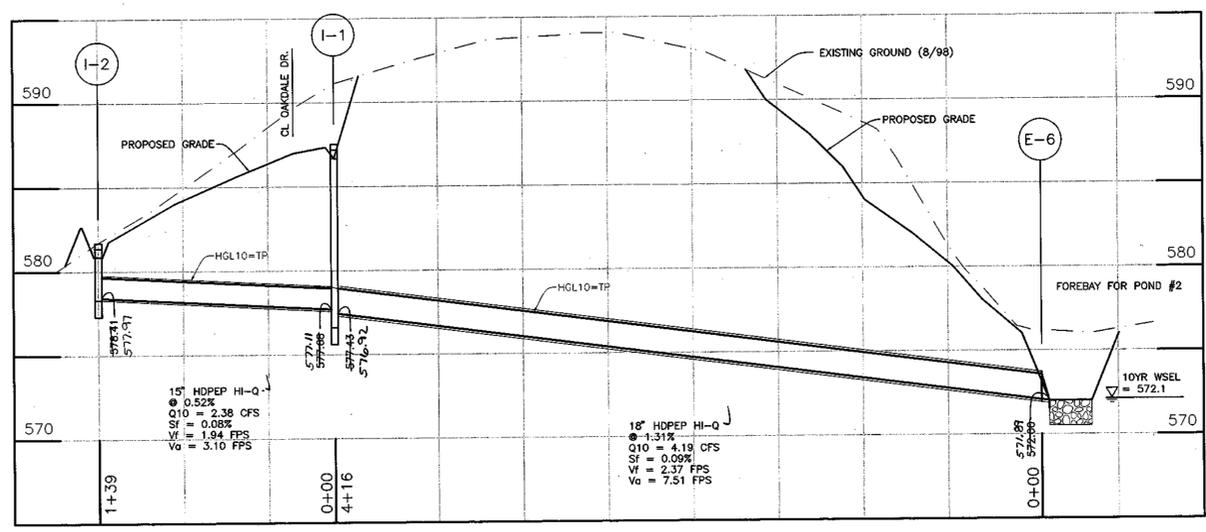
SWALE PROFILE TO I-10
SCALE: VERT. 1" = 5'
HORT. 1" = 50'

- NOTES:
1. ALL RIP-RAP CHANNEL PROTECTION, OUTFLOW PROTECTION SHOWN SHALL HAVE 3' TOE WALL GROUDED WITH MIX NO. 2 CONCRETE.
 2. WHERE XCEL 200F MATTING IS BEING USED THE CONTRACTOR SHALL INSTALL IT IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.



SWALE DETAIL
NOT TO SCALE

STORM DRAIN PROFILE E-7 TO I-5
SCALE: VERT. 1" = 5'
HORT. 1" = 50'



STORM DRAIN PROFILE E-6 TO I-2
SCALE: VERT. 1" = 5'
HORT. 1" = 50'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Robert M. ...
CHIEF, BUREAU OF HIGHWAYS
DATE: 9/10/99

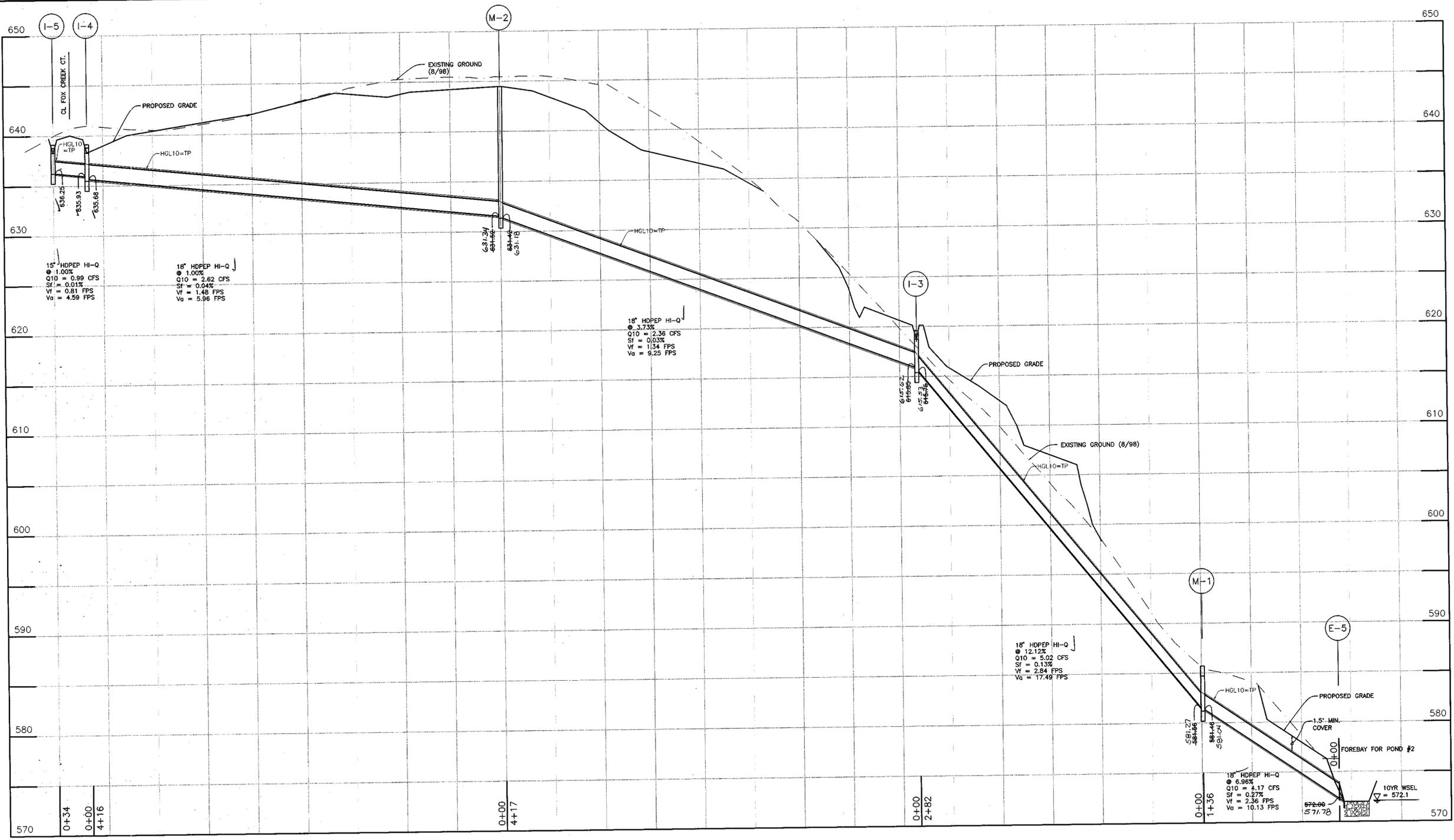


APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Wendy Hamilton
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 7/20/99

NO.	DATE	REVISION
2-19-03		REVISED PER AS-BUILT CONDITIONS

BENCHMARK ENGINEERING, INC.
ENGINEERS • LAND SURVEYORS • PLANNERS
8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644

OWNER/DEVELOPER: HOODS MILL CORPORATION C/O P.O. BOX 417 ELLICOTT CITY, MD 21041 410-465-4244	PROJECT: MONTICELLO LOTS 1-50, PRESERVATION PARCELS "A" THRU "D" AND NON-BUILDABLE PARCEL "E"
LOCATION: TAX MAP 8 - BLOCK 18 - PARCEL 110 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: STORM DRAIN PROFILES
DATE: MARCH, 1999	PROJECT NO. 1122
DESIGN: JMC	DRAFT: JMC
SCALE: AS SHOWN	DRAWING 7 OF 21



STORM DRAIN PROFILE E-5 TO I-5
 SCALE: VERT. 1" = 5'
 HORT. 1" = 50'

STR. NO.	LOCATION	TOP ELEV.	INV. IN	INV. OUT	TYPE	NO. CO. STD.	REMARKS
I-1	LP STA 0+03.71 OS 8.04' L OAKDALE DR. 638.78	637.88	577.68	611	SD-4.11		OPEN ON 2 SIDES
I-2	LP STA 1+29.76 OS 8.00' L OAKDALE DR. 638.03	637.20	611	611	SD-4.11		OPEN ON 2 SIDES
I-3	LP STA 1+47.35 OS 8.00' L FOX CREEK CT. 638.03	615.88	611	611	SD-4.11		OPEN ON 2 SIDES
I-4	SIA 1+85.71 OS 17.00' R FOX CREEK CT.	639.15	635.93		SD-4.11		OPEN ON 2 SIDES
I-5	SIA 1+85.71 OS 17.00' L FOX CREEK CT.	639.15	635.93		SD-4.11		OPEN ON 2 SIDES
I-6	SIA 1+40.71 OS 19.00' L OAKDALE DR.	628.78	617.38	611	SD-4.11		OPEN ON 2 SIDES
I-7	SIA 1+40.71 OS 19.00' R OAKDALE DR.	628.78	617.38	611	SD-4.11		OPEN ON 2 SIDES
I-8	SIA 6+38.97 OS 24.78' R OAKDALE DR.	635.35	613.83	611	SD-4.11		OPEN ON 2 SIDES
I-9	SIA 6+38.97 OS 24.78' L OAKDALE DR.	635.35	613.83	611	SD-4.11		OPEN ON 2 SIDES
I-10	N 605.337.7090 E 1+301.239.0234	618.60			SD-4.11		OPEN ON 2 SIDES
M-1	SIA 6+38.97 OS 24.78' L FOX CREEK CT.	644.49	631.52	611	G-5.12		SHALLOW MANHOLE
M-2	SIA 6+38.97 OS 24.78' L FOX CREEK CT.	644.49	631.52	611	G-5.12		SHALLOW MANHOLE
M-3	N 604.561.9514 E 1+301.368.8274	632.61	618.80	611	G-5.12		SHALLOW MANHOLE
M-4	N 604.828.5951 E 1+301.420.8587	636.40	623.60	611	G-5.12		SHALLOW MANHOLE
E-1	N 604.346.4356 E 1+310.933.5227	636.40	623.60	611	G-5.12		SHALLOW MANHOLE
E-2	N 604.644.9802 E 1+310.188.5227	636.40	623.60	611	G-5.12		SHALLOW MANHOLE
E-3	N 604.670.9849 E 1+309.887.5420	636.40	623.60	611	G-5.12		SHALLOW MANHOLE
E-4	N 605.759.5336 E 1+310.029.8779	636.40	623.60	611	G-5.12		SHALLOW MANHOLE
E-5	N 605.374.7021 E 1+310.543.3403	636.40	623.60	611	G-5.12		SHALLOW MANHOLE
E-6	N 605.549.3957 E 1+310.574.2073	636.40	623.60	611	G-5.12		SHALLOW MANHOLE
E-7	N 604.822.6100 E 1+308.747.7003	636.40	623.60	611	G-5.12		SHALLOW MANHOLE
E-8	N 604.758.8243 E 1+308.747.7003	636.40	623.60	611	G-5.12		SHALLOW MANHOLE
S-1	N 604.382.7882 E 1+310.422.8199	579.47	569.35				SEE SHEET 15
S-2	N 605.886.4357 E 1+310.813.2446	574.87	568.93				SEE SHEET 16

NOTE: ALL INLET TOP ELEVATIONS AND COORDINATES ARE AT THE TOP, MIDDLE OF INLET AND MANHOLES.

PIPE NO.	LENGTH	DIMENSION	MATERIAL
I-1 TO I-2	358 LF	18" DIA	HDPE
I-2 TO I-3	50 LF	24" DIA	HDPE
I-3 TO I-4	117 LF	24" DIA	HDPE
I-4 TO I-5	385 LF	24" DIA	HDPE
I-5 TO I-6	285 LF	24" DIA	HDPE
I-6 TO I-7	38 LF	18" DIA	HDPE
I-7 TO I-8	155 LF	18" DIA	HDPE
I-8 TO I-9	34 LF	18" DIA	HDPE
I-9 TO I-10	416 LF	18" DIA	HDPE
I-10 TO I-11	417 LF	18" DIA	HDPE
I-11 TO I-12	282 LF	18" DIA	HDPE
I-12 TO I-13	136 LF	18" DIA	HDPE
I-13 TO I-14	139 LF	18" DIA	HDPE
I-14 TO I-15	416 LF	18" DIA	HDPE
I-15 TO I-16	60 LF	17" x 13"	ALUM. CMP 16 GG

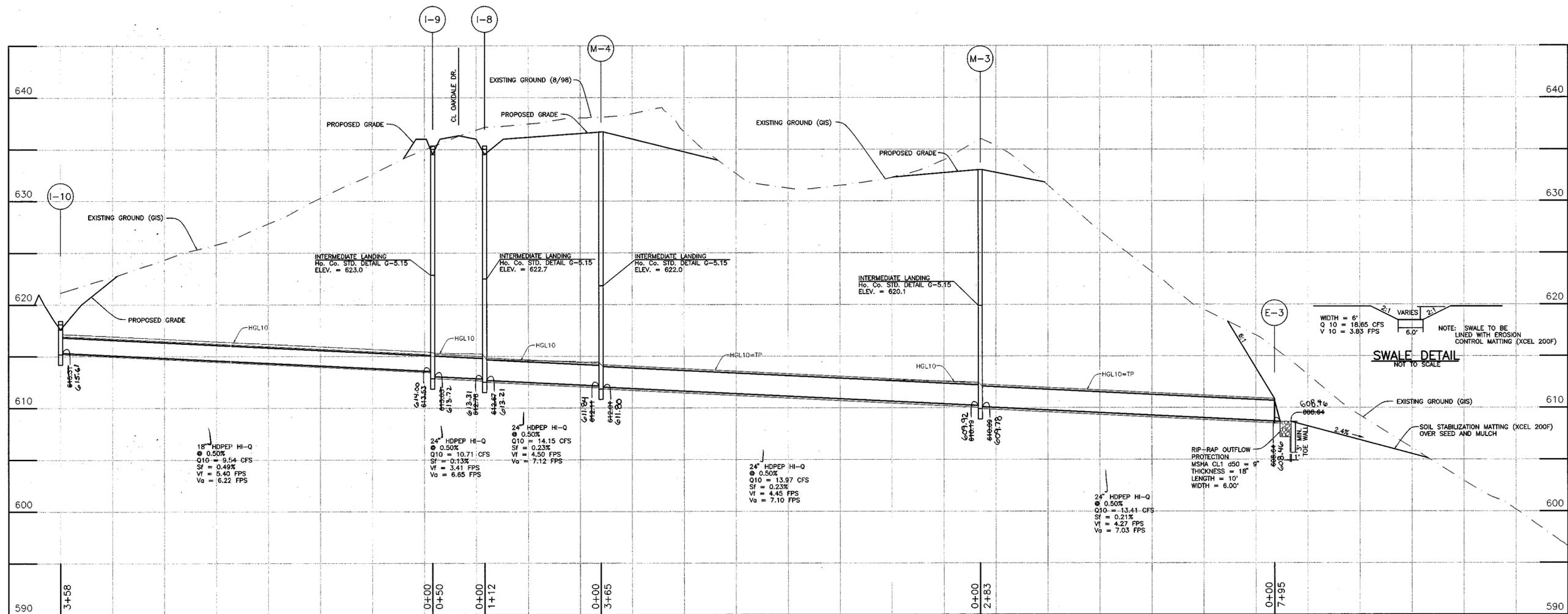


APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard M. Daniels 9/14/99
 CHIEF, BUREAU OF HIGHWAYS

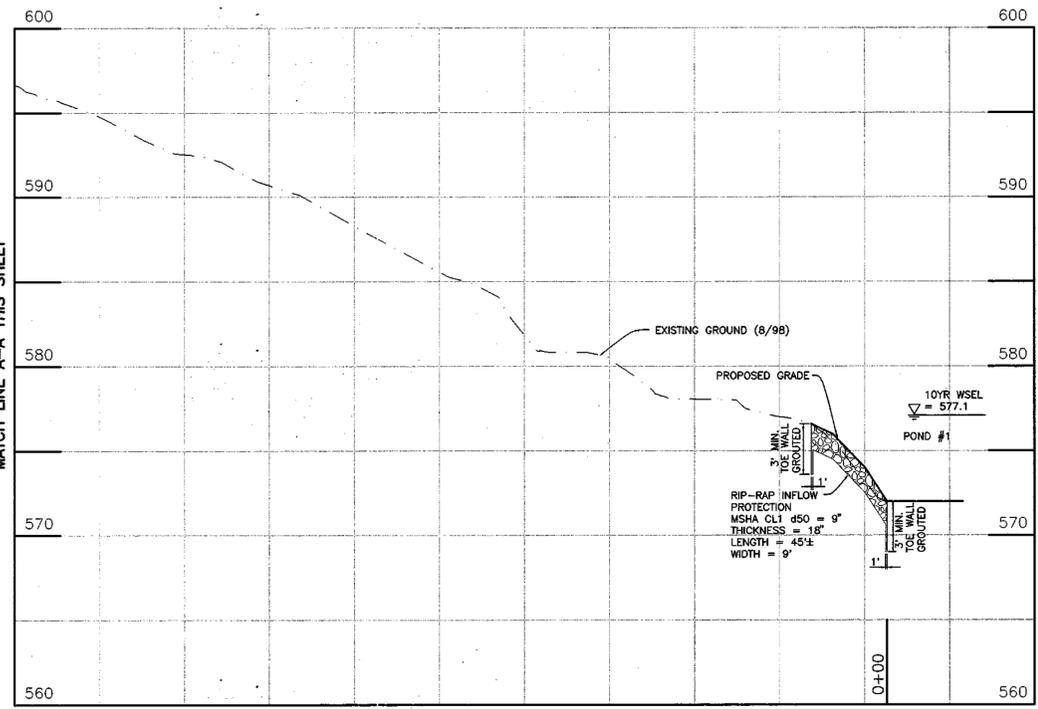
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chris Hamata 9/27/99
 CHIEF, DIVISION OF LAND DEVELOPMENT

Chris Hamata 9/22/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

2-19-03 REVISED PER AS-BUILT CONDITIONS	
NO.	REVISION
BENCHMARK ENGINEERING, INC.	
8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-6644	
OWNER/DEVELOPER: HOODS MILL CORPORATION C/O P.O. BOX 417 ELLICOTT CITY, MD 21041 410-465-4244	PROJECT: MONTICELLO LOTS 1-50, PRESERVATION PARCELS "A" THRU "D" AND NON-BUILDABLE PARCEL "E"
LOCATION: TAX MAP 8 - BLOCK 18 - PARCEL 110 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE: STORM DRAIN PROFILES	
DATE: MARCH, 1999	PROJECT NO. 1122
DESIGN: JMC	DRAFT: JMC
SCALE: AS SHOWN	DRAWING 8 OF 21



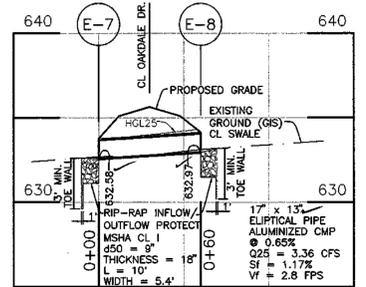
MATCH LINE A-A THIS SHEET



STORM DRAIN PROFILE E-3 TO I-10
 SCALE: VERT. 1" = 5'
 HORT. 1" = 50'

STORM DRAIN PROFILE E-3 TO I-10
 SCALE: VERT. 1" = 5'
 HORT. 1" = 50'

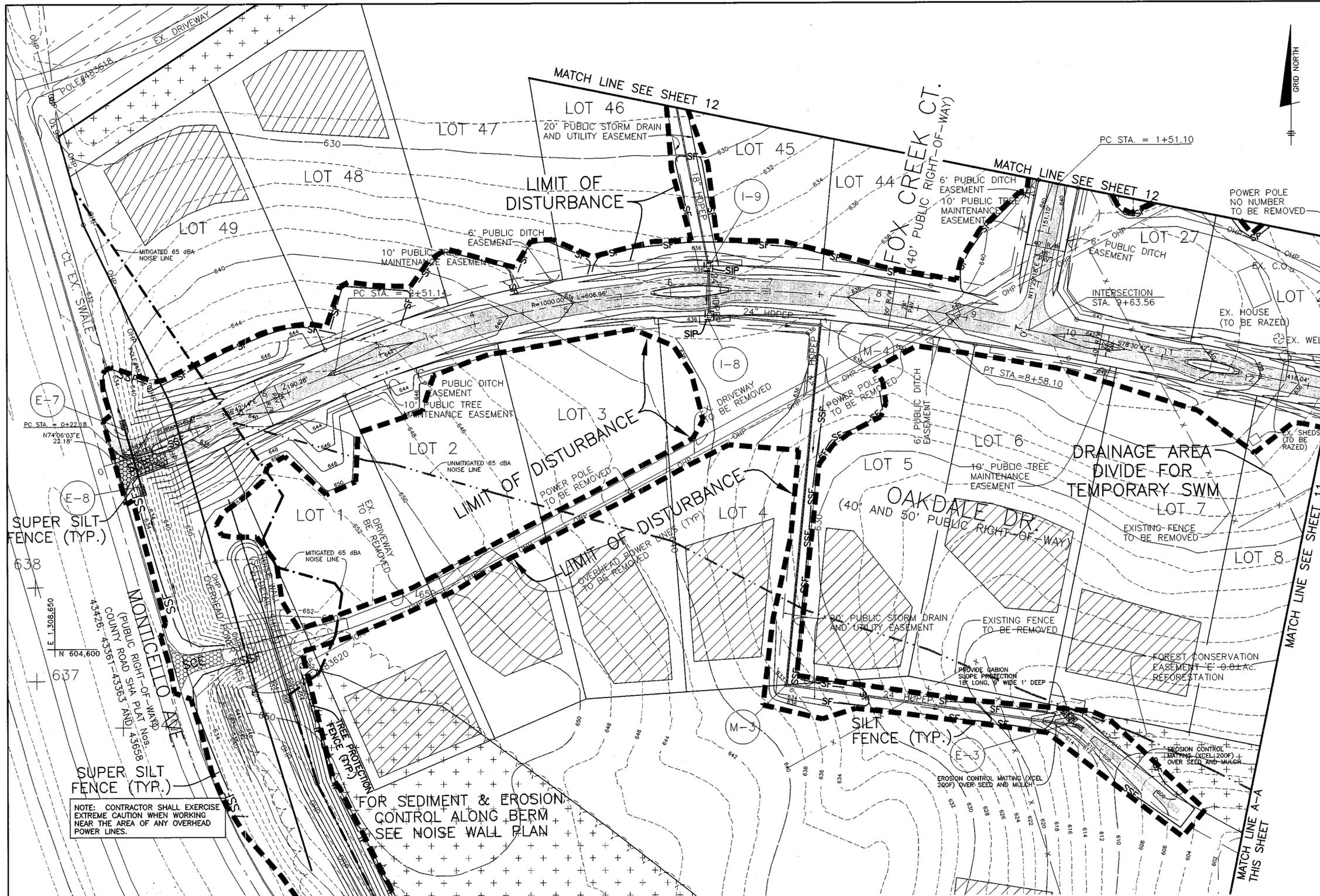
NOTE: ALL RIP-RAP INFLOW/OUTFLOW PROTECTION SHOWN SHALL HAVE 3' TOE WALL GROUTED WITH MIX NO. 2 CONCRETE



STORM DRAIN PROFILE E-8 TO E-9
 SCALE: VERT. 1" = 5'
 HORT. 1" = 50'

Professional Engineer
 Donald M. Moore
 AS-BUILT 2/19/03

NO.	DATE	REVISION
2-19-03		REVISED PER AS-BUILT CONDITIONS
BENCHMARK ENGINEERING, INC.		
8480 BALTIMORE NATIONAL PKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-6644		
OWNER/DEVELOPER:	PROJECT:	
HOODS MILL CORPORATION C/O P.O. BOX 417 ELLICOTT CITY, MD 21041 410-465-4244	MONTICELLO LOTS 1-50, PRESERVATION PARCELS "A" THRU "D" AND NON-BUILDABLE PARCEL "E"	
APPROVED:	APPROVED:	
<i>Howard M. Donahue</i> 9/10/99 CHIEF, BUREAU OF HIGHWAYS	<i>Cinda Hamlett</i> 7/21/99 CHIEF, DIVISION OF LAND DEVELOPMENT	
APPROVED:	APPROVED:	
<i>John Dammeyer</i> 9/27/99 CHIEF, DEVELOPMENT ENGINEERING DIVISION	<i>John Dammeyer</i> 9/27/99 CHIEF, DEVELOPMENT ENGINEERING DIVISION	
DESIGN: JMC	DRAFT: JMC	SCALE: AS SHOWN
LOCATION: TAX MAP 8 - BLOCK 18 - PARCEL 110 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND		TITLE: STORM DRAIN PROFILES
DATE: MARCH, 1999		PROJECT NO. 1122
DRAWING 9 OF 21		



LEGEND

- STEEP SLOPES 15% - 25%
- STEEP SLOPES GREATER THAN 25%
- EX. STREAM OR EDGE OF POND
- EX. CONTOUR (2 FOOT CONTOUR INTERVALS)
- PROPOSED TREE LINE
- EX. TREE LINE
- SPECIMEN TREE
- WETLANDS
- PROPOSED STORM DRAIN
- PROPOSED SEPTIC FIELD
- PROPOSED WELL
- PROPOSED SILT FENCE
- PROPOSED EARTH DIKE
- PROPOSED SUPER SILT FENCE
- STANDARD INLET PROTECTION
- PROPOSED FOREST CONSERVATION EASEMENT
- PROPOSED EROSION CONTROL MATTING OVER SEED AND MULCH
- 20' NO WOODY VEGETATION BUFFER
- STONE CHECK DAMS

NOTE: SOIL STABILIZATION MATTING SHALL BE INSTALLED IN ALL ROADWAY SIDE DITCHES.

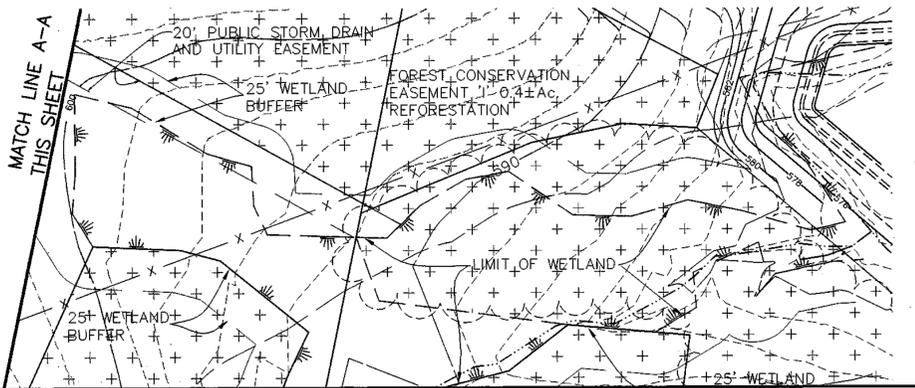
NOTE: CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING NEAR THE AREA OF ANY OVERHEAD POWER LINES.

FOR SEDIMENT & EROSION CONTROL ALONG BERM SEE NOISE WALL PLAN

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Danks 9/14/99
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 7/1/99
 CHIEF, DIVISION OF LAND DEVELOPMENT

Mark Williams 9/22/99
 CHIEF, DESIGN & ENGINEERING DIVISION



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.

Chaf Swain 8/26/99
 NATURAL RESOURCES CONSERVATION SERVICE

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

Yeffery 8/26/99
 HOWARD SOIL CONSERVATION DISTRICT

BY THE DEVELOPER:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN AS-BUILT PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Deborah 9/20/99
 DEVELOPER

BY THE ENGINEER:
 I/WE 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.

Donald A. Mason 9/19/99
 ENGINEER - DONALD A. MASON, P.E. # 21443

NO.	DATE	REVISION

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 3480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6644

Donald A. Mason
 REGISTERED PROFESSIONAL ENGINEER

OWNER/DEVELOPER:
 HOODS MILL CORPORATION
 C/O P.O. BOX 417
 ELLICOTT CITY, MD 21041
 410-465-4244

PROJECT: **MONTICELLO**
 LOTS 1-50, PRESERVATION PARCELS "A" THRU "D" AND NON-BUILDABLE PARCEL "E"

LOCATION: TAX MAP 8 - BLOCK 18 - PARCEL 110
 4TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

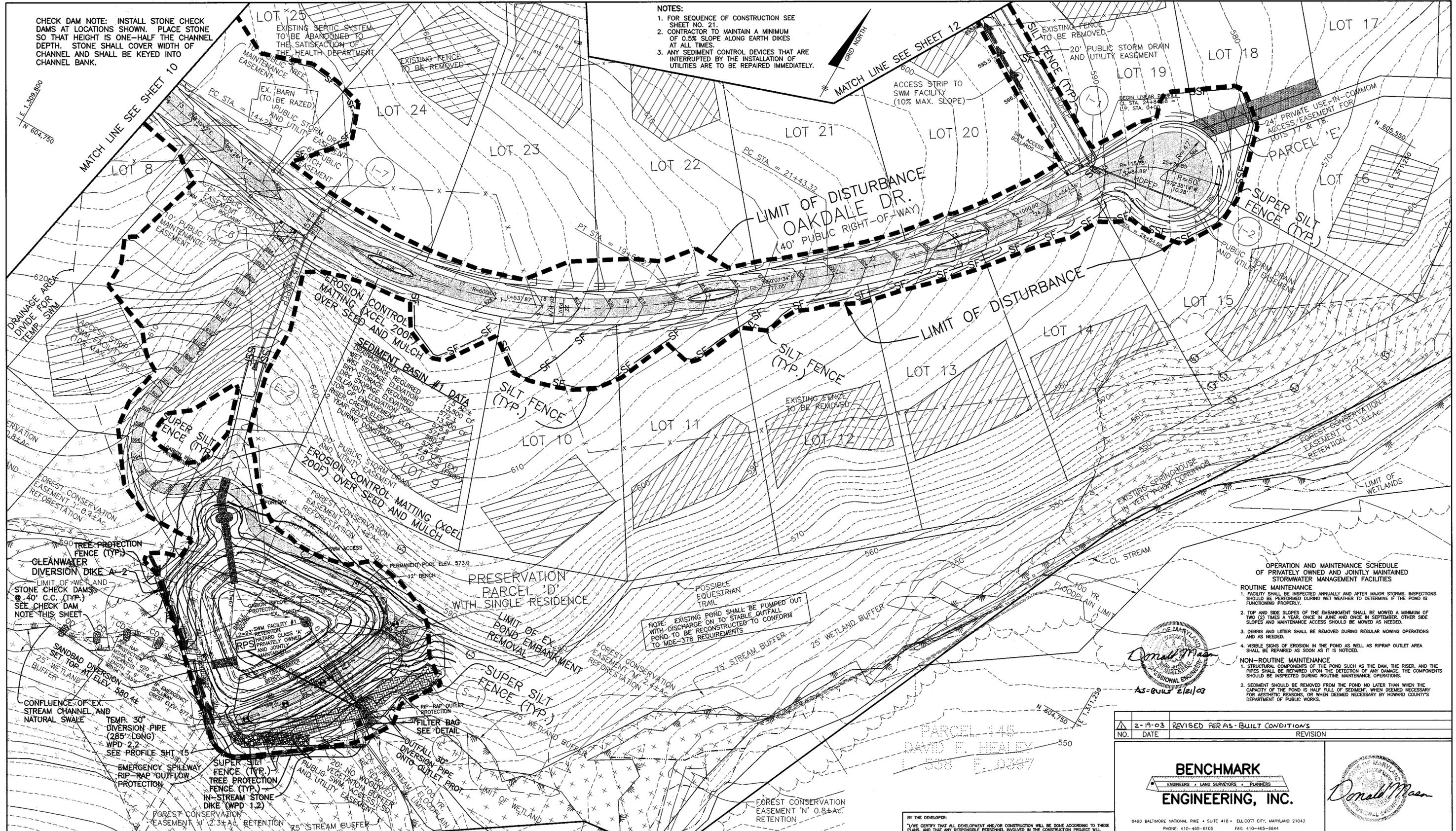
TITLE: **GRADING AND SEDIMENT & EROSION CONTROL PLAN**
 WP-99-24 SP-99-01

DATE: MARCH, 1999 PROJECT NO. 1122
 SCALE: 1" = 50' DRAWING 10 OF 21

DESIGN: JMC DRAFT: JMC

CHECK DAM NOTE: INSTALL STONE CHECK DAMS AT LOCATIONS SHOWN. PLACE STONE SO THAT HEIGHT IS ONE-HALF THE CHANNEL DEPTH. STONE SHALL COVER WIDTH OF CHANNEL AND SHALL BE KEED INTO CHANNEL BANK.

- NOTES:
- FOR SEQUENCE OF CONSTRUCTION SEE SHEET NO. 21.
 - CONTRACTOR TO MAINTAIN A MINIMUM OF 0.5% SLOPE ALONG EARTH DIKES AT ALL TIMES.
 - ANY SEDIMENT CONTROL DEVICES THAT ARE INTERRUPTED BY THE INSTALLATION OF UTILITIES ARE TO BE REPAIRED IMMEDIATELY.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard M. Daniels 9/19/99
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cinda Hamer 9/23/99
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: *Richard M. Daniels* 9/23/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

STORMWATER MANAGEMENT SUMMARY TABLE

STORM FREQUENCY	PRE-DEVELOPED COMBINED DISCHARGE (cfs) WITH SWM AT DESIGN POINT		POST-DEVELOPED CONDITION DISCHARGE (cfs) WITH SWM AT DESIGN POINT	
	DESIGN POINT #1	DESIGN POINT #2	DESIGN POINT #1	DESIGN POINT #2
2	2.4	6.9	2.4	6.9
10	23.7	35.2	23.6	31.0
100	-	-	76.8	75.0

YEARS	POND #1			POND #2		
	2	10	100	2	10	100
INFLOW Q (cfs)	19.4	85.5	128.5	12.1	41.0	78.8
DISCHARGE Q (cfs)	2.4	23.6	76.8	1.6	24.2	44.7
ELEVATION	575.3	577.4	579.0	570.7	572.1	573.8
STORAGE VOLUME PROVIDED (AC FT)	1.393	2.650	3.892	0.589	0.988	0.647

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 Simons 8/20/99
 NATURAL RESOURCES CONSERVATION SERVICE

Yvette 9/24/99
 HOWARD SOIL CONSERVATION DISTRICT

OPERATION, MAINTENANCE AND INSPECTION NOTE

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS' STANDARDS AND SPECIFICATIONS FOR PONDS (40-378). 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.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

Donald A. Mason 2/12/03
 DONALD A. MASON

BY THE DEVELOPER:
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Richard M. Daniels 8/20/99
 DEVELOPER

BY THE ENGINEER:
 I/WE 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 NOTICED 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.

Donald A. Mason 2/12/03
 ENGINEER - DONALD A. MASON, P.E. # 21443

NO.	DATE	REVISION
2	2-19-03	REVISED PER AS-BUILT CONDITIONS

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS

8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-8105 FAX: 410-465-5644

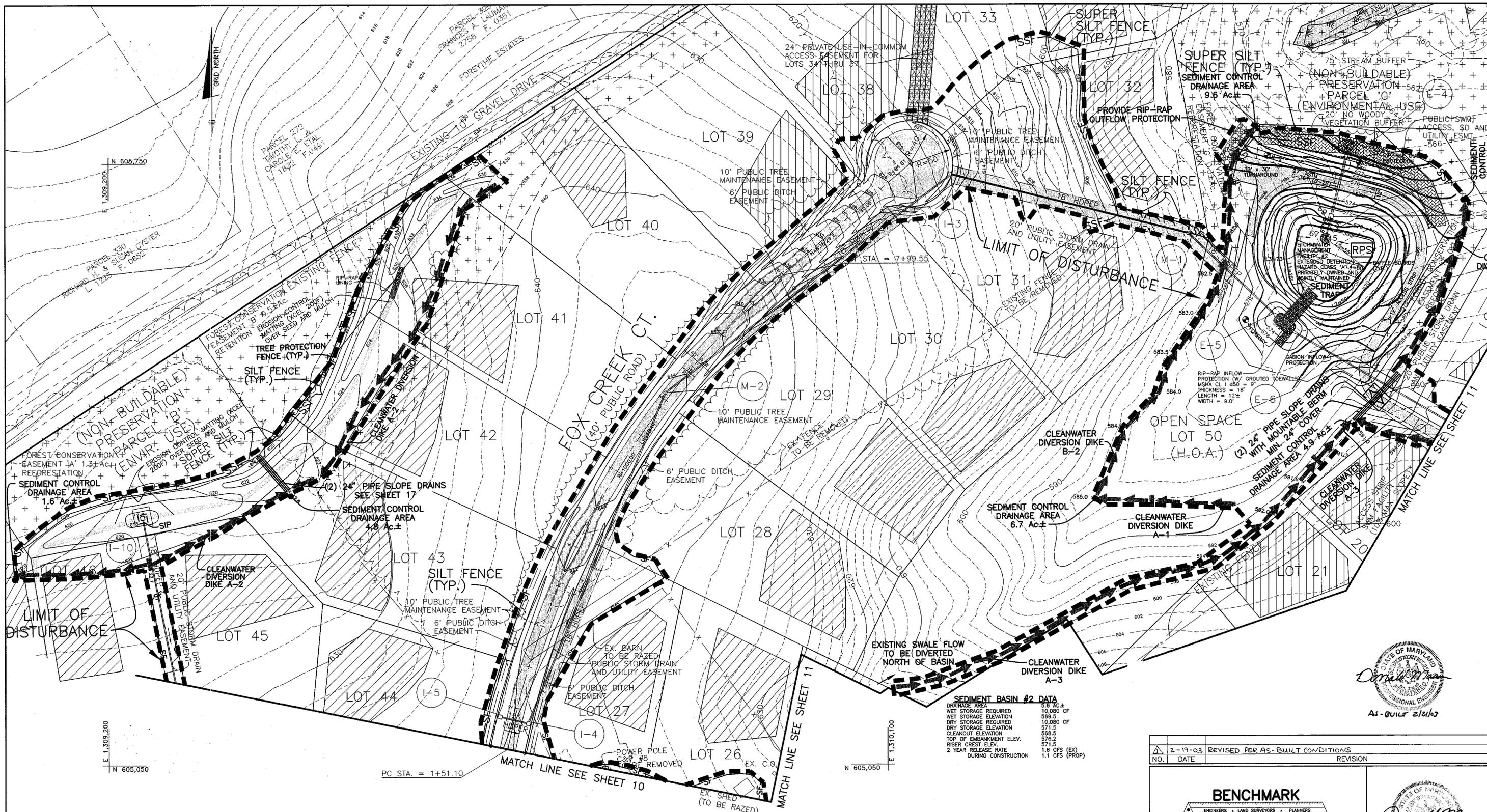
OWNER/DEVELOPER:
 HOODS MILL CORPORATION
 C/O P.O. BOX 417
 ELLICOTT CITY, MD 21041
 410-465-4244

PROJECT:
MONTICELLO
 LOTS 1-50, PRESERVATION PARCELS "A" THRU "D" AND NON-BUILDABLE PARCEL "E"

LOCATION:
 TAX MAP 8 - BLOCK 18 - PARCEL 110
 4TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE:
GRADING AND SEDIMENT & EROSION CONTROL PLAN
 WP-99-24 SP-99-01

DATE: MARCH, 1999 PROJECT NO. 1122
 SCALE: 1" = 50' DRAWING 11 OF 21



STATE OF MARYLAND
 DONALD A. MASON
 PROFESSIONAL ENGINEER
 No. 10000
 As-Built 2/10/03

SEDIMENT BASIN #2 DATA

DRAINAGE AREA	5.6 AC±
WET STORAGE REQUIRED	10,080 CF
WET STORAGE ELEVATION	569.5
DRY STORAGE REQUIRED	10,080 CF
DRY STORAGE ELEVATION	571.5
CLEANOUT ELEVATION	568.5
TOP OF EMBANKMENT ELEV.	576.2
RISER CREST ELEV.	571.5
2 YEAR RELEASE RATE	1.8 CFS (EX)
DURING CONSTRUCTION	1.1 CFS (PROP)

NO.	DATE	REVISION
2-19-03	REVISED PER AS-BUILT CONDITIONS	

BENCHMARK ENGINEERING, INC.
 ENGINEERS • LAND SURVEYORS • PLANNERS
 8490 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043
 PHONE: 410-465-6105 FAX: 410-465-6644

OWNER/DEVELOPER: HOODS MILL CORPORATION C/O P.O. BOX 417 ELLICOTT CITY, MD 21041 410-465-4244	PROJECT: MONTICELLO LOTS 1-50, PRESERVATION PARCELS "A" THRU "D" AND NON-BUILDABLE PARCEL "E"
LOCATION: TAX MAP 8 - BLOCK 18 - PARCEL 110 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	TITLE: GRADING AND SEDIMENT & EROSION CONTROL PLAN WP-99-24 SP-99-24
DATE: MARCH, 1999	PROJECT NO. 4122
DESIGN: JMC DRAFT: JMC	SCALE: 1" = 50' DRAWING NO. OF 21

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard M. Douglas 9-19-99
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Andie Hammit 9/27/99
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: *Donna M. ...* 9/27/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

OPERATION AND MAINTENANCE SCHEDULE OF PRIVATELY OWNED AND JOINTLY MAINTAINED STORMWATER MANAGEMENT FACILITIES

ROUTINE MAINTENANCE

- FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
- TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.
- DEBRIS AND LITTER SHALL BE REMOVED DURING ROUTINE MOWING OPERATIONS AND AS NEEDED.
- VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE

- STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
- SEDIMENT SHOULD BE REMOVED FROM THE POND NO LATER THAN WHEN THE CAPACITY OF THE POND IS HALF FULL OF SEDIMENT, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY HOWARD COUNTY'S DEPARTMENT OF PUBLIC WORKS.

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 Simmons / as 8/26/99
 NATURAL RESOURCES CONSERVATION SERVICE

Yvonne ... 8/26/99
 HOWARD SOIL CONSERVATION DISTRICT

OPERATION, MAINTENANCE AND INSPECTION NOTE

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SC'S "STANDARDS AND SPECIFICATIONS FOR POND(S)" (40-370). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTROLLED OPERATION, SUPERVISANCE, INSPECTION AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATORS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEDIMENT, SLIDING OR SLUMPING.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

Donald A. Mason
 DONALD A. MASON
 PE NO. 21443
 DATE 2/10/03

BY THE DEVELOPER:

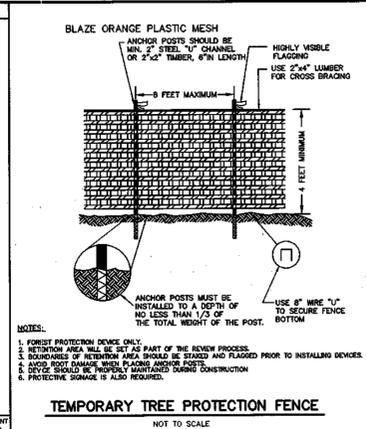
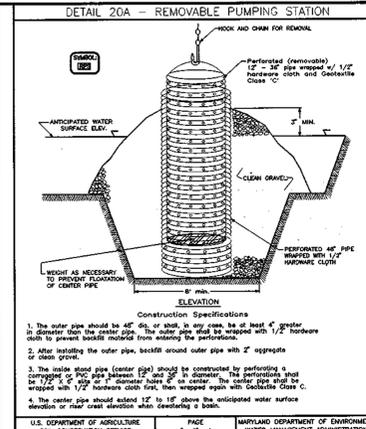
*I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Richard M. Douglas 8-20-99
 DEVELOPER

BY THE ENGINEER:

*I/WE 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 NOTICED 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.

Donald A. Mason 2/10/03
 ENGINEER - DONALD A. MASON, P.E. # 21443



1. The water pipe should be 4" dia. or 6" dia. in any case, be at least 4' greater in diameter than the structure. The pipe should be supported with 1/2" diameter steel to prevent buckling from air pressure.

2. After installing the water pipe, install around outer pipe with 2" aggregate concrete.

3. The inside slope (center) should be completed by performing a concrete pipe around the pipe. The concrete should be 2" thick and 100% finished with 1/2" hardware cloth first, then wrapped again with Geotextile Class C.

4. The center pipe should extend 12" to 18" above the anticipated water elevation or meet crest elevation when overflowing.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE C-11-1 WATER MANAGEMENT ADMINISTRATION

1. FOREST PROTECTION DEVICE ONLY. RETURN TO AREA AS PART OF THE REVERSE PROCESS.

2. BOUNDARIES OF RESTRICTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICES.

3. DEVICES SHOULD BE PROPERLY MAINTAINED DURING CONSTRUCTION.

4. PROTECTIVE DAMAGE IS ALSO REQUIRED.

ANCHOR POSTS MUST BE INSTALLED TO A DEPTH OF 18" TO SECURE FENCE TO BOTTOM.

USE OF 3/4" WIRE TO SECURE FENCE TO BOTTOM.

CONSTRUCTION SPECIFICATIONS

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.

2. In the 2' x 4' construction grade lumber posts 1" into the ground at each corner of the inlet. Place metal strips between the posts on the ends of the inlet. Assemble the top portion of the 2' x 4' frame using the overlap joint shown on Detail 23A. The top of the frame must be 6" below adjacent roadway where flooding and safety issues may arise.

3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.

4. Stretch the Geotextile Class E tightly over the wire mesh with the geotextile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.

5. Backfill around the inlet in compacted 3/4" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.

6. If the inlet is not in a pump, construct a compacted earth dike across the notch to level with the notch elevation on the ends and top elevation on the sides.

7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE C-11-1 WATER MANAGEMENT ADMINISTRATION

TEMPORARY TREE PROTECTION FENCE

NOT TO SCALE

PERMANENT SEEDING NOTES

Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seeded Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. (If not previously loosened)

Soil Amendments: In lieu of soil test recommendations, use on the following schedules:

- 1. Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureamorph fertilizer (9 lbs/1000 sf).
- 2. Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the periods March 1 through April 30 and August 1 through October 15, seed with 2-1/2 bushels per acre of annual ryegrass (3.2 lbs/1000 sf). For the period May 1 through July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (0.05 lbs/1000 sf) of Weeping Lovegrass. During the period of October 16 through 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 seed, Option 3) seed with 60 lbs 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 sf) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sf) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sf) for anchoring.

Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.

Seeded Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. (If not previously loosened)

Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf).

Seeding: For periods March 1 through April 30 and from August 15 through November 15, seed with 2-1/2 bushels per acre of annual ryegrass (3.2 lbs/1000 sf). For the period May 1 through August 14, seed with 3 lbs per acre of Weeping Lovegrass (0.07 lbs/1000 sf). For the period November 16 through 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 seed.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sf) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sf) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sf) for anchoring.

Refer to the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control for rate and methods not covered.

FACILITY No. 1 CONSTRUCTION SEQUENCE

1. CONSTRUCT CLEANWATER DIVERSION DIKE, TEMPORARY 24" DIVERSION PIPE AND IN-STRAIN STONE DAM ALONG SOUTHWEST SIDE OF EXISTING POND TO DIVERT EXISTING BASE FLOW AROUND CONSTRUCTION AREA. INSTALL SUPER SILT FENCE ALONG TOE OF SLOPE AS SHOWN ON THE PLAN.
2. PUMP WATER OUT OF EXISTING POND. INSTALL REMOVABLE PUMP STATION AND CONTINUE PUMPING AS REQUIRED TO KEEP POND DEWATERED.
3. REMOVE EXISTING EMBANKMENT AND PIPE SPILLWAY. DO NOT REMOVE EMBANKMENT AREA OF EXISTING PROPOSED EMERGENCY SPILLWAY LOCATION. THE PROPOSED SPILLWAY MUST BE PLACED WITHIN UNDISTURBED EXISTING GROUND. AT THE TIME OF EMBANKMENT REMOVAL, THE ON-SITE GEOTECHNICAL ENGINEER SHALL INSPECT EMBANKMENT FOR SIGNS OF SOILS OF THE EXISTING SET PRESENT WITHIN EXISTING POND. EMERGENCY SPILLWAY, IF ANY UNDERDRAIN OR RELATED DESIGN CHANGES ARE REQUIRED TO CONTROL SEEPAGE THEY MUST BE APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT AT THE TIME OF EMBANKMENT REMOVAL/RECONSTRUCTION.
4. CONSTRUCT CORE TRENCH AND PRINCIPLE SPILLWAY, DEWATER AREA AS REQUIRED.
5. CONSTRUCT EMBANKMENT AND EMERGENCY SPILLWAY AND GRADE POND AS SHOWN ON PLANS. INSTALL TEMPORARY SEDIMENT BASIN DEVICES AS SHOWN ON PLAN DETAILS AND TEMPORARY STABILIZE. CONTRACTOR SHALL PROVIDE A CERTIFICATION FROM A MARYLAND REGISTERED PROFESSIONAL ENGINEER TO THE HOWARD SOIL CONSERVATION DISTRICT THAT SWM No. 1 SEDIMENT BASIN HAS BEEN INSTALLED AS PER CONTRACT DRAWINGS AND THAT THE BASIN REMAINS DEWATERED TO THE WET POND ELEVATION UNDER BASE FLOW (GREATER THAN 10 HOURS AFTER STORM) CONDITIONS.
6. UPON COMPLETION OF ROADWAY AND STORM DRAIN CONSTRUCTION STABILIZE THE CONTRIBUTING DRAINAGE AREA. UPON APPROVAL OF THE SEDIMENT CONTROL INSPECTOR REMOVE SEDIMENT BASIN, REMOVE TEMPORARY SEDIMENT BASIN DEVICES. CLOSE DEWATERING VALVE IN STRUCTURE, REMOVE EARTH DIKE AND DIVERSION PIPE TO ALLOW POND TO FUNCTION AS PERMANENT RETENTION FACILITY.

NOTE: FROM FIELD OBSERVATIONS THE ONLY STREAM (BASE) FLOW OCCURS FROM THE SOUTHWEST HEADWATER OF THE WETLANDS AS SHOWN ON THE DRAINAGE AREA MAP (SHEET 14). FLOW IN THE EXISTING SPILLWAY CHANNEL OCCURS FROM EMBANKMENT SEEPAGE. IF, DURING EXISTING POND REMOVAL, NEW POND CONSTRUCTION, A STREAM BASE FLOW OCCURS THAT WOULD INTERFERE WITH THE CONSTRUCTOR SHALL CONTACT THE SEDIMENT CONTROL INSPECTOR AND ENGINEER TO CONSTRUCT PROPER STREAM DIVERSION AROUND CONSTRUCTION AREA.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

APPROVED: REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

APPROVED: 9/14/99

APPROVED: 8/26/99

APPROVED: 9/23/99

APPROVED: 9/26/99

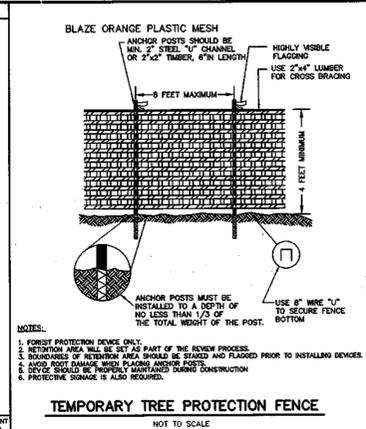
CHIEF, BUREAU OF HIGHWAYS

CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION

CHIEF, NATURAL RESOURCES CONSERVATION SERVICE

DATE



CONSTRUCTION SPECIFICATIONS

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.

2. In the 2' x 4' construction grade lumber posts 1" into the ground at each corner of the inlet. Place metal strips between the posts on the ends of the inlet. Assemble the top portion of the 2' x 4' frame using the overlap joint shown on Detail 23A. The top of the frame must be 6" below adjacent roadway where flooding and safety issues may arise.

3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.

4. Stretch the Geotextile Class E tightly over the wire mesh with the geotextile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.

5. Backfill around the inlet in compacted 3/4" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.

6. If the inlet is not in a pump, construct a compacted earth dike across the notch to level with the notch elevation on the ends and top elevation on the sides.

7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE C-11-1 WATER MANAGEMENT ADMINISTRATION

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be sound quality hardwood. Metal posts will be standard T or U section weighing not less than 1.00 pound 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	30 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.5 gal/h/minute (max.)	Test: MSMT 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 20% of the fabric height.

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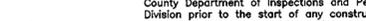
DETAIL 22 - SILT FENCE

SILT FENCE DESIGN CRITERIA

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

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

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE C-11-1 WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

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

2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

4. Filter cloth shall be embedded a minimum of 6" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and laced.

6. 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.

7. Filter cloth 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	0.5 gal/h/minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE C-11-1 WATER MANAGEMENT ADMINISTRATION

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

CONSTRUCTION SPECIFICATIONS

1. Length - minimum of 50' (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") reclaimed or recycled concrete material 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 minimum of 3" of stone over a minimum of 6" of stone over the pipe. Pipe has to be placed according to the drainage. When the pipe is located at a high spot and has no drainage to cover 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.

7. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

8. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

9. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed stabilized area of a non-erosive velocity.

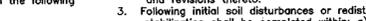
10. All trees, brush, stumps, obstructions, and other obstructions shall be removed and disposed of so as not to interfere with the proper functioning of the dike.

11. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and the free of bank projections or other irregularities which will impede normal flow.

12. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.

13. Inspection and maintenance must be provided periodically and after each rain event.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE C-11-1 WATER MANAGEMENT ADMINISTRATION



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 of a non-erosive velocity.

4. All trees, brush, stumps, obstructions, and other obstructions shall be removed and disposed of so as not to interfere with the proper functioning of the dike.

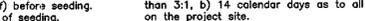
5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and the free of bank projections or other irregularities which will impede normal flow.

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 PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE C-11-1 WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS - Pipe Slope Drain

1. The Pipe Slope Drain (PSD) shall have a slope of 2 percent or steeper.

2. The top of the earth above the inlet pipe shall be at least 2 times the pipe diameter measured at the inlet of the pipe.

3. Flexible tubing is preferred. However, compacted pipe or equivalent PSD pipe can be used. All connections shall be watertight.

4. A flared end section shall be attached to the inlet end of pipe with a watertight connection. Filter cloth shall be placed under the inlet of the pipe slope drain and shall extend 12" from the inlet. The other ends shall be "tapped in" on the sides.

5. The Pipe Slope Drain shall be securely anchored to the slope by staking at the granular protection. Spacing for anchors shall be as provided by manufacturer's specifications, in no case shall be less than 2' (2) anchors be provided. Spacing shall be the length of pipe. These anchors should be provided by pipe supplier.

6. The soil around and under the pipe and end section shall be hand tamped in 4 inch lifts to the top of the earth.

7. All pipe connections shall be watertight.

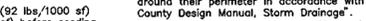
8. Whenever possible where a PSD drains an undisturbed area, it shall outlet into a sediment trap or basin. If this is not possible then the pipe shall discharge into a ditch, conveying that into a sediment trap or basin, then discharging into a top of bank the PSD shall discharge at the same elevation as the wet pool elevation. The discharge from the PSD must be no farther from the sediment control outlet or device.

9. When the discharge area is stabilized, the PSD shall discharge into a stabilized area of a non-erosive velocity.

10. Inspection and any required maintenance shall be performed periodically and after each rain event.

11. The inlet must be kept open at all times.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE C-11-1 WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

1. KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH 4" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO COMPRESS TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" FROM EACH END OF THE MATTING. STAPLE SPACING BETWEEN STAPLES IS 4'.

2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.

3. BEFORE STAPLING THE OVERLAP ENDS OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.

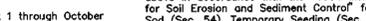
4. STAPLES SHALL BE PLACED 2' APART WITH A ROWS FOR EACH STRIP, 2 TOP ROWS, AND 2 BOTTOM ROWS ALONG THE CENTER.

5. WHERE ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4" SHIP-LAP PATTERN. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 4' APART IN A STAGGERED PATTERN ON OTHER SIDE.

6. THE DISCHARGE END OF THE MATTING LAYER SHOULD BE SIMILARLY SECURED WITH 2" DOUBLE ROWS OF STAPLES.

NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA ENTERED BY THE FLOW MUST BE NOTED-IN.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE C-11-1 WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

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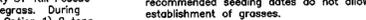
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U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE C-11-1 WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS - Pipe Slope Drain

1. The Pipe Slope Drain (PSD) shall have a slope of 2 percent or steeper.

2. The top of the earth above the inlet pipe shall be at least 2 times the pipe diameter measured at the inlet of the pipe.

3. Flexible tubing is preferred. However, compacted pipe or equivalent PSD pipe can be used. All connections shall be watertight.

4. A flared end section shall be attached to the inlet end of pipe with a watertight connection. Filter cloth shall be placed under the inlet of the pipe slope drain and shall extend 12" from the inlet. The other ends shall be "tapped in" on the sides.

5. The Pipe Slope Drain shall be securely anchored to the slope by staking at the granular protection. Spacing for anchors shall be as provided by manufacturer's specifications, in no case shall be less than 2' (2) anchors be provided. Spacing shall be the length of pipe. These anchors should be provided by pipe supplier.

6. The soil around and under the pipe and end section shall be hand tamped in 4 inch lifts to the top of the earth.

7. All pipe connections shall be watertight.

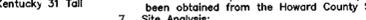
8. Whenever possible where a PSD drains an undisturbed area, it shall outlet into a sediment trap or basin. If this is not possible then the pipe shall discharge into a ditch, conveying that into a sediment trap or basin, then discharging into a top of bank the PSD shall discharge at the same elevation as the wet pool elevation. The discharge from the PSD must be no farther from the sediment control outlet or device.

9. When the discharge area is stabilized, the PSD shall discharge into a stabilized area of a non-erosive velocity.

10. Inspection and any required maintenance shall be performed periodically and after each rain event.

11. The inlet must be kept open at all times.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE C-11-1 WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION SPECIFICATIONS

1. KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH 4" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO COMPRESS TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" FROM EACH END OF THE MATTING. STAPLE SPACING BETWEEN STAPLES IS 4'.

2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.

3. BEFORE STAPLING THE OVERLAP ENDS OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.

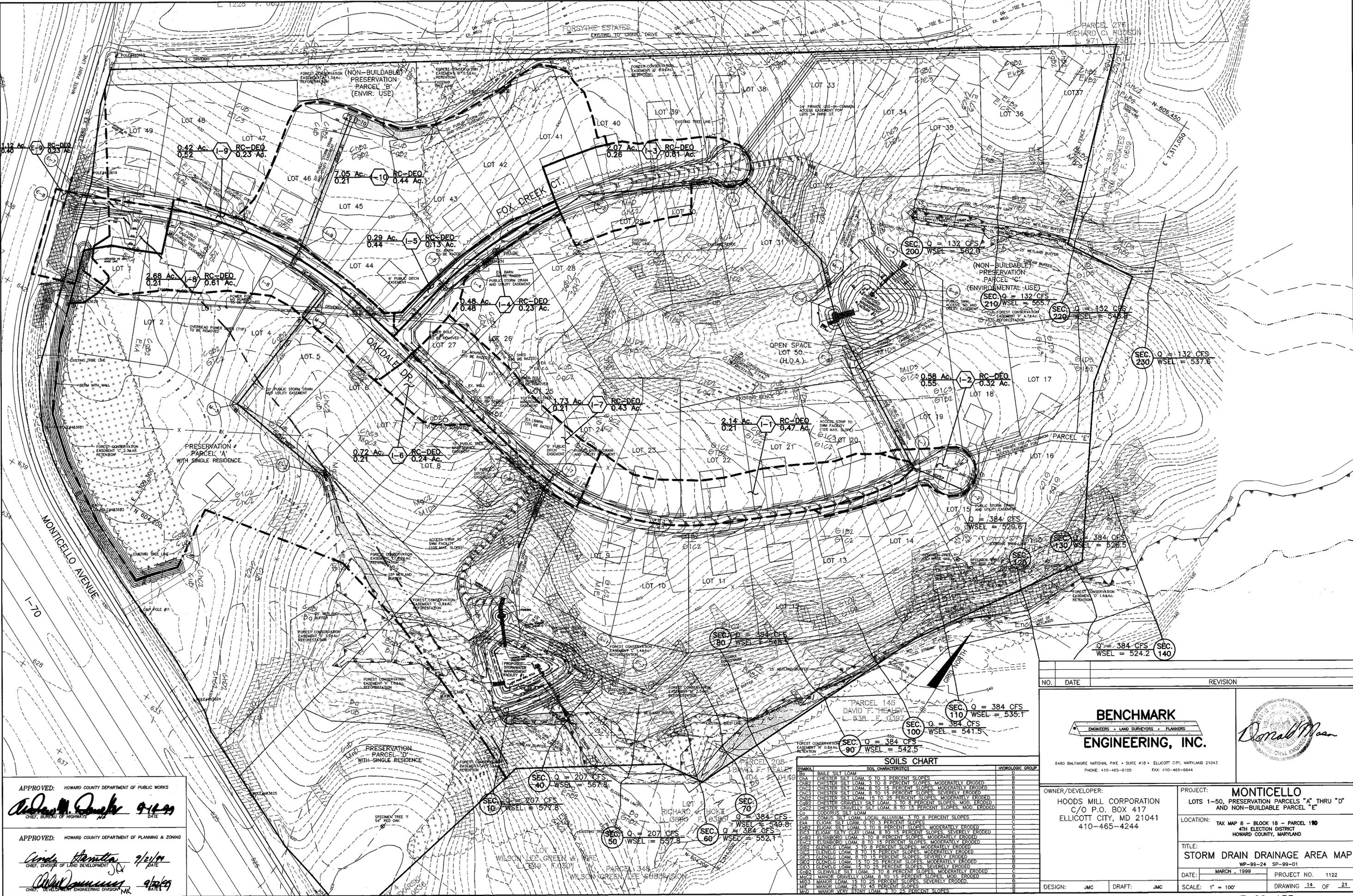
4. STAPLES SHALL BE PLACED 2' APART WITH A ROWS FOR EACH STRIP, 2 TOP ROWS, AND 2 BOTTOM ROWS ALONG THE CENTER.

5. WHERE ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4" SHIP-LAP PATTERN. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 4' APART IN A STAGGERED PATTERN ON OTHER SIDE.

6. THE DISCHARGE END OF THE MATTING LAYER SHOULD BE SIMILARLY SECURED WITH 2" DOUBLE ROWS OF STAPLES.

NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA ENTERED BY THE FLOW MUST BE NOTED-IN.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE C-11-1 WATER MANAGEMENT ADMINISTRATION



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard M. Douglas 9/1/99
 CHIEF, BUREAU OF HIGHWAYS

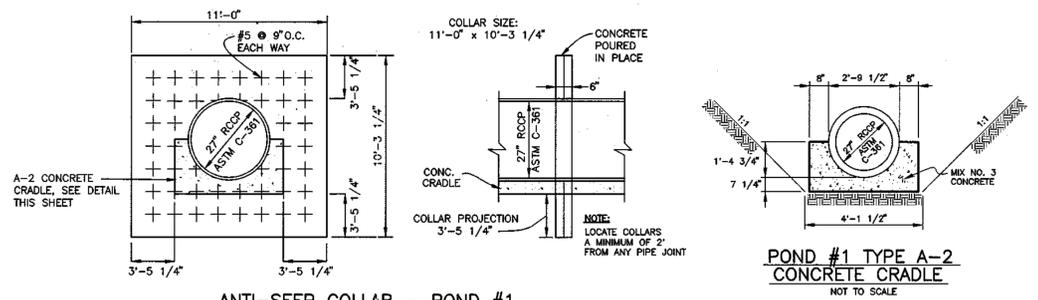
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cinda Klemm 9/2/99
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: *Richard M. Douglas* 9/2/99
 CHIEF, DEPARTMENT OF ENGINEERING DIVISION

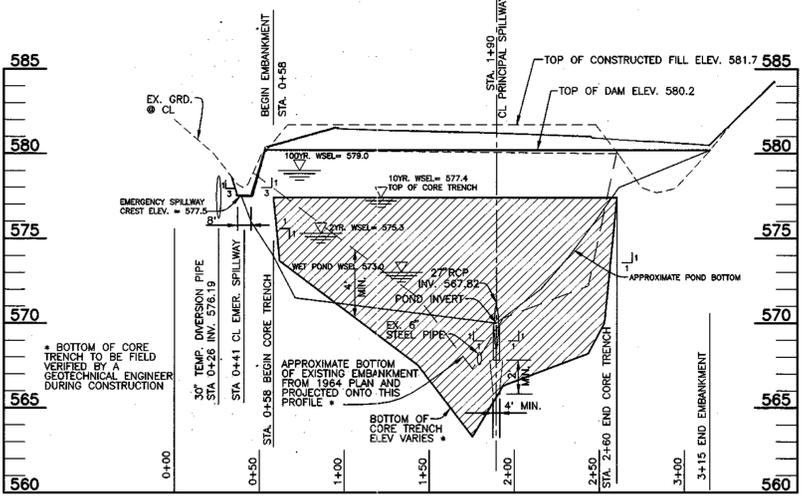
SOILS CHART

SYMBOL	SOIL CHARACTERISTICS	HYDROLOGIC GROUP
BA	BALE SILT LOAM	B
CB1	CHESTER SILT LOAM, 0 TO 3 PERCENT SLOPES	B
CB2	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
CB3	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
CB4	CHESTER SILT LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	B
CB5	CHESTER SILT LOAM, 25 TO 35 PERCENT SLOPES, SEVERELY ERODED	B
CB6	CHESTER SILT LOAM, 35 TO 45 PERCENT SLOPES, SEVERELY ERODED	B
CB7	CHESTER SILT LOAM, 45 TO 55 PERCENT SLOPES, SEVERELY ERODED	B
CB8	CHESTER SILT LOAM, 55 TO 65 PERCENT SLOPES, SEVERELY ERODED	B
CB9	CHESTER SILT LOAM, 65 TO 75 PERCENT SLOPES, SEVERELY ERODED	B
CB10	CHESTER SILT LOAM, 75 TO 85 PERCENT SLOPES, SEVERELY ERODED	B
CB11	CHESTER SILT LOAM, 85 TO 95 PERCENT SLOPES, SEVERELY ERODED	B
CB12	CHESTER SILT LOAM, 95 TO 100 PERCENT SLOPES, SEVERELY ERODED	B
CB13	CHESTER SILT LOAM, 0 TO 3 PERCENT SLOPES, SEVERELY ERODED	B
CB14	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, SEVERELY ERODED	B
CB15	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
CB16	CHESTER SILT LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	B
CB17	CHESTER SILT LOAM, 25 TO 35 PERCENT SLOPES, SEVERELY ERODED	B
CB18	CHESTER SILT LOAM, 35 TO 45 PERCENT SLOPES, SEVERELY ERODED	B
CB19	CHESTER SILT LOAM, 45 TO 55 PERCENT SLOPES, SEVERELY ERODED	B
CB20	CHESTER SILT LOAM, 55 TO 65 PERCENT SLOPES, SEVERELY ERODED	B
CB21	CHESTER SILT LOAM, 65 TO 75 PERCENT SLOPES, SEVERELY ERODED	B
CB22	CHESTER SILT LOAM, 75 TO 85 PERCENT SLOPES, SEVERELY ERODED	B
CB23	CHESTER SILT LOAM, 85 TO 95 PERCENT SLOPES, SEVERELY ERODED	B
CB24	CHESTER SILT LOAM, 95 TO 100 PERCENT SLOPES, SEVERELY ERODED	B
CB25	CHESTER SILT LOAM, 0 TO 3 PERCENT SLOPES, SEVERELY ERODED	B
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CB27	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
CB28	CHESTER SILT LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	B
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CB33	CHESTER SILT LOAM, 65 TO 75 PERCENT SLOPES, SEVERELY ERODED	B
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CB35	CHESTER SILT LOAM, 85 TO 95 PERCENT SLOPES, SEVERELY ERODED	B
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CB84	CHESTER SILT LOAM, 95 TO 100 PERCENT SLOPES, SEVERELY ERODED	B
CB85	CHESTER SILT LOAM, 0 TO 3 PERCENT SLOPES, SEVERELY ERODED	B
CB86	CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, SEVERELY ERODED	B
CB87	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
CB88	CHESTER SILT LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	B
CB89	CHESTER SILT LOAM, 25 TO 35 PERCENT SLOPES, SEVERELY ERODED	B
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CB99	CHESTER SILT LOAM, 8 TO 15 PERCENT SLOPES, SEVERELY ERODED	B
CB100	CHESTER SILT LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	B

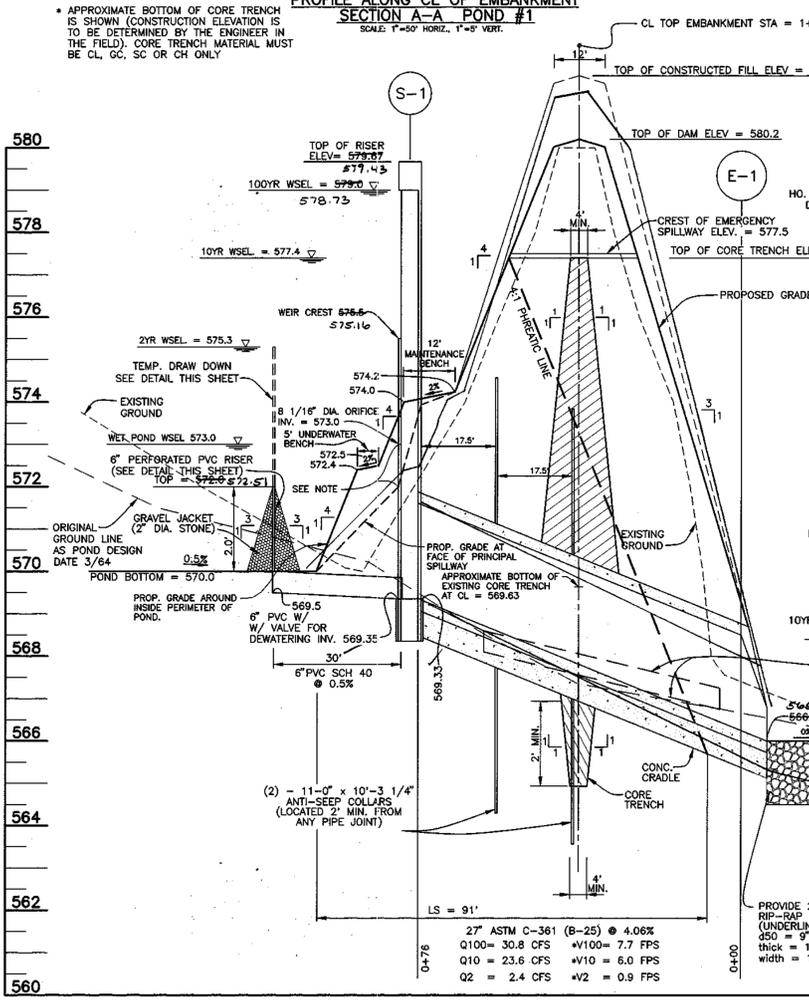
NO. DATE REVISION	
BENCHMARK ENGINEERS - LAND SURVEYORS - PLANNERS	
ENGINEERING, INC.	
6480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043 PHONE: 410-465-6100 FAX: 410-465-6644	
OWNER/DEVELOPER: HOODS MILL CORPORATION C/O P.O. BOX 417 ELLICOTT CITY, MD 21041 410-465-4244	PROJECT: MONTICELLO LOTS 1-50, PRESERVATION PARCELS "A" THRU "D" AND NON-BUILDABLE PARCEL "E"
LOCATION: TAX MAP 8 - BLOCK 18 - PARCEL 180 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE: STORM DRAIN DRAINAGE AREA MAP	
DATE: MARCH 1, 1999	PROJECT NO. 1122
DESIGN: JMC	DRAFT: JMC
SCALE: 1" = 100'	DRAWING 14 OF 21



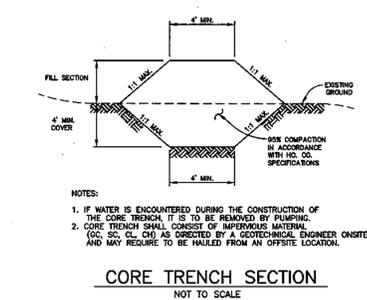
ANTI-SEEP COLLAR - POND #1
NOT TO SCALE



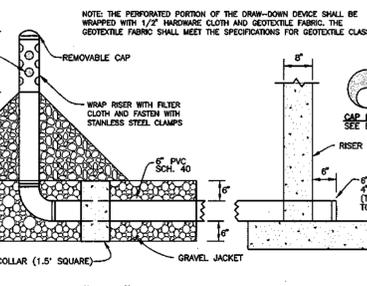
PROFILE ALONG CL OF EMBANKMENT SECTION A-A POND #1
SCALE: 1"=20' HORIZ., 1"=3' VERT.



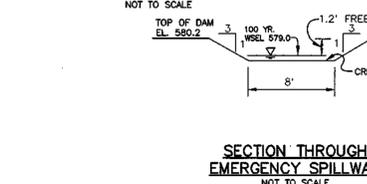
SECTION THRU PRINCIPAL SPILLWAY POND #1
SCALE: 1"=20' HORIZ., 1"=2' VERT.



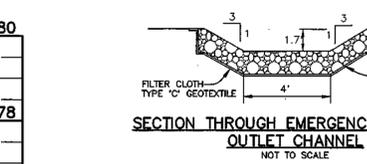
CORE TRENCH SECTION
NOT TO SCALE



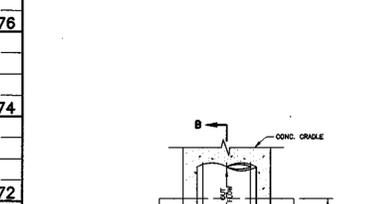
POND #1 6" TEMPORARY SWM VERTICAL DRAW-DOWN DEVICE
NOT TO SCALE



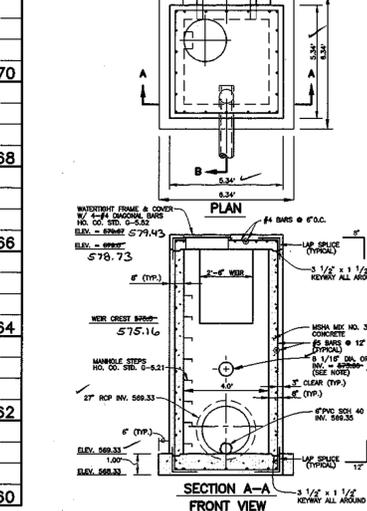
SECTION THROUGH EMERGENCY SPILLWAY
NOT TO SCALE



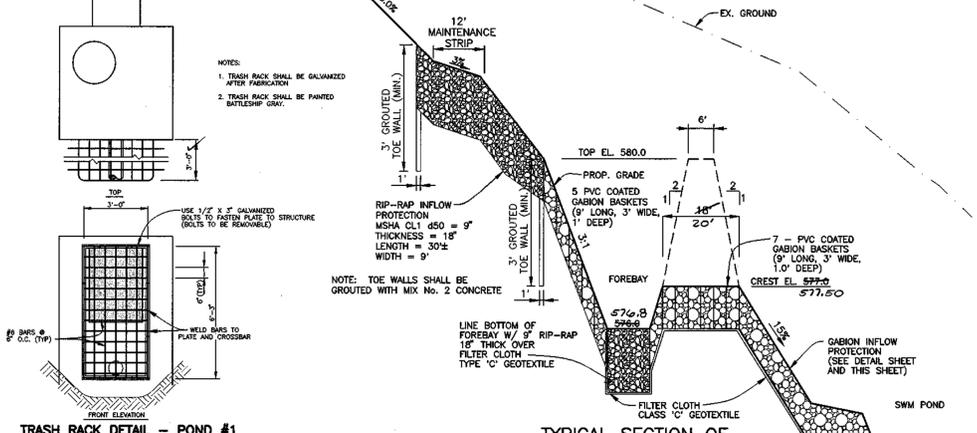
SECTION THROUGH EMERGENCY SPILLWAY OUTLET CHANNEL
NOT TO SCALE



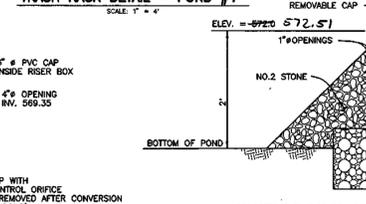
CONTROL STRUCTURE - POND #1
SCALE: 1"=4'



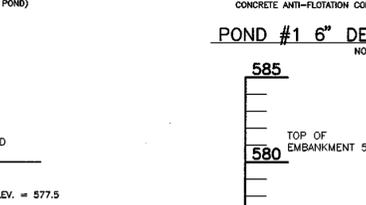
CONTROL STRUCTURE - POND #1
SCALE: 1"=4'



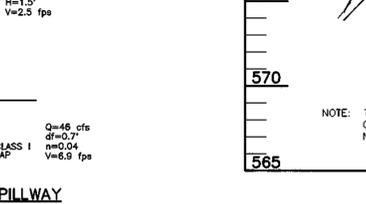
TYPICAL SECTION OF GABION WEIR AT FOREBAY
SCALE: 1"=20' HORIZ., 1"=2' VERT.



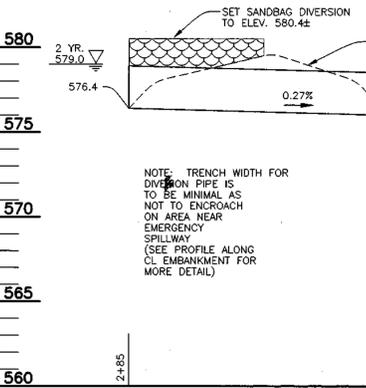
TRASH RACK DETAIL - POND #1
SCALE: 1"=4'



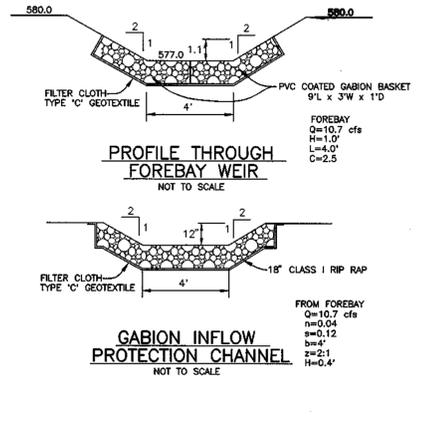
POND #1 6" DEWATERING PIPE DETAIL
NOT TO SCALE



PROFILE ALONG EMERGENCY SPILLWAY
SCALE: 1"=50' HORIZ., 1"=5' VERT.



30" TEMPORARY DIVERSION PIPE DETAIL
SCALE: 1"=50' HORIZ., 1"=5' VERT.



PROFILE THROUGH FOREBAY WEIR
NOT TO SCALE

GABION INFLOW PROTECTION CHANNEL
NOT TO SCALE

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

Donald Mason PE NO. 21443 DATE: 2/11/03

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION, THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE CONDUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/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. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

BY THE DEVELOPER:

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT 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.

Donald Mason 2/19/99 DATE

DEVELOPER - HOODS MILL CORPORATION DATE: 8-20-99

BY THE ENGINEER:

I/WE 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/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.

Donald Mason 2/19/99 DATE

ENGINEER - DONALD A. MASON, P.E. # 21443

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.

Clayton S. Moore 8/26/99 DATE

NATURAL RESOURCES CONSERVATION SERVICE

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

John J. Kelly 8/24/99 DATE

HOWARD SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Richard M. Daniels 9-19-99 DATE

CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Cinda Hamilton 7/27/99 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT

Paul R. ... 9/2/99 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

NO.	DATE	REVISION
2-19-03		REVISED PER AS-BUILT CONDITIONS

BENCHMARK ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-8105 FAX: 410-465-6644

OWNER/DEVELOPER: HOODS MILL CORPORATION
C/O P.O. BOX 417
ELLICOTT CITY, MD 21041
410-465-4244

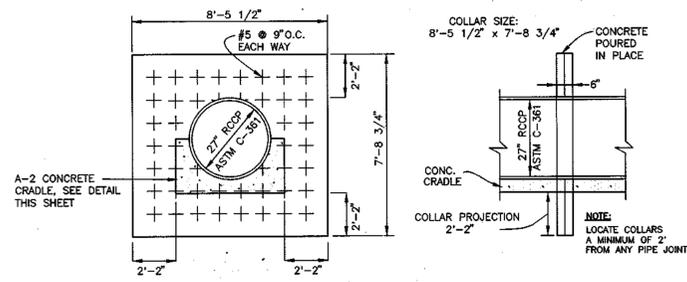
PROJECT: MONTICELLO
LOTS 1-50, PRESERVATION PARCELS "A" THRU "D" AND NON-BUILDABLE PARCEL "E"

LOCATION: TAX MAP 8 - BLOCK 18 - PARCEL 110
4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

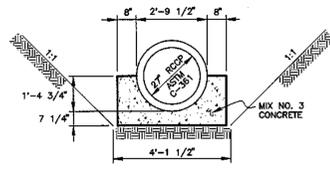
TITLE: STORMWATER MANAGEMENT POND #1
NOTES, PROFILES AND DETAILS
WP-99-24 SP-99-01

DATE: MARCH, 1999 PROJECT NO. 1122

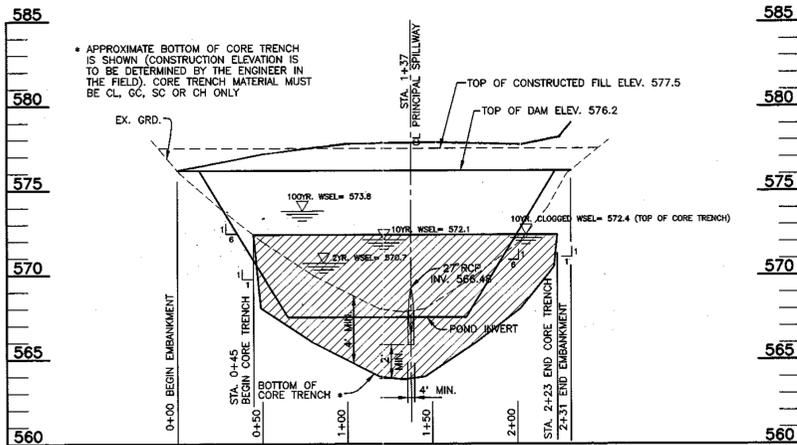
DESIGN: GWF DRAFT: JMC SCALE: AS SHOWN DRAWING 15 OF 21



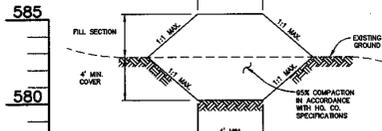
ANTI-SEEP COLLAR - POND #2
NOT TO SCALE



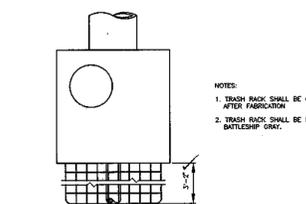
POND #2 TYPE A-2
CONCRETE CRADLE
NOT TO SCALE



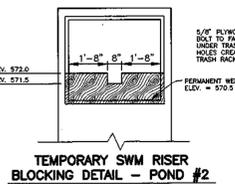
PROFILE ALONG CL OF EMBANKMENT
SECTION A-A POND #2
SCALE: 1" = 20' HORIZ., 1" = 2' VERT.



CORE TRENCH SECTION
NOT TO SCALE

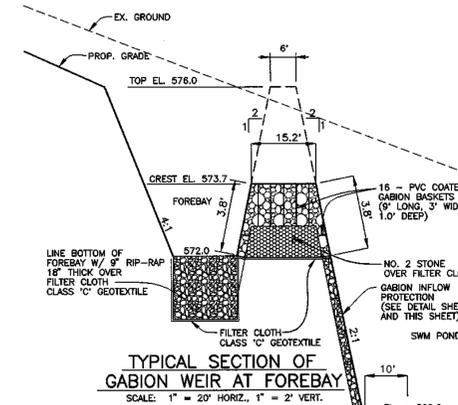


TRASH RACK DETAIL - POND #2
SCALE: 1" = 4"

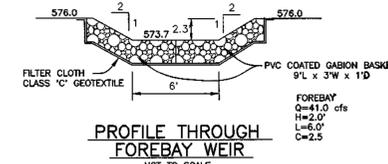


TEMPORARY SWM RISER
BLOCKING DETAIL - POND #2
SCALE: 1" = 4"

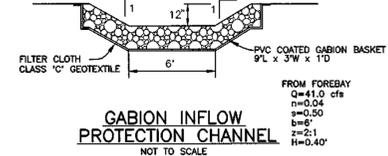
GABION BASKET LAYOUT
SCALE: 1" = 20'



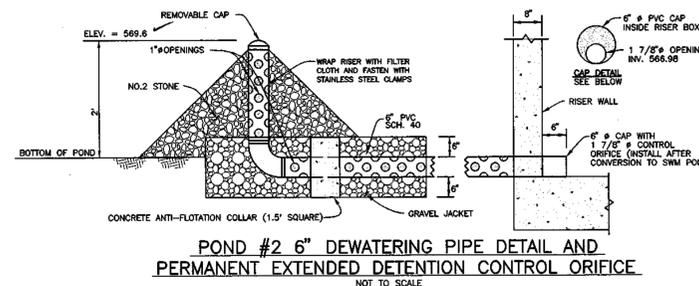
TYPICAL SECTION OF
GABION WEIR AT FOREBAY
SCALE: 1" = 20' HORIZ., 1" = 2' VERT.



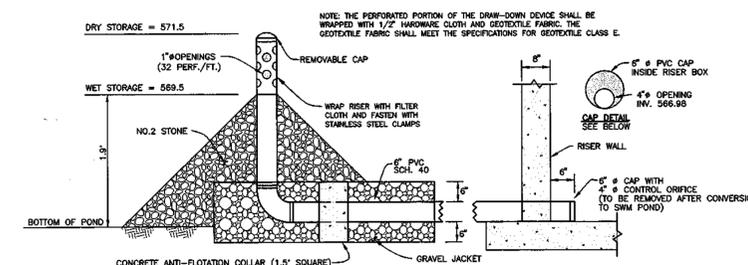
PROFILE THROUGH
FOREBAY WEIR
NOT TO SCALE



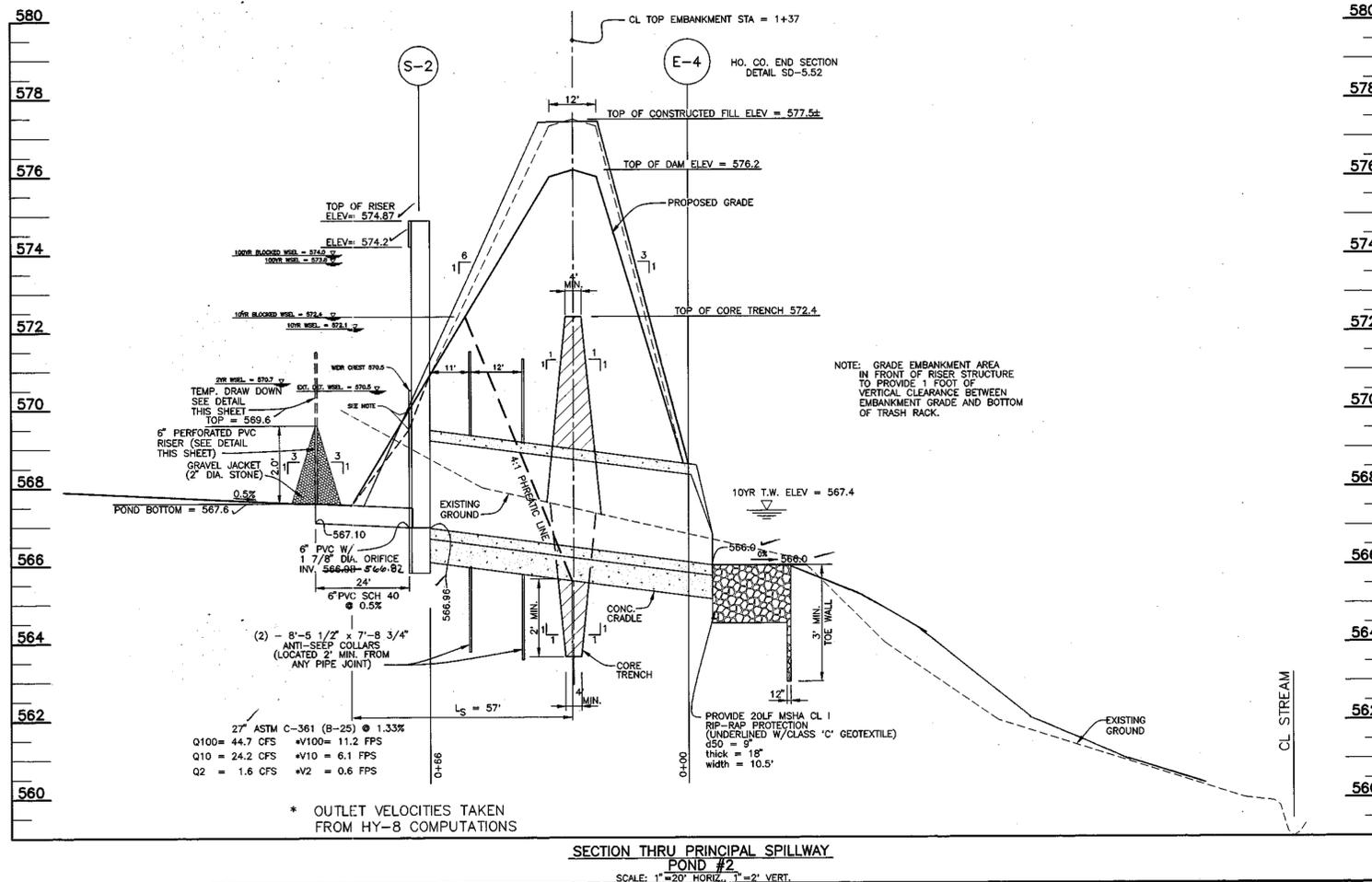
GABION INFLOW
PROTECTION CHANNEL
NOT TO SCALE



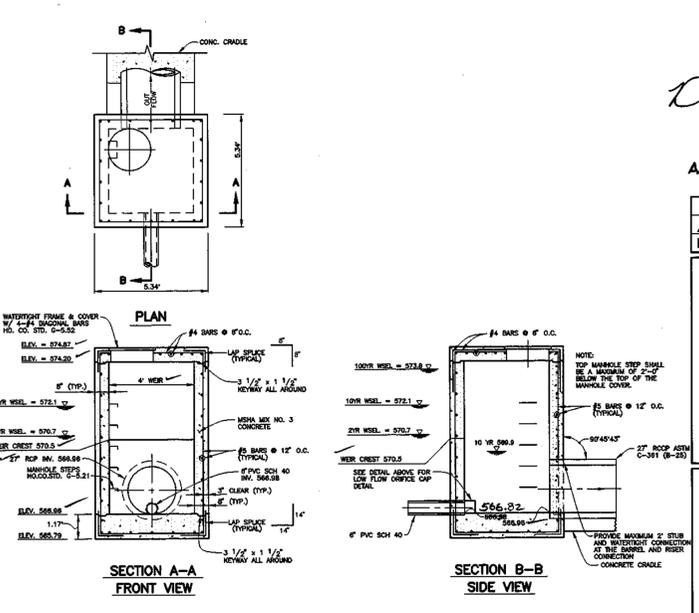
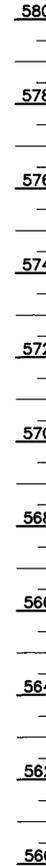
POND #2 6" DEWATERING PIPE DETAIL AND
PERMANENT EXTENDED DETENTION CONTROL ORIFICE
NOT TO SCALE



POND #2 6" TEMPORARY SWM
VERTICAL DRAW-DOWN DEVICE
NOT TO SCALE



SECTION THRU PRINCIPAL SPILLWAY
POND #2
SCALE: 1" = 20' HORIZ., 1" = 2' VERT.



CONTROL STRUCTURE - POND #2
SCALE: 1" = 4"

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

Donald Maan PE NO. 21443 DATE 2/21/03

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHEN CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL EMPLOY 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.

Mike Hill 8-20-99
DEVELOPER - HOODS MILL CORPORATION DATE

BY THE ENGINEER:

I/WE 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 EMPLOY 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.

Donald Maan 2/19/99
ENGINEER - DONALD A. MASON, P.E. # 21443 DATE

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

Chris Simons 2/26/99
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

Gregg Kelly 2/26/99
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Deale 2-2-99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Cynthia Hammit 2/23/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mike Reseman 2/22/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



2-19-03 REVISED PER AS-BUILT CONDITIONS

NO. DATE REVISION

BENCHMARK ENGINEERING, INC.
ENGINEERS • LAND SURVEYORS • PLANNERS
8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043
PHONE: 410-465-6105 FAX: 410-465-6644

OWNER/DEVELOPER:
HOODS MILL CORPORATION
C/O P.O. BOX 417
ELLICOTT CITY, MD 21041
410-465-4244

PROJECT:
MONTICELLO
LOTS 1-50, PRESERVATION PARCELS "A" THRU "D" AND NON-BUILDABLE PARCEL "E"

LOCATION:
TAX MAP 8 - BLOCK 18 - PARCEL 110
4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
STORMWATER MANAGEMENT POND #2
NOTES, PROFILES AND DETAILS
WP-99-24 SP-99-01

DATE: MARCH, 1999 PROJECT NO. 1122
SCALE: AS SHOWN DRAWING 16 OF 21

DESIGN: GWF DRAFT: JMC

POND CONSTRUCTION SPECIFICATIONS

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.

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.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of rocks, stumps, wood, rubbish, stones greater than 5", frozen or other objectionable materials.

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.

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 wheel.

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within +/- 2% of the optimum.

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation.

Structure Backfill - Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness.

Pipe Conduits - All pipes shall be circular in cross section. Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

- 1. Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands.

Materials - (Aluminum Coated Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-198 or M-211 with watertight coupling bands or flanges.

- 2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials of at least 24 mils in thickness.

- 3. Connections - All connections with pipes must be completely watertight. The drain pipe or bore connection to the riser shall be welded all around when the pipe and riser are metal.

All connections shall use a rubber or neoprene gasket when joining pipe sections that are to be in contact with concrete. The end of each pipe for a total of 24" heavily corrugated pipe shall have other continuously welded seams or have lock seams.

- 4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

- 5. Backfilling shall conform to "Structure Backfill."
- 6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

- 1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361. An approved equivalent is AWWA Specification C-302.
- 2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length.

- 3. Laying pipe - Bell and spigot pipe shall be placed with the bell and upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material.

- 4. Backfilling shall conform to "Structure Backfill."
- 5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

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

- 1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.
- 2. Joints and connections to anti-seep collars shall be completely watertight.

- 3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

- 4. Backfilling shall conform to "Structure Backfill."
- 5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Concrete - Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3.

Rock Riprap - The rock shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering.

The rock shall have the following properties: 1. Bulk specific gravity (saturated surface-dry basis) not less than 2.5.

- 2. Absorption not more than three percent.
- 3. Soundness: Weight loss in five cycles not more than 20 percent when sodium sulfate is used.

Bulk specific gravity and absorption shall be determined according to ASTM C 127. The test for soundness shall be performed according to ASTM C 88.

The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous.

Structure Backfill - Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment.

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 area to be occupied by the permanent works.

- 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 VEGETATION 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 1. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS.

- 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, OR SILTY CLAY LOAM. SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE AGENCY. AUTHORITY: REGULATIONS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURES, TOPSOIL SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.

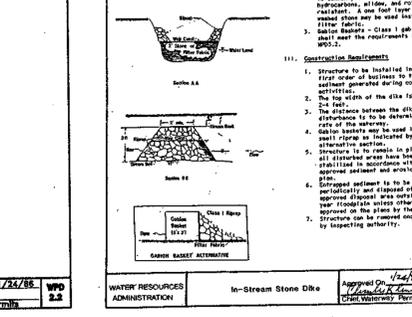
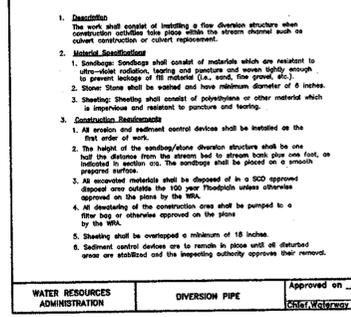
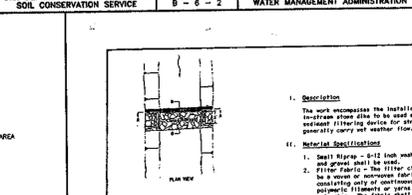
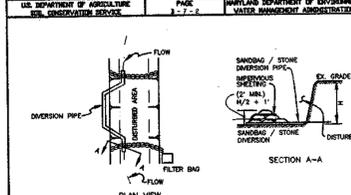
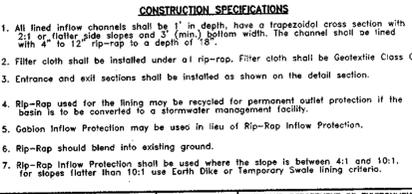
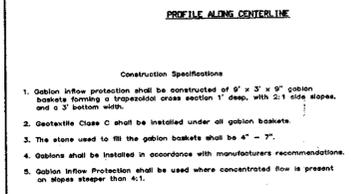
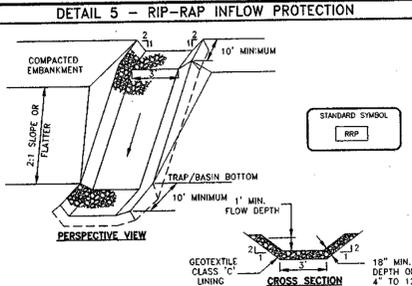
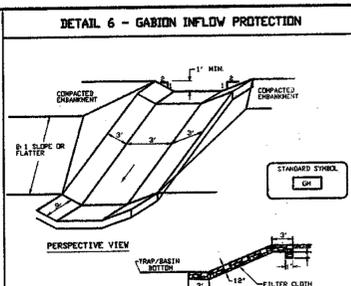
- II. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

- III. WHERE THE SUBSOIL IS EITHER 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.

- III. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:

- A. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS INDICATING 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 CONTENT 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.



Approved on 1/28/88 WJD

Approved on 1/28/88 WJD

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

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 VEGETATION 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.

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- II. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.

- III. WHERE THE SUBSOIL IS EITHER 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.

- III. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:

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- B. ORGANIC CONTENT 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.

REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING, MD-VA, PUB. #1, COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES, REVISED 1973.

Record of Soil Exploration Boring No. 1. Table with columns for SOIL DESCRIPTION, STRATA DEPTH (FT.), SAMPLE CON. BLOWS, and BORING & SAMPLING NOTES.

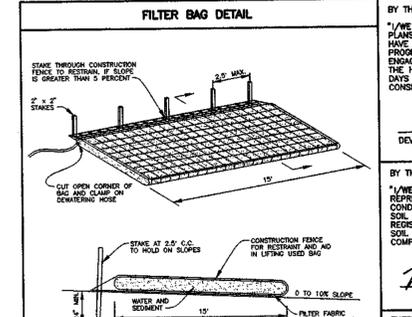
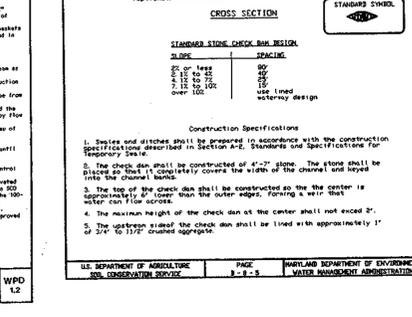
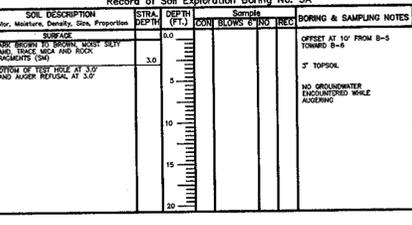
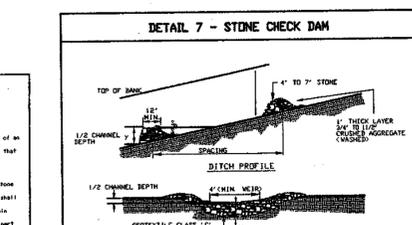
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Record of Soil Exploration Boring No. 3. Table with columns for SOIL DESCRIPTION, STRATA DEPTH (FT.), SAMPLE CON. BLOWS, and BORING & SAMPLING NOTES.

Record of Soil Exploration Boring No. 4. Table with columns for SOIL DESCRIPTION, STRATA DEPTH (FT.), SAMPLE CON. BLOWS, and BORING & SAMPLING NOTES.

Record of Soil Exploration Boring No. 4A. Table with columns for SOIL DESCRIPTION, STRATA DEPTH (FT.), SAMPLE CON. BLOWS, and BORING & SAMPLING NOTES.

Record of Soil Exploration Boring No. 5. Table with columns for SOIL DESCRIPTION, STRATA DEPTH (FT.), SAMPLE CON. BLOWS, and BORING & SAMPLING NOTES.



Approved on 1/28/88 WJD

Approved on 1/28/88 WJD

HILLS-CARNES ENGINEERING ASSOCIATES, INC. RECOMMENDATIONS

Embankment and Cut-off Trench Construction. The site should be stripped of topsoil and any other unsuitable materials from the embankment or structure area in accordance with Soil Conservation Guidelines.

- 1. Filter bag shall be placed on a sloping or level well graded vegetative site such that water will flow away from device and not back into the structure.

- 2. The filter bag shall be secured in place and secured to the riprap drainage line.
- 3. Filter bag shall not be used for discharge flows greater than 300 GPM.
- 4. Device shall be removed and disposed of after bag is filled with sediment. Sediment from bag shall be disposed in an upland area.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

APPROVED: DONALD MAAS

BY THE DEVELOPER: I/VE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS...

DEVELOPER - HOODS MILL CORPORATION

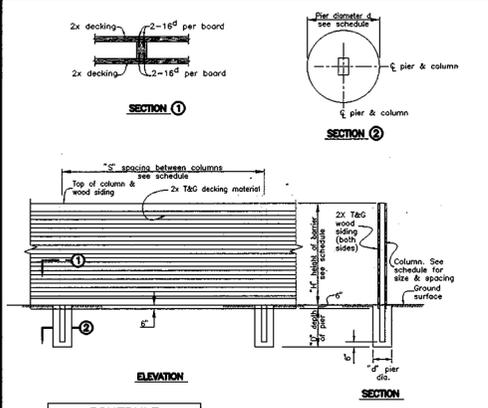
APPROVED: DONALD MAAS

BY THE ENGINEER: I/VE CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICE AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE...

APPROVED: DONALD MAAS

BENCHMARK ENGINEERING, INC. logo and contact information.

OWNER/DEVELOPER: HOODS MILL CORPORATION. PROJECT: MONTICELLO. LOCATION: TAX MAP 8 - BLOCK 18 - PARCEL 110. TITLE: SEDIMENT AND EROSION CONTROL & STORMWATER MANAGEMENT NOTES & DETAILS.



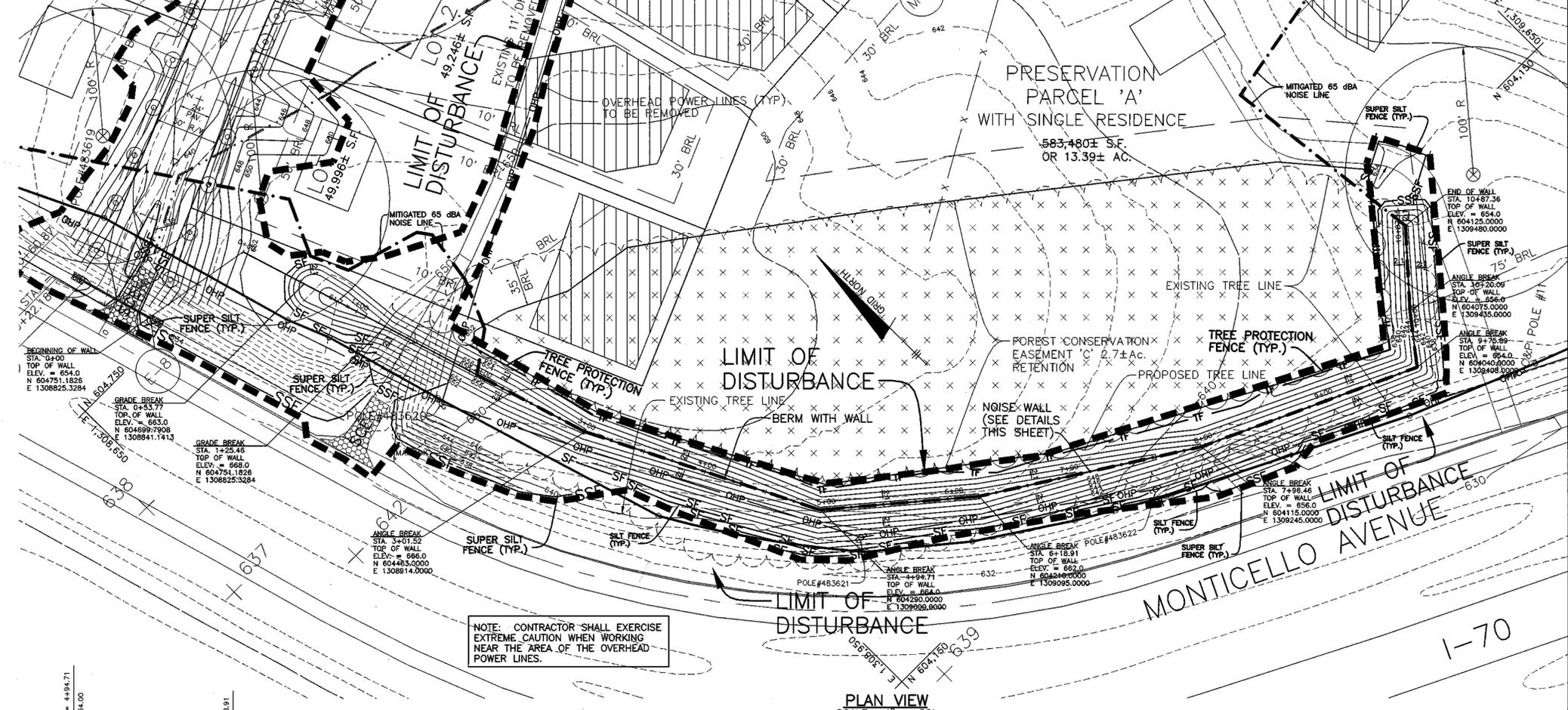
NOTES:

- GENERAL:
 - Height of barrier shall be based on acoustic requirements.
 - Barrier walls having a height (H) not indicated in the tables shall be constructed as shown in the next higher height category.
- SPACING:
 - 2x wood decking material shall be utilized to span horizontally between posts. Design criteria is based on an allowable bending stress of 1400 lbs. per sq. in. and a 33 1/3% increase in stress for wind loads as considered appropriate. Decking shall be MC15.
 - Siding in contact with the ground and for a distance of 6" above grade shall be treated with wood preservative.
- POST:
 - Wood post shall be utilized of the spacing indicated on the schedule. Design criteria is based on an allowable bending stress of 1400 lbs. per sq. in. and a 33 1/3% increase in stress for wind loads.
 - Post embedded in concrete shall be treated with a wood preservative in the area of embedment and 12" above grade.
- CONCRETE:
 - Concrete in the piers shall have a 28 day compressive strength of 3500 lbs. per sq. in.
- FOUNDATIONS:
 - The drilled piers have been designed utilizing an allowable positive pressure of 300 lbs. per sq. ft. and the following formula:

$$D = \frac{(1.52M)^{1/3}}{P}$$
 where:
 M = Moment of top of drilled pier (ft./lbs.)
 P = Allowable positive pressure (300 lbs. per sq. ft.)
 D = Depth of pier (ft.)
- ALTERNATE #1 (Preservative Treatment): Alternate #1 represents the additional cost factor for treating the basic wood structure indicated on this reference plan. The necessity for treatment and the type of preservative will be subject to local conditions. All treatments shall conform to AWPA standard C-14.
- ALTERNATE #2 (Painting): Alternate #2 represents the additional cost factor required to paint one side of the basic wood structure shown on this reference plan. Painting shall consist of 3 applications of paint. 2 coats of latex base paint conforming to Federal Specification TT-P-00966 shall be applied over a primer coat conforming to Federal Specification TT-P-02550.
- ALTERNATE #3 (Staining): Alternate #3 represents the additional cost factor required to stain one side of the basic wood structure. Stain shall consist of 2 coats of semi-transparent sealer stain applied in accordance with manufacturer's written instructions.
- ALTERNATE #4 (Preservative Treatment): Alternate #4 shall be utilized for this project.

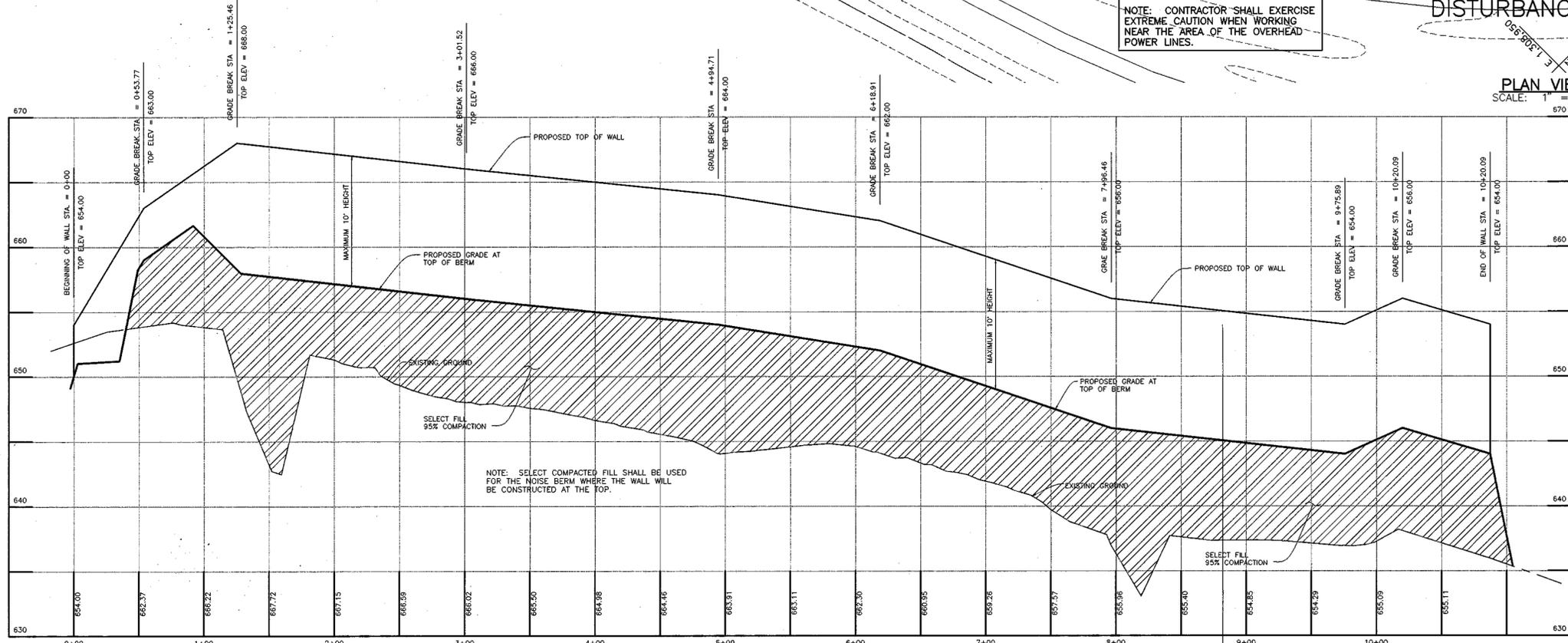
NOISE WALL DETAIL
NOT TO SCALE

NOTE: THE PROPOSED NOISE WALL IS PRIVATELY OWNED AND SHALL BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION. THE NOISE WALL SHALL BE INSPECTED AND REPAIRED AS NECESSARY AT A MINIMUM OF ONCE A YEAR.



NOTE: CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING NEAR THE AREA OF THE OVERHEAD POWER LINES.

PLAN VIEW
SCALE: 1" = 50'



PROFILE OF BERM AND NOISE WALL
PRESERVATION PARCEL "A"

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

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.

NATURAL RESOURCES CONSERVATION SERVICE DATE

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

HOWARD SOIL CONSERVATION DISTRICT DATE

BY THE DEVELOPER:
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIOD ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER: *W. M. ...* DATE: 8/20/99

BY THE ENGINEER:
I/WE 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.

ENGINEER - DONALD A. MASON, P.E. # 21443 DATE: 8/19/99

NO.	DATE	REVISION
BENCHMARK ENGINEERING, INC. ENGINEERS • LAND SURVEYORS • PLANNERS 8480 BALTIMORE NATIONAL PIKE • SUITE 418 • ELLICOTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-5644		
OWNER/DEVELOPER: HOODS MILL CORPORATION C/O P.O. BOX 417 ELLICOTT CITY, MD 21041 410-465-4244		PROJECT: MONTICELLO LOTS 1-50, PRESERVATION PARCELS "A" THRU "D" AND NON-BUILDABLE PARCEL "E" LOCATION: TAX MAP 8 - BLOCK 18 - PARCEL 110 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE: NOISE MITIGATION NOTES, DETAILS & SEDIMENT AND EROSION CONTROL PLAN WP-99-24 SP-99-01		DATE: MARCH, 1999 PROJECT NO. 1122 SCALE: AS SHOWN DRAWING 1B OF 21
DESIGN: JMC	DRAFT: JMC	

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Robert M. ... 2-18-99
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Andy ... 7/27/99
CHIEF, DIVISION OF LAND DEVELOPMENT

... 9/22/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

SCHEDULE A PERIMETER LANDSCAPE EDGE							
CATEGORY	ADJACENT TO ROADWAYS		ADJACENT TO PROPERTIES				
	Ⓛ B	Ⓛ A	Ⓛ A	Ⓛ A	Ⓛ A	Ⓛ A	
LANDSCAPE TYPE							
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	284	1349	1811	3186	111	1840	1715
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	*YES 463	*YES 436	NO	NO	*YES 578	*YES 305
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED							
SHADE TREES	5	15	23	53	2	21	24
EVERGREEN TREES	7	-	-	-	-	-	-
OTHER TREES (2:1 SUBSTITUTE)	-	-	-	-	-	-	-
SHRUBS	-	-	-	-	-	-	-
NUMBER OF PLANTS PROVIDED							
SHADE TREES	5	15	23	53	2	21	24
EVERGREEN TREES	7	-	-	-	-	-	-
OTHER TREES (2:1 SUBSTITUTE)	-	-	-	-	-	-	-
SHRUBS (10:1 SUBSTITUTE)	-	-	-	-	-	-	-
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)							

* - EXISTING TREES TO REMAIN

STREET TREE REQUIREMENTS

REQUIRED: 1 PER 40' O.C. AT 7460' = 187
PROVIDED: 187

LANDSCAPING NOTES

THE DEVELOPER SHALL BE RESPONSIBLE FOR THE STREET TREES, STORMWATER MANAGEMENT POND PLANTING, PERIMETER LANDSCAPE PLANTING AND THE PRESERVATION OF THE PERIMETER VEGETATION AS SHOWN ON THESE PLANS.

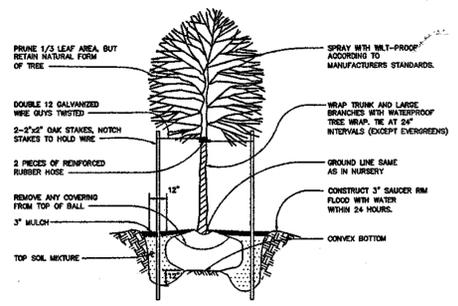
PLANTING NOTES:

- TREES MUST BE PLANTED A MINIMUM OF 4 FEET FROM THE EDGE OF PAVING, 10' FROM A DRIVEWAY AND MUST BE A MINIMUM OF 5 FEET FROM ANY STORM DRAIN.
- FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED AS PART OF THE PERMIT APPLICATION IN THE AMOUNT OF \$50850.00.

LANDSCAPE PLANTING LIST			STREET TREE PLANTING LIST				
SYMBOL	QUANTITY	NAME	REMARKS	SYMBOL	QUANTITY	NAME	REMARKS
⊙	45	PRUNUS SARGENTII (SARGENT CHERRY)	2 1/2" MIN. CAL. B & B FULL HEAD	⊙	7	PRUNUS SARGENTII (SARGENT CHERRY)	2 1/2" MIN. CAL. B & B FULL HEAD
⊙	46	TILIA CORDATA 'GREENSPIRE' (GREENSPIRE LITTLELEAF LINDEN)	2 1/2" MIN. CAL. B & B FULL HEAD	⊙	52	TILIA CORDATA 'GREENSPIRE' (GREENSPIRE LITTLELEAF LINDEN)	2 1/2" MIN. CAL. B & B FULL HEAD
⊕	32	ACER RUBRUM 'RED SUNSET' (RED SUNSET RED MAPLE)	2 1/2" MIN. CAL. B & B FULL HEAD	⊕	88	ACER SACCHARUM 'GREEN MOUNTAIN' (GREEN MOUNTAIN SUGAR MAPLE)	2 1/2" MIN. CAL. B & B FULL HEAD
⊕	52	ACER SACCHARUM 'GREEN MOUNTAIN' (GREEN MOUNTAIN SUGAR MAPLE)	2 1/2" MIN. CAL. B & B FULL HEAD	⊕	42	ACER RUBRUM 'RED SUNSET' (RED SUNSET RED MAPLE)	2 1/2" MIN. CAL. B & B FULL HEAD
●	57	CORNUS FLORIDA (DOGWOOD)	6'-8" HT. B & B				
⊙	21	PINUS STROBUS (EASTERN WHITE PINE)	6'-8" HT. B & B				

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING				
LINEAR FEET OF PERIMETER	Ⓛ (1054')		Ⓛ (645')	
	NUMBER OF TREES REQUIRED	21	19	24
SHADE TREES	21	19	24	24
EVERGREEN TREES	21	19	24	24
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	YES*(39%)	YES*(22%)		
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO	NO		
NUMBER OF TREES PROVIDED				
SHADE TREES	13	15	24	24
EVERGREEN TREES	26	24		
OTHER TREES (2:1 SUBSTITUTE)				

* CREDIT FOR EXISTING VEGETATION IS APPLIED TO SHADE TREES ONLY.



TREE PLANTING DETAIL

NOT TO SCALE

PLANTING SCHEDULE

QTY.	SPECIES	SIZE	SPACING
4	ACER RUBRUM - RED MAPLE	1" CAL.	##
6	LIRIODENDRON TULIPIFERA - TULIP POPLAR	1" CAL.	##
50	ACER RUBRUM - RED MAPLE	2-3" WHIP	**
31	CORNUS FLORIDA - FLOWERING DOGWOOD	2-3" WHIP	**
117	FRAXINUS PENNSYLVANICA - GREEN ASH	2-3" WHIP	**
80	LIRIODENDRON TULIPIFERA - TULIP POPLAR	2-3" WHIP	**
20	JUNIPERUS VIRGINIANA - RED CEDAR	2-3" WHIP	**
50	PRUNUS SEROTINA - BLACK CHERRY	2-3" WHIP	**
80	QUERCUS RUBRA - RED OAK	2-3" WHIP	**
40	ROBINIA PSUEDO-ACACIA - BLACK LOCUST	2-3" WHIP	**
30	SASSAFRAS ALBIDUM - SASSAFRAS	2-3" WHIP	**
30	VIBURNUM PLUNIFOLIUM - BLACKHAW	18-24" B.T.	**

PLANTING SCHEDULE

QTY.	SPECIES	SIZE	SPACING
5	ACER RUBRUM - RED MAPLE	1" CAL.	##
4	LIRIODENDRON TULIPIFERA - TULIP POPLAR	1" CAL.	##
79	ACER RUBRUM - RED MAPLE	2-3" WHIP	**
70	FRAXINUS PENNSYLVANICA - GREEN ASH	2-3" WHIP	**
26	JUGLANS NIGRA - BLACK WALNUT	2-3" WHIP	**
53	LIRIODENDRON TULIPIFERA - TULIP POPLAR	2-3" WHIP	**
35	PLATANUS OCCIDENTALIS - SYCAMORE	2-3" WHIP	**
35	PRUNUS SEROTINA - BLACK CHERRY	2-3" WHIP	**
44	QUERCUS RUBRA - RED OAK	2-3" WHIP	**
26	SASSAFRAS ALBIDUM - SASSAFRAS	2-3" WHIP	**
26	SAMBUCUS CANADENSIS - ELDERBERRY	18-24" B.T.	**
44	VIBURNUM DENTATUM - ARROWWOOD	18-24" B.T.	**

PLANTING SCHEDULE

QTY.	SPECIES	SIZE	SPACING
2	ACER RUBRUM - RED MAPLE	1" CAL.	##
3	LIRIODENDRON TULIPIFERA - TULIP POPLAR	1" CAL.	##
43	ACER RUBRUM - RED MAPLE	2-3" WHIP	**
38	FRAXINUS PENNSYLVANICA - GREEN ASH	2-3" WHIP	**
14	JUGLANS NIGRA - BLACK WALNUT	2-3" WHIP	**
26	LIRIODENDRON TULIPIFERA - TULIP POPLAR	2-3" WHIP	**
19	PLATANUS OCCIDENTALIS - SYCAMORE	2-3" WHIP	**
19	PRUNUS SEROTINA - BLACK CHERRY	2-3" WHIP	**
24	QUERCUS RUBRA - RED OAK	2-3" WHIP	**
14	SASSAFRAS ALBIDUM - SASSAFRAS	2-3" WHIP	**
14	SAMBUCUS CANADENSIS - ELDERBERRY	18-24" B.T.	**
24	VIBURNUM DENTATUM - ARROWWOOD	18-24" B.T.	**

PLANTING SCHEDULE

QTY.	SPECIES	SIZE	SPACING
2	ACER RUBRUM - RED MAPLE	1" CAL.	##
1	LIRIODENDRON TULIPIFERA - TULIP POPLAR	1" CAL.	##
24	ACER RUBRUM - RED MAPLE	2-3" WHIP	**
22	FRAXINUS PENNSYLVANICA - GREEN ASH	2-3" WHIP	**
8	JUGLANS NIGRA - BLACK WALNUT	2-3" WHIP	**
16	LIRIODENDRON TULIPIFERA - TULIP POPLAR	2-3" WHIP	**
11	PLATANUS OCCIDENTALIS - SYCAMORE	2-3" WHIP	**
11	PRUNUS SEROTINA - BLACK CHERRY	2-3" WHIP	**
14	QUERCUS RUBRA - RED OAK	2-3" WHIP	**
8	ROBINIA PSUEDO-ACACIA - BLACK LOCUST	2-3" WHIP	**
4	SASSAFRAS ALBIDUM - SASSAFRAS	2-3" WHIP	**
18	SAMBUCUS CANADENSIS - ELDERBERRY	18-24" B.T.	**
14	VIBURNUM DENTATUM - ARROWWOOD	18-24" B.T.	**

PLANTING SCHEDULE

QTY.	SPECIES	SIZE	SPACING
11	ACER RUBRUM - RED MAPLE	1" CAL.	##
8	LIRIODENDRON TULIPIFERA - TULIP POPLAR	1" CAL.	##
207	ACER RUBRUM - RED MAPLE	2-3" WHIP	**
81	CORNUS FLORIDA - FLOWERING DOGWOOD	2-3" WHIP	**
117	FRAXINUS PENNSYLVANICA - GREEN ASH	2-3" WHIP	**
45	JUNIPERUS VIRGINIANA - RED CEDAR	2-3" WHIP	**
180	LIRIODENDRON TULIPIFERA - TULIP POPLAR	2-3" WHIP	**
117	PRUNUS SEROTINA - BLACK CHERRY	2-3" WHIP	**
81	QUERCUS RUBRA - RED OAK	2-3" WHIP	**
45	ROBINIA PSUEDO-ACACIA - BLACK LOCUST	2-3" WHIP	**
28	SASSAFRAS ALBIDUM - SASSAFRAS	2-3" WHIP	**
91	CORNUS AMOMUM - SILKY DOGWOOD	18-24" B.T.	**
122	VIBURNUM DENTATUM - ARROWWOOD	18-24" B.T.	**
91	VIBURNUM PRUNIFOLIUM - BLACKHAW	18-24" B.T.	**

PLANTING SCHEDULE

QTY.	SPECIES	SIZE	SPACING
1	ACER RUBRUM - RED MAPLE	1" CAL.	##
1	LIRIODENDRON TULIPIFERA - TULIP POPLAR	1" CAL.	##
20	ACER RUBRUM - RED MAPLE	2-3" WHIP	**
10	CORNUS FLORIDA - FLOWERING DOGWOOD	2-3" WHIP	**
7	JUGLANS NIGRA - BLACK WALNUT	2-3" WHIP	**
20	LIRIODENDRON TULIPIFERA - TULIP POPLAR	2-3" WHIP	**
11	PLATANUS OCCIDENTALIS - SYCAMORE	2-3" WHIP	**
7	QUERCUS ALBA - WHITE OAK	2-3" WHIP	**
13	QUERCUS RUBRA - RED OAK	2-3" WHIP	**
4	ROBINIA PSUEDO-ACACIA - BLACK LOCUST	2-3" WHIP	**
4	SASSAFRAS ALBIDUM - SASSAFRAS	2-3" WHIP	**
6	VIBURNUM PRUNIFOLIUM - BLACKHAW	18-24" B.T.	**

PLANTING SCHEDULE

QTY.	SPECIES	SIZE	SPACING
1	ACER RUBRUM - RED MAPLE	1" CAL.	##
1	LIRIODENDRON TULIPIFERA - TULIP POPLAR	1" CAL.	##
20	ACER RUBRUM - RED MAPLE	2-3" WHIP	**
10	CORNUS FLORIDA - FLOWERING DOGWOOD	2-3" WHIP	**
7	JUGLANS NIGRA - BLACK WALNUT	2-3" WHIP	**
20	LIRIODENDRON TULIPIFERA - TULIP POPLAR	2-3" WHIP	**
11	PLATANUS OCCIDENTALIS - SYCAMORE	2-3" WHIP	**
7	QUERCUS ALBA - WHITE OAK	2-3" WHIP	**
13	QUERCUS RUBRA - RED OAK	2-3" WHIP	**
4	ROBINIA PSUEDO-ACACIA - BLACK LOCUST	2-3" WHIP	**
4	SASSAFRAS ALBIDUM - SASSAFRAS	2-3" WHIP	**
6	VIBURNUM PRUNIFOLIUM - BLACKHAW	18-24" B.T.	**

PLANTING SCHEDULE

QTY.	SPECIES	SIZE	SPACING
2	ACER RUBRUM - RED MAPLE	1" CAL.	##
1	LIRIODENDRON TULIPIFERA - TULIP POPLAR	1" CAL.	##
24	ACER RUBRUM - RED MAPLE	2-3" WHIP	**
22	FRAXINUS PENNSYLVANICA - GREEN ASH	2-3" WHIP	**
8	JUGLANS NIGRA - BLACK WALNUT	2-3" WHIP	**
16	LIRIODENDRON TULIPIFERA - TULIP POPLAR	2-3" WHIP	**
11	PLATANUS OCCIDENTALIS - SYCAMORE	2-3" WHIP	**
11	PRUNUS SEROTINA - BLACK CHERRY	2-3" WHIP	**
14	QUERCUS RUBRA - RED OAK	2-3" WHIP	**
8	ROBINIA PSUEDO-ACACIA - BLACK LOCUST	2-3" WHIP	**
4	SASSAFRAS ALBIDUM - SASSAFRAS	2-3" WHIP	**
18	SAMBUCUS CANADENSIS - ELDERBERRY	18-24" B.T.	**
14	VIBURNUM DENTATUM - ARROWWOOD	18-24" B.T.	**

PLANTING SCHEDULE

QTY.	SPECIES	SIZE	SPACING
9	ACER RUBRUM - RED MAPLE	1" CAL.	##
10	LIRIODENDRON TULIPIFERA - TULIP POPLAR	1" CAL.	##
61	ACER RUBRUM - RED MAPLE	2-3" WHIP	**
54	FRAXINUS PENNSYLVANICA - GREEN ASH	2-3" WHIP	**
20	JUGLANS NIGRA - BLACK WALNUT	2-3" WHIP	**
41	LIRIODENDRON TULIPIFERA - TULIP POPLAR	2-3" WHIP	**
27	PLATANUS OCCIDENTALIS - SYCAMORE	2-3" WHIP	**
27	PRUNUS SEROTINA - BLACK CHERRY	2-3" WHIP	**
34	QUERCUS RUBRA - RED OAK	2-3" WHIP	**
20	SASSAFRAS ALBIDUM - SASSAFRAS	2-3" WHIP	**
20	SAMBUCUS CANADENSIS - ELDERBERRY	18-24" B.T.	**
34	VIBURNUM DENTATUM - ARROWWOOD	18-24" B.T.	**

PLANTING SCHEDULE

QTY.	SPECIES	SIZE	SPACING
4	ACER RUBRUM - RED MAPLE	1" CAL.	##
3	LIRIODENDRON TULIPIFERA - TULIP POPLAR	1" CAL.	##
81	ACER RUBRUM - RED MAPLE	2-3" WHIP	**
67	FRAXINUS PENNSYLVANICA - GREEN ASH	2-3" WHIP	**
33	JUGLANS NIGRA - BLACK WALNUT	2-3" WHIP	**
67	LIRIODENDRON TULIPIFERA - TULIP POPLAR	2-3" WHIP	**
62	PLATANUS OCCIDENTALIS - SYCAMORE	2-3" WHIP	**
62	PRUNUS SEROTINA - BLACK CHERRY	2-3" WHIP	**
43	QUERCUS RUBRA - RED OAK	2-3" WHIP	**
33	SASSAFRAS ALBIDUM - SASSAFRAS	2-3" WHIP	**
19	SAMBUCUS CANADENSIS - ELDERBERRY	18-24" B.T.	**
38	VIBURNUM DENTATUM - ARROWWOOD	18-24" B.T.	**

PLANTING SCHEDULE

QTY.	SPECIES	SIZE	SPACING
6	ACER RUBRUM - RED MAPLE	1" CAL.	##
6	LIRIODENDRON TULIPIFERA - TULIP POPLAR	1" CAL.	##
133	ACER RUBRUM - RED MAPLE	2-3" WHIP	**
110	FRAXINUS PENNSYLVANICA - GREEN ASH	2-3" WHIP	**
53	JUGLANS NIGRA - BLACK WALNUT	2-3" WHIP	**
110	LIRIODENDRON TULIPIFERA - TULIP POPLAR	2-3" WHIP	**
102	PLATANUS OCCIDENTALIS - SYCAMORE	2-3" WHIP	**
65	PRUNUS SEROTINA - BLACK CHERRY	2-3" WHIP	**
71	QUERCUS RUBRA - RED OAK	2-3" WHIP	**
55	SASSAFRAS ALBIDUM - SASSAFRAS	2-3" WHIP	**
60	SAMBUCUS CANADENSIS - ELDERBERRY	18-24" B.T.	**
63	VIBURNUM DENTATUM - ARROWWOOD	18-24" B.T.	**

PLANTING SCHEDULE

QTY.	SPECIES	SIZE	SPACING
9	ACER RUBRUM - RED MAPLE	1" CAL.	##
10	LIRIODENDRON TULIPIFERA - TULIP POPLAR	1" CAL.	##
306	ACER RUBRUM - RED MAPLE	2-3" WHIP	**
161	CORNUS FLORIDA - FLOWERING DOGWOOD	2-3" WHIP	**
113	JUGLANS NIGRA - BLACK WALNUT	2-3" WHIP	**
306	LIRIODENDRON TULIPIFERA - TULIP POPLAR	2-3" WHIP	**
177	PLATANUS OCCIDENTALIS		