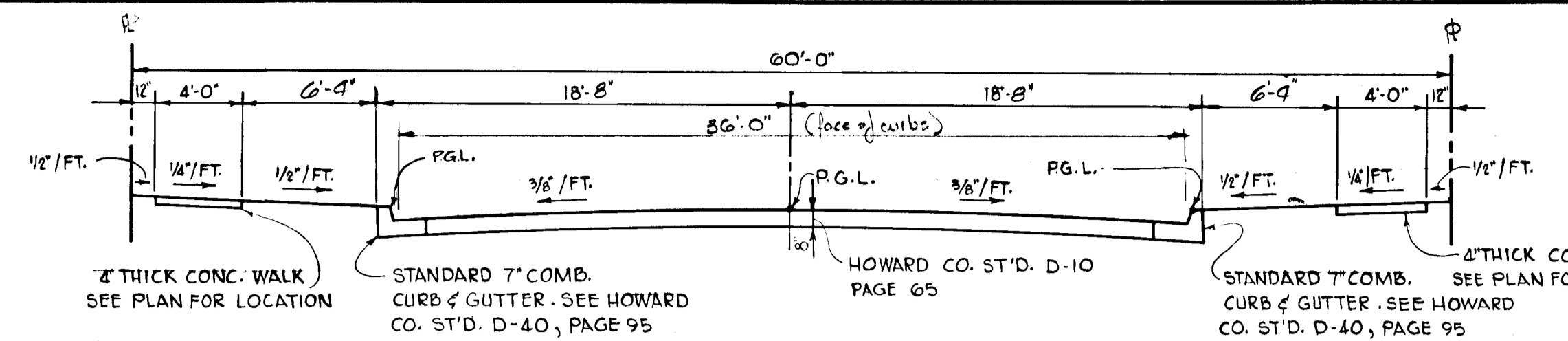


**GENERAL NOTES**

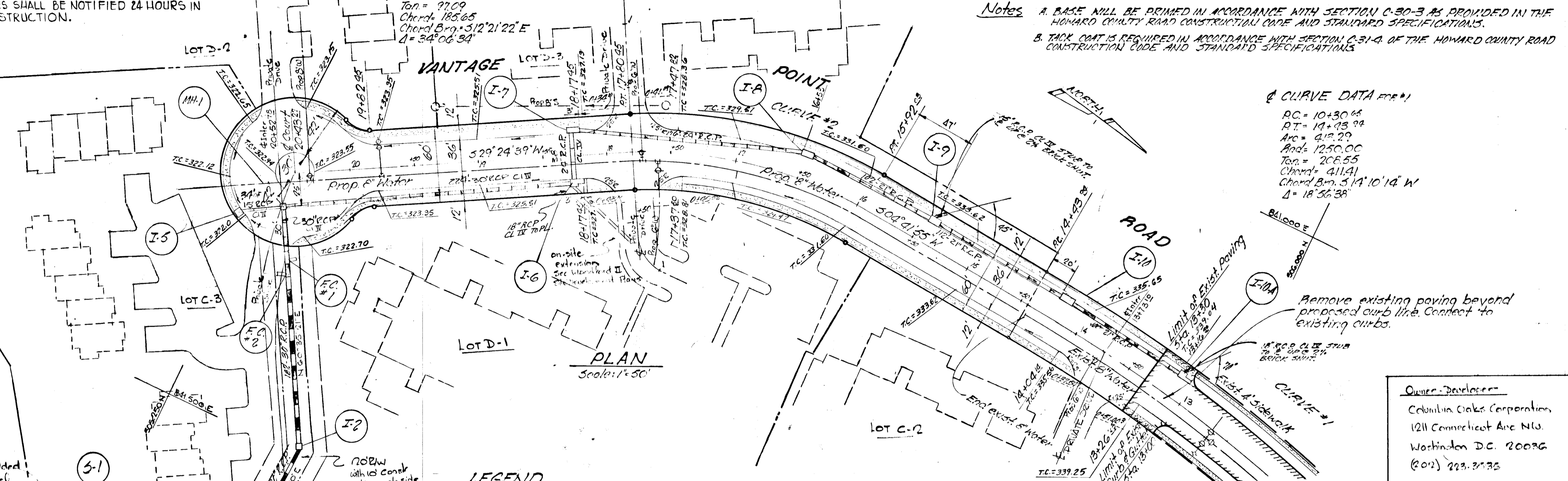
1. ALL STORM DRAIN AND PAVING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST DETAILS AND SPECIFICATIONS OF HOWARD COUNTY.
2. TYPES OF STORM DRAIN STRUCTURES REFER TO THE STANDARD DETAILS OF HOWARD COUNTY.
3. TRENCH COMPACTION FOR STORM DRAINS WITHIN ROAD OR STREET RIGHT OF WAY LIMITS SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY ROAD CODE.
4. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF THE MAINS BY DIGGING TEST PITS BY HAND AT ALL UTILITY CROSSINGS, WELL IN ADVANCE OF TRENCHING.
5. ALL UTILITY COMPANIES SHALL BE NOTIFIED 24 HOURS IN ADVANCE OF CONSTRUCTION.



**DEPARTMENT OF PUBLIC WORKS**  
 Chief Bureau of Highways  
**OFFICE OF PLANNING AND ZONING**  
 Chief Division of Land Development & Transportation Planning

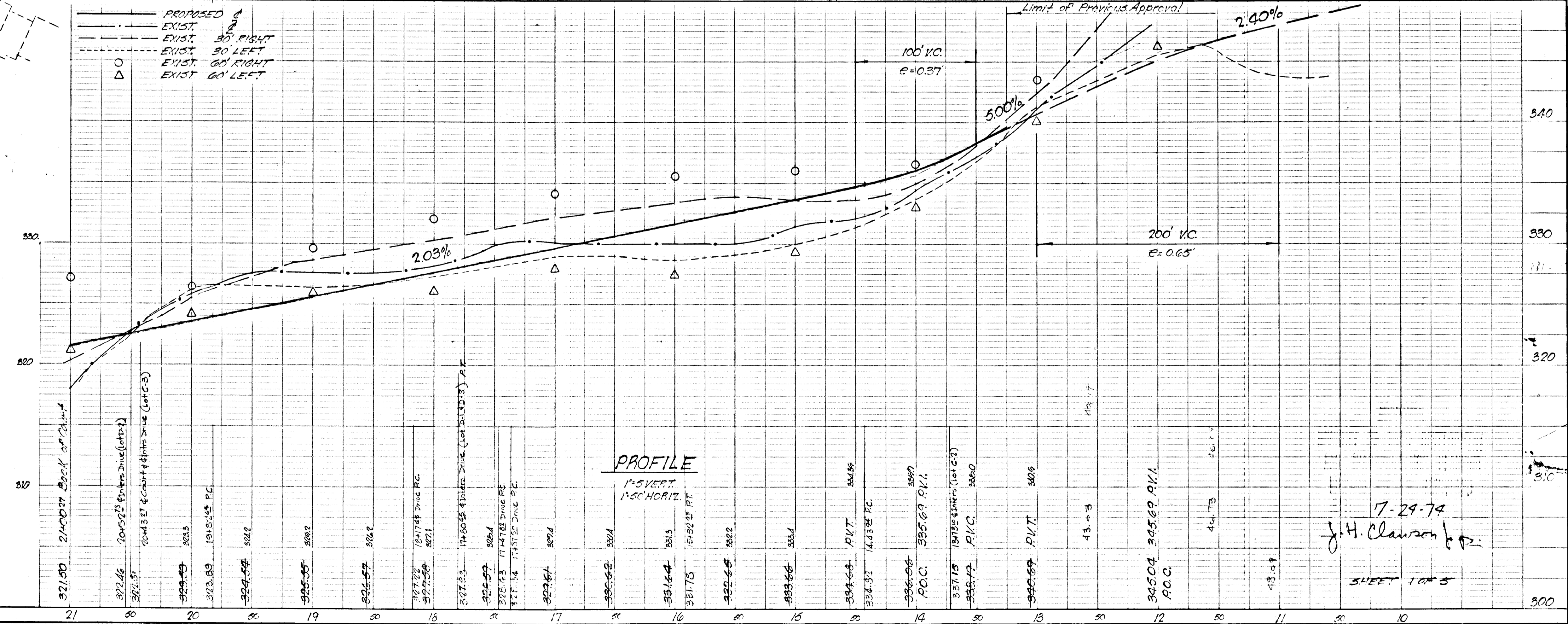
7/30/74  
 DATE

**DESIGN SPEED - 35 M.P.H.**



**LEGEND**

- PROPOSED
- EXIST. 30' RIGHT
- EXIST. 30' LEFT
- EXIST. 60' RIGHT
- EXIST. 60' LEFT



**Owner-Developer:**  
 Columbia Oaks Corporation  
 1211 Connecticut Ave NW  
 Washington DC 20036  
 (202) 223-3735

**COLUMBIA**  
 5th ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 OWNER AND DEVELOPER  
 COLUMBIA OAKS CORP.

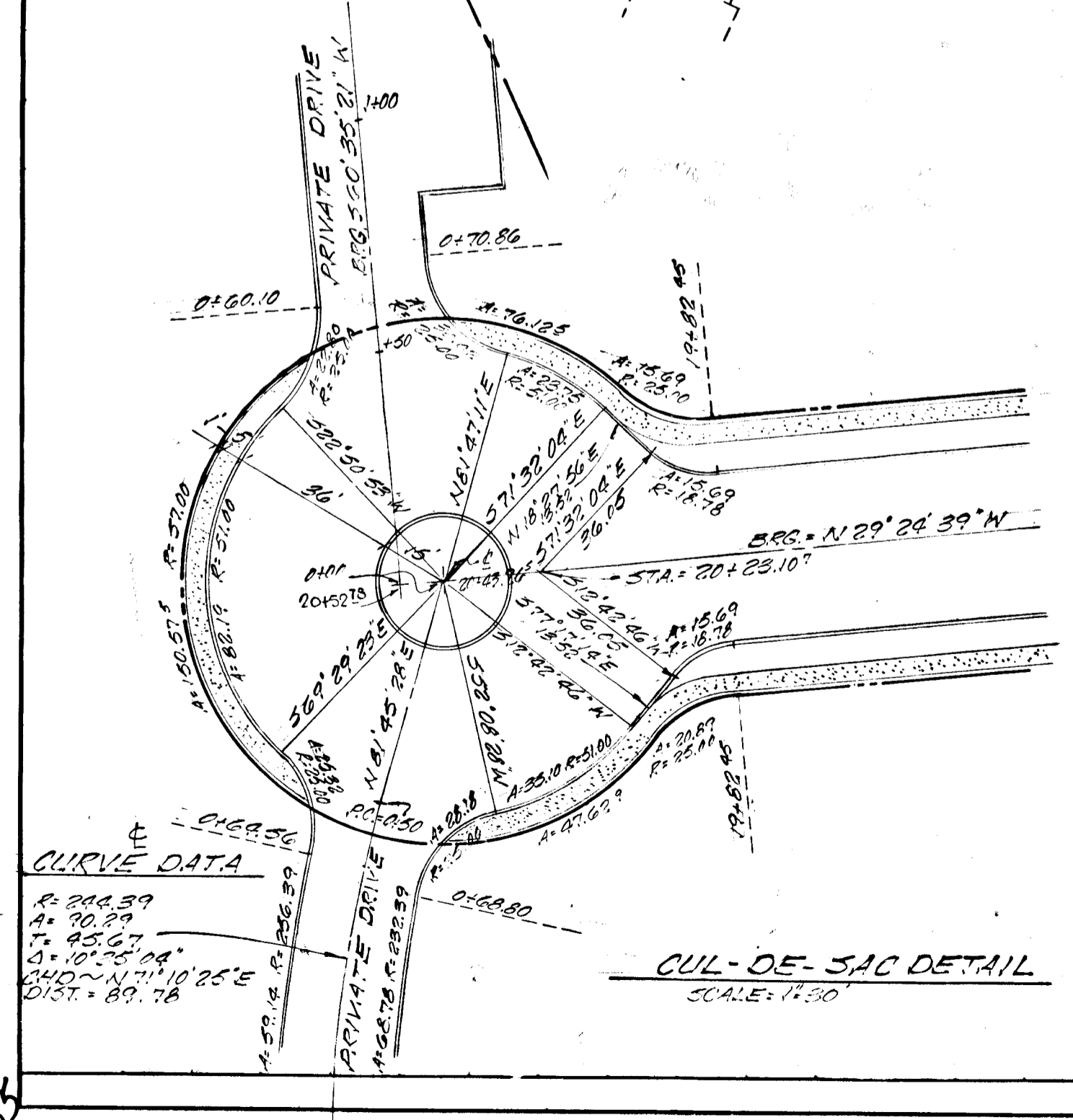
**PROJECT AREA**  
 TOWN CENTER, SECTION 7, AREA 7

**PROJECT TITLE**  
 WOODFORD II

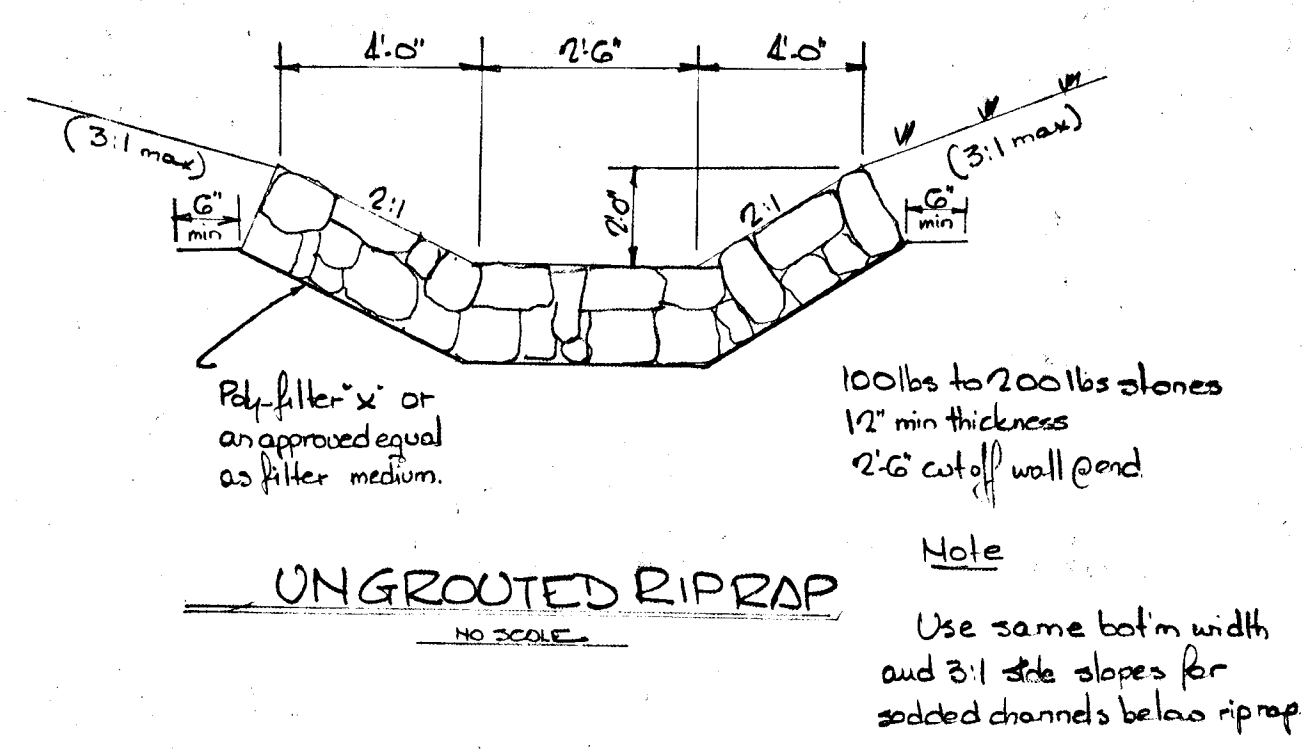
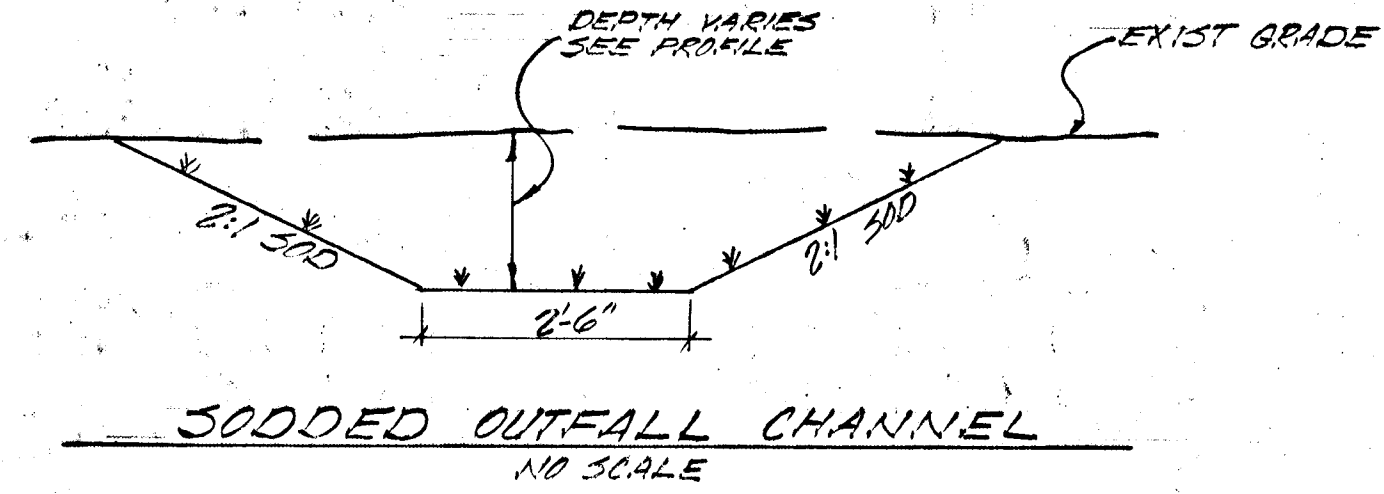
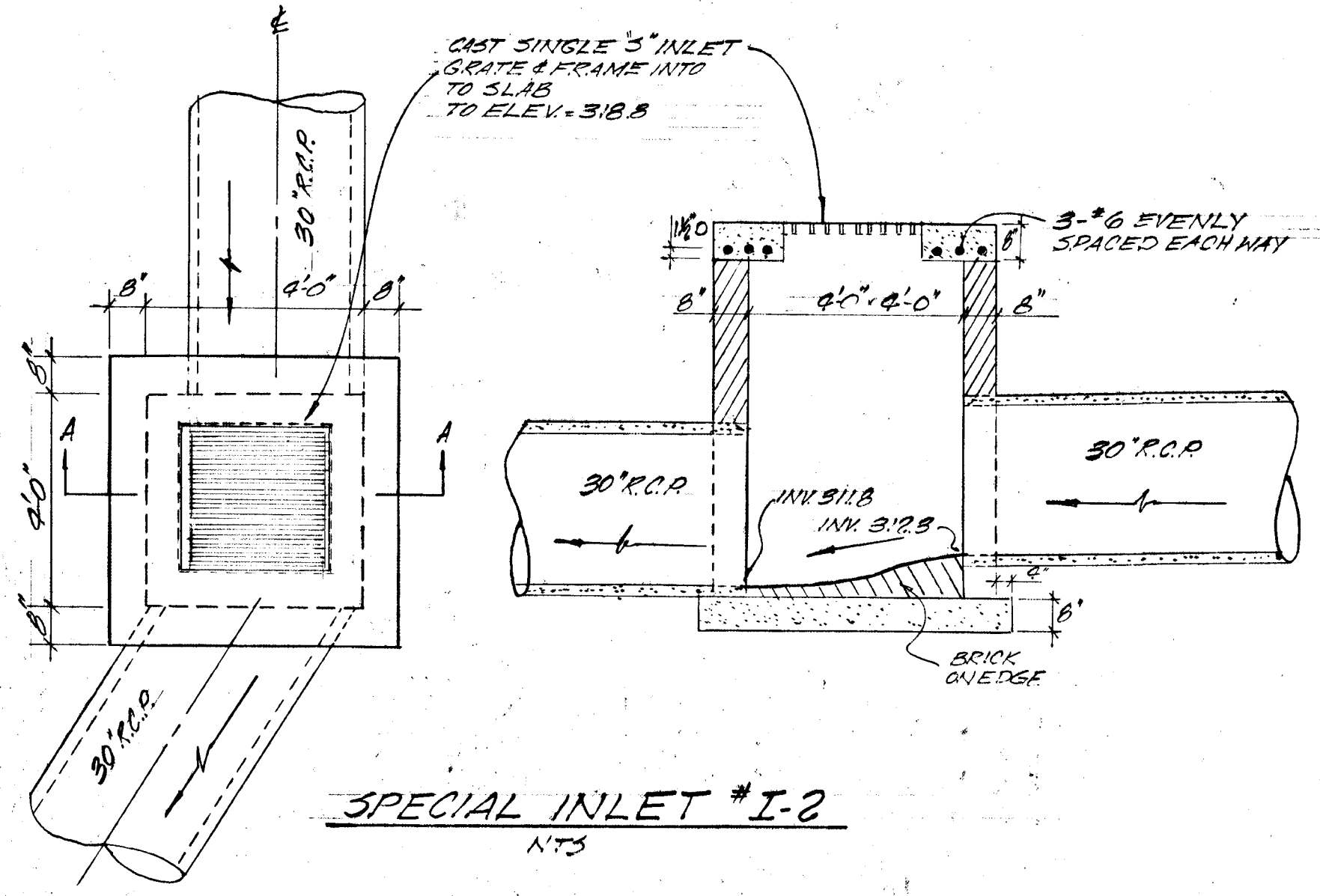
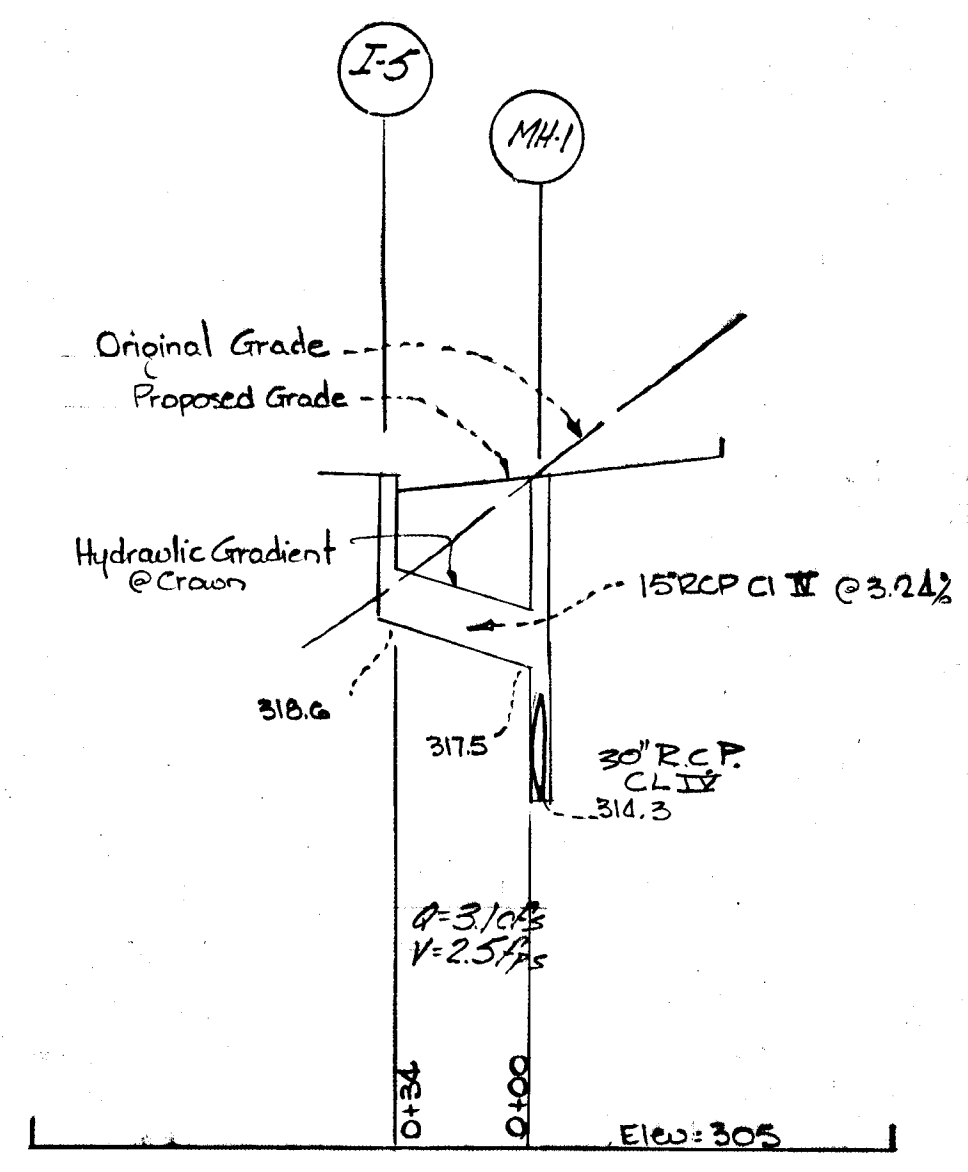
**SCALE: AS SHOWN**      **DATE: O.T., 1973**

**MACRIS-FOWLER ASSOCIATES**  
 ENGINEERS-SURVEYORS  
 817 SILVER SPRING AVE.      27 W. JEFFERSON ST.  
 SILVER SPRING, MARYLAND      ROCKVILLE, MARYLAND

**JOHN A. MACRIS**  
 REGISTERED ENGINEER NO. 4849



7-29-74  
 J.H. Clawson  
 SHEET 1 OF 5

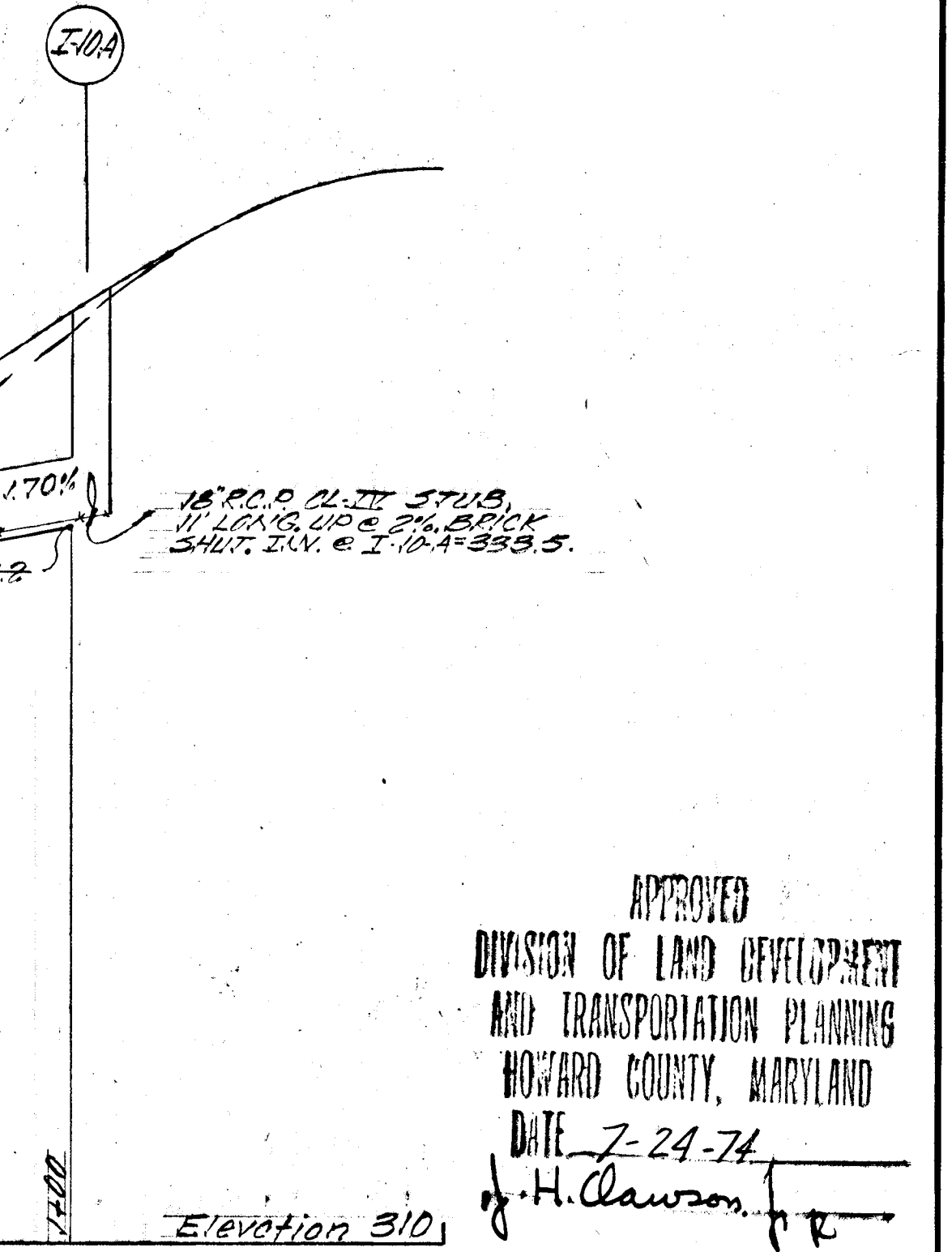
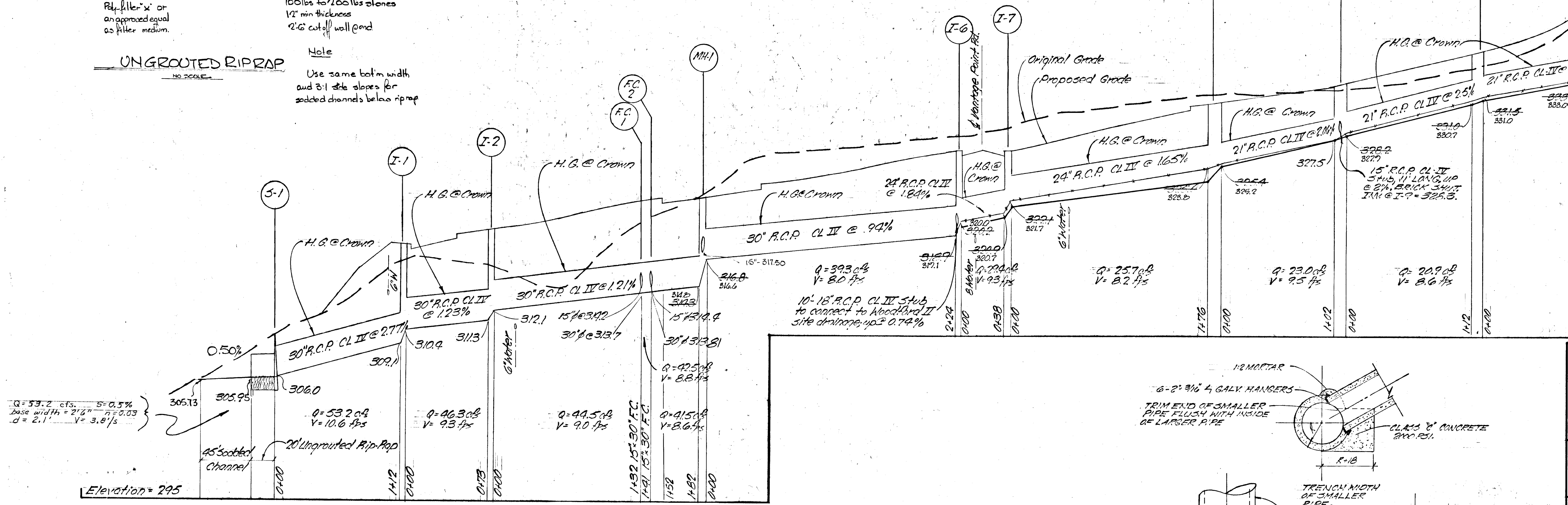


STRUCTURE SCHEDULE						
NO	TYPE	TOP ELEV. UPPER COVER	MIN. IN	MIN. OUT	REMARKS	
I-1	CLASS A-10 INLET	318.0	318.9	307.1	HOWARD CO. STD. DWG. #064-A	
I-2	SPECIAL INLET	318.3	312.1	311.3	SEE DETAIL THIS SHEET	
I-5	CLASS A-5 INLET	322.0	-	318.6	HOWARD CO. STD. DWG. #64-A	
I-6	CLASS B-10 INLET	327.16	326.95	320.2	316.9	HOWARD CO. STD. DWG. #64-B
I-7	CLASS A-10 INLET	327.16	326.95	322.1	321.9	HOWARD CO. STD. DWG. #64-A
I-8	CLASS A-10 INLET	330.78	330.54	325.9	325.0	HOWARD CO. STD. DWG. #64-A
I-9	CLASS A-10 INLET	332.97	332.76	328.2	327.5	HOWARD CO. STD. DWG. #64-A
I-10	CLASS A-10 INLET	333.78	333.53	331.50	331.00	HOWARD CO. STD. DWG. #64-A
I-10A	CLASS B-10 INLET	334.45	334.27	-	333.2	HOWARD CO. STD. DWG. #64-B
MH-1	SHALLOW MANHOLE	322.25	316.8	314.3	HOWARD CO. STD. DWG. SDD-9	
FC#1	15'-30\"/>					
FC#2	15'-30\"/>					
J-1	1\"/>					

DEPARTMENT OF PUBLIC WORKS  
 Chief Bureau of Highways  
 DATE 7/31/74  
 OFFICE OF PLANNING AND ZONING  
 CHIEF DIVISION OF LAND DEVELOPMENT & TRANSPORTATION PLANNING

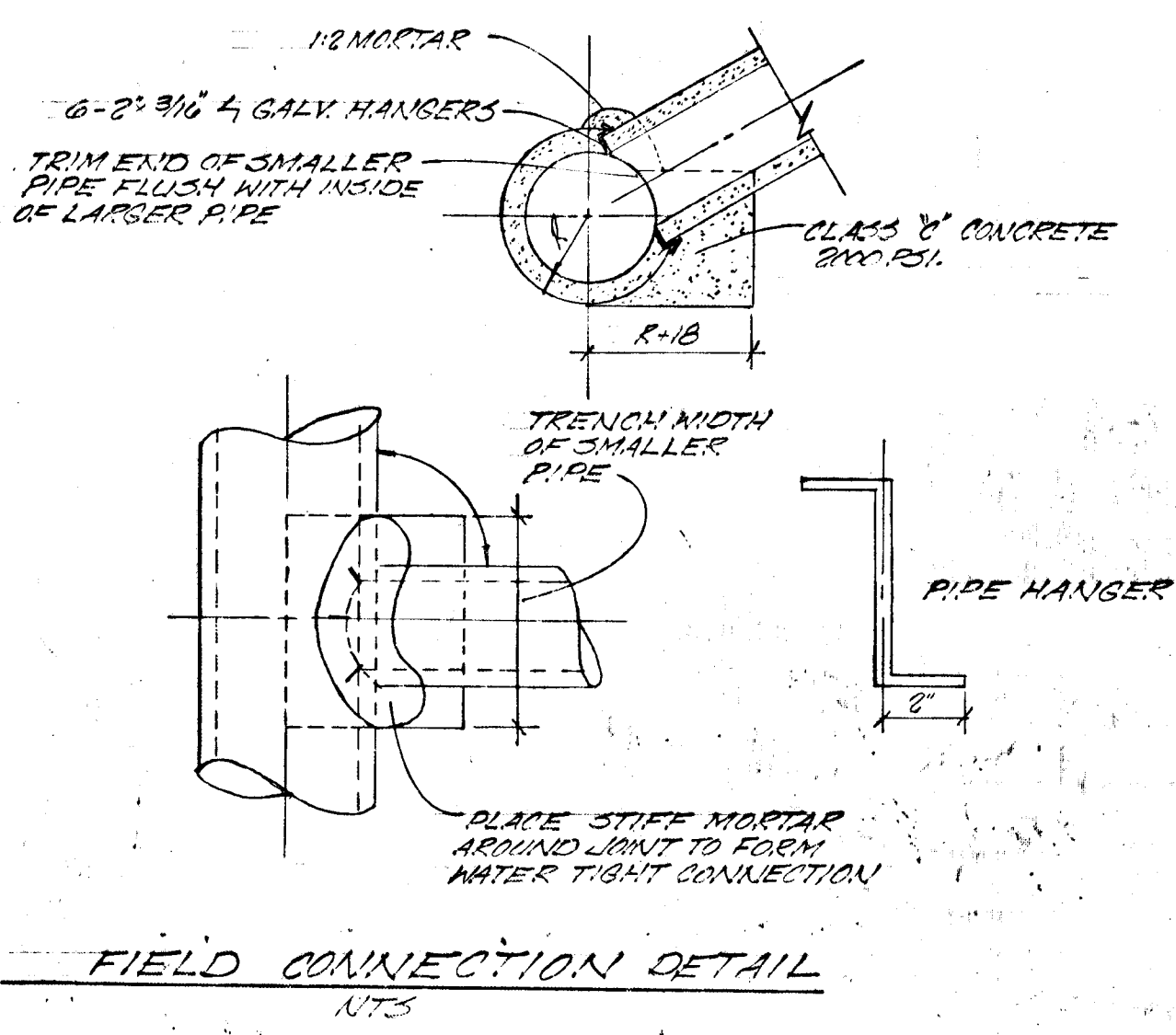
PIPE SCHEDULE		
SIZE	TYPE	LENGTH
15"	R.C.P. CL II	53'
18"	R.C.P. CL II	21'
21"	R.C.P. CL II	314'
24"	R.C.P. CL II	214'
30"	R.C.P. CL II	591'

UNGRADED RIPRAP  
 NO SCALE  
 Note: Use same botm width and 3:1 side slopes for sodded channels below riprap



Q = 53.2 cfs. S = 0.5%  
 Base width = 2'6" n = 0.03  
 d = 2.1" V = 3.8 f/s

PROFILES  
 HORIZ. = 1" = 30'  
 VERT. = 1" = 5'



APPROVED  
 DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING  
 HOWARD COUNTY, MARYLAND  
 DATE 7-24-74  
 J. H. Lawson

**COLUMBIA**  
 5th ELECTION DISTRICT  
 HOWARD COUNTY MARYLAND  
 OWNER AND DEVELOPER  
 COLUMBIA OAKS CORP.

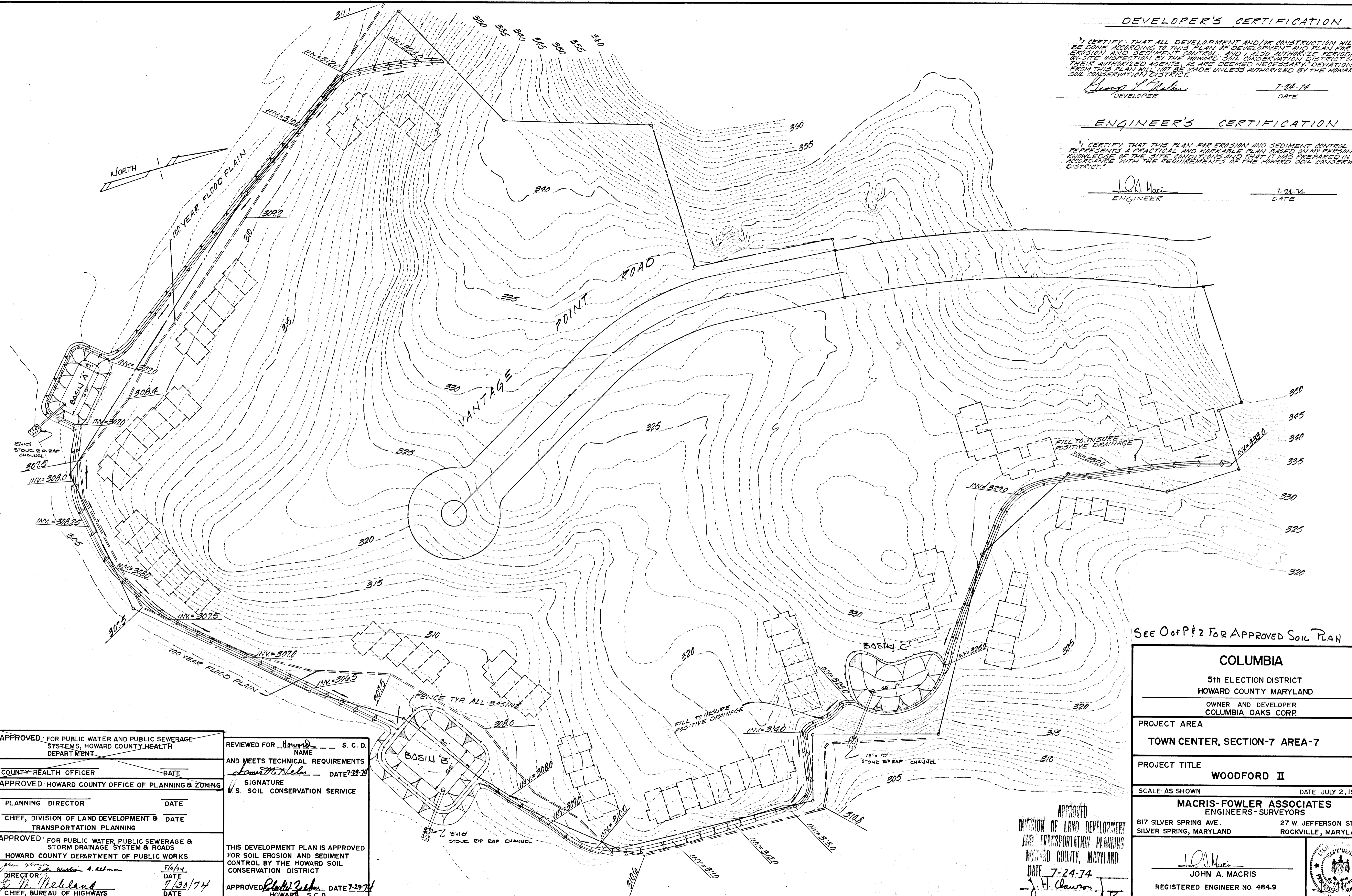
PROJECT AREA  
 TOWN CENTER, SECTION 7, AREA 7

PROJECT TITLE  
 WOODFORD II

SCALE AS SHOWN DATE JULY 2, 1973

MACRIS-FOWLER ASSOCIATES  
 ENGINEERS-SURVEYORS  
 817 SILVER SPRING AVE. SILVER SPRING, MARYLAND  
 27 W. JEFFERSON ST. ROCKVILLE, MARYLAND

JOHN A. MACRIS  
 REGISTERED ENGINEER NO. 4849



**DEVELOPER'S CERTIFICATION**

I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL, AND I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY. DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT.

*George J. Helms*  
DEVELOPER  
7-24-74  
DATE

**ENGINEER'S CERTIFICATION**

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.

*L.O.S. Macris*  
ENGINEER  
7-24-74  
DATE

SEE OOF P 2 FOR APPROVED SOIL PLAN

<b>COLUMBIA</b>	
5th ELECTION DISTRICT HOWARD COUNTY MARYLAND	
OWNER AND DEVELOPER COLUMBIA OAKS CORP.	
PROJECT AREA	
TOWN CENTER, SECTION-7 AREA-7	
PROJECT TITLE	
WOODFORD II	
SCALE: AS SHOWN	DATE: JULY 2, 1973
<b>MACRIS-FOWLER ASSOCIATES</b> ENGINEERS - SURVEYORS	
817 SILVER SPRING AVE. SILVER SPRING, MARYLAND	27 W. JEFFERSON ST. ROCKVILLE, MARYLAND
<i>L.O.S. Macris</i> JOHN A. MACRIS REGISTERED ENGINEER NO. 484-9	
APPROVED DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING HOWARD COUNTY, MARYLAND DATE 7-24-74 <i>J. H. Clawson</i>	

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT	DATE
COUNTY HEALTH OFFICER	
APPROVED HOWARD COUNTY OFFICE OF PLANNING & ZONING	DATE
PLANNING DIRECTOR	
CHIEF, DIVISION OF LAND DEVELOPMENT & TRANSPORTATION PLANNING	DATE
APPROVED FOR PUBLIC WATER, PUBLIC SEWERAGE & STORM DRAINAGE SYSTEM & ROADS	DATE
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
<i>John A. Helms</i> DIRECTOR	7/30/74 DATE
<i>John A. Helms</i> CHIEF, BUREAU OF HIGHWAYS	

REVIEWED FOR <u>Howard</u> S. C. D. NAME	DATE: 7-29-74
AND MEETS TECHNICAL REQUIREMENTS	
<i>George J. Helms</i> SIGNATURE	
U.S. SOIL CONSERVATION SERVICE	
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT	
<i>Robert J. Zecher</i> APPROVED	DATE 7-29-74
HOWARD S.C.D.	



RUNOFF COEFFICIENT LEGEND						
AREA	GRASSED AREA C = 0.25	IMPERVIOUS AREA C = 0.25	PROP SCHOOL AREA C = 0.50	TOTAL AREA	SUMMATION (AC)	COMPOSITE "C"
A-1	4,350	4,350	82,760	91,460	47,045	0.51
A-2	8,700	13,050	74,050	95,800	51,840	0.54
A-3	8,700	4,350	47,920	60,970	30,430	0.50
A-4	4,350	4,350		8,700	5,660	0.65
A-5	2,175	2,175	8,700	13,050	6,970	0.53
A-6		8,700	43,500 (Pool)	13,050	8,700	0.63
A-7	4,350	4,350		8,700	6,230	0.60
A-B	28,310	2,170	4,350	34,830	11,330	0.33
D	7,040	8,460	16,400	31,900	17,997	0.56
E	14,300	23,100		38,000	26,090	0.69
F	1,720	5,300		9,500	5,335	0.56
G	4,900	18,600		23,500	18,895	0.80
H	6,800	10,700		17,500	11,845	0.68
J	20,400	16,600		37,000	20,870	0.56
K	9,000	45,000		64,000	45,000	0.70
L	8,700	16,300		25,000	17,660	0.71
M	8,400	12,600		21,000	14,070	0.67
N	24,350	8,050		32,400	13,735	0.42
O	800	14,100		15,000	13,620	0.91
P	9,300	20,700		30,000	21,990	0.73
Q	24,275	30,725		55,000	35,255	0.64
R	3,440	16,560		20,000	16,592	0.83
S		17,500		17,500	16,625	0.95
T	29,025	11,375		41,000	16,633	0.40
U	13,450	45,050		64,500	47,660	0.74
V	14,200	2,800		17,000	6,210	0.37
W	3,585	20,315		24,500	20,766	0.85
X	9,625	11,375		21,000	13,213	0.63
Y		4,350		4,350	4,133	0.95
Z		4,350		4,350	4,133	0.95

NOTE  
ALL AREAS ARE ZONED APARTMENTS  
EXCEPT WHERE OTHERWISE SHOWN

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT  
 COUNTY HEALTH OFFICER \_\_\_\_\_ DATE \_\_\_\_\_  
 APPROVED HOWARD COUNTY OFFICE OF PLANNING & ZONING  
 PLANNING DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_  
 CHIEF, DIVISION OF LAND DEVELOPMENT & TRANSPORTATION PLANNING  
 APPROVED FOR PUBLIC WATER, PUBLIC SEWERAGE & STORM DRAINAGE SYSTEMS & ROADS  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_  
 CHIEF, BUREAU OF HIGHWAYS \_\_\_\_\_ DATE \_\_\_\_\_

DRAINAGE AREA MAP  
1" = 100'

SEE OOP #2 FOR APPROVED SOIL PLAN

**COLUMBIA**  
 5th ELECTION DISTRICT  
 HOWARD COUNTY MARYLAND  
 OWNER AND DEVELOPER  
 COLUMBIA OAKS CORP.

PROJECT AREA  
**TOWN CENTER, SECTION-7 AREA-7**

PROJECT TITLE  
**WOODFORD II**

SCALE AS SHOWN DATE JULY 2, 1973

APPROVED  
 DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING  
 HOWARD COUNTY, MARYLAND  
 DATE 7-24-74  
 J. H. Lawson, Jr.

MACRIS-FOWLER ASSOCIATES  
 ENGINEERS-SURVEYORS  
 817 SILVER SPRING AVE. SILVER SPRING, MARYLAND  
 27 W. JEFFERSON ST. ROCKVILLE, MARYLAND

JOHN A. MACRIS  
 REGISTERED ENGINEER NO. 4849

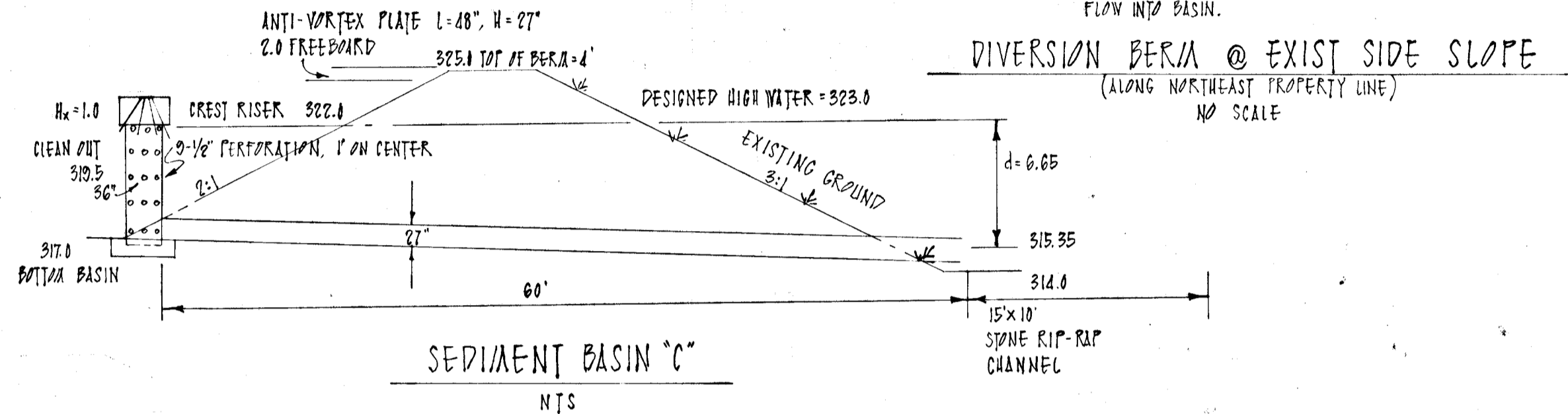
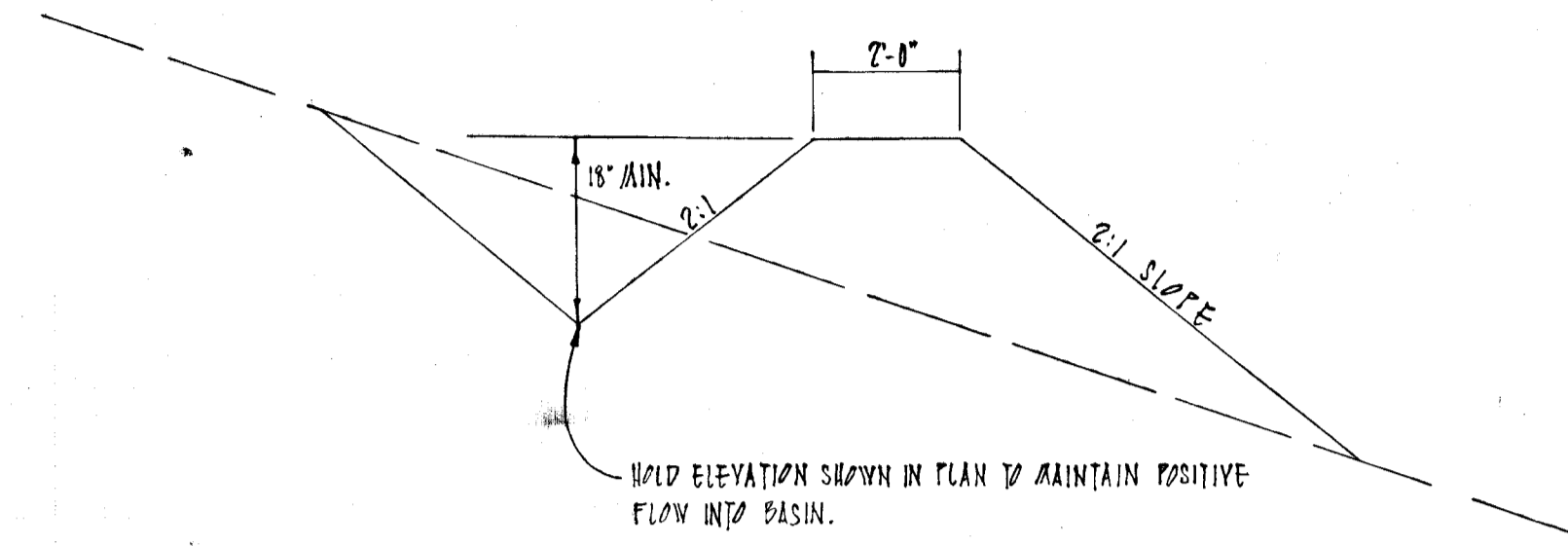
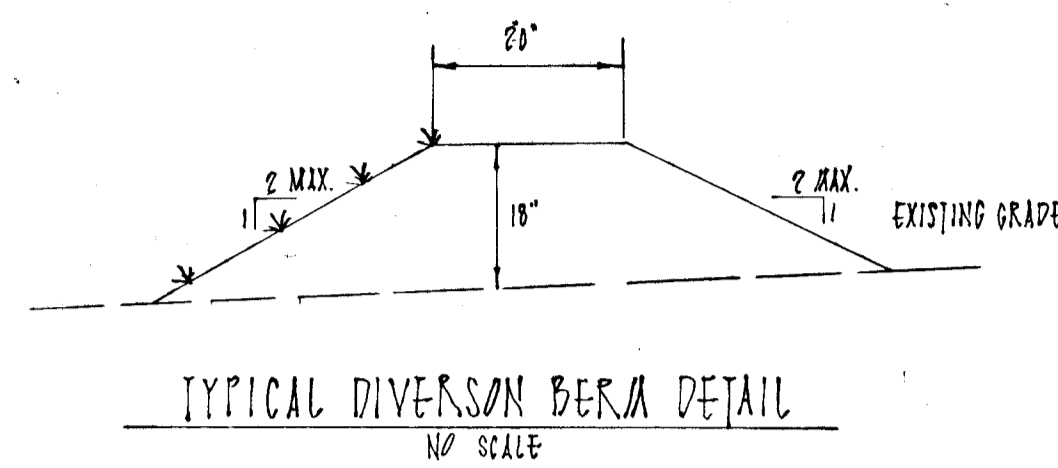
SEQUENCE OF CONSTRUCTION

1. CONSTRUCT SEDIMENT BASINS, BERMS, AND OTHER SOIL EROSION AND SEDIMENT CONTROL STRUCTURES PRIOR TO ANY OTHER SITE GRADING.
2. CLEAR AND GRUB SITE AS NECESSARY.
3. PROCEED WITH TOTAL SITE GRADING, INCLUDING YANTAGE POINT ROAD.
4. PROCEED WITH BUILDING AND UTILITY CONSTRUCTION.
5. PLACE SANDBAGS ON COMPLETED DRAINAGE SYSTEMS - MAINTAIN IN PLACE UNTIL TOTAL SITE STABILIZATION.
6. TOP SOIL, SEED/SOD AS VARIOUS AREAS ARE FINISHED GRADED AND PAVE ALL PAVED AREAS, ALL IN CONFORMANCE WITH THE PLANS AND SOIL EROSION AND SEDIMENT CONTROL NOTES.
7. ELIMINATE BERMS, SEDIMENT BASINS, AND OTHER STRUCTURES AS TRIBUTARY SITE IS STABILIZED.

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. STRUCTURAL MEASURES, SUCH AS BERMS, DIKES, TRAPS, BASINS, ETC. WILL BE INSTALLED AND STABILIZED ACCORDING TO THIS PLAN PRIOR TO ANY OTHER GRADING, CLEARING, OR DISTURBANCE OF THE EXISTING SURFACE OF THE SITE.
2. ALL STRUCTURAL SEDIMENT CONTROL MEASURES ARE TO REMAIN IN PLACE UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD SOIL CONSERVATION DISTRICT, PHONE 465-3100 OR 465-5000 EXT. 328.
3. NOTIFY THE HOWARD SOIL CONSERVATION DISTRICT AT LEAST 24 HOURS BEFORE STARTING ANY WORK, PHONE 465-3100 OR 465-5000 EXT. 328.
4. ALL SEDIMENT BASINS SHALL CONFORM TO THE U.S.C.D. STD'S AND SPECIFICATIONS, NOS. 2,600 TO 2,605, AND AS DETAILED ON THESE PLANS.
5. DIKES ALONG PROPERTY LINES SHALL CONFORM TO THE U.S.C.D. STD'S AND SPECIFICATIONS, NOS. 2,600 TO 2,601 AND AS DETAILED ON THESE PLANS.
6. SAND BAG INLET THROATS UNTIL SUCH TIME THAT FINISH SURFACE IS APPLIED AND OTHER AREAS ARE STABILIZED. SEE DETAILS THIS SHEET.
7. PROVIDE PERMANENT, SEMI-PERMANENT OR PORTABLE FENCE, A MIN. OF 42 INCHES IN HEIGHT AROUND ENTIRE PERIMETER OF SEDIMENT BASINS AS INDICATED IN PLAN DURING ENTIRE LIFE OF THE CONSTRUCTION.
8. CONSTRUCTED BERMS, DIKES, DAMS, AND ETC. WILL BE CONTACTED BY SEVERAL PASSES WITH CONSTRUCTION EQUIPMENT.
9. GRADE AREA ADJACENT TO BERMS TO PROVIDE POSITIVE DRAINAGE INTO SEDIMENT BASINS. SEE ELEVATIONS SHEET SP-10.

10. CONTINUED INSPECTION AND MAINTENANCE WILL BE THE RESPONSIBILITY OF THE DEVELOPER.
11. SEED OR SOD ALL EXPOSED SOIL IN GRASS AREAS WITHIN 72 HOURS OF CUTTING OR FILLING TO FINISHED GRADE IN CONFORMANCE WITH U.S.C.D. STANDARDS AND SPECIFICATIONS AND THESE NOTES. USE BEST PRACTICES IN PAVED AREAS OR PROJECT WITH BITUMINOUS MULCH OR OTHER METHODS APPROVED BY THE ENGINEER WITHIN 72 HOURS OF FINE GRADING.
12. TEMPORARY SEEDING:
  - GROUND LIMESTONE FERTILIZER: 2000 LBS/ACRE - WORK INTO TOP 3" OF SOIL.
  - FERTILIZER: 1000 LBS/ACRE - 5-10-10
  - MULCH: 3000 LBS/ACRE STRAW (WHEAT) PREFERRED
  - SEED: 40 LBS/ACRE RYEGRASS
  - BINDER: ASPHALT STRAY OVER MULCH @ RATE OF 8 GAL/1000 SQ FEET.
13. PERMANENT SEEDING:
  - ALTERNATE - HYDROSEED FERTILIZER SEED AND MULCH USING TURF FIBER OR APPROVED EQUAL
  - GROUND LIMESTONE FERTILIZER: 2000 LBS/ACRE - WORK INTO TOP 3" OF SOIL.
  - FERTILIZER: 1000 LBS/ACRE - 5-10-10
  - SEED: 80% KENTUCKY 91 TALL FESCUE, 15% BERLON BLUEGRASS, 5% RYEGRASS
  - SEEDING RATE: 200 LBS/ACRE
  - BINDER: HYDROSEED FERTILIZER, SEED & BINDER (TURFIBER OR EQUAL)
14. STEEP SLOPES: SAME AS TEMPORARY SEEDING EXCEPT ADD 15 LBS/ACRE CROWNVEGET TO RYEGRASS. IF HYDROSEEDED, APPLY TURF MULCH AS SECOND STEP.



SEDIMENT STORAGE DESIGN

TOTAL DRAINAGE AREA	3.7 AC. = A	TOTAL DISTURBED AREA	3.7 AC. = A
	13.8 AC. = B		9.1 AC. = B
	8.4 AC. = C		7.4 AC. = C
MIN. REQR. STORAGE = 0.5 INCHES x	3.7 AC. = A	DRAINAGE x 1/10	= 1.5 AC. FT. = A
	13.8 AC. = B		= .58 AC. FT. = B
	7.1 AC. = C		= .30 AC. FT. = C
EXCAVATE	248 A C.Y. TO OBTAIN REQUIRED CAPACITY	DESIGNED EXCAV.	280 C.Y. A
	610 B		675 C.Y. B
	490 C		340 C.Y. C
ELEVATION CORRESPONDING TO SCHEDULED TIME OF CLEAN OUT	302.70 A		
DISTANCE BELOW TOP OF RISER	1.3' A		
	1.3' B		
	1.5' C		
EFFECTIVE STORAGE CAPACITY <	240 C.Y. B		
	200 C.Y. C		

DESIGN DATA

RUN OFF

$Q_T = CIA = .6 \times 5.9 \times 3.7 = 13.1 \text{ CFS } A$

$.6 \times 5.1 \times 13.8 = 42.2 \text{ CFS } B$

$.6 \times 5.9 \times 8.4 = 29.7 \text{ CFS } C$

PIPE SPILLWAY  $Q_{ps}$

MIN. PIPE SPILLWAY CAPACITY,  $Q_{ps} = .21 \times 3.7 \text{ P.A.} = .78 \text{ CFS } A$

13.8 2.90 CFS B

8.4 1.76 CFS C

ACTUAL DISCHARGE (FROM APPENDIX A-2)

$d = 2.95 \text{ FT. } A$   $Q_{ps} = 17.5 \text{ CFS } A$   $Q_{req} = 20.0 \text{ CFS } A$

$2.0 \text{ FT. } B$   $42.0 \text{ CFS } B$   $66.0 \text{ CFS } B$

$6.65 \text{ FT. } C$   $30.0 \text{ CFS } C$   $32.0 \text{ CFS } C$

DEVELOPER'S CERTIFICATION

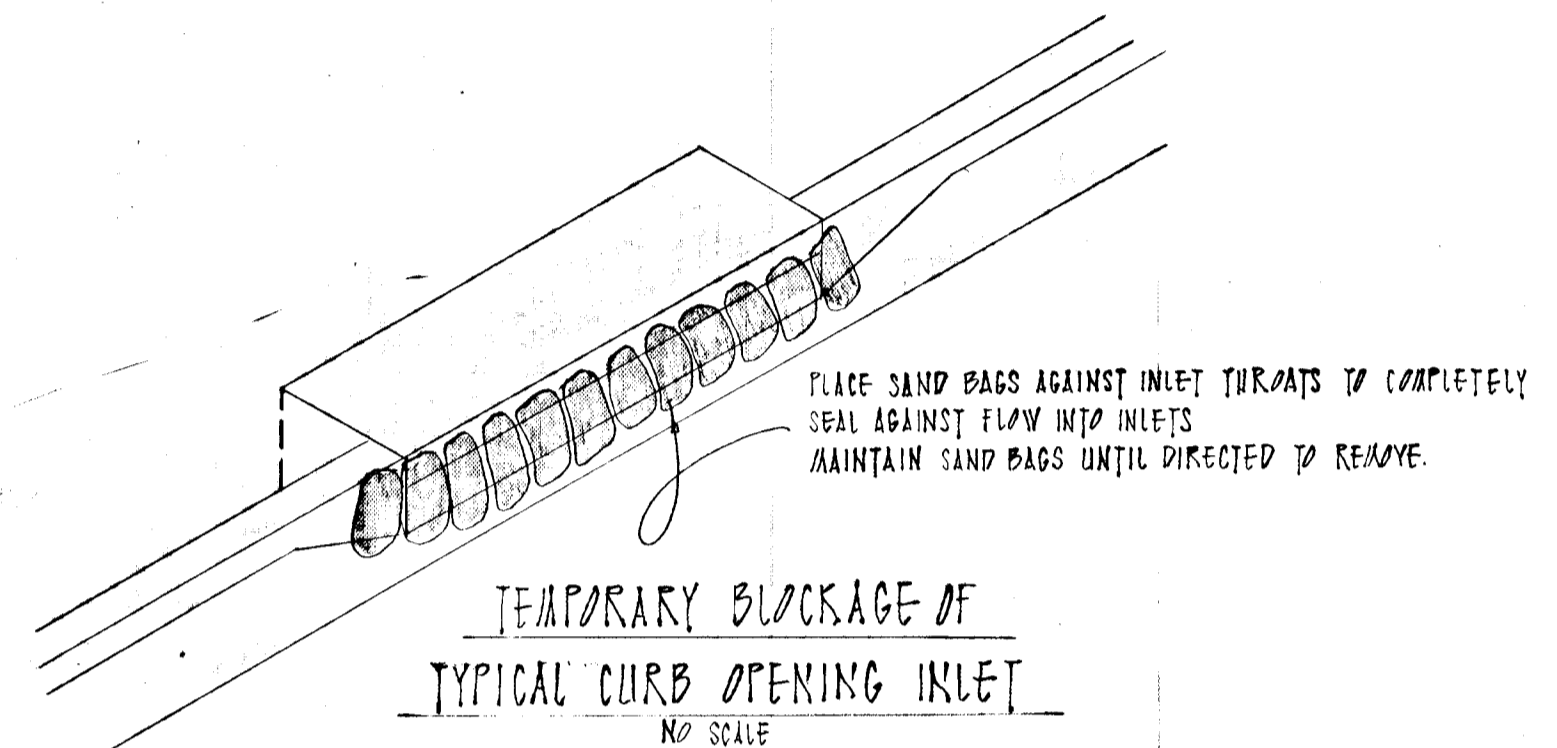
"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL, AND I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY. DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT."

*George L. Nelson* 7-24-74  
SIGNATURE OF DEVELOPER DATE

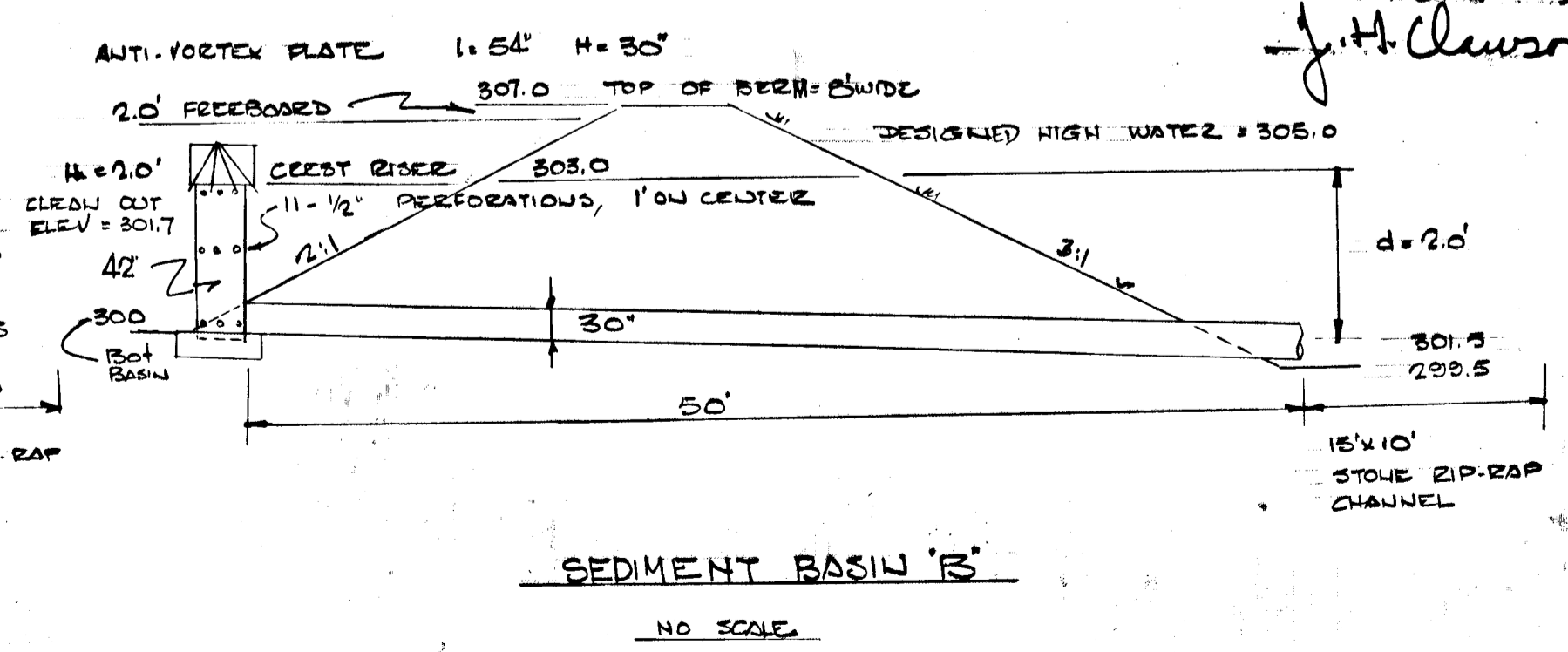
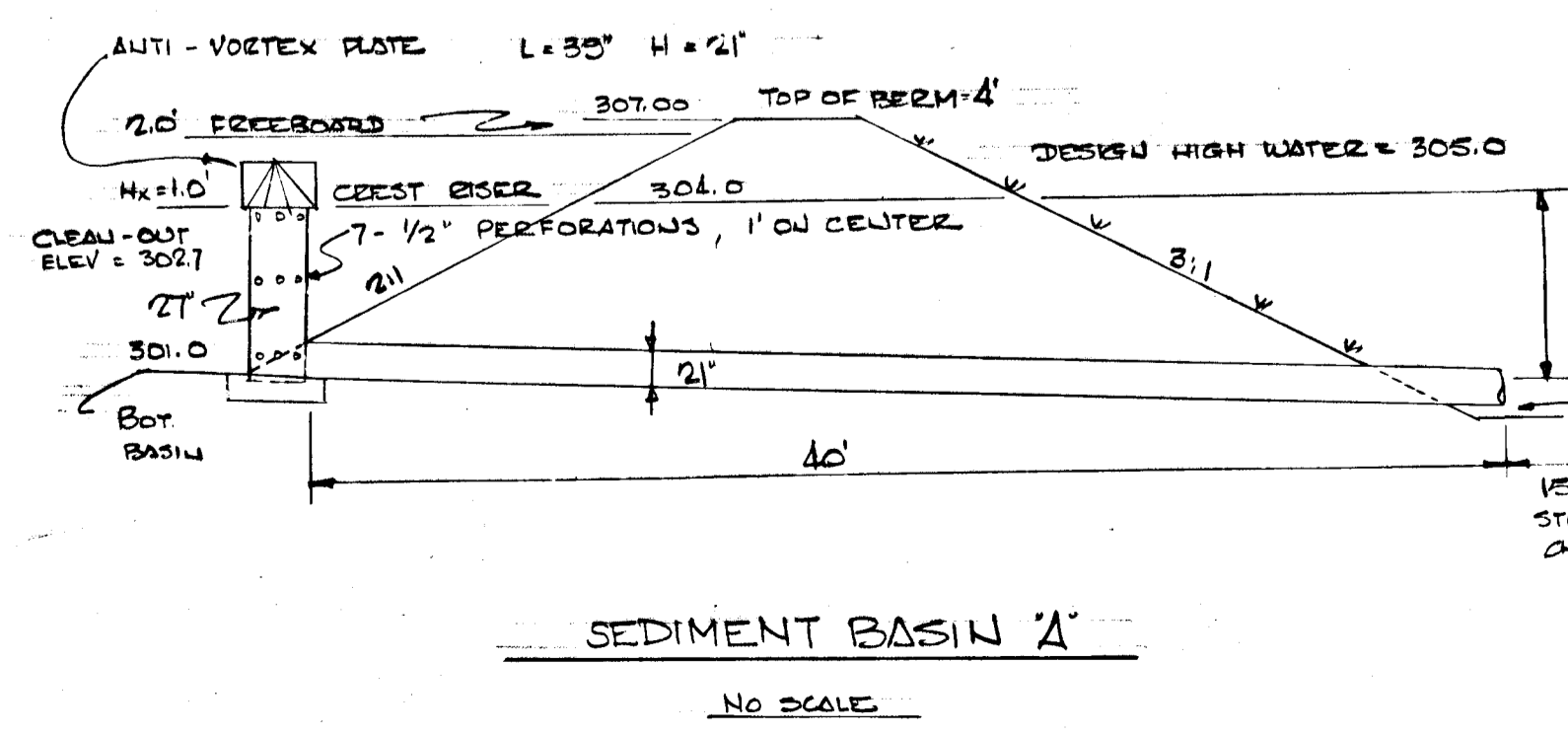
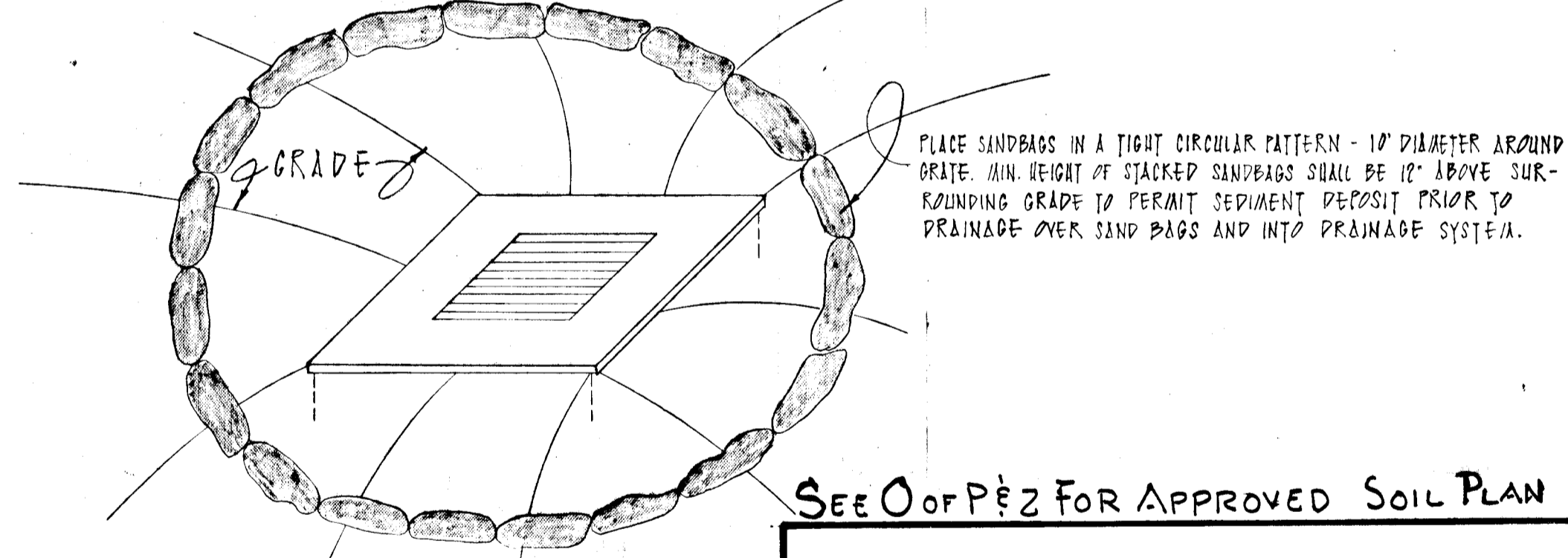
ENGINEER'S CERTIFICATION

"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."

*J. H. Macris* 7-24-74  
SIGNATURE OF ENGINEER DATE



TEMPORARY BLOCKAGE OF TYPICAL SUMP GRATE INLETS



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

COUNTY HEALTH OFFICER DATE

APPROVED HOWARD COUNTY OFFICE OF PLANNING & ZONING

PLANNING DIRECTOR DATE

CHIEF, DIVISION OF LAND DEVELOPMENT & TRANSPORTATION PLANNING DATE

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

DIRECTOR DATE

CHIEF, BUREAU OF HIGHWAYS DATE

REVIEWED FOR Howard S.C.D. NAME

AND MEETS TECHNICAL REQUIREMENTS

*James M. Nelson* DATE 7-29-74 SIGNATURE

U.S. SOIL CONSERVATION SERVICE

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

*Robert J. Zich* DATE 7-29-74 APPROVED HOWARD S.C.D.

DESIGN OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING HOWARD COUNTY, MARYLAND DATE 7-24-74 *J. H. Macris*

COLUMBIA

5th ELECTION DISTRICT

HOWARD COUNTY MARYLAND

OWNER AND DEVELOPER COLUMBIA OAKS CORP.

PROJECT AREA TOWN CENTER SECTION-7 AREA-7

PROJECT TITLE WOODFORD-II

SCALE AS SHOWN DATE JULY 2, 1973

MACRIS-FOWLER ASSOCIATES ENGINEERS SURVEYORS

817 SILVER SPRING AVE. SILVER SPRING, MARYLAND

27 W. JEFFERSON ST. ROCKVILLE, MARYLAND

*J. H. Macris* JOHN A. MACRIS REGISTERED ENGINEER NO. 4849

**DEVELOPER'S CERTIFICATION**

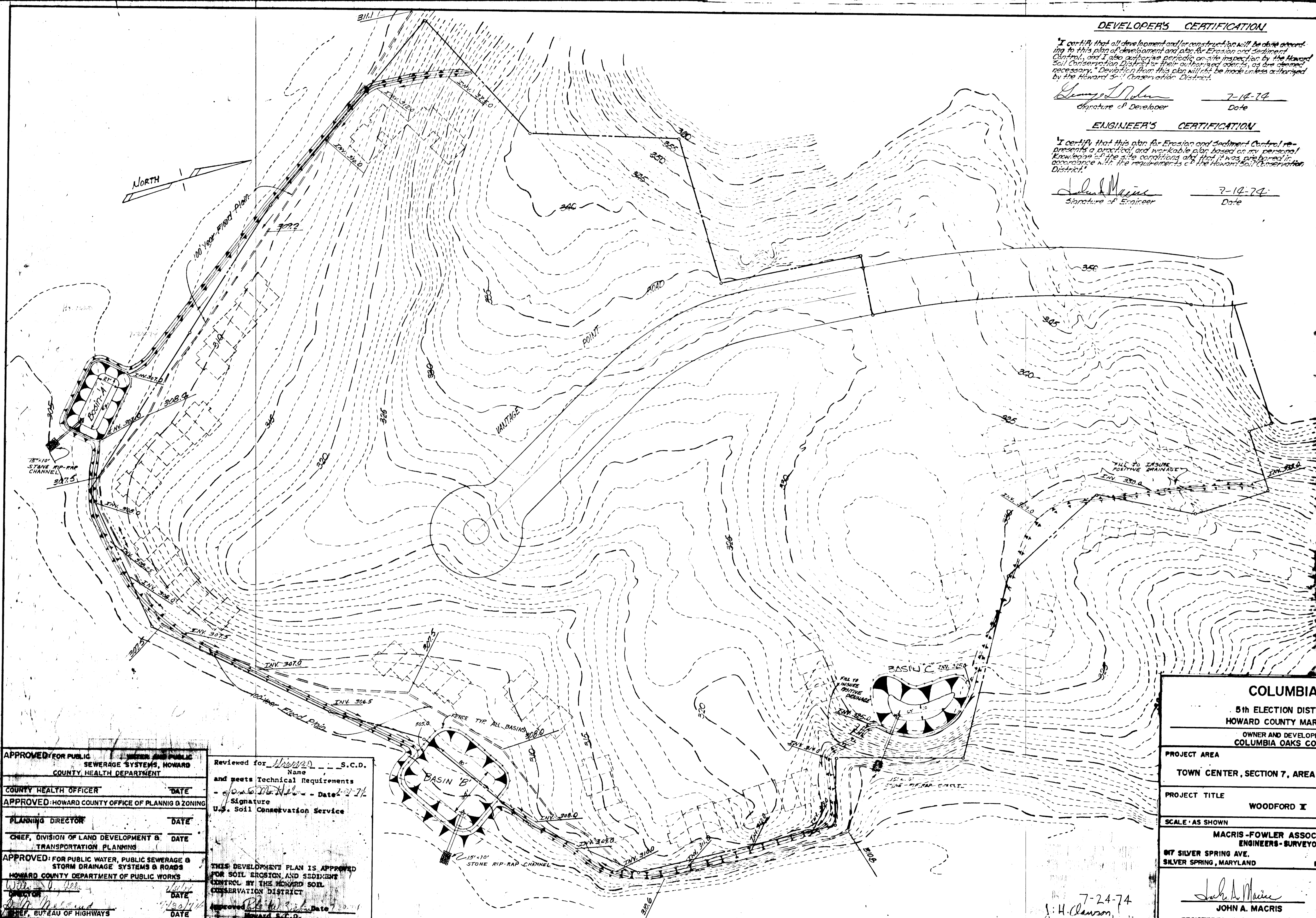
I certify that all development and/or construction will be done according to this plan of development and plan for Erosion and Sediment Control, and I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents, as are deemed necessary. Deviation from this plan will not be made unless authorized by the Howard Soil Conservation District.

*George J. Nelson* 7-14-74  
Signature of Developer Date

**ENGINEER'S CERTIFICATION**

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.

*John A. Macris* 7-14-74  
Signature of Engineer Date



APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT  
 COUNTY HEALTH OFFICER DATE  
 APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING  
 PLANNING DIRECTOR DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT & TRANSPORTATION PLANNING DATE  
 APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE & STORM DRAINAGE SYSTEMS & ROADS  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 DIRECTOR DATE  
 CHIEF, BUREAU OF HIGHWAYS DATE

Reviewed for *Walter* S.C.D. Name  
 and meets Technical Requirements  
 - *George J. Nelson* - Date 7-14-74  
 Signature  
 U.S. Soil Conservation Service  
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT  
 Approved *John A. Macris* Date 7-14-74  
 Howard S.C.D.

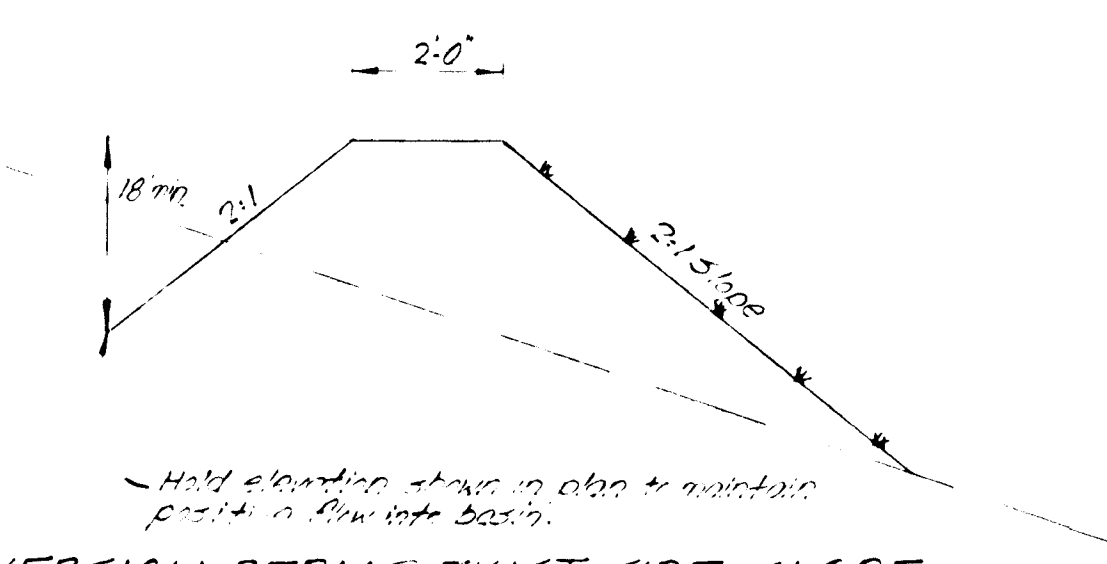
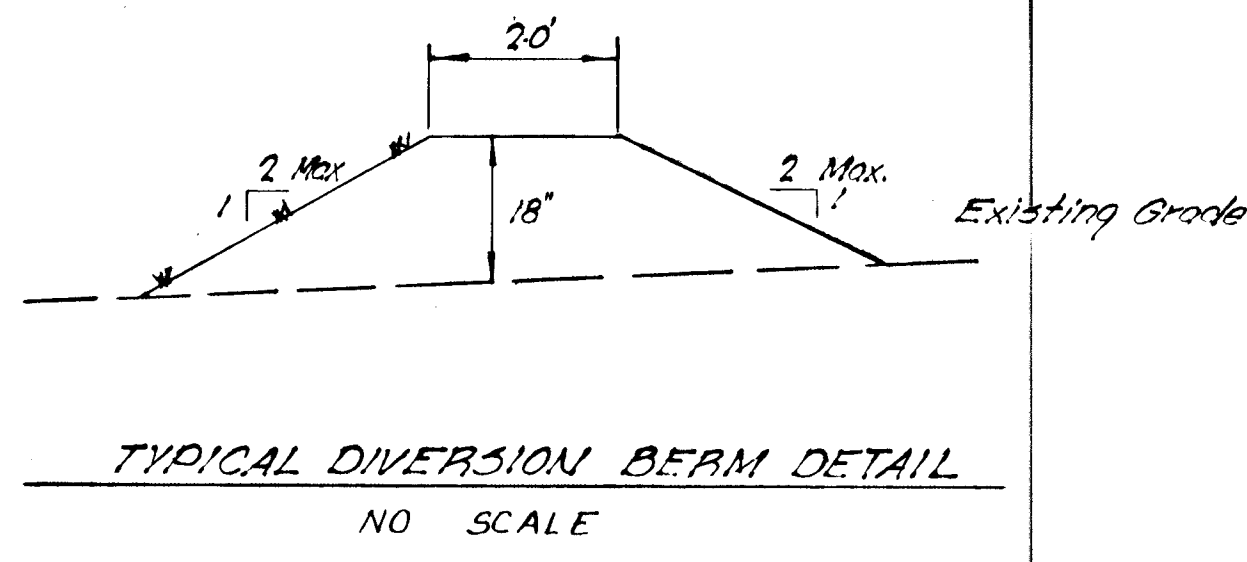
<b>COLUMBIA</b>	
5th ELECTION DISTRICT HOWARD COUNTY MARYLAND	
OWNER AND DEVELOPER COLUMBIA OAKS CORP.	
PROJECT AREA	TOWN CENTER, SECTION 7, AREA 7
PROJECT TITLE	WOODFORD II
SCALE: AS SHOWN	DATE: JULY 2, 1973
MACRIS-FOWLER ASSOCIATES ENGINEERS-SURVEYORS	
817 SILVER SPRING AVE. SILVER SPRING, MARYLAND	27 W. JEFFERSON ST. ROCKVILLE, MARYLAND
<i>John A. Macris</i> JOHN A. MACRIS REGISTERED ENGINEER NO. 4849	

7-24-74  
J.H. Dawson

**SOIL EROSION AND SEDIMENT CONTROL NOTES**

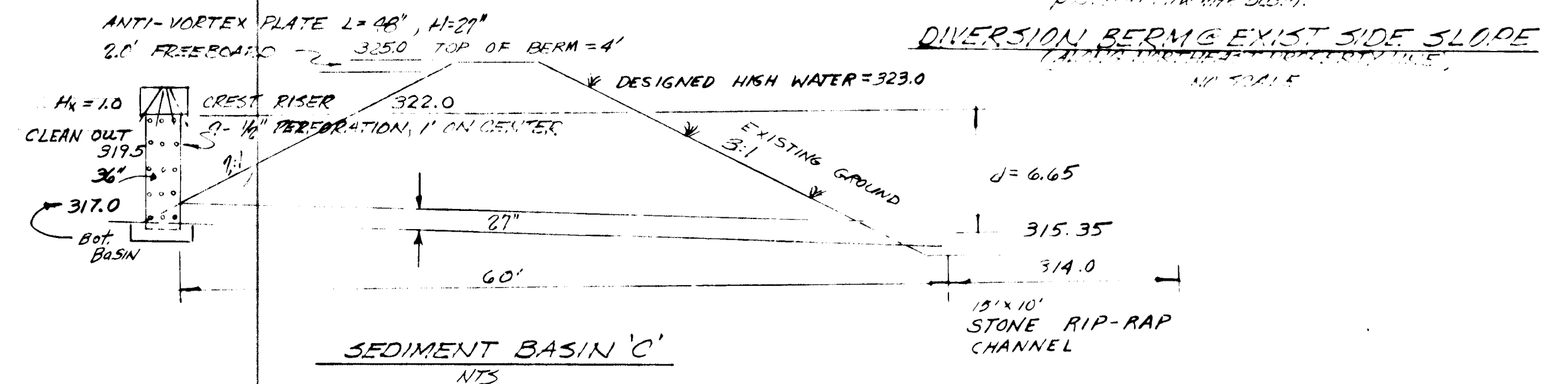
- Structural measures, such as berms, dikes, traps, basins and etc. will be installed and stabilized prior to the start of any other grading, clearing, or disturbance of the existing surface of the site.
- All structural sediment control measures are to remain in place until permission for their removal has been obtained from the Howard Soil Conservation District, Phone 465-3180 or 465-5000, ext. 322.
- Notify the Howard Soil Conservation District at least 24 hours before starting any work, Phone 465-3180 or 465-5000, ext. 322.
- All sediment basins shall conform to the USCS STD. AND SPECIFICATIONS, 1976 TO 1985 AND IS DETAILED IN THESE PLANS.
- Dikes and rip-rap lines shall conform to the USCS STANDARDS AND SPECIFICATIONS, 1976 TO 1985 AND IS DETAILED IN THESE PLANS.
- SAND BAG INLET TUBES, 1 1/2" DIA. THE TUBES SHALL BE SURFACE IS APPLIED AND OTHER AREAS ARE STABILIZED SEE DETAILS IN THESE PLANS.
- PERMANENT SEEDING PERMANENT SEEDING SHALL BE APPLIED TO ALL DISTURBED AREAS WITHIN 72 HOURS OF FINISHING GRADE. A MULCH OF 200 LBS/ACRE SHALL BE APPLIED TO ALL DISTURBED AREAS AS INDICATED IN PLANS. SEE ELEVATIONS AND LIFE OF THIS CONTROL STRUCTURE.
- CONSTRUCTED BERMS, DIKES, SAND BAGS, ETC. WILL BE COMPACTED BY SEVERAL PASSES WITH THE CONSTRUCTION EQUIPMENT.
- GRADE AREA ADJACENT TO BERMS TO RECEIVE POSITIVE DRAINAGE INTO SEDIMENT BASINS. SEE ELEVATIONS, SHEET 3010.
- CONTINUED INSPECTION AND MAINTENANCE WILL BE THE RESPONSIBILITY OF THE DEVELOPER.
- SEED OR SOO ALL EXPOSED SOIL IN GRASS AREAS WITHIN 72 HOURS OF FINISHING GRADE TO FINISHED GRADE IN CONFORMANCE WITH H.S.C.D. STANDARDS AND SPECIFICATIONS AND THESE NOTES. LAY BASE COURSE IN PAVED AREAS OR PROTECT WITH BITUMINOUS MULCH OR OTHER METHODS APPROVED BY THE ENGINEER WITHIN 72 HOURS OF FINISHING GRADE.
- TEMPORARY SEEDING GROUND LIME STONE - 200 LBS/ACRE - WORK INTO TOP 3" OF SOIL. FERTILIZER - 1000 LBS/ACRE 5-10-10. MULCH - 200 LBS/ACRE STRAW (MULCH PREFERRED). SEED - 50 LBS/ACRE RYEGRASS. SEED - 50 LBS/ACRE RYEGRASS. SEED - 50 LBS/ACRE RYEGRASS. ALTERNATE - HYDROSEED FERTILIZER SEED AND MULCH USING TURFIBER OR APPROVED EQUAL.
- PERMANENT SEEDING GROUND LIME STONE - 200 LBS/ACRE - WORK INTO TOP 3" OF SOIL. FERTILIZER - 1000 LBS/ACRE 5-10-10. SEED - 50 LBS/ACRE RYEGRASS. SEED - 50 LBS/ACRE RYEGRASS. SEED - 50 LBS/ACRE RYEGRASS. SEEDING RATE - 200 LBS/ACRE. MULCH - HYDROSEED FERTILIZER, SEED AND MULCH (TURFIBER OR EQUAL).
- SAME AS TEMPORARY SEEDING EXCEPT ADD 15 LBS/ACRE TURFIBER TO RYEGRASS. IF HYDRO SEEDING, APPLY FIBER MULCH AS SECOND STEP.

- SEQUENCE OF CONSTRUCTION**
- Construct Sediment basins, berms and other soil erosion and sediment control structures prior to any other site grading.
  - Clear and grub site as necessary.
  - Proceed with total site grading, including Vantage Point Road.
  - Proceed with building and utility construction.
  - Place sandbags on completed drainage system - maintain in place until total site stabilization.
  - Top soil, seed/sod as various areas are finished graded, and pave all paved areas, all in conformance with the plans and Soil Erosion and Sediment Control Notes.
  - Eliminate berms, sediment basins and other structures as tributary site is stabilized.



Reviewed for Howard S.C.D. Name George L. Nolin and meets Technical Requirements - George L. Nolin Date 7-29-74 Signature George L. Nolin U.S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. Approved George L. Nolin Date 7-29-74 Howard S.C.D.



**SEDIMENT STORAGE DESIGN**

TOTAL DRAINAGE AREA 37 AC. = A	TOTAL DISTURBED AREA 37 AC. = A
13.8 AC. = B	9 AC. = B
11.4 AC. = C	7.4 AC. = C
MIN. REQD. STORAGE = 0.5 INCHES x 37 AC. x 1/8" = 15 CU. FT. A	
	13.8 AC. = 58 CU. FT. B
	7.4 AC. = 30 CU. FT. C

EXCAVATE 248 A C.Y. TO OBTAIN REQUIRED CAPACITY.	DESIGNED EXCAV. 280 C.Y. A
610 B	675 C.Y. B
496 C	346 C.Y. C

ELEVATION CORRESPONDING TO SCHEDULED TIME OF CLEAN OUT 302.70 A	
DISTANCE BELOW TOP OF RISER 1.3 = A 301.70 B	
1.3 = B 319.30 C	
1.3 = C	EFFECTIVE STORAGE CAPACITY < 100 C.Y. A
	246 C.Y. B
	200 C.Y. C

**DESIGN DATA**

RUNOFF  $Q_T = CIA = .6 \times 5.4 \times 3.7 = 12.1$  CFS A

$.6 \times 5.1 \times 13.8 = 42.2$  CFS B

$.6 \times 5.4 \times 8.4 = 27.7$  CFS C

PIPE SPILLWAY  $Q_{ps}$

MIN. PIPE SPILLWAY CAPACITY,  $Q_{ps} = .21 \times 3.7$  D.A. = .78 CFS A

13.8 2.90 CFS B

8.4 1.76 CFS C

ACTUAL DISCHARGE (FROM APPENDIX A-2)

d = 2.95 FT. A	H <sub>x</sub> = 1.0 FT. A	Q <sub>ps</sub> = 17.5 CFS A	Q <sub>weir</sub> = 20.0 CFS A
2.0 FT. B	2.0 FT. B	42.0 CFS B	66.0 CFS B
6.65 FT. C	1.0 FT. C	30.0 CFS C	32.0 CFS C

**DEVELOPER'S CERTIFICATION**

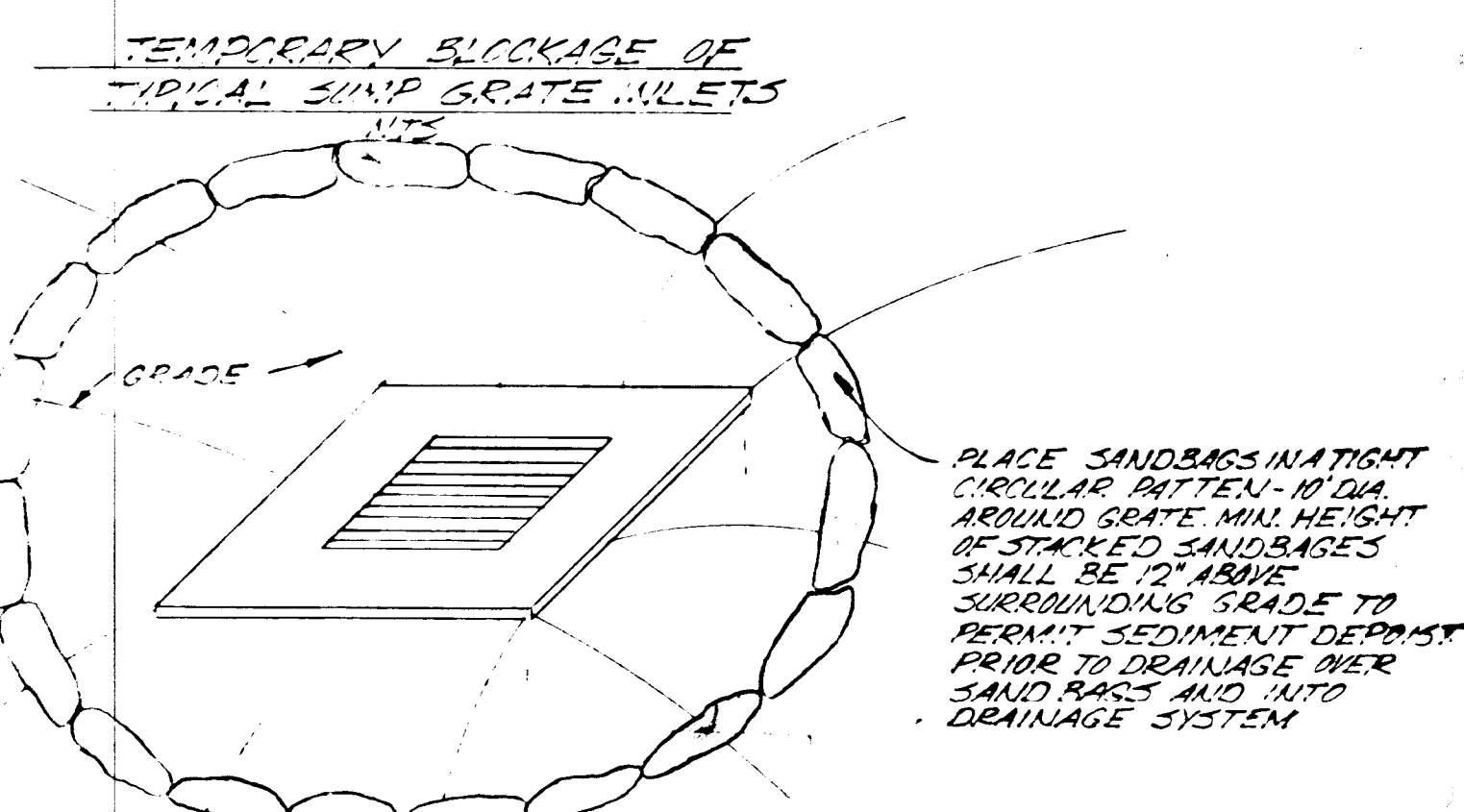
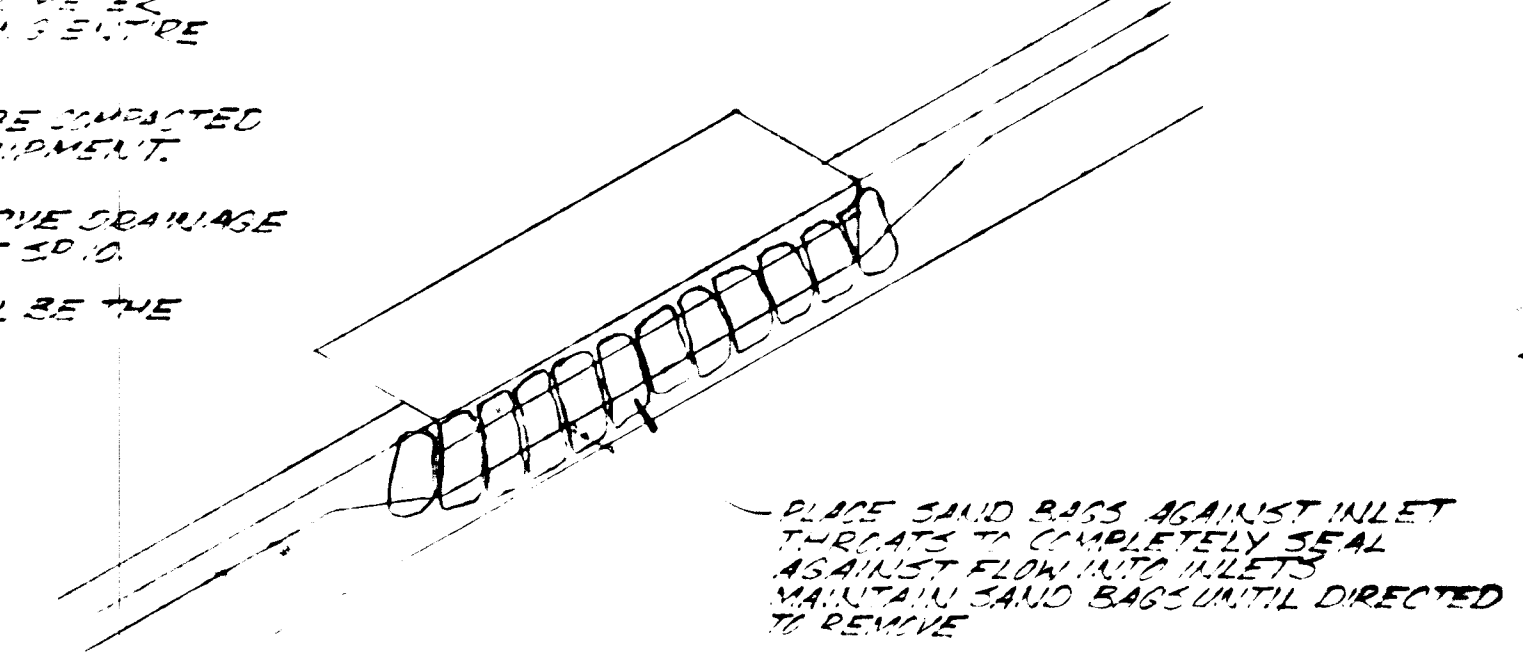
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George L. Nolin 7-14-74  
Signature of Developer Date

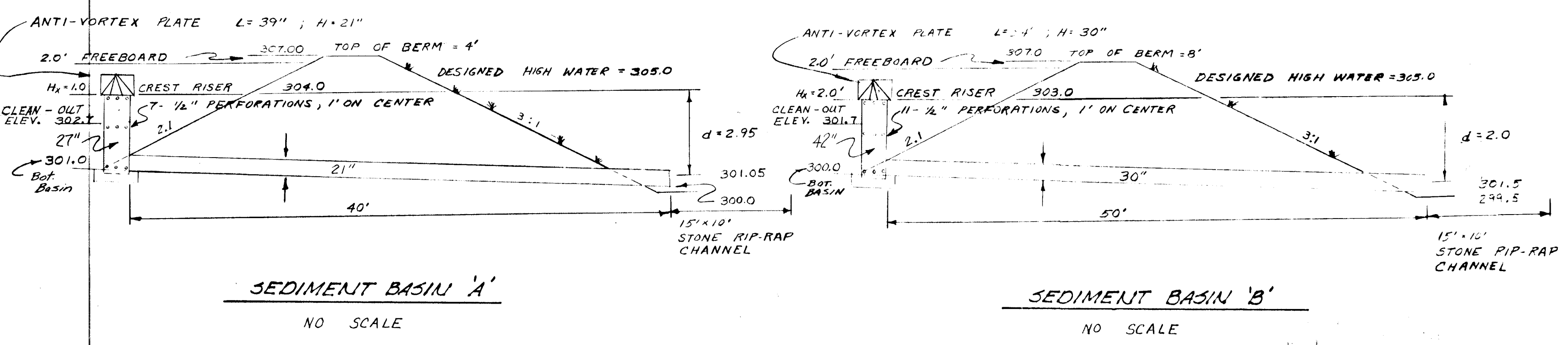
**ENGINEER'S CERTIFICATION**

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.

John A. Macris 7-14-74  
Signature of Engineer Date



APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT. COUNTY HEALTH OFFICER. DATE. APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING. PLANNING DIRECTOR. DATE. CHIEF, DIVISION OF LAND DEVELOPMENT & TRANSPORTATION PLANNING. DATE. APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE & STORM DRAINAGE SYSTEMS & ROADS. HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. DIRECTOR. DATE. CHIEF, BUREAU OF HIGHWAYS. DATE.



7-24-74  
J.H. Clausen J.P.

**COLUMBIA**  
5th ELECTION DISTRICT  
HOWARD COUNTY MARYLAND  
OWNER AND DEVELOPER  
COLUMBIA OAKS CORP.

PROJECT AREA  
TOWN CENTER, SECTION 7, AREA 7

PROJECT TITLE  
WOODFORD II

SCALE: AS SHOWN DATE: JULY 2, 1973

MACRIS-FOWLER ASSOCIATES  
ENGINEERS-SURVEYORS  
817 SILVER SPRING AVE. SILVER SPRING, MARYLAND 27 W. JEFFERSON ST. ROCKVILLE, MARYLAND

John A. Macris  
JOHN A. MACRIS  
REGISTERED ENGINEER NO. 4849



DRAINAGE AREA MAP  
1"=100'

**RUNOFF COEFFICIENT LEGEND**

AREA	SPARSE AREA	INTERMEDIATE AREA	URBAN AREA	TOTAL AREA	SUMMATION	AVERAGE
A1	1,200	3,300	2,100	6,600	1,200	.18
A2	1,200	3,300	2,100	6,600	1,200	.18
A3	1,200	3,300	2,100	6,600	1,200	.18
A4	1,200	3,300	2,100	6,600	1,200	.18
A5	1,200	3,300	2,100	6,600	1,200	.18
A6	1,200	3,300	2,100	6,600	1,200	.18
A7	1,200	3,300	2,100	6,600	1,200	.18
A8	1,200	3,300	2,100	6,600	1,200	.18
A9	1,200	3,300	2,100	6,600	1,200	.18
A10	1,200	3,300	2,100	6,600	1,200	.18
A11	1,200	3,300	2,100	6,600	1,200	.18
A12	1,200	3,300	2,100	6,600	1,200	.18
A13	1,200	3,300	2,100	6,600	1,200	.18
A14	1,200	3,300	2,100	6,600	1,200	.18
A15	1,200	3,300	2,100	6,600	1,200	.18
A16	1,200	3,300	2,100	6,600	1,200	.18
A17	1,200	3,300	2,100	6,600	1,200	.18
A18	1,200	3,300	2,100	6,600	1,200	.18
A19	1,200	3,300	2,100	6,600	1,200	.18
A20	1,200	3,300	2,100	6,600	1,200	.18
A21	1,200	3,300	2,100	6,600	1,200	.18
A22	1,200	3,300	2,100	6,600	1,200	.18
A23	1,200	3,300	2,100	6,600	1,200	.18
A24	1,200	3,300	2,100	6,600	1,200	.18
A25	1,200	3,300	2,100	6,600	1,200	.18
A26	1,200	3,300	2,100	6,600	1,200	.18
A27	1,200	3,300	2,100	6,600	1,200	.18
A28	1,200	3,300	2,100	6,600	1,200	.18
A29	1,200	3,300	2,100	6,600	1,200	.18
A30	1,200	3,300	2,100	6,600	1,200	.18
A31	1,200	3,300	2,100	6,600	1,200	.18
A32	1,200	3,300	2,100	6,600	1,200	.18
A33	1,200	3,300	2,100	6,600	1,200	.18
A34	1,200	3,300	2,100	6,600	1,200	.18
A35	1,200	3,300	2,100	6,600	1,200	.18
A36	1,200	3,300	2,100	6,600	1,200	.18
A37	1,200	3,300	2,100	6,600	1,200	.18
A38	1,200	3,300	2,100	6,600	1,200	.18
A39	1,200	3,300	2,100	6,600	1,200	.18
A40	1,200	3,300	2,100	6,600	1,200	.18
A41	1,200	3,300	2,100	6,600	1,200	.18
A42	1,200	3,300	2,100	6,600	1,200	.18
A43	1,200	3,300	2,100	6,600	1,200	.18
A44	1,200	3,300	2,100	6,600	1,200	.18
A45	1,200	3,300	2,100	6,600	1,200	.18
A46	1,200	3,300	2,100	6,600	1,200	.18
A47	1,200	3,300	2,100	6,600	1,200	.18
A48	1,200	3,300	2,100	6,600	1,200	.18
A49	1,200	3,300	2,100	6,600	1,200	.18
A50	1,200	3,300	2,100	6,600	1,200	.18
A51	1,200	3,300	2,100	6,600	1,200	.18
A52	1,200	3,300	2,100	6,600	1,200	.18
A53	1,200	3,300	2,100	6,600	1,200	.18
A54	1,200	3,300	2,100	6,600	1,200	.18
A55	1,200	3,300	2,100	6,600	1,200	.18
A56	1,200	3,300	2,100	6,600	1,200	.18
A57	1,200	3,300	2,100	6,600	1,200	.18
A58	1,200	3,300	2,100	6,600	1,200	.18
A59	1,200	3,300	2,100	6,600	1,200	.18
A60	1,200	3,300	2,100	6,600	1,200	.18
A61	1,200	3,300	2,100	6,600	1,200	.18
A62	1,200	3,300	2,100	6,600	1,200	.18
A63	1,200	3,300	2,100	6,600	1,200	.18
A64	1,200	3,300	2,100	6,600	1,200	.18
A65	1,200	3,300	2,100	6,600	1,200	.18
A66	1,200	3,300	2,100	6,600	1,200	.18
A67	1,200	3,300	2,100	6,600	1,200	.18
A68	1,200	3,300	2,100	6,600	1,200	.18
A69	1,200	3,300	2,100	6,600	1,200	.18
A70	1,200	3,300	2,100	6,600	1,200	.18
A71	1,200	3,300	2,100	6,600	1,200	.18
A72	1,200	3,300	2,100	6,600	1,200	.18
A73	1,200	3,300	2,100	6,600	1,200	.18
A74	1,200	3,300	2,100	6,600	1,200	.18
A75	1,200	3,300	2,100	6,600	1,200	.18
A76	1,200	3,300	2,100	6,600	1,200	.18
A77	1,200	3,300	2,100	6,600	1,200	.18
A78	1,200	3,300	2,100	6,600	1,200	.18
A79	1,200	3,300	2,100	6,600	1,200	.18
A80	1,200	3,300	2,100	6,600	1,200	.18
A81	1,200	3,300	2,100	6,600	1,200	.18
A82	1,200	3,300	2,100	6,600	1,200	.18
A83	1,200	3,300	2,100	6,600	1,200	.18
A84	1,200	3,300	2,100	6,600	1,200	.18
A85	1,200	3,300	2,100	6,600	1,200	.18
A86	1,200	3,300	2,100	6,600	1,200	.18
A87	1,200	3,300	2,100	6,600	1,200	.18
A88	1,200	3,300	2,100	6,600	1,200	.18
A89	1,200	3,300	2,100	6,600	1,200	.18
A90	1,200	3,300	2,100	6,600	1,200	.18
A91	1,200	3,300	2,100	6,600	1,200	.18
A92	1,200	3,300	2,100	6,600	1,200	.18
A93	1,200	3,300	2,100	6,600	1,200	.18
A94	1,200	3,300	2,100	6,600	1,200	.18
A95	1,200	3,300	2,100	6,600	1,200	.18
A96	1,200	3,300	2,100	6,600	1,200	.18
A97	1,200	3,300	2,100	6,600	1,200	.18
A98	1,200	3,300	2,100	6,600	1,200	.18
A99	1,200	3,300	2,100	6,600	1,200	.18
A100	1,200	3,300	2,100	6,600	1,200	.18

NOTE:  
ALL AREAS ARE ZONED APARTMENTS  
EXCEPT WHERE OTHERWISE SHOWN.

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT  
COUNTY HEALTH OFFICER \_\_\_\_\_ DATE \_\_\_\_\_  
APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING  
PLANNING DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_  
CHIEF, DIVISION OF LAND DEVELOPMENT & TRANSPORTATION PLANNING  
APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE & STORM DRAINAGE SYSTEMS & ROADS  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
DIRECTOR \_\_\_\_\_ DATE \_\_\_\_\_  
CHIEF, BUREAU OF HIGHWAYS \_\_\_\_\_ DATE \_\_\_\_\_

**COLUMBIA**  
5th ELECTION DISTRICT  
HOWARD COUNTY MARYLAND

---

OWNER AND DEVELOPER  
COLUMBIA OAKS CORP.

---

PROJECT AREA  
TOWN CENTER, SECTION 7, AREA 7

---

PROJECT TITLE  
WOODFORD II

---

SCALE: AS SHOWN DATE: JULY 2, 1973

MACRIS-FOWLER ASSOCIATES  
ENGINEERS-SURVEYORS  
817 SILVER SPRING AVE. SILVER SPRING, MARYLAND  
27 W. JEFFERSON ST. ROCKVILLE, MARYLAND

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John A. Macris  
REGISTERED ENGINEER NO. 4849

7-24-74  
J. H. Clary