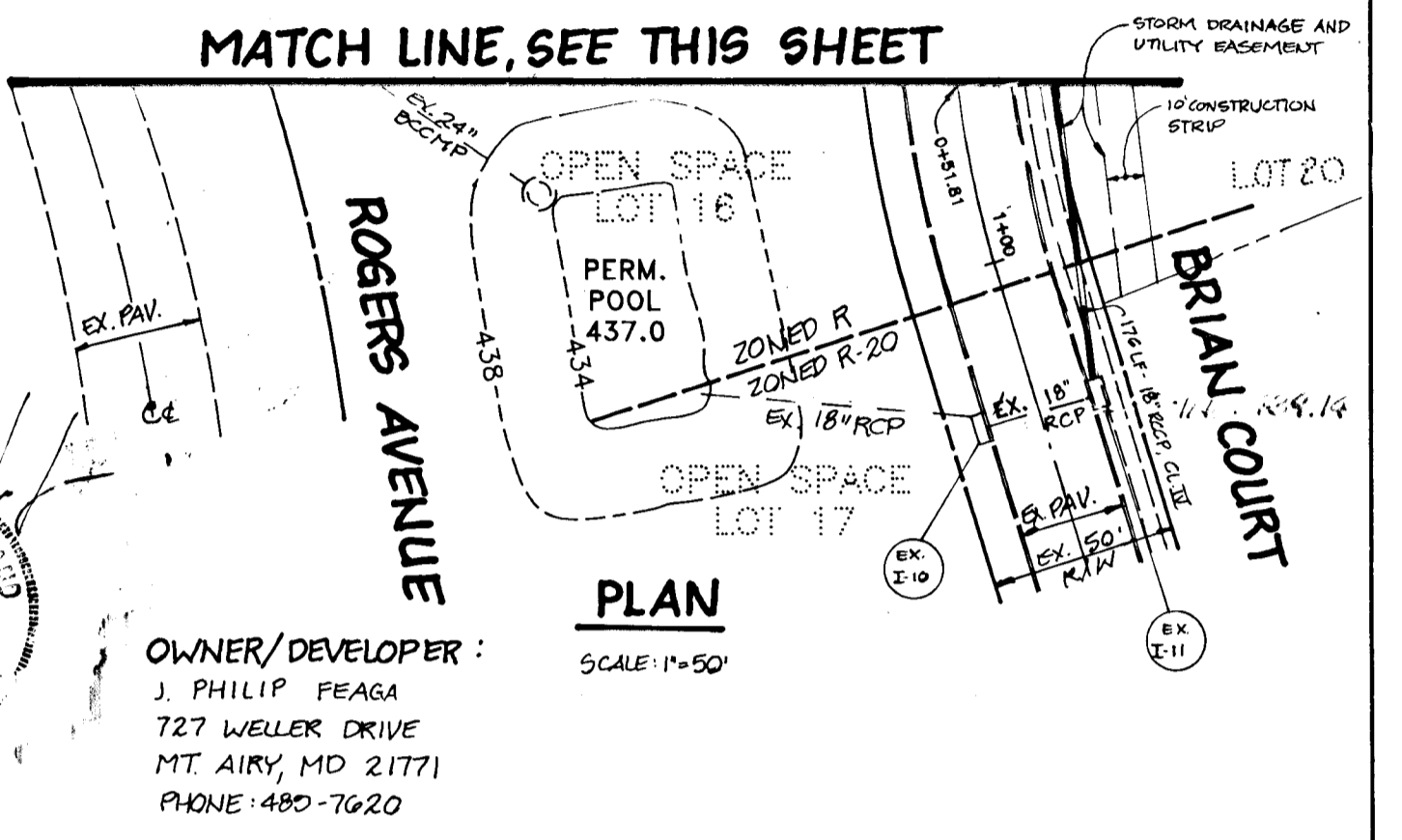
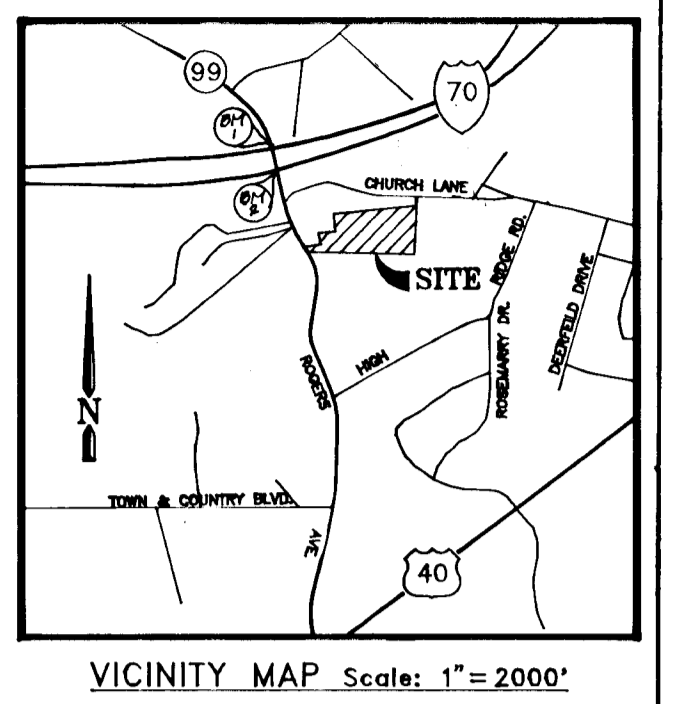


- BENCHMARKS:**
- HO. CO. MON. NO. 344201 N. 533101.605
E. 863186.500
ELEV. 466.88, REBAR IN GRAVEL SHOULDER
0.2' BELOW SURFACE
 - HO. CO. MON. NO. 344303 N. 532850.489
E. 863225.215
ELEV. 468.14, 3/4" REBAR @ 5' BELOW SURFACE
- ▲ INDICATES 100 W. "TRADITIONAIRE" HIGH PRESSURE SODIUM VAPOR LAMP ON 14 FEET HIGH BLACK FIBERGLAS



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature] Chief, Land Development Division DATE: 4/14/93

[Signature] Chief, Bureau of Highways DATE: 2/29/93

[Signature] Chief, Bureau of Engineering DATE: 3-1-93

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] Chief, Division of Community Planning and Land Development DATE: 3/14/93

REF. NO. S-01-14-P-02-00-WP-02-08

TITLE: **ROAD CONSTRUCTION PLAN**

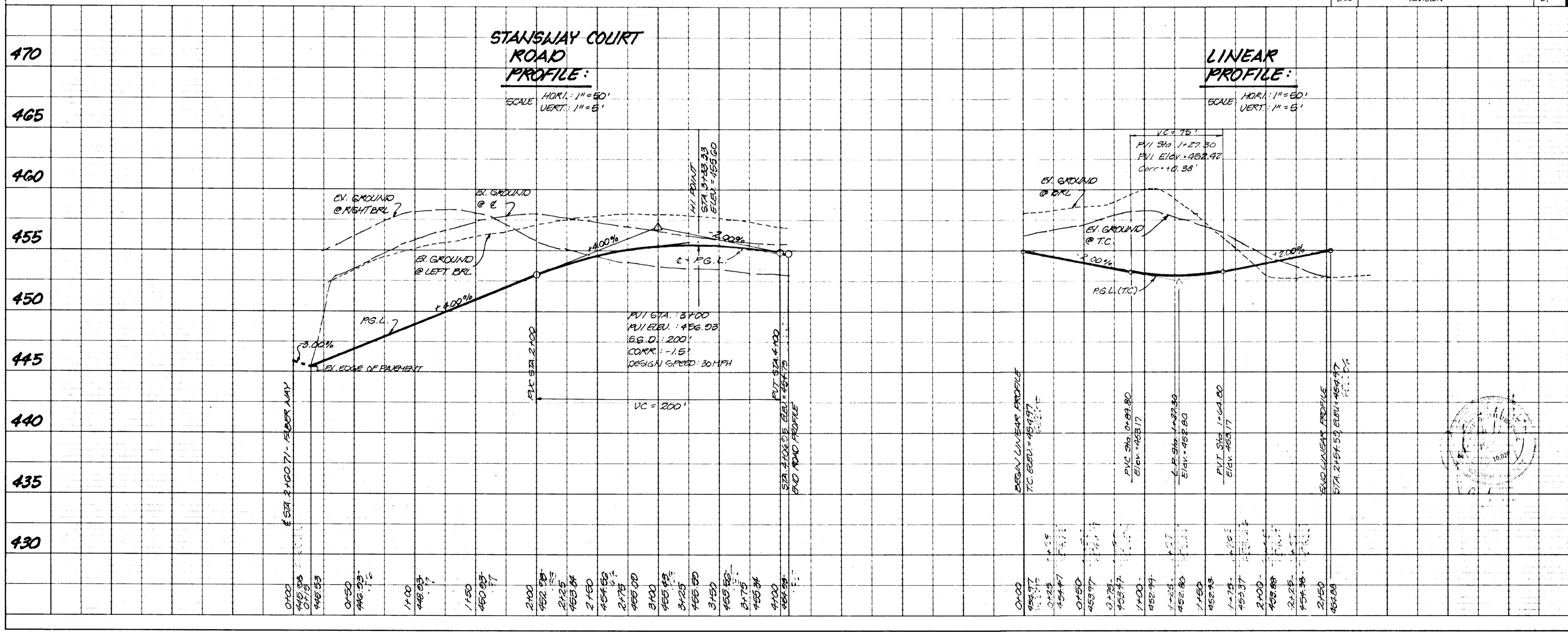
PROJECT: **FEAGA PROPERTY**

LOCATION: SECOND ELECTION DISTRICT, HOWARD CO., MD.

SCALE: AS SHOWN DESIGNED BY: J.C.O. DRAWN BY: J.C.O. CHECKED BY: J.C.O. DATE: SEPT, 1992

FIELD BOOK: 133 PAGE NO.: 28 JOB NO.: 01006 DRAWING NO.: 1 OF 5

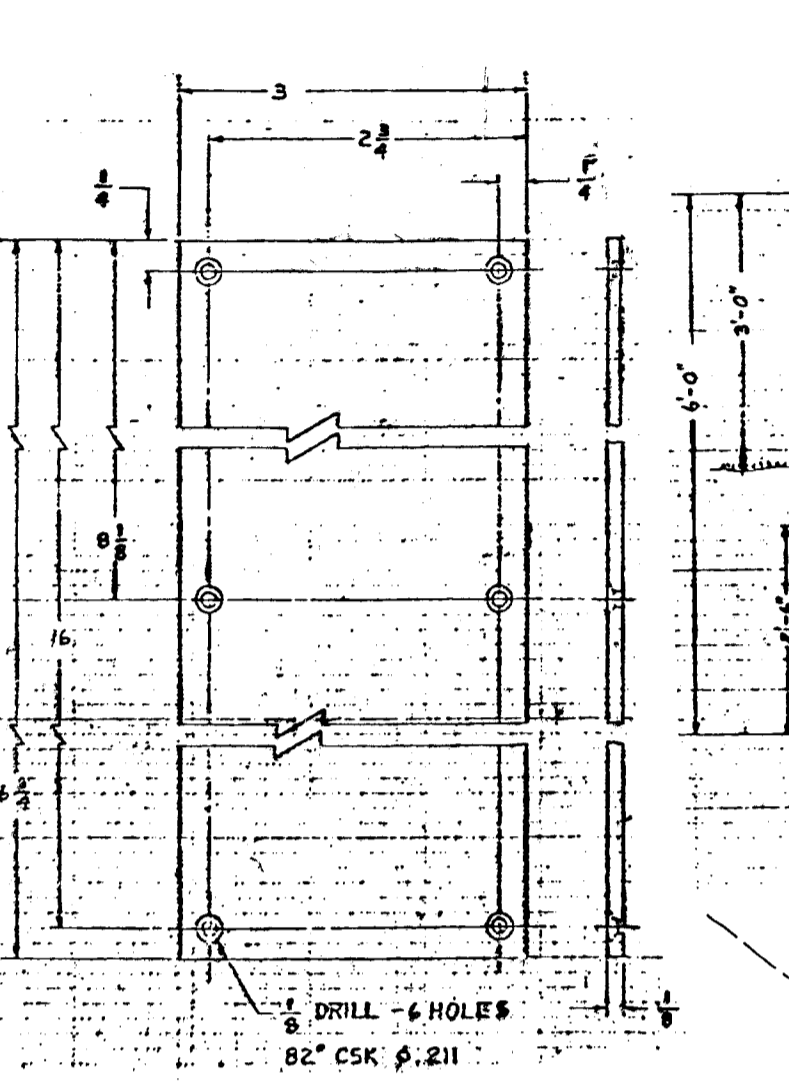
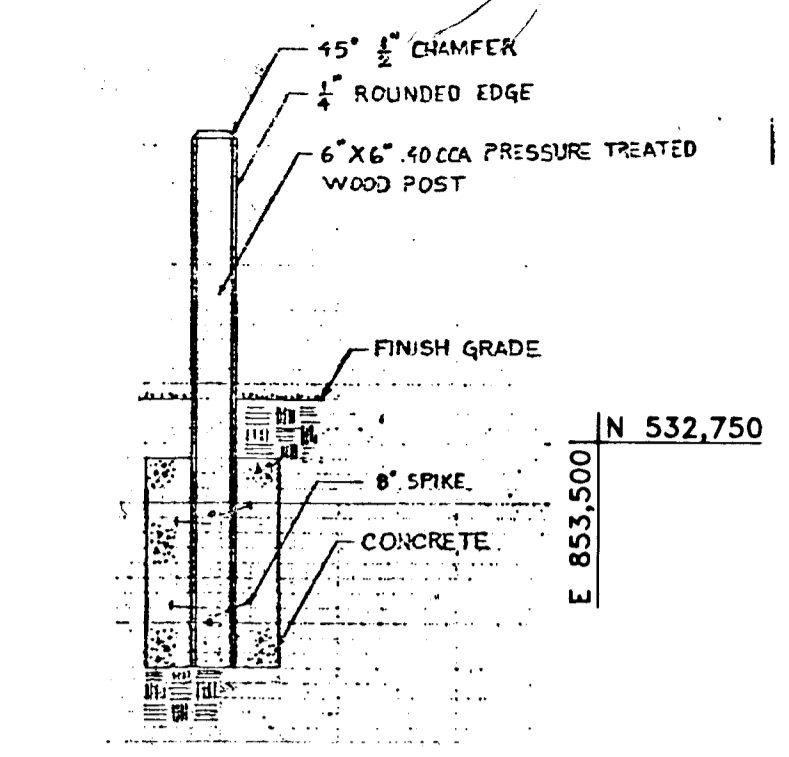
Boender Associates
ENGINEERS, PLANNERS, SURVEYORS
3230 BETHANY LANE
ELLCOTT CITY, MD. 21043
(301) 465-7777 FAX: (301) 465-7966



- GENERAL NOTES**
- All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications, if applicable.
 - The contractor shall notify the Department of Public Works/Bureau of Construction Inspection at (301) 792-7272 at least five (5) working days prior to the start of work.
 - The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work.
 - Total tract area is 9.626 Ac. with 16 proposed lots. Preliminary plan was approved on MAY 29, 1992.
 - Traffic control devices, markings, and signing shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
 - A field run survey was conducted by Boender Associates, Inc. on or about March of 1991.
 - Light poles and fixtures for street lights shall be in accordance with the latest Howard County Design Manual, Volume III Roads and Bridges.
 - Water and sewer to be provided will be a public system.
Water - 14-3174-D
Sewer - 14-3174-D
Drainage area: Patapsco
 - There is no 100 Year Floodplain on site.
 - Stormwater management will be an extended detention facility.
 - The wetlands delineation was performed by Environmental Systems Analysis on March of 1991.
 - The geotechnical report was prepared by Froehling and Robertson, Inc. on October of 1991.
 - Existing utilities were located by field run survey and approved county As-Builts.
 - A waiver of the 20' setback requirement from the property lines of lots 10 & 11 and Rockland Square, open space lot 14 to the S.W.M. facility has been applied for to D.P.W.
 - Street light shall be 150-watt "Traditionaire" high pressure sodium vapor lamps on 14 foot black fiberglass poles.
 - ALL HANDICAP RAMPS SHALL MEET THE LATEST A.D.A. REQUIREMENTS.
- PROJECT BACKGROUND:**
LOCATION: TYP. MAP: 17-18, PARCEL: 310+006
ZONING: R-20
28/BA REF: N/A
ELECTION DISTRICT: 2 ND
SECTION / AREA: N/A
TOTAL AREA OF TRACT: 9.626 AC.
SECTION AREA: N/A
NUMBER OF PROPOSED LOTS: 16
DATE OF PRELIMINARY PLAN: MAY 29, 1992
D.P. & Z. REFERENCE NUMBERS: S-01-14-P-02-00-WP-02-08

806
Eight Zero Six

PLATE TO BE SCREWED & GLUED IN PLACE. SCREWS ARE TO BE COUNTERSUNK.



NOTE: BOLLARDS TO BE PLACED AT THE FOUR CORNERS OF THE OPEN SPACE ACCESS STRIP. THE ALUMINUM PLATE WILL ONLY BE REQUIRED ON THE FRONT RIGHT BOLLARD DIRECTLY FACING THE ROAD.

BOLLARD DETAIL
NOT TO SCALE

| STRUCTURE | TYPE | INVERT | | LOCATION | TOP ELEV. | DETAIL |
|-----------|----------------------|--------|--------|-----------------------|-----------|------------------|
| | | IN | OUT | | | |
| I-1 | A-5 | 442.64 | 442.43 | E STA. 0+30.5, 14'L & | 446.64 | S.D. 4.40 |
| I-2 | A-5 | - | 443.20 | E STA. 0+64, 14'L & | 447.62 | S.D. 4.40 |
| I-3 | A-5 | - | 448.20 | L.P. STA. 1+27 @ SUMP | 452.80 | S.D. 4.40 |
| I-4 | A-5 | 450.25 | 450.00 | E STA. 2+43, 14'L & | 454.37 | S.D. 4.40 |
| I-5 | A-5 | - | 450.80 | E STA. 2+43, 14'L & | 454.37 | S.D. 4.40 |
| EX. I-11 | EX. INLET | 442.14 | 430.00 | SEE PLAN | EXISTING | EXISTING |
| M-2 | MANHOLE | 446.96 | 446.96 | SEE PLAN | 449.34 | G.S.D.1 |
| M-3 | MANHOLE | 446.67 | 446.46 | SEE PLAN | 453.20 | G.S.D.1 |
| E-1 | END SECTION | - | 446.00 | SEE PLAN | - | S.D. 5.51 |
| E-2 | END SECTION | - | 446.00 | SEE PLAN | - | S.D. 5.51 |
| S-1 | MODIFIED TYPED INLET | - | 446.96 | SEE PLAN | - | SEE DETAIL SHEET |

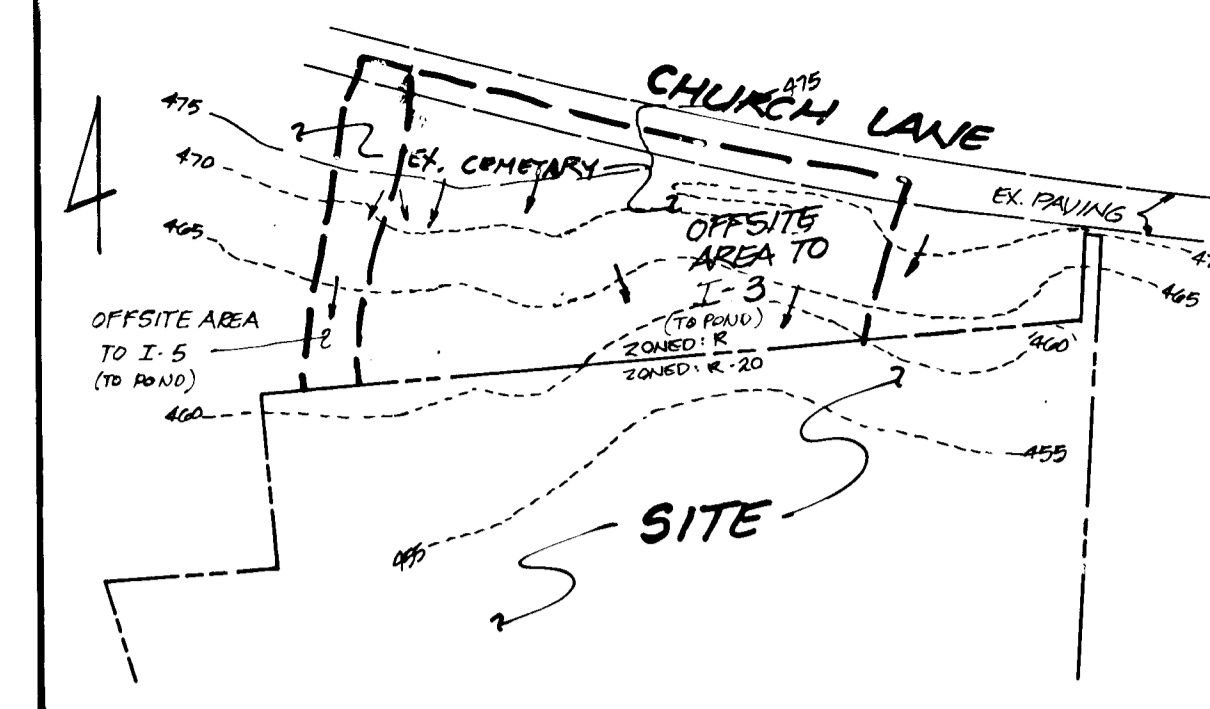
SOIL LEGEND

| TYPE | SYMBOL | NAME / DESCRIPTION |
|------|--------|--|
| G | G.0B2 | GLENNELG LOAM, MODERATELY ERODED |
| B | G.0CB | GLENNELG LOAM, MODERATELY ERODED |
| D | K.B2 | KELLY SILT LOAM, HYDRIC INCLUSIONS |
| M | Md | MADE LAND |
| Md | Md | MAJOR VERY STONY LOAM |
| Md | Md | MONAIDT AND KELLY VERY STONY SILT LOAM |
| B | N.B2 | NASHMINY SILT LOAM, MODERATELY ERODED |

NOTE: SOILS SHOWN HEREON ARE BASED ON HOWARD COUNTY SOILS SURVEY MAP NO. 16.

LEGEND

- EXISTING 2' CONTOUR
- - - EXISTING 10' CONTOUR
- PROPOSED 2' CONTOUR
- - - PROPOSED 10' CONTOUR
- DRAINAGE DIVIDE
- ▲ STREET LIGHT (PROPOSED)
- 61B2 / 46B2 SOILS CLASSIFICATIONS
- SWM POND BORING
- WETLANDS LIMIT
- WETLANDS BUFFER
- OPEN SPACE BOLLARD



OFFSITE DRAINAGE AREA MAP
SCALE: 1" = 200'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Land Development Division
 DATE: 2/19/93

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Community Planning and Land Development
 DATE: 2/19/93

DEVELOPERS CERTIFICATE
 I certify that all development and/or construction will be done according to these plans and that any responsible personnel involved in the construction project will have a certificate of attendance at a 4-hour approved training program for the control of sediment and erosion before beginning the project. I will 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 inspection by the Howard Soil Conservation District.

Developer: *James M. Helms* DATE: Feb. 9, 1993

ENGINEER CERTIFICATE
 I certify that this plan for erosion and sediment control represents a practical and workable plan based on personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "AS-BUILT" plan of the pond within 30 days of completion.

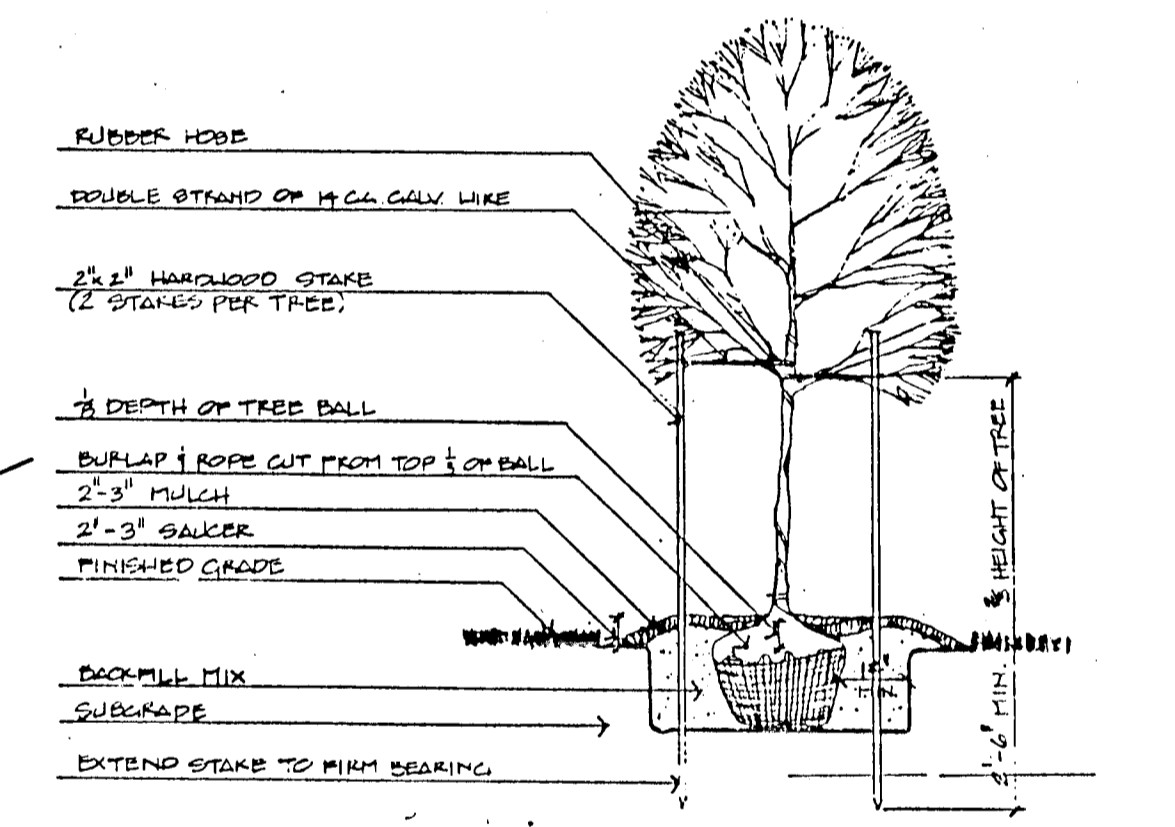
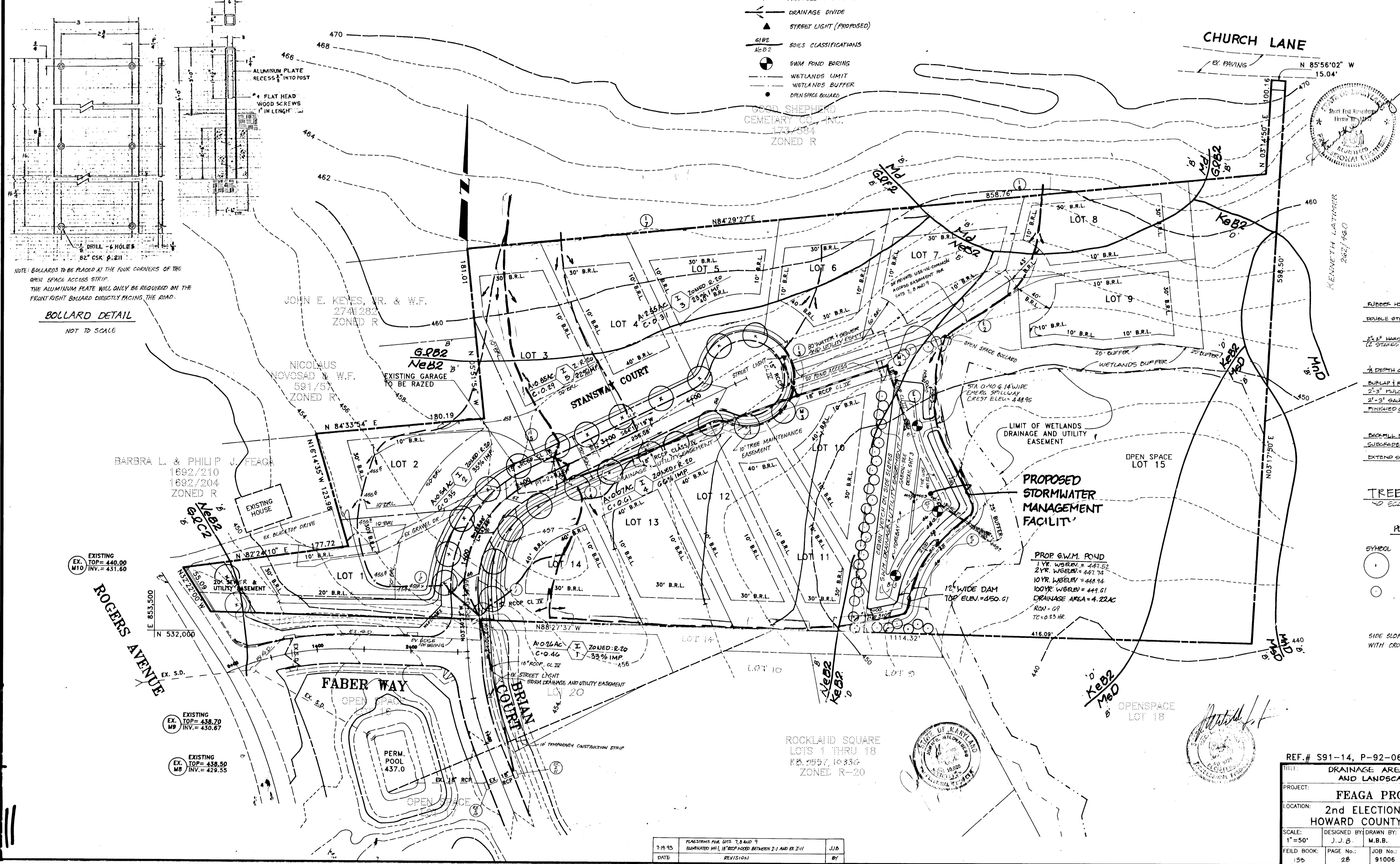
Engineer: *James M. Helms* DATE: 2-9-93

Reviewed for Howard Soil Conservation District and meets technical requirements for small pond construction, soil erosion and sediment control.

James M. Helms / JMH DATE: 2/16/93
 S.O. SOIL CONSERVATION SERVICE

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Robert W. Ziehm / RWZ DATE: 2/16/93
 SOIL CONSERVATION DISTRICT



TREE PLANTING DETAIL - TREES UNDER 2 1/2" CAL.

NOTE: TREES TO BE PLANTED A FEET FROM SIDEWALK AND 6 FEET BEHIND CURB WITHOUT SIDEWALK.

PLANTING SCHEDULE

| SYMBOL | TYPE | QUANTITY | SIZE | REMARKS |
|--------|-------------------------------------|----------|------------------|---|
| ○ | ACER RUBRUM, RED MAPLE (RED SUNSET) | 25 | 2 1/2" - 3" CAL. | B & D |
| ○ | PINUS STROBUS, WHITE PINE | 36 | 6" G. HEIGHT | B & D, 10" O.C. ALONG S.W.M. ACCESS ESM'T. STAGGER W/R. 2' OFFSET ALTERNATELY |

SIDE SLOPES OF POND ARE TO BE PLANTED WITH CROWN VETCH.

OWNER
 J. PHILIP FEAGA
 727 Weller Drive
 Mount Airy, Maryland 21771
 Phone: (301) 489-7620

REF # S91-14, P-92-06, WP 92-98

TITLE: DRAINAGE AREA, SOILS MAP AND LANDSCAPE PLAN

PROJECT: FEAGA PROPERTY

LOCATION: 2nd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1" = 50'

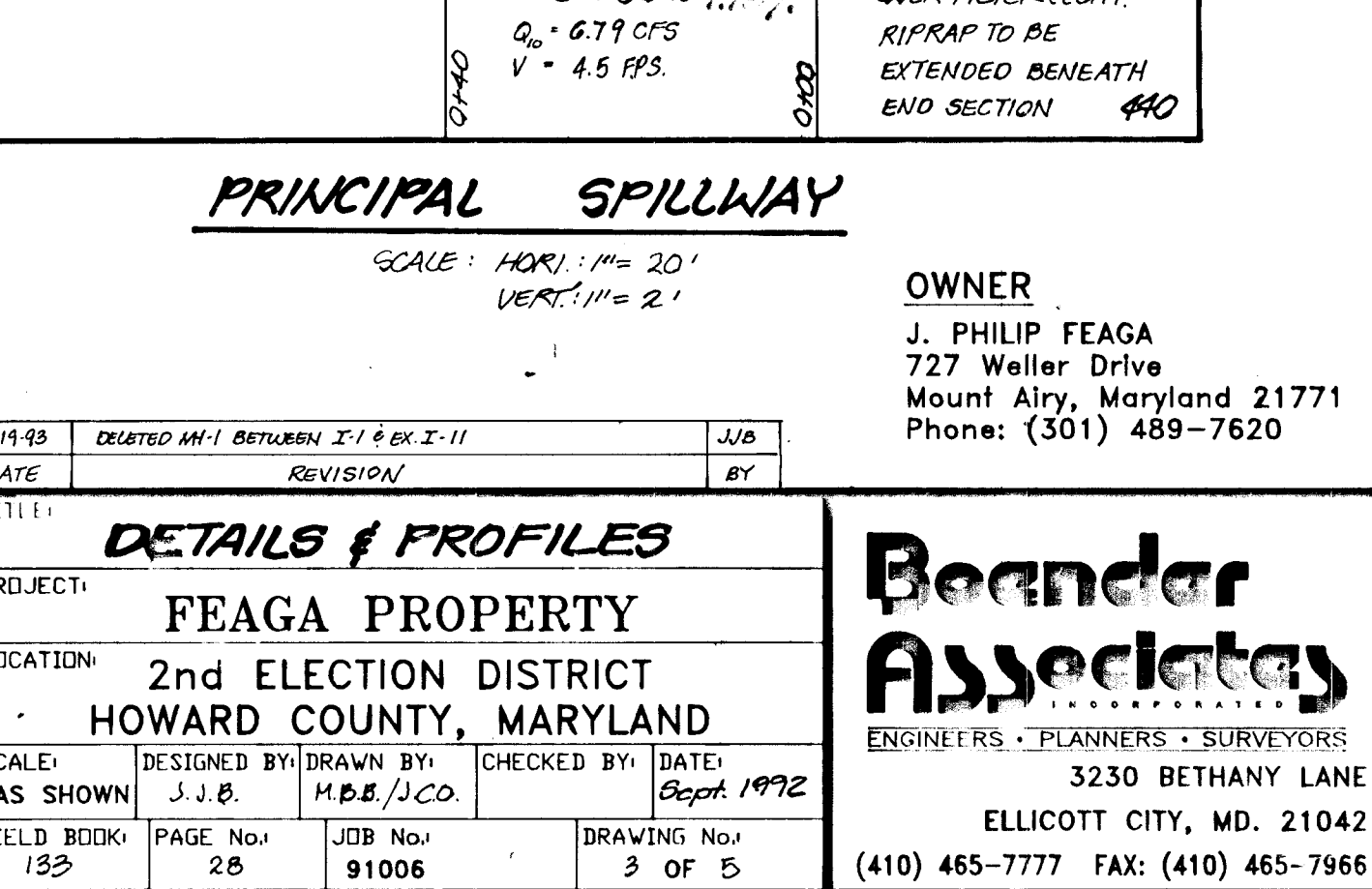
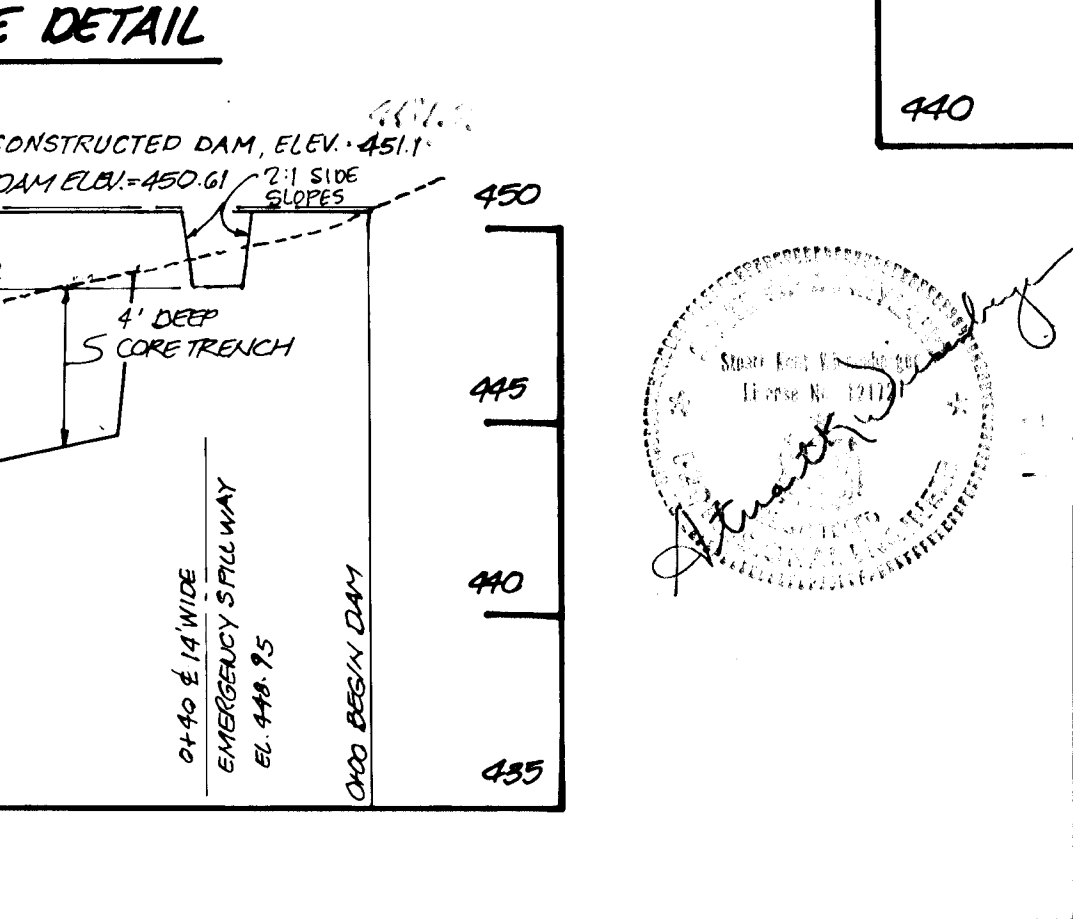
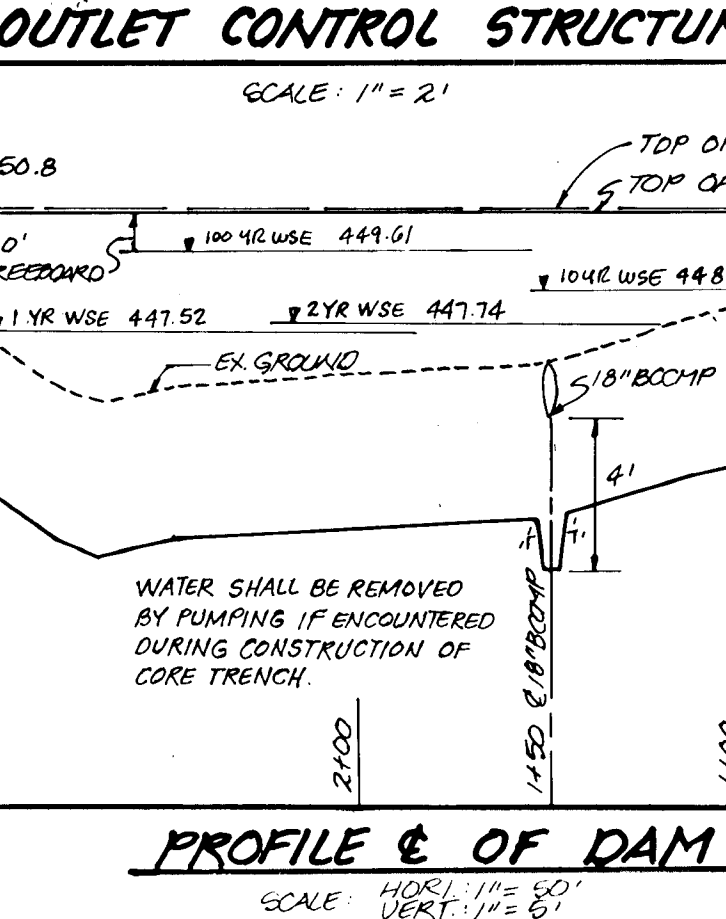
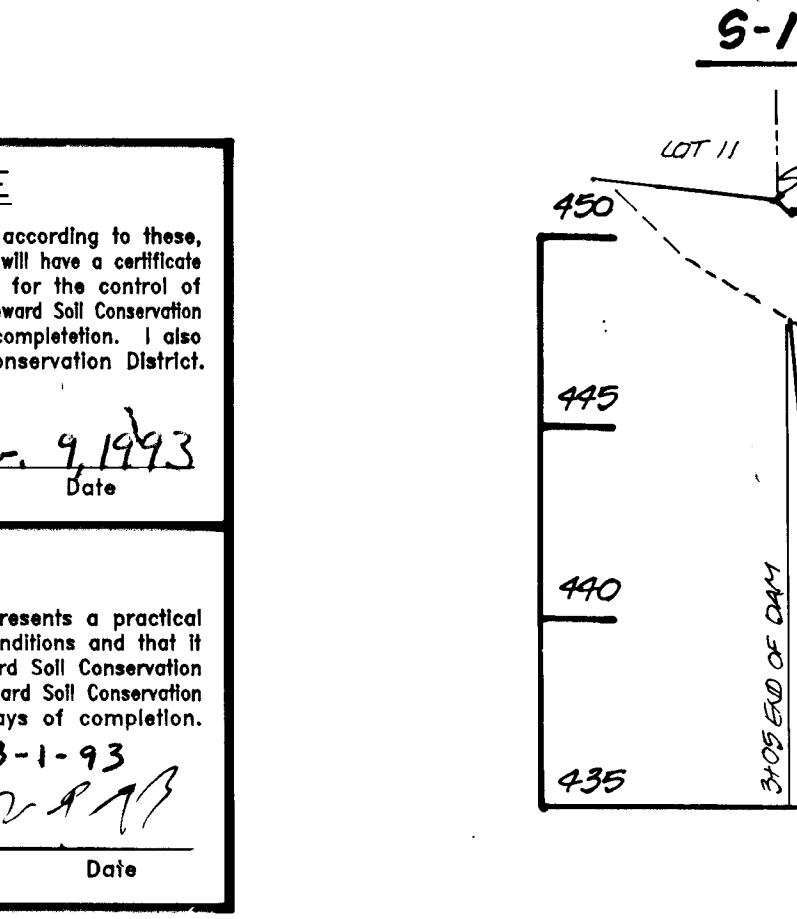
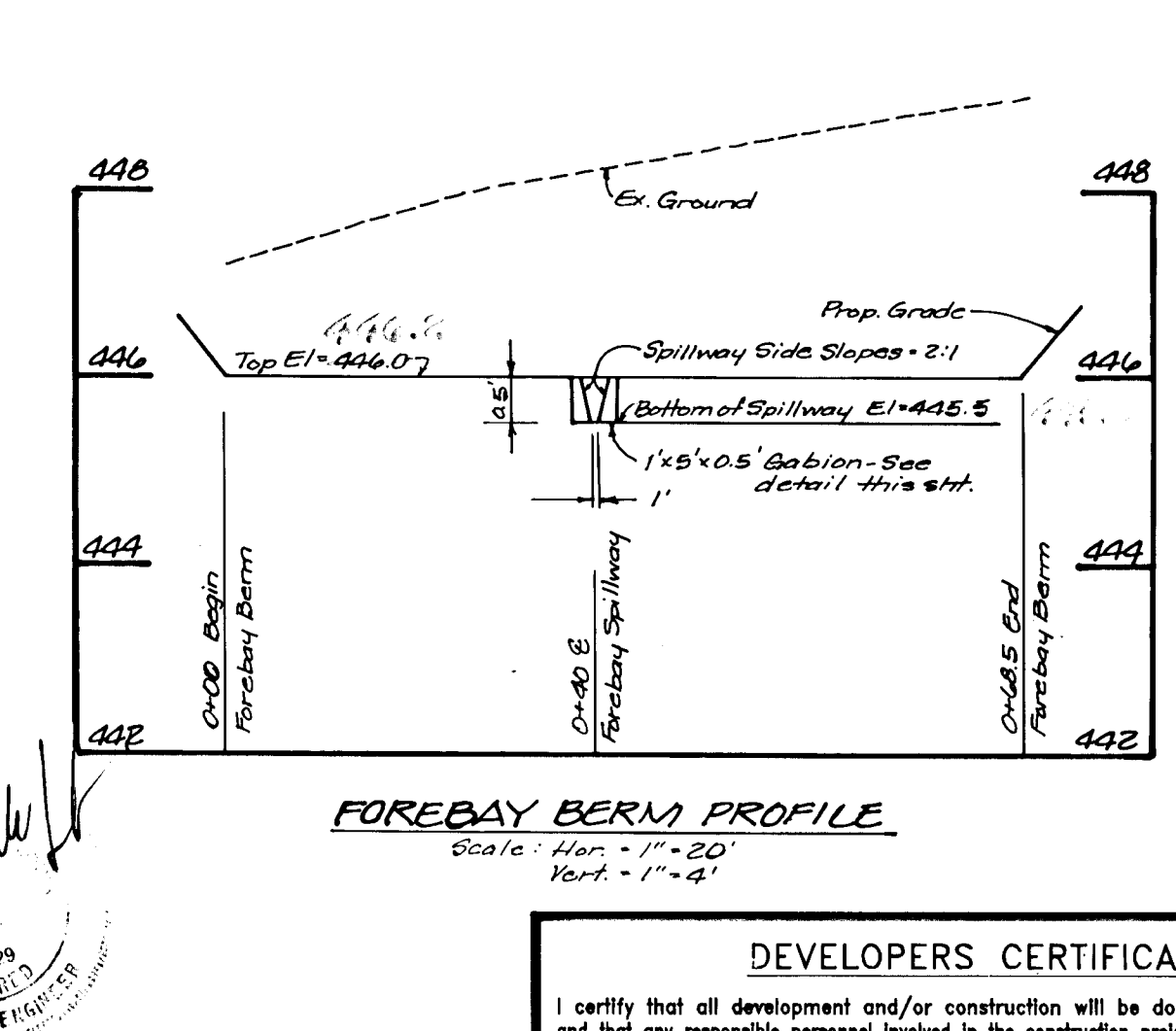
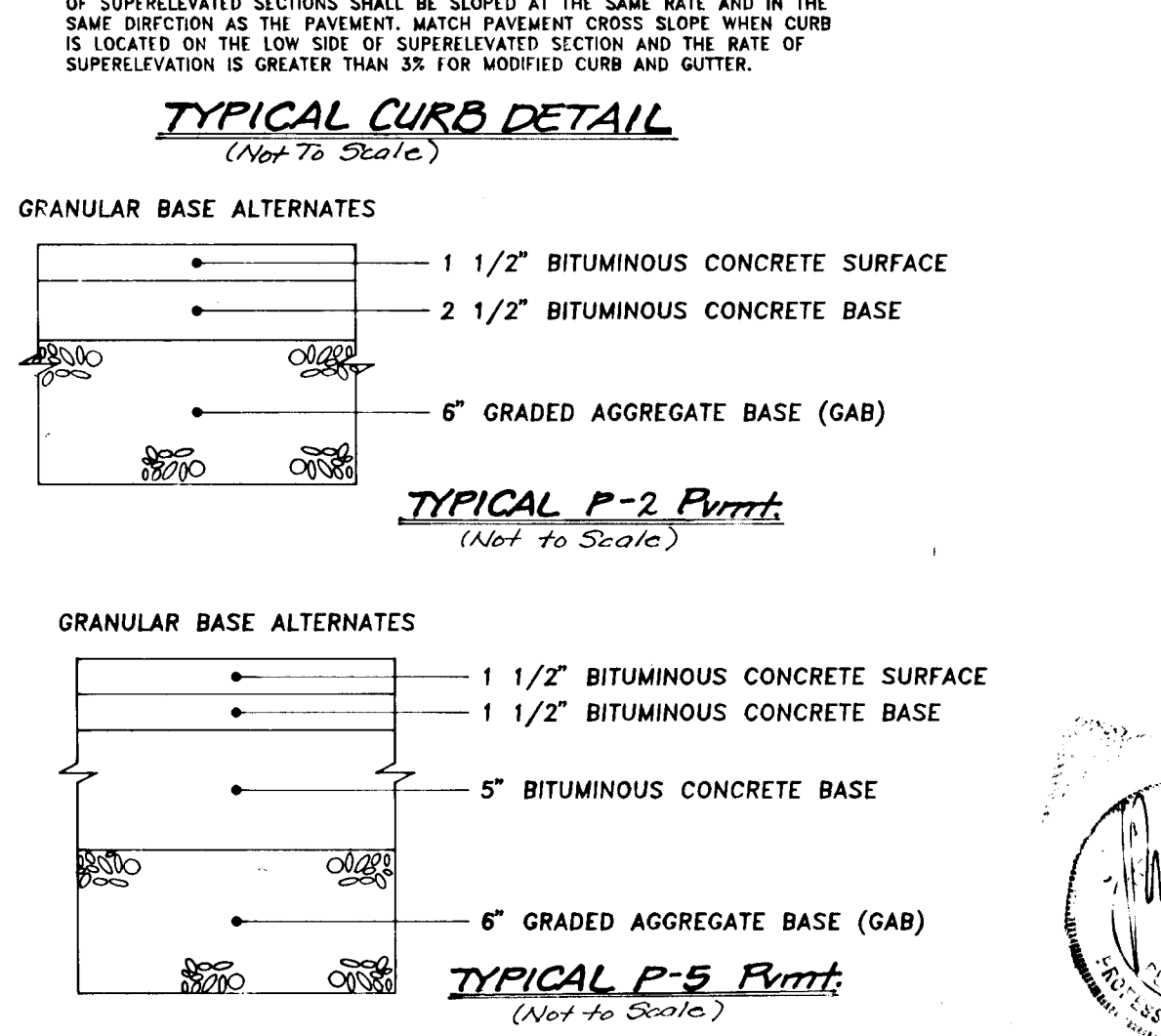
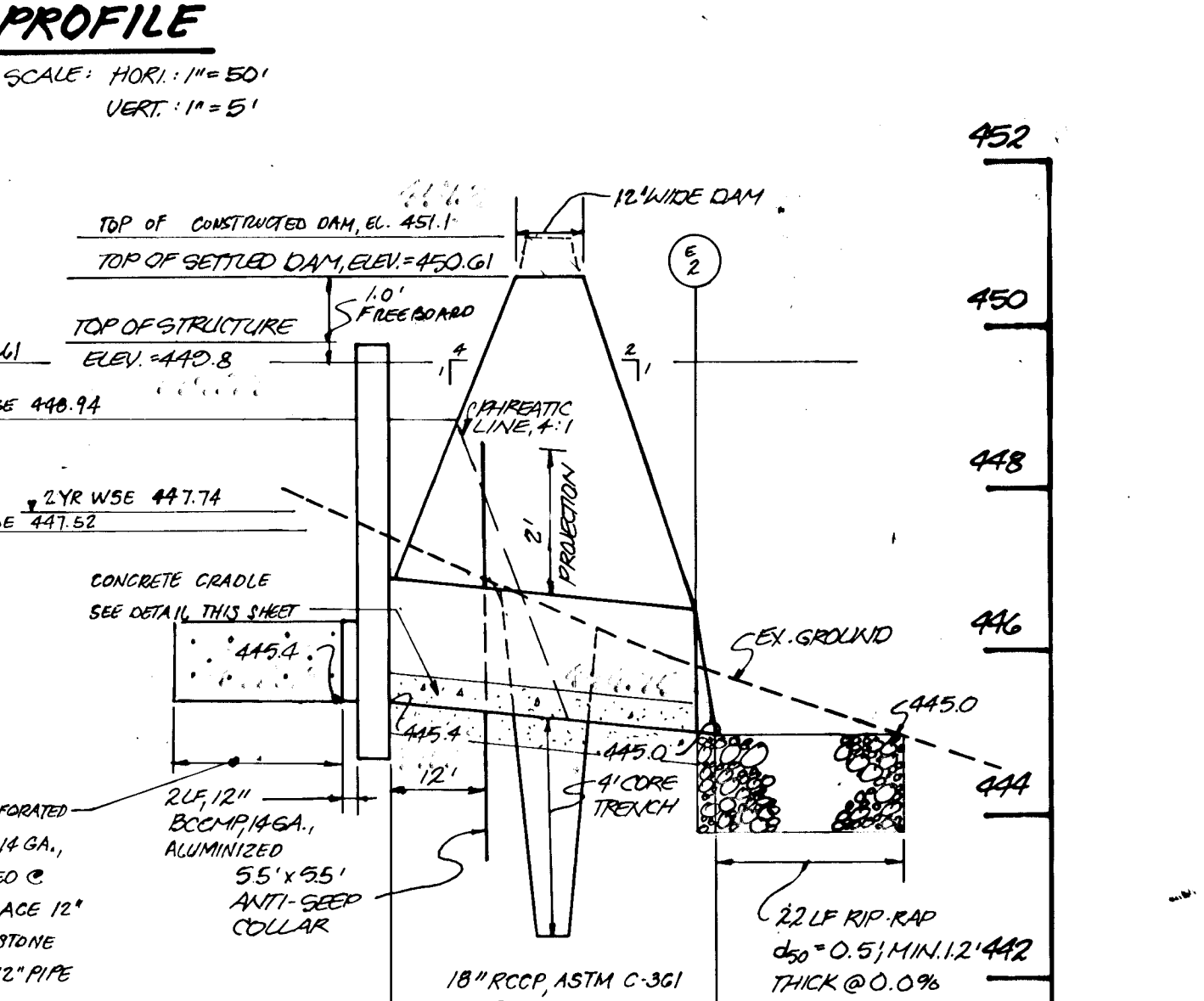
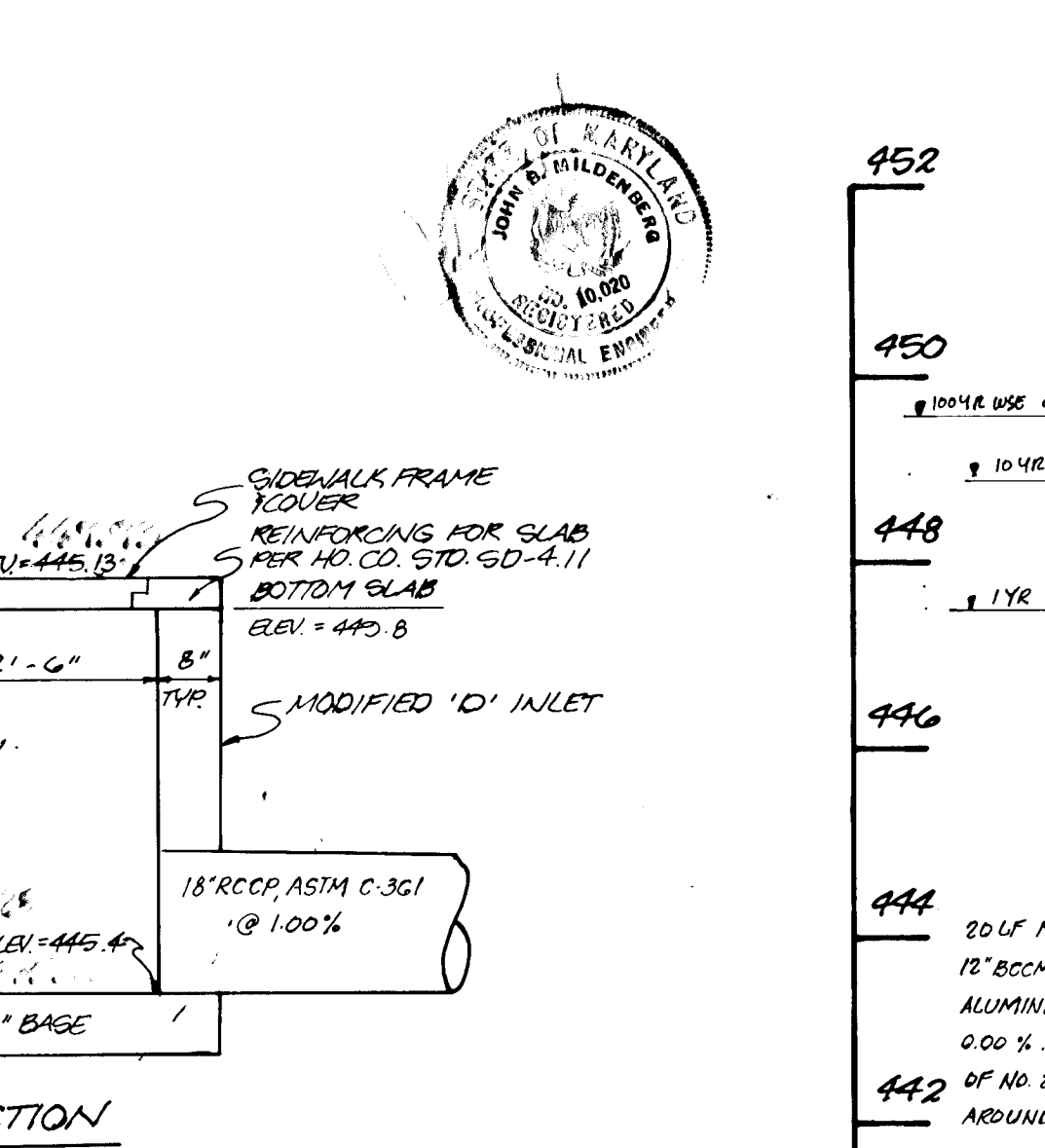
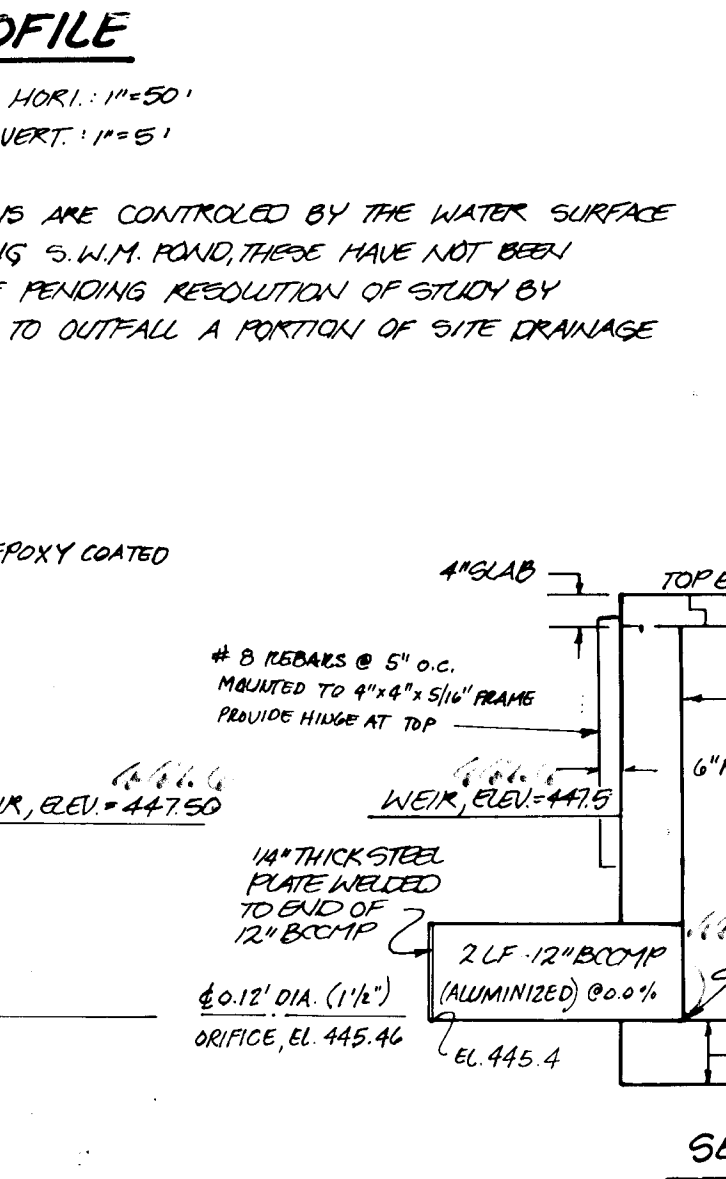
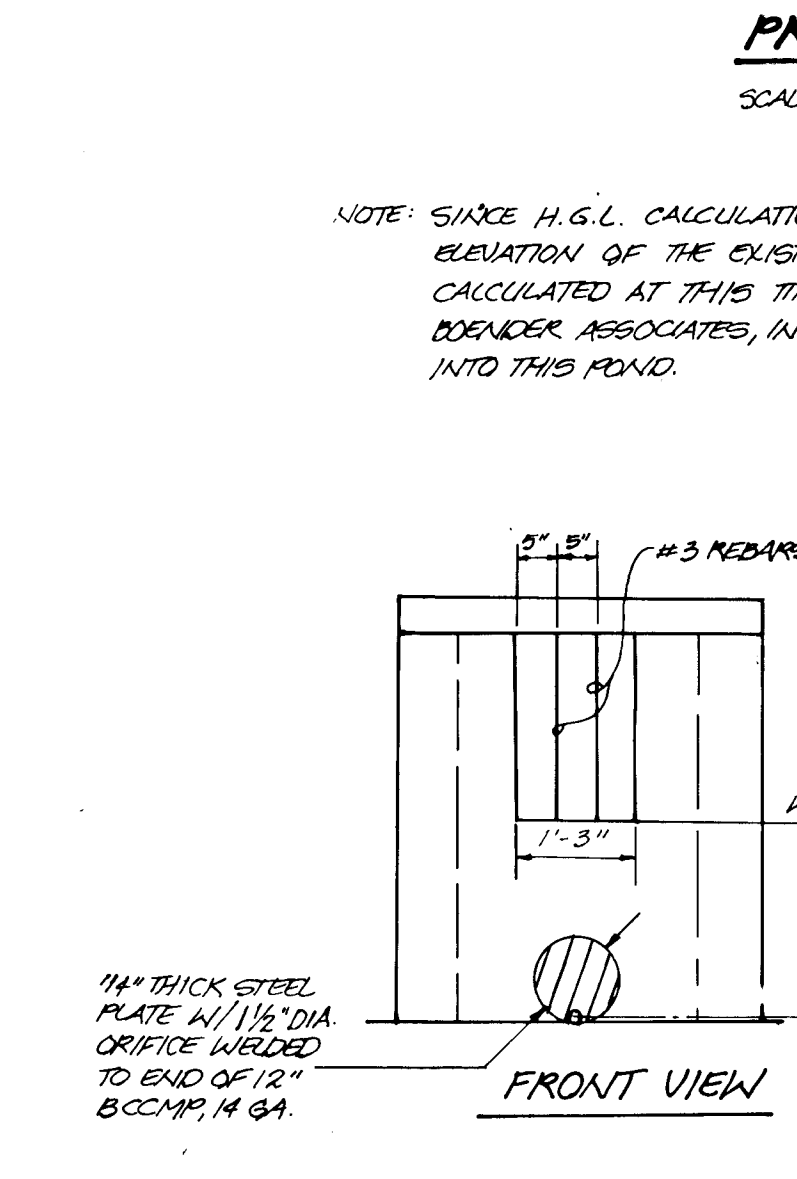
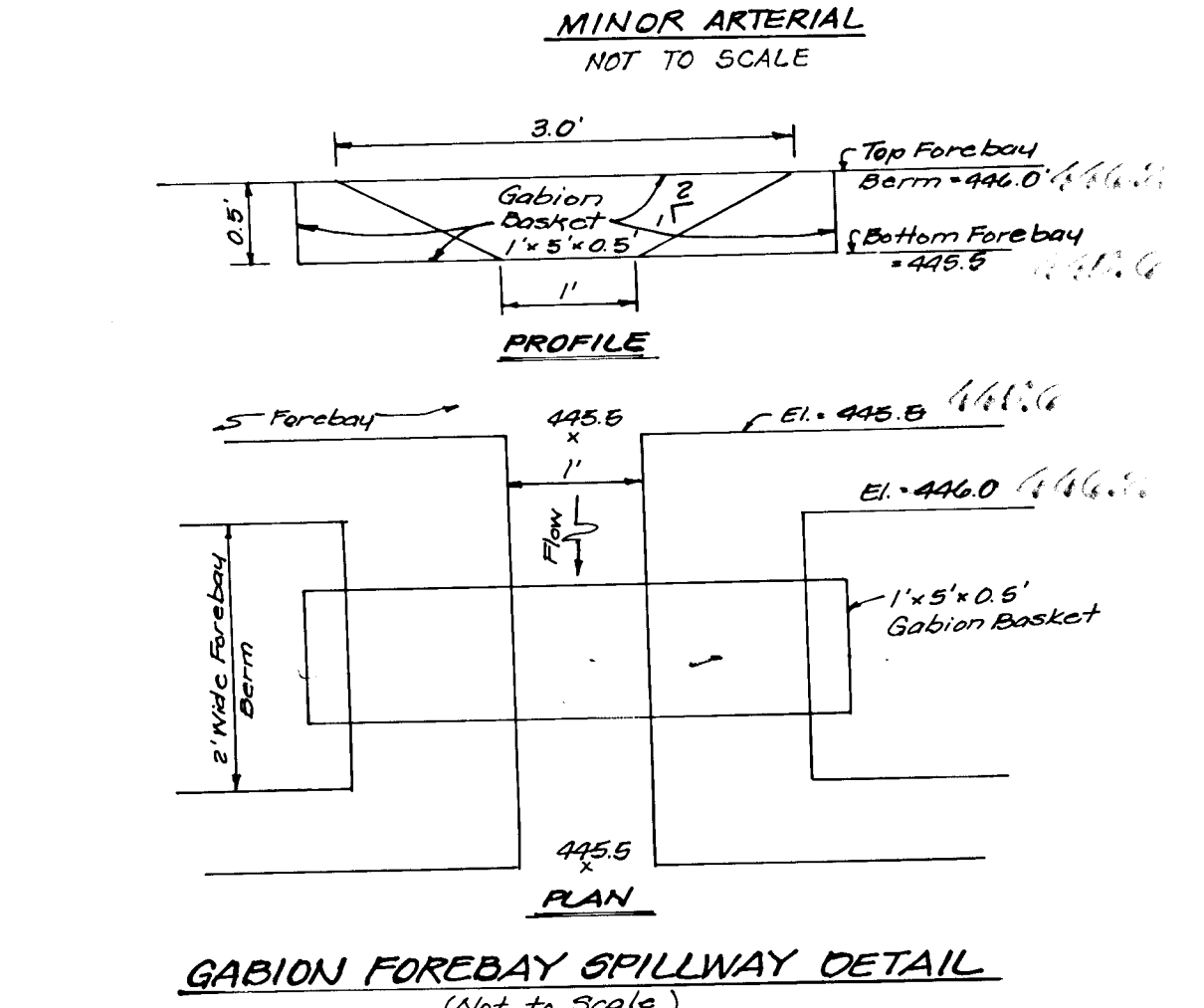
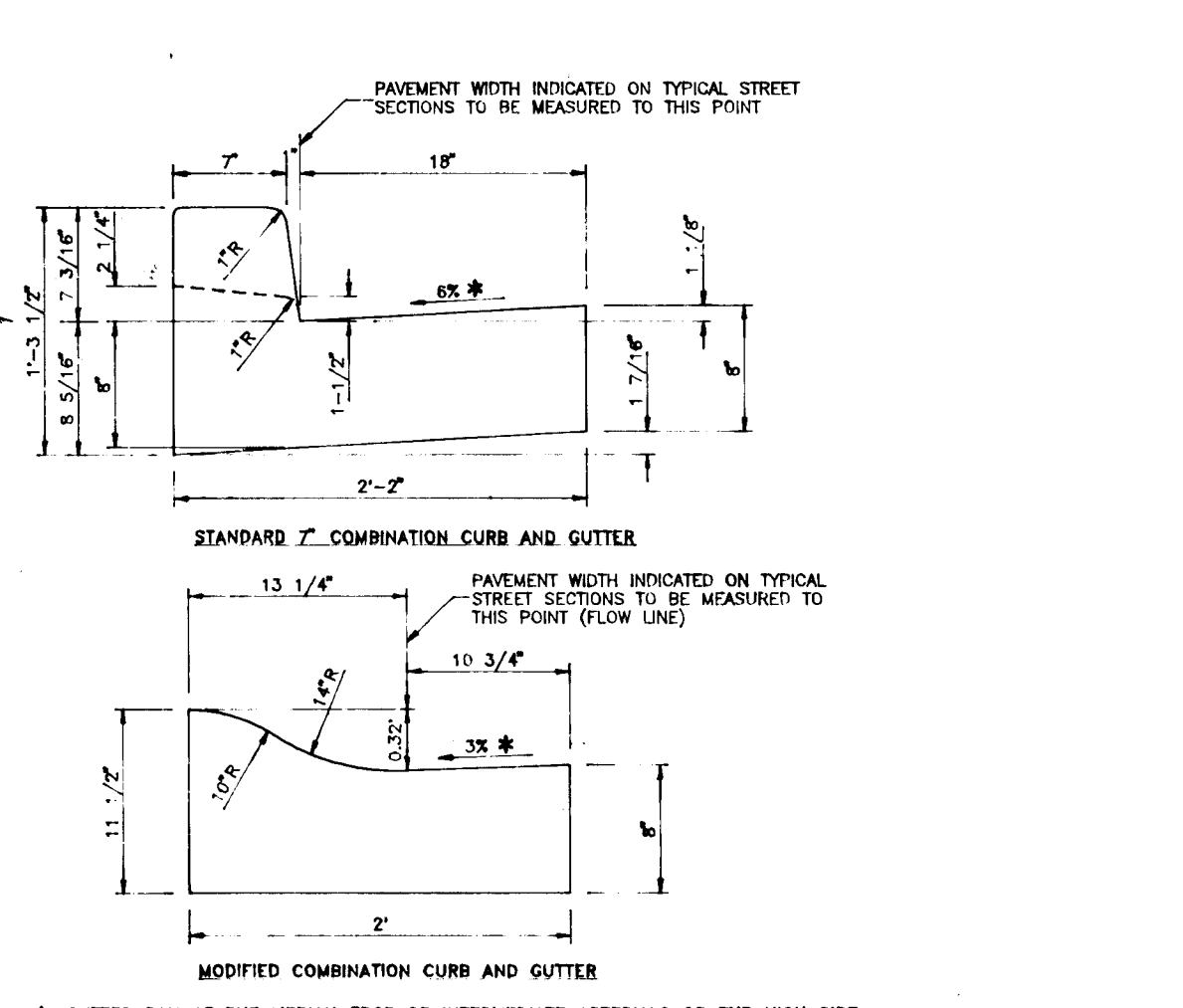
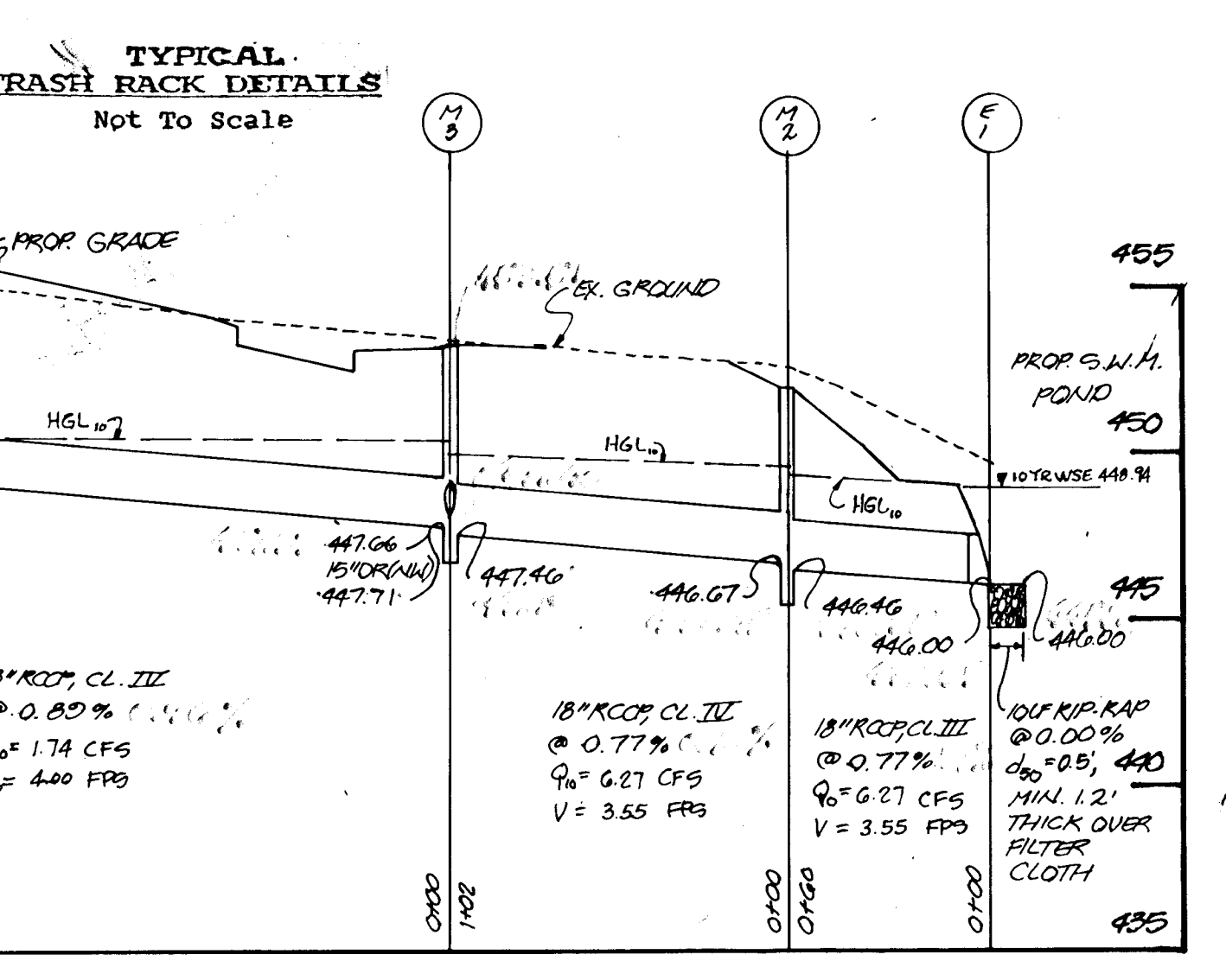
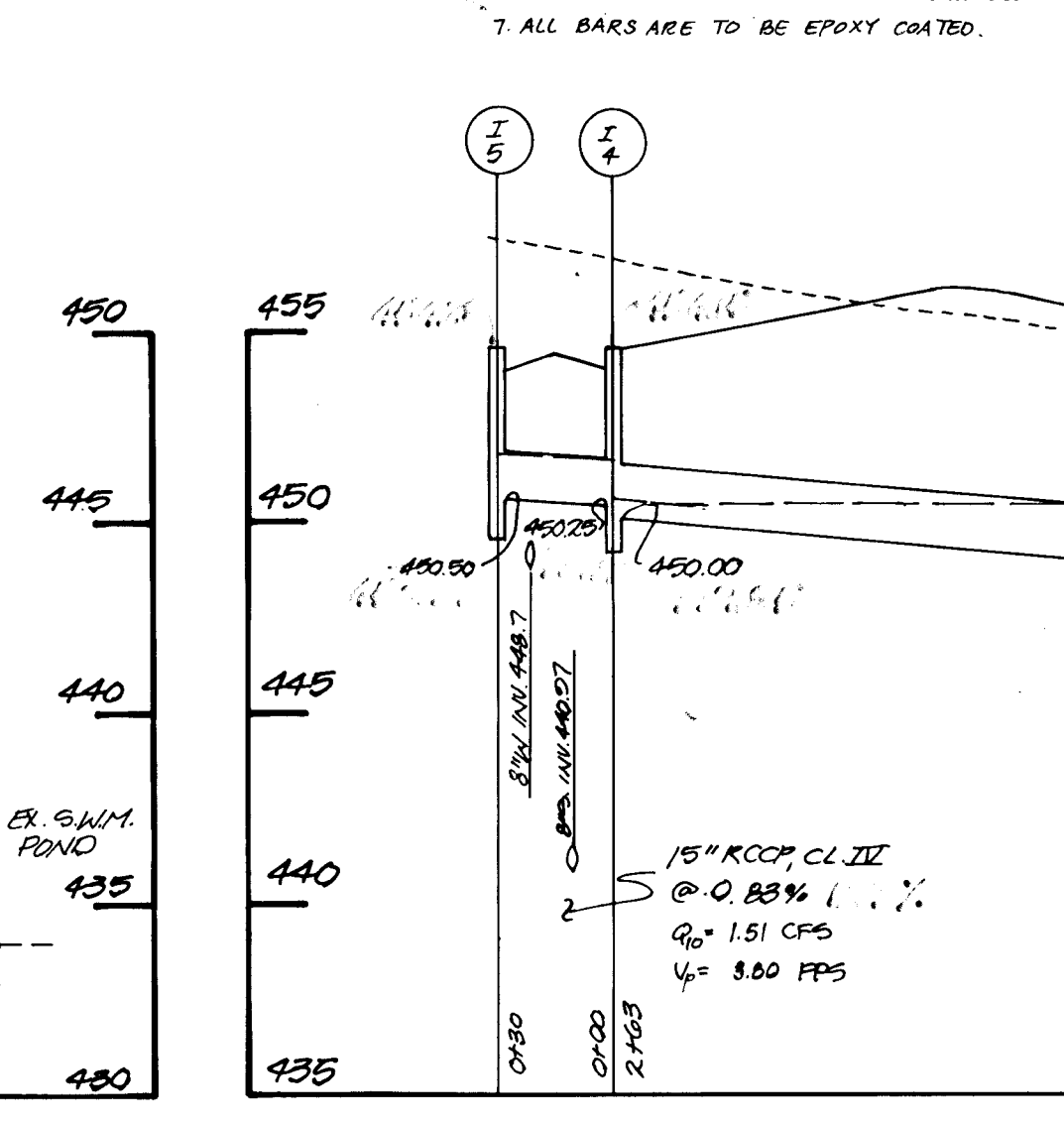
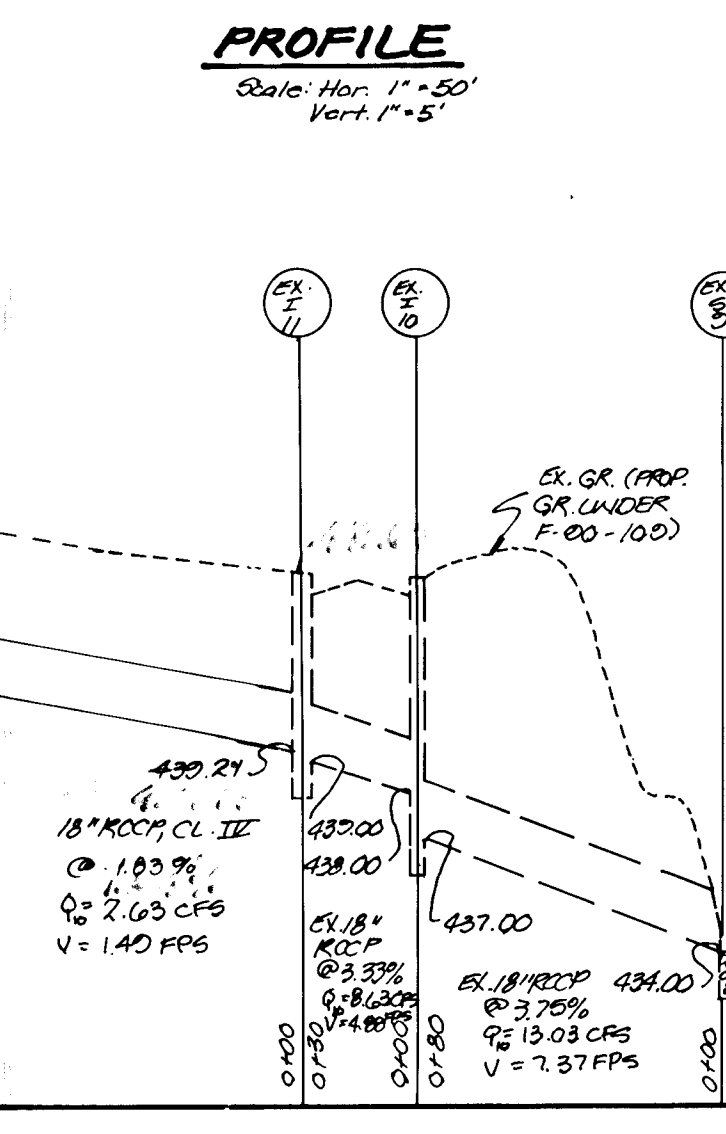
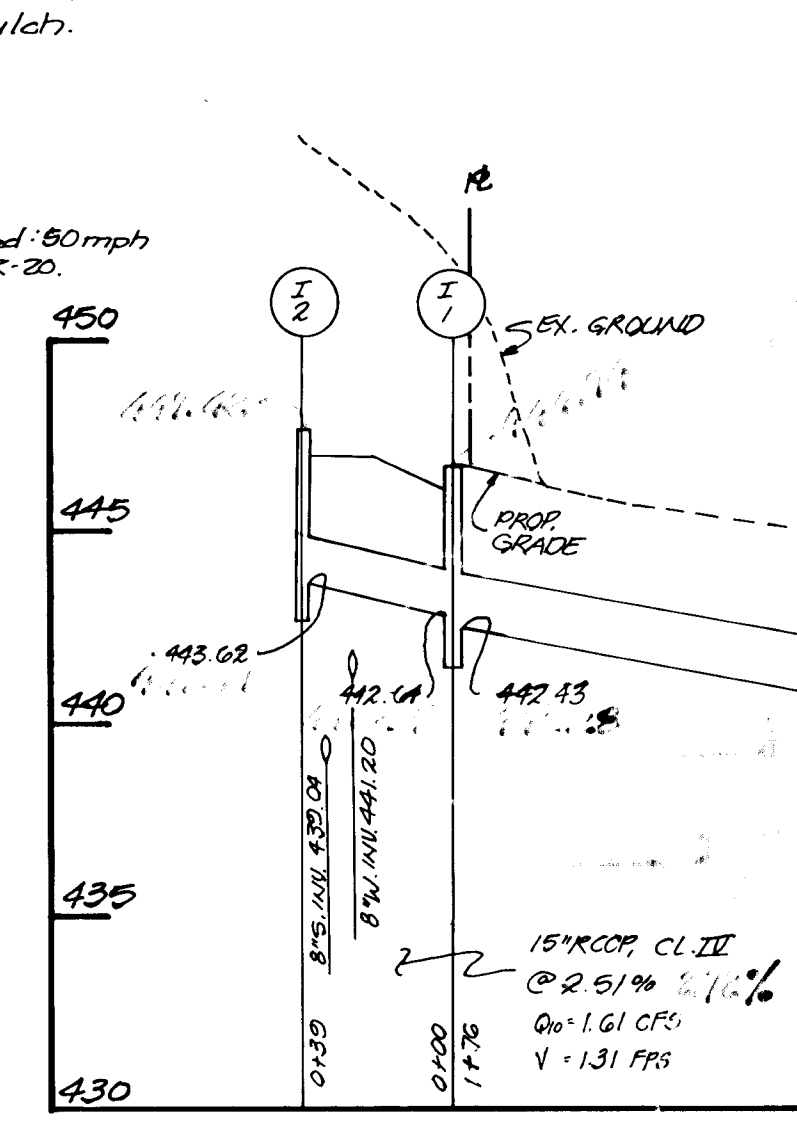
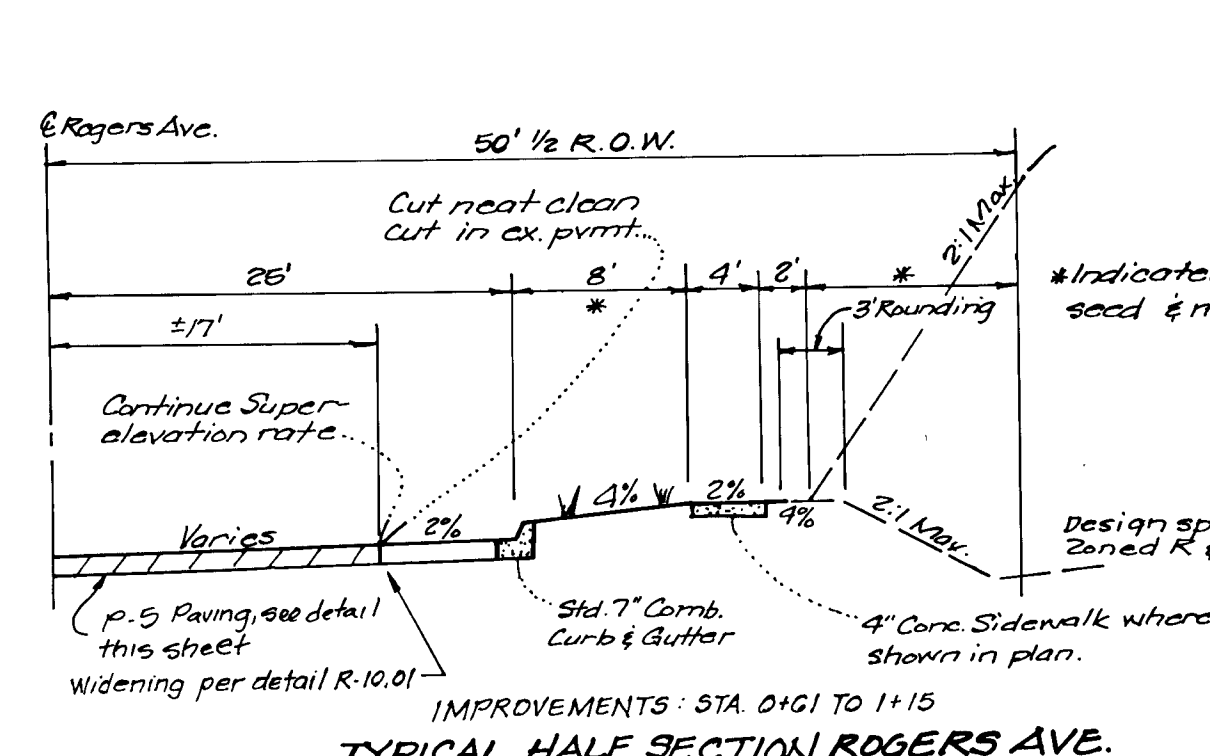
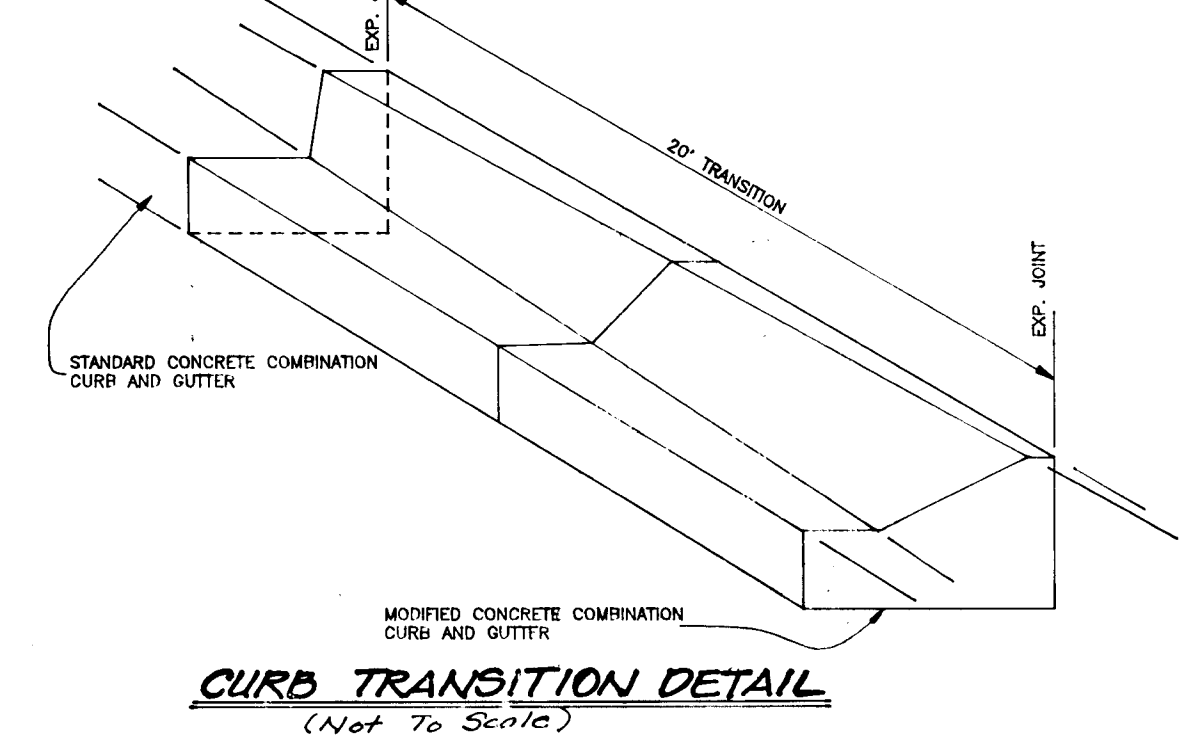
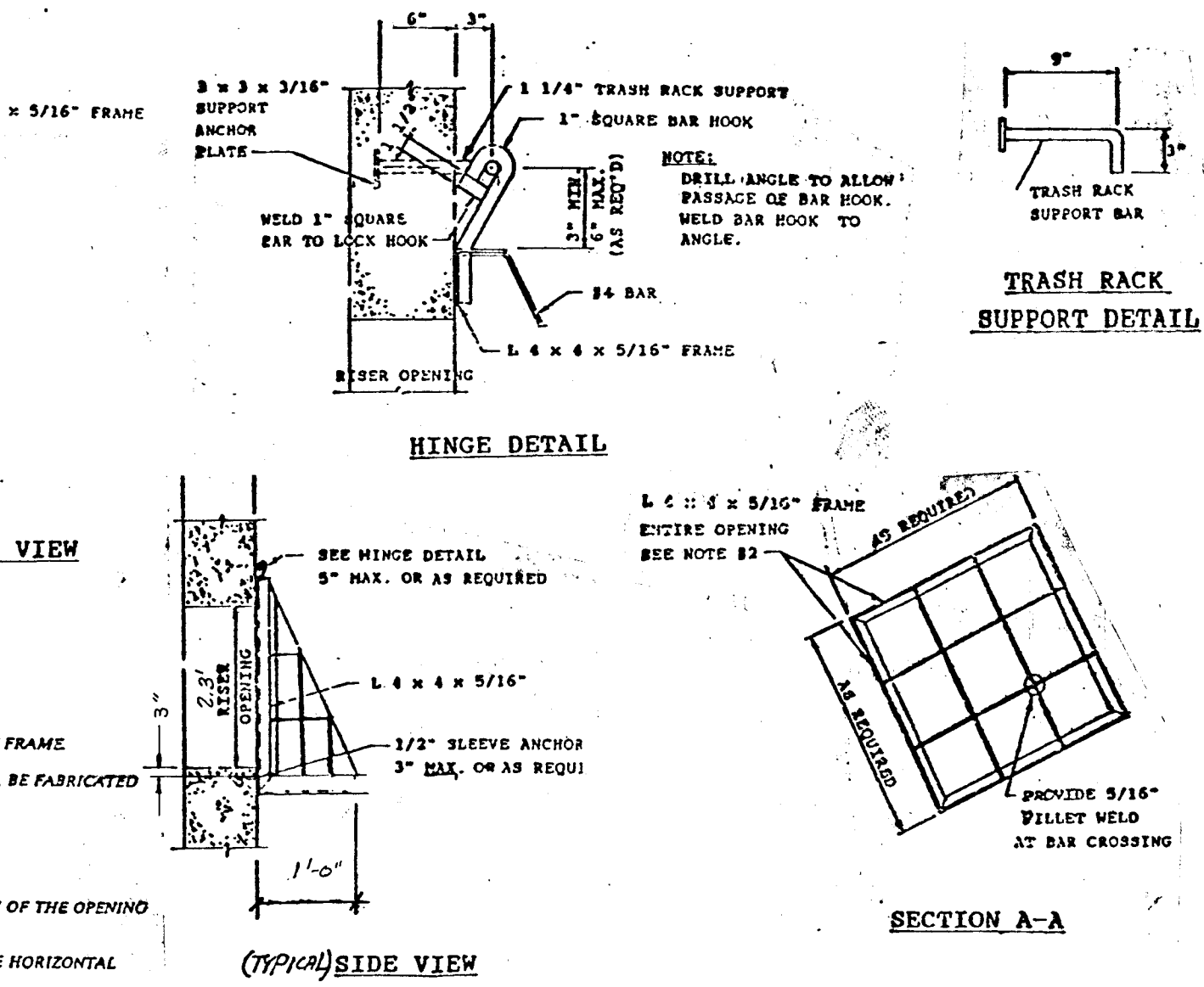
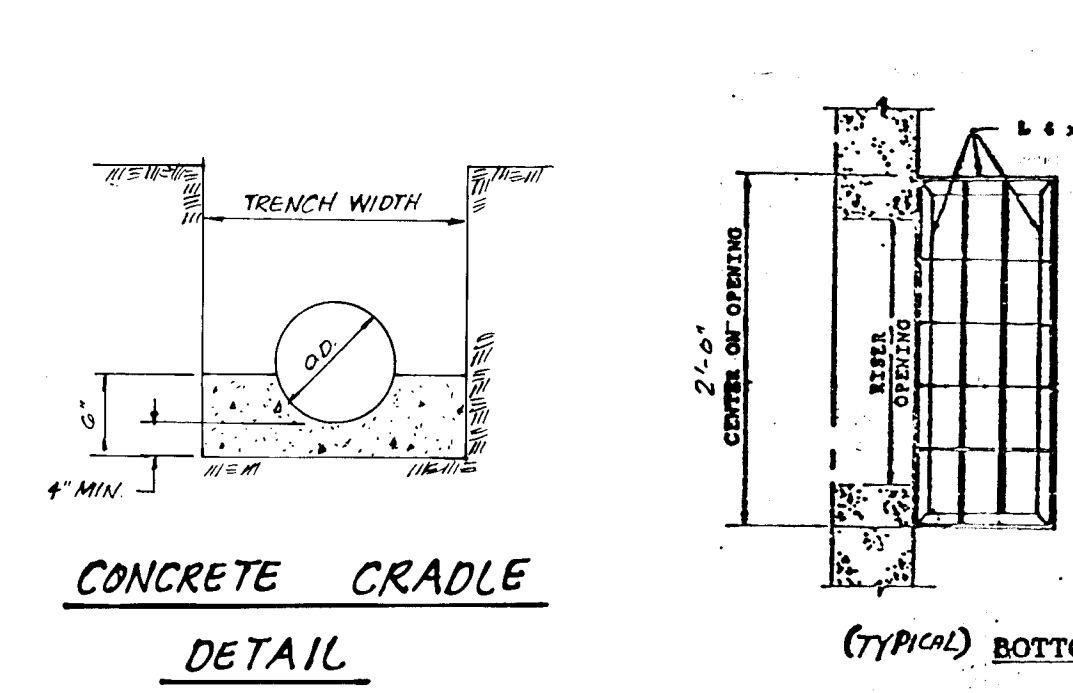
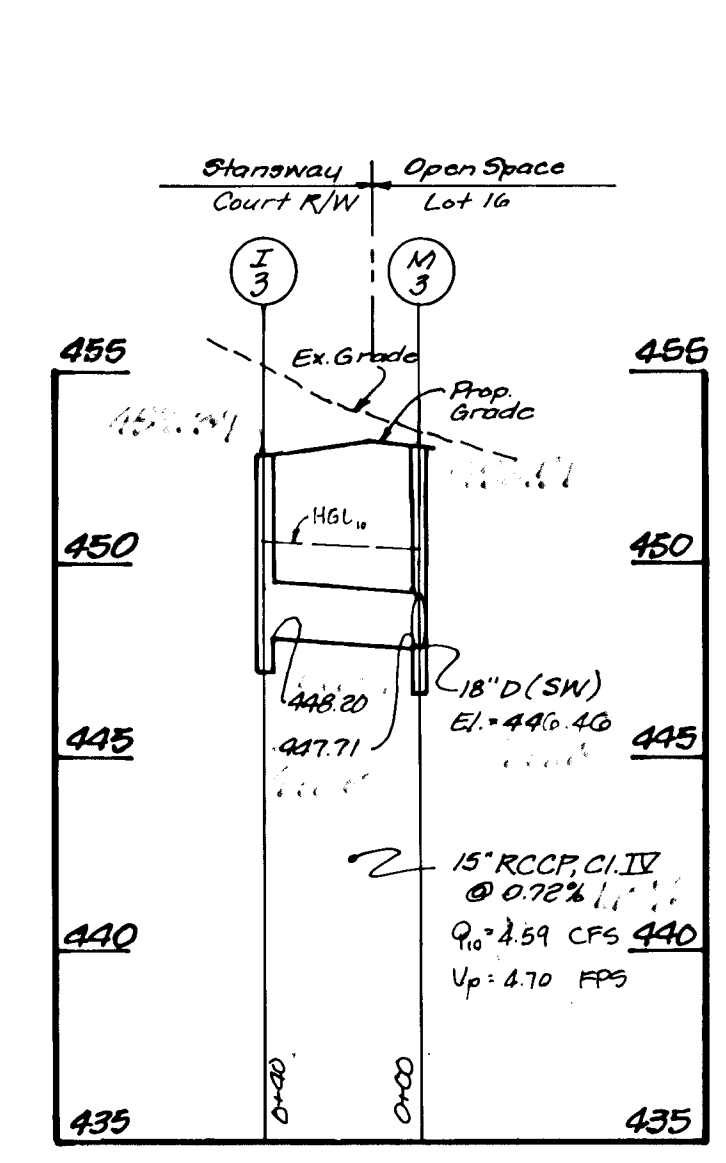
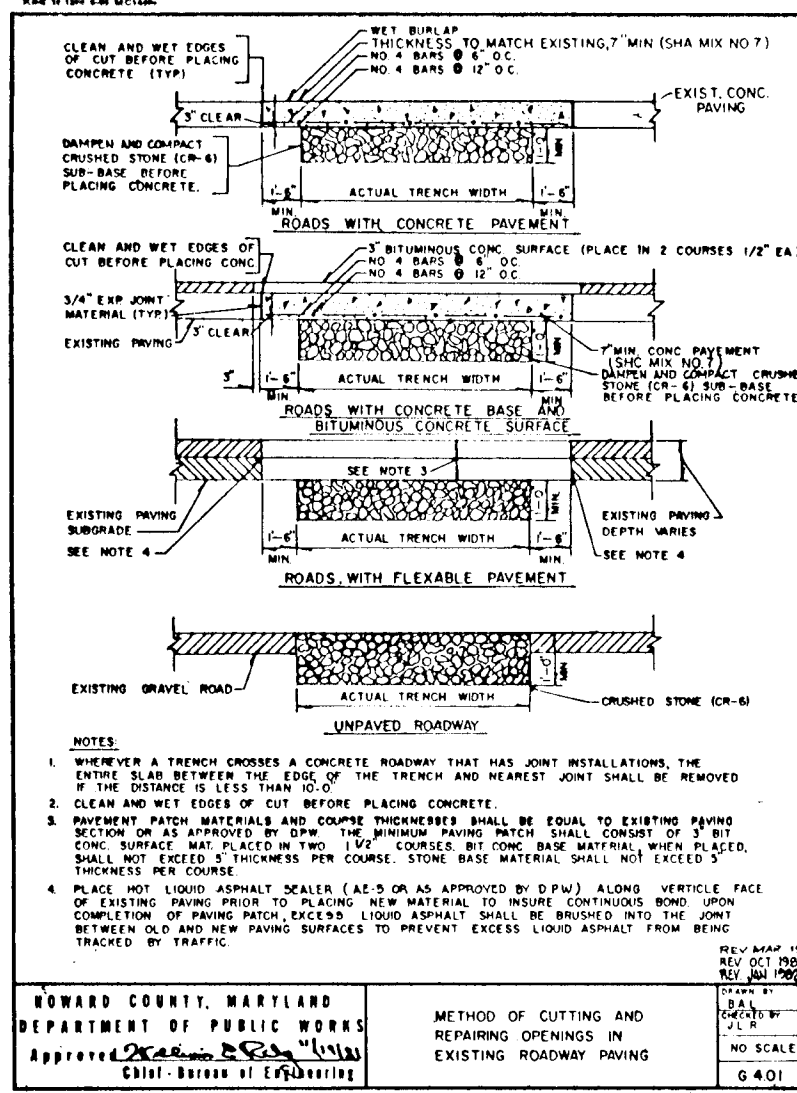
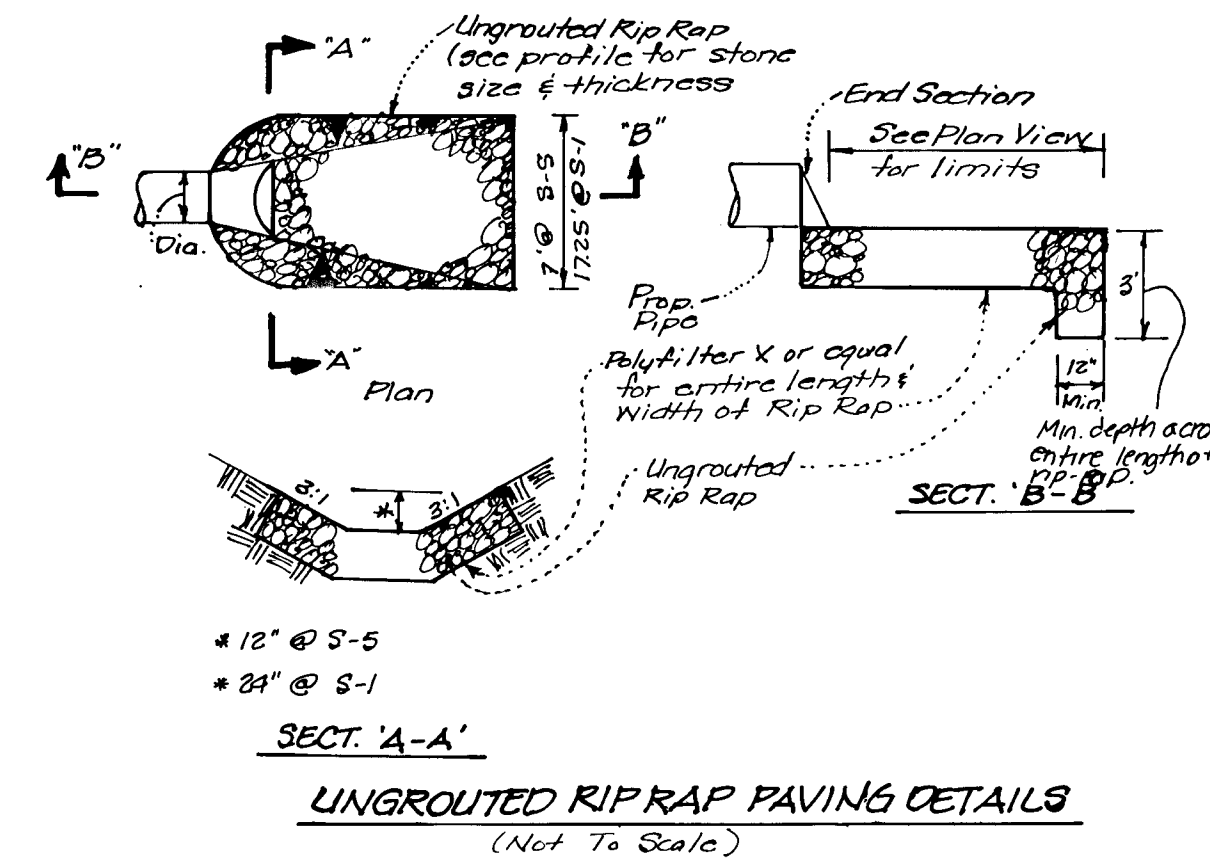
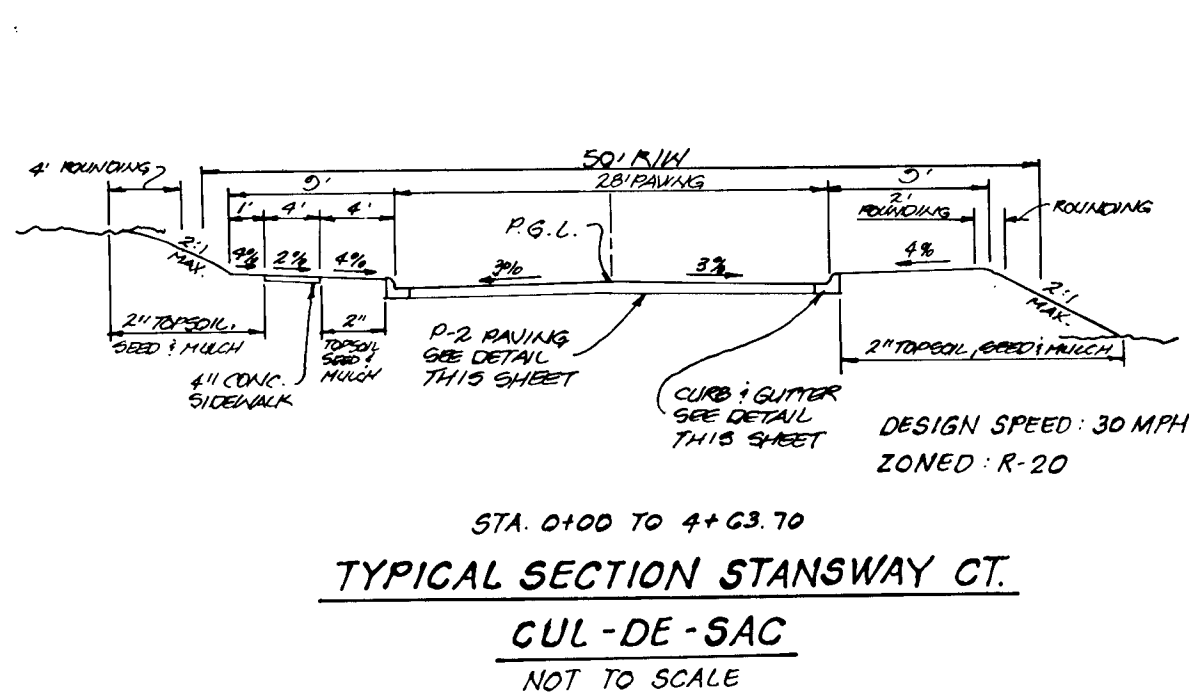
DESIGNED BY: J.J.B. M.B.B. CHECKED BY: DATE: Sept. 1992

FIELD BOOK: PAGE No.: 28 JOB No.: 91006 DRAWING No.: 2 OF 5

Boender Associates
 ENGINEERS - PLANNERS - SURVEYORS
 3230 BETHANY LANE
 ELLICOTT CITY, MD. 21042
 (410) 465-7777 FAX: (410) 465-7966

| DATE | REVISION | BY |
|---------|--|--------|
| 7-19-93 | PLANS FOR LOTS 7, 8 AND 9 ELIMINATED (M.I.), 16" RECESSED BETWEEN 7-1 AND EX. I-11 | J.M.B. |

806 Eight zero six



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Land Development Division
 Chief, Bureau of Highways
 Chief, Bureau of Engineering

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Community Planning and Land Development

DEVELOPERS CERTIFICATE
 I certify that all development and/or construction will be done according to these, and that any responsible person involved in the construction project will have a certificate of attendance at a soil conservation training program for the control of sediment and erosion before beginning the project. I will 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 inspection by the Howard Soil Conservation District.

ENGINEER CERTIFICATE
 I certify that this plan for erosion and sediment control represents a practical and workable plan based on personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "AS-BUILT" plan of the pond within 30 days of completion.

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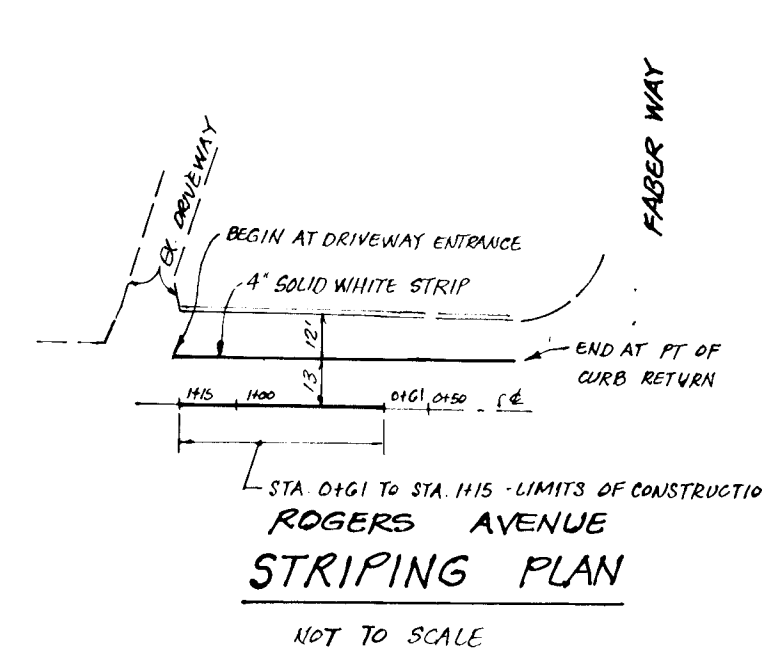
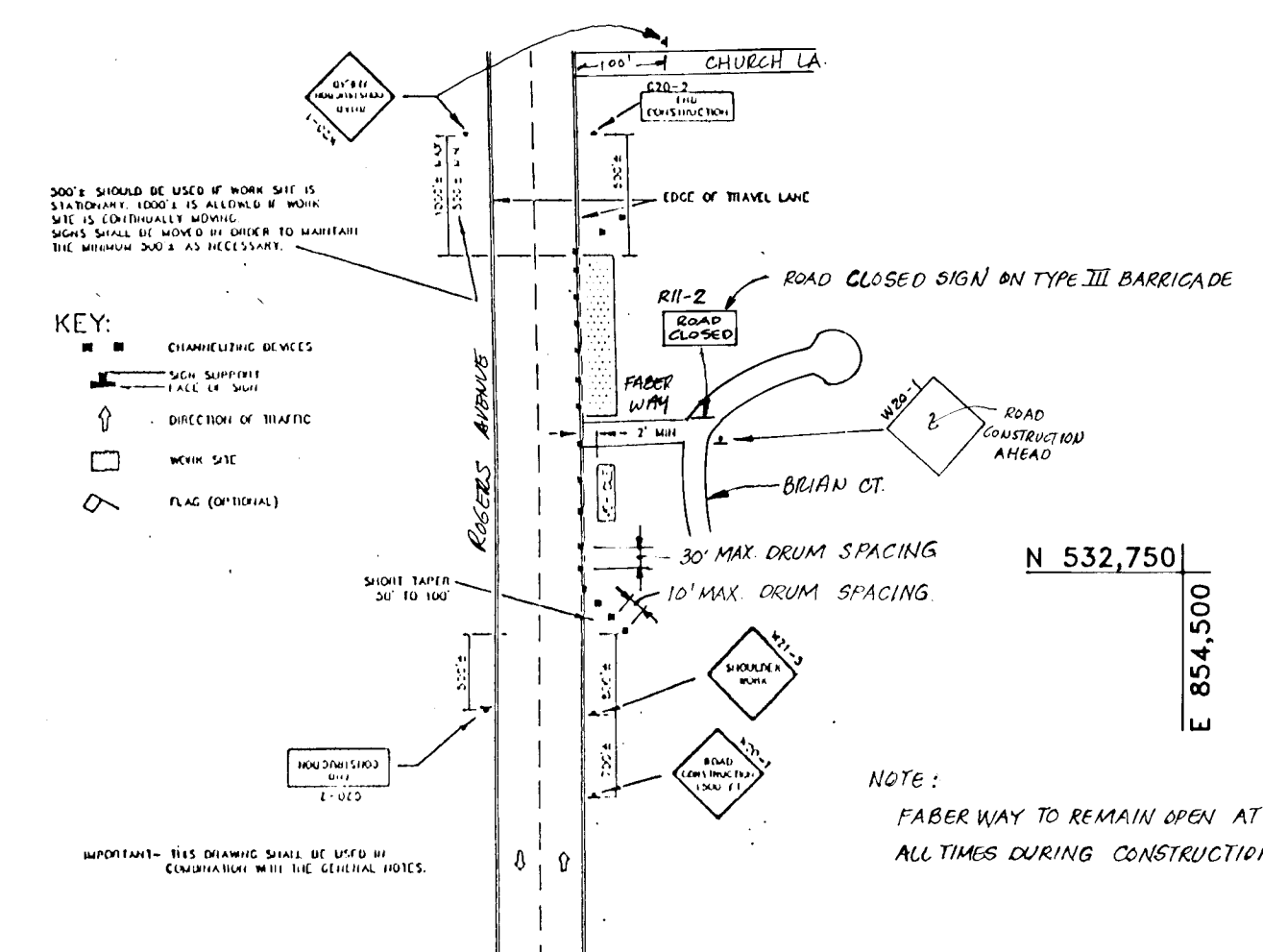
OWNER
 J. PHILIP FEAGA
 727 Weller Drive
 Mount Airy, Maryland 21771
 Phone: (301) 489-7620

Beander Associates
 ENGINEERS - PLANNERS - SURVEYORS
 3230 BETHANY LAKE
 ELLICOTT CITY, MD. 21042
 (410) 465-7777 FAX: (410) 465-7966

806 Eight Zero Six

806 Eight Zero Six

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E 853,500



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Chief, Land Development Division
 Chief, Bureau of Highways
 Chief, Bureau of Engineering

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Community Planning and Land Development

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Developer: J. Phillip Feaga
 Date: Feb 9, 1993

ENGINEER CERTIFICATE
 I certify that this plan for erosion and sediment control represents a practical and workable plan based on personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with an "AS-BUILT" plan of the pond within 30 days of completion.

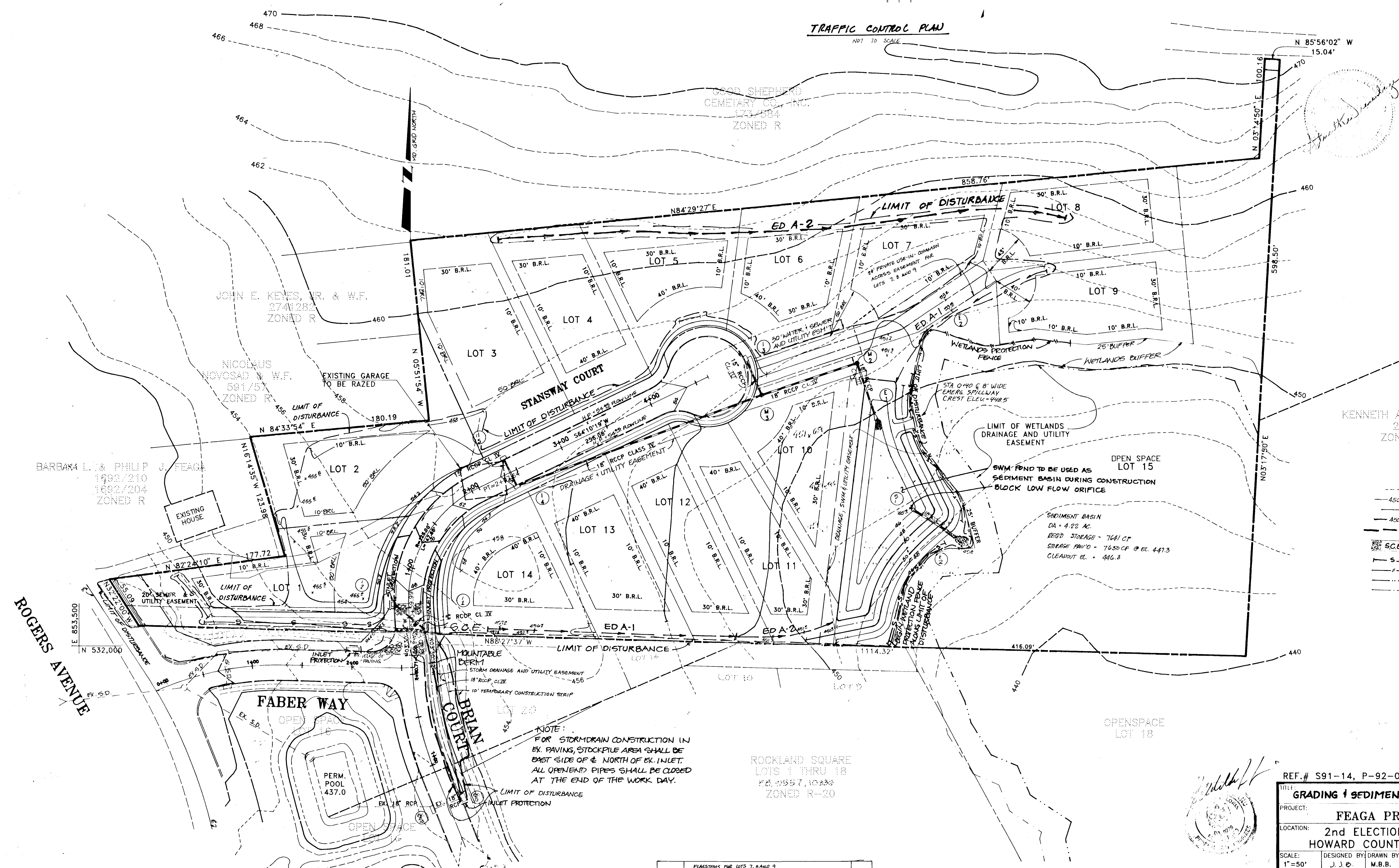
Engineer: J. Phillip Feaga
 Date: 2/9/93

Reviewed for Howard Soil Conservation District and meets technical requirements for small pond construction, soil erosion and sediment control.

James M. Helms
 S. SOIL CONSERVATION SERVICE
 Date: 2/16/93

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Robert W. Zink
 SOIL CONSERVATION DISTRICT
 Date: 2/12/93



LEGEND

- EXISTING 2' CONTOUR
- - - EXISTING 10' CONTOUR
- - - PROPOSED 2' CONTOUR
- - - PROPOSED 10' CONTOUR
- - - LIMIT OF DISTURBANCE
- SC.E. STABILIZED CONSTRUCTION ENTRANCE
- S SILT FENCE
- WETLANDS PROTECTION FENCE
- WETLANDS LIMITS
- 25' WETLANDS BUFFER

OWNER
 J. PHILIP FEAGA
 727 Weller Drive
 Mount Airy, Maryland 21771
 Phone: (301) 489-7620

REF.# S91-14, P-92-06, WP 92-98

GRADING & SEDIMENT CONTROL PLAN

PROJECT: FEAGA PROPERTY
 LOCATION: 2nd ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE: 1"=50'
 DESIGNED BY: J.J.P.
 DRAWN BY: M.B.B.
 CHECKED BY: DATE: Sept. 1992

FIELD BOOK: 123
 PAGE No.: 28
 JOB No.: 91006
 DRAWING No.: 4 OF 5

Beander Associates
 ENGINEERS • PLANNERS • SURVEYORS
 3230 BETHANY LANE
 ELLICOTT CITY, MD. 21102
 (410) 465-7777 FAX: (410) 465-7966

| | | | | |
|--------|--|------|----------|----|
| 1-1993 | FLAGSTICKS FOR LOTS 7, 8 AND 9 | DATE | REVISION | BY |
| | ELIMINATED 11-1, 18' RCP ADDED BETWEEN I-1 AND EX I-11 | | | |



SEDIMENT CONTROL GENERAL NOTES

- 1. A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction (1992-2437).
2. All vegetative and structural practices are to be installed according to the specifications of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
3. Following initial soil disturbance or redistribution, 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 days to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51), and (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seedings do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:
Total area of site: 0.266 Acres
Area disturbed by fill: 0.222 Acres
Area to be seeded or paved: 0.040 Acres
Area to be vegetatively stabilized: 1.000 Acres
Total Cu. Yds. Excavated: 12,045 Cu. Yds.
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.
9. Additional sediment controls must be provided, if deemed necessary by the Howard County DPM sediment control inspector.
10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be required 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.

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.
Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).
Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushel per acre of annual ryegrass (3.2 lbs/1000 sq. ft.). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (0.7 lbs/1000 sq. ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.
Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq. ft.) of untreated small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.
Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding. If not previously loosened.
Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:
1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At times of seeding, apply 400 lbs per acre 30-0-0 ureiform fertilizer (9 lbs/1000 sq ft).
2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil.
Seeding: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring; Option (2) Use sod; Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.
Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of untreated small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring.
Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseedings.

DEVELOPERS CERTIFICATE

I certify that all development and/or construction will be done according to these, and that any responsible personnel involved in the construction project will have a certificate of attendance of a site environmental approval training program for the control of sediment and erosion before beginning the project. I will 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 inspection by the Howard Soil Conservation District.
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Land Development Division
Date: 2/19/93
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Community Planning and Land Development
Date: 3/4/93
APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Engineering
Date: 2-1-93

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Land Development Division
Date: 2/19/93
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Community Planning and Land Development
Date: 3/4/93
APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Engineering
Date: 2-1-93

MD-378 POND 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.

Site Preparation
Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed, and stripped to topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.

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

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

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

- 1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-311. 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 to the top of the pipe at least 10% of its diameter with a minimum thickness of 3 inches, or as shown on the drawings.

Placement - Areas in which fill is to be placed shall be scarified prior to placement of fill. Bedding shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The portion of the embankment to be placed in the downstream portion of the embankment shall be placed in a downstream 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 track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepfoot, 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 of the final 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 its construction, with a 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 shall the material be placed vertically.

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

- 1. Materials - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with waterlight coupling bands. Any bituminous coating damaged or otherwise removed shall be placed 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: Neovon, Plasticoat, Bloc-Klad, and Beth-Cu-Loy. Coated corrugated steel pipes shall meet the requirements of AASHTO M-245 and M-246.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with waterlight 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 waterlight 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.

- 2. Coupling bands, anti-seep collars, and sections, etc., must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials of least 24 mils in thickness.
3. 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. Simple 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 re-rolled an adequate number of corrugations to accommodate the bond width. The following type connections are acceptable for pipes less than 48" in diameter:

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.

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These plans for small pond construction, soil erosion and sediment control must meet the requirements of the Howard Soil Conservation District.

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Chief, Land Development Division
Date: 2/19/93
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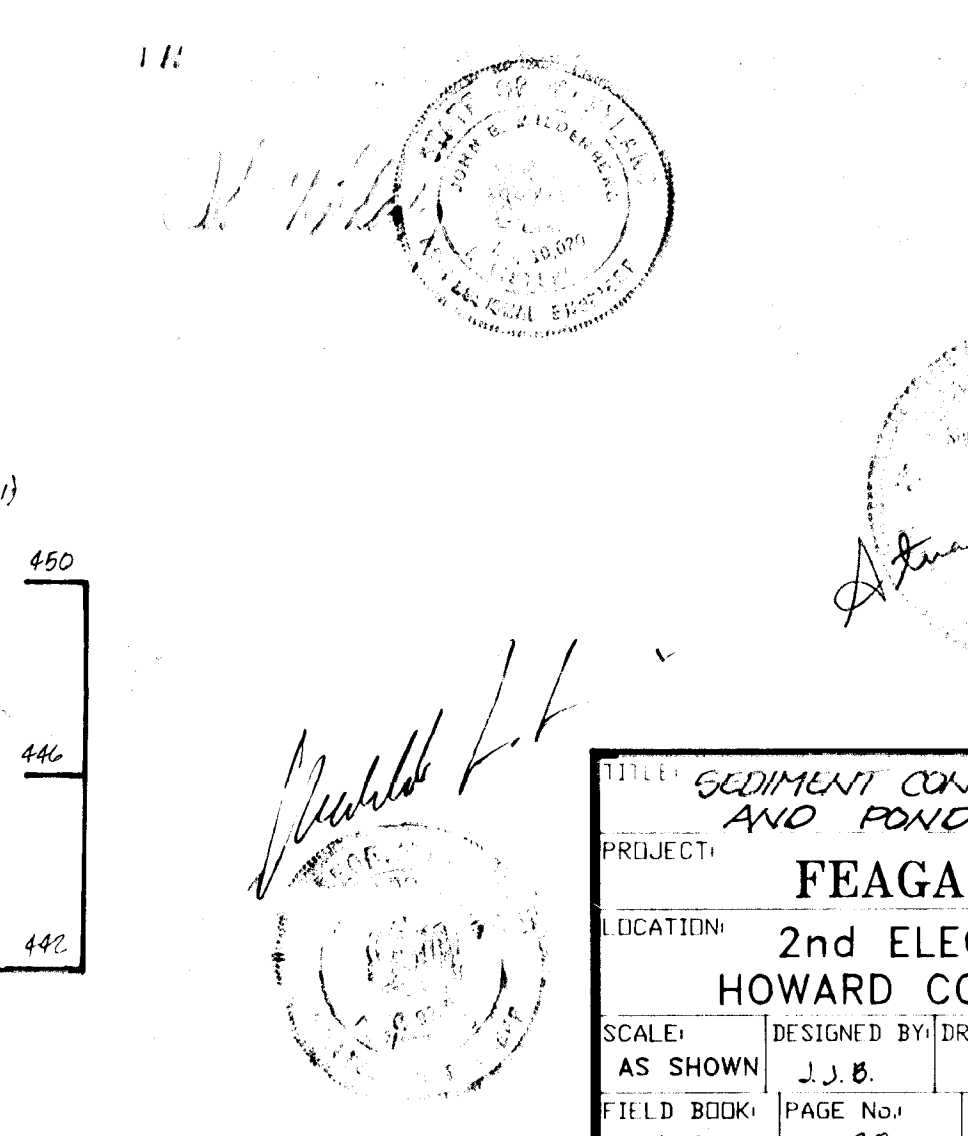
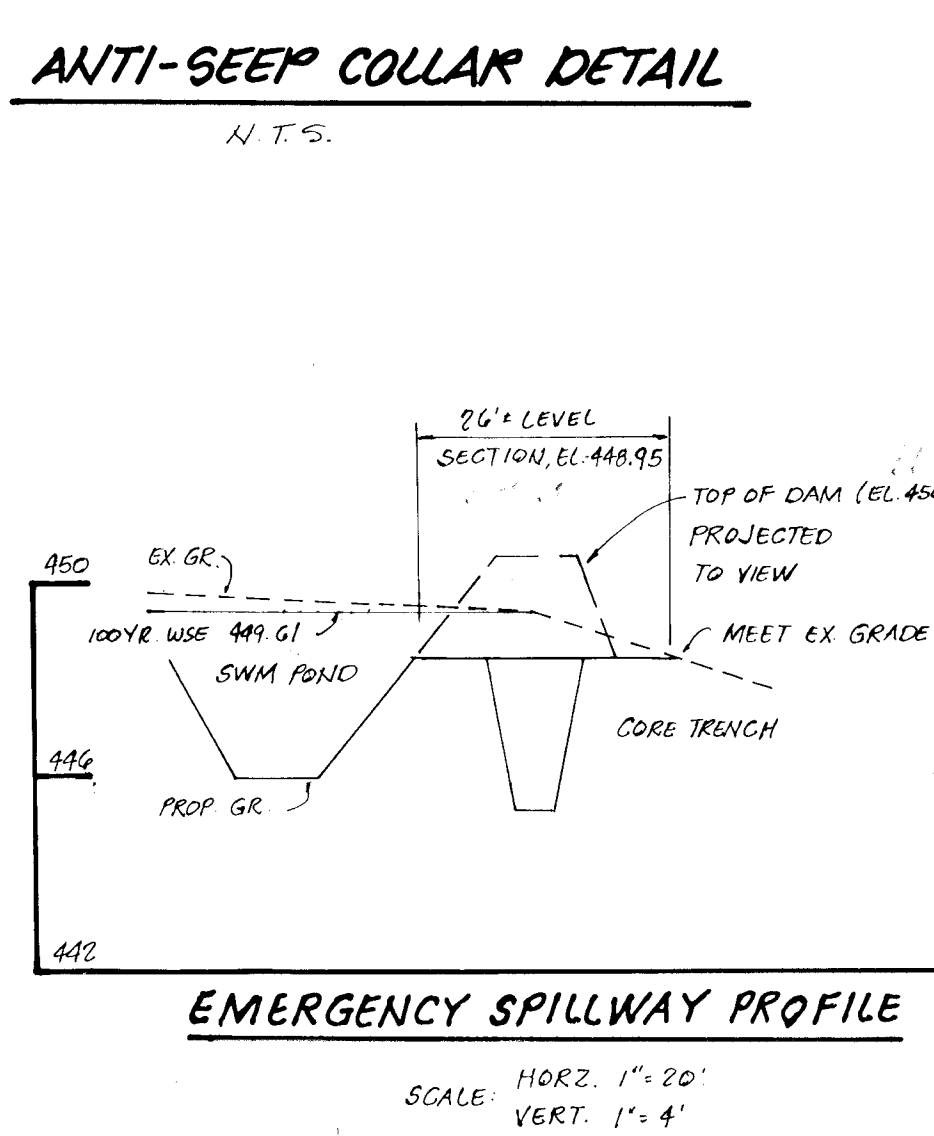
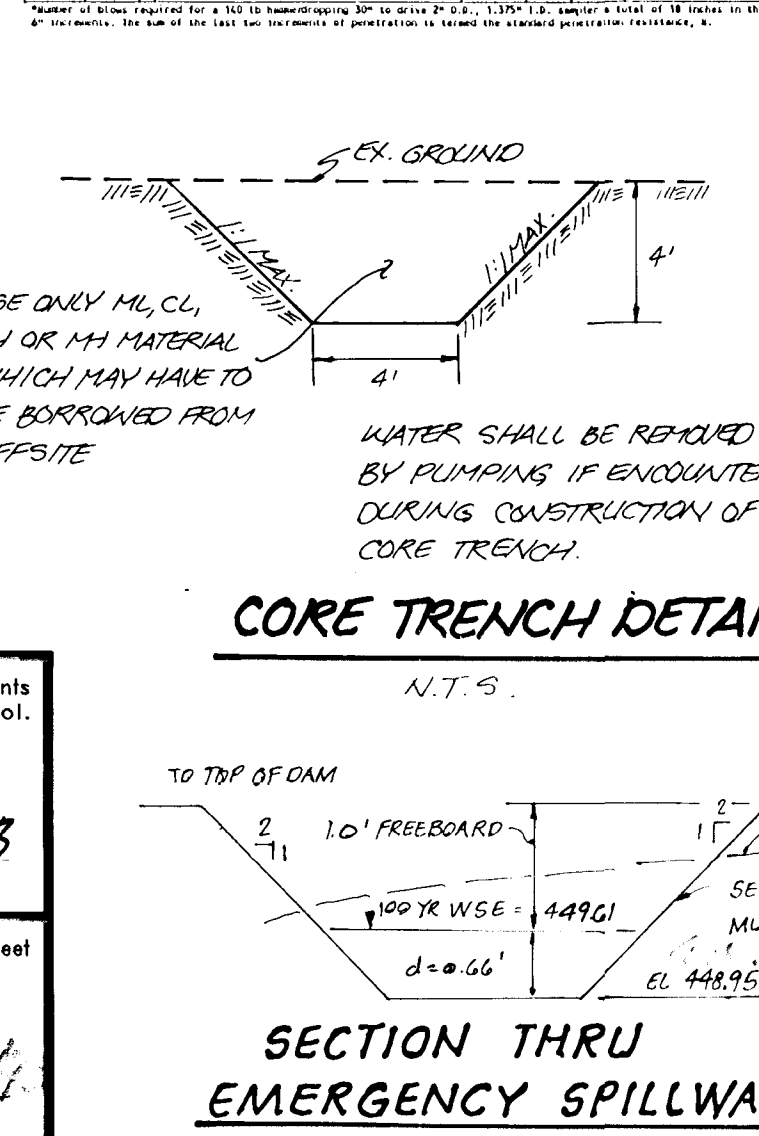
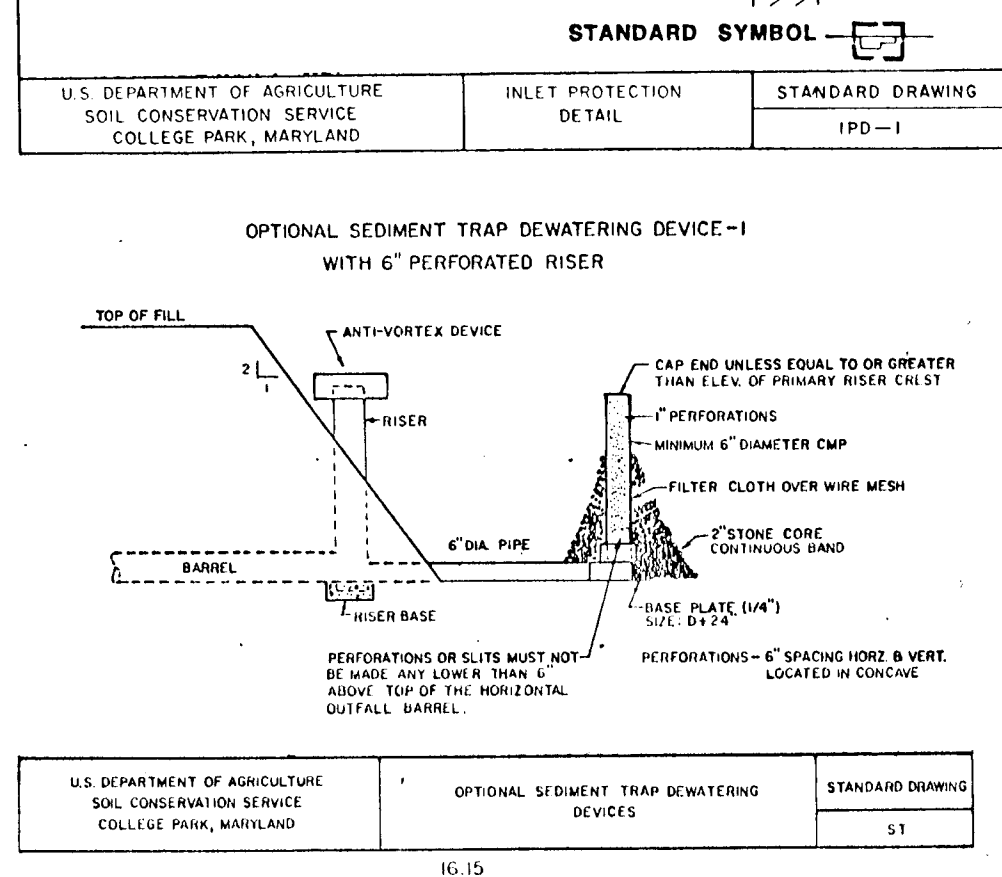
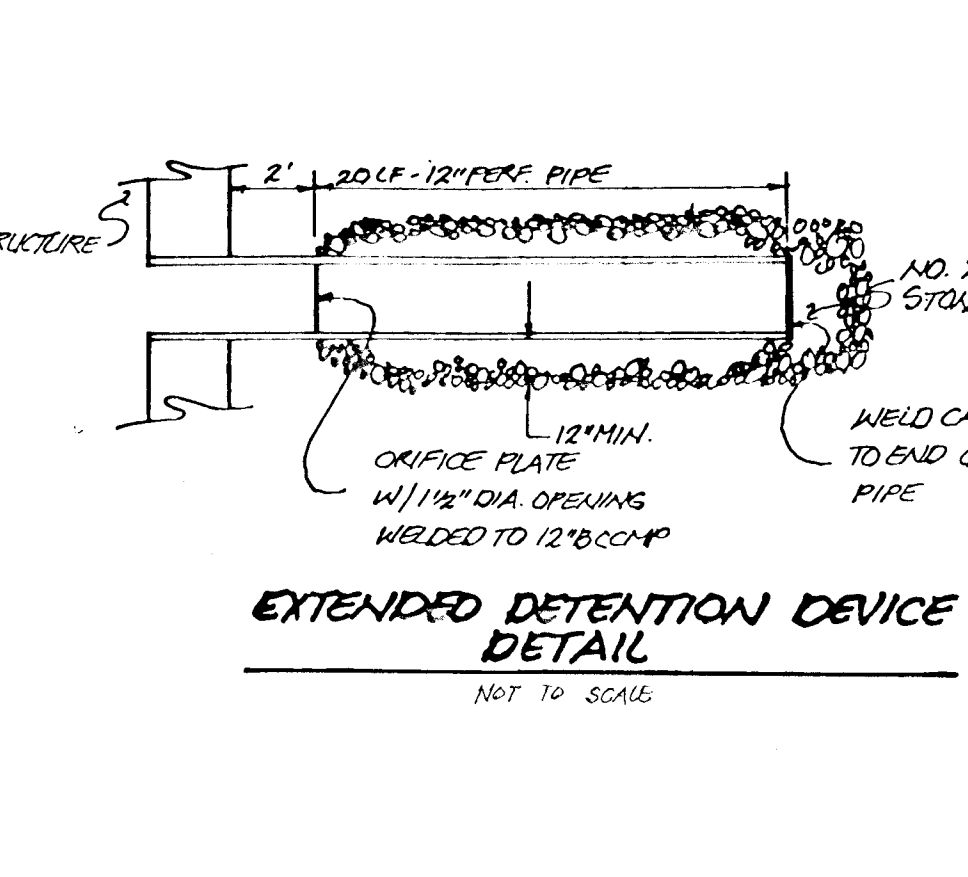
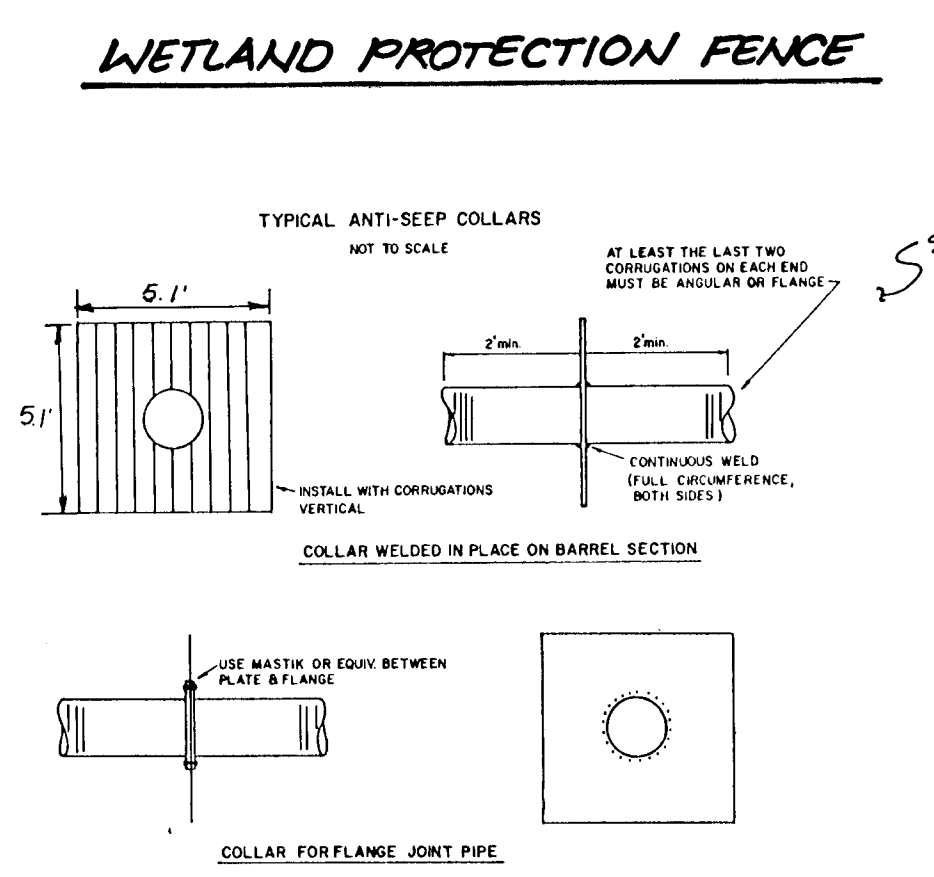
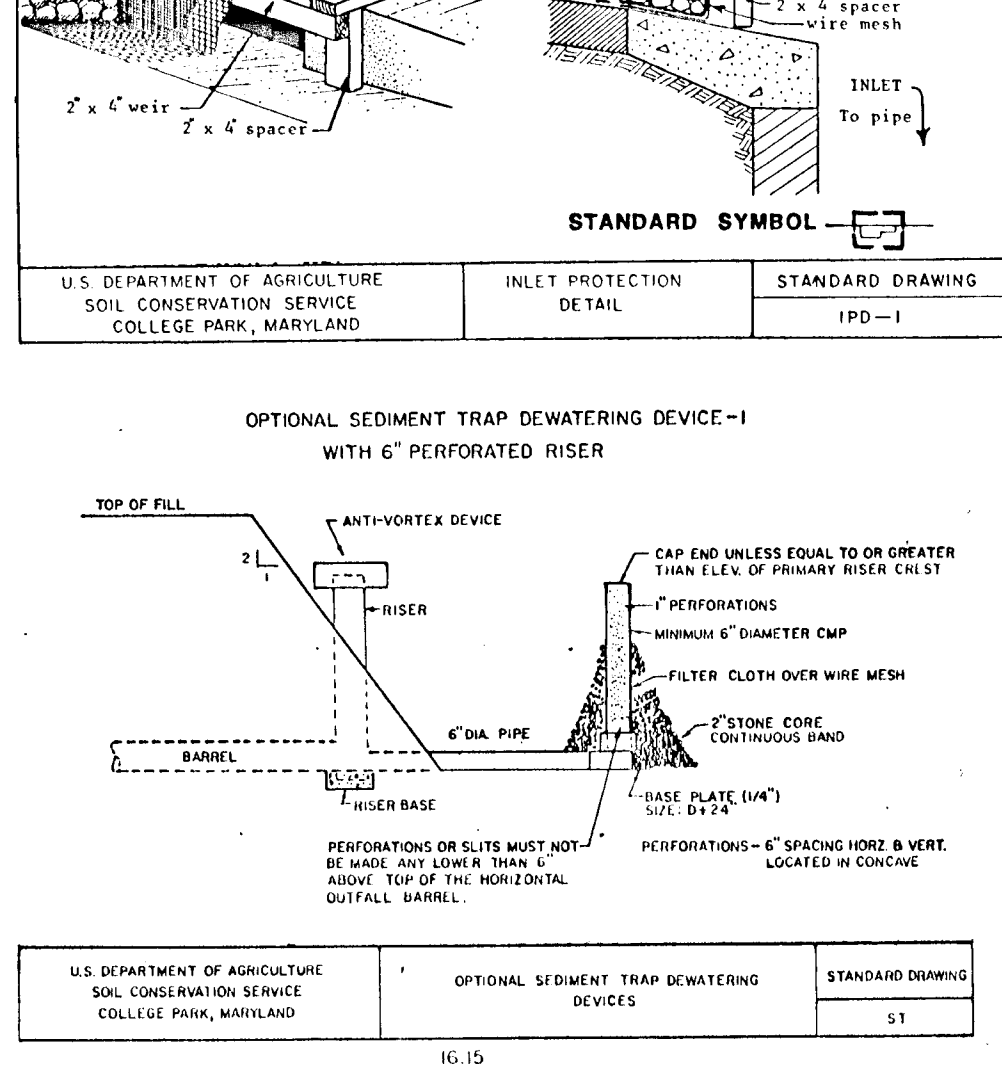
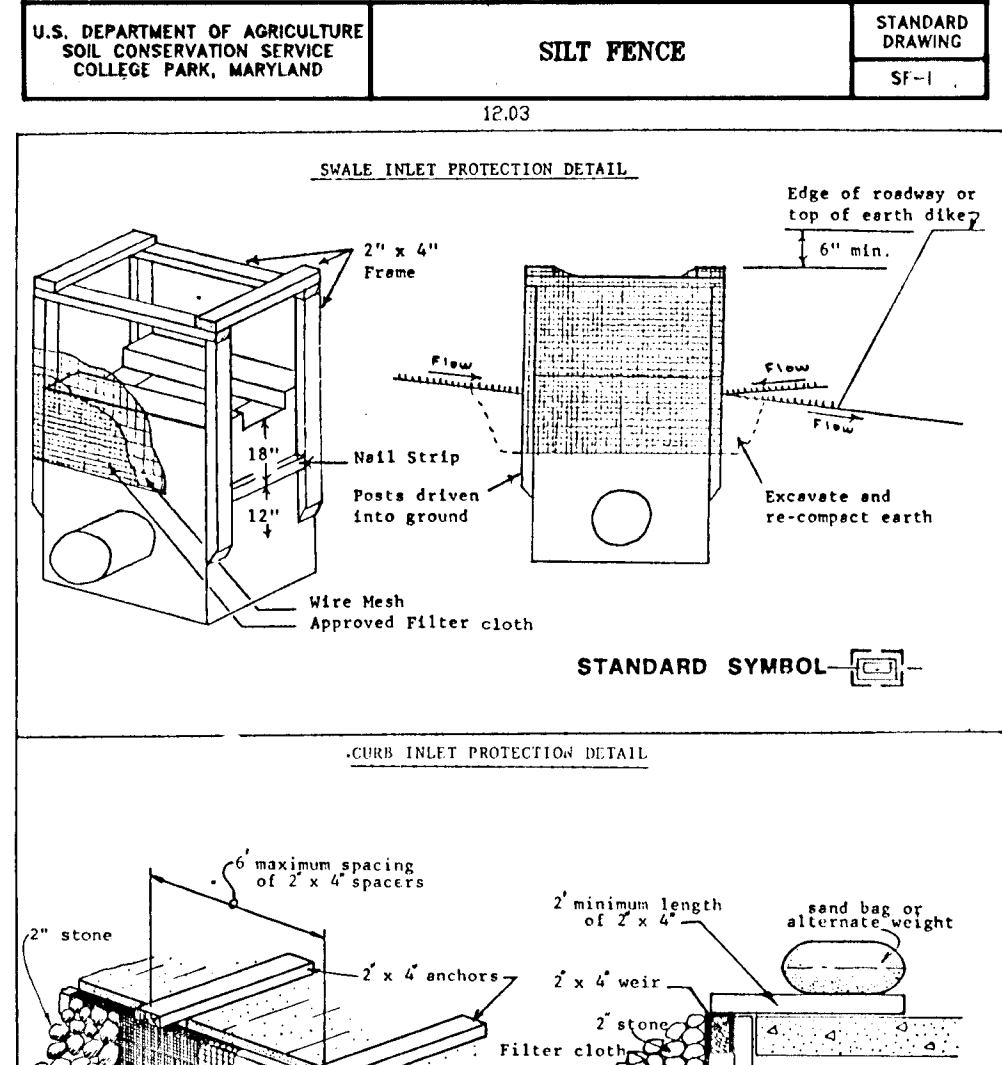
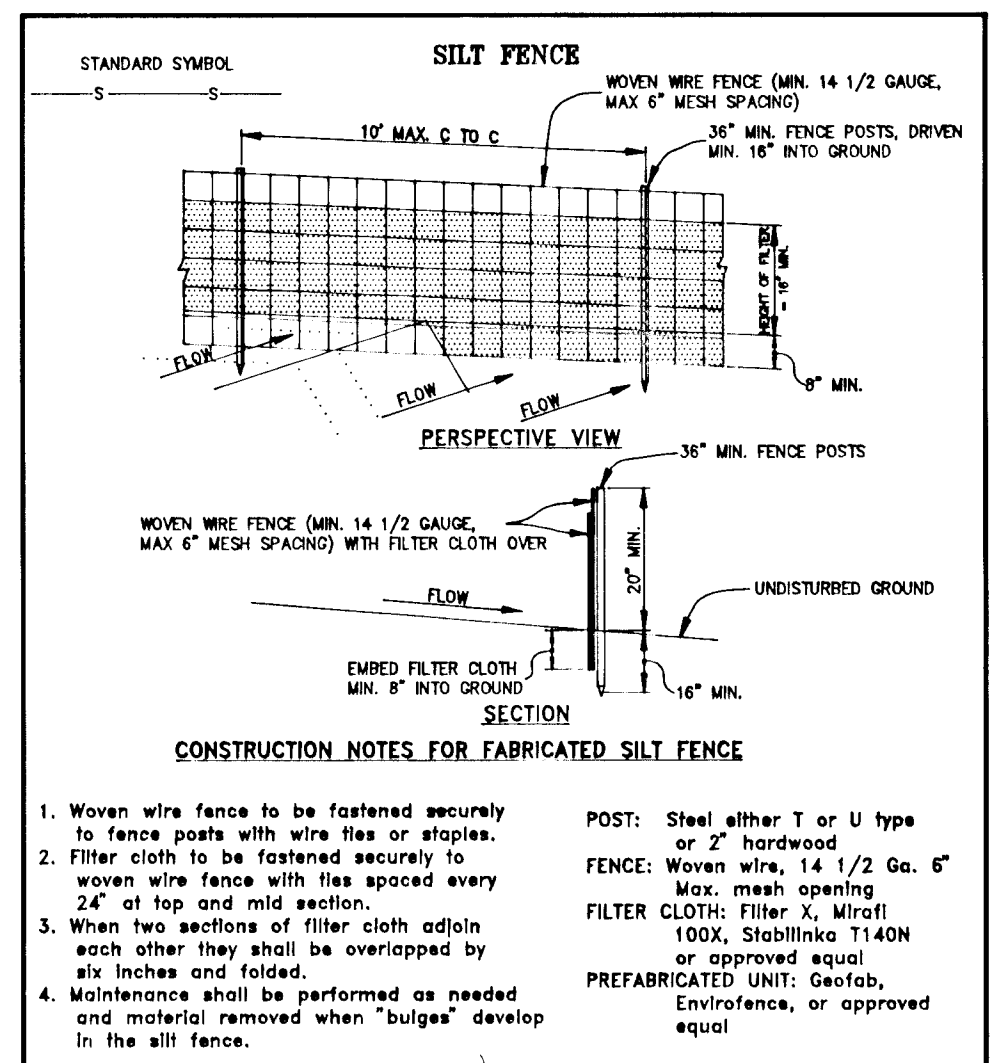
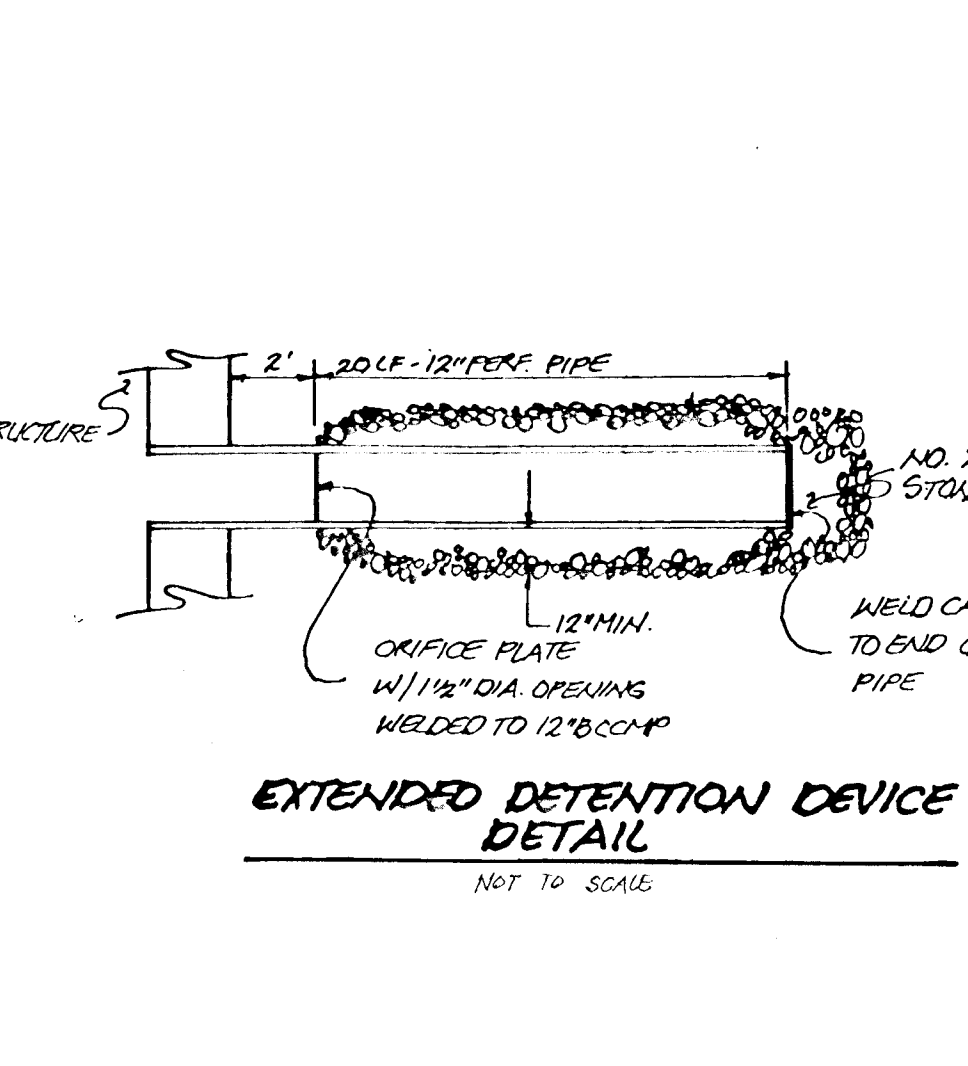
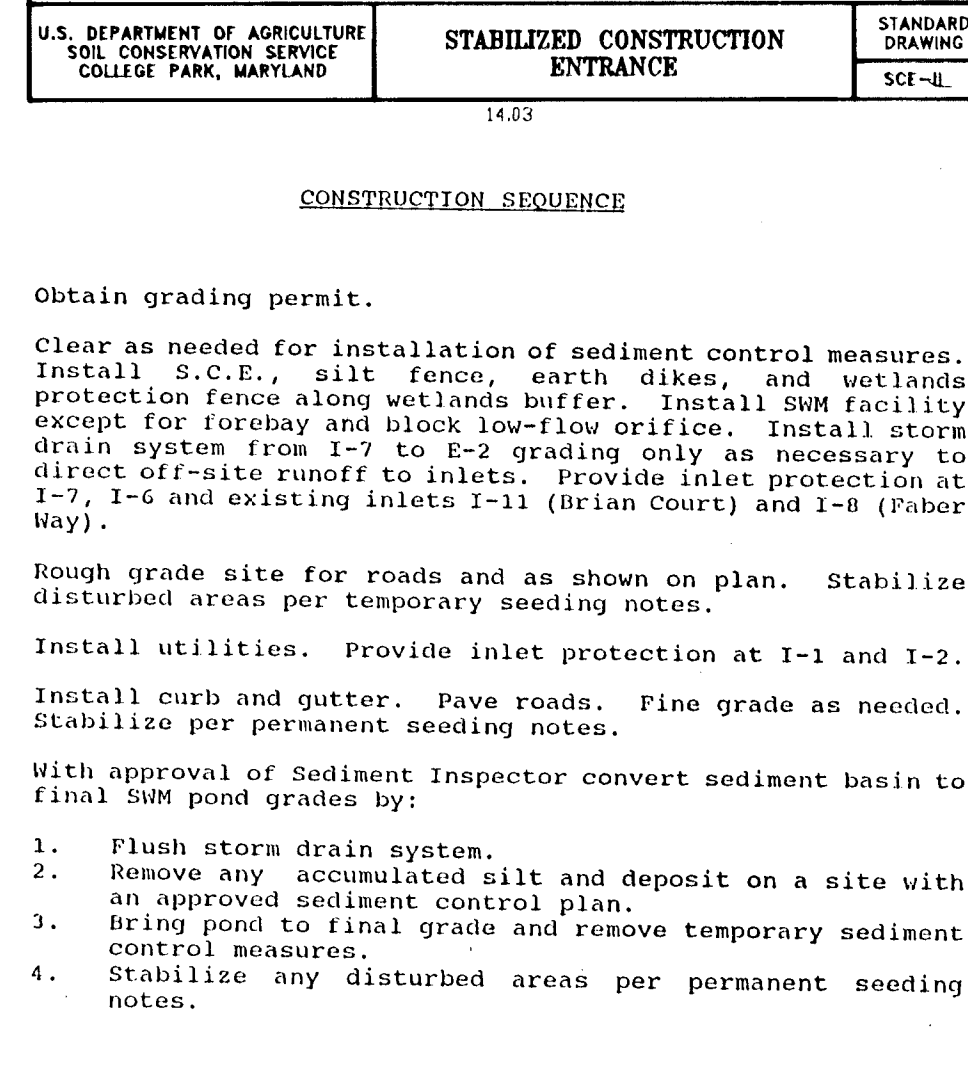
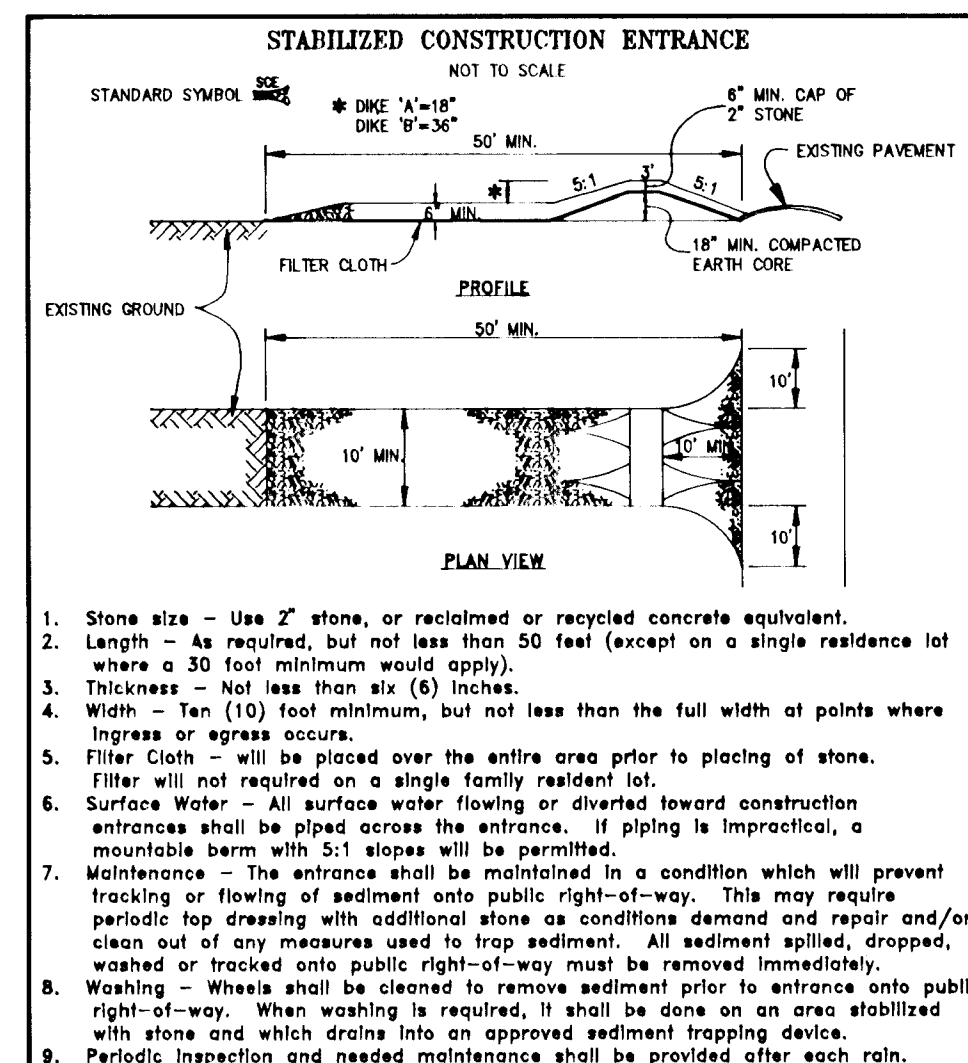
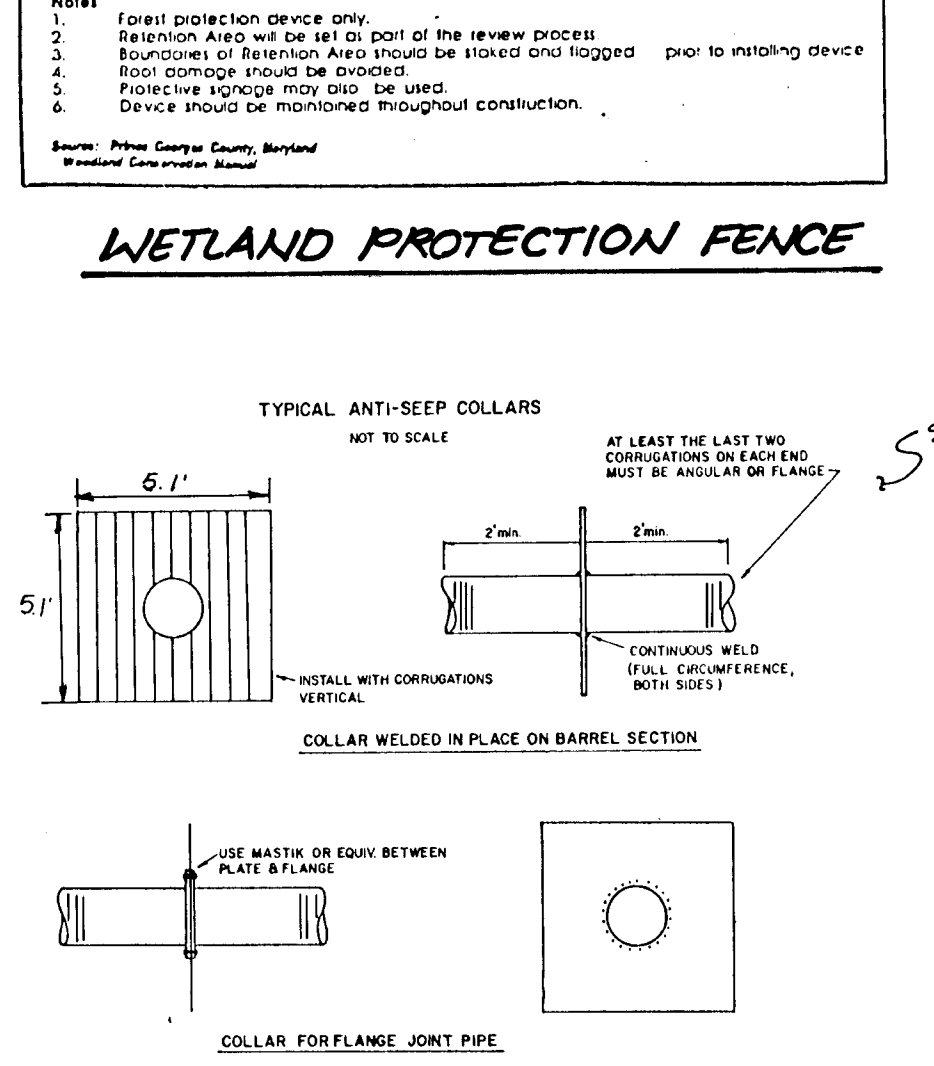
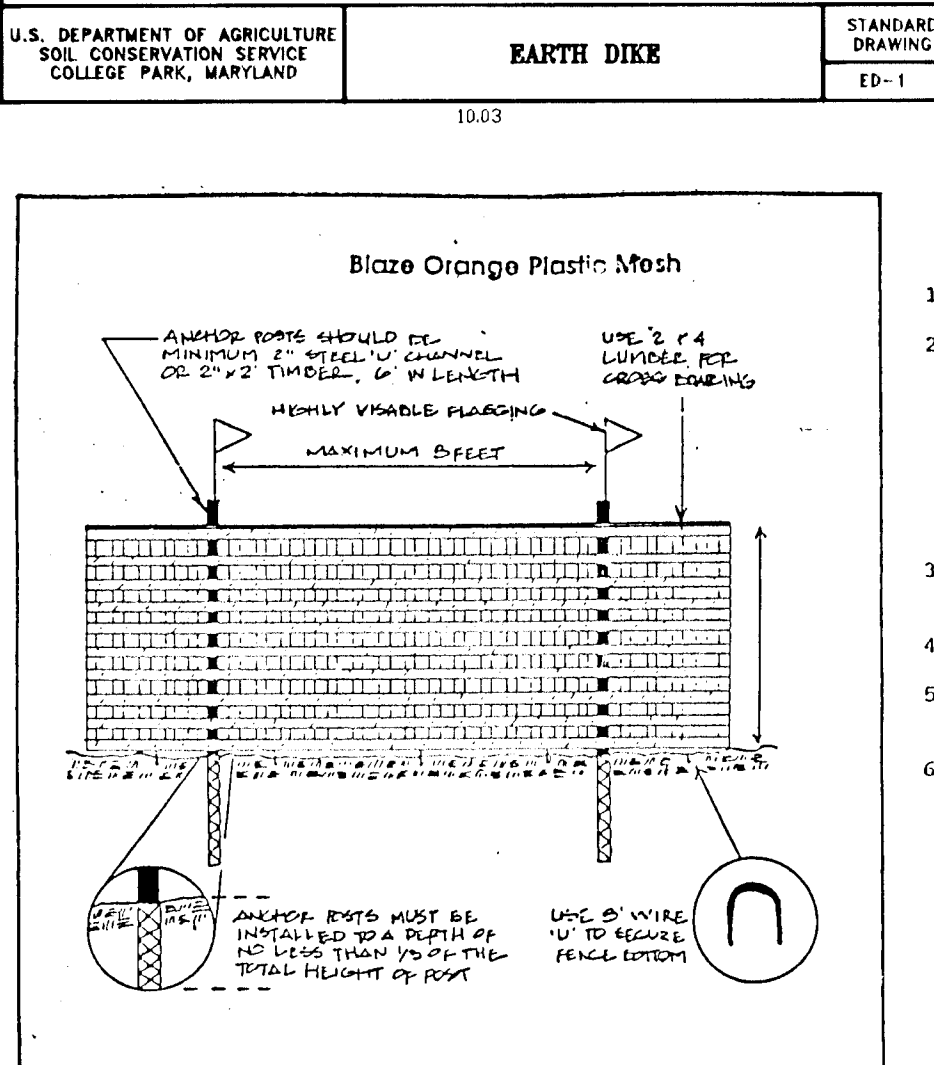
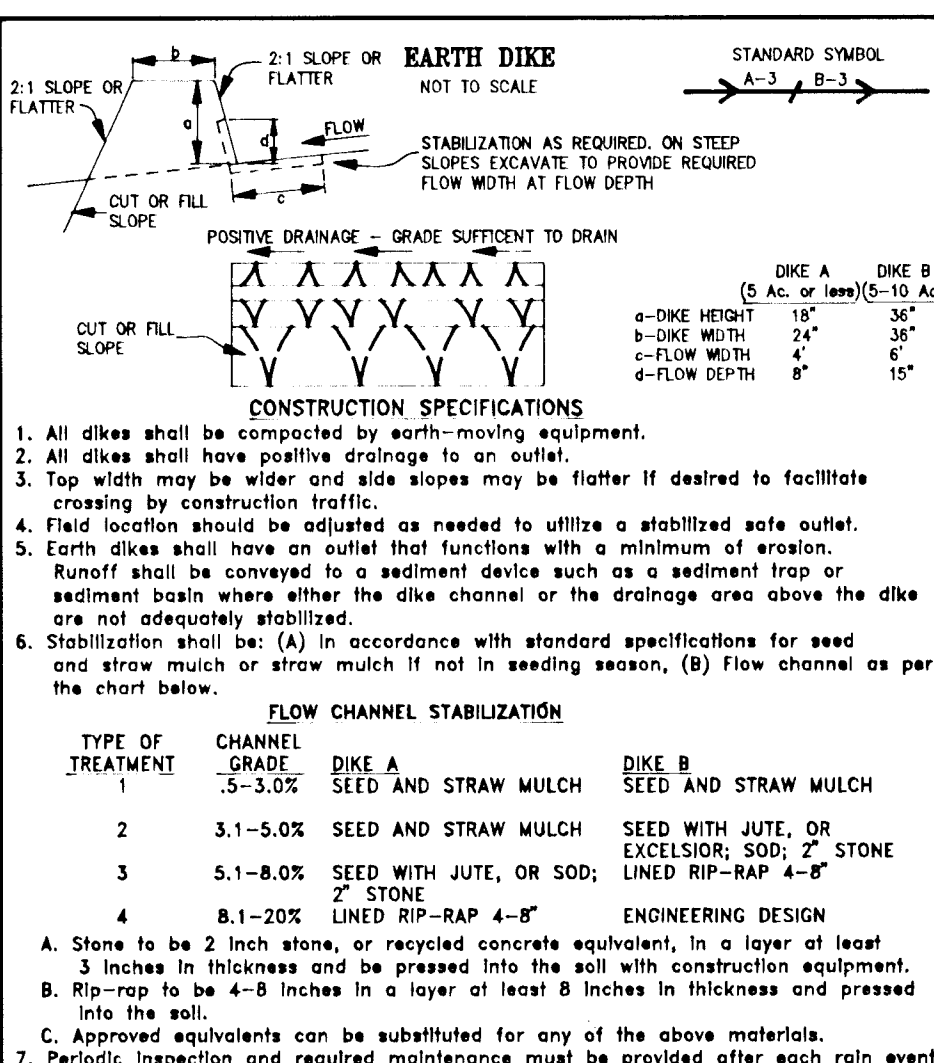
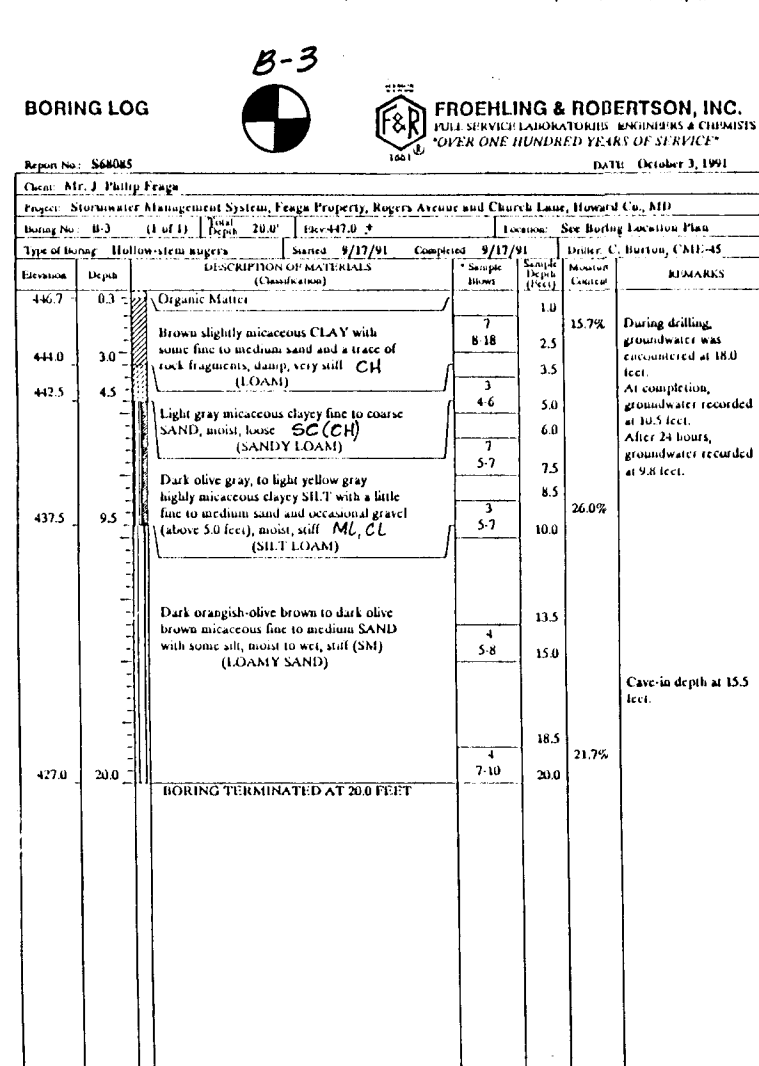
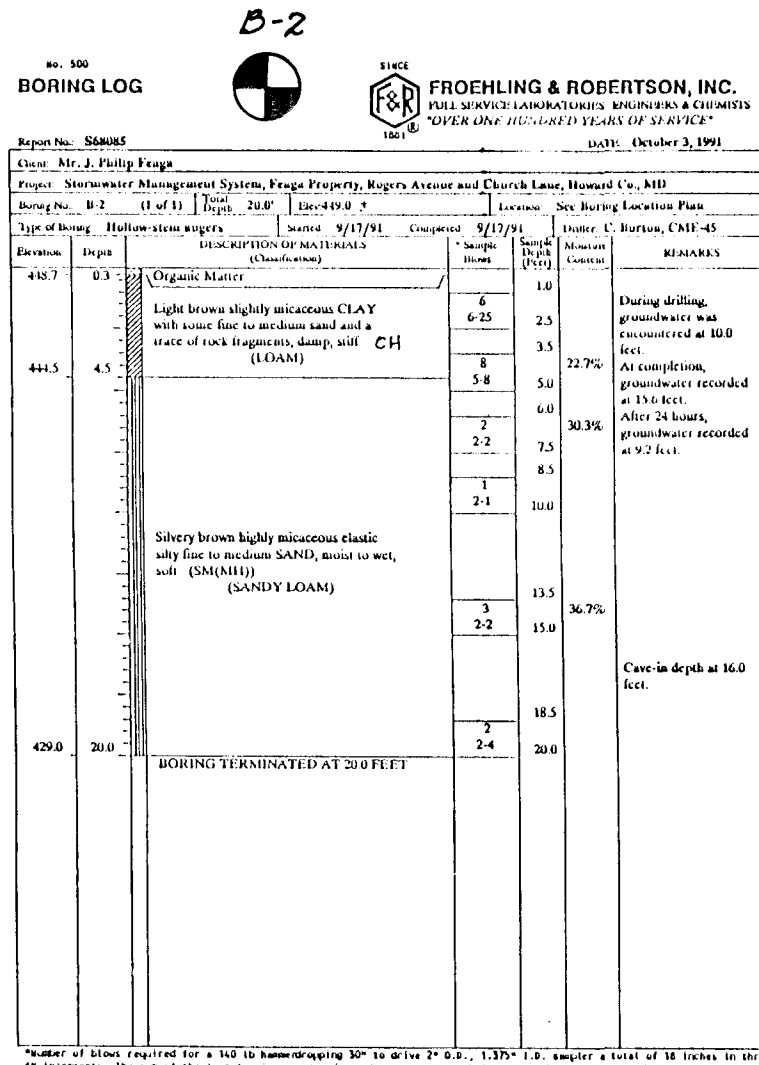
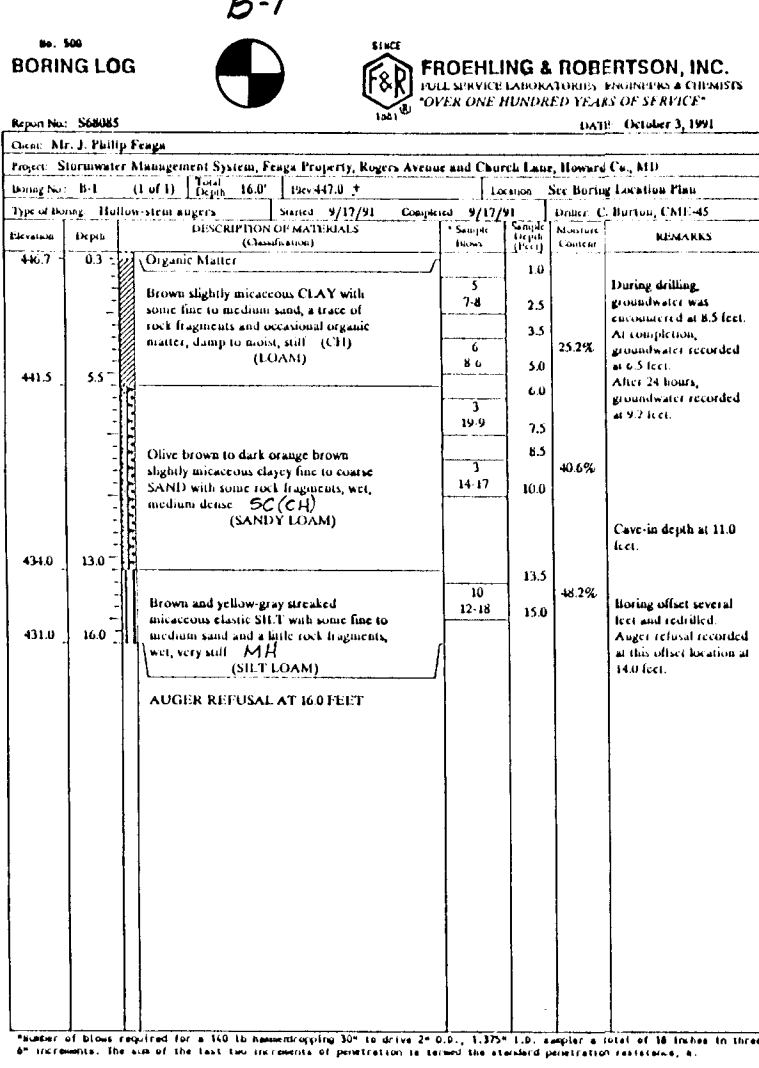
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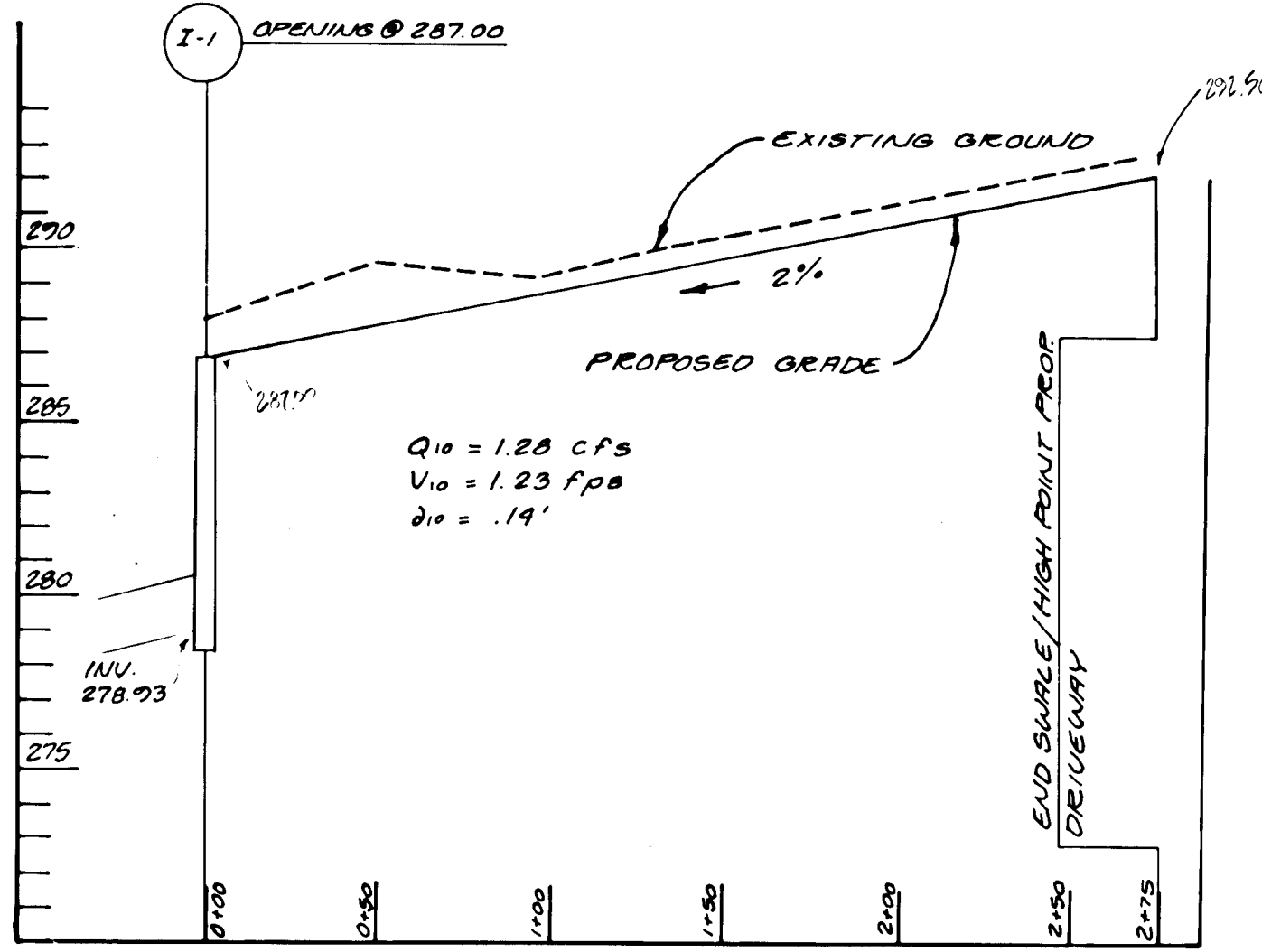
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Chief, Land Development Division
Date: 2/19/93
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Community Planning and Land Development
Date: 3/4/93
APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Engineering
Date: 2-1-93



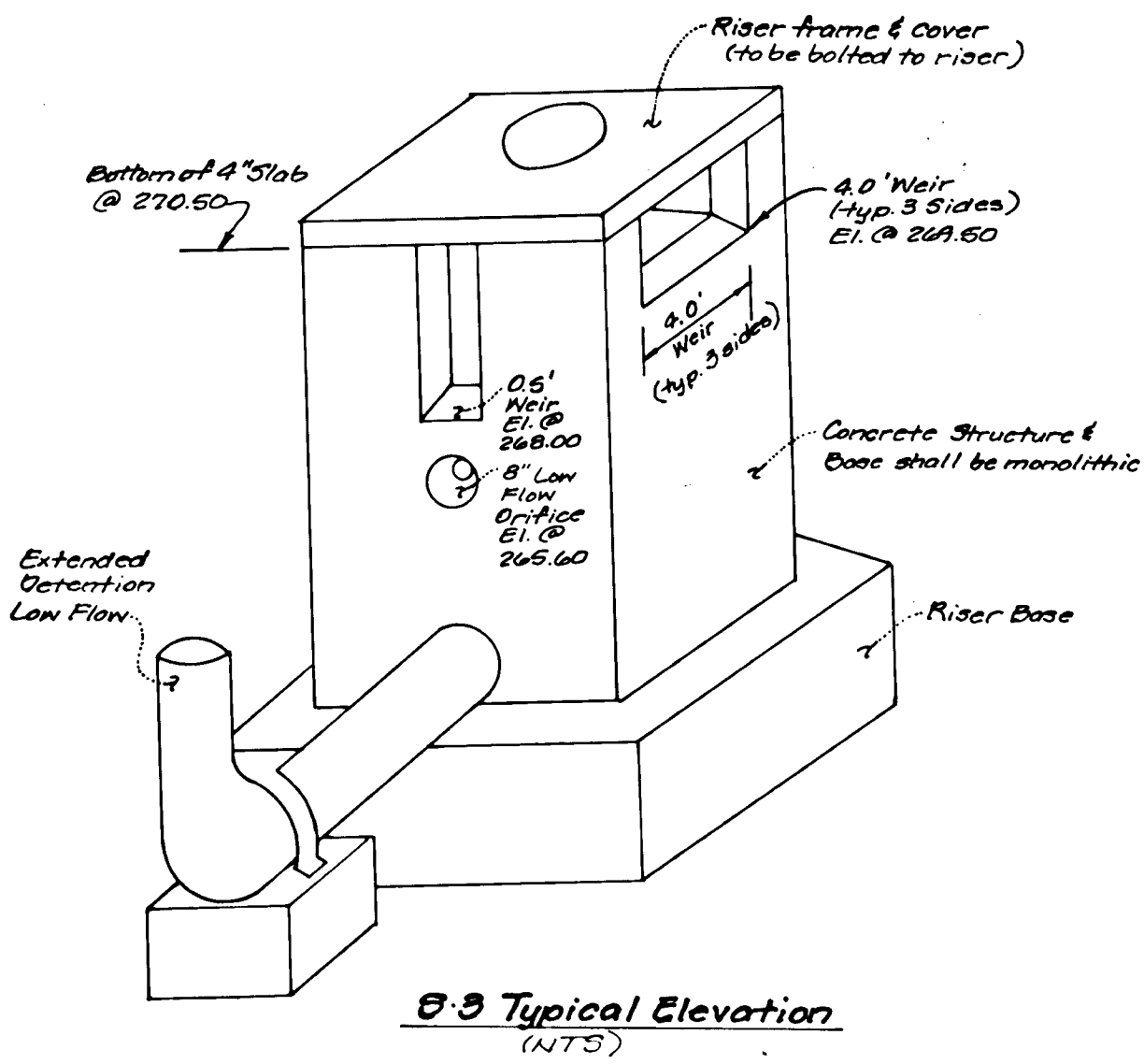
OWNER
J. PHILIP FEAGA
777 Waller Drive
Mount Airy, Maryland 21771
Phone: (301) 489-7620
Bearder Associates
Engineers - Planners - Surveyors
3320 BETHANY LANE
ELLICOTT CITY, MD. 21042
(410) 465-7777 FAX: (410) 465-7966

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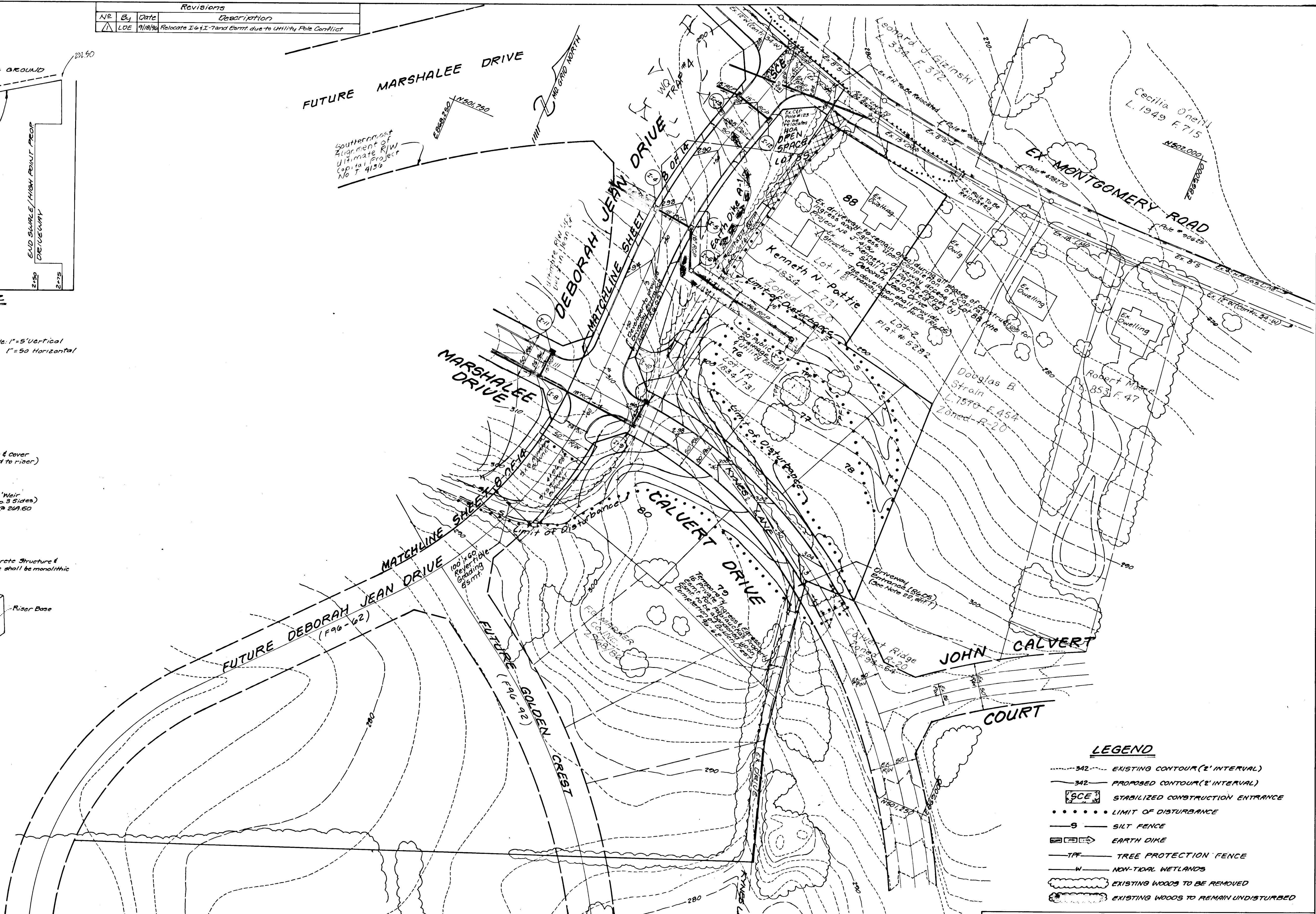
| Revisions | | | |
|-----------|-----|---------|---|
| No | By | Date | Description |
| 1 | LOE | 9/18/96 | Relocate 1/4" I-17 and ERM due to Utility Pole Conflict |



PROFILE ALONG SWALE @ REAR OF LOTS 82-89 DRAINING TOWARDS I-1
 (SEE DETAIL B-B SHEET 5) Scale: 1"=5' Vertical, 1"=50' Horizontal



- Note:
- The 0.5' Weir uses the size 'B' trash rack.
 - The 4.0' weir uses the size 'A' trash rack.
 - The size 'B' trash rack protects the 0.5' weir as well as the 8" low flow orifice.
 - Refer to sheet 14 for plan, profile and trash rack details.



LEGEND

- 342 --- EXISTING CONTOUR (2' INTERVAL)
- - - 342 - - - PROPOSED CONTOUR (2' INTERVAL)
- [SCE] STABILIZED CONSTRUCTION ENTRANCE
- LIMIT OF DISTURBANCE
- S- SILT FENCE
- [E] EARTH DIKE
- TPF TREE PROTECTION FENCE
- W NON-TIDAL WETLANDS
- EXISTING WOODS TO BE REMOVED
- EXISTING WOODS TO REMAIN UNDISTURBED

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

1667

Cynthia Surmann
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH
 DATE: 5/14/96

Robert W. Zuber
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5/16/96

Andrew M. ...
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 5-1-96

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

J. A. ...
 NATURAL RESOURCE CONSERVATION SERVICE
 DATE: 4/23/96

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

Robert W. Zuber
 HOWARD SOIL CONSERVATION DISTRICT
 DATE: 4/23/96



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 OF COMPLETION.

Bruce D. ...
 PROFESSIONAL ENGINEER
 DATE: 4/15/96

DEVELOPER'S CERTIFICATE
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THESE PLANS, 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 HOWARD SOIL CONSERVATION DISTRICT.

Monty ...
 DATE: 4/15/96

LDE, INC.
 9250 Rumsey Road, Suite 106, Columbia, MD. 21045
 (410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

| | | |
|------------------------|---|-------------------|
| DESIGNED: <i>eg/d</i> | GRADING & SEDIMENT AND EROSION CONTROL PLAN | SCALE: 1"=50' |
| DRAWN: <i>WJ/BEI</i> | MARSHALEE WOODS Section 2 - Area 3 Lots 74 - 88 | DRAWING: 7 of 14 |
| CHECKED: <i>B.D.B.</i> | Tax Map 37 P10 Parcels 399, 92 and 93 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND | JOB NO.: 95-022.2 |
| DATE: <i>4/15/96</i> | Owner/Developer: Marshalee Woods Limited Partnership 8835 Columbia 100 Parkway, Unit P Columbia, Maryland 21045 (410) 730-0810 | FILE NO.: F96-30 |

HOWARD SOIL CONSERVATION DISTRICT
STANDARD SEDIMENT CONTROL NOTES

- 1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction, (880-3450).
- 2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.
- 3. Following initial disturbance, permanent or temporary stabilization shall be completed within a 7 calendar days for a perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1. b) 14 days as to all other disturbed or graded areas on the project site.
- 4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- 5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 5.1), sod (Sec. 5.4), temporary seeding (Sec. 5.5), and mulching (Sec. 5.6). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- 6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- 7. Site Analysis:
Total Area of Site: 11.5 Acres
Area Disturbed: 7.0 Acres
Area to be roofed or paved: 1.0 Acres
Area to be vegetatively stabilized: 3.5 Acres
Total Cut: 7.0 Acres
Total Fill: 3.0 Acres
Offsite waste/borrow area location: (299-54) Colver/Ridge
- 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 control must be provided, if deemed necessary by the Howard County Sediment Inspector.
- 9. 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 control, 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.
- 10. Trenches for the construction of utilities is limited to two pipe lengths or that which can be back filled and stabilized within one working day, whichever is shorter.

HOWARD SOIL CONSERVATION DISTRICT
PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
SEEDBED PREPARATION: Loosen upper three inches of soil by raking, disking, or other acceptable means before seeding, if not previously loosened.

- SOIL AMENDMENTS: In lieu of soil test recommendations, use one of the following schedules:
1) PREFERRED --- Apply 2 tons per acre dolomitic limestone (92 lbs/1000sq. ft.) and 600 lbs per acre (14 lbs/1000sq. ft.) of 10-10-10 fertilizer (14 lbs/1000sq. ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000sq. ft.) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000sq. ft.) before seeding. Harrow or disk into upper three inches of soil.
- 2) ACCEPTABLE --- Apply 2 tons per acre dolomitic limestone (92 lbs/1000sq. ft.) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000sq. ft.) before seeding. Harrow or disk into upper three inches of soil.

SEEDING --- For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs per acre (1.4 lbs/1000sq. ft.) of Kentucky 31 Tall Fescue and 2 lbs per acre (.05 lbs/1000sq. ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) - 2 tons per acre well anchored straw mulch and seed as soon as possible in the spring. Option (2) - Use sod. Option (3) - Seed with 60 lbs per acre Kentucky 31 Tall Fescue and mulch 2 tons / acre well anchored straw.

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

MAINTENANCE --- Inspect all seeding areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES

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

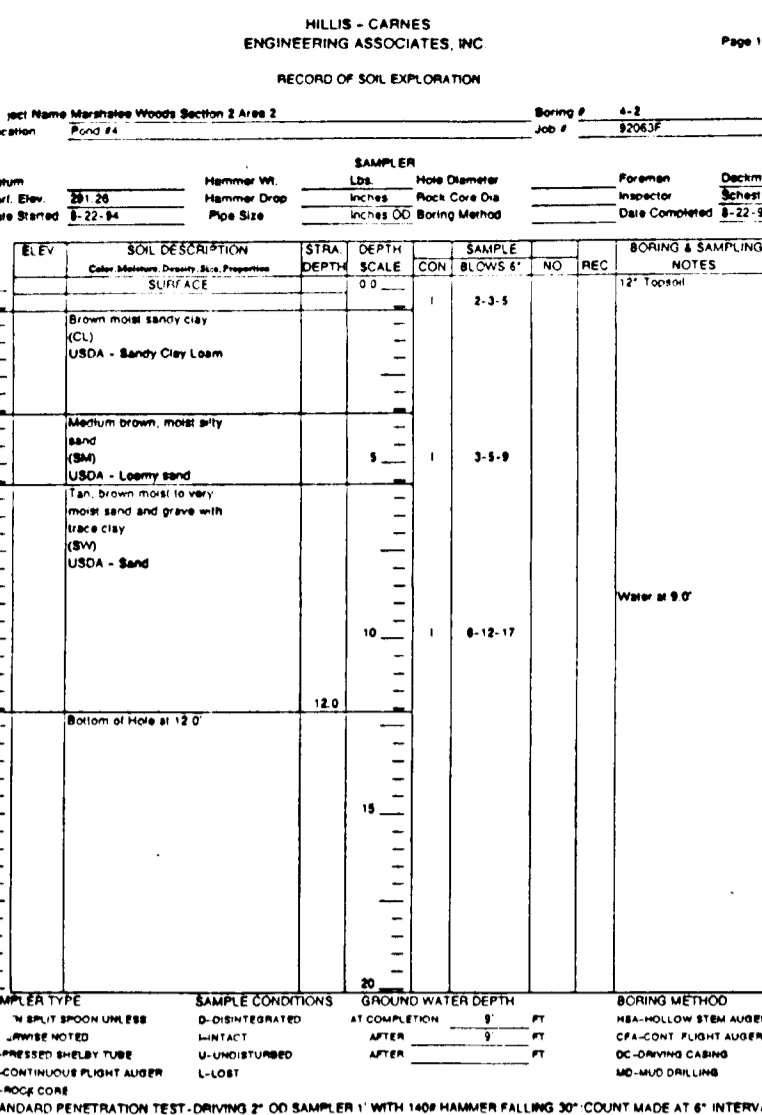
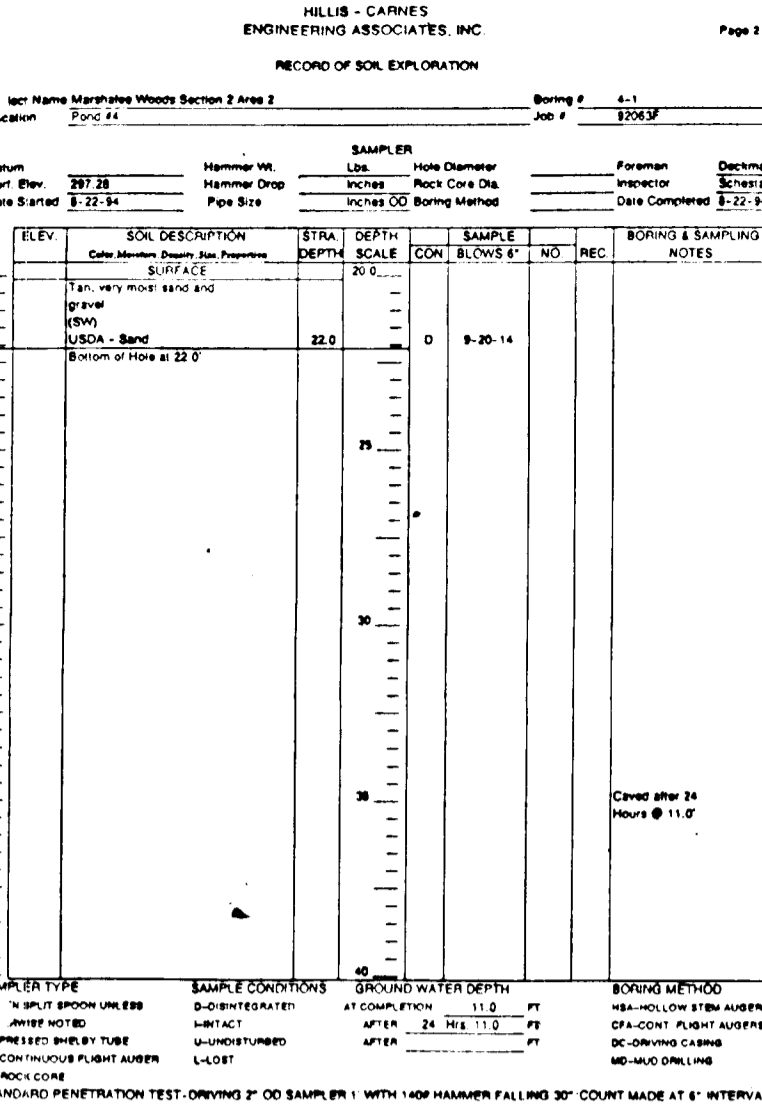
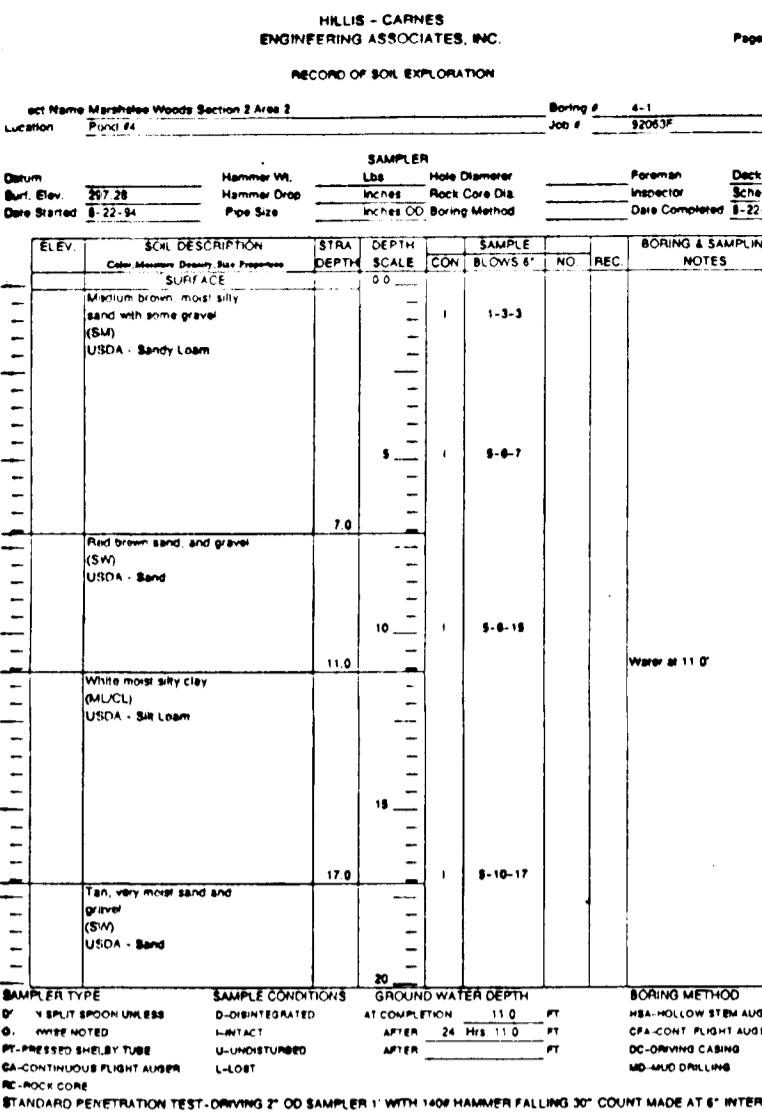
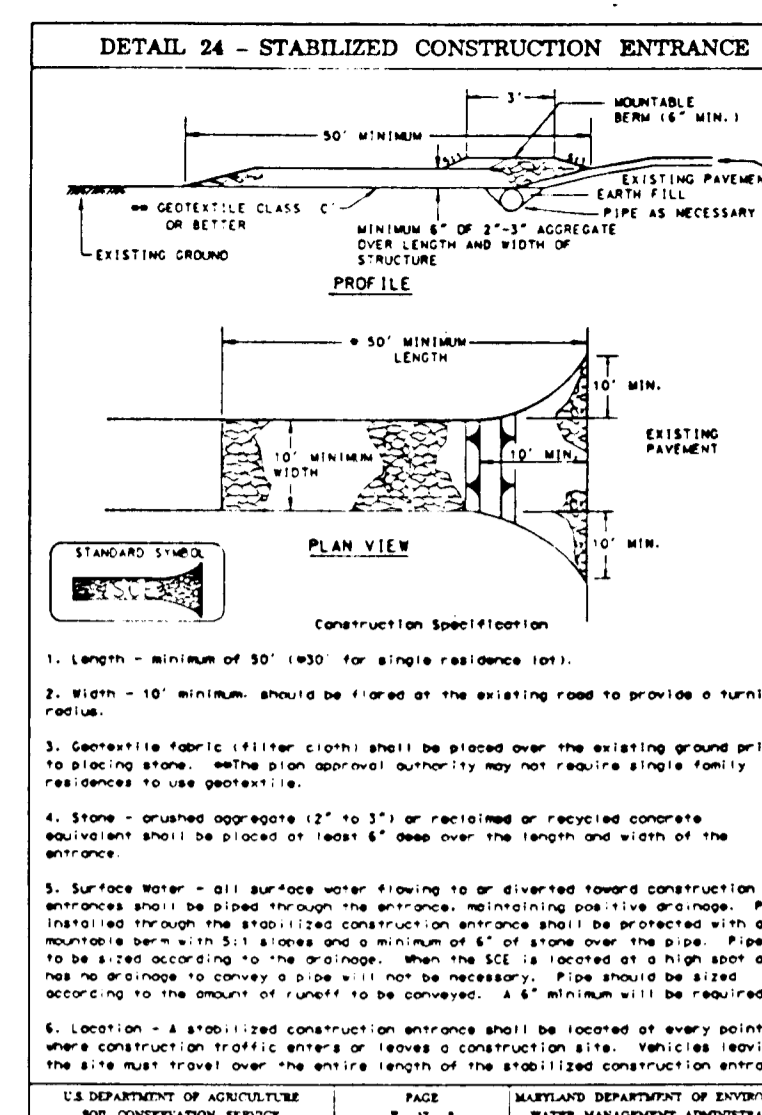
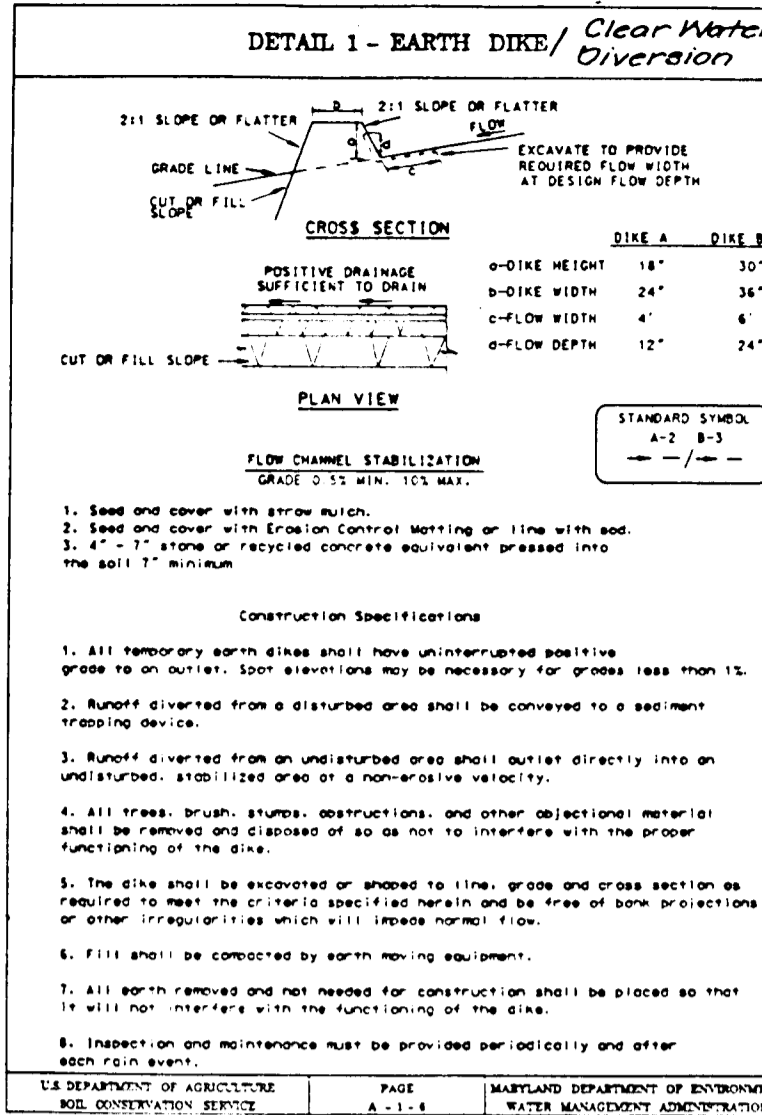
SEEDBED PREPARATION: --- Loosen upper three inches of soil by raking, disking, or other acceptable means before seeding, if not previously loosened.

SOIL AMENDMENTS: --- Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000sq. ft.).

SEEDING --- For periods March 1 thru April 30, and from August 15 thru October 15 seed with 2-12 bushels per acre of annual rye (3.2 lbs/1000sq. ft.) for the period May 1 thru August 14, seed with 1 lb. per acre of weeping lovegrass (.07 lbs/1000sq. ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

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

Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.



CONSTRUCTION SPECIFICATIONS

These specifications are applicable to all borings within the scope of the Standard Specifications for Construction and are subject to the provisions of the Standard Specifications for Construction. All references to ASTM and AASHTO specifications are to the most current editions of these specifications.

Excavation
Areas designated for borrow areas, embankment and structures shall be cleared, grubbed and graded to topsoil. All trees, vegetation, rocks and stumps shall be removed and disposed of in a suitable location. All structures shall be constructed on a minimum of 12 inches of compacted subgrade.

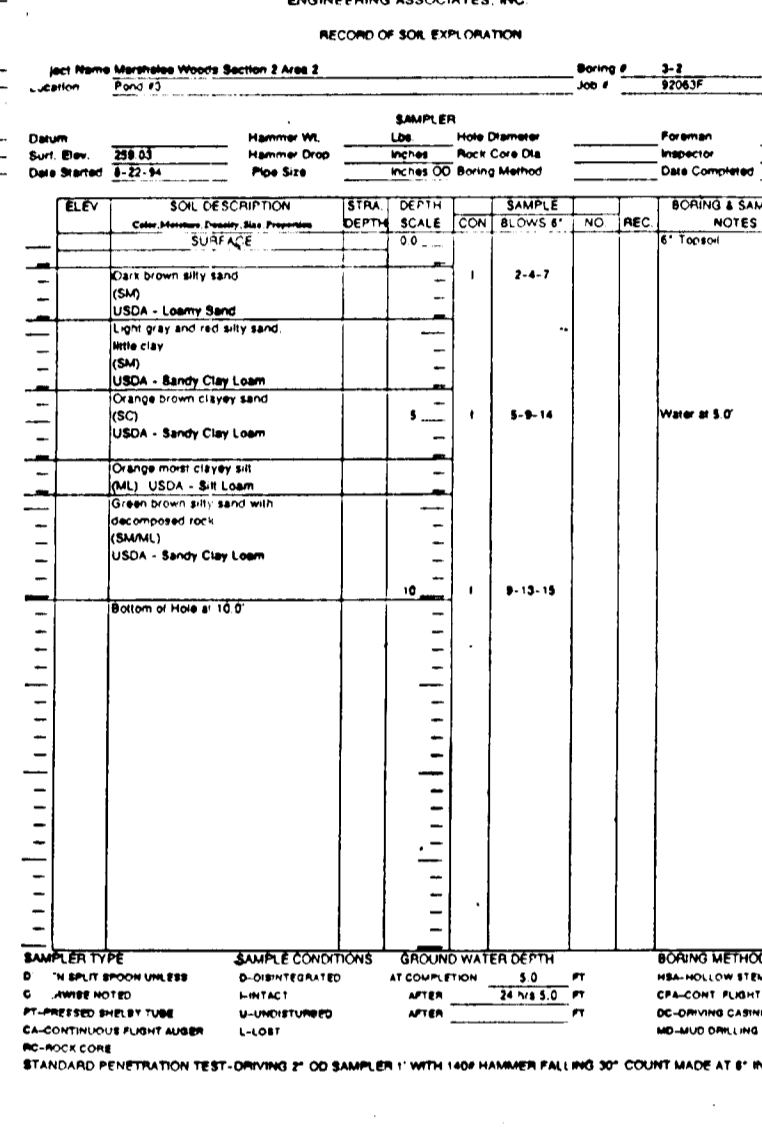
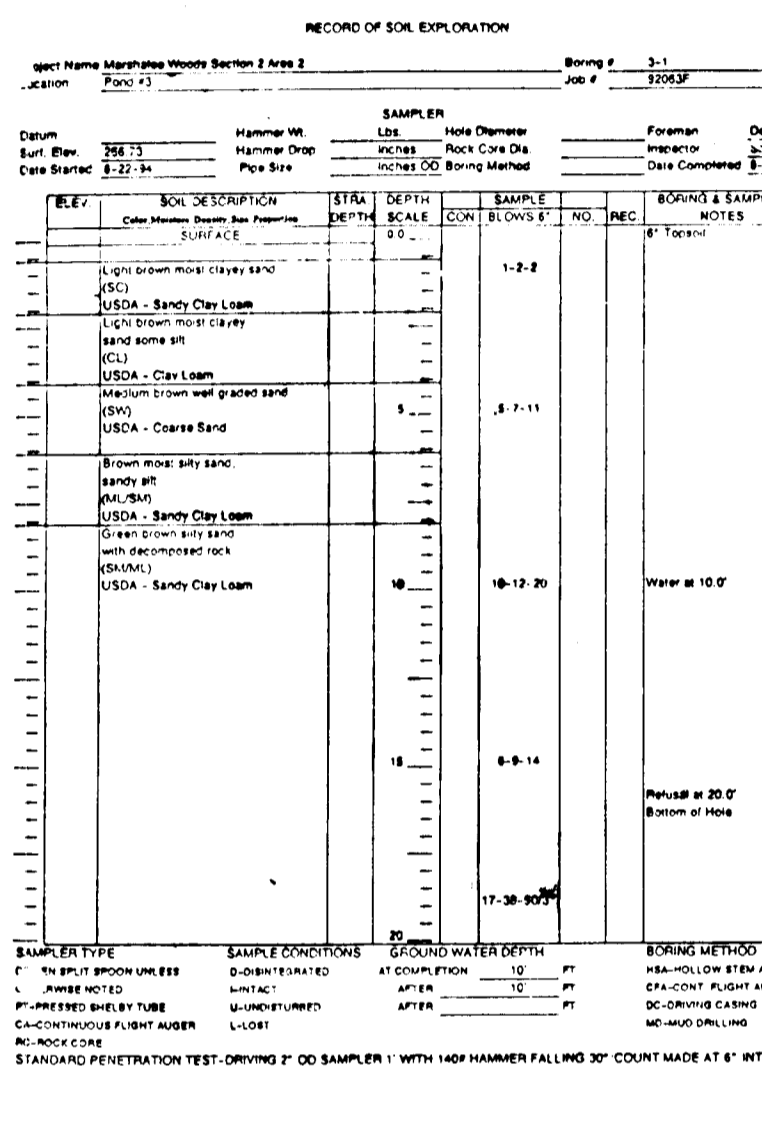
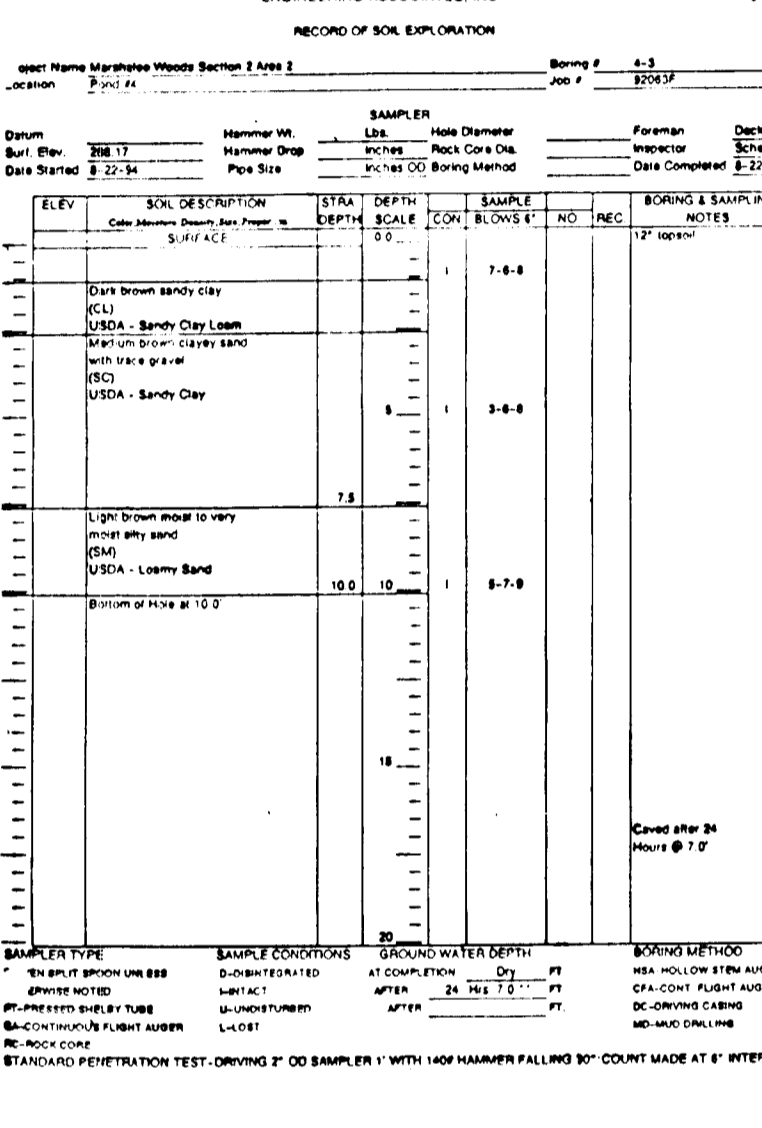
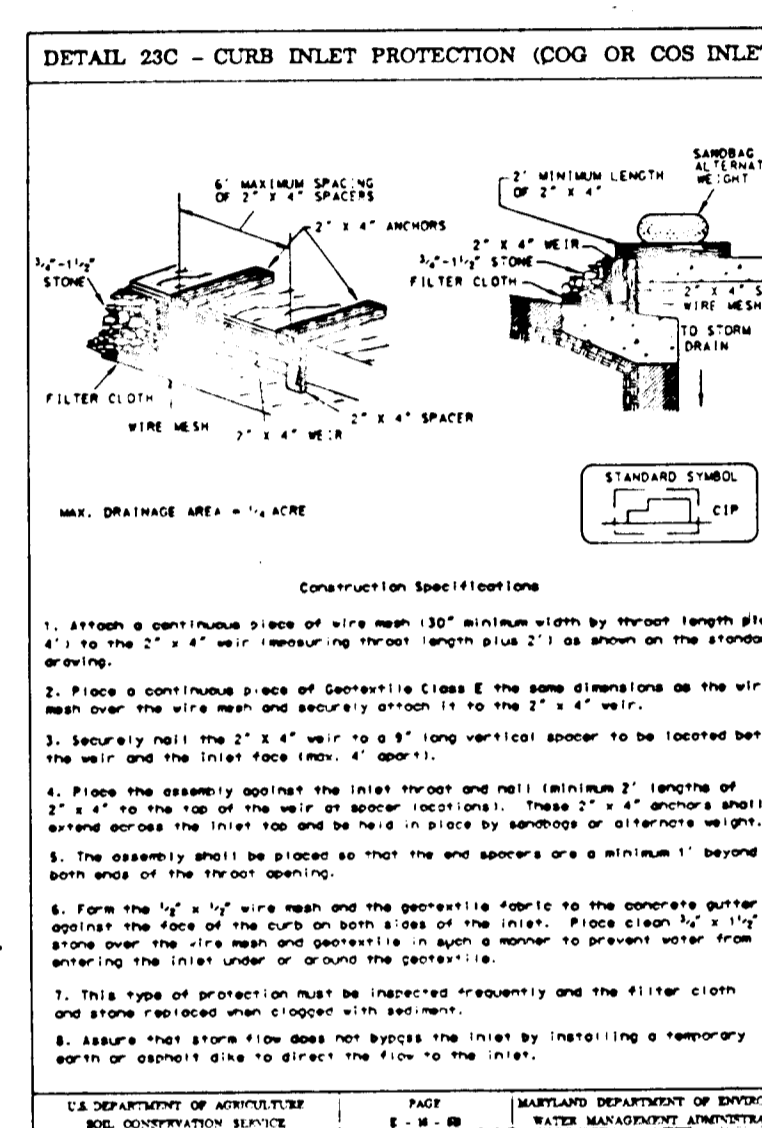
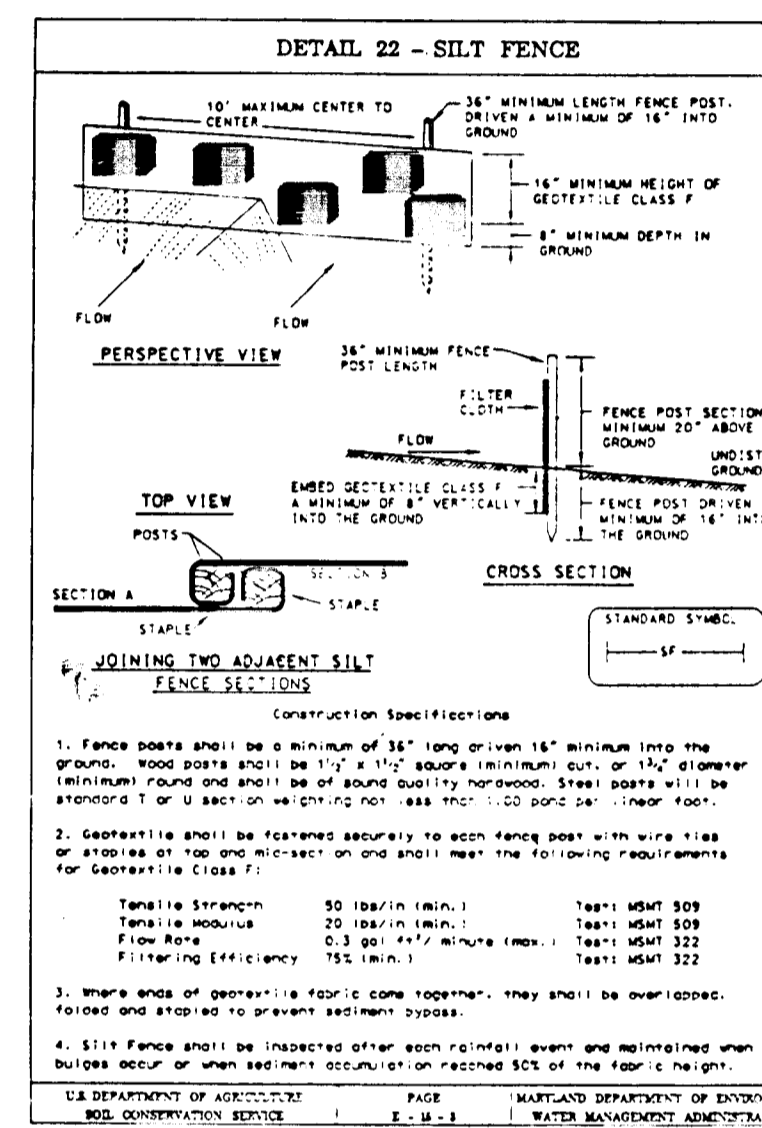
Clearing
Areas to be cleared by the contractor shall be cleared of all trees, brush, logs, stumps, rocks and other objectionable material unless otherwise designated on the plans. These items and stumps shall be removed to an area of approximately equal with the ground surface. For city streets, a minimum of 24 inches of compacted subgrade shall be provided.

Excavation
All excavated and grubbed material shall be disposed of on-site and below the limits of the dam and reservoir. All excavated material shall be disposed of in a suitable location for use on the embankment and other designated areas.

Excavation
The material shall be taken from approved sources. It shall be free of rocks, stumps, wood, brush, stones, glass, etc. The material shall be placed in layers of approximately 6 inches and compacted by hand methods or other manual means to a minimum of 95% of the dry weight of the material. The contractor shall be responsible for the design and construction of all structures.

Excavation
Areas on which it is planned that the structure shall be placed shall be prepared in accordance with the provisions of the Standard Specifications for Construction. The contractor shall be responsible for the design and construction of all structures.

Excavation
The contractor shall be responsible for the design and construction of all structures.



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CONSTRUCTION SEQUENCE

1. Obtain Grading Permit - 1 day
 2. Install stabilized construction entrance - 1 day
 3. Stakeout limits of disturbance and install tree protection fence 3 days
 4. Contractor shall insure access through existing Marshalee Drive and Kynes Lane to the Patten and Paplaxack properties remains open during all phases of construction, until relocated in accordance with the provisions of the Standard Specifications for Construction.
 5. Install silt fence at limit of disturbance where shown hereon or as directed by Sediment Control Inspector - 3 days
 6. Construct "Pond/Trap #3" to MD-378 specifications. WQ Facility/Trap #4, and diversion dikes 3 weeks *
 7. Clear and grub site - 1 day
 8. After shoring operations have been completed, the road subgrade material should be proof rolled or dynamic cone penetrometer tested for stability - 3 days
 9. Grade site after permission is granted by Sediment Control Inspector - 2 weeks
 10. Install utilities - 4 weeks
 11. Repair diversion dikes damaged by utility installation and stabilize with permanent seeding mixture and straw mulch - 1 day
 12. The contractor shall inspect and provide necessary maintenance on the sediment and erosion control structures shown hereon after each rainfall and on a daily basis - 1 day
 13. Install curb and gutter paving - 4 weeks
 14. Install sidewalks - 2 weeks
 15. Complete any grading and stabilize disturbed areas with permanent seeding mixture and straw mulch - 1 week
 16. After all upgrade areas from "Pond/Trap #3" have been stabilized and permission has been given by the Sediment Control Inspector, flush the storm drain system into Pond/Trap #3 - 1 day
 17. Remove silt from Pond/Trap #3 and WQ Facility/Trap #4, and grade to proper dimensions. Convert Trap #4 into Water Facility #4 by removing temporary diverting device and constructing S-7 per detail on Sheet 5. - 1 week
 18. After permission has been given by Sediment Control Inspector, remove silt fence and stabilize disturbed areas with permanent seeding mixture and straw mulch - 1 week
- * PRIOR TO POND #3 CONSTRUCTION, CONTRACTOR SHALL REMOVE EX. TRAP #3 OF 0'-0" TO 7'-0" IN PLACE AND FUNCTIONING.

CONSTRUCTION SEQUENCE

1. Obtain Grading Permit - 1 day
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APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
Aine Stumm 5/14/96
DATE
DEVELOPMENT-ENGINEERING DIVISION

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.
J. A. Ward 4/23/96
DATE
NATURAL RESOURCE CONSERVATION

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE SYSTEMS AND ROADS.
Andrew M. Danek 5-1-96
DATE
CHIEF, BUREAU OF HIGHWAYS

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Robert W. Zehm 4/23/96
DATE
HOWARD SOIL CONSERVATION DISTRICT

ENGINEER'S CERTIFICATE
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Brace D. Brown 4/15/96
DATE
SIGNATURE OF ENGINEER

DEVELOPER'S CERTIFICATE
I, THE DEVELOPER, HAVE READ AND UNDERSTAND THE PLAN AND THE TECHNICAL REQUIREMENTS AND I HEREBY CERTIFY THAT THE PLAN REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
John F. Linn 4/15/96
DATE
SIGNATURE OF DEVELOPER

Sediment Trap Schedule

| Trap No. | Max. D.A. (ft.) | Stor. Regd. (ft.) | Stor. Elev. (ft.) | Stor. Elev. (ft.) | Stor. Elev. (ft.) | Stor. Elev. (ft.) | Stor. Elev. (ft.) | Stor. Elev. (ft.) | Stor. Elev. (ft.) | Trap Size | Type | |
|----------|-----------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-----------|-----------|------|
| 3 | 4.49 | 16164 | 33988 | 263.80 | 8 | 20 | 258.00 | 261.00 | 266.00 | 272.00 | See Plan | ST-1 |
| 4 | 4.27 | 15372 | 18020 | 287.50 | 4 | N/A | 284.00 | 285.20 | 288.00 | 290.00 | 90" x 40" | ST-1 |

* Indicates Bottom Dimensions

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
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DATE
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Andrew M. Danek 5-1-96
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CHIEF, BUREAU OF HIGHWAYS

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DATE
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DATE
HOWARD SOIL CONSERVATION DISTRICT

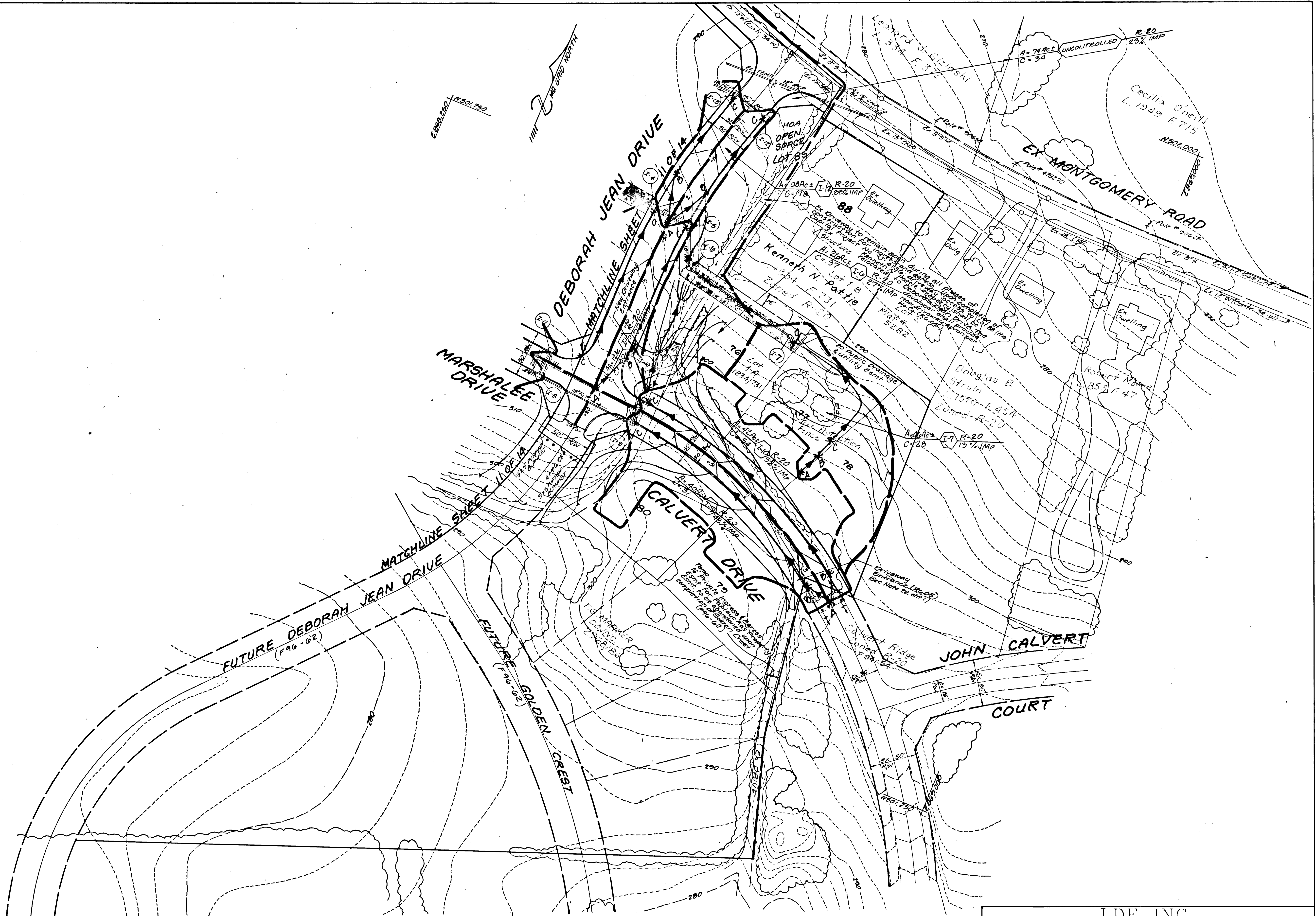
LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

DESIGNED: EDS
DRAWN: WJ
CHECKED: B.D.B.
DATE: March 1996

GRADING & SEDIMENT AND EROSION CONTROL DETAILS
SCALE: AS SHOWN
DRAWING: MARSHALEE WOODS Section 2 - Area 3 Lots 74 - 88
JOB NO.: 95-022 2
FILE NO.: F96-30

Owner/Developer: Marshalee Woods Limited Partnership
8835 Columbia 100 Parkway Unit P
Columbia, MD 21045
(410) 730-0810

1667



Frank Paplauchas
453-36
Zoned R-20

DATE: 8/15/96
BY: [Signature]

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature]
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH
 DATE: 5/14/96

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.
 NATURAL RESOURCE CONSERVATION SERVICE
 DATE: [Blank]
 This development plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.
 HOWARD SOIL CONSERVATION DISTRICT
 DATE: [Blank]

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE SYSTEMS AND ROADS
 [Signature]
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 5-1-96

| No. | By | Date | Description |
|-----|--------|---------|--|
| 1 | L.D.C. | 9-18-96 | Relocate I & E I. Tardent due to Utility Pole Conflict |

LDE, INC.
 9250 Rumsey Road, Suite 106, Columbia, MD. 21045
 (410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

| | | |
|-------------------|--|---------------------|
| DESIGNED ES/TO | DRAINAGE AREA MAP | SCALE 1"=50' |
| DRAWN WJ/BEI | MARSHALEE WOODS Section 2 - Area 3 Lots 74 - 88 | DRAWING 10 of 14 |
| CHECKED B.D.B. | Tax Map 37 P10 Parcels 399, 92 and 93 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND | JOB NO. 95-022.2 |
| DATE Aug. 1996 | Owner, Developer Marshalee Woods Limited Partnership 8835 Columbia 100 Parkway, Unit F Columbia, Maryland 21045 (410) 730-0810 | FILE NO. F96-30 |

1667

| Revision | |
|----------|---|
| NO | Description |
| 1 | Relocate I-16 due to Utility Conflict (12" Water) |



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chris Jaramana
 CHIEF, DIVISION OF LAND DEVELOPMENT, SURVEY AND RESEARCH
 DATE: 5/14/90

[Signature]
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 5/16

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE SYSTEMS AND ROADS.

Andrew M. Daniels
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 5-1-96

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.

NATURAL RESOURCE CONSERVATION SERVICE DATE

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

HOWARD SOIL CONSERVATION DISTRICT DATE

LDE, INC.
 9250 Rumsey Road, Suite 106, Columbia, MD. 21015
 (410) 715-1070 (301) 596-3121 (410) 715-9510 (Fax)

| | | |
|-------------------|--|--------------------|
| DESIGNED EJ/D | DRAINAGE AREA MAP | SCALE 1" = 50' |
| DRAWN WJ/BSI | MARSHALEE WOODS Section 2 - Area 3 Lots 74 - 88 | DRAWN 11 OF 14 |
| CHECKED B.D.B. | Tax Map 37 P10 Parcels 399, 92 and 93 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND | JOB NO. 05-0222 |
| DATE Aug 1996 | Owner/Developer Marshalee Woods Limited Partnership 8833 Columbia 100 Parkway Unit P Columbia, Maryland 21045 (410) 730-0810 | FILE NO. F96-30 |

15667

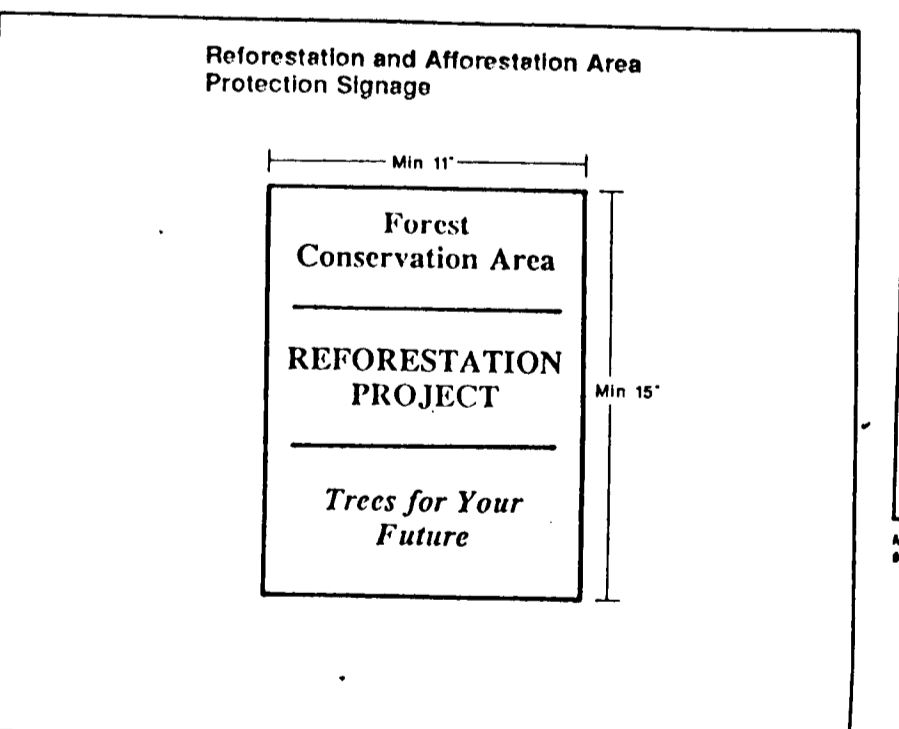
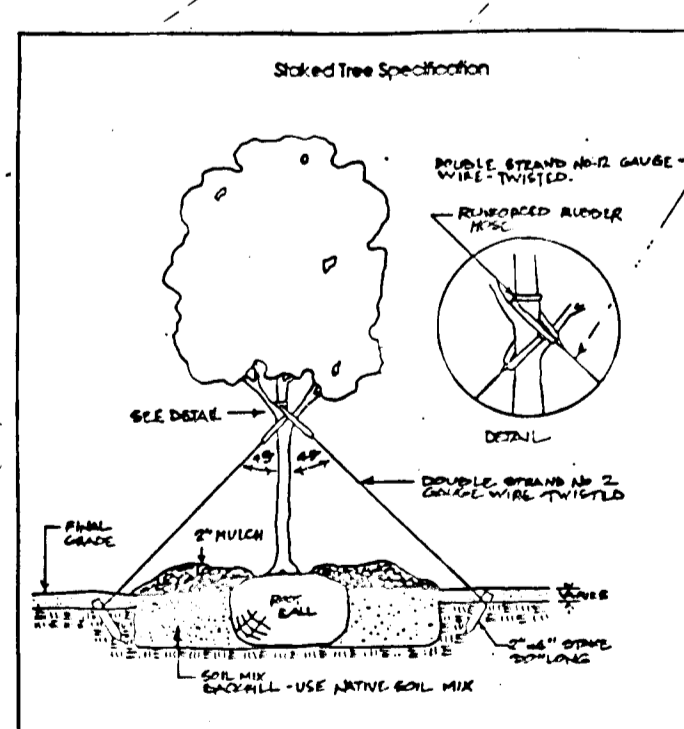
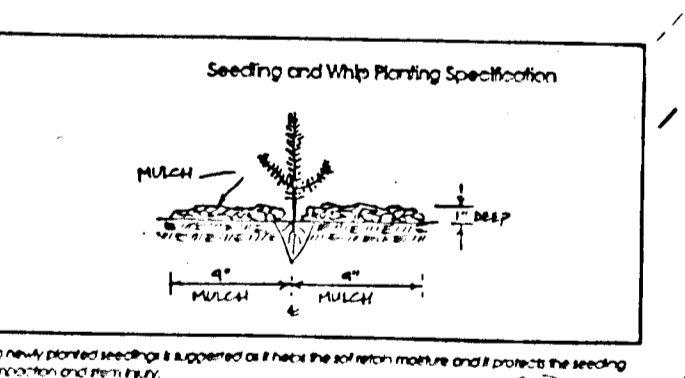
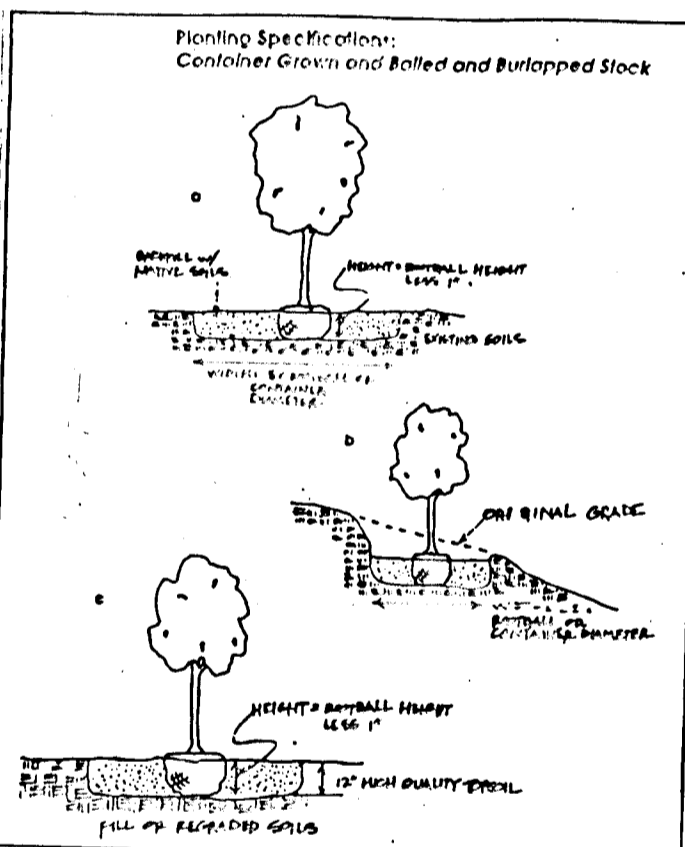
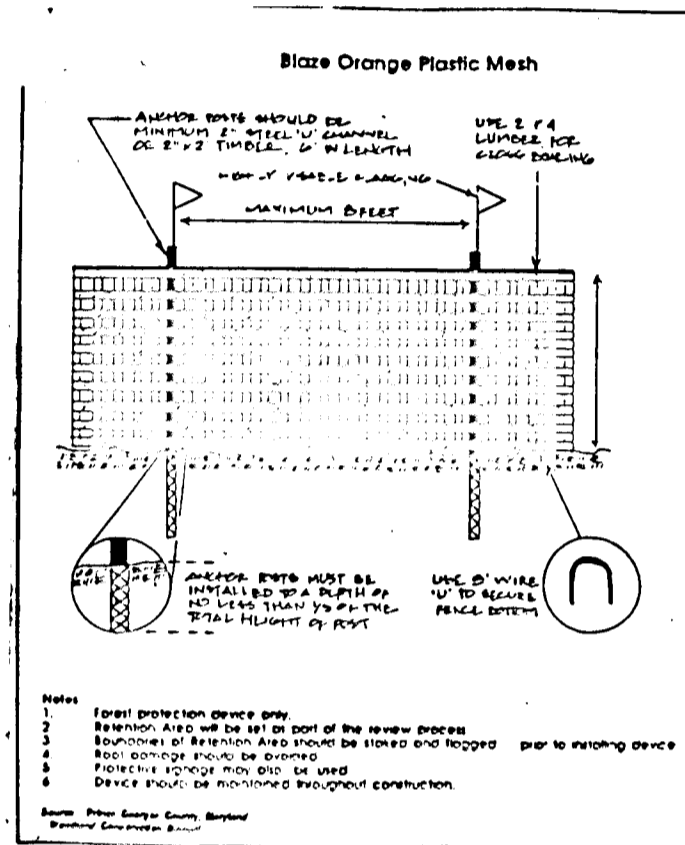


- PLANTING NOTES - street trees**
1. Notify "Miss Utility" 72 hours prior to installation of all plant material.
 2. Plant installation must conform to the minimum standards cited in the latest edition of Landscape Specification Guidelines, published by the Landscape Contractors Association.
 3. Plants to be located in the field by the owner or owner's representative. Notify owner 72 hours in advance of planting.
 4. A Certification of Landscape Installation is required as per the Howard County Landscape Ordinance.
 5. The number, size, location of plants shall not be changed without the approval of the Landscape Architect. Substitutions must be included in the recommended plant list in the Howard County Landscape Ordinance.
 6. Street tree locations may be adjusted for final location of driveways. Trees to be located a minimum of 10 feet from driveways.
 7. Street trees may not be planted within 5 feet of drain inlets, 5 feet of an open space screen strip and 10 feet of a driveway.
 8. Street Tree planting must conform to the Subdivision and Land Development Regulations and the Department of Public Works Design Manual of Howard County.
 9. Balled and Burlapped plant material shall not be accepted if ball is cracked or broken before or during planting. Protect all plants from drying by either sun or wind.
 10. Tree pits shall be backfilled with 50% topsoil, 25% peat, 25% sand with one pound of 10-10-10 fertilizer per pit.
 11. Top soil shall be sandy loam soil free from noxious weeds or grasses, roots, any clumps, stems, sticks, etc. Peat moss shall be commercial with pH 4.5 to 5.5, free of woody material or harmful minerals.
 12. All plants shall be watered at planting with weekly watering thereafter for the first 80 days. Watering shall continue bi-monthly or as necessary to maintain plants in a healthy condition during the guarantee period.
 13. Maintain the site in an orderly manner. Streets and sidewalks shall be swept clean. All needed or dead materials shall be immediately removed from the site.
 14. Plant material to be alive and healthy at the time of the guarantee period (one year), as specified in the Howard County Landscape Ordinance.
 15. Maintenance shall begin immediately after planting and continue to the end of the guarantee period.
 16. Maintenance consist of pruning, watering, weeding, re-mulching, resetting plants to proper grade as needed and repairing guys and stakes as needed.

| NO. | KEY | BOTANICAL / COMMON NAME | SIZE | COMMENT |
|--|-----|--|---------------------------------|--------------------|
| AFFORESTATION PLANTING | | | | |
| Landscape Option (20%) 1,175 SF | | | | |
| 5 | ● | Liquidambar styraciflua Sweetgum | 2-21/2" - 3" cal. B&B | |
| One To Two Gallon Containers 2,750 SF | | | | |
| 5 | ● | Amelanchier canadensis Downy shadblow | 1 gal. cont. | avg. spacing - 11' |
| 5 | ● | Cercis canadensis American Redbud | 1 gal. cont. | avg. spacing - 11' |
| 6 | ● | Ilex opaca American Holly | 1 gal. cont. | avg. spacing - 11' |
| 6 | ● | Viburnum prunifolium Blackhaw | 1 gal. cont. | avg. spacing - 11' |
| Evergreen Seedlings 1,950 SF | | | | |
| 31 | ● | Pinus strobus White Pine | 6" ht. min. 1/8" - 1/4" cal. | avg. spacing - 8' |

| STREET TREE TABLE | | | | | |
|-------------------|----------------------------|--------------------------------|-----|---------------|---------|
| SYMB. | COMMON NAME | BOTANICAL NAME | QTY | SIZE | REMARKS |
| ● | Red Oak | Quercus Rubra | 35 | 2"-2 1/2" Cal | B & B |
| LANDSCAPE EDGE | | | | | |
| SYMBOL | COMMON NAME | BOTANICAL NAME | QTY | SIZE | REMARKS |
| ● | SWEETGUM | LIQUIDAMBAR STYRACIFULUA | 17 | 2"-2 1/2" Cal | B&B |
| ● | OCTOBER GLORY RED MAPLE | ACER RUBRUM 'OCTOBER GLORY' | 19 | 2"-2 1/2" Cal | B&B |
| ● | LEYLAND CYPRESS | CUPRESSUS CYPRARIS LEYLANDI | 26 | 6"-6" HT | B&B |

- PLANTING NOTES - afforestation planting**
1. Forest Stand Delineation and the Preliminary Forest Conservation Plan prepared by C. Williams, Landscape Architect.
 2. Written Documentation including afforestation location, construction protection and management, cost estimate, plant densities, etc. prepared by C. Williams, Landscape Architect, Submission No. P-94-07.
 - A) Construction Protection and Management: Upon completion of the rough grading of the afforestation area, a protective fence and signs will be installed. Adverse landowners will be informed about the existence and importance of these areas.
 - B) Post Construction Protection: After completion and approval of planting, the protective fence shall remain only if construction at Marshalee Drive endangers the viability of the newly planted area. Signs will be removed after the two year maintenance period as directed by the Howard County Forest Conservation Manual.
 3. All planting to meet the implementation techniques and practices as described in the Howard County Forest Conservation Manual.
 4. There are no existing trees on the site.
 5. The hardwood container grown stock should be planted randomly at an average of eleven feet on center in a naturalized pattern. Species should be mixed with no less than three species in a group. Edible species should be planted on the perimeter of the afforestation area (Amelanchier, Cercis, and Viburnum).
 6. Evergreen seedlings should be planted randomly at an average of eight feet on center in a naturalized pattern.
 7. The Landscape Contractor will be responsible for general site preparation of the rough graded afforestation areas. The planting area should be treated by incorporating natural mulch into the top twelve inches of soil. The Contractor will provide needed soil amendments as determined by a soil analysis. Amendments should be natural materials such as organic mulch or leaf mold compost.
 8. All disturbed areas within the afforestation area to be seeded with K-31 Tall Fescue (March 1 - April 30 and August 1 - Oct. 15, seed with 80 lbs/acre; May 1 - July 31 use 60 lbs/acre K-31 and 2 lbs/acre of vetch; November; Oct. 16 - Feb. 28 use 80 lbs/acre K-31 and mulch with 2 tons/acre well anchored straw or mulch and seed in the spring.
 9. Seeded areas to be hand mulched with 1 1/2 to 2 tons per acre of unrotted small grain straw and non-amphibolic fertilizer and left unrotted. All areas between the Site Line Easement and the ROW of Marshalee Drive shall be seeded with K-31 Fescue and mowed once a year.
 10. The Landscape Architect will inspect the planting at the end of the construction period and provide to the County a certification that all plantings have been installed and that all protection devices are in place.
 11. The Landscape Contractor shall be responsible for management of afforestation areas for a period of two years, including needed watering, removal of dead or damaged material and control of undesirable species, fertilizing if necessary, and control of pests, and replacement of plant material as described in the Howard County Forest Conservation Manual.
 12. All inspections as required by the Forest Conservation Manual shall be performed by the Landscape Architect.



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Olga Surman
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH
 DATE: 5/14/96

Andrew M. Danek
 CHIEF, DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE SYSTEMS AND ROADS
 DATE: 5-1-96

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE

DATE: _____

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

HOWARD SOIL CONSERVATION DISTRICT

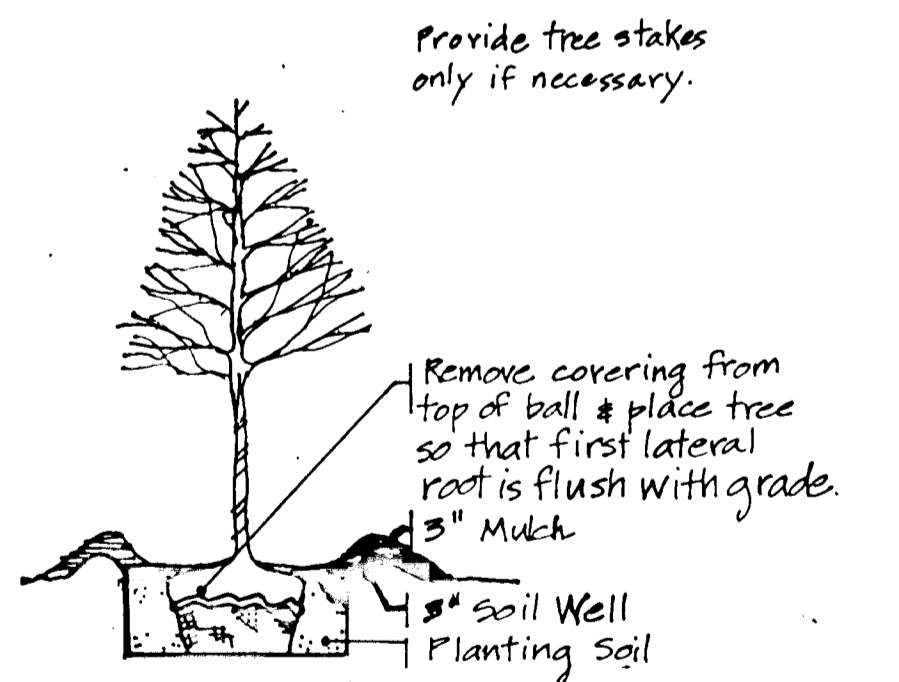
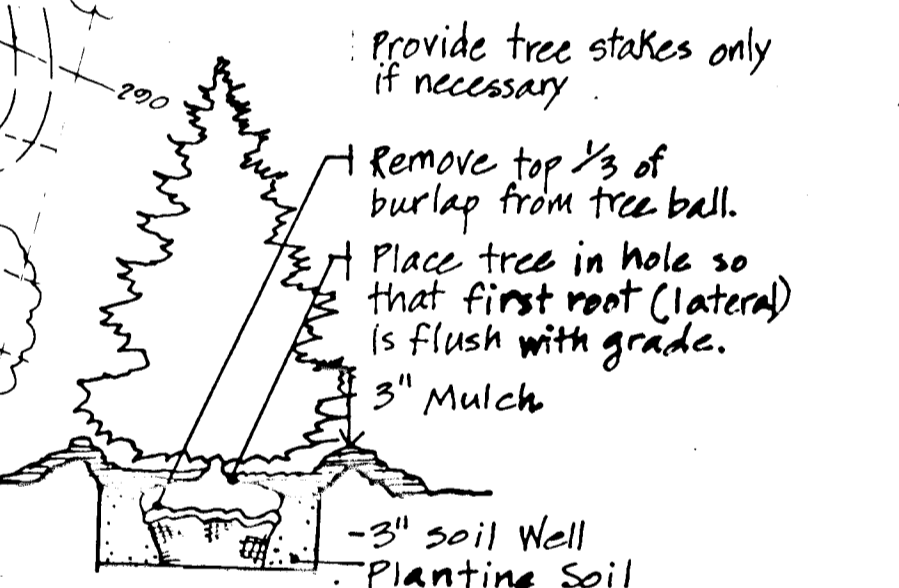
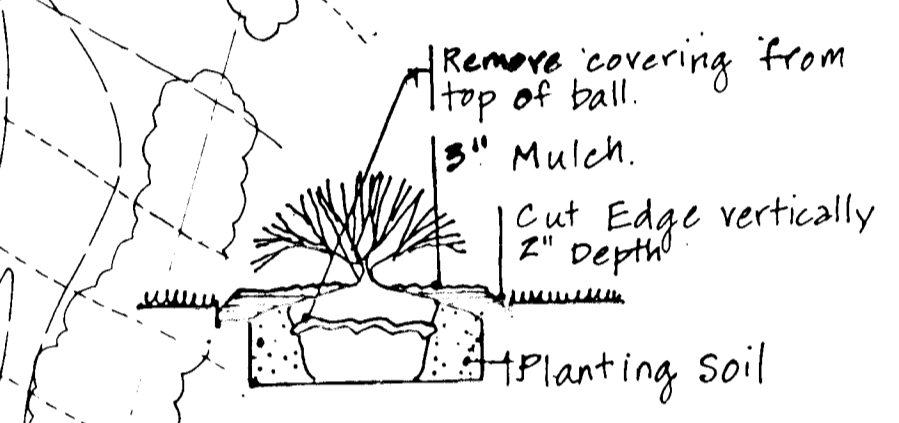
DATE: _____

- NOTES:**
1. This plan has been prepared in accordance with provisions of Section 16.12a of the Howard County Code and the Landscape Manual.
 2. The Owner/Developer is responsible for the planting of all street trees and plant material required to meet the standards established by the Howard County Landscape Manual.
 3. There shall be a minimum of 20' between street lights and street trees.

| Forest Conservation Technique | Area / sq. ft. | Plant Density | Plants Required | Plants Shown |
|---------------------------------------|----------------|---------------------|-----------------|--------------|
| Landscape option | 1175 | 40 trees / 10,000sf | 5 trees | 5 trees |
| Afforestation w/ 1-2 gal. cont. stock | 2750 | 350 trees / ac. | 22 trees | 22 trees |
| Afforestation w/ evgn seedlings | 1950 | 700 trees / ac. | 31 trees | 31 trees |
| Total Area | 5875 | | | |

SCHEDULE A PERIMETER LANDSCAPE EDGE

| Category | Adjacent to Roadways | Adjacent to Perimeter Properties |
|---|----------------------|----------------------------------|
| Landscape Type | A | A |
| Linear Feet of Boundary | 976' | 976' |
| Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed) | Yes 110 LF | No |
| Credit for Visual Fence of Berm (Yes, No, Linear Feet) (Describe below if needed) | No | No |
| Number of Plants Required (Specify 1/4" Evergreen Trees w/4" Stems N/A) | 14 | 14 |
| Number of Plants Provided (Specify: Evergreen Trees Other Trees (2" substitution) (Specify 1/4" substitution) (Describe plant substitution credits below if needed) | 15 | 15 |



LANDSCAPE PLAN

MARSHALEE WOODS
 Section 2 - Area 3
 Lots 74 - 88

Tax Map 37 P/O Parcels 399, 92 and 93
 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: 5/14/96

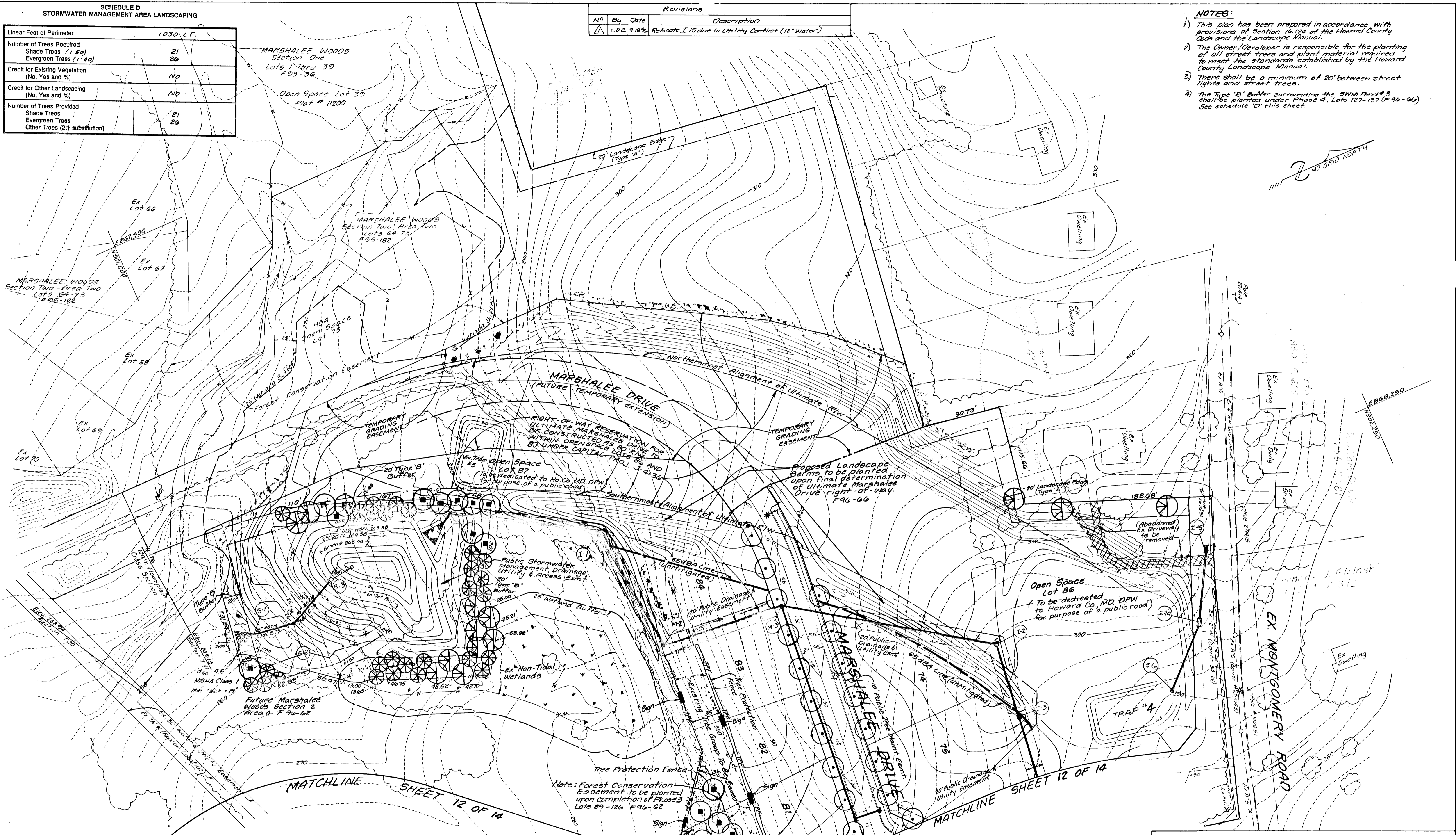
FILE NO: F96-30

SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING

| | |
|--|-----------|
| Linear Feet of Perimeter | 1030 L.F. |
| Number of Trees Required | 21 |
| Shade Trees (1:50) | 26 |
| Evergreen Trees (1:40) | |
| Credit for Existing Vegetation (No, Yes and %) | No |
| Credit for Other Landscaping (No, Yes and %) | No |
| Number of Trees Provided | 21 |
| Shade Trees | 26 |
| Evergreen Trees | |
| Other Trees (2:1 substitution) | |

| Revisions | | | |
|-----------|--------|---------|---|
| NR | By | Date | Description |
| 1 | L.O.E. | 9/18/96 | Relocate I-15 due to Utility Conflict (12" Water) |

- NOTES:**
- 1) This plan has been prepared in accordance with provisions of Section 16.24 of the Howard County Code and the Landscape Manual.
 - 2) The Owner/Developer is responsible for the planting of all street trees and plant material required to meet the standards established by the Howard County Landscape Manual.
 - 3) There shall be a minimum of 20' between street lights and street trees.
 - 4) The Type 'B' Buffer surrounding the SWMA Pond # 2 shall be planted under Phase 4, Lots 127-137 (F 96-06) See schedule 'D' this sheet.



1667

APPLICANT: ED. HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Gina Zornigary
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH
DATE: 5/14/96

[Signature]
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE: 7/6/96

APPROVED: DEPARTMENT OF PUBLIC WORKS FOR STORM DRAINAGE SYSTEMS AND ROADS
Andrew M. Doncker
CHIEF, DIVISION OF HIGHWAY
DATE: 5-1-96

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS.

NATURAL RESOURCE CONSERVATION SERVICE
DATE: _____

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

HOWARD SOIL CONSERVATION DISTRICT
DATE: _____

22 Hardwoods
1-2 Gal. Cont. Stock

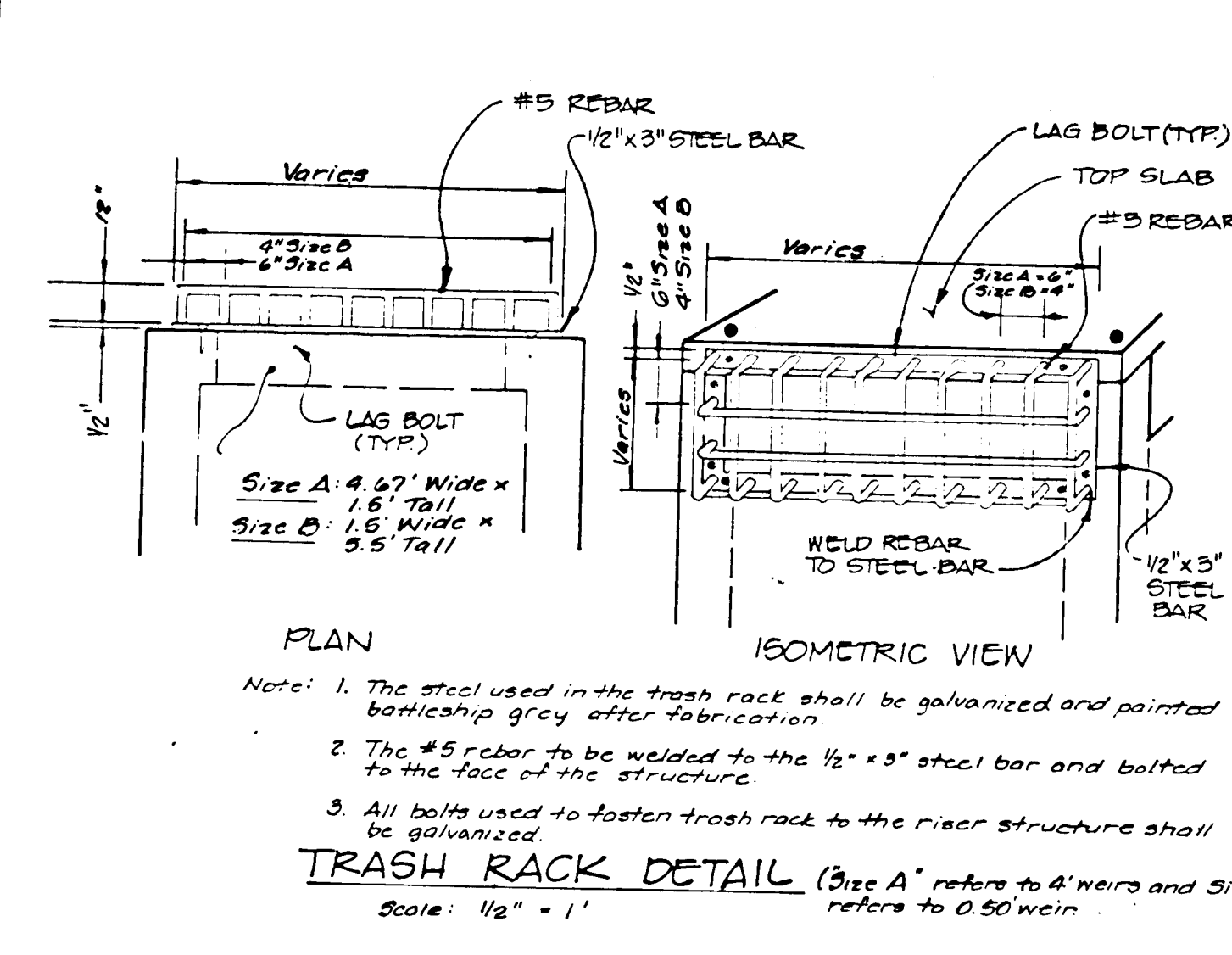
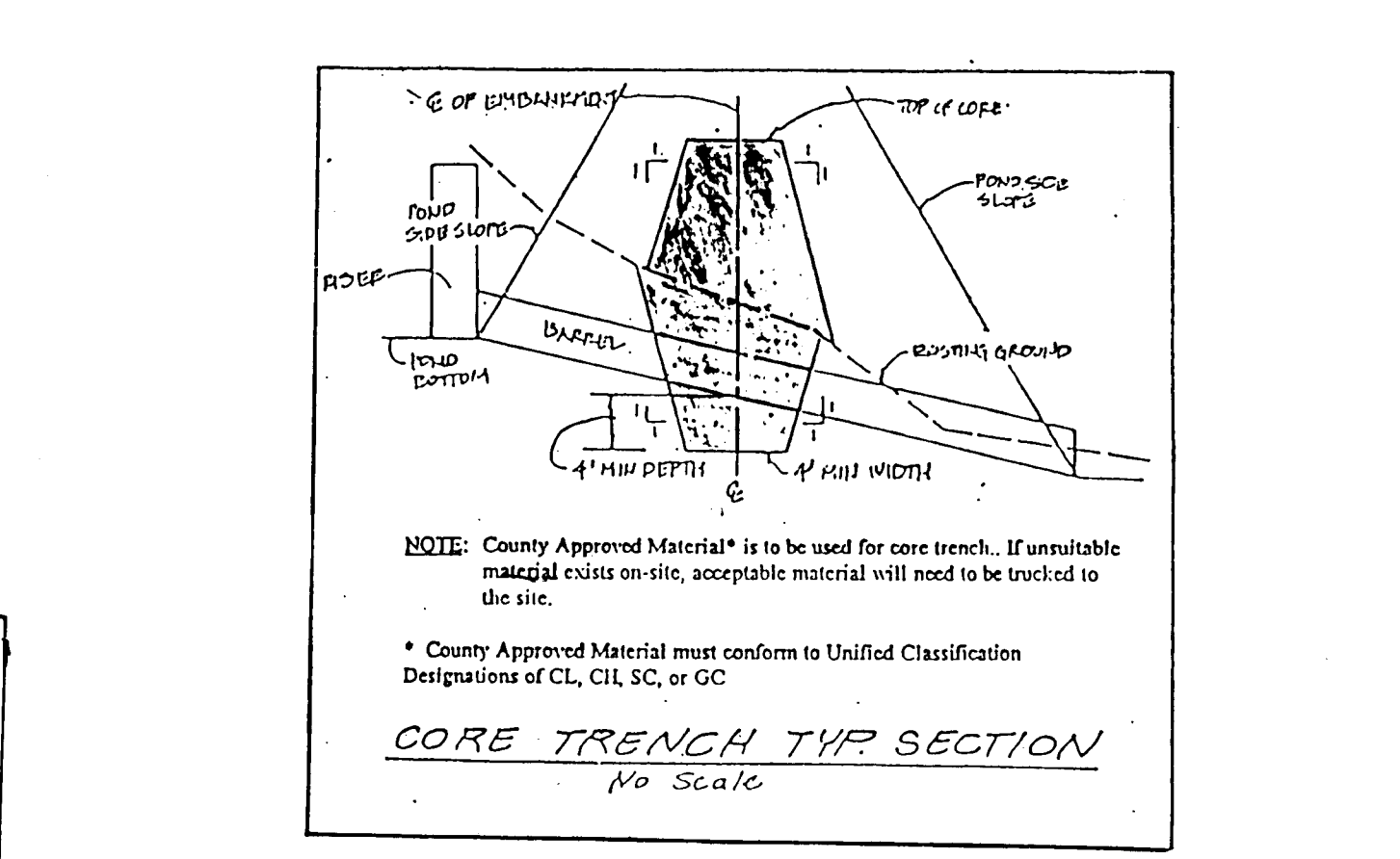
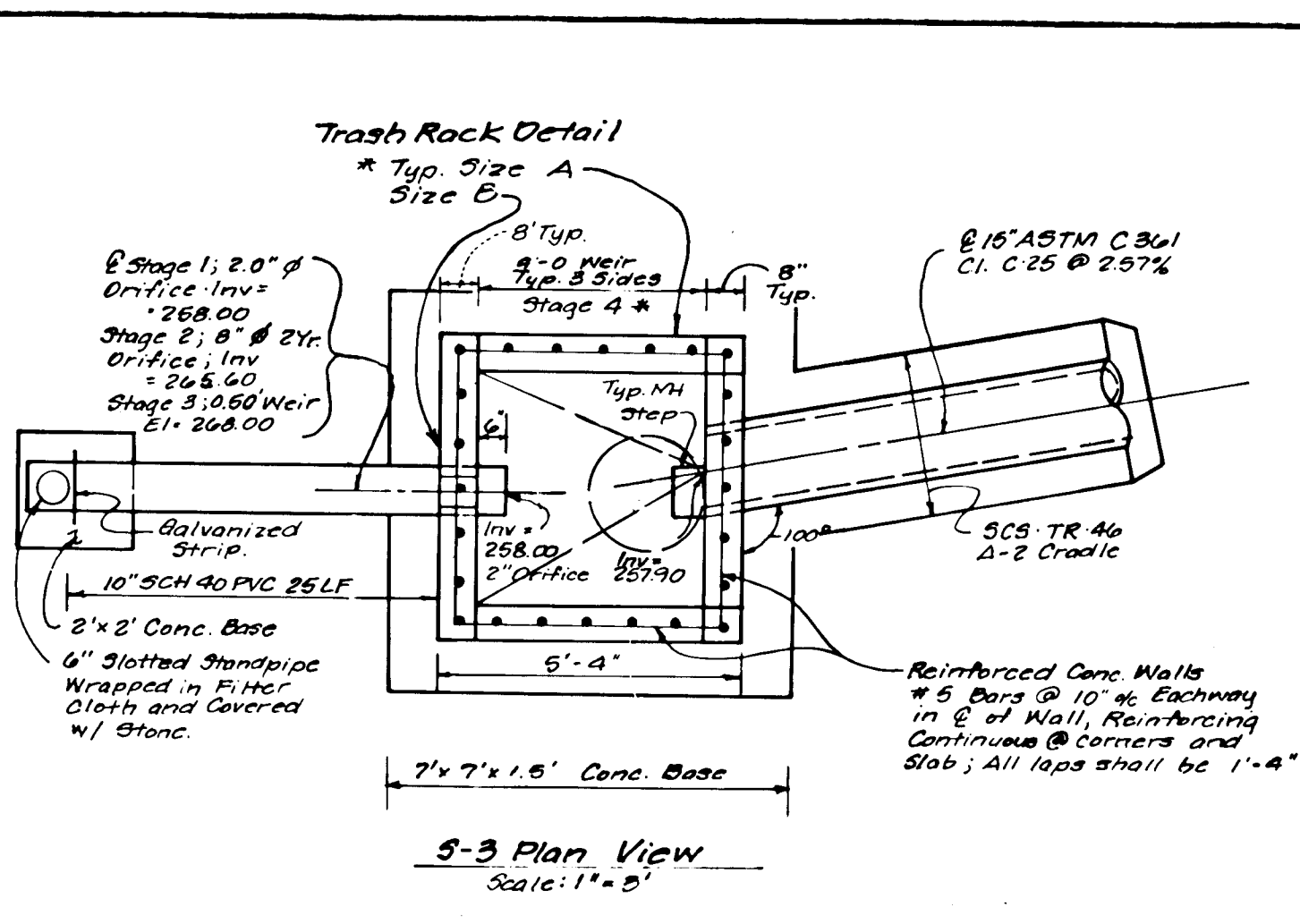
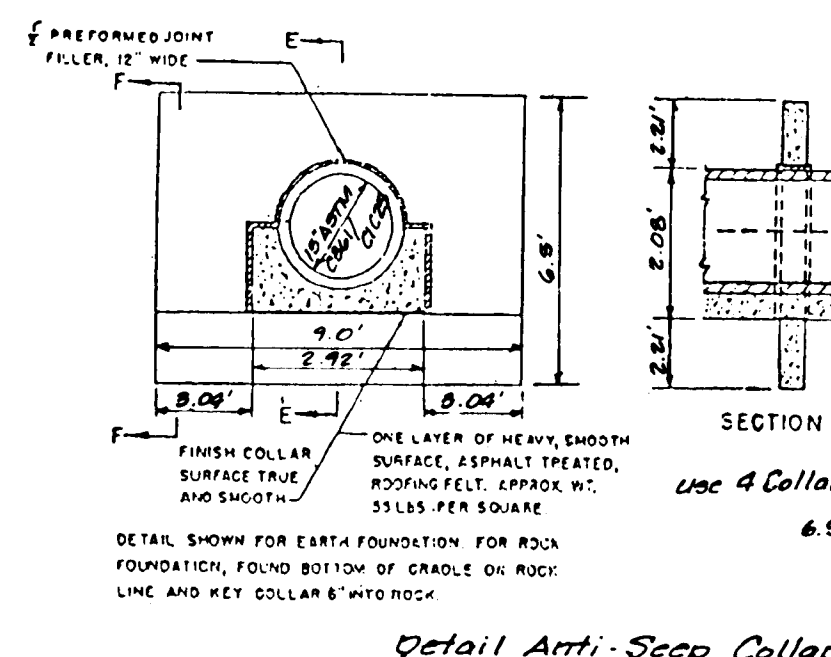
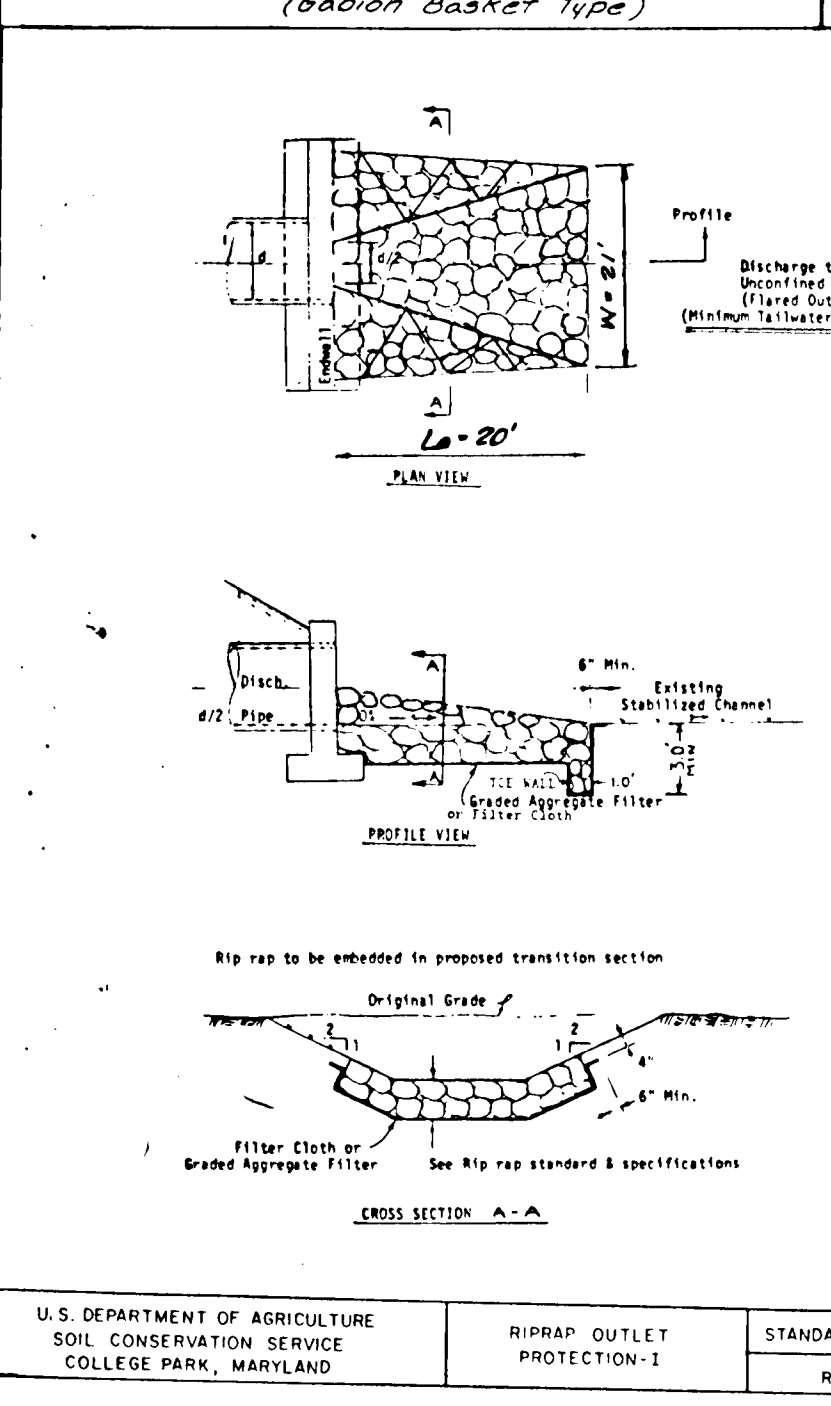
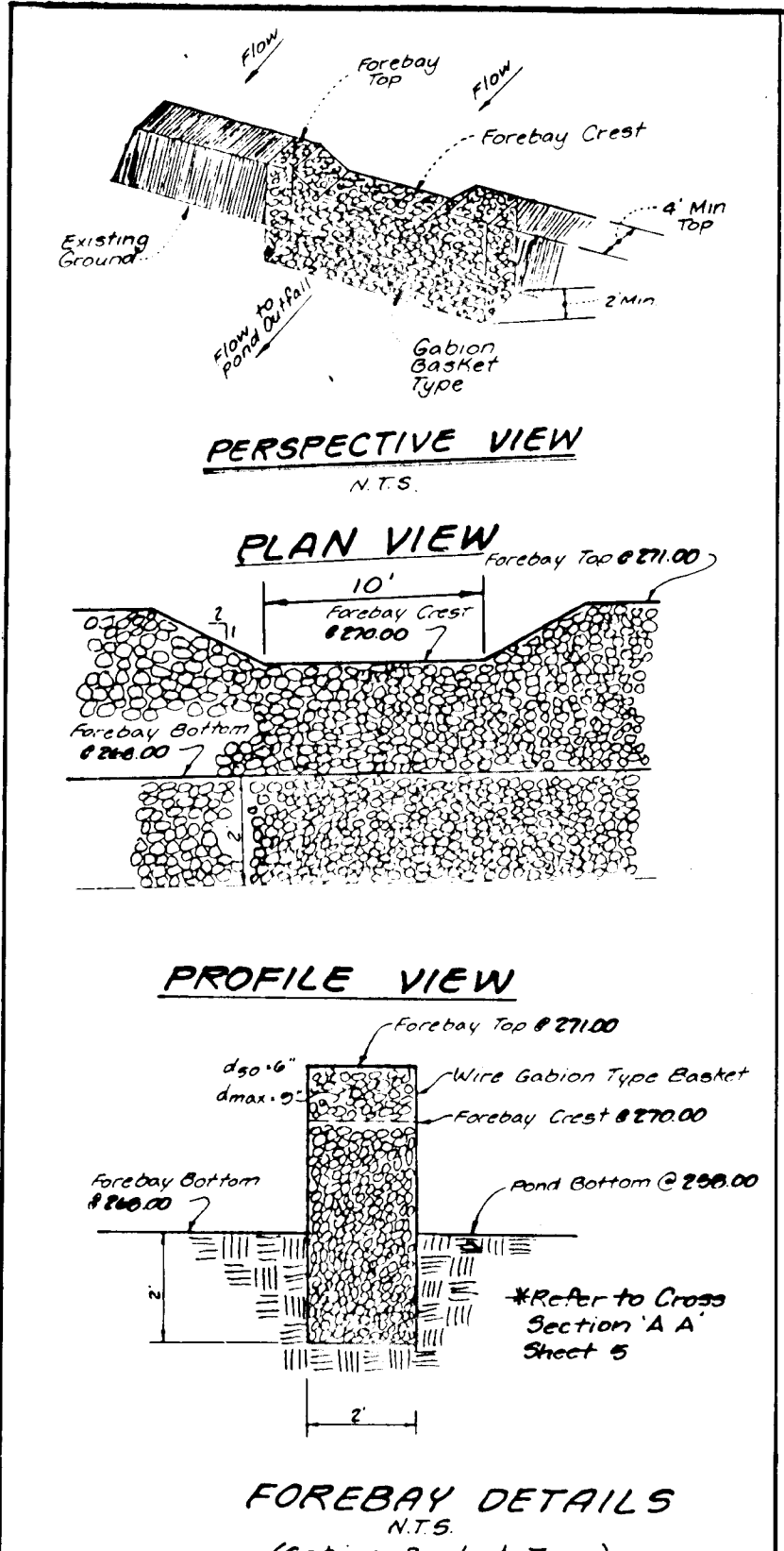
31 Evergreen Seedlings

Remove existing roadbed and expand existing tree groups with planting stock 5875 s.f.t.



| | | |
|--|--|-------------------------|
| LINE, INC. 9555 Rumsey Road, Suite 150, Columbia, MD 21045 (410) 715-1379 (301) 626-3121 (410) 715-3515 (Fax) | | |
| DESIGNED BY E9/10 | LANDSCAPE PLAN | SCALE 1" = 50' |
| DRAWN BY WJ | MARSHALEE WOODS Section 2 - Area 3 Lots 71 - 88 | DRAWING NO. 13 of 14 |
| CHECKED BY B.L.B. | Tax Map 37 P10 Parcels 399, 92 and 93 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND | JOB NO. 05-022 2 |
| DATE Aug. 1996 | FILE NO. F-96-30 | |

F-96-30



Operation and Maintenance Schedule
Stormwater Management Facility
Extended Detention Pond

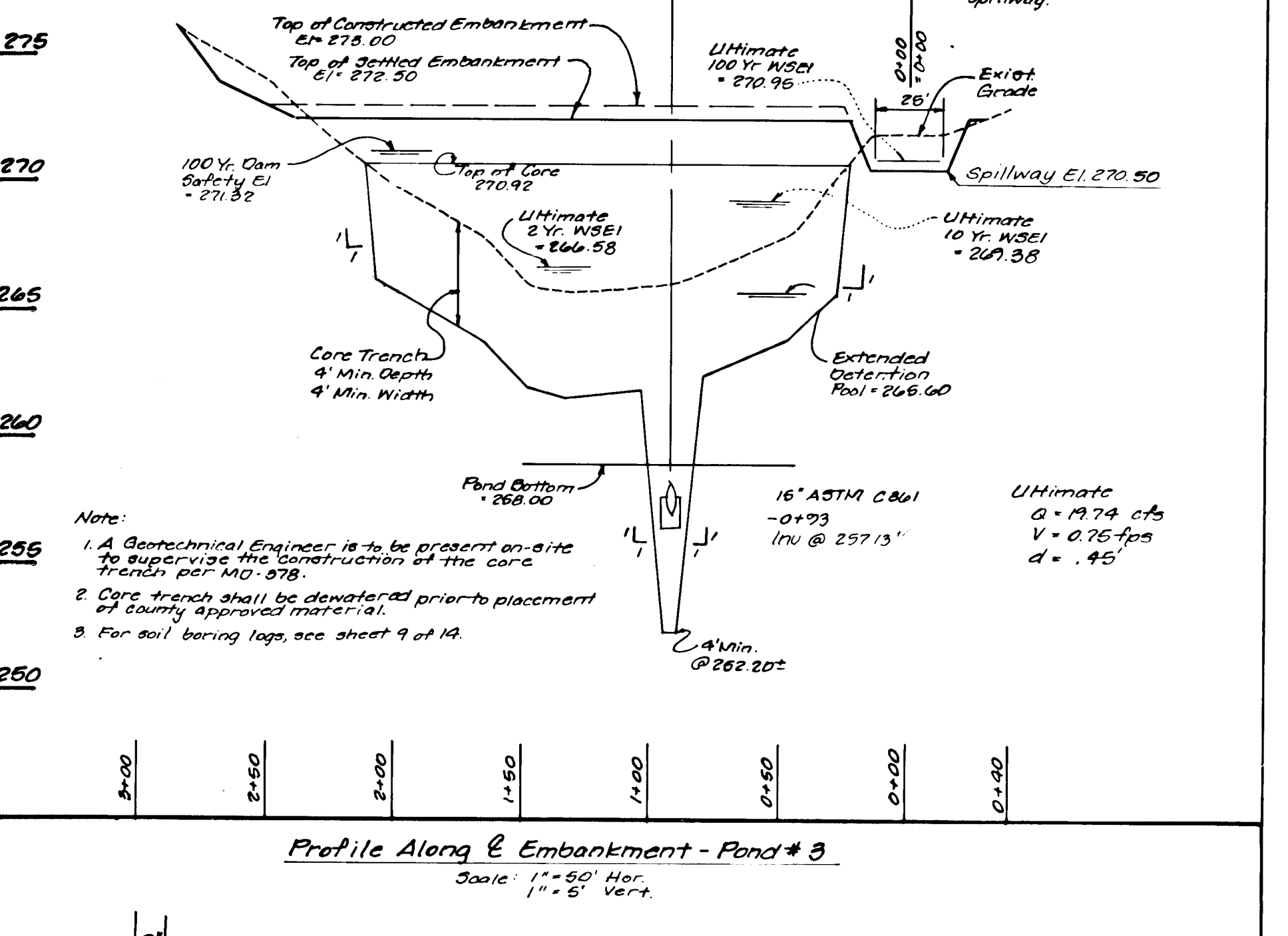
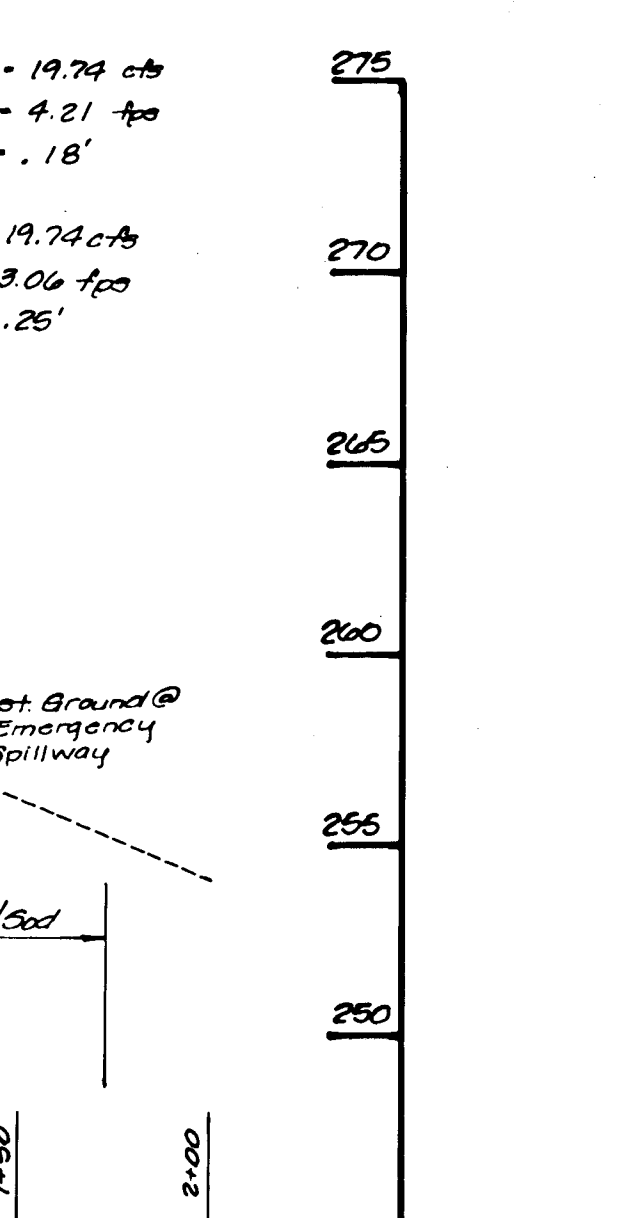
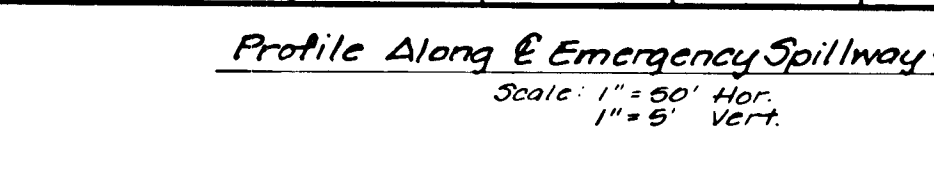
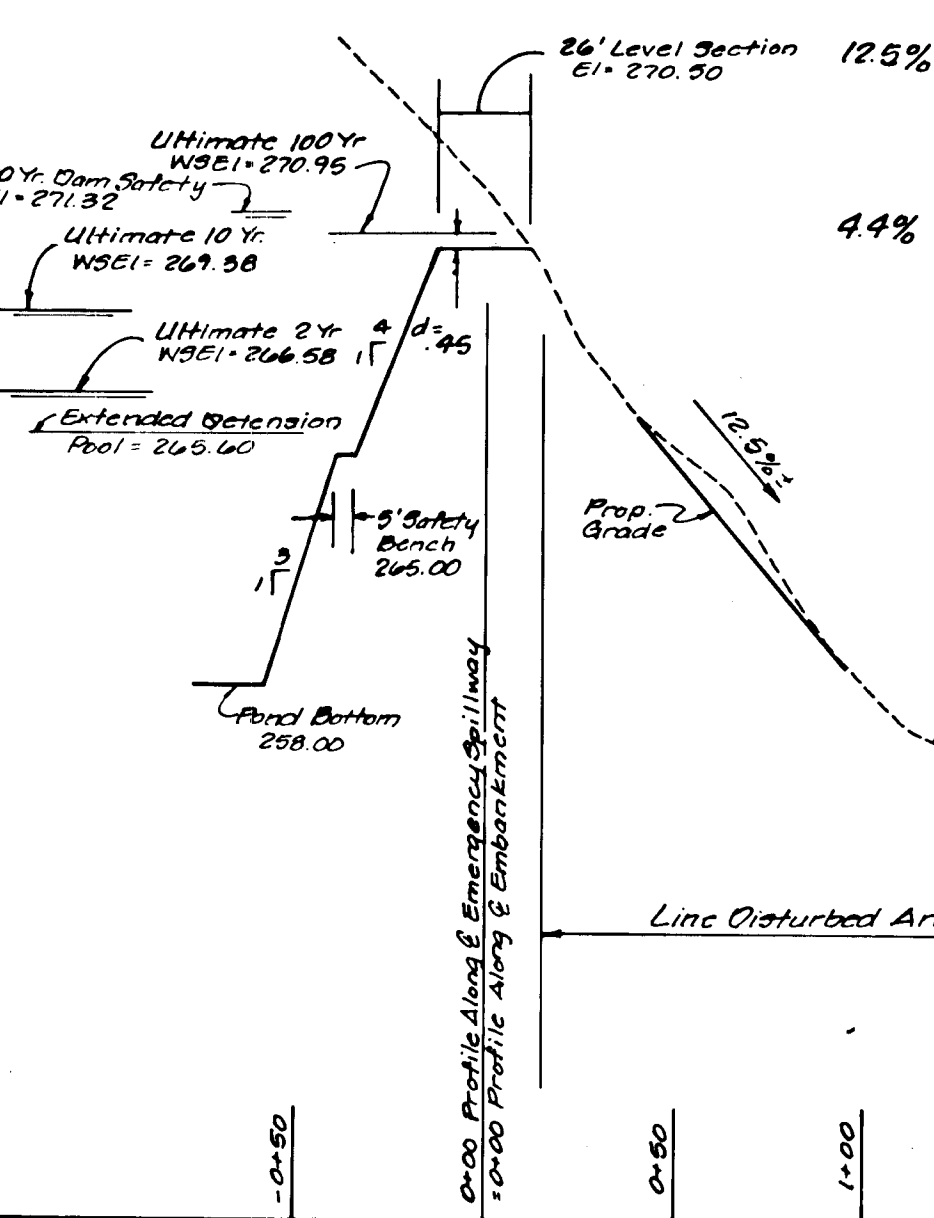
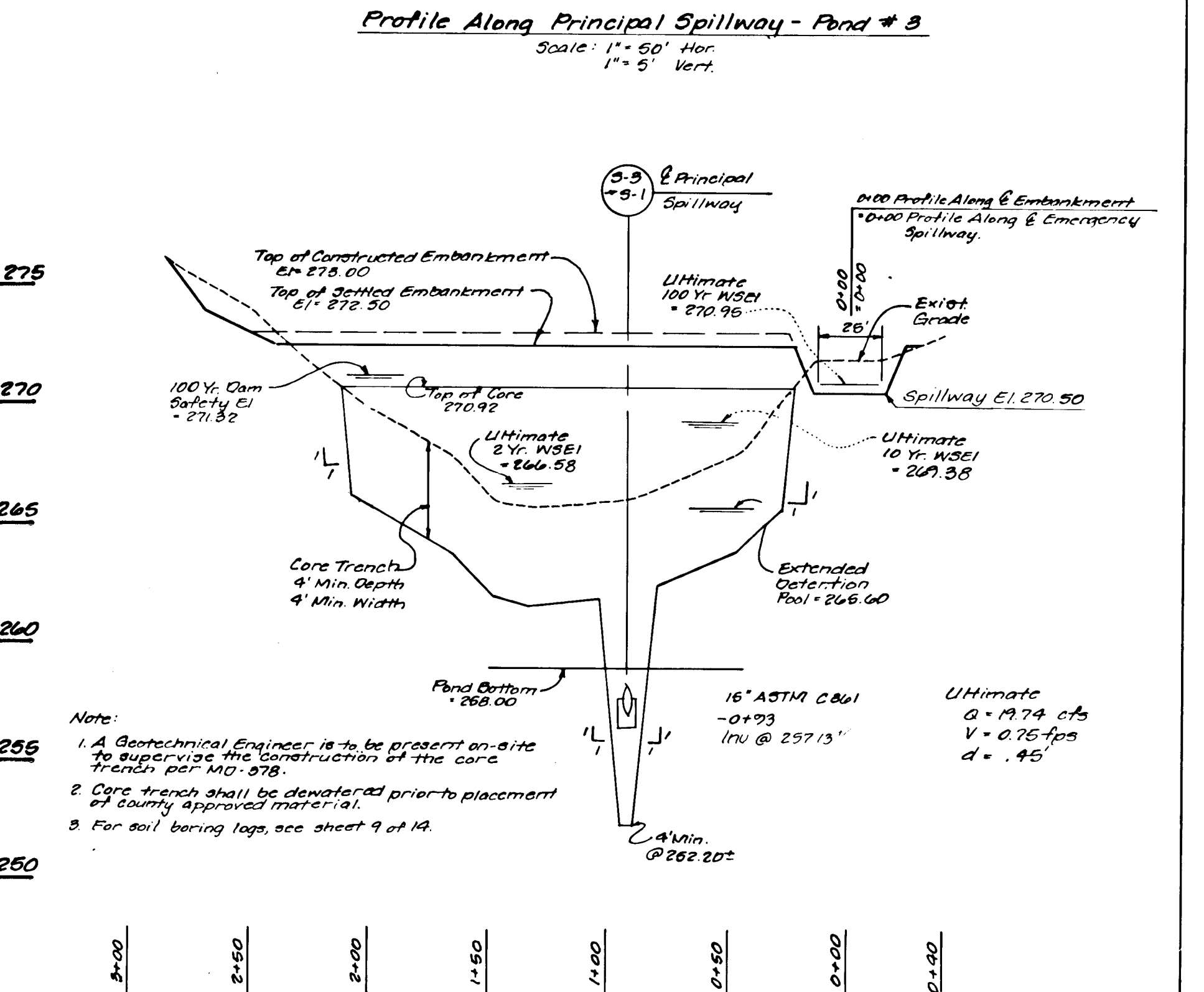
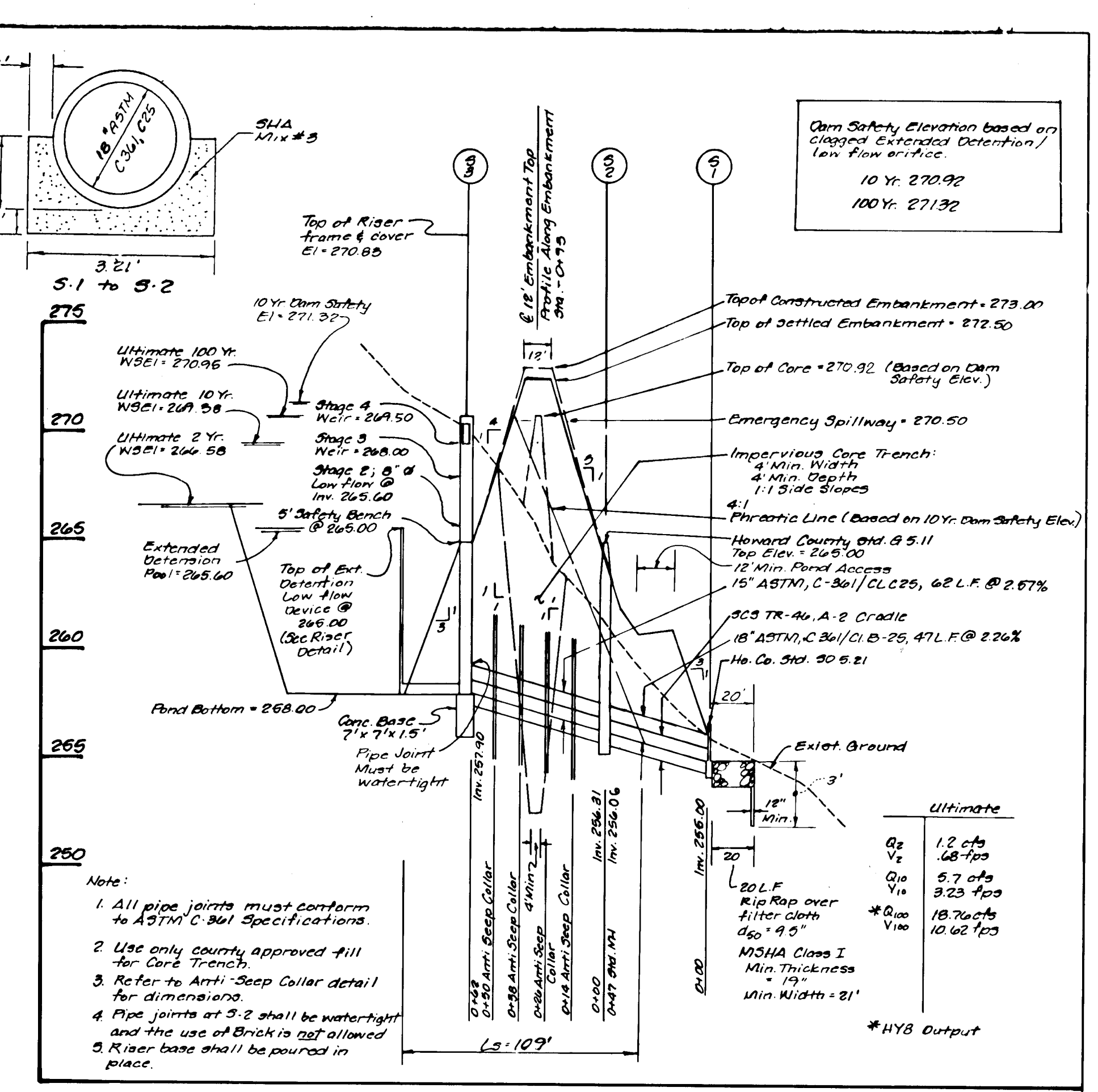
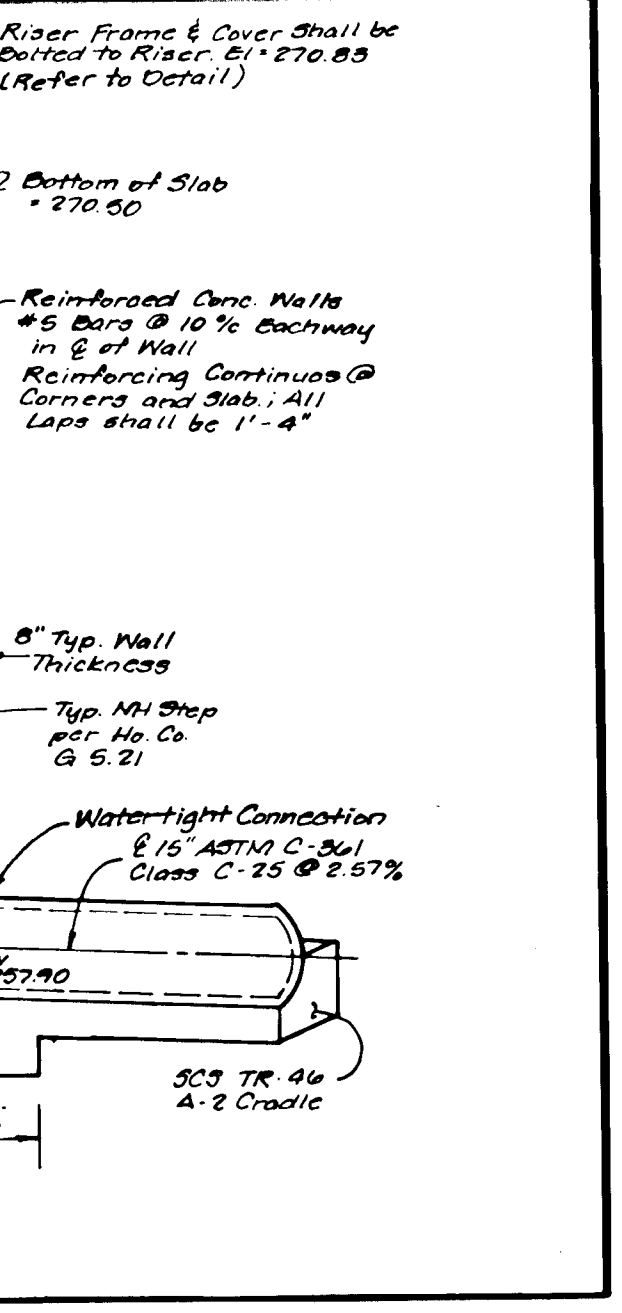
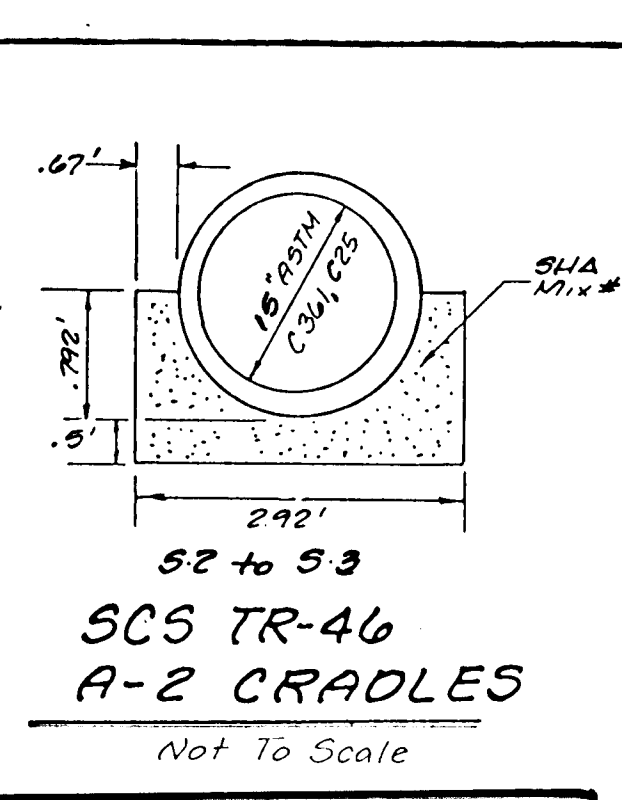
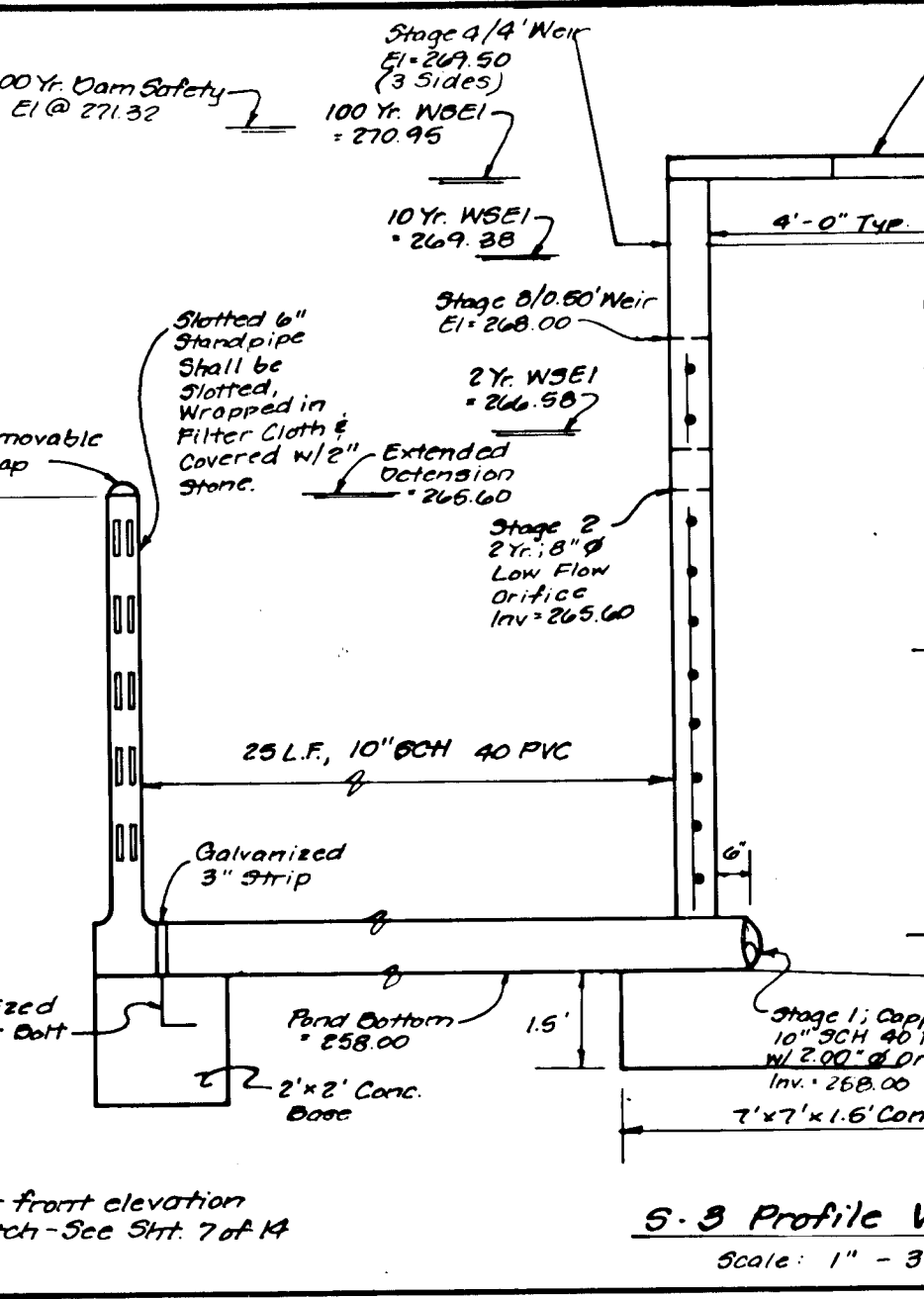
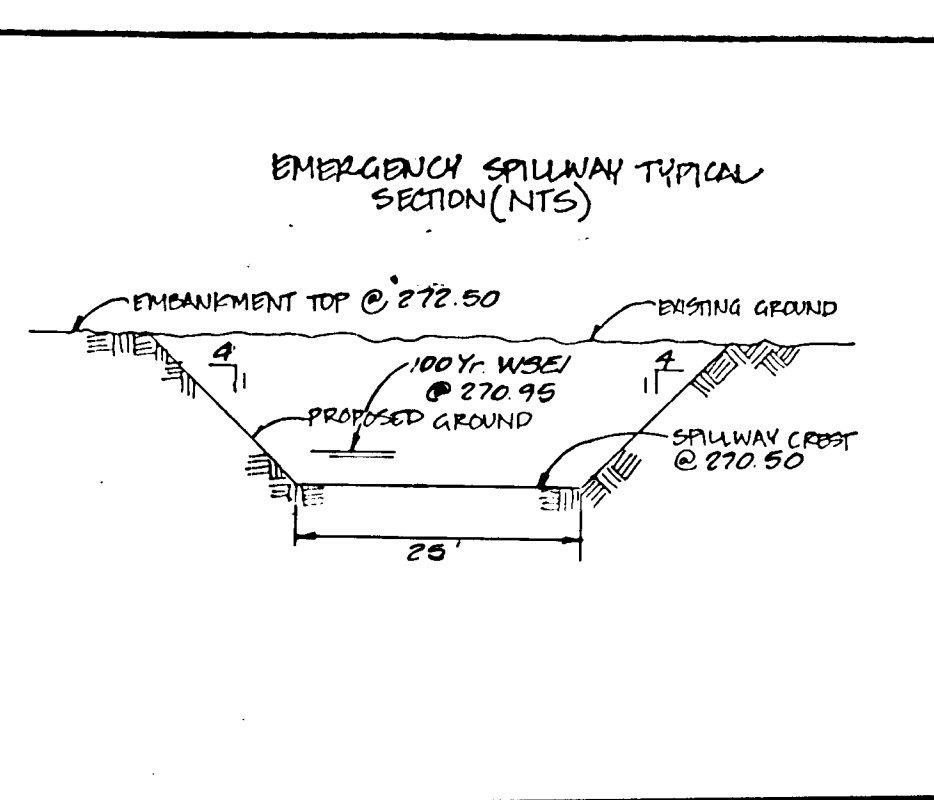
Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes, the bottom of the pond, and maintenance access should be mowed as needed.

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

When deemed necessary for aesthetic reasons, sediment should be removed from the pond. Approval of the Department of Public Works is required.

OPERATION, MAINTENANCE, AND INSPECTION

Inspection of the pond shown hereon shall be performed at least annually, in accordance with the checklist and requirements contained within USDA, SCS Standards and Specifications For Ponds (MD 378). The pond owner(s) and their heirs, successors, or assigns shall be responsible for the safety of the pond and the continued operation, surveillance, inspection, and maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.



Approved: Howard County Department of Planning and Zoning

Aina Simmmons 5/14/96
Chief, Division of Land Development and Research

[Signature] 5/16/96
Chief, Development Engineering Division

Approved: Department of Public Works for Storm Drainage Systems and Roads

[Signature] 5-1-96
Chief, Bureau of Highways

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.

J. A. Warfield 4/23/96
Natural Resource Conservation Service

This development plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.

[Signature] 4/23/96
Howard Soil Conservation District

ENGINEER'S CERTIFICATE

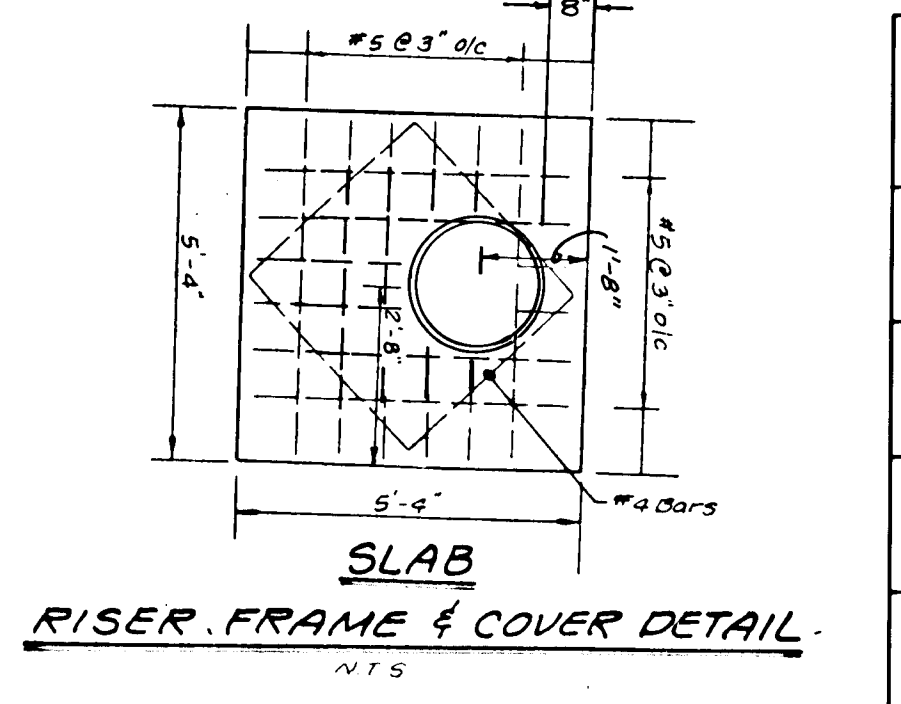
I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer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

[Signature] 4/15/96
Signature of Engineer

DEVELOPER'S CERTIFICATE

I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of 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 Howard Soil Conservation District.

[Signature] 4/15/96
Signature of Developer



LDE, INC.
9250 Rumsey Road, Suite 106, Columbia, MD. 21045
(410) 715-1070 (301) 596-3424 (410) 715-9540 (Fax)

| | |
|--------------------|---------------------|
| DESIGNED E.D.S. | SCALE As Shown |
| DRAWN BEI | DRAWING 19 of 19 |
| CHECKED B.D.B. | JOB NO. 95-022.2 |
| DATE Mar. 1996 | FILE NO. F96-30 |

STORMWATER MANAGEMENT DETAILS

MARSHALEE WOODS
Section Two - Area Three
Lots 74-88

Tax Map 37
1ST ELECTION DISTRICT

P/O Parcels 399, 92 and 93
HOWARD COUNTY, MARYLAND

Owner/Developer:
Marshalee Woods Limited Partnership
8835 Columbia 100 Parkway, Unit P
Columbia, Maryland 21045 (410) 730-0810

F96-30