

Tree Planting Notes

- Contractor shall verify location of underground utilities prior to digging.
- Final location of trees may be adjusted slightly to accommodate field conditions.
- Planting procedures shall comply with "Landscape Specifications for Baltimore-Washington Metropolitan Areas."
- Substitutions to the area species may be permitted, provided that the planting is in accordance with the Street Tree and Landscape Requirements as specified in Section 16.131 of the Howard County Subdivision Regulations.

Date	Revision	By	No.
11/3/91	Revise Street Light Schedule	GAU	1

- General Notes**
- All storm drain and paving shall be constructed in accordance with the latest details and specifications of Howard County and Maryland S.H.A.
 - Types of storm drain structures refer to the standard details of Howard County and Maryland S.H.A.
 - Trench composition for storm drains within road or street right-of-way limits shall be in accordance with Howard County Design Manual Volume IV (Class 'C' trench bedding to be used for all storm drains unless shown otherwise. See detail sheet.
 - Information concerning underground utilities was obtained from available records, but the contractor must determine the exact location and elevation of the mains by digging test pits by hand, at all utility crossings in advance of construction.
 - All utility companies shall be notified 24-hours in advance of construction.
 - All traffic control devices, parking and signing to be done in accordance with the "Manual of Uniform Traffic Control Devices", 1984 Edition.
 - Sag and crest vertical curves were designed in accordance with Howard County Design Manual Volume III.
 - Provide concrete sidewalk ramps, Howard County Standard Type A, R-4.0 where shown on plan.
 - Design Speed: See Chart on Sheet 7.
 - Zoning: Newtown & M-1.
 - Contractor or developer shall contact the construction inspector/survey division, 24-hours before commencing work, at 792-7272.
 - For Tree Schedule see this sheet.
 - Street Lights shall be provided at the locations shown in the schedule on this sheet and in accordance with Volume III of the Howard County Design Manual.
 - Stormwater Management Facilities on this site are Public. S.W.M. Facilities were approved and built according to S.D.P. 90-70.

Tree Schedule

Quantity	Key Plant Name & Symbol	Size	Remarks
11	Acar Rubrum 'Red Sentinel'	2'-2 1/2 Cal.	B. & B. Heavyheads
55	Fraxinus L. 'Patamora'		
11	Rhus Glabra 'Whitmouse'		

Approved
Department of Public Works

John M. [Signature] 8/25/90
Chief, Land Development Division

Approved
Department of Public Works

Braville W. [Signature] 8/10/90
Chief, Bureau of Highways

Approved
Department of Public Works

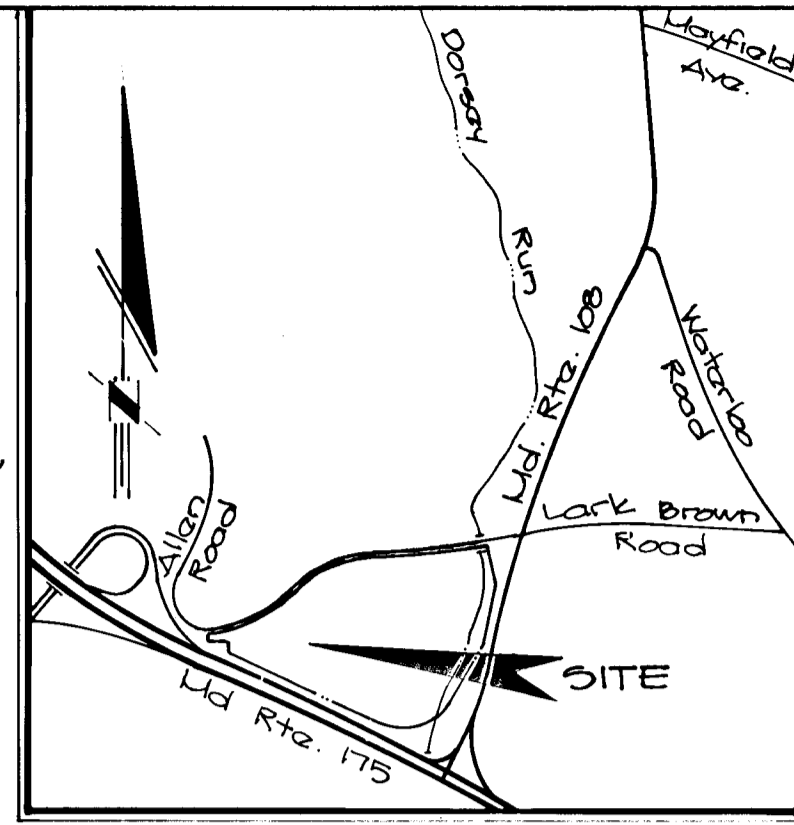
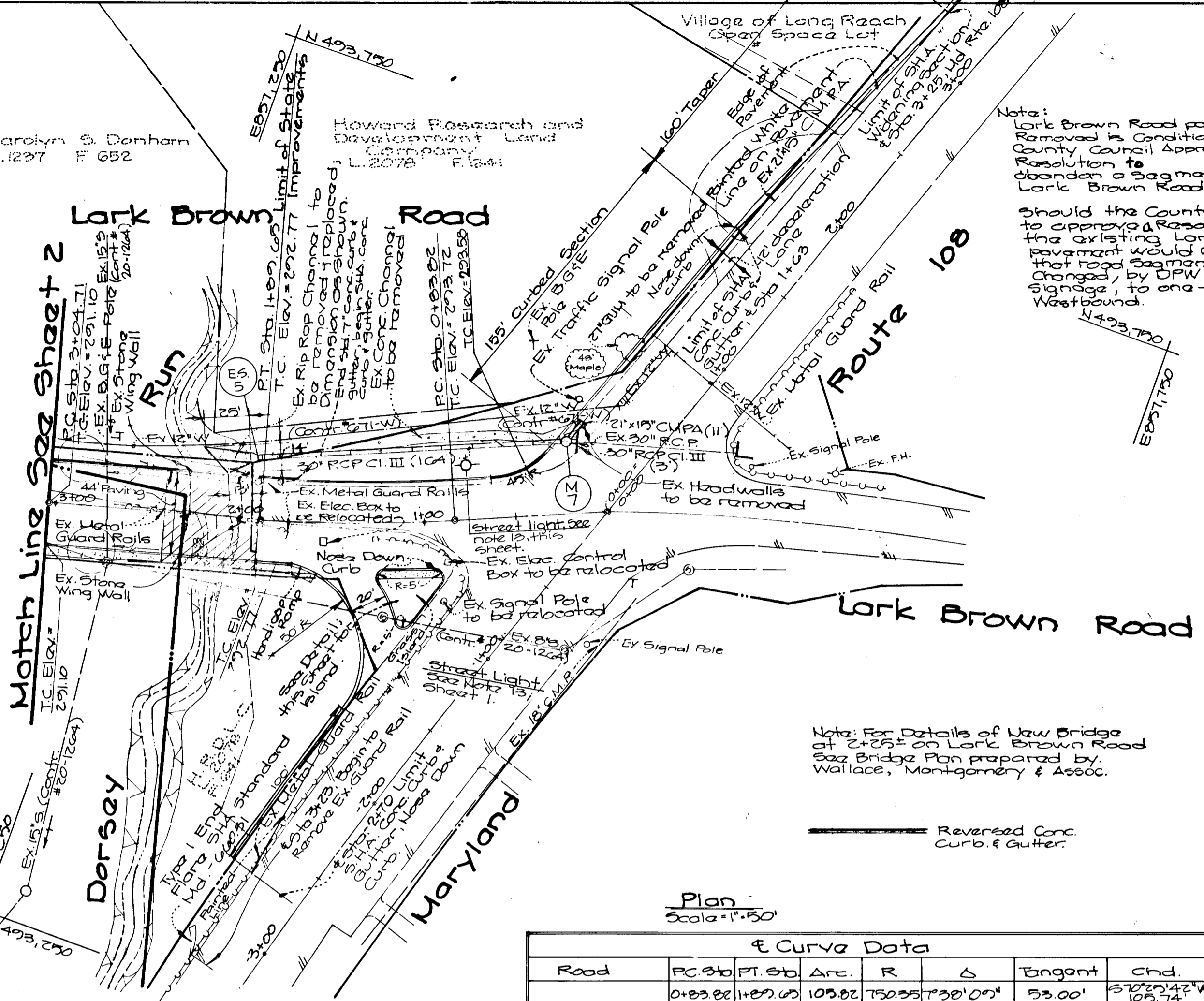
William B. [Signature] 8-24-90
Chief, Bureau of Engineering

Approved
Department of Planning and Zoning

Leslie A. [Signature] 8/31/90
Chief, Division of Community Planning and Land Development

Street Light Schedule

Location	Lamp Type	Mounting	Pole Type
± Sta. 0+75 ; 29' Rt.	250 Watt High Pressure Sodium Vapor	Pendant	30' Bronze Alum.
± Sta. 8+29 ; 37' Rt.	250 Watt High Pressure Sodium Vapor	Pendant	30' Bronze Alum.
± Sta. 9+80 ; 39' Rt.	250 Watt High Pressure Sodium Vapor	Pendant	30' Bronze Alum.
± Sta. 13+80 ; 39' Rt.	250 Watt High Pressure Sodium Vapor	Pendant	30' Bronze Alum.



- General Notes (Continued)**
- Excess fill or construction material shall be removed to an upland disposal area.
 - Heavy equipment working in non-tidal wetlands shall be placed on mats or suitably designed to minimize damage to the non-tidal wetland.
 - The post construction bottom contours and elevations of non-tidal wetlands shall be the same as the original contours and elevations for the utility line.
 - Utility lines shall be backfilled with the soil previously excavated for installation of the utility line.

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

Benson Business Center
Section 1 Phase 202
6th Election District
Howard County, Maryland

DESIGNED BY: [Signature]
DRAWN BY: [Signature]
CHECKED BY: [Signature]

DATE: JULY 1990

HOWARD RESEARCH AND DEVELOPMENT LAND COMPANY
The Rouse Building
10275 Little Patuxent Pkwy. Columbia, Md 21044

SCALE: As Shown
DRAWING: 1 of 2
JOB NO.: 890395

DEVELOPER'S/BUILDER'S CERTIFICATE

"I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT AND THAT THE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR EROSION AND SEDIMENT CONTROL BEFORE BEGINNING THE DESIGN AND/OR CONSTRUCTION OF THIS PROJECT. I AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HSCD."

William J. Roberts 7/16/90
SIGNATURE DATE
DEVELOPER/BUILDER

ENGINEER'S CERTIFICATE

"I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A FEASIBLE AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

C.K. [Signature] 7-16-90
DATE

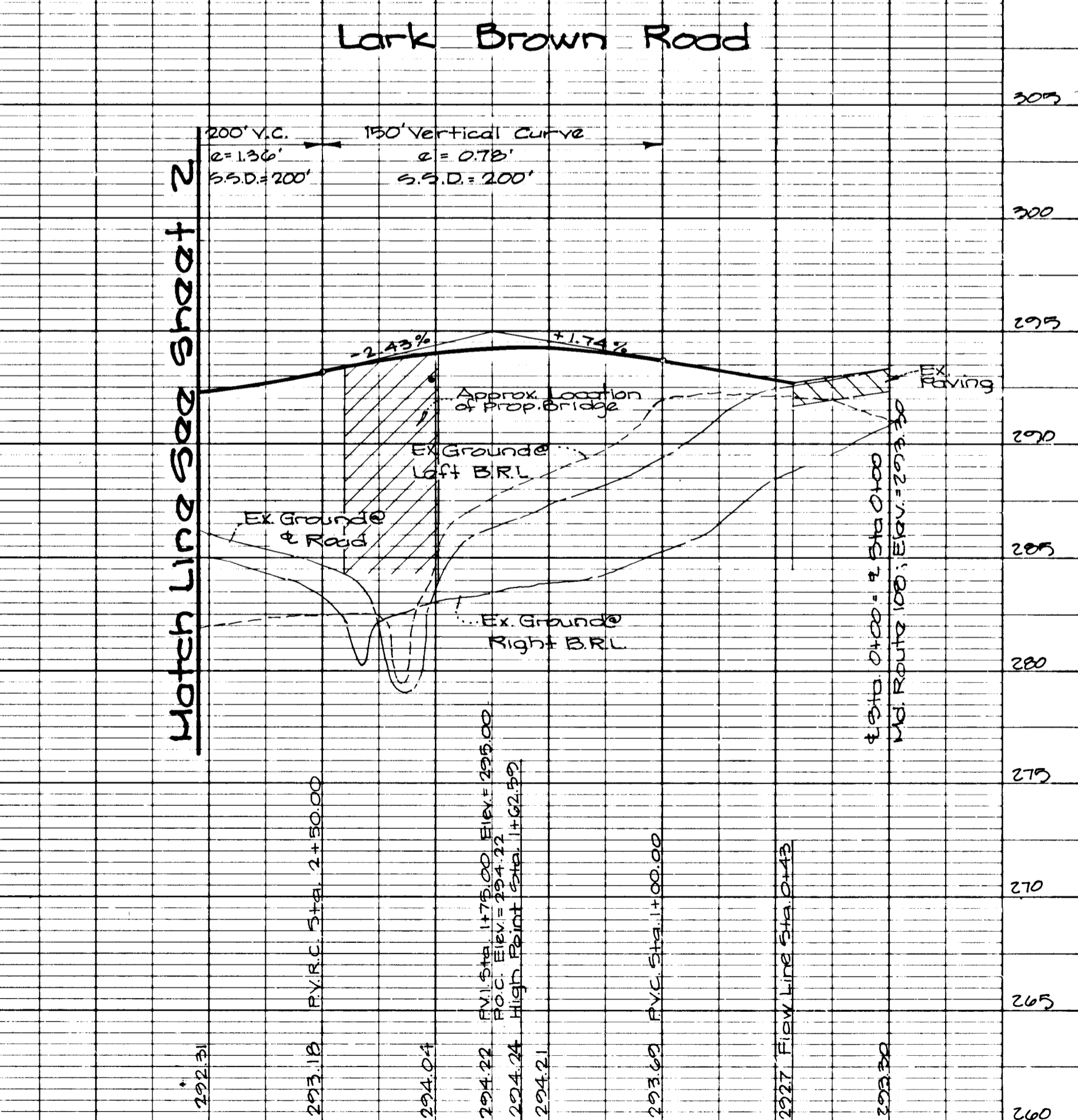
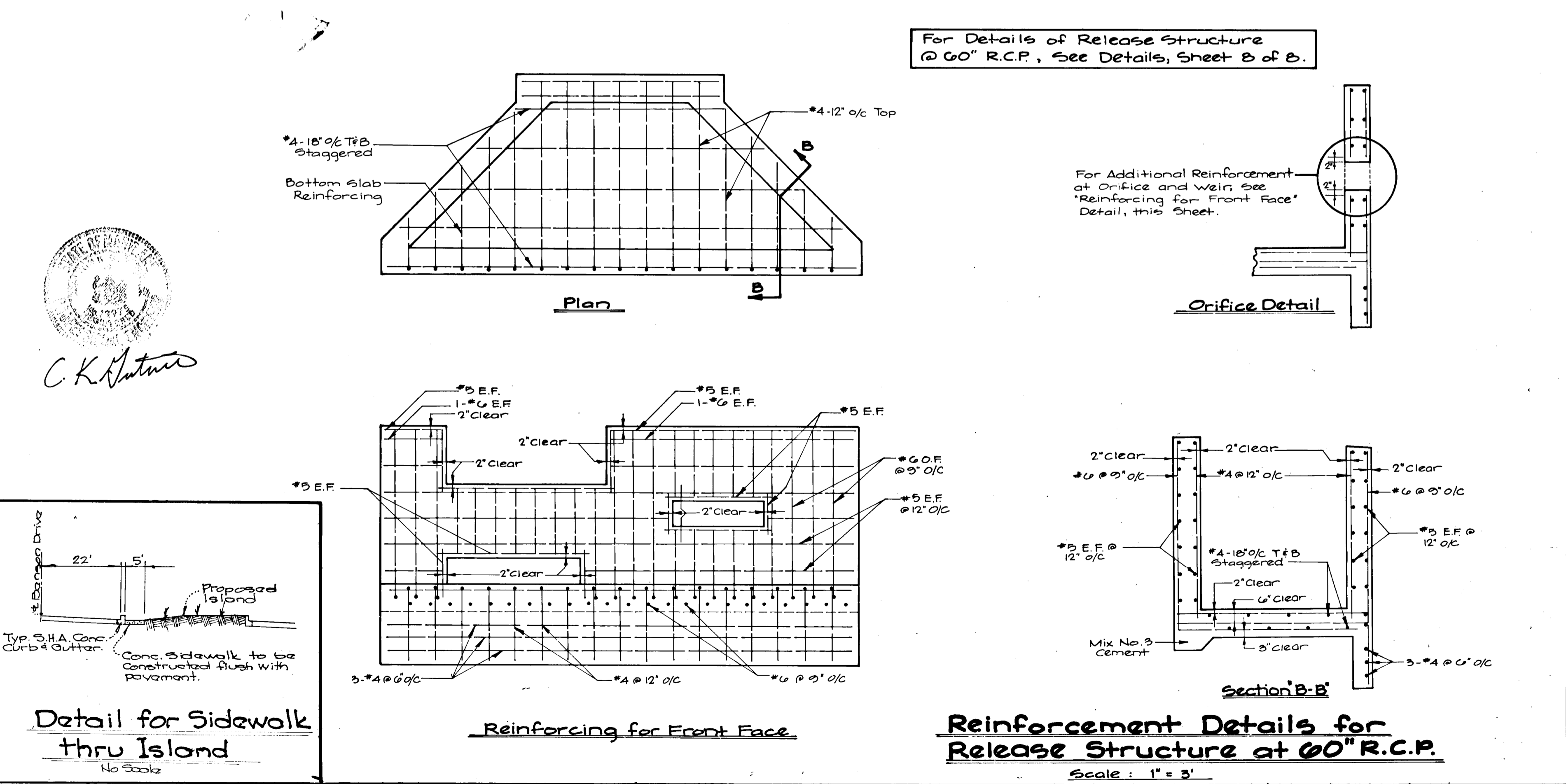
REVIEWED FOR AND MEETS TECHNICAL REQUIREMENTS

James M. [Signature] 7/25/90
DATE

HOWARD S.C.D.

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

John K. [Signature] 7/27/90
DATE



Detail for Sidewalk thru Island
No Scale

22' 5'

Proposed Island

Conc. Sidewalk to be Constructed flush with pavement.

NOTE: NO AS-BUILT INFORMATION SHOWN ON THIS SHEET

1586

AS-BUILT

F90154

DEVELOPER'S/BUILDER'S CERTIFICATE

I, We certify that all development and/or construction will be done according to this plan and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of 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 H&D.

William J. Roberts 7/14/90
Signature of Developer 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.

CK [Signature] 7-16-90
Date

Reviewed for **HOWARD S.C.D.**
Name and meets Technical Requirements.

[Signature] 7/15/90
Howard S.C.D. Date

Approved
Department of Public Works

[Signature] 8/23/90
Chief, Land Development Division, Data MK

Approved
Department of Public Works

[Signature] 8/10/90
Chief, Bureau of Highways, Data

Approved
Department of Public Works

[Signature] 8-24-90
Chief, Bureau of Engineering, Data

Approved
Department of Planning and Zoning

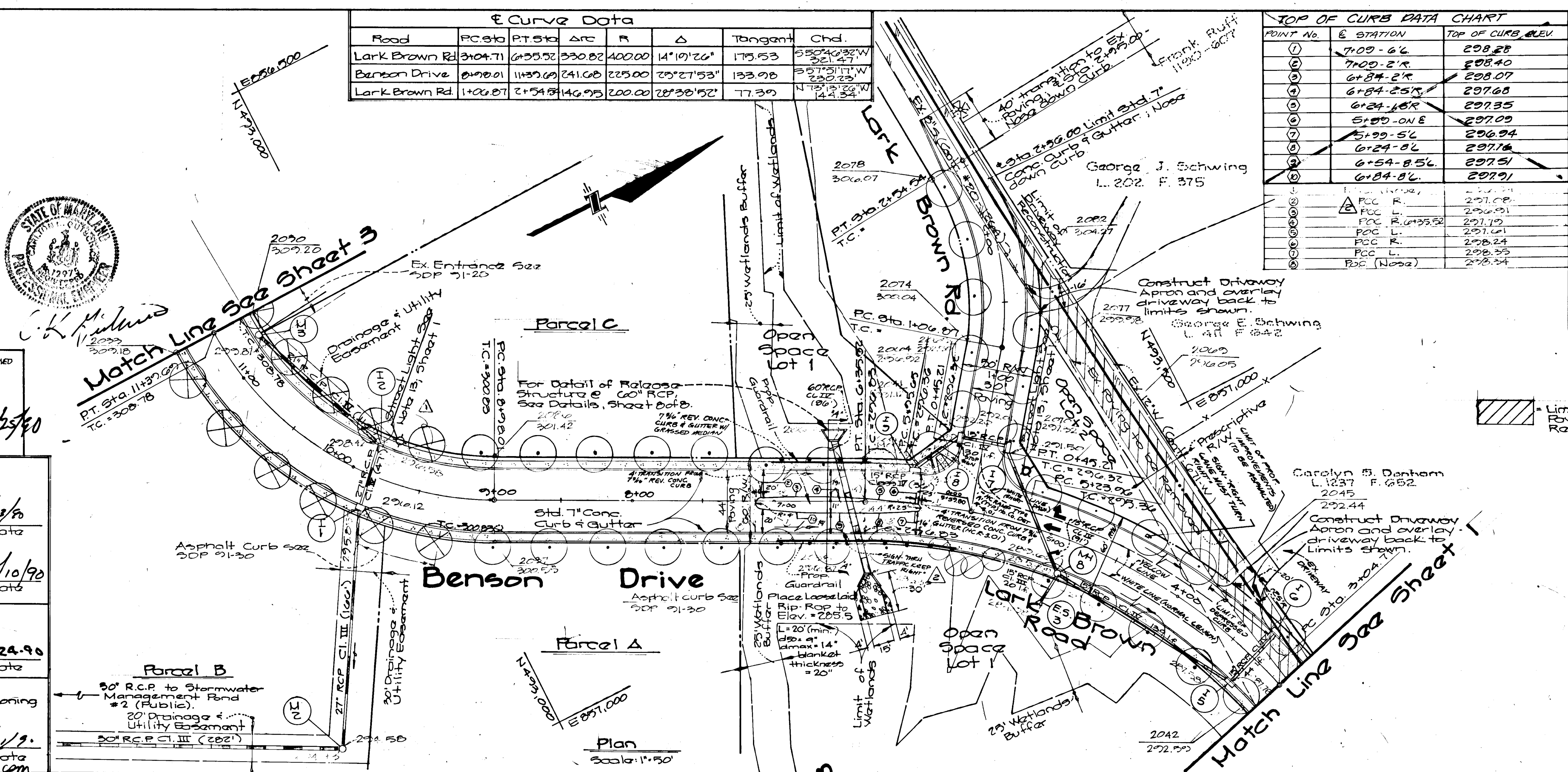
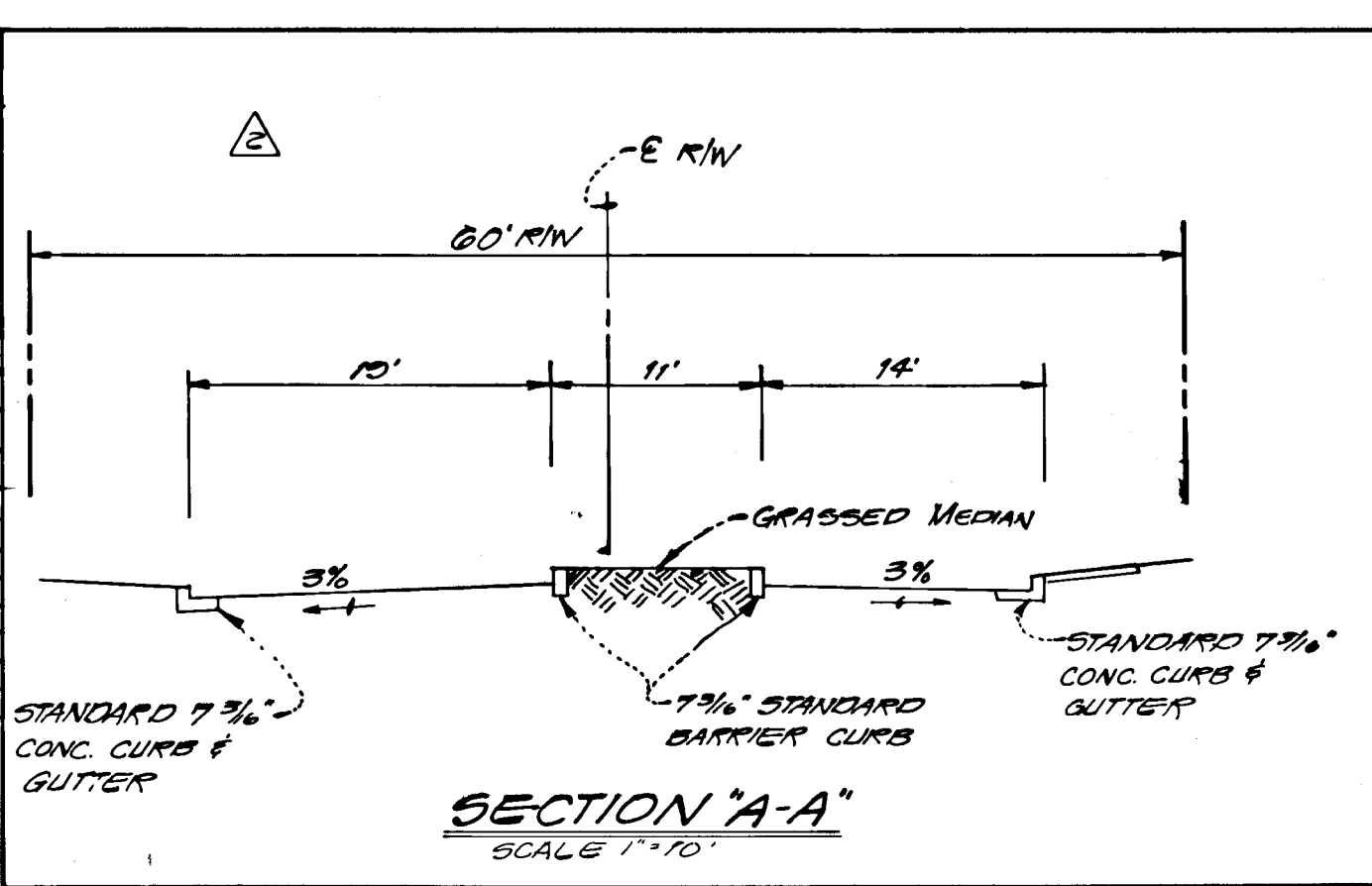
[Signature] 8/13/90
Chief, Division of Community Planning and Land Development, Data

Curve Data

Road	PC Sta	PT Sta	ARC	R	Δ	Tangent	Chd.
Lark Brown Rd	304+71	6+55.52	530.82	400.00	14°19'20"	175.53	350°40'32"W
Benson Drive	0+00.01	11+37.00	241.00	225.00	20°21'53"	133.00	30°00'00"W
Lark Brown Rd	1+00.07	2+54.57	140.00	200.00	28°30'52"	77.30	4°15'12"W

TOP OF CURB DATA CHART

POINT NO.	E STATION	TOP OF CURB, ELEV.
1	7+00-6.6	208.25
2	7+00-2' R	208.40
3	6+84-2' R	208.07
4	6+84-25' R	207.68
5	6+24-16' R	207.35
6	5+00-0' NE	207.00
7	5+00-5' L	206.94
8	6+24-0' L	207.15
9	6+54-8' L	207.51
10	6+84-8' L	207.71



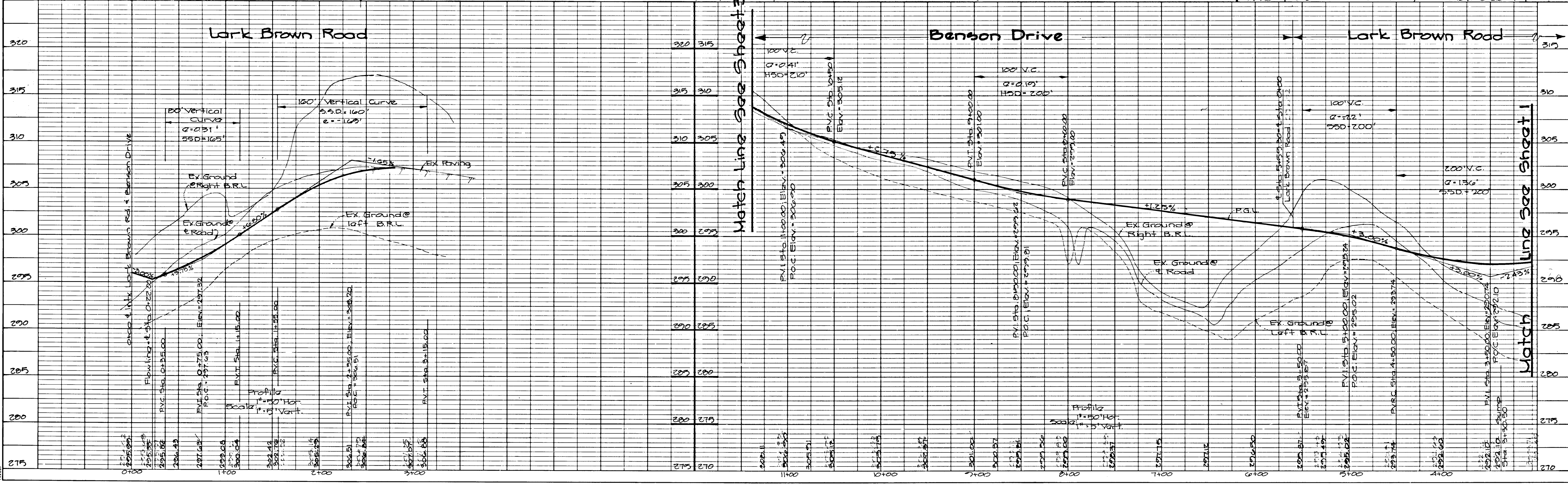
2-10-92	ADDED GRASS MEDIAN & RELATED STRIPING & SIGNS, CHART SECTION	K	AK
1/3/91	Relocate Street Light	AW	AW
	Revision	BY	NO.

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

DESIGNED DEV	Benson Business Center Section 1 Phase 202 4th Election District Howard County, Maryland	SCALE As Shown
DRAWN LICF		DRAWING 2 of 8
CHECKED CKG		
DATE June 1990		JOB NO. 09035

Howard Research and Development
Land Company
The Round Building
10275 Little Patuxent Pkwy. Columbia, Md 21044

1586



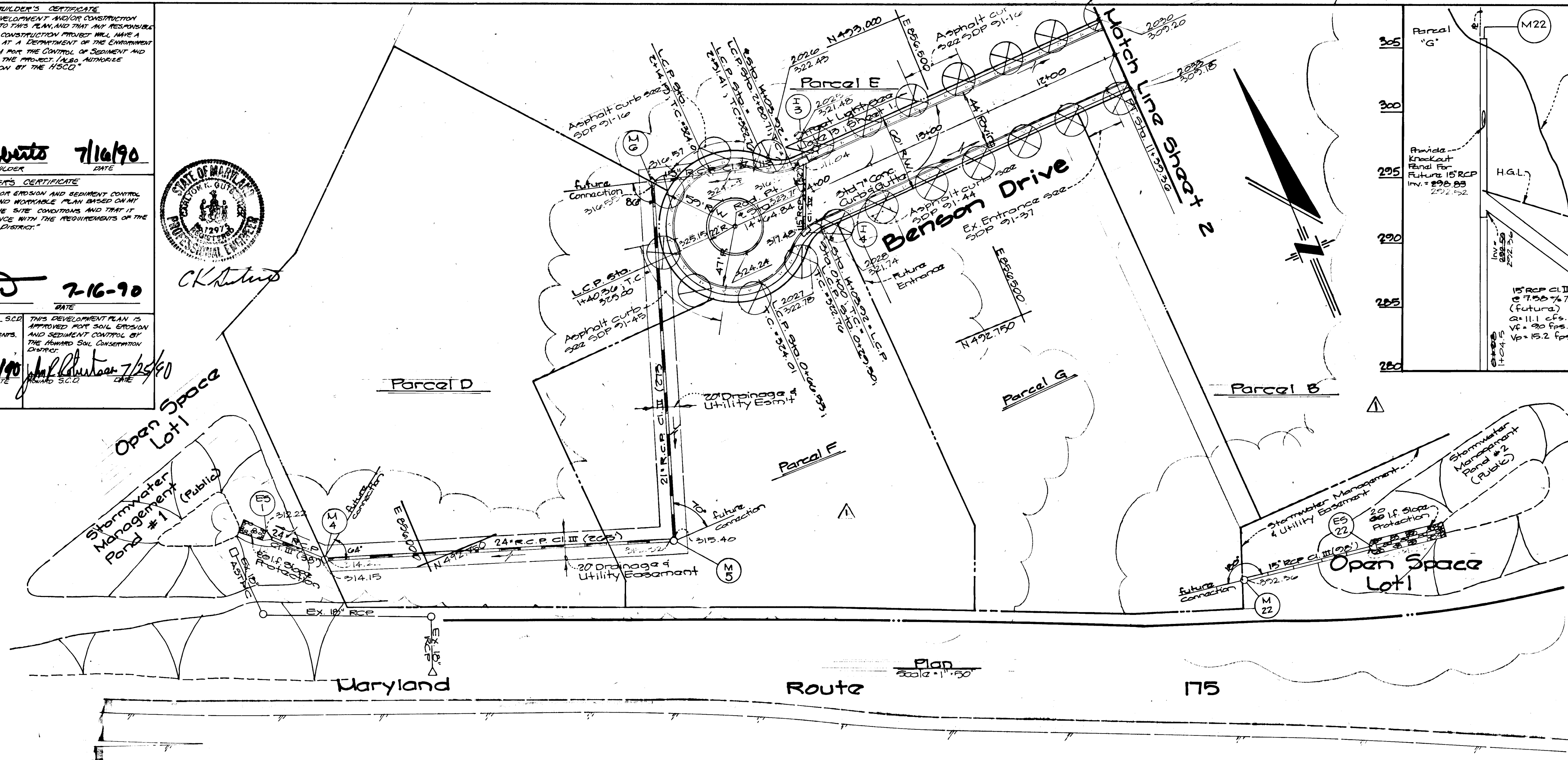
DEVELOPER'S/BUILDER'S CERTIFICATE
 I HEREBY CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL MAKE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AGREE TO MAKE PERIODIC ON-SITE INSPECTION BY THE HSCD.

William Roberts 7/16/90
 SIGNATURE OF DEVELOPER/BUILDER DATE

ENGINEER'S CERTIFICATE
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND FEASIBLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HAWARD SOIL CONSERVATION DISTRICT.

CK Titus 7-16-90
 SIGNATURE DATE

REVIEWED FOR HAWARD S.C.D. THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HAWARD SOIL CONSERVATION DISTRICT.
James H. Hahn 7/21/90 **John A. Chuteau** 7/25/90
 HAWARD SOIL CONSERVATION DISTRICT



Approved
 Department of Public Works
John M. Ingram 8/2/90
 Chief, Land Development Division
 MK

Approved
 Department of Public Works
Lawrence W. Wessend 8/10/90
 Chief, Bureau of Highways
 Data

Approved
 Department of Public Works
William B. Papp 8-24-90
 Chief, Bureau of Engineering
 Data

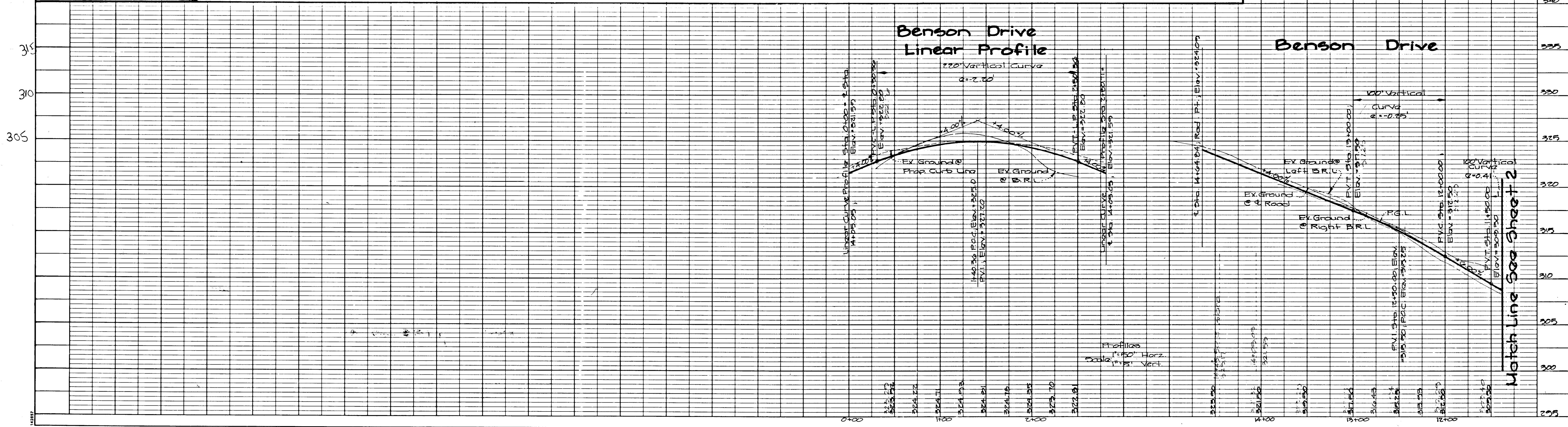
Approved
 Department of Planning and Zoning
Mark J. Tangle 8/31/90
 Chief, Division of Community
 Planning and Land Development
 Data

FOR "KNOCKOUT" LOCATIONS ON STRUCTURES SEE SHEETS 4 AND 5.

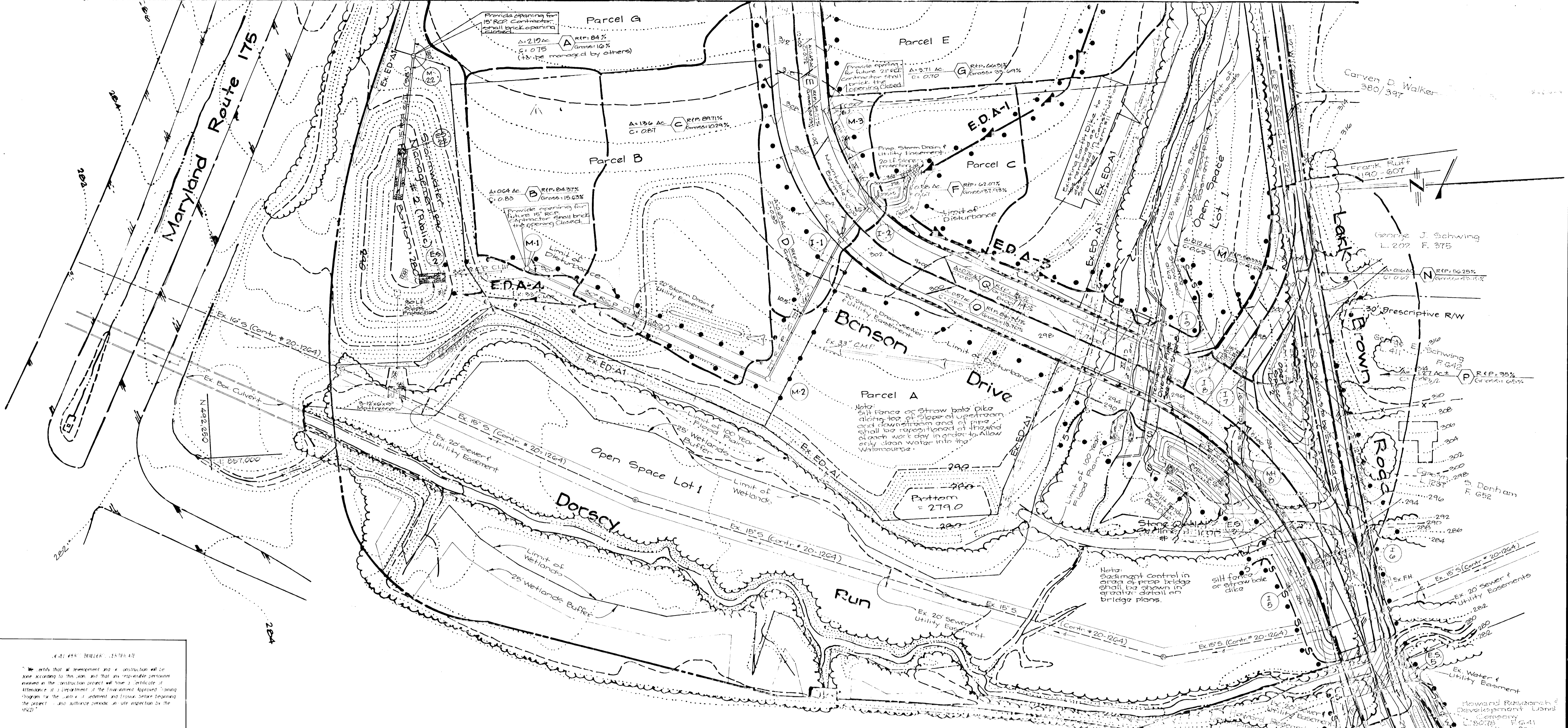
Revision	Date	By	No.
1/3/91			
Parcels - Pipe Sizes - Relocate I-4 - Add Pond #2 + Profile			
		SAW	
		By	No.

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

DESIGNED DEV	Benson Business Center Section 1 Phase 202 6th Election District Howard County, Maryland	SCALE As Shown
DRAWN UCF		DRAWING 3 of 8
CHECKED CKG		
DATE JULY 1990	Howard Raganthand Development Land Company The Ragan Building 10275 Little Patuxent Pkwy. Columbia, Md 21044	JOB NO. 890305



1586



4-11-90 11:45 AM EST 11:47
 We certify that all improvement and construction will be done according to this plan and that an inspector personally viewed the construction project will have a certificate of Attendance at a Department of the Environment Approved Training Program for the contractor's estimator and foreman before beginning the project. Also authorize periodic on-site inspection by the DEP.

William J. Roberto 7/11/90

CK [Signature] 7-16-90

CK [Signature] 7-16-90

Reviewed by: HAWPEO
 Date: 7/25/90

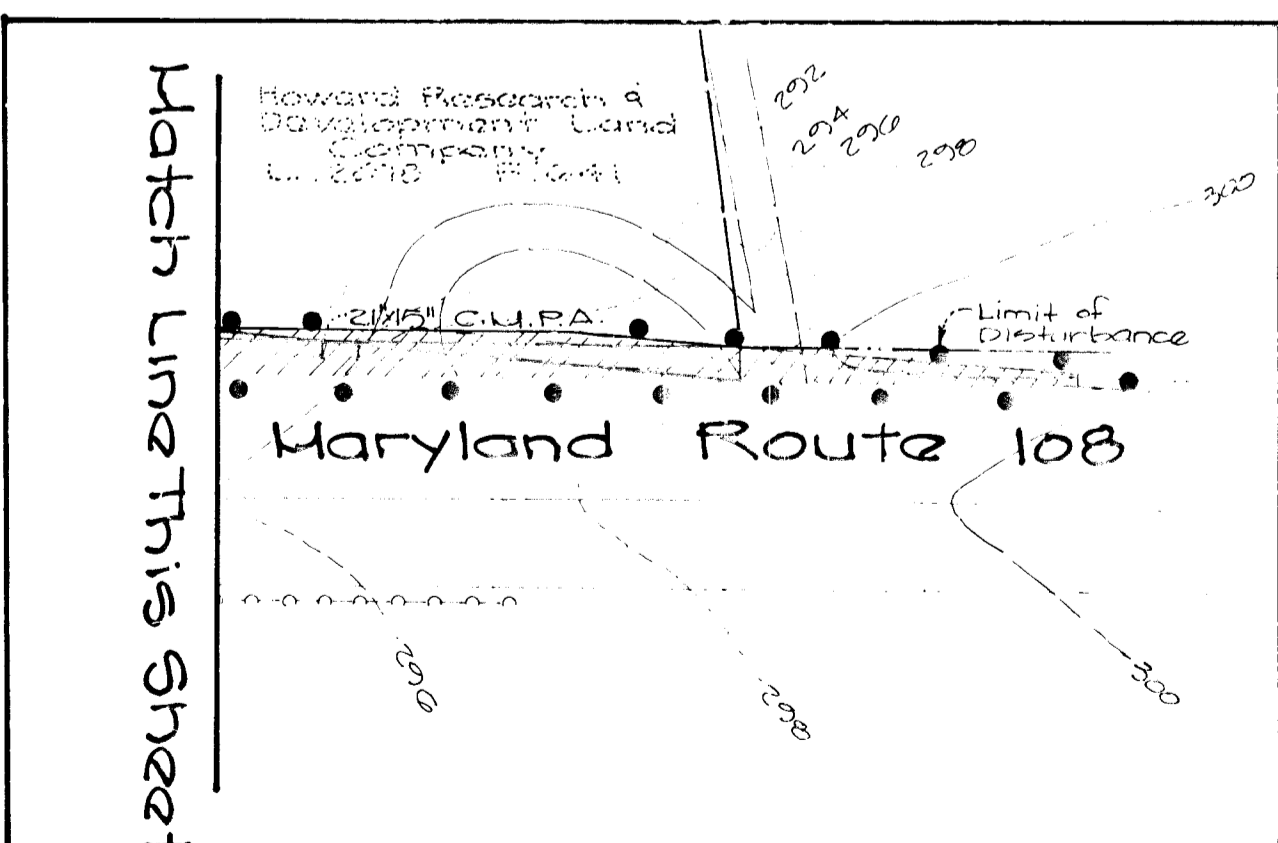
Checked by: [Signature] 7/25/90

CK [Signature]

Approved: Department of Public Works
 [Signature] 8/2/90
 Chief, Bureau of Engineering

Approved: Department of Public Works
 [Signature] 8/10/90
 Chief, Bureau of Highways

Approved: Department of Planning and Zoning
 [Signature] 8/2/90
 Chief, Division of Community Planning and Land Development



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

DATE	REVISION	BY	APP'R.
1/3/91	Revised Drainage Areas & Info. Add 15" RCP from ES-22 to M-22. Add note	GAW	[Signature]

PREPARED FOR:
 Howard Research and Development Land Company
 The Rouse Building
 10275 Little Patuxent Parkway
 Columbia, Maryland 21044

Drainage Area Map and Grading Plan
Benson Business Center
 Section 1 AS-BUILT Phase 202
 Sixth Election District
 Howard County, Maryland

SCALE	ZONING	G.L.W. FILE NO.
1" = 80'	Newtown M-1	B9035
DATE	TAX MAP NO.	SHEET
July 1990	43 PAR 587	1 of 5

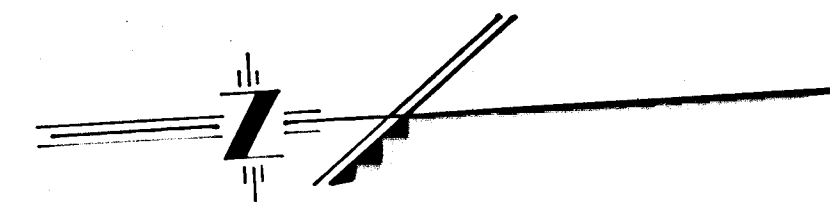
1586

Approved
 Department of Public Works
John M. Payne 2/2/76
 Chief, Land Administration Division
William W. Weiland 8/10/90
 Chief, Bureau of Highways

Approved
 Department of Public Works
John M. Payne 8/24/90
 Chief, Bureau of Engineering

Approved
 Department of Planning and Zoning
Paul L. Taylor 7/11/95
 Chief, Division of Community Planning and Land Development

N 493,250
 E 855,750



- Construction Sequence
1. Obtain grading permit.
 2. Arrange on site meeting with inspector to evaluate condition of existing sediment control devices from S.D.P. 90-70. Make improvements to existing devices as directed by the inspector.
 3. The existing bridge at Lark Brown Road will remain in service while the south side of the bridge is constructed. However, due to existing contours, initial entrance to the site will be the stone construction entrance used during S.D.P. 90-70.
 4. Install earth dikes through parcels E and F and through Parcel B as shown on these plans.
 5. As fill progresses for Benson Drive near intersection and around 40' R.C.P., install Silt Fence/Straw Bale Dike and Sediment Trap near station 5+50 as shown on these plans. Also install Stream Stone Dike (W90-1-2).
 6. Install temporary diversion pipe. See detail, Sheet B of B.
 7. Reinstall installation of 40' R.C.P. under Benson Drive.
 8. Construct storm drains M-1 to ES-2 and from I-4 to ES-1 as shown on these plans.
 9. Provide opening at back of I-2 at invert = 356.75 in order to discharge runoff from Parcels E & F over to stormwater management pond #2. (Install moundable berms at I-1 and I-2 as shown on these plans.)
 10. At the end of each working day, contractor shall reposition Silt fence/Straw Bale Dike in culvert area to the toe of slope (both upstream & downstream) in order to allow only clean water to enter the watercourse.
 11. Construct storm drains from I-3 and I-6 to ES-1.
 12. Construct diversion dike along road R/W from I-2 to upstream end of 40' R.C.P. and backfill area near centerline (Sta. 4+00). Remove Ex. Earth Dike as noted on these plans.
 13. Fine grade roadway, install base paving, curb and gutters.
 14. Upon completion of the south side of bridge, begin improvements to the north side. Vehicles will access existing Lark Brown Road by the new bridge.
 15. Stabilize all disturbed areas on site in accordance with standards and specifications.
 16. Upon approval of the sediment control inspector, backfill trap in Parcel A and reposition pump in Parcel B, remove temporary 12" C.M.U.'s and all other sediment control measures. Stabilize all areas affected by the removal of these measures.
 17. Clean out and stabilize stormwater management ponds 1 & 2 according to the Seeding Standards and specifications for permanent ponds. Clean out and stabilize Sediment Trap at ES-1. This measure will remain and serve as a water quality facility.
 18. Install paving surface course.

N 493,250
 E 856,250

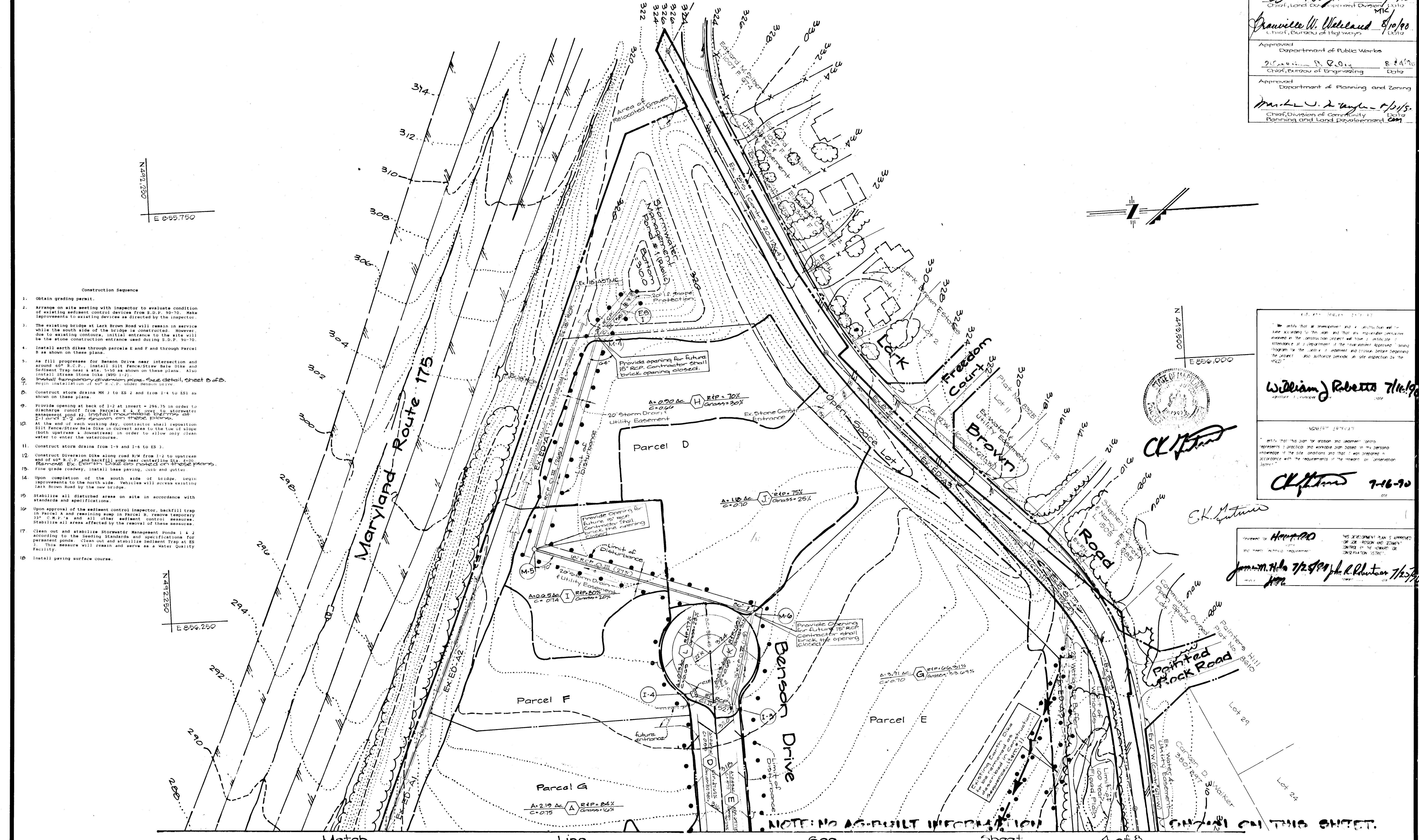
I hereby certify that all measurements and construction were made according to this plan and that the construction complies with the requirements of the Department of Public Works. I further certify that the construction was completed in accordance with the requirements of the Department of Public Works and that the construction was completed in accordance with the requirements of the Department of Public Works.

William J. Roberts 7/16/90
 Surveyor

I hereby certify that this plan for station and sediment control measures is correct and was prepared in accordance with the requirements of the Department of Public Works.

CK [Signature] 7-16-90

Approved by *Howard [Signature]* 7/2/90
 and *John R. [Signature]* 7/2/90



NOTE: NO AS-BUILT INFORMATION SHOWN ON THIS SHEET.

Match Line See Sheet 4 of 8

1586

GUTSCHICK LITTLE & WEBER, P.A.
 ENGINEERS, PLANNERS, SURVEYORS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20868
 TELEPHONE (301) 421-4024

DATE	REVISION	BY	APP'R.
1/3/91	Revised Parcels, Drainage Areas & Info. Relocate I-4. Add notes	G.A.W.	[Signature]

PREPARED FOR:
 Howard Research and Development
 Land Company
 The Rouse Building
 10275 Little Patuxent Parkway
 Columbia, Maryland 21044

Drainage Area Map and Grading Plan
Benson Business Center
 Section 1
 Sixth Election District

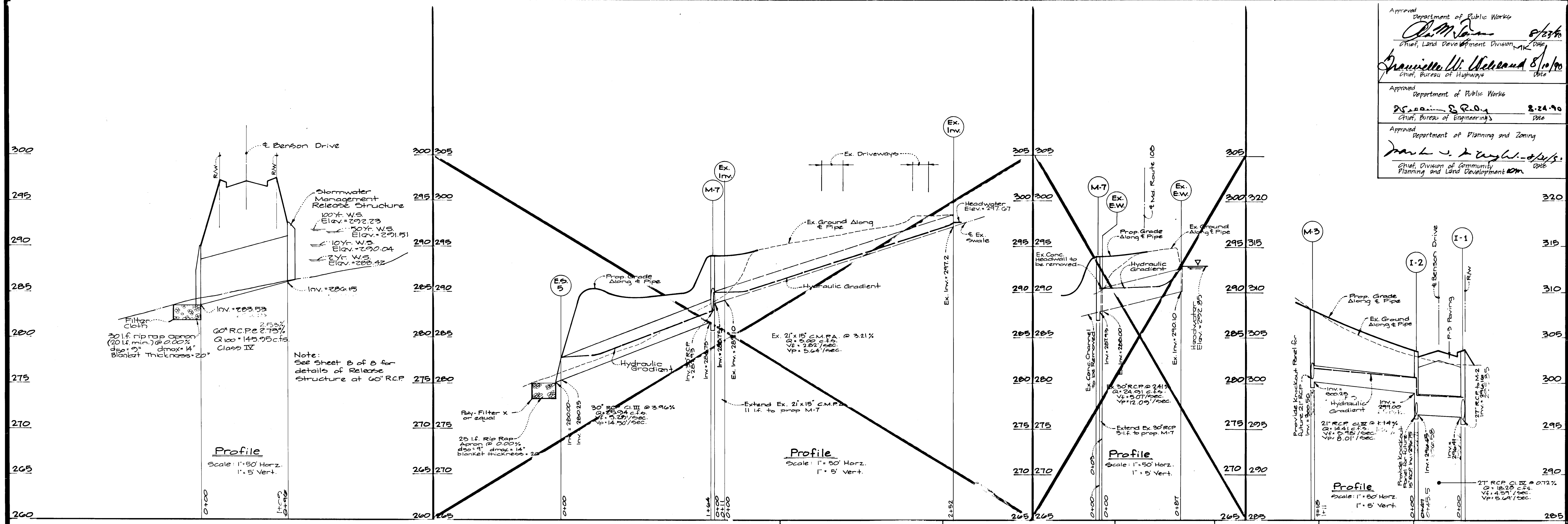
SCALE	ZONING	G.L.W. FILE NO.
1" = 50'	Newtown M-1	89035
DATE	TAX MAP NO.	SHEET
June 1992	42 Par. 987	5 of 8

Approved
 Department of Public Works
Ch. M. ... 8/23/90
 Chief, Land Development Division
 Date

Approved
 Department of Public Works
Francis W. ... 8/10/90
 Chief, Bureau of Highways
 Date

Approved
 Department of Public Works
... 8-24-90
 Chief, Bureau of Engineering
 Date

Approved
 Department of Planning and Zoning
... 8/24/90
 Chief, Division of Community Planning and Land Development
 Date



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

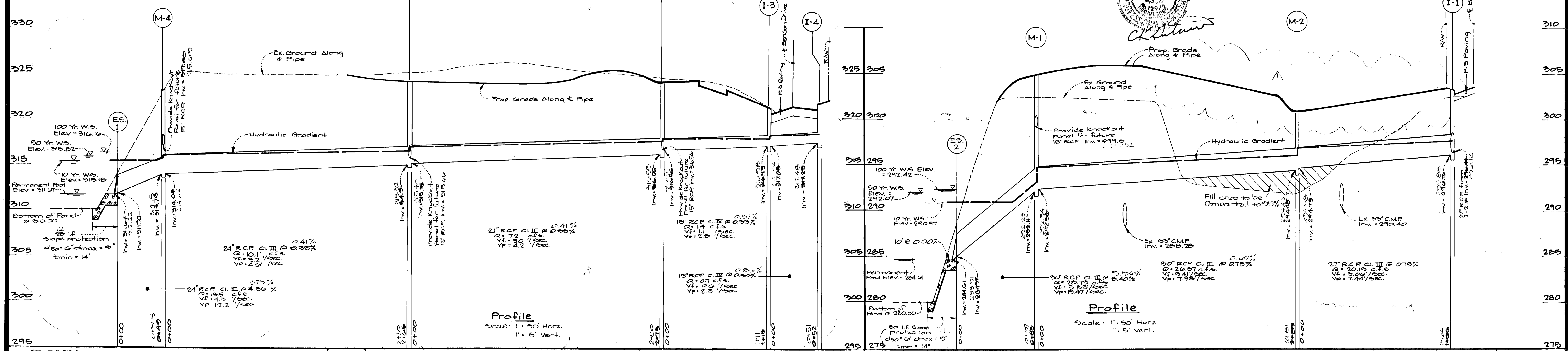
ENGINEER'S CERTIFICATE
 "I certify that this plan for erosion and sediment control approaches a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Reviewed for HOWARD SOIL CONSERVATION DISTRICT
 and meets Technical Requirements
Janet M. ... 7/25/90
 District Engineer

THIS DEVELOPMENT PLAN IS APPROVED FOR THE EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
J. R. ... 7/25/90
 District Engineer

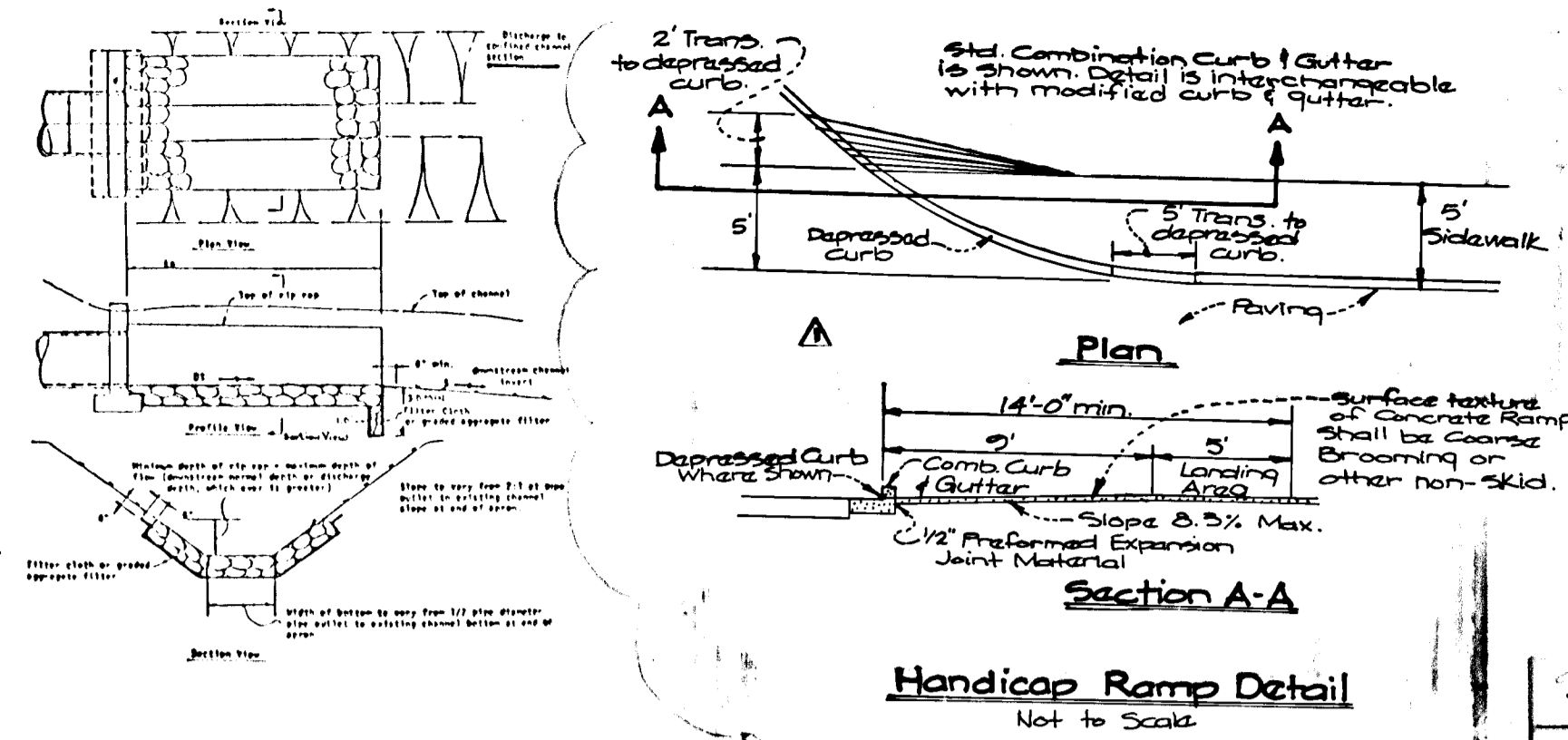
Signature of Developer
William R. ... 7/25/90
 Date

Signature of Engineer
... 7/25/90
 Date

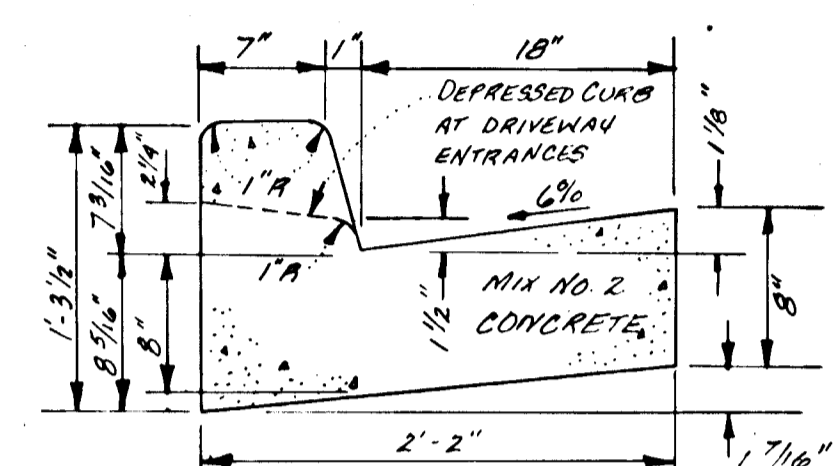
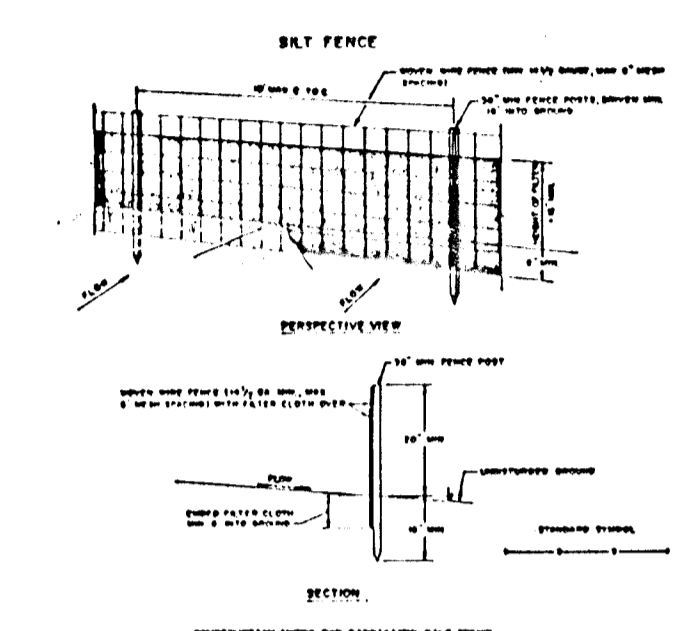


GIW GUTSCHICK LITTLE & WEBER, P.A. ENGINEERS, PLANNERS, SURVEYORS 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD 20866 TELEPHONE (301) 421-4024	DES. DEV.	DRN. GAW	CHK. CKG	DATE	REVISION	BY	APP'R.	PREPARED FOR: Howard Research and Development Land Company The Rouse Building 10275 Little Patuxent Parkway Columbia, Maryland 21044	Storm Drain Profiles Benson Business Center Section 1 Sixth Election District	SCALE As Shown	ZONING Newtown M-1	G.L.W. FILE NO. 89035
	DATE 1/3/91	REVISION Revise Profile E5-1 to I-4, Change Prop. Grade to I-4, E5-2 to I-1	GAW	DATE 1/3/91	REVISION 1	BY GAW	APP'R. [Signature]	DATE 4/30/90	TAX MAP NO. 43 PAR 58T	SHEET GofB	DATE 8/24/90	SHEET GofB

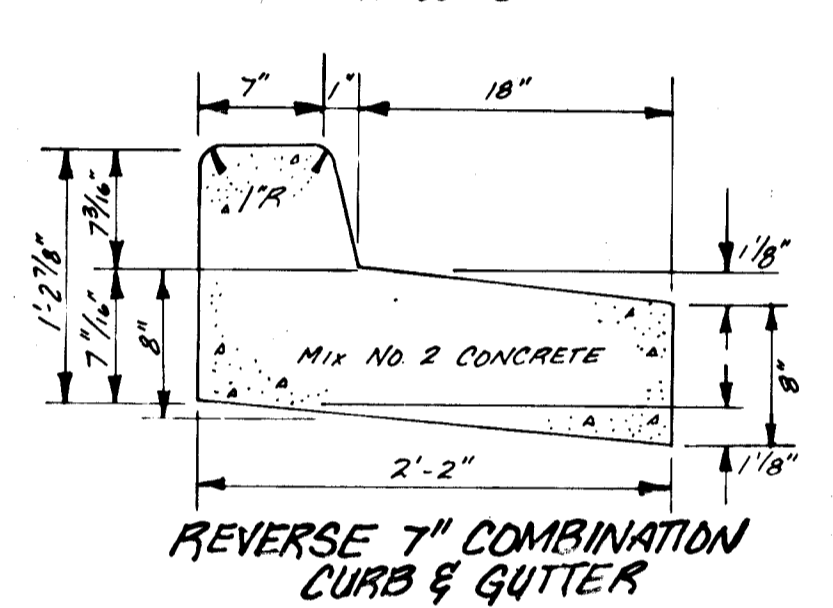
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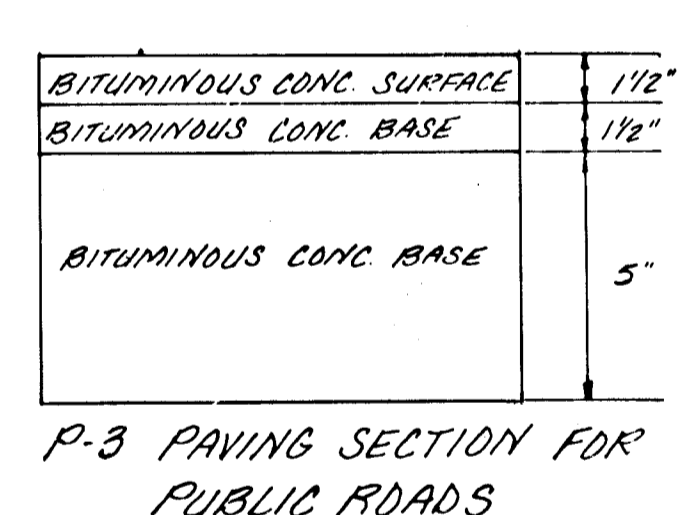
Handicap Ramp Detail
Not to Scale



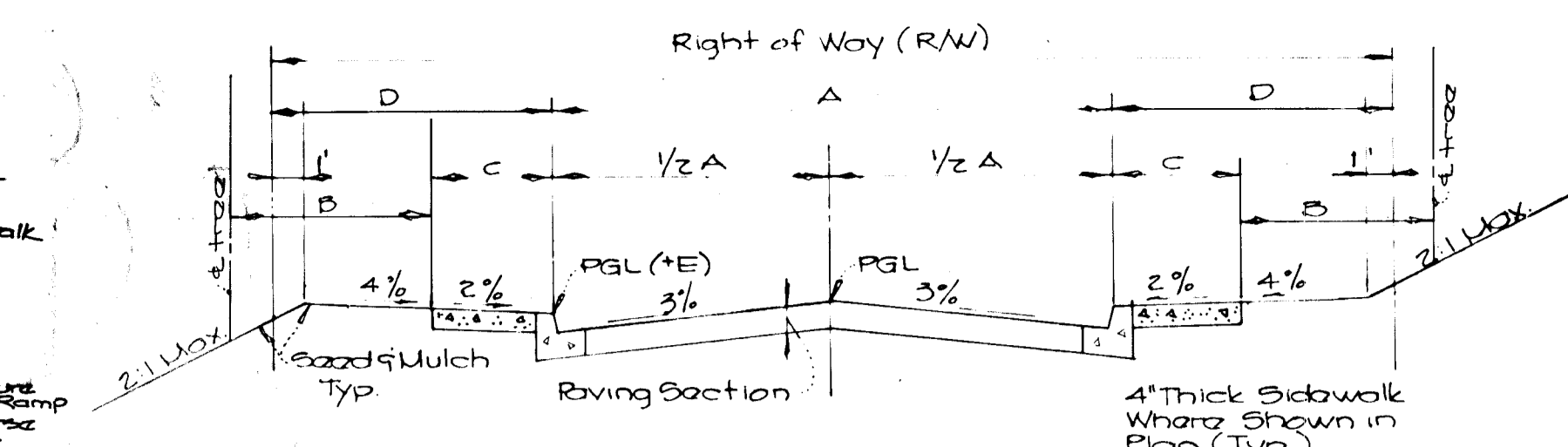
STANDARD 7" COMBINATION CURB & GUTTER
NO SCALE



REVERSE 7" COMBINATION CURB & GUTTER
NO SCALE

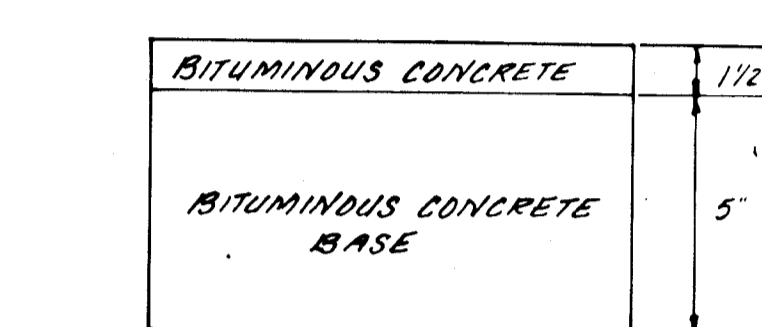


P-3 PAVING SECTION FOR PUBLIC ROADS
NO SCALE

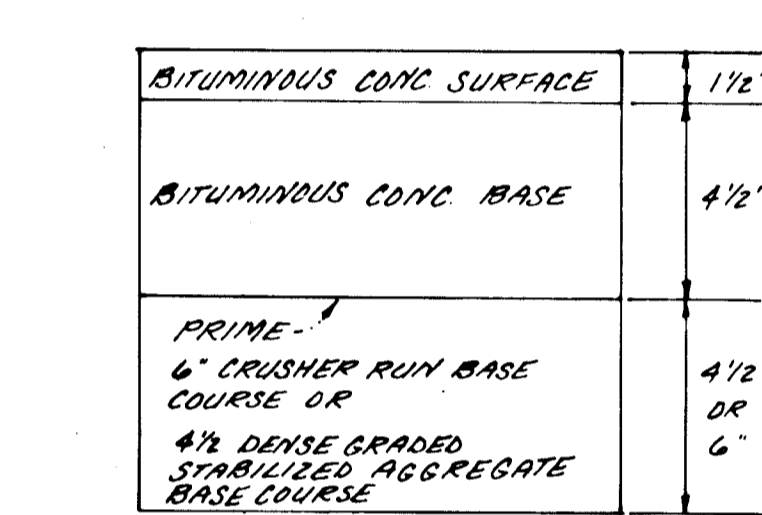


Typical Paving Section - Public Roads
No Scale

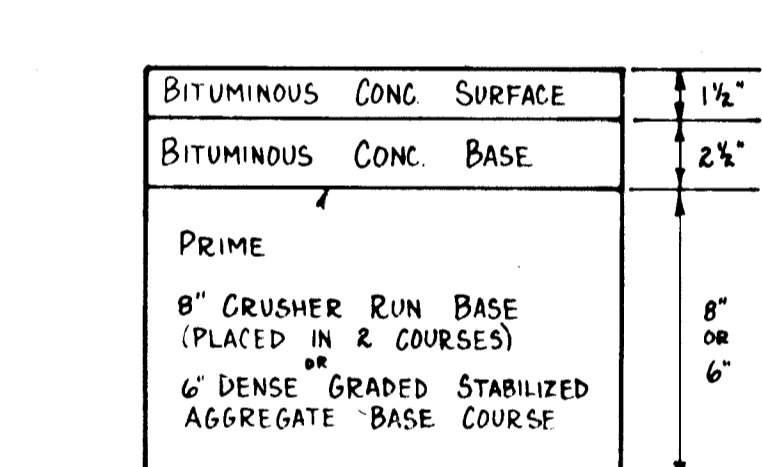
Street Name & Station	Type of Traffic	A	B	C	D	R/W	Zoning	E	Utility	Paving Section
Lark Brown Road, Sta. 1150.5+57.9	Local Road	44'	5'	5'	0'	60'	NT	0.11	30	P-3
Lark Brown Road, Sta. 04521+20.0	Local Road	30'	—	—	10'	50'	NT	0.10	30	P-2
Benson Drive, Sta. 5+59.80+14+03.92	Local Road	44'	5'	5'	0'	60'	NT	0.11	30	P-3



P-2 PAVING SECTION FOR PUBLIC ROADS
NO SCALE



P-3 ALTERNATE PAVING SECTION FOR PUBLIC ROADS
NO SCALE

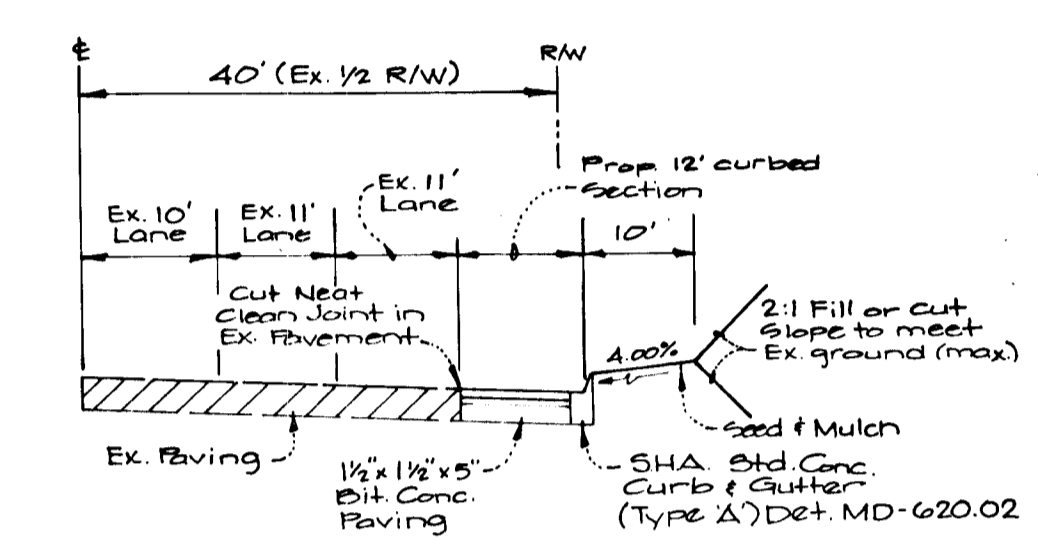


ALTERNATE PAVING SECTION (P-2) FOR PUBLIC ROADS
NO SCALE



CK Jones

Typical Widening Section Along Md. Route 100
No Scale



INSTREAM STONE DIKE (WPD-1)

OWNER'S CERTIFICATE

I certify that this plan for erosion and sediment control represents a practical and suitable plan based on my personal knowledge of the site conditions and that it is prepared in accordance with the requirements of the Howard County Department of Public Works.

DEVELOPER'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 Approval from the Department of Environmental and Planning Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspections by the DPW.

REVISIONS

1. Description: The work encompasses the installation of an in-stream stone dike to stabilize the stream bank and prevent erosion. The dike will be constructed of stone and will be approximately 100 feet long and 10 feet high.

2. Materials: The dike will be constructed of stone. The stone will be a minimum of 12 inches in diameter and will be placed in a 10-foot wide layer. The stone will be placed in a 10-foot wide layer.

3. Construction Requirements: The dike will be constructed in accordance with the following requirements: a) The dike will be constructed of stone. b) The stone will be a minimum of 12 inches in diameter. c) The stone will be placed in a 10-foot wide layer. d) The dike will be approximately 100 feet long and 10 feet high.

4. Inspection: The dike will be inspected by the DPW after construction is complete. The DPW will issue a Certificate of Approval if the dike meets the requirements of this plan.

APPROVALS

Reviewed for Howard County S.C.D. and meets Technical Requirements.

John M. Nelson 7/27/90
U.S. Soil Conservation Service

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

John C. Robinson 7/23/90
Howard S.C.D.

SEDIMENT CONTROL NOTES

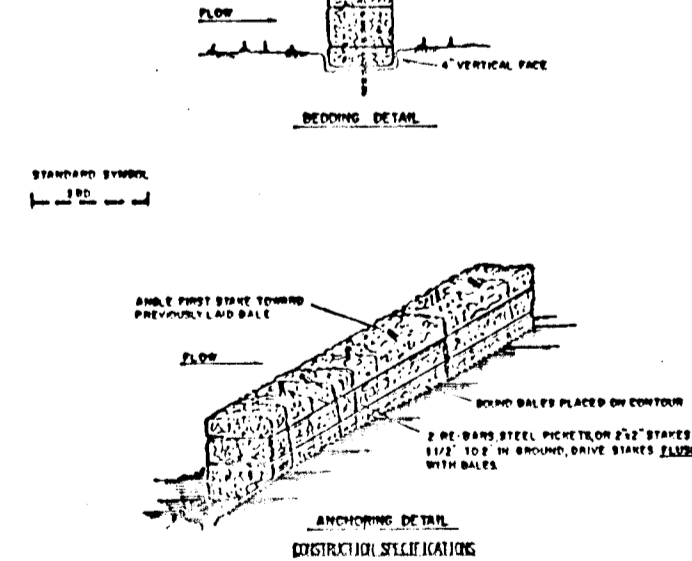
- A minimum of 24 hours notice must be given to the Howard County Office of Inspector and Permits prior to the start of any construction. (992-2437)
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Following initial soil disturbance or redisturbance, 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 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. 11), and (Sec. 14), temporary seeding (Sec. 11) and mulching (Sec. 15). Temporary stabilization with mulch alone can only be done when permanent seeding is not allowed 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: 28.70 Acres
Area Disturbed: 5.76 Acres
Area to be rooted or paved: 1.85 Acres
Area to be vegetatively stabilized: 3.88 Acres
Total Cut 500 Cu. Yds.
Total Fill 500 Cu. Yds.
Off-Site waste/borrow area location
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County DPW Sediment Control Inspector.
- On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

PERMANENT SEEDING NOTES

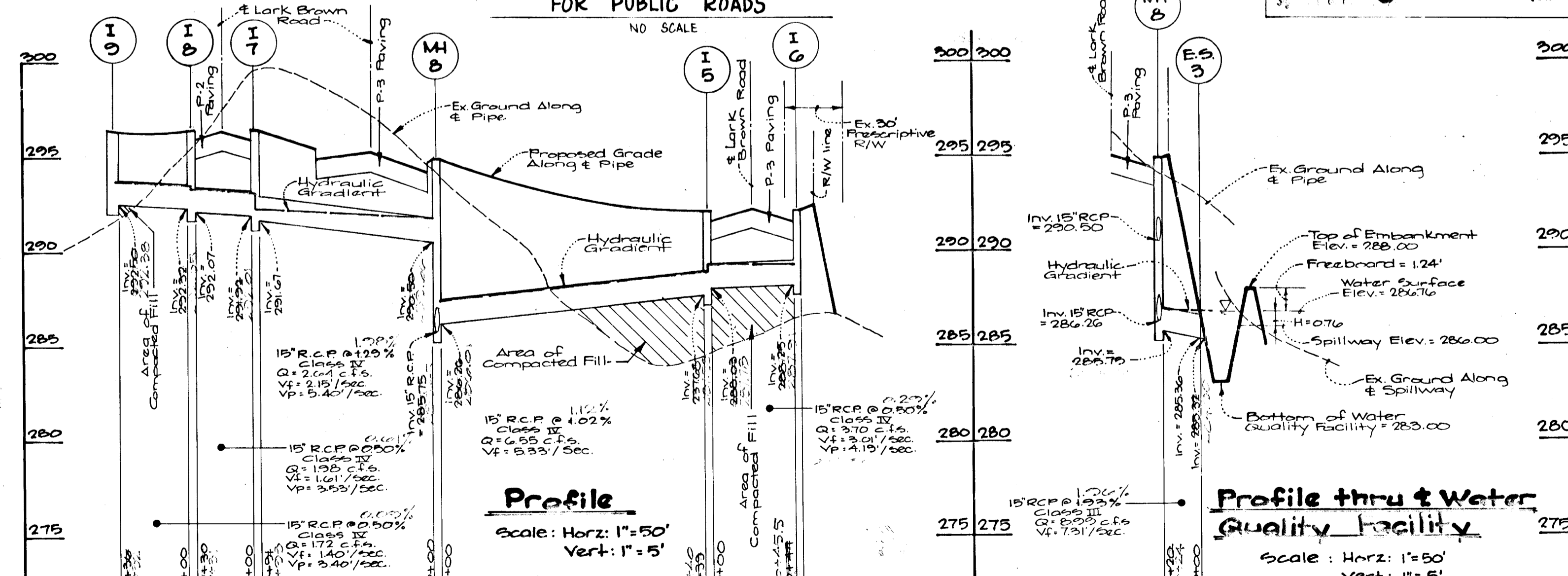
- Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
- Seeded Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (unless previously loosened).
- Soil Amendments: In lieu of soil test recommendations, use one of the following schedules
- 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 rotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq ft) for anchoring.
- Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseedings.

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 (unless previously loosened).
- Soil Amendments: Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft).
- Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs/1000 sq ft). For the period May 1 thru August 14, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.
- Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of rotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.
- Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.



Stream Bank Dike



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

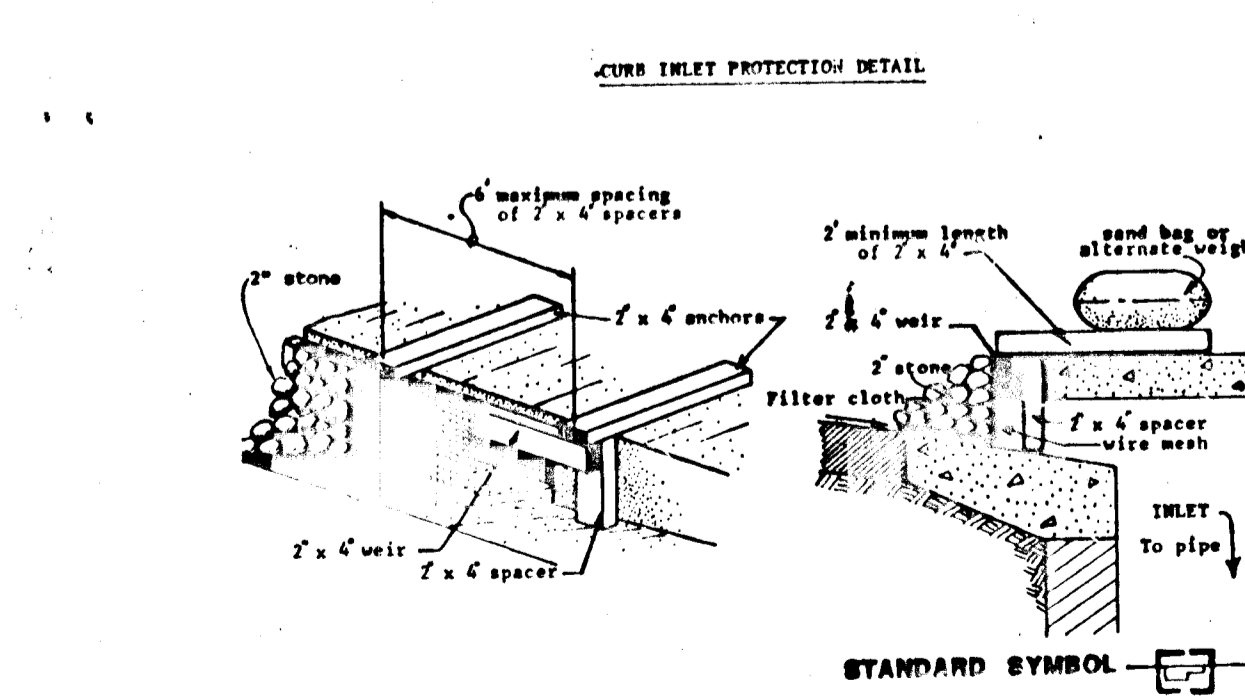
Profile thru Water Quality Facility
Scale: Horz: 1"=50'
Vert: 1"=5'

Reviewed for Howard County S.C.D. and meets Technical Requirements.

John M. Nelson 7/27/90
U.S. Soil Conservation Service

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

John C. Robinson 7/23/90
Howard S.C.D.



CURB INLET PROTECTION DETAIL

GUTSCHICK LITTLE & WEBER, P.A.
ENGINEERS, PLANNERS, SURVEYORS
3909 NATIONAL DRIVE SUITE 250 BURTONSVILLE OFFICE PARK BURTONSVILLE, MD 20866
TELEPHONE (301) 421-4074

PREPARED FOR
Howard Research and Development Land Company
The Route Building
10275 Little Patuxent Parkway
Columbia, Maryland 21044

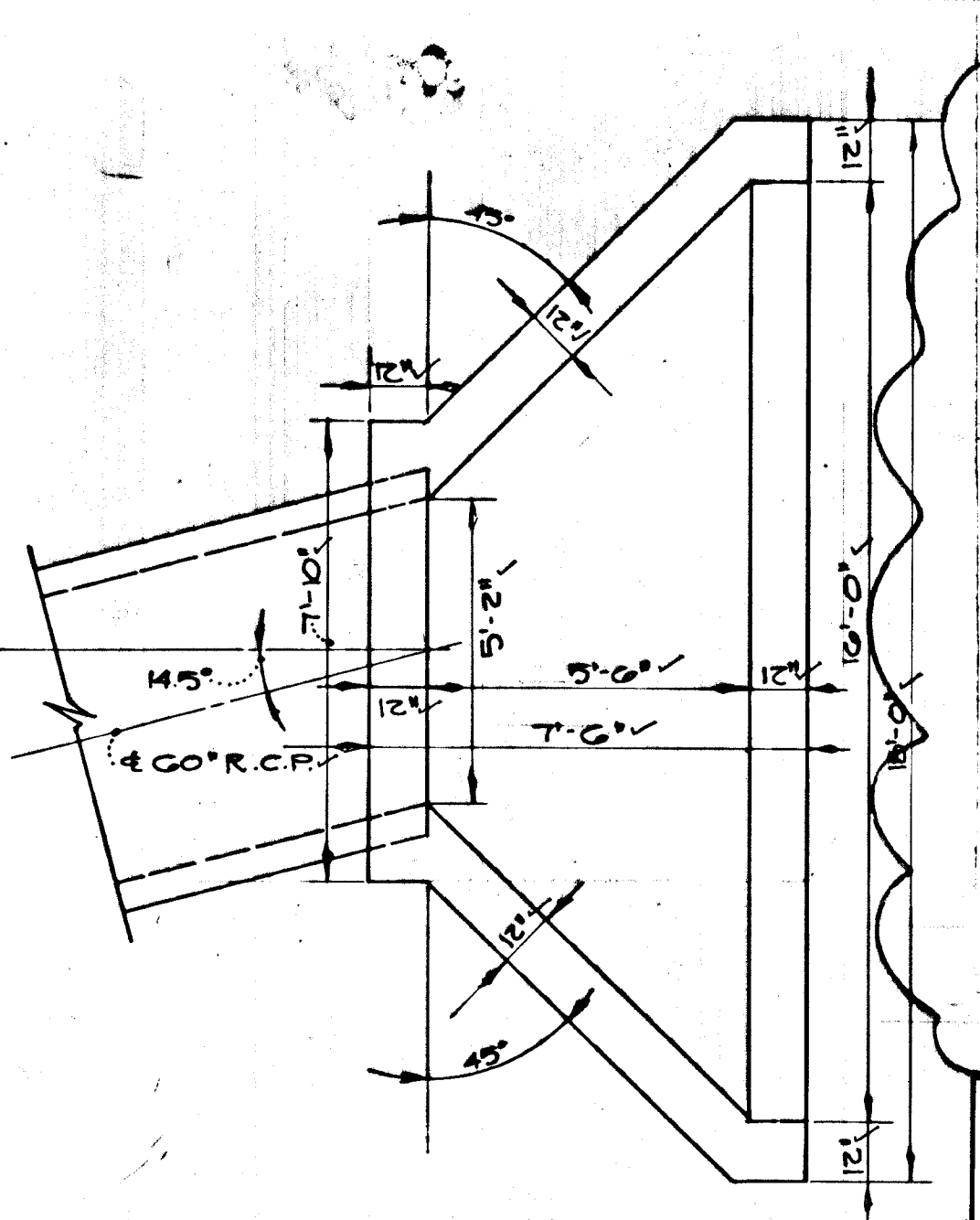
Notes and Details
Benson Business Center
Section 1 Phase 202
Sixth Election District AS-BUILD
Howard County, Maryland

SCALE: AS SHOWN
ZONING: M-1
DATE: July 1990
TAX MAP NO. 43 PAR 587
SHEET 7 of 8

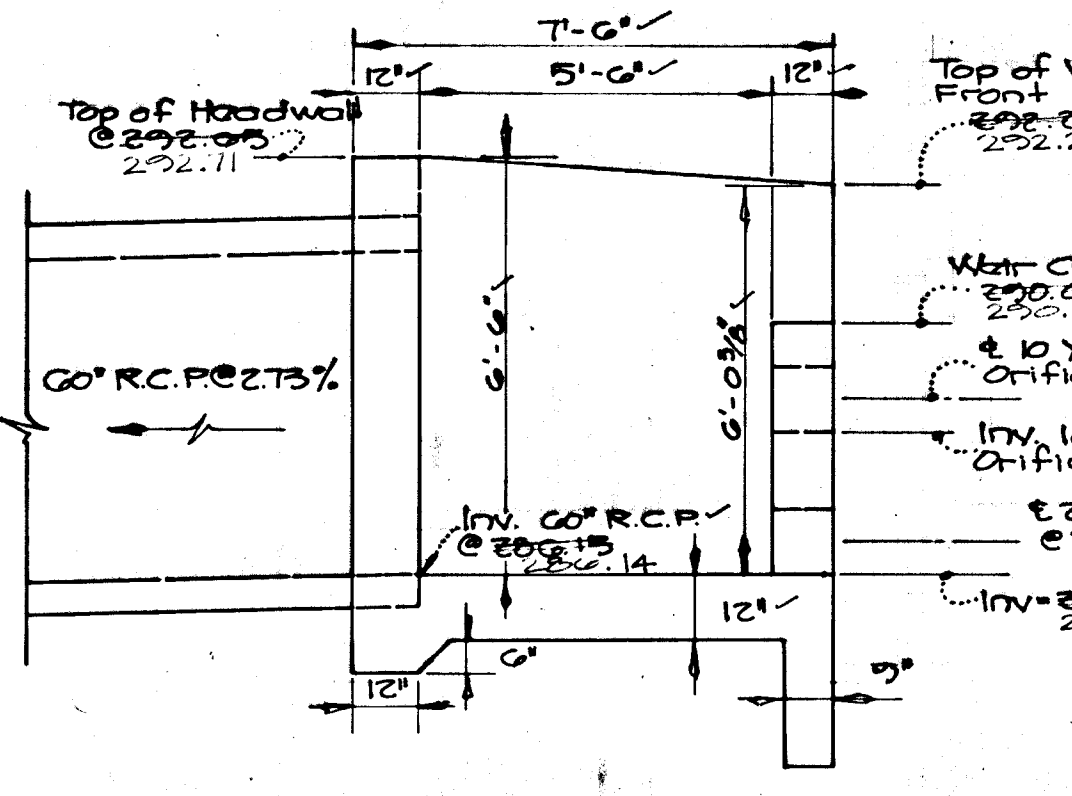
DATE: 7/27/90
DATE: 7/23/90

REVISION
1/2/91 Change Handicap Ramp Detail
G.A.W. BY: [Signature] APPR: [Signature]

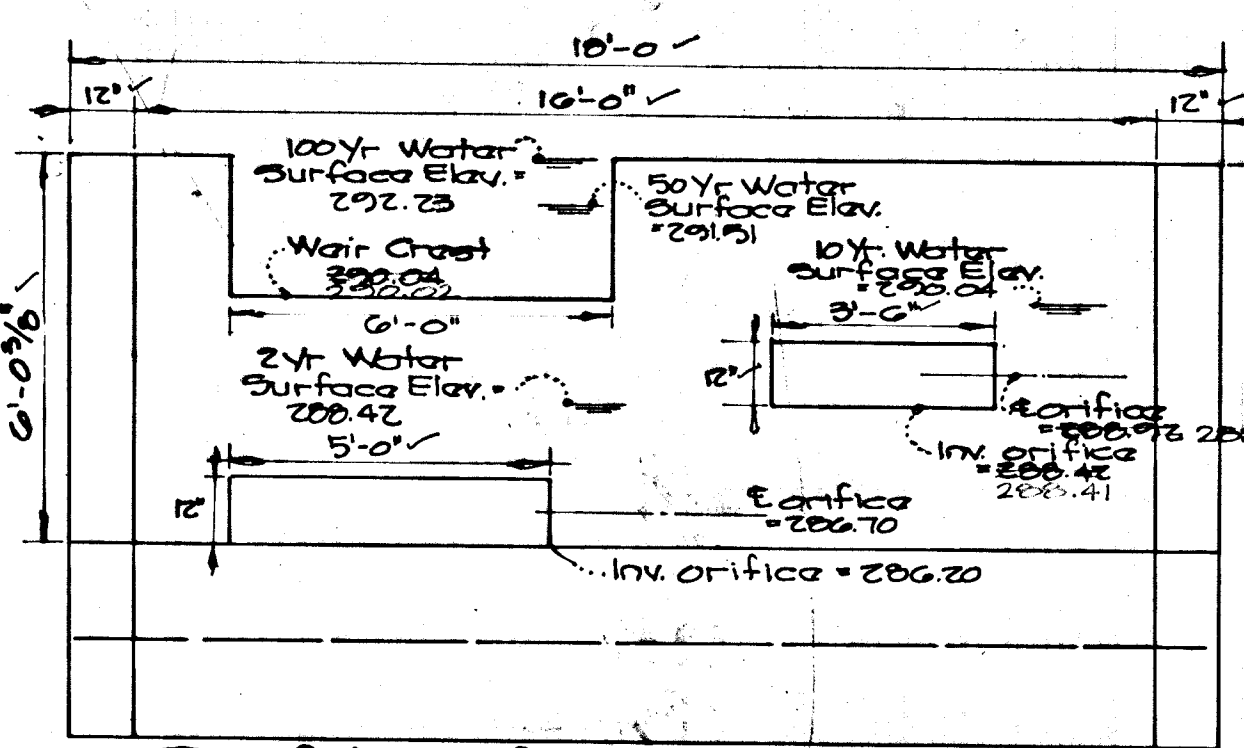
1586



Plan View of Release Structure
Scale: 1"=5'



Profile Through Release Structure
Scale: 1"=5'

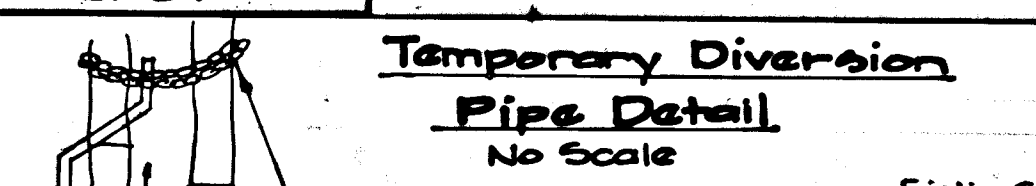


Profile of Release Structure

Structure Schedule table with columns: Structure No., Type, Street Inverts, Top Elevation, Remarks, Centerline Road Station.

Note: Std Details referring to brick structures may also utilize pre-cast structures per Howard County Standards.

For Reinforcement Details for Release Structure at 60' R.C.P., See Details, Sheet 1 of 8.



- I. Description: The work shall consist of installing a flow diversion structure...
II. Material Specifications:
III. Construction Requirements

Approval stamps from Department of Public Works, Bureau of Highways, and Department of Planning and Zoning.

STORM WATER MANAGEMENT POND NOTES

- I. SITE PREPARATION: A. Areas designated for borrow areas, embankment, and structural works shall be cleared...
B. Areas to be covered by pond or reservoir will be cleared...
C. All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir...

- II. EARTH FILL: A. MATERIAL: The fill material shall be taken from approved designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, oversized stones, frozen or other objectionable materials...
B. PLACEMENT: Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 8-inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill...
C. COMPACTION: The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepfoot, rubber tired, or vibratory roller...

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

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

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

- A. CORRUGATED METAL PIPE: 1. MATERIALS: (Steel Pipe) - This pipe and its appurtenances shall be galvanized and fully bituminous coated and shall conform to the requirements of AASHTO Specifications M-190 Type A with watertight coupling bands. Any bituminous coating damaged or otherwise removed shall be placed with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings are commercially available: Mexon, Plasti-Cote, Blac-Klad, and Beth-Cu-Lox. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.

- MATERIALS: (Aluminized Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274-791 with watertight coupling bands or flanges. MATERIALS: (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Coupling bands, anti-seep collars, end section, etc. must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of Zinc Chromate Primer. Hot dip galvanized bolts may be used for connections. The PH of the surrounding soils shall be less than 9 and greater than 4.

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

- 3. BEDDING: The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

- 4. LAYING PIPE: The pipe shall be placed with inside circumferential laps pointing downstream and with the longitudinal laps at the sides. 5. Backfilling shall conform to structural backfill as shown above. 6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

- B. REINFORCED CONCRETE PIPE: 1. MATERIALS: Reinforced concrete pipe shall have a rubber gasket joint and shall equal or exceed ASTM Specification C-361. An approved equivalent is AWWA Specification C-301. 2. BEDDING: All reinforced concrete pipe conduits shall be laid in a concrete bedding for their entire length. This bedding shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 10% of its outside diameter with a minimum thickness of 3", or as shown on the drawings.

- 3. LAYING PIPE: Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. 4. Backfilling shall conform to structural backfill as shown above.

- 5. Other details (anti-seep collars, valves, etc.) shall be shown on the drawings. C. For pipes of other materials, specific specifications shall be shown on the drawings. V. CONCRETE: A. MATERIALS: 1. CEMENT - Normal Portland cement shall conform to latest ASTM Specification C-150. 2. WATER - The water used in concrete shall be clean, free from oil, acid, alkali, scales, organic matter or other objectionable substances.

V. A. (continued)

- I. SAND - The sand used in concrete shall be clean, hard, strong, and durable, and shall be well graded with 100% passing a one quarter inch sieve. Limestone sand shall not be used. 4. COARSE AGGREGATE - The coarse aggregate shall be clean, hard, strong and durable, and free from clay and dirt. It shall be well graded with a maximum size of one-and-one-half (1-1/2) inches.

- 5. REINFORCING STEEL - The reinforcing steel shall be deformed bars of intermediate grade billet steel or rail steel conforming to ASTM Specification A-615. B. DESIGN MIX - The concrete shall be mixed in the following proportions, measured by weight. The water-cement ratio shall be 5-1/2 to 6 U.S. Gals. of water/94-pound bag of cement. The proportion of materials for the trial mix shall be 1:2:3-1/2. The combination of the aggregates may be adjusted to produce a plastic and workable mix that will not produce harshness in placing or honeycombing in the structure.

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

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

- E. REINFORCING STEEL - All reinforcing material shall be free of dirt, rust, scale, oil, paint or any other coatings. The steel shall be accurately placed and securely tied and blocked into position so that no movement of the steel will occur during placement of concrete. F. CONSOLIDATION - Concrete shall be consolidated with internal type mechanical vibrators. Vibration shall be supplemented by spading and hand tamping as necessary to insure smooth and dense concrete along form surfaces, in corners and around embedded items.

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

- H. PROTECTION AND CURING - Exposed surfaces of concrete shall be protected from the direct rays of the sun for at least three days. All concrete shall be kept continuously moist for at least ten days after being placed. Moisture may be applied by spraying or sprinkling as necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compound may also be used. I. PLACING TEMPERATURE - Concrete may not be placed at temperature below 37°F with temperature falling, or 34°F with the temperature rising.

- VI. STABILIZATION: All borrow areas shall be graded to provide drainage and left in a slightly condition. All exposed surfaces of the embankment, spillover, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing, and mulching (if required) in accordance with the vegetative treatment specifications or as shown on the accompanying drawings. VII. EROSION AND SEDIMENT CONTROL: Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures to be employed during the construction process.

7. We certify that all development and/or construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of 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: William J. Roberts, Date: 7/16/90

Reviewed for HOWARD S.C.D. Name: James M. Hall, Date: 7/15/90. THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. Date: 7/15/90.

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. Date: 7-16-90.



Project summary table with columns: Scale (AS Shown), Zoning (Newtown M-1), G.L.W. File No. (89035), Date (July 1990), Tax Map No. (49 R-587), Sheet (8 of 8). Prepared for: Benson Business Center, Section 1, Sixth Election District, AS-BUILT, Phase 202, Howard County, Maryland.

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