

GENERAL NOTES

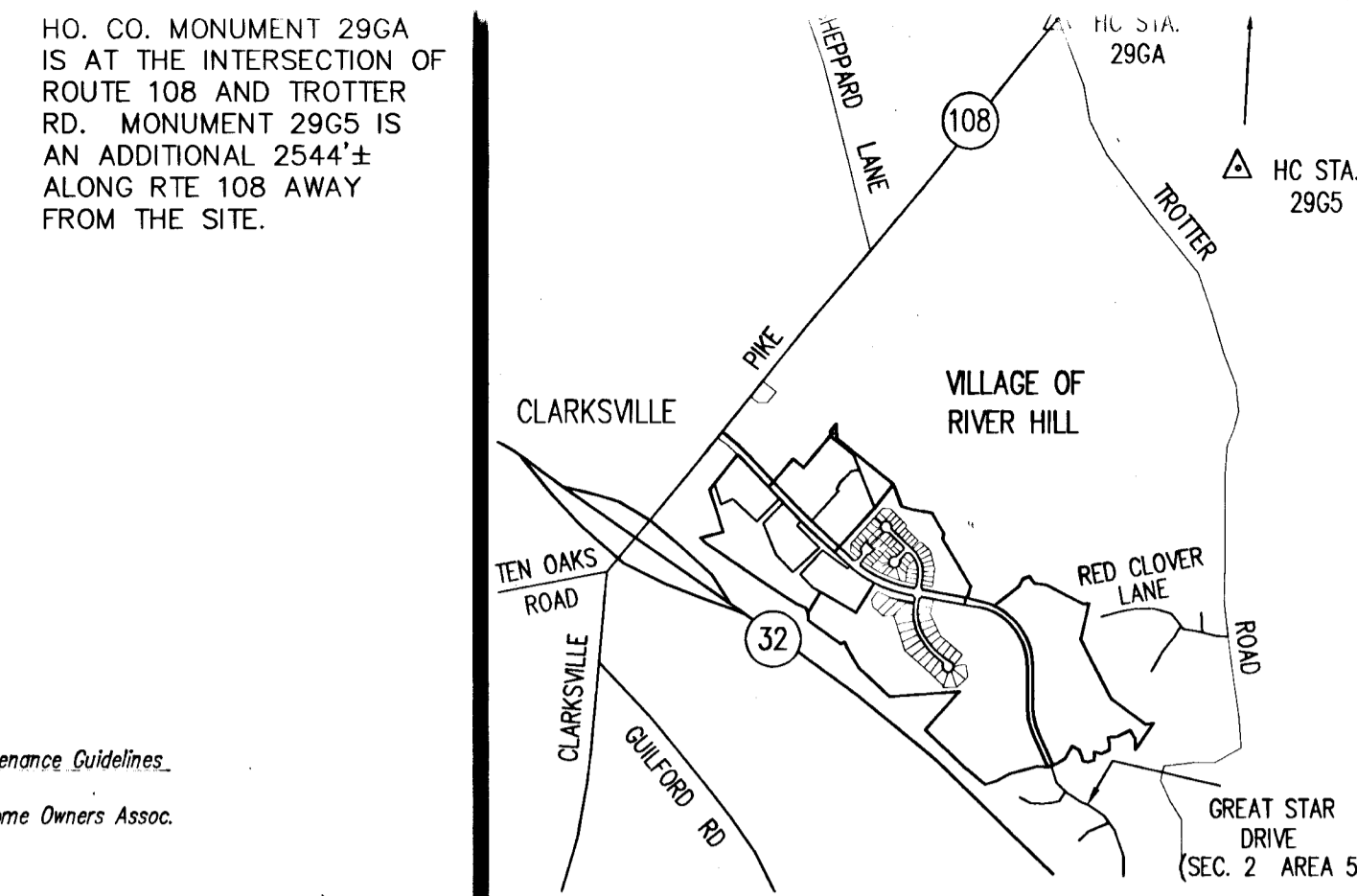
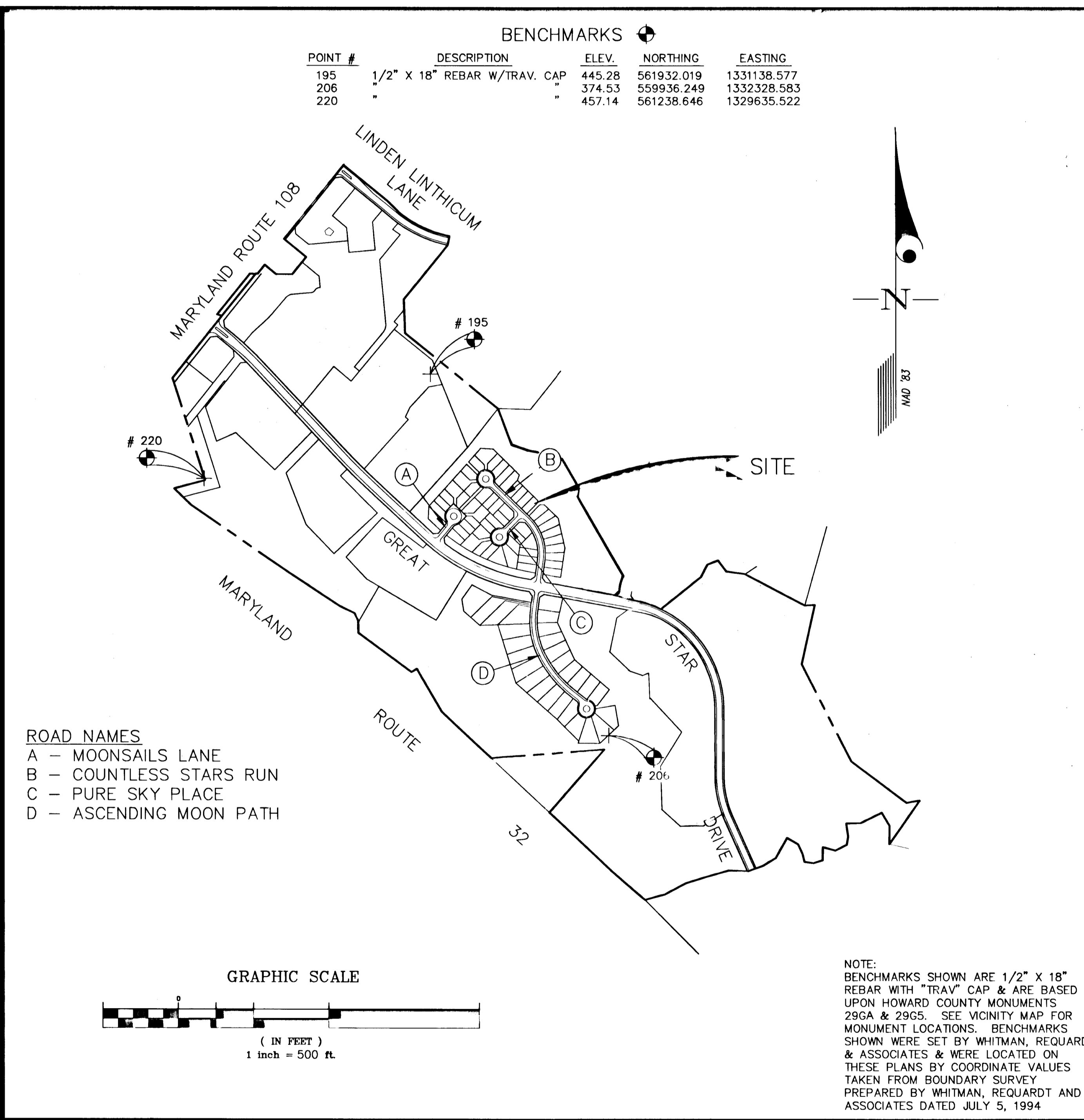
- THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- PROJECT BACKGROUND:
LOCATION: MD. ROUTE 108, 2600' WEST OF SHEPHERD LANE
TAX MAP: 34 AND 35
ZONING: NT
ELECTION DISTRICT: 5
GROSS AREA OF TRACT: 72.8025 AC
PRELIMINARY PLAN FILE NUMBER AND APPROVAL 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, F 96-110.
- 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. 24-2525-0 & 20-2225-10.
- 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 296A, ELEV. 450.30, AND 296S, 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 I.
- 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 MSHA.
- 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. BOND RELEASE IS CONTINGENT UPON SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL.
- SEE SHEET 2 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 W3-14, 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.

- Street light placement & the type of fixture & pole shall be in accordance with the Howard County Design Manual, Volume III (1993) & as modified by "Guidelines for Street Lights in Residential Developments" (June 1993).
- The following numbers can be used to track environmental permits:
MDE Application Tracking #199506783
N.T.W. Division No. 95-NT-0517
- The required perimeter landscaping along Maryland Route 32 will be provided by retaining the existing vegetation.
- A tree maintenance esmt., ten feet in width, running along the edge of the Public right-of-way as shown on these road drawings is reserved upon all lots fronting on the said Public right-of-way. This esmt. allows Howard County the right to access the property, when necessary, for the specific purpose of installation, repair and maintenance of County-owned trees located within the boundaries of private lots. No building structure of any kind shall be located on or over the said esmt. area.

VILLAGE OF RIVER HILL SECTION 4 ~ AREA 1 PHASE 2 HOWARD COUNTY, MARYLAND

BENCHMARKS

POINT #	DESCRIPTION	ELEV.	NORTHING	EASTING
195	1/2" X 18" REBAR W/TRAV. CAP	445.28	561932.019	1331138.577
206	"	374.53	559936.249	1332328.583
220	"	457.14	561238.646	1329635.522



Operations and Maintenance Guidelines.
Facility Owner: HCDPW HOA: Home Owners Assoc.

- Operations Guidelines for H.C.D.P.W.:**
- Facility Owner shall keep accurate records of inspections, maintenance and repairs.
 - Facility Owner shall make a visual inspection of the facility at least twice a year, once in the summer after the facility has been mowed and once during the winter when the vegetation is inactive. Additional inspections shall be made during and after extreme rainfalls.
 - During the extreme weather or rainfall events, the Facility Owner shall check for overtopping, seepage, or dike failure. In order to avoid overtopping, place sandbags on top of the dike.
 - If a severe problem develops, the Facility Owner shall contact a Professional Engineer to assess the problem and make a suggestion to remedy the situation.

Maintenance Guidelines for H.C.D.P.W.:

- During the semi-annual visual inspections, the following items must be checked and documented by the Facility Owner:
- Spillways and Outlet Device**
 - Foraboy - Check for stone deterioration and the need for removal of sediment.
 - Rip Rap Outlet - check for stone deterioration or stone loss.
 - Dikes**
 - Vegetation - proper vegetative cover is required on all dikes. Follow proper seeding specifications for reseeding.
 - Trees and Brush - trees and brush shall be removed from the dikes. Stumps can be removed using silvicide.
 - Mowing - mow dikes as necessary to control the establishment of woody growth and to maintain the vegetative cover. Mowing shall be done at least once a year (mid to late summer) but may be done more often.
 - Seepage - the following warning signs should be looked for when inspecting for seepage problems: cracks (longitudinal and vertical), soil spots or boggy areas on downstream side of dike, seepage along downstream toe of dike.
 - Stability - large cracks, slides, sloughing and excessive settlement are signs of dike instability and a need for repair.
 - Rodents - check for burrows, which can lead to seepage, and remove rodents when encountered.
- III. Maintenance by HOA.**
- Mowing in excess of the one per year provided by owner shall be by HOA.
 - Removal of plantings in facility is prohibited.
 - Removal of landscaping around facility is prohibited. Replacement of dead or diseased landscaping is permitted, but it must be in-kind.
 - Terms and conditions of easement agreement with owner of Open Space lots must be complied with.

DRAWING LIST

NO.	DESCRIPTION
1	Cover sheet
2	Road Plan: Moonsails Lane
3	Road Plan: Countless Stars Run and Pure Sky Place
4	Road Plan: Ascending Moon Path
5	Mass Grading & Sediment Control
6	Mass Grading & Sediment Control
7	Drainage Area Map
8	Storm Drain Profiles, Structure and Pipe Schedules
9	Notes and Details
10	Details and Profiles
11	Details and Profiles Specifications

STREET LIGHT SCHEDULE

SHEET NO.	STREET NAME	LOCATION	OFFSET	TYPE
3	Countless Stars Run	5+00	10' Left	3
3	Countless Stars Run	LP Sta	7' behind	3
4	Ascending Moon Path	0+58	curb	3
4	Ascending Moon Path	4+54	15' Right	3
4	Ascending Moon Path	LP Sta	3' behind	3
		0+57	curb	

STREET LIGHT INFORMATION

☼	TYPE 3 - 100 WATT HIGH PRESSURE SODIUM VAPOR MODERN POST TOP FIXTURE (BRONZE) MOUNTED ON A 14" BRONZE FIBERGLASS EMBEDDED POLE. PLACE 3' FROM FACE OF CURB.
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APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Daniels 2-20-97
Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Richard Blood 2/27/97
Chief, Division of Land Development

Albino 2/25/97
Chief, Department Engineering Division

OWNER:
The Howard Research and Development Corporation
The Rouse Building
10275 Little Patuxent Parkway
Columbia, Md 21044
Phone: (410) 992-6370

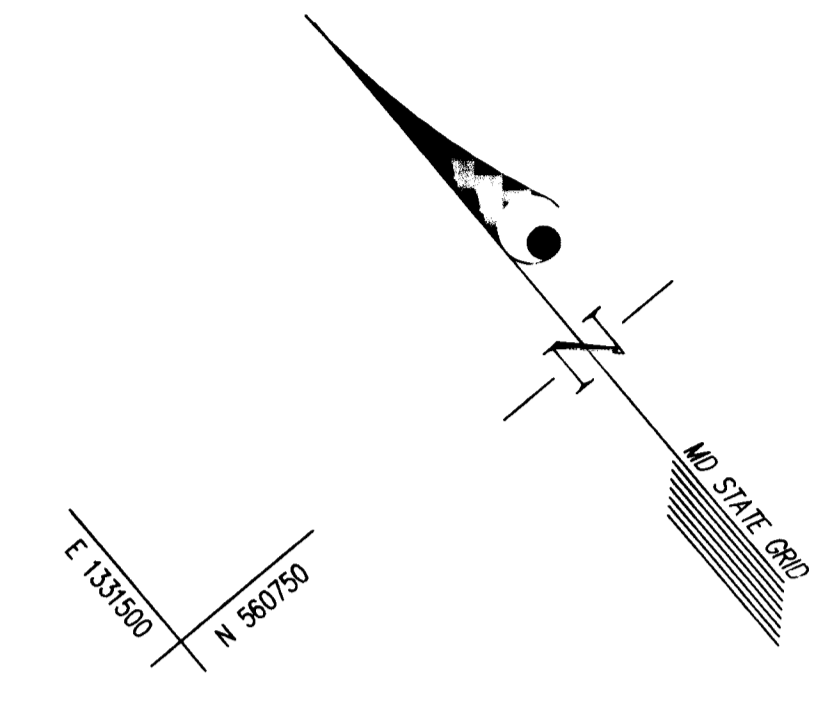
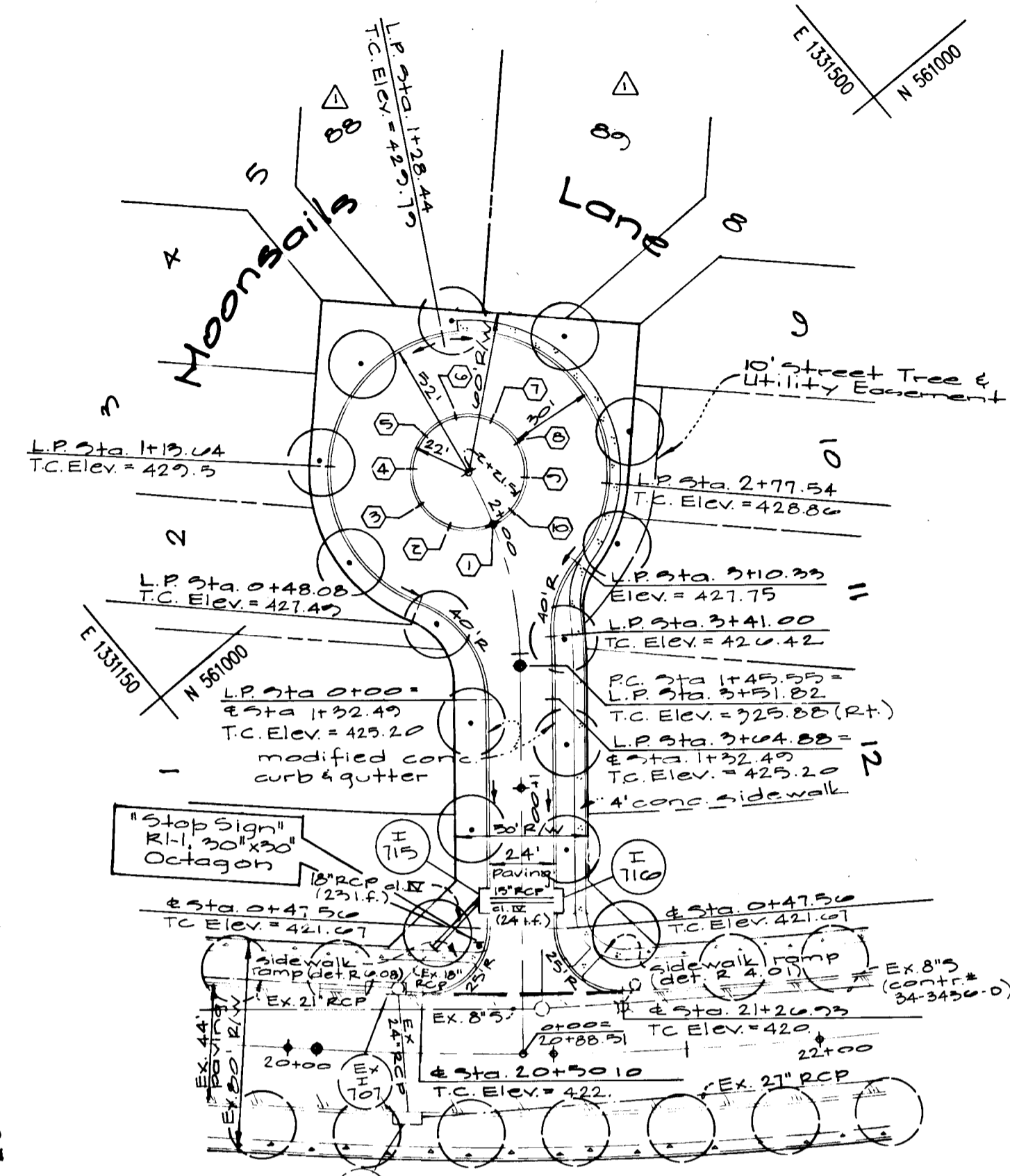
GIW GUTSCHICK LITTLE & WEBER, P.A. CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866 TEL: (301) 421-4024 NO. VA. (301) 989-2524 BALT. (410) 880-1820 FAX: (301) 421-4186 DES. DRN. S.J.G. CHK.	PREPARED FOR: 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 2 CLARKSVILLE ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN ZONING NT G. L. W. FILE NO. 94050
	DATE: JAN, 1997 TAX MAP No. 34 & 35 SHEET 1 OF 11		

CURVE DATA									
STREET NAME	P.C. STA.	P.C.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
Moonwalk Lane	1+45.55	none	2+21.51	150.00'	75.96'	38.81'	75.15'	N 25°02'56" E	28°00'51"

STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
○	Zelkova serrata / Green Lane	6" x 8" cal	15	See General Note # 26

The standard 7" curb and gutter in the Great Star right-of-way will be nosed down within the last 10' prior to the handicap ramp. The first 10' following the ramp will be used to establish the full height of the modified curb and gutter.

Point No.	T.C. Elev.
1	426.62
2	426.70
3	427.75
4	428.03
5	429.05
6	429.08
7	429.08
8	429.09
9	429.08
10	428.76



- Legend**
- Ex 7" conc curb & gutter (F9u-110)
 - Ex bituminous curb to be removed
 - Prep mod conc curb & gutter
 - Ex storm drain (F9u-110)
 - Ex 8" (concr) #34-3456-D
 - Ex 4" conc sidewalk
 - Ex streetlight (F9u-110)
 - Ex street tree (F9u-110)

GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20868
 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 II
 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) 552-6370

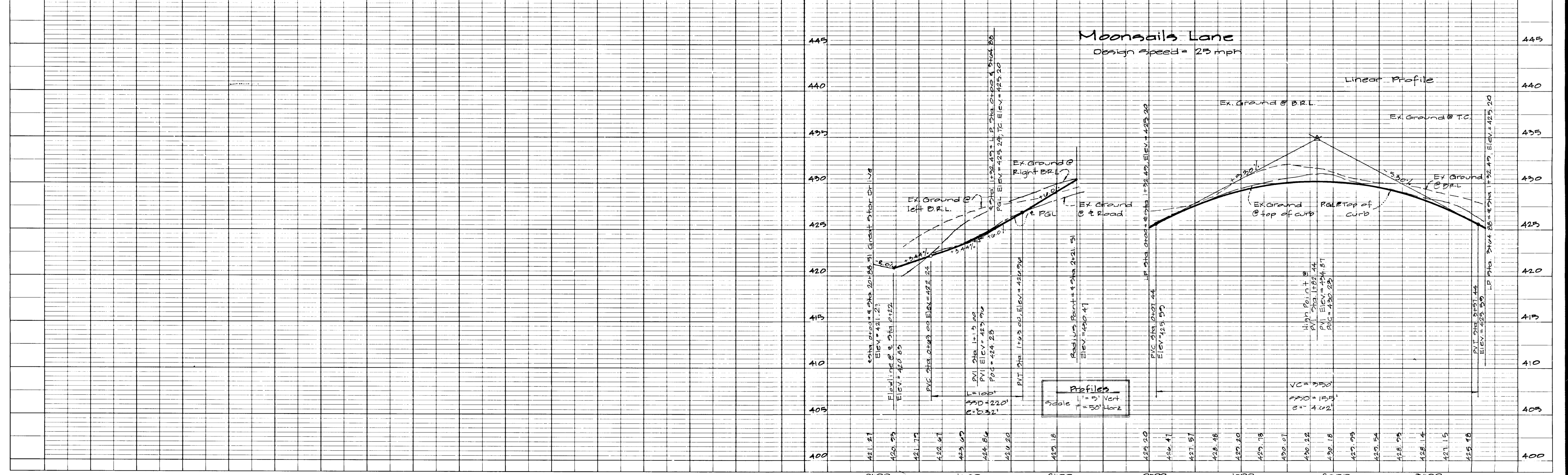
DESIGNED DEV: ROAD CONSTRUCTION PLANS
 DRAWN CAD/: COLUMBIA
 CHECKED DEV: SECTION 4, AREA 1
 DATE: Phase II
 SCALE: 1"=50'
 DRAWING: 2 OF 11
 ZONING: N T
 JOB No.: 94050

Approved: Howard County Dept. of Public Works
Andrew M. Saxe
 Chief, Bureau of Highways
 Date: 2/20/97

Approved: Howard County Dept. of Planning & Zoning
Richard Blood
 Chief, Div. of Land Development
 Date: 2/27/97

W. Damms
 Chief, Development Engineering Div.
 Date: 2/25/97

Date	Revision	By
6/22/96	Revise lot lines on lots 80 & 89	MCF



1487

Countless Stars Run
T.C. Elevations

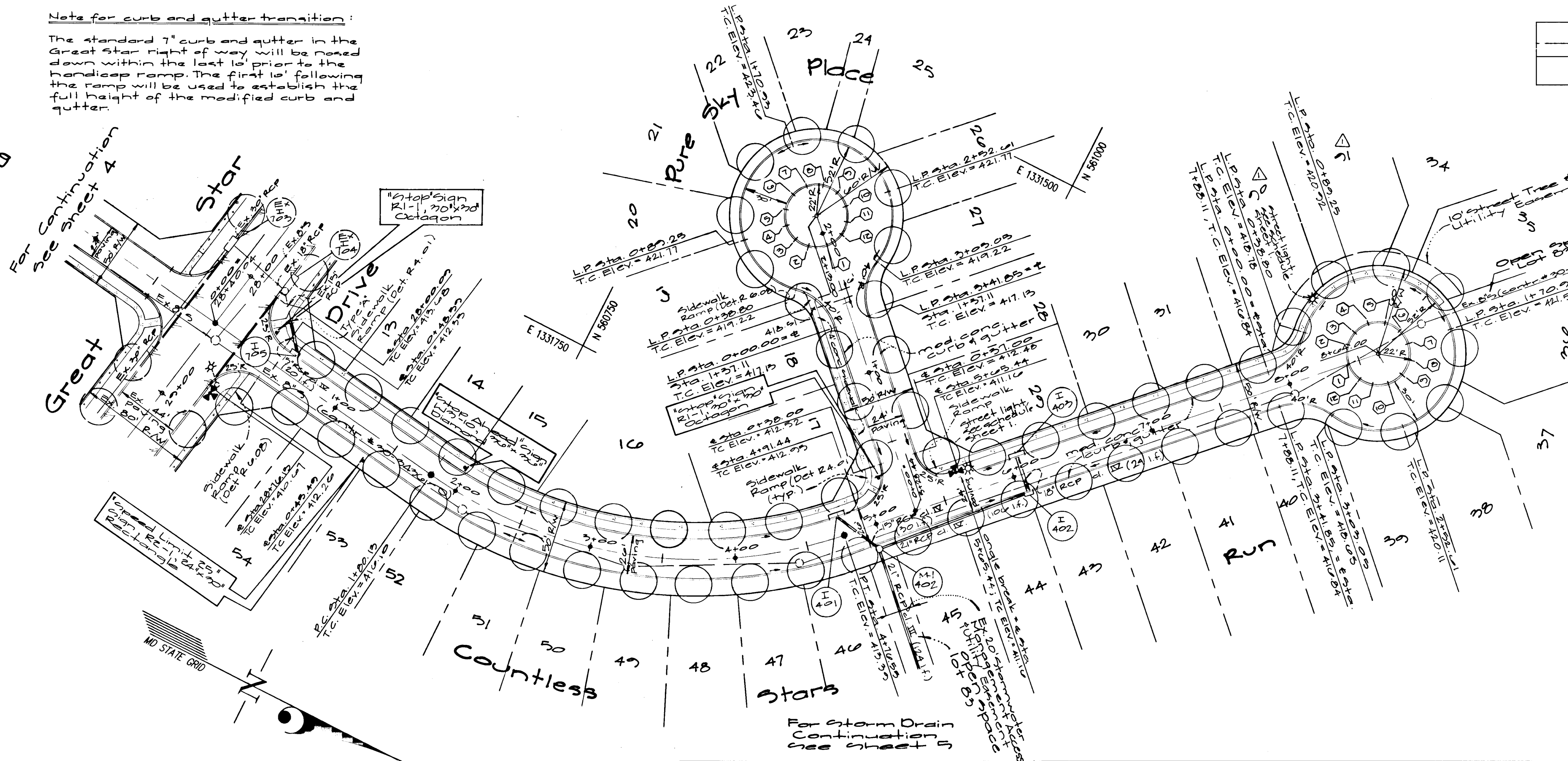
Point No.	T.C. Elev.
1	417.93
2	420.01
3	420.79
4	421.07
5	421.23
6	421.32
7	421.28
8	421.23
9	421.12
10	420.97
11	420.92
12	419.77

Pure Sky Place
T.C. Elevations

Point No.	T.C. Elev.
1	420.00
2	420.02
3	421.02
4	422.17
5	422.02
6	422.01
7	422.72
8	422.02
9	422.17
10	422.02
11	421.02
12	420.02

Ascending
Main
Path

Note for curb and gutter transition:
The standard 7" curb and gutter in the Great Star right of way will be noted down within the last 10' prior to the horizontal ramp. The first 10' following the ramp will be used to establish the full height of the modified curb and gutter.



Curve Data

STREET NAME	P.C. STA.	P.C.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
Countless Stars Run	1+80.13	none	4+76.55	316.00'	296.42'	160.13'	285.68'	N 18°47'41" W	53°44'48"

Plan
Scale: 1"=50'

STREET TREE SCHEDULE

SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
○	Zelkova Serotina / Green Vane	2 1/2" - 3" cal	1	See General Note # 2

- Legend**
- Ex 7" conc. curb & gutter (F90-110)
 - Ex. bituminous curb to be removed
 - Prop. med. conc. curb & gutter
 - Ex. storm drain (F90-110)
 - Ex. 6" (cont. # 20-2250-0)
 - Ex. 4" conc. sidewalk
 - Ex. streetlight (F90-110)
 - Ex. street tree (F90-110)

Approved: Howard County Dept. of Public Works
Andrew M. Danek
Chief, Bureau of Highways
Date: 2-20-97

Approved: Howard County Dept. of Planning & Zoning
Richard Blood
Chief, Div. of Land Development & Research
Date: 2/23/97
W. J. Vannoy
Chief, Development Engineering Div.
Date: 2/25/97

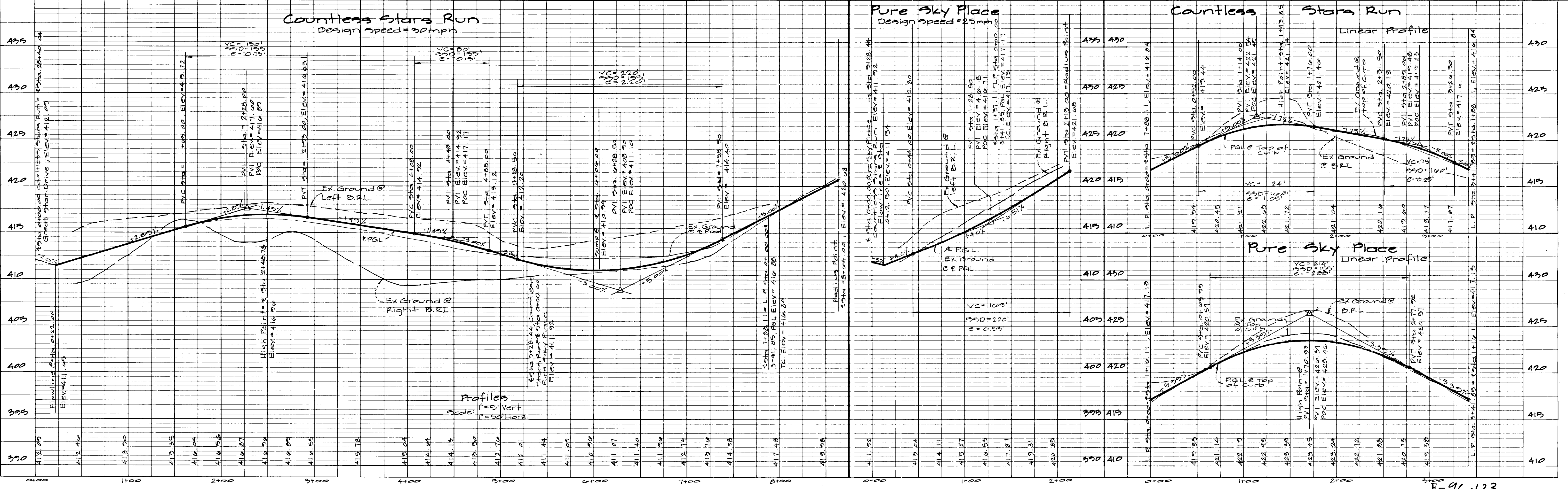
GW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866
TEL: (301) 421-4024 BALT.: (410) 880-1820 NO.VA. (301) 989-2524 FAX: (301) 421-4186

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

OWNER:
THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
PHONE: (410) 522-6370

DESIGNED DEV: ROAD CONSTRUCTION PLANS
DRAWN CAD: COLUMBIA
CHECKED DEV: SECTION 4, AREA 1
DATE: January, 1997

SCALE: 1"=50'
DRAWING: 3 OF 11
ZONING: N I
JOB No.: 94050



1487

Countless Stars Run
For Continuation
See sheet 3

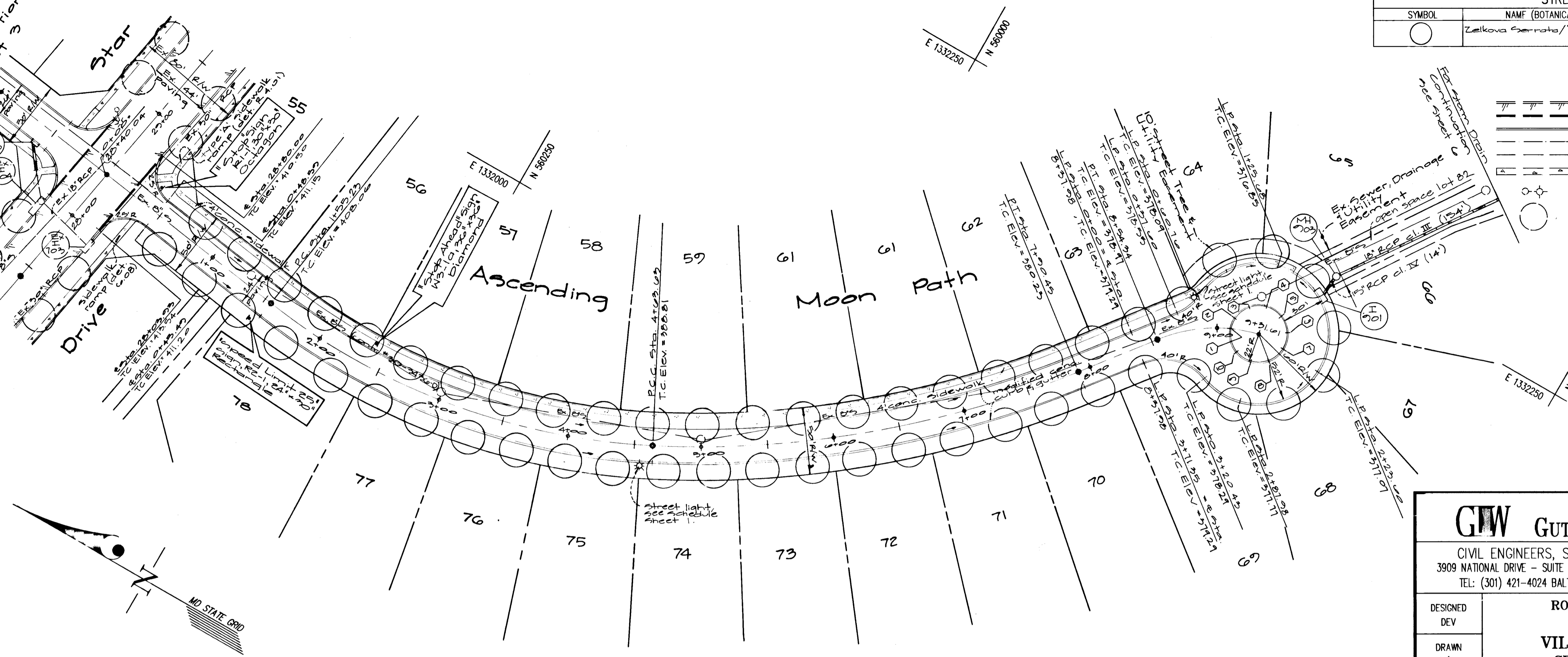
STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/Common)	SIZE	QUANTITY	REMARKS
○	Zelkova serrata / Green Vane	2 1/2" - 3" cal.	52	See General Note # 26

- Legend**
- Ex. 7" conc. curb/gutter (F90-110)
 - Ex. bituminous curb to be removed
 - Prop. mod. conc. curb/gutter
 - Ex. storm drain (F90-110)
 - Ex. 8" (concr. #30-3450-0)
 - Ex. 4" conc. sidewalk (F90-110)
 - Ex. street light (F90-110)
 - Ex. street tree (F90-110)

NOTES FOR CURB AND GUTTER TRANSITION:
The standard 7" curb and gutter in the Great Star right-of-way will be nosed down within the last 10' prior to the handicap ramp. The first 10' following the ramp will be used to establish the full height of the modified curb and gutter.

**Ascending Moon Path
T.C. Elevations**

Point No.	T.C. Elev.
1	976.26
2	976.12
3	977.89
4	977.79
5	977.46
6	977.93
7	977.65
8	977.82
9	977.98
10	976.10



¢ CURVE DATA

STREET NAME	P.C. STA.	P.C.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
Ascending Moon Path	1+55.23	4+63.63	none	500.00'	308.40'	159.28'	303.53'	S 09°35'28" E	35°20'22"
Ascending Moon Path	none	4+63.63	7+90.45	750.00'	326.82'	166.04'	324.24'	S 39°44'40" E	24°58'01"
Ascending Moon Path	8+54.34	none	9+31.61	115.00'	77.27'	40.16'	75.83'	S 32°58'41" E	38°30'00"

Approved: Howard County Dept. of Public Works
Richard M. Coucho 2-20-97
Chief, Bureau of Highways NS Date

Approved: Howard County Dept. of Planning & Zoning
Richard Blood 2/22/97
Chief, Div. of Land Development & Research Date

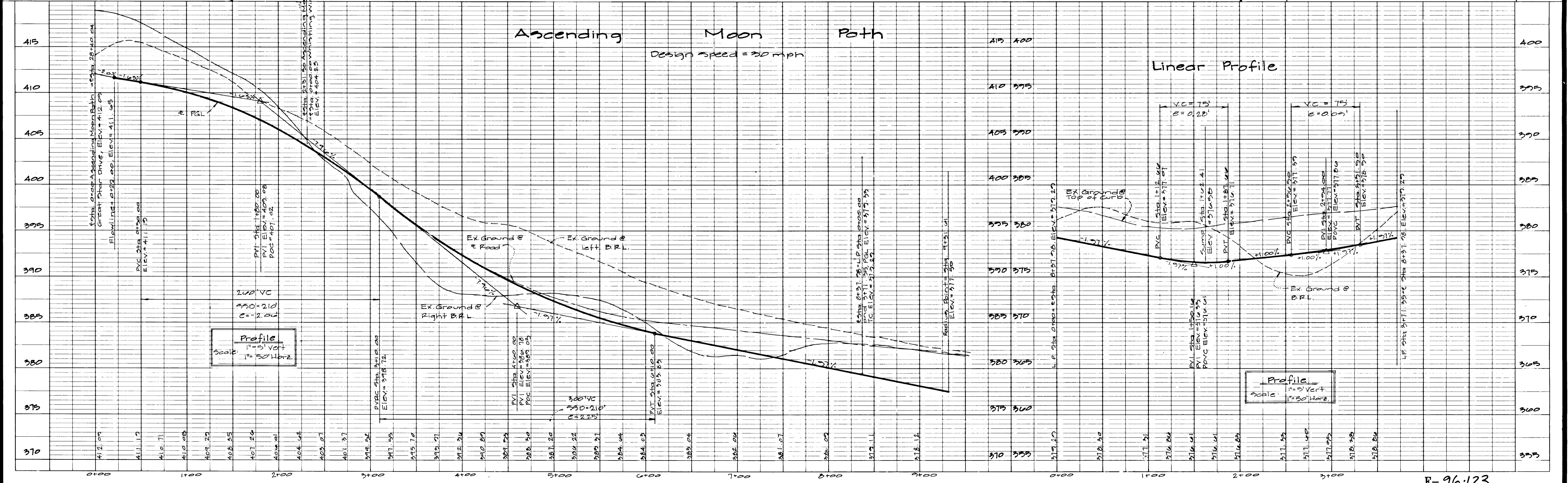
William J. ... 2/25/97
Chief, Development Engineering Div. Date

GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20856
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SECTION 4, AREA 1
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DESIGNED DEV: SCALE 1"=50'
DRAWN CAD/: DRAWING 4 OF 11
CHECKED DEV: ZONING N T
DATE: JOB No. 94050

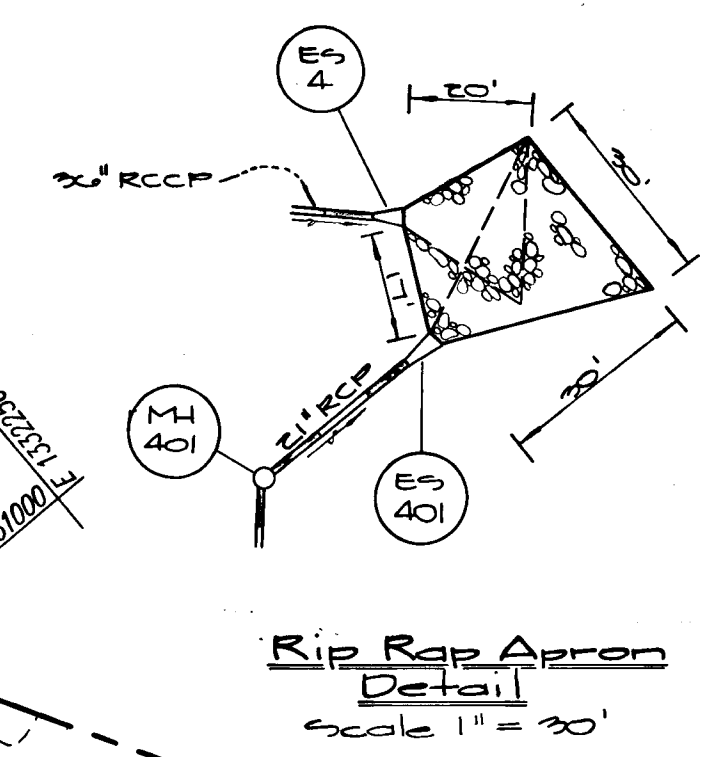


1487

Legend

- LOD 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 Contours
- Proposed Contours
- WB Wetland Buffer
- W Limit of Wetlands
- Existing Treeline
- Proposed Treeline

For final grading of facility #4, see sheet 10.



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

Robert Zichner 2/14/97
Howard Soil Conservation District Date

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

Cheryl Garrison 02-04-97
Natural Resources Conservation Service Date

I certify that this plan for pond construction, erosion & sediment control represents a practical & workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have advised the developer that he/she must engage a registered professional engineer to supervise pond construction & provide the Howard Soil Conservation District with an 'as-built' plan of the pond within 90 days of completion.

[Signature] 3-13-96
Date

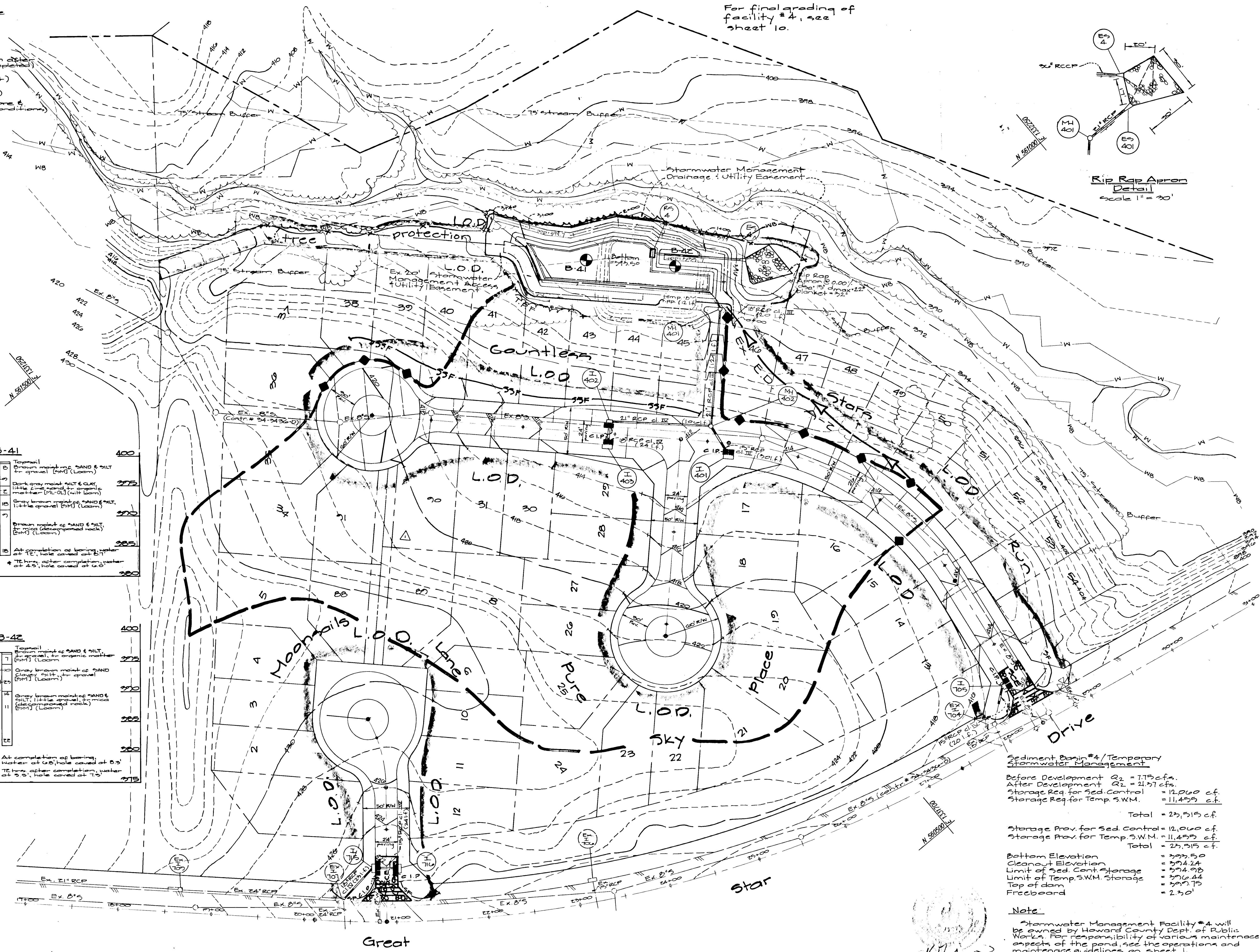
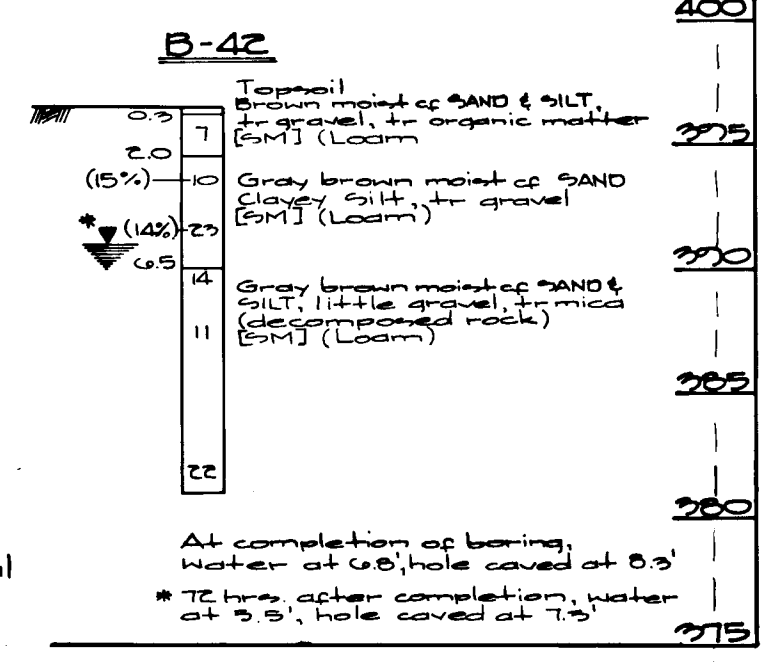
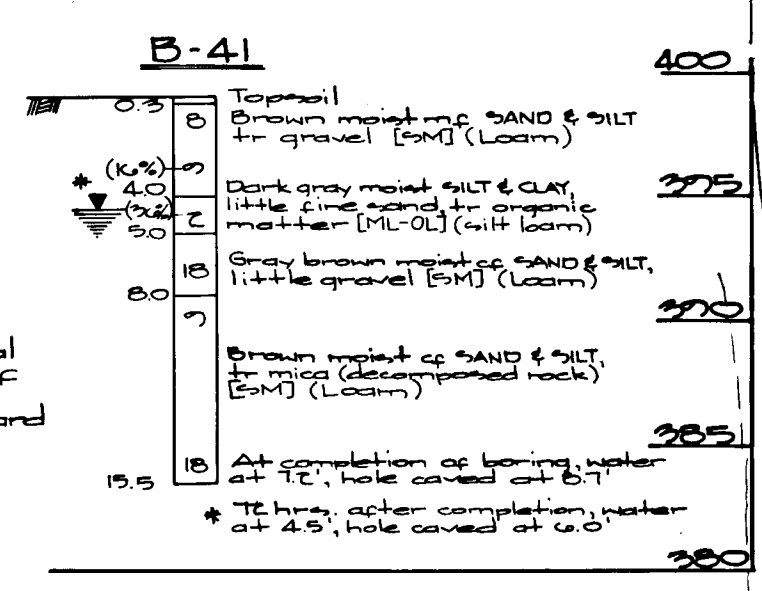
I/We certify that all development &/or construction will be done according to these plans, & that any reasonable personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the control of Erosion & Sedimentation before beginning the project. I/We, the Supervising Professional Engineer, has supervised pond construction & provided the Howard Soil Conservation District with an 'as-built' plan of the pond within 90 days of completion. I also authorize periods on-site inspections to the Howard Soil Conservation District.

[Signature] 3-13-96
Signature of Developer/Builder Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 2-20-97
Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[Signature] 2/27/97
Date
[Signature] 2/25/97
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. CHK.



Sediment Basin #4/Temporary Stormwater Management
Before Development Q2 = 7,775 c.f.s.
After Development Q2 = 21,575 c.f.s.
Storage Req for Sed. Control = 12,000 c.f.
Storage Req for Temp. S.W.M. = 11,455 c.f.
Total = 23,515 c.f.

Storage Prov. for Sed. Control = 12,000 c.f.
Storage Prov. for Temp. S.W.M. = 11,455 c.f.
Total = 23,515 c.f.
Bottom Elevation = 573.50
Cleanup Elevation = 574.24
Limit of Sed. Cont. Storage = 576.44
Top of dam = 579.75
Freeboard = 2.50'

Note: Stormwater Management Facility #4 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.

PREPARED FOR:
The Howard Research and Development Corporation
The Rowe Building
10275 Little Patuxent Parkway
Columbia, Maryland 21044
(410) 922-0670

Mass Grading & Sediment Control Plan
Village of River Hill
Section 4 Area 1
Phase 2
Clarksville Election District No 5 Howard County, Maryland

SCALE 1" = 50'	ZONING N.T.	G. L. W. FILE No. 94050
DATE January, 1997	TAX MAP No. 54135	SHEET 5 of 11

1987

I certify that this plan for pond construction, erosion & sediment control represents a practical & workable plan based on my personal knowledge of 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 & provide the Howard Soil Conservation District with an as-built plan of the pond within 90 days of completion.

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

Robert Zichm
Howard Soil Conservation District
2/4/97
Date

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

Charles J. Aronson
Natural Resources Conservation Service
02-04-97
Date

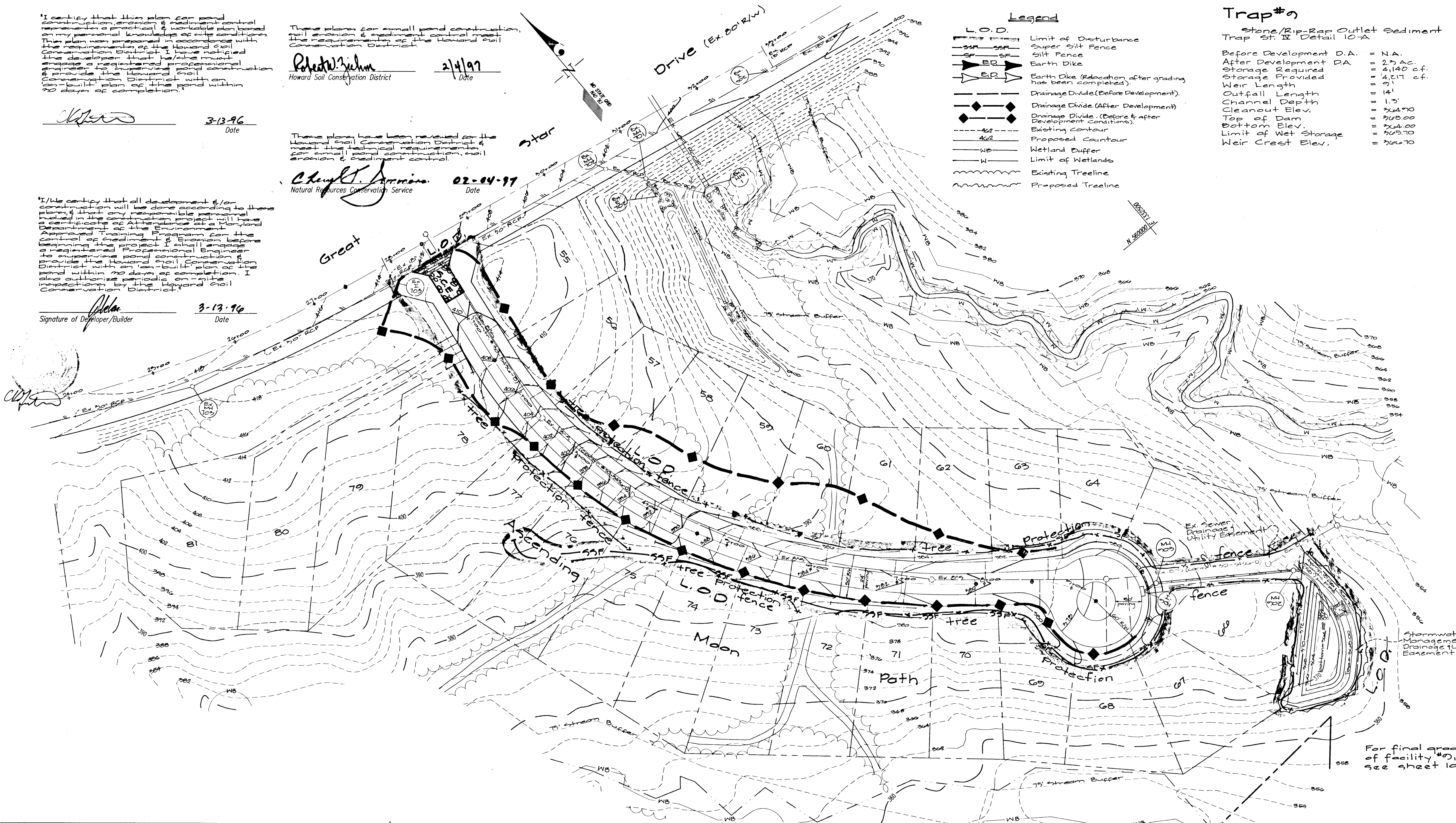
I/We certify that all development &/or construction will be done according to these plans & that any responsible party involved in the construction project will have a certificate of approval from a Maryland Department of the Environment Approved Training Program for the control of erosion & sediment before beginning the project. I shall engage a registered Professional Engineer to supervise pond construction & provide the Howard Soil Conservation District with an as-built plan of the pond within 90 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District.

John
Signature of Developer/Builder
3-13-96
Date

- Legend**
- L.O.D. Limit of Disturbance
 - SSF Super Silt Fence
 - SF Silt Fence
 - ED Earth Dike
 - ED Earth Dike (Relocation after grading has been completed)
 - DD (Before Development) Drainage Divide (Before Development)
 - DD (After Development) Drainage Divide (After Development)
 - DD (Before & after Development Conditions) Drainage Divide (Before & after Development Conditions)
 - 462 Existing Contour
 - 462 Proposed Contour
 - WB Wetland Buffer
 - W Limit of Wetlands
 - Existing Treeline
 - Proposed Treeline

Trap #9
Stone/Rip-Rap Outlet Sediment Trap St. II Detail 10-A

Before Development D.A.	= N.A.
After Development D.A.	= 2.75 AC.
Storage Required	= 4,140 c.f.
Storage Provided	= 4,117 c.f.
Weir Length	= 51'
Outfall Length	= 14'
Channel Depth	= 1.5'
Cleanout Elev.	= 264.70
Top of Dam	= 268.00
Bottom Elev.	= 264.00
Limit of Wet Storage	= 265.70
Weir Crest Elev.	= 266.70



For final grading of facility #9, see sheet 10.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Andrew M. Dwyer
Chief, Bureau of Highways
2-10-97
Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Richard Blood
Chief, Division of Land Development
2/21/97
Date

John
Chief, Engineering Division
2/25/97
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

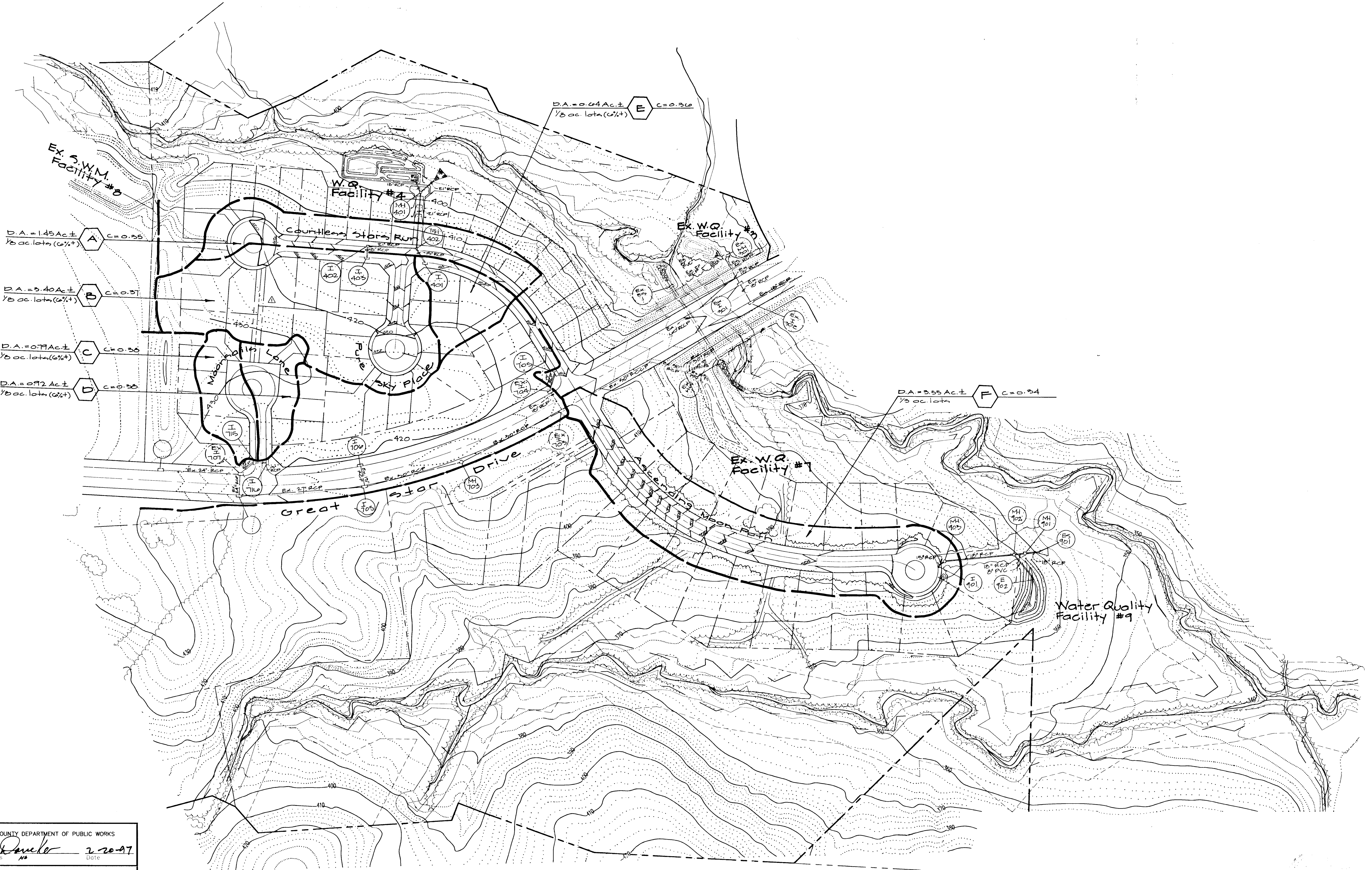
CHK.	DES.	DRN.	DATE	REVISION	BY	APP'R.

PREPARED FOR:
The Howard Research and Development Corporation
The Raune Building
10275 Little Patuxent Parkway
Columbia, Maryland 21044
(410) 282-0770

Mass Grading & Sediment Control Plan
Village of River Hill
Section 4 Area 1
Phase 2
Clarksville Election District No. 5
Howard County, Maryland

SCALE	ZONING	G. L. W. FILE NO.
1" = 50'	N.T.	74050
DATE	TAX MAP No.	SHEET
January, 1997	24175	0 of 11

1987



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard M. Daniels 2/20/97
 Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Richard Blood 2/27/97
 Chief, Division of Land Development
Mark Zimmerman 2/25/97
 Chief, Planning & Zoning

GIW GUTSCHICK LITTLE & WEBER, P.A.

CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MARYLAND 20866

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DATE	REVISION	BY	APP'R.
2/22/97	revise lot lines	MCF	

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

Drainage Area Map
Village of River Hill
 Section 4 Area 1, Phase 2
 Clarkeville Election District No 5
 Howard County, Maryland

SCALE	ZONING	G. L. W. FILE No.
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DATE	TAX MAP No.	SHEET
January, 1997	34755	7 of 11

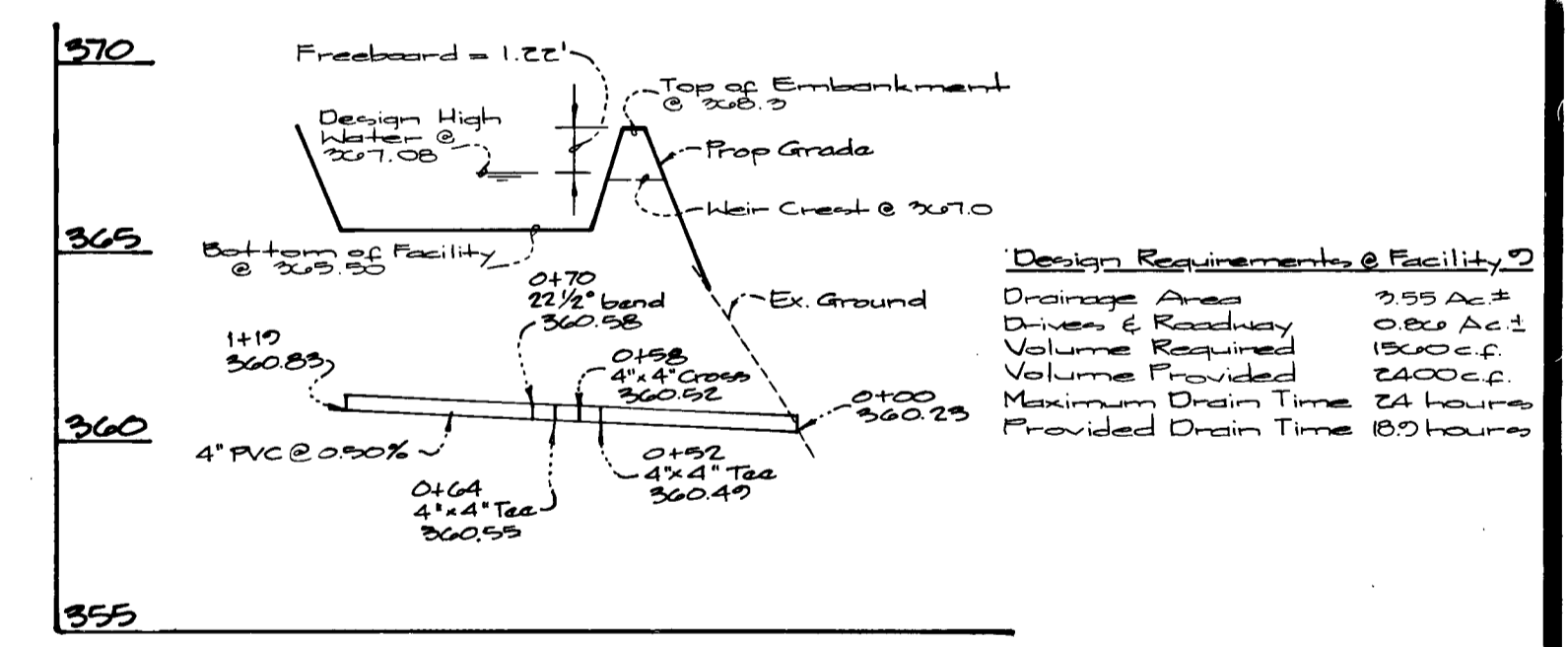
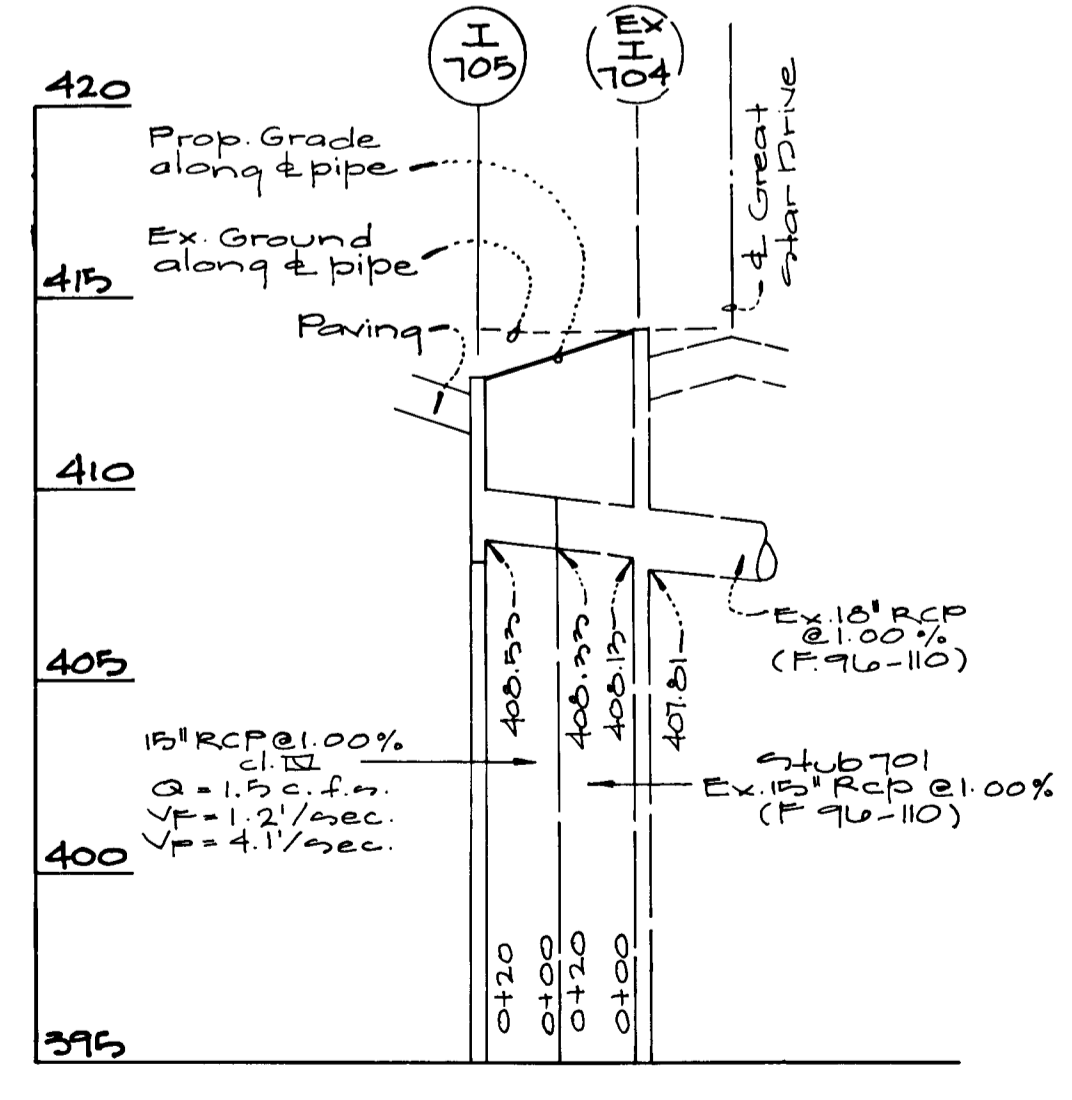
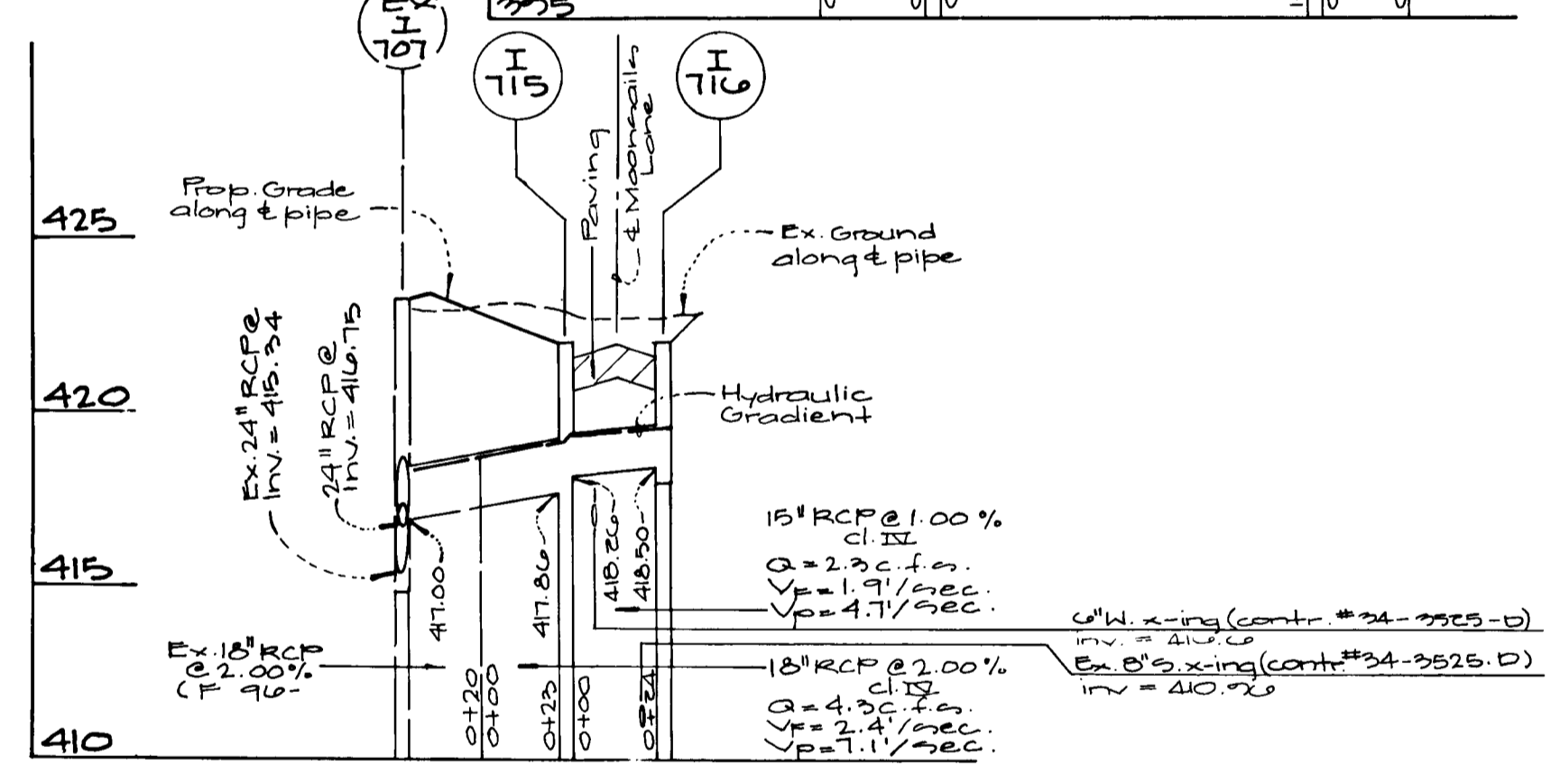
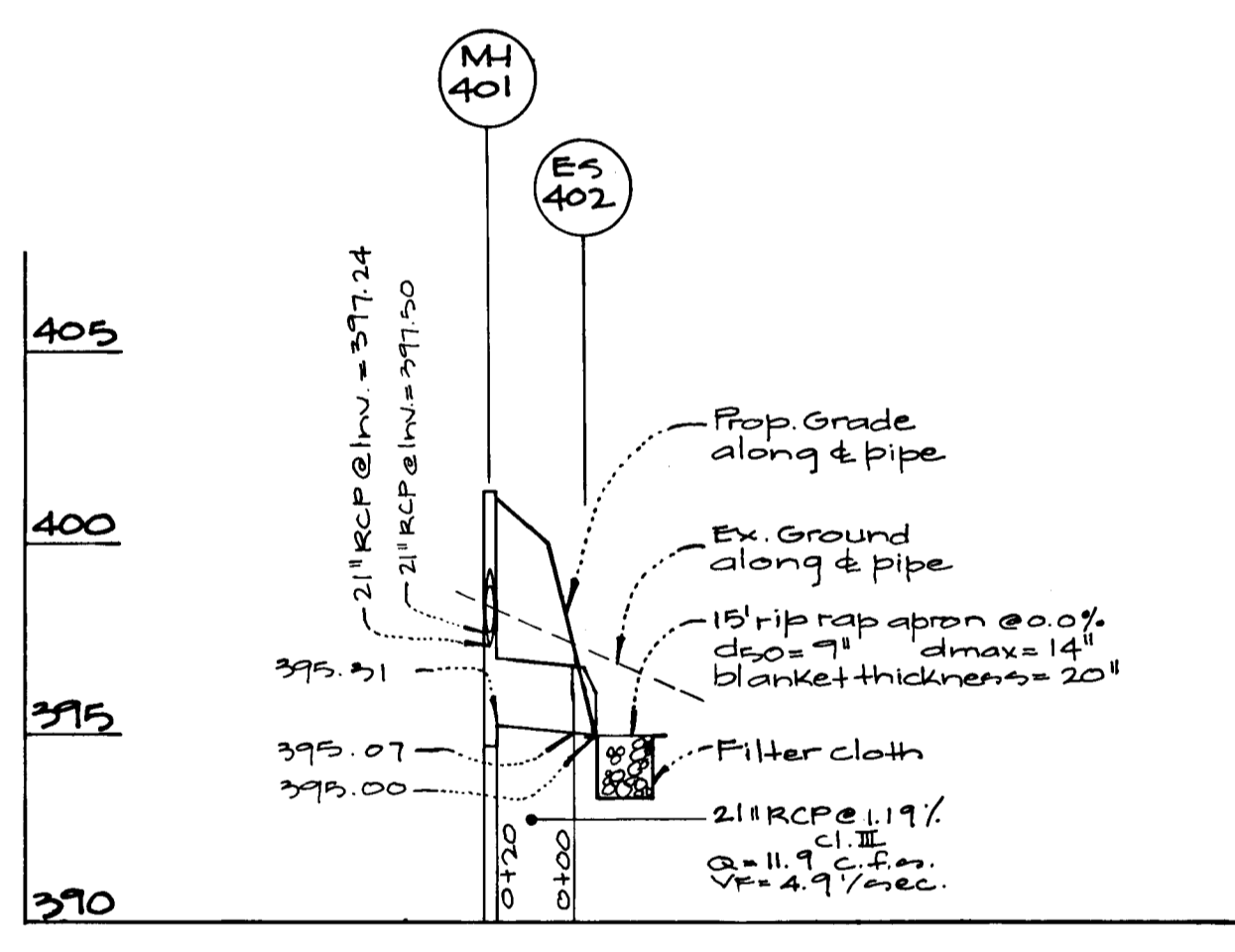
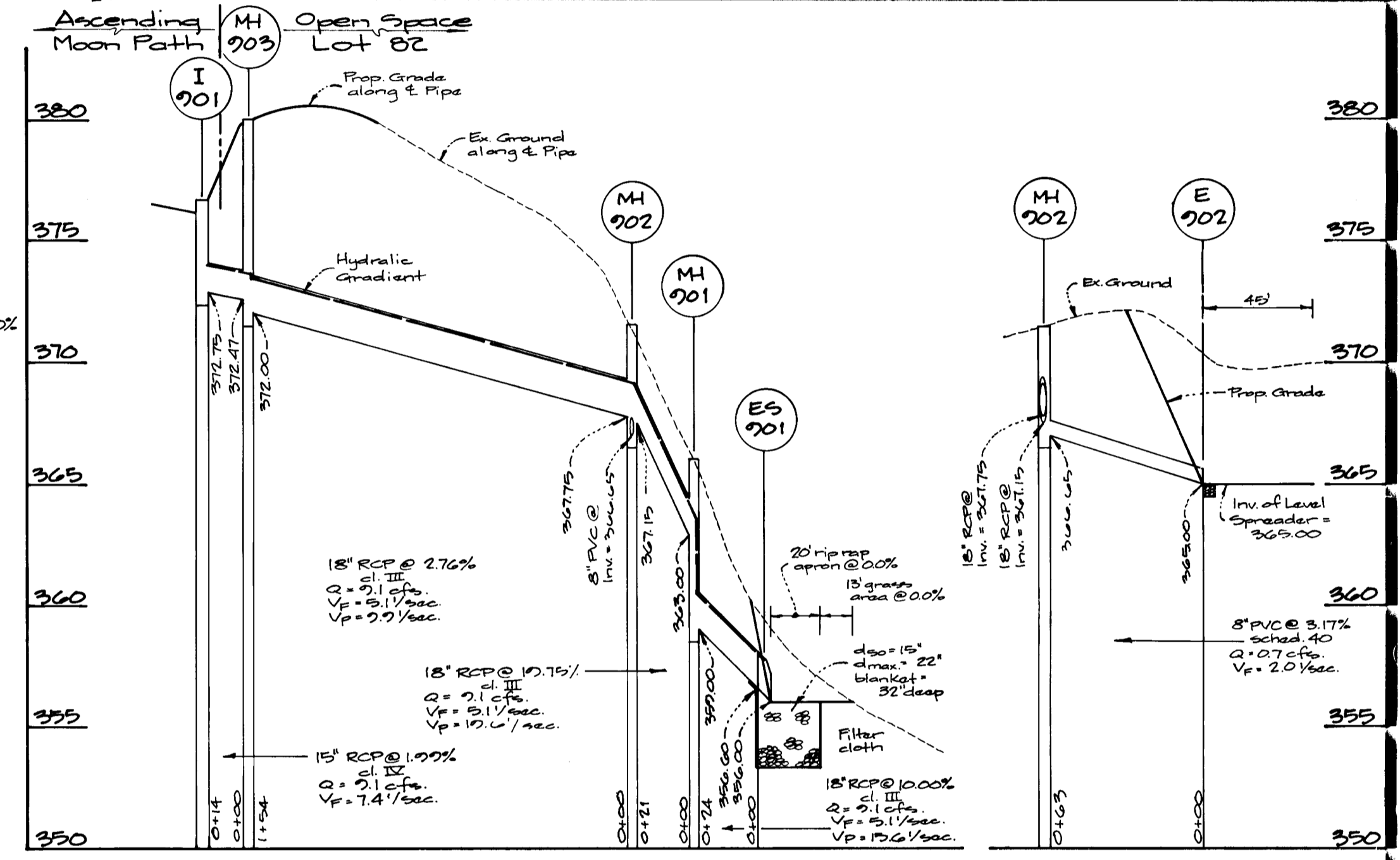
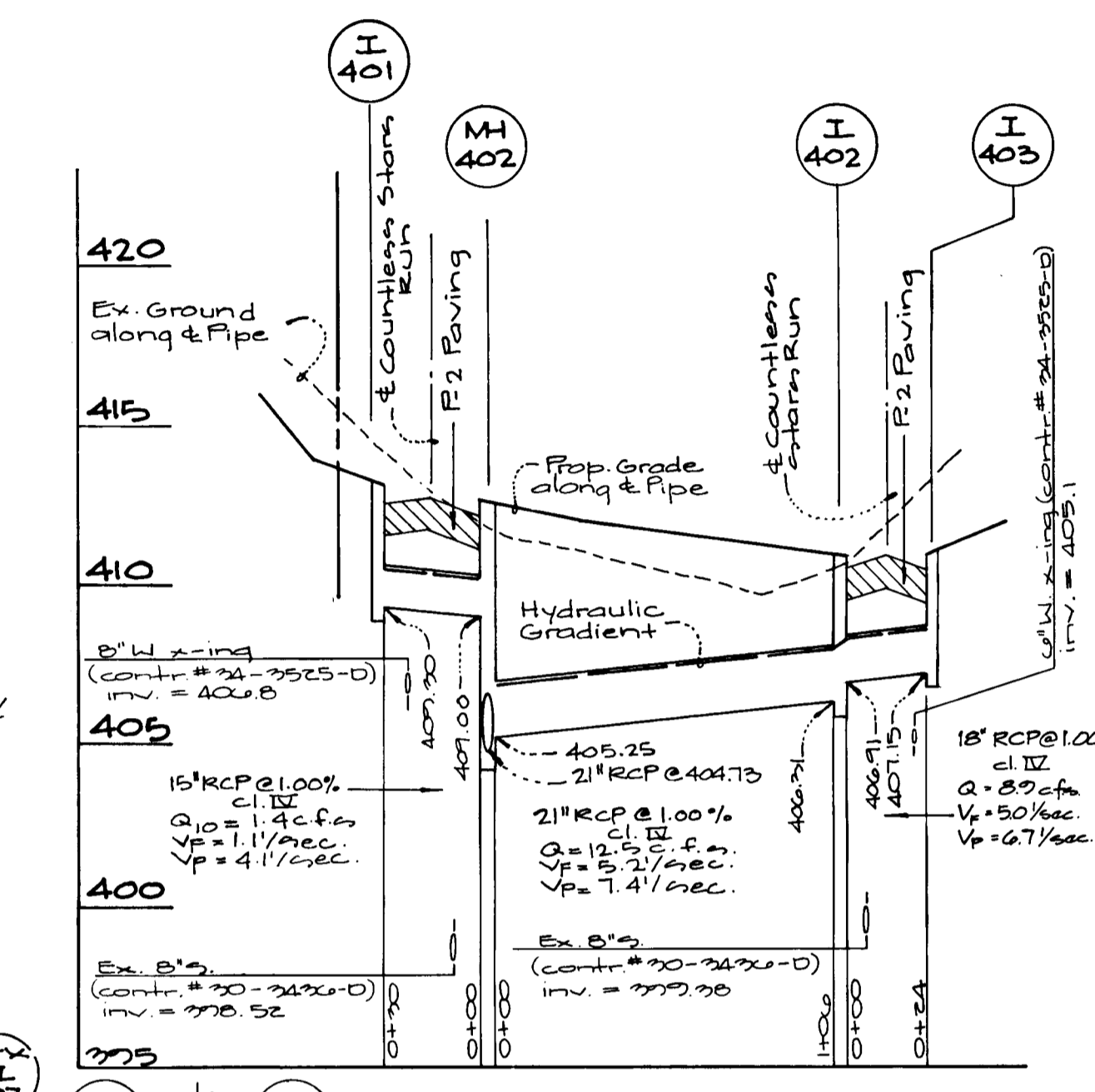
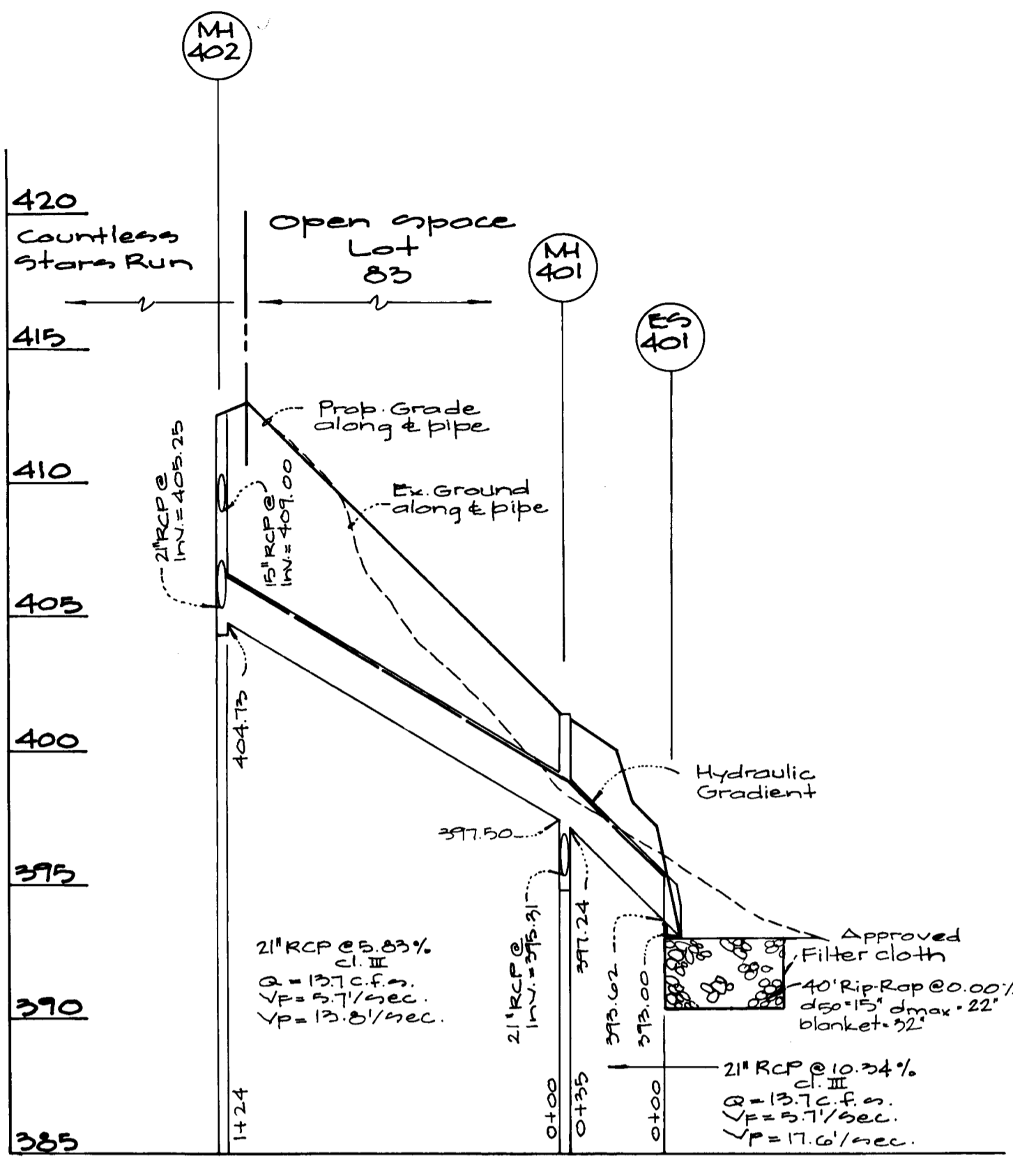
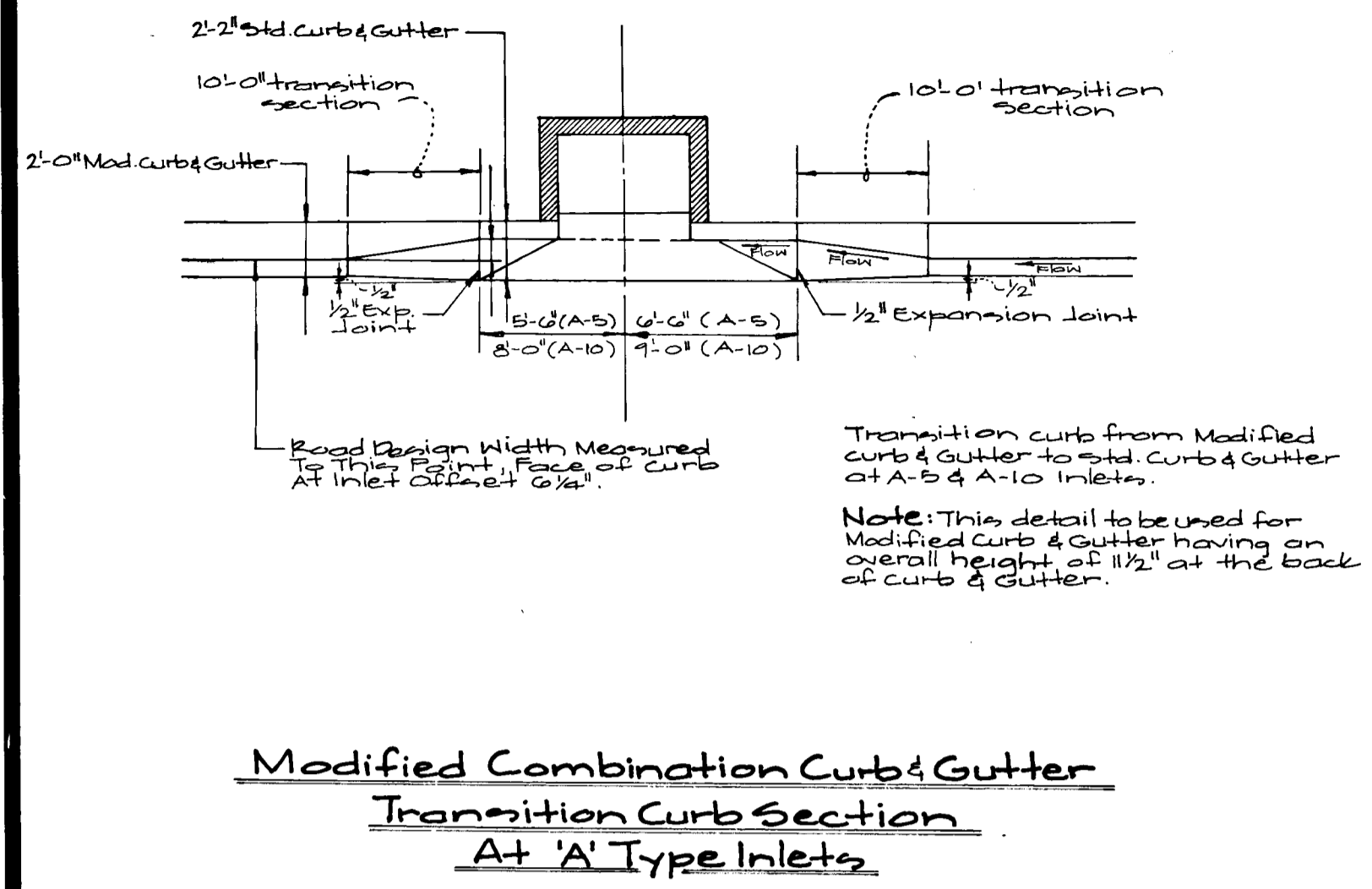
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Pipe Schedule Section 4 Area 1 Phase 2

Size & Type	Class	Quantity
4" HOPE		238
8" PVC	Sched. 40	69
15" RCP	Cl. IV	88
18" RCP	Cl. III	197
18" RCP	Cl. IV	41
21" RCP	Cl. III	17
21" RCP	Cl. IV	106
4" HOPE (Perf.)		52

Structure Schedule

No	Type	Width	invert elevation (inside)	invert elevation (top)	invert elevation (lower)	Std. Detail	Locations
I 401	A-10	3'-0"	413.57	413.51	409.30	S.D. 4.41	4 Sta. 470.55 Countless Stars Run 13'L
I 402	A-5	4'-0"	410.90	406.91	406.31	S.D. 4.40	4 Sta. 470.0 Countless Stars Run 12'L
I 403	A-10	3'-0"	410.90	-	401.15	S.D. 4.41	4 Sta. 610.0 Countless Stars Run 12'L
I 705	A-10	3'-0"	412.81	412.52	405.53	"	4 Sta. 0158.59 Countless Stars Run 15'L
I 715	A-10	3'-0"	422.27	421.75	417.60	"	4 Sta. 0151.56 Moonpails Lane 2'L
I 716	A-10	3'-0"	422.27	421.95	415.50	"	4 Sta. 0151.56 Moonpails Lane 12'L
I 901	A-10	3'-0"	377.94	-	372.75	"	L.P. Sta. 121.0 Ascending Moon Path
MH 401	Std. Manhole	4'-0"	-	377.50	375.31	G.S. 12	See Plan
MH 402	"	"	412.97	-	409.00	404.73	4 Sta. 4797 Countless Stars Run 17'L
MH 901	"	"	-	-	363.00	359.00	See Plan
MH 902	"	"	-	-	361.75	360.64	See Plan
MH 903	"	"	-	-	372.47	372.00	L.P. Sta. Ascending Moon Path
ES 401	Conc. End Sect.	-	-	-	373.02	373.00	S.D. 5.31
ES 402	"	-	-	-	375.07	375.00	"
ES 901	"	-	-	-	356.60	356.00	"
ES 902	"	-	-	-	359.00	359.00	"



Approved: Howard County Department of Public Works
Andrew M. Sauer 2-20-97
 Chief, Bureau of Highways Date

Approved: Howard County Department of Planning and Zoning
Rubens Blood 2/23/97
 Chief, Division of Land Dev. & Research Date

Chad Dammann 2/25/97
 Chief, Development Engineering Division Date

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 NO. VA. (301)989-2524 BALTO. (301)880-1820 FAX (301)421-4186

DATE	REVISION	BY	APPR.
1/24/97	rev. pipe schedule to include 4" HOPE	MEF	

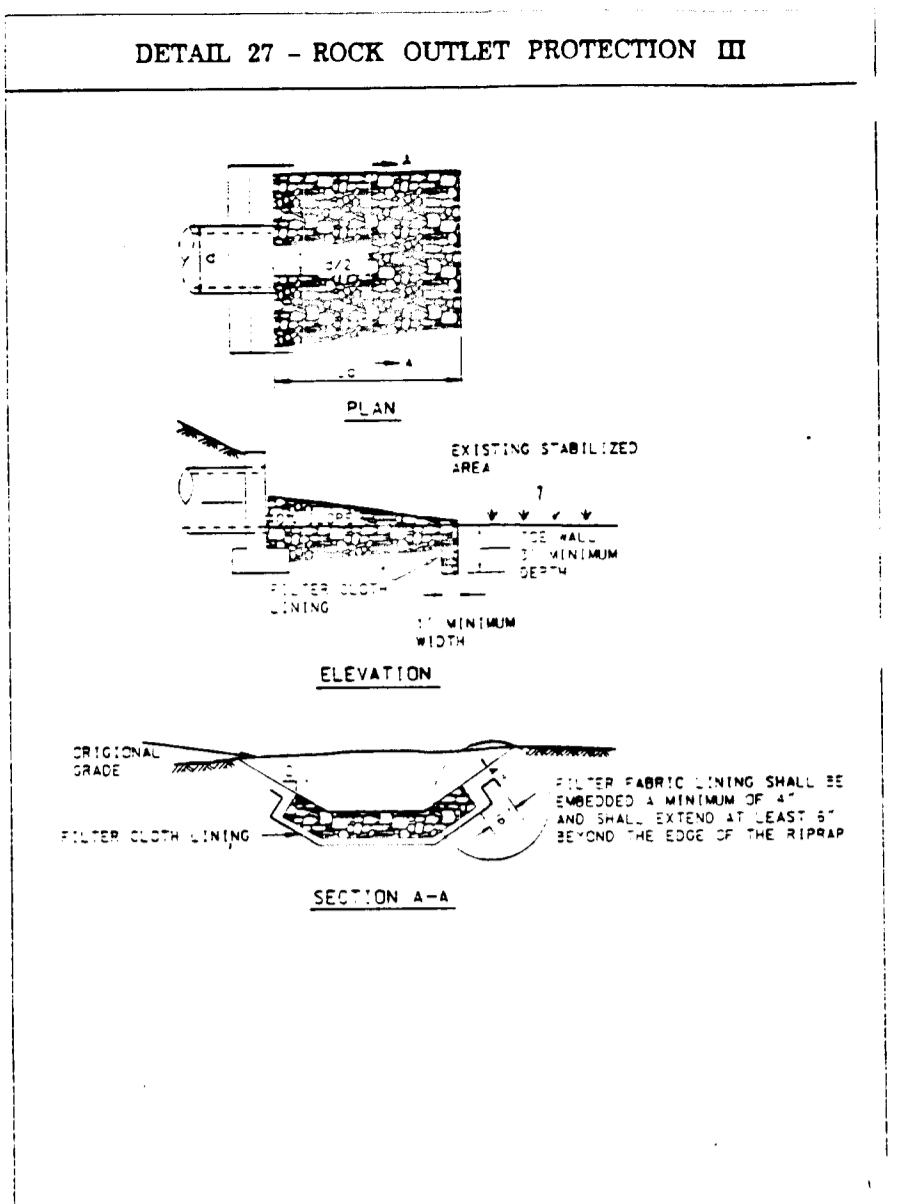
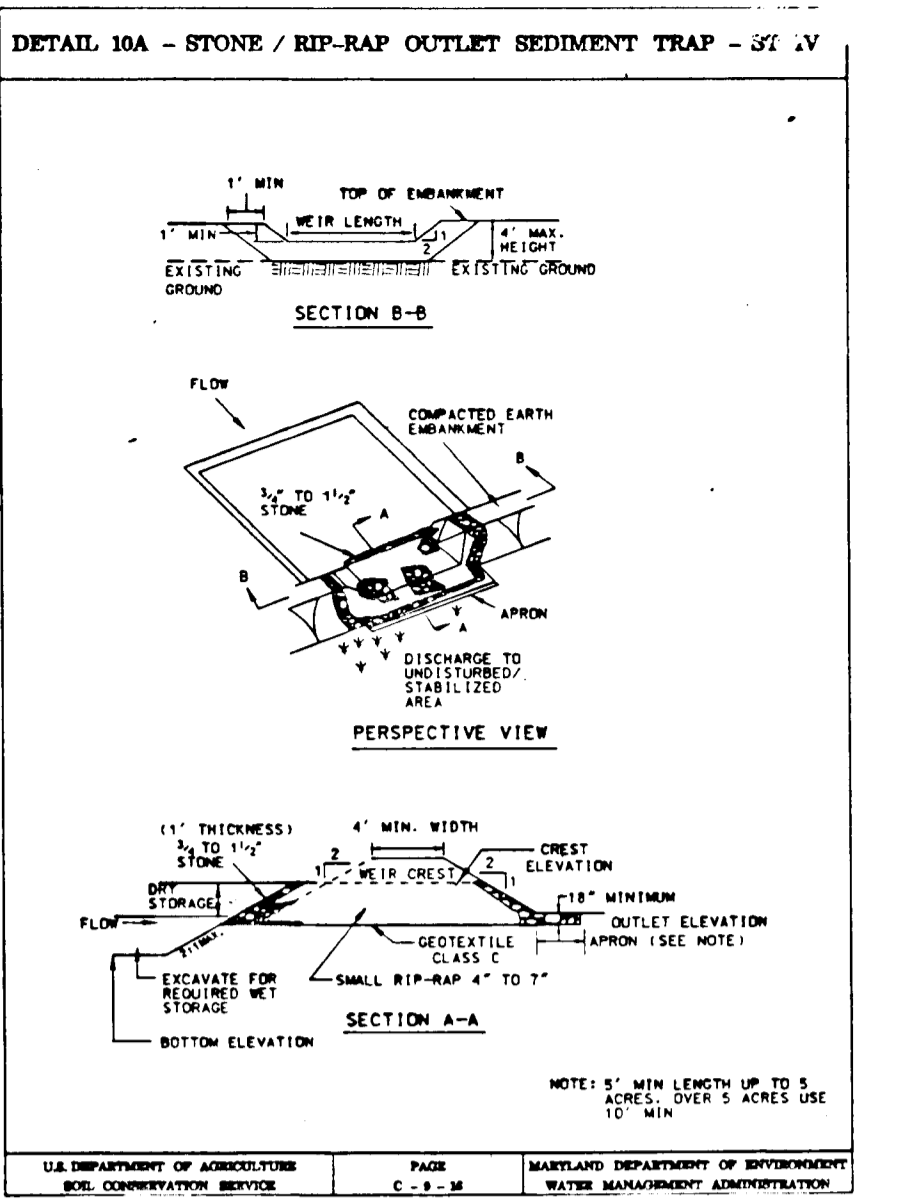
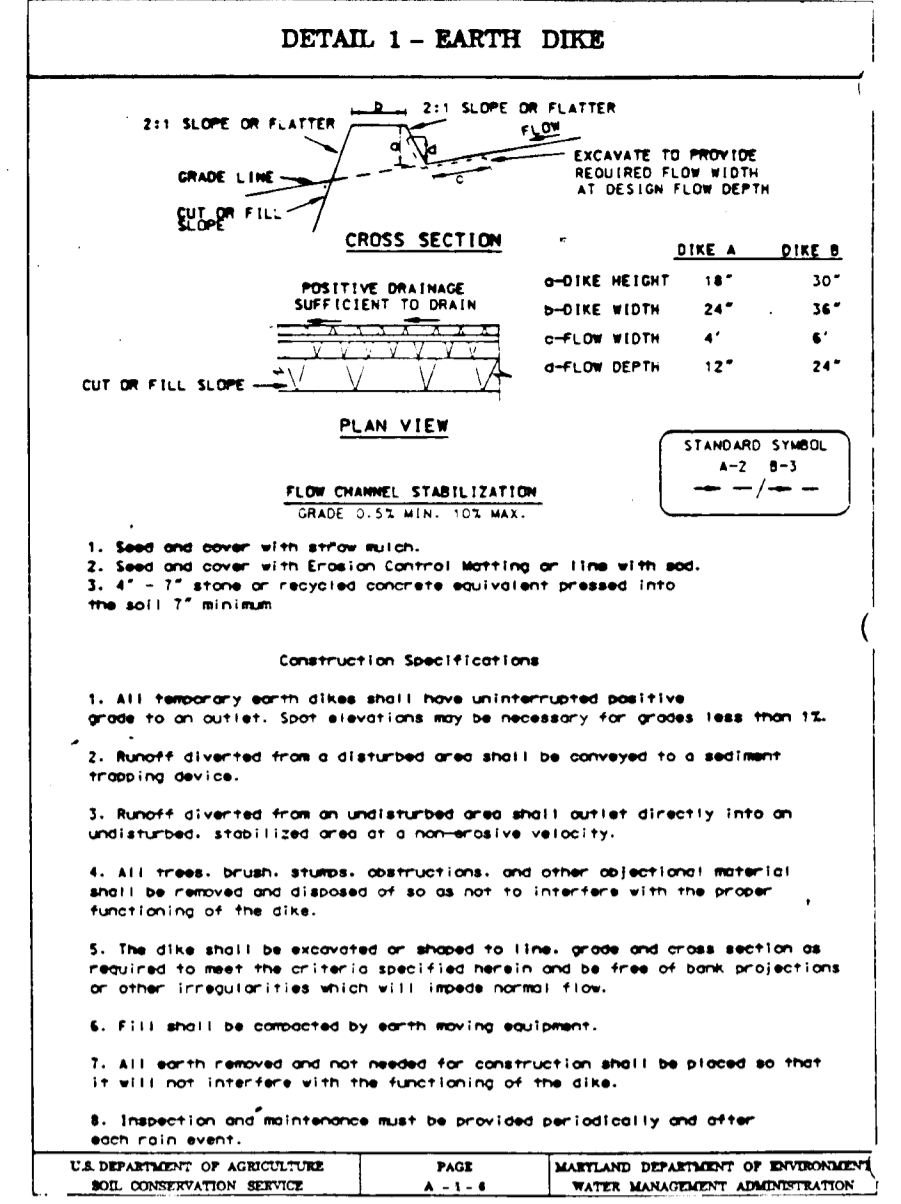
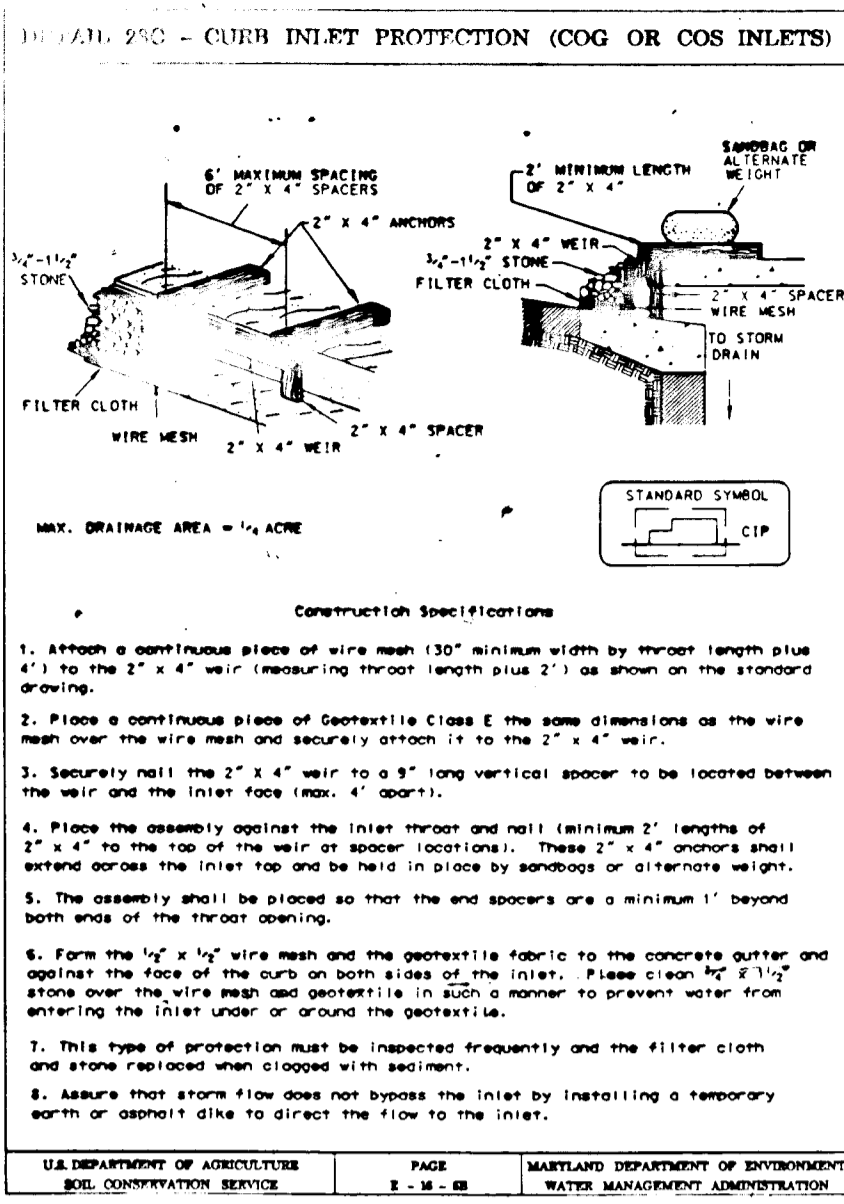
PREPARED FOR:
 The Howard Research and Development Corporation
 The Rouse Building
 10775 Little Patuxent Parkway
 Columbia, Maryland 21044
 (410) 992-6370

Storm Drain Profiles
Village of River Hill
 Section 4 Area 1 Phase 2

Clarksville Election District No. 5
 Howard County, Maryland

DES.:	SCALE	ZONING	G.L.W. FILE NO.
DEV	As Shown	N.T.	94050
DRN.:	DATE	TAX MAP NO.	SHEET
GT	January, 1997	34 & 35	8 of 11
CHK.:			

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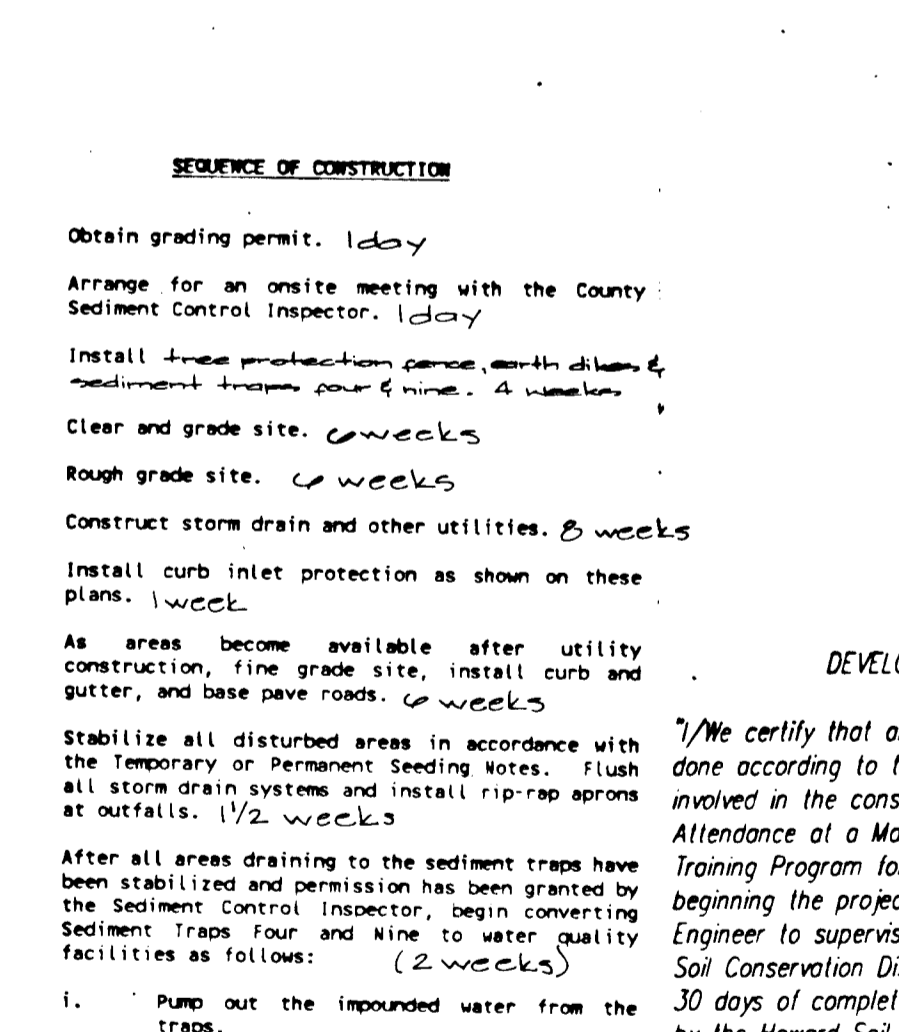
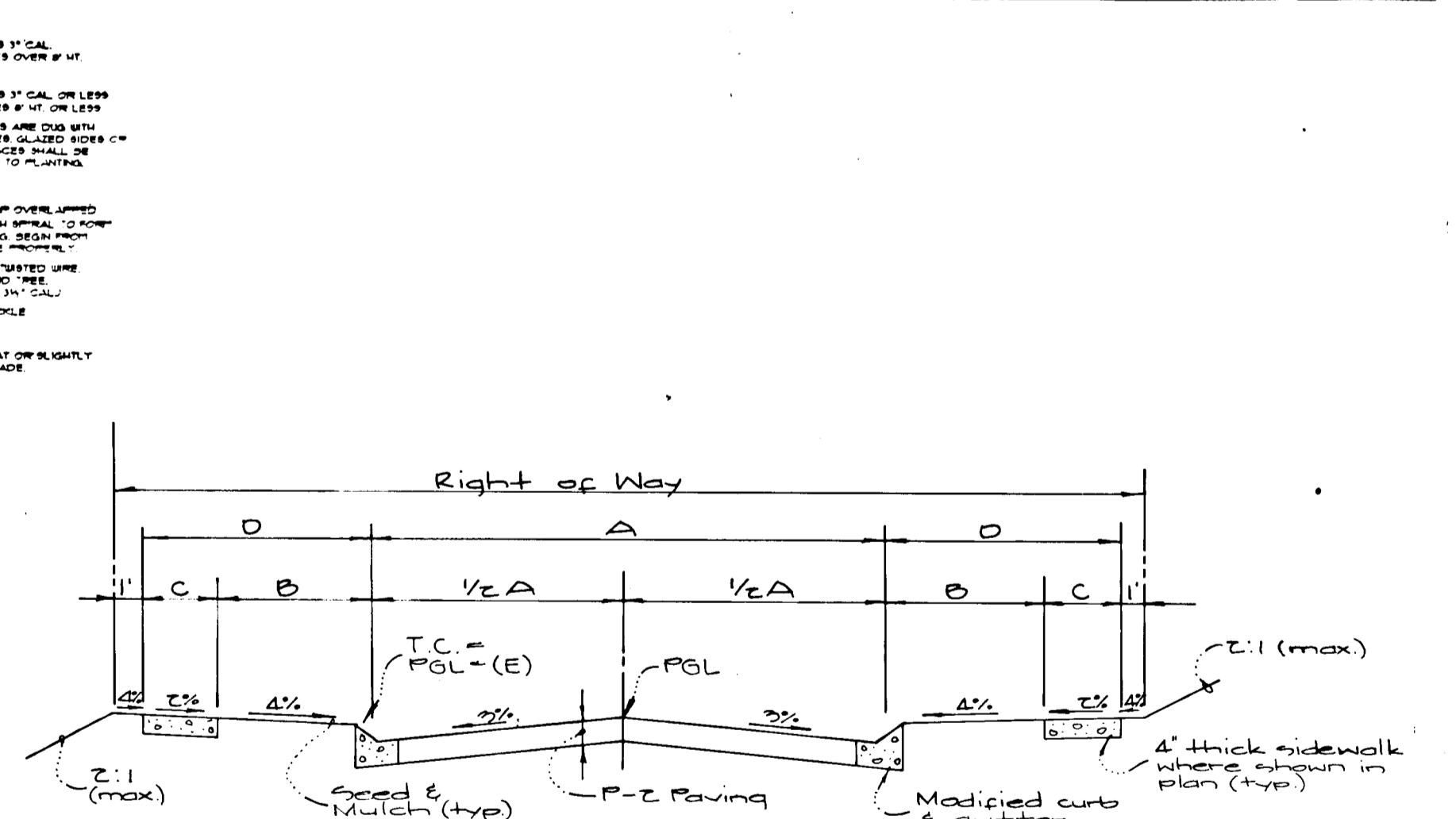
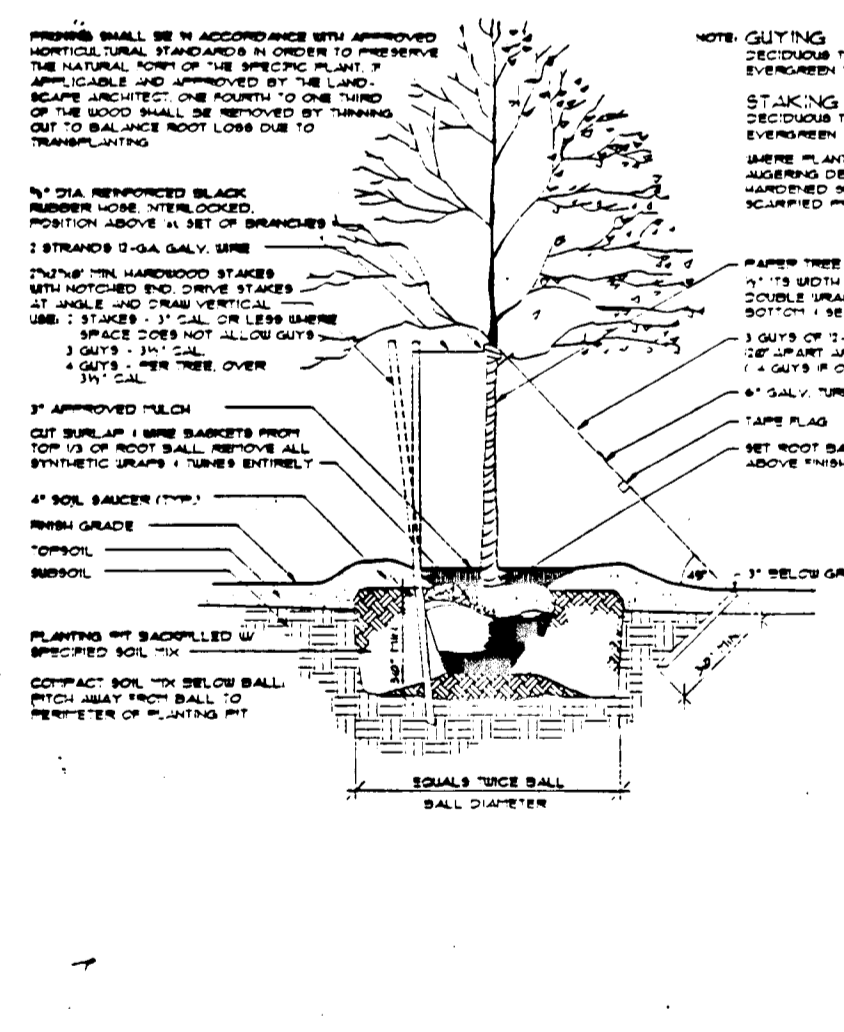
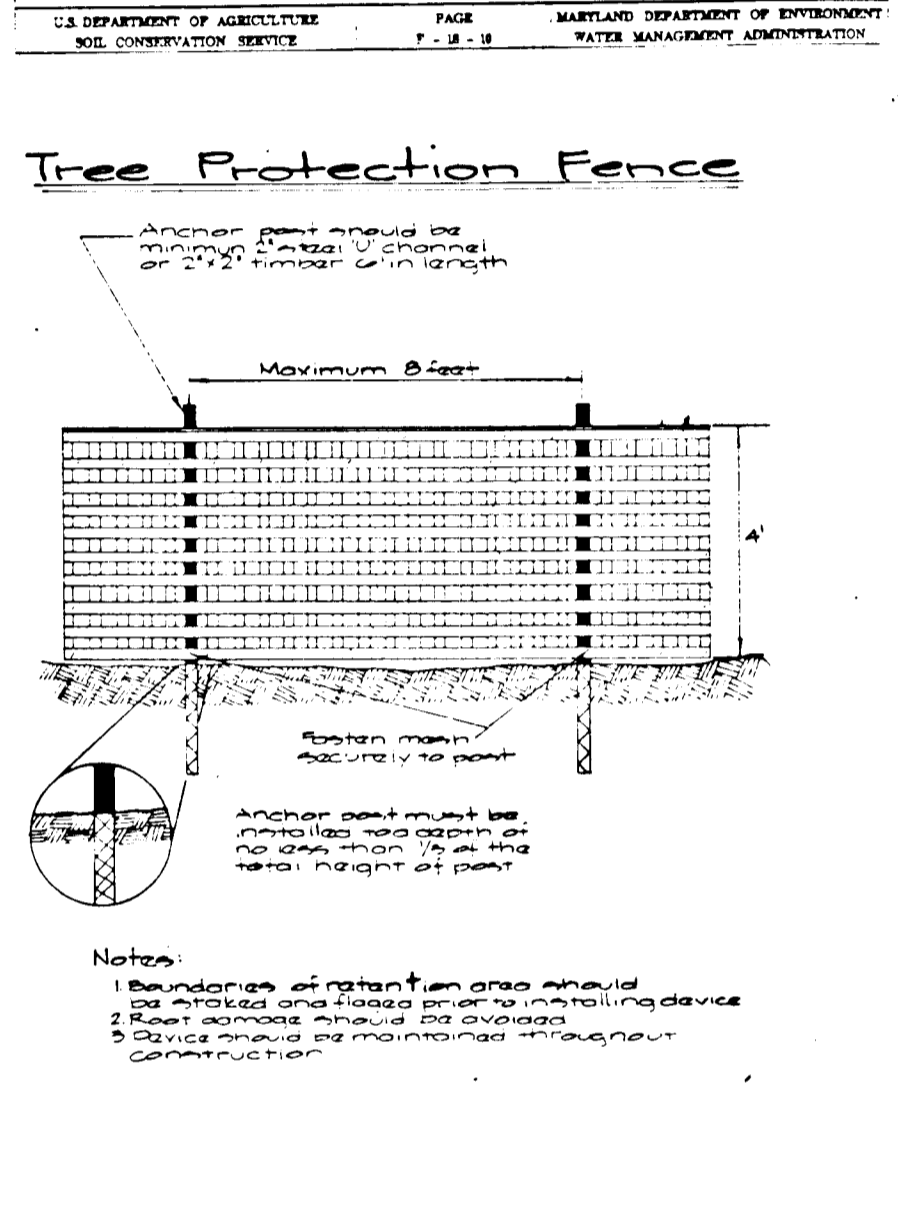
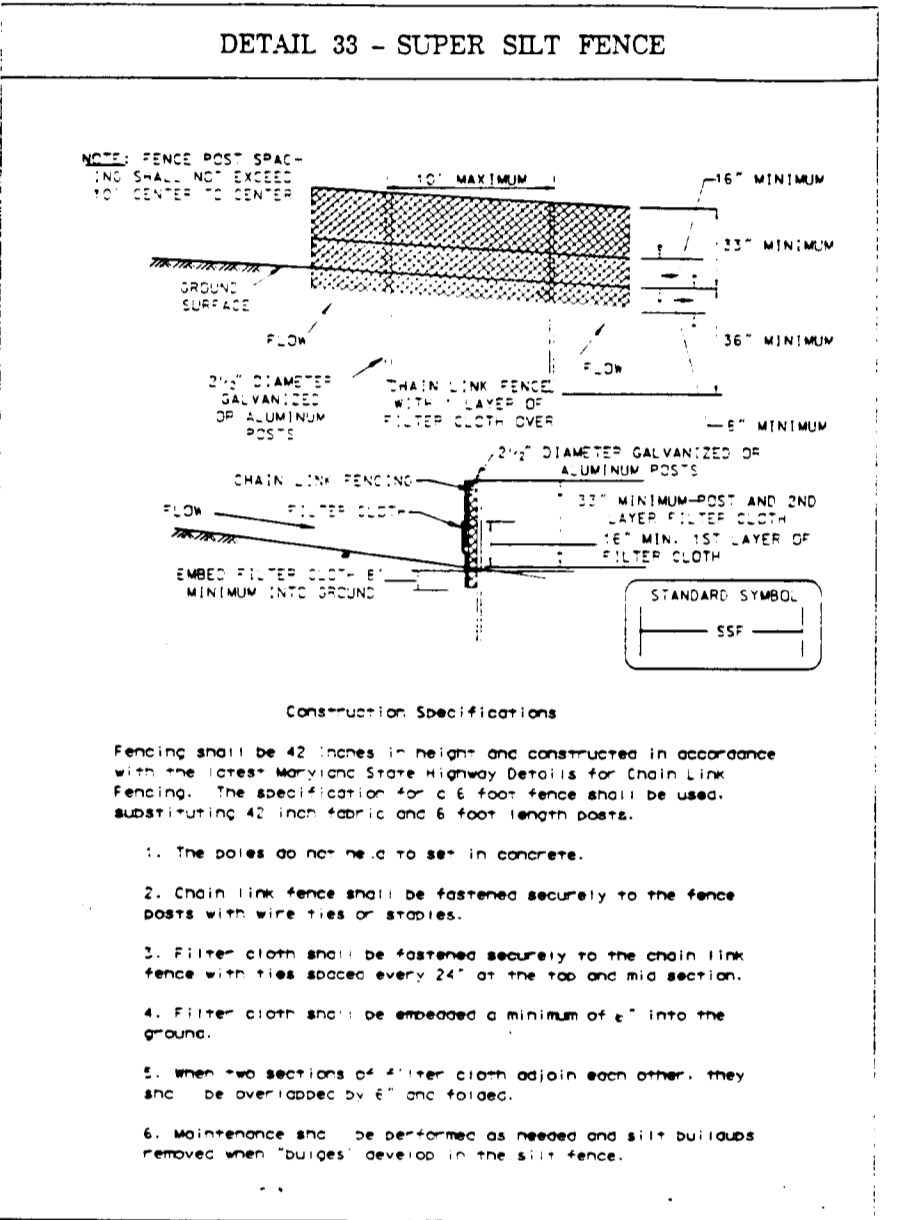
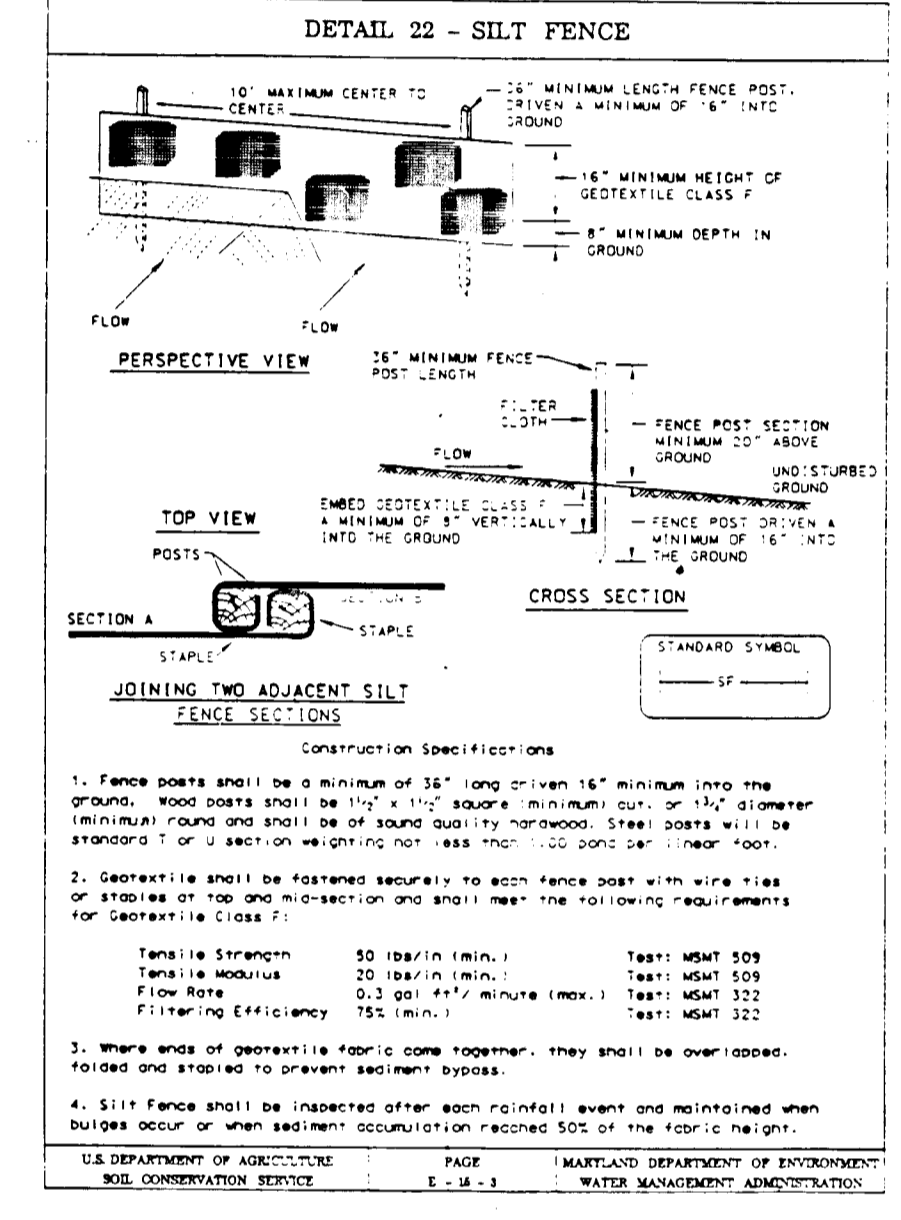
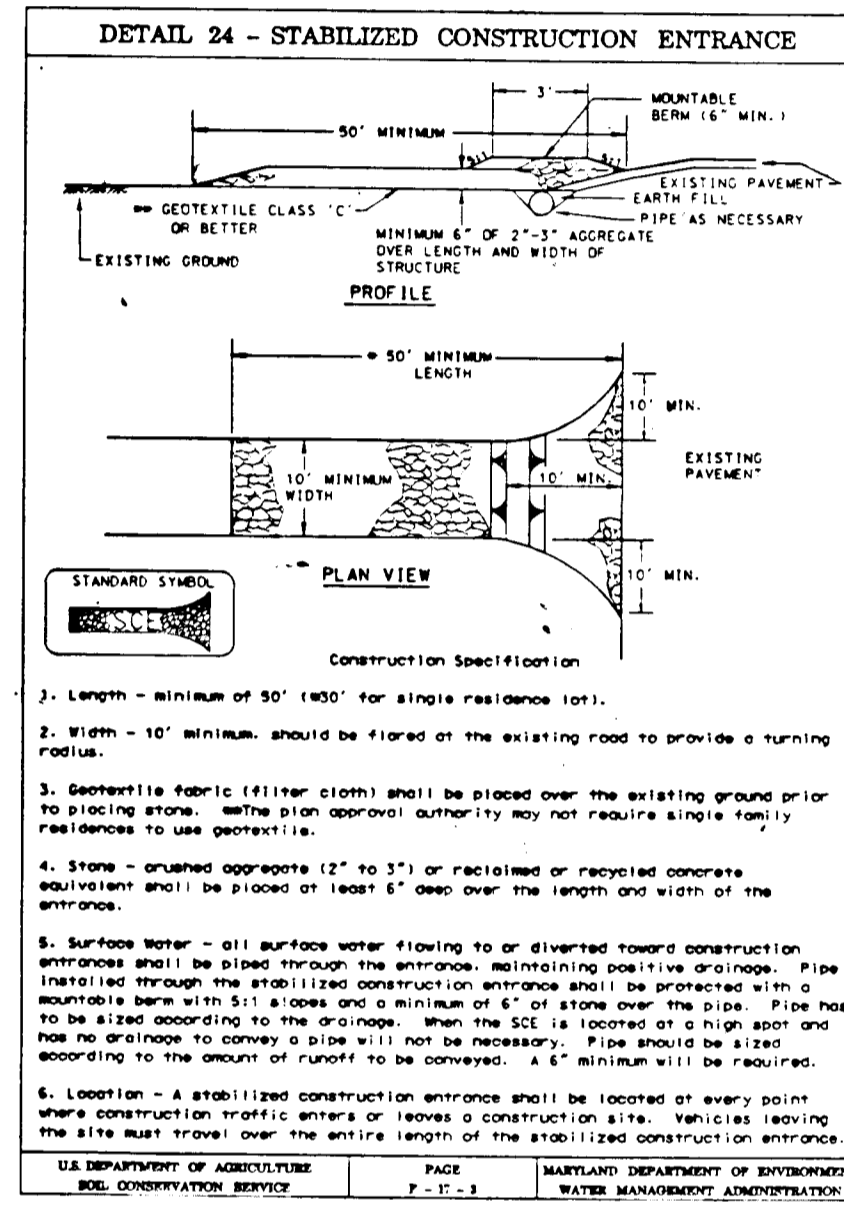
SEDIMENT CONTROL NOTES

- A minimum of 48 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (4.0) 3/13-1055
- 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.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes and perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- All sediment traps/basins 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.
- 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. 6.3). Temporary stabilization, with mulch alone, shall only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:

Total Area of Site	72.8	Acres
Area Disturbed	6.37	Acres
Area to be roofed or paved	1.94	Acres
Area to be vegetatively stabilized	4.38	Acres
Total Cut	10,212	Cu. Yds.
Total Fill	10,212	Cu. Yds.
Off-site waste/borrow area location	N/A	
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back filled and stabilized within one working day, whichever is shorter.

PERMANENT SEEDING NOTES

- Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
- Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.
- Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:
- Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square feet) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq ft).
 - Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square feet) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil.
- Seeding: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.
- Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring.
- Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseedings.



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 of Developer/Builder: *[Signature]* Date: 3-13-96

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 of Engineer: *[Signature]* Date: 3-13-96

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.

Signature of Engineer: *[Signature]* Date: 3/14/97

Approved: Howard County Dept. of Public Works
[Signature] 2-20-97
 Chief, Bureau of Highways

Approved: Howard County Dept. of Planning
[Signature] 2/27/97
 Chief, Bureau of Land Development

Approved: *[Signature]* 2/25/97
 Chief, Development Engineering Div.

Paving Section Tabulation Chart

Street Name & Location Limits	Type of Traffic	Zoning	Design Speed	Paving Section	A	B	C	D	Crown Slope	RW	E	Curb Type
0+00 - 2+21.51	cul-de-sac	NT	25	P-E	24'	8'	4'		3%	50'	bad	modified
Ascending Man Bath	cul-de-sac	NT	30	P-E	24'	8'	4'		3%	50'	bad	modified
Countless Storm Run	cul-de-sac	NT	30	P-E	24'	8'	4'		3%	50'	bad	modified
Countless Storm Run	cul-de-sac	NT	30	P-E	24'	7'	4'		3%	50'	bad	modified
Pure Alky Place	cul-de-sac	NT	25	P-E	24'	8'	4'		3%	50'	bad	modified

PREPARED FOR:
 The Howard Research and Development Corporation
 1275 Little Potuxent Bwy.
 Columbia, Maryland 21044
 (410) 292-0510

Sediment Erosion Control Notes & Details
 Village of River Hill
 Section 4 Area 1
 Phase 2
 Clarksville Election District No. 5
 Howard County, Maryland

SCALE	ZONING	G. L. W. FILE NO.
N/A	NT	94050
DATE	TAX MAP No.	SHEET
January, 1997	34 955	9 of 11

SPECIFICATIONS

MD-378 Specifications

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 50 foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification GC, SC, CH or CL. Consideration may be given to the use of other materials in the embankment if design and construction are supervised by a geotechnical engineer.

Placement - Area on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated in to the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble yet not be so wet that water can be squeezed out.

Where a minimum required density is specified, it shall not be less than 95% of maximum dry density with a moisture content within $\pm 2\%$ of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99.

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

- Materials** - (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specification M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings or an approved equal may be used: Nexon, Plasti-Cote, Blac-Klad, and Beth-Cu-Loy. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound.

Material - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

- Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.**

- Connections** - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe & riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the band width. The following type connections are acceptable for pipes less than 24" in diameter: flanges on both ends of the pipe, a 12" wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket, and a 12" wide hanger type band with O-ring gaskets having a minimum diameter of 1/2" greater than the corrugation depth. Pipes 24" in diameter and larger shall be connected by a 24" long annular corrugated band using rods and lugs. A 12" wide by 3/8" thick closed cell circular neoprene gasket will be installed on the end of each pipe for a total of 24".

Helically corrugated pipe shall have either continuously welded seams or have lock seams.

- Bedding** - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
- Backfilling** shall conform to "Structure Backfill".
- Other details** (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

- Materials** - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM Designation C-361.
- Bedding** - All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at the least 10% of its outside diameter with a minimum thickness of 3 inches, or as shown on the drawings.
- Laying pipe** - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 2 feet from the riser.
- Backfilling** shall conform to "Structure Backfill".
- Other details** (anti-seep collars, valves, etc.) shall be shown on the drawings.

Polyvinyl Chloride (PVC) Pipe - All of the following criteria shall apply for polyvinyl chloride (PVC) pipe:

- Materials** - PVC pipe shall be PVC - 1120 or PVC - 1220 conforming to ASTM D-1785 or ASTM D-2241.
- Joints and connections to anti-seep collars shall be completely watertight.**
- Bedding** - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock of soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
- Backfilling** shall conform to "Structure Backfill".
- Other details** (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standards Specifications for Construction and Materials, Section 608, Mix No. 3.

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 905.

The rip rap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonably homogeneous with the larger rocks uniformly distributed and firmly in contact one to another with the smaller rocks filling the voids between the larger rocks. Filter cloth shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 919.12.

Care of Water during Construction

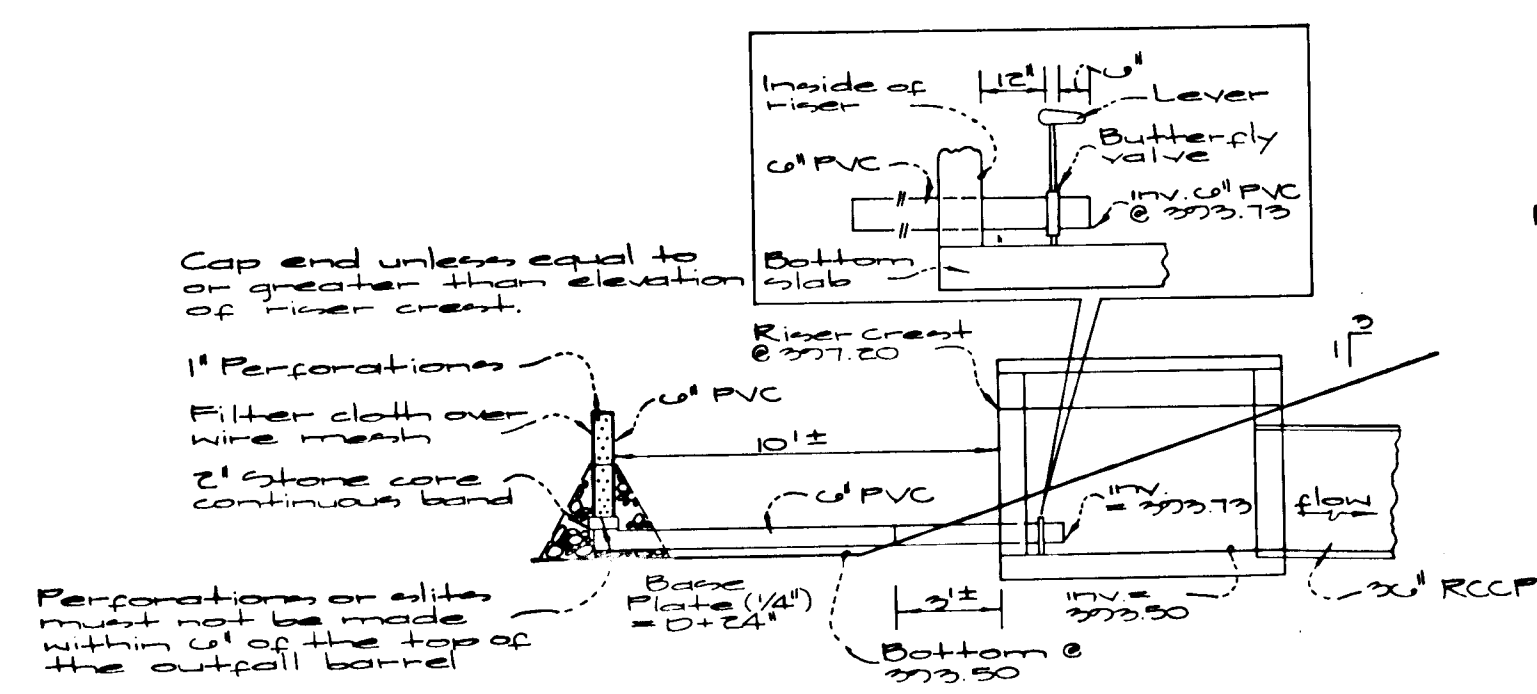
All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from the various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in manner and to the extent that will maintain stability of the excavated slopes and bottom of required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water to sumps from which the water shall be pumped.

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Maryland Soil Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

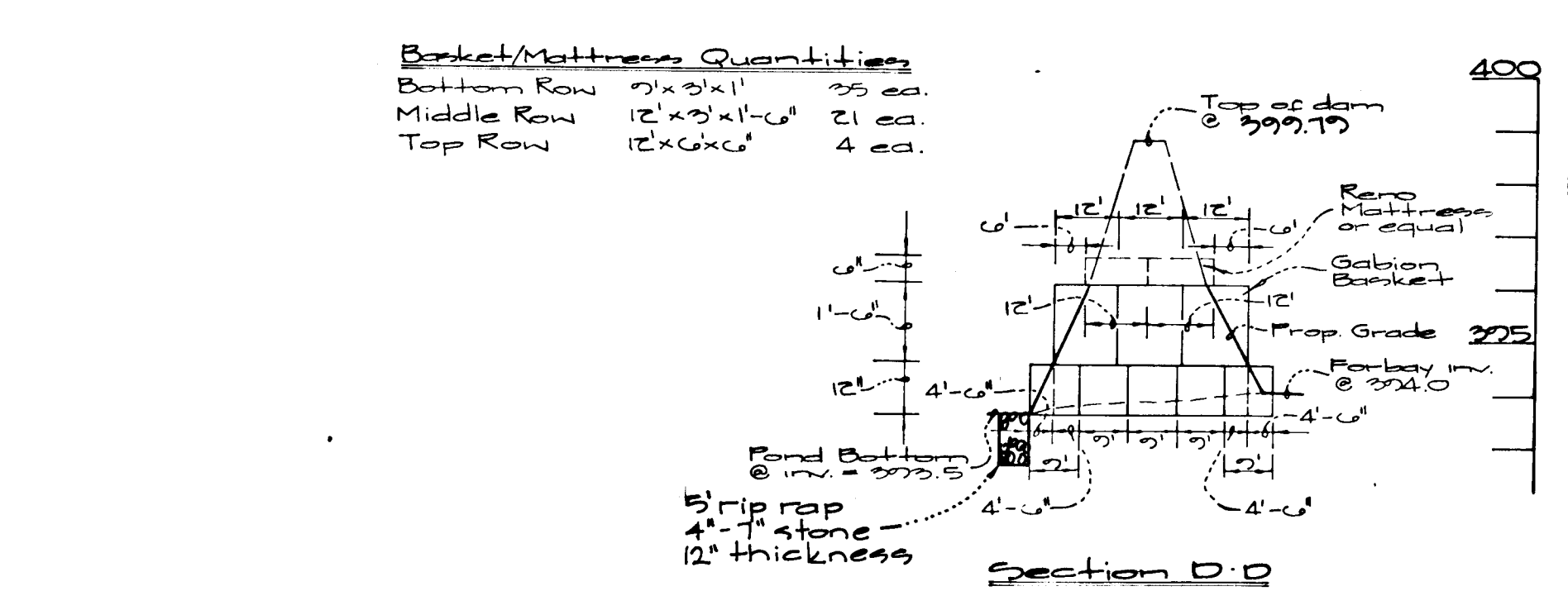
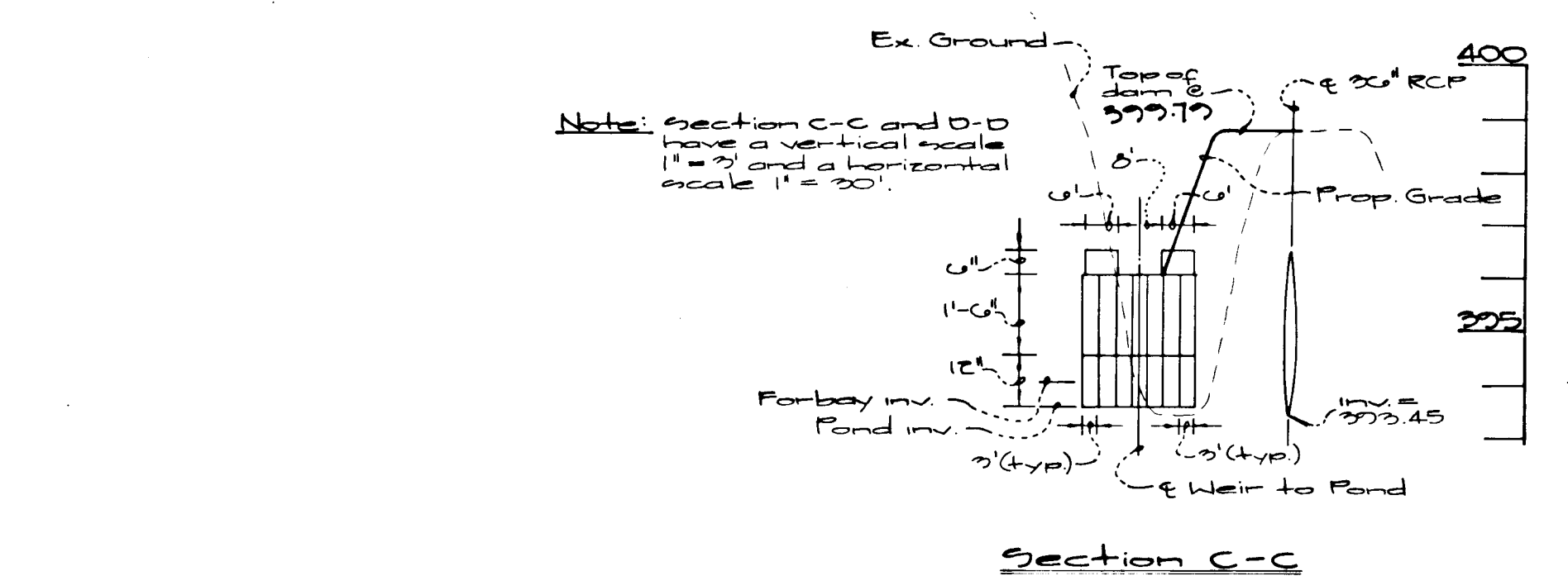
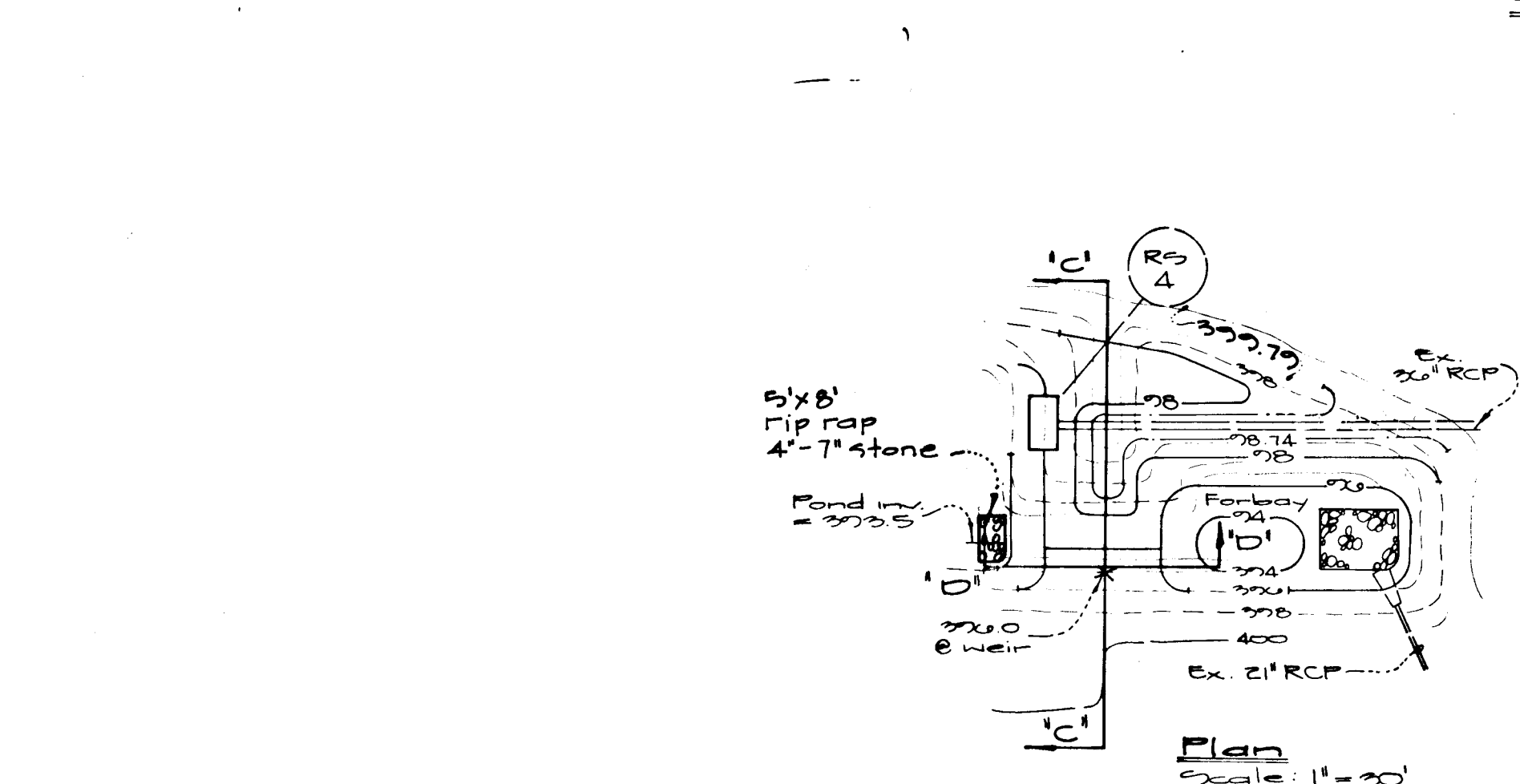
Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.



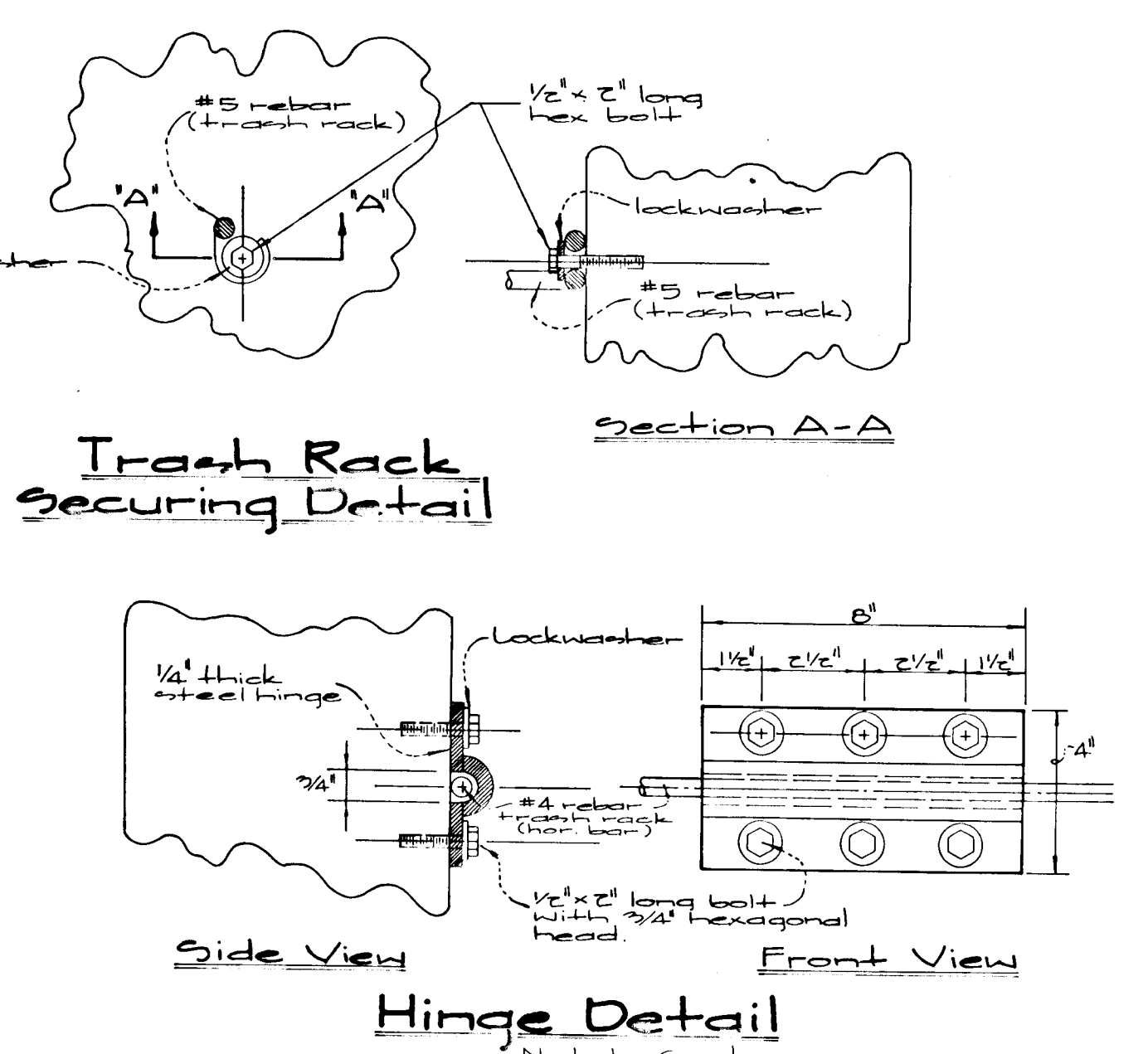
Cap and unless equal to or greater than elevation of river crest.
1" Perforations
Filter cloth over wire mesh
2" above core continuous band
Perforations or slits must not be made within 6" of the top of the outfall barrel

Sediment Trap #4 and Ultimate Pond #4 Dewatering Device



Gabion Basket Details

Basket/Mattness Quantities	
Bottom Row	25 ea.
Middle Row	21 ea.
Top Row	21 ea.



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 D. Simmons 02-04-97
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.

Robert W. Ziehm 2/4/97
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.
Cheryl D. Simmons 3-13-96 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.
Robert W. Ziehm 3-13-96 Date

Approved: Howard County Dept. of Public Works
Andrew M. Daniels 2-20-97
Chief, Bureau of Highways Date

Approved: Howard County Dept. of Planning & Zoning
Richard Blood 2/27/97
Chief, Div. of Land Development Date
Cheryl D. Simmons 2/25/97
Chief, Div. Engineering Division 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 BAL: (410) 880-1820 FAX: (301) 421-4186 DES. DRN. CHK.

DATL	REVISION	BY	APP'R.

PREPARED FOR:
The Howard Research & Development Corporation
The Raime Company
10275 Little Patuxent Parkway
Columbia, Maryland 21044
(410) 992-6370

MD-378 Notes and Details
Village of River Hill
Section 4 Area 1
Phase 2
Clarksville Election District No. 5
Howard County, Maryland

SCALE	ZONING	G. L. W. FILE NO.
As Shown	N.T.	94050
DATE	TAX MAP No.	SHEET
January 1997	34935	11 of 11

1487