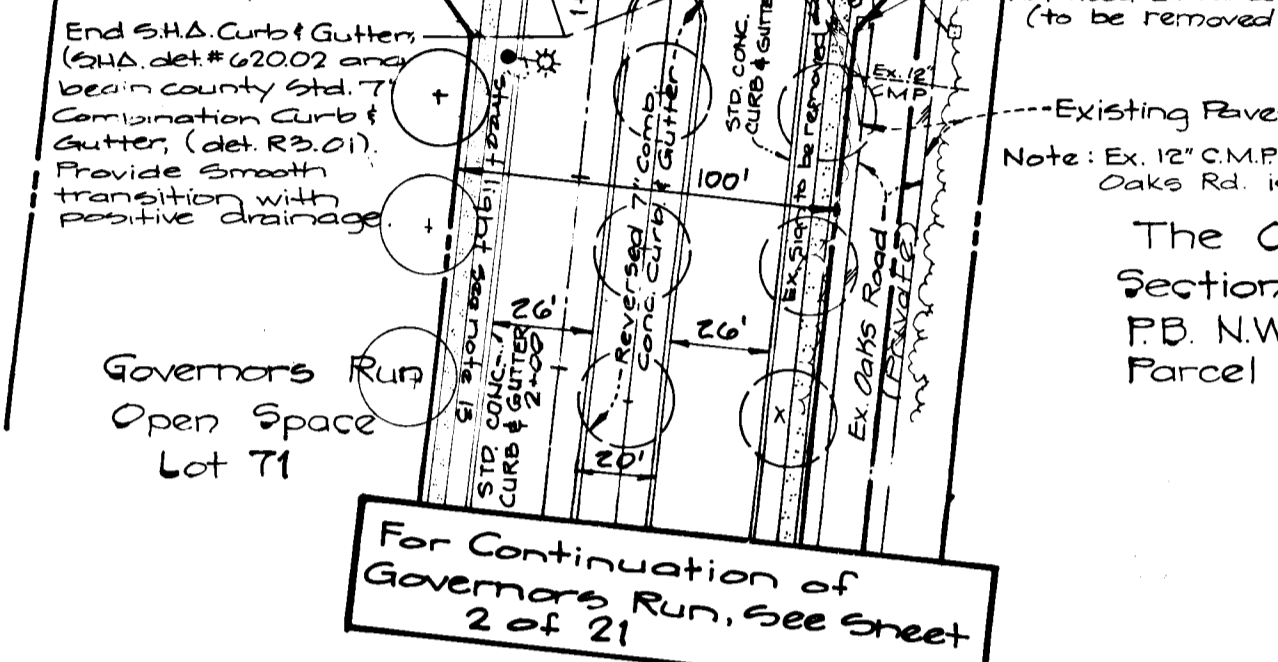


- General Notes**
- All storm drain and paving shall be constructed in accordance with the latest details and specifications of Howard County and Maryland S.H.A.
 - Types of storm drain structures refer to the standard details of Howard County and Maryland S.H.A.
 - Trench compaction for storm drains, within road or street right-of-way limits shall be in accordance with Howard County Design Manual Vol. III (Class "C" trench bedding to be used for all storm drain, unless shown otherwise. See detail, sheet 19.)
 - 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 construction.
 - All utility companies shall be notified 24-hours in advance of construction.
 - All traffic control devices, parking and signing to be done in accordance with the "Manual of Uniform Traffic Control Devices" 1988 Edition.
 - Sag and crest vertical curves were designed in accordance with Howard County Design Manual Volume III.
 - Provide concrete sidewalk ramps, Howard County Standard Type "A", R-4.01 where shown on plan.
 - Design Speed: See chart, sheet 19.
 - Zoning: R-20
 - Contractor or developer shall contact the Construction Inspection/Survey division, 24-hours before commencing work, at 315-1880

- For Tree schedule see this sheet.
- Street lights shall be provided at the locations shown in the schedule on this sheet and in accordance with Volume III of the Howard County Design Manual.
- See Sheet 14 of 21 for Wetland Mitigation Information.



- Tree Planting Notes**
- Contractor shall verify location of underground utilities prior to digging.
 - Final location of trees may be adjusted slightly to accommodate field conditions.
 - Planting procedures shall comply with Landscape Specifications for Baltimore-Washington Metropolitan Areas.
 - Substitutions to the area species may be permitted provided that the planting is in accordance with the Street and Landscape Requirements as specified in Section 16.19 of the Howard County Subdivision Regulations.

Tree Schedule			
Quantity	Key Plant Name & Symbol	Size	Remarks
23	U Acar Saccharum-Green Mountain Sugar Maple	2'-2 1/2' Cal.	B & D Heavyheads
221	Q Quercus Rubra Northern Red Oak		
23	D Pyrus Calleryana Bradford Pear		

Street Light Schedule				
Location	Lamp type	Mounting	Post Type	
0+17 Governor's Run	75' Lt.			
1+2.0	22' Rt.	Pendant	2 1/2' Galvanized Steel	
4+12	54' Lt.	Pendant	2 1/2' Galvanized Steel	
8+76	22' Rt.			
12+65	22' Rt.			
16+70	22' Rt.			
20+70	22' Rt.			
23+10	22' Rt.			
27+65	22' Rt.			
32+25	22' Lt.			
3+70 Governor Grayson Way	24' Lt.	Post Top-Transition	14' Black Fiberglass	
7+54	10' Lt.			
2+54	10' Rt.			

Approved: Department of Public Works
Chia M. Seligson
 Chief, Land Development Division
 Date: 8/10/90

Approved: *William W. Weisand*
 Chief, Bureau of Highway
 Date: 8/11/90

Approved: *James E. DeW*
 Chief, Bureau of Engineering
 Date: 8/10/90

Approved: Howard County Dept. of Planning & Zoning
Robert U. Slaughter
 Chief, Division of Community Planning & Land Development
 Date: 7/21/90

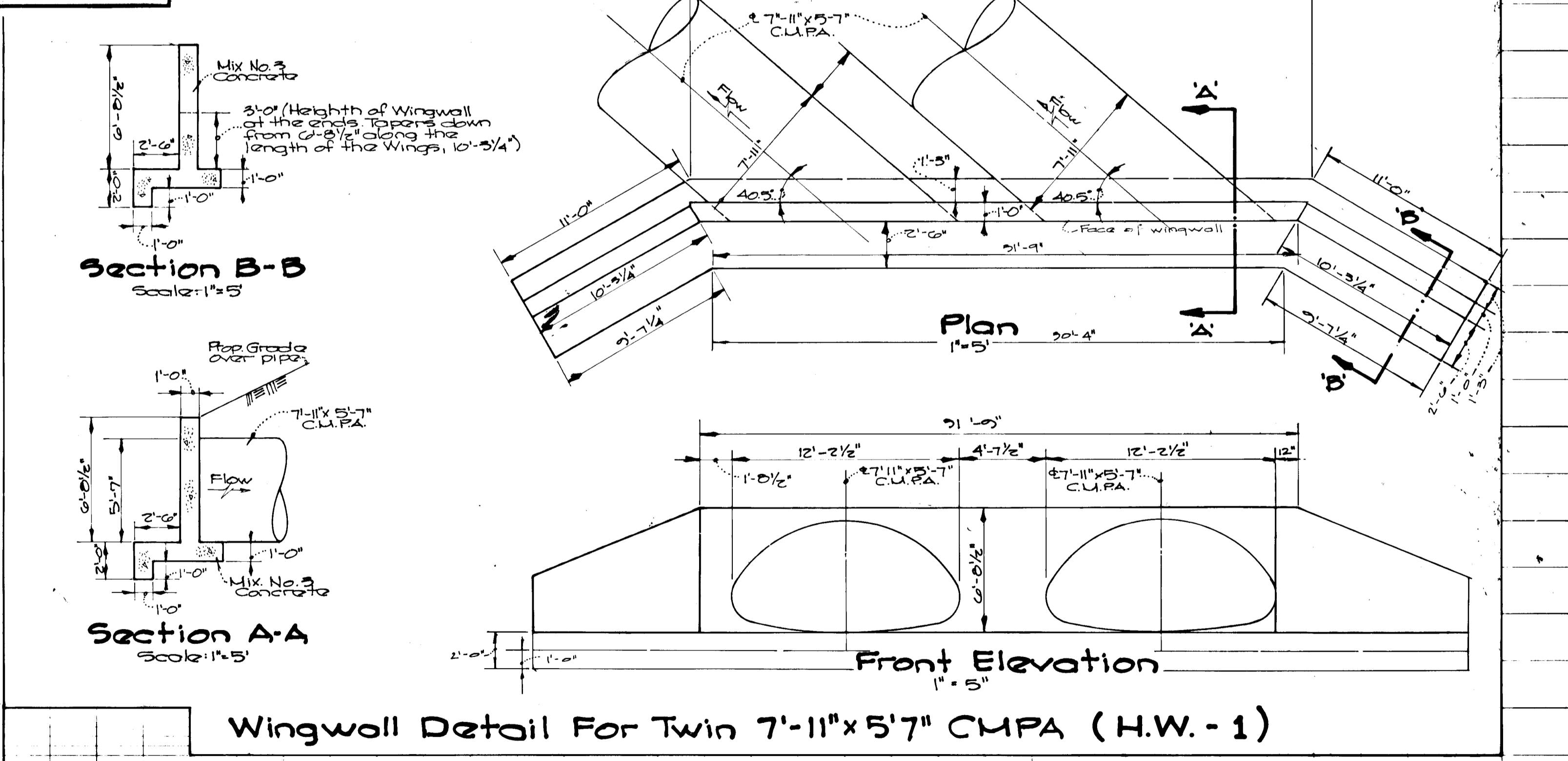
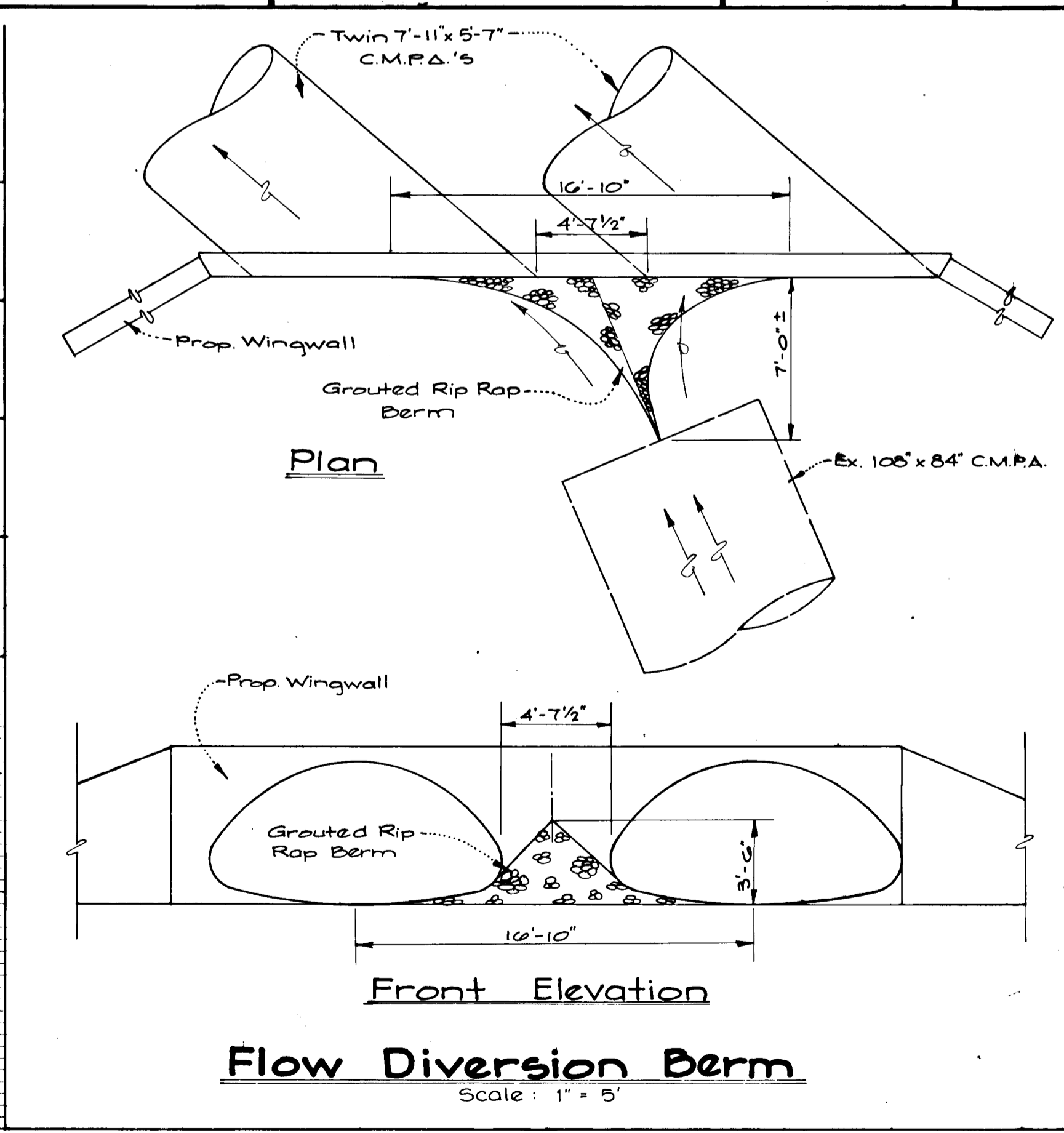
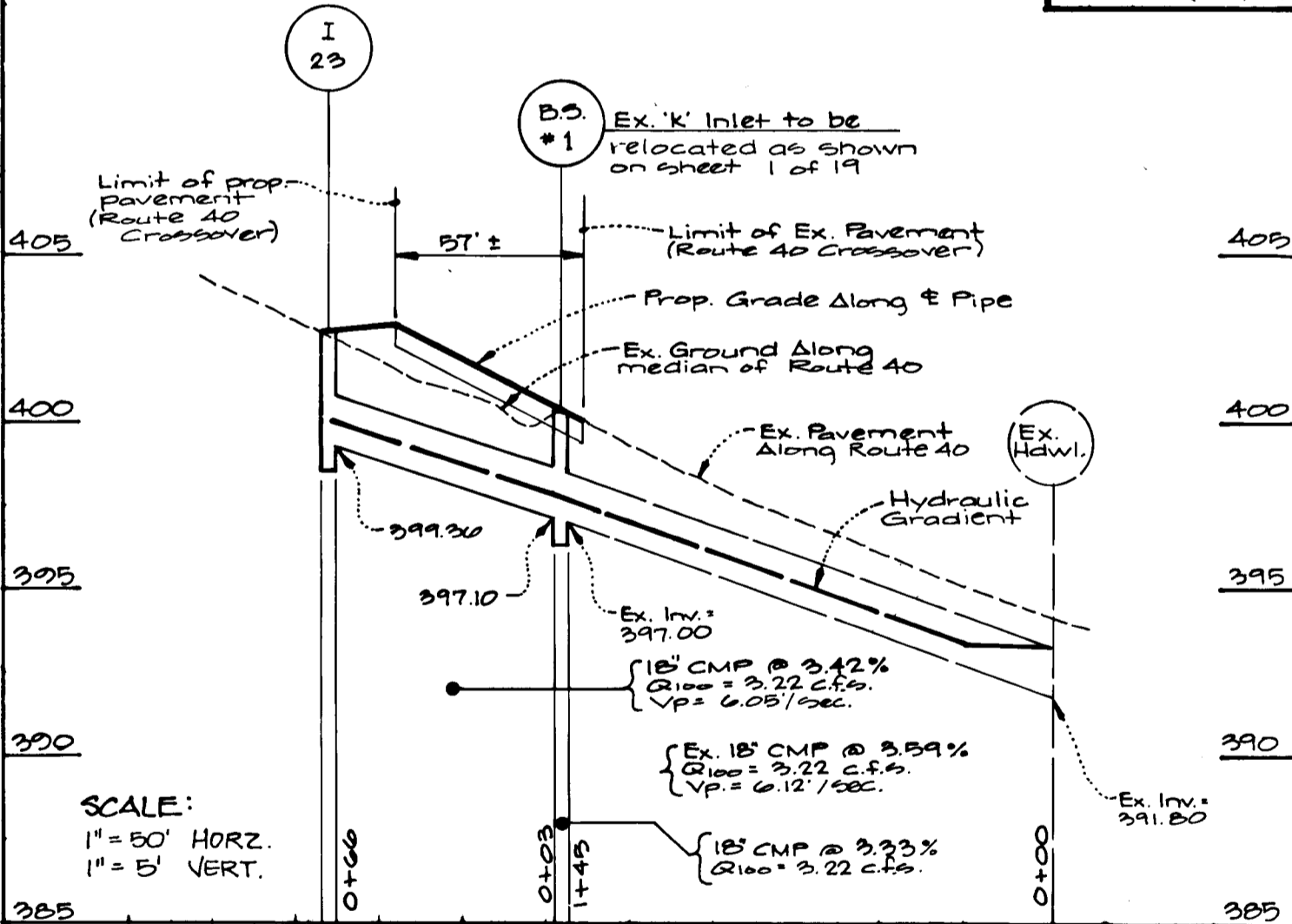
GW GUTSCHICK LITTLE & WEBER, P.A.
 ENGINEERS, PLANNERS, SURVEYORS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20866
 TEL.: (301) 421-4024

DESIGNED: C.K.G. DATE: July 1990
 DEV. DATE: July 1990
 DRAWN: G.A.W.
 CHECKED: C.K.G.
 DATE: July 1990

**Road Construction Plans
 U.S. Route 40
 Governors Run
 Section 1**

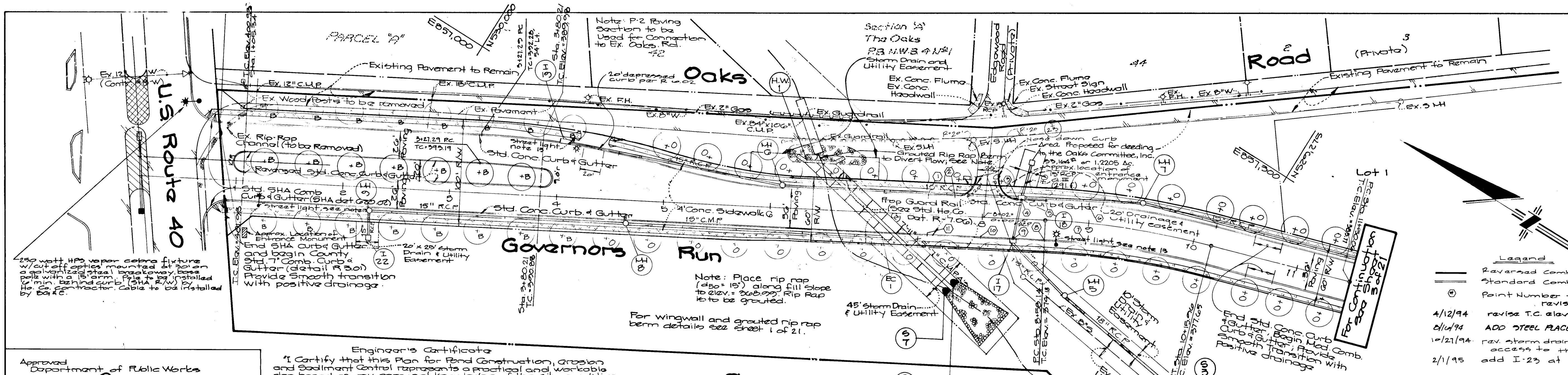
2nd Election District Howard County Md.
 Owner & Developer: Howard Oaks, Inc.
 12482 Little Patuxent Parkway
 Suite 605
 Columbia, Maryland 21044
 (301) 264-2093

SCALE: 1" = 50'
 DRAWING: 1 of 21
 JOB NO: EG-055



data: 8/10/90
 revision: rev. wingwall detail
 by: MCF

1588



Street Tree Easement
 Street Trees shown on this Road Drawing are to be located within a 10' Easement along the Right-of-way Established in a note on Record Plat #. This easement is for the planting and maintenance of street trees.

- Legend**
- Reversed Combination Curb & gutter - 1'
 - Standard Combination curb & gutter - 1'
 - ⊙ Point Number for Top of Curb
 - Revisions
 - 4/12/94 revise T.C. elevations, & street light locations.
 - 6/16/94 ADD STEEL PLACEMENT DETAIL
 - 10/27/94 rev storm drain & road in order to provide access to the Oaks Community @ 6022
 - 2/1/95 add I-23 at access Rd.

Approved
 Department of Public Works
Al M. Danner 8/16/90
 Chief, Land Development Division Date

Approved
 Department of Public Works
Lawrence W. Weiland 8/1/90
 Chief, Bureau of Highways Date

Approved
 Department of Public Works
Michael R. P. S. J. 8-10-90
 Chief, Bureau of Engineering Date

Approved
 Department of Planning and Zoning
Paul V. Z. Gault 9/2/90
 Chief, Division of Community Planning and Land Development 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.

John D. Kelly P.E. 7/13/90
 Date

Developer/Builder's Certificate
 I certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspection by HSCD."

William J. Miller, Jr. President 7/13/90
 Signature of Developer/Builder Date

Plan
 Scale: 1"=50'
 THE GREAT OAKS
 2/1/90

These Plans for Small pond Construction, soil erosion and Sediment control meet the requirements of Howard Soil Conservation District.

Robert J. Ziehn 7/23/90
 Date
 Howard Soil Conservation District

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.

J. Helmert 7/23/90
 Date
 U.S. Soil Conservation District

Top of Curb Elev.

No.	Station	Elev.
1	7+50.00 18' Lt.	214.59
2	7+12 18' Lt.	214.25
3	6+52 18' Lt.	213.95
4	6+22.11 18' Lt.	213.70
5	6+52.14 18' Lt.	214.22
6	7+00 18' Lt.	214.61
7	7+00 18' Rt.	214.67
8	6+52.14 18' Rt.	214.40
9	6+22 18' Rt.	213.97
10	6+00 18' Rt.	214.14
11	7+50 18' Rt.	214.39

Curve Data & Curve Data

Road	P.C. Sta.	P.T. Sta.	Arc	Radius	Delta	Tangent	Chord
Governors Run	6+52.14	10+13.96	157.82'	750.00'	12°03'25"	79.20'	157.82'

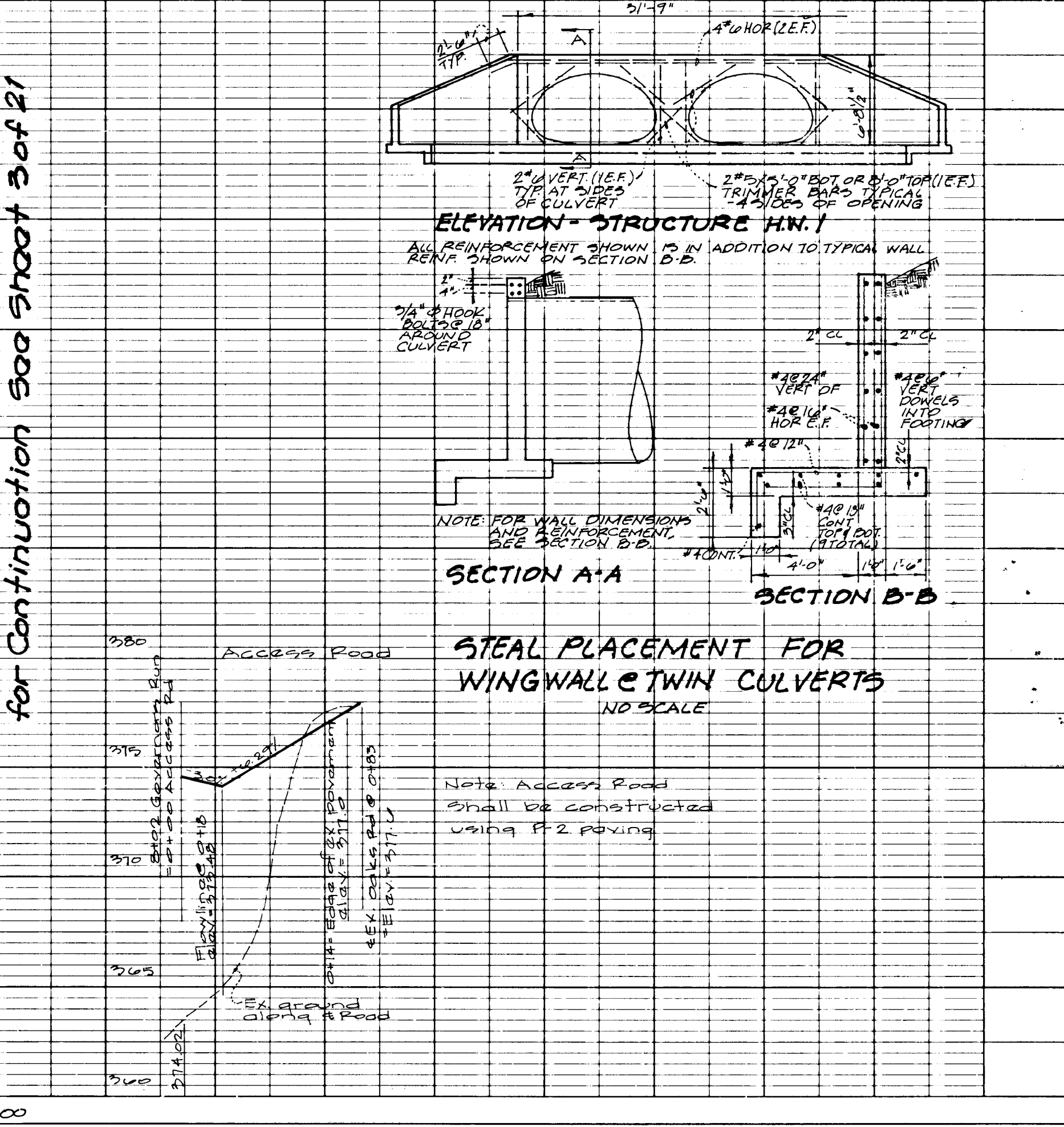
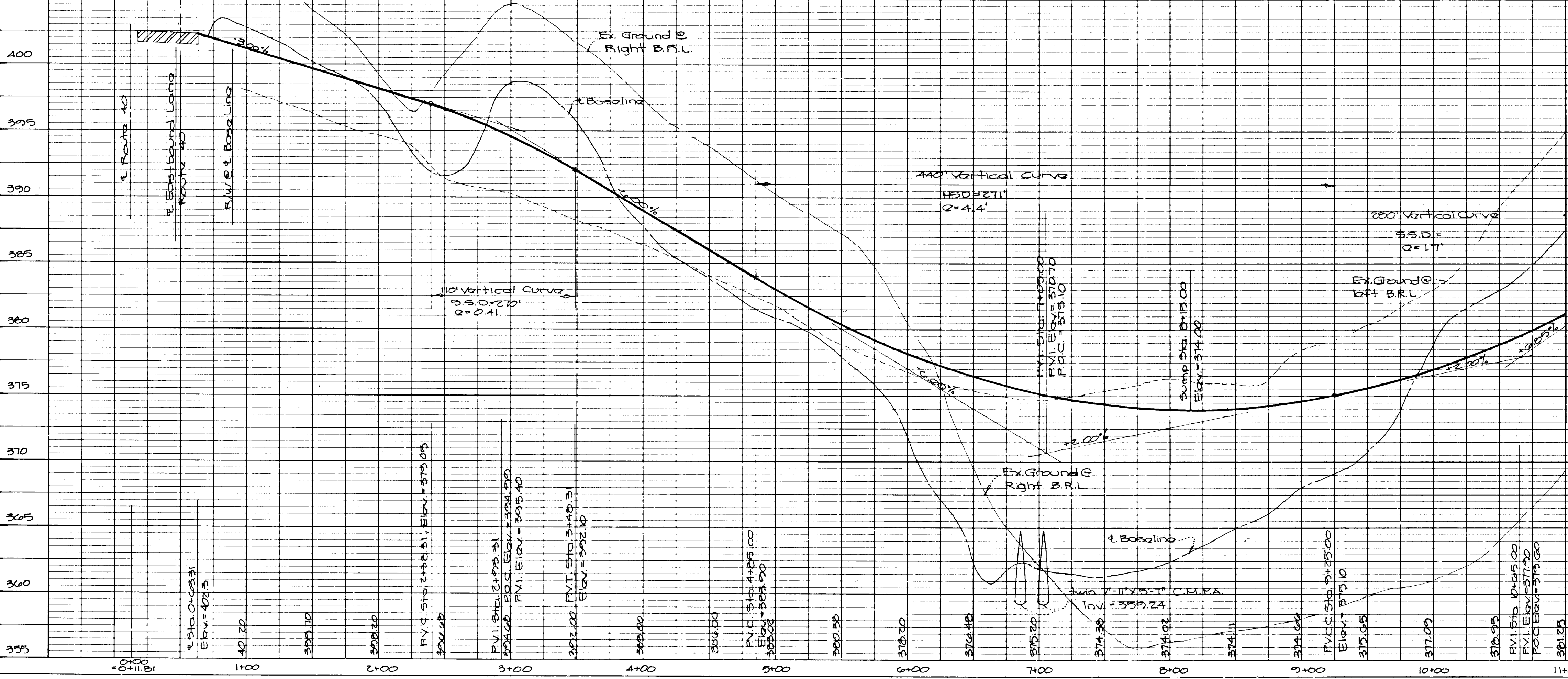


G.W. GUTSCHICK LITTLE & WEBER, P.A.
 ENGINEERS, PLANNERS, SURVEYORS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20866
 TEL.: (301) 421-4024

DESIGNED: DE.V.
 DRAWN: M.C.F.
 CHECKED: C.K.G.
 DATE: JULY, 1990

Road Construction Plans
 Governors Run
Governors Run
 Section 1
 2nd Election District, Howard County, Md.
 Owners: Howard Oaks, Inc.
 Developer: 10480 Little Potomac Parkway Suite 600 Columbia, Maryland 21044
 (301)-964-2025

SCALE: 1"=50'
 DRAWING: 2 of 21
 JOB NO: 86-055



1588

Section 'A'
The Oaks
P.D. N.W.B. 4 No. 1

Street Tree Easement
Street trees shown on this Road Drawing are located within a 10' Easement Along the Right of Way Established in a Note on Record Plat 4. This Easement is for the Planting and Maintenance of the Street Trees.



Road	PC STA.	PT. STA.	R	ARC	Δ	CHD.
Governors Run	10+23.04	18+25.12	1700.00	746.07	25°08'43"	740.10
Governors Run	12+49.65	20+29.00	1250.00	1060.25	31°09'10"	1047.24

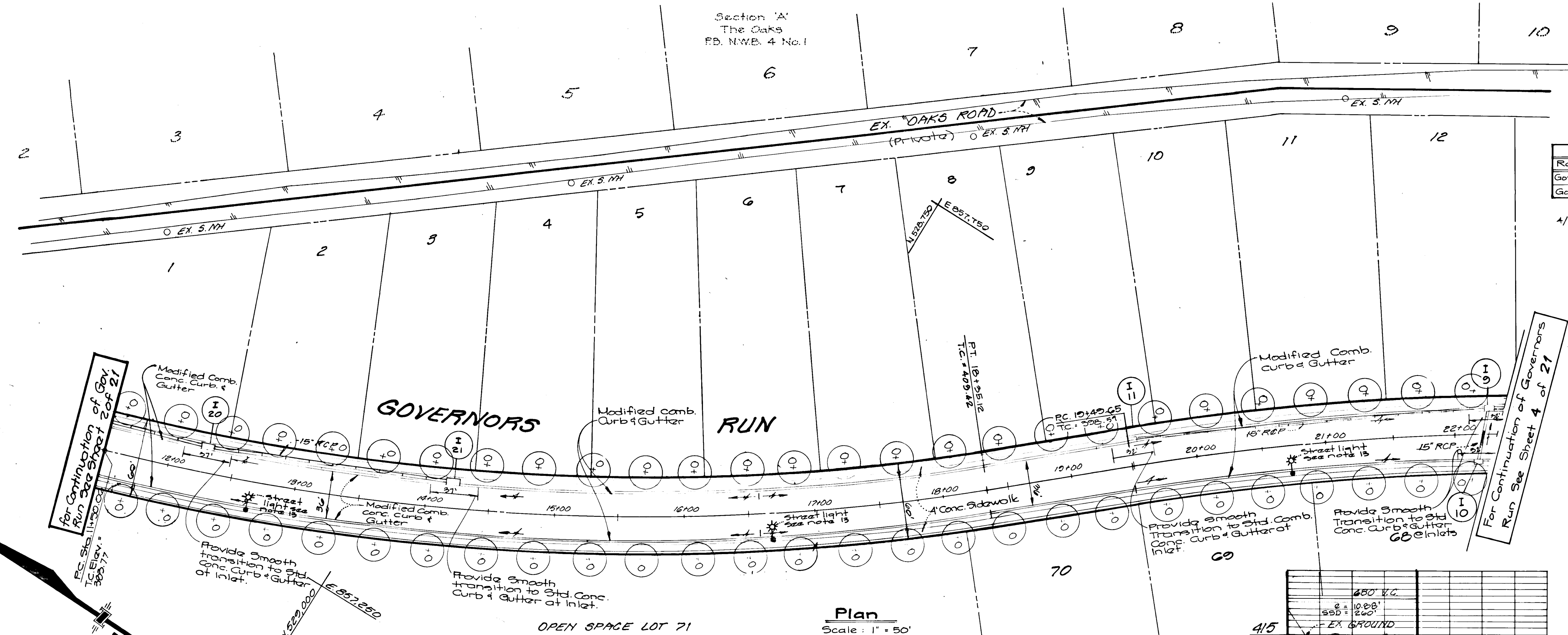
revision
4/12/15 revise T.C. elevations, revise transition @ inlets, revise street light locations

APPROVED: DEPARTMENT OF PUBLIC WORKS
Oliver M. [Name] 8/10/90
CHIEF, LAND DEVELOPMENT DIVISION DATE
Granville W. [Name] 8/1/90
CHIEF, BUREAU OF HIGHWAYS DATE
William S. [Name] 8-10-90
CHIEF, BUREAU OF ENGINEERING DATE
APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
David J. [Name] 9/2/90
CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT DATE

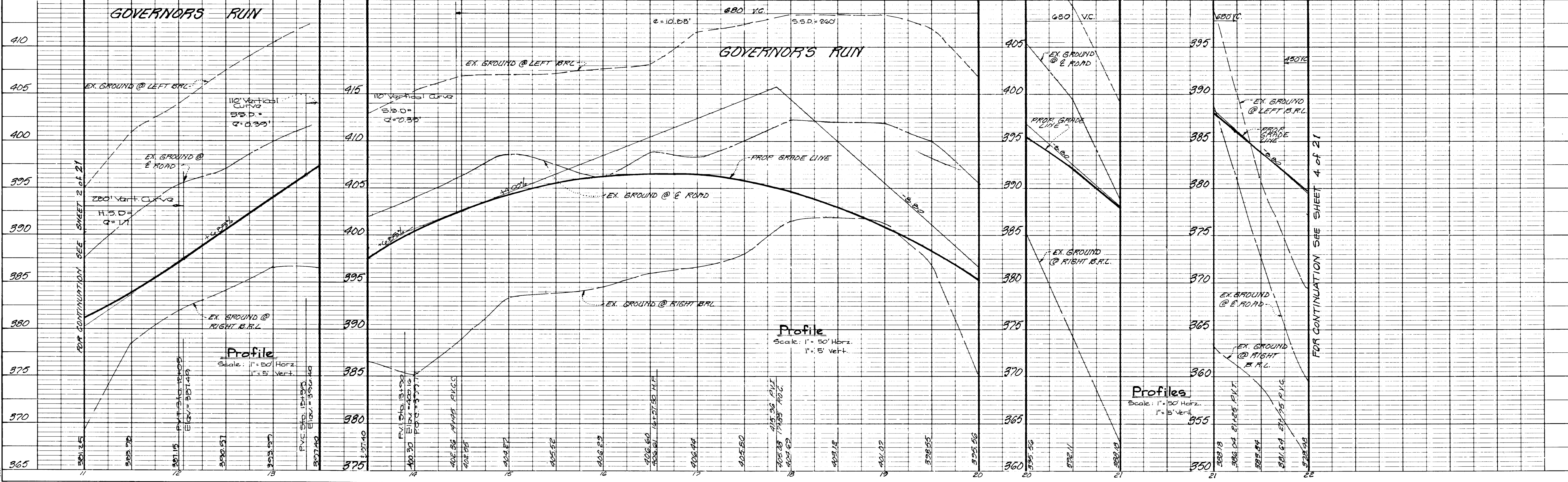
G&W GUTSCHICK LITTLE & WEBER, P.A.

ENGINEERS, PLANNERS, SURVEYORS
3909 NATIONAL DRIVE - SUITE 250 BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD 20866
TEL.: (301) 421-4024

DESIGNED D.E.V.	ROAD CONSTRUCTION PLANS GOVERNORS RUN SECTION 1 2ND ELECTION DISTRICT HOWARD COUNTY, MARYLAND	SCALE AS SHOWN
DRAWN M.C.F./L.H.		DRAWING 3 of 21
CHECKED C.H.G.		JOB NO. 86-055
DATE JULY, 1990		OWNER & DEVELOPER: HOWARD OAKS INC. 12450 LITTLE PATRIOT PARKWAY COLUMBIA, MARYLAND, 21044



Plan
Scale: 1" = 50'



Profile
Scale: 1" = 50' Horiz.
1" = 5' Vert.

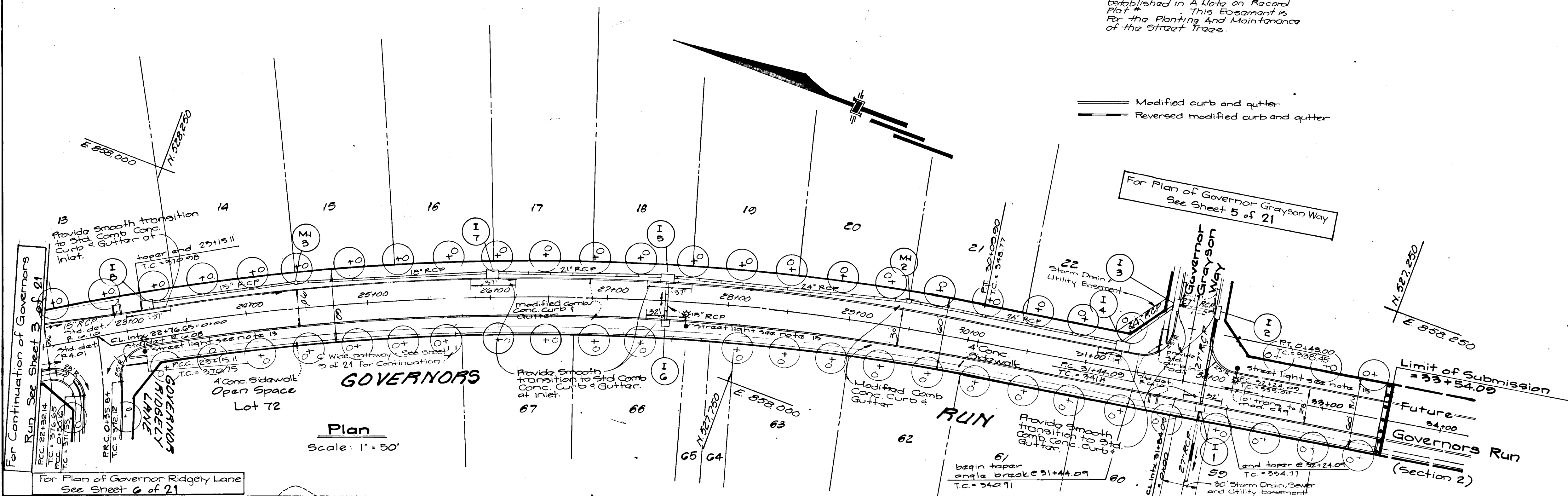
Profiles
Scale: 1" = 50' Horiz.
1" = 5' Vert.

1588

4/12/94 Revisions
 revise paving width on Gov Run from 30' to 30',
 remove sidewalk from east side. Paving
 street light locations.

Curve Data						
Road	P.C. STA.	P.T. STA.	R	ARC	Δ	CHD.
Governors Run	19+49.65	30+09.90	1250.00	1060.25'	31°00'10"	1047.24'

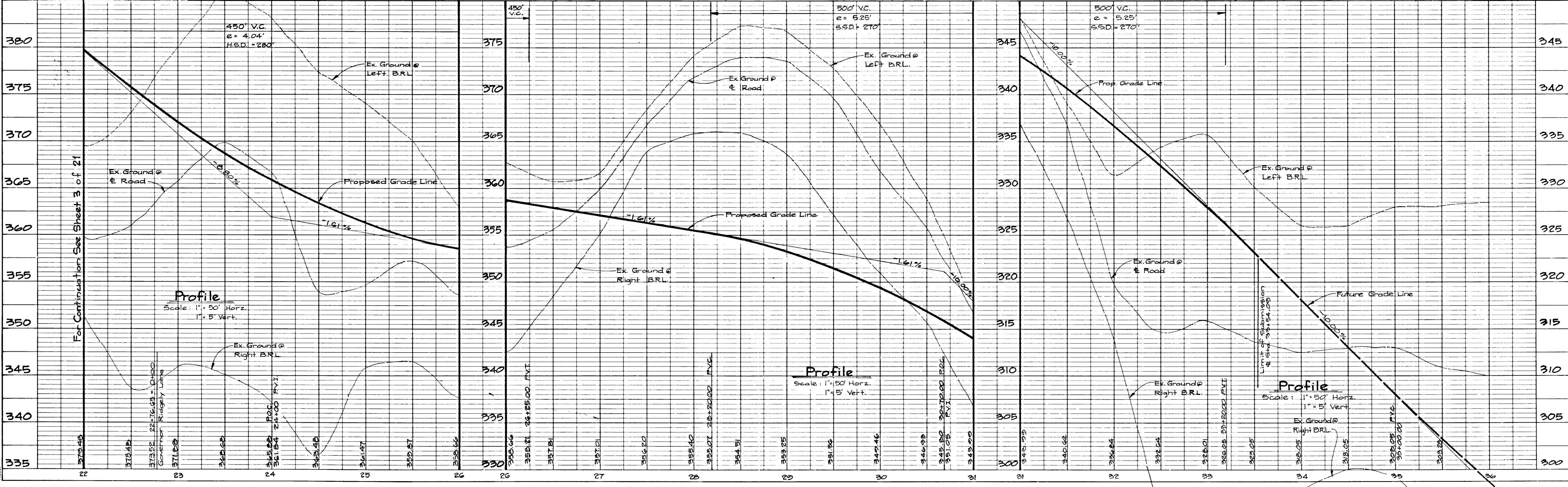
Street Tree Easement
 Street trees shown on this Road
 Drawing are located within a 10'
 Easement Along the Right of Way
 Established in A Note on Record
 Plat # . This Easement is
 For the Planting and Maintenance
 of the Street Trees.



APPROVED: DEPARTMENT OF PUBLIC WORKS
Alan M. Tamm 8/1/90
 CHIEF, LAND DEVELOPMENT DIVISION
Shawville W. Weiland 8/1/90
 CHIEF, BUREAU OF HIGHWAYS
William B. Ryan 8/1/90
 CHIEF, BUREAU OF ENGINEERING
 APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
Mark J. Zapp 9/2/90
 CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT

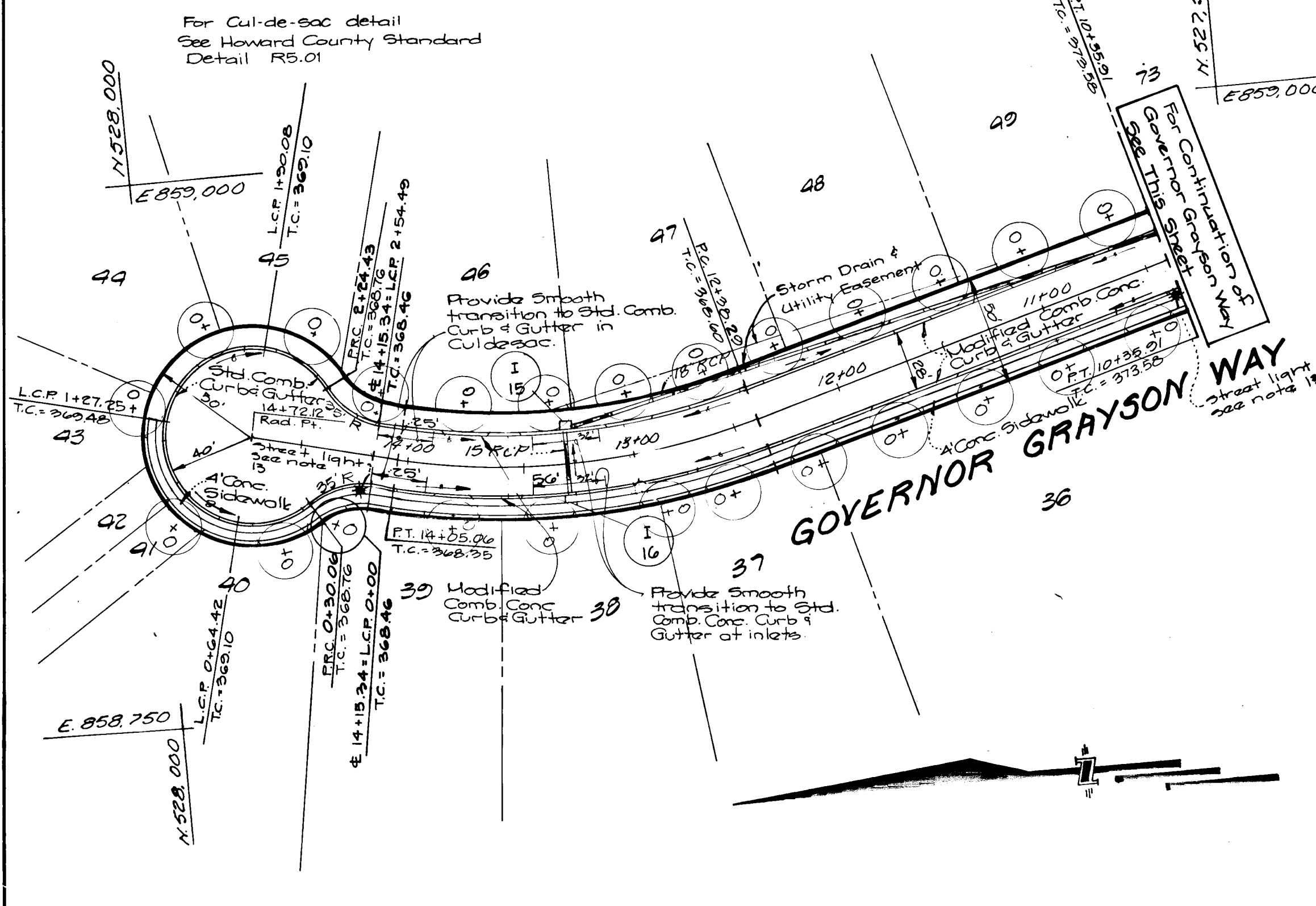
GW GUTSCHICK LITTLE & WEBER, P.A.
 ENGINEERS, PLANNERS, SURVEYORS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20866
 TEL: (301) 421-4024

DESIGNED D.E.V.	Road Construction Plans Governors Run Section 1 2nd Election District Howard County, Maryland	SCALE AS SHOWN
DRAWN L.H. M.C.F.		DRAWING 4 of 21
CHECKED C.M.G.		
DATE JULY, 1990		Owner & Developer: Howard Oaks, Inc. 10480 Little Patuxent Parkway Columbia, Maryland, 21044

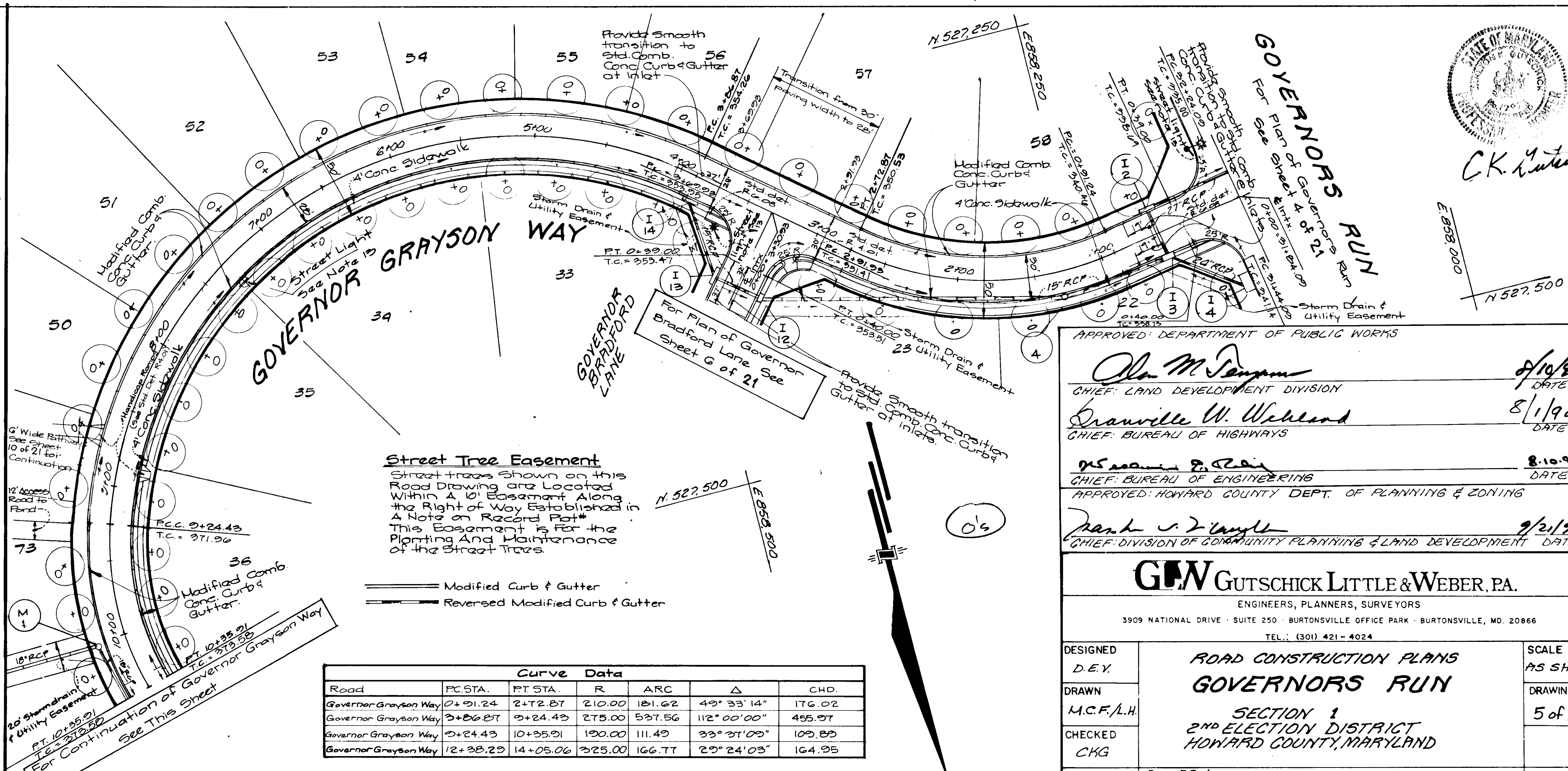


1588

Revisions
4/12/94 Change sidewalk ramps to new std. det. R.O.I. leaving street light locations.



PLAN VIEW
SCALE: 1"=50'



Road	PC STA.	PT STA.	R	ARC	Δ	CHD.
Governor Grayson Way	0+91.24	2+72.87	210.00	181.62	49° 33' 14"	176.02
Governor Grayson Way	3+66.87	5+24.43	275.00	537.56	112° 00' 00"	495.97
Governor Grayson Way	10+24.43	10+35.91	190.00	111.49	33° 21' 09"	109.89
Governor Grayson Way	12+38.29	14+05.06	225.00	166.77	29° 24' 05"	164.95

PLAN VIEW
SCALE: 1"=50'

APPROVED: DEPARTMENT OF PUBLIC WORKS

Ola M. Seng
CHIEF, LAND DEVELOPMENT DIVISION
DATE: 8/10/90

Granville W. Weiland
CHIEF, BUREAU OF HIGHWAYS
DATE: 8/19/90

James P. Stein
CHIEF, BUREAU OF ENGINEERING
DATE: 8/10/90

Frank J. Langley
CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT
DATE: 9/2/90

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING

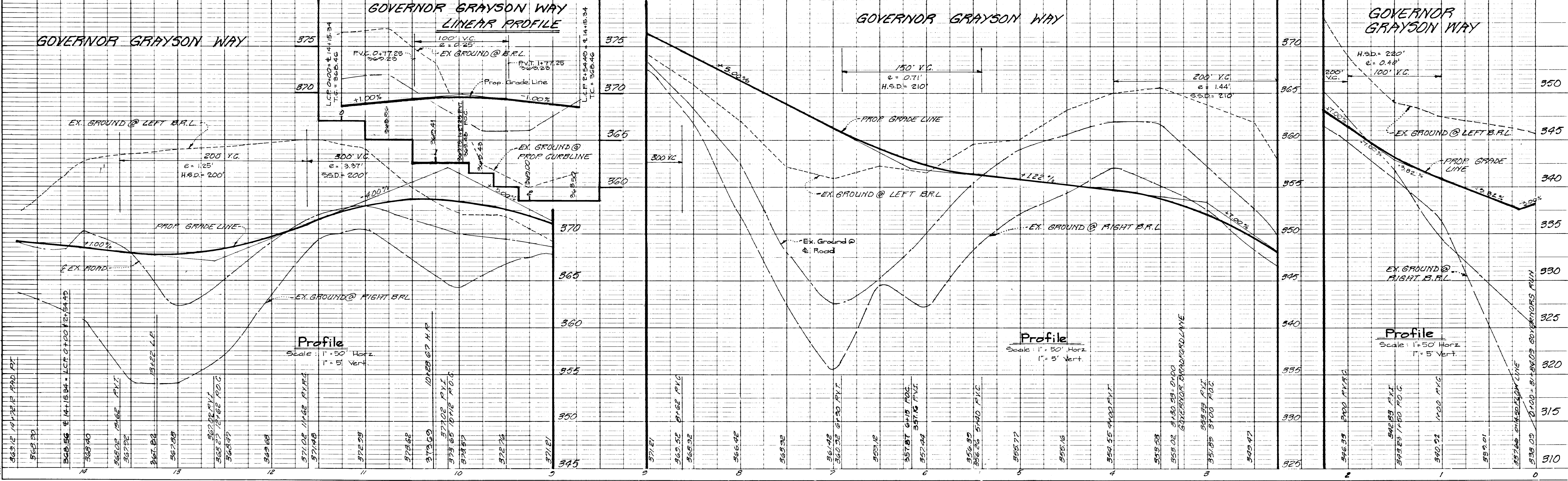
GNW GUTSCHICK LITTLE & WEBER, P.A.
ENGINEERS, PLANNERS, SURVEYORS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20866
TEL.: (301) 421-4024

DESIGNED: D.E.V.
DRAWN: M.C.F./L.H.
CHECKED: CHG
DATE: JULY, 1990

ROAD CONSTRUCTION PLANS
GOVERNORS RUN
SECTION 1
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

OWNER & DEVELOPER: HOWARD CHAM, INC.
10450 LITTLE PATRIMENT PARKWAY
COLUMBIA, MARYLAND, 21044

SCALE: AS SHOWN
DRAWING: 5 of 21
JOB NO.: BG-055

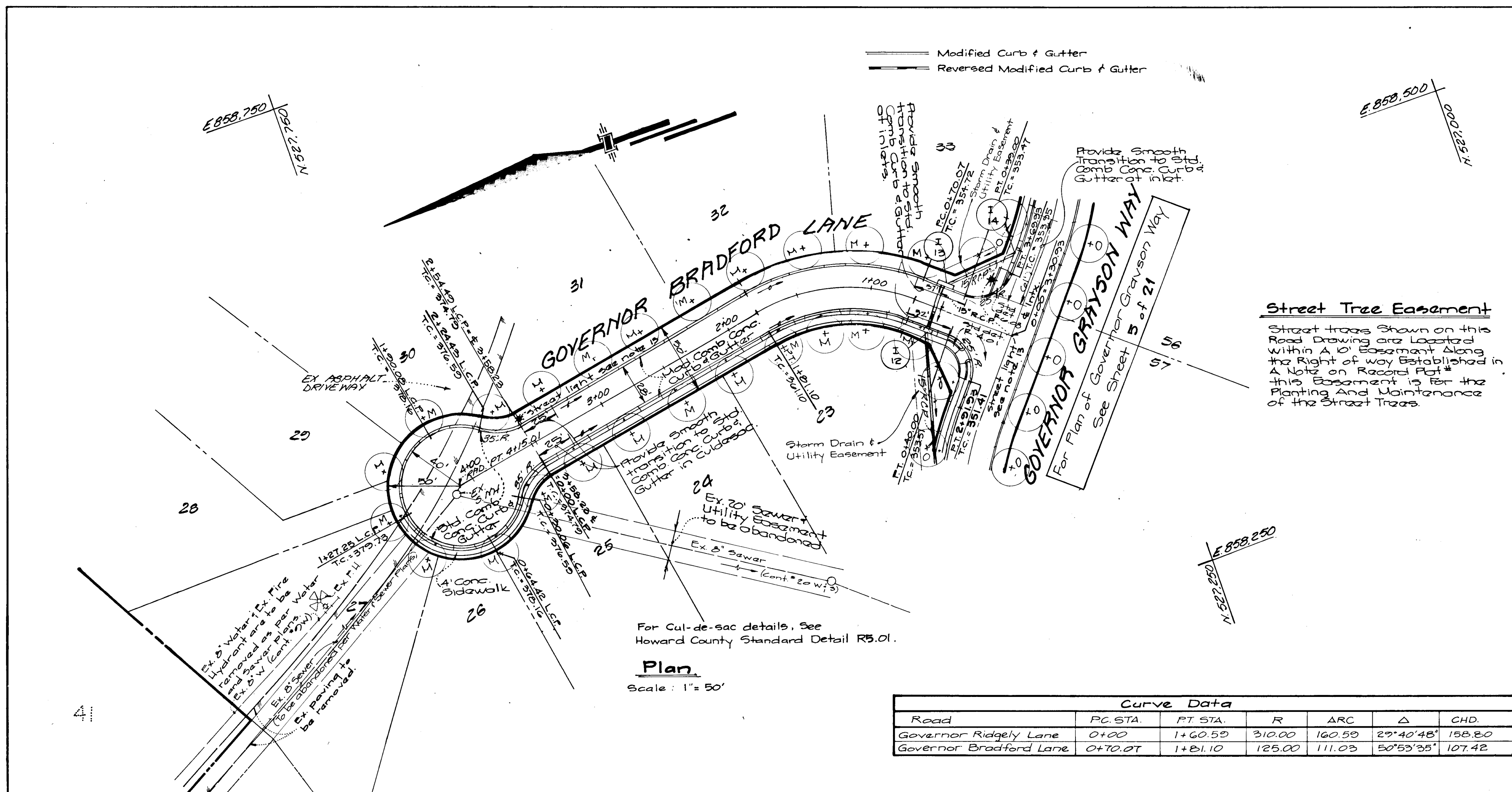


Profile
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1"=5' Vert.

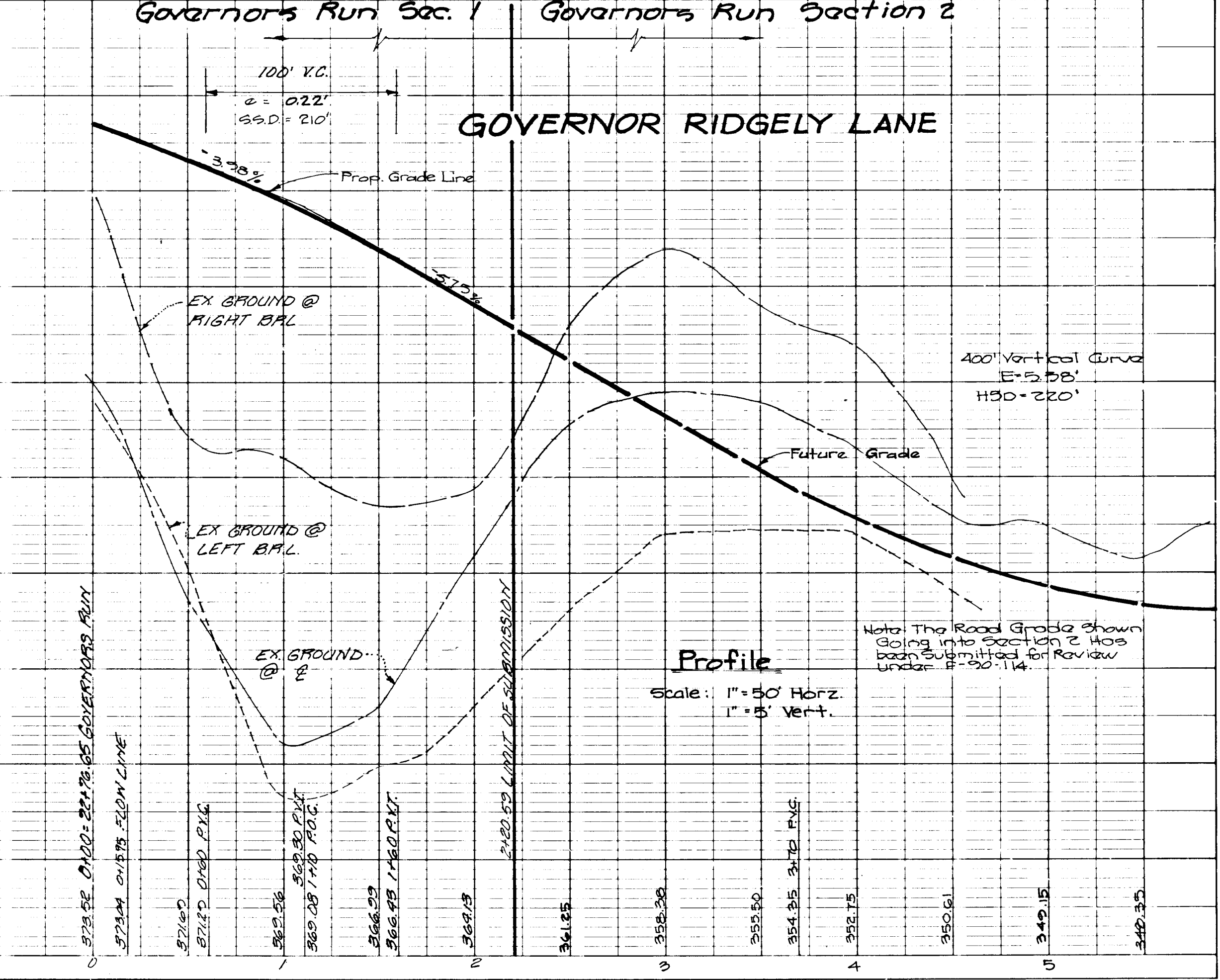
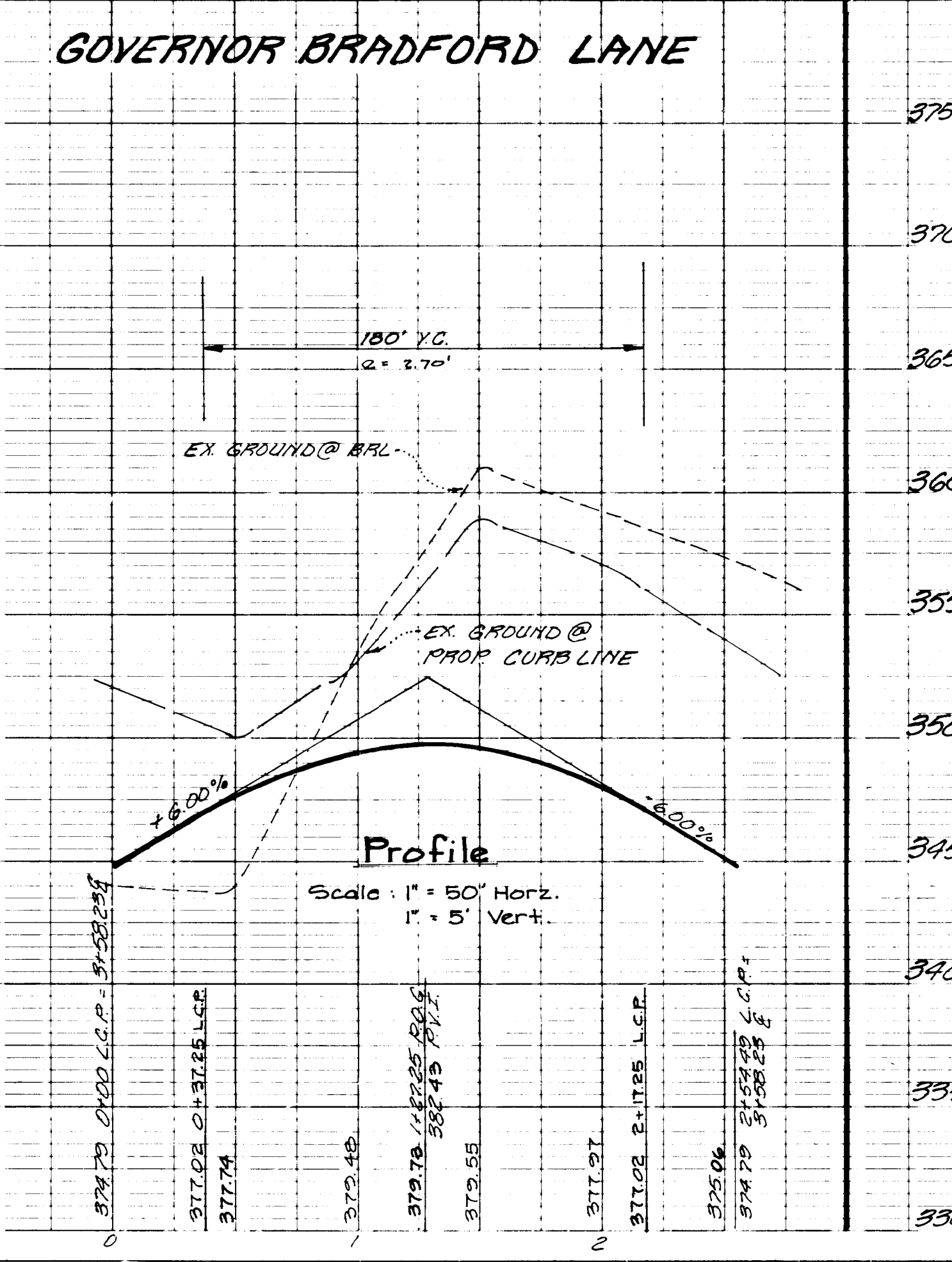
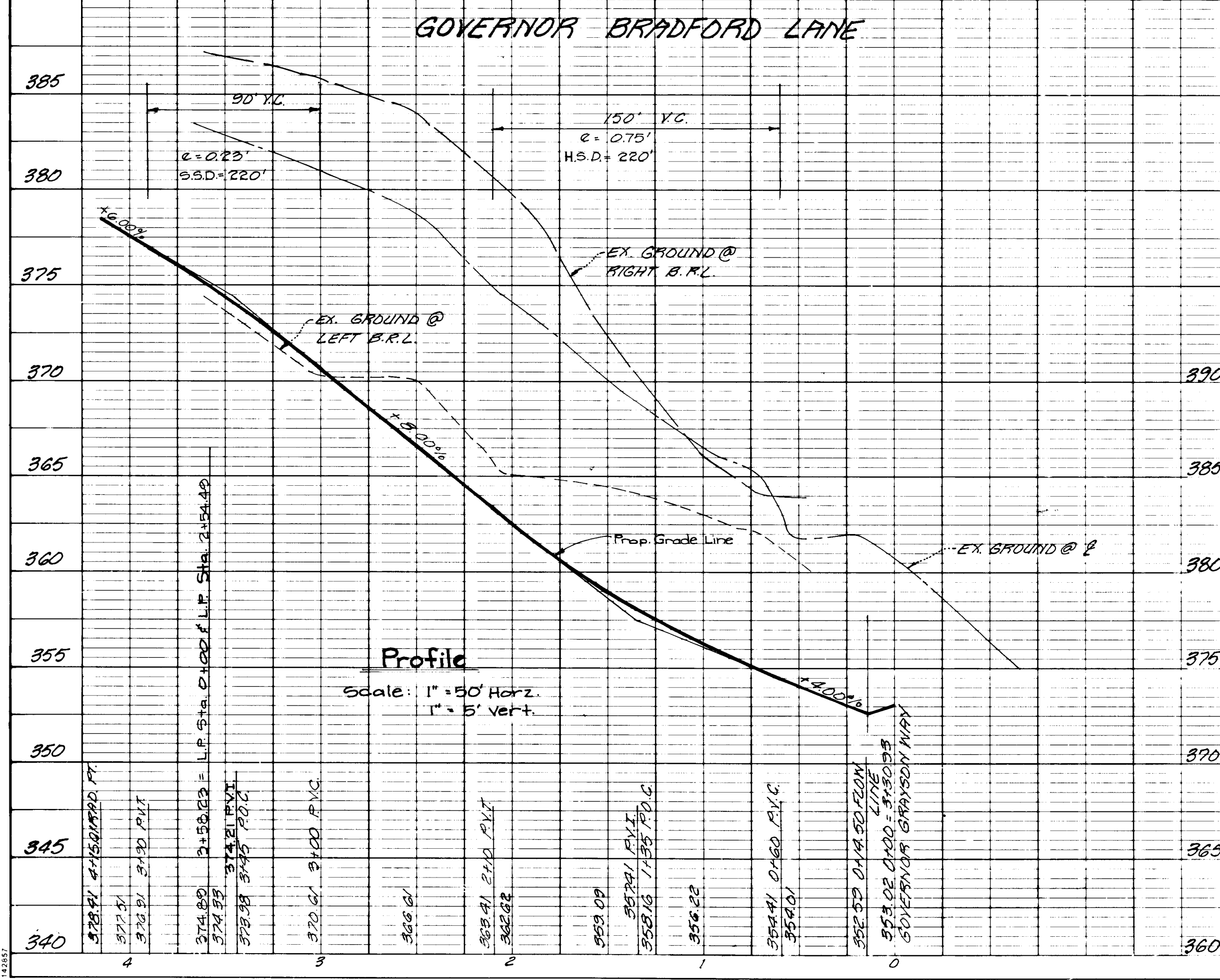
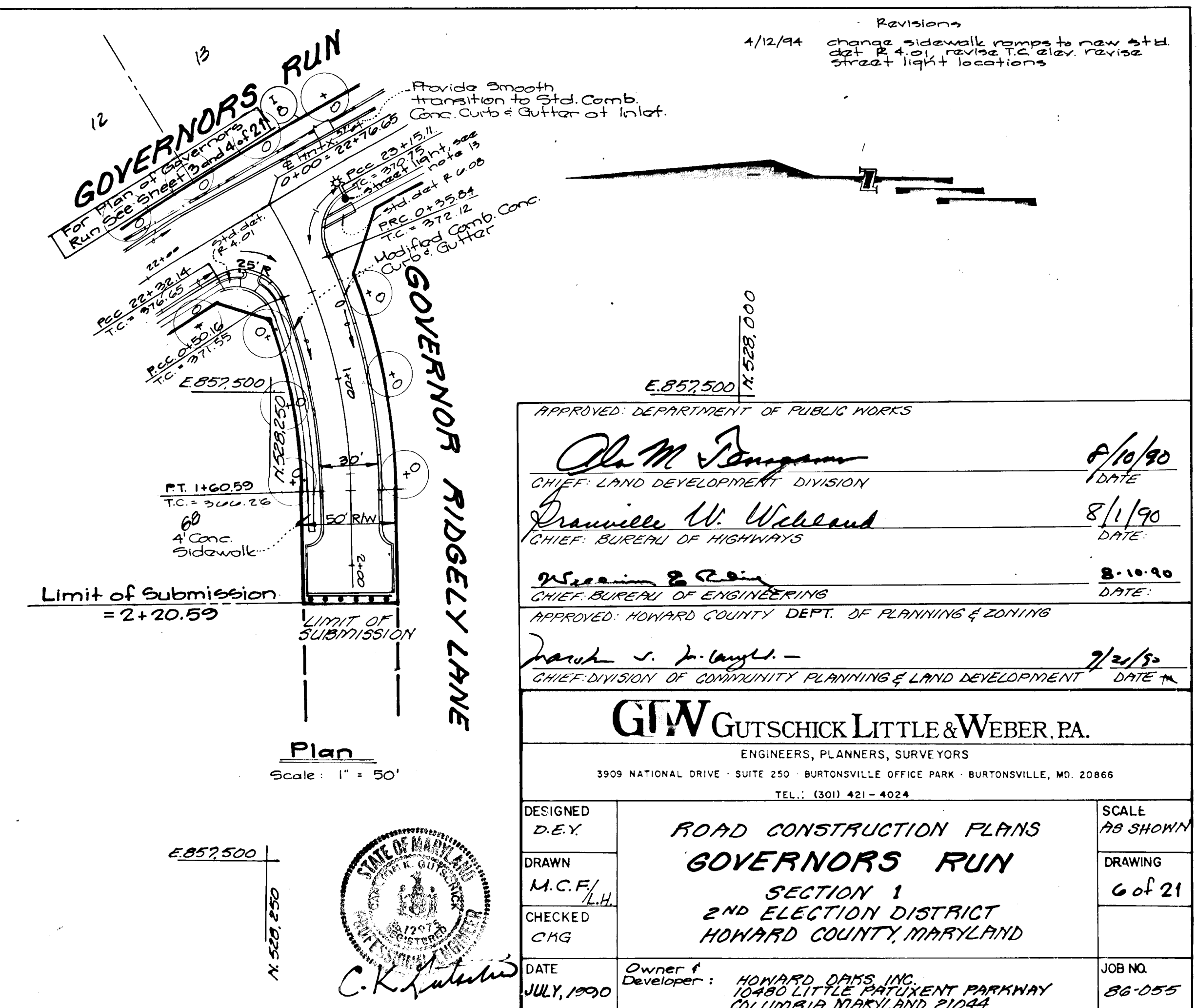
Profile
Scale: 1"=50' Horiz.
1"=5' Vert.

Profile
Scale: 1"=50' Horiz.
1"=5' Vert.

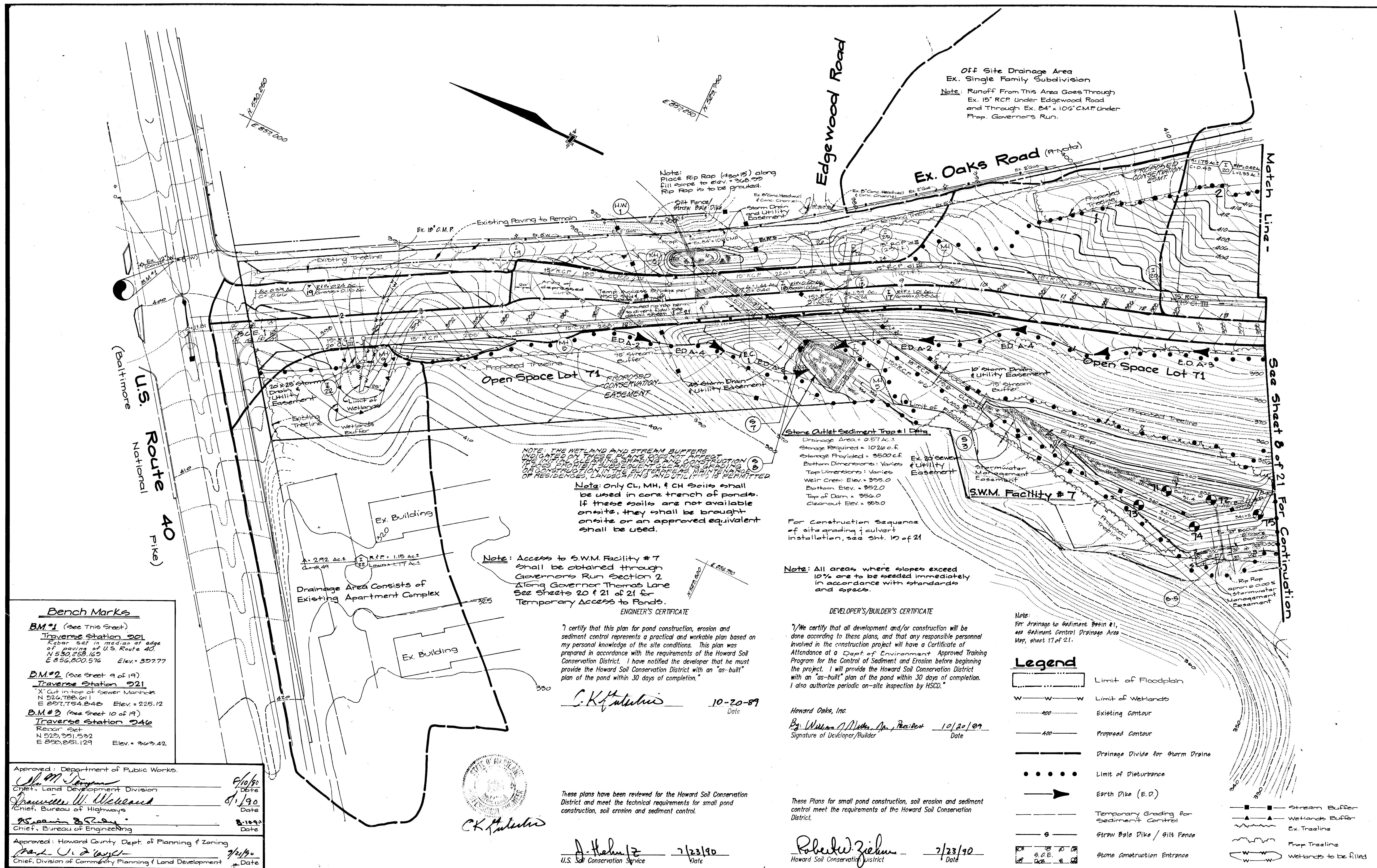
1588



Curve Data						
Road	P.C. STA	P.T. STA	R	ARC	Δ	CHD
Governor Ridgely Lane	0+00	1+60.59	310.00	160.59	27°40'48"	158.80
Governor Bradford Lane	0+70.27	1+81.10	125.00	111.03	50°59'55"	107.42



1588



Bench Marks

BM #1 (See This Sheet)
Traverse Station 301
Rebar Set in median at edge of paving of U.S. Route 40.
N 550,258.160
E 856,000.576 Elev. = 397.77

BM #2 (See Sheet 9 of 19)
Traverse Station 321
X' Cut in top of Sewer Manhole
N 526,788.011
E 857,754.848 Elev. = 225.12

BM #3 (See Sheet 10 of 19)
Traverse Station 346
Rebar Set
N 528,351.532
E 858,251.129 Elev. = 303.42

Approved: Department of Public Works.
[Signature] 6/10/90 Date
Chief, Land Development Division

[Signature] 6/1/90 Date
Chief, Bureau of Highways

[Signature] 6/10/90 Date
Chief, Bureau of Engineering

Approved: Howard County Dept. of Planning & Zoning
[Signature] 7/2/90 Date
Chief, Division of Community Planning & Land Development



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."

C. K. Hutcheson 10-20-89 Date

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

[Signature] 7/23/90 Date
U.S. Soil Conservation Service

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Environment 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. I also authorize periodic on-site inspection by HSCD."

Howard Oaks, Inc.
By: *[Signature]* 10/20/89 Date
Signature of Developer/Builder

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

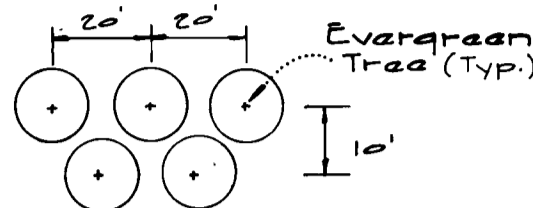
[Signature] 7/23/90 Date
Howard Soil Conservation District

Legend

- Limit of Floodplain
- Limit of Wetlands
- Existing contour
- Proposed Contour
- Drainage Divide for Storm Drains
- Limit of Disturbance
- Earth Dike (E.D.)
- Temporary Grading for Sediment Control
- Straw Bale Dike / Gilt Fence
- Stone Construction Entrance
- Stream Buffer
- Wetlands Buffer
- Ex. Tree Line
- Prop. Tree Line
- Wetlands to be Filled

G.L.W. GUTSCHICK LITTLE & WEBER, P.A. ENGINEERS, PLANNERS, SURVEYORS 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20886 TELEPHONE: (301) 421-4024	2/1/90 Add I-23 & revise grading at access road.	MCF	PREPARED FOR: Howard Oaks, Inc. 10480 Little Patuxent Parkway Suite 600 Columbia, Maryland 21044 Phone: (301) 964-2023	Mass Grading Plan Governors Run Section 1 Liber 1578 Folio 456	SCALE 1" = 50'	ZONING R-20	G.L.W. FILE No. 86-055
	10/21/90 Rev. storm drains & roads in order to provide access to the Oaks community @ site 2.	MCF			DATE July, 1990	TAX MAP No. 16/25 Par 2	SHEET 7 of 21
8/16/90 Add temporary access bridge	MCF	BY [Signature]	DATE 7/23/90	Howard County, Maryland,	2nd Election District		

1586



Evergreen Buffer Detail
No Scale

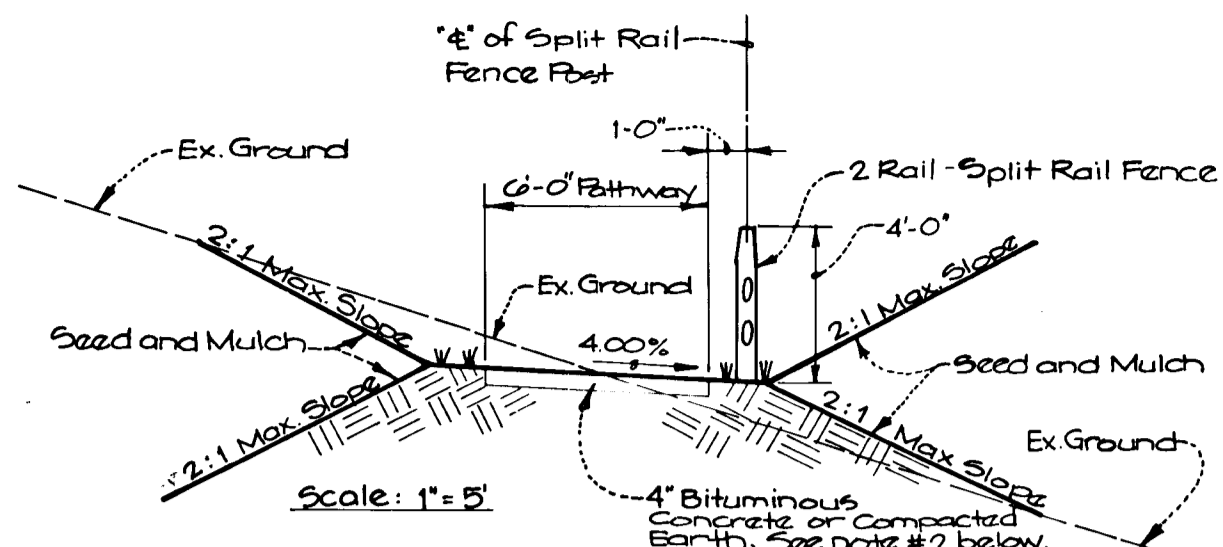
1. Trees shall be well developed White Pines (Pinus strobus) at least 6' tall.
2. Planting procedures shall comply with "Landscape Specifications for Baltimore-Washington Metro area"

NOTE:
ALL AREAS WHERE SLOPES EXCEED 10% ARE TO BE SEEDED IMMEDIATELY IN ACCORDANCE WITH STANDARDS AND SPECS.

NOTE: THE WETLAND & STREAM BUFFERS INDICATED ON THESE SHEETS DO NOT AFFECT THE INITIAL CLEARING, GRADING AND CONSTRUCTION. IT DOES PROHIBIT SUBSEQUENT CLEARING, GRADING OR CONSTRUCTION IN THE BUFFER AREAS MAINTENANCE OF RESIDENCES, LANDSCAPING AND UTILITIES IS PERMITTED.

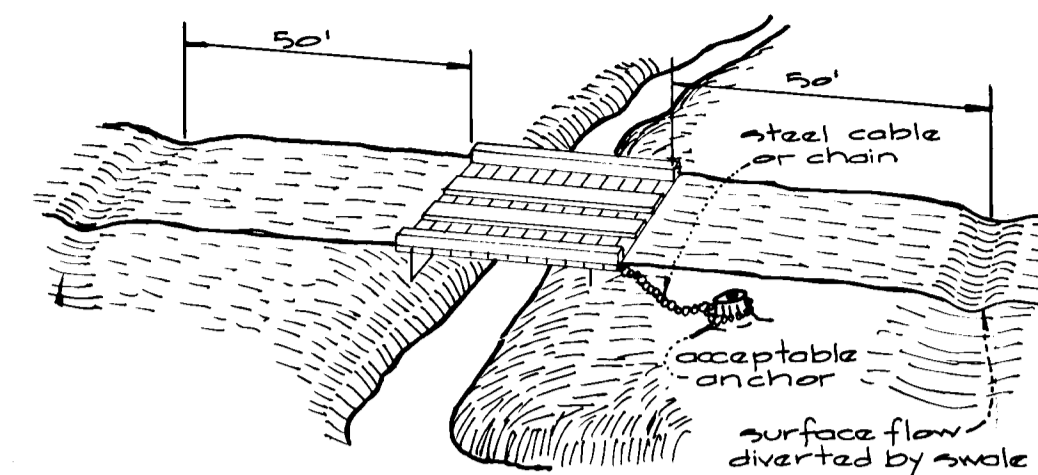
Legend

- Existing Contour
- Proposed Contour
- Drainage Divide for Storm Drains
- Limit of Disturbance
- Earth Dike (E.D.)
- Straw Bale Dike / Gilt Fence
- Stone Construction Entrance
- Ex. Treeline
- Prop. Treeline

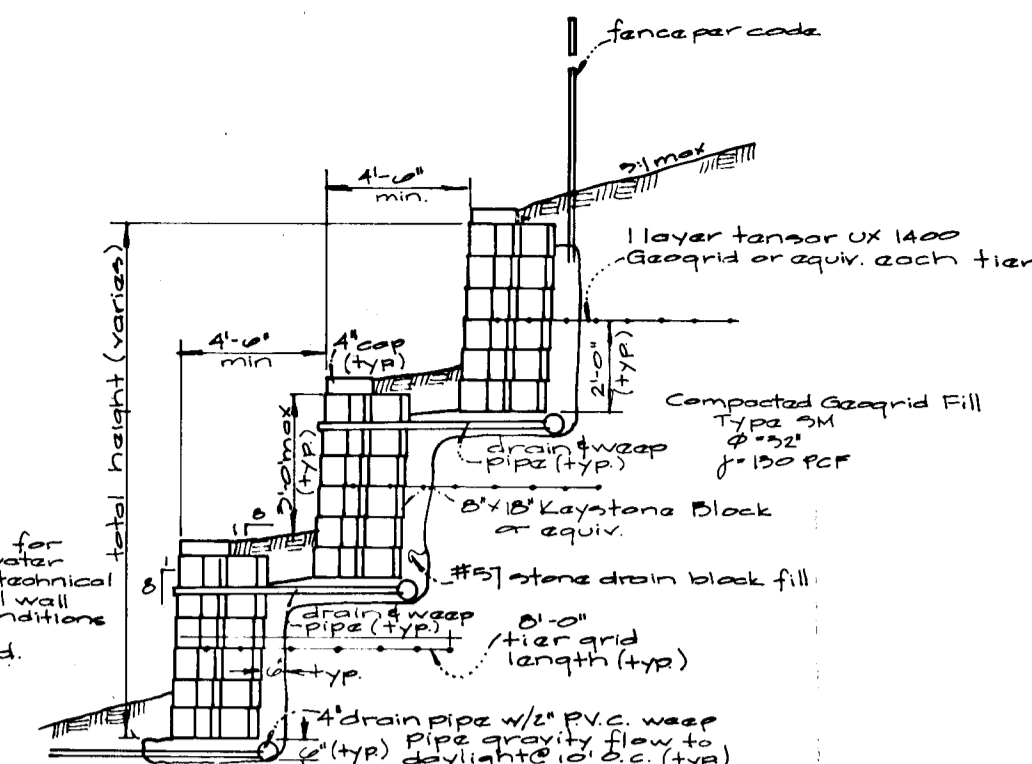


6'-0" Pathway Detail

1. Split rail fence to be placed on downhill side of pathway where total slope length to bottom of grade is greater than 10'.
2. Where pathway is shown thus [hatched] in plan, 4" bituminous concrete shall be used. Where pathway is shown thus [unhatched] in plan, compacted earth shall be used. See sheets 8 and 9 of 10 for plan of pathway.



Temporary Access Bridge
3' TO DET TAB 1



Typical Wall Profile Multi-Tier

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."

CK [Signature] 10-20-89
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Environment 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. I also authorize periodic on-site inspection by HSCD."

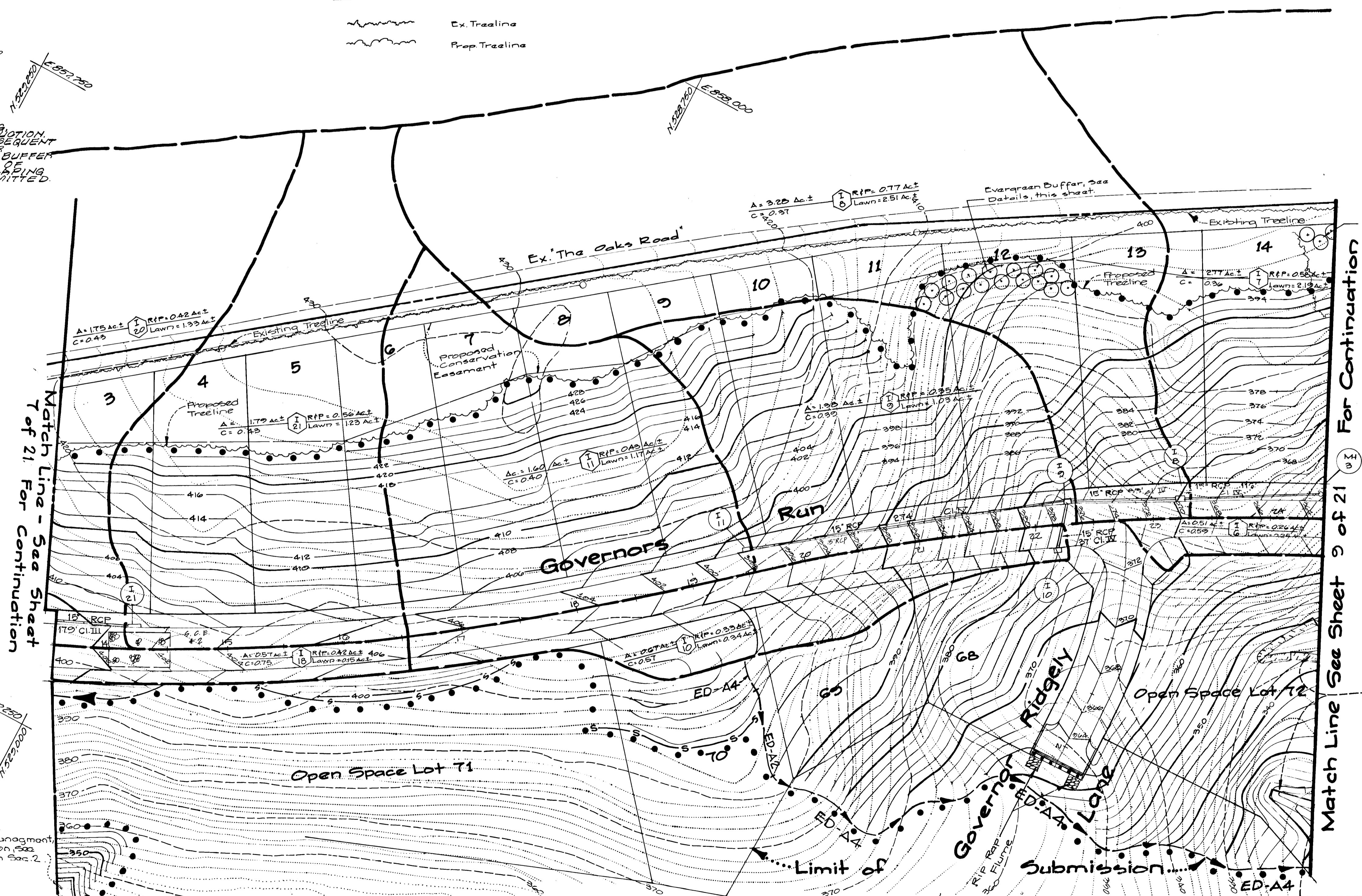
Howard Oaks, Inc.
By: *William A. Muth, Jr.* 10/20/89
Signature of Developer/Builder Date

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

J. Helms 7/23/90
U.S. Soil Conservation Service Date

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

Robert W. Ziehm 7/23/90
Howard Soil Conservation District Date



Match Line - See Sheet 7 of 21 For Continuation

Match Line See Sheet 9 of 21 For Continuation

Access Path for Stormwater Management For Continuation, see Governors Run Sec. 2, F-20-114

Approved: Department of Public Works <i>Chas. M. Longman</i> Chief, Land Development Division Date: 8/10/90	8/10/90
<i>Braville W. Newland</i> Chief, Bureau of Highways Date: 8/11/90	8/11/90
<i>William E. Kelly</i> Chief, Bureau of Engineering Date: 8/11/90	8/11/90
Approved: Howard County Dept. of Planning & Zoning <i>Mark A. Ayler</i> Chief, Division of Community Planning & Land Development Date: 7/23/90	7/23/90

GUTSCHICK LITTLE & WEBER, P.A.
ENGINEERS, PLANNERS, SURVEYORS
3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD. 20886
TELEPHONE (301) 421-4024

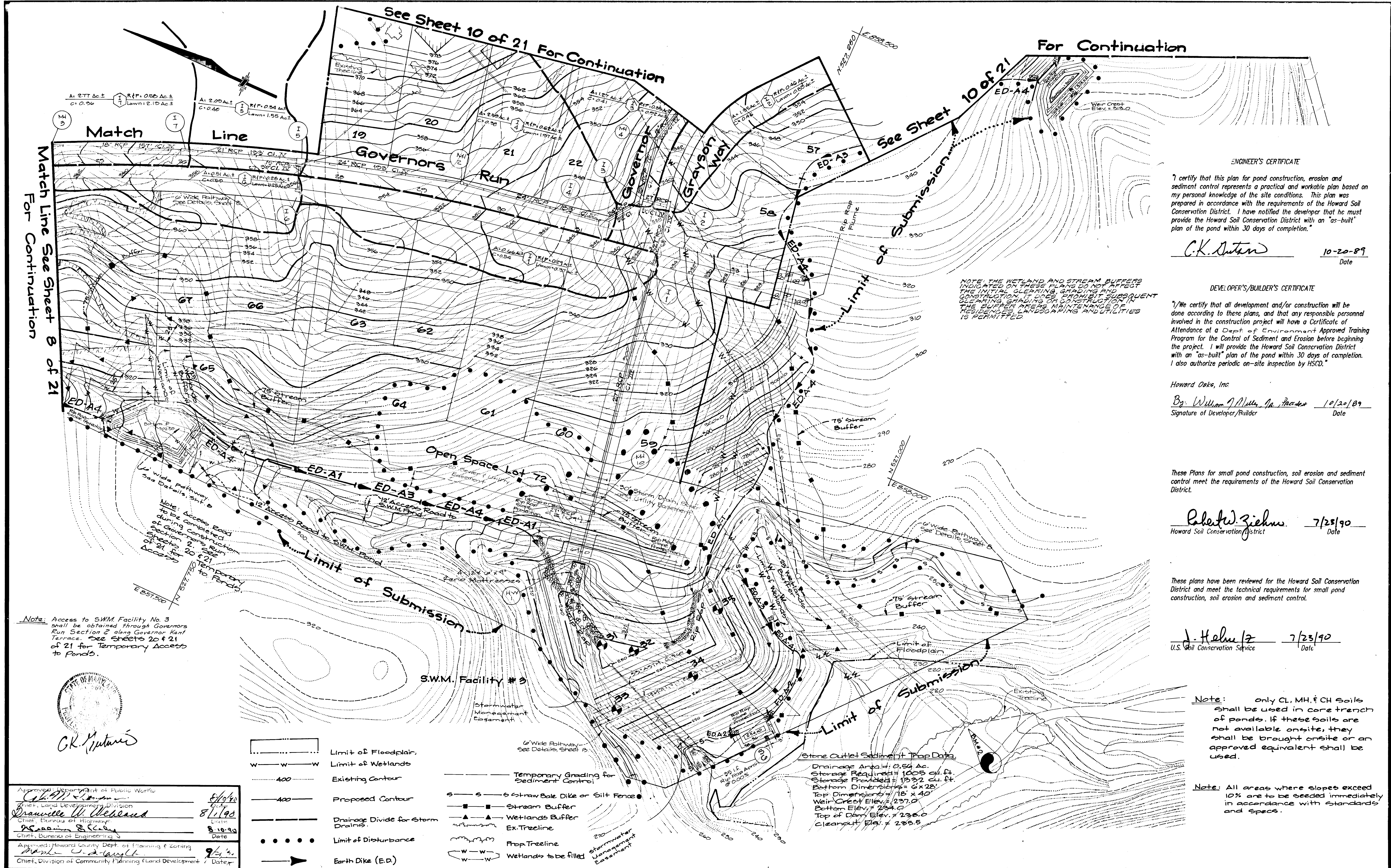
DATE	REVISION	BY	APP'R.
2/16/94	rev. retaining wall det. & add temp access bridge	MCF	
2/12/94	revise paving width along Gov. Run S. of Gov. Ridgely Lane	MCE	

PREPARED FOR:
Howard Oaks, Inc.
10480 Little Patuxent Parkway
Suite 602
Columbia, Maryland 21044
(301) 264-2023

Mass Grading Plan
Governors Run
Section 1 Lots 1-73
Liber 1578 Folio 456
Howard County, Maryland
2nd Election District

SCALE 1" = 50'	ZONING R-20	G.L.W. FILE NO. BG-055
DATE JULY, 1990	TAX MAP No. 18/25 Par 2	SHEET 8 of 21

1989



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.

C.K. Mutkus 10-20-89
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Environment 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. I also authorize periodic on-site inspection by HSCD.

Howard Oaks, Inc.
By: William J. Miller, Jr., President 10/20/89
Signature of Developer/Builder Date

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

Robert W. Ziehm 7/25/90
Howard Soil Conservation District Date

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

J. Helms 7/25/90
U.S. Soil Conservation Service Date

Note: only CL, MH, & CH Soils shall be used in core trench of ponds. If these soils are not available onsite, they shall be brought onsite or an approved equivalent shall be used.

Note: All areas where slopes exceed 10% are to be seeded immediately in accordance with standards and specs.

Note: Access Road to be completed during construction of Governors Run Section 2. See SHEETS 20 & 21 of 21 for Temporary Access to Ponds.



C.K. Mutkus

- Limit of Floodplain
- Limit of Wetlands
- Existing Contour
- Proposed Contour
- Drainage Divide for storm Drains
- Limit of Disturbance
- Earth Dike (E.D.)
- Temporary Grading for Sediment Control
- Stream Buffer
- Wetlands Buffer
- Ex. Trelaine
- Prop. Trelaine
- Wetlands to be filled
- Stormwater Management Easement
- Straw Bale Dike or Silt Fence

Approved: Department of Public Works
Chief, Land Development Division
Drayville W. Weisand 8/1/90
Chief, Bureau of Planning
Robert S. Kelly 8-10-90
Date
Approved: Howard County Dept. of Planning & Zoning
Frank J. Taylor 9/2/90
Chief, Division of Community Planning & Land Development Date

G.L.W. GUTSCHICK LITTLE & WEBER, P.A. ENGINEERS, PLANNERS, SURVEYORS 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20886 TELEPHONE: (301) 421-4024	PREPARED FOR: Howard Oaks, Inc. 10480 Little Patuxent Parkway Suite 600 Columbia, Maryland 21044 (301) 964-2023	Mass Grading Plan Governors Run Section 1 Liber 1578		SCALE 1"=50'	ZONING R-20	G.L.W. FILE NO. 86-055
		Lots 1-73 Folio 456 2nd Election District		DATE JULY, 1990	TAX MAP NO. 18/25 BR 2	SHEET 9 of 21

0351

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.

Robert W. Ziehm 7/23/90
 U.S. Soil Conservation Service
 These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

Robert W. Ziehm 7/23/90
 Howard Soil Conservation District

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.

C.K. Gutschick 10-20-89
 Date

DEVELOPER'S/BUILDER'S CERTIFICATE

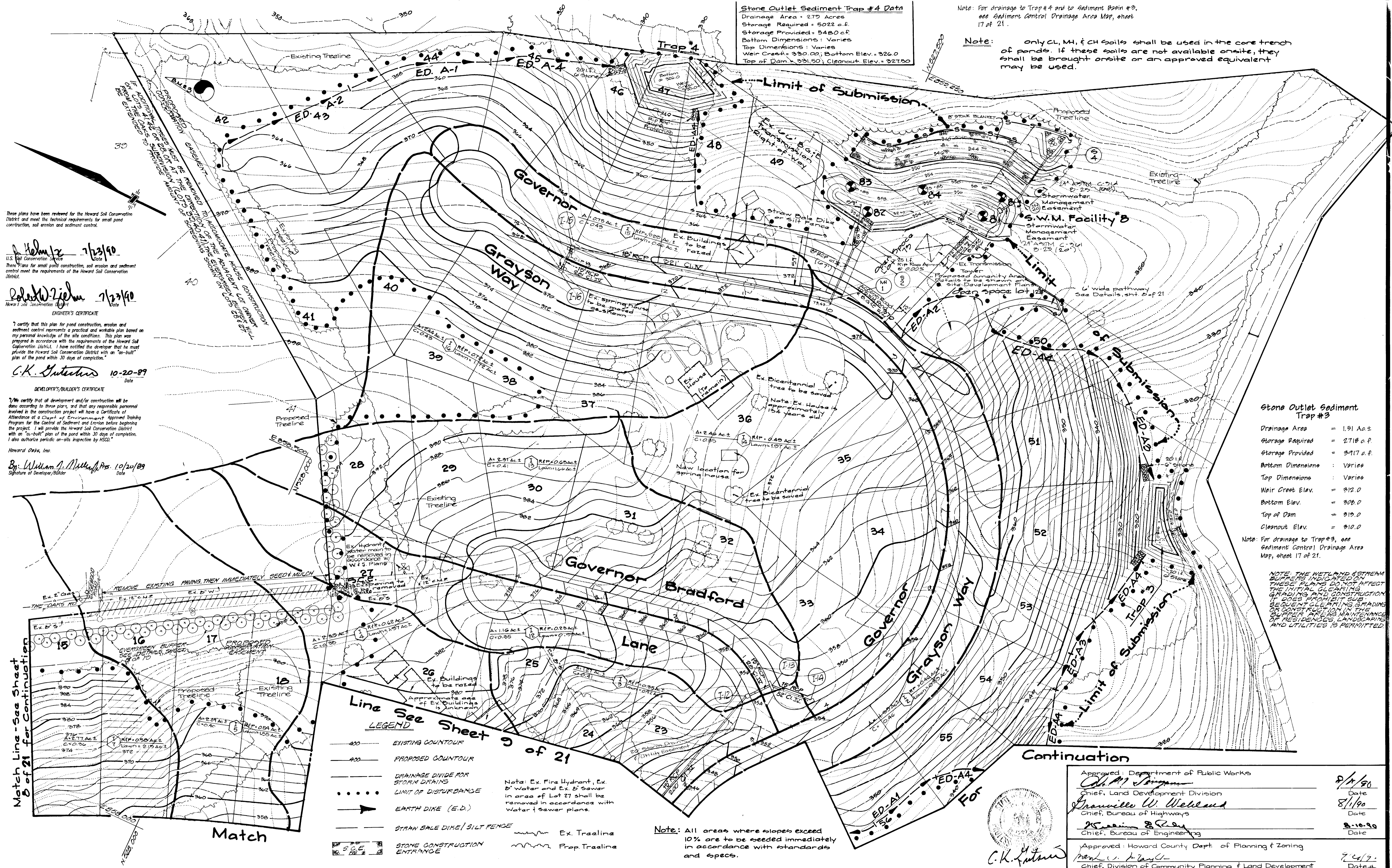
I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Dept. of Environment Approved Training Program for the Control of Sediment and Erosion before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

Howard Oaks, Inc.
William A. Miller, P.E. 10/20/89
 Signature of Developer/BUILDER Date

Stone Outlet Sediment Trap #4 Data
 Drainage Area = 275 Acres
 Storage Required = 5022 c.f.
 Storage Provided = 5480 c.f.
 Bottom Dimensions: Varies
 Top Dimensions: Varies
 Weir Crest = 320.00; Bottom Elev. = 326.0
 Top of Dam = 321.50; Cleanout Elev. = 327.50

Note: For drainage to Trap #4 and to Sediment Basin #3, see Sediment Control Drainage Area Map, sheet 17 of 21.

Note: Only CL, M4, & CH soils shall be used in the core trench of ponds. If these soils are not available onsite, they shall be brought onsite or an approved equivalent may be used.



Stone Outlet Sediment Trap #3

Drainage Area = 1.91 Ac ±
 Storage Required = 2718 c.f.
 Storage Provided = 3417 c.f.
 Bottom Dimensions: Varies
 Top Dimensions: Varies
 Weir Crest Elev. = 312.0
 Bottom Elev. = 308.0
 Top of Dam = 319.0
 Cleanout Elev. = 310.0

Note: For drainage to Trap #3, see Sediment Control Drainage Area Map, sheet 17 of 21.

NOTE: THE WETLAND & STREAM BUFFERS INDICATED ON THESE PLANS DO NOT AFFECT THE INITIAL CLEARING, GRADING AND CONSTRUCTION. DOES PROHIBIT SUBSEQUENT CLEARING, GRADING OR CONSTRUCTION IN THE BUFFER AREAS MAINTENANCE OF RESIDENCES, LANDSCAPING AND UTILITIES IS PERMITTED.

Line See Sheet 9 of 21

LEGEND

- EXISTING COUNTOUR
- PROPOSED COUNTOUR
- DRAINAGE DIVIDE FOR STORM DRAINS
- LIMIT OF DISTURBANCE
- EARTH DIKE (E.D.)
- STRAW BALE DIKE/SILT FENCE
- STONE CONSTRUCTION ENTRANCE
- Ex. Treeline
- Prop. Treeline

Note: Ex. Fire Hydrant, Ex. Dr. Water and Ex. Sewer in area of Lot 27 shall be removed in accordance with water & sewer plans.

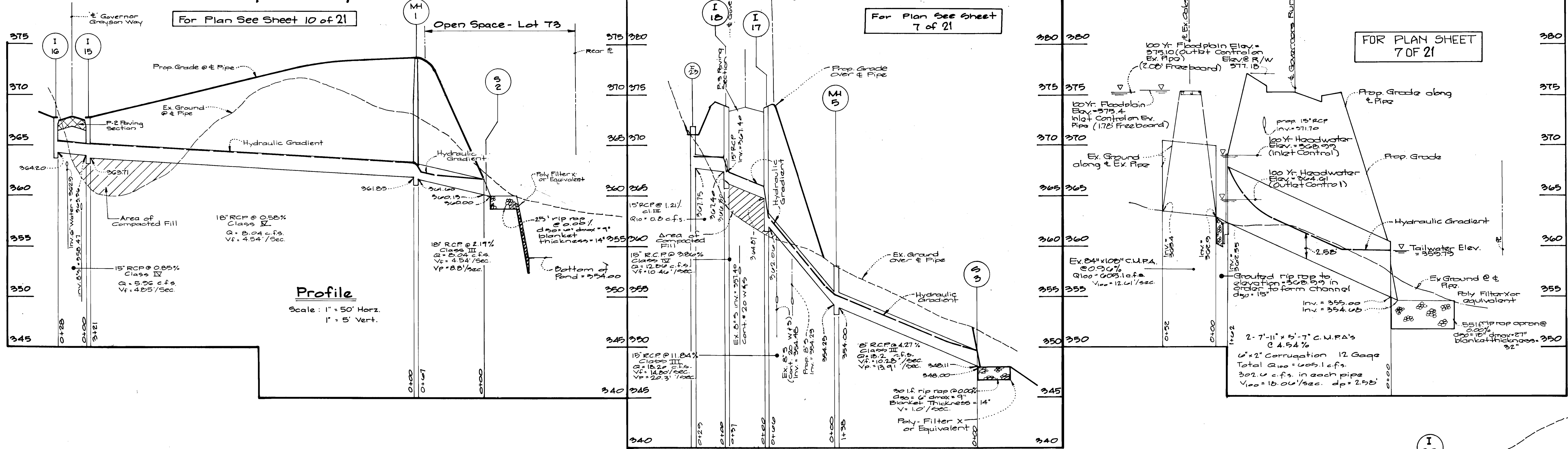
Note: All areas where slopes exceed 10% are to be seeded immediately in accordance with standards and specs.

Approved: Department of Public Works
Col. M. J. ... 8/1/90 Date
 Chief, Land Development Division
Granville W. Welland 8/1/90 Date
 Chief, Bureau of Highways
William R. ... 8-10-90 Date
 Chief, Bureau of Engineering
 Approved: Howard County Dept. of Planning & Zoning
Frank V. ... 7-24-90 Date
 Chief, Division of Community Planning & Land Development

GUTSCHICK LITTLE & WEBER, P.A. ENGINEERS, PLANNERS, SURVEYORS 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20886 TELEPHONE (301) 421-4024	2/1/95 10/21/94 2/10/94 7/12/94 4/12/94	REV. M120 location of S.W.M.F. #3 rev. S.W.M. Pond #3 to add M120 & rev. outfall location Add S.C.E. @ End of Oaks Rd. relocate S-2 revise grading at & add open space lot #128	MCF MCF MCF MCF MCF	PREPARED FOR: Howard Oaks, Inc. 10480 Little Patuxent Parkway Suite 600 Columbia, Maryland 21044 (301) 964-2023	Mass Grading Plan Governors Run Section 1 Lots 1-73 Liber 1578 Folio 456 Howard County, Maryland 2nd Election District	SCALE 1" = 50'	ZONING R-20	G.I.W. FILE NO. 86-055
						DATE JULY 1990	TAX MAP NO. 18/25 Par. 2	SHEET 10 of 21

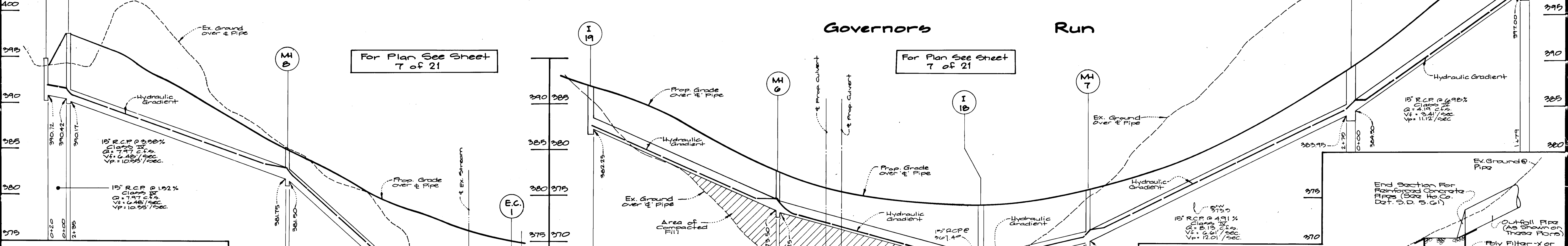
1588

Governor Grayson Way



Profile
Scale: 1" = 50' Horiz.
1" = 5' Vert.

Governors Run



Profile
Scale: 1" = 50' Horiz.
1" = 5' Vert.

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

Red Turner VP. 11-6-89
Signature of Developer/Builder 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.

C.K. Antares 10-22-89
Signature Date

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

J. Helm 7-23-90
U.S. Soil Conservation Service Date

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

Robert W. Ziel 7-23-90
Howard Soil Conservation District Date

Approved: Department of Public Works

Oliver M. Longman 8/10/90
Chief, Land Development Division Date

Lawrence W. Weiland 8/1/90
Chief, Bureau of Highways Date

Wesley R. Reed 8-10-90
Chief, Bureau of Engineering Date

Approved: Howard County Dept. of Planning & Zoning

Wanda U. Drury 9/2/90
Chief, Division of Community Planning & Land Development Date

G.L.W. GUTSCHICK LITTLE & WEBER, P.A.
ENGINEERS, PLANNERS, SURVEYORS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20866
TELEPHONE (301) 421-4024

DATE	REVISION	BY	APP'R.
2/1/95	rev S.D. profile, add I-23	MCF	
10/21/94	rev S.D. profiles @ I-10 & I-11	MCF	
7/12/94	rev Profile @ I-2	MCF	
4/12/94	revise storm drain profiles	MCF	

PREPARED FOR:
Howard Oaks Inc.
10480 Little Patuxent Parkway
Suite 600
Columbia, Maryland 21044
(301) 964-2023

Storm Drain Profiles
Governors Run
Section 1 Lots 1-73
Liber 157B Folio 456

SCALE: As Shown ZONING: R-20 G.L.W. FILE NO.: BG-055

DATE: July 1990 TAX MAP NO.: 18/25 PAR. 2 SHEET: 11 of 21

Howard County, Maryland 2nd Election District

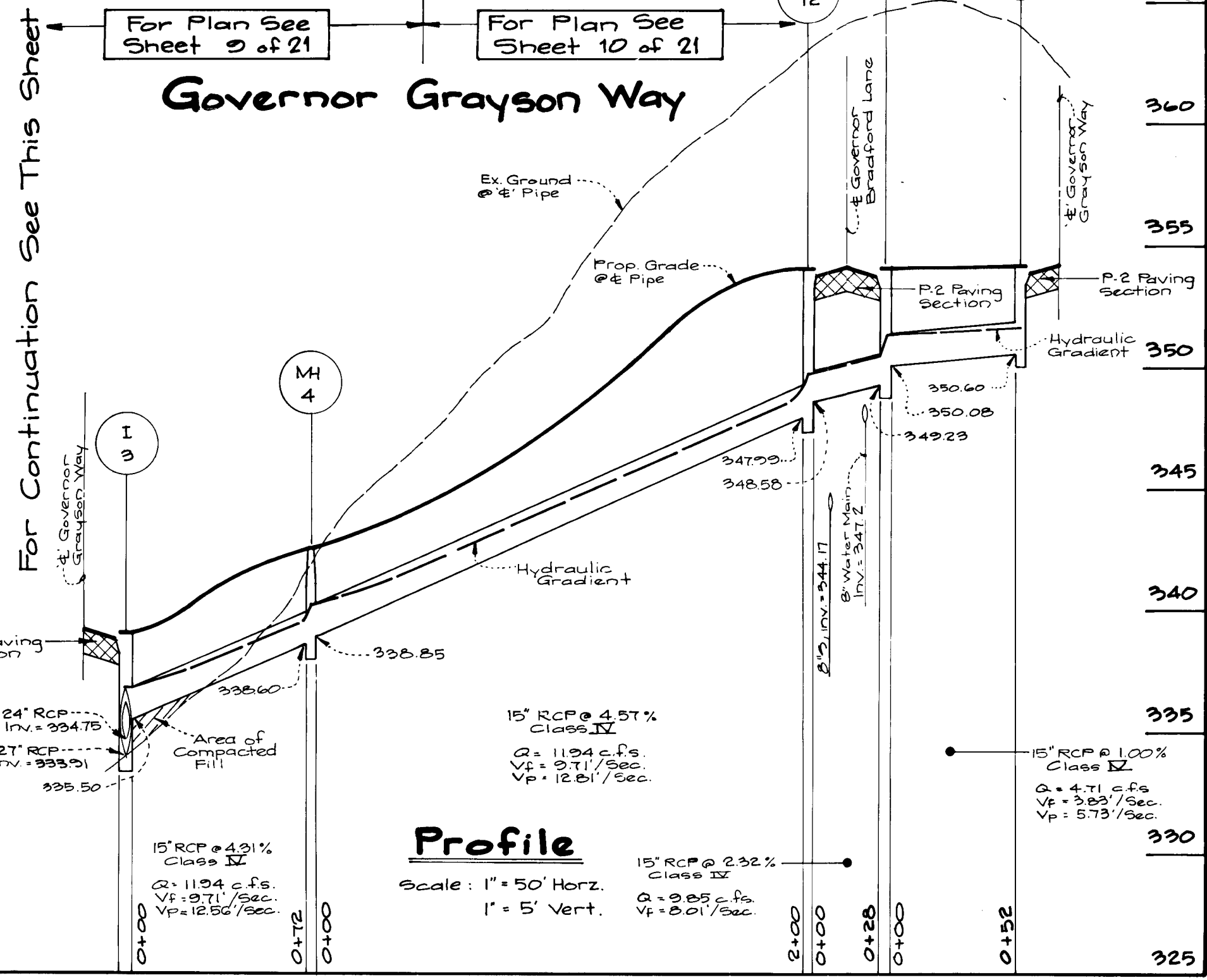
ENGINEER'S CERTIFICATE
 "I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION & SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE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

[Signature]
 SIGNATURE OF ENGINEER
 10-20-89
 DATE

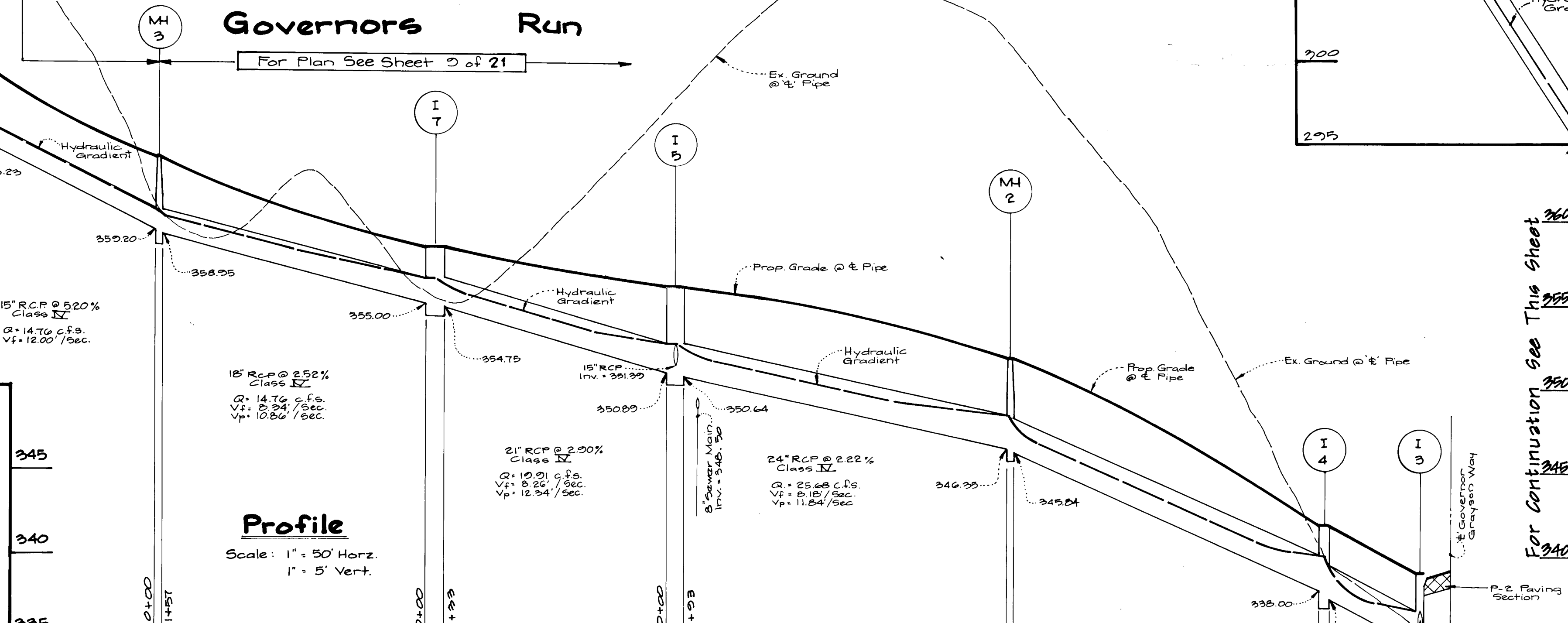
DEVELOPER'S/BUILDER CERTIFICATE
 "I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND THAT ANY REQUIRED PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE RECEIVED TRAINING AS A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION DURING THE CONSTRUCTION PROJECT. I WILL PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY H.S.C.D."

SIGNATURE OF DEVELOPER/BUILDER
 DATE

Governor Grayson Way



Governors Run



E.K. Antkowiak

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, EROSION & SEDIMENT CONTROL.
 U.S. SOIL CONSERVATION SERVICE DATE
 HOWARD SOIL C.D. DATE

Approved: Department of Public Works
[Signature] 8/10/90 Date
 Chief, Land Development Division
[Signature] 8/1/90 Date
 Chief, Bureau of Highways
[Signature] 8-10-90 Date
 Chief, Bureau of Engineering
 Approved: Howard County Dept. of Planning & Zoning
[Signature] 9/24/90 Date
 Chief, Division of Community Planning & Land Development

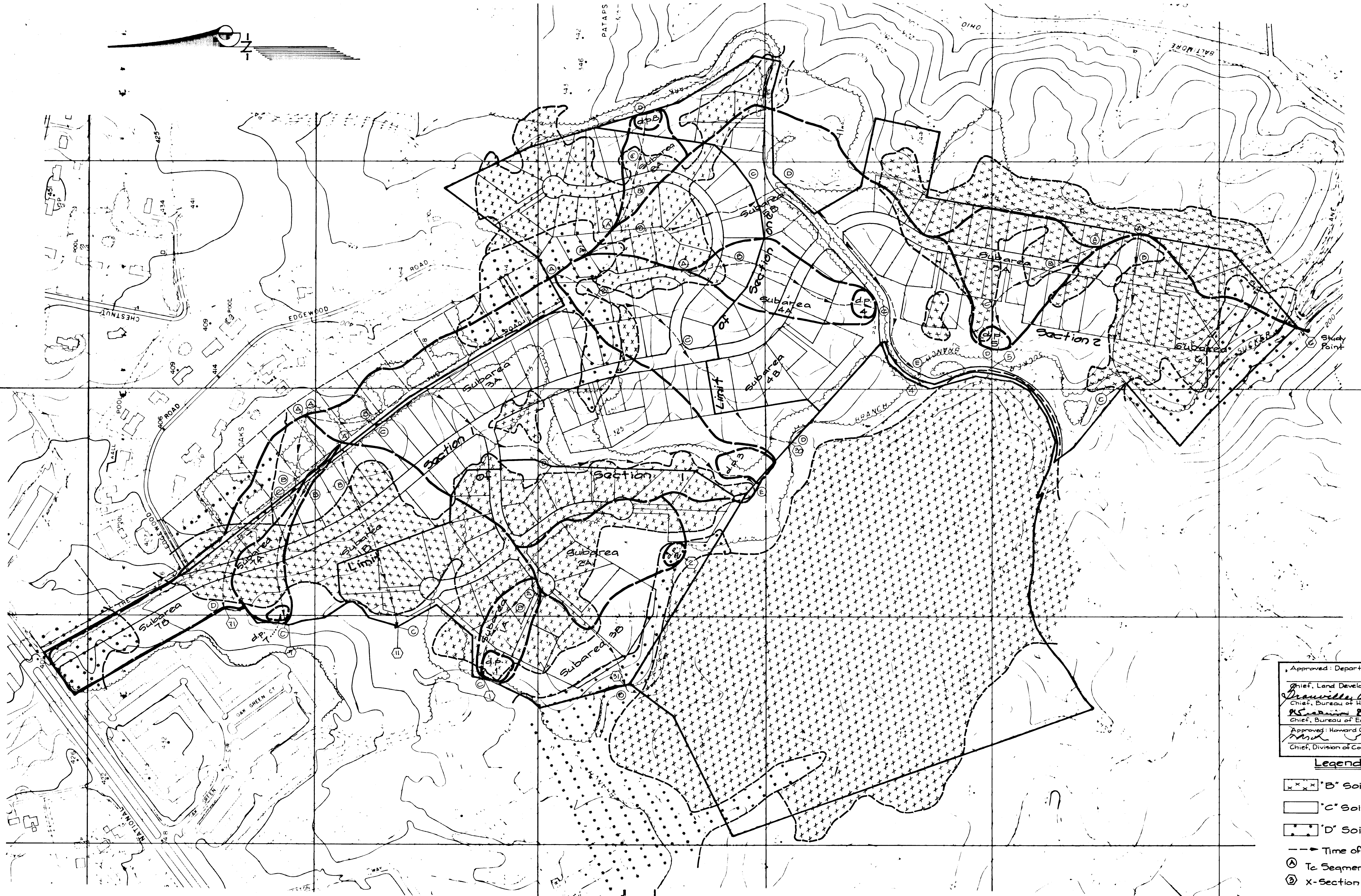
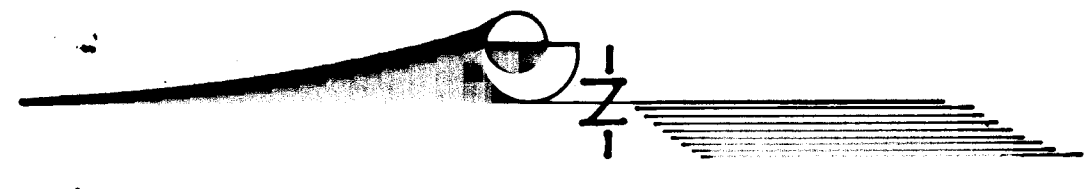
G.L.W. GUTSCHICK LITTLE & WEBER, P.A.
 ENGINEERS, PLANNERS, SURVEYORS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20866

PREPARED FOR:
 Howard Oaks Inc.
 10480 Little Patuxent Parkway
 Suite 600
 Columbia, Maryland 21044
 (301) 264-2023

Storm Drain Profiles
Governors Run
 Section 1 Lots 1-7B
 Liber 1578-Folio 456

SCALE	ZONING	G.L.W. FILE NO.
As Shown	R-20	BG-055
DATE	TAX MAP NO.	SHEET
July 1990	1B/25 Par. 2	12 of 21

1588



Note: Development shown south of Park Drive is no longer being proposed due to the state's acquisition of the property. The area will be re-planned before the start of the development conditions.



C.K. Gattis

Approved: Department of Public Works
 Chief, Land Development Division
Drayton W. Weiland 8/1/98
 Chief, Bureau of Highways
Richard B. Gray 8/10/98
 Chief, Bureau of Engineering
 Approved: Howard County Dept. of Planning & Zoning
Mark S. Taylor 7/25/98
 Chief, Division of Community Planning & Land Development

- Legend**
- x x x "B" Soils
 - "C" Soils
 - "D" Soils
 - Time of Concentration Path
 - Ⓐ Te Segment Identification
 - Ⓑ X-Section Identification

1588

GAW GUTSCHICK LITTLE & WEBER, P.A.
 ENGINEERS, PLANNERS, SURVEYORS

3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20886

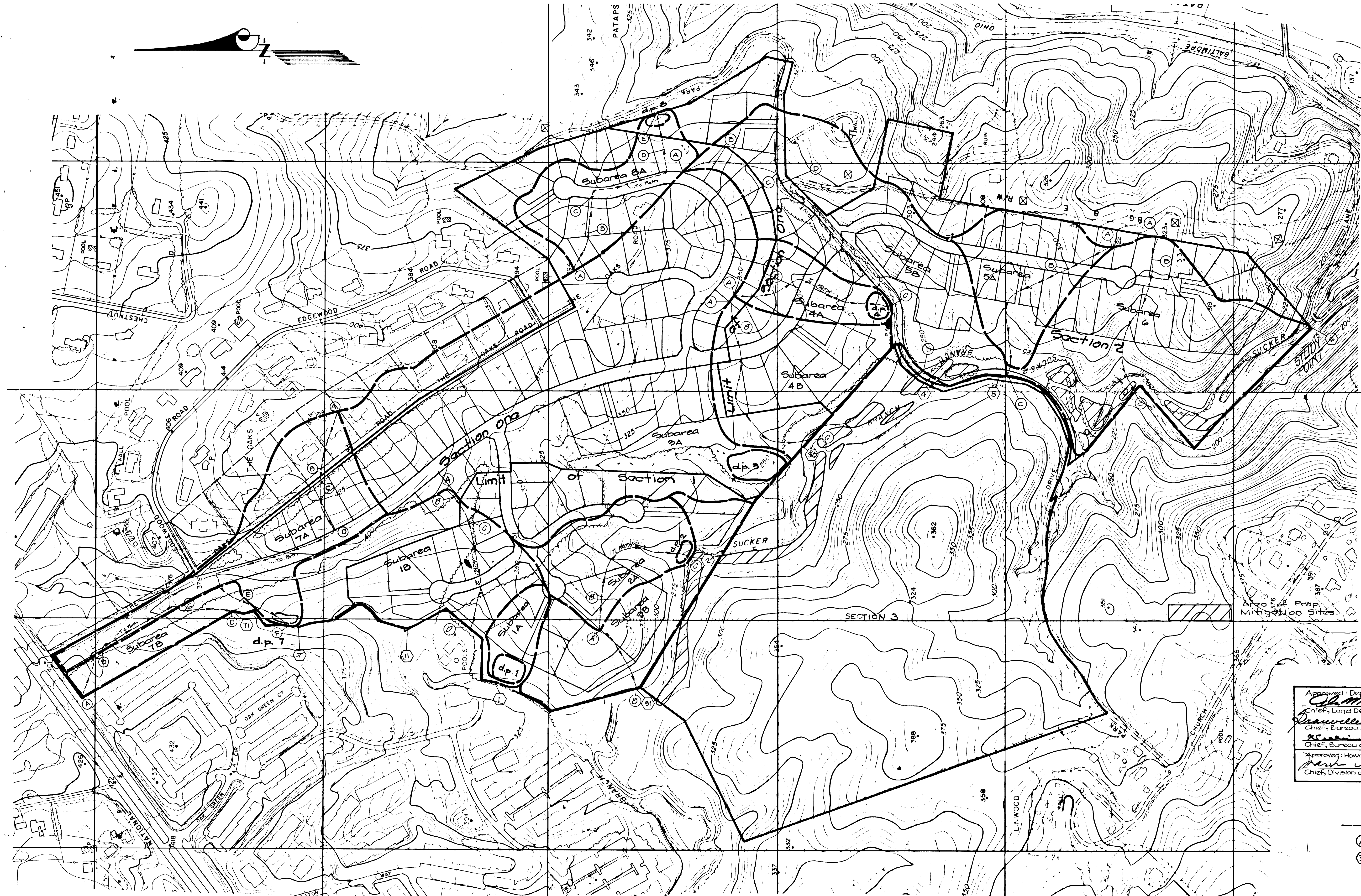
DES. DEV.	DRN. G.A.W.	CNR. CHG.	DATE	REVISION	BY	APP'R.
			4/12/94	add note about prop. south of park Drive	Mc	

Prepared For
 Howard Oaks, Inc.
 10480 Little Patuxent Parkway
 Suite 600
 Columbia, Maryland 21044
 (301) 764-2023

Before Development Drainage Area Map
 Stormwater Management Ponds
Governors Run
 Section 1
 Election District No. 2
 Howard County, Maryland

SCALE	CONTOUR INTERVAL	G.L.W. FILE NO.
1" = 200'	5'	B6-055
DATE	TAX MAP No.	SHEET
July 1990	18/25	13 of 21
	Parcel 2	

Note: This map shows the development of Section 1 and the Stormwater Management being installed for Section 1. The submission for Section 2 will include this information shown as well as the remaining build-out of subdivision and Stormwater Management.



Mitigation for Disturbed Wetlands, as required by MDE, is being provided as follows:
 1. Vegetation enhancement in the 100' Year Flood plain area of Sucker Branch (Approx. as shown on this plan)
 2. Off site forested mitigation.

Plans are being prepared by Exploration Research, Inc. in accordance with certificate requirements by MDE. Mitigation and Enhancement Plans will be approved MDE and COE and implemented per certificate.

Note: development shown south of Park Drive is the larger site proposed due to the site's location and the fact that the area will remain in the same development conditions.



C.K. Luttrell

Approved: Department of Public Works	
<i>C. M. Suggs</i> Chief, Land Development Division	8/16/90 Date
<i>Charles W. Wilson</i> Chief, Bureau of Highways	8/11/90 Date
<i>William D. Ray</i> Chief, Bureau of Engineering	8/11/90 Date
Approved: Howard County Dept. of Planning & Zoning	
<i>Mark J. Paul</i> Chief, Division of Community Planning & Land Development	7/25/90 Date

Legend

- Time of Concentration Path
- (A) Tc Segment Identification
- (B) X-Section Identification

GLW GUTSCHICK LITTLE & WEBER, P.A.
 ENGINEERS, PLANNERS, SURVEYORS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20886

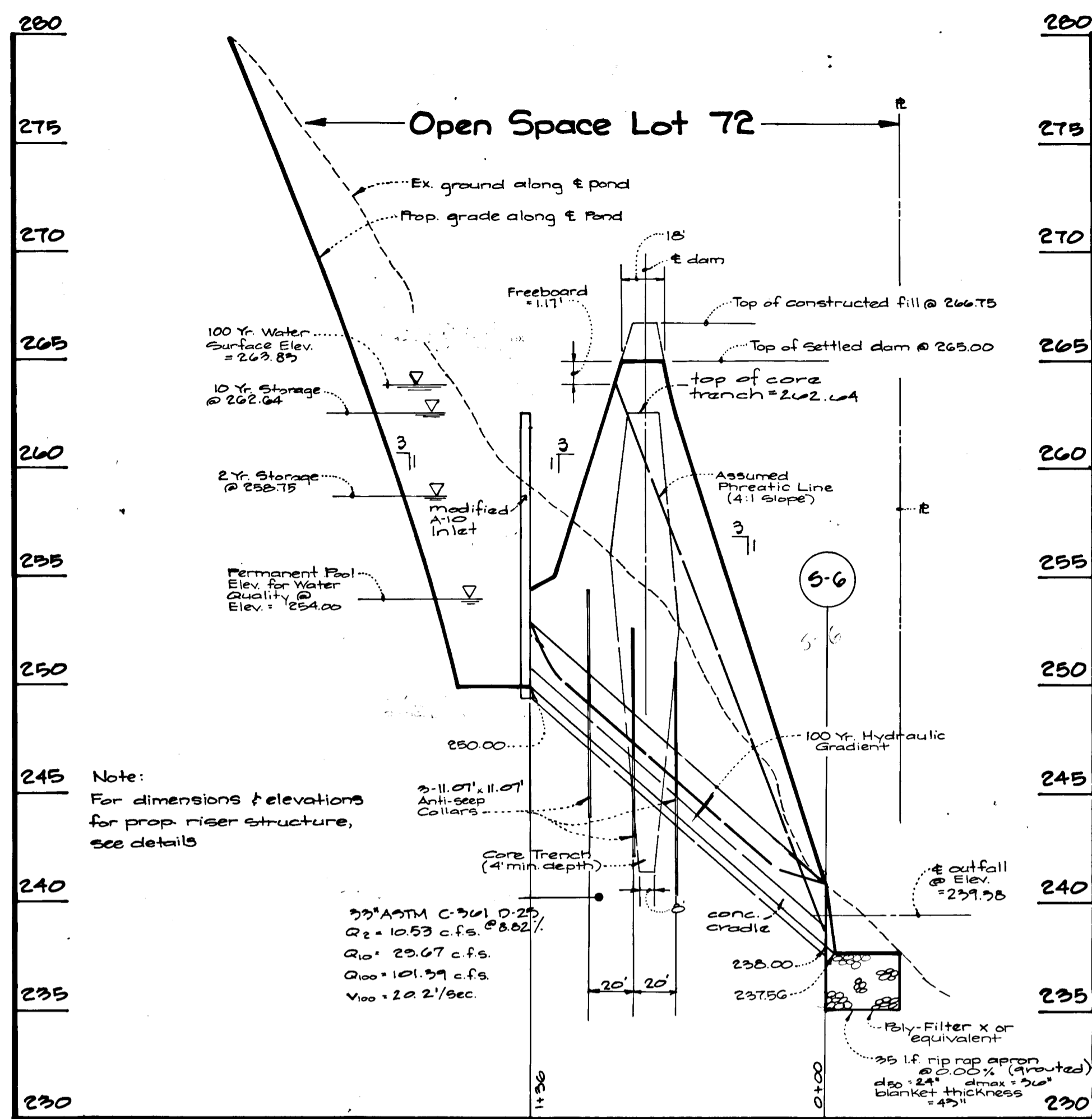
DES. DEV.	DRN. GAW	CHK. HK	CHK. CKG	DATE	REVISION	BY	APPR.
				4/12/94	Add note about prop. south of Park Drive		

PREPARED FOR
HOWARD OAKS, INC.
 10480 LITTLE PATUXENT PKWY.
 SUITE 600
 COLUMBIA, MARYLAND 21044
 (301) 264-2023

PARTIAL DEVELOPMENT DRAINAGE AREA MAP
 STORMWATER MANAGEMENT PONDS
GOVERNORS RUN
 SECTION ONE
 ELECTION DISTRICT No. 2
 HOWARD COUNTY, MARYLAND

SCALE	CONTOUR INTERVAL	G.L.W. FILE NO.
1"=200'	5'	80-055
DATE	TAX MAP NO.	SHEET
July 1990	16/25 Parcel 2	14 of 21

1588

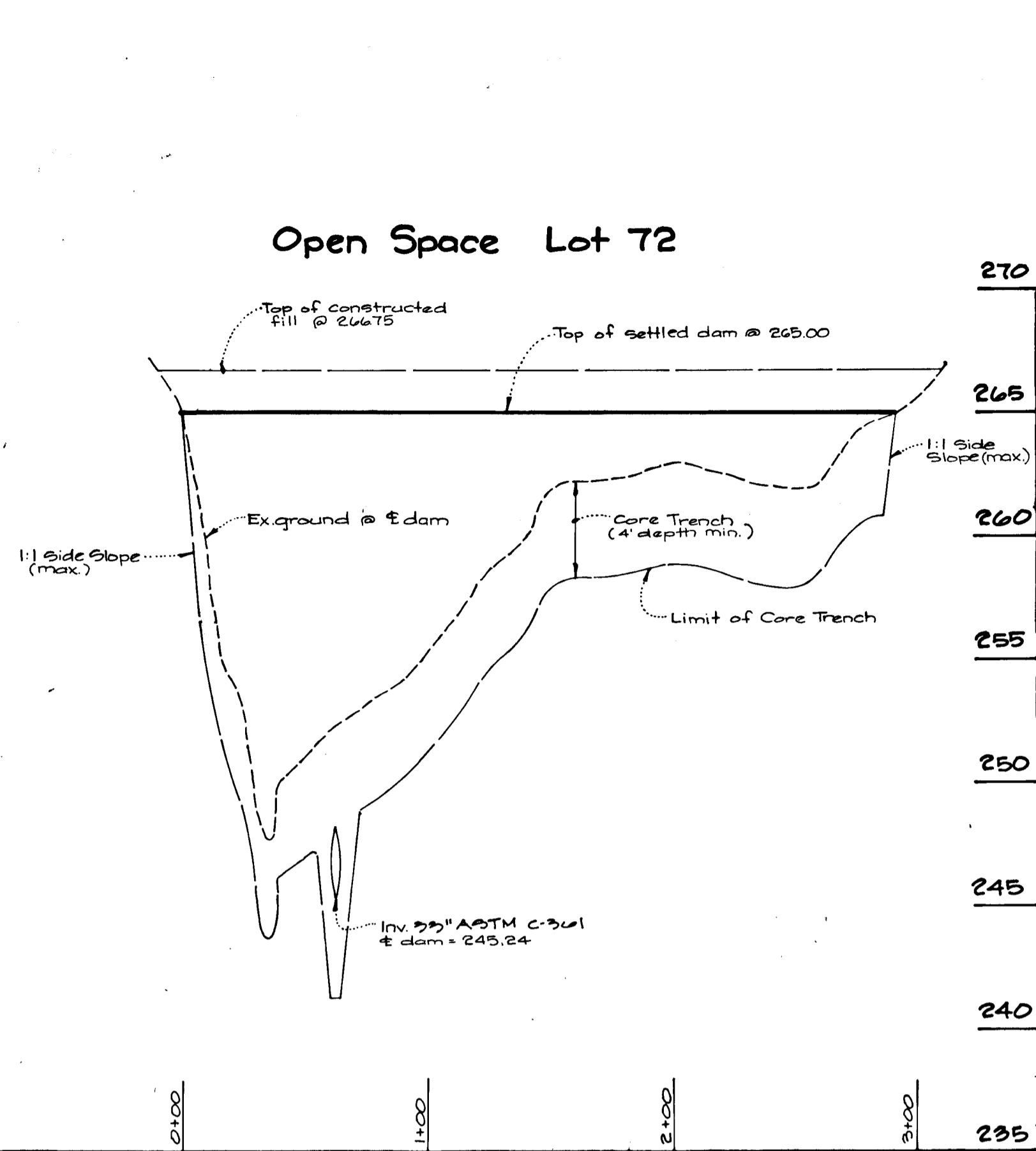


Profile Along 'E' Pond

Scale: 1" = 50' Horiz.
1" = 5' Vert.

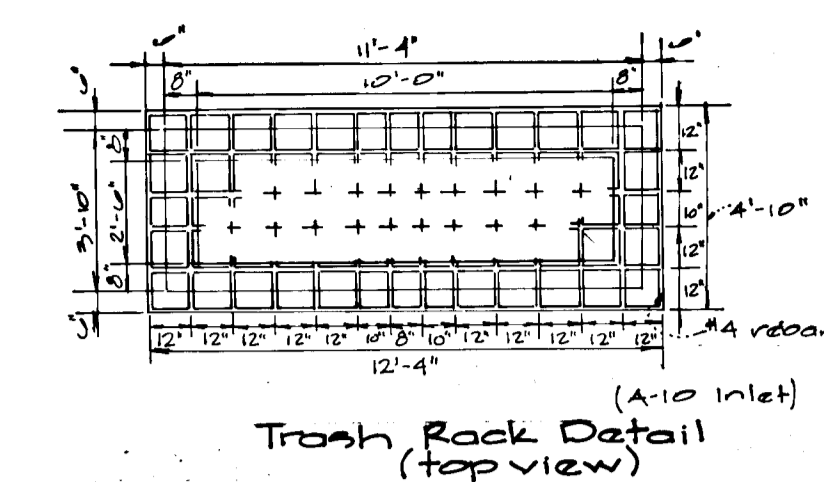
S.W.M. Facility #3

Note: Only CL, MH & CH Soils shall be used in core trench of ponds. If these soils are not available onsite, they shall be brought onsite or an approved equivalent may be used.

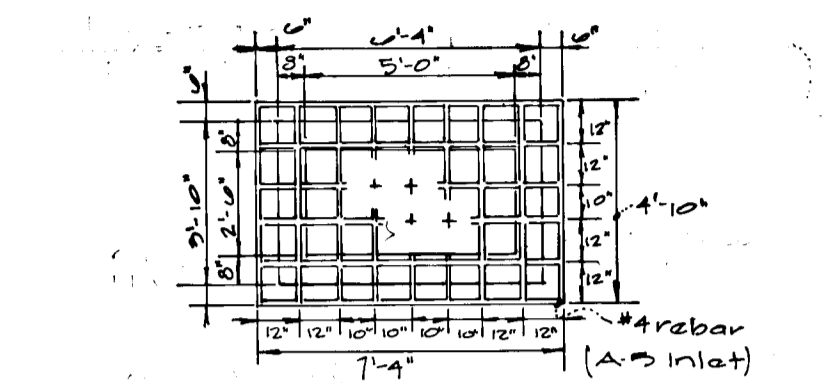


Profile Along 'E' Dam

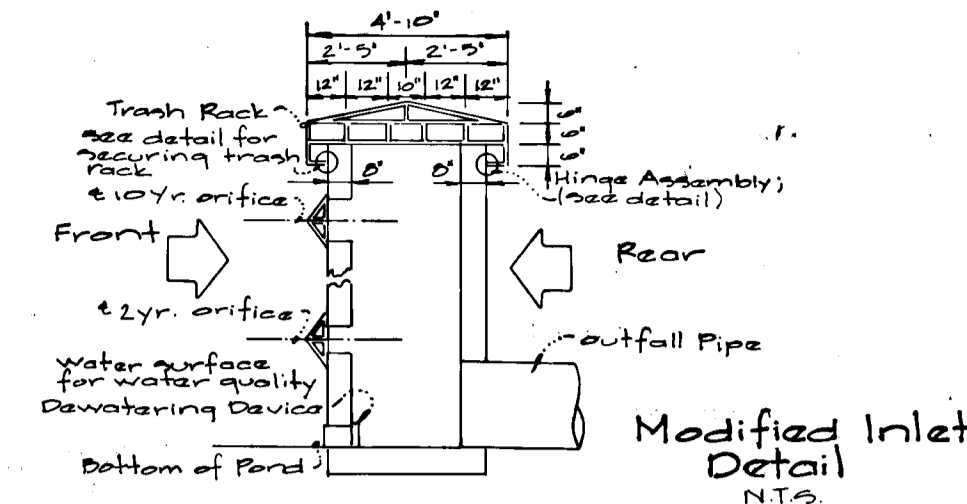
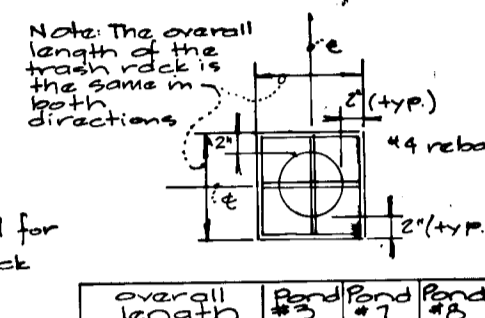
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1" = 5' Vert.



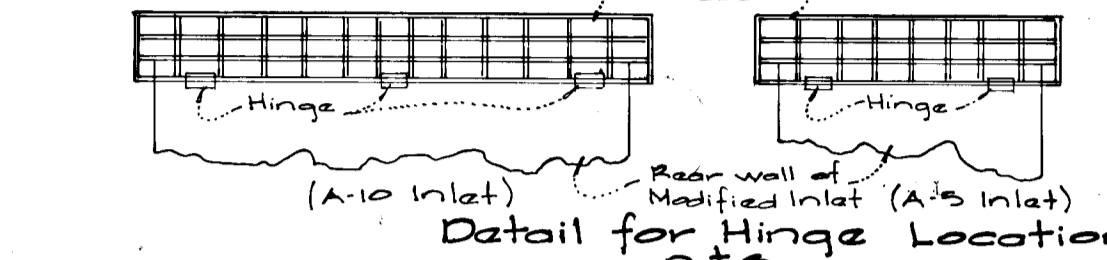
Trash Rack Detail (top view)



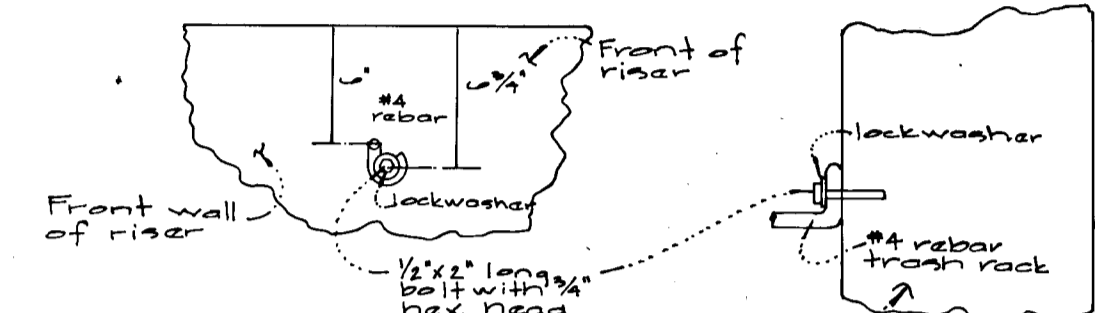
2nd 10 Yr orifice blocking Detail



Modified Inlet Detail



Detail for Hinge Location



Detail for Securing Trash Rack

ENGINEER'S CERTIFICATE

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

Robert W. Zehner
Howard Soil Conservation District

7/23/90
Date

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.

C.K. Fattah

10-20-89
Date

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

J. Helms
U.S. Soil Conservation Service

7/23/90
Date

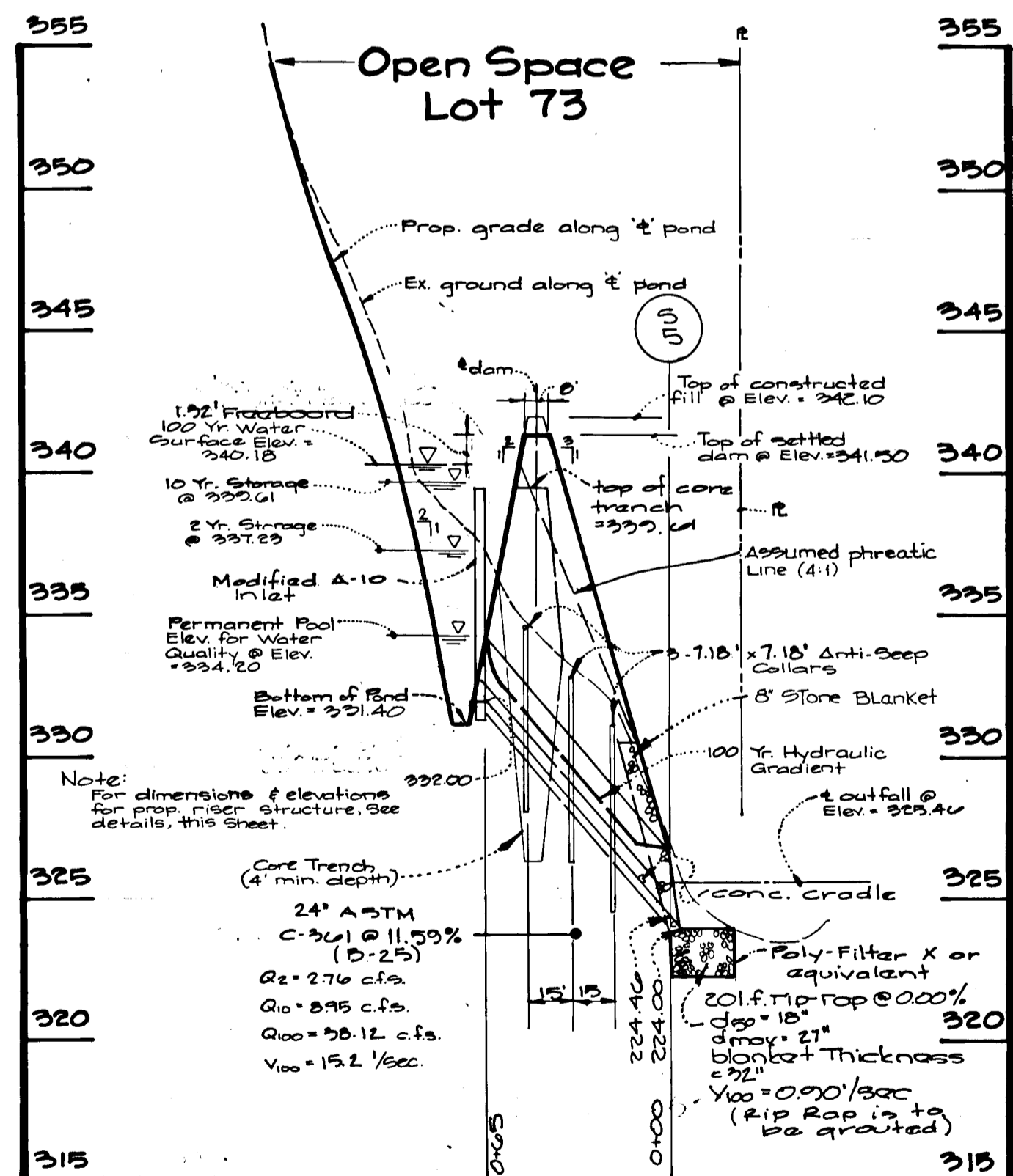
DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources 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. I also authorize periodic on-site inspection by HSCD.

Howard Oaks, Inc.

By: William M. Miller, Jr., President
Signature of Developer/Builder

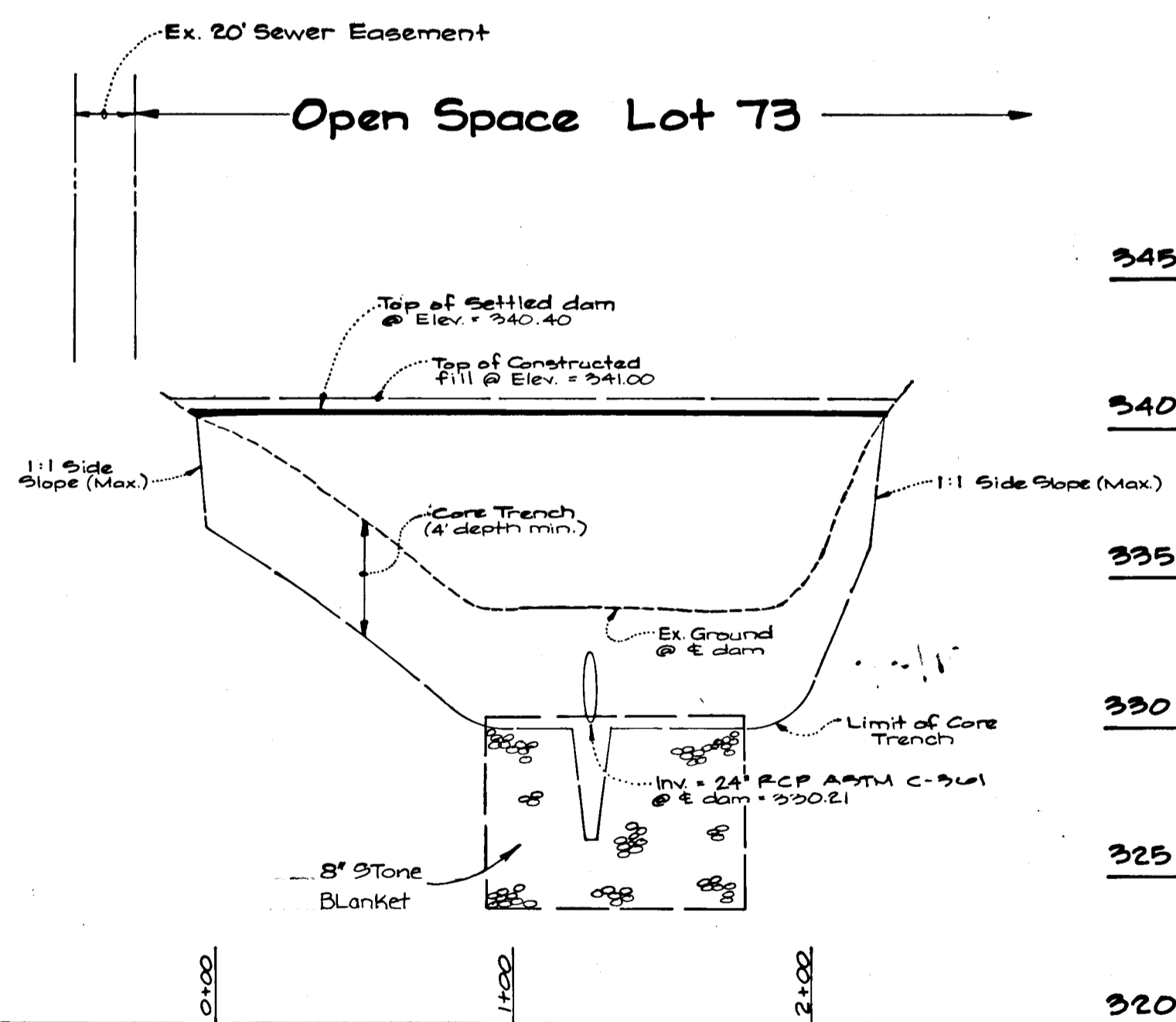
10/20/89
Date



Profile Along 'E' Pond

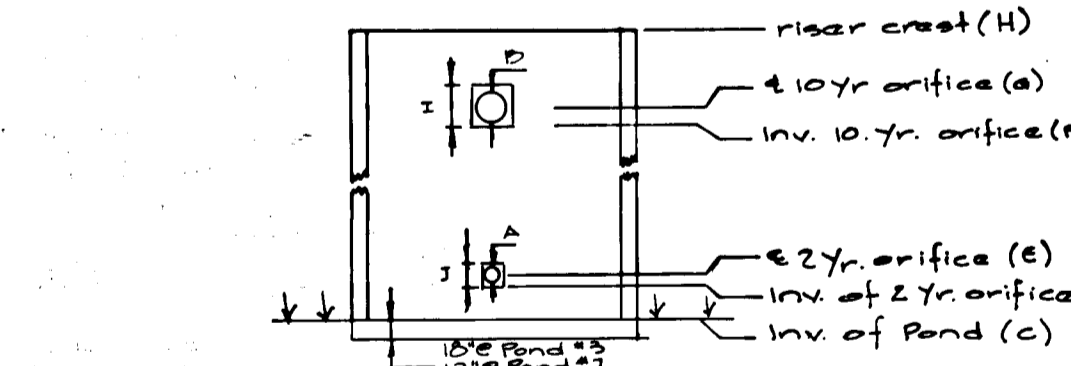
Scale: 1" = 50' Horiz.
1" = 5' Vert.

S.W.M. Facility #7



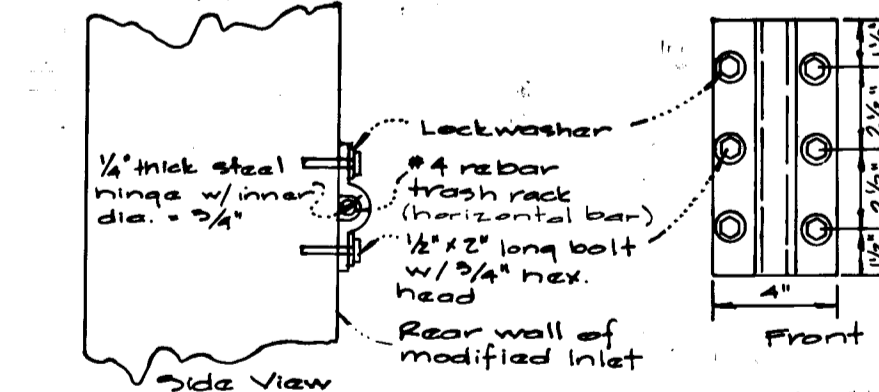
Profile Along 'E' Dam

Scale: 1" = 50' Horiz.
1" = 5' Vert.



HINGE DETAIL

Letter	Dimensions for Release Structures	Pond 5	Pond 7	Pond 8
A	Dim. 2yr orifice	12"	8"	5 1/2"
B	Dim. 10yr orifice	18"	12"	8"
C	Bot. of structure	260.00	292.00	350.00
D	2yr orifice inv.	264.00	294.20	352.00
E	2yr orifice	264.58	294.53	352.93
F	10yr orifice invert	268.11	301.25	355.05
G	2yr orifice	268.25	297.75	355.28
H	riser crest elev.	267.68	297.01	350.94
I	length of 10yr. Trash Rack	22'	16'	12'
J	length of 2yr. Trash Rack	18'	12'	12'
K	Inlet Type	A-10	A-10	A-5
L	Inside Dimensions (LxW)	10'2 1/2" x 12' 2 1/2"	12' 2 1/2" x 12' 2 1/2"	8' x 12' 2 1/2"
M	Wall Thickness	8"	8"	8"
N	Outside Dimensions (LxW)	11'4 1/2" x 14'2 1/2"	14' x 14'	14' x 14'
O	10yr. Trash Rack Bar spacing	11"	8"	6"
P	2yr. Trash Rack Bar spacing	7"	6"	6"



GIW GUTSCHICK LITTLE & WEBER, P.A.

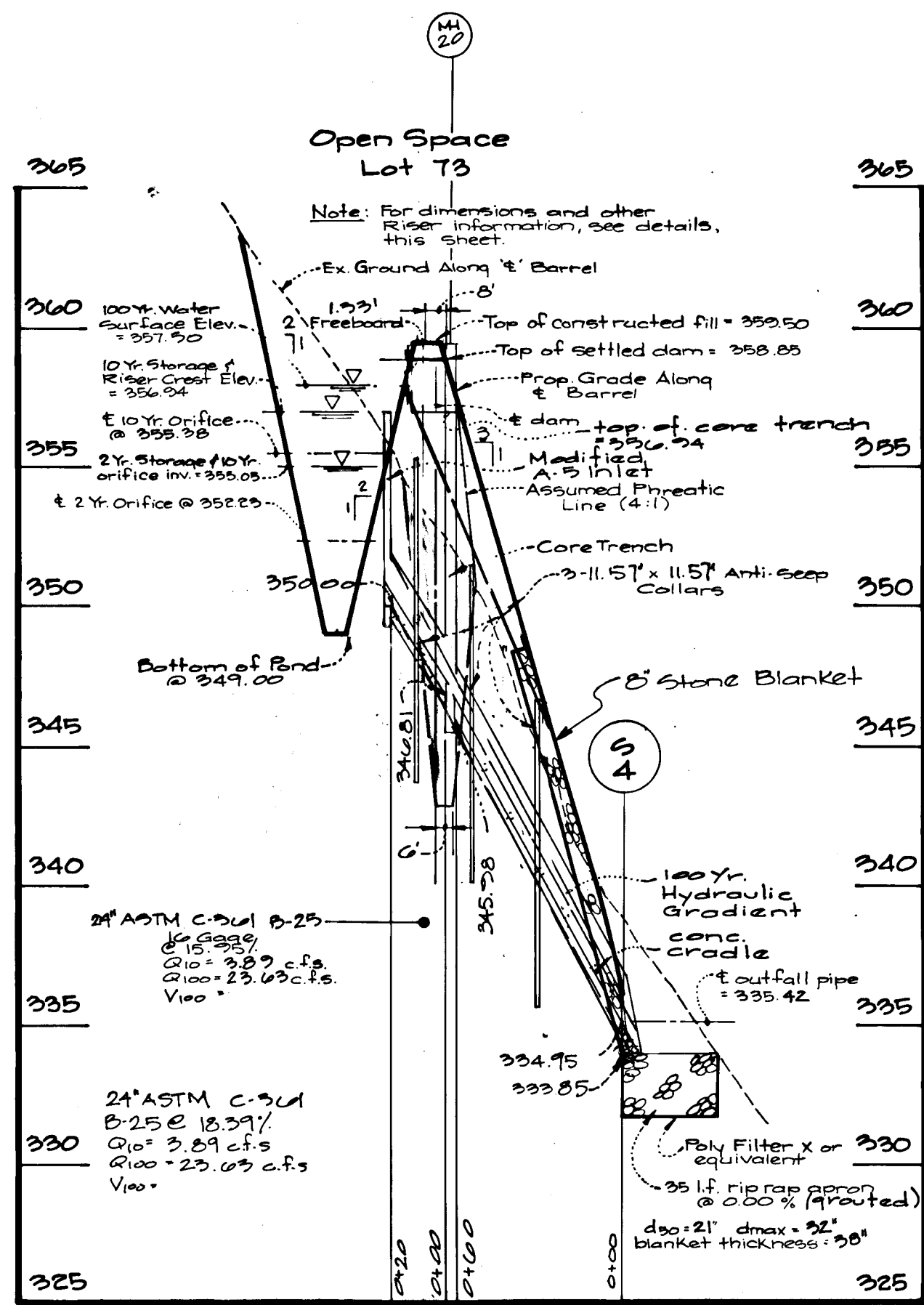
ENGINEERS, PLANNERS, SURVEYORS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20886
TELEPHONE: (301) 421-4024

DATE	REVISION	BY	APP'R.
10/27/94	rev entries in Release Structure Table	MCF	
7/12/94	rev plan in order to provide conc. riser & R.C.P. barrels	MCF	

PREPARED FOR:
Howard Oaks, Inc.
10480 Little Patuxent Parkway
Suite 600
Columbia, Maryland 21044
(301) 964-2023

Storm Water Management Profiles and Details
Governors Run
Section 1
Liber 157B
Howard County, Maryland

SCALE	ZONING	G.L.W. FILE NO.
As Shown	R-20	86-055
DATE	TAX MAP No.	SHEET
July 1990	1B/25	15 of 21
DATE	Parcel	
8-15-90	Parcel 2	

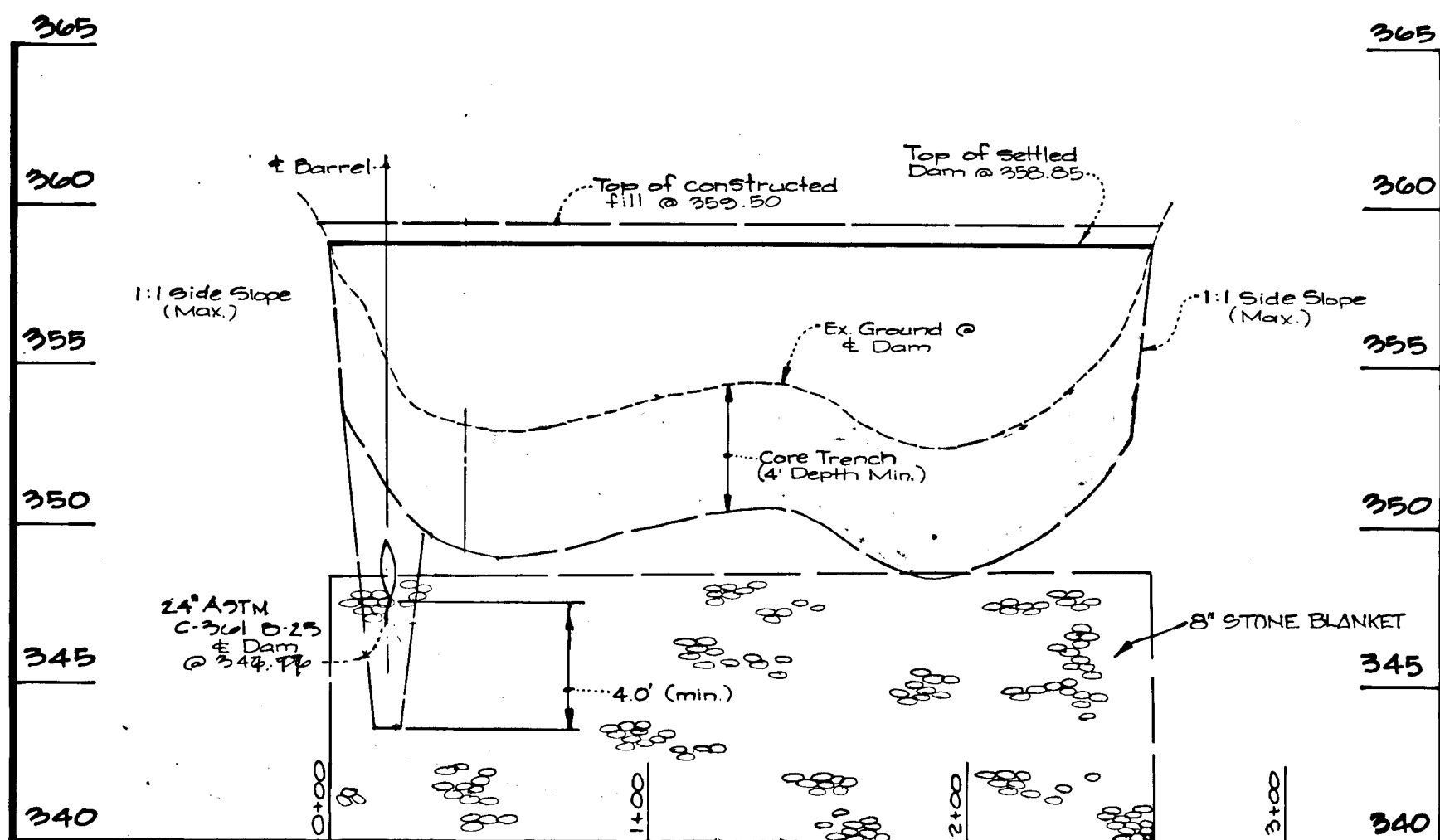


S.W.M. Facility @ Design Point B

Profile Along & Barrel

Scale: 1" = 50' Horiz.
1" = 5' Vert.

Note: Only CL, MH, & CH Soils shall be used in core trench of ponds. If these soils are not available onsite, they shall be brought onsite, or an approved equivalent shall be used.



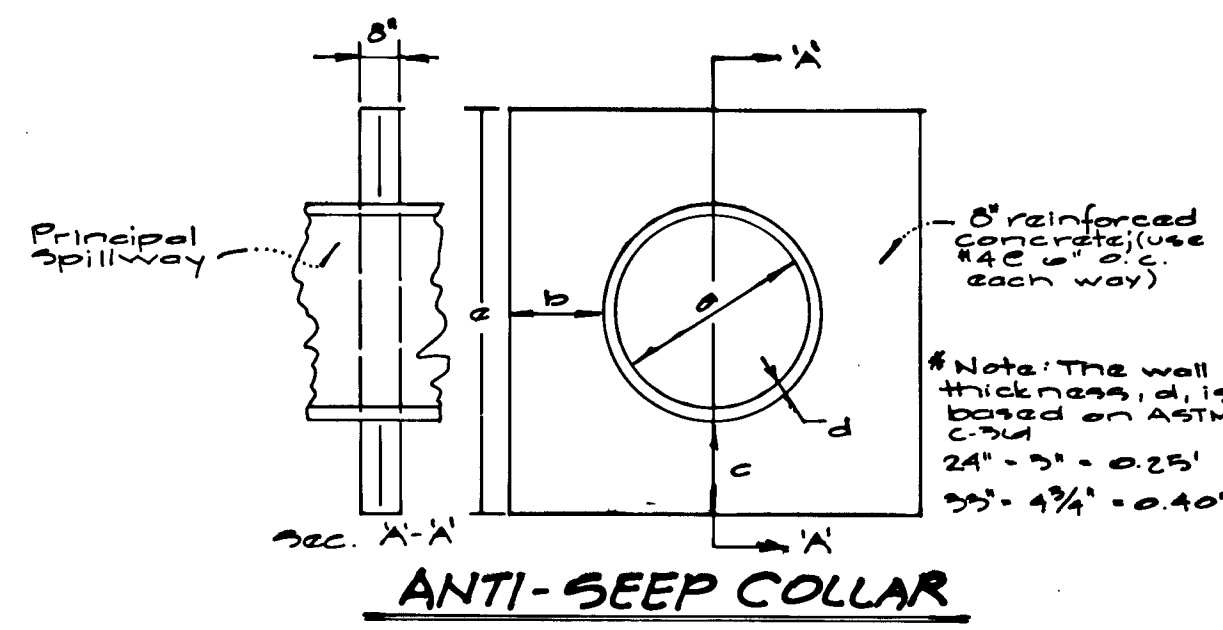
S.W.M. Facility @ Design Point B

Cross Section Along & Dam

Scale: 1" = 50' Horiz.
1" = 5' Vert.

Approved: Department of Public Works
 Chief, Land Development Division
 Chief, Bureau of Highways
 Chief, Bureau of Engineering
 Approved: Howard County Dept. of Planning & Zoning
 Chief, Division of Community Planning & Land Development

C.K. Hester
 8/10/90
 8/11/90
 7/12/91



Letter	Description	Band 3	Band 7	Band 8
a	Inside Pipe dia.	3.5'	2.4'	2.4'
b	Projection	3.1'	2.34'	4.1'
c	Projection	3.1'	2.34'	4.1'
d	Wall Thickness	0.4'	0.25'	0.25'
e	Total Length	11.0'	7.16'	12.92'

STORM WATER MANAGEMENT POND NOTES

I. SITE PREPARATION:

A. 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 no steeper than 1:1.

B. Areas to be covered by pond or reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, logs, and stumps shall be cut approximately level with the ground surface.

C. 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 FILL

A. MATERIAL: The fill material shall be taken from approved designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, oversized stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height all along the length of the embankment shall be increased above the design elevation (including freeboard) as shown on the plans.

B. PLACEMENT: Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 8-inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream portions of the embankment.

C. 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 sheepfoot, rubber tired, or vibratory roller. Fill material shall contain sufficient moisture so that the required degree of compaction can be obtained with the equipment used. Where a minimum required density is specified, each layer of fill shall be compacted as necessary to obtain that density and is to be certified by the Engineer. It is recommended that the Core be constructed in 8" thick layers, each compacted to minimum of 95% of the maximum dry density determined by the standard moisture density relationship test (ASTM D-1557).

D. CUTOFF TRENCH: Where specified, a cutoff trench shall be excavated along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be as shown on the drawings, with the minimum width being four feet. The depth shall be at least four feet or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill material for the cutoff trench shall be the most impervious material available on-site (or from an area designated on the plans) and shall be compacted with equipment or rollers to assure maximum density and minimum permeability.

III. STRUCTURAL BACKFILL:

Backfill material 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 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 the structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe unless there is a compacted fill of twenty-four inches or greater over the structure or pipe.

IV. PIPE CONDUITS: (all pipes shall be circular in cross-section)

A. 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 Specifications M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be placed 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 are commercially available: Mexon, Plasti-Cote, Blac-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

MATERIALS: (Aluminized Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274-791 with watertight coupling bands or flanges.

MATERIALS: (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Coupling bands, anti-seep collars, and section, 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. 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 less than 9 and greater than 4.

2. CONNECTIONS: All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around where the pipe and riser are metal. Watertight coupling bands or flanges shall be used at all joints. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

3. 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.

4. LAYING PIPE: The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides.

5. Backfilling shall conform to structural backfill as shown above.

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

B. REINFORCED CONCRETE PIPE:

1. MATERIALS: Reinforced concrete pipe shall have a rubber gasket joint and shall equal or exceed ASTM Specification C-361. An approved equivalent is AWWA Specification C-301.

2. BEDDING: All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3", or as shown on the drawings.

3. LAYING PIPE: Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe.

4. Backfilling shall conform to structural backfill as shown above.

5. Other details (anti-seep collars, valves, etc.) shall be shown on the drawings.

C. For pipes of other materials, specific specifications shall be shown on the drawings.

V. CONCRETE:

A. MATERIALS: 1. CEMENT - Normal Portland cement shall conform to latest ASTM Specification C-150.

2. WATER - The water used in concrete shall be clean, free from oil, acid, alkali, scales, organic matter or other objectionable substances.

V. A. (continued)

3. SAND - The sand used in concrete shall be clean, hard, strong, and durable, and shall be well graded with 100% passing a one quarter inch sieve. Limestone sand shall not be used.

4. COARSE AGGREGATE - The coarse aggregate shall be clean, hard, strong and durable, and free from clay and dirt. It shall be well graded with a maximum size of one-and-one-half (1-1/2) inches.

5. REINFORCING STEEL - The reinforcing steel shall be deformed bars of intermediate grade billet steel or rail steel conforming to ASTM Specification A-615.

B. DESIGN MIX - The concrete shall be mixed in the following proportions, measured by weight. The water-cement ratio shall be 5-1/2 to 6 U.S. Gals. of water/94-pound bag of cement. The proportion of materials for the trial mix shall be 1:2.3-1/2. The combination of the aggregates may be adjusted to produce a plastic and workable mix that will not produce harshness in placing or honeycombing in the structure.

C. MIXING - The concrete ingredients shall be mixed in batch mixers until the mixture is homogeneous and of uniform consistency. The mixing of each batch shall continue for not less than one and one-half minutes after all the ingredients, except the full amount of water, are in the mixer. The minimum mixing time is predicted on proper control of the speed of rotation of the mixture and of the introduction of the materials including water, into the mixer. Water shall be added prior to, during, and following the mixer-changing operations. Excessive overmixing requiring the addition of water to preserve concrete consistency shall not be permitted. Truck mixing will be allowed provided that the use of this method shall cause no violation of any applicable provisions of the specifications given here.

D. FORMS - The forms shall have sufficient strength and rigidity to hold the concrete and to withstand the necessary pressure, tamping and vibration without deflection from the prescribed lines. They should be mortar-tight and constructed so they can be removed without hammering or prying against the concrete. The inside of the forms shall be oiled with a non-staining mineral oil or thoroughly wetted before concrete is placed. Forms may be removed 24 hours after the placement of concrete. All wire ties and other devices used shall be recessed from the surface of the concrete.

E. REINFORCING STEEL - All reinforcing material shall be free of dirt, rust, scale, oil, paint or any other coatings. The steel shall be accurately placed and securely tied and blocked into position so that no movement of the steel will occur during placement of concrete.

F. CONSOLIDATION - Concrete shall be consolidated with internal type mechanical vibrators. Vibration shall be supplemented by spading and hand tamping as necessary to insure smooth and dense concrete along form surfaces, in corners and around embedded items.

G. FINISHING - Defective concrete, honey combed areas, voids left by removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water on the finished structure, shall be repaired immediately after the removal of forms. All voids shall be reamed and completely filled with dry patching mortar.

H. PROTECTION AND CURING - Exposed surfaces of concrete shall be protected from the direct rays of the sun for at least three days. All concrete shall be kept continuously moist for at least ten days after being placed. Moisture may be applied by spraying or sprinkling as necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compound may also be used.

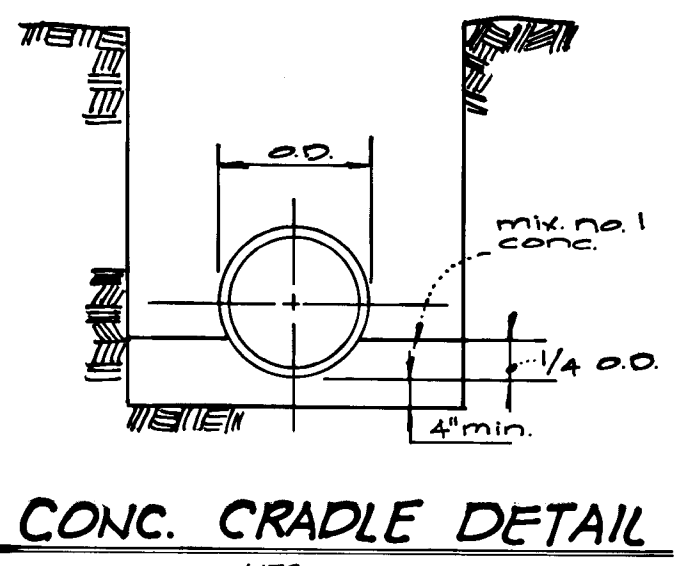
I. PLACING TEMPERATURE - Concrete may not be placed at temperature below 37°F with temperature falling, or 34°F with the temperature rising.

V. STABILIZATION

All borrow areas shall be graded to provide drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing, and mulching (if required) in accordance with the vegetative treatment specifications or as shown on the accompanying drawings.

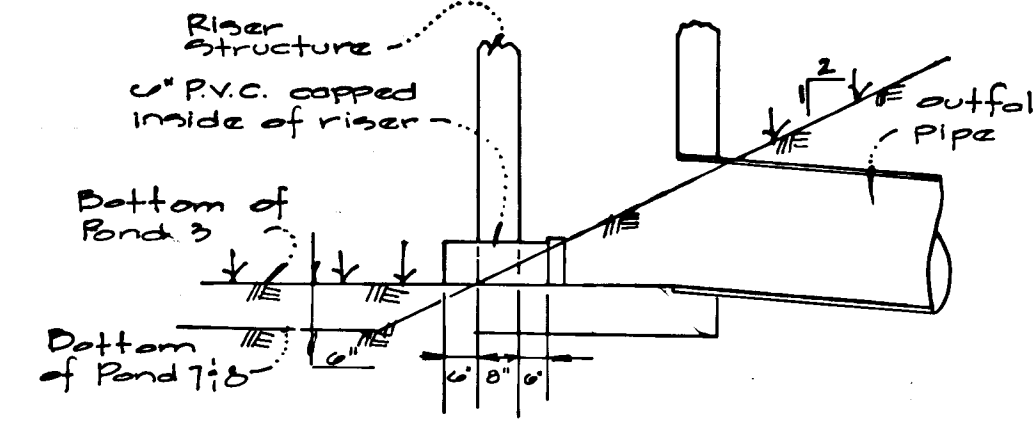
VII. EROSION AND SEDIMENT CONTROL

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.



CONC. CRADLE DETAIL

Note: 1. pour conc. to undisturbed earth, remove sheeting before pouring conc. or leave lower portion of sheeting in place.



DEWATERING DEVICE DETAIL

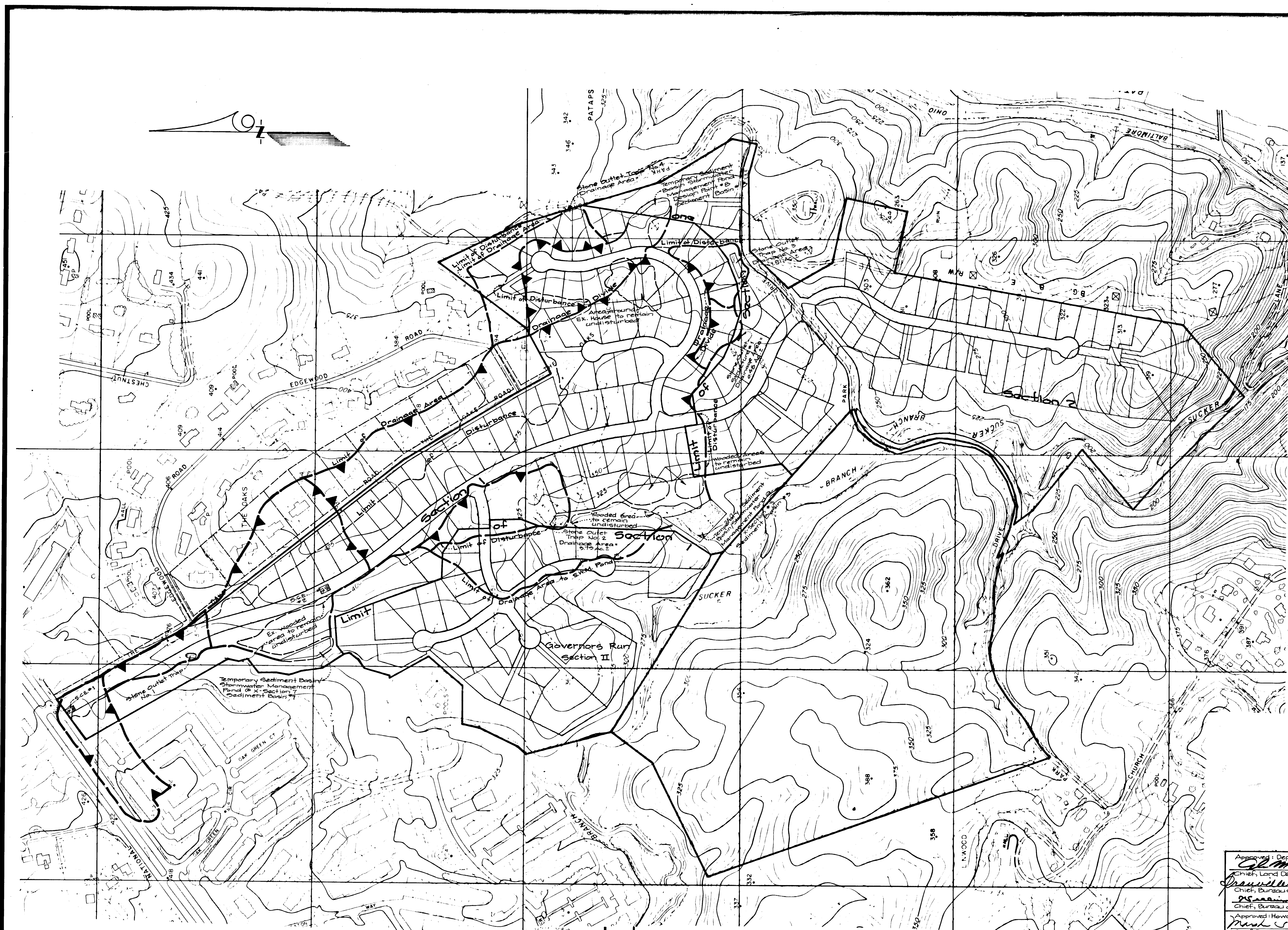
GUTSCHICK LITTLE & WEBER, P.A.
 ENGINEERS, PLANNERS, SURVEYORS
 3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20886
 TELEPHONE (301) 421-4024

DATE	REVISION	BY	APP'R.
2/1/95	rev. outfall profile @ SWMP #3		MCF
10/27/94	rev. S.W.M. #3 to add M20 & rev. outfall location		MCF
7/12/94	rev. plans to provide conc. riser & RCP barrels		MCF

PREPARED FOR:
 Howard Oaks, Inc.
 10480 Little Patuxent Parkway
 Suite 600
 Columbia, Maryland 21044
 (301) 964-2023

Stormwater Management Notes and Details
 Governors Run
 Section 1 Lots 1-73
 Liber 157B Folio 45G
 Howard County, Maryland 2nd Election District

SCALE	ZONING	G.L.W. FILE NO.
As Shown	R-20	CG-055
DATE	TAX MAP NO.	SHEET
July 1990	18/252R-2	16 of 21



Note: development shown south of Park Drive is no longer being proposed due to the state acquisition of the property. The area will remain undeveloped for the future and after development conditions.

- Legend**
- Limit of Drainage Area
 - ▲▲▲ Drainage Divide
 - Limit of Disturbance
 - Stormwater Management Pond / Sediment Trap

Note: For Details and Dimensions of Sediment Control Devices See Sheet 7 through 10 of 21



Approved: Department of Public Works
C. M. Morgan 4/6/90
 Chief, Land Development Division
 Date
Drewitt H. Weiland 8/1/90
 Chief, Bureau of Highways
 Date
D. S. ... 8/10/90
 Chief, Bureau of Engineering
 Date
Mark ... 9/2/90
 Chief, Division of Community Planning & Land Development
 Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
 ENGINEERS, PLANNERS, SURVEYORS
 3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD. 20866

Prepared For:
 Howard Oaks, Inc.
 10480 Little Patuxent Parkway
 Suite 600
 Columbia, Maryland 21044
 (301) 264-2023

Drainage Area Map for Sediment Control
Governors Run
 Section I Lots 1-73
 Liber 157B Folio 45C
 F-90-106
 2nd Election District
 Howard County, Maryland

SCALE	CONTOUR INTERVAL	G.L.W. FILE NO.
1" = 200'	5'	BC-055
DATE	TAX MAP NO.	SHEET
July 1990	18/25 Par. 2	17 of 21 F-90-106

15881

DES. D.E.V.	DRN. G.A.W.	CHK. C.K.G.	4/12/94	add note about prop. south of Park drive	McF	
REVISION				DATE	BY	APPR.

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.

C.K. Futner
10-20-89
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

I/we certify that all development and/or construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspection by HSCD.

Howard Oaks, Inc
By: William J. Miller, Jr. President 10/20/89
Signature of Developer/BUILDER Date

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

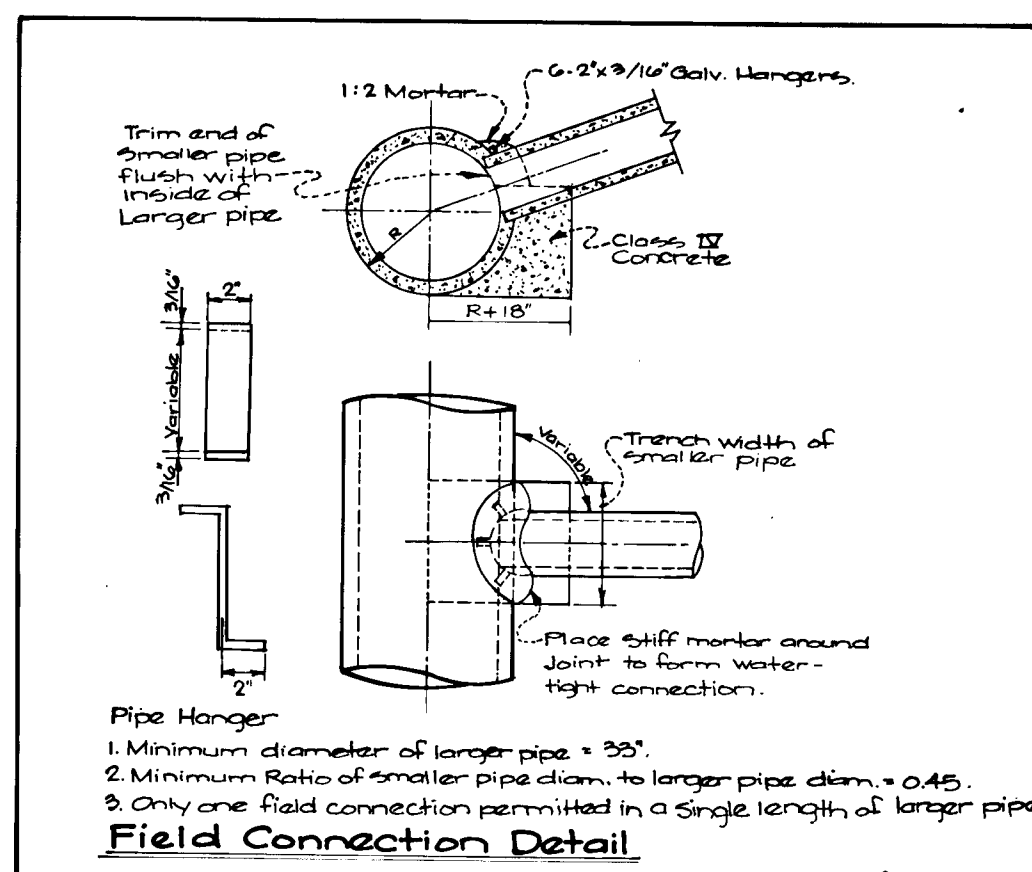
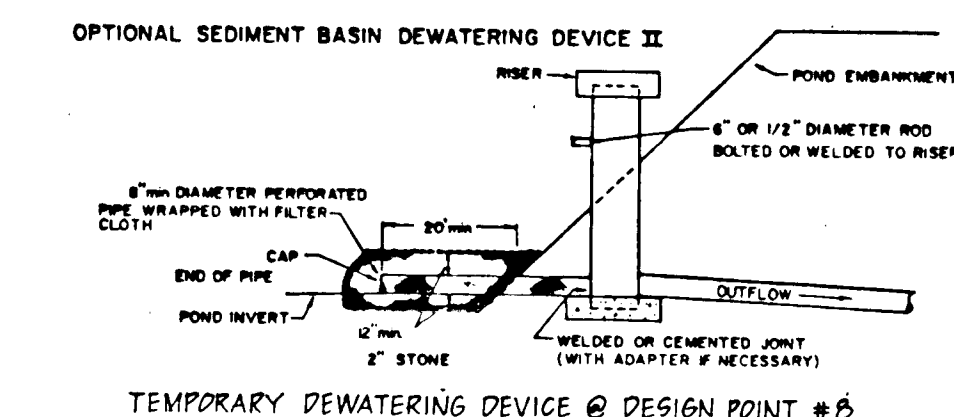
J. Helms
7-23-90
U.S. Soil Conservation Service Date

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

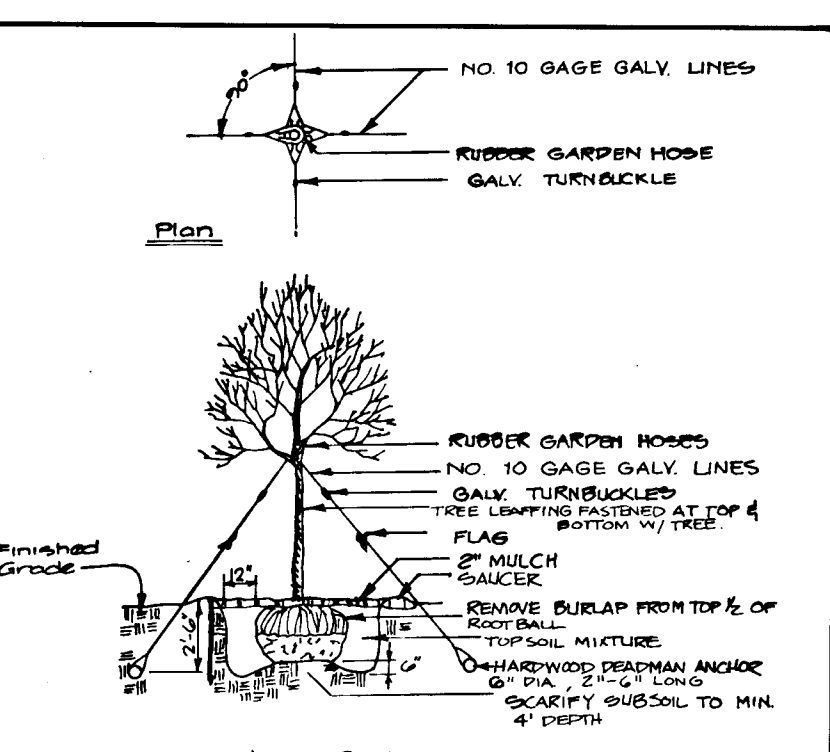
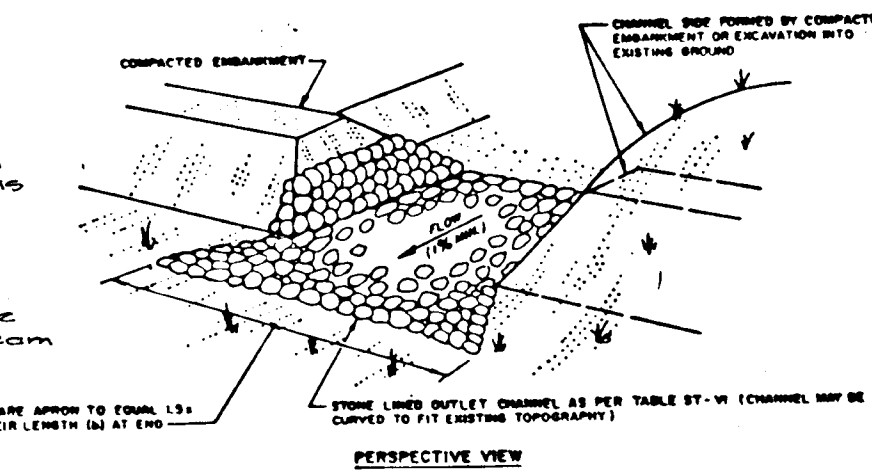
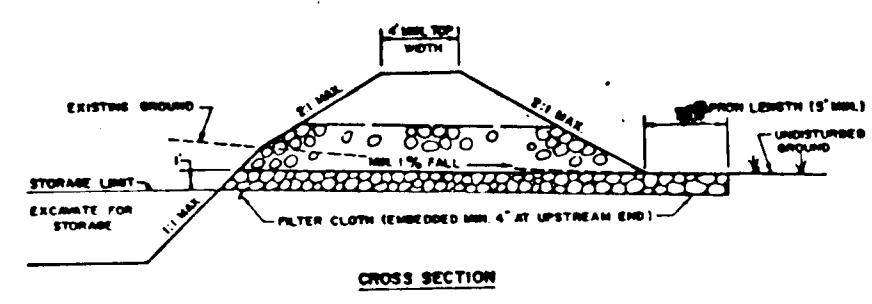
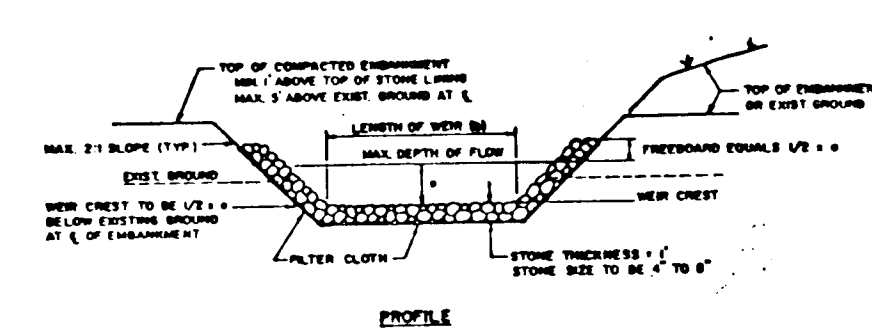
Robert J. Zellman
7/23/90
Howard Soil Conservation District Date

CONSTRUCTION SEQUENCE

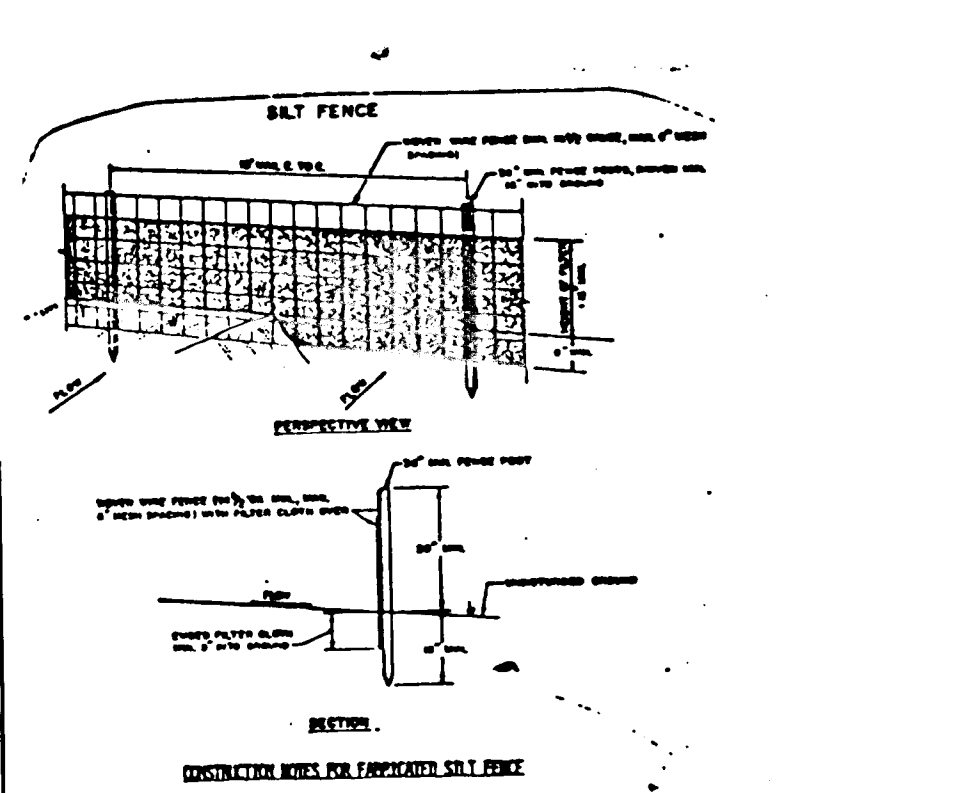
- Obtain grading permit & arrange for on-site pre-construction meeting with the county inspector.
- Install storm construction art. in para 3 B lane of Governor's Run #4 at the end of the existing ads. Rd. Block the end of the existing 10' OD P (2175).
- Clear & grub areas as needed to install the sediment control devices.
- Install temporary sediment basins, 3' HOD, sediment traps, earth dikes & silt fences/straw bale dikes as shown on site 17A, 17B, 17C. Types of basins serving purposes not being graded may be constructed in the future prior to grading operations in these areas. Grading can proceed in these areas after permission is granted by the inspector. Install trap access bridges.
- Clear & grub the remainder of the site.
- Install sand bags on upstream end of existing 10' OD C&P pipe. Place 10' C&P (diversion pipe) along entire length of ex. pipe plus an additional 250' linear feet along site #2 at the stream in order for 10' C&P to extend beyond stone outlet trap #1.
- Rough grade site.
- Construct storm drains & utilities. Construct retaining walls as shown in order to finish rough grading on site 1-10.
- Construct pipe #1 of the twin culverts (7'11/2" x 7'11/2"), closest to Rd. Rt. 404 then move diversion pipe along the bottom of pipe #1 in order to construct pipe #2.
- As fill for twin culverts reaches an elevation higher than the ex. ads. Rd., the contractor shall place silt fence along the existing roadway.
- Finish grade site & install base paving & curb and gutter.
- Stabilize all disturbed areas on the site in accordance with the standards & specs. for permanent seeding. Flush all storm drain systems & install rip rap aprons at storm drain outlets.
- Upon approval of the sediment control inspector, remove sediment control devices & stabilize the disturbed areas. Especially at sediment trap #1 at the downstream end of the twin culverts. Immediately upon removal of trap #1, install riprap apron & stabilize all disturbed areas.
- Begin conversion of sediment basins to permanent stormwater facilities following these steps:
a. Pump out impounded water from the basin.
b. Remove all sediment from the basin and place it as directed by the sediment control inspector.
c. Contractor shall make all necessary repairs to the storm water management ponds, be sure that it conforms to the grading & details shown on these plans.
- Stabilize all remaining disturbed areas in accordance with the permanent seeding notes.



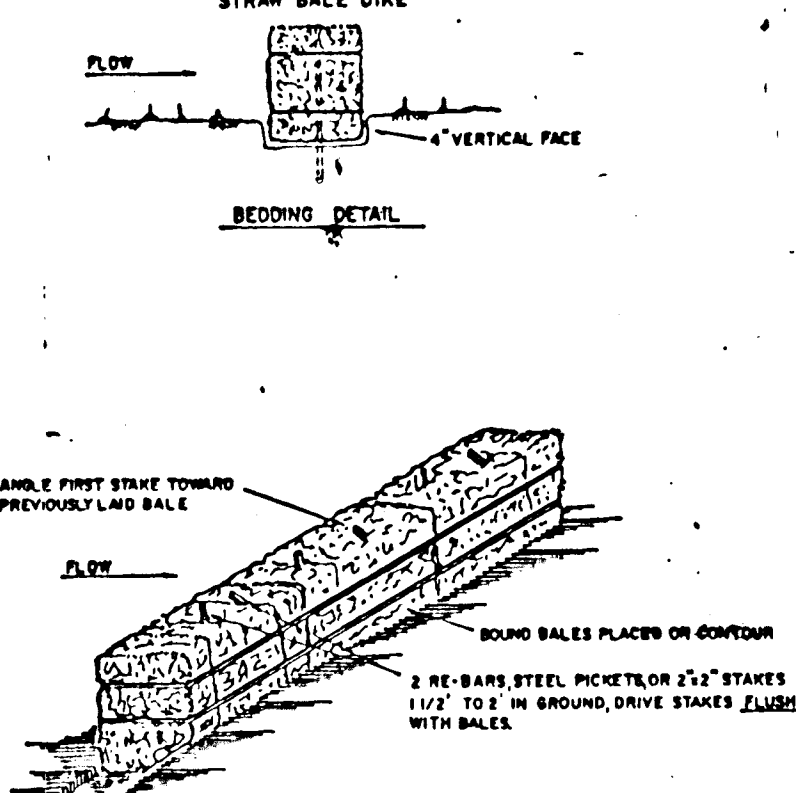
RIPRAP OUTLET SEDIMENT TRAP ST-VI



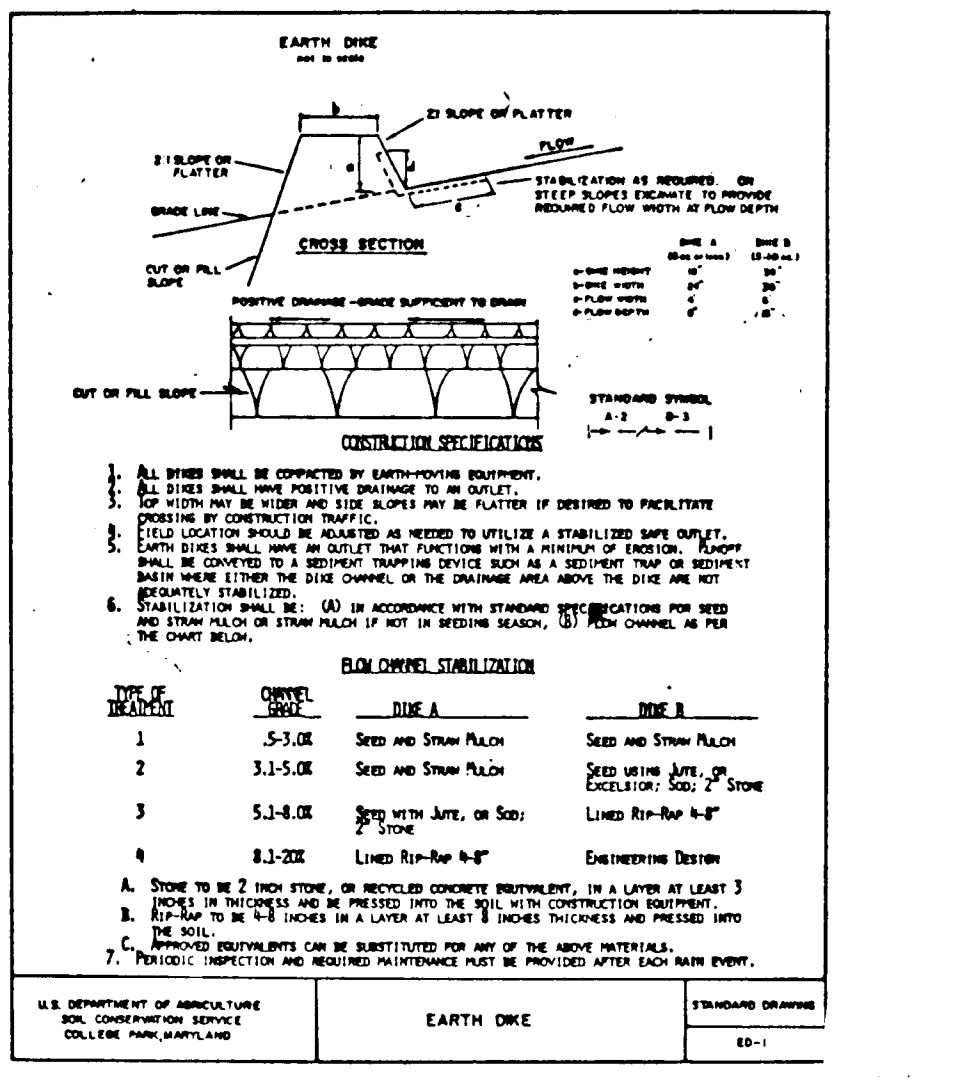
Typical Tree Staking
No nails
Note: Contractor shall verify location of underground utilities prior to staking. Final location of trees may be adjusted slightly to accommodate field conditions. Planting procedures shall comply with landscape regulations for the Baltimore-Washington Metropolitan Area. Substitutions to the above specified may be permitted, provided that the planting is in accordance with the street tree and landscape requirements as specified in section 10.05 of the Howard County Subdivision Regulations.



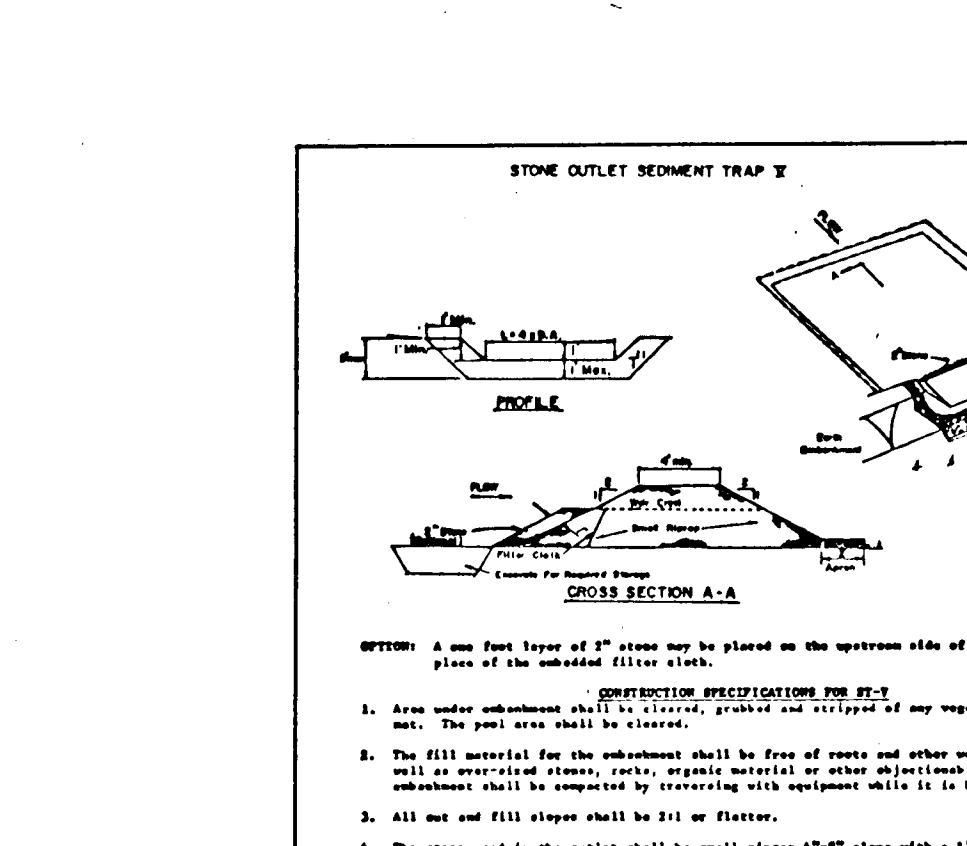
- 1. Bales shall be placed at the toe of a slope or on the contour and in a row with ends tightly abutting the adjacent bales.
- 2. Each bale shall be driven in the soil a minimum of 4\"/>



- 1. Bales shall be placed at the toe of a slope or on the contour and in a row with ends tightly abutting the adjacent bales.
- 2. Each bale shall be driven in the soil a minimum of 4\"/>



STABILIZATION STRUCTURE ENTRANCE



STONE OUTLET STRUCTURE (not to scale)

- 1. The stone shall be crushed stone. Gravel may be used if crushed stone is not available. The stone shall meet MSHA Size No. 2 or AASHTO designation M3 Size No. 2 or 24.
- 2. The crest of the stone dike shall be at least six inches lower than the lowest elevation of the top of the earth dike and shall be level.

SEDIMENT CONTROL NOTES

- A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes and perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins shall be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSIONS AND SEDIMENT CONTROL for permanent seedings (Sec. 51), sod (Sec. 54), temporary seedings (Sec. 50) and mulching (Sec. 52). Temporary stabilization, with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.

Site Analysis:
Total Area of Site: 55.1 Acres
Area Disturbed: 40.2 Acres
Area to be roofed or paved: 4.5 Acres
Area to be vegetatively stabilized: 35.7 Acres
Total Cut 174' Cu. Yds.
Total Fill 240' Cu. Yds.
Off-Site waste/borrow area location - section 2

- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County DPW Sediment Control Inspector.

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

PERMANENT SEEDING NOTES

- Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
- Seeded Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (unless previously loosened).
- Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:
1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square feet) 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 ureaform fertilizer (9 lbs/1000 sq ft).
- 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil.

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

Mulching: Apply 3 to 4 tons per acre (140 to 180 lbs/1000 sq ft) of rotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring.

Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseedings. Areas which experience repeated problems with seeding and mulch stabilization must be stabilized in with sod, excelsior matting and seed, or another method approved by the sediment control inspector.

TEMPORARY SEEDING NOTES

- Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.
- Seeded Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (unless previously loosened).
- Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft).
- Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs./1000 sq.ft). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

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

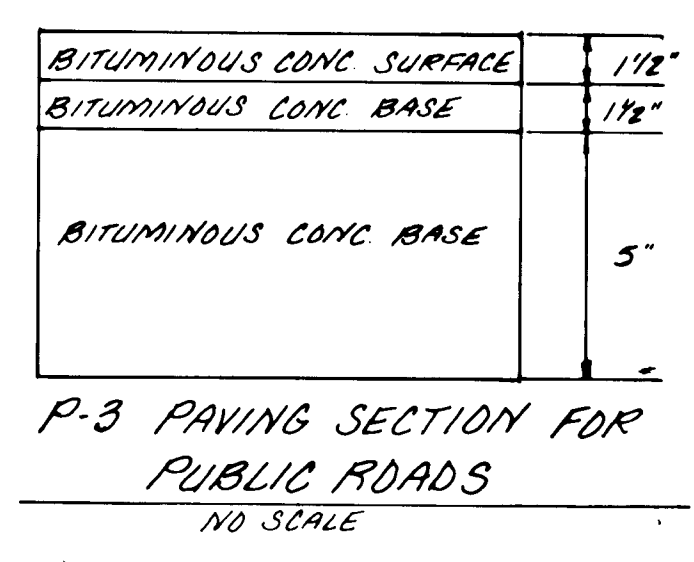
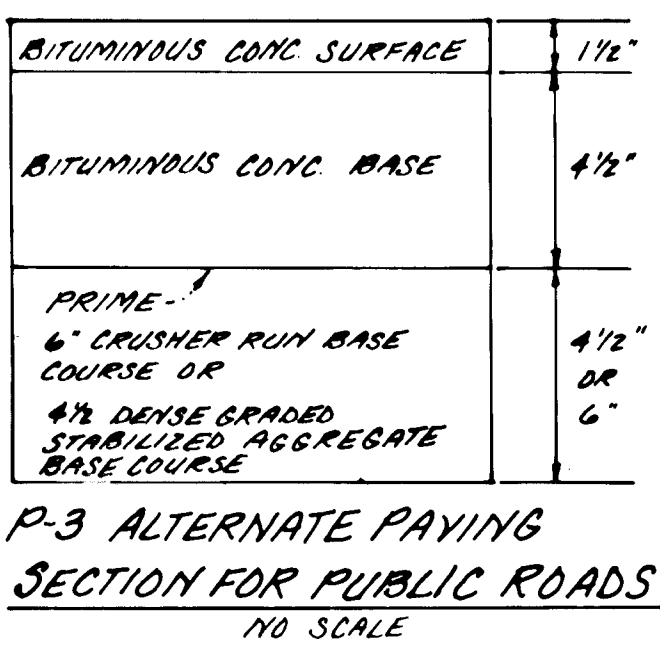
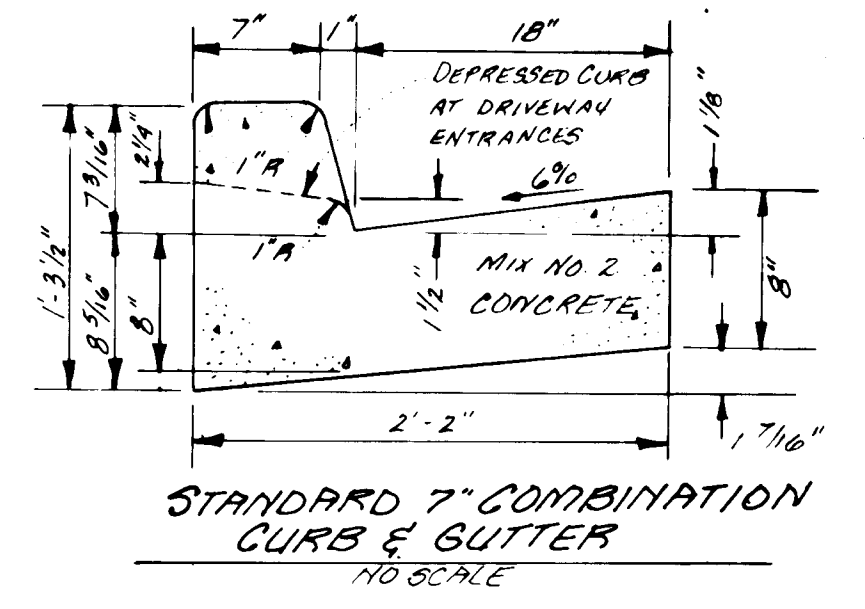
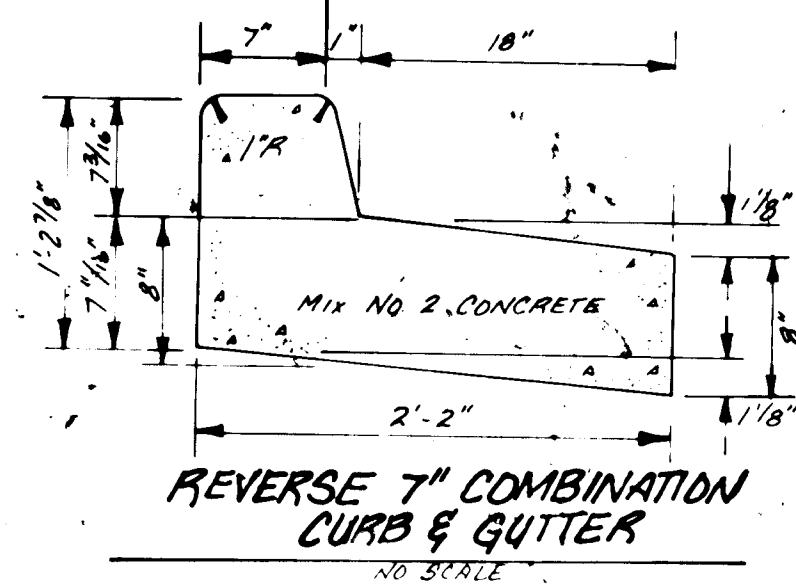
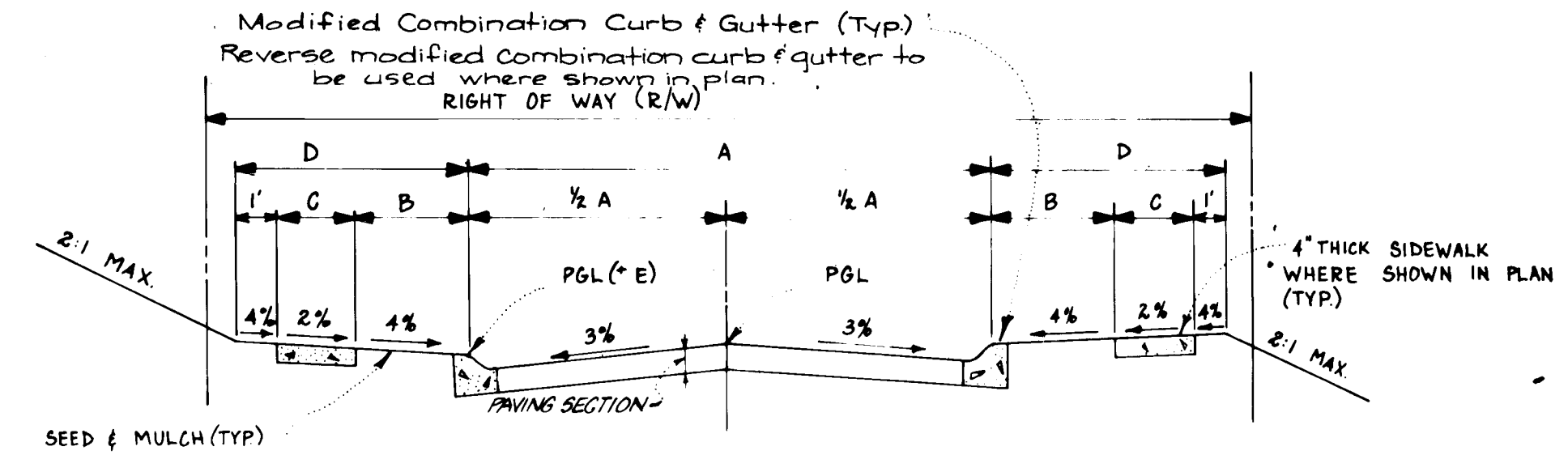
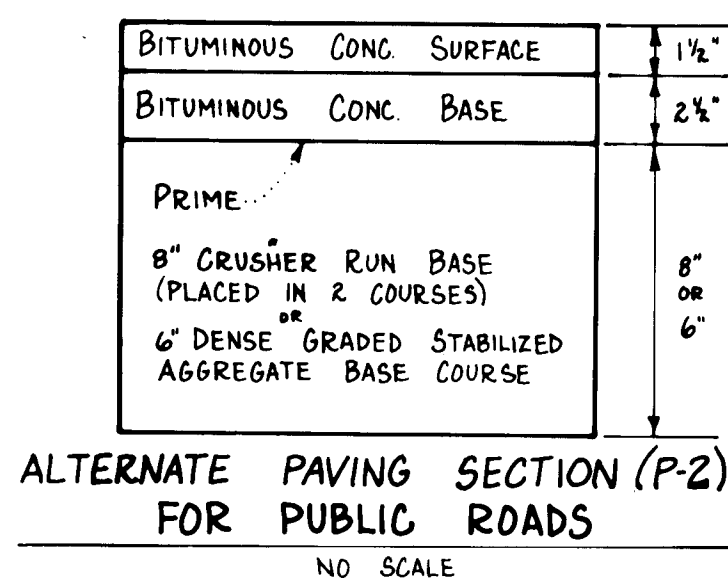
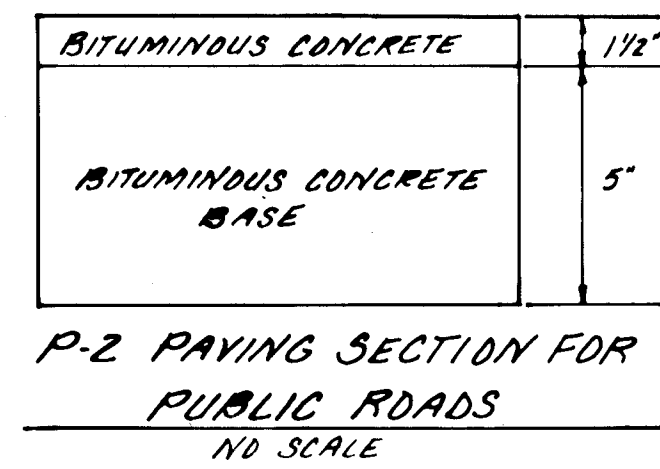
Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

Approved: Department of Public Works
Chief, Land Development Division
Chief, Bureau of Highway
Approved: Howard County Dept. of Planning & Zoning
Chief, Division of Community Planning & Land Development

8/16/90
8/1/90
8/1/90

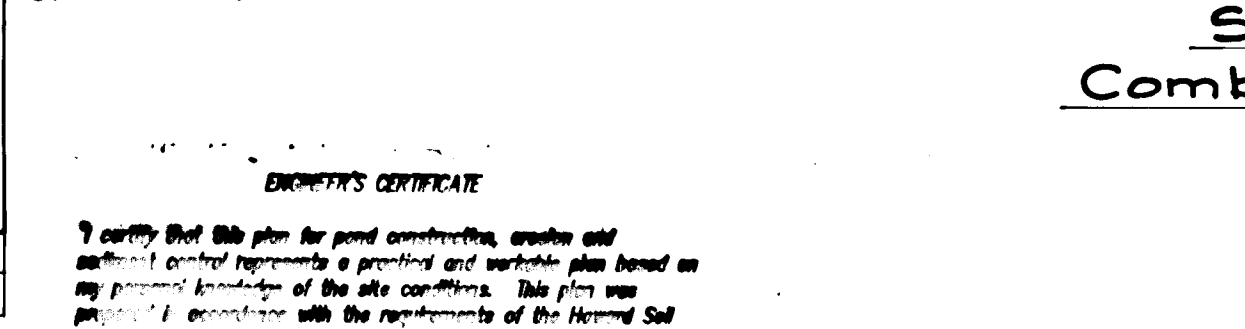
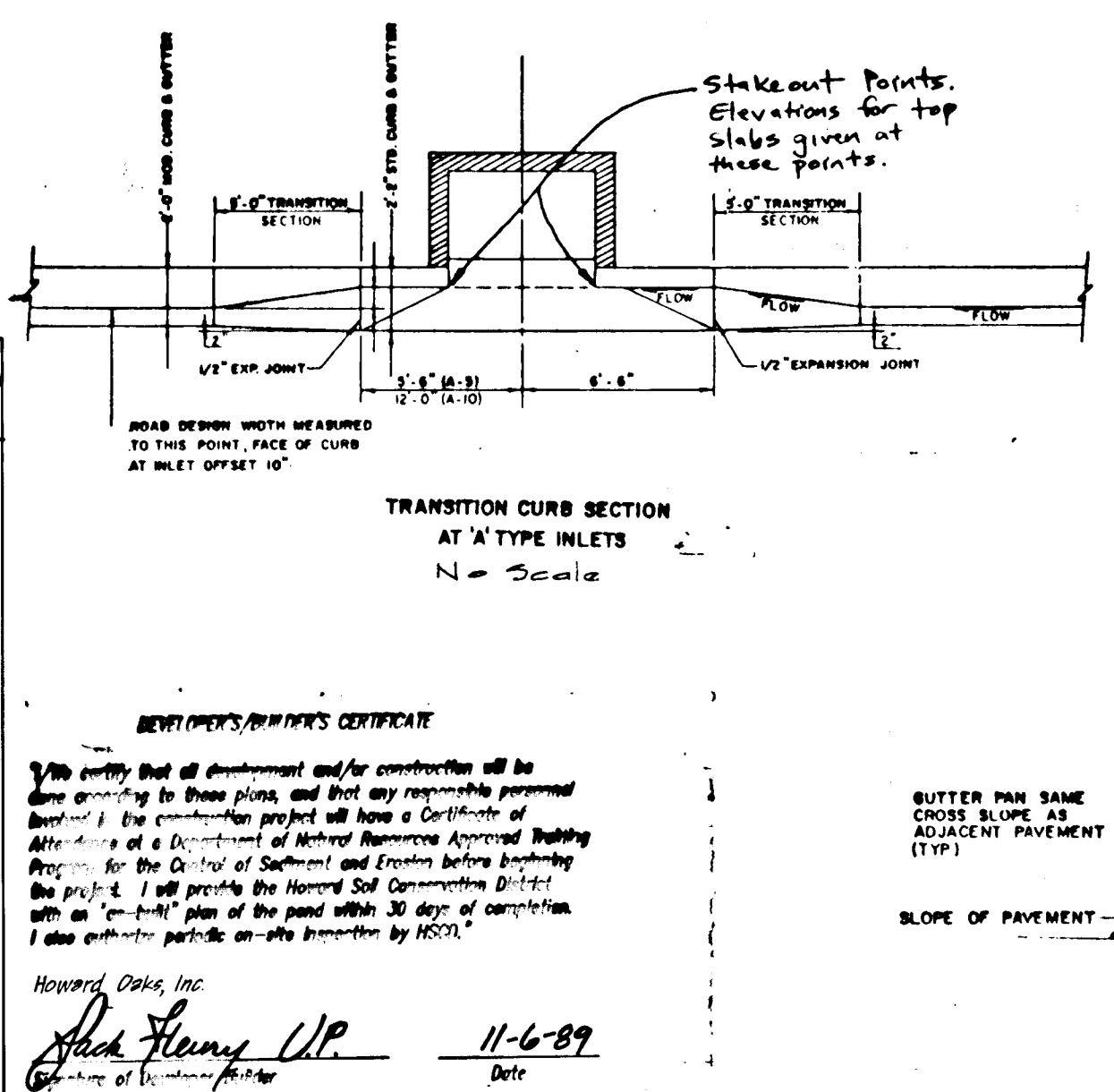
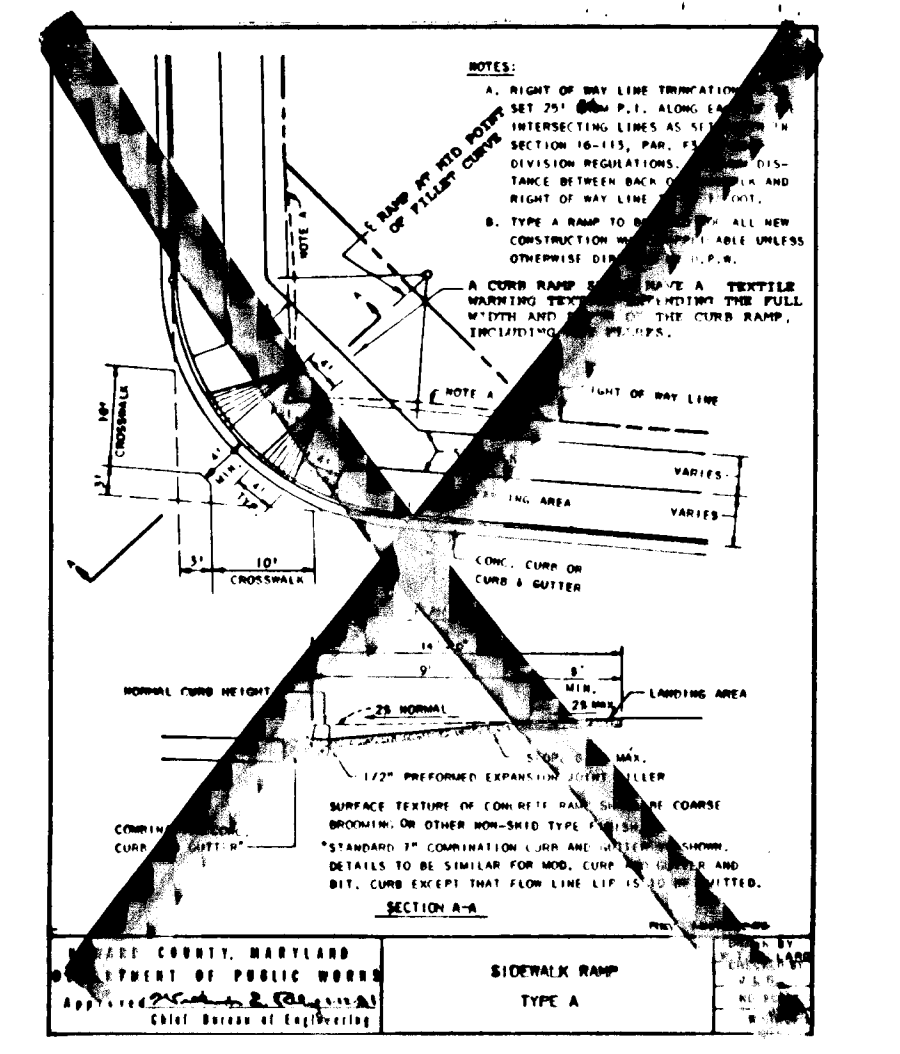
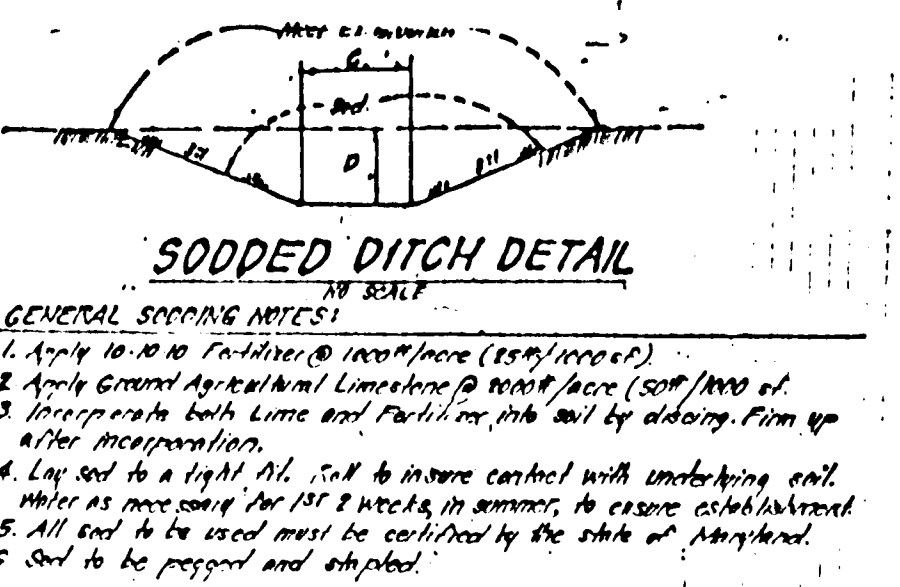
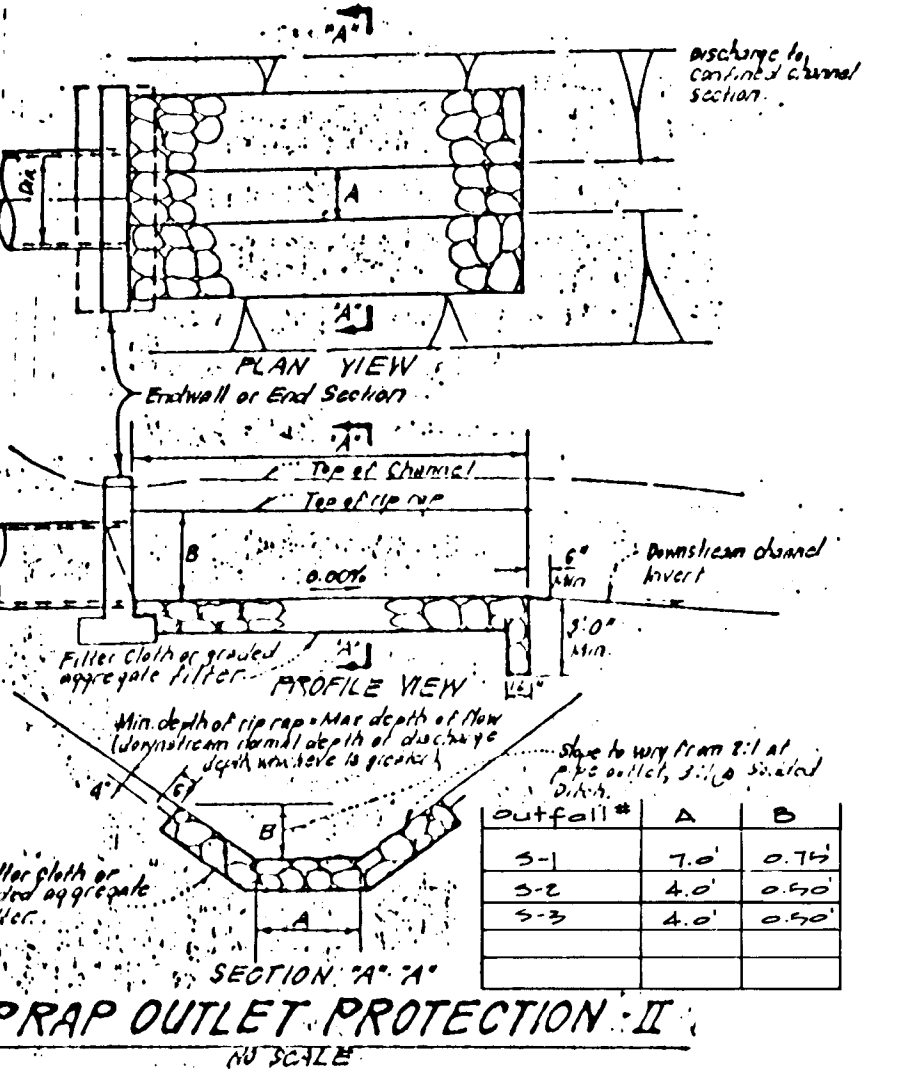
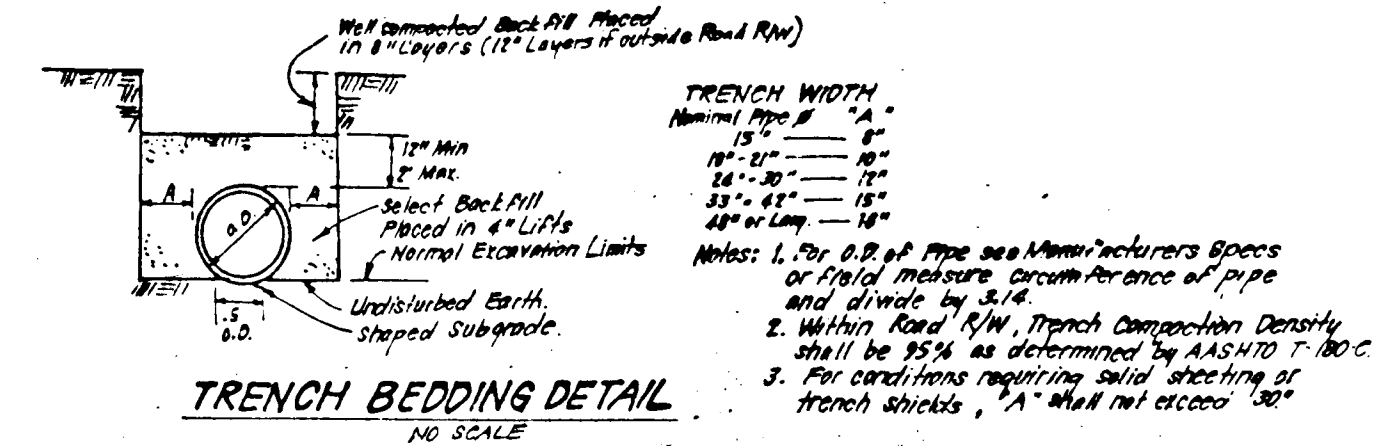
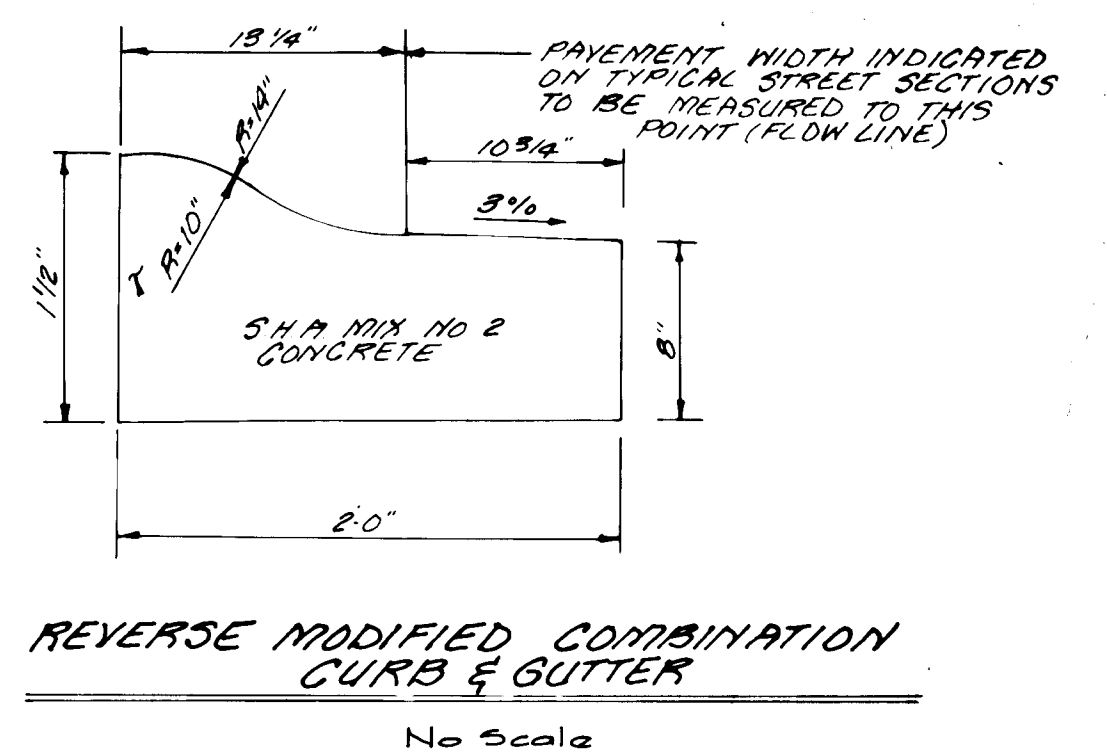
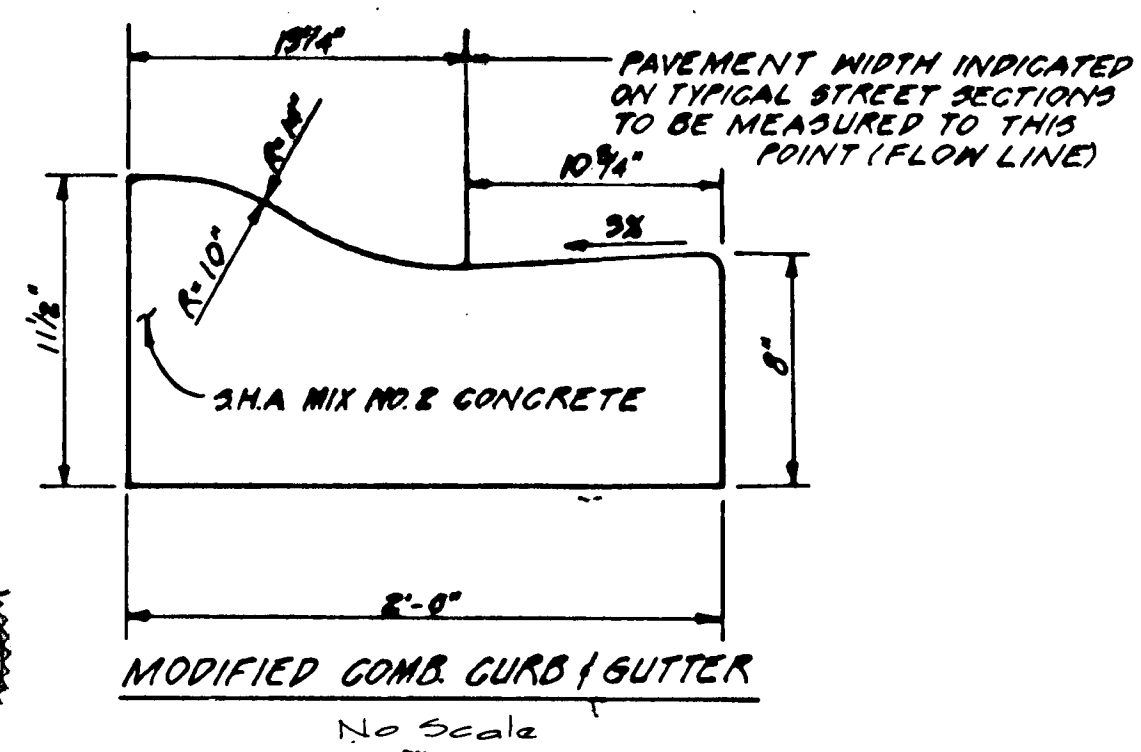
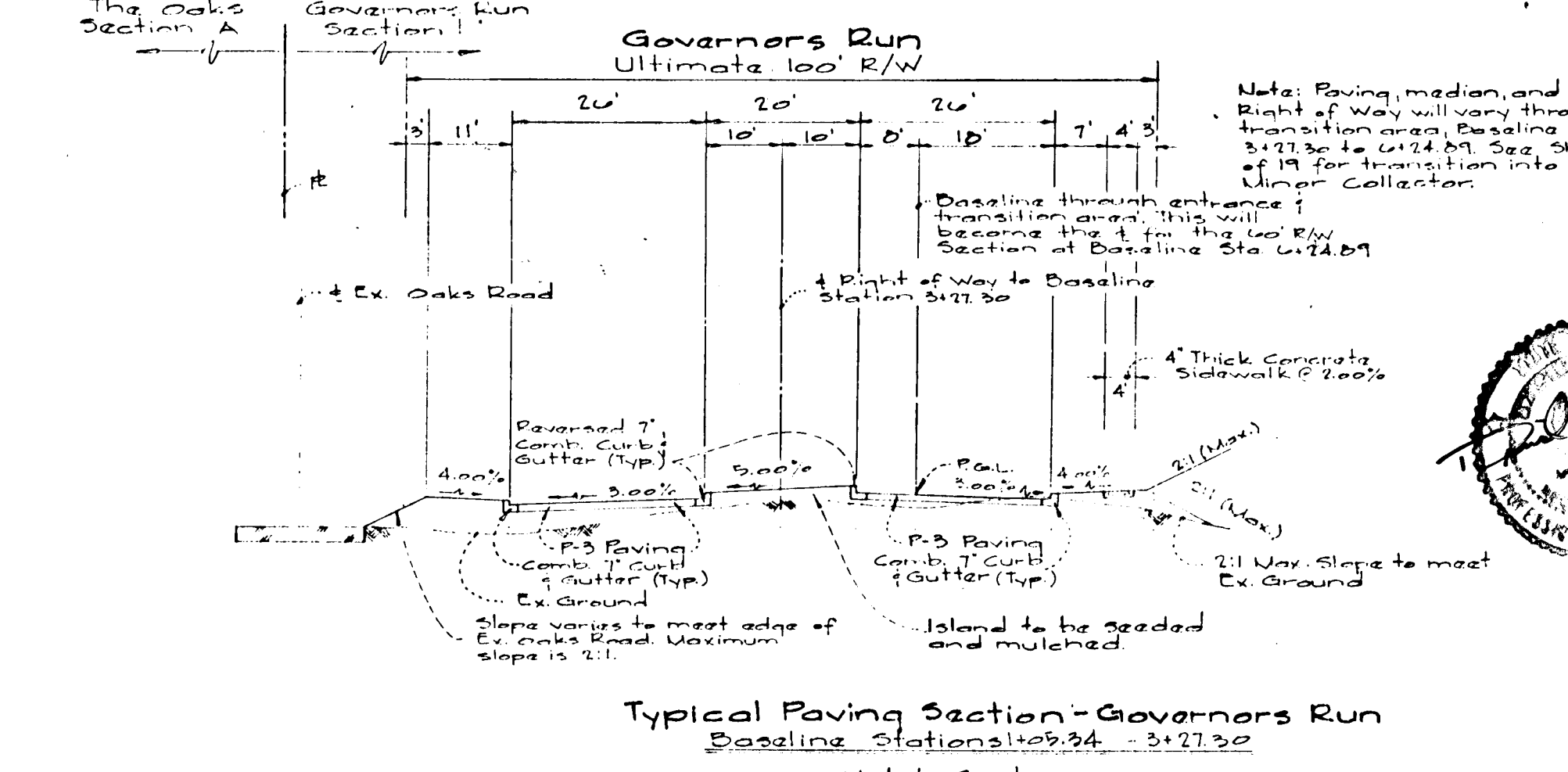
GW GUTSCHICK LITTLE & WEBER, P.A. ENGINEERS, PLANNERS, SURVEYORS 3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20886 TELEPHONE (301) 421-4024			PREPARED FOR Howard Oaks, Inc. 10480 Little Patuxent Parkway Suite 600 Columbia, Maryland 21044 (301) 964-2023				Sediment and Erosion Control Notes and Details Governors Run Section 1 Lots 1-73 Liber 1578 Folio 45G Howard County, Maryland 2nd Election District			SCALE: — ZONING: R-20 G.L.W. FILE NO.: BG-055 DATE: July 1990 TAX MAP NO.: 10/25 Br. 2 SHEET: 18 of 21		
DES. DEV.	ORN. G.A.W.	CHK. C.K.G.	DATE	REVISION	BY	APPR.						
							01/10/90	rev construction sequence	MCF			

1588



STREET NAME & STATION	TYPE OF TRAFFIC	A	B	C	D	R/W	ZONING	E	DESIGN SPEED	PAVING SECTION
Governors Run 0+25.15-22+32.14	Minor Collector	36'	7'	4'	12'	60'	R-20	22'	35	P-3
Governor Ridgely Ln. 0+15.95-2+20.50	Local Road	20'	4'	4'	9'	50'	R-20	13'	30	P-2
Governor Grayson Way 3+14.5-2+11-.95	Local Road	20'	4'	4'	9'	50'	R-20	13'	30	P-2
Governor Grayson Way 3+14.93-14+15.34	Cul-de-Sac	28'	4'	4'	9'	50'	R-20	10'	30	P-2
Governor Bradford Lane 0+14.5-3+58.23	Cul-de-Sac	28'	4'	4'	9'	50'	R-20	10'	30	P-2
Governors Run 23+15.11-31+44.00	Local Road	30'	4'	4'	10'	60'	R-20	13'	30	P-2
Governors Run 30+24.01-32+34.00	Cul-de-Sac	28'	4'	4'	10'	60'	R-20	10'	30	P-2

Utilize applicable paving section and details for cul-de-sac bulb. Also see Howard County Std. R-501



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.

Howard Soil Conservation District

U.S. Soil Conservation Service

Date

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

Howard Soil Conservation District

Date

DESIGNER'S CERTIFICATE

I, the undersigned, certify that these plans and specifications were prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer in the State of Maryland.

Signature: *John Henry UP*
Date: 11-6-89

OWNER'S CERTIFICATE

I, the undersigned, certify that these plans and specifications were approved by me or under my direct supervision and that I am a duly licensed Professional Engineer in the State of Maryland.

Signature: *CK Johnson*
Date: 10-20-89

Approved: Department of Public Works
Chief, Land Development Division
Signature: *Charles W. Cleveland*
Date: 8/1/90

Approved: Howard County Dept. of Planning & Zoning
Chief, Division of Community Planning & Land Development
Signature: *John P. Taylor*
Date: 8/2/90

GUTSCHICK LITTLE & WEBER, PA.
ENGINEERS, PLANNERS, SURVEYORS
3809 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20866
TELEPHONE (301) 421-4024

DATE	REVISION	BY	APPR.
2/1/89	REV. STRUCTURE SCHEDULE - ADD I-23	MCF	
10/21/89	REV. STRUCTURE SCHEDULE	MCF	
4/10/90	REVISE STRUCTURE & STREET NAME SCHEDULE	MCF	

PREPARED FOR:
Howard Oaks, Inc.
10480 Little Patuxent Parkway
Suite 600
Columbia, Maryland 21044
(301) 964-2223

STORM DRAIN AND PAVING DETAILS
Governors Run
Section 1
Liber 157B - Folio 456
Howard County, Maryland
End Election District

SCALE	ZONING	G.L.W. FILE NO.
AS SHOWN	R-20	86-025
DATE	TAX MAP NO.	SHEET
July 1990	12/25 P107	10 of 21

Note:
The wetland & stream buffers indicated on these plans do not affect the initial clearing, grading and construction. It does prohibit subsequent clearing, grading or construction in the buffer areas. Maintenance of residences, landscaping and utilities is permitted.

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 ponds within 30 days of completion.

CK Kuttner
12/27/89
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources 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 ponds within 30 days of completion. I also authorize periodic on-site inspection by HSCD.

Howard OAKS, Inc.
By: *William M. Kelly, Jr.* President
12/27/89
Signature of Developer/Builder Date

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

A. Helms
U.S. Soil Conservation Service
7-23-90
Date

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

Robert W. Zelman
Howard Soil Conservation District
7-23-90
Date

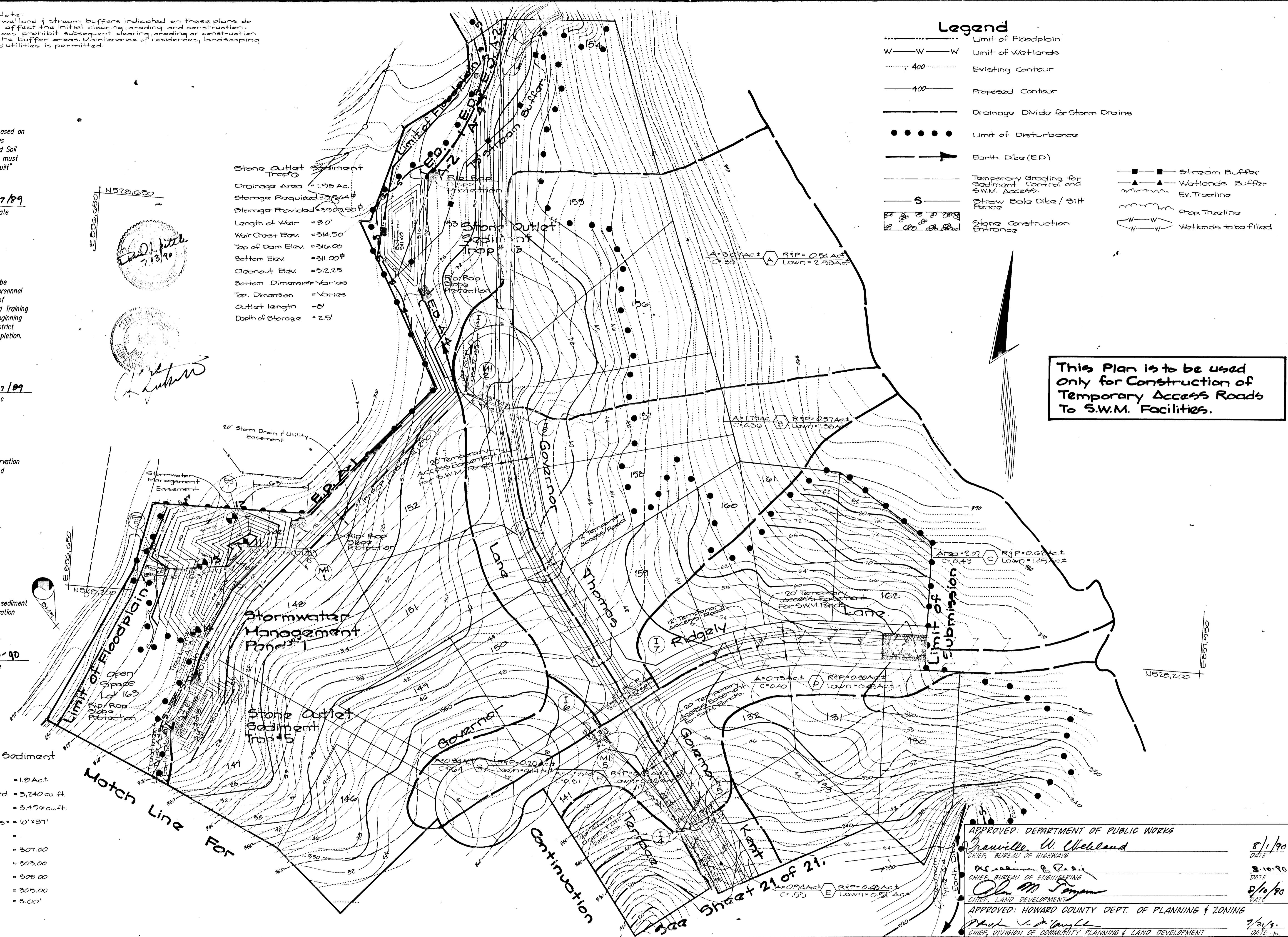
Legend

- Limit of Floodplain
- W—W—W Limit of Wetlands
- 400 Existing Contour
- 400 Proposed Contour
- Drainage Divide for Storm Drains
- Limit of Disturbance
- > Earth Dike (E.D.)
- Temporary Grading for Sediment Control and S.W.M. Facilities
- S Straw Bale Dike / Silt Fence
- Signs Construction Entrance
- Stream Buffer
- Wetlands Buffer
- Ex. Trailing
- Prop. Trailing
- Wetlands to be filled

Stone Outlet Sediment Trap #3
Drainage Area = 1.98 Ac.
Storage Required = 325.64 cu. ft.
Storage Provided = 330.50 cu. ft.
Length of Weir = 8.0'
Weir Crest Elev. = 314.50
Top of Dam Elev. = 316.00
Bottom Elev. = 311.00
Cleanout Elev. = 312.25
Bottom Dimension Varies
Top Dimension = Varies
Outlet length = 8'
Depth of Storage = 2.5'

Stone Outlet Sediment Trap #5
Drainage Area = 1.0 Ac.
Storage Required = 3,240 cu. ft.
Storage Provided = 3,479 cu. ft.
Bottom Dimensions = 10' x 31'
Top Dimension =
Weir Crest Elev. = 307.00
Bottom Elev. = 303.00
Top of Dam Elev. = 308.00
Cleanout Elev. = 305.00
Depth of Storage = 3.00'

This Plan is to be used only for Construction of Temporary Access Roads to S.W.M. Facilities.



APPROVED: DEPARTMENT OF PUBLIC WORKS
Lawrence W. Chelmsford
CHIEF, BUREAU OF HIGHWAYS
8/1/90
DATE

Oliver M. Foy
CHIEF, BUREAU OF ENGINEERING
8/10/90
DATE

Paul J. Taylor
CHIEF, LAND DEVELOPMENT
7/2/90
DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT

G. W. GUNTSCHICK, LUTHE & WEBER, P.A.
1 NORTH FRS. PLAZA, SUITE 1000
3800 NATIONAL DRIVE - SUITE 250 - BOWERSVILLE OFFICE PARK - BOWERSVILLE, MD. 20606
TELEPHONE (301) 421-6024

PREPARED FOR:
HOWARD OAKS, INC.
10480 LITTLE PATUXENT PARKWAY
SUITE 600
COLUMBIA, MARYLAND 21044
(301) 964-7078

Temporary Access to Stormwater Management Ponds
Governors Run
Section 1
Lots 1-73
Liber 1578
2nd Election District
Folio 456
Howard County, Maryland

SCALE	ZONING	G.L.W. FILE No.
1" = 50'	P-70	86095
DATE	TAX MAP No.	SHEET
July 1990	18.125 PARCEL 7	20 of 21

1568



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.

William J. Miller
 Date 12-27-89

DEVELOPER'S/BUILDER'S CERTIFICATE

I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources 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. I also authorize periodic on-site inspection by HSCD.

Howard Oaks, Inc.
 By: *William J. Miller, Jr., President*
 Signature of Developer/Builder Date 12/27/89

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.

J. Helms
 U.S. Soil Conservation Service Date 7-23-90

This Plan is to be used Only for Construction of Temporary Access Roads to S.W.M. Facilities.

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

Robert Ziehm
 Howard Soil Conservation District Date 7-23-90

APPROVED: DEPARTMENT OF PUBLIC WORKS
Drayville W. McLeod 8/1/90
 CHIEF, BUREAU OF HIGHWAYS
William J. Miller 8-10-90
 CHIEF, BUREAU OF ENGINEERING
Ola M. Tompkins 8/10/90
 CHIEF, LAND DEVELOPMENT DIVISION
 APPROVED: HOWARD COUNTY DEPT. OF PLANNING & ZONING
Thomas J. Cuyler 7/21/90
 CHIEF, DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT

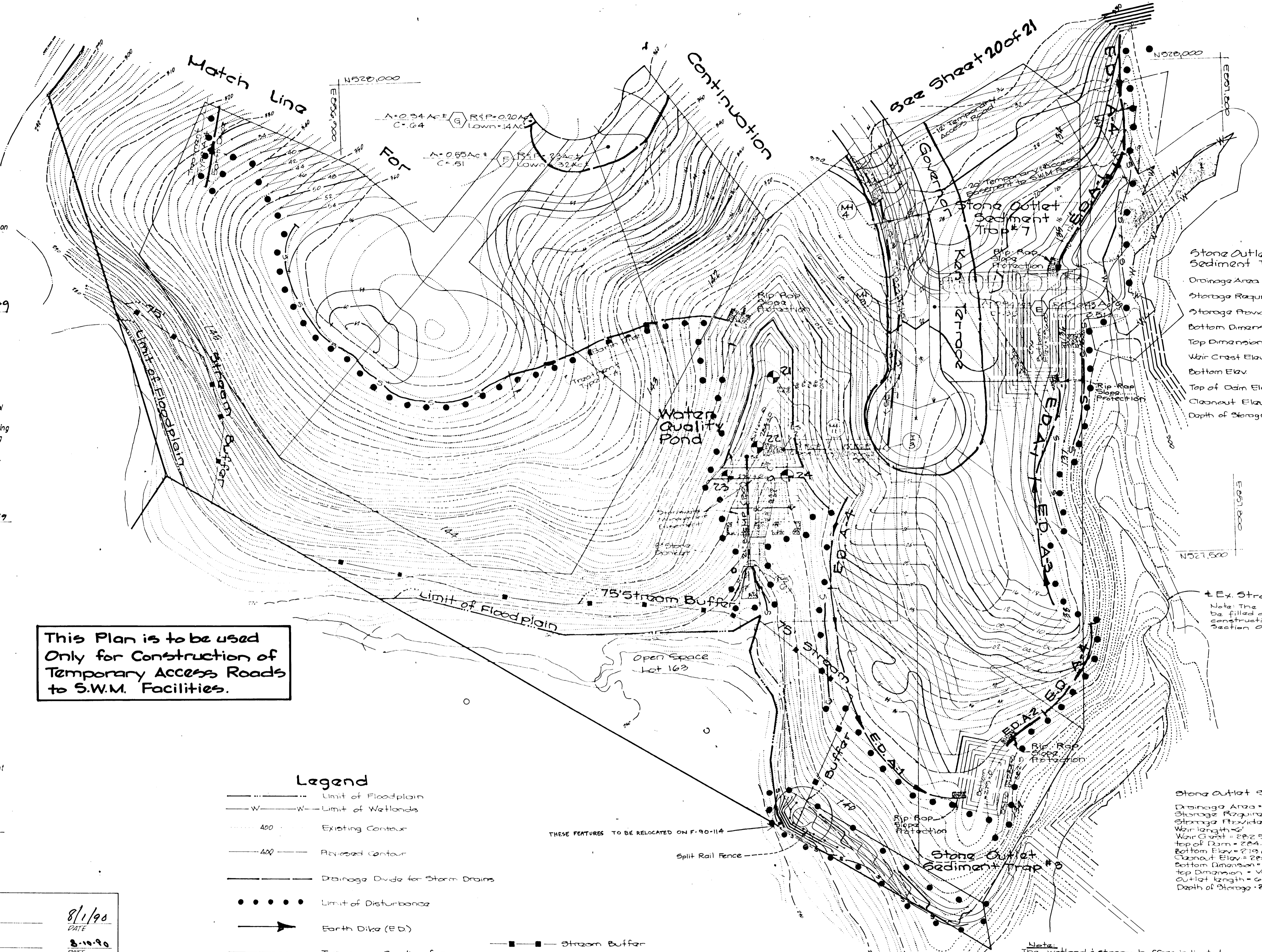
G.L.W. GUTSCHICK LITTLE & WEBER, P.A.
 ENGINEERS, PLANNERS, SURVEYORS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD 20886
 TELEPHONE (301) 421-4024

DATE	REVISION	BY	APPR.

PREPARED FOR:
 HOWARD OAKS, INC.
 10440 LITTLE PATUXENT PARKWAY
 SUITE 400
 COLUMBIA, MARYLAND 21044
 (301) 964-0078

Temporary Access to Stormwater Management Pond
 Governors Run
 Section 1
 Lots 1-73
 Liber 1578
 2nd Election District

SCALE	ZONING	GL.W. FILE NO.
1" = 50'	R-20	64055
DATE	TAX MAP NO.	SHEET
July 1990	10/24 PARCEL 2	21 of 21



- Legend**
- Limit of Floodplain
 - W-W Limit of Wetlands
 - 400 Existing Contour
 - 400 Revised Contour
 - Drainage Divide for Storm Drains
 - Limit of Disturbance
 - Earth Dike (ED)
 - Temporary Grading for Sediment Control and S.W.M. Access
 - Straw Bale Dike/Silt Fence
 - Stone Construction Entrance
 - Stream Buffer
 - ▲ Wetlands Buffer
 - Ex. Trailline
 - Prop Trailline
 - W-W Wetlands to be filled

Stone Outlet Sediment Trap # 7
 Drainage Area = 6.1Ac±
 Storage Required = 10,980 cu ft.
 Storage Provided = 11,176 cu ft.
 Bottom Dimensions = 22' x 20'
 Top Dimensions = 30' x 20'
 Weir Crest Elev. = 301.00
 Bottom Elev. = 296.00
 Top of Dam Elev. = 304.00
 Cleanout Elev. = 298.00
 Depth of Storage = 4.00'

Stone Outlet Sediment Trap # 8
 Drainage Area = 1.42 Ac±
 Storage Required = 2,556 cu ft.
 Storage Provided = 2,845 cu ft.
 Weir length = 2'
 Weir Crest = 282.5
 Top of Dam = 284.0
 Bottom Elev. = 279.0
 Cleanout Elev. = 280.0
 Bottom Dimensions = 10' x 10'
 Outlet length = 6'
 Depth of Storage = 2.50'

Note:
 The wetland & stream buffers indicated on these plans do not affect the initial clearing, grading and construction. It does prohibit subsequent clearing, grading or construction in the buffer areas. Maintenance of residences, landscaping and utilities is permitted.