

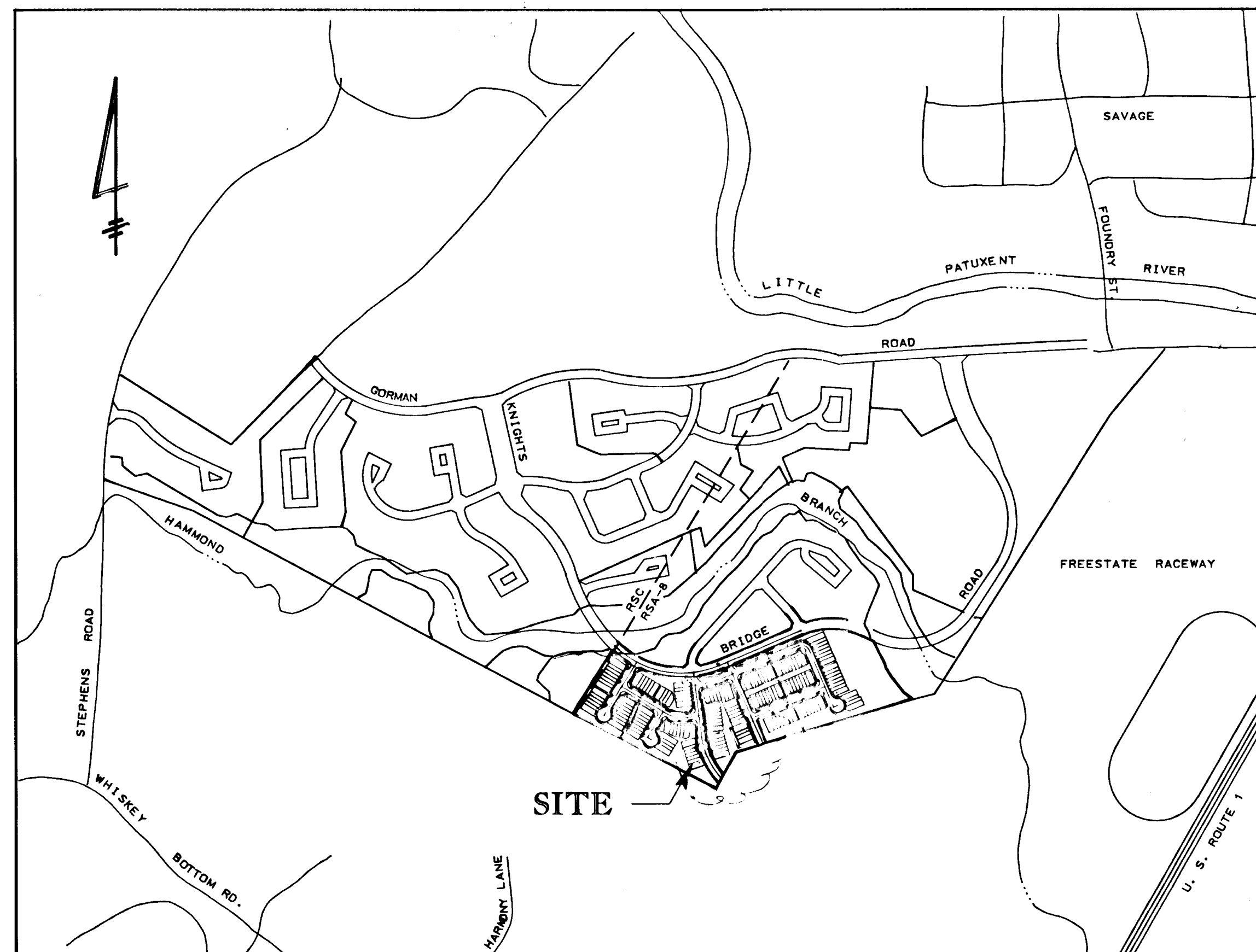
"AS-BUILTS" OF BOWLING BROOK FARMS PARCEL 'C'

LOTS #1 THRU #160 & OPEN SPACE LOTS #161 THRU #168

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATION, IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF CONSTRUCTION INSPECTION AT (301) 792-7272 AT LEAST FIVE (5) WORKING DAYS PRIOR TO ANY EXCAVATION WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
4. SEE DEPARTMENT OF PLANNING AND ZONING REFERENCE #. PB-196, VP-85-78, S-85-23, S-86-57, S-87-07, P-89-19, GP-89-25, F-88-194, S-92-12, WP 92-117, WP-92-119, SDP-92-102.
5. 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.
6. BOUNDARY SHOWN HEREON BASED ON SURVEY PREPARED BY CLARK, FINEFROCK AND SACKETT. TOPOGRAPHY SHOWN HEREON BASED ON FIELD RUN TOPO PREPARED BY CLARK, FINEFROCK AND SACKETT AND HARRIS, SMARIGA, MATZ, INC.
7. VERTICAL AND HORIZONTAL CONTROL WAS DERIVED FROM THE FOLLOWING HOWARD COUNTY CONTROL STATIONS:
STA. 1941002 ELEV. 291.797
STA. 1941003 ELEV. 299.438
8. LIGHT POLES AND FIXTURES FOR STREET LIGHTS SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY DESIGN MANUAL, VOLUME III, ROADS AND BRIDGES.
9. PUBLIC WATER AND SEWER TO BE PROVIDED FOR THIS SUBDIVISION. SEE CONTRACT NO. 24-3213-D.
10. WATER QUALITY MANAGEMENT ONLY IS BEING PROVIDED BY TWO PONDS UTILIZING EXTENDED DETENTION AND SHALLOW MARSH DESIGN PRACTICES. STORMWATER MANAGEMENT FOR WATER QUANTITY HAS BEEN WAIVED OCTOBER 1, 1996.
11. 100-YEAR FLOODPLAIN ELEVATIONS SHOWN HEREON ARE BASED ON THE HAMMOND BRANCH FLOOD STUDY, CAPITAL PROJECT D-G-1026.
12. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTOR'S INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICES.
13. THERE ARE 328 PARKING SPACES ON THIS SITE. THIS INCLUDES 41 GARAGE SPACE LOTS.

LOT NO'S.	SPACES
12-22	= 11
41-46	= 6
122-125	= 4
141-160	= 20
TOTAL	41
14. ALL RAMPS ARE TO BE PER A.D.A. REQUIREMENTS.



VICINITY MAP
SCALE: 1" = 600'

FINAL CONSTRUCTION PLANS

SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

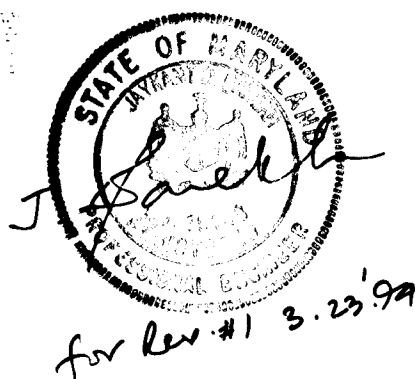
INDEX OF SHEETS

1. TITLE SHEET
2. DALY COURT AND LAWSON LANE, PLAN & PROFILE
3. RIDINGS WAY AND GORDON CT., PLAN & PROFILE
4. MAXWELL CT. AND HOWLAND ROAD, PLAN & PROFILE
5. BREWINGTON LANE, PLAN & PROFILE
6. STORM DRAIN PROFILES
7. STORM DRAIN PROFILES
8. STORM DRAIN PROFILES AND TYPICAL ROAD SECTIONS
9. SWM POND #1 PROFILES AND DETAILS
10. SWM POND #2 PROFILES AND DETAILS
11. SWM POND NOTES AND DETAILS
12. SEDIMENT CONTROL, GRADING AND LANDSCAPE PLAN
13. SEDIMENT CONTROL, GRADING AND LANDSCAPE PLAN
14. SEDIMENT CONTROL NOTES AND DETAILS
15. EXISTING DRAINAGE AREA MAP - SWM
16. EXISTING DRAINAGE AREA MAP - SWM
17. PROPOSED DRAINAGE AREA MAP - SWM
18. PROPOSED DRAINAGE AREA MAP - SWM
19. STORM DRAIN DRAINAGE AREA MAP
20. STORM DRAIN DRAINAGE AREA MAP

STREET LIGHTS

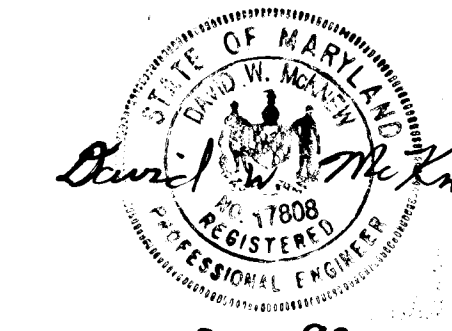
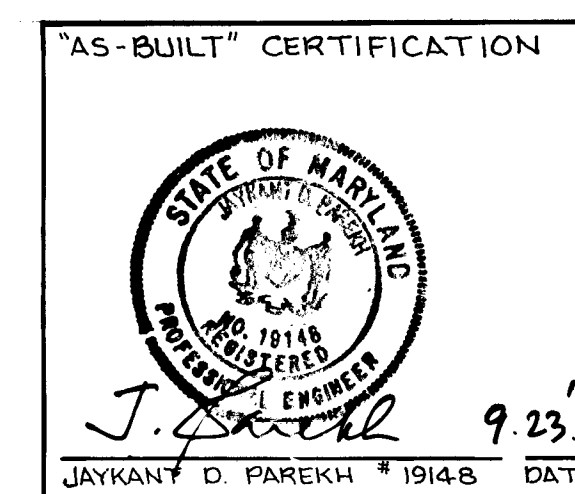
1. INSTALL 100 WATT TRADITIONAIRE SODIUM VAPOR LAMP POST TOPS FIXTURE ON 14 FEET BLACK FIBERGLASS POLES AS SHOWN ON PLAN:
Locations:
a. STA. 6+40 RT. BREWINGTON LANE
b. STA. 9+80 RT. BREWINGTON LANE
c. STA. 0+32 RT. HOWLAND ROAD
d. STA. 2+95 RT. RIDINGS WAY
e. STA. 0+40 RT. LAWSON LANE
f. STA. 0+40 RT. GORDON COURT
2. INSTALL 150 WATT TRADITIONAIRE SODIUM VAPOR PENDENT MOUNTED FIXTURE ON A 25 FEET GALVANIZED STEEL POLE AS SHOWN ON PLAN:
Locations:
a. STA. 0+42 RT. RIDINGS WAY
b. STA. 0+42 RT. DALY COURT
c. STA. 2+00 LT. BREWINGTON LANE

0-23-92	REMOVED CUL-DE-SACS - MAXWELL CT. & RIDINGS WAY IN V. MAP		REVISION
DATE	NO.		
APPROVED: DEPARTMENT OF PLANNING AND ZONING			
<i>Anna Hilsmat</i>		9/24/92	
CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT			
APPROVED: DEPARTMENT OF PUBLIC WORKS			
<i>William R. Ray</i>		9-23-92	
CHIEF BUREAU OF ENGINEERING			
APPROVED: DEPARTMENT OF PUBLIC WORKS			
<i>Oliver M. Tengstrom</i>		9/10/92	
CHIEF BUREAU OF HIGHWAYS			
APPROVED: DEPARTMENT OF PUBLIC WORKS			
<i>William R. Ray</i>		9/24/92	
CHIEF, LAND DEVELOPMENT DIVISION			



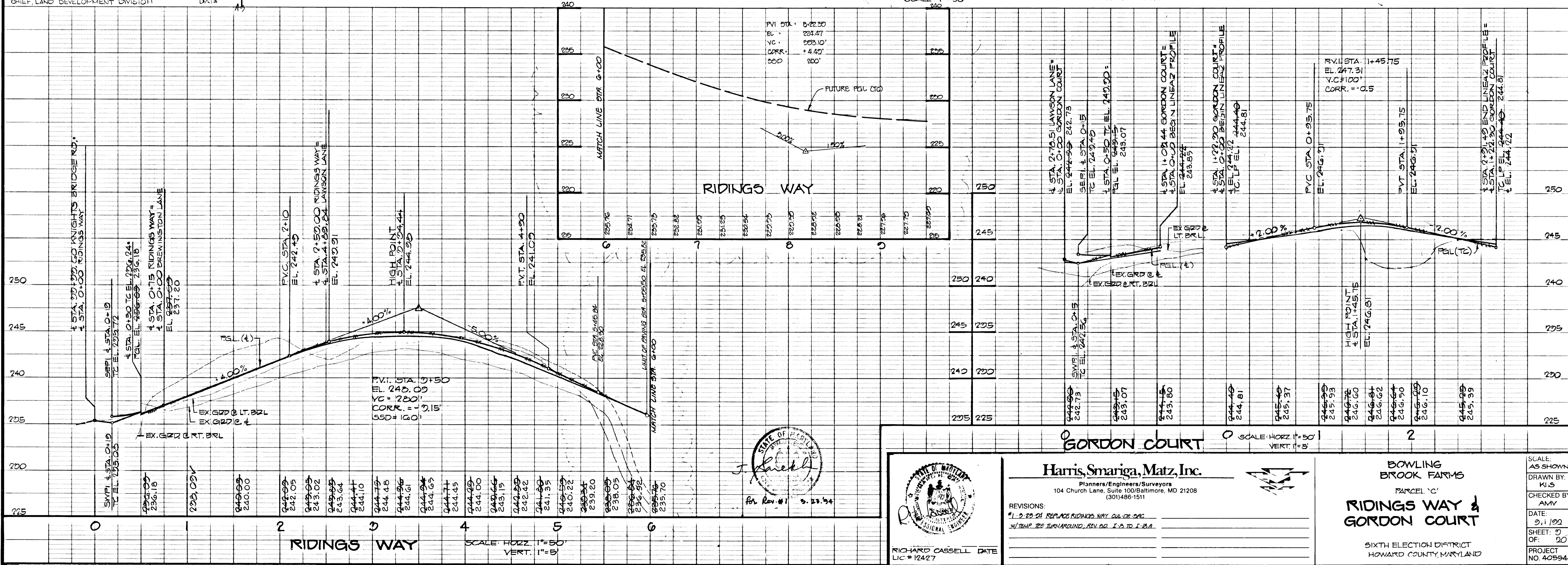
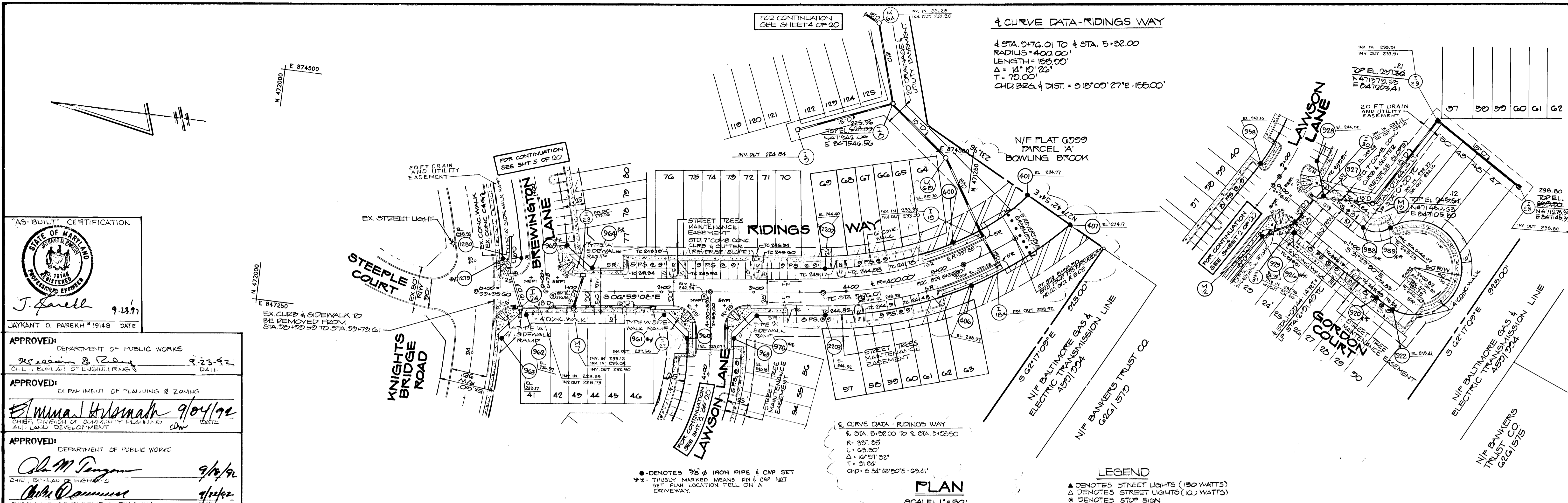
OWNER / DEVELOPER

JAMES KNOTT DEVELOPMENT CORP.
110 WEST RD, SUITE 200
TOWSON, MD 21284
ATTN: KEVIN GERAUGHTY, VP.
(410) 221-1000



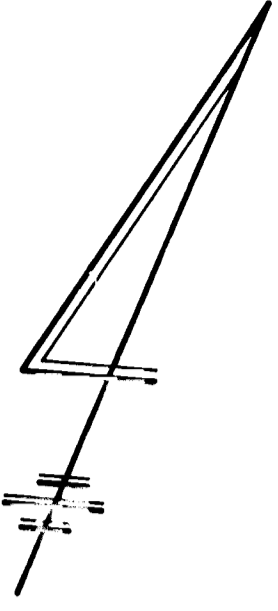
HARRIS, SMARIGA, MATZ, INC.

PLANNERS / ENGINEERS / SURVEYORS
104 CHURCH LANE, SUITE 100
BALTIMORE, MARYLAND 21208
(410)-486-1511
FAX (410)-486-2573
9/1/92



1271

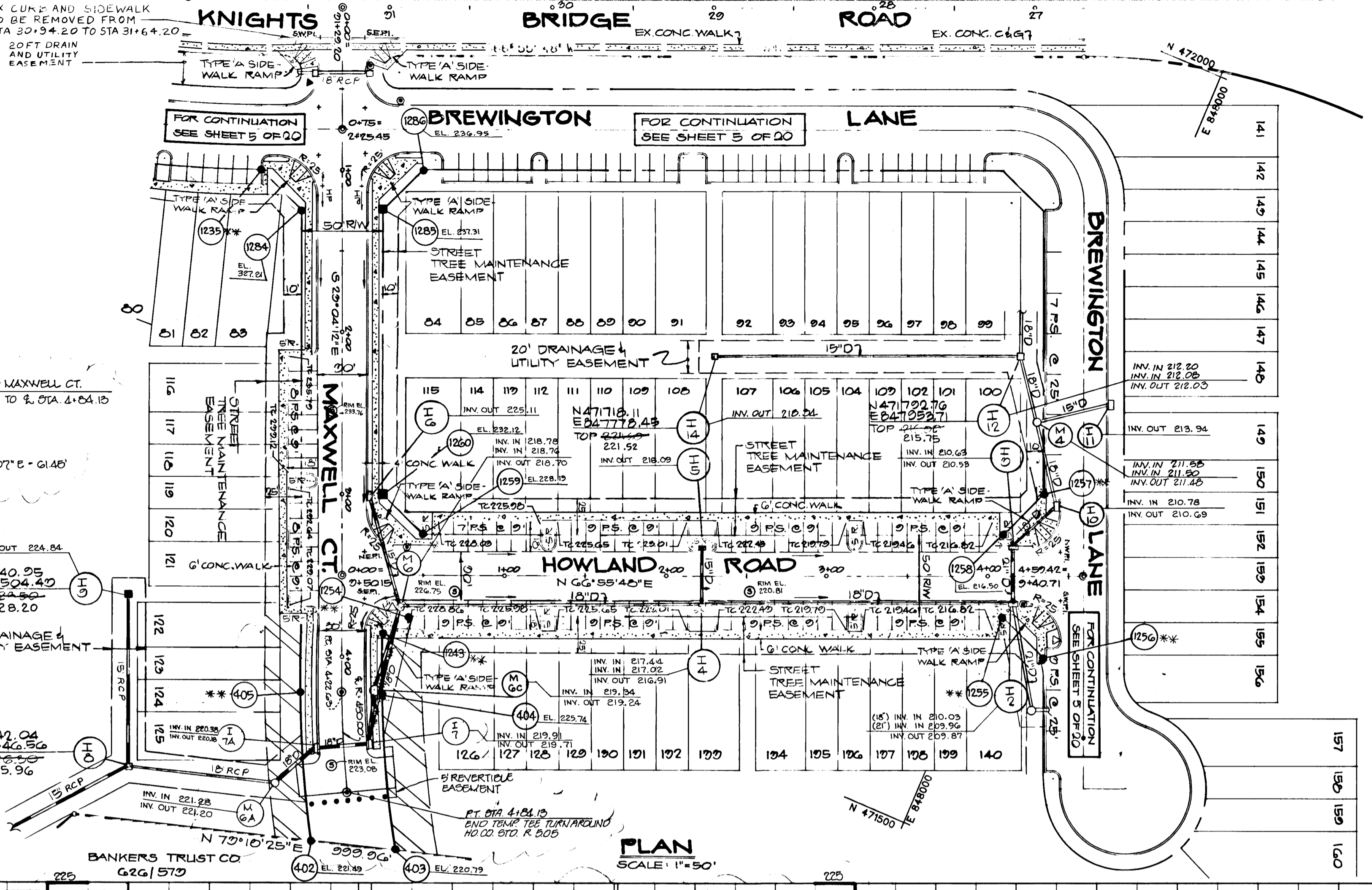
EX CURB AND SIDEWALK TO BE REMOVED FROM STA 30+94.20 TO STA 31+64.20
 20 FT DRAIN AND UTILITY EASEMENT



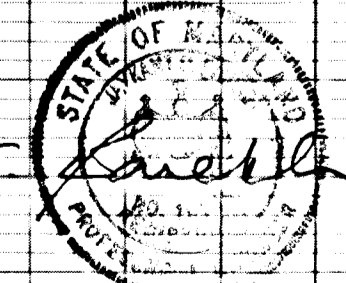
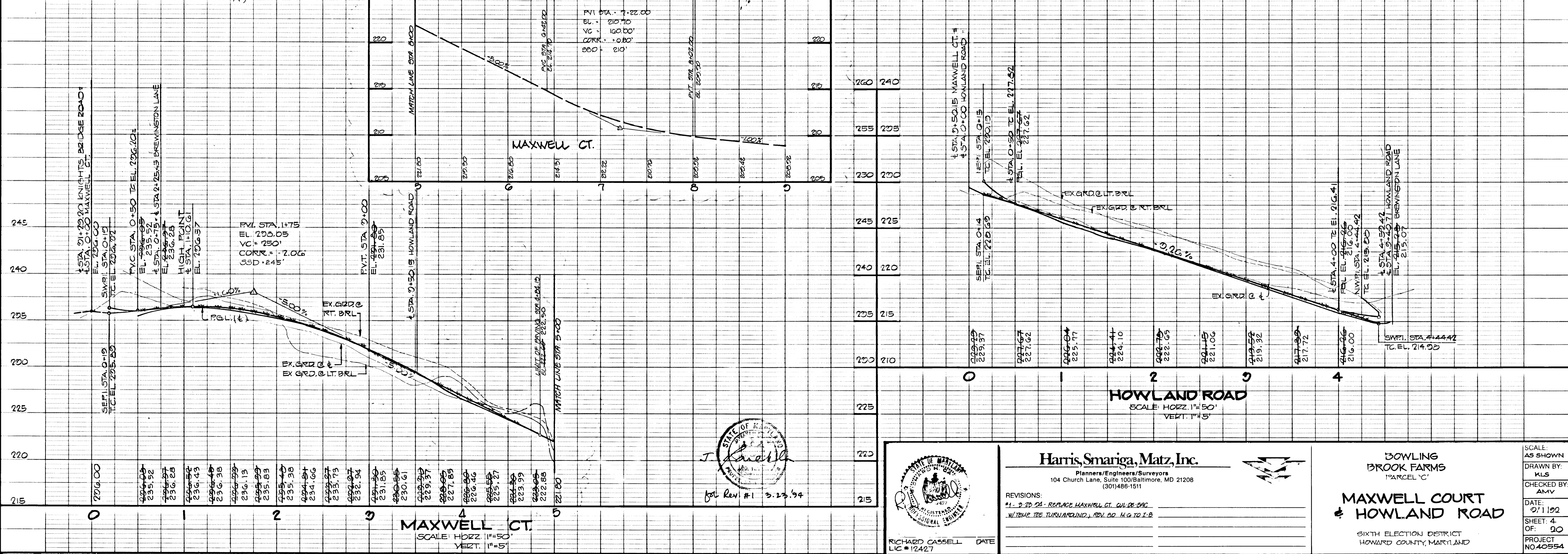
"AS-BUILT" CERTIFICATION
 STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 J. Farrell
 9.23.97
 JAYKANT D. PAREKH #19148 DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
 9-23-92
 APPROVED: DEPARTMENT OF PLANNING & ZONING
 9/24/92
 APPROVED: DEPARTMENT OF PUBLIC WORKS
 9/10/92
 9/22/92

Curve Data - Maxwell Ct.
 R: 480.00'
 L: 61.80'
 Δ: 50.80'
 Chd: 0.00' 50.00' 0.00' 61.80'



LEGEND
 □ DENOTES 4"x4" CONCRETE MONUMENT SET
 ● DENOTES 5/8" IRON PIN & CAP SET
 ▼ DENOTES STREET LIGHTS (150 WATTS)
 ▽ DENOTES STREET LIGHTS (100 WATTS)
 * DENOTES STOP SIGNS



for Rev #1 9.23.94



RICHARD CASSELL DATE LIC #12427

Harris, Smariga, Matz, Inc.
 Planners/Engineers/Surveyors
 104 Church Lane, Suite 100 Baltimore, MD 21208
 (301)486-1511

REVISIONS:
 #1 - 9.23.94 - REPAIR MAXWELL CT. CURB & SWALK
 #2 - TEMP. TR. TURNAROUND, REV. DD. H.G. TO I.B.

SCALE: AS SHOWN
 DRAWN BY: KLS
 CHECKED BY: AMV
 DATE: 9/1/92
 SHEET: 4 OF: 20
 PROJECT: NO. 40554

BOWLING BROOK FARMS
 PARCEL 'C'
MAXWELL COURT & HOWLAND ROAD
 SIXTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

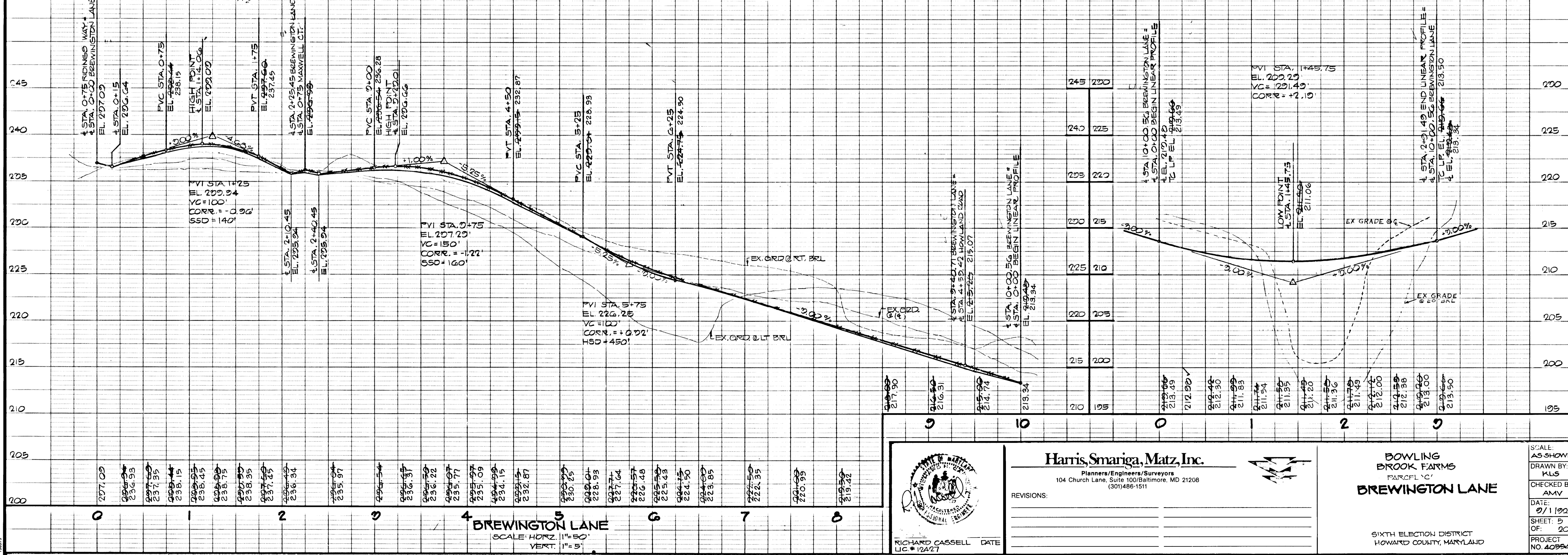
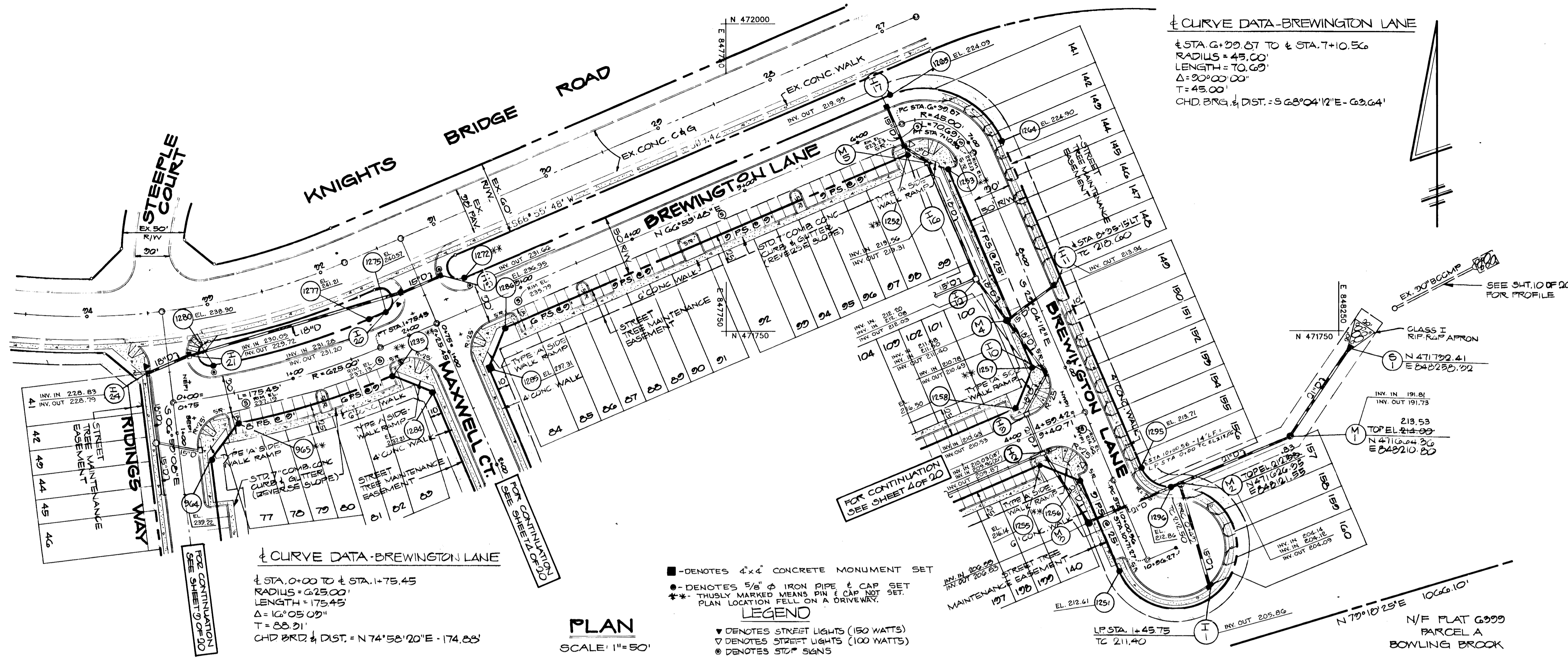
1221

"AS-BUILT" CERTIFICATION
 STATE OF MARYLAND
 PROFESSIONAL ENGINEERS
 J. Farrell
 9/23/97
 JAYKANT D. PAREKH *19148 DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
 DEPARTMENT OF ENGINEERING
 9.23.97
 DATE

APPROVED: DEPARTMENT OF PLANNING & ZONING
 DEPARTMENT OF COMMUNITY PLANNING AND LAND DEVELOPMENT
 9/24/97
 DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
 DEPARTMENT OF HIGHWAYS
 DEPARTMENT OF LAND DEVELOPMENT DIVISION
 9/18/97
 DATE



Harris, Smariga, Matz, Inc.
 Planners/Engineers/Surveyors
 104 Church Lane, Suite 100/Baltimore, MD 21208
 (301)486-1511

BOWLING BROOK FARMS
 PARCEL NO. 1
BREWINGTON LANE

SIXTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 DRAWN BY: KLS
 CHECKED BY: AMV
 DATE: 9/1/97
 SHEET: 5 OF: 20
 PROJECT NO. 40954

1271

20' DRAIN. & UTIL. ESMT

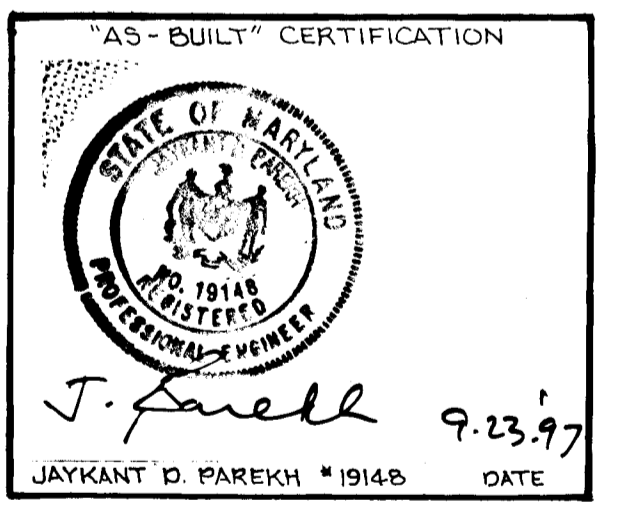
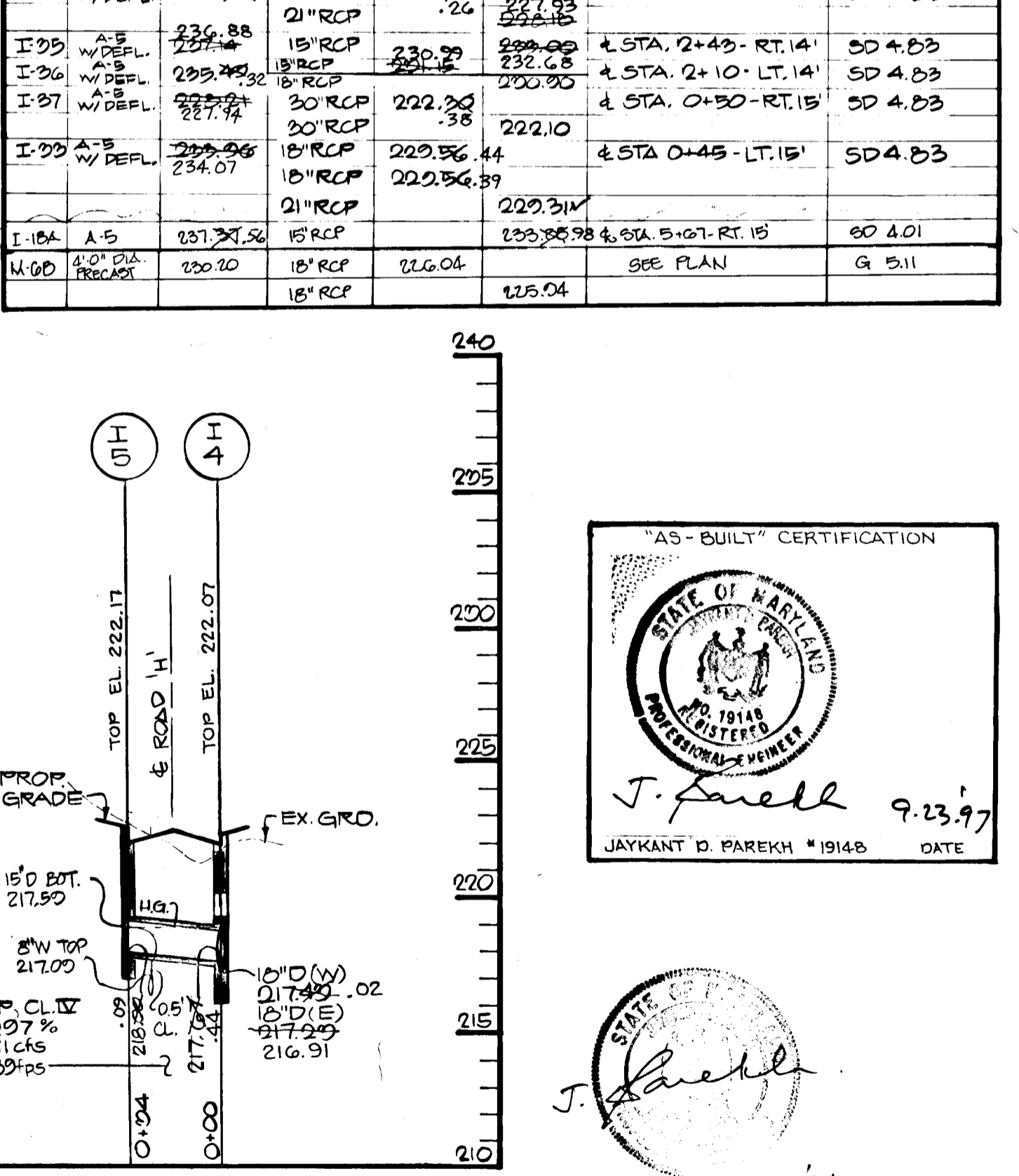
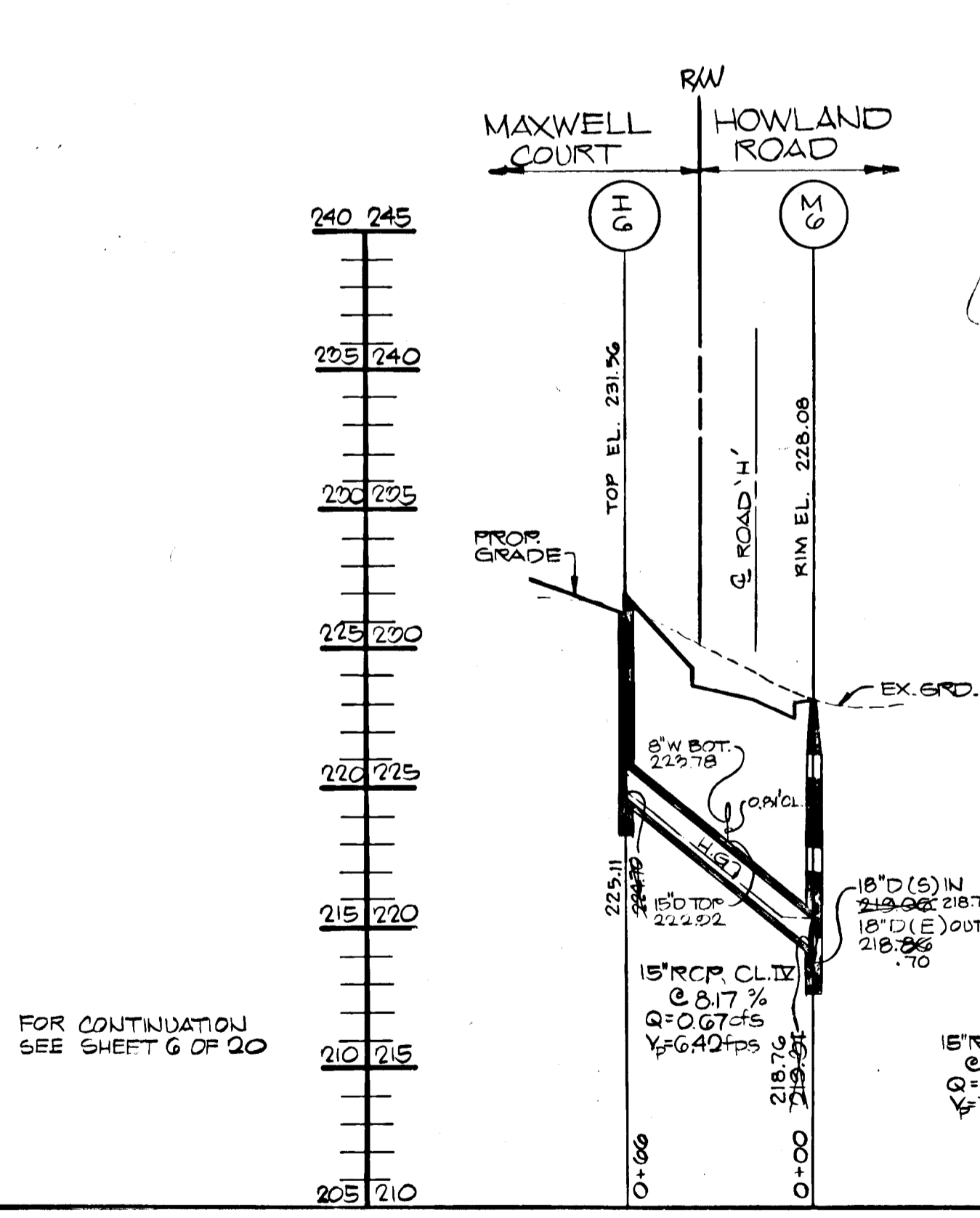
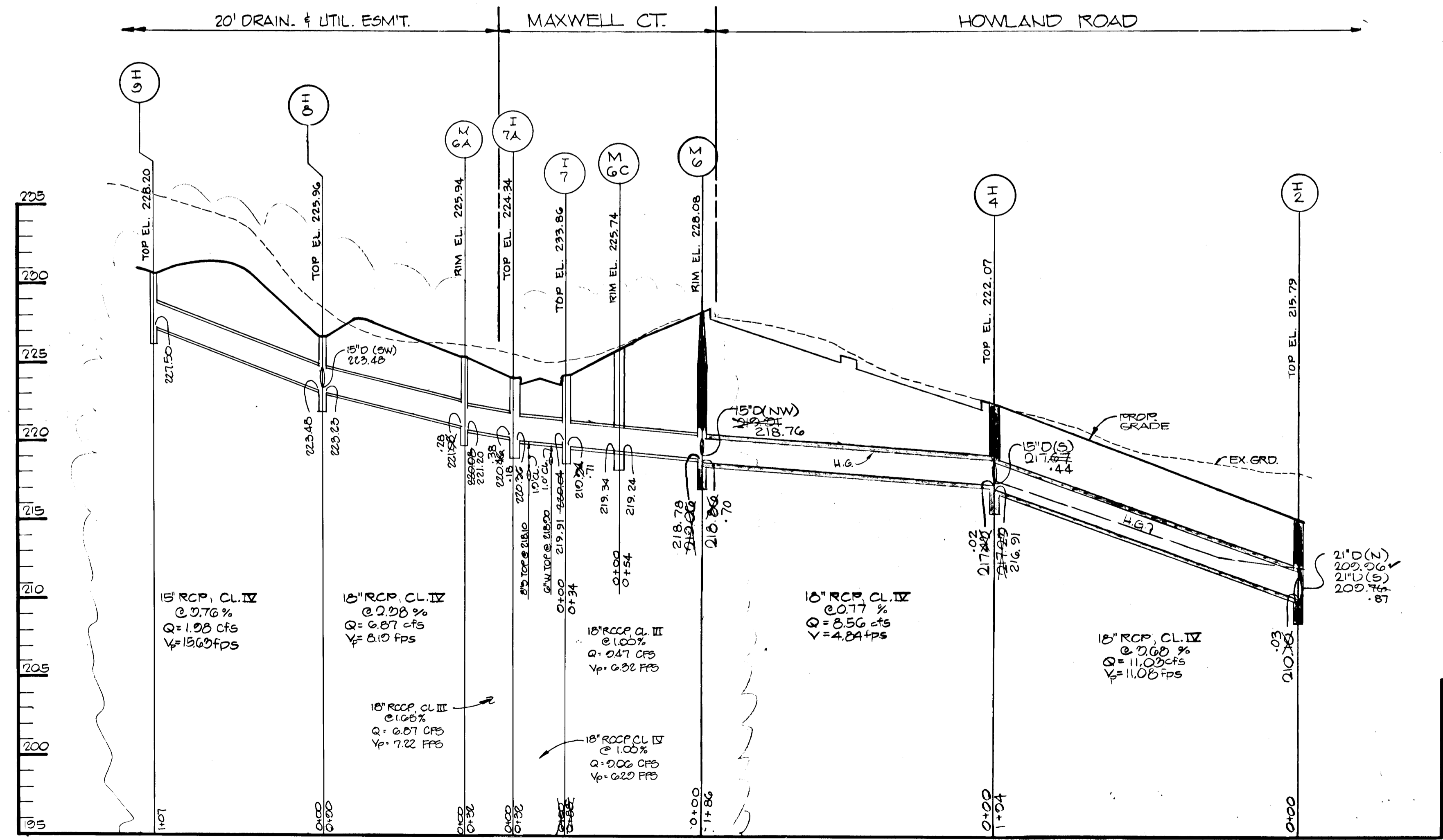
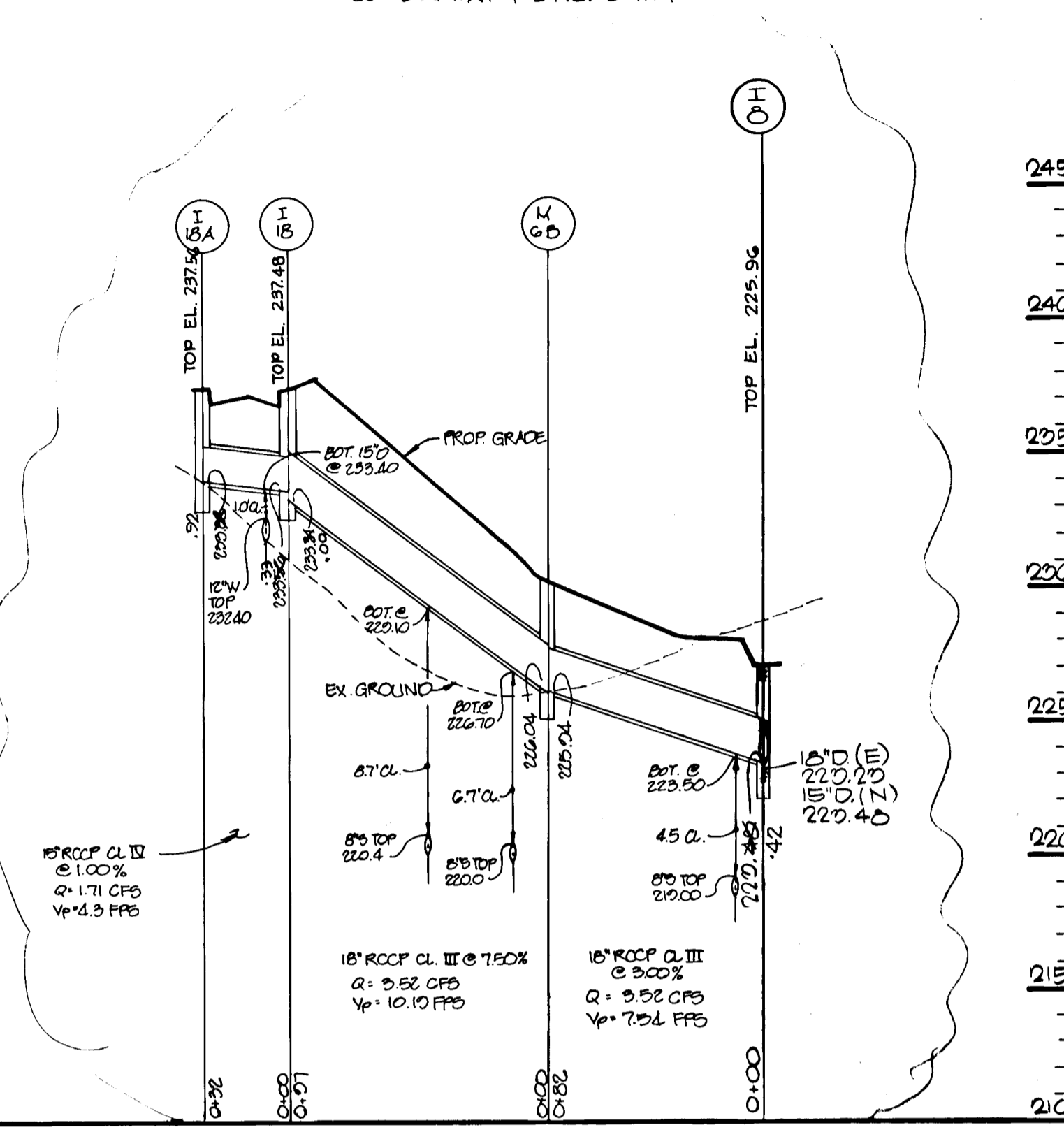
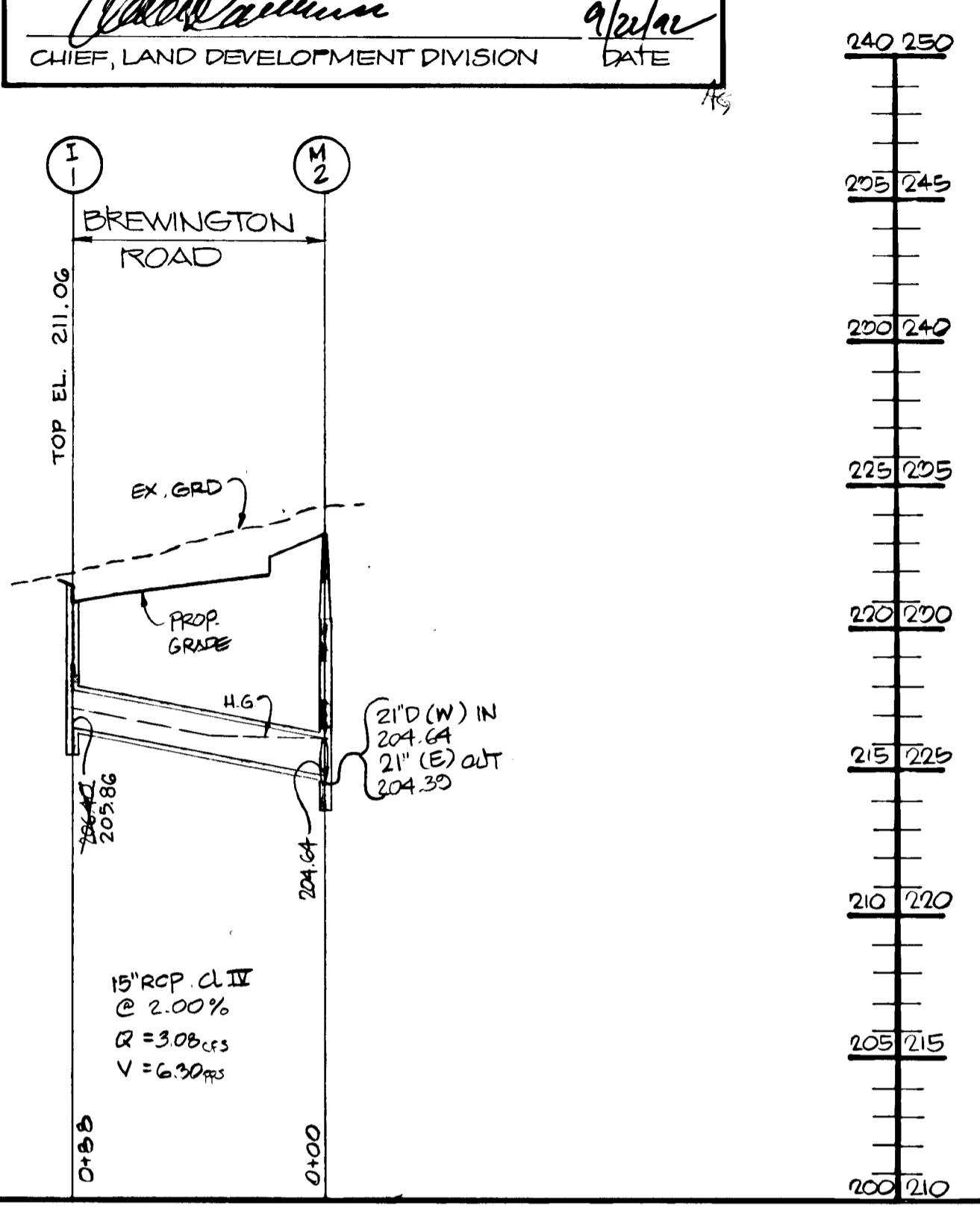
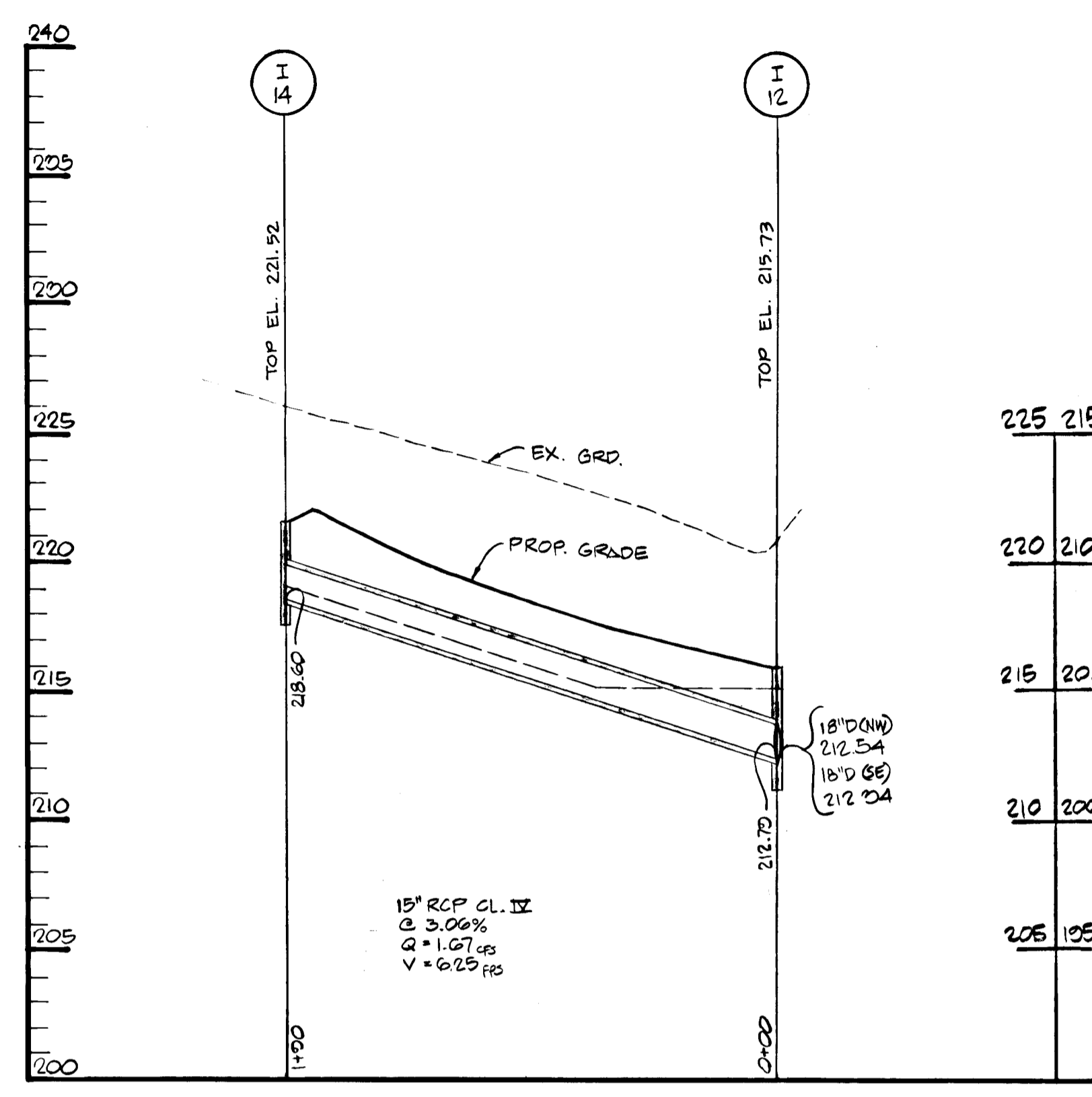
APPROVED
DEPARTMENT OF PUBLIC WORKS
John M. Ferguson
CHIEF, BUREAU OF HIGHWAYS
DATE: 9/18/97

APPROVED
DEPARTMENT OF PUBLIC WORKS
William E. Rice
CHIEF, BUREAU OF ENGINEERING
DATE: 9-23-97

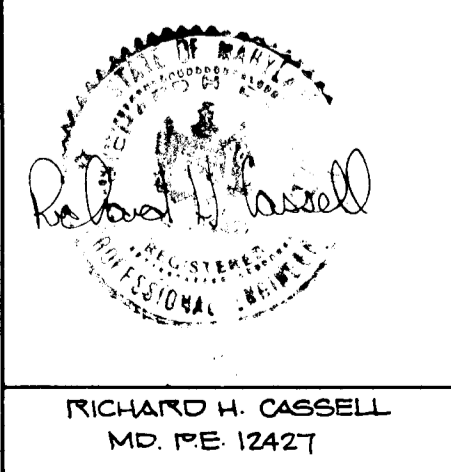
APPROVED
DEPARTMENT OF PLANNING AND ZONING
Shirley H. Blum
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
DATE: 9/24/97

STRUCTURE SCHEDULE

NO.	TYPE	TOP ELEV.	PIPE	INVERT	INV. OUT	LOCATION	REMARKS
I-1	A-5	211.88	18" RCP	209.40	209.40	LP STA. 1+40 @ CURB	SD 4.01
I-2	A-5	215.75	18" RCP	210.78	209.26	4 STA. 4+14 - RT. 15'	SD 4.23
I-3	A-5	215.20	18" RCP	210.78	209.76	4 STA. 4+14 - LT. 15'	SD 4.23
I-4	A-5	222.07	18" RCP	217.50	216.91	4 STA. 2+22 - RT. 15'	SD 4.23
I-5	A-5	220.81	18" RCP	218.00	218.00	4 STA. 2+22 - LT. 15'	SD 4.23
I-6	A-5	221.95	18" RCP	219.31	222.11	4 STA. 3+00 - LT. 15'	SD 4.01
I-7	A-5	224.85	18" RCP	219.31	217.93	4 STA. 4+50 - LT. 15'	SD 4.01
I-8	S	222.93	18" RCP	222.45	222.45	N471047.0 E 847546.6	SD 4.22
I-9	S	228.50	18" RCP	210.78	227.20	N471441.0 E 847504.4	SD 4.22
I-10	A-5	216.70	18" RCP	210.78	210.78	4 STA. 8+21 - RT. 15'	SD 4.01
I-11	A-5	216.60	18" RCP	212.75	212.75	4 STA. 8+21 - LT. 15'	SD 4.22
I-12	S	216.60	18" RCP	212.75	212.75	N471732.76 E 847053.71	SD 4.22
I-13	A-5	224.85	18" RCP	220.48	220.48	4 STA. 4+50 - RT. 15'	SD 4.01
I-14	S	221.50	18" RCP	221.50	221.50	N471718.11 E 84778.45	SD 4.22
I-15	A-5	224.85	18" RCP	221.50	221.50	SEE PLAN	G 5.11
I-16	A-5	224.85	18" RCP	219.52	219.52	4 STA. 0+30 - RT. 15'	SD 4.23
I-17	A-5	224.85	18" RCP	219.52	219.52	4 STA. 0+30 - LT. 15'	SD 4.01
I-18	A-5	227.54	18" RCP	223.50	223.50	4 STA. 0+30 - LT. 15'	SD 4.01
I-19	A-5	227.54	18" RCP	223.50	223.50	4 STA. 0+30 - LT. 15'	SD 4.01
I-20	A-5	227.54	18" RCP	223.50	223.50	4 STA. 0+30 - RT. 15'	SD 4.01
I-21	A-5	227.54	18" RCP	223.50	223.50	4 STA. 0+30 - LT. 15'	SD 4.23
I-22	A-5	227.54	18" RCP	223.50	223.50	4 STA. 1+22 - RT. 15'	SD 4.23
I-23	A-5	227.54	18" RCP	223.50	223.50	4 STA. 1+22 - LT. 15'	SD 4.23
I-24	A-5	227.54	18" RCP	223.50	223.50	4 STA. 0+30 - RT. 15'	SD 4.23
I-25	S	227.54	18" RCP	227.54	227.54	N471695.4 E 847102.7	SD 4.22
I-26	S	227.54	18" RCP	227.54	227.54	N471770.7 E 846935.0	SD 4.22
I-27	A-5	227.54	18" RCP	227.54	227.54	4 STA. 0+30 - LT. 15'	SD 4.23
I-28	A-5	227.54	18" RCP	227.54	227.54	N471278.36 E 847145.33	SD 4.22
I-29	S	227.54	18" RCP	227.54	227.54	N471313.53 E 847203.41	SD 4.22
I-30	A-5	227.54	18" RCP	227.54	227.54	4 STA. 0+45 - LT. 14'	SD 4.01
I-31	A-5	227.54	18" RCP	227.54	227.54	4 STA. 0+45 - RT. 14'	SD 4.01
I-32	A-5	227.54	18" RCP	227.54	227.54	4 STA. 1+21 - RT. 47'	SD 4.22
I-33	A-5	227.54	18" RCP	227.54	227.54	4 STA. 0+45 - LT. 15'	SD 4.23
I-34	A-5	227.54	18" RCP	227.54	227.54	4 STA. 2+45 - RT. 14'	SD 4.23
I-35	A-5	227.54	18" RCP	227.54	227.54	4 STA. 2+10 - LT. 14'	SD 4.23
I-36	A-5	227.54	18" RCP	227.54	227.54	4 STA. 0+30 - RT. 15'	SD 4.23
I-37	A-5	227.54	18" RCP	227.54	227.54	4 STA. 0+45 - LT. 15'	SD 4.23
I-38	A-5	227.54	18" RCP	227.54	227.54	4 STA. 0+45 - LT. 15'	SD 4.23
I-15A	A-5	227.54	18" RCP	227.54	227.54	4 STA. 5+21 - RT. 15'	SD 4.01
I-15B	A-5	227.54	18" RCP	227.54	227.54	SEE PLAN	G 5.11



J. Faehl
9.23.97
DATE



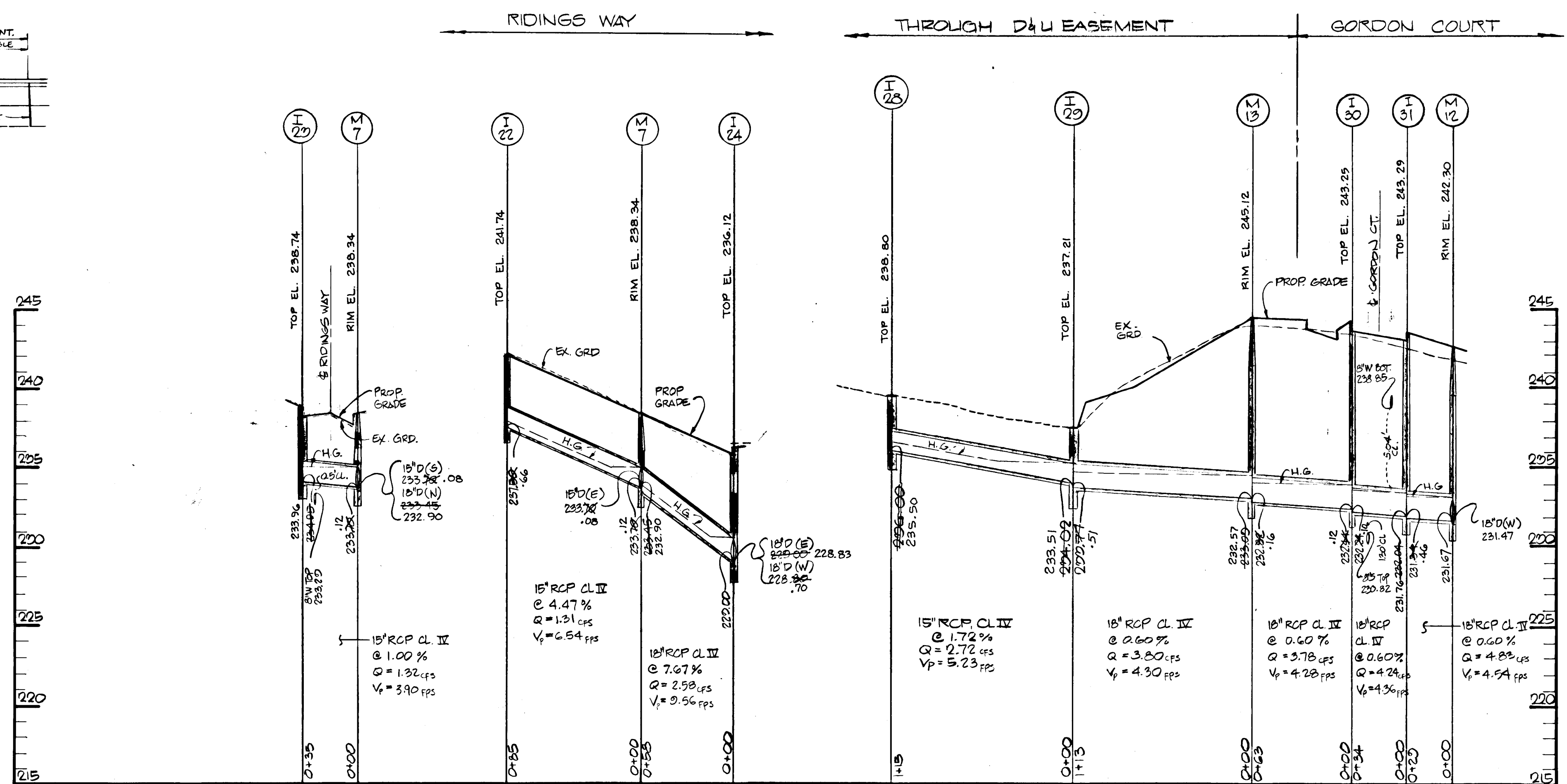
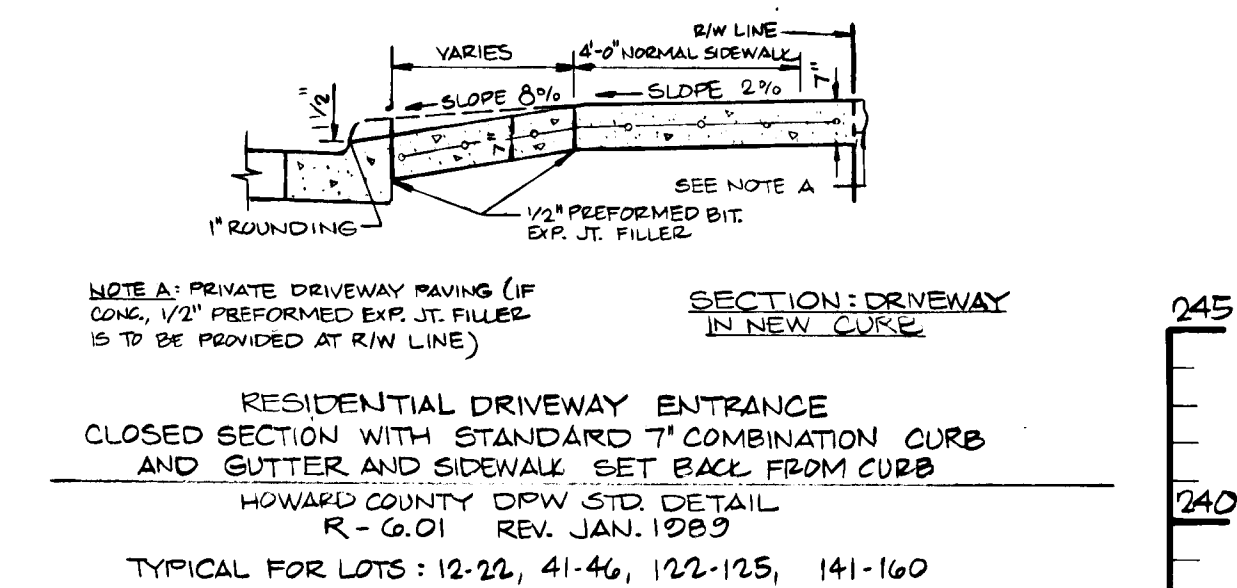
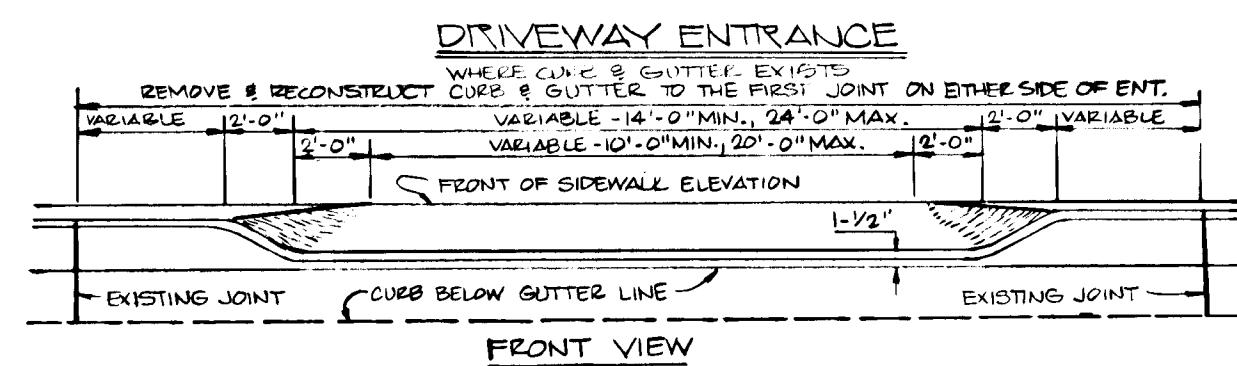
HARRIS, SMARIGA, MATZ, INC.
PLANNERS / ENGINEERS / SURVEYORS
104 CHURCH LANE, SUITE 100
BALTIMORE, MARYLAND 21208
(301)-486-1511

BOWLING BROOK FARMS PARCEL 'C'
SCALE: AS SHOWN
DRAWN BY: KLS
CHECKED BY: AMV
DATE: 9/11/97
SHEET NO.: 7 OF 20
PROJECT NO.: 40554

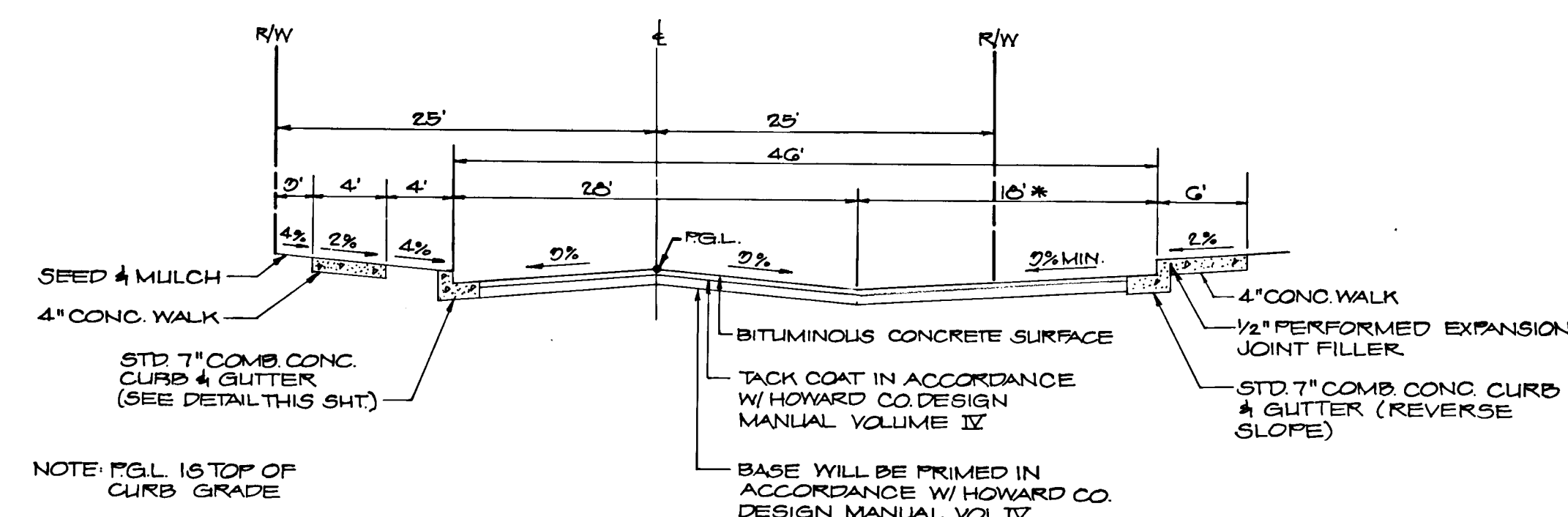
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STRUCTURE SCHEDULE

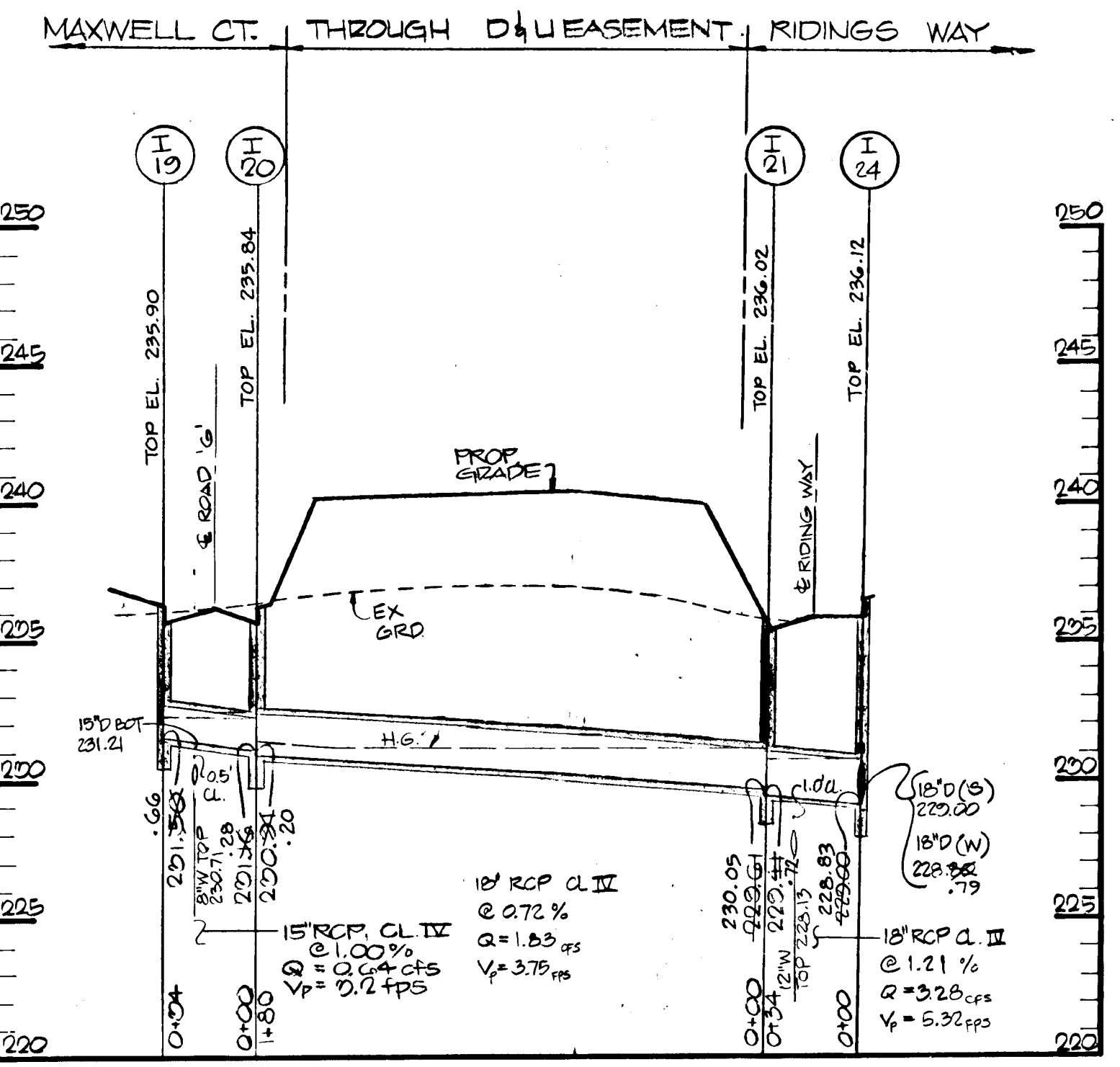
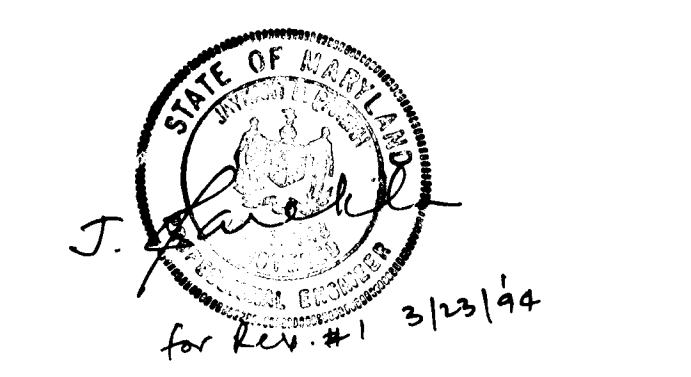
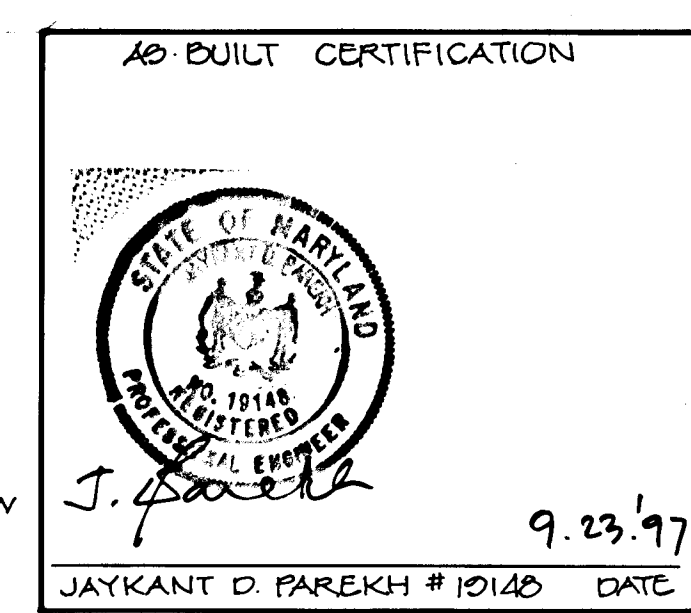
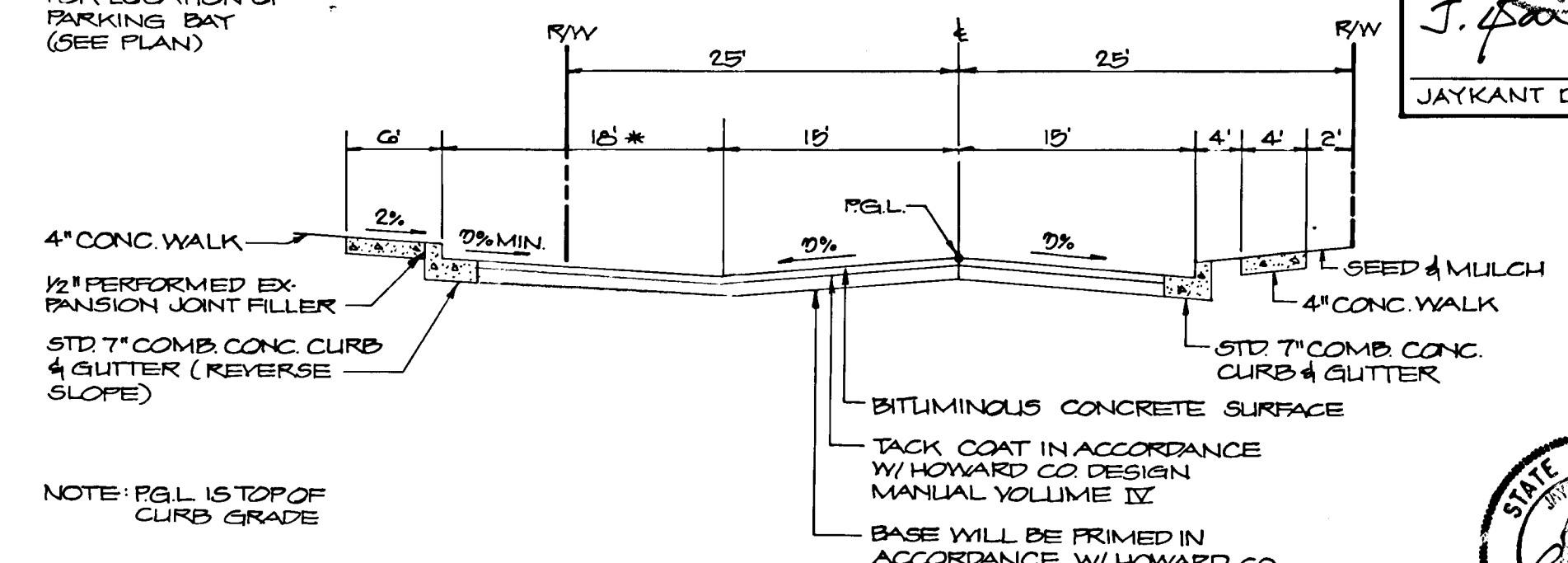
NO.	TYPE	TOP SURV.	PIPE	INV. IN	INV. OUT	LOCATION	REMARKS
M-1	STD.	213.53	21" RCP	193.80	191.81	N471732.41 E 849250.32	STD. G-5.12
M-2	"	212.30	18" RCP	204.64	204.64	N471626.35 E 848121.55	"
M-3	"	213.53	21" RCP	204.44	204.44	N471504.22 E 848046.11	"
M-4	"	218.53	18" RCP	218.53	218.53	N471504.22 E 847070.87	"
M-5	"	224.15	18" RCP	218.00	217.80	N471887.46 E 847014.50	"
M-6	"	228.36	18" RCP	218.76	218.76	N471455.07 E 847661.10	"
M-7	"	238.54	18" RCP	233.70	233.70	E STA. 1+05.1750' RT RD	STD. G-5.12
M-8	"	227.42	30" RCP	220.96	217.97	N471733.90 E 846714.40	STD. G-9.13
M-9	"	228.00	30" RCP	221.95	221.95	N471851.50 E 846842.10	STD. G-5.13
M-10	"	231.60	21" RCP	226.57	226.57	E STA. 1+26.23' LT. RD	STD. G-5.12
M-11	"	227.30	15" RCP	230.80	230.80	N471504.40 E 846968.88	"
M-12	"	242.78	18" RCP	231.67	231.47	E STA. 2+37.05, 30' RT RD	"
M-13	STD.	245.61	18" RCP	233.00	232.82	N471430.63 E 847105.60	STD. G-5.12
S-1	END SECTION		21" RCP	185.80	185.80	N471732.41 E 848250.32	STD. S.D. 5.51
S-2	END SECTION		30" RCP	117.56	117.50	N471735.90 E 846725.00	STD. S.D. 5.51
M-6C		225.74	18" RCP	219.34	219.24		



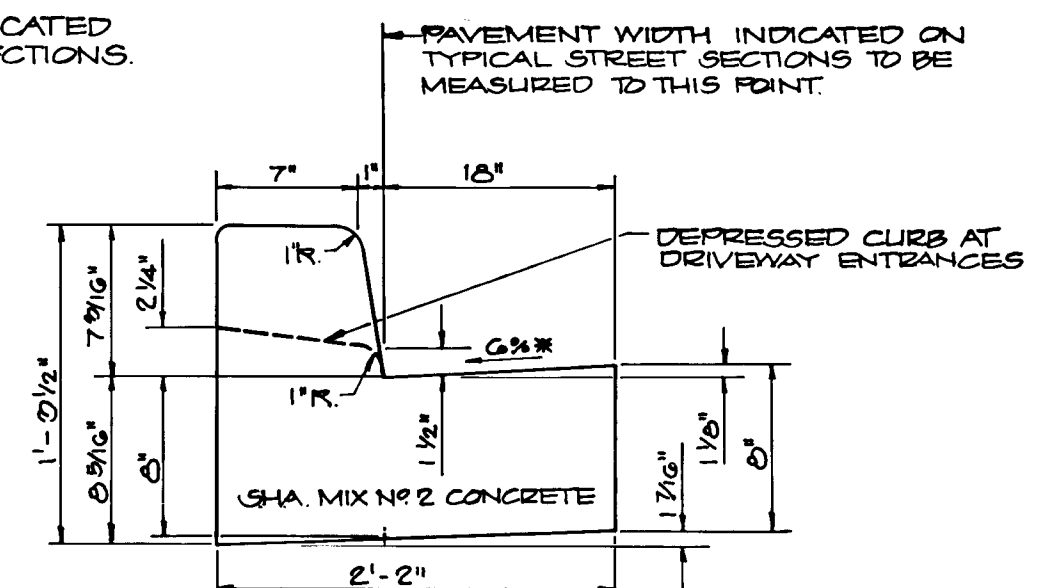
*FOR PARKING BAY LOCATION (SEE PLAN)



*FOR LOCATION OF PARKING BAY (SEE PLAN)



*SLOPE AS INDICATED BY TYPICAL SECTIONS.



ROAD NAME	R/W	CLASSIFICATION	'A'	'B'	DESIGN SPEED	ZONING	STA. LIMITS	PAY. SECTION	'C'	'D'	'E'
DAILY COURT	50'	LOCAL ROAD			30 MPH	23A-B	0+00 TO 1+64.45	P-2			
DAILY COURT	50'	CUL-DE-SAC ST			30 MPH	"	1+64.45 TO 3+05.00	P-2			
RIDINGS WAY	50'	LOCAL ROAD			30 MPH	"	0+00 TO 2+135.00	P-2			
RIDINGS WAY	50'	CUL-DE-SAC ST			30 MPH	"	2+135.00 TO 5+05.00	P-2			
LAWSON LANE	50'	LOCAL ROAD			30 MPH	"	0+00 TO 4+130.00	P-2			
GORDON COURT	50'	CUL-DE-SAC ST			30 MPH	"	0+00 TO 2+100.00	P-2			
BREWINGTON LANE	50'	LOCAL ROAD			30 MPH	"	0+00 TO 2+125.00	P-2			
BREWINGTON LANE	50'	CUL-DE-SAC ST			30 MPH	"	2+125.00 TO 10+17.27	P-2			
MAXWELL COURT	50'	LOCAL ROAD			30 MPH	"	0+00 TO 3+501.00	P-2			
MAXWELL COURT	50'	CUL-DE-SAC ST			30 MPH	"	3+501.00 TO 4+81.00	P-2			
HOWLAND ROAD	50'	LOCAL ROAD			30 MPH	"	0+00 TO 4+150.00	P-2			

TYPICAL SECTIONS P-2
 N.T.S.

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

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Land Development Division
 Date: 9/14/92

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Engineering
 Date: 9-23-92

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Community Planning and Land Development
 Date: 9/24/92

Richard H. Caspell
 M.D. P.E. 12427

Harris, Smariga, Matz, Inc.
 Planners/Engineers/Surveyors
 104 Church Lane, Suite 100/Baltimore, MD 21208
 (301)486-1511

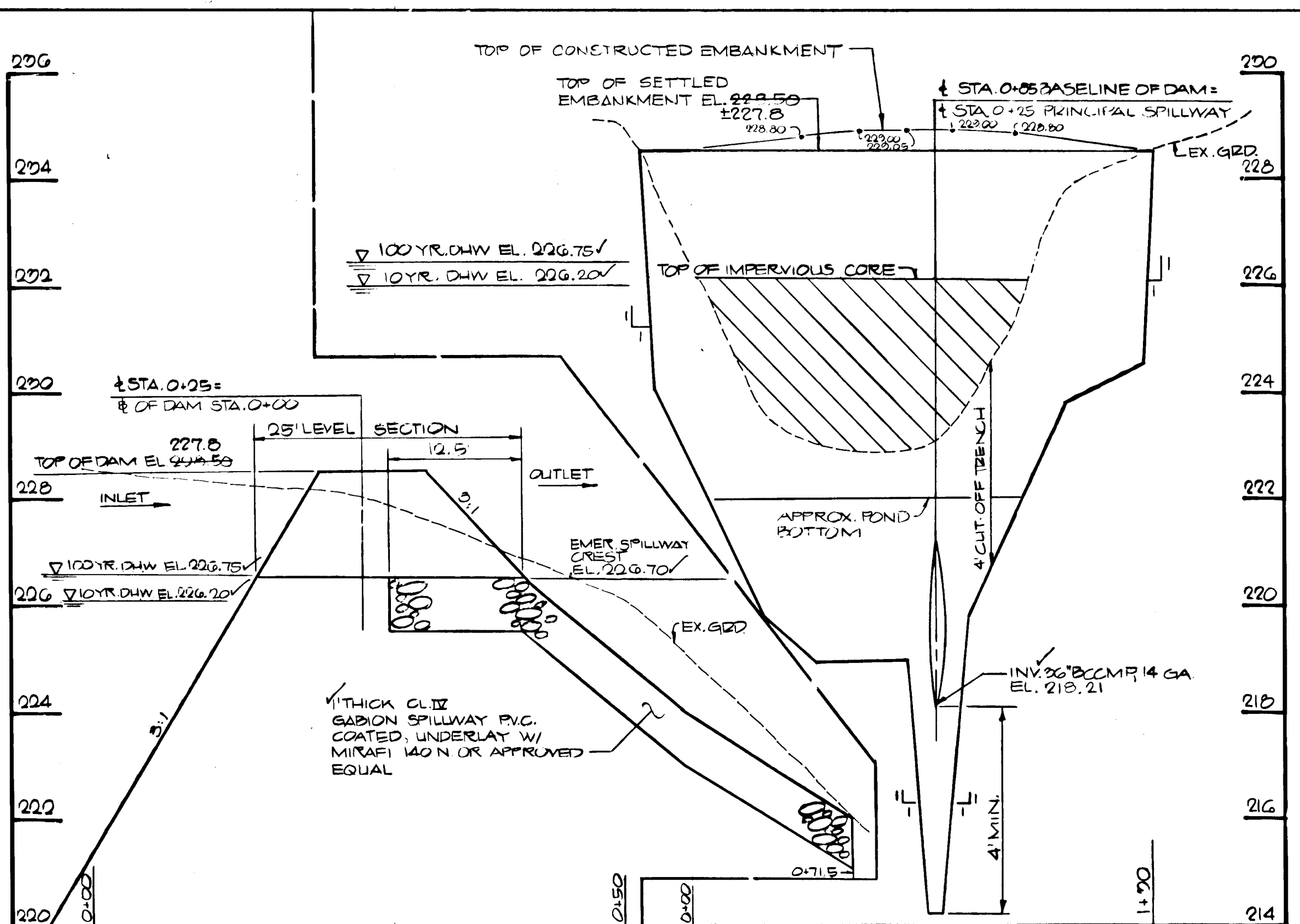
REVISIONS:
 #1 - 9-22-92 - REV. STA. LIMITS, RIDINGS CT. & MAXWELL CT.

BOWLING BROOK FARMS
 PARCEL 'C'
STORM DRAIN PROFILES

SIXTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

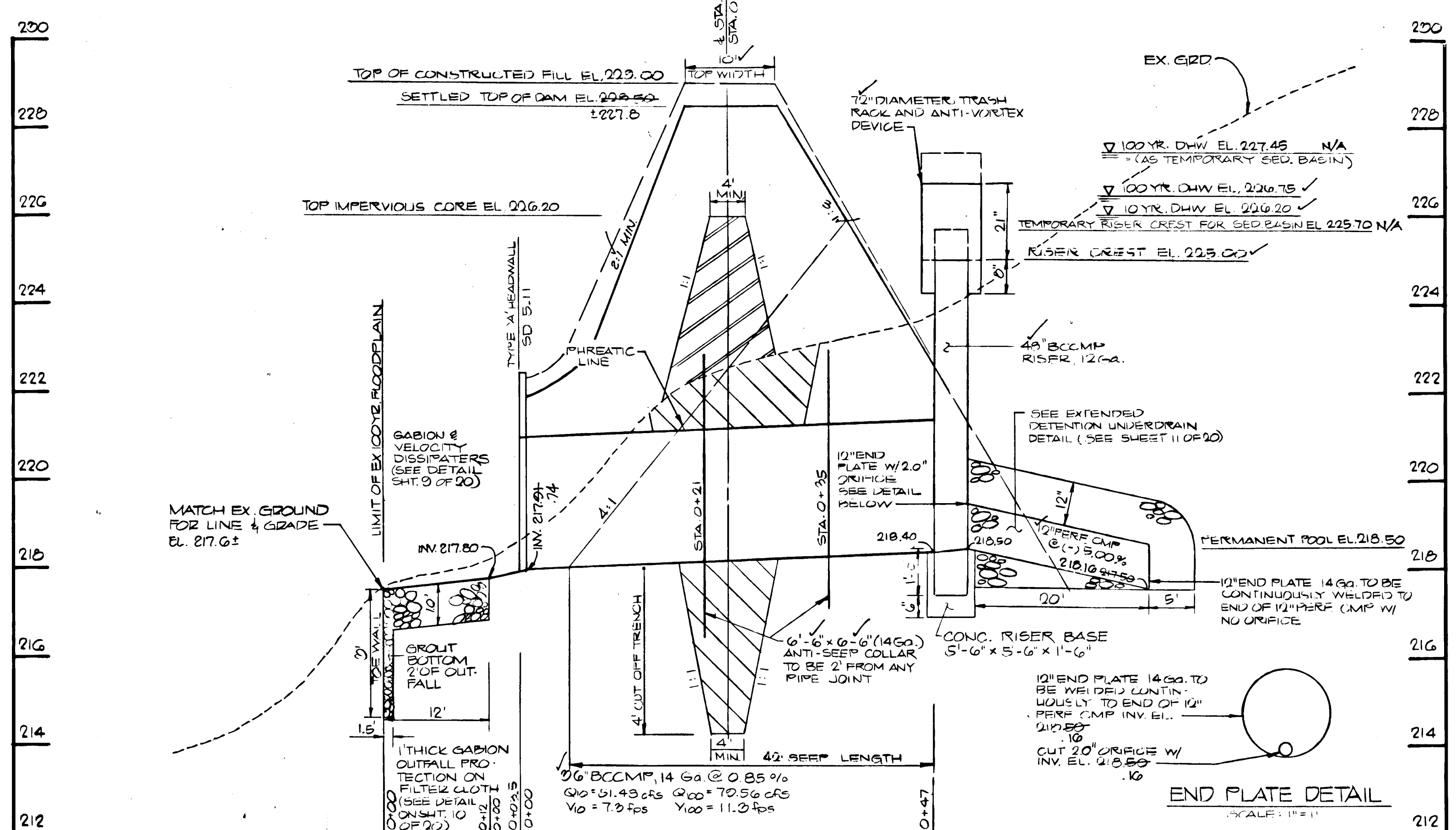
SCALE: AS SHOWN
 DRAWN BY: KLS
 CHECKED BY: DM
 DATE: 9/11/92
 SHEET: 8 OF: 20
 PROJECT NO. 40554

1271



EMERGENCY SPILLWAY PROFILE
SCALE: HORIZ. 1"=10'
VERT. 1"=2'

PROFILE ALONG & OF DAM BASIN NO. 1
SCALE: HORIZ. 1"=20'
VERT. 1"=2'



PRINCIPAL SPILLWAY PROFILE - BASIN NO. 1
SCALE: VERT. 1"=2'
HORIZ. 1"=10'

STORMWATER MANAGEMENT POND CERTIFICATION AND APPROVAL

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 ENVIRONMENT (ODE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN 'AS-BUILT' PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

KG
SIGNATURE OF DEVELOPER
DATE: 9/2/92

ENGINEER'S CERTIFICATE

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

David M. Krew
SIGNATURE OF ENGINEER
DATE: 9-2-92

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

James M. Webb, Inc.
U.S. SOIL CONSERVATION SERVICE
DATE: 9/4/92

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

John W. Smith
HOWARD SOIL CONSERVATION DISTRICT
DATE: 9/4/92

POND CONSTRUCTION CERTIFICATION

I CERTIFY THAT UPON COMPLETION OF CONSTRUCTION, I WILL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE (O&M) OF THE SMALL POND. O&M WILL BE PERFORMED BY ME IN ACCORDANCE WITH THE SPECIFICATIONS ON THIS PLAN. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS OF THE POND BY SITE AND LOCAL AGENCIES.

KG
SIGNATURE OF DEVELOPER
DATE: 9/2/92

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Bluma Skromak
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
DATE: 9/24/92

APPROVED: DEPARTMENT OF PUBLIC WORKS
Gregory E. Riley
CHIEF, BUREAU OF ENGINEERING
DATE: 9-23-92

APPROVED: DEPARTMENT OF PUBLIC WORKS
John Pappas
CHIEF, BUREAU OF HIGHWAYS
DATE: 9/4/92

APPROVED: DEPARTMENT OF PUBLIC WORKS
John Pappas
CHIEF, BUREAU OF WATER DIVISION
DATE: 9/24/92

RECORD OF SOIL EXPLORATION

Projects Name: Bowling Brook Farms Location: Savage, MD Boring # B-1 Job # 92021

Date: 2-17-92 Hammer Wt. 30 Lbs. Hole Diameter 8" Foreman Webb
Surf. Elev. 232.70 Ft. Hammer Drop 30 In. Rock Core Dia. 2 In. Inspector
Date Started 2-17-92 Pipe Size 2 In. Boring Method HSA Date Completed 2-17-92

ELEV.	SOIL DESCRIPTION	STRA. DEPTH	DEPTH SCALE	SAMPLE NO.	NO. REC.	BORING & SAMPLING NOTES
0.0	SURFACE					
1.0	Brown to reddish brown moist soft to very stiff silt with traces of sand and clay	1-2-2	1	18"		Notes in S-1 (Assessible 1.5' fill?)
5.0	(ML - Silt Loam)	11-6-5	2	16"		7" Topsoil
12.0	Bottom of boring at 12.0'	8-11-15	3	16"		

SAMPLER TYPE	SAMPLE CONDITIONS	GROUND WATER DEPTH	BORING METHOD
UNLESS OTHERWISE NOTED: D. DISPERSED U. UNDISTURBED CA. CONTINUOUS FLIGHT AUGER RC. ROCK CORE	AT COMPLETION AFTER _____ HRS D. _____ HRS U. _____ HRS CA. _____ HRS RC. _____ HRS	AT COMPLETION _____ FT AFTER _____ HRS D. _____ HRS U. _____ HRS CA. _____ HRS RC. _____ HRS	HSA. HOLLOW STEM AUGERS CFA. CONTINUOUS FLIGHT AUGERS BC. DRIVING CHAINS MS. MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 8" INTERVALS

RECORD OF SOIL EXPLORATION

Projects Name: Bowling Brook Farms Location: Savage, MD Boring # B-3 Job # 92021

Date: 2-17-92 Hammer Wt. 30 Lbs. Hole Diameter 8" Foreman Webb
Surf. Elev. 235.23 Ft. Hammer Drop 30 In. Rock Core Dia. 2 In. Inspector
Date Started 2-17-92 Pipe Size 2 In. Boring Method HSA Date Completed 2-17-92

ELEV.	SOIL DESCRIPTION	STRA. DEPTH	DEPTH SCALE	SAMPLE NO.	NO. REC.	BORING & SAMPLING NOTES
0.0	SURFACE					
4.0	Brown, moist medium stiff clayey silt (ML - Silt Loam)	2-2-3	1	16"		8" Topsoil
5.0	Brown, moist soft to med. stiff clayey silt with trace fine sand (ML - Silt Loam)	3-3-5	2	16"		
8.0	Yellowish brown, reddish brown moist very stiff to stiff fine sandy silt to silty sand (ML - Silty Loam)	7-8-9	3	16"		
14.0	Bottom of boring at 14.0'	6-6-8	4	18"		

SAMPLER TYPE	SAMPLE CONDITIONS	GROUND WATER DEPTH	BORING METHOD
UNLESS OTHERWISE NOTED: D. DISPERSED U. UNDISTURBED CA. CONTINUOUS FLIGHT AUGER RC. ROCK CORE	AT COMPLETION AFTER _____ HRS D. _____ HRS U. _____ HRS CA. _____ HRS RC. _____ HRS	AT COMPLETION _____ FT AFTER _____ HRS D. _____ HRS U. _____ HRS CA. _____ HRS RC. _____ HRS	HSA. HOLLOW STEM AUGERS CFA. CONTINUOUS FLIGHT AUGERS BC. DRIVING CHAINS MS. MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 8" INTERVALS

RECORD OF SOIL EXPLORATION

Projects Name: Bowling Brook Farms Location: Savage, MD Boring # B-2 Job # 92021

Date: 2-17-92 Hammer Wt. 30 Lbs. Hole Diameter 8" Foreman Webb
Surf. Elev. 238.62 Ft. Hammer Drop 30 In. Rock Core Dia. 2 In. Inspector
Date Started 2-17-92 Pipe Size 2 In. Boring Method HSA Date Completed 2-17-92

ELEV.	SOIL DESCRIPTION	STRA. DEPTH	DEPTH SCALE	SAMPLE NO.	NO. REC.	BORING & SAMPLING NOTES
0.0	SURFACE					
3.4-5	Brown, moist medium stiff to hard sandy silt with trace of clay	3-4-5	1	17"		Notes in S-1
5.0	(ML - Silt Loam)	51/4"	2	4"		8" Topsoil
10.0	Brown, moist medium stiff to hard sandy silt with trace of clay	11-25-19	3	16"		5.0' to 7.5'
13.0	Brown, reddish brown moist hard fine sandy silt (ML - Silt Loam)	11-25-15	4	16"		
17.0	Brown, wet dense silty sand (SH - Sand)	8-20-26	5	16"		Reconstructed water at 21.0'
21.5	Bottom of boring at 21.5'					

SAMPLER TYPE	SAMPLE CONDITIONS	GROUND WATER DEPTH	BORING METHOD
UNLESS OTHERWISE NOTED: D. DISPERSED U. UNDISTURBED CA. CONTINUOUS FLIGHT AUGER RC. ROCK CORE	AT COMPLETION AFTER _____ HRS D. _____ HRS U. _____ HRS CA. _____ HRS RC. _____ HRS	AT COMPLETION _____ FT AFTER _____ HRS D. _____ HRS U. _____ HRS CA. _____ HRS RC. _____ HRS	HSA. HOLLOW STEM AUGERS CFA. CONTINUOUS FLIGHT AUGERS BC. DRIVING CHAINS MS. MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 8" INTERVALS

RECORD OF SOIL EXPLORATION

Projects Name: Bowling Brook Farms Location: Savage, MD Boring # B-4 Job # 92021

Date: 2-17-92 Hammer Wt. 30 Lbs. Hole Diameter 8" Foreman Webb
Surf. Elev. 230.85 Ft. Hammer Drop 30 In. Rock Core Dia. 2 In. Inspector
Date Started 2-17-92 Pipe Size 2 In. Boring Method HSA Date Completed 2-17-92

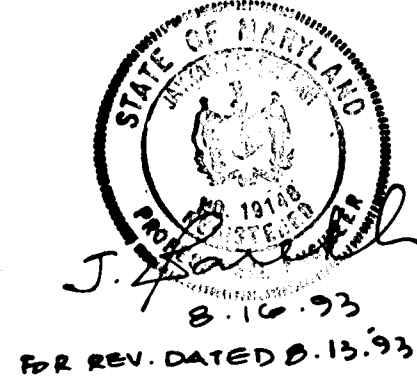
ELEV.	SOIL DESCRIPTION	STRA. DEPTH	DEPTH SCALE	SAMPLE NO.	NO. REC.	BORING & SAMPLING NOTES
0.0	SURFACE					
4.0	Brown, moist medium stiff clayey silt (ML - Silt Loam)	2-3-3	1	16"		Notes in S-1
5.0	Brown, moist very stiff to stiff fine sandy silt (ML - Silt Loam)	9-10-14	2	16"		8" Topsoil
10.0	Bottom of boring at 14.5'	6-5-8	3	8"		Trace of clay in S-3

SAMPLER TYPE	SAMPLE CONDITIONS	GROUND WATER DEPTH	BORING METHOD
UNLESS OTHERWISE NOTED: D. DISPERSED U. UNDISTURBED CA. CONTINUOUS FLIGHT AUGER RC. ROCK CORE	AT COMPLETION AFTER _____ HRS D. _____ HRS U. _____ HRS CA. _____ HRS RC. _____ HRS	AT COMPLETION _____ FT AFTER _____ HRS D. _____ HRS U. _____ HRS CA. _____ HRS RC. _____ HRS	HSA. HOLLOW STEM AUGERS CFA. CONTINUOUS FLIGHT AUGERS BC. DRIVING CHAINS MS. MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" OD SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 8" INTERVALS

NOTES TO CONTRACTOR

- A GEOTECHNICAL ENGINEER MUST BE CONTACTED PRIOR TO EMBANKMENT CONSTRUCTION FOR CERTIFICATION OF ALL SOIL MATERIAL AND COMPACTION OF THE EMBANKMENT.
- ALL PIPE RISER CONNECTIONS TO BE WATER TIGHT.



HARRIS, SMARIGA, MATZ, INC.
PLANNERS / ENGINEERS / SURVEYORS
104 DUNN LANE, SUITE 100
BALTIMORE, MARYLAND 21208
(301) 486-1511

BOWLING BROOK FARMS
PARCEL C
S.W.M. POND #1
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

DESIGNED	DM	SCALE	1"=50'
DRAWN	CADD/KLS	DRAWING	90900
CHECKED	DM	JOB NO.	40554
DATE	9/11/92	FILE NO.	
SUBDIVISION NAME		SECT./AREA	LOT/PARCEL
BOWLING BROOKS FARMS		47	C
PLAT • OR L/F/BLOCK •		TAX/ZONE MAP	ELEC. DIST. CENSUS TR
		47	6TH 6063
WATER CODE		SEWER CODE	

AS-BUILT CERTIFICATION

JAYKANT D. PAREKH #10140 DATE: 9-23-97

DATE	REVISION
8-15-93	REV. DOWNSTREAM SLOPE OF POND 1. EMBANKMENT FROM 5:1 TO 2:1 USING EMBANKMENT APPROX. 10' NORTH

11271

**STORMWATER MANAGEMENT POND
CONSTRUCTION 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.

I. SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORMWATER MANAGEMENT PONDS, A MINIMUM OF A 50 FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DAM AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

II. EARTH FILLS

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 MATERIALS. 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 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, RUBBER Tired OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT FORMED INTO A BALL IT WILL NOT CRUMBLE YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT.

WHERE A MINIMUM REQUIRED DENSITY IS SPECIFIED, IT SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN ± 2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99.

CUT OFF TRENCH - THE CUTOFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE COVERED 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 BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

III. STRUCTURE BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME 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.

IV. PIPE CONDUITS

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

A. CORRUGATED METAL PIPE - ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:

1. MATERIALS - (STEEL PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL BE GALVANIZED AND FULLY BITUMINOUS COATED AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A WITH WATERTIGHT COUPLING BANDS. ANY BITUMINOUS COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THE FOLLOWING COATINGS OR AN APPROVED EQUAL MAY BE USED: NEXON, PLASTI-COTE, BLAC-KLAD, AND BETH-CU-LOY. COATED CORRUGATED STEEL PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M-245 AND M-246.

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

MATERIALS - (ALUMINUM PIPE) - THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-198 OR M-211 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC. - MUST BE COMPOSED OF THE SAME MATERIAL AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS.

3. CONNECTIONS - ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATERTIGHT. THE DRAIN PIPE OR BARREL CONNECTION TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATERTIGHT. DRINK BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.

ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED AN ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BAND WIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 48" IN DIAMETER: FLANGES ON BOTH ENDS OF THE PIPE, A 12" WIDE STANDARD LAP TYPE BAND WITH 12" WIDE BY 3/8" THICK CLOSED CELL CIRCULAR NEOPRENE GASKET; AND A 12" WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF 1/2" GREATER THAN THE CORRUGATION DEPTH. PIPES 48" IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24" LONG ANNUAL CORRUGATED BAND USING RODS AND LUGS. A 12" WIDE BY 3/8" THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED ON THE END OF EACH PIPE FOR A TOTAL OF 24". HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEAMS.

4. BEDDING - THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH, WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL".

6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

V. 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. REINFORCING STEEL SHALL BE ASTM A615, GRADE 60. STEEL ANGLES AND ANCHOR BARS MUST BE ASTM A36.

VI. ROCK RIPRAP
ALL ROCK SHALL BE DENSE, SOUND, AND FREE FROM CRACKS, SEAMS, AND OTHER DEFECTS CONDUCTIVE 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:

1. BULK SPECIFIC GRAVITY (SATURATED SURFACE DRY BASIS) NOT LESS THAN 2.5.
2. ABSORPTION NOT MORE THAN THREE PERCENT.
3. SOUNDNESS: WEIGHT LOSS IN FIVE CYCLES NOT MORE THAN 20 PERCENT WHEN SODIUM SULFATE IS USED.

1. INSPECTION OF THE PIPE TRENCH AND BEDDING.
2. INSPECTION OF THE PIPE RISER AND ANTI-SEEP COLLARS.
3. SUPERVISION OF EMBANKMENT CONSTRUCTION AND COMPACTION TESTING.
4. INSTALLATION OF ACCESS ROAD.
5. OTHER STRUCTURES AND DRAINAGE FEATURES.

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.

VII. 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 ALSO 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. DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF THE WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN THE 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 SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER TO PUMPS FROM WHICH THE WATER SHALL BE PUMPED.

VIII. STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SLIGHTLY UNSTABLE CONDITION. ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL 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.

IX. 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.

X. FENCE AND GATE (42 INCH HEIGHT) (IF REQUIRED)

CONSTRUCT FENCING IN ACCORDANCE WITH THE STATE HIGHWAY ADMINISTRATION STANDARD DETAILS 690.01 AND 690.02. USE SPECIFICATIONS FOR A 6-FOOT FENCE, SUBSTITUTING 42-INCH FABRIC AND 6 FOOT 8 INCH LINE POSTS. CONSTRUCT THE GATE IN ACCORDANCE WITH STATE HIGHWAY ADMINISTRATION STANDARD DETAIL 692.01 WITH 42-INCH FABRIC. THE FABRIC USED FOR THE FENCE AND GATE MUST CONFORM TO AASHTO DESIGNATION M 181.74.

A MINIMUM ACCESS GATE OF 18 FEET SHALL BE PROVIDED WHEN ACCESS IS PERPENDICULAR TO THE GATE. A 24-FOOT GATE SHALL BE PROVIDED WHEN ACCESS IS SKEWED.

XI. FILTER CLOTH

FILTER CLOTH SHALL BE MIRAF140S, REEMAY TYPAR #3341 OR APPROVED EQUAL.

XII. GABIONS

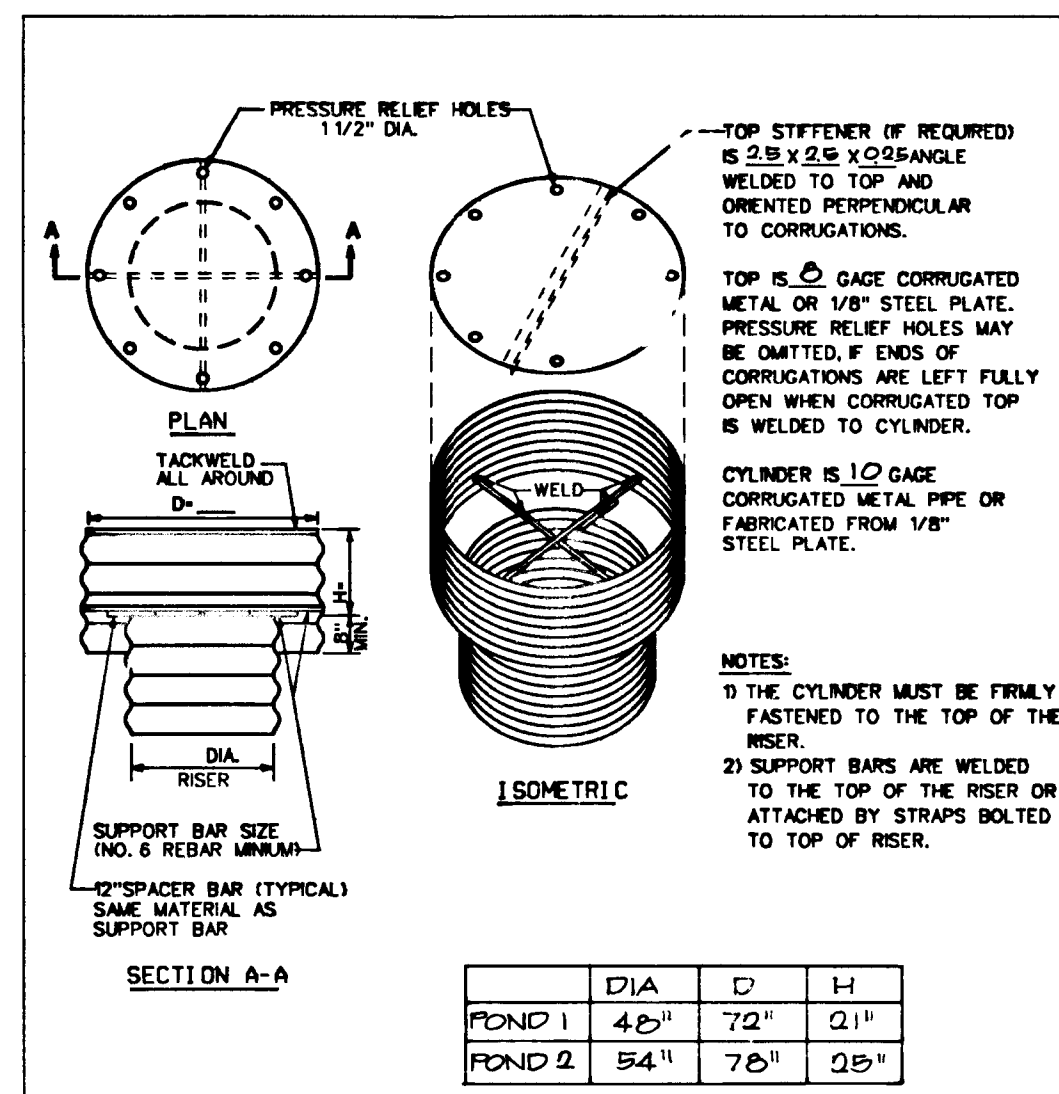
ALL GABIONS SHALL BE CLASS IV (PVC COATED).

CONTRACTOR'S NOTES

CONSTRUCTION SHOWN HEREON MUST BE CERTIFIED TO THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.

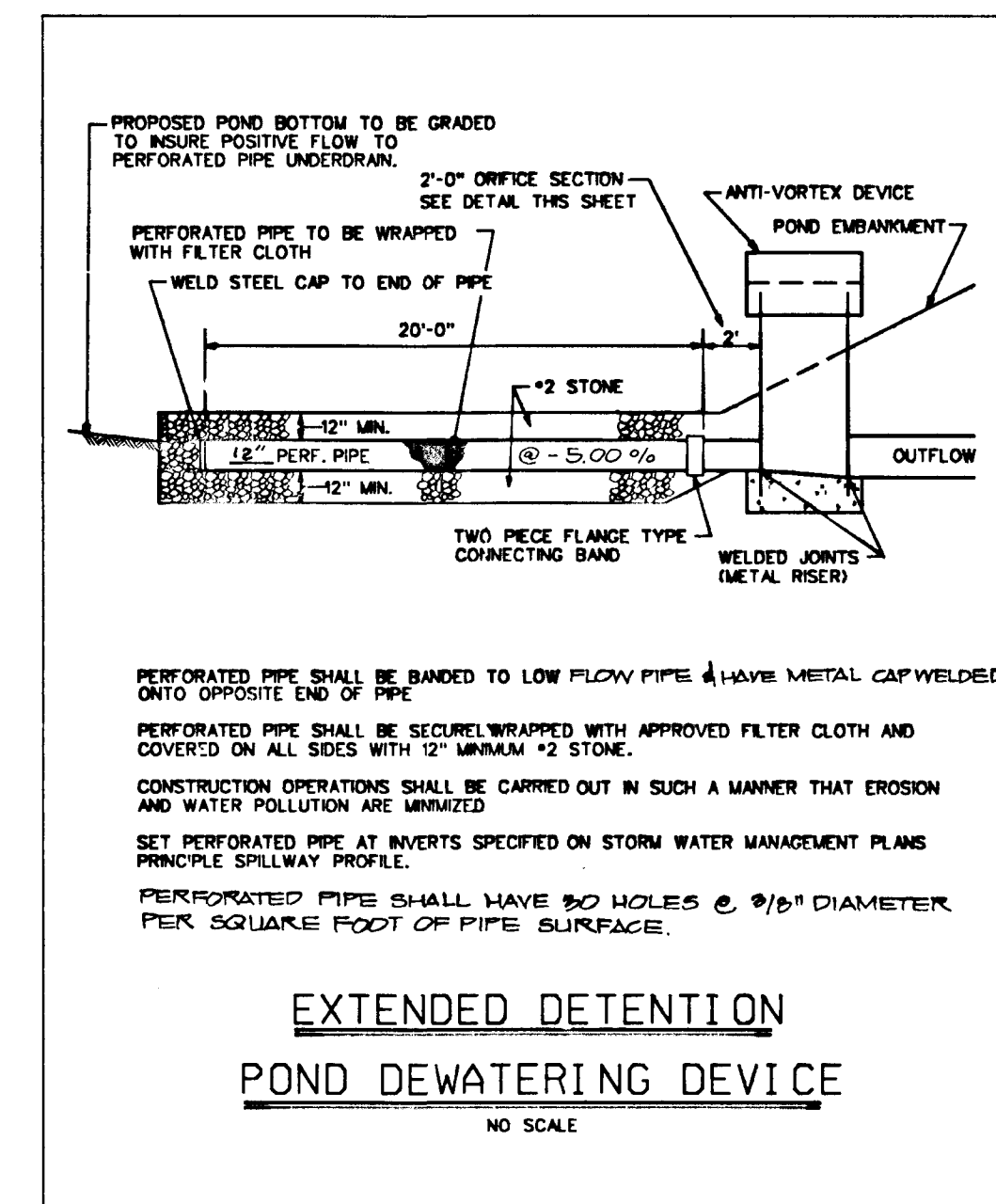
A REGISTERED PROFESSIONAL ENGINEER MUST BE NOTIFIED SUFFICIENTLY IN ADVANCE OF CONSTRUCTION SO THAT HE CAN ARRANGE FOR:

1. INSPECTION OF THE PIPE TRENCH AND BEDDING.
2. INSPECTION OF THE PIPE RISER AND ANTI-SEEP COLLARS.
3. SUPERVISION OF EMBANKMENT CONSTRUCTION AND COMPACTION TESTING.
4. INSTALLATION OF ACCESS ROAD.
5. OTHER STRUCTURES AND DRAINAGE FEATURES.



CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE
NO SCALE

	DIA	D	H
POND 1	42"	72"	21"
POND 2	54"	76"	25"



EXTENDED DETENTION POND DEWATERING DEVICE
NO SCALE

"AS-BUILT" CERTIFICATION

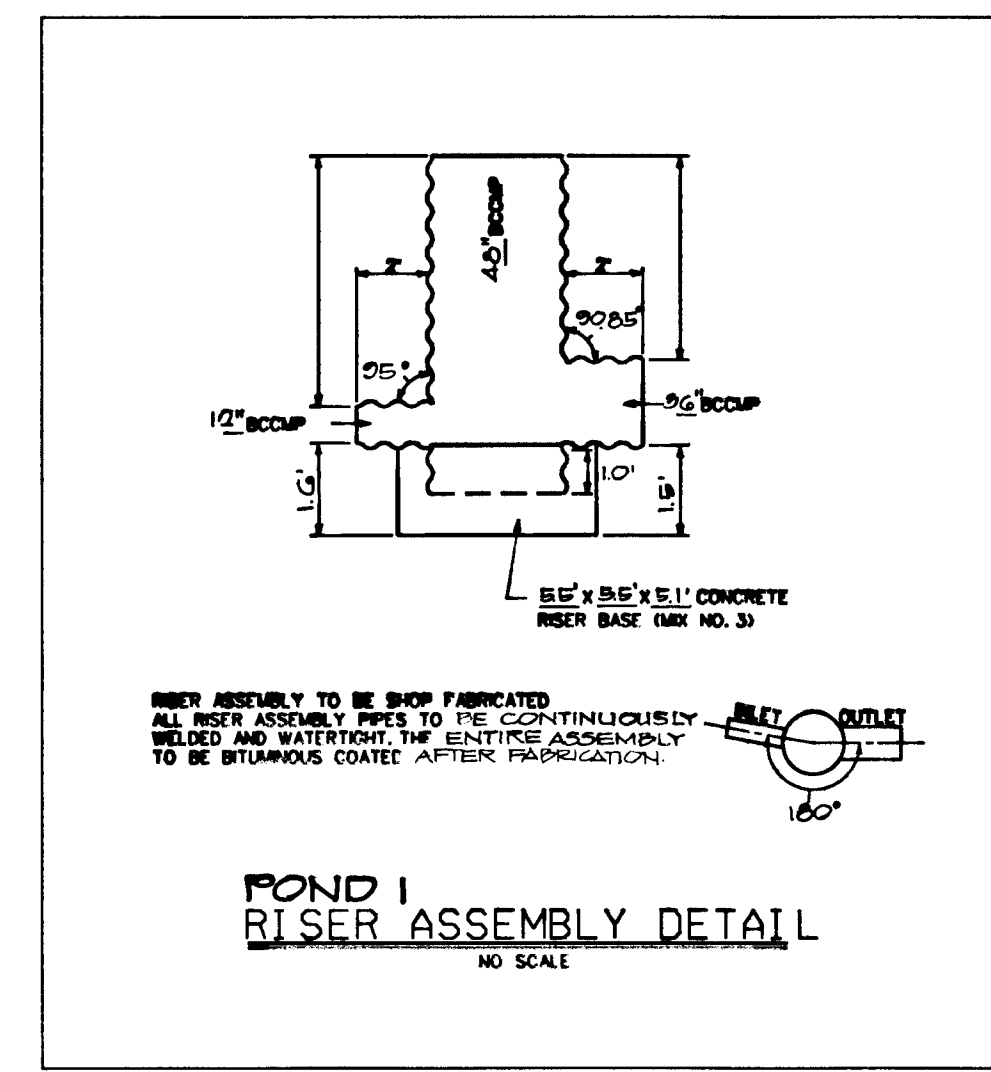
HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNED _____ DATE _____
P.E. _____

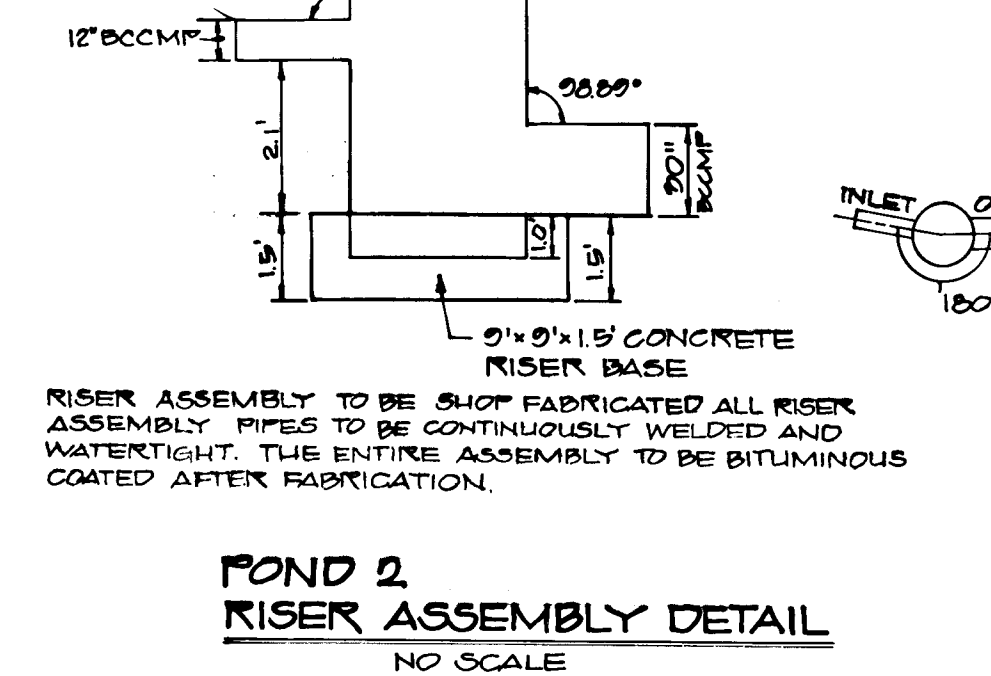
CONSULTANT'S HAZARD CLASS CERTIFICATION

"I certify that this pond meets all requirements for hazard class A (A,B,C). (Requirements as stated in the SOIL CONSERVATION SERVICE-MARYLAND STANDARDS AND SPECIFICATIONS FOR POND, CODE 378, JANUARY 1991.) All necessary investigations and computations have been performed to verify this finding. A copy of said information has been supplied to S.C.S./H.C.S.C.D.

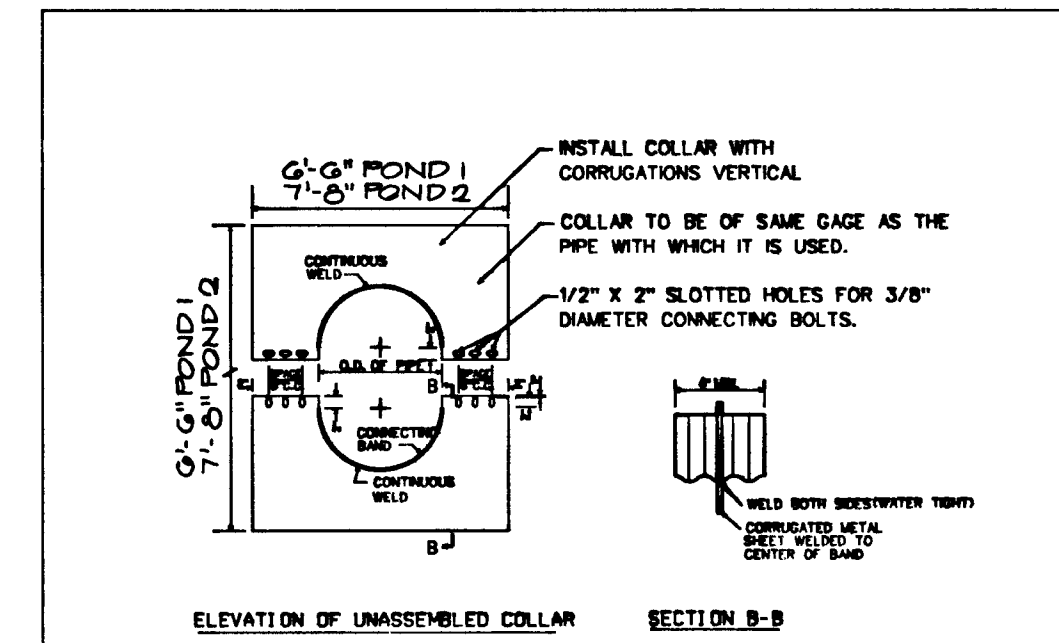
Signature *David W. McKnew* Md. License No. 17808 Date 2/1/92
Print Name: DAVID W. MCKNEW



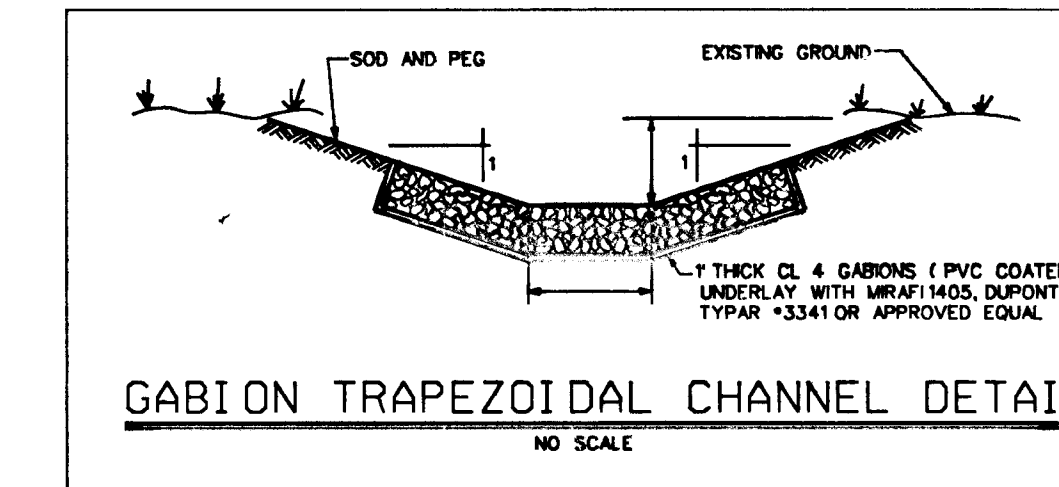
POND 1 RISER ASSEMBLY DETAIL
NO SCALE



POND 2 RISER ASSEMBLY DETAIL
NO SCALE



CORRUGATED METAL ANTI-SEEP COLLAR DETAIL
NO SCALE



GABION TRAPEZOIDAL CHANNEL DETAIL
NO SCALE

STORMWATER MANAGEMENT POND CERTIFICATION AND APPROVAL 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 ENVIRONMENT (ODE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION."

Signature *V. G.* DATE 7/24/92
SIGNATURE OF DEVELOPER DATE

ENGINEER'S CERTIFICATE

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

Signature *David W. McKnew* DATE 9/1/92
SIGNATURE OF ENGINEER DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Signature *Thomas J. Brennan* DATE 9/24/92
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PUBLIC WORKS
Signature *Robert J. Kelly* DATE 9-23-92
CHIEF, BUREAU OF ENGINEERING

APPROVED: DEPARTMENT OF PUBLIC WORKS
Signature *Colin M. Morgan* DATE 9/19/92
CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PUBLIC WORKS
Signature *John W. Anderson* DATE 9/26/92
CHIEF, LAND DEVELOPMENT DIVISION

DATE	REVISION

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 *David W. McKnew* DATE 9/1/92
U.S. SOIL CONSERVATION DISTRICT

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
Signature *David W. McKnew* DATE 9/1/92
HOWARD SOIL CONSERVATION DISTRICT

POND CONSTRUCTION CERTIFICATION

"I CERTIFY THAT UPON COMPLETION OF CONSTRUCTION, I WILL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE (O&M) OF THE SMALL POND. O&M WILL BE IN ACCORDANCE WITH THE SPECIFICATIONS ON THIS PLAN. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS OF THE POND BY SITE AND LOCAL AGENCIES."
Signature *K.A.* DATE 8/21/92
SIGNATURE OF DEVELOPER DATE

HARRIS SMARIGA, MATZ, INC.
PLANNERS / ENGINEERS / SURVEYORS
104 CHURCH LANE, SUITE 100
BALTIMORE, MARYLAND 21208
(301)-486-1511

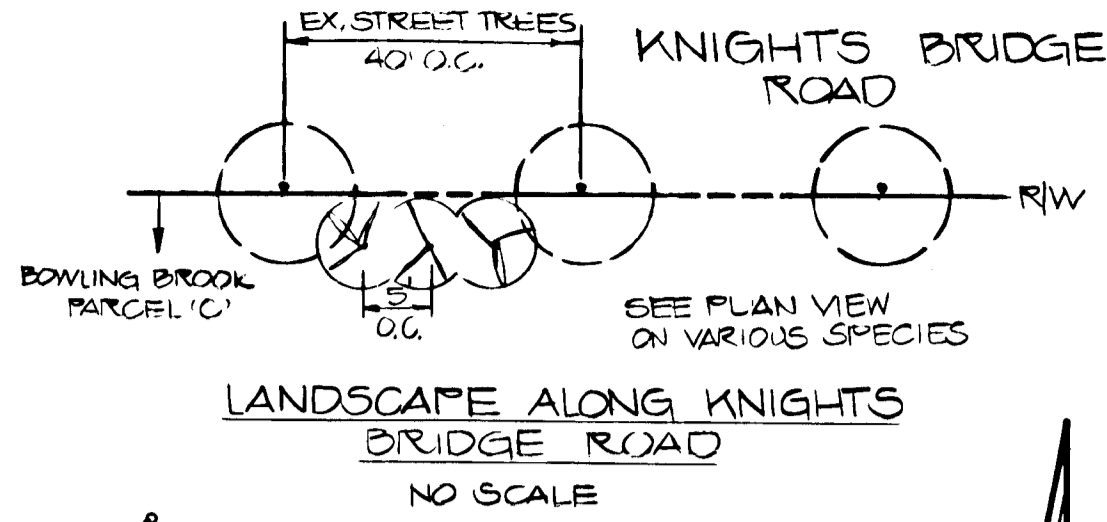
DESIGNED	SCALE
AMV	1"=50'
DRAWN	DRAWING
CADD/	11 OF 20
CHECKED	JOB NO.
AMV	40554
DATE:	FILE NO.
9/1/92	

OWNER DEVELOPER			
JAMES F. KNOTT DEVELOPMENT CORPORATION			
110 WEST ROAD, SUITE 203			
TOWSON, MARYLAND 21204			
(410) 321-1000			
SUBDIVISION NAME	SECT./AREA	LOT/PARCEL	
BOWLING BROOKS FARMS		PARCEL C	
PLAT • OR L/F	BLOCK • ZONE	TAX/ZONE MAP	ELEC. DIST./CENSUS TR
	RSA-B	47	6TH 6063
WATER CODE	SEWER CODE		

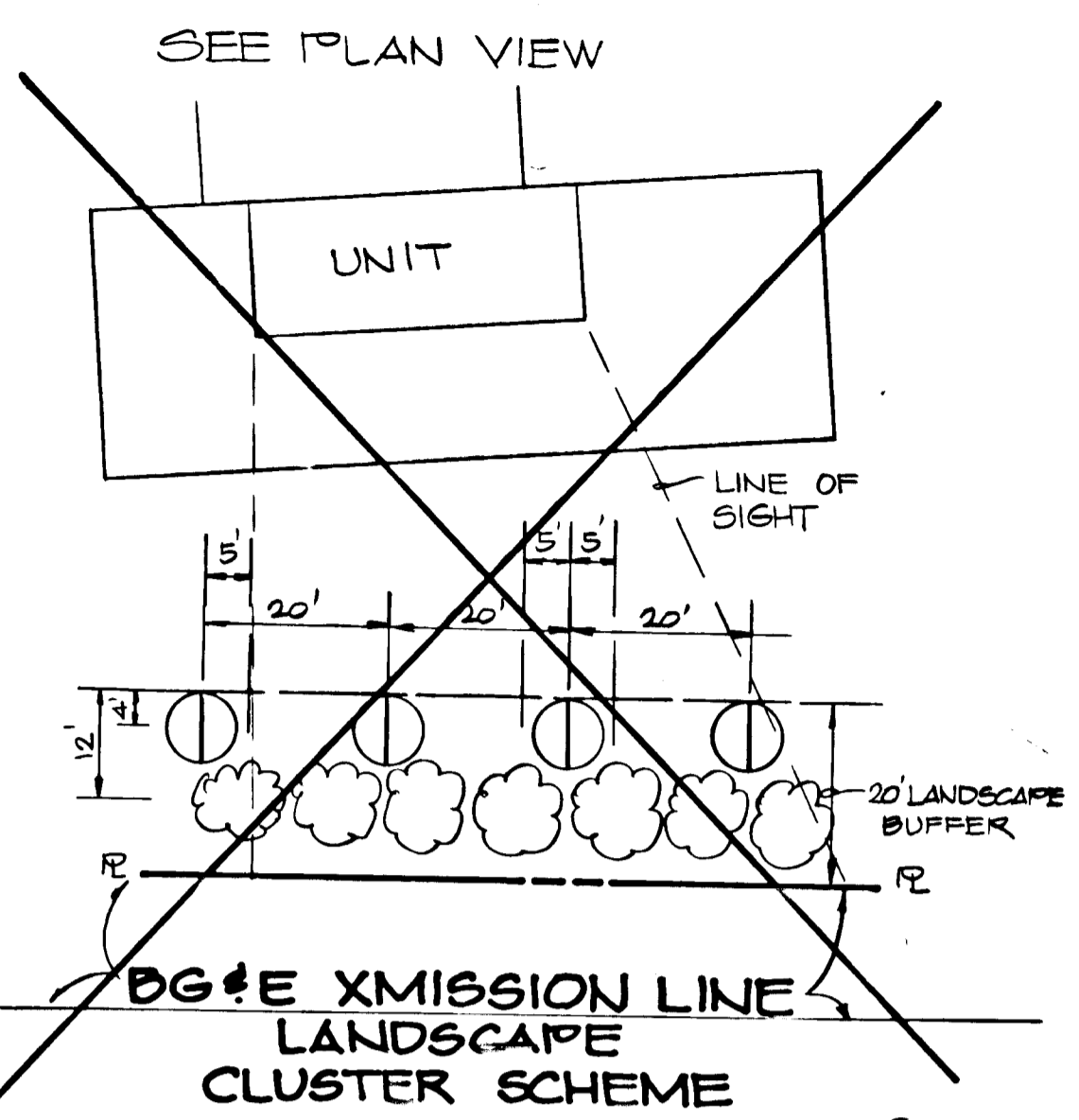
11271

EX. SEDIMENT BASIN #1

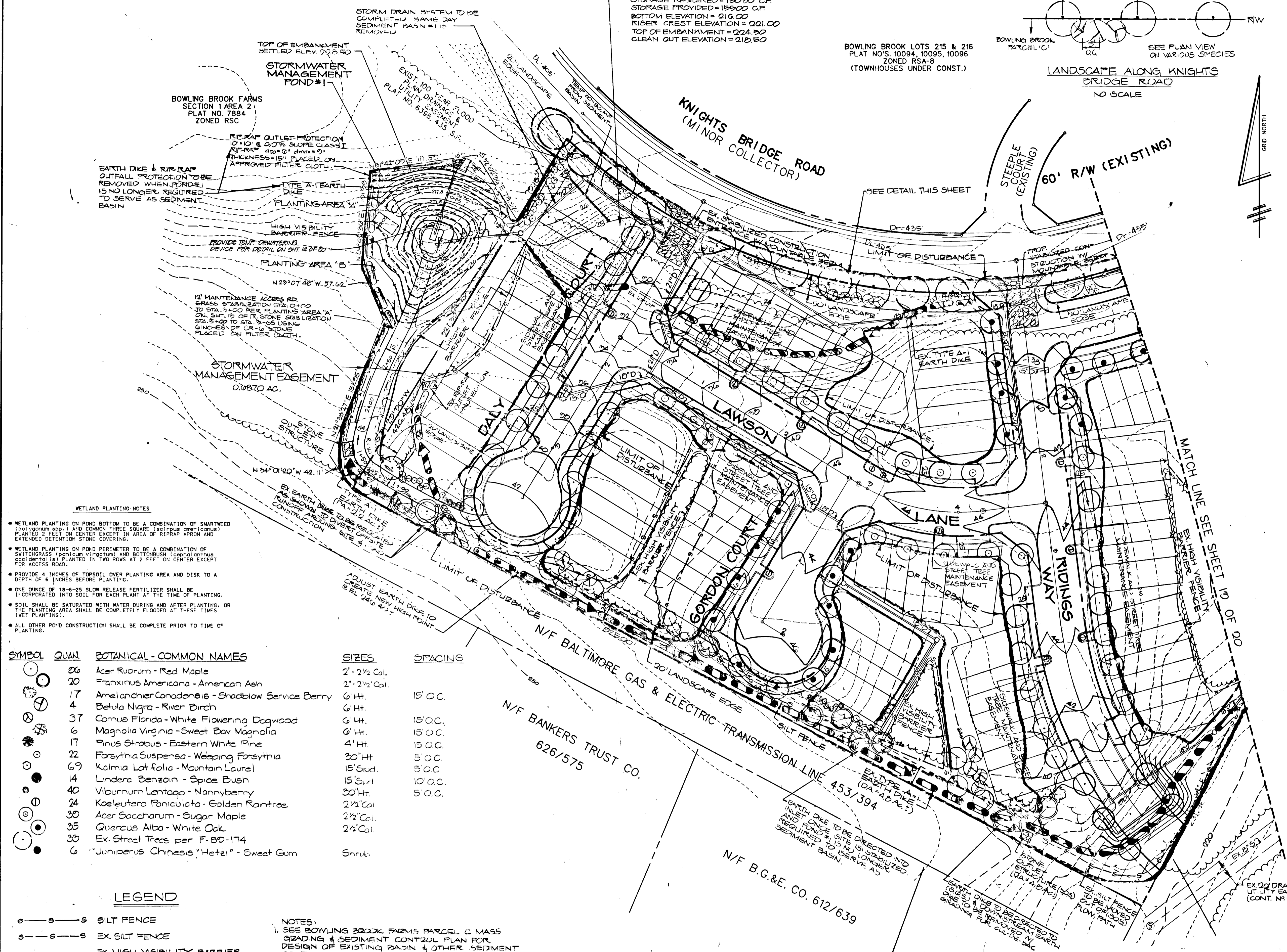
DRAINAGE AREA = 878 A±
 STORAGE REQUIRED = 18000 CF
 STORAGE PROVIDED = 19500 CF
 BOTTOM ELEVATION = 216.00
 RISER CREST ELEVATION = 221.00
 TOP OF EMBANKMENT = 224.30
 CLEAN OUT ELEVATION = 218.50



BOWLING BROOK LOTS 215 & 216
 PLAT NO'S. 10094, 10095, 10096
 ZONED RSA-8
 (TOWNHOUSES UNDER CONST.)

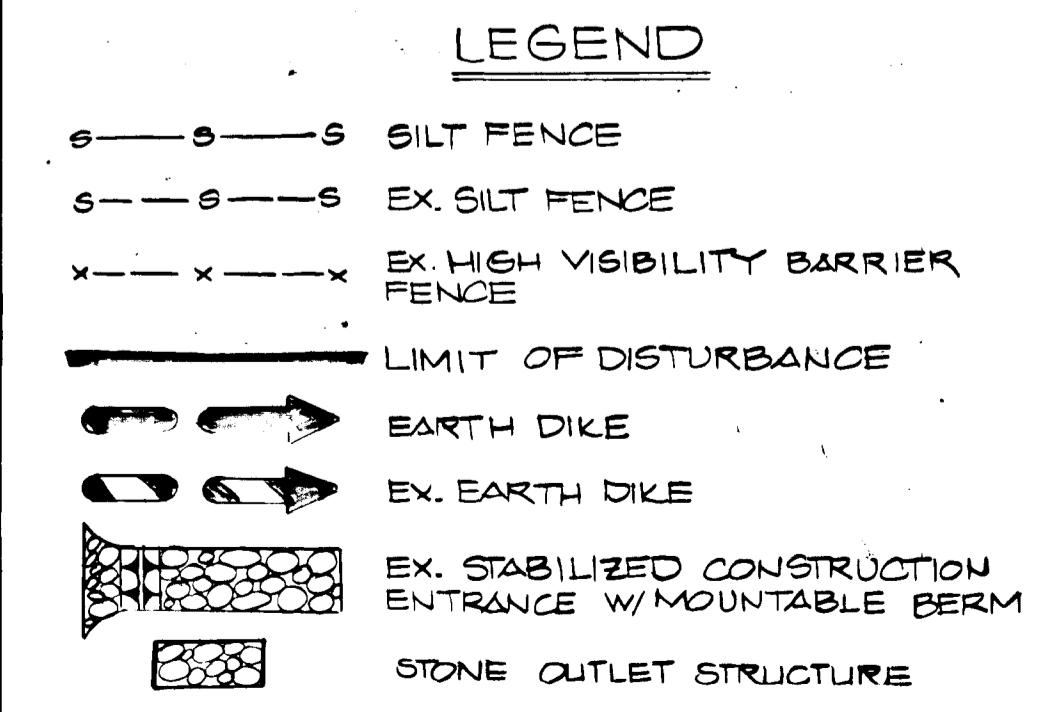


NOTES:
 • THIS PLAN IS A CONTINUATION OF THE MASS GRADING PLAN SHEET 2 OF 2 SDP-92-102. IT IS NECESSARY TO USE BOTH PLANS TOGETHER BECAUSE THIS PLAN ASSUMES THAT ALL ACTIVITY SHOWN ON THE MASS GRADING PLAN WILL BE COMPLETED PRIOR TO OR CONCURRENT WITH THIS PLAN.
 • SMALL ORNAMENTAL TREES WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE PRUNED TO 8 FOOT CLEAR TRUNK.



- WETLAND PLANTING NOTES**
- WETLAND PLANTING ON POND BOTTOM TO BE A COMBINATION OF SMARTWEED (Polygonum spp.) AND COMMON THREE SQUARE (Sagittaria arifolia) PLANTED 2 FEET ON CENTER EXCEPT IN AREA OF RIPRAP APRON AND EXTENDED DETENTION STONE COVERING.
 - WETLAND PLANTING ON POND PERIMETER TO BE A COMBINATION OF SWITCHGRASS (Panicum virgatum) AND BOTTLEBUSH (Cephalanthus occidentalis) PLANTED IN TWO ROWS AT 2 FEET ON CENTER EXCEPT FOR ACCESS ROAD.
 - PROVIDE 4 INCHES OF TOPSOIL OVER PLANTING AREA AND DISK TO A DEPTH OF 6 INCHES BEFORE PLANTING.
 - ONE OUNCE OF 18-6-25 SLOW RELEASE FERTILIZER SHALL BE INCORPORATED INTO SOIL FOR EACH PLANT AT THE TIME OF PLANTING.
 - SOIL SHALL BE SATURATED WITH WATER DURING AND AFTER PLANTING. OR THE PLANTING AREA SHALL BE COMPLETELY FLOODED AT THESE TIMES (NET PLANTING).
 - ALL OTHER POND CONSTRUCTION SHALL BE COMPLETE PRIOR TO TIME OF PLANTING.

SYMBOL	QUAN	BOTANICAL - COMMON NAMES	SIZES	SPACING
○	26	Acer Rubrum - Red Maple	2' - 2 1/2' Cal.	
○	20	Fraxinus Americana - American Ash	2' - 2 1/2' Cal.	
○	17	Amelanchier Canadensis - Shadblow Service Berry	6' Ht.	15' O.C.
○	4	Betula Nigra - River Birch	6' Ht.	
○	37	Cornus Florida - White Flowering Dogwood	6' Ht.	15' O.C.
○	6	Magnolia Virginia - Sweet Bay Magnolia	6' Ht.	15' O.C.
○	17	Pinus Strobus - Eastern White Pine	4' Ht.	15' O.C.
○	22	Forsythia Suspensa - Weeping Forsythia	30" Ht.	5' O.C.
○	69	Kalmia Latifolia - Mountain Laurel	15' Std.	5' O.C.
○	14	Lindera Benzoin - Spice Bush	15' Std.	10' O.C.
○	40	Viburnum Lentago - Nannyberry	30" Ht.	5' O.C.
○	24	Koeleutera Paniculata - Golden Raintree	2 1/2' Cal.	
○	30	Acer Saccharum - Sugar Maple	2 1/2' Cal.	
○	35	Quercus Alba - White Oak	2 1/2' Cal.	
○	30	Acer Saccharum - Sugar Maple	2 1/2' Cal.	
○	6	Juniperus Chinensis 'Hetzl' - Sweet Gum	Shrub	



- NOTES:**
1. SEE BOWLING BROOK FARMS PARCEL C MASS GRADING & SEDIMENT CONTROL PLAN FOR DESIGN OF EXISTING BASIN & OTHER SEDIMENT CONTROL MEASURES.
 2. ALL EXISTING SEDIMENT CONTROL MEASURES SHOWN ON THIS PLAN ARE TO BE MAINTAINED THROUGHOUT THIS PHASE OF CONSTRUCTION. EXISTING SEDIMENT CONTROL MEASURES NOT SHOWN ON THIS PLAN ARE TO BE REMOVED W/ THE SEDIMENT CONTROL INSPECTOR'S APPROVAL.
 3. ENTIRE DRAINAGE AREA IS TO BE STABILIZED OR PROTECTED WITH UPSTREAM SEDIMENT CONTROL PRIOR TO DISCHARGING RUNOFF INTO SWM POND #1.

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 J. Farrell
 9.23.97
 DATE

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 David Mc Knew
 8.16.93
 FOR REV. DATED 8.16.93
 BY REV. DATED 3.23.94

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 David W. McKnew
 MD PE 17808

HARRIS, SMARIGA, MATZ, INC.
 PLANNERS & ENGINEERS / SURVEYORS
 104 CHURCH LANE, SUITE 100
 BALTIMORE, MARYLAND 21208
 (301) 486-1511

BOWLING BROOK FARMS
 PARCEL C
 Revised
SEDIMENT CONTROL, GRADING AND LANDSCAPE PLAN
 SIXTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE: 1" = 30'
 DRAWN BY: KLS
 CHECKED BY: DM
 DATE: 9/1/92
 SHEET NO.: 12 OF 20
 PROJECT NO.: 40584

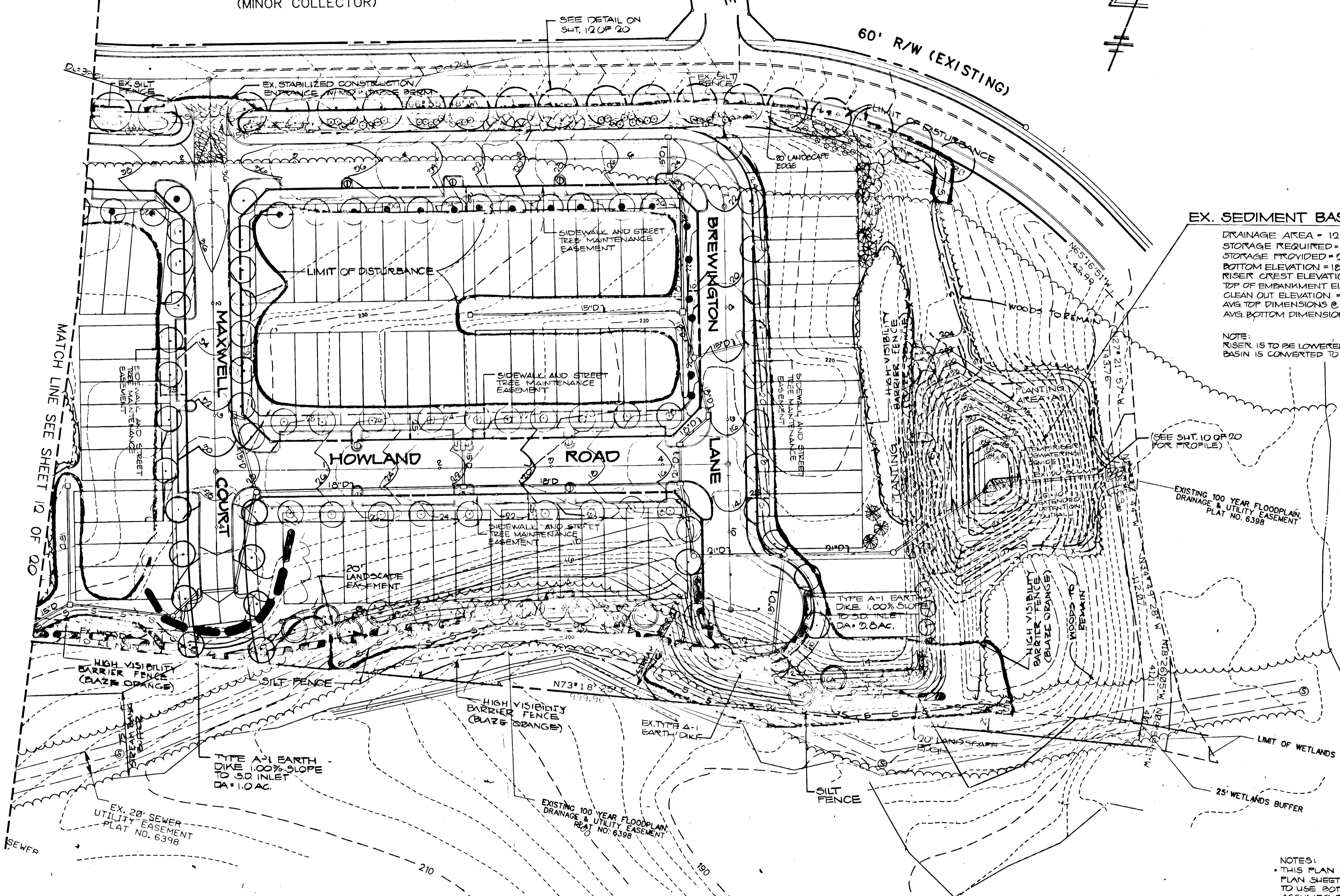
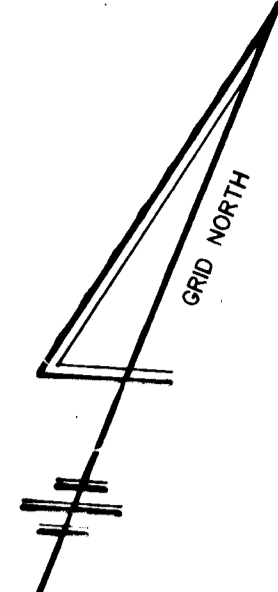
1271

BOWLING BROOK LOTS 215 & 216
 PLAT NO'S 10094, 10095, 10096
 ZONED RSA-8
 (TOWNHOUSES UNDER CONST.)

KNIGHTS BRIDGE ROAD
 (MINOR COLLECTOR)

BURLEIGH LANE
 (EXISTING)

60' R/W (EXISTING)



EX. SEDIMENT BASIN #2
 DRAINAGE AREA = 12.85 AC ±
 STORAGE REQUIRED = 22,590 CF
 STORAGE PROVIDED = 29,125 CF
 BOTTOM ELEVATION = 187.50
 RISER CREST ELEVATION = 194.00
 TOP OF EMBANKMENT ELEVATION = 199.00
 CLEAN OUT ELEVATION = 191.00
 AVG. TOP DIMENSIONS @ ELEV. 194' = 75' x 50'
 AVG. BOTTOM DIMENSIONS @ ELEV. 188' = 40' x 50'

NOTE:
 RISER IS TO BE LOWERED TO ELEV. 192.50 WHEN
 BASIN IS CONVERTED TO PERMANENT POND.

PLANTING AREA "A" (CONSISTING OF POND
 SIDE SLOPES STEEPER THAN 2:1) WITH:
 "CORONILLA VARIA" (CROWN VETCH) PLUGS
 PLACED 18 INCHES O.C. IN STAGGERED
 ROWS.

PLANTING AREA "B" (CONSISTING OF CUT
 SIDE SLOPES) WITH "COTONEASTER
 SPECIES" (GROUND COVER) & SHRUBS
 AS SPECIFIED.

PLANT COTONEASTER 4' O.C.
 (126 PLANTS REQ'D. POND #2);
 142 PLANTS REQ'D. POND #1)

EXISTING 100 YEAR FLOODPLAIN,
 DRAINAGE & UTILITY EASEMENT
 PLAT NO. 6398

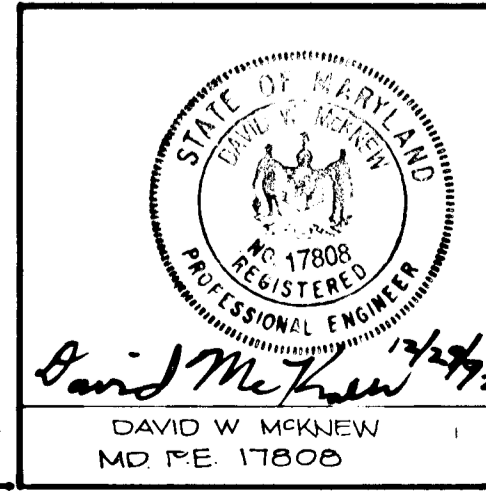
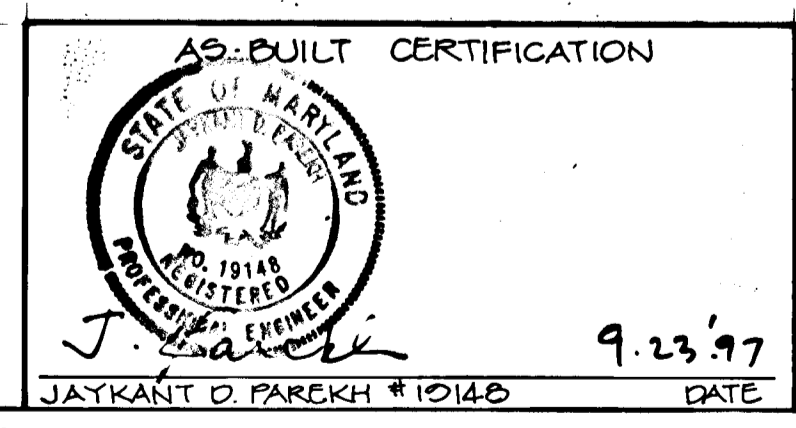
BOWLING BROOK LOT 224
 PLAT NO. 10097
 ZONED RSA-8
 (TOWNHOUSES UNDER CONST.)

NOTES:
 • THIS PLAN IS A CONTINUATION OF THE MASS GRADING
 PLAN SHEET 12 OF 12 OF 92-102. IT IS NECESSARY
 TO USE BOTH PLANS TOGETHER BECAUSE THIS PLAN
 ASSUMES THAT ALL ACTIVITY SHOWN ON THE MASS
 GRADING PLAN WILL BE COMPLETED PRIOR TO OR
 CONCURRENT WITH THIS PLAN.
 • FOR WETLAND PLANTING NOTES SEE SHEET 12 OF 20.
 • SMALL ORNAMENTAL TREES WITHIN THE PUBLIC
 RIGHT-OF-WAY SHALL BE PRUNED TO 8 FOOT
 CLEAR TRUNK.

ENGINEER'S CERTIFICATE	
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.	
David McKen SIGNATURE OF ENGINEER	12/29/92 DATE
DEVELOPER'S CERTIFICATE	
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT (MDC) APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.	
[Signature] SIGNATURE OF DEVELOPER	12/31/92 DATE
REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.	
James M. Tully, Jr. USDA SOIL CONSERVATION DISTRICT	1/1/93 DATE
THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.	
[Signature] HOWARD SOIL CONSERVATION DISTRICT	1/1/93 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
[Signature] CHIEF, BUREAU OF PLANNING AND ZONING	1/19/93 DATE
APPROVED: DEPARTMENT OF PUBLIC WORKS	
[Signature] CHIEF, BUREAU OF ENGINEERING	1/19/93 DATE
APPROVED: DEPARTMENT OF PUBLIC WORKS	
[Signature] CHIEF, BUREAU OF ENGINEERING	1/19/93 DATE

NOTES:
 1. SEE BOWLING BROOK FARMS PARCEL C MASS GRADING & SEDIMENT CONTROL PLAN FOR DESIGN OF EXISTING BASIN & OTHER SEDIMENT CONTROL MEASURES.
 2. ALL EXISTING SEDIMENT CONTROL MEASURES SHOWN ON THIS PLAN ARE TO BE MAINTAINED THROUGHOUT THIS PHASE OF CONSTRUCTION. EXISTING SEDIMENT CONTROL MEASURES NOT SHOWN ON THIS PLAN ARE TO BE REMOVED WITH THE SEDIMENT CONTROL INSPECTOR.
 3. FOR LEGEND, SEE SHEET 12 OF 20.

N/F PLAT 6399
 PARCEL A
 BOWLING BROOK



HARRIS, SMARIGA, MATZ, INC.
 PLANNERS / ENGINEERS / SURVEYORS
 104 CHURCH LANE, SUITE 100
 BALTIMORE, MARYLAND 21208
 (301)-486-1511

REVISIONS:
 01/29/93: REV. LANDSCAPING DESIGN TO IMPROVE AESTHETIC QUAL. OF COMM.
 01/29/93: REPLACED 7 MAGNOLIA VIRGINICA W/ 20 KALMIA LATIFOLIA
 02/22/94: REPLACE MAXWELL CT. GULCH W/ TREE TURNAROUND & ARBOLIZACION

BOWLING BROOK FARMS
 PARCEL C
 REUSED
SEDIMENT CONTROL, GRADING AND LANDSCAPE PLAN

SIXTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE: 1" = 50'
 DRAWN BY: KLS
 CHECKED BY: DM
 DATE: 01/1/93
 SHEET NO.: 10 OF 20
 PROJECT NO.: 40564

1271

STANDARDS AND SPECIFICATIONS

VEGETATIVE STABILIZATION WITH SOD

- 1. CLASS OF TURF/SOD SHALL BE MARYLAND OR VIRGINIA STATE CERTIFIED, OR MARYLAND OR VIRGINIA STATE APPROVED SOD.
2. SOD SHALL BE MAINTAINED CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH PLUS OR MINUS 1/4 INCH AT THE TIME OF CUTTING MEASUREMENT FOR THICKNESS. SHALL EXCLUDE TOP GROWTH AND THATCH.
3. STANDARD SIZE SECTIONS OF SOD SHALL BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT PER HOUR. THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION.
4. INDIVIDUAL PIECES OF SOD SHALL BE CUT TO THE SUPPLIERS WIDTH AND LENGTH. MAXIMUM ALLOWABLE DEVIATION FROM STANDARD WIDTHS AND LENGTHS SHALL BE 5 PERCENT. BROKEN PADS AND TORN OR UNEVEN ENDS WILL NOT BE ACCEPTABLE.
5. SOD SHALL NOT BE HARVESTED OR TRANSPORTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
6. SOD SHALL BE HARVESTED, DELIVERED AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPORTED WITHIN THIS PERIOD SHALL BE INSPECTED AND APPROVED PRIOR TO ITS INSTALLATION.

- I. SITE PREPARATION
FERTILIZER AND LIMING APPLICATION RATES SHALL BE DETERMINED BY SOIL TESTS. UNUSUAL CIRCUMSTANCES WHERE THERE IS INSUFFICIENT TIME FOR A COMPLETE SOIL TEST, FERTILIZER AND LIME MATERIALS MAY BE APPLIED IN AMOUNTS SHOWN UNDER B. BELOW.
A. PRIOR TO SODDING, THE SURFACE SHALL BE CLEARED OF ALL TRASH, DEBRIS, AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBSTACLES THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.
B. WHERE THE SOIL IS ACID OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 2 TONS/ACRE OR 100 POUNDS PER 1000 SQUARE FEET. IN ALL SOILS 1000 POUNDS PER ACRE OR 25 POUNDS PER 1000 SQUARE FEET OF 10-10-10 FERTILIZER OR EQUIVALENT SHALL BE UNIFORMLY APPLIED AND MIXED INTO THE TOP 3 INCHES OF SOIL WITH THE REQUIRED LIME.
C. ALL AREAS RECEIVING SOD SHALL BE UNIFORMLY FINE GRADED. HARD-PACKED EARTH SHALL BE SCARIFIED PRIOR TO PLACEMENT OF SOD.

- II. SOD INSTALLATION
A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE THE SOIL SHALL BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING OF SOD.
B. THE FIRST ROW OF SOD SHALL BE LAD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND TIGHTLY WEDGED AGAINST EACH OTHER. LATERAL JOINTS SHALL BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. INSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS.
C. ON SLOPING AREAS WHERE EROSION MAY BE A PROBLEM SOD SHALL BE LAD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERED JOINTS. SECURE THE SOD BY TAMPING AND PEGGING OR OTHER APPROVED METHODS.
D. AS SODDING IS COMPLETED IN ANY ONE SECTION, THE ENTIRE AREA SHALL BE ROLLED OR TAMPED TO INSURE SOLID CONTACT OF ROOTS WITH THE SOIL SURFACE. SOD SHALL BE WATERED IMMEDIATELY AFTER ROLLING OR TAMPING UNTIL THE UNDERSIDE OF THE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. THE OPERATIONS OF LAYING, TAMING AND IRRIGATING FOR ANY PIECE OF SOD SHALL BE COMPLETED WITHIN EIGHT HOURS.

- III. SOD MAINTENANCE
A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHALL BE PERFORMED DAILY OR AS OFTEN AS NECESSARY DURING THE FIRST WEEK AND IN SUFFICIENT QUANTITIES TO MAINTAIN MOST SOIL AT A DEPTH OF 4 INCHES. WATERING SHOULD BE DONE DURING THE HEAT OF THE DAY TO PREVENT WILTING.
B. AFTER THE FIRST WEEK, SOD SHALL BE WATERED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE AND INSURE ESTABLISHMENT.
C. FIRST MOWING SHOULD NOT BE ATTEMPTED UNTIL SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF SHALL BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. GRASS HEIGHT SHALL BE MAINTAINED BETWEEN 2 AND 3 INCHES UNLESS OTHERWISE SPECIFIED.
D. MAINTENANCE OF ESTABLISHED SOD SHOULD FOLLOW SPECIFICATIONS OUTLINED IN TABLE 54-1.

SEDIMENT CONTROL NOTES

- 1. A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction.
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
3. Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within a 7 calendar days for all perimeter erosion control structures, dikes, perimeter slopes and all slopes greater than 3:1 or 14 days or 10 days after disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. I, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, for permanent seedings (Sec. 51) and (Sec. 54), temporary seedings (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seedling dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:
Total Area of Site: 20.19 Acres
Area Disturbed: 9.10 Acres
Area to be seeded or mulched: 5.50 Acres
Area to be vegetatively stabilized: 3.60 Acres
Total Fertilizer: 4800 Cu. yds.
Total Lime: 4800 Cu. yds
8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment controls must be provided if deemed necessary by the Howard County DPW sediment control inspector.
10. 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 initial approval by the inspection agency is made.

TEMPORARY SEEDING NOTES

- SEEDBED PREPARATION: LOOSEN UPPER 3 INCHES BY DISCING, RAKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.
SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE (14 LBS./1000 SQ. FT.) OF 10-10-10 FERTILIZER.
SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30, AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2 1/2 BU. PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ. FT.). FOR THE PERIOD MAY 1 THRU AUG. 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (0.7 LBS./1000 SQ. FT.). FOR PERIOD NOV. 15 THRU FEB. 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.
MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ. FT.) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 218 GALLONS PER ACRE (5 GALLONS/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES 8 FEET OR HIGHER USE 348 GALLONS PER ACRE (18 GALLONS/1000 SQ. FT.) FOR ANCHORING.

PERMANENT SEEDING NOTES

- ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS:
SEEDBED PREPARATION: LOOSEN UPPER 3 INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.
SOIL AMENDMENTS: APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ. FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./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 UREA FORM FERTILIZER (9 LBS./1000 SQ. FT.).
SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE (14 LBS./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 (0.8 LBS./1000 SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 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. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.
MULCHING: APPLY 1 1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ. FT.) OF UNROTTED SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 218 GALLONS PER ACRE (5 GAL./1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS, ON SLOPES OF 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (18 GAL./1000 SQ. FT.) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS, AND RESEEDINGS.

GENERAL NOTES

- 1. REFER TO "1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR STANDARD DETAILS AND DETAILED SPECIFICATIONS OF EACH PRACTICE SPECIFIED HEREIN.
2. WITH THE APPROVAL OF SEDIMENT CONTROL INSPECTOR, MINOR FIELD ADJUSTMENTS CAN AND WILL BE MADE TO INSURE THE CONTROL OF ANY SEDIMENT CHANGES IN SEDIMENT CONTROL PRACTICES REQUIRE PRIOR APPROVAL OF SEDIMENT CONTROL INSPECTOR AND THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.
3. AT THE END OF EACH WORKING DAY ALL SEDIMENT CONTROL PRACTICES WILL BE INSPECTED AND LEFT IN OPERATIONAL CONDITION.
4. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN (A) SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND (B) FOURTEEN DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
5. ANY CHANGE TO THE GRADING PROPOSED ON THIS PLAN REQUIRES RE-SUBMISSION TO HOWARD COUNTY SOIL CONSERVATION DISTRICT FOR APPROVAL.
6. DUST CONTROL WILL BE PROVIDED FOR ALL DISTURBED AREAS. REFER TO "1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL," P.P. 62.01 AND 62.02 FOR ACCEPTABLE METHODS AND SPECIFICATIONS FOR DUST CONTROL.
7. ANY VARIATION FROM THE SEQUENCE OF OPERATIONS STATED ON THIS PLAN REQUIRES THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR AND THE HOWARD COUNTY SOIL CONSERVATION DISTRICT PRIOR TO THE INITIATION OF THE CHANGE.
8. ANY EXCESS CUT OR BORROW MATERIAL WILL BE TAKEN TO OR BROUGHT FROM A SITE WITH AN APPROVED SEDIMENT CONTROL PLAN.
9. TOTAL AREA OF TRACT: 20.19 AC.
10. TOTAL DISTURBED AREA: 9.40 AC.
11. REFER TO "MARYLAND GUIDELINES TO WATERWAY CONSTRUCTION" BY THE WATER RESOURCES ADMINISTRATION (WARA), DATED JANUARY, 1986 FOR STANDARD DETAILS AND DETAILED SPECIFICATIONS OF EACH PRACTICE SPECIFIED HEREIN FOR WATERWAY CONSTRUCTION.

OWNERS/DEVELOPERS CERTIFICATION

I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT(N)S APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT, ALSO THAT THE SITE WILL BE INSPECTED AT THE END OF EACH WORKING DAY, AND THAT ANY NEEDED MAINTENANCE WILL BE COMPLETED SO AS TO INSURE THAT ALL SEDIMENT CONTROL PRACTICES ARE LEFT IN OPERATIONAL CONDITION. I/WE AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS.

KG DEVELOPER 01/19/92 DATE
KEVIN GERAGHY, VP
PRINT NAME, TITLE, FIRM & ADDRESS
JAMES F. KNOTT DEVELOPMENT CORP
110 WEST ROAD, SUITE 203
TOWSON, MD 21284

CONSULTANT'S CERTIFICATION

I CERTIFY THAT THIS PLAN OF EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT AND "STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL." I HAVE REVIEWED THIS EROSION AND SEDIMENT CONTROL PLAN WITH THE OWNER/DEVELOPER.

SIGNATURE: David W. McKewen, License No. 17000
NAME: DAVID W. MCKEWEN DATE: 9-1-92

Table with 2 columns: DATE, REVISION

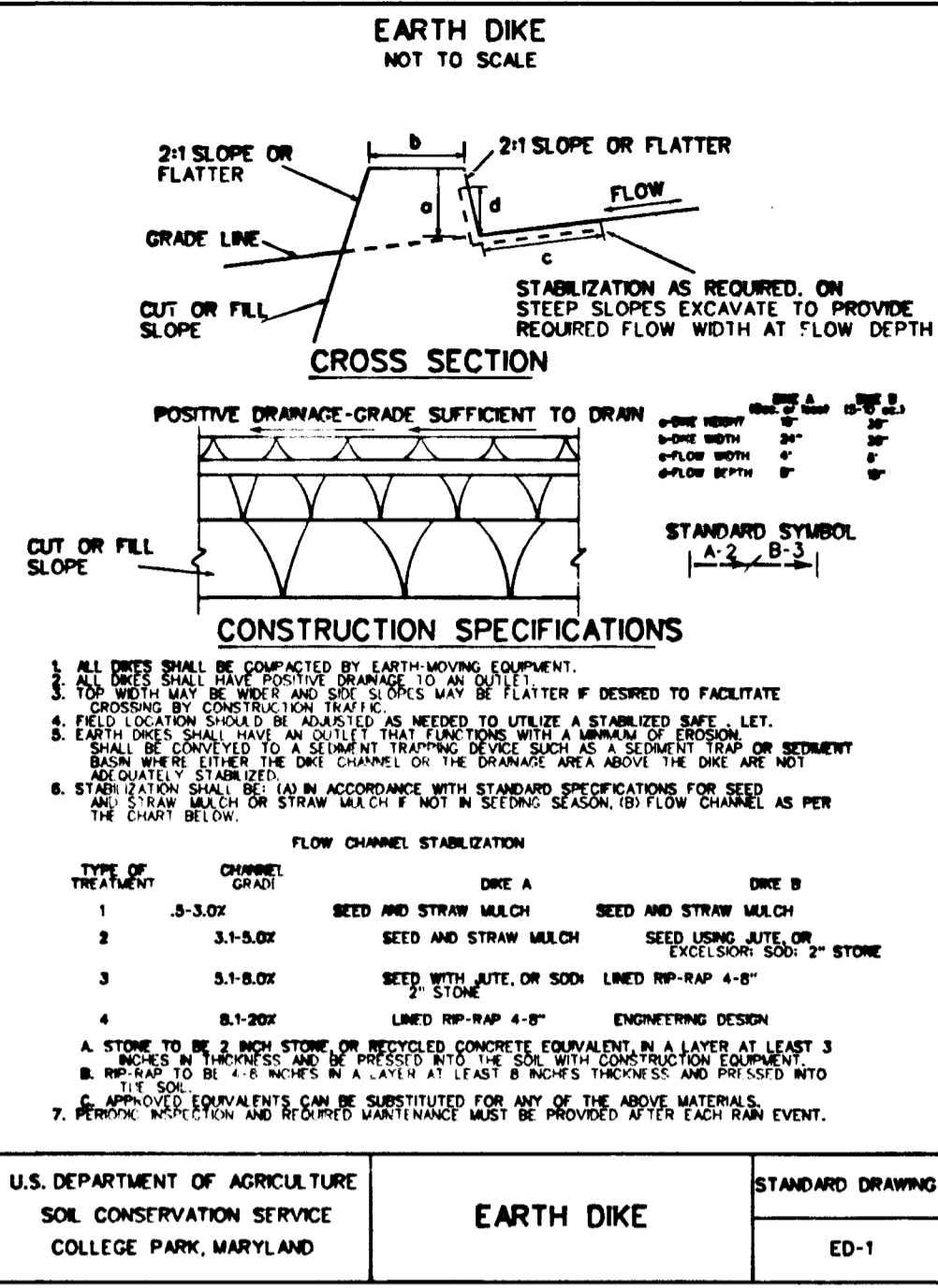


Table with 3 columns: U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND; EARTH DIKE; STANDARD DRAWING ED-1

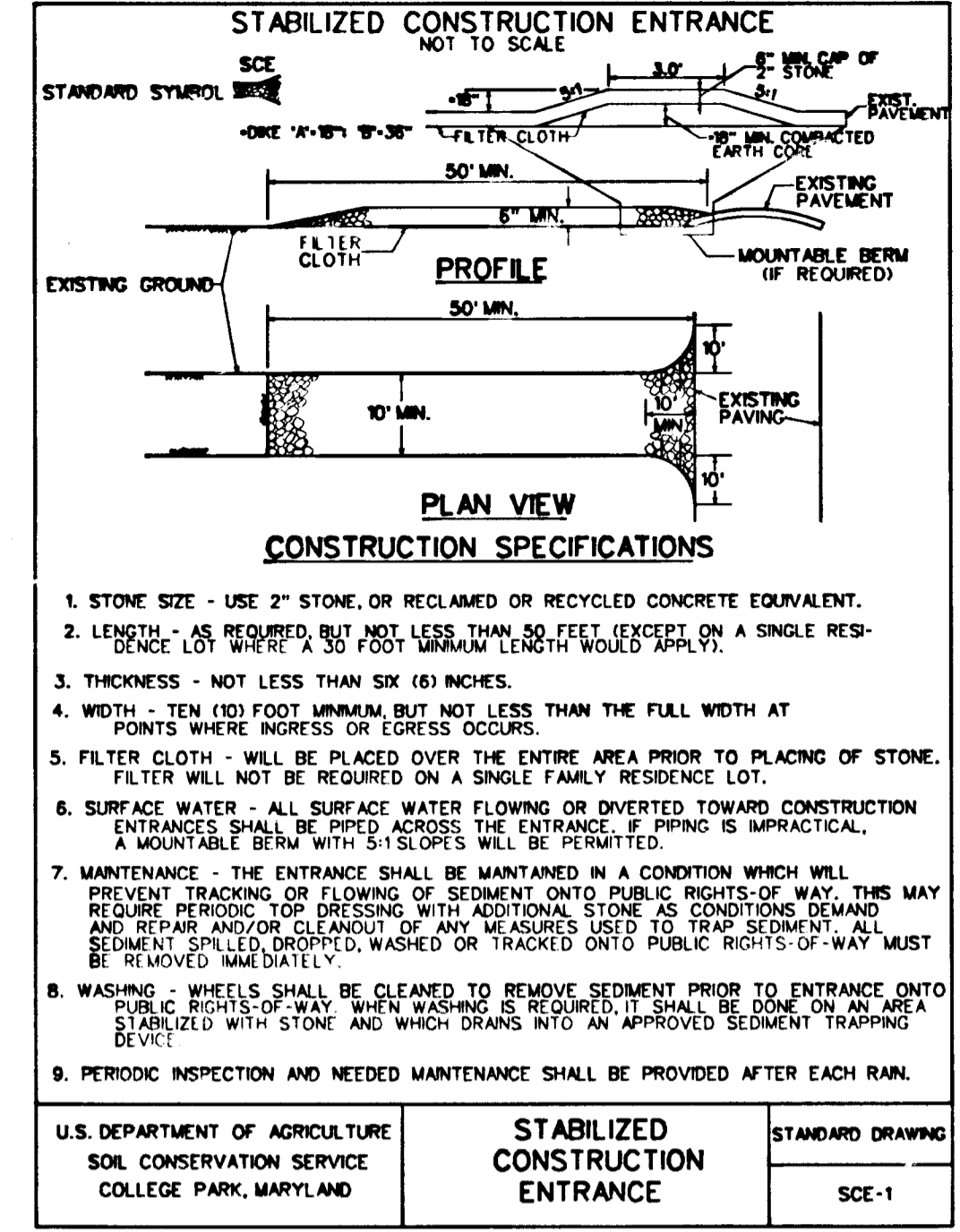


Table with 3 columns: U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE COLLEGE PARK, MARYLAND; STABILIZED CONSTRUCTION ENTRANCE; STANDARD DRAWING SCE-1

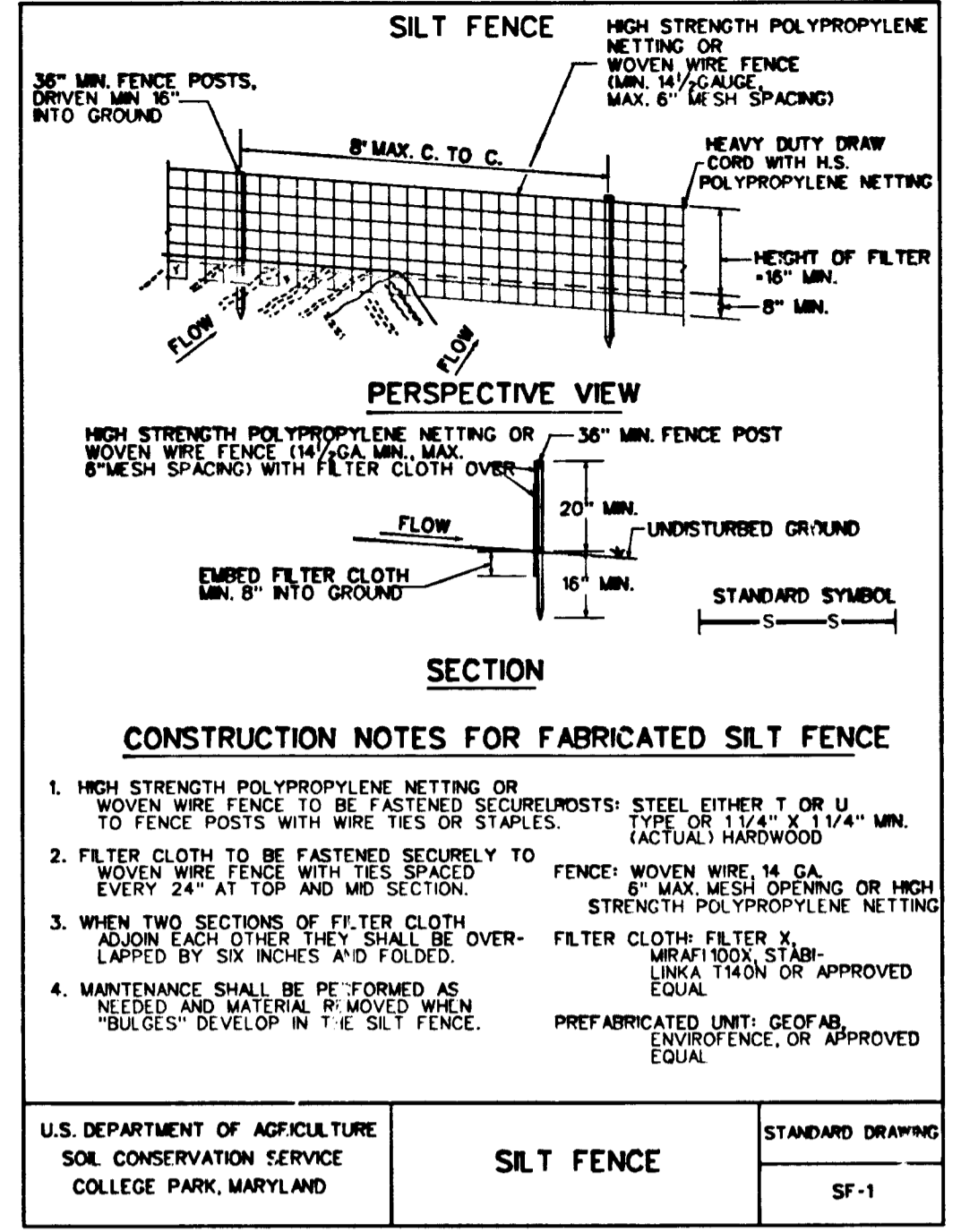
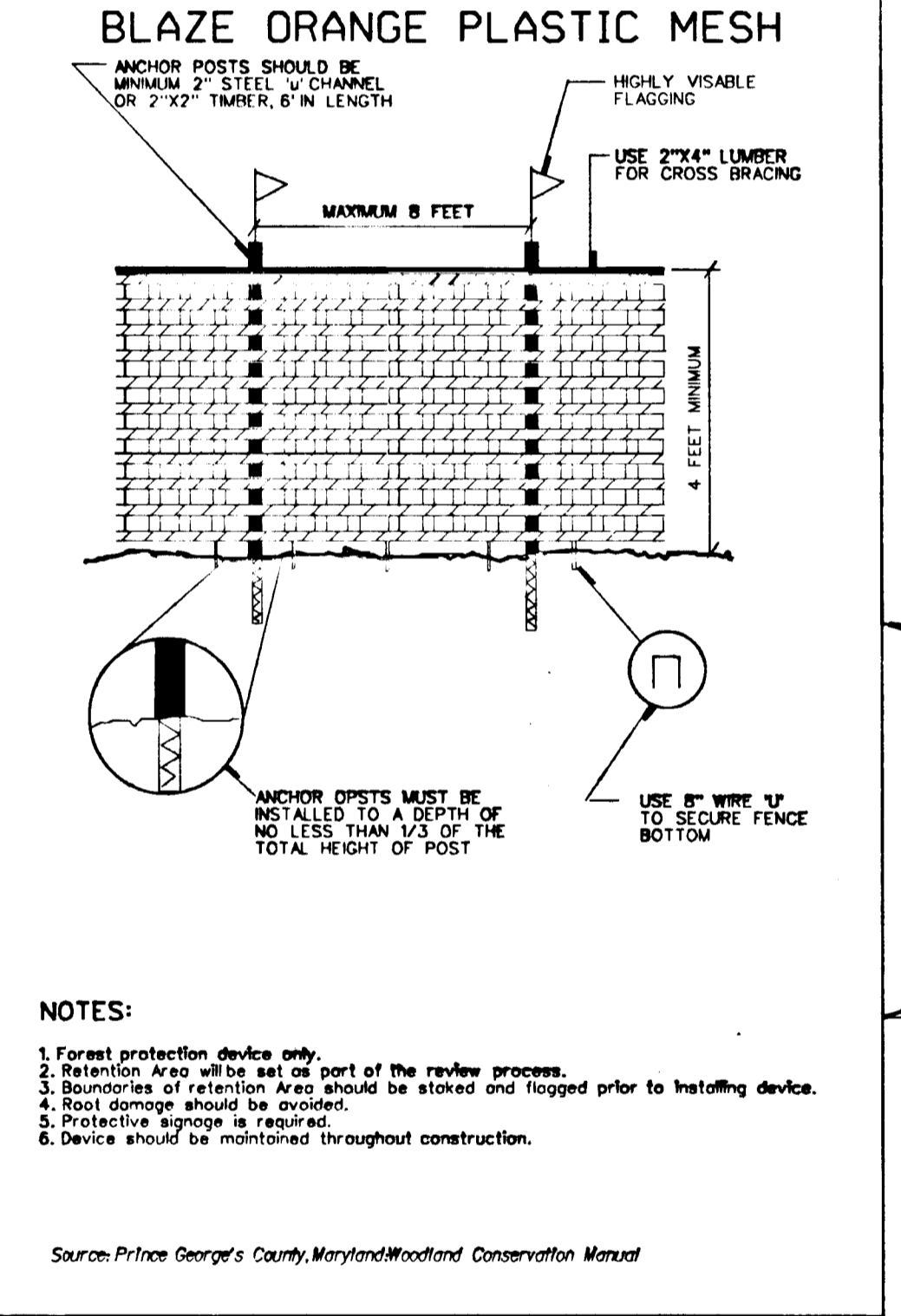
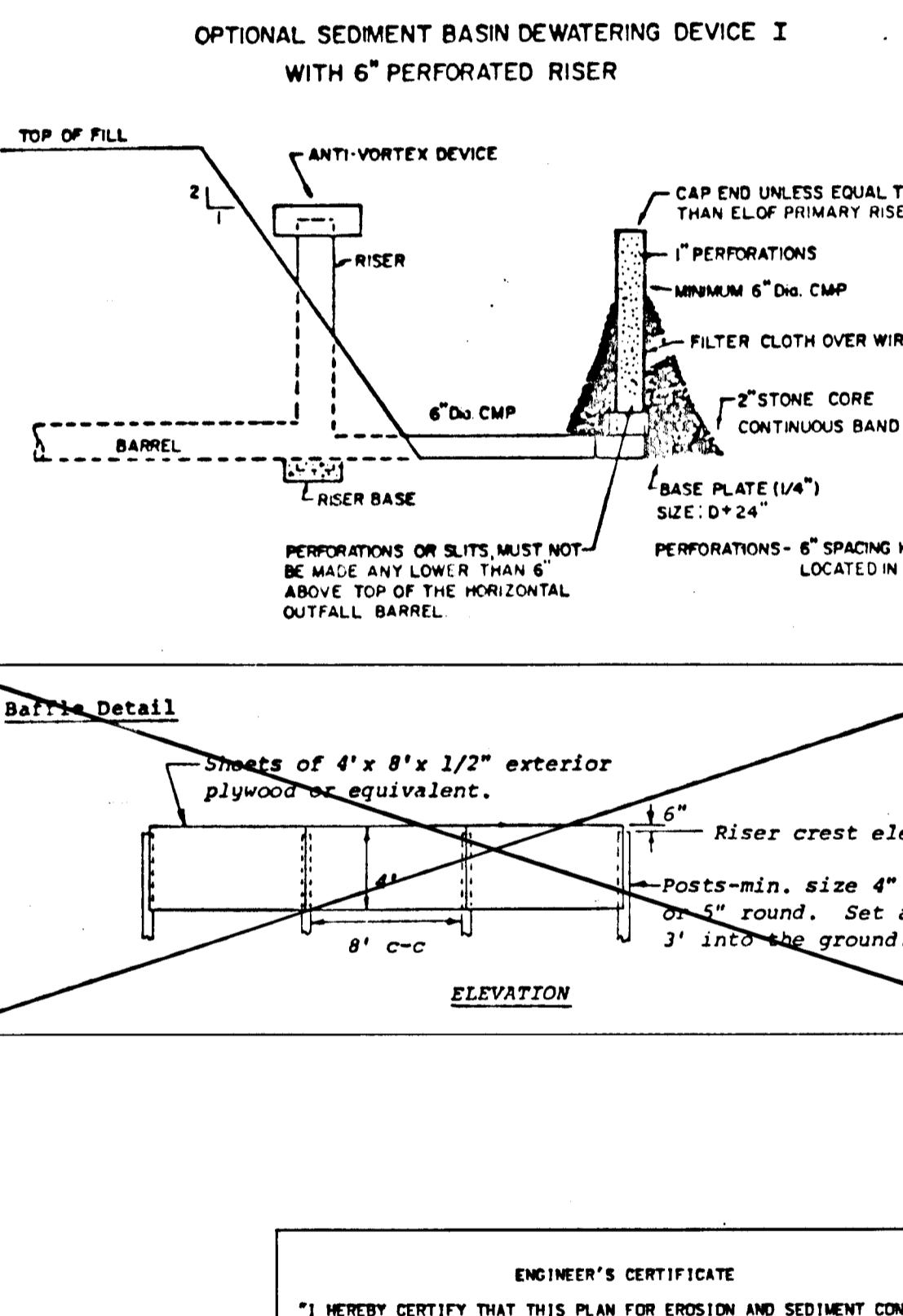


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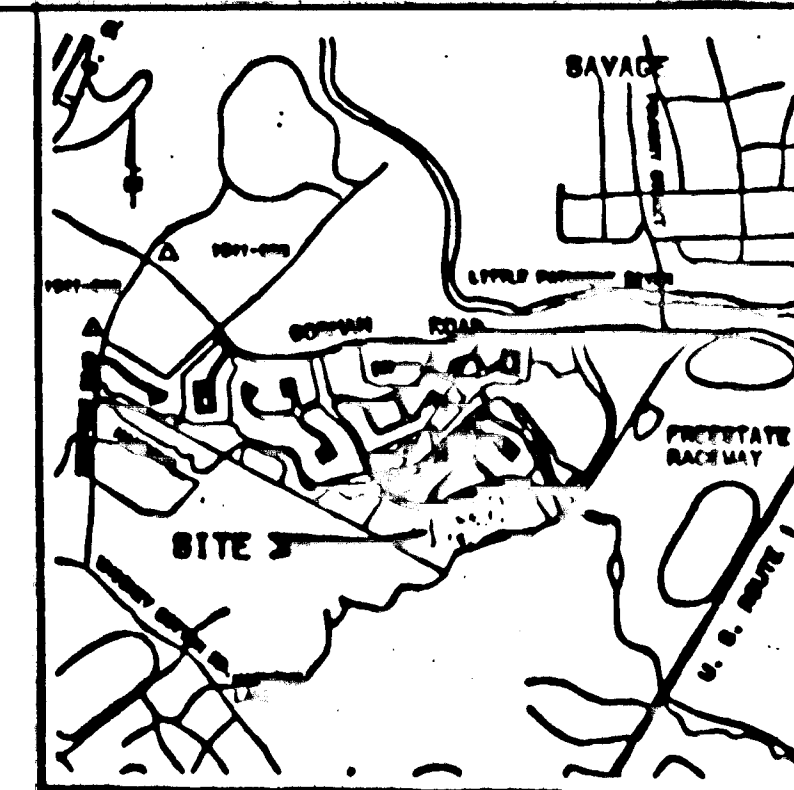
NOTES:
1. Forest protection device only.
2. Retention Area will be set as part of the review process.
3. Boundaries of retention Area should be staked and flagged prior to installing device.
4. Soil erosion should be checked.
5. Protective signage is required.
6. Device should be maintained throughout construction.
Source: Prince Georges County, Maryland Woodland Conservation Manual



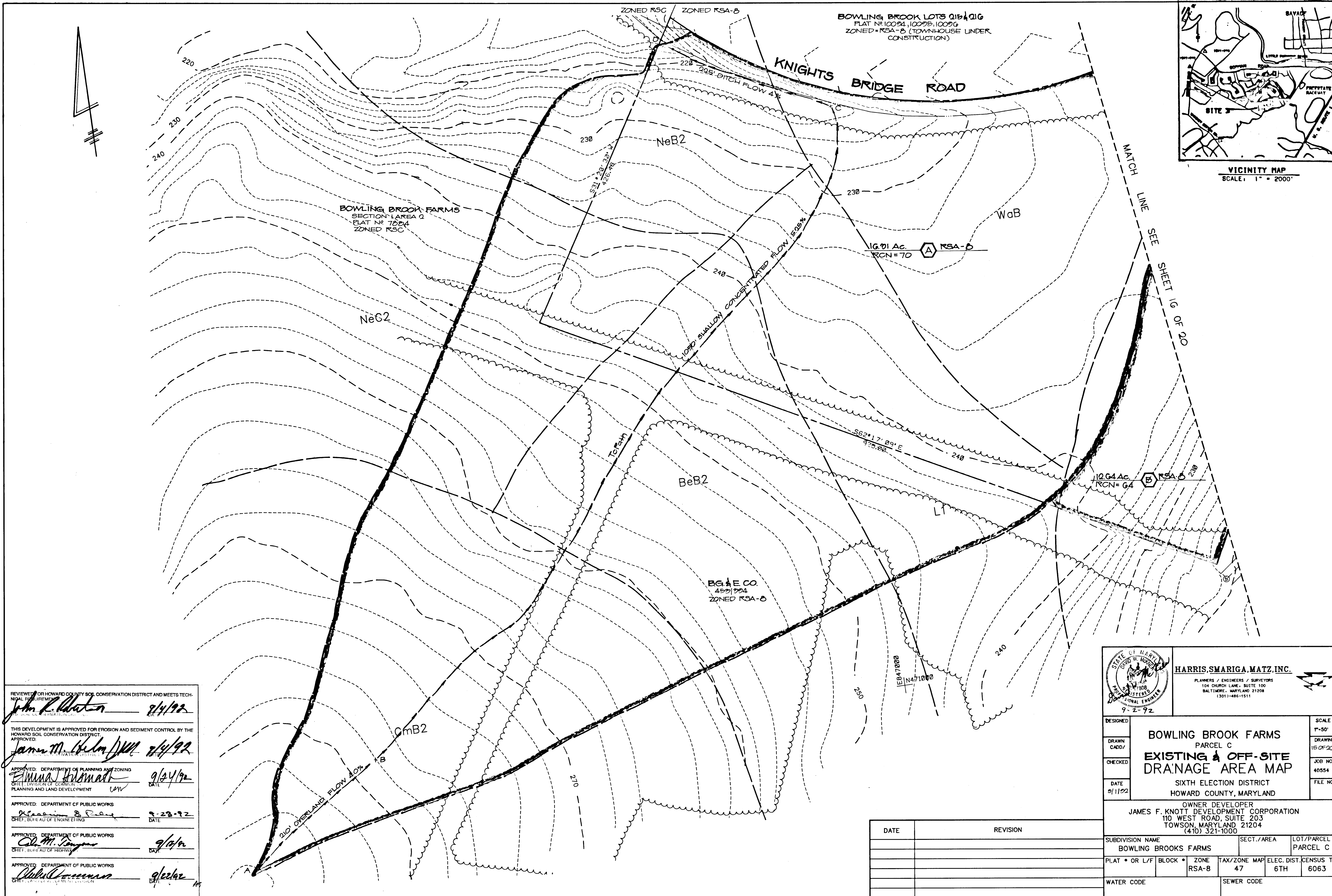
- CONSTRUCTION SEQUENCE
1. OBTAIN GRADING PERMIT.
2. NOTIFY HOWARD COUNTY DEPARTMENT OF INSPECTIONS AND PERMITS 24 HOURS PRIOR TO STARTING WORK.
3. INSPECT AND MAINTAIN EXISTING STABILIZED CONSTRUCTION ENTRANCES, PROTECTIVE HIGH VESTIBILITY FENCING, SILT FENCE, STONE OUTLETS, SEDIMENT BASINS AND EARTH DIKES THAT ARE STILL REQUIRED IN THIS PHASE OF CONSTRUCTION (AS SHOWN ON SHEETS 12 OF 20 AND 13 OF 20).
4. INSTALL NEW STABILIZED CONSTRUCTION ENTRANCES, EARTH DIKES AND SILT FENCE AS SHOWN ON THESE PLANS AND CONSTRUCTION FUND #1.
5. INSTALL STORM DRAIN STRUCTURES AND PIPES TO FUND #1 AND REMOVE SEDIMENT BASIN #1 W/ SED CONTROL INSPECTOR'S APPROVAL. ADJUST GRAINS TO DRAIN TIE INTO STORM DRAIN INLETS.
6. GRADE ROADS TO SURGRADE ELEVATION.
7. STABILIZE ALL DISTURBED AREAS OUTSIDE PROPOSED PAVEMENT AREA.
8. INSTALL CURBING AND STONE SUB-BASE COURSE.
9. INSTALL BASE COURSE PAVEMENT.
10. STORM DRAIN PIPES TO BE CLEARED OF ALL SEDIMENT AND DEBRIS.
11. PROTECTIVE HIGH VESTIBILITY FENCING, SILT FENCE, AND SEDIMENT BASIN #2 TO REMAIN IN PLACE. SEDIMENT CONTROL MEASURES TO BE ADJUSTED OR REMOVED ONLY WITH THE SEDIMENT CONTROL INSPECTOR'S APPROVAL. FUND #1 TO FUNCTION AS SEDIMENT BASIN.
12. SILT FENCE TO BE USED AS NECESSARY DURING HOME CONSTRUCTION TO PREVENT SEDIMENT THAT WOULD NOT BE CONVEYED BY STORMDRAIN FROM LEAVING LOTS.
13. PERFORATED UNDERDRAIN AND STONE ARE NOT TO BE INSTALLED IN PERMANENT PAVEMENT UNTIL ALL CONSTRUCTION IS COMPLETED INCLUDING HOMES AND SITE IS STABILIZED.
14. LOWER RISER CREST FOR FUND #1 AND INSTALL WETLAND VEGETATION AFTER PERFORATED UNDERDRAINS ARE INSTALLED.
NOTE: REFER TO THE CONSTRUCTION SEQUENCE FOR THE MASS GRADING PLAN FOR THIS PROJECT (SEE SHEET 7 OF 20 SDP-02-102).

ENGINEER'S CERTIFICATE
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.
Signature: David W. McKewen, 9/1/92
DEVELOPER'S CERTIFICATION
I/WE CERTIFY THAT ANY DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT(N)S APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.
Signature: Kevin Geraghy, 9/2/92
SIGNATURE OF DEVELOPER DATE
This development is approved for erosion and sediment control by the Howard County Soil Conservation District.
Signature: Staff Sgt. Kelly, 9/1/92
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Signature: James A. Holladay, 9/2/92
APPROVED: DEPARTMENT OF PUBLIC WORKS
Signature: James A. Holladay, 9-23-92
APPROVED: DEPARTMENT OF PUBLIC WORKS
Signature: Cole M. Dwyer, 9/1/92
APPROVED: DEPARTMENT OF PUBLIC WORKS
Signature: Chad Lawrence, 9/1/92

STATE OF MARYLAND
HARRIS, SMARIGA, MATZ, INC.
PLANNERS / ENGINEERS / SURVEYORS
104 CHURCH LANE, SUITE 100
BALTIMORE, MARYLAND 21208
(301)-486-1511
DESIGNED: DATE
DRAWN: DATE
CADD: DATE
CHECKED: DATE
DATE: 9/1/92
SCALE: 1"=50'
DRAWING: 14 OF 20
JOB NO.: 40554
FILE NO.
OWNER DEVELOPER
JAMES F. KNOTT DEVELOPMENT CORPORATION
110 WEST ROAD, SUITE 203
TOWSON, MARYLAND 21204
(410) 321-1000
SUBDIVISION NAME: BOWLING BROOKS FARMS
SECT./AREA: PARCEL C
PLAT OR L/F BLOCK: ZONE RSA-B
TAX/ZONE MAP: 47
ELEC. DIST. CENSUS TR: 6063
WATER CODE: SEWER CODE



VICINITY MAP
SCALE: 1" = 2000'



REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS
John L. Watson 8/4/92

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED: *James M. Hahn* 8/4/92

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Emma H. Smith 9/24/92
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PUBLIC WORKS
Michael S. Ray 9-23-92
 CHIEF, BUREAU OF ENGINEERING

APPROVED: DEPARTMENT OF PUBLIC WORKS
Col. M. Poyner 9/24/92
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PUBLIC WORKS
Robert C. ... 9/24/92
 CHIEF, BUREAU OF PUBLIC UTILITIES

HARRIS, SMARIGA, MATZ, INC.
 PLANNERS / ENGINEERS / SURVEYORS
 104 CHURCH LANE, SUITE 100
 BALTIMORE, MARYLAND 21208
 (301) 486-1511

DESIGNED: _____ SCALE: 1" = 50'

DRAWN: CADD/ _____ DRAWING: 15 OF 20

CHECKED: _____ JOB NO.: 40554

DATE: 9/11/92 FILE NO.: _____

BOWLING BROOK FARMS
 PARCEL C
EXISTING & OFF-SITE DRAINAGE AREA MAP
 SIXTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

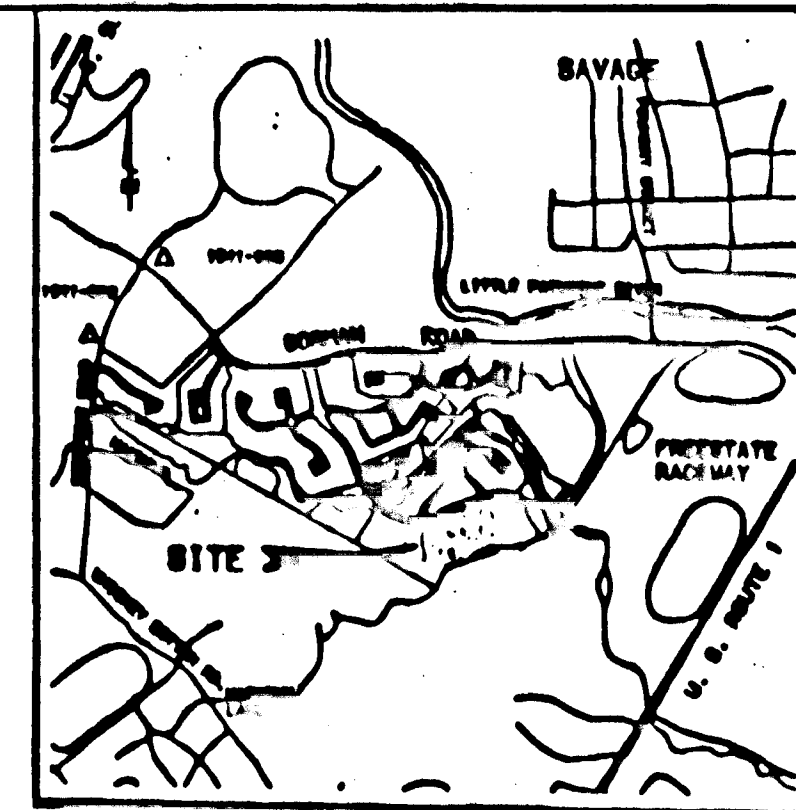
OWNER DEVELOPER
JAMES F. KNOTT DEVELOPMENT CORPORATION
 110 WEST ROAD, SUITE 203
 TOWSON, MARYLAND 21204
 (410) 321-1000

SUBDIVISION NAME	SECT./AREA	LOT/PARCEL
BOWLING BROOKS FARMS		PARCEL C
PLAT • OR L/F BLOCK •	ZONE	TAX/ZONE MAP
	RSA-B	47
		ELEC. DIST. 6TH
		CENSUS TR. 6063
WATER CODE		SEWER CODE

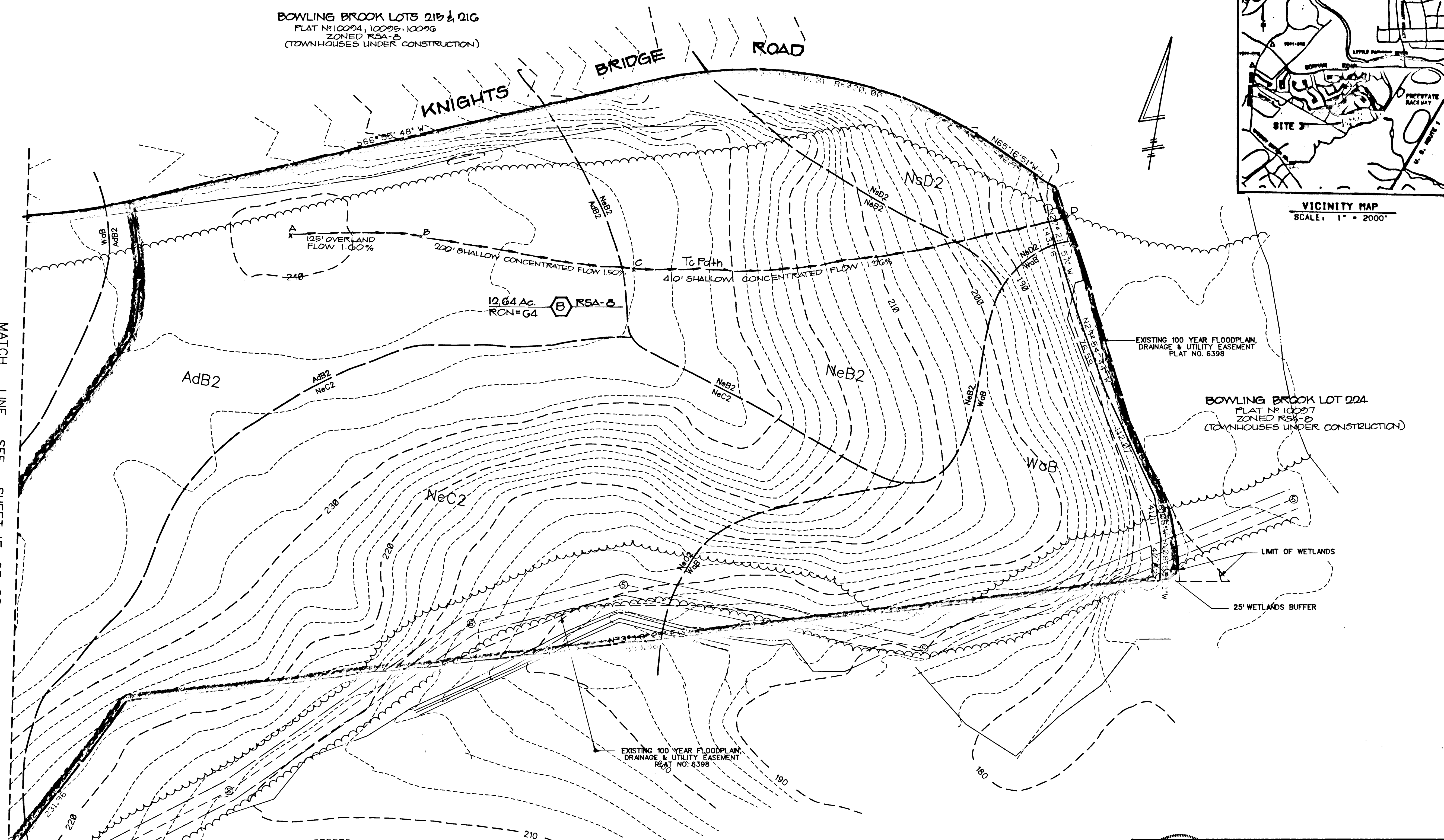
DATE	REVISION

1271

BOWLING BROOK LOTS 210 & 216
 PLAT NO. 10004, 10005, 10006
 ZONED RSA-B
 (TOWNHOUSES UNDER CONSTRUCTION)



MATCH LINE SEE SHEET 15 OF 20



REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS
John K. Roberts 9/14/92
 DATE

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED: *James M. Helm/JMH* 9/14/92
 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Anna Blumark 9/24/92
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

APPROVED: DEPARTMENT OF PUBLIC WORKS
William E. Ray 9-23-92
 CHIEF, BUREAU OF ENGINEERING DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
Oliver M. Langston 9/14/92
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS
William E. Ray 9/22/92
 CHIEF, BUREAU OF ENGINEERING DATE

BANKERS TRUST CO
 6001 57th
 ZONED INDUSTRIAL

HARRIS, SMARIGA, MATZ, INC.
 PLANNERS / ENGINEERS / SURVEYORS
 104 CHURCH LANE, SUITE 100
 BALTIMORE, MARYLAND 21208
 (301) 486-1511

DESIGNED: _____ SCALE: 1"=50'

DRAWN: _____ DRAWING: 16 OF 20

CHECKED: _____ JOB NO.: 40554

DATE: 9/11/92 FILE NO.: _____

**BOWLING BROOK FARMS
 PARCEL C
 EXISTING
 DRAINAGE AREA MAP**

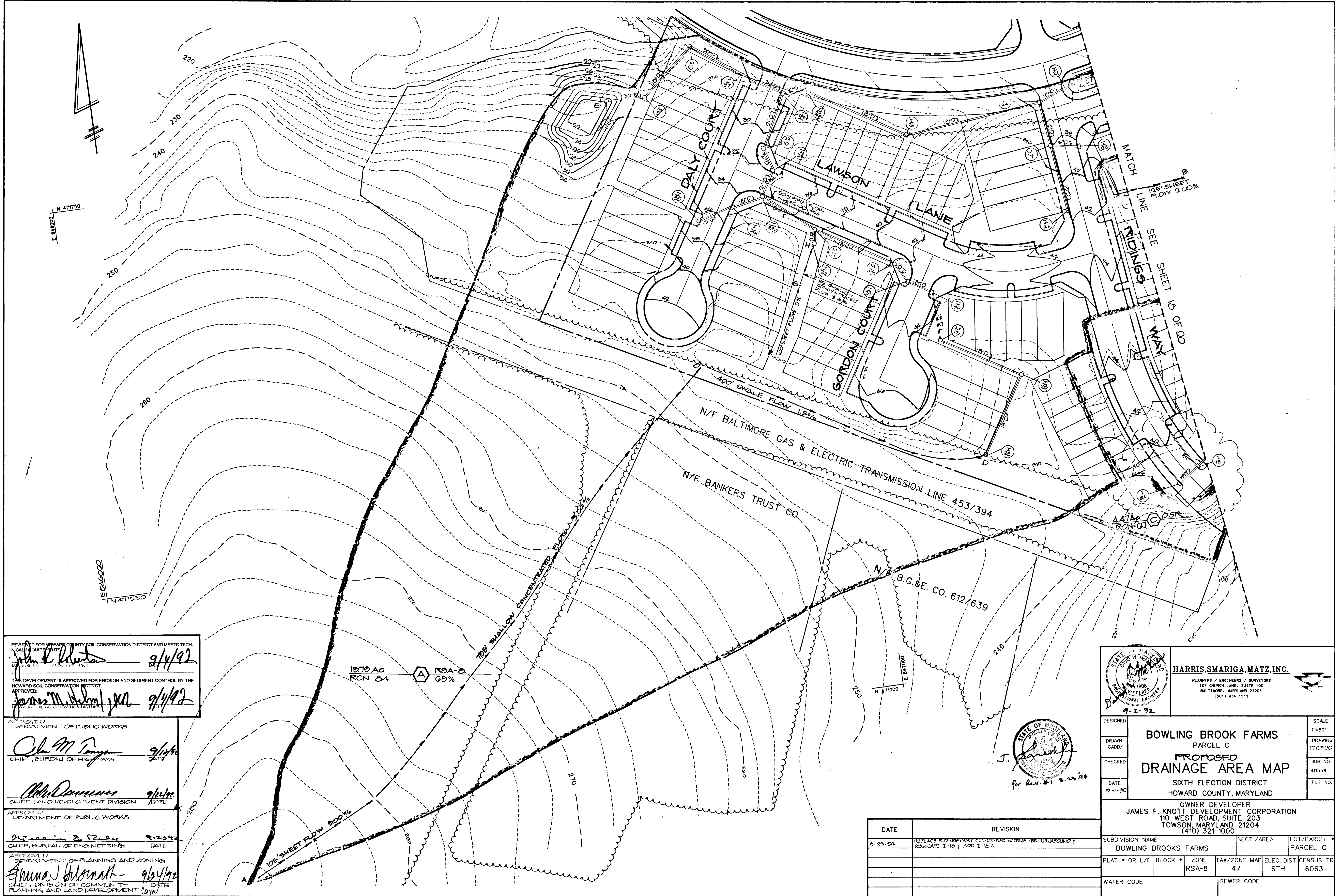
SIXTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

OWNER DEVELOPER
JAMES F. KNOTT DEVELOPMENT CORPORATION
 110 WEST ROAD, SUITE 203
 TOWSON, MARYLAND 21204
 (410) 321-1000

SUBDIVISION NAME	SECT./AREA	LOT/PARCEL
BOWLING BROOKS FARMS		PARCEL C
PLAT * OR L/F	BLOCK * ZONE	TAX/ZONE MAP
	RSA-B	47
		ELEC. DIST. 6TH
		CENSUS TR. 6063
WATER CODE	SEWER CODE	

DATE	REVISION

1271



REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS
John K. Roberts 9/4/92
 DATE

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED:
James M. Helm 9/4/92
 DATE

APPROVED
 DEPARTMENT OF PUBLIC WORKS
Chas M. Tanager 9/4/92
 CHIEF, BUREAU OF HIGHWAYS
 DATE

APPROVED
 DEPARTMENT OF PUBLIC WORKS
John J. ... 9/2/92
 CHIEF, LAND DEVELOPMENT DIVISION
 DATE

APPROVED
 DEPARTMENT OF PUBLIC WORKS
James ... 9-23-92
 CHIEF, BUREAU OF ENGINEERING
 DATE

APPROVED
 DEPARTMENT OF PLANNING AND ZONING
Anna Blomark 9/3/92
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
 DATE

1870 AC
 RCN 24
 RSA-8
 65%

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 9-2-92

HARRIS, SMARIGA, MATZ, INC.
 PLANNERS / ENGINEERS / SURVEYORS
 104 CHURCH LANE, SUITE 100
 BALTIMORE, MARYLAND 21208
 (301) 486-1511

DESIGNED
 DRAWN
 CADD/
 CHECKED
 DATE
 9-1-92

**BOWLING BROOK FARMS
 PARCEL C
 PROPOSED
 DRAINAGE AREA MAP**
 SIXTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

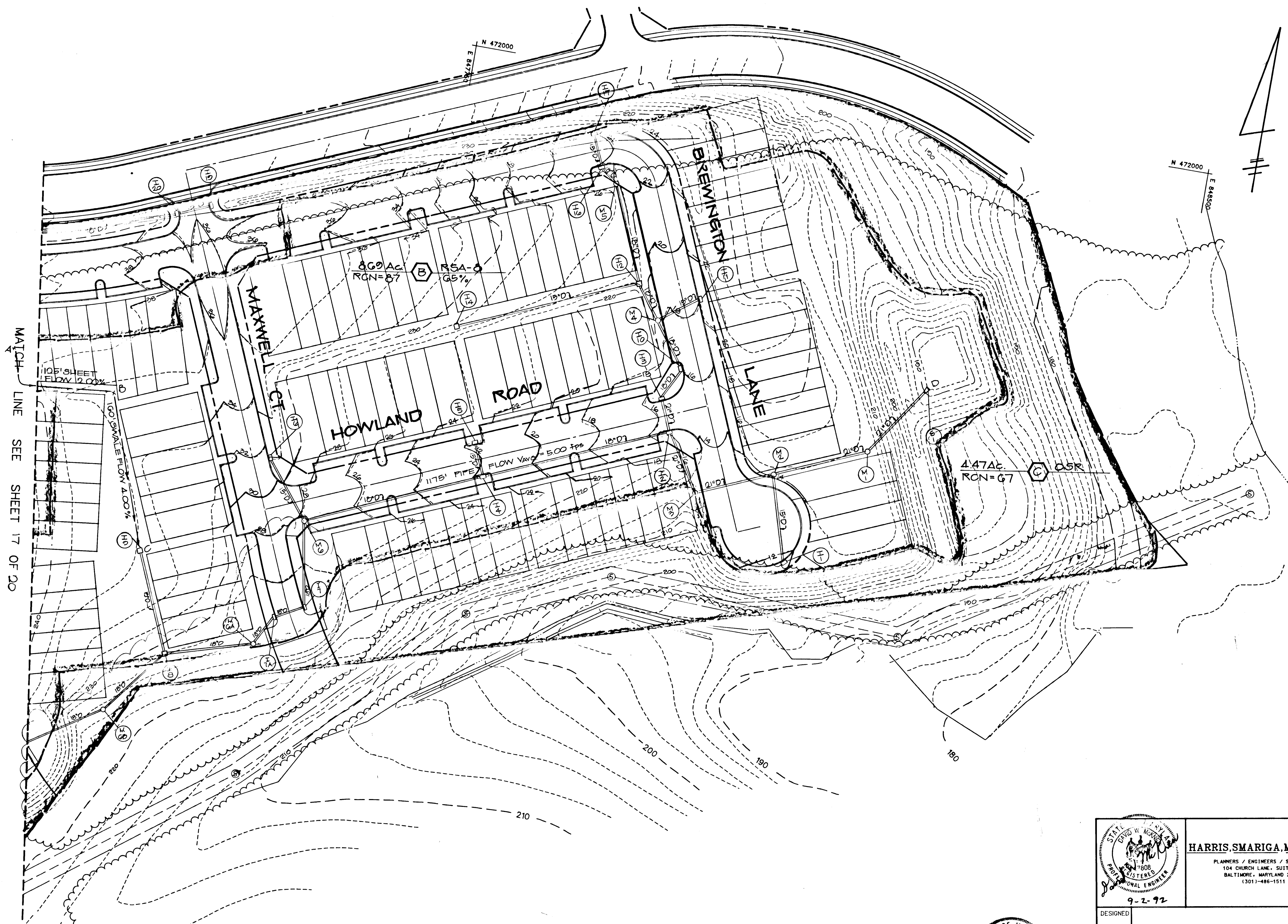
SCALE
 1"=50'
 DRAWING
 17 OF 20
 JOB NO.
 40554
 FILE NO.

OWNER DEVELOPER
JAMES F. KNOTT DEVELOPMENT CORPORATION
 110 WEST ROAD, SUITE 203
 TOWSON, MARYLAND 21204
 (410) 321-1000

SUBDIVISION NAME BOWLING BROOKS FARMS	SECT./AREA	L01/PARCEL PARCEL C
PLAT * OR L/F BLOCK	ZONE RSA-8	TAX/ZONE MAP 47
ELEC. DIST 6TH		CENSUS TR 6063
WATER CODE		SEWER CODE

DATE	REVISION
9-23-92	REPLACE RIDINGS WAY CUR. DE 200' W/TEMP. TEE TURNAROUND ? RELOCATE T-18; ACC. T-18.A

1271



MATCH LINE SEE SHEET 17 OF 20

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS
John K. Blanton 2/4/92
 SOIL CONSERVATION DISTRICT

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED:
James M. Helm JMK 2/4/92
 SOIL CONSERVATION DISTRICT

APPROVED
 DEPARTMENT OF PUBLIC WORKS
Don M. Long 9/19/92
 CHIEF, BUREAU OF HIGHWAYS

Chlo. Damms 9/23/92
 CHIEF, LAND DEVELOPMENT DIVISION

APPROVED
 DEPARTMENT OF PUBLIC WORKS
William E. Riley 9-23-92
 CHIEF, BUREAU OF ENGINEERING

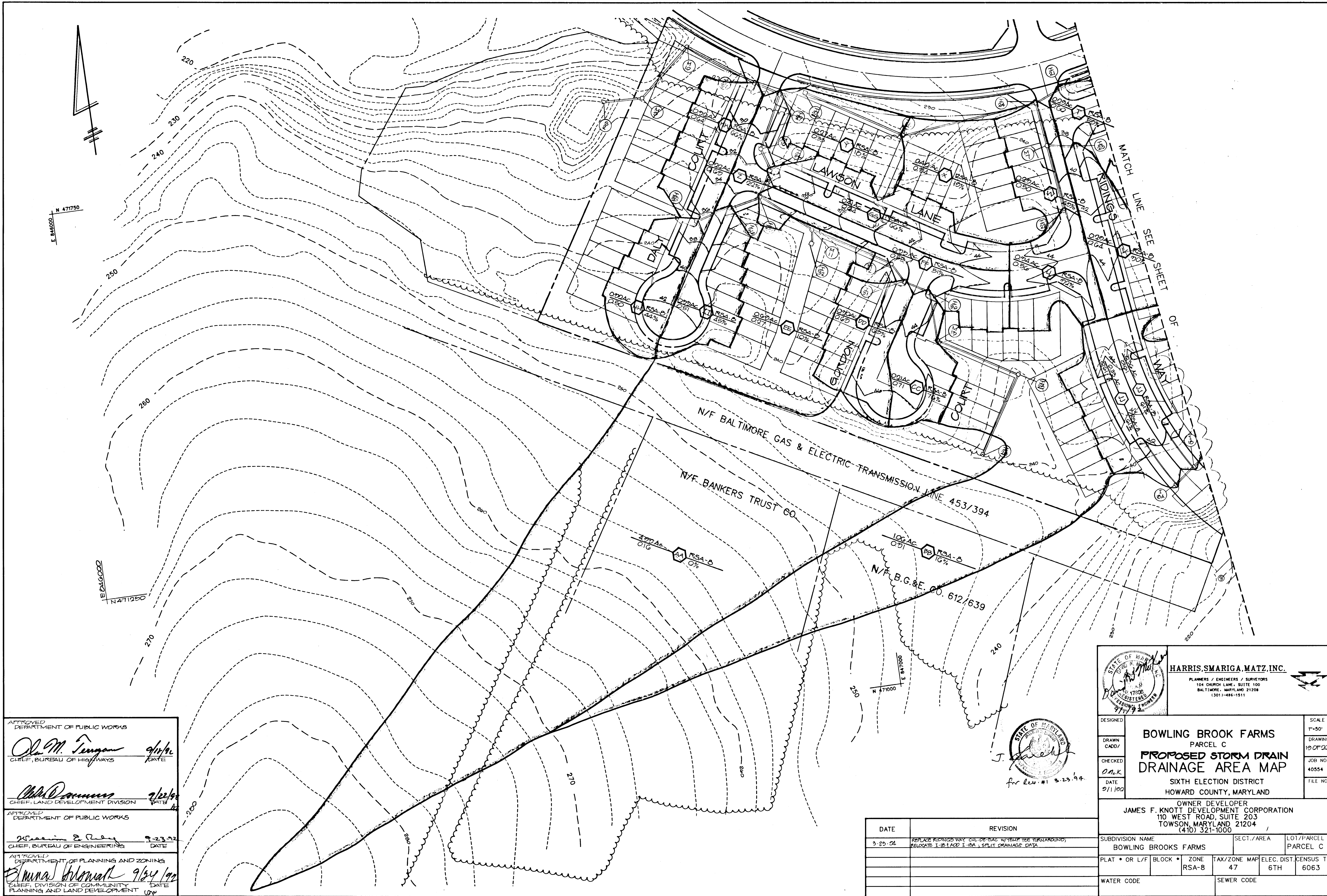
APPROVED
 DEPARTMENT OF PLANNING AND ZONING
Anna J. Hilomath 9/24/92
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

HARRIS, SMARIGA, MATZ, INC.
 PLANNERS / ENGINEERS / SURVEYORS
 104 CHURCH LANE, SUITE 100
 BALTIMORE, MARYLAND 21209
 (301) 486-1511

DESIGNED				SCALE	1"=50'
DRAWN				DRAWING	10 OF 20
CADD/				JOB NO.	40554
CHECKED				FILE NO.	
DATE	9-1-92			BOWLING BROOK FARMS PARCEL C PROPOSED DRAINAGE AREA MAP SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
OWNER DEVELOPER JAMES F. KNOTT DEVELOPMENT CORPORATION 110 WEST ROAD, SUITE 203 TOWSON, MARYLAND 21204 (410) 321-1000					
SUBDIVISION NAME		SECT./AREA	LOT/PARCEL		
BOWLING BROOKS FARMS		47	PARCEL C		
PLAT • OR L/F	BLOCK •	ZONE	TAX/ZONE MAP	ELEC. DIST.	CENSUS TR
		RSA-B	47	6TH	6063
WATER CODE		SEWER CODE			

DATE	REVISION
3-25-94	REPLACE MAXWELL CT. CUL-DE-SAC W/TEMP. TEE TURNAROUND; RE-ALIGN 20' W/O TO E-102A

1721



APPROVED
DEPARTMENT OF PUBLIC WORKS

Olaf M. Ferguson 9/16/94
CHIEF, BUREAU OF HIGHWAYS DATE

John P. ... 7/22/94
CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS

William E. ... 9-23-94
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED
DEPARTMENT OF PLANNING AND ZONING

Anna ... 9/24/94
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

HARRIS, SMARIGA, MATZ, INC.
PLANNERS / ENGINEERS / SURVEYORS
104 CHURCH LANE, SUITE 100
BALTIMORE, MARYLAND 21208
(301) 486-1511

DESIGNED
DRAWN
CHECKED
DATE

**BOWLING BROOK FARMS
PARCEL C
PROPOSED STORM DRAIN
DRAINAGE AREA MAP**

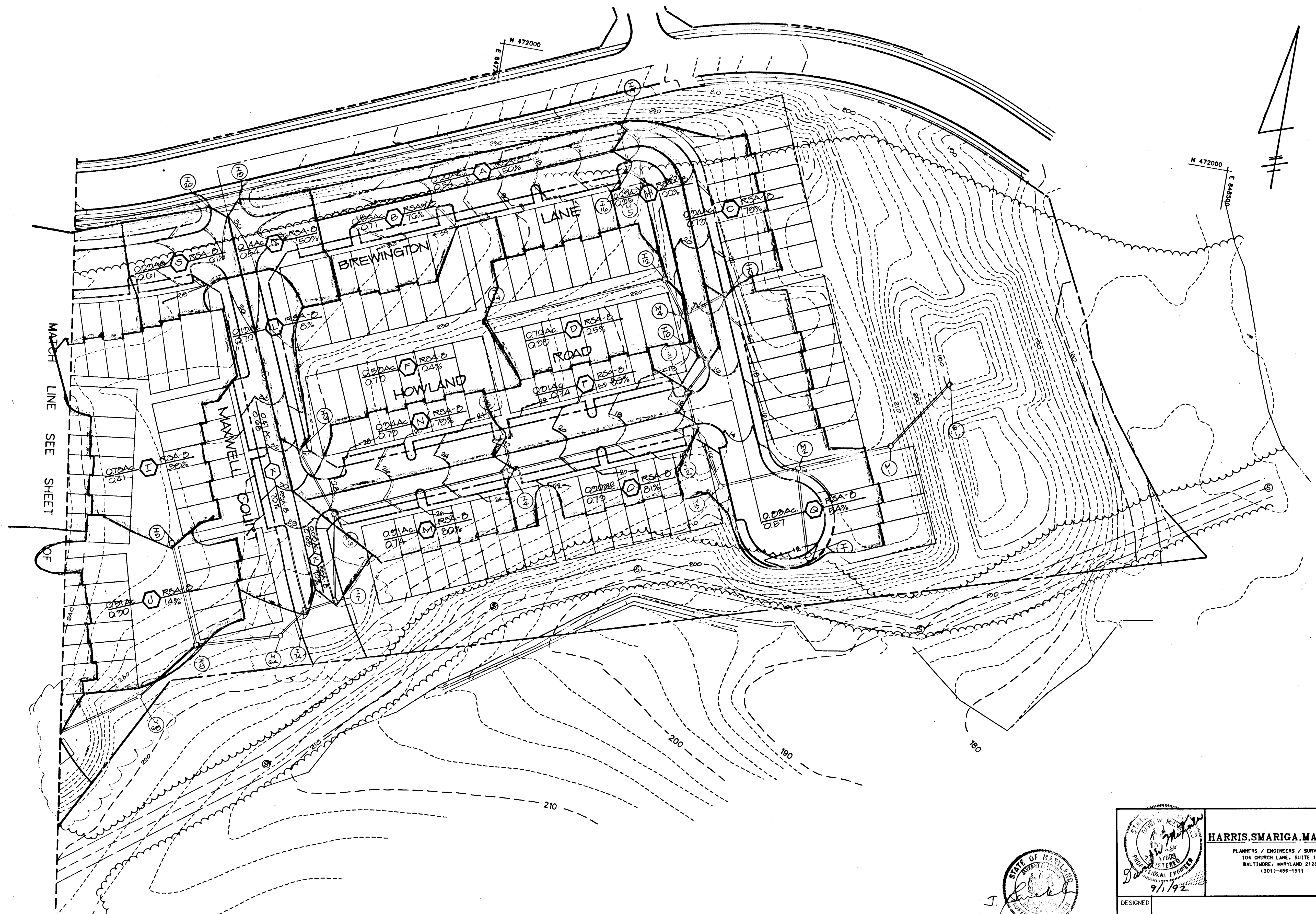
SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER DEVELOPER
JAMES F. KNOTT DEVELOPMENT CORPORATION
110 WEST ROAD, SUITE 203
TOWSON, MARYLAND 21204
(410) 321-1000

SUBDIVISION NAME BOWLING BROOKS FARMS		SECT./AREA	LOT/PARCEL PARCEL C
PLAT • OR L/F	BLOCK	ZONE RSA-8	TAX/ZONE MAP 47
WATER CODE		SEWER CODE	
ELEC. DIST. 6TH		CENSUS TR 6063	

DATE	REVISION
3-25-94	REPLACE REVISIONS WAY CUL-DE-SAC W/TEMP TREE TURNAROUNDS; RELOCATE I-10, I-622 I-10A, & SPLIT DRAINAGE DATA

1271



APPROVED
DEPARTMENT OF PUBLIC WORKS

Olga M. Penney 9/10/92
CHIEF, BUREAU OF HIGHWAYS DATE

Alan Dammus 9/23/92
CHIEF, LAND DEVELOPMENT DIVISION DATE

APPROVED
DEPARTMENT OF PUBLIC WORKS

William S. P. Ray 7-23-92
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED
DEPARTMENT OF PLANNING AND ZONING

Anna J. Hilsenrath 9/10/92
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

J. Smith
for Rev. #1 3-23-99

HARRIS, SMARIGA, MATZ, INC.
PLANNERS / ENGINEERS / SURVEYORS
104 CHURCH LANE, SUITE 100
BALTIMORE, MARYLAND 21208
(301) 486-1511

DESIGNED: [Signature]
DRAWN CADD/ [Signature]
CHECKED: *D.M.K.*
DATE: 9/1/92

**BOWLING BROOK FARMS
PARCEL C
PROPOSED STORM DRAIN
DRAINAGE AREA MAP**

SIXTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE
1"=50'
DRAWING
00 OF 20
JOB NO.
40554
FILE NO.

OWNER-DEVELOPER
JAMES F. KNOTT DEVELOPMENT CORPORATION
110 WEST ROAD, SUITE 203
TOWSON, MARYLAND 21204
(410) 321-1000

SUBDIVISION NAME: BOWLING BROOKS FARMS SE CT./AREA: L07/PARCEL C
PLAT * OR L/F BLOCK * ZONE: RSA-8 TAX/ZONE MAP: 47 ELEC. DIST: 6TH CENSUS TR: 6063
WATER CODE: SEWER CODE:

DATE	REVISION
3-23-99	REPLACE MANWELL COLT ODDAG-SIG WITH THE SURROUNDING, RELOCATE E-7, ADD E-7A, W-10A & W-10B, SPLIT DRAINAGE AREA DATA

1121