

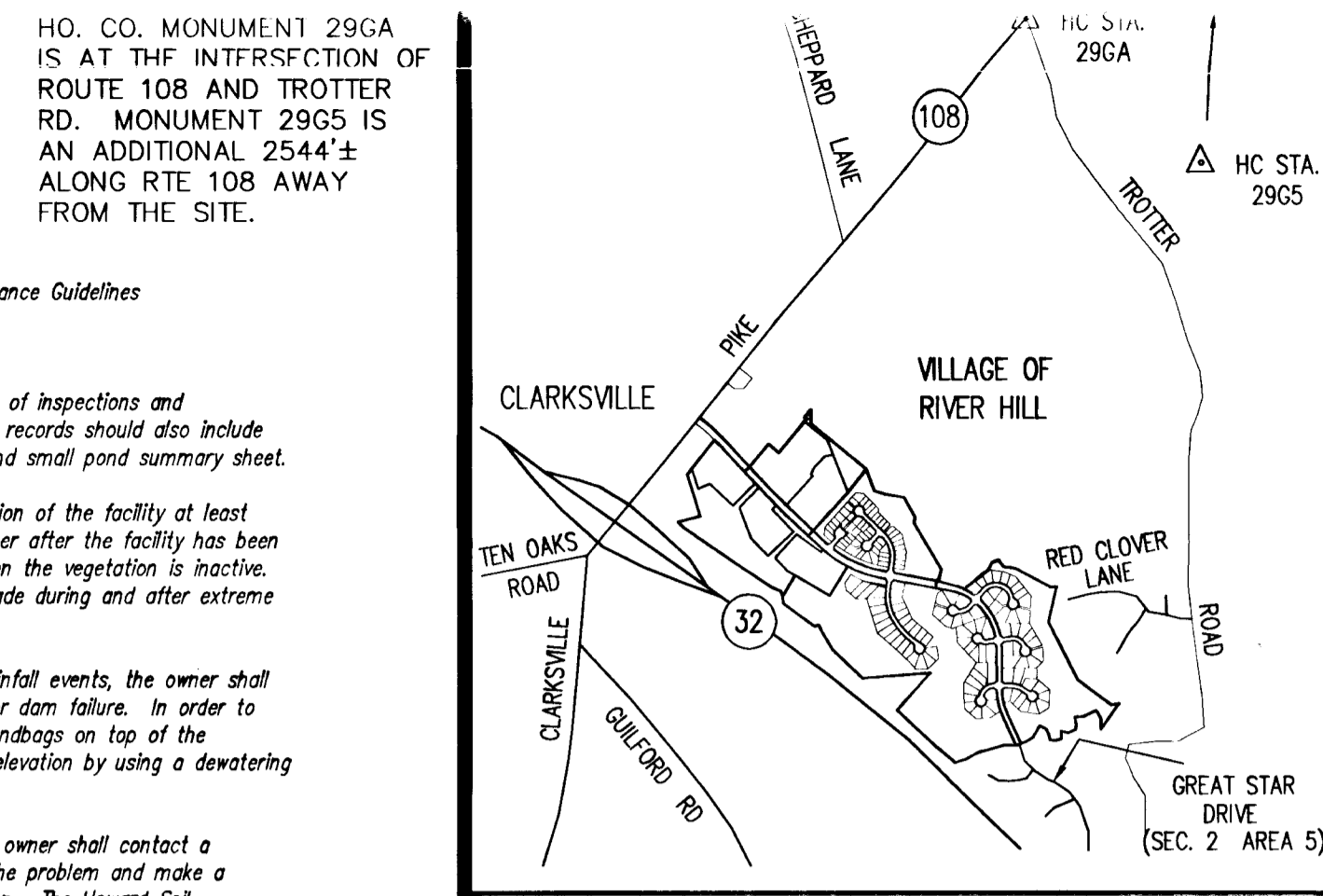
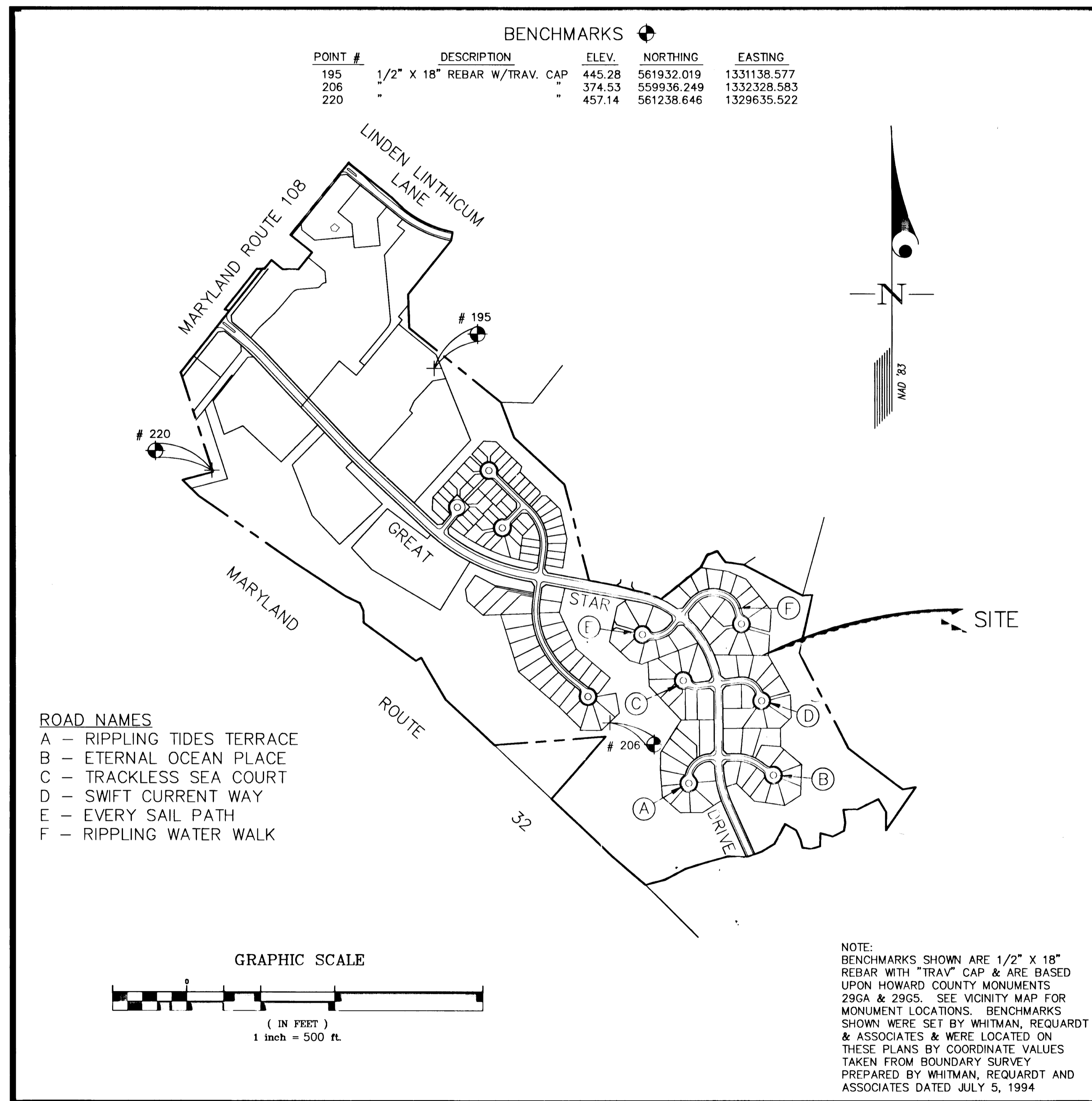
GENERAL NOTES

- 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: 46.52 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. 34-2445-0
- 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. 452.30 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 2.2.2, Part III.
- 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 11 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.
 - STOP SIGNS R1-1, 30"x30" OCTAGON
 - STOP AHEAD SIGNS W3-1A, 30"x30" DIAMOND
 - 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, Vol. III (1992) & as Modified by Guidelines For Street Lights in Residential Development (June 1993).
- The Following Numbers can be used to Track Environmental Permits: M.D.E. Application Tracking # 950500000 N.T.W.W. Division No. 95-NT-0517
- The Required Perimeter Landscaping will be Fulfilled by Retaining the Existing Vegetation.

VILLAGE OF RIVER HILL SECTION 4 ~ AREA 3

HOWARD COUNTY, MARYLAND



- Operations and Maintenance Guidelines**
- Operations:**
- Owner shall keep accurate records of inspections and maintenance type repairs. These records should also include a copy of the "as-built" plans and small pond summary sheet.
 - 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 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 owner shall check for overtopping, seepage, or dam failure. In order to avoid overtopping, either place sandbags on top of the embankment or lower the water elevation by using a dewatering device.
 - If a severe problem develops, the owner shall contact a Professional Engineer to assess the problem and make a suggestion to remedy the situation. The Howard Soil Conservation District or Maryland Dam Safety Division shall be contacted before major repairs are made.
- Maintenance**
- During the semi-annual visual inspections, the following items must be checked and documented by the owner:
- Spillways and Outlet Device
 - Pipes - check for sagging, misalignment, gaps at joints, cracks, leaks, and wear along inside surface of pipes. Also remove any blockages.
 - Trash Racks - inspect and replace if necessary. Actual time for removal of trash racks should be limited. Trash racks shall be painted once a year.
 - Concrete Surfaces - check for cracks or any other signs of failure.
 - Forbay and Spillway - check for stone deterioration or loss and spillway failure.
 - Rip Rap Outlet - check for stone deterioration or stone loss.
 - Dewatering Device - remove blockages.
 - Embankments
 - Vegetation - proper vegetative cover is required on all embankments. The owner shall follow proper seeding specifications for reseeding.
 - Trees and Brush - trees and brush shall be removed from the embankment. Stumps can be removed using silvicide.
 - Mowing - mowing is necessary to control the establishment of woody growth and to maintain the vegetative cover. The embankment, a 25-foot wide (except in wetland/stream buffers) strip adjacent to the toe, upstream and downstream of the embankment, and the area within 50 feet of the control structures need to be mowed. 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), soft spots or boggy areas on downstream embankment, seepage along downstream toe of embankment.
 - Stability - large cracks, slides, sloughing and excessive settlement are signs of embankment instability and a need for repair. Repairs must be approved by Howard Soil Conservation District.
 - Rodents - check for burrows, which can lead to seepage, and remove rodents when encountered.

DRAWING LIST

NO.	DESCRIPTION
1	Cover sheet
2	Road Plan - Every Sail Path
3	Road Plan - Rippling Tides Terrace and Eternal Ocean Place
4	Road Plan - Trackless Sea Court and Swift Current Way
5	Road Plan - Rippling Water Walk
6	Mass Grading & Sediment Control
7	Mass Grading & Sediment Control
8	Mass Grading & Sediment Control
9	Drainage Area Map
10	Storm Drain Profiles, Structure and Pipe Schedule
11	Notes and Details
12	Details & Profiles

STREET LIGHT SCHEDULE

SHEET NO.	STREET NAME	& LOCATION	OFFSET	TYPE
2	Every Sail Path	Δ 2+17	15' Lt.	3
3	Rippling Tides Terrace	Δ 2+93	Δ 17' Rt.	3
3	Eternal Ocean Place	Δ 3+44	Δ 15' Lt.	3
4	Swift Current Way	3+15	15' Lt.	3
5	Rippling Water Walk	Δ 3+18	15' Lt.	3
5	Rippling Water Walk	Lt. extra	5' behind curb	3
		Δ 0+58		

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.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] 12/19/96
 Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[Signature] 12/12/96
 Chief, Division of Land Development

[Signature] 12/11/96
 Chief, Development Engineering Division

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

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 3
 CLARKSVILLE ELECTION DISTRICT No. 5
 HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	NT	94050
DATE	TAX MAP No.	SHEET
NOV, 1996	34 & 35	1 OF 12

1487

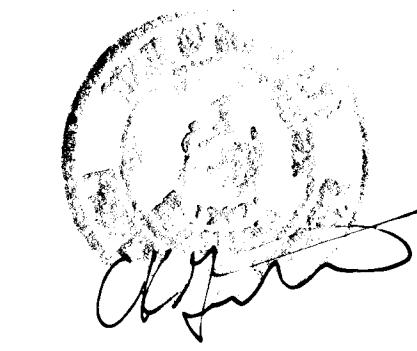
F96-124

STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
○	Zelkova Serrata/Green Yew	6 1/2" - 8" cal.	20	See General Note #26

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.

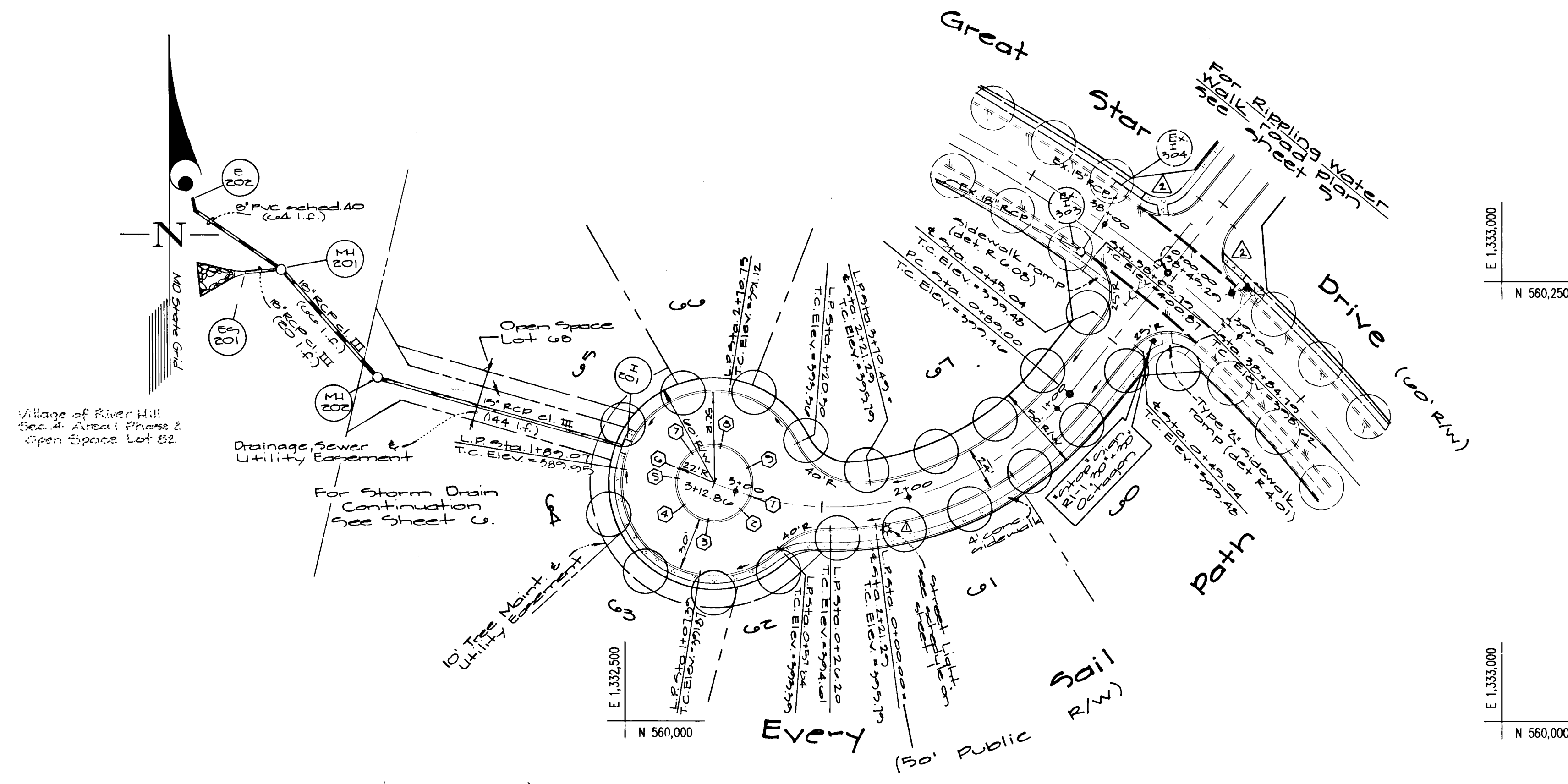
Legend

- Ex. 7" conc. curb & gutter (F 96-110)
- Ex. bituminous curb to be removed
- Prop. mod. conc. curb & gutter
- Ex. storm drain (F 96-110)
- Ex. 8" S (contr. # 34-3436-D)
- Ex. 4" conc. sidewalk
- Ex. streetlight (F 96-110)
- Ex. street tree (F 96-110)



Every Sail Path

Point No.	T.C. Elev.
1	392.47
2	392.29
3	391.64
4	391.13
5	390.89
6	390.81
7	390.89
8	391.32
9	392.27



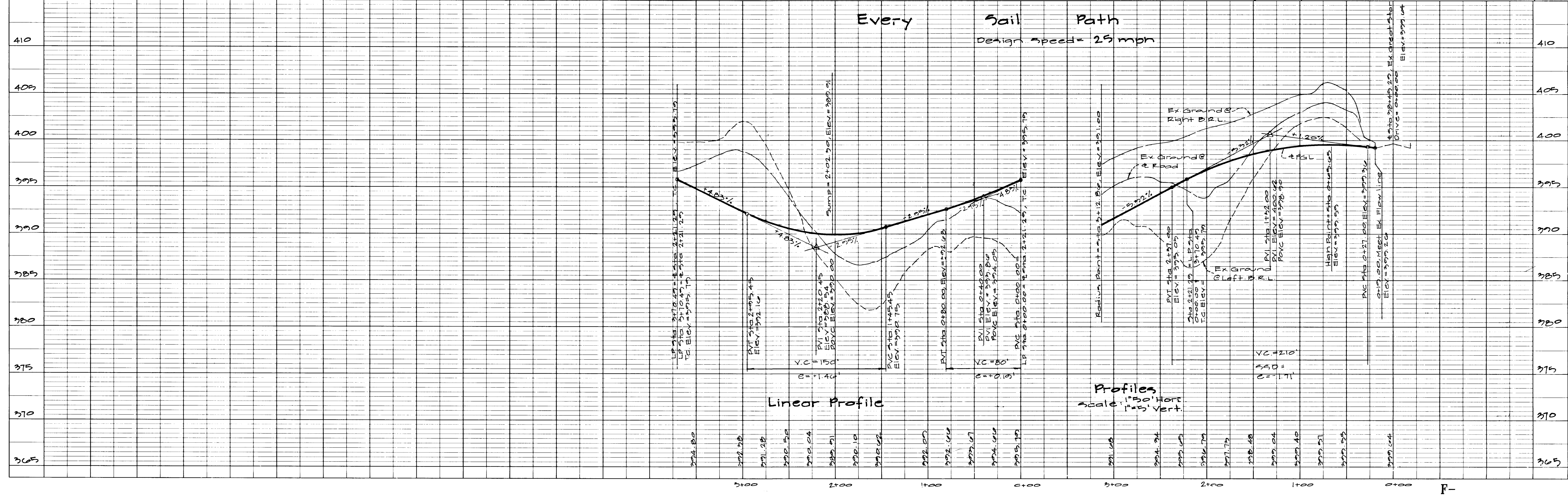
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] Acting Chief, Bureau of Highways Date: 12/15/96

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[Signature] Chief, Division of Planning and Development Date: 12/12/96
[Signature] Chief, Development Engineering Division Date: 12/11/96

Date	Revision	By	Appr
4/22/98	add sidewalk ramps at Rippling water walk	MCF	
4/9/97	relocate street light in order to coordinate w/ water/sewer	MCF	

Plan Scale: 1"=50'

CURVE DATA									
STREET NAME	P.C. STA.	P.C.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
Every Sail Path	0+89.00	none	3+12.86	175.00'	223.86'	130.19'	208.91'	S 75°50'13" W	73°17'34"



1487

STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/Common)	SIZE	QUANTITY	REMARKS
○	Zelkova serrata/Green Vane	2 1/2" - 3"	44	See General Note # 26

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.

Legend

- Ex. 7" conc. curb & gutter (F 96-110)
- Ex. bituminous curb to be removed
- Prop. mod. conc. curb & gutter
- Ex. storm drain (F 96-110)
- Ex. 8" S (center # 30-3436-D)
- Ex. 4" conc. sidewalk
- Ex. streetlight (F 96-110)
- Ex. street tree (F 96-110)

Chapman

Rippling Tides Terrace

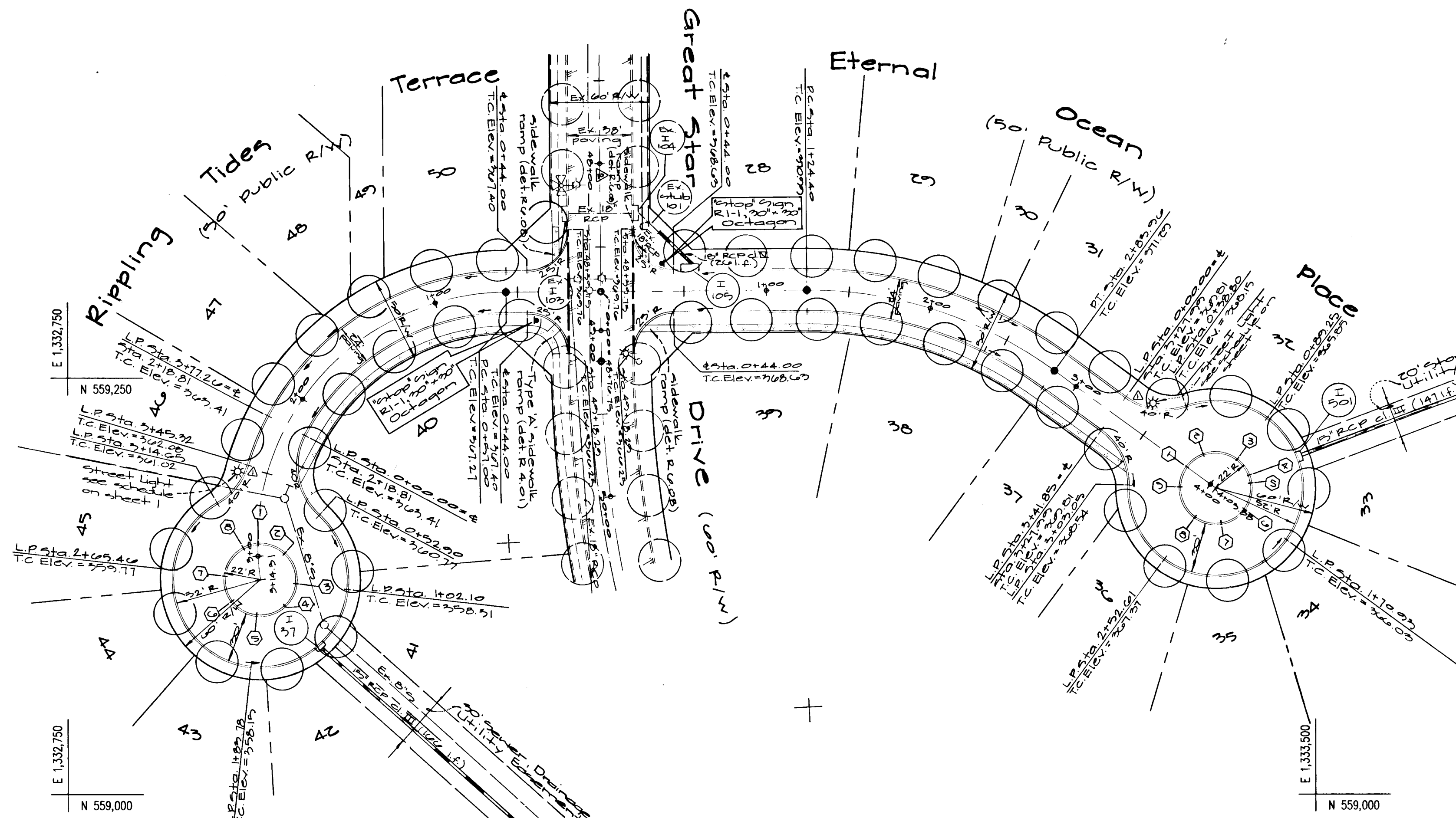
T.C. Elevation

Point No.	T.C. Elev.
1	359.97
2	359.87
3	358.81
4	358.51
5	358.14
6	357.08
7	357.02
8	356.12

Eternal Ocean Place

T.C. Elevation

Point No.	T.C. Elev.
1	360.05
2	361.98
3	362.41
4	362.40
5	362.44
6	362.47
7	362.95
8	362.75



Plan Scale: 1"=50'

Curve Data

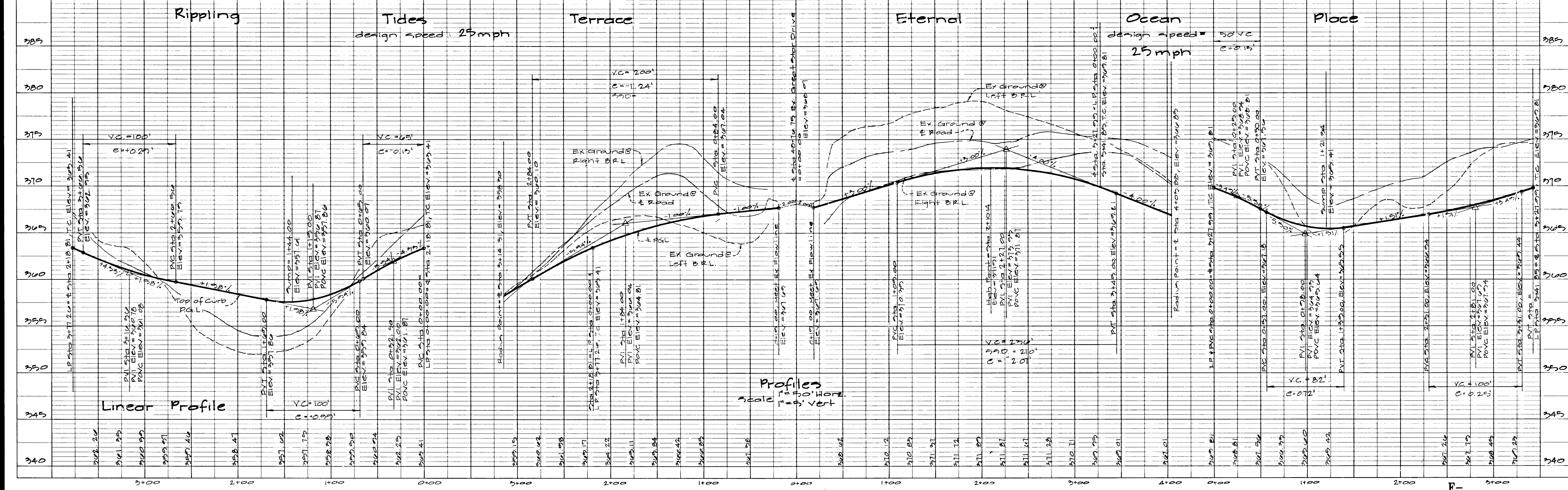
STREET NAME	P.C. STA.	P.C.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
Rippling Tides Terrace	0+57.00	none	3+14.31	150.00'	257.31'	173.43'	226.90'	S 40°30'06" W	98°17'09"
Eternal Ocean Place	14+24.40	none	2+83.96	250.00'	158.56'	82.60'	156.87'	S 72°04'16" E	36°34'07"

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature] *[Signature]* 12/9/96
 Chief, Bureau of Highways Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
[Signature] *[Signature]* 12/12/96
 Chief, Division of Land Development Date

[Signature] *[Signature]* 12/11/96
 Chief, Development Engineering Division Date

Date	Revision	By	Appr
12/22/96	show ex. sidewalk ramp at Eternal Ocean Place		MCF
4/9/97	relocate street lights on Rippling Tide Terrace, and Eternal Ocean Place, in order to coordinate w/ water/sewer plans		MCF



Profiles Scale: 1"=10' Horz., 1"=5' Vert.

1481

GLW 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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ROAD CONSTRUCTION PLANS
COLUMBIA
VILLAGE OF RIVER HILL
 SECTION 4, AREA 3

ELICOTT CITY ELECTION DISTRICT No. 5
 HOWARD COUNTY, MARYLAND

OWNER
 THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21046
 PHONE (410) 484-8400

DESIGNED DEV: SCALE 1"=50'
 DRAWN CAD: DRAWING 3 OF 12
 CHECKED DEV: ZONING N T
 DATE: NOV, 1996 JOB No. 94050

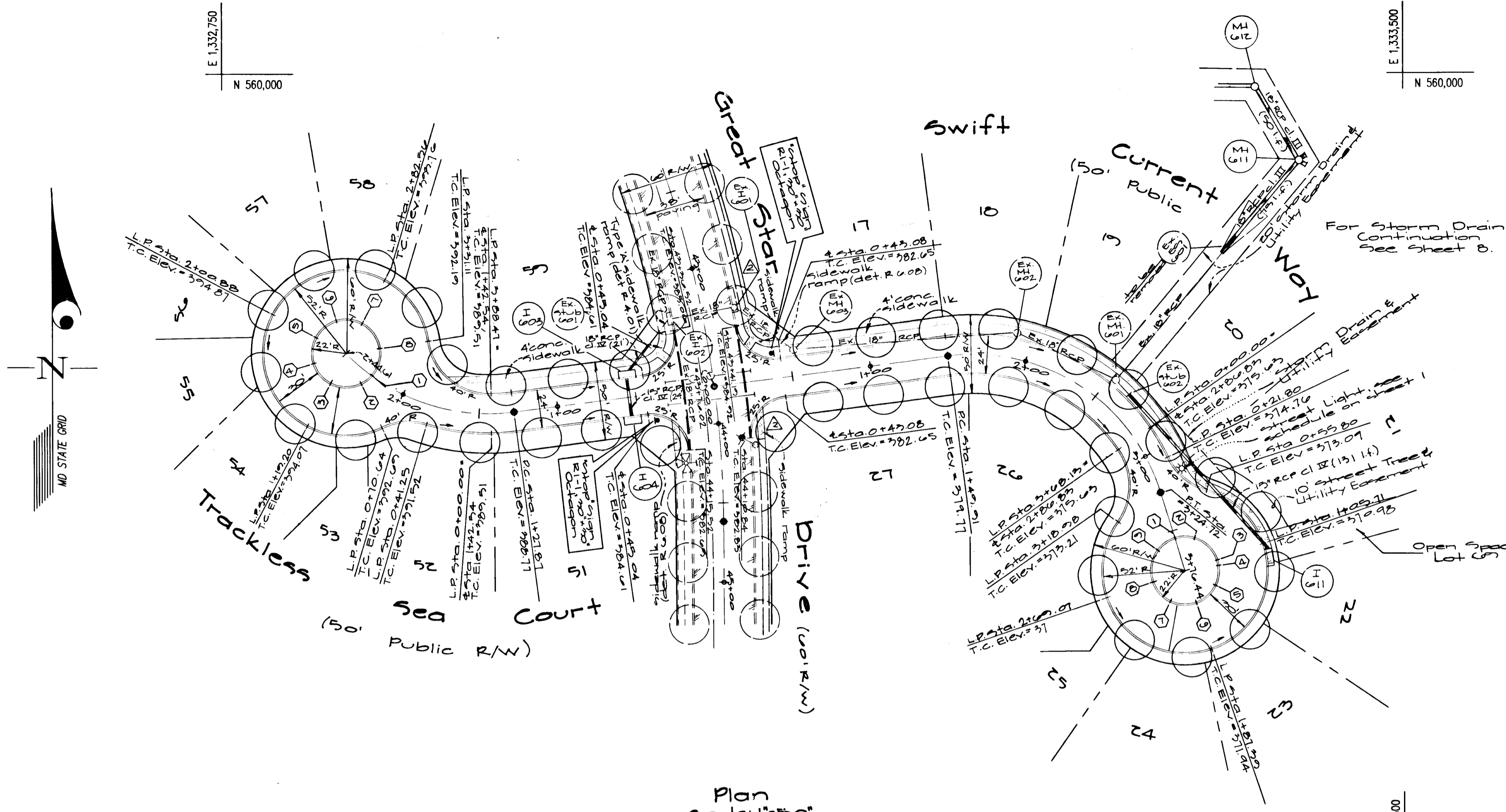
Trackless Sea Court	
T.C. Elevation	
Point No.	T.C. Elev.
1	973.70
2	974.03
3	974.61
4	974.88
5	974.97
6	974.82
7	974.88
8	974.82

Swift Current Way	
T.C. Elevation	
Point No.	T.C. Elev.
1	975.47
2	972.24
3	971.85
4	971.82
5	971.77
6	971.42
7	972.52
8	972.77
9	973.24

STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
○	Zelkova serrata / Green Vase	2 1/2" - 3" cal.	38	See General Note 26

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.

- Legend
- Ex. 7" conc. curb & gutter (F 96-110)
 - Ex. bluminous curb to be removed
 - Prop. mod. conc. curb & gutter
 - Ex. storm drain (F 96-110)
 - Ex. 8" S (cont. # 34-3436-D)
 - Ex. 4" conc. sidewalk
 - Ex. streetlight (F 96-110)
 - Ex. street tree (F 96-110)



CURVE DATA									
STREET NAME	P.C. STA.	P.C.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
Trackless Sea Court	1427.87	none	2444.67	125.00'	116.80'	63.06'	112.60'	N 70°36'01" W	53°32'14"
Swift Current Way	1449.91	none	3424.72	125.00'	174.81'	105.13'	160.91'	S 57°18'13" E	80°07'50"

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Howard 12/9/96
 Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Richard Blood 12/12/96
 Chief, Division of Planning and Development

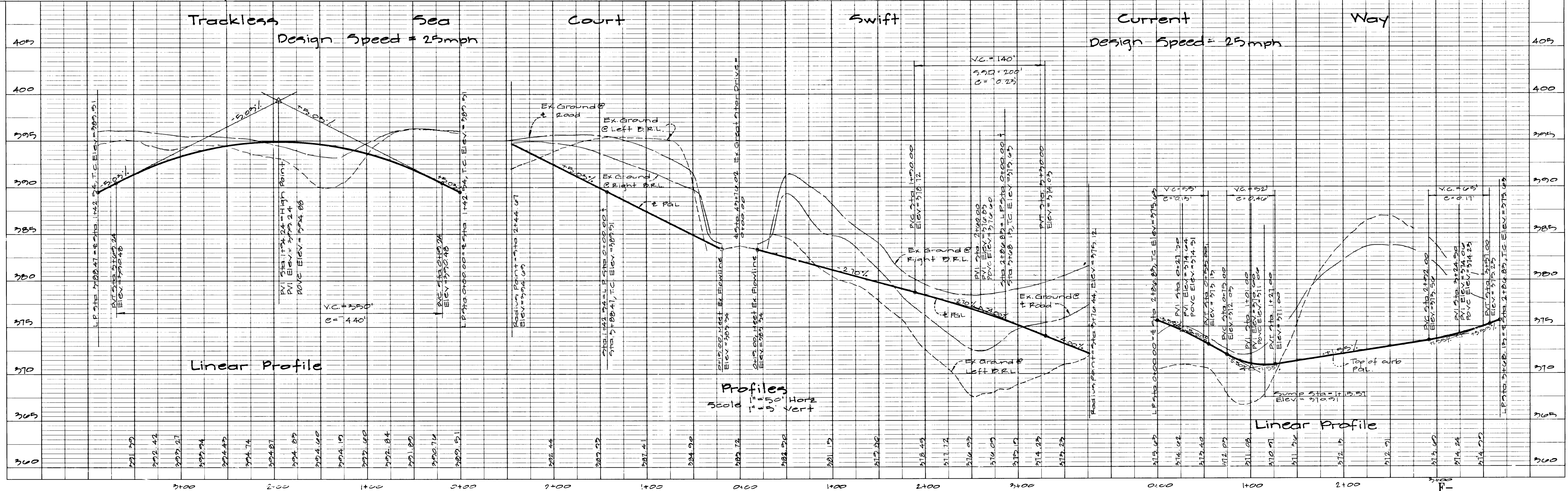
William 12/11/96
 Chief, Development Engineering Division

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 BALT.: (410) 880-1820 NO.VA. (301) 989-2524 FAX: (301) 421-4165

DESIGNED DEV: ROAD CONSTRUCTION PLANS
 DRAWN CAD: COLUMBIA
 CHECKED DEV: VILLAGE OF RIVER HILL
 DATE: SECTION 4, AREA 3
 NOV 1996

SCALE: 1"=50'
 DRAWING: 4 OF 12
 ZONING: N T
 JOB No.: 94050

OWNER: THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21046
 PHONE (410) 484-8400



1487

STREET TREE SCHEDULE				
SYMBOL	NAME (BOTANICAL/COMMON)	SIZE	QUANTITY	REMARKS
○	Zelkova Serotina/Green Vase	2 1/2"-3" cal.	25	See General Note #26

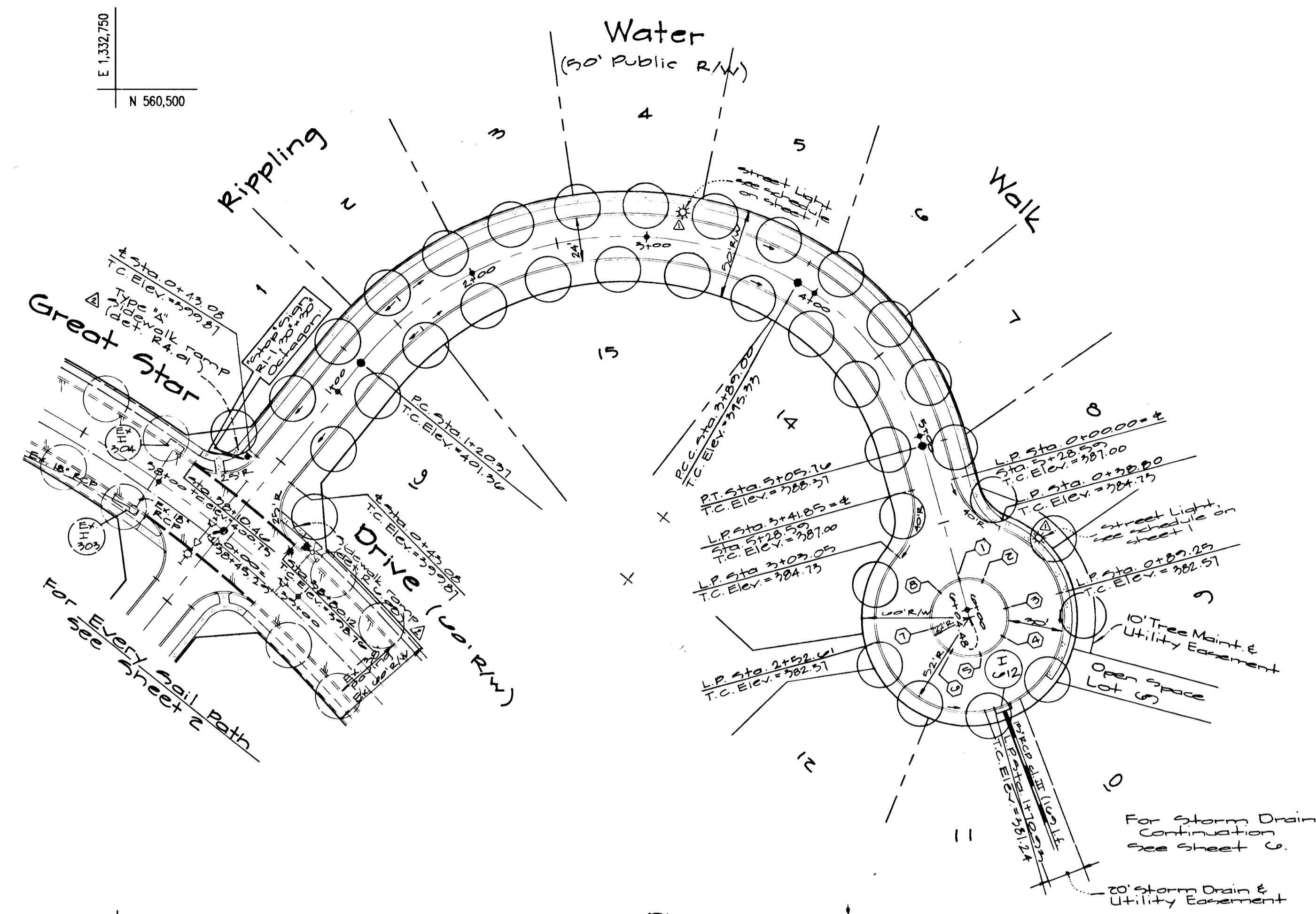
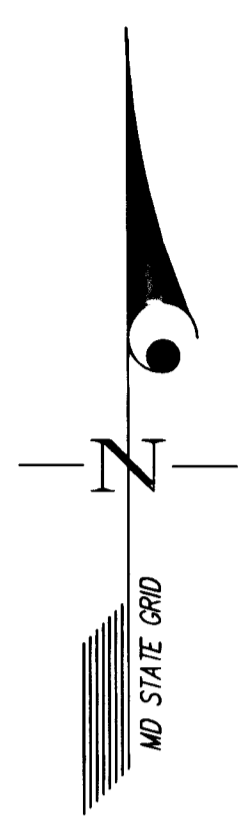
NOTES FOR CURB AND GUTTER TRANSITION:
 The standard 7" curb and gutter in the Great Star right-of-way will be raised down within the last 10' prior to the handicap ramp. The first 10' following the ramp will be used to establish a full height of the modified curb and gutter.

Legend

- Ex. 7" conc. curb & gutter (F 96-110)
- Ex. bituminous curb to be removed
- Prop. mod. conc. curb & gutter
- Ex. storm drain (F 96-110)
- Ex. 8" S (contr. # 34-3436-D)
- Ex. 4" conc. sidewalk
- Ex. streetlight (F 96-110)
- Ex. street tree (F 96-110)

Date	Revision	By	Appr.
6/22/96	show sidewalk & add sidewalk ramps to Rippling Water Walk	MCF	
4/7/97	relocate street lights in order to coordinate w/water/sewer plans	MCF	

Point No.	T.C. Elevation
1	284.13
2	283.87
3	282.72
4	282.42
5	282.13
6	282.42
7	282.72
8	283.87



Plan scale: 1"=50'

STREET NAME	P.C. STA.	P.C.C. STA.	P.T. STA.	RADIUS	ARC	TANGENT	CHORD	BEARING	DELTA
Rippling Water Walk	1+20.37	3+89.00	none	190.00'	268.63'	162.29'	246.80'	N 79°41'35" E	81°00'20"
Rippling Water Walk	none	3+89.00	5+05.76	150.00'	116.76'	61.52'	113.84'	S 37°30'16" E	44°35'58"

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Howard County
 Chief, Bureau of Highways
 Date: 12/12/96

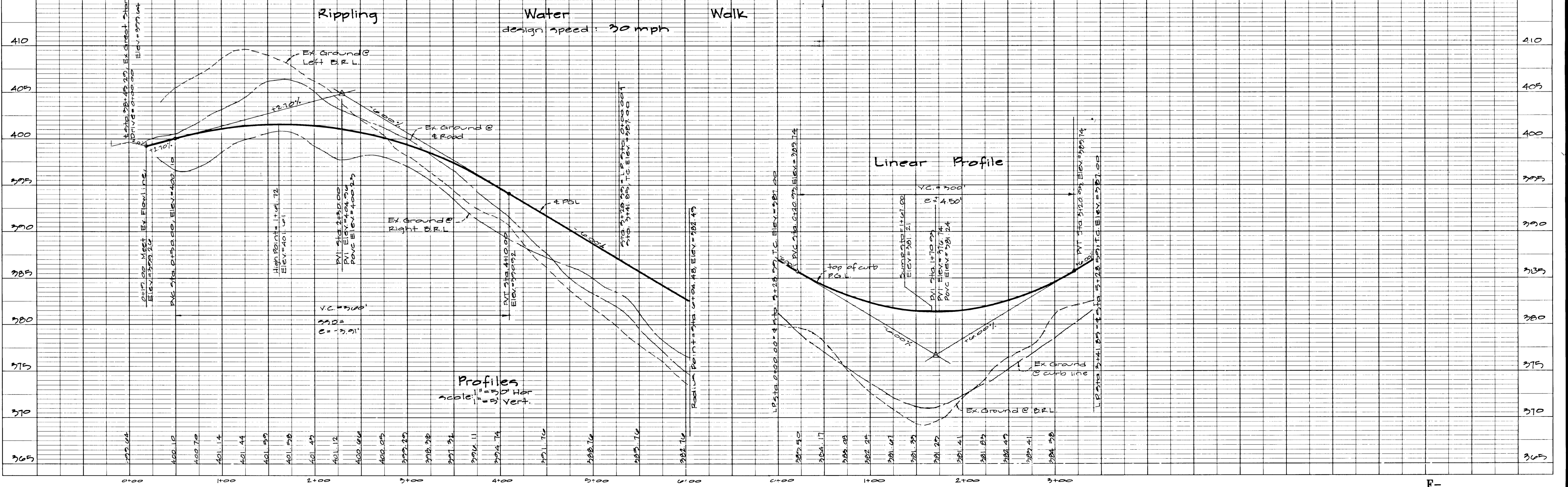
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Richard Blood
 Chief, Division of Land Development
 Date: 12/12/96

Michael Damron
 Chief, Development Engineering Division
 Date: 12/11/96

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

DESIGNED DEV	ROAD CONSTRUCTION PLANS COLUMBIA	SCALE 1"=50'
DRAWN CAD/	VILLAGE OF RIVER HILL SECTION 4, AREA 3	DRAWING OF 12
CHECKED DEV	ELICOTT CITY ELECTION DISTRICT No. 5 HOWARD COUNTY, MARYLAND	ZONING N T
DATE	OWNER THE HOWARD RESEARCH AND DEVELOPMENT CORPORATION 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21046 PHONE (410) 484-8400	JOB No. 94050

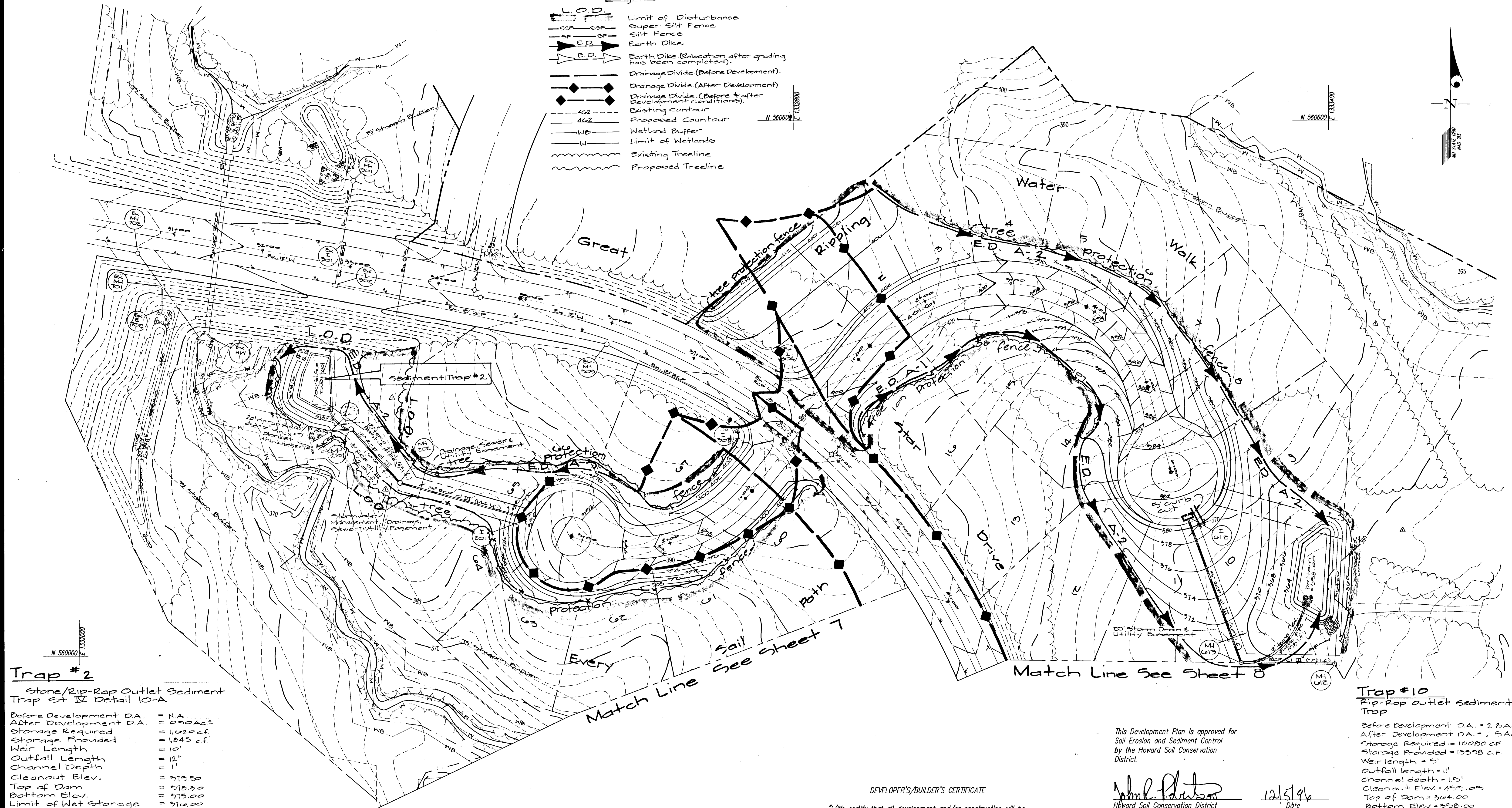
NOV, 1996



1487

Legend

- L.O.D. 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)
- Drainage Divide (Before & after Development conditions)
- Existing contour
- Proposed Contour
- Wetland Buffer
- Limit of Wetlands
- Existing Treeline
- Proposed Treeline



Trap #2
 Stone/Rip-Rap Outlet Sediment Trap St. IV Detail 10-A

Before Development D.A. = N.A.
 After Development D.A. = 0.90 Act
 Storage Required = 1,620 cf.
 Storage Provided = 1,645 cf.
 Weir Length = 10'
 Outfall Length = 12'
 Channel Depth = 1'
 Cleanout Elev. = 375.50
 Top of Dam = 378.30
 Bottom Elev. = 375.00
 Limit of Wet Storage = 376.00
 Weir Crest Elev. = 377.00

Trap #10
 Rip-Rap outlet Sediment Trap

Before Development D.A. = 2.8 Act.
 After Development D.A. = 1.5 Act.
 Storage Required = 10,000 CF
 Storage Provided = 13,578 C.F.
 Weir length = 5'
 Outfall length = 11'
 Channel depth = 15'
 Cleanout Elev. = 459.05
 Top of Dam = 364.00
 Bottom Elev. = 358.00
 Limit of Wet Storage = 460.10
 Weir crest Elev. = 362.5

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Adrian Ariza 12/19/96
 Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Richard Blood 12/12/96
 Chief, Division of Land Development and Zoning

Chris Dammann 12/11/96
 Chief, Engineering Division

ENGINEER'S CERTIFICATE

"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Chris Dammann 3-13-96
 Date

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/we certify that all development and/or construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the HSCD."

John P. Peterson 3-13-96
 Signature of Developer/Builder Date

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

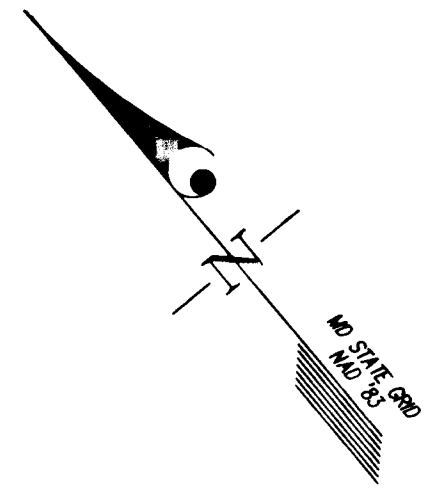
John P. Peterson 12/5/96
 Howard Soil Conservation District Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.

Charles E. Jennings 12-05-96
 Natural Resources Conservation Service Date

1487

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. CHK.		PREPARED FOR: The Howard Research and Development Corporation The Rowe Building 10275 Little Patuxent Parkway Columbia, Maryland 21044 (410) 392-6770	Mass Grading & Sediment Control Plan Village of River Hill Section 4 Area 3 Clarksville Election District No. 5 Howard County, Maryland	SCALE 1" = 50' ZONING N.T. G. L. W. FILE No. 940950
DATE 4/9/97 REVISION Revise treeline in order to coordinate water & sewer plans BY MCF APPR.	DATE 3-13-96 DATE 3-13-96 DATE 12-05-96	DATE Nov., 1996 TAX MAP No. 94105 SHEET 6 of 12		



This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

Howard S.C.D. Date 12/14/96

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.

Michael J. Jamieson 12-05-96
Natural Resources Conservation Service Date

ENGINEER'S CERTIFICATE

"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Alfred 3-13-97
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

"We certify that all development and/or construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the HSCD."

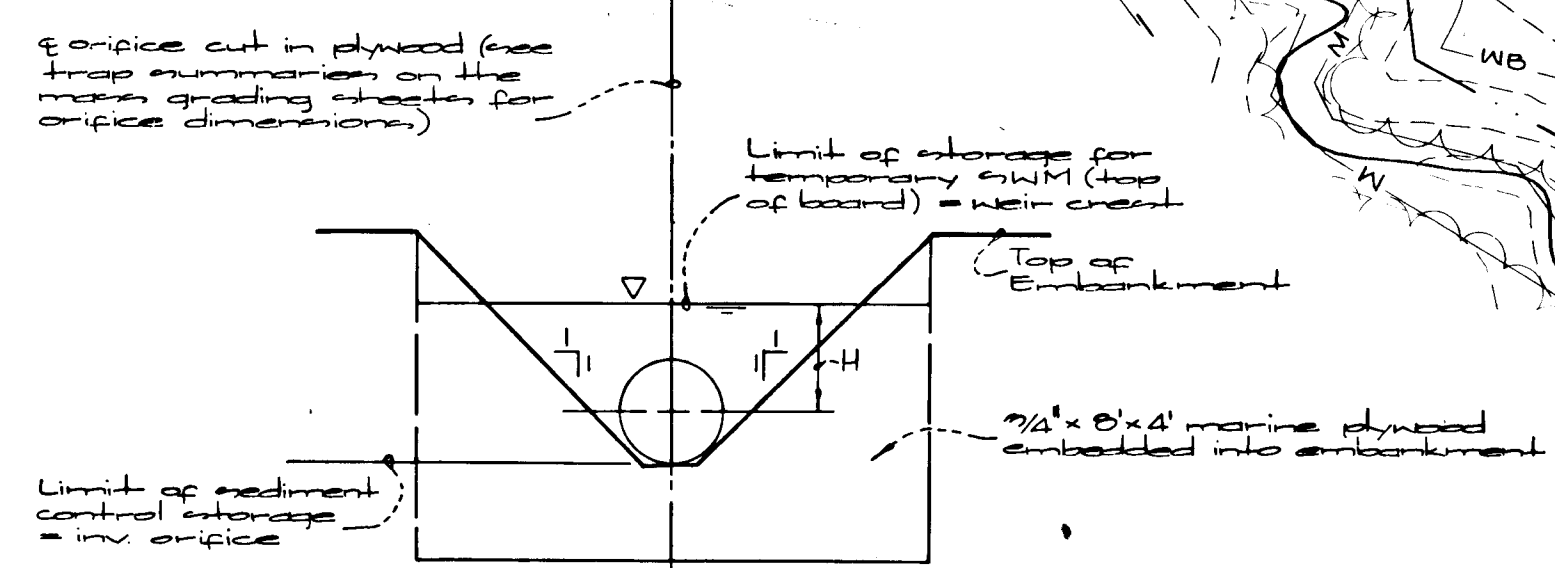
Alfred 3-13-97
Signature of Developer/Builder Date

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Richard Board 12/19/96
Act. Bureau of Highways Date

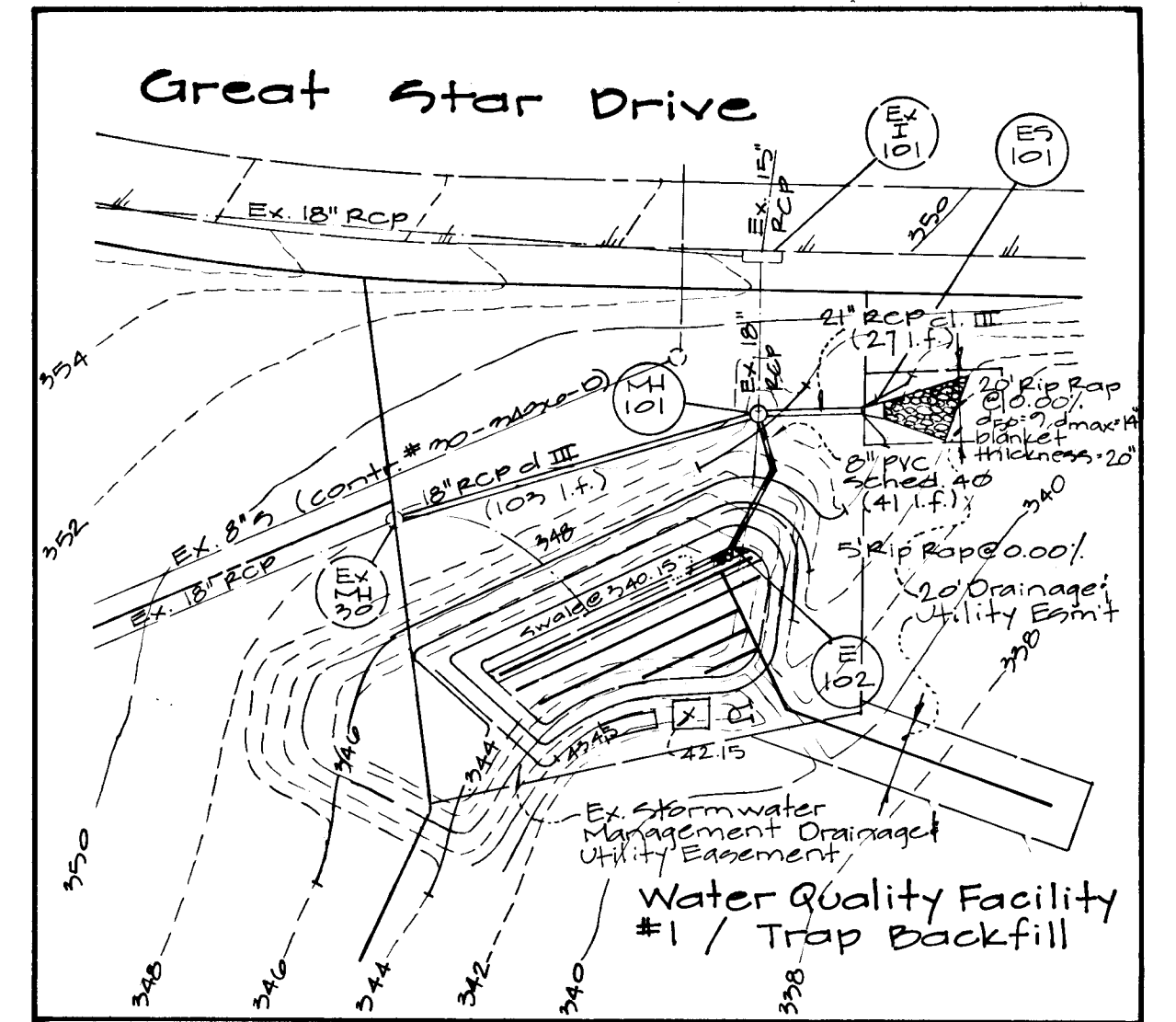
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Richard Board 12/19/96
Act. Planning & Land Development Date

Michael J. Jamieson 12/14/96
Act. Engineering Division Date

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



Detail of Temporary S.W.M. Device @ Facilities 1, 2, 4, 5, 6, 7 & 11
Not to Scale



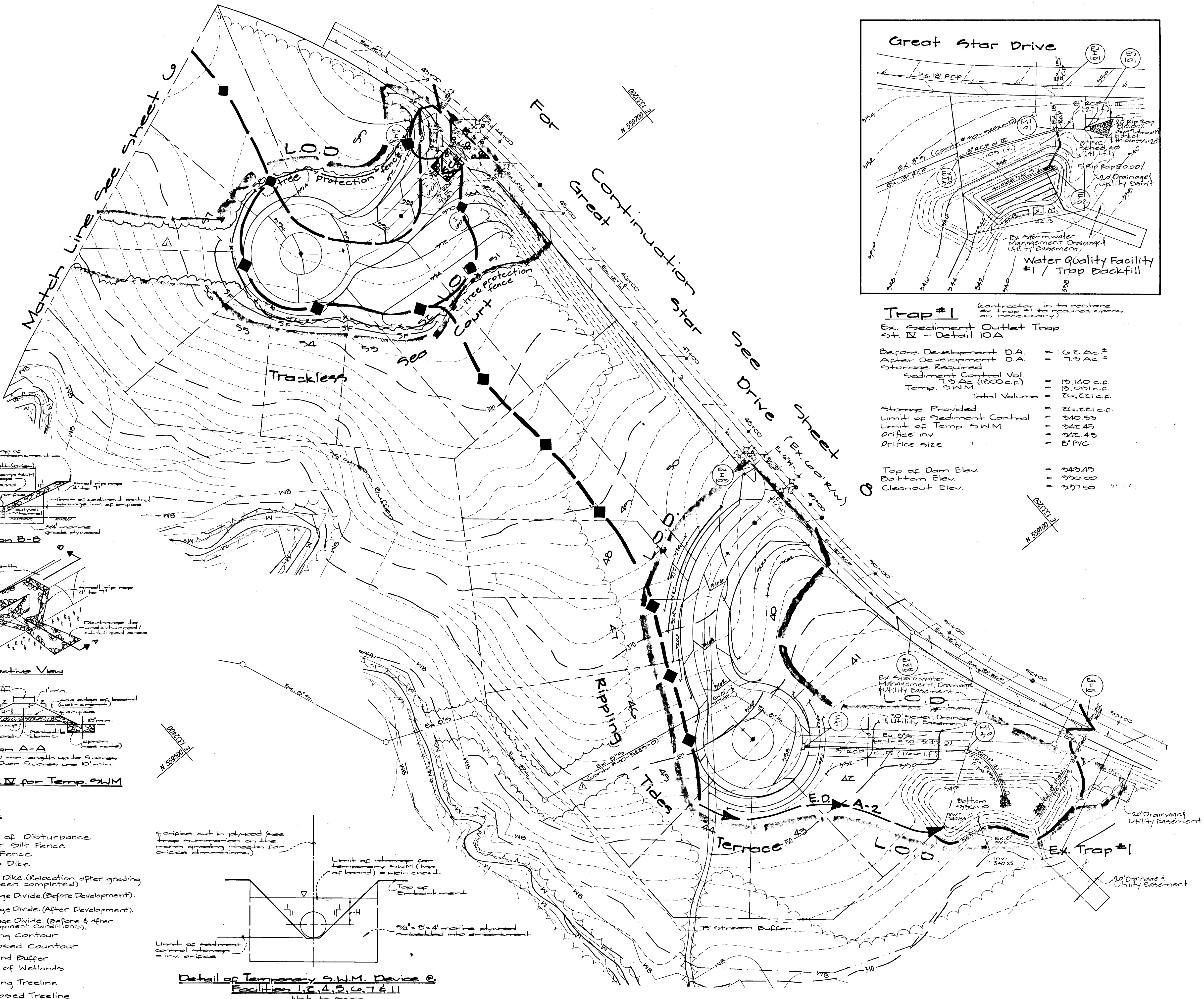
Trap #1 (Contractor in to restore ex. trap #1 to required spec. as necessary)

Ex. Sediment Outlet Trap
St. IV - Detail 10A

Before Development D.A. = 6.6 Ac ±
After Development D.A. = 7.3 Ac ±
Storage Required
Sediment Control Vol. = 13,140 c.f.
Temp. S.W.M. = 13,081 c.f.
Total Volume = 26,221 c.f.

Storage Provided = 26,221 c.f.
Limit of Sediment Control = 240.59
Limit of Temp. S.W.M. = 242.45
Orifice Inv. = 242.45
Orifice Size = 8" PVC

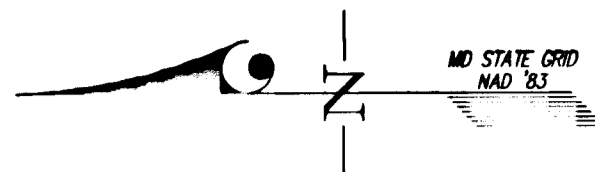
Top of Dam Elev. = 243.45
Bottom Elev. = 236.00
Cleanout Elev. = 237.50



1487

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 BAL: (410) 880-1820 FAX: (301) 421-4186	DES.	DRN.	CHK.	DATE	REVISION	BY	APP'R.	PREPARED FOR: The Howard Research and Development Corporation The Rowe Building 10215 Little Patuxent Parkway Columbia, Maryland 21044 (410) 992-0970	MASS GRADING & SEDIMENT CONTROL PLAN Village of River Hill Section 4 Area 3 Clarksville Election District No. 5 Howard County, Maryland	SCALE 1" = 50'	ZONING N.T.	G. L. W. FILE No. 94050
					4/2/97	Δ revise treeline in order to coordinate w/water & sewer plans	MCF			DATE Nov. 1996	TAX MAP No. 34155	SHEET 7 of 12

F-96-124



Trap #6

Before Development D.A.	=	46 AC
After Development D.A.	=	62 AC
Storage Required	=	11,160 CF
Sediment Control Vol.	=	19,020 CF
Temp. S.W.M.	=	30,790 CF
Total Volume	=	350.99
Storage Provided	=	354.50
Limit of Sediment Control	=	350.91
Limit of Temp. S.W.M.	=	8' PVC
Orifice Inv.	=	355.50
Orifice size	=	348.27
Top of Dam Elev.	=	349.65
Bottom Elev.	=	
Cleanout Elev.	=	

Trap #5

Stone/Rip-Rap Outlet Sediment Trap St. III Detail 10-A	=	150 AC
Before Development D.A.	=	120 AC
After Development D.A.	=	2,448 CF
Storage Required	=	2,400 CF
Storage Provided	=	6.0'
Weir Length	=	60'
Outfall Length	=	1.5'
Channel Depth	=	342.00
Cleanout Elev.	=	341.00
Top of Dam	=	344.70
Bottom Elev.	=	345.70
Limit of Wet Storage	=	
Weir Crest Elev.	=	

Legend

	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)
	Drainage Divide (Before & after Development conditions)
	Existing Contour
	Proposed Contour
	Wetland Buffer
	Limit of Wetlands
	Existing Treeline
	Proposed Treeline

This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

Howard Soil Conservation District
Date: 12/14/94

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.

Natural Resources Conservation Service
Date: 12-05-94

ENGINEER'S CERTIFICATE

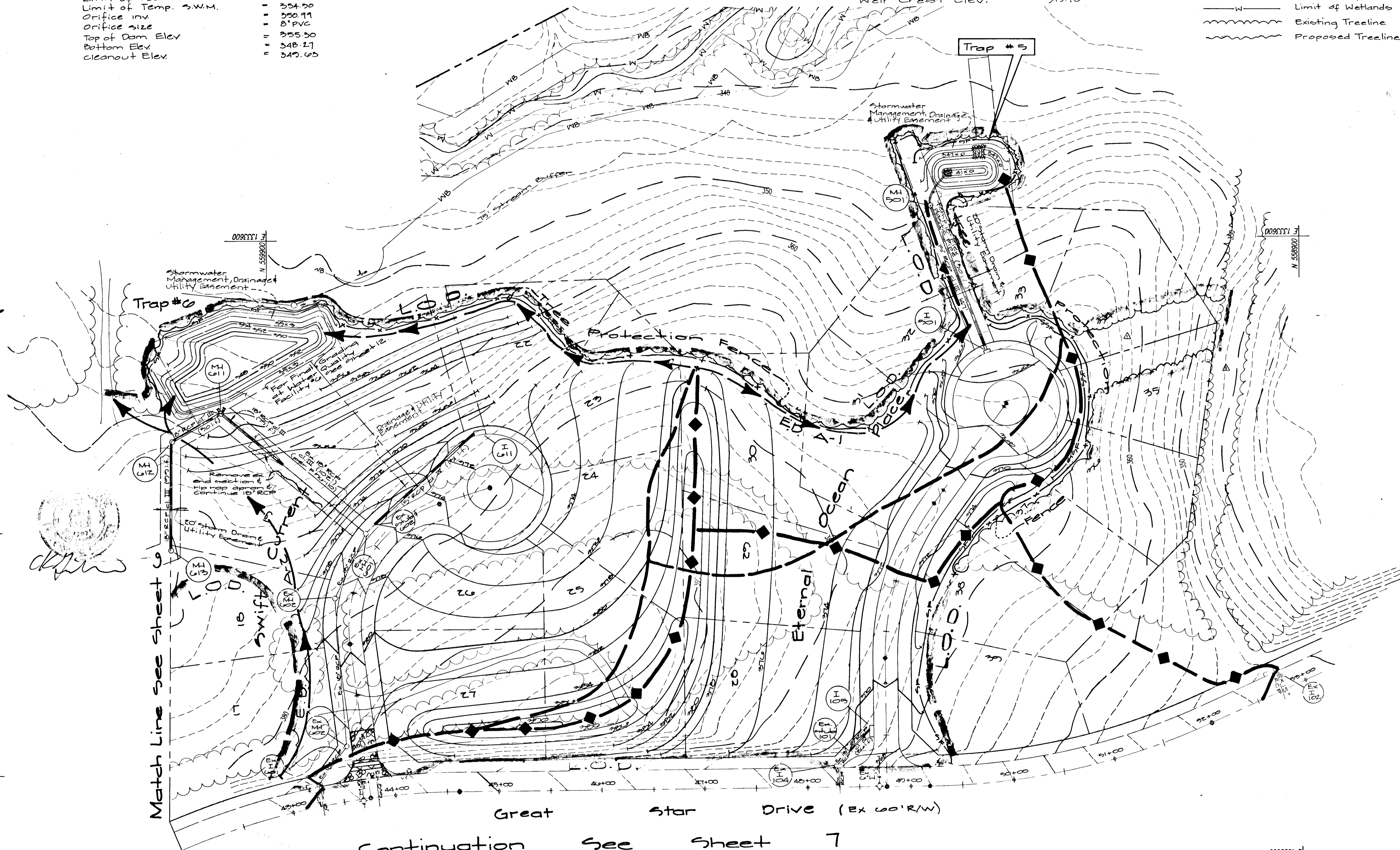
"I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Signature
Date: 3-13-96

DEVELOPER'S/BUILDER'S CERTIFICATE

"I/We certify that all development and/or construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the HSCD."

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



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Signature Date: 12/9/96
Chief, Bureau of Highways

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
Signature Date: 12/12/96
Chief, Division of Land Development

Signature Date: 12/14/96
Chief, Division of Planning Division

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

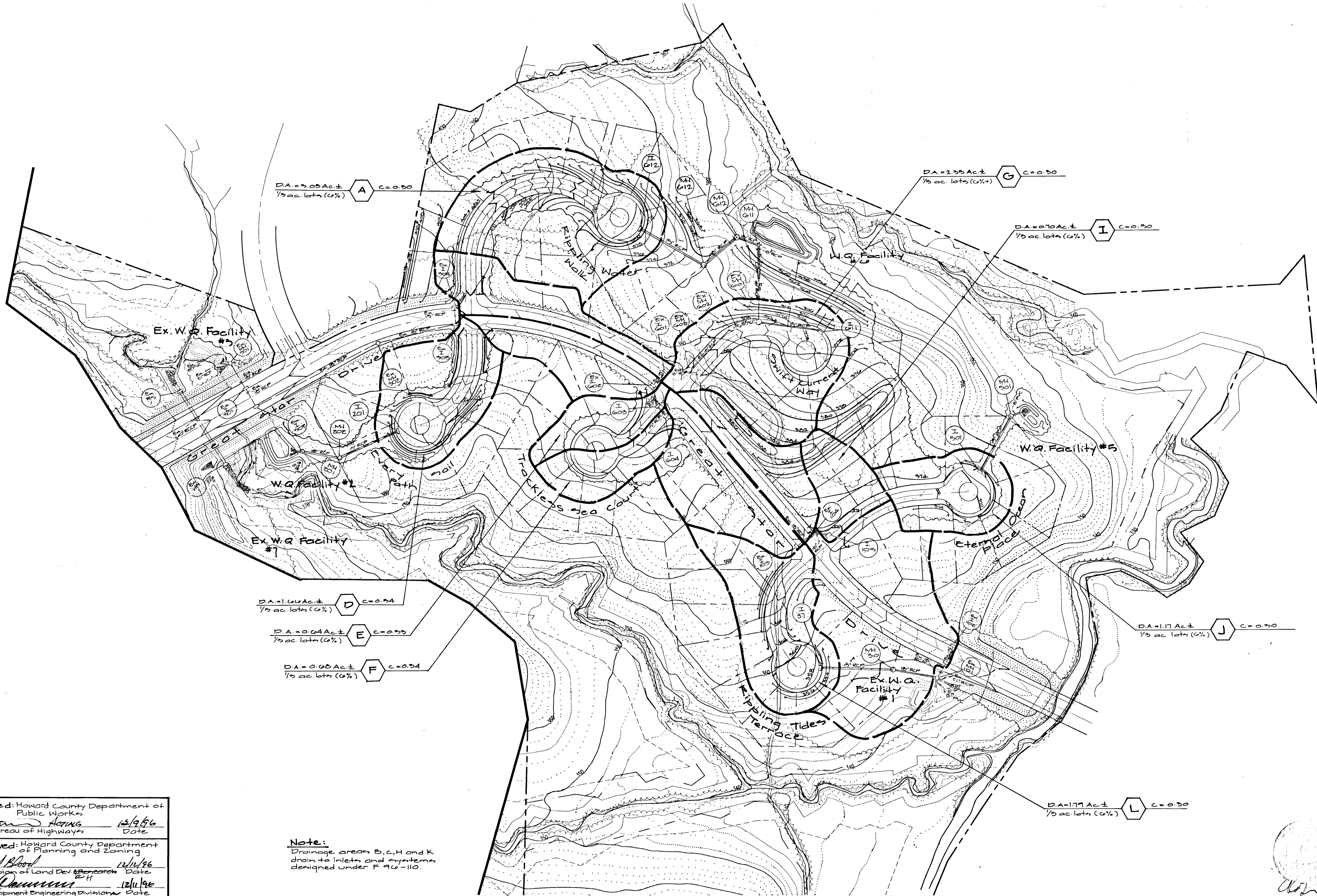
DATE	REVISION	BY	APPR.
12/9/97	Revise treeline in order to coordinate w/ water & sewer plans	MCF	

PREPARED FOR:
The Howard Research and Development Corporation
The Rowe Building
10279 Little Patuxent Parkway
Columbia, Maryland 21044
(410) 972-0370

Mass Grading & Sediment Control Plan
Village of River Hill
Section 4 Area 3
Clarksville Election District No. 5
Howard County, Maryland

SCALE 1" = 50'	ZONING N.T.	G. L. W. FILE No. 94090
DATE November 1996	TAX MAP No. 34135	SHEET 8 of 12

1487



Approved: Howard County Department of Public Works
 Chief, Bureau of Highways
 Date: 12/9/96

Approved: Howard County Department of Planning and Zoning
 Chief, Division of Land Development
 Date: 12/11/96

Approved: Howard County Department of Planning and Zoning
 Chief, Development Engineering Division
 Date: 12/11/96

Note:
 Drainage areas B, C, H and K drain to inlets and systems designed under F 96-110.

1487

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

DATE	REVISION	BY	APPR.

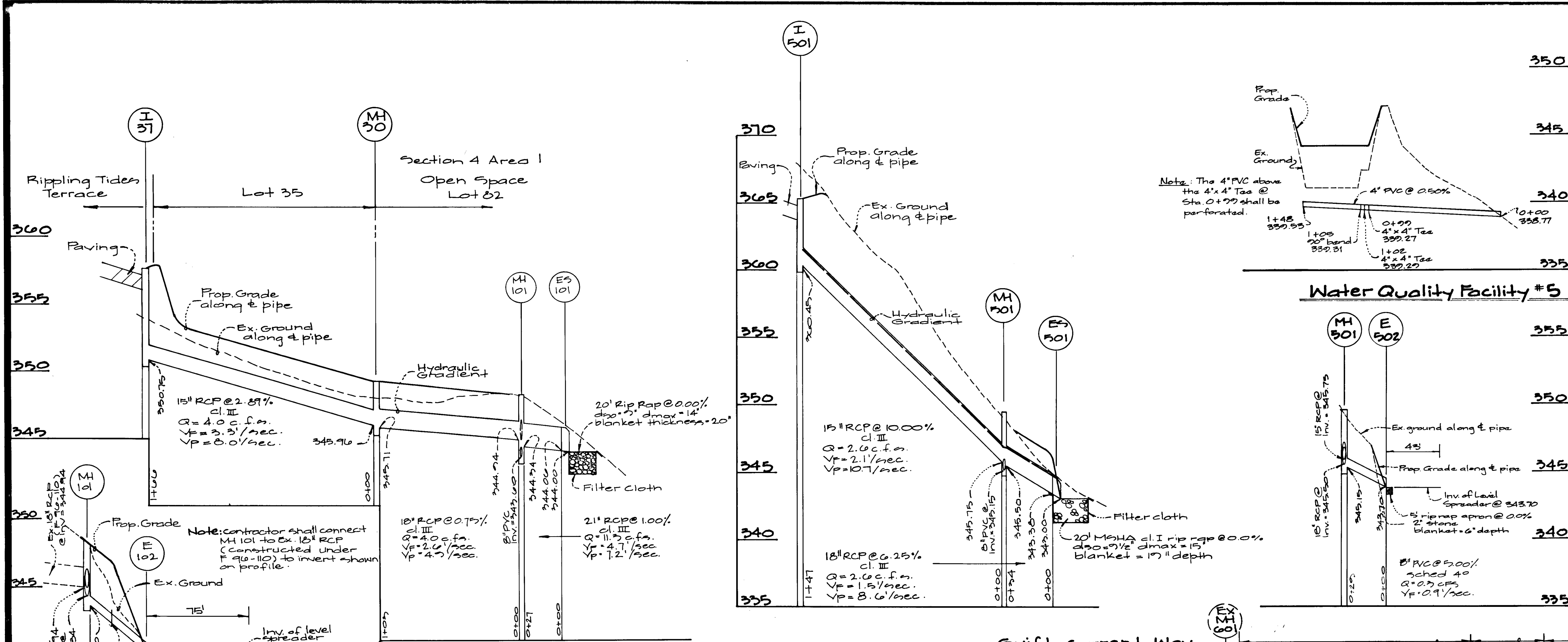
PREPARED FOR:
 The Howard Research and Development Corporation
 The Rouse Building
 10275 Little Patuxent Parkway
 Columbia, Maryland 21044
 (410) 992-6070

Drainage Area Map
Village of River Hill
 Section 4, Area 3
 Clarksville Election District No. 5
 Howard County, Maryland

SCALE	ZONING	G. L. W. FILE No.
1" = 100'	NT	94050
DATE	TAX MAP No.	SHEET
November 1996	24 & 25	9 of 12

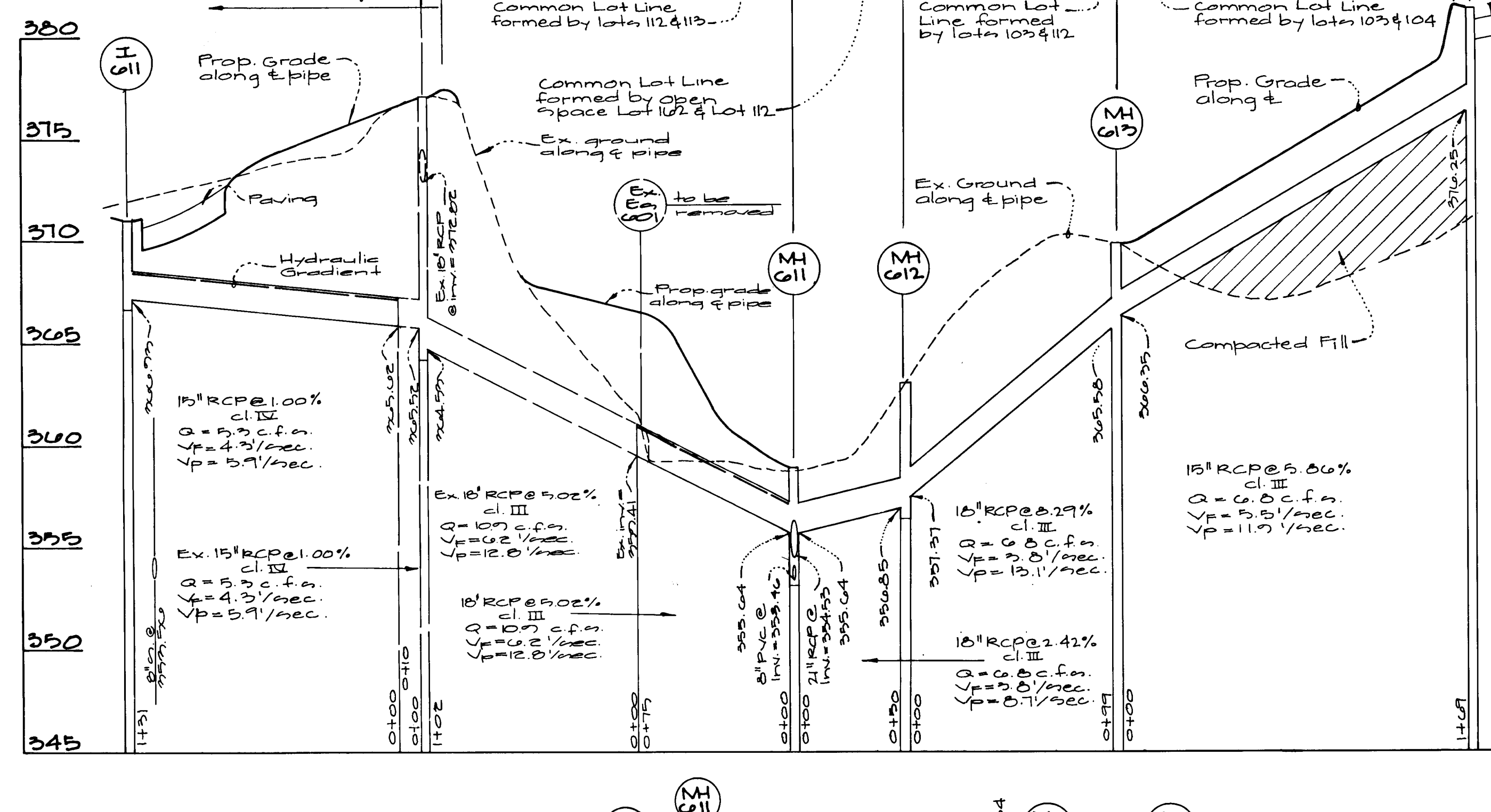
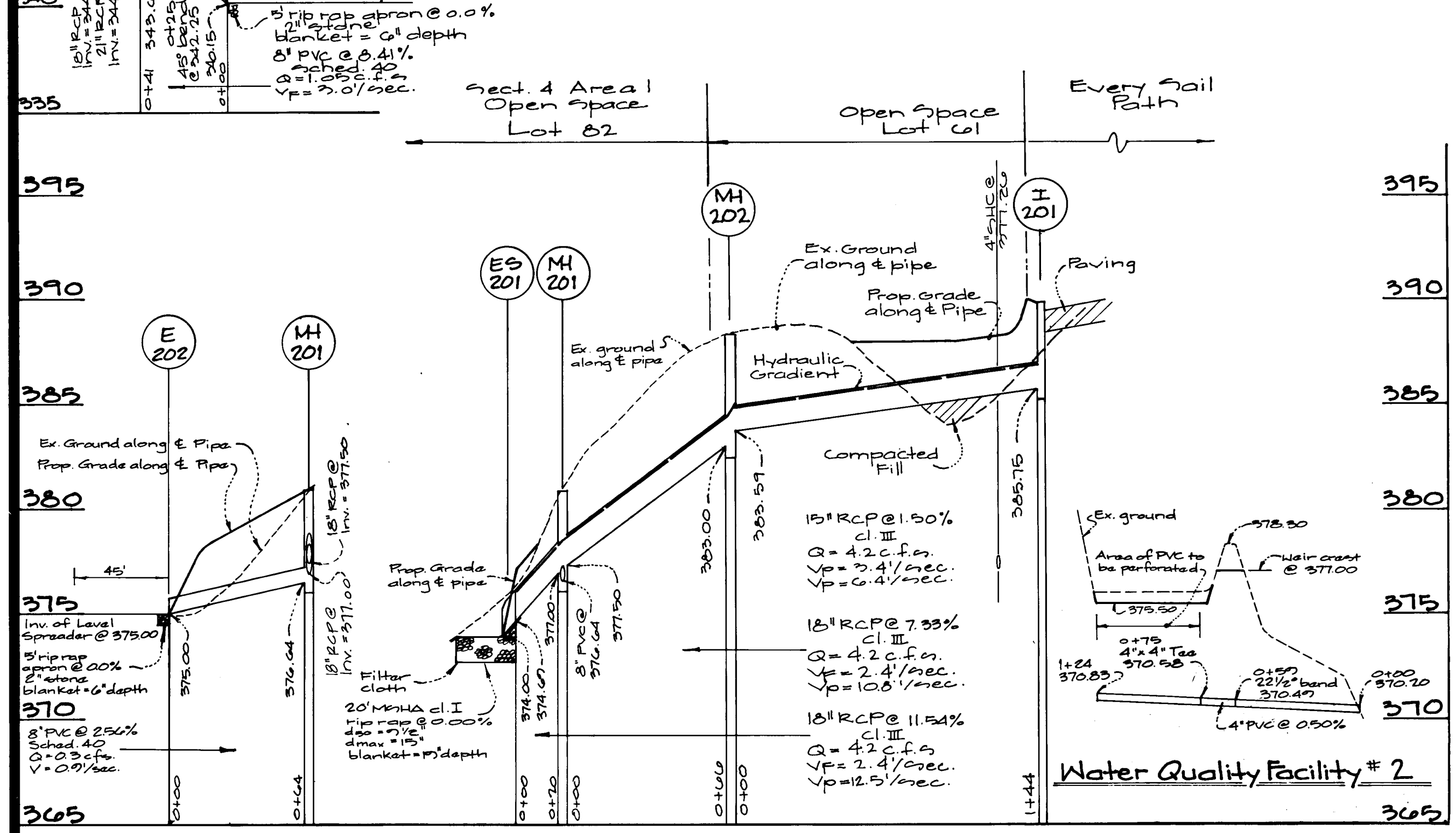
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1487



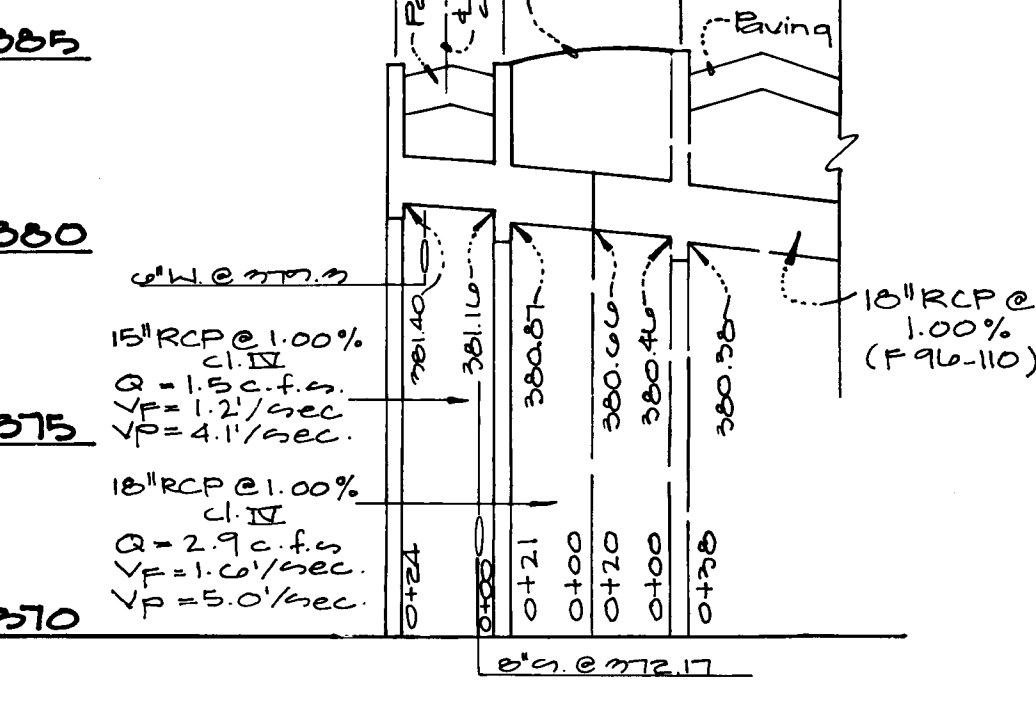
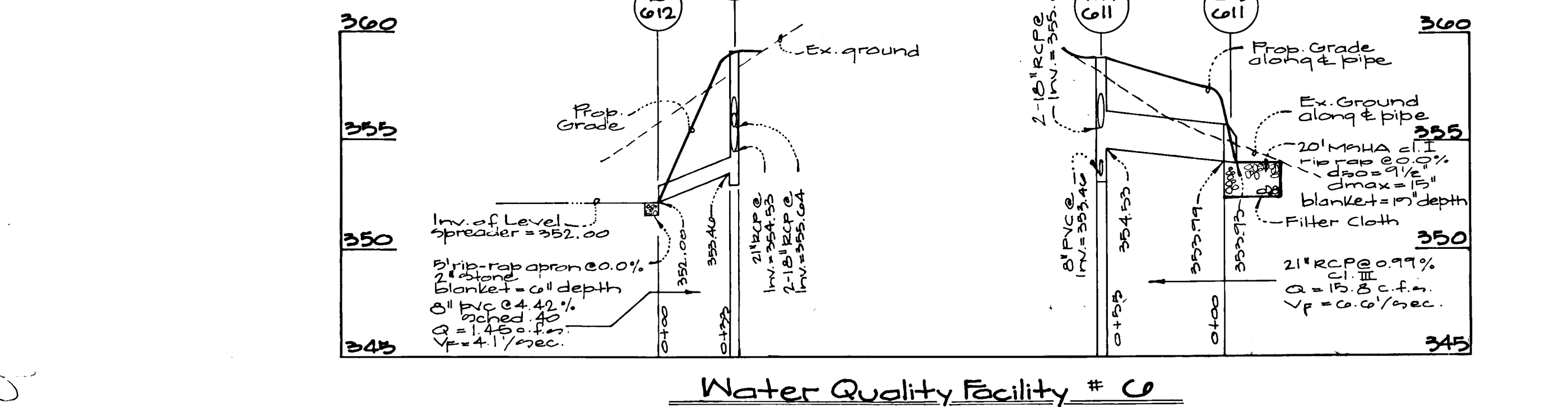
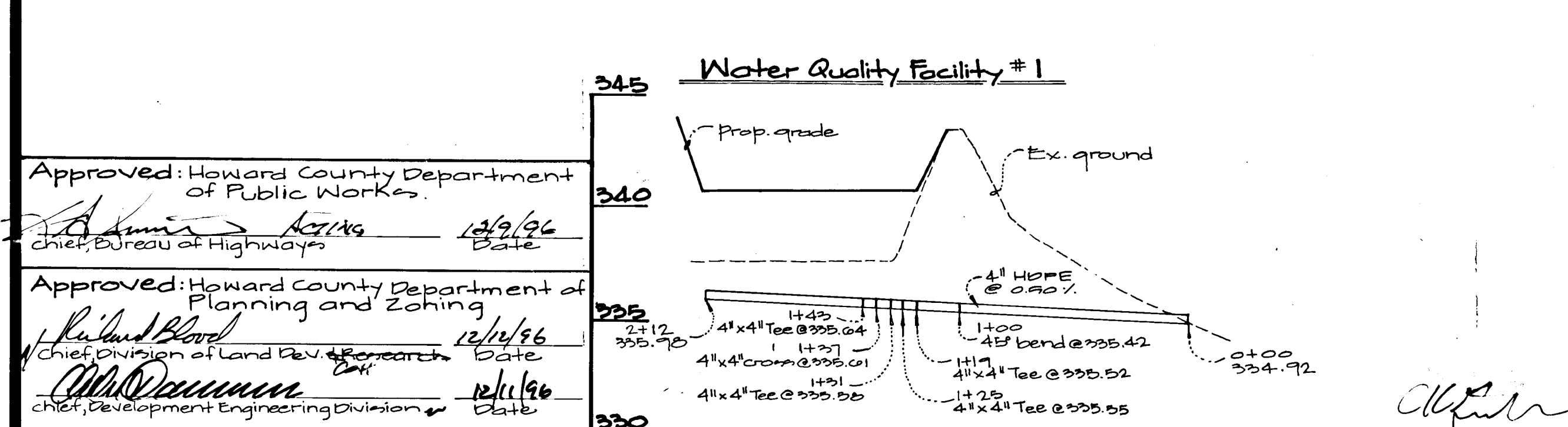
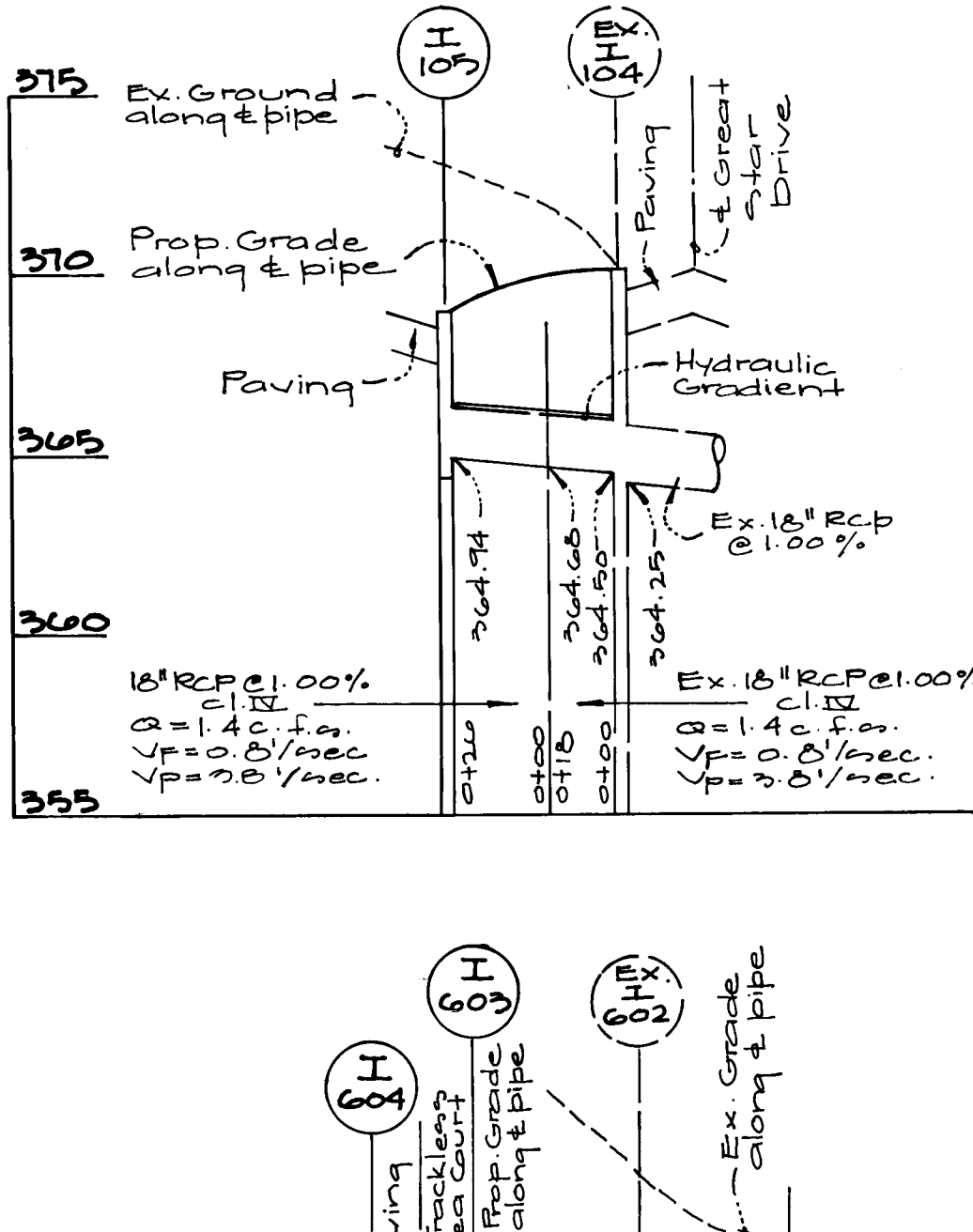
Structure Schedule

No.	Type	Width (Inside)	Top Elevation	Invert Elevation	Std. Detail	Locations
I-37	A-5	3'-0"	351.61	350.75	S.D. 4.40	L.P. Sta. 1+44.0 Rippling Tides Terrace
I-201	A-5	3'-0"	350.71	350.75	"	L.P. Sta. 2+02.50 Every Sail Path
I-501	A-5	3'-0"	350.41	350.49	"	L.P. Sta. 1+19.75 Eternal Ocean Pose
I-603	A-10	3'-0"	350.36	350.51	S.D. 4.41	0+55.04 Trackless Sea Court 12' R
I-604	A-10	3'-0"	350.36	351.06	"	0+59.04 Trackless Sea Court 12' L
I-611	A-5	3'-0"	350.71	350.75	S.D. 4.40	L.P. Sta. 1+14.85 Swift Current Way
I-612	A-5	3'-0"	351.21	351.25	"	L.P. Sta. 1+67.00 Rippling Water Walk
I-105	A-10	3'-0"	350.55	351.22	S.D. 4.41	0+54.00 Eternal Ocean Path 12' L
MH 50	Std. Manhole	4'-0"	349.20	345.94	G.S. 12	Sec. Plan
MH 201	"	"	350.70	351.50	"	"
MH 202	"	"	350.40	350.59	"	"
MH 501	"	"	350.50	345.75	"	"
MH 611	"	"	350.00	350.64	"	"
MH 612	"	"	350.10	351.51	"	"
MH 613	"	"	350.20	346.55	"	"
MH 101	"	"	348.20	344.74	"	"
ES 201	Conc. End Sect.	-	351.07	351.04	S.D. 5.51	See Plan
ES 501	"	-	348.20	345.00	"	"
ES 611	"	-	350.74	353.95	"	"
ES 101	"	-	345.01	344.00	"	"



Pipe Schedule Section 4 Area 3

Size & Type	Class	Quantity
8" PVC Sched. 40		167
15" RCP cl. III		626
15" RCP cl. IV		155
18" RCP cl. III		447
18" RCP cl. IV		47
21" RCP cl. III		82
4" HDPE (Perp.)		1117'
4" HDPE		425'



Approved: Howard County Department of Public Works
 Approved: Howard County Department of Planning and Zoning

G.W. 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)880-8200 FAX (301)421-4186

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

Storm Drain Profiles
Village of River Hill
 Section 4 Area 3

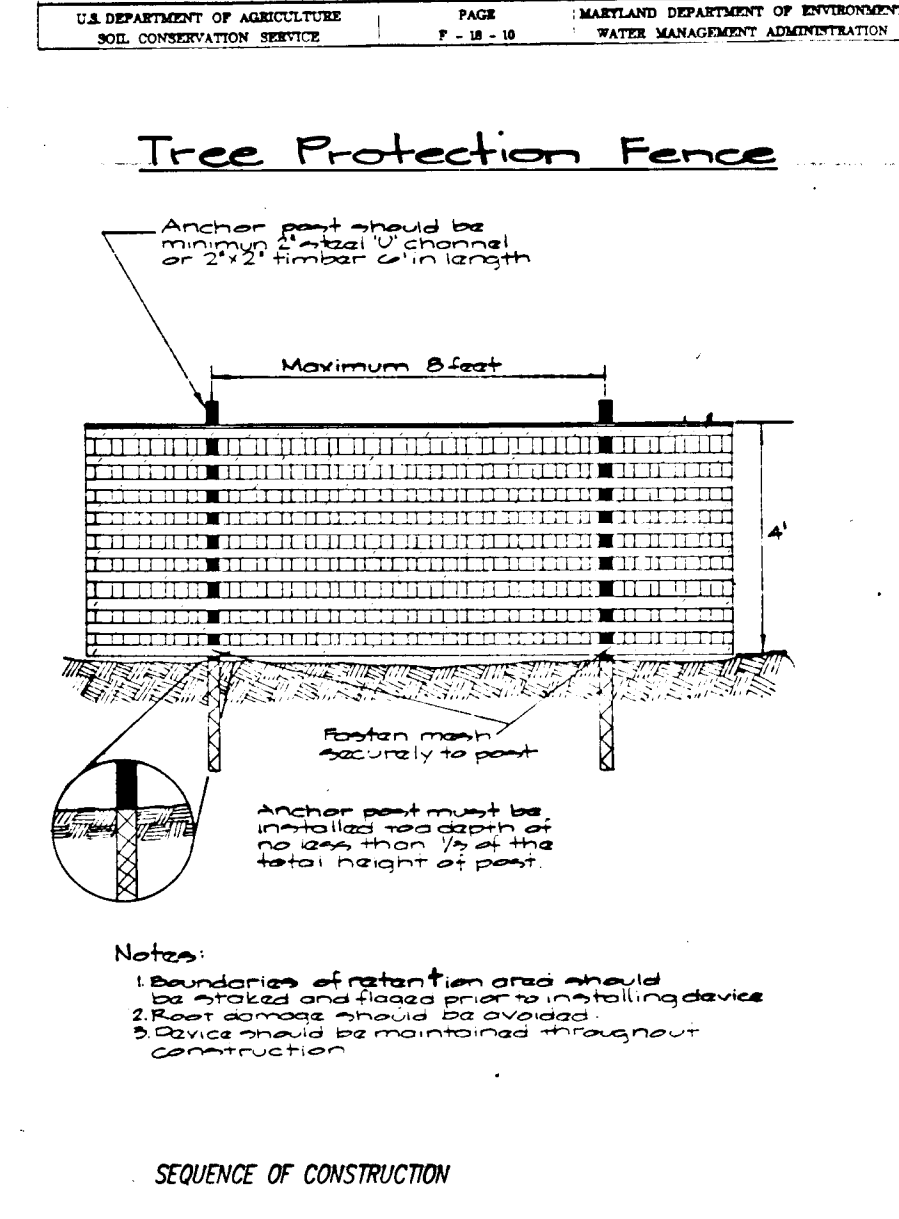
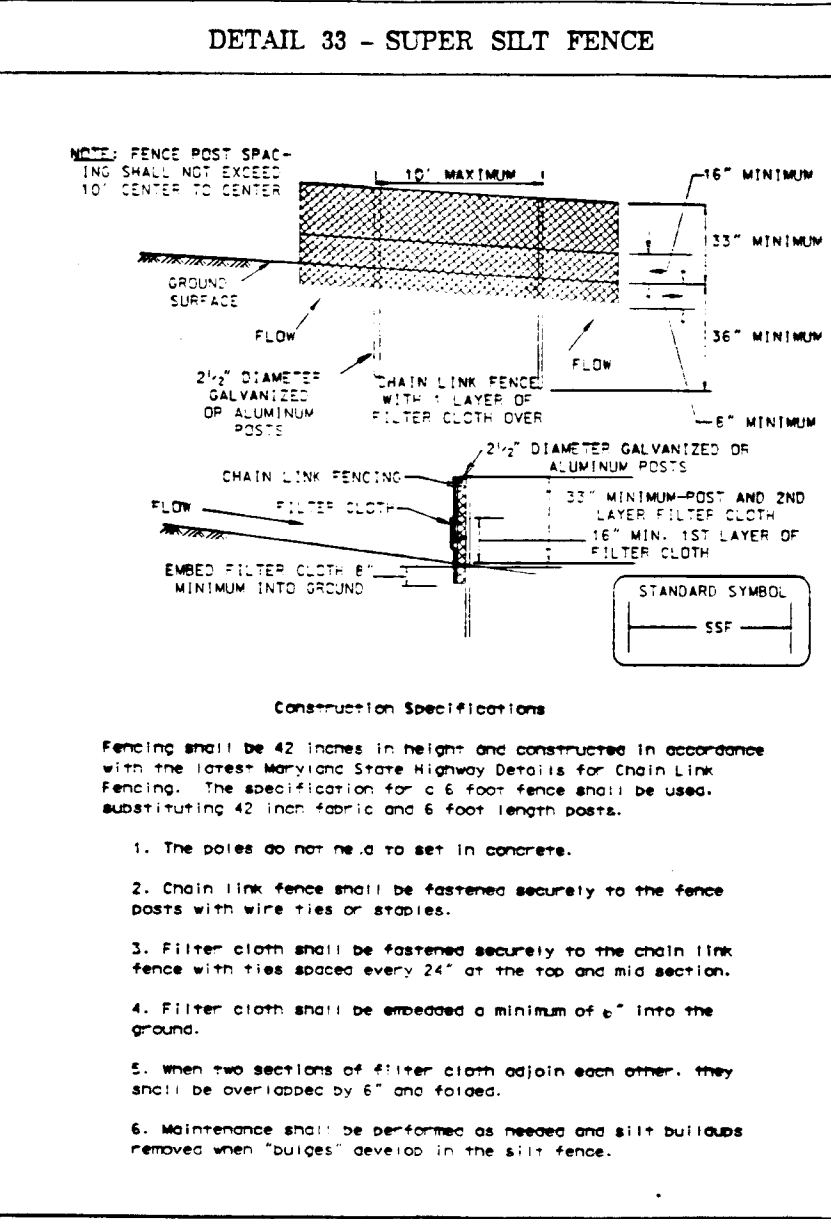
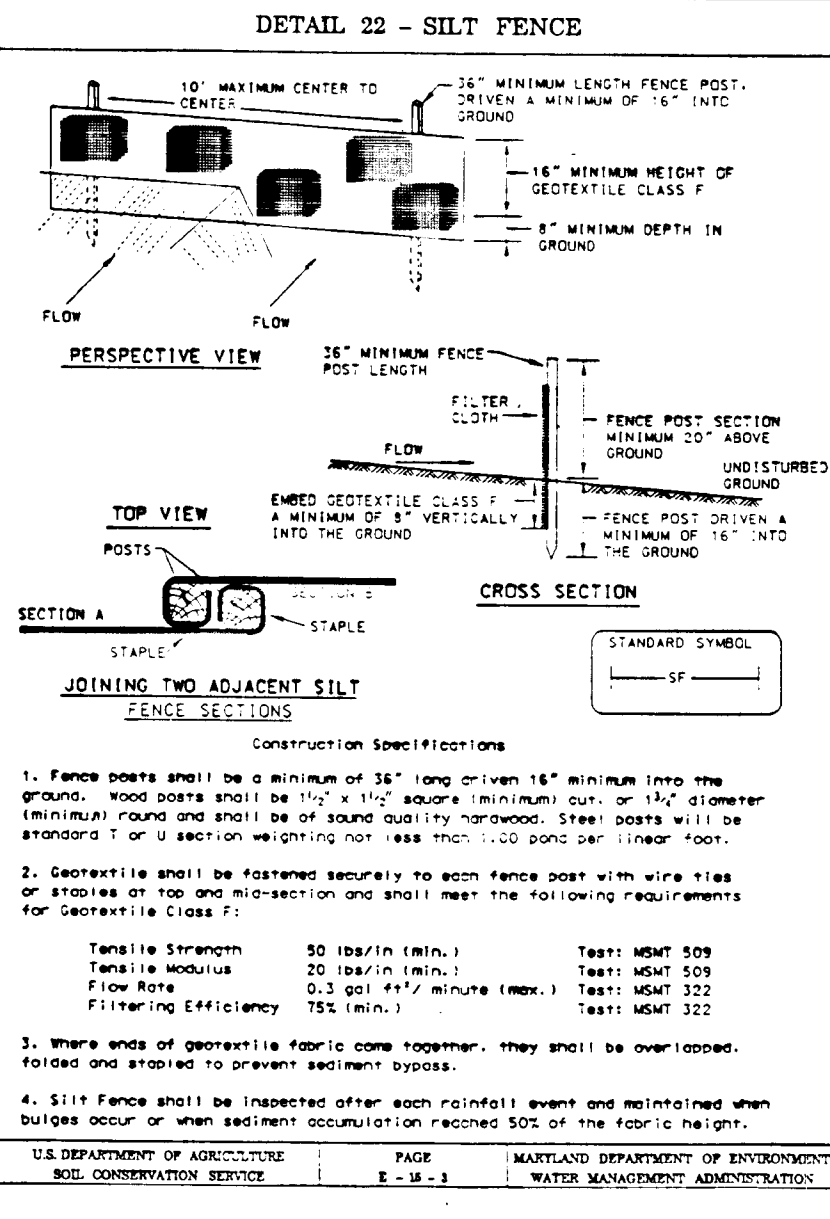
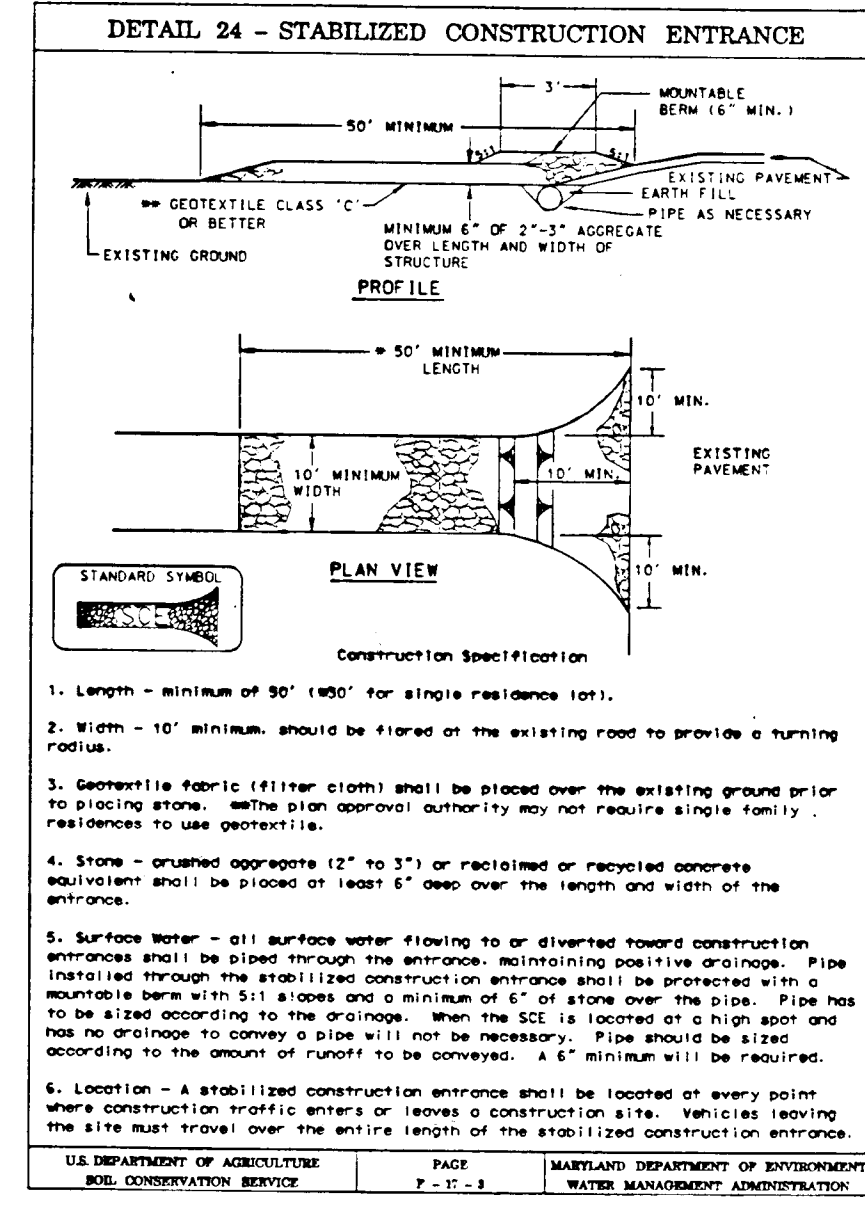
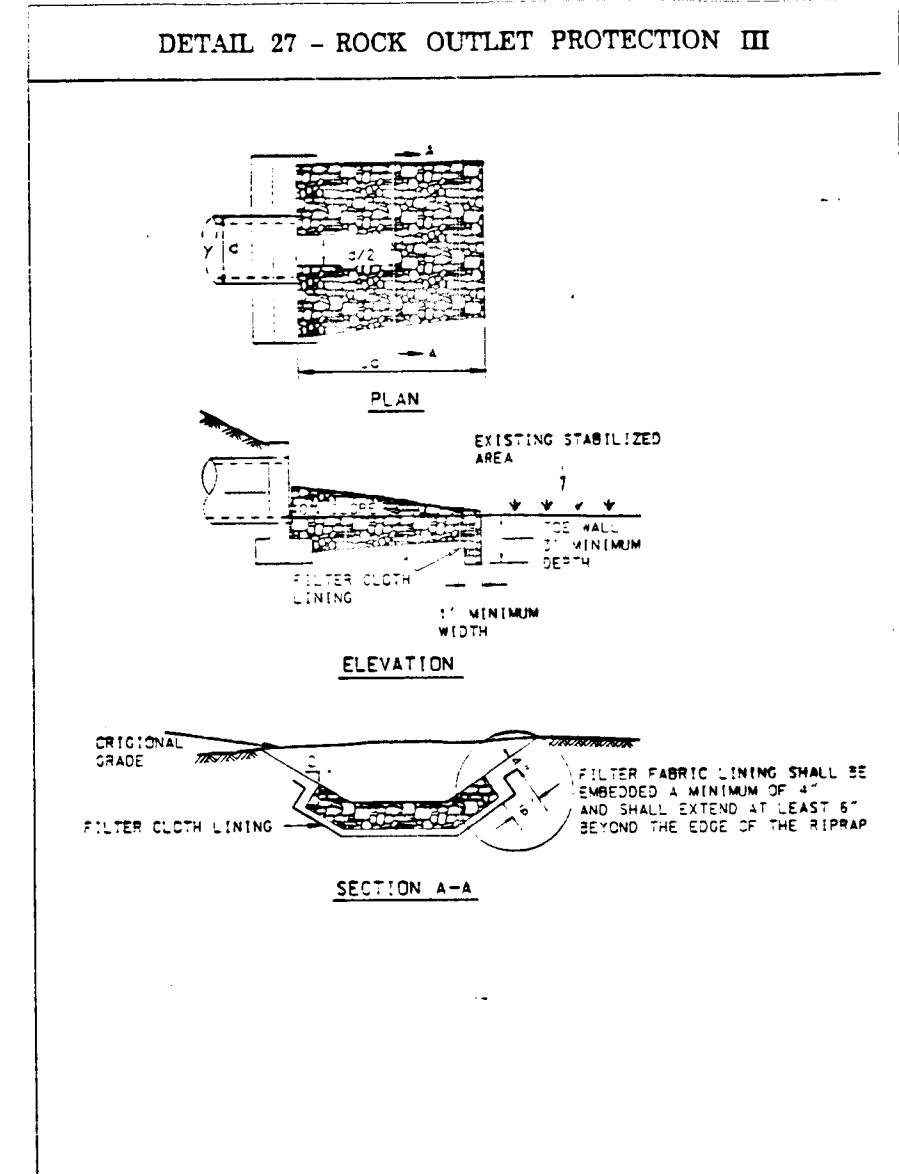
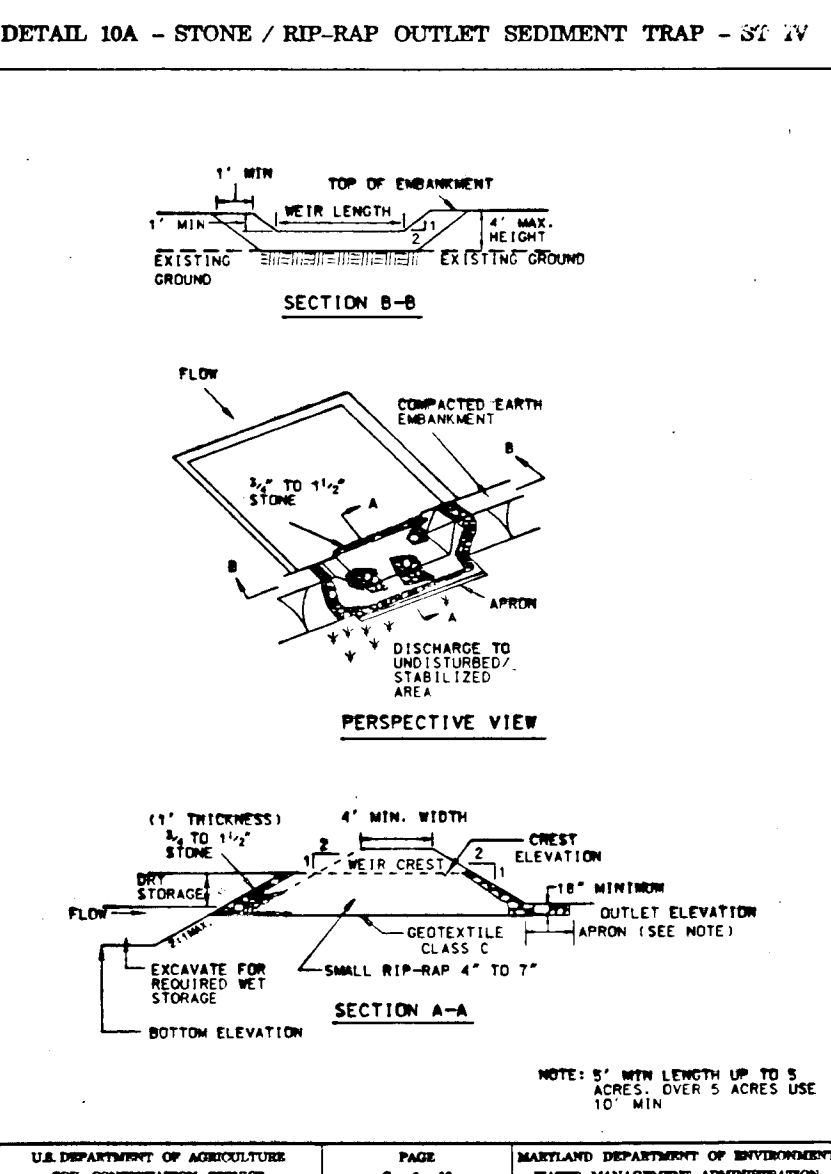
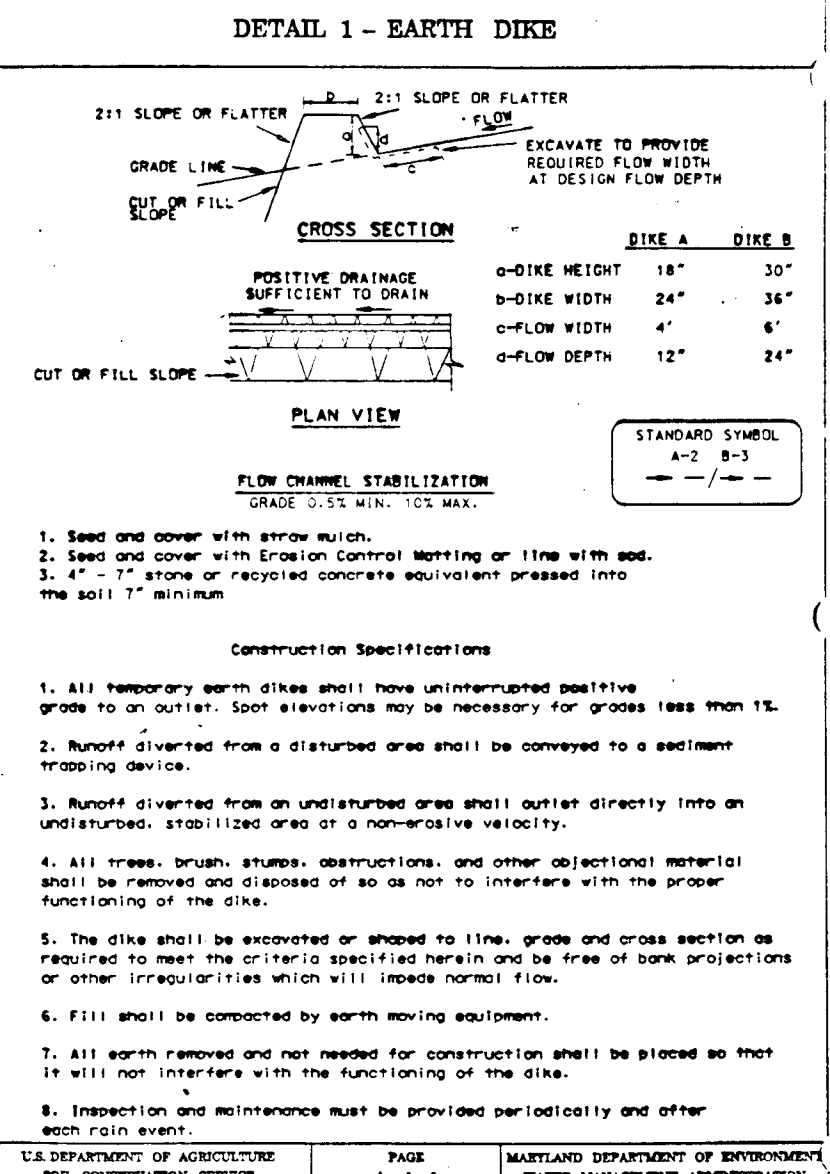
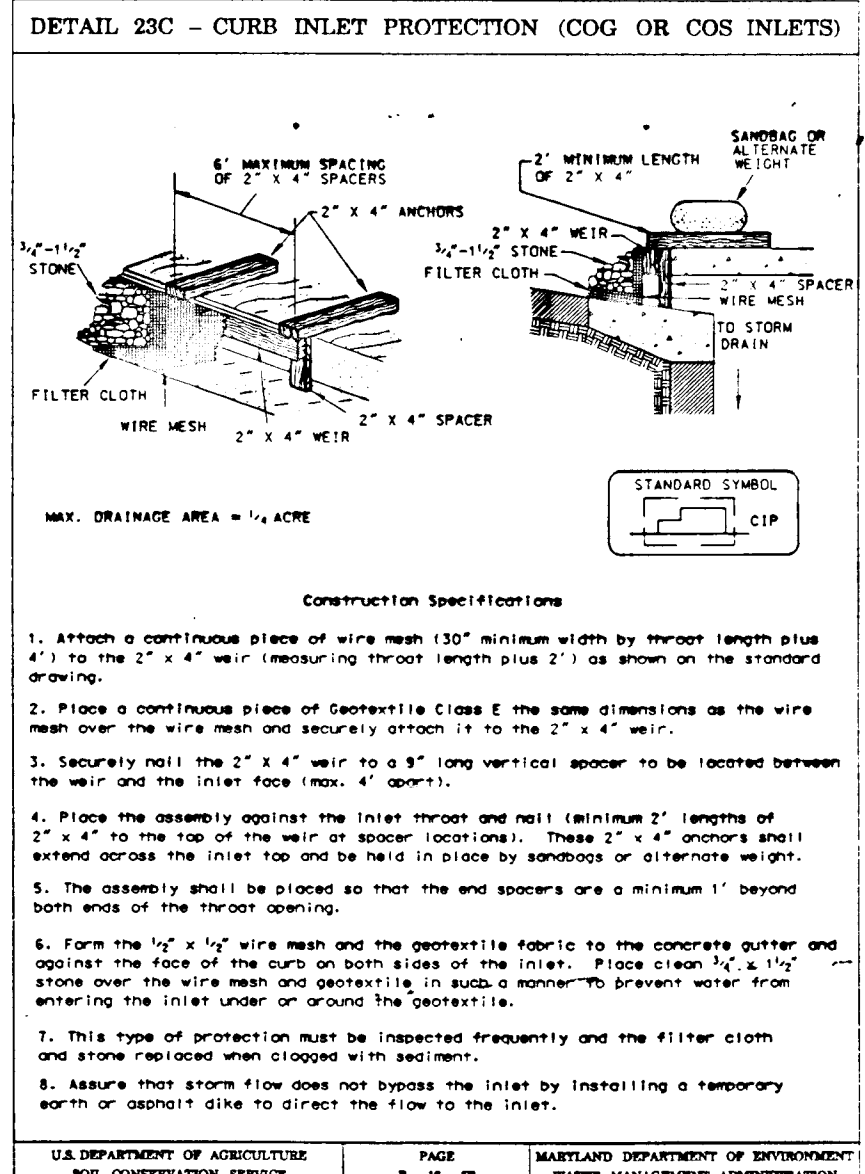
DES.: AS SHOWN
 DRN.: DATE
 CHK.: NOVEMBER 1996

ZONING: N.T.
 TAX MAP NO.: 34 & 35

G.L.W. FILE NO.: 94050
 SHEET: 10 OF 10

Clarksville Election District No. 5
 Howard County, Maryland

F96.124



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) 313-1055
- 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. G.) 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:

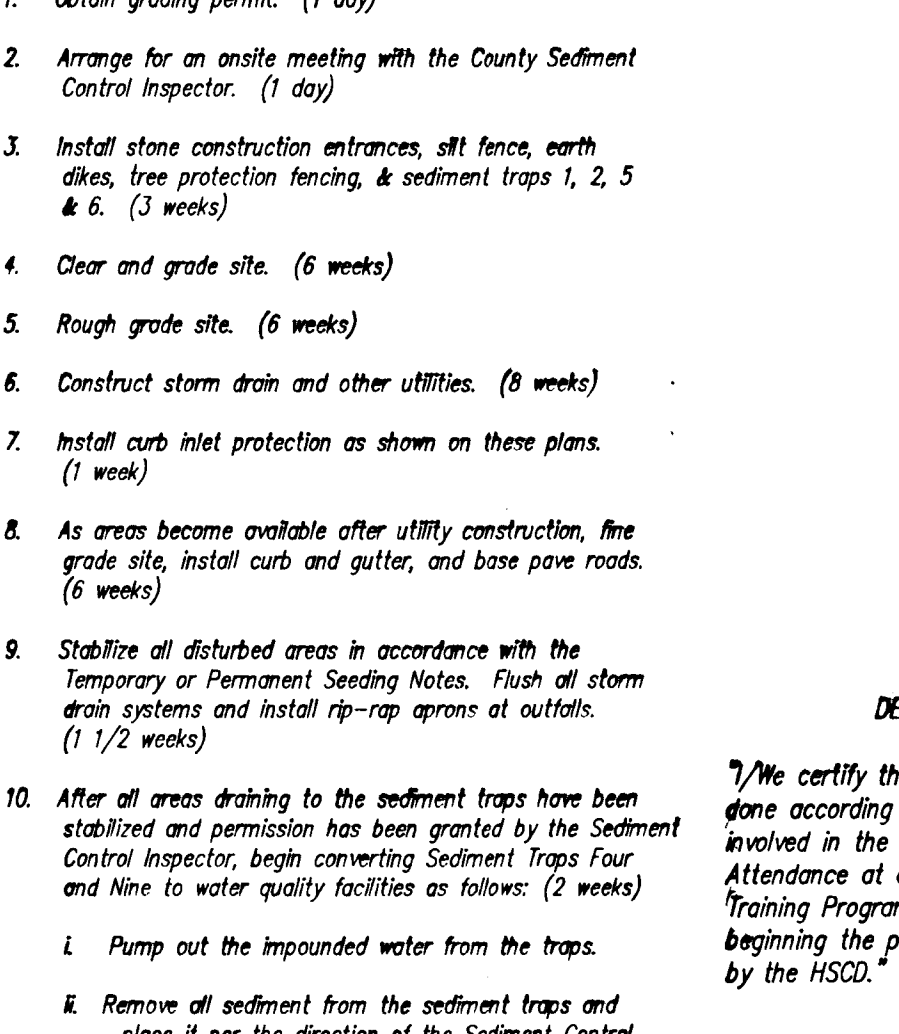
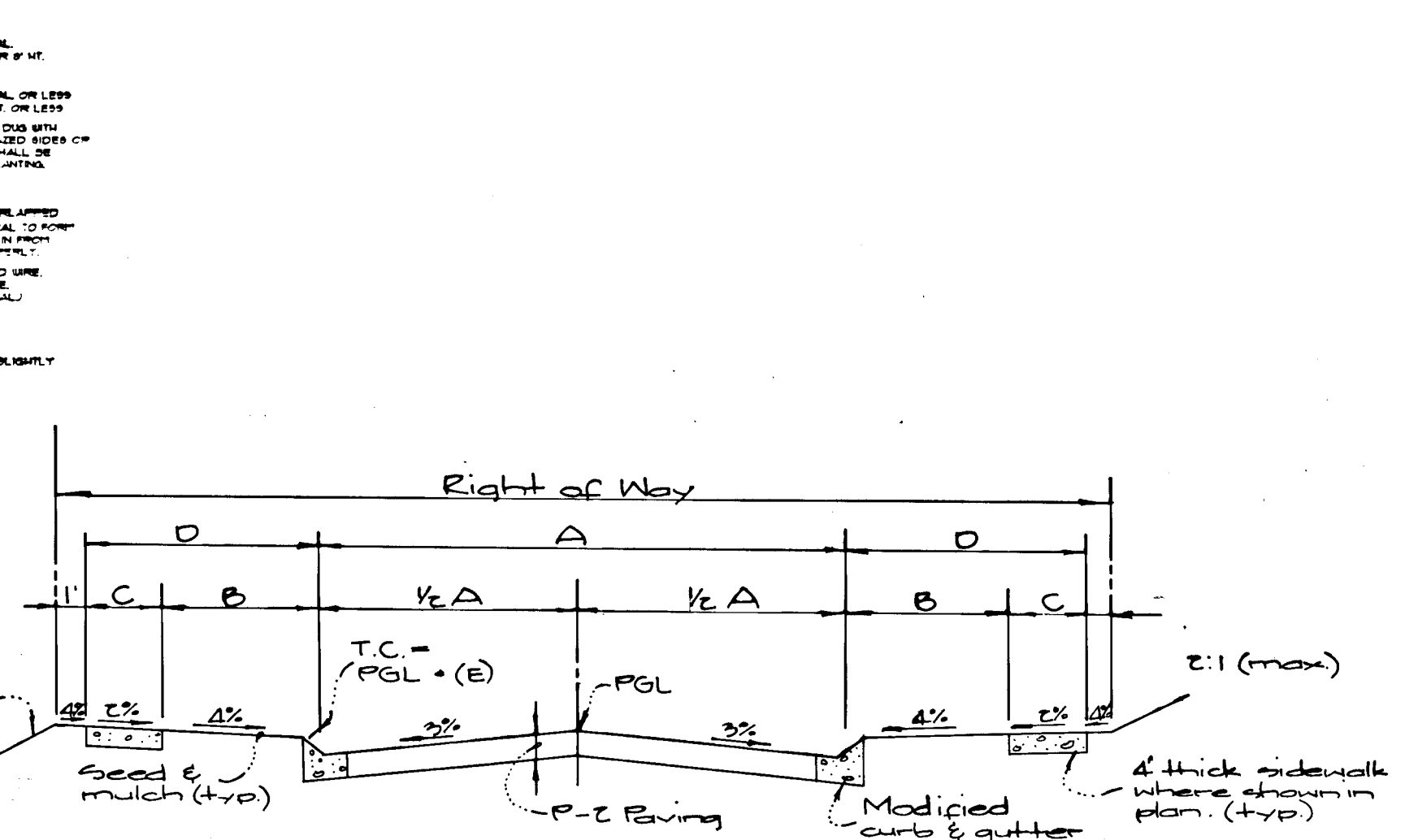
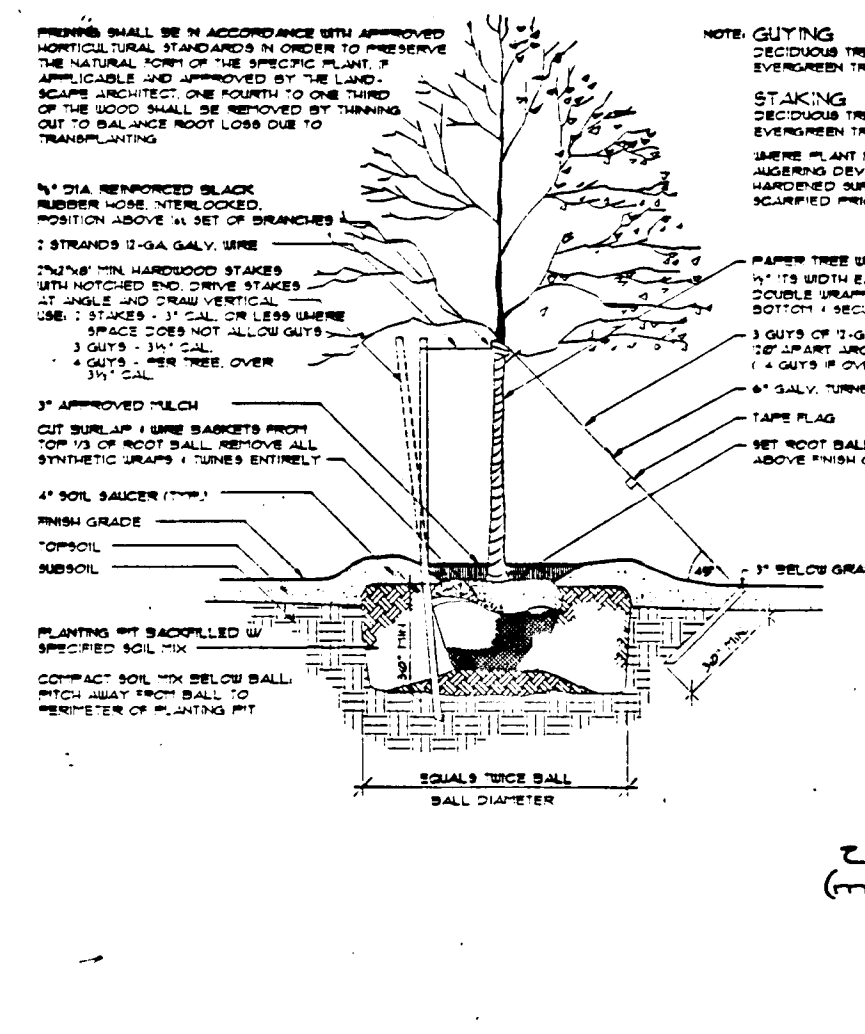
Total Area of Site	160.4	Acres
Area Disturbed	14.9	Acres
Area to be roofed or paved	2.16	Acres
Area to be vegetatively stabilized	12.74	Acres
Total Cut	24,039	Cu. Yds.
Total Fill	24,039	Cu. Yds.
Off-site waste/borrow area location:	N/A	
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

PERMANENT SEEDING NOTES

- Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
- Seeded Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, 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 sq ft) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil.
- Seeding: For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. During the period of October 16 thru February 28, protect site by Option (1) 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) Use sod. Option (3) Seed with 60 lbs/acre Kentucky 31 Tall Fescue and mulch with 2 tons/acre well anchored straw.
- Mulching: Apply 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 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 ft 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.

TEMPORARY SEEDING NOTES

- Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.
- Seeded Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.
- Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft).
- Seeding: For periods March 1 thru April 30 and from August 15 thru October 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.
- Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted, weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes, 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.
- Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.



Approved: Howard County Dept. of Public Works
[Signature] 12/9/96
 Chief, Bureau of Highways

Approved: Howard County Dept. of Planning & Zoning
[Signature] 12/10/96
 Chief, Development Engineering Div.

Street Name & Station Limits	Type of Traffic	Zoning	Design Speed	Being	A	B	C	D	Cross Slope	R/W	E	Curb Type
Every 3rd Path 0+00 - 3+16.80	cul-de-sac	NT	25	P-Z	24	8	4		3%	50'	mod	modified
Rippling Tides Walk 3+00 - 4+04.48	cul-de-sac	NT	25	P-Z	24	8	4		3%	50'	mod	modified
Rippling Tides Terrace 0+00 - 2+14.31	cul-de-sac	NT	25	P-Z	24	8	4		3%	50'	mod	modified
Eternal Ocean Place 0+00 - 4+03.80	cul-de-sac	NT	25	P-Z	24	8	4		3%	50'	mod	modified
Trackless Lane Court 0+00 - 2+44.07	cul-de-sac	NT	25	P-Z	24	8	4		3%	50'	mod	modified
Swift Current Way 0+00 - 2+16.44	cul-de-sac	NT	25	P-Z	24	8	4		3%	50'	mod	modified

DEVELOPER'S/BUILDER'S CERTIFICATE
 I certify that all development and/or construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Maryland Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the HSCD.
[Signature] 3-13-96
 Date

ENGINEER'S CERTIFICATE
 I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
[Signature] 3-13-96
 Date

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.
[Signature] 12-05-96
 Date
 Natural Resources Conservation Service

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 MO. VA: (301) 989-2524 BALT: (410) 880-1820 FAX: (301) 421-4186

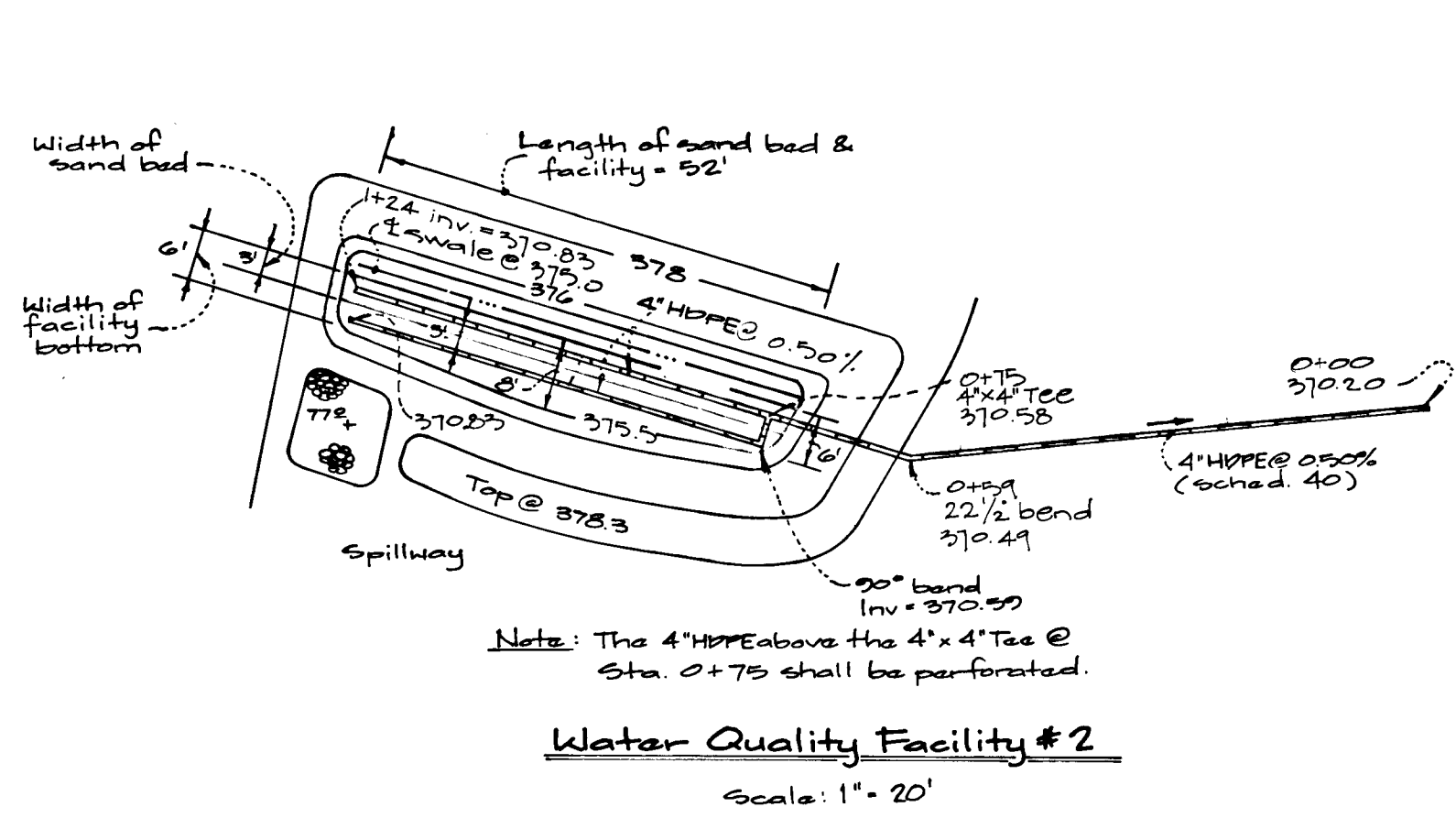
DES.	DRN.	CHK.	DATE	REVISION	BY	APP'R.

PREPARED FOR:
 The Howard Research and Development Corporation
 The Raven Building
 10219 Little Patuxent Pkwy.
 Columbia, Maryland 21044
 (410) 292-0570

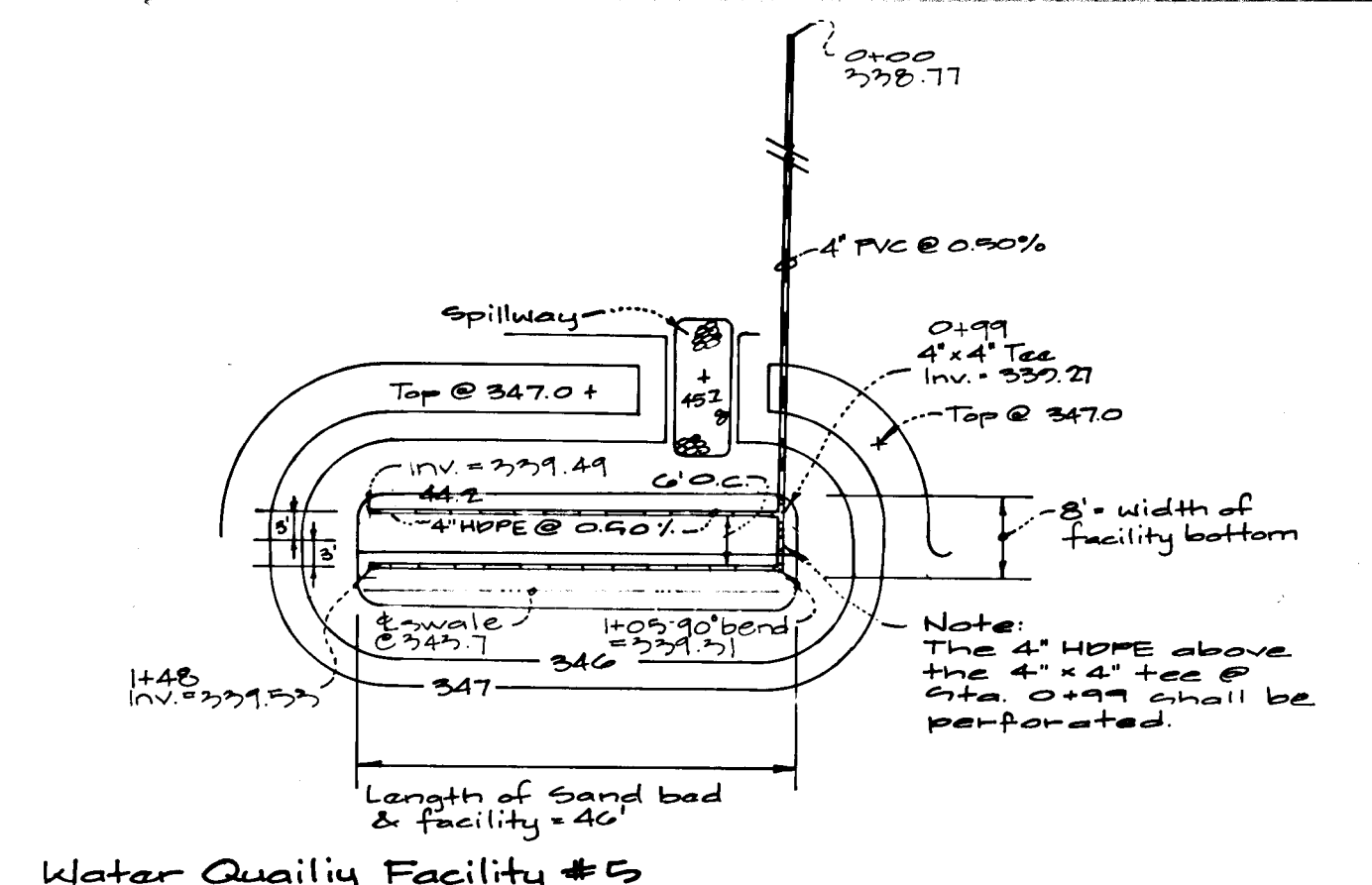
Sediment Erosion Control Notes & Details
Village of River Hill
 Section 4 Area 3
 Clarksville Election District No. 5
 Howard County, Maryland

SCALE	ZONING	G. L. W. FILE No.
N/A	NT	94050
DATE	TAX MAP No.	SHEET
Nov. 1996	34135	11 of 12

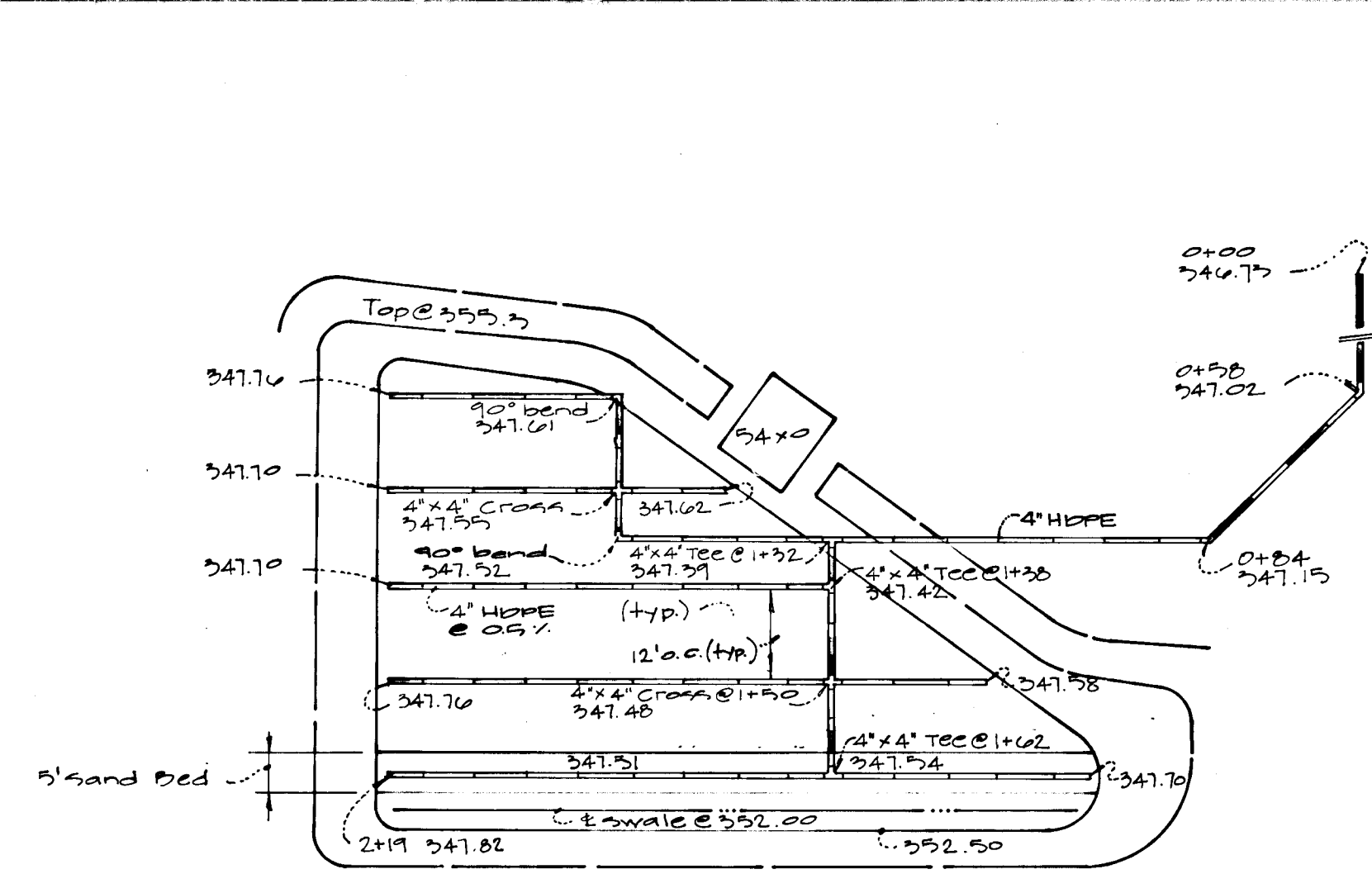
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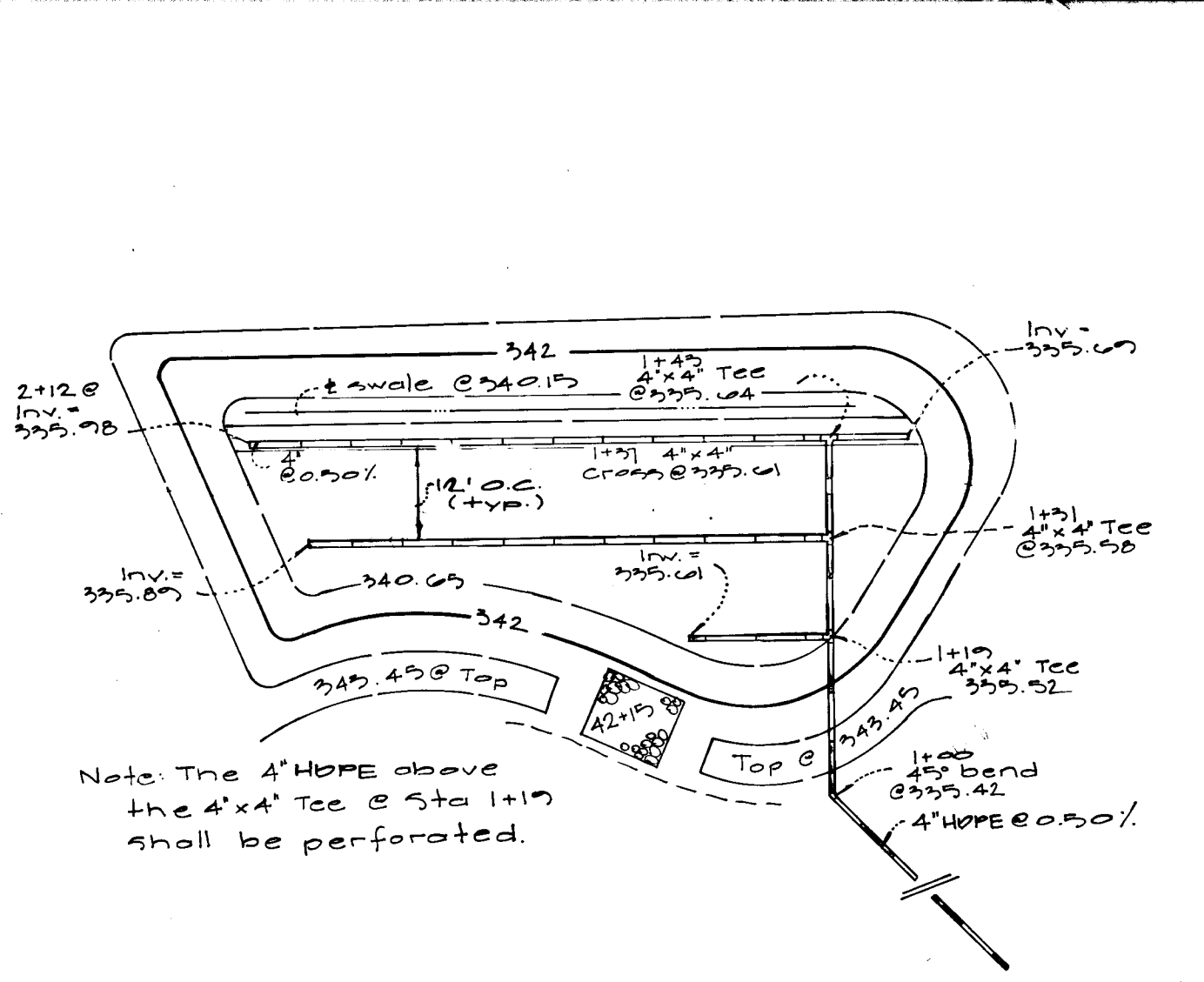
Water Quality Facility #2
Scale: 1" = 20'



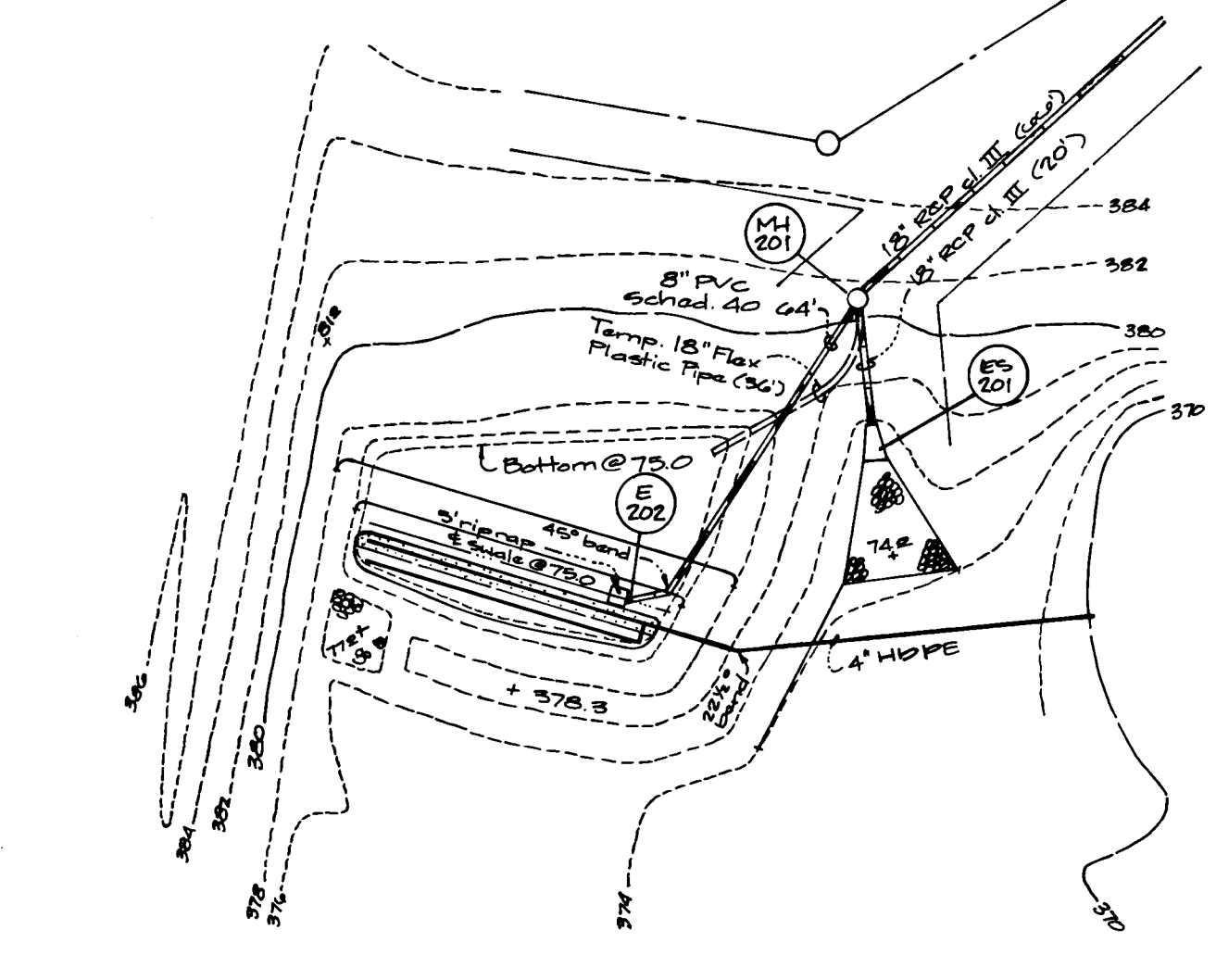
Water Quality Facility #5
Scale: 1" = 20'



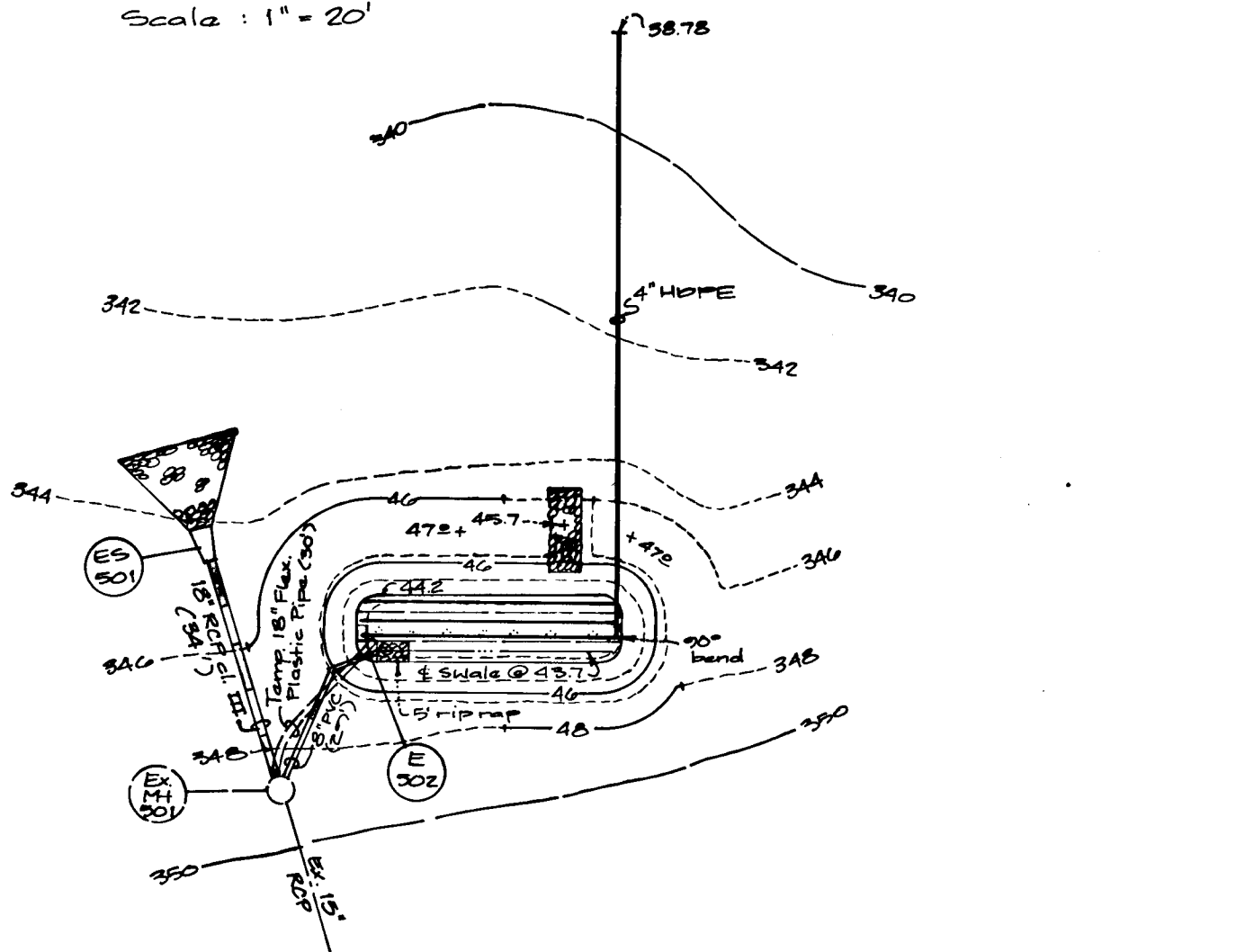
Water Quality Facility #6
Scale: 1" = 20'



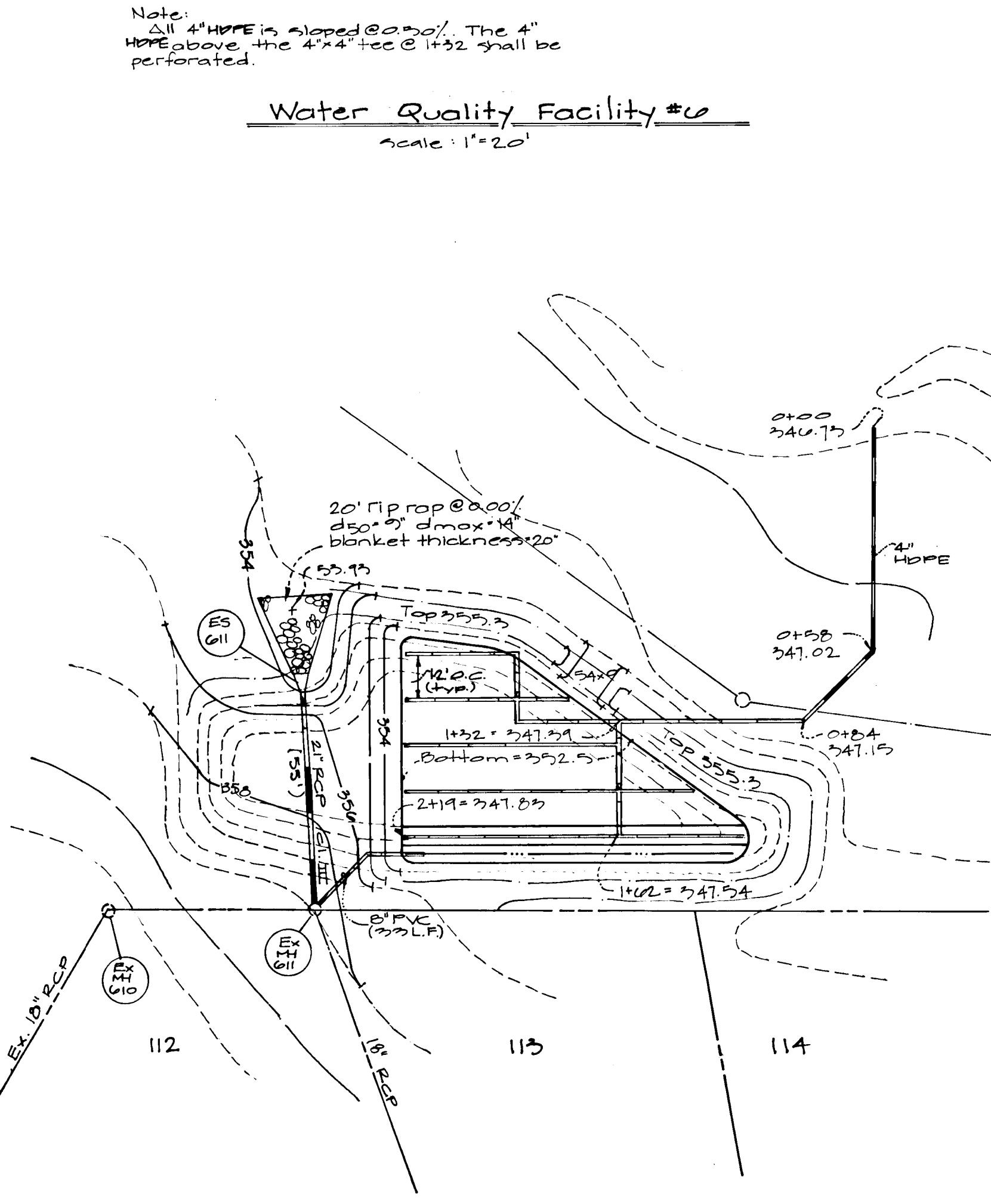
Water Quality Facility #1
Scale: 1" = 20'



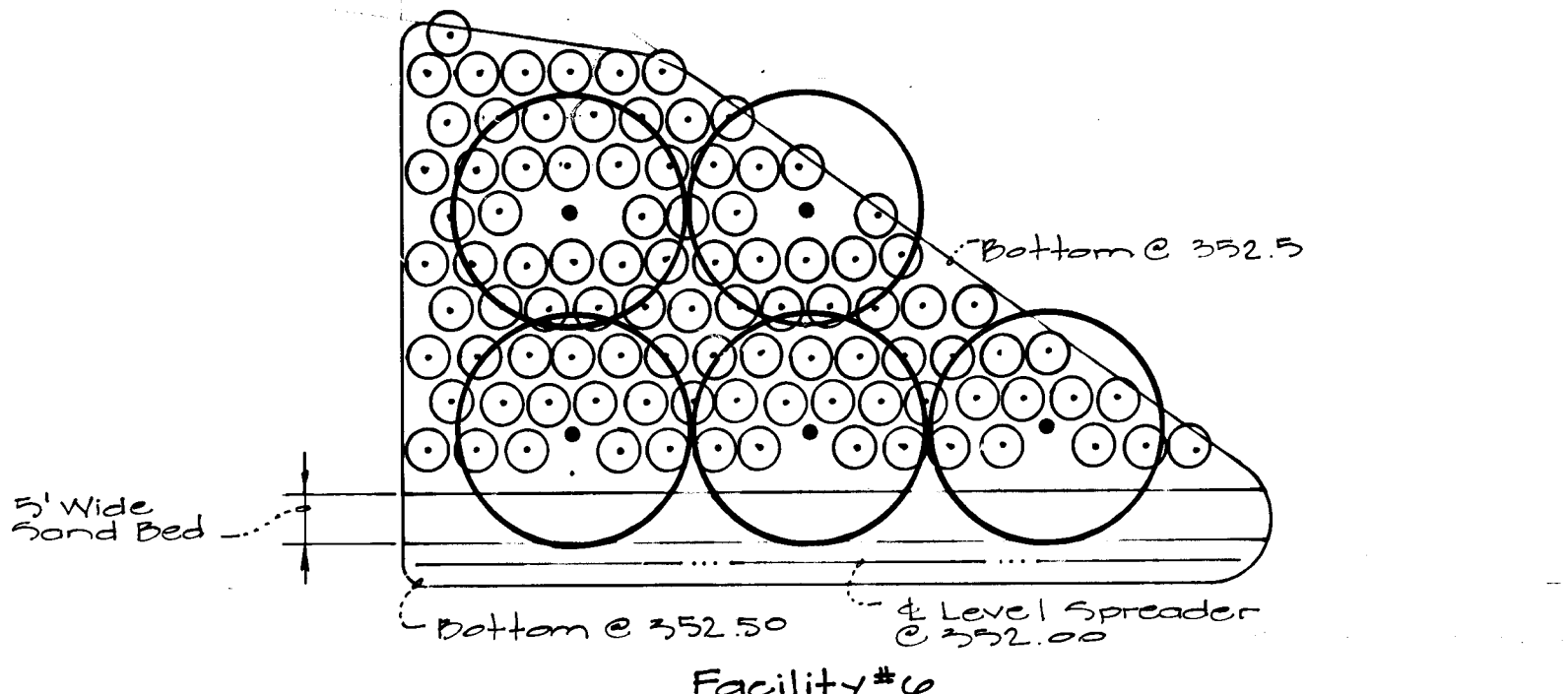
Conversion to Water Quality Facility #2 Detail
Scale: 1" = 30'



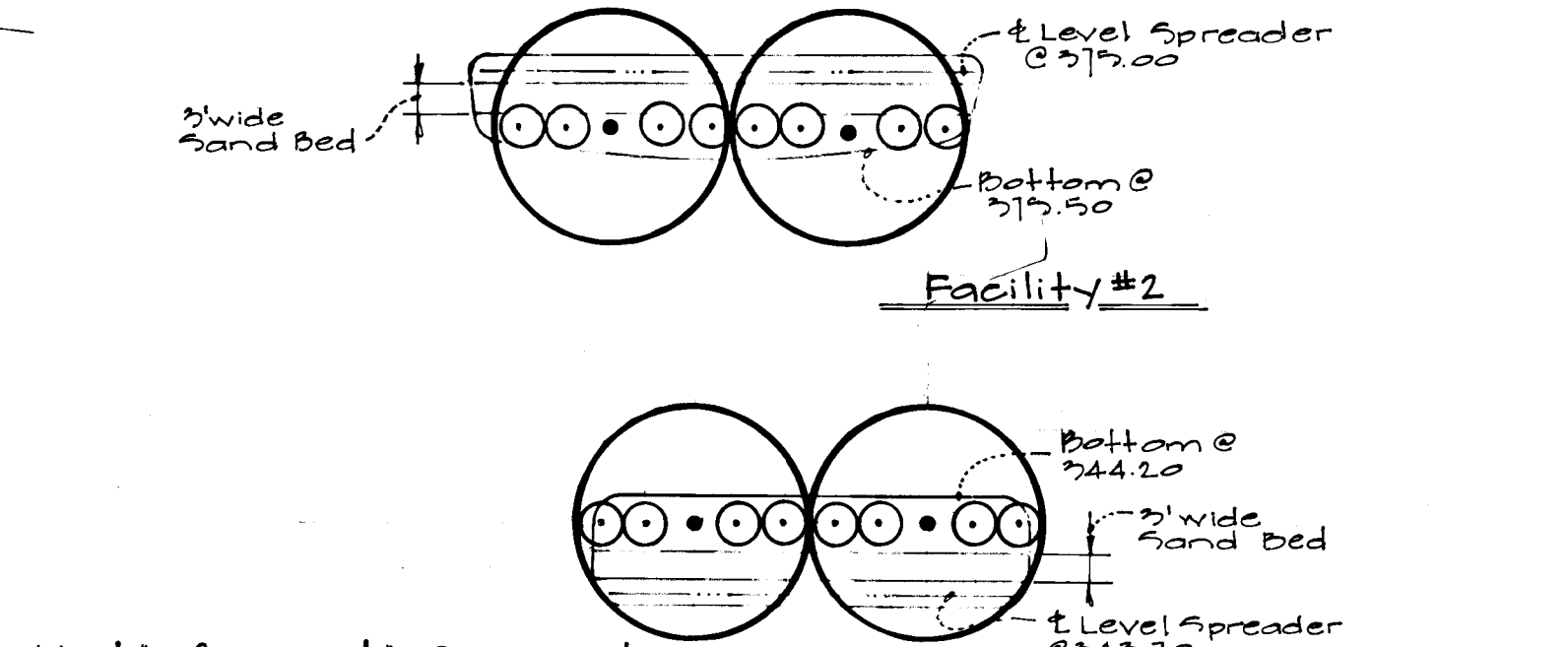
Conversion to Water Quality Facility #5 Detail
Scale: 1" = 30'



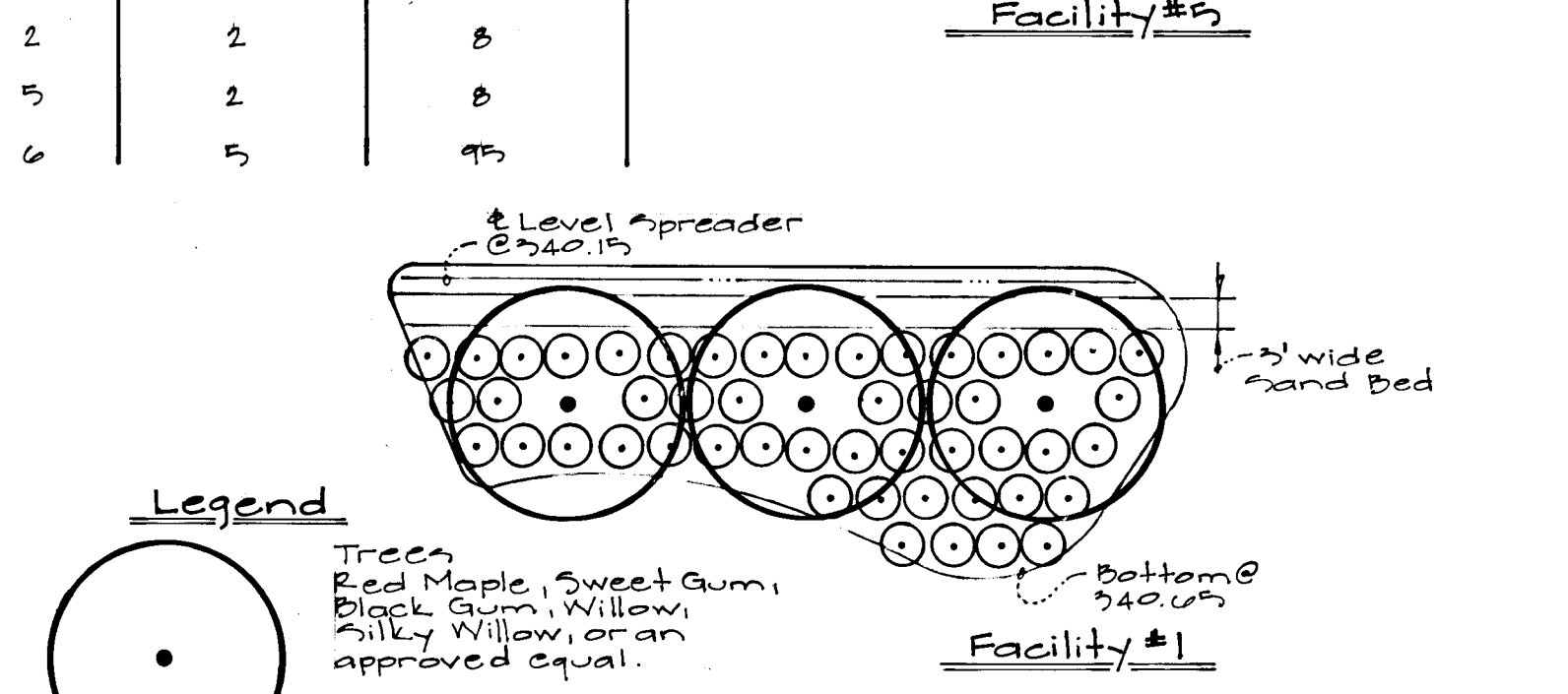
Conversion to Water Quality Facility #6 Detail
Scale: 1" = 30'



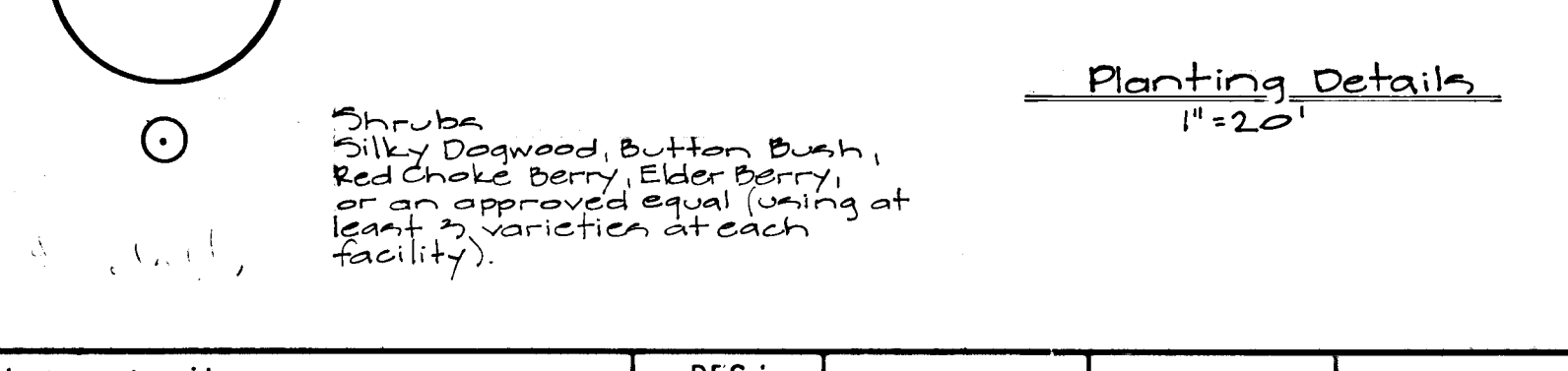
Facility #6



Facility #2



Facility #5



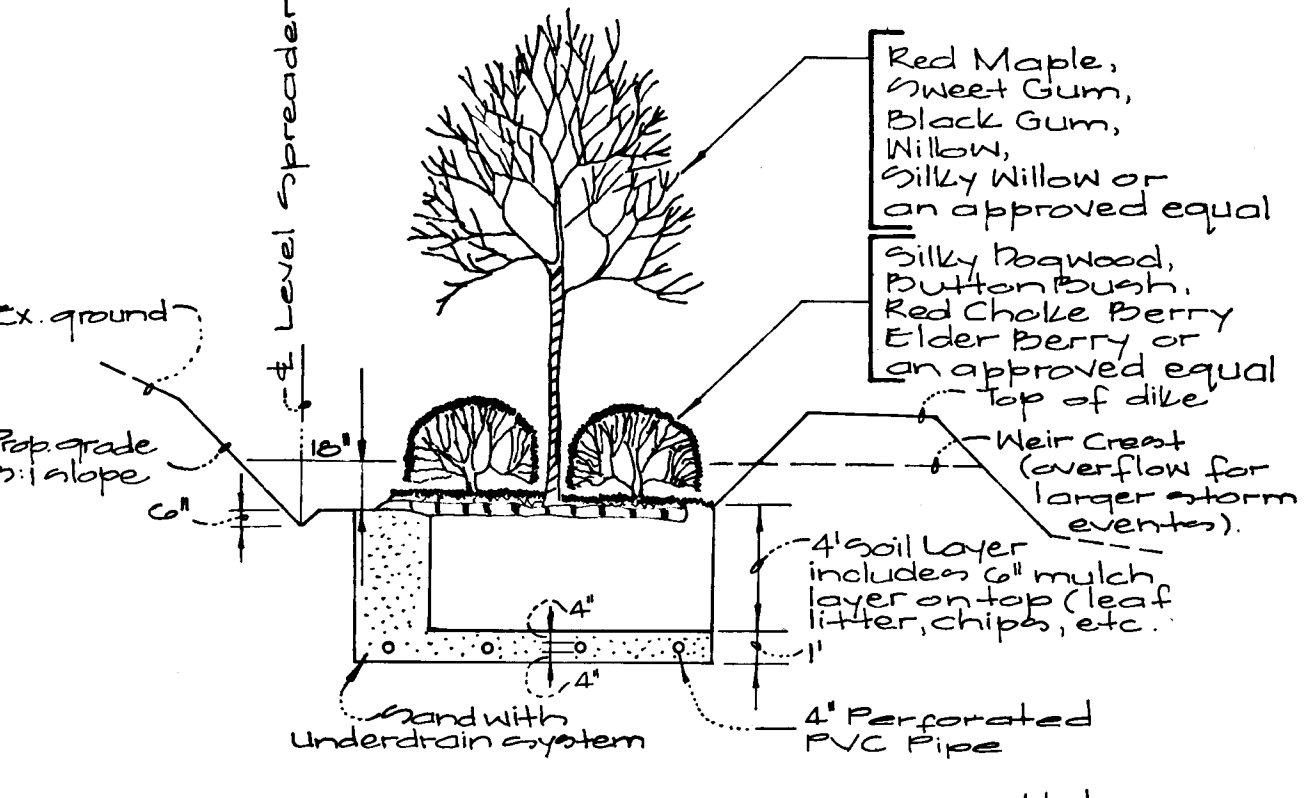
Facility #1

Facility	# of Trees	# of Shrubs
1	5	49
2	2	5
5	2	5
6	5	45

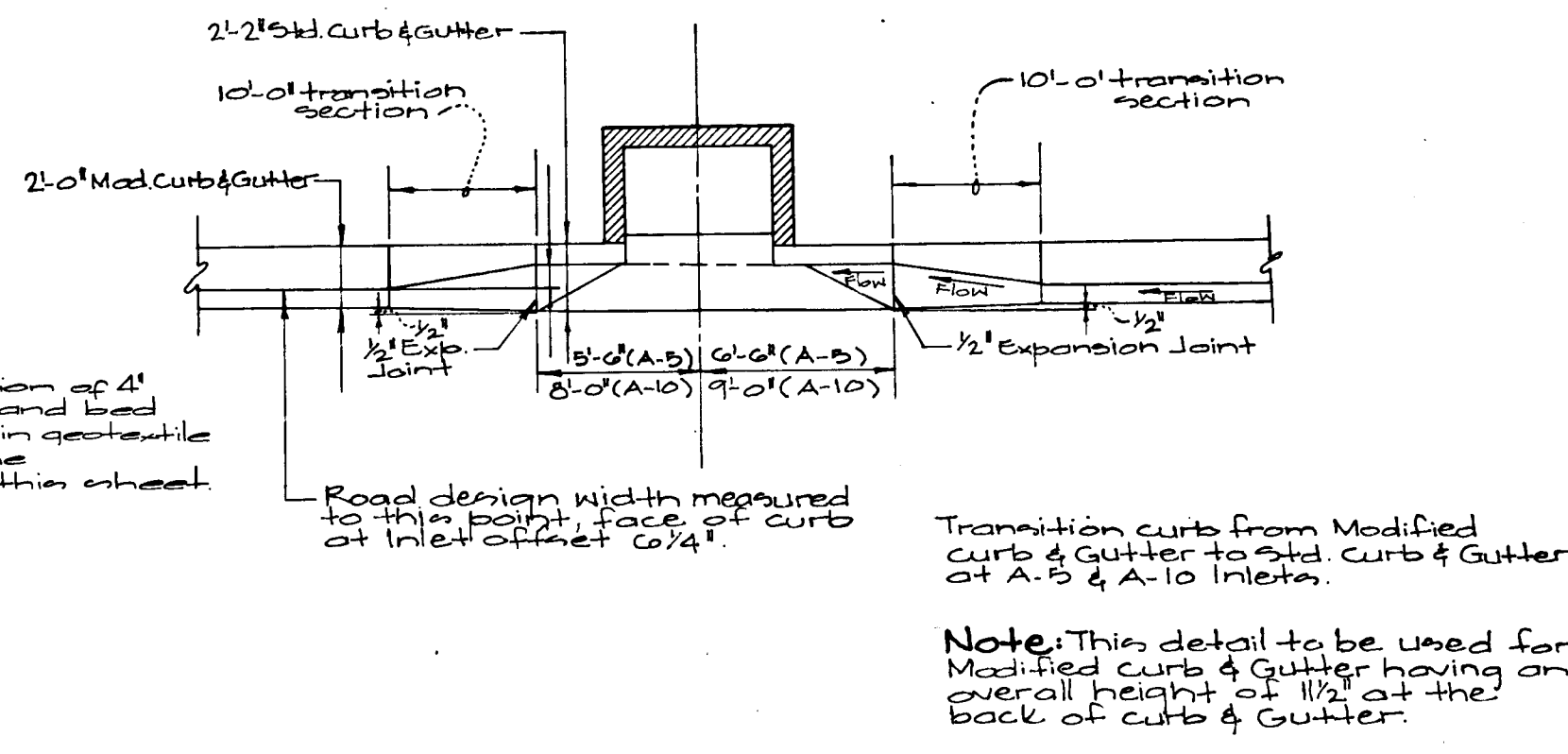
- Legend**
- Trees: Red Maple, Sweet Gum, Black Gum, Willow, Silky Willow, or an approved equal.
 - Shrubs: Silky Dogwood, Button Bush, Red Choke Berry, Elder Berry, or an approved equal (using at least 3 varieties at each facility).

Geotextile Fabric Specifications

Property	Test Method	Unit	Specification (min. avg.)
Material		Nonwoven geotextile fabric	
Mass per Unit Area	ASTM D-5201	oz/ft ²	7.2
Flow Rate	ASTM D-4491	GPM/ft ²	80
Puncture Strength	ASTM D-4873	lb.	115
Mullen Burst	ASTM D-3780	psi	200
Grab Tensile Strength	ASTM D-4072	lb.	215
AOS	ASTM D-4751	US Sieve	80
Permeability	ASTM D-4491	cm/sec	0.25
Thickness	ASTM D-5199	mil	05



Section through Bio-Retention System
Not to Scale



Modified Combination Curb & Gutter Transition Curb Section at A' Type Inlets

APPROVED: Howard County Department of Public Works
 Chief, Bureau of Highways
 Date: 12/19/96

APPROVED: Howard County Department of Planning & Zoning
 Chief, Division of Land Development & Research
 Date: 12/19/96

GIW GUTSCHICK LITTLE & WEBER, P.A.
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 TELEPHONE: (301)421-4024 NO. VA. (301)989-2524 BALTO. (301)880-1820 FAX (301)421-4186

DATE	REVISION	BY	APP'R.
6-24-99	Changed 4" PVC to 4" HORE	mm	

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

Water Quality Facilities & Details
Village of River Hill
 Section 4 Area 3
 Clarksville Election District No. 5
 Howard County, Maryland

DES. d.w.	SCALE	ZONING	G.L.W. FILE NO.
h.c. <td>as shown</td> <td>N.T.</td> <td>24050</td>	as shown	N.T.	24050
DRN. h.c.	DATE	TAX MAP NO.	SHEET
chk.	Nov, 1996	34 & 35	12 of 12