

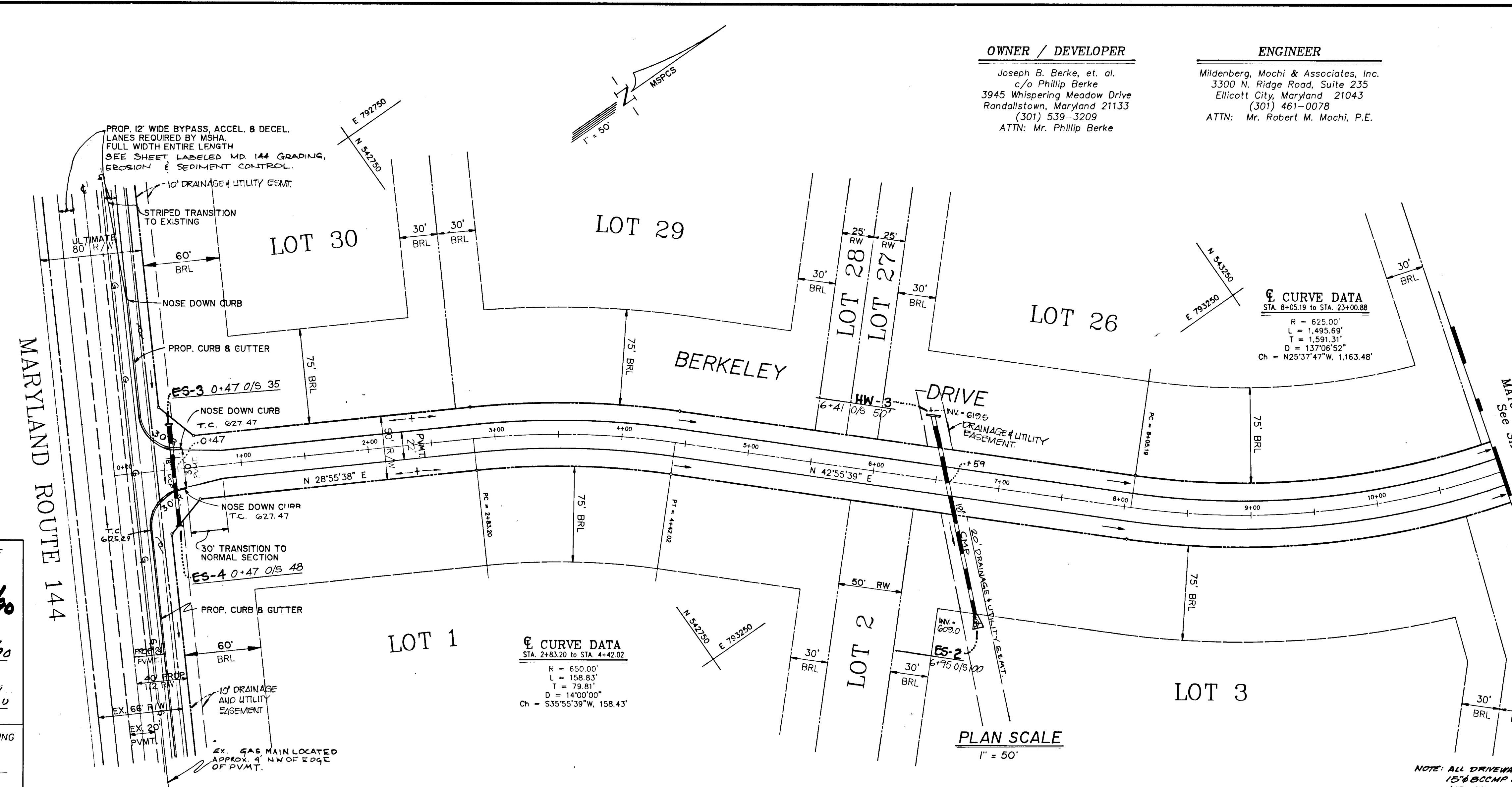
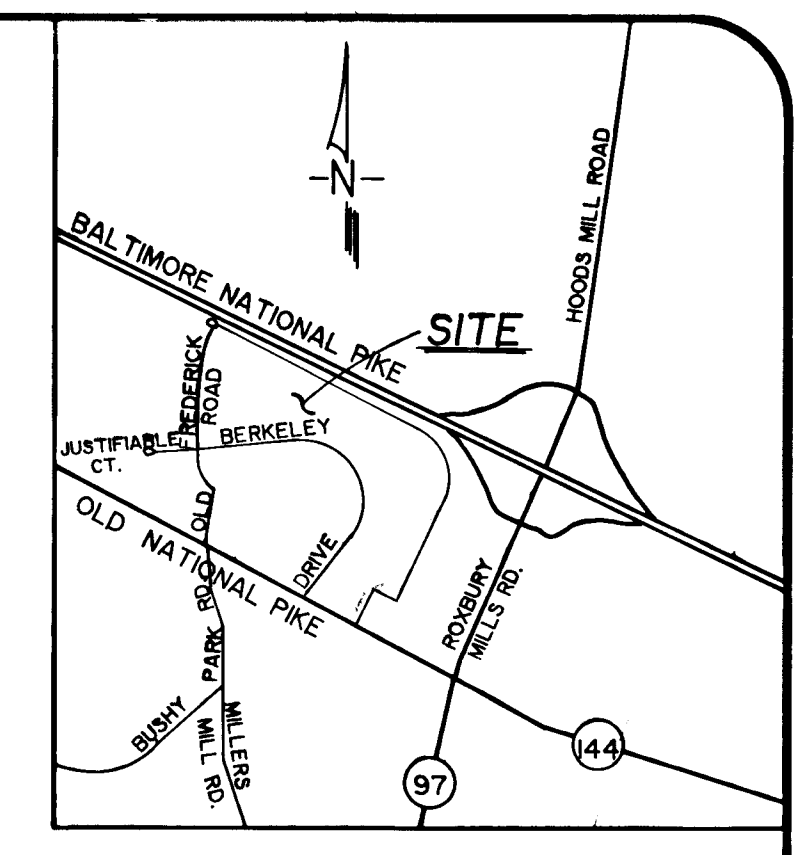
BENCHMARKS
 NO.3632001 N.54307.256 E.79188.695 ELEV. 646.321
 NO.3633003 N.54195.702 E.79371.821 ELEV. 617.440

- GENERAL NOTES**
- All work shall be done in accordance with Howard County Standards, Specifications and Details for Construction.
 - All utility companies must be notified in advance of any construction.
 - Storm drainage trenches within road rights-of-way shall be backfilled and compacted in accordance with Howard County Road Code.
 - Any damage to public rights-of-way or paving will be corrected at the contractor's expense.
 - Contractor to notify the Howard County Inspection and Survey Division at least three days before starting work shown on these drawings (Telephone: (301) 792-7272).
 - All traffic control devices shall be installed in accordance with the Manual of Uniform Traffic Control Devices, 1984 Revised Edition.
 - Location of existing utilities shall be verified by the contractor prior to starting any work shown on these drawings. Any damage to existing utilities will be corrected at the contractor's expense.

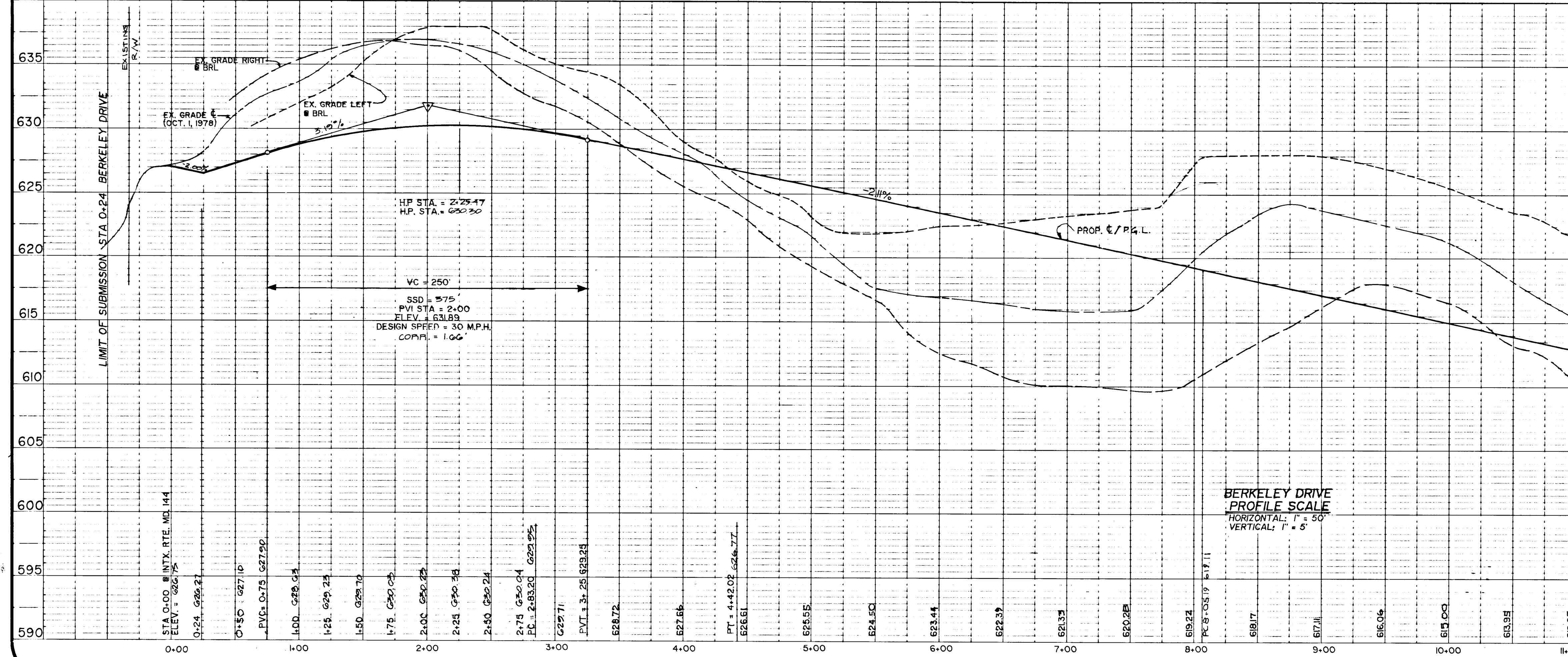
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
John M. Perryman 6/20/90
 CHIEF, LAND DEVELOPMENT DIVISION
Francis W. Walsand 6/15/90
 CHIEF, BUREAU OF HIGHWAYS
Charles Anderson-Callo 6/15/90
 CHIEF, BUREAU OF ENGINEERING
 APPROVED: DEPARTMENT OF PLANNING & ZONING
Mark J. A. Taylor 7/6/90
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

OWNER / DEVELOPER
 Joseph B. Berke, et. al.
 c/o Phillip Berke
 3945 Whispering Meadow Drive
 Randallstown, Maryland 21133
 (301) 539-3209
 ATTN: Mr. Phillip Berke

ENGINEER
 Mildenberg, Mochi & Associates, Inc.
 3300 N. Ridge Road, Suite 235
 Ellicott City, Maryland 21043
 (301) 461-0078
 ATTN: Mr. Robert M. Mochi, P.E.



PROPOSED NOISE MITIGATION FENCE TO BE LOCATED 10' OFF THE PROPERTY LINE ADJACENT TO INTERSTATE ROUTE 70. SEE PAGE 4 OF II FOR LOCATION AND SIZE.



| STRUCTURE NO. | TYPE | INV. IN | INV. OUT | TOP | CENTERLINE | | REMARKS |
|---------------|----------------|---------|----------|-------------|------------|--------|--------------------|
| | | | | | STA. | O/S | |
| ES-3 | END SECTION | - | 622.78 | 622.78(INV) | 0+47 | 35'LT | SD 5.51 |
| ES-4 | END SECTION | - | 622.00 | 622.00(INV) | 0+47 | 43'LT | SD 5.51 |
| HW-3 | ENDWALL | - | 619.50 | 621.75(TOP) | 6+41 | 50'LT | SD 5.21 |
| ES-2 | END SECTION | - | 609.00 | 609.00(INV) | 6+95 | 100'RT | SD 5.61 |
| I-2 | K INLET | - | 604.35 | 606.6(INCH) | 13+10.69 | 21'LT | SD 4.12 |
| I-1 | K INLET | 603.0 | 602.07 | 606.6(INCH) | 13+10.69 | 21'LT | SD 4.12 |
| ES-1 | END SECTION | - | 599.00 | 599.00(INV) | 11+83 | 115'LT | SD 5.61 |
| HW-1 | SPECIAL HW. | - | 628.12 | 630.87(TOP) | 32+79 | 25'RT | SEE DETAIL PAGE 4 |
| HW-5 | SPECIAL HW. | - | 627.55 | 630.30(TOP) | 33+07 | 33'LT | SEE DETAIL PAGE 4 |
| HW-4 | ENDWALL | - | 599.00 | (TOP) | 2+26 | 39'RT | SEE DETAIL PAGE 10 |
| OS-1 | OUTLET STRUCT. | 597.75 | 597.50 | 602.67 | 2+26 | 29'RT | SEE DETAIL PAGE 10 |
| ES-5 | END SECTION | - | 596.00 | 596.00(INV) | 2+26 | 56'LT | SD 5.61 |
| HW-2 | SPECIAL HW. | - | 618.35 | 621.01(TOP) | 7+68 | 20'RT | SEE DETAIL PAGE 4 |
| HW-6 | SPECIAL HW. | - | 617.79 | 620.54(TOP) | 7+95 | 40'LT | SEE DETAIL PAGE 4 |

* REFERS TO CENTERLINE OF SWM EMBANKMENT
 HW = HEADWALL

1575

| | | | |
|--------------|------------------|-------------|---------|
| PROJECT | 89030.00 | DATE | 9/89 |
| ILLUSTRATION | L-14, AD-4, L-PR | ENGINEERING | KAM/JBM |
| SCALE | 1" = 50' | APPROVAL | |

| | | |
|-----|---------------------------------------|---------|
| NO. | DESCRIPTION | DATE |
| 1 | 2nd SUBMISSION TO HOWARD COUNTY DPZ | 2/12/90 |
| 0 | First submission to Howard County DPZ | 9/22/89 |

LOTS 1-52
BERKSHIRE ESTATES
 Parcel 79 & 156
 ELECTION DISTRICT No. 4
BERKELEY DRIVE - PLAN & PROFILE

MILDENBERG, MOCHI & ASSOCIATES, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 3300 North Ridge Road, Suite 235, Ellicott City, Maryland 21043-3350
 (301) 461-0078 D.C. Metro: (301) 821-5768

BENCHMARKS
 NO.362001 N.54307.256 ELEV. 646.321
 E.791881.693
 NO.363003 N.541935.702 ELEV. 617.440
 E.793781.821

N 544000
 E 793000

OWNER / DEVELOPER

Joseph B. Berke, et. al.
 c/o Phillip Berke
 3945 Whispering Meadow Drive
 Randallstown, Maryland 21133
 (301) 539-3209
 ATTN: Mr. Phillip Berke

ENGINEER

Mildenberg, Mochi & Associates, Inc.
 3300 N. Ridge Road, Suite 235
 Ellicott City, Maryland 21043
 (301) 461-0078
 ATTN: Mr. Robert M. Mochi, P.E.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Oliver M. Dreyer 6/2/80
 CHIEF, LAND DEVELOPMENT DIVISION P.E. DATE

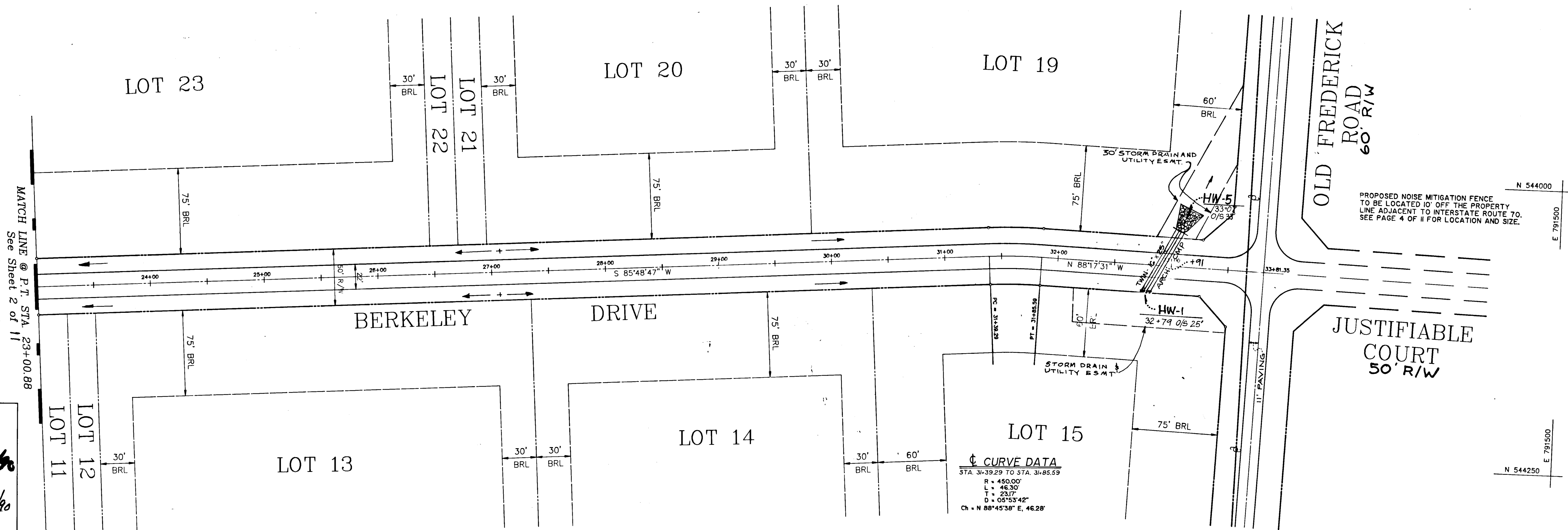
Francis W. Welden 6/8/80
 CHIEF, BUREAU OF HIGHWAYS DATE

Elizabeth Anderson Calce 6/2/80
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING

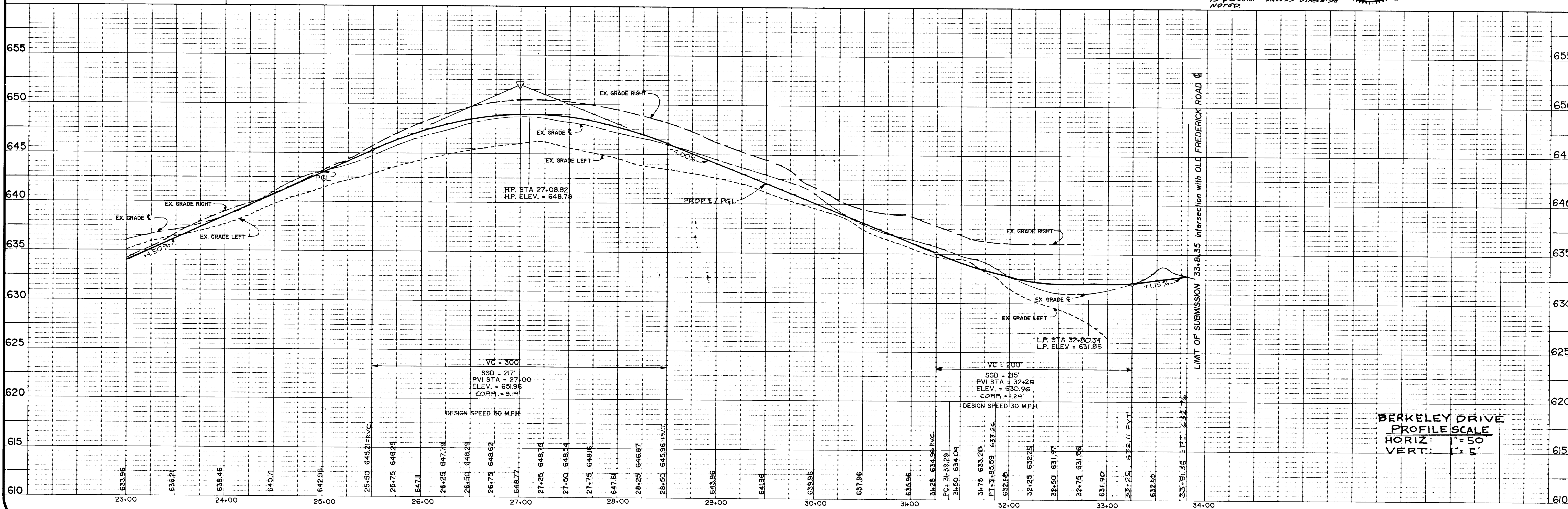
David J. Taylor 7/2/80
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

MATCH LINE @ P.T. STA. 23+00.88
 See Sheet 2 of 11



PLAN SCALE
 1" = 50'

NOTE: ALL DRIVEWAY CULVERTS TO BE 15" MIN. R/CMP UNLESS OTHERWISE NOTED.



BERKELEY DRIVE
 PROFILE SCALE
 HORIZ: 1" = 50'
 VERT: 1" = 5'

| | |
|--------------|-------------|
| Project | 89030.00 |
| Date | 9/89 |
| Illustration | engineering |
| Scale | KAM |
| Approval | KAM |
| Scale | 1" = 50' |
| Revision | RWM |

| | |
|-------------|---------------------------------------|
| NO. | 0 |
| DATE | 9/22/89 |
| DESCRIPTION | First submission to Howard County DPZ |
| REVISIONS | |

LOT'S 1-32
BERKSHIRE ESTATES
 Parcel 79 & 158
 Tax Map 8
 HOWARD COUNTY, MARYLAND
 ELECTION DISTRICT No. 4
BERKELEY DRIVE - PLAN & PROFILE

MILDENBERG, MOCHI & ASSOCIATES, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 3300 North Ridge Road, Suite 235, Ellicott City, Maryland 21043-3550
 (301) 461-0078 D.C. Metro: (301) 821-5188

1575

1212

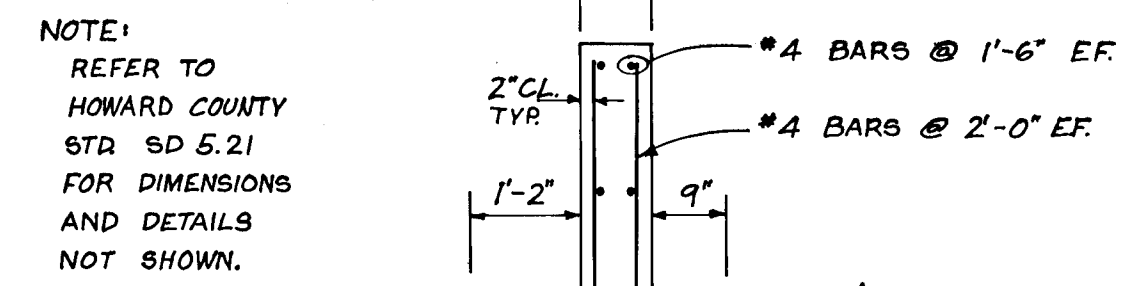
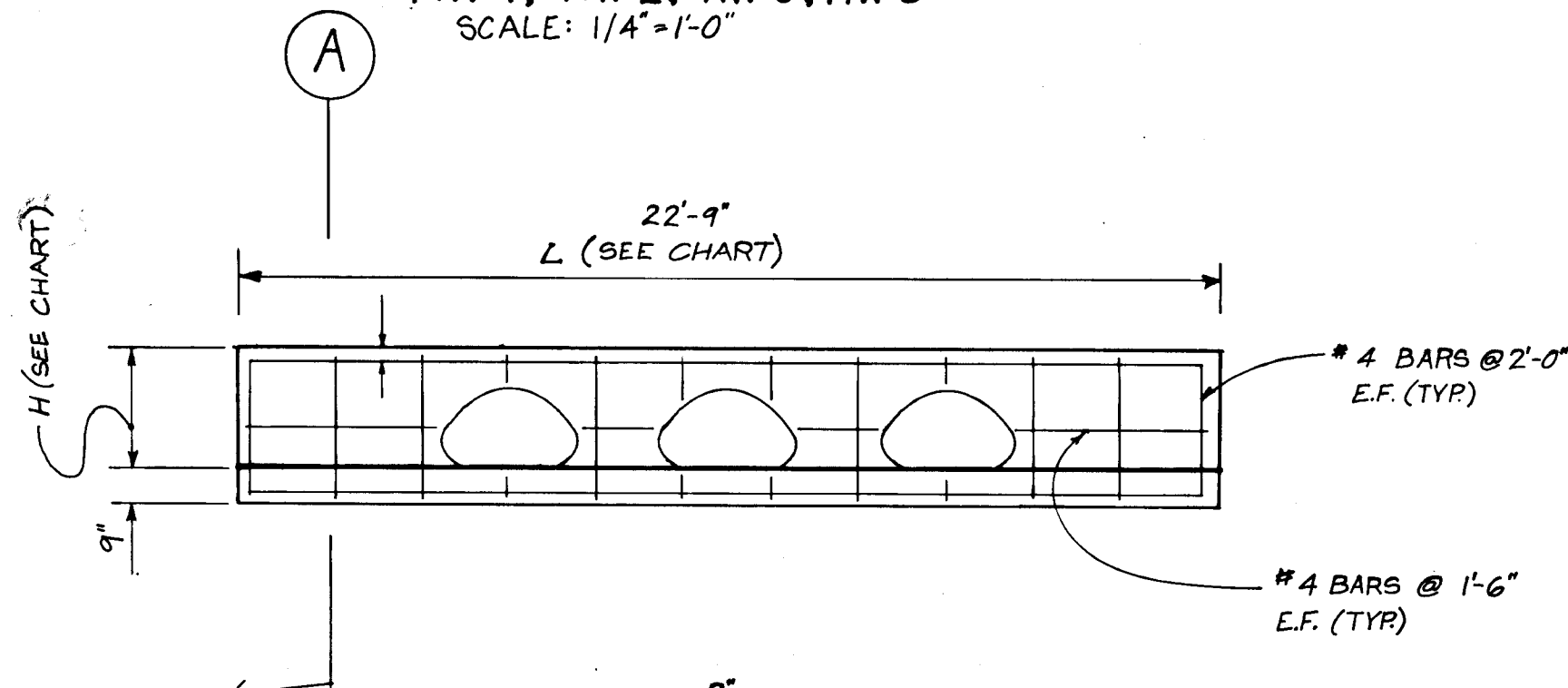
NOISE MITIGATION FENCE
 NOISE MITIGATION FENCE SHALL CONSIST OF A BOARD ON BOARD FENCE CONSTRUCTED 10' FROM RIGHT OF WAY OF H.L. 70 (SEE 200' SCALE). THIS SHEET DISTANCES SHOWN ARE MEASURED FROM THE WESTERMOST CORNER OF LOT 18.

| DISTANCE | HEIGHT OF FENCE |
|--------------|-----------------|
| 0 TO 390 | 10' |
| 390 TO 550 | 8' |
| 550 TO 685 | 6' |
| 685 TO 830 | 8' |
| 830 TO 925 | 10' |
| 925 TO 1120 | 12' |
| 1120 TO 1430 | 10' |
| 1430 TO 2130 | 12' |
| 2130 TO 2410 | 12' |
| 2410 TO 2460 | NO FENCE (ESMT) |
| 2460 TO 2530 | 6' |
| 2530 TO 2685 | 12' |
| 2685 TO 2785 | 8' |
| 2785 TO 2885 | 4' |

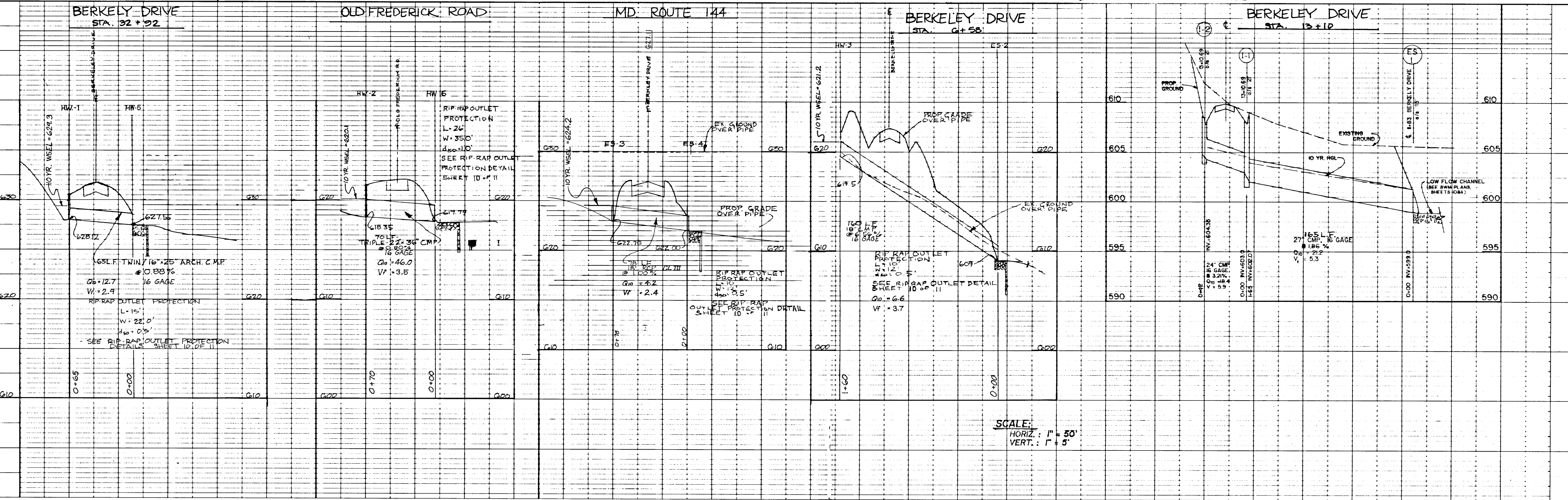
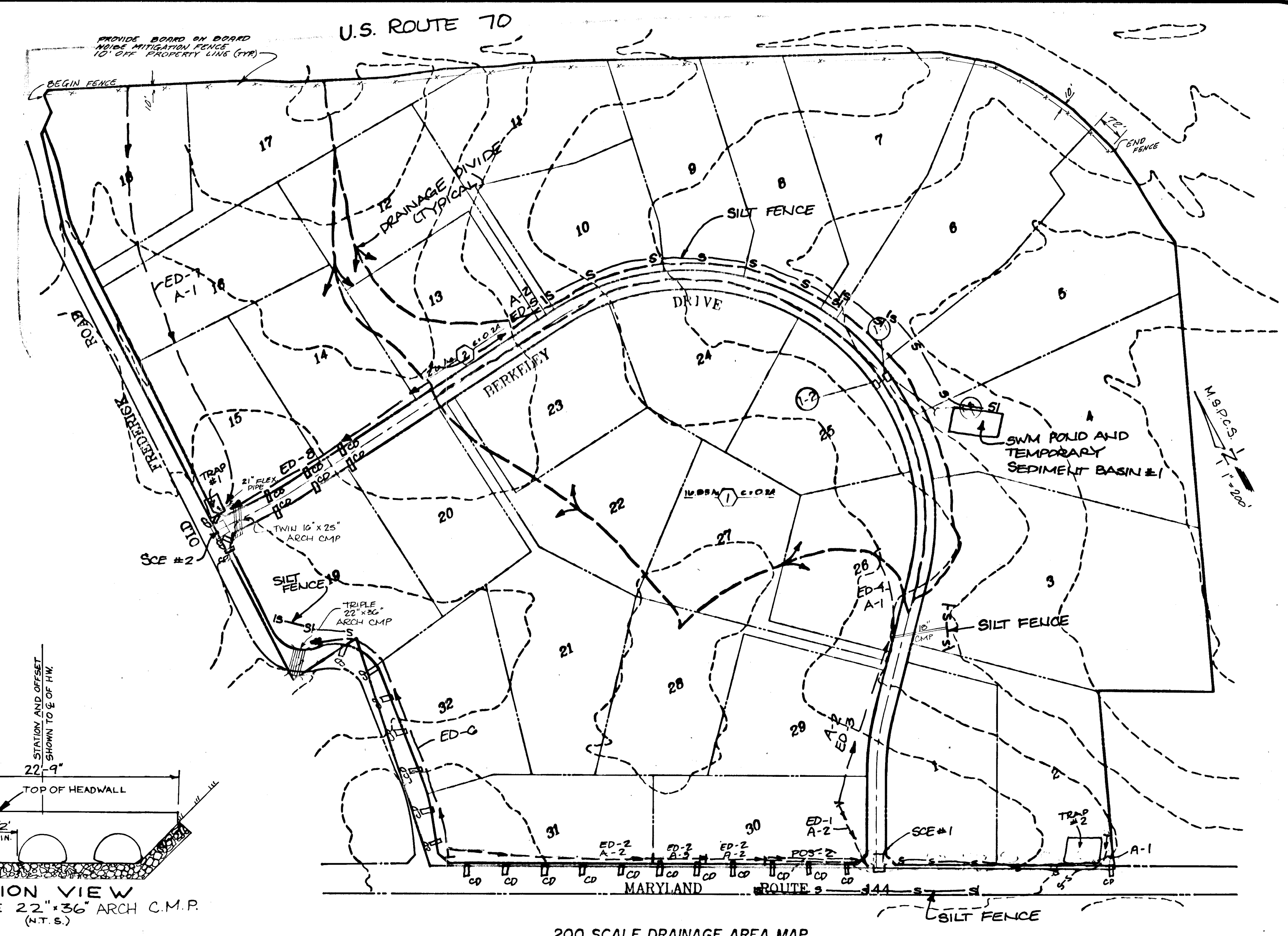
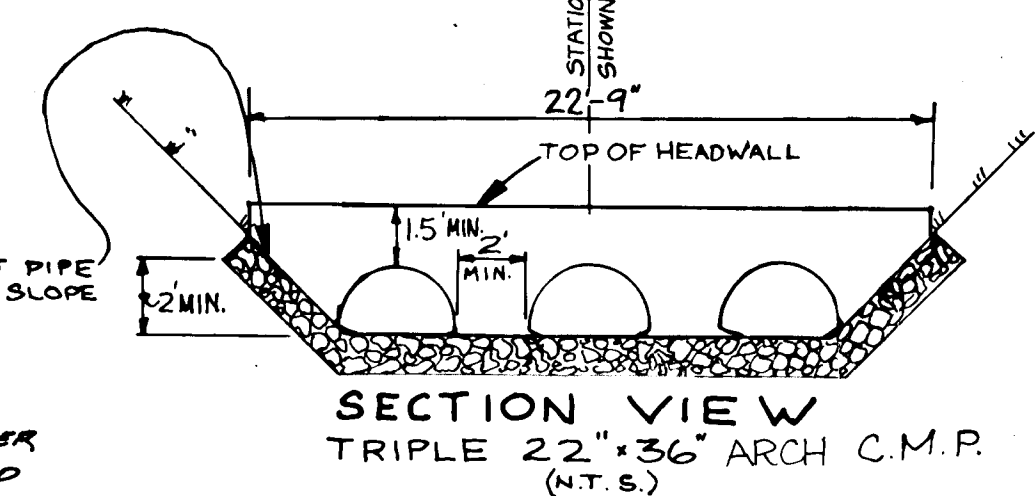
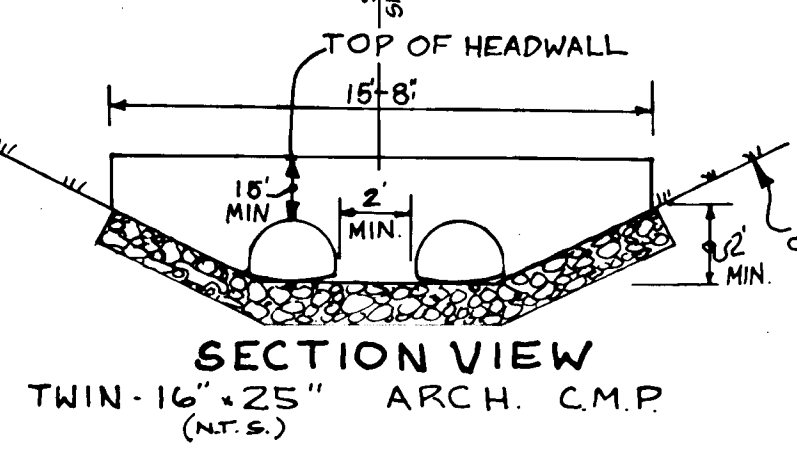


APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Ch. M. Ingram 6/20/90
 CHIEF, LAND DEVELOPMENT DIVISION MKZ
Travis W. Weiland 6/18/90
 CHIEF, BUREAU OF HIGHWAYS
Elizabeth Anderson-Celia 6/21/90
 CHIEF, BUREAU OF ENGINEERING
 APPROVED: DEPARTMENT OF PLANNING & ZONING
Barbara S. Dwyer 7/2/90
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

DETAILS FOR HW 1, HW 2, HW 5, HW 6
 SCALE: 1/4" = 1'-0"



| DIMENSIONS | |
|------------------|------------------|
| TRIPLE | TWIN |
| 22" x 36" C.M.P. | 16" x 25" C.M.P. |
| L 22'-9" | 15'-8" |
| H 2'-9" | 2'-9" |



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

| | | | |
|--------------|-----------|-------------|------|
| Project | 89030.00 | Date | 9/89 |
| Illustration | LPR, #106 | Engineering | KAM |
| Scale | 1" = 50' | Approval | RMM |

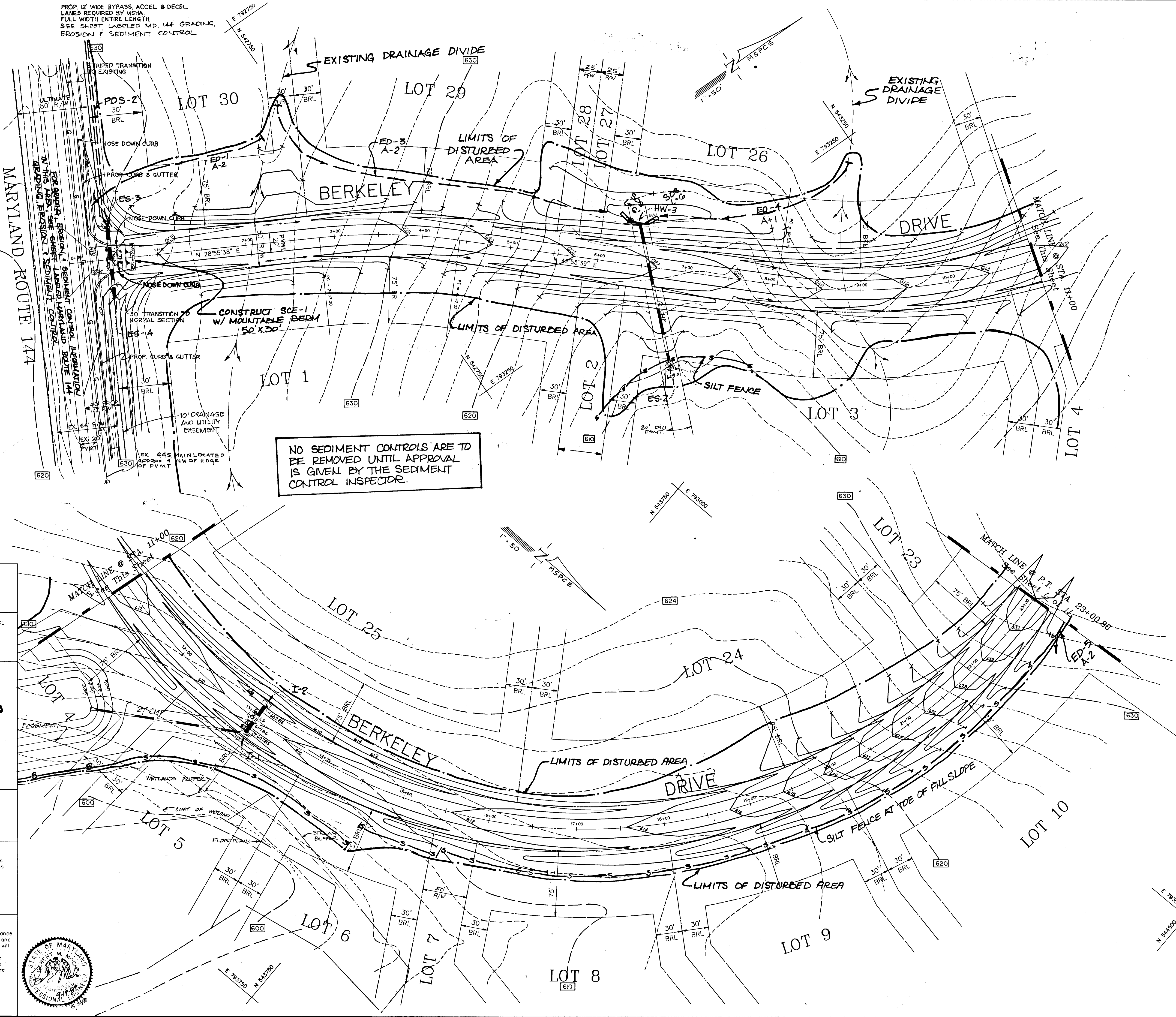
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|--------------|-----------|-------------|------|
| Project | 89030.00 | Date | 9/89 |
| Illustration | LPR, #106 | Engineering | KAM |
| Scale | 1" = 50' | Approval | RMM |

LOT 1-32
BERKSHIRE ESTATES
 Tax Map 8 Parcels 79 & 158
 ELECTION DISTRICT No. 4
 HOWARD COUNTY, MARYLAND
STORM DRAIN PROFILES & DETAILS

MILDENBERG, MOCH & ASSOCIATES, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 3300 North Ridge Road, Suite 235, Ellicott City, Maryland 21043-3350
 (301) 461-0078 D.C. Metro: (301) 621-5768

BENCHMARKS
 NO.3632001 N.543017.256
 E.791861.695
 NO.363003 N.541955.702
 E.793714.821

PROP. 12' WIDE BYPASS, ACCEL. & DECEL
 LANES REQUIRED BY MSHA
 FULL WIDTH ENTIRE LENGTH
 SEE SHEET LABELED MD. 144 GRADING,
 EROSION & SEDIMENT CONTROL



NO SEDIMENT CONTROLS ARE TO
 BE REMOVED UNTIL APPROVAL
 IS GIVEN BY THE SEDIMENT
 CONTROL INSPECTOR.

OWNER / DEVELOPER

Joseph B. Berke, et. al.
 c/o Phillip Berke
 3945 Whispering Meadow Drive
 Randallstown, Maryland 21133
 (301) 539-3209
 ATTN: Mr. Phillip Berke

ENGINEER

Mildenberg, Mochi & Associates, Inc.
 3300 N. Ridge Road, Suite 235
 Ellicott City, Maryland 21043
 (301) 461-0078
 ATTN: Mr. Robert M. Mochi, P.E.

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND
 MEETS TECHNICAL REQUIREMENTS.

James M. Nelson 6/1/90
 U.S. SOIL CONSERVATION SERVICE

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

Robert W. Giehm 6/1/90
 HOWARD COUNTY SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF
 PUBLIC WORKS

Alan M. Dugan 6/20/90
 CHIEF, LAND DEVELOPMENT DIVISION, M.D.

Draville W. Weisland 6/20/90
 CHIEF, BUREAU OF HIGHWAYS

Deborah Anderson 6/21/90
 CHIEF, BUREAU OF ENGINEERING

APPROVED: DEPARTMENT OF PLANNING & ZONING

Frank J. Zengler 7/2/90
 CHIEF, DIVISION OF COMMUNITY PLANNING
 AND LAND DEVELOPMENT

ENGINEER'S CERTIFICATE

I hereby certify that this plan for erosion and sediment control represents
 a practical and workable plan based on my personal of the site conditions
 and that it was prepared in accordance with the requirements of the
 Howard County Soil Conservation District.

Bob Mochi 6/11/90
 Date

DEVELOPER'S CERTIFICATE

I/We certify that all development and construction will be done in accordance
 with this plan of development and plan for erosion and sediment control and
 that all responsible personnel involved in the construction of this project will
 have a certificate of attendance at a Department of Natural Resources
 approved training program for the control of sediment and erosion before
 beginning the project. I also authorize periodic on-site inspection by the
 Howard County Soil Conservation District or their authorized agents, as are
 deemed necessary.

Joseph B. Berke 6/1/90
 Signature of Developer Date



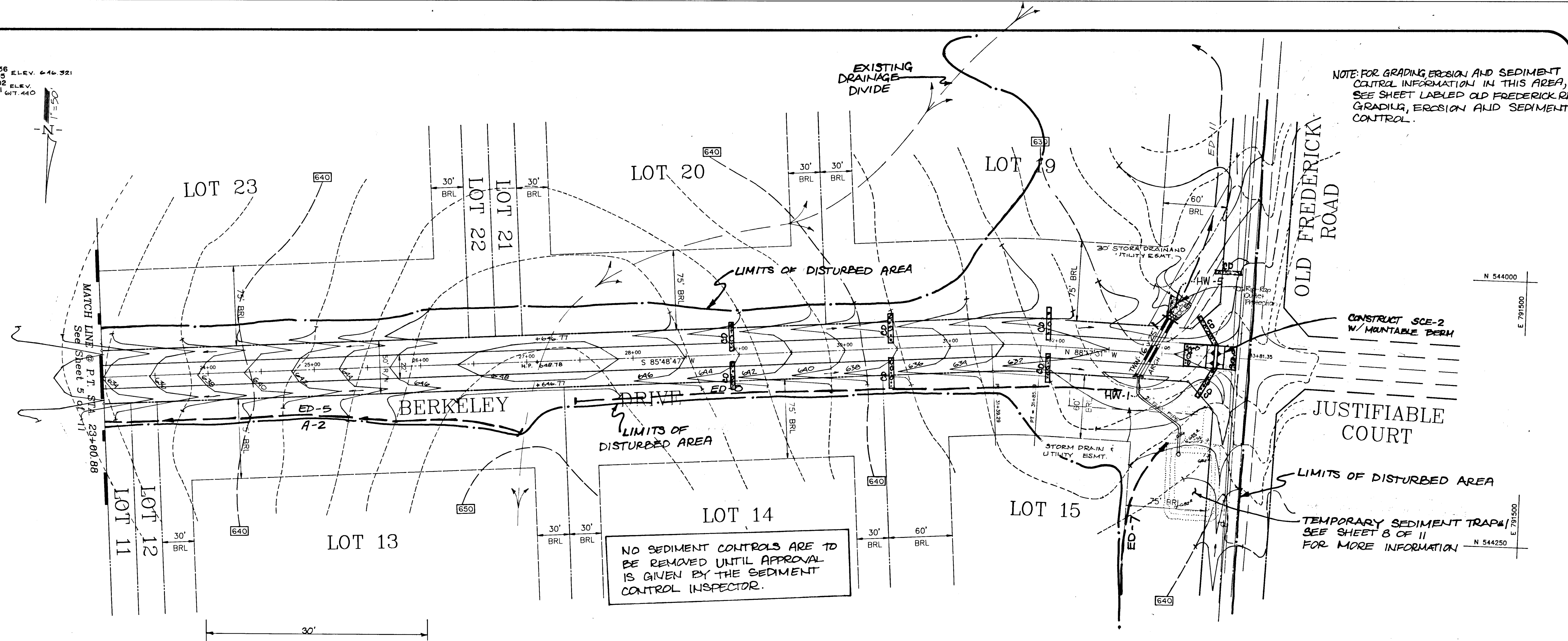
| | | |
|----------|---------------------------------------|-------------|
| project | date | 9/89 |
| 89030.00 | illustration | engineering |
| 1 | 2nd SUBMISSION TO HOWARD COUNTY DPZ | KAM |
| 0 | First submission to Howard County DPZ | approval |
| no. | description | scale |
| | revisions | 1" = 50' |

| | |
|-------------------------|---------------------------------------|
| LOT 1-32 | BERKSHIRE ESTATES |
| Parcel 8 | Tax Map 8 |
| Parcels 79 & 158 | HOWARD COUNTY, MARYLAND |
| ELECTION DISTRICT No. 4 | GRADING, EROSION AND SEDIMENT CONTROL |

| | |
|------|---------|
| 1575 | 5 OF 11 |
|------|---------|

MILDENBERG, MOCHI & ASSOCIATES, INC.
 ENGINEERS - PLANNERS - SURVEYORS
 3300 North Ridge Road, Suite 235, Ellicott City, Maryland 21043-3350
 (301) 461-0078 D.C. Metro. (301) 821-5788

BENCHMARKS
 NO.3632001 N.543017.256 ELEV. 646.321
 E.791891.693
 NO.363003 N.541953.702 ELEV. 647.440
 E.79371.821



NOTE: FOR GRADING EROSION AND SEDIMENT CONTROL INFORMATION IN THIS AREA, SEE SHEET LABELED OLD FREDERICK RD GRADING, EROSION AND SEDIMENT CONTROL.

| | | |
|---------|----------|--------------|
| Project | 9/89 | Engineering |
| Project | 89030.00 | Illustration |
| Project | 2/10/95 | Approval |
| Project | 5/22/95 | Approval |
| Project | | Scale |
| Project | | 1" = 50' |

| | | |
|-------------------------------------|---------|-----------|
| 2nd Submission to Howard County DEP | 2/10/95 | date |
| 1st Submission to Howard County DEP | 5/22/95 | date |
| | | revisions |

LOTS 1-32
BERKSHIRE ESTATES
 Tax Map 8 Parcels 79 & 158
 HOWARD COUNTY, MARYLAND
 ELECTION DISTRICT No. 4
 GRADING, EROSION & SEDIMENT CONTROL

MILDENBERG MOCHI & ASSOCIATES, INC.
 ENGINEERS - SURVEYORS - PLANNERS
 3300 North Ridge Road, Suite 235, Ellicott City, Maryland 21043-3350
 (301) 461-0078 D.C. Metro: (301) 621-5768

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
James M. Helm / JMK 6/1/90
 U.S. SOIL CONSERVATION SERVICE DATE

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Robert W. Ziehm / RWZ 6/1/90
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Alan M. Dargatzis / AMD 6/20/90
 CHIEF, LAND DEVELOPMENT DIVISION, M.P. DATE

Janville W. Welland / JWW 6/2/90
 CHIEF, BUREAU OF HIGHWAYS DATE

Elizabeth Anderson Calver / EAC 6/21/90
 CHIEF, BUREAU OF ENGINEERING DATE

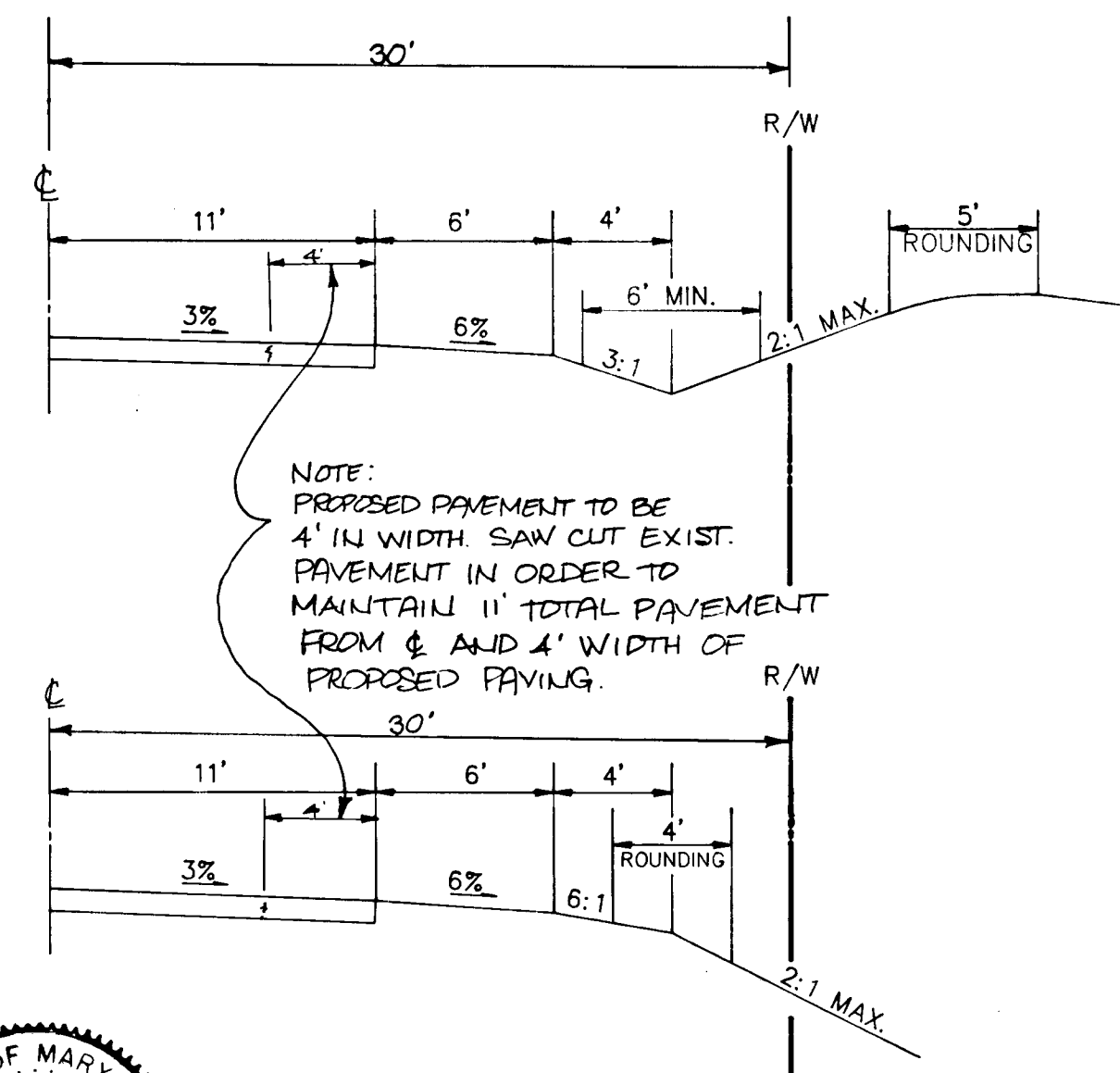
APPROVED: DEPARTMENT OF PLANNING & ZONING
Paul S. Ziegler / PSZ 7/2/90
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

ENGINEER'S CERTIFICATE
 I hereby certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Bob Mah / 9/19/89
 Date

DEVELOPER'S CERTIFICATE
 I/We certify that all development and construction will be done in accordance with this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction of this project will have a certificate of attendance at a Department of Natural Resources approved training program for the control of sediment and erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.

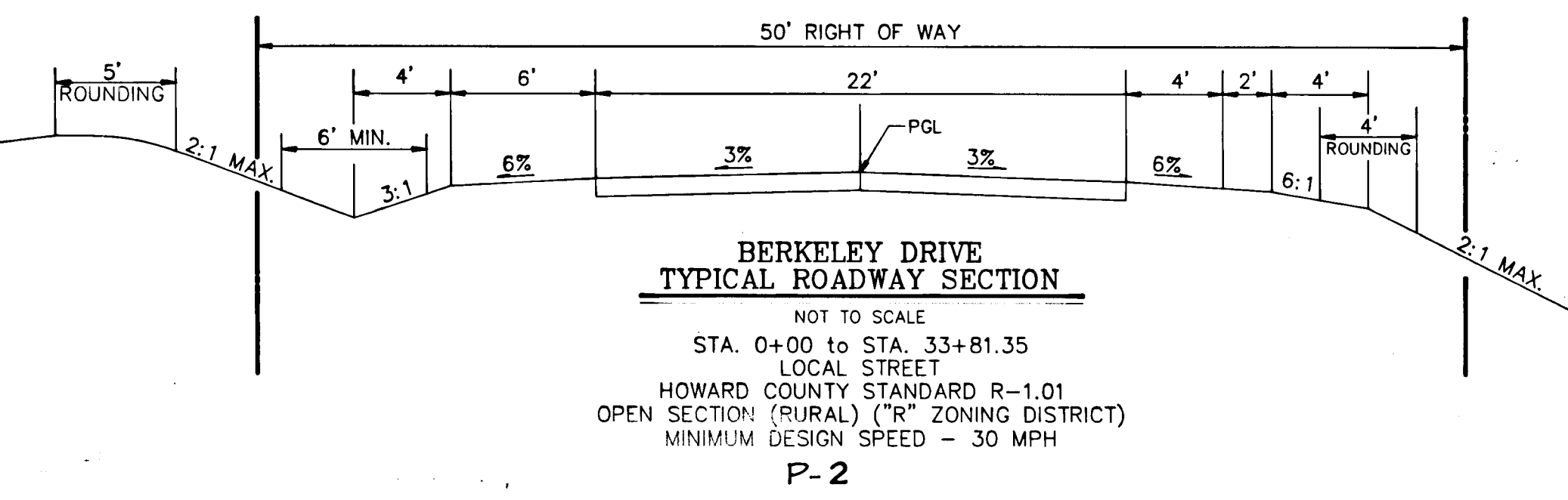
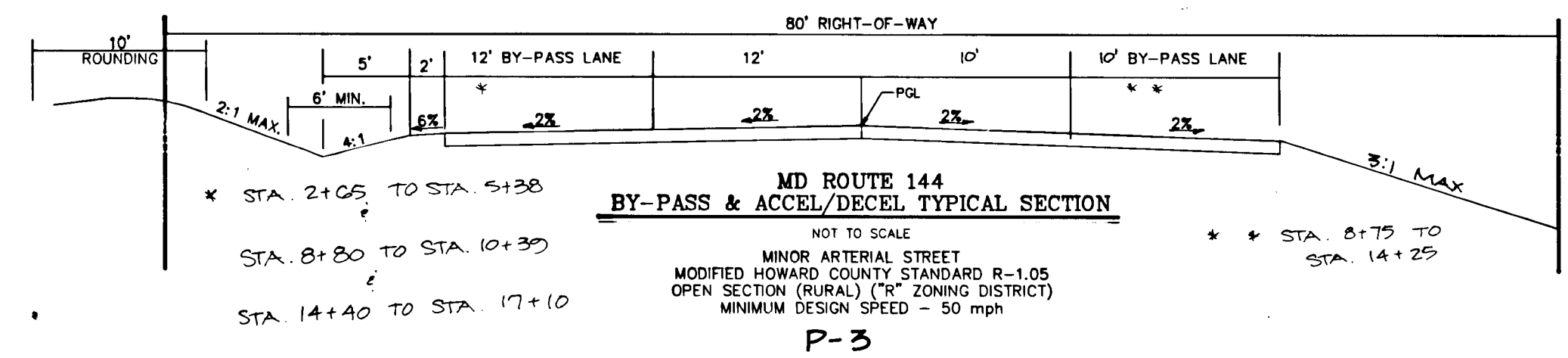
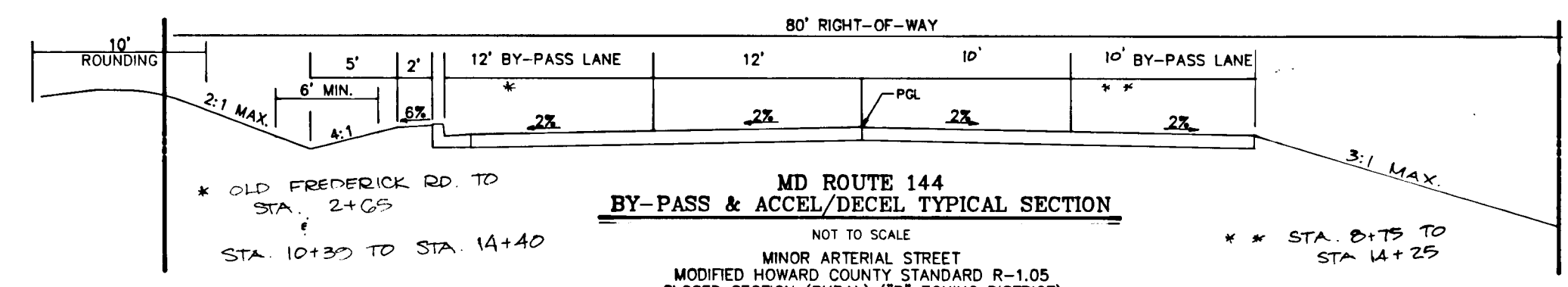
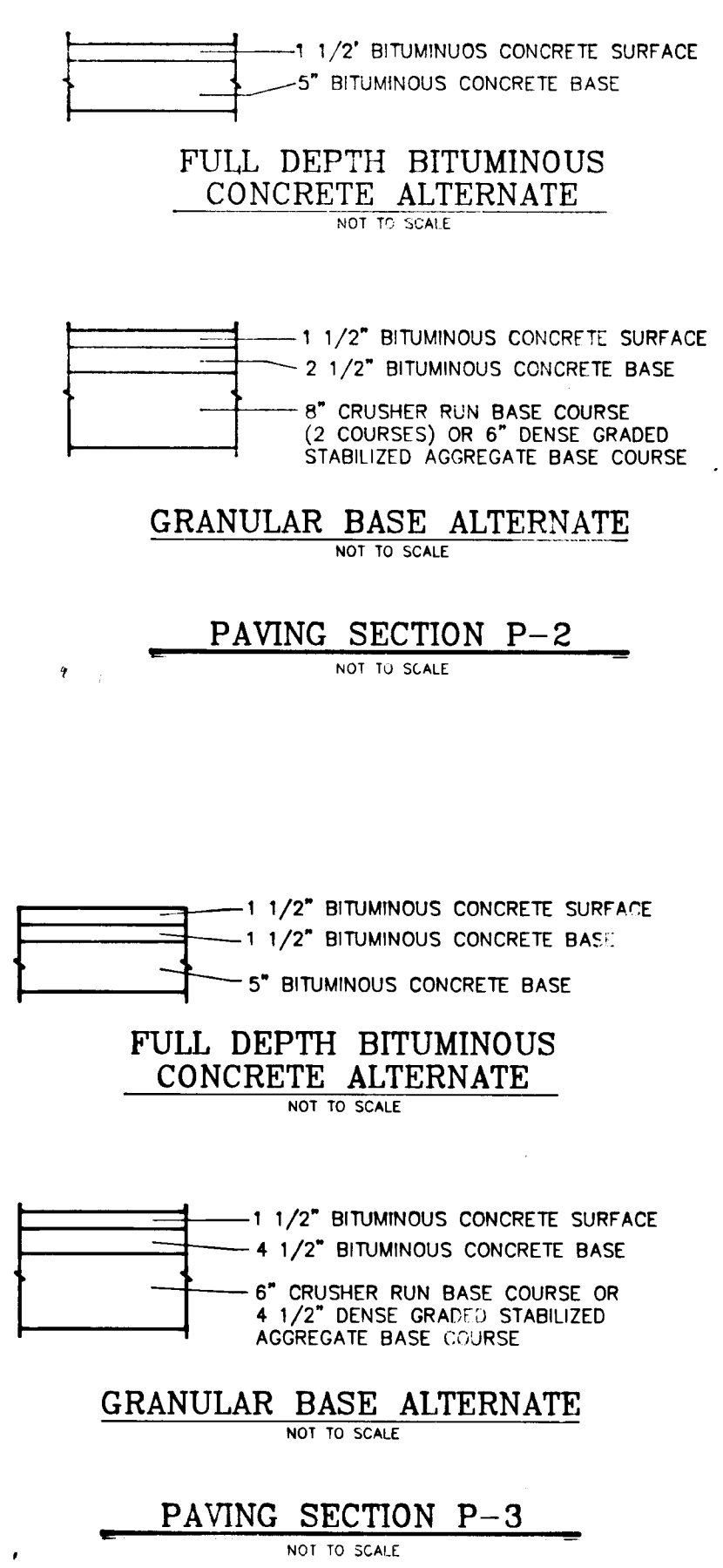
Joseph B. Berke / 9/19/89
 Signature of Developer Date



OLD FREDERICK ROAD TYPICAL ROADWAY WIDENING
 NOT TO SCALE
 STA. 0+00 TO END LOCAL STREET
 HOWARD COUNTY STANDARD R-1.02
 OPEN SECTION (RURAL) ("R" ZONING DISTRICT)
 MINIMUM DESIGN SPEED - 30 MPH
 P-2

OWNER / DEVELOPER
 Joseph B. Berke, et. al.
 c/o Phillip Berke
 3945 Whispering Meadow Drive
 Randallstown, Maryland 21133
 (301) 539-3209
 ATTN: Mr. Phillip Berke

ENGINEER
 Mildenberg, Mochi & Associates, Inc.
 3300 N. Ridge Road, Suite 235
 Ellicott City, Maryland 21043
 (301) 461-0078
 ATTN: Mr. Robert M. Mochi, P.E.



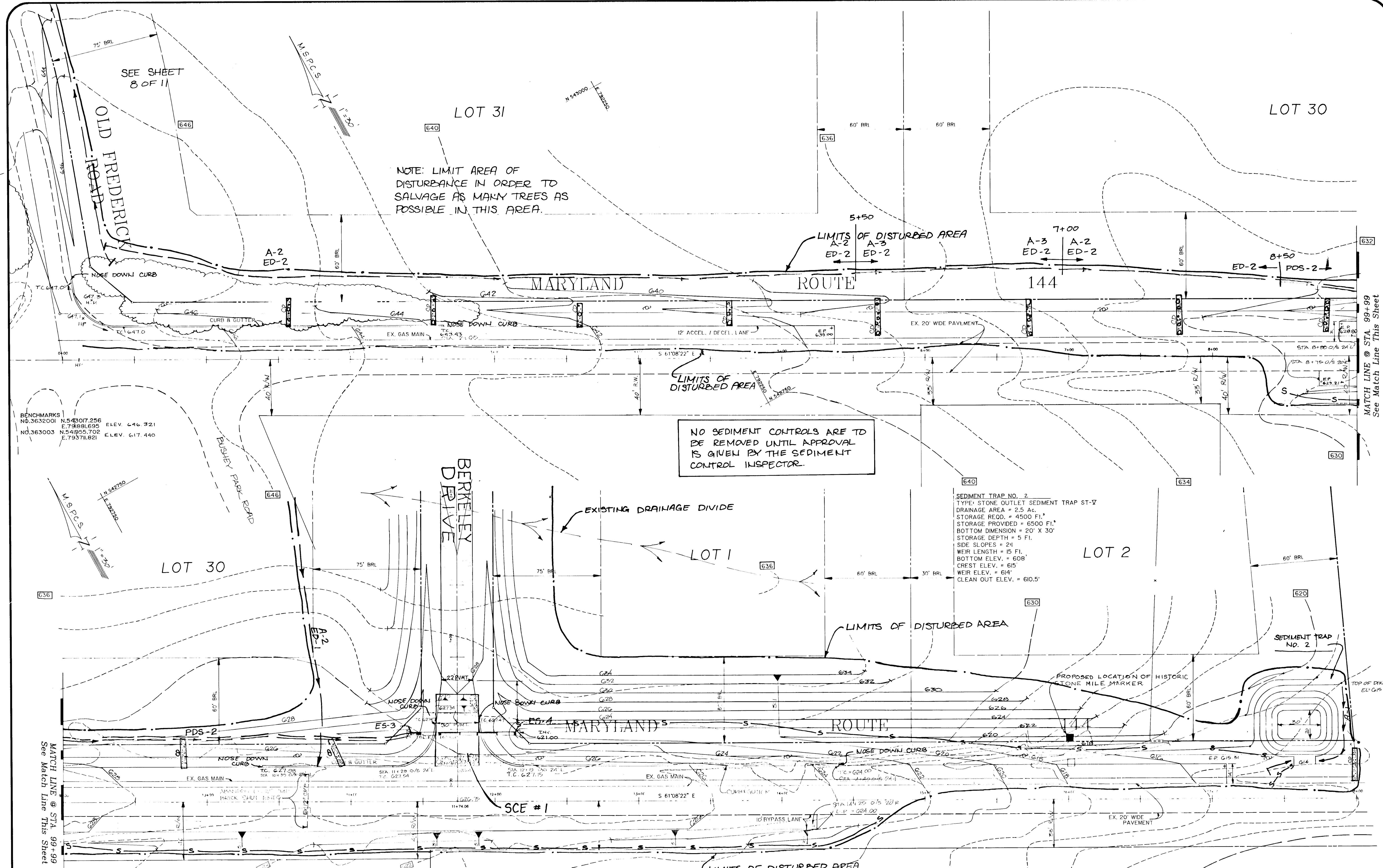
1575

| | | | |
|--------------|----------|-------------|------|
| Project | 89030.00 | Date | 9/89 |
| Illustration | | Engineering | KAM |
| Scale | 1" = 30' | Approval | RMM |

| | | | |
|--|---------|------|--|
| 2 nd Submission to Howard County, Pa. 2 | 2/16/90 | Date | |
| 1 st Submission to Howard County, Pa. 1 | 7/22/89 | Date | |
| 1 st Submission to Howard County, Pa. 2 | 7/22/89 | Date | |
| 1 st Submission to Howard County, Pa. 1 | 7/22/89 | Date | |

MARYLAND ROUTE 144
 LOTS 1 - 32
BERKSHIRE ESTATES
 Tax Map 8 Parcels 79 & 158
 HOWARD COUNTY, MARYLAND
 ELECTION DISTRICT No. 4
GRADING, EROSION & SEDIMENT CONTROL

MILDENBERG, LOCH & ASSOCIATES, INC.
 ENGINEERS & PLANNERS
 3300 North Ridge Road, Suite 205, Ellicott City, Maryland, 21043-3350
 (301) 461-0078



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 6/1/90
 CHIEF, LAND DEPT.
 APPROVED: DEPARTMENT OF PLANNING & ZONING
[Signature] 7/1/90
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
 APPROVED: *[Signature]* 6/1/90
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: *[Signature]* 6/1/90
 CHIEF, BUREAU OF ENGINEERING

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
[Signature] 6/1/90
 U.S. SOIL CONSERVATION SERVICE
 THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
[Signature] 6/1/90
 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 my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
[Signature] 5-25-90
 Date

DEVELOPER'S CERTIFICATE
 I/We certify that all development and construction will be done in accordance with this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction of this project will have a certificate of attendance at a Department of Natural Resources approved training program for the control of sediment and erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.
[Signature] 9/21/89
 Date



1575

STORMWATER MANAGEMENT CONSTRUCTION SPECIFICATIONS

1. GENERAL

Unless otherwise noted, all materials and construction shall conform to these plans and specifications, and to the following:

"Standard Specifications and Details for Construction" of the Howard County, Maryland, Department of Public Works, 1986 and as amended.

"Standard Specifications for Construction and Materials" of the Maryland State Highway Administration, 1982 and as amended.

"Standards and Specifications for Ponds" of the Soil Conservation Service of Maryland (MD-378), July 1981 and as amended.

2. SITE PREPARATION

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

Areas to be covered by the pond or reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on these plans. Trees, brush and stumps shall be cut approximately level with the ground surface.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam or reservoir as directed by the Developer 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.

3. EARTHWORK AND EARTH FILL

3.1 Material

The earth fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, oversize stones, frozen or other objectionable material. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased ten (10) percent above the design elevation (including freeboard) unless otherwise shown on the plans. All fill material shall meet the requirements of the Unified Soil Classifications CL or ML unless otherwise noted.

3.2 Placement

Areas on which earth fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in eight (8) inches maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream portions of the embankment.

3.3 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 a minimum of four (4) complete passes of a sheepfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture so that it can be formed into a ball without crumbling. If water can be squeezed out of the ball, it is too wet to compact properly. Each layer of fill shall be compacted as necessary to obtain ninety-five (95) percent of ASSHTO T-99 and is to be certified by the Geotechnical Engineer.

3.4 Cutoff Trench

Where specified, a Cutoff Trench shall be excavated along or parallel to the centerline of the embankment as shown on these plans. The bottom width of the trench shall be as shown on the drawings, with the minimum width being four (4) feet. The depth shall be as shown on the plans and shall be at least four (4) feet below existing grade. The side slopes of the trench shall be 1:1 or flatter. The backfill material for the Cutoff Trench shall be compacted with equipment or rollers to assure maximum density and minimum permeability. Compact as outlined above to ninety-five (95) percent of ASSHTO T-99 density. All Cutoff Trench backfill material shall meet the requirements of Unified Soil Classification SC or CL, ML, CH, MH.

3.5 Structural Backfill

Backfill material to be placed adjacent to structures shall be of the type and quality conforming to that specified for the adjoining fill material. The backfill shall be placed in horizontal layers not to exceed four (4) inches in thickness and compacted by hand tampers or other 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 (4) 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 compacted fill of twenty-four (24) inches or greater over the structure pipe.

4. PIPE CONDUITS

4.1 Corrugated Metal Pipe

Materials - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to all of the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around. Watertight coupling bands shall be used at all joints. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered watertight.

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

Laying pipe - The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides.

4.2 Reinforced Concrete Pipe

Materials - Reinforced concrete pipe conduits shall have a rubber gasket joint and shall equal or exceed ASTM Specifications C-361. An approved equivalent is ANWA Specification C-301.

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 the sides of the pipe at least ten (10) percent of its outside diameter with a minimum thickness of three (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.

4.3 Backfilling and Other Details

Backfilling shall conform to Structural Backfill as shown above. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

5. STRUCTURES

Concrete structures shall meet minimum requirements set forth in the Maryland State Highway Administration "Standards and Specifications for Construction and Materials," 1982, as amended, including:

5.1 Concrete

Section 918 (Portland Cement Concrete Mixtures), Mix No. 3

5.2 Reinforcement

Section 610 (Reinforcement for Concrete Structures)
Section 911 (Reinforcing Steel, Wire Rope and Wire Fabric)

In addition, reinforcing steel shall meet ASTM Specification A615, Grade 60. Steel angles, anchor bars and appurtenances shall be ASTM A36.

6. STABILIZATION

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spill and borrow areas, and berms shall be stabilized in accordance with the specifications shown hereon and with the "1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control" as amended, immediately after finishing grading. All 2:1 slopes shall be sodded. Unless otherwise noted, all other disturbed areas shall be stabilized with permanent seeding.

| | | |
|-------------------|---|--|
| Fertilizer: | 10-10-10 | ● 11.5 lbs./1000 sq. ft. |
| Seed: | Crackchew inoculated KY-31 Tall Fescue | ● 0.5 lbs./1000 sq. ft. ● 1.5 lbs./1000 sq. ft. |
| Mulch: | Straw | ● 80 lbs./1000 sq. ft. |
| Asphalt Tie-down: | Slopes Flat areas | ● 8 gal./1000 sq. ft. ● 5 gal./1000 sq. ft. |

7. 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, as shown on these plans and as set forth in the "1983 Standards and Specifications for Soil Erosion and Sediment Control" of the Soil Conservation Service of Maryland, Howard County Soil Conservation District, as amended.

8. FILTER FABRIC

Where specified, MIRAFI 1405 or equivalent shall be used.



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.

James M. Helm 6/1/90
U.S. SOIL CONSERVATION SERVICE

Robert W. Quinn 6/1/90
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED: DEPARTMENT OF PLANNING & ZONING

John S. Taylor 7/1/90
CHIEF, DIVISION OF COMMUNITY PLANNING & ZONING

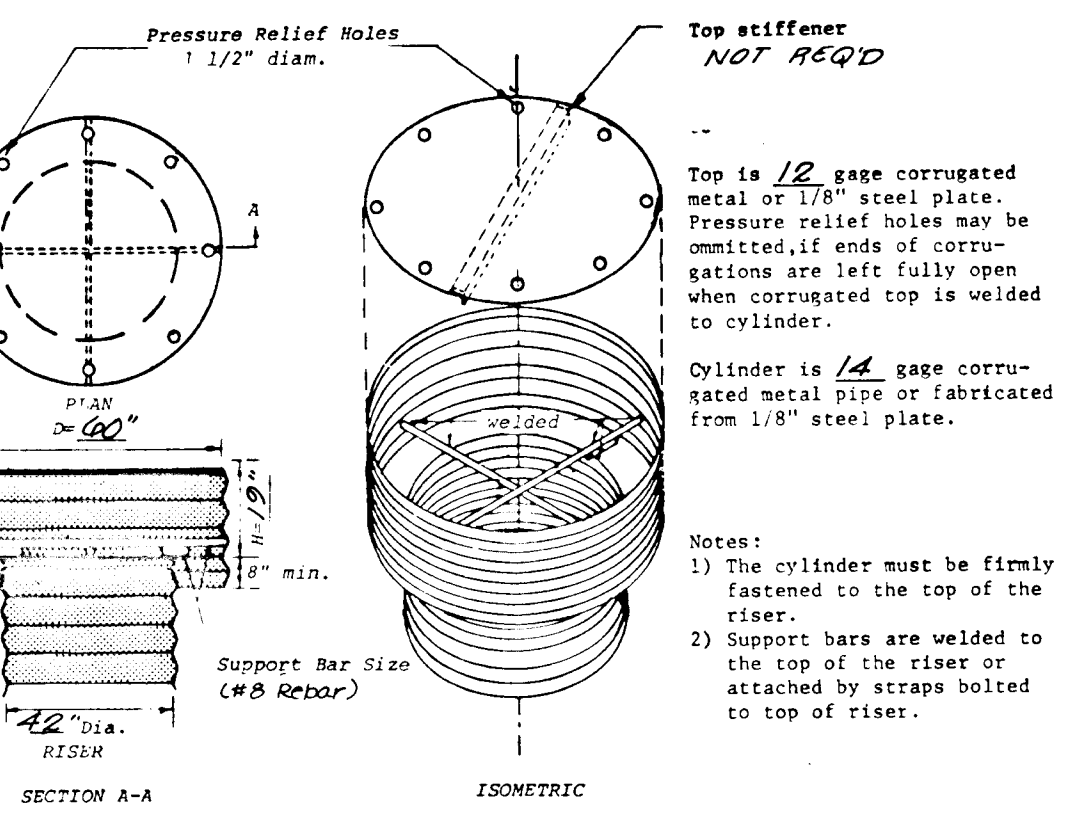
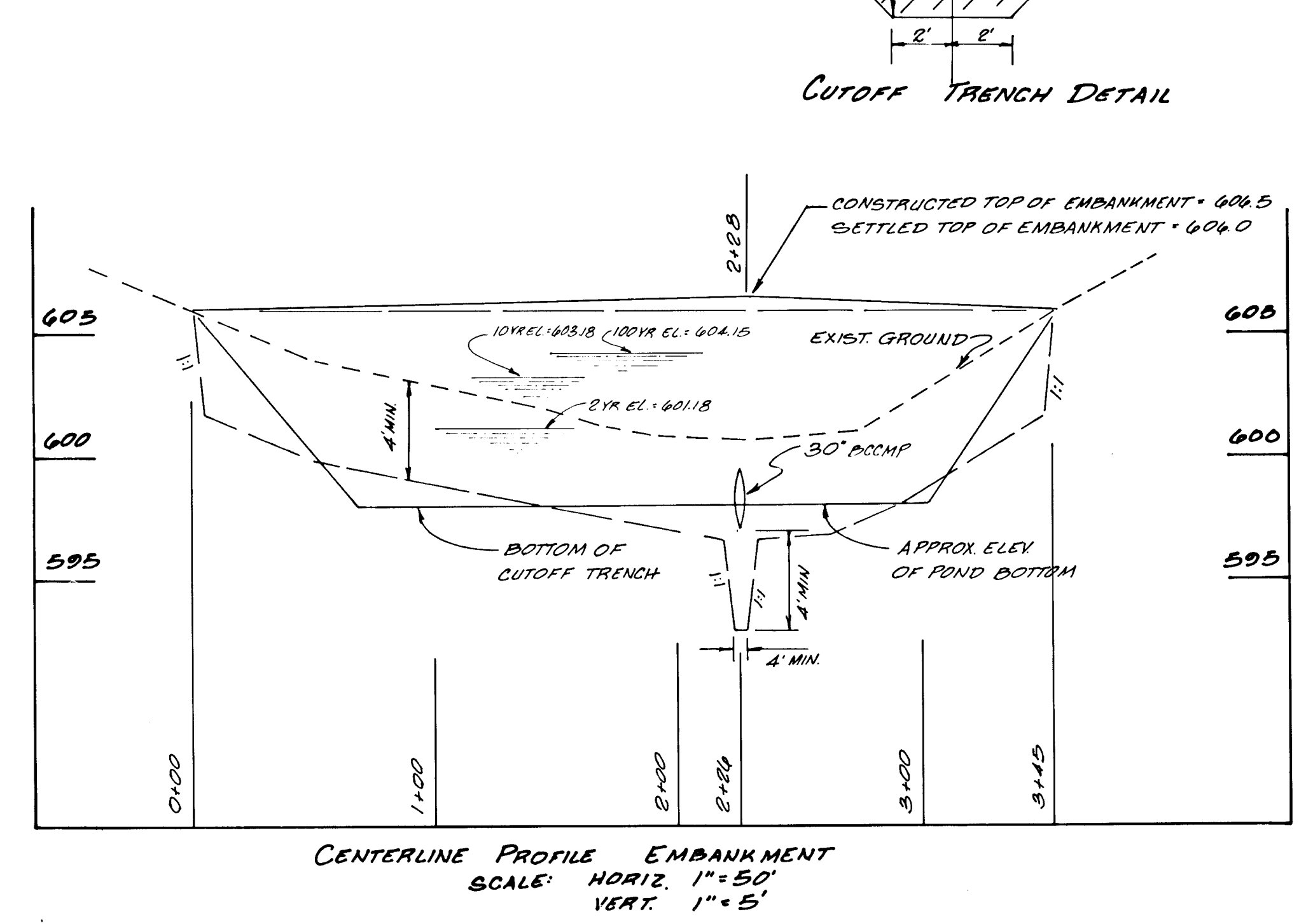
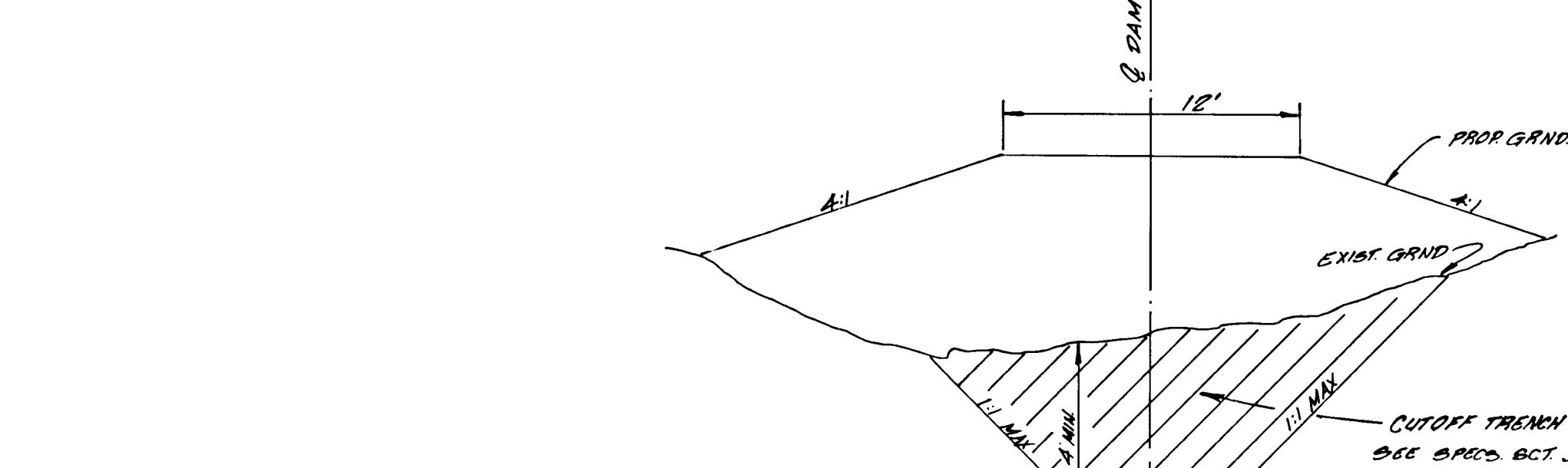
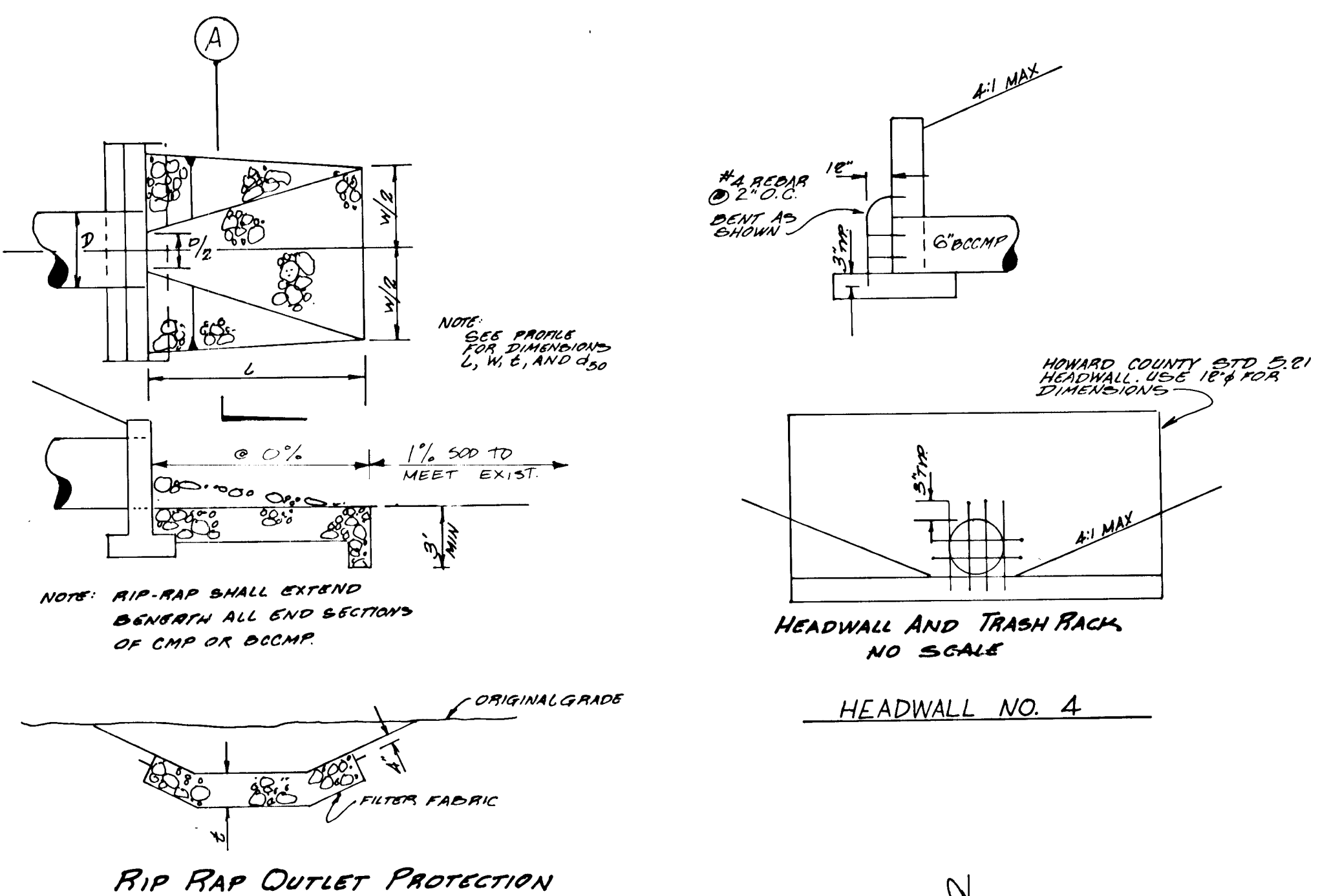
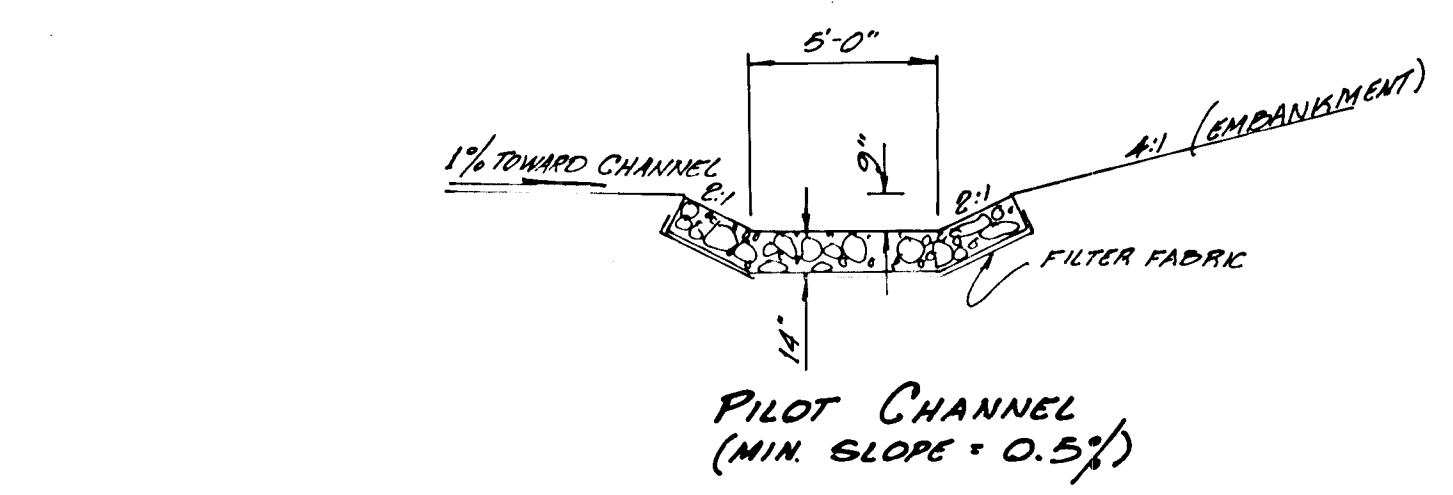
Granville W. Cleveland 6/18/90
CHIEF, BUREAU OF ENGINEERING

Bob Maki 5-25-90
CHIEF, BUREAU OF ENGINEERING

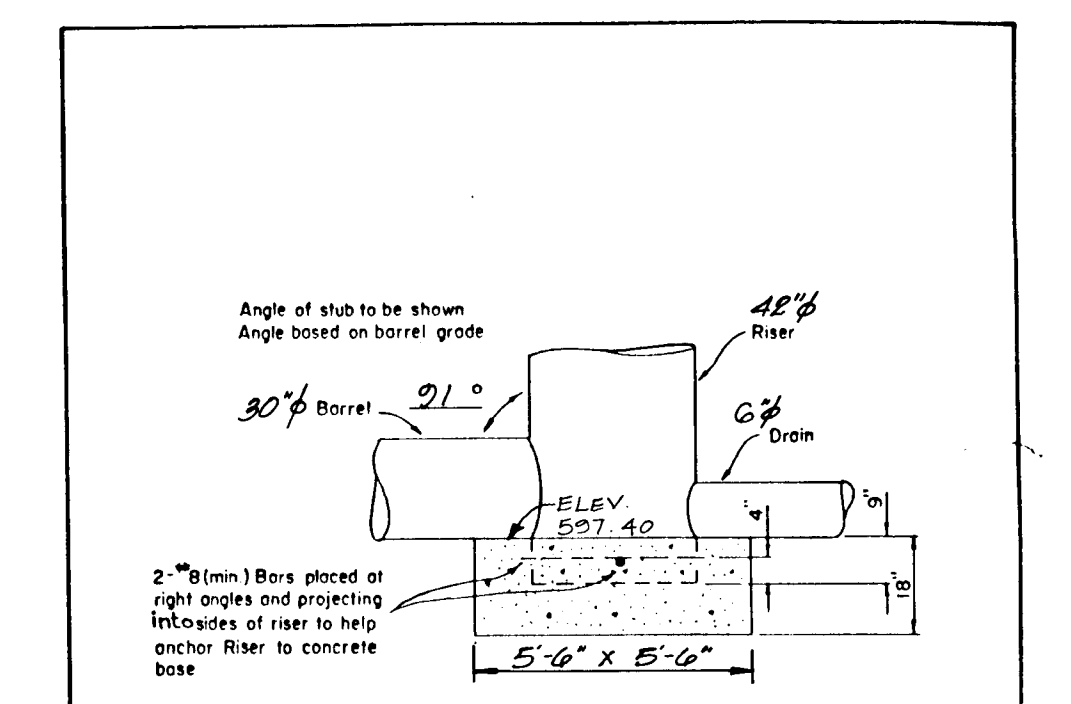
DEVELOPER'S CERTIFICATE

I hereby 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 Natural Resources 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.

John B. Cook 7/1/90



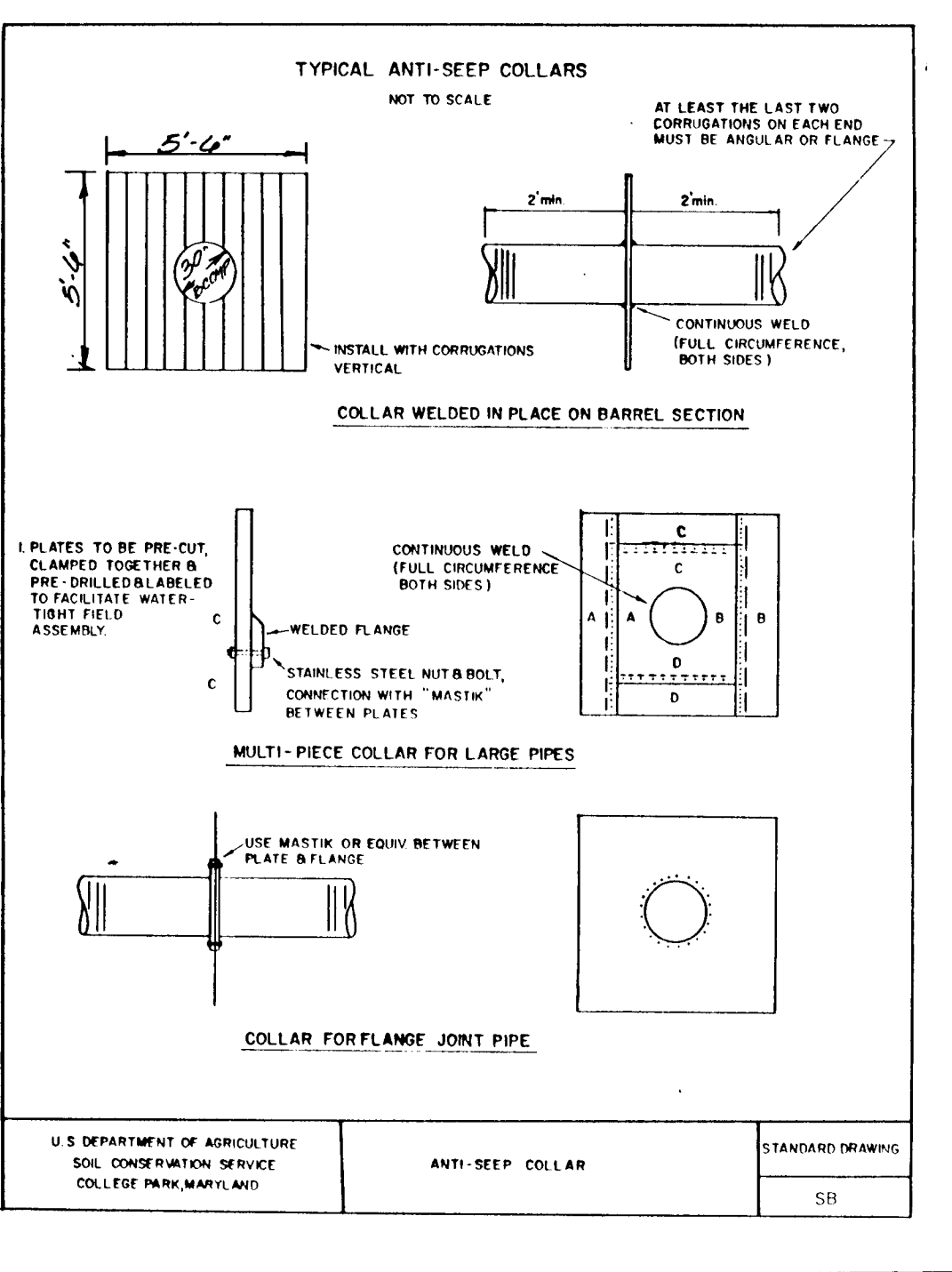
NOTE: ALL CORRUGATED PIPE SHALL BE BITUMINOUS COATED.



RISER BASE DETAIL

NOTES:

- The concrete base shall be poured in such a manner to assure that the concrete fills the bottom of the riser; to the invert of the outlet pipe to prevent the riser from breaking away from the base.
- With aluminum or galvanized pipe the embedded section must be painted with zinc chromate or equivalent.



U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
COLLEGE PARK, MARYLAND

ANTI-SEEP COLLAR

STANDARD DRAWING
SB

| | | | |
|---------|---------|--------------|-----|
| date | 5/27/90 | engineering | |
| project | 89030 | illustration | JDM |
| scale | | approval | JDM |

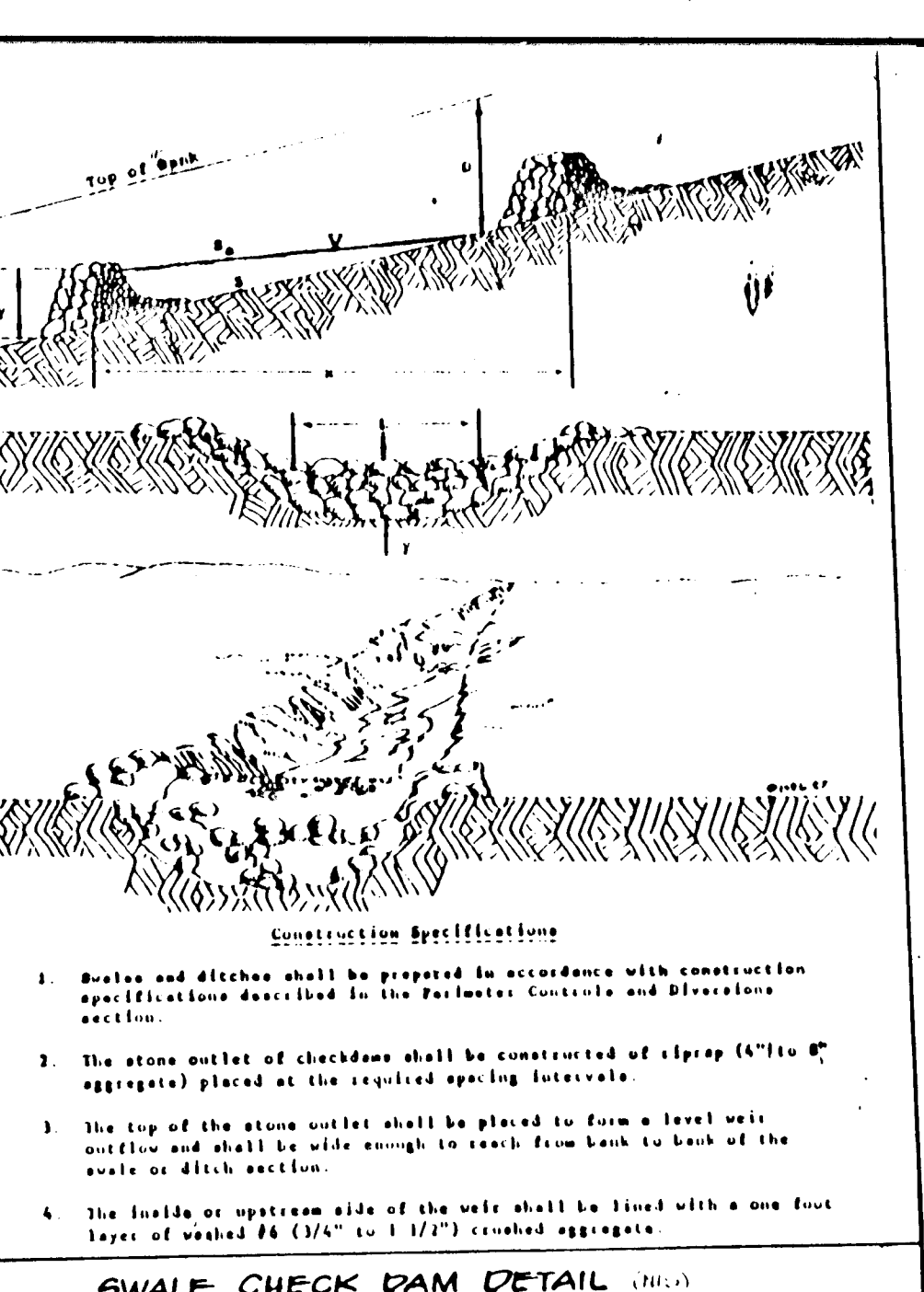
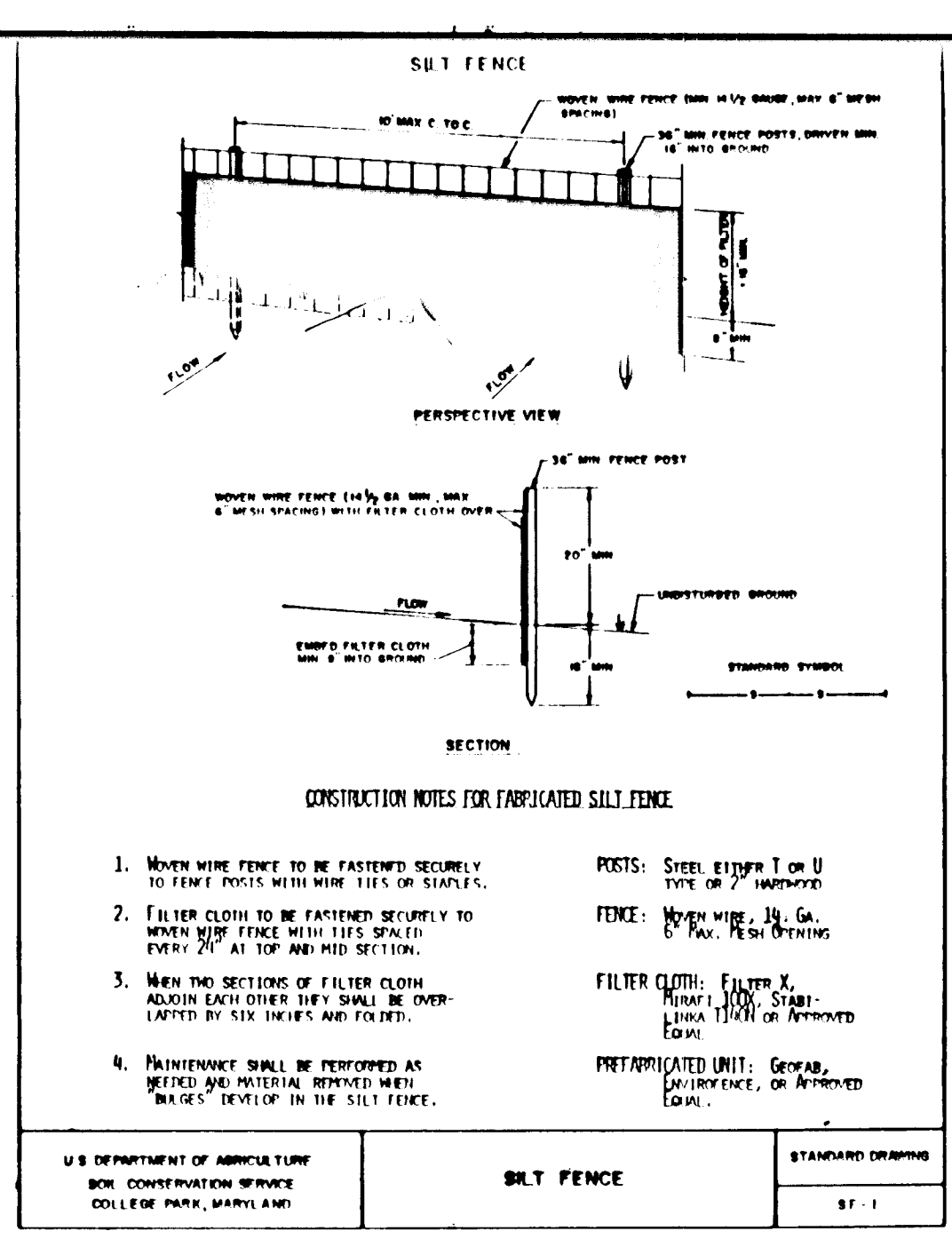
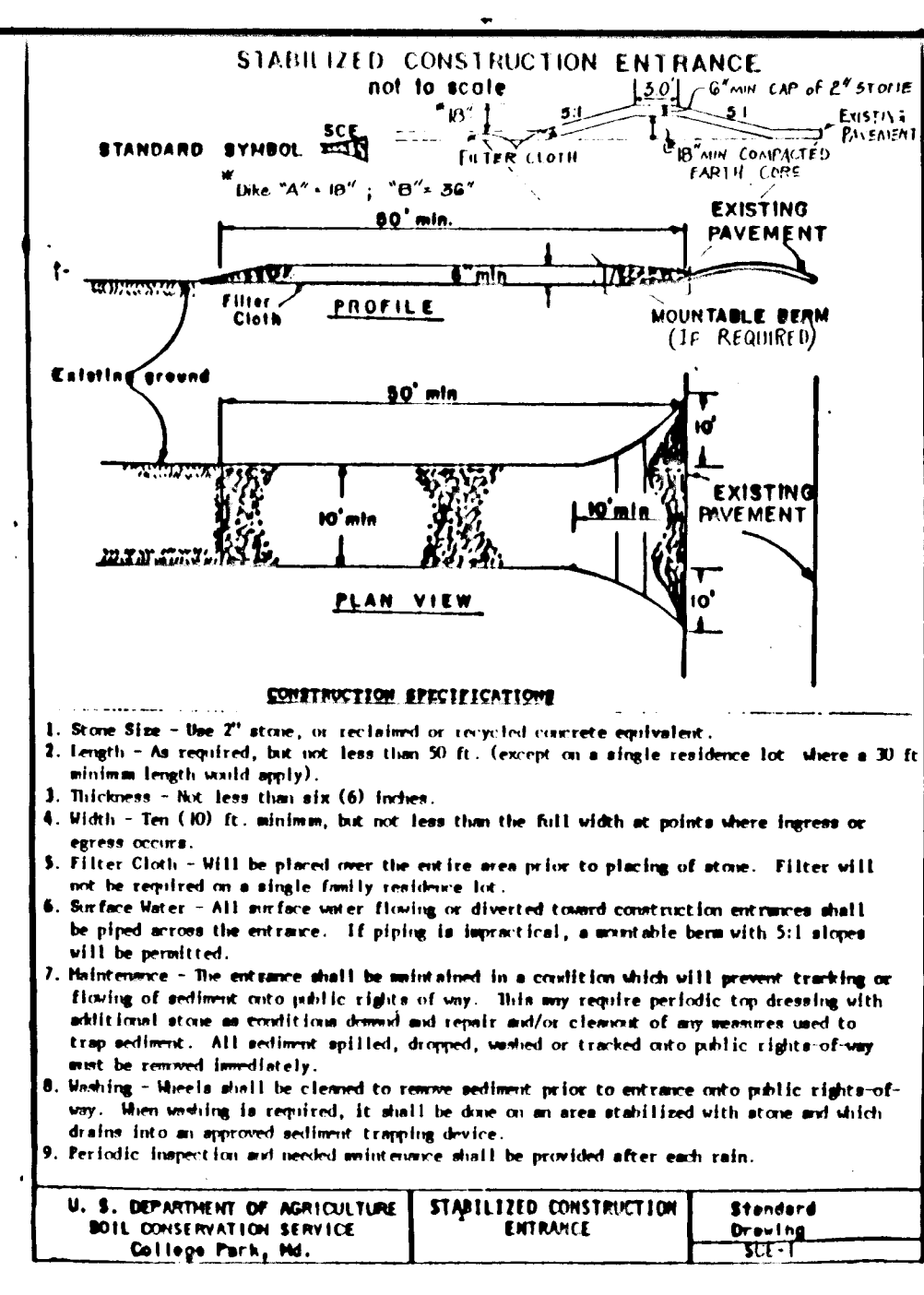
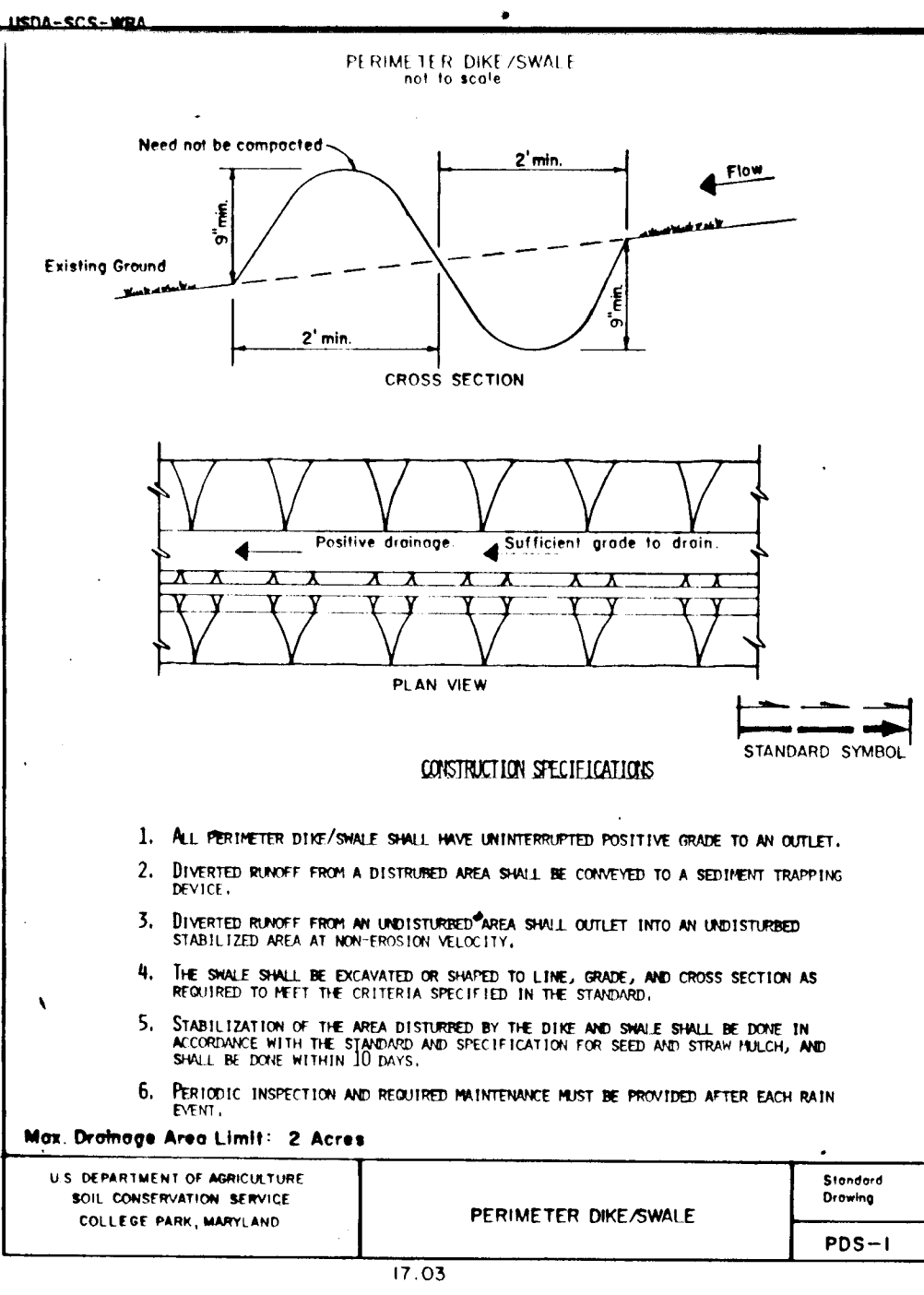
| | | |
|--|---------|------------------------|
| ADDED: USE 1/2\"/> | DATE | REVISIONS |
| 1. All corrugated pipe shall be bituminous coated. | 5/27/90 | 1. Initial design |
| 2. First submission to Howard County DEP. | 6/1/90 | 2. Revise per comments |

BERKSHIRE ESTATES
Parcel 79 & 156
HOWARD COUNTY, MARYLAND
ELECTION DISTRICT No. 4

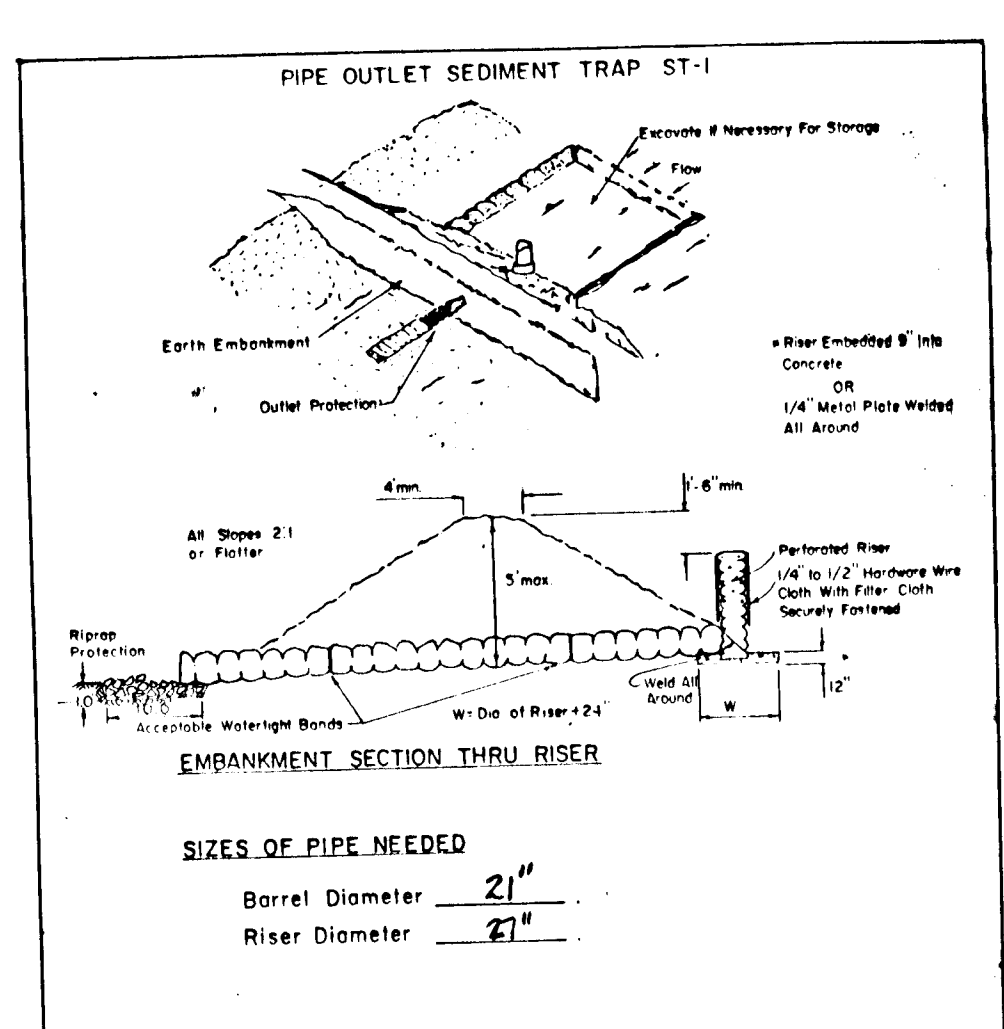
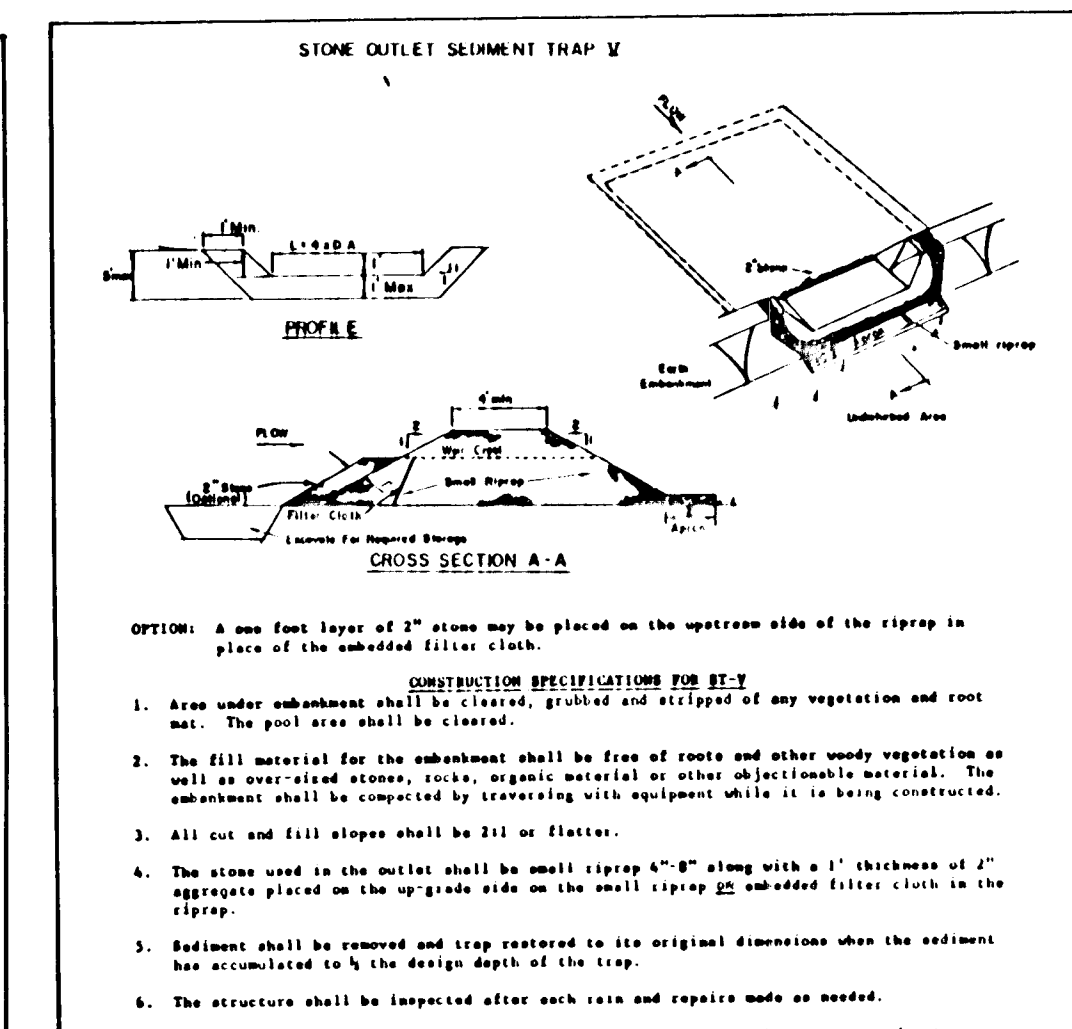
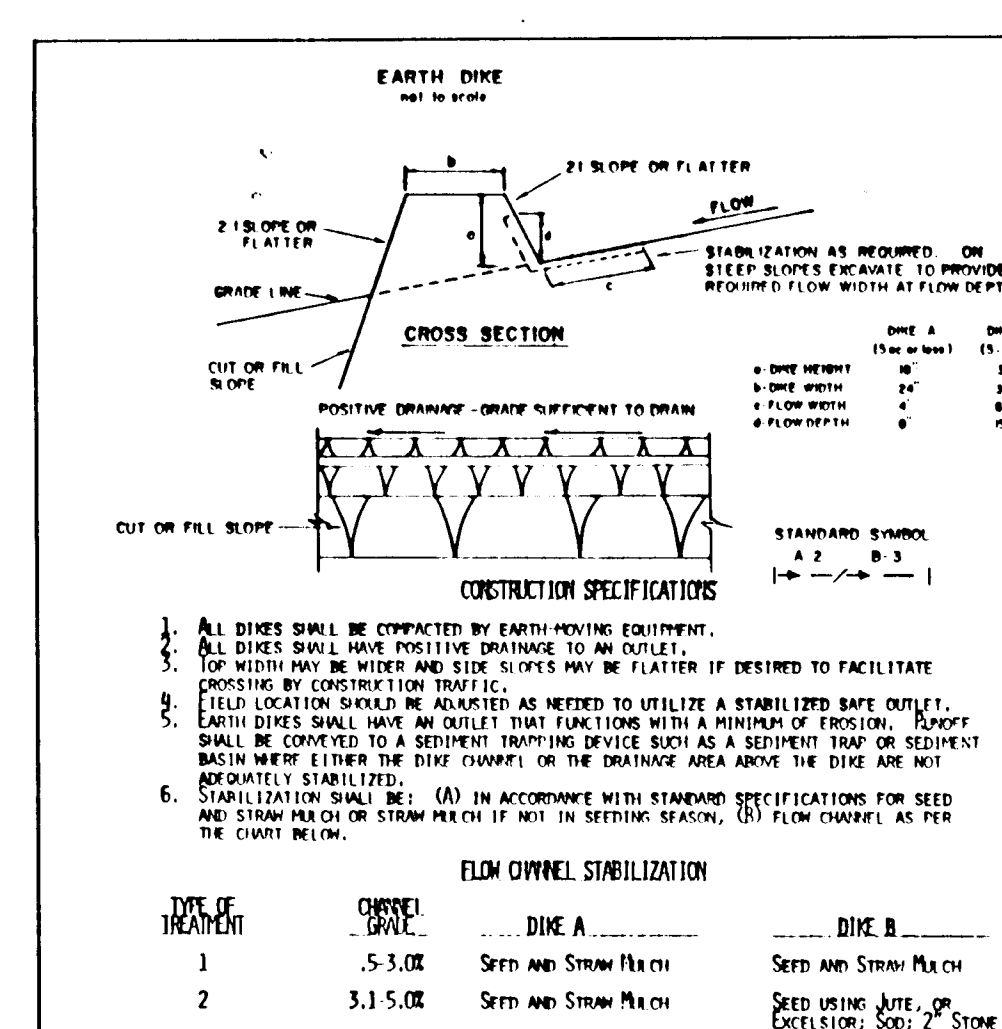
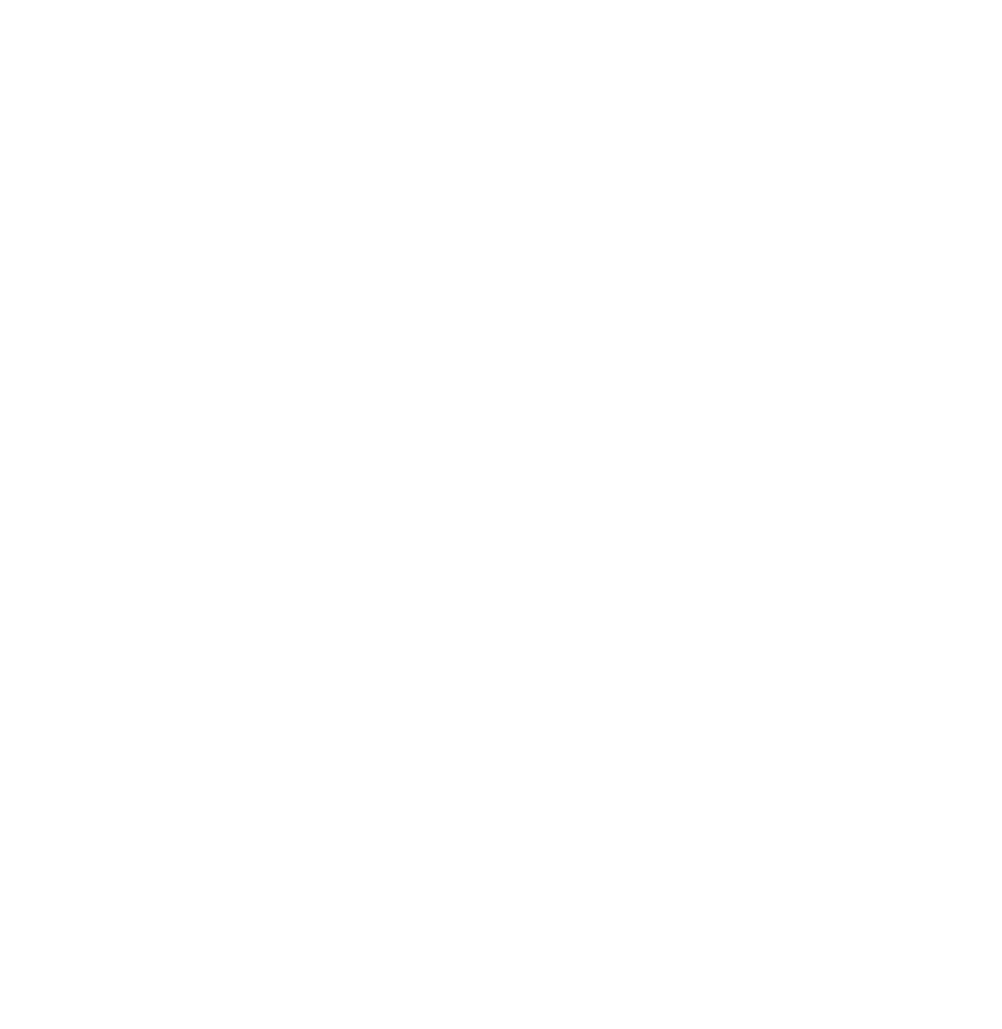
SEDIMENT CONTROL & SWM NOTES & DETAILS

MILDENBERG, MOCH & ASSOCIATES, INC.
ENGINEERS • SURVEYORS • PLANNERS

3300 North Ridge Road, Suite 235, Elverton, Maryland 21043-3350
(301) 461-0078 D.C. Metro: (301) 821-5788



- SEQUENCE OF CONSTRUCTION**
1. Obtain grading permit.
 2. Construct earth dike #1 in order to intercept and re-orient clean water into existing 12" CMP beneath Maryland Route 144.
 3. Construct sediment trap #2.
 4. Install 18" CMP between ES-5 to ES-6 and grade as necessary to complete proposed road improvements and side ditches along Berkeley Drive between stations 0+00 to 2+25 and from end of pipe to southern property line.
 5. Stabilize side slopes of MD Route 144 and Berkeley Drive with permanent seed and mulch. Provide jute or excelsior matting to stabilize slope areas along MD Route 144; provide silt fence on north side MD Route 144 swale. Stabilize declination lane along MD Route 144 and Berkeley Drive between stations 0+00 to 2+25 with stone base course per typical section.
 6. When MD Route 144 swale area is stabilized, earth dike #1 and sediment trap #2 may be removed with the approval of the Sediment Control Inspector.
 7. Install earth dike #2 and perimeter dike/swale #2 to divert clean runoff through 18" culvert between ES-5 to ES-6. Finish grading and complete proposed road improvements along MD Route 144. Construct check dams every 100 feet starting upstream from ES-6 towards Old Frederick Road. Stabilize area using permanent seeding methods.
 8. When all MD Route 144 improvements have been completed, and area has been permanently stabilized, and with the approval of the Sediment Control Inspector, earth dike #2, perimeter dike/swale #2 and the remaining check dams may be removed. Stabilize area using permanent seeding methods.
 9. Install SCE #1 and SCE #2 with mountable berms at the entrances of Berkeley Drive.
 10. Construct sediment basin #1 (stormwater management pond #1) and silt fence. Stabilize using temporary seeding practices.
 11. Begin initial grading of Berkeley Drive and Old Frederick Road, to construct IR CMP between ES-4 to HW-3; the twin 10" x 25" arch CMP between ES-7 to HW-1; the triple arch CMP between ES-12 to HW-2; and 1:1 to 1:2 and 1:2 to 1:1. Provide jute or excelsior matting to stabilize swale from ES-1 to HW-2.
 12. Install remaining sediment control devices. Install check dams where indicated as work progresses upstream of disturbed areas where indicated on Berkeley Drive and Old Frederick Road. Install base course, stabilize side slopes and ditches using permanent seeding methods.
 13. During construction, sediment shall be removed from the sediment basin/stormwater management pond and traps when the clean-out elevation has been reached.
 14. All sediment control devices shall be inspected daily as well as after each rainfall. All sediment control devices shall be repaired as necessary.
 15. Upon stabilization of graded areas, remove accumulated sediment from storm drainage system.
 16. Clean base course. Apply tack coat to base course. With the approval of the Sediment Control Inspector, SCE #1 and SCE #2 may be removed to facilitate paving.
 17. Contractor shall dewater sediment basin #1 and remove accumulated sediment. The basin shall be graded in accordance with these plans and stabilized using permanent seeding methods. Remove dewatering device and construct HW4 and trash rack.
 18. With the approval of the Sediment Control Inspector, remove all remaining sediment control devices. Grade all disturbed areas and stabilize using permanent seeding methods.
 19. Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed with:
 - a) 7 calendar days for all perimeter slopes and all slopes greater than 3:1; or
 - b) 14 days for all other disturbed areas on the project site.
 20. Notify Howard County Office of Inspections and Permits for final inspection at completion of project.



- PIPE OUTLET TRAP CONSTRUCTION SPECIFICATION FOR ST-1**
1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
 2. The fill material for the embankment shall be free of roots or other woody vegetation as well as oversized stones, rocks, organic material, or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed.
 3. Volume of sediment storage shall be 1800 cubic feet per acre of contributory drainage.
 4. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
 5. The structure shall be inspected after each rain and repairs made as needed.
 6. Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
 7. The structure shall be removed and area stabilized when the drainage area has been properly stabilized.
 8. All fill slopes shall be 2:1 or flatter; cut slopes 1:1 or flatter.
 9. All pipe connections shall be watertight.
 10. The top 2/3 of the riser shall be perforated with one (1) inch diameter holes or slots spaced six(6) inches vertically and horizontally and placed in the concave portion of pipe. No holes will be allowed within six(6) inches of the horizontal barrel.
 11. The riser shall be wrapped with 1/4 to 1/2 inch hardware cloth wire then wrapped with filter cloth (having an equivalent sieve size of 40 - 80). The filter cloth shall extend six (6) inches above the highest hole and six (6) inches below the lowest hole. Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent bypass.
 12. Straps or connecting bands shall be used to hold the filter cloth and wire fabric in place. They shall be placed at the top and bottom of the cloth.
 13. Fill material along the pipe spillway shall be hand compacted in four(4) inch layers. A minimum of two (2) feet of hand-compacted backfill shall be placed over the pipe spillway before crossing it with construction equipment.
 14. The riser shall be anchored with either a concrete base or steel plate base to prevent flotation. For concrete base the depth shall be 12 inches with the riser embedded nine (9) inches. A 1/4 inch minimum thickness steel plate shall be attached to the riser by a continuous weld around the bottom to form a watertight connection and then place two (2) feet of stone, gravel, or tamped earth on the plate.

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

James M. Helm / JMH / 6/1/90
U.S. SOIL CONSERVATION SERVICE

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

Robert W. Zisch / RWZ / 6/1/90
HOWARD SOIL CONSERVATION SERVICE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Alan M. Duggan / AMD / 6/1/90
CHIEF, LAND DEVELOPMENT

Gravelle W. Weisand / GWW / 6/8/90
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING & ZONING

David W. Conroy / DWC / 7/1/90
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

ENGINEER'S CERTIFICATE

I hereby certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District

Bob Mochi / BM / 9-19-89
DATE

DEVELOPER'S CERTIFICATE

I/We certify that all development and construction will be done in accordance with this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction of this project will have a certificate of attendance at a Department of Natural Resources approved training program for the control of sediment and erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.

Joseph B. Baker / JBB / 9/1/89
DATE

FLOW CHANNEL STABILIZATION

| DIST. FROM HEADQUARTERS | CHANNEL | DIKE A | DIKE B |
|-------------------------|----------|---------------------------------------|--|
| 1 | 5-3.0E | SEED AND STRAW MULCH | SEED AND STRAW MULCH |
| 2 | 3.1-5.0E | SEED AND STRAW MULCH | SEED USING JUTE, OR EXCELSTOR, SOO; 2" STONE |
| 3 | 5.1-8.0E | SEED WITH JUTE, OR SOO; 2" STONE | LINED RIP-RAP 4-8" ENGINEERING DESIGN |
| 4 | 8.1-20E | LINED RIP-RAP 4-8" ENGINEERING DESIGN | |

A. Stone to be 2 inch stone, recycled concrete equivalent in a layer at least 3 inches in thickness and be pressed into the soil with construction equipment.
B. Rip rap to be 4-8 inches in a layer at least 3 inches thickness and pressed into the soil.
C. Temporary stabilization can be substituted for any of the above materials.
D. Periodic inspection and required maintenance must be provided after each rain event.

PERMANENT SEEDING NOTES

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

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

Soil Amendments: In lieu of soil test recommendations, use one of the following schedule:

- 1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square feet) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 square feet) 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 square feet).
- 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square feet) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 square feet) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the periods March 1 through April 30 and August 1 through October 15, seed with 60 lbs per acre (14 lbs/1000 square feet) 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 (.05 lbs/1000 square feet) of Weeping Lovegrass. During the period of October 16 through February 28, protect site by Option 1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option 2) use sod. Option 3) seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 square feet) of unrolled small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (.33/1000 square feet) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 square feet) for anchoring.

Replacement: 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.

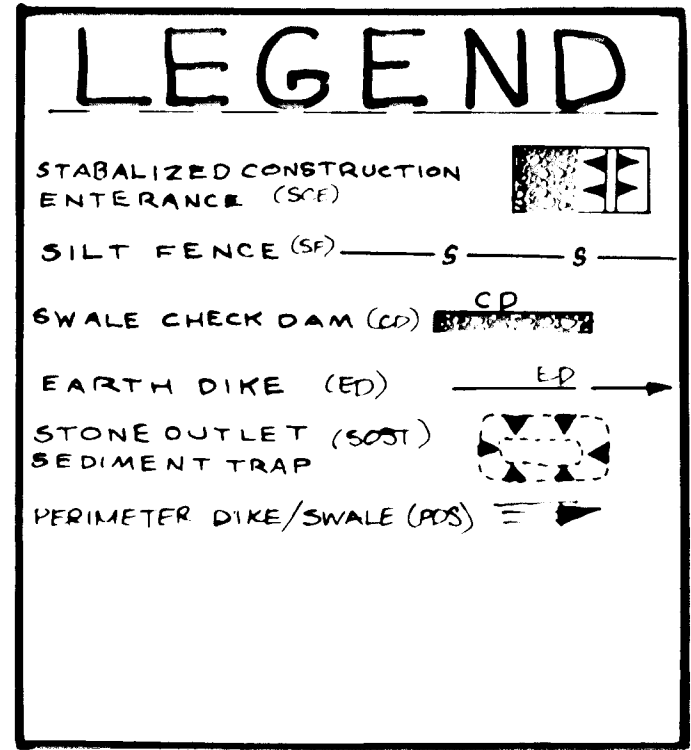
Seeded Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (if not previously loosened).

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

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 ryegrass (32 lbs/1000 square feet). For the period May 1 through August 14, seed with 1 lbs per acre of Weeping Lovegrass (.07 lbs/1000 square feet). For the period November 16 through February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 square feet) of unrolled small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (.33/1000 square feet) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 square feet) for anchoring.

Refer to the 1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control for rate and methods not covered.



OWNER / DEVELOPER

Joseph B. Berke, et al
c/o Phillip Berke
3945 Whispering Meadow Drive
Randallstown, Maryland 21133
(301) 539-3209
ATTN: Mr. Phillip Berke

ENGINEER

Mildenberg, Mochi & Associates, Inc.
3300 N. Ridge Road, Suite 235
Ellicott City, Maryland 21043
(301) 461-0078
ATTN: Mr. Robert M. Mochi, P.E.



Project: 89030.00
Date: SEPT. 89
Illustration: KAM
Scale: 1" = 50'

2nd SUBMISSION TO HOWARD COUNTY DPZ 2/16/90
First submission to Howard County DPZ 9/22/89

BERKSHIRE ESTATES
Tax Map 8 Parcels 79 & 198
HOWARD COUNTY, MARYLAND
ELECTION DISTRICT No. 4

EROSION & SEDIMENT CONTROL NOTES & DETAILS

MCH & ASSOCIATES, INC.
3300 North Ridge Road, Suite 235, Ellicott City, Maryland 21043-3350
(301) 461-0078