

ROADS, STORM DRAINS, & STORMWATER MANAGEMENT

COOPER PROPERTY

LOTS 1-38

SIXTH ELECTION DISTRICT

HOWARD COUNTY, MARYLAND.

GENERAL NOTES

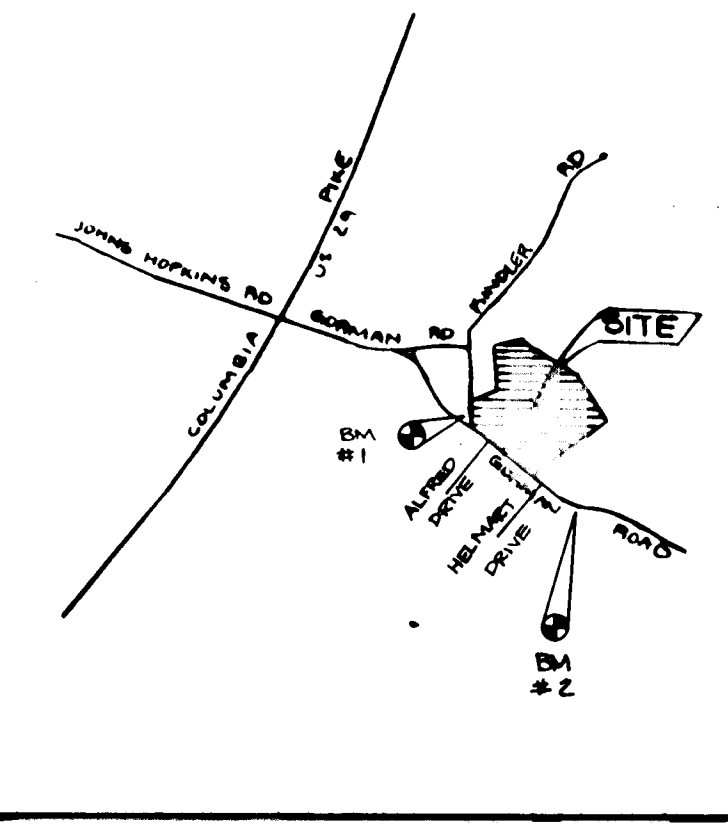
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV. & STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK ON THESE DRAWINGS:

MISS UTILITY- 1-800-257-7777
 BELL TELEPHONE SYSTEM- 393-3649
 LONG DISTANCE CABLE DIVISION- 393-3553 or 3553
 BALTIMORE GAS AND ELECTRIC CO.- 539-8000 ext. 691
 COLONIAL PIPELINE- 795-1390
 HOWARD COUNTY BUREAU OF UTILITIES- 313-2366
 HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION- 792-7272
 (24 HOURS NOTICE PRIOR TO COMMENCEMENT OF WORK)

- ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
- ALL STREET CURB RETURNS SHALL HAVE A 35.0' RADIUS UNLESS OTHERWISE NOTED.
- STORM DRAIN TRENCHES WITHIN THE ROAD RIGHT-OF-WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL, VOLUME IV. & STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- INSTALLATION OF TRAFFIC CONTROL DEVICES, MARKING, AND SIGNING SHALL BE IN ACCORDANCE WITH THE DESIGN MANUAL.
- 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.
- DESIGNED TRAFFIC SPEED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIAL STANDARDS.

ALL 50' RIGHT-OF-WAYS = 25 M.P.H.

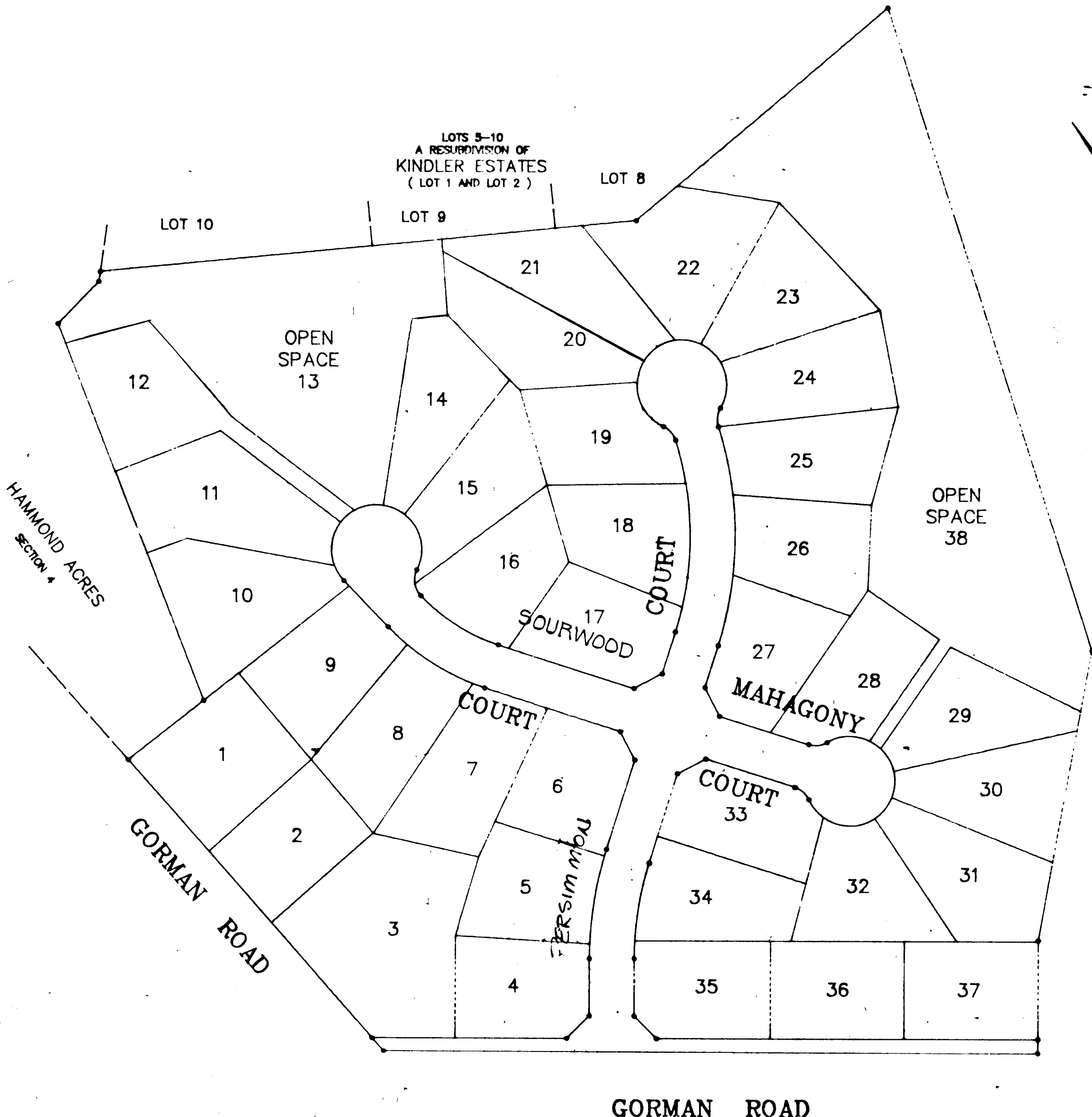
- ALL ELEVATIONS SHOWN ARE BASED ON U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
- ALL FILL AREAS WITHIN THE ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION, AS DETERMINED BY ASTM D-1557.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
- SUBJECT PROPERTY ZONED R-20 PER 10-18-93 COMPREHENSIVE ZONING PLAN.
- TOPO TAKEN FROM AERIAL TOPOGRAPHY SURVEY BY: PHOTO SCIENCE & MAISTE WATTS, INC. DATE: 2-12-89
- NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 8" OF FINISHED GRADE.
- ALL STORM DRAIN PIPE BEDDING SHALL BE AS SHOWN IN FIG. 11.4 VOLUME 1 OF HOWARD COUNTY DESIGN MANUAL UNLESS OTHERWISE NOTED.
- SEE DEPARTMENT OF PLANNING AND ZONING FILE NO.: S-89-75, P-89-88, WP-90-27
- U.S. ARMY CORPS OF ENGINEERS PERMIT #90-1121-7 AND MD STATE WATER QUALITY CERTIFICATE #90-0741 HAVE BEEN ISSUED FOR THIS PROJECT. SEE ADDITIONAL INFORMATION ON SHEET 5.
- SIDEWALKS AND SIDEWALK RAMP SHALL COMPLY WITH CURRENT A.P.A. REQUIREMENTS.



VICINITY MAP
SCALE: 1" = 2000'

BENCHMARKS / GEODETIC CONTROL	
STATION DESIGNATION	DESCRIPTION
BM #2 2140002	CONC. MON. 0.2' BELOW SURFACE @ EDGE OF SHOULDER BOTTOM OF GRASS BANK 15.1' OFF E. GORMAN ROAD
BM #1 2135002	P.B. 7' ± N. OF N. EDGE RD. 0.2' BELOW SURFACE 60' ± W. OF GORMAN ROAD

SHEET INDEX	
SHT. NO.	DESCRIPTION
1 OF 14	TITLE SHEET
2 OF 14	ROAD PLAN
3 OF 14	ROAD PROFILES
4 OF 14	GORMAN ROAD WIDENING PLAN
5 OF 14	GRADING & SEDIMENT CONTROL
6 OF 14	DRAINAGE AREA MAP (PROPOSED & EXISTING)
7 OF 14	STORM DRAIN PROFILES
8 OF 14	STORM WATER MANAGEMENT PROFILES
9 OF 14	STORM WATER MANAGEMENT DETAILS
10 OF 14	SEDIMENT CONTROL DETAILS
11 OF 14	SOILS MAP
12 OF 14	MITIGATION PLAN
13 OF 14	TRAFFIC MAINTENANCE PLAN
14 OF 14	



STRUCTURE SCHEDULE

STRUCTURE No.	STRUCTURE TYPE	INVERT IN	INVERT OUT	TOP ELEVATION	REMARKS	LOCATION
I-1	A-10	N/A	360.20	369.87	HO. CO. STD. SD-4.0	LT STA 1+35.15
I-2	A-10	N/A	374.50	378.14	HO. CO. STD. SD-4.0	LT STA 1+11.04
I-3	A-10	N/A	370.60	374.25	HO. CO. STD. SD-4.0	LT STA 0+87.74
I-4	YARD INLET	362.10	361.00	364.10	HO. CO. STD. SD-4.14	SEE SHEET 2 OF 12
I-5	A-5	383.32	383.07	387.45	HO. CO. STD. SD-4.0	STA 6+00 14 RT. E
I-6	A-5	390.56	390.00	394.47	HO. CO. STD. SD-4.0	STA 1+91 15 LT. E
I-7	YARD INLET	377.5	377.4	381.00	HO. CO. STD. SD-4.14	
I-8	A-10	382.15	381.4	385.00-386.96	HO. CO. STD. SD-4.02	STA 3+22.14 RT. E
I-9	A-10	N/A	382.0	385.00-386.96	HO. CO. STD. SD-4.02	STA 3+22.14 RT. E
M-1	STANDARD	373.20	372.70	377.77	HO. CO. STD. G-5.01	
M-2	STANDARD	365.45	364.95	370.5	HO. CO. STD. G-5.01	
M-3	STANDARD	369.10	368.60	376.15	HO. CO. STD. G-5.01	
S-1	METAL END SECTION		358.9	N/A	HO. CO. STD. SD-5.61	
S-2	METAL END SECTION		363.0	N/A	HO. CO. STD. SD-5.61	
S-3	METAL END SECTION		363.2	N/A	HO. CO. STD. SD-5.61	
S-4	TYPE 'C' ENDWALL		346.0	N/A	HO. CO. STD. SD-5.61	
S-5	METAL END SECTION		382.25	N/A	HO. CO. STD. SD-5.61	
S-6	TYPE 'C' ENDWALL		346.5	N/A	HO. CO. STD. SD-5.61	
S-8	METAL END SECTION	361.7	361.20	N/A	HO. CO. STD. SD-5.61	
S-9	METAL END SECTION		360.70	N/A	HO. CO. STD. SD-5.61	
R-1	48" BCCMP RISER	355.5	N/A	N/A	N/A	
R-2	36" BCCMP RISER	360.25	N/A	N/A	N/A	

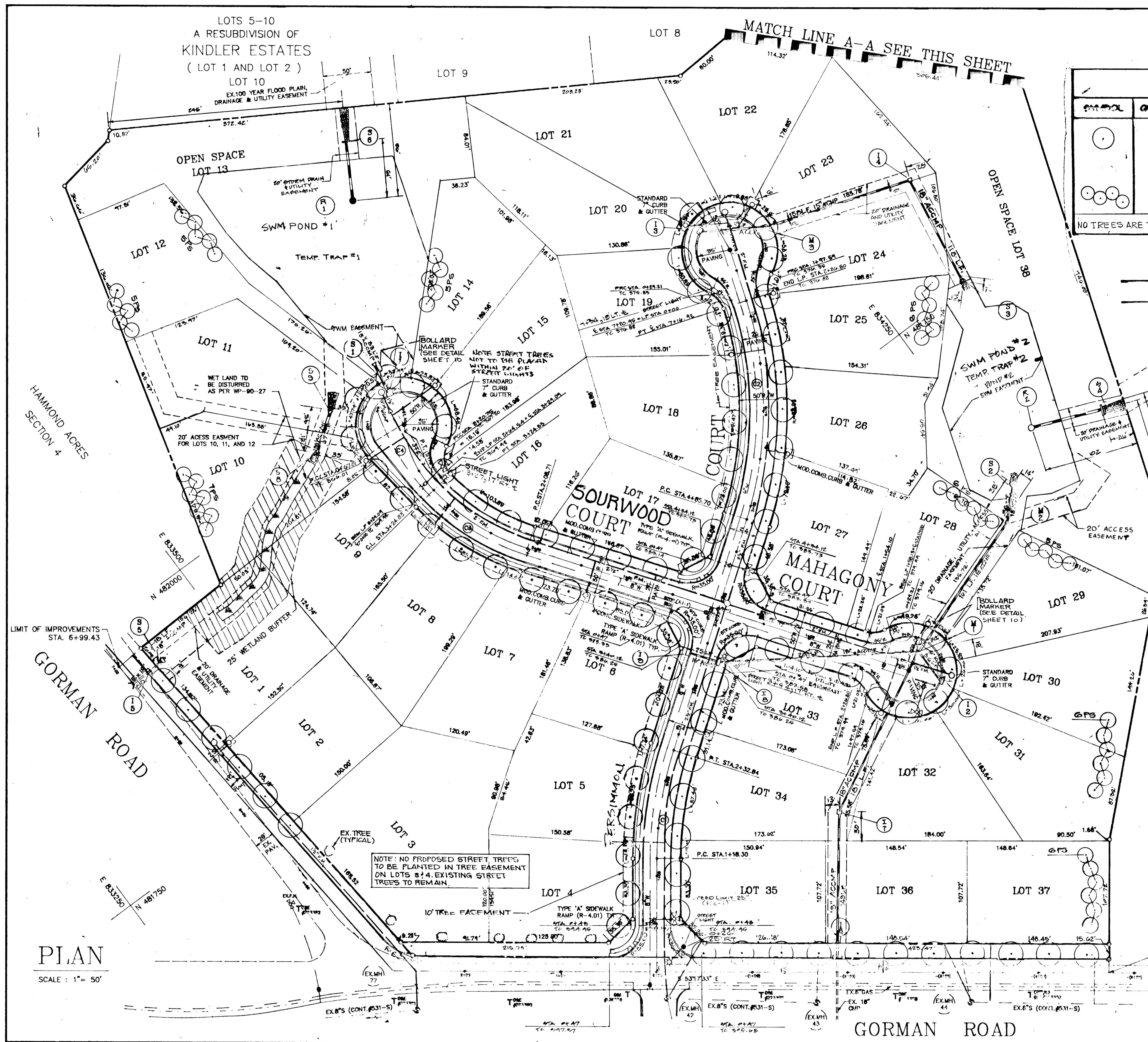
NO.	BY	REVISION	DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.			
	<i>Chris Cummings</i>	CHIEF, LAND DEVELOPMENT DIVISION	3/26/94 DATE
	<i>Andrew M. Danek</i>	CHIEF, BUREAU OF HIGHWAYS	3-22-94 DATE
	<i>Paul J. Seaton</i>	CHIEF, BUREAU OF ENGINEERING	3/30/94 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.			
	<i>Anna Strummary</i>	CHIEF, DIVISION OF LAND DEVELOPMENT & RESEARCH	4/13/94 DATE
PROJECT NAME: COOPER PROPERTY SECTION 1 / AREA 1 LOTS 1-38 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND.			
TITLE: TITLE SHEET		OWNER / DEVELOPER: COOPER AND CUMMINGS 585 MAIN STREET, SUITE 241 LAUREL, MD 20707	
PREPARED BY: American Engineering Inc. CIVIL ENGINEERING CONSULTANTS AND LAND PLANNERS		JERRY K. & ELLEN COOPER 585 MAIN STREET, SUITE 241 LAUREL, MD 20707	
AE 871-A MAIN STREET LAUREL, MARYLAND 20707 WASH. (301) 953-1221 B.M. 1. (301) 880-3030		ELJER CONSTRUCTION CO. 585 MAIN STREET, SUITE 241 LAUREL, MD 20707	
DES. : R.A.	JOB :	SCALE :	SHEET 1 OF 14
DRWG. : W.D.F.	PROJ. :	1" = 50'	
CHKD. : R.A.	DATE : 4-14-90		

1691



PLAN
Scale 1" = 100'

1691



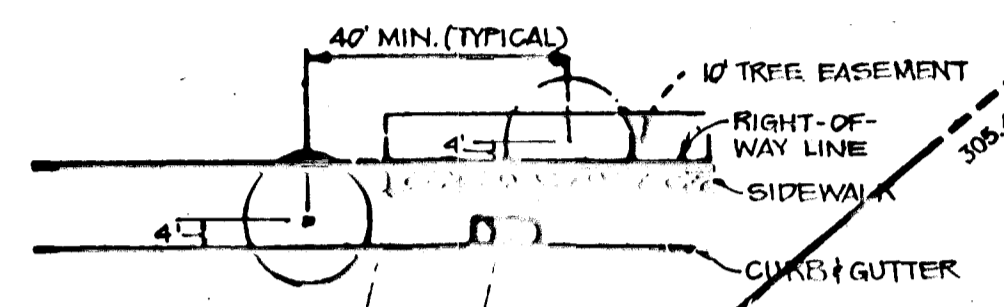
CURVE DATA AT ROAD CL.

CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	375.00'	114.54'	57.72'	114.09'	S45°27'27"W	17°30'00"
C2	375.00'	231.22'	119.42'	227.58'	N36°23'36"E	35°19'42"
C3	233.45'	116.12'	59.29'	114.93'	N21°32'34"W	28°28'58"
C4	22.63'	61.58'	31.01'	62.61'	S10°24'56"W	35°24'58"

PLANT LIST

SYMBOL	QUANTITY	NAME	REMARKS
(Symbol: Circle with vertical line)	41	SYCAMORE (PLATANUS X ACER)	ALONG PERSIMMON COURT ONLY
(Symbol: Circle with horizontal line)	17	RED MAPLE (ACER RUBRUM CULT.)	ALONG GORMAN ROAD ONLY
(Symbol: Circle with diagonal line)	12	ANUR MAPLE (ACER GINNALA)	ALONG MAHAGONY COURT ONLY
(Symbol: Circle with cross-hatch)	22	HEDGE MAPLE (ACER CAMPESTRE)	ALONG SOURWOOD COURT ONLY
(Symbol: Circle with dots)	51	WHITE PINE (PINUS SPP.) PS	USED FOR BUFFER PURPOSE

NO TREES ARE TO BE PLACED WITHIN 20 FEET OF ANY STREET LIGHT



STREET LIGHTING TABLE

TYPE	LOCATION
100 WATT HPS, PENDANT MOUNT, 25' HIGH GALVANIZED STEEL POLE	INTERSECTION OF GORMAN ROAD AND PERSIMMON COURT
100 WATT HPS, POST TOP, 12' HIGH, FORGEWELD POLE	INTERSECTION OF MAHAGONY COURT AND PERSIMMON COURT SECTION BENEATH MAHAGONY COURT SECTION BENEATH SOURWOOD COURT

LIGHTING LEGEND

- 100 WATT HPS
- ⊙ 100 WATT HPS, POST MOUNT

* NOTE STREET TREES ARE TO BE PLACED WITHIN 20' OF STREET LIGHTS.

NO.	BY	REVISION	DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chad Dammus 7/20/94
CHIEF, LAND DEVELOPMENT DIVISION DATE

Richard M. Ducker 3-22-94
CHIEF, BUREAU OF HIGHWAYS HS DATE

Paul J. Sisson 3/30/94
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Cina Swannery 4/13/94
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

PROJECT NAME: COOPER PROPERTY
SECTION 1 / AREA 1 LOTS 1-36
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND.

TITLE: ROAD PLAN & STREET TREES

OWNER / DEVELOPER: COOPER AND CUMMINGS
585 MAIN STREET, SUITE 241
LAUREL, MD 20707

DESIGNED BY: American Engineering Inc.
CIVIL ENGINEERING CONSULTANTS
AND LAND PLANNERS
871-A MAIN STREET
LAUREL, MARYLAND 20707
PHONE: (301) 953-1271
FAX: (301) 953-3008

ELJER CONSTRUCTION CO.
585 MAIN STREET, SUITE 241
LAUREL, MD 20707

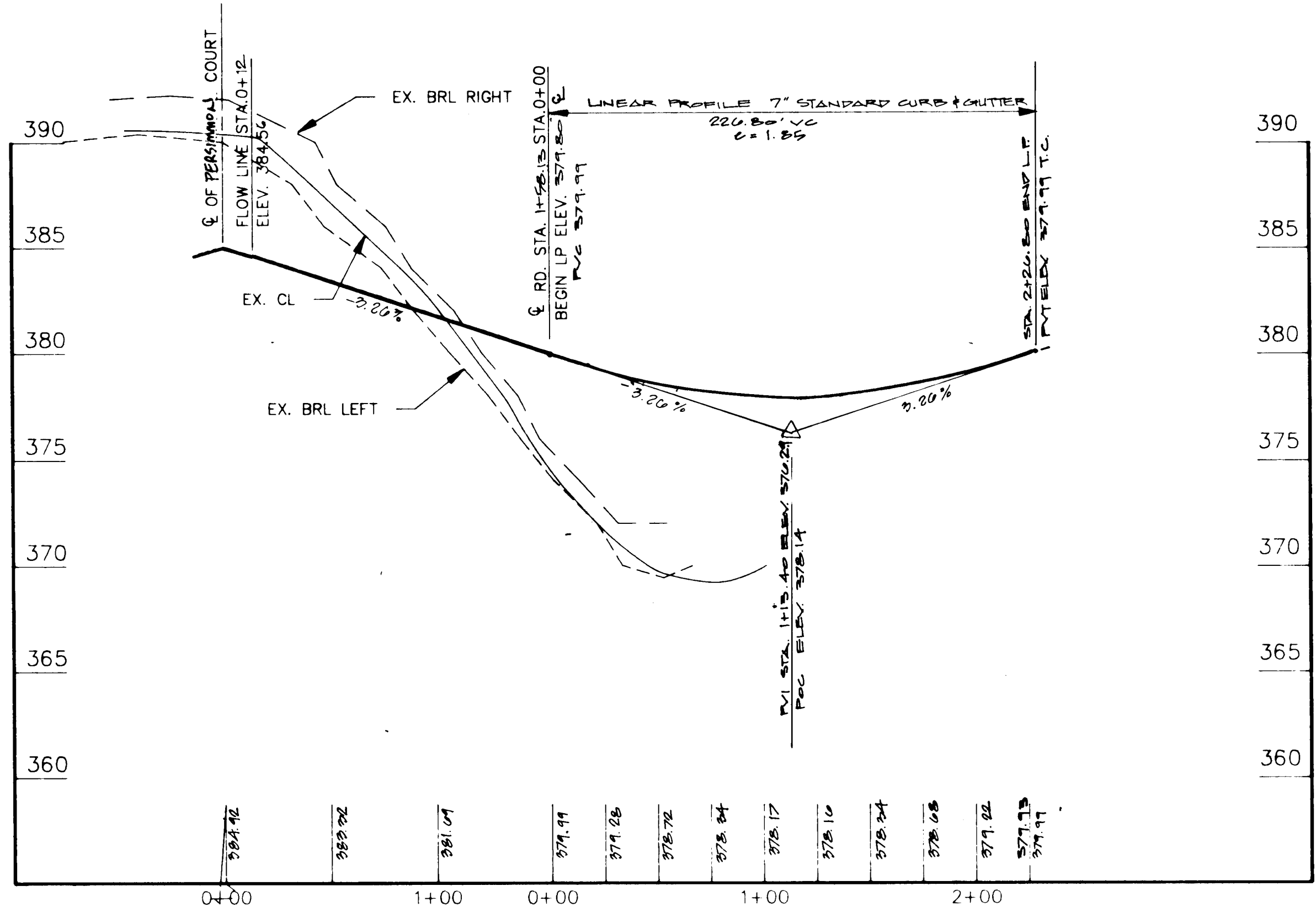
DES: D.C.W. JOB: DATE: 4-14-90
DRW: W.D.F. PROJ: SHEET: 2 OF 14
CHK: R.A.

FOR ROAD & UTILITY CONSTRUCTION
OWNER REFER TO UTILITY PLANS
FOR MAINTENANCE & REPAIR CONSTRUCTION.

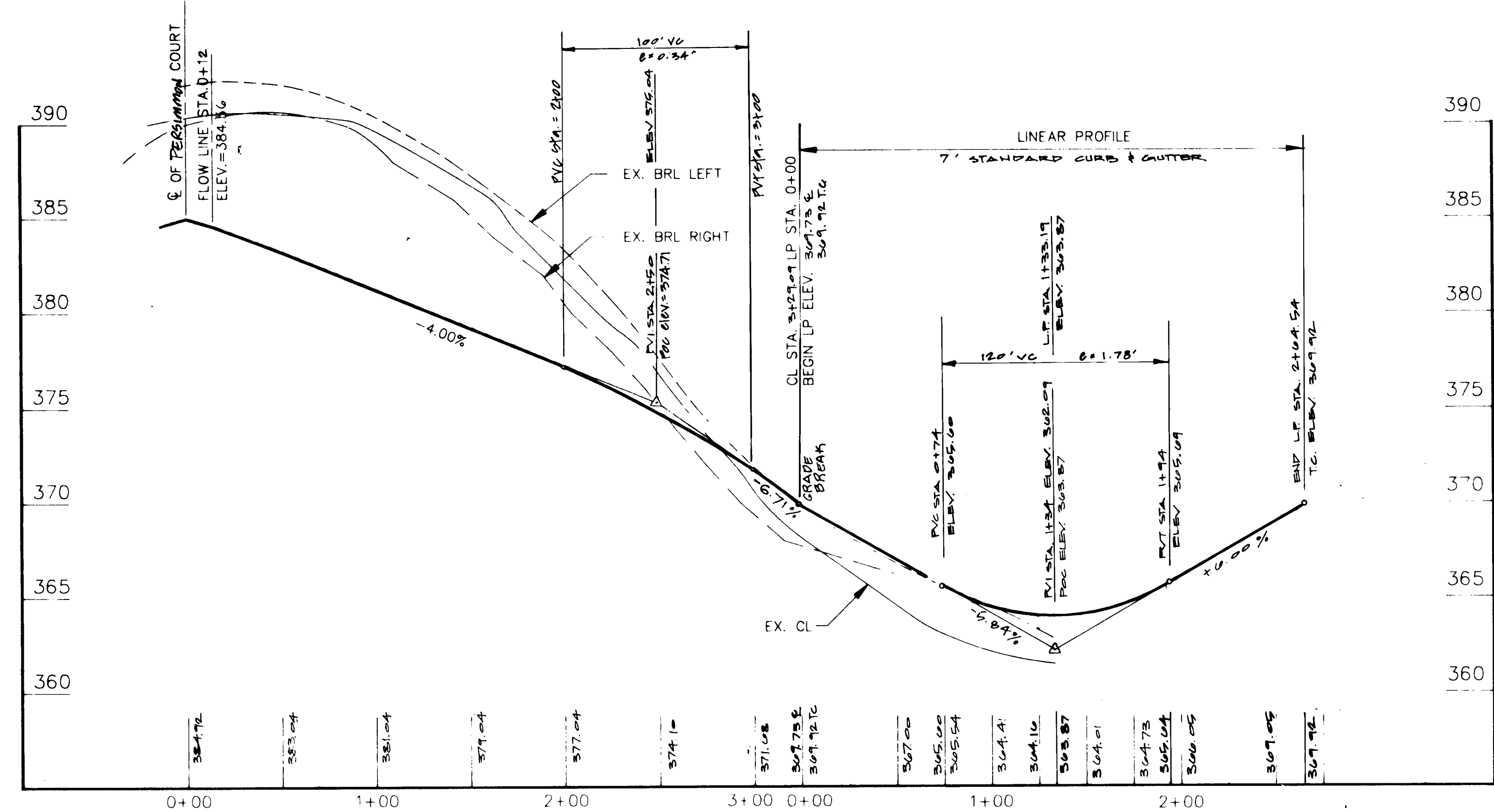
LIMITS OF IMPROVEMENTS
STA. - 4+73.45



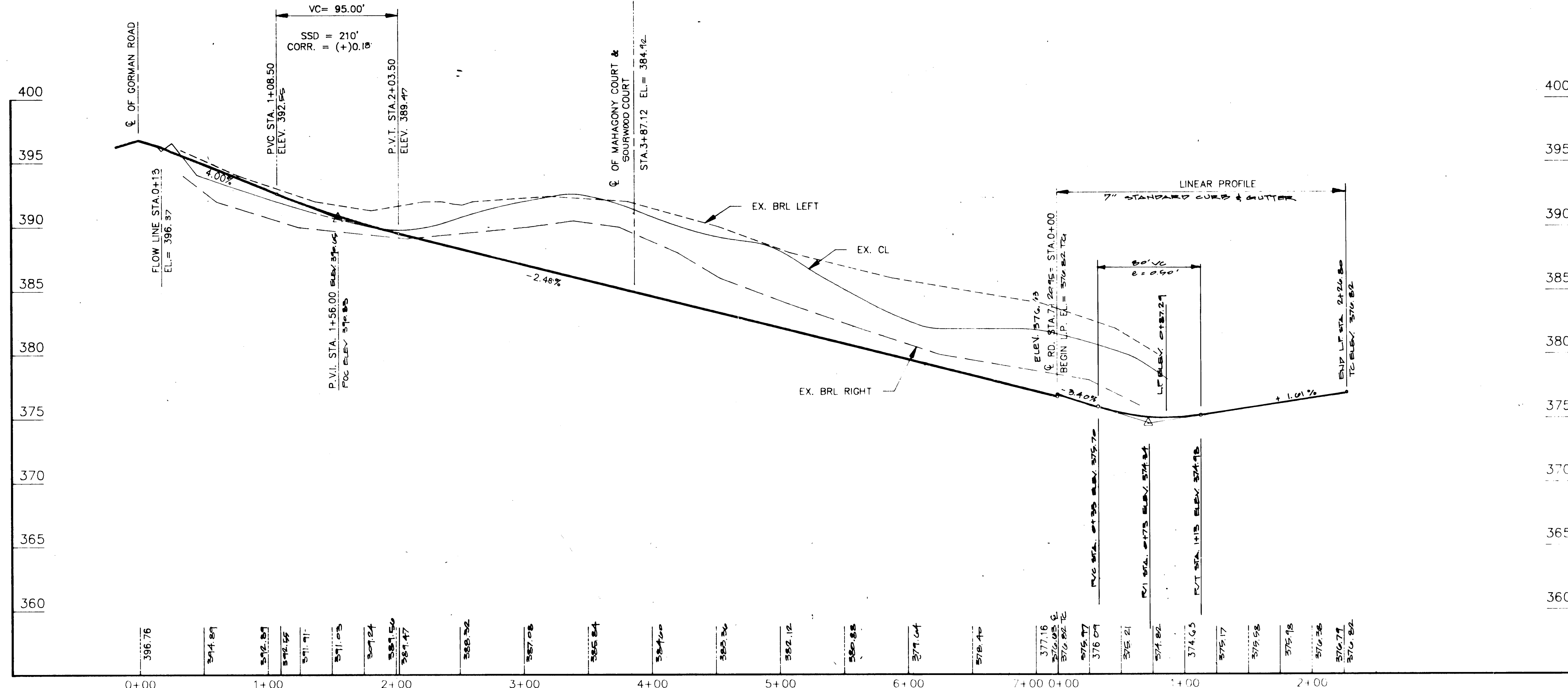
PLAN
SCALE: 1" = 50'



MAHAGONY COURT
DESIGN SPEED = 25 M.P.H.



SOURWOOD COURT
DESIGN SPEED = 25 M.P.H.

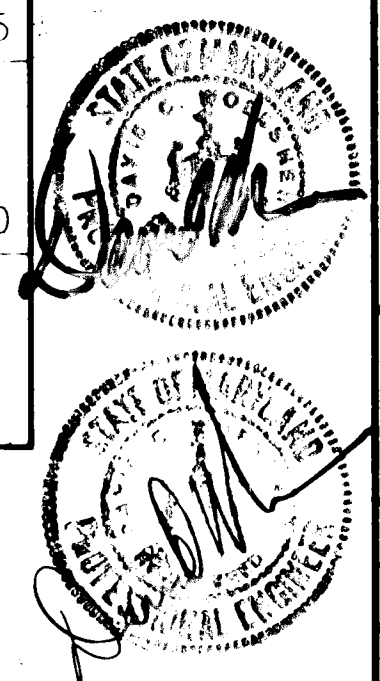


PERSIMMON COURT
DESIGN SPEED = 25 M.P.H.

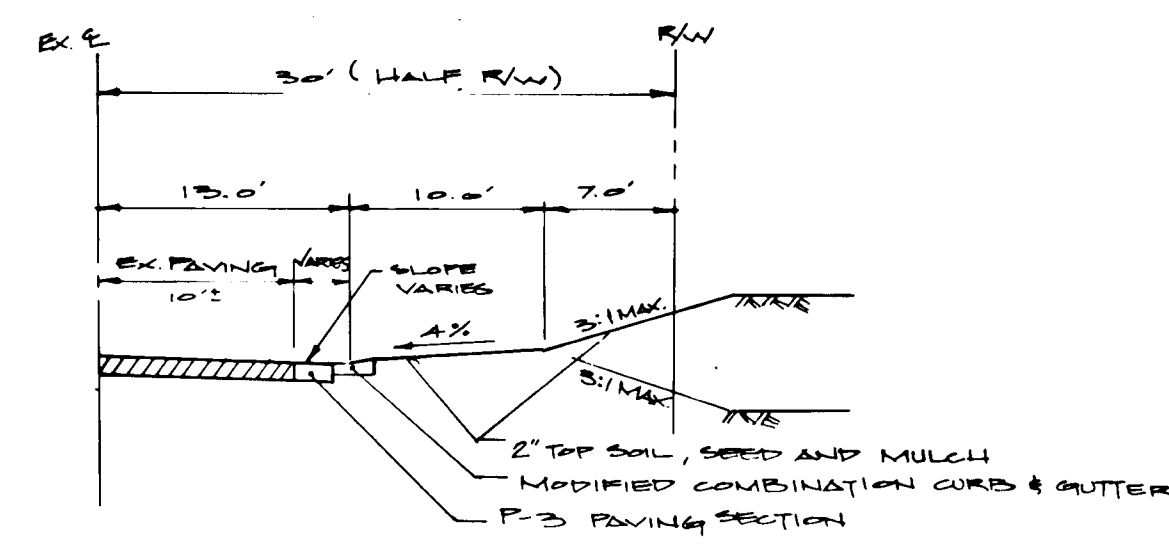
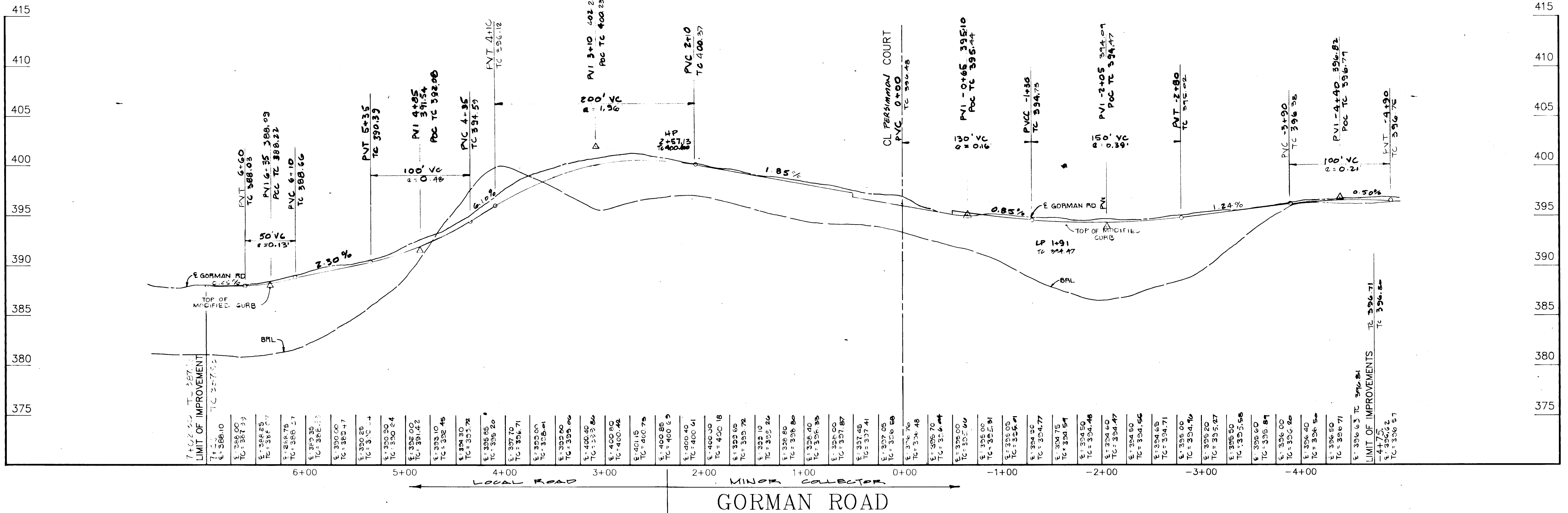
PROFILE

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

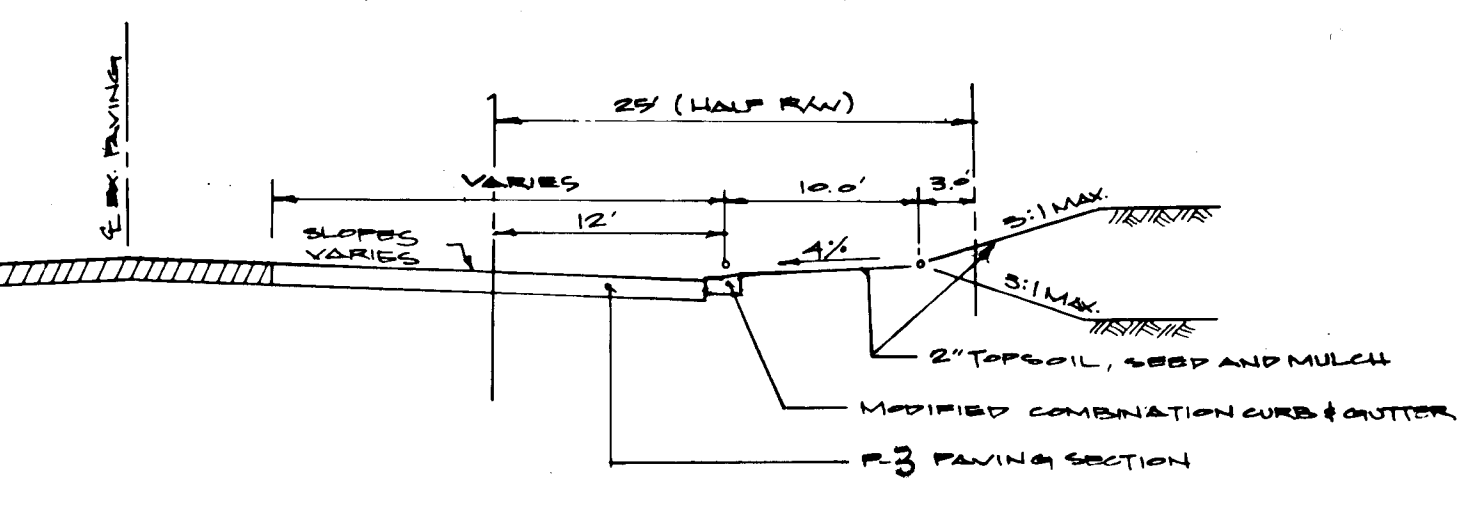
NO.	BY	REVISION	DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.			
	<i>Alan Deane</i>	CHIEF, LAND DEVELOPMENT DIVISION	3/20/94
	<i>Andrew M. Conner</i>	CHIEF, BUREAU OF HIGHWAYS	3-22-94
	<i>Paulo Sapon</i>	CHIEF, BUREAU OF ENGINEERING	3/30/94
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.			
	<i>Aina Summary</i>	CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH	4/13/94
PROJECT NAME: COOPER PROPERTY SECTION 1 / AREA 1 LOTS 1-38 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND.			
TITLE: ROAD PROFILE		OWNER / DEVELOPER COOPER AND CUMMINGS 585 MAIN STREET, SUITE 241 LAUREL, MD 20707	
PREPARED BY: American Engineering Inc. 671-A MAIN STREET LAUREL, MARYLAND 20707 WASH. (301) 953-1221 BALT. (301) 880-3039			
DES. : R.T.T. Jr	PROJ. : 89109	JERRY K. & ELLEN COOPER 585 MAIN STREET, SUITE 241 LAUREL, MD 20707	
DRW. : W.D.F.	JOB. : 89109	ELJER CONSTRUCTION CO. 585 MAIN STREET, SUITE 241 LAUREL, MD 20707	
CHK. : R.A.	DATE : 6-6-90	SCALE : AS SHOWN	SHEET 1 OF 14



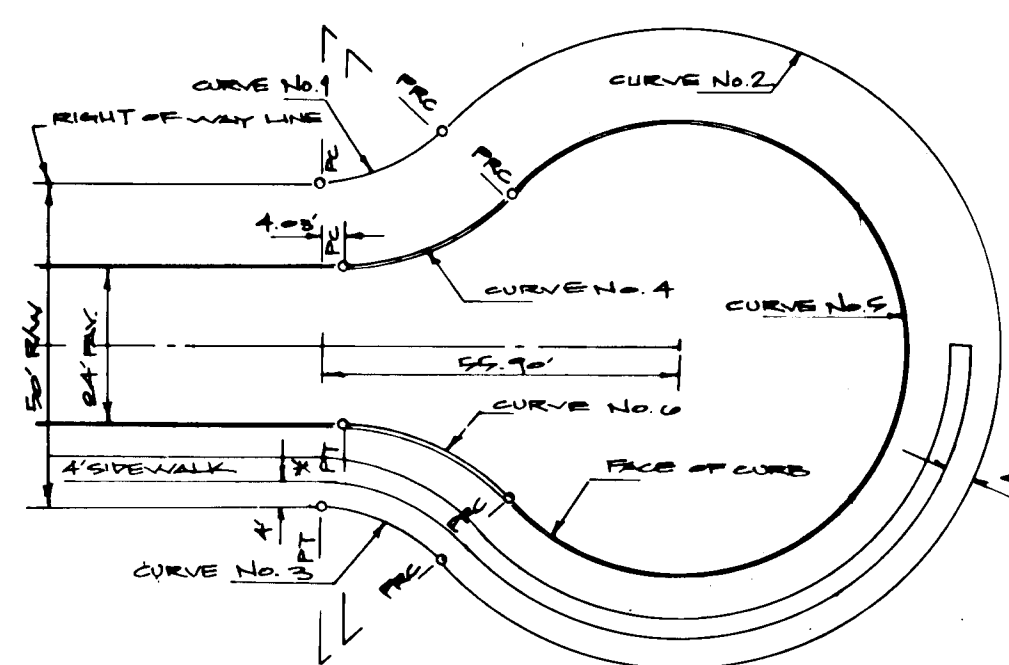
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TYPICAL SECTION
GORMAN ROAD
MINOR COLLECTOR PORTION
(STA 2+40.5 TO STA 4+73.45)

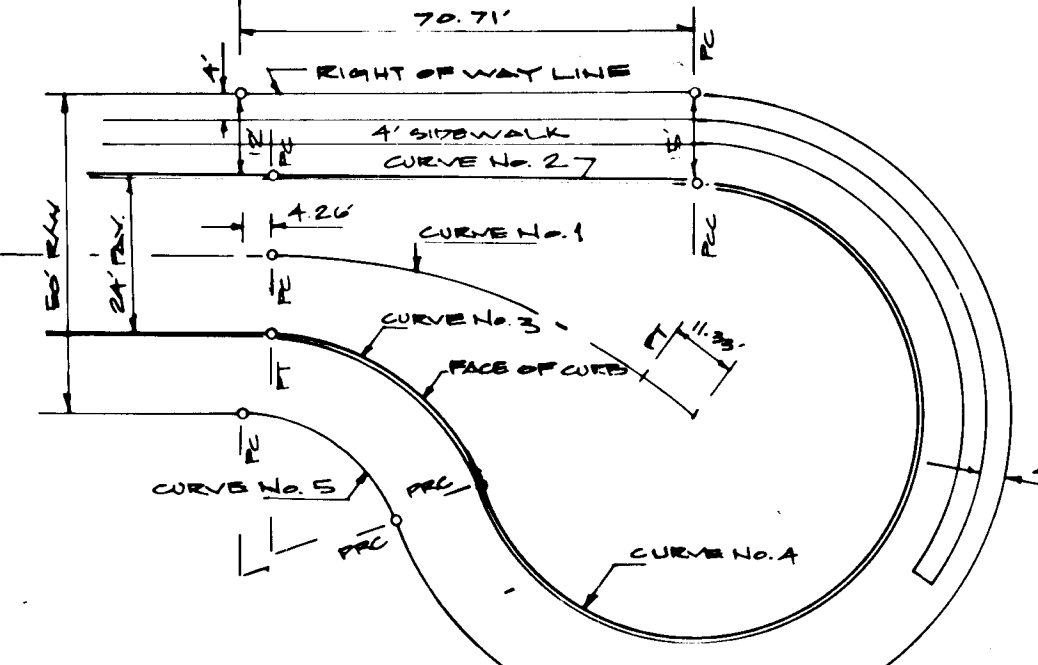


TYPICAL SECTION
GORMAN ROAD
LOCAL ROAD PORTION
(STA 2+40.5 TO STA 0+77.45)



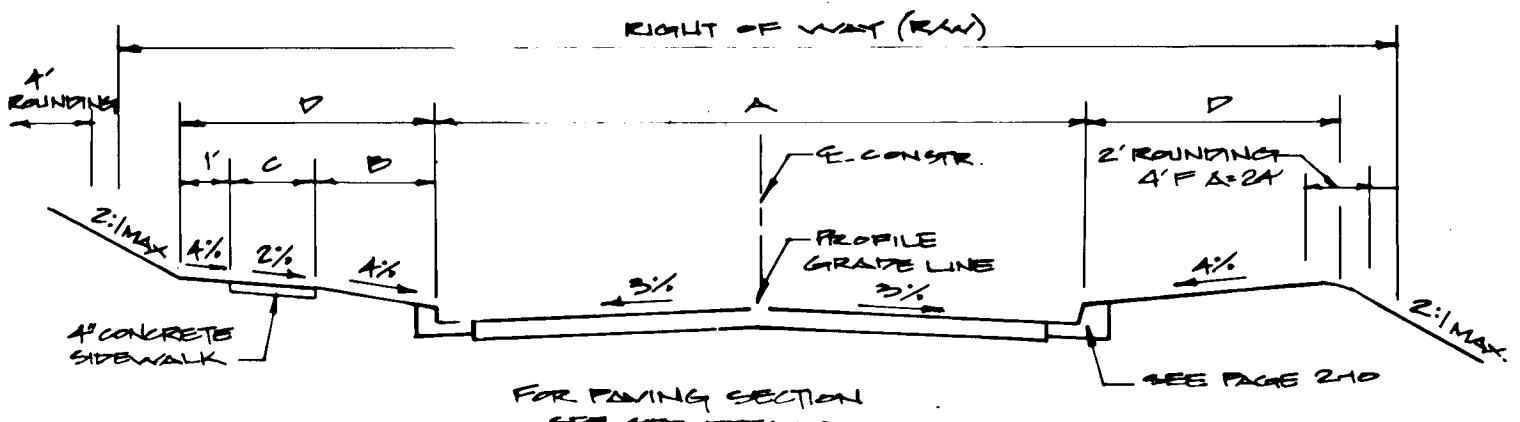
NOTE: NO SIDEWALK ON MALLORY COURT.

CURVE NO.	LC	PTC	PVI	POC	PVT	TC
CURVE NO. 1	48'11.23'	27'22.46'	47'41.21'	27'28.42'	27'28.42'	27'28.42'
CURVE NO. 2	29.00'	50.00'	21.18'	15.52'	22.57'	22.57'
CURVE NO. 3	11.18'	20.41'	-	-	-	-
CURVE NO. 4	27'28.42'	47'41.21'	27'28.42'	27'28.42'	27'28.42'	27'28.42'
CURVE NO. 5	27'28.42'	47'41.21'	27'28.42'	27'28.42'	27'28.42'	27'28.42'
CURVE NO. 6	27'28.42'	47'41.21'	27'28.42'	27'28.42'	27'28.42'	27'28.42'



NOTE: NO SIDEWALK ON MALLORY COURT.

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CURVE NO. 5	27'28.42'	47'41.21'	27'28.42'	27'28.42'	27'28.42'	27'28.42'
CURVE NO. 6	27'28.42'	47'41.21'	27'28.42'	27'28.42'	27'28.42'	27'28.42'



ZONING DISTRICTS	A	B	C	D	RAW
ALL	24'	5'	4'	10'	50'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Howard County
 CHIEF, LAND DEVELOPMENT DIVISION
 DATE: 3/20/94

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
China Summery
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH
 DATE: 4/13/94



PROJECT NAME: COOPER PROPERTY
 SECTION 1 / AREA 1 LOTS 1-38
 SIXTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND.

TITLE: ROAD PROFILES

OWNER / DEVELOPER: COOPER AND CUMMINGS
 585 MAIN STREET, SUITE 241
 LAUREL, MD 20707

PREPARED BY: American Engineering Inc.
 CIVIL ENGINEERING CONSULTANTS
 AND LAND PLANNERS
 671-A MAIN STREET
 LAUREL, MARYLAND 20707
 WASH. (301) 953-1221
 BALT. (301) 880-3039

FLIER CONSTRUCTION CO.
 585 MAIN STREET, SUITE 241
 LAUREL, MD 20707

NO.	BY	REVISION	DATE

DES.: D.C.W. JOB: SCALE: SHEET OF 14
 DRW.: W.D.F. PROJ.: AS SHOWN 4
 CHK.: R.A. DATE: 2-2-90

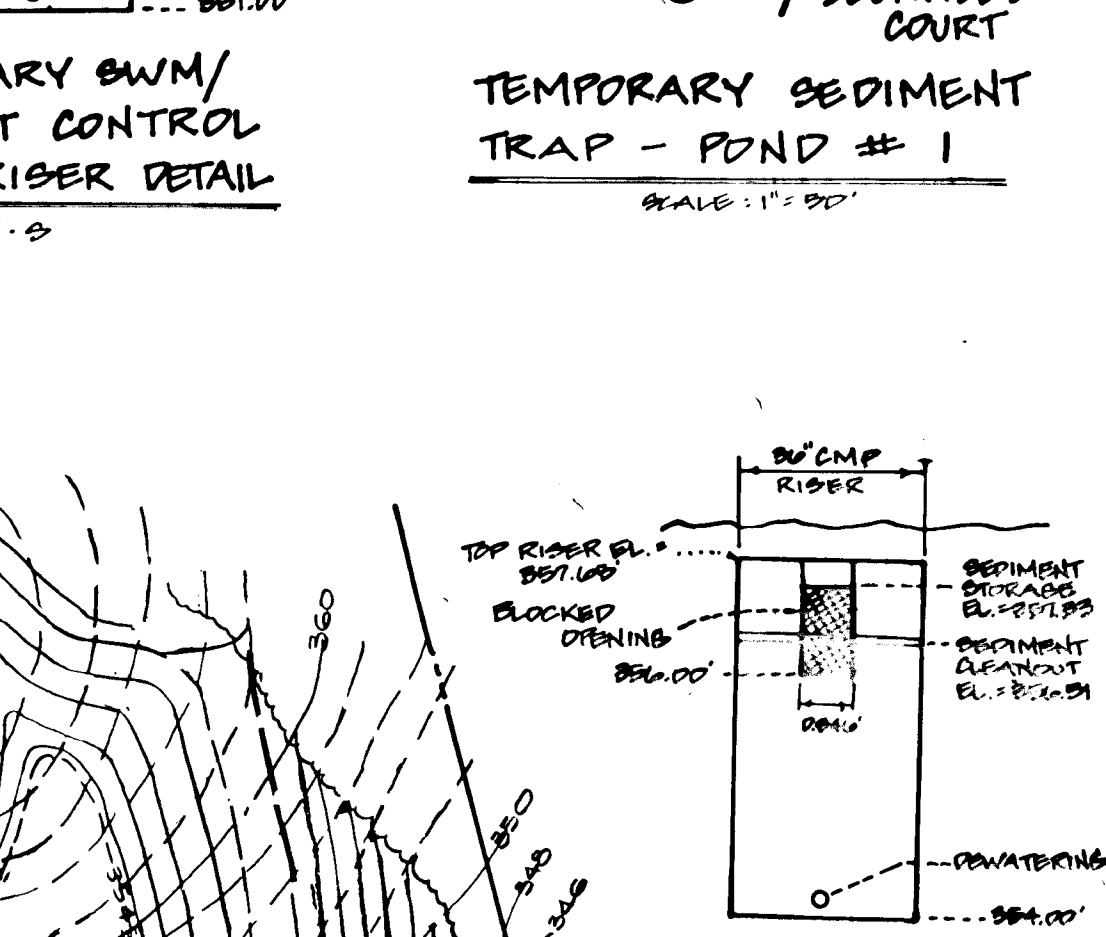
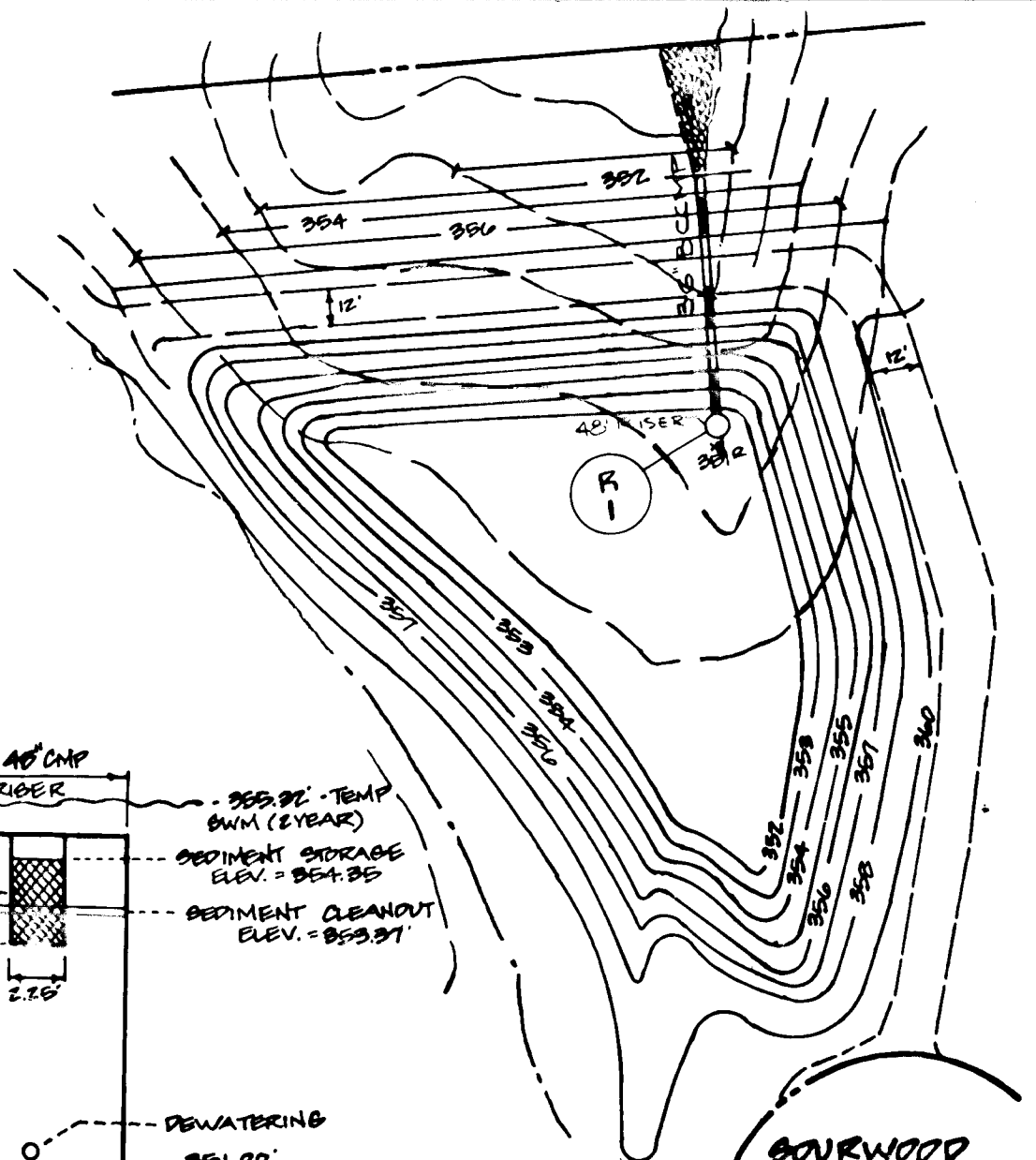
1691

LOTS 5-10
A RESUBDIVISION OF
KINDLER ESTATES
(LOT 1 AND LOT 2)
LOT 10

SEDIMENT TRAP DATA	TRAP #1	TRAP #2	TRAP #3
	DRAINAGE AREA	17.4 AC	11.3A (MAX)
DISTURBED AREA	6.6 AC	9.6A (MAX)	2.48 AC
STORAGE REQUIRED	97,200 CU FT	20,340 CU FT	5778 CU FT
STORAGE PROVIDED	94,100 CU FT	20,350 CU FT	6502 CU FT
CREST ELEVATION	354.35	357.13	358.00
CLEANOUT ELEVATION	353.37	356.51	358.00
BOTTOM ELEVATION	351.00	354.50	358.00
TRAP DIMENSIONS	120' x 60'	135' x 40'	30' x 45'
SIDE SLOPES	4:1	4:1	2:1

LEGEND

EXISTING CONTOUR 356 — or — 360
 PROPOSED CONTOUR 356
 EARTH DIKE ED A-4
 SILT FENCE SF
 SPOT ELEVATION + 361.0
 LIMITS OF DISTURBANCE
 STABILIZED CONSTRUCTION ENTRANCE

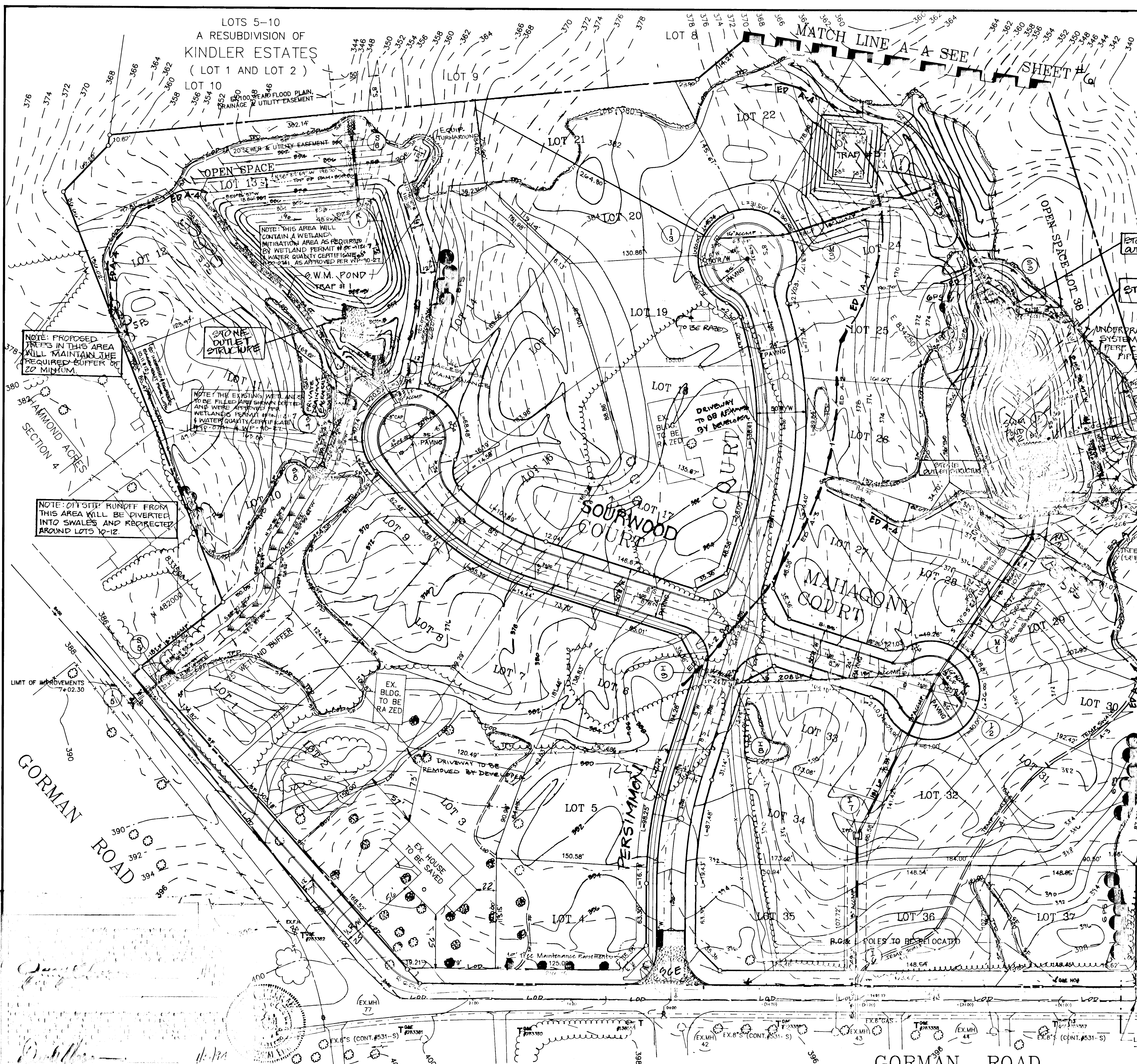


Reviewed for **HOWARD** S.C.D.
 Name
 Title meets Technical Requirements
 Date 2/1/88
 U.S. Soil Conservation Service

THIS PLAN IS FOR GRADING AND SEDIMENT CONTROL ONLY. REFER TO UTILITY PLANS FOR UTILITY CONSTRUCTION.

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

NOTE: PROPOSED TREES IN THIS AREA WILL MAINTAIN THE 20' MINIMUM.



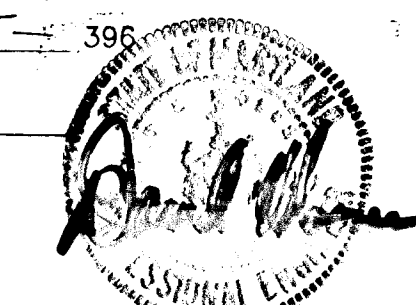
NOTE: PROPOSED TREES IN THIS AREA WILL MAINTAIN THE 20' MINIMUM.

NOTE: THIS AREA WILL CONTAIN A WETLAND MITIGATION AREA AS REQUIRED BY WETLAND PERMIT # 2-112-7 WATER QUALITY CERTIFICATE # 2-112-7-1 AS APPROVED PER W-10-21.

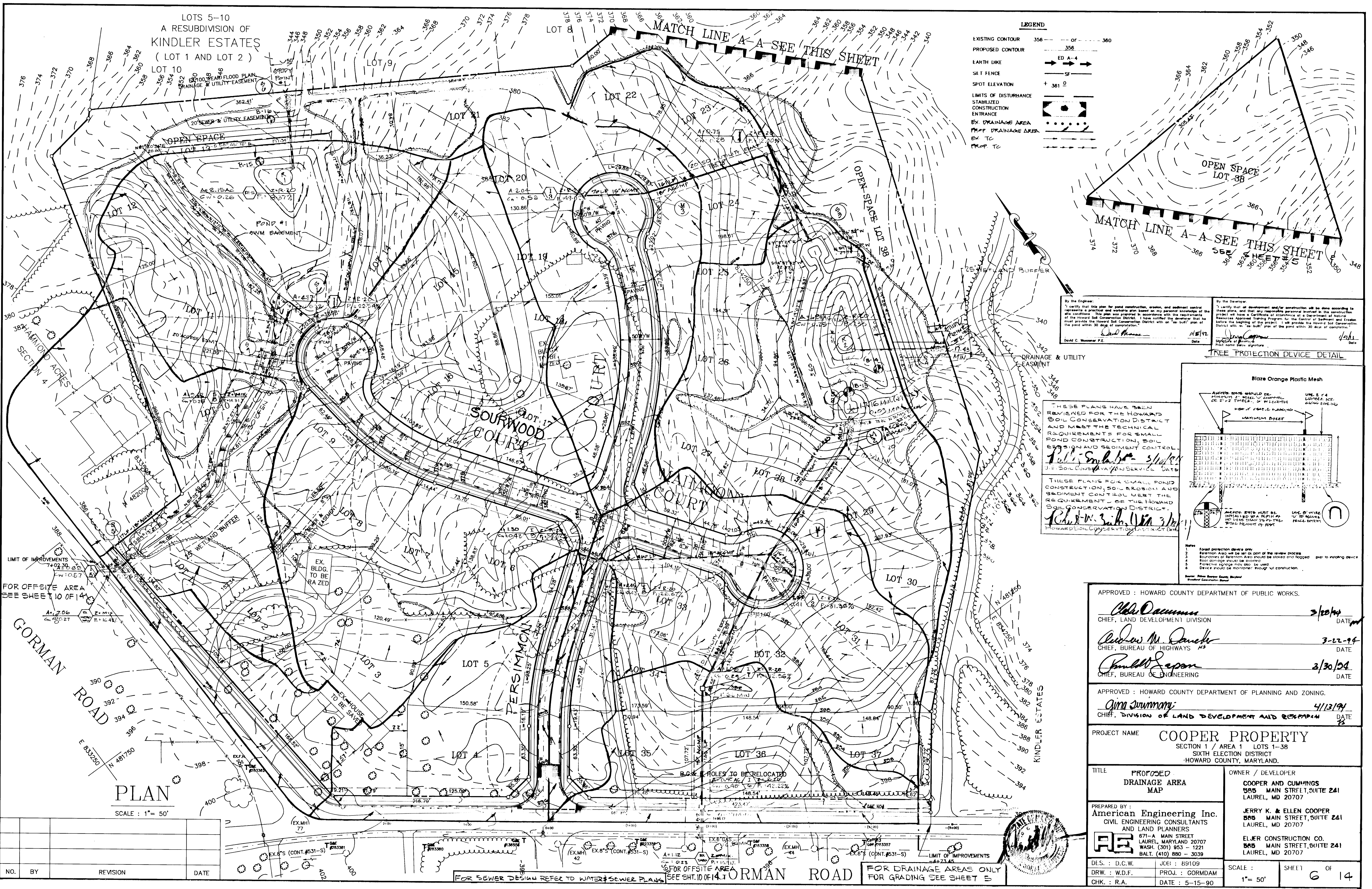
NOTE: THE EXISTING WETLANDS WERE FILED AND APPROVED BY WETLANDS PERMIT # 2-112-7 WATER QUALITY CERTIFICATE # 2-112-7-1 AS APPROVED PER W-10-21.

NOTE: ON SITE RUNOFF FROM THIS AREA WILL BE DIVERTED INTO SWALES AND REDIRECTED AROUND LOTS 12-12.

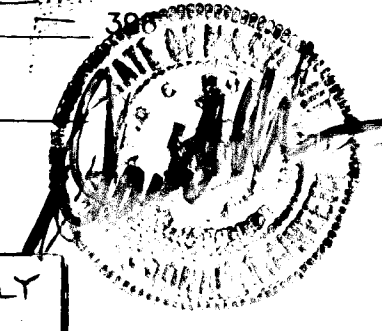
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Paul W. Smith
 Andrew M. Smith
 Paul W. Smith
 Anna Summary

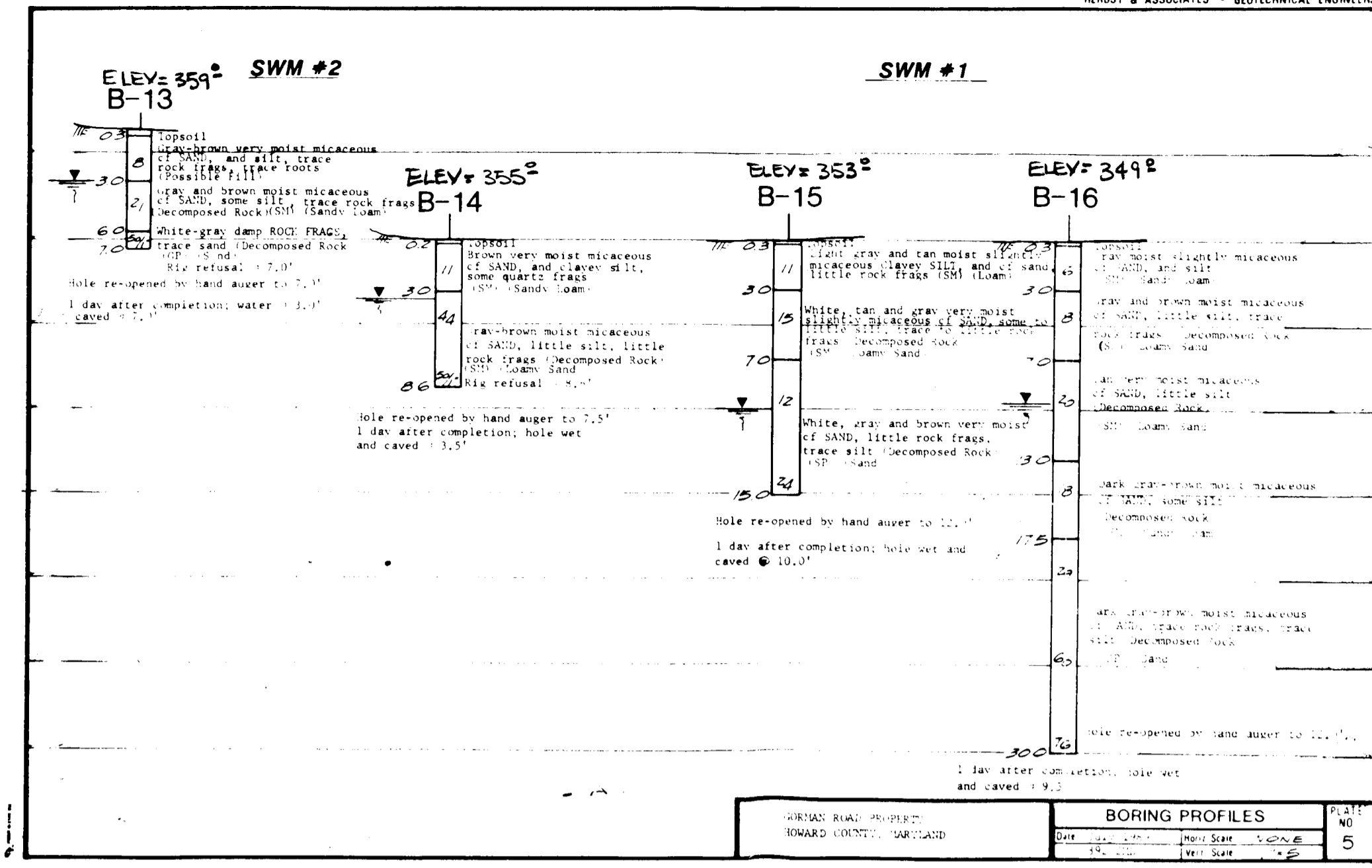
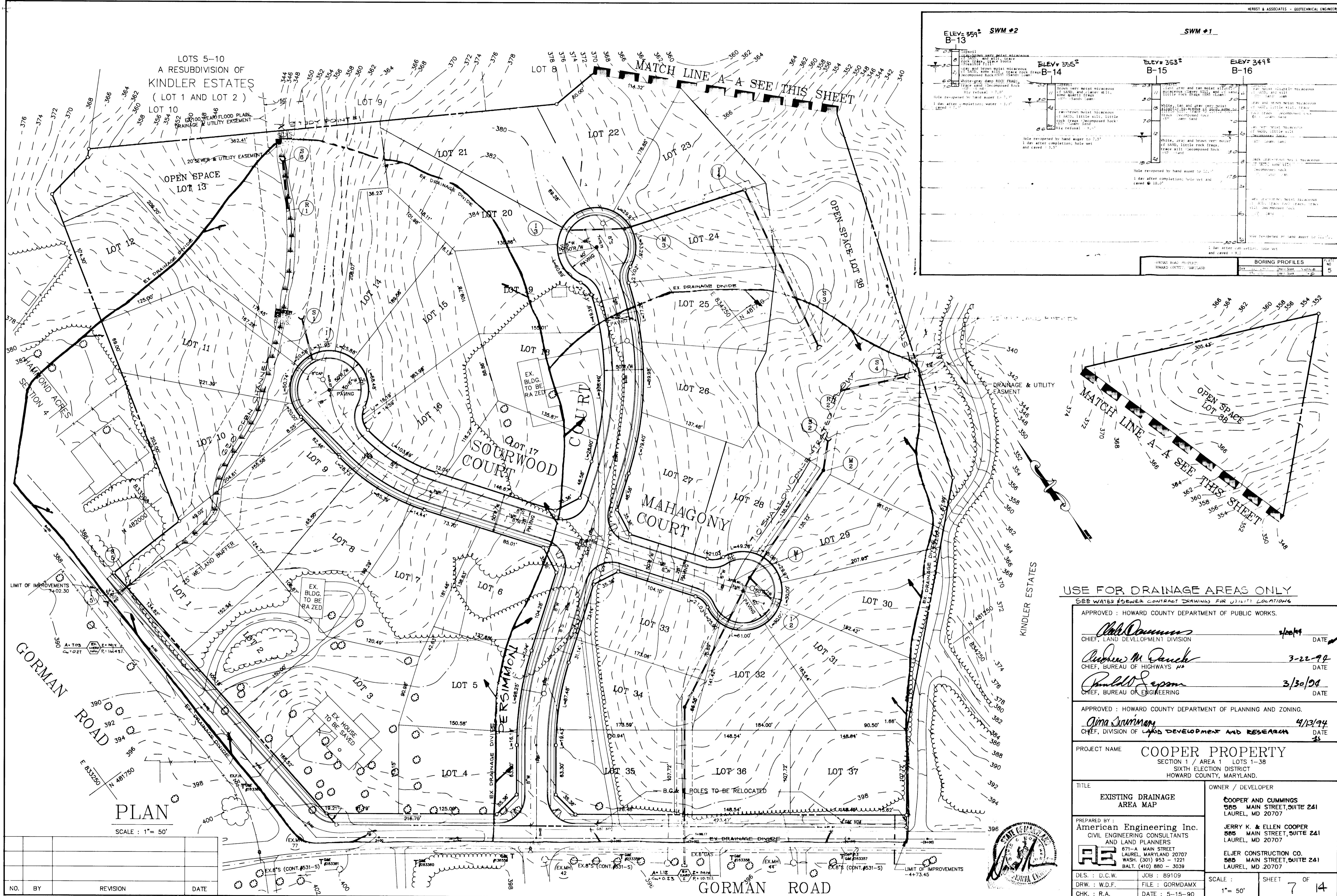


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NO.	BY	REVISION	DATE

FOR SEWER DESIGN REFER TO WATER & SEWER PLANS
FOR OFFSITE AREA SEE SHT. 10 OF 14
FOR DRAINAGE AREAS ONLY
FOR GRADING SEE SHEET 5



PLAN
SCALE: 1" = 50'

NO.	BY	REVISION	DATE

USE FOR DRAINAGE AREAS ONLY
SEE WATER POWER CONTRACT DRAWINGS FOR UTILITY LOCATIONS

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chad Cummings 4/20/94
CHIEF, LAND DEVELOPMENT DIVISION DATE

Andrew M. Danche 3-22-94
CHIEF, BUREAU OF HIGHWAYS DATE

Paul D. Johnson 3/30/94
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Gina Saurman 4/13/94
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

PROJECT NAME: **COOPER PROPERTY**
SECTION 1 / AREA 1 LOTS 1-38
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND.

TITLE: **EXISTING DRAINAGE AREA MAP**

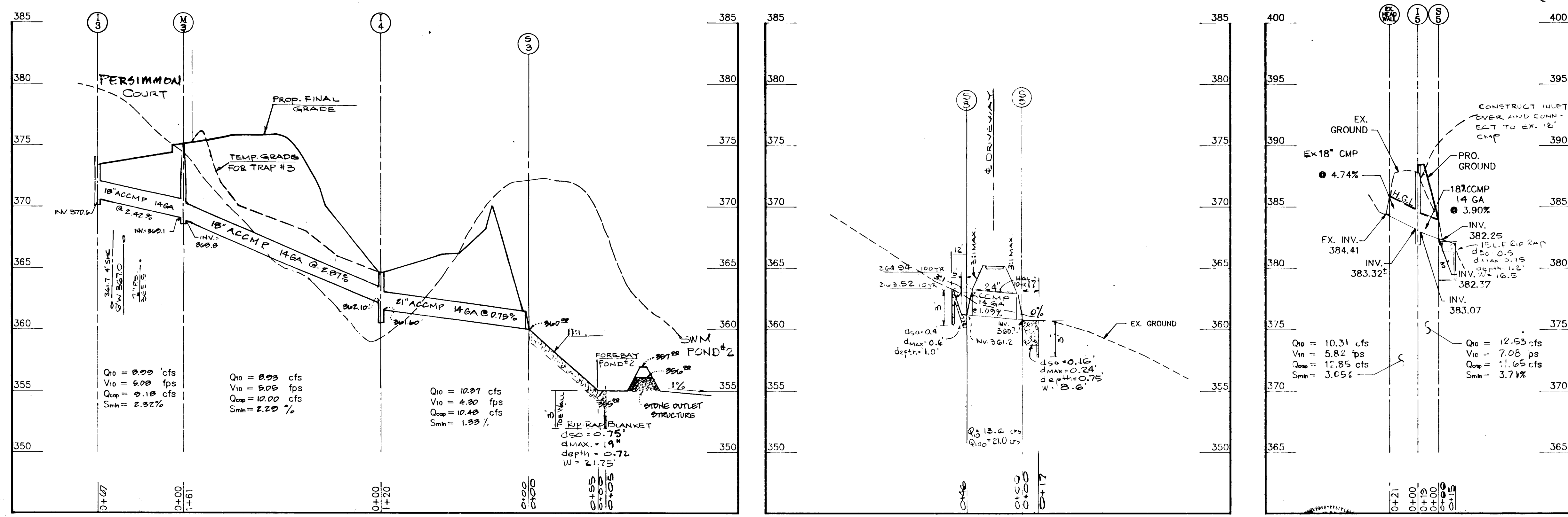
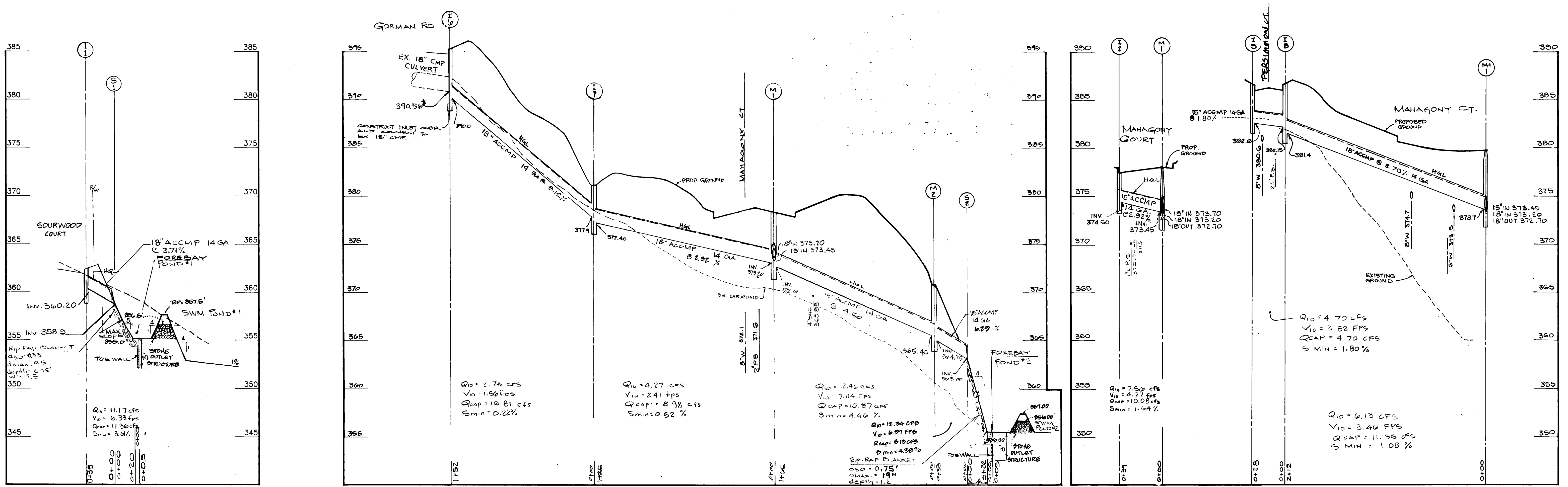
OWNER / DEVELOPER:
COOPER AND CUMMINGS
585 MAIN STREET, SUITE 241
LAUREL, MD 20707

PREPARED BY:
American Engineering Inc.
CIVIL ENGINEERING CONSULTANTS
AND LAND PLANNERS
671-A MAIN STREET
LAUREL, MARYLAND 20707
WASH. (301) 953-1221
BALT. (410) 880-3039

ELJ CONSTRUCTION CO.
585 MAIN STREET, SUITE 241
LAUREL, MD 20707

DES.: D.C.W. JOB: 89109 SCALE: OF
DRW.: W.D.F. FILE: GORMDAMX 1" = 50' SHEET 7 OF 14
CHK.: R.A. DATE: 5-15-90

1691



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

Patricia Englund 4/6/94
U.S. SOIL CONSERVATION SERVICE

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

Robert D. Zuhm 4/6/94
HOWARD SOIL CONSERVATION DISTRICT

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Mike Dammon 2/20/94
CHIEF, LAND DEVELOPMENT DIVISION

Andrew M. Daniels 3-22-94
CHIEF, BUREAU OF HIGHWAYS

Paul D. Sepp 3/30/94
CHIEF, BUREAU OF ENGINEERING

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Quia Swinney 4/13/94
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH

PROJECT NAME: **COOPER PROPERTY**
SECTION 1 / AREA 1 LOTS 1-38
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND.

TITLE: **STORM DRAIN PROFILE**

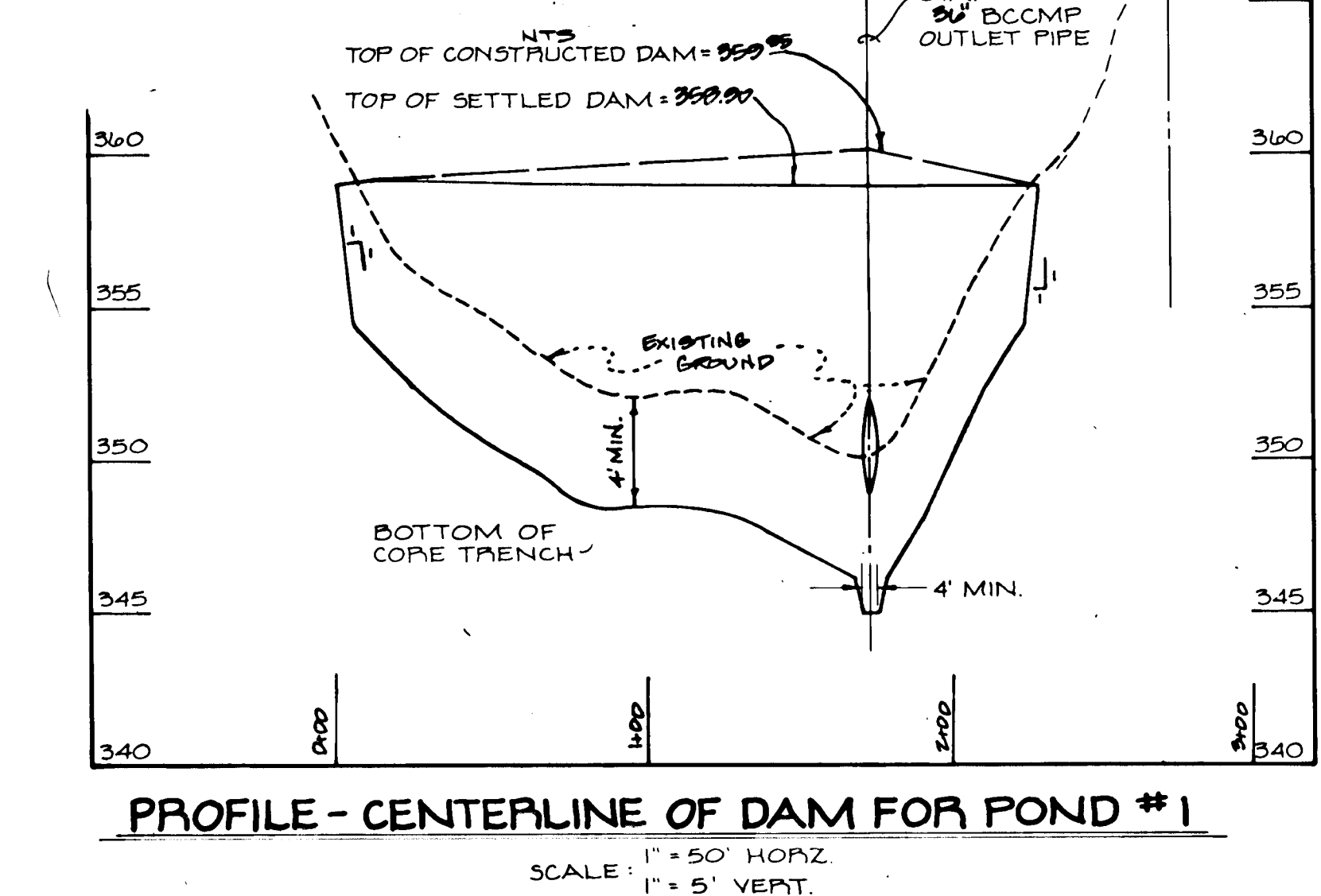
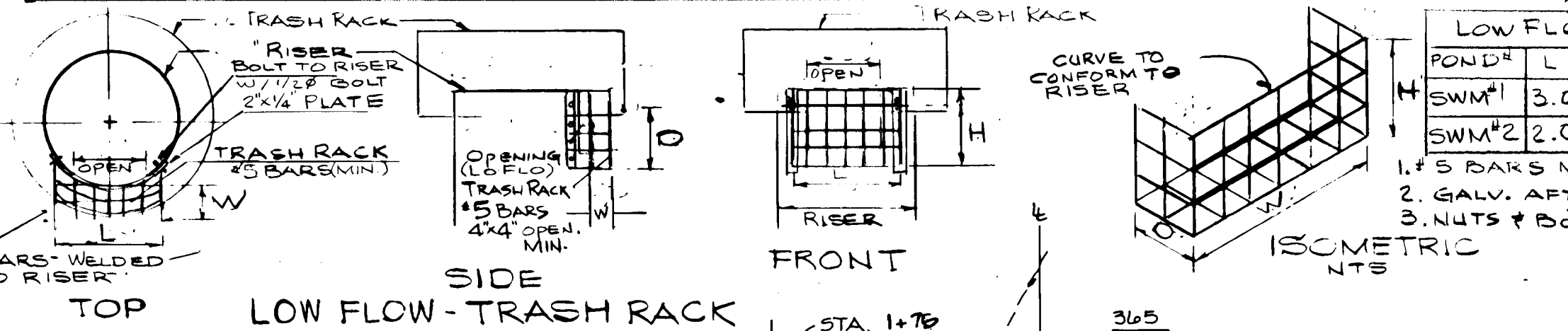
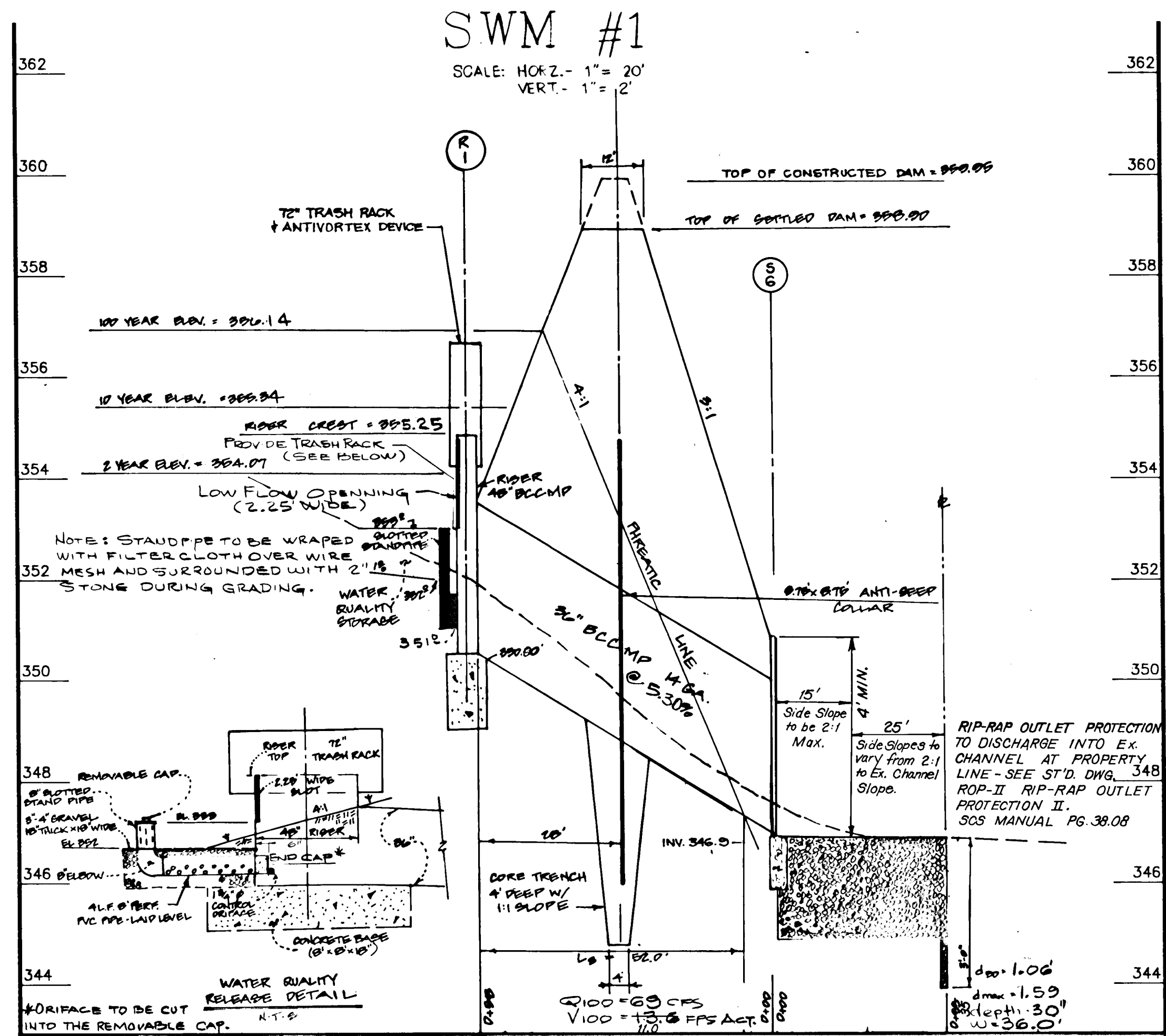
OWNER / DEVELOPER:
COOPER AND CUMMINGS
585 MAIN STREET, SUITE 241
LAUREL, MD 20707

PREPARED BY:
American Engineering Inc.
CIVIL ENGINEERING CONSULTANTS AND LAND PLANNERS
671-A MAIN STREET
LAUREL, MARYLAND 20707
WASH. (301) 953-1221
BALT. (301) 880-3039

DES. : H.C.W. JOB :
DRW. : W.D.F. PROJ. :
CHK. : R.A. DATE :

SCALE : AS SHOWN SHEET 8 OF 14

1691



1691

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

Patricia G. J. M. 3/10/94
U.S. SOIL CONSERVATION SERVICE DATE

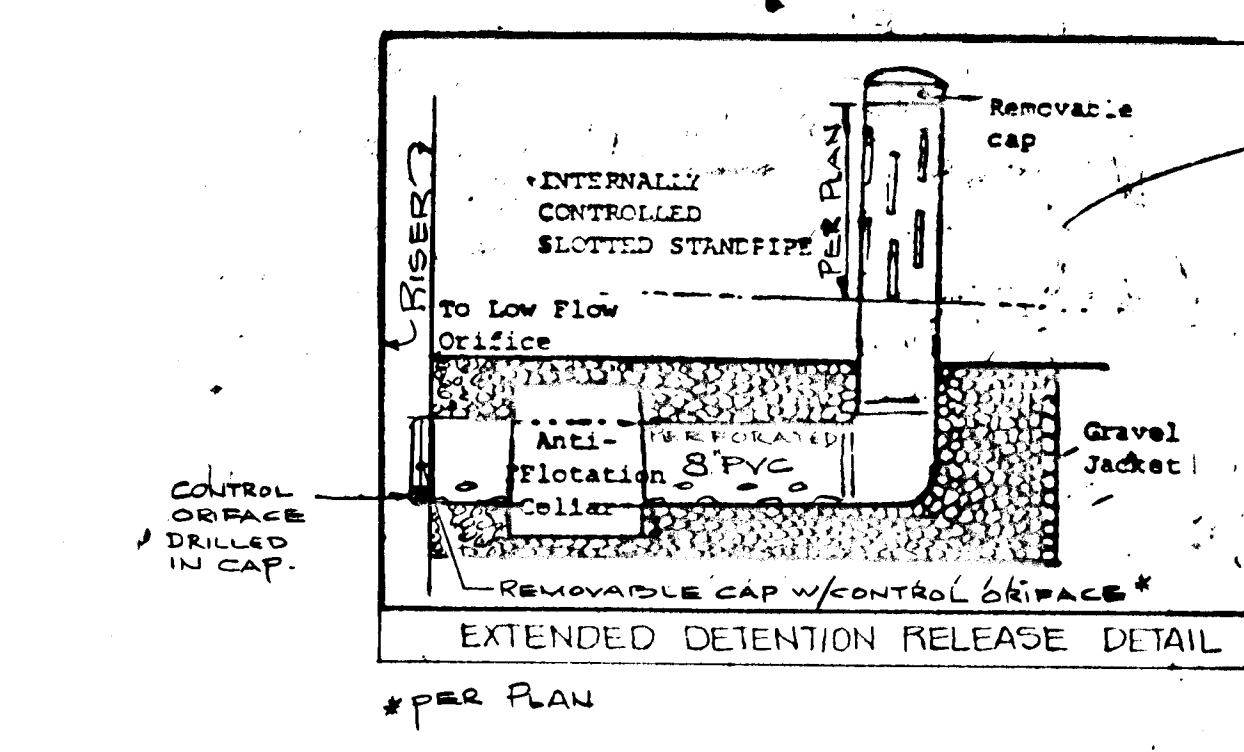
These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Robert W. J. M. 3/10/94
HOWARD SOIL CONSERVATION DISTRICT DATE

Low Flow Trash Rack

POND #	L	W	H
SWM #1	3.0	2.25	1.65
SWM #2	2.0	0.75	1.65

1. 5 BARS MIN.
2. GALV. AFTER FABRICATION
3. NUTS & BOLTS TO BE GALV.

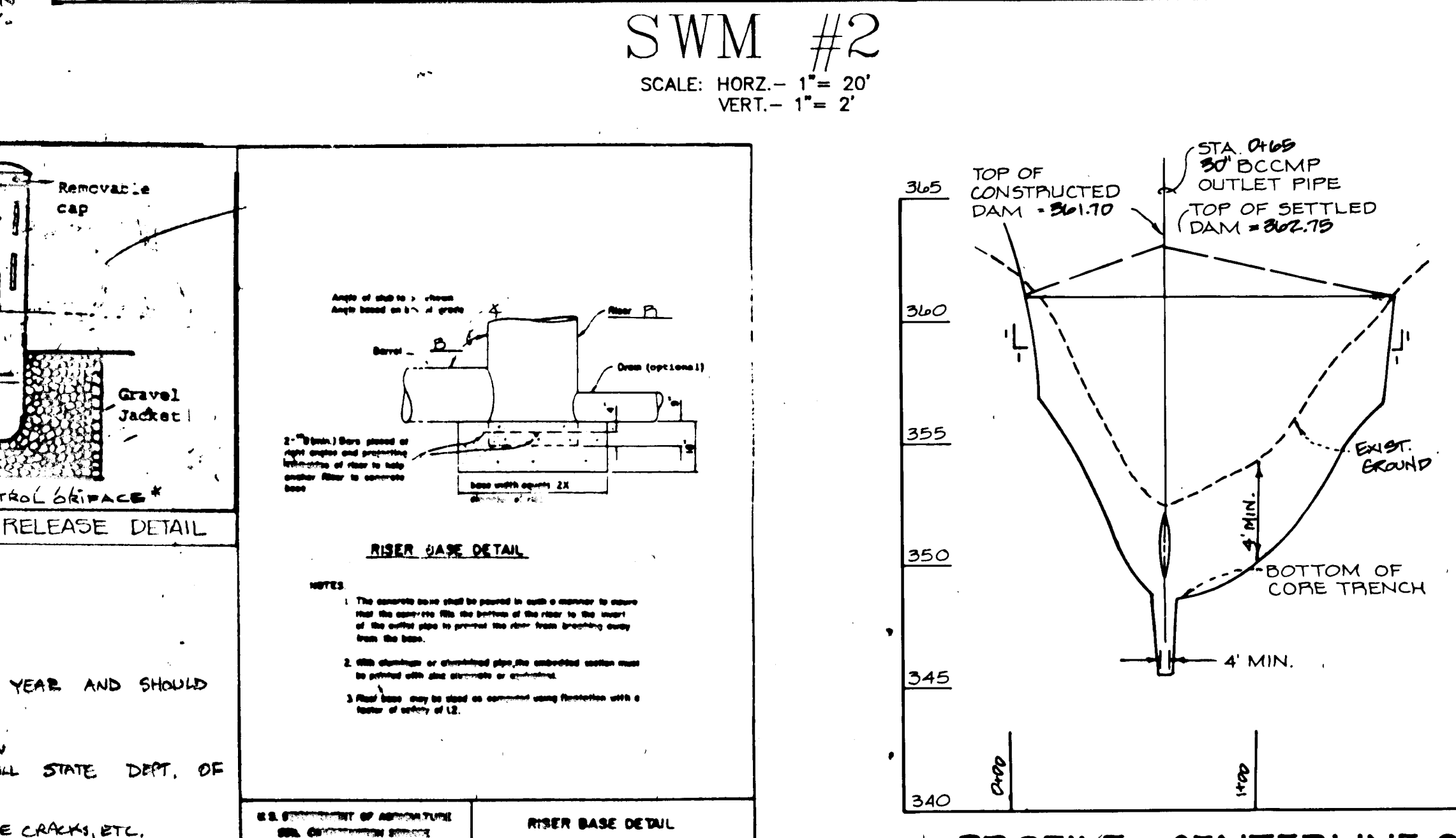
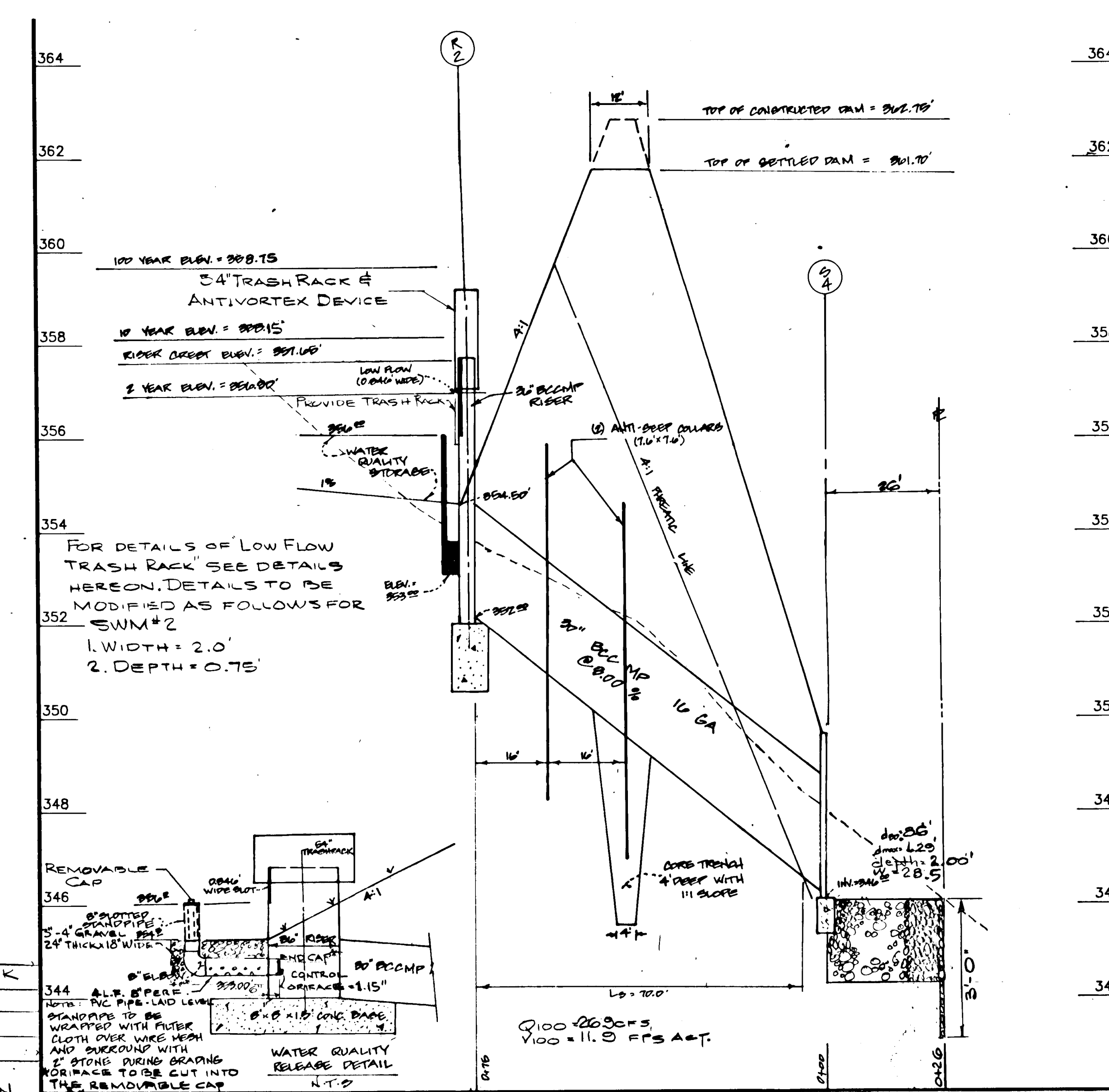


SWM OPERATION AND MAINTENANCE SCHEDULE

ALL FACILITIES SHOULD BE INSPECTED TWICE PER YEAR AND SHOULD INCLUDE:

- CHECK EMBANKMENT AND SIDE SLOPES FOR EROSION
- CHECK FOR MOSQUITO LARVAE. IF PRESENT, CALL STATE DEPT. OF AGRICULTURE.
- CHECK FOR LOW FLOW ORIFICE BLOCKAGE
- CHECK OUTLET STRUCTURES FOR SIGNS OF SEEPAGE CRACKS, ETC.
- CHECK FOR DEBRIS ACCUMULATION AND REMOVE AS REQUIRED.
- MOW GRASS 2 TIMES PER YEAR

NOTE: THESE PROCEDURES ARE THE RESPONSIBILITY OF THE CONTRACTOR PRIOR TO DEDICATION.

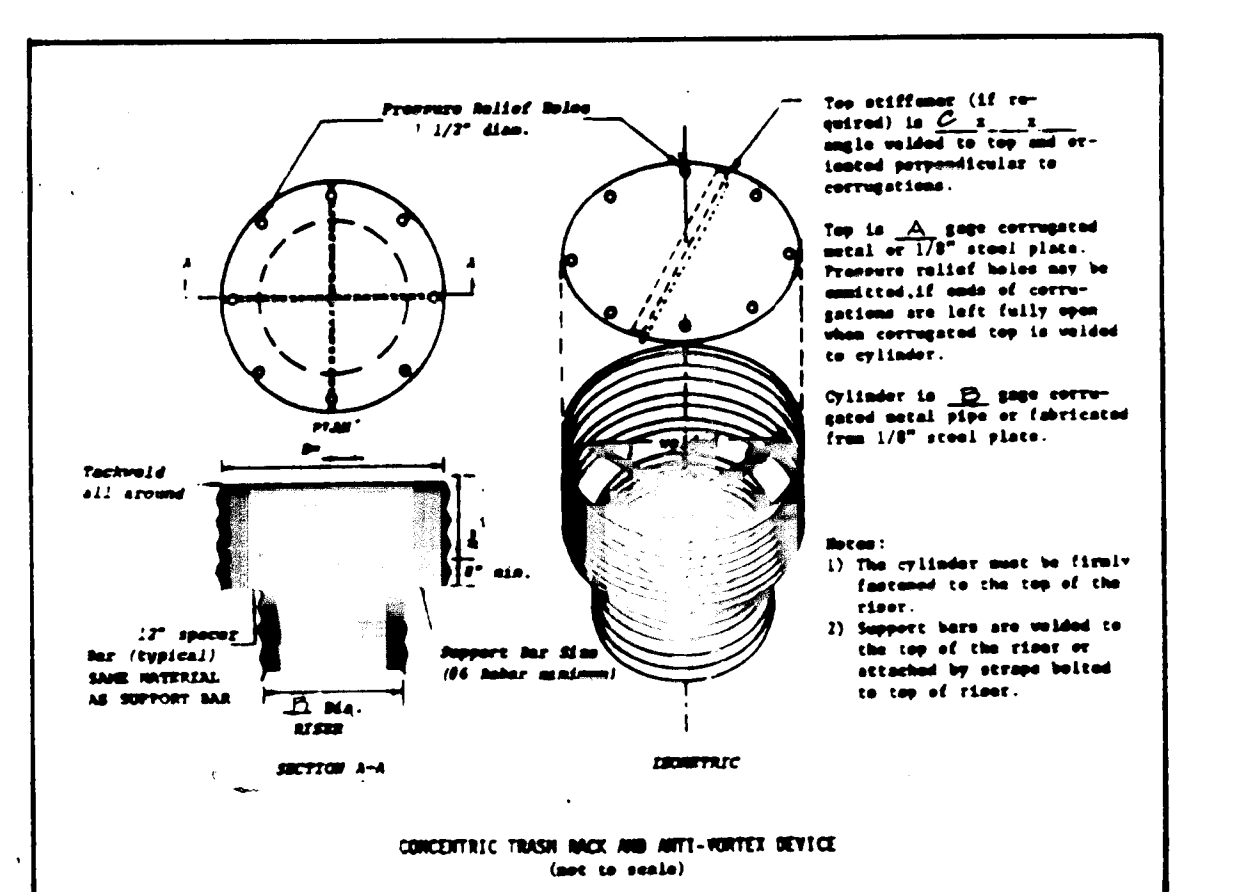


These plans have been reviewed for the Howard Soil Conservation District and meet the requirements for small pond construction, soil erosion and sediment control.

Patricia G. J. M. 3/10/94
U.S. SOIL CONSERVATION SERVICE DATE

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

Robert W. J. M. 3/10/94
HOWARD SOIL CONSERVATION DISTRICT DATE



No.	P	D	H	A	D	C
P-1	48"	12"	21"	10"	12"	1 1/2" x 1/2"
P-2	36"	24"	17"	12"	14"	#8

NO.	BY	REVISION	DATE
1	LEN	REVISED ROP-II DETAIL	5-25-95

By the Developer:

"I certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Md. Department of the Environment Approved Training Program for the Control of Sediment and Erosion before the beginning of the project. I will provide the developer that an "as-built" plan of the pond within 30 days of completion."

Jerry K. Coopers 1/23/93
Signature of Developer Date
Print name below signature

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 must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

David C. Woessner P.E. 11/5/92
Signature of Engineer Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Chris Cummings 2/26/94
CHIEF, LAND DEVELOPMENT DIVISION DATE

Andrew M. Daniels 3-22-94
CHIEF, BUREAU OF HIGHWAYS HS DATE

Paul D. Sporn 3/30/94
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Quia J. J. J. J. 4/13/94
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH DATE

PROJECT NAME: COOPER PROPERTY
SECTION 1 / AREA 1 LOTS 1-38
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND.

TITLE: S.W.M. PROFILES

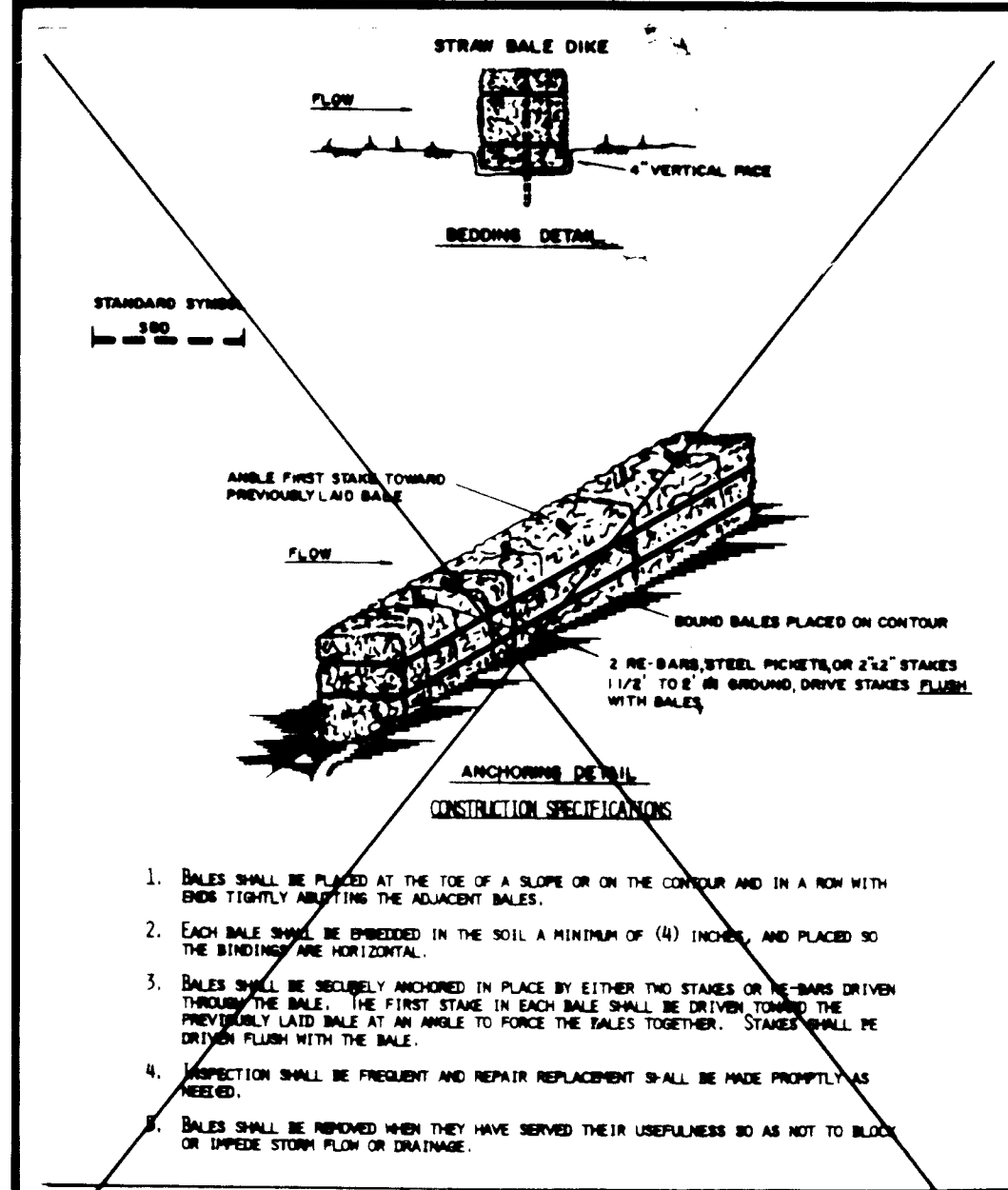
OWNER / DEVELOPER: COOPER AND CUMMINGS
555 MAIN STREET, SUITE 241
LAUREL, MD 20707

PREPARED BY: American Engineering Inc.
671-A MAIN STREET
LAUREL, MARYLAND 20707
WASH. (301) 953-1221
BALT. (301) 880-3039

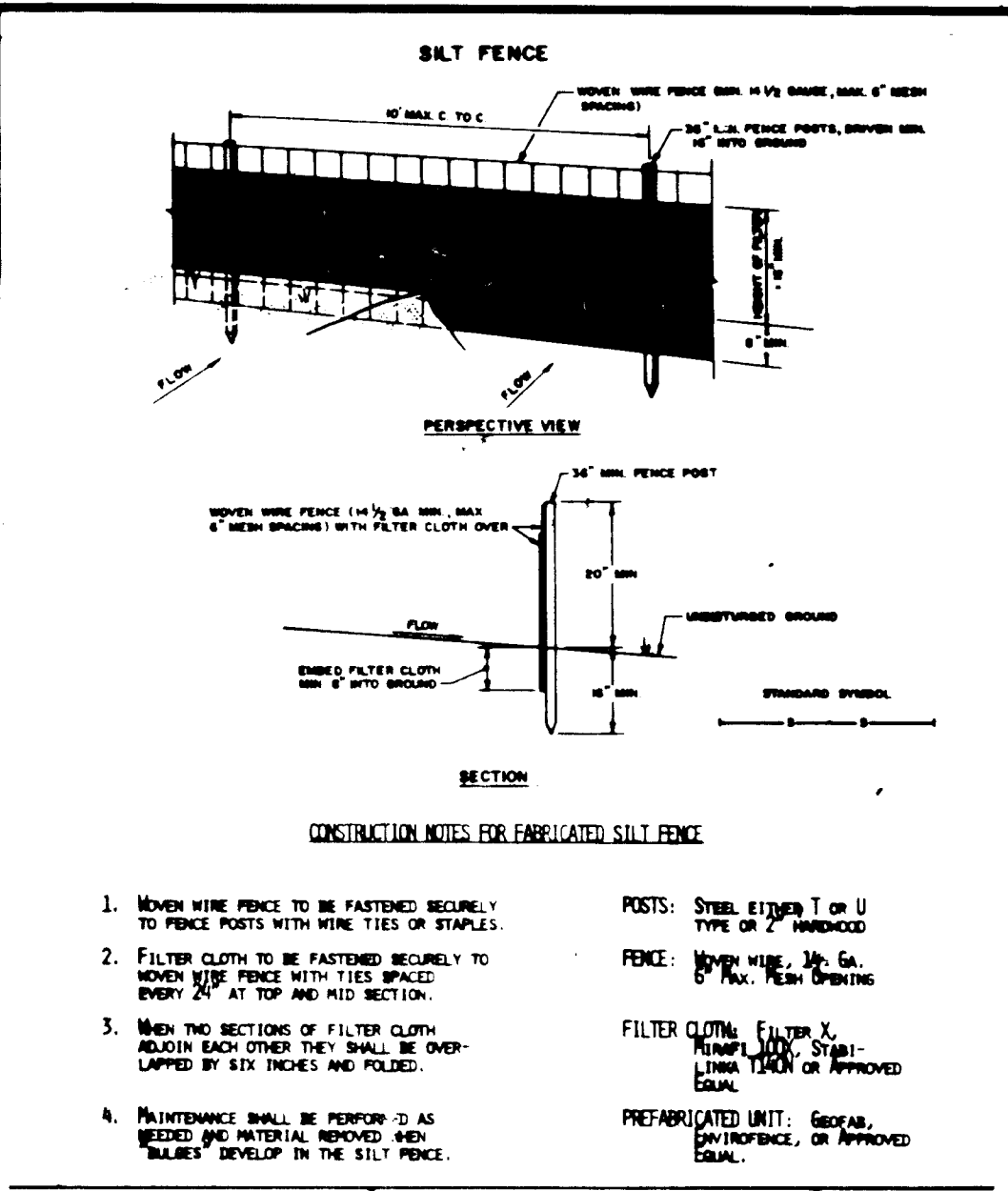
JERRY K. & ELLEN COOPER
555 MAIN STREET, SUITE 241
LAUREL, MD 20707

ELJER CONSTRUCTION CO.
555 MAIN STREET, SUITE 241
LAUREL, MD 20707

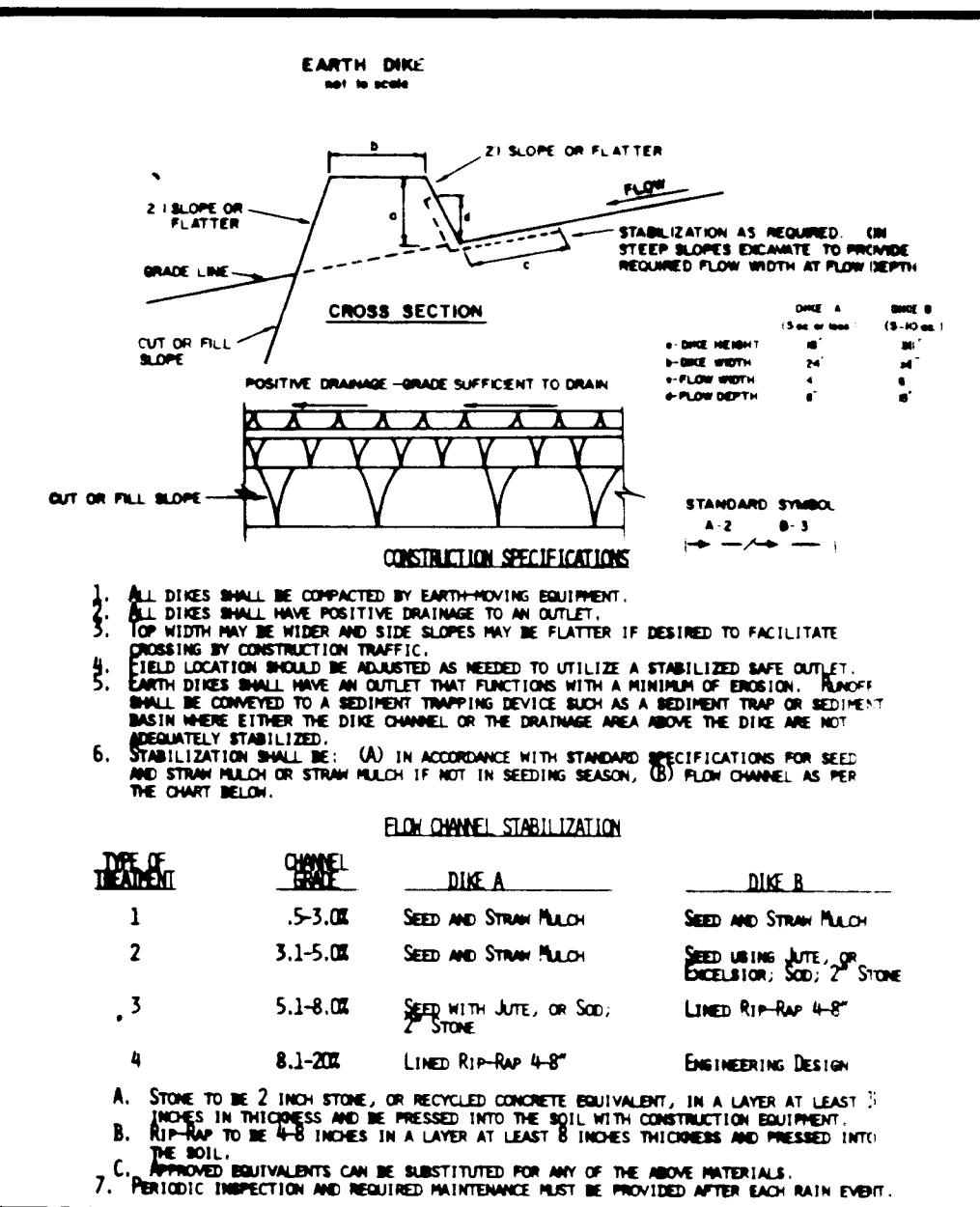
DES.: D.C.W. JOB: SCALE: SHEET 9 OF 14
DRW.: W.D.F. PROJ.: AS SHOWN
CHK.: R.A. DATE:



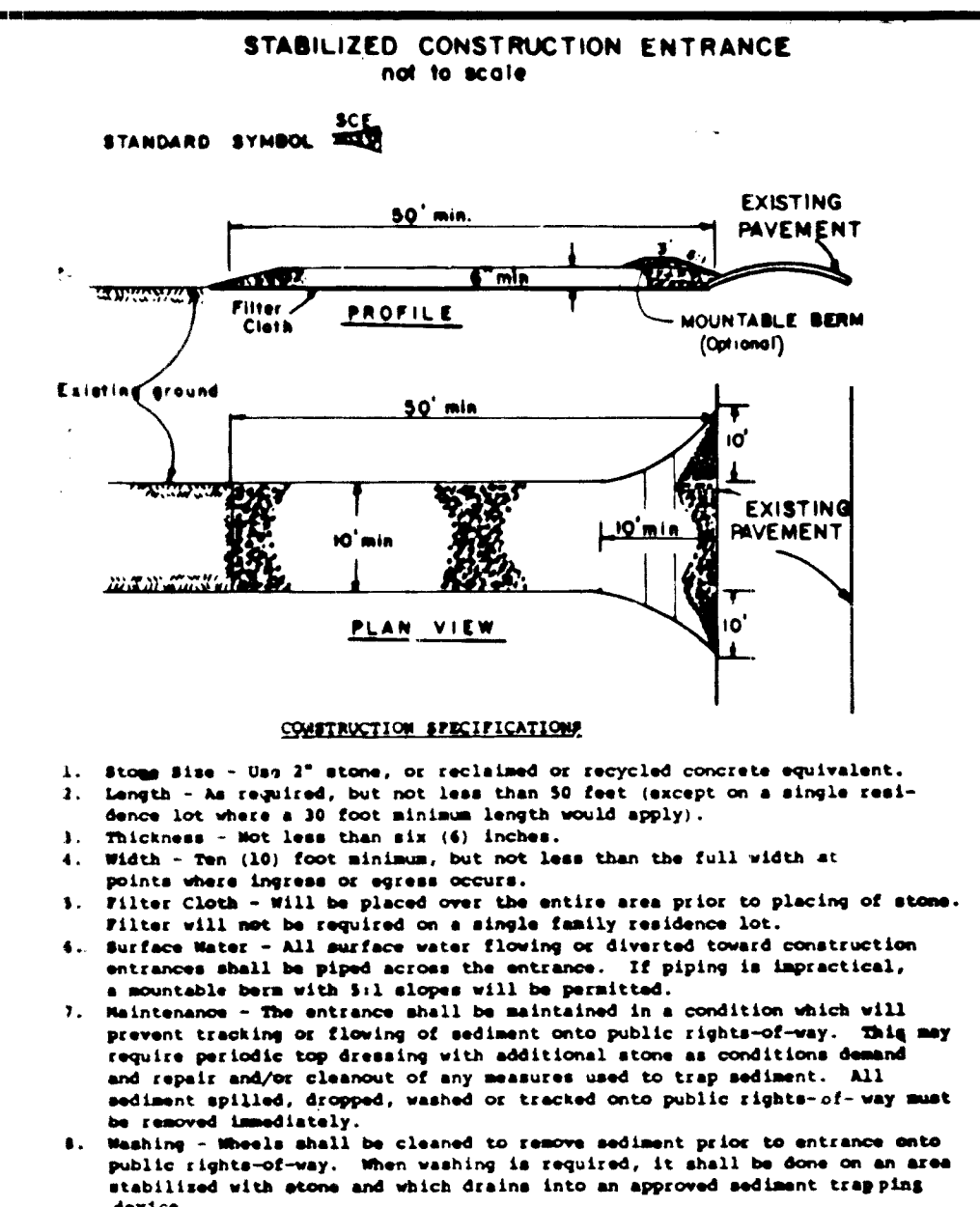
STRAW BALE DIKE
 STANDARD DRAWING
 SO-1



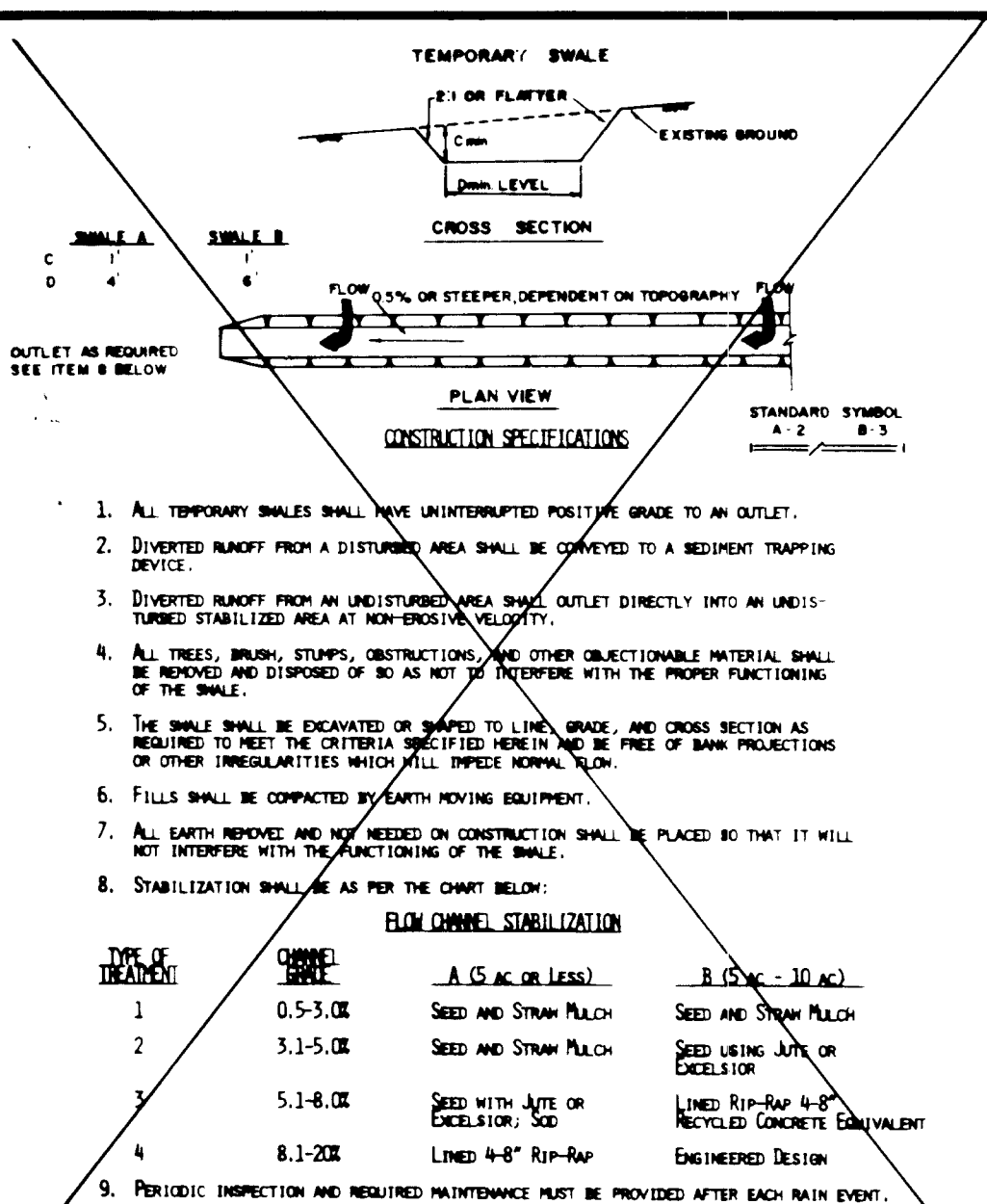
SILT FENCE
 STANDARD DRAWING
 SF-1



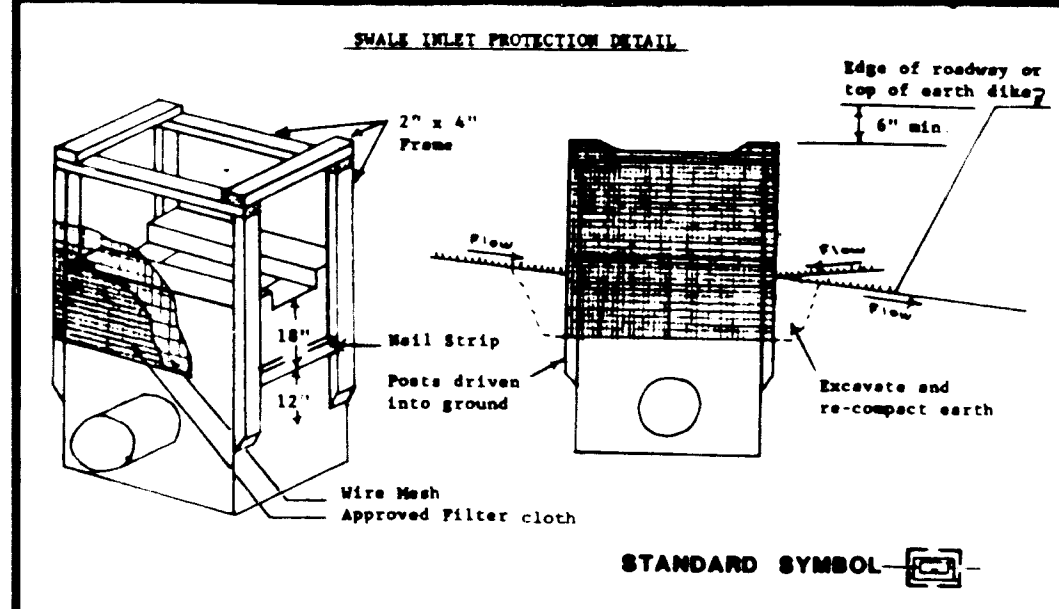
EARTH DIKE
 STANDARD DRAWING
 ED-1



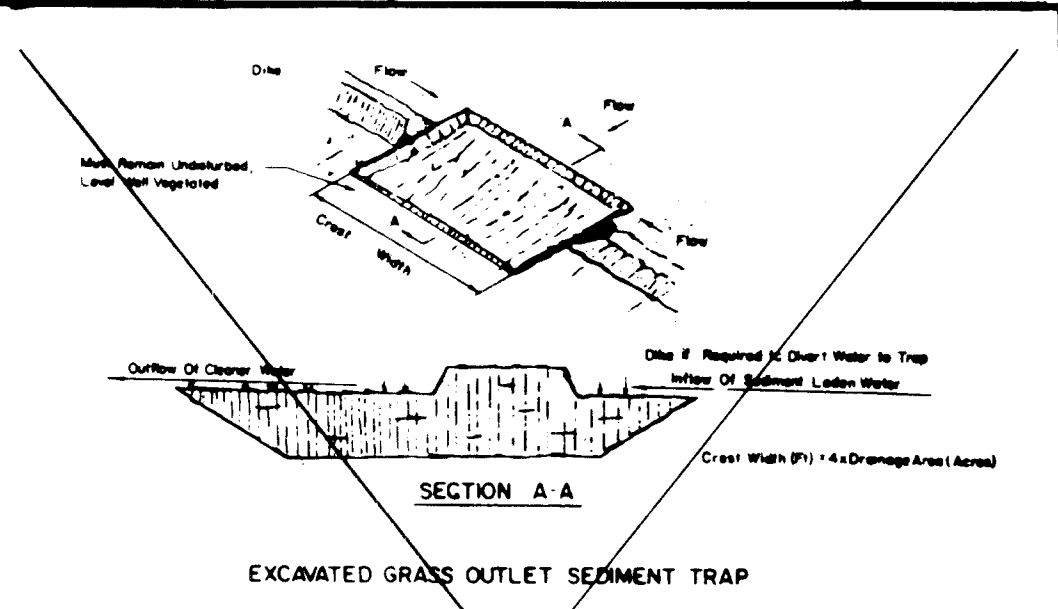
STABILIZED CONSTRUCTION ENTRANCE
 STANDARD DRAWING
 SC-1



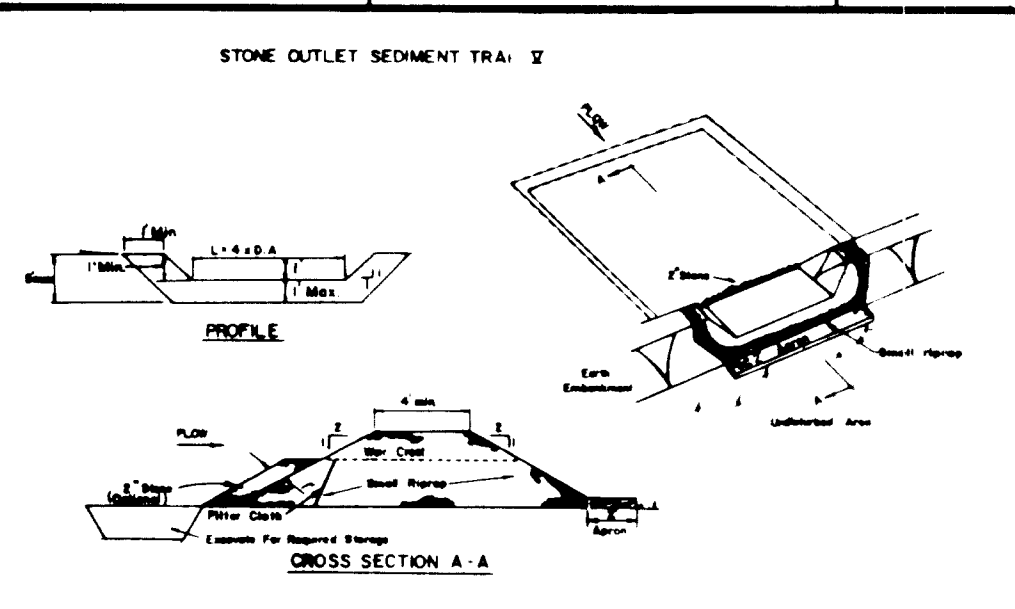
TEMPORARY SWALE
 STANDARD DRAWING
 TS-1



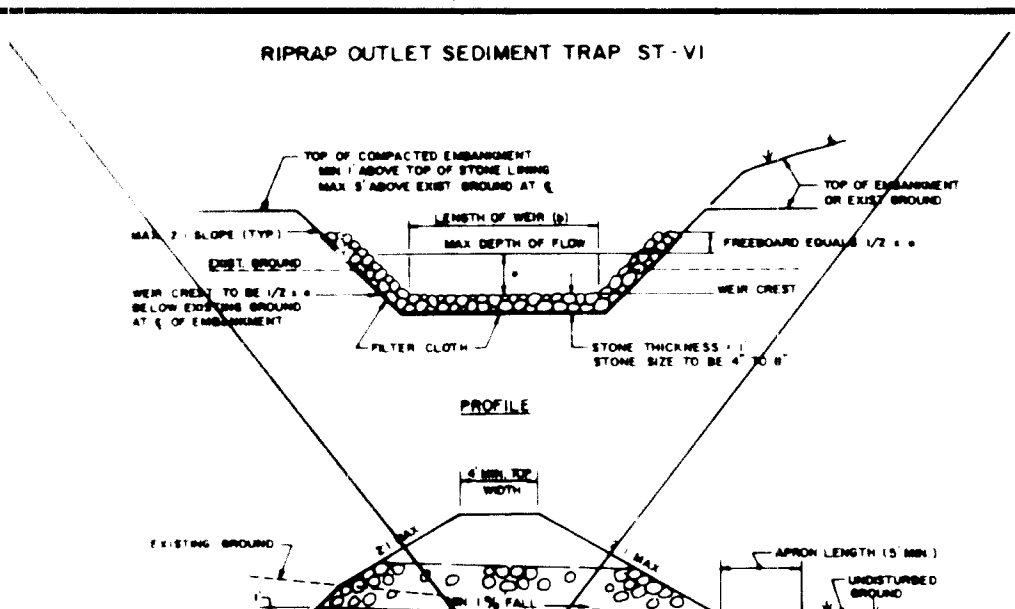
SWALE INLET PROTECTION DETAIL
 STANDARD DRAWING
 IPD-1



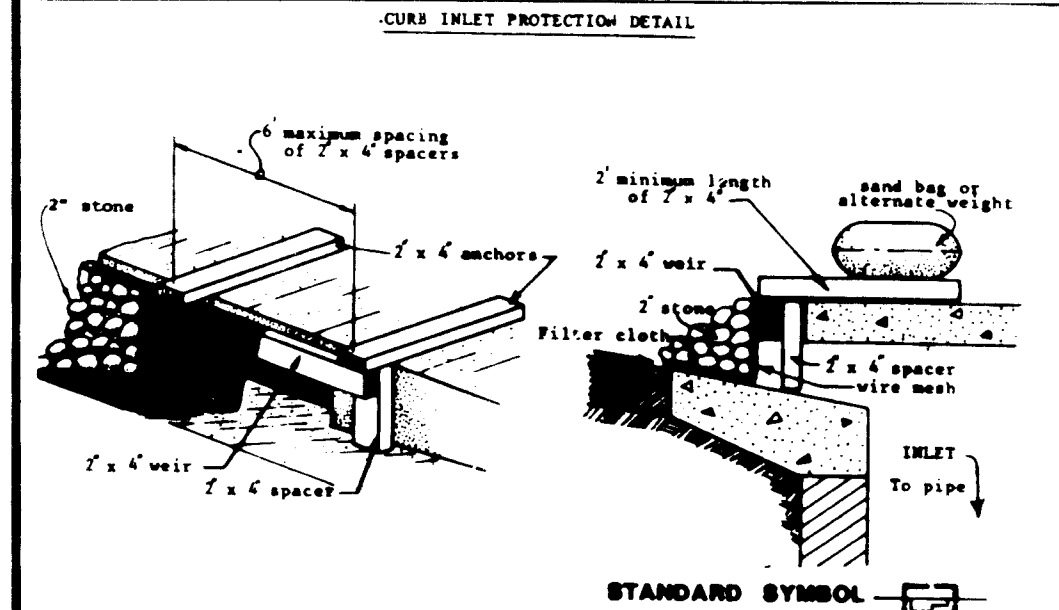
EXCAVATED GRASS OUTLET SEDIMENT TRAP
 STANDARD DRAWING
 ST-II



STONE OUTLET SEDIMENT TRAP
 STANDARD DRAWING
 ST-III



RIPRAP OUTLET SEDIMENT TRAP
 STANDARD DRAWING
 ST-VI



CURB INLET PROTECTION DETAIL
 STANDARD DRAWING
 IPD-1

CONSTRUCTION SPECIFICATIONS FOR ST-II

- Volume of sediment storage shall be 1000 cubic feet per acre of contributory drainage area.
- Minimum crest width shall be 4:1 drainage area.
- Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
- The structure shall be inspected after each rain and repairs made as needed.
- Construction operations shall be carried out in such a manner that erosion and water pollution shall be minimized.
- The sediment trap shall be removed and area stabilized when the remaining drainage area has been properly stabilized.

All outlet slopes shall be 1:1 or flatter.

Maximum Drainage Area: 5 Acres

EXCAVATED GRASS OUTLET SEDIMENT TRAP
 STANDARD DRAWING
 ST-II

CONSTRUCTION SPECIFICATIONS FOR ST-III

- Area under embankment shall be cleared, grubbed and stripped of any vegetation and tree stumps. The pool area shall be cleared.
- The fill material for the embankment shall be free of roots and other woody vegetation as well as oversized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by treading with equipment while it is being constructed.
- All outlet and fill slopes shall be 2:1 or flatter.
- The stone used in the outlet shall be minimum 4" x 6" along with a 1" thickness of 3/4" aggregate placed on the upstream side on the small riprap 1/2 embedded filter cloth in the riprap.
- Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap.
- The structure shall be inspected after each rain and repairs made as needed.
- Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
- The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

Maximum Drainage Area: 5 Acres

STONE OUTLET SEDIMENT TRAP
 STANDARD DRAWING
 ST-III

CONSTRUCTION SPECIFICATIONS FOR ST-VI

- The area under embankment shall be cleared, grubbed and stripped of any vegetation and tree stumps. The pool area shall be cleared.
- The fill material for the embankment shall be free of roots or other woody vegetation as well as oversized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by treading with equipment while it is being constructed. Maximum height of embankment shall be five (5) feet, measured at centerline of embankment.
- All fill slopes shall be 2:1 or flatter; cut slopes 1:1 or flatter.
- Elevation of the top of any dike directing water into trap must equal or exceed the height of embankment.
- Storage area provided shall be figured by computing the volume available behind the outlet channel up to an elevation of one (1) foot below the level weir crest.
- Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Sections of fabric must overlap at least one (1) foot with section nearest the entrance placed on top. Fabric shall be embedded at least six (6) inches into existing ground at entrance of outlet channel.
- Stone used in the outlet channel shall be four (4) to eight (8) inches (riprap). To provide a filtering effect, a layer of filter cloth shall be embedded one (1) foot back into the upstream face of the outlet stone or one (1) foot thick layer of two (2) inch or finer aggregate shall be placed on the upstream face of the outlet.
- Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
- The structure shall be inspected after each rain and repaired as needed.
- Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
- The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.
- Drainage area for this practice is limited to 15 acres or less.

RIPRAP OUTLET SEDIMENT TRAP
 STANDARD DRAWING
 ST-VI

Riprap Outlet Sediment Trap
 ST-VI (for Stone Lined Channel)

Contributing Drainage Area (Acres)	Depth of Channel (Feet)	Length of Weir (b) (Feet)
1	1.5	4.0
2	1.5	6.0
3	1.5	8.0
4	1.5	10.0
5	1.5	12.0
6	1.5	14.0
7	1.5	16.0
8	2.0	10.0
9	2.0	12.0
10	2.0	14.0
11	2.0	16.0
12	2.0	18.0
13	2.0	18.0
14	2.0	18.0
15	2.0	18.0

RIPRAP OUTLET SEDIMENT TRAP
 STANDARD DRAWING
 ST-VI

Construction Specifications

Materials

- Wooden frame is to be constructed of 2"x4" construction grade lumber.
- Plywood is to be a minimum thickness of 1/4" construction grade lumber.

Installation

- Cut plywood to extend a minimum of 6" past throat along curb.
- Attach to anchors in a secure manner which will insure a water tight fit against throat.
- Brace securely using sandbag or alternate weight. If not watertight, use approved filter cloth under plywood and attach securely.

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS,
 HOWARD COUNTY HEALTH DEPARTMENT

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS,
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

APPROVED FOR PUBLIC WATER AND SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS,
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature] DATE *[Date]*

[Signature] DATE *[Date]*

[Signature] DATE *[Date]*

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

[Signature] DATE *[Date]*

U.S. SOIL CONSERVATION SERVICE

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

Approved Howard S.C.D. DATE

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS,
 HOWARD COUNTY HEALTH DEPARTMENT

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS,
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

APPROVED FOR PUBLIC WATER AND SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS,
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature] DATE *[Date]*

[Signature] DATE *[Date]*

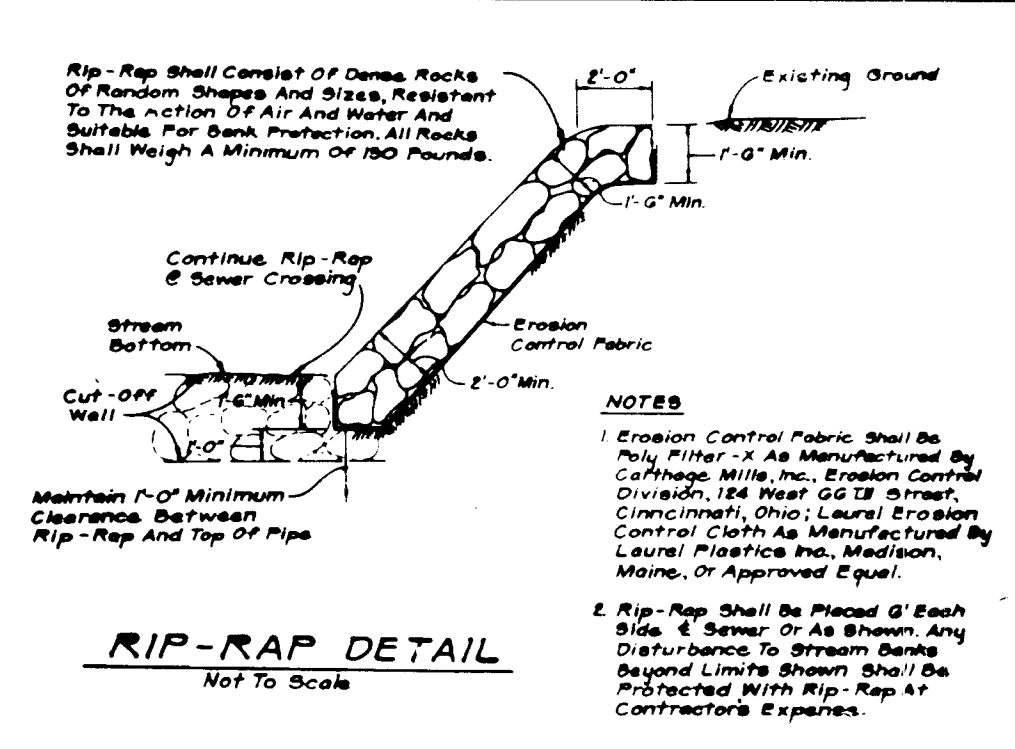
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APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

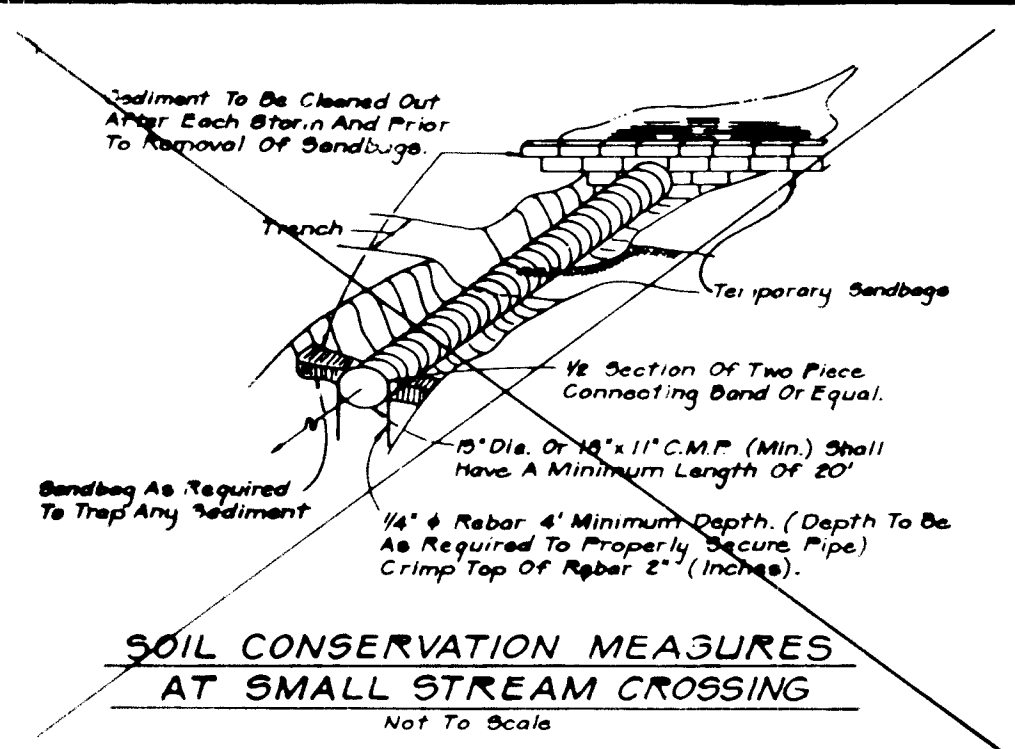
[Signature] DATE *[Date]*

[Signature] DATE *[Date]*

[Signature] DATE *[Date]*



RIP-RAP DETAIL
 Not To Scale



SOIL CONSERVATION MEASURES AT SMALL STREAM CROSSING
 Not To Scale

APPROVED HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] DATE *[Date]*

[Signature] DATE *[Date]*

APPROVED HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] DATE *[Date]*

[Signature] DATE *[Date]*

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS,
 HOWARD COUNTY HEALTH DEPARTMENT

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS,
 HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

APPROVED FOR PUBLIC WATER AND SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS,
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature] DATE *[Date]*

[Signature] DATE *[Date]*

[Signature] DATE *[Date]*

APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature] DATE *[Date]*

[Signature] DATE *[Date]*

[Signature] DATE *[Date]*

PERMANENT SEEDING NOTES

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

Seeding Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding. If not previously loosened.

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

- Preferred - Apply 2 tons per acre dolomitic limestone (92 lb/1000 sq ft) and 800 lbs per acre 10-10-10 fertilizer (14 lb/1000 sq ft) before seeding. Apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lb/1000 sq ft).
- Acceptable - Apply 2 tons per acre dolomitic limestone (92 lb/1000 sq ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lb/1000 sq ft) before seeding. Apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lb/1000 sq ft).

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

Mulching - Apply 14 to 2 tons per acre (70 to 90 lb/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring.

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

TEMPORARY SEEDING NOTES

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

Seeding Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding. If not previously loosened.

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

Seeding - For periods March 1 thru April 30 and from August 15 thru November 15, seed with 24 bushel per acre annual rye (3.2 lb/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lb/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 seed.

Mulching - Apply 14 to 2 tons per acre (70 to 90 lb/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/1000 sq ft) of emulsified asphalt on flat areas. On slopes, 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.

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

SEDIMENT CONTROL NOTES

- A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1; b) 14 days 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 their perimeter in accordance with Sol. 11, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) and (Sec. 52), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:
 Total Area of Site _____ Acres
 Area Disturbed _____ Acres
 Area to be roofed or paved _____ Acres
 Area to be vegetatively stabilized _____ Acres
 Total Cut _____ Cu. yds
 Total Fill _____ Cu. yds
 Offsite waste/borrow area location _____
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment controls must be provided, if deemed necessary by the Howard County DPW sediment control inspector. *PERMITTED BY GOVERNMENT

On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

NOTE: FOR SEQUENCE OF CONSTRUCTIONS, SEE SHEET 10 OF 14.

SEDIMENT CONTROL DETAIL SHEET

APPROVED HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[Signature] DATE *[Date]*

[Signature] DATE *[Date]*

[Signature] DATE *[Date]*

OWNER'S/ DEVELOPER'S CERTIFICATION

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Signature *[Signature]* Date *[Date]*
 Name *[Name]* Title *[Title]* Phone No. *[Phone]*
 Firm *[Firm]* Complete Address *[Address]*

ENGINEER'S CERTIFICATE

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

[Signature] DATE *[Date]*

Registered Professional Engineer # *[Number]*

COOPER PROPERTY
 SECTION 1, AREA 1, LOT 1, SP
 SIXTH ELECTION DISTRICT,
 HOWARD COUNTY, MARYLAND

[Signature]

Drawing	DATE	REVISIONS	SHEET	DATE	JOB
Check			11		NUMBER
Design			OF		SCALE
Check			14		

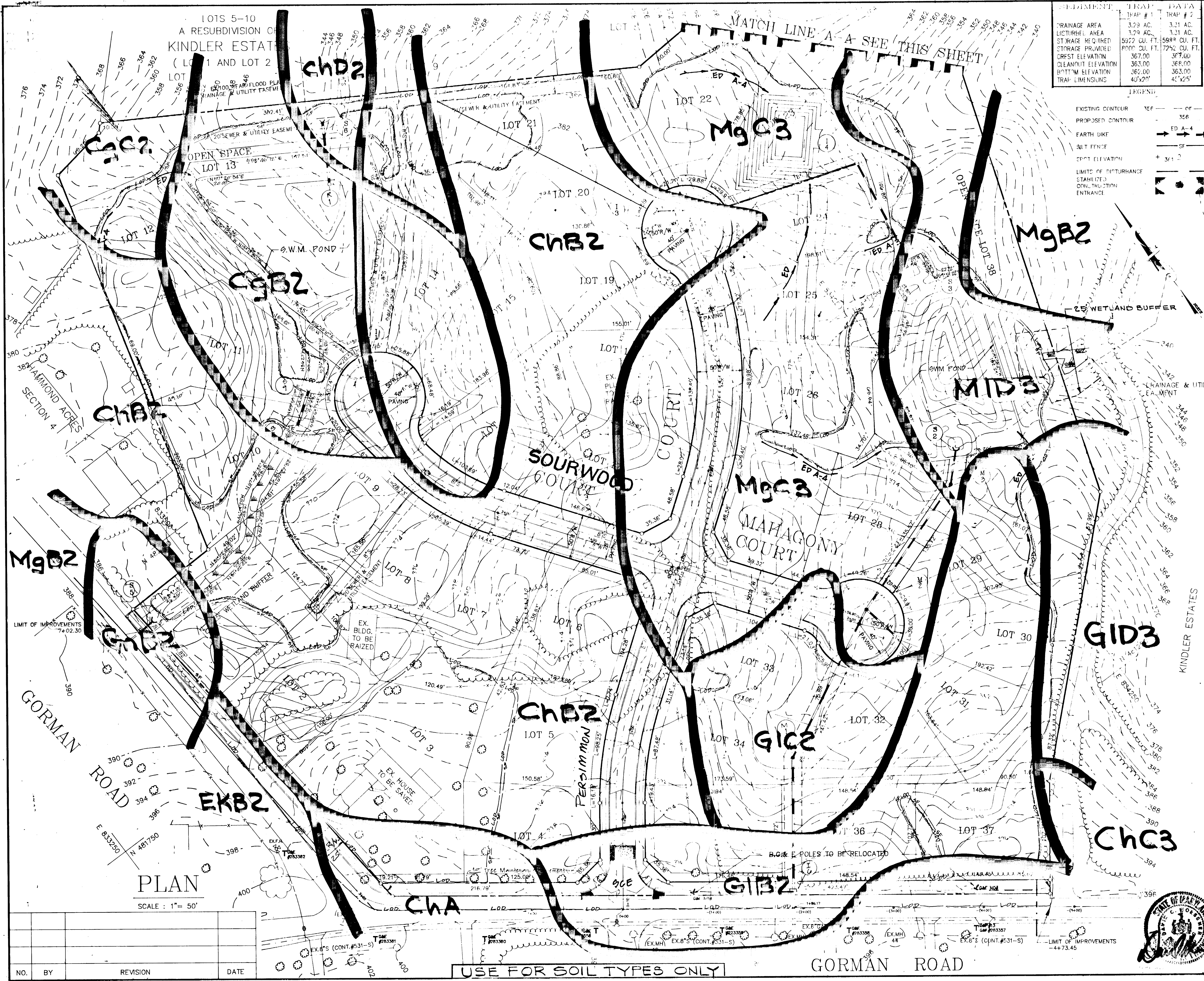
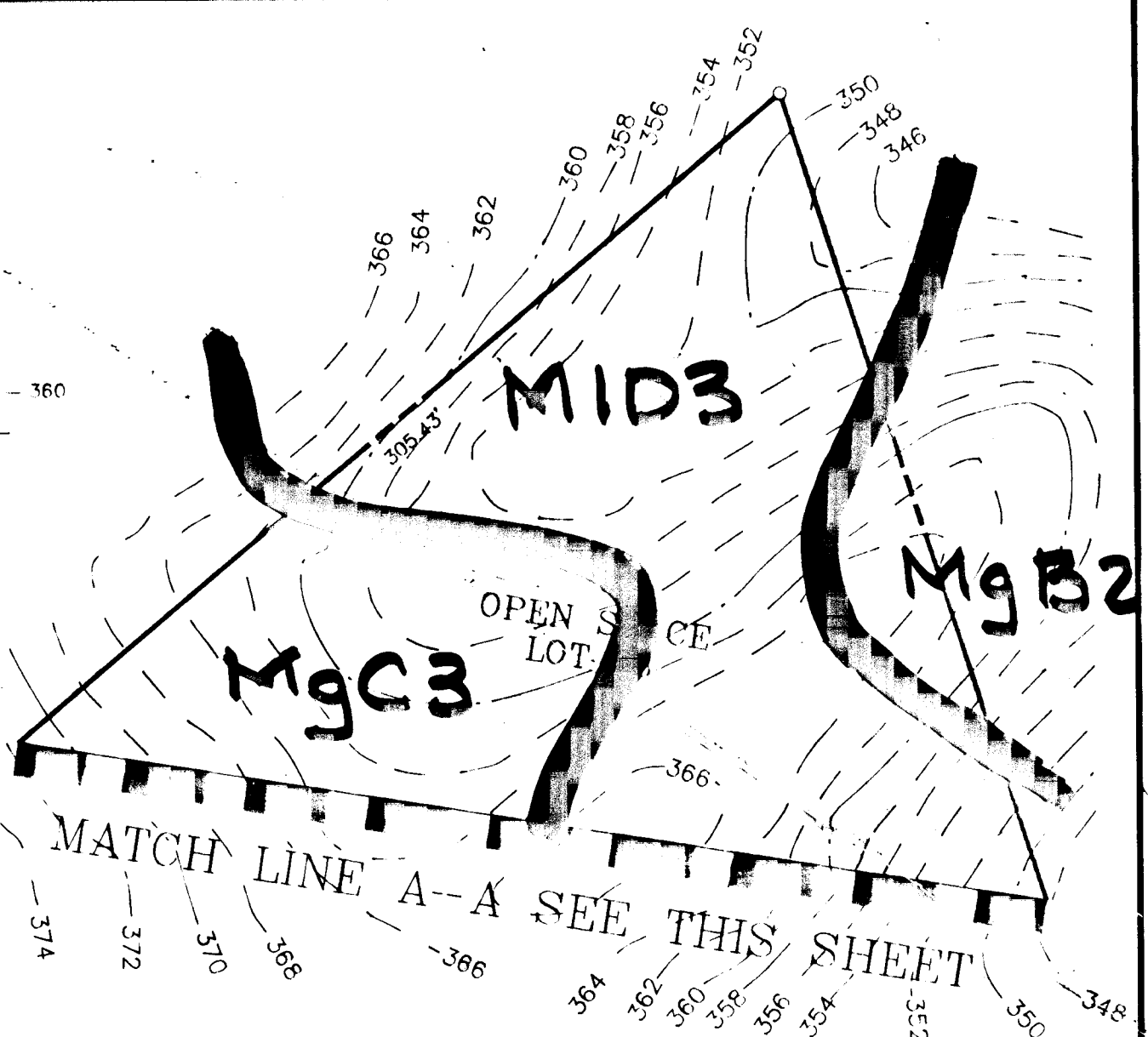
16971

LOTS 5-10
A RESUBDIVISION OF
KINDLER ESTATE
(LOT 1 AND LOT 2)

ELEMENT	TRAP # 1	TRAP # 2
DRAINAGE AREA	3.79 AC.	3.21 AC.
DISCHARGE AREA	3.79 AC.	3.21 AC.
STORAGE REQUIRED	5972 CU. FT.	5999 CU. FT.
STORAGE PROVIDED	8000 CU. FT.	7750 CU. FT.
CREST ELEVATION	367.00	367.00
CLEANOUT ELEVATION	363.00	363.00
BOTTOM ELEVATION	362.00	363.00
TRAP DIMENSIONS	40"x20"	41"x25"

LEGEND

EXISTING CONTOUR	--- OF ---	360
PROPOSED CONTOUR	--- OF ---	356
EARTH DIKE	→ ED A-4 →	
SILT FENCE	→ SF →	
SOFT ELEVATION	+ 364.2	
LIMITS OF DISTURBANCE	--- OF ---	
STABILIZED CONSTRUCTION ENTRANCE	--- OF ---	



By the Developer:
 "I certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before the beginning of the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."
Jerry Cooper 1/23/93
 Signature of Developer
 Print name below signature

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 must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."
David Whames 11-5-92
 Signature of Engineer
 Print name below signature

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.
Patty Embury 3/10/94
 U.S. Soil Conservation Service

These plans for small pond construction, soil erosion, and sediment control meet the requirements of the Howard Soil Conservation District.
Robert W. Ziehm 3/10/94
 Howard Soil Conservation District

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Allen Quinlan 3/20/94
 CHIEF, LAND DEVELOPMENT DIVISION
Andrew M. Conner 3/22/94
 CHIEF, BUREAU OF HIGHWAYS
Paul D. Sporn 3/30/94
 CHIEF, BUREAU OF ENGINEERING

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Gina Summary 4/13/94
 CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH

PROJECT NAME: COOPER PROPERTY
 SECTION 1 / AREA 1 LOTS 1-38
 SIXTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND.

TITLE: SOILS MAP
 OWNER / DEVELOPER: COOPER AND CUMMINGS
 585 MAIN STREET, SUITE 241
 LAUREL, MD 20707
 PREPARED BY: American Engineering Inc.
 CIVIL ENGINEERING CONSULTANTS
 AND LAND PLANNERS
 671-A MAIN STREET
 LAUREL, MARYLAND 20707
 WASH. (301) 953-1221
 BALT. (410) 880-3039

DES. : D.C.W. JOB : 29109
 DRW. : W.D.F. PROJ. : GORMSD
 CHK. : R.A. DATE : 5-15-90
 SCALE : 1" = 50'
 SHEET 12 OF 14

PLAN
 SCALE: 1" = 50'

NO.	BY	REVISION	DATE

USE FOR SOIL TYPES ONLY

GORMAN ROAD



1691

CONSTRUCTION SEQUENCE

1. All grading to be done under approved grading permit for Cooper Property
2. After pond is constructed and slopes stabilized, begin construction of mitigation.
3. Establish stabilized channel from pond outfall for drainage relief.
4. Install silt fence.
5. Remove topsoil and stockpile on site.
6. Excavate mitigation area to within six inches (6") below finish grade and replace with topsoil up to finish grade.
7. Haul excess material to approved on site location.
8. Remove modified earth dike/swale.
9. Plant mitigation area in accordance with planting plan.
10. Remove silt fence and stabilize.

CONSTRUCTION REQUIREMENTS

The site to be restored as emergent Wetland shall be graded, planted, and fertilized as shown on the plans and in accordance with these special provisions:

- A. Planting schedule shall conform to the following conditions:**
- Planting shall commence after final grading, adjacent construction has been completed, and all sediment control measures have been removed. In order to coordinate the planting work with the entire construction schedule, plant material will not be shipped from the supplier until directed to do so by American Engineering. All emergent Wetland plantings (peat plants and bare root-stock) shall be installed between September 15 to November 15 or as directed by American Engineering.
- B. Plant Materials:**
- 1) Root-stock of the plant material shall be kept moist during transport from the source to the job site and until planted.
 - 2) Plant material shall be planted in existing soil with each planting pit excavated to size sufficient to contain the entire root-stock or the entire root-mass without cramping.
- C. Planting bed preparation:**
- The contractor shall prepare the area to be planted in Wetland plant materials by spreading a uniform layer of 6 inches of topsoil over the existing soil without disturbing the grade. Planting areas shall be approved by American Engineering prior to the installation of the plant material.
- D. Clean-up:**
- Final clean up shall be the responsibility of the contractor and consist of removing all trash and materials incidental to the project, and disposing of them off-site. In addition, the construction procedure shall not damage any areas of existing plants which are to remain.
- E. The planting grids are approximate and may be varied upon the approval of American Engineering, provided the relative ratios and areas are maintained.**
- F. Plant material selections are based upon availability at time of design. If specific plants are unavailable at time of planting, substitute plants conforming to above specifications will be made. All substitute plant materials are subject to the approval of American Engineering and the Army Corps of Engineers.**

CONSTRUCTION RESTRICTIONS

All work in flood plain must be done in strict accordance with applicable State permit requirements.

Work in streams is prohibited during certain times of the year as follows:

Class I Streams	March 1 thru June 15
Class II Streams	June 1 thru September 30 or December 16 thru March 14
Class III Streams	October 1 thru April 30
Class IV Streams	March 1 thru May 31

NOTES/SPECIFICATIONS

1. Compact subgrade by rolling and compacting with approved multiple-wheel pneumatic tire rollers vibratory rollers or other types of approved rollers.
2. The basin bottom shall be excavated eight inches (8") below finished grade and eight inches (8") of topsoil shall be uniformly spread to finished elevation. Topsoil shall be free of stone, lumps, plants, roots, and other debris including toxic substances. Topsoil shall have a pH range of 5.0 - 7.0.

WETLAND PLANT MATERIAL

DESCRIPTION:

This work shall consist of furnishing and planting emergent wetland plants and shrubs as shown on the plans and/or as directed by American Engineering and all planting operations and care and replacement as necessary to complete the work specified.

Prior to the start of the work on this project, American Engineering shall submit to the Army Corps of Engineers for review, the proposed planting schedule for the wetland vegetation.

MATERIALS:

- A. Plant material -** As shown on the plans, shall conform to the following specifications: The plant species required are normally unavailable from standard landscape nursery sources. American Engineering will make arrangements to insure a supply of the required plant material. This shall be done five (5) months prior to planting time to allow for plant collection, storage, and preparation.
- B. Fertilizer -** As required.
- C. Substitute plants -** Shall conform to the above specifications and approval of American Engineering and the Army Corps of Engineers.

WETLAND MANAGEMENT NOTES

In order to establish a productive, functioning wetland ecosystem, an effective wetland management plan has been developed. The objectives of the management plan include:

1. Re-establish a healthy, self-sustaining vegetative cover.
2. Re-establish self-sustaining hydrological conditions.
3. Enhance and promote maximum wildlife habitat.

In order to establish an effective, workable, and practical wetland management plan, the following strategy is recommended:

1. During and immediately proceeding construction of the wetland areas, potential or existing problems will be identified and corrective management techniques will be implemented.

CLEARING AND GRUBBING

1. All vegetation, trash, and debris not marked in the field or on the plans, within the limits of disturbance, are to be disposed of off site in an approved landfill site.

GRADING

1. All topsoil and excess cut is to be removed and disposed of off site.
2. Grade tolerance shall be within 0.15 feet.
3. Specific field elevations for the basin bottom may be adjusted slightly during construction to allow for unanticipated field conditions.
4. Side slopes shall be excavated eight inches (8") below finished grade and eight inches (8") of topsoil shall be uniformly spread to finished elevation. Topsoil shall be free of stones, lumps, plants, roots, and other debris including toxic substances. Topsoil shall have a pH range of 5.0 - 7.0.
5. The basin bottom shall be excavated eight inches (8") below finished grade and eight inches (8") of topsoil shall be uniformly spread to finished elevation.
6. All final elevations shall be field checked by American Engineering prior to the contractor removing equipment from the site.

ENGINEER'S CERTIFICATE

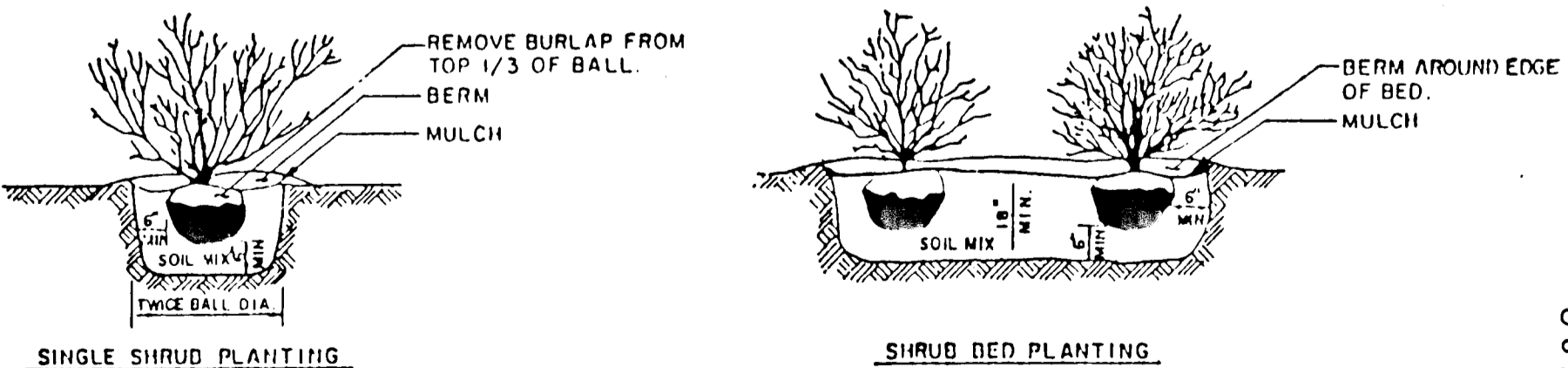
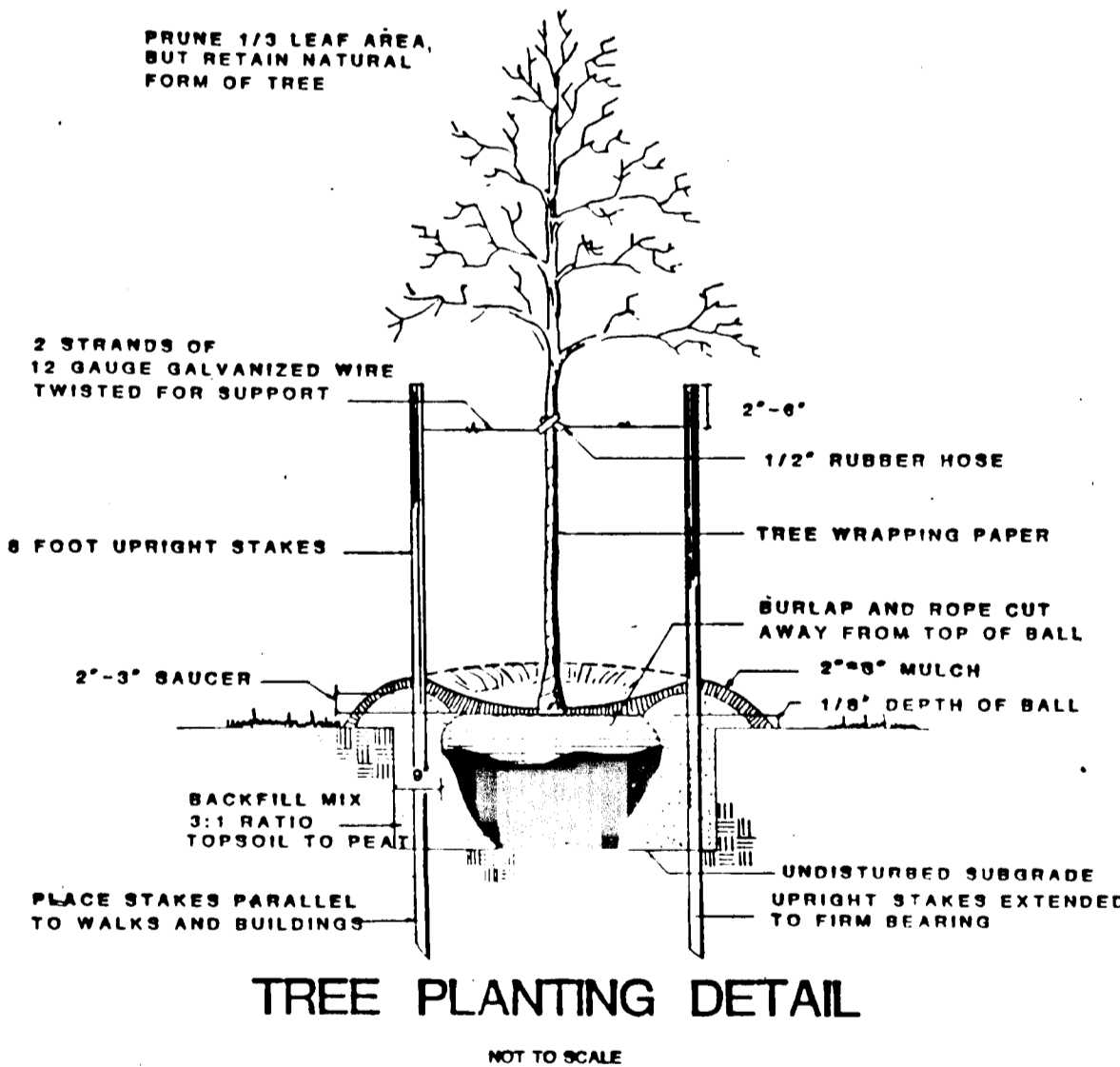
I HEREBY CERTIFY THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE ADVISED THE DEVELOPER THAT HE MUST PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

[Signature] 11/15/92
Date

DEVELOPER'S CERTIFICATE

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I HAVE PROVIDED THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

[Signature] 1/23/93
Date



PLANTING DETAIL
NO SCALE

NATURAL CYCLE

Natural cycles must be maintained to prevent "succession" from wetland to solid ground. Although this is a long term goal exceeding the limits of this management program, several techniques can be implemented over the two year period enhance stability.

IMMEDIATE MANAGEMENT TECHNIQUES

No management strategies planned.

SHORT TERM MANAGEMENT TECHNIQUES

Wetland area will be periodically monitored for altered hydrologic conditions, invasive plant species, transition of wetland species to upland plants, and cultural impacts such as human disturbance, filling, non-point, and point source pollution. Management techniques will be recommended to stabilize unnatural ecological successions including:

- 1) Altering the hydrological regime.
- 2) Removing undesirable plant species.
- 3) Restricting or discouraging destructive human interaction.

LONG TERM MANAGEMENT TECHNIQUES

Overall ecology and stability of the restored wetland areas will be assessed in comparison to similar adjacent areas. Recommendations and strategies will be planned to enhance and protect the overall ecology of the site.

HYDROLOGIC REGIME

The duration, timing, and source of surface inundation determines and regulates wetland functions and their characteristics.

IMMEDIATE MANAGEMENT TECHNIQUES

Vegetation demonstrating immediate stress or dieback will be replaced. In addition, soil and climatic factors will be analyzed in relation to plant growth. The following management techniques will be utilized:

- 1.) Replace plant species with similar vegetation.
- 2.) Add soil amendments to enhance survivability.
- 3.) Replace plant species with specified alternative.
- 4.) Prune plant species to establish desired growth characteristics and enhance survivability.

SHORT TERM MANAGEMENT TECHNIQUES

Survey vegetation after major storm events or droughts to determine appropriate management techniques as specified in Immediate Management Techniques.

LONG TERM MANAGEMENT TECHNIQUES

Re-assess vegetation for its functional value in relation to wetland cycles and habitat enhancement. Recommend and implement corrective and preventive action.

VEGETATION

Vegetation sustains wildlife species, filters and reduces flood velocity. A goal of 85% vegetative cover will be established in two (2) years.

IMMEDIATE MANAGEMENT TECHNIQUES

Vegetation demonstrating immediate stress or dieback will be replaced. In addition, soil and climatic factors will be analyzed in relation to plant growth. The following management techniques will be utilized:

- 1.) Replace plant species with similar vegetation.
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LONG TERM MANAGEMENT TECHNIQUES

Re-assess vegetation for its functional value in relation to wetland cycles and habitat enhancement. Recommend and implement corrective and preventive action.

SHORT TERM MANAGEMENT TECHNIQUES

Survey vegetation after major storm events or droughts to determine appropriate management techniques as specified in Immediate Management Techniques.

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

[Signature] 3/14/94
U.S. Soil Conservation Service Date

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

[Signature] 3/14/94
Howard Soil Conservation District Date

APPROVED - HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

[Signature] 3/20/94
CHIEF, LAND DEVELOPMENT DIVISION Date

[Signature] 3-22-94
CHIEF, BUREAU OF HIGHWAYS Date

[Signature] 3/30/94
CHIEF, BUREAU OF ENGINEERING Date

APPROVED - HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[Signature] 4/13/94
CHIEF, DIVISION OF LAND DEVELOPMENT AND RESEARCH Date

PROJECT NAME: **COOPER PROPERTY**
SECTION 1 / AREA 1 LOTS 1-38
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: **MITIGATION NOTES**

OWNER / DEVELOPER: **COOPER AND CUMMINGS**
505 MAIN STREET, SUITE 201
LAUREL, MD 20707

PREPARED BY: **American Engineering Inc.**
CIVIL ENGINEERING CONSULTANTS
AND LAND PLANNERS

AE 871-A MAIN STREET
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WASH. (301) 953-1221
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DES. : D.C.W. JOB :
DRW. : W.D.F. PROJ. :
CHK. : R.A. DATE : 5-15-90

SCALE: 1" = 50'
SHEET 13 OF 14

