## 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 WORK/CONSTRUCTION INSPECTION
- DIVISION AT 410-313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.

  3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS
- PRIOR TO ANY EXCAVATION WORK.
- LOCATION: TAX MAP: 8, BLOCK 18, PARCEL 110 ZONING: RC-DEO
- ELECTION DISTRICT: 4th TOTAL TRACT AREA: 103.13± AC.
- NUMBER OF PROPOSED LOTS:
- NUMBER OF PROPOSED OPEN SPACE LOT: 1 NUMBER OF PROPOSED NON-BUILDABLE PRESERVATION PARCELS: 2 NUMBER OF PROPOSED NON-BUILDABLE PARCELS: 1 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. 5. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH
- THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT. 6. 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.

  7. COORDINATES ARE BASED ON NAD 83, MARYLAND STATE PLAN GRID AS PROJECTED
- BY HOWARD CO. GEODETIC CONTROL STATIONS Nos. 08FA AND 08IB.

  8. THE PROJECT IS NOT WITHIN THE METROPOLITAN DISTRICT. WATER AND SEWER FOR
- FOR THIS PROJECT SHALL BE PRIVATE AND WILL BE PROVIDED ON THE LOTS.
- 9. 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.
- 10. THE FLOODPLAIN LIMIT SHOWN HAS BEEN CALCULATED BY TSA GROUP, INC., DATED JUNE, 1998.
  AND APPROVED ON FEB. 1, 1999 (SP-99-01).

  11. WETLAND LIMITS SHOWN HEREON ARE BASED ON A DELINEATION BY ECO-SCIENCE
- PROFESSIONALS, INC., DATED JULY, 1998 AND WAS APPROVED ON FEB. 1, 1999. 12. ADEQUATE PUBLIC FACILITIES ORDINANCE TRAFFIC ANALYSIS WAS PREPARED
- BY LEE CUNNUNGHAM & ASSOCIATES, DATED JULY, 1998 AND APPROVED ON FEB. 1, 1999. 13. NOISE STUDY WAS PREPARED BY BENCHMARK ENGINEERING, INC. AND DATED SEPT. 3, 1998 AND
- APPROVED FEB. 1, 1999 (SP-99-01).

  14. THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY
- HILLIS-CARNES AND ASSOCIATES, DATED JUNE, 1998. 15. EXISTING UTILITIES SHOWN ARE TAKEN FROM RECORD INFORMATION AND FIELD
- LOCATIONS. CONTRACTOR TO VERIFY LOCATION PRIOR TO STARTING CONSTRUCTION. 16. FOREST STAND DELINEATION WAS PREPARED BY ECO-SCIENCE PROFESSIONALS,
- INC., DATED JULY, 1998 AND APPROVED ON FEB. 1, 1999 (SP-99-01).

  17. 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.

  18. 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). 19. TO THE BEST OF OWNERS KNOWLEDGE, THERE ARE NO CEMETERY LOCATIONS ONSITE.
- 20. 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. 21. 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.
- 22. ALL ROAD FILLS SHALL BE COMPACTED TO 95% AS DETERMINED BY AASHTO T-180.
  23. ON NOVEMBER 3, 1998, THE DIRECTOR THE 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 1-70 UNLESS ADEQUATE NOISE MITIGATION IS PROVIDED.
- 24. THE MARYLAND DEPARTMENT OF THE ENVIRONMENT APPLICATION TRACKING No. IS 99-NT-0115/199962677.

27. LANDSCAPE SURETY WITH DEVELOPERS AGREEMENT IS IN THE -AMOUNT OF \$59,850.00

25. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN THE AREA OF ANY OVERHEAD POWERLINES. FOREST CONSERVATION OBLIGATIONS ARE MET BY 10.0 AC. RETENTION ON-SITE (\$43,860.00.) PLUS 16.8 AC. RE-PLANTING ON-SITE (\$219,542.00) FOR A TOTAL DEVELOPER'S AGREEMENT SURETY FOR FOREST CONSERVATION OF \$263,102.00.

#### RIGHT OF WAY ELEVATION CHART NAD 83 R/WPT. NO. DESCRIPTION ELEVATION 637.21 CONC. MON. SET 200 REBARECAP 640.58 REBARECAP 638.54 639.44 CONC. MON. SET 639.86 REBARECAP 204 639.61 REBARÉCAP 205 REBARZCAP 634.91 623.89 REBAR&CAP 624.18' P. K. NAIL SET <u> 208</u> 624.06 209 P. KNAIL SET REBAR& CAP 624.09 634.86 REBAR & CAP REBAR & CAP 639.251 REBAR & CAP 639.76 640.60 REBAR & CAP REBAR & CAP 626.54' REBARECAP 613.95' REBAR & CAP 604.73' 217 REBAR& CAP 587,32 218 585.60 REBAR & CAP 219 584.76 REBAR & CAP 220 586.851 REBAR&CAP REBARECAP 604.97' REBAR& CAP 614.57 626.52 REBAR & CAP REBAR & CAP 640.26 640.36' REBAR & CAP .226 638.27 REBAR & CAP 227 228. REBAR & CAP 641.51 636.76

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

REBAR & CAP

OAKDALE DRIVE

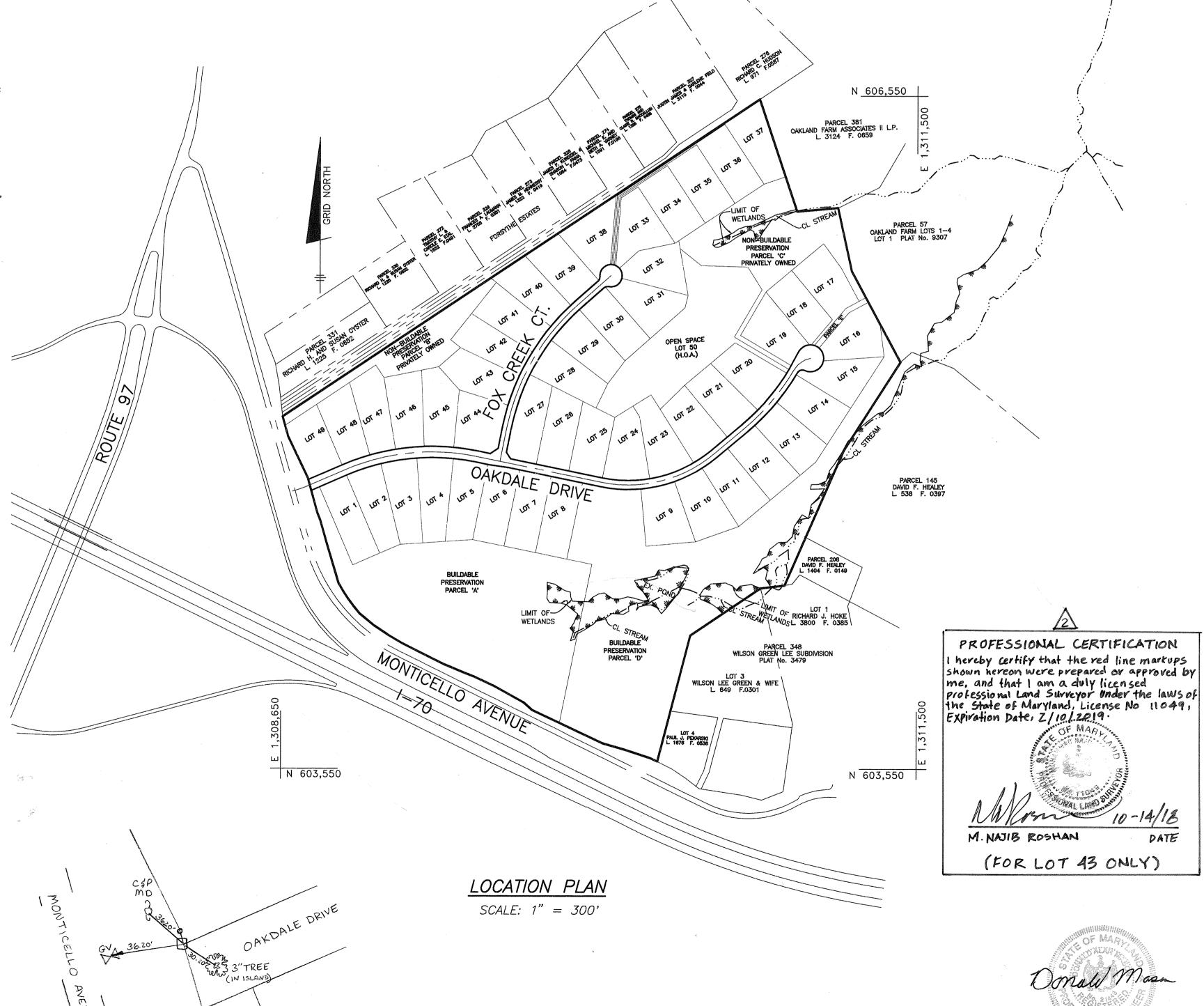
MAILBOX

HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

# MONTICELLO

4th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

# FINAL ROAD, STORMWATER MANAGEMENT AND STORM DRAINAGE CONSTRUCTION PLAN



MONUMENT No. 08F HOWARD COUNTY MONUMENT No. 081B

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 1-70 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. 08IB 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 1-70 AND 76.8' 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' ELÉV. 596.55'

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

LOT43 SITE SWM. GRADING AND SEDIMENT CONTROLPLAN

DATE REVISION BY 9/15/18 ADDED SHEET 22 FOR NEW IMPROVEMENTS TO LOT 43 NJR & ASSOCIATES 12-19-03 REVISED PER AS-BUILT CONDITIONS NO. DATE REVISION

> **BENCHMARK** ENGINEERS A LAND SURVEYORS A PLANNERS

ENGINEERING, INC.

8480 BALTIMORE NATIONAL PIKE A SUITE 418 A 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

DRAFT:

**2** 22

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

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

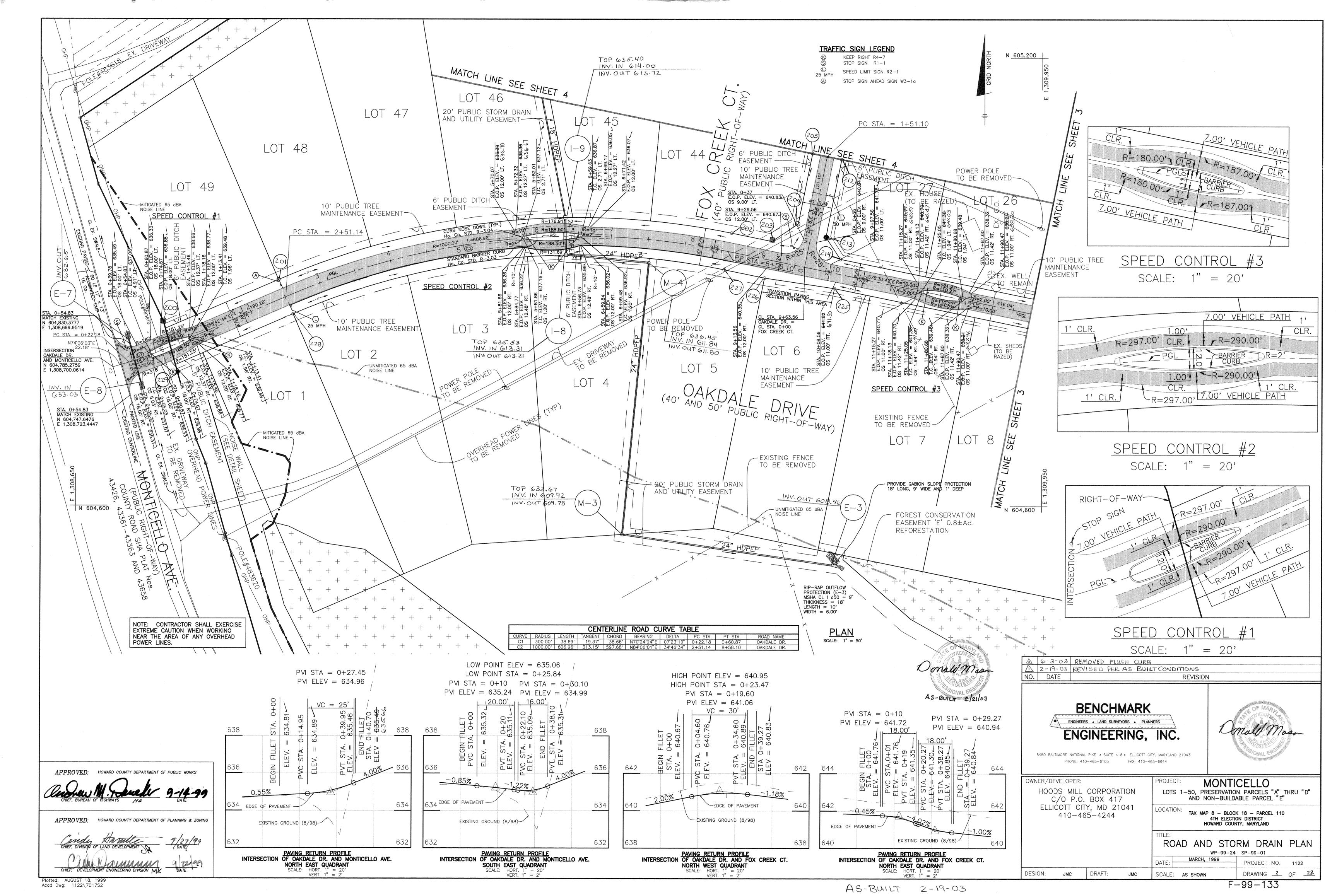
COVER SHEET WP-99-24 SP-99-01 PROJECT NO. 1122 JMC SCALE: AS SHOWN DRAWING 1 OF 22

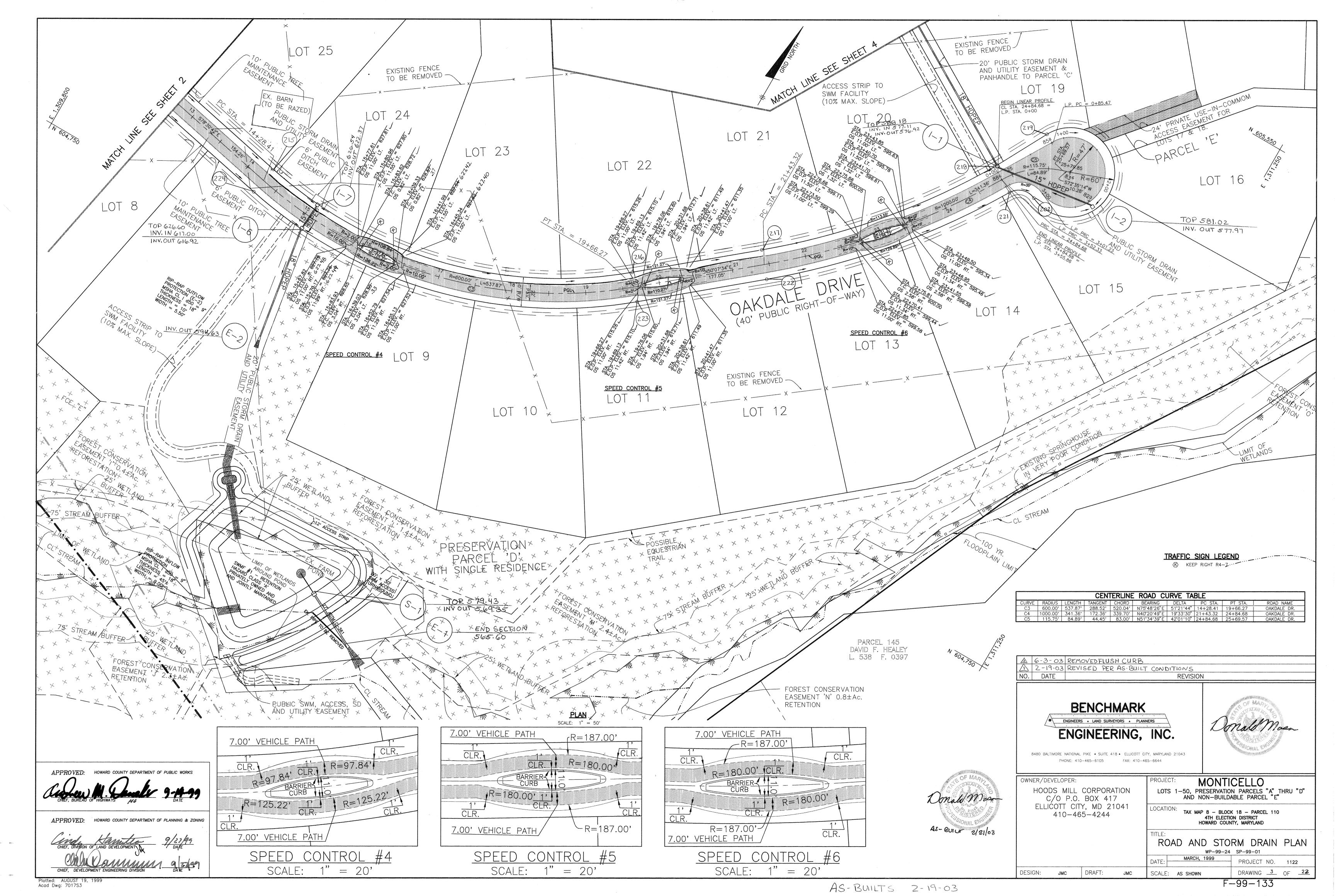
F - 99 - 133

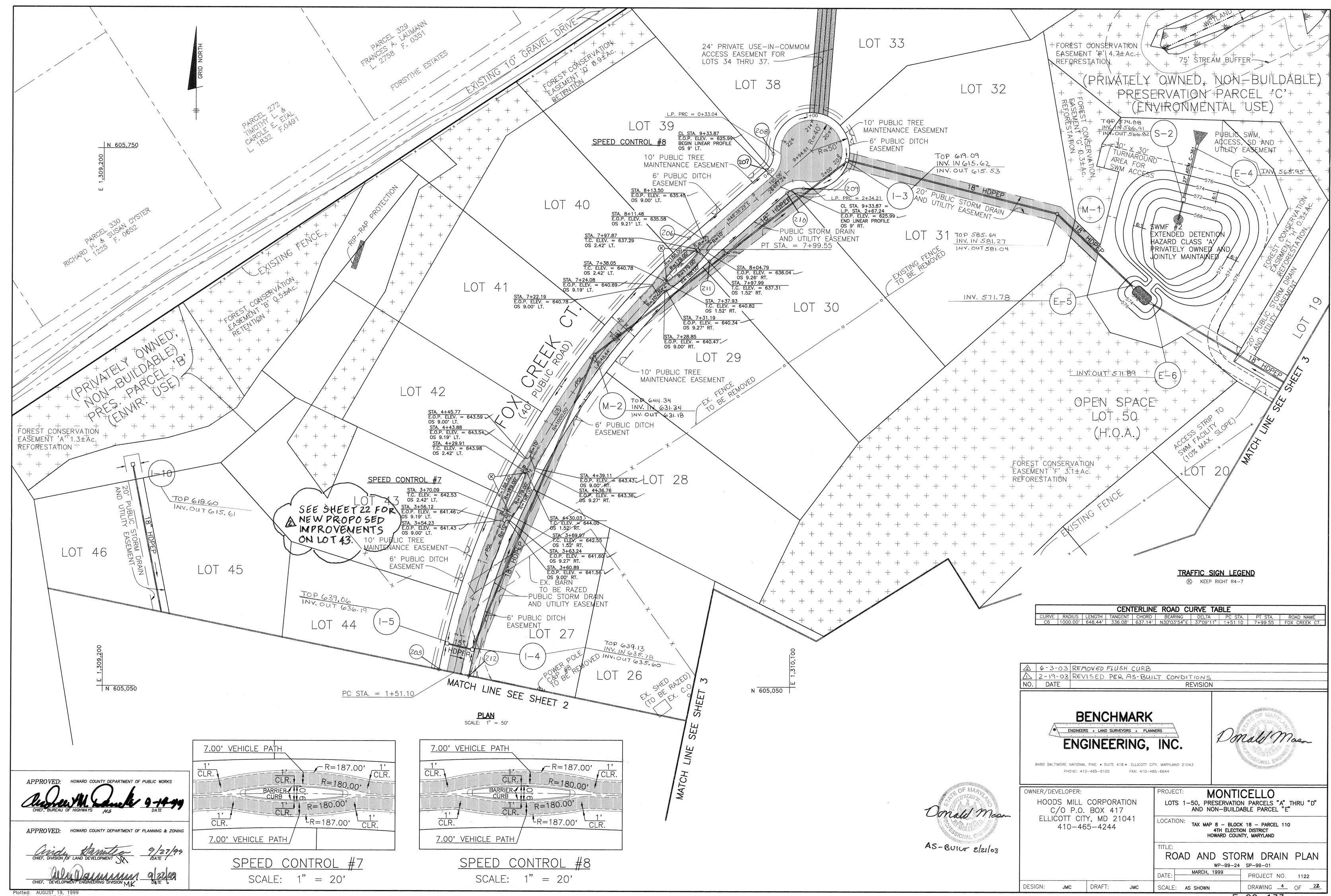
Acad Dwg: 7009S1

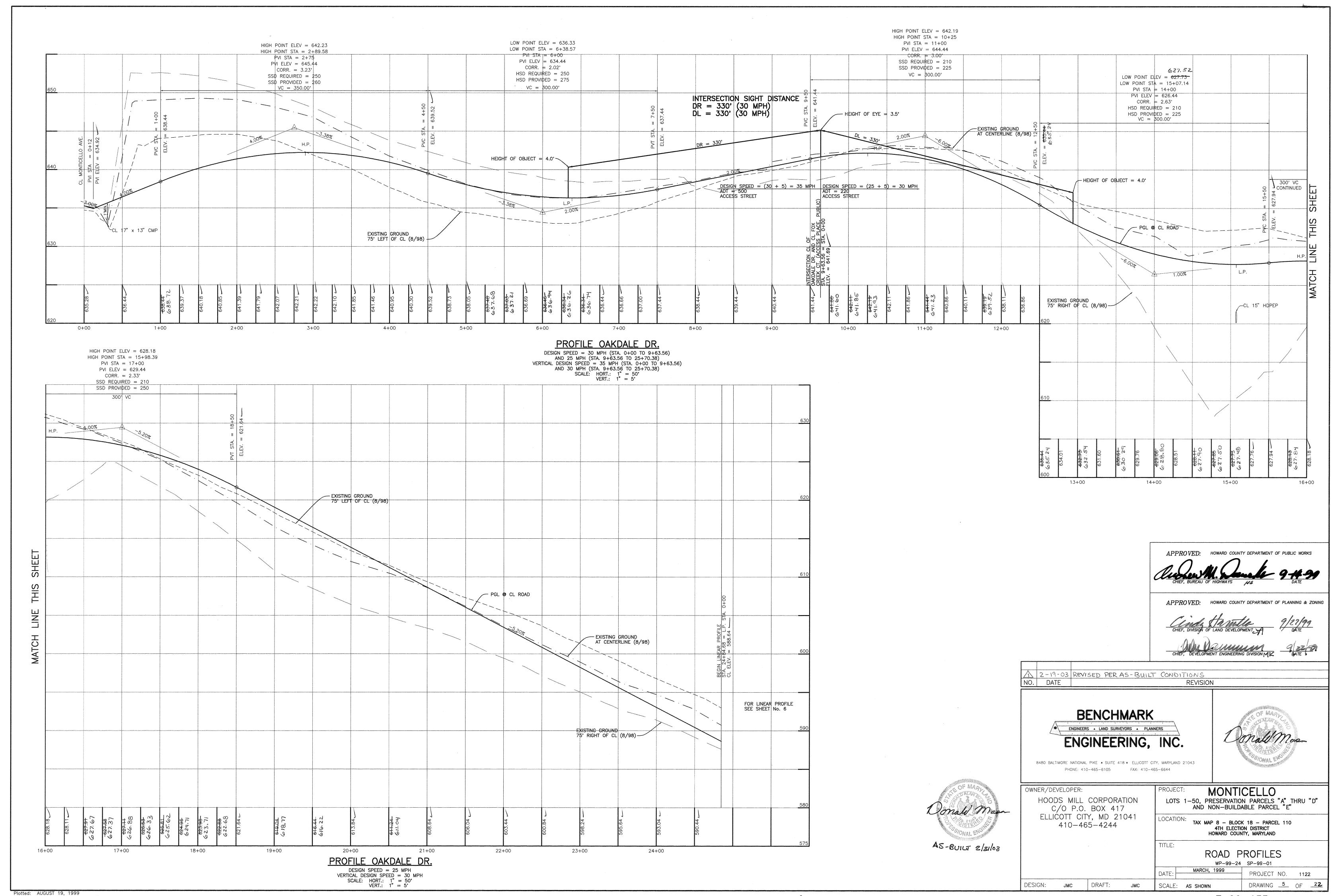
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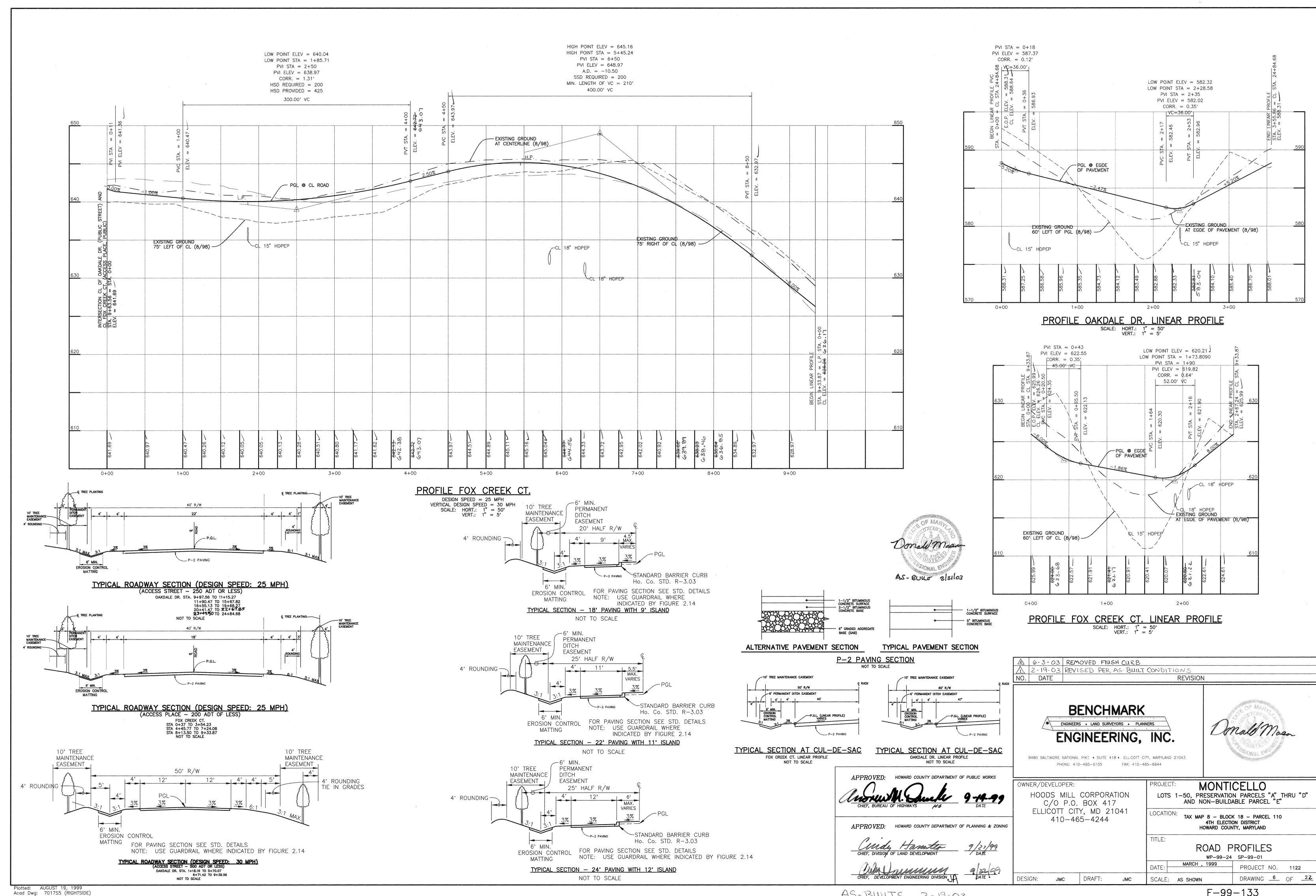
AS-BUILT 2/21/03

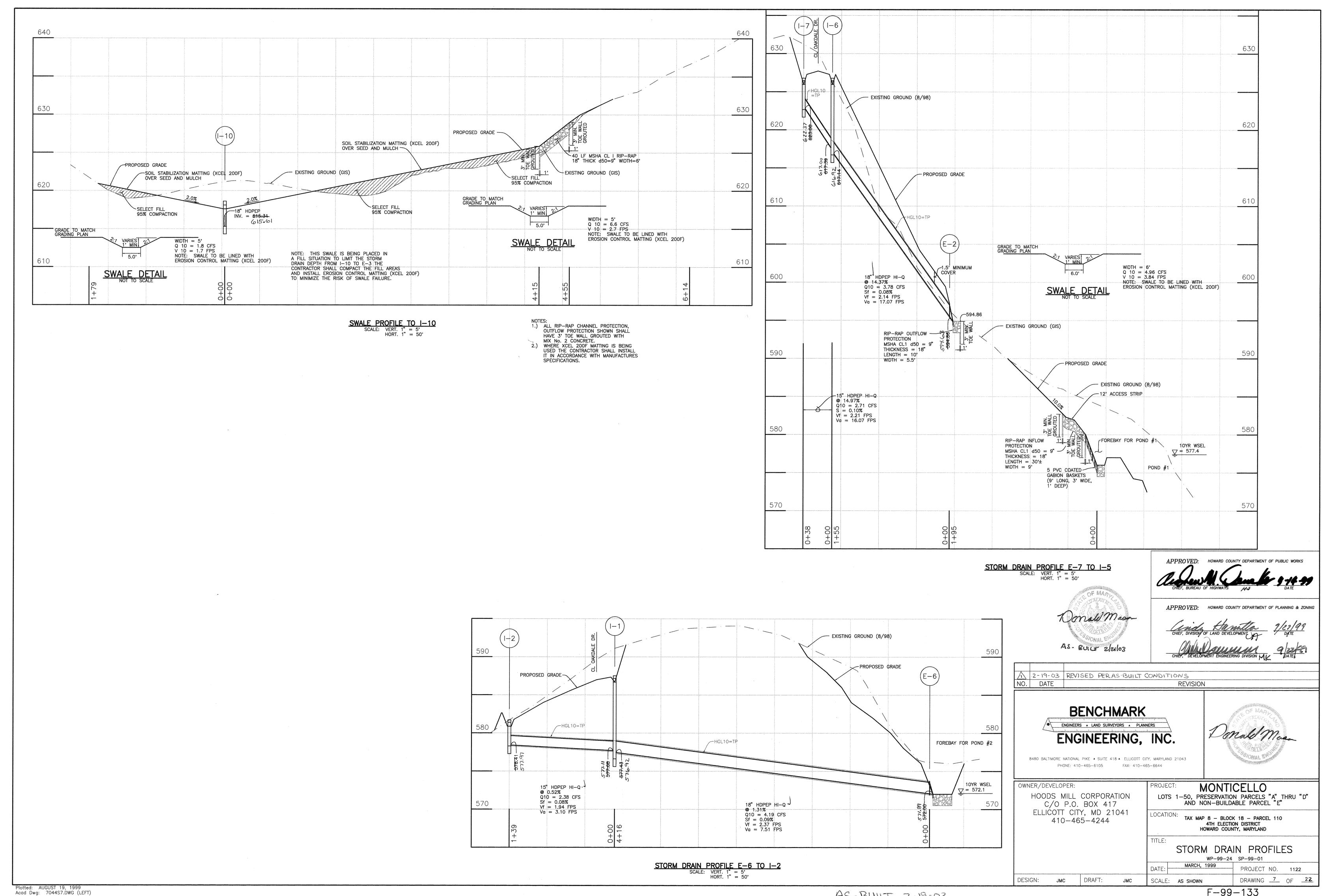


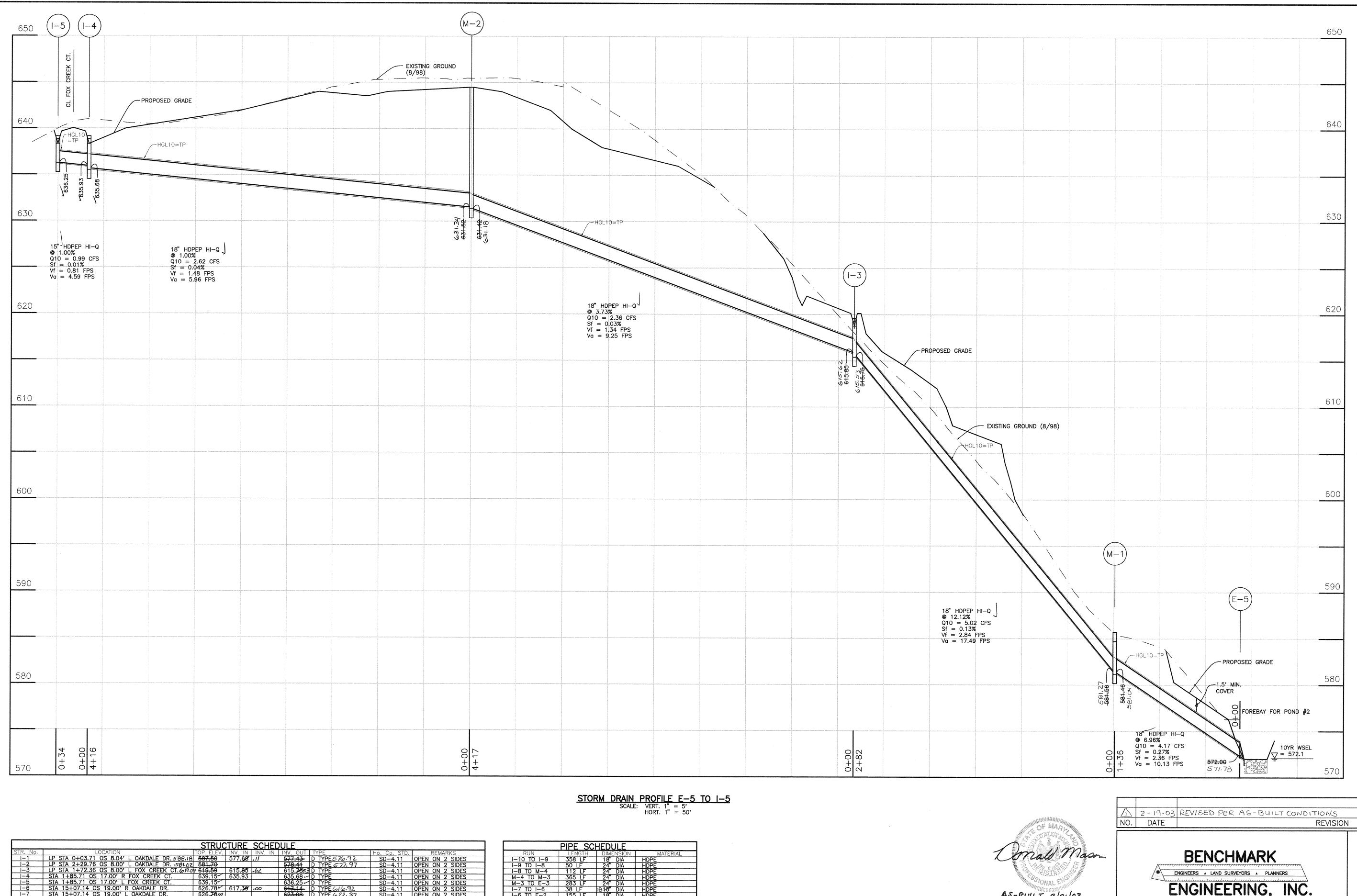


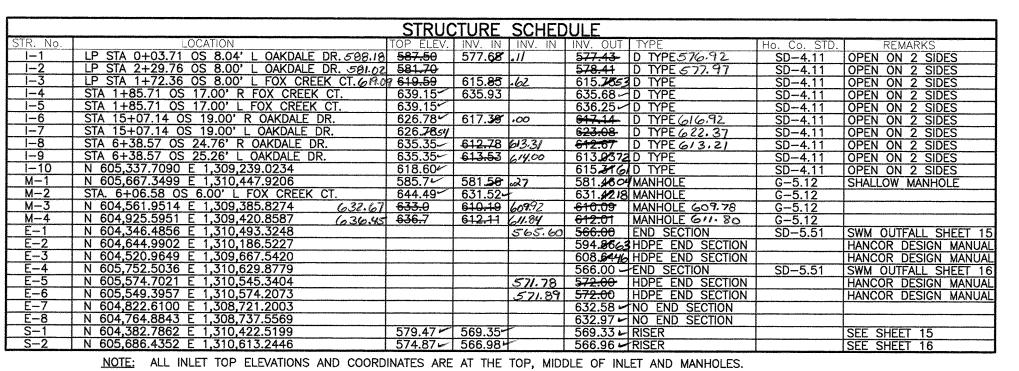


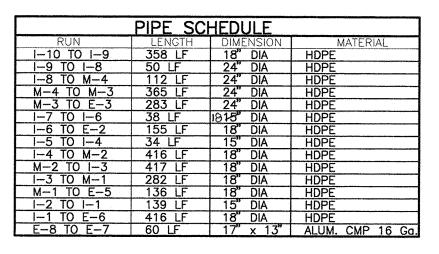












AS-BULT 2/21/03

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

ENGINEERING, INC. 8480 BALTIMORE NATIONAL PIKE A SUITE 418 A ELL COTT CITY, MARYLAND 21043 PHONE: 410-465-6105 FAX: 410-465-6644

JMC

JMC

DRAFT:

PROJECT: MONTICELLO

LOTS 1-50, PRESERVATION PARCELS "A" THRU "D"

AND NON-BUILDABLE PARCEL "E" OWNER/DEVELOPER: HOODS MILL CORPORATION C/O P.O. BOX 417 ELLICOTT CITY, MD 21041 410-465-4244

LOCATION:

TAX MAP 8 - BLOCK 18 - PARCEL 110

4TH ELECTION DISTRICT

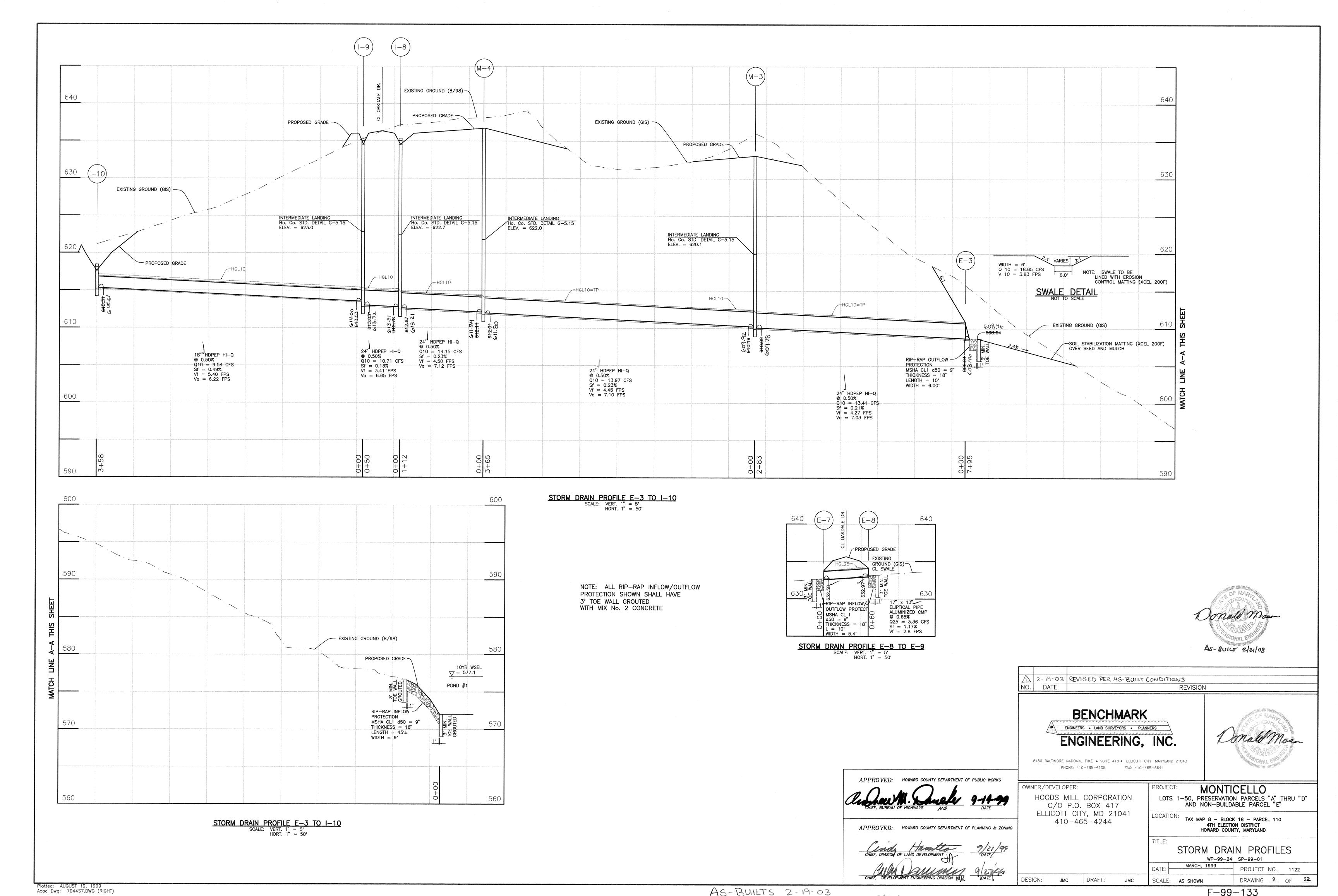
HOWARD COUNTY, MARYLAND TITLE: STORM DRAIN PROFILES

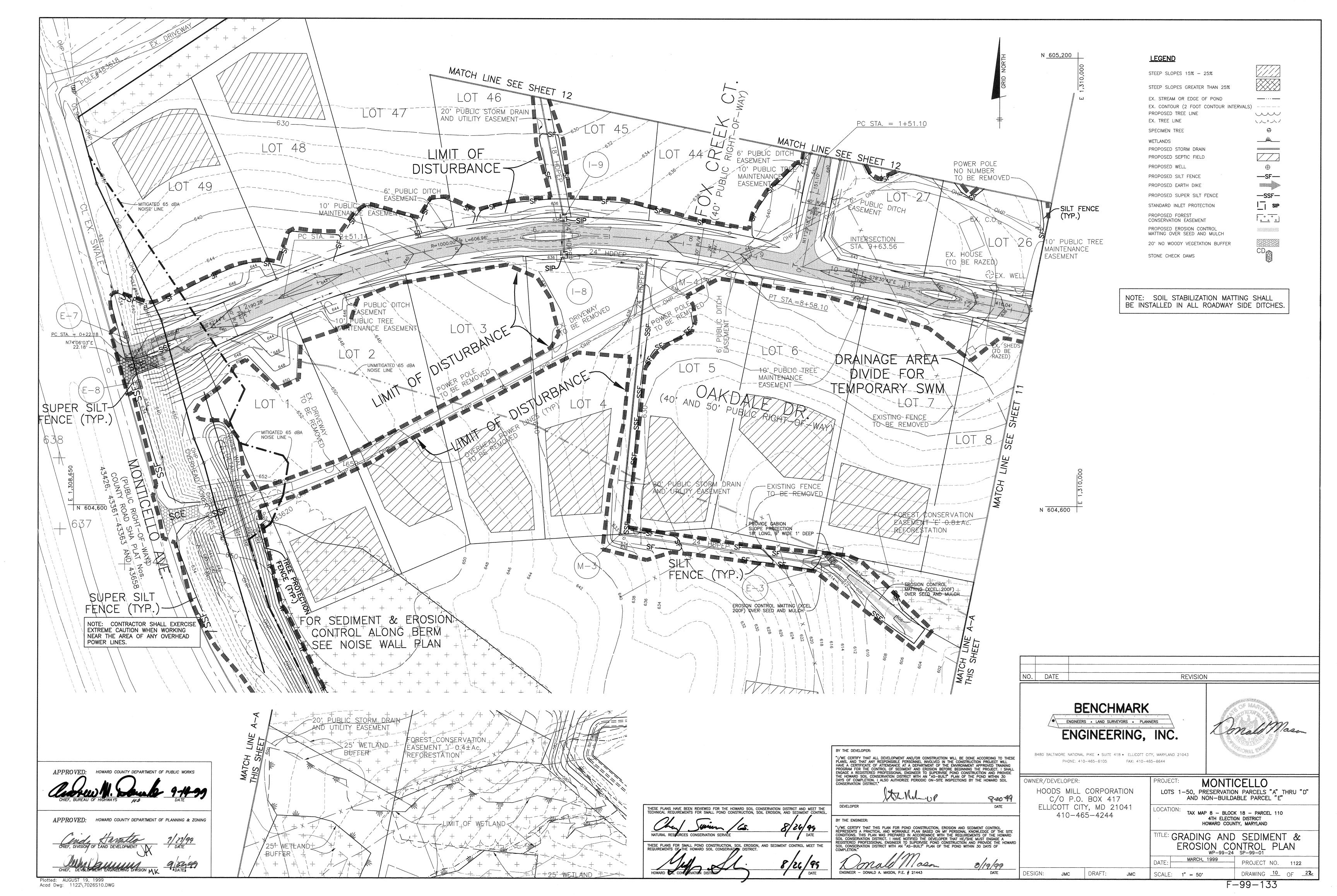
WP-99-24 SP-99-01 PROJECT NO. 1122 DRAWING 8 OF 22 SCALE: AS SHOWN

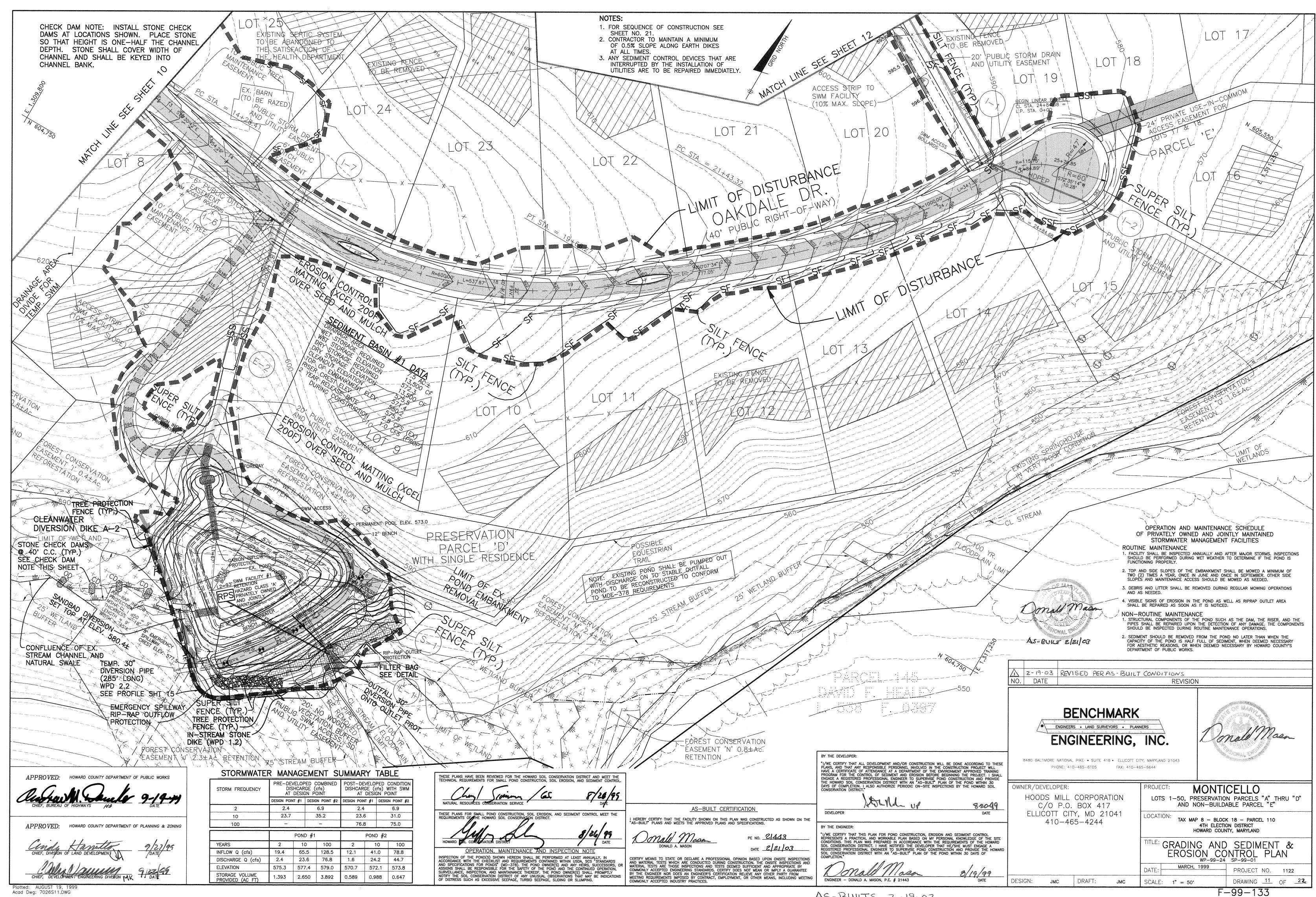
Plotted: AUGUST 19, 1999 Acad Dwg: 7044S7.DWG (CENTER)

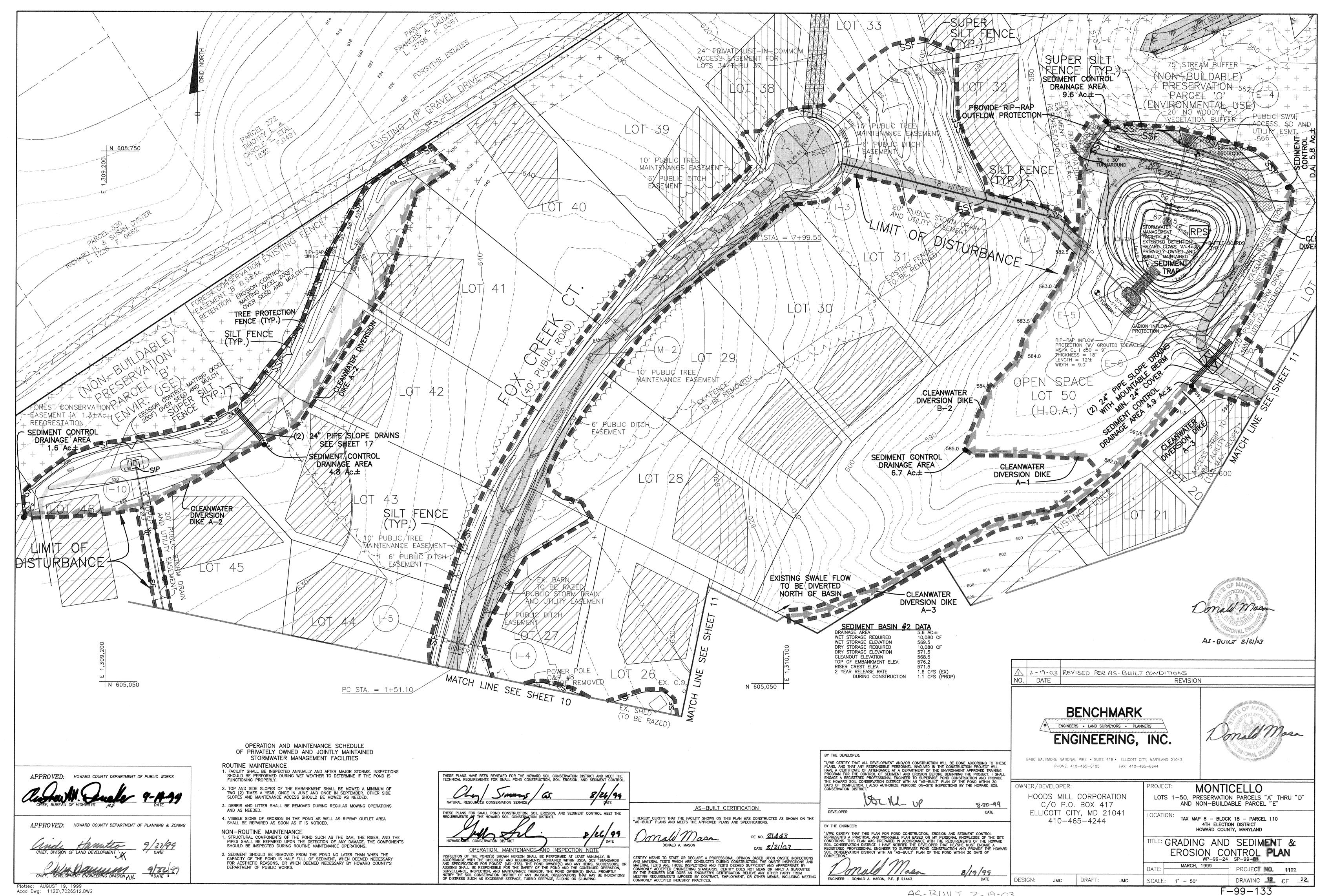
AS-BUILTS 2-19-03

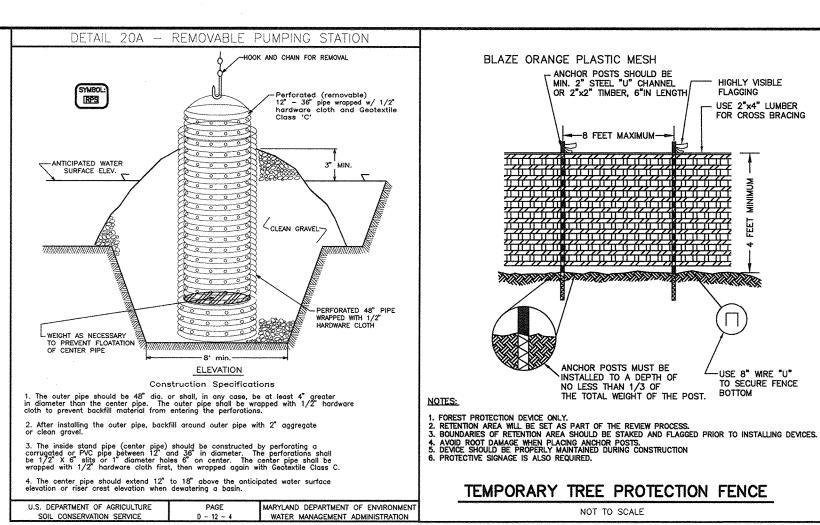
F-99-133











#### PERMANENT SEEDING NOTES

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

Seedbed Preparation: Loosen upper three inches of soil be raking, discing or other acceptable means before seeding. (If not previously loosened) Soil Amendments: In lieu of soil test recommendations, use on the following

- 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 ureaform 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 60 lbs per acre (1.4 lbs/1000 sf) of Kentucky 31 Tall Fescue. 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 sod. Option 3) seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching: Apply 1-1/12 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

gallons per acre (8 gal/1000 sf) for anchoring.

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

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

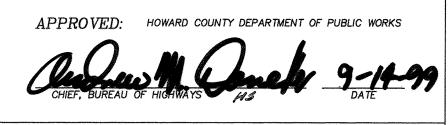
Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf). Seeding: For periods March 1 through April 30 and from August 15 through November 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sf). For the period May 1 through August 14, seed with 3 lbs per acre of Weeping 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 sod. 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

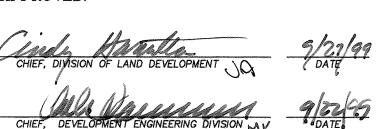
Refer to the 1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control for rate and methods not covered.

## FACILITY No. 1 CONSTRUCTION SEQUENCE

- 1) CONSTRUCT CLEANWATER DIVERSION DIKE, TEMPORARY 24" DIVERSION PIPE AND IN-STREAM 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 IN AREA OF EXISTING/PROPOSED EMERGENCY SPILLWAY LOCATION. THE PROPOSED SPILLWAY MUST BE PLACED WITHIN UNDISTURBED EXISTING GROUND. AT THE TIME O EMBANKMENT REMOVAL THE ON-SITE GEOTECHNICAL ENGINEER SHALL INSPECT EMBANKMENT FOR SIGNS OF SOURCE OF THE EXISTING SEEP PRESENT WITHIN EXISTING POND EMERGENCY SPILLWAY. IF ANY UNDERDRAIN OR RELATED DESIGN CHANGES ARE REQUIRED O CONTROL SEEPAGE THEY MUST BE APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT T 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 AN STRUCTURE 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 SWMF No. 1 SEDIMENT BASIN HAS BEEN INSTALLED AS PER CONTRACT DRAWINGS AND THAT THE BASIN REMAINS DEWATERED TO THE WET POOL 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 CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE SEDIMENT CONTROL INSPECTOR AND ENGINEER TO CONSTRUCT PROPER STREAM DIVERSION AROUND CONSTRUCTION AREA.



HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING



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

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

## SEDIMENT CONTROL NOTES

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections and Permits, Sediment Control

Division prior to the start of any construction (313-1855).

2. All vegetative and structural practices are to be installed accordingly to the provisions of this plan and are to be in conformance with the most current Maryland Standards and Specifications for Soil Erosion and Sediment Control" and revisions thereto. Following initial soil disturbances or redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater

than 3:1, b) 14 calendar days as to all other disturbed or graded areas on the project site. 4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the "Howard

County Design Manual, Storm Drainage". All disturbed areas must be stabilized within the time period specified above in accordance with the "1994 Maryland Standards and Specifications" for Soil Erosion and Sediment Control" for Permanent Seedings (Sec. 51) Sod (Sec. 54), Temporary Seeding (Sec. 50) and Mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and

establishment of grasses. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.

103.13± acres

19.8± acre

18.5± acre

1.3± acre

26.711 CY

Site Analysis: Total Area of Site: Area to be Disturbed: Area to be roofed or paved: Area to be vegetatively stabilized: Total Cut:

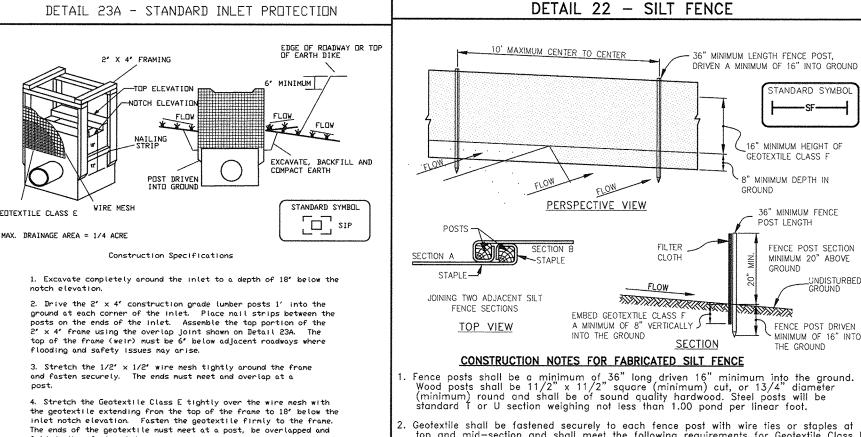
26,195 C.Y. Offsite Waste/Borrow Area Location : \* 8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

Additional sediment controls must be provided, if deemed necessary by the

Howard County DPW Sediment Control Inspector. 10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the

inspection agency is made. 11. Trenches for the construction of utilities is limited to three pipe lengths or that which can be back filled and stabilized within one working day, whichever is shorter.

12. Quantities and estimates shown are for sediment control purposes only. Contractor shall prepare his/her own quantity estimates to his/her satisfaction. \* It is the responsibility of the contractor to identify the spoil/borrow site and notify and gain approval from the sediment control inspector of the site and it's grading permit number at the time of construction.



U.S. DEPARTMENT OF AGRICULTURE

PSD - 12

U.S. DEPARTMENT OF AGRICULTURE PAGE MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE PAGE SOIL CONSERVATION SERVICE B - 5 - 4 VATER MANAGEMENT ADMINISTRATION SOIL CONSERVATION SERVICE B - 5 - 4A

THICKNESS SHA

(T)

18**"** 

18"

18"

18**"** 

18**"** 

18"

18"

18"

5. Backfill around the inlet in compacted 6' layers until the

should be at least 6' higher than the top of the frame.

rain and the geotextile replaced when it becomes cloqued

top elevation on the sides.

eyer of earth is level with the notch elevation on the ends and

6. If the inlet is not in a sump, construct a compacted earth dike

7. The structure must be inspected periodically and after each

MARYLAND DEPARTMENT OF ENVIRONMEN

DETAIL 4 - PIPE SLOPE DRAIN

Table 6 Design Criteria for Pipe Slope Drain

PSD-18

PSD-21

PSD-24

STRUCTURE D-50

E-2

E-3

E-4

E-5

E-6

E-7

E-8

9" 10'

9" 10'

9"

9"

9" 10'

9" 10'

9" | 20' LEVEL @

\* SEE PLAN VIEW SHEET No. 12 AND

SWM DETAIL SHEET No. 16 FOR FOREBAY INFORMATION

OUTLET PROTECTION DETAIL

NOT TO SCALE

FOREBAY\*

FOREBAY\*

9" | 20' LEVEL @ 0% | 10.5'

5.75'

FOREBAY\*

FORFRAY\*

5.4'

5.4'

)% 10.5°

PSD-24 (2)

MINIMUM 20" ABOVE MINIMUM OF 16" INT Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be top and mid-section and shall meet the following requirements for Geotextile Class 0.3 gal ft / minute (max.) Test: MSMT 3 Filtering Efficiency Where ends of geotextile fabric come together, they shall be overlapped, folded

Silt Fence shall be inspected after each rainfall event and maintained when bulges

PIPE SLOPE DRAIN

Construction Specifications - Pipe Slope Drain

1. The Pipe Slope Drain (PSD) shall have a slope of 3 percen

2. The top of the earth dike over the inlet pipe shall be a

pipe or equivalent PVC pipe can be used. All connections

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

5. The Pipe Stope Drain shall be securely anchored to the

slope by staking at the grammets provided. Spacing for

anchors shall be as provided by manufacturer's specification

In no case shall less than two (2) anchors be provided, equally spaced along the length of pipe. These details should

6. The soil around and under the pipe and end section shall be

8. Whenever possible where a PSD drains an unstabilized area,

it shall outlet into a sediment trap or basin. If this is not

discharging into a trap or basin the PSD shall discharge at

the same elevation as the wet pool elevation. The discharge

from the PSD must be as far away from the sediment control

possible then the slope drain will discharge into a stable

9. When the drainage area is stabilized, the PSD shall

discharge onto a stabilized area at a non-erosive velocity.

10. Inspection and any required maintenance shall be performed

PLAN

hand tamped in 4 inch lifts to the top of the earth dike

7. All pipe connections shall be watertight.

periodically and after each rain event.

11. The inlet must be kept open at all times

extend out 5' from the inlet. The filter cloth shall be "keyed in" on all sides.

shall be watertight.

be provided by pipe suppliers

outlet as possible.

least 2 times the pipe diameter measured at the invert of the

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

SILT FENCE

SILT FENCE DESIGN CRITERIA

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

DETAIL 1 - EARTH DIKI

FLOW CHANNEL STABILIZATION

' stone or recycled concrete equivalent pressed into the soil 7" minimum.

GRADE 0.5% MIN. 10% MAX

CONSTRUCTION SPECIFICATIONS

All temporary earth dikes shall have uninterrupted positive grade to an outlet.

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

. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed,

and disposed of so as not to interfere with the proper functioning of the dike.

. All earth removed and not needed for construction shall be placed so that it will

PAGE

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

. All trees, brush, stumps, obstructions, and other objectional material shall be remove

. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other

CROSS SECTION

PLAN VIEW

Seed and cover with Erosion Control Matting or line with sod.

Spot elevations may be necessary for grades less than 1%

irregularities which will impede normal flow.

not interfere with the functioning of the dike

6. Fill shall be compacted by earth moving equipment.

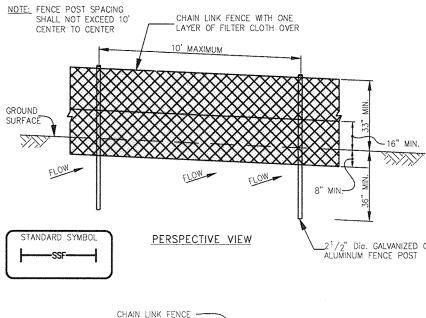
Seed and cover with straw mulch.

EXCAVATE TO PROVIDE

REQUIRED FLOW WIDTH

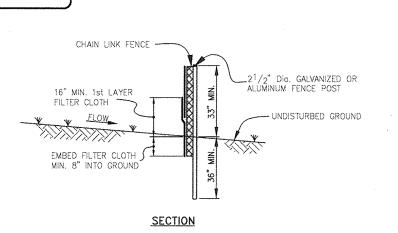
a-DIKE HEIGHT

c-FLOW WIDTH



\_\_2<sup>1</sup>/<sub>2</sub>" Dio. GALVANIZED OR ALUMINUM FENCE POST CHAIN LINK FENCE -

DETAIL 33 - SUPER SILT FENCE



be used, substituting 42" fabric and 6' length posts. Chain link fence shall be fastened securely to the fence posts with wire fies. The lower tension wire, brace and truss rods, drive anchors and post caps are not . Filter cloth shall be fastened securely to the chain link fence with ties spaced every  $24^{\circ}$  at the top and mid section. . Filter cloth shall be embedded a minimum of 8" into the ground. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence heigh Filter cloth shall be fastened securely to each fence post with wire ties or staples at Tensile Modulus Test: MSMT 509 0.3 gal/ft /minute (max.)

Filtering Efficiency

SUPER SILT FENCE

CONSTRUCTION SPECIFICATIONS

. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall

SUPER SILT FENCE DESIGN CRITERIA

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

PAGE MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE
H - 26 - 3 WATER MANAGEMENT ADMINISTRATION SOIL CONSERVATION SERVICE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE DETAIL 2 - TEMPORARY SWALE DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE 2:1 OR FLATTER — SLOPES SWALE A SWALE E D MINIMUM C 1' MIN. 1' MIN. D 4' MIN. 6' MIN.

OUTLET AS REQUIRED

MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE PAGE MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE PAGE MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION SOIL CONSERVATION SERVICE F - 17 - 3 WATER MANAGEMENT ADMINISTRATION

FLOW \_ 0.5% SLOPE MINIMUM PLAN VIEW DRAINAGE AREA = 10 ac (MAX) FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX. A - 2/B - 3

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

CROSS SECTION

Construction Specifications 1. All temporary swales shall have uninterrupted positive grade to an 2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed stabilized area at a non-erosive velocity. shall be removed and disposed of so as not to interfere with the

5. The swale shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow 6. Fill, if necessary, shall be compacted by earth moving equipment. 7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the swale. 8. Inspection and maintenance must be provided periodically and after

OR BETTER PROFILE EXISTING GROUND PLAN VIEW SCE Construction Specifications

1. Length - minimum of 50' (\*30' for single residence lot).

2. Width- 10' minimum, should be flared at the existing road to provide a turning 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 residence to use geotextile. 4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the

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 mounted berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required 6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance

## DETAIL 30 - EROSION CONTROL MATTING DETAIL 18 - SEDIMENT BASIN BAFFLES Le= L1+ L2+ L3+ L4 TYP. STAPLES NO.1 CONSTRUCTION SPECIFICATIONS KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH. 6" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" DOWN SLOPE FROM THE TRENCH. SPACING BETWEEN STAPLES IS 6".

MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE PAGE
WATER MANAGEMENT ADMINISTRATION SOIL CONSERVATION SERVICE E - 15 - 3A

OUT OR FIL

CUT OR FILL

MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE

2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES. 3. BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL. 4. STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP, 2 OUTER ROWS, AND 2 ALTERNATING ROWS DOWN 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", SHIPLAP FASHION. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 6" APART IN A STAGGERED PATTERN ON EITHER SIDE.

6. THE DISCHARGE END OF THE MATTING LINER SHOULD BE SIMILARLY SECURED WITH WITH 2 DOUBLE ROWS OF STAPLES. NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA

PLAN VIEWS D = DISTANCE BETWEEN INFLOW AND OUTFLOW A = AREA OF NORMAL POOL We = EFFECTIVE WIDTH = A/D Le= TOTAL DISTANCE FROM THE INFLOW POINT AROUND THE BAFFLES TO THE RISER FORMULA:  $\frac{Le}{Wa} \ge 2$ RISER (OUTLET) BAFFLE BOARD |---|

MARYLAND DEPARTMENT OF ENVIRONMENT | U.S. DEPARTMENT OF AGRICULTURE

STANDARD SYMBO

A-2 B-3 *→* -/*>* -

BAFFLE DETAIL PAGE
G - 22 - 2 MARYLAND DEPARTMENT OF ENVIRONMENT
WATER MANAGEMENT ADMINISTRATION
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

MARYLAND DEPARTMENT OF ENVIRONMEN
WATER MANAGEMENT ADMINISTRATION

SEQUENCE OF CONSTRUCTION

THE CONTRACTOR(S) IS TO IDENTIFY AND MARK ANY HAZARDOUS CONDITIONS THAT MAY EXIST ONSITE, SUCH AS OVERHEAD POWERLINES, OLD WELLS, GAS LINES, ETC. INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, SUPER SILT FENCE, CLEANWATER DIVERSIONS, PIPE SLOPE DRAINS AND TREE PROTECTION FENCE.
APPROVAL FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR IS REQUIRED TO PROCEED TO THE NEXT STEP.

DAY 6-35 CLEAR AND GRUB AREA OF SWM FACILITIES AND COMMENCE WITH CONSTRUCTION OF FACILITIES (SEE FACILITY No. 1 CONSTRUCTION SEQUENCE). APPROVAL FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR IS REQUIRED TO PROCEED TO THE NEXT STEP DAY 36-43 CLEAR AND GRUB SITE. CONTRACTOR TO CONTACT THE HEALTH DEPARTMENT FOR

PROPER ABANDONMENT OF WELL AND SEPTIC SYSTEMS PRIOR TO HOUSE DEMOLITION. DAY 44-59 COMMENCE WITH SITE GRADING AND UTILITY INSTALLATION.

DAY 60-74 CONSTRUCT STORM DRAIN, WATER QUALITY AND STORM WATER MANAGEMENT SYSTEMS AND UTILITIES.

DAY 75-82 FINAL GRADE SITE AND PERMANENTLY STABILIZE. DAY 83-86 INSTALL PAVEMENT.

OBTAIN GRADING PERMIT.

DAY 87-90 INSTALL REQUIRED LANDSCAPING AS SPECIFIED ON THE PLAN. DAY 91-95 UPON APPROVAL OF HOWARD COUNTY SEDIMENT CONTROL INSPECTOR,

REMOVE ALL SEDIMENT CONTROL DEVICES. PERMANENTLY STABILIZE AS REQUESTED.

the Howard Soil Conservation District. DEVELOPER'S CERTIFICATE I/We certify that all development and construction will be done in accordance with this plan of development and plan for erosion and sediment control and deemed necessary.

ENGINEER'S CERTIFICATE

that all responsible personnel involved in the construction of this project will have a certificate of attendance at a Department of the Environment approved training program for the control of sediment and erosion before beginning the project. I also authorize periodic onsite inspection by the Howard Soil Conservation District or their authorized agents, as are 8 50 98

I hereby certify that this plan for erosion and sediment control represents

a practical and workable plan based on my personal knowledge of the site

conditions and that it was prepared in accordance with the requirements of

REVISION

**BENCHMARK** ENGINEERS A LAND SURVEYORS A PLANNERS

DATE

NO.

DESIGN:

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



OWNER/DEVELOPER: PROJECT: HOODS MILL CORPORATION

DRAFT:

JMC

C/O P.O. BOX 417 ELLICOTT CITY, MD 21041 410-465-4244

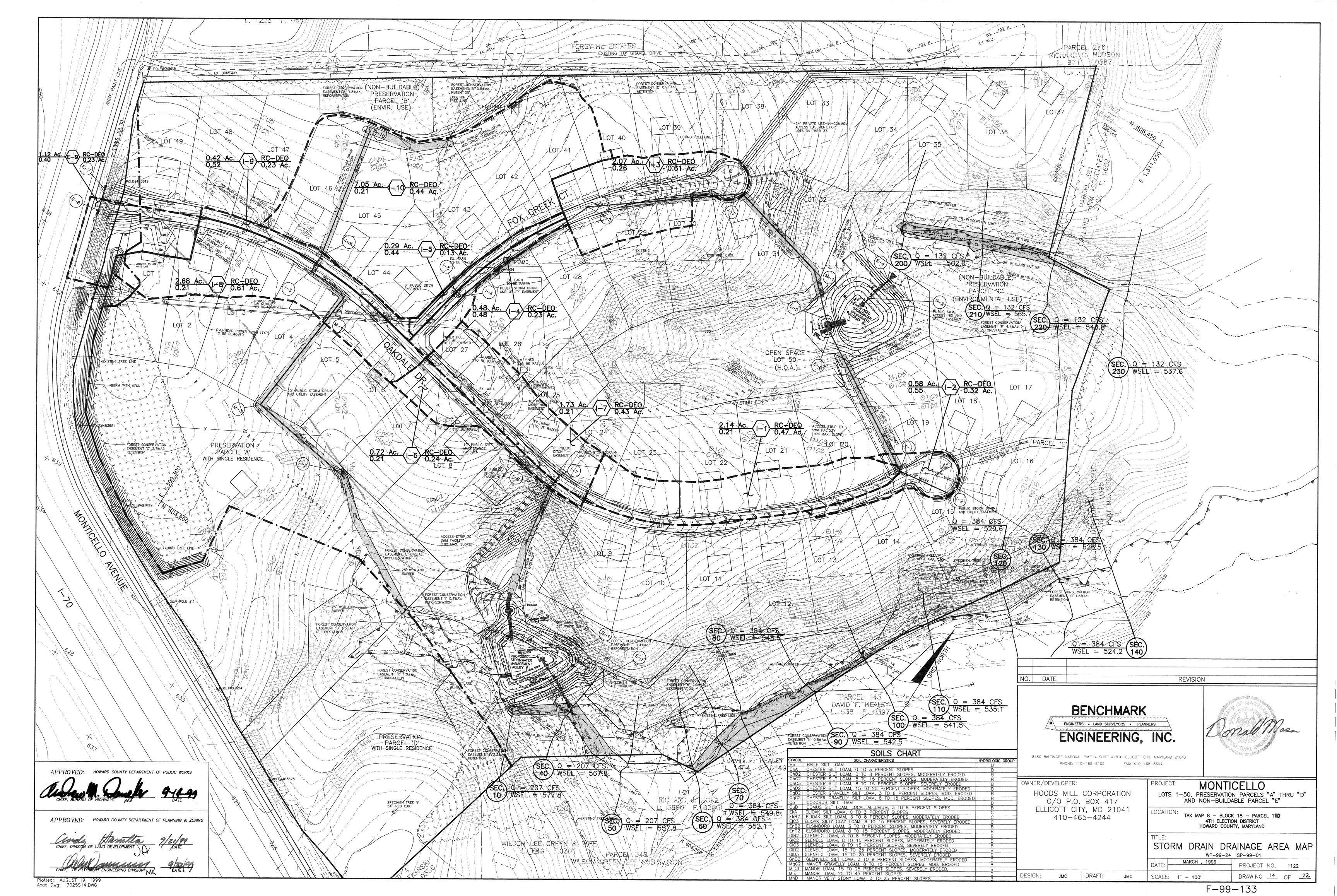
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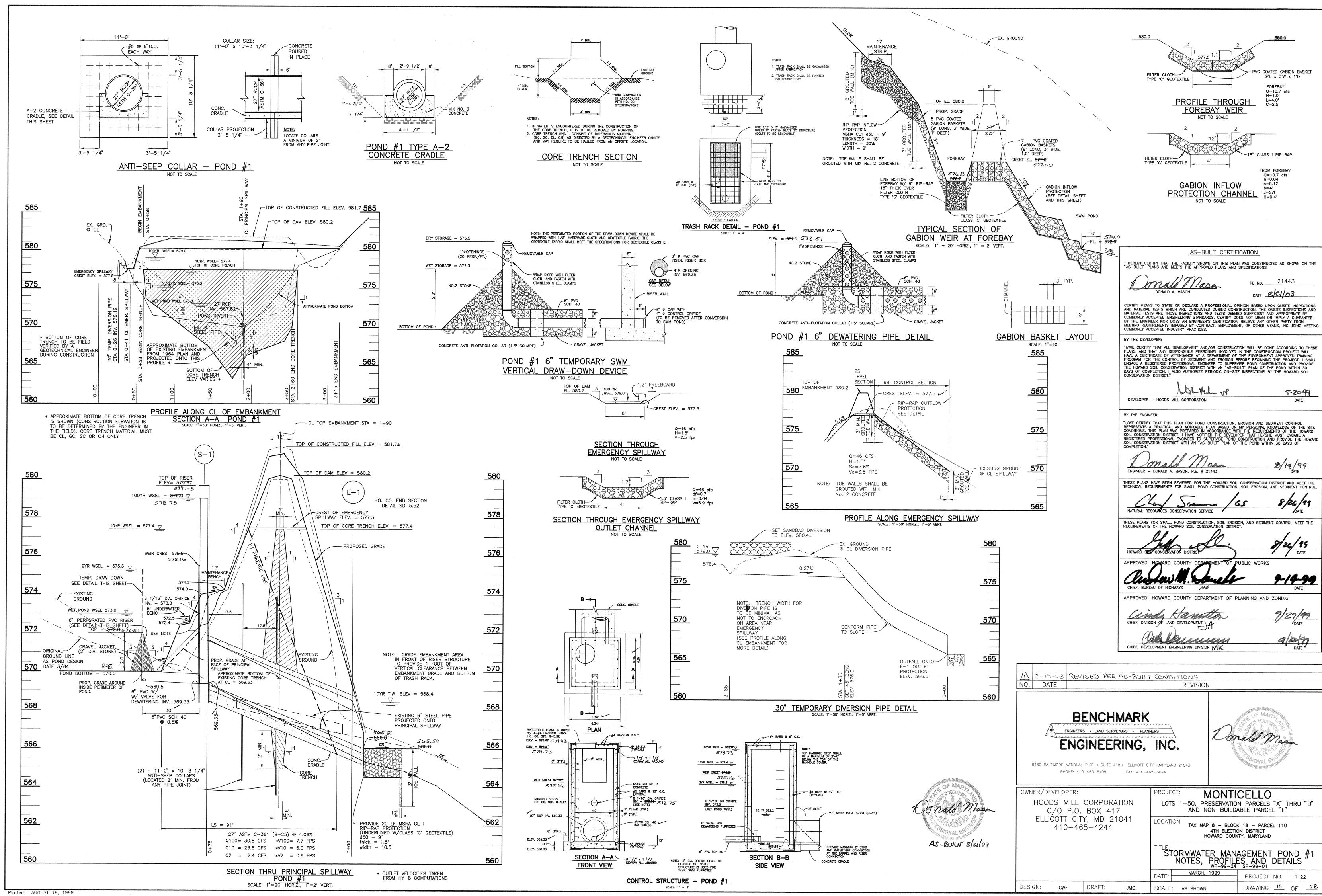
MONTICELLO LOTS 1-50, PRESERVATION PARCELS "A" THRU "D" AND NON-BUILDABLE PARCEL "E"

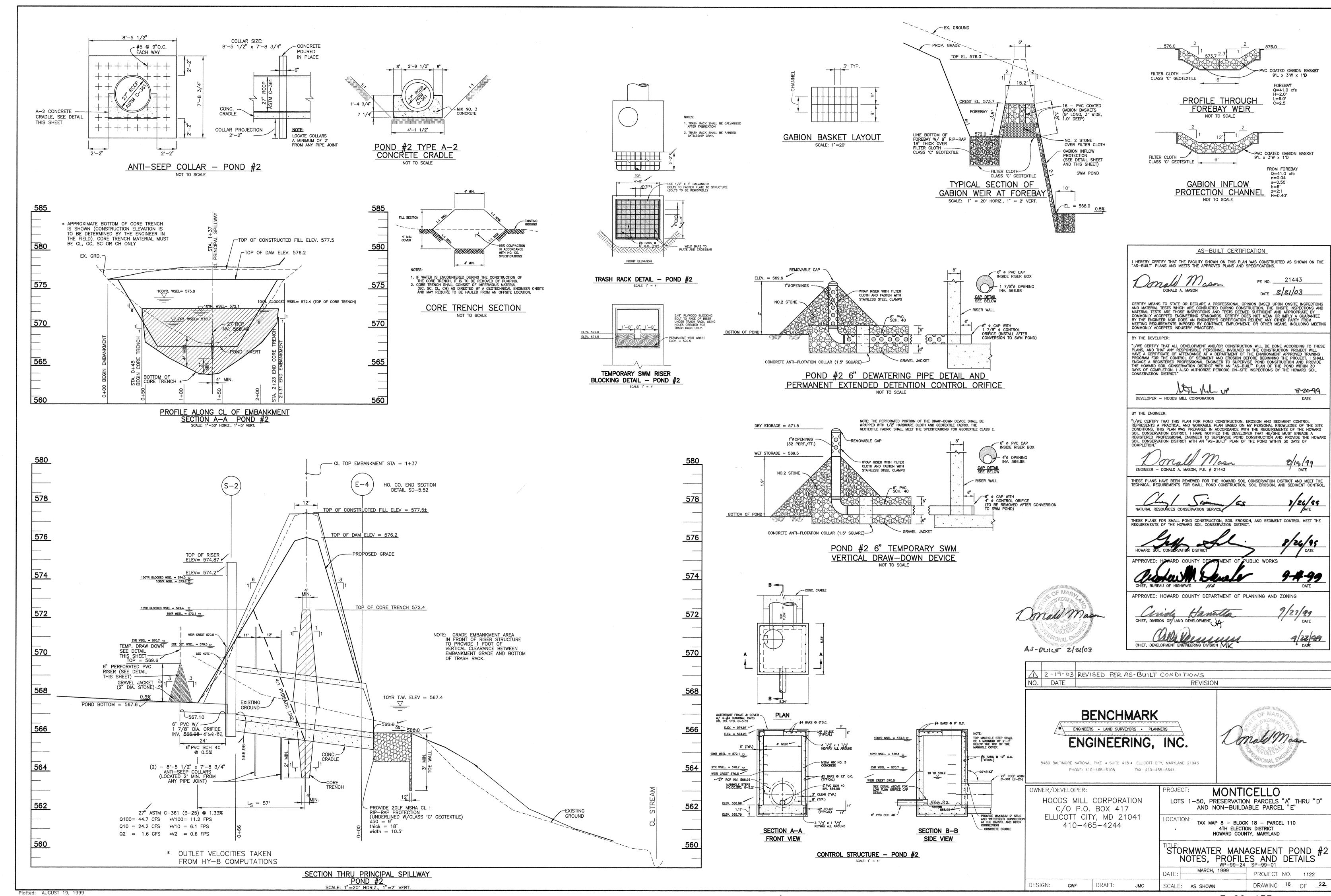
TAX MAP 8 - BLOCK 18 - PARCEL 110 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SEDIMENT AND EROSION  ${\color{red}\mathsf{CONTROL}} \underset{\mathtt{WP-99-24}}{\mathsf{NOTES}} \underset{\mathtt{SP-99-01}}{\color{blue}\&} \hspace{0.1cm} \mathtt{DETAILS}$ FEBRUARY, 1999 DATE PROJECT NO. 1122 DRAWING  $\frac{13}{1}$  OF  $\frac{22}{1}$ SCALE: AS SHOWN

Acad Dwg: 7023S13.DWG







#### 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. Channel banks and sharp breaks shall be sloped to no steeper

Areas to be covered by the reservoir will be cleared of all trees. brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient auantity of topsol 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 greas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment and cut-off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not be so wet that water can be squeezed out.

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. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

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, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

#### 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 of other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally. to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or

## Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

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. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings or an approved equal may be used: Nexon, Plasti-Cote, Blac-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

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. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

Materials — (Aluminum Pipe) — This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

- 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 at least 24 mils in thickness.
- Connections All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be rerolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 48" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8' thick closed cell circular neoprene gasket; and a 12" wide hugger type band with O—ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 48" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24". Helically corrugated pipe shall have either continuously welded seams or have lock

- 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."
- 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:

- 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. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the
- Laying pipe Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the ioints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.
- 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:

- 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.

#### Rock Riprap

All rock shall be dense, sound, and free from cracks, seams, and other defects conducive to accelerated weathering. The rock fragments shall be angular to subrounded in shape. The least dimension of an individual rock fragment shall be not less than one third the greatest dimension of the fragment.

## The rock shall have the following properties:

- 1. Bulk specific gravity (saturated surface—dry basis) not less
- 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 riprop 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 with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 919.12.

## Care of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Maryland Soil Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

## Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

#### 10' MINIMUM COMPACTED **EMBANKMENT** STANDARD SYMBOL RRP 2: 1 SLOPE C GM TRAP/BASIN BOTTOM 10' MINIMUM 1' MIN. PERSPECTIVE VIEW PERSPECTIVE VIEW **GEOTEXTUE** CLASS 'C' CROSS SECTION LINING CONSTRUCTION SPECIFICATIONS PROFILE ALONG CENTERLINE All lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min.) bottom width. The channel shall be lined with 4" to 12" rip—rap to a depth of 18". . Filter cloth shall be installed under a rip—rap. Filter cloth shall be Geotextile Class Construction Specifications 3. Entrance and exit sections shall be installed as shown on the detail section. . Gablon inflow protection shall be constructed of 9' x 3' x 9" gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width. Rip—Rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility. 2. Geotextile Class C shall be installed under all gabion baskets 5. Gabion Inflow Protection may be used in lieu of Rip—Rap Inflow Protection. 3. The stone used to fill the gabion baskets shall be 4"-7"Rip—Rap should blend into existing ground. 4. Gabions shall be installed in accordance with manufacturers recommendations. Rip—Rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria. 5. Gabion inflow Protection shall be used where concentrated flow is present

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION

PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN

HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO

CONDITIONS WHERE PRACTICE APPLIES

V. TOPSOIL APPLICATION

DETAIL 6 - GABION INFLOW PROTECTION

SANDBAG / STONE DIVERSION PIPE-

IMPERVIOUS SHEETING

TAS.

SECTION A-A

PERMANENT VEGETATION.

PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

(2' MIN.) H/2 + 1'

DIVERSION PIPE-

FLOW

1. Sandbage: Sandbage shall consist of materials which are resistant t

ultra-violet radiation, tearing and puncture and woven tightly enough to prevent leakage of fill material (i.e., sand, fine gravel, etc.).

2. Stone: Stone shall be washed and have minimum diameter of 6 inches.

3. Sheeting: Sheeting shall consist of polyethylene or other material which

1. All erosion and sediment control devices shall be installed as the

2. The height of the sandbag/stone diversion structure shall be one

3. All excavated materials shall be disposed of in a SCD approved

4. All dewatering of the construction area shall be numbed to a

approved on the plans by the WRA.

filter bag or otherwise approved on the plans by the WRA.

5. Sheeting shall be overlapped a minimum of 18 inches

disposal area outside the 100 year Floodplain unless otherwise

6. Sediment control devices are to remain in place until all disturbed

areas are stabilized and the inspecting authority approves their removal.

THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:

B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP

ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF

C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT

SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR

ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL

A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT

D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT

HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND

FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING

CONSTRUCTION AND MATERIAL SPECIFICATIONS

TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE

TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT

THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE

I. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF

RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED

NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL

II. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA

III. WHERE THE SUBSOIL IS EITHER ACIDIC OR COMPOSED OF HEAVY CLAYS.

AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.

A. PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED

I. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS

SOIL INTO COMPLIANCE WITH THE FOLLOWING:

BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL

CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE

GRASS, QUACK GRASS, JOHNSON GRASS, NUTSEDGE, POISON IVY, THISTLE,

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

F TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED

DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE

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

C. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS

FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER

FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY

MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY,

ADEQUATE TO PRODUCE VEGETATIVE GROWTH.

MOISTURE AND PLAT NUTRIENTS.

AGRICULTURAL EXPERIMENTAL STATION.

THAN 1 1/2" IN DIAMETER.

OR OTHERS AS SPECIFIED.

III. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:

PER MILLION SHALL NOT BE USED.

BY WEIGHT.

GROWTH.

FOLLOWING:

half the distance from the stream bed to stream bank plus one foot, as indicated in section a:a. The sandbags shall be placed on a smooth

is impervious and resistant to puncture and tearing.

PLAN VIEW

2. Material Specifications

3. Construction Requirements

prepared surface.

WATER RESOURCES

ADMINISTRATION

 Description The work encompasses the Installation of a n-stream stone dike to be used as a ediment filtering device for streams tha generally carry wet weather flow II. Material Specifications 1. Small Riprap - 8-12 inch washed stone and gravel shall be used.
2. Filter Fabric - The filter cloth shall be a woven or non-woven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric shall be inert to commonly encountered chemicals, hydrocarbons, mildew, and rot resistant. A one foot layer of 2" washed stone may be used instead of filter fabric.
3. Gabion Baskets - Class I gabion baskets shall meet the requirements listed in MPOS.2. III. Construction Requirements . Structure to be installed in-stream as first order of business to trap sediment generated during construction The top width of the dike is to be from 2-4 feet.

The distance between the dike and the 3. The distance between the disk and the disturbance is to be determined by flow rate of the waterway.
4. Gablon baskets may be used in lieu of small riprap as indicated by alternative section.
5. Structura is to remain in place until all disturbed areas have been stabilized in accordance with an approved sediment and erosion control plan. Entrapped sediment is to be excavate eriodically and disposed of in a SCC pproved disposal area outside the IC year floodplain unless otherwise approved on the plans by the MRA. Structure can be removed once approved by inspecting authority. Gabion Class 1 Riprap
Basket
(Iow 4 (3'x 3') Jac(4 GABION BASKET ALTERNATIVE Approved on 1/24/84 WPD 1.2 Approved on 1/24/86 WPD VATER RESOURCES In-Stream Stone Dike

D. NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN

PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

II. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS

II. GRADES ON THE AREAS TO BE TOP SOILED, WHICH HAVE BEEN

HE FORMATION OF DEPRESSIONS OR WATER POCKETS.

VI. ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL

AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND

COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR

A. COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS THAT ARE PERMITTED (AT THE TIME OF

B. COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1 PERCENT NITROGEN,

1.5 PERCENT PHOSPHORUS, AND 0.2 PERCENT POTASSIUM AND

HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE

C. COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000

REQUIREMENTS. THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO

COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB/1,000 SQUARE FEET, AND 1/3 THE NORMAL

SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO

UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:

PRESCRIBE AMENDMENTS AND FOR SITES HAVING DISTURBED AREAS

ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF

GRADING AND SEEDBED PREPARATION.

AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW:

THE ENVIRONMENT UNDER COMAR 26,04,06.

MEET THE REQUIREMENTS PRIOR TO USE.

VEGETATIVE STABILIZATION METHODS AND MATERIALS.

SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION 1 -

TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED

NOTE: TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL

CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO

WHEN TOP SOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL

PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES,

EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS

III. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4"-8" LAYER AND LIGHTLY

PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN

PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND

COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE

TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOP

TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A

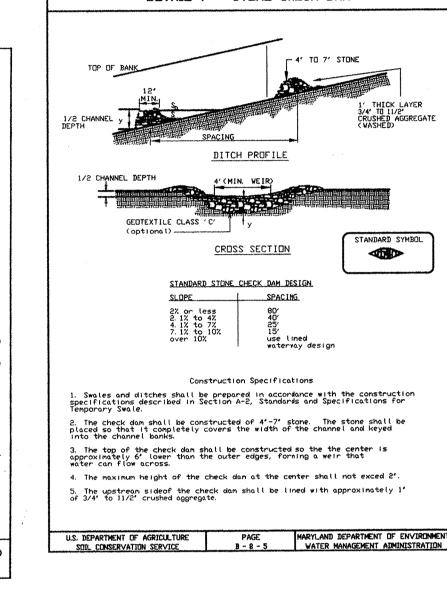
FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET

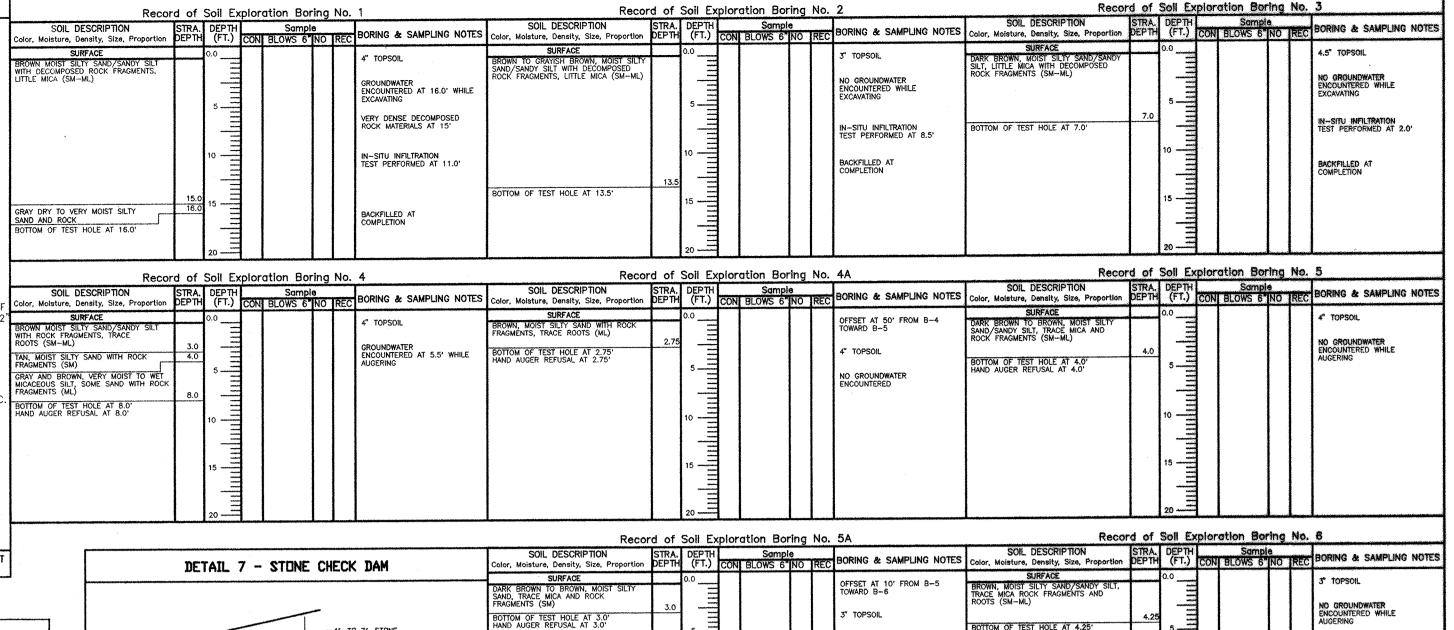
OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER

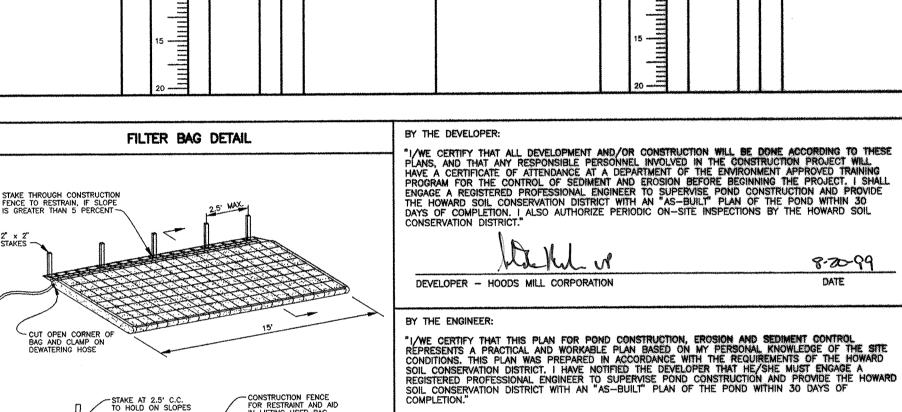
SOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT

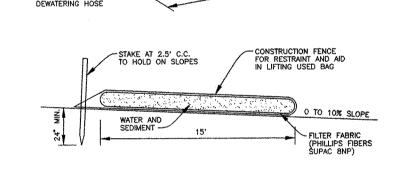
PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4"-8" HIGHER IN

DETAIL 5 - RIP-RAP INFLOW PROTECTION









SECTION

- 2. THE FILTER BAG MUST BE STACKED IN PLACE AND SECURED TO THE PUMP DISCHARGE LINE
- THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION, AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.

## 3. FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM. DEVICE SHALL BE REMOVED AND DISPOSED OF AFTER BAG IS FILLED WITH SEDIMENT. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA.

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

8-20-99

2/19/99

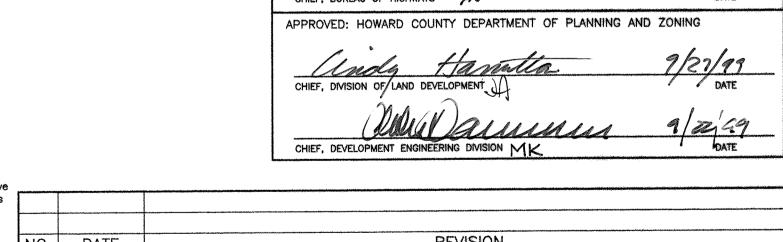
8/24/79

equipment in the presence of a geotechnical engineer or his representative. For greas that are not accessible to a dump truck, the exposed materials identified by proofrolling or penetrometer testing should be excavated to suitable firm soil, and then grades re-established by backfilling with suitable A representative of the geotechnical Engineer should be present to monitor placement and compaction of fill for each embankment and cut-off trench.

In accordance with Maryland Soil Conservation Specification 378, soils considered suitable for the center of embankment and cut-off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Per SCS 378, consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer. Any materials for core and cut-off trench construction should be tested prior to placement to determine its suitability. All fill materials must be placed and compacted in accordance with MD SCS 378 specifications (that is, to a minimum of 95 percent of the Standard Proctor maximum dry density).

Additionally, the following procedures should be utilized to construct

2. Typically during slope construction, compaction equipment has difficulty compacting soils along the shoulder. It is therefore then cut back to the required geometry.



).	DATE		REVIS	ION
8	E 3480 BALTIMORE	BENCHMAF  INGINEERS • LAND SURVEYORS •  INGINEERING  NATIONAL PIKE • SUITE 418 • ELLIF  ONE: 410-465-6105 FAX:	PLANNERS INC.	Donald Ma
ΝN	ER/DEVELO	PER:	PROJECT:	MONTICELLO

OWNER/DEVELOPER:	PROJECT: MONTICELLO
HOODS MILL CORPORATION C/O P.O. BOX 417	LOTS 1-50, PRESERVATION PARCELS "A" THRU "D" AND NON-BUILDABLE PARCEL "E"
ELLIĆOTT CITY, MD 21041 410-465-4244	LOCATION: TAX MAP 8 - BLOCK 18 - PARCEL 110  4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
	TITLE: SEDIMENT AND EROSION CONTROL &

DRAFT:

LECTION DISTRICT COUNTY, MARYLAND EROSION CONTROL & STORMWATER MANAGEMENT NOTES & DETAILS WP-99-24 SP-99-01 PROJECT NO. 1122 DATE: -DRAWING 17 OF 22 SCALE: AS SHOWN JMC

## HILLIS-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. After stripping operations have been completed, the exposed subgrade materials should be proofrolled with a loaded dumptruck or similar should be observed and tested by a geotechnical engineer or his representative utilizing a Dynamic Cone Penetrometer. Any excessively soft or loose materials

the proposed embankments:

- 1. Slope construction should commence at the toes of the proposed slopes and continue upwards as additional fill is placed. The engineered fill placed for slope construction should be benched into the natural slopes in the abutment areas to provide good contact and to prevent the presence of weak zones.
- important that the bank be overfilled during slope construction and
- 3. After construction, the slopes should be promptly vegetated to prevent erosion. Also, to prevent erosion from occurring prior to sprouting of the vecetation, the slopes should be protected with straw or an erosion control geotextile.
- 4. The embankment construction should be done under the supervision of an experienced soil inspector or the Geotechnical Engineer. Sufficient testing during fill placement should be done to verify adequate compaction.

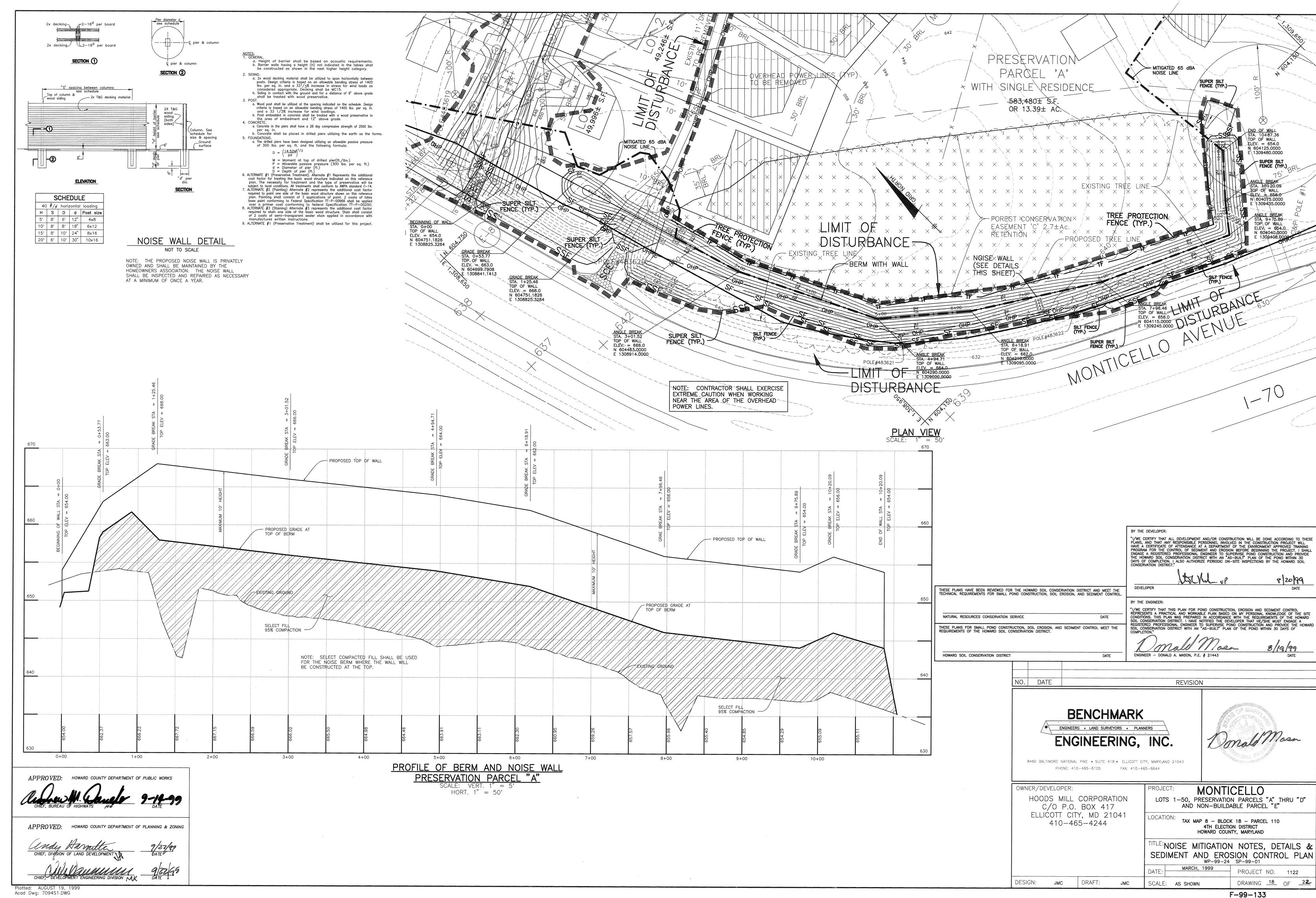
Plotted: AUGUST 19, 1999 Acad Dwg: 7024S17.DWG

MD-VA. PUB. #1, COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973.

LIME APPLICATION RATE.

REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING.

F - 99 - 133







SCHEDULE A PERIMETER LANDSCAPE EDGE							
CATEGORY ADJACENT TO ADJACENT TO ROADWAYS PERIMETER P							
LANDSCAPE TYPE	₫) B	② A	(3) A	<b>④</b> A	<b>⑤</b> A	⑥ A	Ø A
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	264	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 EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTE) SHRUBS	5 7 -	15 - -	23 - -	53  	2 - -	21 - -	24 - -
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTE) SHRUBS (10:1 SUBSTITUTE) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	5 7 - -	15 - - -	23 - - -	53 - - -	2 -	21  	24   -

\* - EXISTING TREES TO REMAIN

#### STREET TREE REQUIREMENTS

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

#### LANDSCAPING NOTES

THE DEVELOPER SHALL BE RESPONSIBLE FOR THE STREET TREES, STORMWATER MANAGEMENT POND PLANTING, PERIMETER LANDESCAPE PLANTING AND THE PRESERVATION OF THE

PERIMETER VEGETATION AS SHOWN ON THESE PLANS.

PLANTING NOTES:

1. 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

F	Periores done 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								
LANDSCAPE PLANTING LIST					STREET TREE PLANTING LIST				
SYMBOL	QUANTITY	NAME	REMARKS	SYMBOL	QUANTITY	NAME	REMARKS		
0	45	PRUNUS SARGENTII (SARGENT CHERRY)	2 1/2" MIN. CAL. B & B FULL HEAD	0	7	PRUNUS SARGENTII (SARGENT CHERRY)	2 1/2" MIN. CAL. B & B FULL HEAD		
0	46	TILIA CORDATA 'GREENSPIRE' (GREENSPIRE LITTLELEAF LINDEN)	2 1/2" MIN. CAL. B & B FULL HEAD	0	52	TILIA CORDATA 'GREENSPIRE' (GREENSPIRE LITTLELEAF LINDEN)	2 1/2" MIN. CAL. B & B FULL HEAD		
0	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	<b>⊕</b>	42	ACER RUBRUM RED SUNSET (RED SUNSET RED MAPLE	21/2"MINCAL B&B FUILHEAD		
*	57	CEDRUS DEODORA (DEODAR CEDAR)	6'- 8' HT. B & B						

## PLANTING/SOIL SPECIFICATIONS

PINUS STROBUS EASTERN WHITE PINE

- PLANTING OF NURSERY STOCK SHALL TAKE PLACE BETWEEN MARCH 15TH AND APRIL 30TH. BY SITE GRADING TO ASSURE A SUITABLE PLANTING AREA. DISTURBED AREAS SHALL BE SEEDED AND STABILIZED AS PER GENERAL CONSTRUCTION PLAN FOR PROJECT. PLANTING AREAS NOT IMPACTED BY SITE GRADING SHALL HAVE NO ADDITIONAL TOPSOIL INSTALLED.
- ALL BAREROOT PLANTING STOCK SHALL HAVE THEIR ROOT SYSTEMS DIPPED INTO AN ANTI-DESICANT GEL PRIOR TO PLANTING. PLANTS SHALL BE INSTALLED SO THAT THE TOP OF ROOT MASS IS LEVEL WITH THE TOP OF EXISTING
- FERTILIZER SHALL CONSIST OF AGRIFORM 22-8-2, OR EQUIVALENT, APPLIED AS PER
- MANUFACTURER'S SPECIFICATIONS. 6. A TWO (2) INCH LAYER OF HARDWOOD MULCH SHALL BE PLACED OVER THE ROOT AREA OF ALL
- PLANTINGS. PLANT MATERIAL SHALL BE TRANSPORTED TO THE SITE IN A TARPED OR COVERED TRUCK. PLANTS
- SHALL BE KEPT MOIST PRIOR TO PLANTING. ALL NON-ORGANIC DEBRIS ASSOCIATED WITH THE PLANTING OPERATION SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.

## SEQUENCE OF CONSTRUCTION

- SEDIMENT CONTROL AND TREE PROTECTION DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH GENERAL CONSTRUCTION PLAN FOR SITE. SITE SHALL BE GRADED IN ACCORDANCE WITH THE
- GENERAL CONSTRUCTION PLANS. PROPOSED FORESTATION AREAS IMPACTED BY SITE GRADING SHALL BE TOPSOILED AND STABILIZED AS PER #2 OF PLANTING/SOIL SPECIFICATIONS FOR PROJECT.
- PLANTS SHALL BE INSTALLED AS PER PLANT SCHEDULE AND PLANTING/SOIL SPECIFICATIONS FOR THE
- UPON COMPLETION OF THE PLANTING, SIGNAGE SHALL BE INSTALLED AS PER THE FOREST PROTECTION DEVICES SHOWN ON THE FOREST CONSERVATION PLAN.
- PLANTINGS SHALL BE MAINTAINED AND GUARANTEED IN ACCORDANCE WITH THE MAINTENANCE AND GUARANTEE REQUIREMENTS FOR PROJECT.

## MAINTENANCE OF PLANTINGS

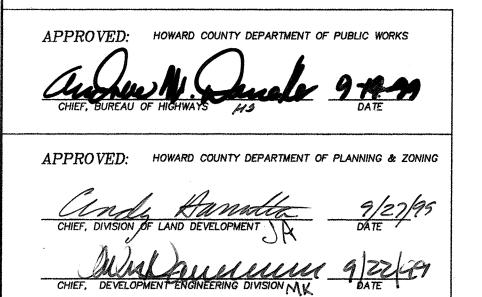
- MAINTENANCE OF ALL PLANTINGS SHALL LAST FOR A PERIOD OF 24 MONTHS. ALL PLANT MATERIAL SHALL BE WATERED TWICE A MONTH DURING THE 1ST GROWING SEASON, ONCE A MONTH DURING MAY-SEPTEMBER. IF NEEDED.
- INVASIVE EXOTICS AND NOXIOUS WEEDS WILL BE REMOVED FROM FORESTATION AREAS. OLD FIELD SUCCESSIONAL SPECIES WILL BE RETAINED.
- 4. PLANTS WILL BE EXAMINED A MINIMUM OF TWO TIMES DURING THE GROWING SEASON FOR SERIOUS PLANT PESTS AND DISEASES. SERIOUS PROBLEMS WILL BE TREATED WITH THE
- APPROPRIATE AGENT. 5. DEAD BRANCHES WILL BE PRUNED FROM PLANTINGS.

## **GUARANTEE REQUIREMENTS**

1. A 75 PERCENT SURVIVAL RATE OF FORESTATION PLANTINGS WILL BE REQUIRED AT THE END OF THE 24 MONTH MAINTENANCE PERIOD. ALL PLANT MATERIAL BELOW THE 75 PERCENT THRESHOLD WILL BE REPLACED AT THE BEGINNING OF THE NEXT GROWING SEASON. AFTER ONE GROWING SEASON, PLANT MATERIAL SHALL BE MAINTAINED AT 90% SURVIVAL THRESHOLD. 2. THE CONTRACTOR WILL NOT BE LIABLE FOR PLANT LOSS DUE TO VANDALISM.

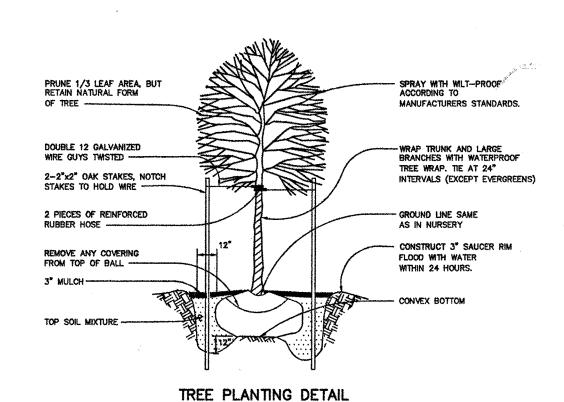
## SURETY FOR REFORESTATION

THE DEVELOPER SHALL POST A SURETY (BOND, LETTER OF CREDIT) TO ENSURE THAT REFORESTATION PLANTINGS ARE COMPLETED. UPON ACCEPTANCE OF THE PLANTINGS BY THE COUNTY, THE BOND SHALL BE RELEASED.



SCHEDULE D STORMWATER MANAGEMENT AREA		
LINEAR FEET OF PERIMETER	(B) B(1054')	(9) B(945')
NUMBER OF TREES REQUIRED SHADE TREES EVERGREEN TREES	21 26	19 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 EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTE)	13 26	15 24

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



FCP NOTES:

- ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH MAY BE FOUND IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
- AND SHALL NOT BE SUBJECT TO PROTECTIVE LAND COVENANTS.

FORESTED AREAS OCCURRING OUTSIDE OF THE FCE SHALL NOT BE CONSIDERED PART OF THE FCE

- LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
- THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ.
- NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS
- DESIGNATED AS FOREST CONSERVATION EASEMENTS.
- TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE PLACED ALONG ALL FCE BOUNDARIES WHICH OCCUR WITHIN 15 FEET OF

INCLUDED IN FOREST CONSERVATION EASEMENTS.

- PERMANENT SIGNAGE SHALL BE PLACED 50-100' APART ALONG THE BOUNDARIES OF ALL AREAS
- ACTIVITY WITHIN STORMWATER MANAGEMENT DRAINAGE EASEMENT OCCURRING WITHIN THE LIMITS OF THE FCE SHALL NOT BE RESTRICTED. THESE AREAS SHALL NOT BE PLANTED AND HAVE NOT BEEN CONSIDERED PART OF THE FCE ACREAGE REQUIREMENTS.
- HEAVY BRUSH (MULTIFLORA ROSE) SHALL BE REMOVED OR CONTROLLED PRIOR TO FORESTATION OF FCE "G" AND "P".
- FOREST CONSERVATION OBLIGATIONS ARE MET BY 10,0AC, RETENTION ON-SITE (\$43,560,00) PLUS 16.8 AC. REPLANTING ON-SITE (\$219,542.00) FOR A TOTAL DEVELOPERS AGREEMENT SURETY

FOR FOREST CONSERVATION OF \$263,102.00.

	ACRES
GROSS AREA: FLOODPLAIN/UNFORESTED PRESERVATION	103.1
PARCEL:	21.8 81.3
NET TRACT AREA (NTA) : EXISTING FOREST (NTA) :	17.8
AFFORESTATION THRESHOLD:	16.3
REFORESTATION THRESHOLD:	20.3
FOREST TO BE CLEARED (NTA) :	7.8
REFORESTATION FOR FOREST CLEARING: FOREST TO BE RETAINED (NTA) :	15.6 10.0
FOREST TO BE RETAINED IN FCE:	8.8
FORESTATION FOR FOREST RETAINED ON	
PRIVATE LOTS:	1.2
TOTAL FORESTATION REQUIRED:	16.8

## PLANTING SCHEDULE

FOREST CONSERVATION EASEMENT 'A' (1.3 ACRES)		
QTY. SPECIES	SIZE	SPACIN
4 ACER RUBRUM — RED MAPLE 6 LIRIODENDRON TULIPIFERA — TULIP POPLAR		## ##
30 CORNUS FLORIDA — FLOWERING DOGWOOD 30 FRAXINSU PENNSYLVANICA — GREEN ASH 80 LIRIODENDRUM TULIPIFERA — TULIP POPLAR 20 JUNIPERUS VIRGINIANA — RED CEDAR 50 PRUNUS SEROTINA — BLACK CHERRY	2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP	** ** ** ** ** ** ** **
30 VIBURNUM PLUNIFOLIUM — BLACKHAW	18-24" B.T.	**

### PLANTING SCHEDULE

QTY.	SPECIES	SIZE	SPA
5	ACER RUBRUM — RED MAPLE LIRIODENDRON TULIPIFERA — TULIP POPLAR	1" CAL. 1" CAL.	#
79 70 26 53 35 35 44 26	ACER RUBRUM — RED MAPLE FRAXINUS PENNSYLVANICA— GREEN ASH JUGLANS NIGRA — BLACK WALNUT LIRIODENDRUM TULIPIFERA — TULIP POPLAR PLATANUS OCCIDENTALIS — SYCAMORE PRUNUS SEROTINA — BLACK CHERRY QUERCUS RUBRA — RED OAK SASSAFRAS ALBIDUM — SASSAFRAS	2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP	K K K K K K
26 44	SAMBUCUS CANADENSIS — ELDERBERRY VIBURNUM DENTATUM — ARROWWOOD	18-24" B.T. 18-24" B.T.	

## PLANTING SCHEDULE

	melikan menjali di didan bekeran sejah melakan perindan menjan pelakan melakan berasa pelakan melakan berasa p Sen	ANN CONTRACTOR OF THE CONTRACT	
FORE	ST CONSERVATION EASEMENT 'E' (0.7 ACRES)		
QTY.	SPECIES	SIZE	SPACING
2 3	ACER RUBRUM — RED MAPLE LIRIODENDRON TULIPIFERA — TULIP POPLAR	1" CAL. 1" CAL.	## ##
43 38 14 28 19 19	ACER RUBRUM — RED MAPLE FRAXINUS PENNSYLVANICA— GREEN ASH JUGLANS NIGRA — BLACK WALNUT LIRIODENDRUM TULIPIFERA — TULIP POPLAR PLATANUS OCCIDENTALIS — SYCAMORE. PRUNUS SEROTINA — BLACK CHERRY QUERCUS RUBRA — RED OAK SASSAFRAS ALBIDUM — SASSAFRAS	2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP	**  **  **  **  **  **  **
14 24	SAMBUCUS CANADENSIS — ELDERBERRY VIBURNUM DENTATUM — ARROWWOOD	18-24" B.T. 18-24" B.T.	**

## PLANTING SCHEDULE

FOREST CONSERVATION EASEMENT 'F' (3.1 ACRES)

QTY. SPECIES	·	SIZE	SPACING	QTY.	SPECIES
	M - RED MAPLE I TULIPIFERA - TULIP POPLAR	1" CAL. 1" CAL.	## ##	10 9	ACER RUBRUM — RED MAPLE LIRIODENDRON TULIPIFERA — TULIP POPLAR
CORNUS FLOR FRAXINUS PEN FRAXINUS PEN JUNIPERUS VI IBO LIRIODENDRUM PRUNUS SERC GUERCUS RUE FO ROBINIA PSUE	M RED MAPLE  RIDA FLOWERING DOGWOOD  INSYLVANICA GREEN ASH  RGINIANA RED CEDAR  I TULIPIFERA TULIP POPLAR  ISTINA BLACK CHERRY  BRA RED OAK  DO-ACACIA BLACK LOCUST  BIDUM SASSAFRAS	2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP	**  **  **  **  **  **  **  **  **	61 54 20 41 27 27 34 20	ACER RUBRUM — RED MAPLE FRAXINUS PENNSYLVANICA— GREEN ASH JUGLANS NIGRA — BLACK WALNUT LIRIODENDRUM TULIPIFERA — TULIP POPLAR PLATANUS OCCIDENTALIS — SYCAMORE PRUNUS SEROTINA — BLACK CHERRY QUERCUS RUBRA — RED OAK SASSAFRAS ALBIDUM — SASSAFRAS
01 CORNUS AMON 122 VIBURNUM DE	MUM — SILKY DOGWOOD NTATUM — ARROWWOOD UNIFOLIUM — BLACKHAW	18-24" B.T. 18-24" B.T. 18-24" B.T.	** ** **	20 34	SAMBUCUS CANADENSIS — ELDERBERRY VIBURNUM DENTATUM — ARROWWOOD
	PLANTING SCHEDULE				PLANTING SCHEDULE

### PLANTING SCHEDULE

FOREST CONSERVATION EASEMENT 'G' (0.3 ACRES)						FOREST CONSERVATION EASEMENT 'L' (1.4 ACRES)			
QTY. SPECIES		SIZE SPACING			QTY. SPECIES				
1	ACER RUBRUM — RED MAPLE LIRIODENDRON TULIPIFERA — TULIP POPLAR	1" CAL. 1" CAL.	## ##		<b>4</b> 3	ACER RUBRUM — RED MAPLE LIRIODENDRON TULIPIFERA — TULIP POPLAR			
20 10 7 20 11 7 13 4	ACER RUBRUM — RED MAPLE CORNUS FLORIDA — FLOWERING DOGWOOD JUGLANS NIGRA — BLACK WALNUT LIRIODENDRUM TULIPIFERA — TULIP POPLAR PRUNUS SEROTINA — BLACK CHERRY QUERCUS ALBA — WHITE OAK QUERCUS RUBRA — RED OAK ROBINIA PSUEDO—ACACIA — BLACK LOCUST SASSAFRAS ALBIDUM — SASSAFRAS	2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP	**  **  **  **  **  **  **  **  **  **		81 67 33 67 62 33 43 33	ACER RUBRUM — RED MAPLE FRAXINUS PENNSYLVANICA— GREEN ASH JUGLANS NIGRA — BLACK WALNUT LIRIODENDRUM TULIPIFERA — TULIP POPLAR PLATANUS OCCIDENTALIS — SYCAMORE PRUNUS SEROTINA — BLACK CHERRY QUERCUS RUBRA — RED OAK SASSAFRAS ALBIDUM — SASSAFRAS			
6	VIBURNUM PRUNIFOLIUM - BLACKHAW	18-24" B.T.	**		19 38	SAMBUCUS CANADENSIS — ELDERBERRY VIBURNUM DENTATUM — ARROWWOOD			

SPACING

### PLANTING SCHEDULE

FORE	ST CONSERVATION EASEMENT 'H' (0.3 ACRES)	
QTY.	SPECIES	SIZE
1	ACER RUBRUM — RED MAPLE LIRODENDRON TULIPIFERA — TULIP POPLAR	1" CAL. 1" CAL.
20 10 7 20 11 7 13 4	ACER RUBRUM — RED MAPLE CORNUS FLORIDA — FLOWERING DOGWOOD JUGLANS NIGRA — BLACK WALNUT LIRODENDRUM TULIPIFERA — TULIP POPLAR PRUNUS SEROTINA — BLACK CHERRY QUERCUS ALBA — WHITE OAK QUERCUS RUBRA — RED OAK ROBINIA PSUEDO—ACACIA — BLACK LOCUST SASSAFRAS ALBIDUM — SASSAFRAS	2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP
6	VIBJRNUM PRUNIFOLIUM - BLACKHAW	18-24" B.T.

FOREST CONSERVATION EASEMENT 'M' (2.3 ACRES)

LIRIODENDRON TULIPIFERA - TULIP POPLAR

ACER RUBRUM - RED MAPLE

110 FRAXINUS PENNSYLVANICA- GREEN ASH

JUGLANS NIGRA - BLACK WALNUT 110 LIRIODENDRUM TULIPIFERA - TULIP POPLAR

PLATANUS OCCIDENTALIS - SYCAMORE PRUNUS SEROTINA - BLACK CHERRY QUERCUS RUBRA - RED OAK SASSAFRAS ALBIDUM - SASSAFRAS

SAMBUCUS CANADENSIS - ELDERBERRY VIBURNUM DENTATUM - ARROWWOOD

133 ACER RUBRUM - RED MAPLE

QTY. SPECIES

PLANTING SCHEDULE

PLANTING SCHEDULE

SIZE

-3' WHIP

-3' WHIP

2-3' WHIP

2-3' WHIP

18-24" B.T. 18-24" B.T.

SIZE

2-3' WHIP

18-24" B.T.

SIZE

, WHIP

WHIP
WHIP

2-3' WHIP

18-24" B.T. 18-24" B.T.

3' WHIP

3' WHIP -3' WHIP SPACING

SPACING

SPACING

FOREST CONSERVATION EASEMENT 'K' (1.0 ACRES)

PLANTING SCHEDULE  FOREST CONSERVATION EASEMENT 'I' (0.4 ACRES)					PLANTING SCHEDULE			
					FOREST CONSERVATION EASEMENT 'P' (4.7 ACRES)			
QTY. SPECIES	SIZE	SPACING		QTY.	SPECIES	SIZE	SPACINO	
2 ACER RUBRUM — RED MAPLE 1 LIRIODENDRON TULIPIFERA — TULIP POPLAR	1" CAL. 1" CAL.	## ##		9 10	ACER RUBRUM — RED MAPLE LIRIODENDRON TULIPIFERA — TULIP POPLAR	1" CAL. 1" CAL.	<b>##</b> ##	
ACER RUBRUM — RED MAPLE FRAXINUS PENNSYLVANICA— GREEN ASH JUGLANS NIGRA — BLACK WALNUT LIRIODENDRUM TULIPIFERA — TULIP POPLAR PLATANUS OCCIDENTALIS — SYCAMORE PRUNUS SEROTINA — BLACK CHERRY QUERCUS RUBRA — RED OAK SASSAFRAS ALBIDUM — SASSAFRAS	2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP	**  **  **  **  **  **  **	V 28	306 161 113 306 177 113 210 64 64	ACER RUBRUM — RED MAPLE CORNUS FLORIDA — FLOWERING DOGWOOD JUGLANS NIGRA — BLACK WALNUT LIRIODENDRUM TULIPIFERA — TULIP POPLAR PRUNUS SEROTINA — BLACK CHERRY QUERCUS ALBA — WHITE OAK QUERCUS RUBRA — RED OAK ROBINIA PSUEDO—ACACIA — BLACK LOCUST SASSAFRAS ALBIDUM — SASSAFRAS	2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP 2-3' WHIP	** ** ** ** ** ** ** **	
8 SAMBUCUS CANADENSIS — ELDERBERRY 14 VIBURNUM DENTATUM — ARROWWOOD	18-24" B.T. 18-24" B.T.	**		97	VIBURNUM PRUNIFOLIUM — BLACKHAW	18-24" B.T.	**	

CAL. - CALIPER WHIP -- MAY BE CONTAINER GROWN OR BAREROOT B.T. BRANCHED TRANSPLANT ## - ONE INCH CALIPER TREES SHALL BE SPACED AROUND PERIMETER OF FCE EASEMENT IN RANDOM PATTERN.

\*\* - WHIPS AND SHRUBS SHALL BE PLANTED, ON AVERAGE, AT A SPACING OF 11 FEET ON CENTER, NOT IN A GRID PATTERN, LIMITED CLUMPING OF SHRUBS IS PERMITTED. PLANTING NOTES:

1. FCEs 'G' AND 'P' ARE HEAVILY INFLUENCED BY A MULTIFLORA ROSE. IT IS RECOMMENDED THAT THE MULTIFLORA ROSE BE REMOVED AND CONTROLLED PRIOR TO FORESTATION. IF THE ROSE IS NOT REMOVED IT WILL BE A CHRONIC MAINTENANCE PROBLEM FOR THE SITE. EXISTING NATIVE TREES MAY BE RETAINED.

2. NO PLANTING SHALL OCCUR WITHIN THE EMERGENT WETLANDS. PLANTING WITHIN THE BUFFER IS PERMITTED BUT DISTURBANCE OF EXISTING VEGETATION WITHIN THE BUFFER SHALL BE MINIMIZED.

**BENCHMARK** 

ENGINEERS A LAND SURVEYORS A PLANNERS

8480 BALTIMORE NATIONAL PIKE . SUITE 418 . ELLICOTT CITY, MARYLAND 21043

PHONE: 410-465-6105 FAX: 410-465-6644

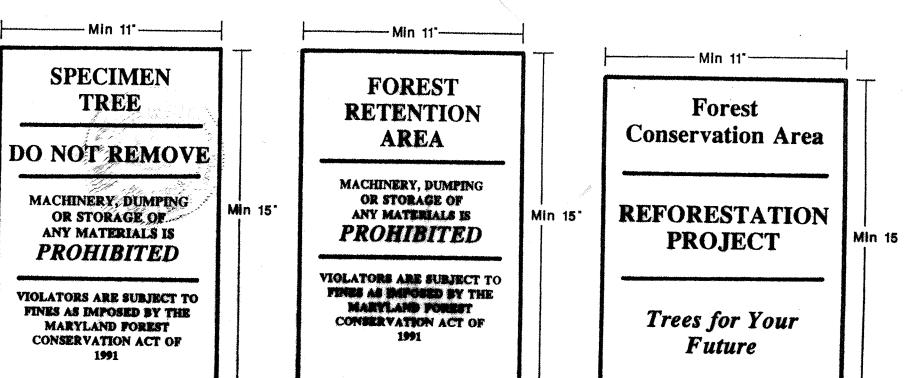
ENGINEERING, INC.

DATE

OWNER/DEVELOPER:

3. THE POTENTIAL FOR DEER AND RODENT DAMAGE ON THIS FORESTATION PROJECT IS HIGH. THE PLANTING CONTRACTOR MAY UTILIZE PHYSICAL AND CHEMICAL TECHNIQUES TO IMPROVE THE SUCCESS OF THE PLANTINGS. THESE TECHNIQUES MUST BE APPROVED BY THE OWNER PRIOR TO INITIATION OF WORK.

5-31-01 REVISED LANDSCAPE & STREET TREE PLANTING LIST



Eco-Science Professionals, Inc. CONSULTING ECOLOGISTS P.O. Box 5006 Glen Arm, MD 21057 (410) 592-6752

DESIGN:

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

DRAFT:

JMC

JMC

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

REVISION

TAX MAP 8 - BLOCK 18 - PARCEL 110 4TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND TITLE: FOREST CONSERVATION AND LANDSCAPE NOTES & DETAILS

DATE: PROJECT NO. 1122 DRAWING 21 OF 22 SCALE: AS SHOWN

Acad Dwg: 7022S19.DWG (RIGHT)

