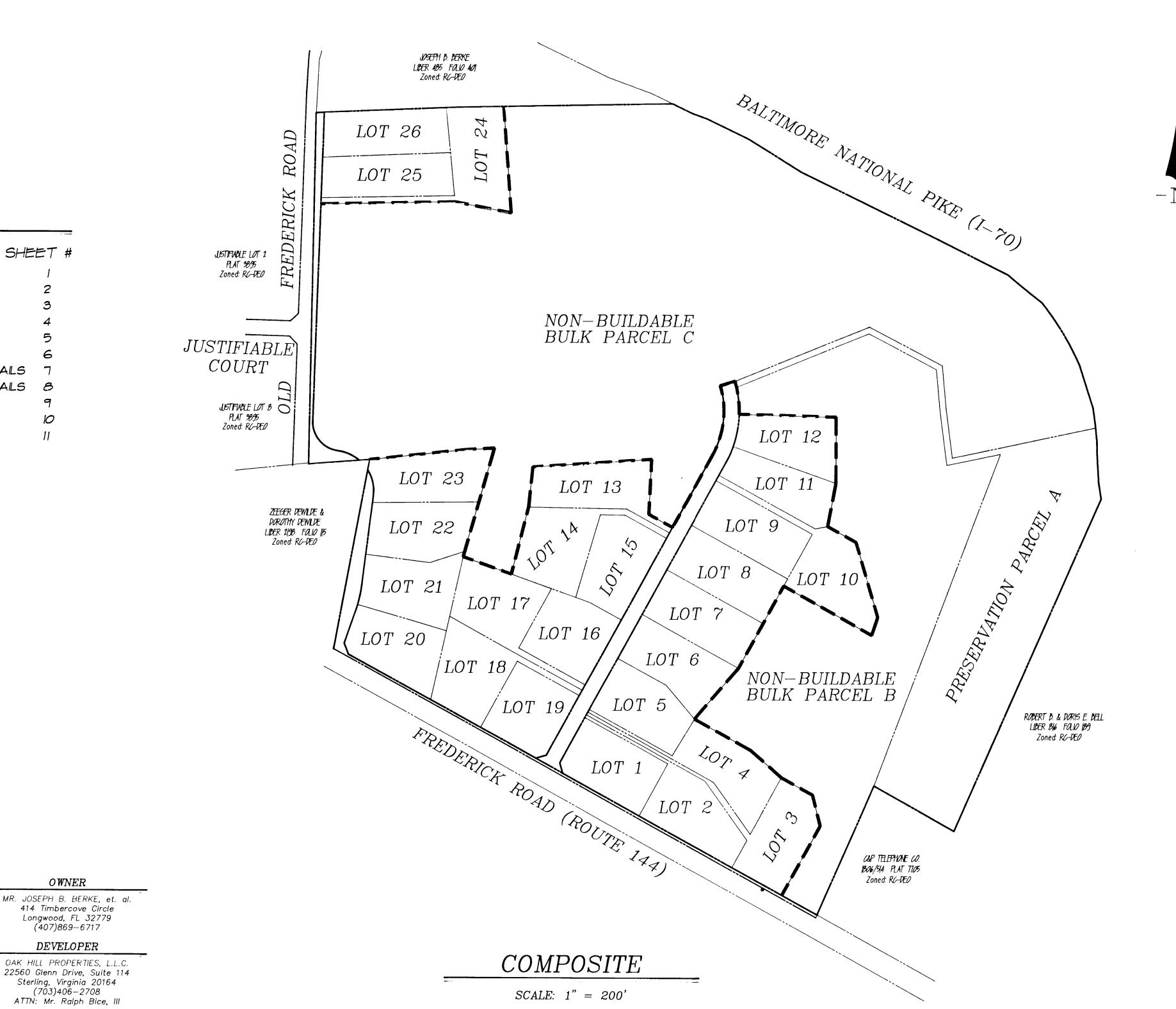
ROADS, STORM DRAIN & GRADING CARRIAGE MILL FARMS

PHASE I

ELECTION DISTRICT NO. 4 HOWARD COUNTY, MARYLAND



HOWARD COUNTY BENCHMARK 3632001 ELEV = 646.321

LOCATED ALONG MARYLAND ROUTE 144 • NE INTERSECTION OF OLD FREDERICK ROAD MONUMENT IS 0.7' BELOW SURFACE

HOWARD COUNTY BENCHMARK 3633003 ELEV = 617.440

LOCATED ALONG MARYLAND ROUTE 144 0.1 MILES WEST OF ROUTE 97
MONUMENT IS 9.7' OFF EDGE OF PAVING 0.9' BELOW SURFACE



Vicinity Map Scale: 1" = 2000'

0.36 Ac.

1.16 Ac.

1.62 Ac.

GENERAL NOTES

1. DENSITY TABULATION:

TOTAL TRACT AREA = FLOODPLAIN = 109.93 Ac.

No. OF UNITS ALLOWED BY RC ZONING $112.98 \text{ Ac. } \times 1 \text{ d.u.}/4.25 \text{ Ac. } (gross) = 26 \text{ d.u.}$

No. OF UNITS ALLOWED ON RECEIVING PARCEL BY CLUSTER EXCHANGE

OPTION 112.98 Ac. x 1 d.u./2.0 Ac. (gross) = 56 d.u.

No. OF CLUSTER EXCHANGE OPTIONS TO BE TRANSFERRED FROM SENDING PARCEL = 25 CEO (PHASE II)

TOTAL No. OF UNITS PROPOSED = 26 (PHASE I)

PRESERVATION PARCEL PROVIDED = 9.36 Ac.

2. AREA TABULATION:

GROSS AREA OF TRACT = NET AREA OF TRACT =

AREA OF PROPOSED LOTS/PARCELS (total) = 109.84 Ac. AREA OF BUILDABLÉ LOTS = 36.17 Ac. AREA OF PRESERVATION PARCEL = 64.31 Ac.

AREA OF NON-BUILDABLE BULK PARCELS AREA OF R/W DEDICATION = FREDERICK ROAD (RT. 144) :

OLD FREDERICK ROAD = CARRIAGE MILL DRIVE =

3. LOT TABULATION:

No. OF PROPOSED LOTS/PARCELS = No. OF BUILDABLÉ LOTS = No. OF PRESERVATION PARCELS = No. OF NON-BUILDABLE BULK PARCELS =

4. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVER(S) HAVE BEEN APPROVED.

5. PROJECT BACKGROUND: TAX MAP 8 PARCEL 158

> ELECTION DISTRICT No. 4 TOTAL TRACT AREA = 112.98 Ac.

No. OF PROPOSED LOTS/PARCELS = 29 (26 BUILDABLE, 1 PRESERVATION, PARCEL, 2 NON-BUILDABLE BULK PARCELS)

6. TOPOGRAPHIC INFORMATION BASED ON A SURVEY DATED OCTOBER 1, 1978 PERFORMED BY LEON A. PODOLAK & ASSOCIATES.

7. COORDINATES BASED ON NAD '27 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY CONTROL STATIONS:

> 3632001 N543017.256 E791881.695 3633003 N541955.702 E793711.821

8. PUBLIC WATER AND SEWER SYSTEMS ARE NOT AVAILABLE. PROPOSED WATER AND SEWER SYSTEMS ARE TO BE PRIVATE.

THIS AREA DESIGNATES A PRIVATE SEWAGE EASEMENT OF 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVE-MENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWAGE IS AVAILABLE. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONN-ECTION TO A PUBLIC SEWAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT VARIANCES FOR ENCROACHMENTS INTO THE PRIVATE SEWAGE EASEMENTS. RECORDATION OF A MODIFIED SEWAGE EASEMENT SHALL NOT BE NECESSARY. PERCOLATION TEST HOLES SHOWN HEREON HAVE BEEN FIELD LOCATED AS SHOWN.

10. FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE IS TO BE PROVIDED AT THE JUNCTION OF THE FLAG OR PIPESTEM AND THE ROAD RIGHT-OF-WAY AND NOT ONTO THE FLAG OR PIPESTEM DRIVEWAY.

11. FOREST STAND DELINEATION AND FOREST CONSERVATION PLAN PREPARED BY LAND PLANNING AND DESIGN GROUP DATED JUNE, 1995.

12. TRAFFIC STUDY PREPARED BY LEE CUNNINGHAM & ASSOCIATES DATED JUNE, 1995

13. PREVIOUS COUNTY FILE NUMBERS: SP-95-12

14. ATTROXIMATE LOCATION OF EXISTING LITILITIES ARE SHOWN, THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE, ANY DAMAGE INCLIRRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE, EXISTING LITILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION,



CARRIAGE MILL FARMS

TAX MAP 8 PARCEL 158 HOWARD COUNTY, MARYLAND

SCALE: 1" = 200'NOVEMBER 09, 1995 4th ELECTION DISTRICT

SHEET INDEX

TITLE

CARRIAGE MILL DRIVE PLAN & PROFILE

GRADING & SEDIMENT CONTROL PLAN

GRADING & SEDIMENT CONTROL PLAN

GRADING & SEDIMENT CONTROL PLAN

SEDIMENT CONTROL NOTES & DETAILS

STORM DRAIN PROFILES

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

CHIEF, BUREAU OF HIGHWAYS 45

CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH \

CHIEF, DEVELOPMENT ENGINEERING DIVISION

LANDSCAPE PLAN

MD ROUTE 144 ROAD IMPROVEMENT PLAN

STORMWATER MANAGEMENT NOTES & DETAILS

STORMWATER MANAGEMENT NOTES & DETAILS

OWNER

414 Timbercove Circle Longwood, FL 32779

(407)869-6717

DEVELOPER

Sterling, Virginia 20164 (703)406-2708

ATTN: Mr. Ralph Bice, III

ENGINEER

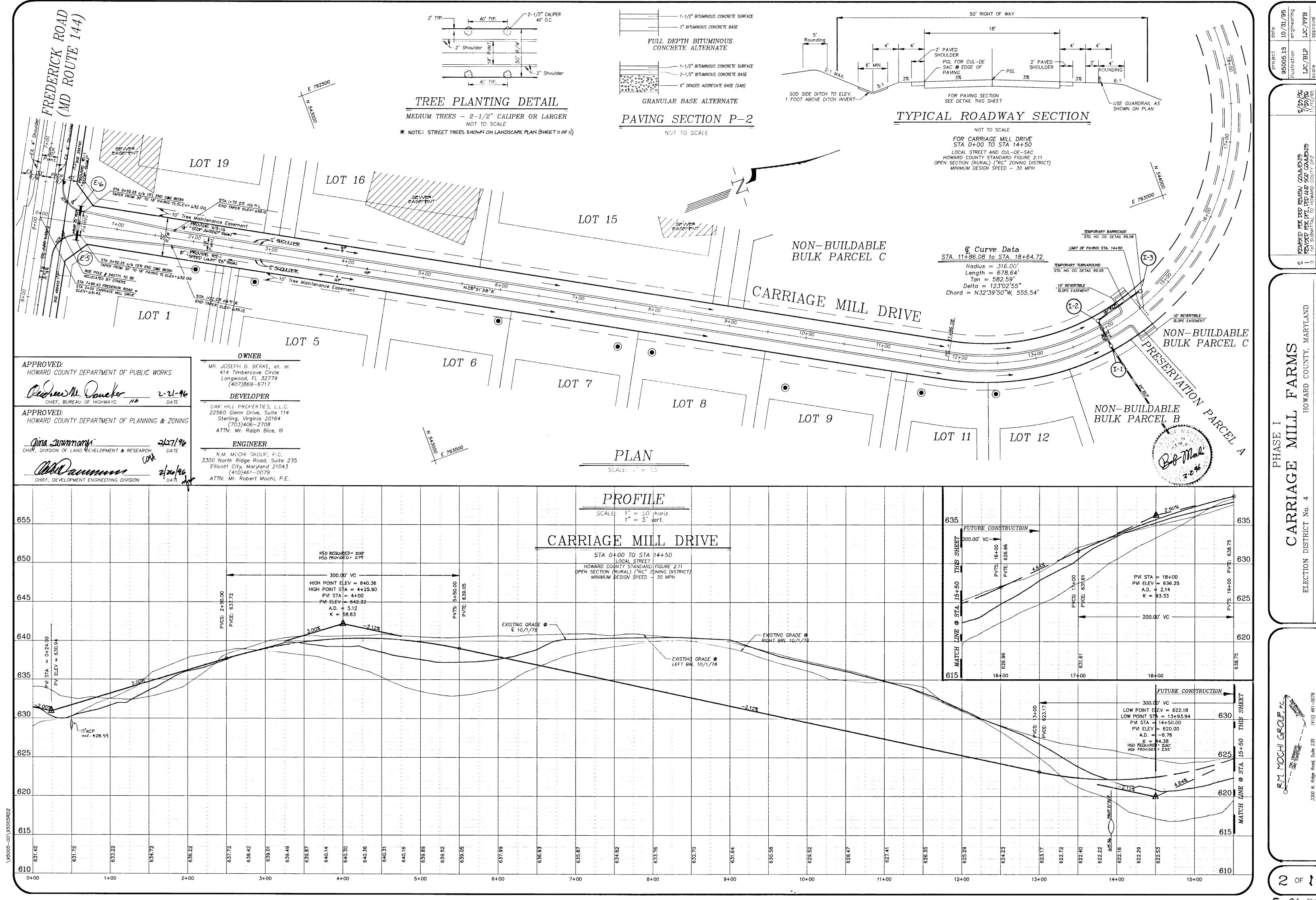
R.M. MOCHI GROUP, P.C.

3300 North Ridge Road, Suite 235 Ellicott City, Maryland 21043 (410)461-0079

ATTN: Mr. Robert Mochi, P.E.

COVER SHEET

OF |

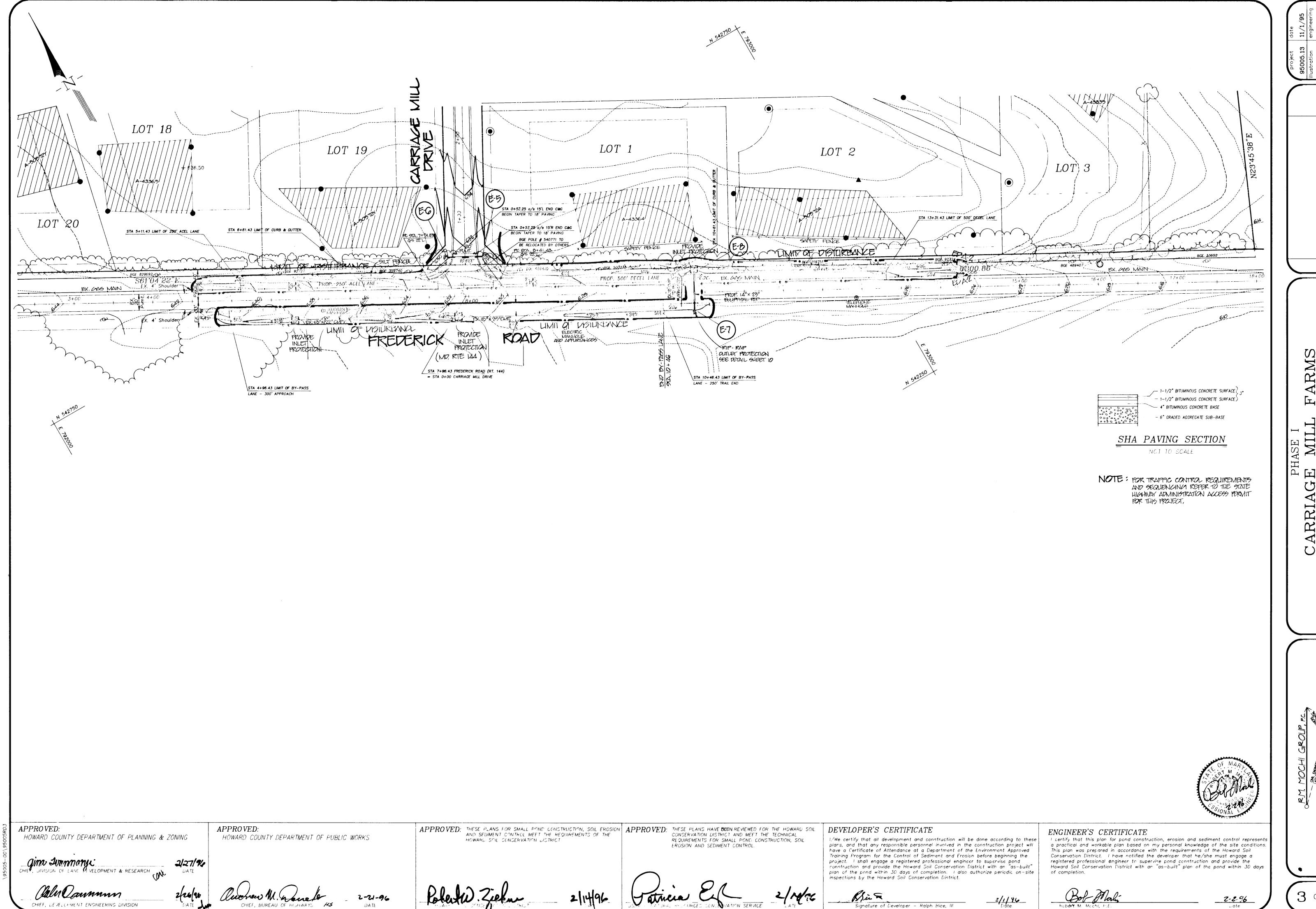


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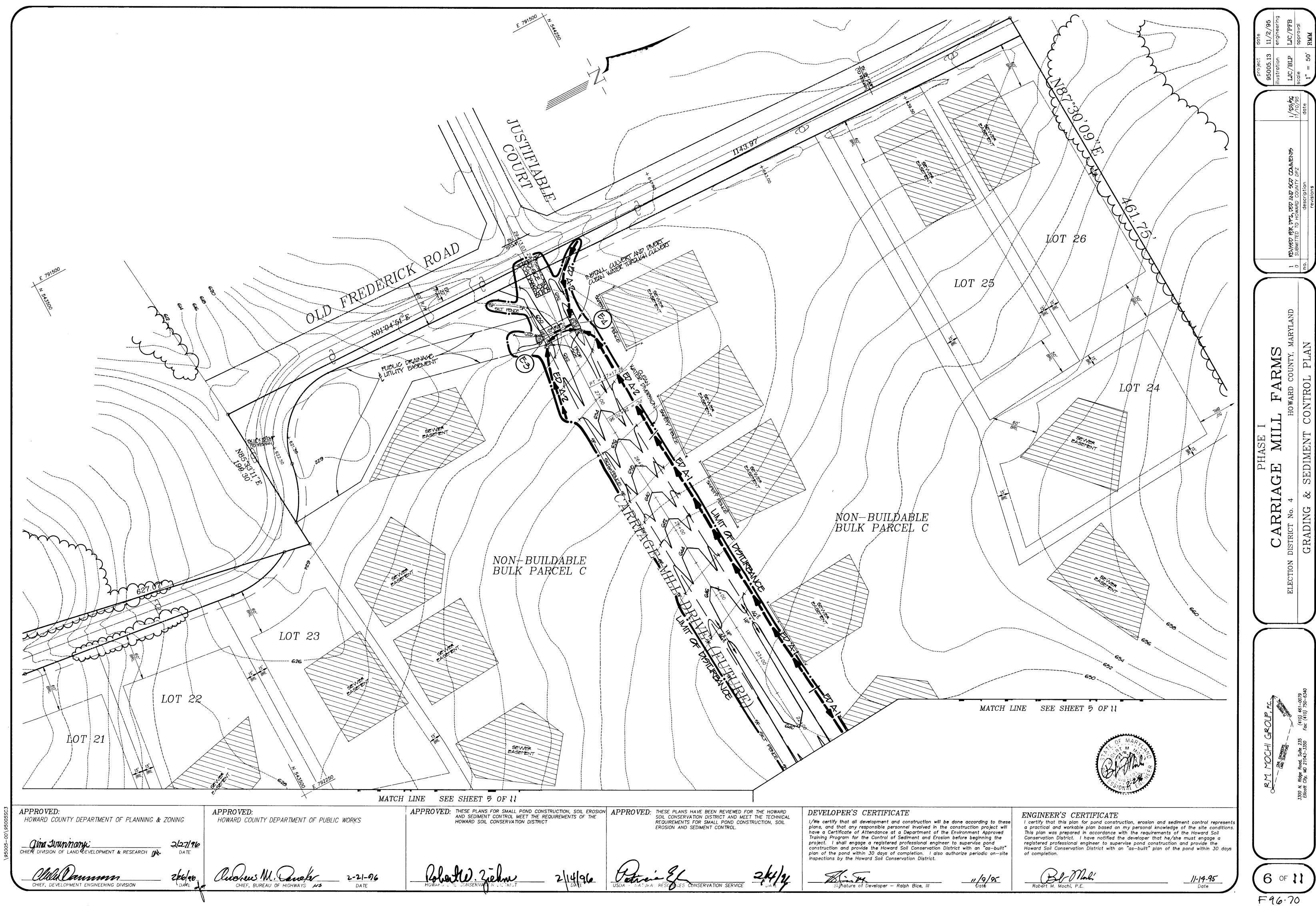
CARRIAGE

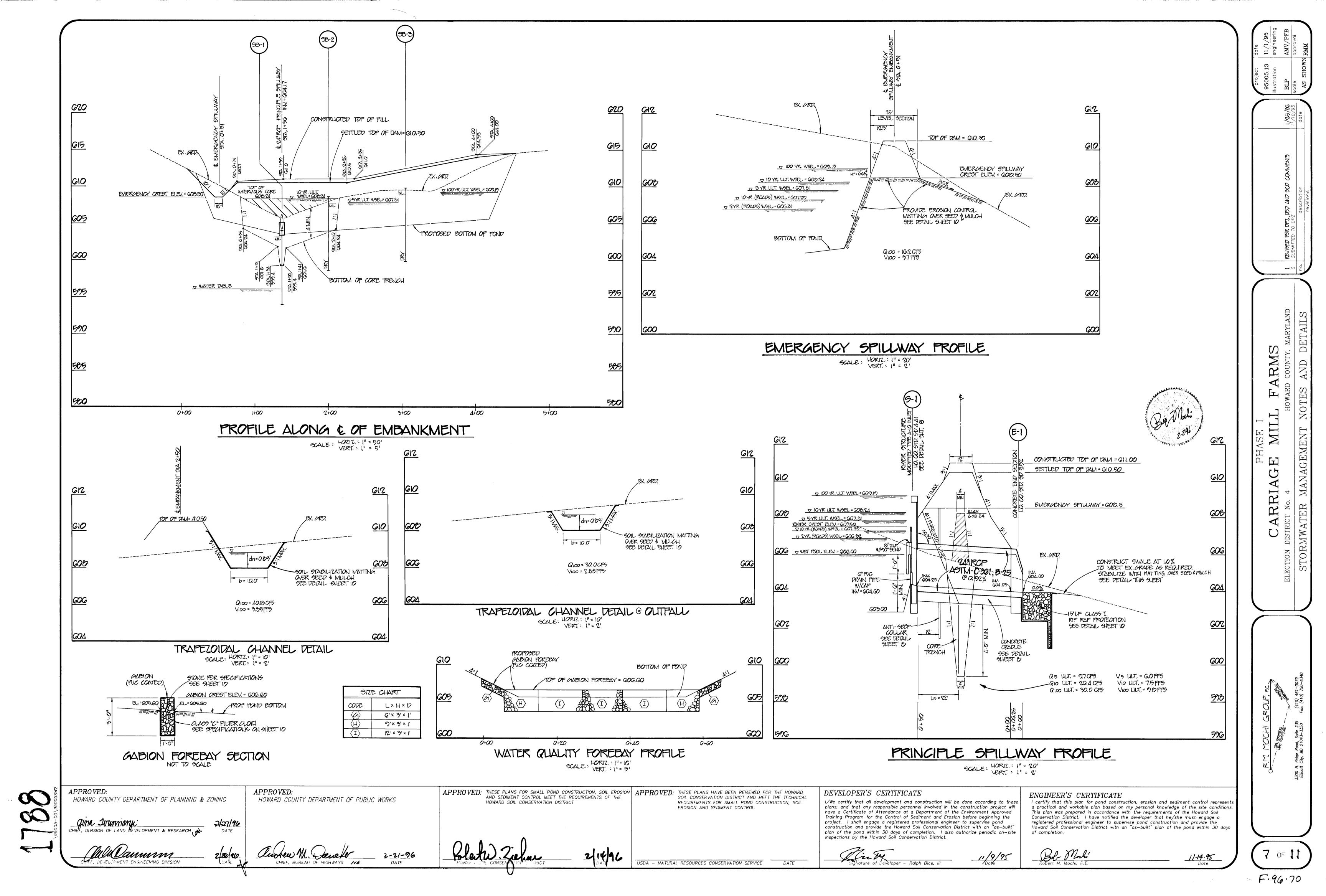


3 OF 11

F94.70

188





SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378 All references to ASTM and AASHTO specifications apply to the most recent version.

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 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 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.

Compection - 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 or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than 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

Pipe Conduits

All pipes shall be circular in cross section.

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.
- 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 drawings.
- Laying pipe Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the 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
- Backfilling shall conform to "Structure Backfill." Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Polyvinyl Chloride (PVC) Pipe - All of the following

be completely watertight

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

Backfilling shall conform to "Structure Backfill." 6. Other details (anti-seep collars, valves, etc.) shall

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 905.

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 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.

criteria shall applly for polyvinyl chloride (PVC) pipe: Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-

Joints and connections to anti-seep collars shall

be as shown on the drawings.

Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3

Care of Water during Construction

NOTES

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

Stabilization

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

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.

14" FLAT BAR BOLTED @ 24"CC. TOP SLAB ·C"X 2"X 3/16"TLIBING @ 8"CC. WELDED AT ALL JOINING SIDES, I, FIELD MEASURE THE STRUCTURE DIMENSIONS TO INSURE EXACT FIT OF TRACH RACK. 2, GALVANIZE ENTIRE TRAGH RACK AFTER FABRICATION. 3, PAINT BATTLESHIP GRAY, TRACH RACK DETAIL

NOT TO SCALE

STORMWATER MANAGEMENT POND MAINTENANCE SCHEDULE

A. 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.
- 2. 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.
- Debris and litter next to the outlet structure shall be removed during regular mowing operations and as needed.

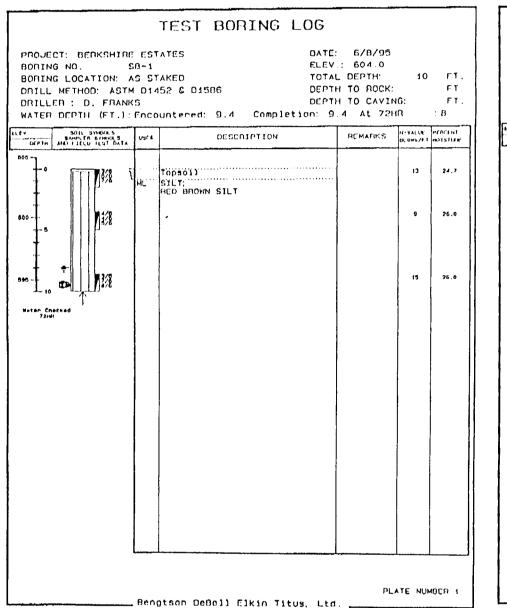
Other side slopes, the bottom of the pond, and maintenance

4. Visible signs of erosion in the pond as well as rip-rap outlet area shall be repaired as soon as it is noticed.

access should be moved as needed.

B. NON-ROUTINE MAINTENANCE

- Structural components of the pond such as the dam, riser structure 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 when its accumulation significantly reduces the design storage, interfere with the function of the riser, when deemed necessary for aesthetic reasons, or when deemed necessary by the Howard County's Department of Public Works.

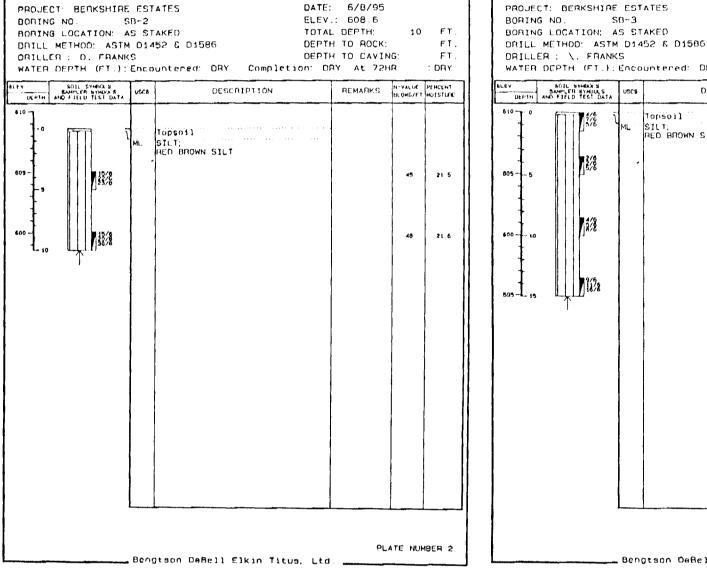


REMARKS

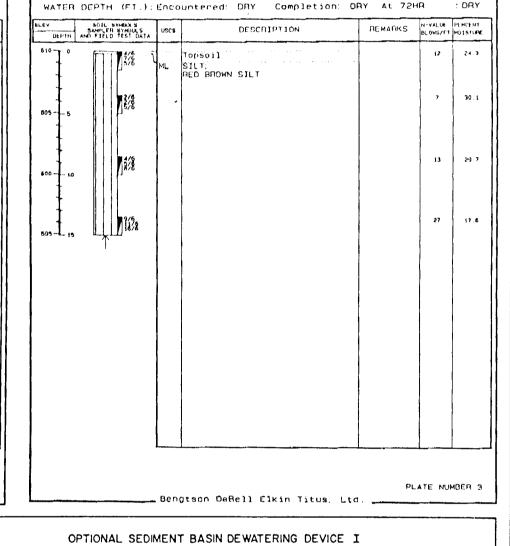
HO.CO. STD. VOL IV SD 5.52

HO.CO. STD. VOL IV SD 4.41

MODIFIED PER DETAILS ON SHT. 8



TEST BORING LOG



TEST BORING LOG

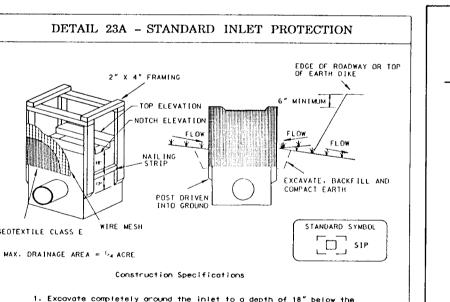
DATE: 6/8/95

ELEV : 609 9

TOTAL DEPTH:

DEPTH TO BOCK:

DEPTH TO CAVING:



1. Excavate completely around the inlet to a depth of 18" below the 2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the $2^{\prime\prime}\times4^{\prime\prime}$ frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be $6^{\prime\prime}$ below adjacent roadways 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 4. Stretch the Geotextile Class E tightly over the wire mesh with

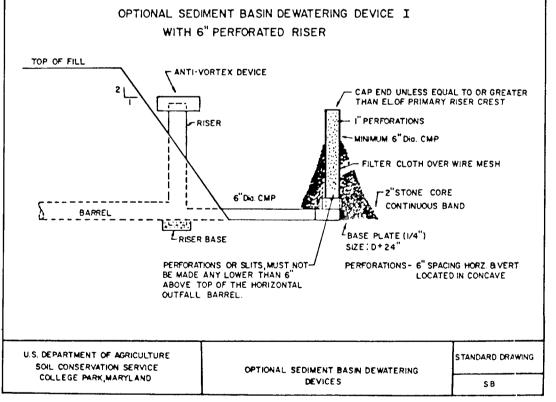
the geotixtile extending from the top of the frome to 18" below the

inlet notch elevation. Fasten the aeatextile firmly to the frame

The ends of the geotextile must meet at a post, be overlapped and 5. Backfill around the inlet in compacted 6" layers until the ayer 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 should be at least 6" higher than the top of the frame. 7. The structure must be inspected periodically and after each

U.S. DEPARTMENT OF AGRICULTURE PAGE MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE E - 16 - 5 WATER MANAGEMENT ADMINISTRATION





ama Turunnanyi

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT

NOTE: COLLARS SHALL BE PLACED A MINIMUM

OF 21-0" FROM APE JOINTS.

PROVIDE ASPHALT JOINT FILLER BETWEEN ALL

TYPE A-2

PIPE CRADLE

SECTION B-B

THIS 194ER

CONCRETE SURFACES EXCEPT BETWEEN CRADLE AND PIFE.

TYPICAL SECTION THROUGH

NOT TO SCALE

1'-G"

AZ CRADLE

CONCRETE SHALL BE MISHA MIX #3 (FC > 3,500 PSI)/FOR CRADLE AND COLLAR)

FOR WALLS OF STRUCTURE SHALL LITTLIZE L.M. SCOPIELD CO. FORM LINERS

5. ANCHOR BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION G.07.03.59

NO.

TYPE

FOR 24" PIPE

MODIFIED TYPE

CL EMBANKMENT

CL EMBANKMENT

1+36 0/S 2€' R

1+39 C/S 25' L

G. ALL REINFORCING SPLICES SHALL BE LAP SPLICES OF 30 BAR DIAMBIERS

NOT TO SCALE

#4 BARS @ 4'-0"0.C.

REINFORCING STEEL : GRADE GO

PROVIDE ROLEH BROOM FINISH,

UNLESS SHOWN OTHERWISE,

(RANDOM SPLIT-FACE ROOK) (OPTIONAL)

OF THE MGHA GTANDARDS AND SPECIFICATIONS.

BARREL, CRADLE & ANTI-SEEP COLLAR

ASPHALT JOINT FILLER MATERIAL SHALL BE

PROMOCO BETWEEN ALL

(4 REQUIRED

ANTI-SEEP COULAR

NOT TO SCALE

@ G"CC/EW

(MIN.)

CONCRETE SURFACES

EXCEPT BETWEEN CRADE AND PIPE.

¢ 21"RCP

SECTION A-A

MSHA MIX #3

`#G BARS @ G"O.C.

/FC > 3500 PSI

SEE DETAIL

STORMWATER MANAGEMENT STRUCTURE SCHEDULE

INV. IN INV. OUT ELEV.

604.29 | 609.17 (TOP)

APPROVED: THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION APPROVED: 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.

DEVELOPER'S CERTIFICATE

I/We certify that all development and 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.

ENGINEER'S CERTIFICATE

I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a realstered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days

DEVELOPMENT ENGINEERING DIVISION

DIVISION OF LAND GEVELOPMENT & RESEARCH 🛝

ignature of Developer — Ralph Bice, III

DETAIL

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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.

Fescue and mulch with 2 tons/acre well anchored straw.

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

Mulching: Apply 1-1/12 to 2 tons per acre (70 to 90 lbs/1000 sf) of unrotted small grain strow 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 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)

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

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

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.

SEDIMENT CONTROL NOTES

- 1. A minimum of 48 hours notice must be given to the Howard County Office of Inspections and Permits 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 1994 Maryland Standards and Specifications for Soil Erosion and Sediment
- Following initial soil disturbances or redisturbance, permanent or temporary stabilization shall be completed within: a) 72 hours for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 5 calendar days as to all other disturbed
- or graded areas on the project site. 4. 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. G-III) Sod (Sec. G-IV). Temporary Seeding (Sec. G-II) and Mulching (Sec. G-I) 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.
- Site Analysis: Total Area of Site: Area to be Disturbed Area to be roofed or paved:

Total Cut:

Total Fill:

CROSS - SECTION

Area to be vegetatively stabilized:

Ac. ± = 13.0 AC Ac. ± = 1.1AC c.y. = 13,500 CY

c.y.t = 1500 CY

None (EXCESS TO NOISE MITIGATION BERM Offsite Waste/Borrow Area: Any sediment control practice which is disturbed by grading activity for

> 4" OVERLAP OF MATTING

> STAPLE OUTSIDE EDGE

TYPICAL STAPLE NO. 11

GAUGE WIRE

OF MATTING ON 2" CENTER

STRIPS WHERE TWO OR

MORE STRIPS WIDTHS

ARE REQUIRED ATTACH

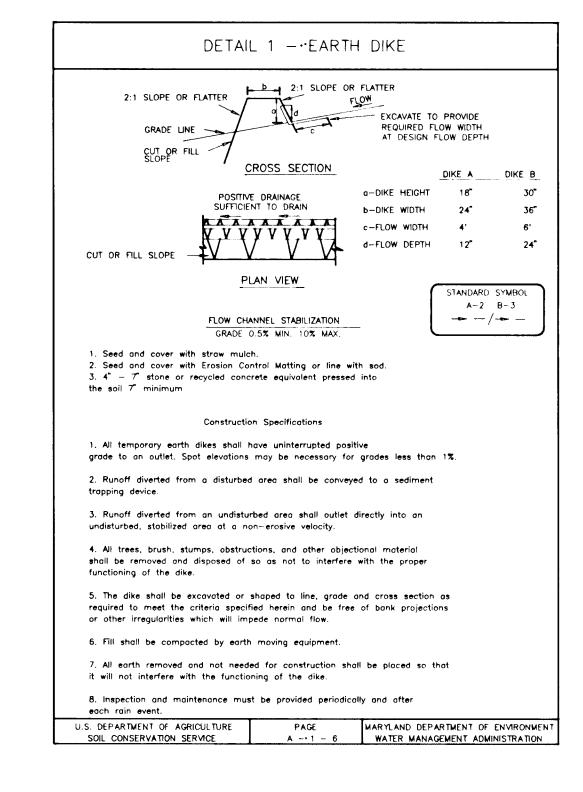
STAPLES ON 18" CENTERS

placement of utilities must be repaired on the same day of disturbance. Additional sediment controls must be provided, if deemed necessary by the

Contractor shall prepare his/her own quantity estimates to his/her satisfaction.

Howard County DILP Sediment Control Inspector. 9. Quantities and estimates shown are for sediment control purposes only.

DETAIL 30 EROSION CONTROL MATTING



DETAIL 33 - SUPER SILT FENCE

10' MAXIMUM

4 CHAIN LINK FENC

34' MINIMUM

Construction Specifications

latest Maryland State Highway Details for Chain Link Fencing. The specification

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

5. When two sections of filter cloth adjoin each other, they shall be overlapped

Maintenance shall be performed as needed and silt buildups removed when 'bulges'

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

50 lbs/in (min.)

20 lbs/in (min.)

SAFETY FENCE CONSTRUCTION SPECIFICATIONS

4). Fence is to be built so as not to restrict flow into or out of trap.

2). Safety sence to be a minimum 4 seet high.

0.3 gal/ft*/minute (max.)

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced

1. Fencing shall be 42' in height and constructed in accordance with the

for a 6' fence shall be used, substituting 42' fabric and 6' length

4. Filter cloth shall be embedded a minimum of 8' into the ground.

develop in the silt fence, or when silt reaches 50% of fence height

34' MINIMUM

1/8//8//8

36' MINIMUM

- 8' MINIMUM

FLOW

- 16' MIN. 1ST LAYER OF

Test: MSMT 509

Test: MSMT 509

Test: MSMT 322

be put in the ground to

1). Contractor may use snow fence or blaze orange plastic mesh fence where shown on plan.

3). Anchor post to be installed to a depth of at least 1/3 of the total height of the post

MARYLAND DEPARTMENT OF ENVIRONMEN

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Test: MSMT 322

NOTE: FENCE POST SPACING

SHALL NOT EXCEED 10' CENTER TO CENTER

TIANK TIANK

SURFACE

CHAIN LINK FENCING-

required except on the ends of the fence.

every 24' at the top and mid section.

Tensile Strength

Tensile Modulus

Filtering Efficiency 75% (min.)

Anchor posts should be minimum 2" steel U-channel

or 2'x2' limber at least 6' in length.

flow Rate

U.S. DEPARTMENT OF AGRICULTURE

SUIL CONSERVATION SERVICE

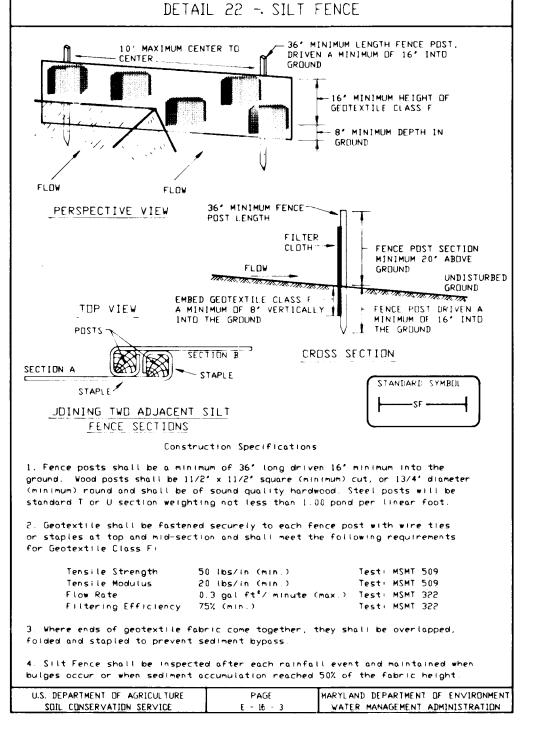
MINIMUM INTO GROUND

IF MULTIPLE LAYERS ARE REQUIRED TO ATTAIN 42'

FILTER CLOTH-

21/2' DIAMETER

OR ALUMINUM



SILT FENCE

Silt Fence Design Criteria

Slope Length

unlimited

125 feet

100 feet

60 feet

40 feet

20 feet

Note: In areas of less than 2% slope and sandy solls (USDA general classification

system, soil (lass A) maximum slope length and silt fence length will be

unlimited In these areas a silt fence may be the only perimeter control

24.0 MATERIALS SPECIFICATIONS

Table 27 Geotextile Fabrics

APPARENT

MM. MAX.

OPENING SIZE

0.60

0.30

0.60

0.**3**0

0.40-0.80+

-Apparent opening size MSMT 323

abric shall resist deterioration from ultraviolet exposure.

prior to starting work.

3) Install stabilized construction entrances.

of pond per plan ,clear and grub pond area.

The properties shall be determined in accordance with the following procedures.

GRAB TENSILE

STRENGTH

LB. MIN.

-Grab tensile strength ASTM D 1682: 4x8" specimen, 1x2" clamps, 12"/min. strain rate in both principal directions of geotextile fabric.

The fabric shall be inert to commonly encountered chemicals and hydrocarbons, and will be rot and

n addition, Classes A through E shall have a 0.01 cm./sec. minimum permeablity when tested in

accordance with MSMT 507, and an apparent minimum elongation of 20 percent (20%) when tested in accordance with the grab tensile strength requirements listed above

Obtain all required permits, approvals and licenses from appropriate agencies.

6) Construct Core Trench with suitable material as verified by a Profession Engineer.

7) Construct Principle spillway Precast structure, barrel, anti-seep collar and outfall per plans.

Sequence of Construction

4) Install all sediment and erosion control measures and devices for the construction / mass grading

Notify Howard County Construction Inspection Division (313-1880) at least five (5) working days

of the onsite roads and SWM pond. This will include the construction of the culverts at the

entrances to the site and the temporary 18"CMP at station 15+18± to divert clean water. All

sediment control devices are to be inspected daily and after each rainfall. Repair sediment devices

mildew resistant. It shall be manufactured from fibers consisting of long chain synthetic polymers, and composed of a minimum of 85% by weight of polyolephins, polyesters, or polyamides. The geotextile

Slope Steepness

Flatter than 50:

50:1 to 10:1

10:1 to 5:1

5:1 to 3:1

3:1 to 2:1

2:1 and steeper

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F (SILT FENCE)

• US Std Sieve CW-02215

Silt Fence Length

unlimited

750 feet

500 feet

250 feet

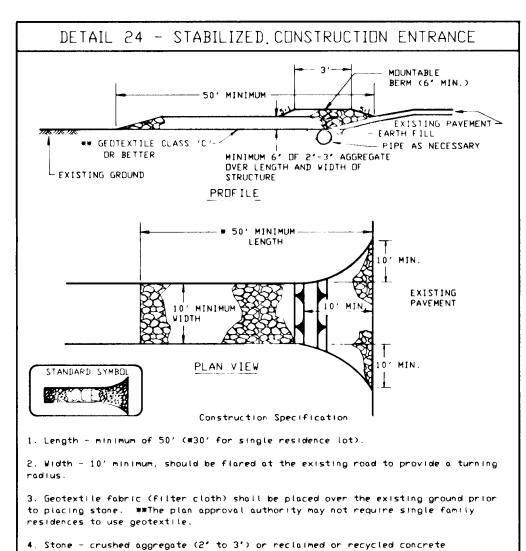
125 feet

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BURST STRENGTH

320

WATER MANAGEMENT ADMINISTRATION

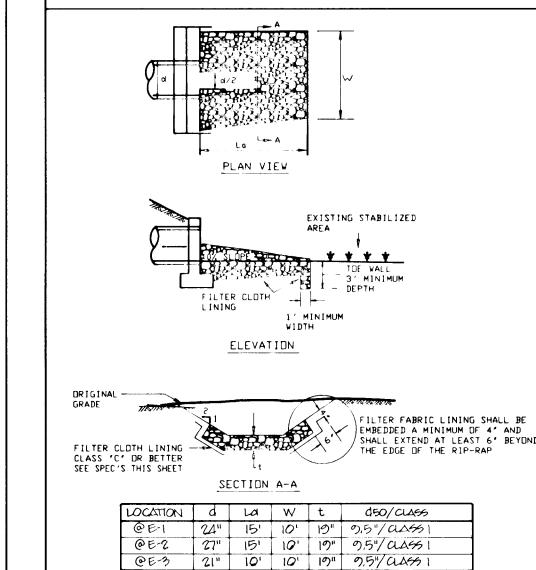


equivalent shall be placed at least 6" deep over the length and width of the

Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with $5{\cdot}1$ slopes and a minimum of 6^{\prime} of stone over the pipe. Pipe ha 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 iccording to the amount of runoff to be conveyed. A 6' minimum will be required.

 Location - A stabilized construction entrance shall be located at every point. where construction traffic enters or leaves a construction site. Vehicles leaving

| the site must travel over the entir | re length of the | stabilized construction entrance. |
|-------------------------------------|------------------|------------------------------------|
| U.S. DEPARTMENT OF AGRICULTURE | PAGE | MARYLAND DEPARTMENT OF ENVIRONMENT |
| SOIL CONSERVATION SERVICE | F - 17 - 3 | WATER MANAGEMENT ADMINISTRATION |
| | | |



DETAIL 27 - ROCK DUTLET PROTECTION III

12" 5.5"/4"-7" RIP-RAP 8' 5' 19" 9,5"/CLAGS 1 4' 12" 5,5"/4"-7"RIP-RAP 23" 8' 10' 19" 9.5"/CLASS 1 23" 4' 4' 12" 5.5"/4"-7" RIP-RAP MARYLAND DEPARTMENT OF ENVIRONMEN U.S. DEPARTMENT OF AGRICULTURE WATER MANAGEMENT ADMINISTRATION

Construction Specifications

density of approximately that of the surrounding undisturbed material

two pieces of geotextile fabric shall be a minimum of one foot.

The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a

The rock or gravel shall conform to the specified grading limits when installed

Geotextile Class \mathbb{C}^{28} or better shall be protected from punching, cutting, or

tearing. Any damage other than an occasional small hole shall be repaired by

placing another piece of geotextile fabric over the damaged part or by completely replacing the geotextile fabric. All overlaps whether for repairs or for joining

Stone for the rip-rap or gabion outlets may be placed by equipment. They shall

outlets shall be delivered and placed in a manner that will ensure that it is

filter blanket or geotextile fabric. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabior

reasonably homogenous with the smaller stones and spalls filling the voids betwee the larger stones. Rip-rap shall be placed in a manner to prevent damage to the

The stone shall be placed so that it blends in with the existing ground. If the

stone is placed too high then the flow will be forced out of the channel and scour

- STONE DUTLET STRUCTURE

STABILIZED CONSTRUCTION ENTRANCE ROCK DUTLET PROTECTION III

adjacent to the stone will occur.

Construction Specification

Length - minimum of 50' (#30' for single residence lot)

2. Width - 10^{\prime} 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 residences to use geotextile.

4. Stone - crushed aggregate (2° to 3°), or reclaimed or recycled concrete equivalent shall be placed at least 6' deep over the length and width of the

 Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6' of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and according to the amount of runoff to be conveyed. A 6' minimum will be required.

Location ~ A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance

U.S. DEPARTMENT OF AGRICULTURE MARYLAND DEPARTMENT OF ENVIRONMEN SDIL CONSERVATION SERVICE WATER MANAGEMENT ADMINISTRATION

24.0 MATERIALS SPECIFICATIONS (Cont'd)

| Iable 27 Geotextile Fabrics | | | | | | | |
|-----------------------------|---------------|-----------------|------------------|--------|-------------|--|--|
| | SIZE RANGE | D ₅₀ | D ₁₀₀ | AASHTO | WEIGHT | | |
| NUMBER 57. | 3/8" - 1 1/2" | 1/2" | 1 1/2" | M-43 | N/A | | |
| NUMBER 1 | 2" - 3" | 2 1/2" | 3* | M-43 | N/A | | |
| RIP-RAP** | 4" - 7" | 5 1/2" | 7* | N/A | N/A | | |
| CLASS I | N/A | 9.5* | 15* | N/A | 150 lb max | | |
| CLASS II | N/A | 16* | 24* | N/A | 700 lb max | | |
| CLASS III | N/A | 23" | 34* | N/A | 2000 lb max | | |

This classification is to be used on the inside face of stone outlets and check dams.

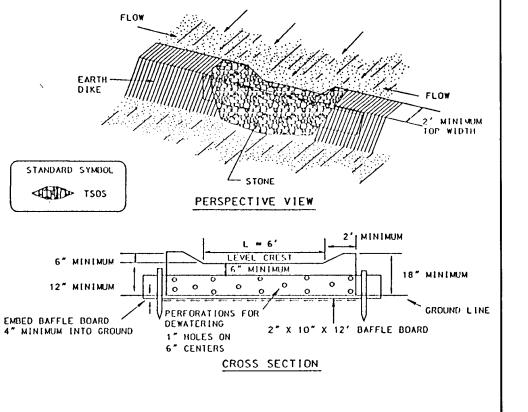
This classification is to be used when ever small rip-rap is required. The State Highway. Administration designation for this stone is Stone For Gabions (905.01.04).

| BASKET THICKNESS | | SIZE OF INDIVIDUAL STONES | | |
|------------------|-----|---------------------------|-----------|--|
| INCHES | ММ | INCHES | ММ | |
| 6 | 150 |] 3 - 5 | 75 - 125 | |
| 9] | 225 | 4 - 7 | 100 - 175 | |
| 12 | 300 | 4 - 7 | 100 - 175 | |
| 18 | 460 | 4 - 7 | 100 - 175 | |
| 36 | 910 | 4 - 12 | 100 - 300 | |

- 8) Upon obtaining proper inspections and certifications, backfill Principal Spillway. Install Temporary Dewatering Device and brick Weir opening to the elevations shown on the plans. (See Sheet 8)
- 9) Complete Embankment fills and excavate for pond volumes per plan.
- 11) Construct storm drain to SWM / Sediment Control Basin. Delay forebay construction until sediment basin is converted to a SWM pond.
- 12) Construct Phase I roads. Provide temporary paving to Route 144 as dictated by field conditions. Install sediment and erosion control measures associated with the Route 144 road improvements
- (Silt fences & inlet protection).
- Upon diversion of clean water around the proposed pond and installation of silt fence downstream 14) Construct road improvements. 15) Upon stabilization of all disturbed areas, clean and flush storm drainage, convert sediment basin to SWM pond and construct forebay.
 - 16) Notify Howard County Office of Inspections and Permits for final inspection of completed project.

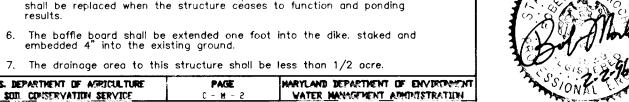
I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion 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"

ENGINEER'S CERTIFICATE I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days



Construction Specification

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





APPROVED:

HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Uma Irrinnani NEVELOPMENT & RESEARCH

EROSION CONTROL MATTING

Construction Specifications

1. 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

2. Staple the 4" overlap in the channel center using an 18" spacing

3. Before stapling the outer edges of the motting, make sure the

4. Stables shall be placed 2' apart with 4 rows for each strip, 2

the top strip shall overlap the upper end of the lower strip by 4". shiptop fashion. Reinforce the overtop with a doubte row of staples

Note: If flow will enter from the edge of the matting then the area

6. The discharge end of the matting liner should be similarly

matting is smooth and in firm contact with the soil.

outer rows, and 2 atternating rows down the center.

secured with 2 double rows of stoples.

ffected by the flow must be keyed-in.

APPROVED:

spaced 6" apart in a staggered pattern on either side.

about 4" down slope from the trench. Spacing between stoples is

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT

APPROVED: these plans for small pone construction, soil erosion |APPROVED: these plans have been reviewed for the howard EROSION AND SEDIMENT CONTROL.

SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL

DEVELOPER'S CERTIFICATE

plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

Signature of Developer - Ralph Bice, III

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