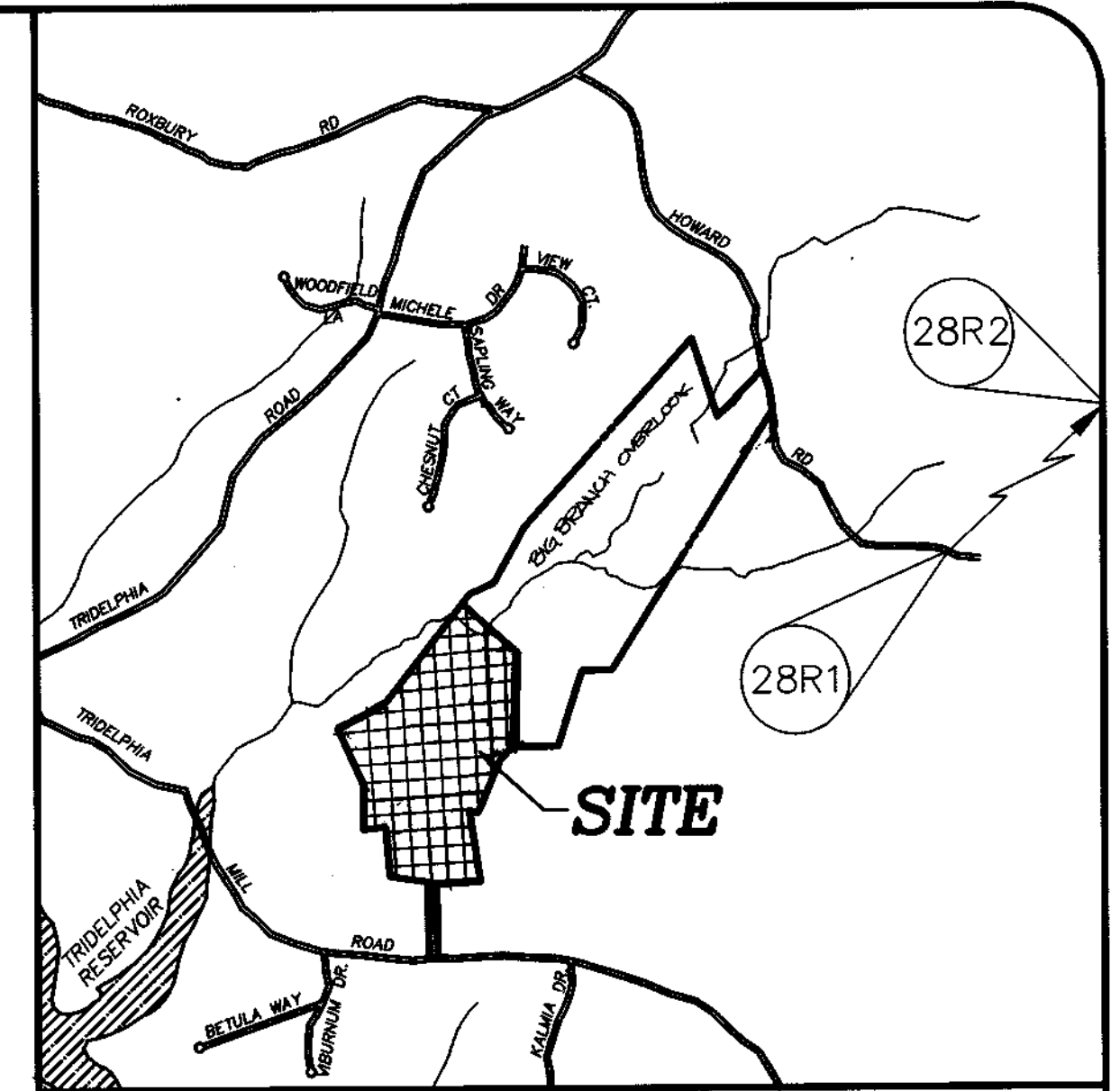
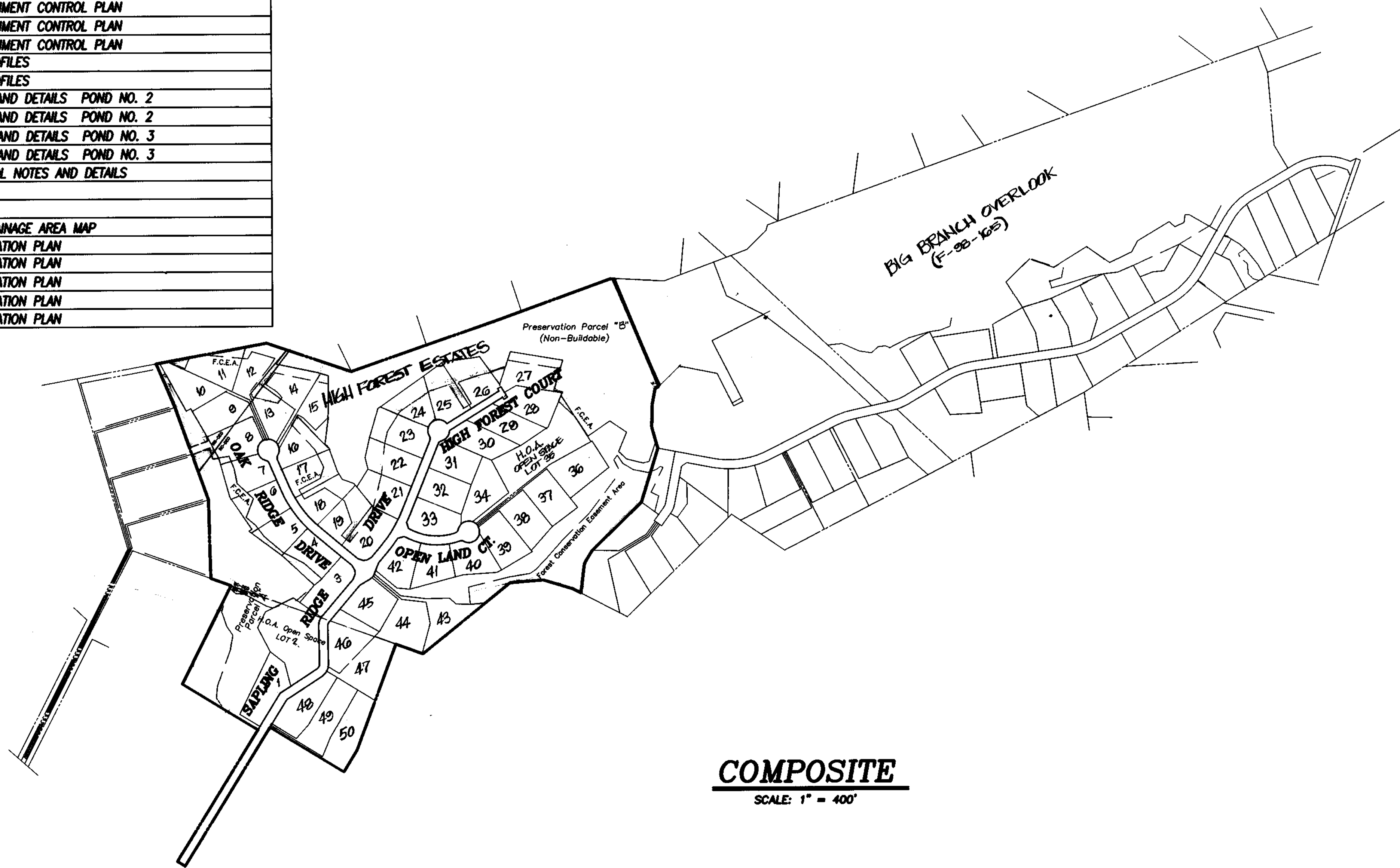


ROADS, STORM DRAIN, AND GRADING HIGH FOREST ESTATES

Election District No.5 Howard County, MD

INDEX OF SHEETS:

1. COVER SHEET
2. SAPLING RIDGE DRIVE PLAN AND PROFILE
3. SAPLING RIDGE DRIVE PLAN AND PROFILE
4. SAPLING RIDGE DR. & HIGH FOREST CT. PLAN AND PROFILE
5. OAK RIDGE DRIVE PLAN AND PROFILE
6. OPEN LAND COURT PLAN AND PROFILE
7. GRADING AND SEDIMENT CONTROL PLAN
8. GRADING AND SEDIMENT CONTROL PLAN
9. GRADING AND SEDIMENT CONTROL PLAN
10. STORM DRAIN PROFILES
11. STORM DRAIN PROFILES
12. S.W.M. PROFILES AND DETAILS POND NO. 2
13. S.W.M. PROFILES AND DETAILS POND NO. 2
14. S.W.M. PROFILES AND DETAILS POND NO. 3
15. S.W.M. PROFILES AND DETAILS POND NO. 3
16. SEDIMENT CONTROL NOTES AND DETAILS
17. LANDSCAPE PLAN
18. LANDSCAPE PLAN
19. STORM DRAIN DRAINAGE AREA MAP
20. FOREST CONSERVATION PLAN
21. FOREST CONSERVATION PLAN
22. FOREST CONSERVATION PLAN
23. FOREST CONSERVATION PLAN
24. FOREST CONSERVATION PLAN



VICINITY MAP
SCALE: 1" = 2000'

GENERAL NOTES:

1. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
2. The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.
3. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
4. Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
5. The existing topography is taken from aerial survey with two foot contour intervals prepared by Wings Mapping Co., dated 12/98.
6. The coordinates shown herein are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monument Nos. 28R1 and 28R2 were used for this project.
7. Water is private.
8. Sewer is private.
9. Stormwater management control will be provided on site, on either open space or preservation parcels. Ponds shall be maintained by Howard County.
10. Existing utilities are based on Howard County contract drawings.
11. The floodplain study for this project was prepared by R.M. Mochi Group, P.C., dated October, 1997, and was approved on November 13, 1997.
12. The wetlands delineation study for this project was prepared by American Land Concepts dated May, 1997 and was approved on September 16, 1997.
13. The traffic study for this project was prepared by Lee Cunningham and Associates, Inc. dated May, 1997 and was approved on September 16, 1997.
14. Project Background information:

| | |
|-----------------------------------|--|
| a. Zoning: | RC-DEO and RR-DEO |
| b. Gross Area of Tract: | 102.0 AC. (22.7 Ac.-RR, 79.3 Ac.- RC.) |
| c. Net Area of Tract: | 91.72 AC. |
| d. Area of Proposed Lots/Parcels: | 10: 55.11 AC.; Parcels: 30.08 ; open space = 5.1 AC. |
| e. Area of Proposed R/W: | 57.77 AC. |
| f. Number of Proposed Lots: | 20 Buildable Lots , 1 Build. Pres. Parcel 2 Open Space Lots, 1 Non-Build. Pres. Parcels |
| | 52 Total |
| e. Open Space Required: | 5.1 AC. |
| Open Space Provided: | 5.1 AC. |
15. Waiver request for use of draft road design standards and cul-de-sac length approval 7/10/97.
16. Unless otherwise noted all B.R.L.'s shown are standard for RC zoning district.
17. Coordinates are based on NAD '83/91 Maryland Coordinate System as projected by Howard County Geodetic Control Stations Nos. 28R1 & 28R2.
(Meters X 3.2808333333 = Feet; Feet X 0.3048006096 = Meters)

| | |
|-------------------------|-------------------------|
| No. 28R1 N 573,574.1517 | No. 28R2 N 573,637.5879 |
| E 1,313,221.1140 | E 1,314,445.6788 |
| Elev. 547.85 | Elev. 506.27 |

18. The Contractor shall contact the Construction Inspection Division 24 hours prior to commencement of any work at 410-313-1880.
19. The proposed infiltration facility shall be owned and privately maintained by the Homeowner's Association.



HIGH FOREST ESTATES

Election District No.5 Howard County, MD
Tax Map 27, Grid 6, Parcels 96,140, & 142

Previous Files: S-97-21, P-98-14, WP-98-70, BA: 399-D, BA: 413-D

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Andrew M. Danek 3-8-99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hamilton 7/5/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Robert M. Mochi 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

OWNER/DEVELOPER

SAPLING RIDGE, LLC,
2770 SHARP ROAD
GLENWOOD, MD 21728
(410) 420-4620

ATTN: MR. CHARLES A. SHARP, PRESIDENT MEMBER

ENGINEER/SURVEYOR

R.M. MOCHI GROUP, P.C.
P.O. BOX 10
NEW MARKET, MD 21774
(301) 865-5858

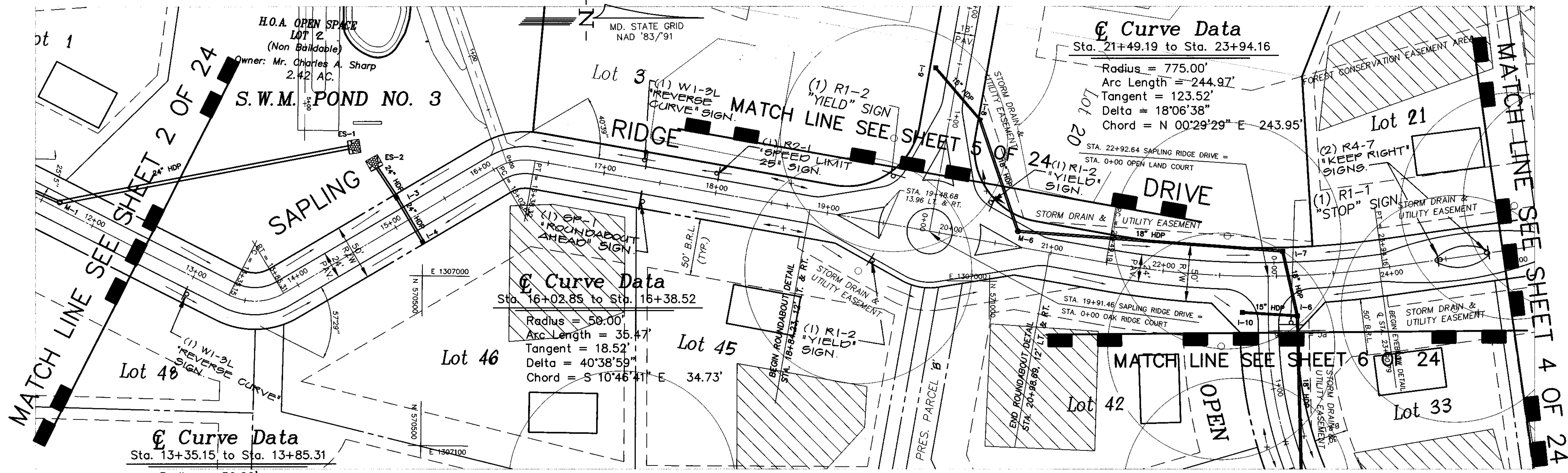
ATTN: MR. ROBERT M. MOCHI, P.E.

| | | | |
|--------------|-----------|-------------|----------|
| Project | 90019.13 | Date | 04-17-98 |
| Illustration | K.M.B. | Engineering | M.W.Z. |
| Scale | 1" = 400' | Approval | R.M.M. |

| | | |
|-----|---|----------|
| NO. | DESCRIPTION | DATE |
| 4 | REVISED PER FLAT REVISIONS | 07-12-98 |
| 3 | SUBMITTED ORIGINAL DRAWING TO DC FOR SIGNATURE | 02-24-98 |
| 2 | REVISED SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW | 10-22-98 |
| 1 | SUBMITTED TO HOWARD CO. D.P.Z. FOR REVIEW | 08-98 |

HOWARD COUNTY
 ELECTION DISTRICT NO. 5
 HIGH FOREST ESTATES
 TITLE SHEET

R.M. MOCHI GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
(301) 865-5858
Fax: (301) 865-5111



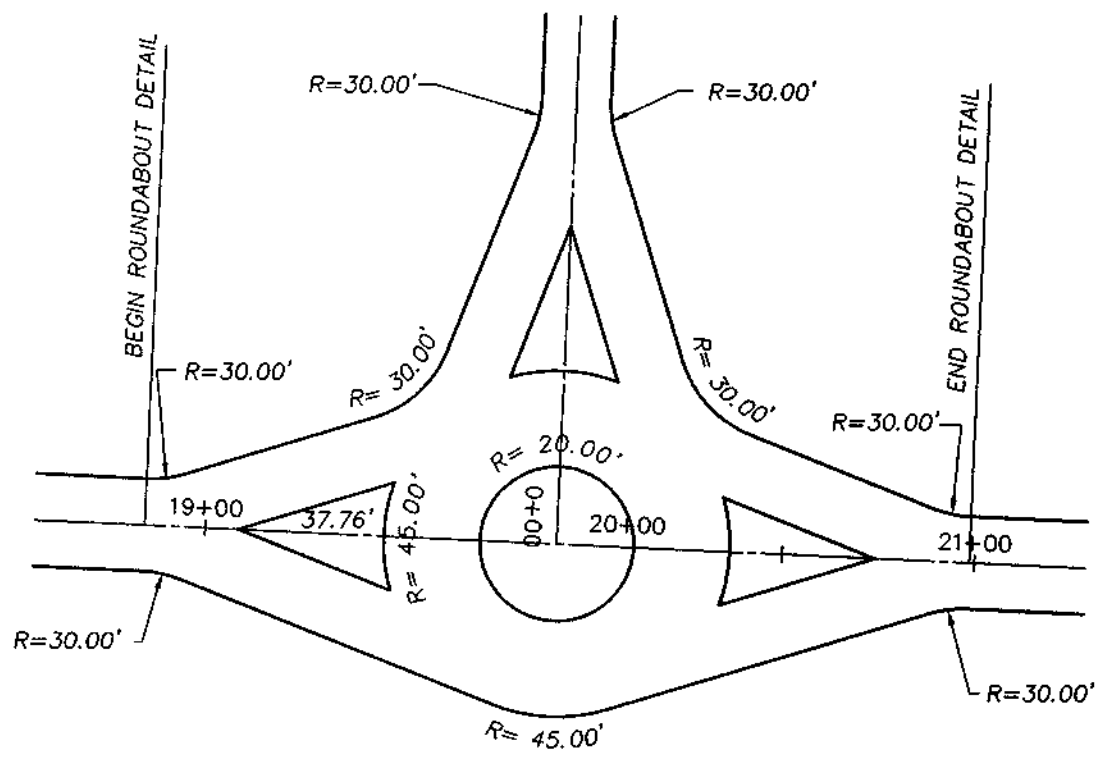
Curve Data
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 Radius = 50.00'
 Arc Length = 50.16'
 Tangent = 27.42'
 Delta = 57°28'39"
 Chord = S 02°21'51" E 48.08'

Curve Data
 Sta. 16+02.85 to Sta. 16+38.52
 Radius = 50.00'
 Arc Length = 35.47'
 Tangent = 18.52'
 Delta = 40°38'59"
 Chord = S 10°46'41" E 34.73'

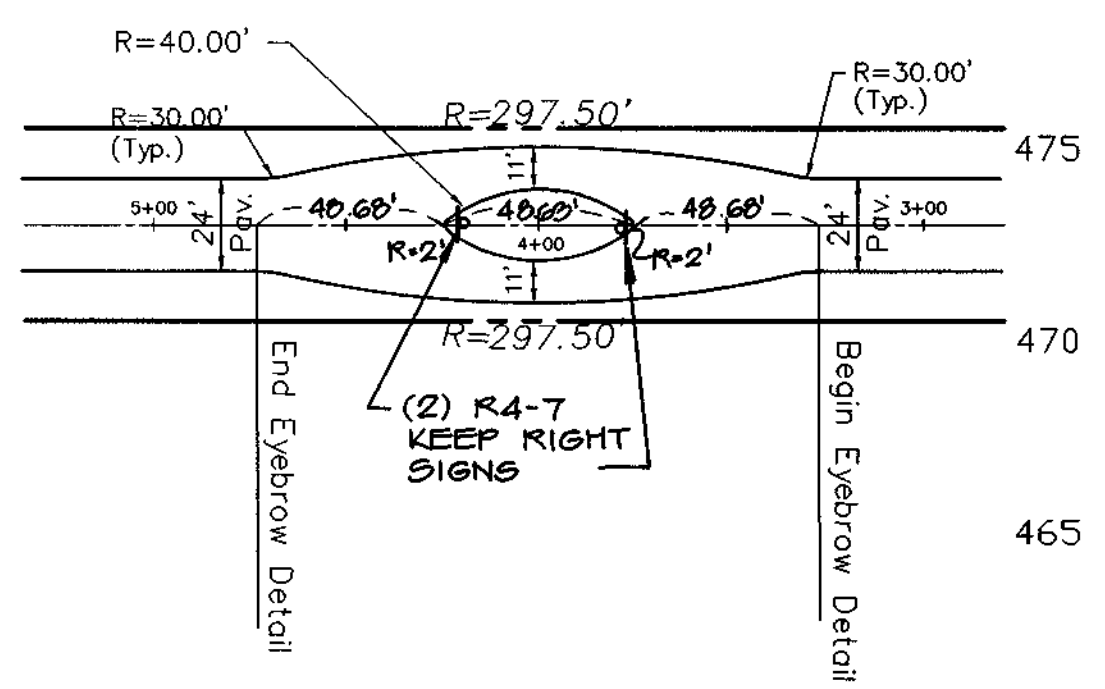
Curve Data
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 Radius = 775.00'
 Arc Length = 244.97'
 Tangent = 123.52'
 Delta = 18°06'38"
 Chord = N 00°29'29" E 243.95'

PLAN
 SCALE: 1" = 50'

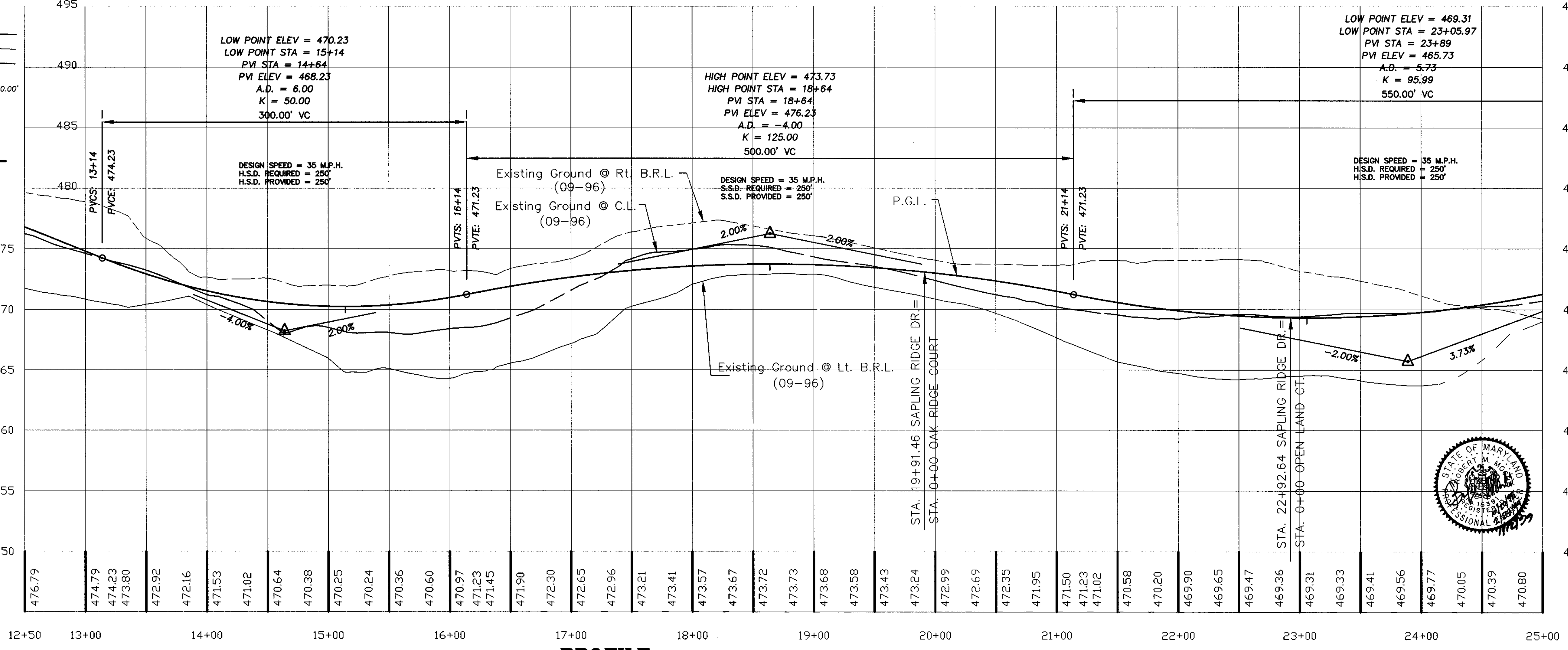
See Sheet 4 of 24
 For Typical Section



Typical Roundabout Detail
 Scale: 1"=50'



Typical Eyebrow Detail
 Scale: 1"=50'



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

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Pank 3/8/99
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 3/6/99
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chris Deussen 3/15/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

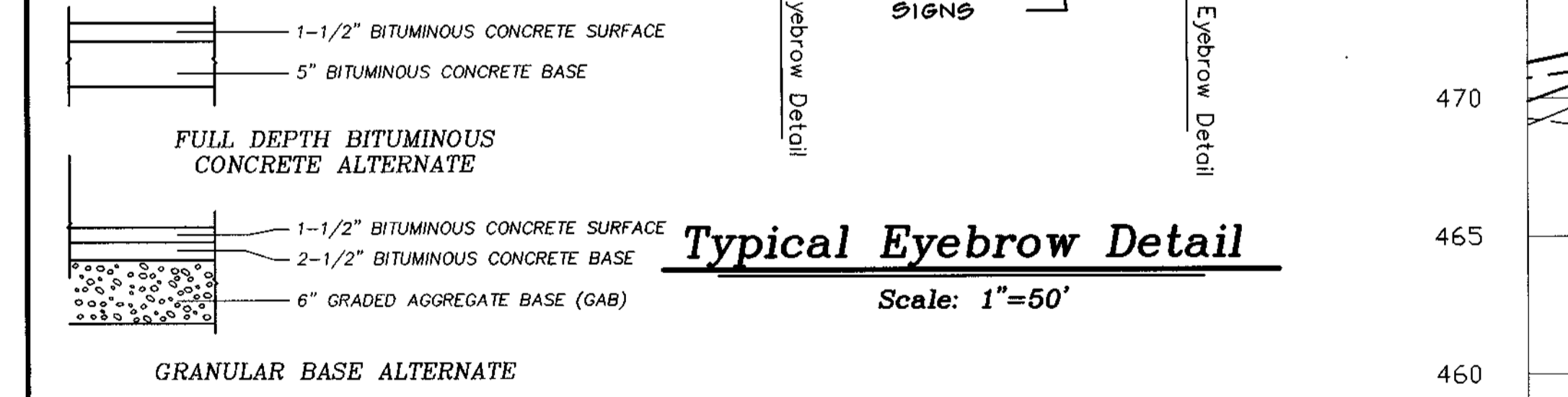
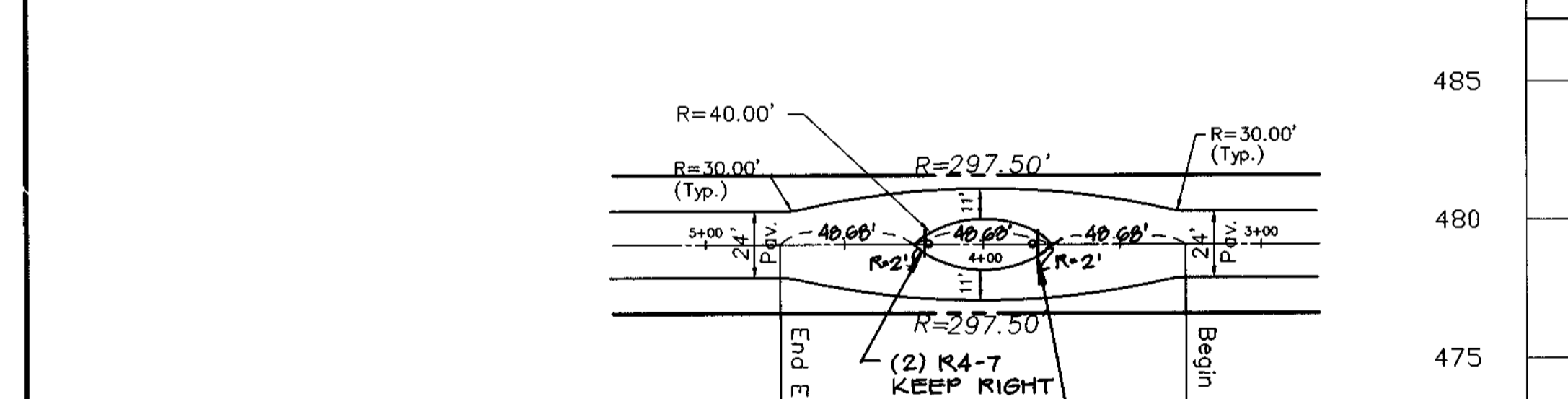
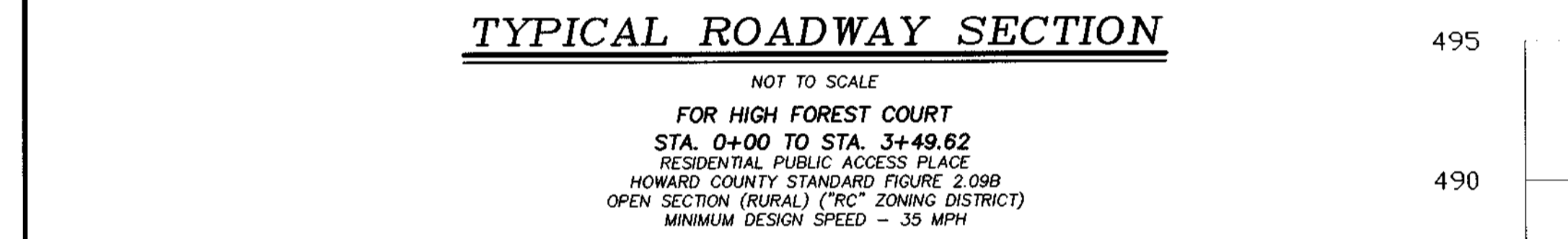
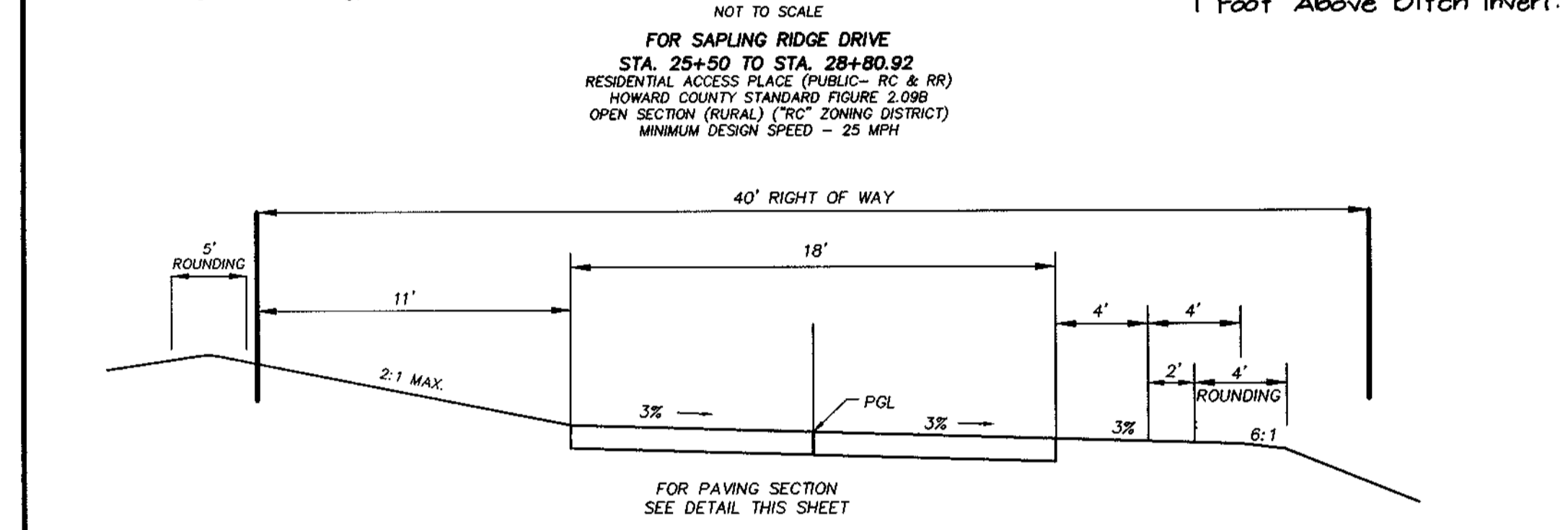
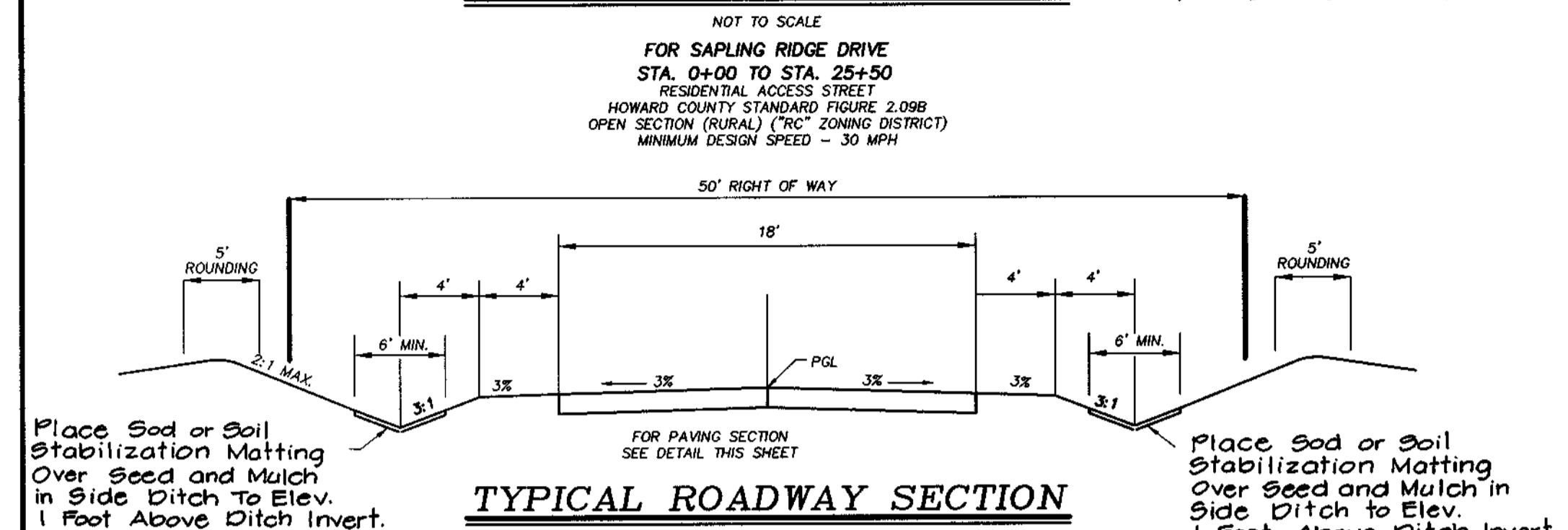
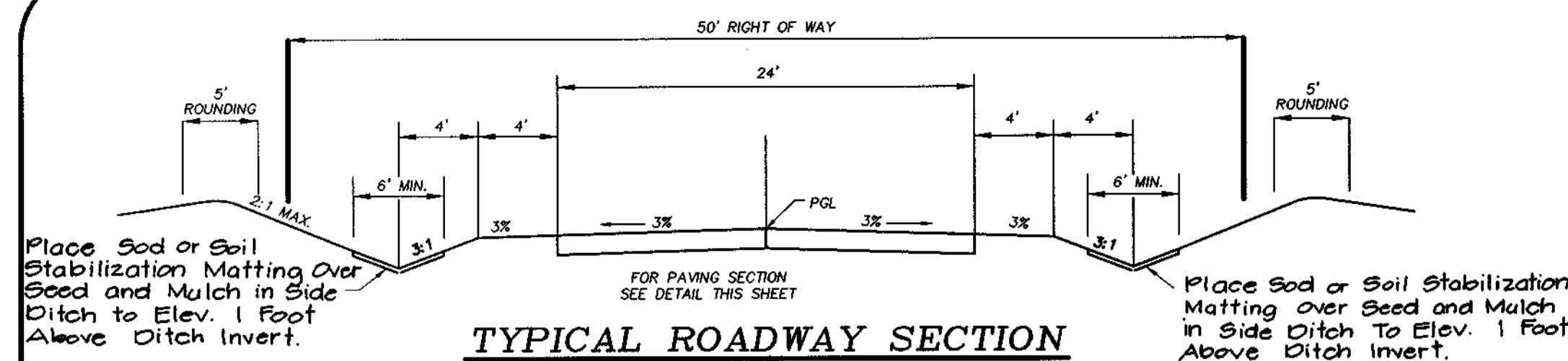


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| Project | 98019-13 | Date | 04-98 |
| Illustration | K.M.B. | Engineering | M.W.Z. |
| Scale | AS SHOWN | Approval | R.M.M. |

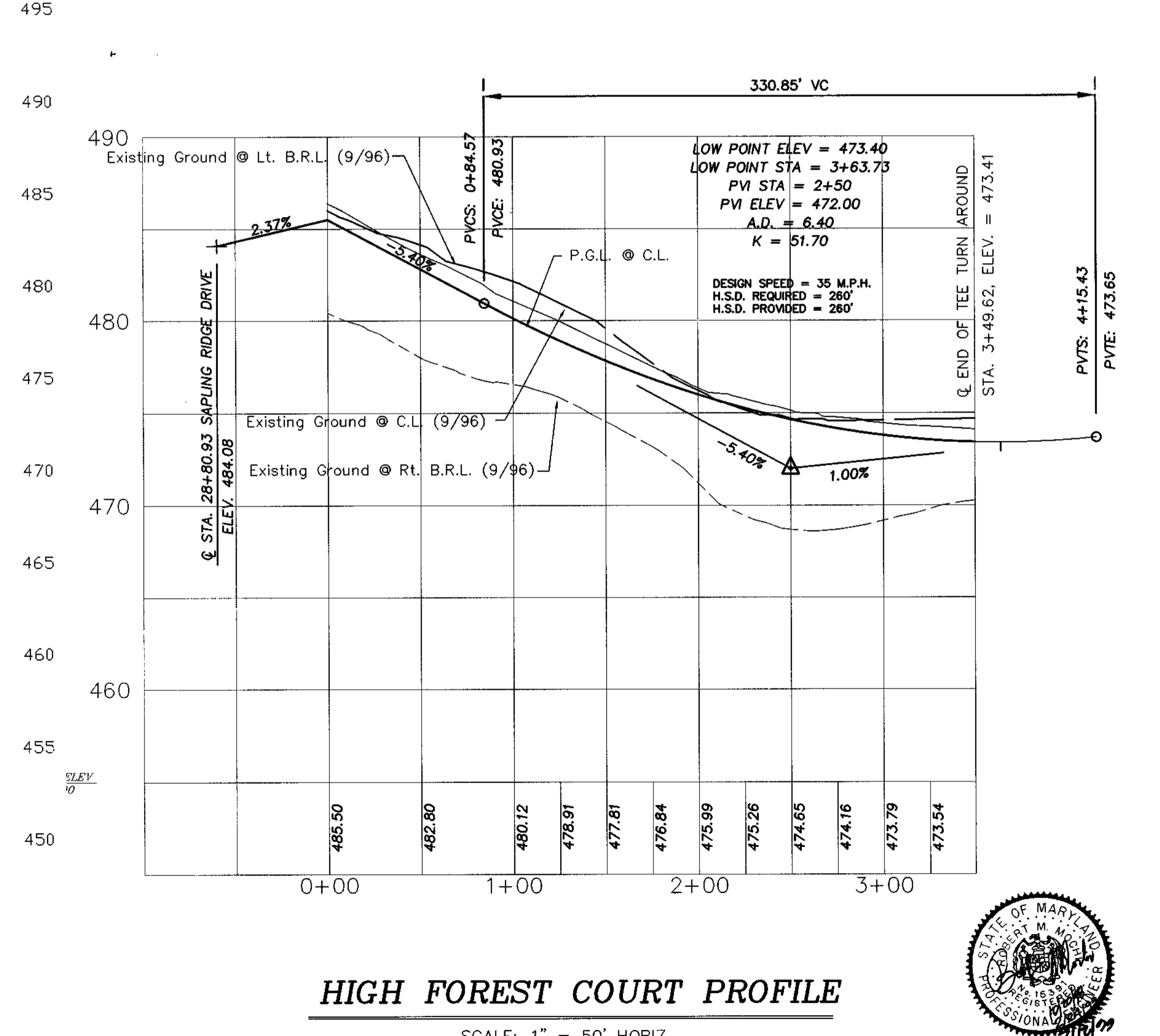
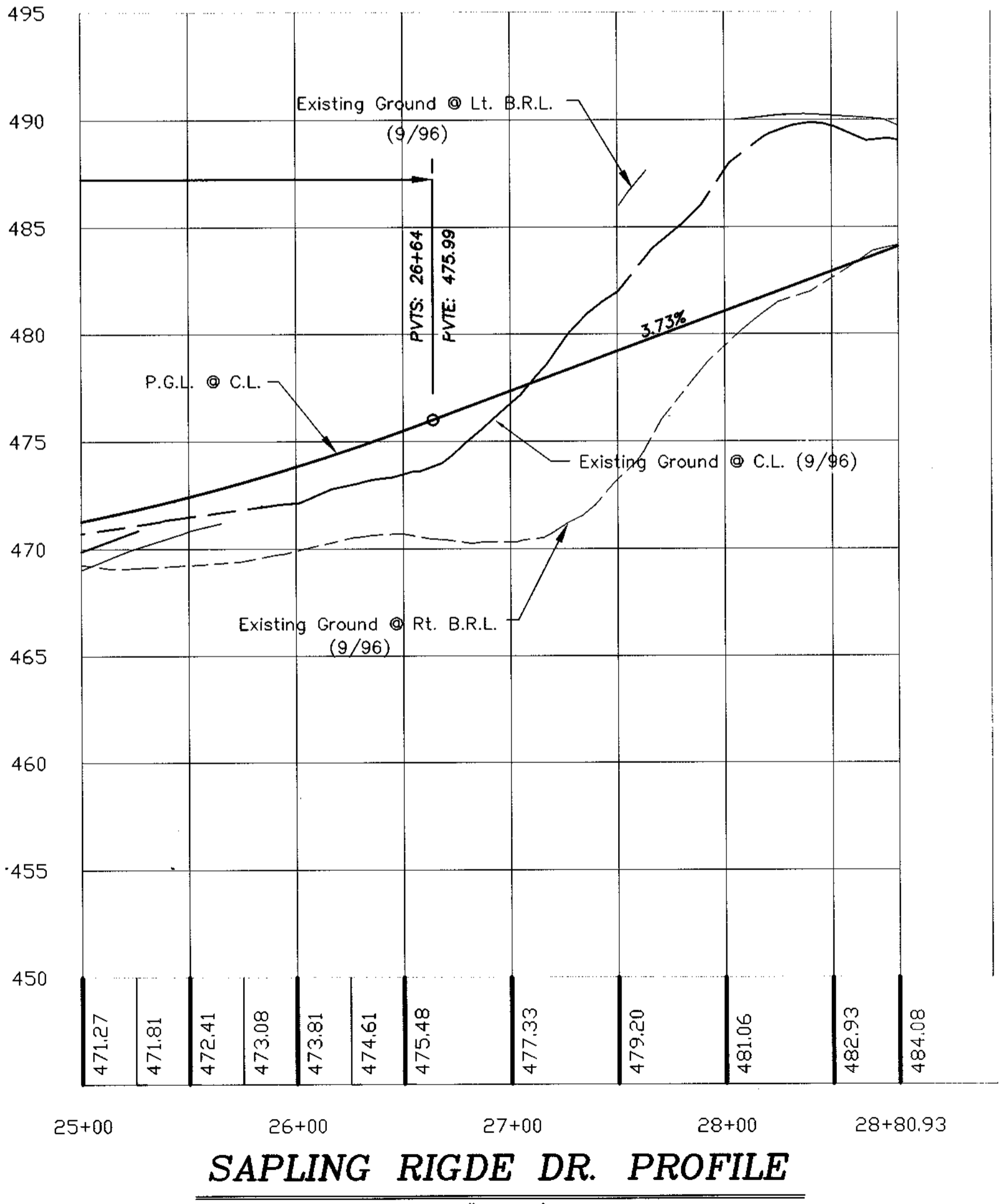
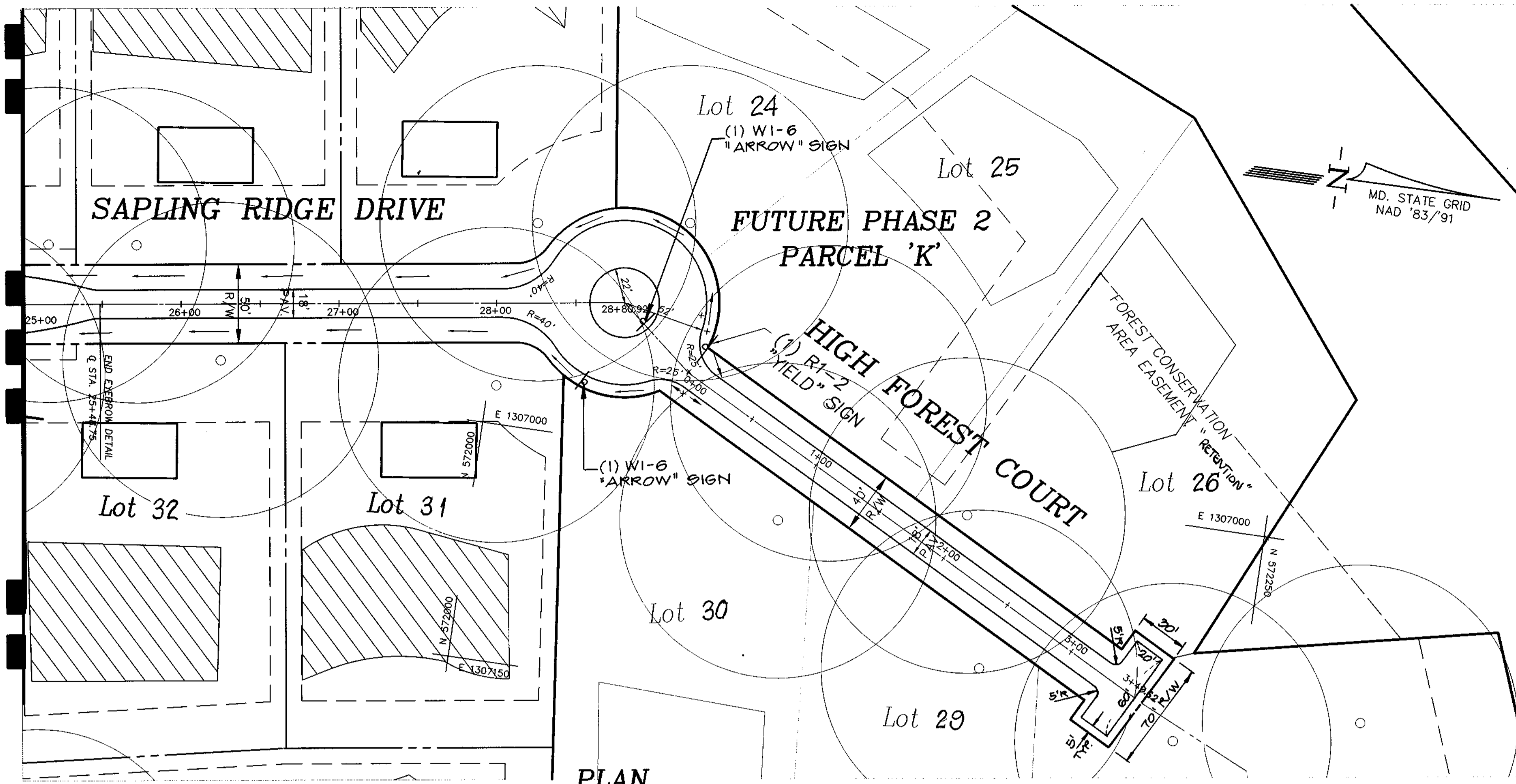
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|---|----------|------|--|
| Revised per P&Z Revisions | 07-12-98 | Date | |
| Submitted Original to Co. for Signature | 07-24-98 | | |
| Revised Submittal to H.C. D.P.Z. | 01-22-99 | | |
| 1st Submittal to H.C. D.P.Z. for Review | 10-22-98 | | |
| | 06-98 | | |

HIGH FOREST ESTATES
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MD.
SAPLING RIDGE DRIVE PLAN AND PROFILE

R.M. MOCHI GROUP, INC.
 1020 A St. Beltsville, Md.
 Beltsville, Md. 21704-3706
 (301) 965-8669
 Fax: (301) 965-3171



MATCH LINE SEE SHEET 3 OF 24



APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Danaher 3/24/99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

W.D. [Signature] 3/25/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

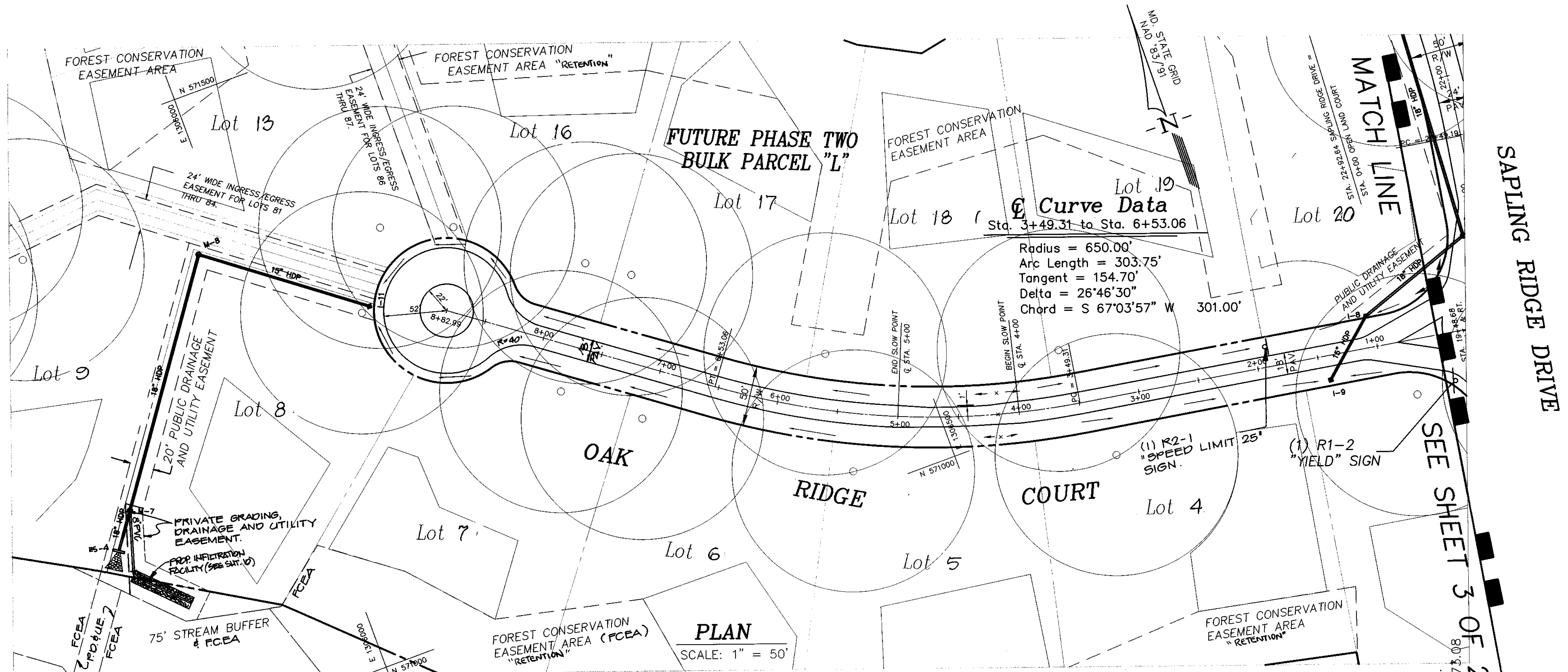


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| PROJECT | 96019-13 | DATE | 04-98 |
| ILLUSTRATION | K.M.B. | ENGINEERING | M.W.Z. |
| SCALE | AS SHOWN | APPROVAL | R.M.M. |

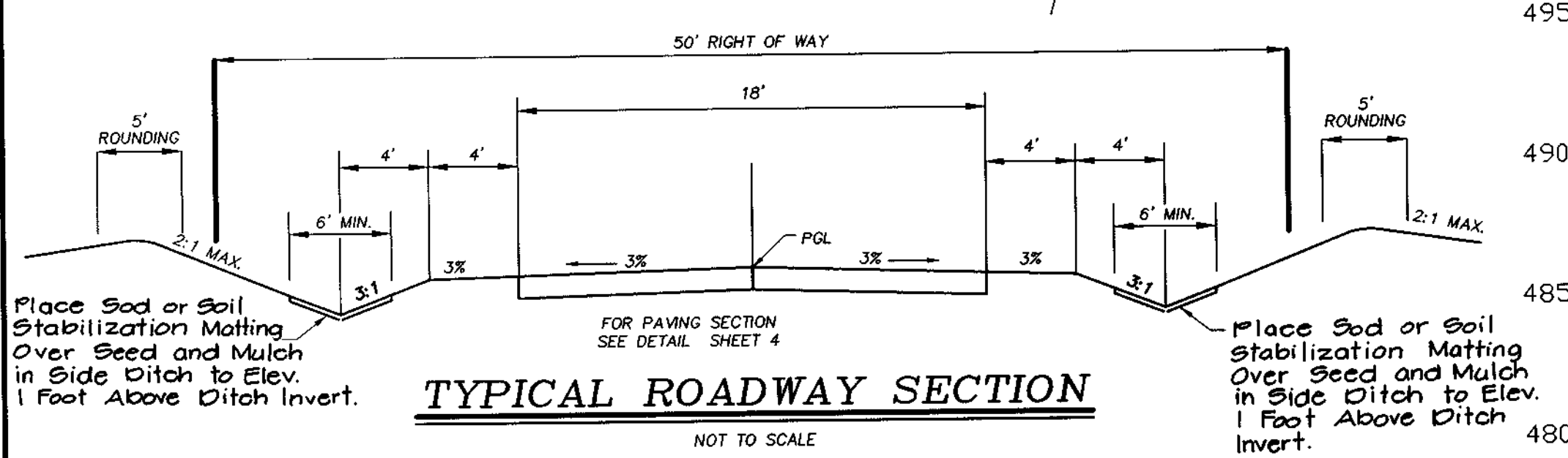
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|-----|----------|--|
| NO. | DATE | DESCRIPTION |
| 4 | 07-12-99 | REVISED PER FLAT REVISIONS |
| 3 | 02-24-99 | Submitted Original Plans to Co. for Signature |
| 2 | 01-09-99 | REVISED SUBMITTAL TO HO. CO. DPZ |
| 1 | 10-22-98 | REVISED SUBMITTAL TO HOWARD CO. DPZ FOR REVIEW |
| 0 | 08-08-98 | 1ST SUBMITTAL TO HO. CO. DPZ FOR REVIEW |

HIGH FOREST ESTATES
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MD.
 SAPLING RIDGE DR., HIGH FOREST CT. PLAN AND PROFILE

R.M. MOCHI GROUP, P.C.
P.O. Box 10, 10
New Market, MD 21774-0010
(301) 865-5666
Fax: (301) 865-5111

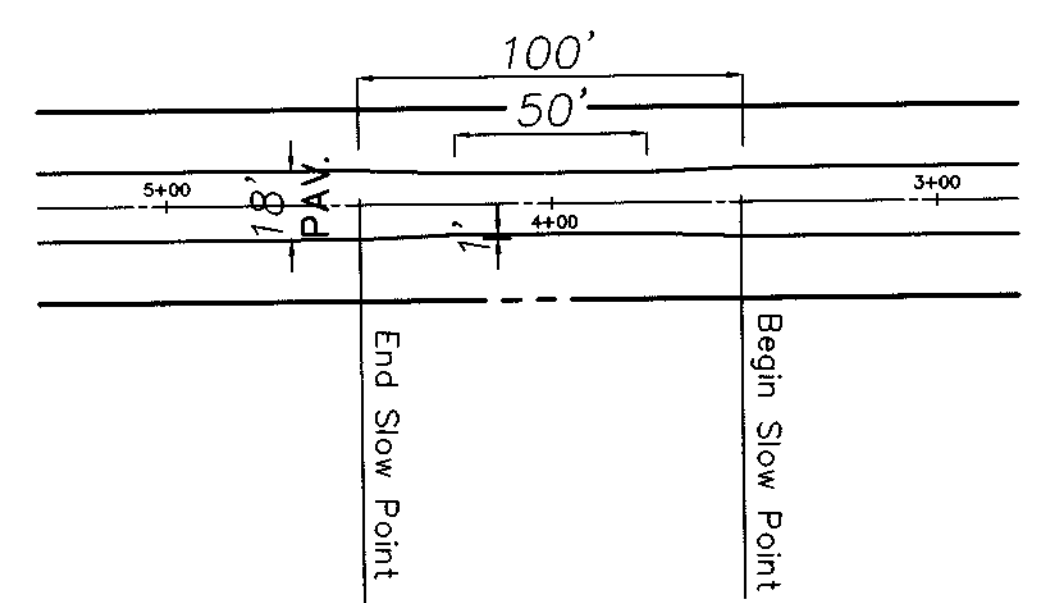


PLAN
SCALE: 1" = 50'



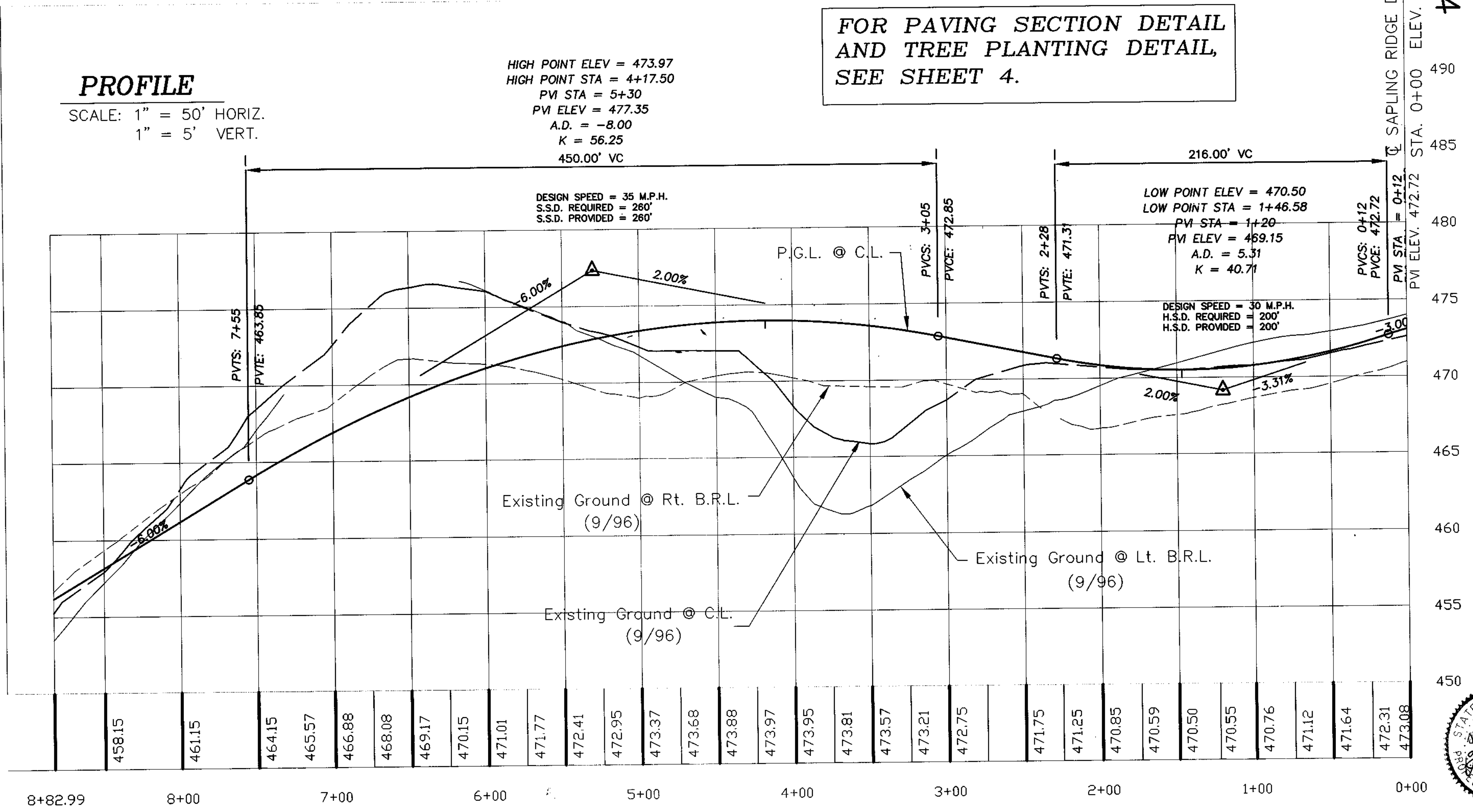
TYPICAL ROADWAY SECTION

NOT TO SCALE
FOR OAK RIDGE COURT
STA. 0+00 TO STA. 8+82.99
RESIDENTIAL ACCESS PLACE (PUBLIC RC & RR)
HOWARD COUNTY STANDARD FIGURE 2.09B
OPEN SECTION (RURAL) ("RC" ZONING DISTRICT)
MINIMUM DESIGN SPEED - 25 MPH



18' Paving Slow Point Detail

Scale: 1"=50'



PROFILE

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

FOR PAVING SECTION DETAIL
AND TREE PLANTING DETAIL,
SEE SHEET 4.

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3/28/99
CHIEF, BUREAU OF HIGHWAYS
DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 3/28/99
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE

Mike Damman 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE



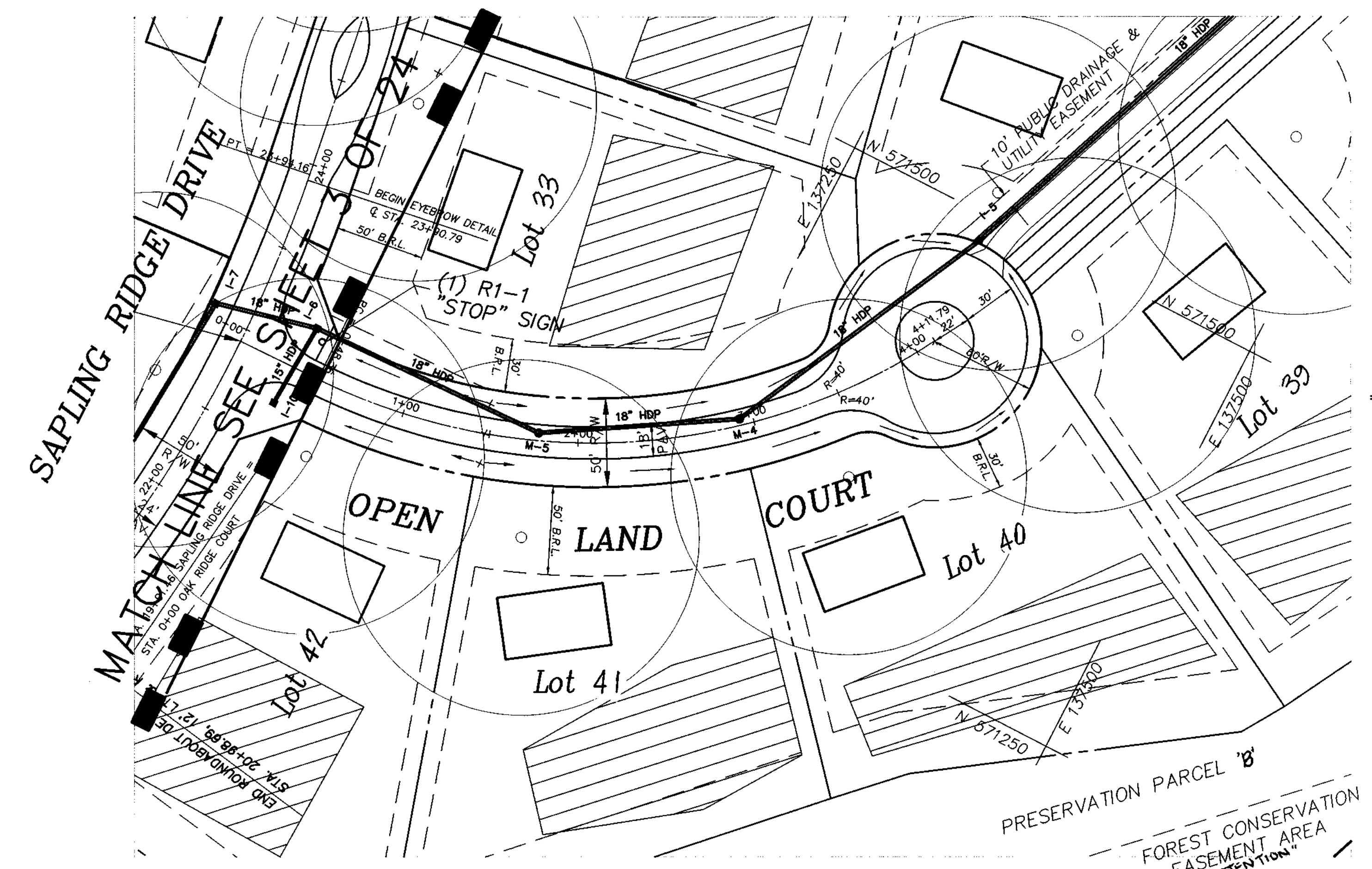
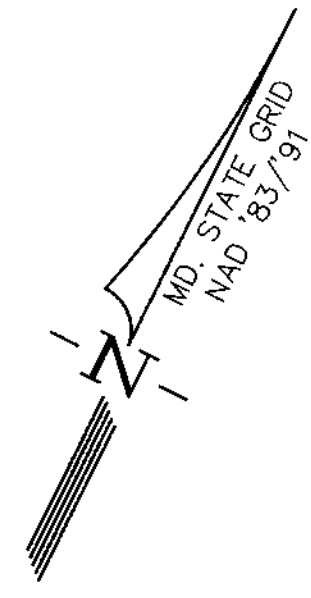
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|--------------|----------|-------------|--------|
| project | 98019-13 | date | 04-98 |
| illustration | K.M.B. | engineering | M.W.Z. |
| scale | AS SHOWN | approval | R.M.M. |

| | | |
|-----|-------------|------|
| no. | description | date |
| 1 | REVISIONS | |
| 2 | REVISIONS | |
| 3 | REVISIONS | |

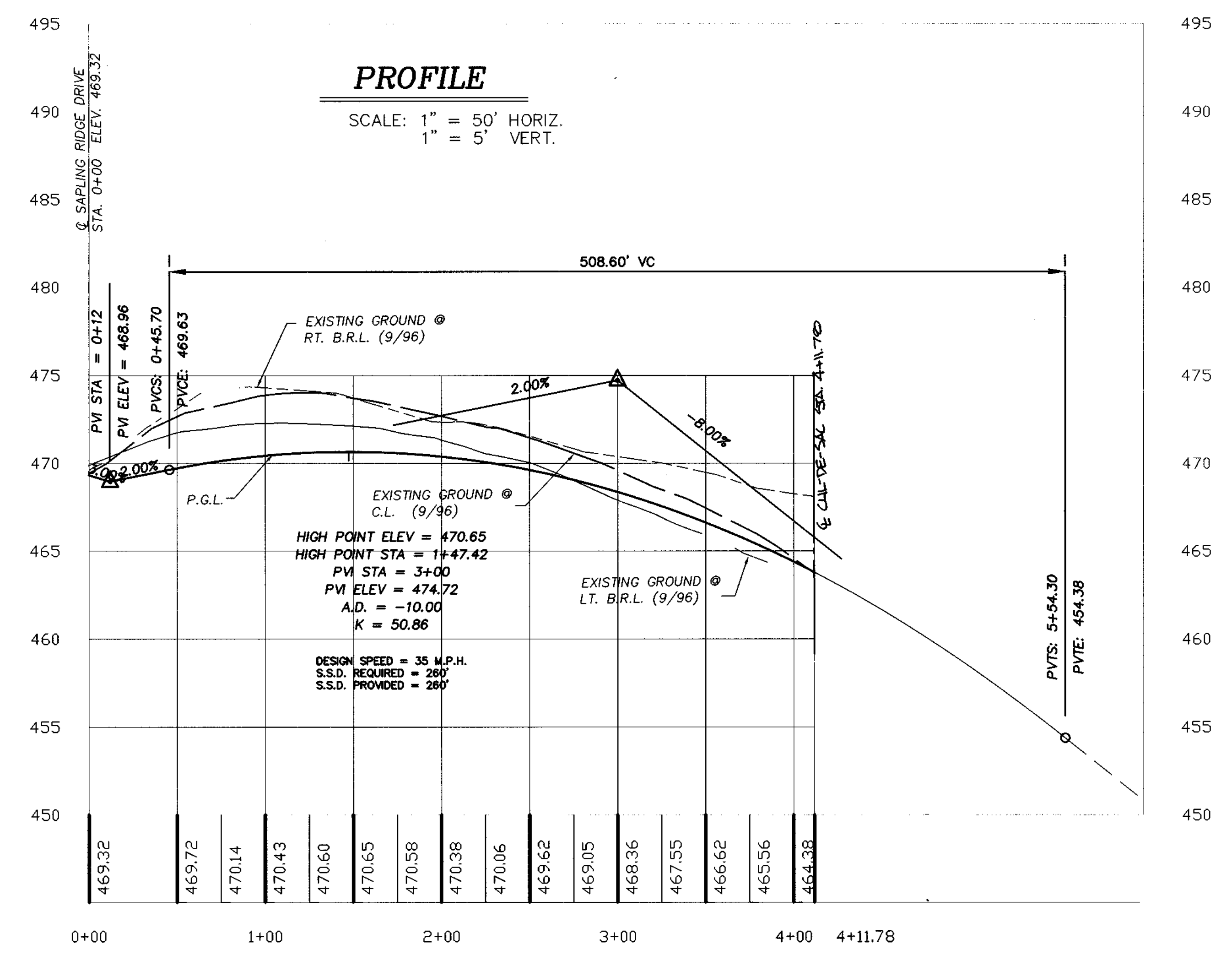
REVISIONS
1. REVISIONS
2. REVISIONS
3. REVISIONS

HOWARD COUNTY, MD.
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
OAK RIDGE DRIVE PLAN AND PROFILE

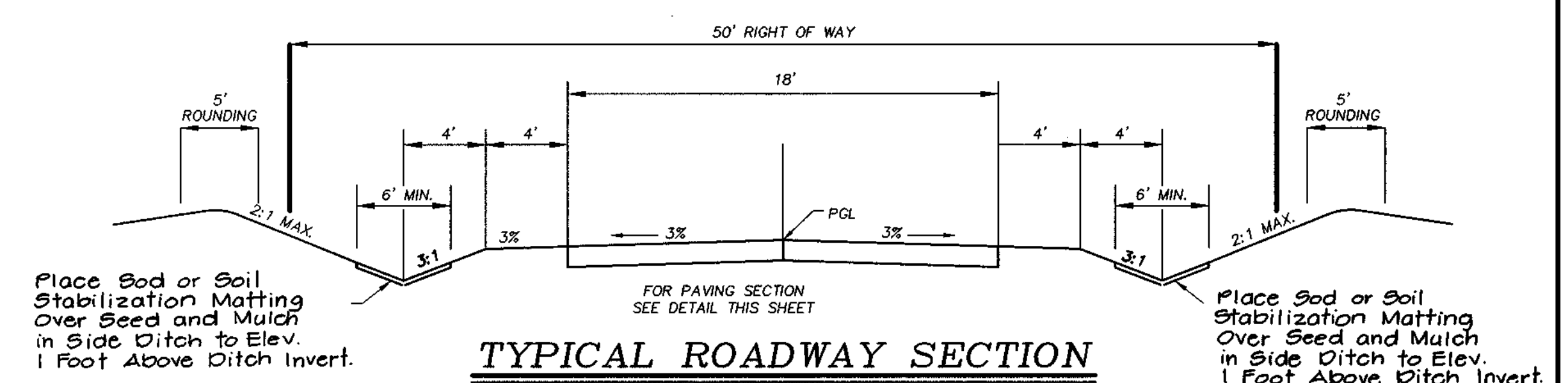
RM MOCHI GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
(301) 865-9838
Fax: (301) 865-5111



PLAN
SCALE: 1" = 50'

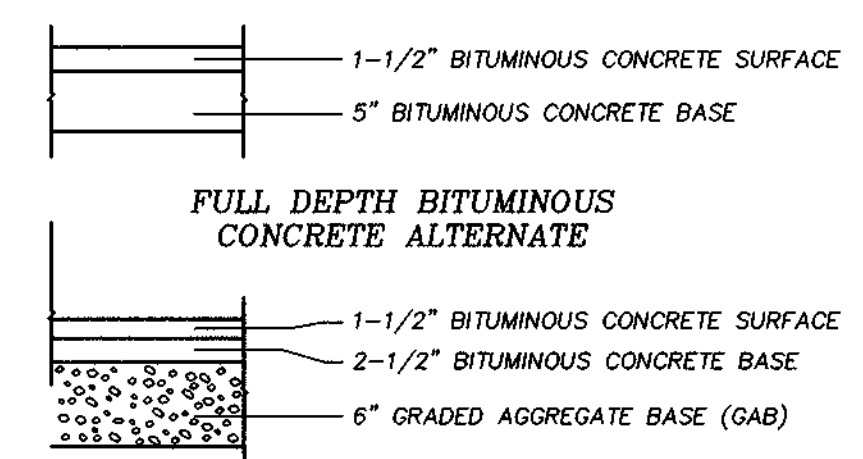


PROFILE
SCALE: 1" = 50' HORIZ.
1" = 5' VERT.

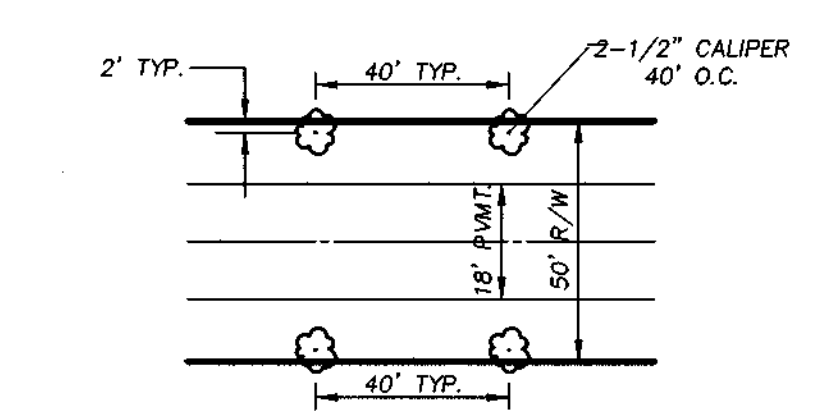


Curve Data
Sta. 0+48.36 to Sta. 4+11.79
Radius = 350.00'
Arc Length = 363.43'
Tangent = 200.02'
Delta = 59°29'37"
Chord = N 59°11'40" 347.32'

TYPICAL ROADWAY SECTION



PAVING SECTION P-2



TREE PLANTING DETAIL

MEDIUM TREES - 2-1/2" CALIPER OR LARGER
NOT TO SCALE
SEE LANDSCAPE PLAN FOR STREET TREES

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 2/28/99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mark Danner 2/28/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



| | | | |
|--------------|----------|-------------|--------|
| project | 98019-13 | date | 04-98 |
| illustration | K.M.B. | engineering | M.W.Z. |
| scale | AS SHOWN | approval | R.M.M. |

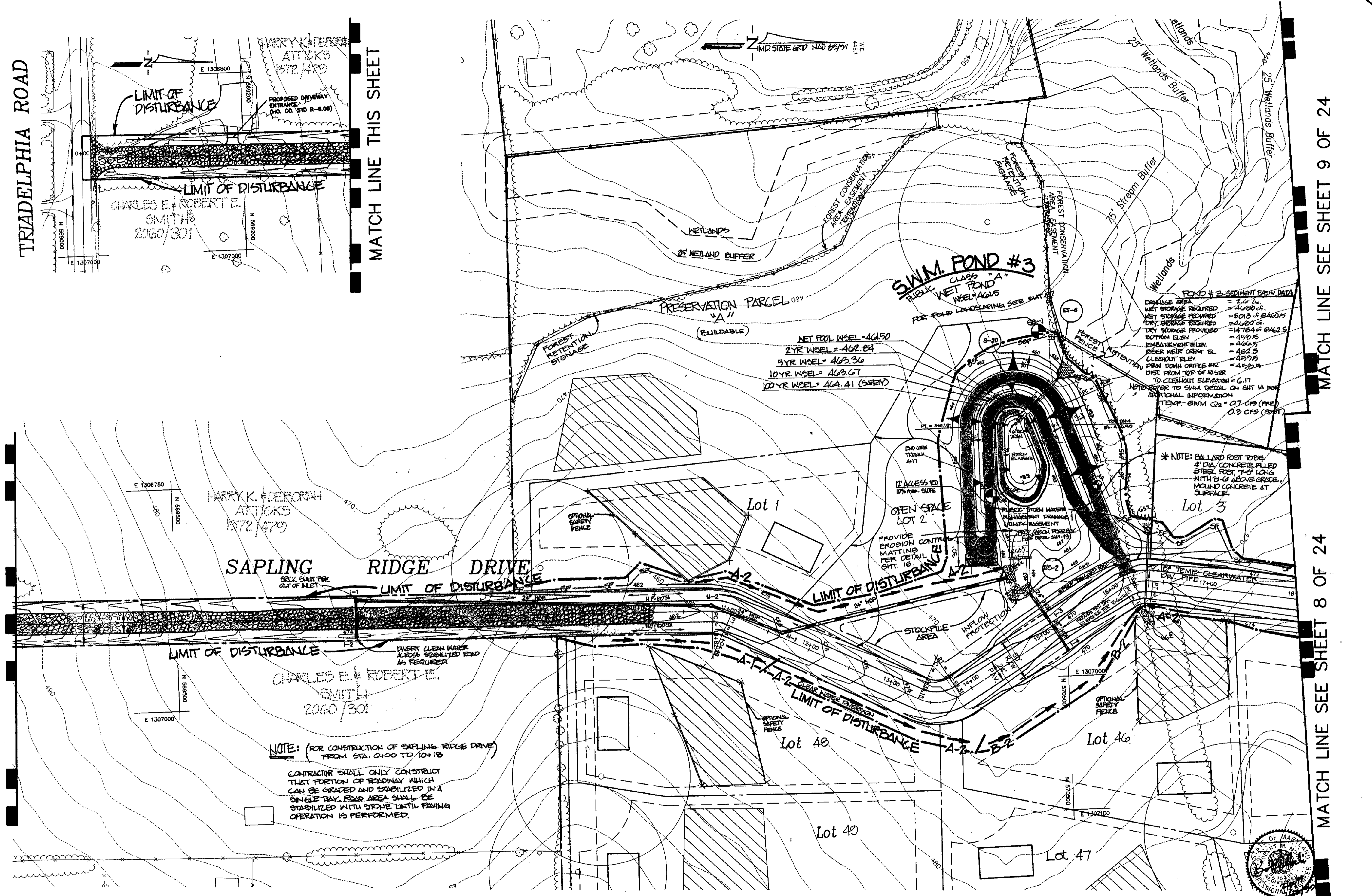
| | | | |
|-----|--|-----------|------|
| 4 | REVISIONS PER PLAN REVISIONS | 07-12-99 | date |
| 3 | Submitted Original Mylar to Co. for Signature | 02-24-99 | |
| 2 | REVISSED SUBMITTAL TO HO. CO. DIR. Z. | 01-09 | |
| 1 | REVISSED SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW | 10-22-98 | |
| 0 | 1ST SUBMITTAL TO HO. CO. D.P.Z. FOR REVIEW | 09-28 | |
| NO. | DESCRIPTION | REVISIONS | |

HIGH FOREST ESTATES
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MD.
OPEN LAND COURT PLAN AND PROFILE

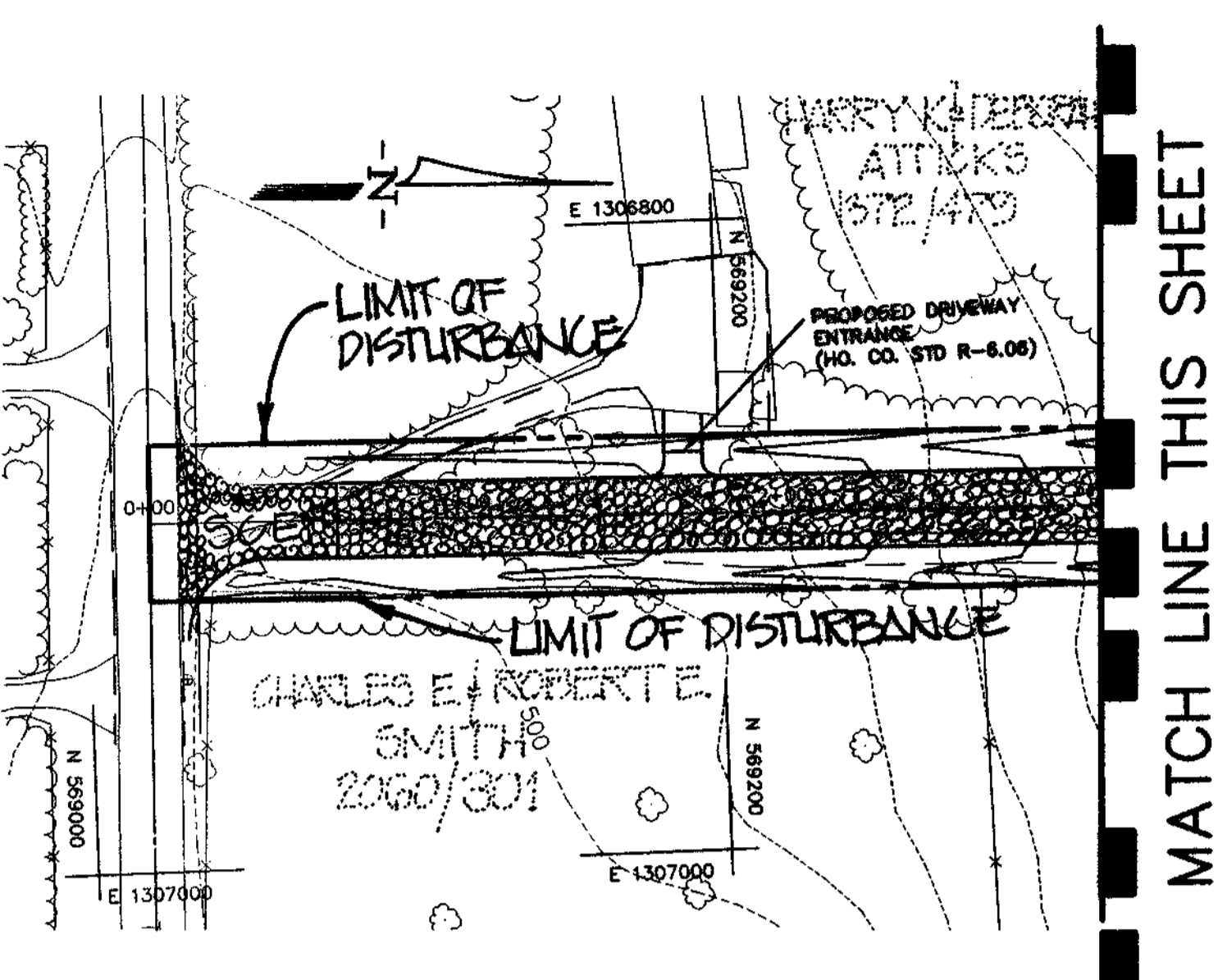
R.M. MOCH GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
10730 A Old National Pike
Jomarie, MD 21784-5706
(301) 865-6658
Fax: (301) 865-3111

A:\GIS\PROJECTS\198019-00\100\DATA\SEC04RAGE\0001.DWG

MATCH LINE THIS SHEET



TRIADELPHIA ROAD



MATCH LINE THIS SHEET

MATCH LINE SEE SHEET 9 OF 24

MATCH LINE SEE SHEET 8 OF 24

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hamilton 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mike Perkinson 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Andrew M. Donohue 3-8-99
CHIEF, BUREAU OF HIGHWAYS DATE

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

Shirley Selby 2/24/99
HOWARD SOIL CONSERVATION DISTRICT DATE

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

Cheryl Strain/cs 2/24/99
USDA - NATIONAL RESOURCES CONSERVATION SERVICE DATE

DEVELOPER'S CERTIFICATE
I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

Charles A. Sharp 6-70-98
Signature of Developer DATE

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.

Robert M. Nochi 10/20/98
Robert M. Nochi, P.E. DATE

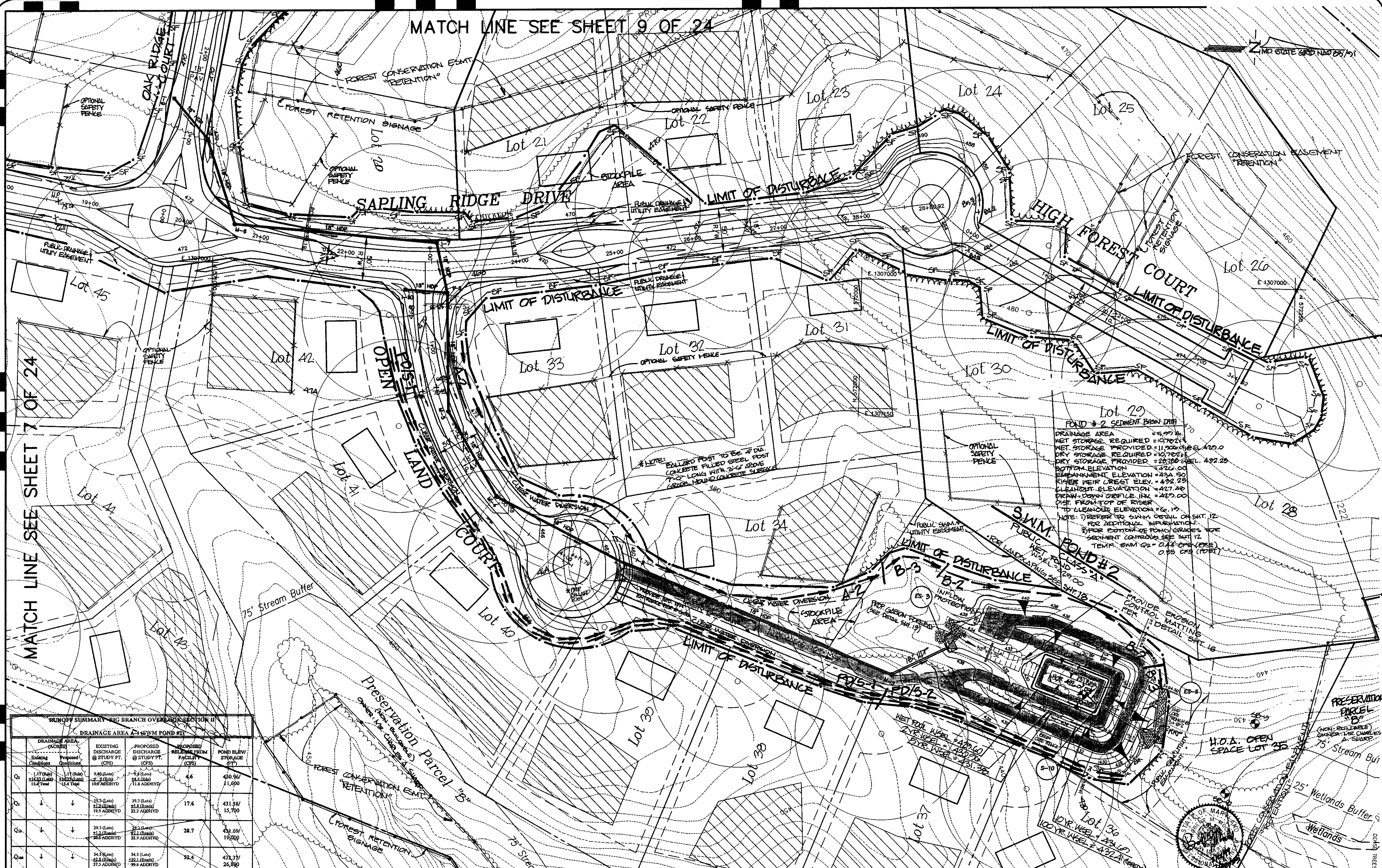
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| date | 05-98 |
| project | 98018.13 |
| illustration | CE-1 / K.M.B. |
| scale | 1" = 20' |
| approval | M.W.Z. |
| | R.M.M. |

| | |
|-------------|----------------------------|
| date | 02-24-99 |
| revisions | 1/1/99 |
| description | REVISED PER FLAT REVISIONS |
| no. | 1 |
| no. | 2 |
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| no. | 6 |
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| no. | 84 |
| no. | 85 |
| no. | 86 |
| no. | 87 |
| no. | 88 |
| no. | 89 |
| no. | 90 |
| no. | 91 |
| no. | 92 |
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| no. | 95 |
| no. | 96 |
| no. | 97 |
| no. | 98 |
| no. | 99 |
| no. | 100 |

HOWARD COUNTY
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
Grading and Sediment Control Plan

R.M. NOCHI GROUP, INC.
P.O. Box 19, Mt. Airy, NC 27174-0019
Tel: (703) 885-5885
Fax: (703) 885-5911

MATCH LINE SEE SHEET 9 OF 24



RUNOFF SUMMARY - BIG BRANCH OVER SECT 12

DRAINAGE AREA A-1 (SWM POND #2)

| DRAINAGE AREA (ACRES) | EXISTING DISCHARGE @ STUDY PT. (CFS) | PROPOSED DISCHARGE @ STUDY PT. (CFS) | PROPOSED RETENTION FROM FACILITY (CFS) | POND BLW/ STORAGE (FT³) |
|-----------------------------|---|--|--|-------------------------|
| 1.17 (Peak) 15.4 (Total) | 3.80 (Peak) 0.0 (Total) 10.6 (ADRYD) | 3.8 (Peak) 0.0 (Total) 11.8 (ADRYD) | 4.6 | 430,460 11,600 |
| 1.17 (Peak) 15.4 (Total) | 1.17 (Peak) 0.0 (Total) 14.2 (ADRYD) | 19.3 (Peak) 21.2 (Total) 19.9 (ADRYD) | 17.6 | 431,980 15,700 |
| 1.17 (Peak) 15.4 (Total) | 2.93 (Peak) 0.0 (Total) 12.4 (ADRYD) | 28.3 (Peak) 31.1 (Total) 22.9 (ADRYD) | 28.7 | 431,690 19,000 |
| 1.17 (Peak) 15.4 (Total) | 54.5 (Peak) 22.8 (Total) 31.7 (ADRYD) | 54.5 (Peak) 210.1 (Total) 99.8 (ADRYD) | 52.4 | 432,370 26,900 |

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hamilton 2/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT

Chris Dunning 2/25/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Andrew M. Jankovic 3-8-99
CHIEF, BUREAU OF HIGHWAYS

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

Mark... 2/24/99
HOWARD SOIL CONSERVATION DISTRICT

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

Clayton... 2/24/99
USDA - NATIONAL RESOURCES CONSERVATION SERVICE

DEVELOPER'S CERTIFICATE
I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance of a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

Charles G. Skop 6-10-98
Signature of Developer

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.

Robert M. Mochl 10/20/98
Robert M. Mochl, P.E.

| | | | |
|--------------|---------------|-------------|--------|
| Project | 96019.13 | Date | 05-98 |
| Illustration | GEK1 / K.M.B. | Engineering | M.W.Z. |
| Scale | 1" = 50' | Approval | R.M.M. |

| | | | |
|--|----------|-----------|--|
| Revised per flat revisions. | 07-12-98 | Date | |
| Submitted Original to H.S.C.D. for signature | 02-24-99 | Signature | |
| Revised Original to H.S.C.D. for review | 01-20-98 | Signature | |
| Revised Original to H.S.C.D. for review | 01-20-98 | Signature | |
| Revised Original to H.S.C.D. for review | 01-20-98 | Signature | |

HOWARD COUNTY
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
Grading and Sediment Control Plan

R.M. MOCHL GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
Tel: (301) 656-5888
Fax: (301) 656-5911



RUNOFF SUMMARY - BIG BRANCH OVERLOOK SECTION II

| DRAINAGE AREA (ACRES) | EXISTING DISCHARGE @ STUDY PT. (CFS) | | PROPOSED DISCHARGE @ STUDY PT. (CFS) | | PROPOSED RELEASE FROM FACILITY (CFS) | POND REW. STORAGE (FT) |
|-----------------------|---|---|--|--|--------------------------------------|--|
| | Existing Conditions | Proposed Conditions | Existing Conditions | Proposed Conditions | | |
| Q ₁ | 0.35 (Peak) 21.4 (1.0hr) 1.80 Total | 0.35 (Peak) 21.4 (1.0hr) 1.80 Total | 1.3 (Peak) 12.2 (1.0hr) 1.3 ADDHYD | 1.7 (Peak) 12.2 (1.0hr) 1.4 ADDHYD | N/A | Overcompensation provided in SWM Pond #3 |
| Q ₂ | ↓ | ↓ | 2.6 (Peak) 2.6 (1.0hr) 2.7 ADDHYD | 3.0 (Peak) 2.6 (1.0hr) 4.6 ADDHYD | ↓ | ↓ |
| Q ₃ | ↓ | ↓ | 3.8 (Peak) 3.8 (1.0hr) 4.6 ADDHYD | 3.8 (Peak) 3.8 (1.0hr) 4.6 ADDHYD | ↓ | ↓ |
| Q ₄ | ↓ | ↓ | 7.1 (Peak) 62.7 (1.0hr) 7.1 ADDHYD | 7.1 (Peak) 62.7 (1.0hr) 7.1 ADDHYD | ↓ | ↓ |

DRAINAGE AREA C-1 (SWM POND #3) & OVERCOMPENSATION FOR C-3

| DRAINAGE AREA (ACRES) | EXISTING DISCHARGE @ STUDY PT. (CFS) | | PROPOSED DISCHARGE @ STUDY PT. (CFS) | | PROPOSED RELEASE FROM FACILITY (CFS) | POND REW. STORAGE (FT) |
|-----------------------|--|--|---|---|---|------------------------|
| | Existing Conditions | Proposed Conditions | Existing Conditions | Proposed Conditions | | |
| Q ₁ | 1.80 (Peak) 21.2 (1.0hr) 19.80 Total | 1.00 (Peak) 18.2 (1.0hr) 19.80 Total | 10.7 (Peak) 21.2 (1.0hr) 10.9 acwtage 21.3 (1.0hr) 11.7 acwtage | 10.7 (Peak) 21.2 (1.0hr) 12.3 acwtage 21.3 (1.0hr) 11.7 acwtage | 5.1 (Peak #3) 22.8 (1.0hr) 22.8 ADDHYD | 462.84/ 11,100 |
| Q ₂ | ↓ | ↓ | 22.6 (Peak) 2.0 (1.0hr) 2.8 acwtage 2.8 acwtage 2.8 ADDHYD | 22.6 (Peak) 2.0 (1.0hr) 2.9 acwtage 2.9 acwtage 2.9 ADDHYD | 17.5 (Peak #3) 22.8 (1.0hr) 22.8 ADDHYD | 463.36/ 20,000 |
| Q ₃ | ↓ | ↓ | 35.1 (Peak) 3.4 (1.0hr) 3.8 acwtage 3.8 acwtage 3.8 ADDHYD | 35.1 (Peak) 3.4 (1.0hr) 3.8 acwtage 3.8 acwtage 3.8 ADDHYD | 31.3 (Peak #3) 25.6 (1.0hr) 25.6 ADDHYD | 463.67/ 24,500 |
| Q ₄ | ↓ | ↓ | 67.9 (Peak) 3.1 (1.0hr) 3.8 acwtage 3.8 acwtage 3.8 ADDHYD | 67.9 (Peak) 3.1 (1.0hr) 3.8 acwtage 3.8 acwtage 3.8 ADDHYD | 63.3 (Peak #3) 25.7 (1.0hr) 25.7 ADDHYD | 464.30/ 35,200 |

SEDIMENT TRAP #1
 SEDIMENT TRAP TYPE #1
 INITIAL DRAINAGE AREA = 1.47 AC
 FINAL DRAINAGE AREA = 1.40 AC
 REQUIRED STORAGE = 7720 GAL
 STORAGE PROVIDED = 7820 GAL (SWM POND #3 @ ELEV. 44.00, 30.97, DRY)
 BOTTOM DIMENSIONS = SEE PLAN
 STORAGE (DEPTH) = 2.00
 BOTTOM ELEV. = 240.00
 RIDGE CREST ELEV. = 442.00
 EN. GRAVITY @ EMBANKMENT = 400/50
 CLEANOUT ELEVATION = 240.75
 SIDE SLOPES = 2:1 MAX (SEE PLAN)

Preservation Parcel "B"
 (Non-Buildable)
 Owner: Mr. Charles A. Sharp
 7.884 AC.



APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Cindy Hammita 3/23/99
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
 Andrew M. Daniels 3-4-99
 CHIEF, BUREAU OF HIGHWAYS
 DATE

APPROVED:
 THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
 [Signature] 2/26/99
 HOWARD SOIL CONSERVATION DISTRICT
 DATE

APPROVED:
 THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
 [Signature] 2/26/99
 USDA - NATIONAL RESOURCES CONSERVATION SERVICE
 DATE

DEVELOPER'S CERTIFICATE
 I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.
 Charles A. Sharp 6-10-98
 Signature of Developer DATE

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] 10/29/98
 Robert M. Mochl, P.E. DATE

| | | | |
|--------------|-----------|-------------|--------|
| project | 98018.13 | date | 10-98 |
| illustration | GM/K.M.B. | engineering | M.W.Z. |
| scale | 1" = 60' | approval | R.M.M. |

| | | | |
|---|-----------|------|--|
| REVISED PER PLAN REVISIONS | 07-12-99 | date | |
| Submitted Original Mylar to Co. for Signature | 08-24-99 | | |
| REVISED SUBMITTAL TO HO. CO. FOR REVIEW | 07/26/98 | | |
| REVISED SUBMITTAL TO HO. CO. FOR REVIEW | | | |
| 1ST SUBMITTAL TO HO. CO. FOR REVIEW | | | |
| description | revisions | | |

HOWARD COUNTY
 ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
 Grading and Sediment Control Plan.

R.M. MOCHL GROUP, P.C.
 P.O. Box 10
 New Market, MD 21774-0010
 10290 & Old National Pike
 (301) 865-5859
 Fax: (301) 865-5111

| STORM DRAIN STRUCTURE SCHEDULE | | | | | |
|--------------------------------|--------------------------------|---------------|----------------|---------|--|
| No. | Type | Location | | Remarks | |
| I-1 | Precast Open End Grate | STA. 6+81.99 | O/S 20.00'L | SD 4.36 | |
| I-2 | Precast Open End Grate | STA. 6+81.99 | O/S 20.00'R | SD 4.36 | |
| I-3 | Precast Open End Grate | STA. 15+14.00 | O/S 23.27 R | SD 4.36 | |
| I-4 | Precast Open End Grate | STA. 15+14.00 | O/S 22.93 L | SD 4.36 | |
| I-5 | Precast Open End Grate | N 571485.37 | E 1307336.47 | SD 4.36 | |
| I-6 | Precast Open End Grate | STA. 0+35.22 | O/S 25.45 L | SD 4.36 | |
| I-7 | Precast Open End Grate | STA. 23+05.97 | O/S 21.87 L | SD 4.36 | |
| I-8 | Precast Open End Grate | STA. 1+04.69 | O/S 26.28 R | SD 4.36 | |
| I-9 | Precast Open End Grate | STA. 1+42.91 | O/S 20.12 L | SD 4.36 | |
| I-10 | Precast Open End Grate | STA. 0+31.88 | O/S 22.99 R | SD 4.36 | |
| I-11 | Precast Open End Grate | N 571283.87 | E 1306090.93 | SD 4.36 | |
| M-1 | 4'0" Precast Manhole | STA. 11+65.18 | O/S 5.31 L | G5.12 | |
| M-2 | 4'0" Precast Manhole | STA. 10+81.75 | O/S 6.16 L | G5.12 | |
| M-3 | 4'0" Precast Manhole | N 571796.58 | E 1307455.65 | G5.12 | |
| M-4 | 4'0" Precast Manhole | STA. 2+92.31 | O/S 3.58 L | G5.12 | |
| M-5 | 4'0" Precast Manhole | STA. 1+77.46 | O/S 4.32 L | G5.12 | |
| M-6 | 4'0" Precast Manhole | STA. 20+68.02 | O/S 13.55 L | G5.12 | |
| M-7 | 4'0" Precast Manhole | N 571372.87 | E 1305974.07 | G5.12 | |
| M-8 | 4'0" Precast Manhole | N 571194.48 | E 1305847.32 | G5.12 | |
| ES-1 | Type "C" Endwall Circular Pipe | N 570433.69 | E 1306887.67 | SD 5.21 | |
| ES-2 | Type "C" Endwall Circular Pipe | N 570459.42 | E 1306905.67 | SD 5.21 | |
| ES-3 | Type "C" Endwall Circular Pipe | N 571059.79 | E 1307423.82 | SD 5.21 | |
| ES-4 | Type "C" Endwall Circular Pipe | N 571105.1972 | E 1305826.4757 | SD 5.21 | |

INTEGRATION CONSTRUCTION SPECIFICATIONS

TIMING: An infiltration trench shall not be constructed or placed in service until all of the contributing drainage area has been stabilized and approved by the responsible inspector.

TRENCH PREPARATION: Excavate the trench to the design dimensions. Excavated material shall be placed away from the trench sides to enhance trench wall stability. Large tree roots must be removed flush with the trench sides in order to prevent fabric puncturing or tearing during the installation procedure. The side walls of the trench shall be roughened where shales and sealed by heavy equipment.

FABRIC LAYDOWN: The filter fabric roll must be cut to the proper width prior to installation. The cut width must include sufficient material to maintain to trench perimeter. Irregularities and for a 6-inch minimum lap overlap. Place the fabric roll over the trench and unroll a sufficient length to allow placement of the fabric down into the trench. Stones or other protruding objects should be placed on the fabric at the edge of the trench to keep the lined trench open during windy periods. When overlaps are required between rolls, the upstream roll should lap a minimum of 2' over the downstream roll in order to provide a shingled effect. The overlap ensures fabric conformity and that the fabric conforms to the excavation surface during aggregate placement and compaction.

STONE - AGGREGATE PLACEMENT AND COMPACTION: The stone aggregate should be placed in lifts and compacted using plate compactors. As a rule of thumb, a maximum lift thickness of 12 inches is recommended. The compaction process ensures fabric conformity to the excavation sides, thereby reducing the potential for soil piping, fabric clogging, and settlement problems.

VEGETATIVE BUFFER: A vegetative buffer of at least 20' width, if possible, shall be used to intercept surface runoff from all impervious areas.

OBSERVATION WELL: The depth of the well at the time of installation will be clearly marked on the well cap.

INTEGRATION TRENCH AND MANHOLE M-7 MAINTENANCE SCHEDULE

- Remove silt from bottom of Manhole M-7 when accumulation exceeds 1.5'.
- Remove accumulated paper, trash and debris as necessary.
- Vegetation growing within the trench area is not allowed to exceed 18 inches in height at any time.
- Corrective maintenance is required any time the trench does not drain down completely within 96 hours (i.e., no standing water within the trench is allowed).
- Inspect observation well after every major storm event.

COVERINGS AND CURBS: Following the stone aggregate placement, the filter fabric shall be rolled over the stone aggregate to form a 6" minimum longitudinal lap. The desired fit over stone aggregate shall be placed over the lap during subsequent backfilling.

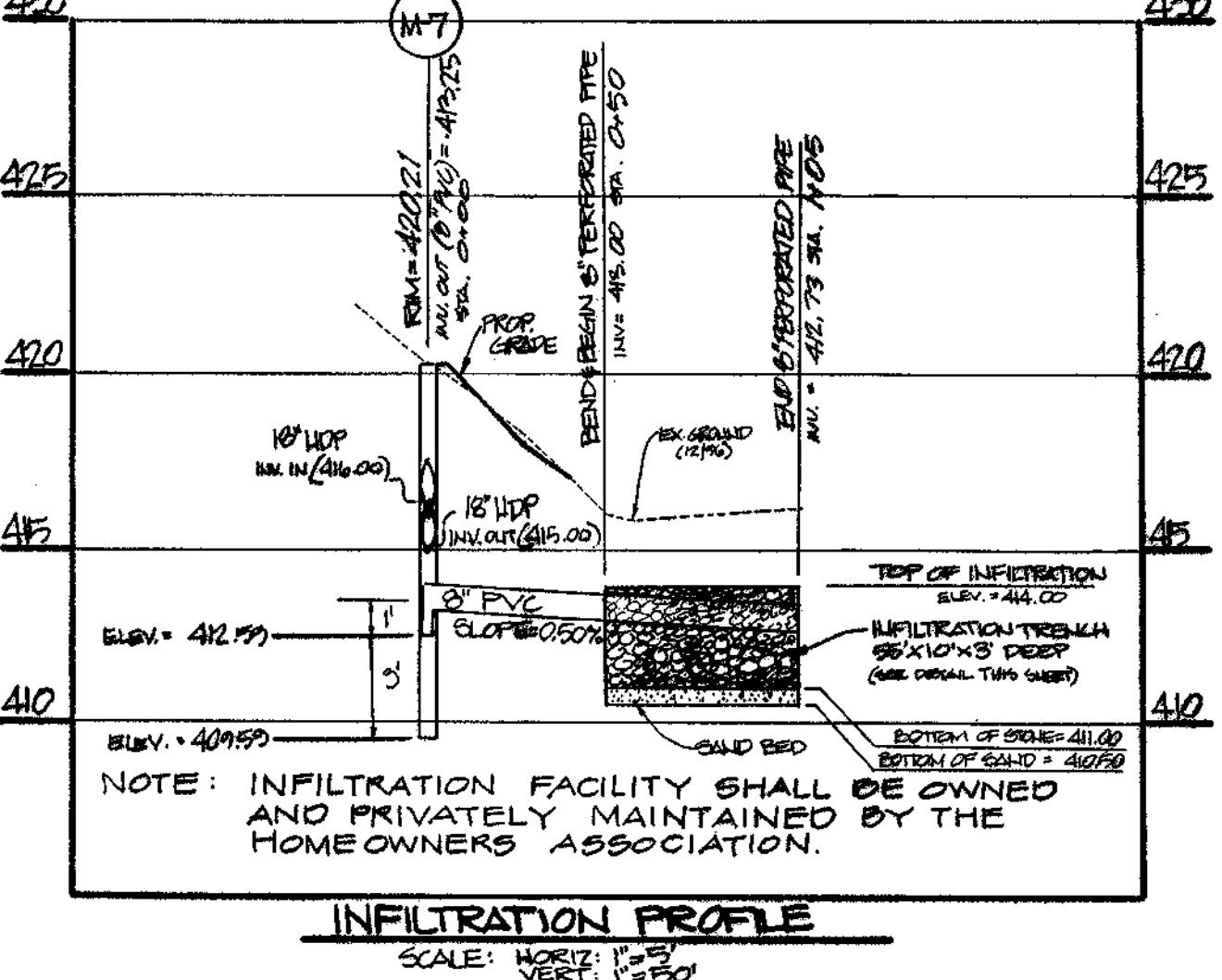
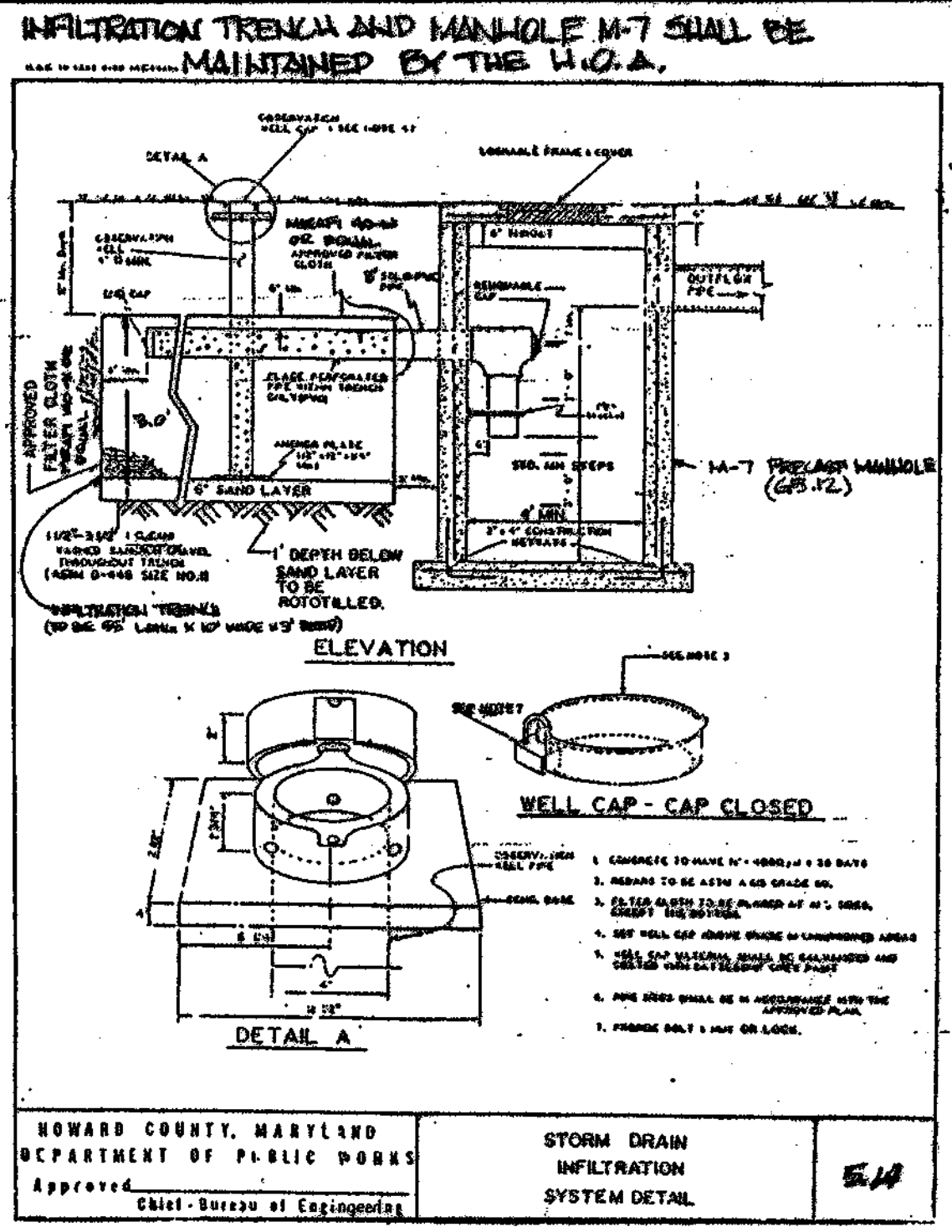
CONTAMINATION: Care should be exercised to prevent material or debris from accumulating with the stone aggregate. All contaminated stone aggregate shall be removed and replaced with uncontaminated stone aggregate.

VOIDS BEHIND FABRIC: Voids can be created between the fabric and excavation sides and shall be avoided. Stone or boulders or other objects from the trench walls to one space of such voids. Natural soils should be placed in these voids at the most convenient time during construction to ensure fabric conformity to the excavation sides. Soil piping, fabric clogging, and possible surface subsidence will be avoided by this remedial process.

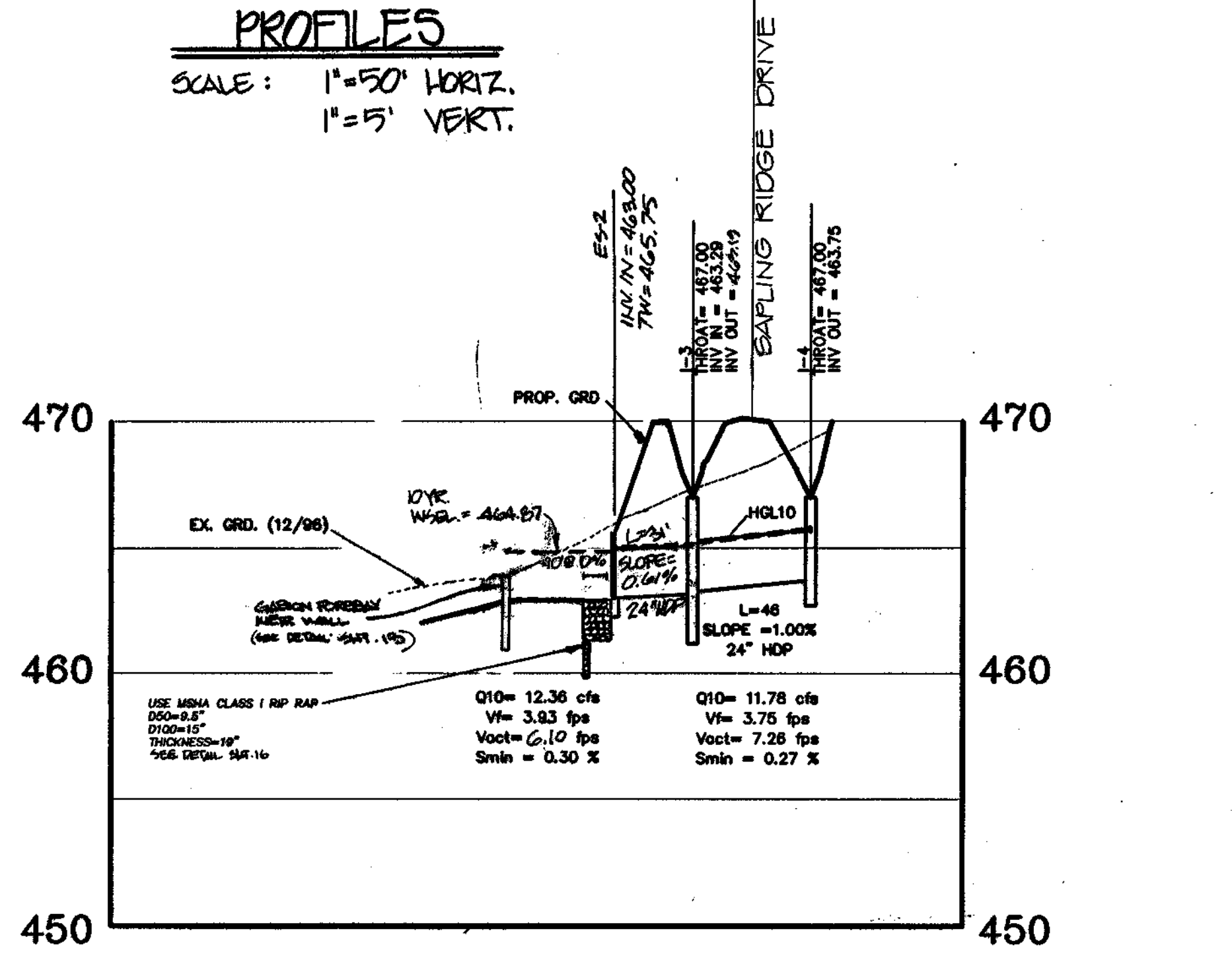
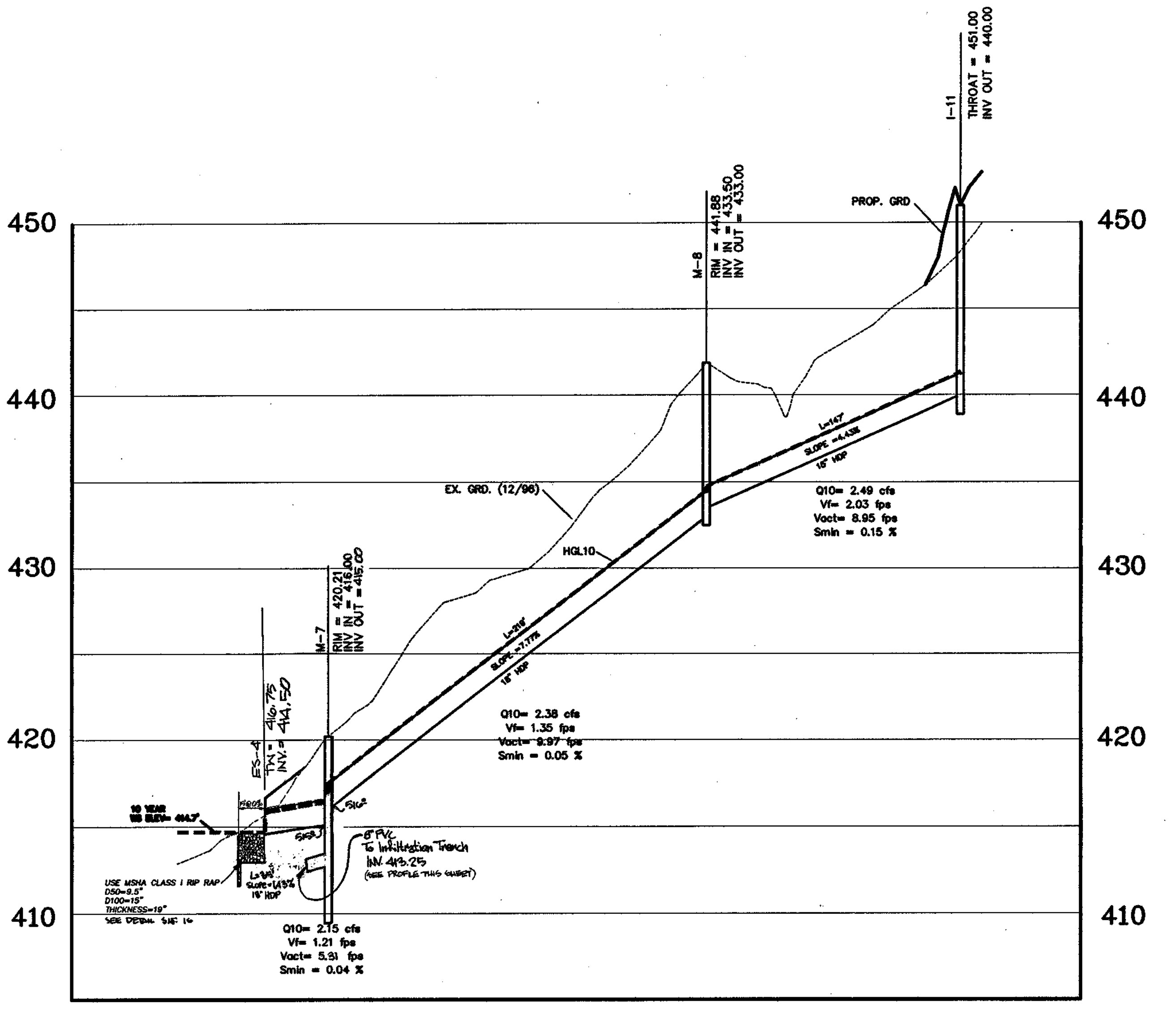
UNSTABLE EXCAVATION SIDES: Vertically excavated walls may be difficult to maintain in areas where the soil moisture is high or where soil cohesive or cohesionless soils predominate. These conditions may require taping back of the side slopes to maintain stability; trapezoidal rather than rectangular cross sections may result.

VEGETATIVE BUFFER: A vegetative buffer of at least 20' width, if possible, shall be used to intercept surface runoff from all impervious areas.

OBSERVATION WELL: The depth of the well at the time of installation will be clearly marked on the well cap.



| ELEV. | SOIL DESCRIPTION | DEPTH SCALE | BORING & SAMPLING NOTES |
|--------|--|-------------|---|
| 418.00 | Topsoil - 8" | 0.0 | Operator indicates soil test 0 to 2 ft. Plus below 3.0 feet. |
| 412.00 | Brown, moist, sandy SILT, trace rock fragments and mica (SM) | 2.5 | Note: All samples were recovered from the test pit excavation. Therefore, no SPT blow counts recorded, and all samples were recovered in a disturbed "D" condition. |
| 410.20 | Clayey brown, silty SAND, trace rock fragments and mica (SM) | 6.0 | Infiltration test set @ 6.0 ft |
| 407.20 | Clay, moist, silty sand, trace rock fragments and mica (SM) | 10.0 | Difficult to excavate below 11.0 ft |
| 405.20 | Bottom at 11.0 feet | 12.5 | |
| | | 16.0 | |
| | | 17.0 | |
| | | 20.0 | |



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Danks 3-8-99
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 3/25/99
 CHIEF, DIVISION OF LAND DEVELOPMENT

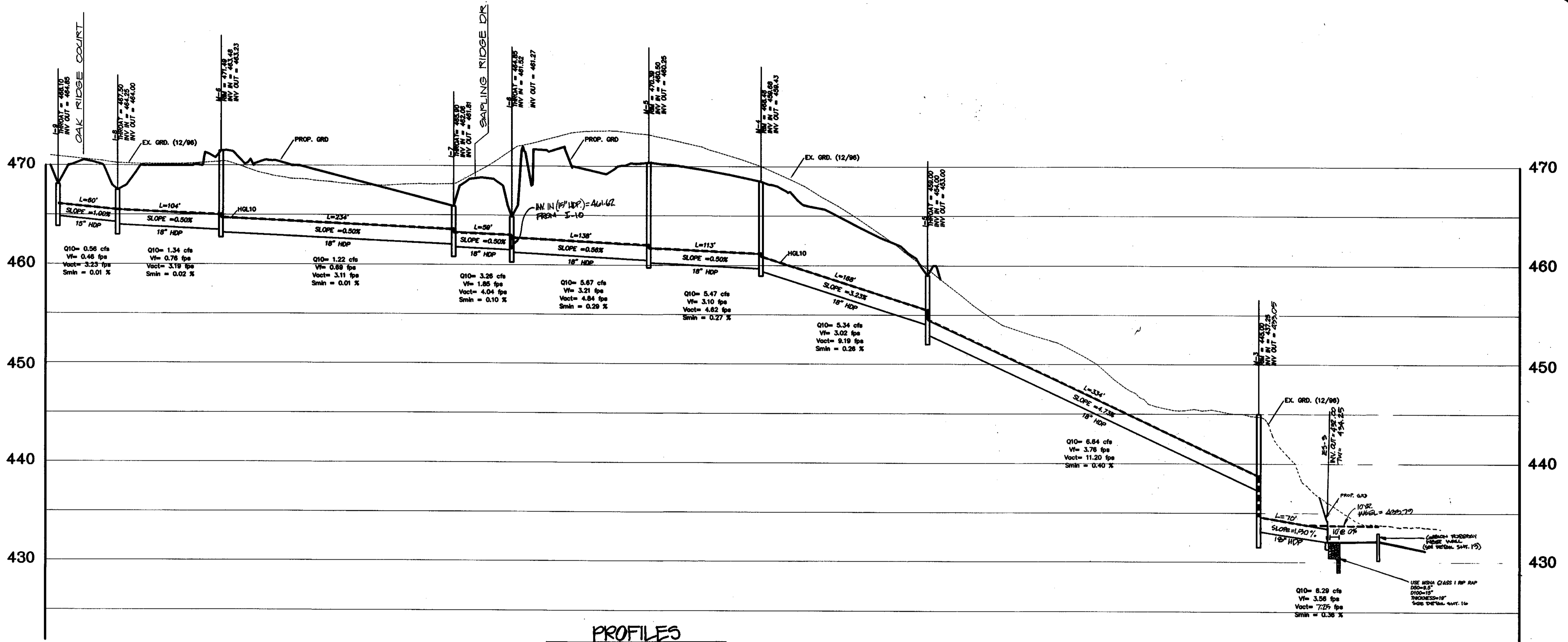
Chad Dammann 3/15/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



Project: 96019.13 Date: 06-05-98
 Illustration: G.E.M., M.W.Z. scale: As Noted
 Signature: G.E.M., M.W.Z. date: 07-17-98
 Description: REVISIONS TO PLAN, ELEVATIONS, AND PROFILES FOR STORM DRAIN INFILTRATION SYSTEM TO HO-20-100. REVISED DRAWING TO HO-20-100. REVISED DRAWING TO HO-20-100. REVISED DRAWING TO HO-20-100. SUBMITTED TO HOWARD CO. D.P.Z. FOR REVIEW.

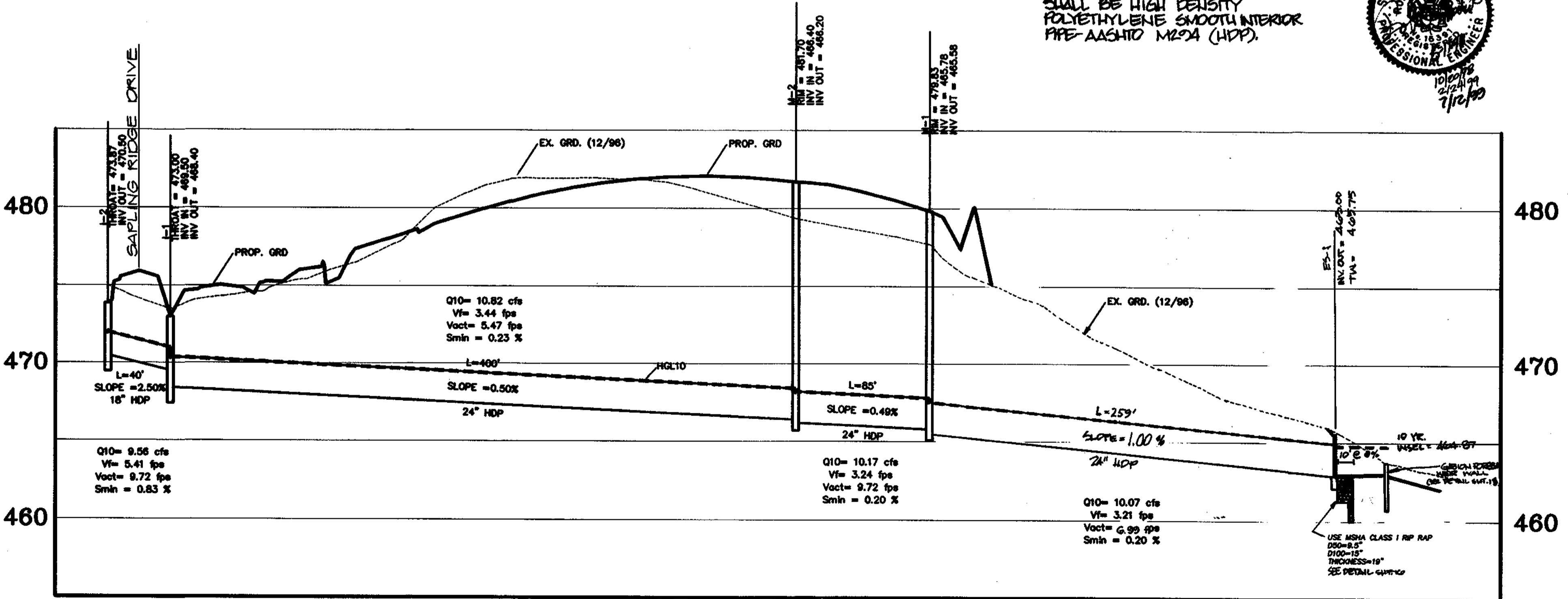
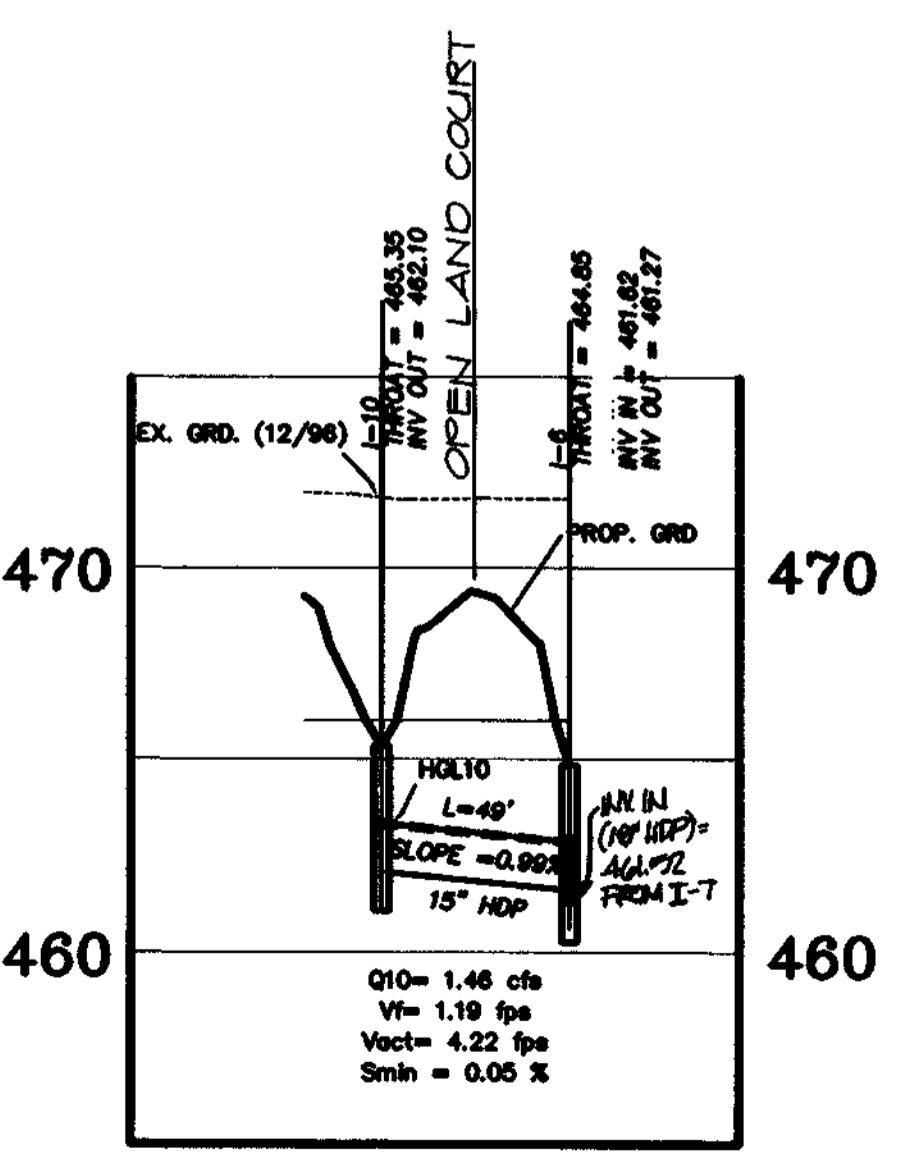
HOWARD COUNTY, MD.
 ELECTION DISTRICT NO. 5
 HIGH FOREST ESTATES
 STORM DRAIN PROFILES

10 OF 24
 F: 98-167



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

NOTE: UNLESS OTHERWISE NOTED ALL PROPOSED STORM DRAIN SHALL BE HIGH DENSITY POLYETHYLENE SMOOTH INTERIOR PIPE-ASHTO M254 (HDP).



APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3/8/99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Henton 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

W. Deane 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

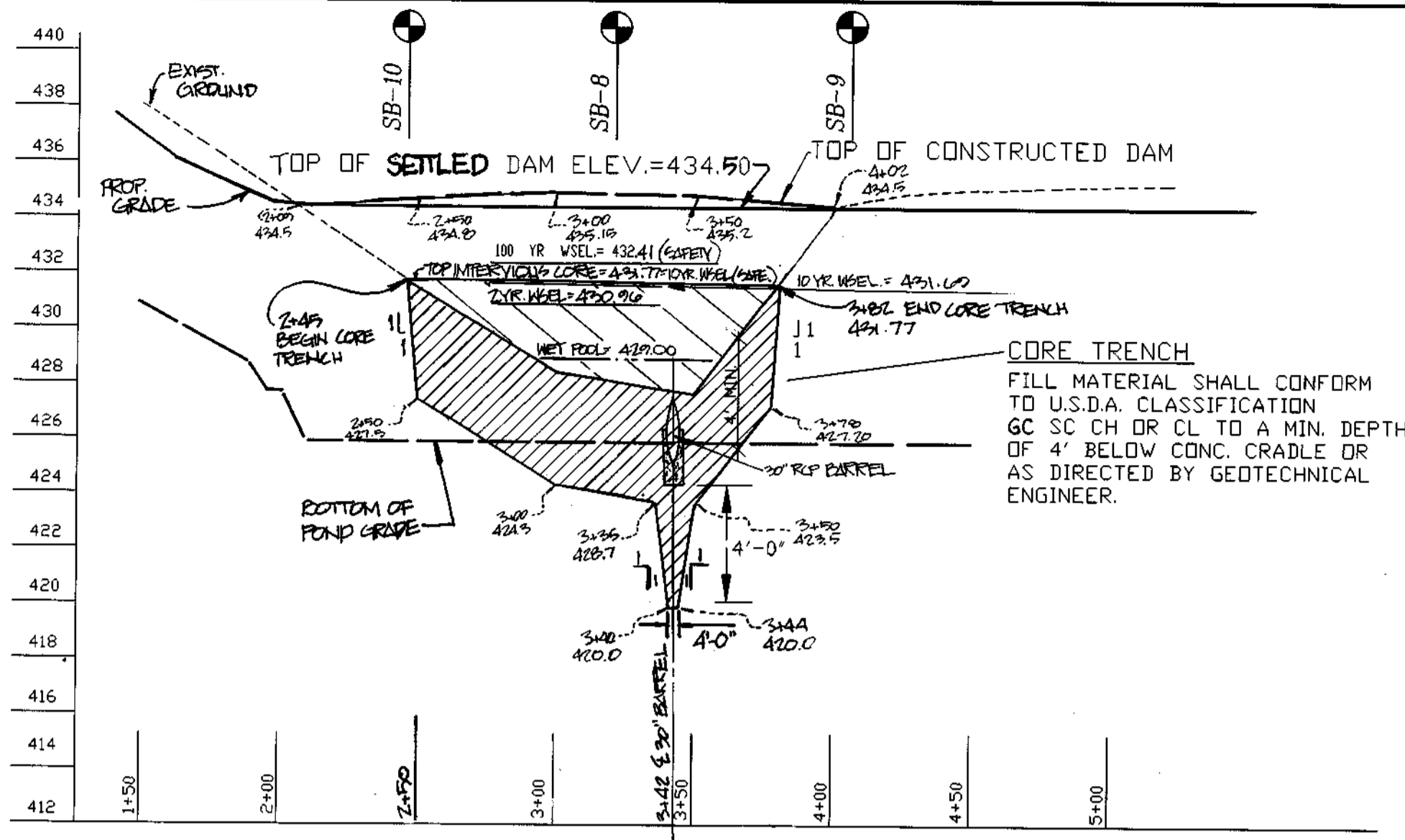
| | | | |
|--------------|----------------|-------------|--------|
| Project | 98019-19 | Date | 04-98 |
| Illustration | G.E.M., K.M.B. | Engineering | M.W.Z. |
| Scale | AS SHOWN | Approval | R.M.M. |

REMOVED FOR PLAT REVISIONS
Submitted Originals Myers to Co. for Signature
REMOVED SUBMITTAL TO HD. CO. FOR REVIEW
1ST SUBMITTAL TO HD. CO. FOR REVIEW

| No. | Description | Date |
|-----|-------------|------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |

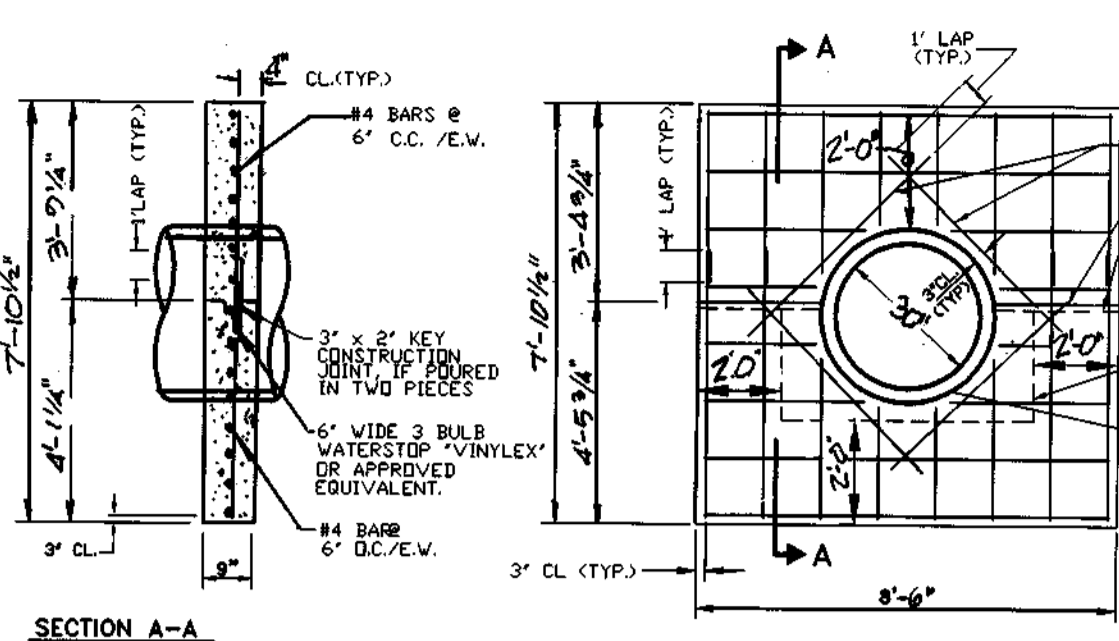
HOWARD COUNTY
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
STORM DRAIN PROFILES

R.M. MOCHI GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
10120 A Old National Pike
Crummey, MD 21754-5706
(301) 865-9868
Fax: (301) 865-5111



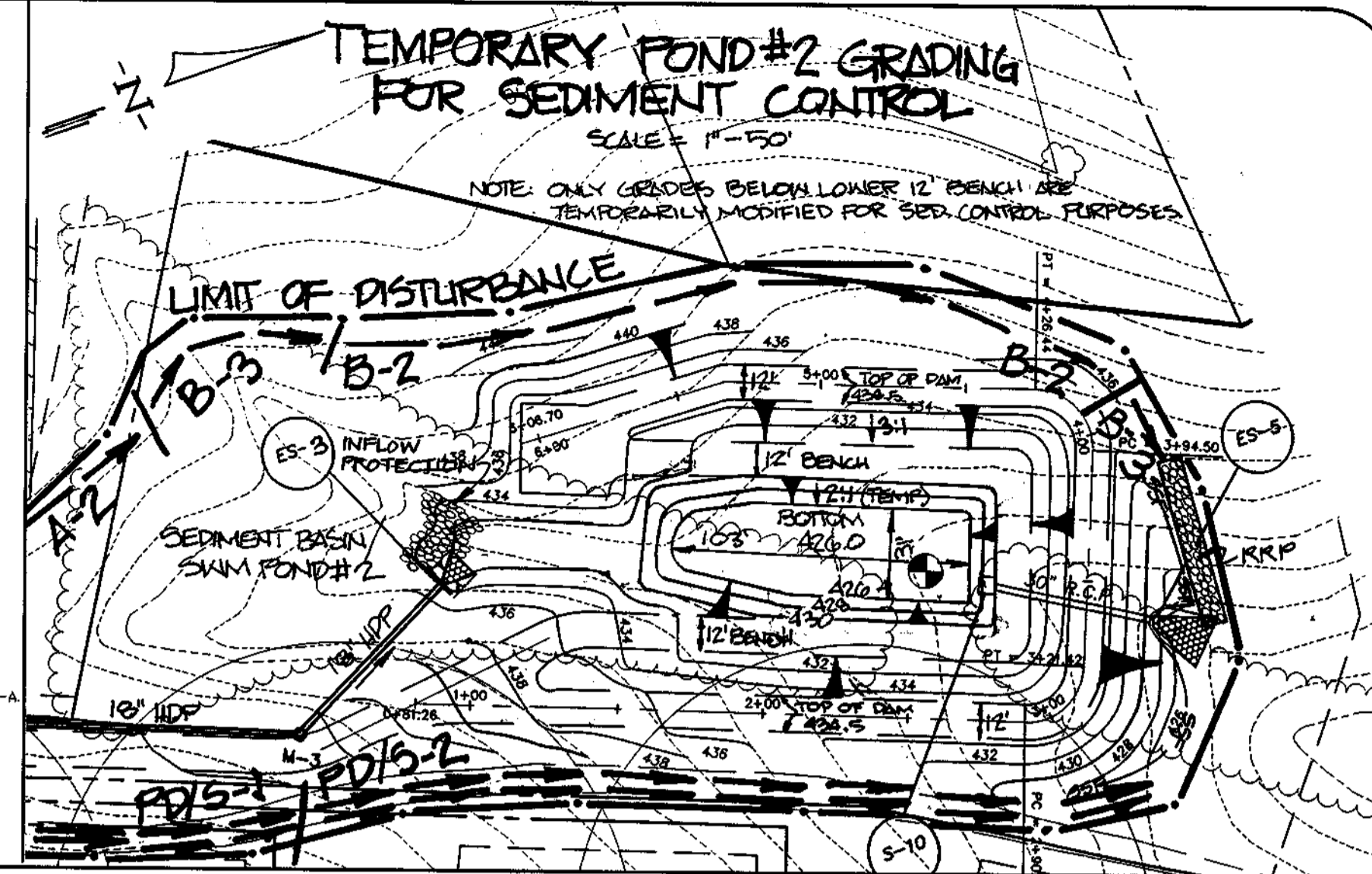
PROFILE ALONG C OF THE DAM (POND #2)

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



CONCRETE ANTI-SEEP COLLAR
NOT TO SCALE
POND #2

- NOTES:
- ANTI-SEEP COLLARS ARE TO BE FIELD LOCATED A MINIMUM OF 2' AWAY FROM ANY PIPE JOINT.
 - SEE PIPE PROFILE FOR APPROX. SPACING.
 - CONCRETE SHALL BE M.S.H.A. MIX NO. 3 (F'c=3,500 PSI).
 - A "ONE POLY" COLLAR DOES NOT REQUIRE A CONSTRUCTION JOINT.
 - PROVIDE A MINIMUM OF 2" CLEARANCE FROM OUTSIDE OF PIPE OR CONCRETE CRADLE TO OUTSIDE OF ANTI-SEEP COLLAR.
 - CONCRETE CRADLE IS NOT SHOWN IN SECTION A-A.

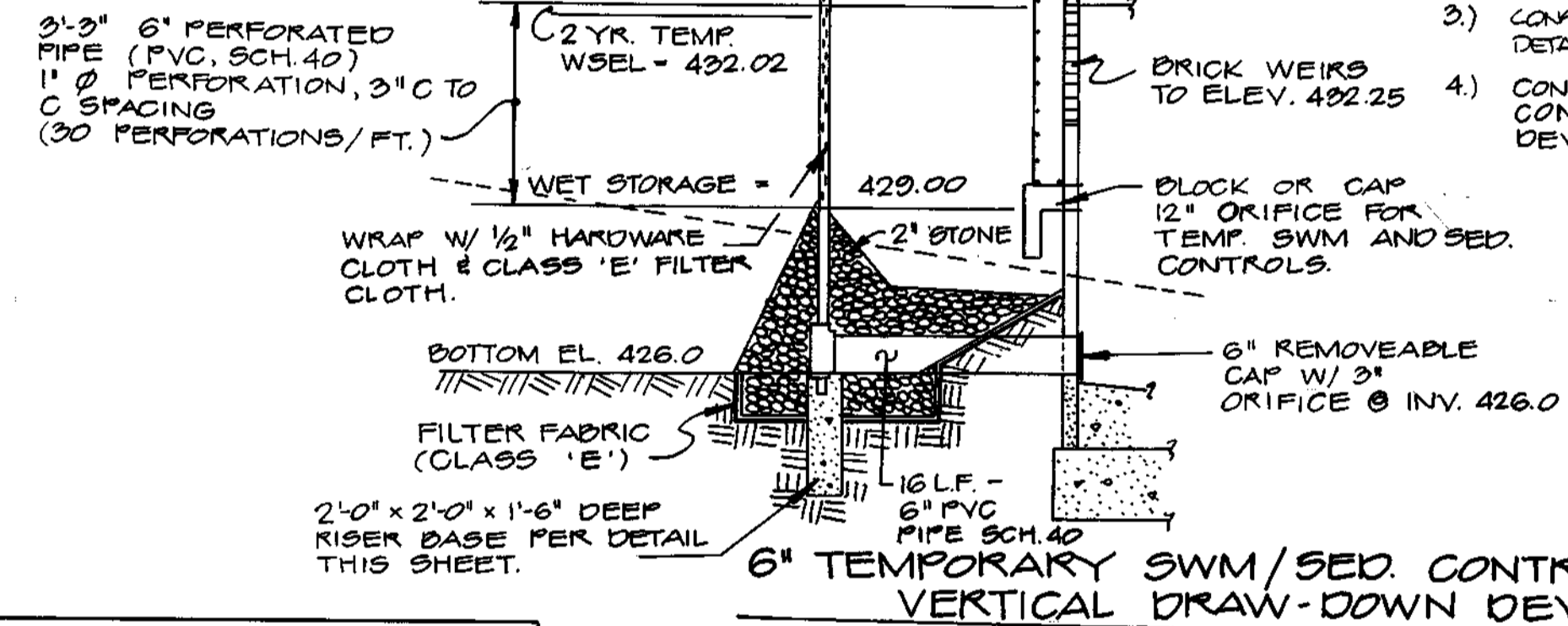


TEMPORARY POND #2 GRADING FOR SEDIMENT CONTROL
SCALE: 1"=50'

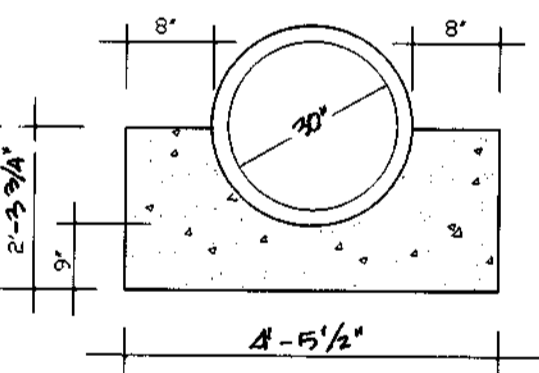
NOTE: ONLY GRIDES BELOW LOWER 12" BENCH ARE TEMPORARILY MODIFIED FOR SED. CONTROL PURPOSES.

LIMIT OF DISTURBANCE

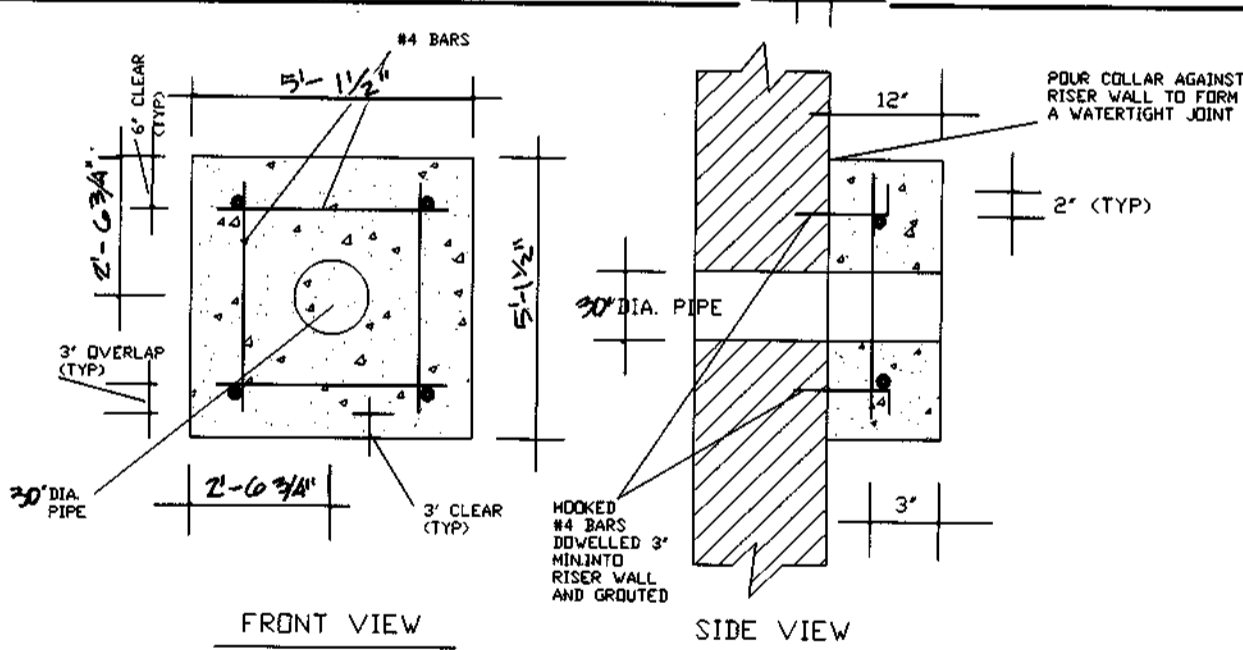
- * MODIFICATIONS FOR SED. CONTROL / TEMP. SWM
- CAP 12" PVC PIPE INSIDE RISER.
 - BRICK ALL WEIRS TO ELEVATION 422.25
 - CONSTRUCT BOTTOM OF POND PER DETAIL THIS SHEET.
 - CONSTRUCT 6" TEMPORARY SWM/SED. CONTROL VERTICAL DRAW-DOWN DEVICE PER DETAIL THIS SHEET.



6" TEMPORARY SWM/SED. CONTROL VERTICAL DRAW-DOWN DEVICE
POND #2
NOT TO SCALE



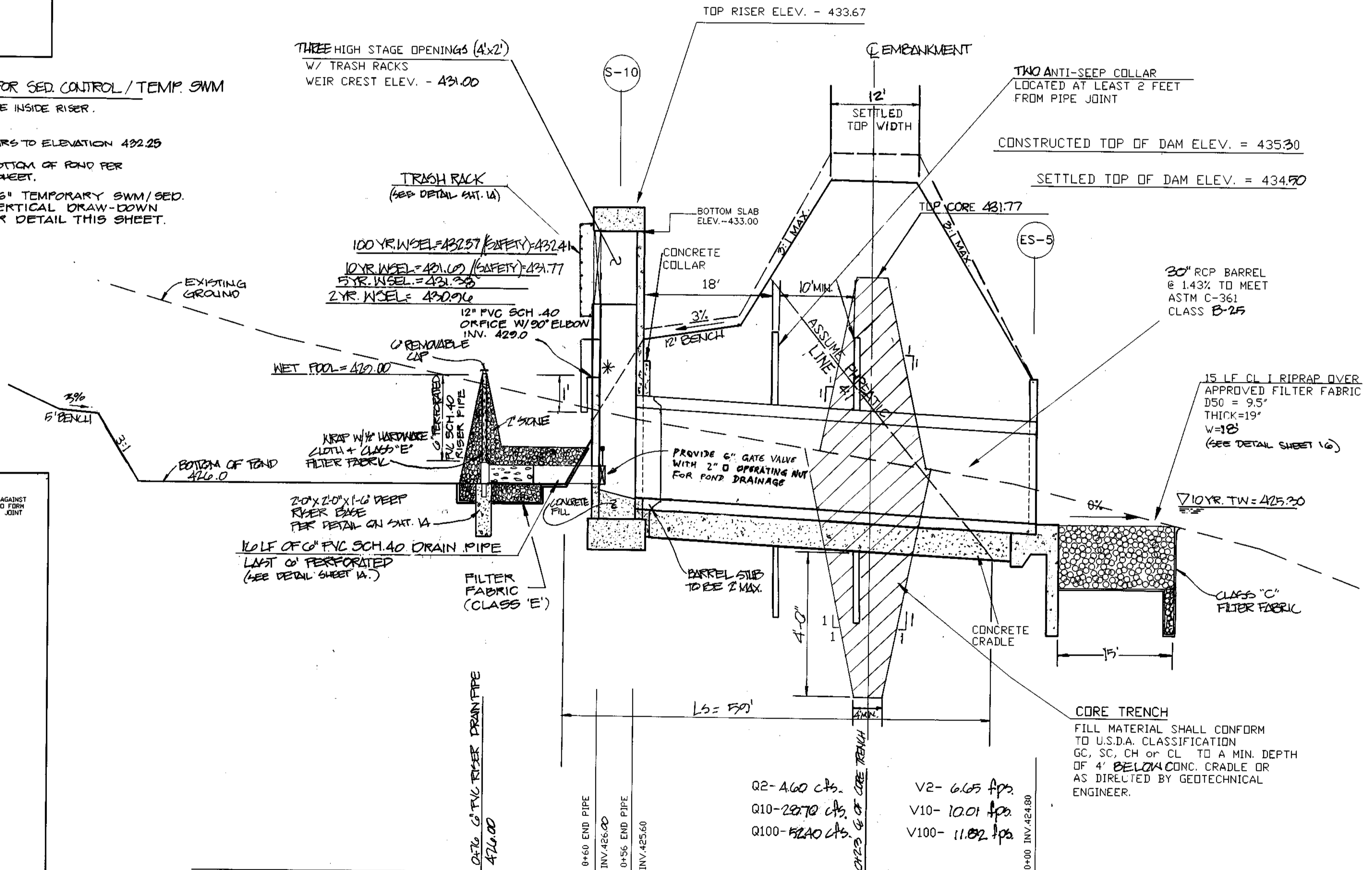
CONCRETE CRADLE
NOT TO SCALE
POND #2



CONCRETE COLLAR
NOT TO SCALE
POND #2

- NOTES:
- POUR CONCRETE AGAINST UNDISTURBED EARTH. CONCRETE SHALL BE M.S.H.A. MIX NO. 3 (F'c=3,500 PSI).
 - BARREL MAY BE PLACED ON PRECAST CONCRETE BLOCKS PRIOR TO CRADLE POUR.
 - POURING AN ADDITIONAL 4" TO 6" THICK "MUDMAT" MAY BE ACCEPTABLE IF SUBCONDITIONS ARE WET AND WITH APPROVAL OF GEOTECHNICAL ENGINEER.
 - IF ALL OF CONCRETE CRADLE CANNOT BE POURED AT ONE TIME, ONE HORIZONTAL JOINT IS ALLOWED.
 - PLACE A MINIMUM OF THREE (3) - 6" LONG #4 REBAR BOWELS TO CONNECT POIRS.
 - IF A CRADLE HORIZONTAL JOINT IS USED, DO NOT LOCATE WITHIN 2' OF PIPE JOINT.

NOTE:
1. CONCRETE SHALL BE M.S.H.A. MIX NO. 3 (F'c = 3,500 PSI)



PRINCIPAL SPILLWAY PROFILE FOR SWM POND #2

SCALE: HORIZ. 1" = 10'
VERT. 1" = 2'

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Stephen M. Daniels 3-8-99
CHIEF, BUREAU OF HIGHWAYS

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Andy Hamilton 2/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED:
John Deane 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED:
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Mark A. ... 2/24/99
HOWARD SOIL CONSERVATION DISTRICT

APPROVED:
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
Charles A. Sharp 2/24/99
USDA - NATIONAL RESOURCES CONSERVATION SERVICE

DEVELOPER'S CERTIFICATE
I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.
Charles A. Sharp 6-10-98
Signature of Developer DATE

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.
Robert M. Mochi, P.E. 6-11-98
DATE

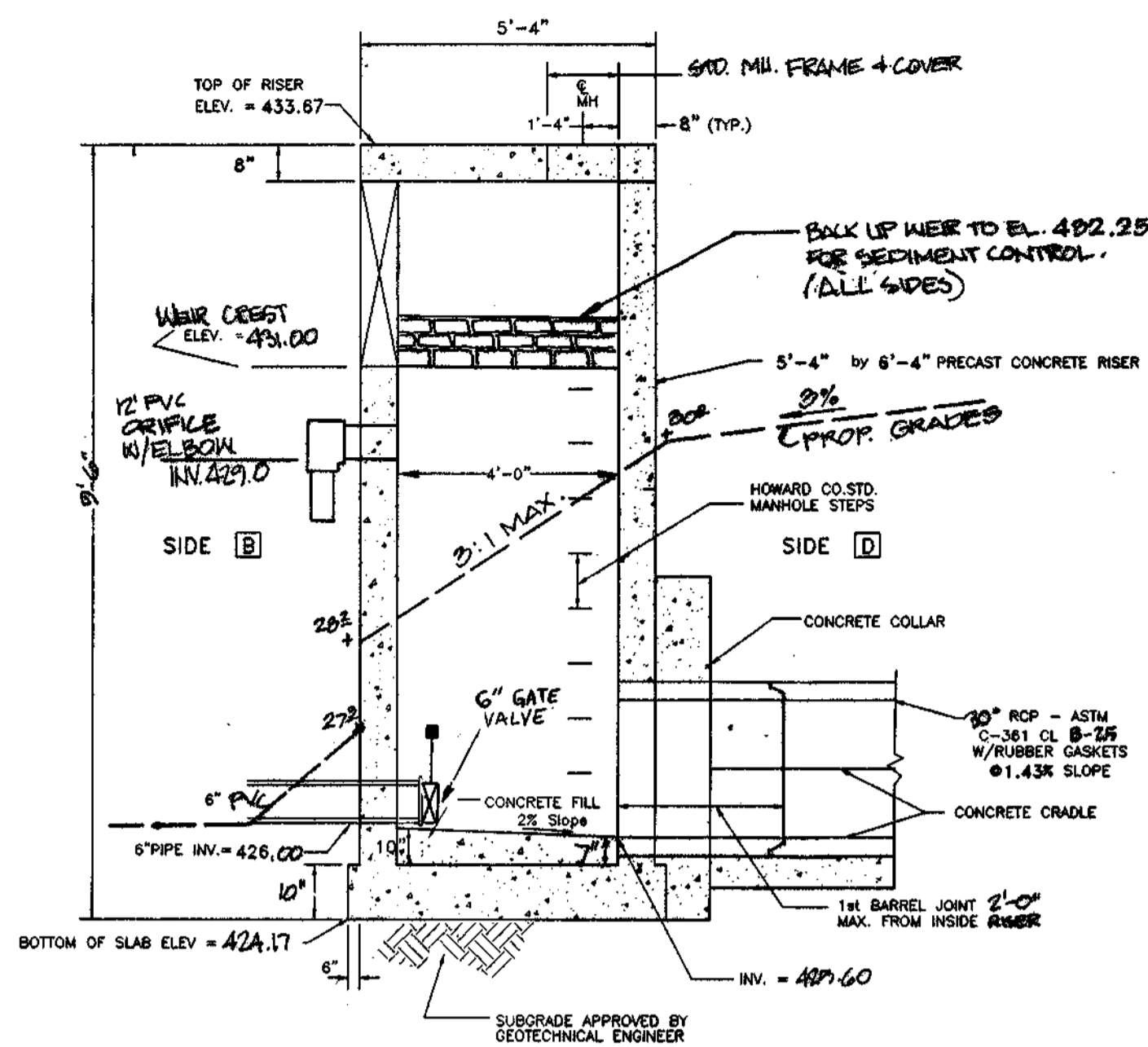


| | | | |
|--------------|-------------|-------------|--------|
| Project | 96019.13 | Date | 06-98 |
| Illustration | GEN. E.M.B. | Engineering | M.W.Z. |
| Scale | AS SHOWN | Approval | R.M.M. |

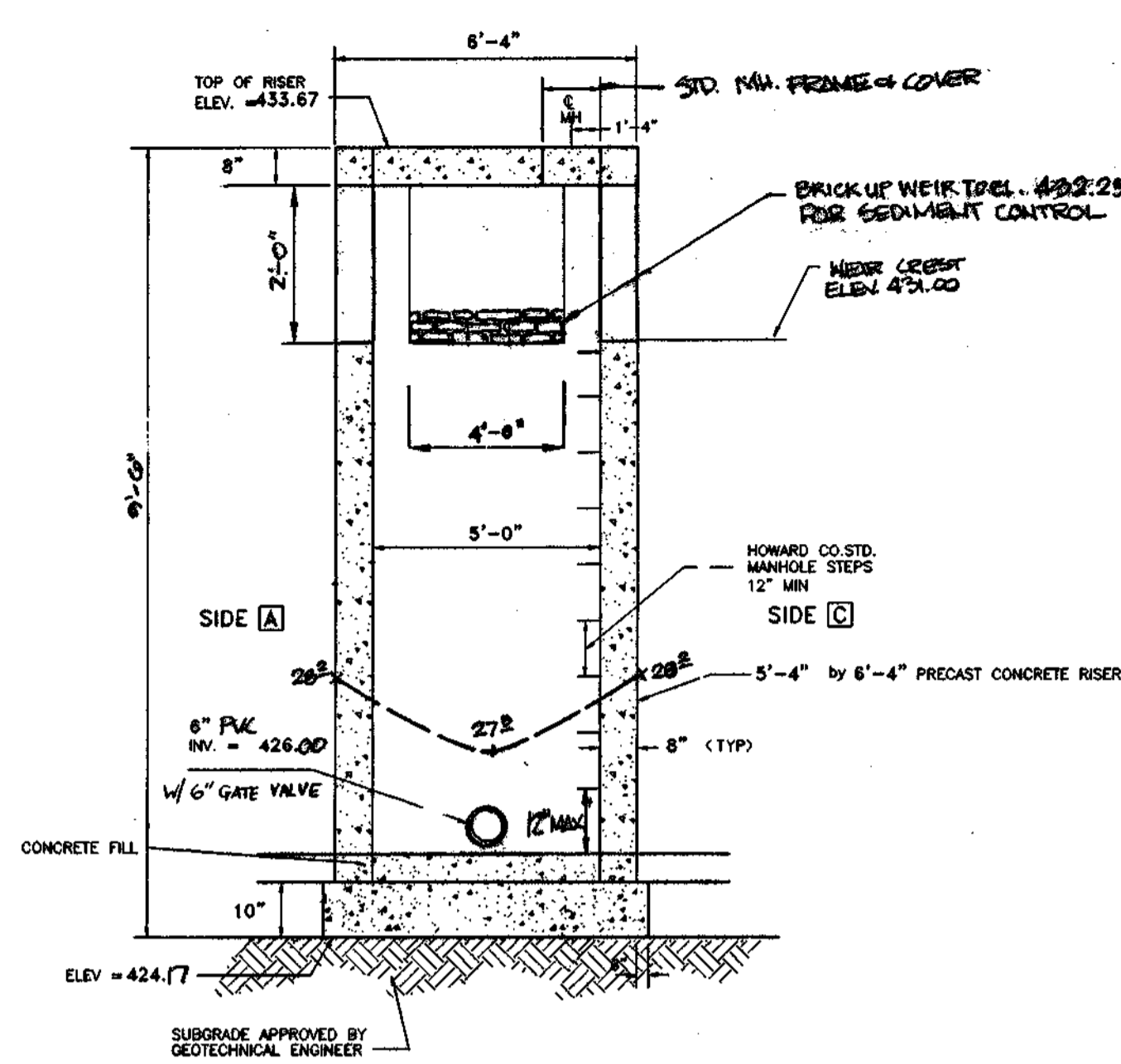
| | | |
|-----------|----------|--|
| REVISIONS | DATE | DESCRIPTION |
| 1 | 05-27-99 | REVISED PER PLAN REVISIONS |
| 2 | 05-27-99 | ADDED WEIR DETAIL |
| 3 | 05-27-99 | SUBMITTED ORIGINAL TO HO. CO. BY SIGNATURE |
| 4 | 05-27-99 | REVISED SUBMITTAL TO HO. CO. DPT. FOR REVIEW |
| 5 | 05-27-99 | REVISED SUBMITTAL TO HO. CO. DPT. FOR REVIEW |
| 6 | 05-27-99 | REVISED SUBMITTAL TO HO. CO. DPT. FOR REVIEW |

HOWARD COUNTY
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
STORMWATER MANAGEMENT PLAN

R.M. MOCHI GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
10750 A Old National Pike
Pomomoke, MD 21756-9706
(301) 852-5858
Fax: (301) 866-5111

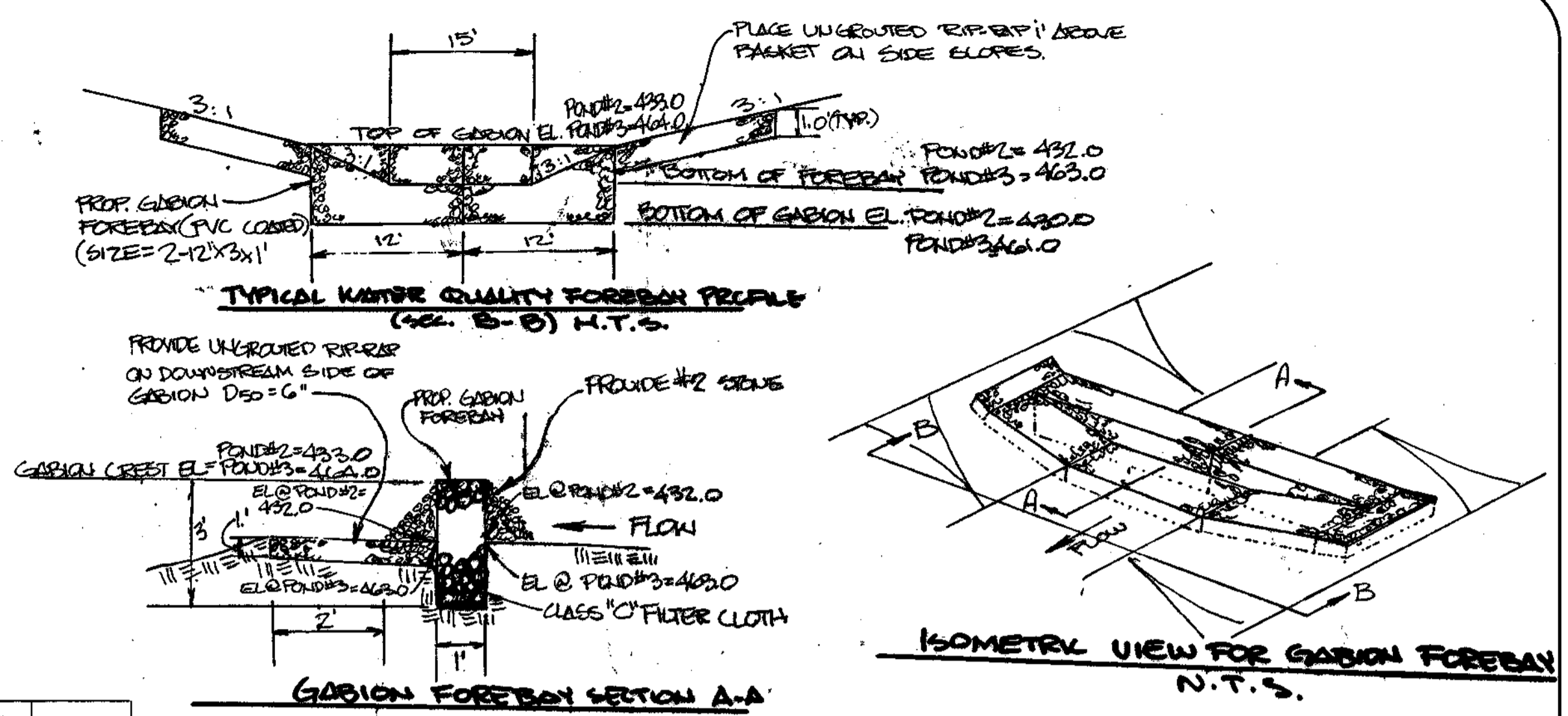


SECTION A-A
POND # 2



SECTION B-B

| DESIGN STORM | WSEL | AS BUILT |
|--------------|--------|----------|
| WET POND | 422.0 | |
| 2 YEAR | 430.96 | |
| 10 YEAR | 431.69 | |
| 100 YEAR | 432.33 | |



FOREBAY DETAILS POND #2/3

| STRUCTURE | TYPE | LOCATION | INVERT | | ELEVATION | REMARKS |
|-----------|----------|---------------------------|--------|--------|------------|--|
| | | | IN | OUT | | |
| S-10 | RISER | N 87° 00' 00" W 137.00 FT | 425.60 | | TOP 433.67 | |
| ES-5 | END WALL | N 87° 00' 00" W 137.00 FT | | 424.80 | | H.C.C.D. STANDARD TYPE 'A' HEADWALL CIRCULAR |
| S-20 | RISER | N 87° 00' 00" W 137.00 FT | | 458.30 | TOP 463.67 | |
| ES-6 | END WALL | N 87° 00' 00" W 137.00 FT | | 457.80 | | H.C.C.D. STANDARD TYPE 'A' HEADWALL CIRCULAR |

RISER STRUCTURE GENERAL NOTES:

1. PRECAST RISER AND TOP SLAB TO BE MANUFACTURED AND SUPPLIED BY FREDERICK PRECAST CONCRETE, INC. OR APPROVED EQUIVALENT.
2. SHOP DRAWINGS FOR RISER AND TOP SLAB MUST BE REVIEWED BY AN ENGINEER AND APPROVED BY HOWARD COUNTY PRIOR TO FABRICATION.
3. IF ANY DIMENSIONS ARE CHANGED OR REDUCED, REVISED ANTI-FLOTATION COMPUTATION MUST BE SUBMITTED WITH THE SHOP DRAWINGS TO HOWARD COUNTY FOR APPROVAL.
4. TRASH RACKS ARE NOT SHOWN IN THIS VIEW FOR CLARITY.
5. THE RISER STRUCTURE SHOWN IS NOT TO SCALE SEE THIS SHEET FOR ACTUAL DIMENSIONS.

STORMWATER MANAGEMENT POND MAINTENANCE SCHEDULE (POND #2)

ROUTINE MAINTENANCE

FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.

TOP AND SIDE SLOPES OF THE EMBAZMENT 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.

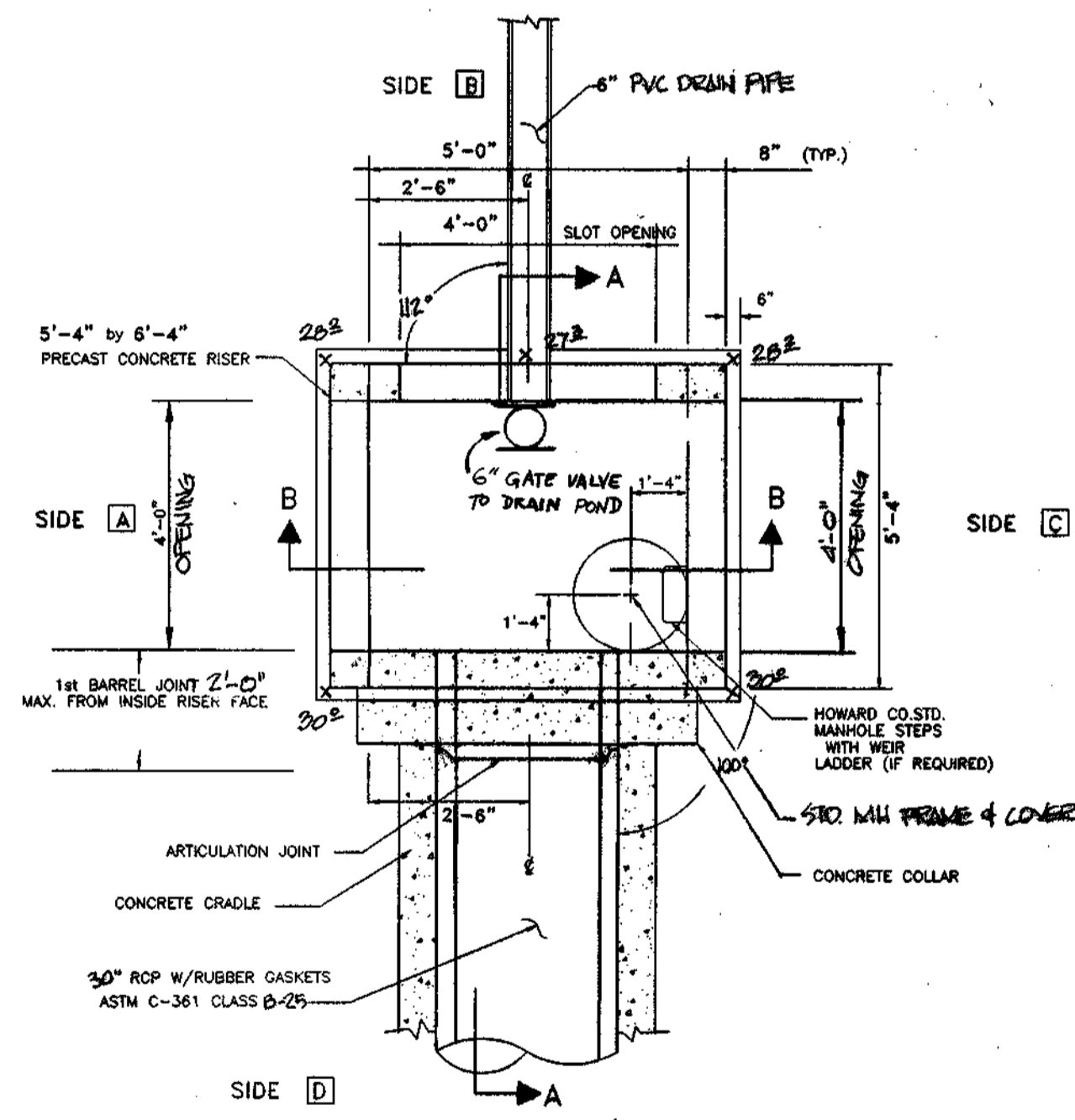
DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.

VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE

STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, RISER STRUCTURE AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.

SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERES WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY'S DEPARTMENT OF PUBLIC WORKS.



PLAN VIEW
POND #2 - RISER
NOT TO SCALE

| DEPTH | TEMPERATURE | WIND DIRECTION | WIND VELOCITY | WIND VELOCITY (KNOTS) | WIND VELOCITY (MPH) | WIND VELOCITY (KPH) | WIND VELOCITY (M/S) | WIND VELOCITY (MILES PER HOUR) | WIND VELOCITY (KILOMETERS PER HOUR) | WIND VELOCITY (METERS PER SECOND) | WIND VELOCITY (MILES PER HOUR) | WIND VELOCITY (KILOMETERS PER HOUR) | WIND VELOCITY (METERS PER SECOND) |
|-------|-------------|----------------|---------------|-----------------------|---------------------|---------------------|---------------------|--------------------------------|-------------------------------------|-----------------------------------|--------------------------------|-------------------------------------|-----------------------------------|
| 0.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 0.5 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 1.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 1.5 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 2.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 2.5 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 3.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 3.5 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 4.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 4.5 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 5.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |

| DEPTH | TEMPERATURE | WIND DIRECTION | WIND VELOCITY | WIND VELOCITY (KNOTS) | WIND VELOCITY (MPH) | WIND VELOCITY (KPH) | WIND VELOCITY (M/S) | WIND VELOCITY (MILES PER HOUR) | WIND VELOCITY (KILOMETERS PER HOUR) | WIND VELOCITY (METERS PER SECOND) | WIND VELOCITY (MILES PER HOUR) | WIND VELOCITY (KILOMETERS PER HOUR) | WIND VELOCITY (METERS PER SECOND) |
|-------|-------------|----------------|---------------|-----------------------|---------------------|---------------------|---------------------|--------------------------------|-------------------------------------|-----------------------------------|--------------------------------|-------------------------------------|-----------------------------------|
| 0.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 0.5 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 1.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 1.5 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
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| 2.5 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 3.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 3.5 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 4.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 4.5 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 5.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |

| DEPTH | TEMPERATURE | WIND DIRECTION | WIND VELOCITY | WIND VELOCITY (KNOTS) | WIND VELOCITY (MPH) | WIND VELOCITY (KPH) | WIND VELOCITY (M/S) | WIND VELOCITY (MILES PER HOUR) | WIND VELOCITY (KILOMETERS PER HOUR) | WIND VELOCITY (METERS PER SECOND) | WIND VELOCITY (MILES PER HOUR) | WIND VELOCITY (KILOMETERS PER HOUR) | WIND VELOCITY (METERS PER SECOND) |
|-------|-------------|----------------|---------------|-----------------------|---------------------|---------------------|---------------------|--------------------------------|-------------------------------------|-----------------------------------|--------------------------------|-------------------------------------|-----------------------------------|
| 0.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 0.5 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 1.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 1.5 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 2.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 2.5 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 3.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 3.5 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 4.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 4.5 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |
| 5.0 | 58.0 | 135 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | |

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Danke 3-9-99
CHIEF, BUREAU OF HIGHWAYS

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Andy Hamilton 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT

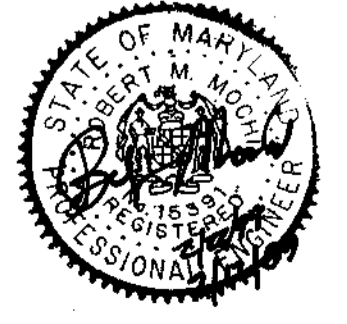
APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
John D. ... 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED:
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
[Signature] 2/24/99
HOWARD SOIL CONSERVATION DISTRICT

APPROVED:
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Cheryl Simms 2/26/99
USDA - NATIONAL RESOURCES CONSERVATION SERVICE

DEVELOPER'S CERTIFICATE
I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.
Robert M. Mochi 6-10-98
Signature of Developer

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.
Robert M. Mochi 6-11-98
DATE

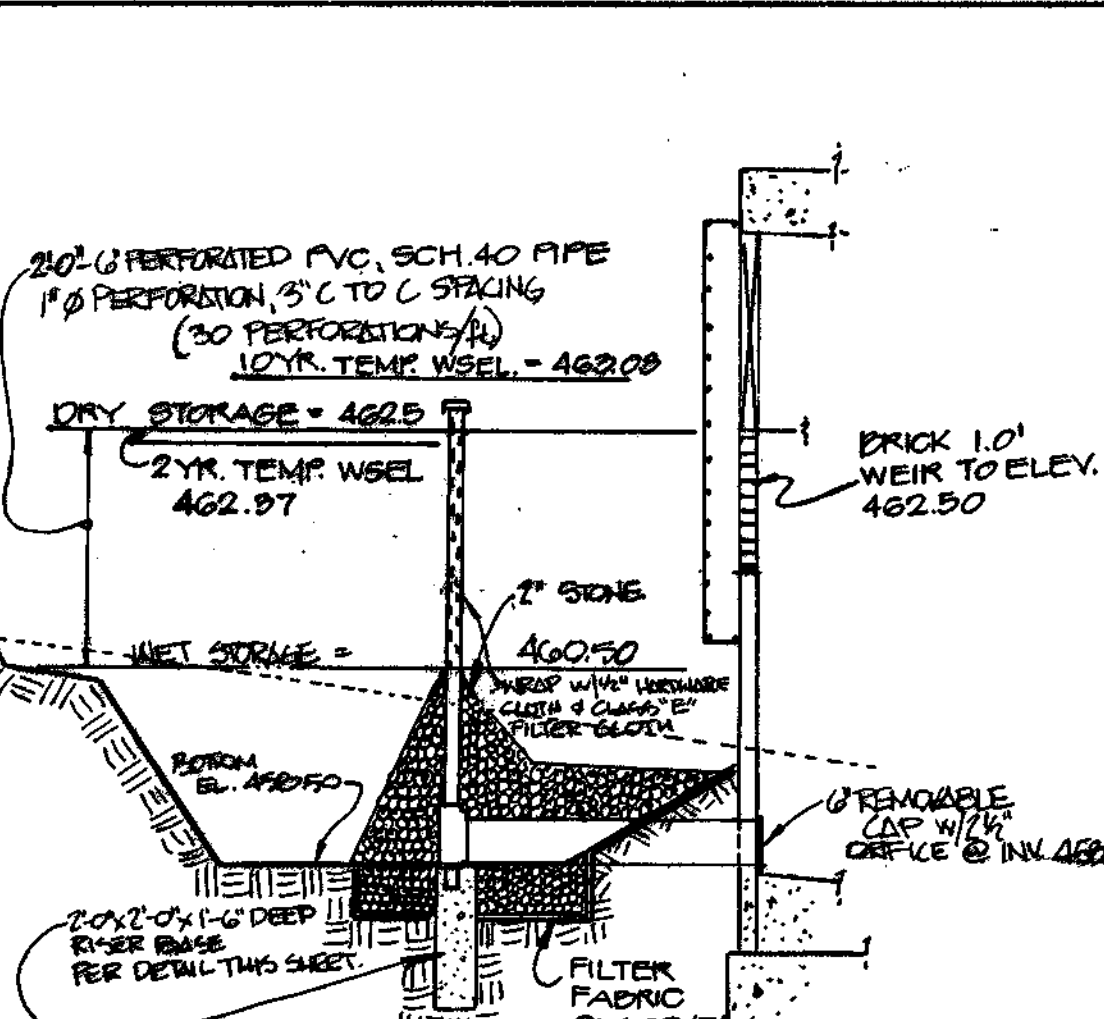
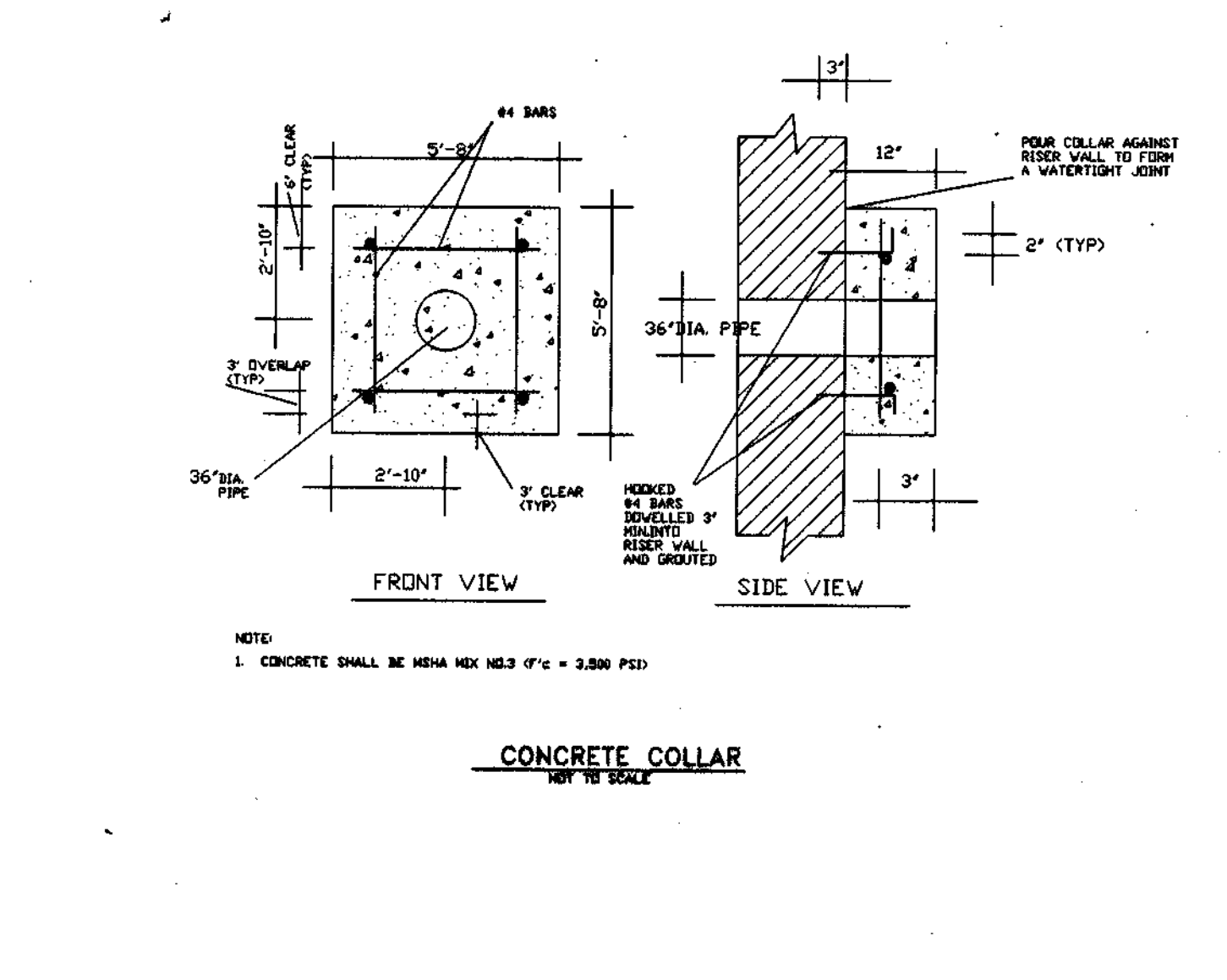
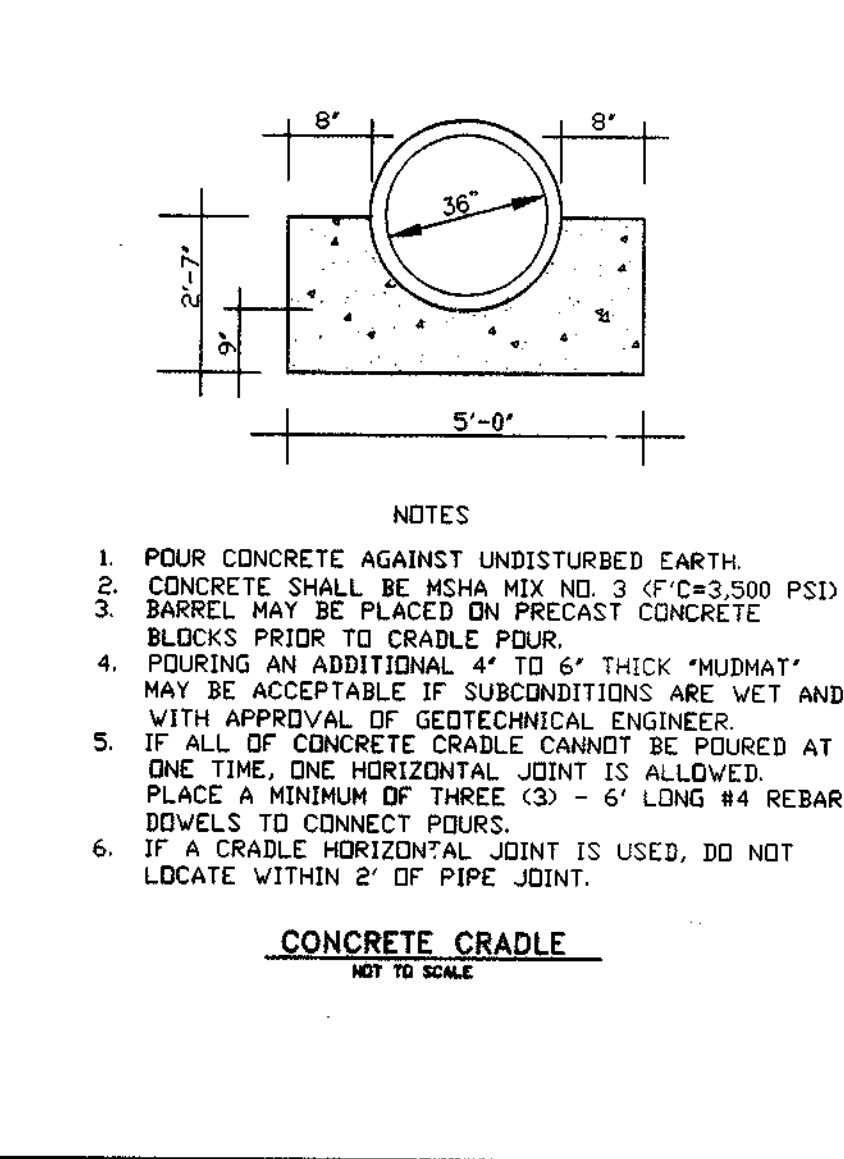
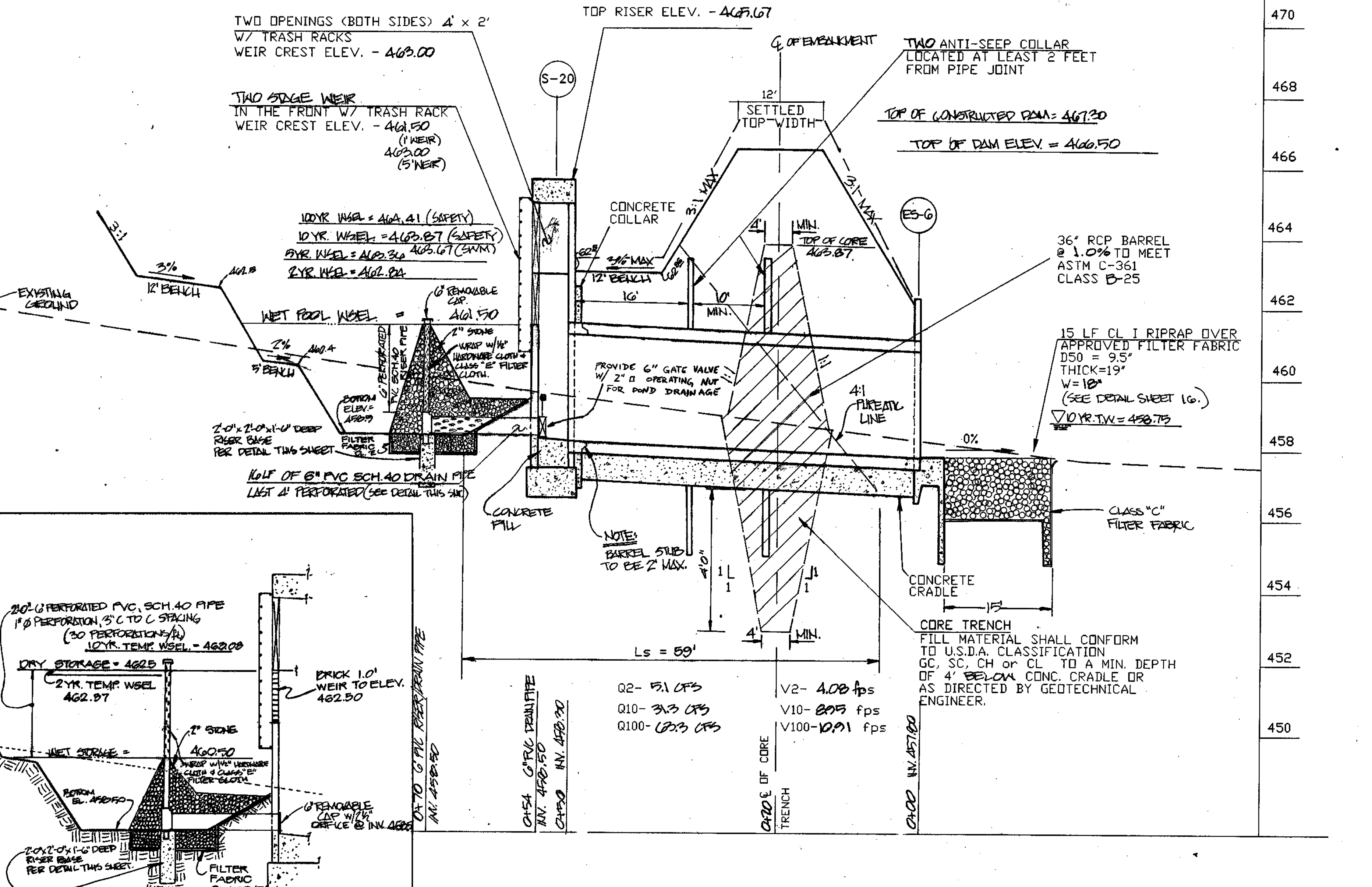
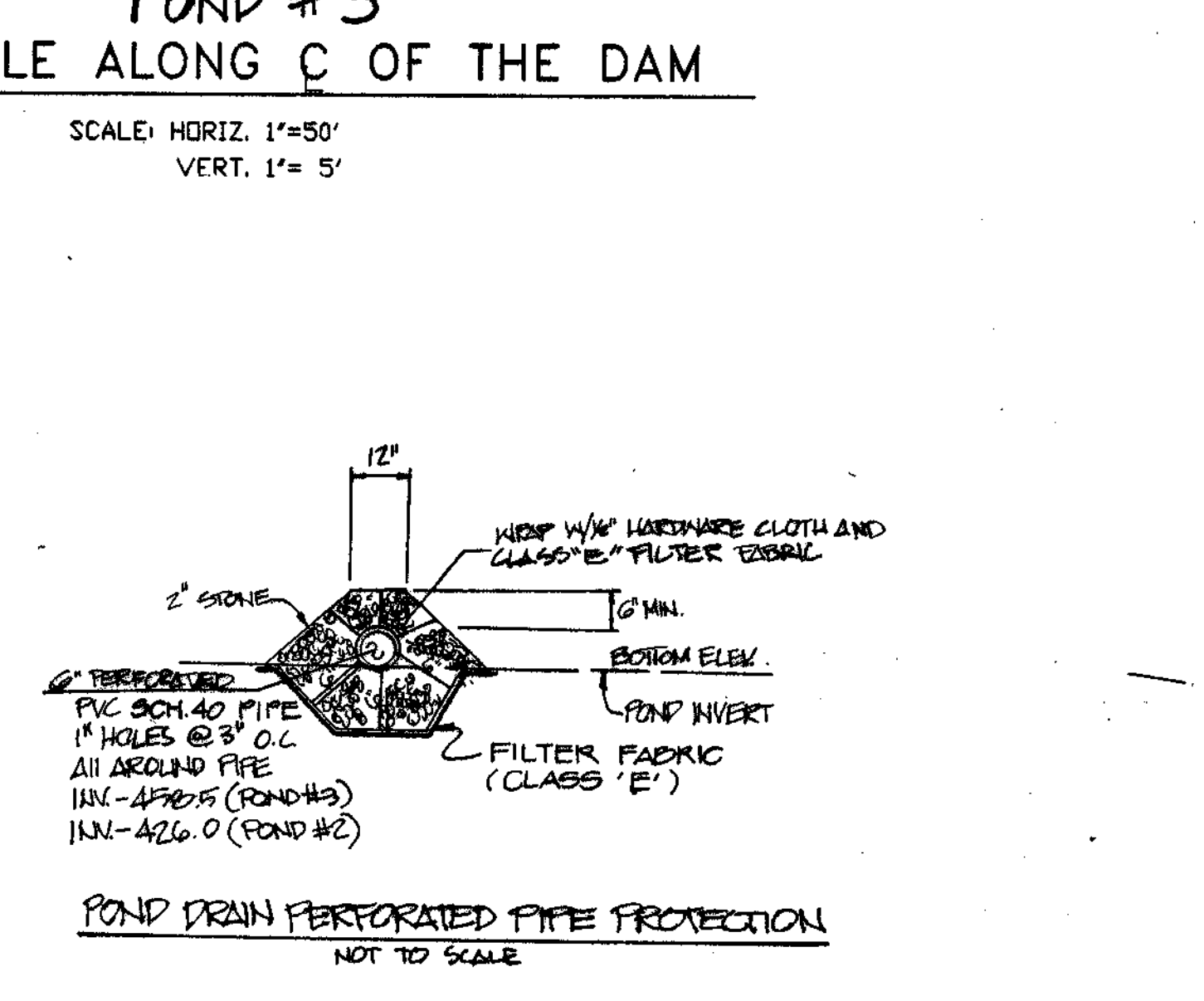
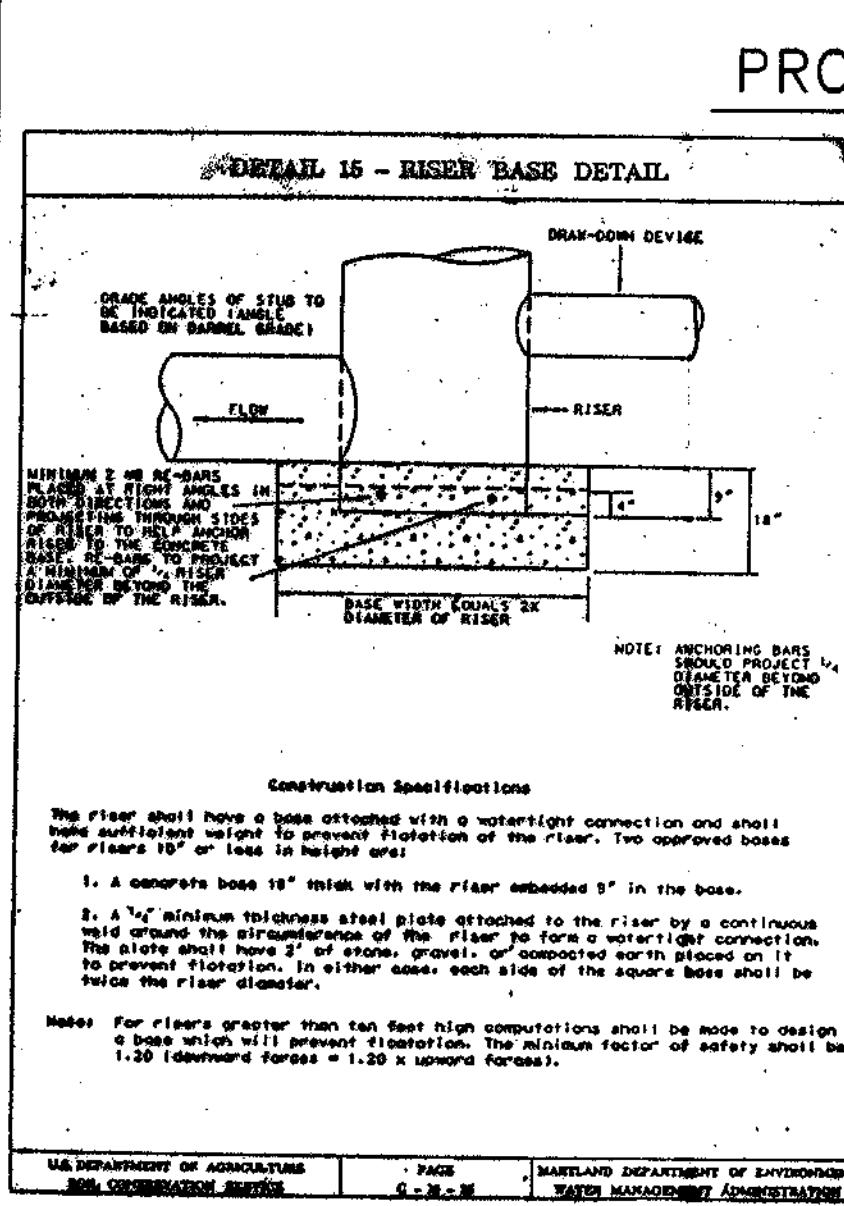
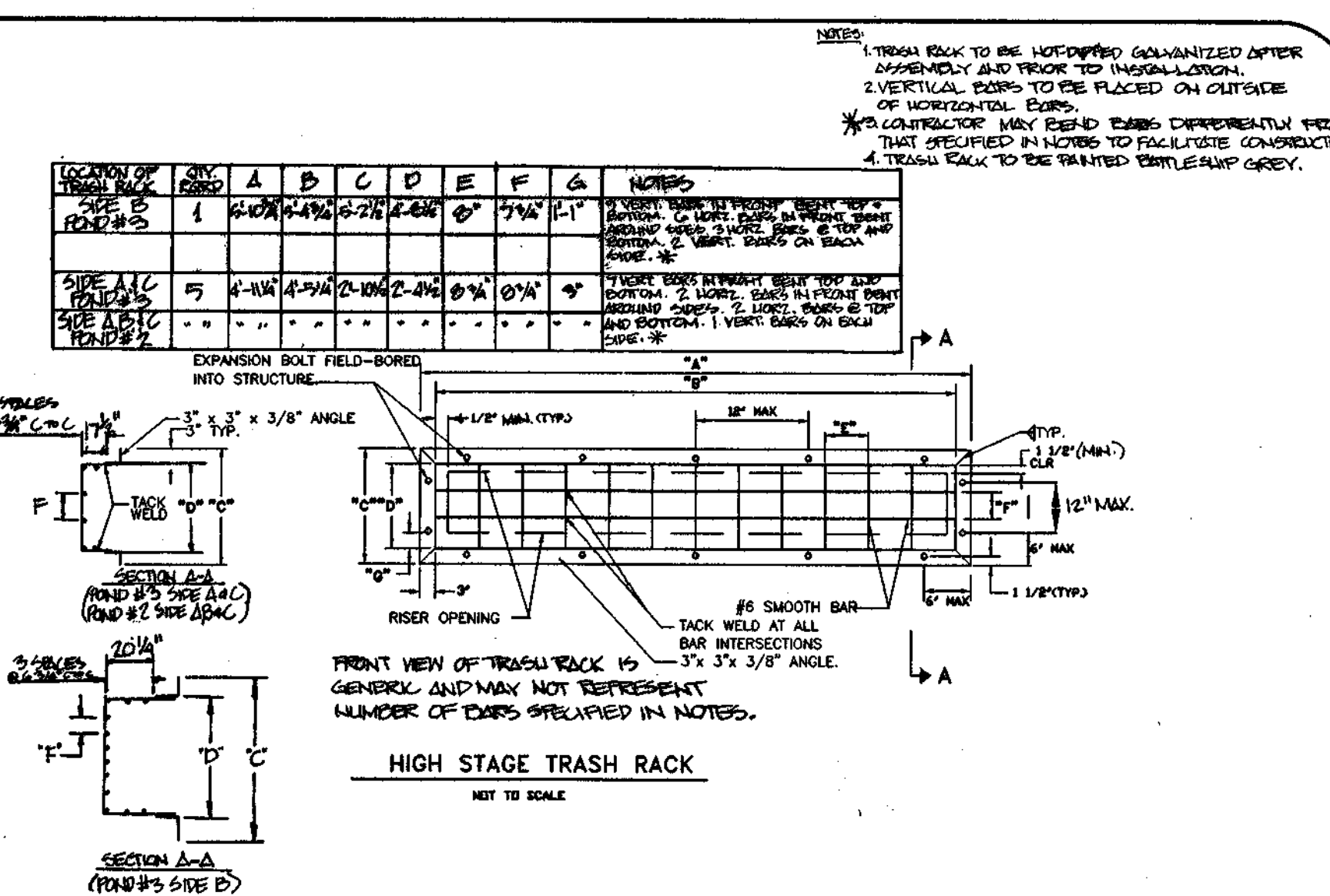
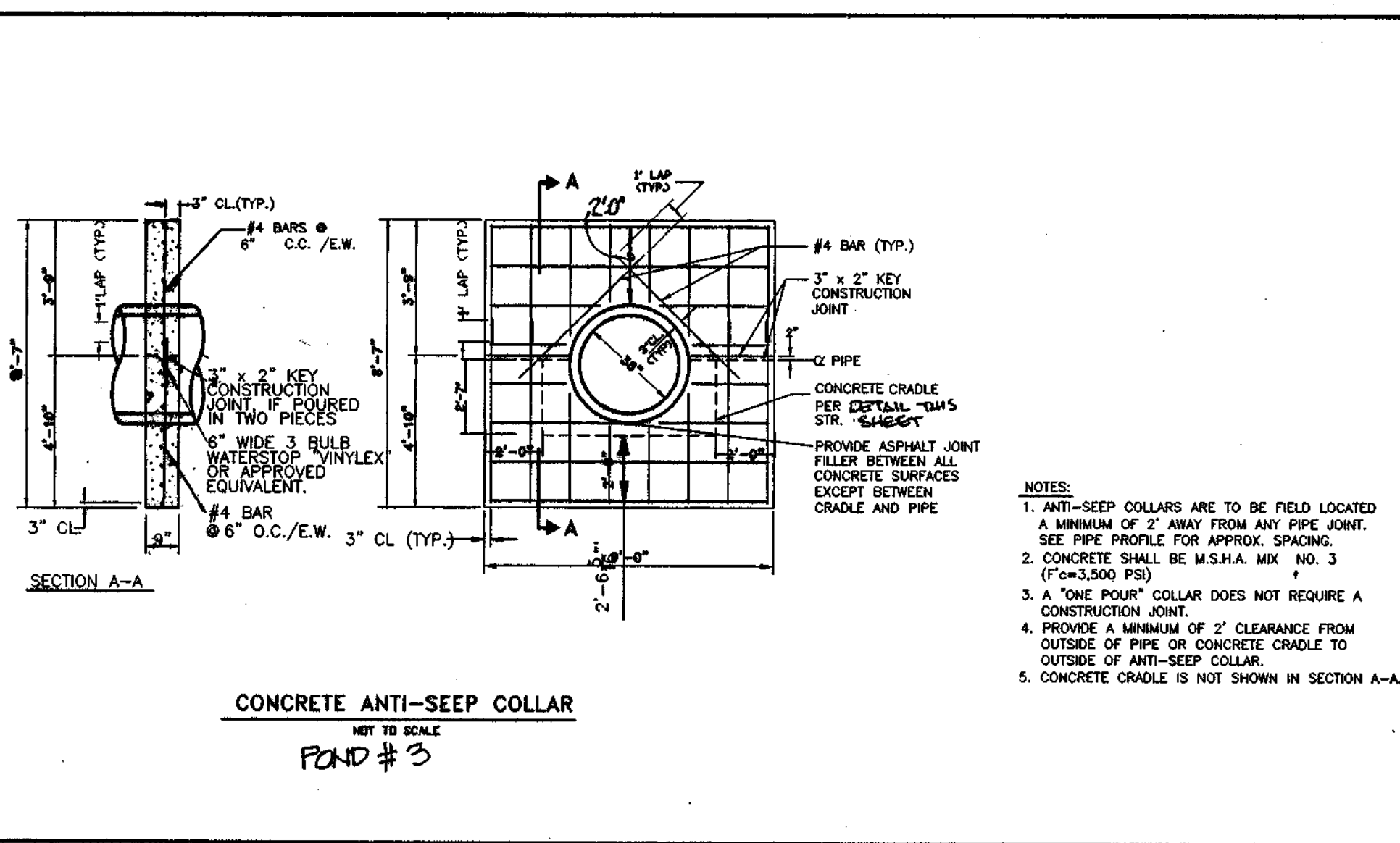
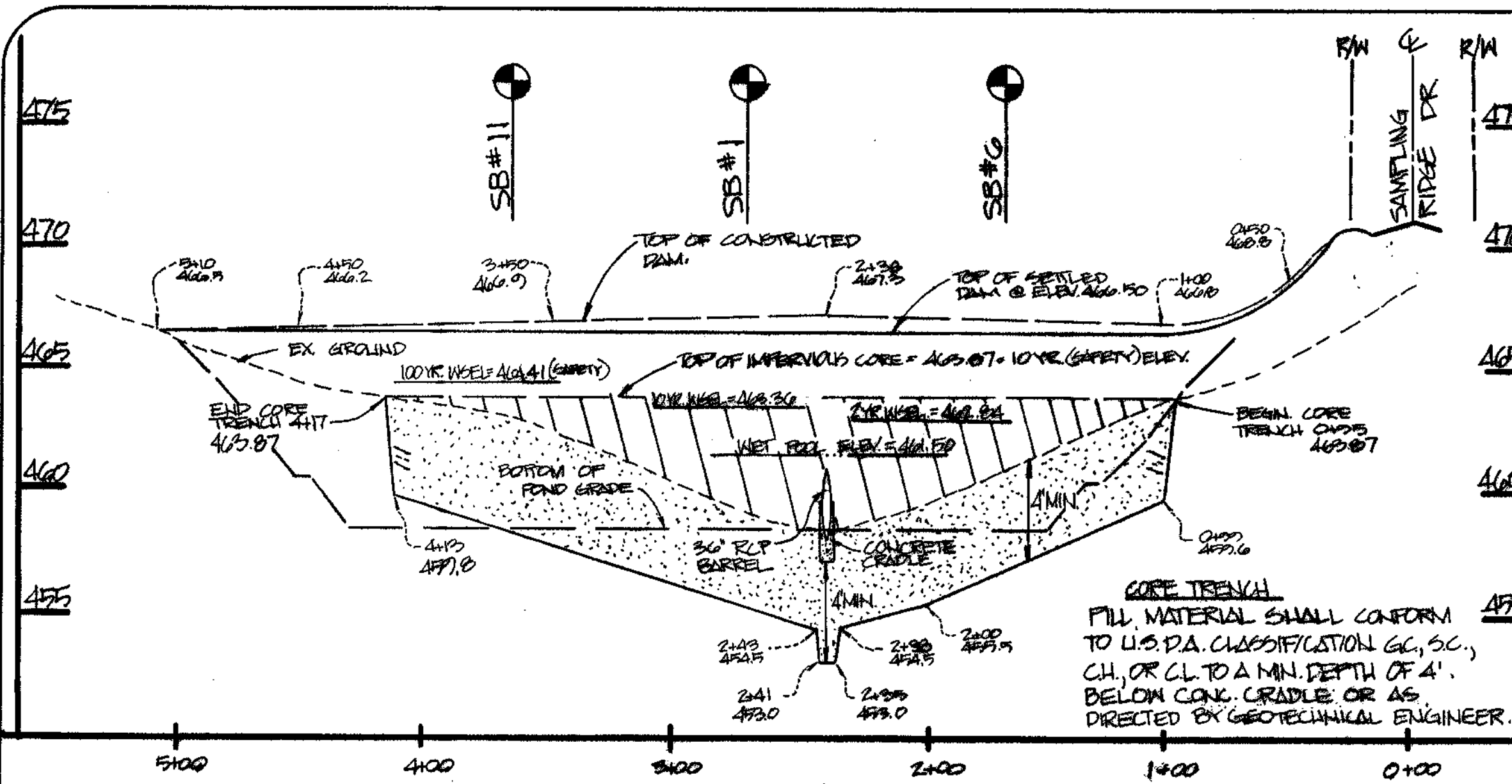


| | | | |
|---------|----------|--------------|----------|
| date | 05-98 | approval | R. M. M. |
| project | 98019.13 | illustration | K. M. B. |
| scale | 1" = 50' | | |

REVISED PER PLAN REVISIONS
DATE: 02/12/99
BY: [Signature]
SUBMITTED TO HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING FOR REVIEW
DATE: 01-19-99
DATE: 10/12/98

HOWARD COUNTY
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
STORMWATER MANAGEMENT PLAN

R.M. MOCHI GROUP, P.C.
10100 A. Rd. Beltsville, MD 21774-4010
(301) 955-6559
Fax: (301) 955-3171



APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Jank 3-4-99
CHIEF, BUREAU OF HIGHWAYS

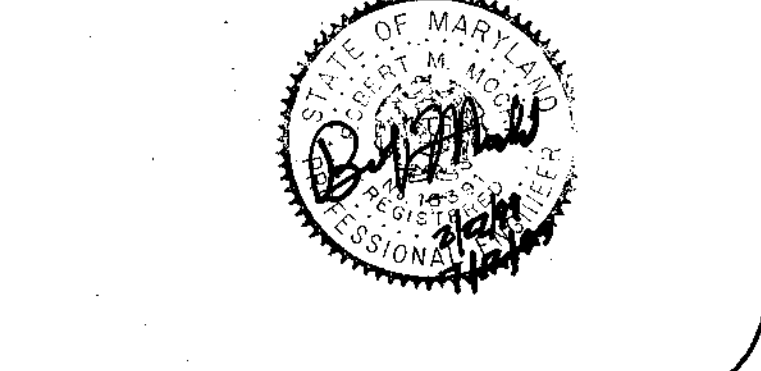
APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hornath 2/24/99
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED:
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Chuck Simms/es. 2/24/99
HOWARD SOIL CONSERVATION DISTRICT

APPROVED:
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
Chuck Simms/es. 2/24/99
USDA - NATIONAL RESOURCES CONSERVATION SERVICE

DEVELOPER'S CERTIFICATE
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Charles A. Sharp 6-10-98
Signature of Developer

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.
Robert M. Mochl, P.E. 6/1/98
DATE

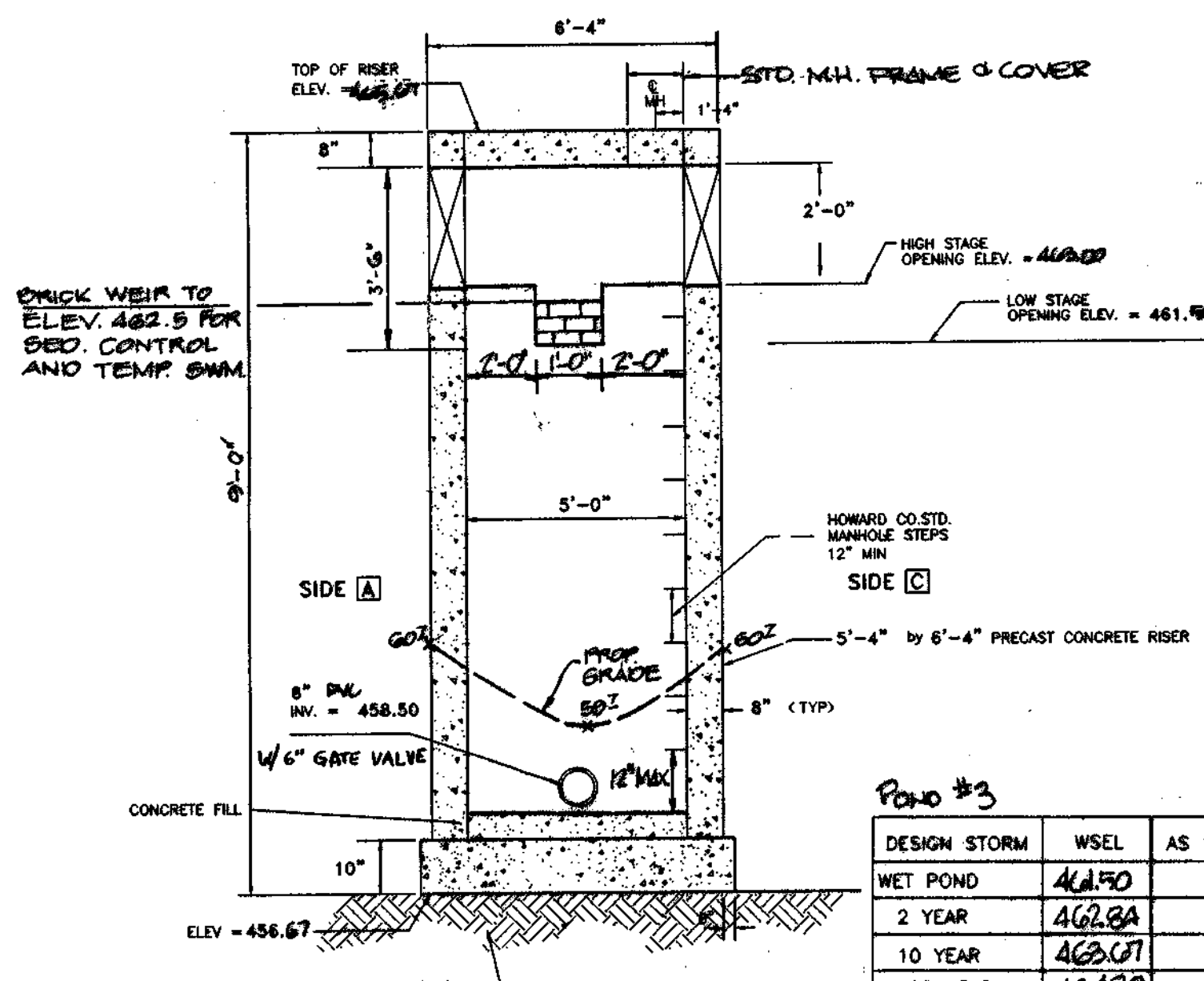
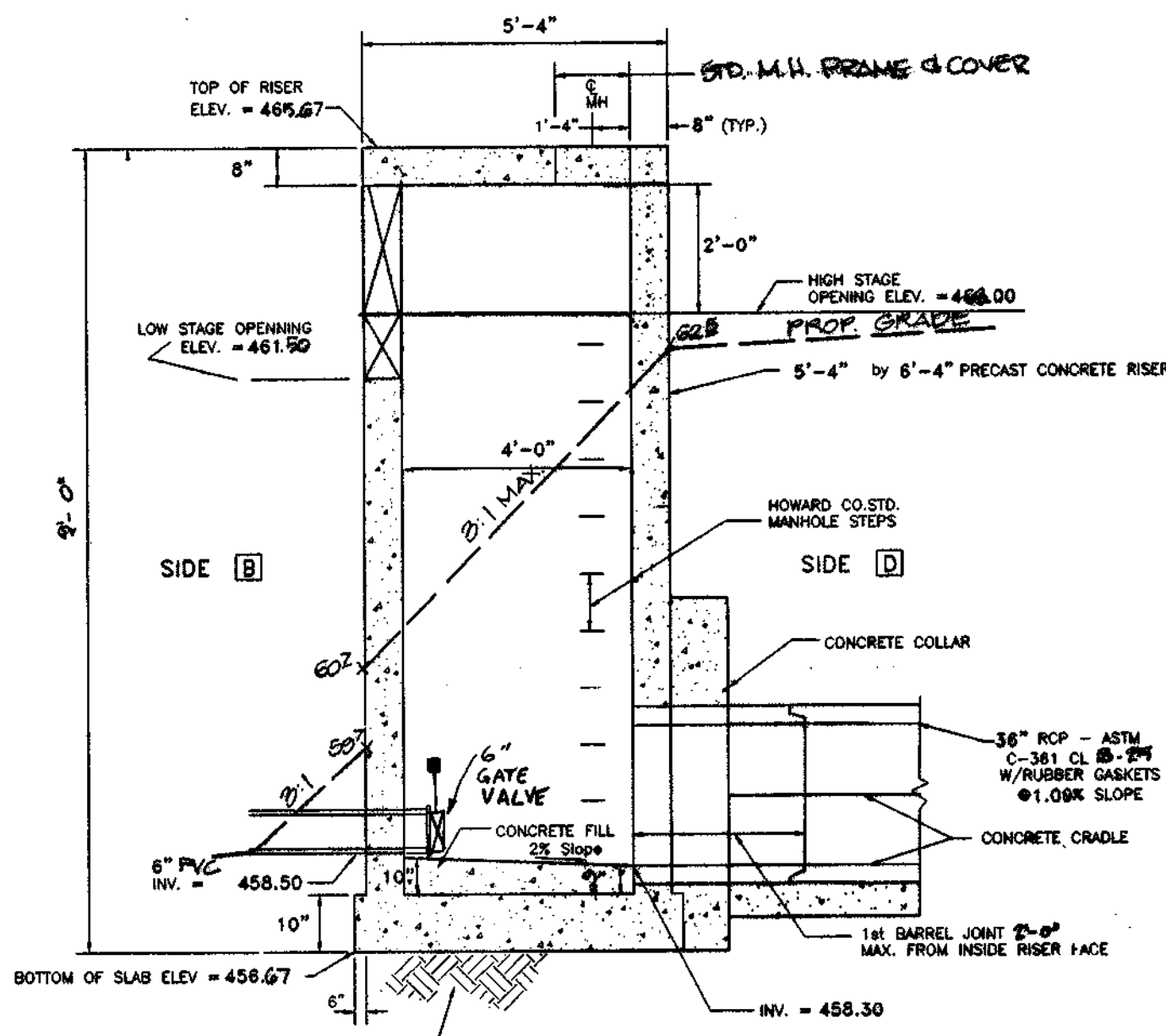


| | | | |
|--------------|-------------|-------------|--------|
| Project | 98019.13 | Date | 05-98 |
| Illustration | GEM, M.M.B. | Engineering | M.W.Z. |
| Scale | 1" = 50' | Approval | R.M.M. |

| | | | |
|---------|----------|----|--|
| Revised | 07-12-99 | By | REVISIONS |
| 1 | 07-12-99 | 1 | Original Myrns to Co for Signatures |
| 2 | 07-21-99 | 1 | Revised Submittal to HO CO. DIST. |
| 3 | 07-21-99 | 1 | Revised Submittal to HO CO. DIST. FOR REVIEW |
| 4 | 07-21-99 | 1 | 1st Submittal to HO CO. DIST. FOR REVISION |

HOWARD COUNTY
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
STORMWATER MANAGEMENT PLAN

R.M. MOCHL GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
10120 A Old National Pike
Pawcatuck, MD 21784-9706
(201) 865-8998
(201) 865-5111
Fax: (201) 865-5111



SECTION A-A

SECTION B-B

Pond #3

| DESIGN | STORM WSEL | AS BUILT |
|----------|------------|----------|
| 2 YEAR | 462.84 | |
| 10 YEAR | 463.01 | |
| 100 YEAR | 464.30 | |

STORMWATER MANAGEMENT POND MAINTENANCE SCHEDULE (POND #3)

ROUTINE MAINTENANCE

FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.

TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOVED 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 MOVED AS NEEDED.

DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MAINTENANCE OPERATIONS AND AS NEEDED.

VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE

STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, RISER STRUCTURE AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.

SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE CAPACITY INTERFERES WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY'S DEPARTMENT OF PUBLIC WORKS.

OPERATION, MAINTENANCE AND INSPECTION

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

| Item No. | Description | Frequency | Responsible Party | Notes |
|----------|--|--------------|-------------------|---|
| 1 | Visual inspection of pond structure and embankment | Annually | Owner | Check for cracks, erosion, and debris. |
| 2 | Inspection of riser structure and gate valve | Annually | Owner | Check for proper operation and leaks. |
| 3 | Removal of sediment from pond | As needed | Owner | Check depth of pond and remove sediment if necessary. |
| 4 | Maintenance of embankment slopes | Twice a year | Owner | Mow and grade slopes to prevent erosion. |
| 5 | Removal of debris and litter | As needed | Owner | Keep outlet area clear of debris. |
| 6 | Inspection of riprap outlet area | Annually | Owner | Check for erosion and repair riprap as needed. |

POND # 3 - RISER

NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Andrew M. Decker 3/29/99
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hamilton 3/29/99
CHIEF, DIVISION OF LAND DEVELOPMENT

John Decker 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

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

[Signature] 2/24/99
HOWARD SOIL CONSERVATION DISTRICT

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

Cheryl Swanson 3/24/99
USDA - NATIONAL RESOURCES CONSERVATION SERVICE

DEVELOPER'S CERTIFICATE
I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

Robert M. Mochi 6-10-98
Signature of Developer

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.

Robert M. Mochi 6-11-98
Robert M. Mochi, P.E.



| Project | Date | By | For |
|----------|-------|---------------|----------|
| 98010.13 | 05-98 | Engineering | M.W.Z. |
| | | Illustrations | M.W.Z. |
| | | Scale | AS NOTED |
| | | Approval | R.M.M. |

| Project | Date | By | For |
|----------|-------|---------------|----------|
| 98010.13 | 05-98 | Engineering | M.W.Z. |
| | | Illustrations | M.W.Z. |
| | | Scale | AS NOTED |
| | | Approval | R.M.M. |

REVISED PER PLAT REVISIONS
ADDED GATE VALVE PER B. OF HIGHWAYS
Submitted Original Mylars to Co. for Signature
REVISED SUBMITTAL TO HD. CO. PLAT
REVISED SUBMITTAL TO HD. CO. PLAT
1ST SUBMITTAL TO HD. CO. PLAT FOR REVIEW

4 7 2 1 0
1 0 1 0 1 0

HOWARD COUNTY
ELECTION DISTRICT NO. 5

HIGH FOREST ESTATES
STORMWATER MANAGEMENT PLAN

15 OF 24

R.M. MOCHI GROUP, P.C.
P.O. Box 16
10120 A, MD 21774-0016
Tel: (301) 855-5568
Fax: (301) 855-3111

WR-07-103 F.90.167 6/1/98

STREET TREES

SAPLING RIDGE DRIVE
5,840 L.F. RIGHT-OF-WAY
146 STREET TREES REQUIRED
146 Acer rubrum 'RED SUNSET'
PROPOSED - 40 FEET APART

OAK RIDGE COURT
1,766 L.F. RIGHT-OF-WAY
47 STREET TREES REQUIRED
47 Acer rubrum 'RED SUNSET'
PROPOSED - 40 FEET APART

OPEN LAND COURT
924 L.F. RIGHT-OF-WAY
24 STREET TREES REQUIRED
24 Acer rubrum 'RED SUNSET'
PROPOSED - 40 FEET APART

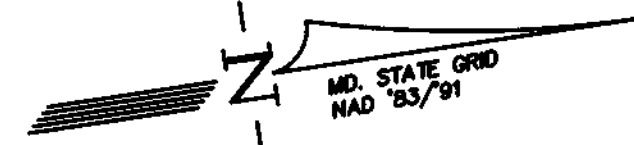
HIGH FOREST COURT
640 L.F. RIGHT-OF-WAY
16 STREET TREES REQUIRED
16 Acer rubrum 'RED SUNSET'
PROPOSED - 40 FEET APART

THE DEVELOPER WILL BE RESPONSIBLE FOR STREET TREE INSTALLATION. FINANCIAL SURETY FOR THE 233 PROPOSED STREET TREES, IN THE AMOUNT OF \$ 69,900 IS PART OF THE DEVELOPER'S AGREEMENT.

LEGEND

- Acer rubrum 'Red Sunset' / Red Sunset Red Maple (RS)
15 PROPOSED ADJACENT TO S.W.M. AREA + 233 STREET TREES
- Acer rubrum 'October Glory' / October Glory Red Maple (OG)
6 PROPOSED ADJACENT TO S.W.M. AREA
- Quercus phellos / Willow Oak (WO)
7 PROPOSED ADJACENT TO S.W.M. AREA
- Quercus rubra / Red Oak (RO)
8 PROPOSED ADJACENT TO S.W.M. AREA
- Cupressocyparis leyland / Leyland Cypress (LC)
79 PROPOSED S.W.M. AND PERIMETER
- Pinus strobus / Eastern White Pine (EWP)
79 PROPOSED S.W.M. AND PERIMETER

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 182 LANDSCAPE TREES, IN THE AMOUNT OF \$92,700 IS PART OF THE DEVELOPER'S AGREEMENT.



MATCH LINE SEE SHEET 18 OF 24

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3/8/99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

William J. Cummings 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

| SCHEDULE A - PERIMETER LANDSCAPE EDGE | | | | | |
|---|------|-----|------|-----|-------|
| Perimeter | 10 | 11 | 12 | 13 | TOTAL |
| Category * | | | | | |
| Landscape Type | A | A | A | A | |
| Linear Feet of Perimeter | 4800 | 450 | 4600 | 500 | 10350 |
| Credit for Existing Vegetation (Yes, Linear Feet) | 4650 | 230 | 2390 | | 7270 |
| Net Linear Feet to be planted | 150 | 220 | 2210 | 500 | 3080 |
| Number of Plants Required/Provided | | | | | |
| Shade Trees | 0 | 0 | 0 | 0 | |
| Evergreen Trees** | 5 | 7 | 73 | 16 | 101 |
| Shrubs | 0 | 0 | 0 | 0 | |

* - Adjacent to Perimeter Properties / Preservation Parcel unless otherwise noted
** - 2 EVERGREEN TREES SUBSTITUTED FOR EACH SHADE TREE

| SCHEDULE D - STORMWATER MANAGEMENT AREA LANDSCAPING | | | |
|---|---------------------|---------------------|-------|
| | SWM POND 2 (TYPE B) | SWM POND 3 (TYPE B) | TOTAL |
| LINEAR FEET OF PERIMETER | 780 | 1200 | |
| NUMBER OF TREES REQUIRED/PROVIDED | | | |
| SHADE TREES | 15 | 21 | 36 |
| EVERGREEN TREES | 19 | 26 | 45 |
| CREDIT FOR EXISTING VEG. (NO, YES AND L.F.) | NO | YES-270L.F. | |
| CREDIT FOR OTHER LANDSCAPING (NO, YES AND %) | NO | NO. | |

Note: This sheet for Landscaping Purposes Only.



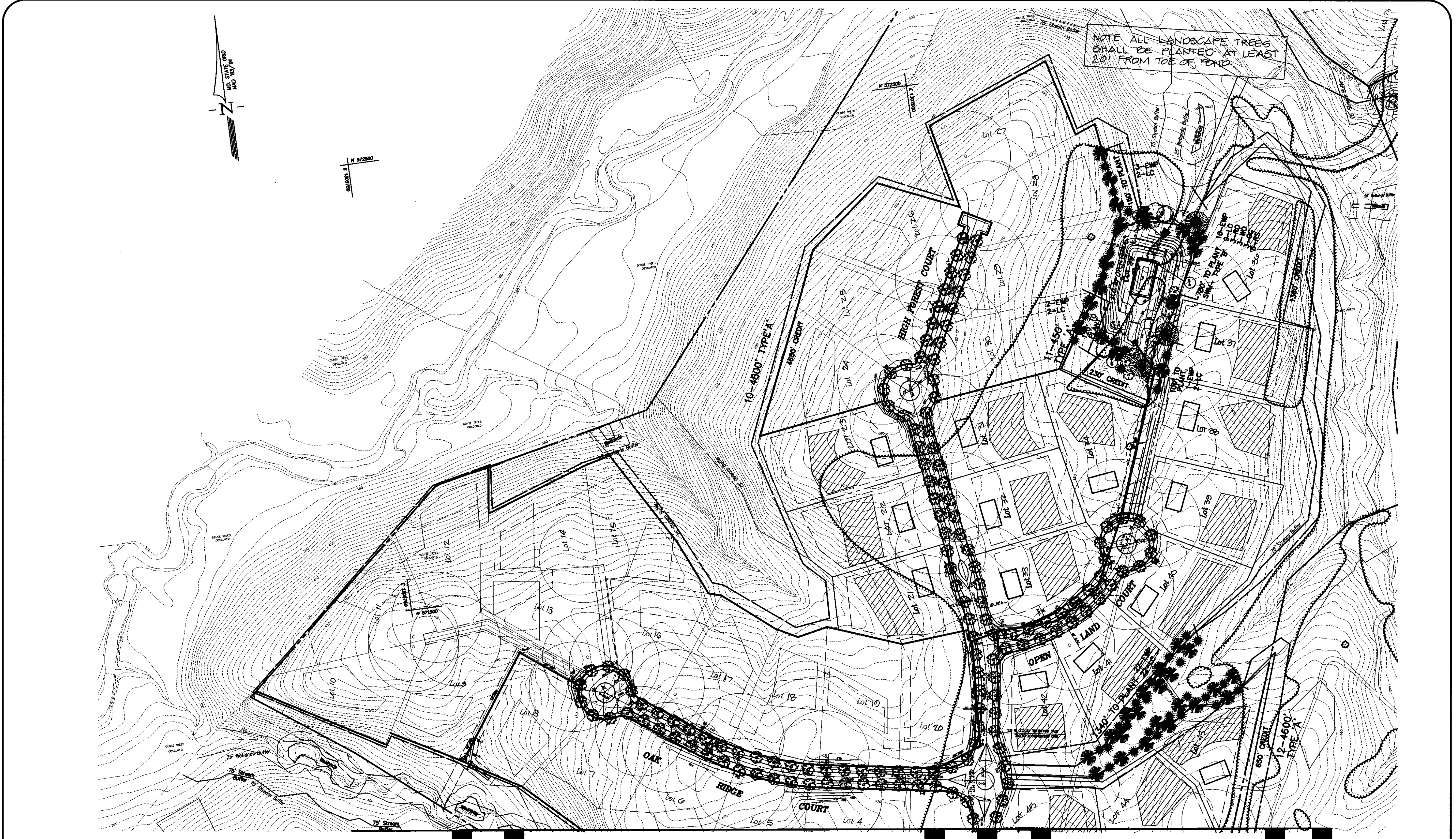
| | | | |
|--------------|----------|-------------|----------|
| project | 98019.13 | date | 06-05-98 |
| illustration | K.M.B. | engineering | M.W.Z. |
| scale | 1"=100' | approval | R.M.L. |

| | | |
|-----|---|----------|
| no. | description | date |
| 4 | REVISED PER PLAN REVISIONS | 07-12-98 |
| 3 | Submitted Originals to Co. for Signatures | 02-24-99 |
| 2 | Submitted Originals to Howard Co. for Review | 01-29-98 |
| 1 | REVISIONS SUBMITTED TO HOWARD CO. D.P.Z. FOR REVIEW | 06-28-98 |
| 0 | SUBMITTED TO HOWARD CO. D.P.Z. FOR REVIEW | 06-28-98 |

HIGH FOREST ESTATES
 LANDSCAPE AND STREET TREE PLAN
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MD.

R.M. MOCHI GOLF, P.C.
P.O. Box 10, Old National Pike
New Market, MD 21774-0010
(301) 865-5888
Fax: (301) 865-5111

J:\198019845\508P00A\CD\DATA\LANDSCAPE.DWG



APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Andrew M. Daniels 3-4-99
CHIEF, BUREAU OF HIGHWAYS MD DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

And Hamilton 7/24/99
CHIEF, DIVISION OF LAND DEVELOPMENT JH DATE

W.D. Dammann 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION JH DATE

MATCH LINE SEE SHEET 17 OF 24

NOTE: THIS SHEET FOR LANDSCAPING PURPOSES ONLY.



| | | | |
|--------------|----------|-------------|----------|
| project | 98019.13 | date | 06-06-98 |
| illustration | K.M.B. | engineering | M.W.Z. |
| scale | 1"=100' | approval | R.M.L. |

| | | | |
|-----|---|----------|-----------|
| 4 | REVISED PER PLAT REVISIONS | 07-12-99 | |
| 3 | Submitted Original Mylers to Co. for Signatures | 02-24-99 | |
| 2 | REVISED SUBMITTAL TO HO. CO. DEP. REVIEW | 01-29-98 | |
| 1 | SUBMITTED TO HOWARD CO. DEP. FOR REVIEW | 06-06-98 | |
| CO. | description | date | revisions |

HIGH FOREST ESTATES
HOWARD COUNTY, MD.

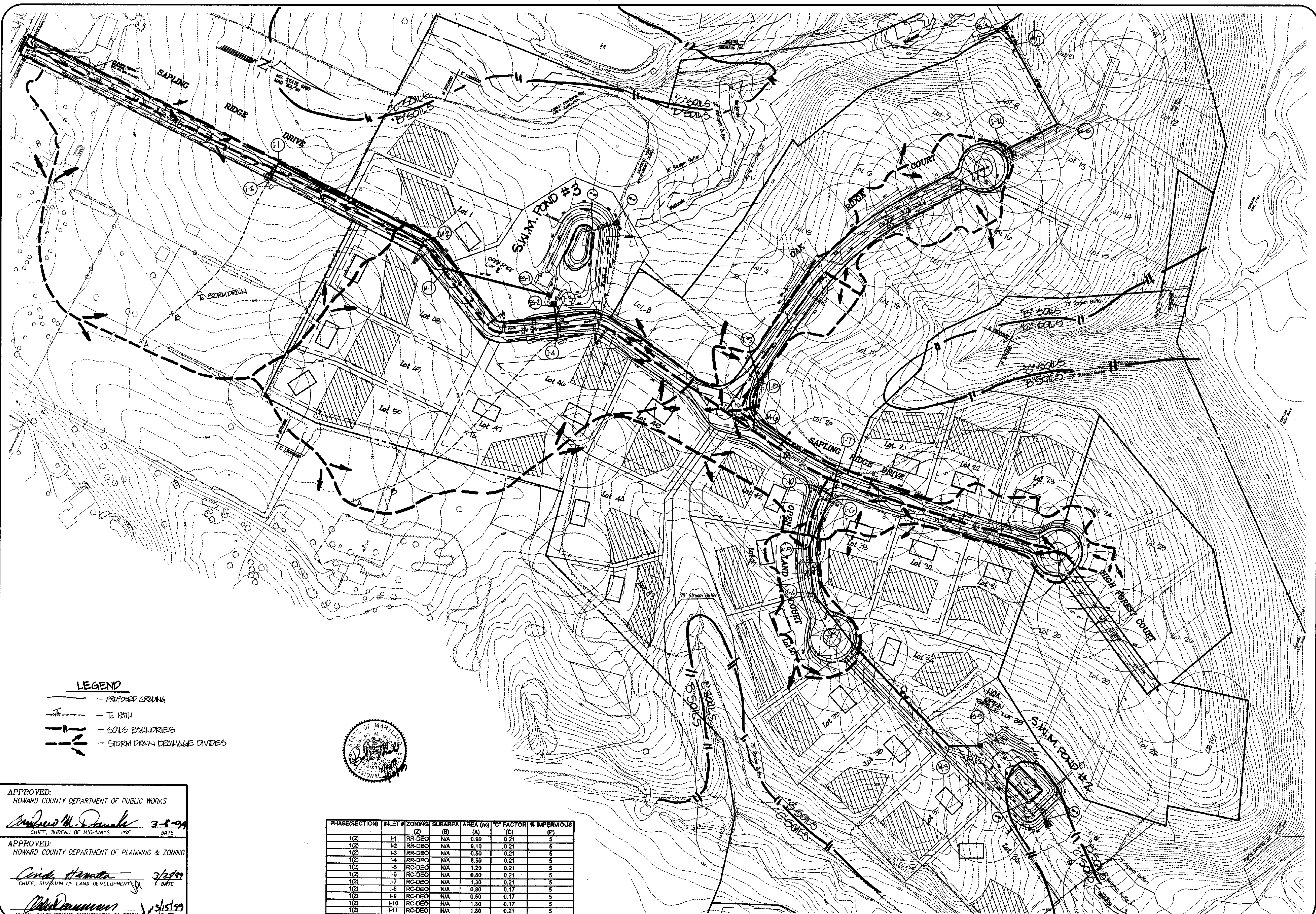
ELECTION DISTRICT NO. 5

LANDSCAPE AND STREET TREE PLAN

E.M. MOCH GROUP, INC.

P.O. Box 10
New Market, MD 21774-0010
10120 A Old Woodstock Pike
Jenningsville, MD 21751-9706

(301) 865-5858
Fax: (301) 865-5111



LEGEND

- - - PROPOSED GRADING
- - - T.E. PATH
- - - SOILS BOUNDARIES
- - - STORM DRAIN DRAINAGE DIVIDES



APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Andrew M. Daniels 3/5/99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hamata 3/24/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John Dammann 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

| PHASE(SECTION) | INLET # | ZONING (Z) | SUBAREA (B) | AREA (A) | C _f FACTOR (C) | % IMPERVIOUS (P) |
|----------------|---------|------------|-------------|----------|---------------------------|------------------|
| 1(2) | I-1 | RR-DEO | N/A | 0.90 | 0.21 | 5 |
| 1(2) | I-2 | RR-DEO | N/A | 9.10 | 0.21 | 5 |
| 1(2) | I-3 | RR-DEO | N/A | 0.50 | 0.21 | 5 |
| 1(2) | I-4 | RR-DEO | N/A | 8.50 | 0.21 | 5 |
| 1(2) | I-5 | RC-DEO | N/A | 1.20 | 0.21 | 5 |
| 1(2) | I-6 | RC-DEO | N/A | 0.80 | 0.21 | 5 |
| 1(2) | I-7 | RC-DEO | N/A | 1.30 | 0.21 | 5 |
| 1(2) | I-8 | RC-DEO | N/A | 0.80 | 0.17 | 5 |
| 1(2) | I-9 | RC-DEO | N/A | 0.50 | 0.17 | 5 |
| 1(2) | I-10 | RC-DEO | N/A | 1.30 | 0.17 | 5 |
| 1(2) | I-11 | RC-DEO | N/A | 1.80 | 0.21 | 5 |

J:\960198AS\SDSKPROV\CD\DATA\DMAP.DWG

| | | | |
|--------------|------------|-------------|----------|
| project | 96019.13 | date | 06-05-98 |
| illustration | GEM/K.L.B. | engineering | M.W.Z. |
| scale | 1"=100' | approval | R.M.M. |

| | | | |
|---|--|----------|--|
| 4 | REVISED PER PLAT REVISIONS | 07-12-99 | |
| 5 | Submitted Original Mylars to Co. for Signatures | 02-24-98 | |
| 6 | RECEIVED SIGNATURE TO HOWARD CO. D.P.Z. FOR REVIEW | 03-16-98 | |
| 7 | SUBMITTED TO HOWARD CO. D.P.Z. FOR REVIEW | 06-08-98 | |
| 0 | | | |

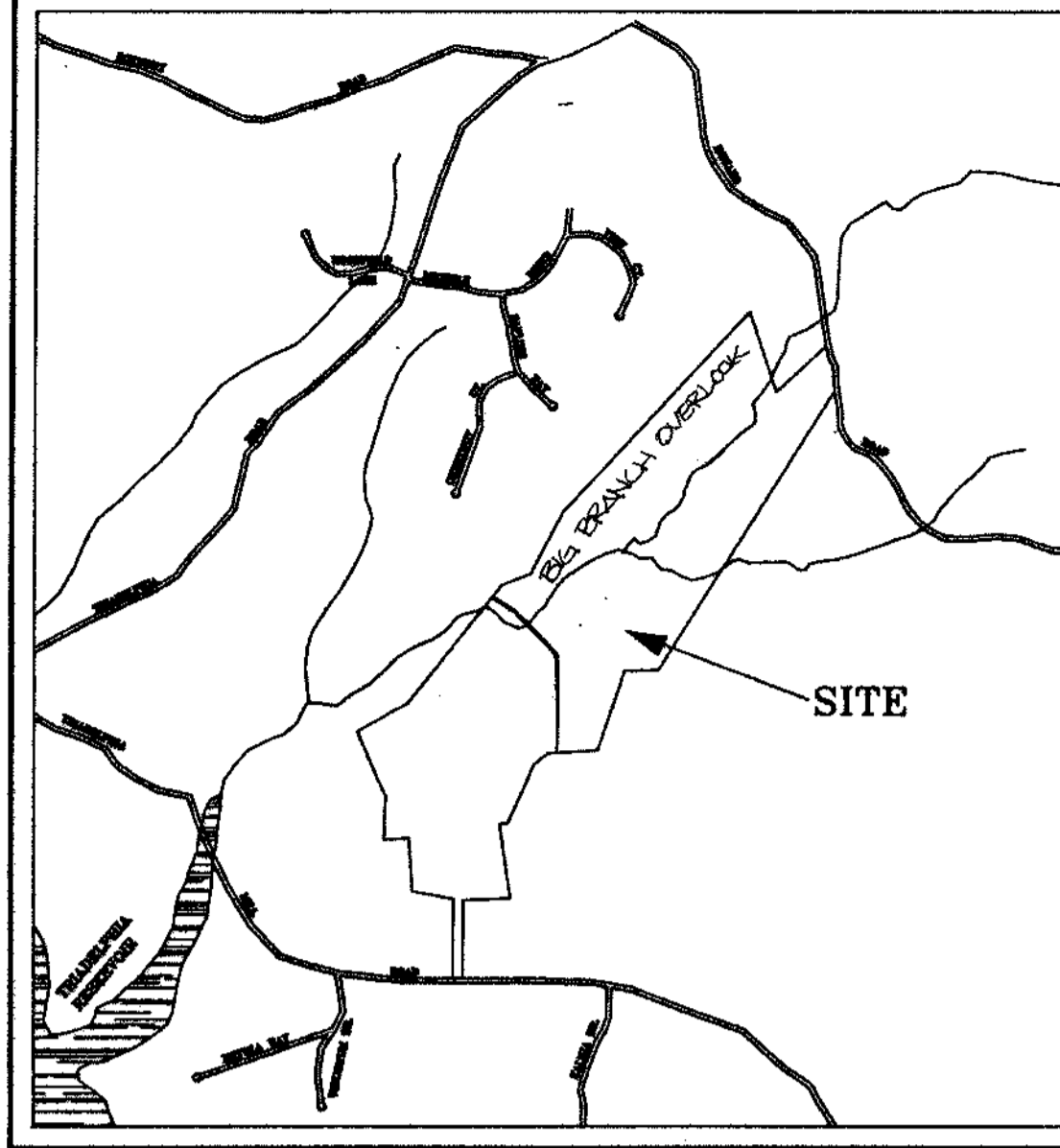
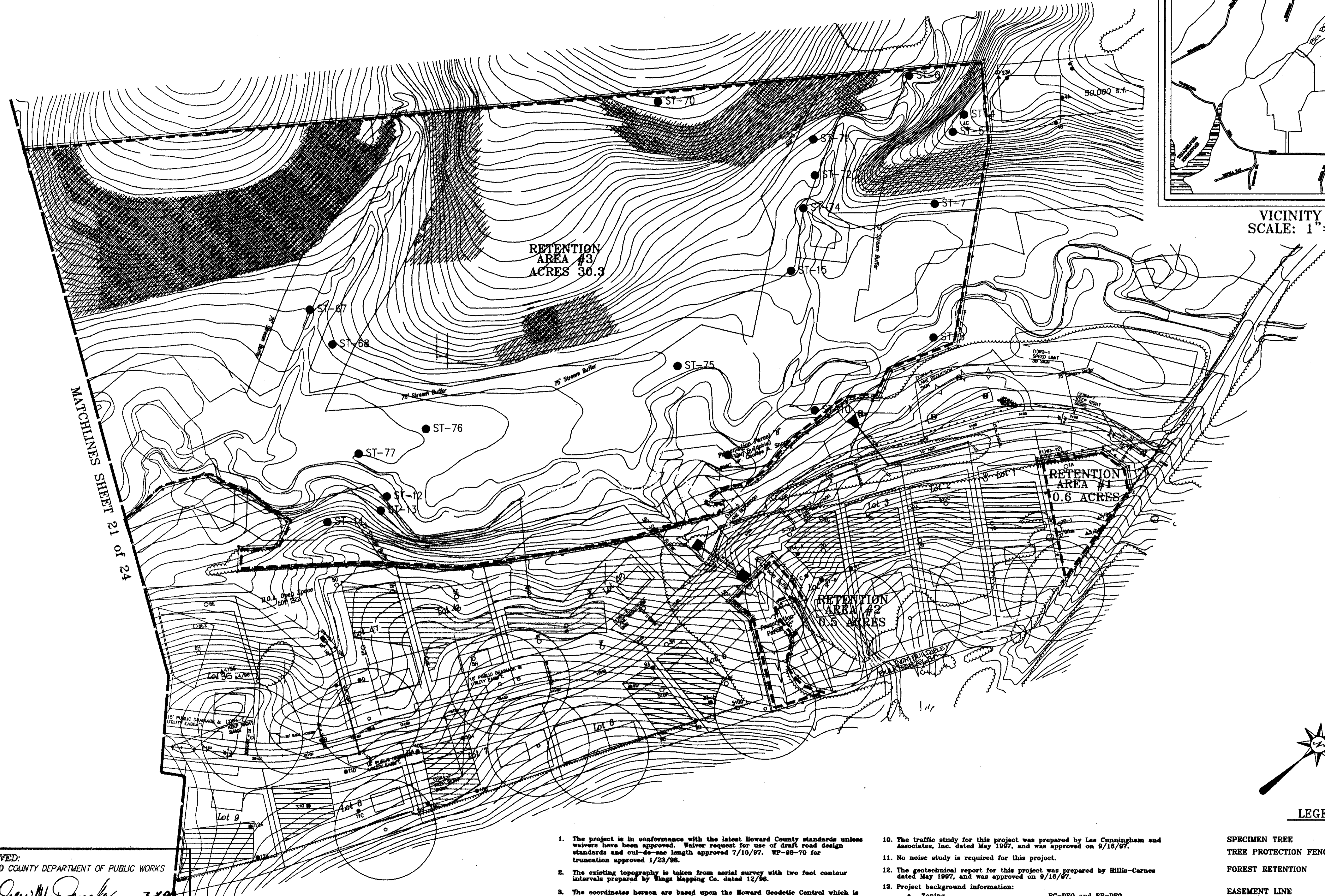
HIGH FOREST ESTATES
HOWARD COUNTY, MD.

ELECTION DISTRICT NO. 5

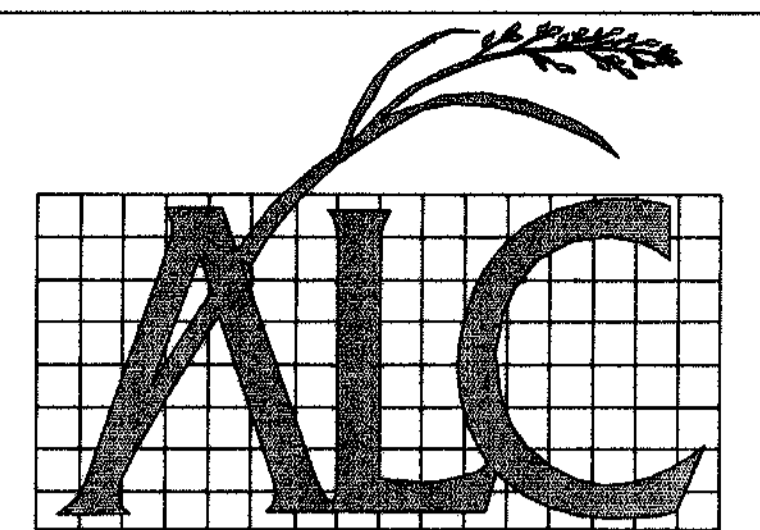
STORM DRAIN DRAINAGE AREA MAP

R.M. MOCHI GROF, P.C.

P.O. Box 10
New Market, MD 21774-0010
Tel: (301) 865-5903
Fax: (301) 865-5111



VICINITY MAP
SCALE: 1"=2000'



AMERICAN LAND CONCEPTS
236 B MAIN STREET
REISTERSTOWN, MARYLAND 21136
PHONE: (410)-526-2688 FAX: (410)-526-2970

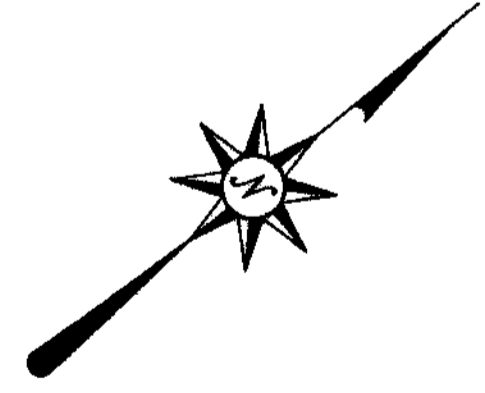
OWNER/DEVELOPER

Mr. Charles A. Sharp
3779 Sharp Road
Glenwood, MD 21738

HIGH FOREST ESTATES
(FORMERLY BIG BRANCH OVERLOOK SECTION 2)
FINAL FOREST CONSERVATION PLAN
ELECTION DISTRICT NO. 4
HOWARD COUNTY, MARYLAND

R.M. MOCHI GROUP, P.C.

P.O. Box 10
New Market, MD 21774-0010
10120 A Old National Pike
Jopansville, MD 21754-9706
(301) 865-5858
Fax: (301) 865-5111



LEGEND

- SPECIMEN TREE ● ST-42
- TREE PROTECTION FENCE ————
- FOREST RETENTION - - - - -
- EASEMENT LINE - - - - -
- FOREST RETENTION SIGNAGE ————
- SLOPES 15-25% [diagonal hatching]
- SLOPES 25% & UP [cross-hatching]

1. The project is in conformance with the latest Howard County standards unless waivers have been approved. Waiver request for use of draft road design standards and cul-de-sac length approved 7/10/97. WP-98-70 for truncation approved 1/23/98.
2. The existing topography is taken from aerial survey with two foot contour intervals prepared by Wings Mapping Co. dated 12/96.
3. The coordinates hereon are based upon the Howard Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monument Nos. 28R1 and 28R2 were used for this project.
4. Water is private.
5. Sewer is private.
6. Stormwater Management control will be provided on-site, on either open or preservation parcels. Ponds shall be maintained by Howard County.
7. Existing utilities are based on Howard County contract drawings.
8. The floodplain study for this project was prepared by R.M. Mochi Group, P.C. dated October 1997, and was approved on 11/13/97.
9. The wetland delineation study for this project was prepared by American Land Concepts, inc. dated May 1997, and was approved on 9/16/97.
10. The traffic study for this project was prepared by Lee Cunningham and Associates, Inc. dated May 1997, and was approved on 9/16/97.
11. No noise study is required for this project.
12. The geotechnical report for this project was prepared by Hillis-Carnes dated May 1997, and was approved on 9/16/97.
13. Project background information:

| | |
|-----------------------------------|--|
| a. Zoning | RC-DEO and RR-DEO |
| b. Gross Area of Tract | 238.3 AC. |
| c. Net Area of Tract: | 199.8 AC. |
| d. Area of Proposed Lots/Parcels: | 228.2 AC. |
| e. Area of Proposed R/W: | 9.9 AC. |
| f. Number of Proposed Units: | 624 BRANCH OVERLOOK - 40 UNITS HIGH FOREST ESTATES - 40 UNITS |
14. Howard Road is a scenic road.
15. * - Denotes approved location of future traffic calming device (if required).

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Andrew M. Panko 3-8-99
CHIEF, BUREAU OF HIGHWAYS

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hemmelt 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT

Mike Robinson 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

SIGNATURE BLOCK

Matthew V. Smith 01/04/99
MATTHEW V. SMITH, ENVIRONMENTAL SCIENTIST
QUALIFIED PROFESSIONAL STATUS AS
PER THE FOREST CONSERVATION ACT

C:\R19\DRAWINGS\BIG BRANCH OVERLOOK\BBO-fcp 1.dwg
DRAWN BY: MVS/JKF SCALE: 1" = 100'
DESIGNED BY: MVS DATE: JAN 5, 1999
CHECKED BY: MVS SHEET 20 OF 24



AMERICAN LAND CONCEPTS
 236 B MAIN STREET
 REISTERSTOWN, MARYLAND 21156
 PHONE: (410)-526-2688 FAX: (410)-526-2970

OWNER/DEVELOPER

Mr. Charles A. Sharp
 3779 Sharp Road
 Glenwood, MD 21738

HIGH FOREST ESTATES
 (FORMERLY BIG BRANCH OVERLOOK)
 SECTION 2

FINAL FOREST CONSERVATION PLAN
 ELECTION DISTRICT NO. 4
 HOWARD COUNTY, MARYLAND

R.M. MOCHI GROUP, P.C.

P.O. Box 10
 New Market, MD 21774-0010
 10120 A Old National Pike
 Jomsville, MD 21754-9706
 (301) 865-5958
 Fax: (301) 865-5111

SIGNATURE BLOCK

Matthew V. Smith 01/04/99
 MATTHEW V. SMITH, ENVIRONMENTAL SCIENTIST
 QUALIFIED PROFESSIONAL STATUS AS
 PER THE FOREST CONSERVATION ACT

C:\R13\DRAWINGS\BIG BRANCH OVERLOOK\BBO-top 2.dwg
 DRAWN BY: MVS/JKF SCALE: 1" = 100'
 DESIGNED BY: MVS DATE: JAN. 5, 1999
 CHECKED BY: MVS SHEET 21 OF 24

MATCHLINES SHEET 22 of 24

MATCHLINES SHEET 20 of 24

MATCHLINES SHEET 23 of 24

RETENTION AREA #4
 23.9 ACRES

RETENTION AREA #3
 (CONTINUED FROM SHEET 20 OF 24)

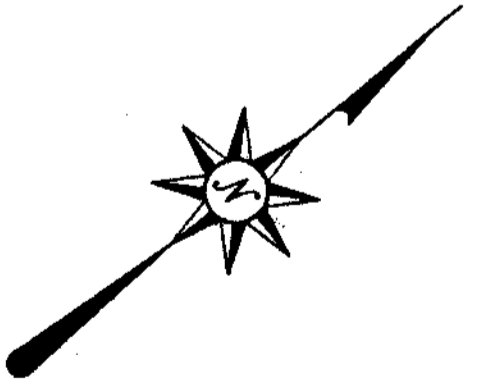
RETENTION AREA #5
 0.80 ACRES

S.W. POND

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Danley 3-8-99
 CHIEF, BUREAU OF HIGHWAYS HS DATE

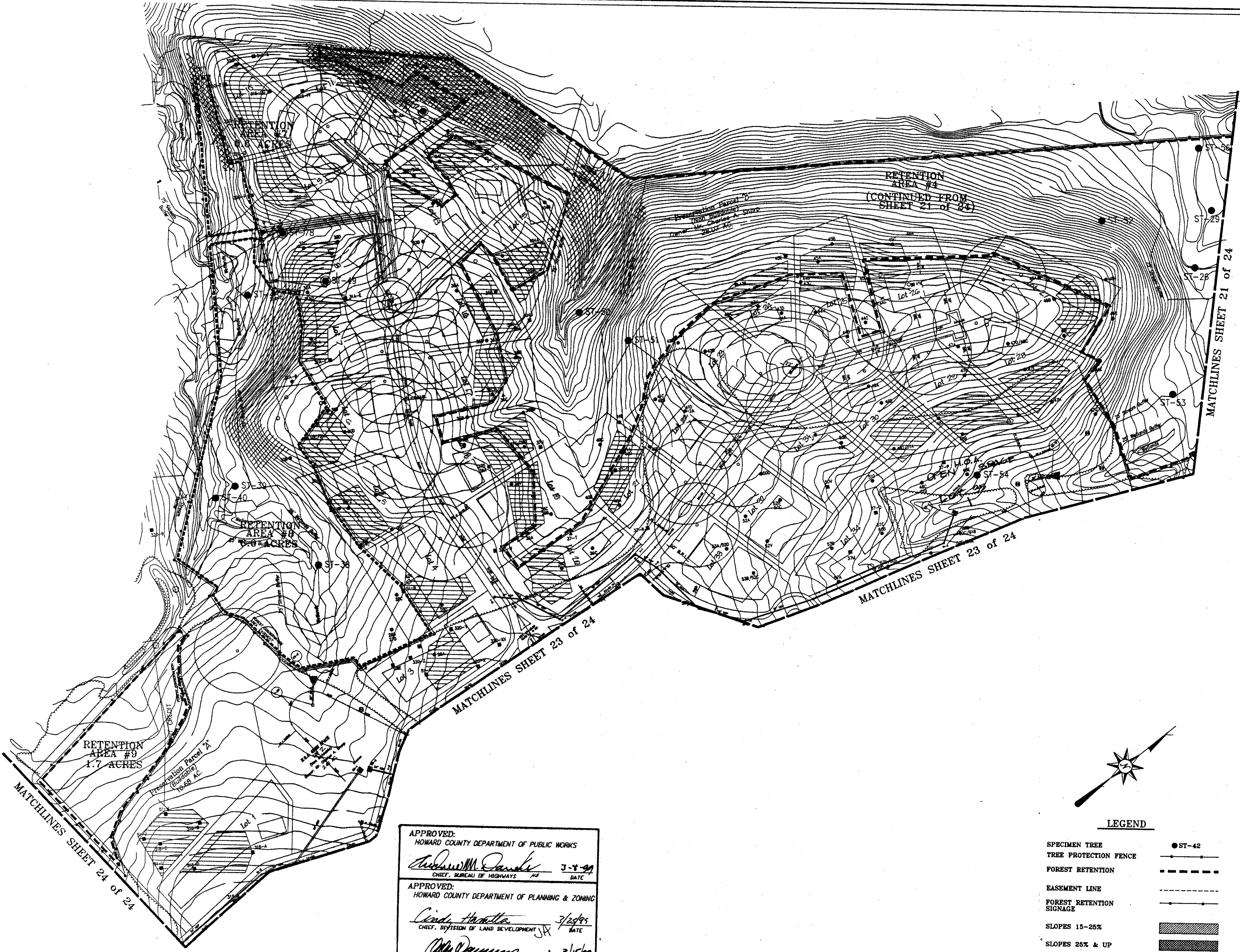
APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamble 3/25/99
 CHIEF, DIVISION OF LAND DEVELOPMENT JA DATE

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
John P. ... 3/15/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



LEGEND

- ST-42
- TREE PROTECTION FENCE
- - - FOREST RETENTION
- - - EASEMENT LINE
- - - FOREST RETENTION SIGNAGE
- ▨ SLOPES 15-25%
- ▩ SLOPES 25% & UP



AMERICAN LAND CONCEPTS
 238 B MAIN STREET
 REISTERSTOWN, MARYLAND 21136
 PHONE: (410)-826-2686 FAX: (410)-826-2970

OWNER/DEVELOPER

Mr. Charles A. Sharp
 3779 Sharp Road
 Glenwood, MD 21738

HIGH FOREST ESTATES
 (FORMERLY BIG BRANCH OVERLOOK)
 SECTION 2

FINAL FOREST CONSERVATION PLAN

ELECTION DISTRICT NO. 4
 HOWARD COUNTY, MARYLAND

R.M. MOCHI GROUP, P.C.

P.O. Box 10
 New Market, MD 21774-0010
 10120 A Old National Pike
 Gamewille, MD 21754-9706
 (301) 865-5858
 Fax: (301) 865-5111

SIGNATURE BLOCK

Matthew V. Smith 01/04/99
 MATTHEW V. SMITH, ENVIRONMENTAL SCIENTIST
 QUALIFIED PROFESSIONAL STATUS AS
 PER THE FOREST CONSERVATION ACT

LEGEND

- SPECIMEN TREE ● ST-42
- TREE PROTECTION FENCE ————
- FOREST RETENTION - - - - -
- EASEMENT LINE - · - · - ·
- FOREST RETENTION SIGNAGE ————
- SLOPES 15-25% [diagonal hatching]
- SLOPES 25% & UP [cross-hatching]

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3/8/99
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 3/29/99
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John D. Williams 3/15/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

C:\RIS\DRAWINGS\BIG BRANCH OVERLOOK\BBO-fcp 3.dwg
 DRAWN BY: MVS/JKF SCALE: 1" = 100'
 DESIGNED BY: MVS DATE: JAN. 5, 1999
 CHECKED BY: MVS SHEET 22 OF 24



AMERICAN LAND CONCEPTS
 238 B MAIN STREET
 REISTERSTOWN, MARYLAND 21136
 PHONE: (410)-526-2688 FAX: (410)-526-2970

OWNER/DEVELOPER

Mr. Charles A. Sharp
 3779 Sharp Road
 Glenwood, MD 21738

HIGH FOREST ESTATES
 (FORMERLY BIG BRANCH OVERLOOK)
 SECTION 2

FINAL FOREST CONSERVATION PLAN

ELECTION DISTRICT NO. 4
 HOWARD COUNTY, MARYLAND

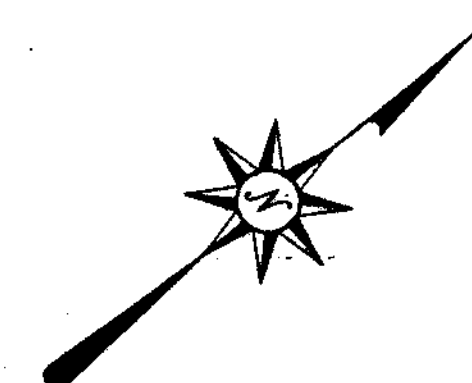
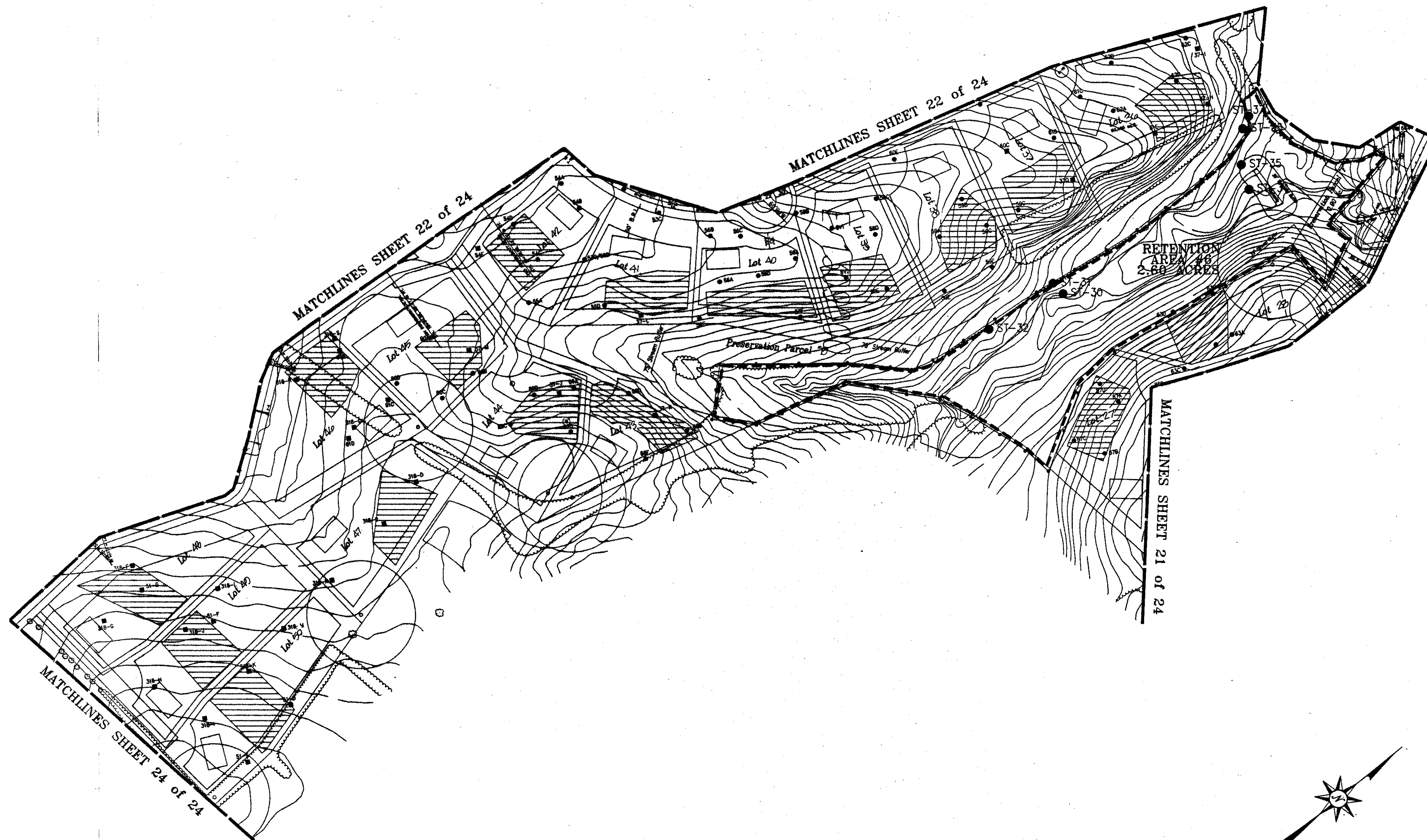
R.M. MOCHI GROUP, P.C.

P.O. Box 10
 New Market, MD 21774-0010
 10120 A Old National Pike
 Jomsville, MD 21754-9706
 (301) 865-3538
 Fax: (301) 865-5111

SIGNATURE BLOCK

Matthew V. Smith 01/04/99
 MATTHEW V. SMITH, ENVIRONMENTAL SCIENTIST
 QUALIFIED PROFESSIONAL STATUS AS
 PER THE FOREST CONSERVATION ACT

C:\R13\DRAWINGS\BIG BRANCH OVERLOOK\BBO-fcp 4.dwg
 DRAWN BY: MVS/JKF SCALE: 1" = 100'
 DESIGNED BY: MVS DATE: Jan 5, 1999
 CHECKED BY: MVS SHEET 23 OF 24



LEGEND

- SPECIMEN TREE ●ST-42
- TREE PROTECTION FENCE ————
- FOREST RETENTION - - - - -
- EASEMENT LINE - - - - -
- FOREST RETENTION SIGNAGE ————
- SLOPES 15-25% [diagonal hatching]
- SLOPES 25% & UP [cross-hatching]

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Richard M. Daniels 3-4-99
 CHIEF, BUREAU OF HIGHWAYS #4 DATE

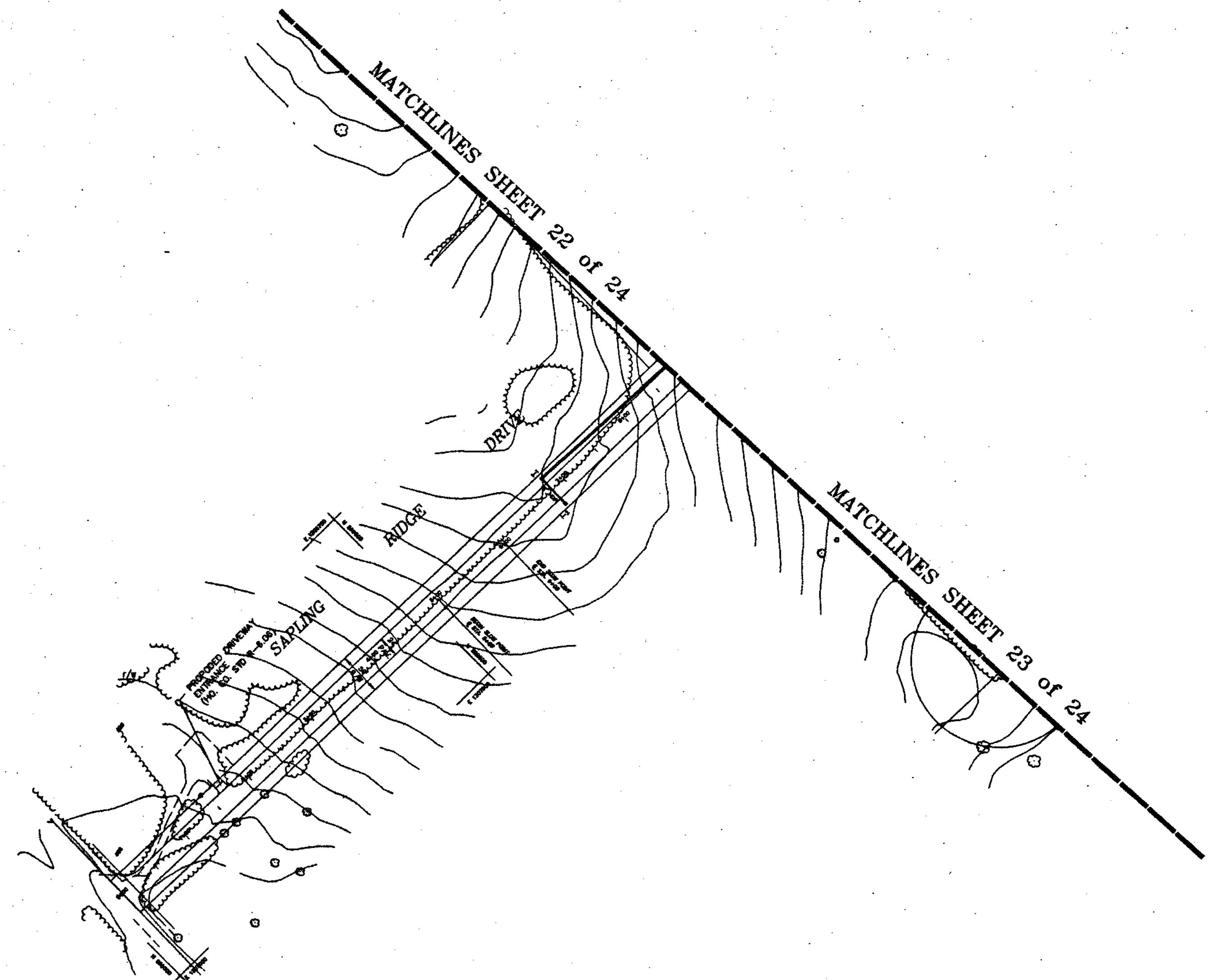
APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hamstra 3/25/99
 CHIEF, DIVISION OF LAND DEVELOPMENT #4 DATE

John P. ... 3/15/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION #4 DATE

SPECIMEN TREE LIST

| NO. | COMMON NAME | BOTANICAL NAME | SIZE | CONDITION |
|-----|------------------|-------------------------|------|-----------|
| 4 | TULIP POPLAR | Liriodendron tulipifera | 36" | GOOD |
| 5 | BLACK OAK | Quercus velutina | 35" | GOOD |
| 6 | TULIP POPLAR | Liriodendron tulipifera | 33" | GOOD |
| 7 | TULIP POPLAR | Liriodendron tulipifera | 36" | GOOD |
| 8 | SYCAMORE | Platanus occidentalis | 34" | GOOD |
| 9 | SYCAMORE | Platanus occidentalis | 36" | GOOD |
| 10 | TULIP POPLAR | Liriodendron tulipifera | 85" | GOOD |
| 11 | SYCAMORE | Platanus occidentalis | 47" | GOOD |
| 12 | TULIP POPLAR | Liriodendron tulipifera | 32" | GOOD |
| 13 | TULIP POPLAR | Liriodendron tulipifera | 39" | GOOD |
| 14 | TULIP POPLAR | Liriodendron tulipifera | 35" | GOOD |
| 15 | SYCAMORE | Platanus occidentalis | 38" | GOOD |
| 16 | SYCAMORE | Platanus occidentalis | 33" | GOOD |
| 17 | SYCAMORE | Platanus occidentalis | 31" | GOOD |
| 18 | SYCAMORE | Platanus occidentalis | 20" | GOOD |
| 19 | BLACK OAK | Quercus velutina | 22" | GOOD |
| 20 | TULIP POPLAR | Liriodendron tulipifera | 59" | GOOD |
| 21 | TULIP POPLAR | Liriodendron tulipifera | 41" | GOOD |
| 22 | TULIP POPLAR | Liriodendron tulipifera | 40" | FAIR-GOOD |
| 24 | TULIP POPLAR | Liriodendron tulipifera | 33" | GOOD |
| 25 | TULIP POPLAR | Liriodendron tulipifera | 32" | GOOD |
| 26 | TULIP POPLAR | Liriodendron tulipifera | 33" | GOOD |
| 28 | TULIP POPLAR | Liriodendron tulipifera | 33" | GOOD |
| 29 | TULIP POPLAR | Liriodendron tulipifera | 33" | GOOD |
| 30 | TULIP POPLAR | Liriodendron tulipifera | 42" | GOOD |
| 31 | TULIP POPLAR | Liriodendron tulipifera | 32" | GOOD |
| 32 | TULIP POPLAR | Liriodendron tulipifera | 45" | GOOD |
| 33 | TULIP POPLAR | Liriodendron tulipifera | 30" | GOOD |
| 34 | TULIP POPLAR | Liriodendron tulipifera | 32" | GOOD |
| 35 | TULIP POPLAR | Liriodendron tulipifera | 46" | GOOD |
| 36 | TULIP POPLAR | Liriodendron tulipifera | 36" | GOOD |
| 37 | TULIP POPLAR | Liriodendron tulipifera | 35" | GOOD |
| 38 | TULIP POPLAR | Liriodendron tulipifera | 39" | GOOD |
| 39 | TULIP POPLAR | Liriodendron tulipifera | 31" | GOOD |
| 40 | TULIP POPLAR | Liriodendron tulipifera | 41" | GOOD |
| 48 | SOUTHERN RED OAK | Quercus falcata | 31" | GOOD |
| 49 | SOUTHERN RED OAK | Quercus falcata | 33" | GOOD |
| 50 | TULIP POPLAR | Liriodendron tulipifera | 36" | GOOD |
| 51 | TULIP POPLAR | Liriodendron tulipifera | 46" | GOOD |
| 52 | BLACK OAK | Quercus velutina | 30" | GOOD |
| 53 | TULIP POPLAR | Liriodendron tulipifera | 48" | GOOD |
| 54 | BLACK OAK | Quercus velutina | 32" | GOOD |
| 55 | SYCAMORE | Platanus occidentalis | 33" | GOOD |
| 56 | TULIP POPLAR | Liriodendron tulipifera | 38" | GOOD |
| 57 | TULIP POPLAR | Liriodendron tulipifera | 40" | GOOD |
| 58 | SYCAMORE | Platanus occidentalis | 36" | GOOD |
| 60 | TULIP POPLAR | Liriodendron tulipifera | 32" | GOOD |
| 61 | BLACK OAK | Quercus velutina | 35" | GOOD |
| 62 | TULIP POPLAR | Liriodendron tulipifera | 41" | GOOD |
| 63 | SYCAMORE | Platanus occidentalis | 32" | GOOD |
| 64 | SYCAMORE | Platanus occidentalis | 38" | GOOD |
| 65 | TULIP POPLAR | Liriodendron tulipifera | 32" | GOOD |
| 66 | TULIP POPLAR | Liriodendron tulipifera | 32" | GOOD |
| 67 | TULIP POPLAR | Liriodendron tulipifera | 35" | GOOD |
| 68 | TULIP POPLAR | Liriodendron tulipifera | 30" | GOOD |
| 69 | TULIP POPLAR | Liriodendron tulipifera | 38" | GOOD |
| 70 | BLACK OAK | Quercus velutina | 44" | GOOD |
| 71 | SOUTHERN RED OAK | Quercus falcata | 32" | GOOD |
| 72 | SOUTHERN RED OAK | Quercus falcata | 30" | GOOD |
| 73 | TULIP POPLAR | Liriodendron tulipifera | 31" | GOOD |
| 74 | TULIP POPLAR | Liriodendron tulipifera | 31" | GOOD |
| 75 | SYCAMORE | Platanus occidentalis | 32" | GOOD |
| 76 | BLACK OAK | Quercus velutina | 54" | GOOD |
| 77 | TULIP POPLAR | Liriodendron tulipifera | 20" | GOOD |
| 78 | SOUTHERN RED OAK | Quercus falcata | 35" | GOOD |
| 79 | BLACK OAK | Quercus velutina | 31" | GOOD |

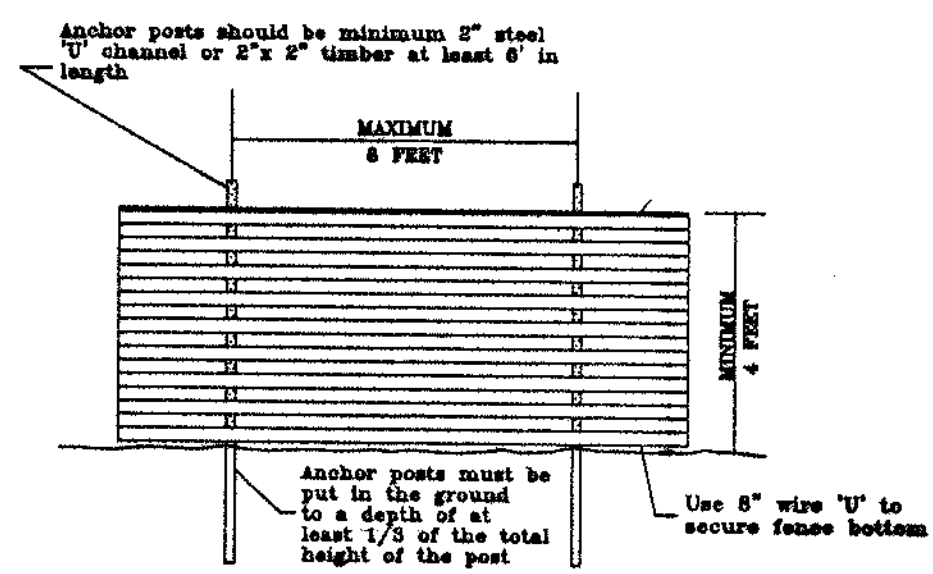


APPROVED:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard M. Paule 3-8-99
 CHIEF, BUREAU OF HIGHWAYS DATE

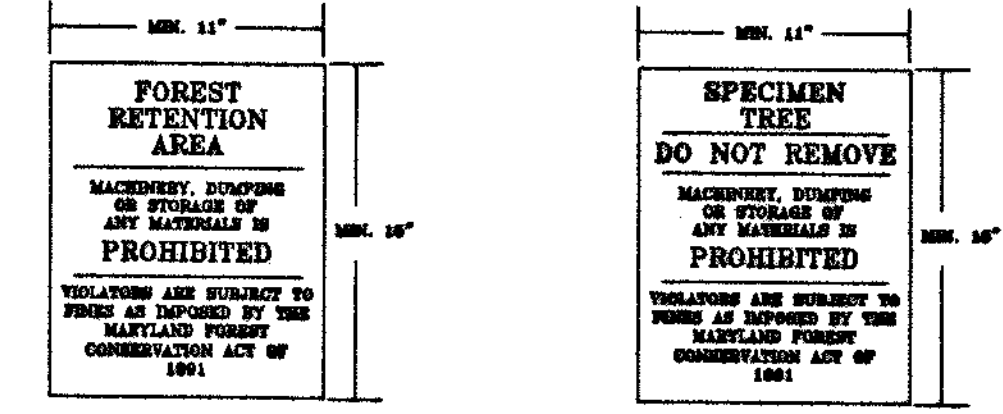
APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cinda Hamata 3/8/99
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
John Williams 3/8/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

TREE PROTECTION FENCE
 BLAZE ORANGE PLASTIC MESH
 NOT TO SCALE



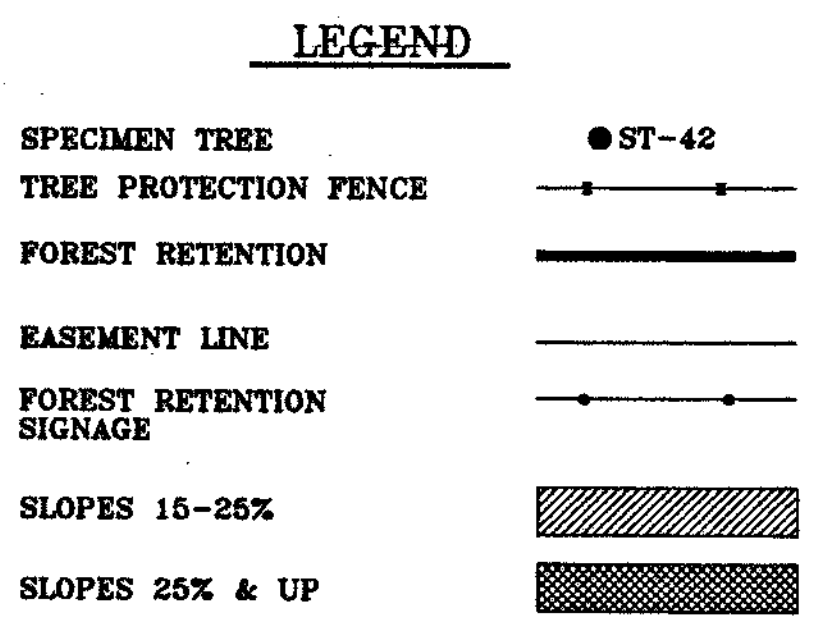
TREE SIGNAGE
 NOT TO SCALE



FOREST CONSERVATION WORKSHEET
 BIG BRANCH OVERLOOK

| | ACRES | (1/10 acre) |
|---|--------|-------------|
| I. BASIC SITE DATA | | |
| GROSS SITE AREA | 252.8 | 25.3 |
| AREA WITHIN 100 FEET FLOODPLAIN | 0.0 | 0.0 |
| AREA WITHIN 100 FEET OF FORESTATION FENCE | 0.0 | 0.0 |
| NET TRACT AREA (BY APPLICATION) | 169.8 | 16.9 |
| LAND USE CATEGORY (B-RES, D-RES, D-2, C/A/O, I) | 169.8 | 16.9 |
| II. INFORMATION FOR CALCULATIONS | | |
| A. NET TRACT AREA | 169.8 | 16.9 |
| B. REFORESTATION THRESHOLD (SEE X A) | 80.0 | 8.0 |
| C. AFFORESTATION MINIMUM (SEE X A) | 40.0 | 4.0 |
| D. EXISTING FOREST ON NET TRACT AREA | 109.82 | 10.98 |
| E. FOREST AREAS TO BE CLEARED | 47.82 | 4.78 |
| F. FOREST AREAS TO BE RETAINED | 62.0 | 6.2 |
| III. DETERMINING REQUIREMENTS: AFFORESTATION OR REFORESTATION | | |
| 1. Reforestation | | |
| If existing forest areas equal or exceed the afforestation minimum (if B equals or is more than C), and clearing of forest areas is proposed, reforestation requirements may apply. | | |
| GO TO SECTION IV | | |
| If existing forest areas exceed the afforestation minimum (if B equals or is more than C) and no clearing of existing forest is proposed, no reforestation is required. No further calculations are needed. | | |
| 2. Afforestation | | |
| If existing forest areas are less than the afforestation minimum (if B is less than C), afforestation requirements apply. | | |
| GO TO SECTION V | | |

| | ACRES | (1/10 acre) |
|---|--------|-------------|
| IV. REFORESTATION CALCULATIONS | | |
| A. NET TRACT AREA | 169.8 | 16.9 |
| B. REFORESTATION THRESHOLD (SEE X A) | 80.0 | 8.0 |
| C. EXISTING FOREST ON NET TRACT AREA | 109.82 | 10.98 |
| D. FOREST AREAS TO BE CLEARED | 47.82 | 4.78 |
| E. FOREST AREAS TO BE RETAINED | 62.0 | 6.2 |
| G. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD (D-F, if F equals or is greater than B, Alternate 1) (D-F, if F is less than B, Alternate 2) | | |
| | 47.82 | 4.78 |
| H. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD (D-F, if applicable) | | |
| | 0.0 | 0.0 |
| I. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD (F-B, Retention Credit, if applicable) | | |
| | 16.4 | 1.6 |
| Select the alternative that applies: | | |
| 1. Clearing above the threshold only If forest areas to be retained equal or are greater than the reforestation threshold (if F equals or is greater than B), the following calculations apply: | | |
| REFORESTATION FOR CLEARING ABOVE THRESHOLD G X 1/4 = 12.0 | | |
| CREDIT FOR FOREST AREAS RETAINED ABOVE THRESHOLD I = Retention Credit | | |
| TOTAL REFORESTATION REQUIRED (G X 1/4) - I = 0.0 | | |
| If the total reforestation requirement is equal to or less than 0, no reforestation is required. | | |
| 2. Clearing below the threshold If forest areas to be retained are less than the reforestation threshold (if F is less than B), the following calculations apply: | | |
| REFORESTATION FOR CLEARING ABOVE THRESHOLD G X 1/4 = M/A | | |
| CREDIT FOR FOREST AREAS RETAINED ABOVE THRESHOLD I = M/A | | |
| TOTAL REFORESTATION REQUIRED (G X 1/4) + (B X E) = M/A | | |
| Since clearing occurs below the threshold, no forest retention credit is possible. | | |



NOTE: ONLY THE FLOODPLAIN AREA WAS DEDUCTED FROM THE GROSS AREA OF THE PROPERTY, TO OBTAIN THE NET TRACT AREA VALUE.

NOTE: ALL FOREST CONSERVATION EASEMENTS SHOWN ARE SUBJECT TO THE TERMS OF THE DEED OF FOREST CONSERVATION EASEMENT TO BE EXECUTED WITH HOWARD COUNTY AND RECORDED AMONG THE LAND RECORDS OF HOWARD COUNTY.

NOTE: TREE PROTECTION FENCE WILL BE INSTALLED IF DISTURBANCE IS WITHIN 100' OF THE FOREST RETENTION EASEMENT LINE.

SEQUENCE OF CONSTRUCTION

- INSTALL TREE PROTECTION FENCE.
- INSTALL FOREST CONSERVATION SIGNAGE.
- COMPLETE ALL REQUIRED GRADING AND CONSTRUCTION.
- REMOVE TREE PROTECTION FENCE.



AMERICAN LAND CONCEPTS
 238 B MAIN STREET
 REISTERSTOWN, MARYLAND 21136
 PHONE: (410)-526-2688 FAX: (410)-526-2070

OWNER/DEVELOPER

Mr. Charles A. Sharp
 3779 Sharp Road
 Glenwood, MD 21738

HIGH FOREST ESTATES
 (FORMERLY BIG BRANCH OVERLOOK)
 SECTION 2
FINAL FOREST CONSERVATION PLAN
 ELECTION DISTRICT NO. 4
 HOWARD COUNTY, MARYLAND

R.M. MOCHI GROUP, P.C.

P.O. Box 10
 New Market, MD 21774-0010
 10120 A Old National Pike
 (301) 865-5858
 (Jomville, MD 21754-9706 Fax: (301) 865-5111

SIGNATURE BLOCK

Matthew V. Smith 01/04/99
 MATTHEW V. SMITH, ENVIRONMENTAL SCIENTIST
 QUALIFIED PROFESSIONAL STATUS AS
 PER THE FOREST CONSERVATION ACT

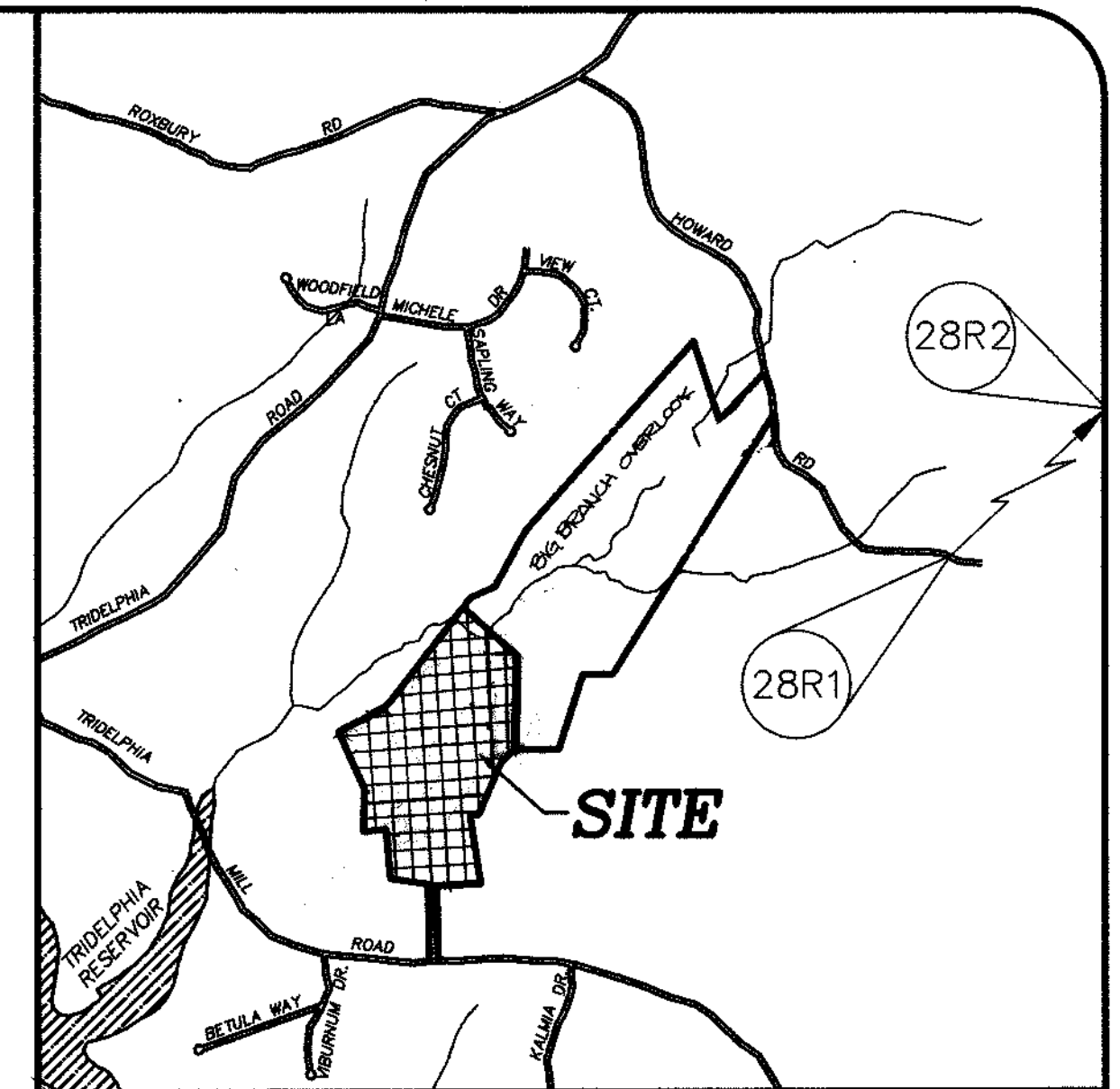
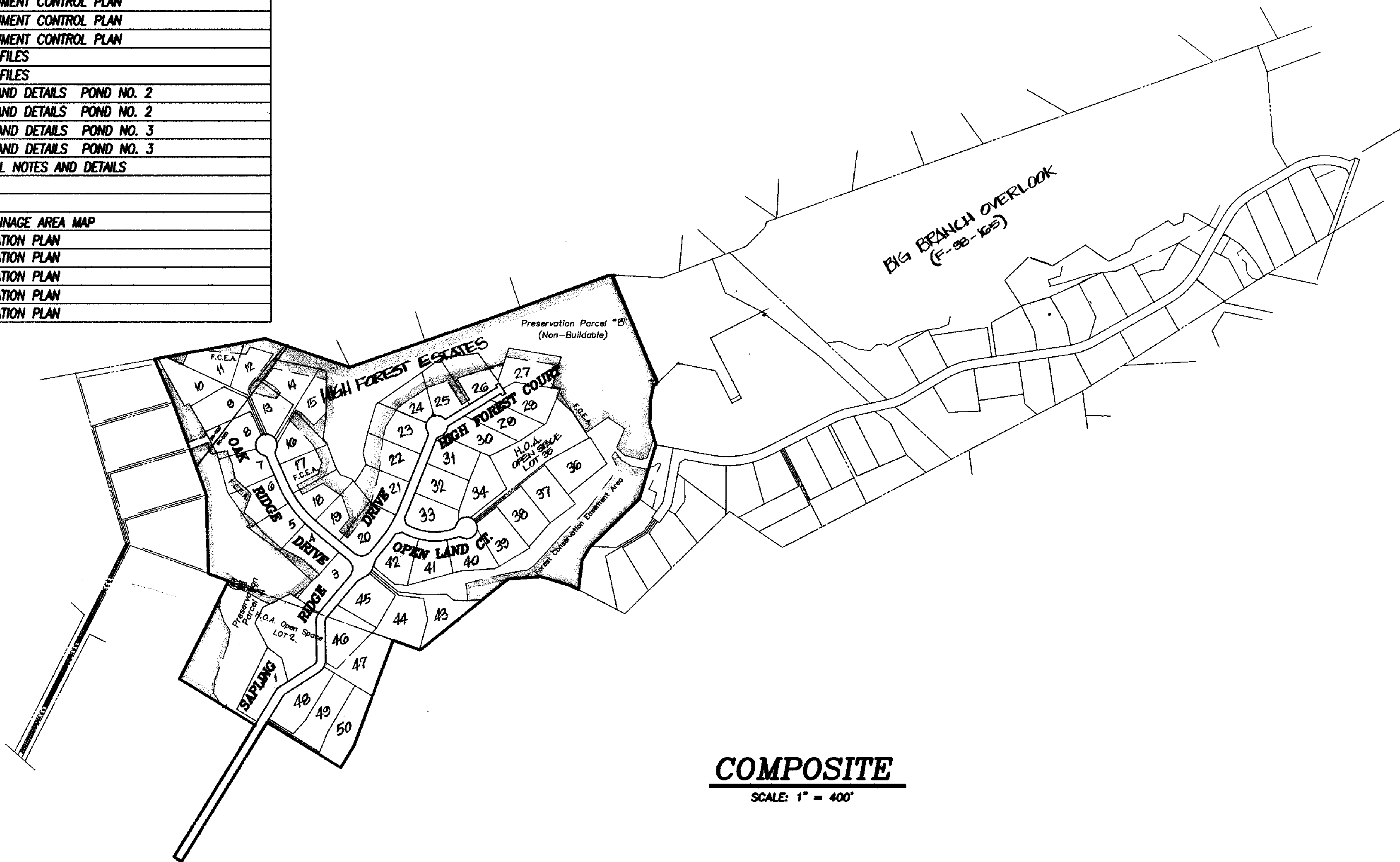
C:\R13\DRAWINGS\BIG BRANCH OVERLOOK\BBO-fcp 6.dwg
 DRAWN BY: MVS/JKF SCALE: 1" = 100'
 DESIGNED BY: MVS DATE: JAN 5, 1999
 CHECKED BY: MVS SHEET 24 OF 24

ROADS, STORM DRAIN, AND GRADING HIGH FOREST ESTATES

Election District No.5 Howard County, MD

INDEX OF SHEETS:

1. COVER SHEET
2. SAPLING RIDGE DRIVE PLAN AND PROFILE
3. SAPLING RIDGE DRIVE PLAN AND PROFILE
4. SAPLING RIDGE DR. & HIGH FOREST CT. PLAN AND PROFILE
5. OAK RIDGE DRIVE PLAN AND PROFILE
6. OPEN LAND COURT PLAN AND PROFILE
7. GRADING AND SEDIMENT CONTROL PLAN
8. GRADING AND SEDIMENT CONTROL PLAN
9. GRADING AND SEDIMENT CONTROL PLAN
10. STORM DRAIN PROFILES
11. STORM DRAIN PROFILES
12. S.W.M. PROFILES AND DETAILS POND NO. 2
13. S.W.M. PROFILES AND DETAILS POND NO. 2
14. S.W.M. PROFILES AND DETAILS POND NO. 3
15. S.W.M. PROFILES AND DETAILS POND NO. 3
16. SEDIMENT CONTROL NOTES AND DETAILS
17. LANDSCAPE PLAN
18. LANDSCAPE PLAN
19. STORM DRAIN DRAINAGE AREA MAP
20. FOREST CONSERVATION PLAN
21. FOREST CONSERVATION PLAN
22. FOREST CONSERVATION PLAN
23. FOREST CONSERVATION PLAN
24. FOREST CONSERVATION PLAN



VICINITY MAP

SCALE: 1"=2000'

GENERAL NOTES:

1. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
2. The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.
3. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
4. Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
5. The existing topography is taken from aerial survey with two foot contour intervals prepared by Wings Mapping Co., dated 12/96.
6. The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monument Nos. 28R1 and 28R2 were used for this project.
7. Water is private.
8. Sewer is private.
9. Stormwater management control will be provided on site, on either open space or preservation parcels. Ponds shall be maintained by Howard County.
10. Existing utilities are based on Howard County contract drawings.
11. The floodplain study for this project was prepared by R.M. Mochi Group, P.C., dated October, 1997, and was approved on November 13, 1997.
12. The wetlands delineation study for this project was prepared by American Land Concepts dated May, 1997 and was approved on September 16, 1997.
13. The traffic study for this project was prepared by Lee Cunningham and Associates, Inc. dated May, 1997 and was approved on September 16, 1997.
14. Project Background information:
 - a. Zoning: RC-DEO and RR-DEO
 - b. Gross Area of Tract: 102.0 AC. (22.7 Ac.-RR, 79.3 Ac.- RC.)
 - c. Net Area of Tract: 91.72 AC.
 - d. Area of Proposed Lots/Parcels: 48: 55.14 AC; Parcel 1: 30.08; Open Space = 5.1 AC.
 - e. Area of Proposed R/W: 5.77 AC.
 - f. Number of Proposed Lots: 48 Buildable Lots, 1 Build. Pres. Parcel, 2 Open Space Lots, 1 Non-Build. Pres. Parcel
- e. Open Space Required: 5.1 AC.
Open Space Provided: 5.1 AC.
15. Waiver request for use of draft road design standards and cul-de-sac length approval 7/10/97.
16. Unless otherwise noted all B.R.L.'s shown are standard for RC zoning district.
17. Coordinates are based on NAD '83/91 Maryland Coordinate System as projected by Howard County Geodetic Control Stations Nos. 28R1 & 28R2.
(Meters X 3.280833333 = Feet; Feet X 0.3048006096 = Meters)
No. 28R1 N 573,574.1517 E 1,313,221.1140 Elev. 547.85
No. 28R2 N 573,637.5879 E 1,314,445.6788 Elev. 606.27
18. The Contractor shall contact the Construction Inspection Division 24 hours prior to commencement of any work at 410-313-1880.
19. The proposed infiltration facility shall be owned and privately maintained by the Homeowner's Association.



HIGH FOREST ESTATES

Election District No.5 Howard County, MD
Tax Map 27, Grid 6, Parcels 96,140, & 142

Previous Files: S-97-21, P-98-14, WP-98-70, BA: 399-D, BA: 413-D

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Danek 3-8-99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hanvick 3/6/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Robert M. Mochi 3/5/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

OWNER/DEVELOPER
SAPLING RIDGE, LLC.
3770 SHARP ROAD
GLENWOOD, MD 21720
(410) 422-4120
ATTN: MR. CHARLES A. SHARP, PRESIDING MEMBER

ENGINEER/SURVEYOR
R.M. MOCHI GROUP, P.C.
P.O. BOX 10
NEW MARKET, MD 21774
(301) 865-5858
ATTN: MR. ROBERT M. MOCHI, P.E.

| | | | |
|--------------|-----------|-------------|----------|
| project | 96019.13 | date | 04-17-98 |
| illustration | K.M.B. | engineering | M.W.Z. |
| scale | 1" = 400' | approval | R.M.M. |

| | | |
|-----|---|----------|
| no. | description | date |
| 4 | REVISED PER PLAT REVISIONS | 07-22-99 |
| 3 | REVISIONS TO ORIGINAL MAP FOR SIGNATURE | 02-24-99 |
| 2 | REVISIONS TO ORIGINAL MAP FOR SIGNATURE | 10-22-98 |
| 1 | REVISIONS TO ORIGINAL MAP FOR SIGNATURE | 08-22-98 |
| 0 | SUBMITTED TO HOWARD CO. D.P.Z. FOR REVIEW | 06-22-98 |

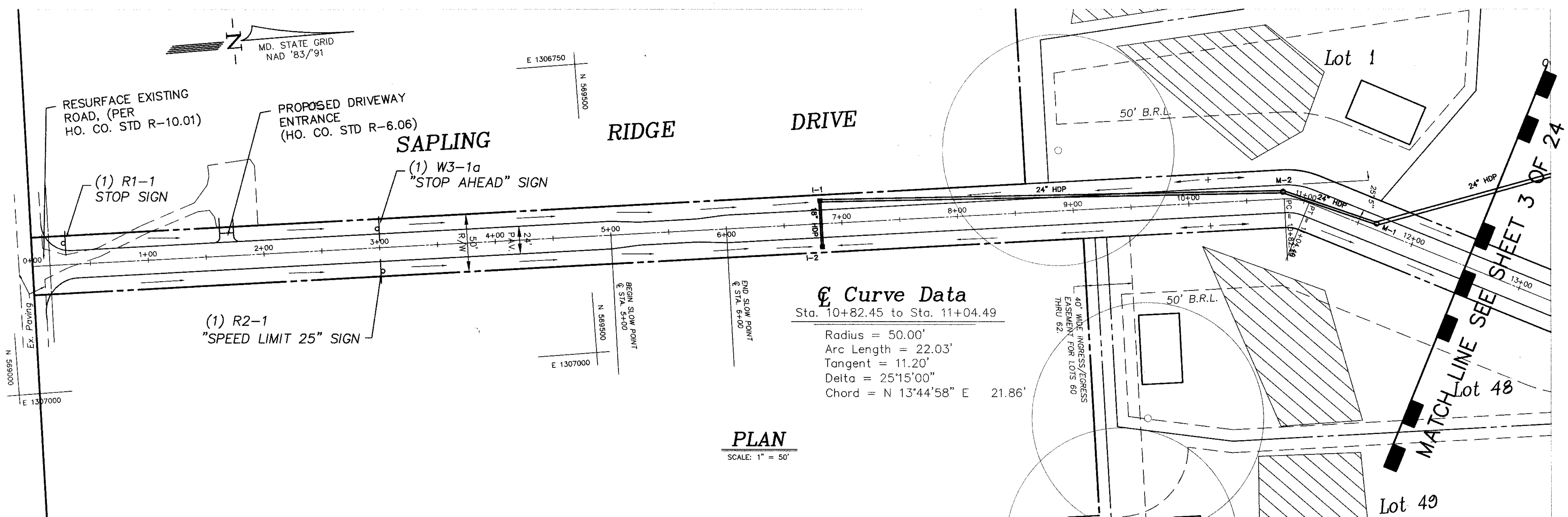
HOWARD COUNTY
 ELECTION DISTRICT NO. 5
 HIGH FOREST ESTATES
 TITLE SHEET

R.M. MOCHI GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
10120 A Old National Pike
Jomattole, MD 21794-9708
(301) 865-5858
Fax: (301) 865-5111

WF-99-103

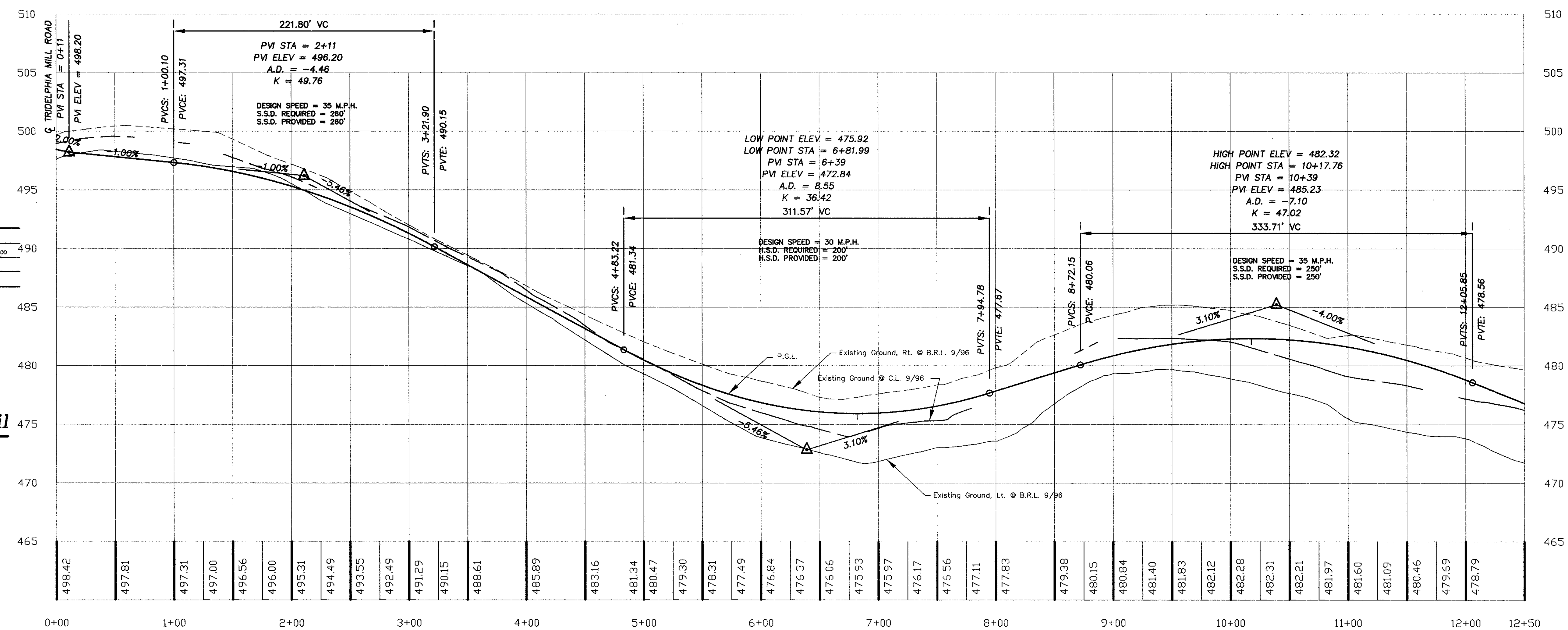
F.98.167

TRIDELPHIA MILL ROAD



PLAN
SCALE: 1" = 50'

See Sheet 4 of 24
For Typical Section



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

Typical Slow Point Detail
Scale: 1" = 50'

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3-4-99
CHIEF, BUREAU OF HIGHWAYS

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Gilda Hamilton 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT

John Damann 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

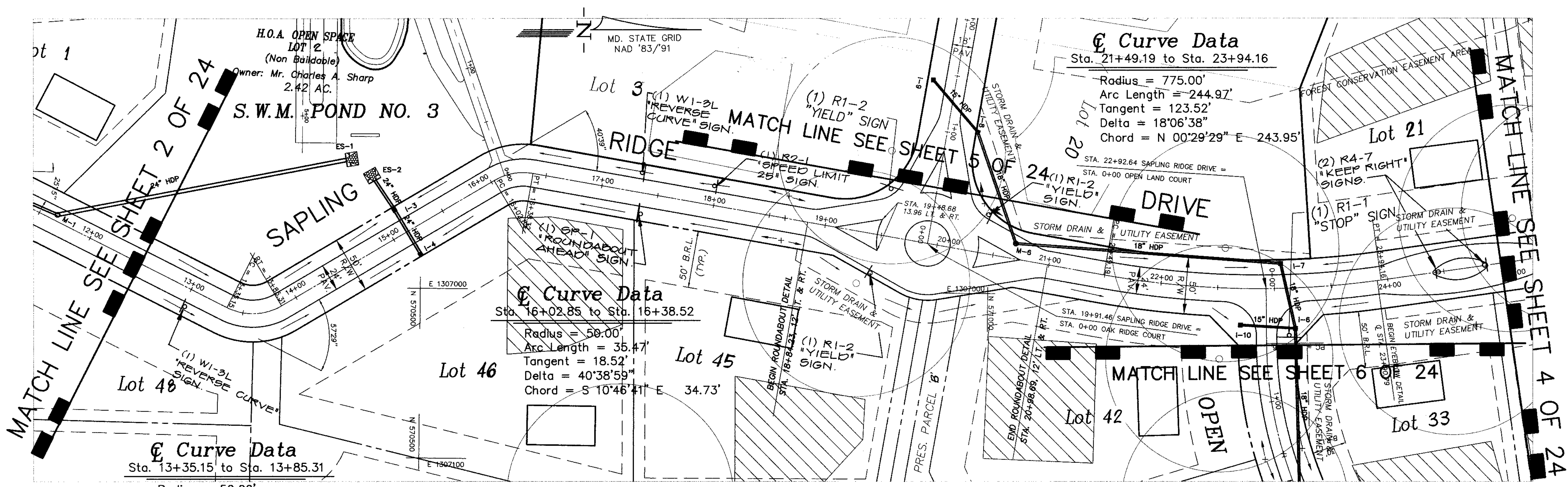


| | | | |
|--------------|----------|-------------|--------|
| Project | 98019-13 | Date | 04-98 |
| Illustration | K.M.B. | Engineering | M.W.Z. |
| Scale | AS SHOWN | Approval | R.M.M. |

| | | | |
|---|---|----------|--|
| 4 | REVISED PER PLAT REVISIONS | DATE | |
| 0 | Submitted Originals to Howard Co. for Signature | 07-25-98 | |
| 1 | REVISIONS SUBMITTED TO HOWARD CO. D.P.Z. FOR REVIEW | 10-22-98 | |
| 0 | 1ST SUBMITTAL TO HO. CO. DPZ FOR REVIEW | 06-98 | |

ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
HOWARD COUNTY, MD.
SAPLING RIDGE DRIVE PLAN AND PROFILE

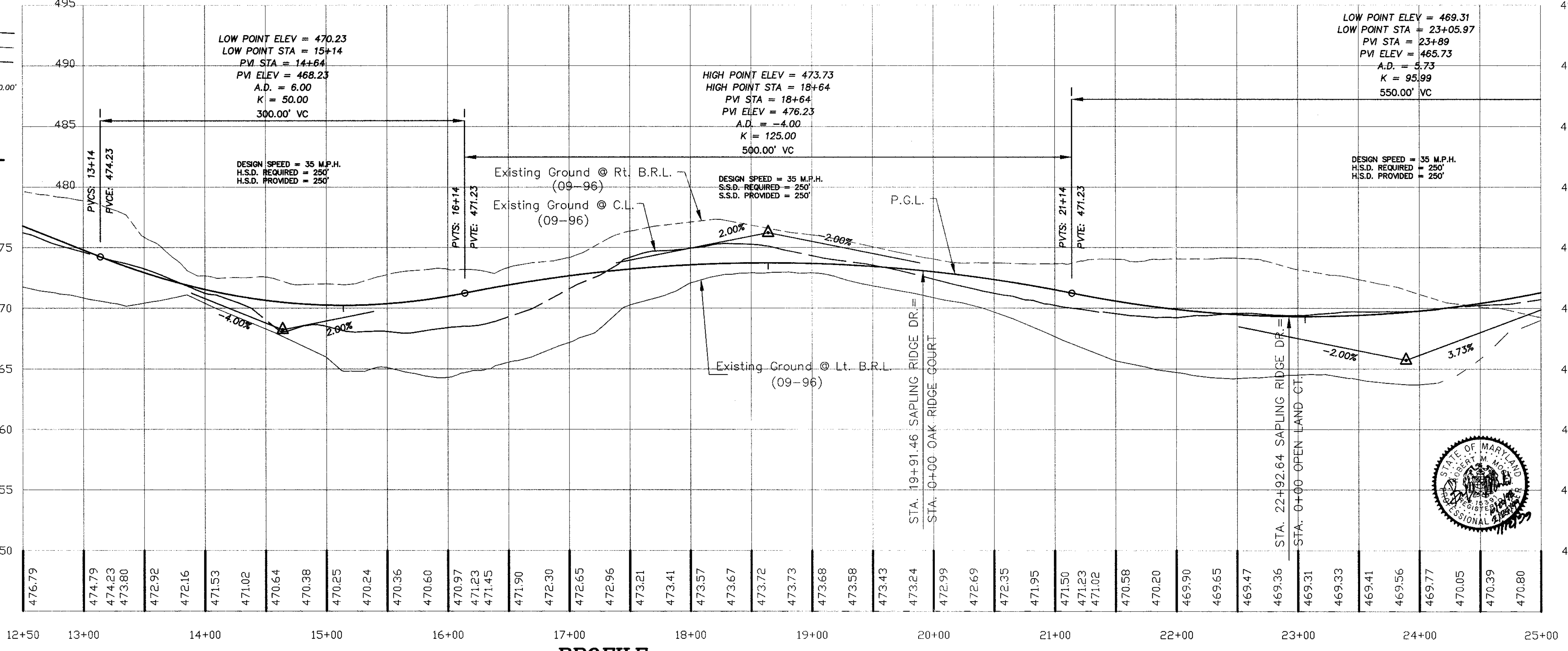
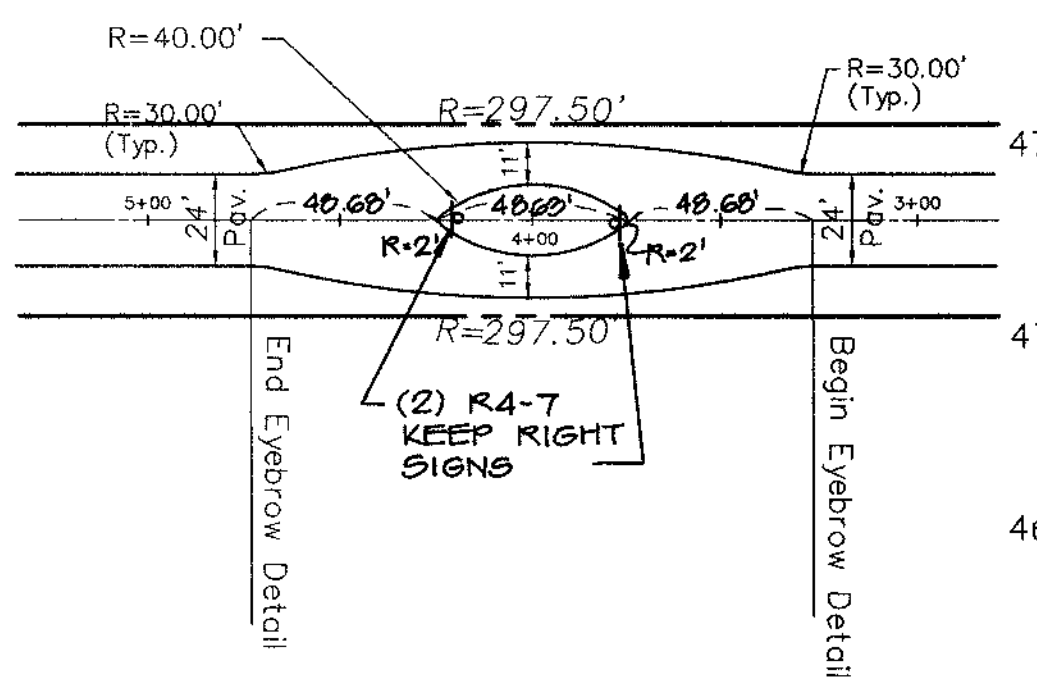
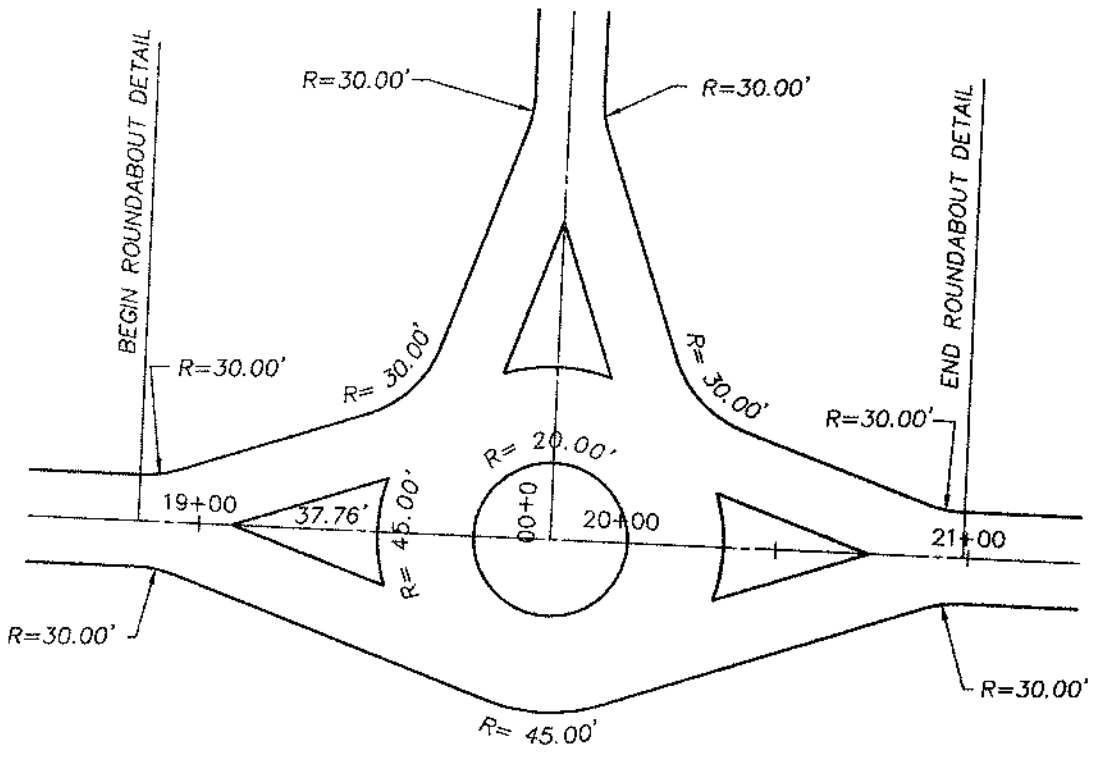
R.M. MOCH GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
1020 A Old National Pike
Jomerville, MD 21754-9706
(301) 865-9998
Fax: (301) 865-5111



PLAN

SCALE: 1" = 50'

See Sheet 4 of 24
For Typical Section



APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daulton 3-8-99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 3/15/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John DeWitt 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

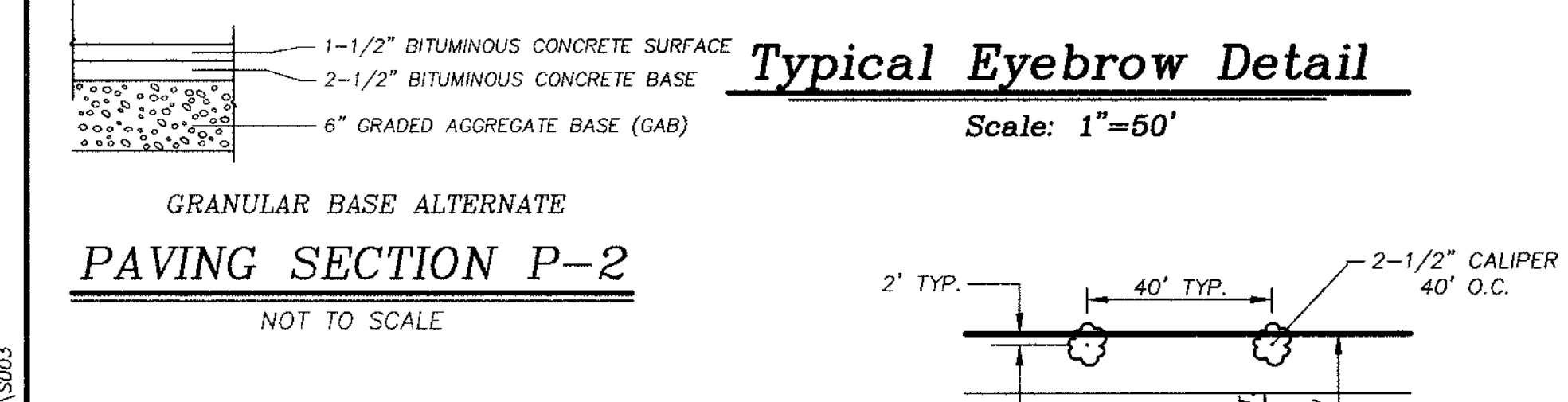
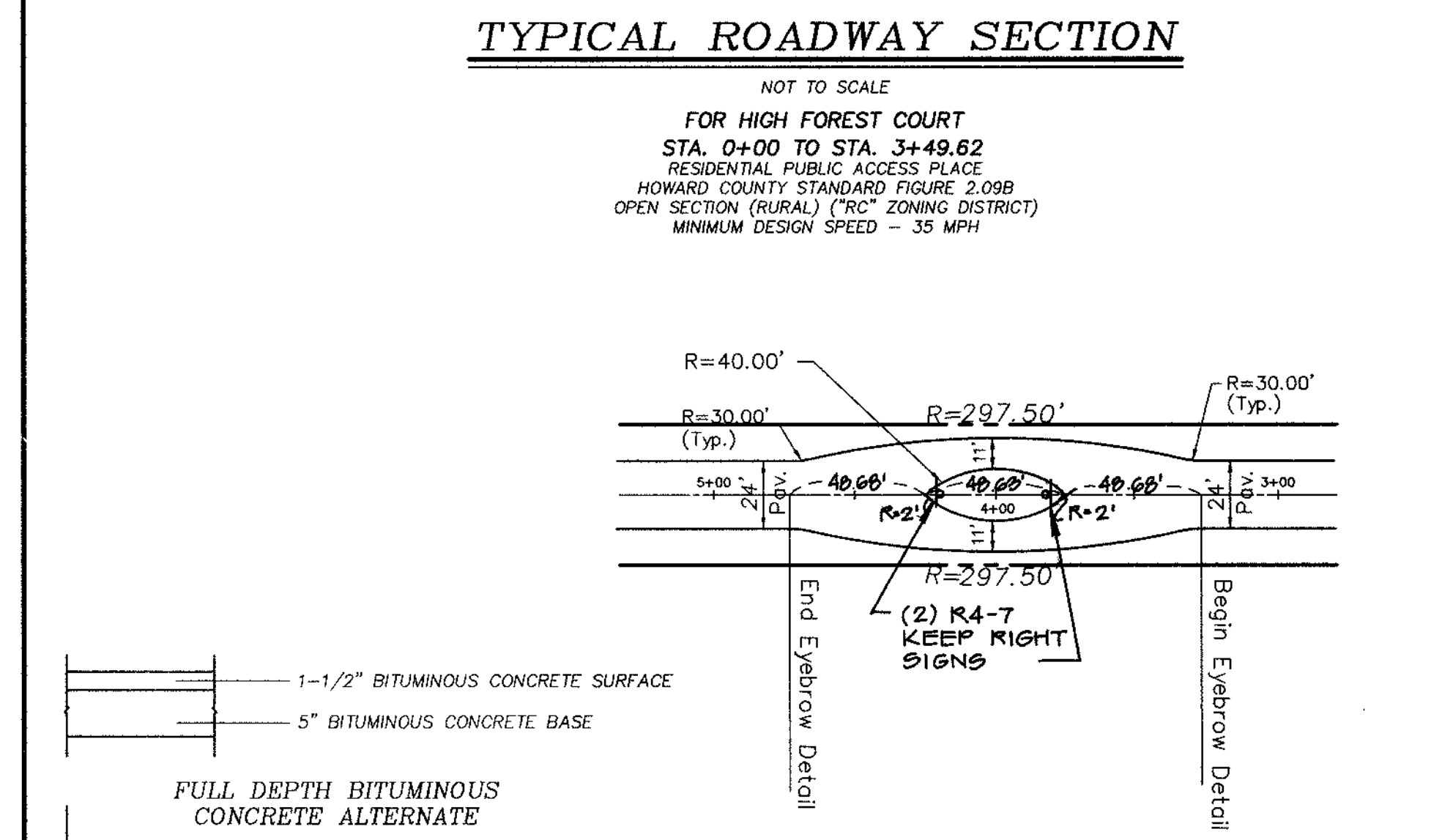
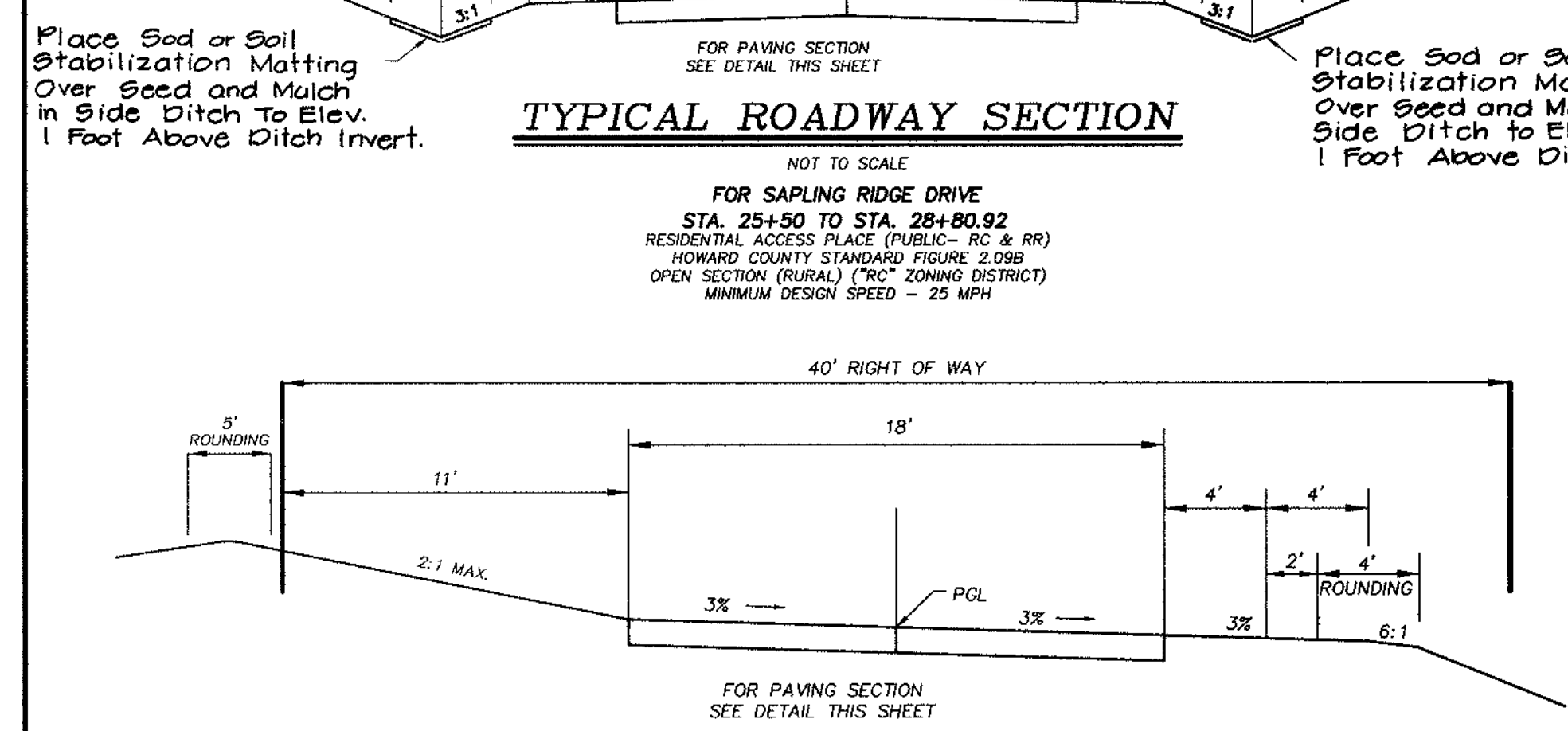
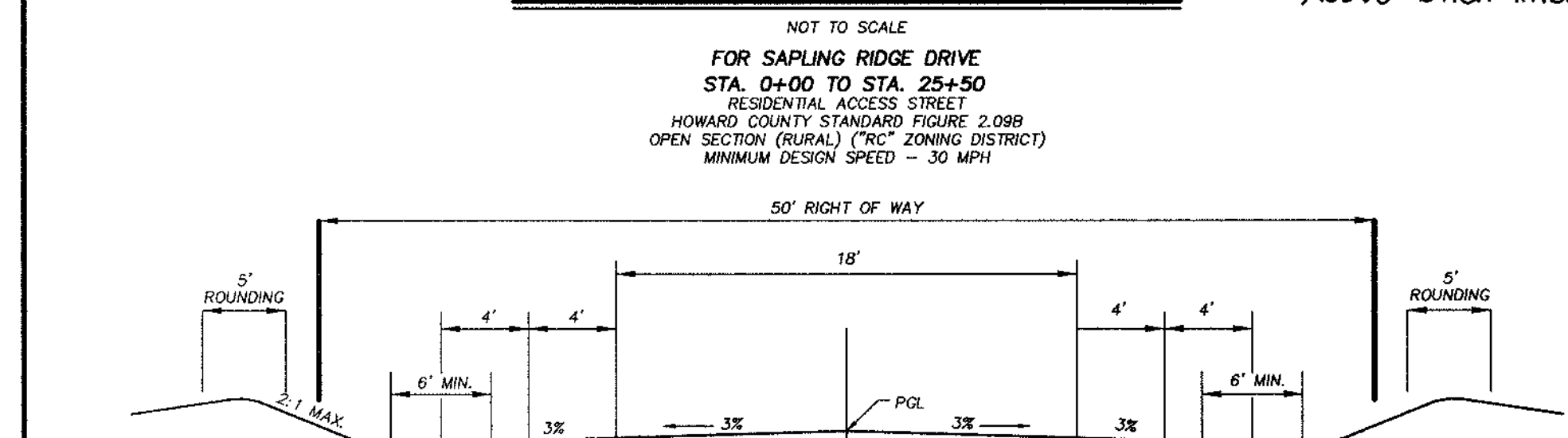
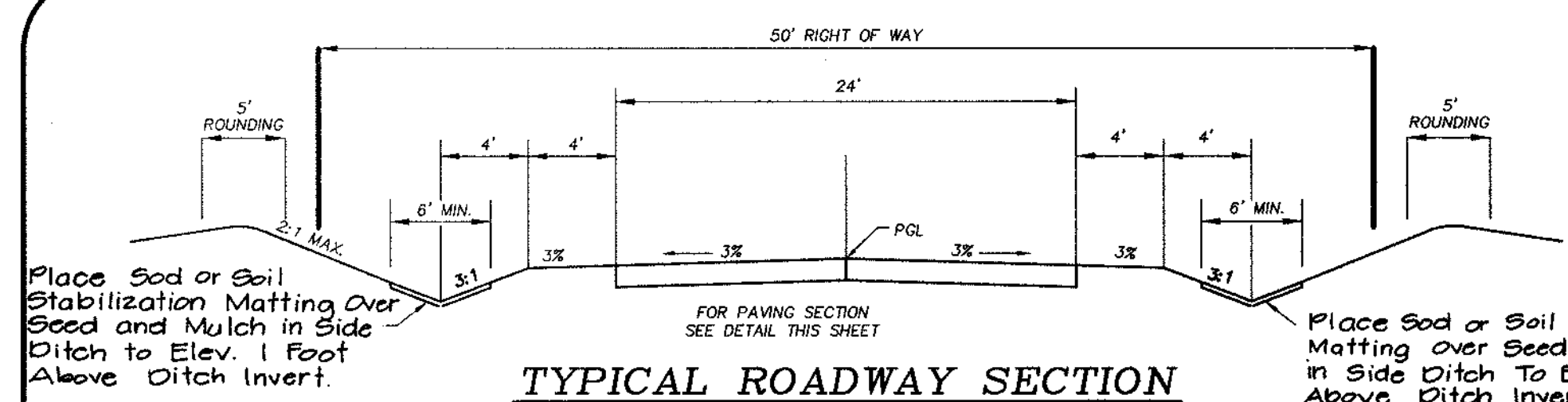


| | | | |
|--------------|----------|-------------|--------|
| project | 96019-13 | date | 04-98 |
| illustration | K.M.B. | engineering | M.W.Z. |
| scale | AS SHOWN | approval | R.M.M. |

| | | |
|-----|--|----------|
| NO. | DESCRIPTION | DATE |
| 4 | REVISED PER PLAT REVISIONS | 07-12-99 |
| 3 | Submitted Original Mylars to Co. for Signature | 02-24-99 |
| 2 | REVISED SUBMITTAL TO HO. CO. DPZ | 01-29-99 |
| 1 | REVISED SUBMITTAL TO HOWARD CO. DPZ FOR REVIEW | 10-22-98 |
| 0 | 1ST SUBMITTAL TO HO. CO. DPZ FOR REVIEW | 08-29-98 |

HIGH FOREST ESTATES
ELECTION DISTRICT NO. 5
SAPLING RIDGE DRIVE PLAN AND PROFILE
HOWARD COUNTY, MD.

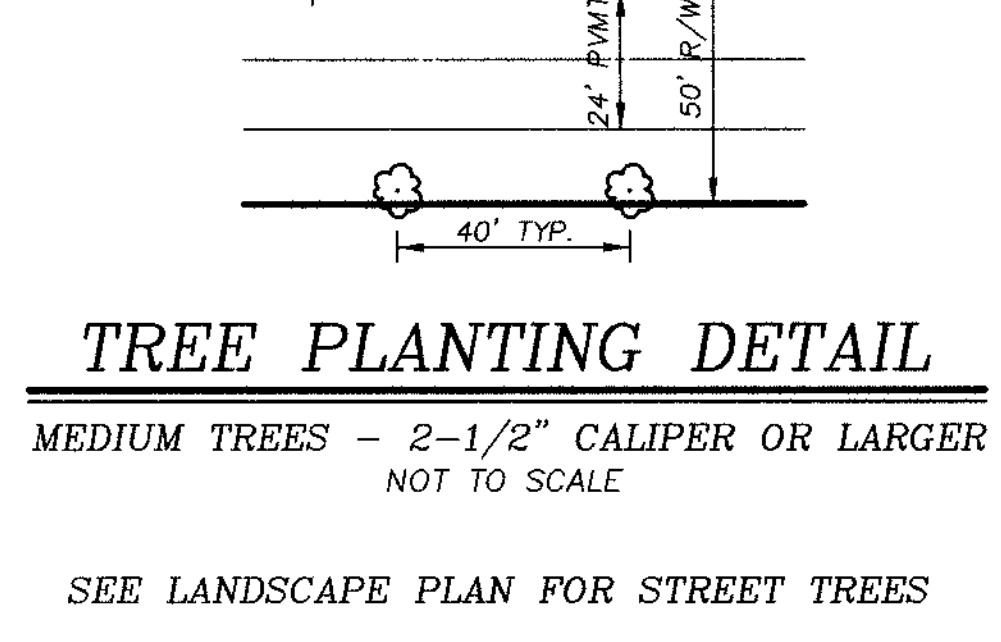
R.M. MOCHI GROUP, P.C.
10120 A Oak Orchard Pike
Jennings, MD 21784-5706
(201) 865-6589
Fax: (201) 865-3111



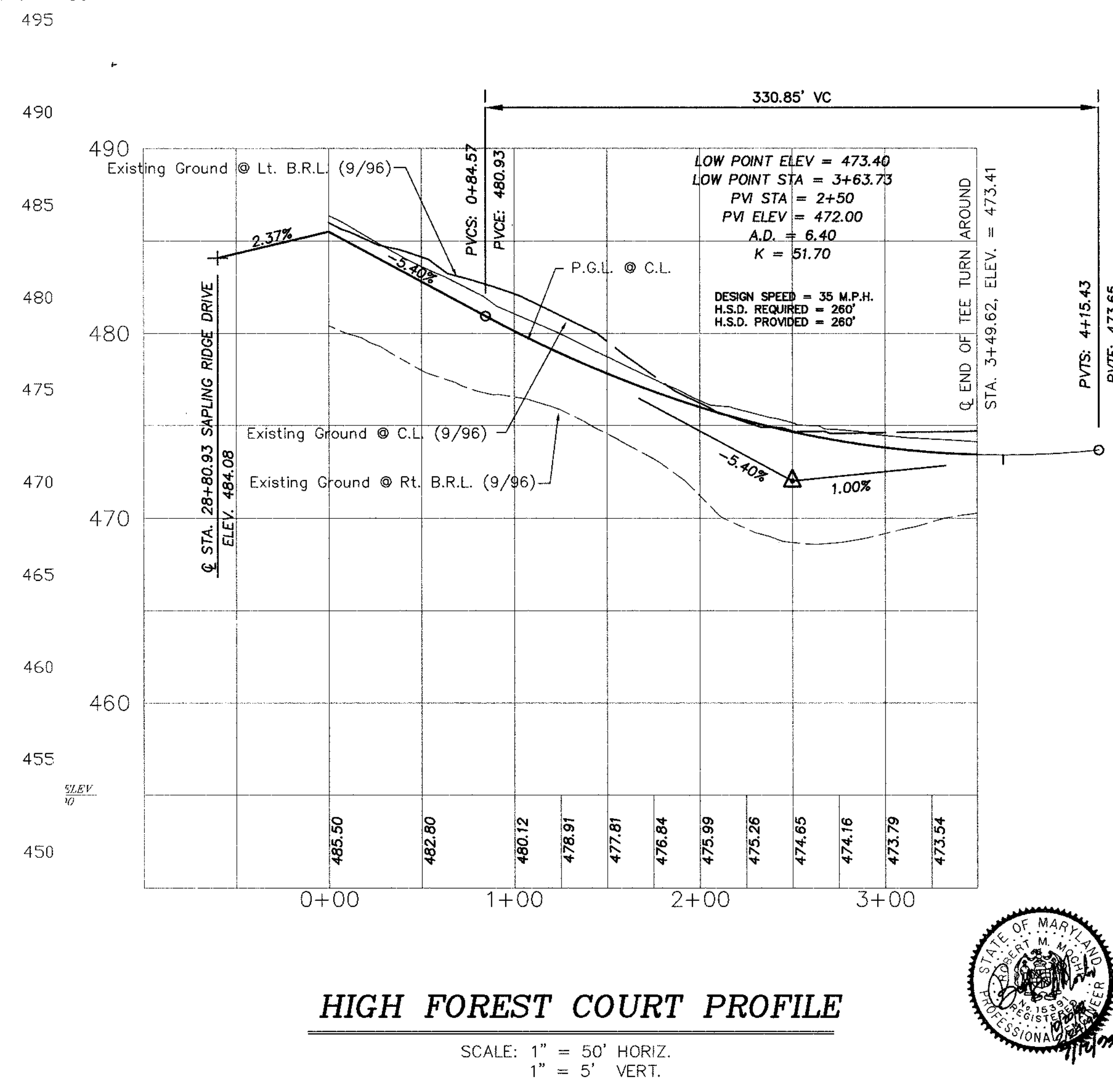
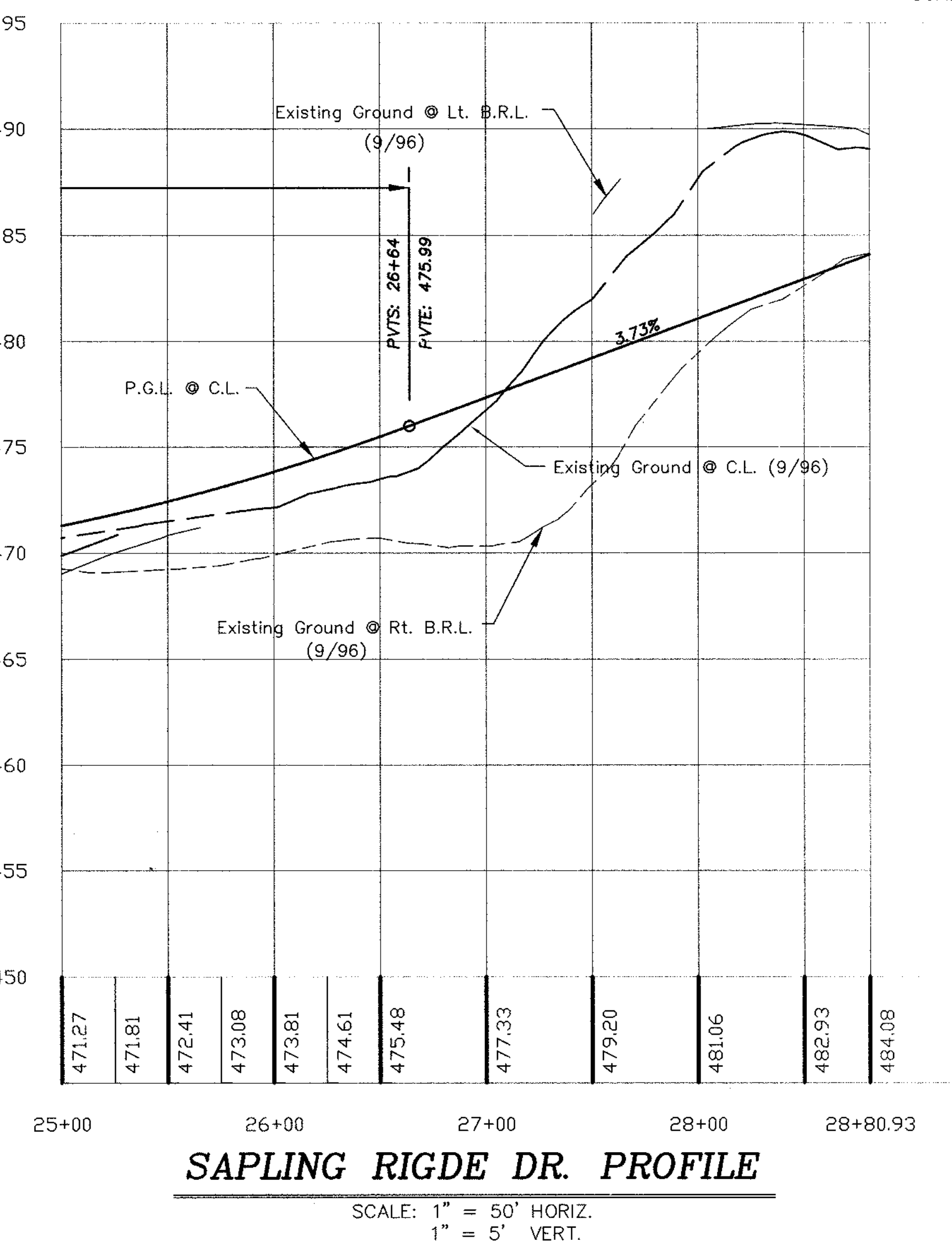
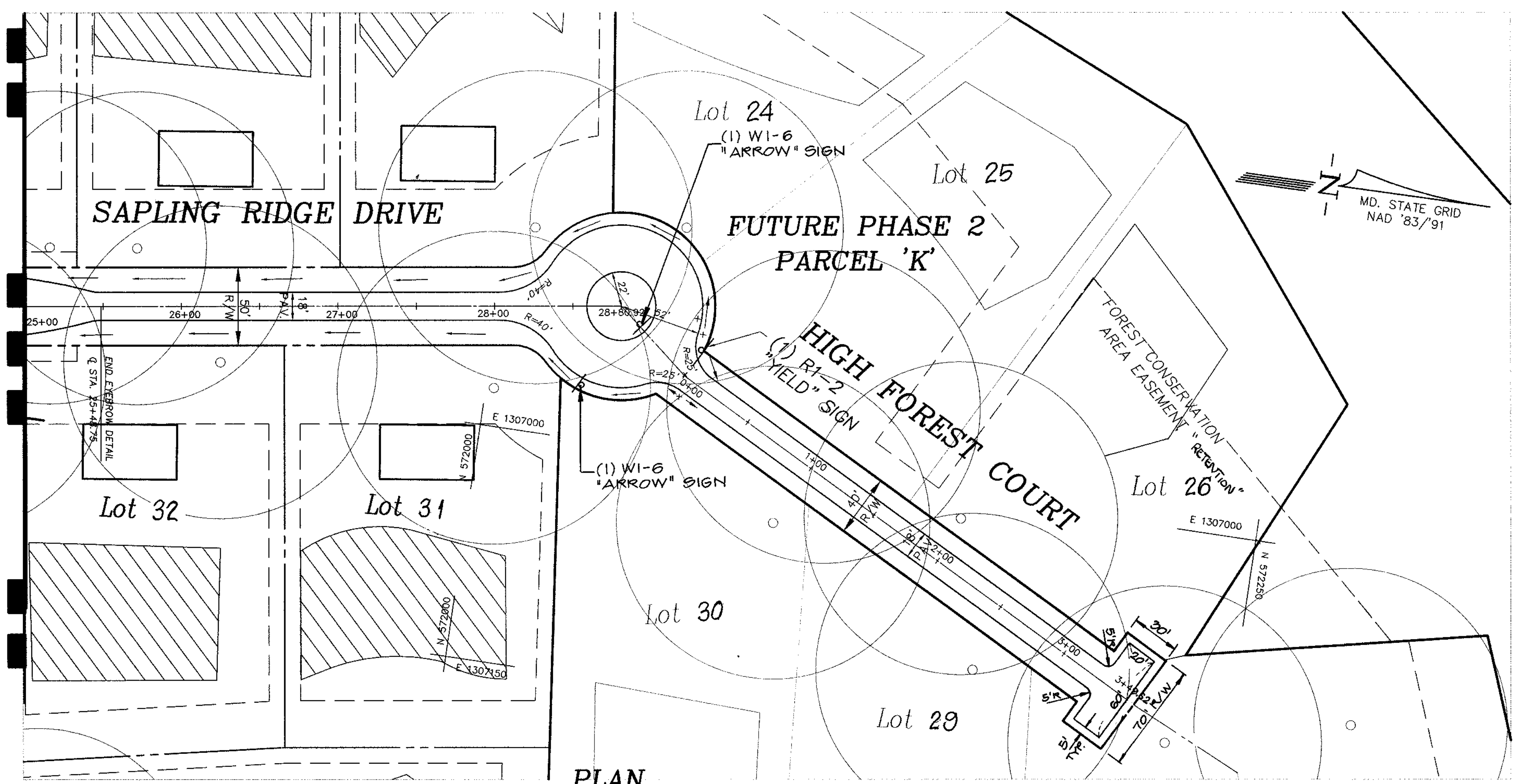
APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3-4-99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 3/26/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

W.D. [Signature] 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



MATCH LINE SEE SHEET 3 OF 24



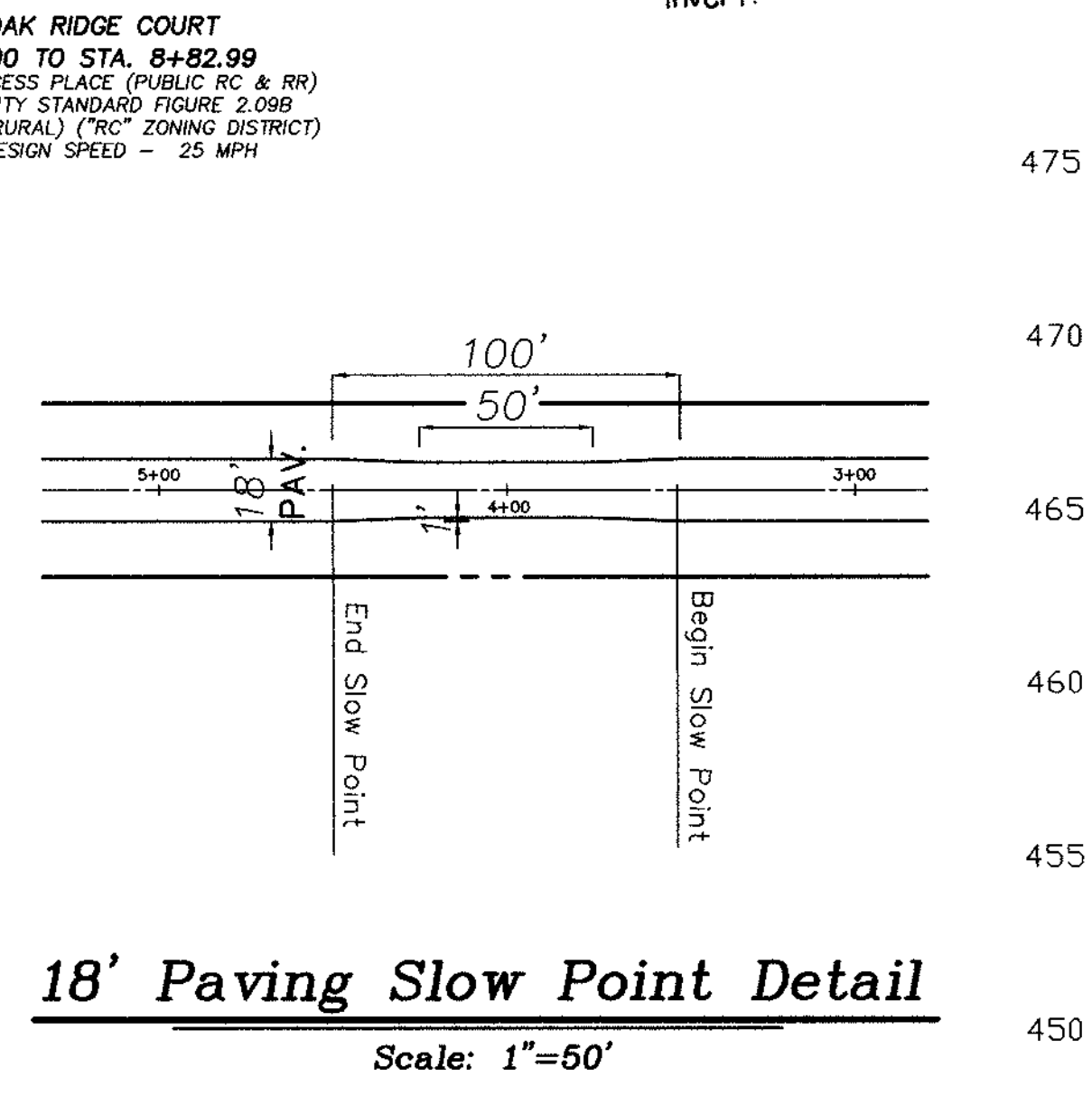
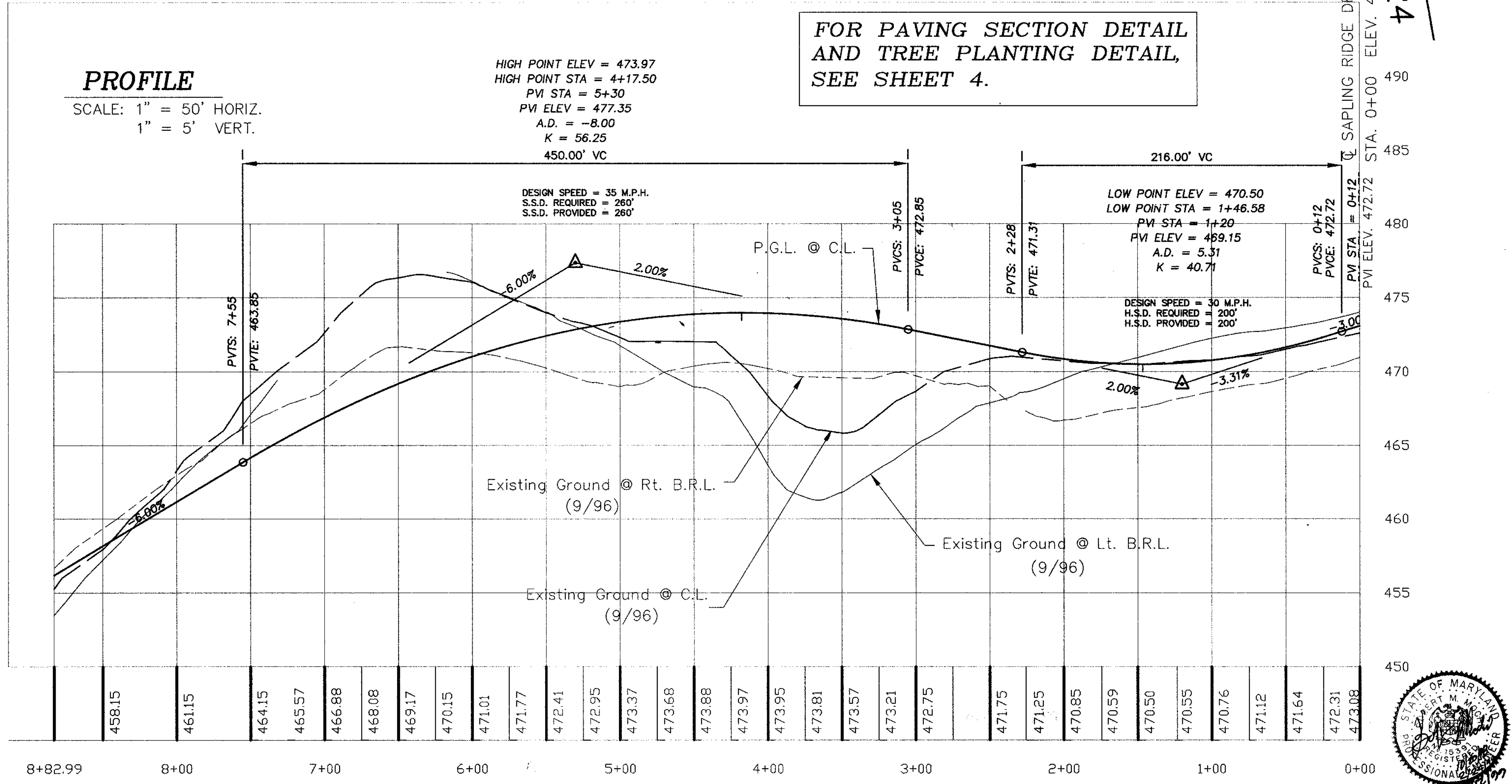
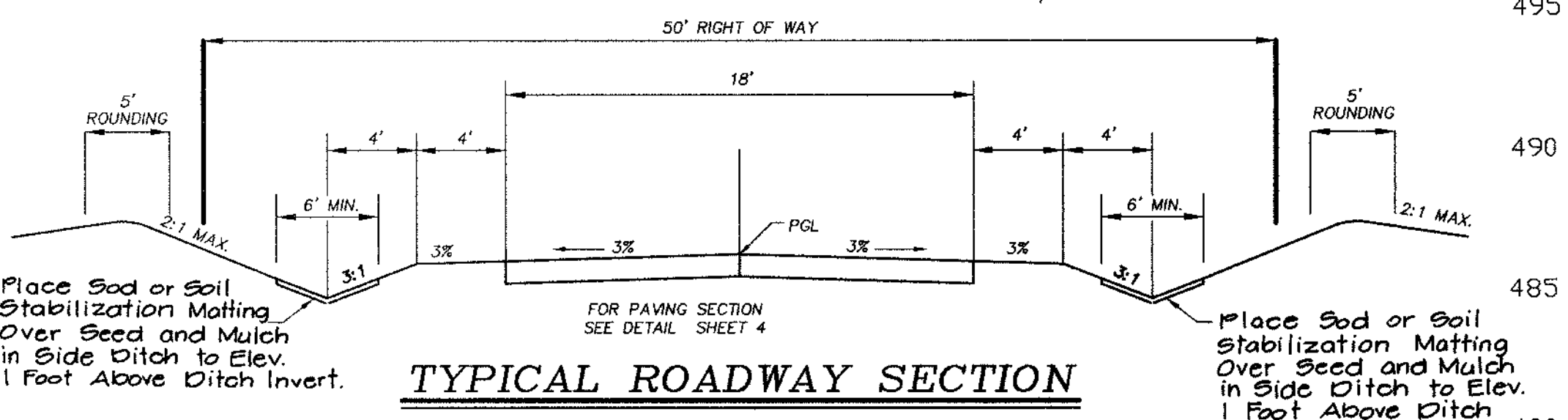
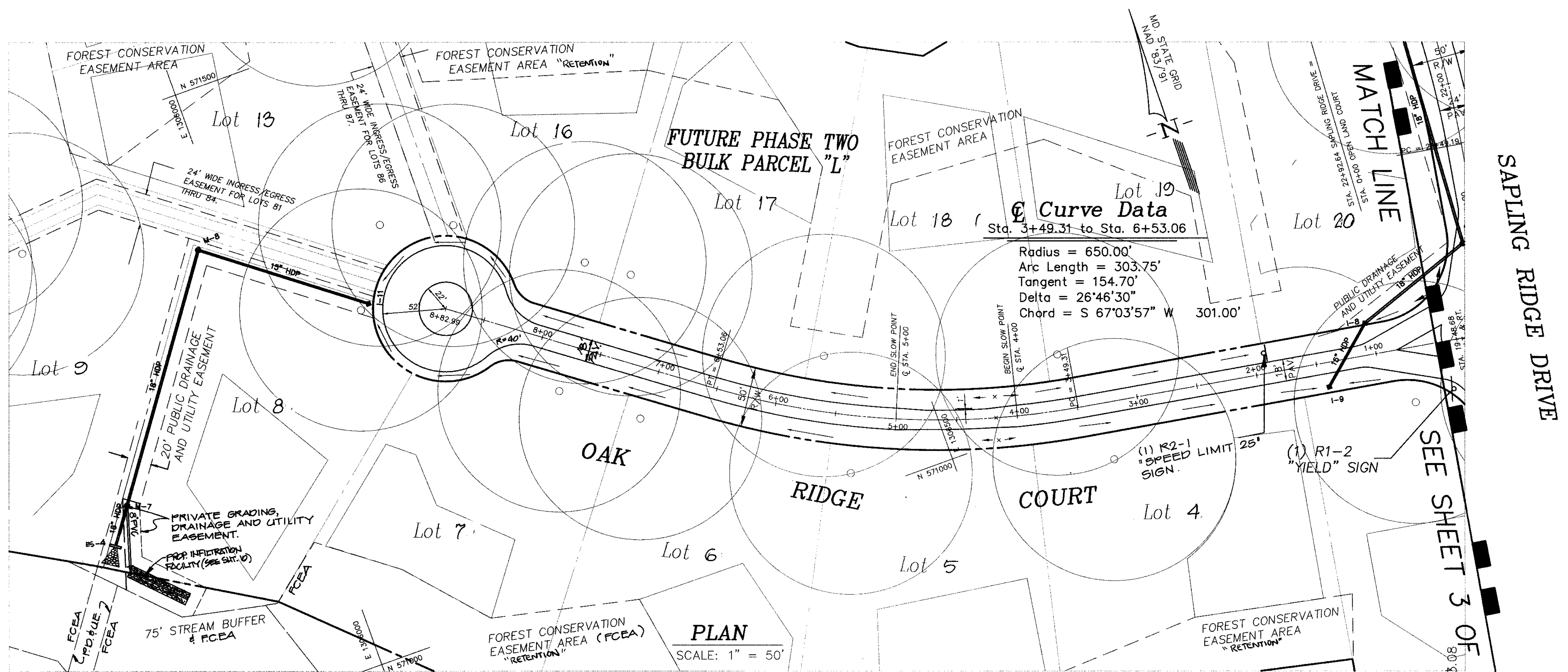
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|--------------|----------|-------------|--------|
| PROJECT | 98019-13 | DATE | 04-98 |
| ILLUSTRATION | K.M.B. | ENGINEERING | M.W.Z. |
| SCALE | AS SHOWN | APPROVAL | R.M.M. |

| | | |
|-----|---|----------|
| NO. | DESCRIPTION | DATE |
| 4 | REVISED PER PLAT REVISIONS | 07/17-98 |
| 3 | SUBMITTED ORIGINAL WORK TO HO. CO. FOR SIGNATURE | 02-24-99 |
| 2 | REVISOR SUBMITTED TO HO. CO. D.P.Z. FOR REVIEW | 01-99 |
| 1 | REVISED SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW | 10-22-98 |
| 0 | 1ST SUBMITTAL TO HO. CO. D.P.Z. FOR REVIEW | 06-98 |

HIGH FOREST ESTATES
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MD.
 SAPLING RIDGE DR., HIGH FOREST CT. PLAN AND PROFILE

R.M. MOCHI GROUP, P.C.
 P.O. Box 10
 New Market, MD 21774-0010
 10120 A Old National Pike
 (301) 985-5868
 (301) 985-5111
 Fax: (301) 985-5176





APPROVED:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3/28/99
 CHIEF, BUREAU OF HIGHWAYS
 DATE

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Andy Hamilton 3/28/99
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE

William Dammann 3/15/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE

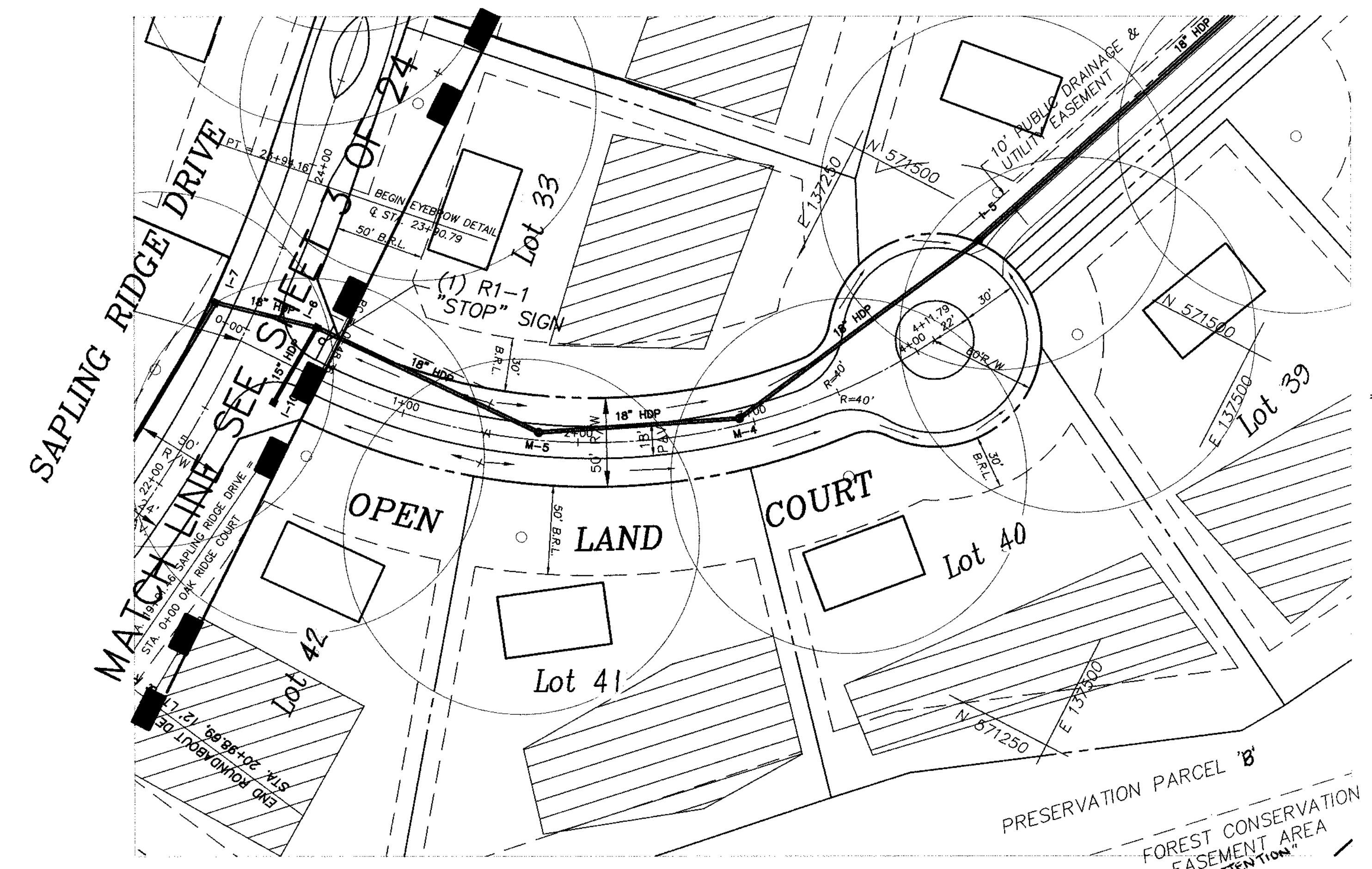
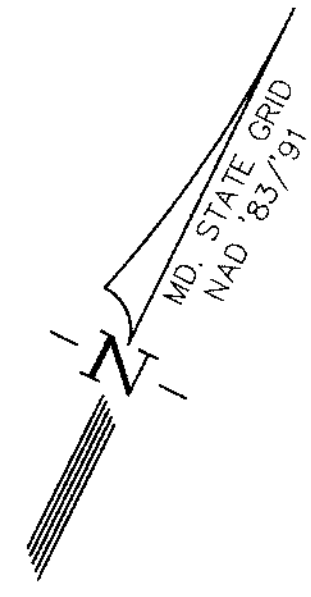


| | | | |
|--------------|----------|-------------|--------|
| PROJECT | 98019-13 | DATE | 04-98 |
| ILLUSTRATION | K.M.B. | ENGINEERING | M.W.Z. |
| SCALE | AS SHOWN | APPROVAL | R.M.M. |

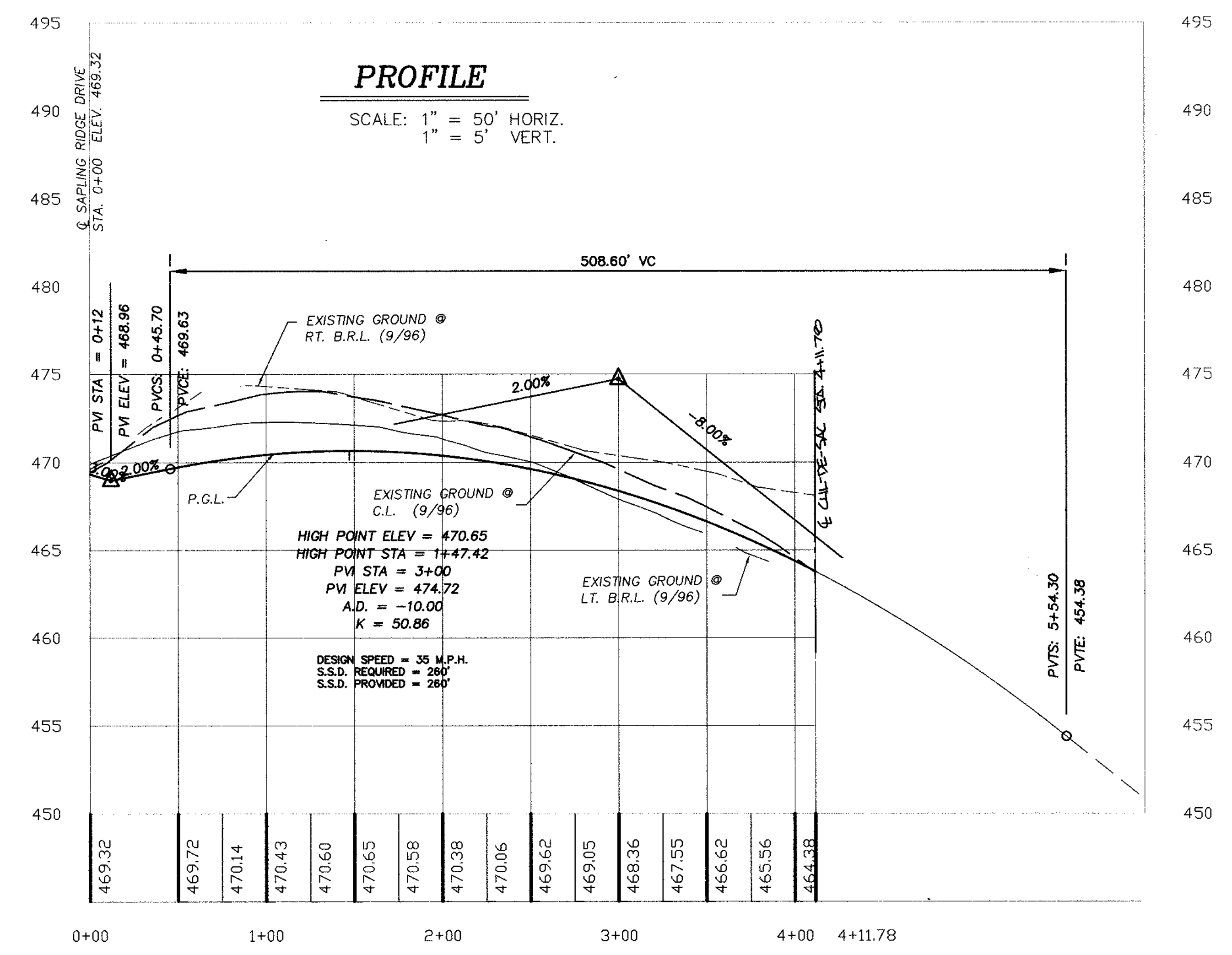
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|-------------|---|------|----------|
| NO. | 1 | DATE | 02-24-99 |
| DESCRIPTION | REVISED PER PLAT REVISIONS | | |
| NO. | 2 | DATE | 01-29-99 |
| DESCRIPTION | SUBMITTED ORIGINAL MYLARS TO C&B SIGNATURE | | |
| NO. | 3 | DATE | 10-22-99 |
| DESCRIPTION | REVISED SUBMITTAL TO HOWARD CO. D.P.F. FOR REVIEW | | |
| NO. | 4 | DATE | 09-26-99 |
| DESCRIPTION | 1ST SUBMITTAL TO HD. CO. D.P.F. FOR REVIEW | | |

High Forest Estates
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MD.
 OAK RIDGE DRIVE PLAN AND PROFILE

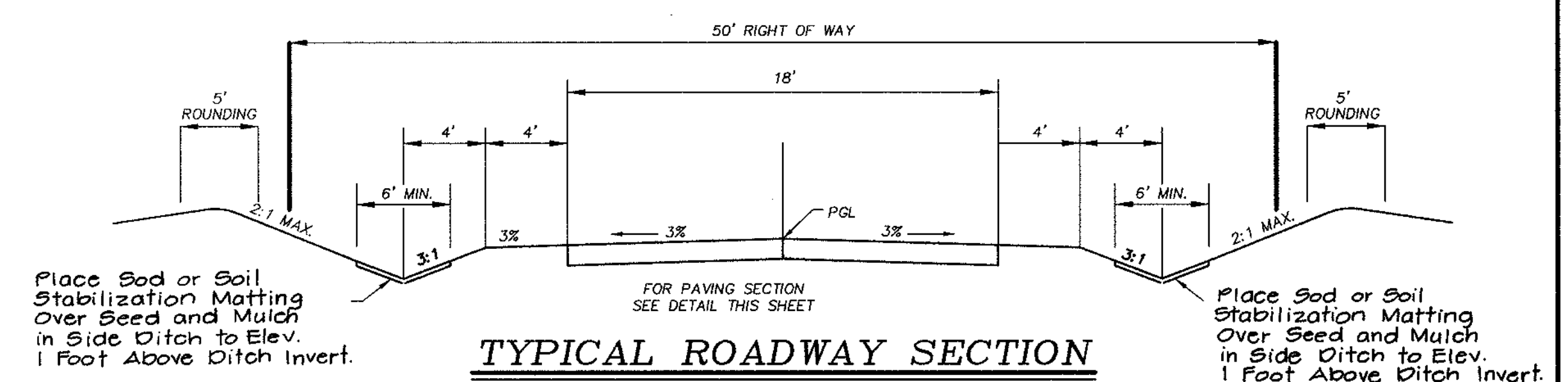
R.M. MOCHI GROUP, P.C.
 19109 A Rd, New Market, MD 21774-0010
 (301) 885-4888
 Fax: (301) 885-3111



PLAN
SCALE: 1" = 50'

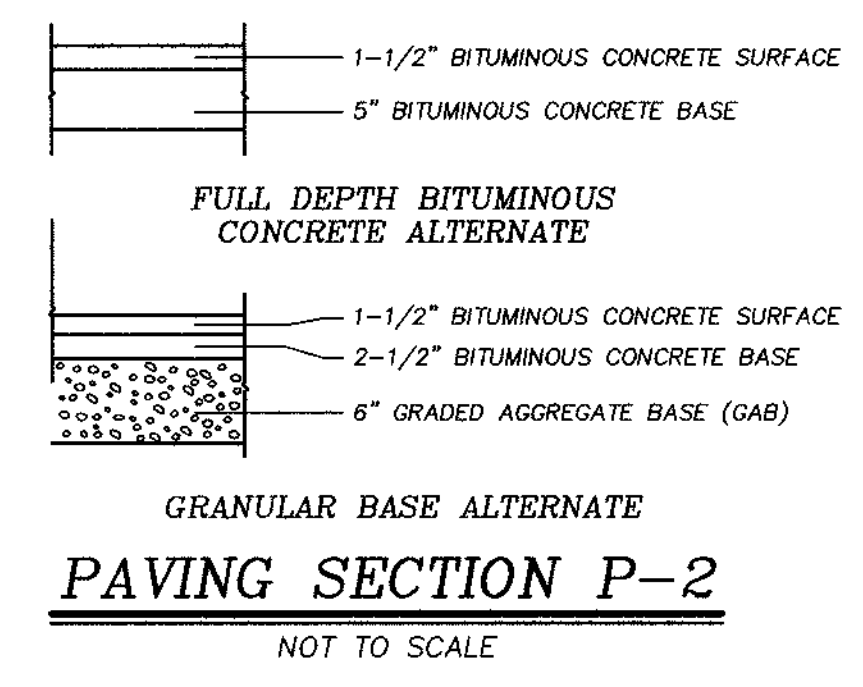


PROFILE
SCALE: 1" = 50' HORIZ.
1" = 5' VERT.

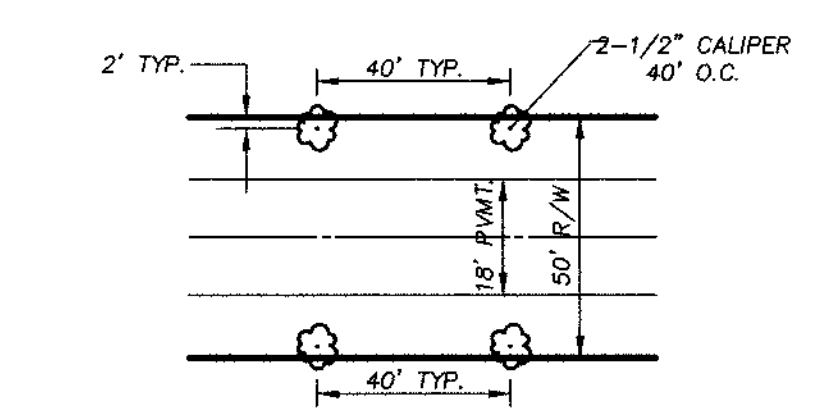


TYPICAL ROADWAY SECTION
NOT TO SCALE

Curve Data
Sta. 0+48.36 to Sta. 4+11.79
Radius = 350.00'
Arc Length = 363.43'
Tangent = 200.02'
Delta = 59°29'37"
Chord = N 59°11'40" 347.32'



PAVING SECTION P-2
NOT TO SCALE



TREE PLANTING DETAIL
MEDIUM TREES - 2-1/2" CALIPER OR LARGER
NOT TO SCALE
SEE LANDSCAPE PLAN FOR STREET TREES

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 2-8-99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 2/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John R. ... 2/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



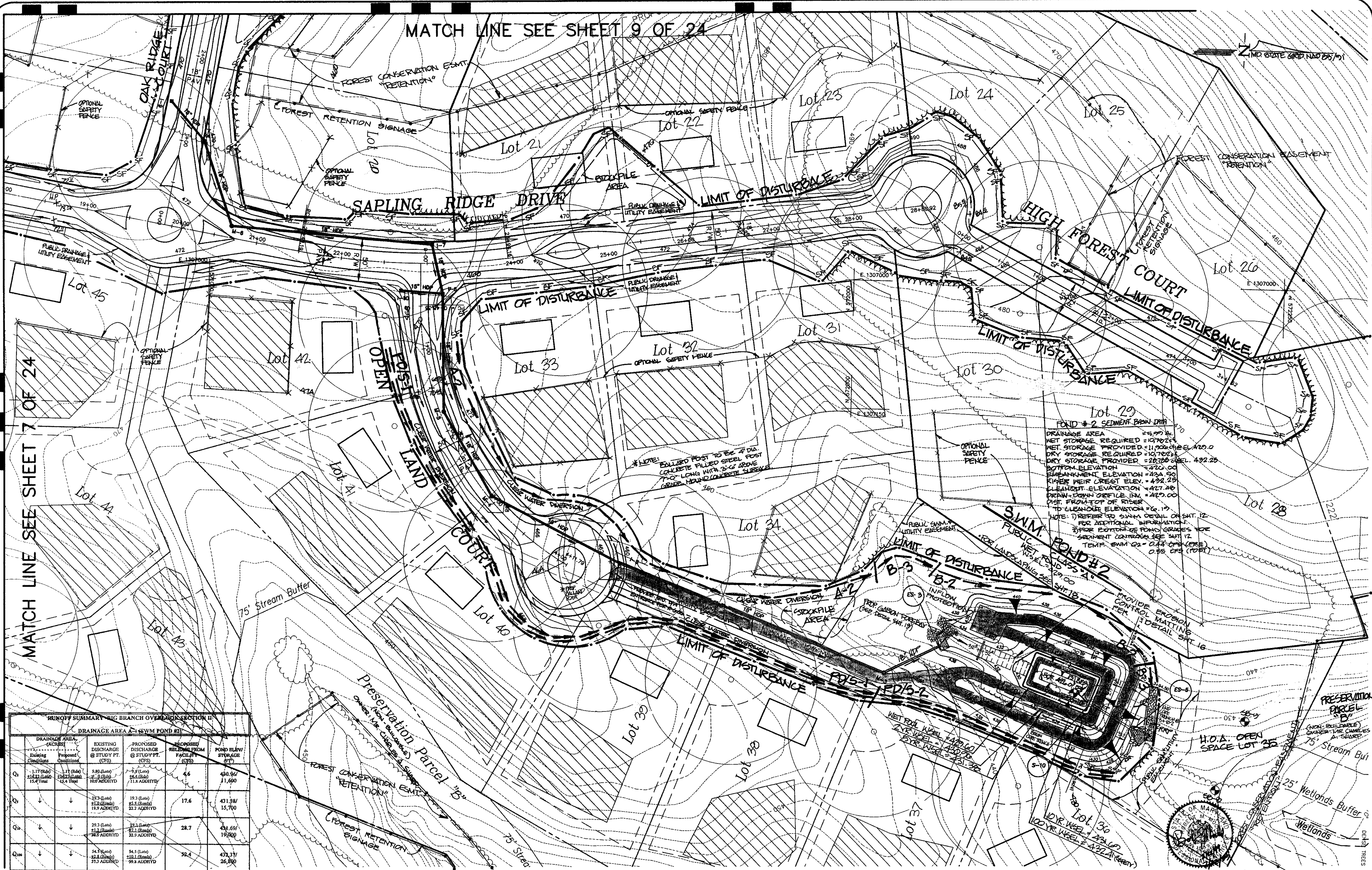
| | | | |
|--------------|----------|-------------|--------|
| project | 96019-13 | date | 04-98 |
| illustration | K.M.B. | engineering | M.W.Z. |
| scale | AS SHOWN | approval | R.M.M. |

| | | | | |
|-----|---|---|-----------|----------|
| no. | 1 | description | REVISIONS | date |
| 1 | 1 | REVISED SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW | | 01-99 |
| 2 | 2 | REVISED SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW | | 02-99 |
| 3 | 3 | REVISED SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW | | 02-99 |
| 4 | 4 | REVISED PER PLAT REVISIONS. Submitted Original Mylar to Co. for Signature | | 02-24-99 |

HIGH FOREST ESTATES
ELECTION DISTRICT NO. 5
HOWARD COUNTY, MD.
OPEN LAND COURT PLAN AND PROFILE

R.M. MOCHI GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
10100 A Rd, Newburg, Pa.
Jonestown, MD 21794-8705
(301) 865-6868
Fax: (301) 865-3111

MATCH LINE SEE SHEET 9 OF 24



Runoff Summary - Big Branch Overland Section II
DRAINAGE AREA #1 - SWM POND #2

| DRAINAGE AREA (ACRES) | EXISTING DISTURBANCE @ STUDY PT. (CFS) | PROPOSED DISTURBANCE @ STUDY PT. (CFS) | PROPOSED RETENTION FROM FACILITY (CFS) | POND FLOW STORAGE (CFS) |
|-----------------------|--|--|--|-------------------------|
| 1.17 (0.6) | 1.17 (0.6) | 7.9 (4.0) | 4.6 | 430.34 |
| 21.82 (1.0) | 21.82 (1.0) | 24.4 (1.0) | 11.8 ADDHYD | 11,600 |
| 12.4 (0.6) | 12.4 (0.6) | 19.3 (1.0) | 17.6 | 431.98 |
| | | 21.0 (1.0) | 25.3 (1.0) | 15,700 |
| | | 15.9 ADDHYD | 22.3 ADDHYD | |
| | | 29.3 (1.0) | 28.7 | 431.69 |
| | | 21.2 (1.0) | 22.3 ADDHYD | 19,000 |
| | | 26.5 ADDHYD | 22.3 ADDHYD | |
| | | 54.3 (1.0) | 54.3 (1.0) | 432.17 |
| | | 42.8 (1.0) | 110.1 (1.0) | 26,800 |
| | | 37.3 ADDHYD | 99.8 ADDHYD | |

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT
Chris Dammann 3/25/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Danks 3-8-99
CHIEF, BUREAU OF HIGHWAYS
Matthew 3/26/99
HOWARD SOIL CONSERVATION DISTRICT

APPROVED:
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Charles 3/26/99
USDA - NATIONAL RESOURCES CONSERVATION SERVICE

DEVELOPER'S CERTIFICATE
I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.
Charles A. Sharp 6-10-98
Signature of Developer DATE

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.
Robert M. Mochl 10/20/98
Robert M. Mochl, P.E. DATE

| | | | | | |
|---------|---------|--------------|--------------|----------|----------|
| date | 05-98 | engineering | M.W.Z. | approval | R.M.M. |
| project | 9801913 | illustration | GEM / K.M.B. | scale | 1" = 50' |

| | | | |
|-----------|----------|-------------|--|
| date | 07-12-99 | signature | As per |
| revisions | 01-12-99 | description | Submitted Original Mylar to Co. for Review |
| | 02-12-99 | | REVISIONS SUBMITTED TO H.C. DPZ FOR REVIEW |
| | 03-12-99 | | REVISIONS SUBMITTED TO H.C. DPZ FOR REVIEW |
| | 04-12-99 | | REVISIONS SUBMITTED TO H.C. DPZ FOR REVIEW |

HOWARD COUNTY
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
Grading and Sediment Control Plan

R.M. MOCHL GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
10120 A Old Highway Rd
New Market, MD 21754-5705
(301) 865-5656
(301) 865-5171



RUNOFF SUMMARY - BIG BRANCH OVERLOOK SECTION II

| DRAINAGE AREA (ACRES) | | EXISTING DISCHARGE @ STUDY PT. (CFS) | PROPOSED DISCHARGE @ STUDY PT. (CFS) | PROPOSED RELEASE FROM FACILITY (CFS) | |
|-----------------------|--|--|--|---------------------------------------|---|
| Existing Condition | Proposed Conditions | | | | |
| Q ₁ | 0.35 (Road) 21.61 (Lot) 1.40 Total | 0.35 (Road) 21.55 (Lot) 1.40 Total | 1.3 (Lot) 2.8 (Road) 1.3 ADDHYD | 1.3 (Lot) 2.4 (Road) 2.4 ADDHYD | W.A. Overcompensation provided in SWM Pond #3 |
| Q ₂ | ↓ | ↓ | 2.6 (Lot) 2.8 (Road) 2.3 ADDHYD | 2.6 (Lot) 2.4 (Road) 4.8 ADDHYD | ↓ |
| Q ₃ | ↓ | ↓ | 3.8 (Lot) 2.8 (Road) 4.8 ADDHYD | 3.8 (Lot) 2.8 (Road) 5.6 ADDHYD | ↓ |
| Q ₄ | ↓ | ↓ | 7.1 (Lot) 10.1 (Road) 2.7 ADDHYD | 7.1 (Lot) 2.4 (Road) 2.7 ADDHYD | ↓ |

| DRAINAGE AREA (ACRES) | | EXISTING DISCHARGE @ STUDY PT. (CFS) | PROPOSED DISCHARGE @ STUDY PT. (CFS) | PROPOSED RELEASE FROM FACILITY (CFS) | POND BELOW STORAGE (FT ³) |
|-----------------------|--|--|---|---|---------------------------------------|
| Existing Condition | Proposed Conditions | | | | |
| Q ₁ | 1.03 (Pond) 218.77 (Lot) 19.80 Total | 1.03 (Pond) 218.77 (Lot) 19.80 Total | 10.7 (Lot) 18.3 (Road) 11.3 (C2) 11.7 ADDHYD | 3.1 (Pond #3) 22.4 (C2) 5.3 ADDHYD | 462.84/ 11,100 |
| Q ₂ | ↓ | ↓ | 22.6 (Lot) 2.2 (Road) 2.4 ADDHYD | 22.6 (Lot) 2.4 (Road) 17.5 (Pond #3) 2.4 (C2) 18.4 ADDHYD | 463.36/ 30,000 |
| Q ₃ | ↓ | ↓ | 35.1 (Lot) 1.4 (Road) 2.4 ADDHYD | 35.1 (Lot) 1.4 (Road) 33.3 ADDHYD | 463.67/ 24,500 |
| Q ₄ | ↓ | ↓ | 67.9 (Lot) 2.3 (Road) 2.3 (C2) 2.3 (C3) 77.4 ADDHYD | 67.9 (Lot) 2.3 (Road) 2.7 (C2) 2.7 (C3) 67.4 ADDHYD | 464.30/ 35,200 |

| | | | |
|-------------|------------|--------------|----------|
| date | 10-98 | approval | R.M.M. |
| project | 96019.13 | illustration | M.W.Z. |
| illustrator | GEM/K.M.B. | scale | 1" = 60' |

| | | | |
|------|----------|-------------|---|
| date | 02-24-99 | description | REVISION 1: SUBMITTED TO HO. CO. DIST. FOR REVIEW |
| date | 01-09-99 | description | REVISION 2: FOR SIGNATURE |
| date | 01-22-98 | description | REVISION 3: SUBMITTED TO HO. CO. DIST. FOR REVIEW |

HOWARD COUNTY
 ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
 Grading and Sediment Control Plan.

R.M. MOCH GROUP, P.C.
 P.O. Box 10
 New Market, MD 21774-0010
 (301) 885-5868
 Fax: (301) 885-5111

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 3/29/99
 CHIEF, DIVISION OF LAND DEVELOPMENT
Chris Dawson 3/15/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daulton 3-8-99
 CHIEF, BUREAU OF HIGHWAYS

APPROVED:
 THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Keith S. [Signature] 2/24/99
 HOWARD SOIL CONSERVATION DISTRICT

APPROVED:
 THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
Cheryl Simon 2/24/99
 USDA - NATIONAL RESOURCES CONSERVATION SERVICE

DEVELOPER'S CERTIFICATE
 I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.
Charles A. Sharp 6-10-98
 Signature of Developer DATE

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.
Robert H. Moch, P.E. 10/29/98
 DATE

| STORM DRAIN STRUCTURE SCHEDULE | | | | | |
|--------------------------------|--------------------------------|---------------|-----|--------------|---------|
| No. | Type | Location | | Remarks | |
| I-1 | Precast Open End Grate | STA. 6+81.99 | O/S | 20.00'L | SD 4.36 |
| I-2 | Precast Open End Grate | STA. 6+81.99 | O/S | 20.00'R | SD 4.36 |
| I-3 | Precast Open End Grate | STA. 15+14.00 | O/S | 23.27 R | SD 4.36 |
| I-4 | Precast Open End Grate | STA. 15+14.00 | O/S | 22.93 L | SD 4.36 |
| I-5 | Precast Open End Grate | N 571485.37 | E | 1307336.47 | SD 4.36 |
| I-6 | Precast Open End Grate | STA. 0+35.22 | O/S | 25.45 L | SD 4.36 |
| I-7 | Precast Open End Grate | STA. 23+05.97 | O/S | 21.87 L | SD 4.36 |
| I-8 | Precast Open End Grate | STA. 1+04.69 | O/S | 26.28 R | SD 4.36 |
| I-9 | Precast Open End Grate | STA. 1+42.91 | O/S | 20.12 L | SD 4.36 |
| I-10 | Precast Open End Grate | STA. 0+31.88 | O/S | 22.99 R | SD 4.36 |
| I-11 | Precast Open End Grate | N 571283.87 | E | 1306090.93 | SD 4.36 |
| M-1 | 4'0" Precast Manhole | STA. 11+65.18 | O/S | 5.31 L | G5.12 |
| M-2 | 4'0" Precast Manhole | STA. 10+81.75 | O/S | 6.16 L | G5.12 |
| M-3 | 4'0" Precast Manhole | N 571796.58 | E | 1307455.65 | G5.12 |
| M-4 | 4'0" Precast Manhole | STA. 2+92.31 | O/S | 3.58 L | G5.12 |
| M-5 | 4'0" Precast Manhole | STA. 1+77.46 | O/S | 4.32 L | G5.12 |
| M-6 | 4'0" Precast Manhole | STA. 20+68.02 | O/S | 13.55 L | G5.12 |
| M-7 | 4'0" Precast Manhole | N 571372.87 | E | 1305974.07 | G5.12 |
| M-8 | 4'0" Precast Manhole | N 571194.48 | E | 1305847.32 | G5.12 |
| ES-1 | Type "C" Endwall Circular Pipe | N 570433.69 | E | 1306887.67 | SD 5.21 |
| ES-2 | Type "C" Endwall Circular Pipe | N 570459.42 | E | 1306309.67 | SD 5.21 |
| ES-3 | Type "C" Endwall Circular Pipe | N 571052.79 | E | 1307423.82 | SD 5.21 |
| ES-4 | Type "C" Endwall Circular Pipe | N 571165.13 | E | 1305826.4757 | SD 5.21 |

INFILTRATION CONSTRUCTION SPECIFICATIONS

TIMING: An infiltration trench shall not be constructed or placed in service until all of the surrounding drainage area has been stabilized and approved by the responsible inspector.

TRENCH PREPARATION: Excavate the trench to the design dimensions. Excavated materials shall be placed away from the trench sides to enhance trench wall stability. Large tree roots must be removed from the trench sides in order to prevent fabric puncturing or tearing during the installation procedure. The side walls of the trench shall be roughened where shored and sealed by heavy equipment.

FABRIC LAYDOWN: The filter fabric roll must be cut to the proper width prior to installation. The cut width must include sufficient material to conform to the trench dimensions. Excavated materials shall be placed away from the trench sides to enhance trench wall stability. Large tree roots must be removed from the trench sides in order to prevent fabric puncturing or tearing during the installation procedure. The side walls of the trench shall be roughened where shored and sealed by heavy equipment.

OVERLAPPING AND COVERING: Following the stone aggregate placement, the filter fabric shall be folded over the stone aggregate to form a 6" minimum longitudinal lap. The desired fit of soil or stone aggregate shall be placed over the top of sufficient intervals to maintain the lap during subsequent backfilling.

CONTAMINATION: Care should be exercised to prevent natural or fill soils from intermingling with the stone aggregate. All contaminated stone aggregate shall be removed and replaced with uncontaminated stone aggregate.

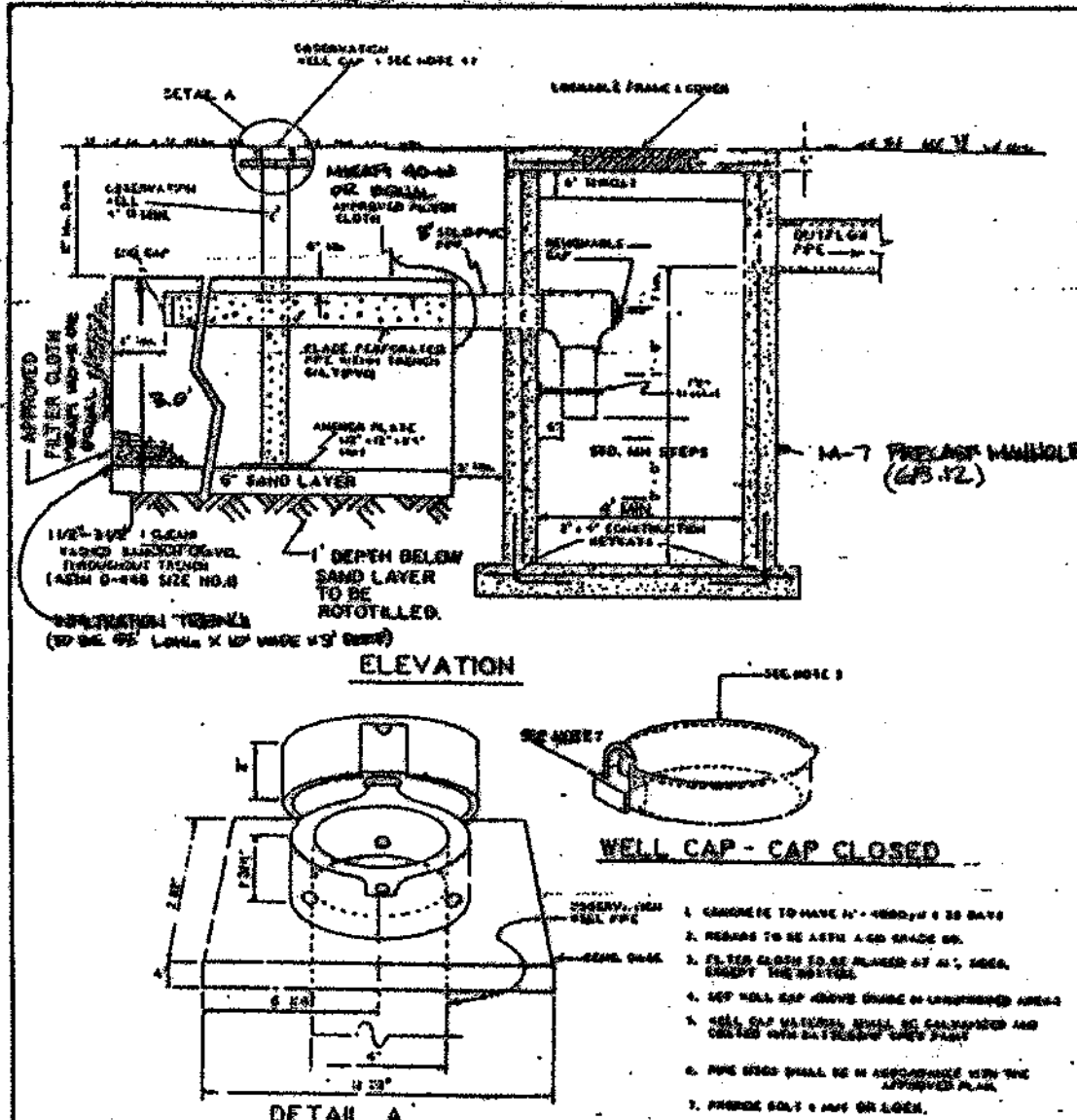
VOIDS BEHIND FABRIC: Voids can be created between the fabric and excavation sides and shall be avoided. Remedial measures or other obstacles from the trench walls is one source of such voids. Natural soils should be placed in these voids at the most convenient time during construction to ensure fabric conformity to the excavation sides. Soil piping, fabric clogging, and possible surface subsidence will be avoided by this remedial process.

UNSTABLE EXCAVATION SIDES: Vertically excavated walls may be difficult to maintain in areas where the soil moisture is high or where soft cohesive or cobbles/sand soils predominate. These conditions may require lining back of the site slopes to maintain stability; trapezoidal rather than rectangular cross sections may result.

VEGETATIVE BUFFER: A vegetative buffer of at least 20' buffer, if possible, shall be used to intercept surface runoff from all impervious areas.

OBSERVATION WELL: The depth of the well at the time of installation will be clearly marked on the well cap.

INFILTRATION TRENCH AND MANHOLE M-7 SHALL BE MAINTAINED BY THE H.O.A.



HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved: Chief, Bureau of Engineering

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved: Chief, Bureau of Engineering

Project Location: 10 Branch District, Howard County, Maryland
Test Pipe 10-10
Date Installed: November 17, 1998

Project Location: 10 Branch District, Howard County, Maryland
Test Pipe 10-10
Date Installed: November 17, 1998

| ELEV. | SOIL DESCRIPTION | DEPTH | BOMBING & SAMPLING NOTES |
|--------|--|-------|--|
| 412.50 | Topsoil - 0" | 0.0 | Diameter indicates soil and from 0 to 8 ft. From below 3.0 feet. |
| 412.20 | Dark, moist, sandy SILT, water rock fragments and mica (M&L) | 2.5 | Notes: All samples were returned from the test pit excavation. Therefore, no SPT blow counts recorded, and all samples were returned in a disturbed "D" condition. |
| 410.20 | Difficult to excavate below 11 ft | 7.5 | infiltration test set @ 6.0 ft |
| 407.20 | Gray-brown, silty SAND, trace rock fragments and mica (M&L) | 10.0 | Difficult to excavate below 10.0 ft |
| 407.20 | Bottom at 10.0 feet | 12.5 | |
| | | 15.0 | |
| | | 17.5 | |
| | | 20.0 | |

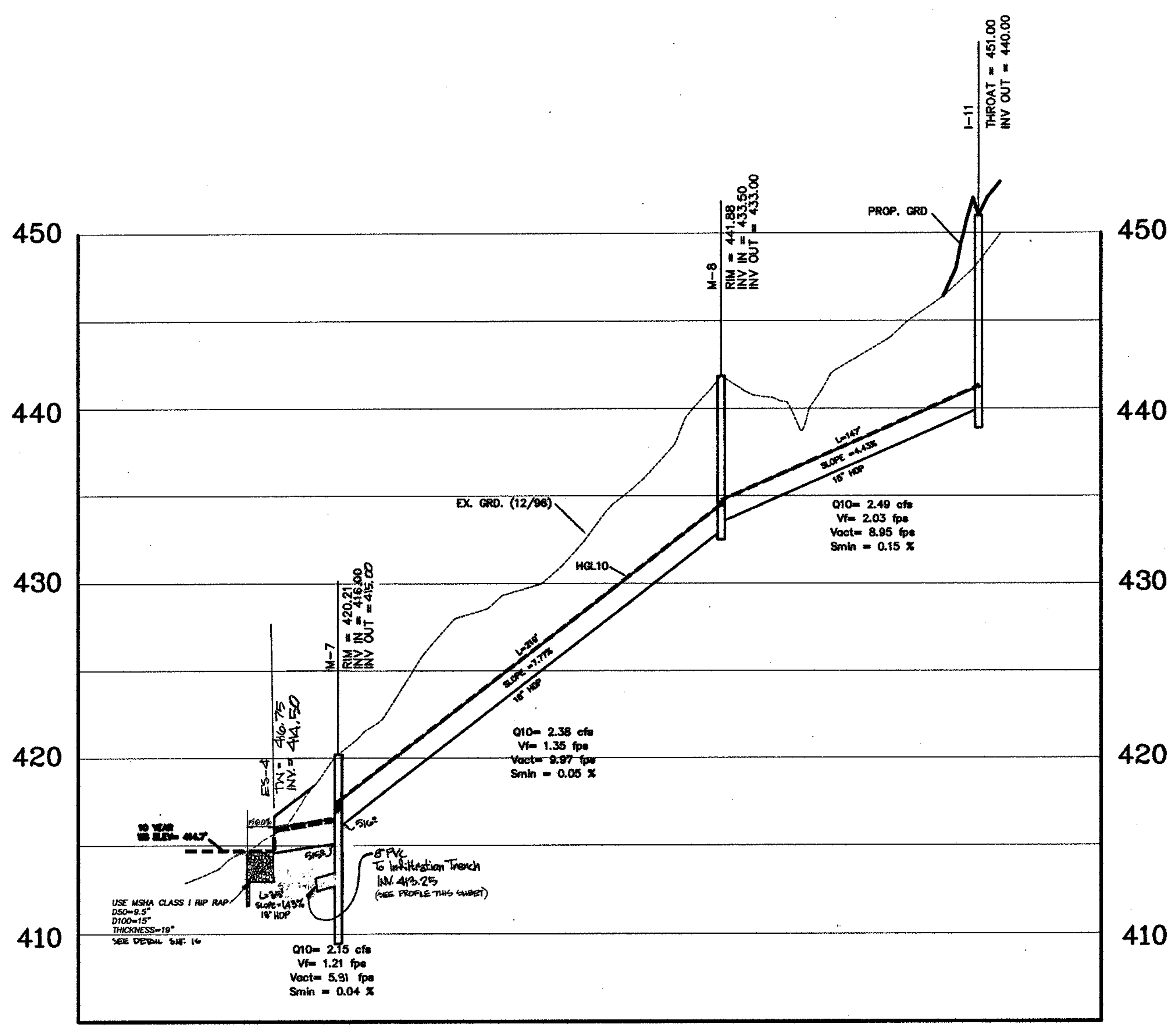
Project Location: 10 Branch District, Howard County, Maryland
Test Pipe 10-10
Date Installed: November 17, 1998

Project Location: 10 Branch District, Howard County, Maryland
Test Pipe 10-10
Date Installed: November 17, 1998

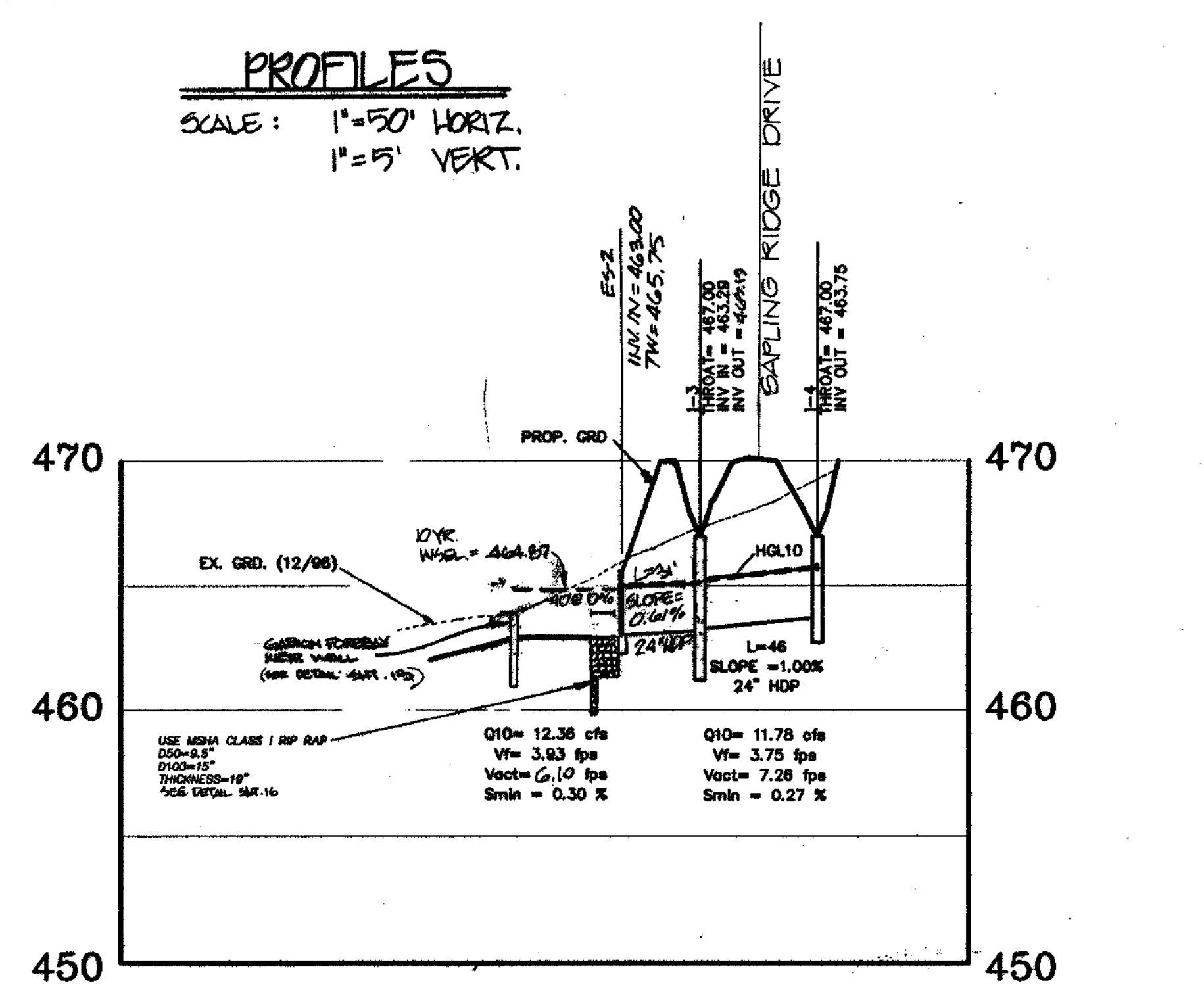
| ELEV. | SOIL DESCRIPTION | DEPTH | BOMBING & SAMPLING NOTES |
|--------|--|-------|--|
| 415.20 | Dark, Moisture, Heavy, Silty, clayey Substrate | 0.0 | Diameter indicates soil and from 0 to 8 ft. From below 3.0 feet. |
| 412.20 | Medium brown, moist, sandy SILT, trace rock fragments and mica (M&L) | 2.5 | Notes: All samples were returned from the test pit excavation. Therefore, no SPT blow counts recorded, and all samples were returned in a disturbed "D" condition. |
| 407.20 | Fine, moist, sandy SILT, trace rock fragments and mica (M&L) | 5.0 | infiltration test set @ 6.0 ft |
| 407.20 | Bottom at 10.0 feet | 10.0 | Difficult to excavate below 10.0 ft |
| | | 12.5 | |
| | | 15.0 | |
| | | 17.5 | |
| | | 20.0 | |

Ground Water Depth
At Completion: 0 ft
After 0.5 hr: 0 ft

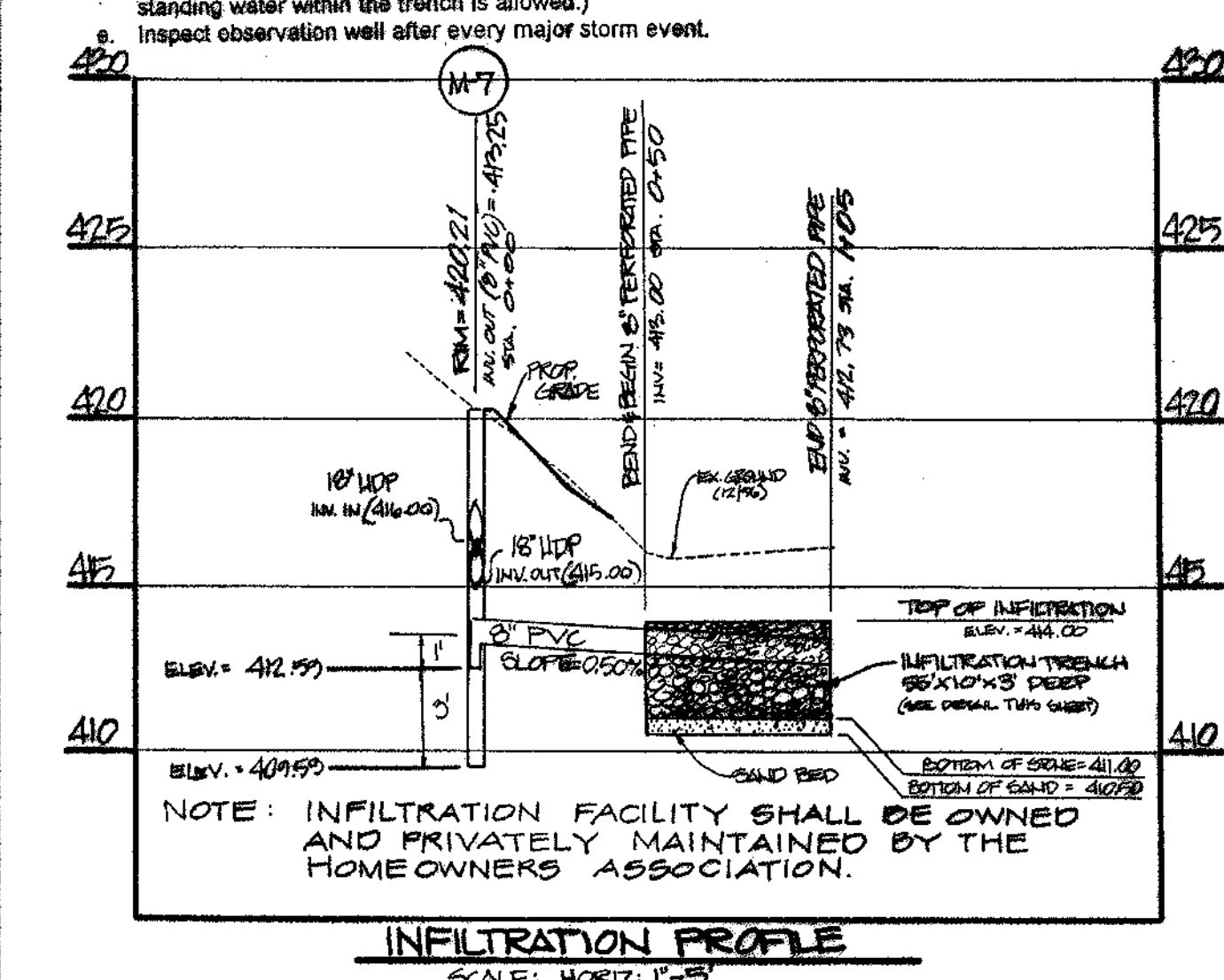
Ground Water Depth
At Completion: 0 ft
After 0.5 hr: 0 ft



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



NOTE: UNLESS OTHERWISE NOTED ALL PROPOSED STORM DRAIN SHALL BE HIGH DENSITY POLYETHYLENE 24"X100"X10' INTERIOR FIRE-RESISTANT M224 (HDP).



NOTE: INFILTRATION FACILITY SHALL BE OWNED AND PRIVATELY MAINTAINED BY THE HOMEOWNERS ASSOCIATION.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Danek 3-5-99
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Houston 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT

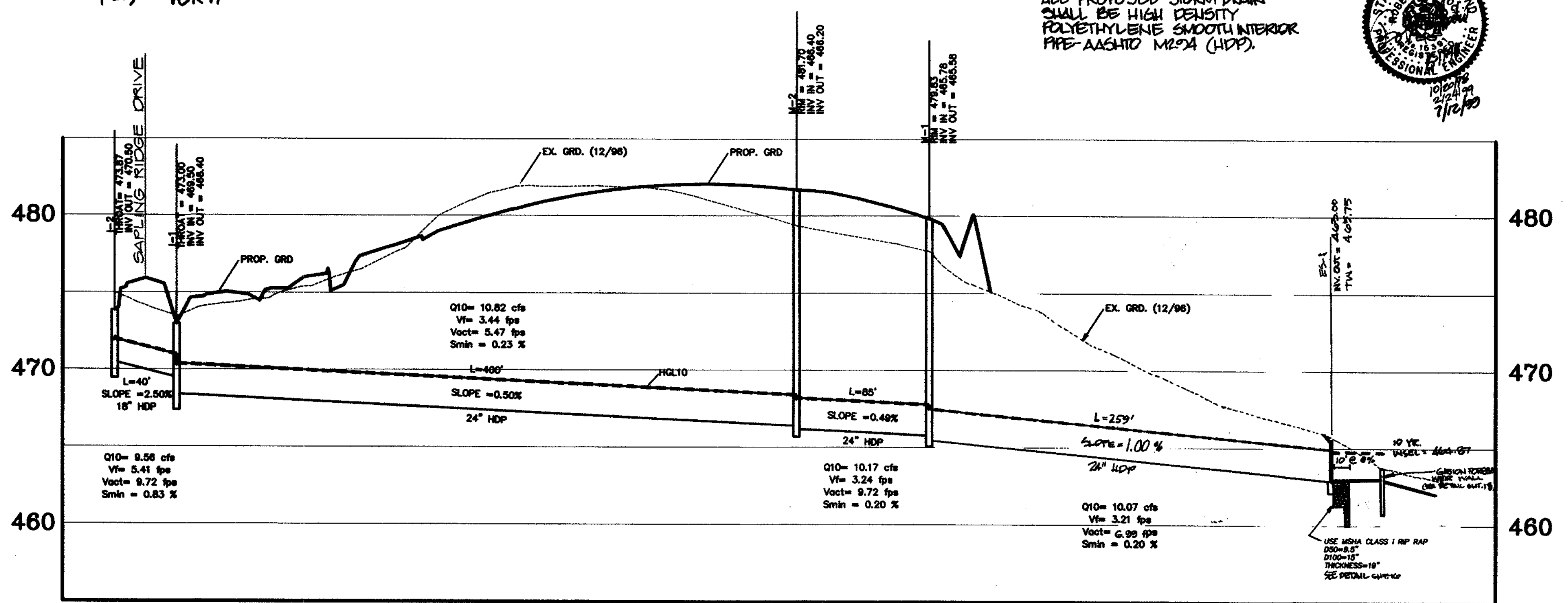
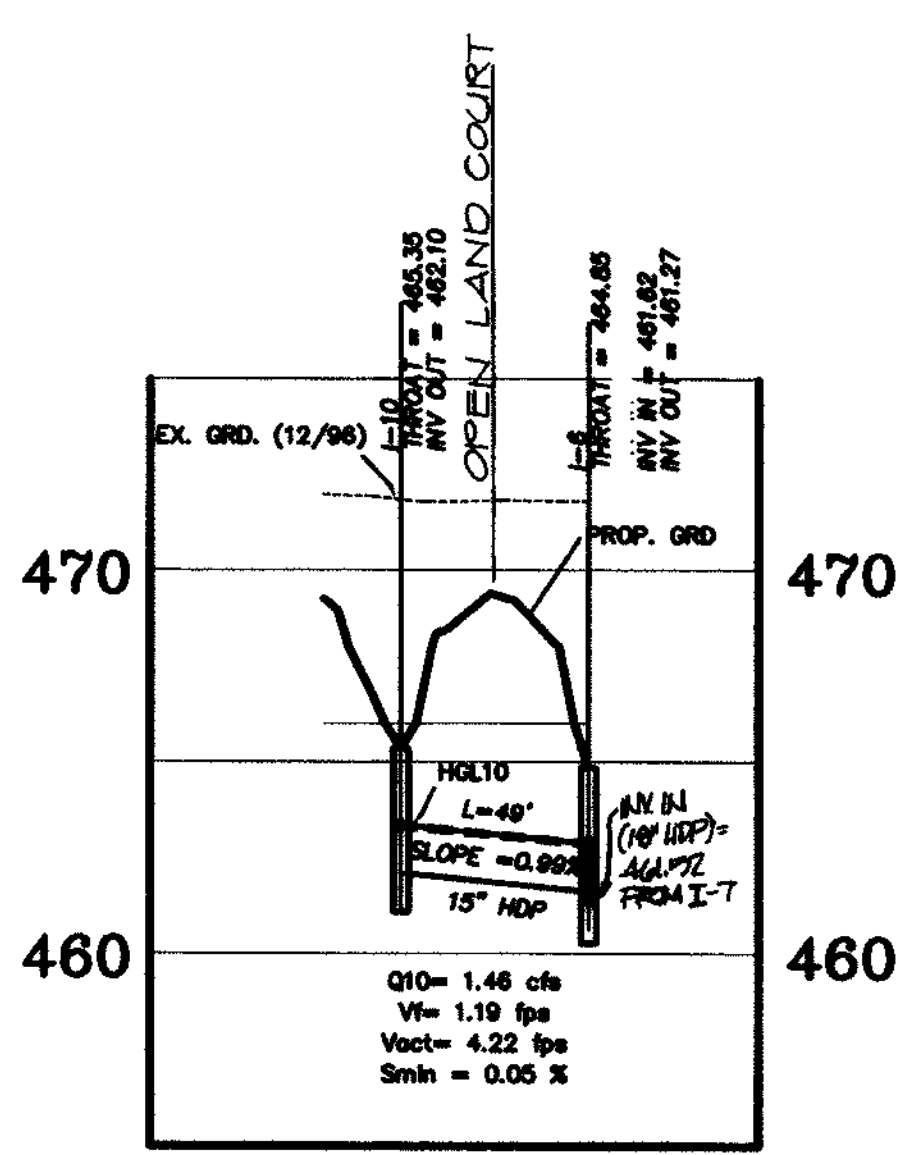
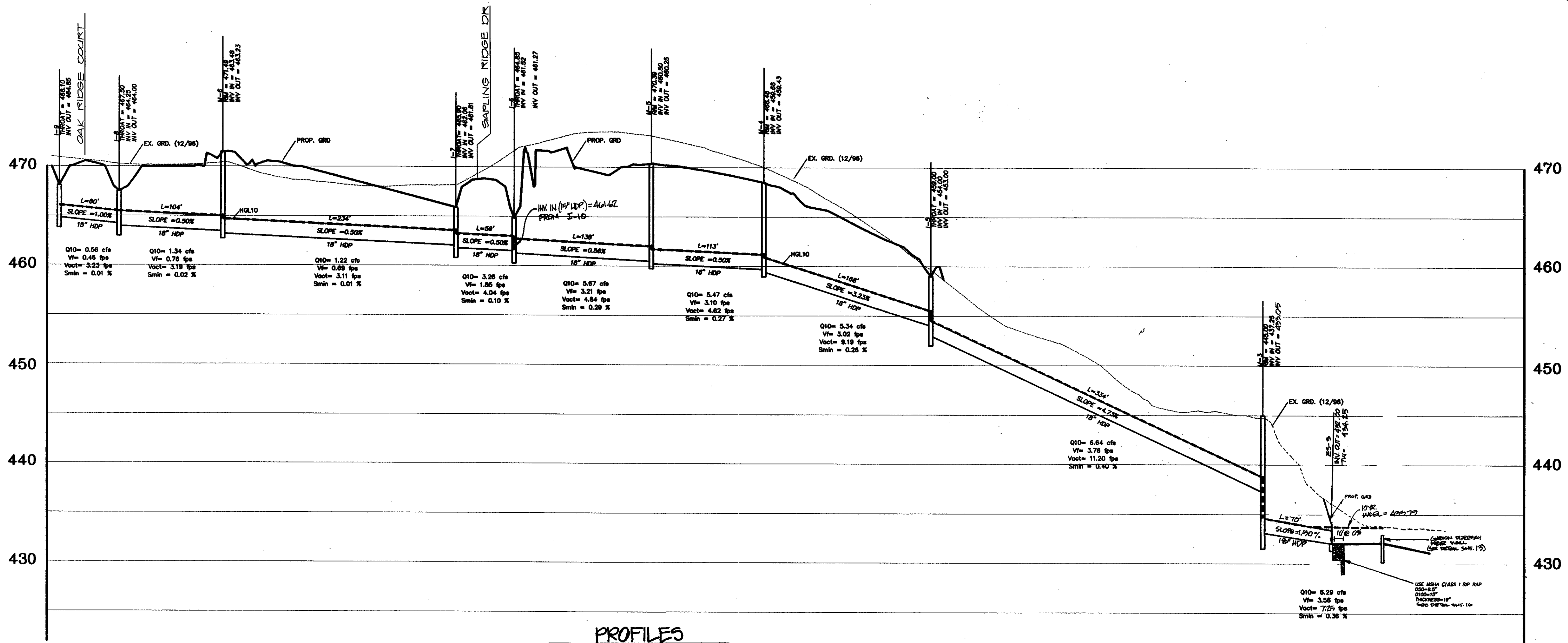
Chris Drummer 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

| | |
|--------------|----------------|
| date | 06-05-98 |
| project | 96019.13 |
| illustration | G.E.M., M.W.Z. |
| scale | As Noted |
| approval | R.M.M. |

| | |
|-------------|--|
| date | 07-12-99 |
| signature | G.E.M., M.W.Z. |
| revision | 02.24.99 |
| description | REVISED PER PLAT REVISIONS. SUBMITTED ORIGINAL MYLARS TO G.E.M. FOR REVIEW. REVISED SUBMITTALS TO HOWARD CO. P.E.Z. FOR REVIEW. SUBMITTED TO HOWARD CO. P.E.Z. FOR REVIEW. |

ELECTION DISTRICT NO. 5
HOWARD COUNTY, MD.
HIGH FOREST ESTATES
STORM DRAIN PROFILES

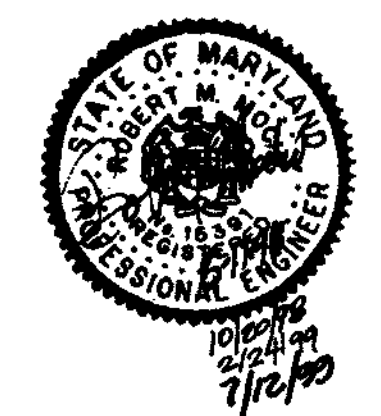
R.M. MOCHI GROUP, P.C.
P.O. Box 10 MD 21774-0010
New Market, MD 21754-9706
(301) 885-9888
Fax: (301) 885-5111



APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3-8-99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hunter 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mark Dammus 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



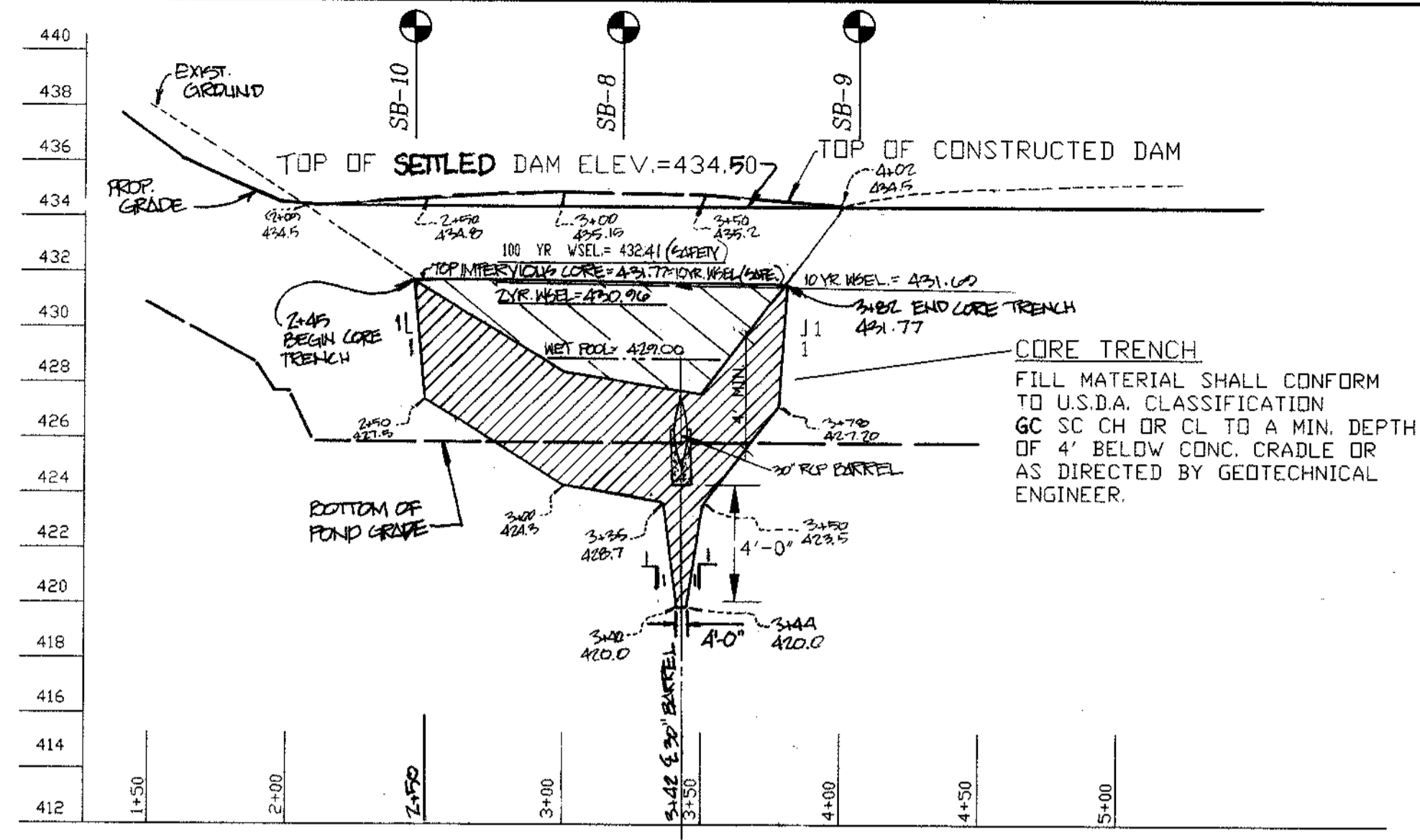
| | | | |
|--------------|----------------|-------------|--------|
| project | 96019-13 | date | 04-98 |
| illustration | G.E.M., R.M.B. | engineering | M.M.Z. |
| scale | AS SHOWN | approval | R.M.M. |

| | | | |
|-------------|--|------|----------|
| no. | 1 | date | 02-21-98 |
| description | REMOVED FOR PLAT RESULTS. Submitted Originals to Ho. Co. DEZ. REVISED SUBMITTAL TO HO. CO. DEZ. REVISION SUBMITTAL TO HO. CO. DEZ. FOR REVIEW. 1ST SUBMITTAL TO HO. CO. DEZ. FOR REVIEW. | | |
| no. | 2 | date | 01-29-98 |
| description | REVISED SUBMITTAL TO HO. CO. DEZ. FOR REVIEW. | | |
| no. | 3 | date | 10/12/98 |
| description | 1ST SUBMITTAL TO HO. CO. DEZ. FOR REVIEW. | | |

HOWARD COUNTY
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
STORM DRAIN PROFILES

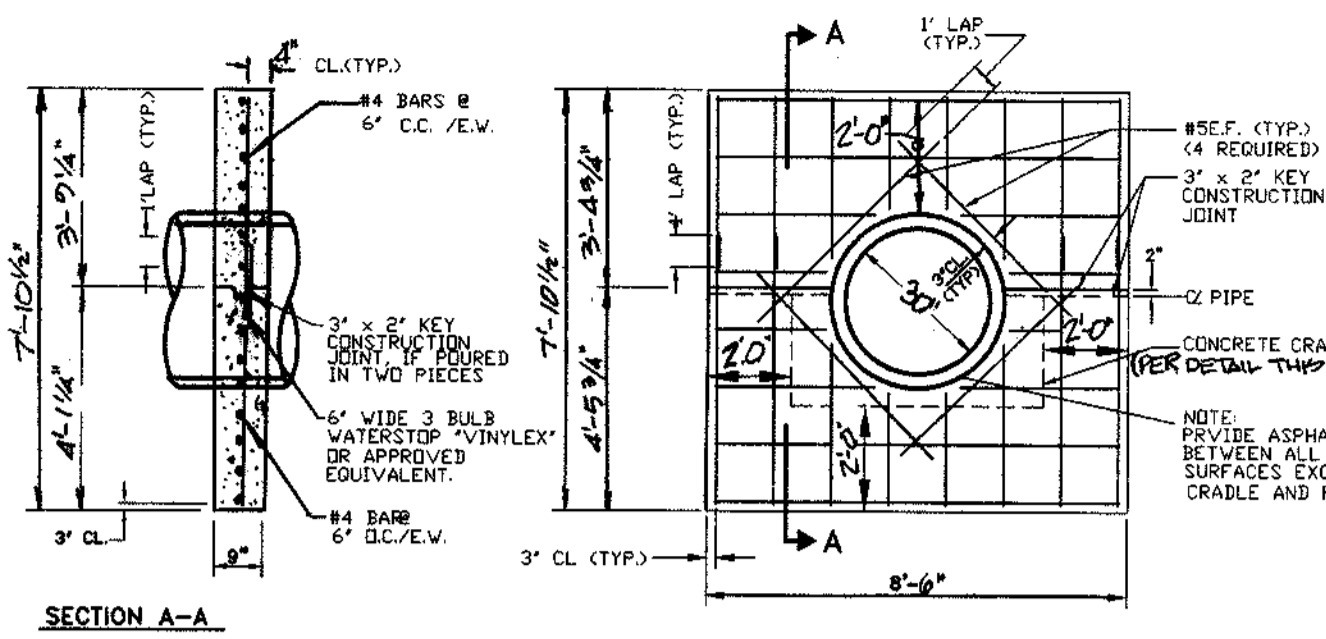
R.M. MOCHI GROUP, INC.
P.O. Box 10
10129 A Old Millwood Pike
Baltimore, MD 21294-6708
(301) 955-5555
Fax: (301) 955-3111

WP-99-103



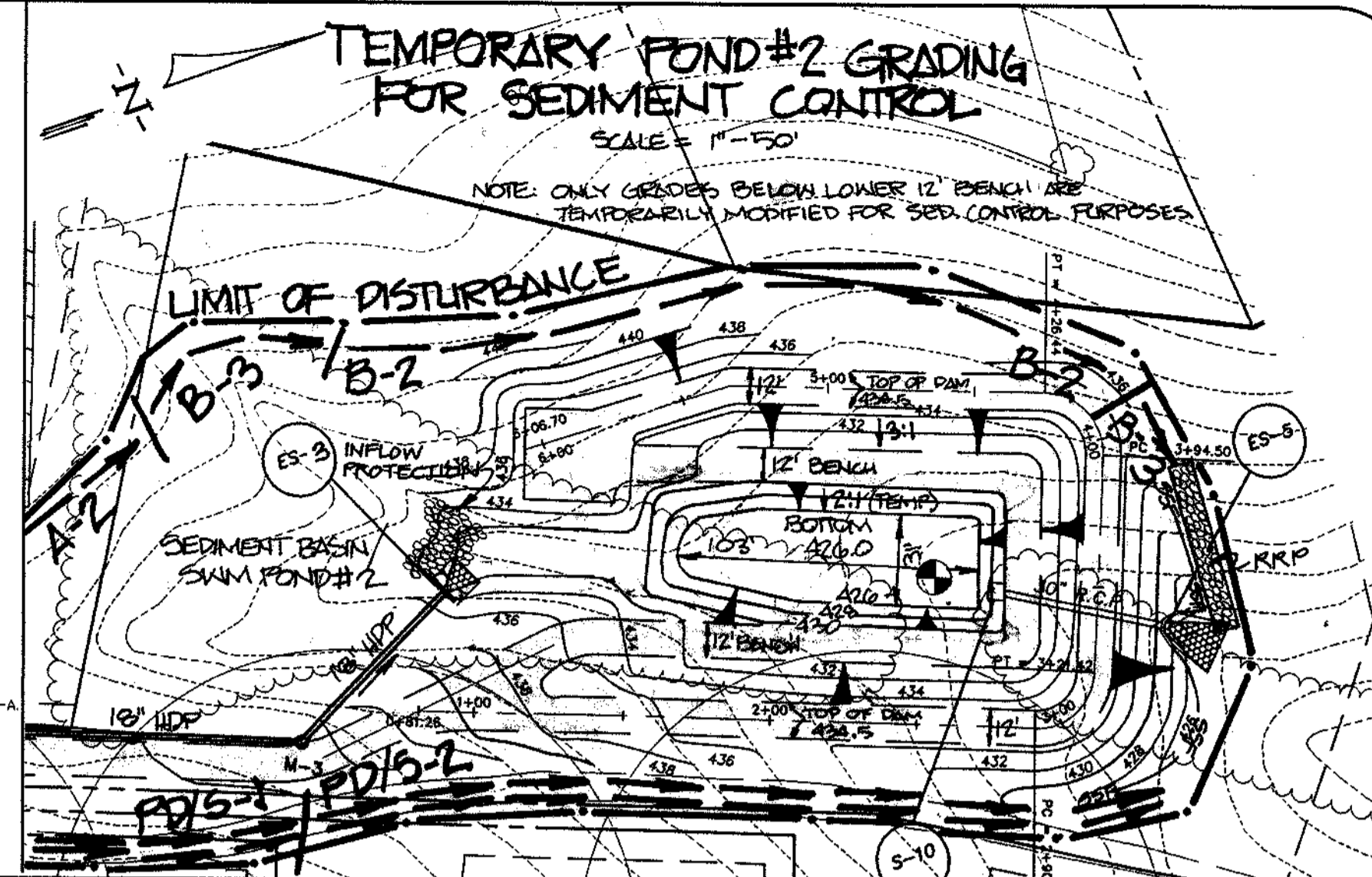
PROFILE ALONG C OF THE DAM (POND #2)

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

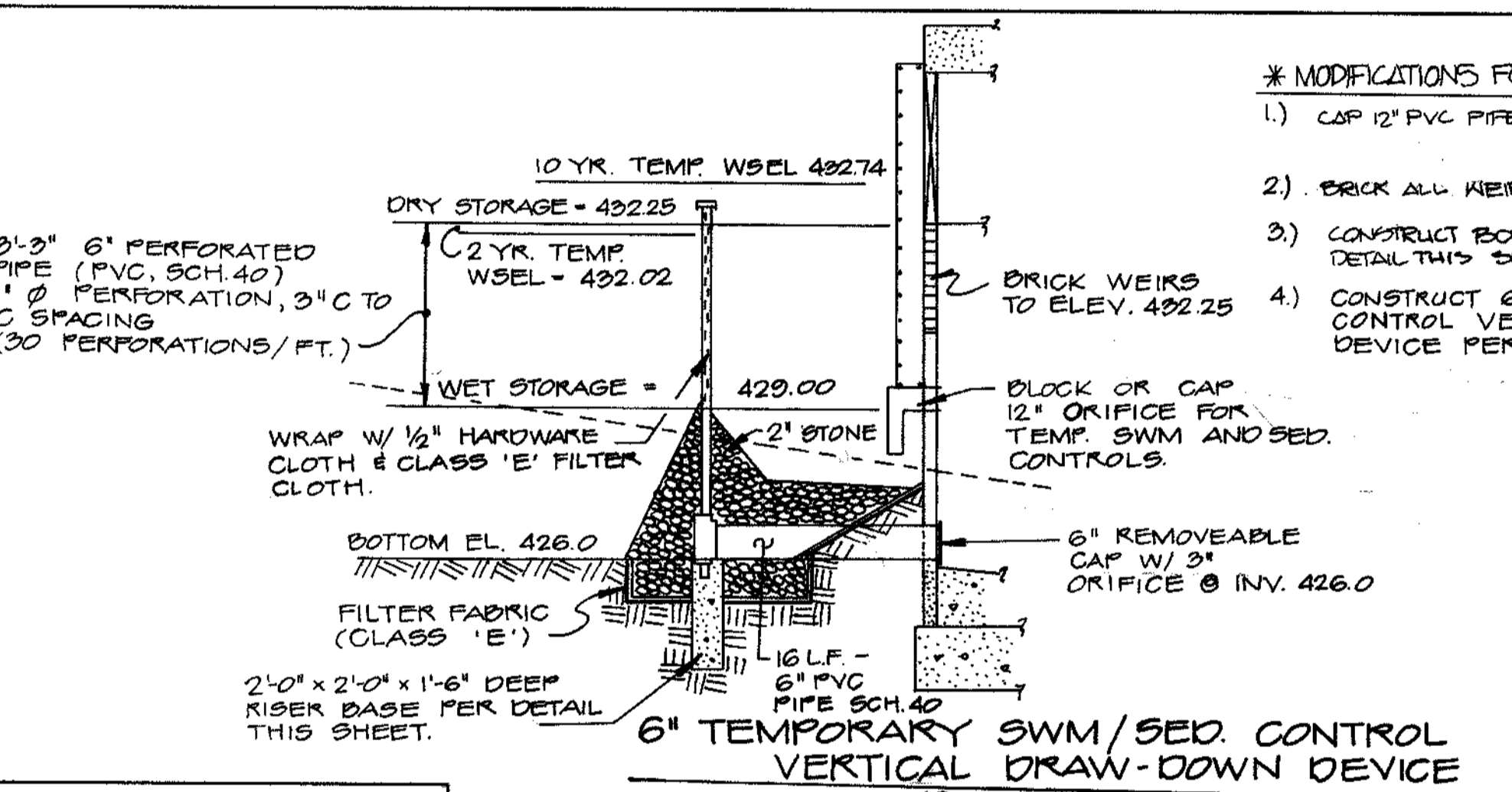


CONCRETE ANTI-SEEP COLLAR
NOT TO SCALE
POND #2

- NOTES:
1. ANTI-SEEP COLLARS ARE TO BE FIELD LOCATED A MINIMUM OF 2' AWAY FROM ANY PIPE JOINT. SEE PIPE PROFILE FOR APPROX. SPACING.
 2. CONCRETE SHALL BE MSHA MIX NO. 3 (F_c=3,500 PSI).
 3. A "ONE POUR" COLLAR DOES NOT REQUIRE A CONSTRUCTION JOINT.
 4. PROVIDE A MINIMUM OF 2" CLEARANCE FROM OUTSIDE OF PIPE OR CONCRETE CRADLE TO OUTSIDE OF ANTI-SEEP COLLAR.
 5. CONCRETE CRADLE IS NOT SHOWN IN SECTION A-A.



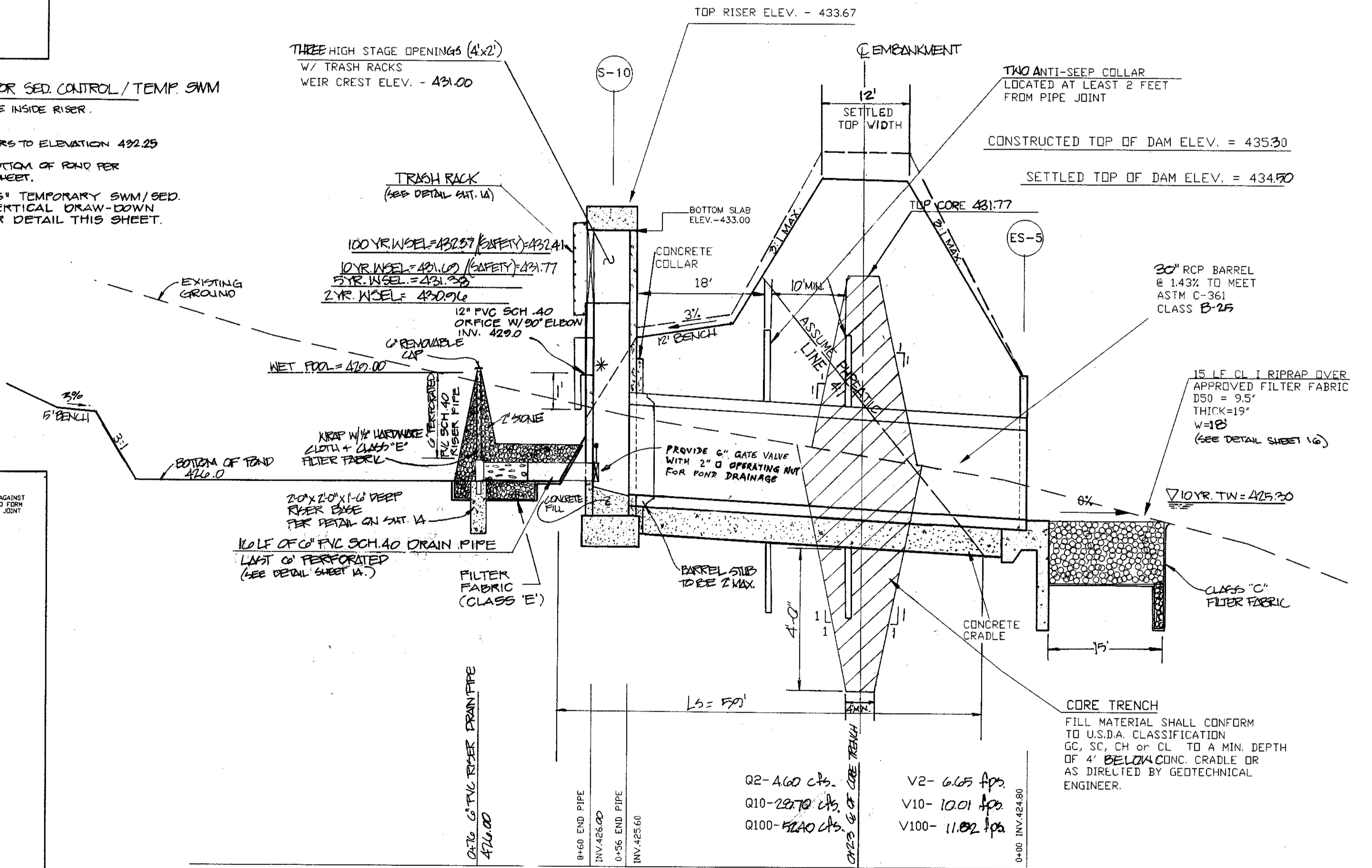
TEMPORARY POND #2 GRADING FOR SEDIMENT CONTROL
SCALE: 1"=50'



6" TEMPORARY SWM/SED. CONTROL VERTICAL DRAW-DOWN DEVICE
NOT TO SCALE
POND #2

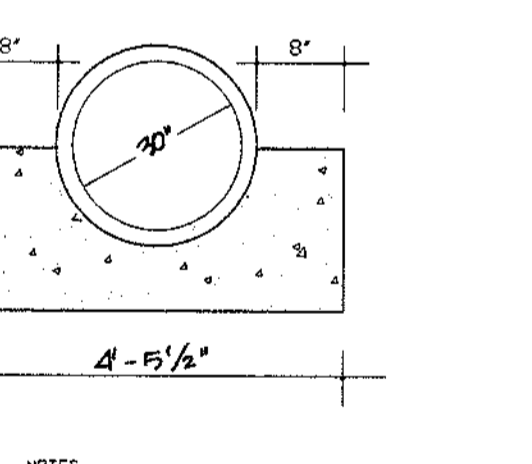
* MODIFICATIONS FOR SED. CONTROL / TEMP. SWM

1. CAP 12" PVC PIPE INSIDE RISER.
2. BRICK ALL WEIRS TO ELEVATION 432.25
3. CONSTRUCT BOTTOM OF POND PER DETAIL THIS SHEET.
4. CONSTRUCT 6" TEMPORARY SWM/SED. CONTROL VERTICAL DRAW-DOWN DEVICE PER DETAIL THIS SHEET.

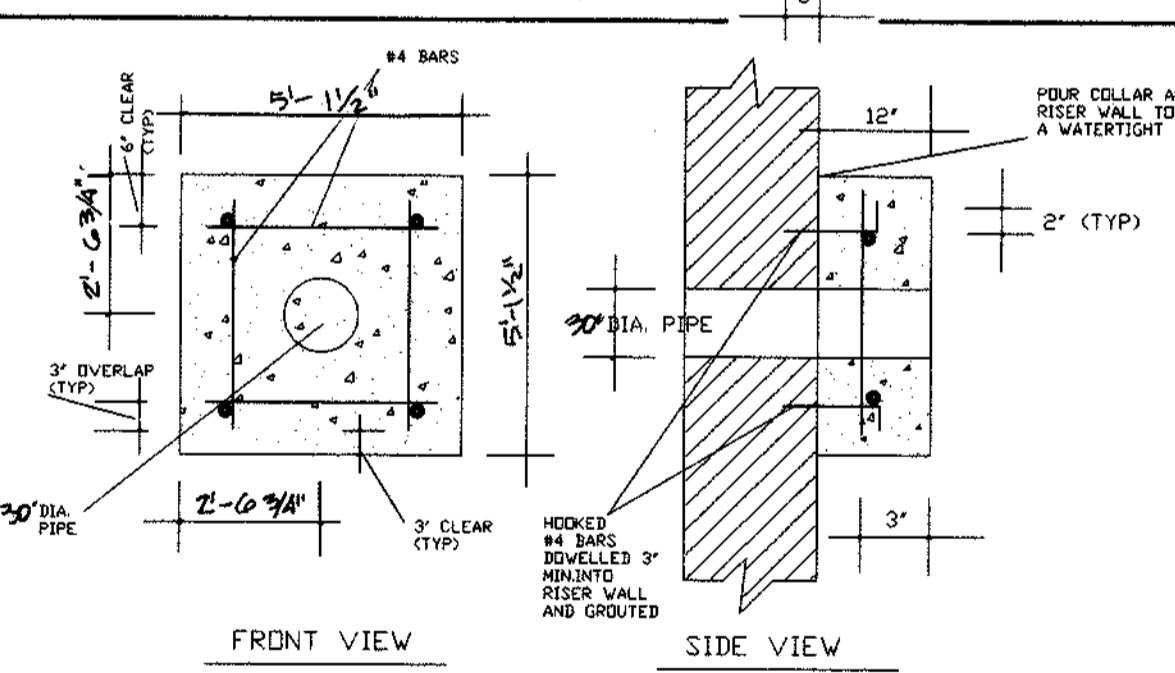


PRINCIPAL SPILLWAY PROFILE FOR SWM POND #2

SCALE: HORIZ. 1"=10'
VERT. 1"=2'



CONCRETE CRADLE
NOT TO SCALE
POND #2



CONCRETE COLLAR
NOT TO SCALE
POND #2

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Christopher M. Daniels 3-8-99
CHIEF, BUREAU OF HIGHWAYS

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Gandy Hamilton 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED:
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Mark A. [Signature] 2/26/99
HOWARD SOIL CONSERVATION DISTRICT

APPROVED:
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
Charles [Signature] 2/26/99
USDA - NATIONAL RESOURCES CONSERVATION SERVICE

DEVELOPER'S CERTIFICATE
I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.
Charles A. Sharp 6-10-98
Signature of Developer DATE

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.
Robert M. Mochl, P.E. 6-11-98
DATE

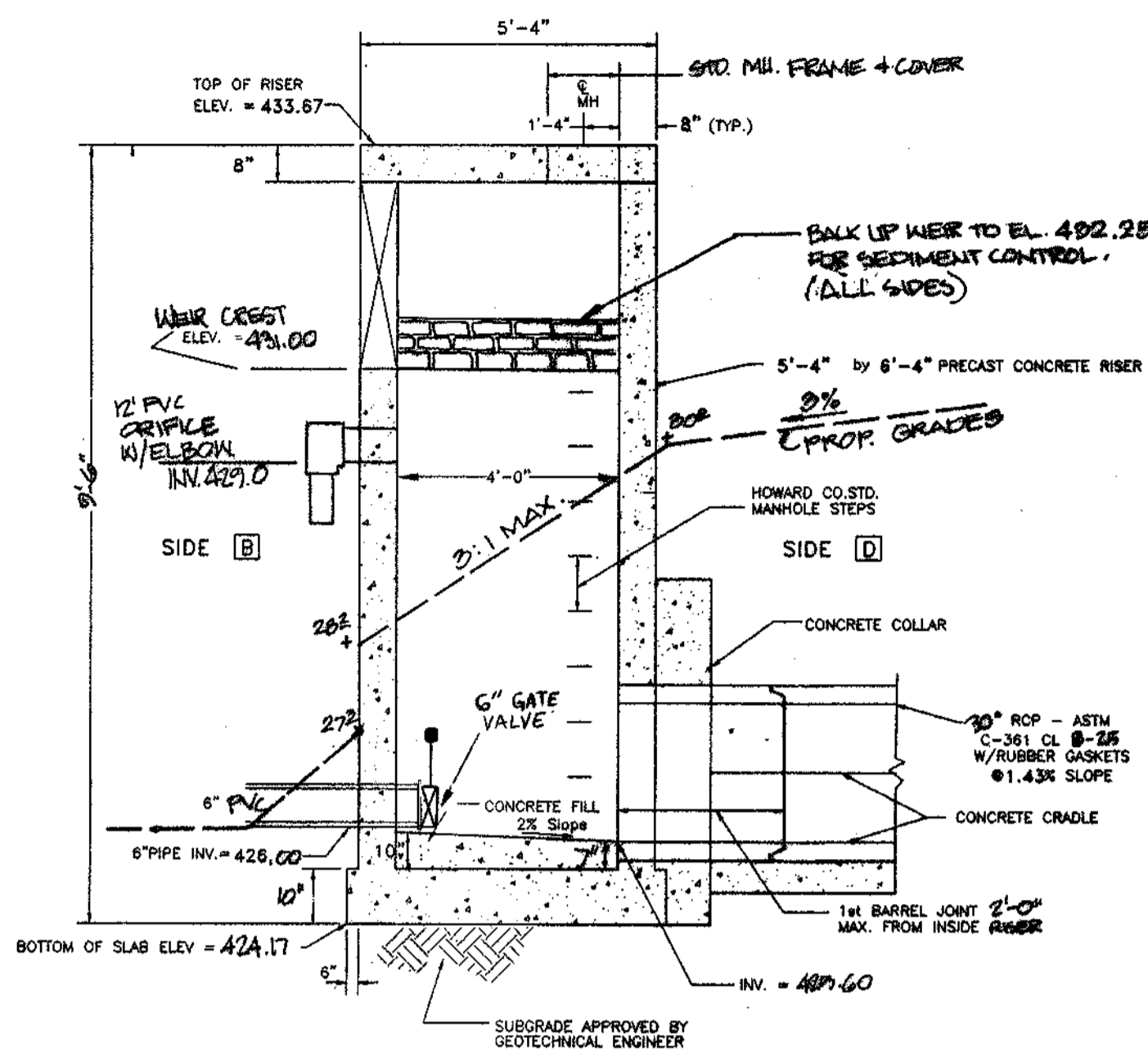


| | | | |
|---------|----------|--------------|---------------|
| date | 05-98 | approval | R.M.M. |
| project | 96019.13 | illustration | G.E.M. K.M.B. |
| scale | | scale | AS SHOWN |

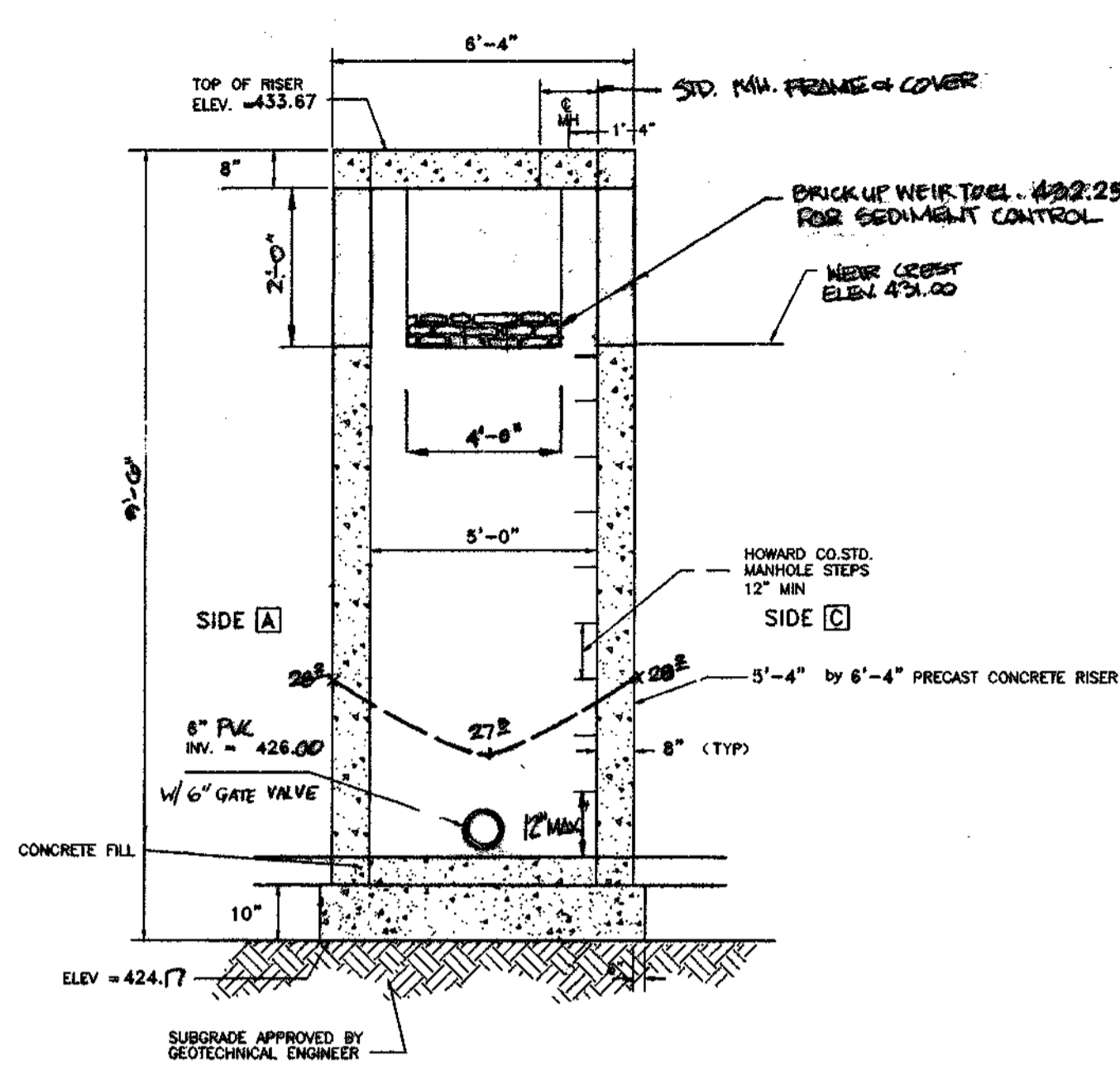
| | | | |
|------|----------|-------------|--|
| date | 02-12-99 | description | REVISED PER PLAN REVISIONS |
| date | 02-24-99 | description | ADDED GATE VALVE PER S. OF HIGHWAYS |
| date | 01-99 | description | Submitted Original to H.C. Co. for Signature |
| date | 10-17-98 | description | REVISED SUBMITTAL TO H.C. CO. DPZ FOR REVIEW |
| date | 0 | description | 1ST SUBMITTAL TO H.C. CO. DPZ FOR REVIEW |

HOWARD COUNTY
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
STORMWATER MANAGEMENT PLAN

R.M. MOCHL GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
10120 A Old National Pike
Pinesville, MD 21754-9706
(301) 865-5658
Fax: (301) 865-5111

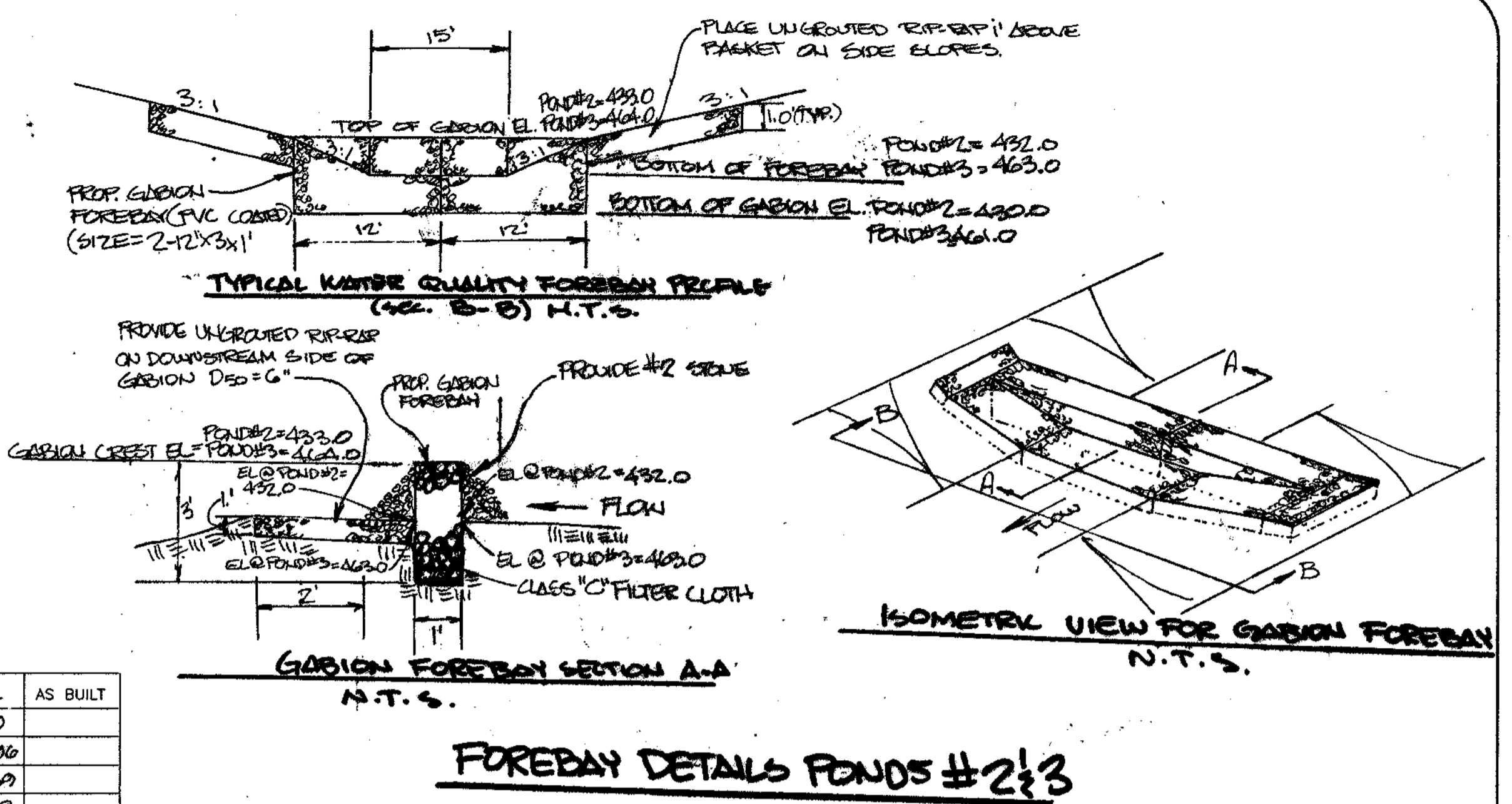


SECTION A-A
POND # 2



SECTION B-B

| DESIGN STORM | WSEL | AS BUILT |
|--------------|--------|----------|
| WET POND | 429.0 | |
| 2 YEAR | 430.96 | |
| 10 YEAR | 431.69 | |
| 100 YEAR | 432.33 | |



FOREBAY DETAILS POND # 2 1/3

RISER STRUCTURE GENERAL NOTES:

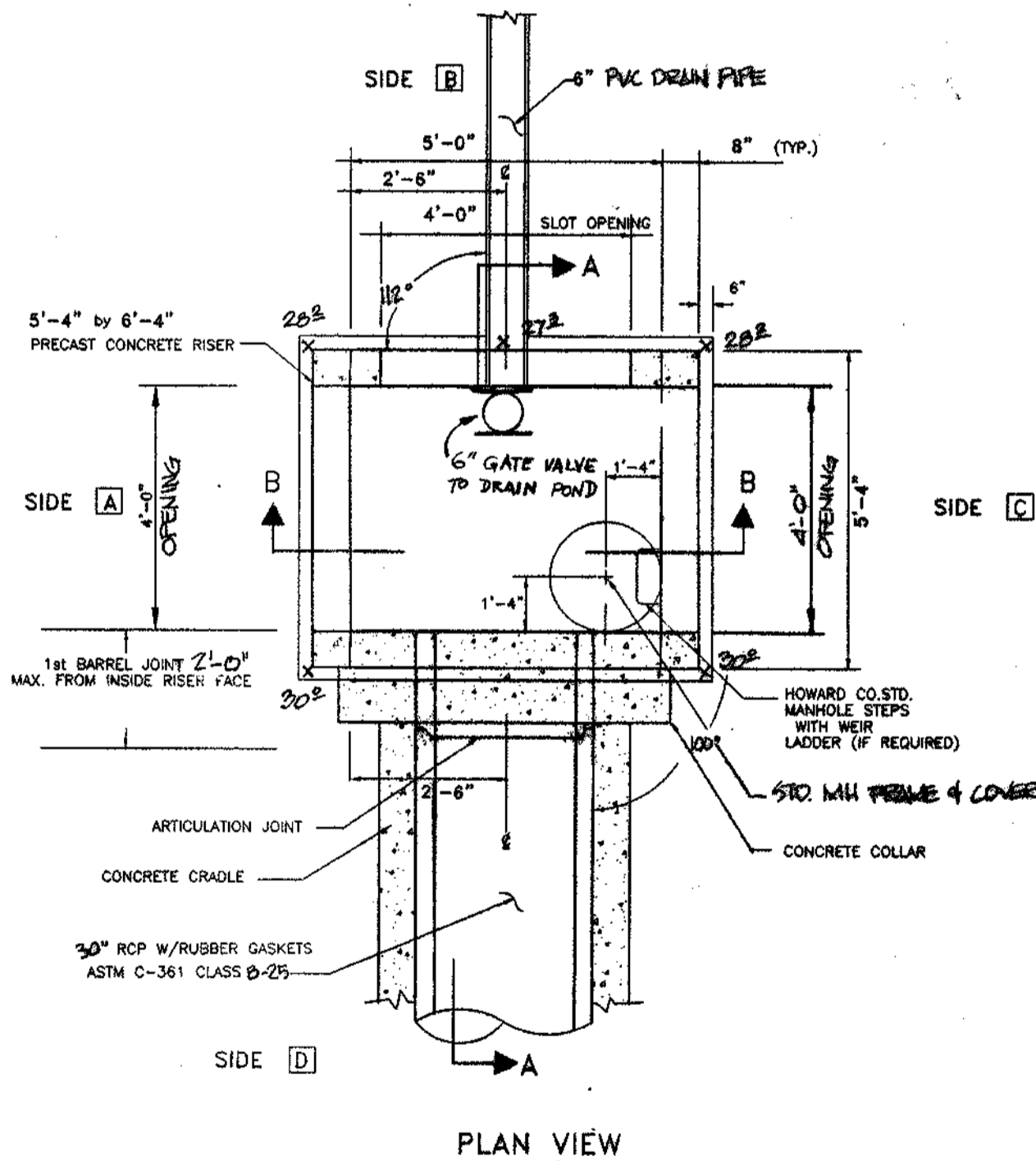
1. PRECAST RISER AND TOP SLAB TO BE MANUFACTURED AND SUPPLIED BY FREDERICK PRECAST CONCRETE, INC. OR APPROVED EQUIVALENT.
2. SHOP DRAWINGS FOR RISER AND TOP SLAB MUST BE REVIEWED BY AN ENGINEER AND APPROVED BY HOWARD COUNTY PRIOR TO FABRICATION.
3. IF ANY DIMENSIONS ARE CHANGED OR REDUCED, REVISED ANTI-FLOTATION COMPUTATION MUST BE SUBMITTED WITH THE SHOP DRAWINGS TO HOWARD COUNTY FOR APPROVAL.
4. TRASH RACKS ARE NOT SHOWN IN THIS VIEW FOR CLARITY.
5. THE RISER STRUCTURE SHOWN IS NOT TO SCALE SEE THIS SHEET FOR ACTUAL DIMENSIONS.

STORMWATER MANAGEMENT POND MAINTENANCE SCHEDULE (POND #2)

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

NON-ROUTINE MAINTENANCE
STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, RISER STRUCTURE AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERES WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY'S DEPARTMENT OF PUBLIC WORKS.

| STRUCTURE SCHEDULE | | | | | | | |
|--------------------|------|----------|--------|-----|-----------|---------|--|
| STRUCTURE | TYPE | LOCATION | INVERT | | ELEVATION | REMARKS | |
| | | | IN | OUT | | | |
| SWM POND # 2 | S-10 | RISER | | | 425.60 | 426.67 | |
| | ES-5 | END WALL | | | 424.80 | | HQ.CD. STANDARD TYPE 'A' HEADWALL CIRCULAR |
| SWM POND # 3 | S-20 | RISER | | | 458.38 | 459.67 | |
| | ES-6 | END WALL | | | 457.80 | | HQ.CD. STANDARD TYPE 'A' HEADWALL CIRCULAR |



PLAN VIEW
POND # 2 - RISER
NOT TO SCALE

| DATE | DEPTH | TEMP | WIND | WAVE | WIND DIR | WAVE DIR | WAVE PERIOD | WAVE HEIGHT | WAVE LENGTH | WAVE PERIOD | WAVE HEIGHT | WAVE LENGTH | WAVE PERIOD | WAVE HEIGHT | WAVE LENGTH |
|---------|-------|------|------|------|----------|----------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 6/10/98 | 0.2 | 68 | 10 | 1.0 | 100 | 100 | 10 | 1.0 | 100 | 100 | 10 | 1.0 | 100 | 100 | 10 |
| 6/11/98 | 0.2 | 68 | 10 | 1.0 | 100 | 100 | 10 | 1.0 | 100 | 100 | 10 | 1.0 | 100 | 100 | 10 |

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Drake 3-8-99
CHIEF, BUREAU OF HIGHWAYS

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chris Hamilton 3/28/99
CHIEF, DIVISION OF LAND DEVELOPMENT

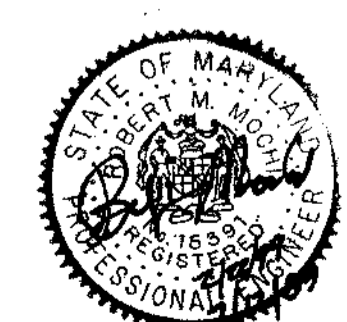
APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chris Hamilton 5/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED:
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
[Signature] 2/26/99
HOWARD SOIL CONSERVATION DISTRICT

APPROVED:
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
Chief Simon 2/26/99
USDA - NATIONAL RESOURCES CONSERVATION SERVICE

DEVELOPER'S CERTIFICATE
I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.
Robert M. Mochl 6-10-98
Signature of Developer DATE

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.
Robert M. Mochl 6-11-98
DATE



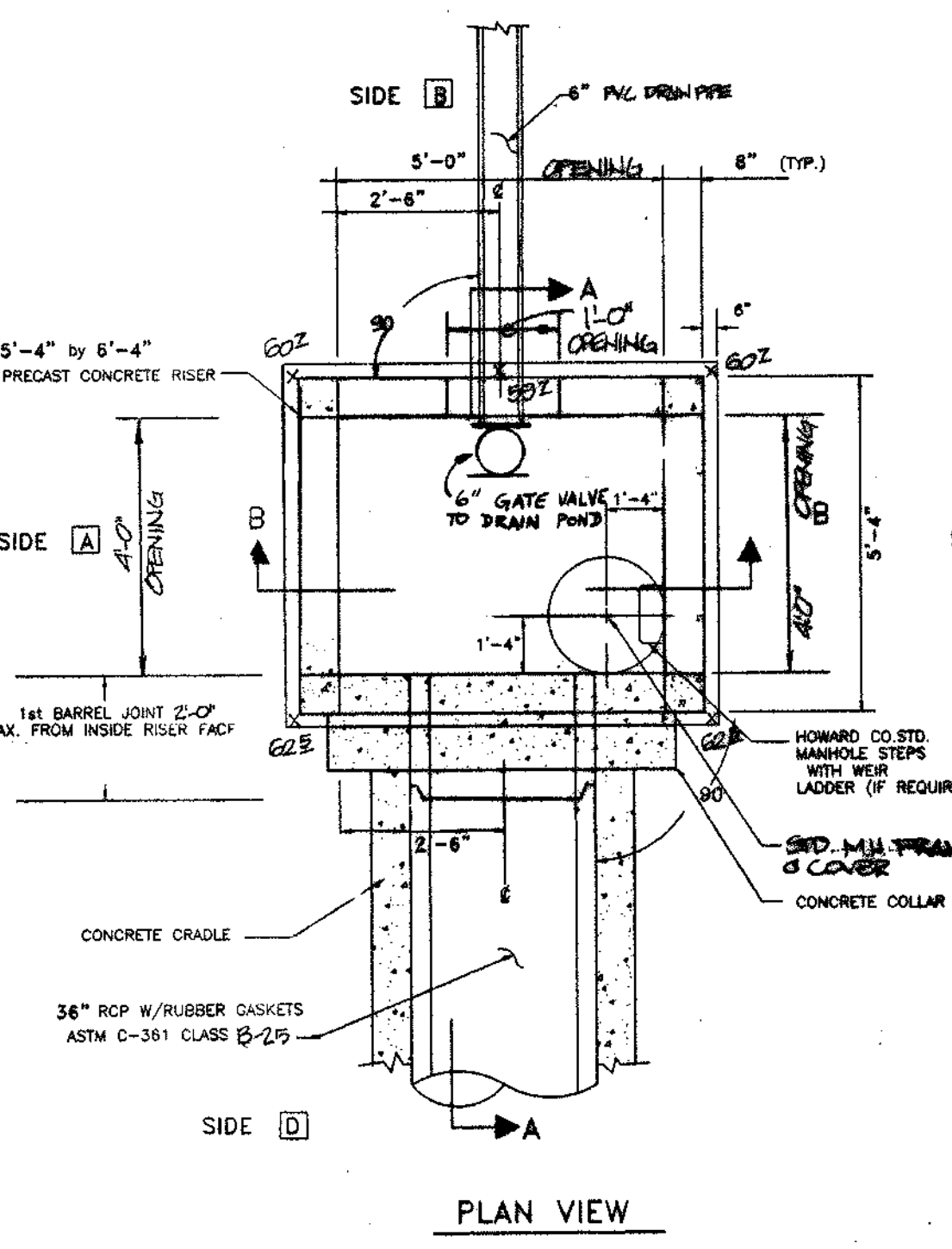
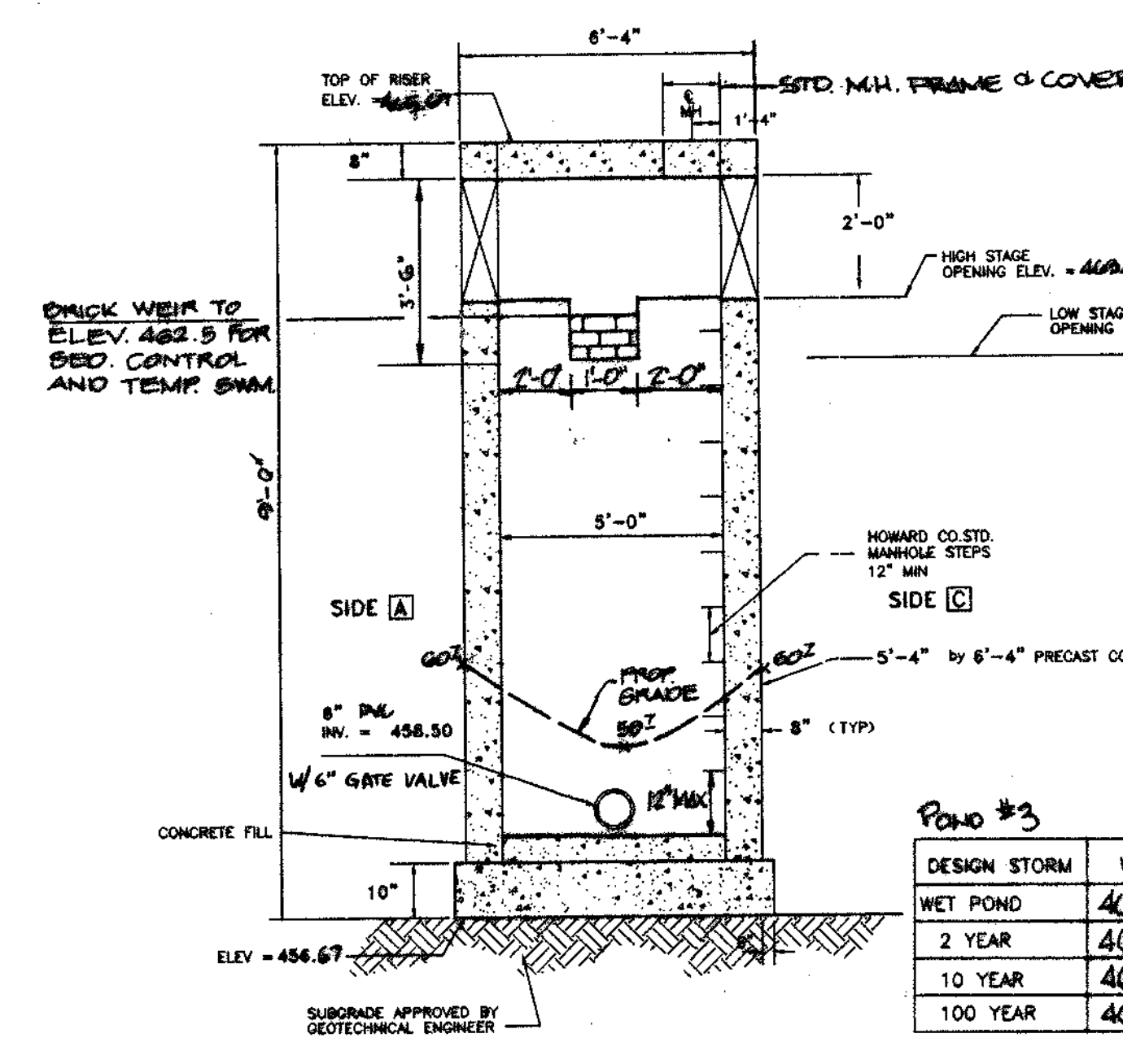
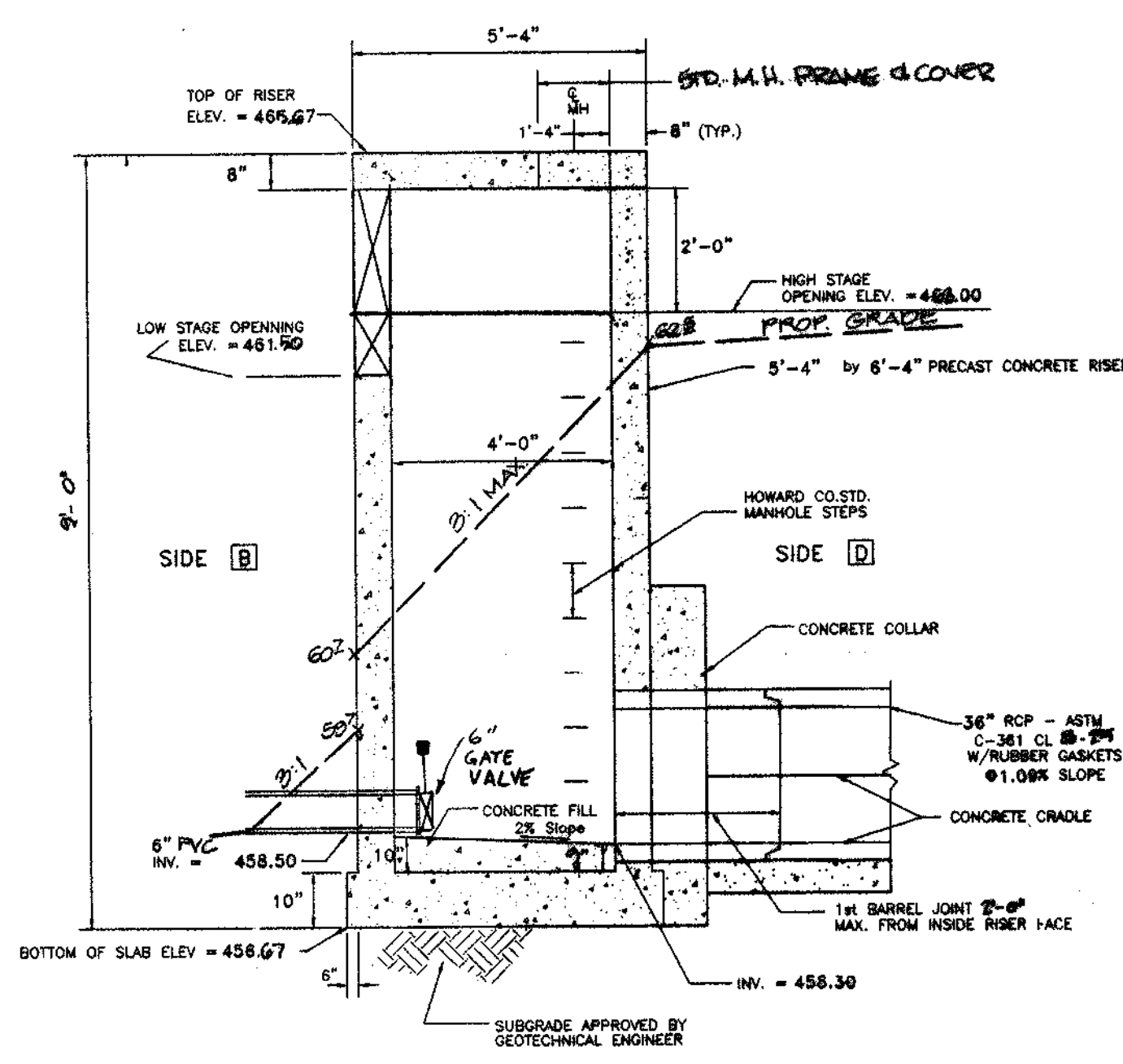
PROJECT: 96019.13
DATE: 05-98
SITUATION: K.M.Z.
SCALE: 1" = 50'
APPROVAL: R.M.M.

REVISIONS:
1. REVISED PER PLAT REVISIONS
2. ASB GATE VALVE FOR HOWARD COUNTY
3. SUBMITTED ORIGINAL PLANS TO HOWARD COUNTY FOR REVIEW
4. REVISED SUBMITTAL TO HOWARD COUNTY FOR REVIEW
5. 1ST SUBMITTAL TO HOWARD COUNTY FOR REVIEW

HOWARD COUNTY
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
STORMWATER MANAGEMENT PLAN

R.M. MOCHL GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
(301) 865-8988
FAC: (301) 865-5111

13 OF 24



POND # 3 - RISER
NOT TO SCALE

RISER STRUCTURE GENERAL NOTES:

1. PRECAST RISER AND TOP SLAB TO BE MANUFACTURED AND SUPPLIED BY FREDERICK PRECAST CONCRETE, INC. OR APPROVED EQUIVALENT.
2. SHOP DRAWINGS FOR RISER AND TOP SLAB MUST BE REVIEWED BY AN ENGINEER AND APPROVED BY HOWARD COUNTY PRIOR TO FABRICATION.
3. IF ANY DIMENSIONS ARE CHANGED OR REDUCED, REVISED ANTI-FLOURATION COMPUTATION MUST BE SUBMITTED WITH THE SHOP DRAWINGS TO HOWARD COUNTY FOR APPROVAL.
4. TRASH RACKS ARE NOT SHOWN IN THIS VIEW FOR CLARITY.
5. THE RISER STRUCTURE SHOWN IS NOT TO SCALE. SEE THIS SHEET FOR ACTUAL DIMENSIONS.
6. CAST FRAME (30" DIA. MIN. OPENING) INTO TOP SLAB (HEAVY R-1782 - HL OR APPROVED EQUIVALENT). PROVIDE BOLTABLE FRAME AND COVER WITH 1/2" DIA. BOLT HOLES AND 5/8" DIA. STAINLESS STEEL BOLTS SPACED AT 12" O.C.

STORMWATER MANAGEMENT POND MAINTENANCE SCHEDULE (POND #3)

| DESIGN STORM | WSEL | AS BUILT |
|--------------|--------|----------|
| WET POND | 461.90 | |
| 2 YEAR | 462.84 | |
| 10 YEAR | 463.81 | |
| 100 YEAR | 464.30 | |

ROUTINE MAINTENANCE

FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.

TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES, 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.

VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE

STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, RISER STRUCTURE AND PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.

SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERES WITH THE FUNCTION OF THE RISER, WHEN DEMAND NECESSARY FOR AESTHETIC REASONS, OR WHEN DEMAND NECESSARY BY THE HOWARD COUNTY'S DEPARTMENT OF PUBLIC WORKS.

OPERATION MAINTENANCE AND INSPECTION

Inspection of the pond(s) shown herein 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 any heirs, successors, or assigns shall be responsible for the safety of the pond and the continued operation, surveillance, inspection, and maintenance thereof. The pond owner(s) shall promptly notify the Soil Conservation District of any unusual observations that may be indications of distress such as excessive seepage, turbid seepage, sliding or slumping.

| NO. | DESCRIPTION | DATE | BY | STATUS |
|-----|--|------|----|--------|
| 1 | Annual inspection of pond structure and embankment | | | |
| 2 | Annual inspection of outlet structure and riprap | | | |
| 3 | Annual inspection of sediment accumulation | | | |
| 4 | Annual inspection of vegetation on embankment | | | |
| 5 | Annual inspection of water quality | | | |
| 6 | Annual inspection of erosion control measures | | | |
| 7 | Annual inspection of trash and debris | | | |
| 8 | Annual inspection of gate valve operation | | | |
| 9 | Annual inspection of concrete structure | | | |
| 10 | Annual inspection of manhole steps | | | |

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Deane 2/9/99
CHIEF, BUREAU OF HIGHWAYS

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 2/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED:
Michael... 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED:
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
[Signature] 2/24/99
HOWARD SOIL CONSERVATION DISTRICT

APPROVED:
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
[Signature] 2/24/99
USDA - NATIONAL RESOURCES CONSERVATION SERVICE

DEVELOPER'S CERTIFICATE
I certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.
[Signature] 6-10-98
Signature of Developer

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] 6/1/98
Robert M. Mochi, P.E.



| | | | |
|--------------|----------|-------------|--------|
| Project | 88018.13 | Date | 05-98 |
| Illustration | K.M.B. | Engineering | M.W.Z. |
| Scale | AS NOTED | Approval | R.M.M. |

REVISED PER R.M.M. REVISIONS
SUBMITTED TO HO. CO. DPZ
REVISED SUBMITTAL TO HO. CO. DPZ
REVISED SUBMITTAL TO HO. CO. DPZ FOR REVIEW
1ST SUBMITTAL TO HO. CO. DPZ FOR REVIEW

HOWARD COUNTY
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
STORMWATER MANAGEMENT PLAN

15 OF 24

WP-00-103 F.98.167 6/1/98

DETAIL 22 - SILT FENCE

Construction Specifications

- Fence posts shall be a minimum of 16" long driven 18" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum cut of 1 1/2" diameter) (minimum 10' long) and 1 1/2" x 1 1/2" square (minimum cut of 1 1/2" diameter) (minimum 10' long) and 1 1/2" x 1 1/2" square (minimum cut of 1 1/2" diameter) (minimum 10' long).
- Geotextile shall be fastened securely to each fence post with wire ties or staples of 1/8" diameter and shall meet the following requirements for Geotextile Class F:

| | | |
|-----------------------|-----------------------|----------------|
| Tensile Strength | 50 (lb/in. min.) | Tact: MSMT 529 |
| Tensile Modulus | 100 (lb/in. min.) | Tact: MSMT 532 |
| Flow Rate | 0.3 (0.017 min./min.) | Tact: MSMT 533 |
| Filtration Efficiency | 75% (min.) | Tact: MSMT 532 |

3. Where areas of geotextile fabric do not overlap, they shall be overlapped and stapled to prevent sediment bypass.

4. Silt fence shall be inspected after each rainfall event and maintained when bypass occurs or when sediment accumulation reaches 50% of the fabric height.

5. Maintenance shall be performed and silt fence removed when "bypass" occurs in the silt fence.

6. Maintenance shall be performed and silt fence removed when "bypass" occurs in the silt fence.

DETAIL 33 - SUPER SILT FENCE

Construction Specifications

- Fencing shall be 42 inches in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for 42 inch fence shall be used. Substituting 42 inch fabric and 6 foot length posts.
- The posts do not need to be set in concrete.
- Chain link fence shall be fastened securely to the fence posts with wire ties or staples.
- Filter cloth shall be fastened to the chain link fence with 1/8" diameter staples every 24" on the top and side sections.
- Filter cloth shall be extended a minimum of 2" into the ground.
- When two sections of filter cloth join each other, they shall be overlapped by 6" and stapled.
- Maintenance shall be performed and silt fence removed when "bypass" occurs in the silt fence.

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE

Construction Specifications

- Length - minimum of 50' (30' for single residence lots).
- 10" aggregate shall be placed on the existing road to provide a turning radius.
- Geotextile fabric (filter cloth) shall be placed over the existing road prior to placing stone. The stone shall be placed in a minimum of 4" layers. The stone shall be placed in a minimum of 4" layers. The stone shall be placed in a minimum of 4" layers.
- Stone - crushed aggregate 1 1/2" to 3" or recycled concrete aggregate equivalent shall be placed at least 4" deep over the length and width of the entrance.
- Surface water shall be allowed to flow to or diverted from construction entrances shall be placed through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a minimum of 3" slope and a minimum of 18" of stone over the pipe. Pipe has to be placed according to the specifications. When the stone is placed on a high spot and has no drainage to convey a pipe will not be necessary. Pipe shall be placed according to the specifications.
- Location - A stabilized construction entrance shall be located at every spot where construction traffic enters or leaves a construction site. Vehicles leaving the site shall travel over the entire length of the stabilized construction entrance.

DETAIL 6 - GABION INFLOW PROTECTION

Construction Specifications

- Gabion inflow protection shall be constructed of 3" x 3" x 9" gabion baskets forming a trapezoidal cross section 1' deep with 2:1 side slopes and a 3' bottom width.
- Geotextile Class G shall be fastened under all gabion baskets.
- The stone used to fill the gabion baskets shall be 4" - 1 1/2".
- Gabions shall be installed in accordance with manufacturer's recommendations.
- Gabion inflow protection shall be used where concentrated flow is present on slopes steeper than 4:1.

DETAIL 1 - EARTH DIKE

Construction Specifications

- All temporary earth dikes shall have uninterrupted positive drainage to a disturbed area. Spot elevations may be necessary for grades less than 1%.
- Runoff diverted from a disturbed area shall be conveyed to a sediment trap or other undisturbed area.
- Runoff diverted from an undisturbed area shall be conveyed to an undisturbed area.
- All trees, brush, stumps, obstructions, and other obstructions shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
- The dike shall be constructed or placed to limit, grade and cross section as required to meet the criteria for erosion control and to prevent production of other irregularities which will impede runoff flow.
- Dike shall be completed by earth moving equipment.
- All north roadway and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
- Inspection and maintenance shall be provided periodically and after each rain event.

DETAIL 3 - PERIMETER DIKE / SWALE

Construction Specifications

- All perimeter dikes/swales shall have uninterrupted positive drainage to a disturbed area. Spot elevations may be necessary for grades less than 1%.
- Runoff diverted from a disturbed area shall be conveyed to a sediment trap or other undisturbed area.
- Runoff diverted from an undisturbed area shall be conveyed to an undisturbed area.
- The dike shall be constructed or placed to limit, grade and cross section as required to meet the criteria for erosion control and to prevent production of other irregularities which will impede runoff flow.
- Dike shall be completed by earth moving equipment.
- All north roadway and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
- Inspection and maintenance shall be provided periodically and 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, tilling or other acceptable means before seeding. (If not previously loosened)

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

- Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaformal fertilizer (8 lbs/1000 sf).
- Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sf) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sf) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the periods March 1 through April 30 and August 1 through October 15, seed with 60 lbs per acre (1.4 lbs/1000 sf) of Kentucky 31 Tall Fescue. For the period May 1 through July 31, seed with 40 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (0.05 lbs/1000 sf) of Weeping Lovegrass. During the period of October 16 through February 28, protect site by Option 1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option 2) use sod. Option 3) seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.

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

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

DETAIL 30 EROSION CONTROL MATTING

Construction Specifications

- Key-in the matting by placing the top edge of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the original ground surface. Secure with a row of staples every 4" down slope from the trench. Spacing between staples is 4".
- Staples shall be placed 2" apart with 4 rows for each strip. 2 outer rows and 2 intermediate rows down the center.
- Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper and the end of the lower strip by 4". anterior reason. Reinforce the overlap with a double row of staples spaced 4" apart in a staggered pattern on either side.
- The discharge end of the matting roll should be initially secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area affected by the flow must be key-in.

EROSION CONTROL MATTING

Construction Specifications

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- The discharge end of the matting roll should be initially secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area affected by the flow must be key-in.

DETAIL 27 - ROCK OUTLET PROTECTION III

Construction Specifications

- The surface for the filter, rip-rap, or gabion shall be prepared to the required line and grade. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
- Reinforcing shall be prepared from punching, cutting, or tearing. Any damage other than on construction shall be repaired by placing mortar or concrete over the damaged area. The mortar or concrete shall be placed over the damaged area. The mortar or concrete shall be placed over the damaged area.
- Staples shall be placed at 2' intervals on the rip-rap or filter. The staples shall be placed at 2' intervals on the rip-rap or filter. The staples shall be placed at 2' intervals on the rip-rap or filter.
- The stone shall be placed so that it blocks in with the existing ground. If the stone is placed too high, the flow will be forced out of the channel and scour adjacent to the stone will occur.

DETAIL 5 - RIP-RAP INFLOW PROTECTION

Construction Specifications

- Rip-rap lined inflow protection shall be 1' in depth, have a trapezoidal cross section with 2:1 or steeper side slopes and 2' (min.) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 18".
- Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
- Entrance and exit sections shall be installed as shown on the detail section.
- Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.
- Gabion inflow protection may be used in lieu of rip-rap inflow protection.
- Rip-rap should be placed into existing ground.
- Rip-rap inflow protection shall be used where the stone is between 4:1 and 1:1 slopes steeper than 2:1. Use stone for slopes steeper than 2:1. Use stone for slopes steeper than 2:1.

DETAIL 8 - PIPE OUTLET SEDIMENT TRAP - ST I

Construction Specifications

- The area under the sediment trap shall be cleared, graded and stripped of any vegetation and rock cover. The soil area shall be cleared.
- The fill material for the sediment trap shall be free of roots or other woody debris and shall be compacted to a density of approximately that of the surrounding undisturbed material. The sediment trap shall be constructed by troweling equipment until it is being smooth.
- The area under the sediment trap shall be cleared, graded and stripped of any vegetation and rock cover. The soil area shall be cleared.
- The fill material for the sediment trap shall be free of roots or other woody debris and shall be compacted to a density of approximately that of the surrounding undisturbed material. The sediment trap shall be constructed by troweling equipment until it is being smooth.
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- The fill material for the sediment trap shall be free of roots or other woody debris and shall be compacted to a density of approximately that of the surrounding undisturbed material. The sediment trap shall be constructed by troweling equipment until it is being smooth.

TABLE 22 - GEOTEXTILE FABRICS

| CLASS | APPEARANT OPENING SIZE (MM. MAX.) | GRAB TENSILE STRENGTH (LB. MIN.) | BURST STRENGTH (PSI. MIN.) |
|----------------|-----------------------------------|----------------------------------|----------------------------|
| A | 0.30 | 250 | 300 |
| B | 0.60 | 200 | 320 |
| C | 0.30 | 200 | 330 |
| D | 0.60 | 90 | 145 |
| E | 0.30 | 90 | 145 |
| F (SILT FENCE) | 0.40-0.50" | 90 | 190 |

210 MATERIALS SPECIFICATIONS

The fabric shall be tested in accordance with the following procedures:

- Apparent opening size: MSMT 323
- Grab tensile strength: ASTM D 1683; 48" specimens, 12" clamps, 12" min. tensile rate in both principal directions of geotextile fabric.
- Burst strength: ASTM D 3786

The fabric shall be tested to determine chemical and hydrolytic, and will be not red and yellow stains. It shall be manufactured from fibers consisting of long chain synthetic polymers, and composed of a minimum of 85% by weight of polyethylene, polypropylene, or polypropylene. The geotextile fabric shall resist degradation from ultraviolet exposure.

In addition, Classes A through E shall have a 50 lb./sq. ft. minimum tensile strength and a 20 lb./sq. ft. minimum burst strength when tested in accordance with MSMT 309. The material shall also have a 0.3 gal./sq. ft./min. flow rate and seventy-five percent (75%) minimum filtration efficiency when tested in accordance with MSMT 322.

Geotextile fabric used in the construction of silt fence shall resist degradation from ultraviolet exposure. The fabric shall contain reflective amount of ultraviolet ray inhibitors and stabilizers to provide a minimum of 12 months of expected useful construction life at a temperature range of 0 to 120 degrees F.

DETAIL 20A - REMOVABLE PUMPING STATION

Construction Specifications

- The outer pipe should be at least 48" dia. or shall, in any case, be at least 4" greater in diameter than the inner pipe. The outer pipe shall be 1/2" heavier than the inner pipe.
- After installing the outer pipe, backfill around outer pipe with 2" aggregate of clean gravel.
- The inner pipe shall be supported by perforating it with 1/2" diameter holes spaced at 12" intervals. The inner pipe shall be supported by perforating it with 1/2" diameter holes spaced at 12" intervals. The inner pipe shall be supported by perforating it with 1/2" diameter holes spaced at 12" intervals.
- The center pipe shall extend 12" to 18" above the anticipated water surface elevation or pipe grade elevation when diverting to main.
- The structure shall be removed and earth stabilized when the drainage work has been completed.
- All cut and fill slopes shall be 2:1 or flatter.
- All pipe connections shall be watertight.

DETAIL 9 - PIPE OUTLET SEDIMENT TRAP - ST II

Construction Specifications

- The area under the sediment trap shall be cleared, graded and stripped of any vegetation and rock cover. The soil area shall be cleared.
- The fill material for the sediment trap shall be free of roots or other woody debris and shall be compacted to a density of approximately that of the surrounding undisturbed material. The sediment trap shall be constructed by troweling equipment until it is being smooth.
- The area under the sediment trap shall be cleared, graded and stripped of any vegetation and rock cover. The soil area shall be cleared.
- The fill material for the sediment trap shall be free of roots or other woody debris and shall be compacted to a density of approximately that of the surrounding undisturbed material. The sediment trap shall be constructed by troweling equipment until it is being smooth.
- The area under the sediment trap shall be cleared, graded and stripped of any vegetation and rock cover. The soil area shall be cleared.
- The fill material for the sediment trap shall be free of roots or other woody debris and shall be compacted to a density of approximately that of the surrounding undisturbed material. The sediment trap shall be constructed by troweling equipment until it is being smooth.

TABLE 23 - GABION BASKETS

| SIZE RANGE | D ₁ | D ₂ | AASHTO | WEIGHT |
|-------------|----------------|----------------|--------|--------|
| CLASS I | 36" | 18" | M-43 | N/A |
| CLASS II | 36" | 18" | M-43 | N/A |
| CLASS III | 36" | 18" | M-43 | N/A |
| CLASS IV | 36" | 18" | M-43 | N/A |
| CLASS V | 36" | 18" | M-43 | N/A |
| CLASS VI | 36" | 18" | M-43 | N/A |
| CLASS VII | 36" | 18" | M-43 | N/A |
| CLASS VIII | 36" | 18" | M-43 | N/A |
| CLASS IX | 36" | 18" | M-43 | N/A |
| CLASS X | 36" | 18" | M-43 | N/A |
| CLASS XI | 36" | 18" | M-43 | N/A |
| CLASS XII | 36" | 18" | M-43 | N/A |
| CLASS XIII | 36" | 18" | M-43 | N/A |
| CLASS XIV | 36" | 18" | M-43 | N/A |
| CLASS XV | 36" | 18" | M-43 | N/A |
| CLASS XVI | 36" | 18" | M-43 | N/A |
| CLASS XVII | 36" | 18" | M-43 | N/A |
| CLASS XVIII | 36" | 18" | M-43 | N/A |
| CLASS XIX | 36" | 18" | M-43 | N/A |
| CLASS XX | 36" | 18" | M-43 | N/A |

CONSTRUCTION SPECIFICATIONS

- Contractor shall use snow fence or beam orange plastic snow fence where shown on plan.
- Safety fence to be a minimum 4 foot high.
- Anchor post to be installed to a depth of at least 1/3 of the total height of the post.
- Fence is to be built so as not to restrict flow into or out of trap.

APPROVED: *[Signature]* 3-29-99
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: *[Signature]* 2/25/99
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: *[Signature]* 3/15/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

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

APPROVED: *[Signature]* 2/24/99
 HOWARD SOIL CONSERVATION DISTRICT

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

APPROVED: *[Signature]* 2/24/99
 USDA - NATURAL RESOURCES CONSERVATION SERVICE

DEVELOPER'S CERTIFICATE

I certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

[Signature] 6-10-98
 Signature of Developer

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 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] 6-11-98
 Robert M. Moch, P.E.
 Date

APPROVED: *[Signature]* 6-11-98
 PROFESSIONAL ENGINEER

APPROVED: *[Signature]* 6-11-98
 PROFESSIONAL ENGINEER

DATE: 06-08-98
 PROJECT: 9801913
 DRAWING: 101
 SHEET: 16 OF 24

REVISIONS

1. REVISIONS FOR PERMITS

2. REVISIONS FOR PERMITS

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STREET TREES

SAPLING RIDGE DRIVE
5,840 L.F. RIGHT-OF-WAY
146 STREET TREES REQUIRED
146 Acer rubrum 'RED SUNSET'
PROPOSED - 40 FEET APART

OAK RIDGE COURT
1,766 L.F. RIGHT-OF-WAY
47 STREET TREES REQUIRED
47 Acer rubrum 'RED SUNSET'
PROPOSED - 40 FEET APART

OPEN LAND COURT
924 L.F. RIGHT-OF-WAY
24 STREET TREES REQUIRED
24 Acer rubrum 'RED SUNSET'
PROPOSED - 40 FEET APART

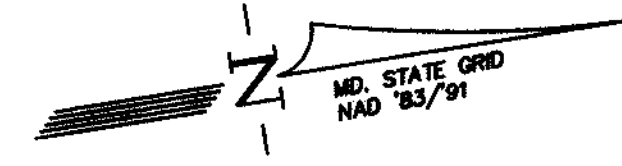
HIGH FOREST COURT
640 L.F. RIGHT-OF-WAY
16 STREET TREES REQUIRED
16 Acer rubrum 'RED SUNSET'
PROPOSED - 40 FEET APART

THE DEVELOPER WILL BE RESPONSIBLE FOR STREET TREE INSTALLATION. FINANCIAL SURETY FOR THE 233 PROPOSED STREET TREES, IN THE AMOUNT OF \$ 69,900 IS PART OF THE DEVELOPER'S AGREEMENT.

LEGEND

- Acer rubrum 'Red Sunset' / Red Sunset Red Maple (RS)
15 PROPOSED ADJACENT TO S.W.M. AREA + 233 STREET TREES
- Acer rubrum 'October Glory' / October Glory Red Maple (OG)
6 PROPOSED ADJACENT TO S.W.M. AREA
- Quercus phellos / Willow Oak (WO)
7 PROPOSED ADJACENT TO S.W.M. AREA
- Quercus rubra / Red Oak (RO)
8 PROPOSED ADJACENT TO S.W.M. AREA
- Cupressocyparis leyland / Leyland Cypress (LC)
79 PROPOSED S.W.M. AND PERIMETER
- Pinus strobus / Eastern White Pine (EWP)
72 PROPOSED S.W.M. AND PERIMETER

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 182 LANDSCAPE TREES, IN THE AMOUNT OF \$2,700 IS PART OF THE DEVELOPER'S AGREEMENT.



APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3-8-99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cathy Stavetta 3/15/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John Dammann 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

| Category* | Perimeter | | | | TOTAL |
|---|-----------|-----|------|-----|-------|
| | 10 | 11 | 12 | 13 | |
| Landscape Type | A | A | A | A | |
| Linear Feet of Perimeter | 4800 | 450 | 4800 | 500 | 10350 |
| Credit for Existing Vegetation (Yes, Linear Feet) | 4650 | 230 | 2390 | | 7270 |
| Net Linear Feet to be planted | 150 | 220 | 2210 | 500 | 3080 |
| Number of Plants Required/Provided | | | | | |
| Shade Trees | 0 | 0 | 0 | 0 | 0 |
| Evergreen Trees** | 5 | 7 | 73 | 16 | 101 |
| Shrubs | 0 | 0 | 0 | 0 | 0 |

* = Adjacent to Perimeter Properties / Preservation Parcel unless otherwise noted
** = 2 EVERGREEN TREES SUBSTITUTED FOR EACH SHADE TREE

| Category | SCHEDULE D - STORMWATER MANAGEMENT AREA LANDSCAPING | | TOTAL |
|--|---|---------------------|-------|
| | SWM POND 2 (TYPE B) | SWM POND 3 (TYPE B) | |
| LINEAR FEET OF PERIMETER | 780 | 1290 | |
| NUMBER OF TREES REQUIRED/PROVIDED | | | |
| SHADE TREES | 15 | 21 | 36 |
| EVERGREEN TREES | 19 | 26 | 45 |
| CREDIT FOR EXISTING VEG. (NO, YES AND L.F.) | NO | YES-270L.F. | |
| CREDIT FOR OTHER LANDSCAPING (NO, YES AND %) | NO | NO | |

Note: This Sheet for Landscaping Purposes Only.



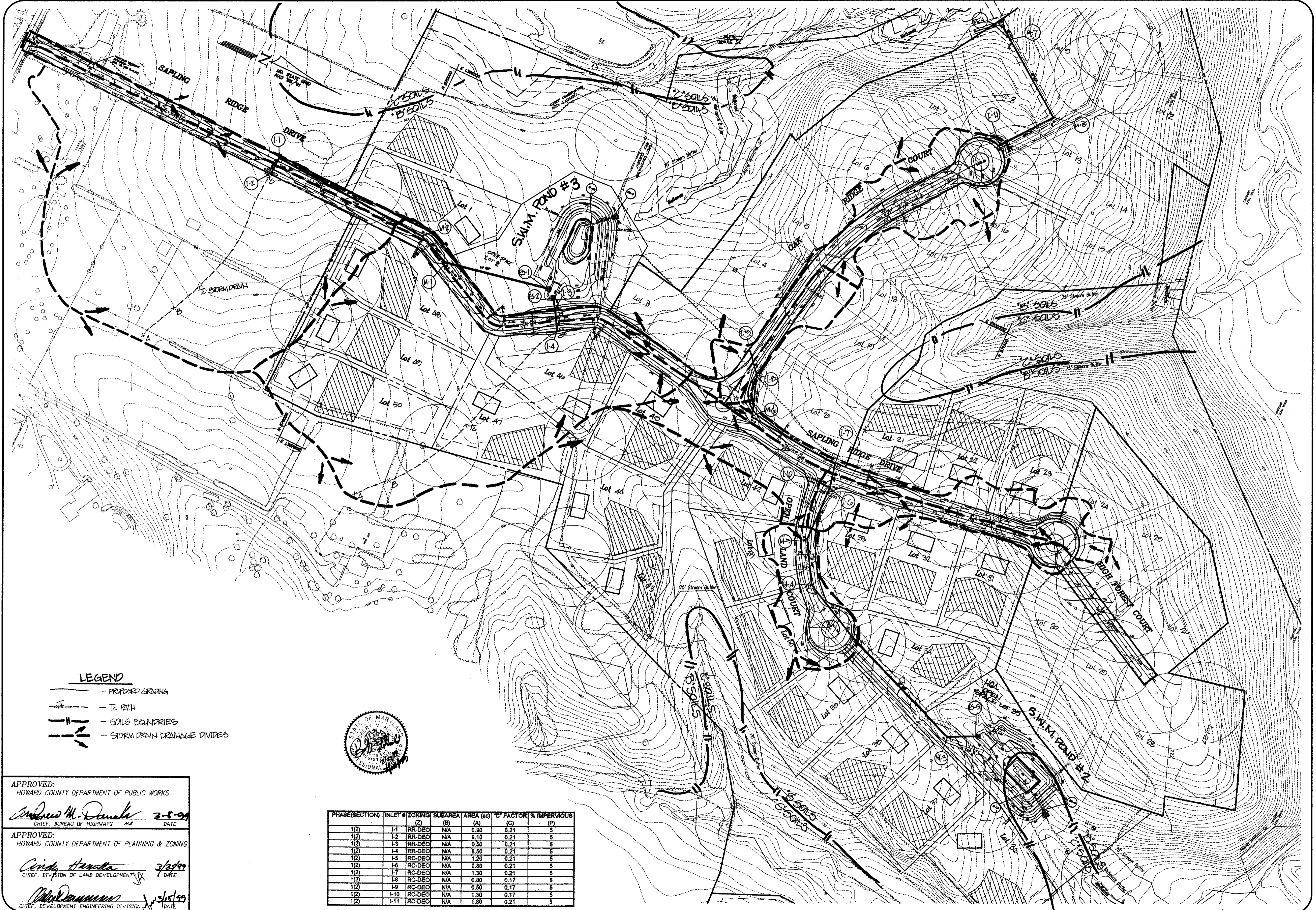
MATCH LINE SEE SHEET 18 OF 24

| | | | |
|--------------|---------|-------------|----------|
| project | 9601813 | date | 06-06-98 |
| illustration | K.M.B. | engineering | M.W.Z. |
| scale | 1"=100' | approval | R.M.M. |

| | | | |
|---|---|----------|--|
| 4 | REVISED PER PLAT REVISIONS | 07-12-98 | |
| 3 | Submitted Originals to Co. for Signatures | 02-24-99 | |
| 2 | REVIEWED SUBMITTAL TO CO. FOR REVIEW | 01-28-98 | |
| 1 | SUBMITTED TO HOWARD CO. D.P.Z. FOR REVIEW | 06-28-98 | |

HIGH FOREST ESTATES
 LANDSCAPE AND STREET TREE PLAN
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MD.

P.O. Box 10
 New Market, MD 21774-010
 10750 A Old National Pike
 (410) 865-5858
 (410) 865-5111



LEGEND

- PROPOSED GRADING
- T.E. PATH
- SOILS BOUNDARIES
- STORM DRAIN DRAINAGE DIVIDES



APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3/5/99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hendon 3/2/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

William D. ... 3/5/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

| PHASE(SECTION) | INLET # | ZONING (Z) | SUBAREA (B) | AREA (A) | CF FACTOR (C) | % IMPERVIOUS (P) |
|----------------|---------|------------|-------------|----------|---------------|------------------|
| 1(2) | I-1 | RR-DEO | N/A | 0.90 | 0.21 | 5 |
| 1(2) | I-2 | RR-DEO | N/A | 9.10 | 0.21 | 5 |
| 1(2) | I-3 | RR-DEO | N/A | 0.50 | 0.21 | 5 |
| 1(2) | I-4 | RR-DEO | N/A | 8.50 | 0.21 | 5 |
| 1(2) | I-5 | RC-DEO | N/A | 1.20 | 0.21 | 5 |
| 1(2) | I-6 | RC-DEO | N/A | 0.80 | 0.21 | 5 |
| 1(2) | I-7 | RC-DEO | N/A | 1.30 | 0.21 | 5 |
| 1(2) | I-8 | RC-DEO | N/A | 0.80 | 0.17 | 5 |
| 1(2) | I-9 | RC-DEO | N/A | 0.50 | 0.17 | 5 |
| 1(2) | I-10 | RC-DEO | N/A | 1.30 | 0.17 | 5 |
| 1(2) | I-11 | RC-DEO | N/A | 1.80 | 0.21 | 5 |

project 98018.13 date 08-06-98
illustration GEM/K.M.B. engineering M.W.Z.
scale 1"=100' approval R.M.M.

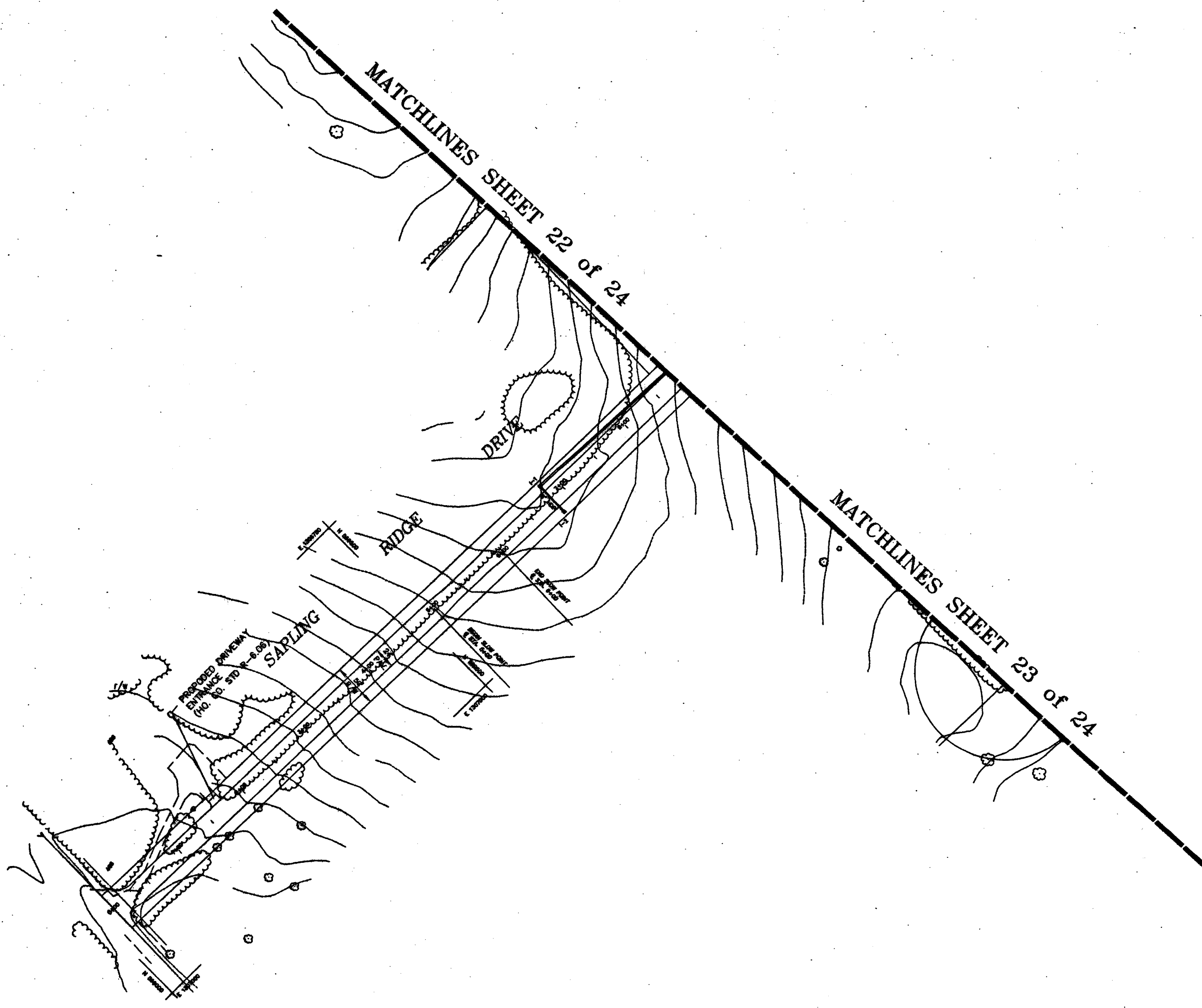
4 REVISED PER PLAT REVISIONS
3 Submitted Original Major to Co. for Signatures 07-12-99
2 REVISED SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW 02-24-99
1 REVISED SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW 01-29-99
0 SUBMITTED TO HOWARD CO. D.P.Z. FOR REVIEW 09-16-98
DATE 08-26-98

HIGH FOREST ESTATES
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MD.
STORM DRAIN DRAINAGE AREA MAP

R.M. MOCHI GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
10220 A Old National Pike
Newmarket, MD 21754-8706
(301) 865-8868
Fax (301) 865-3111

SPECIMEN TREE LIST

| NO. | COMMON NAME | BOTANICAL NAME | SIZE | CONDITION |
|-----|------------------|-------------------------|------|-----------|
| 4 | TULIP POPLAR | Liriodendron tulipifera | 36" | GOOD |
| 5 | BLACK OAK | Quercus velutina | 35" | GOOD |
| 6 | TULIP POPLAR | Liriodendron tulipifera | 33" | GOOD |
| 7 | TULIP POPLAR | Liriodendron tulipifera | 35" | GOOD |
| 8 | SYCAMORE | Platanus occidentalis | 34" | GOOD |
| 9 | SYCAMORE | Platanus occidentalis | 36" | GOOD |
| 10 | TULIP POPLAR | Liriodendron tulipifera | 65" | GOOD |
| 11 | SYCAMORE | Platanus occidentalis | 47" | GOOD |
| 12 | TULIP POPLAR | Liriodendron tulipifera | 32" | GOOD |
| 13 | TULIP POPLAR | Liriodendron tulipifera | 39" | GOOD |
| 14 | TULIP POPLAR | Liriodendron tulipifera | 35" | GOOD |
| 15 | SYCAMORE | Platanus occidentalis | 38" | GOOD |
| 16 | SYCAMORE | Platanus occidentalis | 33" | GOOD |
| 17 | SYCAMORE | Platanus occidentalis | 31" | GOOD |
| 18 | SYCAMORE | Platanus occidentalis | 20" | GOOD |
| 19 | BLACK OAK | Quercus velutina | 22" | GOOD |
| 20 | TULIP POPLAR | Liriodendron tulipifera | 59" | GOOD |
| 21 | TULIP POPLAR | Liriodendron tulipifera | 41" | GOOD |
| 22 | TULIP POPLAR | Liriodendron tulipifera | 40" | FAIR-GOOD |
| 24 | TULIP POPLAR | Liriodendron tulipifera | 33" | GOOD |
| 25 | TULIP POPLAR | Liriodendron tulipifera | 32" | GOOD |
| 26 | TULIP POPLAR | Liriodendron tulipifera | 33" | GOOD |
| 28 | TULIP POPLAR | Liriodendron tulipifera | 33" | GOOD |
| 29 | TULIP POPLAR | Liriodendron tulipifera | 33" | GOOD |
| 30 | TULIP POPLAR | Liriodendron tulipifera | 42" | GOOD |
| 31 | TULIP POPLAR | Liriodendron tulipifera | 32" | GOOD |
| 32 | TULIP POPLAR | Liriodendron tulipifera | 45" | GOOD |
| 33 | TULIP POPLAR | Liriodendron tulipifera | 30" | GOOD |
| 34 | TULIP POPLAR | Liriodendron tulipifera | 32" | GOOD |
| 35 | TULIP POPLAR | Liriodendron tulipifera | 46" | GOOD |
| 36 | TULIP POPLAR | Liriodendron tulipifera | 38" | GOOD |
| 37 | TULIP POPLAR | Liriodendron tulipifera | 35" | GOOD |
| 38 | TULIP POPLAR | Liriodendron tulipifera | 39" | GOOD |
| 39 | TULIP POPLAR | Liriodendron tulipifera | 31" | GOOD |
| 40 | TULIP POPLAR | Liriodendron tulipifera | 41" | GOOD |
| 48 | SOUTHERN RED OAK | Quercus falcata | 31" | GOOD |
| 49 | SOUTHERN RED OAK | Quercus falcata | 33" | GOOD |
| 50 | TULIP POPLAR | Liriodendron tulipifera | 36" | GOOD |
| 51 | TULIP POPLAR | Liriodendron tulipifera | 46" | GOOD |
| 52 | BLACK OAK | Quercus velutina | 30" | GOOD |
| 53 | TULIP POPLAR | Liriodendron tulipifera | 48" | GOOD |
| 54 | BLACK OAK | Quercus velutina | 32" | GOOD |
| 55 | SYCAMORE | Platanus occidentalis | 33" | GOOD |
| 56 | TULIP POPLAR | Liriodendron tulipifera | 38" | GOOD |
| 57 | TULIP POPLAR | Liriodendron tulipifera | 40" | GOOD |
| 58 | SYCAMORE | Platanus occidentalis | 36" | GOOD |
| 60 | TULIP POPLAR | Liriodendron tulipifera | 32" | GOOD |
| 61 | BLACK OAK | Quercus velutina | 35" | GOOD |
| 62 | TULIP POPLAR | Liriodendron tulipifera | 41" | GOOD |
| 63 | SYCAMORE | Platanus occidentalis | 32" | GOOD |
| 64 | SYCAMORE | Platanus occidentalis | 36" | GOOD |
| 65 | TULIP POPLAR | Liriodendron tulipifera | 32" | GOOD |
| 66 | TULIP POPLAR | Liriodendron tulipifera | 32" | GOOD |
| 67 | TULIP POPLAR | Liriodendron tulipifera | 35" | GOOD |
| 68 | TULIP POPLAR | Liriodendron tulipifera | 30" | GOOD |
| 69 | TULIP POPLAR | Liriodendron tulipifera | 36" | GOOD |
| 70 | BLACK OAK | Quercus velutina | 44" | GOOD |
| 71 | SOUTHERN RED OAK | Quercus falcata | 30" | GOOD |
| 72 | SOUTHERN RED OAK | Quercus falcata | 30" | GOOD |
| 73 | TULIP POPLAR | Liriodendron tulipifera | 31" | GOOD |
| 74 | TULIP POPLAR | Liriodendron tulipifera | 31" | GOOD |
| 75 | SYCAMORE | Platanus occidentalis | 32" | GOOD |
| 76 | BLACK OAK | Quercus velutina | 34" | GOOD |
| 77 | TULIP POPLAR | Liriodendron tulipifera | 20" | GOOD |
| 78 | SOUTHERN RED OAK | Quercus falcata | 35" | GOOD |
| 79 | BLACK OAK | Quercus velutina | 31" | GOOD |

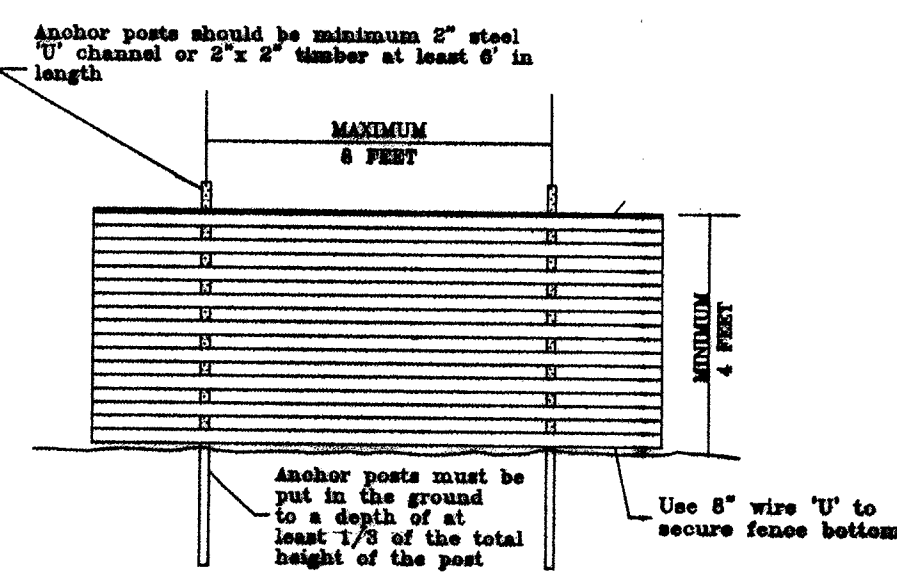


APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Dangle 3-8-99
CHIEF, BUREAU OF HIGHWAYS DATE

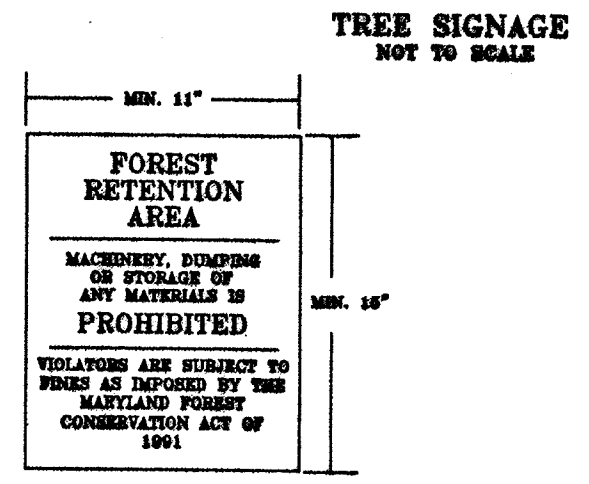
APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamstra 3/2/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED:
Chris Williams 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

TREE PROTECTION FENCE
BLAZE ORANGE PLASTIC MESH
NOT TO SCALE



- GENERAL NOTES**
- FUREST PROTECTION FENCE ONLY
 - RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 - BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING SERVICE.
 - ROOT DAMAGE SHOULD BE AVOIDED.
 - PROTECTIVE REMAINS MAY ALSO BE USED.
 - SERVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.



- GENERAL NOTES**
- Bottom of sign to be higher than top of tree protection fence.
 - Signs to be placed approximately 100 feet apart. Conditions on site affecting visibility may warrant placing signs closer or further apart.
 - Attachment of sign to trees is prohibited.

FOREST CONSERVATION WORKSHEET
BIG BRANCH OVERLOOK

| | ACRES (1/10 acre) |
|--|-------------------|
| I. BASIC SITE DATA | |
| GROSS SITE AREA | 238.3 |
| AREA WITHIN 100' YEAR FLOODPLAIN | 26.8 |
| AREA WITHIN 50' OR PRESERVATION PARCEL (IF APPLICABLE) | 0.0 |
| NET TRACT AREA | 199.8 |
| LAND USE CATEGORY (P-1RD, P-2RD, P-3, C1/O, I) RE/AC | |
| II. INFORMATION FOR CALCULATIONS | |
| A. NET TRACT AREA | 199.8 |
| B. REFORESTATION THRESHOLD (SEE X A) | 50.0 |
| C. AFFORESTATION MINIMUM (SEE X A) | 40.0 |
| D. EXISTING FOREST ON NET TRACT AREA | 100.02 |
| E. FOREST AREAS TO BE CLEARED | 47.82 |
| F. FOREST AREAS TO BE RETAINED | 64.4 |
| III. DETERMINING REQUIREMENTS: AFFORESTATION OR REFORESTATION | |
| 1. Reforestation | |
| If existing forest areas equal or exceed the afforestation minimum (if D equals or is more than C), and clearing of forest areas is proposed, reforestation requirements may apply. | |
| GO TO SECTION IV | |
| If existing forests exceed the afforestation minimum (if D equals or is more than C) and no clearing of existing forest resources is proposed, no reforestation is required. No further calculations are needed. | |
| 2. Afforestation | |
| If existing forest areas are less than the afforestation minimum (if D is less than C), afforestation requirements apply. | |
| GO TO SECTION V | |

| | ACRES (1/10 acre) |
|--|-------------------|
| IV. REFORESTATION CALCULATIONS | |
| A. NET TRACT AREA | 199.8 |
| B. REFORESTATION THRESHOLD (SEE X A) | 50.0 |
| D. EXISTING FOREST ON NET TRACT AREA | 100.02 |
| E. FOREST AREAS TO BE CLEARED | 47.82 |
| F. FOREST AREAS TO BE RETAINED | 64.4 |
| G. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD (D-F, if F equals or is greater than B, Alternate 1) (D-F, if F is less than B, Alternate 2) | 47.82 |
| H. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD (D-F, if applicable) | 0.0 |
| I. FOREST AREAS REMAINED ABOVE REFORESTATION THRESHOLD (F-B, Retention Credit, if applicable) | 16.4 |
| Select the alternative that applies: | |
| 1. Clearing above the threshold only | |
| If forest areas to be retained equal or are greater than the reforestation threshold (if F equals or is greater than B), the following calculations apply: | |
| REFORESTATION FOR CLEARING ABOVE THRESHOLD | 18.0 |
| CREDIT FOR FOREST AREAS REMAINED ABOVE THRESHOLD | 16.4 |
| 1" Retention Credit | 0.0 |
| TOTAL REFORESTATION REQUIRED | 0.0 |
| If the total reforestation requirement is equal to or less than 0, no reforestation is required. | |
| 2. Clearing below the threshold | |
| If forest areas to be retained are less than the reforestation threshold (if F is less than B), the following calculations apply: | |
| REFORESTATION FOR CLEARING ABOVE THRESHOLD | N/A |
| CREDIT FOR FOREST AREAS REMAINED ABOVE THRESHOLD | N/A |
| 1" Retention Credit | N/A |
| TOTAL REFORESTATION REQUIRED | N/A |
| (G X 1/4) + (H X 2) | N/A |
| Since clearing occurs below the threshold, no forest retention credit is possible. | |

- LEGEND**
- SPECIMEN TREE ● ST-42
 - TREE PROTECTION FENCE ———
 - FOREST RETENTION ———
 - EASEMENT LINE ———
 - FOREST RETENTION SIGNAGE ———
 - SLOPES 15-25% [diagonal hatching]
 - SLOPES 25% & UP [cross-hatching]

NOTE: ONLY THE FLOODPLAIN AREA WAS DEDUCTED FROM THE GROSS AREA OF THE PROPERTY, TO OBTAIN THE NET TRACT AREA VALUE.

NOTE: ALL FOREST CONSERVATION EASEMENTS SHOWN ARE SUBJECT TO THE TERMS OF THE DEED OF FOREST CONSERVATION EASEMENT TO BE EXECUTED WITH HOWARD COUNTY AND RECORDED AMONG THE LAND RECORDS OF HOWARD COUNTY.

NOTE: TREE PROTECTION FENCE WILL BE INSTALLED IF DISTURBANCE IS WITHIN 100' OF THE FOREST RETENTION EASEMENT LINE.

SEQUENCE OF CONSTRUCTION

- INSTALL TREE PROTECTION FENCE.
- INSTALL FOREST CONSERVATION SIGNAGE.
- COMPLETE ALL REQUIRED GRADING AND CONSTRUCTION.
- REMOVE TREE PROTECTION FENCE.



AMERICAN LAND CONCEPTS
236 B MAIN STREET
REISTERSTOWN, MARYLAND 21136
PHONE: (410)-526-2688 FAX: (410)-526-2970

OWNER/DEVELOPER

Mr. Charles A. Sharp
3779 Sharp Road
Glenwood, MD 21738

HIGH FOREST ESTATES
(FORMERLY BIG BRANCH OVERLOOK)
SECTION 2
FINAL FOREST CONSERVATION PLAN
ELECTION DISTRICT NO. 4
HOWARD COUNTY, MARYLAND

R.M. MOCHI GROUP, P.C.

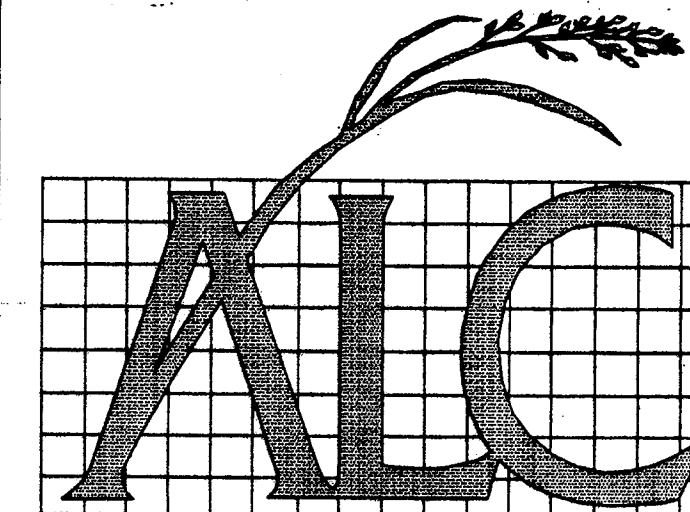
P.O. Box 10
New Market, MD 21774-0010
10120 A Old National Pike
Jomsville, MD 21754-9706
(301) 865-5858
Fax: (301) 865-5111

SIGNATURE BLOCK

Matthew V. Smith 01/04/99
MATTHEW V. SMITH, ENVIRONMENTAL SCIENTIST
QUALIFIED PROFESSIONAL STATUS AS
PER THE FOREST CONSERVATION ACT

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DRAWN BY: MVS/JKF SCALE: 1" = 100'
DESIGNED BY: MVS DATE: JAN 5, 1999
CHECKED BY: MVS SHEET 24 CE 24

WP-92-103



AMERICAN LAND CONCEPTS
 238 B MAIN STREET
 REISTERSTOWN, MARYLAND 21136
 PHONE: (410)-526-2668 FAX: (410)-526-2970

OWNER/DEVELOPER-

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 3779 Sharp Road
 Glenwood, MD 21738

HIGH FOREST ESTATES
 (FORMERLY BIG BRANCH OVERLOOK)
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FINAL FOREST CONSERVATION PLAN

ELECTION DISTRICT NO. 4
 HOWARD COUNTY, MARYLAND

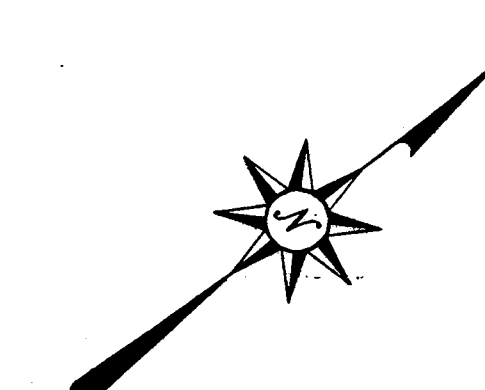
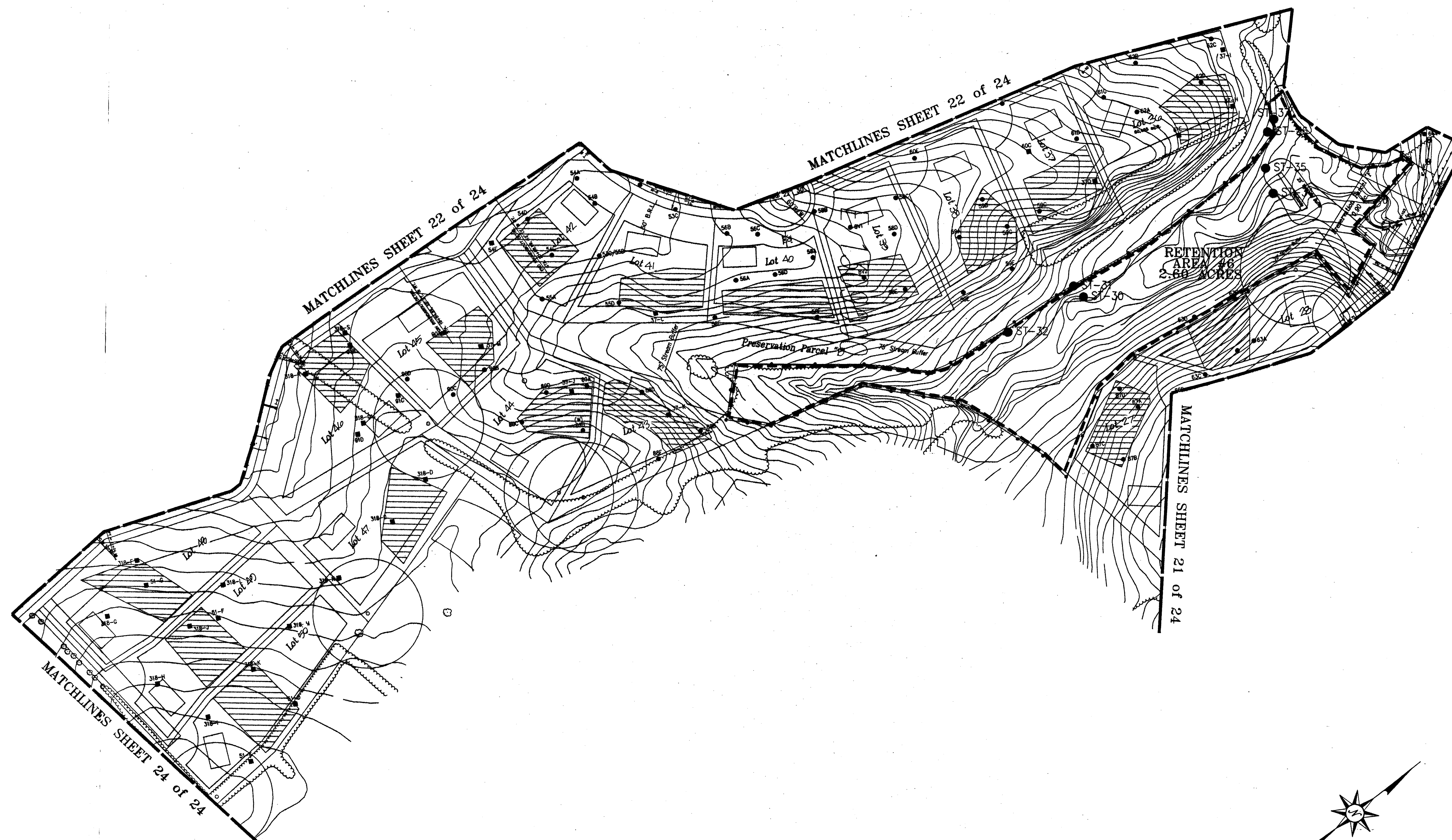
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 DRAWN BY: MVS/JKF SCALE: 1" = 100'
 DESIGNED BY: MVS DATE: Jan 5, 1999
 CHECKED BY: MVS SHEET 23 OF 24



LEGEND

- SPECIMEN TREE ● ST-42
- TREE PROTECTION FENCE ————
- FOREST RETENTION - - - - -
- EASEMENT LINE - - - - -
- FOREST RETENTION SIGNAGE ————
- SLOPES 15-25% [diagonal hatching]
- SLOPES 25% & UP [cross-hatching]

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3/4/99
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamstra 3/25/99
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Robert Dammann 3/15/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



AMERICAN LAND CONCEPTS
 238 B MAIN STREET
 REISTERSTOWN, MARYLAND 21136
 PHONE: (410)-626-2868 FAX: (410)-626-2970

OWNER/DEVELOPER

Mr. Charles A. Sharp
 3779 Sharp Road
 Glenwood, MD 21738

HIGH FOREST ESTATES
 (FORMERLY BIG BRANCH OVERLOOK SECTION 2)
FINAL FOREST CONSERVATION PLAN
 ELECTION DISTRICT NO. 4
 HOWARD COUNTY, MARYLAND

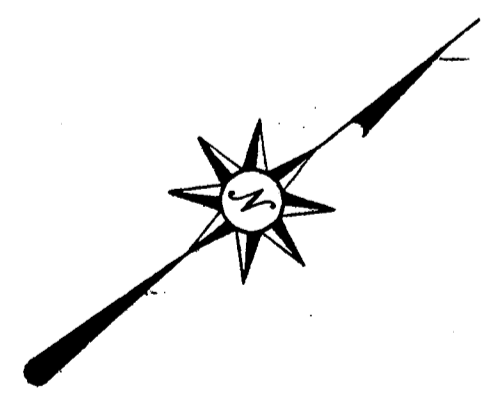
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 DESIGNED BY: MVS DATE: JAN. 5, 1999
 CHECKED BY: MVS SHEET 22 OF 24



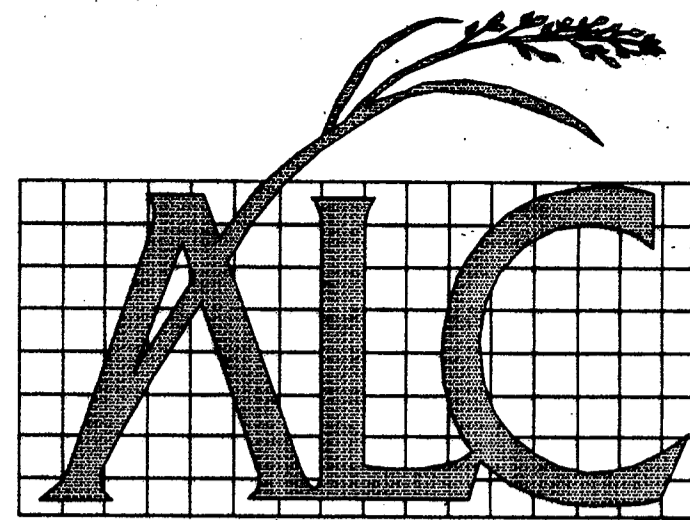
LEGEND

- SPECIMEN TREE ● ST-42
- TREE PROTECTION FENCE ————
- FOREST RETENTION - - - - -
- EASEMENT LINE - - - - -
- FOREST RETENTION SIGNAGE ————
- SLOPES 15-25% [diagonal hatching]
- SLOPES 25% & UP [cross-hatching]

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3-8-99
 CHIEF, BUREAU OF HIGHWAYS / DATE

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cind Hamilton 3/28/99
 CHIEF, DIVISION OF LAND DEVELOPMENT / DATE

John Williams 3/15/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION / DATE



AMERICAN LAND CONCEPTS
 236 B MAIN STREET
 REISTERSTOWN, MARYLAND 21136
 PHONE: (410)-526-2688 FAX: (410)-526-2970

OWNER/DEVELOPER

Mr. Charles A. Sharp
 3779 Sharp Road
 Glenwood, MD 21738

FINAL FOREST CONSERVATION PLAN
 ELECTION DISTRICT NO. 4
 HOWARD COUNTY, MARYLAND

HIGH FOREST ESTATES
 (FORMERLY BIG BRANCH OVERLOOK)
 SECTION 2

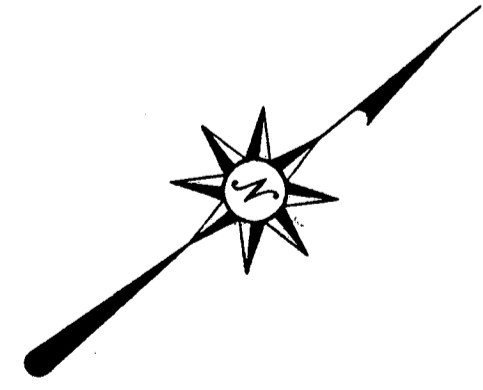
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SIGNATURE BLOCK

Matthew V. Smith 01/04/99
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C:\RIS\DRAWINGS\BIG BRANCH OVERLOOK\BBO-fcp 2.dwg
 DRAWN BY: MVS/JKF SCALE: 1" = 100'
 DESIGNED BY: MVS DATE: JAN. 5, 1999
 CHECKED BY: MVS SHEET 21 OF 24



LEGEND

- SPECIMEN TREE ● ST-42
- TREE PROTECTION FENCE ———
- FOREST RETENTION - - - - -
- EASEMENT LINE - - - - -
- FOREST RETENTION SIGNAGE ———
- SLOPES 15-25% [diagonal hatching]
- SLOPES 25% & UP [cross-hatching]

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3-8-99
 CHIEF, BUREAU OF HIGHWAYS DATE

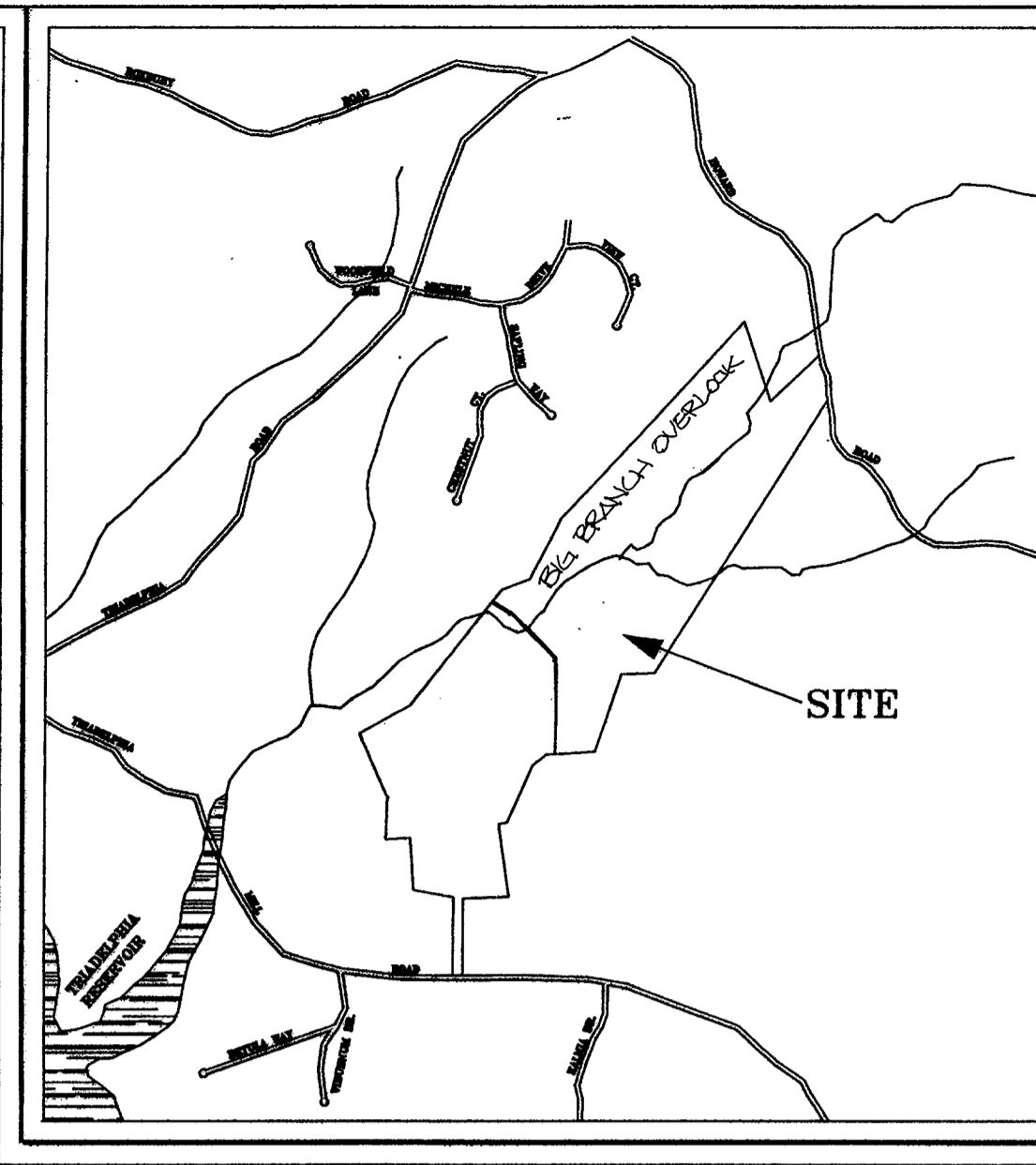
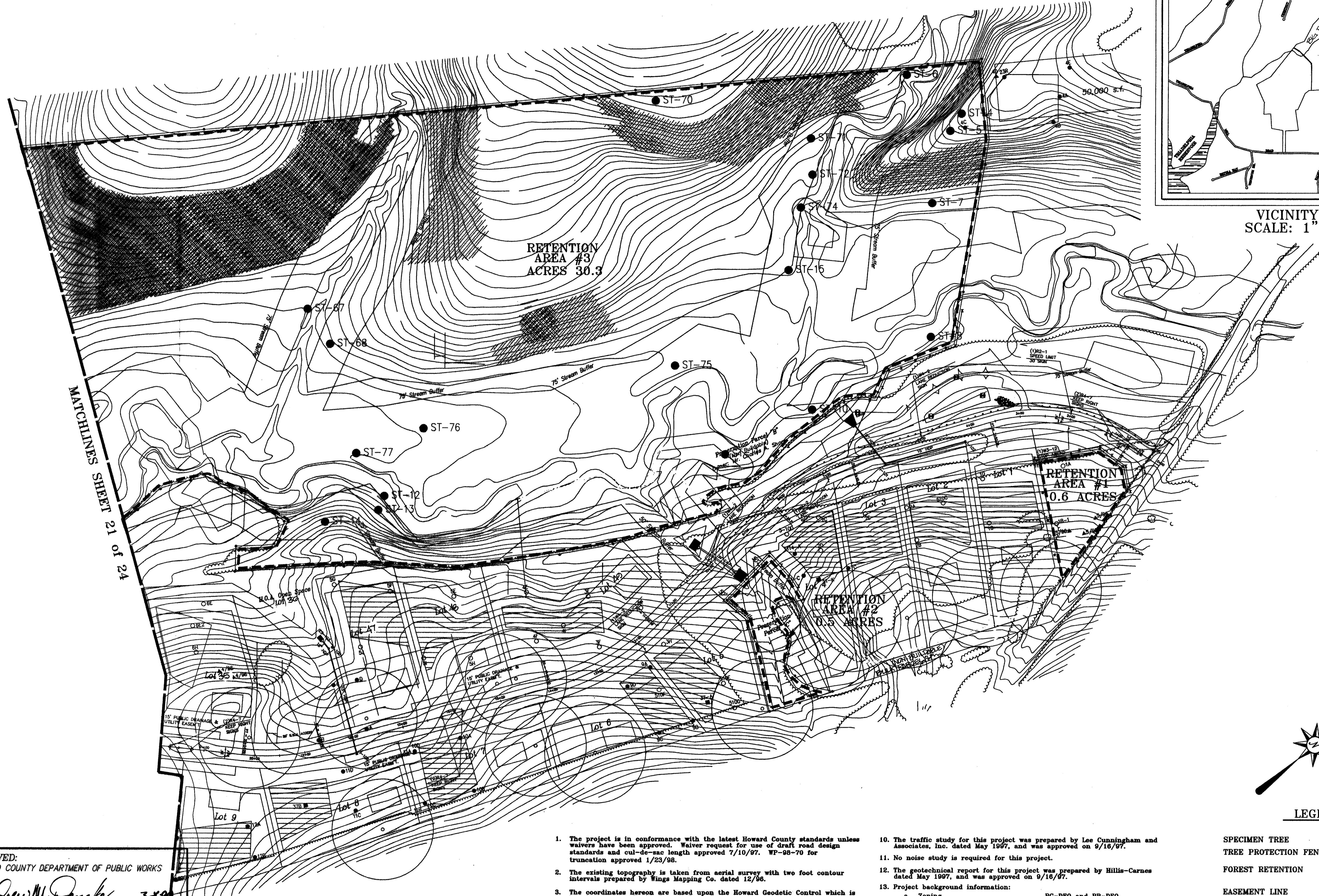
APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cecilia Hernandez 7/25/99
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Wm. Deane 3/15/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

MATCHLINES SHEET 22 of 24

MATCHLINES SHEET 20 of 24

MATCHLINES SHEET 23 of 24

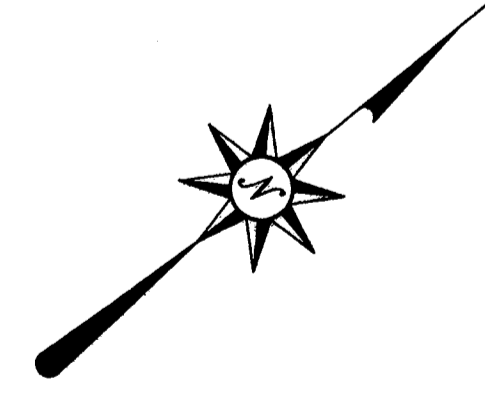


ALC
 AMERICAN LAND CONCEPTS
 236 B MAIN STREET
 REISTERSTOWN, MARYLAND 21136
 PHONE: (410)-526-2688 FAX: (410)-526-2970

OWNER/DEVELOPER
 Mr. Charles A. Sharp
 3779 Sharp Road
 Glenwood, MD 21738

HIGH FOREST ESTATES
 (FORMERLY BIG BRANCH OVERLOOK SECTION 2)
FINAL FOREST CONSERVATION PLAN
 ELECTION DISTRICT NO. 4
 HOWARD COUNTY, MARYLAND

R.M. MOCHI GROUP, P.C.
 P.O. Box 10
 New Market, MD 21774-0010
 10120 A Old National Pike
 Joppa, MD 21754-9706
 (301) 865-5858
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LEGEND

- ST-42
- TREE PROTECTION FENCE
- FOREST RETENTION
- - - EASEMENT LINE
- - - FOREST RETENTION SIGNAGE
- ▨ SLOPES 15-25%
- ▩ SLOPES 25% & UP

1. The project is in conformance with the latest Howard County standards unless waivers have been approved. Waiver request for use of draft road design standards and cul-de-sac length approved 7/10/97. WP-98-70 for truncation approved 1/23/98.
2. The existing topography is taken from aerial survey with two foot contour intervals prepared by Wings Mapping Co. dated 12/96.
3. The coordinates hereon are based upon the Howard Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monument Nos. 2881 and 2882 were used for this project.
4. Water is private.
5. Sewer is private.
6. Stormwater Management control will be provided on-site, on either open or preservation parcels. Ponds shall be maintained by Howard County.
7. Existing utilities are based on Howard County contract drawings.
8. The floodplain study for this project was prepared by R.M. Mochi Group, P.C. dated October 1997, and was approved on 11/13/97.
9. The wetland delineation study for this project was prepared by American Land Concepts, Inc. dated May 1997, and was approved on 9/16/97.
10. The traffic study for this project was prepared by Lee Cunningham and Associates, Inc. dated May 1997, and was approved on 9/16/97.
11. No noise study is required for this project.
12. The geotechnical report for this project was prepared by Hillis-Carnes dated May 1997, and was approved on 9/16/97.
13. Project background information:
 - a. Zoning RC-DEO and RR-DEO
 - b. Gross Area of Tract 238.3 AC.
 - c. Net Area of Tract: 199.8 AC.
 - d. Area of Proposed Lots/Parcels: 228.2 AC.
 - e. Area of Proposed R/W: 9.9 AC.
 - f. Number of Proposed Units: BIG BRANCH OVERLOOK - 46 UNITS
HIGH FOREST ESTATES - 40 UNITS
14. Howard Road is a scenic road.
15. * - Denotes approved location of future traffic calming device (if required).

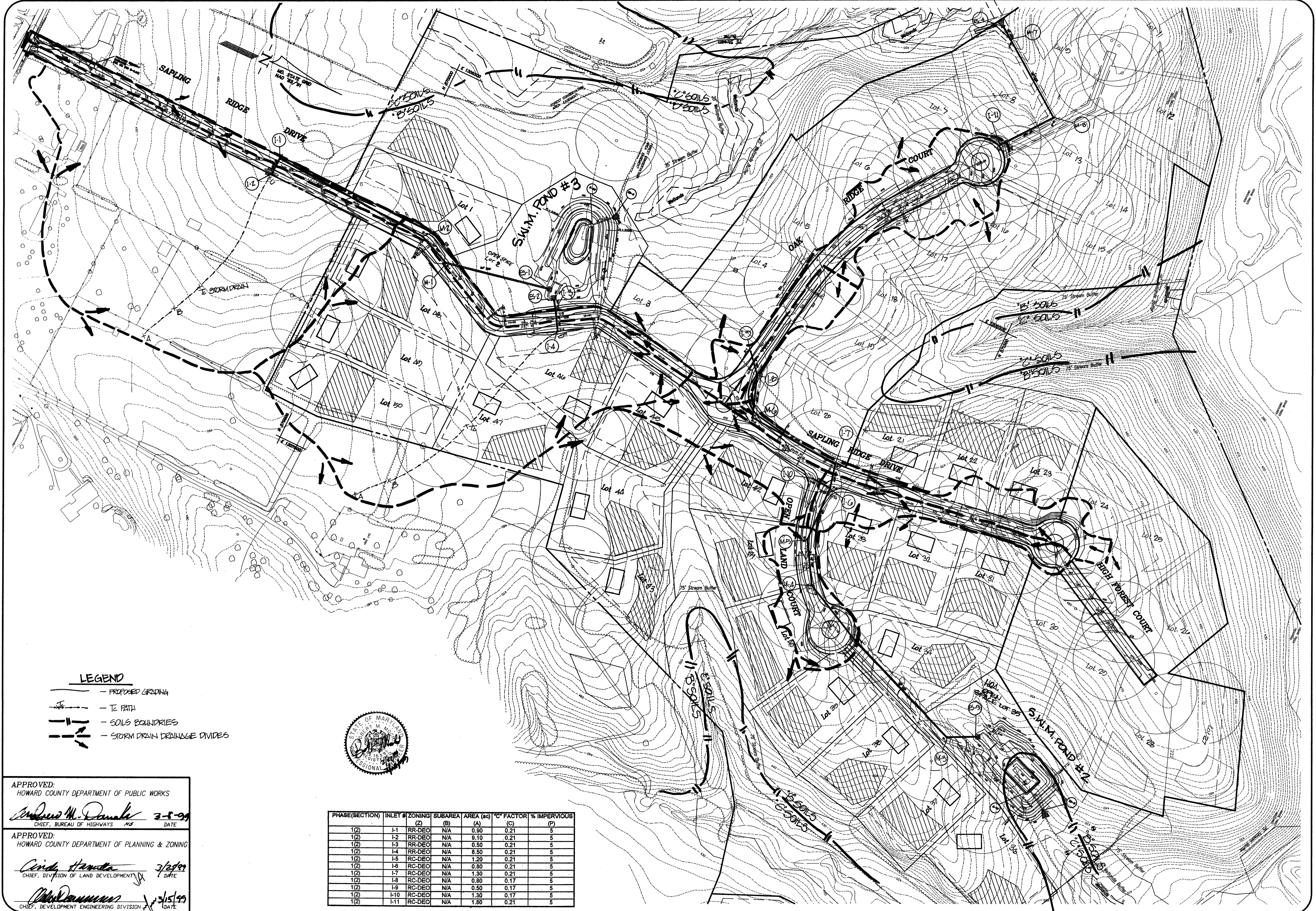
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 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3-8-99
 CHIEF, BUREAU OF HIGHWAYS
 DATE

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamstra 3/5/99
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE

William J. ... 3/15/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE

SIGNATURE BLOCK
Matthew V. Smith 01/04/99
 MATTHEW V. SMITH, ENVIRONMENTAL SCIENTIST
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C:\R13\DRAWINGS\BIG BRANCH OVERLOOK\BBO-fcp 1.dwg
 DRAWN BY: MVS/JKF SCALE: 1" = 100'
 DESIGNED BY: MVS DATE: JAN 5, 1999
 CHECKED BY: MVS SHEET 20 OF 24



LEGEND

- PROPOSED LEADING
- T.E. PATH
- SOILS BOUNDARIES
- STORM DRAIN DRAINAGE DIVIDES



APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3/5/99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Carla Hester 3/2/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

William J. ... 3/5/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

| PHASE(SECTION) | INLET # | ZONING | SUBAREA (B) | AREA (sq) | CF FACTOR (C) | % IMPERVIOUS (P) |
|----------------|---------|--------|-------------|-----------|---------------|------------------|
| 1(2) | I-1 | RR-DEO | N/A | 0.90 | 0.21 | 5 |
| 1(2) | I-2 | RR-DEO | N/A | 9.10 | 0.21 | 5 |
| 1(2) | I-3 | RR-DEO | N/A | 0.50 | 0.21 | 5 |
| 1(2) | I-4 | RR-DEO | N/A | 8.50 | 0.21 | 5 |
| 1(2) | I-5 | RC-DEO | N/A | 1.20 | 0.21 | 5 |
| 1(2) | I-6 | RC-DEO | N/A | 0.80 | 0.21 | 5 |
| 1(2) | I-7 | RC-DEO | N/A | 1.30 | 0.21 | 5 |
| 1(2) | I-8 | RC-DEO | N/A | 0.80 | 0.17 | 5 |
| 1(2) | I-9 | RC-DEO | N/A | 0.50 | 0.17 | 5 |
| 1(2) | I-10 | RC-DEO | N/A | 1.30 | 0.17 | 5 |
| 1(2) | I-11 | RC-DEO | N/A | 1.80 | 0.21 | 5 |

project 96018.13 date 06-05-98
illustration GEM/K.M.B. engineering M.W.Z.
scale 1"=100' approval R.M.M.

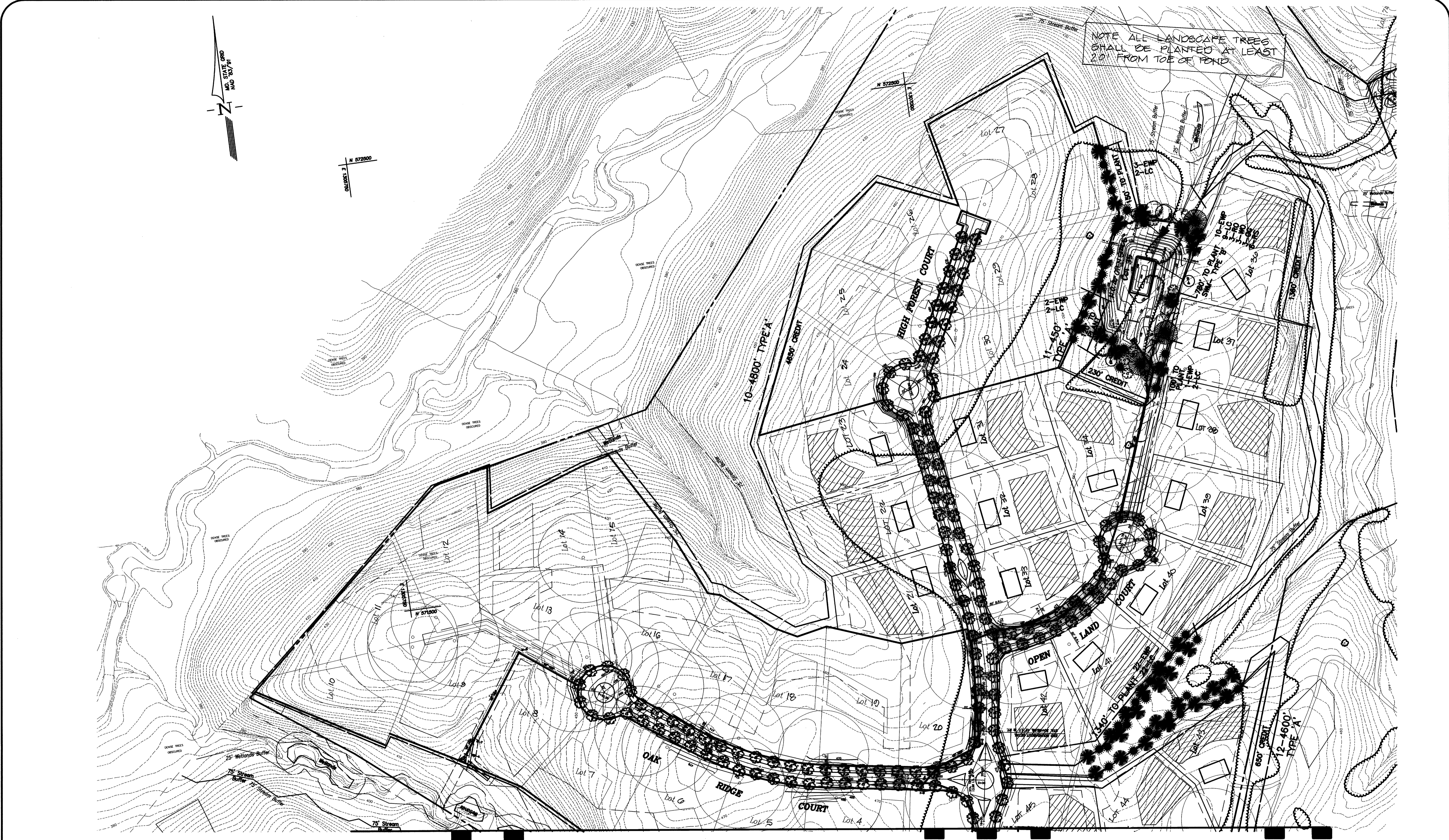
4 REVISED PER PLAT REVISIONS
3 Submitted Original to Co. for Signatures
2 REVISED SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW
1 SUBMITTED TO HOWARD CO. D.P.Z. FOR REVIEW
0 REVISIONS

07-12-99
02-24-99
01-09-99
09-16-98
08-26-98

HIGH FOREST ESTATES
ELECTION DISTRICT NO. 5 HOWARD COUNTY, MD.
STORM DRAIN DRAINAGE AREA MAP

EM MOCH GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
1020 A Old National Pike
Jenningsville, MD 21724-9706
(301) 865-9988
Fax: (301) 865-3111

J:\1997\98\AS\SSCPROA\CD\DATA\LAND2.DWG



NOTE ALL LANDSCAPE TREES SHALL BE PLANTED AT LEAST 20' FROM TOE OF FOND.

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Andrew M. Daniels 3-4-99
CHIEF, BUREAU OF HIGHWAYS MS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

And Hamilton 7/29/99
CHIEF, DIVISION OF LAND DEVELOPMENT MS DATE

W. D. ... 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION MS DATE

MATCH LINE SEE SHEET 17 OF 24

NOTE: THIS SHEET FOR LANDSCAPING PURPOSES ONLY.



| | | | |
|--------------|----------|-------------|----------|
| project | 96018.13 | date | 06-06-98 |
| illustration | K.M.B. | engineering | M.W.Z. |
| scale | 1"=100' | approval | R.M.M. |

| | | |
|-----|---|----------|
| no. | description | date |
| 4 | REVISED PER PLAT REVISIONS | 07-12-99 |
| 3 | Submitted Original Mylars to Co. for Signatures | 02-24-99 |
| 2 | REVISION TO HOWARD CO. D.P.Z. FOR REVIEW | 01-29-98 |
| 1 | REVISION TO HOWARD CO. D.P.Z. FOR REVIEW | 06-30-98 |
| 0 | SUBMITTED TO HOWARD CO. D.P.Z. FOR REVIEW | 06-30-98 |

HIGH FOREST ESTATES
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MD.
LANDSCAPE AND STREET TREE PLAN

R.M. MOCH GROUP, P.C.
 P.O. Box 10
 New Market, MD 21774-0010
 10120 A Old National Pike
 (301) 865-5868
 (301) 865-5111
 (301) 865-5111

STREET TREES

SAPLING RIDGE DRIVE
5,840 L.F. RIGHT-OF-WAY
146 STREET TREES REQUIRED
146 Acer rubrum 'RED SUNSET'
PROPOSED - 40 FEET APART







OAK RIDGE COURT
1,766 L.F. RIGHT-OF-WAY
47 STREET TREES REQUIRED
47 Acer rubrum 'RED SUNSET'
PROPOSED - 40 FEET APART

OPEN LAND COURT
924 L.F. RIGHT-OF-WAY
24 STREET TREES REQUIRED
24 Acer rubrum 'RED SUNSET'
PROPOSED - 40 FEET APART

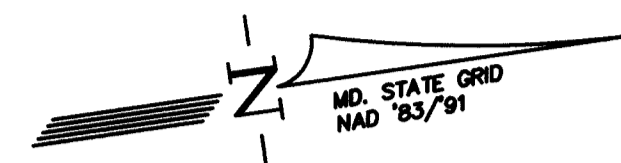
HIGH FOREST COURT
640 L.F. RIGHT-OF-WAY
16 STREET TREES REQUIRED
16 Acer rubrum 'RED SUNSET'
PROPOSED - 40 FEET APART

THE DEVELOPER WILL BE RESPONSIBLE FOR STREET TREE INSTALLATION. FINANCIAL SURETY FOR THE 233 PROPOSED STREET TREES, IN THE AMOUNT OF \$ 69,900 IS PART OF THE DEVELOPER'S AGREEMENT.

LEGEND

-  Acer rubrum 'Red Sunset' / Red Sunset Red Maple (RS)
15 PROPOSED ADJACENT TO S.W.M. AREA + 233 STREET TREES
-  Acer rubrum 'October Glory' / October Glory Red Maple (OG)
6 PROPOSED ADJACENT TO S.W.M. AREA
-  Quercus phellos / Willow Oak (WO)
7 PROPOSED ADJACENT TO S.W.M. AREA
-  Quercus rubra / Red Oak (RO)
0 PROPOSED ADJACENT TO S.W.M. AREA
-  Cupressocyparis leyland / Leyland Cypress (LC)
70 PROPOSED S.W.M. AND PERIMETER
-  Pinus strobus / Eastern White Pine (EWP)
70 PROPOSED S.W.M. AND PERIMETER

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 162 LANDSCAPE TREES, IN THE AMOUNT OF \$2,700 IS PART OF THE DEVELOPER'S AGREEMENT.



MATCH LINE SEE SHEET 18 OF 24

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3-8-99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chris Hamilton 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mr. Dammann 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

| SCHEDULE A - PERIMETER LANDSCAPE EDGE | | | | | |
|---|------|-----|------|-----|-------|
| Perimeter | 10 | 11 | 12 | 13 | TOTAL |
| Category * | | | | | |
| Landscape Type | A | A | A | A | |
| Linear Feet of Perimeter | 4800 | 450 | 4600 | 500 | 10350 |
| Credit for Existing Vegetation (Yes, Linear Feet) | 4650 | 230 | 2390 | | 7270 |
| Net Linear Feet to be planted | 150 | 220 | 2210 | 500 | 3080 |
| Number of Plants Required/Provided | | | | | |
| Shade Trees | 0 | 0 | 0 | 0 | |
| Evergreen Trees** | 5 | 7 | 73 | 16 | 101 |
| Shrubs | 0 | 0 | 0 | 0 | |

* = Adjacent to Perimeter Properties / Preservation Parcel unless otherwise noted
** = 2 EVERGREEN TREES SUBSTITUTED FOR EACH SHADE TREE

| SCHEDULE D - STORMWATER MANAGEMENT AREA LANDSCAPING | | | |
|---|---------------------|---------------------|-------|
| | SWM POND 2 (TYPE B) | SWM POND 3 (TYPE B) | TOTAL |
| LINEAR FEET OF PERIMETER | 780 | 1290 | |
| NUMBER OF TREES REQUIRED/PROVIDED | | | |
| SHADE TREES | 15 | 21 | 36 |
| EVERGREEN TREES | 19 | 26 | 45 |
| CREDIT FOR EXISTING VEG. (NO, YES AND L.F.) | NO | YES-270 L.F. | |
| CREDIT FOR OTHER LANDSCAPING (NO, YES AND %) | NO | NO | |

Note: This Sheet for Landscaping Purposes Only.



| | | | |
|--------------|----------|-------------|----------|
| project | 96018.13 | date | 06-06-98 |
| illustration | K.M.B. | engineering | M.W.Z. |
| scale | 1"=100' | approval | R.M.M. |

| | | | | | |
|-----|---|-------------|---|------|----------|
| no. | 4 | description | REVISED PER PLAT REVISIONS | date | 07-12-98 |
| no. | 3 | description | REVISED PER ORIGINAL MY GARDEN CO. FOR SIGNATURES | date | 06-24-99 |
| no. | 2 | description | REVISED PER SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW | date | 10-22-98 |
| no. | 1 | description | REVISED PER SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW | date | 06-08-98 |
| no. | 0 | description | REVISED PER SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW | date | |

HIGH FOREST ESTATES
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MD.
 LANDSCAPE AND STREET TREE PLAN

RM MOCHI GROUP, INC.
P.O. Box 10
New Market, MD 21774-0010
10120 A Old Millwood Pike
Jennings, MD 21754-5706
Tel: (301) 865-5656
Fax: (301) 865-3111

| | | | |
|--------------|----------|-------------|--------|
| project | 96018.13 | date | 05-98 |
| illustration | K.M.B. | engineering | M.W.Z. |
| scale | AS NOTED | approval | R.M.M. |

| | | | |
|----------|---|-------------|---|
| revision | 1 | description | REVISED PER PLAT REVISIONS |
| revision | 2 | description | ADDED GATE VALVE AS B OF HIGHWAYS |
| revision | 3 | description | Submitted original Mylars to Co. for Signatures |
| revision | 4 | description | REVISED SUBMITTAL TO HO. CO. DPZ |
| revision | 5 | description | REVISED SUBMITTAL TO HO. CO. DPZ FOR REVIEW |
| revision | 6 | description | 1ST SUBMITTAL TO HO. CO. DPZ FOR REVIEW |

| | | | |
|----------|----|-------------|---|
| revision | 7 | description | REVISED PER PLAT REVISIONS |
| revision | 8 | description | ADDED GATE VALVE AS B OF HIGHWAYS |
| revision | 9 | description | Submitted original Mylars to Co. for Signatures |
| revision | 10 | description | REVISED SUBMITTAL TO HO. CO. DPZ |
| revision | 11 | description | REVISED SUBMITTAL TO HO. CO. DPZ FOR REVIEW |
| revision | 12 | description | 1ST SUBMITTAL TO HO. CO. DPZ FOR REVIEW |

| | | | |
|----------|----|-------------|---|
| revision | 13 | description | REVISED PER PLAT REVISIONS |
| revision | 14 | description | ADDED GATE VALVE AS B OF HIGHWAYS |
| revision | 15 | description | Submitted original Mylars to Co. for Signatures |
| revision | 16 | description | REVISED SUBMITTAL TO HO. CO. DPZ |
| revision | 17 | description | REVISED SUBMITTAL TO HO. CO. DPZ FOR REVIEW |
| revision | 18 | description | 1ST SUBMITTAL TO HO. CO. DPZ FOR REVIEW |

| | | | |
|----------|----|-------------|---|
| revision | 19 | description | REVISED PER PLAT REVISIONS |
| revision | 20 | description | ADDED GATE VALVE AS B OF HIGHWAYS |
| revision | 21 | description | Submitted original Mylars to Co. for Signatures |
| revision | 22 | description | REVISED SUBMITTAL TO HO. CO. DPZ |
| revision | 23 | description | REVISED SUBMITTAL TO HO. CO. DPZ FOR REVIEW |
| revision | 24 | description | 1ST SUBMITTAL TO HO. CO. DPZ FOR REVIEW |

| | | | |
|----------|----|-------------|---|
| revision | 25 | description | REVISED PER PLAT REVISIONS |
| revision | 26 | description | ADDED GATE VALVE AS B OF HIGHWAYS |
| revision | 27 | description | Submitted original Mylars to Co. for Signatures |
| revision | 28 | description | REVISED SUBMITTAL TO HO. CO. DPZ |
| revision | 29 | description | REVISED SUBMITTAL TO HO. CO. DPZ FOR REVIEW |
| revision | 30 | description | 1ST SUBMITTAL TO HO. CO. DPZ FOR REVIEW |

| | | | |
|----------|----|-------------|---|
| revision | 31 | description | REVISED PER PLAT REVISIONS |
| revision | 32 | description | ADDED GATE VALVE AS B OF HIGHWAYS |
| revision | 33 | description | Submitted original Mylars to Co. for Signatures |
| revision | 34 | description | REVISED SUBMITTAL TO HO. CO. DPZ |
| revision | 35 | description | REVISED SUBMITTAL TO HO. CO. DPZ FOR REVIEW |
| revision | 36 | description | 1ST SUBMITTAL TO HO. CO. DPZ FOR REVIEW |

| | | | |
|----------|----|-------------|---|
| revision | 37 | description | REVISED PER PLAT REVISIONS |
| revision | 38 | description | ADDED GATE VALVE AS B OF HIGHWAYS |
| revision | 39 | description | Submitted original Mylars to Co. for Signatures |
| revision | 40 | description | REVISED SUBMITTAL TO HO. CO. DPZ |
| revision | 41 | description | REVISED SUBMITTAL TO HO. CO. DPZ FOR REVIEW |
| revision | 42 | description | 1ST SUBMITTAL TO HO. CO. DPZ FOR REVIEW |

| | | | |
|----------|----|-------------|---|
| revision | 43 | description | REVISED PER PLAT REVISIONS |
| revision | 44 | description | ADDED GATE VALVE AS B OF HIGHWAYS |
| revision | 45 | description | Submitted original Mylars to Co. for Signatures |
| revision | 46 | description | REVISED SUBMITTAL TO HO. CO. DPZ |
| revision | 47 | description | REVISED SUBMITTAL TO HO. CO. DPZ FOR REVIEW |
| revision | 48 | description | 1ST SUBMITTAL TO HO. CO. DPZ FOR REVIEW |

STORMWATER MANAGEMENT CONSTRUCTION SPECIFICATIONS
SCS MD. - 378 NOV. 1992

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 EDITION.

I. 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 NOT STEEPER THAN 1:1.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBER 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 WITHIN 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.

II. EARTH FILL MATERIAL
THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBER, STONES GREATER THAN 5" DIAMETER OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY SHALL BE BUILT CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED.

AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT. FILL MATERIAL SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE EMBANKMENT. THE MINIMUM WIDTH BEING FOUR FEET. THE CENTER OF THE EMBANKMENT AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GROUPS OR OTHER CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGN AND CONSTRUCTION ARE SUPERVISED BY A GEOTECHNICAL ENGINEER.

III. STRUCTURE BACKFILL
BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADDING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPER OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE BACKFILL SHALL BE PLACED UNDER ALL STRUCTURES UNDER AND ADJACENT TO THE PIPE AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN OVER ANY PART OF CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE.

IV. 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-274 WITH WATERPROOFING BANDS. ANY BITUMINOUS COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING. STEEL PIPES WITH POLYURETHANE COATING SHALL BE REPLACED WITH POLYURETHANE COATING. COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THE FOLLOWING COATINGS OR AN APPROVED EQUAL MAY BE USED: NEVON, PLASTICOTE, BLACK-GLAD, AND BETH-COULOT. FC COATED CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M-245 AND M-245.

MATERIALS (ALUMINUM COATED STEEL PIPE) (ACCP)
THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274 WITH WATERPROOFING BANDS OR FLANGES. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING.

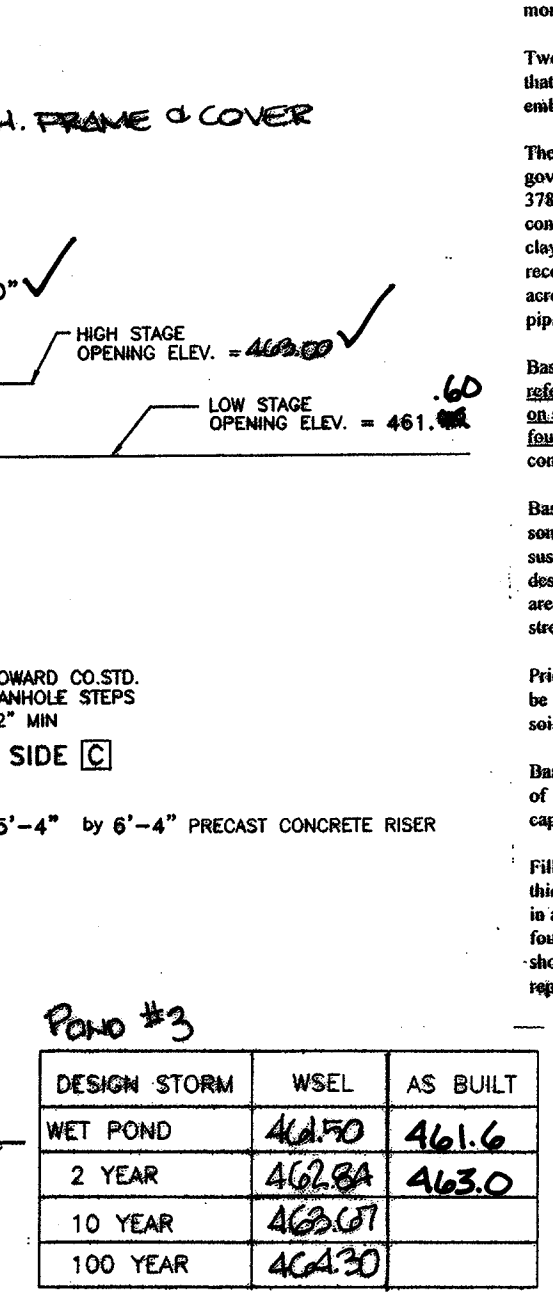
MATERIALS (ALUMINUM PIPE)
THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-211 WITH WATERPROOFING BANDS OR FLANGES. ANY ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER. HOT DIP GALVANIZED PIPE SHALL BE USED FOR CONNECTIONS. THE pH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AS THE PIPE. METALS MUST BE INSULATED FROM POSSIBLE MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT 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. DUMPLE 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 BAND WIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 24" IN DIAMETER: FLANGES ON BOTH ENDS OF THE PIPE, A 12" WIDE STANDARD LAP TYPE BAND WITH 1/2" WIDE 1/2" GREATER THAN THE CIRCULAR PERIPHERY OF THE PIPES. A 12" WIDE HUGGER TYPE BAND WITH O-RING GASKETS MAKING A MINIMUM DIAMETER AND LARGER SHALL BE CONNECTED BY A 24" LONG ANULAR CORRUGATED BAND USING RODS AND LUGS. A 12" WIDE BY 3/8" THICK CLOSED CELL CELLULAR NEOPRENE GASKET WILL BE INSTALLED ON THE END OF EACH PIPE FOR A TOTAL OF 24".

HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS WITH INTERNAL CALKING OR A NEOPRENE GASKET.



POND #3

| DESIGN STORM | WSEL | AS BUILT |
|--------------|--------|----------|
| WET POND | 461.70 | 461.6 |
| 2 YEAR | 462.84 | 463.0 |
| 10 YEAR | 463.01 | |
| 100 YEAR | 464.20 | |

STORMWATER MANAGEMENT POND MAINTENANCE SCHEDULE (POND #3)

ROUTINE MAINTENANCE
FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.

TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES, 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.

VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE
STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, RISER STRUCTURE AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.

SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE. INTERFERES WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY'S DEPARTMENT OF PUBLIC WORKS.

OPERATION, MAINTENANCE AND INSPECTION

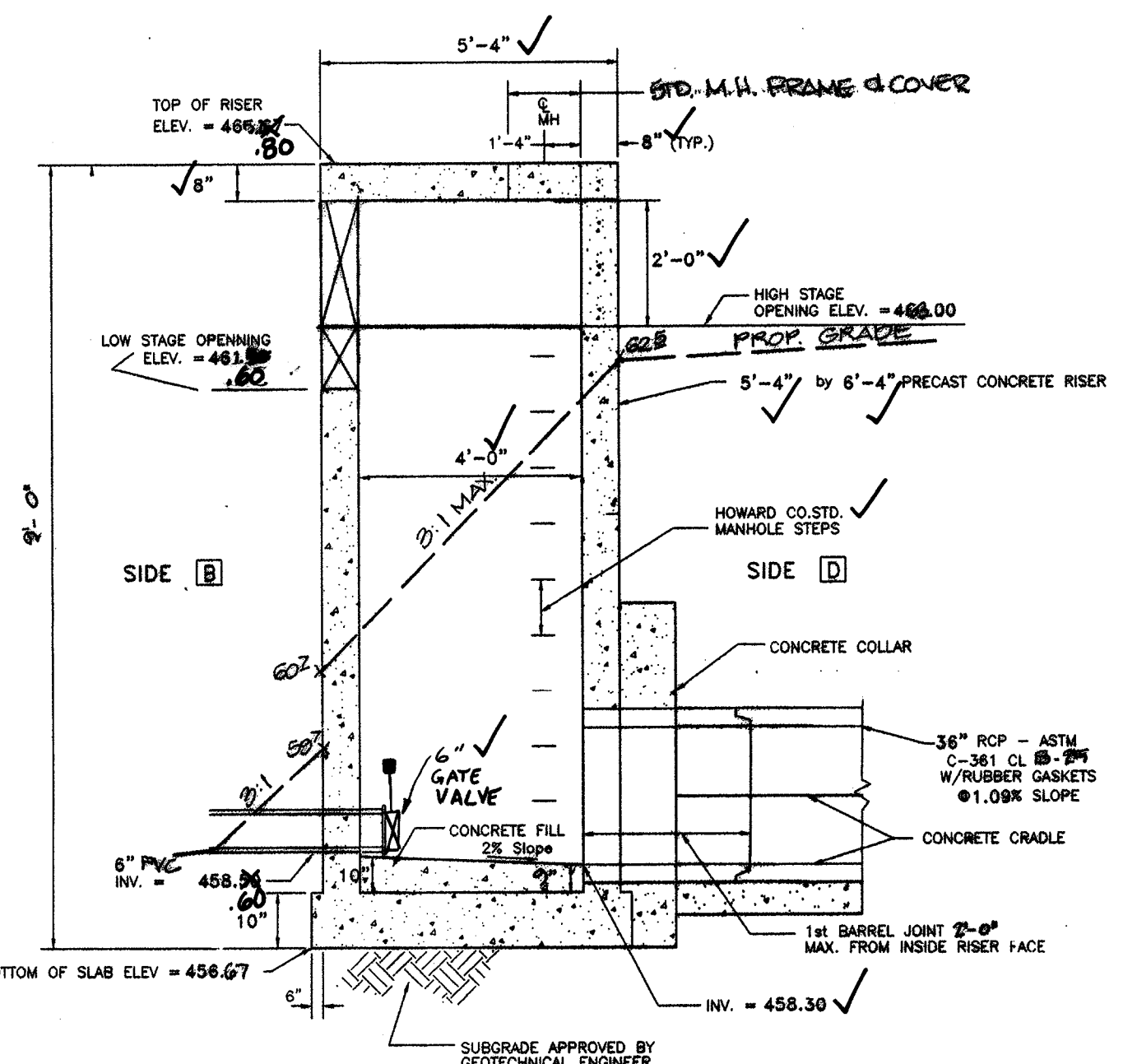
Inspection of the pond(s) shown hereon shall be performed at least annually, in accordance with the checklist and requirements contained within USDA, SCS "Standards and Specifications For Ponds" (MD-378). The pond owner(s) and any heirs, successors, or assigns shall be responsible for the safety of the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

| NO. | DESCRIPTION | DATE | BY | REMARKS |
|-----|---|---------|------------|--|
| 1 | Annual inspection of pond structure and embankment. | 3/27/03 | R.M. Mochi | Structure in good condition. No signs of distress. |
| 2 | Inspection of riser structure and gate valve operation. | 3/27/03 | R.M. Mochi | Gate valve operates smoothly. No leaks observed. |
| 3 | Inspection of embankment slopes and erosion control. | 3/27/03 | R.M. Mochi | Slopes are stable. No erosion noted. |
| 4 | Inspection of sediment accumulation and removal. | 3/27/03 | R.M. Mochi | Minimal sediment observed. No removal required. |
| 5 | Inspection of riprap outlet area and debris removal. | 3/27/03 | R.M. Mochi | Riprap is in place. No debris present. |
| 6 | Inspection of water quality and turbidity. | 3/27/03 | R.M. Mochi | Water is clear. No turbidity observed. |
| 7 | Inspection of vegetation and mowing schedule. | 3/27/03 | R.M. Mochi | Vegetation is well-maintained. Mowing schedule followed. |
| 8 | Inspection of safety and access. | 3/27/03 | R.M. Mochi | Access is clear. Safety measures in place. |
| 9 | Inspection of structural components and repairs. | 3/27/03 | R.M. Mochi | No structural repairs needed. |
| 10 | Inspection of anti-seep collars and connections. | 3/27/03 | R.M. Mochi | All connections are watertight. |

SWM AS-BUILTS
3/27/03

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

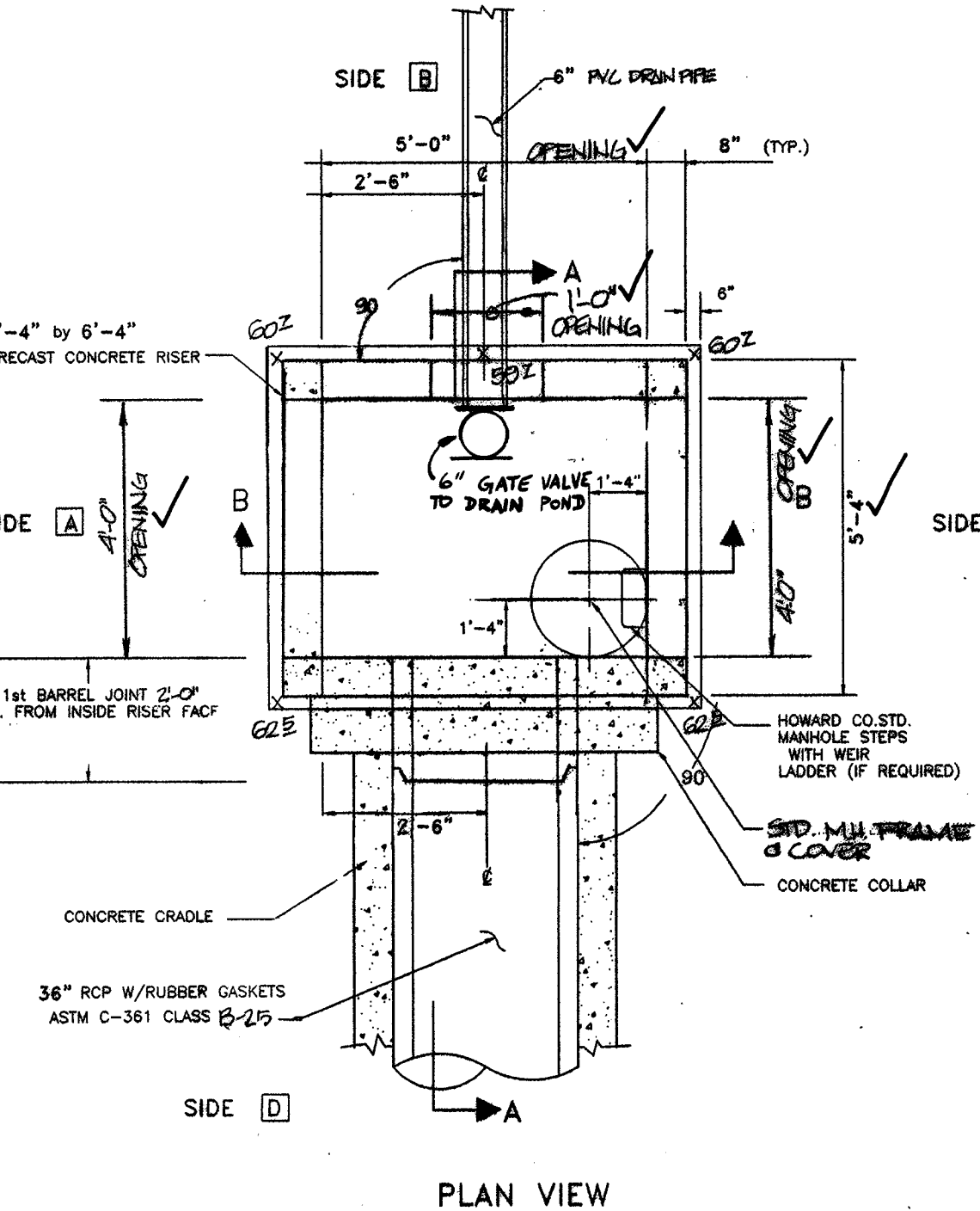
Robert M. Mochi
Professional Engineer
3/27/03



POND # 3 - RISER
NOT TO SCALE

RISER STRUCTURE GENERAL NOTES:

1. PRECAST RISER AND TOP SLAB TO BE MANUFACTURED AND SUPPLIED BY FREDERICK PRECAST CONCRETE, INC. OR APPROVED EQUIVALENT.
2. SHOP DRAWINGS FOR RISER AND TOP SLAB MUST BE REVIEWED BY AN ENGINEER AND APPROVED BY HOWARD COUNTY PRIOR TO FABRICATION.
3. IF ANY DIMENSIONS ARE CHANGED OR REDUCED, REVISED ANTI-FLOTATION COMPUTATION MUST BE SUBMITTED WITH THE SHOP DRAWINGS TO HOWARD COUNTY FOR APPROVAL.
4. TRASH RACKS ARE NOT SHOWN IN THIS VIEW FOR CLARITY.
5. THE RISER STRUCTURE SHOWN IS NOT TO SCALE. SEE THIS SHEET FOR ACTUAL DIMENSIONS.
6. CAST FRAME (30" DIAM MIN. OPENING) INTO TOP SLAB (MINIMUM 8" - 12" MIN. OR APPROVED EQUIVALENT). PROVIDE BOLTABLE FRAME AND COVER WITH (3) 1/2" DIA. BOLT HOLES AND 5/8" DIA. STAINLESS STEEL BOLTS SPACED AT 120."



APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Decker
3-9-99
CHIEF, BUREAU OF HIGHWAYS

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cinda Hamstra
3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT

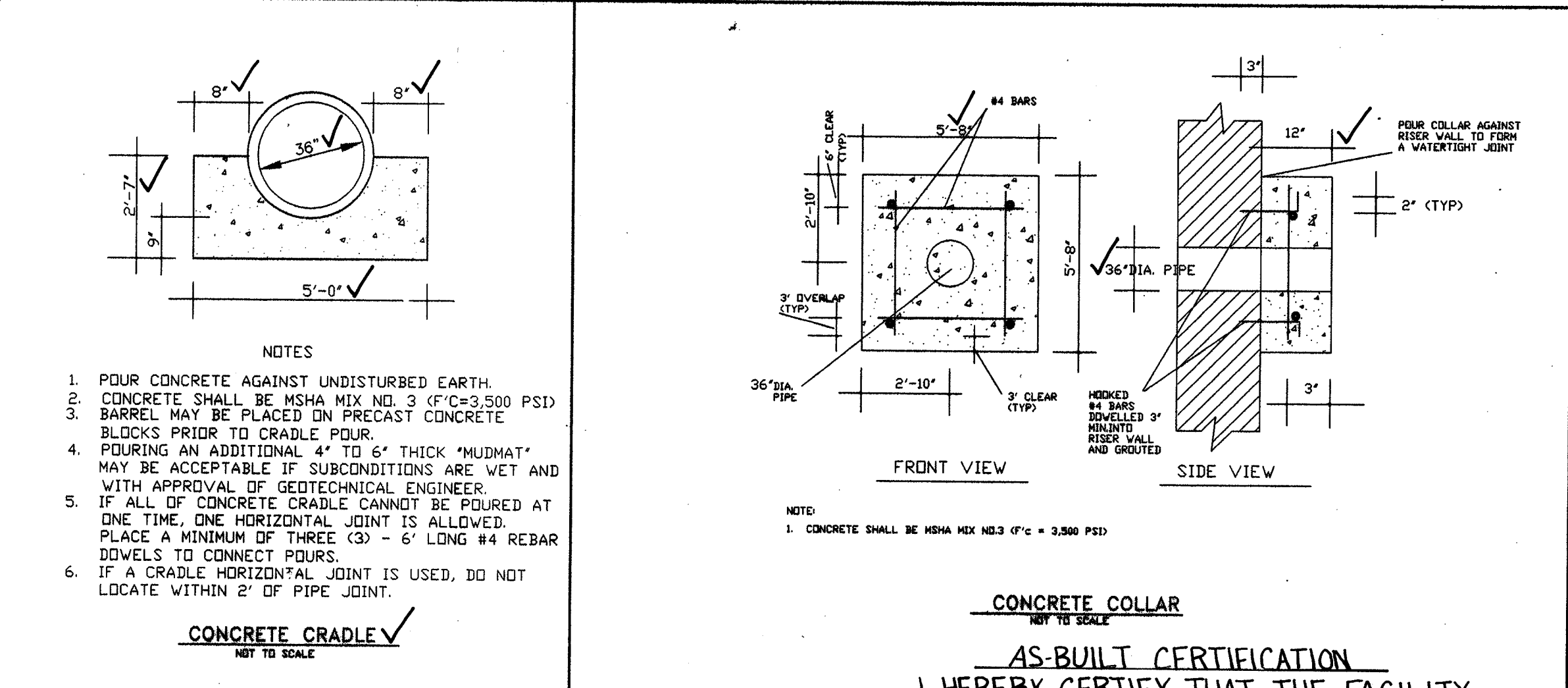
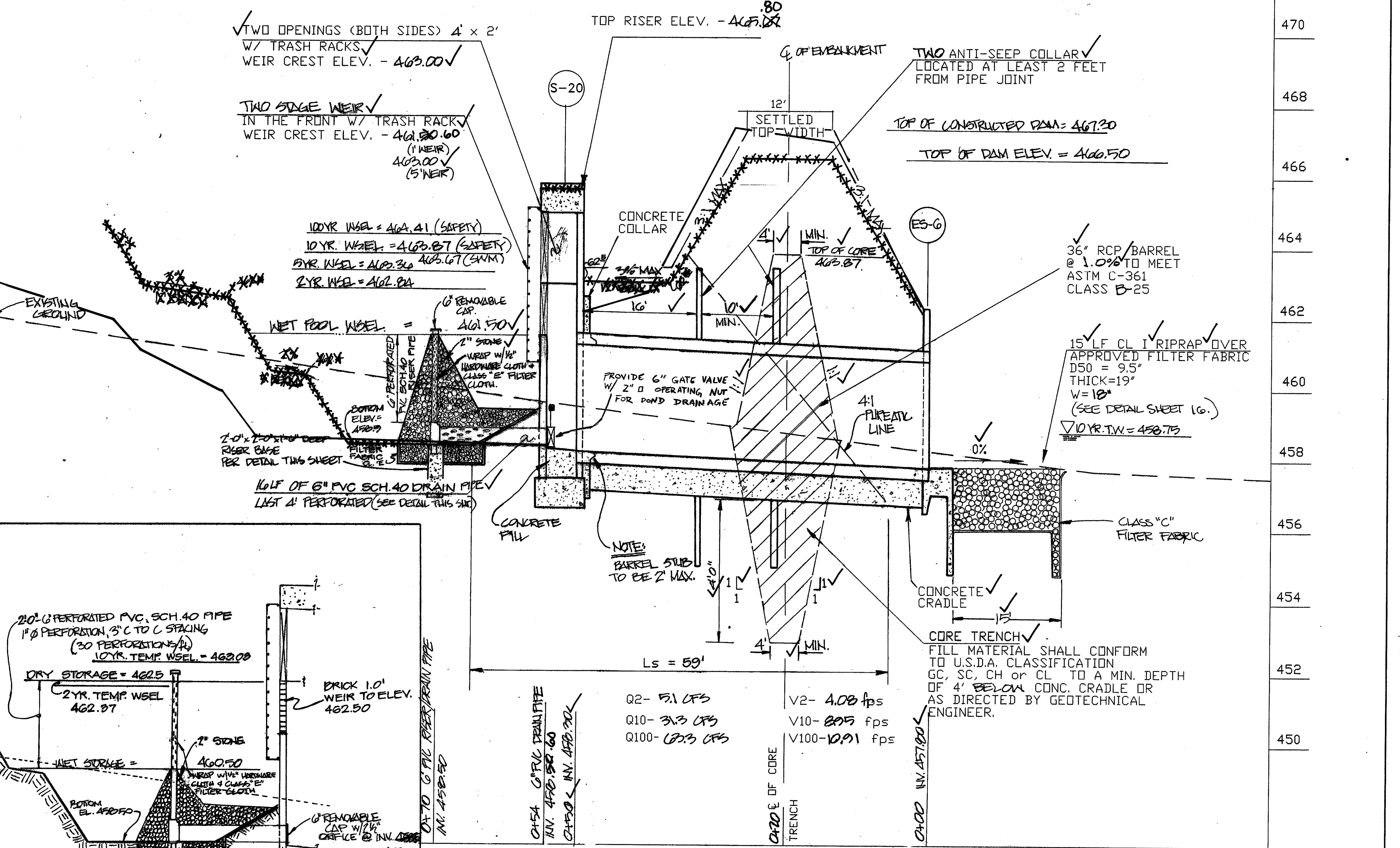
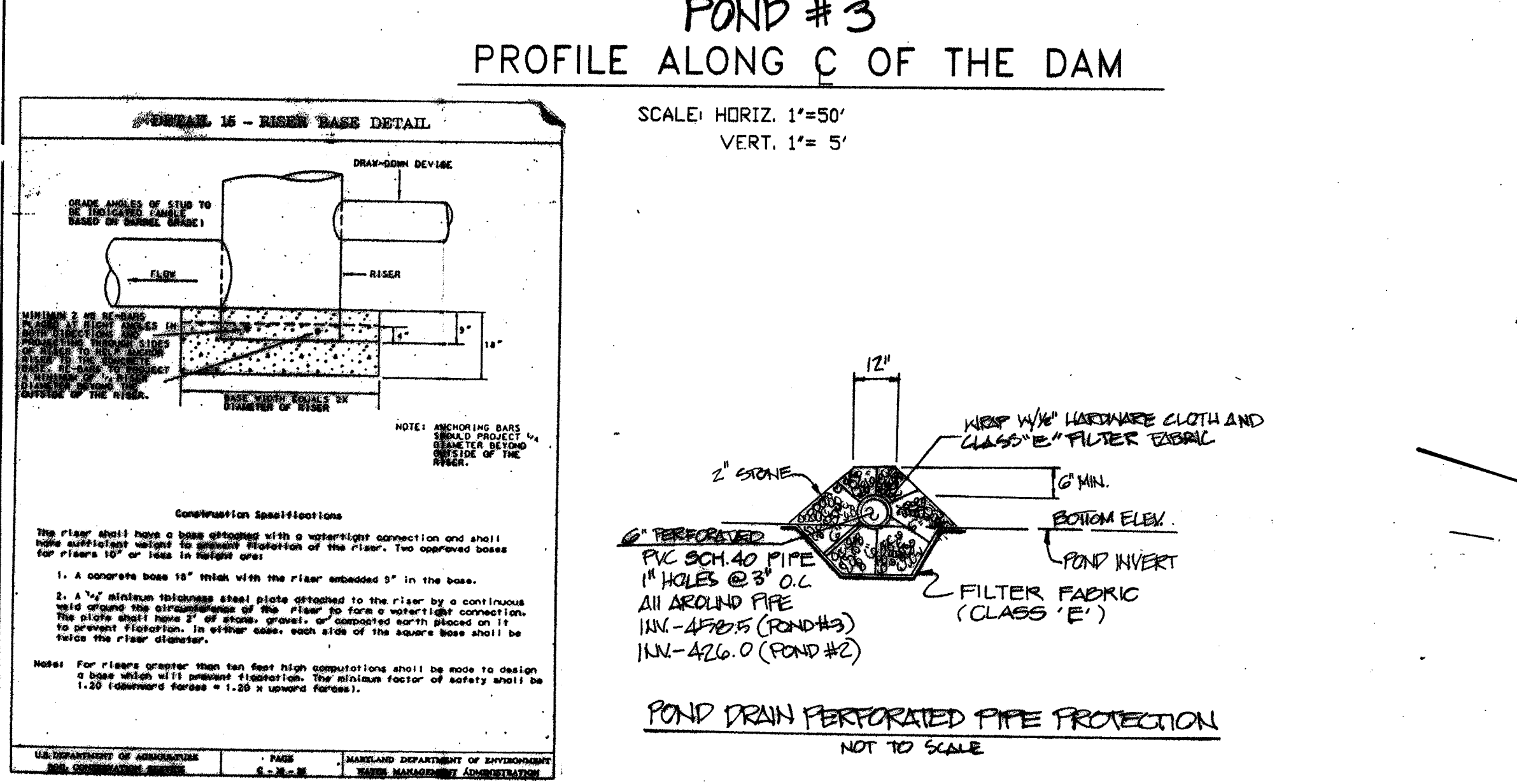
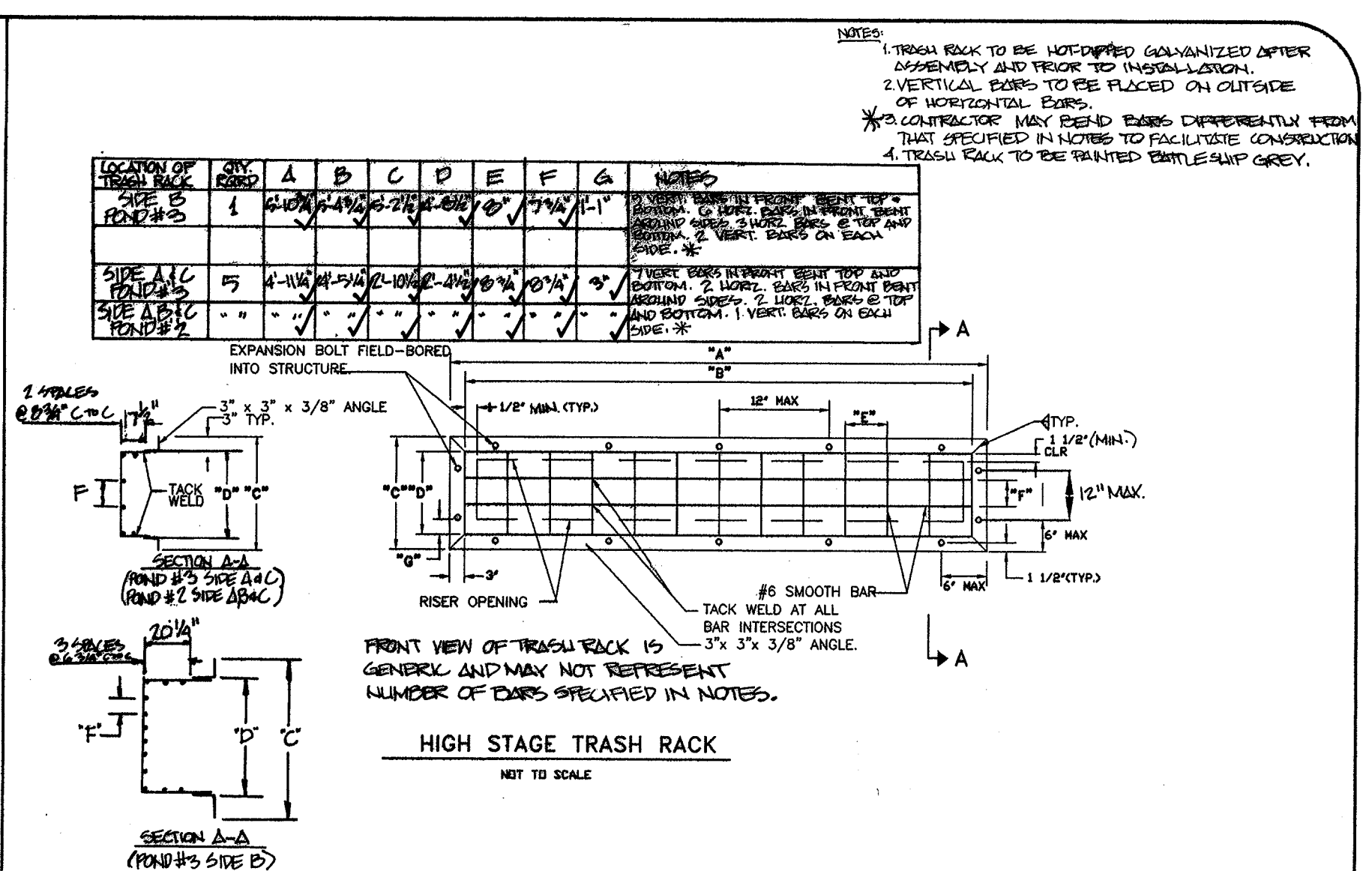
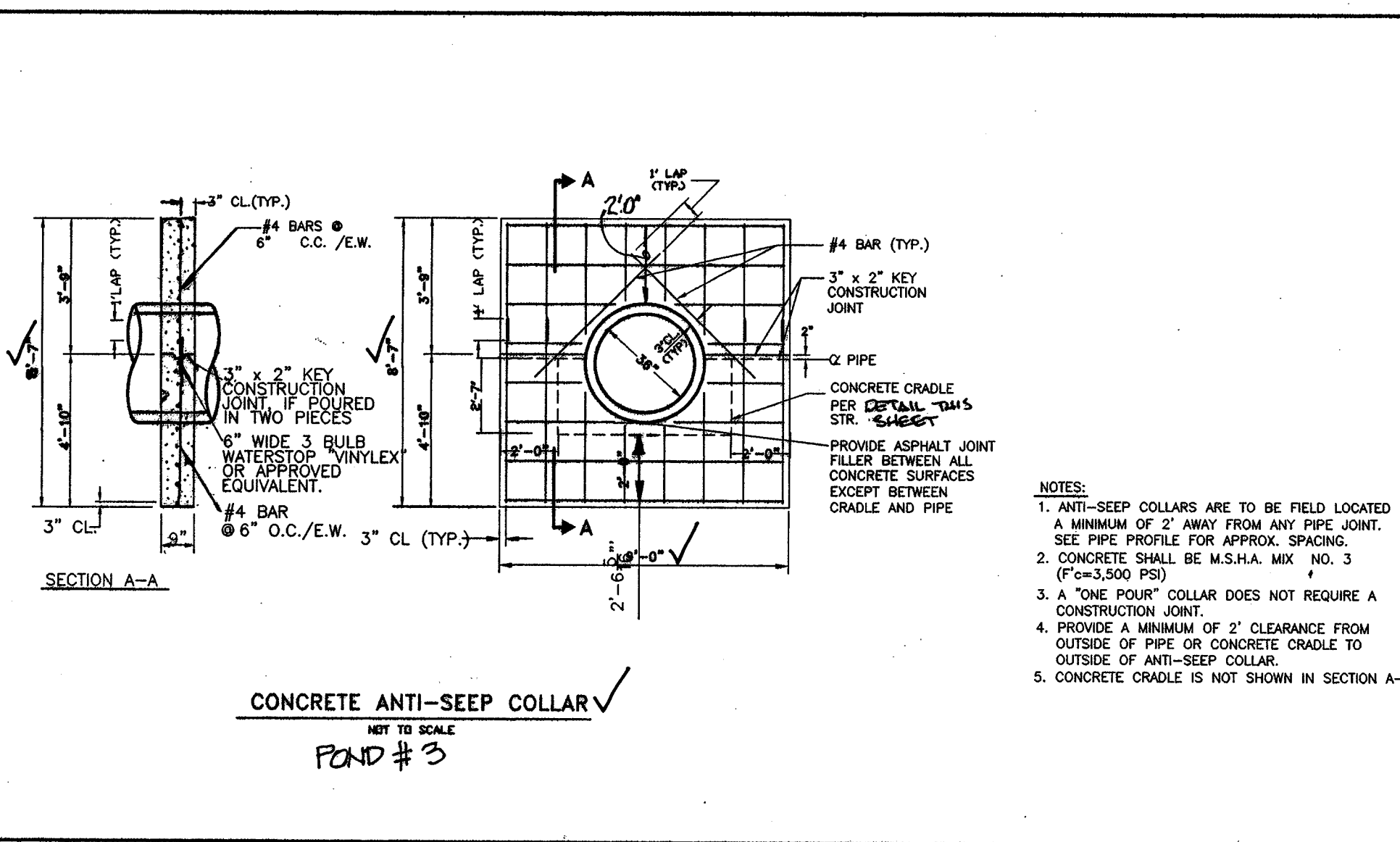
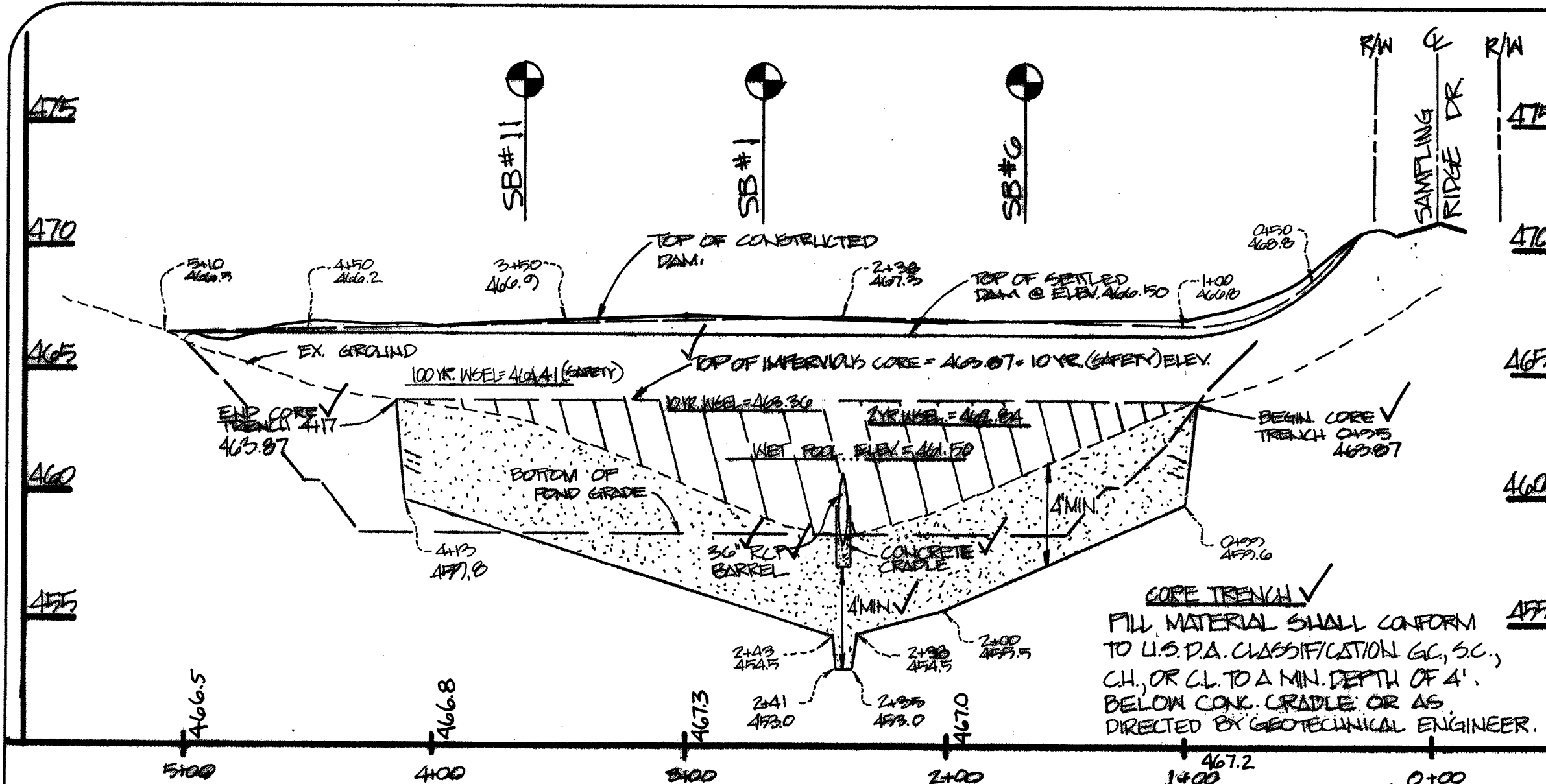
APPROVED:
William D. ...
3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED:
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
William D. ...
2/24/99
HOWARD SOIL CONSERVATION DISTRICT

APPROVED:
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
Charles Simmons
2/24/99
USDA - NATIONAL RESOURCES CONSERVATION SERVICE

DEVELOPER'S CERTIFICATE
I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.
Charles V. Sharp
6-10-98
Signature of Developer

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.
Robert M. Mochi
6-11-98
DATE



APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3-4-99
CHIEF, BUREAU OF HIGHWAYS

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamstra 2/24/99
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED:
John D. ... 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

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

Michael ... 2/24/99
PROFESSIONAL ENGINEER

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

Cheryl ... 2/24/99
USDA - NATIONAL RESOURCES CONSERVATION SERVICE

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Charles A. Sharp 6-10-98
Signature of Developer

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Robert M. Mochi, P.E. 6-11-98
DATE

SWM AS-BUILTS
3/27/03

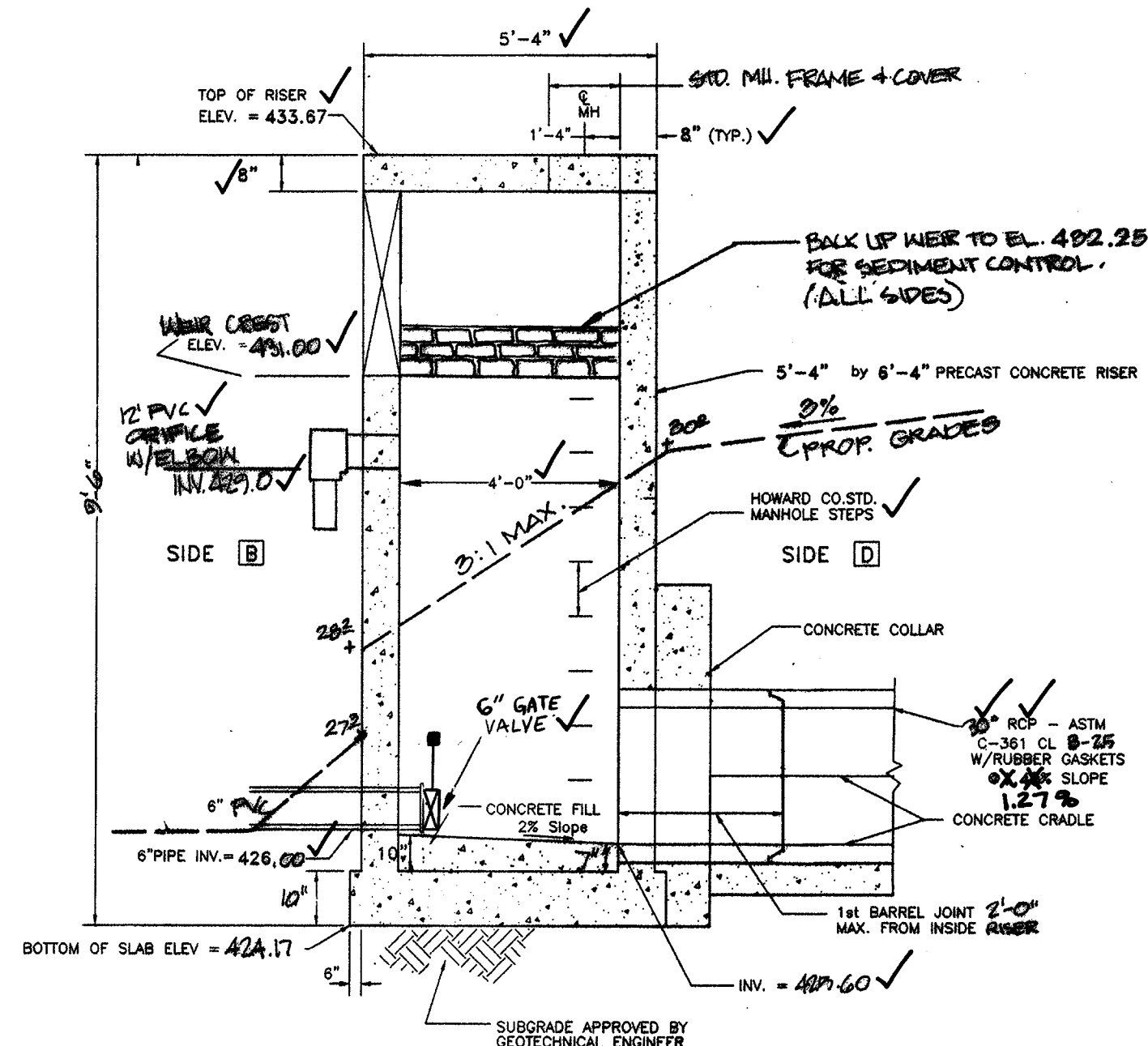
WR 00-103
F.9B.167

HOWARD COUNTY
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
STORMWATER MANAGEMENT PLAN

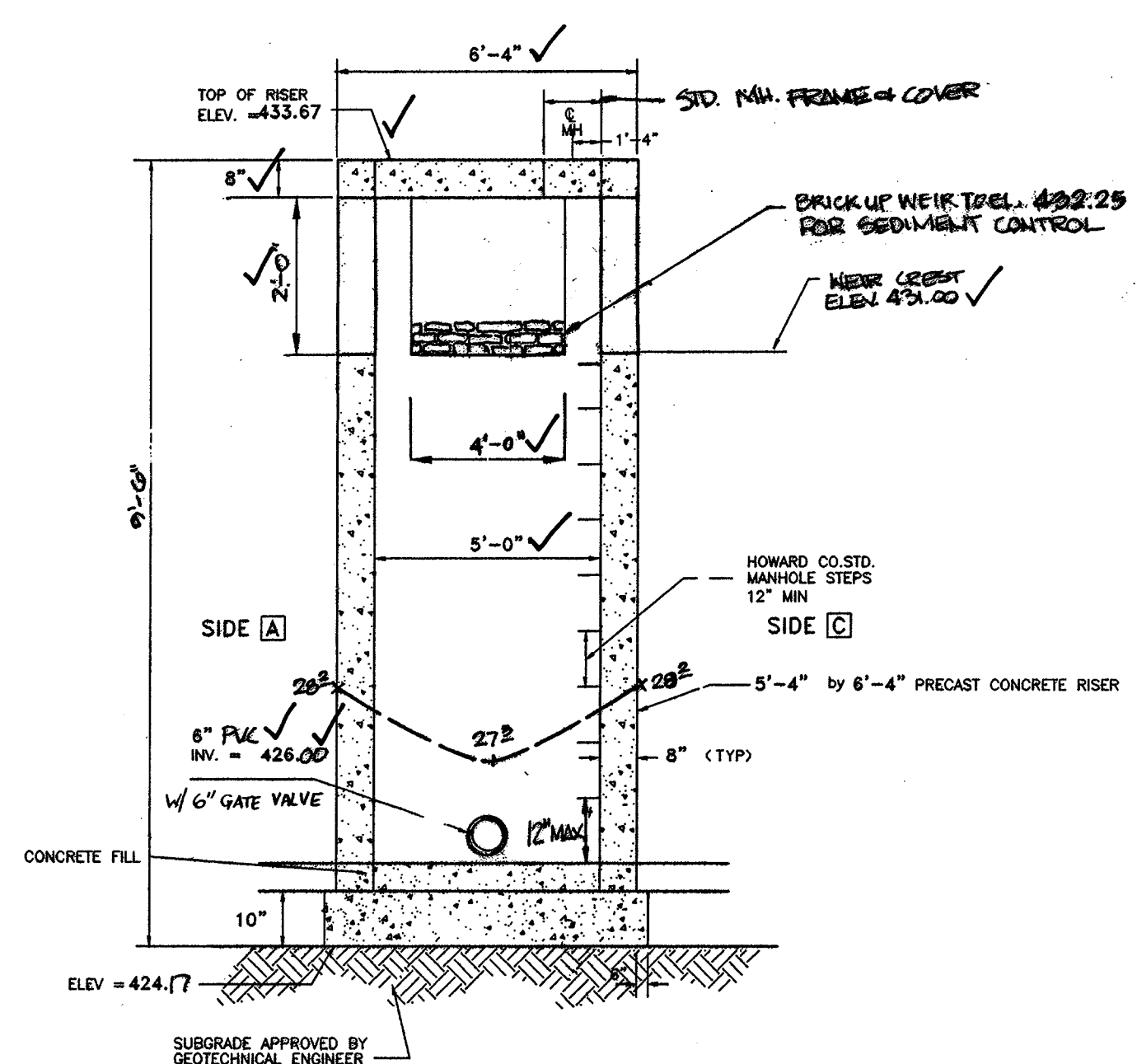
| | | | |
|--------------|----------|----------|----------|
| project | 05-98 | date | 05-98 |
| illustration | M.W.Z. | date | 07-12-99 |
| scale | 1" = 50' | revision | 03-12-99 |
| approval | R.M.M. | revision | 02-24-99 |
| | | revision | 01-29-99 |
| | | revision | 10/22/98 |

REVISIONS:
1. REVISED PER PLAT REVISIONS
2. ADDED GATE VALVE PER E. OF HIGHWAYS
3. SUBMITTED ORIGINAL PLANS TO CO. FOR SIGNATURES
4. REVISED PER SUBMITTAL TO CO. DIST. DIVISION
5. REVISED PER SUBMITTAL TO HO. CO. DIST. FOR REVIEW
6. 1ST SUBMITTAL TO HO. CO. DIST. FOR REVIEW

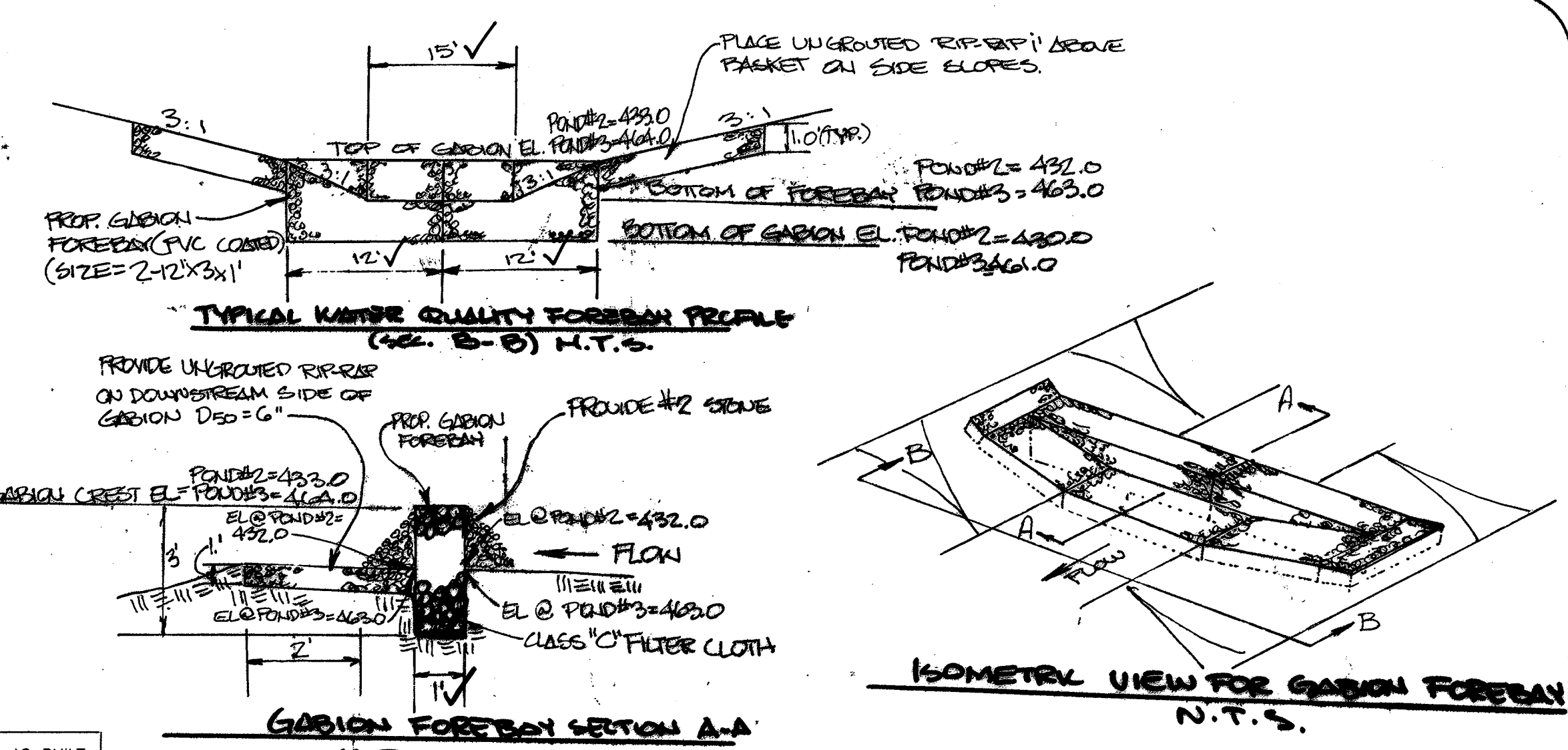
10/20 A.M. Howard
10/20 A.M. Howard
10/20 A.M. Howard



SECTION A-A
POND # 2



SECTION B-B



FOREBAY DETAILS PONDS # 2 & 3

| DESIGN STORM | WSEL | AS BUILT |
|--------------|--------|----------|
| WET POND | 422.0 | |
| 2 YEAR | 420.96 | |
| 10 YEAR | 421.69 | |
| 100 YEAR | 422.33 | |

| STRUCTURE SCHEDULE | | | | | |
|--------------------|----------|--|--------|--------|--|
| STRUCTURE | TYPE | LOCATION | INVERT | | REMARKS |
| | | | IN | OUT | |
| S-10 | RISER | N 19° 00' 00" E 120' 00" 00" TO E 120' 00" 00" N 19° 00' 00" W | 425.60 | | TOP 433.67 |
| ES-5 | END WALL | N 19° 00' 00" E 120' 00" 00" TO E 120' 00" 00" N 19° 00' 00" W | | 424.80 | H.O.C.O. STANDARD TYPE 'A' HEADWALL CIRCULAR |
| S-20 | RISER | N 19° 00' 00" E 120' 00" 00" TO E 120' 00" 00" N 19° 00' 00" W | 458.30 | | TOP 457.80 |
| ES-6 | END WALL | N 19° 00' 00" E 120' 00" 00" TO E 120' 00" 00" N 19° 00' 00" W | | 457.80 | H.O.C.O. STANDARD TYPE 'A' HEADWALL CIRCULAR |

RISER STRUCTURE GENERAL NOTES:

1. PRECAST RISER AND TOP SLAB TO BE MANUFACTURED AND SUPPLIED BY FREDERICK PRECAST CONCRETE, INC. OR APPROVED EQUIVALENT.
2. SHOP DRAWINGS FOR RISER AND TOP SLAB MUST BE REVIEWED BY AN ENGINEER AND APPROVED BY HOWARD COUNTY PRIOR TO FABRICATION.
3. IF ANY DIMENSIONS ARE CHANGED OR REDUCED, REVISED ANTI-FLOTATION COMPUTATION MUST BE SUBMITTED WITH THE SHOP DRAWINGS TO HOWARD COUNTY FOR APPROVAL.
4. TRASH RACKS ARE NOT SHOWN IN THIS VIEW FOR CLARITY.
5. THE RISER STRUCTURE SHOWN IS NOT TO SCALE SEE THIS SHEET FOR ACTUAL DIMENSIONS.

STORMWATER MANAGEMENT POND MAINTENANCE SCHEDULE (POND #2)

ROUTINE MAINTENANCE

FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.

TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES A YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES, THE BOTTOM OF THE POND, AND MAINTENANCE ACCESS SHOULD BE MOWED AS NEEDED.

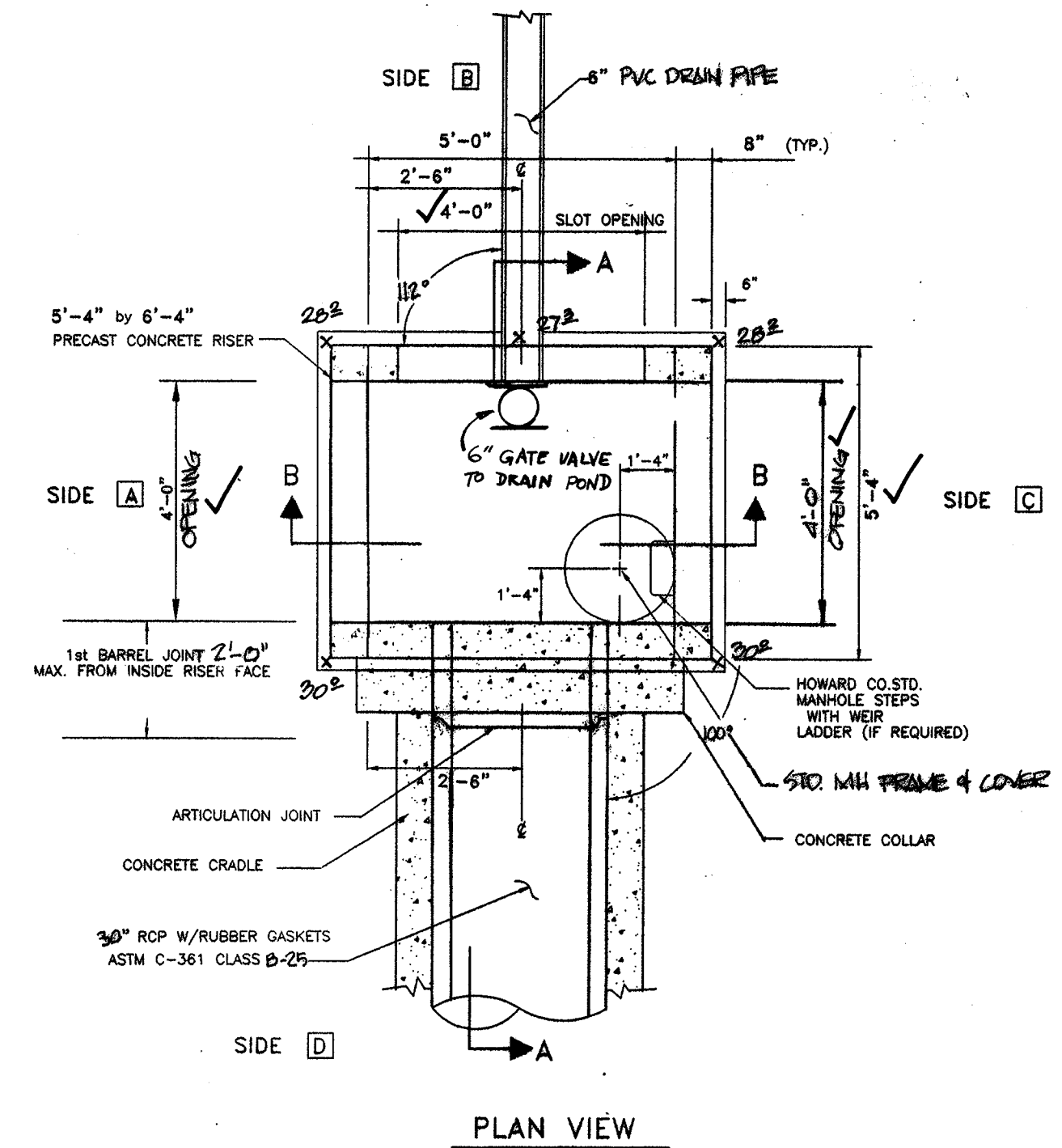
DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.

VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE

STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, RISER STRUCTURE AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.

SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE CAPACITY, INTERFERES WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY THE HOWARD COUNTY'S DEPARTMENT OF PUBLIC WORKS.



PLAN VIEW
POND # 2 - RISER
NOT TO SCALE

FIELD - GARDNER ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

| NO. | DEPTH (FEET) | SOIL TYPE | WATER CONTENT (%) | LIQUID LIMIT (%) | PLASTICITY INDEX | UNSATURATED SWELLING (%) | REMARKS |
|-----|--------------|-----------|-------------------|------------------|------------------|--------------------------|---------|
| 1 | 0-1.0 | CLAY | 28 | 75 | 47 | 1.0 | ... |
| 2 | 1.0-2.0 | CLAY | 28 | 75 | 47 | 1.0 | ... |
| 3 | 2.0-3.0 | CLAY | 28 | 75 | 47 | 1.0 | ... |
| 4 | 3.0-4.0 | CLAY | 28 | 75 | 47 | 1.0 | ... |
| 5 | 4.0-5.0 | CLAY | 28 | 75 | 47 | 1.0 | ... |

FIELD - GARDNER ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

| NO. | DEPTH (FEET) | SOIL TYPE | WATER CONTENT (%) | LIQUID LIMIT (%) | PLASTICITY INDEX | UNSATURATED SWELLING (%) | REMARKS |
|-----|--------------|-----------|-------------------|------------------|------------------|--------------------------|---------|
| 1 | 0-1.0 | CLAY | 28 | 75 | 47 | 1.0 | ... |
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| 3 | 2.0-3.0 | CLAY | 28 | 75 | 47 | 1.0 | ... |
| 4 | 3.0-4.0 | CLAY | 28 | 75 | 47 | 1.0 | ... |
| 5 | 4.0-5.0 | CLAY | 28 | 75 | 47 | 1.0 | ... |

FIELD - GARDNER ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION

| NO. | DEPTH (FEET) | SOIL TYPE | WATER CONTENT (%) | LIQUID LIMIT (%) | PLASTICITY INDEX | UNSATURATED SWELLING (%) | REMARKS |
|-----|--------------|-----------|-------------------|------------------|------------------|--------------------------|---------|
| 1 | 0-1.0 | CLAY | 28 | 75 | 47 | 1.0 | ... |
| 2 | 1.0-2.0 | CLAY | 28 | 75 | 47 | 1.0 | ... |
| 3 | 2.0-3.0 | CLAY | 28 | 75 | 47 | 1.0 | ... |
| 4 | 3.0-4.0 | CLAY | 28 | 75 | 47 | 1.0 | ... |
| 5 | 4.0-5.0 | CLAY | 28 | 75 | 47 | 1.0 | ... |

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



APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Pankake 3-9-99
CHIEF, BUREAU OF HIGHWAYS

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 3/24/99
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED:
DEVELOPMENT ENGINEERING DIVISION
William J. ... 3/15/99

APPROVED:
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Shirley ... 2/26/99
HOWARD SOIL CONSERVATION DISTRICT

APPROVED:
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
Cheryl ... 2/26/99
USDA - NATIONAL RESOURCES CONSERVATION SERVICE

DEVELOPER'S CERTIFICATE
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Robert M. Mochi 6-10-98
Signature of Developer

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.
Robert M. Mochi 6-11-98
Robert M. Mochi, P.E.



DATE: 05-98
PROJECT: 96019.13
ILLUSTRATION: F.M.M.
SCALE: 1" = 50'
APPROVAL: R.M.M.

REVISED PER PLAN REVISIONS
ADDED GATE VALVE FOR 8" OF HEADWALLS
SUBMITTED ORIGINAL PLANS TO CO. FOR SIGNATURE
REVISED SUBMITTAL TO CO. FOR REVIEW
REVISED SUBMITTAL TO CO. FOR REVIEW
SUBMITTED TO HOWARD COUNTY FOR REVIEW

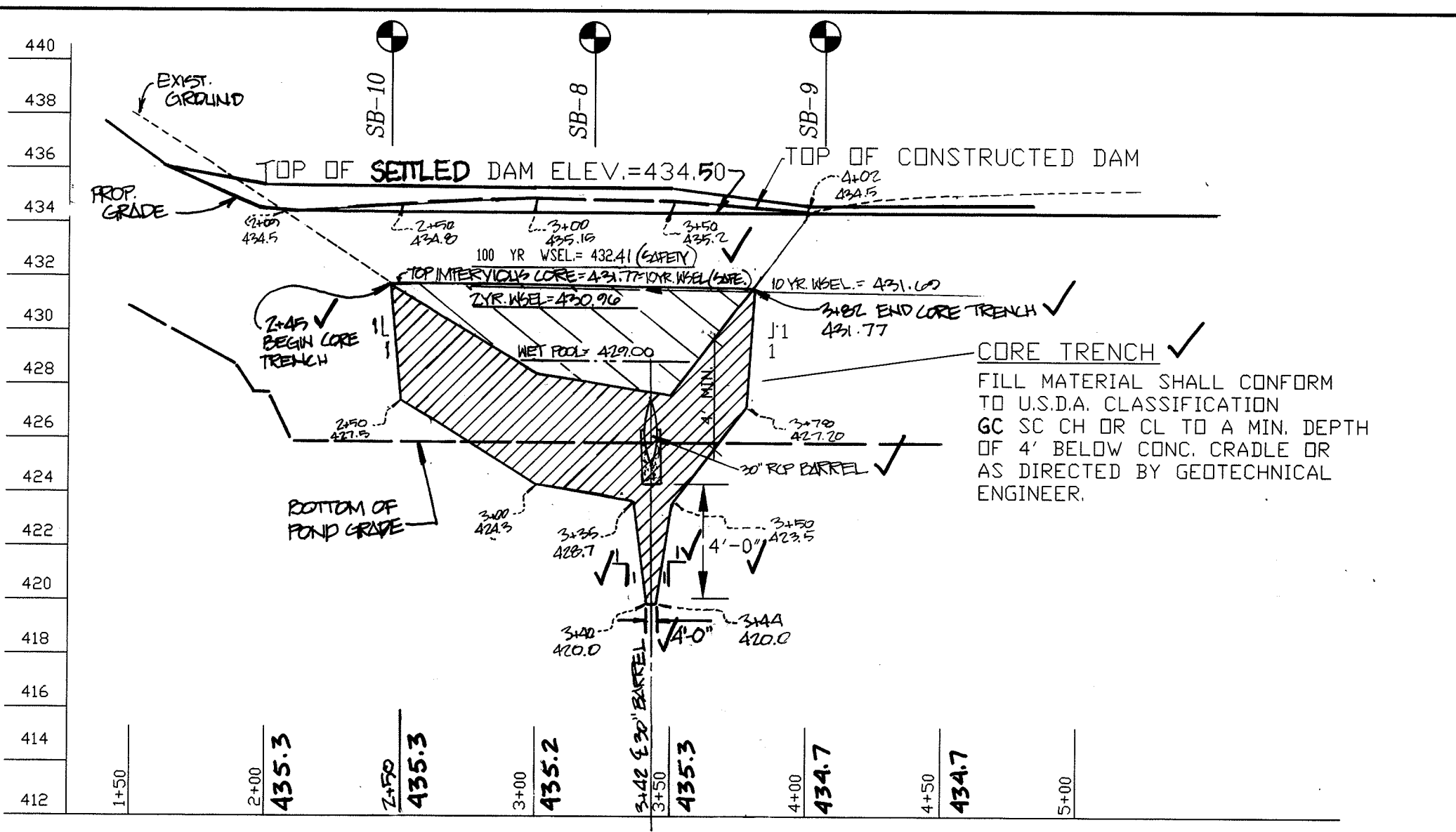
NO. 4
DATE: 03-12-99
02-24-99
01-29-99
10/15/98

HOWARD COUNTY
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
STORMWATER MANAGEMENT PLAN

13 OF 24

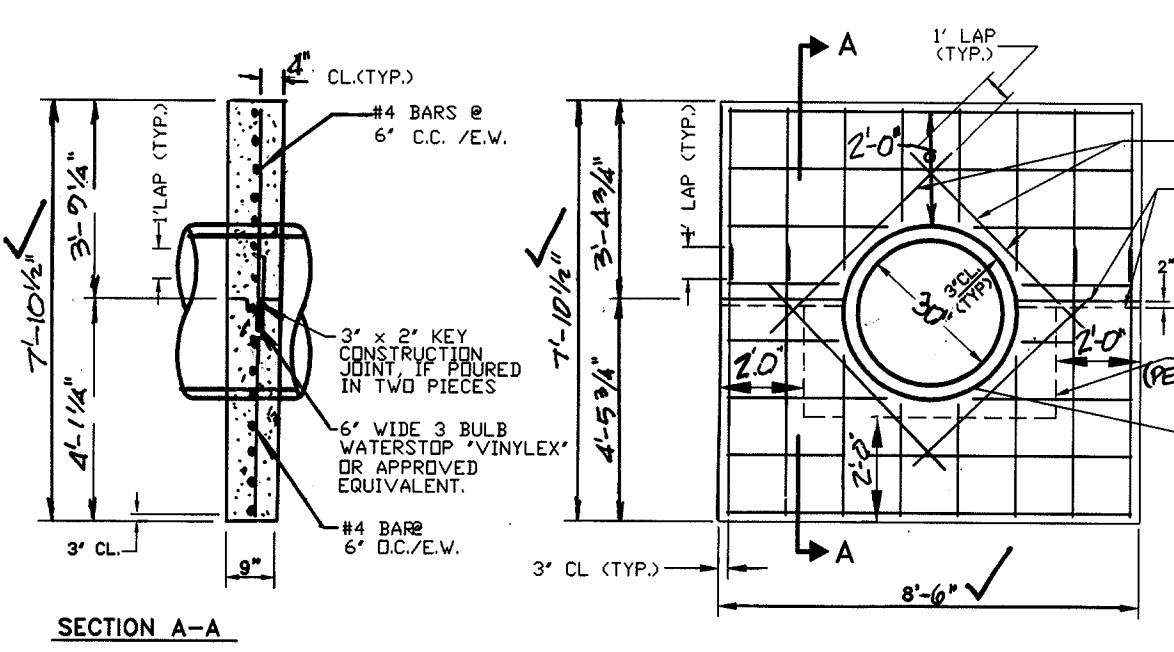
WP-99-103

98-167 6/49



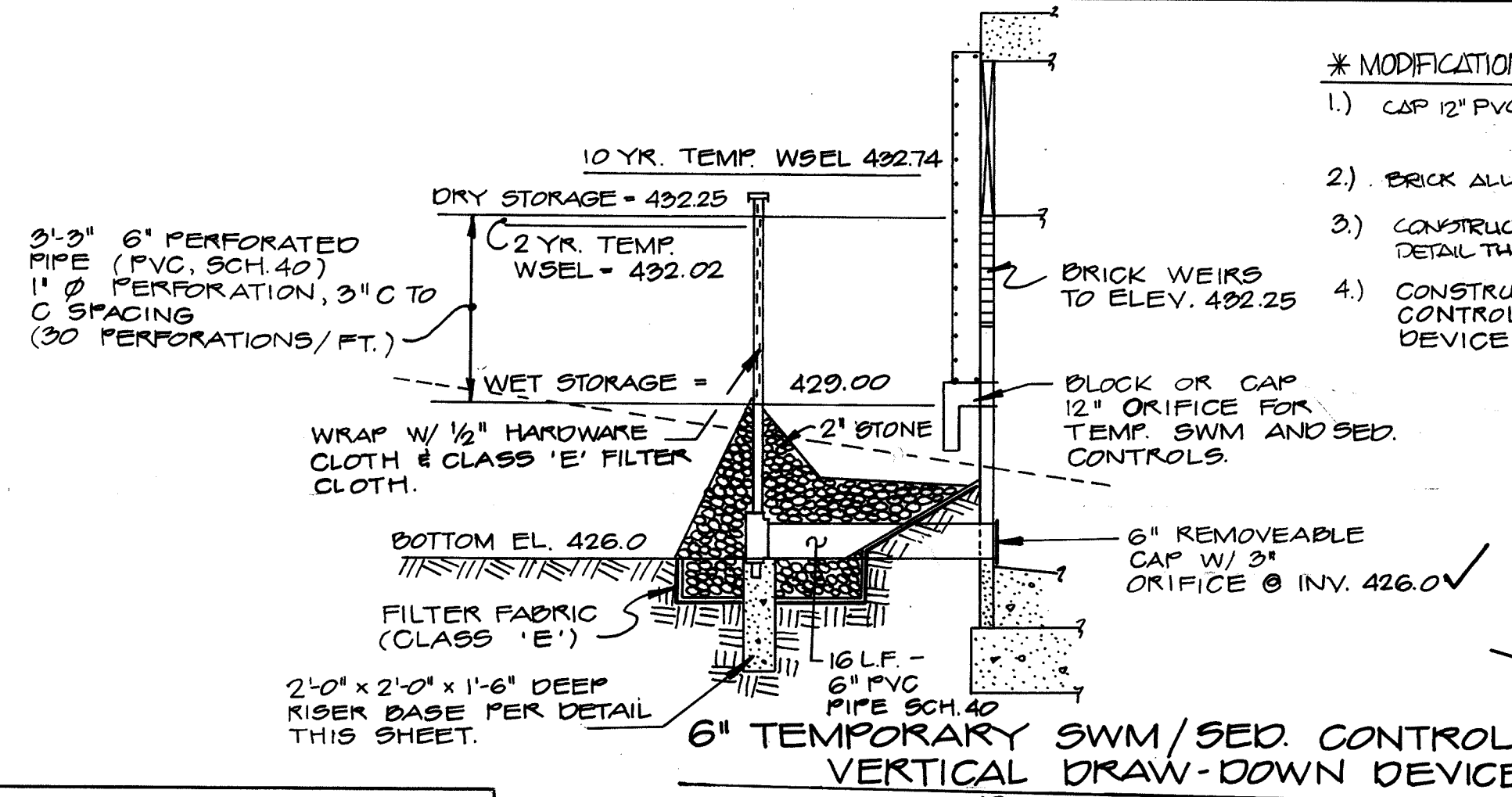
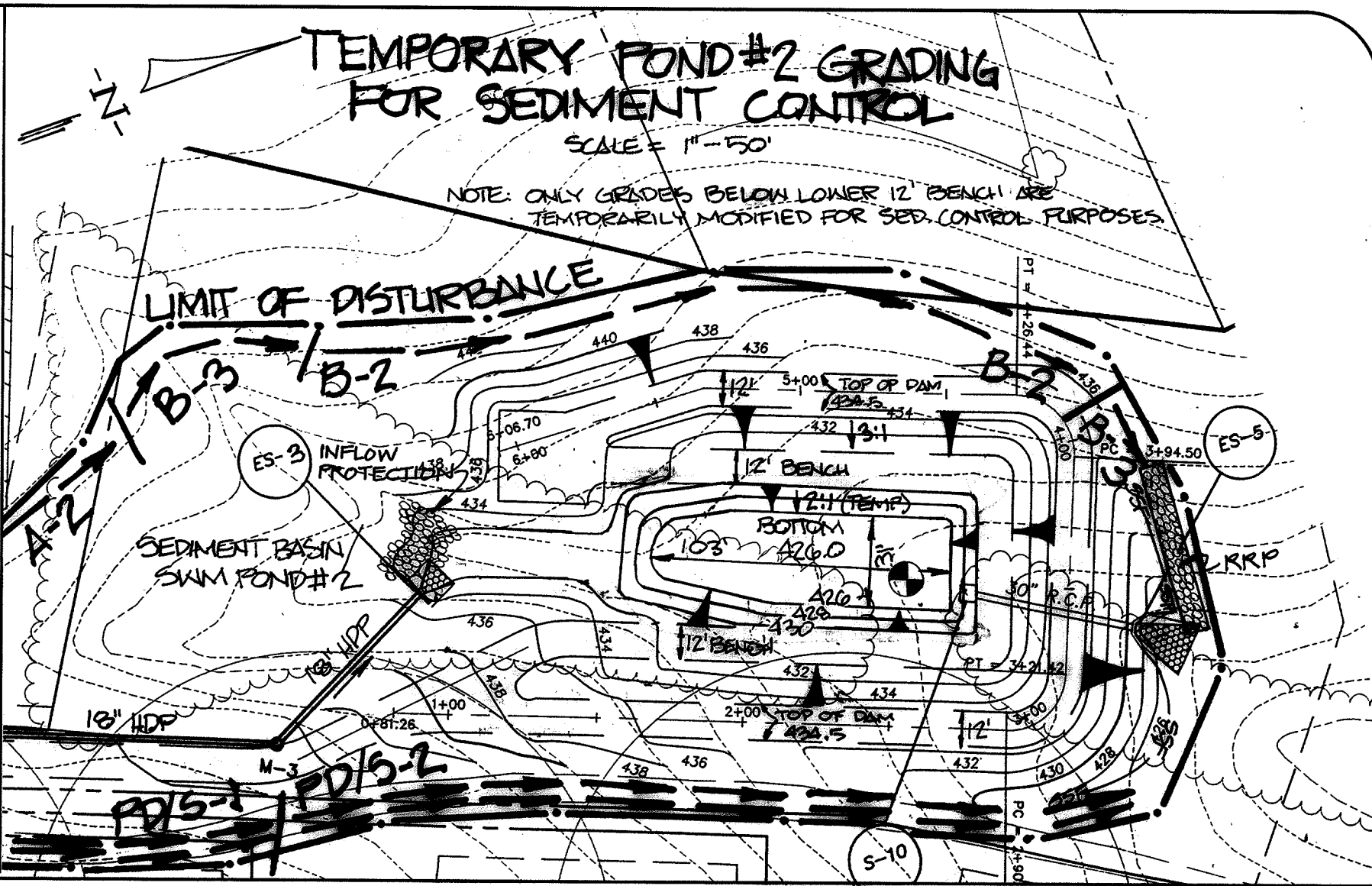
PROFILE ALONG C OF THE DAM (POND #2)

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

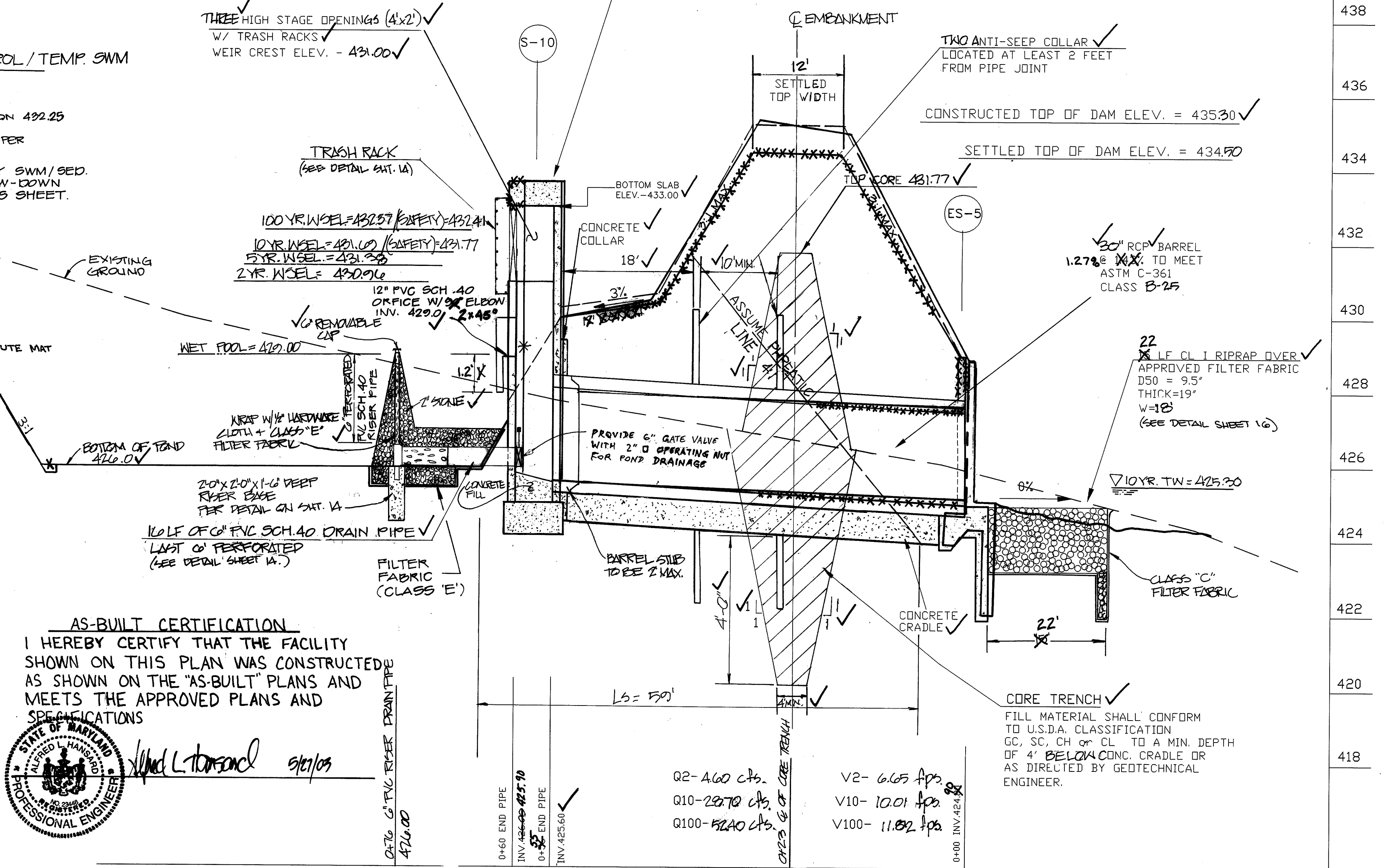


CONCRETE ANTI-SEEP COLLAR
POND #2

- NOTES:
- ANTI-SEEP COLLARS ARE TO BE FIELD LOCATED A MINIMUM OF 2' AWAY FROM ANY PIPE JOINT. SEE PIPE PROFILE FOR APPROX. SPACING.
 - CONCRETE SHALL BE M.S.H.A. MIX NO. 3 (F'c=3,500 PSI)
 - A "ONE POUR" COLLAR DOES NOT REQUIRE A CONSTRUCTION JOINT.
 - PROVIDE A MINIMUM OF 2" CLEARANCE FROM OUTSIDE OF PIPE OR CONCRETE CRADLE TO OUTSIDE OF ANTI-SEEP COLLAR.
 - CONCRETE CRADLE IS NOT SHOWN IN SECTION A-A



- * MODIFICATIONS FOR SED. CONTROL / TEMP. SWM
- CAP 12" PVC PIPE INSIDE RISER.
 - BRICK ALL KIERS TO ELEVATION 422.25
 - CONSTRUCT BOTTOM OF POND PER DETAIL THIS SHEET.
 - CONSTRUCT 6" TEMPORARY SWM/SED. CONTROL VERTICAL DRAW-DOWN DEVICE PER DETAIL THIS SHEET.



PRINCIPAL SPILLWAY PROFILE FOR SWM POND #2

SCALE: HORIZ. 1"= 10'
VERT. 1"= 2'

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



SWM AS-BUILTS
3/27/03

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3-8-99
CHIEF, BUREAU OF HIGHWAYS

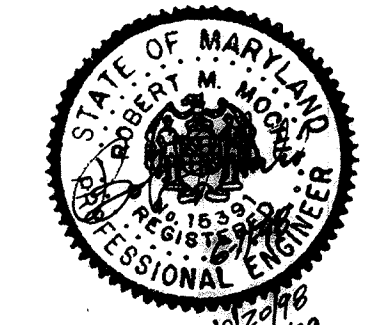
APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Andy Hamilton 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED:
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Howard L. Townsend 2/26/99
HOWARD SOIL CONSERVATION DISTRICT

APPROVED:
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
Charles A. Sharp 2/26/99
USDA - NATIONAL RESOURCES CONSERVATION SERVICE

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Charles A. Sharp 6-10-98
Signature of Developer

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Robert M. Mochi, P.E. 6-11-98
DATE

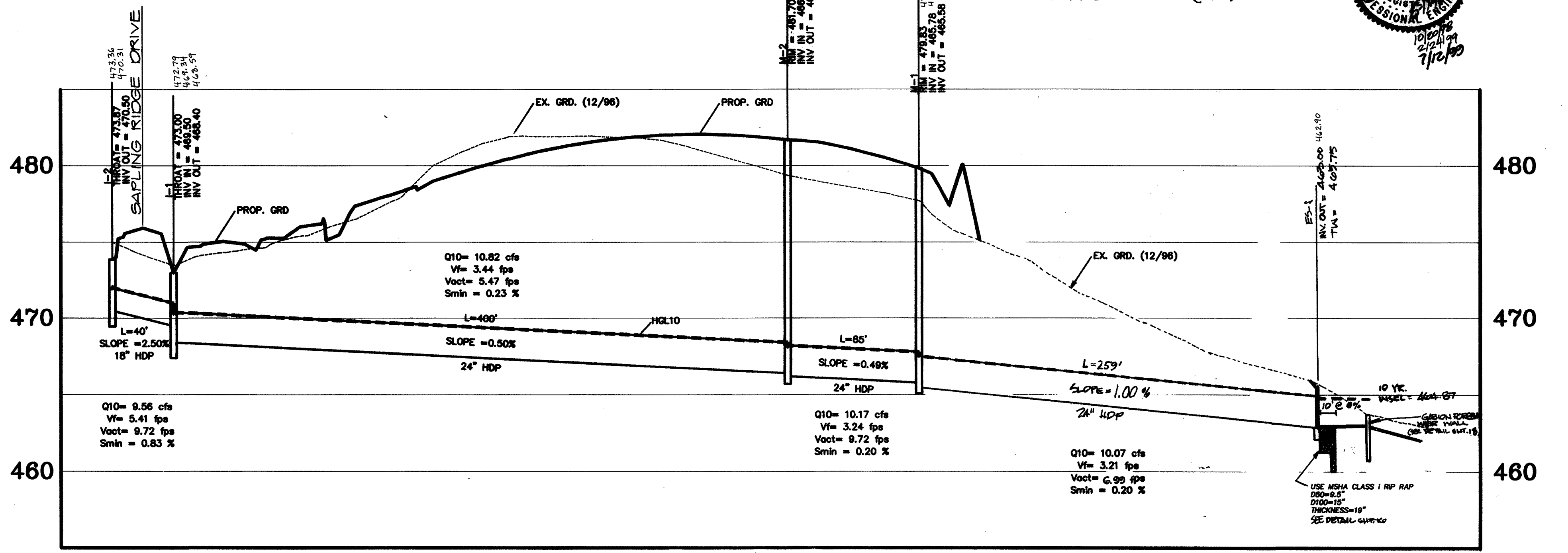
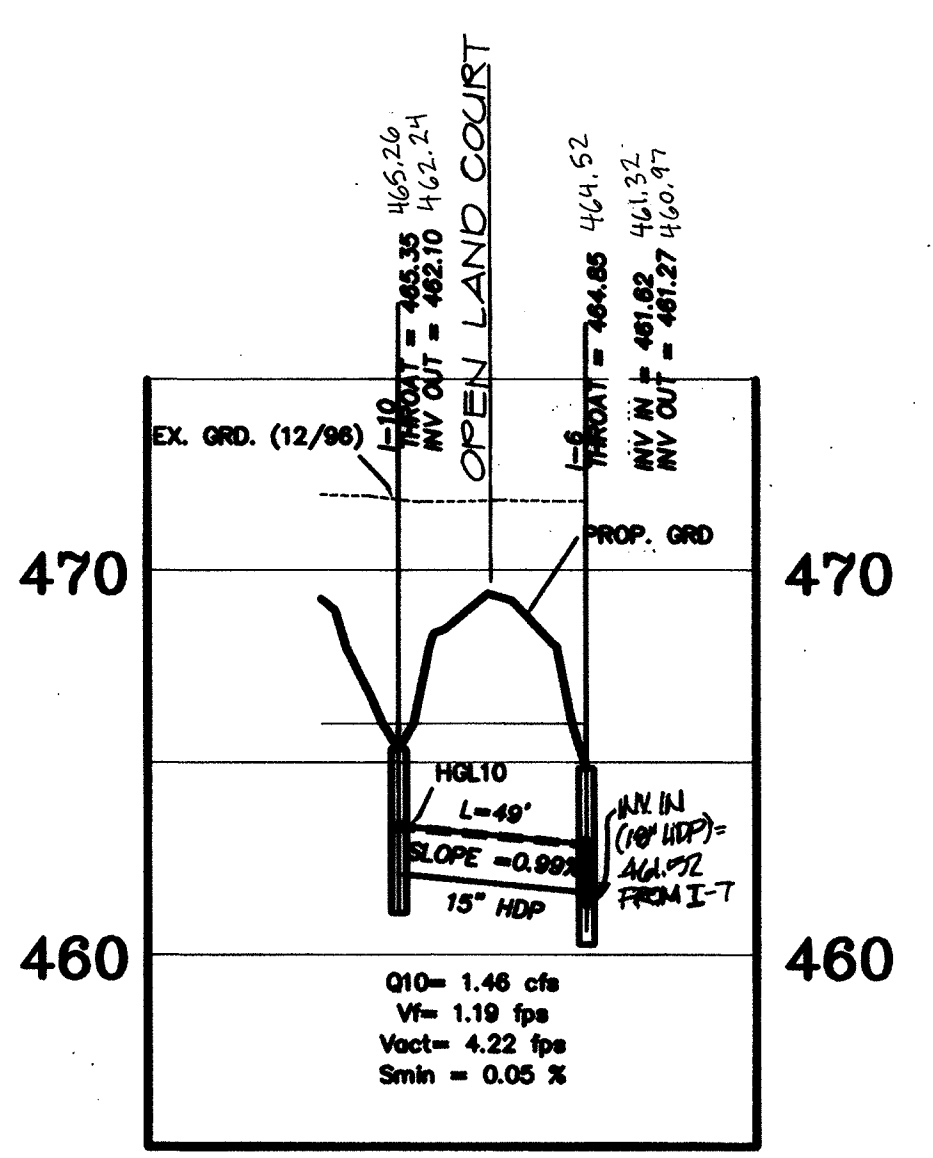
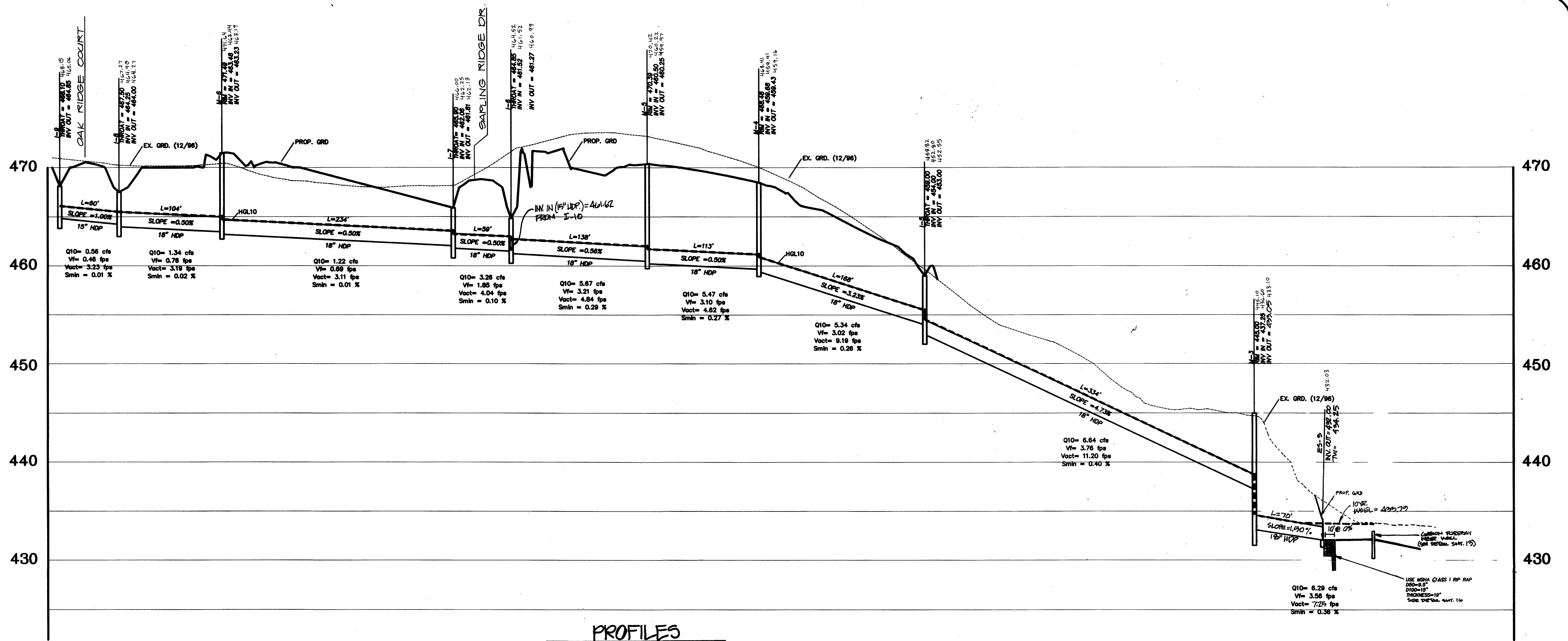


| | | | |
|----------|----------|--------------|---------------|
| date | 05-98 | approval | R.M.M. |
| project | 98019.13 | illustration | G.E.M. K.M.B. |
| revision | 02-24-99 | description | |

| | | | |
|-------------|--|----------|---|
| date | 02-12-99 | revision | 1 |
| description | REVISED PER FLAT REVISIONS | no. | 1 |
| description | ADDED GATE VALVE PER S.O. OF HIGHWAYS | no. | 2 |
| description | Submitted Original Mylars to Co. for Signature | no. | 3 |
| description | REVISED SUBMITTAL TO HO. CO. PER S.O. REVIEW | no. | 4 |
| description | REVISED SUBMITTAL TO HO. CO. PER S.O. REVIEW | no. | 5 |

HOWARD COUNTY
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
STORMWATER MANAGEMENT PLAN

R.M. MOCHI GROUP, P.C.
10220 A Old Millwood Pike
P.O. Box 10
New Market, MD 21774-0010
(301) 865-8005
FAX: (301) 865-3171



NOTE: UNLESS OTHERWISE NOTED ALL PROPOSED STORM DRAIN SHALL BE HIGH DENSITY POLYETHYLENE SMOOTH INTERIOR PIPE-AASHTO M254 (HDP).



APPROVED:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3-5-99
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hunter 3/25/99
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

David Dammus 3/15/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

| | | | |
|--------------|----------------|-------------|--------|
| Project | 98019-13 | Date | 04-98 |
| Illustration | G.E.M., K.M.B. | Engineering | M.W.Z. |
| Scale | AS SHOWN | Approval | R.M.L. |

| | | |
|-----|--|----------|
| NO. | DESCRIPTION | DATE |
| 4 | REVISED FOR PLAT REVISIONS | 02-12-98 |
| 3 | REVISIONS TO CO. SIGNATURE | 01-29-98 |
| 2 | REVISIONS TO HO. CO. DATE | 01-29-98 |
| 1 | REVISIONS TO HO. CO. DATE | 01-29-98 |
| 0 | 1ST SUBMITTAL TO HO. CO. DATE FOR REVIEW | 01-29-98 |

HOWARD COUNTY
 ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
 STORM DRAIN PROFILES

SM MOCHI GROUP, P.C.
 P.O. Box 10
 New Market, MD 21774-0010
 10120 1st Old National Pike
 (301) 865-5888
 Fax: (301) 865-5111

| STORM DRAIN STRUCTURE SCHEDULE | | | | |
|--------------------------------|--------------------------------|---------------|----------------|---------|
| No. | Type | Location | | Remarks |
| I-1 | Precast Open End Grate | STA. 6+81.99 | O/S 20.00' L | SD 4.36 |
| I-2 | Precast Open End Grate | STA. 6+81.99 | O/S 20.00' R | SD 4.36 |
| I-3 | Precast Open End Grate | STA. 15+14.00 | O/S 23.27 R | SD 4.36 |
| I-4 | Precast Open End Grate | STA. 15+14.00 | O/S 22.93 L | SD 4.36 |
| I-5 | Precast Open End Grate | N 571485.37 | E 1307336.47 | SD 4.36 |
| I-6 | Precast Open End Grate | STA. 0+35.22 | O/S 25.45 L | SD 4.36 |
| I-7 | Precast Open End Grate | STA. 23+05.97 | O/S 21.87 L | SD 4.36 |
| I-8 | Precast Open End Grate | STA. 1+04.69 | O/S 26.28 R | SD 4.36 |
| I-9 | Precast Open End Grate | STA. 1+42.91 | O/S 20.12 L | SD 4.36 |
| I-10 | Precast Open End Grate | STA. 0+31.88 | O/S 22.99 R | SD 4.36 |
| I-11 | Precast Open End Grate | N 571283.87 | E 1306090.93 | SD 4.36 |
| M-1 | 4'0" Precast Manhole | STA. 11+65.18 | O/S 5.31 L | G5.12 |
| M-2 | 4'0" Precast Manhole | STA. 10+81.75 | O/S 6.16 L | G5.12 |
| M-3 | 4'0" Precast Manhole | N 571796.58 | E 1307455.65 | G5.12 |
| M-4 | 4'0" Precast Manhole | STA. 2+92.31 | O/S 3.58 L | G5.12 |
| M-5 | 4'0" Precast Manhole | STA. 1+77.46 | O/S 4.32 L | G5.12 |
| M-6 | 4'0" Precast Manhole | STA. 20+68.02 | O/S 13.55 L | G5.12 |
| M-7 | 4'0" Precast Manhole | N 571372.87 | E 1305974.07 | G5.12 |
| M-8 | 4'0" Precast Manhole | N 571194.48 | E 1305847.32 | G5.12 |
| ES-1 | Type "C" Endwall Circular Pipe | N 570493.69 | E 1306887.67 | SD 5.21 |
| ES-2 | Type "C" Endwall Circular Pipe | N 570493.42 | E 1306905.67 | SD 5.21 |
| ES-3 | Type "C" Endwall Circular Pipe | N 571053.79 | E 1307423.82 | SD 5.21 |
| ES-4 | Type "C" Endwall Circular Pipe | N 571165.1972 | E 1305826.4757 | SD 5.21 |

INFILTRATION CONSTRUCTION SPECIFICATIONS

TIME: An infiltration trench shall not be constructed or placed in service until all of the contributing drainage area has been stabilized and approved by the responsible agencies.

TRENCH PREPARATION: Excavate the trench to the design dimensions. Excavated materials shall be placed away from the trench sides to enhance trench wall stability. Large tree roots must be removed flush with the trench sides in order to prevent fabric puncturing or tearing during the installation process. The site walls of the trench shall be regraded where shored and sealed by heavy equipment.

FABRIC LAYDOWN: The filter fabric roll must be cut to the proper width prior to installation. The cut width must include sufficient material to conform to trench particular irregularities and for a 6" minimum longitudinal lap. The desired fill soil or stone aggregate shall be placed over the top at sufficient intervals to maintain the lap during subsequent backfilling.

STONE AGGREGATE PLACEMENT AND COMPACTION: The stone aggregate should be placed in 12" and compacted using plate compactors. As a rule of thumb, a maximum loose fill thickness of 12 inches is recommended. The compaction process ensures fabric conformity to the excavation sides, thereby reducing the potential for soil piping, fabric clogging, and settlement problems.

OVERLAPPING AND COVERING: Following the stone aggregate placement, the filter fabric shall be folded over the stone aggregate to form a 6" minimum longitudinal lap. The desired fill soil or stone aggregate shall be placed over the top at sufficient intervals to maintain the lap during subsequent backfilling.

CONTAMINATION: Care should be exercised to prevent material or debris from accumulating with the stone aggregate. All contaminated stone aggregate shall be removed and replaced with uncontaminated stone aggregate.

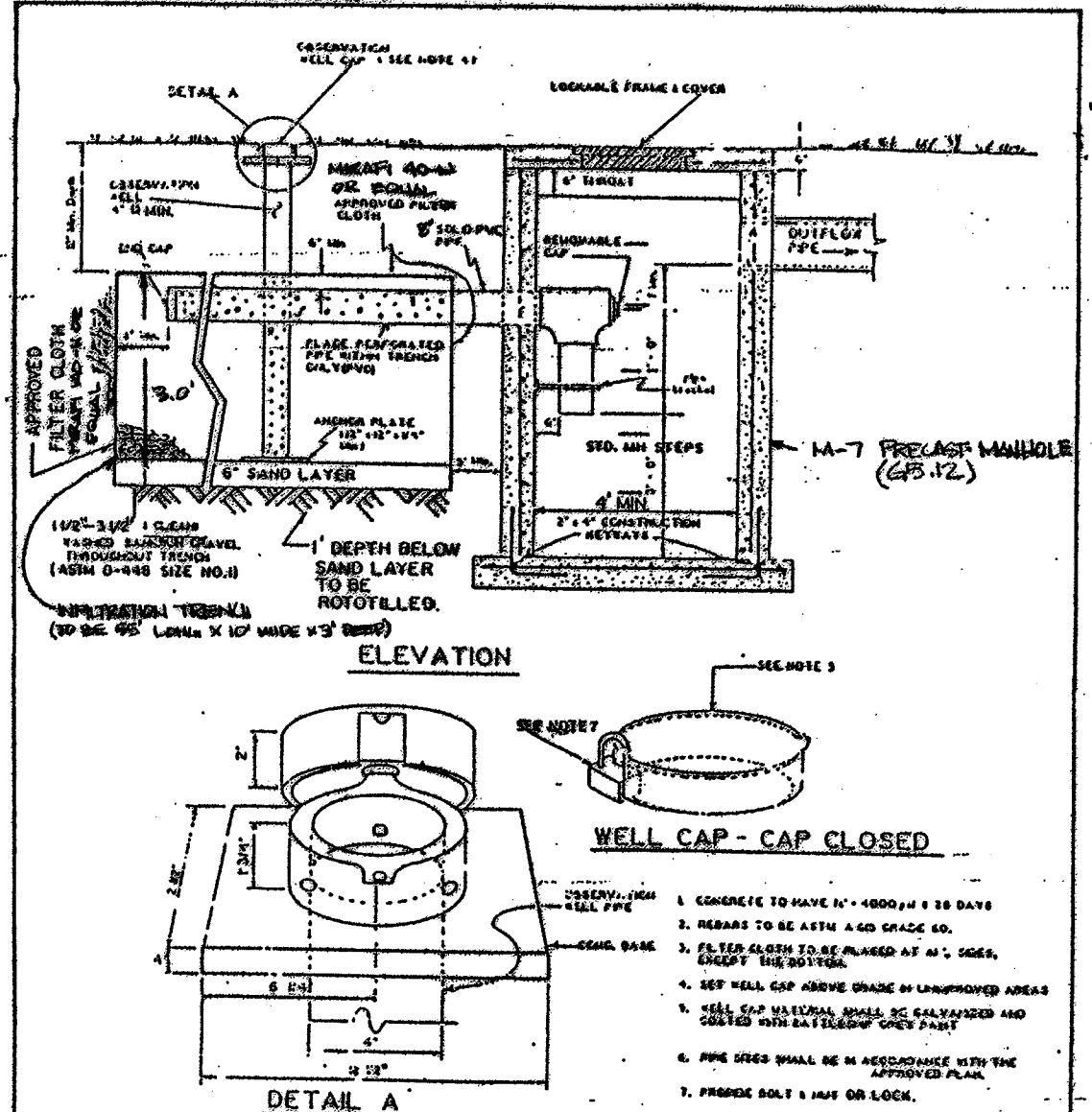
VOIDS BEHIND FABRIC: Voids can be created between the fabric and excavation sides and shall be avoided. Remaining boulders or other obstacles from the trench walls in one manner or another. Natural soils should be placed in these voids at the most convenient time during construction to ensure fabric conformity to the excavation sides. Soil piping, fabric clogging, and possible surface subsidence will be avoided by the remedial process.

UNSTABLE EXCAVATION SIDES: Vertically excavated walls may be difficult to maintain in areas where the soil moisture is high or where soil cohesive or consolidation soils predominate. These conditions may require laying back of the side slopes to maintain stability. Irregularities rather than rectangular cross sections may result.

VEGETATIVE BUFFER: A vegetative buffer of at least 20' (where, if possible) shall be used to intercept surface runoff from all impervious areas.

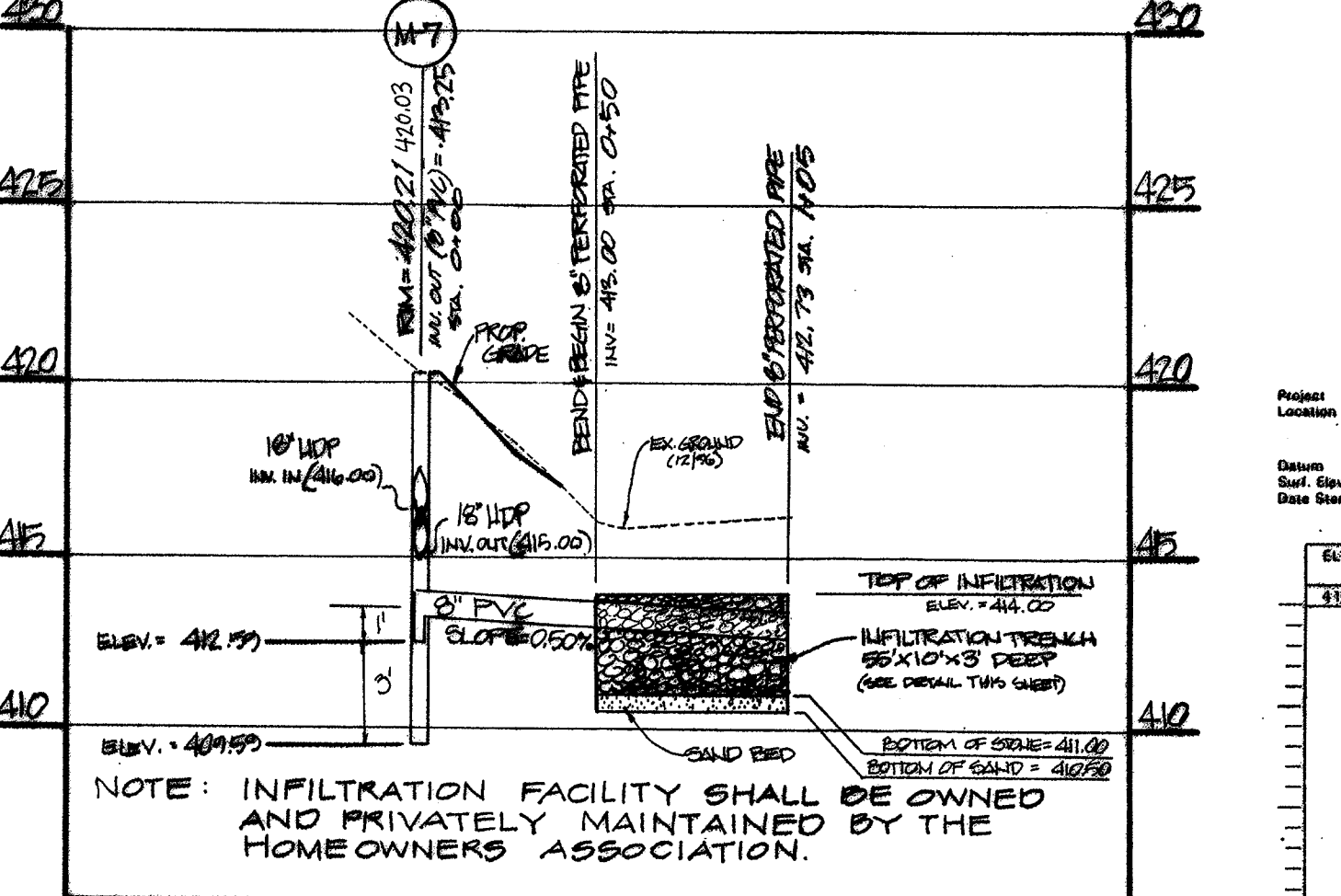
OBSERVATION WELL: The depth of the well at the level of installation will be clearly marked on the well cap.

INFILTRATION TRENCH AND MANHOLE M-7 SHALL BE MAINTAINED BY THE H.O.A.



HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved: Chief, Bureau of Engineering

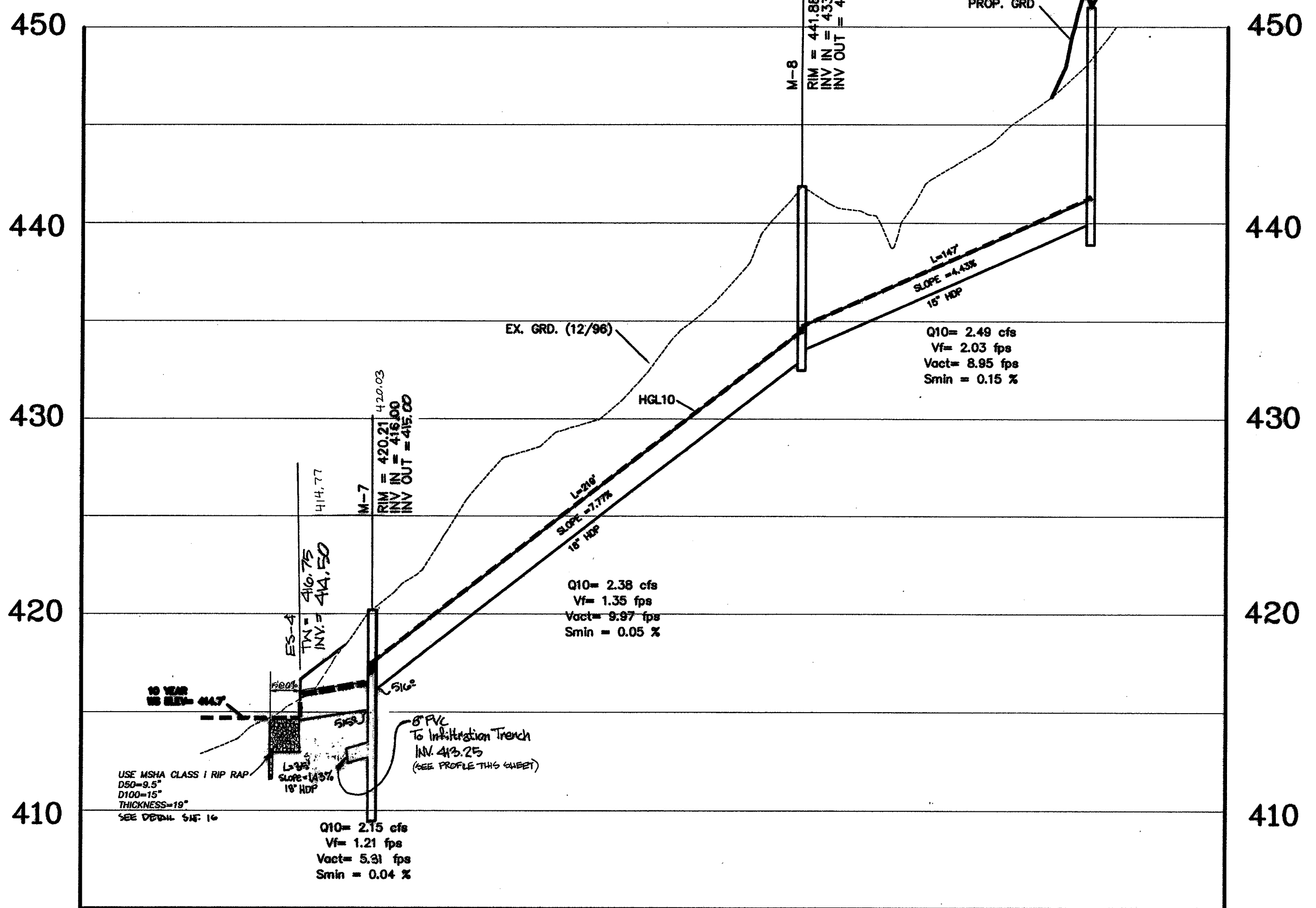
- INFILTRATION TRENCH AND MANHOLE M-7 MAINTENANCE SCHEDULE**
- Remove dirt from bottom of trench M-7 when accumulation exceeds 1.5'.
 - Remove accumulated paper, trash and debris as necessary.
 - Vegetation growing within the trench area is not allowed to exceed 18 inches in height at any time.
 - Corrective maintenance is required any time the trench does not drain down completely within 96 hours (i.e., no standing water within the trench is allowed).
 - Inspect observation well after every major storm event.



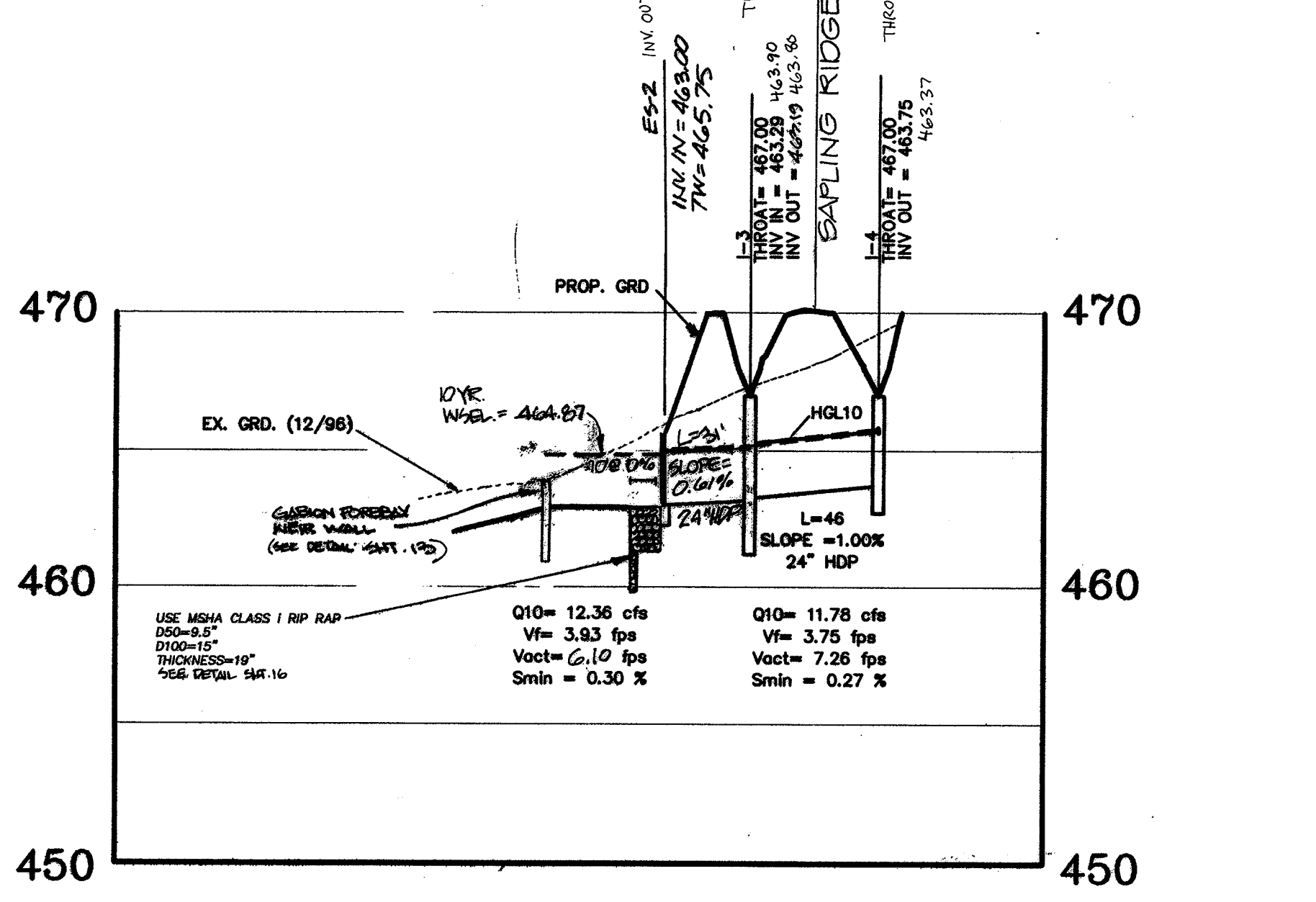
APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Danaher 3-8-99
CHIEF, BUREAU OF HIGHWAYS

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT

| ELEV. | SOIL DESCRIPTION | DEPTH SCALE | BORING & SAMPLING NOTES |
|--------|--|-------------|---|
| 418.20 | Topsoil - 0" | 0.0 | Operator indicates soil from 0 to 3 ft. flow below 2.0 feet. |
| 412.20 | Reddish brown, moist, sandy SILT, trace rock fragments and mica (SM) | 2.5 | Note: All samples were recovered from the test pit excavation. Therefore, no SPT blow were recorded, and all samples were recovered in a disturbed "D" condition. |
| 410.20 | Fine, moist, sandy SILT, trace rock fragments and mica (SM) | 5.0 | Infiltration test set @ 6.0 ft. |
| 407.20 | Gray-brown, silty SAND, trace rock fragments and mica (SM) | 10.0 | Difficult to excavate below 11 ft. |
| 405.20 | Fine, moist, silty sand, trace rock fragments and mica (SM) | 12.5 | |
| 402.20 | Bottom at 11.0 feet | 15.0 | |
| | | 17.5 | |
| | | 20.0 | |



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



NOTE: UNLESS OTHERWISE NOTED ALL PROPOSED STORM DRAIN SHALL BE HIGH DENSITY POLYETHYLENE SMOOTH INTERIOR PIPE - AASHTO M294 (HDP).



| | |
|--------------|-------------|
| Project No. | 96019-13 |
| Date | 06-05-98 |
| Illustration | engineering |
| Scale | M.W.Z. |
| As Noted | R.M.M. |

| | |
|--------------|-------------|
| Project No. | 96019-13 |
| Date | 07-12-99 |
| Illustration | engineering |
| Scale | M.W.Z. |
| As Noted | R.M.M. |

ELECTION DISTRICT NO. 5
HOWARD COUNTY, MD.
HIGH FOREST ESTATES
STORM DRAIN PROFILES

R.M. MCCHOI GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
(301) 885-9888
(301) 885-5111



RUNOFF SUMMARY - BIG BRANCH OVERLOOK SECTION II

| DRAINAGE AREA C-2 | | | | |
|-----------------------|---|---|---|---|
| DRAINAGE AREA (ACRES) | EXISTING DISCHARGE @ STUDY PT. (CFS) | | PROPOSED DISCHARGE @ STUDY PT. (CFS) | |
| | Existing Conditions | Proposed Conditions | EXISTING DISCHARGE @ STUDY PT. (CFS) | PROPOSED DISCHARGE FROM FACILITY (CFS) |
| Q ₂ | 0.35 (Road) ±1.45 (Total) 1.80 Total | 0.35 (Road) ±1.45 (Total) 1.80 Total | 1.3 (Lot) ± 5.2 (Road) ± 1.3 (ADDITION) 7.8 ADDITION | 1.3 (Lot) ± 5.2 (Road) ± 2.4 (ADDITION) 8.9 ADDITION |
| Q ₅ | ↓ | ↓ | 2.6 (Lot) ± 0 (Road) ± 2.7 (ADDITION) 5.3 ADDITION | 2.6 (Lot) ± 0 (Road) ± 4.0 (ADDITION) 6.6 ADDITION |
| Q ₁₀ | ↓ | ↓ | 3.8 (Lot) ± 0 (Road) ± 4.0 (ADDITION) 7.8 ADDITION | 3.8 (Lot) ± 0 (Road) ± 5.6 (ADDITION) 9.4 ADDITION |
| Q ₁₀₀ | ↓ | ↓ | 7.1 (Lot) ± 0 (Road) ± 7.7 (ADDITION) 14.8 ADDITION | 7.1 (Lot) ± 0 (Road) ± 9.7 (ADDITION) 16.8 ADDITION |

| DRAINAGE AREA C-1 (SWM POND #3 & OVERCOMPENSATION FOR C-2) | | | | | |
|--|---|---|--|--|--------------------------------------|
| DRAINAGE AREA (ACRES) | EXISTING DISCHARGE @ STUDY PT. (CFS) | | PROPOSED DISCHARGE @ STUDY PT. (CFS) | | POND ELEV STORAGE (FT ³) |
| | Existing Conditions | Proposed Conditions | EXISTING DISCHARGE @ STUDY PT. (CFS) | PROPOSED RELEASE FROM FACILITY (CFS) | |
| Q ₂ | 1.03 (Lot) ± 18.27 (Road) ± 19.30 Total | 1.03 (Lot) ± 18.27 (Road) ± 19.30 Total | 10.7 (Lot) ± 0 (Road) ± 10.9 (ADDITION) ± 1.3 (C-2) ± 11.9 (ADDITION) | 3.1 (Pond #3) ± 2.4 (C-2) ± 5.5 (ADDITION) | 462.84 / 11,100 |
| Q ₅ | ↓ | ↓ | 22.6 (Lot) ± 0 (Road) ± 23.4 (ADDITION) ± 2.2 (C-2) ± 25.6 (ADDITION) | 17.5 (Pond #3) ± 4.0 (C-2) ± 18.5 (ADDITION) | 463.36 / 20,000 |
| Q ₁₀ | ↓ | ↓ | 35.1 (Lot) ± 1.4 (Road) ± 46.3 (Road) ± 44.4 (ADDITION) ± 48.8 (C-2) ± 94.5 (ADDITION) | 31.3 (Pond #3) ± 5.6 (C-2) ± 37.9 (ADDITION) | 463.67 / 24,500 |
| Q ₁₀₀ | ↓ | ↓ | 67.9 (Lot) ± 1.1 (Road) ± 69.0 (Road) ± 69.6 (ADDITION) ± 72.3 (ADDITION) ± 141.9 (ADDITION) | 63.3 (Pond #3) ± 2.7 (C-2) ± 67.4 (ADDITION) | 464.30 / 35,200 |

SEDIMENT TRAP #1
 SEDIMENT TRAP TYPE #1
 INITIAL DRAINAGE AREA = 1.47 AC
 FINAL DRAINAGE AREA = 1.49 AC
 REQUIRED STORAGE = 7070 CF
 STORAGE PROVIDED = 7406 CF (6397 NET @ ELEV. 414.0, 3051 DRY)
 BOTTOM DIMENSIONS = SEE PLAN
 STORAGE DEPTH = 2.60 FT
 BOTTOM ELEV. = 442.00
 RIBER CREEK ELEV. = 442.00
 EX. GROUND @ C. ENKANKMENT = 422.50
 CLEANOUT ELEVATION = 440.70
 SIDE SLOPES = 2:1 MAX (SEE PLAN)

Preservation Parcel "B"
 Owner: Mr. Charles A. Sharp
 28.84 AC

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Indy Hamilton 3/25/99
 CHIEF, DIVISION OF LAND DEVELOPMENT
William 3/15/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Dault 3-8-99
 CHIEF, BUREAU OF HIGHWAYS

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

APPROVED:
 THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
[Signature]
 USDA - NATIONAL RESOURCES CONSERVATION SERVICE

DEVELOPER'S CERTIFICATE
 I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.
Charles A. Sharp 6-10-98
 Signature of Developer DATE

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.
Robert M. Mochi 10/29/98
 Robert M. Mochi, P.E. DATE

| | | | |
|--------------|------------|--------------|----------|
| date | 10-98 | approval | R.M.M. |
| project | 96019.13 | illustration | M.W.Z. |
| illustration | GEM/K.M.B. | scale | 1" = 50' |

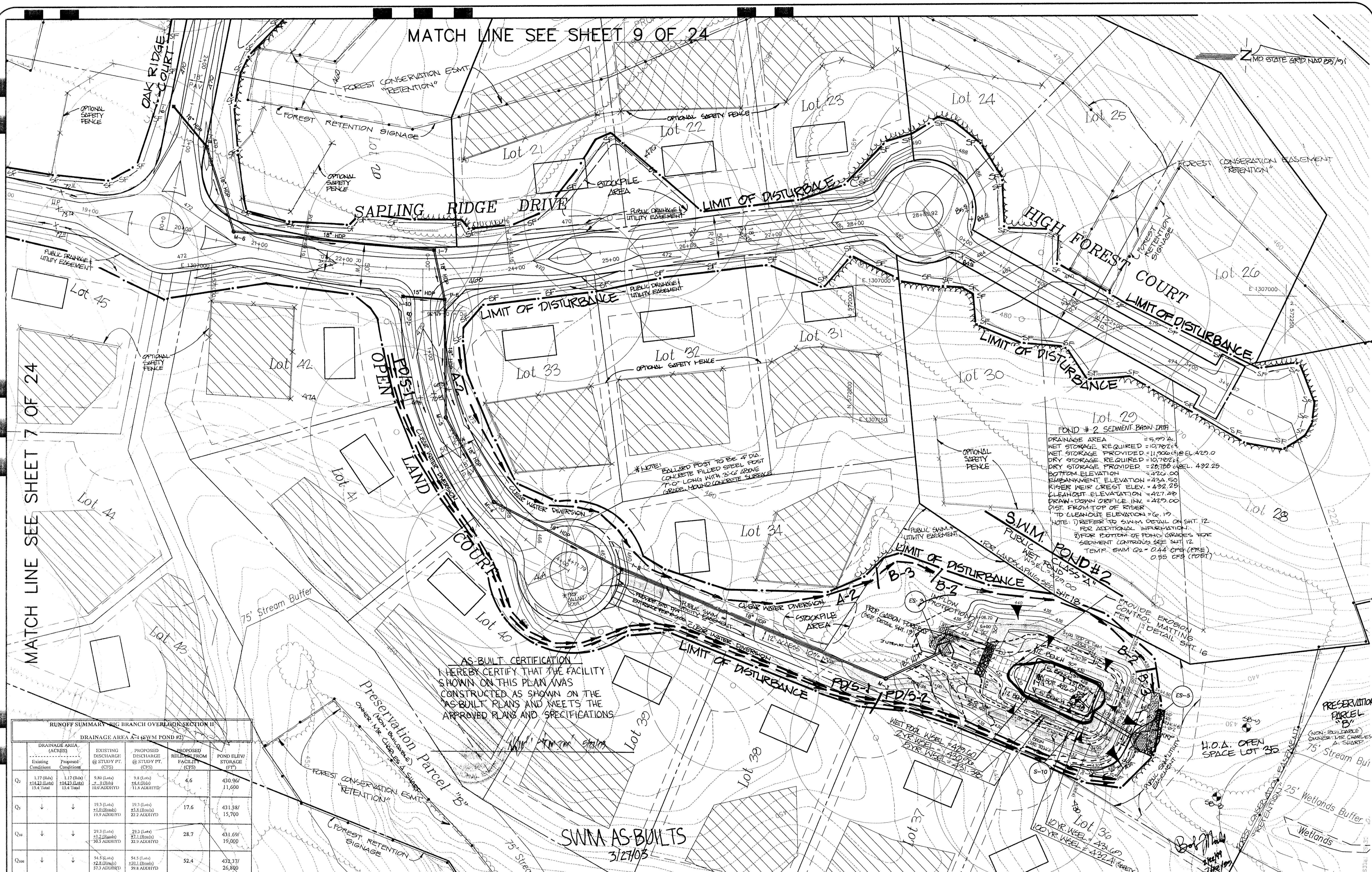
| | | | |
|---|----------|-------------|-----------|
| REVISED PER PLAT REVISIONS | 07-12-99 | description | revisions |
| Submitted Original Mylars to Co for Signature | 02-24-99 | | |
| REVISOR SUBMITTED TO HO. CO. FOR REVIEW | 01-29 | | |
| 1ST. SUBMITTAL TO HO. CO. FOR REVIEW | 07/21/98 | | |

HOWARD COUNTY
 ELECTION DISTRICT NO. 5

HIGH FOREST ESTATES
 Grading and Sediment Control Plan

R.M. MOCHI GOLF, P.C.
 10120 A Old National Pike
 New Market, MD 21774-0010
 (301) 865-5959
 Fax: (301) 865-3111

MATCH LINE SEE SHEET 9 OF 24



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

RUNOFF SUMMARY - BIG BRANCH OVERLOOK SECTION II

DRAINAGE AREA A-4 (SWM POND #2)

| DRAINAGE AREA (ACRES) | EXISTING DISCHARGE @ STUDY PT. (CFS) | PROPOSED DISCHARGE @ STUDY PT. (CFS) | PROPOSED REDUCTION FROM FACILITY (CFS) | POND ELEV./STORAGE (FT³) |
|-----------------------|---------------------------------------|---------------------------------------|--|--------------------------|
| Q1 | 1.17 (84) / 15.4 (Total) | 1.17 (84) / 15.4 (Total) | 9.8 (Lots) / 24.4 (84) / 19.9 ADMRYD | 4.6 / 430,961 / 11,600 |
| Q2 | 19.3 (Lots) / 21.2 (84) / 19.9 ADMRYD | 19.3 (Lots) / 21.2 (84) / 22.2 ADMRYD | 17.6 / 53.8 (84) / 31.8 ADMRYD | 431,387 / 15,700 |
| Q3 | 29.3 (Lots) / 31.2 (84) / 30.5 ADMRYD | 29.3 (Lots) / 31.2 (84) / 32.9 ADMRYD | 28.7 / 53.1 (84) / 32.9 ADMRYD | 431,697 / 19,000 |
| Q4 | 54.5 (Lots) / 57.3 ADMRYD | 54.5 (Lots) / 57.3 ADMRYD | 52.4 / 102.1 (84) / 39.8 ADMRYD | 432,371 / 26,800 |

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[Signature]
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE: 3/17/98

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature]
CHIEF, BUREAU OF HIGHWAYS
DATE: 3-17-98

APPROVED:
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
[Signature]
HOWARD SOIL CONSERVATION DISTRICT
DATE: 3/17/98

APPROVED:
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.
[Signature]
USDA - NATIONAL RESOURCES CONSERVATION SERVICE
DATE: 3/17/98

DEVELOPER'S CERTIFICATE
I/We certify that all development and construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.
Charles A. Sharp
Signature of Developer
6-10-98
DATE

ENGINEER'S CERTIFICATE
I certify that this plan for pond construction, erosion and sediment control represents a practice and workable plan based on my personal knowledge of the site 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.
Robert M. Mochi, P.E.
DATE: 10/20/98

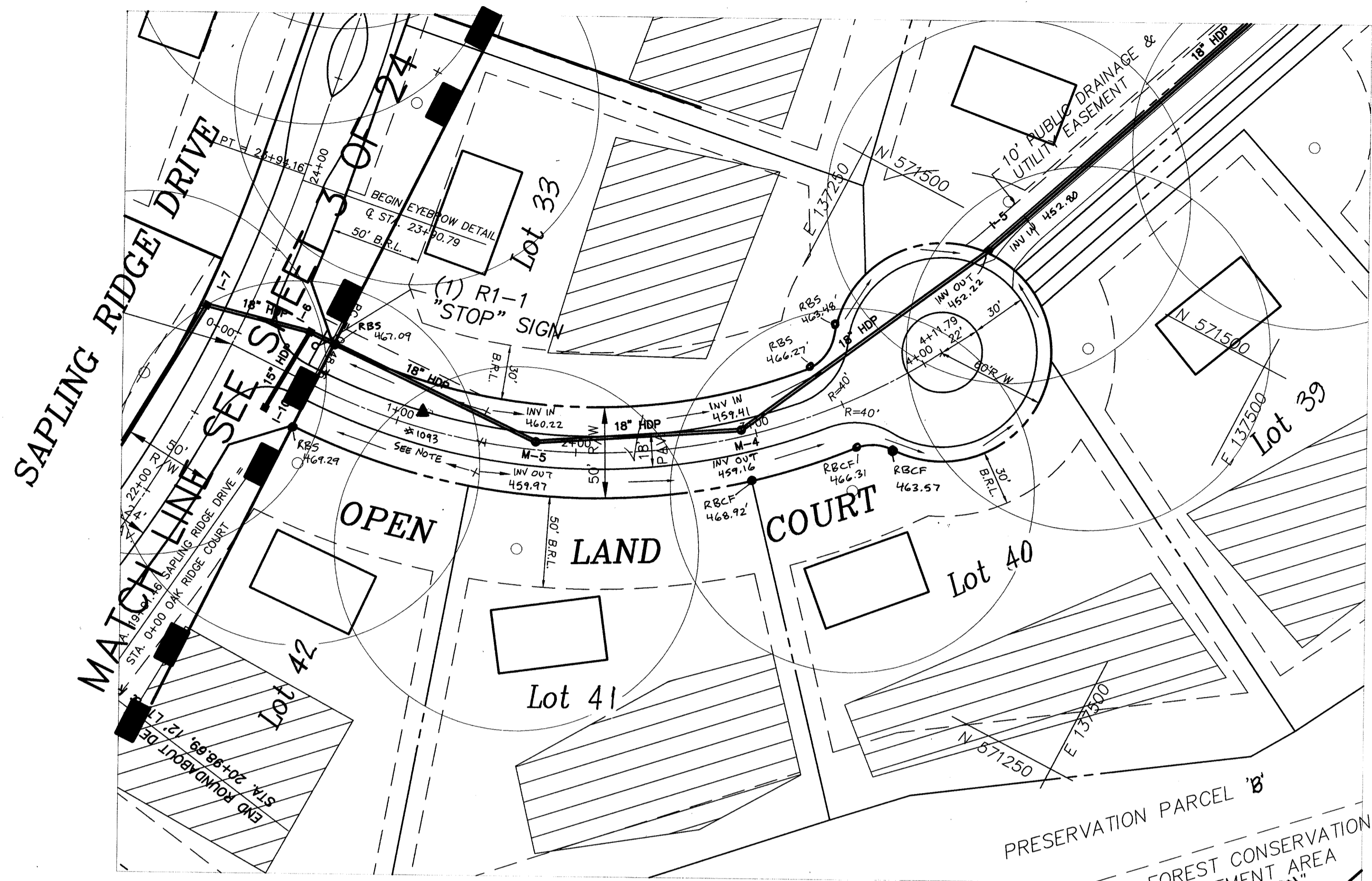
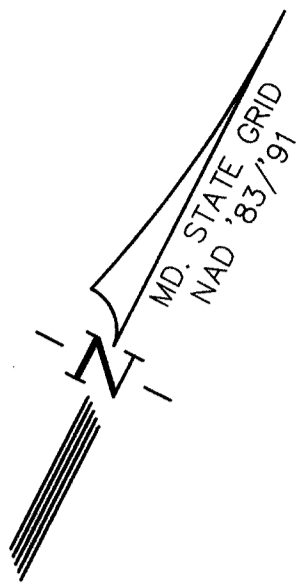
WP-99-103

| | | | |
|--------------|--------------|-------------|--------|
| project | 98019.13 | date | 05-98 |
| illustration | GEM / K.M.B. | engineering | M.W.Z. |
| scale | 1" = 10' | approval | R.M.M. |

| | | | | |
|-----|---|---|-----------|----------|
| no. | 4 | description | revisions | date |
| 1 | 2 | REVISED PER PLAT REVISIONS | | 07-12-98 |
| 2 | 2 | Submitted Original Mylars to Co. for Signature | | 05-24-98 |
| 3 | 2 | Revised Submittal to HO. SO. CON. DIST. FOR REVIEW | | 07-29-98 |
| 4 | 0 | AS-BUILT SUBMITTAL TO HO. SO. CON. DIST. FOR REVIEW | | 05-11-98 |

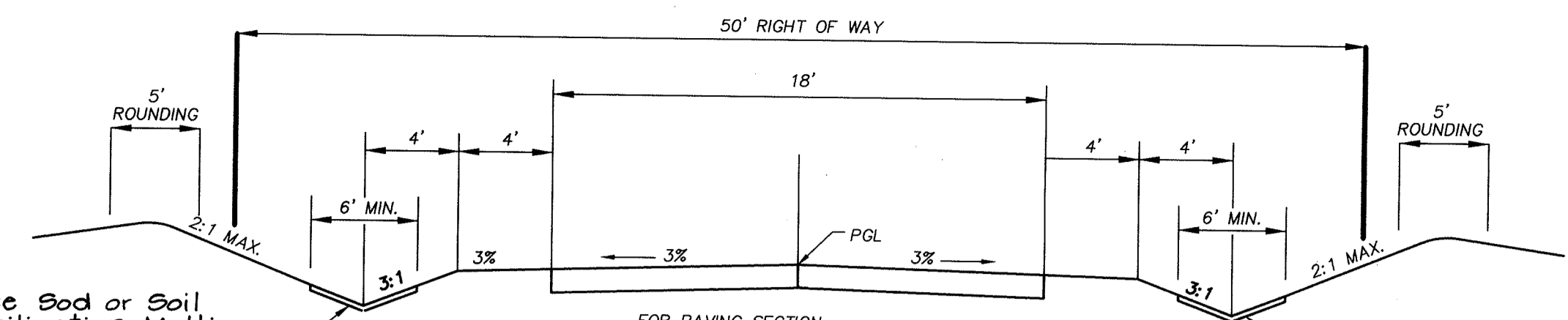
HOWARD COUNTY
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
Grading and Sediment Control Plan

R.M. MOCHI GROUP, INC.
P.O. Box 10
New Market, MD 21774-0010
(410) 865-8855
Fax: (410) 865-5311



PLAN
SCALE: 1" = 50'

Place Sod or Soil Stabilization Matting Over Seed and Mulch in Side Ditch to Elev. 1 Foot Above Ditch Invert.

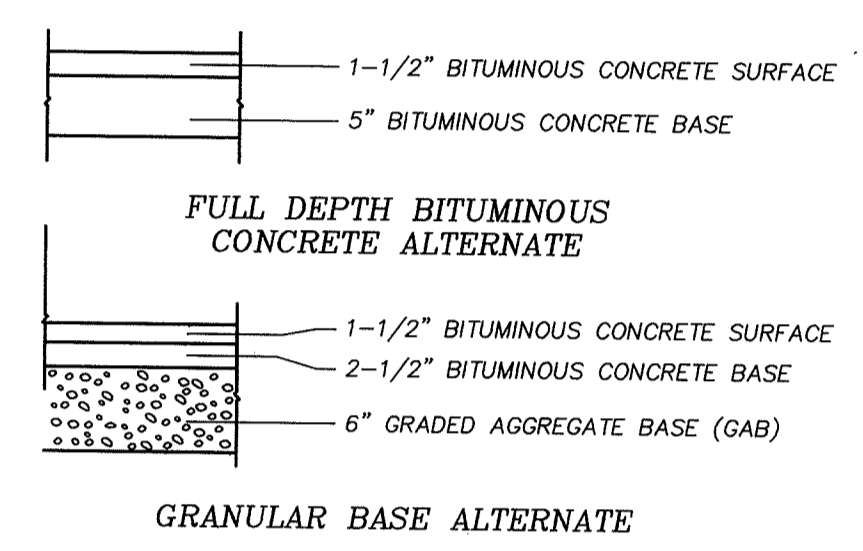


TYPICAL ROADWAY SECTION
NOT TO SCALE

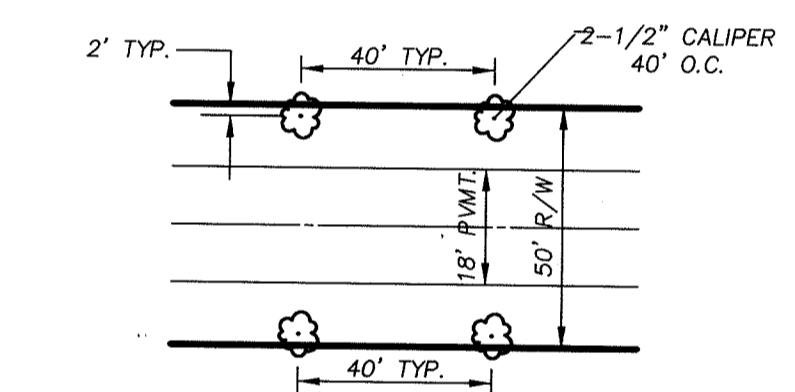
Place Sod or Soil Stabilization Matting Over Seed and Mulch in Side Ditch to Elev. 1 Foot Above Ditch Invert.

Curve Data
Sta. 0+48.36 to Sta. 4+11.79
Radius = 350.00'
Arc Length = 363.43'
Tangent = 200.02'
Delta = 59°29'37"
Chord = N 59°11'40" 347.32'

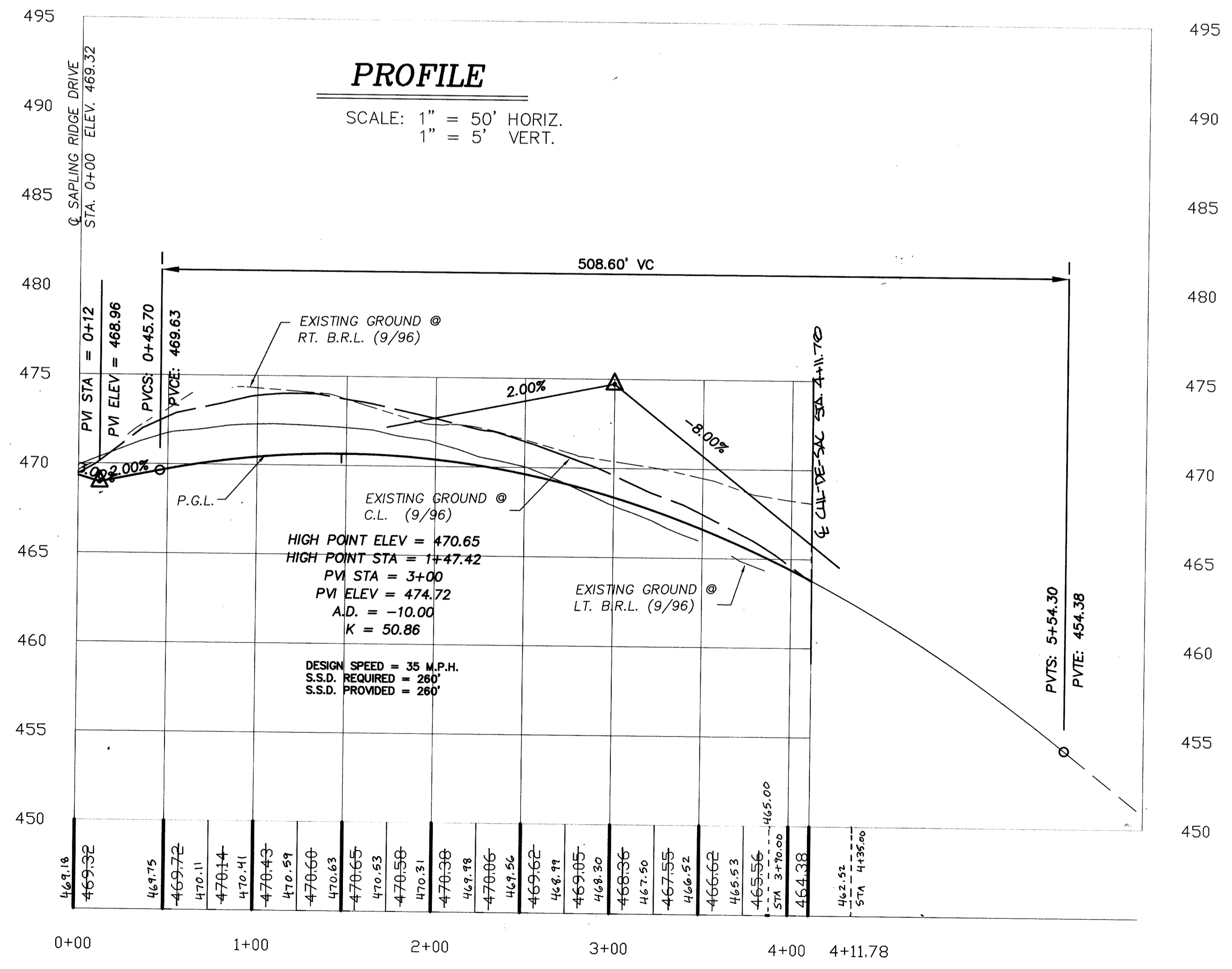
* NOTE
#1093 MAG NAIL
N: 571242.4095
E: 1307104.9531
ELEV: 470.23'



PAVING SECTION P-2
NOT TO SCALE



TREE PLANTING DETAIL
MEDIUM TREES - 2-1/2\"/>

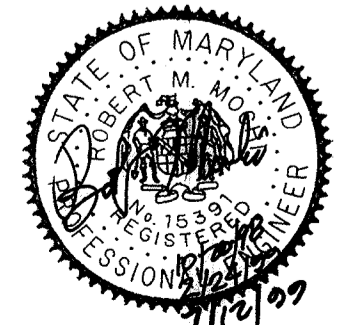


PROFILE
SCALE: 1" = 50' HORIZ.
1" = 5' VERT.

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 2/8/99
CHIEF, BUREAU OF HIGHWAYS

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Cindy Hamilton 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT

John Danner 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

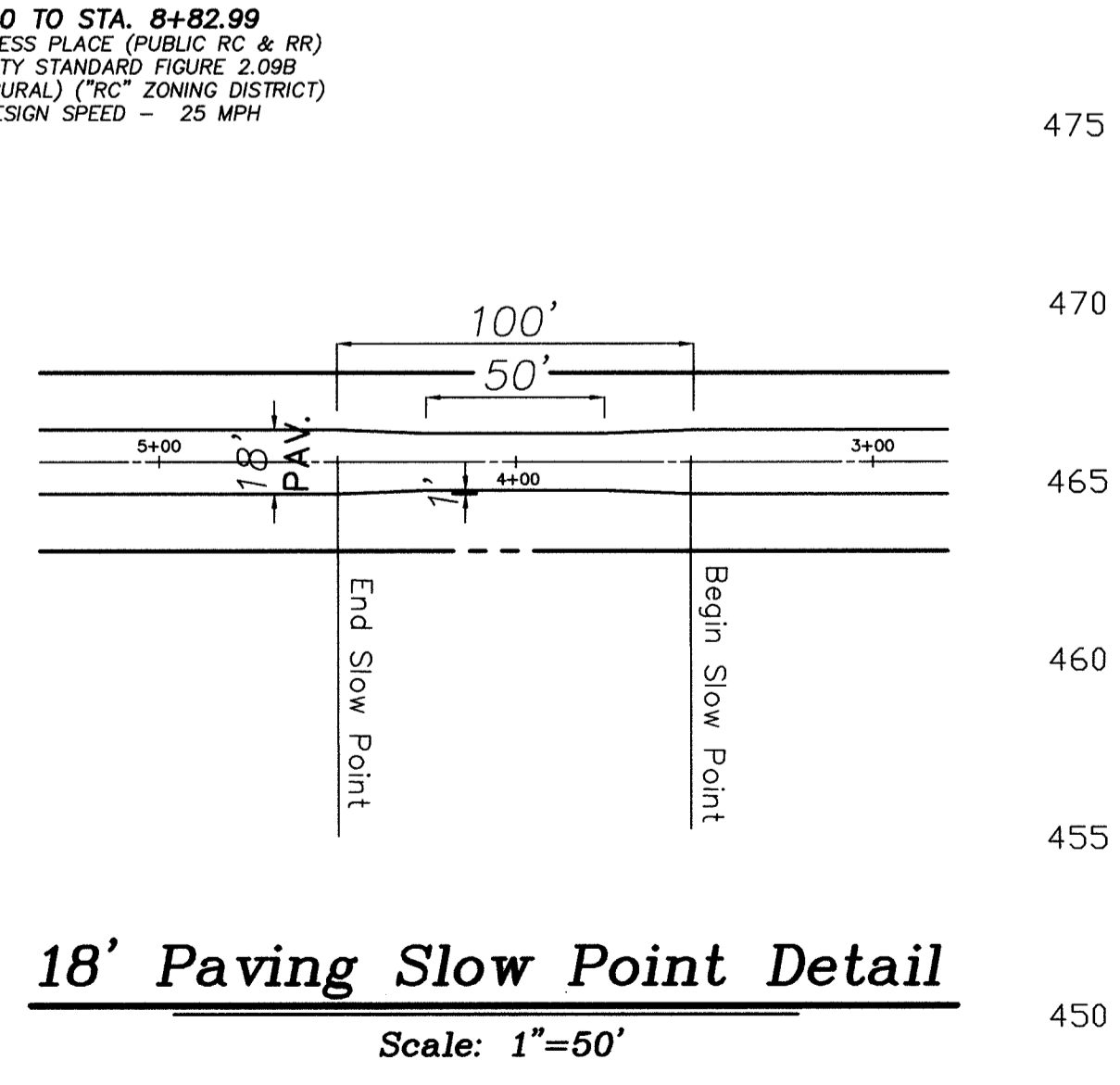
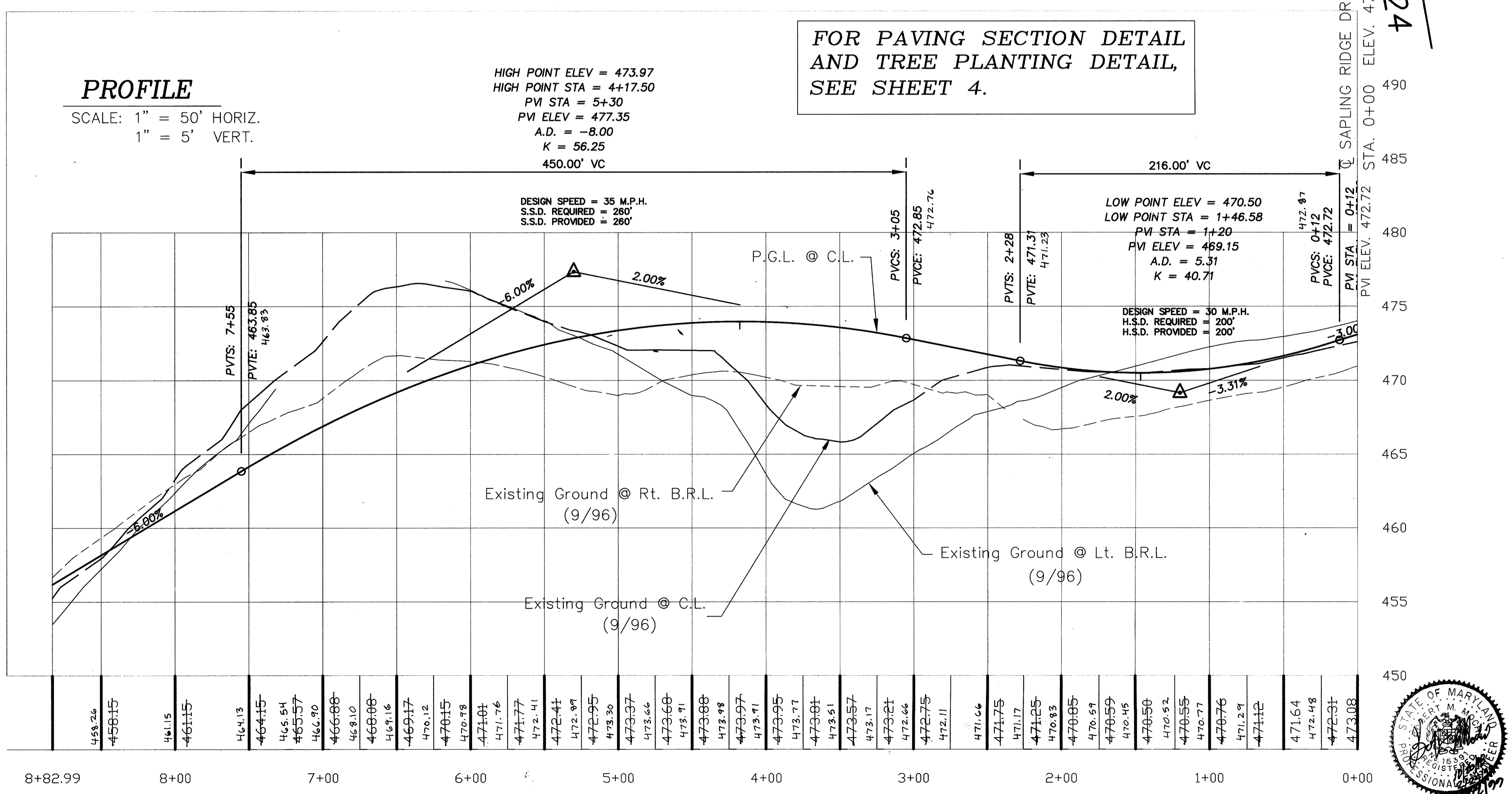
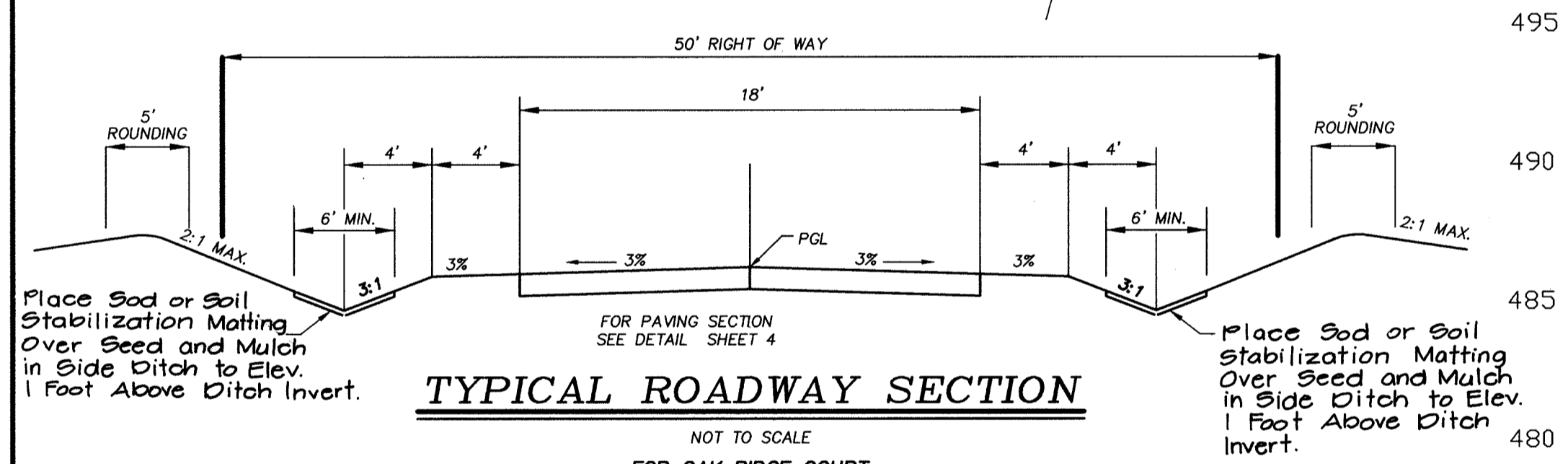
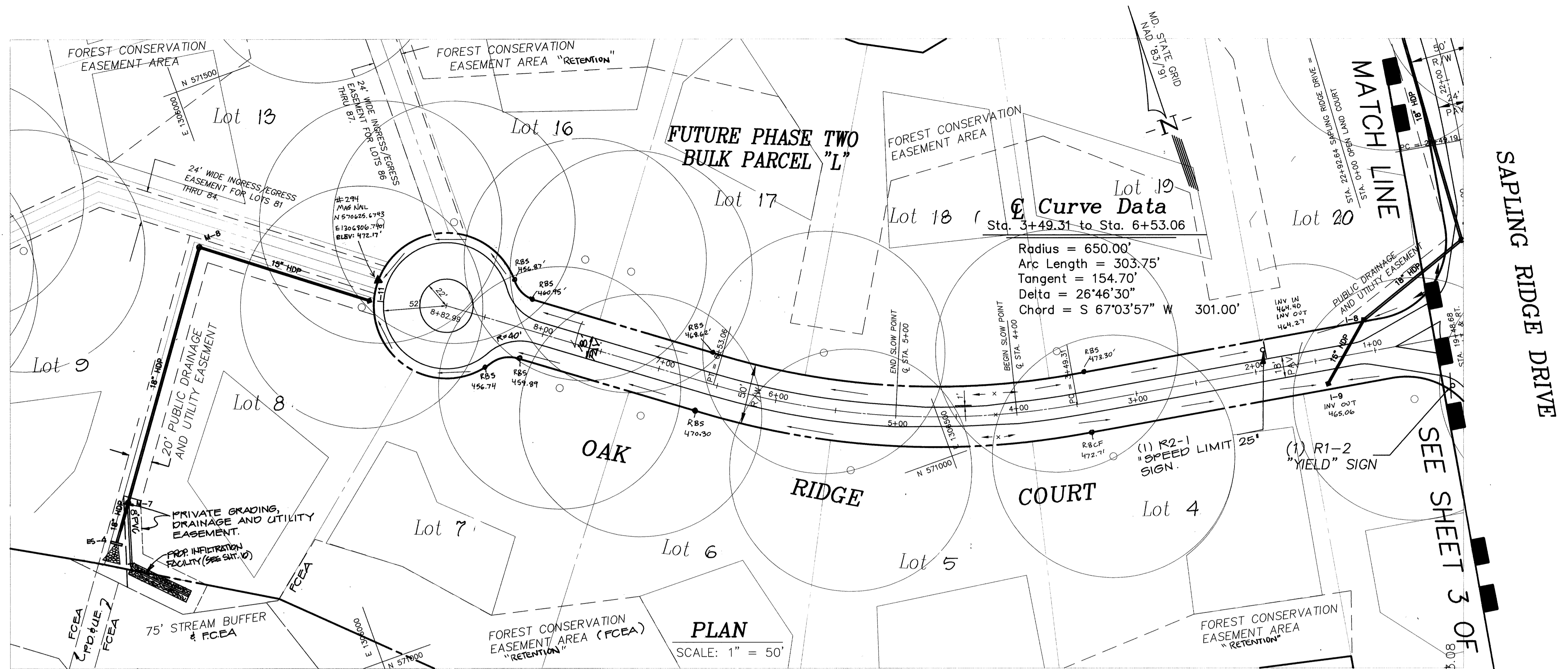


| | | | |
|--------------|----------|-------------|--------|
| Project | 98019-13 | Date | 04-98 |
| Illustration | K.M.B. | Engineering | M.W.Z. |
| Scale | AS SHOWN | Approval | R.M.M. |

| | | | |
|--|----------|-------------|--|
| Revised Per Plat | 07-12-99 | Date | |
| Submitted Original Mylar to Co for Signature | 02-24-99 | Date | |
| Reviewed Submittal to H.C. Dir. Z. | 01-99 | Date | |
| Reviewed to Howard Co. Dir. Z. for Review | 10-22-98 | Date | |
| 1st Submittal to H.C. Dir. Z. for Review | 08-98 | Date | |
| Revisions | | Description | |
| 4 | | | |
| 2 | | | |
| 0 | | | |
| 1 | | | |

HIGH FOREST ESTATES
HOWARD COUNTY, MD.
ELECTION DISTRICT NO. 5
OPEN LAND COURT PLAN AND PROFILE

R.M. MOCHI GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
10120 A Old National Pike
Jennings, MD 21784-5706
(301) 865-6689
(301) 865-3171



APPROVED:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3/28/99
 CHIEF, BUREAU OF HIGHWAYS
 DATE

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Chris Hamstra 3/28/99
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE

Mike Dammon 3/15/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE

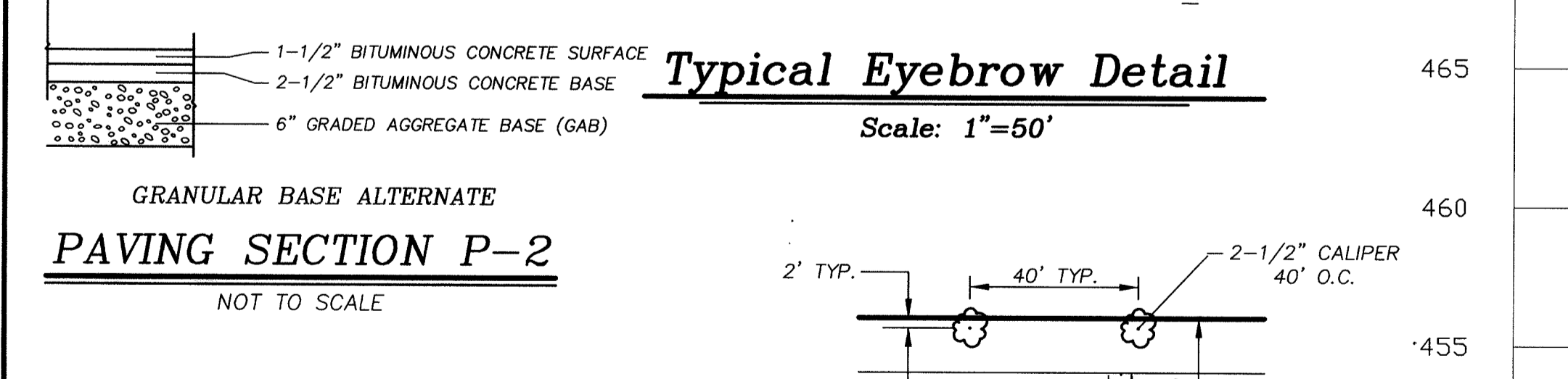
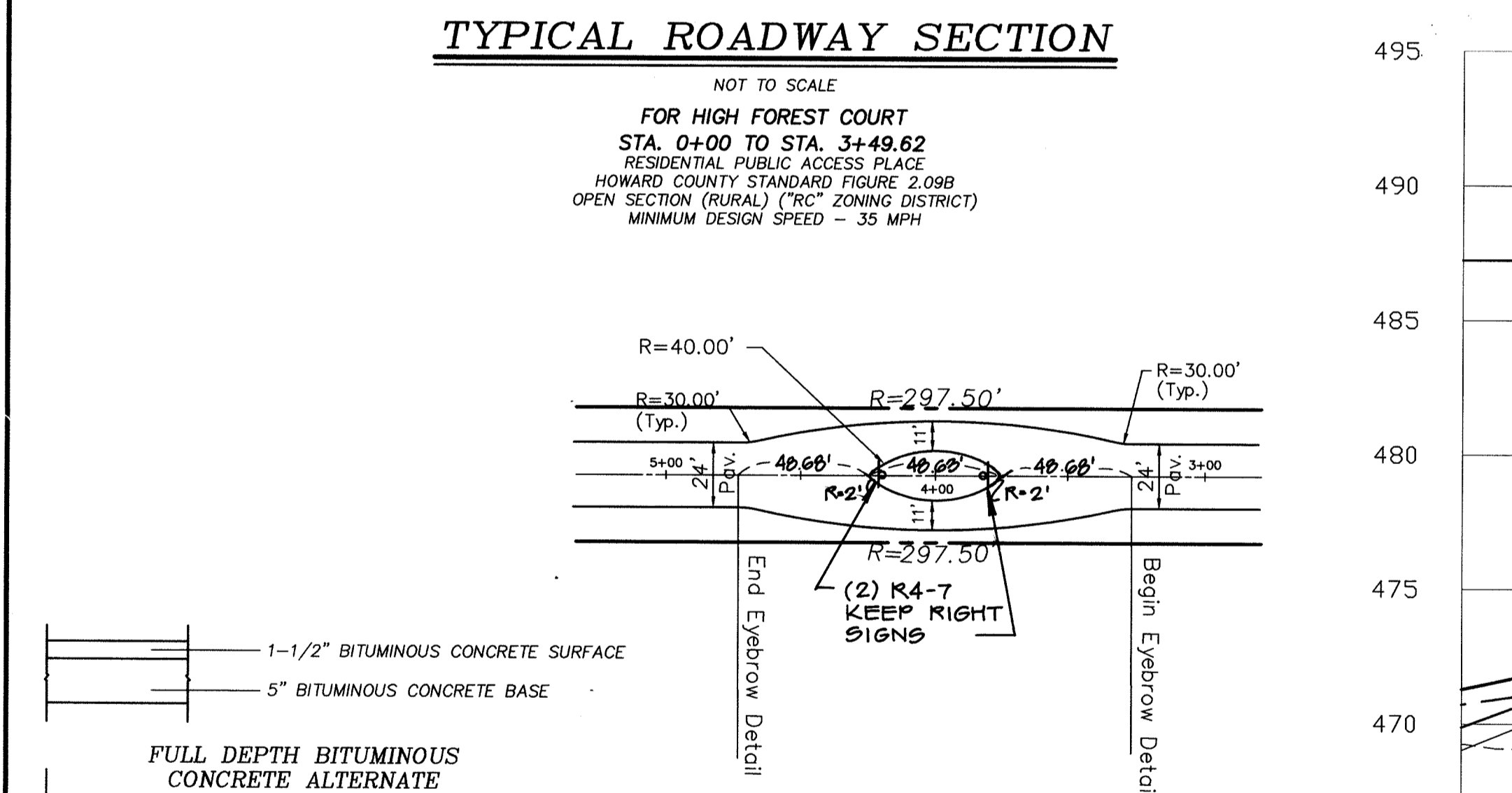
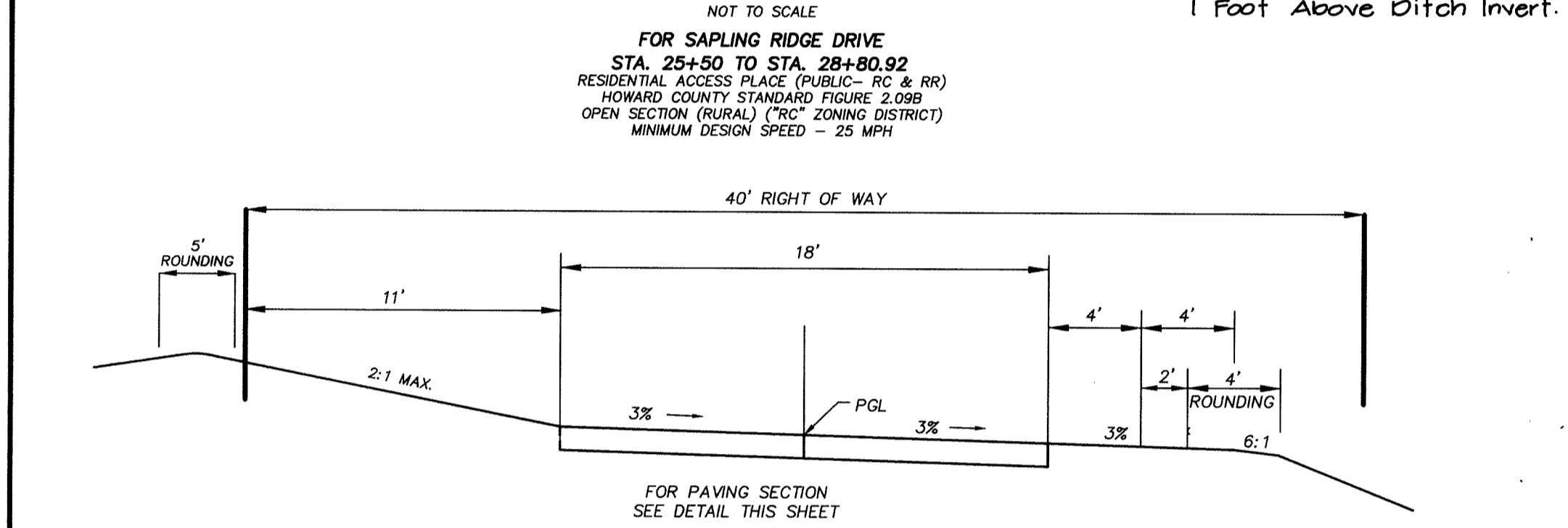
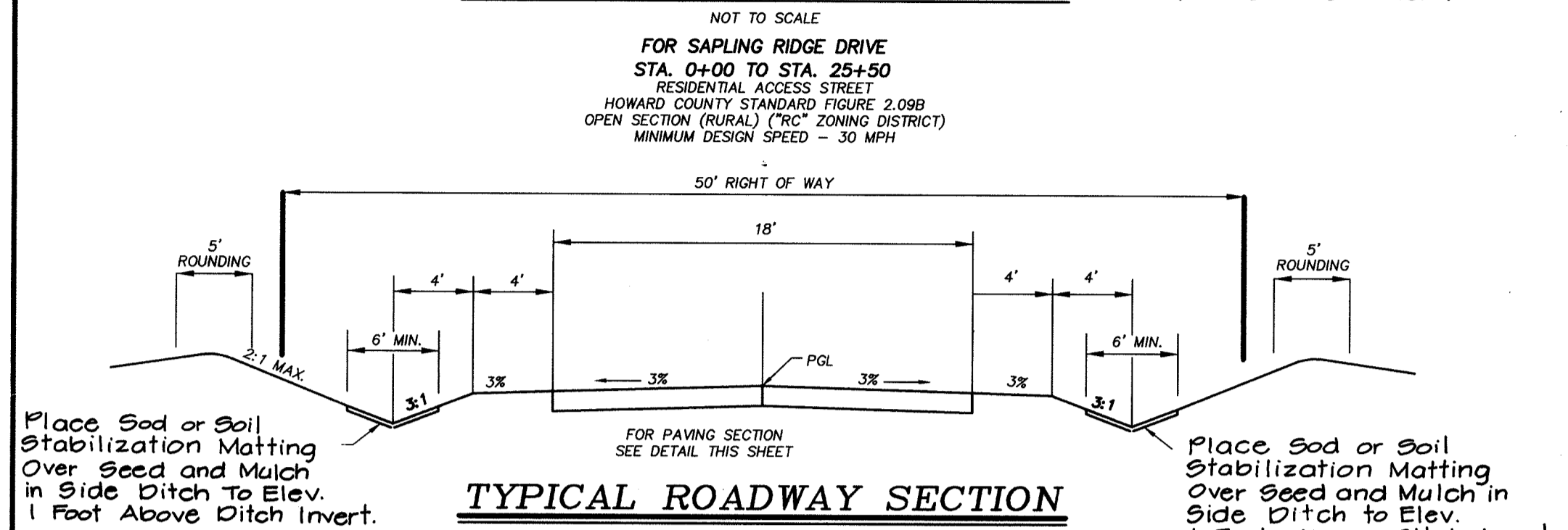
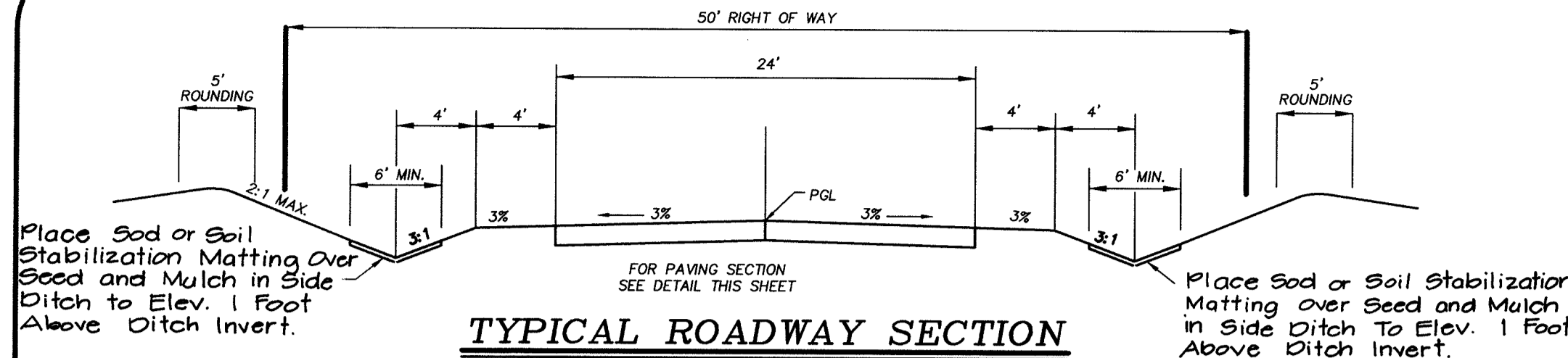


| | | | |
|--------------|----------|-------------|--------|
| project | 98019-13 | date | 04-98 |
| illustration | K.M.B. | engineering | M.W.Z. |
| scale | AS SHOWN | approval | R.M.M. |

| | | | |
|------|----------|-------------|-----------|
| date | 02-24-99 | description | REVISIONS |
| date | 01-29-99 | description | REVISIONS |
| date | 06-26-98 | description | REVISIONS |
| date | 06-26-98 | description | REVISIONS |

High Forest Estates
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MD.
 OAK RIDGE DRIVE PLAN AND PROFILE

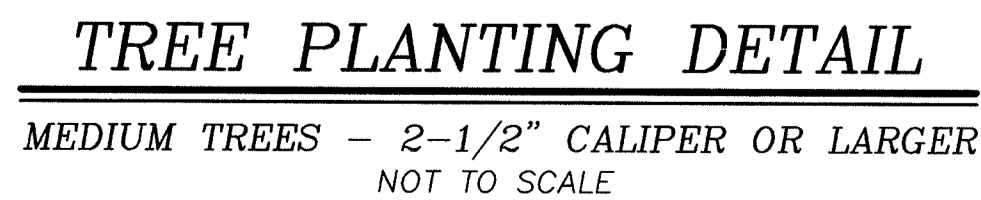
R.M. MOCHI GROUP, INC.
 P.O. Box 10
 New Market, MD 21774-0010
 10120 A Old National Pike
 (jennings), MD 21754-9706
 (301) 885-8888
 Fax: (301) 885-5111



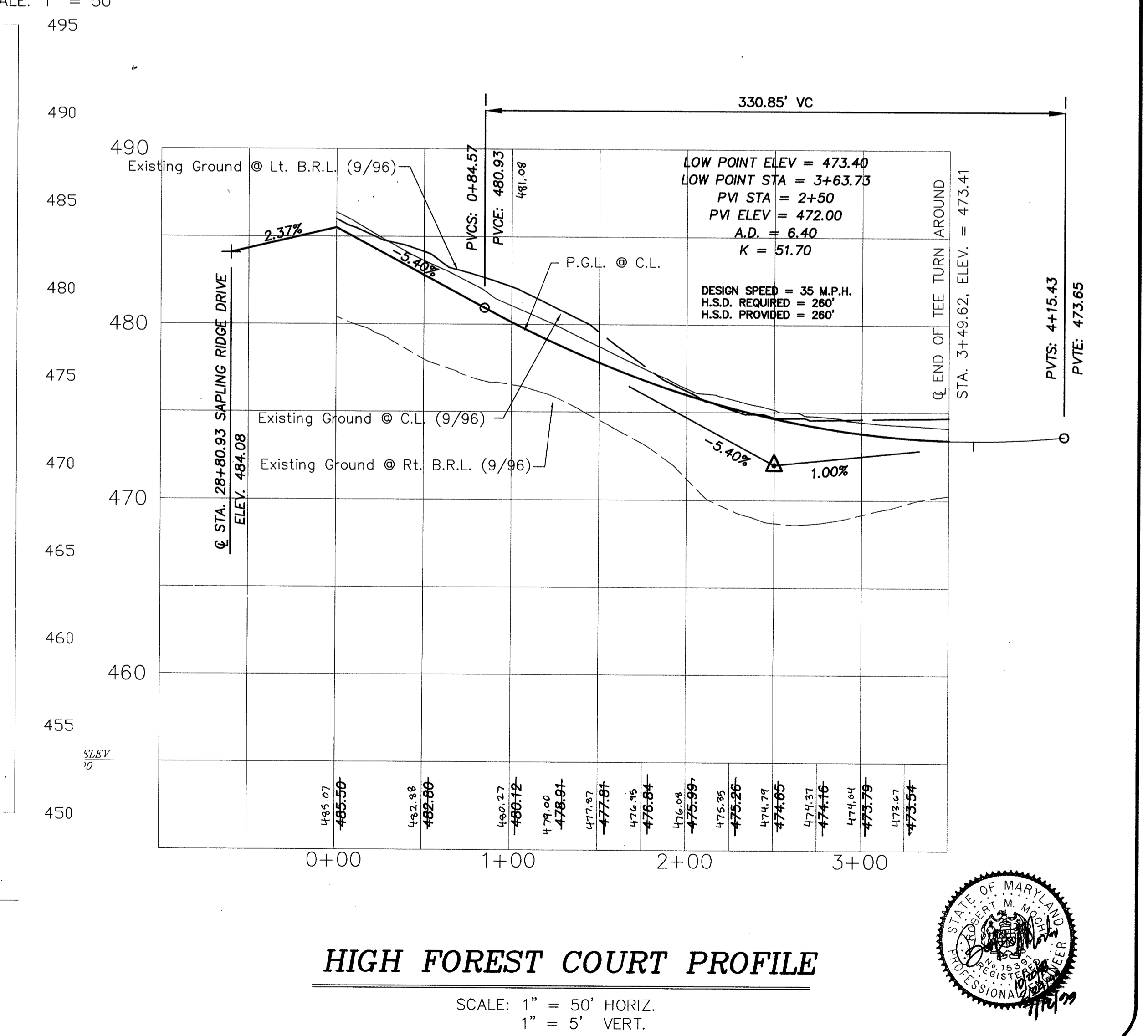
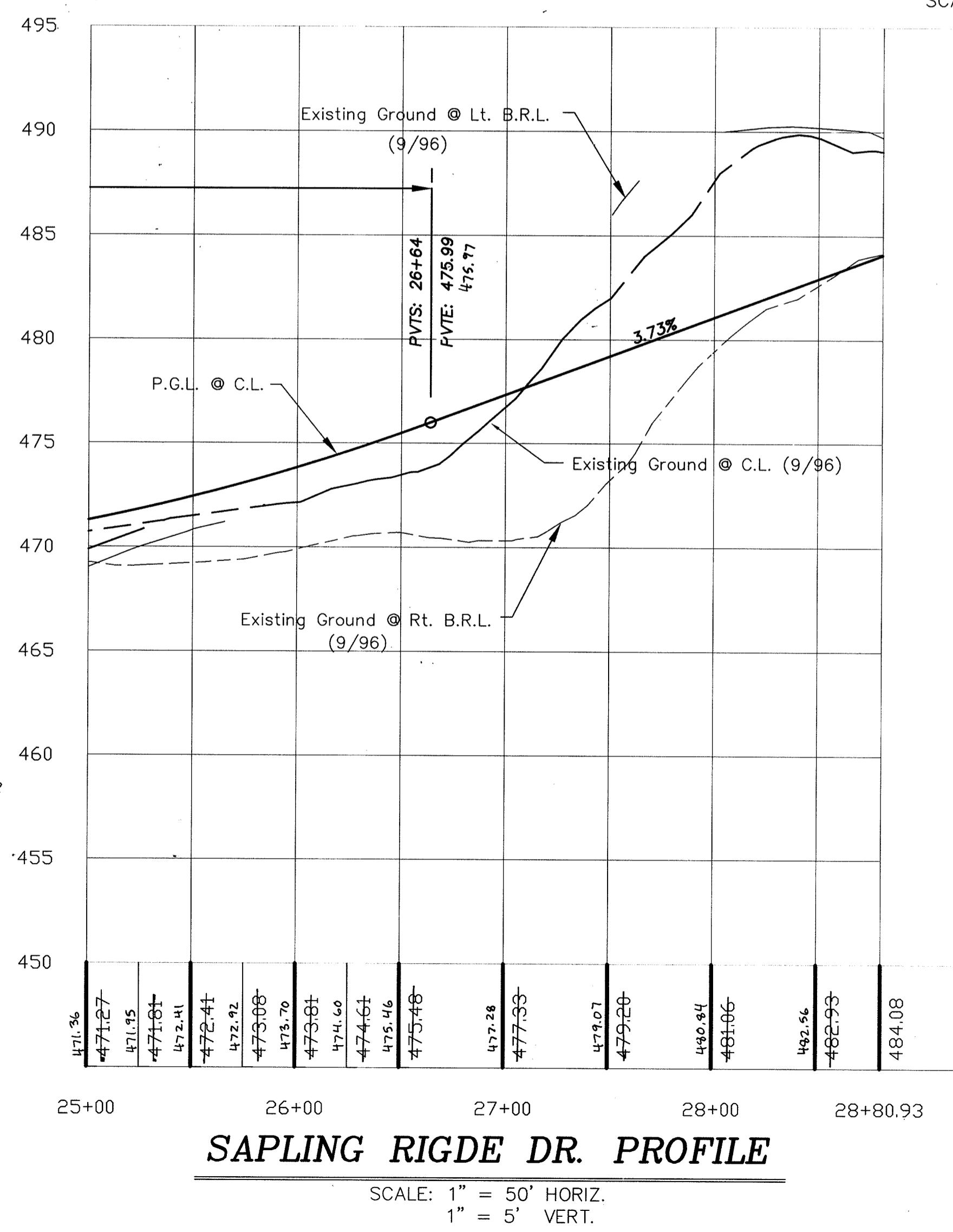
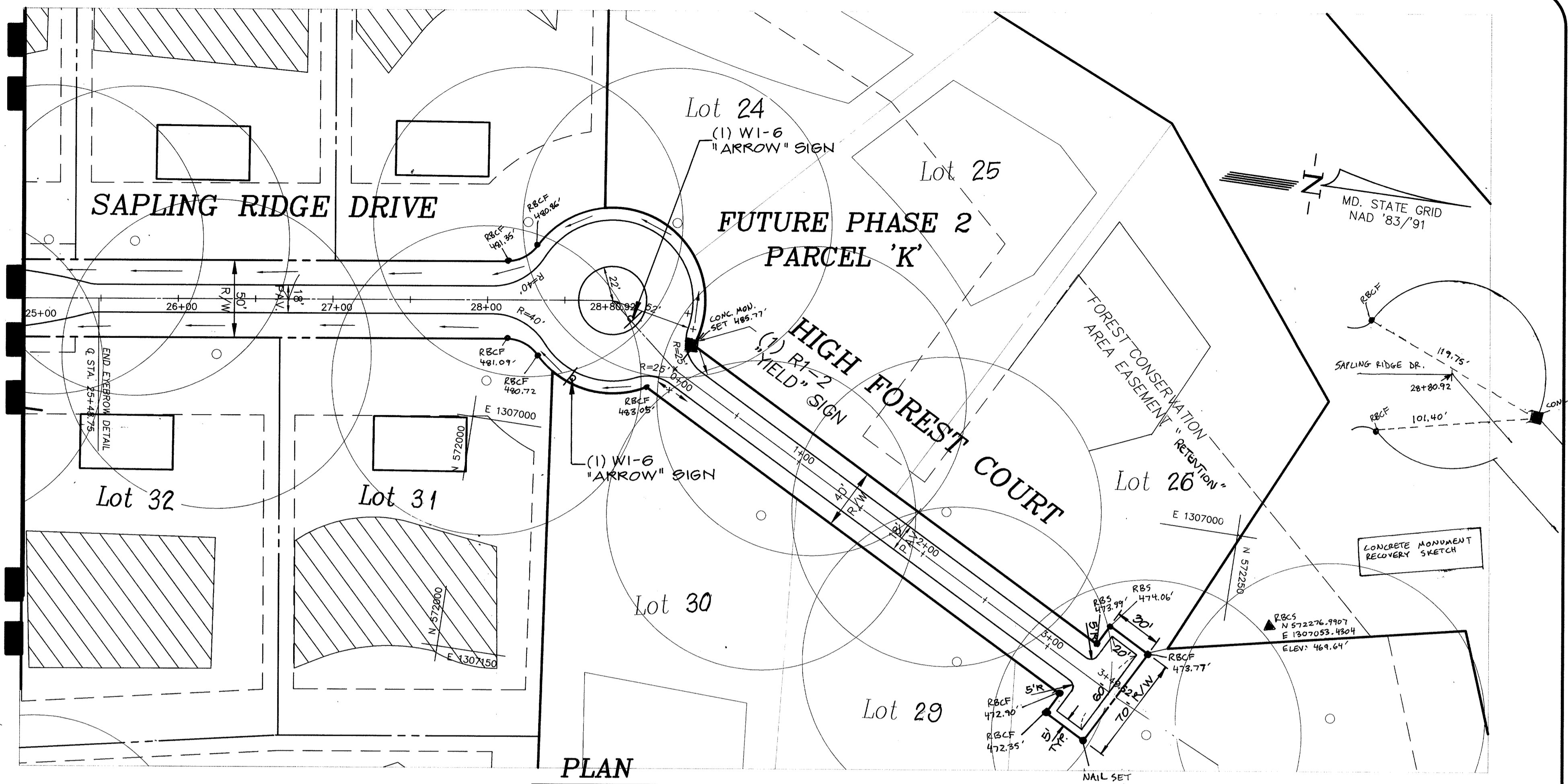
APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3/4/99
CHIEF, BUREAU OF HIGHWAYS
DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Andy Hamilton 3/25/99
CHIEF, DIVISION OF LAND DEVELOPMENT
DATE

William J. ... 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE



MATCH LINE SEE SHEET 3 OF 24



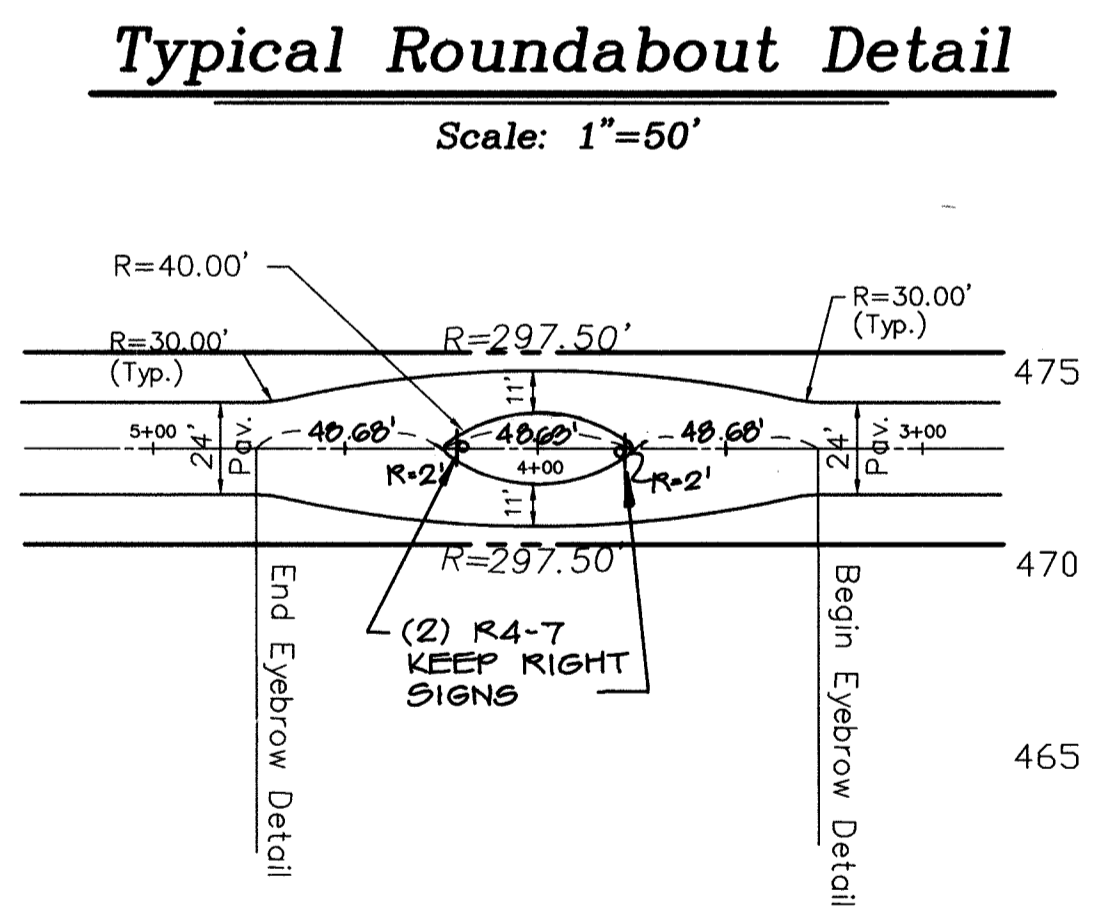
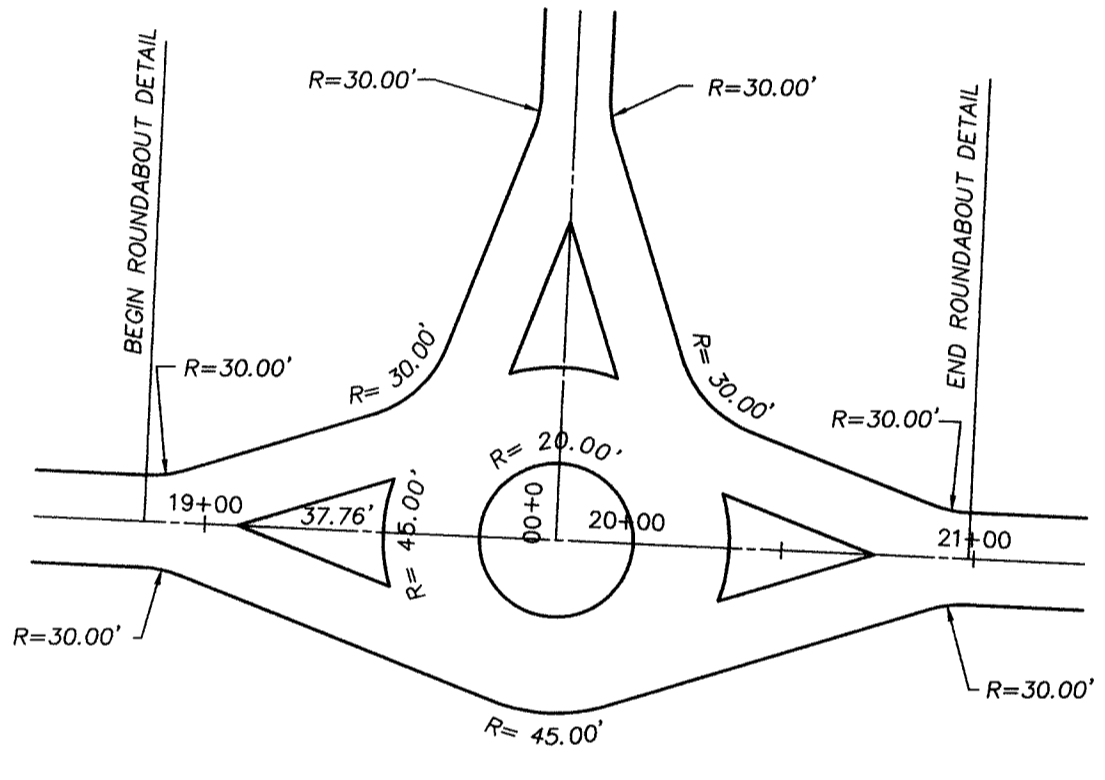
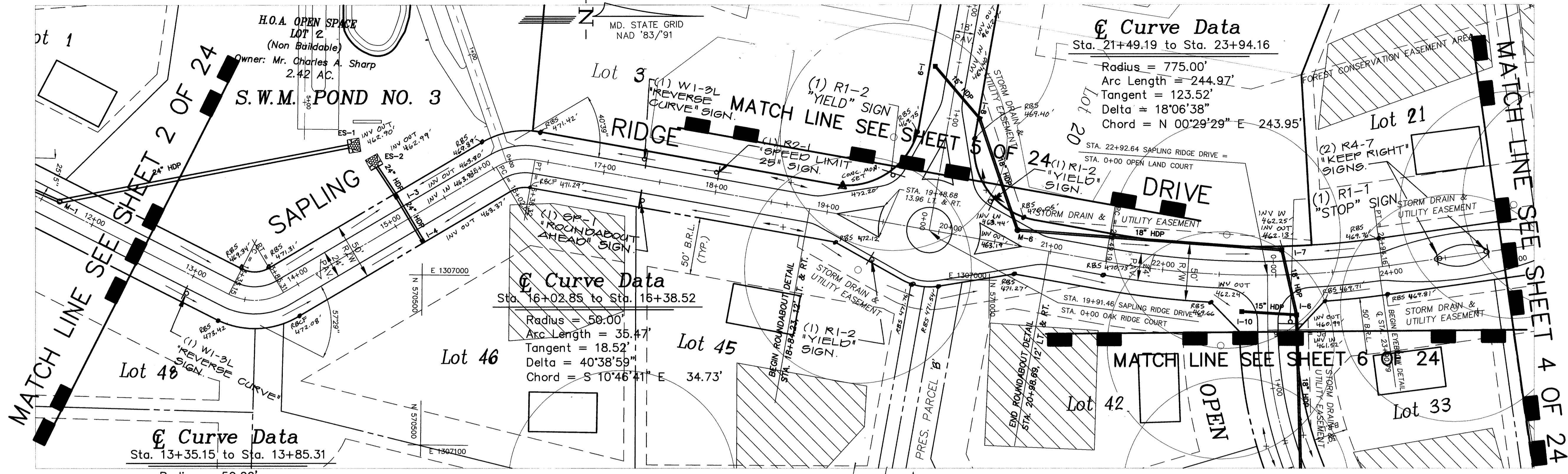
HIGH FOREST ESTATES
ELECTION DISTRICT NO. 5
SAPLING RIDGE DR., HIGH FOREST CT. PLAN AND PROFILE
HOWARD COUNTY, MD.

PROJECT: 96019-13
DATE: 04-98
ILLUSTRATION: K.M.B.
SCALE: AS SHOWN
APPROVAL: R.M.M.

REVISIONS:
1. 07-12-99: REVISED PER PLAT REVISIONS
2. 02-24-99: Submitted Original Mylars to Co. for Signature
3. 01-22-98: REVISED SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW
4. 10-22-98: 1ST SUBMITTAL TO HO. CO. DPZ FOR REVIEW

R.M. MOCHI GROUP, P.C.
P.O. Box 10
New Market, MD 21774-0010
10120 A Old National Pike
Jomerville, MD 21784-9706
(301) 865-3868
Fax: (301) 865-5111

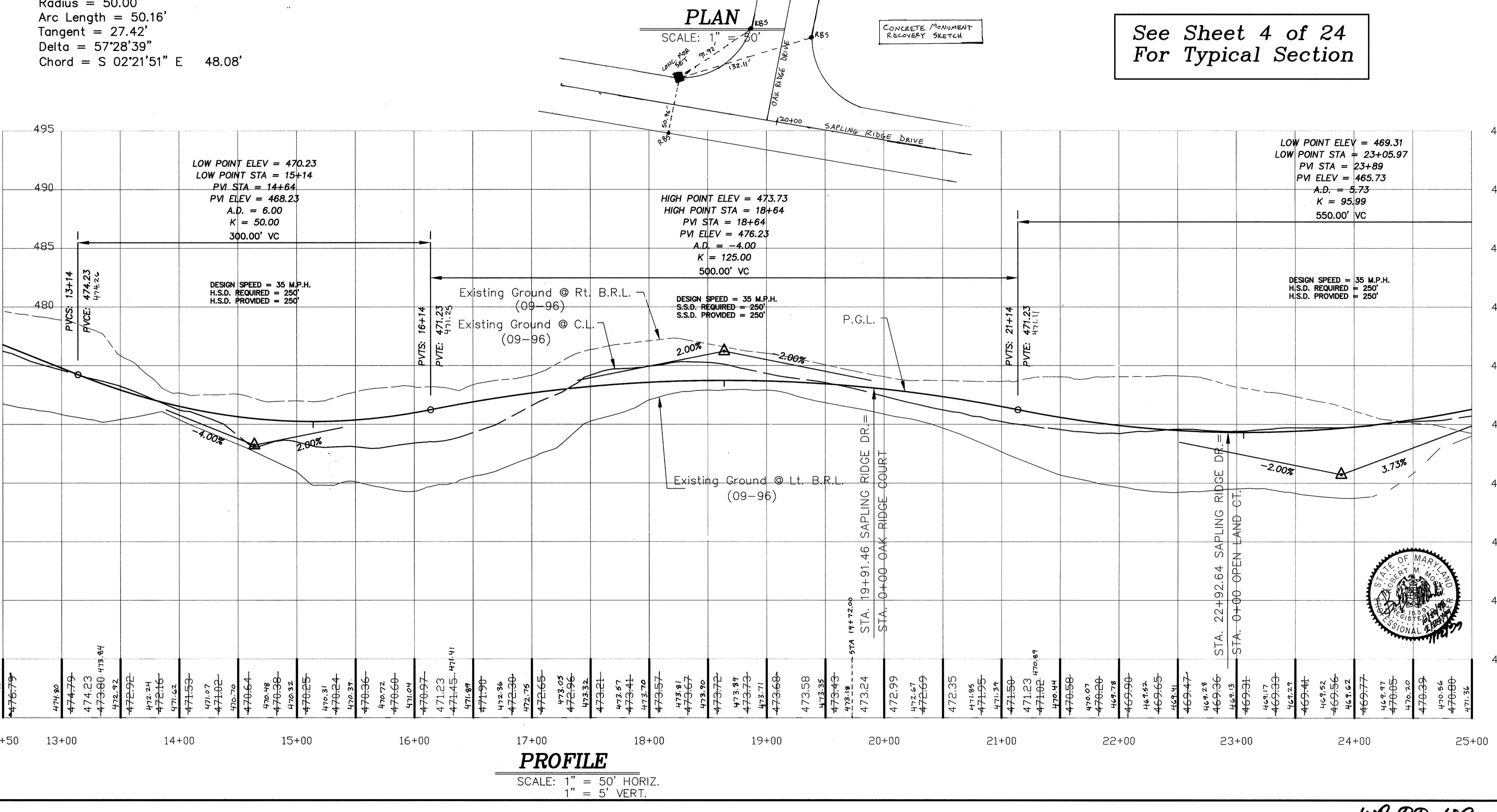
4 OF 24



APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daulton 3-8-99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Amy Hamilton 3/8/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chris Deussen 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



See Sheet 4 of 24
For Typical Section



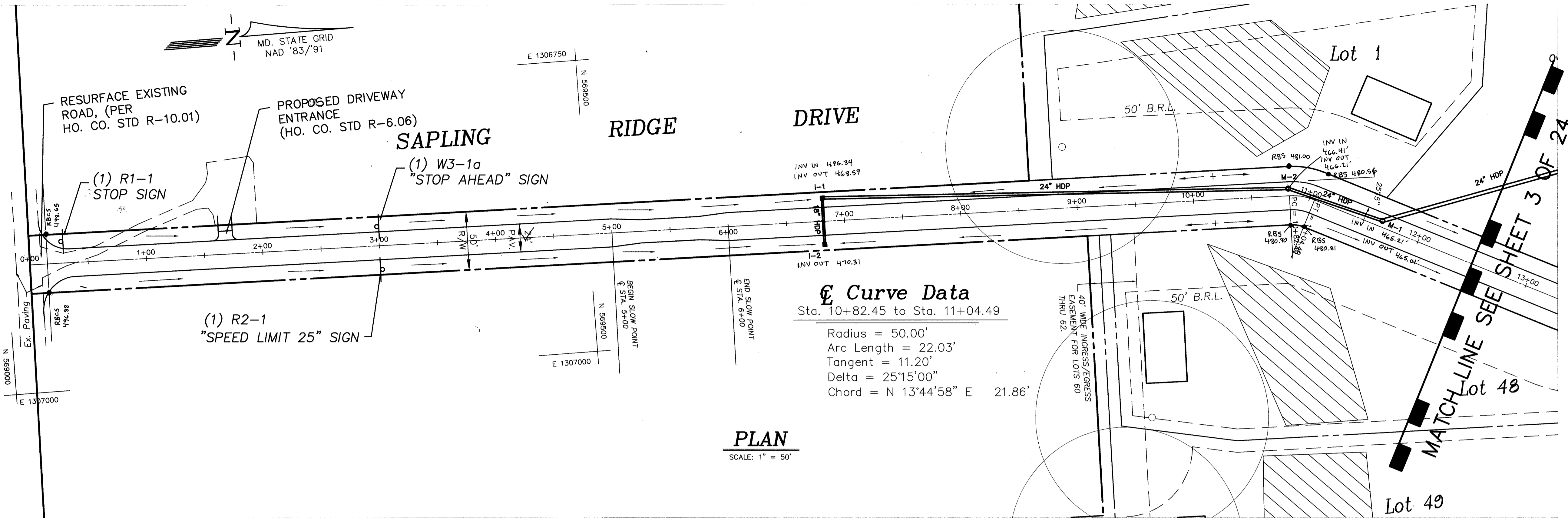
| | | | |
|--------------|----------|-------------|--------|
| project | 88019-13 | date | 04-98 |
| illustration | K.M.B. | engineering | M.W.Z. |
| scale | AS SHOWN | approval | R.M.M. |

| | | | | |
|-----|---|---|-----------|----------|
| NO. | 0 | description | revisions | date |
| 1 | 1 | REVISED PER PLAT REVISIONS | | 07-12-99 |
| 2 | 1 | SUBMITTED ORIGINAL MYLERS TO Co. for Signature | | 01-24-99 |
| 3 | 1 | REVISED SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW | | 10-22-98 |
| 4 | 1 | 1ST SUBMITTAL TO HOW. CO. D.P.Z. FOR REVIEW | | 01-22-98 |

HOWARD COUNTY, MD.
ELECTION DISTRICT NO. 5
HIGH FOREST ESTATES
SAPLING RIDGE DRIVE PLAN AND PROFILE

R.M. MOCHI GROUP, P.C.
10109 A. Rd. Beltsville, Md.
Johanna, MD 21784-9706
(301) 865-6588
Fax: (301) 865-3171

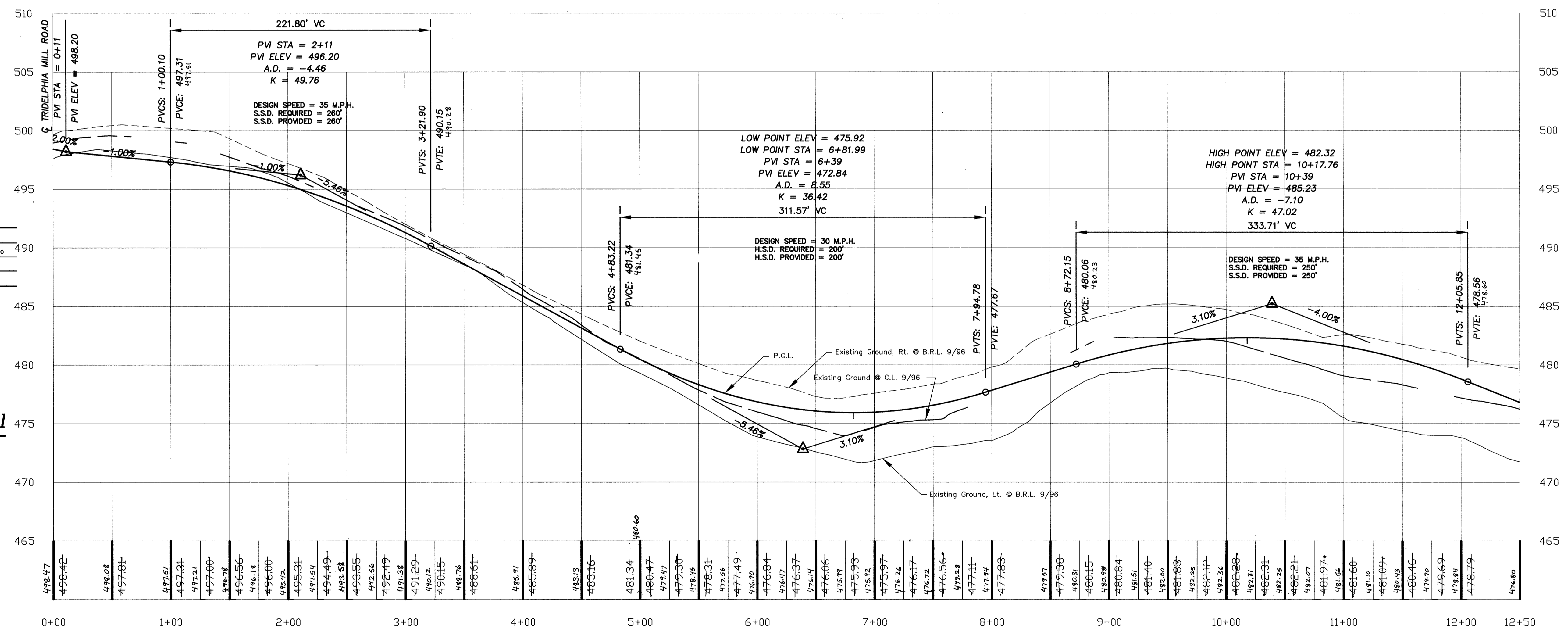
TRIADELPHIA MILL ROAD



Curve Data
 Sta. 10+82.45 to Sta. 11+04.49
 Radius = 50.00'
 Arc Length = 22.03'
 Tangent = 11.20"
 Delta = 25°15'00"
 Chord = N 13°44'58" E 21.86'

PLAN
 SCALE: 1" = 50'

See Sheet 4 of 24
 For Typical Section



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

Typical Slow Point Detail
 Scale: 1" = 50'

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 3-9-99
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Andy Hamilton 3/25/99
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Mr. [Signature] 3/25/99
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



| | | | | | |
|---------|----------|--------------|--------|----------|----------|
| date | 04-98 | engineering | M.W.Z. | approval | R.M.M. |
| project | 98019-13 | illustration | K.M.B. | scale | AS SHOWN |

| | | | | |
|-----|---|---------|----------|---------------------|
| no. | 4 | REVISOR | DATE | DESCRIPTION |
| 1 | 1 | REVISOR | 02-24-99 | REVISOR'S SIGNATURE |
| 2 | 1 | REVISOR | 01-19-99 | REVISOR'S SIGNATURE |
| 3 | 1 | REVISOR | 10-22-98 | REVISOR'S SIGNATURE |
| 4 | 1 | REVISOR | 08-08-98 | REVISOR'S SIGNATURE |

HIGH FOREST ESTATES
 ELECTION DISTRICT NO. 5
 HOWARD COUNTY, MD.
SAPLING RIDGE DRIVE PLAN AND PROFILE

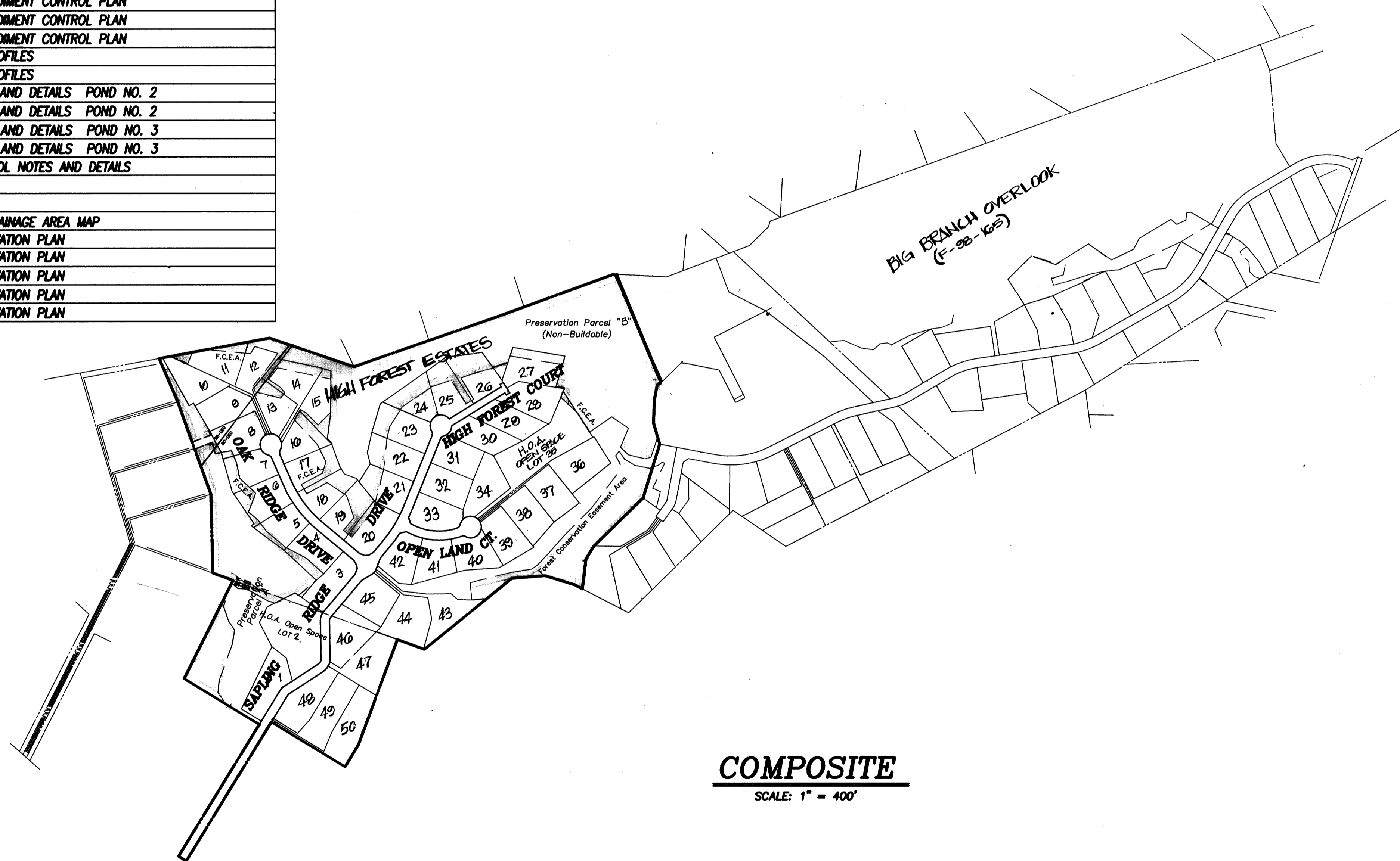
R.M. MOCHI GROUP, P.C.
 P.O. Box 10
 New Market, MD 21774-0010
 (301) 965-5659
 Fax: (301) 965-5111

ROADS, STORM DRAIN, AND GRADING HIGH FOREST ESTATES

Election District No.5 Howard County, MD

INDEX OF SHEETS:

1. COVER SHEET
2. SApLING RIDGE DRIVE PLAN AND PROFILE
3. SApLING RIDGE DRIVE PLAN AND PROFILE
4. SApLING RIDGE DR. & HIGH FOREST CT. PLAN AND PROFILE
5. OAK RIDGE DRIVE PLAN AND PROFILE
6. OPEN LAND COURT PLAN AND PROFILE
7. GRADING AND SEDIMENT CONTROL PLAN
8. GRADING AND SEDIMENT CONTROL PLAN
9. GRADING AND SEDIMENT CONTROL PLAN
10. STORM DRAIN PROFILES
11. STORM DRAIN PROFILES
12. S.W.M. PROFILES AND DETAILS POND NO. 2
13. S.W.M. PROFILES AND DETAILS POND NO. 2
14. S.W.M. PROFILES AND DETAILS POND NO. 3
15. S.W.M. PROFILES AND DETAILS POND NO. 3
16. SEDIMENT CONTROL NOTES AND DETAILS
17. LANDSCAPE PLAN
18. LANDSCAPE PLAN
19. STORM DRAIN DRAINAGE AREA MAP
20. FOREST CONSERVATION PLAN
21. FOREST CONSERVATION PLAN
22. FOREST CONSERVATION PLAN
23. FOREST CONSERVATION PLAN
24. FOREST CONSERVATION PLAN



COMPOSITE

SCALE: 1" = 400'

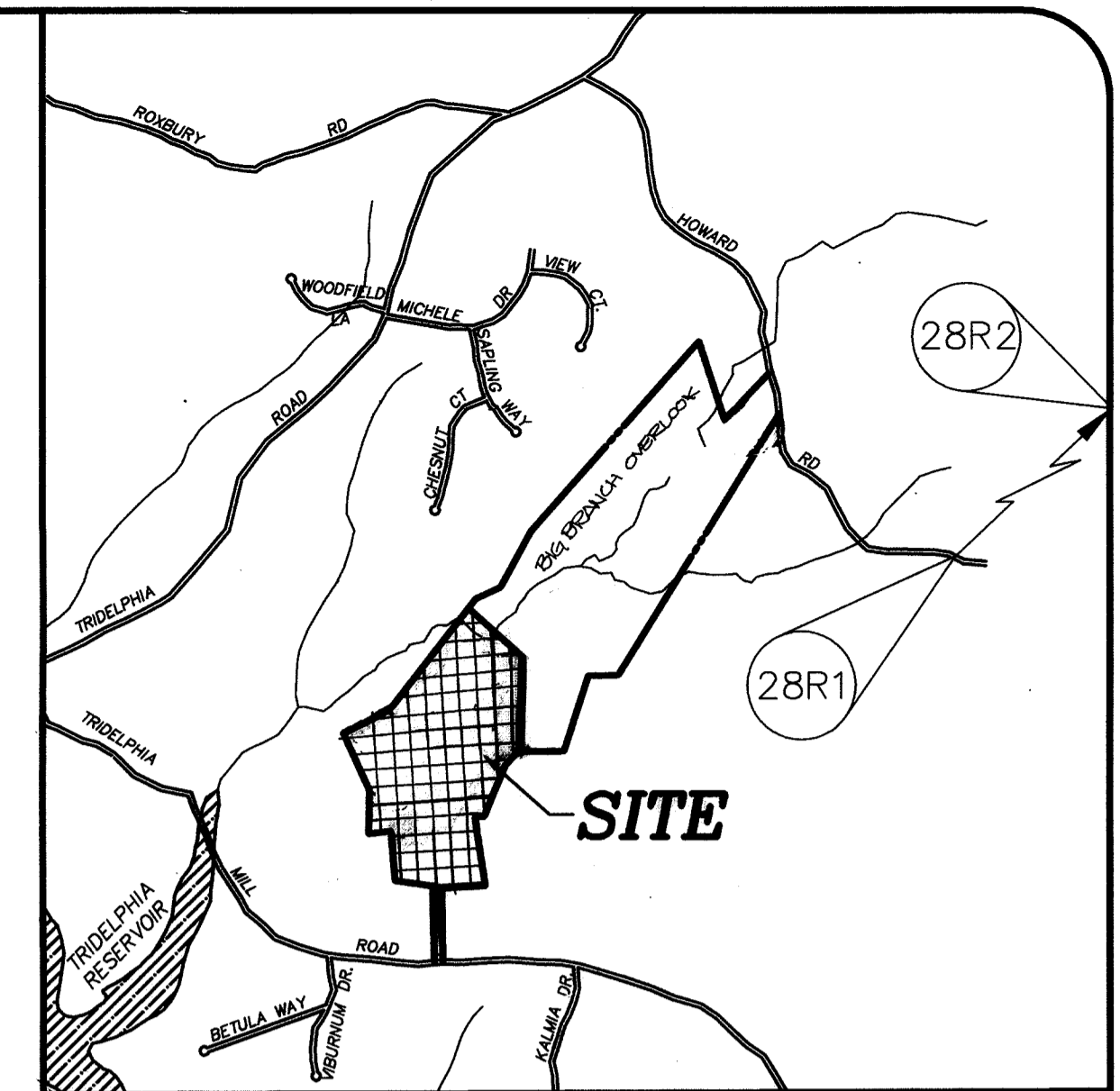
AS-BUILT CERTIFICATION

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

Michael L. Thomas #23446
SIGNATURE

4/29/05
DATE

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



VICINITY MAP

SCALE: 1" = 2000'

GENERAL NOTES:

1. All construction shall be in accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
 2. The contractor shall notify the Department of Public Works/Bureau of Engineering/Construction Inspection Division at (410) 313-1880 at least five (5) working days prior to the start of work.
 3. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least 48 hours prior to any excavation work being done.
 4. Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to the placement of any asphalt.
 5. The existing topography is taken from aerial survey with two foot contour intervals prepared by Wings Mapping Co., dated 12/95.
 6. The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monument Nos. 28R1 and 28R2 were used for this project.
 7. Water is private.
 8. Sewer is private.
 9. Stormwater management control will be provided on site, on either open space or preservation parcels. Ponds shall be maintained by Howard County.
 10. Existing utilities are based on Howard County contract drawings.
 11. The floodplain study for this project was prepared by R.M. Mochi Group, P.C., dated October, 1997, and was approved on November 13, 1997.
 12. The wetlands delineation study for this project was prepared by American Land Concepts dated May, 1997 and was approved on September 16, 1997.
 13. The traffic study for this project was prepared by Lee Cunningham and Associates, Inc. dated May, 1997 and was approved on September 16, 1997.
 14. Project Background information:
 - a. Zoning: RC-DEO and RR-DEO
 - b. Gross Area of Tract: 102.0 AC. (22.7 Ac.-RR, 79.3 Ac.- RC.)
 - c. Net Area of Tract: 91.72 AC.
 - d. Area of Proposed Lots/Parcels: 10: 55.11 AC.; Parcel 1: 30.08, open space = 5.1 AC.
 - e. Area of Proposed R/W: 5.77 AC.
 - f. Number of Proposed Lots: 48 Buildable Lots, 1 Build. Pres. Parcel, 2 Open Space Lots, 1 Non-Build. Pres. Parcels
 - e. Open Space Required: 5.1 AC.
 - Open Space Provided: 5.1 AC.
15. Waiver request for use of draft road design standards and cul-de-sac length approval 7/10/97.
 16. Unless otherwise noted all B.R.L.'s shown are standard for RC zoning district.
 17. Coordinates are based on NAD '83/91 Maryland Coordinate System as projected by Howard County Geodetic Control Stations Nos. 28R1 & 28R2.
(Meters X 3.280833333 = Feet; Feet X 0.3048006096 = Meters)
No. 28R1 N 573,574.1517 No. 28R2 N 573,637.5879
E 1,313,221.1140 E 1,314,445.6788
Elev. 547.85 Elev. 606.27
 18. The Contractor shall contact the Construction Inspection Division 24 hours prior to commencement of any work at 410-313-1880.
 19. The proposed infiltration facility shall be owned and privately maintained by the Homeowner's Association.



HIGH FOREST ESTATES

Election District No.5 Howard County, MD
Tax Map 27, Grid 6, Parcels 96,140, & 142

Previous Files: S-97-21, P-98-14, WP-98-70, BA: 399-D, BA: 413-D

APPROVED:
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Andrew M. Daneker 3-8-99
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED:
HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Cindy Hamilton 3/5/99
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Robert M. Mochi 3/15/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

OWNER/DEVELOPER

SAPLING RIDGE, LLC.
2779 SHARP ROAD
GLENWOOD, MD 21728
(410) 462-4020

ATTN: MR. CHARLES A. SHARP, PRESIDING MEMBER

ENGINEER/SURVEYOR

R.M. MOCHI GROUP, P.C.
P.O. BOX 10
NEW MARKET, MD 21774
(301) 865-5658
ATTN: MR. ROBERT M. MOCHI, P.E.

| | | | |
|--------------|-----------|-------------|----------|
| project | 98019.13 | date | 04-17-98 |
| illustration | K.M.B. | engineering | M.W.Z. |
| scale | 1" = 400' | approval | R.M.M. |

| | | | |
|---|----------|-----------|--|
| REVISED PER PLAN REVISIONS | 07-12-99 | date | |
| SUBMITTED ORIGINAL MATTERS TO CO. FOR SIGNATURE | 02-24-99 | date | |
| REVISED SUBMITTAL TO HOWARD CO. D.P.Z. FOR REVIEW | 10-22-98 | date | |
| SUBMITTED TO HOWARD CO. D.P.Z. FOR REVIEW | 08-28-98 | date | |
| description | | revisions | |

HOWARD COUNTY
 ELECTION DISTRICT NO. 5
 HIGH FOREST ESTATES
 TITLE SHEET

R.M. MOCHI GROUP, P.C.
10020 A Old National Pike
New Market, MD 21774-0010
(301) 865-5658
Fax: (301) 865-5111