

# ROADWAYS, STORM DRAINS & STORMWATER MANAGEMENT

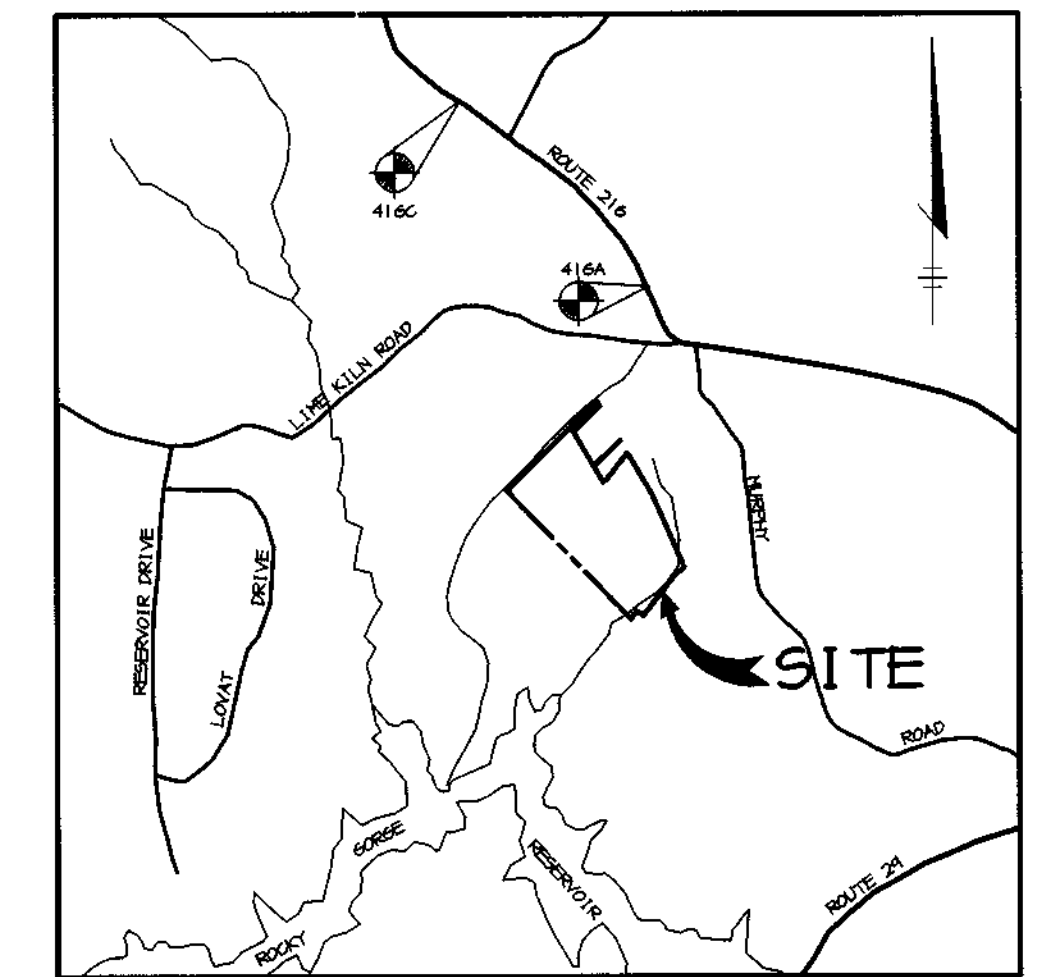
# HUNTERBROOKE

## FORMERLY PRINCE PROPERTY

### LOTS 1 - 21, PARCELS A - E

### 5th ELECTION DISTRICT

## HOWARD COUNTY, MARYLAND



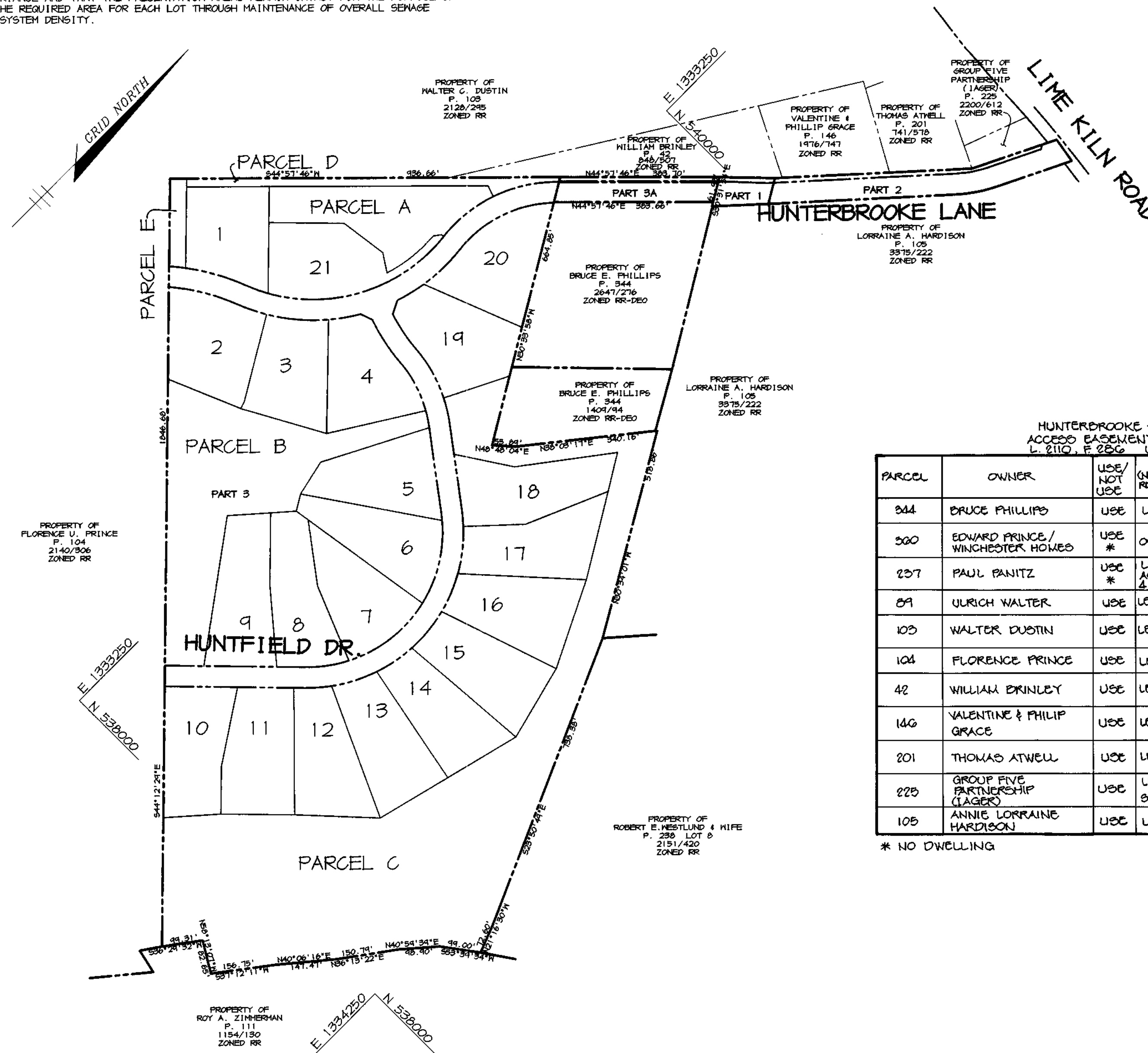
VICINITY MAP  
SCALE: 1" = 2000'

SHEET INDEX	
NO	DESCRIPTION
1	TITLE SHEET
2	PLAN AND PROFILE HUNTERBROOKE LANE FROM STA 0+00 TO STA 13+65
3	PLAN AND PROFILE HUNTERBROOKE LANE FROM STA 13+65 TO END
4	PLAN AND PROFILE HUNTFIELD DRIVE FROM STA 0+00 TO STA 11+00
5	PLAN AND PROFILE HUNTFIELD DRIVE FROM STA 11+00 TO END
6	GRADING AND SEDIMENT CONTROL PLAN, DRAINAGE AREA MAP
7	GRADING AND SEDIMENT CONTROL PLAN, DRAINAGE AREA MAP
8	GRADING AND SEDIMENT CONTROL PLAN, DRAINAGE AREA MAP
9	SMM PROFILES AND DETAILS
10	NOTES AND STRUCTURE SCHEDULE
11	DETAILS AND PROFILES
12	STORM DRAIN PROFILES
13	DETAILS AND PROFILES
14	LANDSCAPE PLAN
15	LANDSCAPE PLAN
16	LANDSCAPE PLAN AND DETAIL SHEET
17	REFORESTATION PLAN
18	REFORESTATION DETAIL SHEET

### GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7177 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME 111 (1983) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS, (JUNE 1983)". A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL MAPPING WITH A MAXIMUM TWO FOOT CONTOUR INTERVAL, FLOREN BY MINOS MAPPING, INC., IN MAY, 1997.
- 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. 41 6A AND 41 6C WERE USED FOR THIS PROJECT.
- WATER IS PRIVATE, TO BE SUPPLIED BY WELLS.
- SEWER IS PRIVATE, TO BE PROVIDED BY SEPTIC FIELDS.
- THE STORMWATER MANAGEMENT PROPOSED FOR THIS SITE ARE 2 EXTENDED DETENTION FACILITIES TO BE OWNED BY HOWARD COUNTY AND MAINTAINED BY THE HOA.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.
- THERE IS NO 100-YEAR FLOODPLAIN STUDY REQUIRED FOR THIS PROJECT.
- THE WETLANDS DELINEATION FOR THIS PROJECT WAS PREPARED BY MCCARTHY AND ASSOCIATES, INC., AND A PERMIT FOR BUFFER DISTURBANCE WAS GRANTED, PER #41-NI-0676/1997 65022, TO EXPIRE SEPTEMBER 29, 2000.
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP DATED NOVEMBER 1996.
- A NOISE STUDY FOR THIS PROJECT IS NOT REQUIRED.
- THE GEOTECHNICAL STUDY FOR STORMWATER MANAGEMENT FOR THIS PROJECT WAS PREPARED BY GEO-TECHNOLOGY ASSOCIATES, INC., DATED JULY 14, 1997.
- THE BOUNDARY SURVEY FOR THIS PROJECT WAS PREPARED BY RIEMER MUEGGE & ASSOCIATES, DATED FEBRUARY, 1998.
- SUBJECT PROPERTY ZONED RR-DEO PER 10-10-93 COMPREHENSIVE ZONING PLAN.
- ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
- SEE DEPARTMENT OF PLANNING AND ZONING FILE NO'S. 9-97-08, 9P-98-01.
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
- NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
- ALL STORM DRAIN PIPE BEDDINGS SHALL BE CLASS 'C' AS SHOWN IN FIG. 11.4, VOLUME 1 OF HOWARD COUNTY DESIGN MANUAL UNLESS OTHERWISE NOTED.
- ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- STORM DRAIN TRENCHES WITHIN ROAD RIGHT OF WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, I.e., STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, LATEST AMENDMENTS.
- PROFILES STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
- DESIGNED TRAFFIC SPEED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIAL STANDARD.  
ALL 50' RIGHT OF WAYS 25 AND 30 M.P.H.
- ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T100.
- ALL STREET CURB RETURNS SHALL HAVE 25' RADIUS UNLESS OTHERWISE NOTED.
- ALL STREET LIGHTS SHALL BE LOCATED BETWEEN 2'-0" AND 4'-0" BEHIND FACE OF CURB.
- STREET TREES (193), THE LOCATION, TYPE AND NUMBER OF TREES SHOWN ON THIS PLAN ARE TENTATIVE AND ARE USED FOR BOND PURPOSES ONLY. THE FINAL LOCATION AND VARIETY OF TREES MAY VARY TO ACCOMMODATE FIELD CONDITIONS INCLUDING 20' CLEARANCE OF ANY STREET LIGHT AND BUILDERS LANDSCAPE PROGRAMS. BOND RELEASE IS CONTINGENT UPON SECTION 15.131 OF THE HOWARD COUNTY SUBDIVISION REGULATIONS, AS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING.

35. HUNTERBROOKE SUBDIVISION IS A SUBDIVISION CONSISTING OF 21 BUILDING LOTS. IT IS LOCATED WITHIN 2500 FEET OF THE TRIADAPLHIA RESERVOIR. THE REQUIREMENTS FOR THE SUBDIVISION APPROVAL WITHIN THIS AREA INCLUDE A MINIMUM LOT WIDTH OF 135 FEET AND LOT AREA OF TWO ACRES. EACH LOT IN THE SUBDIVISION HAS A MINIMUM WIDTH OF 176 FEET AND A MINIMUM AREA OF 1 ACRE. IN ORDER TO MEET THE ABOVE 2-ACRE REQUIREMENT THE OWNER HAS REQUESTED A VARIANCE TO USE NON-BUILDABLE PRESERVATION PARCELS. THE VARIANCE IS REQUESTED UNDER "COMAR 26.04.09 WATER SUPPLY AND SEWERAGE SYSTEMS" IN THE SUBDIVISION OF LAND IN MARYLAND SECTION .05. THE DEPARTMENT OF THE ENVIRONMENT GRANTED THE VARIANCE CONTINGENT UPON NO FURTHER DEVELOPMENT OCCURRING ON THESE PRESERVATION PARCELS. NO ON-SITE SEWAGE DISPOSAL SYSTEMS WILL BE PERMITTED ON THE PRESERVATION PARCELS AND NO FURTHER SUBDIVISION WILL TAKE PLACE. THE COUNTY HEALTH DEPARTMENT IS RESPONSIBLE TO ASSURE THERE IS NO VIOLATION OF THE VARIANCE AND THAT THE PRESERVATION AREAS REMAIN INTACT FOR THE PURPOSE OF MEETING THE REQUIRED AREA FOR EACH LOT THROUGH MAINTENANCE OF OVERALL SEWAGE DISPOSAL SYSTEM DENSITY.



HUNTERBROOKE - F-98-94  
ACCESS EASEMENT HOLDERS  
L. 8110, P. 2826 L. 8270, E. 2829

PARCEL	OWNER	USE/NOT USE	ACCEPTANCE (NEW ACCESS TO LINE KILN RD. VIA HUNTERBROOKE LN.)	CONDITIONS OF ACCEPTANCE
844	BRUCE PHILLIPS	USE	LETTER SIGNED 3-11-90	NONE
500	EDWARD PRINCE/ WINCHESTER HOMES	USE #	OWNER OF HUNTERBROOKE	NONE
257	PAUL BANITZ	USE #	LETTER OF ACKNOWLEDGEMENT 4-9-90	NONE
89	ULRICH WALTER	USE	LETTER SIGNED 3-11-90	NONE
103	WALTER DUSTIN	USE	LETTER SIGNED 3-1-90	PAVED APRON, 40' PARCEL & RIGHT OF WAY
104	FLORENCE PRINCE	USE	LETTER SIGNED 4-28-98	ACCESS TO DUSTIN
42	WILLIAM BRINLEY	USE	LETTER SIGNED 3-11-90	TWO DRIVEWAY CONNECTIONS
146	VALENTINE & PHILIP GRACE	USE	LETTER SIGNED 3-11-90	NONE
201	THOMAS ATWELL	USE	LETTER SIGNED 3-1-90	NEW WELL AS NECESSARY
229	GROUP FIVE PARTNERSHIP (LAGER)	USE	LETTER APRIL 27, 1990 SIGNED 3-1-90	REMOVE WALL PARKING PAD
105	ANNIE LORRAINE HARDISON	USE	LETTER SIGNED 3-4-98	PAVED APRON

\* NO DWELLING

### DRIVEWAY CULVERT CHART

LOT NO.	PIPE SIZE
7	12" CMP
8	15" CMP
9	15" CMP
10	15" CMP
11	15" CMP
12	15" CMP
13	12" CMP
14	12" CMP
19	15" CMP
20	15" CMP

### AS-BUILT CONTROL BENCHMARKS

- ✓ HOWARD COUNTY SURVEY CONTROL STATION: 416A  
N 541,399.096 E 1,333,808.252
- ✓ HOWARD COUNTY SURVEY CONTROL STATION: 416C  
N 543,240.643 E 1,331,647.835

AS-BUILT CERTIFICATE

*Chris J. Reid* 5-9-01  
CHRISTOPHER J. REID #19949 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

*Andrew M. Daniels* 10-2-98  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Chris Hamilton* 10/26/95  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Arthur E. Muegge* 4/7/98  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

DEVELOPER: WINCHESTER HOMES  
6305 Ivy Lane, Suite 800  
Greenbelt, Maryland 20770  
(301) 474-4411

OWNER: EDWARD ROBERT PRINCE  
P.O. Box 381  
Fulton, Maryland 20759

PROJECT: HUNTERBROOKE  
FORMERLY PRINCE PROPERTY  
LOTS 1 - 21, PARCELS A - E

AREA: Parcel 360 & P/O 344  
Tax Map 46 Zoned RR-DEO  
5th Election District  
Howard County, Maryland

TITLE: TITLE SHEET

**RIEMER MUEGGE & ASSOCIATES, INC.**  
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
8818 Centre Park Drive, Columbia, Maryland 21045  
tel 410.997.8900 fax 410.997.9282

8-28-98  
DATE

DESIGNED BY: C.J.R.

DRAWN BY: DAM

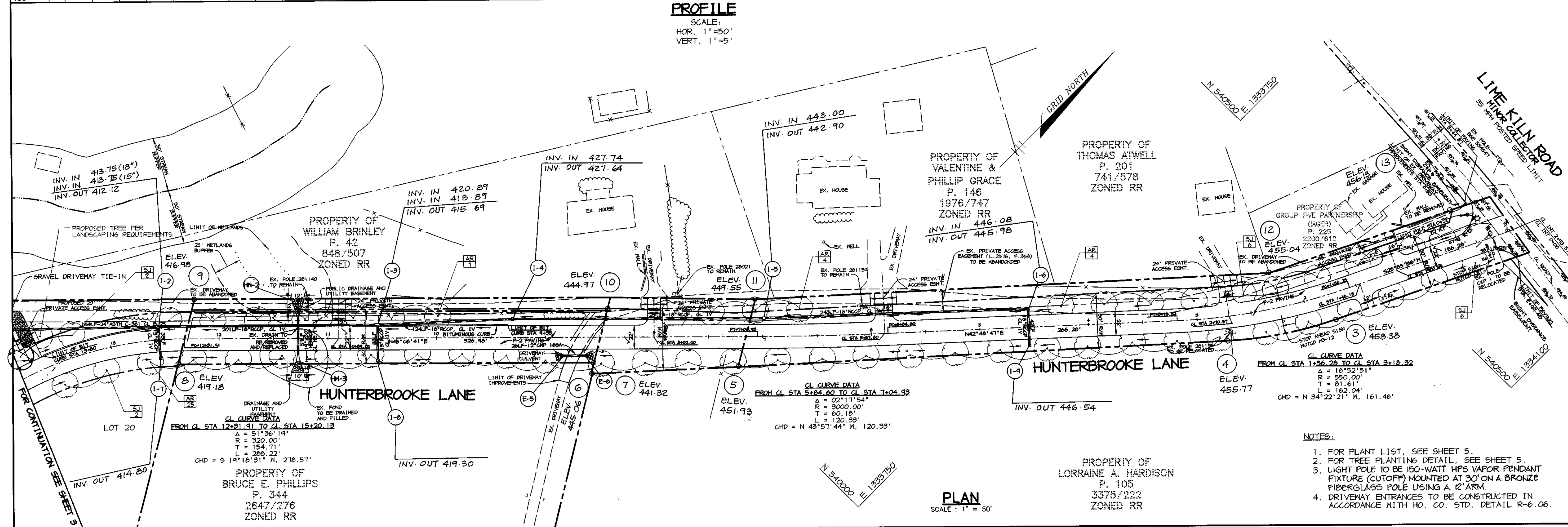
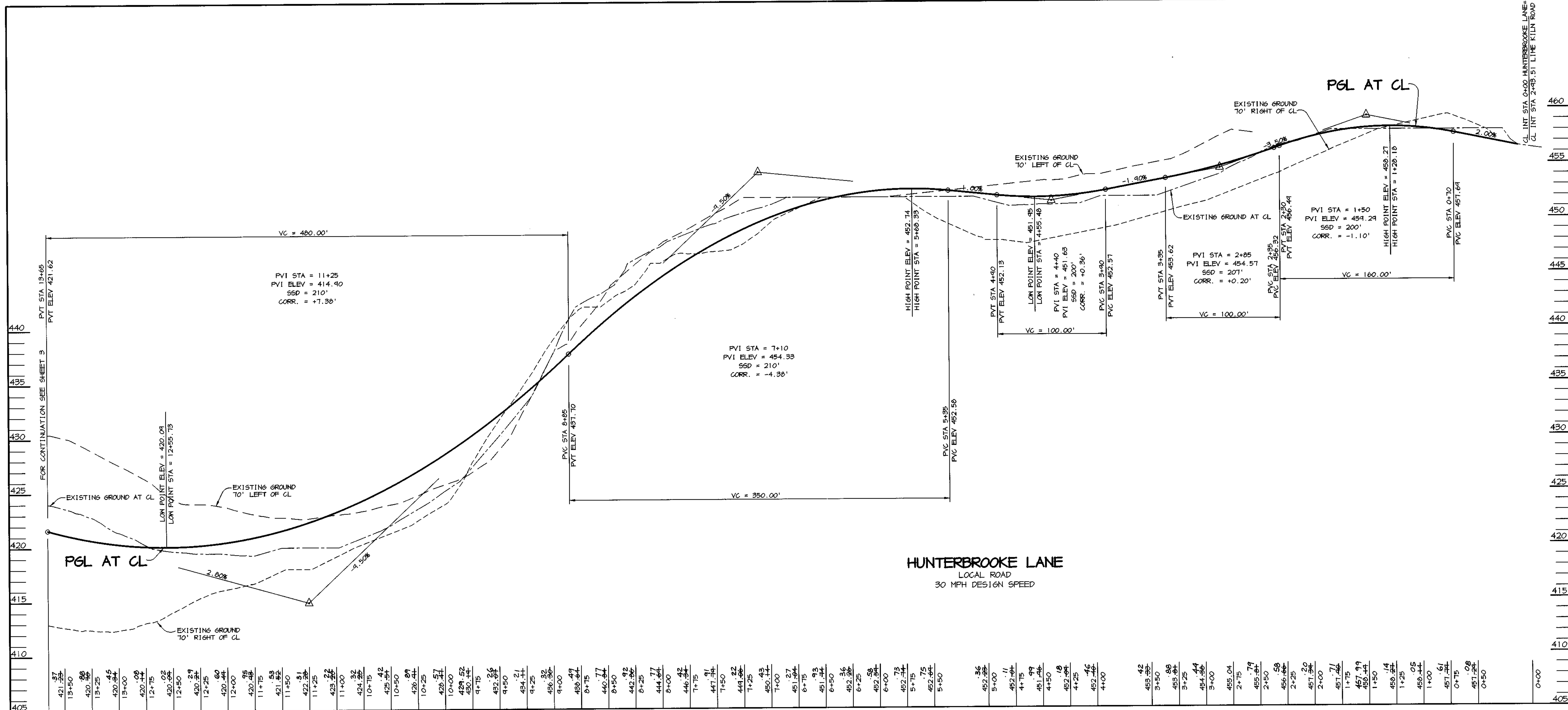
PROJECT NO.: 97150/FINALS  
RD1.DWG

DATE: AUGUST 28, 1998

SCALE: 1" = 200'

*Arthur E. Muegge*  
ARTHUR E. MUEGGE #8707

DRAWING NO. 1 OF 18



**AS-BUILT 5/17/01 F-98-94**

**RIEMER MUEGGE & ASSOCIATES, INC.**  
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
8818 Centre Park Drive, Columbia, Maryland 21045  
tel 410.997.8900 fax 410.997.9282

**DATE** 8-28-98

**DESIGNED BY:** C.J.R.  
**DRAWN BY:** DAM  
**PROJECT NO:** 97150/FINALS RD2.DWG  
**DATE:** AUGUST 28, 1998  
**SCALE:** AS SHOWN  
**DRAWING NO.:** 2 OF 18

**APPROVED:** HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*Christopher J. Reid* 5.9.01  
CHRISTOPHER J. REID # 19949 DATE

**APPROVED:** HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*Andrew M. Danek* 10-2-98  
CHIEF, BUREAU OF HIGHWAYS MS DATE

**APPROVED:** HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*Carole Hamilton* 10/22/98  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**APPROVED:** HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*Arthur E. Muegge* 10/9/98  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

**DEVELOPER:** WINCHESTER HOMES  
6305 Ivy Lane, Suite 800  
Greenbelt, Maryland 20770  
(301) 474-4411

**OWNER:** EDWARD ROBERT PRINCE  
P.O. Box 381  
Fulton, Maryland 20759

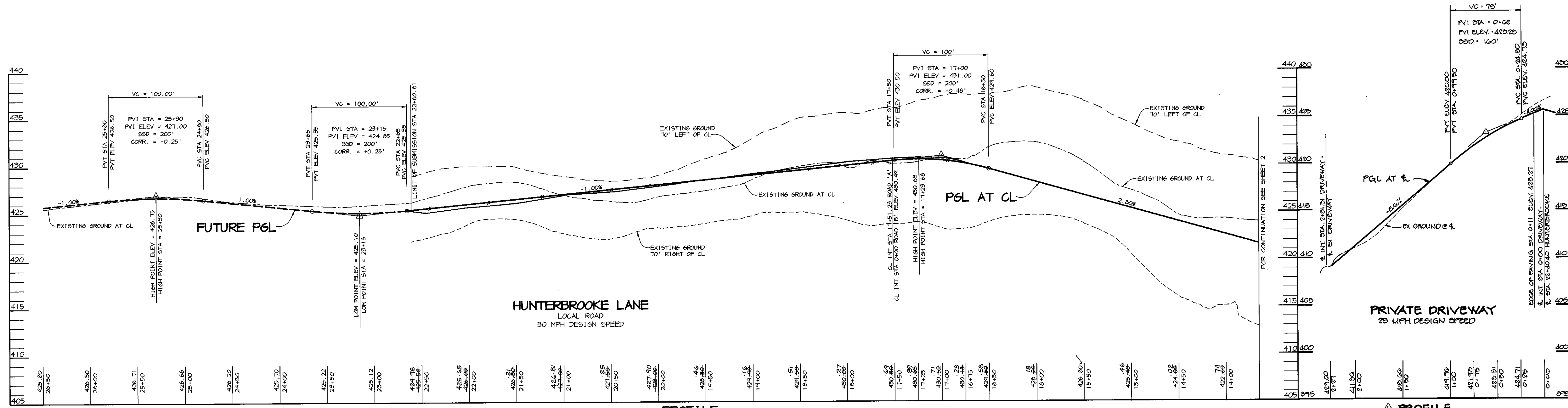
**PROJECT:** HUNTERBROOKE  
FORMERLY PRINCE PROPERTY  
LOTS 1 - 21, PARCELS A - E

**AREA:** Parcel 360 & P/O 344  
Tax Map 46 Zoned RR-DEO  
5th Election District  
Howard County, Maryland

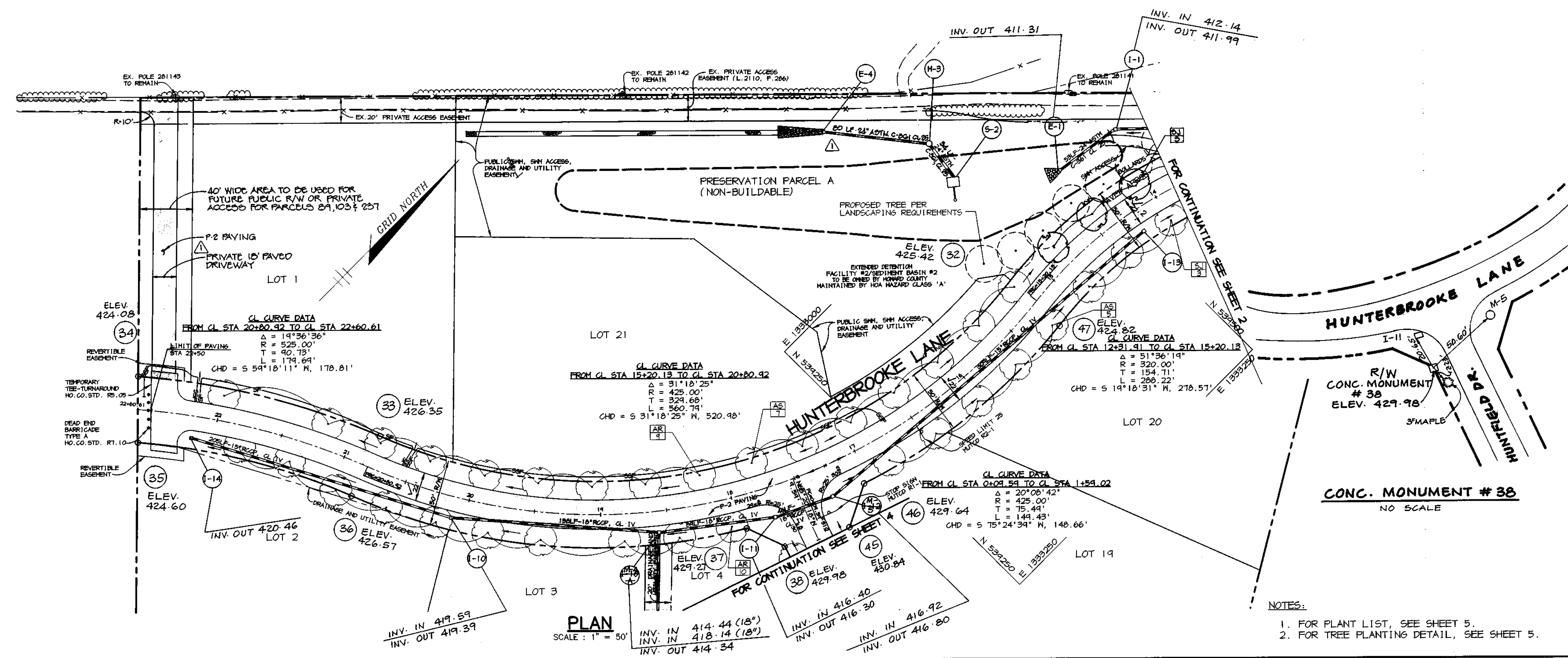
**TITLE:** PLAN AND PROFILE  
HUNTERBROOKE LANE  
FROM STA 0+00 TO STA 13+65

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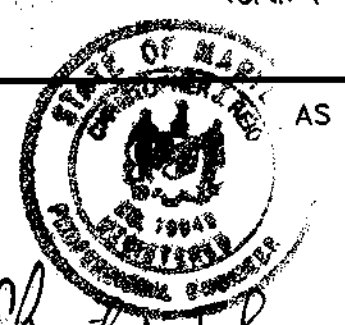




**PROFILE**  
SCALE:  
HOR. 1"=50'  
VERT. 1"=5'

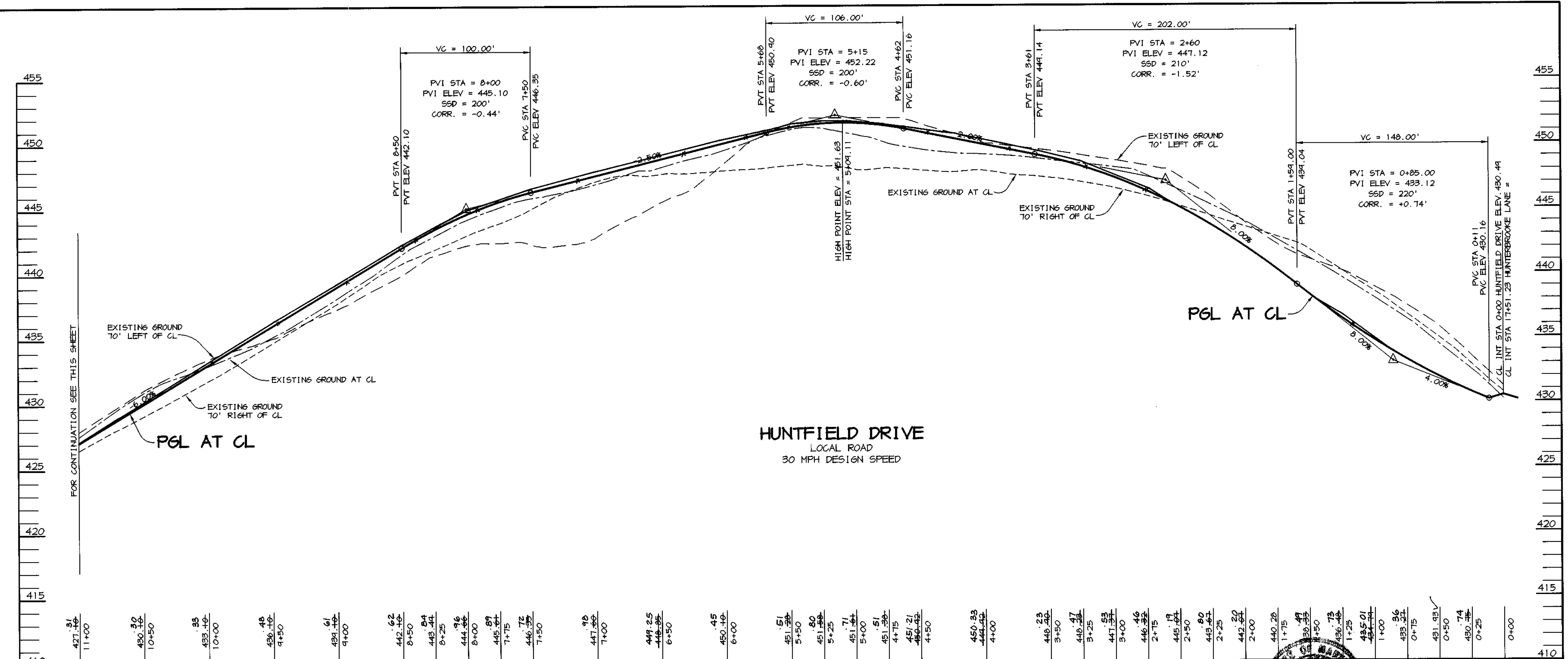
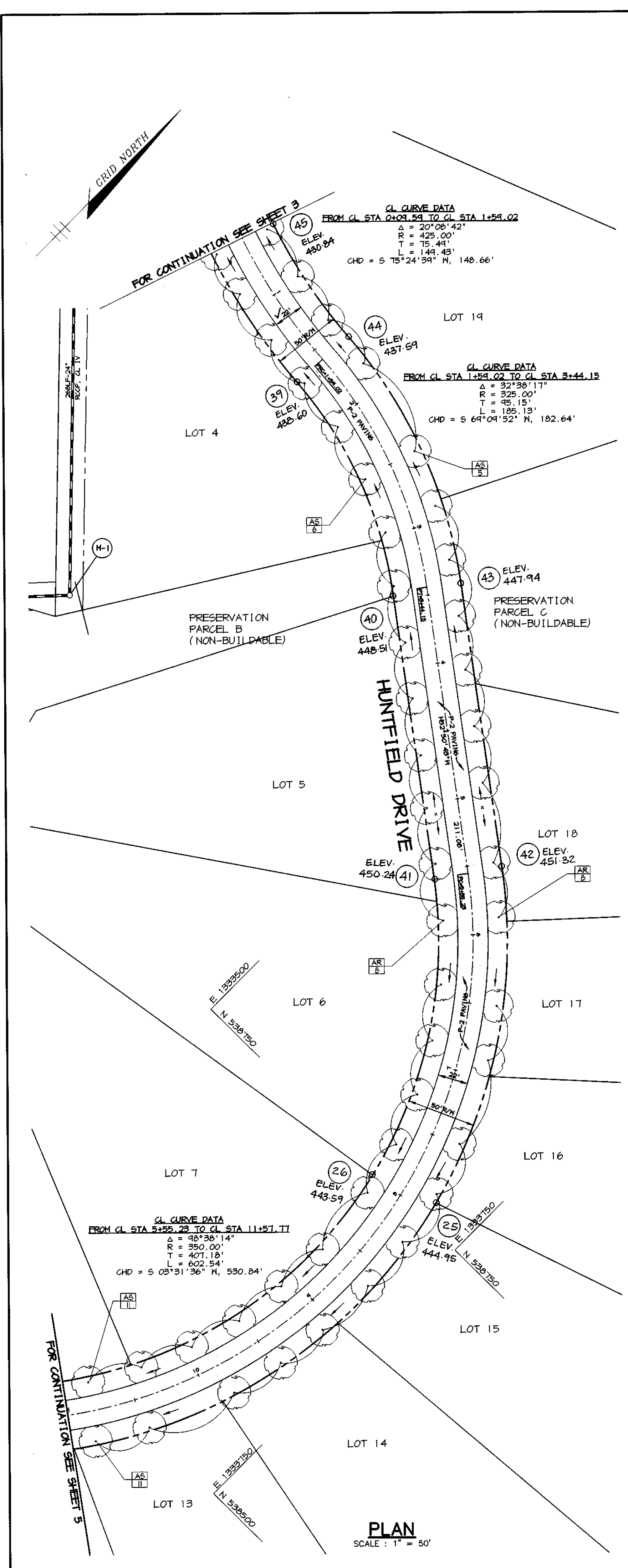


**PLAN**  
SCALE: 1"=50'

PROFILE	
SCALE: HOR. 1"=50' VERT. 1"=5'	
<b>AS BUILT CERTIFICATE</b>	
	
<i>Christopher J. Reid</i> CHRISTOPHER J. REID # 19949	
5.9.01 DATE	
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Andrew M. Daniels</i> ANDREW M. DANIELS # 10298 CHIEF, BUREAU OF HIGHWAYS	
10-2-98 DATE	
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Andy Hamilton</i> ANDY HAMILTON # 10298 CHIEF, DIVISION OF LAND DEVELOPMENT	
10/23/98 DATE	
<i>Arthur E. Muegge</i> ARTHUR E. MUEGGE #8707 CHIEF, DEVELOPMENT ENGINEERING DIVISION	
10/23/98 DATE	
4-20-79	ADDED DRIVEWAY TO ADJOINING OWNER'S PROFILE RELOCATED OWNERS' OUTFALL
DATE	REVISION
DEVELOPER	WINCHESTER HOMES 6305 Ivy Lane, Suite 800 Greenbelt, Maryland 20710 (301) 474-4411
OWNER	EDWARD ROBERT PRINCE P.O. Box 381 Fulton, Maryland 20715
PROJECT	HUNTERBROOKE FORMERLY PRINCE PROPERTY LOTS 1 - 21, PARCELS A - E
AREA	Parcel 360 & P/O 344 Tax Map 46 Zoned RR-DEO 5th Election District Howard County, Maryland
TITLE	PLAN AND PROFILE HUNTERBROOKE LANE FROM STA 13+65 TO END
<b>RIEMER MUEGGE &amp; ASSOCIATES, INC.</b> ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 8818 Centre Park Drive, Columbia, Maryland 21045 tel 410.997.8900 fax 410.997.9282	
8-28-98	DATE
DESIGNED BY: C.J.R.	
DRAWN BY: DAM	
PROJECT NO.: 97150/FINALS RDS, DWS	
DATE: AUGUST 28, 1998	
SCALE: AS SHOWN	
DRAWING NO.: 3 OF 18	

- NOTES:**
- FOR PLANT LIST, SEE SHEET 5.
  - FOR TREE PLANTING DETAIL, SEE SHEET 5.

K:\PROJECT\97150\FINALS\9803 Thu Aug 27 15:28:18 1998 RIEMER MUEGGE & ASSOCIATES, INC.



**AS-BUILT CERTIFICATE**

Christopher J. Reid 5.9.01  
CHRISTOPHER J. REID #19949 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*Christopher M. Daniels* 10-2-05  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*Chris Hamilton* 10/22/98  
CHIEF, DIVISION OF LAND USE DEVELOPMENT DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

DEVELOPER: WINCHESTER HOMES  
6305 Ivy Lane, Suite 800  
Greenbelt, Maryland 20770  
(301) 474-4411

OWNER: EDWARD ROBERT PRINCE  
P.O. Box 381  
Fulton, Maryland 20759

PROJECT: HUNTERBROOKE  
FORMERLY PRINCE PROPERTY  
LOTS 1 - 21, PARCELS A - E

AREA: Parcel 360 & P/O 344  
Tax Map 46 Zoned RR-DEO  
5th Election District  
Howard County, Maryland

TITLE: PLAN AND PROFILE  
HUNTFIELD DRIVE  
FROM STA 0+00 TO STA 11+00

**RIEMER MUEGGE & ASSOCIATES, INC.**  
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
8818 Centre Park Drive, Columbia, Maryland 21045  
tel 410.997.8900 fax 410.997.9282

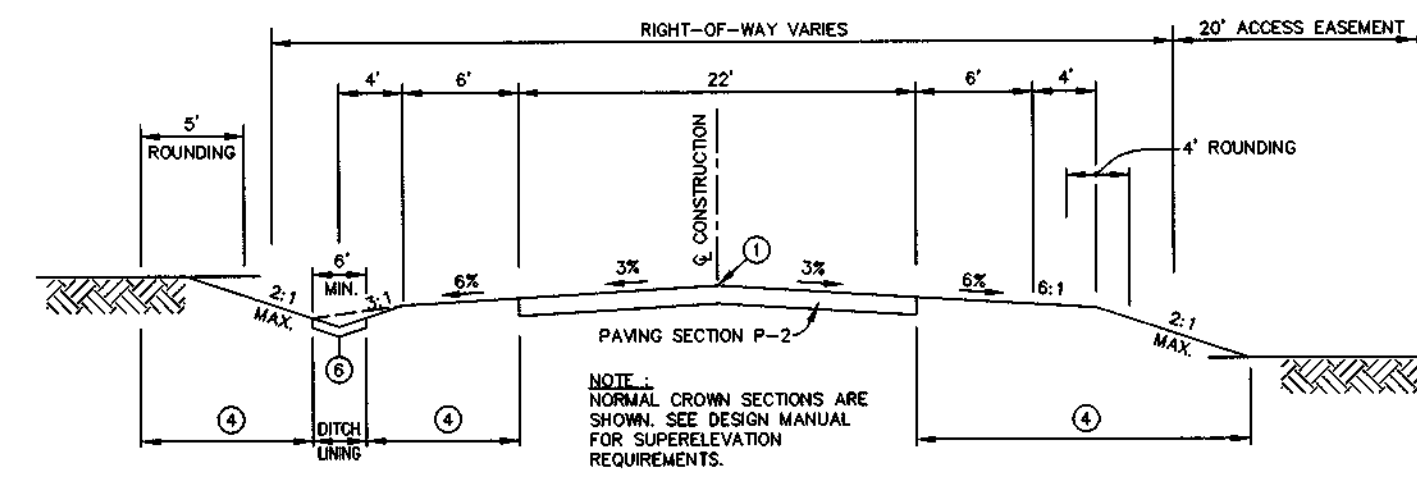
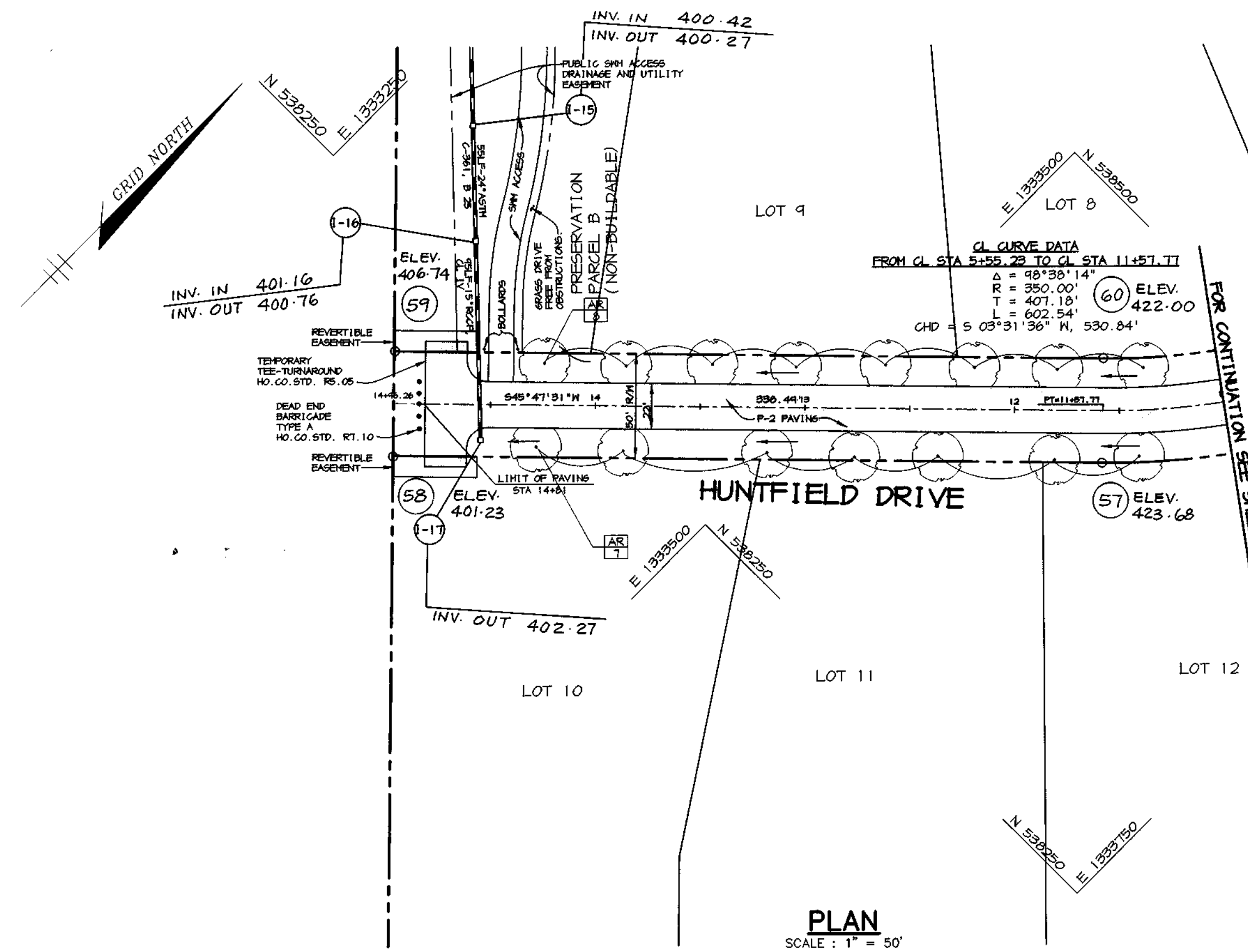
8.28.98  
DATE

DESIGNED BY: C.J.R.  
DRAWN BY: DAM  
PROJECT NO: 97150/FINALS  
RD4.DWG  
DATE: AUGUST 28, 1998  
SCALE: AS SHOWN  
DRAWING NO. 4 OF 18

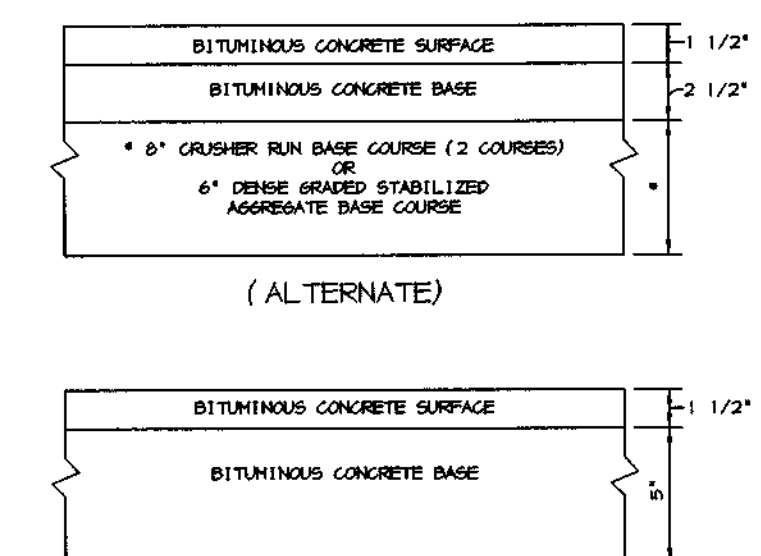
Arthur E. Muegge #8707

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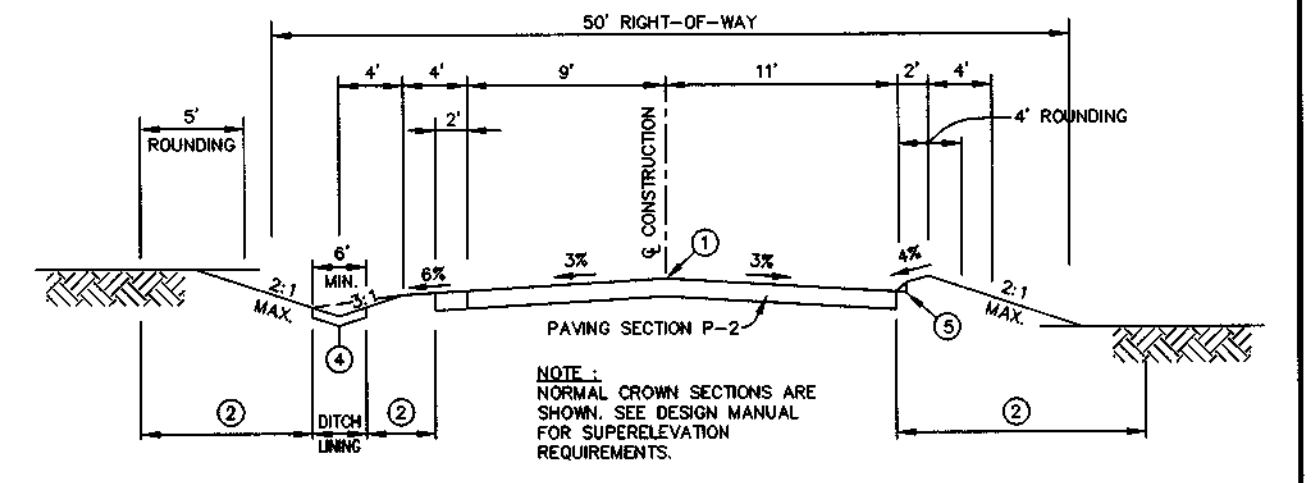
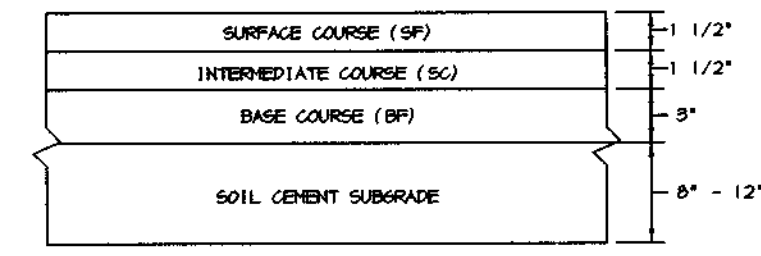
NOTES:  
1. FOR PLANT LIST, SEE SHEET 5.  
2. FOR TREE PLANTING DETAIL, SEE SHEET 5.



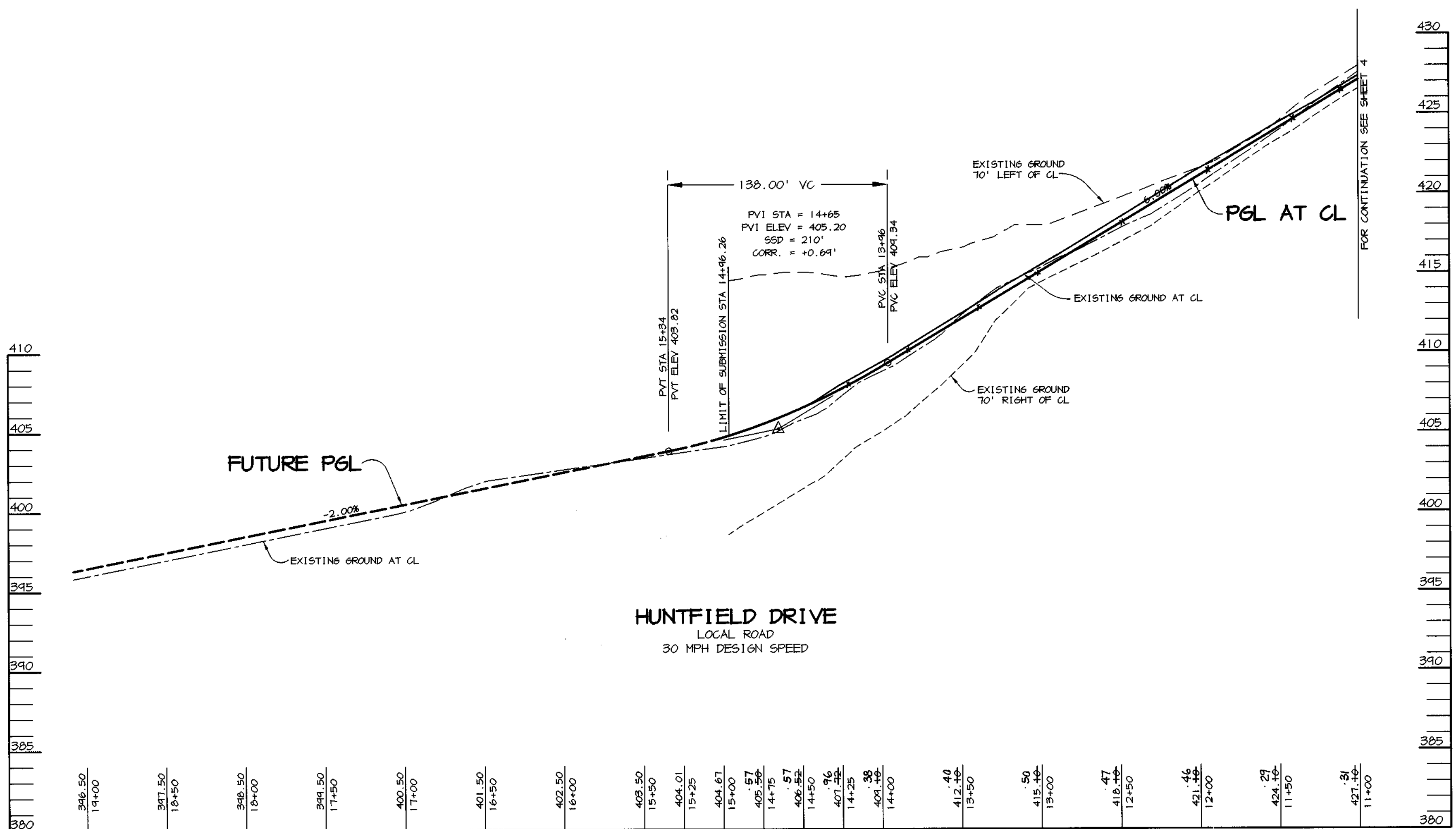
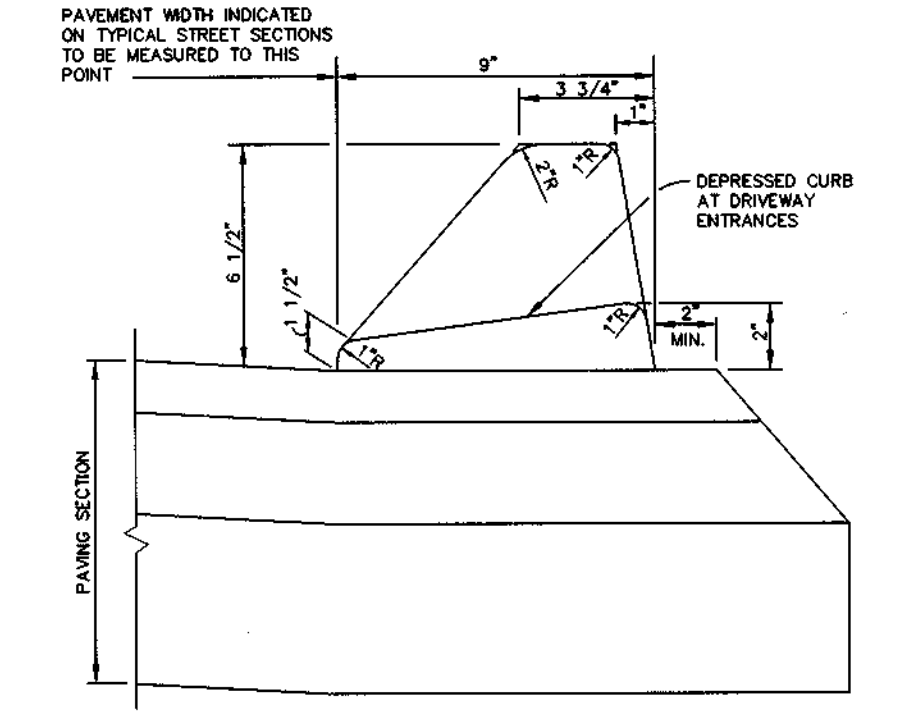
- TYPICAL SECTION**  
NO SCALE
- ① PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.
  - ② INDICATES 2" TOPSOIL, SEED AND MULCH.
  - ③ GUARDRAIL WHERE REQUIRED BY THE DESIGN MANUAL.
  - ④ DITCH CROSS SECTION SLOPE MAY BE FLATTENED TO PROVIDE A SWALE AT OR NEAR THE CREST OF VERTICAL CURVES WHERE QUANTITY OF SWALE FLOW IS SMALL, AS APPROVED BY DPW. TO BE LINED WITH EROSION CONTROL MATTING.
- HUNTERBROOKE LANE FROM CL STA 0+00 TO CL STA 9+50**  
R/W WIDTH VARIES
- HUNTERBROOKE LANE FROM CL STA 13+00 TO CL STA 22+50**  
50' R/W
- HUNTFIELD DRIVE FROM CL STA 0+00 TO CL STA 14+81**  
50' R/W



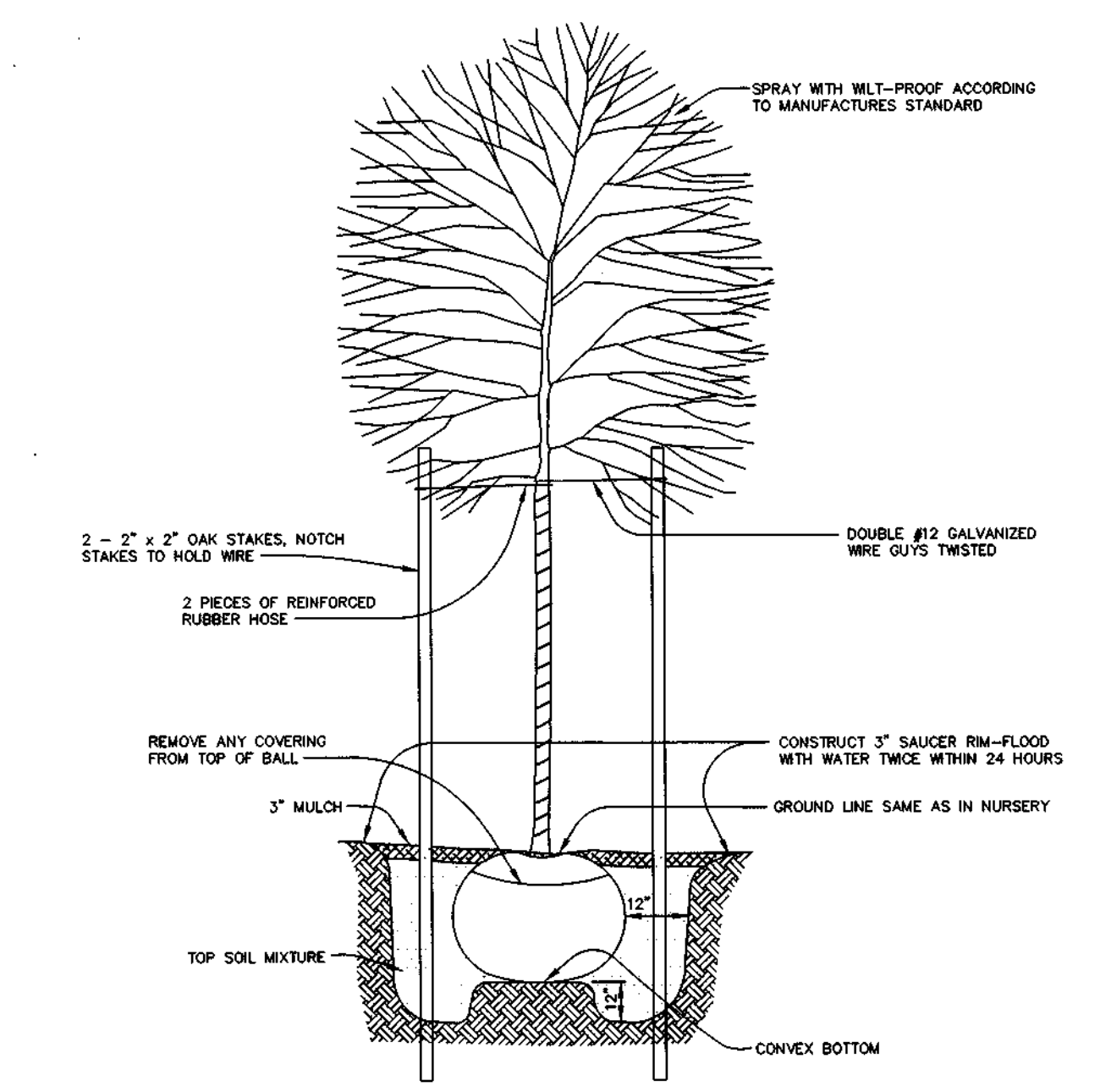
HOWARD COUNTY DESIGN MANUAL VOLUME 1V - STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-2.01)



- OPEN SECTION**  
30 MPH DESIGN SPEED
- ① PROFILE GRADE LINE (PGL), SEE DESIGN MANUAL.
  - ② INDICATES 2" TOPSOIL, SEED AND MULCH.
  - ③ GUARDRAIL WHERE REQUIRED BY THE DESIGN MANUAL.
  - ④ AT OR NEAR THE CREST OF VERTICAL CURVES WHERE QUANTITY OF SWALE FLOW IS SMALL, AS APPROVED BY DPW. TO BE LINED WITH EROSION CONTROL MATTING.
  - ⑤ BITUMINOUS CURB - SEE DESIGN MANUAL.
- HUNTERBROOKE LANE FROM CL STA 9+35 TO CL STA 13+65**



FOR CONTINUATION SEE SHEET 4



- NOTES:**
1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
  2. FINANCIAL SURETY FOR THE REQUIRED STREET TREES SHALL BE POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT FOR ROADS CONSTRUCTION IN THE AMOUNT OF \$47,100.

**PLANT MATERIAL LIST**  
(FOR SHEETS 2-5)

KEY	QUANTITY	BOTANICAL / COMMON NAME	SIZE	ROOT
AR	40	ACER RUBRUM "OCTOBER GLORY" / OCTOBER GLORY RED MAPLE	3"-3 1/2" CAL.	B4B
AS	45	ACER SACCHARUM "GREEN MOUNTAIN" / GREEN MOUNTAIN SUGAR MAPLE	3"-3 1/2" CAL.	B4B
SJ	22	SOPHORA JAPONICA "REGENT" / REGENT JAPANESE PAGODA TREE	3"-3 1/2" CAL.	B4B

**BUILT CERTIFICATE**

Charles J. Reid  
CHRISTOPHER J. REID # 19949  
DATE: 5.9.01

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
Christopher J. Reid  
CHIEF, BUREAU OF HIGHWAYS  
DATE: 10-2-98

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
Cindy Hamilton  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 10/20/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 11/16/98

DATE	NO.	REVISION

DEVELOPER: WINCHESTER HOMES  
6305 Ivy Lane, Suite 800  
Greenbelt, Maryland 20770  
(301) 474-4411

OWNER: EDWARD ROBERT PRINCE  
P.O. Box 381  
Fulton, Maryland 20759

PROJECT: HUNTERBROOKE  
FORMERLY PRINCE PROPERTY  
LOTS 1 - 21, PARCELS A - E

AREA: Parcel 360 & P/O 344  
Tax Map 46 Zoned RR-DEO  
5th Election District  
Howard County, Maryland

TITLE: PLAN AND PROFILE  
HUNTFIELD DRIVE  
FROM STA 11+00 TO END

**RIEMER MUEGGE & ASSOCIATES, INC.**  
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
8818 Centre Park Drive, Columbia, Maryland 21045  
tel 410.997.8900 fax 410.997.9282

DATE: 8.28.98

DESIGNED BY: C.J.R.  
DRAWN BY: DAM  
PROJECT NO: 97150/FINALS  
RDS.DWG  
DATE: AUGUST 28, 1998  
SCALE: AS SHOWN  
DRAWING NO. 5 OF 18

ARTHUR E. MUEGGE #8707



NOTE: FOR FINAL LOT GRADING, A 15' SETBACK BETWEEN THE HOUSE AND CENTERLINE OF SWALE SHALL BE MAINTAINED.

**LEGEND**

- SUPER SILT FENCE
- SILT FENCE
- - - DRAINAGE DIVIDE
- EARTH DIKE
- - - LIMIT OF DISTURBANCE
- EROSION CONTROL MATTING

**SWM SUMMARY CHART SWMF #2 DA: 8.99 AC.**

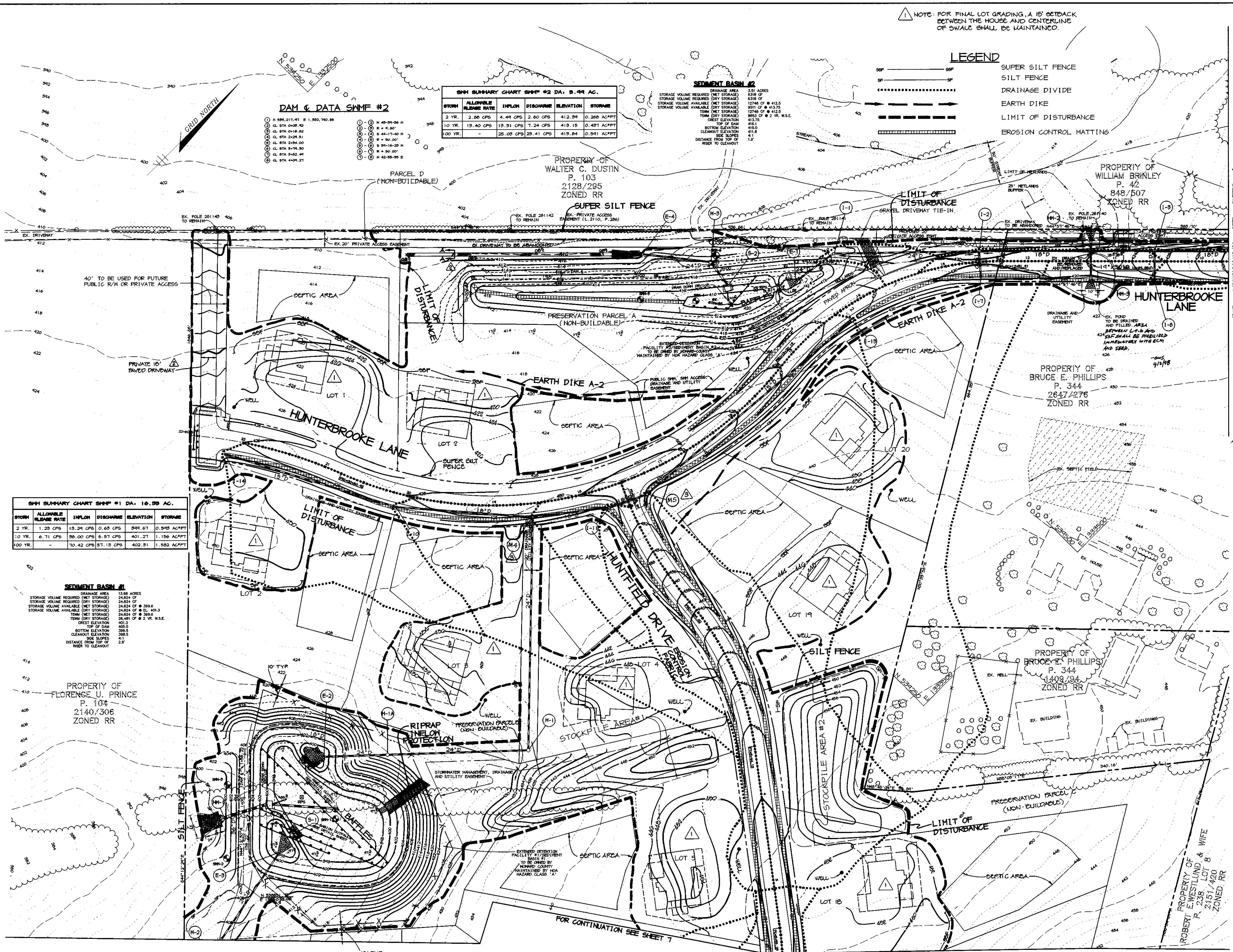
STORM	ALLOWABLE RELEASE RATE	INFLOW	DISCHARGE	ELEVATION	STORAGE
2 YR.	2.00 CPS	4.48 CPS	2.60 CPS	412.84	0.260 AC*FT
10 YR.	15.40 CPS	15.51 CPS	7.24 CPS	418.15	0.497 AC*FT
100 YR.	-	25.00 CPS	23.41 CPS	419.84	0.541 AC*FT

**SEDIMENT BASIN #2**

DRAINAGE AREA	3.51 ACRES
STORAGE VOLUME REQUIRED (NET STORAGE)	6318 CF
STORAGE VOLUME AVAILABLE (NET STORAGE)	12748 CF @ 412.5
STORAGE VOLUME AVAILABLE (NET STORAGE)	3501 CF @ 413.75
STORAGE VOLUME AVAILABLE (NET STORAGE)	12748 CF @ 412.5
TSM (NET STORAGE)	3663 CF @ 2 YR. W.S.E.
TSM (NET STORAGE)	41378
TOP OF DAM	416.1
CREST ELEVATION	416.1
BOTTOM ELEVATION	416.1
CLEARANCE ELEVATION	411
SOIL SLOPES	4:1
DISTANCE FROM TOP OF ROAD TO CLEANOUT	1.5'

**DAM & DATA SWMF #2**

1. N 336.211.47 E 1,392.740.60	1. N 40-54-56 W
2. S 71.048.92	2. R = 4.00'
3. S 79.208.51	3. S 44-17-40 W
4. S 79.208.51	4. R = 50.00'
5. S 79.208.51	5. S 88-16-28 W
6. S 79.208.51	6. R = 50.00'
7. S 79.208.51	7. R = 50.00'
8. S 79.208.51	8. N 42-55-35 E



**SWM SUMMARY CHART SWMF #1 DA: 16.95 AC.**

STORM	ALLOWABLE RELEASE RATE	INFLOW	DISCHARGE	ELEVATION	STORAGE
2 YR.	1.25 CPS	15.24 CPS	0.68 CPS	399.67	0.915 AC*FT
10 YR.	6.71 CPS	36.00 CPS	6.57 CPS	401.27	1.156 AC*FT
100 YR.	-	70.42 CPS	57.15 CPS	402.51	1.582 AC*FT

**SEDIMENT BASIN #1**

DRAINAGE AREA	13.66 ACRES
STORAGE VOLUME REQUIRED (NET STORAGE)	24,624 CF
STORAGE VOLUME AVAILABLE (NET STORAGE)	24,624 CF @ 399.6
STORAGE VOLUME AVAILABLE (NET STORAGE)	24,624 CF @ 401.3
STORAGE VOLUME AVAILABLE (NET STORAGE)	24,624 CF @ 399.6
TSM (NET STORAGE)	36,481 CF @ 2 YR. W.S.E.
TSM (NET STORAGE)	40,738
TOP OF DAM	402.3
CREST ELEVATION	402.3
BOTTOM ELEVATION	398.5
CLEARANCE ELEVATION	411
SOIL SLOPES	4:1
DISTANCE FROM TOP OF ROAD TO CLEANOUT	2.5'

12/28/99	ADDED FENCE TO SWMF #1	
8/25/99	MODIFIED I-10A: I-12	
DATE	NO.	REVISION

BY THE DEVELOPER:  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*Walter C. Dustin* 8/28/98  
 DEVELOPER DATE

BY THE ENGINEER:  
 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.

*Arthur E. Muegge* 8-28-98  
 ENGINEER DATE

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 Stamm* 1/65 9/2/98  
 NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*Christopher J. Reid* 9/2/98  
 HOWARD SOIL CONSERVATION DISTRICT DATE

AS BUILT CERTIFICATE

*Christopher J. Reid* 5-9-01  
 CHRISTOPHER J. REID # 19949 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*Andrew M. Daniels* 10-2-98  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*Andy Hamilton* 10/20/95  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Christopher J. Reid* 10/2/98  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

4-20-99	ADDED DRIVEWAY TO ADJOINING OWNER'S PROPERTY	
2-12-99	ADDED DRIVEWAY, HOUSE FOOTPRINT, GENERAL OUTLINES & SEPTIC AREAS - LOTS 1, 9 & 12-21	
DATE	NO.	REVISION

DEVELOPER: WINCHESTER HOMES  
 6305 Ivy Lane, Suite 800  
 Greenbelt, Maryland 20770  
 (301) 474-4411

OWNER: EDWARD ROBERT PRINCE  
 P.O. Box 361  
 Fulton, Maryland 20759

PROJECT: HUNTERBROOKE  
 FORMERLY PRINCE PROPERTY  
 LOTS 1 - 21, PARCELS A - E

AREA: Parcel 360 & P/O 344  
 Tax Map 46 Zoned RR-DEO  
 5th Election District  
 Howard County, Maryland

TITLE: GRADING AND SEDIMENT CONTROL PLAN, DRAINAGE AREA MAP

**RIEMER MUEGGE & ASSOCIATES, INC.**  
 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
 8818 Centre Park Drive, Columbia, Maryland 21045  
 tel 410.997.8900 fax 410.997.9282

8-28-98  
 DATE

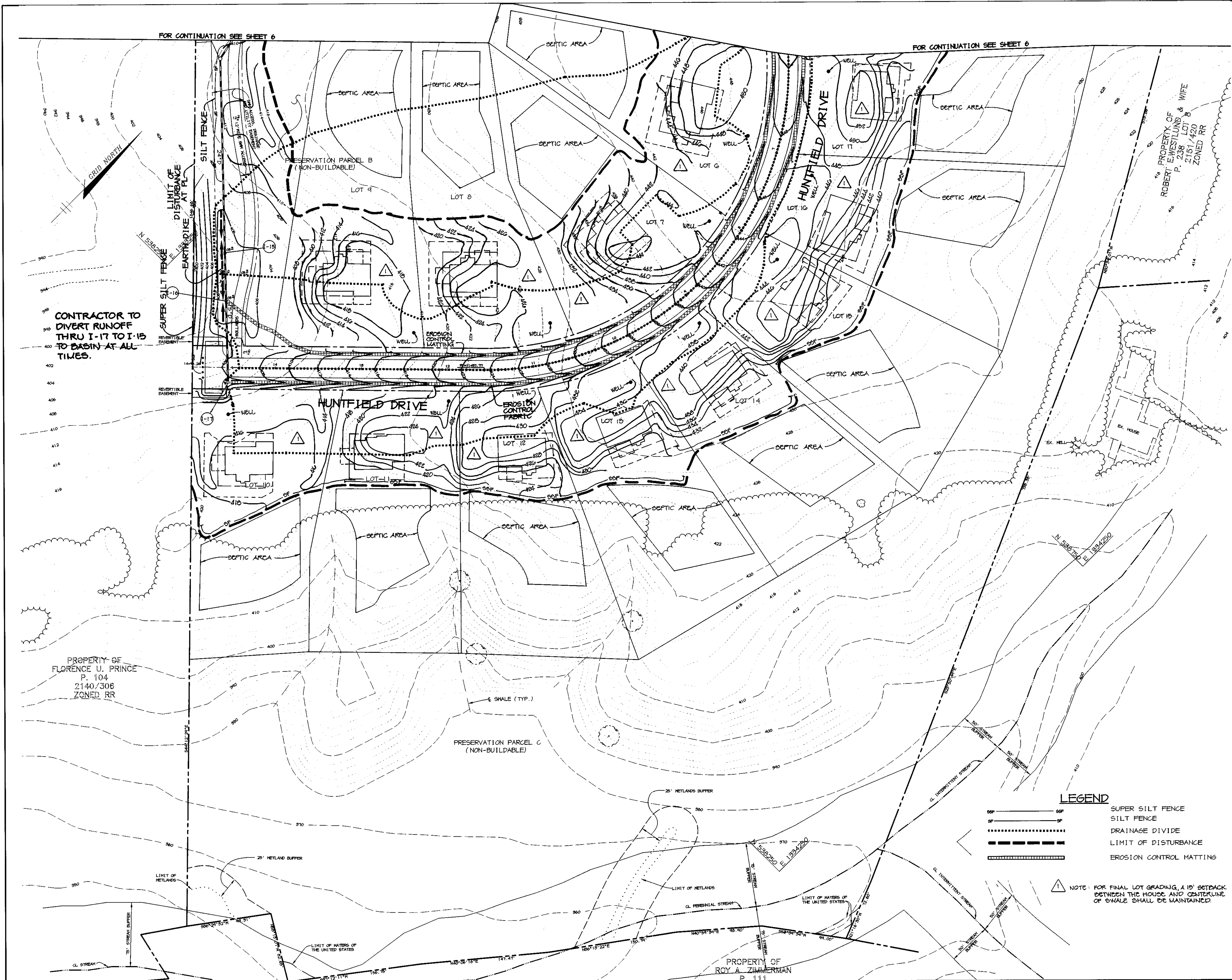
DESIGNED BY: C.J.R.  
 DRAWN BY: DAM  
 PROJECT NO: 97150/FINALS  
 RD6.DWG  
 DATE: AUGUST 28, 1998  
 SCALE: 1" = 50'  
 DRAWING NO. 6 OF 18

*Arthur E. Muegge* #8707  
 ARTHUR E. MUEGGE #8707

AS-BUILT 5/17/01 F-98-94

M:\PROJECT\197150\FINALS\RD6 Thu Aug 27 15:07:23 1998 RIEMER MUEGGE & ASSOCIATES, INC.





BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*Robert E. Westlund* 8/28/98  
 DEVELOPER DATE

BY THE ENGINEER :

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.

*Arthur E. Muegge* 8/28/98  
 ENGINEER DATE

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.

*Carol Summers* 9/4/98  
 NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*Arthur E. Muegge* 9/2/98  
 HOWARD SOIL CONSERVATION DISTRICT DATE

BUILT CERTIFICATE

*Christopher J. Reid* 5.9.01  
 CHRISTOPHER J. REID #19949 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

*Stephen M. Daniels* 10-2-98  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Cindy Hamilton* 10/22/98  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

10/2/98 DATE

2-12-99	ADDED LOT GRADING, HOUSE FOOTPRINT, GENERIC OUTLINES & SEPTIC AREAS - LOTS G-F
DATE	REVISION
DEVELOPER	WINCHESTER HOMES 6305 Ivy Lane, Suite 800 Greenbelt, Maryland 20770 (301) 474-4411
OWNER	EDWARD ROBERT PRINCE P.O. Box 381 Fulton, Maryland 20759
PROJECT	HUNTERBROOKE FORMERLY PRINCE PROPERTY LOTS 1 - 21, PARCELS A - E
AREA	Parcel 360 & P/O 344 Tax Map 46 Zoned RR-DEO 5th Election District Howard County, Maryland

TITLE  
 GRADING AND SEDIMENT CONTROL PLAN,  
 DRAINAGE AREA MAP

**RIEMER MUEGGE & ASSOCIATES, INC.**  
 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
 8818 Centre Park Drive, Columbia, Maryland 21045  
 tel 410.997.8900 fax 410.997.9282

DATE 8-28-98

DESIGNED BY : C.J.R.

DRAWN BY : DAM

PROJECT NO. 97150/FINALS  
 "RD1.DWG"

DATE : AUGUST 28, 1998

SCALE : 1" = 50'

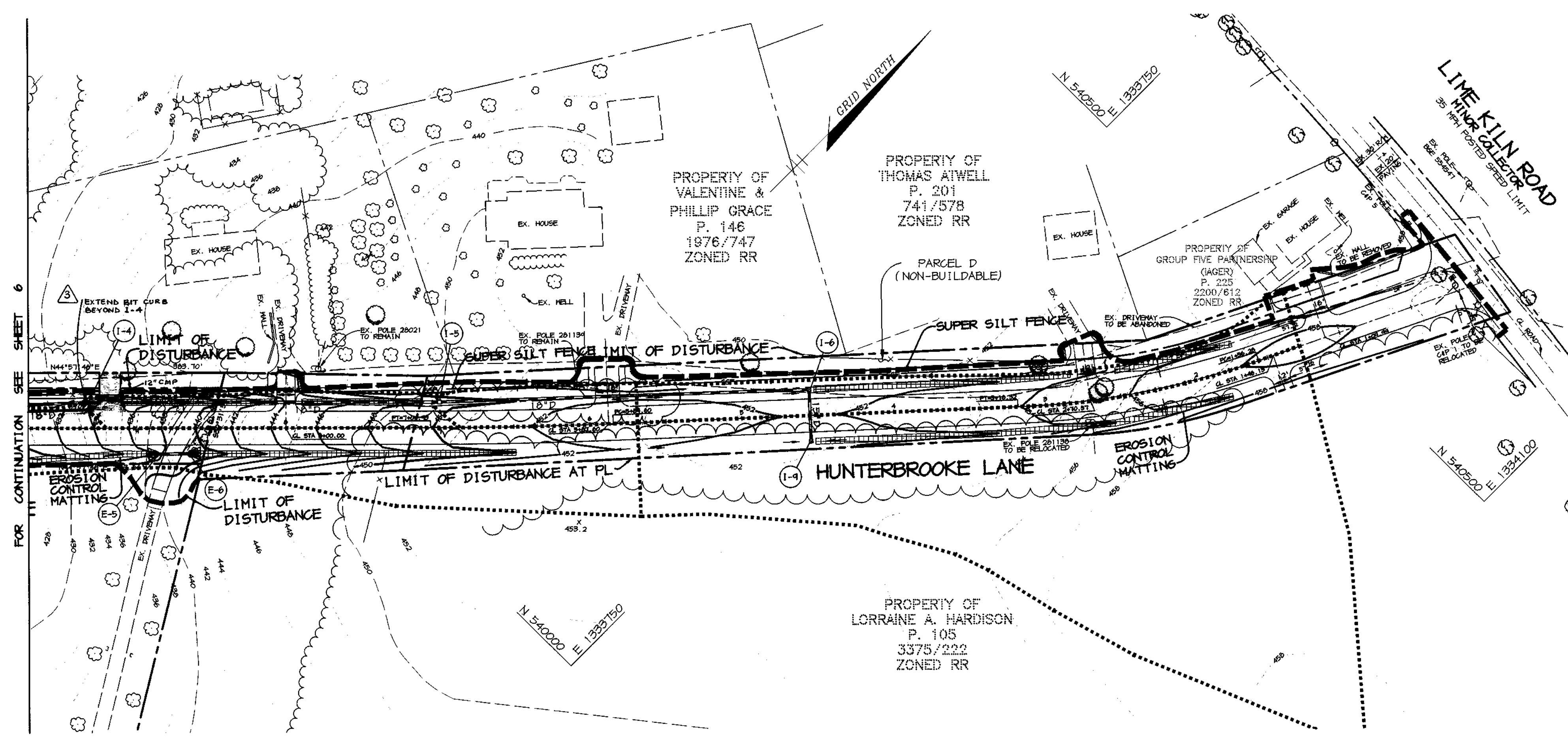
DRAWING NO. 7 OF 18

*Arthur E. Muegge*  
 ARTHUR E. MUEGGE #8707

AS-BUILT 5/1/01 F-98-94

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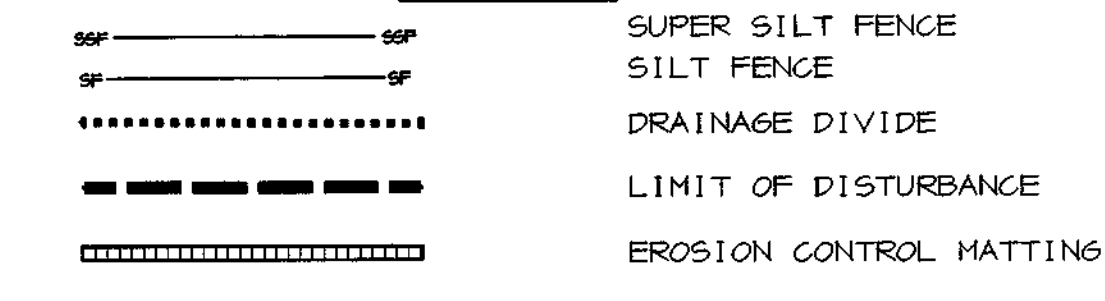




**DRAINAGE DATA**

INLET NOS.	AREA IN ACRES	C FACTOR	PERCENT IMPERVIOUS
1	0.20	0.40	20%
2	0.08	0.88	100%
3	0.04	0.75	100%
4	0.12	0.58	50%
5	0.08	0.63	30%
6	0.24	0.54	46%
7	1.34	0.35	0%
8	0.45	0.44	27%
9	2.13	0.33	4%
10	0.80	0.34	4%
11	0.70	0.42	11%
12	2.14	0.33	7%
13	0.61	0.34	0%
14	2.04	0.31	0%
15	1.60	0.40	16%
16	1.38	0.41	18%
17			

**LEGEND**



**21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL**

**Definition**  
Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

**Purpose**  
To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

**Conditions Where Practice Applies**

- This practice is limited to areas having 2:1 or flatter slopes where:
  - The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
  - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
  - The original soil to be vegetated contains material toxic to plant growth.
  - The soil is so acidic that treatment with limestone is not feasible.
- For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

**Construction and Material Specifications**

- Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimentation Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
  - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
  - Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutgrass, poison ivy, thistle, or others as specified.
  - Where subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
- For sites having disturbed areas over 5 acres:
  - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- For sites having disturbed areas over 5 acres:
  - On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
    - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
    - Organic content of topsoil shall be not less than 1.5 percent by weight.
    - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
    - No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.

Note: Topsoil substitutes to amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority may be used in lieu of natural topsoil.

- Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

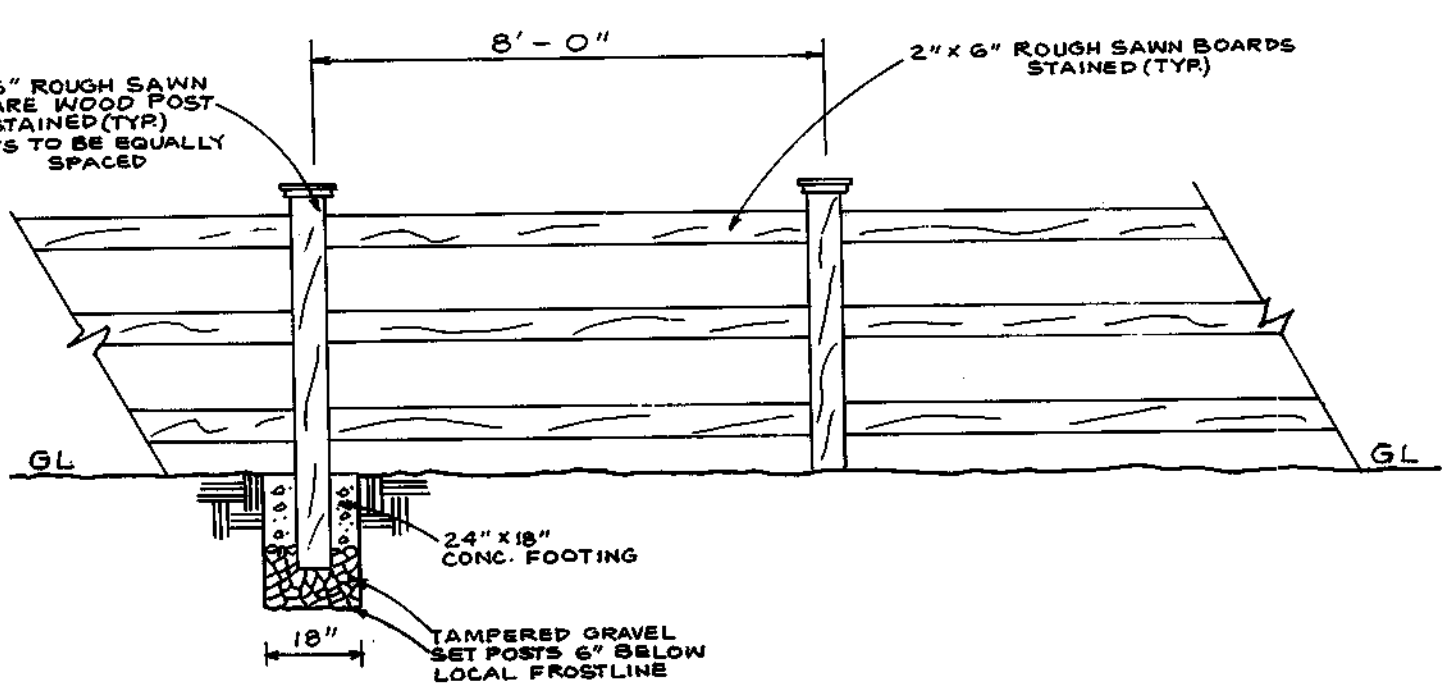
**V. Topsoil Application**

- When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, earth dikes, slope silt fence and sediment traps and basins.
- Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
- Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
- Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

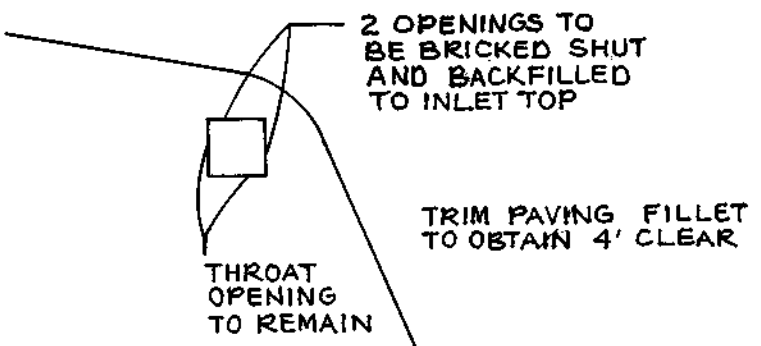
**VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:**

- Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall conform to the following requirements:
  - Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
  - Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
  - Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
  - Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

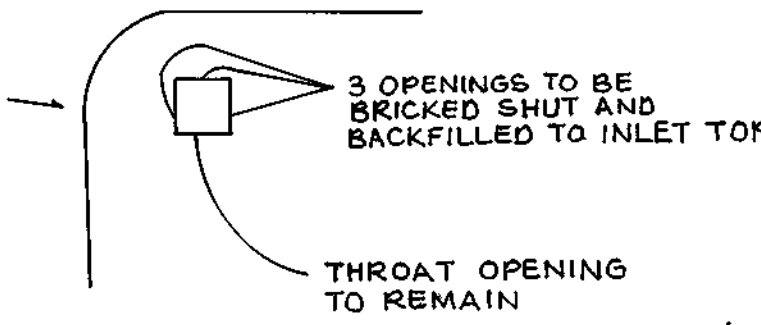
References: Guideline Specifications, Soil Preparation and Sodding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1978.



**4 DETAIL OF 3 BOARD WOOD FENCE (TYP)**  
NO SCALE

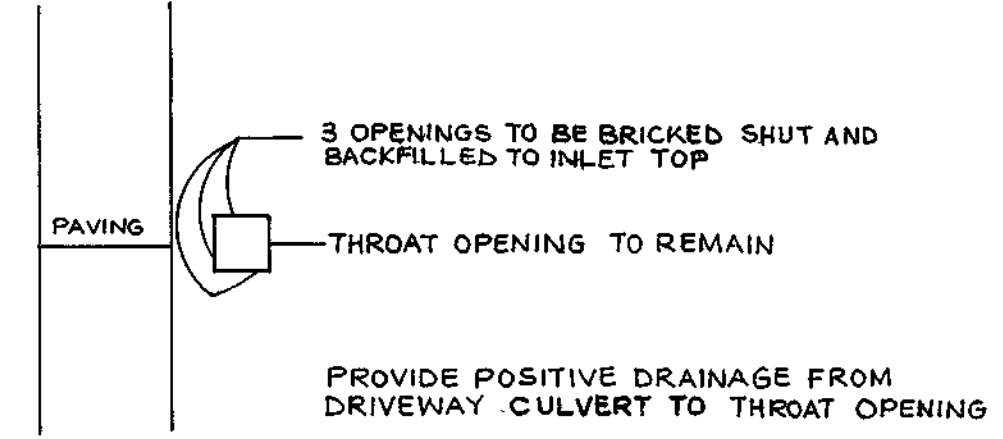


**I-11**

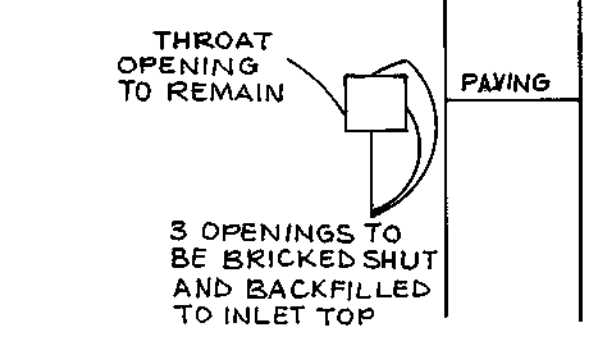


**I-17**

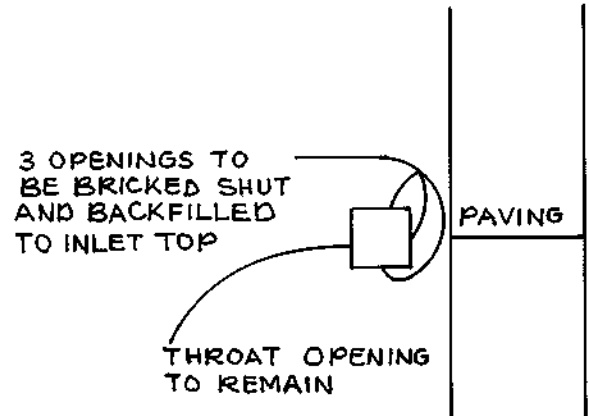
**INLET MODIFICATION DETAIL**  
NO SCALE



**I-4**



**I-7**



**I-10**

**BY THE DEVELOPER :**  
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*Prof. J. S.* 8/29/98  
DEVELOPER DATE

**BY THE ENGINEER :**  
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.

*Arthur E. Muegge* 8-28-98  
ENGINEER DATE

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 Simms* 9/2/98  
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*Math. S.* 9/6/98  
HOWARD SOIL CONSERVATION DISTRICT DATE

**AS-BUILT CERTIFICATE**

*Christopher J. Reid* 5.9.01  
CHRISTOPHER J. REID # 19949 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
*Andrew M. Dwyer* 10-2-98  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*Condi Hamilton* 10/22/98  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Arthur E. Muegge* 10/2/98  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

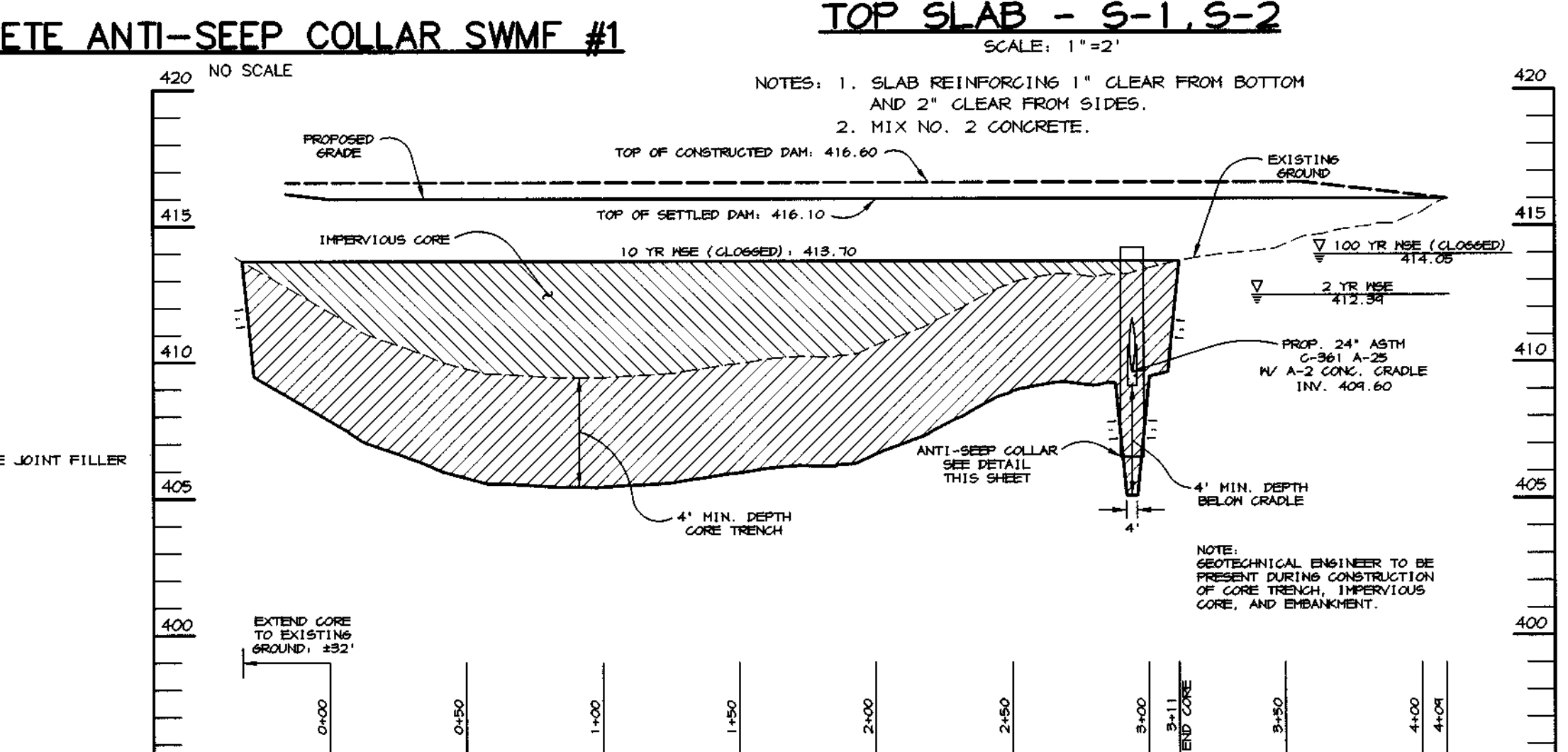
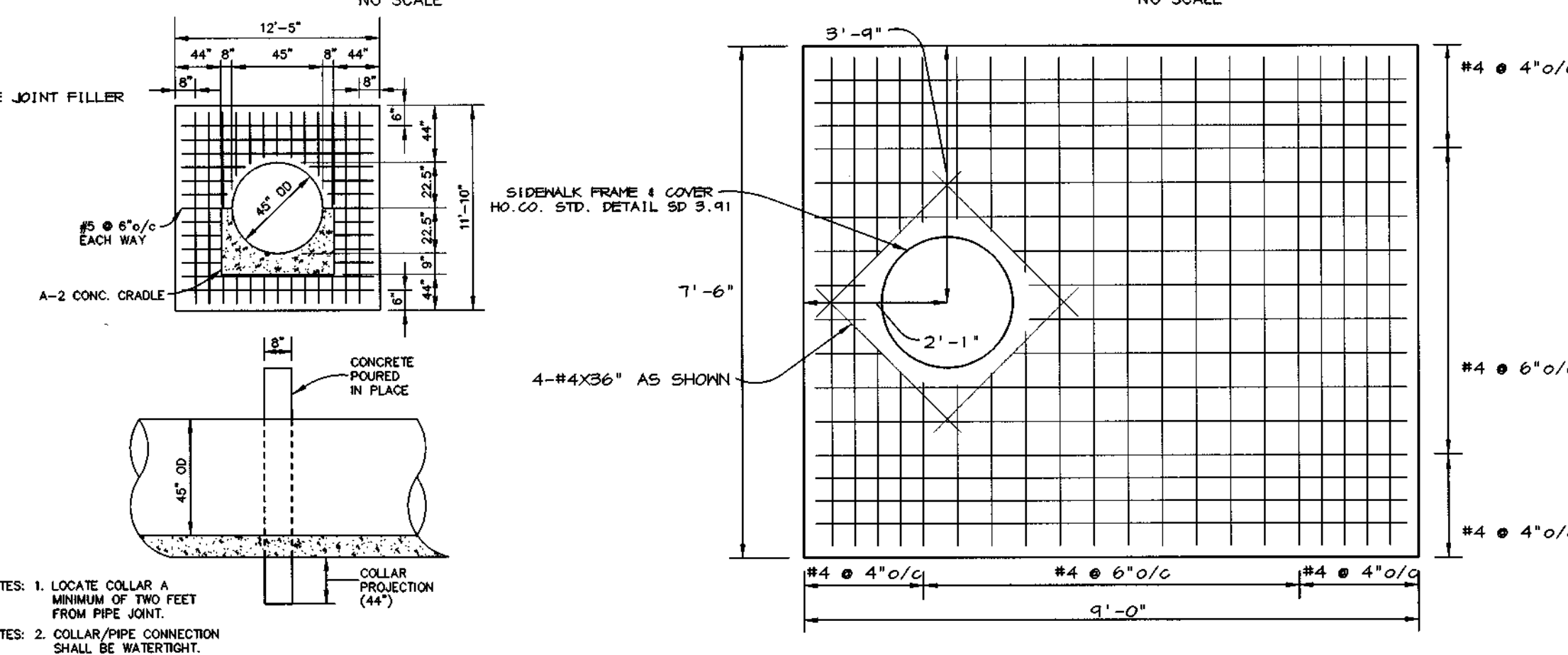
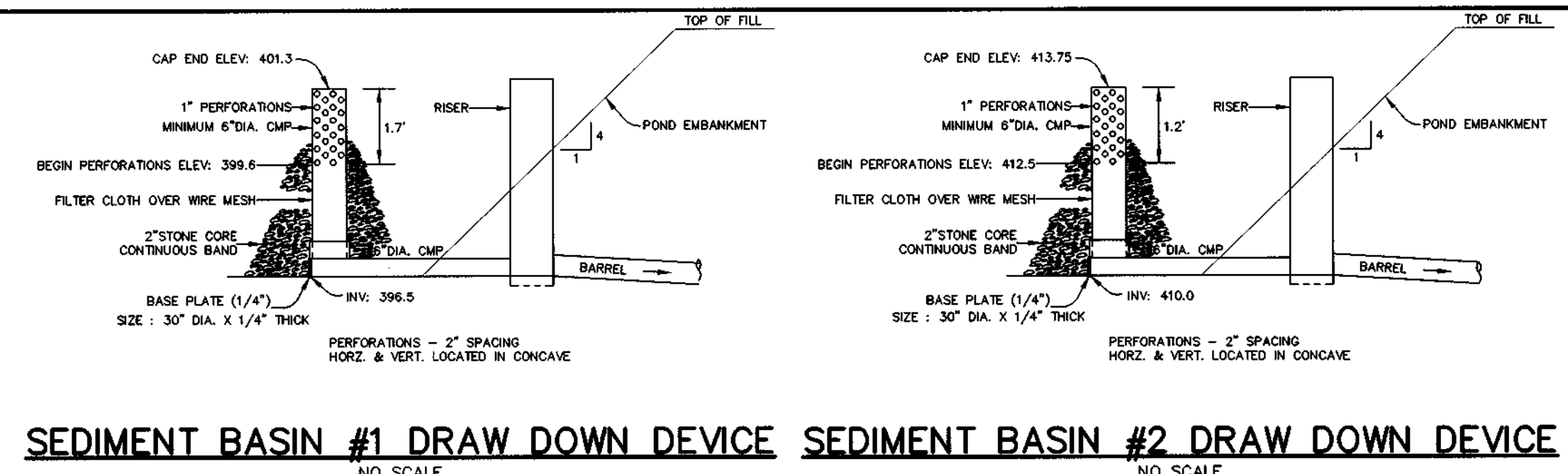
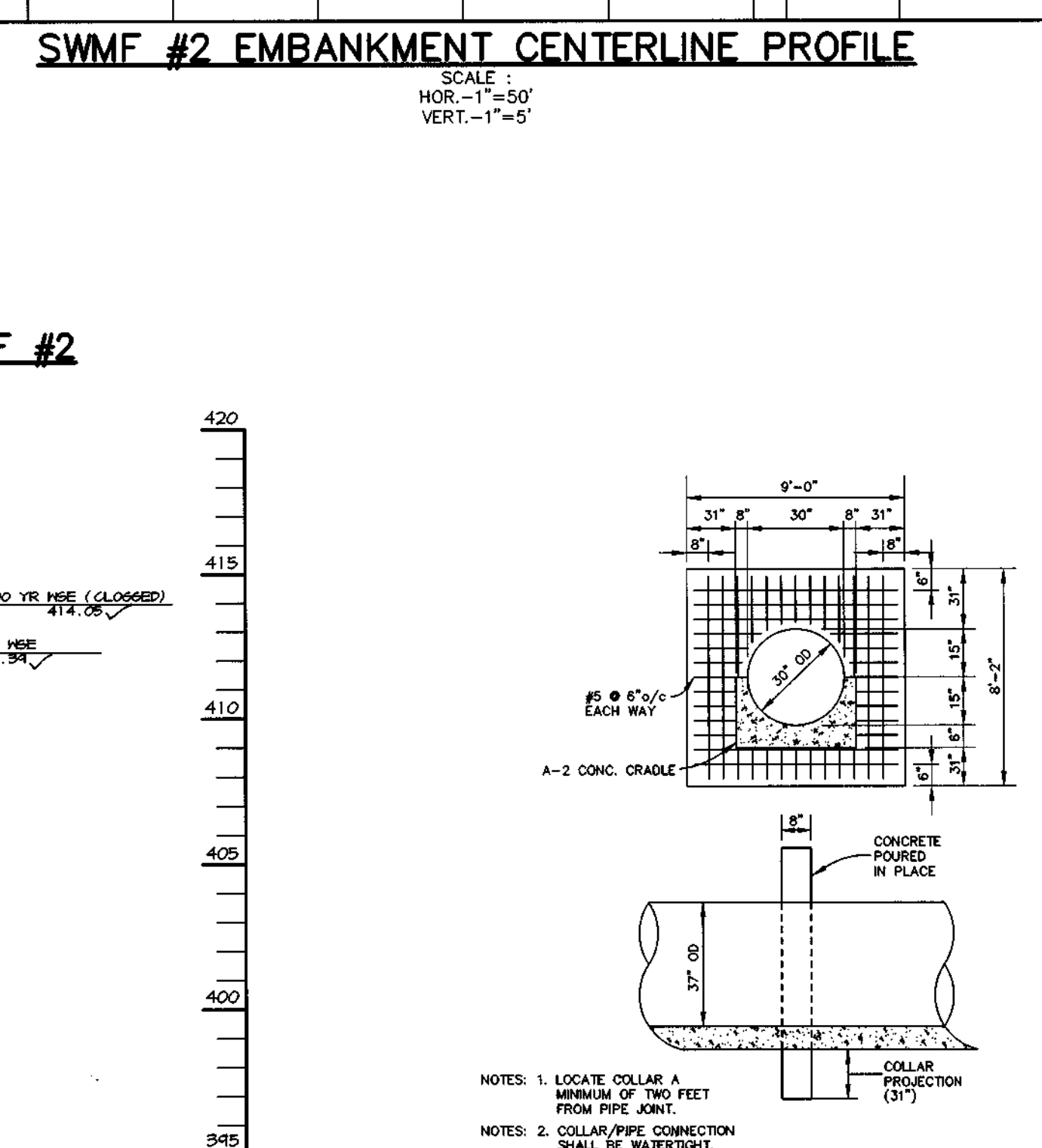
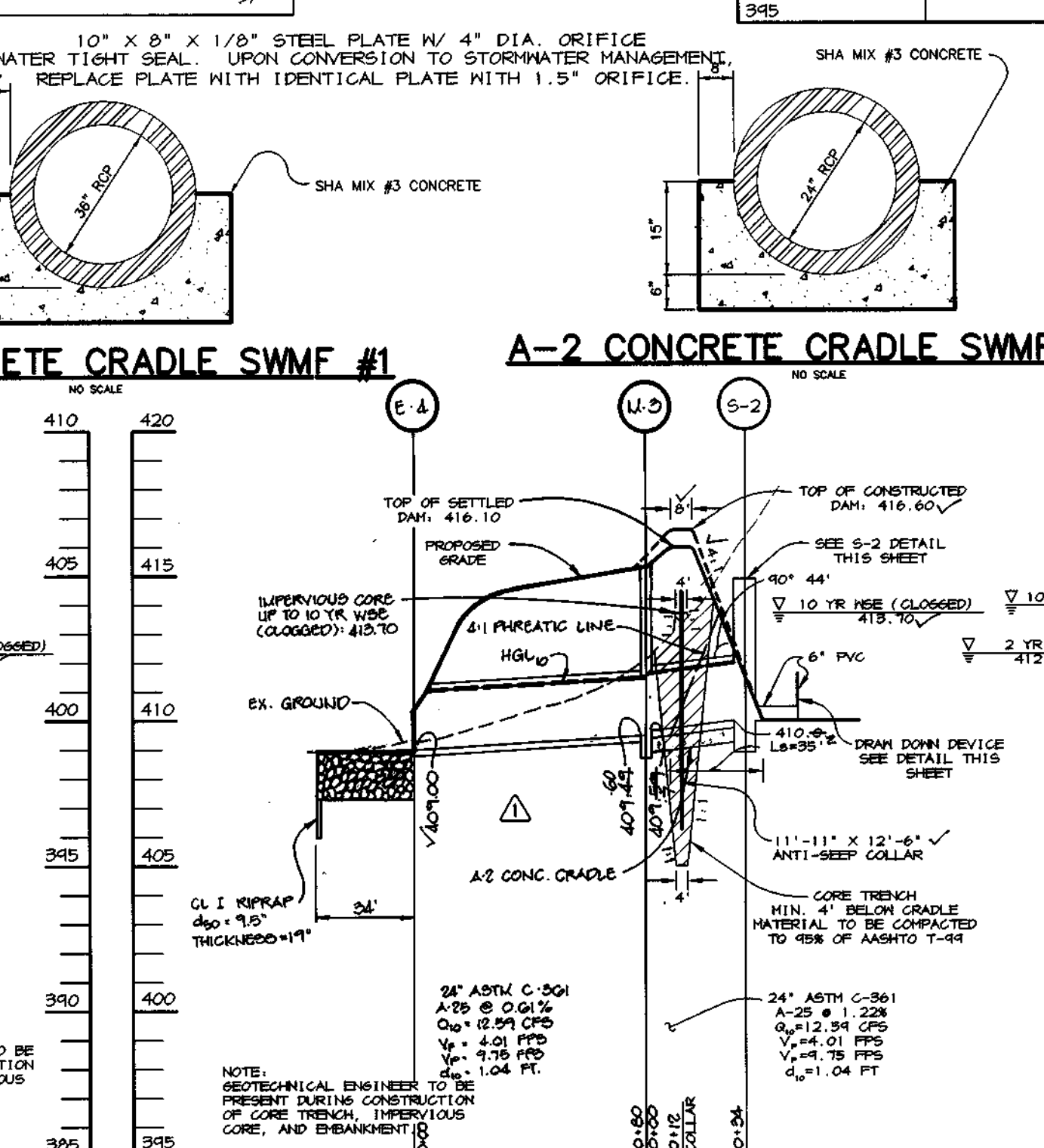
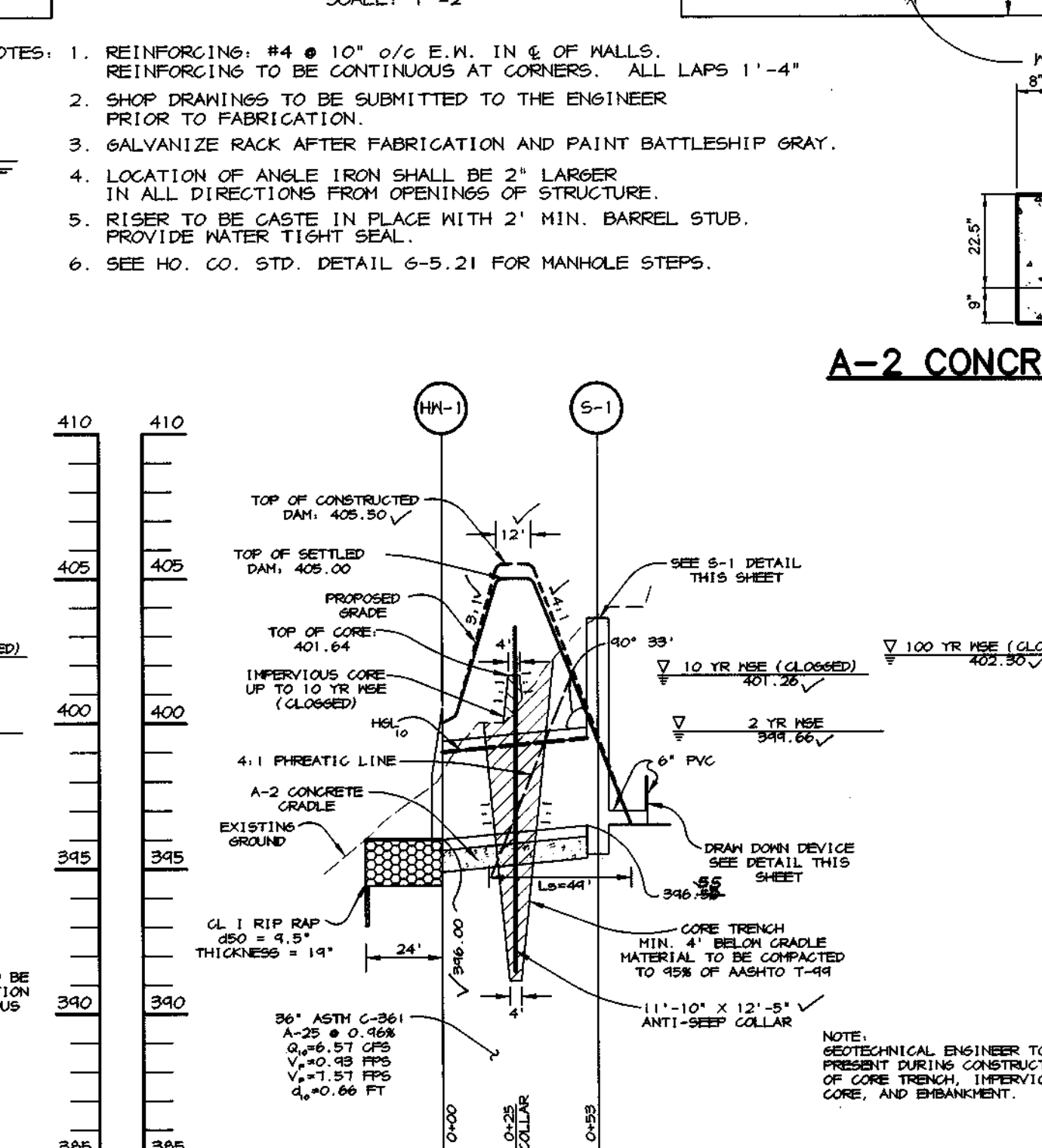
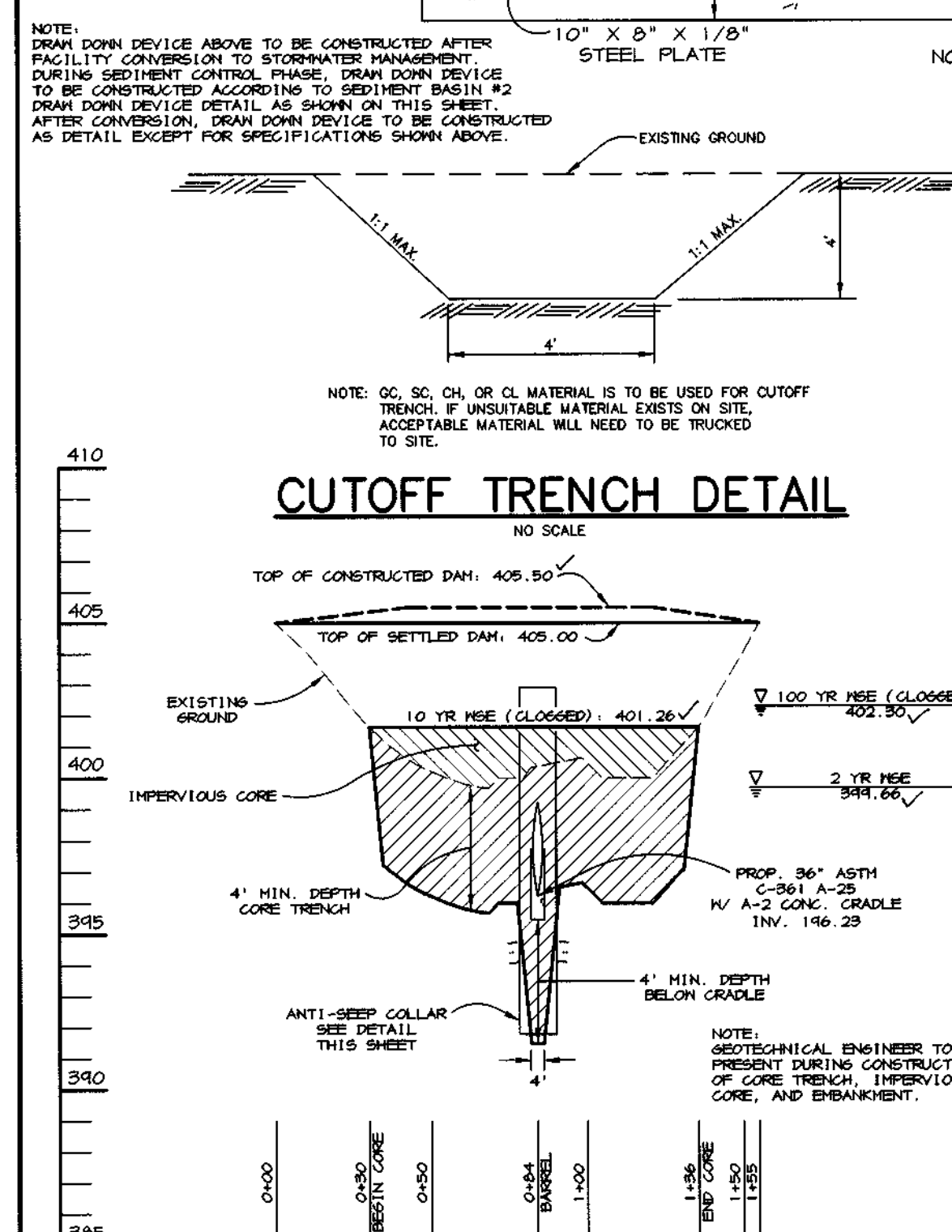
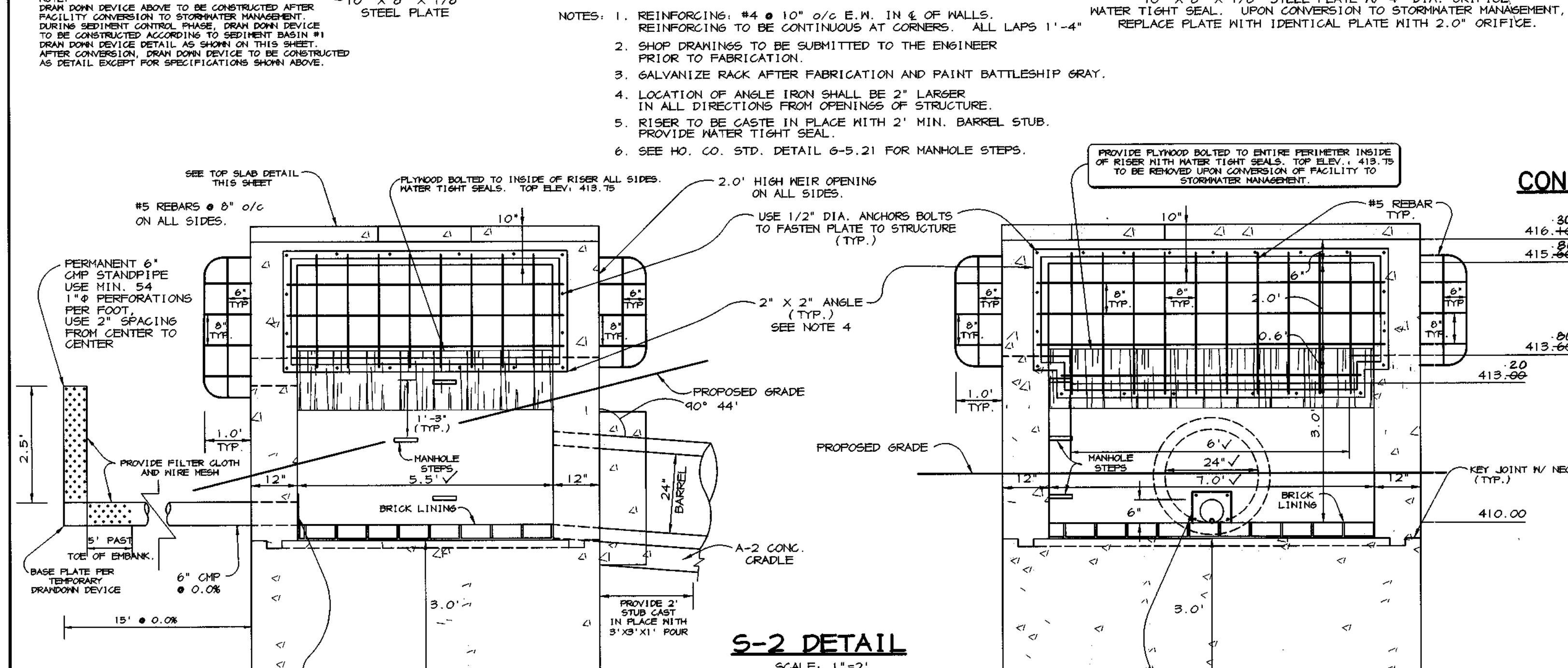
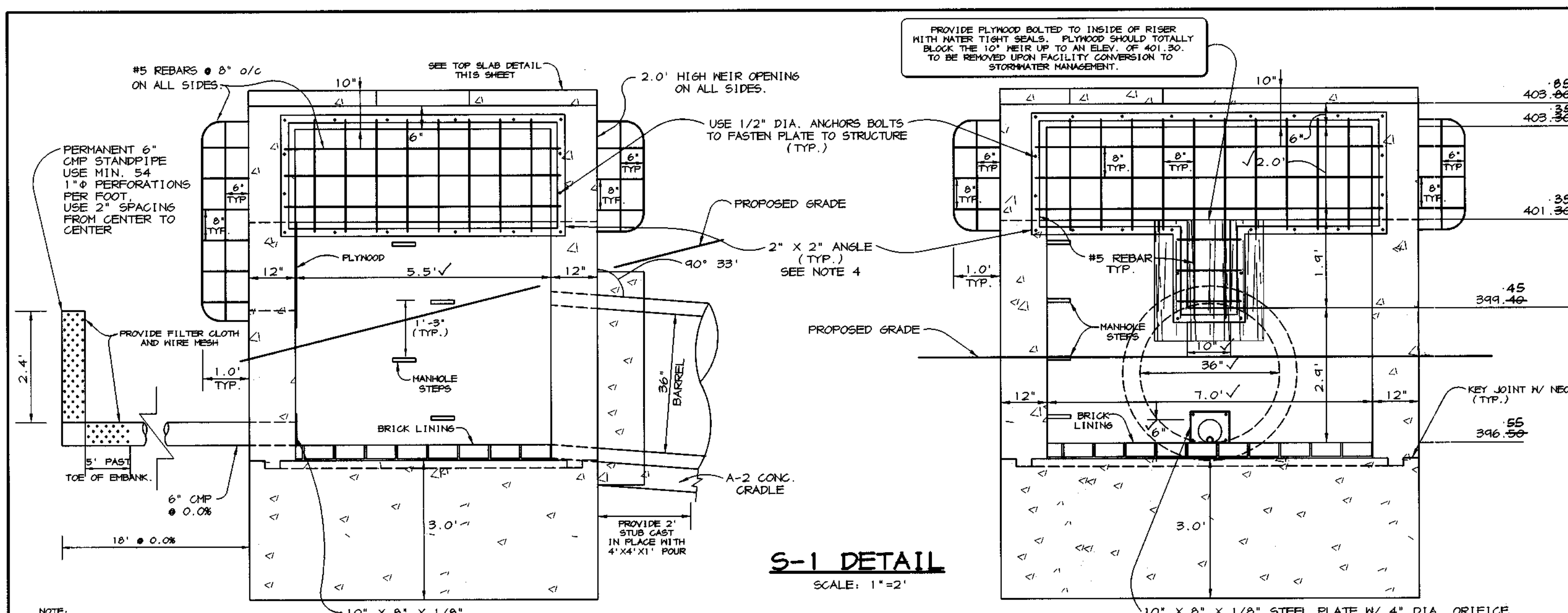
12/28/99 ADDED FENCE DETAIL  
8/25/99 ADDED INLET MODIFICATION DETAIL

DATE	NO.	REVISION
		DEVELOPER WINCHESTER HOMES 6305 Ivy Lane, Suite 800 Greenbelt, Maryland 20770 (301) 474-4411
		OWNER EDWARD ROBERT PRINCE P.O. Box 381 Fulton, Maryland 20759
		PROJECT HUNTERBROOKE FORMERLY PRINCE PROPERTY LOTS 1 - 21, PARCELS A - E
		AREA Parcel 360 & P/O 344 Tax Map 46 Zoned RR-DEO 5th Election District Howard County, Maryland
		TITLE GRADING AND SEDIMENT CONTROL PLAN, DRAINAGE AREA MAP
<b>RIEMER MUEGGE &amp; ASSOCIATES, INC.</b> ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 8818 Centre Park Drive, Columbia, Maryland 21045 tel 410.997.8900 fax 410.997.9282		
8-28-98		DESIGNED BY : C.J.R.
		DRAWN BY : DAM
		PROJECT NO. 97150/FINALS RDB, DMS
		DATE : AUGUST 28, 1998
		SCALE : 1" = 50'
		DRAWING NO. 8 OF 18

*Arthur E. Muegge* #8707  
ARTHUR E. MUEGGE #8707

**AS-BUILT** 5/17/01 F-98-94





BY THE DEVELOPER:  
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER: *[Signature]* DATE: 8/20/98

BY THE ENGINEER:  
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.

ENGINEER: *[Signature]* DATE: 8-28-98

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.

NATURAL RESOURCES CONSERVATION SERVICE DATE: 9/2/98

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

HOWARD SOIL CONSERVATION DISTRICT DATE: 9/2/98

AS BUILT CERTIFICATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 5.9.01

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS DATE: 10-2-98

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 10/22/98

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE: 10/2/98

4-20-99	REV. 04/99 #2 PRINCIPAL SPILLWAY PROFILE
DATE NO.	REVISION
DEVELOPER	MINCHESTER HOMES 6305 Ivy Lane, Suite 800 Greenbelt, Maryland 20770 (301) 474-4411
OWNER	EDWARD ROBERT PRINCE P.O. Box 301 Fulton, Maryland 20759
PROJECT	HUNTERBROOKE FORMERLY PRINCE PROPERTY LOTS 1 - 21, PARCELS A - E
AREA	Parcel 360 & P/O 344 Tax Map 46 Zoned RR-DEO 5th Election District Howard County, Maryland
TITLE	SWM PROFILES AND DETAILS

**RIEMER MUEGGE & ASSOCIATES, INC.**  
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
8818 Centre Park Drive, Columbia, Maryland 21045  
tel 410.997.8900 fax 410.997.9282

DATE: 8-28-98  
DESIGNED BY: C.J.R.  
DRAWN BY: DAM  
PROJECT NO: 97150/FINALS RDP.DWG  
DATE: AUGUST 28, 1998  
SCALE: AS SHOWN  
DRAWING NO. 9 OF 18

ARTHUR E. MUEGGE #8707



**MD-378 STANDARDS AND SPECIFICATIONS**

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

**SITE PREPARATION**

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to a steepness of 1:1.

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

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

**EARTH FILL**

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6" frozen or other objectionable material. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

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

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

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within +/- 2% of the optimum. Each layer of fill shall be compacted as specified to obtain that density, and it to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

Cutoff Trench - The cutoff trench shall be excavated into impervious material along and parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be the maximum width of the equipment for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1:1 or flatter.

The back fill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

**STRUCTURE BACKFILL**

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjacent embankment. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and over the structure. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of the structure. Under no circumstances shall equipment be driven over any concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure.

**PIPE CONDUITS**

All pipes shall be circular in cross section.

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

- Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-561. An approved equivalent is AWWA Specification C-302.
- Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the side of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.
- Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any material from entering the joint line and grade of the pipe. The first joint must be located within 2 feet from the riser.
- Backfilling shall conform to Structure Backfill.
- Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

**CONCRETE**

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3.

**ROCK RIPRAP**

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

The rock shall have the following properties:

- Bulk specific gravity (saturated surface-dry basis) not less than 2.5.
- Absorption not more than three percent.
- Soundness: Weight loss in five cycles not more than 20 percent when sodium sulfate is used.
- Bulk specific gravity and absorption shall be determined according to ASTM C 127. The test for soundness shall be performed according to ASTM C 88.

The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 919.12.

**CARE OF WATER DURING CONSTRUCTION**

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

**STABILIZATION**

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

**EROSION AND SEDIMENT CONTROL**

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

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

**TEMPORARY SEEDING NOTES**

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

**Seedbed Preparation** - Loosen upper three inches of soil by raking, dicing or other acceptable means before seeding. If not previously loosened.

**Soil Amendments** - Apply 600 lbs. per acre 10-10-10 Fertilizer (14 lbs. per 1000 sq.ft.).

**Seeding** - For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushels per acre of annual ryegrass (3.2 lbs. per 1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of creeping lovegrass (0.7 lbs. per 1000 sq.ft.). For the period November 16 thru February 26, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

**Mulching** - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

**PERMANENT SEEDING NOTES**

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

**Seedbed Preparation** - Loosen upper three inches of soil by raking, dicing or other acceptable means before seeding. If not previously loosened.

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

- Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 1000 lbs. per acre 10-10-10 Fertilizer (14 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs. per 1000 sq.ft.).
- Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 1000 lbs. per acre 10-10-10 Fertilizer (23 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

**Seeding** - For the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq.ft.) of creeping lovegrass. During the period October 16 thru February 26, protect site by one of the following options:

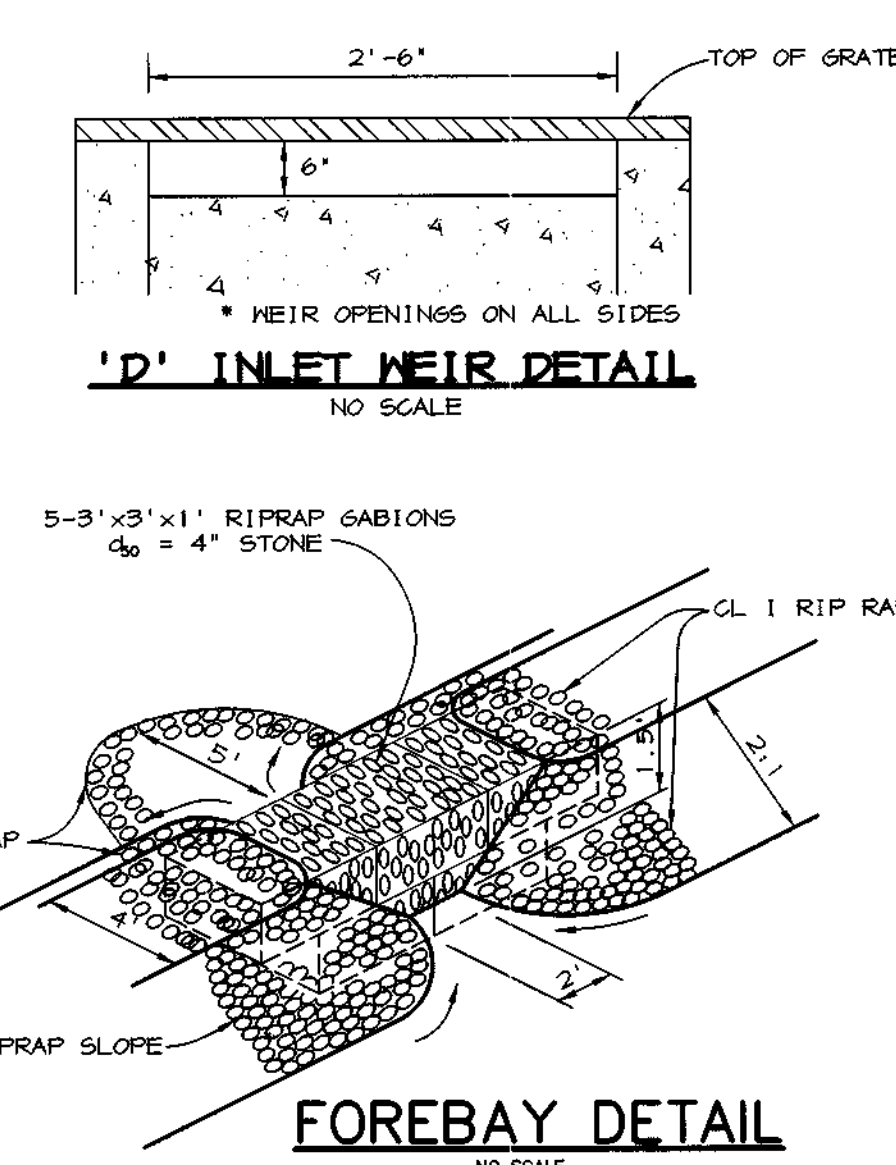
- 2 tons per acre of well-anchored mulch straw and seed as soon as possible in the spring.
- Use sod.
- Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw.

**Mulching** - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

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

**SEDIMENT CONTROL NOTES**

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES, AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THEREOF.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THE PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOY, TEMPORARY SEEDING, AND MULCHING (SEC. 6.) TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
  - TOTAL AREA OF SITE 21.21 ACRES
  - AREA DISTURBED 19.90 ACRES
  - AREA TO BE ROOFED OR PAVED 2.00 ACRES
  - AREA TO BE VEGETATIVELY STABILIZED 14.90 ACRES
  - TOTAL CUT 14,500 CU. YARDS
  - TOTAL FILL 14,500 CU. YARDS



**GEOTECHNICAL SPECIFICATIONS**

- CONSTRUCTION DEWATERING IS TO BE IMPLEMENTED DURING FACILITY CONSTRUCTION IF GROUND WATER IS ENCOUNTERED.
- MATERIAL USED TO CONSTRUCT CUTOFF TRENCH SHOULD ALSO BE USED TO BACKFILL RISER AND OUTLET PIPE.
- A TEST PIT EXPLORATION AND LABORATORY TESTING PROGRAM SHOULD BE IMPLEMENTED TO LOCATE SUITABLE SOILS FOR CUTOFF TRENCH CONSTRUCTION.
- AMENDED SOIL WITH THE USE OF BENTONITE MAY BE USED IF APPROVED BY THE GEOTECHNICAL ENGINEER.
- FILLS FOR CONSTRUCTION OF CUTOFF TRENCH AND EMBANKMENT SHOULD BE CONSTRUCTED IN EIGHT-INCH LOOSE LIFTS, AND COMPACTED TO WITHIN 95% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D 698, THE STANDARD PROCTOR. FILLS AROUND THE RISER, OUTLET PIPE AND ANTI-SEEP COLLAR TO BE PLACED IN FOUR-INCH LIFTS AND COMPACTED TO THE SAME STANDARD WITH HAND EQUIPMENT. COMPACTIVE EFFORT SHOULD BE MONITORED WITH INPLACE DENSITY TESTINGS AS PERFORMED BY A QUALIFIED TECHNICIAN UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER.

**STRUCTURE SCHEDULE**

STRUCTURE	TYPE	LOCATION	INV. IN	INV. OUT	TOP	REMARKS
I-1	D	N 534,545.39 E 1,333,099.37	412.00	411.33	415.63	HOCO STD. DETAIL SD 4.39
I-2	A-5	11' RT OF CL STA 12+55.73	413.45 (10')	412.45	420.30	HOCO STD. DETAIL SD 4.40
I-3	A-5	11' RT OF CL STA 10+54	413.55 (10')	415.20	425.34	HOCO STD. DETAIL SD 4.40
I-4*	D	21' RT OF CL STA 9+29	427.74	427.68	435.24	HOCO STD. DETAIL SD 4.39
I-5	D	21' RT OF CL STA 6+49	442.00	442.40	449.30	HOCO STD. DETAIL SD 4.39
I-6	D	21' RT OF CL STA 4+55.48	446.58	445.98	450.14	HOCO STD. DETAIL SD 4.39
I-7*	D	21' LT OF CL STA 12+55.73	-	414.80	420.25	HOCO STD. DETAIL SD 4.39
I-8	D	21' LT OF CL STA 10+54	-	419.30	422.80	HOCO STD. DETAIL SD 4.39
I-9	D	21' LT OF CL STA 4+55.48	-	446.05	450.14	HOCO STD. DETAIL SD 4.39
I-10*	D	21' LT OF CL STA 20+10	419.45	419.36	426.09	HOCO STD. DETAIL SD 4.39
I-11	D	26' LT OF CL STA 17+73	416.33	416.25	426.75	HOCO STD. DETAIL SD 4.39
M-5	MH	26' LT OF CL STA 17+29	416.82	416.50	424.42	HOCO STD. DETAIL G 5.12
I-13	D	21' LT OF CL STA 14+22	-	418.35	423.34	HOCO STD. DETAIL SD 4.39
I-14	D	21' LT OF CL STA 22+17	-	420.46	424.56	HOCO STD. DETAIL SD 4.39
I-15*	D	N 538,318.55 E 1,333,245.47	400.42	400.30	404.44	HOCO STD. DETAIL SD 4.39
I-16	D	N 538,230.51 E 1,333,331.68	401.59	401.46	404.16	HOCO STD. DETAIL SD 4.39
I-17	D	21' LT OF CL STA 14+55	-	402.27	406.58	HOCO STD. DETAIL SD 4.39
M-1	MH	N 538,842.52 E 1,333,214.61	414.0	413.95	433.30	HOCO STD. DETAIL G 5.12
M-2	MH	N 538,500.95 E 1,333,085.31	398.48	398.37	406.64	HOCO STD. DETAIL G 5.13
M-3	MH	N 539,458.58 E 1,332,707.41	407.34	407.24	415.0	HOCO STD. DETAIL G 5.12
S-1	-	N 538,637.67 E 1,333,048.20	396.55	396.55	404.13	SEE SHEET 9
S-2	-	N 534,430.82 E 1,333,000.40	410.30	410.30	416.43	SEE SHEET 9
E-1	24" END SECTION	N 534,443.32 E 1,333,051.15	-	411.34	-	HOCO STD. DETAIL SD 5.51
E-2	24" END SECTION	N 538,721.42 E 1,333,053.94	-	398.58	-	HOCO STD. DETAIL SD 5.51
E-3	36" END SECTION	N 538,605.92 E 1,333,088.47	-	395.13	-	HOCO STD. DETAIL SD 5.51
E-4	24" END SECTION	N 539,009.16 E 1,332,708.87	-	409.0	-	HOCO STD. DETAIL SD 5.51
E-5	12" END SECTION	N 534,907.79 E 1,333,458.94	-	435.30	-	HOCO STD. DETAIL SD 5.61
E-6	12" END SECTION	N 534,922.66 E 1,333,473.61	-	437.30	-	HOCO STD. DETAIL SD 5.61
HN-1	TYPE 'A' HEADWALL	N 538,540.64 E 1,333,022.51	-	396.00	-	HOCO STD. DETAIL SD 5.11
HN-2	TYPE 'O' HEADWALL	N 534,765.44 E 1,333,257.11	-	417.38	-	HOCO STD. DETAIL SD 5.42
HN-3	TYPE 'O' HEADWALL	N 534,732.87 E 1,333,284.54	417.38	-	-	HOCO STD. DETAIL SD 5.42
M-4	MH	21' LT OF CL STA 18+57	418.34 (10')	418.34	425.34	HOCO STD. DETAIL G 5.12
M-1A	MH	N 538,774.53 E 1,333,103.81	413.34	405.36	420.30	HOCO STD. DETAIL G 5.12

**NOTES:**

LOCATION OF 'D' INLETS AND MANHOLES IS AT CENTER OF TOP COVER; FOR 'A' INLETS LOCATION IS GIVEN FOR CENTER OF THROAT OPENING AT FACE OF CURB. LOCATION OF THE 'S' WATER QUALITY FACILITIES IS GIVEN FOR CENTER POINT AT TOP OF STRUCTURE; FOR END SECTIONS AND HEADWALLS THE LOCATION IS CENTER OF THROAT OPENING AT FACE OF STRUCTURE.

TOP ELEVATION IS TOP OF CURB/GRATE/RIM. ELEVATION OF 'D' INLETS IS AT THROAT OPENING.

SEE DETAIL THIS SHEET FOR 'D' INLET NEIR.

SEE SHEET 8 FOR DETAILED DESCRIPTION OF THROAT OPENINGS

**SEQUENCE OF CONSTRUCTION**

- OBTAIN GRADING PERMIT.
- INSTALL STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE. THEN INSTALL SEDIMENT BASINS AND CONTROL STRUCTURES WITH TEMPORARY MODIFICATIONS. INSTALL EARTH DIKES AND INFLOW PROTECTION. USE MATERIAL FROM BASIN EXCAVATION TO FILL FOR INLETS 1-15 TO 1-17. INSTALL HN-2 TO HN-3 (2 WEEKS)
- UPON COMPLETION OF STEP 2 INSTALL ALL STORM DRAINS BEGINNING WITH E-3 TO I-17. INSTALL ONLY THAT WHICH CAN BE STABILIZED BY THE END OF EACH DAY. (2 WEEKS)
- WITH PERMISSION OF HOWARD COUNTY DILP SEDIMENT CONTROL INSPECTOR, PERFORM ROUGH GRADING. (3 WEEKS)
- VEHICULAR PASSAGE THROUGH ACCESS DRIVE TO BE MAINTAINED AT ALL TIMES
- AS SUBGRADE ELEVATIONS ARE ESTABLISHED, INSTALL REMAINING STORM DRAINS. ONCE THE EXISTING CULVERT AT STA. 11+27 IS REPLACED, INSTALL EARTH DIKES TO OUTLET CLEAR WATER INTO IT. INSTALL EROSION CONTROL MATTING AS ROAD SHOULDES ARE COMPLETED. (4 WEEKS)
- COMMENCE PAVING AND INSTALL BITUMINOUS CURB. (3 WEEKS)
- APPLY TOPSOIL AND STABILIZE DISTURBED AREAS AS NECESSARY IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (3 DAYS)
- INSTALL STREET LIGHT, LANDSCAPING, STREET TREES, REFORESTATION AND ROAD STRIPING. (3 WEEKS)
- UPON APPROVAL OF HOWARD COUNTY DILP SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND CONVERT SEDIMENT BASINS TO PERMANENT SHIMS IN THE FOLLOWING STEPS:
  - CLEAN STORM DRAIN INLETS AND FLUSH OUT PIPES. (1 DAY)
  - PUMP OUT STANDING WATER IN BASIN USING PUMPING STATION. (1 DAY)
  - REMOVE ACCUMULATED SEDIMENT. (2 DAYS)
  - REMOVE DRAIN DOWN DEVICES, PLYWOOD AND ORIFICE PLATES. (1 DAY)
  - INSTALL RIP-RAP. (1 DAY)
  - STABILIZE REMAINING DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 DAYS)

OPERATION AND MAINTENANCE SCHEDULE OF PUBLICLY OWNED AND MAINTAINED STORMWATER MANAGEMENT FACILITIES BY HOA.

**ROUTINE MAINTENANCE**

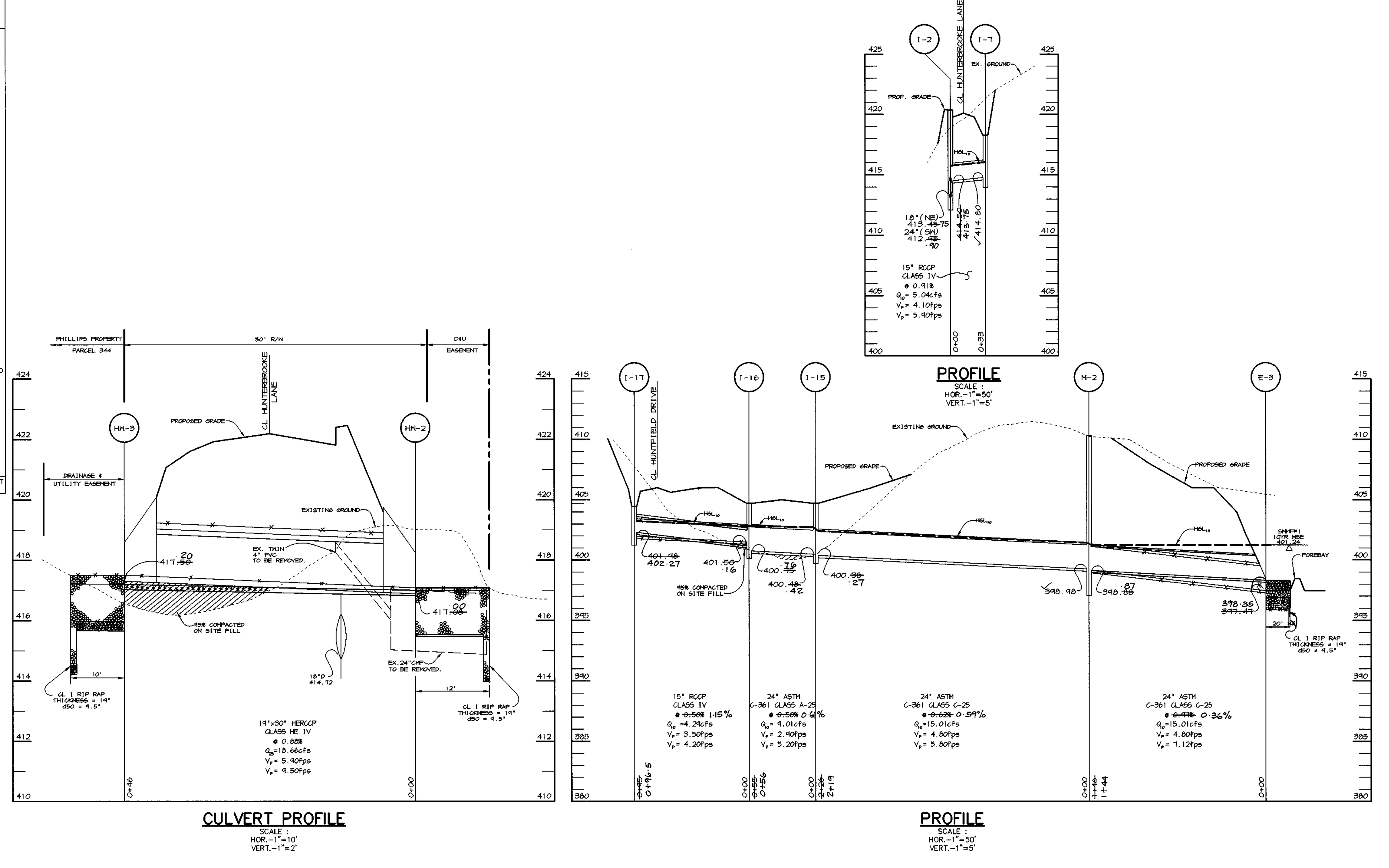
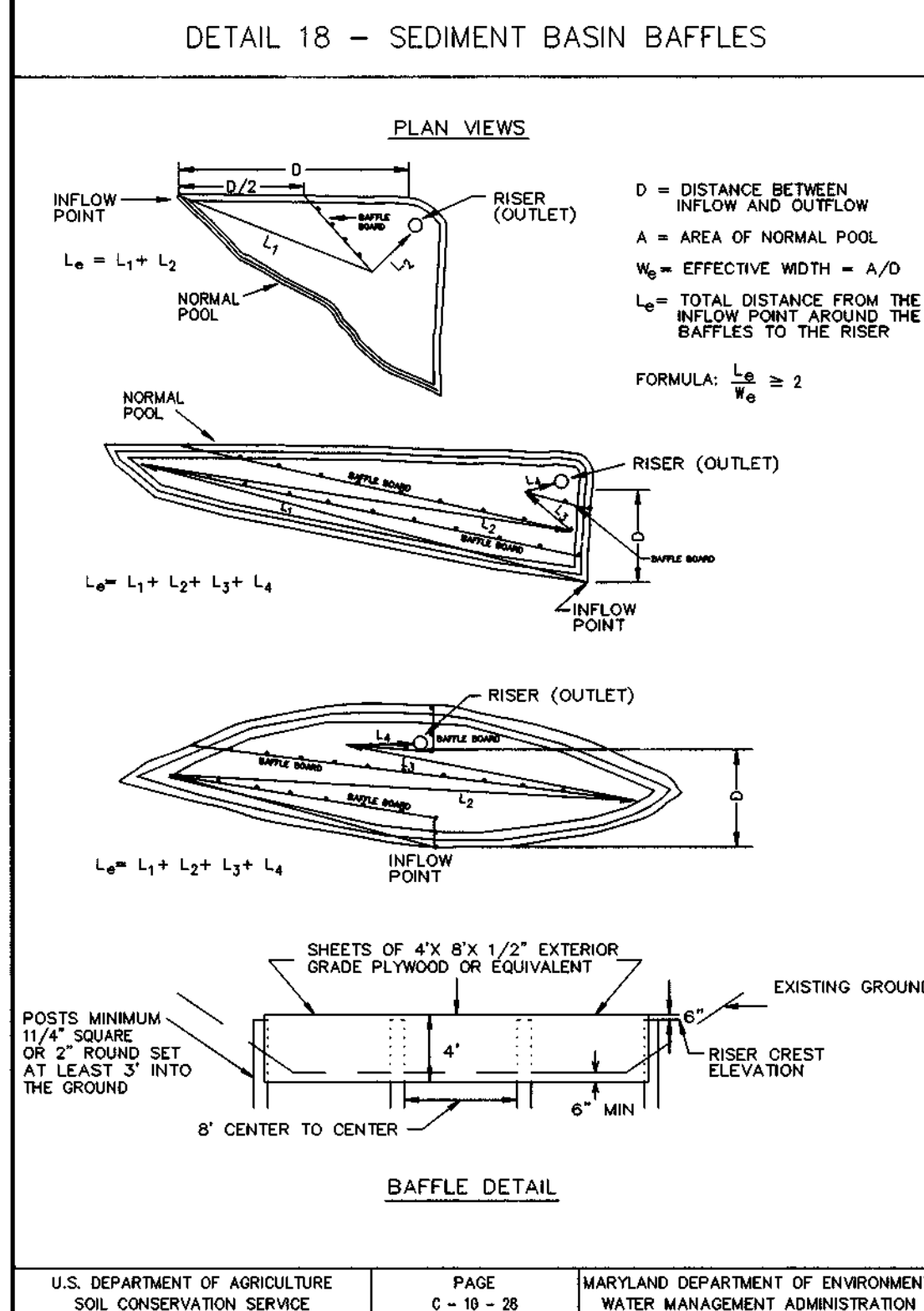
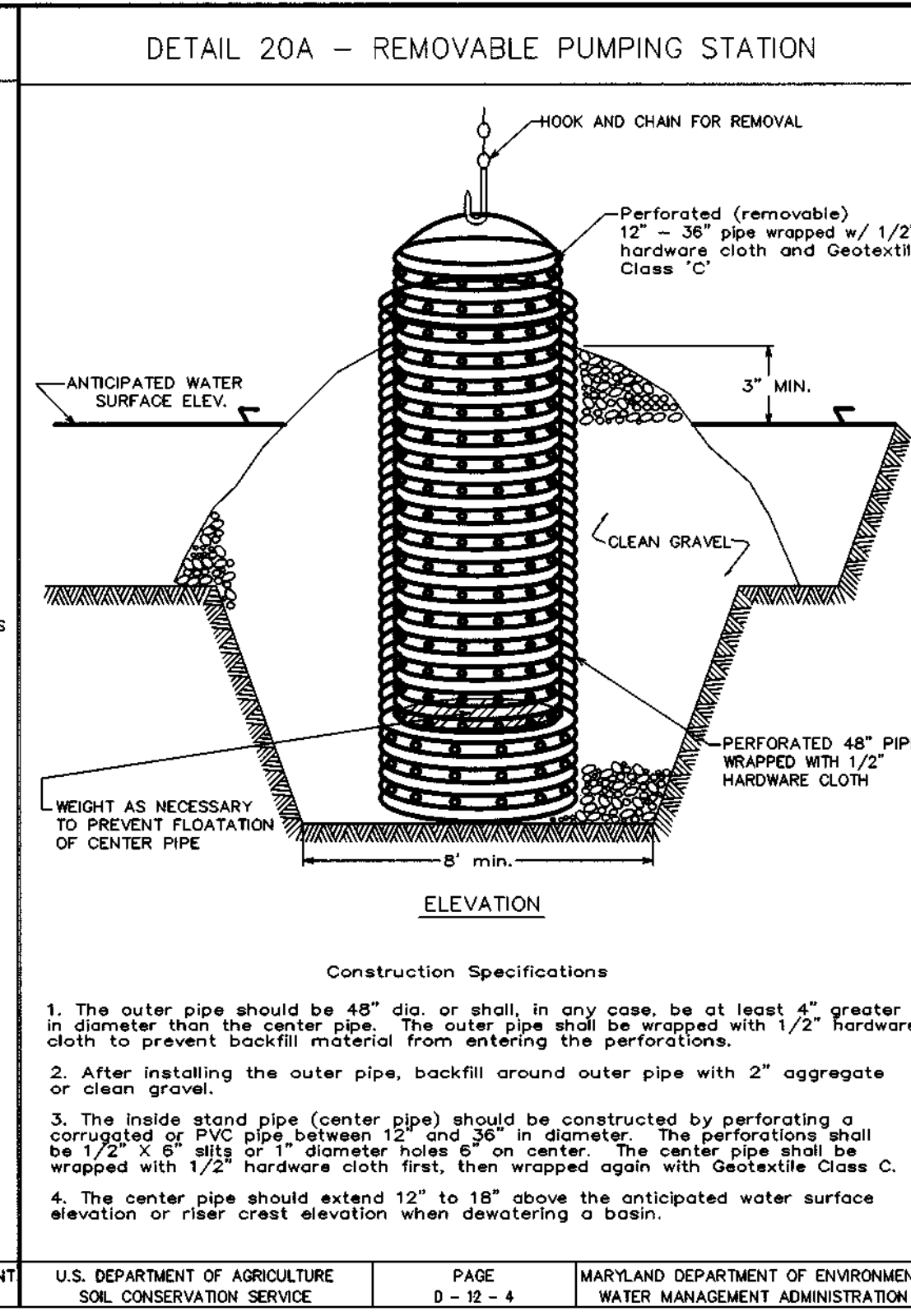
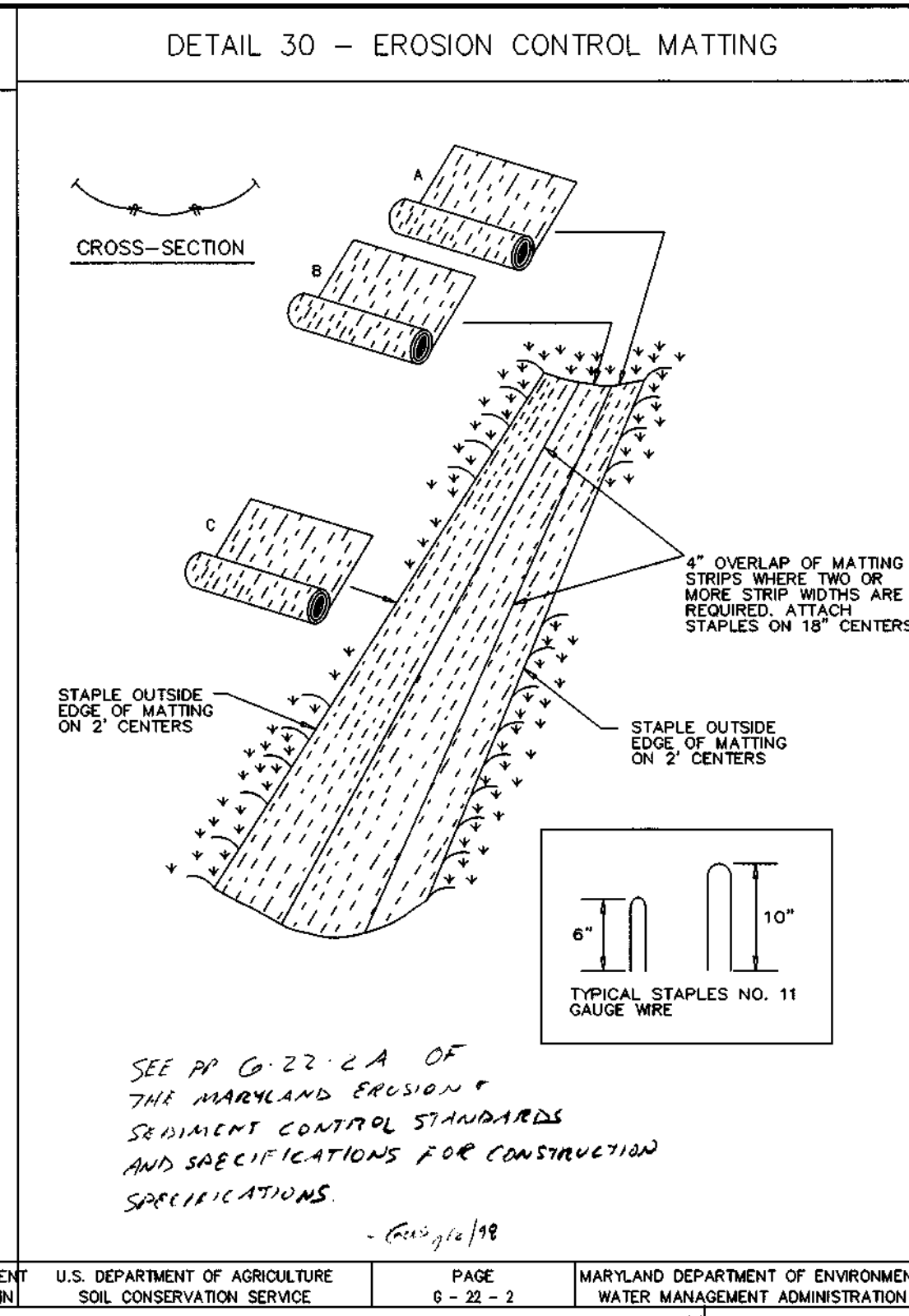
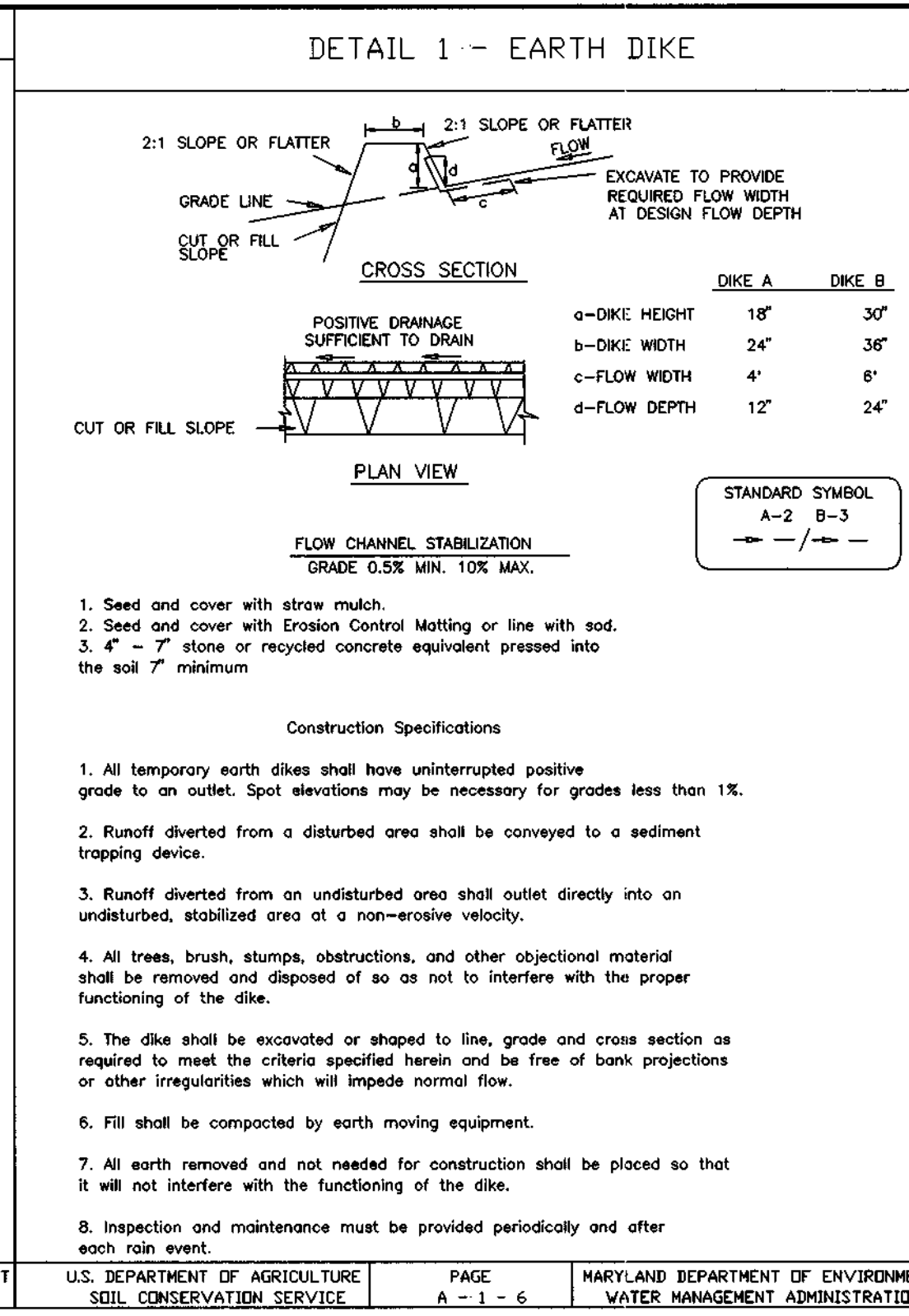
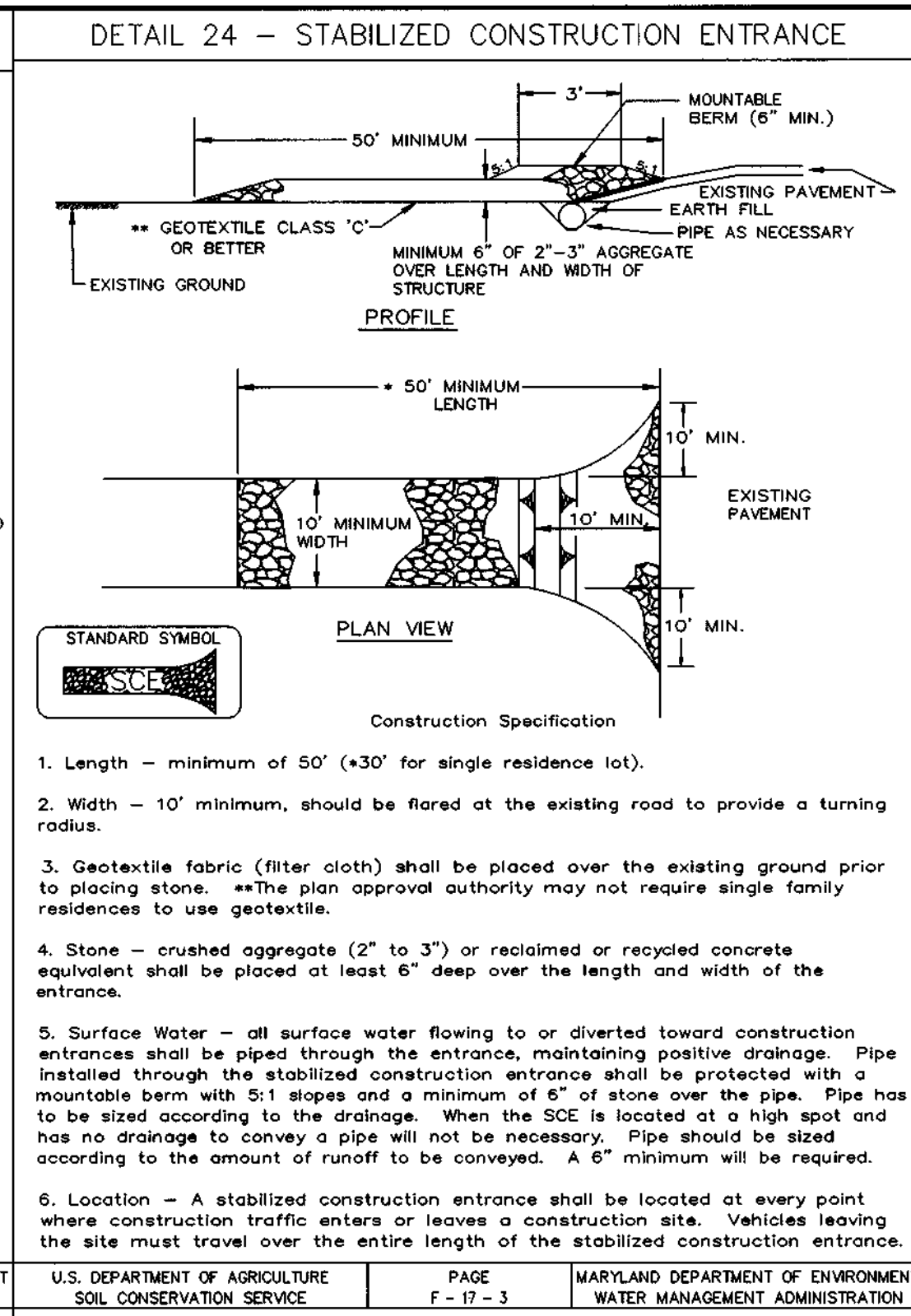
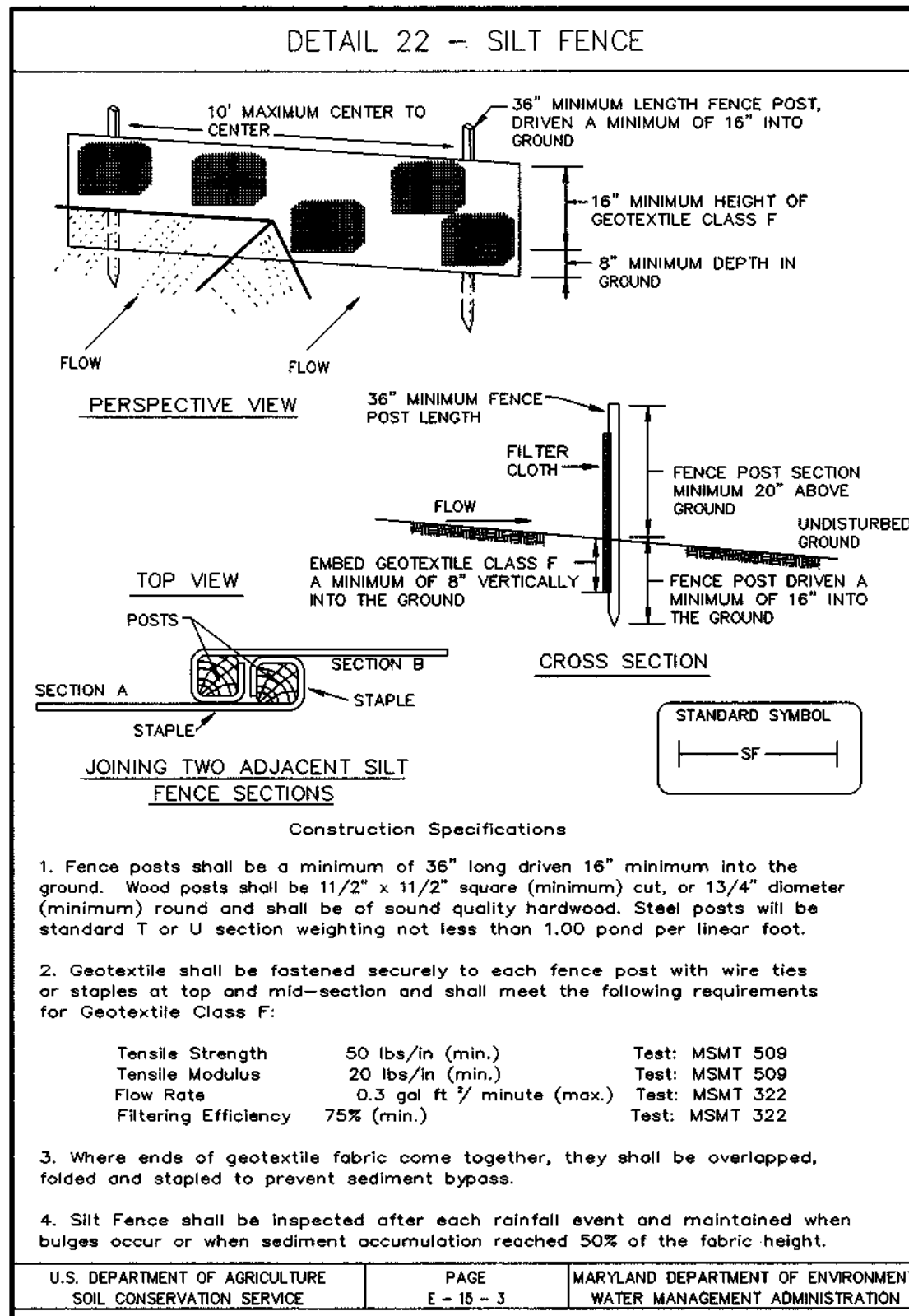
- Facility shall be inspected annually and after major storms. Inspections should be performed during wet weather to determine if the pond is functioning properly.
- Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side 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, the riser, 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.

8/25/99	REVISED	MODIFIED STRUCTURE SCHEDULE
DATE	NO.	REVISION
BY THE DEVELOPER:		
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.		
<i>Arthur E. Muegge</i>		8/14/99
DEVELOPER		DATE
BY THE ENGINEER:		
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 NOTICED 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.		
<i>Arthur E. Muegge</i>		8-28-98
ENGINEER		DATE
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.		
<i>Carol Simms</i>		9/6/98
NATURAL RESOURCES CONSERVATION SERVICE		DATE
THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.		
<i>Paul Kelly</i>		9/6/98
HOWARD SOIL CONSERVATION DISTRICT		DATE
AS-BUILT CERTIFICATE		
<i>Christopher J. Reid</i>		5.9.01
CHRISTOPHER J. REID #19949		DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.		
<i>Andrew M. Daniels</i>		10-2-98
CHIEF, BUREAU OF HIGHWAYS		DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.		
<i>Archie Hamilton</i>		1/22/98
CHIEF, DIVISION OF LAND DEVELOPMENT		DATE
<i>Arthur E. Muegge</i>		1/1/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION		DATE
4-28-99	REV. 11.3 & 8.4 IN STRUCTURE SCHEDULE	
2-12-99	REV. AREA DISTURBED & VEGET. STABILIZED	
DATE	NO.	REVISION
DEVELOPER		WINCHESTER HOMES 6305 Ivy Lane, Suite 800 Greenbelt, Maryland 20770 (301) 474-4411
OWNER		EDWARD ROBERT PRINCE P.O. Box 381 Fulton, Maryland 20759
PROJECT		HUNTERBROOKE FORMERLY PRINCE PROPERTY LOTS 1 - 21, PARCELS A - E
AREA		Parcel 360 & P/O 344 Tax Map 46 Zoned RR-DEO 5th Election District Howard County, Maryland
TITLE	</	





BY THE DEVELOPER:

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*Arthur E. Muegge* 8/28/98  
 DEVELOPER DATE

BY THE ENGINEER:

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.

*Arthur E. Muegge* 8/28/98  
 ENGINEER DATE

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.

*Christopher J. Reid* 9/2/98  
 NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*Arthur E. Muegge* 9/2/98  
 HOWARD SOIL CONSERVATION DISTRICT DATE

AS-BUILT CERTIFICATE

*Christopher J. Reid* 5.9.01  
 CHRISTOPHER J. REID #19949 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

*Andrew M. Deane* 10-2-98  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Andy Hamilton* 10/23/95  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE NO. REVISION

DEVELOPER: WINCHESTER HOMES  
 6305 Ivy Lane, Suite 800  
 Greenbelt, Maryland 20770  
 (301) 474-4411

OWNER: EDWARD ROBERT PRINCE  
 P.O. Box 361  
 Fulton, Maryland 20759

PROJECT: HUNTERBROOKE  
 FORMERLY PRINCE PROPERTY  
 LOTS 1 - 21, PARCELS A - E

AREA: Parcel 360 & P/O 344  
 Tax Map 46 Zoned RR-DEO  
 5th Election District  
 Howard County, Maryland

DETAILS AND PROFILES

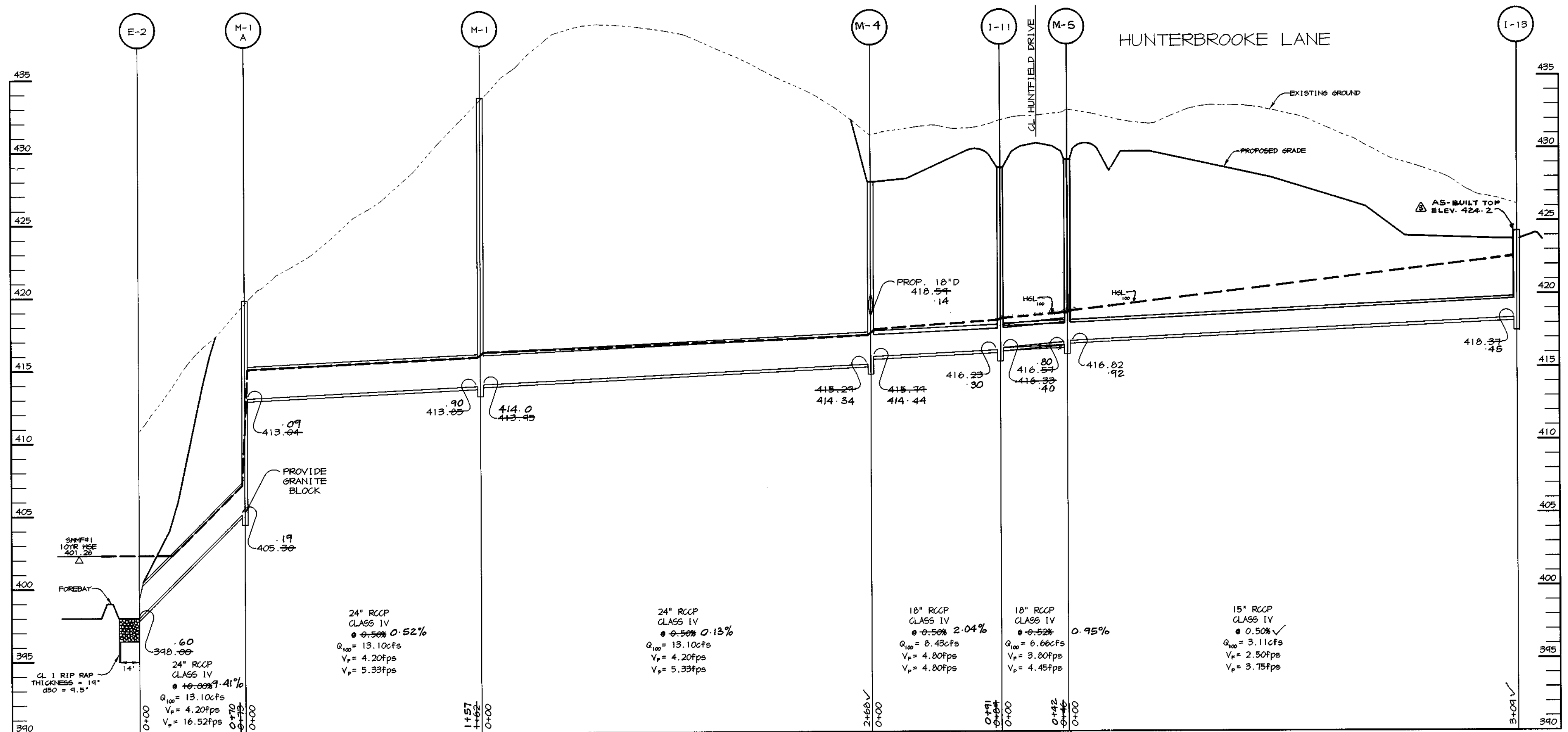
**RIEMER MUEGGE & ASSOCIATES, INC.**  
 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
 8818 Centre Park Drive, Columbia, Maryland 21045  
 tel 410.997.8900 fax 410.997.9282

DATE: 8-28-98

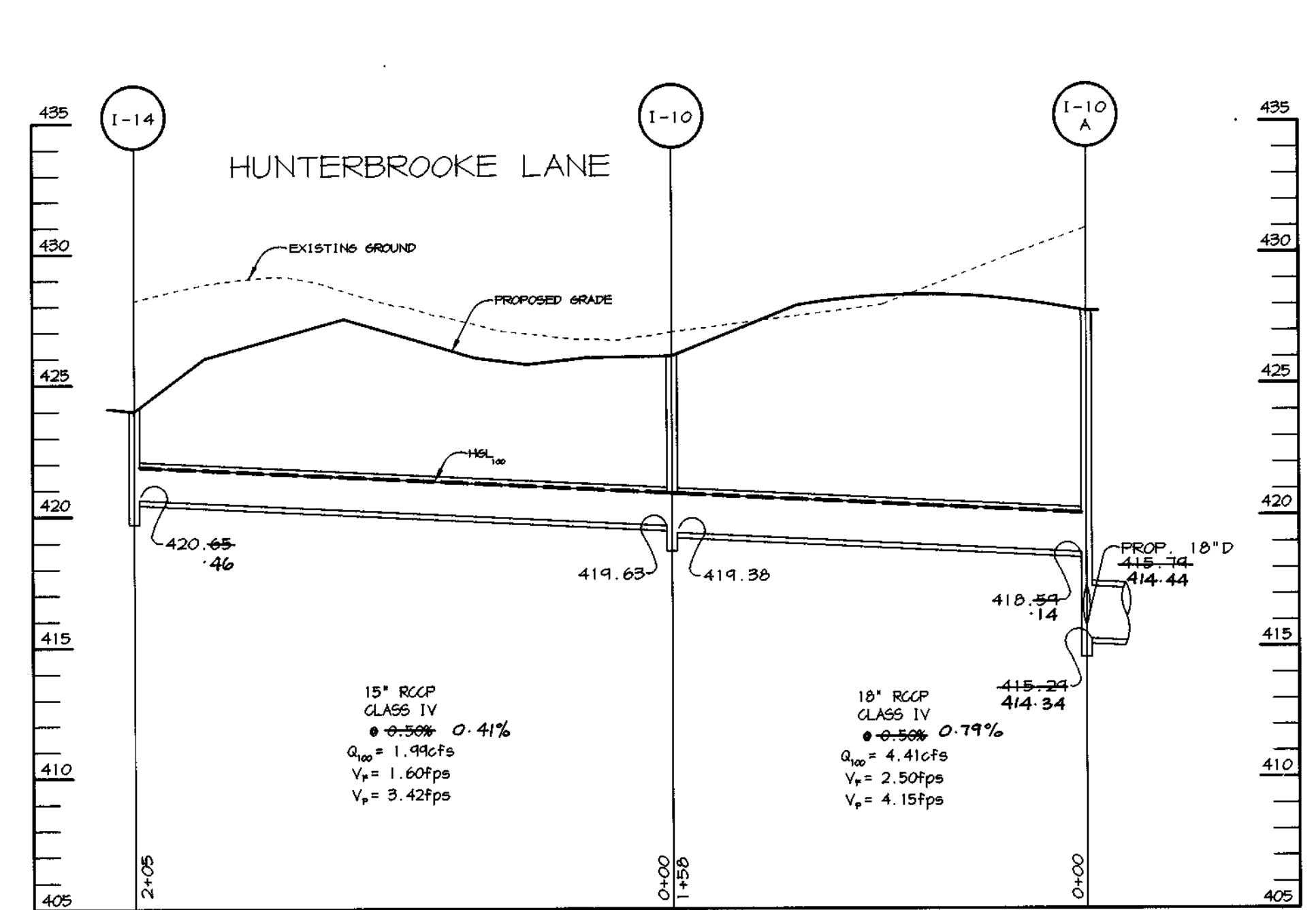
DESIGNED BY: C.J.R.  
 DRAWN BY: DAM  
 PROJECT NO: 97150/FINALS  
 RD11.DWG  
 DATE: AUGUST 28, 1998  
 SCALE: AS SHOWN  
 DRAWING NO. 11 OF 18

*Arthur E. Muegge* #8707

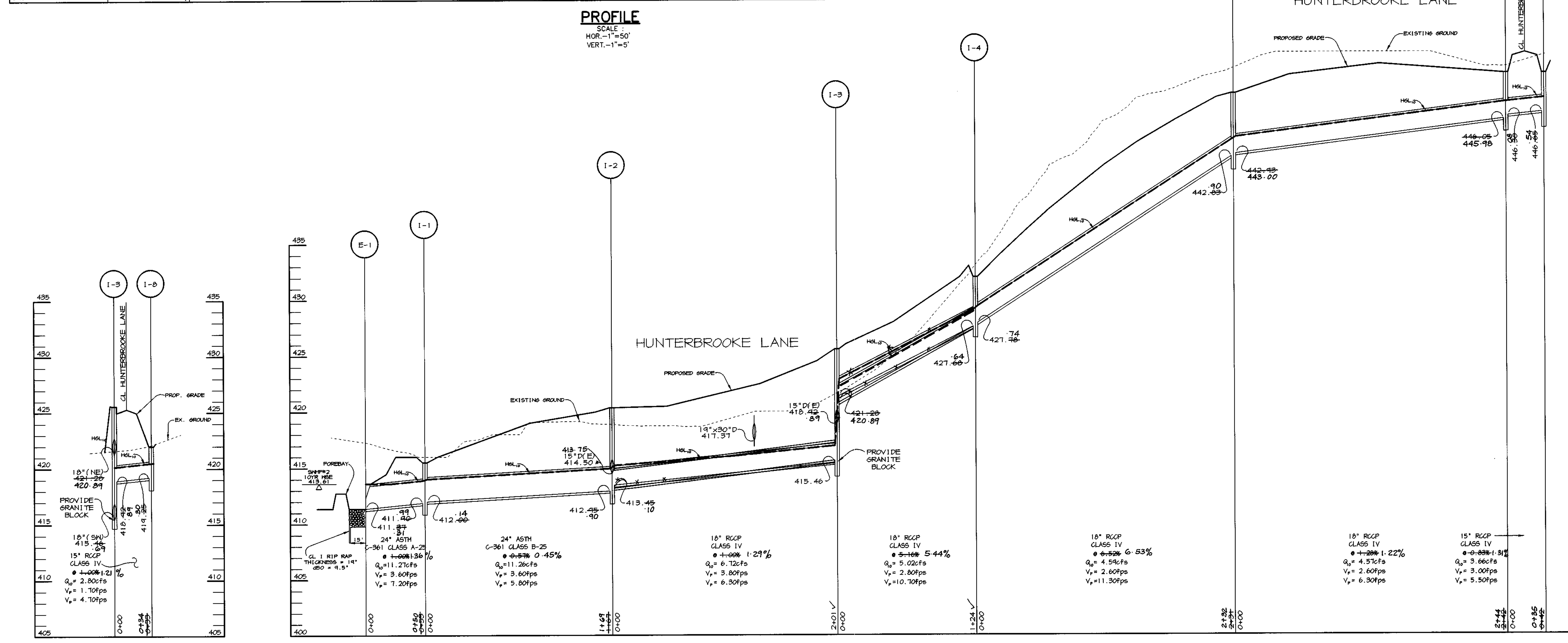
AS-BUILT 5/7/01 F-98-94



**PROFILE**  
SCALE:  
HOR.-1"=50'  
VERT.-1"=5'



**PROFILE**  
SCALE:  
HOR.-1"=50'  
VERT.-1"=5'

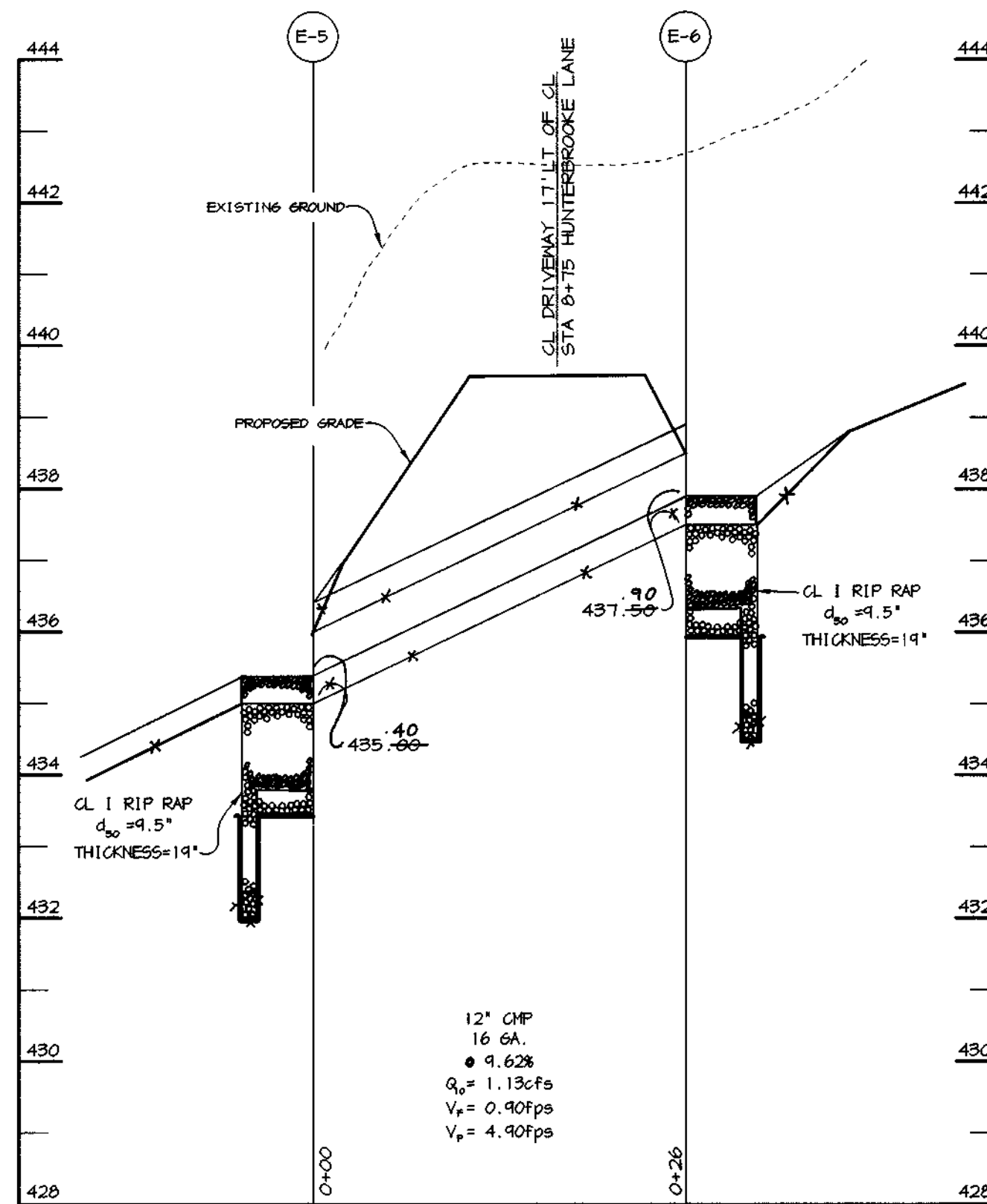


**PROFILE**  
SCALE:  
HOR.-1"=50'  
VERT.-1"=5'

**PROFILE**  
SCALE:  
HOR.-1"=50'  
VERT.-1"=5'

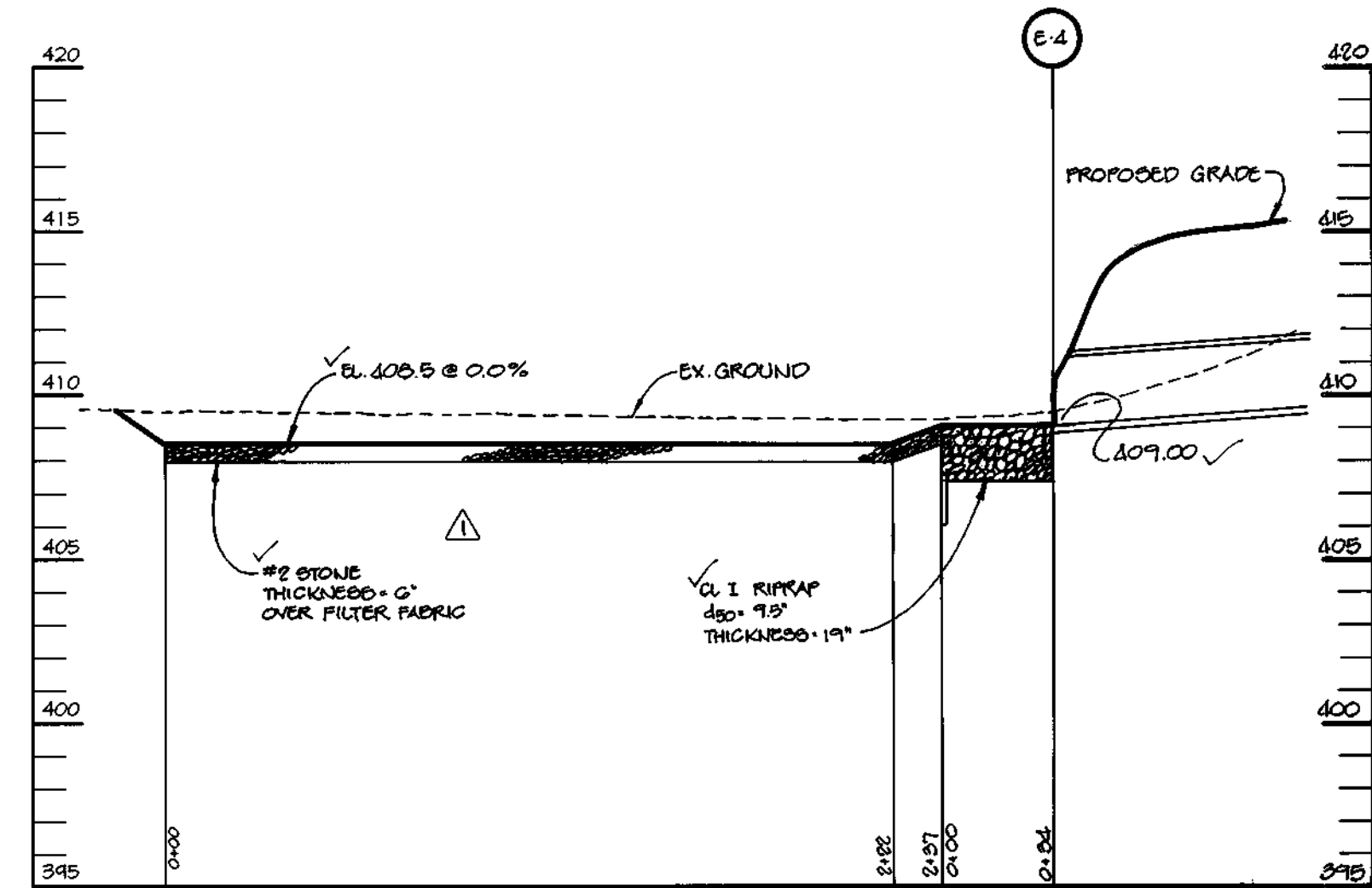
AS-BUILT CERTIFICATE	
<i>Christopher J. Reid</i> CHRISTOPHER J. REID #19949	5.9.11 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Andrew M. Daniels</i> CHIEF, BUREAU OF HIGHWAYS	10-2-98 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Wanda Hamilton</i> CHIEF, DIVISION OF LAND DEVELOPMENT	1/2/98 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	
8/25/99 MODIFIED I-10A, I-12	
DATE NO.	REVISION
DEVELOPER	WINCHESTER HOMES 6305 Ivy Lane, Suite 800 Greenbelt, Maryland 20770 (301) 474-4411
OWNER	EDWARD ROBERT PRINCE P.O. Box 381 Fulton, Maryland 20759
PROJECT	HUNTERBROOKE FORMERLY PRINCE PROPERTY LOTS 1 - 21, PARCELS A - E
AREA	Parcel 360 & P/O 344 Tax Map 46 Zoned RR-DEO 5th Election District Howard County, Maryland
TITLE	STORM DRAIN PROFILES
<b>RIEMER MUEGGE &amp; ASSOCIATES, INC.</b> ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 8818 Centre Park Drive, Columbia, Maryland 21045 tel 410.997.8900 fax 410.997.9282	
DATE	DESIGNED BY: C.J.R.
DATE	DRAWN BY: DAM
DATE	PROJECT NO. 97150/FINALS RD12.DWG
DATE	DATE: AUGUST 28, 1998
DATE	SCALE: AS SHOWN
DATE	DRAWING NO. 12 OF 18
ARTHUR E. MUEGGE #8707	





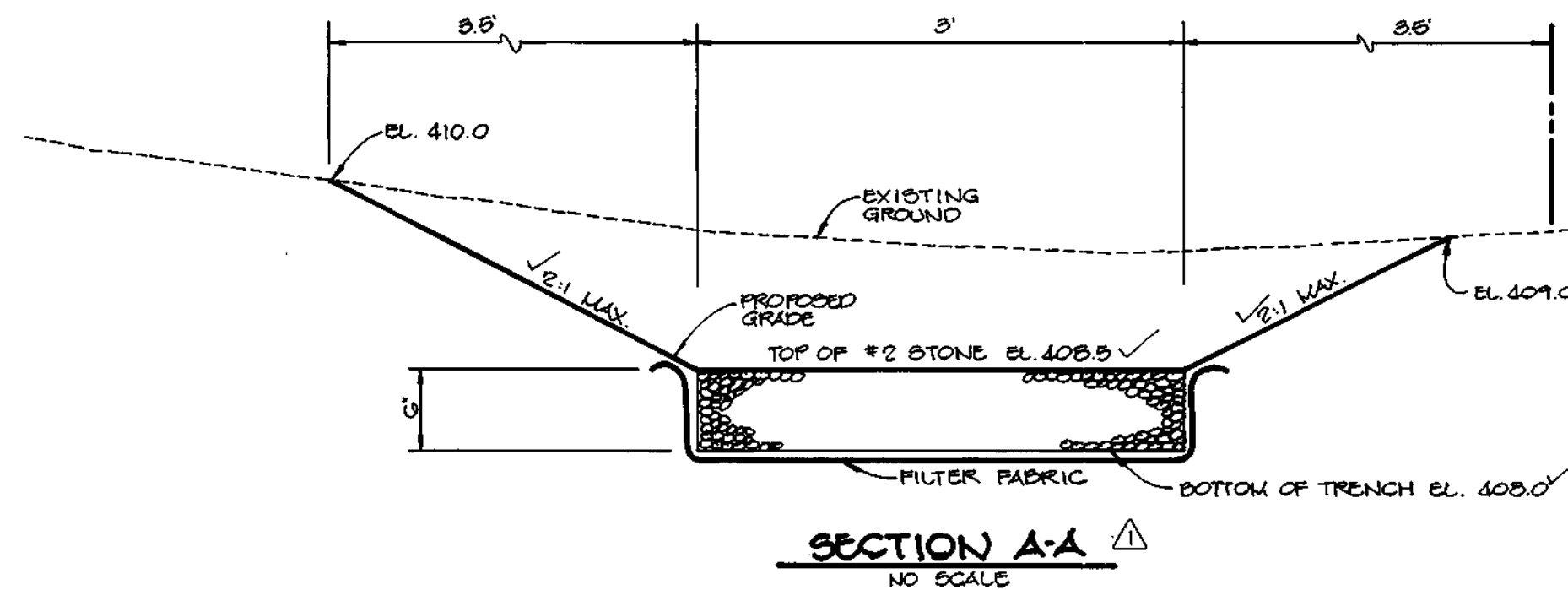
**DRIVEWAY CULVERT PROFILE  
(PHILLIPS PROPERTY)**

SCALE:  
HOR. - 1" = 10'  
VERT. - 1" = 2'

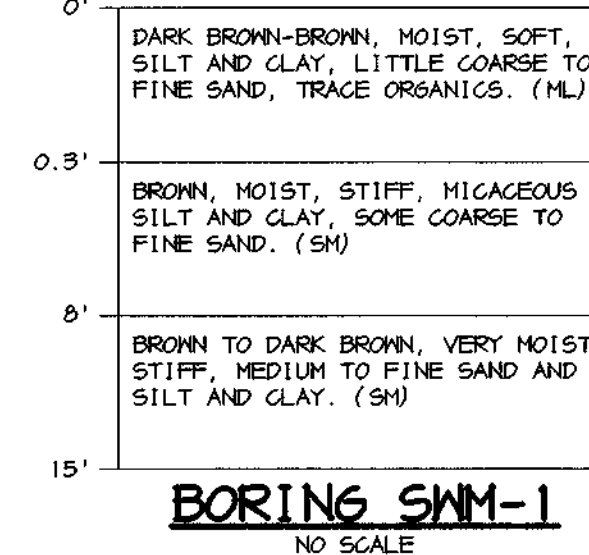


**SWMF #2 OUTFALL PROFILE**

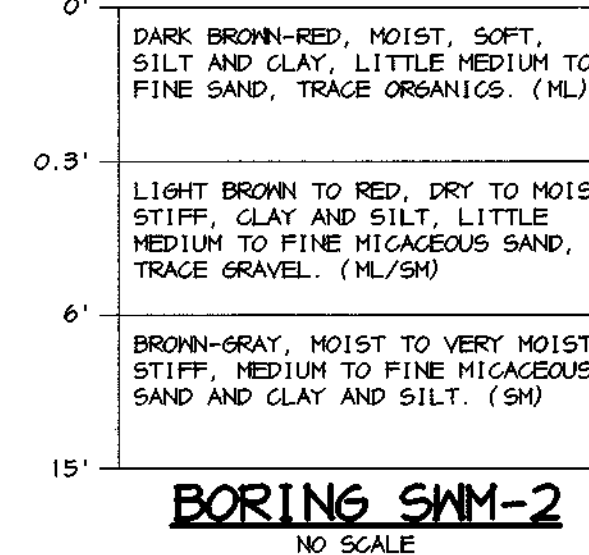
SCALE:  
HOR. - 1" = 50'  
VERT. - 1" = 5'



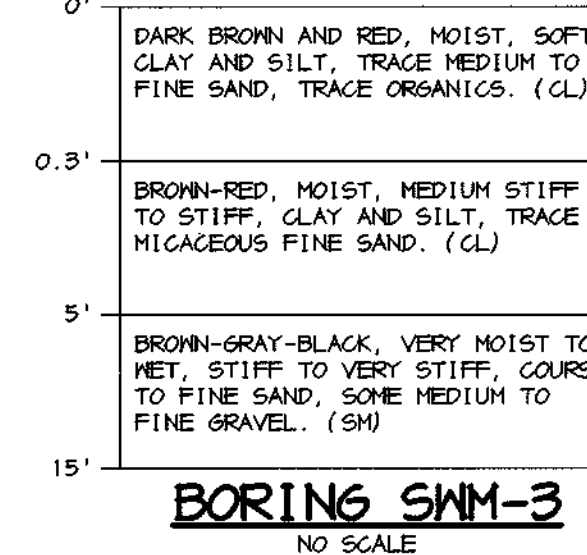
**SECTION A-A**



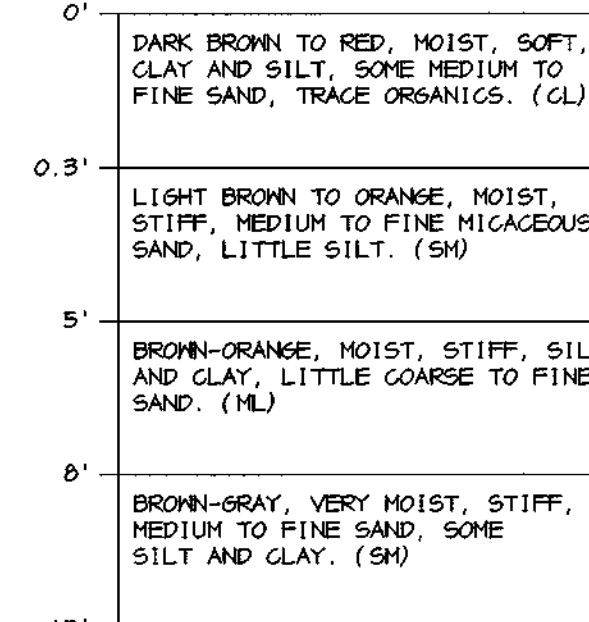
**BORING SWM-1**  
NO SCALE



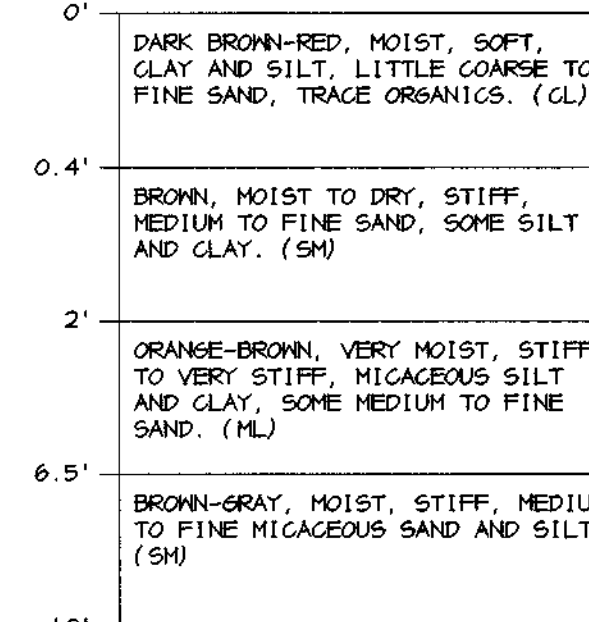
**BORING SWM-2**  
NO SCALE



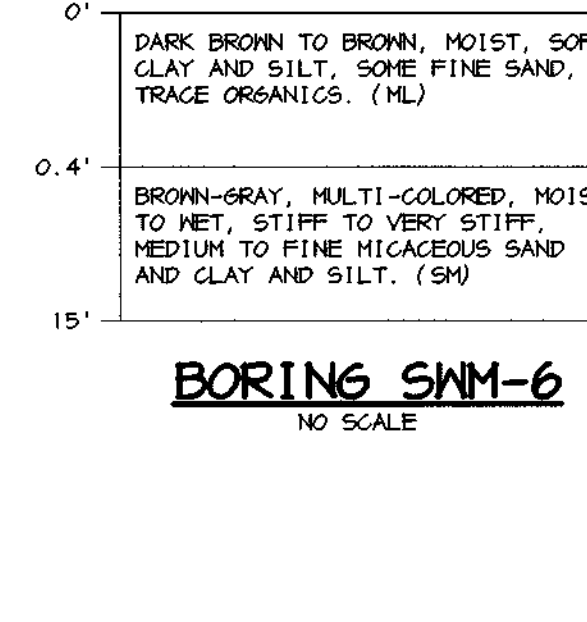
**BORING SWM-3**  
NO SCALE



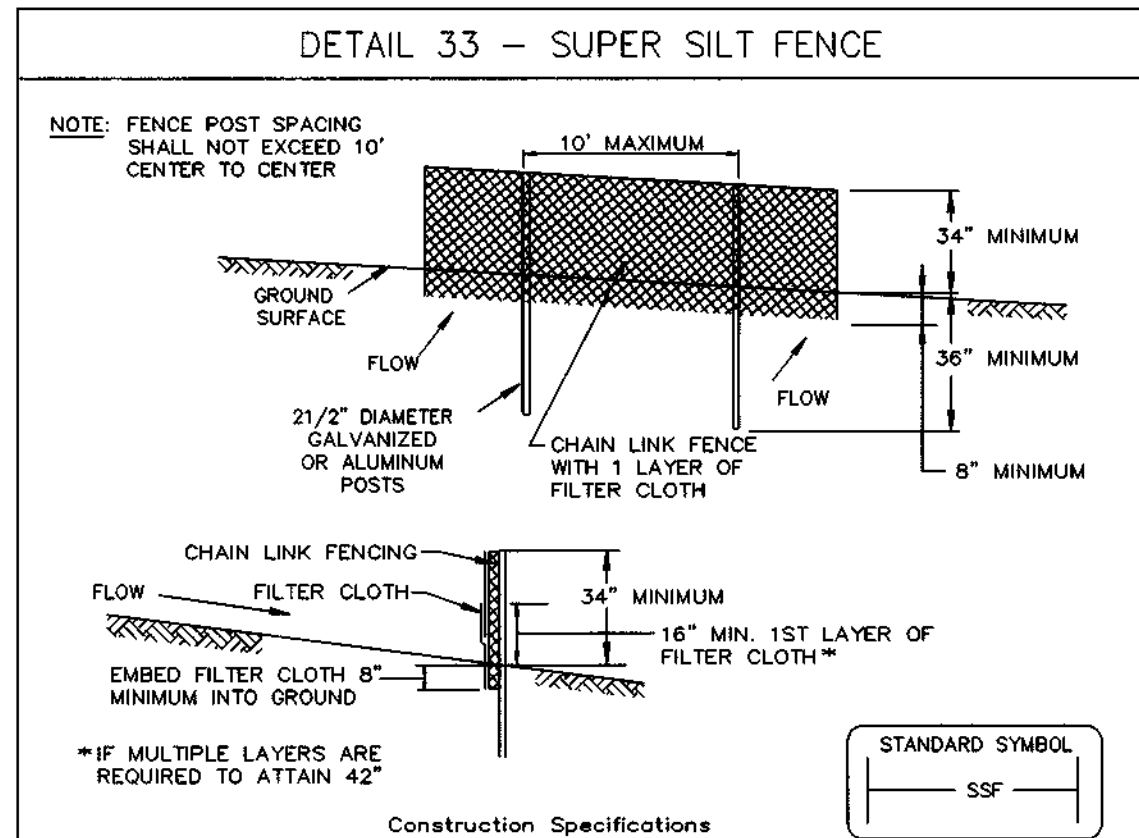
**BORING SWM-4**  
NO SCALE



**BORING SWM-5**  
NO SCALE



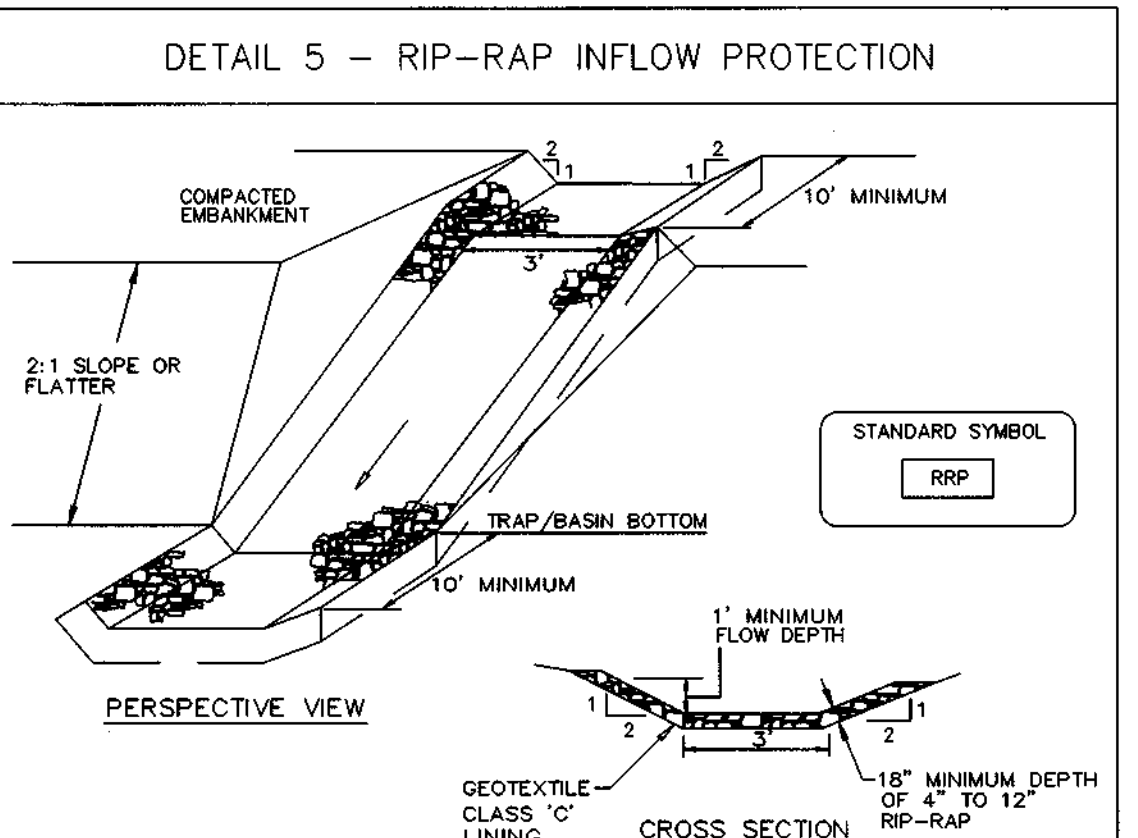
**BORING SWM-6**  
NO SCALE



**Construction Specifications**

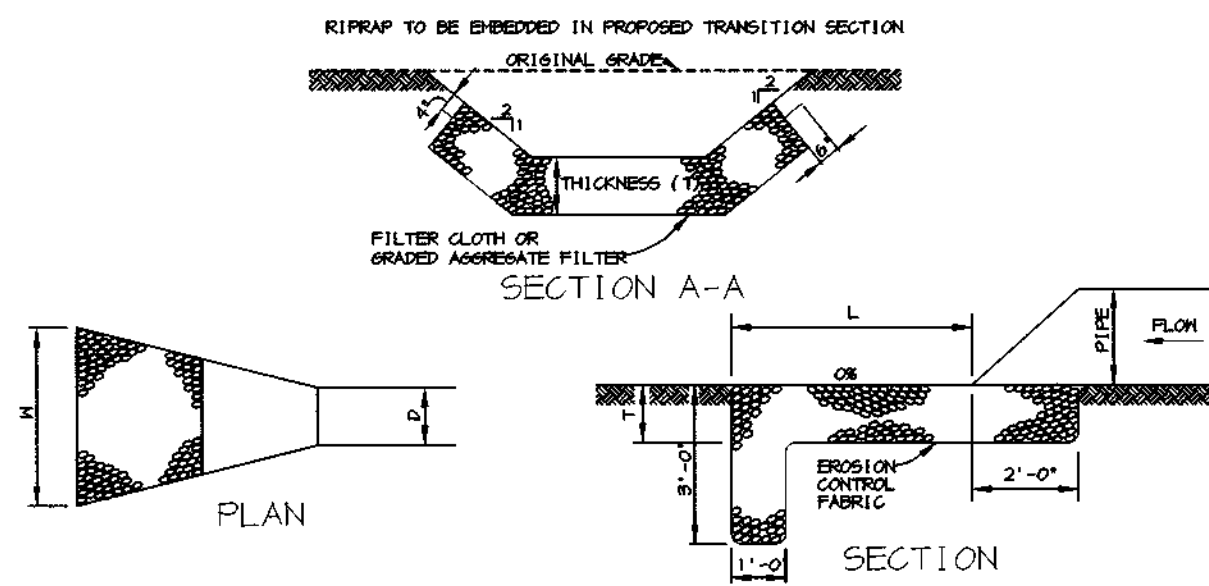
- Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
- Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
- Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- Filter cloth shall be embedded a minimum of 8" into the ground.
- When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
- Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height.
- Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:
 

Tensile Strength	50 lbs/in. (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft <sup>2</sup> /minute (max.)	Test: MSMT 322
Filtration Efficiency	75% (min.)	Test: MSMT 322



**Construction Specifications**

- Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min.) bottom width. The channel shall be lined with 4" to 12" rip-rap to a depth of 18".
- Filter cloth shall be installed under 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 blend into existing ground.
- Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1; for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.



STRUCTURE	MEDIAN STONE DIA.	LENGTH (L)	WIDTH (W)	THICKNESS (T)
E-1	4.5"	10'	12'	14"
E-2	4.5"	20'	20'	14"
E-3	4.5"	22'	24'	14"
E-4	4.5"	34'	0'	14"
E-5	4.5"	6'	1'	14"
E-6	4.5"	6'	1'	14"
HI-1	4.5"	24'	27'	14"
HI-2	4.5"	12'	12'	14"
HI-3	4.5"	10'	10'	14"

**RIPRAP OUTLET PROTECTION DETAIL**

BY THE DEVELOPER:  
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*Paul B. [Signature]* 8/28/98  
DEVELOPER DATE

BY THE ENGINEER:  
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.

*Arthur E. Muegge* 8-28-98  
ENGINEER DATE

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.

*Carol S. [Signature]* 9/2/98  
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*John [Signature]* 9/2/98  
HOWARD SOIL CONSERVATION DISTRICT DATE

AS BUILT CERTIFICATE

*Christopher J. Reid* 5.9.01  
CHRISTOPHER J. REID #19949 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

*Andrew M. [Signature]* 10-2-99  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Cathy [Signature]* 10/28/98  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

*[Signature]* 10/28/98  
DATE

DATE	NO.	REVISION
8-28-98	1	REV. SWMF #2 OUTFALL PROFILE

DEVELOPER  
WINCHESTER HOMES  
6305 Ivy Lane, Suite 800  
Greenbelt, Maryland 20770  
(301) 474-4411

OWNER  
EDWARD ROBERT PRINCE  
P.O. Box 381  
Fulton, Maryland 20759

PROJECT  
HUNTERBROOKE  
FORMERLY PRINCE PROPERTY  
LOTS 1 - 21, PARCELS A - E

AREA  
Parcel 360 & P/O 344  
Tax Map 46 Zoned RR-DEO  
5th Election District  
Howard County, Maryland

TITLE  
DETAILS AND PROFILES

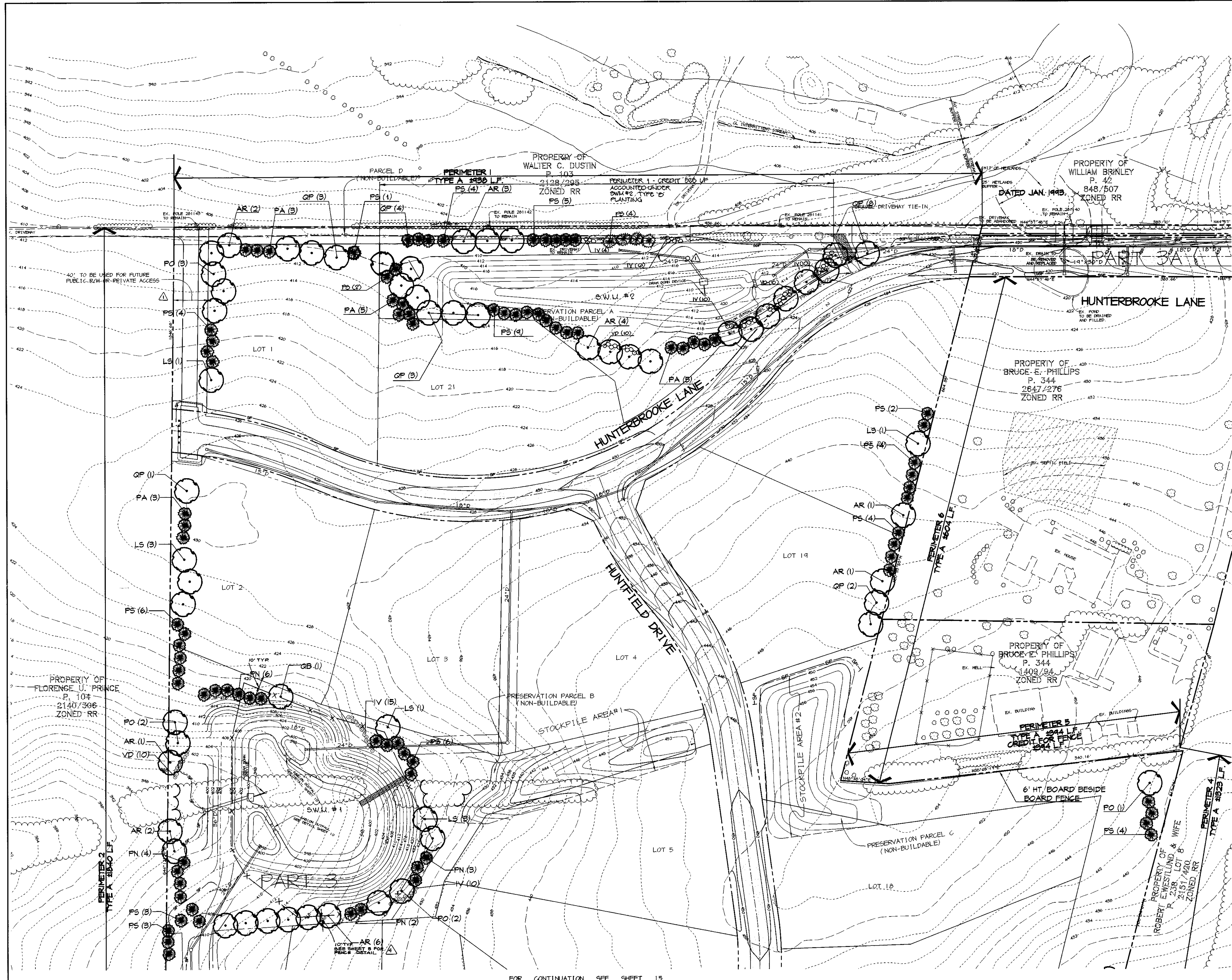
**RIEMER MUEGGE & ASSOCIATES, INC.**  
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
8818 Centre Park Drive, Columbia, Maryland 21045  
tel 410.997.8900 fax 410.997.9282

8-28-98  
DATE

DESIGNED BY: C.J.R.  
DRAWN BY: DAM  
PROJECT NO: 97150/FINALS  
RD13.DWG  
DATE: AUGUST 28, 1998  
SCALE: AS SHOWN  
DRAWING NO. 13 OF 18

*Arthur E. Muegge*  
ARTHUR E. MUEGGE #8707





**PLANTING LEGEND**

SYMBOL	TYPE OF PLANT MATERIAL
	EXISTING TREE LINE
	PROPOSED TREE LINE
	NEW SHADE TREE
	NEW EVERGREEN TREE
	NEW SHRUBS

- NOTES:**
1. THIS PLAN IS FOR LANDSCAPE PURPOSES ONLY.
  2. SEE SHEETS 2, 3, 4 AND 5 FOR LOCATIONS OF STREET TREES.
  3. SEE SHEET 16 FOR PLANT SPECIFICATIONS AND SCHEDULES.

FOR CONTINUATION SEE SHEET 16

BUILT CERTIFICATE	
 CHRISTOPHER J. REID #19949	5.9.01 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
 ANDREW M. DANIELS #10	10-2-98 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
 LINDA HAMILTON #14	10/22/98 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	
12-28-99  ADDED FENCE TO SWAMP #1	
4-20-99  ADDED DRIVEWAY TO ADJOINING OWNER'S RELOCATED SWAMP #2 OUTFALL	
DATE	NO. REVISION
DEVELOPER: WINCHESTER HOMES 6305 Ivy Lane, Suite 200 Greenbelt, Maryland 20770 (301) 474-4411	
OWNER: EDWARD ROBERT PRINCE P.O. Box 381 Fulton, Maryland 20754	
PROJECT: HUNTERBROOKE FORMERLY PRINCE PROPERTY LOTS 1 - 21, PARCELS A - E	
AREA: Parcel 360 & P/O 344 Tax Map 46 Zoned RR-DEO 5th Election District Howard County, Maryland	
TITLE: LANDSCAPE PLAN	
<b>RIEMER MUEGGE &amp; ASSOCIATES, INC.</b> ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 8818 Centre Park Drive, Columbia, Maryland 21045 tel 410.997.8900 fax 410.997.9282	
B-21-98 DATE	
 DAVID T. DOWS #830	
DESIGNED BY: C.J.R.	
DRAWN BY: DAM	
PROJECT NO.: 97150/FINALS LSCP2.DWG	
DATE: AUGUST 28, 1998	
SCALE: 1" = 50'	
DRAWING NO. 14 OF 18	

PROJECT: 97150/FINALS/SP2 Thu Aug 27 10:00:01 1998 RIEMER MUEGGE & ASSOCIATES, INC.

FOR CONTINUATION SEE SHEET 15

AS-BUILT 5/1/01 F-98-94





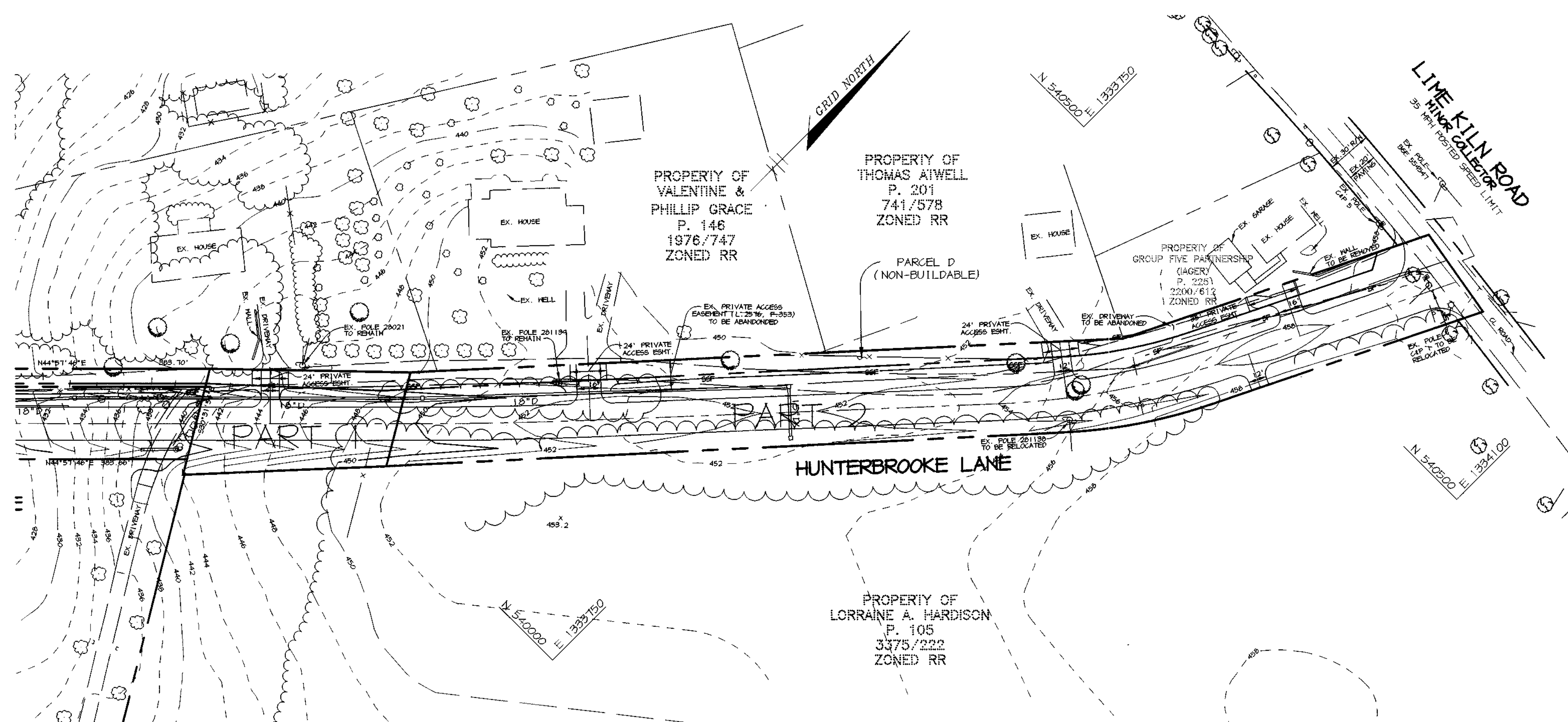
- NOTES:**
1. THIS PLAN IS FOR LANDSCAPE PURPOSES ONLY.
  2. SEE SHEETS 2, 3, 4 AND 5 FOR LOCATIONS OF STREET TREES.
  3. SEE SHEET 16 FOR PLANT SPECIFICATIONS AND SCHEDULES.

AS BUILT CERTIFICATE	
<i>Christopher J. Reid</i> CHRISTOPHER J. REID #19949	5-9-01 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Richard M. Danek</i> CHIEF, BUREAU OF HIGHWAYS #10	10-2-98 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Cindy Hamilton</i> CHIEF, DIVISION OF LAND DEVELOPMENT #14	10/22/95 DATE
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	10/1/98 DATE
DATE NO.	REVISION
DEVELOPER: WINCHESTER HOMES 6305 Ivy Lane, Suite 800 Greenbelt, Maryland 20770 (301) 474-4411	
OWNER: EDWARD ROBERT PRINCE P.O. Box 381 Fulton, Maryland 20759	
PROJECT: HUNTERBROOKE FORMERLY PRINCE PROPERTY LOTS 1 - 21, PARCELS A - E	
AREA: Parcel 360 & P/O 344 Tax Map 46 Zoned RR-DEO 5th Election District Howard County, Maryland	
TITLE: LANDSCAPE PLAN	
RIEMER MUEGGE & ASSOCIATES, INC. ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 8818 Centre Park Drive, Columbia, Maryland 21045 tel 410.997.8900 fax 410.997.9282	
8-27-98 DATE	DESIGNED BY: C.J.R.
<i>David T. Dows</i> DAVID T. DOWS #830	DRAWN BY: DAM
	PROJECT NO: 97150/FINALS LSCP3.DWG
	DATE: AUGUST 28, 1998
	SCALE: 1" = 50'
	DRAWING NO. 15 OF 18

4. PROJECT 97150/FINALS/LSCP3 Thu Aug 27 08:03:55 1998 RIEMER MUEGGE & ASSOCIATES, INC.



FOR CONTINUATION SEE SHEET 14



**LANDSCAPE SCHEDULES**

SCHEDULE A PERIMETER LANDSCAPE EDGE						
PERIMETER	ADJACENT TO PERIMETER PROPERTIES					
	1	2	3	4	5	6
LANDSCAPE TYPE	A	A	A	A	A	A
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	± 430'	± 1840'	± 710'	± 1325'	± 394'	± 604'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	YES 1944'	YES 1710'	YES 4825'	NO	NO
CREDIT FOR WALL FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES 900'	NO	NO	NO	YES 1944'	NO
NUMBER OF PLANTS REQUIRED						
SHADE TREES	0	0	0	0	0	0
EVERGREEN TREES	0	0	0	0	0	0
SHRUBS	0	0	0	0	0	0
NUMBER OF PLANTS PROVIDED						
SHADE TREES	0	0	0	0	0	0
EVERGREEN TREES	0	0	0	0	0	0
SHRUBS	0	0	0	0	0	0
SMALL FLOWERING TREES	0	0	0	0	0	0

**SUBSTITUTION NOTES:**  
**PERIMETER LANDSCAPE EDGE, SCHEDULE A**  
**PERIMETER 1:**  
 (4) EVERGREEN TREES WERE SUBSTITUTED FOR (12) SHADE TREES.  
**PERIMETER 2:**  
 (24) EVERGREEN TREES WERE SUBSTITUTED FOR (12) SHADE TREES.  
**PERIMETER 3:**  
 CREDIT IS TAKEN FOR EXISTING FOREST ALONG THE ENTIRE PERIMETER. NO PLANTING IS REQUIRED.  
**PERIMETER 4:**  
 (8) EVERGREEN TREES WERE SUBSTITUTED FOR (4) SHADE TREES.  
**PERIMETER 5:**  
 CREDIT IS TAKEN FOR A PROPOSED 6' PRIVACY FENCE ALONG THE ENTIRE PERIMETER.  
**PERIMETER 6:**  
 (10) EVERGREEN TREES WERE SUBSTITUTED FOR (5) SHADE TREES.

**SWM POND #1 SCHEDULE PARCEL D**  
 SWM POND REQUIREMENTS:  
 1180 L.F. SWM PERIMETER

**TYPE 'B' BUFFER REQUIRED**  
 REQUIREMENTS:  
 SHADE TREE 1 @ 50 L.F. = 20  
 EVERGREEN TREE 1 @ 40 L.F. = 24.5  
 PROVIDED:  
 SHADE TREES: 17  
 EVERGREEN TREES: 24  
 SHRUBS: 95

**SWM POND #2 SCHEDULE PARCEL A**  
 SWM POND REQUIREMENTS:  
 1180 L.F. SWM PERIMETER

**TYPE 'B' BUFFER REQUIRED**  
 REQUIREMENTS:  
 SHADE TREE 1 @ 50 L.F. = 27  
 EVERGREEN TREE 1 @ 40 L.F. = 34  
 PROVIDED:  
 SHADE TREES: 22  
 EVERGREEN TREES: 34  
 SHRUBS: 50

**SUBSTITUTION NOTES:**  
**SWM POND #1**  
 (50) SHRUBS WERE SUBSTITUTED FOR (5) SHADE TREES.  
 (5) SHRUBS WERE SUBSTITUTED FOR (0.5) EVERGREEN TREE.

**SWM POND #2**  
 (50) SHRUBS WERE SUBSTITUTED FOR (5) SHADE TREES.

**NOTES:**  
 THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.  
 \* 925 L.F. OF PERIMETER 1 ACCOUNTED FOR UNDER SWM POND #2 TYPE 'B' REQUIREMENTS.

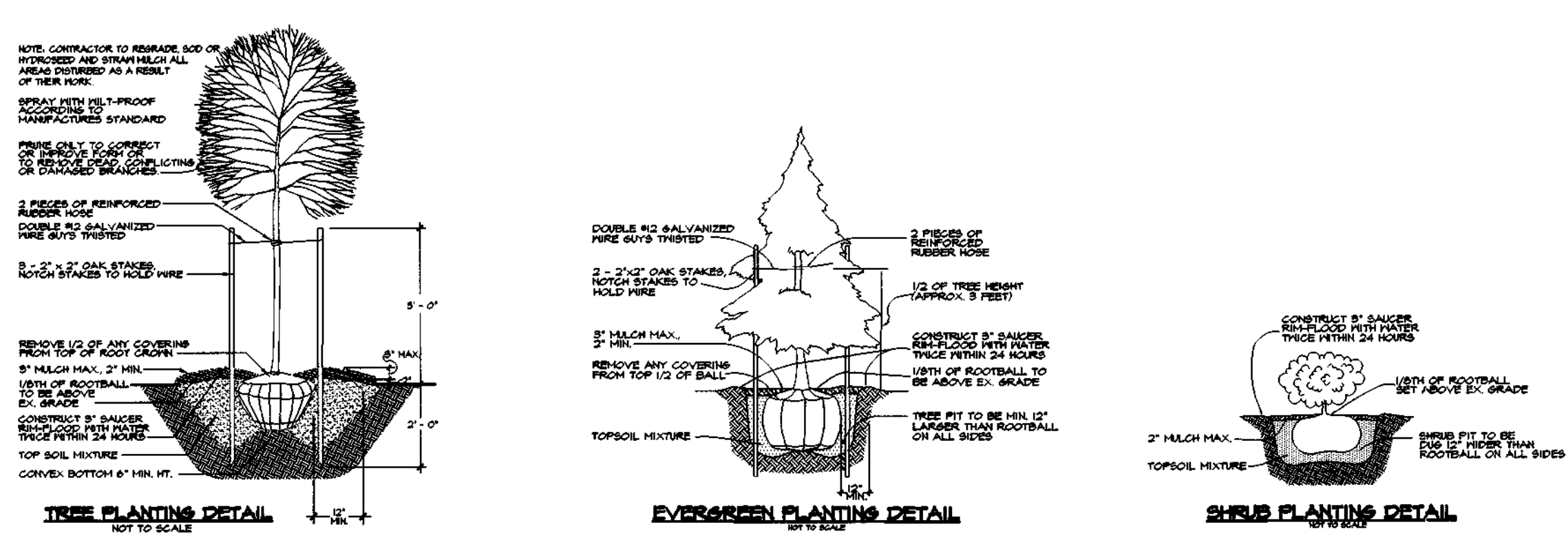
- NOTES:**
- THIS PLAN IS FOR LANDSCAPE PURPOSES ONLY.
  - SEE SHEETS 2, 3, 4 AND 5 FOR LOCATIONS OF STREET TREES.
  - THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
  - FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPM DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$ 41,000.  
 (65 SHADE TREES @ \$300.00, 104 EVERGREEN TREES @ \$150.00, 85 SHRUBS @ \$30.00, 398 FENCE @ 10/LF)

PLANT MATERIAL LIST					
KEY	QTY	BOTANICAL - COMMON NAME	SIZE	ROOT	REMARKS
<b>SHADE TREES</b>					
AR	21	Acer rubrum Red Maple	2 1/2" - 3" Cal.	B & B	Full Crown Central Leader
LS	9	Liquidambar styraciflua Sweet Gum	2 1/2" - 3" Cal.	B & B	Full Crown Central Leader
PO	8	Platanus occidentalis Sycamore	2 1/2" - 3" Cal.	B & B	Full Crown
QB	1	Quercus borealis Northern Red Oak	2 1/2" - 3" Cal.	B & B	Full Crown Central Leader
QP	27	Quercus palustris Pin Oak	2 1/2" - 3" Cal.	B & B	Full Crown Central Leader
<b>EVERGREEN TREES</b>					
FA	16	Picea abies Norway Spruce	6'-8" Ht.	B & B	Full Form Central Leader
FN	15	Pinus nigra Austrian Pine	6'-8" Ht.	B & B	Full Form Central Leader
PS	73	Pinus strobus White Pine	6'-8" Ht.	B & B	Full Form Central Leader
<b>SHRUBS</b>					
IV	55	Ilex verticillata Honeysuckle	30"-36" Ht.	B & B	Full Form 4" O.C.
VD	30	Viburnum dentatum Arrowwood Viburnum	30"-36" Ht.	B & B	Full Form 4" O.C.

**PLANTING SPECIFICATIONS**

- Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.
- All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to American Association of Nurserymen (AAN) standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sunscald injuries, abrasions of the bark, plant disease, insect pests and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug, no heated-in plants or plants from cold storage will be accepted.
- Unless otherwise specified, all general conditions, planting operations, details and planting specifications shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Areas", (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architects, latest edition, including all agenda.
- Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.
- Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.
- Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence or blaze orange safety fence at the drip line.
- Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within growing season of completion of site construction.
- Bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications.
- Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence.
- All shrubs and groundcover areas shall be planted in continuous prepared planting beds mulched with composted hardwood mulch as detailed and specified except where noted on plans.
- Positive drainage shall be maintained in planting beds (minimum 2 percent slope).
- Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure. Add 3 lbs of standard fertilizer per cubic yard of planting mix. Evergreen Plants - two parts topsoil, one part humus or other approved organic material. Add 3 lbs. of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Contractors Association Guidelines.
- Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its adaptability to the specific groundcover to be treated.
- Mulch: Groundcover beds should be mulched with minimum 2 inches of shredded composted hardwood, or as specified on the details, whichever is greater.
- All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.
- This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.

**PLANTING DETAILS**



AS BUILT CERTIFICATE

5.9.01  
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
 CHRISTOPHER J. REID #19949

10-2-98  
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
 CHIEF, DIVISION OF LAND DEVELOPMENT

10/26/98  
DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

10/2/98  
DATE

DATE	NO.	REVISION

DEVELOPER: WINCHESTER HOMES  
 6305 Ivy Lane, Suite 800  
 Greenbelt, Maryland 20770  
 (301) 474-4411

OWNER: EDWARD ROBERT PRINCE  
 P.O. Box 381  
 Fulton, Maryland 20759

PROJECT: HUNTERBROOKE  
 FORMERLY PRINCE PROPERTY  
 LOTS 1 - 21, PARCELS A - E

AREA: Parcel 360 & P/O 344  
 Tax Map 46 Zoned RR-DEO  
 5th Election District  
 Howard County, Maryland

TITLE: LANDSCAPE PLAN  
 AND DETAIL SHEET

**RIEMER MUEGGE & ASSOCIATES, INC.**  
 ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
 8818 Centre Park Drive, Columbia, Maryland 21045  
 tel 410.997.8900 fax 410.997.9282

DESIGNED BY: C.J.R.

DRAWN BY: DAM

PROJECT NO: 97150/FINALS  
 LSCP4.DWG

DATE: AUGUST 28, 1998



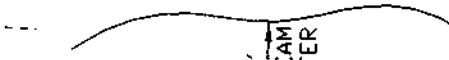
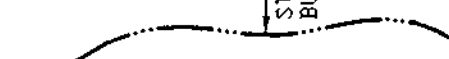


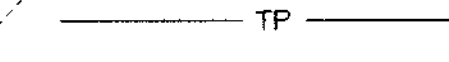
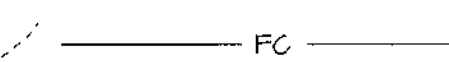

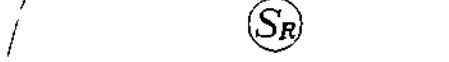


SCALE: 1" = 50'

DRAWING NO. 16 OF 18

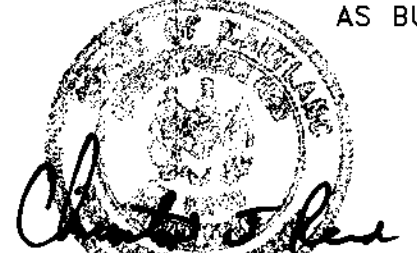
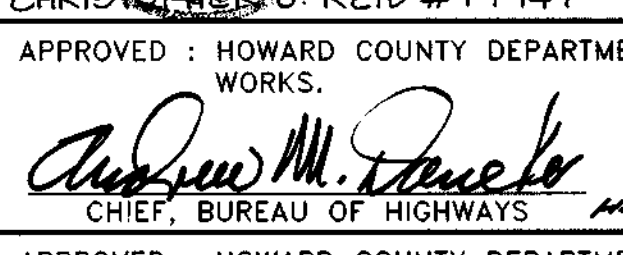
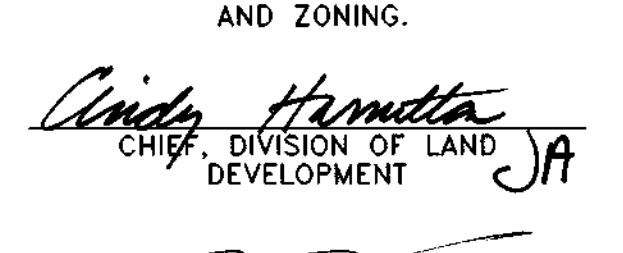

DAVID T. DOWS #830



**LEGEND**

-  EXISTING TREE LINE
-  PROPOSED TREE LINE
-  75' STREAM BUFFER
-  LIMIT OF DISTURBANCE
-  TP TREE PROTECTION FENCE
-  FC FOREST CONSERVATION EASEMENT
-  REFORESTATION SIGNAGE
-  FOREST CONSERVATION SIGNAGE
-  FOREST RETAINED WITHIN FOREST CONSERVATION EASEMENT
-  EXISTING FOREST TO BE CLEARED
-  NEW REFORESTATION AREA PLANTINGS (see plant list, dng. 1B of 1B)
-  UNFORESTED AREA WITHIN FOREST CONSERVATION EASEMENT (SEE NOTE 2)




AS BUILT CERTIFICATE	
	5-9-01 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
	10-2-98 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
	10/20/98 DATE
	10/20/98 DATE

DATE NO.	REVISION
DEVELOPER	WINCHESTER HOMES 6305 Ivy Lane, Suite 800 Greenbelt, Maryland 20770 (301) 474-4411
OWNER	EDWARD ROBERT PRINCE P.O. Box 381 Fulton, Maryland 20759
PROJECT	HUNTERBROOKE FORMERLY PRINCE PROPERTY LOTS 1 - 21, PARCELS A - E
AREA	Parcel 360 & P/O 344 Tax Map 46 Zoned RR-DEO 5th Election District Howard County, Maryland

**TITLE**  
REFORESTATION PLAN

**RIEMER MUEGGE & ASSOCIATES, INC.**  
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
8818 Centre Park Drive, Columbia, Maryland 21045  
tel 410.997.8900 fax 410.997.9282

	DESIGNED BY : C.J.R.
	DRAWN BY : DAM
	PROJECT NO .97150/FINALS refrest1.DWG
	DATE : AUGUST 28, 1998
	SCALE : 1" = 50'
	DRAWING NO. 17 OF 18

NOTES:  
1. SEE REFORESTATION DETAIL SHEET, DRAWING 1B OF 1B FOR PLANT LIST AND PLANTING DETAILS.  
2. UNFORESTED AREAS WITHIN FOREST CONSERVATION EASEMENTS SHALL BE ALLOWED TO REGENERATE NATURALLY.



# REFORESTATION PLANT LIST

KEY	QTY.	SCIENTIFIC/COMMON NAME	SIZE	ROOT	REMARKS
1	20	ACER RUBRUM / RED MAPLE	1" CAL.	CONT.	FULL CROWN
2	21	QUERCUS ALBA / WHITE OAK			
3	19	FRAVINUS AMERICANA / WHITE ASH			

NOTE: 1. SEE REFORESTATION PLAN, DWG NO. 17 OF 18 FOR TREE LOCATIONS.  
2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE D.P.N. DEVELOPERS AGREEMENT IN THE OF \$24,930.

# PLANTING SPECIFICATIONS

## AFFORESTATION OR REFORESTATION MAINTENANCE AND REPLACEMENT REQUIREMENTS

A two year (24) month maintenance and replacement warranty period is required for all newly planted materials. The maintenance and replacement warranty shall commence upon the date of the written acceptance by the Owner of the planted areas. A written warranty will be delivered to the Owner upon acceptance of the planted areas. Maintenance and replacement shall be provided by the Contractor responsible for the initial planting operations and related work. All landscape plant material included as forest conservation credits shall be covered under this maintenance and replacement warranty period.

**I. MAINTENANCE:**  
The Contractor shall field check the newly planted area(s) and shall provide the following maintenance items in accordance with the following schedule which shall begin after the completion and acceptance of the initial Afforestation or Reforestation planting.

**II. MAINTENANCE ITEMS:**  
1. **Watering:** Watering of all newly planted materials once per week as weather permits during the entire initial growing season. Following the initial growing season, watering shall be done on an "as needed" basis depending on the frequency of natural rainfall. During the months of July and August and periods of severe drought, all newly planted materials shall be watered thoroughly once every week. Watering shall be done deeply and slowly using an open end hose or watering probe, at low pressure, allowing the water to be absorbed into the soil until thoroughly saturated. The watered area shall include the whole root zone as the tree becomes more established.  
2. **Fertilizing:** Fertilizing shall be applied only after the soil has been tested to determine its needs. Organic fertilizer should be applied in accordance with the amounts recommended in the soil analysis report. No fertilizing of newly planted trees shall be done within the first growing season after initial planting. Following the first growing season, apply fertilizer as recommended either in late fall or early spring.  
3. **Supplemental Mulch:** To control undesirable vegetation adjacent to the newly planted materials and to prevent tree roots from drying out, additional mulch shall be placed over the existing mulch field where required. Carefully remove any invasive plants (including the root system) within the mulch fields. Do not damage trees in any way during removal of invasive plants or mulching operations.  
4. **Pruning:** Remove dead, diseased, dying and broken branches from all plant materials. Pruning shall be done cleanly leaving no ragged ends.

**III. REPLACEMENT OF DEAD OR DYING MATERIALS:**  
1. **Replacement:** Any plant materials which are 25% dead or more shall be replaced during the appropriate spring or fall planting seasons in accordance with the methods indicated in the Planting Specifications. A tree shall be considered dead when the main leader has died back.  
2. All replacements shall be plants of the same genus, species and size as specified on the plant list.  
3. Contractor shall schedule an inspection of the Afforestation or Reforestation area(s) by a qualified representative of the DPZ and by the qualified professional who prepared the plan, at the beginning and at the end of the growing season to observe any problems, monitor survival rate and specify necessary remedial actions needed to correct existing problems. The inspection should focus on the following items when determining survival potential:

- (a) Vigor and threat of competing vegetation
- (b) Plant structure
- (c) Growth rate
- (d) Crown development
- (e) Trunk conditions and health

**IV. PLANT CONDITION CHECK SHEETS**  
The Contractor shall maintain accurate records on appropriate field data check sheets which shall include all conditions observed relative to the health and potential survival of the plant materials. Such check sheets shall be completed during each scheduled maintenance session during the 24 month management and maintenance program. One copy of the check sheets shall be sent to the Client, one copy to RMA, and one copy shall be sent to the Howard County Department of Planning and Zoning.

**V. SURVIVAL REQUIREMENT:**  
The survival rate for Afforestation and Reforestation areas shall be a minimum of seventy-five percent (75%) of the total number of trees required to be planted per acre under the approved plan.

**VI. INSPECTION/CERTIFICATION SCHEDULE:**  
The Contractor shall submit with his bid, a schedule for the work which shall include inspections by RMA at the conclusion of installation and at the start and conclusion of each growing season during the two-year warranty period.

**VII. PENALTY FOR VIOLATION:**  
A site inspection by the Contractor and a representative of RMA shall take place at the end of the 24 month management and maintenance agreement period. The Contractor shall contact RMA at least one (1) month in advance of such inspection for coordination. If the survival rate of the Afforestation or Reforestation area(s) falls below the established survival requirements by the end of the 24-month management and maintenance agreement, the remaining amount of the cash bond or other surety may be subject to forfeiture, or other penalties may be imposed.

# SEQUENCE OF OPERATIONS

## PRE-CONSTRUCTION SITE PREPARATION

- INSTALL TREE PROTECTION FENCE AND IMPLEMENT TREE PROTECTION METHODS AS SHOWN.
- MOY OR BRUSH HOE THE SITE WITHIN THE LIMITS OF THE PROPOSED REFORESTATION AREA. DO NOT REMOVE OR DAMAGE ANY EXISTING TREES OR SAPLINGS UNLESS OTHERWISE INDICATED.  
\*THERE SHALL BE NO STAKES, STORAGE, OR STOCKPILES OF MATERIALS WITHIN THE NONTIDAL WETLANDS OR 25' NONTIDAL WETLANDS BUFFER.
- REMOVE OR TREAT WITH AN ACCEPTABLE METHOD, NOxious PLANT MATERIAL, SUCH AS MULTIFLORA ROSE, TEARthumb, AND JOHNSON GRASS BEFORE INSTALLING REFORESTATION PLANTS.
- INSTALL TREE PROTECTION SIGNAGE.
- STABILIZE ANY DISTURBED AREAS USING THE SPECIFIED STABILIZATION MIXTURE WHICH ALLOWS FOR NATURAL REVEGETATION OF FOREST COMMUNITIES.

## FOREST CONSERVATION SEQUENCE OF OPERATIONS

- Prior to beginning any grading operations on the site or on a respective lot, there shall be a preconstruction meeting held at the site which is to include the Contractor and representatives from Riemer Muegge & Associates, Inc. (RMA), The Howard County Department of Planning and Zoning (DPZ) and the owner will be notified by the Contractor as to the time and place of the field meeting which they wish to send a representative. The purpose of this meeting will be to review the approved FCP and to field verify the correct Limits of Disturbance (LOD).
- The Limits of Disturbance (LOD) pertinent to the preservation of wooded areas shall be staked in the field with final adjustments being made as necessary to insure adequate protection of the Critical Root Zone of trees designated for retention. Stakes to be used shall be those specified for the "TREE PROTECTION DEVICE" to which approved protective material will be attached. Alternate means of defining the LOD may be used if approved by the DPZ.
- All forest retention areas shall be protected by highly visible, well anchored temporary protection devices (see detail), which shall be securely in place prior to any clearing or grading operations.
- Grading operations or other construction operations which could dislodge or otherwise damage the protective devices shall be avoided along the edges of the LOD lines if possible. Any protective devices which are damaged during site construction operations shall be properly repaired immediately by the Contractor.
- After site grading, utility access road, and driveway construction have been completed, all trees adjacent to the LOD line shall be inspected for indications of crown die-back (summer indicator), damage within respective critical root zones or any dead wood or other conditions which might be hazardous to pedestrians, bicyclists, utility lines, vehicular access ways or parked vehicles.
- Should there be evidence of any damage to tree trunks, branches or the critical root zone of trees within the protected areas or to isolated specimen trees to be preserved, the damage shall be examined within a period of two (2) days from the date of observation by a licensed tree care professional. Exposed roots should be covered immediately to a depth of 6 - 8 inches with soil, preferably mixed with 50% peat moss or leaf mold.
- Remove damaged, dead or dying trees or limbs only if the trees or limbs pose an immediate safety hazard to buildings, utility lines, vehicles, or access drives or pedestrian areas. Trees designated for pruning or removal shall be pruned or removed using equipment and methods which will not damage or destroy adjacent large trees or understory trees or shrubs designated for retention.
- All temporary forest protection devices will be carefully removed after all general construction, necessary tree surgery, removal of debris, etc. regrading and reseeded of sediment and erosion control disturbance have been completed and acceptance and approval of the work and site conditions have been given by the DPZ.

## AFFORESTATION/REFORESTATION PLANTING SEQUENCE OF OPERATIONS

- The Contractor(s) shall inform the Howard County Department of Planning and Zoning (DPZ) when planting operations are to begin.
- Determine storage areas for materials and equipment. Obtain approval of location from Owner and the DPZ.
- Prior to beginning any planting the soils within the area(s) designated for Afforestation or Reforestation shall be analyzed regarding the following features: nutrient content, organic matter, structure, pH and cation exchange capacity. Soils that have been actively farmed may require evaluation for pesticide or herbicide contamination. Such analysis may be performed by the local Soil Conservation Service or Agricultural Extension Service. A minimum of three random samples should be collected for the analysis. An assessment of soil moisture should also be made at this time. Corrective measures shall be made in accordance with analysis results and recommendations.
- The Contractor, assisted by a Representative of Riemer Muegge & Associates, shall stake (or wire-flag) planting area limits and plant locations in accordance with the plan and details.
- Provide and plant all trees of the species and sizes specified and in accordance with the details shown on the Forest Conservation Plans, unless otherwise directed by the DPZ.
- At the completion of planting, remove all excess materials and miscellaneous debris from the respective area(s) of work.
- Protection Devices - to prevent damage within planted areas, all reforestation and/or afforestation sites must be posted with appropriate signs and the area(s) delineated with appropriate protective fencing. No construction equipment nor storage of materials shall be permitted within the planted areas. Details are shown on the Forest Conservation Plans regarding typical sign size and wording. No pedestrian traffic shall be allowed within the protected areas.
- Attachment of signs or any other objects to trees within the protected areas is prohibited.

# FOREST CONSERVATION PROGRAM

## I. OBJECTIVE:

IT IS THE OBJECTIVE OF THE FOREST RETENTION AND THE REFORESTATION PORTION OF THE HUNTERBROOKE SUBDIVISION TO RETAIN ENVIRONMENTAL INTEGRITY BY PRESERVING AND ENHANCING EXISTING WOODED AREAS AND BY REFORESTING OPEN AREAS.

## II. PRESERVATION:

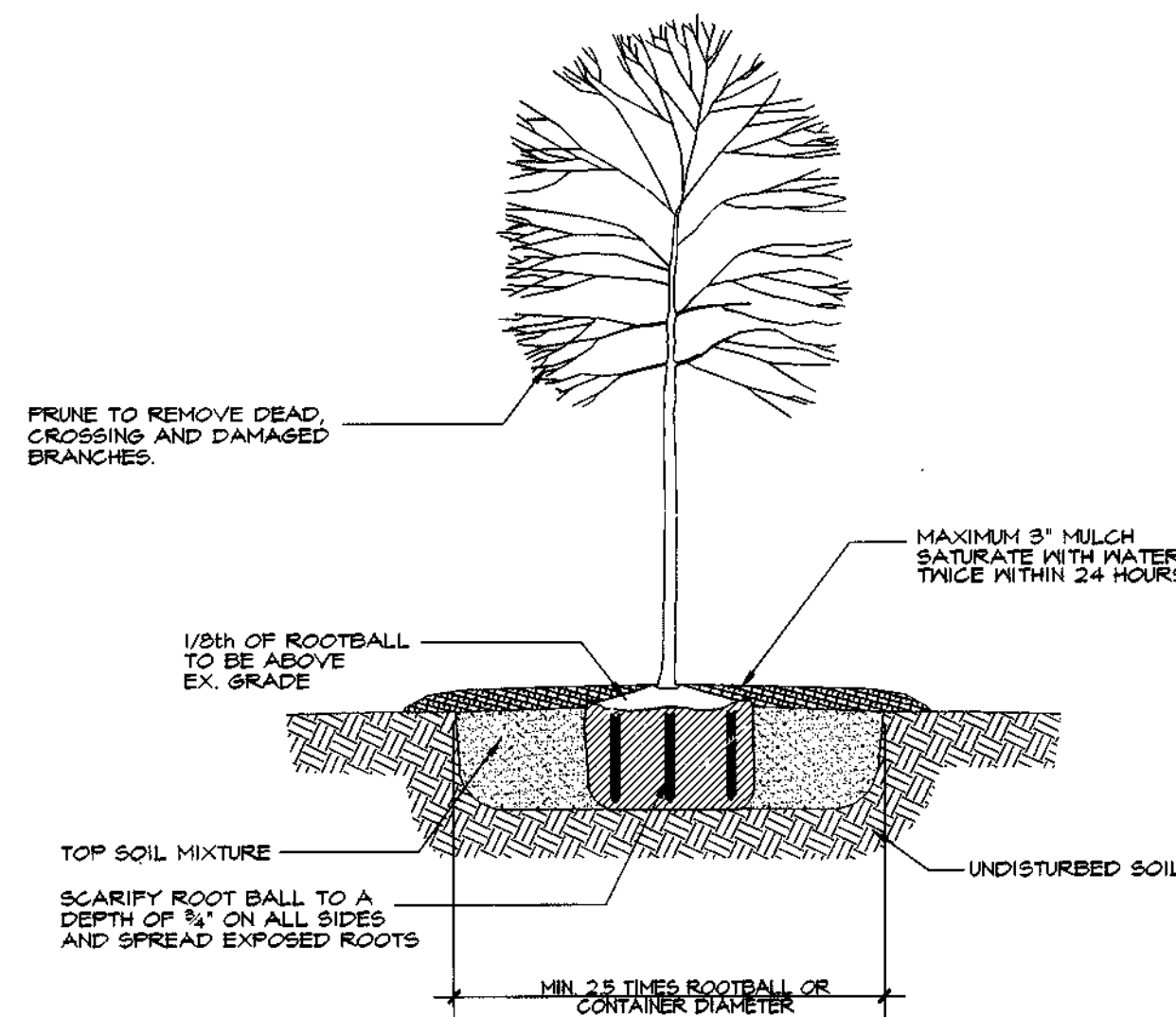
FOREST PRESERVATION AND CREATION AREAS SHALL BE PERMANENTLY PROTECTED BY FOREST CONSERVATION EASEMENTS.

## III. GENERAL CONSTRUCTION NOTES:

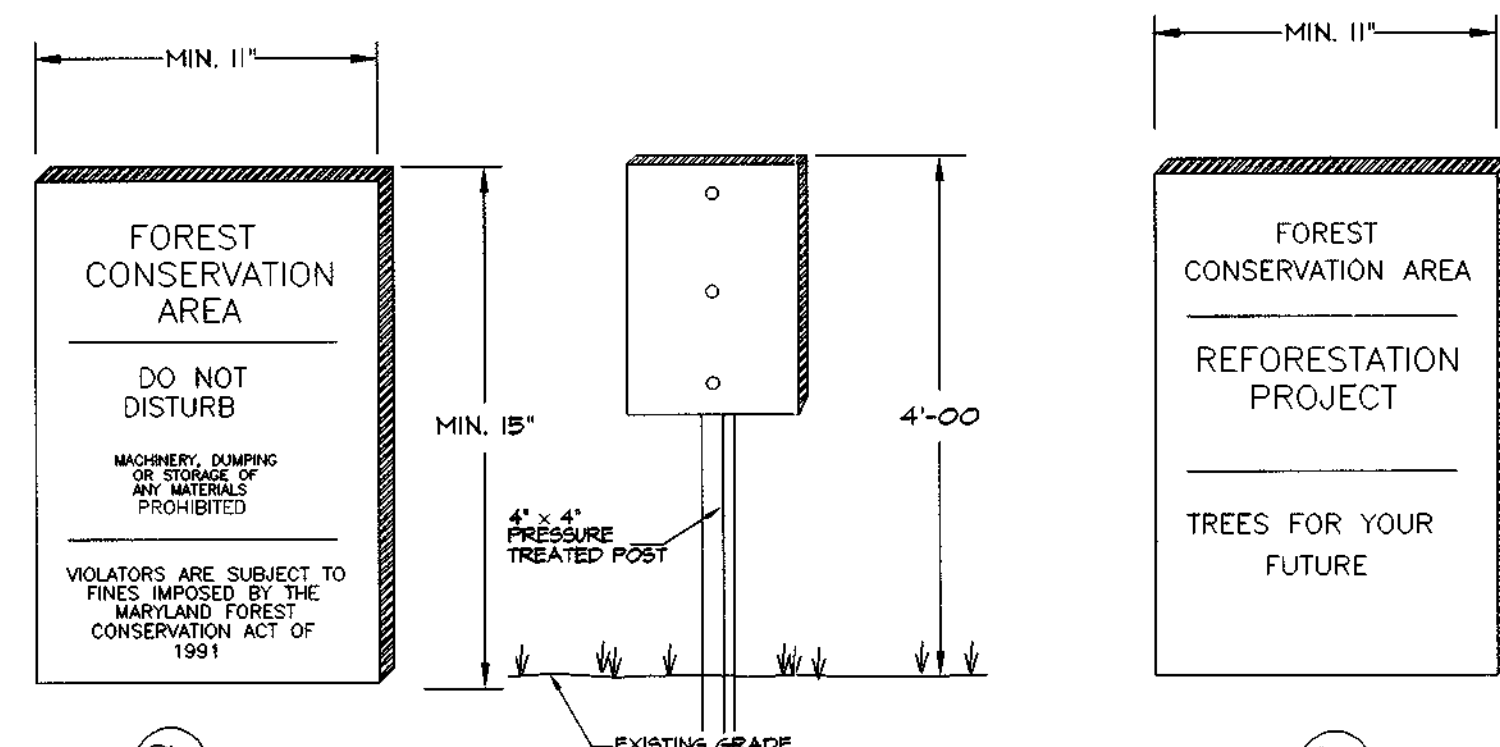
- THERE WILL BE NO STAKES OR STORING OF EQUIPMENT WITHIN THE LIMIT OF THE NONTIDAL WETLANDS OR THE 25' BUFFER.
- PLANTING OF REFORESTATION MATERIAL SHALL BE CONDUCTED IN A MANNER AS TO LIMIT DISTURBANCE TO EXISTING TREES, SAPLINGS OR SIGNIFICANT SHRUBS.

## IV. POST CONSTRUCTION MANAGEMENT PRACTICE:

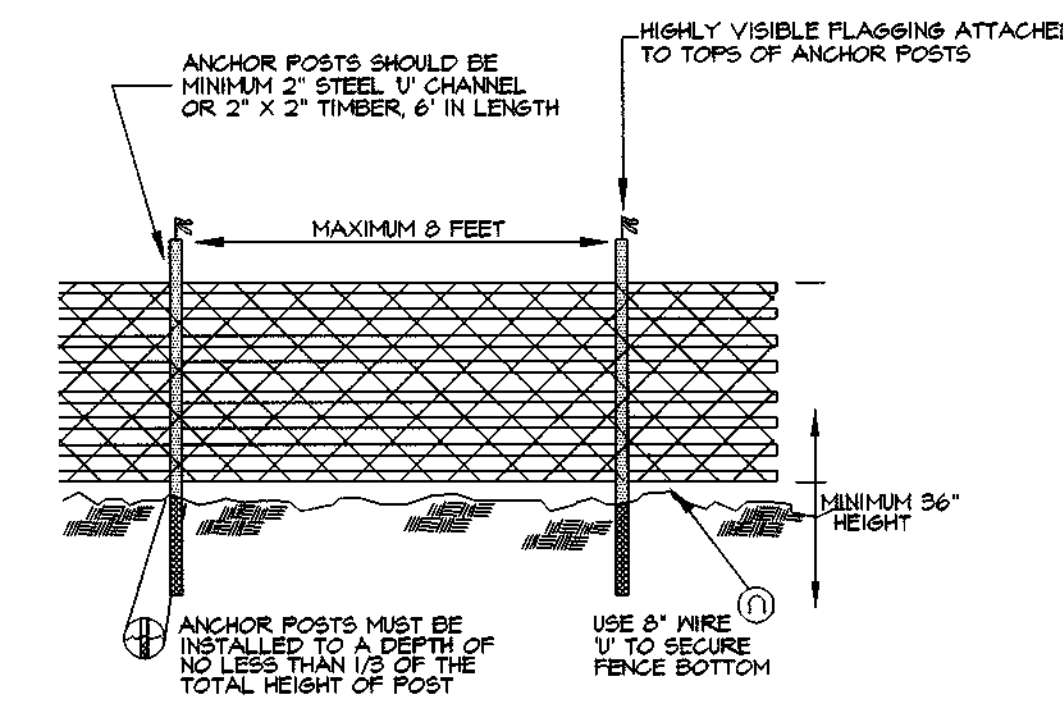
- A TWO (2) YEAR POST-CONSTRUCTION AND MANAGEMENT PROGRAM TO ENSURE PROBABILITY OF A HIGH SURVIVAL RATE INCLUDES THE FOLLOWING:
  - MAINTENANCE OF SIGNS, FENCES AND TREE PROTECTION DEVICES TO PREVENT UNAUTHORIZED INTRUSIONS AND DAMAGE.
  - CAREFUL REMOVAL OF ALL TEMPORARY STRUCTURES AFTER CONSTRUCTION.
  - ROUTINE INSPECTIONS OF FOREST CONSERVATION EASEMENTS.
  - PROVIDE SUITABLE THINNING, WATERING AND FERTILIZING TO ENSURE PROPER GROWTH AND SURVIVAL.



CONTAINERIZED TREE PLANTING DETAIL  
Not To Scale



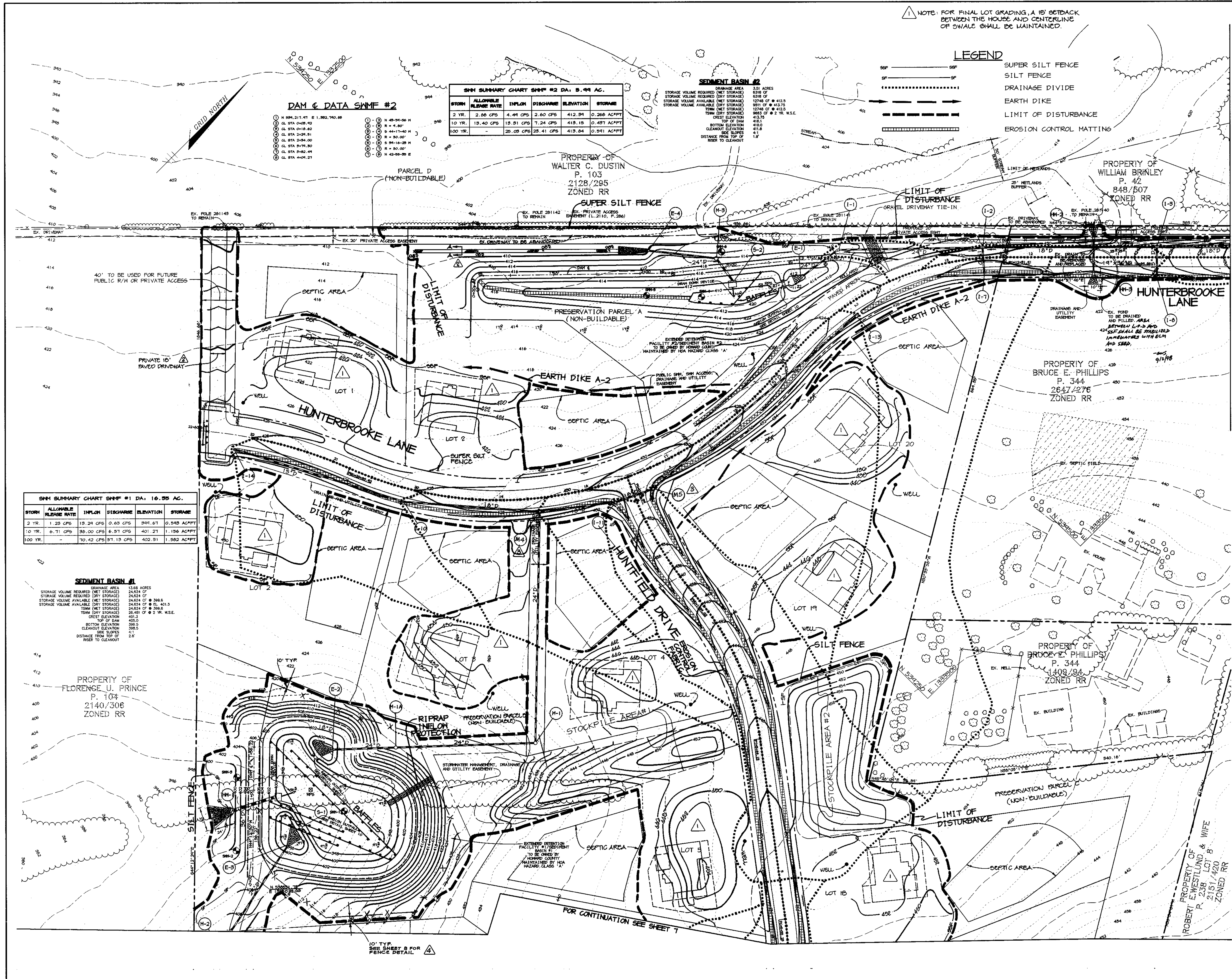
FOREST RETENTION & REFORESTATION SIGN DETAILS  
Not To Scale



TREE PROTECTION FENCING  
BLAZE ORANGE PLASTIC MESH  
Not To Scale

AS BUILT CERTIFICATE	
<i>Christopher J. Reid</i> CHRISTOPHER J. REID #19949	5.9.01 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Andrew M. Danels</i> CHIEF, BUREAU OF HIGHWAYS	10-2-98 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Andie Hamilton</i> CHIEF, DIVISION OF LAND DEVELOPMENT	10/22/98 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	
DATE NO. REVISION	
DEVELOPER WINCHESTER HOMES 6305 Ivy Lane, Suite 800 Greenbelt, Maryland 20770 (301) 474-4411	
OWNER EDWARD ROBERT PRINCE P.O. Box 381 Fulton, Maryland 20759	
PROJECT HUNTERBROOKE FORMERLY PRINCE PROPERTY LOTS 1 - 21, PARCELS A - E	
AREA Parcel 360 & P/O 344 Tax Map 46 Zoned RR-DEO 5th Election District Howard County, Maryland	
TITLE REFORESTATION DETAIL SHEET	
RIEMER MUEGGE & ASSOCIATES, INC. ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 8818 Centre Park Drive, Columbia, Maryland 21045 tel 410.997.8900 fax 410.997.9282	
DESIGNED BY: C.J.R.	
DRAWN BY: DAM	
PROJECT NO: 97150/FINALS REFRST2.DWG	
DATE: AUGUST 28, 1998	
SCALE: 1" = 50'	
DRAWING NO. 10 OF 18	
<i>David T. Dows</i> DAVID T. DOWS #830	





NOTE: FOR FINAL LOT GRADING, A 10' SETBACK BETWEEN THE HOUSE AND CENTERLINE OF SWALE SHALL BE MAINTAINED.

**LEGEND**

- SUPER SILT FENCE
- SILT FENCE
- - - - - DRAINAGE DIVIDE
- EARTH DIKE
- - - - - LIMIT OF DISTURBANCE
- EROSION CONTROL MATTING

**SWMF SUMMARY CHART SWMF #2 DA: 5.99 AC.**

STORM	ALLOWABLE RELEASE RATE	INFLOW	DISCHARGE	ELEVATION	STORAGE
2 YR.	2.00 CFS	4.41 CFS	2.60 CFS	412.34	0.200 AC*FT
10 YR.	18.40 CFS	19.81 CFS	7.24 CFS	418.15	0.487 AC*FT
100 YR.	-	25.05 CFS	25.41 CFS	419.64	0.591 AC*FT

**SEDIMENT BASIN #2**

STORM	GRAVIMETRIC AREA	STORAGE VOLUME REQUIRED (NET STORAGE)	STORAGE VOLUME AVAILABLE (NET STORAGE)
2 YR.	6316 SF	24,624 CF	24,624 CF
10 YR.	6316 SF	24,624 CF	24,624 CF
100 YR.	6316 SF	24,624 CF	24,624 CF

**DAM & DATA SWMF #2**

NO.	DESCRIPTION	NO.	DESCRIPTION
1	N 894.217.41 E 1,392.790.66	11	4-40-30-00 H
2	CL STA 0+00.42	12	S = 4.80'
3	CL STA 0+16.82	13	S = 44-17-40 H
4	CL STA 0+33.21	14	S = 30.00'
5	CL STA 0+49.60	15	S = 30.00'
6	CL STA 0+66.00	16	S = 30.00'
7	CL STA 0+82.40	17	S = 30.00'
8	CL STA 0+98.80	18	S = 30.00'
9	CL STA 1+15.20	19	S = 30.00'
10	CL STA 1+31.60	20	S = 30.00'

**SWMF SUMMARY CHART SWMF #1 DA: 16.55 AC.**

STORM	ALLOWABLE RELEASE RATE	INFLOW	DISCHARGE	ELEVATION	STORAGE
2 YR.	1.25 CFS	19.21 CFS	0.65 CFS	394.61	0.545 AC*FT
10 YR.	6.71 CFS	38.00 CFS	6.57 CFS	401.21	1.156 AC*FT
100 YR.	-	10.42 CFS	17.13 CFS	402.31	1.562 AC*FT

**SEDIMENT BASIN #1**

STORM	GRAVIMETRIC AREA	STORAGE VOLUME REQUIRED (NET STORAGE)	STORAGE VOLUME AVAILABLE (NET STORAGE)
2 YR.	13,668 ACES	24,624 CF	24,624 CF
10 YR.	13,668 ACES	24,624 CF	24,624 CF
100 YR.	13,668 ACES	24,624 CF	24,624 CF

12/28/99	ADDED FENCE TO SWMF #1
8/25/99	MODIFIED I-10A: I-12
DATE	NO. REVISION

BY THE DEVELOPER:

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*Walter C. G...* 8/28/98  
DEVELOPER DATE

BY THE ENGINEER:

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.

*Arthur E. Muegge* 8-28-98  
ENGINEER DATE

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 Simms* 165 9/2/98  
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*Arthur E. Muegge* 9/2/98  
HOWARD SOIL CONSERVATION DISTRICT DATE

AS BUILT CERTIFICATE

DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

*Andrew M. Daniels* 10-2-98  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Andy Hamilton* 1/22/98  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Arthur E. Muegge* 1/2/98  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

4-20-99 ADDED DRIVEWAY TO ADJOINING OWNER'S PROPERTY AND RELOCATED SWMF #1 & #2

2-12-99 ADDED LOT GRADING, HOUSE FOOTPRINT, GENERIC OUTLINES & SEPTIC AREAS - LOTS 1, 3 & 10-21

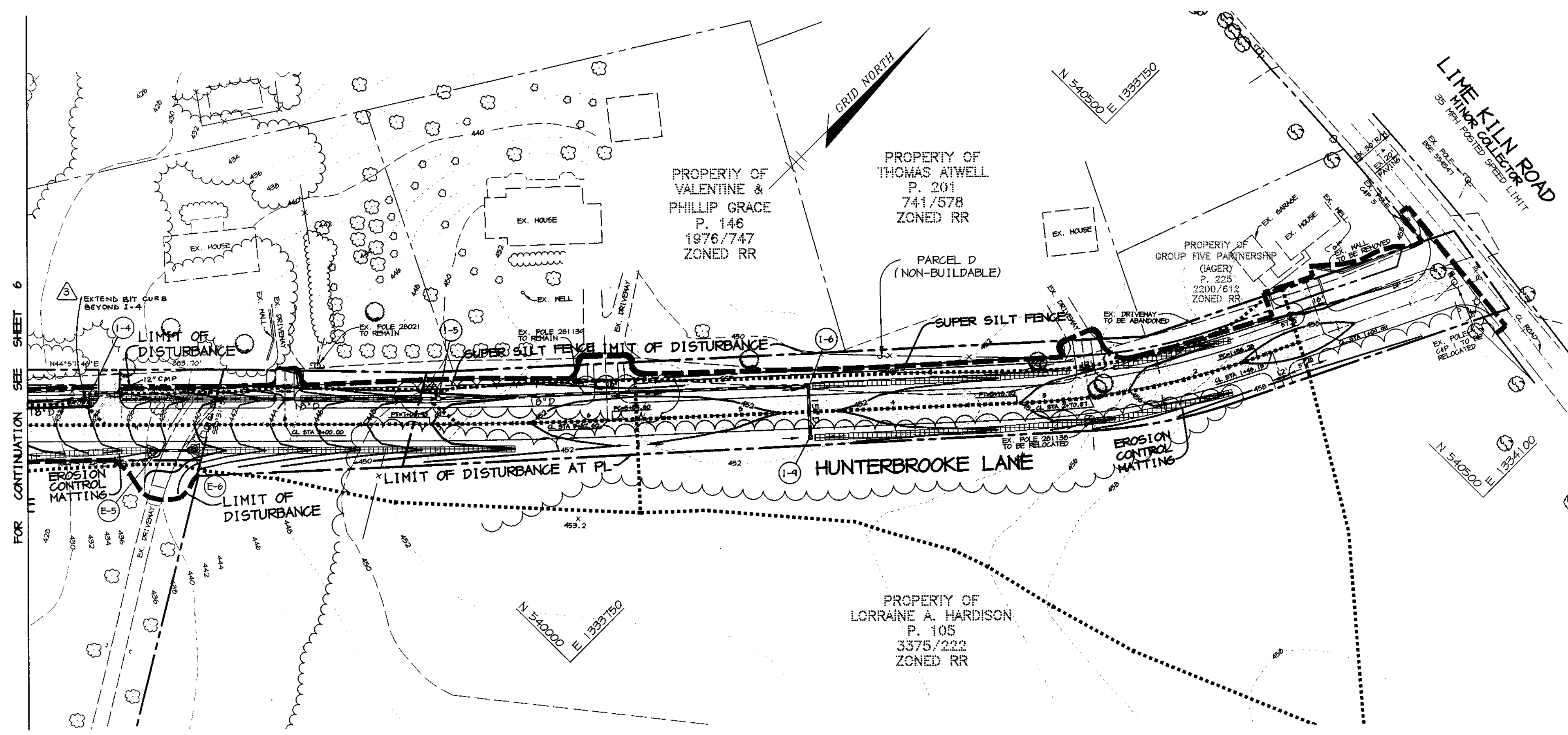
DATE	NO.	REVISION
DEVELOPER	WINCHESTER HOMES	
OWNER	EDWARD ROBERT PRINCE	
PROJECT	HUNTERBROOKE	
AREA	Parcel 360 & P/O 344	
TITLE	GRADING AND SEDIMENT CONTROL PLAN, DRAINAGE AREA MAP	

**RIEMER MUEGGE & ASSOCIATES, INC.**  
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
8818 Centre Park Drive, Columbia, Maryland 21045  
tel 410.997.8900 fax 410.997.9282

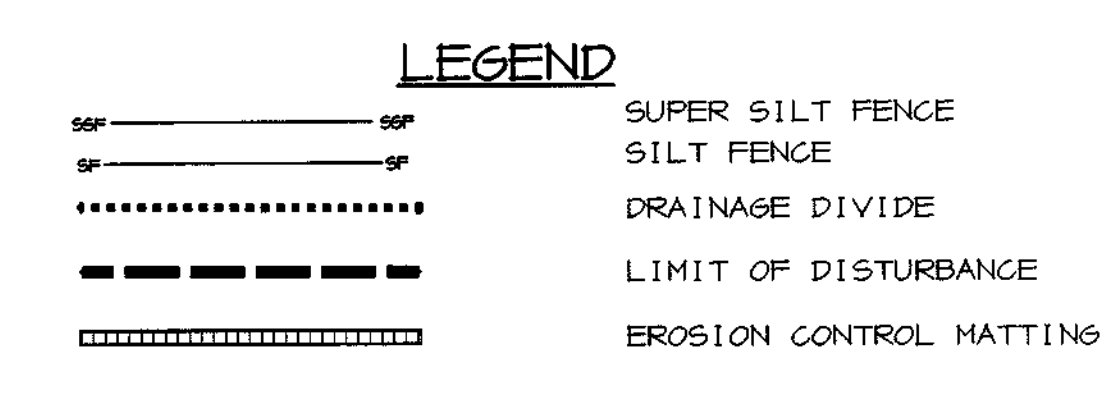
9-28-98	DATE	DESIGNED BY: C.J.R.
		DRAWN BY: DAM
		PROJECT NO.: 97150/FINALS
		DATE: AUGUST 28, 1998
		SCALE: 1" = 50'
		DRAWING NO. 6 OF 18

*Arthur E. Muegge* #8707





DRAINAGE DATA			
INLET NOS.	AREA IN ACRES	'C' FACTOR	PERCENT IMPERVIOUS
1	0.20	0.40	20%
2	0.08	0.28	100%
3	0.04	0.12	75%
4	0.08	0.59	50%
5	0.08	0.63	30%
6	0.24	0.54	46%
7	1.34	0.35	8%
8	0.45	0.44	27%
9	2.13	0.33	4%
10	0.80	0.34	4%
11	0.70	0.42	11%
13	2.14	0.33	7%
14	0.61	0.34	8%
15	2.69	0.31	0%
16	1.60	0.40	16%
17	1.38	0.41	18%



**21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL**

**Definition:**  
Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

**Purpose:**  
To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

**Conditions Where Practice Applies:**

- This practice is limited to areas having 2:1 or flatter slopes where:
  - The texture of the exposed subsoil parent material is not adequate to produce vegetative growth.
  - The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
  - The original soil to be vegetated contains material toxic to plant growth.
  - The soil is so acidic that treatment with limestone is not feasible.
- For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

**Construction and Material Specifications:**

- Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SSS in cooperation with Maryland Agricultural Experimentation Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
  - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
  - Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.
  - Where subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
- For sites having disturbed areas under 5 acres:
  - Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
- For sites having disturbed areas over 5 acres:
  - On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
    - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
    - Organic content of topsoil shall be not less than 1.5 percent by weight.
    - Topsoil having soluble salt content greater than 500 parts per million shall not be used.
    - No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.

**Note:** Topsoil substitutes to amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority may be used in lieu of natural topsoil.

- Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

**V. Topsoil Application**

- When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.
- Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
- Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
- Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

**VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:**

- Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for site having disturbed areas under 5 acres shall conform to the following requirements:
  - Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
  - Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
  - Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
  - Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

**References:** Guideline Specifications, Soil Preparation and Sodding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

BY THE DEVELOPER:  
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*Paul J. ...* 8/28/98  
DEVELOPER DATE

BY THE ENGINEER:  
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.

*Arthur E. Muegge* 8-28-98  
ENGINEER DATE

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 Simms* 08. 9/8/98  
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*Yuth ...* 9/8/98  
HOWARD SOIL CONSERVATION DISTRICT DATE

AS BUILT CERTIFICATE

DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

*Andrew M. ...* 10-2-98  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Chris Hamilton* 10/20/98  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

12/28/99  
8/25/99  
ADDED FENCE DETAIL  
ADDED INLET MODIFICATION DETAIL

DATE	NO.	REVISION
		DEVELOPER WINCHESTER HOMES 6305 Ivy Lane, Suite 800 Greenbelt, Maryland 20770 (301) 474-4411
		OWNER EDWARD ROBERT PRINCE P.O. Box 381 Fulton, Maryland 20759
		PROJECT HUNTERBROOKE FORMERLY PRINCE PROPERTY LOTS 1 - 21, PARCELS A - E
		AREA Parcel 360 & P/O 344 Tax Map 46 Zoned RR-DEO 5th Election District Howard County, Maryland

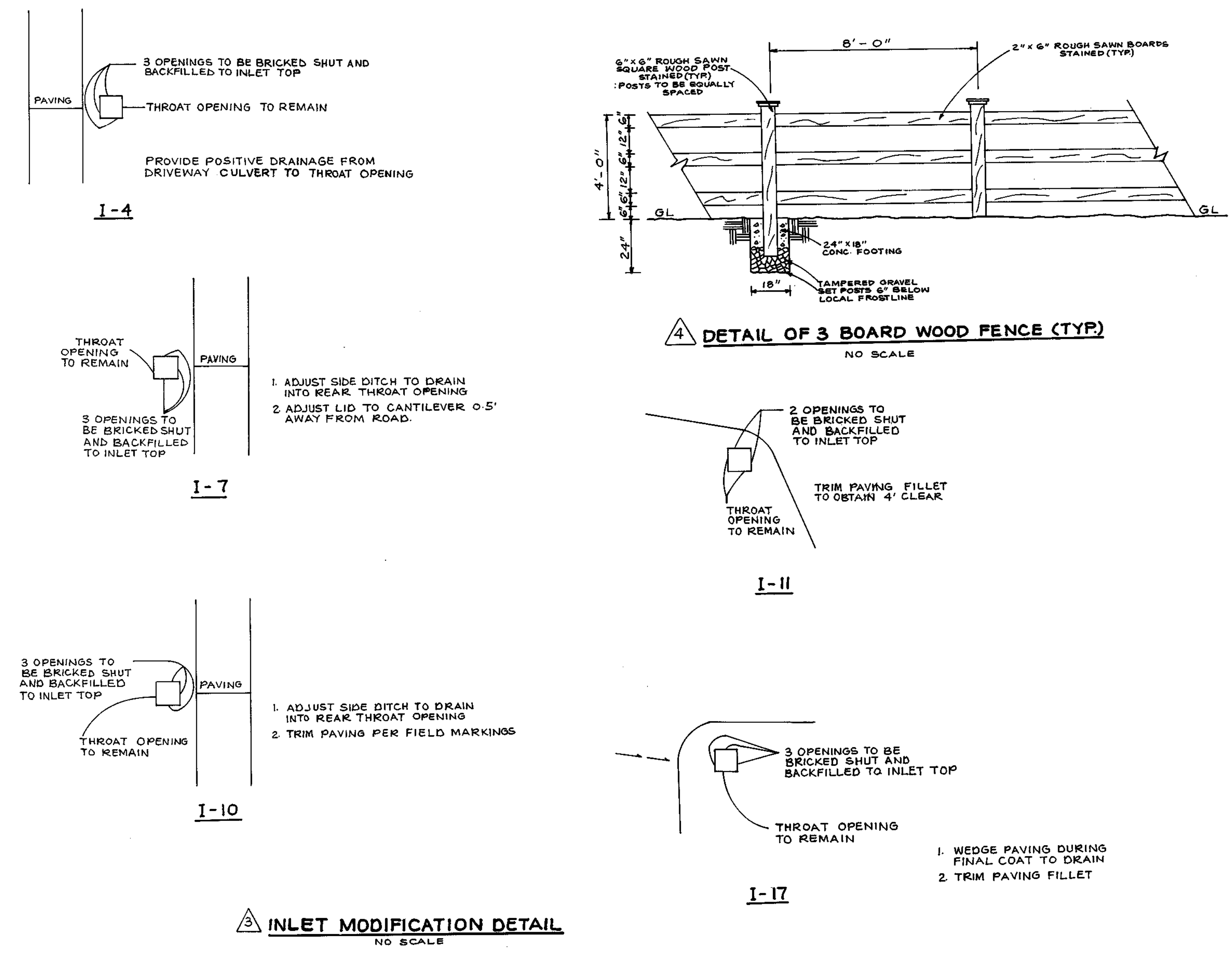
TITLE  
**GRADING AND SEDIMENT CONTROL PLAN,  
DRAINAGE AREA MAP**

**RIEMER MUEGGE & ASSOCIATES, INC.**  
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
8818 Centre Park Drive, Columbia, Maryland 21045  
tel 410.997.8900 fax 410.997.9282

8-28-98  
DATE

DESIGNED BY: C.J.R.  
DRAWN BY: DAM  
PROJECT NO.: 97150/FINALS  
RDB, DMS  
DATE: AUGUST 28, 1998  
SCALE: 1" = 50'  
DRAWING NO.: 8 OF 18

*Arthur E. Muegge* #8707  
ARTHUR E. MUEGGE #8707





**MD-378 STANDARDS AND SPECIFICATIONS**

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

**SITE PREPARATION**  
Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.  
Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

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

**EARTH FILL**  
Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6" frozen or other objectionable material. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification CC, SC, CL or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

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

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

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within +/- 2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and this to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

**Cutoff Trench** - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter.

The rock fill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

**STRUCTURE BACKFILL**  
Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the structure. At the time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

**PIPE CONDUITS**  
All pipes shall be circular in cross section.  
Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

- Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361. An approved equivalent is AWWA Specification C-302.
- Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the side of the pipe at least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.
- Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with the recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the finished line and grade of the pipe. The first joint must be located within 2 feet from the riser.
- Backfilling shall conform to Structure Backfill.
- Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

**CONCRETE**  
Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 608, Mix No. 3.

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

- The rock shall have the following properties:
- Bulk specific gravity (saturated surface-dry basis) not less than 2.5.
  - Absorption not more than three percent.
  - Soundness: Weight loss in five cycles not more than 20 percent when sodium sulfate is used.

Bulk specific gravity and absorption shall be determined according to ASTM C 127. The test for soundness shall be performed according to ASTM C 88.  
The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 519.12.

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

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

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

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

**TEMPORARY SEEDING NOTES**

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

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

**Soil Amendments** - Apply 600 lbs. per acre 10-10-10 Fertilizer (14 lbs. per 1000 sq.ft.).

**Seeding** - For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushels per acre of annual ryegrass (3.2 lbs. per 1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.07 lbs. per 1000 sq.ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

**Mulching** - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Refer to the 1993 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

**PERMANENT SEEDING NOTES**

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

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

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

- Preferred - Apply 2 tons per acre dolomitic limestone (42 lbs. per 1000 sq.ft.) and 600 lbs. per acre 10-10-10 Fertilizer (14 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (4 lbs. per 1000 sq.ft.).
- Acceptable - Apply 2 tons per acre dolomitic limestone (42 lbs. per 1000 sq.ft.) and 1000 lbs. per acre 10-10-10 Fertilizer (23 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

**Seeding** - For the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1000 sq.ft.) of weeping lovegrass. During the period October 16 thru February 28, protect site by one of the following options:

- 2 tons per acre of well-anchored mulch straw and seed as soon as possible in the spring.
- Use sod.
- Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw.

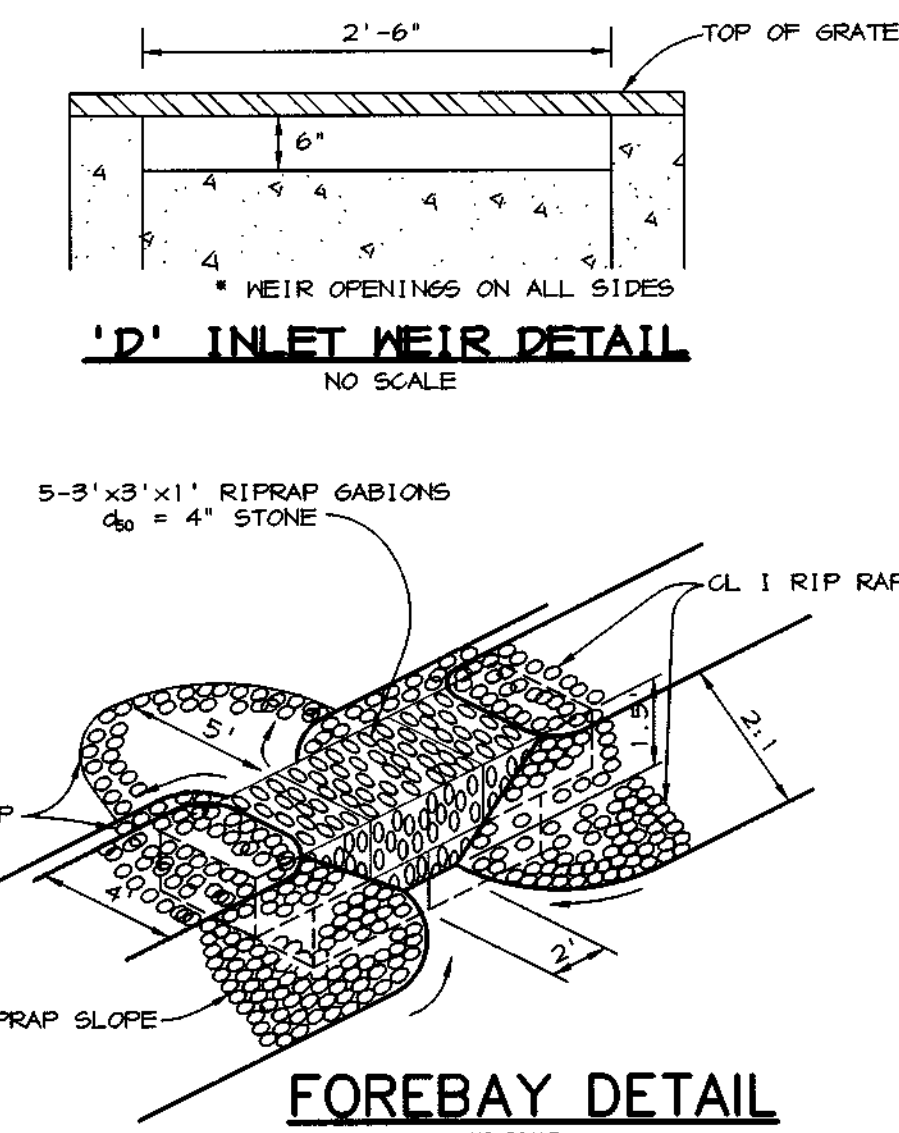
**Mulching** - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal. per acre (5 gal. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

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

**SEDIMENT CONTROL NOTES**

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES, AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERE TO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THE PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOIL TEMPORARY SEEDING, AND MULCHING (SEC. 6.). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:

TOTAL AREA OF SITE	21.21 ACRES
AREA DISTURBED	19.40 ACRES
AREA TO BE ROOFED OR PAVED	2.00 ACRES
AREA TO BE VEGETATIVELY STABILIZED	17.90 ACRES
TOTAL CUT	14,500 CU. YARDS
TOTAL FILL	14,500 CU. YARDS



**GEOTECHNICAL SPECIFICATIONS**

- CONSTRUCTION DEMATERING TO BE IMPLEMENTED DURING FACILITY CONSTRUCTION IF GROUND WATER IS ENCOUNTERED.
- MATERIAL USED TO CONSTRUCT CUTOFF TRENCH SHOULD ALSO BE USED TO BACKFILL RISER AND OUTLET PIPE.
- A TEST PIT EXPLORATION AND LABORATORY TESTING PROGRAM SHOULD BE IMPLEMENTED TO LOCATE SUITABLE SOILS FOR CUTOFF TRENCH CONSTRUCTION.
- AMENDED SOIL WITH THE USE OF BENTONITE MAY BE USED IF APPROVED BY THE GEOTECHNICAL ENGINEER.
- FILLS FOR CONSTRUCTION OF CUTOFF TRENCH AND EMBANKMENT SHOULD BE CONSTRUCTED IN EIGHT-INCH LOOSE LIFTS, AND COMPACTED TO NITIN 95% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D 698, THE STANDARD PROCTOR. FILLS AROUND THE RISER, OUTLET PIPE AND ANTI-SEEP COLLAR TO BE PLACED IN FOUR-INCH LIFTS AND COMPACTED TO THE SAME STANDARD WITH HAND EQUIPMENT. COMPACTIVE EFFORT SHOULD BE MONITORED WITH INPLACE DENSITY TESTING AS PERFORMED BY A QUALIFIED TECHNICIAN UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER.

**STRUCTURE SCHEDULE**

STRUCTURE	TYPE	LOCATION	INV. IN	INV. OUT	TOP	REMARKS
I-1	D	N 534,945.89 E 1,333,059.37	412.00	411.40	415.00	HOCO STD. DETAIL SD 4.34
I-2	A-5	11' RT OF CL STA 12+55.73	413.45 (18") 414.50 (15")	412.45	420.36	HOCO STD. DETAIL SD 4.40
I-3	A-5	11' RT OF CL STA 10+54	421.26 (18") 418.42 (15")	415.46	425.57	HOCO STD. DETAIL SD 4.40
I-4*	D	21' RT OF CL STA 9+29	427.78	427.68	432.00	HOCO STD. DETAIL SD 4.34
I-5	D	21' RT OF CL STA 6+49	442.93	442.83	448.35	HOCO STD. DETAIL SD 4.34
I-6	D	21' RT OF CL STA 4+55.48	446.30	446.05	450.11	HOCO STD. DETAIL SD 4.34
I-7*	D	21' LT OF CL STA 12+55.73	-	414.80	418.25	HOCO STD. DETAIL SD 4.34
I-8	D	21' LT OF CL STA 10+54	-	419.25	422.00	HOCO STD. DETAIL SD 4.34
I-9	D	21' LT OF CL STA 4+55.48	-	446.65	450.11	HOCO STD. DETAIL SD 4.34
I-10*	D	21' LT OF CL STA 20+10	419.63	419.38	426.06	HOCO STD. DETAIL SD 4.34
I-11	D	26' LT OF CL STA 17+73	416.33	416.23	428.75	HOCO STD. DETAIL SD 4.34
M-S	4" MH	26' LT OF CL STA 17+29	416.82	416.57	429.30	HOCO STD. DETAIL G 5.12
I-13	D	21' LT OF CL STA 14+22	-	418.37	423.34	HOCO STD. DETAIL SD 4.34
I-14	D	21' LT OF CL STA 22+17	-	420.65	424.00	HOCO STD. DETAIL SD 4.34
I-15*	D	N 538,318.55 E 1,333,245.47	400.48	400.38	403.50	HOCO STD. DETAIL SD 4.34
I-16	D	N 538,230.51 E 1,333,331.68	401.50	400.75	403.50	HOCO STD. DETAIL SD 4.34
I-17	D	21' LT OF CL STA 14+55	-	401.98	404.46	HOCO STD. DETAIL SD 4.34
M-1	4" MH	N 538,842.52 E 1,333,214.61	413.45	413.85	433.73	HOCO STD. DETAIL G 5.12
M-2	5" MH	N 538,500.95 E 1,333,085.31	348.48	348.88	406.00	HOCO STD. DETAIL G 5.13
M-3	4" MH	N 537,430.55 E 1,332,707.41	407.57	407.47	418.0	HOCO STD. DETAIL G 5.12
S-1	-	N 538,637.67 E 1,333,048.20	346.50	346.50	404.13	SEE SHEET 9
S-2	-	N 534,430.82 E 1,333,000.40	410.00	410.00	416.43	SEE SHEET 9
E-1	24" END SECTION	N 534,448.32 E 1,333,051.15	-	411.37	-	HOCO STD. DETAIL SD 5.51
E-2	24" END SECTION	N 538,721.42 E 1,333,053.44	-	348.00	-	HOCO STD. DETAIL SD 5.51
E-3	36" END SECTION	N 538,605.42 E 1,333,088.47	-	347.47	-	HOCO STD. DETAIL SD 5.51
E-4	24" END SECTION	N 537,309.10 E 1,332,704.97	-	404.0	-	HOCO STD. DETAIL SD 5.51
E-5	12" END SECTION	N 534,907.79 E 1,333,458.44	-	435.0	-	HOCO STD. DETAIL SD 5.61
E-6	12" END SECTION	N 534,422.66 E 1,333,473.61	-	437.50	-	HOCO STD. DETAIL SD 5.61
HN-1	TYPE 'A' HEADWALL	N 538,590.64 E 1,333,022.51	-	346.00	-	HOCO STD. DETAIL SD 5.11
HN-2	TYPE 'O' HEADWALL	N 534,765.44 E 1,333,251.11	-	417.08	-	HOCO STD. DETAIL SD 5.42
HN-3	TYPE 'O' HEADWALL	N 534,732.87 E 1,333,284.54	417.50	-	-	HOCO STD. DETAIL SD 5.42
M-4	4" MH	21' LT OF CL STA 10+57	415.74 (18") 418.54 (18")	415.24	427.47	HOCO STD. DETAIL G 5.12
M-1A	4" MH	N 538,774.55 E 1,333,103.81	413.04	405.30	420.00	HOCO STD. DETAIL G 5.12

**NOTES:**  
LOCATION OF "D" INLETS AND MANHOLES IS AT CENTER OF TOP COVER, FOR "A" INLETS LOCATION IS GIVEN FOR CENTER OF THROAT OPENING AT FACE OF CURB/GRATE/RIM. ELEVATION OF "D" INLETS IS AT THROAT OPENING. SEE DETAIL THIS SHEET FOR "D" INLET NEIR.  
\* SEE SHEET 8 FOR DETAILED DESCRIPTION OF THROAT OPENINGS

**SEQUENCE OF CONSTRUCTION**

- OBTAIN GRADING PERMIT.
- INSTALL STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE, THEN INSTALL SEDIMENT BASIN AND CONTROL STRUCTURES WITH TEMPORARY MODIFICATIONS. INSTALL EARTH DIKES AND INFLOW PROTECTION. USE MATERIAL FROM BASIN EXCAVATION TO FILL FOR INLETS 1-15 TO 1-17. INSTALL HH-2 TO HH-3 (2 WEEKS)
- UPON COMPLETION OF STEP 2 INSTALL ALL STORM DRAINS BEGINNING WITH E-3 TO 1-17. INSTALL ONLY THAT WHICH CAN BE STABILIZED BY THE END OF EACH DAY. (2 WEEKS)
- WITH PERMISSION OF HOWARD COUNTY DILP SEDIMENT CONTROL INSPECTOR, PERFORM ROUGH GRADINGS. (3 WEEKS)
- VEHICULAR PASSAGE THROUGH ACCESS DRIVE TO BE MAINTAINED AT ALL TIMES
- AS SUBGRADE ELEVATIONS ARE ESTABLISHED, INSTALL REMAINING STORM DRAINS. ONCE THE EXISTING CULVERT AT STA. 11+21 IS REPLACED, INSTALL EARTH DIKES TO OUTLET CLEAR WATER INTO IT. INSTALL EROSION CONTROL MATTINGS AS ROAD SHOULDES ARE COMPLETED. (4 WEEKS)
- COMMENCE PAVING AND INSTALL BITUMINOUS CURB. (3 WEEKS)
- APPLY TOPSOIL AND STABILIZE DISTURBED AREAS AS NECESSARY IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (3 DAYS)
- INSTALL STREET LIGHT, LANDSCAPINGS, STREET TREES, REFORESTATION AND ROAD STRIPINGS. (3 WEEKS)
- UPON APPROVAL OF HOWARD COUNTY DILP SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND CONVERT SEDIMENT BASINS TO PERMANENT SWIMPS IN THE FOLLOWING STEPS:
  - SEAL STORM DRAIN INLETS AND FLUSH OUT PIPES. (1 DAY)
  - PUMP OUT STANDING WATER IN BASIN USING PUMPING STATION, (1 DAY)
  - REMOVE ACCUMULATED SEDIMENT, (2 DAYS)
  - REMOVE DRAIN DOWN DEVICES, FLYMOOD AND ORIFICE PLATES. (1 DAY)
  - INSTALL PERMANENT DRAIN DOWN DEVICES AND ORIFICE PLATES. (1 DAY)
  - INSTALL RIP-RAP. (1 DAY)
  - STABILIZE REMAINING DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 DAYS)

OPERATION AND MAINTENANCE SCHEDULE OF PUBLICLY OWNED AND MAINTAINED STORMWATER MANAGEMENT FACILITIES BY HOA.

ROUTINE MAINTENANCE EXTENDED DETENTION POND

- 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, the riser, and the pipes shall be repaired upon the detection of any damage. The components should be inspected during routine maintenance operations.
- Sediment should be removed when its accumulation significantly reduces the design storage. Interfere with the function of the riser, when deemed necessary for aesthetic reasons, or when deemed necessary by the Howard County's Department of Public Works.

DATE	NO.	REVISION
8/25/99	1	MODIFIED STRUCTURE SCHEDULE
		REVISION

**BY THE DEVELOPER :**  
I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

*Arthur E. Muegge* 8/28/99  
DEVELOPER DATE

**BY THE ENGINEER :**  
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.

*Arthur E. Muegge* 8-28-98  
ENGINEER DATE

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.

*Paul Simms* 9/6/98  
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*Paul Simms* 9/6/98  
HOWARD SOIL CONSERVATION DISTRICT DATE

AS BUILT CERTIFICATE

DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

*Andrew M. Daniels* 10-2-98  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

*Carla Hentzer* 10/28/98  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

*Arthur E. Muegge* 10/6/98  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

4-28-99 (A) REV. 11.5 & 14.11 STRUCTURE SCHEDULE  
2-10-99 (A) REV. AREA DISTURBED & VEG. STABILIZED

DATE NO. REVISION

DEVELOPER WINCHESTER HOMES  
6305 Ivy Lane, Suite 800  
Greenbelt, Maryland 20770  
(301) 474-4411

OWNER EDWARD ROBERT PRINCE  
P.O. Box 381  
Fulton, Maryland 20759

PROJECT HUNTERBROOKE  
FORMERLY PRINCE PROPERTY  
LOTS 1 - 21, PARCELS A - E

AREA Parcel 360 & P/O 344  
Tax Map 46 Zoned RR-DEO  
5th Election District  
Howard County, Maryland

TITLE NOTES AND STRUCTURE SCHEDULE

**RIEMER MUEGGE & ASSOCIATES, INC.**  
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING  
8818 Centre Park Drive, Columbia, Maryland 21045  
tel 410.997.8900 fax 410.997.9282

8-28-98 DATE

DESIGNED BY : C.J.R.

DRAWN BY : DAM

PROJECT NO : 97150/FINALS  
RD10.DWG

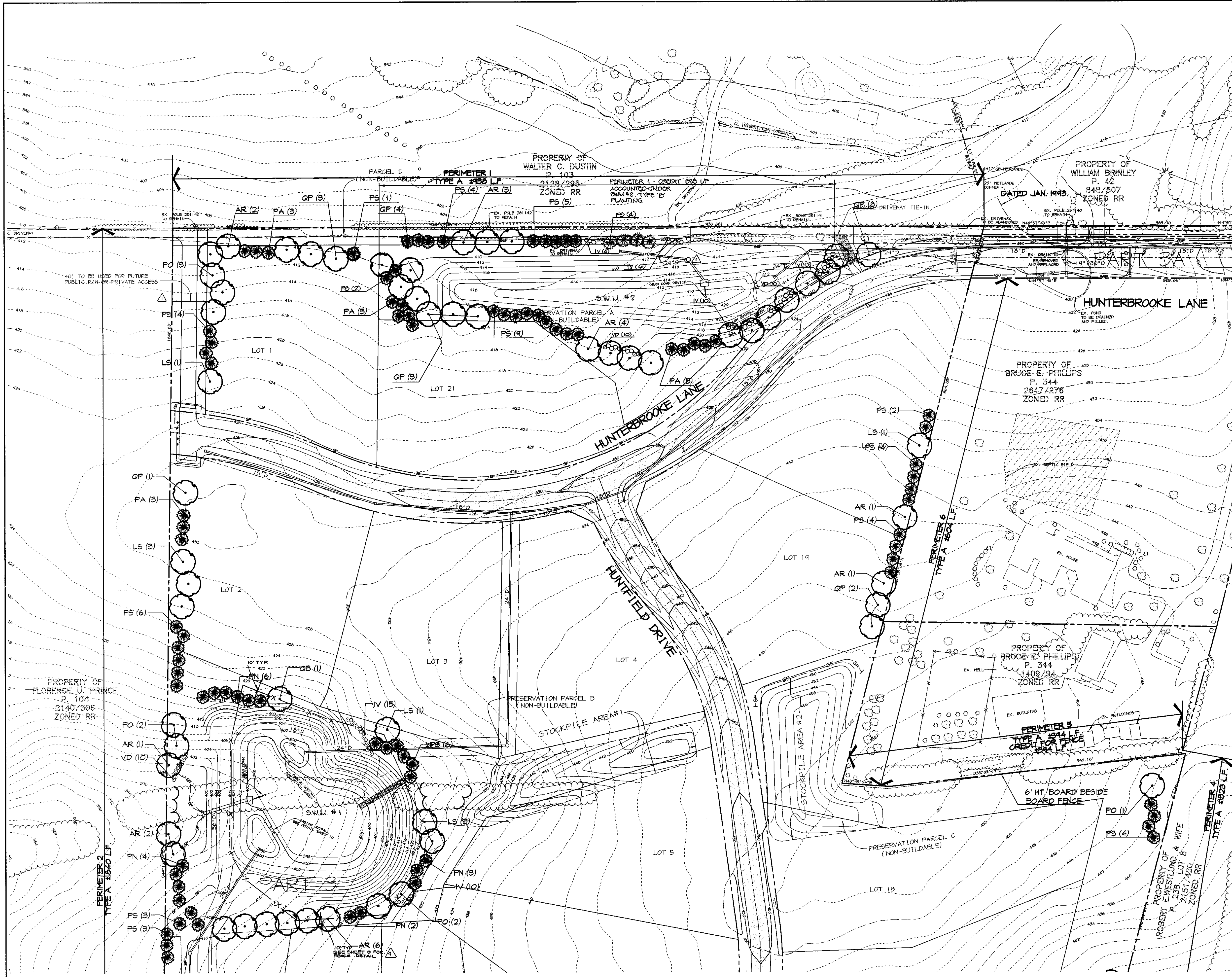
DATE : AUGUST 28, 1998

SCALE : AS SHOWN

DRAWING NO. 10 OF 18

*Arthur E. Muegge* ARTHUR E. MUEGGE #8707





**PLANTING LEGEND**

SYMBOL	TYPE OF PLANT MATERIAL
	EXISTING TREE LINE
	PROPOSED TREE LINE
	NEW SHADE TREE
	NEW EVERGREEN TREE
	NEW SHRUBS

- NOTES:**
- THIS PLAN IS FOR LANDSCAPE PURPOSES ONLY.
  - SEE SHEETS 2, 3, 4 AND 5 FOR LOCATIONS OF STREET TREES.
  - SEE SHEET 16 FOR PLANT SPECIFICATIONS AND SCHEDULES.

FOR CONTINUATION SEE SHEET 16

AS BUILT CERTIFICATE	
APPROVED :	DATE
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Andrew M. Daniels</i>	10-2-98
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED :	DATE
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Cinda Hamilton</i>	10/22/98
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>[Signature]</i>	10/2/98
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
12-28-99	ADDED FENCE TO SWMP#1
4-20-99	ADDED DRIVEWAY TO ADJOINING OWNER'S RELOCATED SWMP#2 OUTFALL
DATE NO.	REVISION
DEVELOPER	WINCHESTER HOMES 6305 Ivy Lane, Suite 800 Greenbelt, Maryland 20770 (301) 474-4411
OWNER	EDWARD ROBERT PRINCE P.O. Box 381 Fulton, Maryland 20759
PROJECT	<b>HUNTERBROOKE</b> FORMERLY PRINCE PROPERTY LOTS 1 - 21, PARCELS A - E
AREA	Parcel 360 & P/O 344 Tax Map 46 Zoned RR-DEO 5th Election District Howard County, Maryland
TITLE	<b>LANDSCAPE PLAN</b>
<b>RIEMER MUEGGE &amp; ASSOCIATES, INC.</b> ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING 8818 Centre Park Drive, Columbia, Maryland 21045 tel 410.997.8900 fax 410.997.9282	
<b>B-21-98</b>	DATE
	DESIGNED BY : C.J.R.
	DRAWN BY : DAM
	PROJECT NO : 97150/FINALS LSCP2.DWG
	DATE : AUGUST 28, 1998
	SCALE : 1" = 50'
	DRAWING NO. 14 OF 18
<i>DAVID T. DOWS #830</i>	

X:\PROJECT\97150\FINALS\LSCP2 Thu Aug 27 10:00:01 1998 RIEMER MUEGGE & ASSOCIATES, INC.

FOR CONTINUATION SEE SHEET 15

F-98-94