

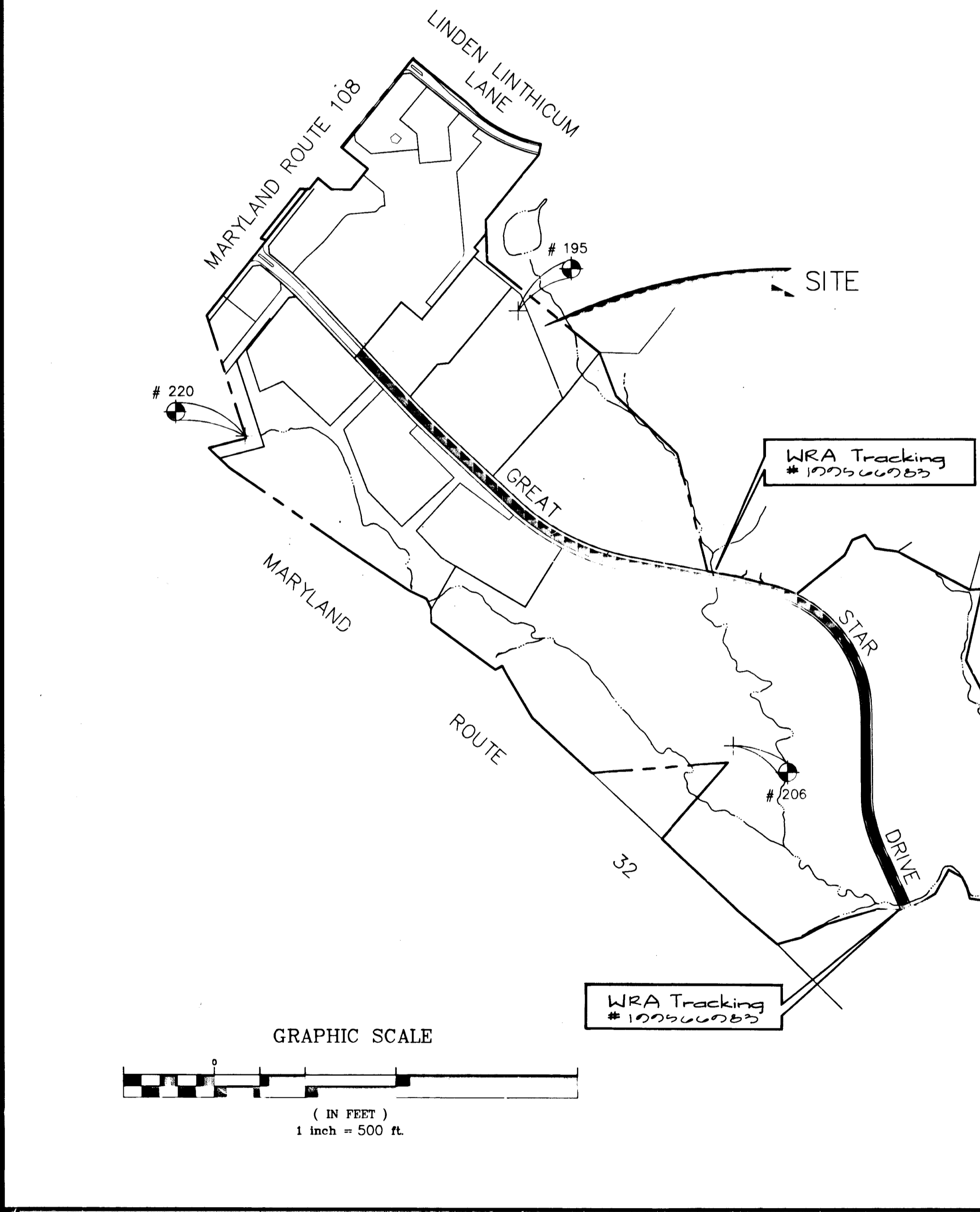
VILLAGE OF RIVER HILL SECTION 4 ~ AREA 1 PHASE 1 HOWARD COUNTY, MARYLAND

- GENERAL NOTES**
- THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
 - PROJECT BACKGROUND:
LOCATION: MD. ROUTE 108, 2600' WEST OF SHEPHERD LANE
TAX MAP: 34 AND 35
ZONING: NT
ELECTION DISTRICT: 5
GROSS AREA OF TRACT: 58.33 AC.
PRELIMINARY PLAN FILE NUMBER AND APPROVAL DATE: P-95-10 (6/15/95)
 - SEE COUNTY FILE NOS. S93-21, P-95-10, WP-95-78, WP 95-32, & WP 95-114, F 96-89.
 - TOPOGRAPHY SHOWN HAS A 2' CONTOUR INTERVAL AND WAS PHOTOGRAPHED BY MAPPING ASSOCIATES, INC. IN 1989.
 - PUBLIC WATER AND SEWER TO BE UTILIZED. (MIDDLE PATUXENT DRAINAGE AREA) SITE IS IN METROPOLITAN DISTRICT. WATER AND SEWER CONSTRUCTION FOR THIS SUBDIVISION IS TO BE IN ACCORDANCE WITH HOWARD COUNTY DPW CONTRACT NO. 30-3476-D & 34-5924-D.
 - STORMWATER MANAGEMENT QUANTITY FOR THE IMPROVEMENTS UNDER THIS SUBDIVISION WILL BE PROVIDED BY THE EXISTING STREAM VALLEY UPSTREAM OF THE GREAT STAR CULVERT AND BY TAKING CREDIT FOR THE STORAGE UPSTREAM OF THE EXISTING SHA CULVERTS UNDER MD ROUTE 32, AS DESCRIBED IN A REPORT PREPARED BY WHITMAN, REQUARDT AND ASSOC. AND APPROVED AS OF 1/20/95. STORMWATER MANAGEMENT QUALITY WILL BE PROVIDED BY FACILITIES AT ES 101 AND 301. STORMWATER DISCHARGING FROM ES 701 AND 601 WILL USE THE NATURAL GROUND COVER AS A FILTERING BUFFER PRIOR TO THE STREAMS. THESE SYSTEMS WILL BE EXTENDED UNDER A FUTURE SUBMISSION AND WILL HAVE PERMANENT WATER QUALITY FACILITIES CONSTRUCTED AS A PART OF THAT EXTENSION.
 - THE FLOODPLAIN STUDY HAS BEEN PREPARED BY WHITMAN, REQUARDT AND ASSOC. STUDY APPROVED AS OF 1/20/95.
 - THE WETLAND DELINEATION WAS PERFORMED BY EXPLORATION RESEARCH, INC. STUDY APPROVED AS OF 1/20/95.
 - A NOISE STUDY WAS PREPARED BY STAIANO ENGINEERING, INC. STUDY APPROVED AS OF 1/20/95.
 - TRAFFIC STUDY PREPARED BY WELLS & ASSOCIATES, DATED 1/20/95.
 - GEOTECHNICAL REPORT PREPARED BY ROBERT B. BALTER, INC.
 - HORIZONTAL AND VERTICAL CONTROL BASED ON HOWARD COUNTY CONTROL STATIONS 29GA, ELEV. 450.10, AND 29G5, ELEV. 388.12.
 - EXISTING UTILITIES WERE LOCATED BY FIELD SURVEY AND AVAILABLE RECORDS.
 - MINIMUM BUILDING SETBACK RESTRICTION FROM PROPERTY LINES AND THE RIGHT-OF-WAY OF ANY PUBLIC ROAD WILL BE IN ACCORDANCE WITH THE FINAL DEVELOPMENT PLAN CRITERIA PHASE 222, Part 1.
 - SEE SOILS MAP #23
 - NO SLOPES OF 25% OR GREATER THAT ARE A CONTIGUOUS AREA OF 20,000 S.F. EXIST ON SITE.
 - ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
 - THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF CONSTRUCTION INSPECTION AT 1 (410) 313-1880 AT LEAST FIVE (5) DAYS PRIOR TO THE START OF WORK.
 - THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
 - TYPES OF STORM DRAINS REFER TO THE STANDARD DETAILS OF HOWARD COUNTY AND MDSA.
 - TRENCH COMPACTION FOR STORM DRAINS WITHIN ROADS AND STREET RIGHT-OF-WAYS LIMITS SHALL BE IN ACCORDANCE WITH "HOWARD COUNTY DESIGN MANUAL", VOL. IV, STANDARD G-2.01.
 - EXISTING UTILITIES WERE LOCATED BY FIELD SURVEY AND AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF MAINS BY DIGGING TEST PITS, BY HAND, AT ALL UTILITY CROSSINGS, WELL IN ADVANCE OF CONSTRUCTION.
 - SAG AND CREST VERTICAL CURVES WERE DESIGNED IN ACCORDANCE WITH "HOWARD COUNTY DESIGN MANUAL", VOL. III.
 - CONCRETE SIDEWALK RAMPS SHALL BE PROVIDED AT ALL INTERSECTIONS AND AS INDICATED ON THE PLANS. THE RAMPS SHALL CONFORM TO THE AMERICANS WITH DISABILITIES ACT (ADA) 1992, AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH "HOWARD COUNTY DESIGN MANUAL", VOL. IV.
 - SEDIMENT CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH THE "1994 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL".
 - STREET TREE LOCATIONS SHOWN ARE TENTATIVE AND ARE TO BE USED FOR BOND PURPOSES ONLY. THE FINAL LOCATION AND VARIETY OF TREES MAY VARY TO ACCOMMODATE FIELD CONDITIONS AND BUILDERS LANDSCAPE PROGRAM.
 - SEE SHEET # FOR STREET TREE DETAIL.
 - TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
A. STOP SIGNS R1-1, 30"x30" OCTAGON
B. STOP AHEAD SIGNS, W3-1A, 30"x30" DIAMOND
C. SPEED LIMIT SIGNS R2-1, 24"x30" RECTANGULAR
 - STREET TREES SHALL BE PLANTED A MINIMUM OF FIVE (5) FEET FROM STORM DRAIN, WATERLINE OR SEWER PIPE MANHOLES; ALSO A MINIMUM OF TWENTY (20) FEET FROM STREET LIGHTS.

24 The following numbers can be used to track environmental permits:
MDE application tracking no. 17756005
NTM# division no. 95-NT-0517

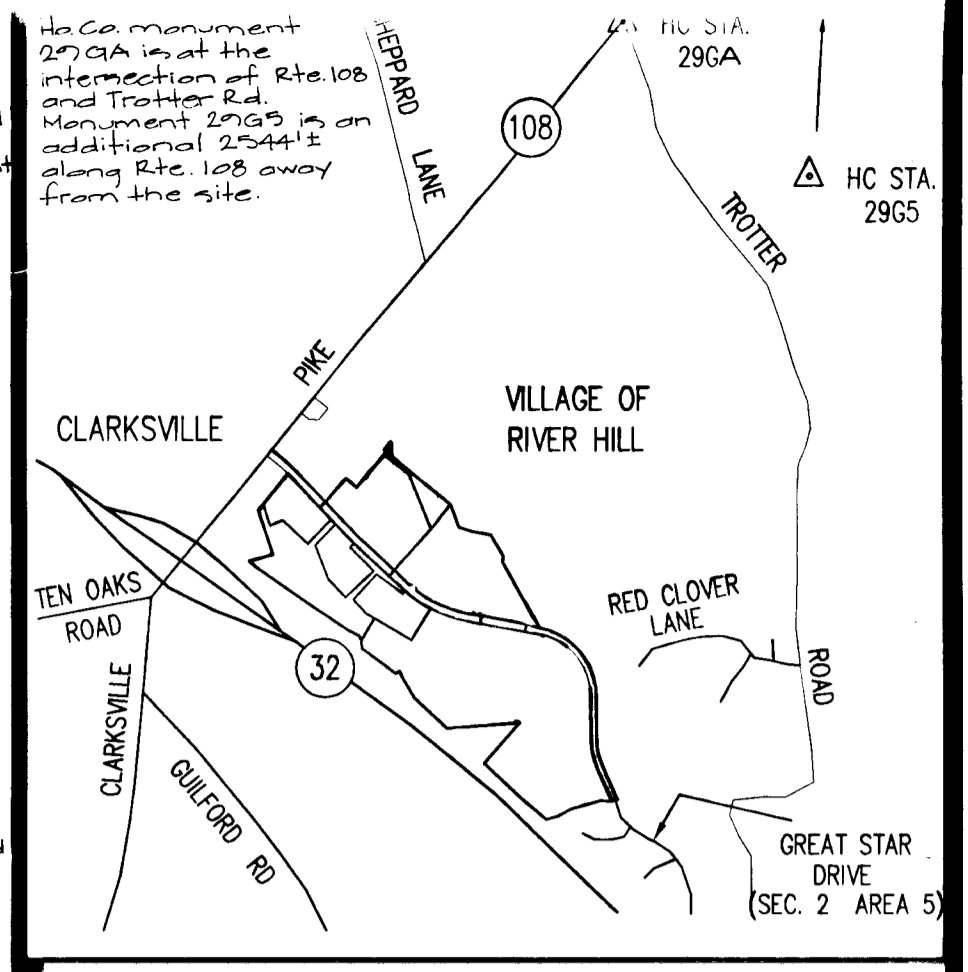
BENCHMARKS

POINT #	DESCRIPTION	ELEV.	NORTHING	EASTING
195	1/2" X 18" REBAR W/TRAV. CAP	445.28	561932.019	133138.577
206	"	374.53	559936.249	1332328.583
220	"	457.14	561238.646	1329635.522



NOTE: BENCHMARKS SHOWN ARE 1/2" X 18" REBAR WITH "TRAV" CAP & ARE BASED UPON HOWARD COUNTY MONUMENTS 29GA & 29G5. SEE VICINITY MAP FOR MONUMENT LOCATIONS. BENCHMARKS SHOWN WERE SET BY WHITMAN, REQUARDT & ASSOCIATES & WERE LOCATED ON THESE PLANS BY COORDINATE VALUES TAKEN FROM BOUNDARY SURVEY PREPARED BY WHITMAN, REQUARDT AND ASSOCIATES DATED JULY 5, 1994

- Operations and Maintenance for Bio-Retention Areas**
- Annual maintenance of plant material, mulch layer and soil layer is required. Maintenance shall include, but not be limited to, the following: removal of dead and diseased plant material; removal of mulch and soil; and replacement of all deficient plants and weeds.
 - Schedule of plant inspection will be twice a year in spring and fall. This inspection will include removal of dead and diseased vegetation considered beyond treatment; treatment of all diseased trees and shrubs; and replacement of all deficient stakes and wires.
 - Mulch shall be inspected each spring. Remove previous mulch layer before applying new layer once every 2 to 3 years.
 - Soil erosion to be addressed as soon as needed, but with a minimum of once per month and after heavy storm events.
- Operation and Maintenance for Shallow Marsh Areas**
- The shallow marsh facility shall be inspected annually and after major storm. Inspections shall be performed during wet weather to determine if the facility is functioning properly.
 - Top and side slopes of the embankments shall be mowed at a minimum of once per year, when vegetation reaches 18" in height or as needed.
 - Debris and litter shall be removed during regular mowing operations and as needed.
 - Visible signs of erosion in the facility shall be repaired as soon as it is noticed.
 - Remove silt when it exceeds four (4) inches deep in the forebay.



DRAWING LIST

NO.	DESCRIPTION
1.	COVER SHEET
2.	GREAT STAR DRIVE (STA. 8+13.50 - 23+50)
3.	GREAT STAR DRIVE (STA. 23+50 - 34+50)
4.	GREAT STAR DRIVE (STA. 34+50 - 47+50)
5.	GREAT STAR DRIVE (STA. 47+50 - 55+80.81)
6.	STORM DRAIN PROFILES
7.	STORM DRAIN PROFILES
8.	STORM DRAIN PROFILES
9.	RISE STRUCTURE DETAIL @ GREAT STAR DRIVE
10.	DRAINAGE AREA MAP
11.	DRAINAGE AREA MAP
12.	GRADING & SEDIMENT EROSION CONTROL PLAN
13.	GRADING & SEDIMENT EROSION CONTROL PLAN
14.	GRADING & SEDIMENT EROSION CONTROL PLAN
15.	GRADING & SEDIMENT EROSION CONTROL PLAN
16.	GRADING & SEDIMENT EROSION CONTROL PLAN
17.	GRADING & SEDIMENT EROSION CONTROL PLAN
18.	GRADING & SEDIMENT EROSION CONTROL PLAN
19.	SEDIMENT EROSION CONTROL NOTES & DETAILS
20.	MD-57B POND SPECIFICATIONS & SOIL BORINGS
21.	STORMWATER MANAGEMENT DETAILS & PROFILES
22.	BIO-RETENTION FACILITY DETAILS
23.	COMPOSITE AREA MAP FOR SEDIMENT CONTROL

STREET LIGHT SCHEDULE

SHEET NO.	STREET NAME	% LOCATION	OFF SET	TYPE
2	Great Star Dr.	8+25	25'L	Type 2
2	Great Star Dr.	12+00	25'R	Type 2
2	Great Star Dr.	16+75	25'R	Type 2
2	Great Star Dr.	21+20	25'L	Type 2
2	Great Star Dr.	24+75	25'L	Type 2
2	Great Star Dr.	28+10	25'L	Type 2
2	Great Star Dr.	31+77	25'L	Type 2
4	Great Star Dr.	34+84	21'L	Type 2
4	Great Star Dr.	38+12	21'L	Type 2
4	Great Star Dr.	41+20	21'L	Type 2
4	Great Star Dr.	44+25	21'L	Type 2
5	Great Star Dr.	47+00	21'L	Type 2
5	Great Star Dr.	51+70	21'L	Type 2

STREET LIGHT INFORMATION

● ** TYPE 2 - 150 WATT HIGH PRESSURE SODIUM VAPOR
Pendant Fixture (outlet) Mounted on 30" x 30" x 1/2" Aluminum Plate Placed 4" Back of Curb.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Davelle 2/25/97
Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Richard Blood 2/3/97
Chief, Division of Land Development

John Damman 2/20/97
Chief, Division of Planning & Zoning

- Street light placement & the type of fixture & pole shall be in accordance with the Howard County Design Manual, Volume III (1992) & as modified by Guidelines for Street Lights in Residential Developments (June 1995)
- The general & perimeter landscaping required for lots B, C, & D will be provided by the builder(s) in conjunction with the site development plan(s).
- The landscaping for Parcel A1 & A2 will be provided by the developer & builder as part of the subdivision plan & site development plan(s) for the parcel.
- The perimeter landscaping requirement for the boundary of open space Lot 722 against the Route 32 right-of-way will be filled via the retention of existing trees.

GTW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4024 NO. VA: (301) 989-2524 BAL: (410) 880-1870 FAX: (301) 421-4186

DATE	REVISION	BY	APP'R

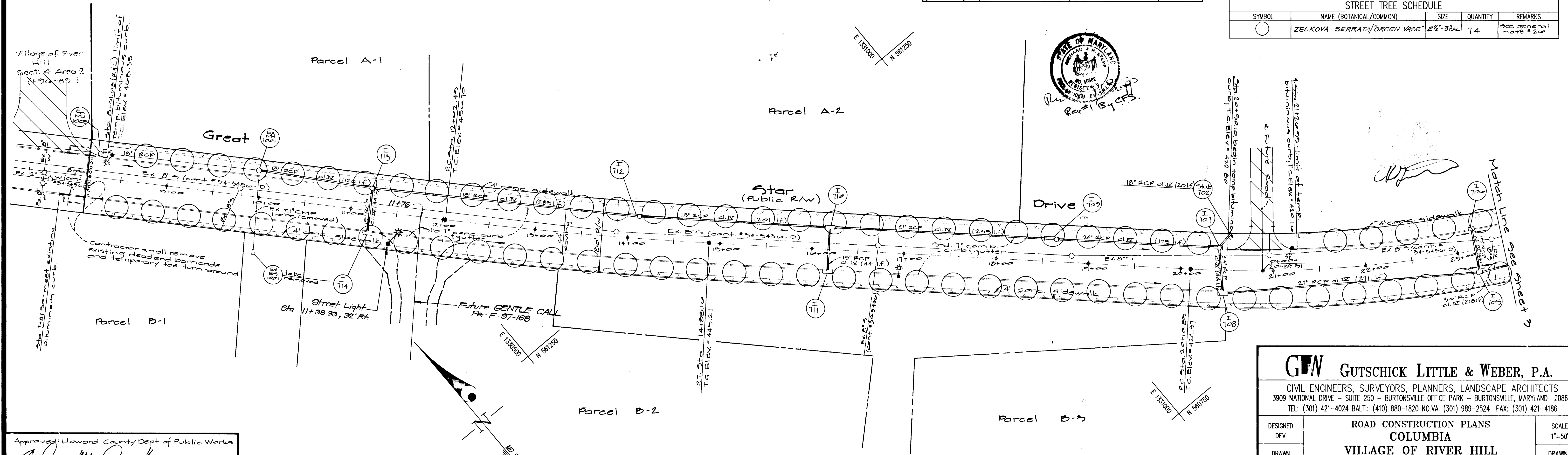
PREPARED FOR:
The Howard Research and Development Corporation
The Rouse Building
10275 Little Patuxent Parkway
Columbia, MD 21044
(410) 992-6370

COVER SHEET
**VILLAGE OF RIVER HILL
SECTION 4 AREA 1
Phase I**
CLARKSVILLE ELECTION DISTRICT No. 6 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	94050
DATE	TAX MAP No.	SHEET
FEB, 1997	34 & 35	1 OF 23

Date	No	REVISIONS	By
7-25-97	1	Relocated Street Light to Sta. 11+38.33	C.F.S. Inc.

STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
○	ZELKOVA SERRATA/GREEN VASE	2 1/2" CAL	74	see general note #20



CURVE DATA									
STREET NAME	P.C. STA.	P.C.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
GREAT STAR DRIVE	12+02.49	none	14+88.16	4400.00'	285.67'	142.89'	285.62'	S 45°03'44" E	034°31'2"
GREAT STAR DRIVE	20+10.83	none	27+40.42	1280.00'	729.59'	375.00'	719.75'	S 63°15'05" E	32°39'29"

Approved: Howard County Dept. of Public Works
Andrew M. Daniels 2-25-97
 Chief, Bureau of Highways Date

Approved: Howard County Dept. of Planning & Zoning
Richard Blawie 2/3/97
 Chief, Div. of Land Development Date

Mike Summers 2/20/97
 Chief, Development Engineering Div. Date

Legend

- temp bituminous curb
- std curb & gutter
- street light, see sheet 1.

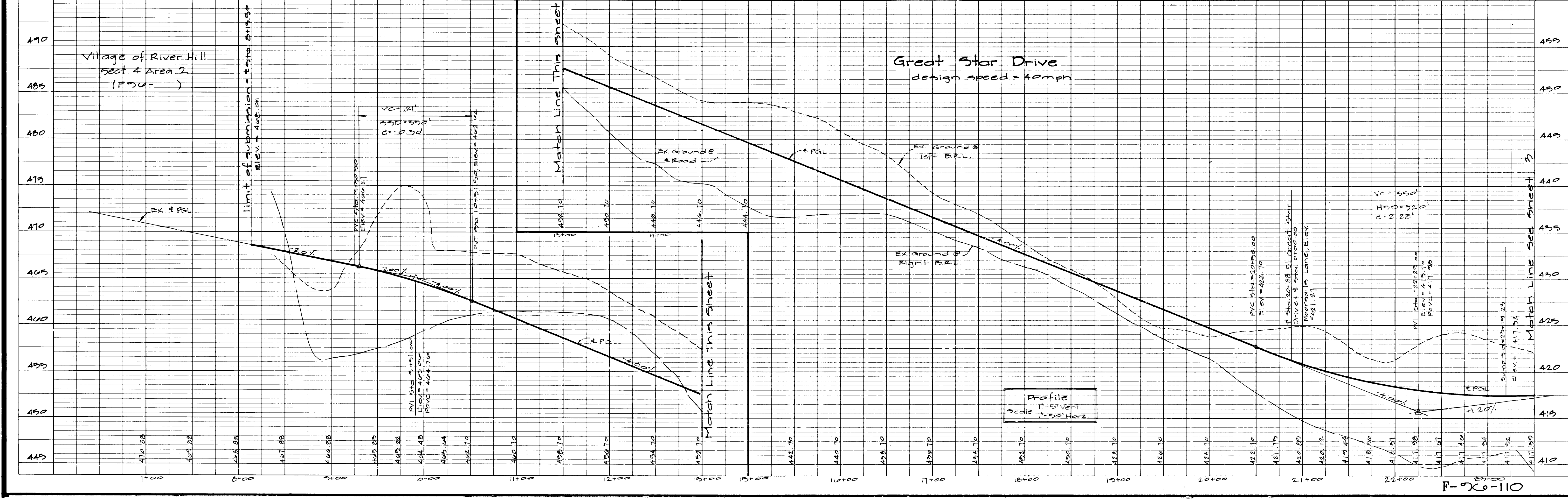
GW GUTSCHICK LITTLE & WEBER, P.A.
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 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
 TEL: (301) 421-4024 BALT.: (410) 880-1820 NO.VA. (301) 989-2524 FAX: (301) 421-4186

ROAD CONSTRUCTION PLANS
COLUMBIA
VILLAGE OF RIVER HILL
 SECTION 4, AREA 1
 Phase I
 ELLICOTT CITY ELECTION DISTRICT No. 5
 HOWARD COUNTY, MARYLAND

OWNER
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 PHONE (410) 412-6970

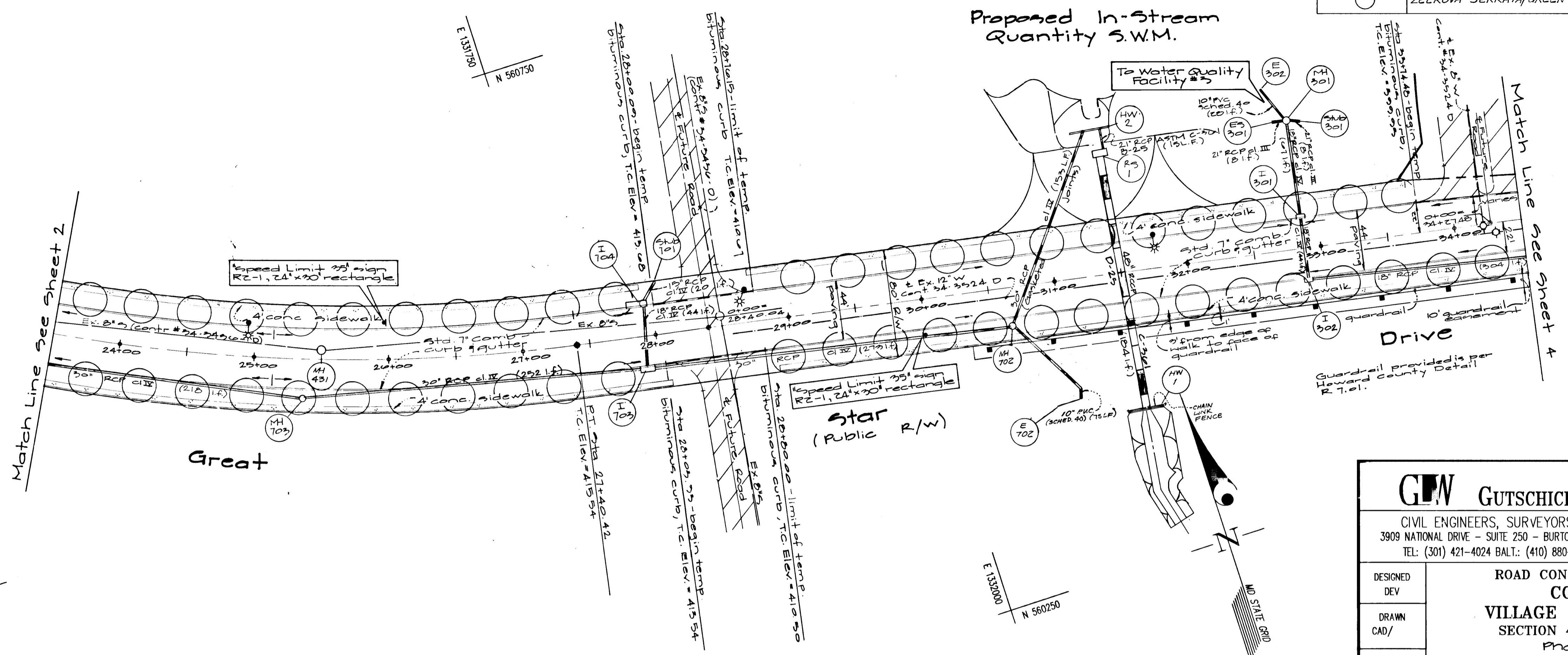
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 CHECKED DEV: VILLAGE OF RIVER HILL
 DATE: Feb. 1997

SCALE: 1"=50'
 DRAWING: 2 OF 20
 ZONING: N T
 JOB No.: 94050



1987

STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
○	ZELKOVA SERRATA/GREEN VASE	2 1/2" - 3 CAL	50	See general note #2



Approved: Howard County Dept. of Public Works
Richard M. Daniels 2-25-97
 Chief, Bureau of Highways Date

Approved: Howard County Dept. of Planning & Zoning
Richard Blood 3/2/97
 Chief, Div. of Land Development Date

John Williams 2/20/97
 Chief, Development Engineering Div. Date

- Legend**
- temp. bituminous curb
 - std. conc. curb & gutter
 - street light, see sheet 1.

Plan Scale 1"=50'

CURVE DATA									
STREET NAME	P.C. STA.	P.C.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
GREAT STAR DRIVE	20+10.83	none	27+40.42	1280.00'	729.59'	375.00'	719.75'	S 63°15'05" E	32°39'29"

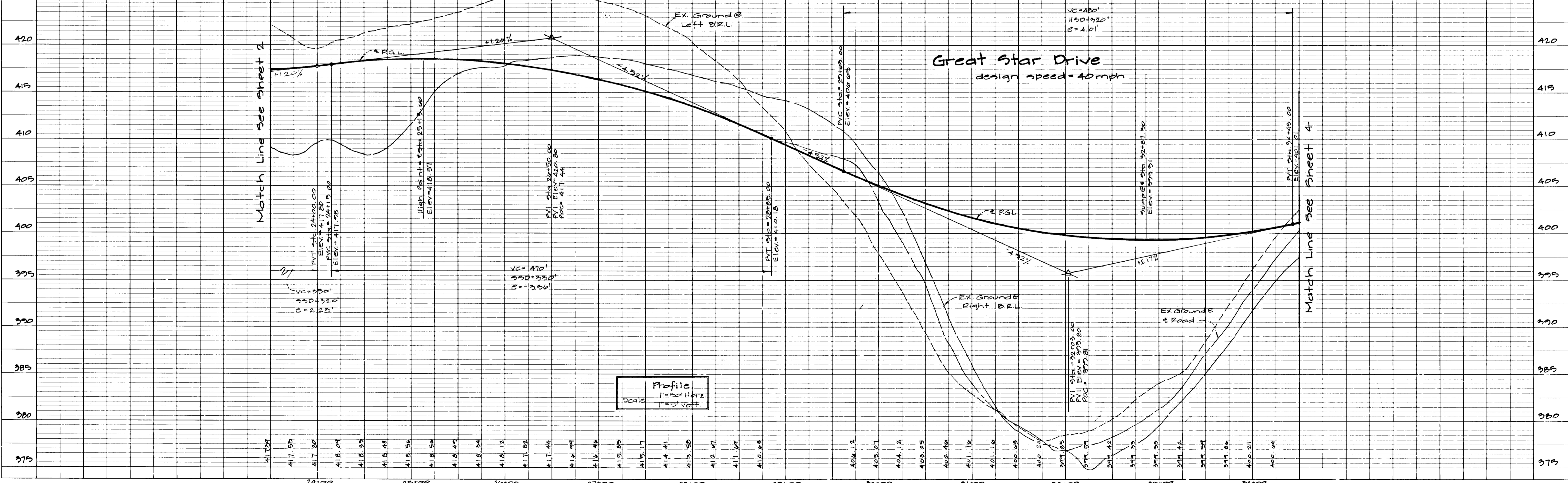
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 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
 TEL: (301) 421-4024 BALT.: (410) 880-1820 NO. VA. (301) 989-2524 FAX: (301) 421-4186

ROAD CONSTRUCTION PLANS
COLUMBIA
VILLAGE OF RIVER HILL
SECTION 4, AREA 1
Phase I
 ELLICOTT CITY ELECTION DISTRICT No. 5
 HOWARD COUNTY, MARYLAND

OWNER:
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 PHONE (410) 392-6510

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 DATE: Feb, 1997

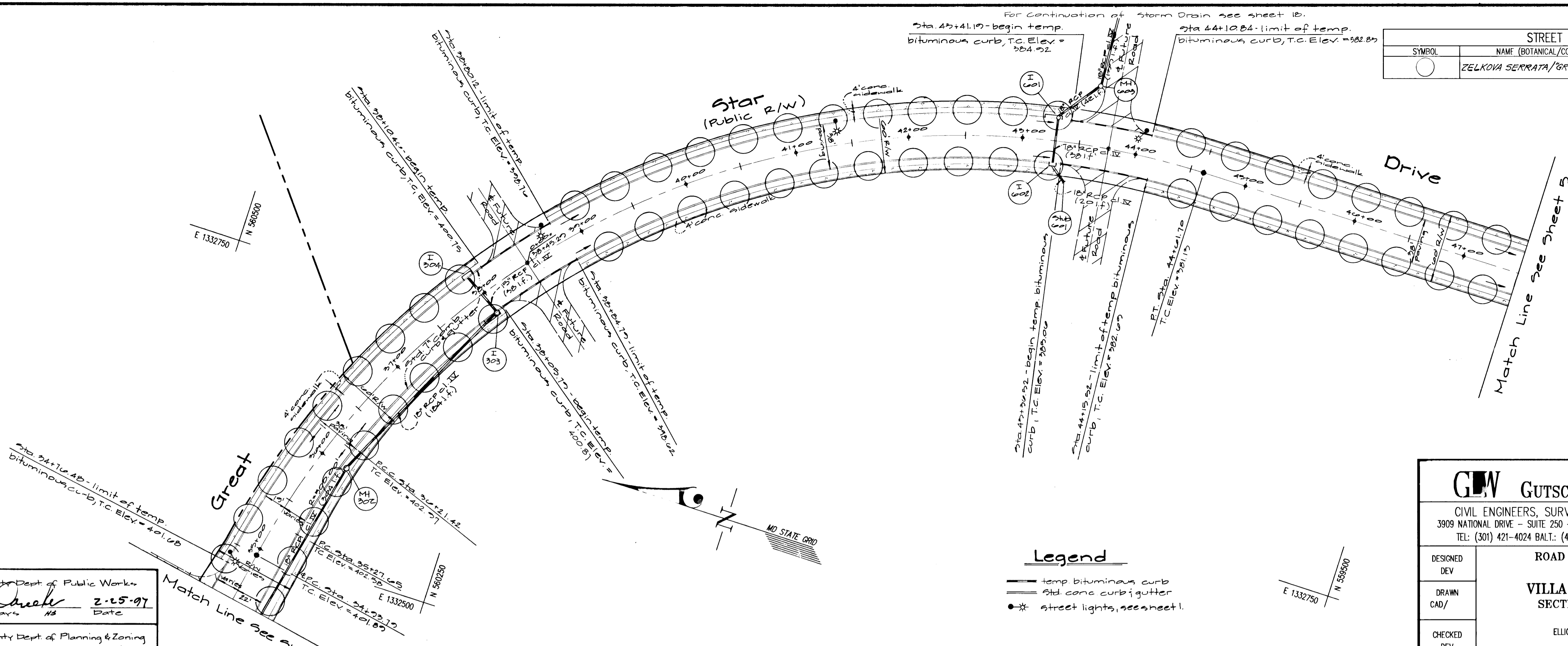
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 ZONING: N T
 JOB No.: 94050



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

1487

STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
○	ZELKOIA SERRATA / GREEN VASE	2 1/2" x 3" GAL	57	see general note #26.



Approved: Howard County Dept. of Public Works
Andrew M. Darsch 2-25-97
 Chief, Bureau of Highways Date

Approved: Howard County Dept. of Planning & Zoning
Richard Blood 3/3/97
 Chief, Div. of Land Development & Planning Date

Richard Blood 2/20/97
 Chief, Development Engineering Div. Date

CURVE DATA									
STREET NAME	P.C. STA.	P.C.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
GREAT STAR DRIVE	34+93.79	none	44+61.70	700.00'	967.91'	579.35'	892.63'	S 39°58'05" E	79°13'29"

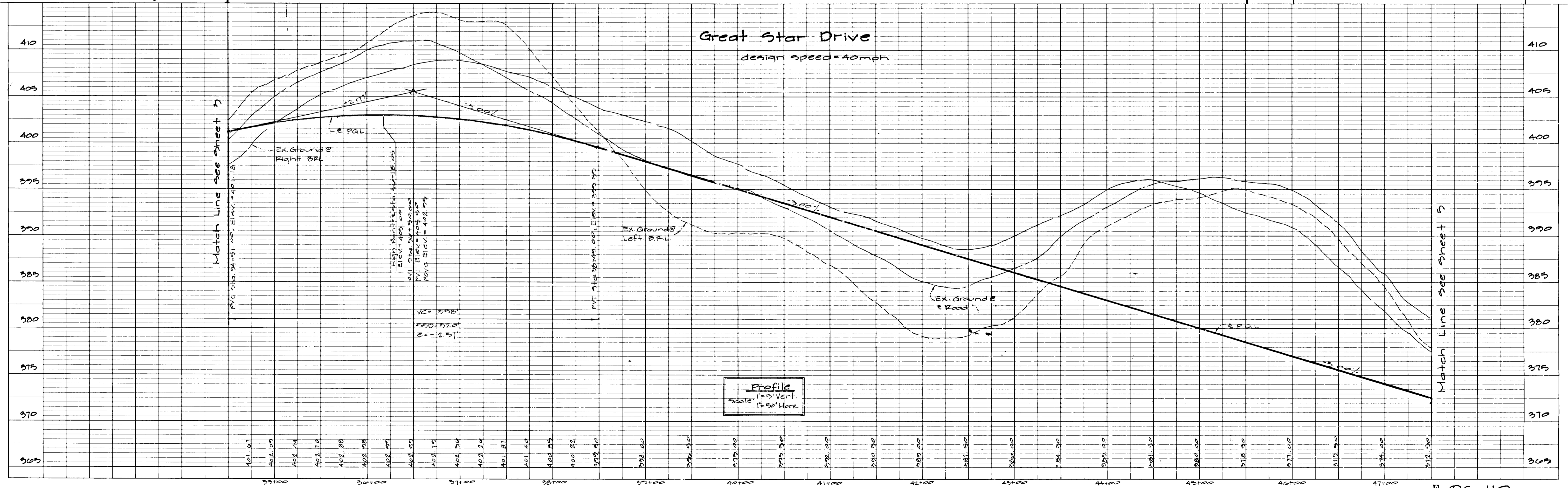
Plan
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GW GUTSCHICK LITTLE & WEBER, P.A.
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 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 PHONE (410) 292-6370

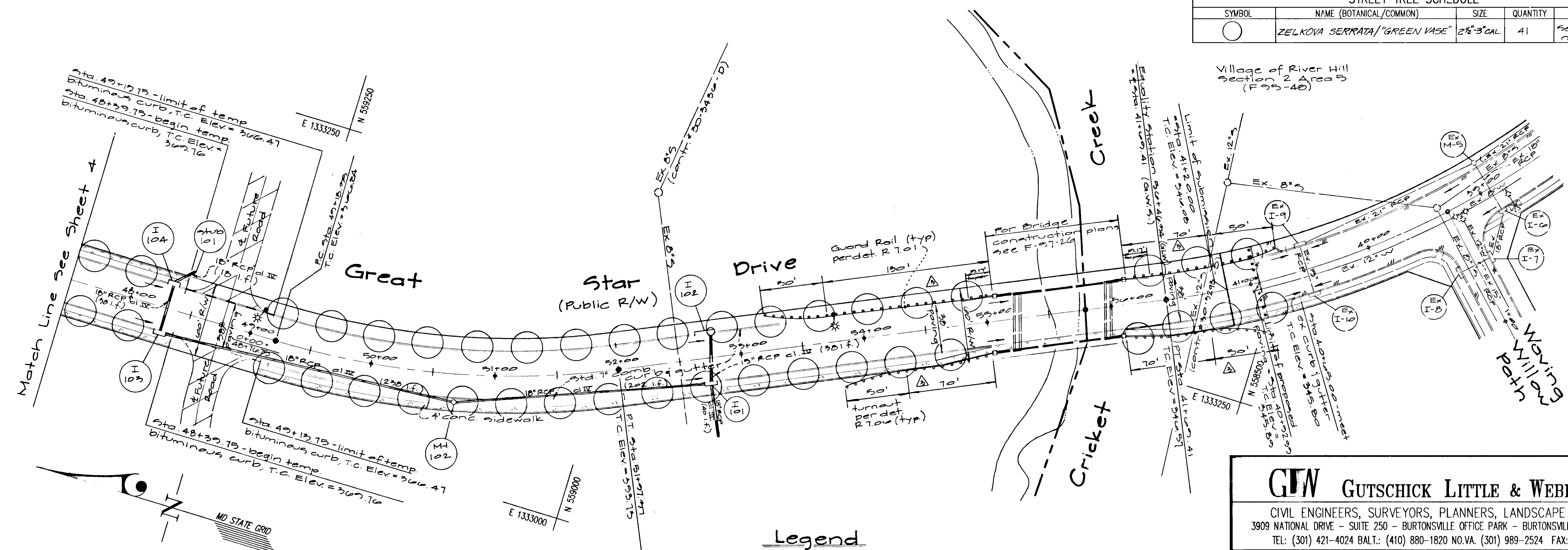
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 DATE: Feb, 1997
 JOB No. 94050



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

1987

STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
○	ZELKOVA SERIKATA/"GREEN VASE"	2 1/2" - 3" CAL.	41	See general note #26



- Legend**
- temp bituminous curb
 - std. conc. curb & gutter
 - * street light, see sheet 1

CURVE DATA									
STREET NAME	P.C. STA.	P.C.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
GREAT STAR DRIVE	49+13.75	none	51+27.27	670.00'	279.02'	141.56'	277.00'	S 121° 08' E	25° 51' 27"
Great Star Drive	—	P.C.C. 41+20.00	41+29.41	670.00'	47.40'	24.71'	49.33'	S 26° 10' 55" E	4° 15' 28"

3-9-98 Add Guard Rail MCF
 Date Revision By

Approved: Howard County Dept. of Public Works
Andrew M. Davel 2-25-97
 Chief, Bureau of Highways Date

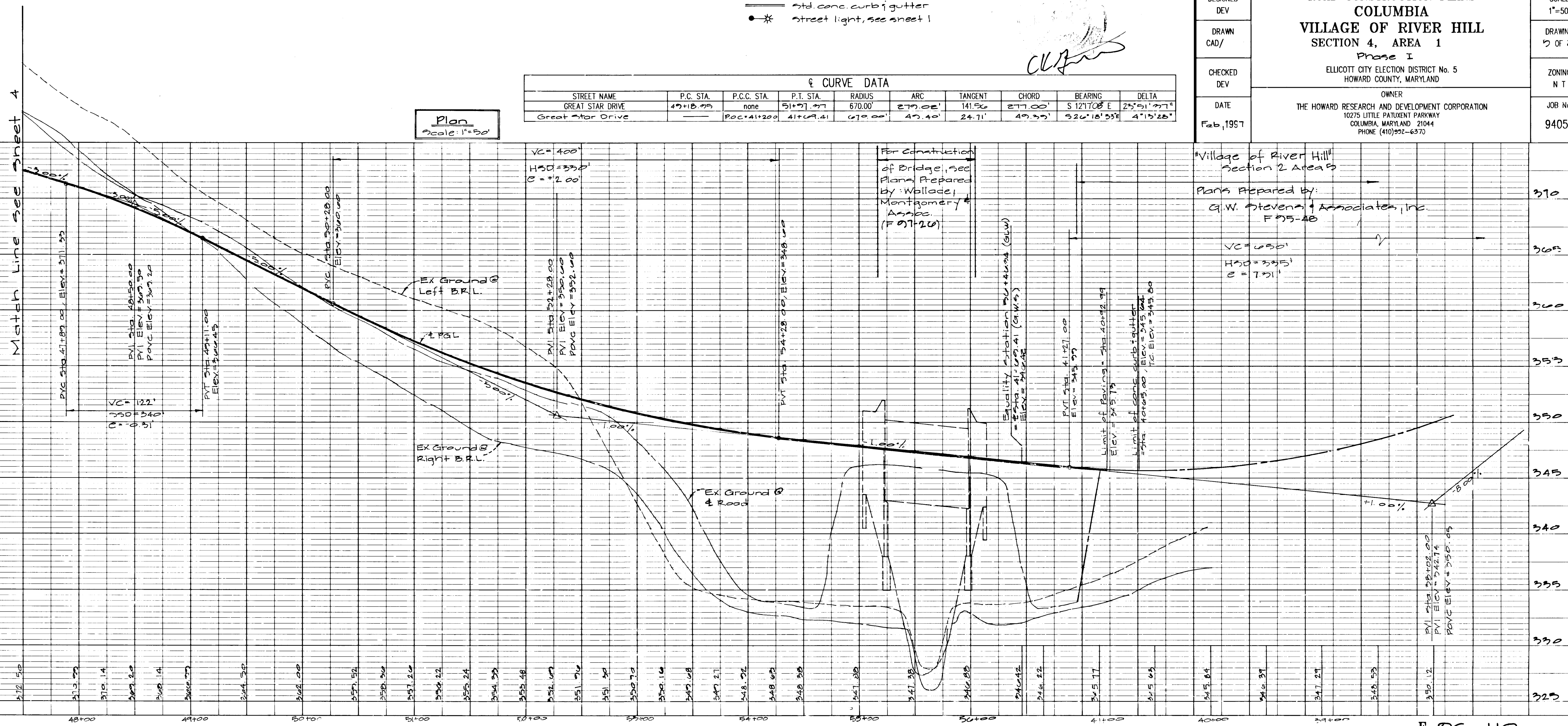
Approved: Howard County Dept. of Planning & Zoning
Richard Blood 3/3/97
 Chief, Div. of Land Development Date
William C. ... 2/20/97
 Chief, Development Engineering Div. Date

GW GUTSCHICK LITTLE & WEBER, P.A.
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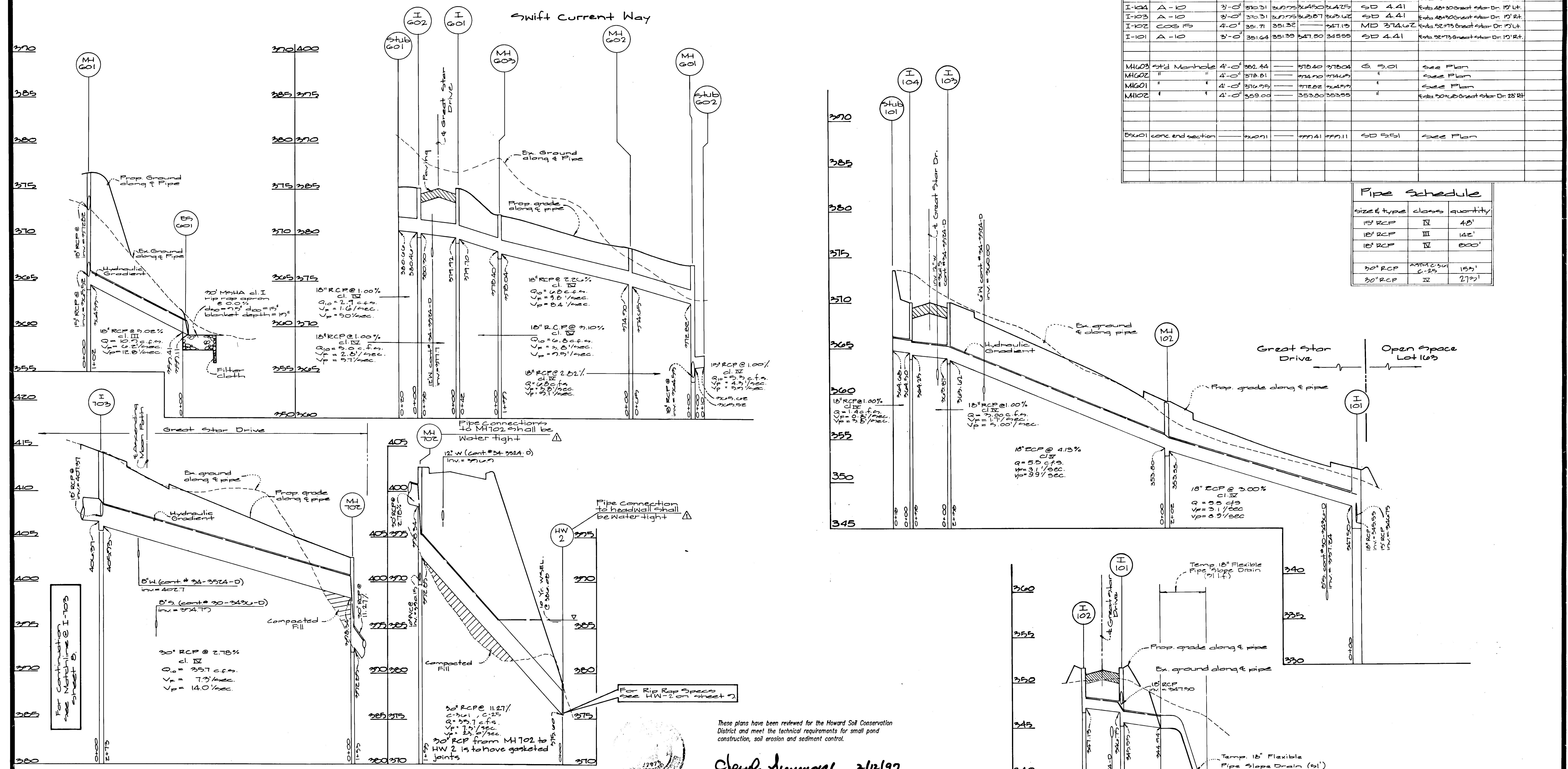
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 CHECKED DEV ZONING N T
 DATE Feb, 1997 JOB No. 94050



1987

Structure Schedule									
No	Type	Width (ft)	Top Elev.	Invert Elev.	Upper	Lower	Std. Detail	Locations	Remarks
I-100	A-10	3'-0"	305.44	305.14	300.00	300.00	SD 4.41	Ex. 45+25 Great Star Dr. 10' Rt.	
I-101	COB 15	4'-0"	305.40	305.00	300.00	300.00	MD 374.6Z	Ex. 45+25 Great Star Dr. 10' Lt.	
I-102	A-10	3'-0"	305.31	300.00	300.00	300.00	SD 4.41	Ex. 45+25 Great Star Dr. 10' Lt.	
I-103	A-10	3'-0"	305.31	300.00	300.00	300.00	SD 4.41	Ex. 45+25 Great Star Dr. 10' Rt.	
I-104	COB 15	4'-0"	305.71	305.30	300.00	300.00	MD 374.6Z	Ex. 45+25 Great Star Dr. 10' Lt.	
I-101	A-10	3'-0"	351.64	351.35	347.50	348.55	SD 4.41	Ex. 52+75 Great Star Dr. 10' Lt.	
M1003	Std Manhole	4'-0"	302.44		302.44	302.44	S. 5.01	See Plan	
M1002	"	4'-0"	308.81		308.81	308.81	"	See Plan	
M1001	"	4'-0"	306.95		306.95	306.95	"	See Plan	
M1002	"	4'-0"	359.00		359.00	359.00	"	Ex. 52+75 Great Star Dr. 10' Lt.	
B1001	conc end section		320.01		320.01	320.01	SD 5.51	See Plan	

Pipe Schedule			
size & type	class	quantity	
18" RCP	IV	48'	
18" RCP	III	142'	
18" RCP	IV	800'	
30" RCP	ASPC 501 C-25	153'	
30" RCP	IV	273'	



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.

Cloud Summers 2/12/97
Natural Resources Conservation Service Date

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

Ronald W. Ziehn 2/11/97
Howard Soil Conservation District Date

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

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 Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

Gregory R. Allen 1/11/96
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/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

Cloud Summers 1/11/96
Signature of Engineer Date

Approved: Howard County Dept. of Public Works
Andrew M. Danek 2-25-97
Chief, Bureau of Highways Date

Approved: Howard County Dept. of Planning & Zoning
Richard Blood 3/3/97
Chief, Office of Planning & Zoning Date
Michael Summers 2/20/97
Chief, Development Engineering Div. Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20866
TELEPHONE: (301)421-4024 NO. VA. (301)989-2524 BALTO. (301)880-1820 FAX (301)421-4186

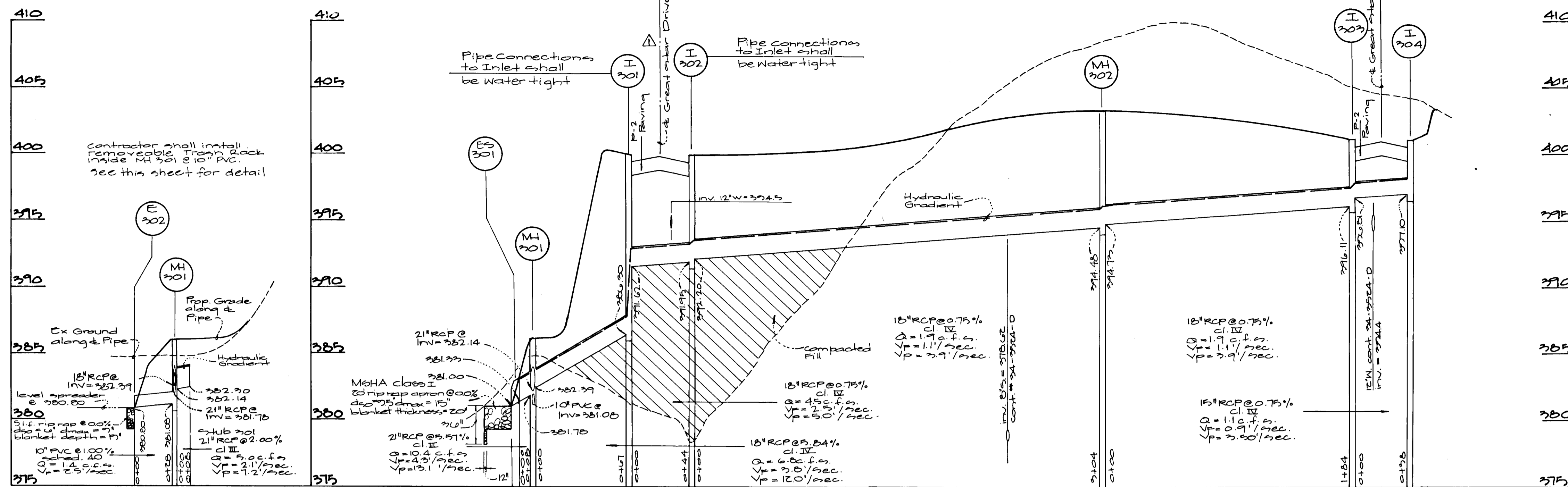
DATE	REVISION	BY	APP'R.
6/15/97	Add note to MH102 & HW2 that pipe connect. shall be water tight		

PREPARED FOR:
The Howard Research & Development Corporation
The Rouse Building
10275 Little Patuxent Parkway
Columbia, Maryland 21044
(410) 372-6370

Storm Drain Profiles
Village of River Hill
section 4 Area 1
Phase I
5th Election District
Howard County, Maryland

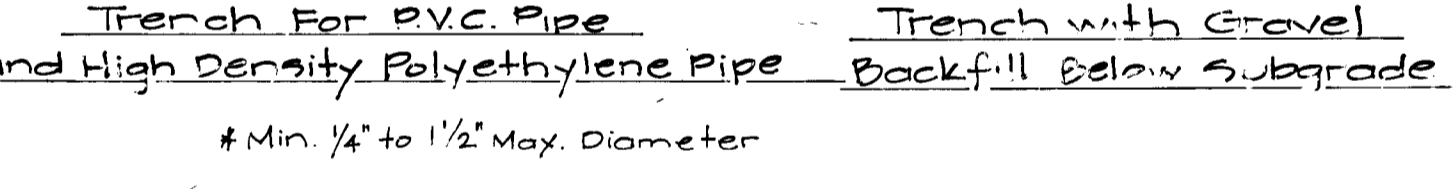
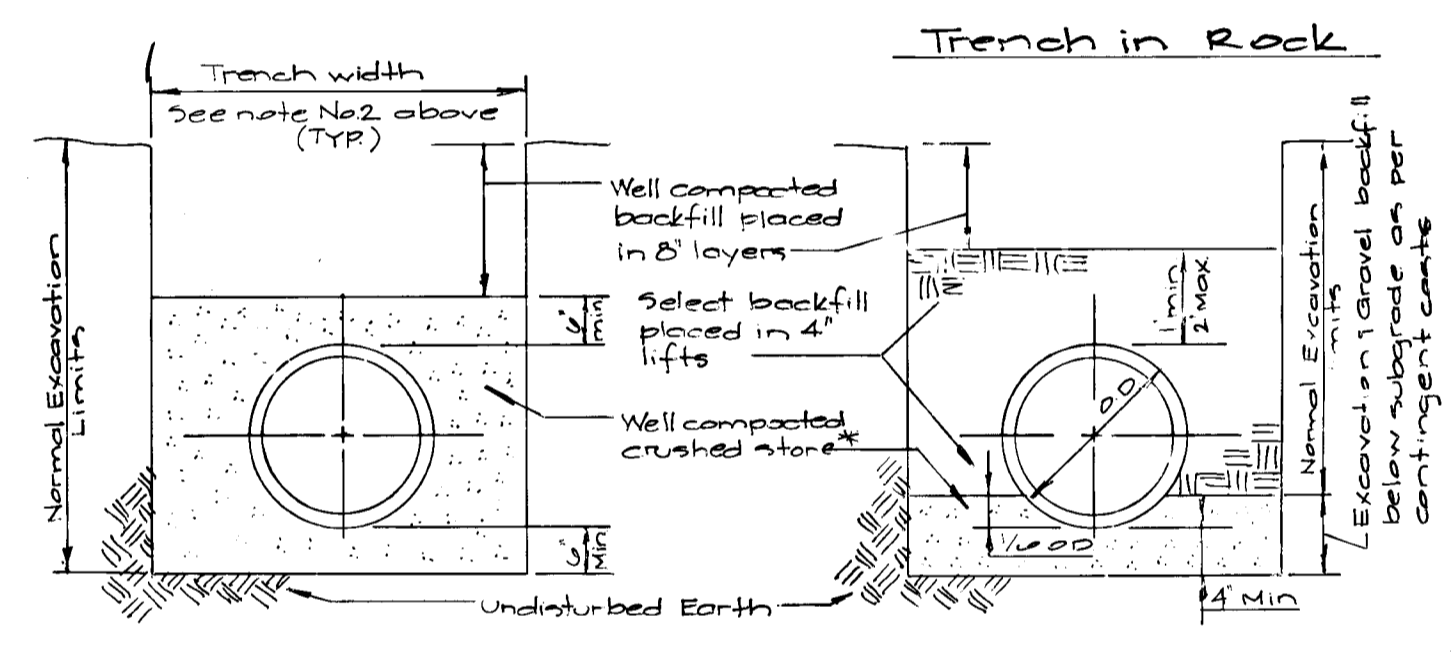
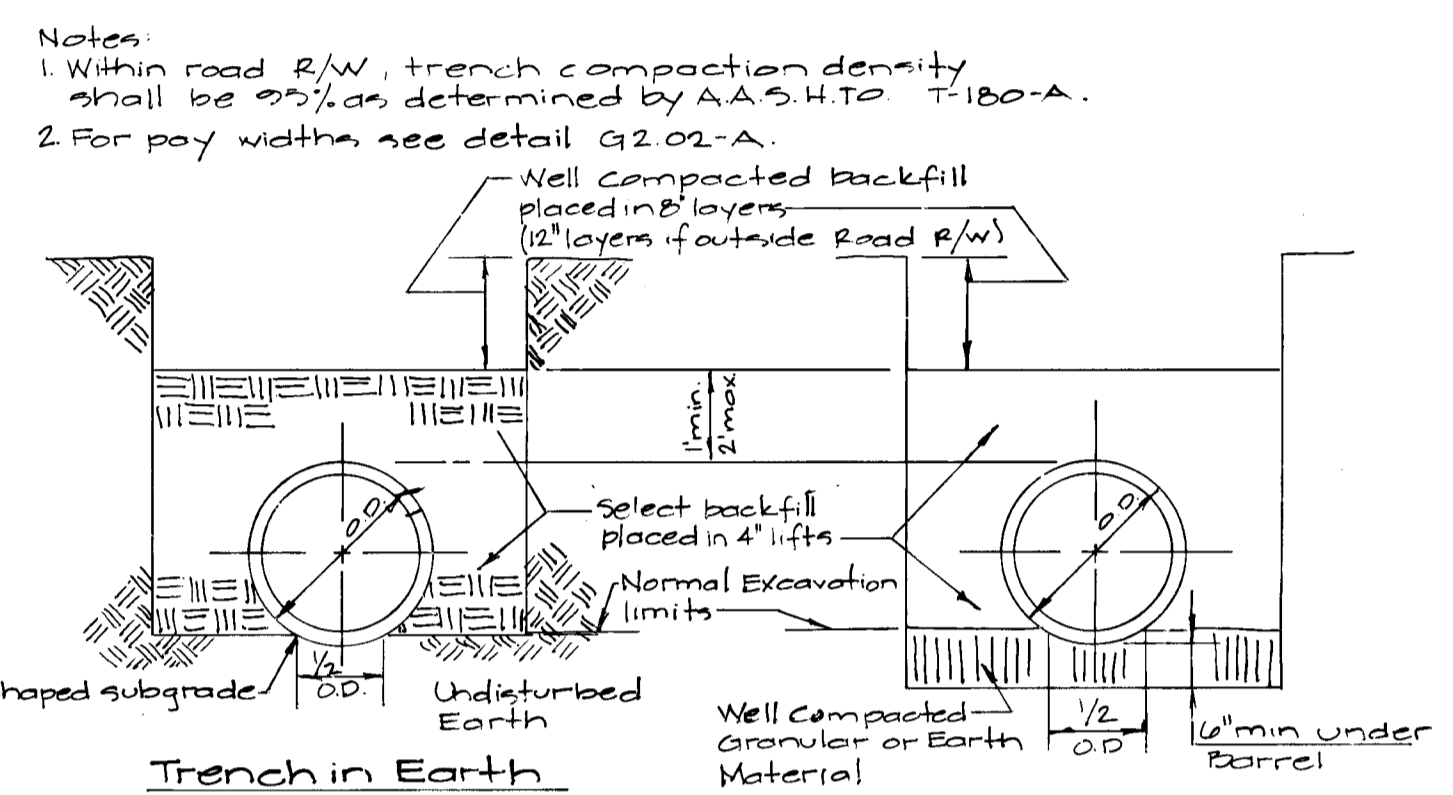
DES.: DEV	SCALE: As Shown	ZONING: NT	G.L.W. FILE NO.: 24-050
DRN.: KLP/ST <td>DATE: February 1997 <td>TAX MAP NO.: 34 & 35 <td>SHEET: 6 of 23 </td></td></td>	DATE: February 1997 <td>TAX MAP NO.: 34 & 35 <td>SHEET: 6 of 23 </td></td>	TAX MAP NO.: 34 & 35 <td>SHEET: 6 of 23 </td>	SHEET: 6 of 23
CHK.: DEV <td></td> <td></td> <td></td>			

1987

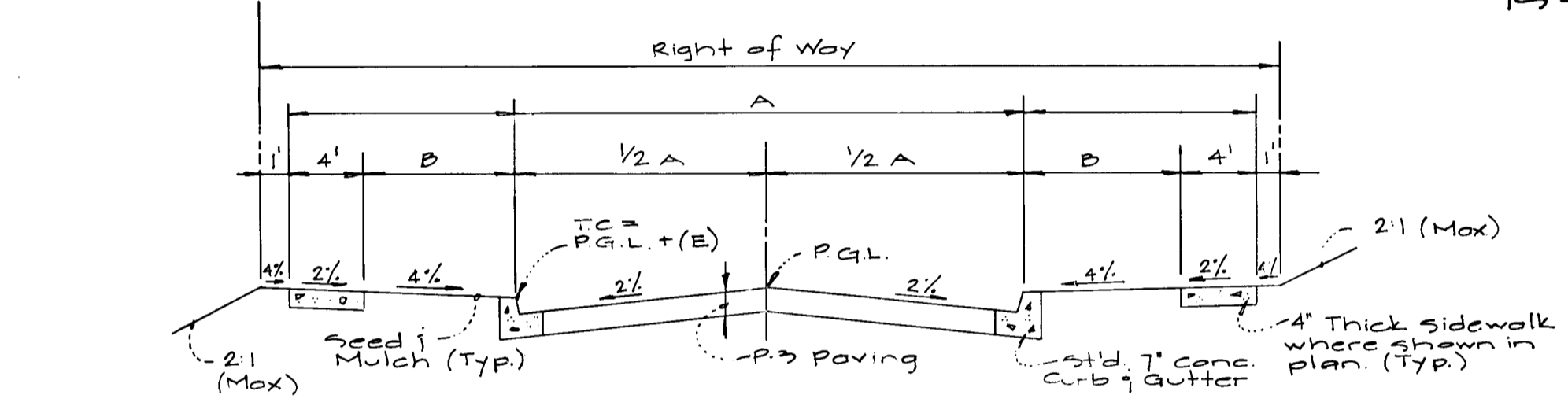


No.	Type	Width (inside)	Top Elev. Upper	Top Elev. Lower	Invert Elev. Upper	Invert Elev. Lower	Std. Detail	Locations	Remarks
I-304	A-10	3'-0"	401.22	400.00	397.10		SD 4.41	Exts. 31+95.70 Great Star Dr. 19' Lt.	
I-303	CAS 15	4'-0"	401.33	400.99	396.01	396.11	MD 374.02	Exts. 31+95.70 Great Star Dr. 19' Lt.	
I-302	A-5	3'-0"	399.41	399.41	392.20	391.99	SD 4.40	Exts. 32+01.50 Great Star Dr. 22' Lt.	
I-301	A-5	3'-0"	399.41	399.41	391.62	391.90	SD 4.40	Exts. 32+01.50 Great Star Dr. 22' Lt.	
MH 302	Std. Manhole	4'-0"	403.10		392.73	394.40	S 501	Exts. 32+02 Great Star Dr. 24' Lt.	
MH 301		4'-0"	386.00		382.97	381.08	S 501	See Plan	
E-301	conc. end section		383.98		381.33	381.00	SD 551	See Plan	
E-302						381.00			

size & type	class	quantity
15" RCP	IV	30'
18" RCP	III	57'
21" RCP	III	16'
10" PVC	Sched. 40	20'

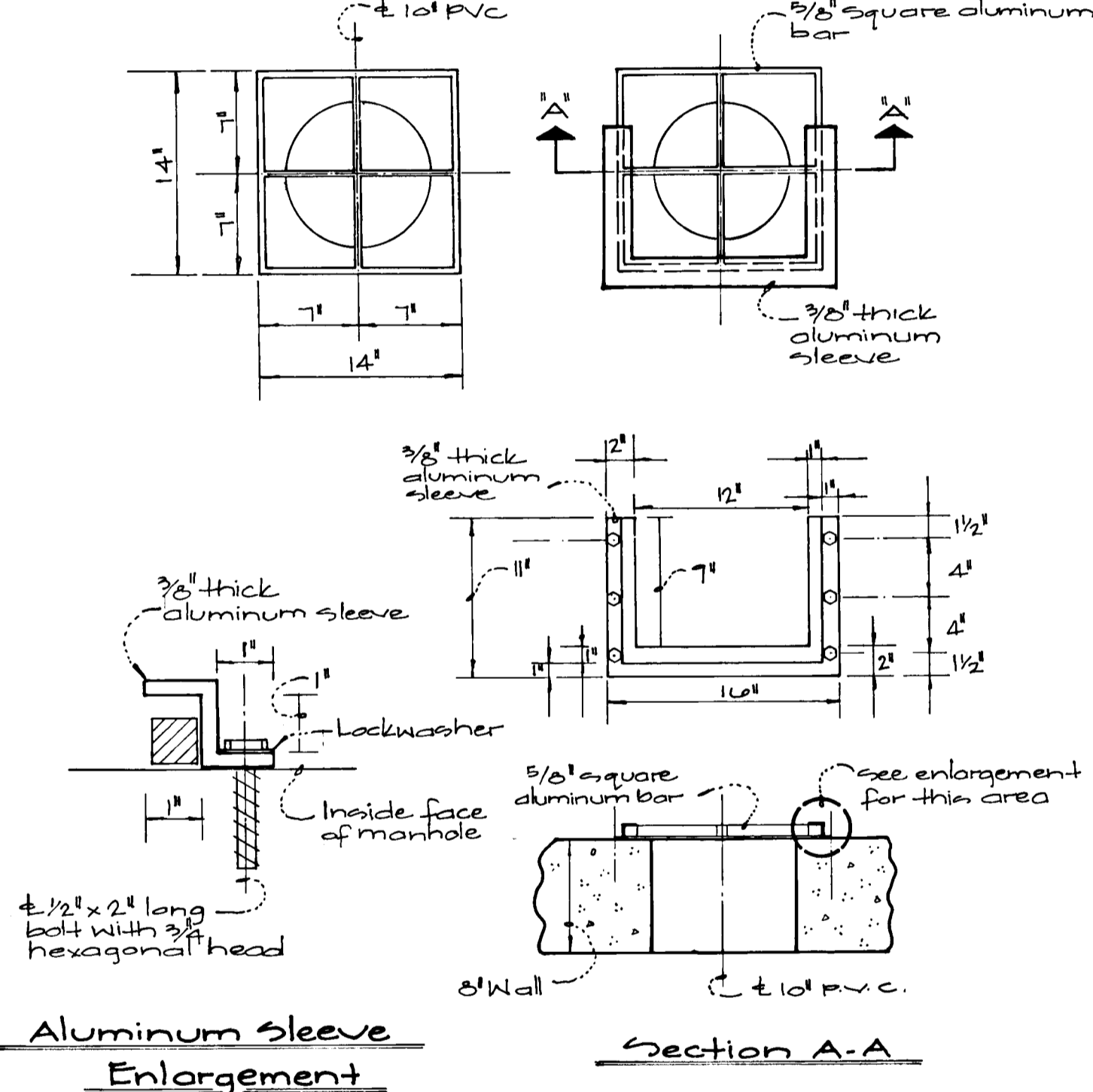


Note:
Do not use gravel or crushed stone for bedding or backfill for pipes in SWM embankment, including Great Star Drive (32+50 to 32+55). Compact earth backfill for all pipes in accordance w/ Howard County Std. Specs.



Street Name Station	Type of Traffic	Zoning	Design Speed	Paving Section	A	B	C	D	F	G	H	Cross slope R/W	E
Great Star Dr. 31+95.70 - 32+14.48	Major Collector	NT	40	P-3	44'	13'	-	-	-	-	-	2%	10' 10' 10' 10'
Great Star Dr. 32+14.48 - 32+21.42	Major Collector	NT	40	P-3	40'	10'	-	-	-	-	-	2%	10' 10' 10' 10'
Great Star Dr. 32+21.42 - 32+22.84	Major Collector	NT	40	P-3	38'	10'	-	-	-	-	-	2%	10' 10' 10' 10'
Great Star Dr. 32+22.84 - 32+30.81	Major Collector	NT	40	P-3	38'	10'	-	-	-	-	-	2%	10' 10' 10' 10'
Great Star Dr. 42+02.00 - 42+02.00	Major Collector	NT	40	P-3	38'	10'	-	-	-	-	-	2%	10' 10' 10' 10'
Great Star Dr. 42+02.00 - 42+34.80	Major Collector	NT	40	P-3	38'	10'	-	-	-	-	-	2%	10' 10' 10' 10'

* See Great Star Bridge Plan (P-77-26) for typical cross section data within these limits.
① The paving section along Great Star Dr. decreases from 44' at 32+14.48 to 38' at 32+21.42.



Detail for Trash Rack @ 10" P.V.C
Draining to Bio-Retention Facilities
Not to Scale

DEVELOPER'S/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 Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

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/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Approved: Howard County Dept. of Public Works
Andrew M. Conner 2-25-97
Chief, Bureau of Highways

Approved: Howard County Dept. of Planning & Zoning
Richard Blount 3/3/97
Chief, Planning and Development

Gregory R. Miller 1/11/96
Signature of Developer/Builder

CK [Signature] 1-11-96
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.

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

Charles Simons 2/10/97
Natural Resources Conservation Service

Rolando Zichner 2/10/97
Howard Soil Conservation District

GIW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20866
TELEPHONE: (301)421-4024 FAX: (301)989-2524 BALTO. (301)880-1820 FAX: (301)421-4186

DATE	REVISION	BY	APP'R.
4/10/97	Added to existing gasketed water-tight pipe connect		

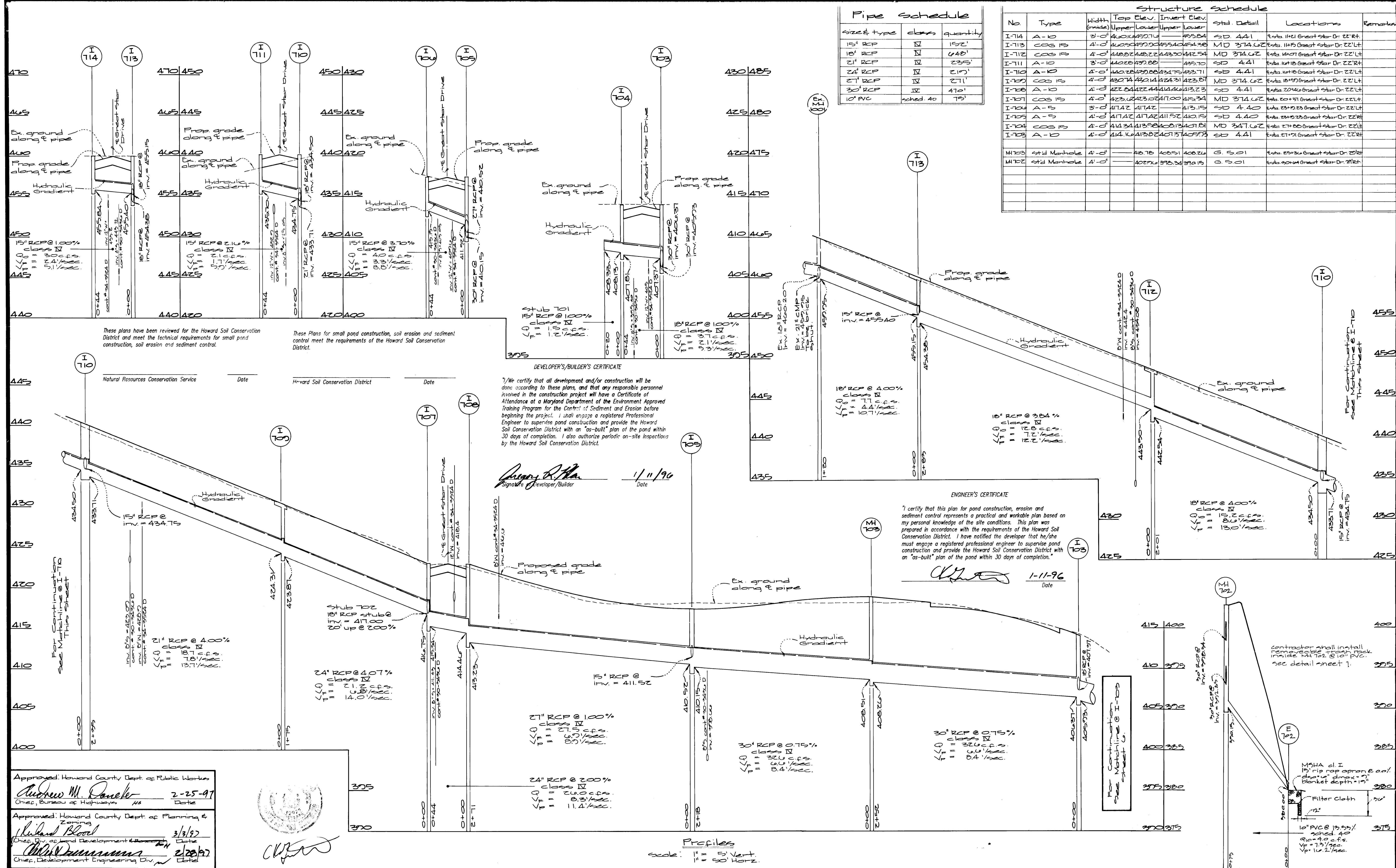
PREPARED FOR:
The Howard Research & Development Corporation
The Round Building
10275 Little Patuxent Parkway
Columbia, Maryland 21044
(410) 997-6370

DESIGNED BY: DEV
SCALE: As shown
ZONING: NT
G.L.W. FILE NO.: 24-050
DRAWN BY: DRN./ST
DATE: February 1997
TAX MAP NO.: 34 & 35
SHEET: 7 of 23
CHECKED BY: CHK./DEV

STORM DRAIN PROFILES
Village of River Hill
Section 4 Area 1
Phase I
5th Election District
Howard County, Maryland

7861

1487



Pipe Schedule

Size & Type	Class	Quantity
15' RCP	II	152'
10' RCP	II	640'
24' RCP	II	235'
24' RCP	IV	210'
27' RCP	IV	271'
30' RCP	IV	470'
10' PVC	Sched 40	75'

Structure Schedule

No	Type	Width (made)	Top Elev. Upper	Invert Elev. Lower	Std. Detail	Locations	Remarks
I-704	A-10	3'-0"	440.445	455.84	SD 4.41	Ex. 1145 Great Star Dr. 22' Lt.	
I-713	COB 15	4'-0"	425.445	445.445	MD 374 CoZ	Ex. 1145 Great Star Dr. 22' Lt.	
I-712	COB 15	4'-0"	448.242	442.34	MD 374 CoZ	Ex. 1147 Great Star Dr. 22' Lt.	
I-711	A-10	3'-0"	440.243	435.70	SD 4.41	Ex. 1147 Great Star Dr. 22' Lt.	
I-710	A-10	4'-0"	440.243	433.70	SD 4.41	Ex. 1147 Great Star Dr. 22' Lt.	
I-709	COB 15	4'-0"	430.14	424.31	MD 374 CoZ	Ex. 1147 Great Star Dr. 22' Lt.	
I-708	A-10	4'-0"	422.842	413.23	SD 4.41	Ex. 2046 Great Star Dr. 22' Lt.	
I-707	COB 15	4'-0"	423.042	413.24	MD 374 CoZ	Ex. 2046 Great Star Dr. 22' Lt.	
I-706	A-5	3'-0"	417.42	413.15	SD 4.40	Ex. 2046 Great Star Dr. 22' Lt.	
I-705	A-5	4'-0"	417.42	410.52	SD 4.40	Ex. 2046 Great Star Dr. 22' Lt.	
I-704	COB 15	4'-0"	414.34	401.34	MD 374 CoZ	Ex. 2046 Great Star Dr. 22' Lt.	
I-703	A-10	4'-0"	414.10	401.34	SD 4.41	Ex. 2046 Great Star Dr. 22' Lt.	
MH 703	std Manhole	4'-0"	416.78	408.26	S 5.01	Ex. 2046 Great Star Dr. 22' Lt.	
MH 702	std Manhole	4'-0"	402.20	392.15	S 5.01	Ex. 2046 Great Star Dr. 22' Lt.	

DEVELOPER'S/BUILDER'S CERTIFICATE

I, *[Signature]*, 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 Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

Date: 1/11/96

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Date: 1-11-96

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

Natural Resources Conservation Service Date: _____

Howard Soil Conservation District Date: _____

Approved: Howard County Dept. of Public Works
Andrew M. Daneker 2-25-97
 Chief, Bureau of Highways

Approved: Howard County Dept. of Planning & Zoning
Richard Blood 3/3/97
 Chief, Div. of Land Development & Planning

[Signature] 2/28/97
 Chief, Development Engineering Div.

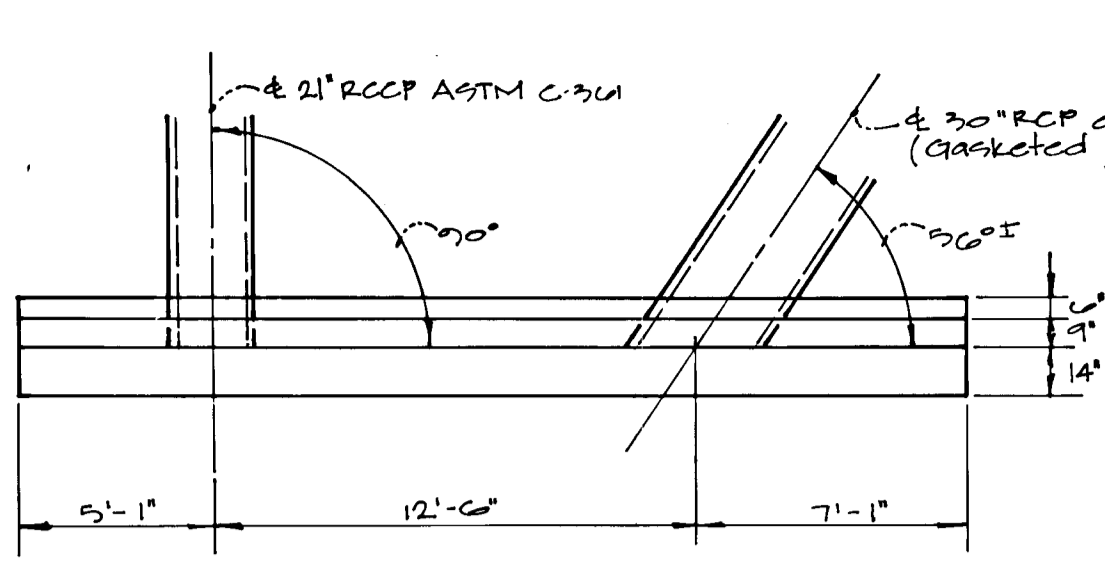
GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20866

DATE: _____ REVISION: _____ BY: _____ APPR.: _____

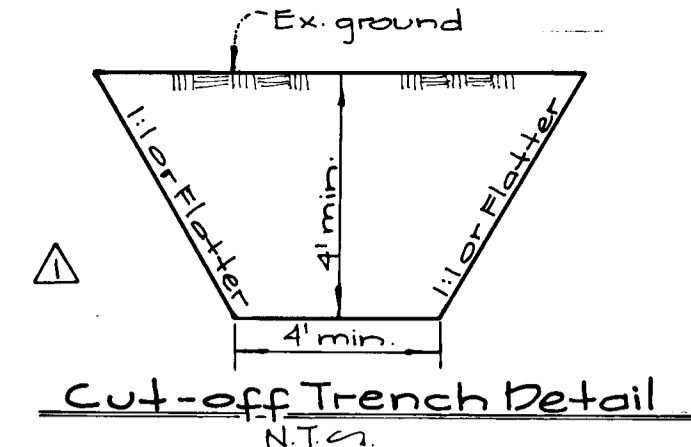
PREPARED FOR: The Howard Research & Development Corporation, The Rose Building, 1015 Little Patuxent Parkway, Columbia, Maryland 21044 (410) 972-0370

Storm Drain Profiles
 Village of River Hill
 section 4 Area 1 & 2
 Phase I
 5th Election District
 Howard County, Maryland

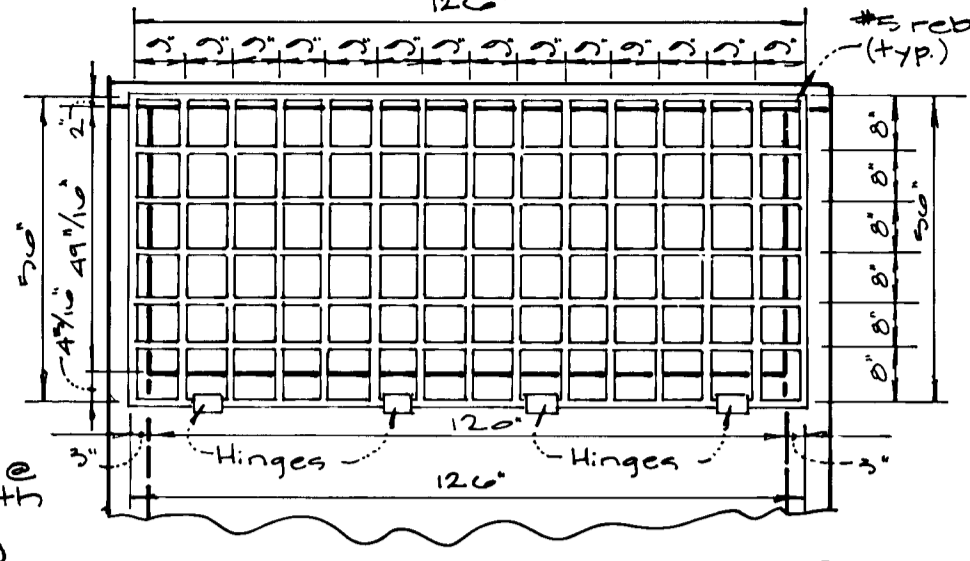
DES: DEV SCALE: As Shown ZONING: NT G.L.W. FILE NO.: 04-050
 DRN: KLP DATE: February 1997 TAX MAP No.: 34 & 35 SHEET: 8 of 23
 CHK: DEV



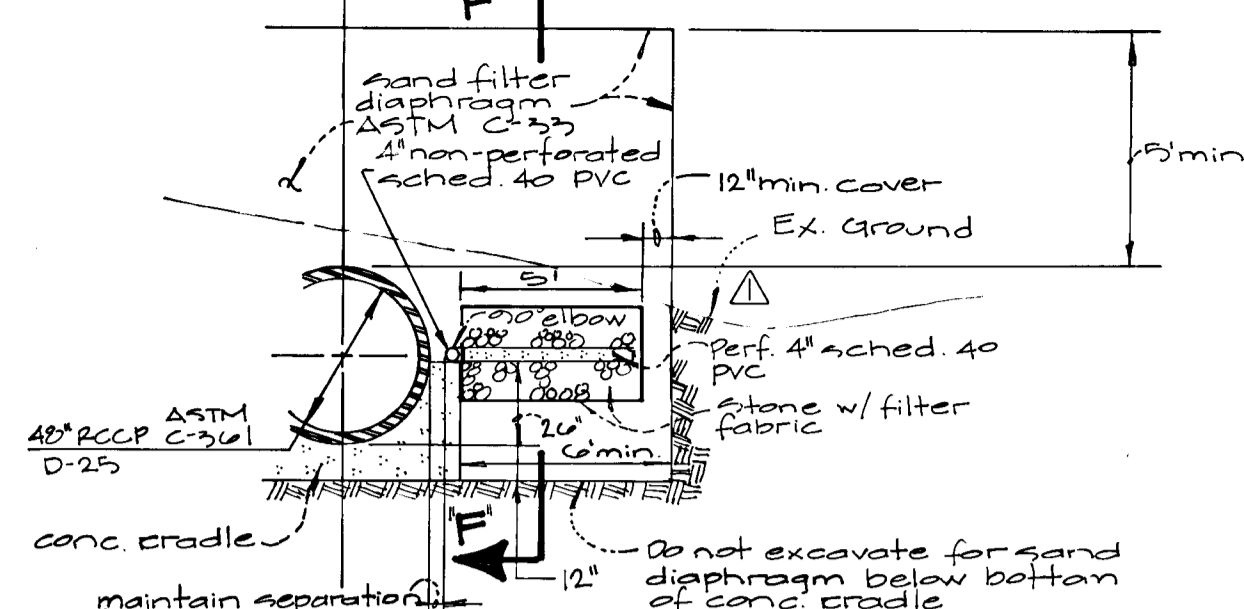
Detail for HW-2
No scale



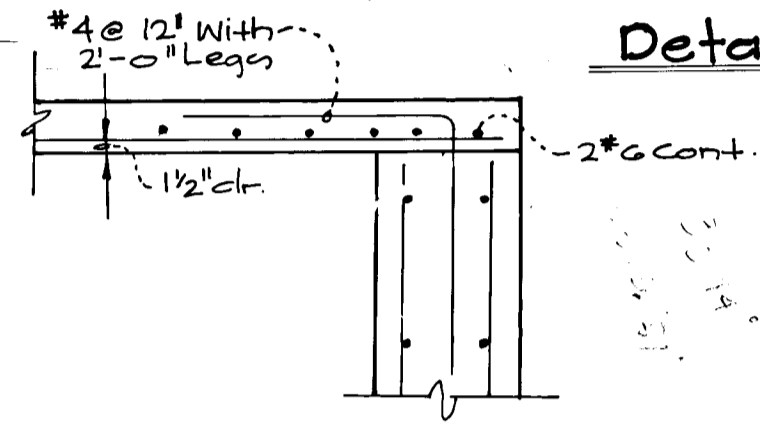
8" Top Slab



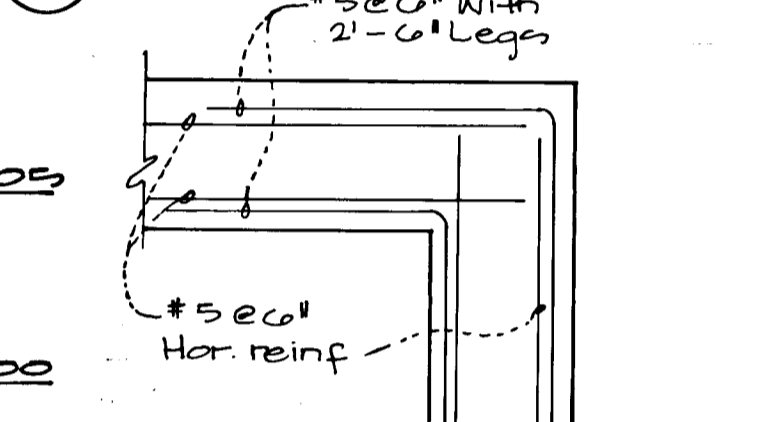
100 Year Orifice Trash Rack Details
(North & South side of Riser)
N.T.S.



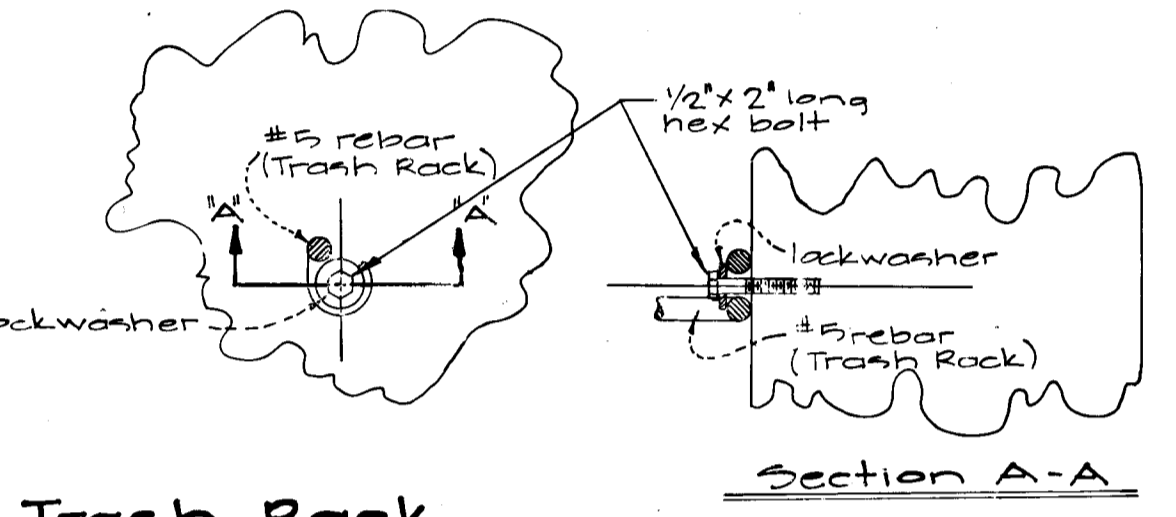
Typical Half-section of Sand Diaphragm
N.T.S.



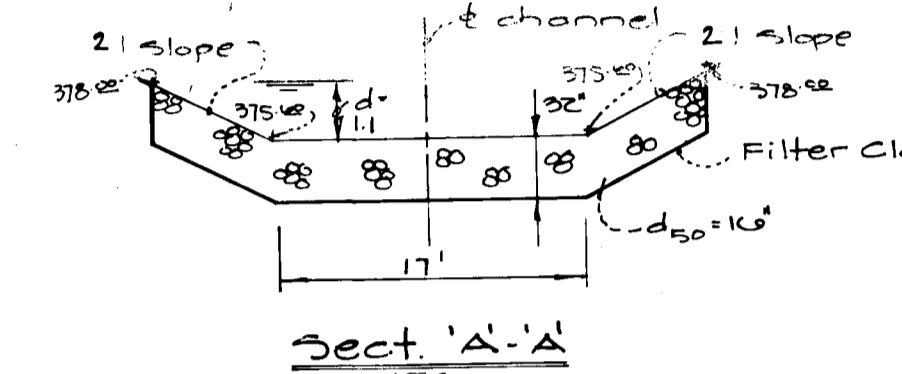
Top of Wall



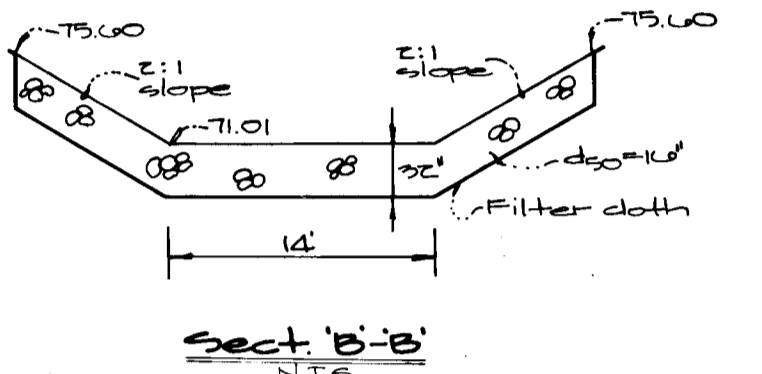
Corner Detail



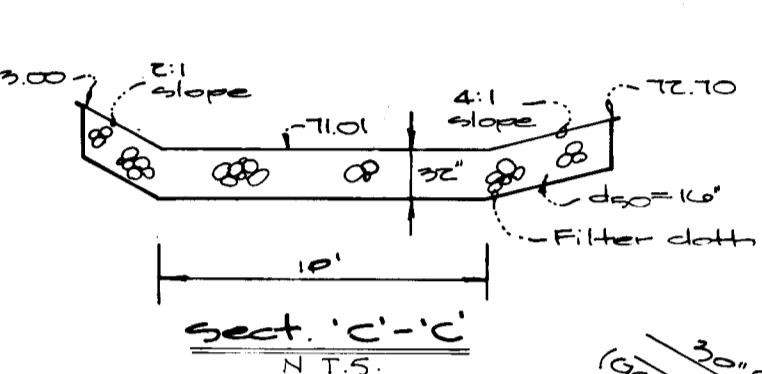
Trash Rack Securing Detail



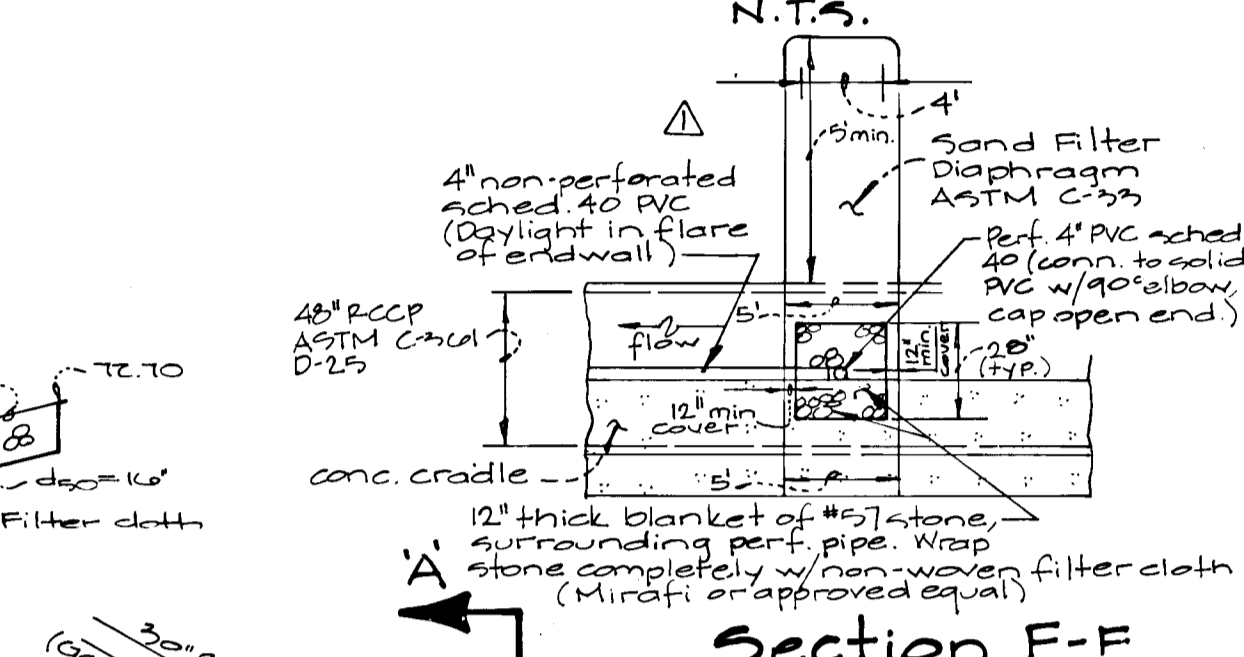
Section A-A
N.T.S.



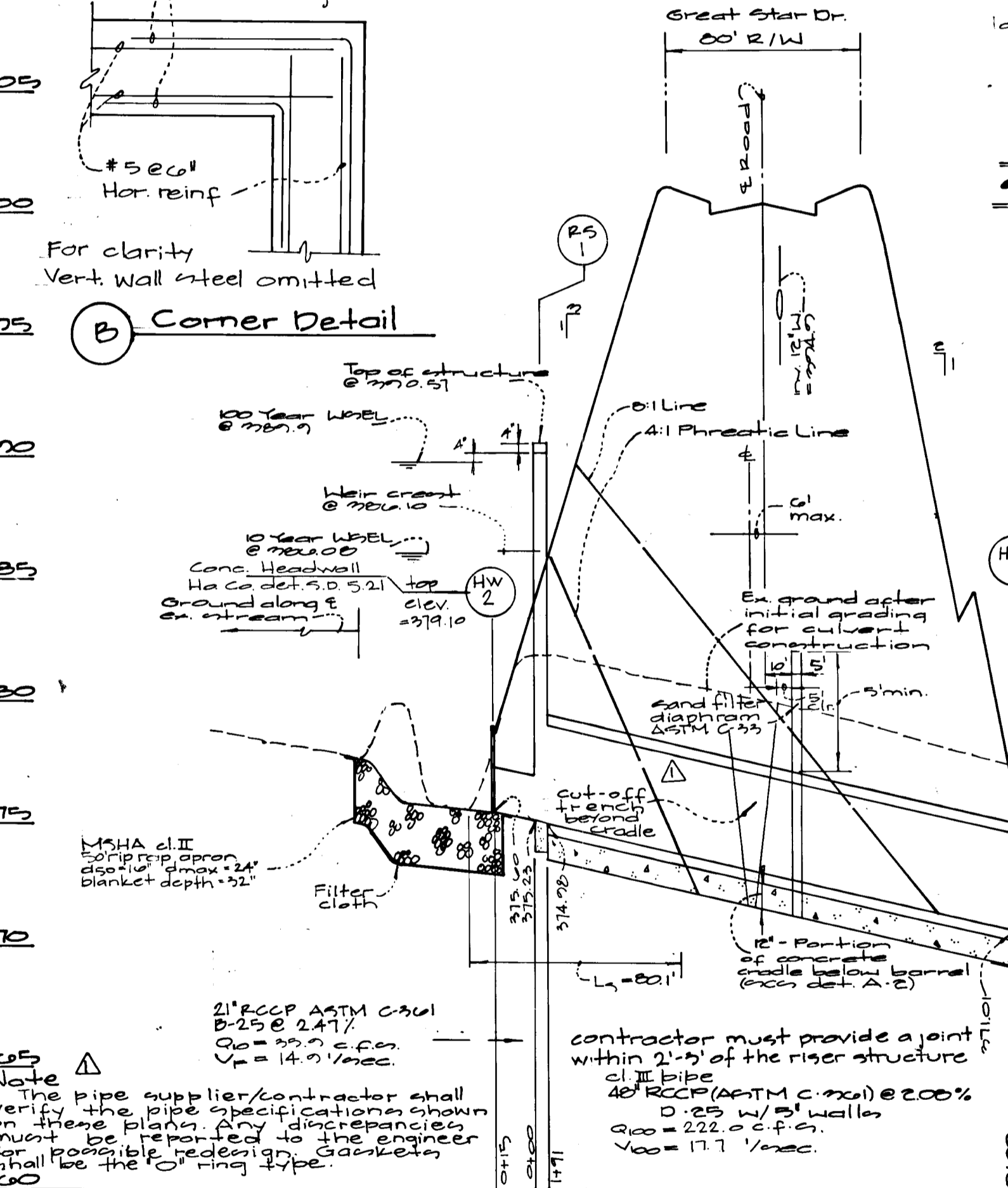
Section B-B
N.T.S.



Section C-C
N.T.S.



Section F-F
N.T.S.



Principal Spillway Profile
scale: 1/4" = 5'0" horz.
1/8" = 5'0" vert.

Approved: Howard County Dept. of Public Works
Richard M. Duncanson 2-25-97
Chief, Bureau of Highways NS Date

Approved: Howard County Dept. of Planning & Zoning
Richard Blawie 3/3/97
Chief, Div. of Land Development CAH 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/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

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Jerry R. R... 1-11-96
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.

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

GIW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD 20886
TELEPHONE (301)421-4024 NO. VA. (301)989-2524 BALTO. (301)980-1820 FAX (301)421-4186

DATE	REVISION	BY	APP'R.
10/19/97	Show steel reinforcement for Riser structure #1		
	Rev. Typ half-section of sand diaphragm sheet F-F		
	Rev. Section of trash rack detail		

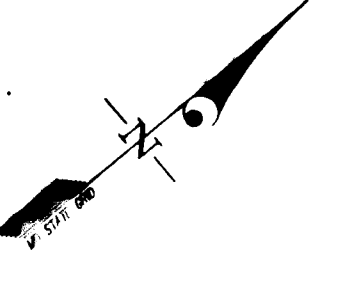
PREPARED FOR:
The Howard Research and Development Corporation
10275 Little Patuxent Parkway
Columbia, Maryland 21044
(410) 772-6370

Riser Structure Detail @ Great Star Drive Culvert
Village of River Hill
Section 4 Area 1
Phase I
5th Election District
Howard County, Maryland

DES.:	SCALE	ZONING	G.L.W. FILE NO.
DEV	As Shown	NT	2A-050
DRN.:	DATE	TAX MAP NO.	SHEET
KLP	February, 1997	34 & 35	2 of 23
CHK.:	DATE	TAX MAP NO.	SHEET
DEV	February, 1997	34 & 35	2 of 23



Inlet Area	Drain Area (Ac)	Imperv. Area	% Imperv.	Grass Area	% Grass	'C'
708	V	0.55	0.24	44%	0.31	0.51
709	W	0.78	0.47	50%	0.47	0.53
710	Z	0.56	0.28	50%	0.28	0.53
711	AA	0.72	0.27	38%	0.45	0.44
712	BB	0.87	0.45	50%	0.44	0.53
713	CC	1.00	0.50	50%	0.50	0.53
714	DD	0.84	0.42	50%	0.42	0.53



Match Line See Sheet 11

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard M. Daniels 2-25-97
 Chief, Bureau of Highways 18 Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Richard Blazel 3/3/97
 Chief, Div. of Land Development Research 04 Date

Michael Cummings 2/20/97
 Chief, Development Engineering Division 04 Date

1487

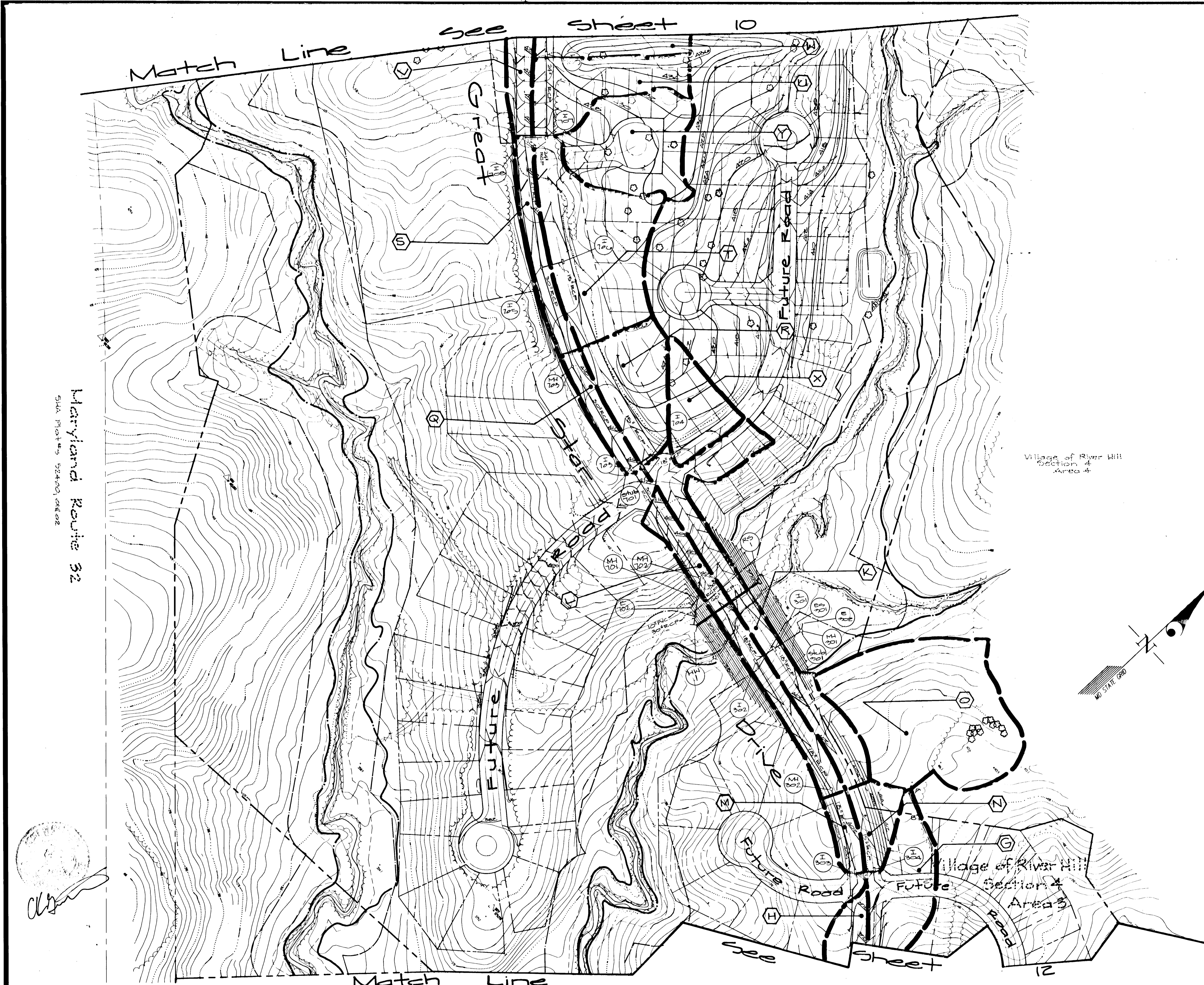
GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
 TEL: (301) 421-4024 NO. VA: (301) 989-2524 BAL: (410) 880-1820 FAX: (301) 421-4186 DES. DRN. CHK.

DATE	REVISION	BY	APPR.

PREPARED FOR:
 The Howard Research and Development Corporation
 The Rouse Building
 10275 Little Patuxent Parkway
 Columbia, Maryland 21044
 (410) 992-6370

Drainage Area Map
 Village of River Hill
 Section 4 Area 1 and 2
 5th Election District
 Howard County, Maryland

SCALE	ZONING	G. L. W. FILE NO.
1" = 100'	NT	04-050
DATE	TAX MAP No.	SHEET
February, 1997	3A E 35	10 of 23

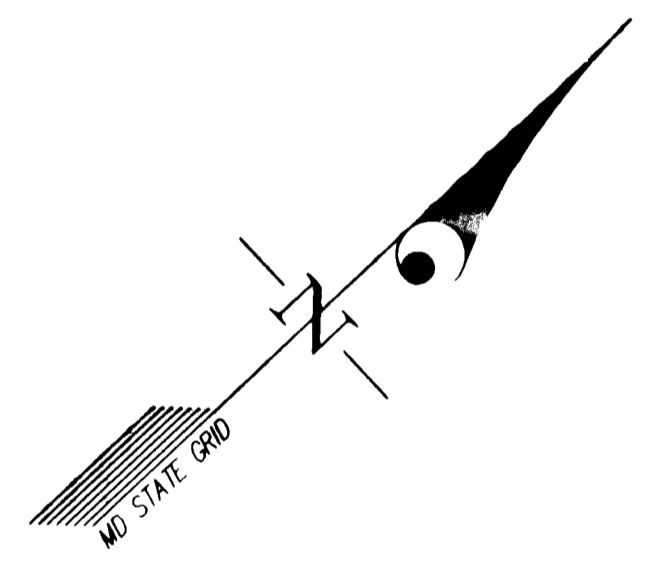


Inlet	Area	Drain Area (Ac)	Imperv. Area	% Imperv.	Storm Area	% Storm	'C'
301	K	0.24	0.24	40%	0.20	60%	0.47
302	L	0.24	0.46	47%	0.45	51%	0.55
303	M	0.26	0.12	46%	0.14	54%	0.50
304	N	0.41	0.12	29%	0.29	71%	0.42
Stub 301	O	2.28	—	—	—	—	0.31
301	G	1.55	—	—	—	—	0.31
302	H	0.27	—	—	—	—	0.23
303	O	0.27	0.17	63%	0.10	37%	0.65
304	R	0.29	—	—	—	—	0.38
305	S	0.45	0.20	62%	0.17	38%	0.42
306	T	1.68	—	—	—	—	0.36
307	U	0.23	—	—	—	—	0.33
308	V	0.55	0.24	44%	0.31	56%	0.51
309	W	0.28	0.47	50%	0.47	50%	0.53
Stub 301	X	0.60	—	—	—	—	0.37
Stub 302	Y	1.71	—	—	—	—	0.36

① Drainage area contains 1/3 Ac. lots.
 ② Drainage area contains 1/6 Ac. lots.

Maryland Route 32
 State Route No. 2000000000

Village of River Hill
 Section 4
 Areas 1 & 2



Approved: Howard County Dept of Public Works
Richard M. Kuehl 2-25-97
 Chief, Bureau of Highways Date

Approved: Howard County Dept of Planning & Zoning
Richard Blood 3/3/97
 Chief, Div. of Land Development Date

Chris Vaccaro 2/28/97
 Chief, Development Engineering Div. Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
 TEL: (301) 421-4024 NO. VA.: (301) 989-2524 BALT.: (410) 880-1820 FAX: (301) 421-4186 DES. DRN. CHK. DATE BY APPR.

PREPARED FOR:
 The Howard Research and Development Corporation
 The Rouse Building
 10210 Little Patuxent Parkway
 Columbia, Maryland 21044
 (410) 792-0570

Drainage Area Map
Village of River Hill
 Section 4 Areas 1 and 2
 5th Election District Howard County, Maryland

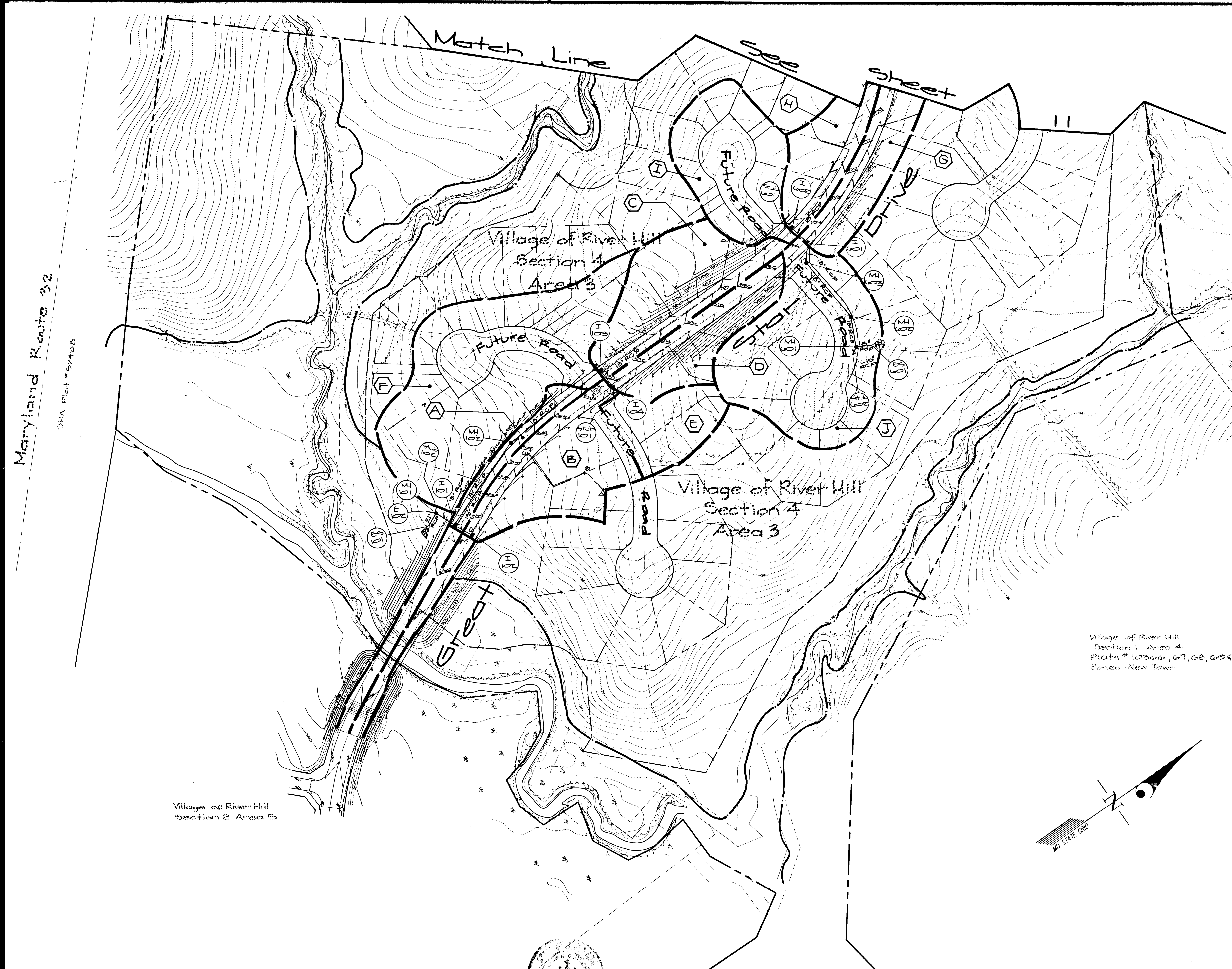
SCALE: 1" = 100'
 ZONING: NT
 G. L. W. FILE No.: 24-050
 DATE: February, 1997
 TAX MAP No.: 34 & 35
 SHEET: 11 of 23

1487

Inlet	Area	Drain Area (Ac)	Imperv Area	% Imperv	Storm Area	% Storm	'C'
101	A	0.33	—	70%	—	30%	0.66
102	B	1.43	—	—	—	—	0.30
103	C	1.32	—	—	—	—	0.30
104	D	0.88	—	—	—	—	0.30
Stub 101	E	0.70	—	—	—	—	0.30
Stub 102	F	1.70	—	—	—	—	0.30
601	G	1.55	—	—	—	—	0.31
602	H	0.99	—	—	—	—	0.32
Stub 601	I	1.32	—	—	—	—	0.34
Stub 602	J	2.35	—	—	—	—	0.30

① Drainage area contains 1/3 Ac. lots.

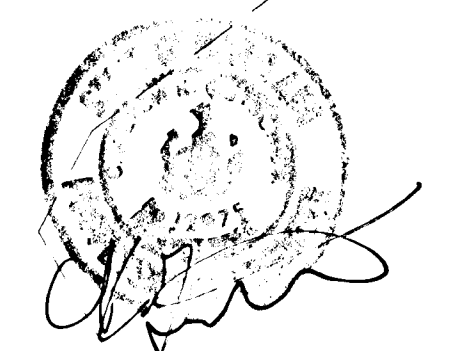
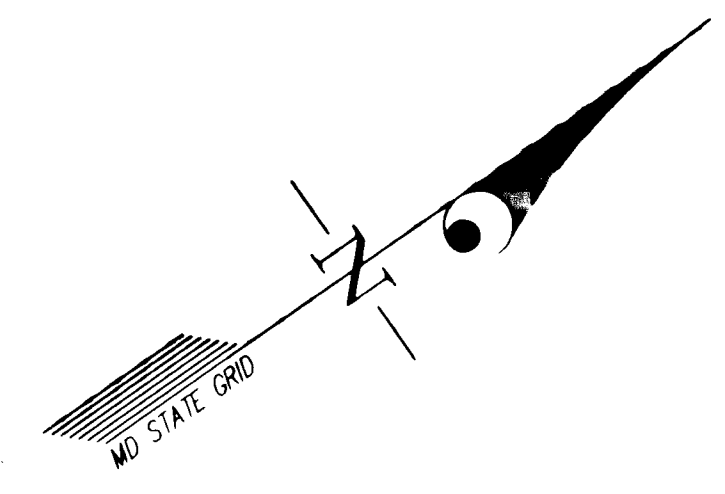
Maryland Route 32
SHA Plat # 52408



Lot 51
Forest Hills
Plat # 3570
William E. Stikler
L. 1915 P. 229
Zoned: R-20

Village of River Hill
Section 4 Area 4
Plats # 10200, 67, 68, 69 & 70
Zoned: New Town

Village of River Hill
Section 2 Area 3



Approved: Howard County Dept. of Public Works
William E. Stikler 2-25-97
Chief, Bureau of Highways Date

Approved: Howard County Dept. of Planning & Zoning
Richard Blood 3/3/97
Chief, Div. of Land Development & Research Date

William E. Stikler 2/20/97
Chief, Development Engineering Div. Date

1887

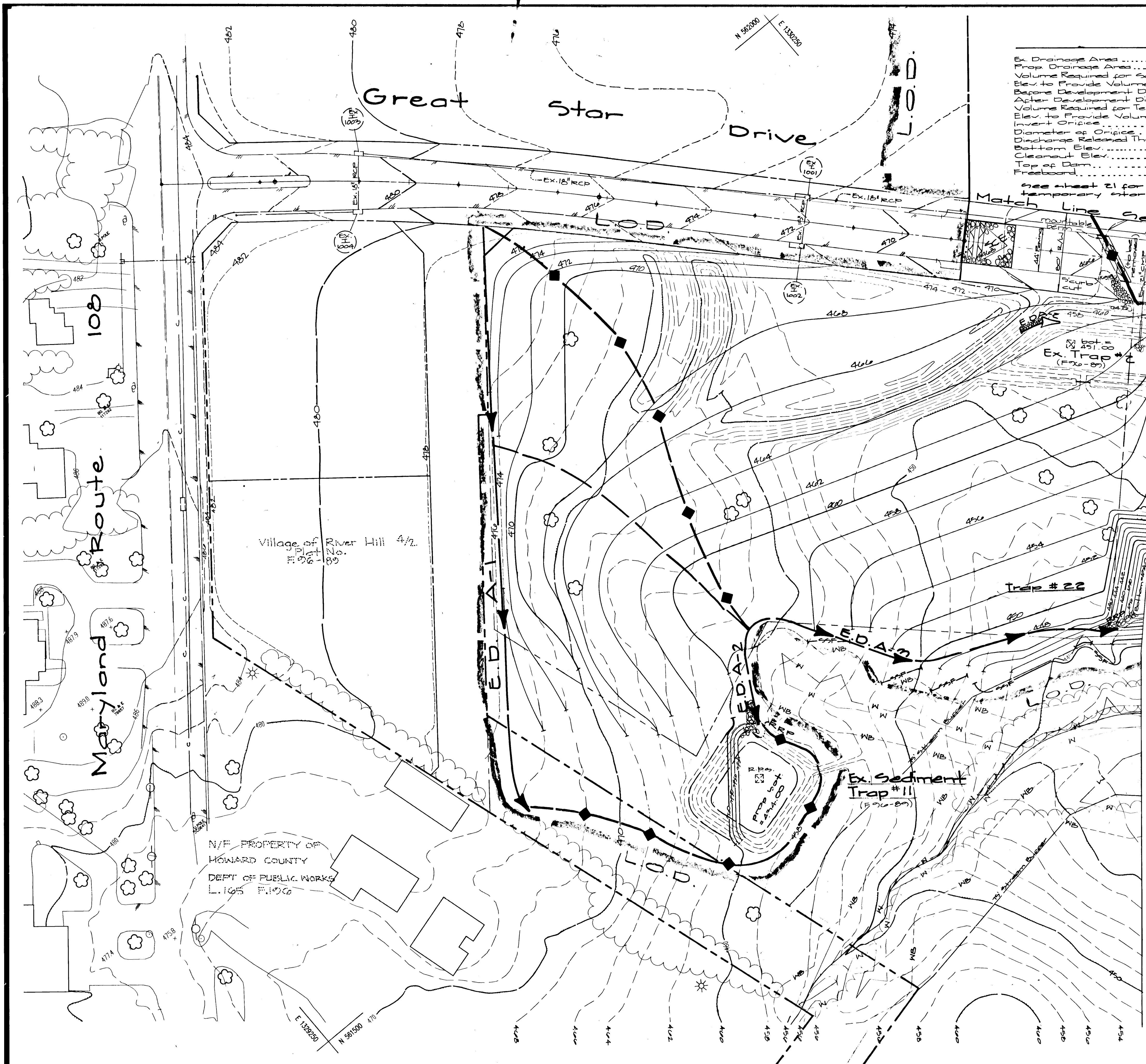
GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4024 NO. VA: (301) 989-2524 BAL: (410) 880-1820 FAX: (301) 421-4186

DATE	REVISION	BY	APP'R.

PREPARED FOR:
The Howard Research and
Development Corporation
The Raige Building
10270 Little Patuxent Parkway
Columbia, Maryland 21044
(410) 542-0910

Drainage Area Map
Village of River Hill
Section 4 Area 1
Phase I
5th Election District
Howard County, Maryland

SCALE	ZONING	G. L. W. FILE NO.
1" = 100'	NT	24-050
DATE	TAX MAP No.	SHEET
February, 1997	34 E 35	12 of 23



	Facility #2	Facility #11
Ex. Drainage Area	5.7 Ac±	1.7 Ac±
Prop. Drainage Area	5.7 Ac±	2.7 Ac±
Volume Required for Sediment Control	102,000 c.f.	48,000 c.f.
Elev. to Provide Volume	452.04	454.82 = Top edge of board
Before Development Discharge	5.4 c.f.s.	1.1 c.f.s.
After Development Discharge	22.2 c.f.s.	7.4 c.f.s.
Volume Required for Temp. SWM	22,000 c.f.	8712 c.f.
Elev. to Provide Volume (top of plywood)	452.51	452.24
Invert Orifice	452.04	454.82
Diameter of Orifice	11 1/2"	6"
Discharge Released Through Orifice	5.4 c.f.s.	1.0 c.f.s.
Bottom Elev.	451.00	454.00
Clearout Elev.	452.00	454.40
Top of Dam	452.51	458.00
Freshboard	2.25'	1.70'

See sheet 21 for detail of trap modifications for temporary stormwater management

	Facility #22
Max. Drainage Area	6.1 Ac±
Volume Required	21,700 c.f.
Volume Provided	23,750 c.f.
Top of Dam	442.00
Weir Crest	440.00
Limit of Storage	437.50
Bottom Elev.	434.00
Depth	5.5'
Clearout Elev.	432.75
Weir Length	24'

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

Robert W. Zichon 2/2/97
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.

Chad Simmons 2/2/97
USDA - Natural Resources Conservation Service 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/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

[Signature] 1-11-96
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

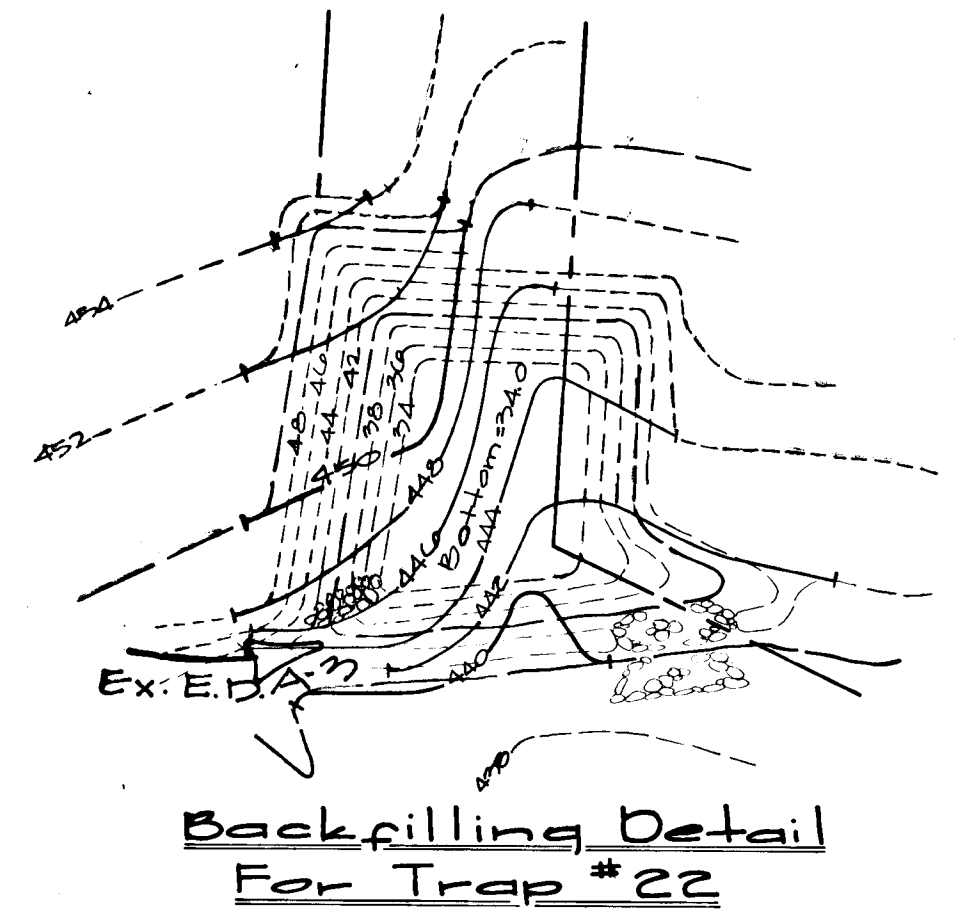
I/we certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment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

[Signature] 1/11/96
Signature of Developer/Builder Date

Approved: Howard County Dept. of Public Works
[Signature] 2-25-97
Chief, Bureau of Highways Date

Approved: Howard County Dept. of Planning & Zoning
[Signature] 3/2/97
Chief, Div. of Land Development & Planning Date

[Signature] 2/28/97
Chief, Development Engineering Div. Date



Match Line see sheet 14

Legend

	L.O.D.	Limit of Disturbance
	Super Silt Fence	Super Silt Fence
	Silt Fence	Silt Fence
	Earth Dike	Earth Dike
	Earth Dike (Relocation after grading has been completed)	Earth Dike (Relocation after grading has been completed)
	Drainage Divide (Before Development)	Drainage Divide (Before Development)
	Drainage Divide (After Development)	Drainage Divide (After Development)
	Drainage Divide (Before & After Development Conditions)	Drainage Divide (Before & After Development Conditions)
	Existing Contour	Existing Contour
	Proposed Contour	Proposed Contour
	Wetland Buffer	Wetland Buffer
	Limit of Wetlands	Limit of Wetlands
	Existing Treeline	Existing Treeline
	Proposed Treeline	Proposed Treeline
	Removable Pumping Station	Removable Pumping Station
	Rip Rap Protection	Rip Rap Protection

GIW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4024 NO. VA.: (301) 989-2524 BALT.: (410) 880-1820 FAX: (301) 421-4186 DES. DRN. G+ CHK. DEV

DATE	REVISION	BY	APP'R.

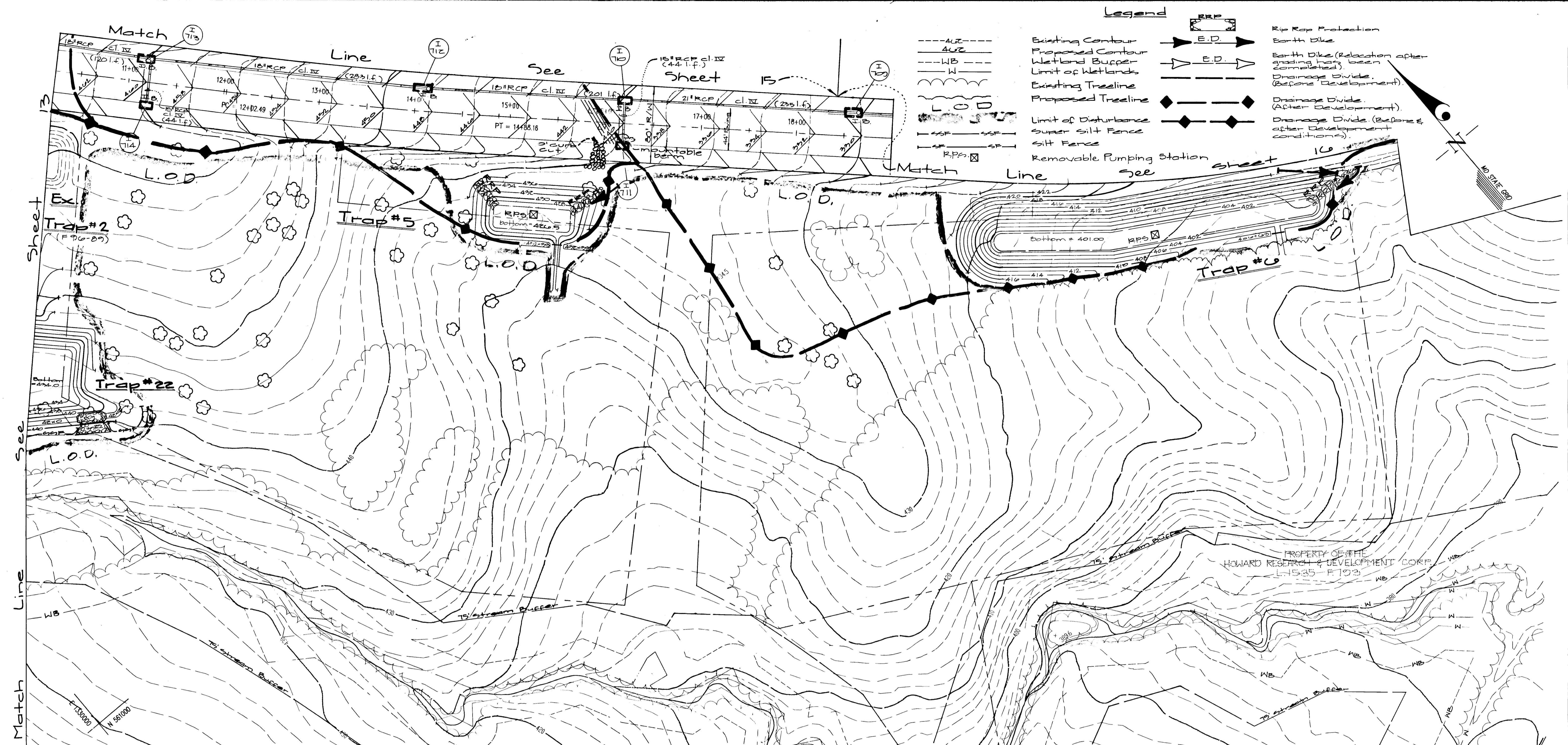
PREPARED FOR:
The Howard Research and Development Corporation
The Rouse Building
10279 Little Patuxent Parkway
Columbia, Maryland 21044
(410) 992-6370

Grading & Sediment Erosion Control Plan
Village of River Hill
Section 4 Area I
Phase I
5th Election District
Howard County, Maryland

SCALE	ZONING	G. L. W. FILE No.
1"=50'	NT	94050
DATE	TAX MAP No.	SHEET
February 1997	34 & 35	13 of 23

1487

1487



Legend

- Existing Contour
- - - Proposed Contour
- - - WB Wetland Buffer
- - - W Limit of Wetlands
- - - Existing Treeline
- - - Proposed Treeline
- - - LOD Limit of Disturbance
- - - Super Silt Fence
- - - Silt Fence
- RPS Removable Pumping Station
- E.D. Earth Dike
- E.D. Earth Dike (Relocation after grading has been completed)
- - - Drainage Divide (Before Development)
- - - Drainage Divide (After Development)
- - - Drainage Divide (Before & after Development conditions)

	Facility #5	Facility #6
Ex Drainage Area	28Ac*	7.1 Ac*
Prop Drainage Area	28Ac*	7.1 Ac*
Volume Required for Sediment Control	5040 c.f.	12,700
Elevation to Provide Volume	428.78	402.64 = Top edge of board
Before Development Discharge	24 c.f.s.	40 c.f.s.
After Development Discharge	110 c.f.s.	28.7 c.f.s.
Volume Required for Temp. S.W.M.	12,770 c.f.	28,224 c.f.
Elevation to Provide Volume (top of plywood)	429.33	403.69
Invert Orifice	428.38	402.64
Diameter of Orifice	7 1/2"	10"
Discharge Released Through Orifice	24 c.f.s.	43 c.f.s.
Bottom Elevation	426.5	401.00
Cleanout Elevation	427.44	401.80
Top of Dam	428.33	402.69
Freeboard	1.0'	1.0'

Approved: Howard County Dept. of Public Works
Richard M. Seneler 2-25-97
 Chief, Bureau of Highways MS Date

Approved: Howard County Dept. of Planning & Zoning
Richard Blood 3/3/97
 Chief, Div. of Land Development CH Date

Approved: *[Signature]* 2/20/97
 Chief, Development Engineering Div. Date

See sheet 21 for detail of trap modifications for temporary stormwater management.

Note
 For trap information on trap #22 see sheet 13

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.

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

Cheryl Simmons
 USDA - Natural Resources Conservation Service

[Signature]
 Date

Robert W. Zilman
 Howard Soil Conservation District

[Signature]
 Date

[Signature]
 Date

1-11-96
 Date

Gregory R. [Signature]
 Signature of Developer/Builder

1/11/96
 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/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

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 Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
 TEL: (301) 421-4024 NO. VA: (301) 989-2524 BAL: (410) 880-1820 FAX: (301) 421-4186

DES.	CHK.	DEV.	DATE	REVISION	BY	APP'R.

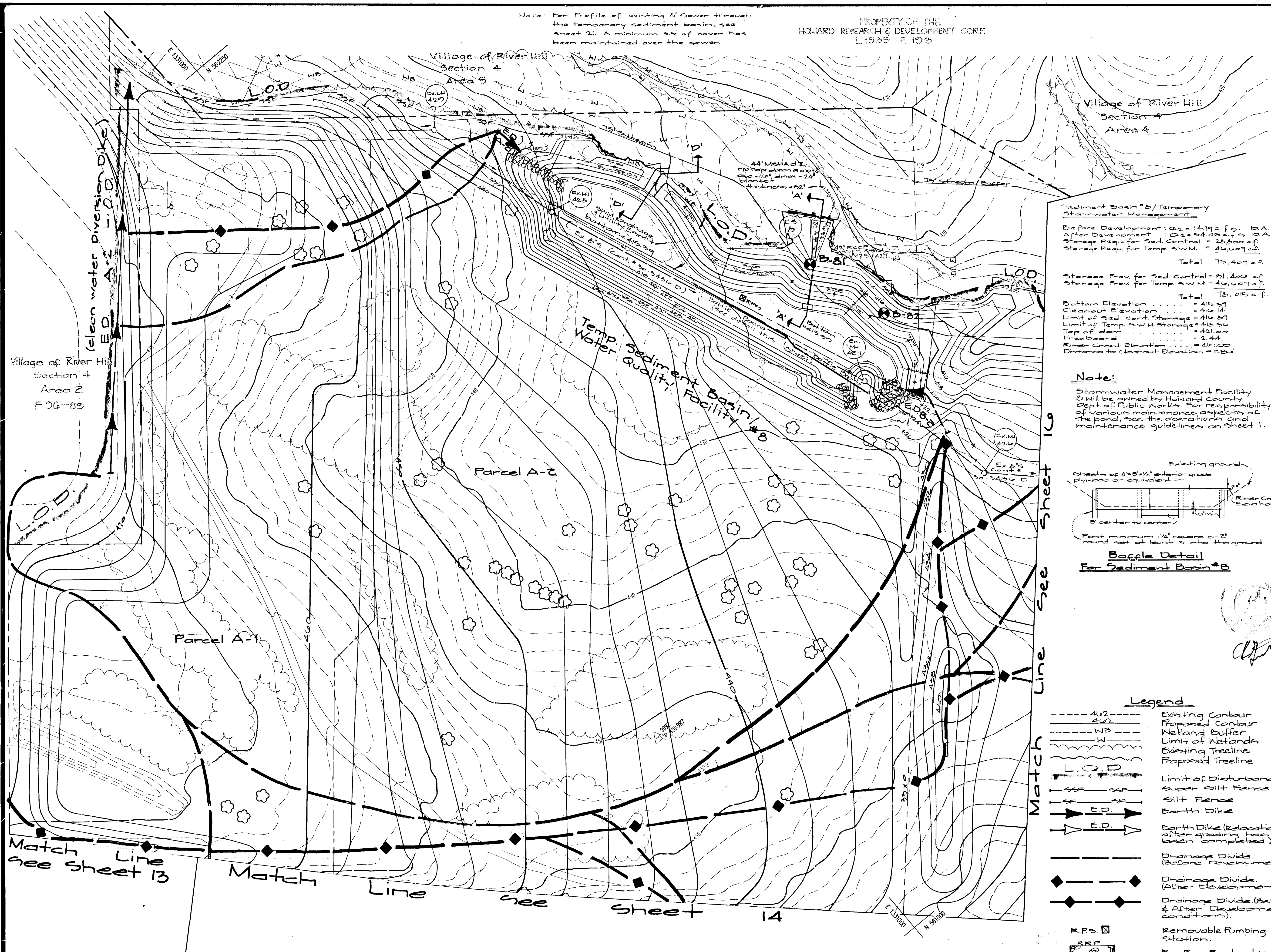
PREPARED FOR:
 The Howard Research and Development Corporation
 The House Building
 10275 Little Patuxent Parkway
 Columbia, Maryland 21044
 (410) 992-0970

Grading & Sediment Erosion Control Plan
Village of River Hill
 Section 4 Area 1
 Phase I
 5th Election District
 Howard County, Maryland

SCALE	ZONING	G. L. W. FILE No.
1" = 50'	NT	94050
DATE	TAX MAP No.	SHEET
February 1997	34 & 35	14 of 29

Note: For Profile of existing 6" Sewer through the temporary sediment basin, see sheet 21. A minimum 3% of cover has been maintained over the sewer.

PROPERTY OF THE HOWARD RESEARCH & DEVELOPMENT CORP. L1505 F. 103



Sediment Basin #8/Temporary Stormwater Management

Before Development: $Q_2 = 14,790 \text{ c.f.s.}$ $BA = 12.2 \text{ ac}$
 After Development: $Q_2 = 54,070 \text{ c.f.s.}$ $BA = 14.6 \text{ ac}$
 Storage Req. for Sed. Control = 25,800 c.f.
 Storage Req. for Temp. SW.M. = 46,407 c.f.
 Total 72,207 c.f.

Storage Prov. for Sed. Control = 21,400 c.f.
 Storage Prov. for Temp. SW.M. = 46,407 c.f.
 Total 67,807 c.f.

Bottom Elevation = 415.34
 Cleanout Elevation = 416.14
 Limit of Sed. Cont. Storage = 416.57
 Limit of Temp. SW.M. Storage = 415.50
 Top of dam = 421.00
 Freeboard = 2.44'
 River Crest Elevation = 417.00
 Distance to Cleanout Elevation = 28'

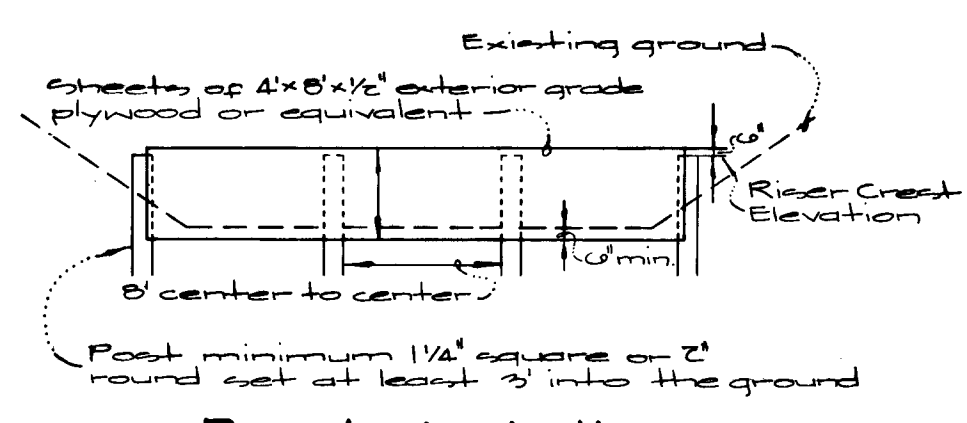
These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

Clayton Simmons 2/12/97
 Date

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

Robert W. Zehm 2/12/97
 Date

Note:
 Stormwater Management Facility #8 will be owned by Howard County Dept. of Public Works. For responsibility of various maintenance aspects of the pond, see the operations and maintenance guidelines on sheet 1.



Baffle Detail
 For Sediment Basin #8

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/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Gregory P. Blaha 1-11-96
 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 Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

Gregory P. Blaha 1/11/96
 Date

Approved: Howard County Dept. of Public Works
Andrew W. Gault 2-25-97
 Chief, Bureau of Highways #8 Date

Approved: Howard County Dept. of Planning & Zoning
Richard Blood 3/3/97
 Chief, Div. of Land Development & Planning #24 Date

Clayton Simmons 2/12/97
 Chief, Development Engineering Div. #1 Date

- Legend**
- 462 --- Existing Contour
 - 462 --- Proposed Contour
 - WB --- Wetland Buffer
 - W --- Limit of Wetlands
 - Existing Treeline
 - Proposed Treeline
 - L.O.D. --- Limit of Disturbance
 - S.S.F. --- Super Silt Fence
 - S.F. --- Silt Fence
 - E.D. --- Earth Dike
 - E.D. --- Earth Dike (Relocation after grading has been completed)
 - Drainage Divide (Before Development)
 - Drainage Divide (After Development)
 - Drainage Divide (Before & After Development conditions)
 - R.P.S. --- Removable Pumping Station
 - R.P.P. --- Rip Rap Protection

GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
 TEL: (301) 421-4024 NO. VA.: (301) 989-2524 BALT.: (410) 980-1820 FAX: (301) 421-4186 DES. DRN.G.T. CHK.DEV. DATE REVISION BY APPR.

PREPARED FOR:
 The Howard Research and Development Corporation
 The Rouse Building
 10270 Little Patuxent Parkway
 Columbia, Maryland 21044
 (410) 992-0270

Grading & Sediment Erosion Control Plan

Village of River Hill
 Section 4 Area 1
 5th Election District Phase I

Howard County, Maryland

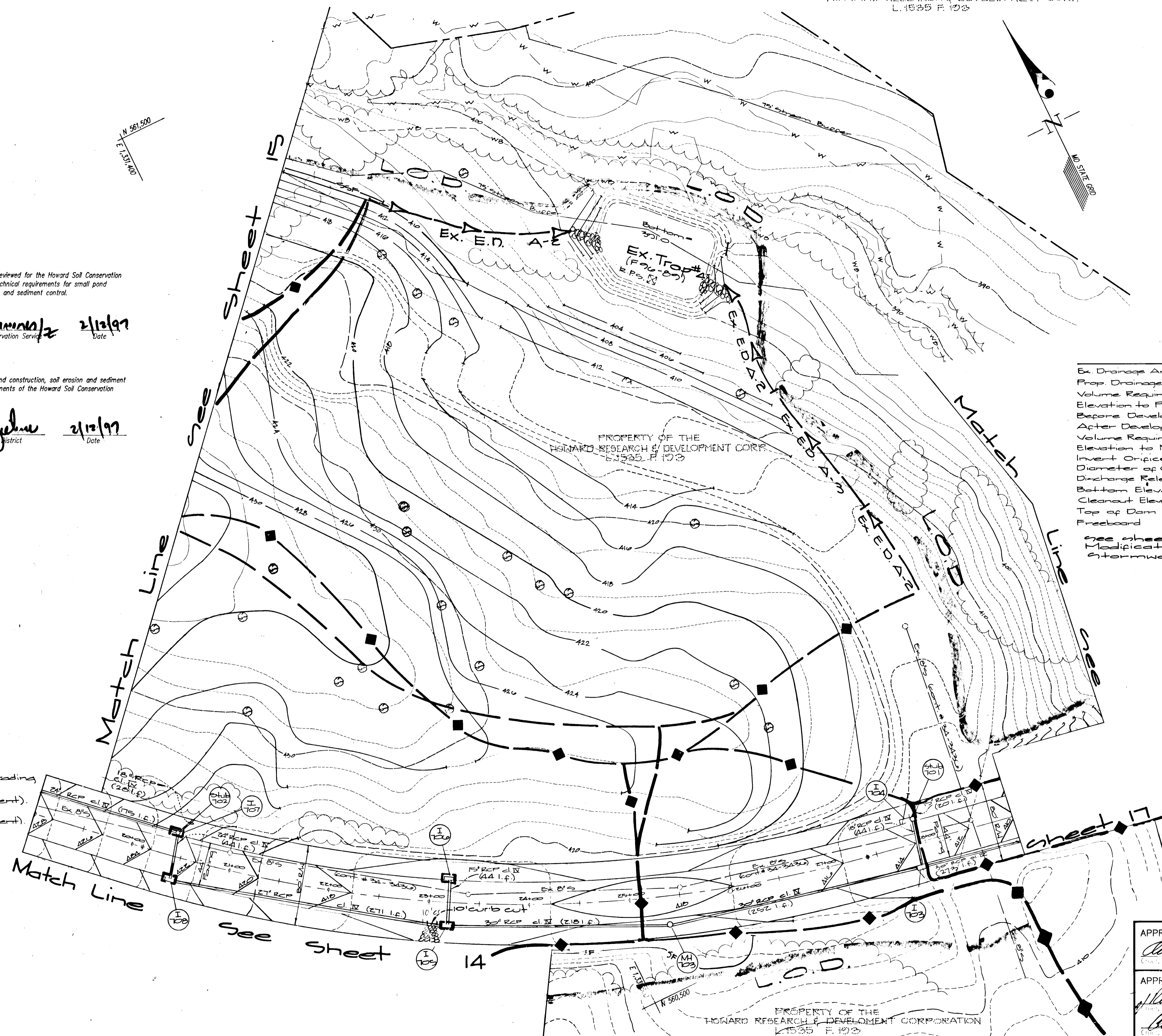
SCALE 1"=50'	ZONING N.T.	G. L. W. FILE NO. 94050
DATE February 1997	TAX MAP No. 34 & 35	SHEET 15 of 23

1487

PROPERTY OF THE
HOWARD RESEARCH & DEVELOPMENT CORP.
L 1535 P 103

N 561,500
E 1,131,400

E 1,132,400
N 561,000



DEVELOPER'S/BUILDER'S CERTIFICATE

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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.

Clayton Summers 2/12/97
Natural Resources Conservation Service Date

Gregory R. Miller 1/11/96
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. Zelnor 2/12/97
Howard Soil Conservation District 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/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Gregory R. Miller 1-11-96
Date

	Facility #4
Ex. Drainage Area	6.7 Ac±
Prop. Drainage Area	6.7 Ac±
Volume Required for Sediment Control Elevation to Provide Volume Before Development Discharge	12,000 c.f.
Volume Required for Temp. S.W.M. After Development Discharge	272.41
Volume Required for Temp. S.W.M. Elevation to Provide Volume (top of plywood)	2072.8 c.f.
Invert Orifice	272.41
Diameter of Orifice	2.75'
Discharge Released Through Orifice	4.0 c.f.s.
Bottom Elevation	271.00
Cleanout Elevation	271.70
Top of Dam	272.27
Freeboard	1.0'

see sheet 21 for detail of trap
Modifications for Temporary
Stormwater Management.



- Legend**
- L.O.D. Limit of Disturbance
 - Super Silt Fence
 - Silt Fence
 - E.D. Earth Dike
 - E.D. Earth Dike (Relocation after grading has been completed).
 - Drainage Divide (Before Development)
 - Drainage Divide (After Development)
 - Drainage Divide (Before & after Development Conditions)
 - Existing Contour
 - Proposed Contour
 - Wetland Buffer
 - Limit of Wetlands
 - Existing Treeline
 - Proposed Treeline
 - Ex. Removable Pumping Station
 - Rip Rap Protection

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Donker 2-25-97
Chief, Streets & Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Richard Blair 3/2/97
Chief, Planning & Zoning

Clayton Summers 2/20/97
Chief, Natural Resources Conservation Service

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4024 NO. VA.: (301) 989-2524 BALI: (410) 880-1820 FAX: (301) 421-4186 DES. DRN. CHK.

DATE	REVISION	BY	APP'R.

PREPARED FOR:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSEBUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
(401) 992-6370

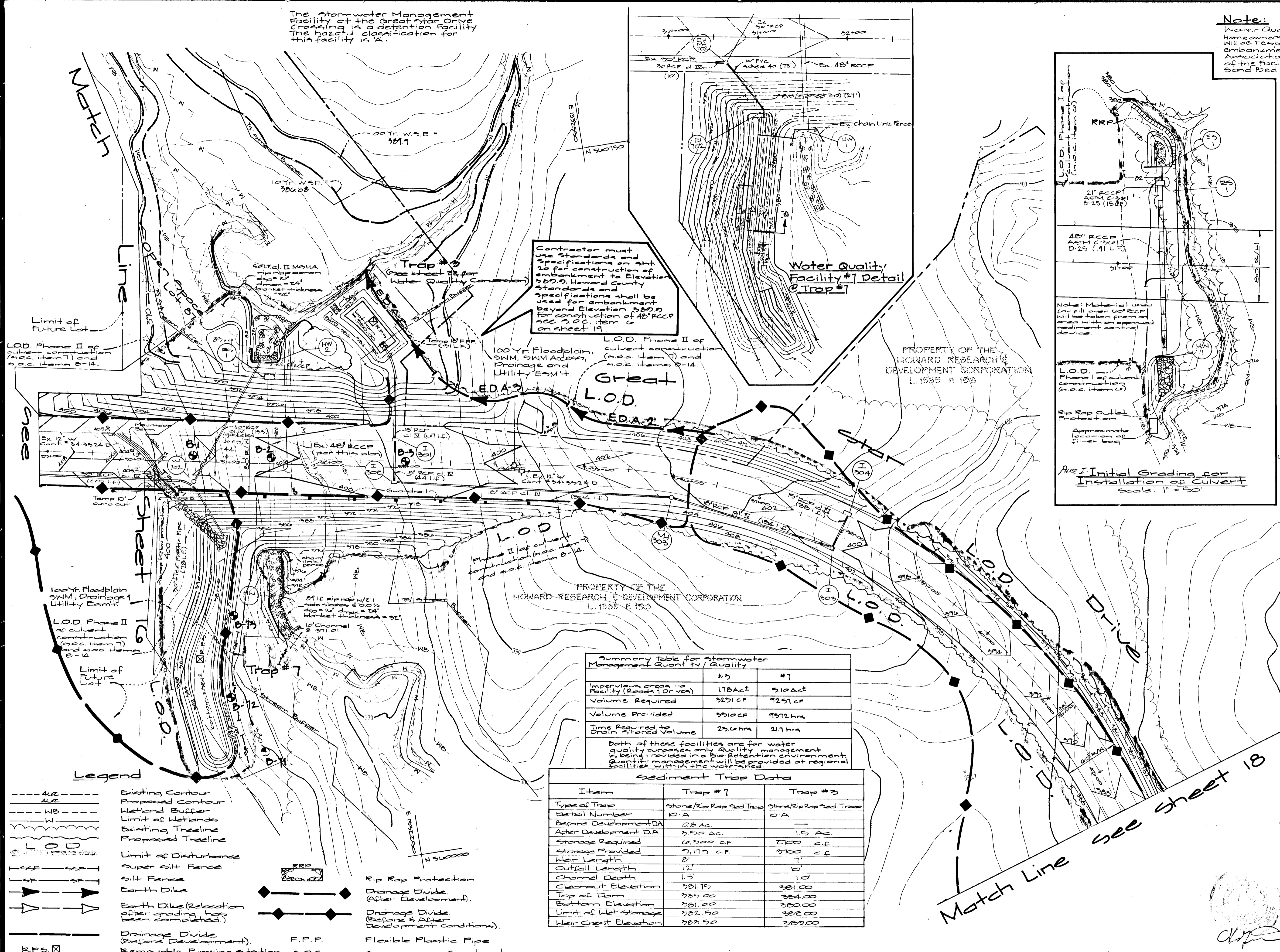
Grading & Sediment Erosion Control Plan
VILLAGE OF RIVER HILL
SECTION 4 AREA 1
Phase I
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
1"=50'	N.T.	94050
DATE	TAX MAP No.	SHEET
February 1997	24975	16 of 23

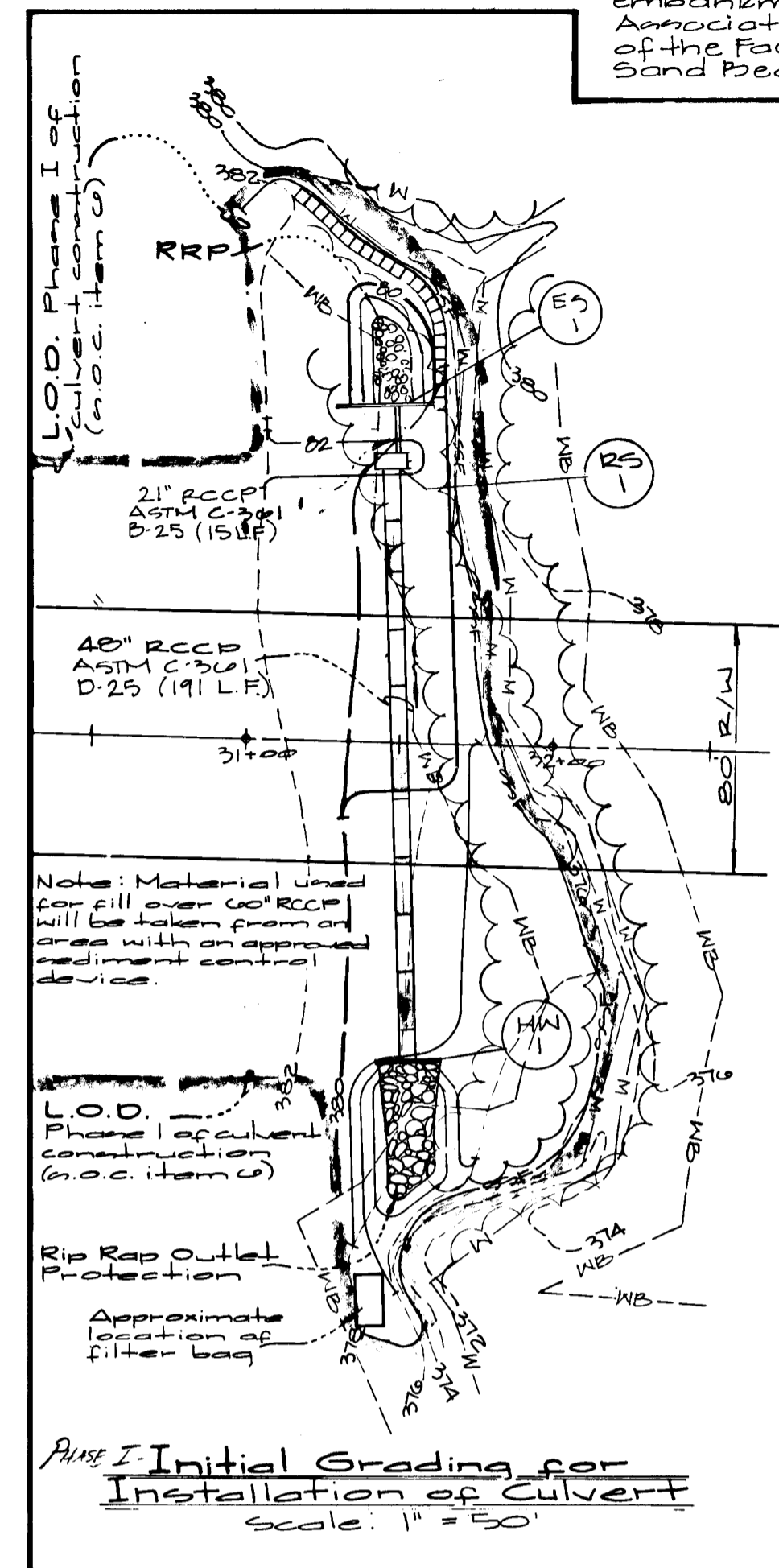
1487

The Stormwater Management Facility of the Great Star Drive Crossing is a detention Facility. The hazard classification for this facility is 'A'.

Note:
Water Quality Facilities #1 & 7 will be owned by the Homeowners Association. Howard County will be responsible for the maintenance and repair of the embankment and underdrain system. The Home Owners Association will be responsible for the aesthetic aspects of the facilities and the occasional maintenance of the sand bed surface.



Contractor must use standards and specifications on sheet 25 for construction of embankment to Elevation 380.0. Howard County standards and specifications shall be used for embankment beyond Elevation 380.0. For construction of 48" RCP see S.O.C. item C on sheet 19.



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

Robert W. Zick 2/12/97
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.

Cheryl Simmons 2/12/97
USDA-Natural Resources Conservation Service Date

Cheryl Simmons 2/12/97
USDA-Natural Resources Conservation Service 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/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

Cheryl Simmons 1-11-96
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 Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

Gregory R. Allen 1/11/94
Signature of Developer/Builder Date

Summary Table for Stormwater Management Quantity/Quality

	#3	#7
Impervious area to Facility (Roads + Drives)	178Ac±	910Ac±
Volume Required	3251 CF	9251 CF
Volume Provided	3310 CF	9312 CF
Time Required to Drain Stored Volume	23.6 hrs	21.7 hrs

Both of these facilities are for water quality purposes only. Quality management is being provided in a Bio Retention Environment. Quantity management will be provided at regional facilities within the watershed.

Sediment Trap Data

Item	Trap #7	Trap #3
Type of Trap	Stone/Rip Rap Sed. Trap	Stone/Rip Rap Sed. Trap
Detail Number	10-A	10-A
Before Development D.A.	28 Ac	—
After Development D.A.	3.92 Ac	1.5 Ac
Storage Required	6,920 CF	2700 CF
Storage Provided	7,175 CF	3700 CF
Weir Length	8'	7'
Outfall Length	12'	10'
Channel Depth	1.5'	1.0'
Clearout Elevation	381.75	381.00
Top of Dam	385.00	384.00
Bottom Elevation	381.00	380.00
Limit of Wet Storage	382.50	382.00
Weir Crest Elevation	383.50	383.00

- Legend**
- Existing Contour
 - - - Proposed Contour
 - WB Wetland Buffer
 - W Limit of Wetlands
 - Existing Treeline
 - Proposed Treeline
 - Limit of Disturbance
 - Super silt Fence
 - Silt Fence
 - Earth Dike
 - Earth Dike (Relocation after grading has been completed)
 - Drainage Divide (Before Development)
 - Drainage Divide (After Development)
 - Flexible Plastic Pipe
 - Sequence of Construction
 - R.P.S. Removable Pumping Station S.O.C.

G.W. GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4024 NO. VA: (301) 989-2524 BAL: (410) 880-1810 FAX: (301) 421-4186 DES. DRN. KLP/ST. CHK. DEV

DATE	REVISION	BY	APP'R.

PREPARED FOR:
The Howard Research and Development Corporation
The Rouse Building
10215 Little Patuxent Parkway
Columbia Maryland 21044
(410) 992-0970

Grading & Sediment Erosion Control Plan
Village of River Hill
Section 4 Area I
Phase I
5th Election District
Howard County, Maryland

SCALE	ZONING	G. L. W. FILE NO.
1" = 50'	NT	94050
DATE	TAX MAP No.	SHEET
Feb. 1, 1997	34 & 35	17 of 23

1987

E 1334000
N 588750

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

Cheryl Simms 2/12/97
Natural Resources Conservation Specialist
Date

These Plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.
Robert W. Zuhm 2/12/97
Howard Soil Conservation District
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 Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.
August A. Alan 1/11/96
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/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.
Alan 1-11-96
Date

Facility #1	Value
Ex. Drainage Area	6.2 Ac±
Prop. Drainage Area	7.3 Ac±
Volume Required for Sediment Control Before Development Discharge	13,140 c.f.
Elevation to Provide Volume	336.70
Volume Required for Temp. S.W.M. After Development Discharge	20 c.f.
Elevation to Provide Volume (top of plywood)	17,055 c.f.
Volume Required for Temp. S.W.M.	241.55
Elevation to Provide Volume (top of plywood)	336.50
Diameter of Orifice	7"
Discharge Released Through Orifice	2.0 c.f.s.
Bottom Elevation	335.40
Clearout Elevation	336.75
Top of Dam	343.45
Freeboard	1.0'

See sheet 21 for detail of trap modifications for temporary stormwater management

- Legend**
- Existing Contour
 - - - Proposed Contour
 - Wetland Buffer
 - Limit of Wetlands
 - Existing Treeline
 - Proposed Treeline
 - Limit of Disturbance (Before Development)
 - Super Silt Fence
 - Silt Fence
 - Earth Dike
 - Earth Dike (Relocation after grading has been completed)
 - Drainage Divide (Before Development)
 - Drainage Divide (After Development)
 - Drainage Divide (Before & After Development Conditions)
 - Removable Pumping Station
 - Rip Rap Protection

VILLAGE OF RIVER HILL
SECTION 2 AREA 5
PLAT NO. E 75-48
OPEN SPACE LOT 51

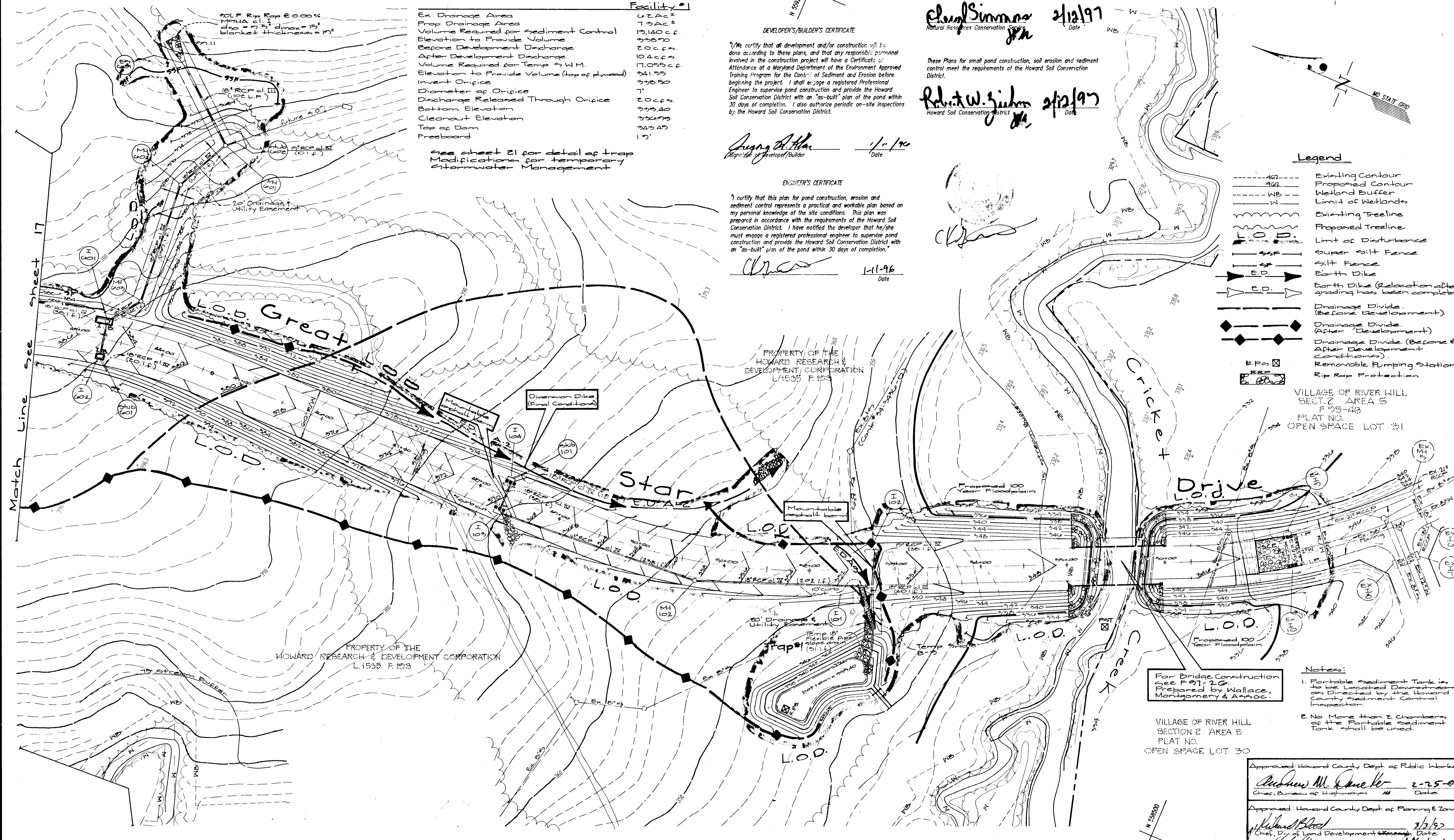
For Bridge Construction see P 971-2 G. Prepared by Wallace, Montgomery & Assoc.

- Notes:**
1. Portable Sediment Tank is to be Located Downstream as Directed by the Howard County Sediment Control Inspector.
 2. No More than 2 Chambers of the Portable Sediment Tank shall be used.

VILLAGE OF RIVER HILL
SECTION 2 AREA 5
PLAT NO. E 75-48
OPEN SPACE LOT 50

Approved: Howard County Dept. of Public Works
Andrew M. Duncanson 2-25-97
Chief, Bureau of Highways Date

Approved: Howard County Dept. of Planning & Zoning
Richard Blood 3/3/97
Chief, Div. of Land Development & Research Date
William J. ... 2/28/97
Chief, Development Engineering Div. Date



GW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4024 NO. VA: (301) 989-2524 BALT: (410) 880-1820 FAX: (301) 421-4186 DES. DRN. G+ CHK. DEW

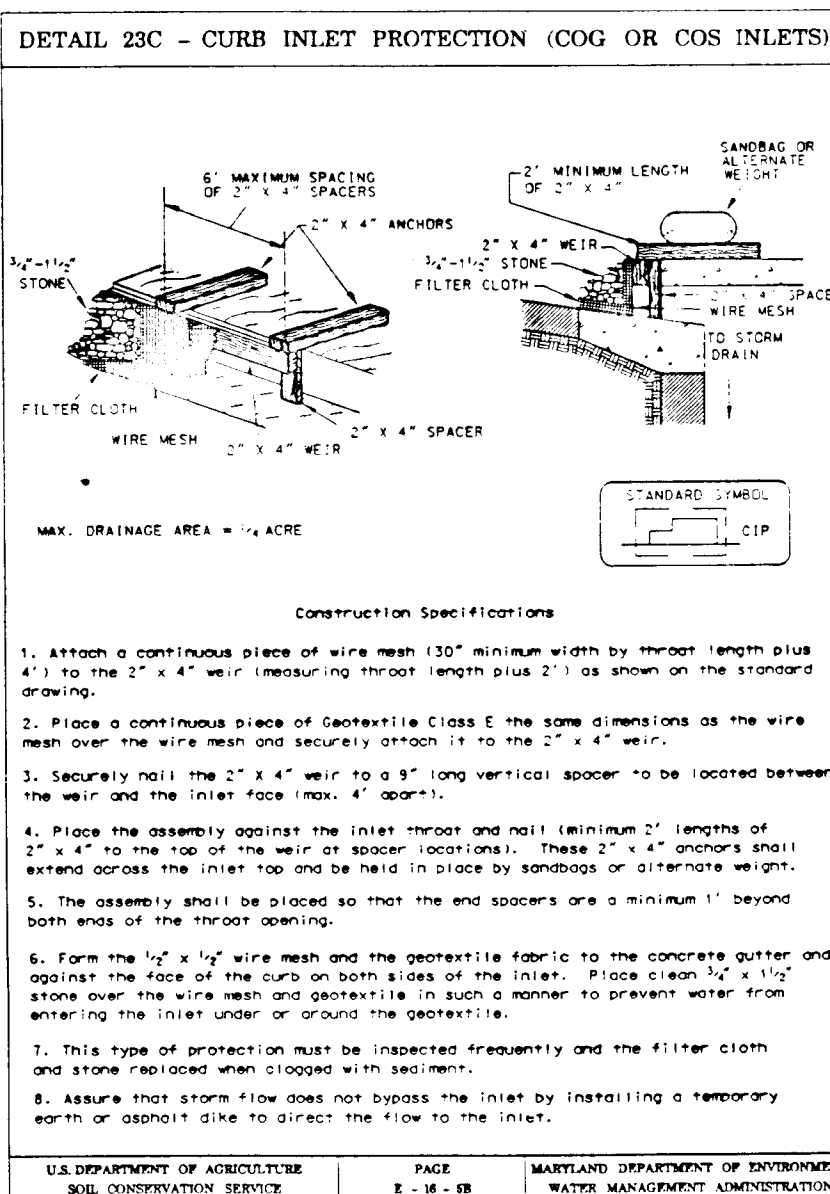
DATE	REVISION	BY	APP'R.

PREPARED FOR:
The Howard Research and Development Corporation
The Rouse Building
10275 Little Patuxent Parkway
Columbia, Maryland 21044
(410) 992-0370

Grading & Sediment Erosion Control Plan
Village of River Hill
Section 4 Area 1
Phase I
5th Election District
Howard County, Maryland

SCALE	ZONING	G. L. W. FILE NO.
1"=50'	N.T.	94050
DATE	TAX MAP No.	SHEET
February 1997	74 & 35	18 of 23

1487



1. Attach a continuous piece of wire mesh (30" minimum width by mesh length plus 2" to the 2" x 4" weir measuring throat length plus 2" as shown on the standard drawing.

2. Place a continuous piece of Geotextile Class E (the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.

3. Securely nail the 2" x 4" weir to a 6" long vertical support to be located between the weir and the inlet pipe (see note 4).

4. Place the assembly against the inlet throat and nail (minimum 2" lengths of 2" x 4" to the top of the weir or support locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by supports of adequate weight.

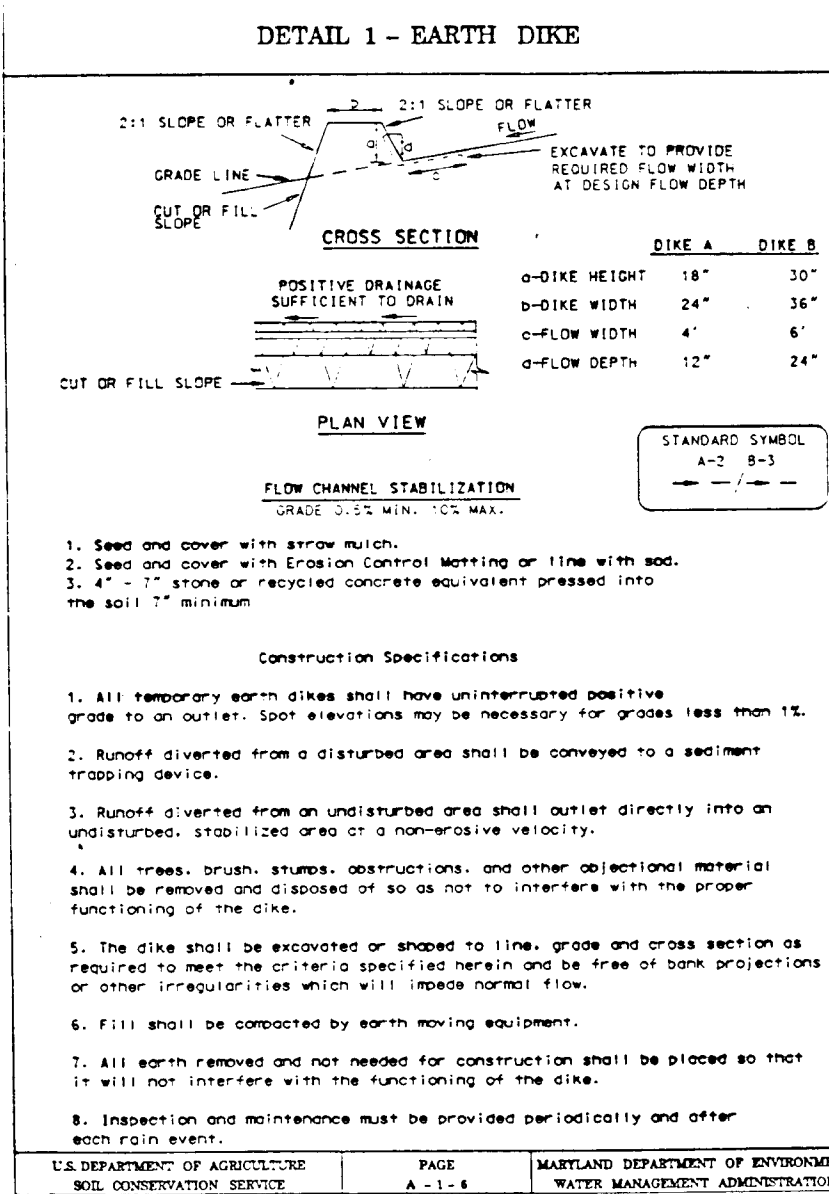
5. The assembly shall be placed so that the mesh and supports are a minimum 1" beyond both ends of the throat opening.

6. Form the 1/2" x 1/2" wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place a 1/2" x 1/2" wire mesh stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.

7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

8. Assume that storm flow does not expose the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT
SOIL CONSERVATION SERVICE E-18-18 WATER MANAGEMENT ADMINISTRATION

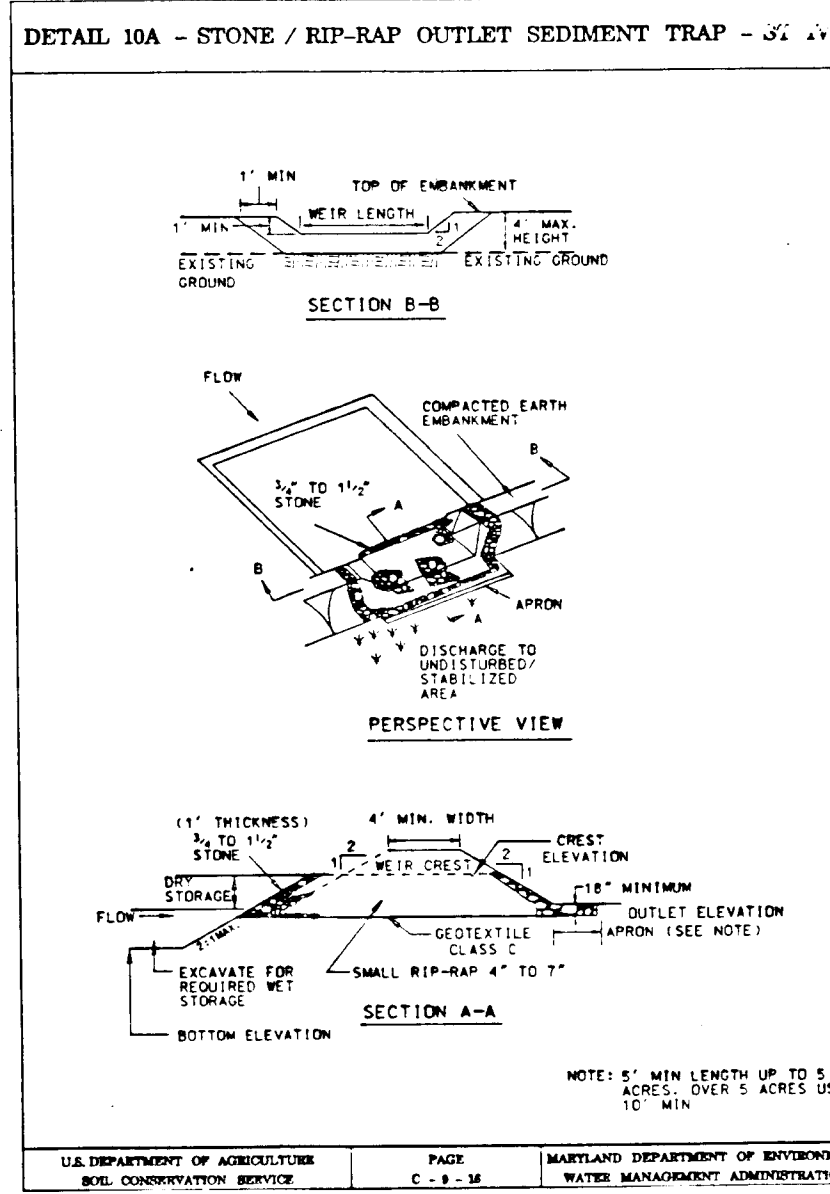


1. Seed and cover with straw mulch.

2. Seed and cover with Erosion Control Matting or lime with seed.

3. 4" x 12" stone or recycled concrete equivalent graded into the soil 1" minimum.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT
SOIL CONSERVATION SERVICE A-1-1-4 WATER MANAGEMENT ADMINISTRATION



1. All temporary earth dikes shall have uninterfused positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an uninterfused stone or rip-rap area of a representative width.

4. All trees, shrubs, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.

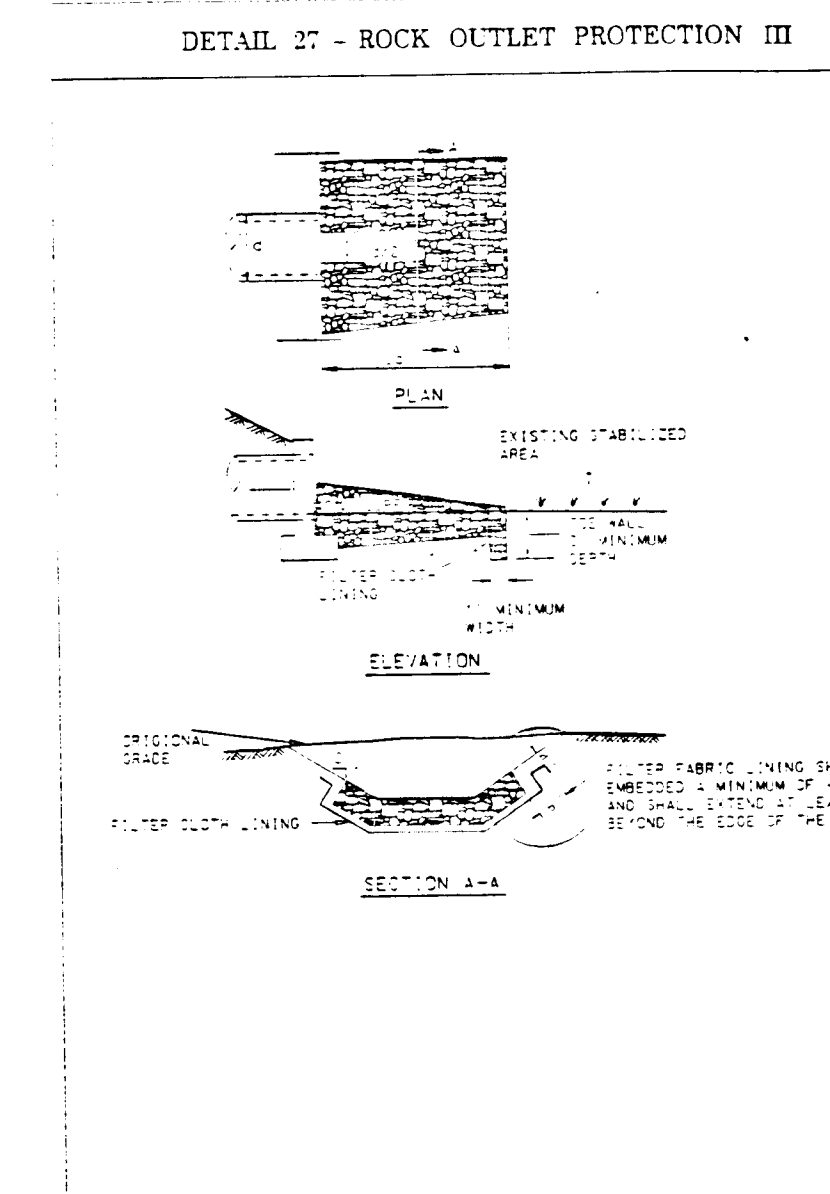
5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of any projections or other irregularities which will impede the flow of water.

6. Fill shall be composed of approved soil, grass and cross section as required to meet the criteria specified herein and be free of any projections or other irregularities which will impede the flow of water.

7. All work removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.

8. Inspection and maintenance must be provided periodically and after each rain event.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT
SOIL CONSERVATION SERVICE C-1-1-1 WATER MANAGEMENT ADMINISTRATION



1. A minimum of 48 hours notice must be given to the Howard County Office of Erosion and Permits prior to the start of any construction. (4-0) 313-1235

2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.

3. 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.

4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.

5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding, sod, temporary seeding, and mulching (Sec G.) Temporary stabilization, with mulch alone, shall only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.

6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.

7. Site Analysis:
Total Area of Site : 58.46 Acres
Area Disturbed : 55.2 Acres
Area to be roofed or paved : 5.21 Acres
Area to be vegetatively stabilized : 40.99 Acres
Total Cut : 180.00 Cu. Yds.
Total Fill : 180.00 Cu. Yds.
Off-site waste/borrow area location: N/A

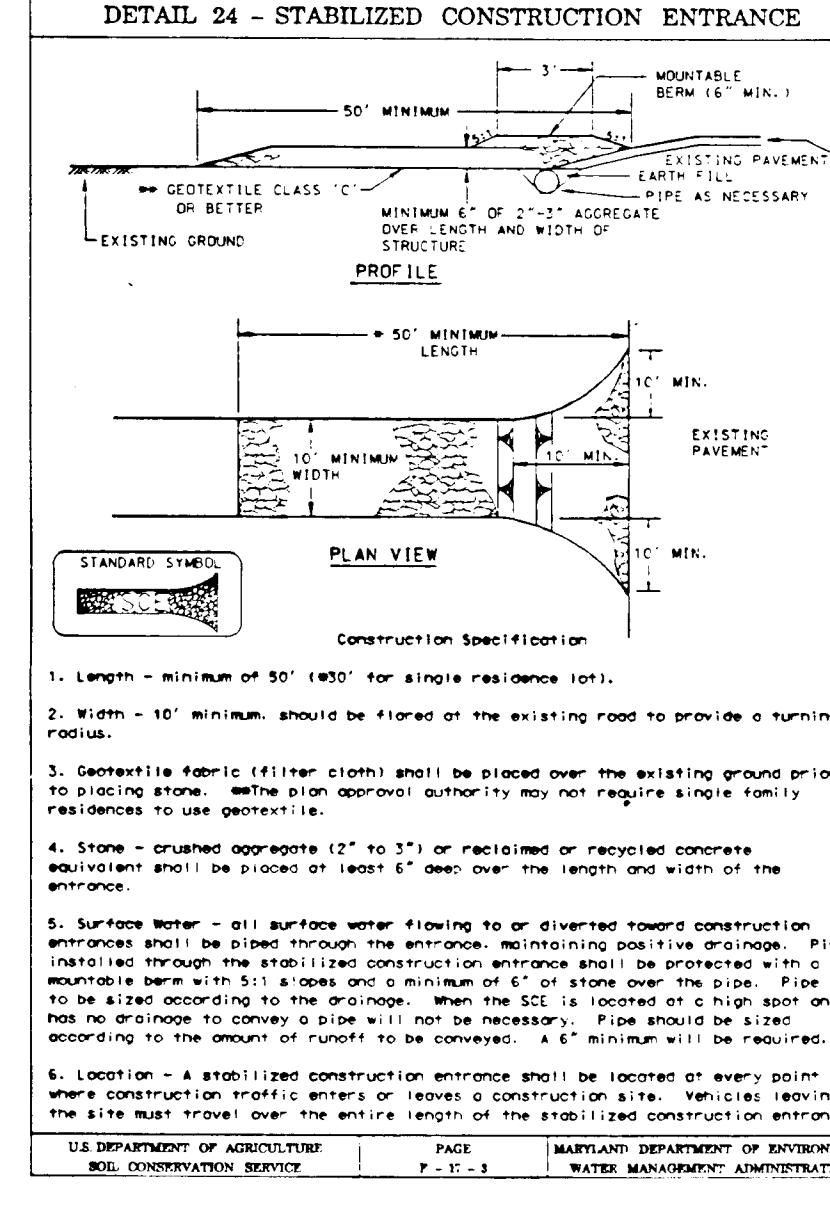
8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

9. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.

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

11. Trenches for the construction of utilities is limited to that which shall be back filled and stabilized within one working day.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT
SOIL CONSERVATION SERVICE F-1-1-1 WATER MANAGEMENT ADMINISTRATION



1. Length - minimum of 50' (400' for slope reduction only).

2. Width - 10' minimum, should be placed on the existing road to provide a turning radius.

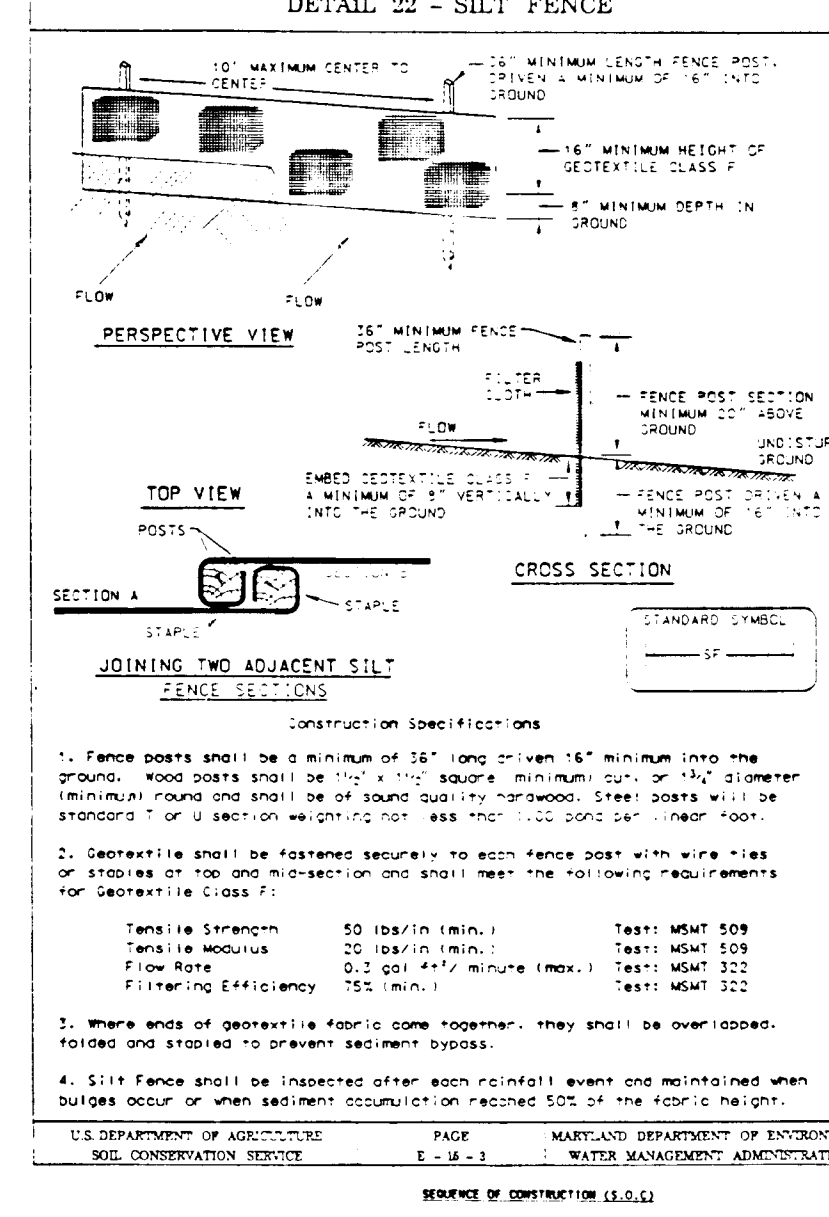
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. The fabric should be secured to the existing ground by staples or other means to prevent it from being displaced.

4. Stone - crushed aggregate (2" to 3") or recycled or crushed concrete equivalent shall be placed at least 6" over the length and width of the entrance.

5. Surface water - all surface water flowing to or diverted from a construction entrance shall be filtered through the entrance, maintaining positive drainage. Flow through the entrance shall be directed to a storm drain or other drainage structure. The entrance shall be placed on a slope of 1:1 or steeper. Flow has no drainage to convey to slope will not be necessary. Flow should be sized according to the amount of runoff to be conveyed. A 6" minimum shall be required.

6. Location - a stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Traffic leaving the site must travel over the entire length of the stabilized construction entrance.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT
SOIL CONSERVATION SERVICE F-1-1-2 WATER MANAGEMENT ADMINISTRATION



1. Fence posts shall be a minimum of 1 1/2" long or 1 1/2" diameter into the ground. Wood posts shall be treated with a preservative. Steel posts shall be galvanized. Posts shall be spaced 10' to 12' on center.

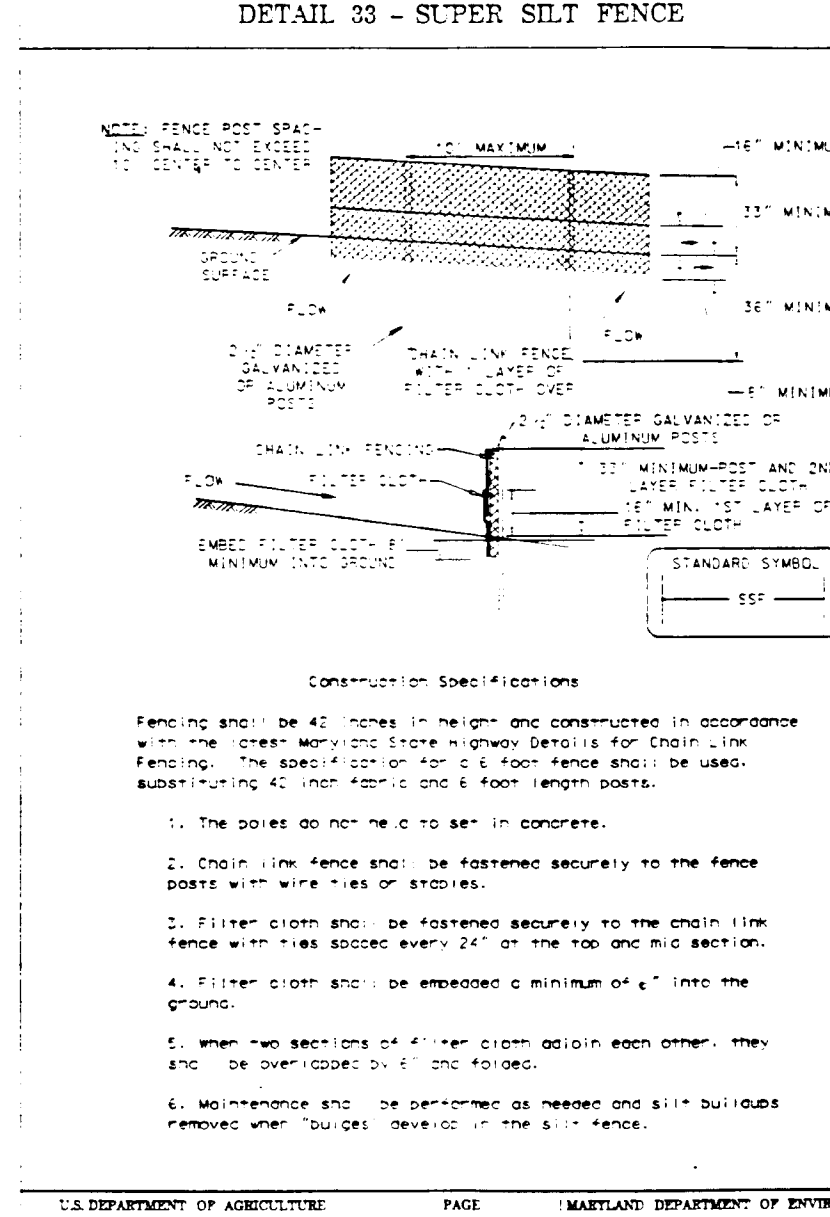
2. Geotextile fabric shall be stretched across the fence posts with wire ties or staples at 100" intervals and shall meet the following requirements for Geotextile Class G:

Tensile Strength	22 (lb/inch)	Test Method	DOT 508
Initial Modulus	100 (lb/inch)	Test Method	DOT 508
Flow Rate	1.0 (gal/min/ft)	Test Method	DOT 502
Filtering Efficiency	90%	Test Method	DOT 502

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent some bypass.

4. Silt fence shall be inspected after each rainfall event and maintained when damage occurs or when sediment accumulates on top of the silt fence.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT
SOIL CONSERVATION SERVICE E-18-1-3 WATER MANAGEMENT ADMINISTRATION



1. Fence posts shall be a minimum of 1 1/2" long or 1 1/2" diameter into the ground. Wood posts shall be treated with a preservative. Steel posts shall be galvanized. Posts shall be spaced 10' to 12' on center.

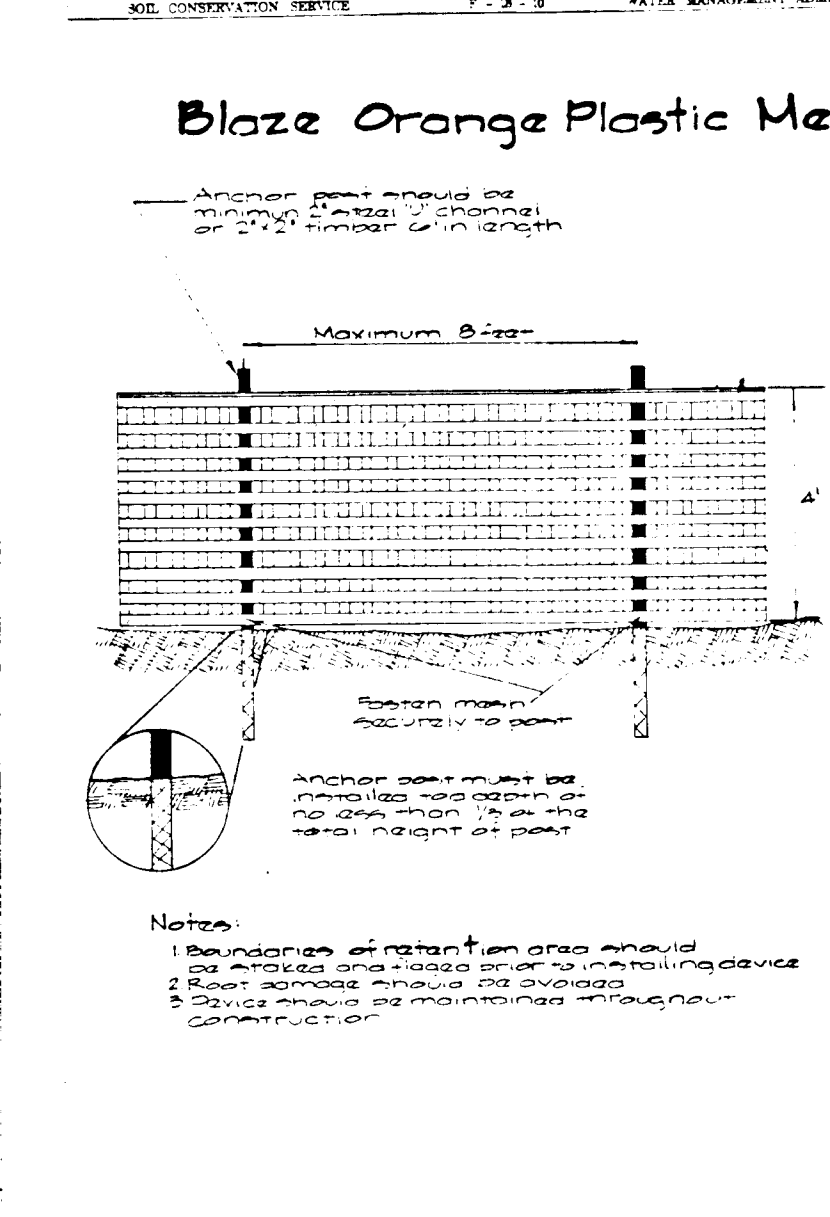
2. Geotextile fabric shall be stretched across the fence posts with wire ties or staples at 100" intervals and shall meet the following requirements for Geotextile Class G:

Tensile Strength	22 (lb/inch)	Test Method	DOT 508
Initial Modulus	100 (lb/inch)	Test Method	DOT 508
Flow Rate	1.0 (gal/min/ft)	Test Method	DOT 502
Filtering Efficiency	90%	Test Method	DOT 502

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent some bypass.

4. Silt fence shall be inspected after each rainfall event and maintained when damage occurs or when sediment accumulates on top of the silt fence.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT
SOIL CONSERVATION SERVICE E-18-1-3 WATER MANAGEMENT ADMINISTRATION

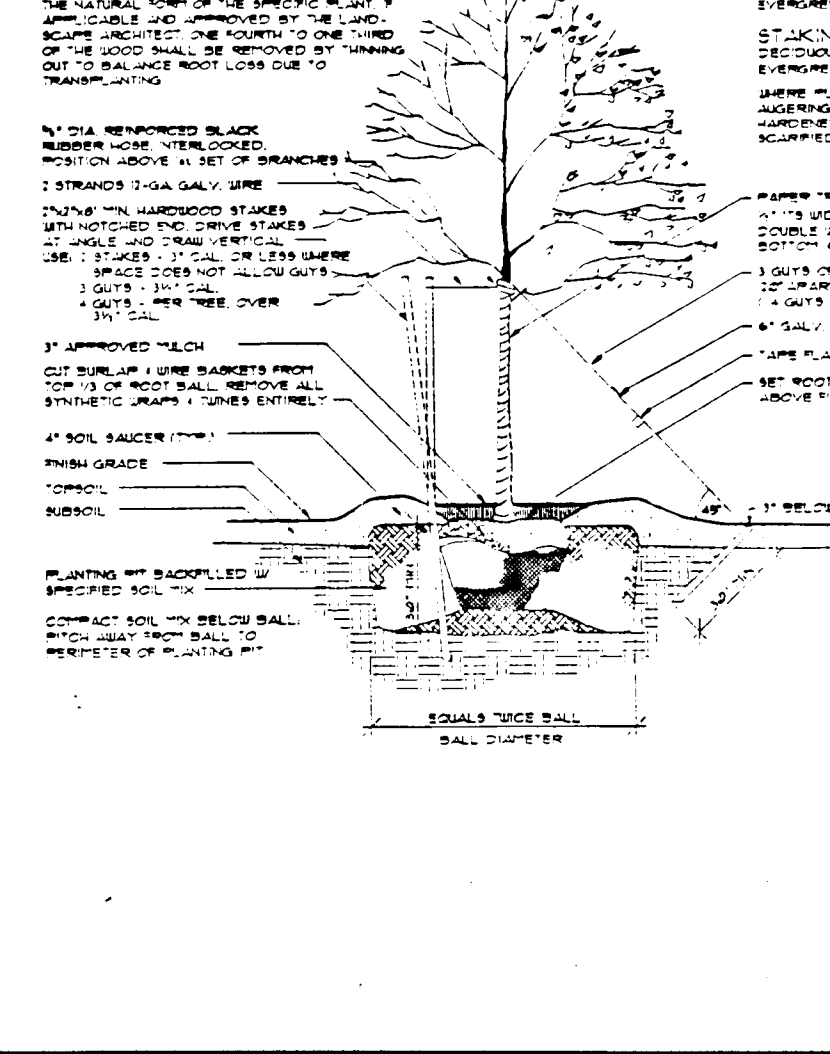


1. The mesh shall be made of high density polyethylene (HDPE) or similar material. The mesh shall be orange in color and shall be made of 1/2" x 1/2" squares.

2. The mesh shall be stretched across the fence posts with wire ties or staples at 100" intervals.

3. The mesh shall be inspected after each rainfall event and maintained when damage occurs or when sediment accumulates on top of the mesh.

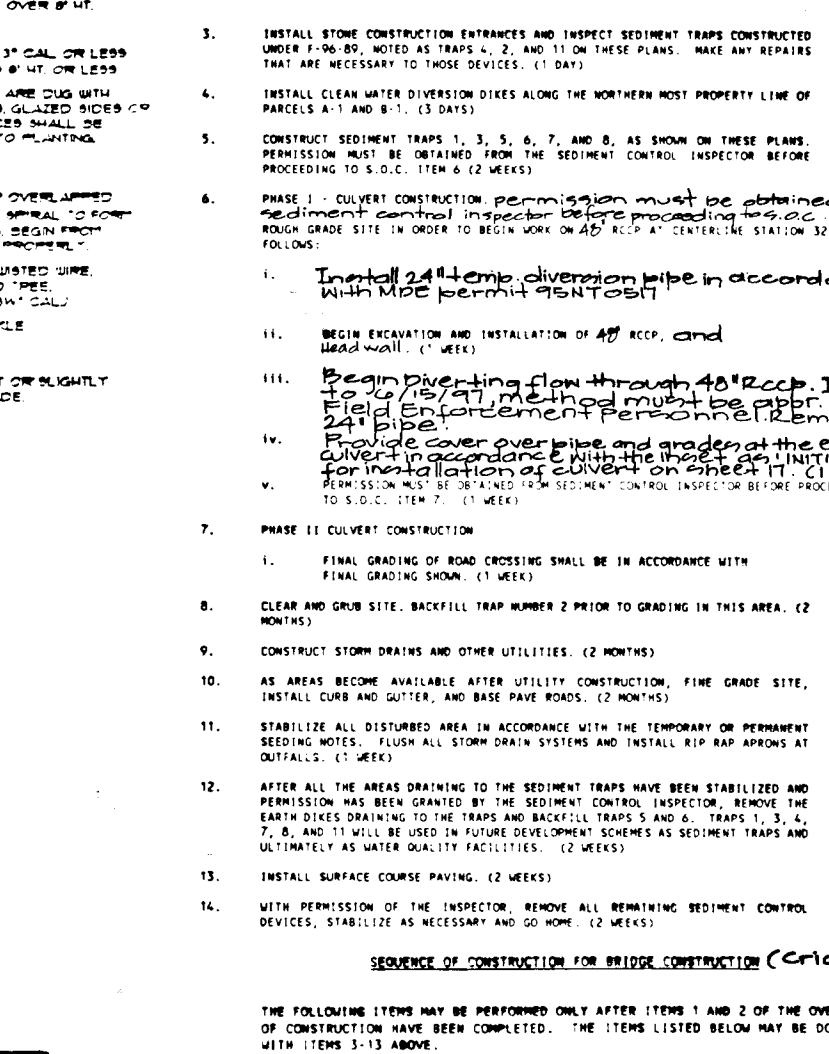
U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT
SOIL CONSERVATION SERVICE E-18-1-3 WATER MANAGEMENT ADMINISTRATION



Approved: Howard County Dept. of Public Works
Andrew M. Savelle 2/25/97
Chief, Bureau of Highways

Approved: Howard County Dept. of Planning
Richard Blood 3/3/97
Chief, Div. of Land Development

Approved: Howard County Dept. of Engineering
[Signature] 2/20/97
Chief, Development Engineering Div.



1. NOTIFY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR AT LEAST 24 HOURS PRIOR TO BEGINNING CONSTRUCTION. (1 DAY)

2. INSTALL PERIMETER CONSTRUCTION ENTRANCES, SILT FENCE AND OTHER APPROPRIATE SEDIMENT CONTROL DEVICES. SEE SHEETS 13 THROUGH 18 OF THIS PLAN FOR CONSTRUCTION OF THESE DEVICES. THE PERIMETER CONSTRUCTION ENTRANCES, SILT FENCE AND OTHER APPROPRIATE SEDIMENT CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY EARTH DISTURBANCE OR GRADING. THE PERIMETER CONSTRUCTION ENTRANCES, SILT FENCE AND OTHER APPROPRIATE SEDIMENT CONTROL DEVICES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. THE PERIMETER CONSTRUCTION ENTRANCES, SILT FENCE AND OTHER APPROPRIATE SEDIMENT CONTROL DEVICES SHALL BE REPAIRED OR REPLACED AS NECESSARY. (2 WEEKS)

3. INSTALL PORTABLE SEDIMENT TANK. SEE NOTES CONCERNING TANKS ON SHEET 18. NO MORE THAN TWO TANKS SHALL BE USED. THE PORTABLE SEDIMENT TANKS SHALL BE USED TO DETAIN SEDIMENT UNTIL THE TANKS ARE FULL. THE TANKS SHALL BE DISCHARGED INTO THE STREAM. (2 WEEKS)

4. COMPLETE PORTIONS OF THE APPROACH ROADWAY ENHANCEMENTS. (2 WEEKS)

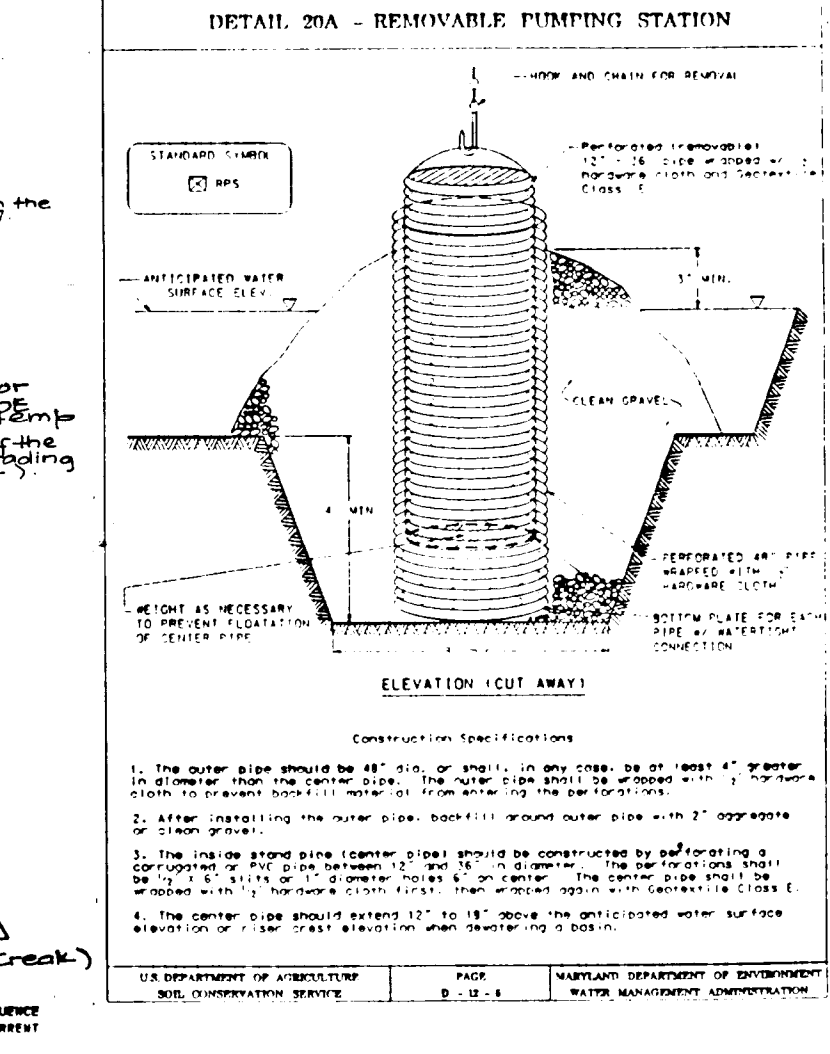
5. CONSTRUCT APPROACH PILES, CONSTRUCT APPROACHES AND INSTALL RIP-RAP SLOPE PROTECTION. (4 WEEKS)

6. CONSTRUCT BRIDGE SUPERSTRUCTURE. (9 WEEKS)

7. COMPLETE APPROACH ROADWAY ENHANCEMENTS AND STABILIZE SLOPES. (3 WEEKS)

8. REMOVE SEDIMENT CONTROL DEVICES AS DIRECTED BY THE INSPECTOR. (1 WEEK)

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT
SOIL CONSERVATION SERVICE E-18-1-3 WATER MANAGEMENT ADMINISTRATION



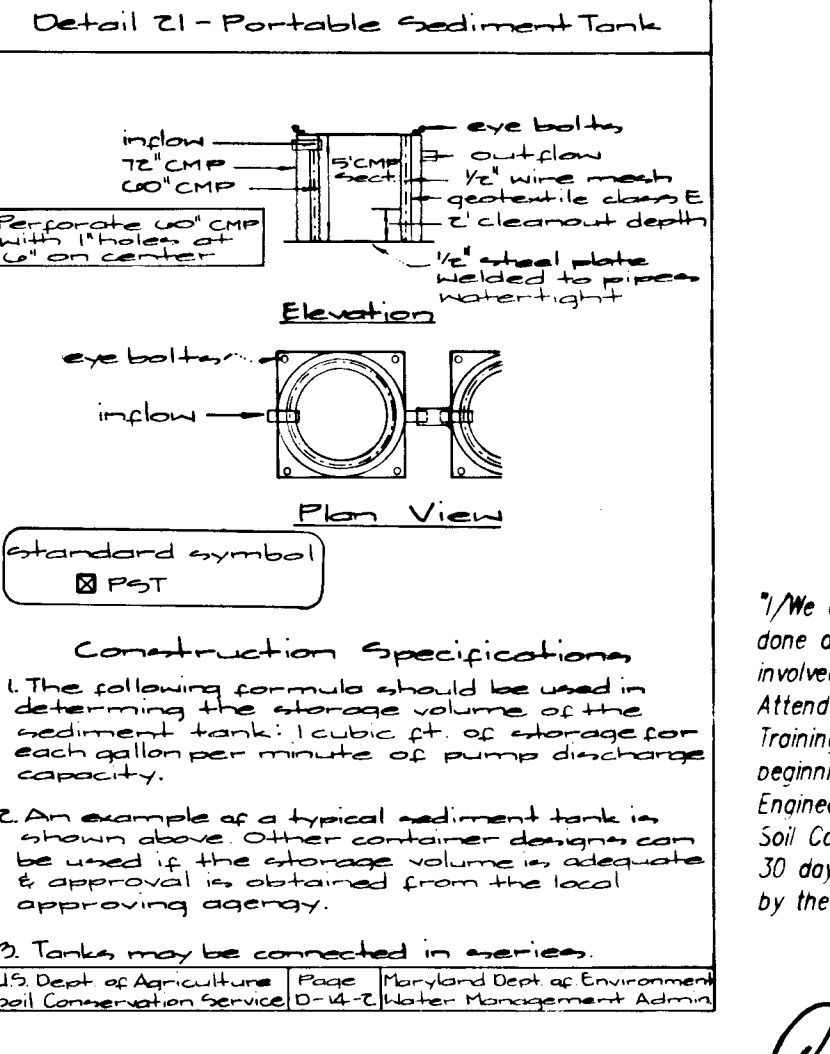
1. The pump shall be made of galvanized steel or similar material. The pump shall be 18" in diameter and shall be 48" high.

2. The pump shall be installed on a concrete pad. The pad shall be 18" thick and shall be 48" x 48" in size.

3. The pump shall be connected to a 4" diameter discharge pipe. The pipe shall be 48" long and shall be 4" in diameter.

4. The pump shall be inspected after each rainfall event and maintained when damage occurs or when sediment accumulates on top of the pump.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT
SOIL CONSERVATION SERVICE E-18-1-3 WATER MANAGEMENT ADMINISTRATION



1. The tank shall be made of galvanized steel or similar material. The tank shall be 18" in diameter and shall be 48" high.

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4. The tank shall be inspected after each rainfall event and maintained when damage occurs or when sediment accumulates on top of the tank.

U.S. DEPARTMENT OF AGRICULTURE PAGE 1 MARYLAND DEPARTMENT OF ENVIRONMENT
SOIL CONSERVATION SERVICE E-18-1-3 WATER MANAGEMENT ADMINISTRATION

Approved: Howard County Dept. of Public Works
Andrew M. Savelle 2/25/97
Chief, Bureau of Highways

Approved: Howard County Dept. of Planning
Richard Blood 3/3/97
Chief, Div. of Land Development

Approved: Howard County Dept. of Engineering
[Signature] 2/20/97
Chief, Development Engineering Div.

1. NOTIFY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR AT LEAST 24 HOURS PRIOR TO BEGINNING CONSTRUCTION. (1 DAY)

2. INSTALL PERIMETER CONSTRUCTION ENTRANCES, SILT FENCE AND OTHER APPROPRIATE SEDIMENT CONTROL DEVICES. SEE SHEETS 13 THROUGH 18 OF THIS PLAN FOR CONSTRUCTION OF THESE DEVICES. THE PERIMETER CONSTRUCTION ENTRANCES, SILT FENCE AND OTHER APPROPRIATE SEDIMENT CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY EARTH DISTURBANCE OR GRADING. THE PERIMETER CONSTRUCTION ENTRANCES, SILT FENCE AND OTHER APPROPRIATE SEDIMENT CONTROL DEVICES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. THE PERIMETER CONSTRUCTION ENTRANCES, SILT FENCE AND OTHER APPROPRIATE SEDIMENT CONTROL DEVICES SHALL BE REPAIRED OR REPLACED AS NECESSARY. (2 WEEKS)

3. INSTALL PORTABLE SEDIMENT TANK. SEE NOTES CONCERNING TANKS ON SHEET 18. NO MORE THAN TWO TANKS SHALL BE USED. THE PORTABLE SEDIMENT TANKS SHALL BE USED TO DETAIN SEDIMENT UNTIL THE TANKS ARE FULL. THE TANKS SHALL BE DISCHARGED INTO THE STREAM. (2 WEEKS)

4. COMPLETE PORTIONS OF THE APPROACH ROADWAY ENHANCEMENTS. (2 WEEKS)

5. CONSTRUCT APPROACH PILES, CONSTRUCT APPROACHES AND INSTALL RIP-RAP SLOPE PROTECTION. (4 WEEKS)

6. CONSTRUCT BRIDGE SUPERSTRUCTURE. (9 WEEKS)

7. COMPLETE APPROACH ROADWAY ENHANCEMENTS AND STABILIZE SLOPES. (3 WEEKS)

8. REMOVE SEDIMENT CONTROL DEVICES AS DIRECTED BY THE INSPECTOR. (1 WEEK)

1. The pump shall be made of galvanized steel or similar material. The pump shall be 18" in diameter and shall be 48" high.

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GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4024 NO. VA.: (301) 989-2524 BALT.: (410) 880-1820 FAX: (301) 421-4186

DATE: 2/19/97 REVISION: Rev. per construction notes, cell 4 & 6

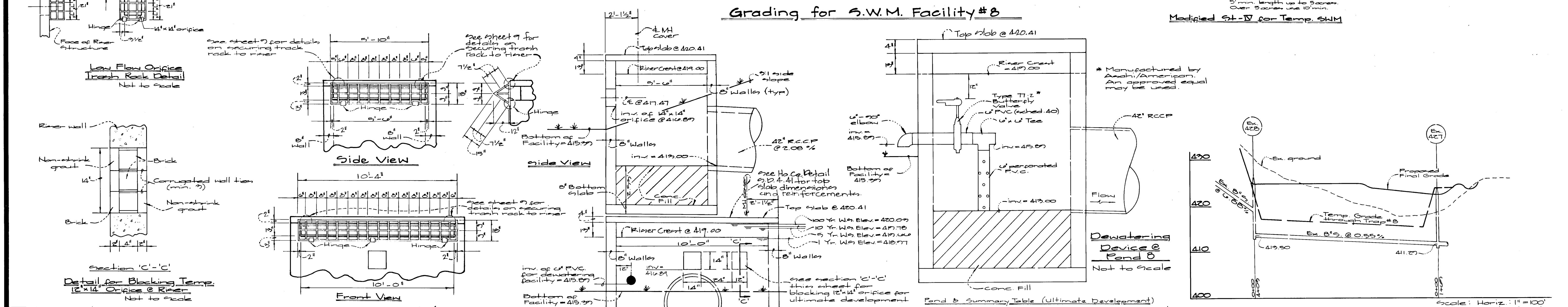
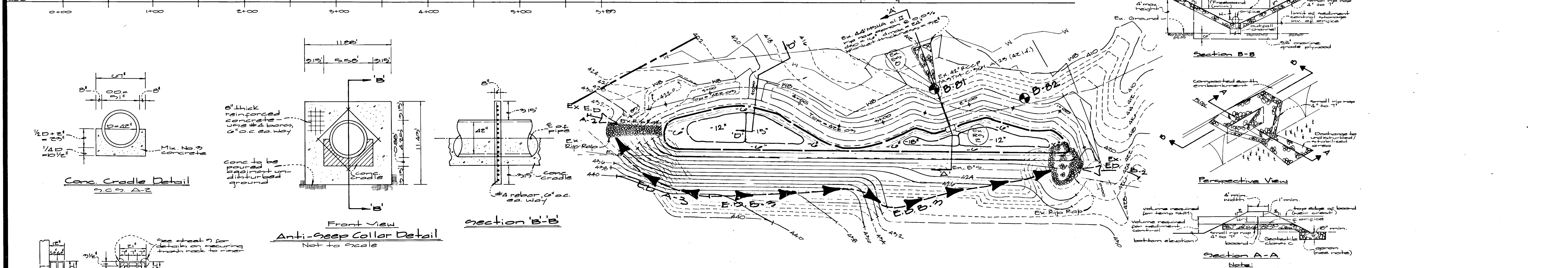
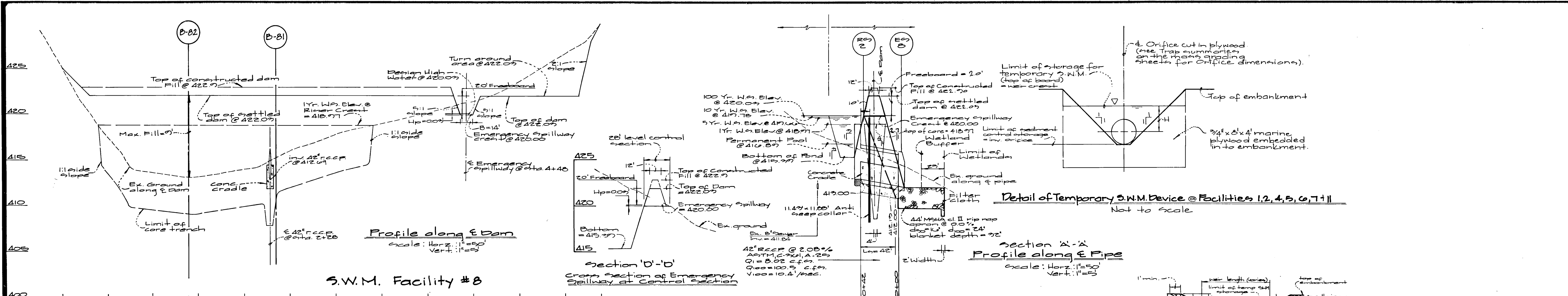
PREPARED FOR: The Howard Research and Development Corporation, The Rouse Building, 10275 Little Patuxent Pkwy, Columbia, Maryland 21044 (410) 992-0510

Project: Sediment Erosion Control Notes & Details, Village of River Hill, Section 4 Area 1, Phase 1

Scale: N/A Zoning: NT G.L.W. File No.: 94050

Date: Feb. 1997 Tax Map No.: 34935 SHEET: 17 of 23

Howard County, Maryland



Approved: Howard County Dept. Public Works
Andrew M. Cavaleri 2-25-97
 Chief, Bureau of Highways NO Date

Approved: Howard County Dept. of Planning & Zoning
Richard B. Howell 3/3/97
 Chief, Div. of Land Development CW Date

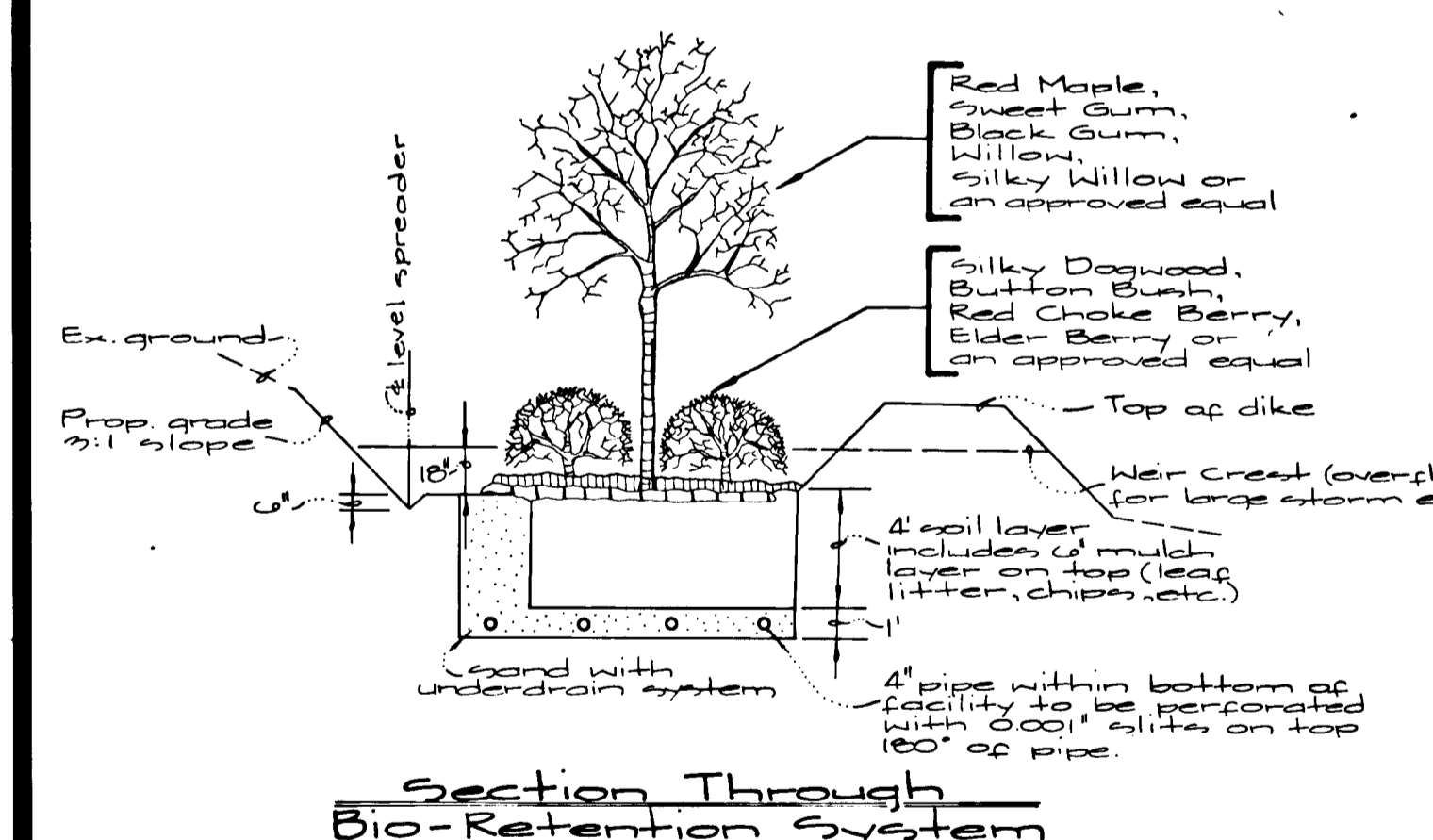
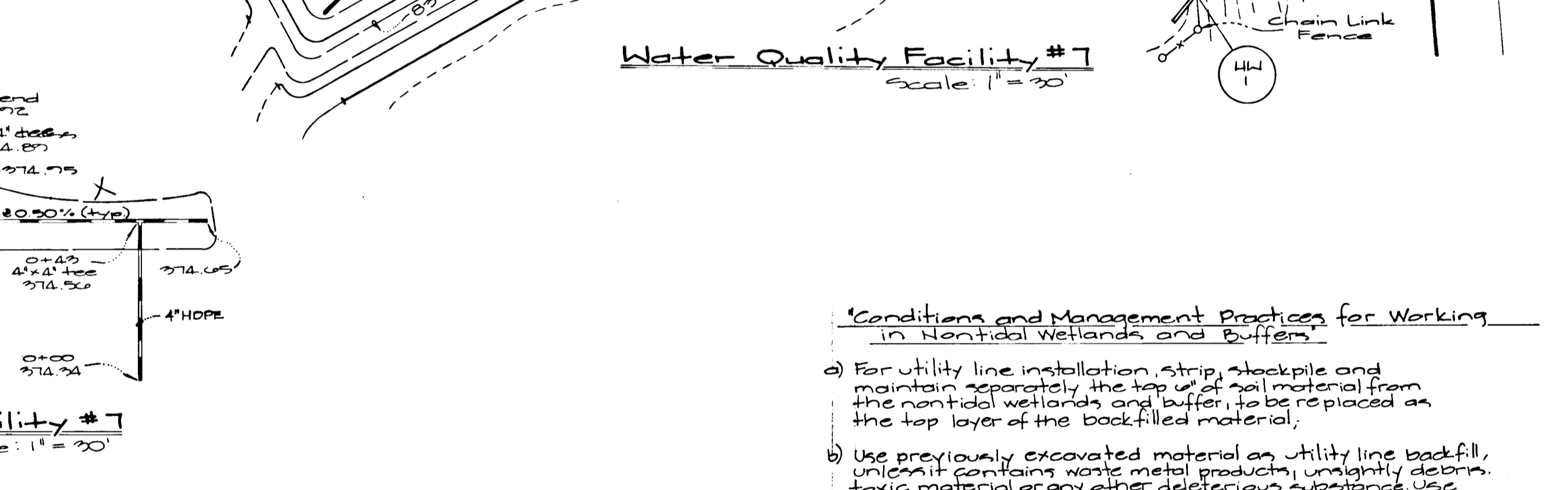
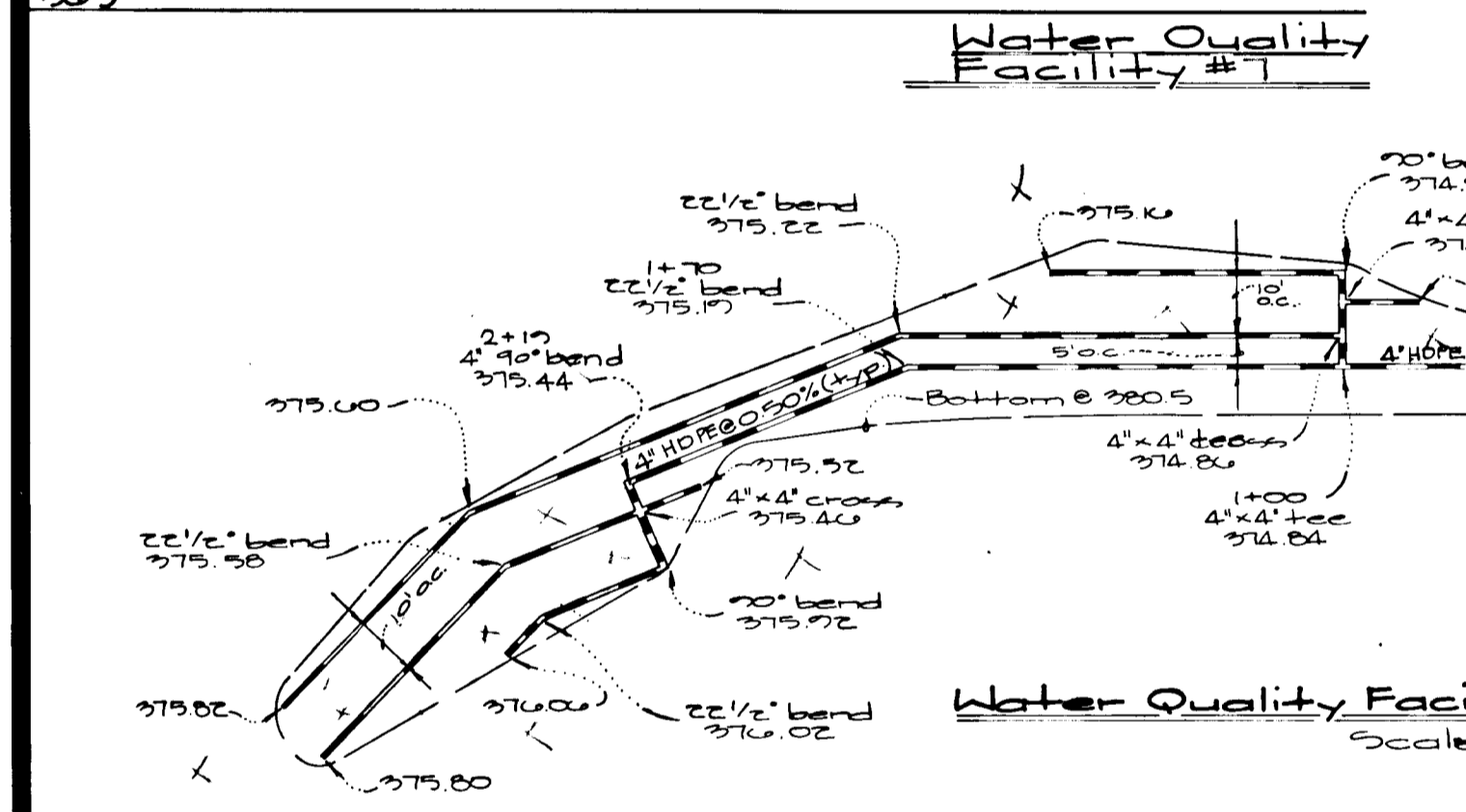
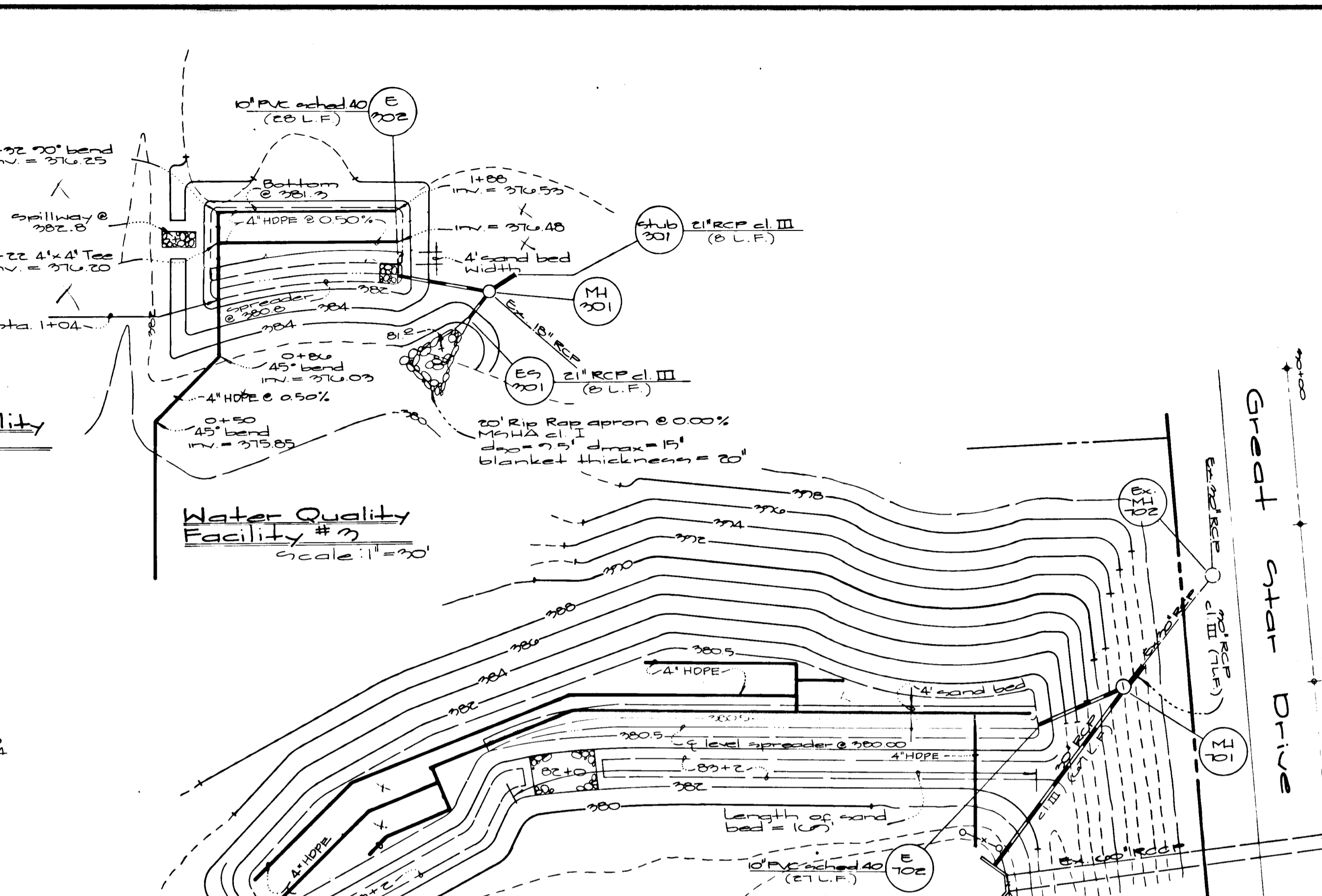
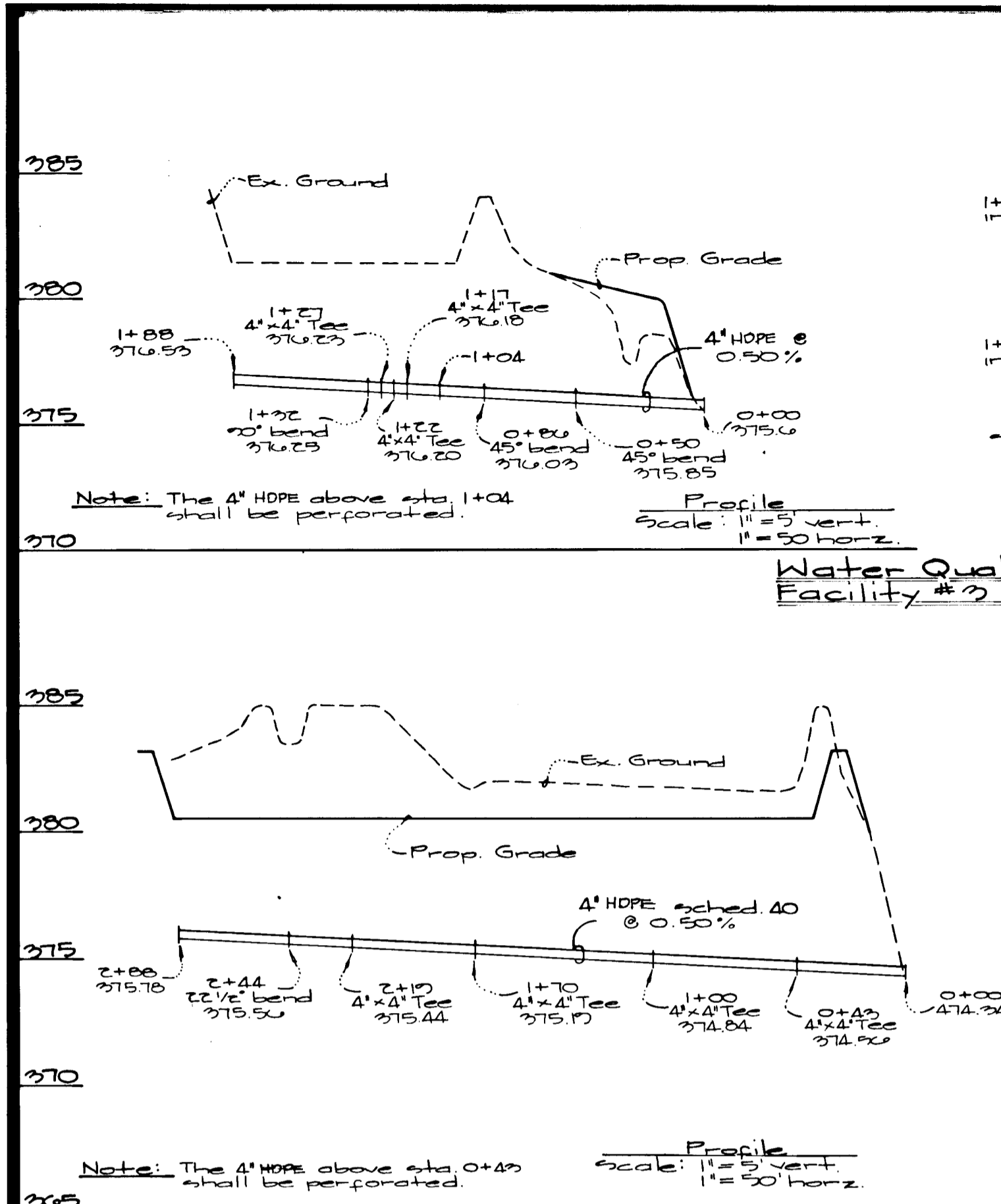
[Signature] 2/28/97
 Chief, Development Engineering Date

Pond 0 Summary Table (Ultimate Development)

Types of Facility:	Quantity and Quality Management
Before Development:	564 cfs. DA = 12.2 ac-ft
After Development:	30.08 cfs. DA = 14.6 ac-ft
After Management:	8.02 cfs. DA = 14.6 ac-ft
Hazard Classification:	'A'
1 Yr. Water Surface Elevation:	415.97
100 Yr. Water Surface Elevation:	419.86
Top of dam:	421.00 Freeboard: 1.14'
Bottom Elevation:	416.80 Permanent Pool: 415.30
Top of dam width:	12' sideslopes: upstream 5:1 downstream 5:1

Note:
 The Contractor Must Implement Any Recommendations Made By The Geotechnical Engineer That Exceed The Standards Established By MD-21B. The Recommendations can be Found in The Section Titled, 'Embankment Construction' Beginning on Page 6 of a Report Prepared By The Robert B. Balter Company Dated September 18, 1995. The Report is Titled 'Stormwater Management Facilities, Village of River Hill, Section 4, Area 1, 2 and 3'.

GIW GUTSCHICK LITTLE & WEBER, PA. CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS 3909 NATIONAL DRIVE · SUITE 250 · BURTONSVILLE OFFICE PARK · BURTONSVILLE, MD. 20866 TELEPHONE (301)421-4024 NO. VA (301)989-2524 BALTO. (301)880-1820 FAX (301)421-4186	DATE	REVISION	BY	APP'R.	PREPARED FOR: The Howard Research and Development Corporation The Rouse Building 10275 Little Patuxent Parkway Columbia, Maryland 21044 (410)992-6210	DES.: DEN DRN.: W.S.J. CHK.:	SCALE: As Shown DATE: February 1997	ZONING: NT TAX MAP No.: 24 & 25	G.L.W. FILE No.: 9A-050 SHEET: 21 of 23
	Storm Water Management Details & Profiles Village of River Hill Section 4 Area 1 Phase I 5th Election District Howard County, Maryland								



Conditions and Management Practices for Working in Nontidal Wetlands and Buffer

- For utility line installation, strip, stockpile and maintain separately the top 4" of soil material from the nontidal wetlands and buffer, to be replaced as the top layer of the backfilled material.
- Use previously excavated material as utility line backfill, unless it contains waste metal products, unsorted debris, toxic material or any other deleterious substance. Use clean borrow material when excavated material is not suitable for use as backfill.
- Remove excess fill or construction material or debris to an upland disposal area, outside of any floodplain, waterway, wetland or buffer.
- Rectify any nontidal wetlands and buffers temporarily impacted by the proposed activity. All stabilization in the wetland and buffer shall be of the following recommended species: Annual Rye grass (*Lolium multiflorum*), Millet (*Setaria italica*), and/or Rye (*Secale cereale*). Other non-permanent vegetation may be acceptable, but must be approved by the Nontidal Wetlands and Waterways Division, Kentucky. No fence shall not be utilized in the wetland or buffer. All temporary fills shall be removed in their entirety on or before the completion of construction.
- After utility line installation has been completed, make post construction grades and elevations of nontidal wetlands the same as the original grades and elevations.
- Place heavy equipment on mats or suitably operate the equipment to prevent damage to the nontidal wetlands.
- To protect important aquatic species, in-stream work shall be prohibited as determined by the classification of the stream as follows:
Class I Water: In-stream work may not be conducted during the period March 1 through June 15, inclusive during any year.
- No removal of vegetation, grading, filling, draining or other alteration of the nontidal wetlands, or buffer outside the limits of disturbance shall occur without written authorization from the water management Administration.

Size and Type	Quantity
4" HOPE (perforated)	692'
4" HOPE	141'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Caveler 2-25-97
 Chief, Department of Public Works

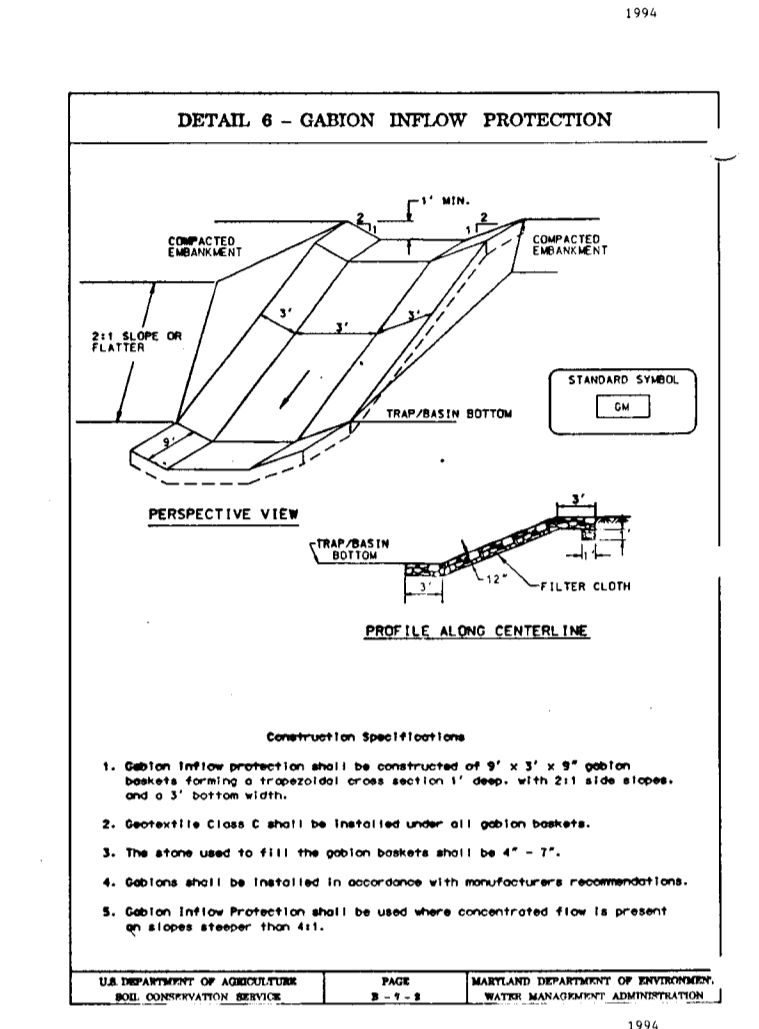
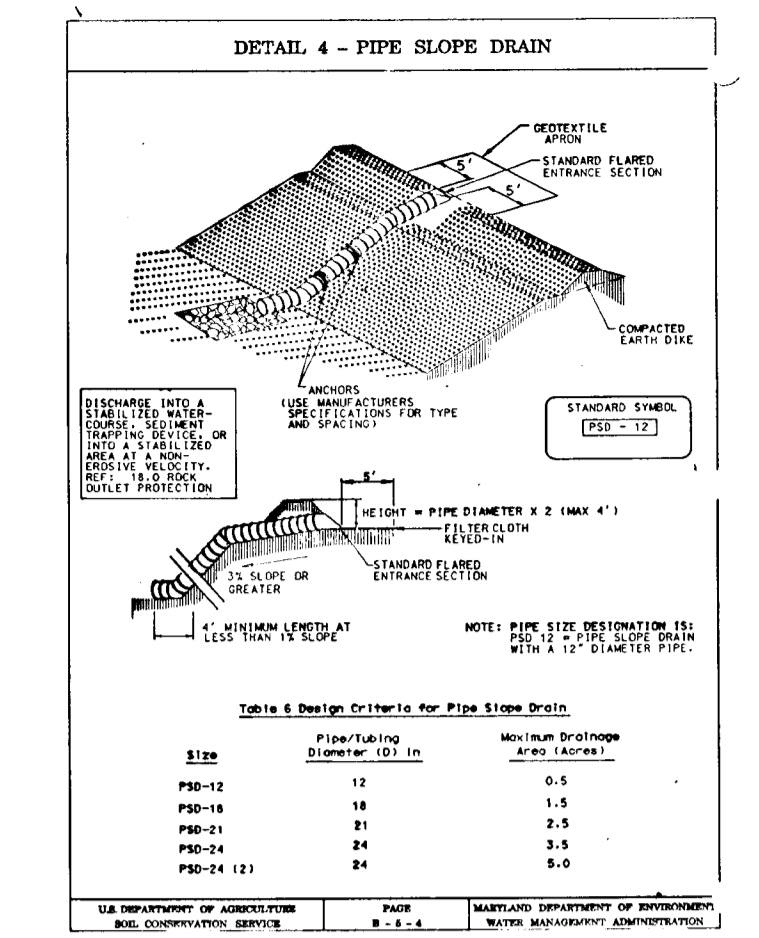
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Richard Blood 3/3/97
 Chief, Department of Planning & Zoning

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 Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

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/she must engage a registered professional engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion.

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



23.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

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

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

Conditions Where Practice Applies

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

Construction and Material Specifications

- Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile in the Soil Survey published by the Maryland Department of the Environment, Agricultural Experiment Station.
- Topsoil Specifications - Soil to be used as topsoil must meet the following:
 - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam or other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate authority. Regardless, topsoil shall not be a mixture of containing required subsoils and shall contain less than 5% by volume of cinders, stones, clay, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
 - Topsoil must be free of plants or plant parts such as bermudagrass, quackgrass, johnsongrass, nutgrass, poison ivy, thistle or others as specified.
 - Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 200 to 400 pounds per 1,000 square feet prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures:
 - For sites having disturbed areas under 5 acres:
 - Place topsoil (if required) and apply soil amendments as specified in 23.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.
 - For sites having disturbed areas over 5 acres:
 - On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
 - pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, an sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
 - Organic content of topsoil shall be not less than 1.5 percent by weight.
 - Topsoil having suitable salt content greater than 500 parts per million shall not be used.
 - No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days minimum) to permit dissipation of phytotoxic materials.

GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
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 TEL: (301) 421-4024 NO. VA.: (301) 989-2524 BAL: (410) 880-1820 FAX: (301) 421-4186 DES. DEV. DRN.: KLP/CHK

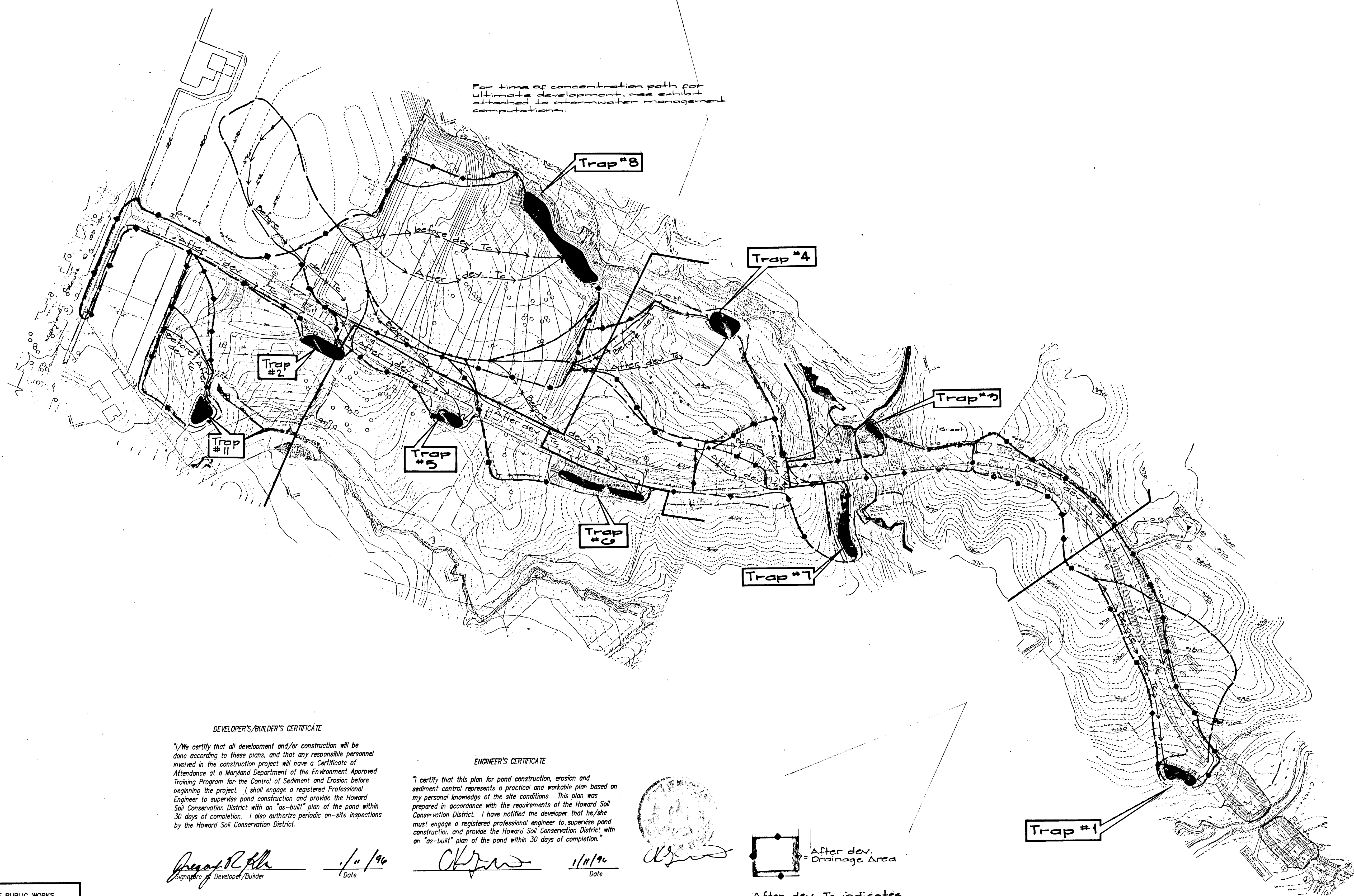
DATE	REVISION	BY	APP'R.
6/24/97	REV. 4" PVC TO 4" HOPE, add pipe schedule	MCJ	

PREPARED FOR:
 The Howard Research & Development Corporation
 10275 Little Patuxent Parkway
 Columbia, Maryland 21044
 (410) 792-6970

Water Quality Facilities & Details
 Village of River Hill
 Section 4, Area 1
 Phase I
 5th Election District
 Howard County, Maryland

SCALE	ZONING	G. L. W. FILE NO.
As Shown	NT.	74050
DATE	TAX MAP No.	SHEET
February 1997	24 & 25	22 of 23

1987



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 Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

Gregory R. Kline 1/11/96
 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/she must engage a registered professional engineer to supervise pond construction, and provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

Chris 1/11/96
 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.

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

Cheryl Simmon 2/12/97 *John W. Zink* 2/12/97
 Natural Resources Conservation Service Date Howard Soil Conservation District Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Sauer 2-25-97
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Richard Blood 3/3/97
 Chief, Division of Land Development Date

Cheryl Simmon 2/28/97
 Chief, Development Engineering Division Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
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DATE	REVISION	BY	APP'R.

PREPARED FOR:
 The Howard Research and Development Corporation
 The Rouse Building
 10275 Little Patuxent Parkway
 Columbia, MD 21044
 (410) 992-6370

Composite Area Map For Sediment Control
VILLAGE OF RIVER HILL
 SECTION 4 AREA 1
 Phase I
 CLARKSVILLE ELECTION DISTRICT No. 6 HOWARD COUNTY, MARYLAND

DES.:	SCALE	ZONING	G.L.W. FILE No.
	1" = 200'	NT	94050
DRN.:	DATE	TAX MAP No.	SHEET
	February 1997	24 & 25	23 of 23
CHK.:			

1487