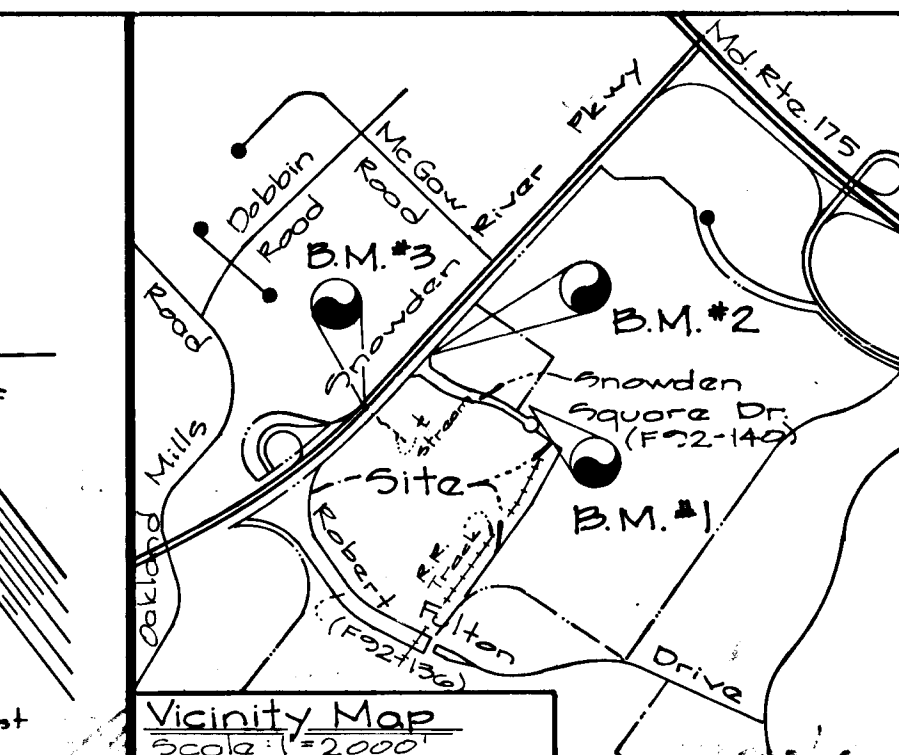
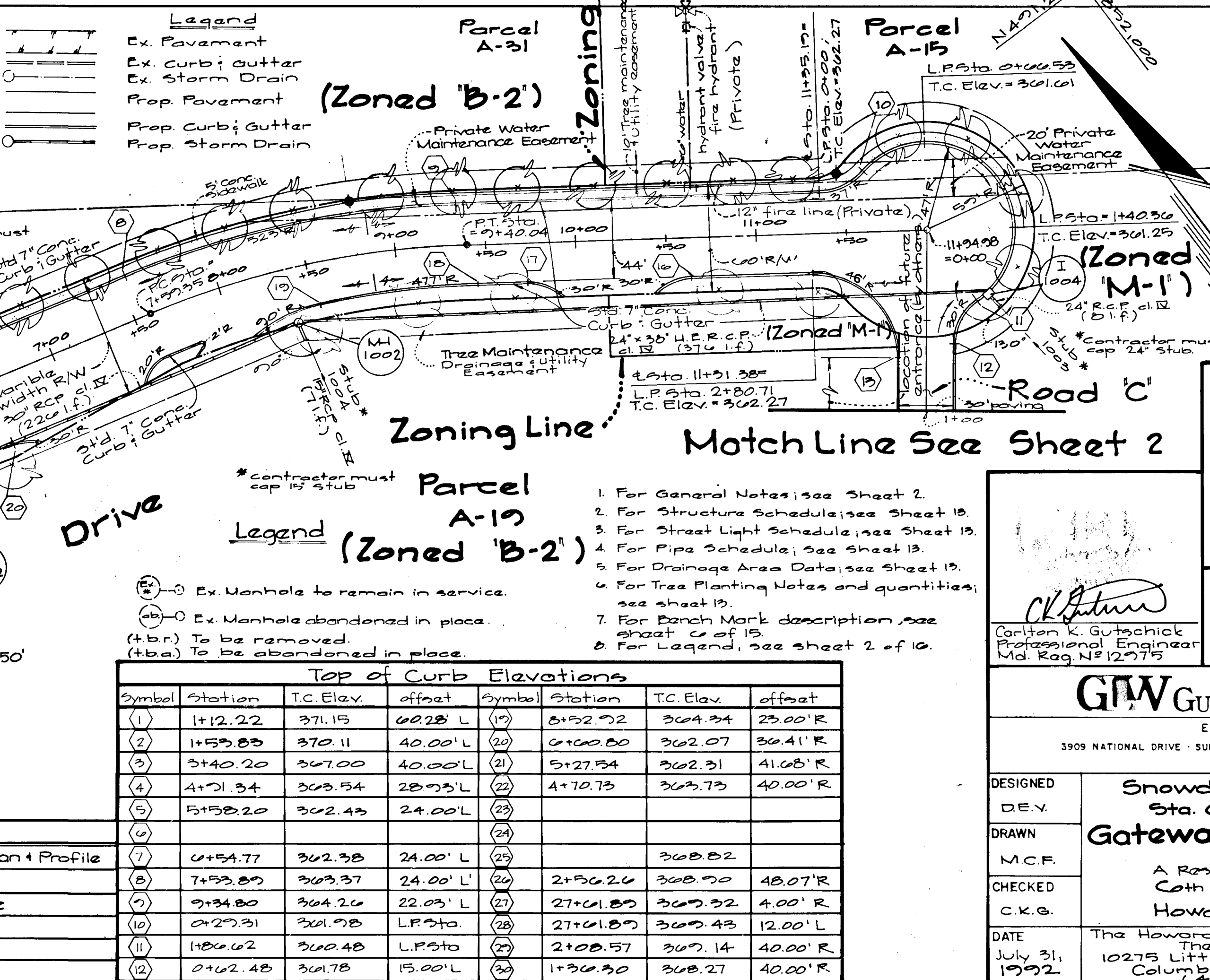
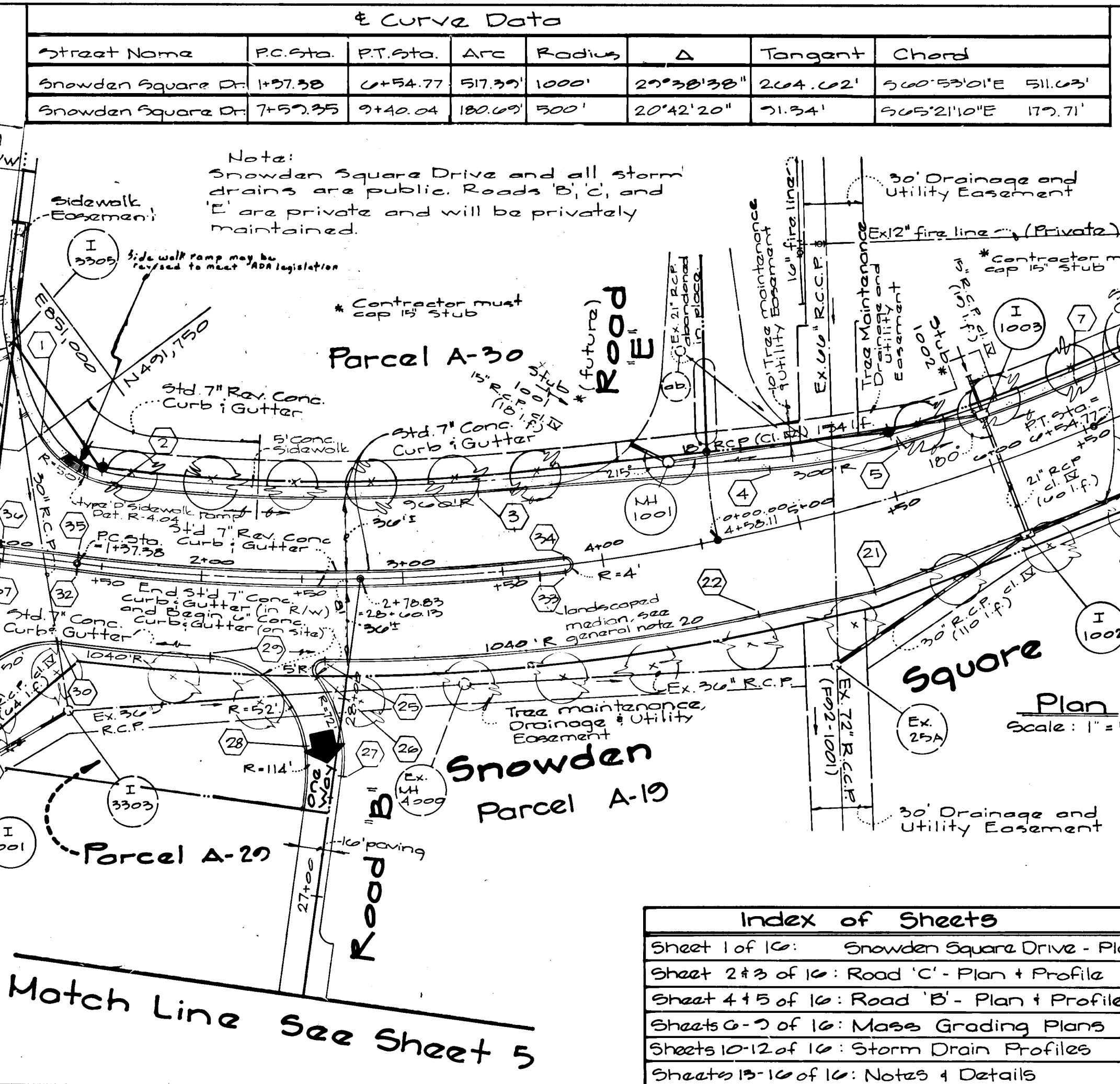
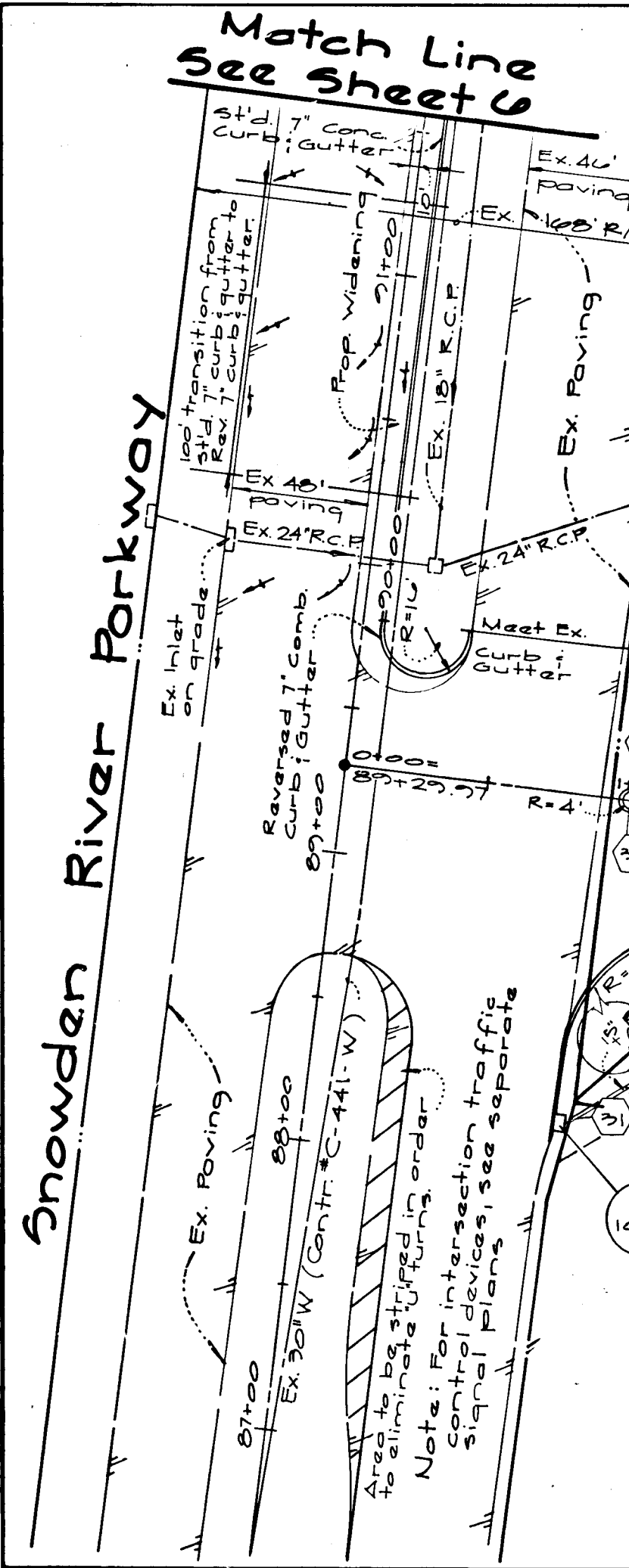
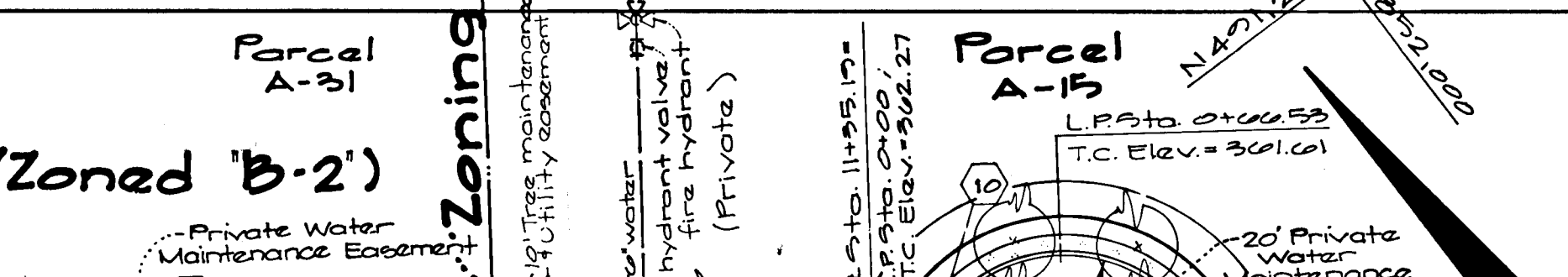
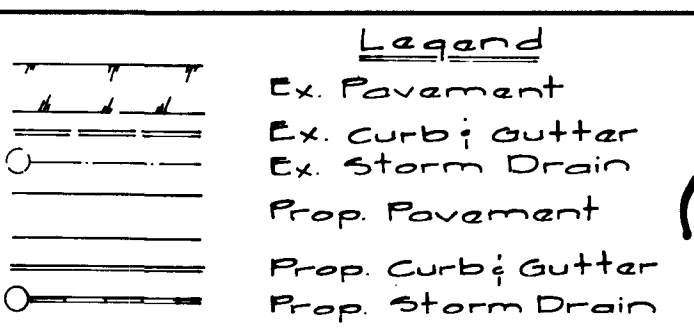


1158



Curve Data

Street Name	P.C. Sta.	P.T. Sta.	Arc	Radius	Δ	Tangent	Chord
Snowden Square Dr	1+57.38	0+54.77	517.35'	1000'	20°38'38"	204.02'	500°53'01"E 511.03'
Snowden Square Dr	7+57.95	9+40.04	180.09'	300'	20°42'20"	71.34'	505°21'10"E 173.71'



Approved Department of Public Works

Clark
Chief, Land Development DIV/MK/1038

Olson M. Sangam
Chief, Bureau of Highways

William J. Kelly
Chief, Bureau of Engineering

Approved Department of Planning and Zoning

William J. Kelly
Chief, Division of Community Planning and Land Development

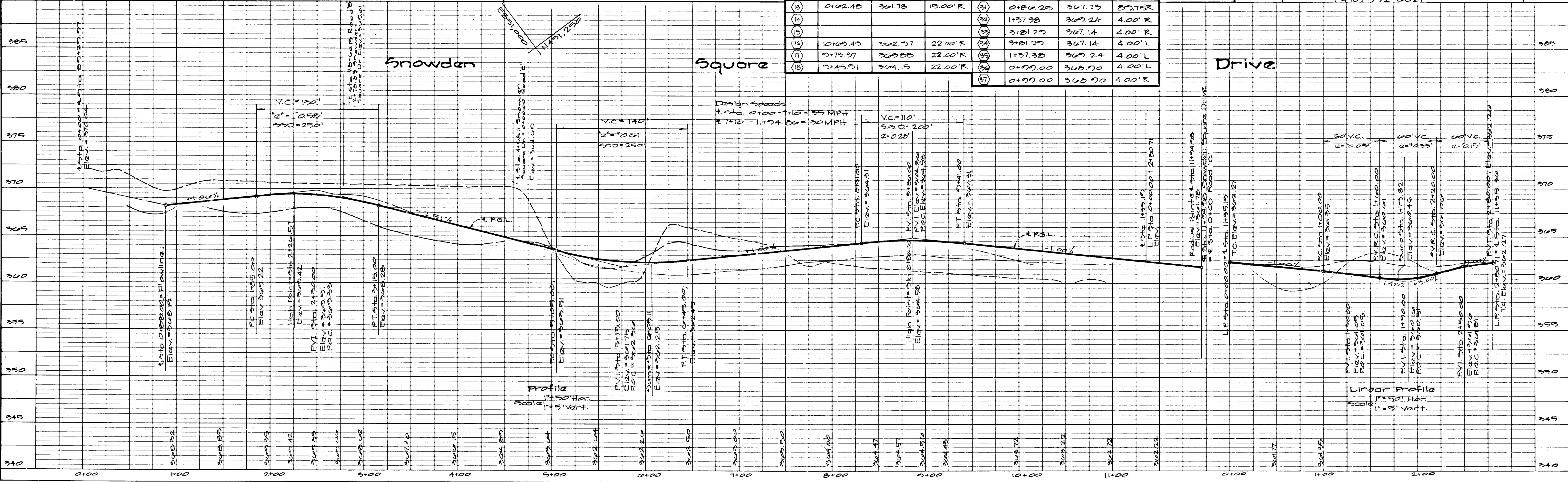
- Legend**
- For General Notes, see Sheet 2.
 - For Structure Schedule, see Sheet 13.
 - For Street Light Schedule, see Sheet 13.
 - For Pipe Schedule, see Sheet 13.
 - For Drainage Area Data, see Sheet 13.
 - For Tree Planting Notes and quantities, see sheet 13.
 - For Bench Mark description, see sheet 2 of 15.
 - For Legend, see sheet 2 of 15.

TOP OF CURB ELEVATIONS

Symbol	Station	T.C. Elev.	offset	Symbol	Station	T.C. Elev.	offset
(1)	1+12.22	371.15	0.28' L	(17)	8+52.72	364.34	23.00' R
(2)	1+59.85	370.11	40.00' L	(20)	0+00.00	362.07	36.41' R
(3)	3+40.20	367.00	40.00' L	(21)	5+27.54	362.31	41.68' R
(4)	4+21.34	363.54	28.75' L	(22)	4+70.73	363.73	40.00' R
(5)	5+58.20	362.43	24.00' L	(23)			
(6)				(24)			
(7)	0+54.77	362.38	24.00' L	(25)			
(8)	7+57.95	363.37	24.00' L	(26)	2+56.26	368.90	48.07' R
(9)	9+34.80	364.26	22.03' L	(27)	2+01.85	367.92	4.00' R
(10)	0+27.31	361.78	L.P. Sta.	(28)	2+01.85	367.43	12.00' L
(11)	1+04.62	360.48	L.P. Sta.	(29)	2+08.57	367.14	40.00' R
(12)	0+62.48	361.78	15.00' L	(30)	1+36.30	368.27	40.00' R
(13)	0+62.48	361.78	15.00' R	(31)	0+86.25	367.73	87.75' R
(14)				(32)	1+37.38	367.24	4.00' R
(15)				(33)	3+81.27	367.14	4.00' R
(16)	10+63.47	362.77	22.00' R	(34)	3+81.27	367.14	4.00' L
(17)	7+73.37	363.88	22.00' R	(35)	1+37.38	367.24	4.00' L
(18)	7+45.31	364.15	22.00' R	(36)	0+07.00	368.70	4.00' L
(19)				(37)	0+07.00	368.70	4.00' R

Index of Sheets

Sheet 1 of 16: Snowden Square Drive - Plan & Profile
Sheet 2 & 3 of 16: Road 'C' - Plan & Profile
Sheet 4 & 5 of 16: Road 'B' - Plan & Profile
Sheets 6-7 of 16: Mass Grading Plans
Sheets 10-12 of 16: Storm Drain Profiles
Sheets 13-16 of 16: Notes & Details



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 DE.V. **Snowden Square Drive**
Sta. 0+00 - Sta. 11+04.00

DRAWN M.C.F. **Gateway Commerce Center**

CHECKED C.K.G. Parcels A-15 thru A-31
A Resubdivision of Parcel A-11
Cath Election District
Howard County, Maryland

DATE July 31, 1992 The Howard Research & Development Corp.
The Row Building
10275 Little Patuxent Parkway
Columbia, MD 21044

SCALE As Shown
DRAWING 1 of 16
JOB NO. 91-053

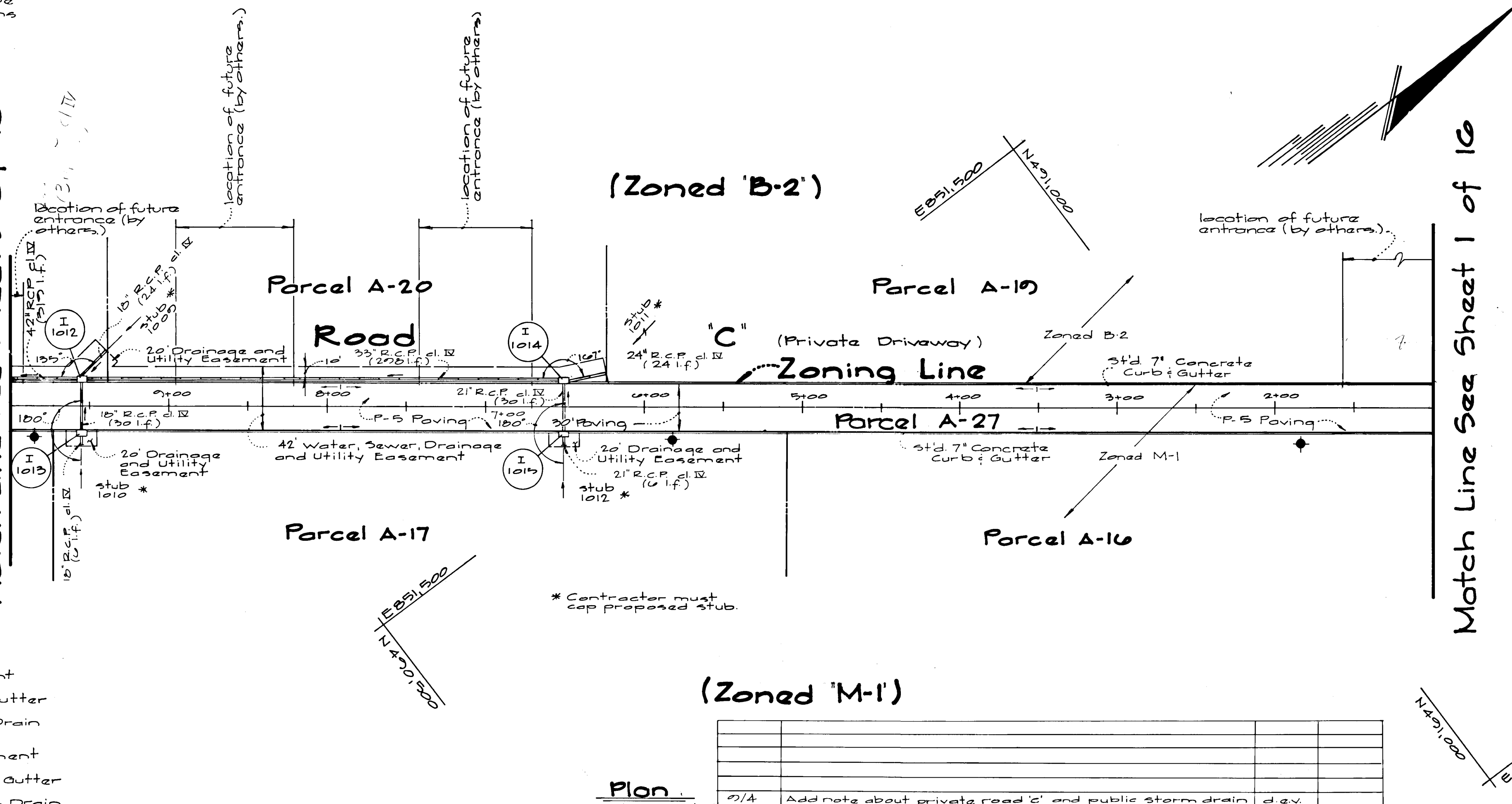
Note:
Road 'C' is a private road and will be privately maintained. All Storm Drains shown are public.

Match Line See Sheet 3 of 16

Match Line See Sheet 1 of 16

- Legend**
- Ex. Pavement
 - Ex. Curb & Gutter
 - Ex. Storm Drain
 - Prop. Pavement
 - Prop. Curb & Gutter
 - Prop. Storm Drain

- Legend**
- Ex. Pavement
 - Ex. Curb & Gutter
 - Ex. Storm Drain
 - Prop. Pavement
 - Prop. Curb & Gutter
 - Prop. Storm Drain
 - Street Light
 - Street Tree



Plan
Scale: 1"=50'

NO.	DATE	DESCRIPTION	BY	APP'D.
1/1		Add note about private road 'C' and public storm drain	d.e.v.	
		Revision		

Approved Department of Public Works
John M. Pennington
 Chief, Land Development Division
 M.K. Data

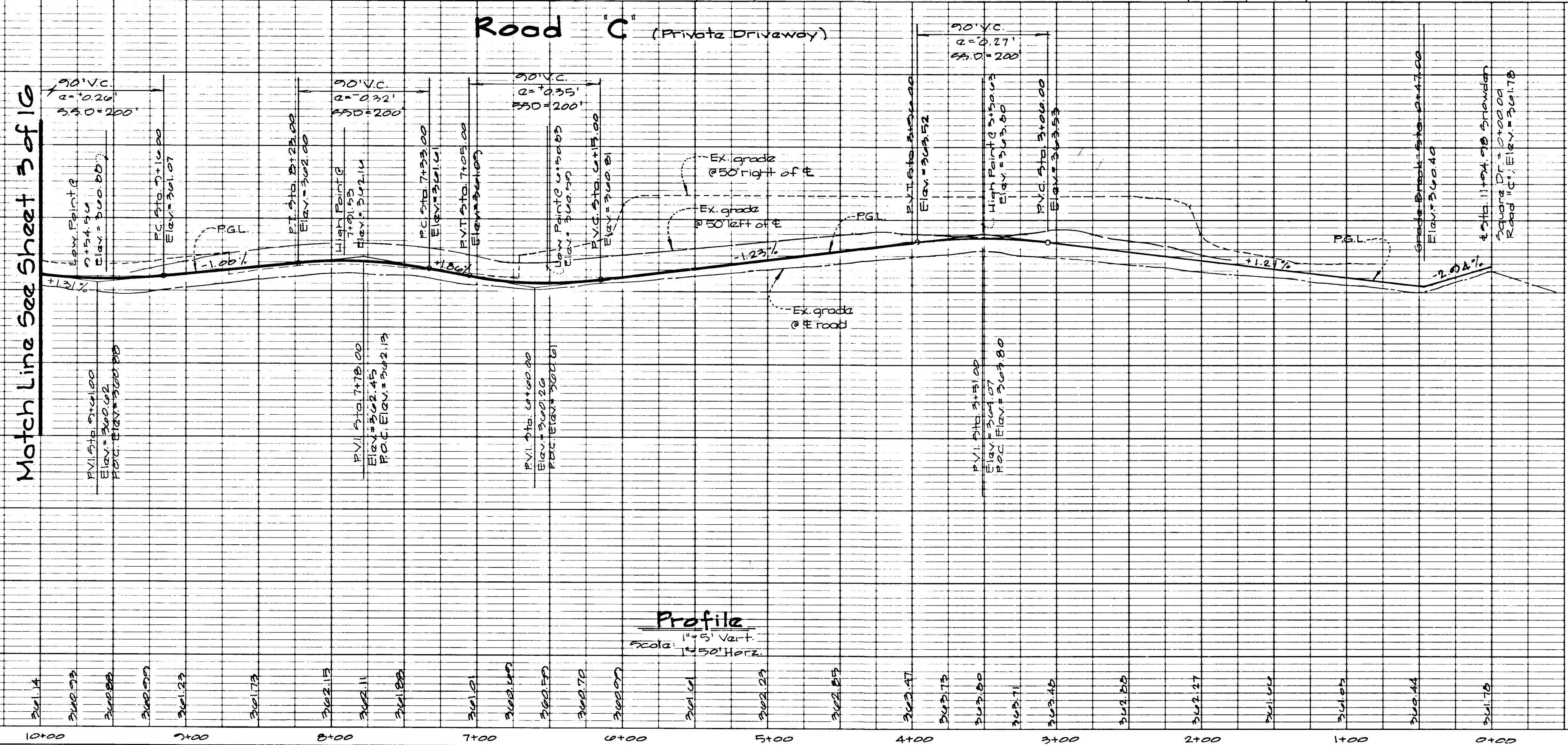
Approved Department of Planning and Zoning
Emma J. Hornum
 Chief, Division of Community Planning and Land Development
 Data

Approved Department of Engineering
William S. Rely
 Chief, Bureau of Engineering
 Data

GTW GUTSCHICK LITTLE & WEBER, P.A.
 ENGINEERS, PLANNERS, SURVEYORS
 3809 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20866
 TEL.: (301) 421-4024

DESIGNED D.E.V.	Road 'C' Sta. 0+00 - Sta. 10+00	SCALE As Shown
DRAWN M.C.F.	Gateway Commerce Center Parcels A-15 thru A-21 A Resubdivision of Parcel A-11 Cath Election District	DRAWING 2 of 16
CHECKED C.K.G.	Howard County, Maryland	
DATE July 21, 1992	The Howard Research & Development Corp. The Rowe Building 10275 Little Patuxent Parkway Columbia, Maryland 21044 (410) 552-1027	JOB NO. 91-055

Match Line See Sheet 3 of 16



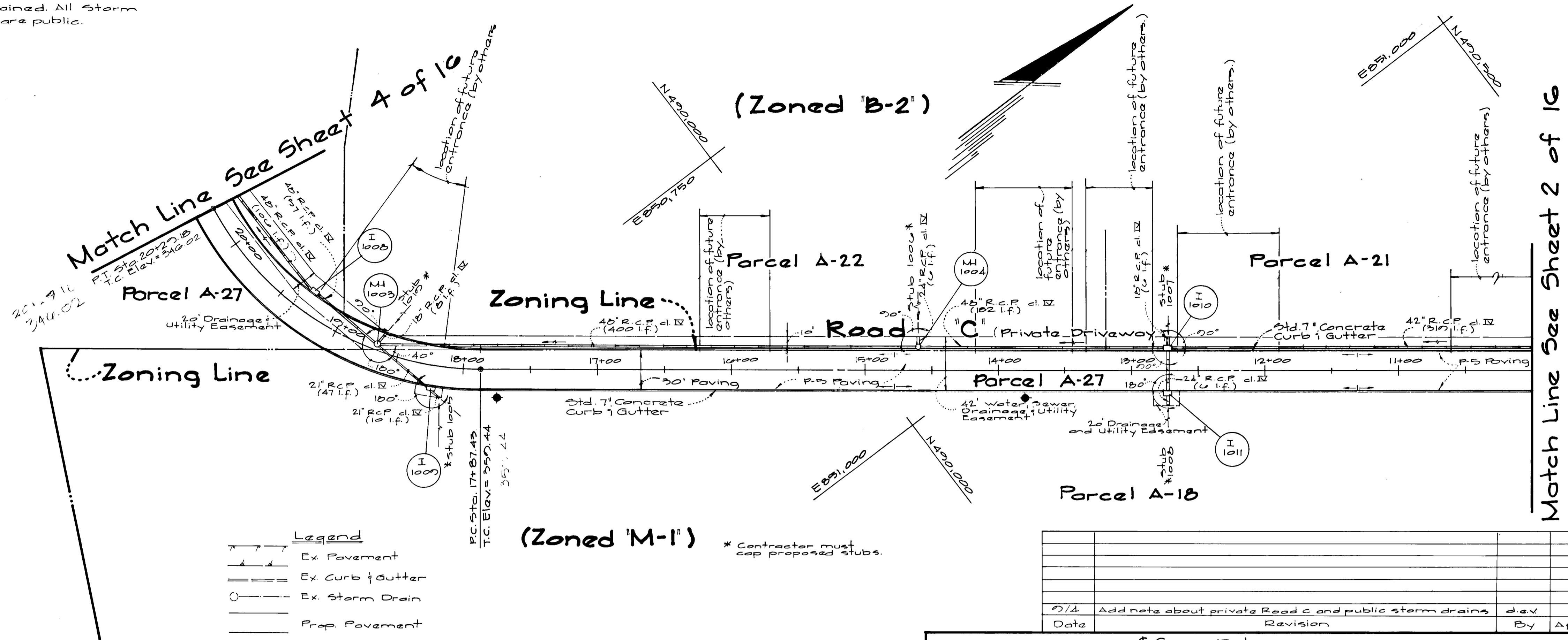
Profile
Scale: 1"=5' Vert.
1"=50' Horiz.

General Notes

1. All storm drain & paving shall be constructed in accordance with the latest edition & specifications of Howard County Design Manual Vol. III.
2. Types of storm drainage refer to the Standard Details of Howard County Design Manual Vol. III.
3. Trench compacting for storm drains within road or driveway limits shall be in accordance with the Howard County Design Manual Vol. III. Trench bedding shall be for all storm drains except where shown otherwise.
4. Information concerning underground utilities was obtained from available records, but the contractor must locate the exact location and verify the main by digging test pits by hand at all utility crossings. Verify all crossings at least 10' in advance.
5. All utility companies shall be notified 24 hours in advance of construction.
6. All traffic services, parking, & signing to be done in accordance with Howard County Uniform Traffic Control Device & Legend.
7. Road and crest vertical curves were designed with Howard County Design Manual Vol. III.
8. The contractor and developer shall contact the contractor inspection agency 24 hours in advance of commencement of work.
9. Design speed - See Chart A-14 - Zoning: M-2/B-1
10. Stormwater management provided by an ex. regional facility on site where adequacy was studied in design plans prepared by Whitman, Requardt & Associates, Inc.
11. Stopping sight distance is shown in accordance with Howard County Design Manual Vol. III, Fig. 2-2.1.
12. Street lights shall be provided at the locations shown in the street lighting schedule shown on these plans and in accordance with Vol. III of the Howard County Design Manual.
13. See sheet 13 of 16 for street tree notes and information.
14. Contractor must remove abandoned pipes within R/W's and easements being dedicated to Howard County.
15. Existing utilities were obtained from as-built plans prepared by Fisher, Collins & Carter (March, 1992). There may be other existing pipes which are not shown on these plans. If additional pipes are found, contact the engineer.
16. All existing drainage structures in the public right of way or shown within an easement are granted to Howard County with this contract. However, all existing utilities not being used within the County Right of Way shall be abandoned and removed.
17. Prior to dedication all Howard County agencies will perform their own investigation of the site as required for their acceptance.
18. Existing utilities shown on these plans were located by a survey prepared by Fisher, Collins & Carter, Inc. (March, 1992).
19. All storm drain field connections shall be performed in accordance with standard detail 20-2.01.
20. Howard County is responsible for the maintaining of grass & trees in the median, other landscaping will be maintained by others.

15811

Note:
Road 'C' is private and will be privately maintained. All Storm Drains shown are public.



- Legend**
- Ex. Pavement
 - Ex. Curb & Gutter
 - Ex. Storm Drain
 - Prop. Pavement
 - Prop. Curb & Gutter
 - Prop. Storm Drain

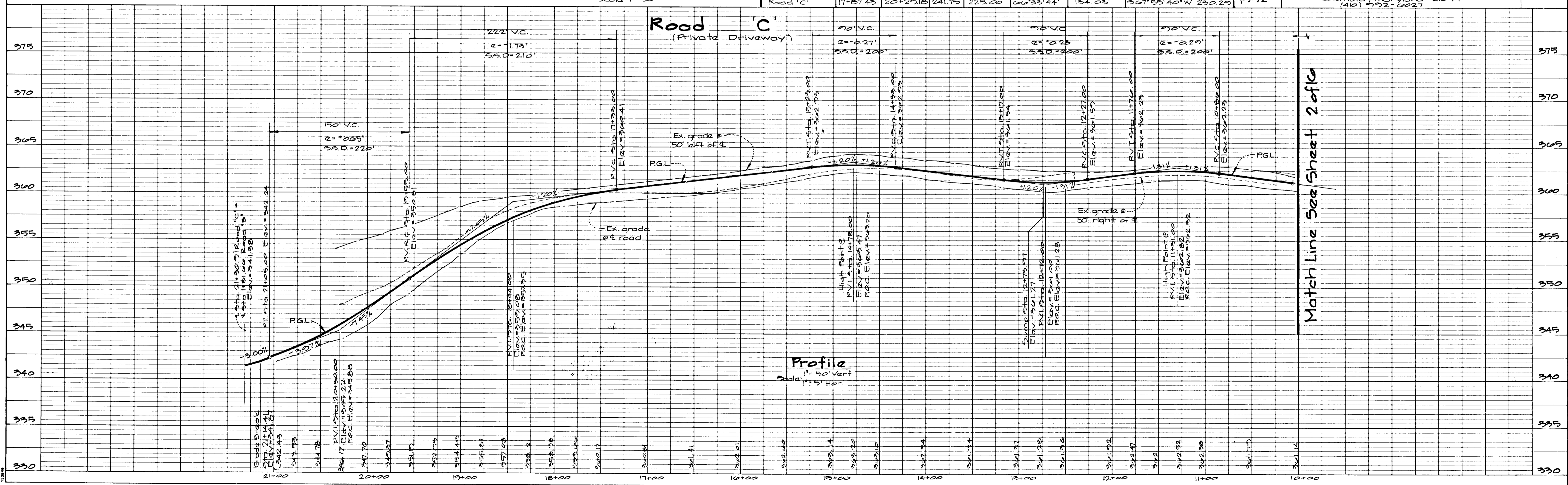
* Contractor must cap proposed stubs.

Revision

No.	Description	Date	By	App'r
1	Add note about private Road C and public storm drains	day		

Curve Data

Street Name	R.C. Sta	P.T. Sta	Arc Radius	Δ	Tangent	Chord
Road 'C'	17+87.43	20+29.16	241.75	66°33'44"	134.03'	267°55'40" W 230.29'

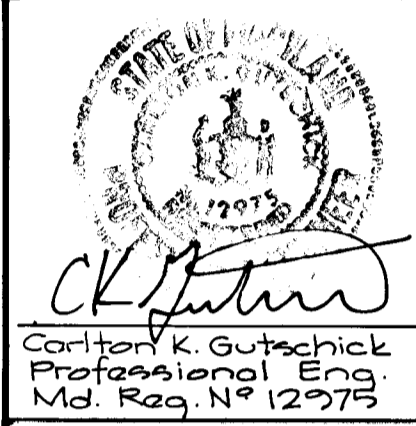


Approved
Department of Public Works
[Signature] 9/3/92
Chief, Land Development Division
Mk. Data

Approved
Department of Highways
[Signature] 8/24/92
Chief, Bureau of Highways
Data

Approved
Department of Engineering
[Signature] 9-3-92
Chief, Bureau of Engineering
Data

Approved
Department of Planning & Zoning
[Signature] 9/8/92
Chief, Division of Community
Planning and Land Development
JA Data



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

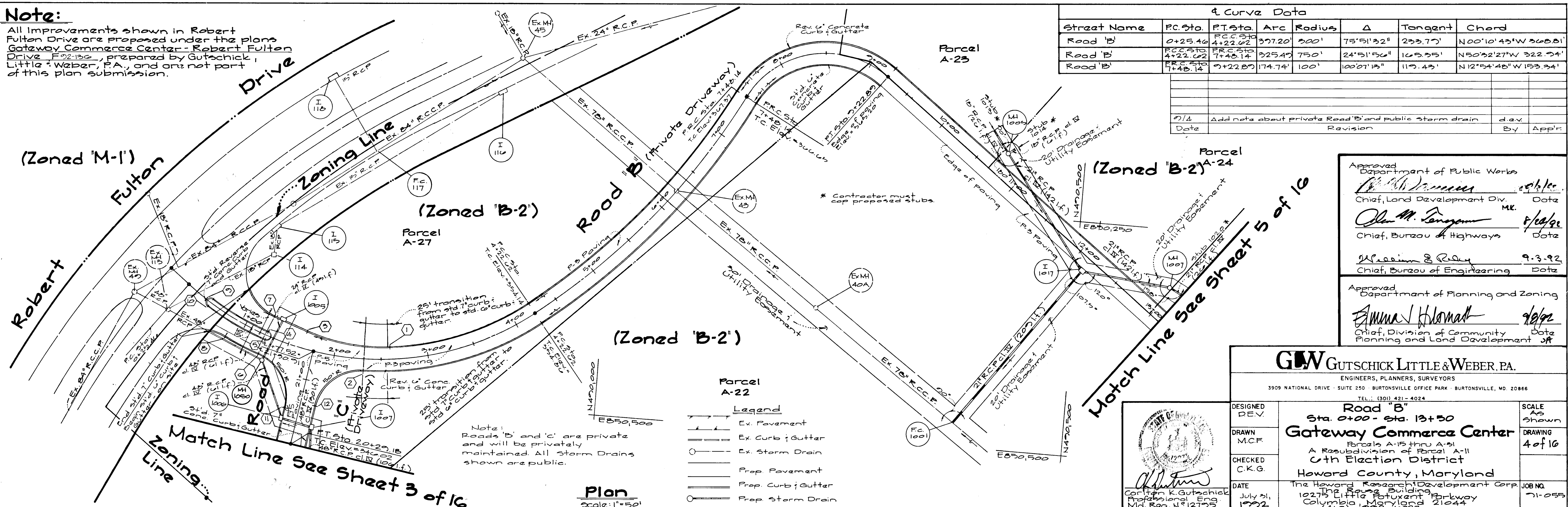
DESIGNED DE.V. As Shown
DRAWN M.C.F. DRAWING 3 of 16
CHECKED C.K.G.
DATE July 31, 1992
JOB NO. 91-055

Road 'C'
Sta. 10+00 - Sta. 21+30.91
Gateway Commerce Center
Parcels A-15 thru A-31
A Resubdivision of Parcel A-11
6th Election District
Howard County, Maryland
The Howard Research & Development Corp.
The Plaza Building
10275 Little Potomac Parkway
Columbia, Maryland 21044
(AID) 522-6227

1/58

Note:

All Improvements shown in Robert Fulton Drive are proposed under the plans Gateway Commerce Center - Robert Fulton Drive, prepared by Gutschick, Little & Weber, P.A., and are not part of this plan submission.



Curve Data

Street Name	P.C. Sta.	P.T. Sta.	Arc Radius	Δ	Tangent	Chord
Road 'B'	0+25.46	4+22.02	377.20'	500'	75°51'32"	233.75'
Road 'B'	4+22.02	7+48.14	325.47'	750'	24°51'56"	165.55'
Road 'B'	7+48.14	9+22.89	174.74'	100'	100°01'13"	117.43'

Approved Department of Public Works
[Signature] Chief, Land Development Div.
[Signature] Chief, Bureau of Highways
[Signature] Chief, Bureau of Engineering

Approved Department of Planning and Zoning
[Signature] Chief, Division of Community Planning and Land Development

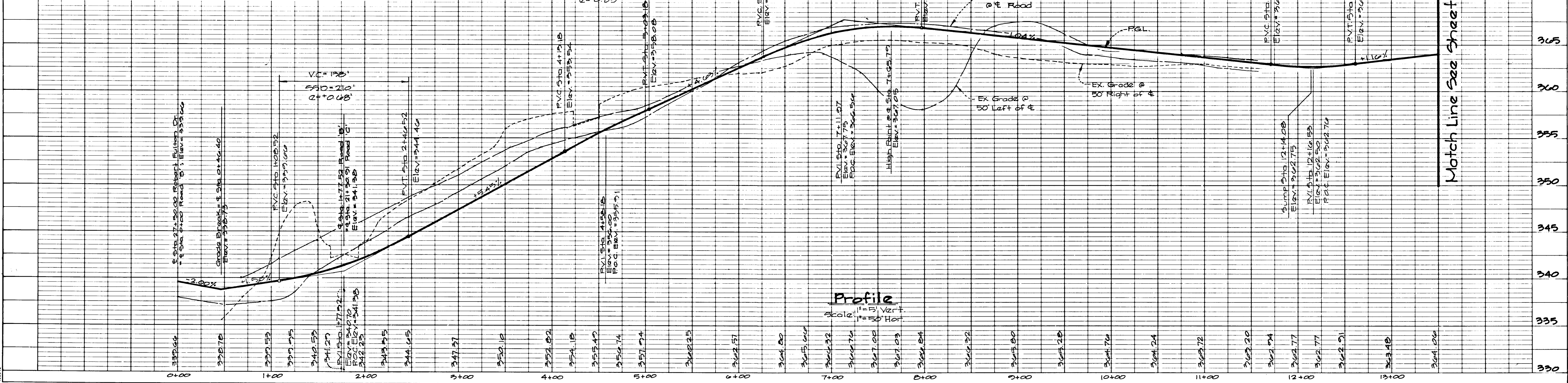
GLW GUTSCHICK LITTLE & WEBER, P.A.
 ENGINEERS, PLANNERS, SURVEYORS
 3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20866
 TEL.: (301) 431-4024

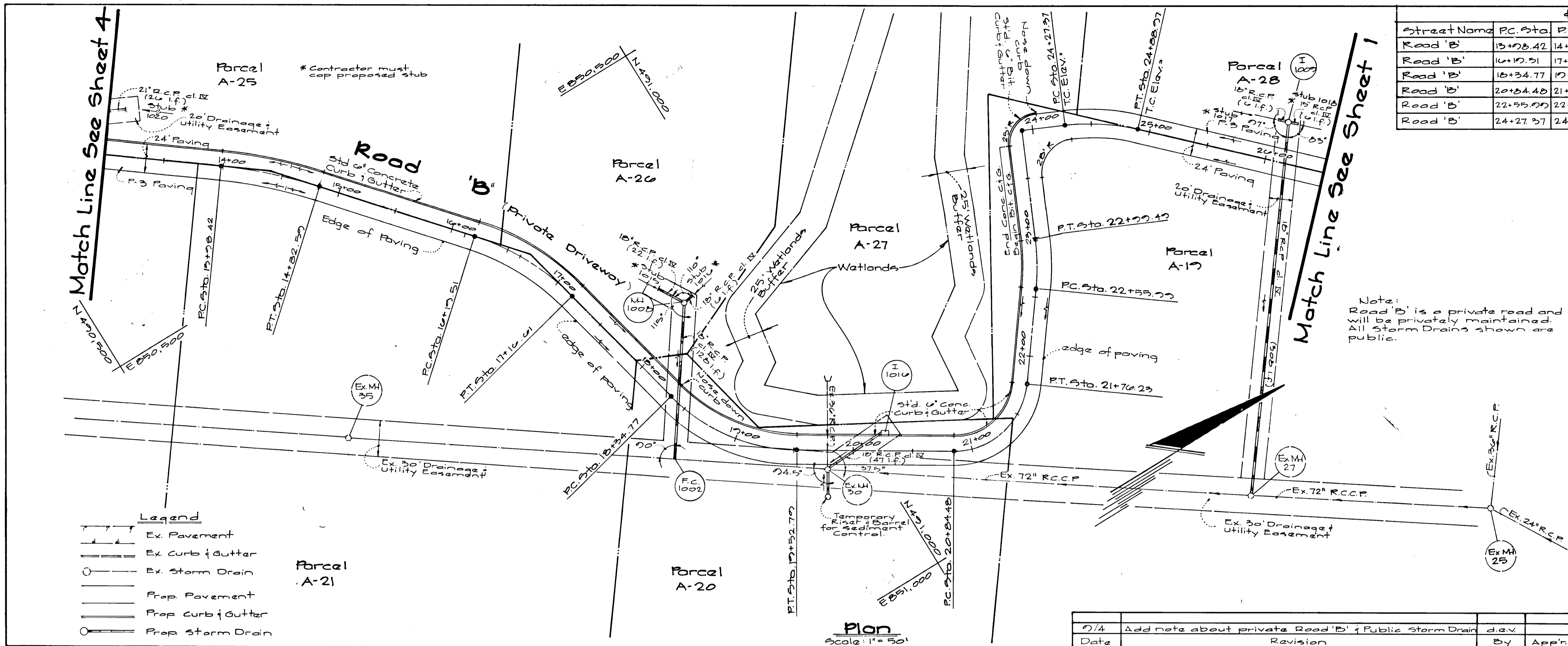
DESIGNED DEV: Road "B" Sta. 0+00 - Sta. 13+50
DRAWN M.C.F.: Gateway Commerce Center
 Parcels A-15 thru A-51
 A Resubdivision of Parcel A-11
 4th Election District
 Howard County, Maryland
 The Howard Research Development Corp.
 10275 The Potomac Parkway
 Columbia, Maryland 21044
 (410) 252-6827

CHECKED C.K.G.:
DATE: July 21, 1992
SCALE: As Shown
DRAWING: 4 of 16
JOB NO.: 71-055

Top of Curb Elevations

Symbol	Station	T.C. Elev.	offset	Symbol	Station	T.C. Elev.	offset
(1)	2+60.20	345.34	12'L	(7)	1+24.03	337.85	21'L
(2)	2+31.08	344.03	12'R	(8)	0+80.55	337.20	21'R
(3)	1+05.40	340.98	18.52'L	(9)	0+55.00	337.31	5'L
(4)	1+24.03	340.37	5'L	(10)	0+55.00	337.31	5'R
(5)	1+24.03	340.37	5'R	(11)	20+05.05	344.08	15'L
(6)	1+24.03	337.86	21'R	(12)	20+74.79	343.65	15'R





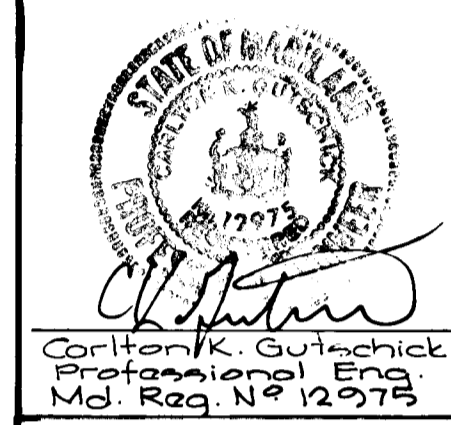
Street Name	PC Sta.	PT Sta.	Arc	Radius	Δ	Tangent	Chord
Road 'B'	13+28.42	14+22.50	84.17'	400.00'	12°03'24"	42.24'	N43°10'30"E 84.02'
Road 'B'	16+10.51	17+16.61	97.10'	200.00'	27°49'02"	49.53'	N63°06'43"E 96.15'
Road 'B'	18+34.77	19+52.00	118.02'	150.00'	43°24'50"	62.26'	N54°28'47"E 115.00'
Road 'B'	20+24.48	21+76.23	91.76'	62.00'	84°47'36"	56.61'	N10°27'24"W 85.61'
Road 'B'	22+55.00	22+00.40	43.40'	200.00'	12°27'35"	21.85'	N57°05'01"W 43.41'
Road 'B'	24+27.37	24+86.97	61.60'	175.00'	20°10'01"	31.12'	N34°46'10"E

Approved Department of Public Works
John P. ... 9/1/92
 Chief, Land Development Division Date
 M.K.

Sh. M. Taylor 9/3/92
 Chief, Bureau of Highways Date

William S. Ray 9-3-92
 Chief, Bureau of Engineering Date

Approved Department of Planning & Zoning
Anna Blomquist 9/8/92
 Chief, Division of Community Planning and Land Development Date



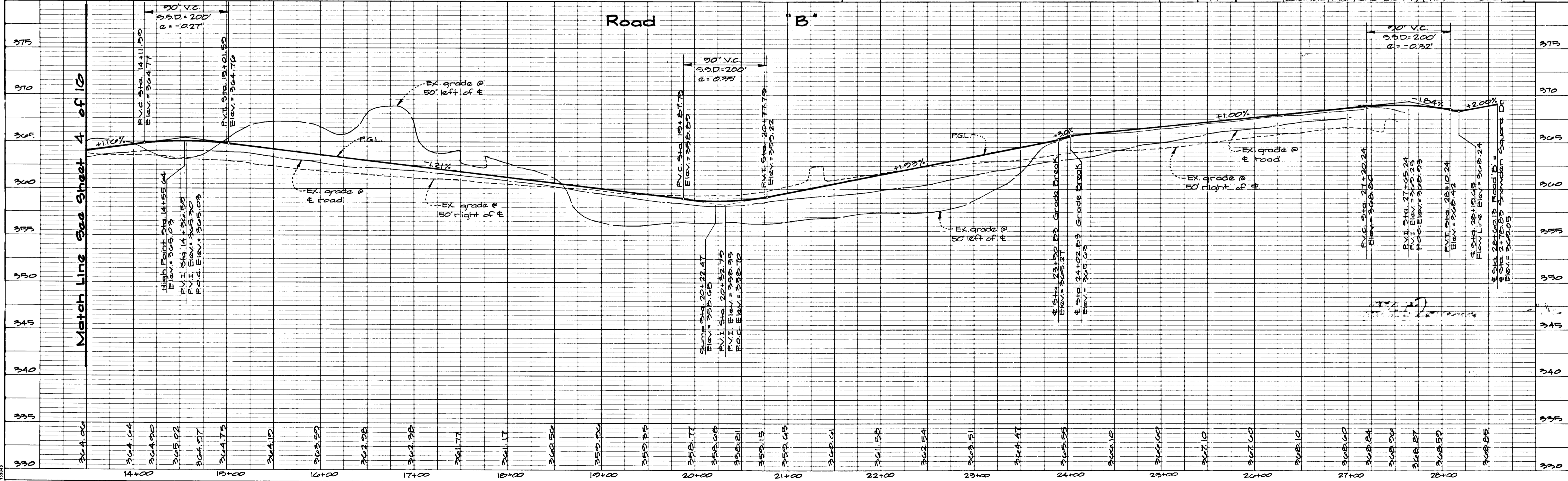
G&W GUTSCHICK LITTLE & WEBER, P.A.
 ENGINEERS, PLANNERS, SURVEYORS
 3509 NATIONAL DRIVE - SUITE 210 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD 20866
 TEL.: (301) 421-4024

DESIGNED DE.V.
 DRAWN M.C.F.
 CHECKED C.K.G.
 DATE July 31, 1992

Road 'B'
 Sta. 13+50 - Sta. 28+60.13
Gateway Commerce Center
 Parcels A-15 thru A-21
 A Resubdivision of Parcel A-11
 6th Election District
 Howard County, Maryland

The Howard Research & Development Corp.
 The Royal Building
 10275 Little Patuxent Parkway
 Columbia, Maryland 21044; (410) 972-0027

SCALE A3 Shown
 DRAWING 5 of 10
 JOB NO. 91-055



Match Line See Sheet 4 of 10

Match Line See Sheet 4 of 10

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.
Ch. Little 5-5-92
 Date

DEVELOPER'S/BUILDER'S CERTIFICATE
 We certify that all development and/or construction 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.
Albert J. Stahl 5-5-92
 Date
 Signature of Developer/Builder

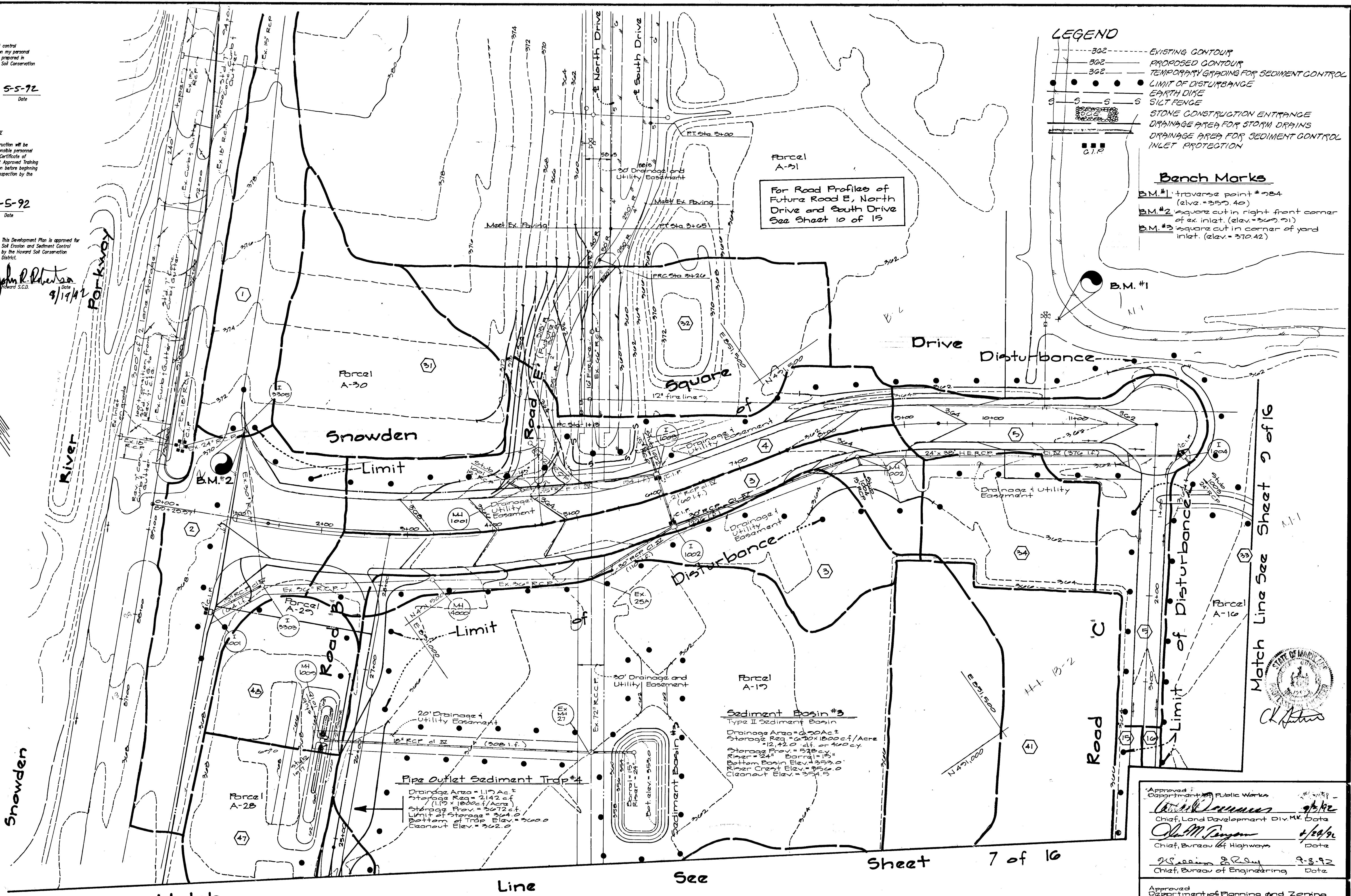
These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.
John R. Peterson 9/14/92
 Date
 U.S. Soil Conservation Service
 This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.

LEGEND

- 302--- EXISTING CONTOUR
- 302--- PROPOSED CONTOUR
- 302--- TEMPORARY GRADING FOR SEDIMENT CONTROL
- LIMIT OF DISTURBANCE
- EARTH DING
- SILT FENCE
- STONE CONSTRUCTION ENTRANCE
- DRAINAGE AREA FOR STORM DRAINS
- DRAINAGE AREA FOR SEDIMENT CONTROL
- INLET PROTECTION

Bench Marks

- B.M. #1 traverse point # 284 (elev. = 357.40)
- B.M. #2 square cut in right front corner of ex. inlet. (elev. = 300.91)
- B.M. #3 square cut in corner of yard inlet. (elev. = 370.42)



For Road Profiles of Future Road E, North Drive and South Drive See Sheet 10 of 15

Sediment Basin #3
 Type II Sediment Basin
 Drainage Area = 0.50 Act
 Storage Req. = 6,700 cu ft / Acre
 = 12,420 cu ft for 400 sq yd
 Storage Prov. = 5,280 cu ft
 Riser = 24" Barrel = 15"
 Bottom Basin Elev. = 353.0
 Riser Crest Elev. = 354.0
 Cleanout Elev. = 354.5

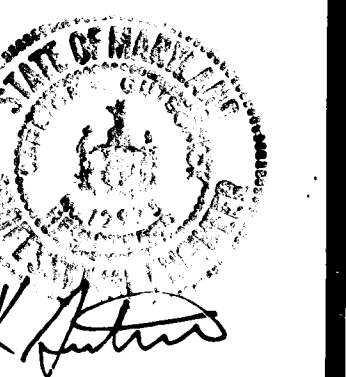
Pipe Outlet Sediment Trap #4
 Drainage Area = 1.19 Act
 Storage Req. = 2,142 cu ft
 (119 x 1800 cu ft / Acre)
 Storage Prov. = 2,072 cu ft
 Limit of Storage = 264.0
 Bottom of Trap Elev. = 360.0
 Cleanout Elev. = 362.0

Approved: Department of Public Works
Ch. Little 9/1/92
 Chief, Land Development Div. MK Data
Ch. Little 4/24/92
 Chief, Bureau of Highways Date
Ch. Little 9-3-92
 Chief, Bureau of Engineering Date

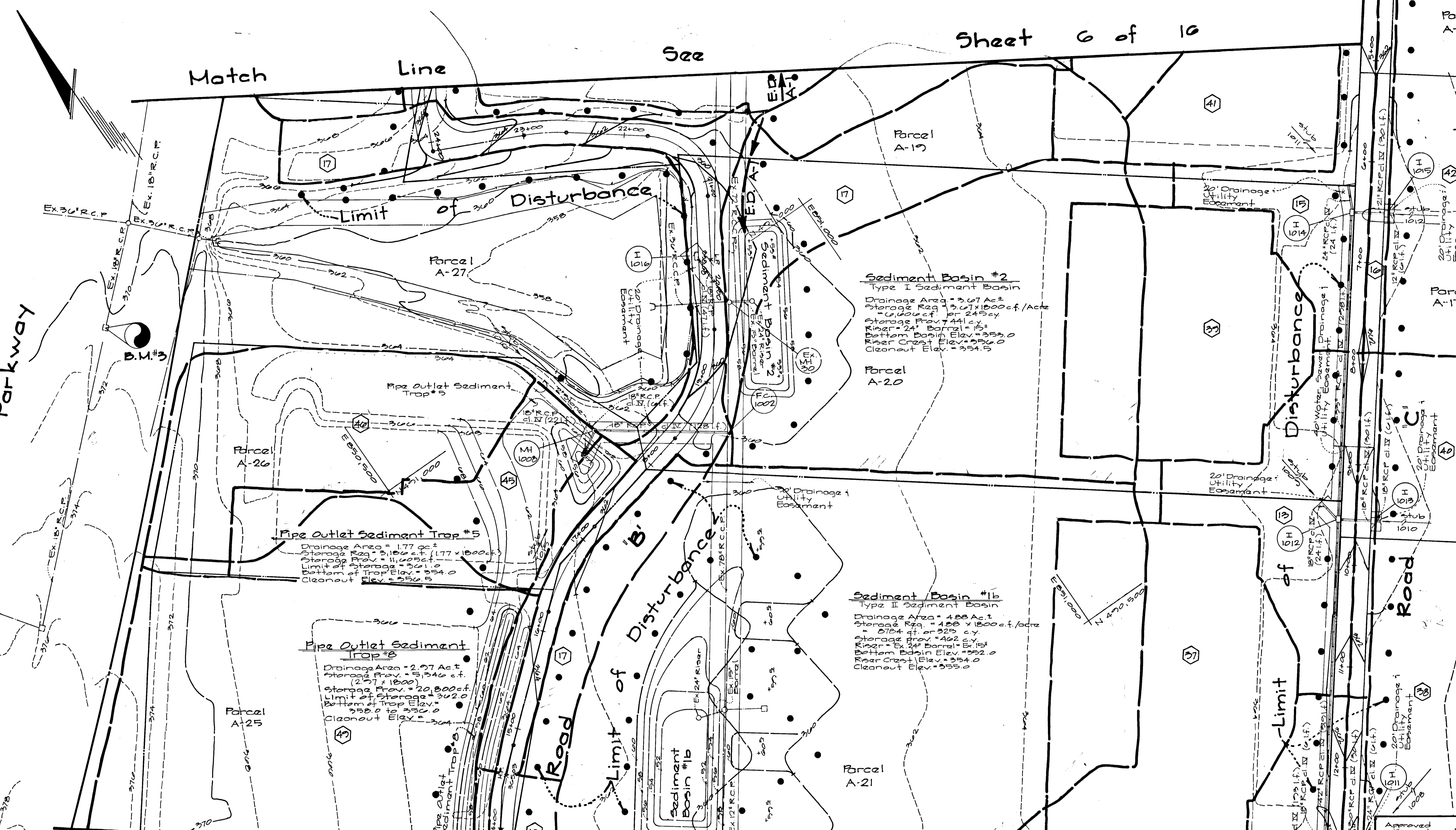
Approved: Department of Planning and Zoning
Ch. Little 9/1/92
 Chief, Division of Community Data Planning and Land Development JA

Match Line See Sheet 7 of 16
 Plan
 Scale 1" = 50'

GLW 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)880-1820 FAX (301)421-4186	PREPARED FOR: The Howard Research & Development Corp. The Rouse Building 10275 Little Patuxent Parkway Columbia, Maryland 21044 (301) 972-6027	Mass Grading Plan Gateway Commerce Center Parcels A-15 thru A-31 A Resubdivision of Parcel A-11 4th Election District Howard County, Maryland	DES: DEV DRN: MCF CHK: CKG	SCALE: As Shown DATE: July 31, '92	ZONING: M-1/B-2 TAX MAP No.: 42	G.L.W. FILE No.: 91-055 SHEET: 7 of 16
	DATE: 8/18 REVISION: Add 2" stone to sub #1017 + 1018 per #200 comment BY: MCF APPR.:					



Match Line See Sheet 9 of 16



Sheet 6 of 16

Match Line See Sheet 9 of 16

- LEGEND**
- 362 --- EXISTING CONTOUR
 - 362 --- PROPOSED CONTOUR
 - 362 --- TEMPORARY GRADING FOR SEDIMENT CONTROL
 - ● ● ● ● LIMIT OF DISTURBANCE
 - — — — — EARTH DIKE
 - — — — — SILT FENCE
 - — — — — STONE CONSTRUCTION ENTRANCE
 - — — — — DRAINAGE AREA FOR STORM DRAINS
 - — — — — DRAINAGE AREA FOR SEDIMENT CONTROL
 - — — — — INLET PROTECTION

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

John H. [Signature] 8/19/92
U.S. Soil Conservation Service Date

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

John A. [Signature] 8/12/92
Howard S.C.D. Date

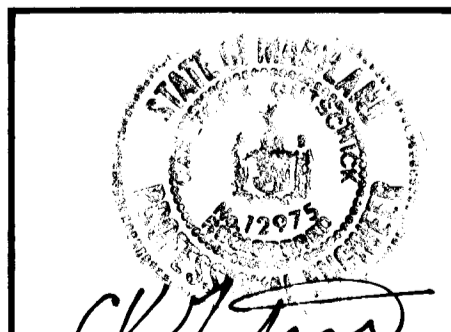
DEVELOPER'S/BUILDER'S CERTIFICATE
I, the undersigned, certify that all development and/or construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training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

Robert [Signature] 5-5-92
Signature of Developer/Builder 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.

Carlton K. [Signature] 5-5-92
Date



Approved Department of Public Works
Michael [Signature] 8/26/92
Chief, Land Development Division Date

Alan M. [Signature] 8/26/92
Chief, Bureau of Highways Date

William [Signature] 8-3-92
Chief, Bureau of Engineering Date

Approved Department of Planning & Zoning
Emma [Signature] 9/8/92
Chief, Division of Community Planning and Land Development Date

Plan
Scale: 1" = 50'

PREPARED FOR:
The Howard Research Development Corp.
The Rouse Building
10275 Little Patuxent Pkwy
Columbia, Maryland 21044
(410) 272-6027

Mass Grading Plan
Gateway Commerce Center
Parcels A-15 thru A-31
A Re subdivision of Parcel A-11
6th Election District
Howard County, Maryland

DES: DEY	SCALE: As Shown	ZONING: M-1, B-2	G.L.W. FILE NO: 71-035
DRN: MCF	DATE: July 31, '92	TAX MAP NO: 42	SHEET: 7 of 16
CHK: CKG			

1158

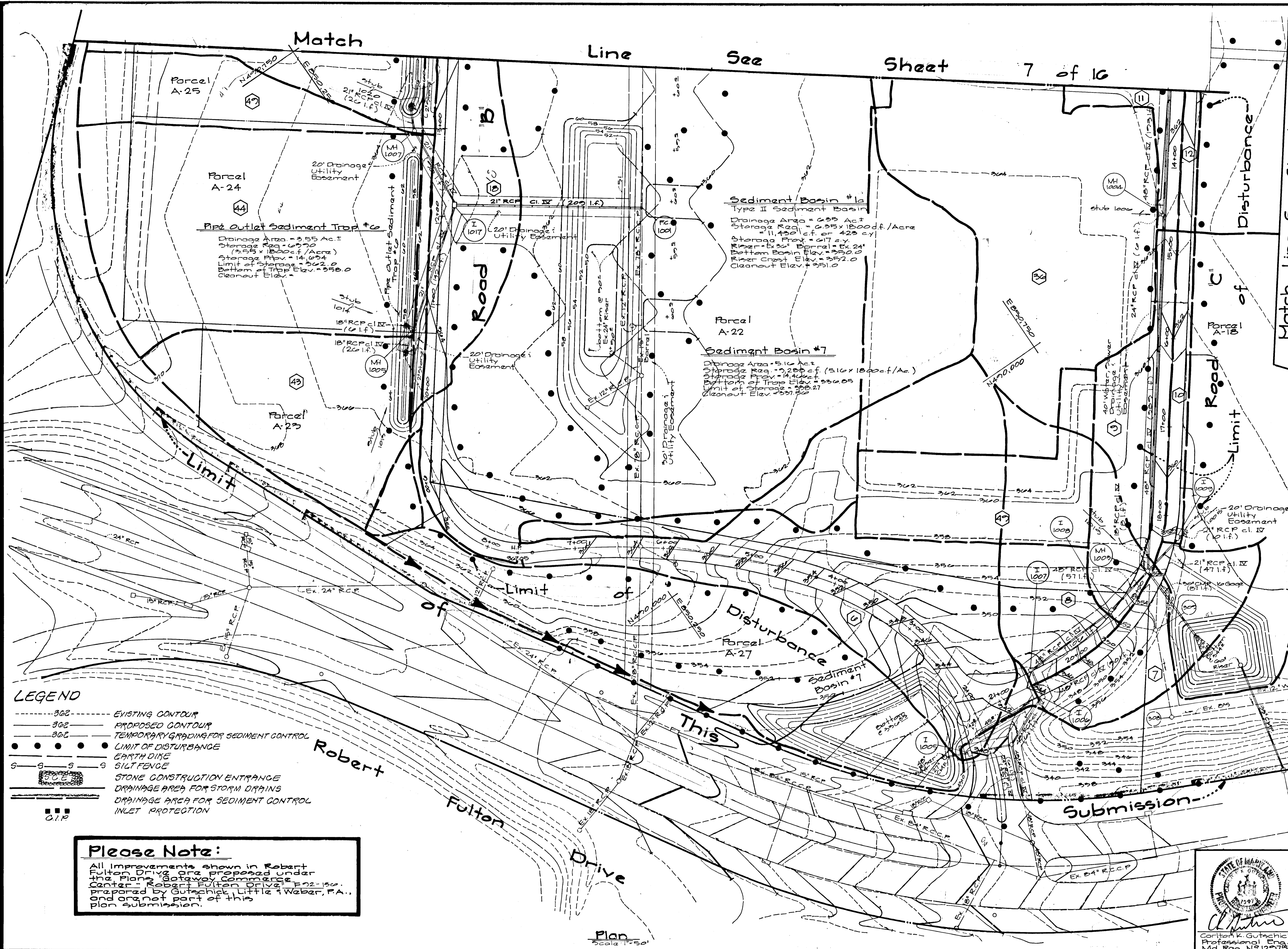
GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
3909 NATIONAL DRIVE - SUITE 250 - BURTONSVILLE OFFICE PARK - BURTONSVILLE, MD. 20866
TELEPHONE: (301)421-4024 NO. VA. (301)989-2524 BALTO. (301)880-1820 FAX (301)421-4186

2/18	Add 2" stems to stub #1015 per H.S.C.D. comment	MCF	
DATE	REVISION	BY	APP'R.

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.
Carlton K. Gutschick 5-5-92
 Date

DEVELOPER'S/BUILDER'S CERTIFICATE
 I/We certify that 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 of 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.
Robert A. Fulton 5-5-92
 Signature of Developer/Builder Date

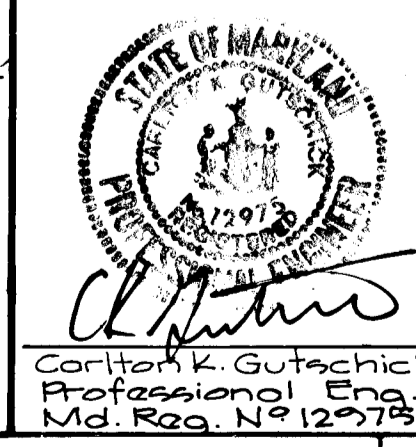
These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements.
James H. Steiner 8/19/92
 U.S. Soil Conservation Service Date
 This Development Plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.
John R. Peltzer 8/19/92
 Howard S.C.D. Date



- LEGEND**
- 302 --- EXISTING CONTOUR
 - 302 --- PROPOSED CONTOUR
 - 300 --- TEMPORARY GRADING FOR SEDIMENT CONTROL
 - ● ● ● ● LIMIT OF DISTURBANCE
 - — — — — EARTH DIKE
 - — — — — SILT FENCE
 - — — — — STONE CONSTRUCTION ENTRANCE
 - — — — — DRAINAGE AREA FOR STORM DRAINS
 - — — — — DRAINAGE AREA FOR SEDIMENT CONTROL
 - — — — — INLET PROTECTION

Please Note:
 All improvements shown in Robert Fulton Drive are proposed under the Plans Gateway Commerce Center - Robert Fulton Drive, P02-1502, prepared by Gutschick, Little & Weber, P.A., and are not part of this plan submission.

Approved
 Department of Public Works
Robert A. Fulton 8/19/92
 Chief, Land Development Div. Date
 Chief, Bureau of Highways Date
 Approved
 Department of Planning and Zoning
James H. Steiner 8/19/92
 Chief, Division of Community Planning and Land Development Date



GLW GUTSCHICK LITTLE & WEBER, P.A.
 CIVIL ENGINEERS, SURVEYORS, PLANNERS, LANDSCAPE ARCHITECTS
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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.
01/18	Add 2' stone to stub #1015, #1014, #1020 per H.S.C.D. comments	MCF	

PREPARED FOR:
 The Howard Research & Development Corp.
 The Rouse Building
 10275 Little Patuxent Pkwy
 Columbia, Maryland 21044
 (410) 592-4227

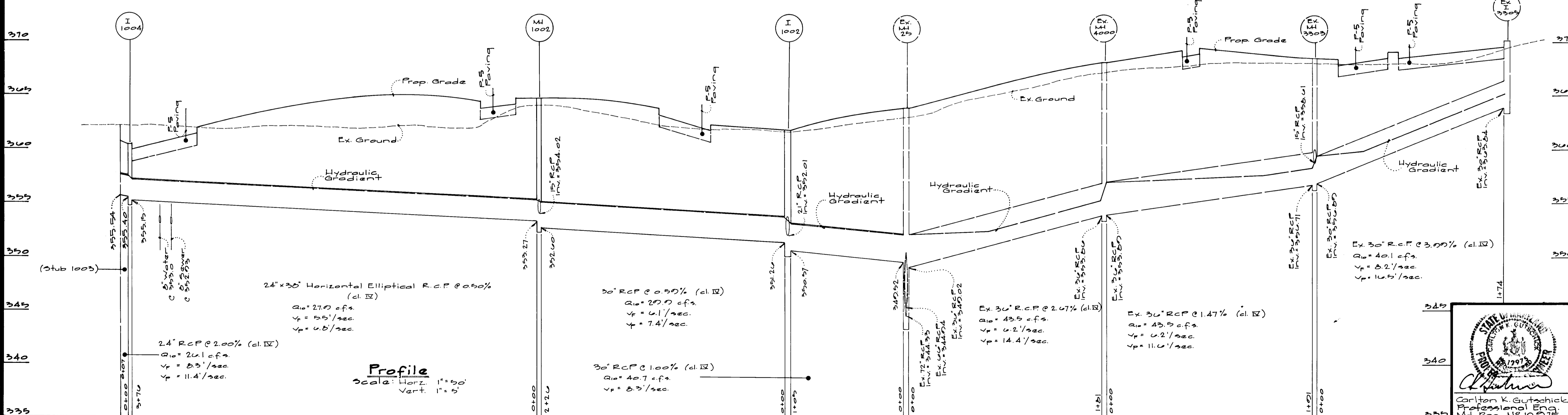
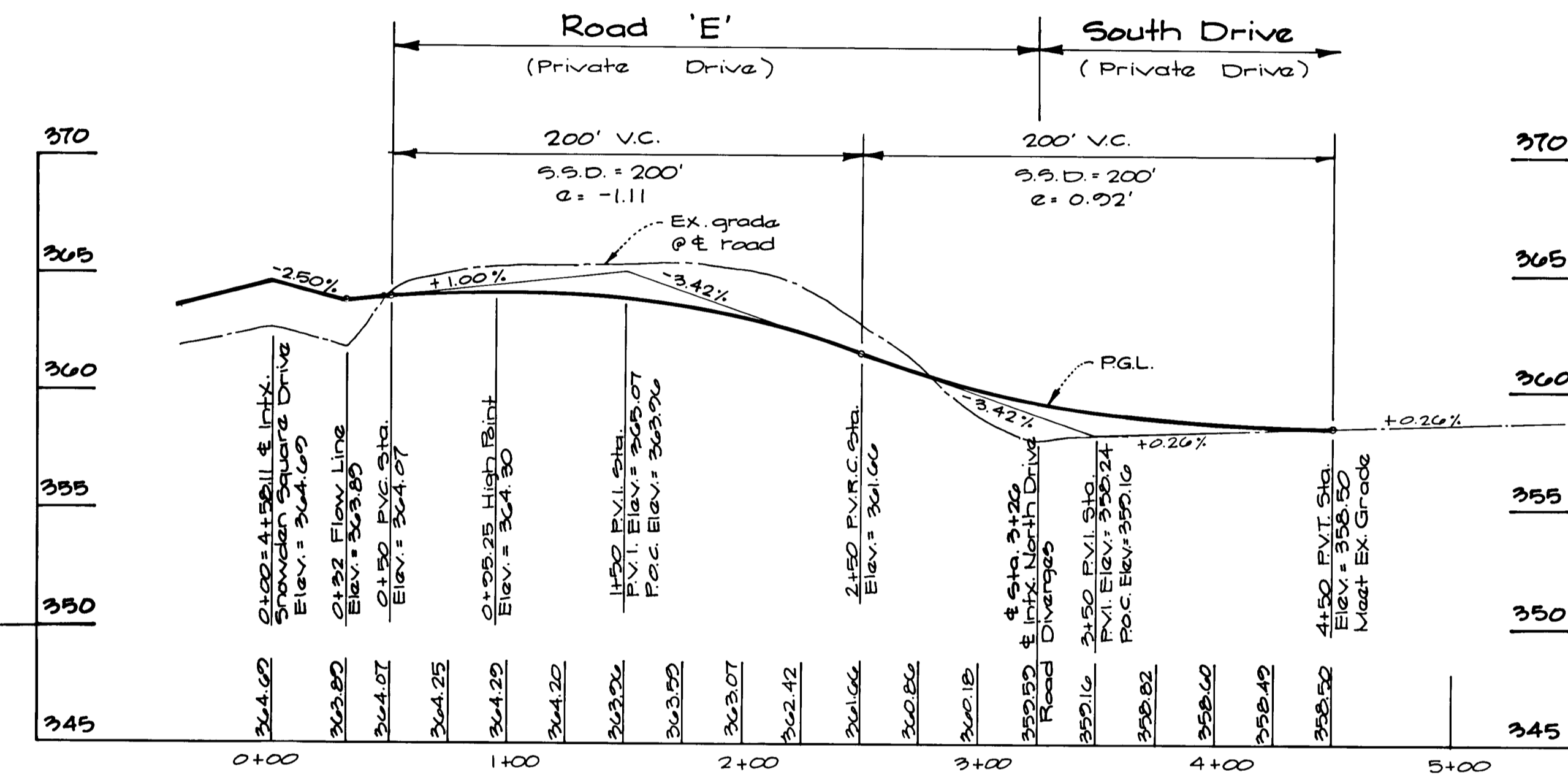
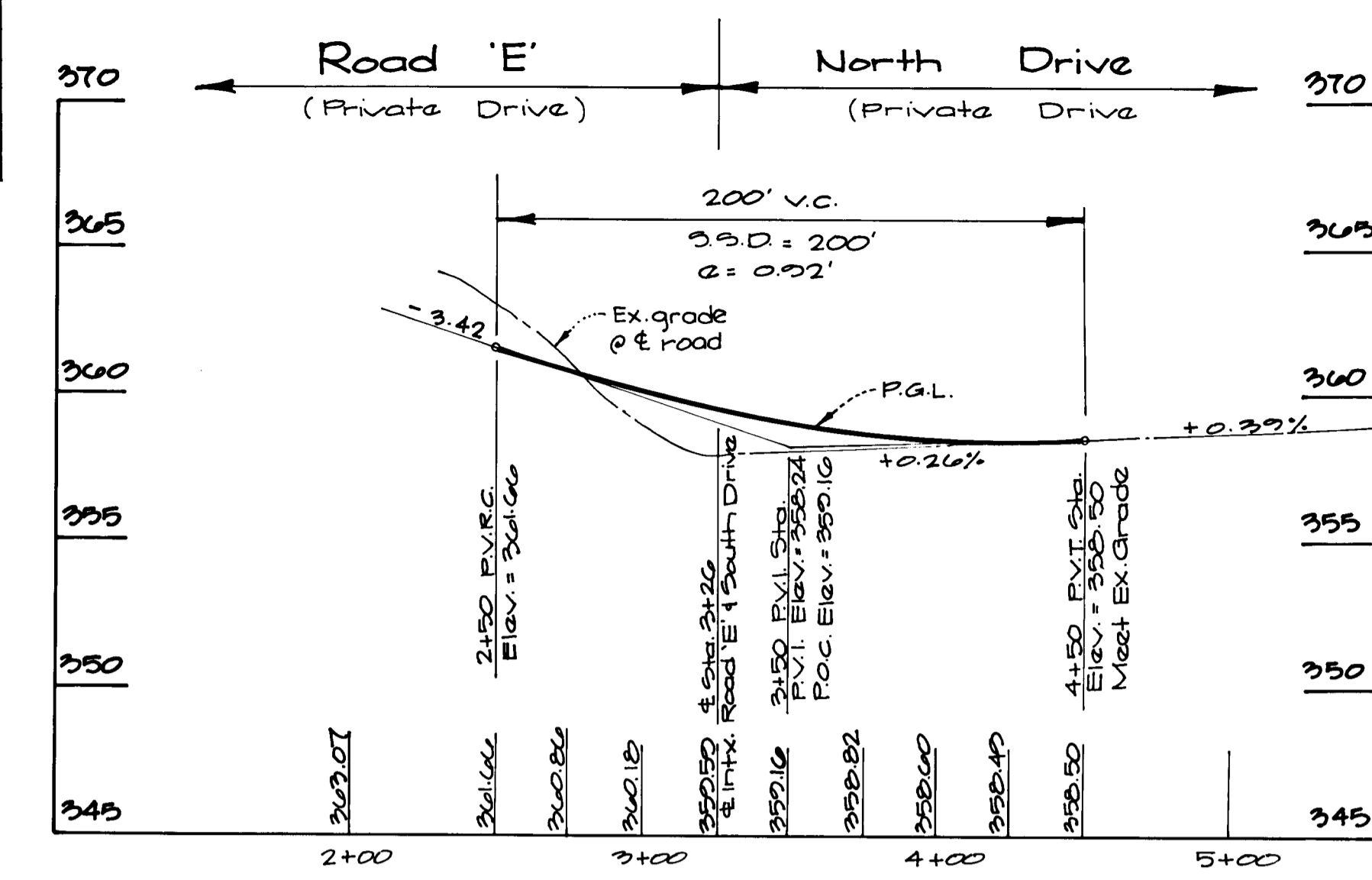
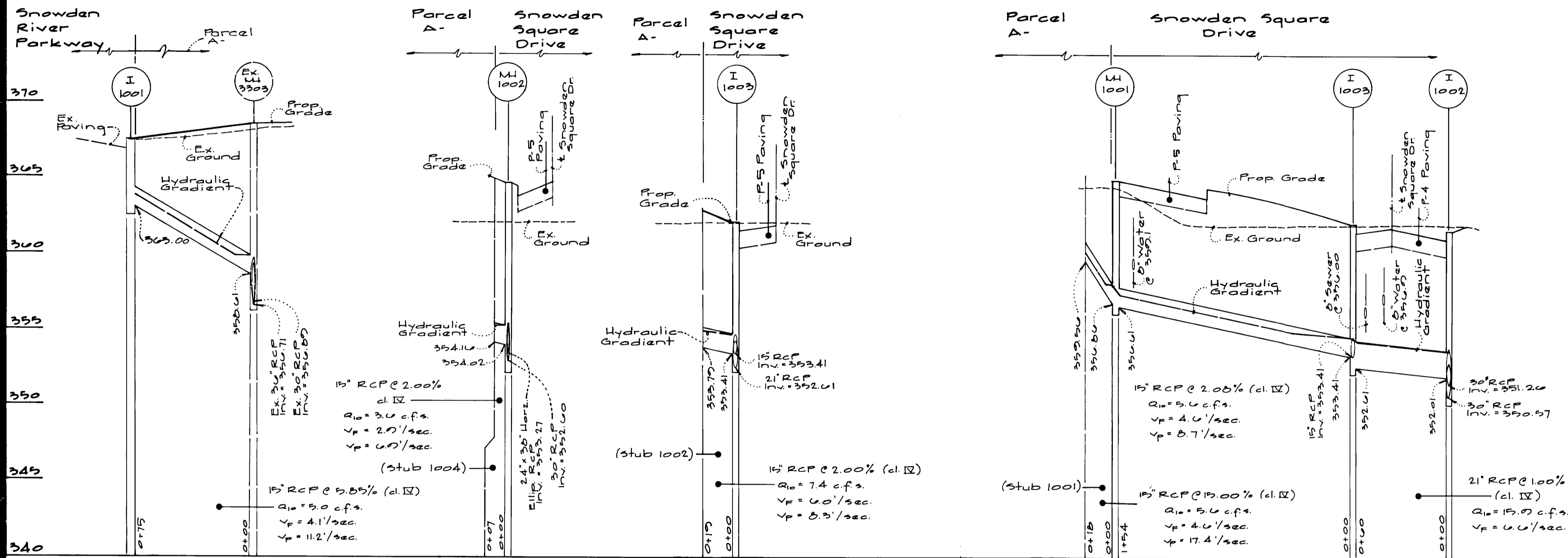
Moss Grading Plan
Gateway Commerce Center
 Parcels A-15 thru A-31
 A Resubdivision of Parcel A-11
 6th Election District
 Howard County, Maryland

DES. DEV.	SCALE	ZONING	G.L.W. FILE NO.
CKG	As Shown	M-1, B-2	91-055
DRN. M.C.F.	DATE	TAX MAP NO.	SHEET
CKG	July 31, '92	42	28 of 16

1158

- Note:
- Contractor shall plug existing pipe stubs being abandoned or removed at the manholes being dedicated to Howard County. Stubs will be plugged with mortared brick bulkheads.
 - All Storm Drains shown are public.

Size	Length
15" RCP (cl. IX)	275 l.f.
21" RCP (cl. IX)	60 l.f.
24" RCP (cl. IX)	71 l.f.
30" RCP (cl. IX)	93 l.f.
24" x 36" H.E.R.C.P.	376 l.f.



Approved
Department of Public Works
Robert D. ... 9/3/92
Chief, Land Development Div. (MKB/ote)

Approved
Department of Planning and Zoning
Carlton K. Gutschick 9/3/92
Chief, Division of Community Planning and Land Development (JH)



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

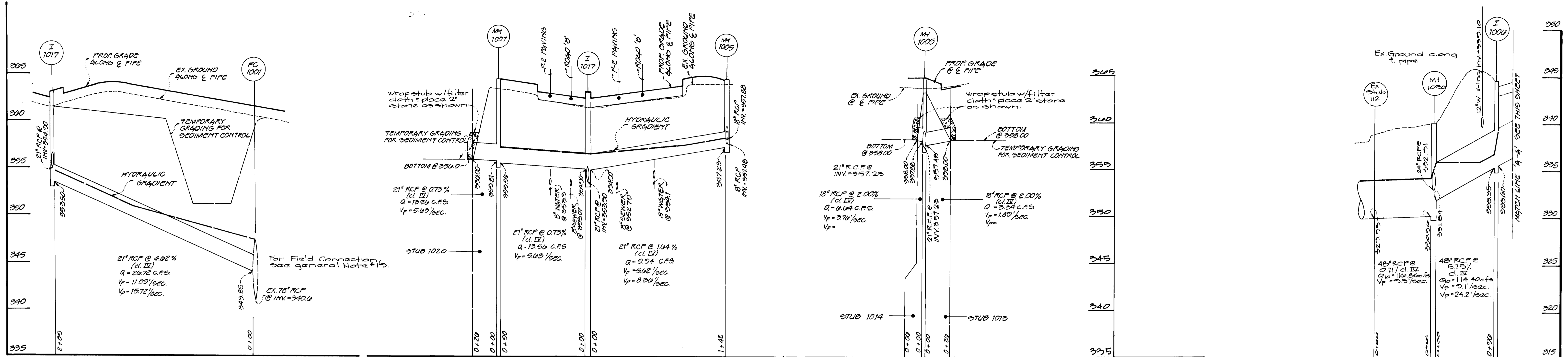
DATE	REVISION	BY	APPR.
7/4	Add note about public storm drains (note #2)	d.e.v.	

PREPARED FOR:
The Howard Research & Development Corp.
The Rowse Building
12275 Little Patuxent Parkway
Columbia, Maryland 21044
(410) 772-6027

Storm Drain Profiles
Gateway Commerce Center
Parcels A-15 thru A-31
A Resubdivision of Parcel A-11
6th Election District
Howard County, Maryland

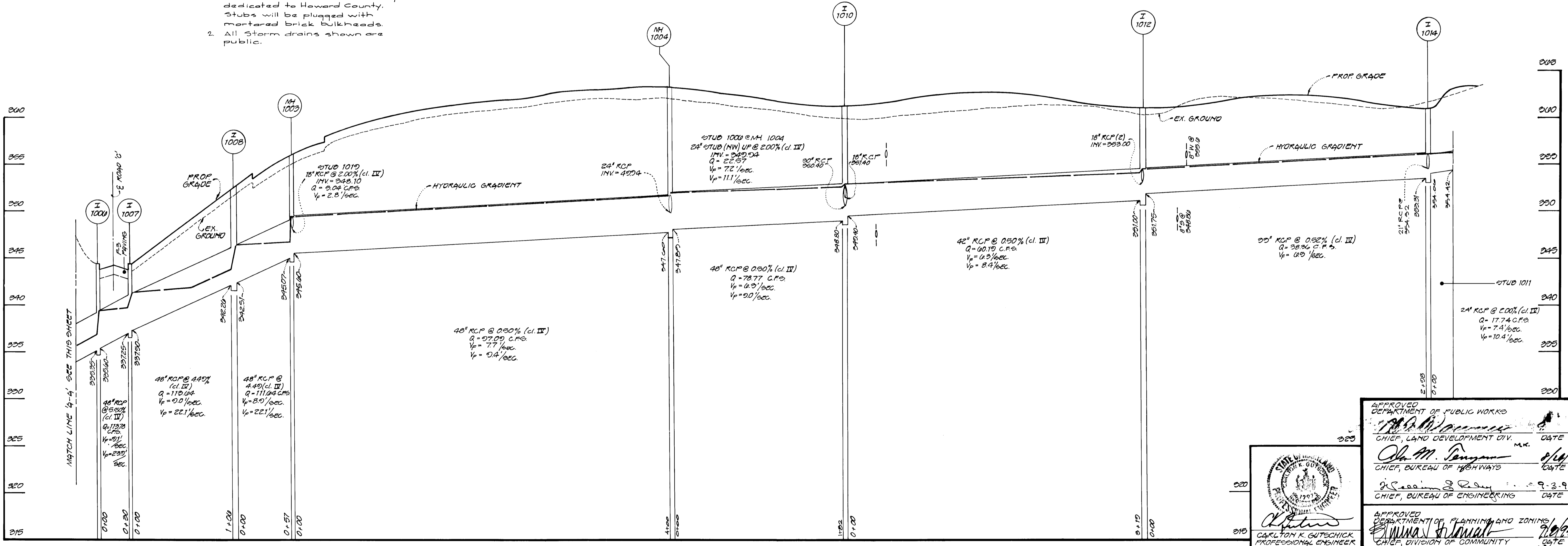
DES: DEV	SCALE	ZONING	G.L.W. FILE NO.
AS SHOWN	M-1, B-2	91-055	
DRN: DEV	DATE	TAX MAP NO.	SHEET
CKG	July 31, 92	42	10 of 16

1/58



SCALE:
 1" = 5' VERTICAL
 1" = 50' HORIZONTAL

- Notes:
- Contractor shall plug existing pipe stubs being abandoned or removed at the manholes being dedicated to Howard County. Stubs will be plugged with mortared brick bulkheads.
 - All storm drains shown are public.



APPROVED DEPARTMENT OF PUBLIC WORKS
 CHIEF, LAND DEVELOPMENT DIV.
 DATE: 8/16/92

APPROVED DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
 DATE: 9-3-92

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

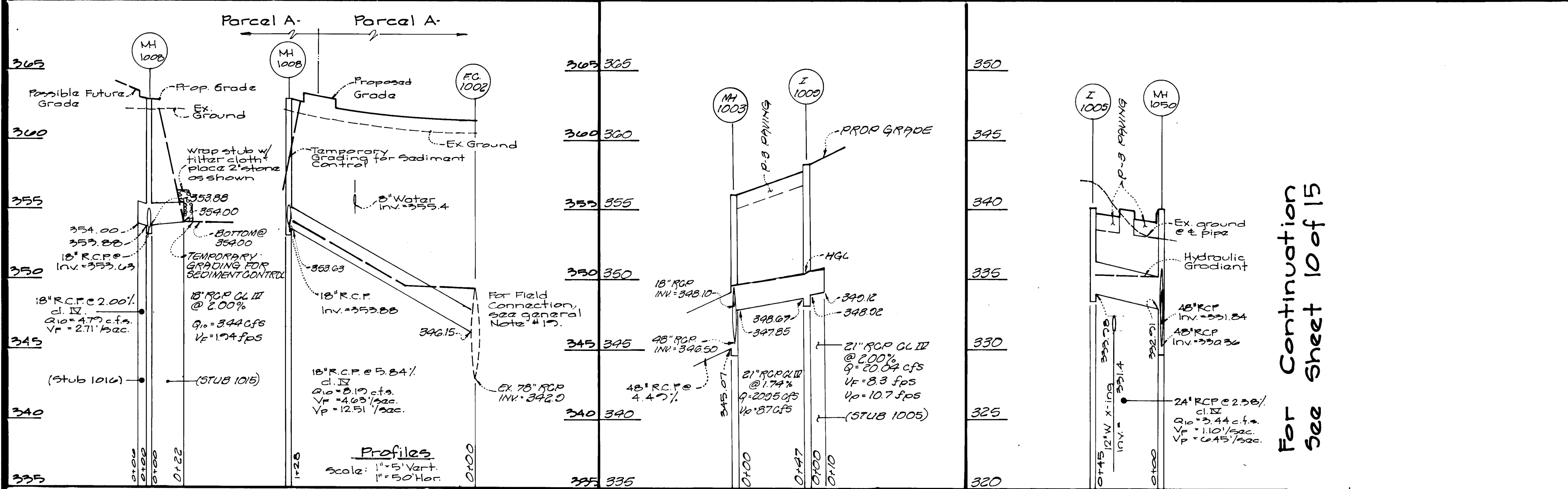
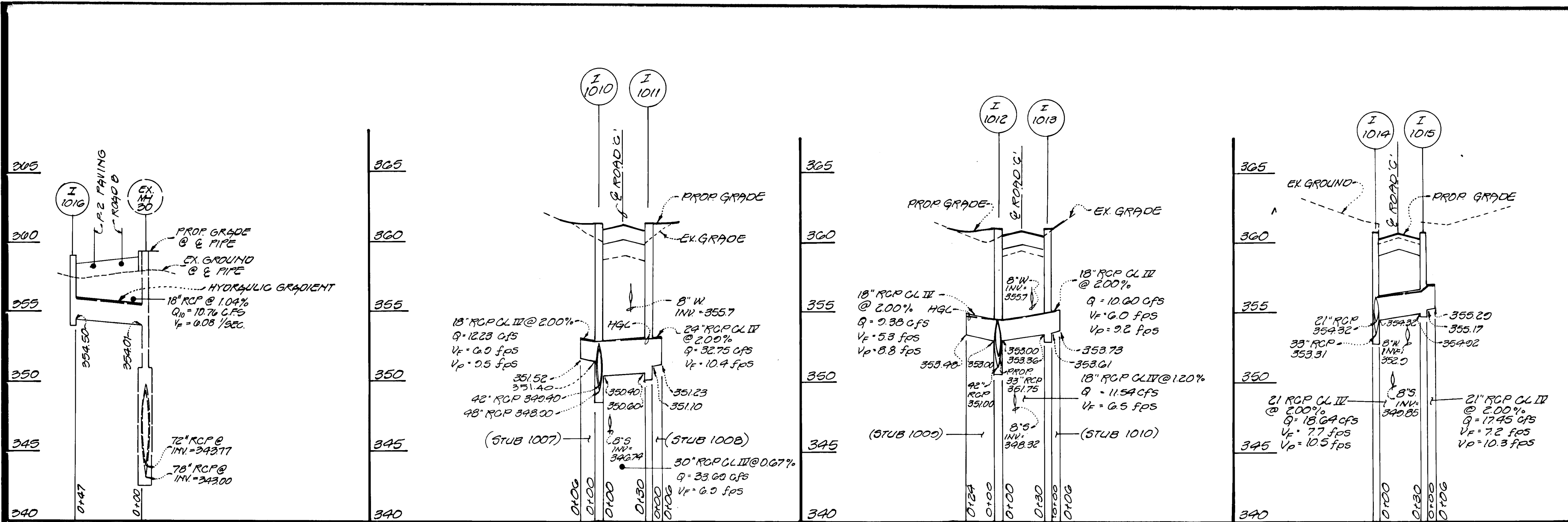
DATE	REVISION	BY	APP'R.
7/4	Add note about public storm drains (note #2)	d.e.v.	
8/18	Add 2" stone to stub #1015, #1014, #1020 per H.S.C.O comment	M.C.F.	

PREPARED FOR:
 THE HOWARD RESEARCH DEVELOPMENT CORP.
 THE HOUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 (301) 992-6027

GATEWAY COMMERCE CENTER
 PARCELS A-15 THRU A-31
 A RESUBDIVISION OF PARCEL A-11
 6TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

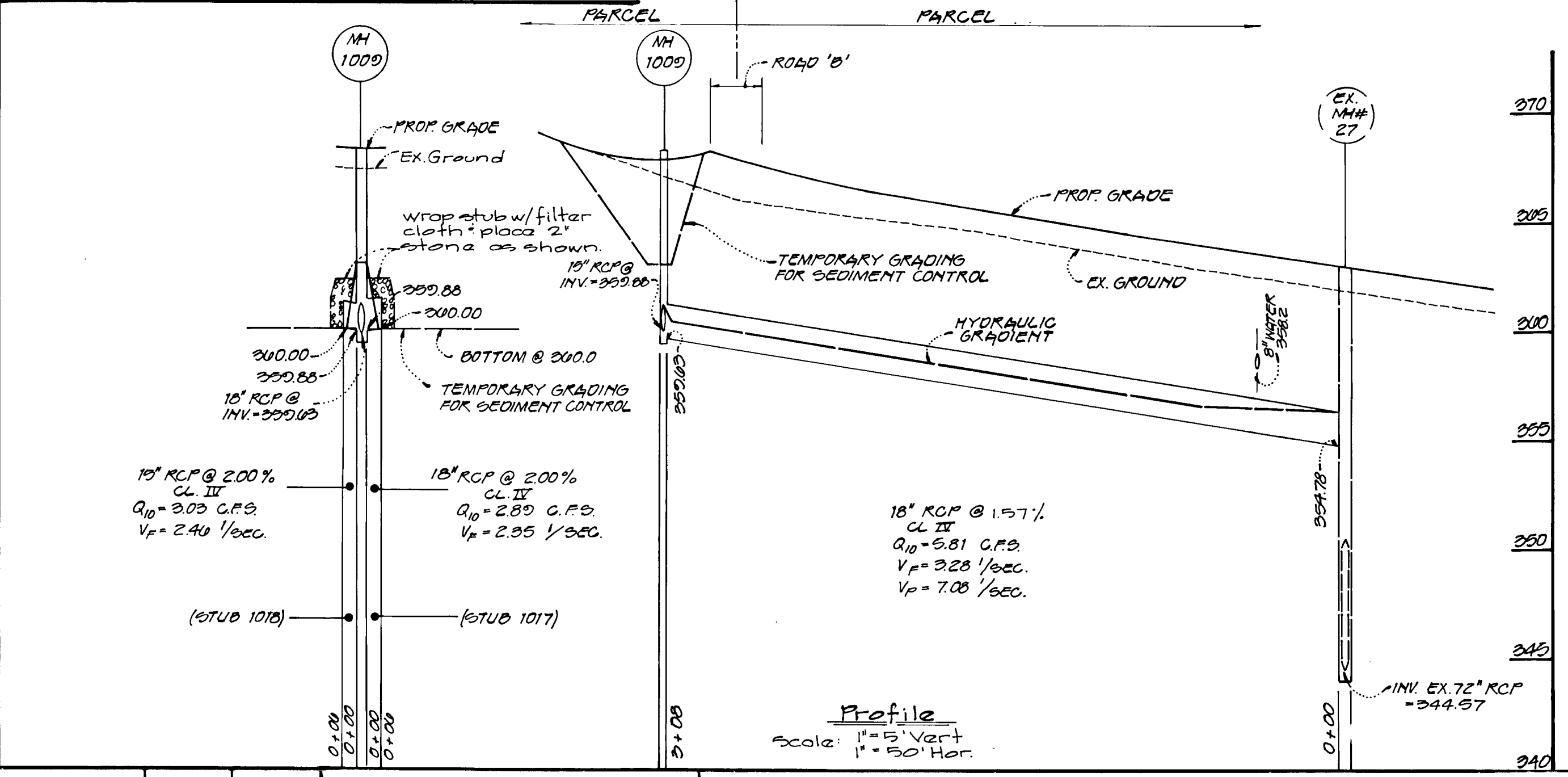
DES. DEV.	SCALE	ZONING	G.L.W. FILE NO.
DEV.	AS SHOWN	M-1, B-2	01-033
DRN.	DATE	TAX MAP NO.	SHEET
ENB	July 31, 1992	42	11 of 16
CHK.: CKG	DATE		
	1992		

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For Continuation
See Sheet 10 of 15

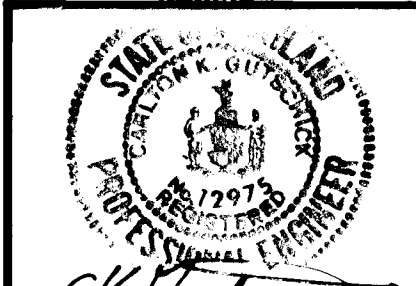
- Note:
- Contractor shall plug existing pipe stubs being abandoned or removed at the manholes being dedicated to Howard County. Stubs will be plugged with mortared brick bulkheads.
 - All Storm Drains shown are public.



Approved
Department of Public Works
[Signature] 9/1/92
Chief, Land Development Div. Date

[Signature] 9/1/92
Chief, Bureau of Highways Date

[Signature] 9/3/92
Chief, Bureau of Engineering Date



Approved
Department of Planning and Zoning
[Signature] 9/1/92
Chief, Division of Community Data Planning and Land Development SA

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

DATE	REVISION	BY	APP'R.
0/4	Add note about public storm drains (note #2)	d.ev	
5/18	Add 2' stone to stub 1015, 1017, 1018 per H&C comment	McF	

PREPARED FOR:
The Howard Research & Development Corp.
The Rouse Building
10215 Little Patuxent Pkwy
Columbia, Maryland 21044
(410) 272-1021

Storm Drain Profiles
Gateway Commerce Center
Parcels A-15 thru A-31
A Resubdivision of Parcel A-11
6th Election District
Howard County, Maryland

DES.	SCALE	ZONING	G.L.W. FILE NO.
DEV	As Shown	M-1, B-2	71-055
DRN.	DATE	TAX MAP NO.	SHEET
LH	July 31, '92	42	12 of 16
CHK.	CKG		

1158

STRUCTURE SCHEDULE

STR.#	TYPE	TOP ELEV	INVERTS	REMARKS	E STATION
		UPPER	LOWER	IN	OUT
EX I-3305	DOUBLE 5" INLET	370.26	363.89	363.84	H.C. 3.0 4.24
I-1001	A-5 INLET	362.25	352.01	352.01	H.C. 3.0 4.01
I-1002	"	362.25	352.01	352.01	"
I-1003	"	362.25	352.01	352.01	"
I-1004	"	362.25	352.01	352.01	"
I-1005	"	362.25	352.01	352.01	"
I-1006	"	362.25	352.01	352.01	"
I-1007	"	362.25	352.01	352.01	"
I-1008	"	362.25	352.01	352.01	"
I-1009	"	362.25	352.01	352.01	"
I-1010	"	362.25	352.01	352.01	"
I-1011	"	362.25	352.01	352.01	"
I-1012	"	362.25	352.01	352.01	"
I-1013	"	362.25	352.01	352.01	"
I-1014	"	362.25	352.01	352.01	"
I-1015	"	362.25	352.01	352.01	"
I-1016	"	362.25	352.01	352.01	"
I-1017	"	362.25	352.01	352.01	"
EX MH 2003	STANDARD MH	371.00	358.01	358.71	H.C. 6.5 01
EX MH 2000	"	368.00	353.80	353.80	"
EX MH 2005	"	362.50	349.52	349.52	"
MH 1001	STANDARD MH	364.21	350.80	350.01	"
MH 1002	"	364.52	354.02	352.00	"
MH 1003	"	363.11	348.10	345.07	"
MH 1004	"	363.40	349.04	347.54	"
MH 1005	"	363.40	357.68	357.23	"
MH 1050	"	360.00	352.01	350.70	"
MH 1007	"	364.55	355.81	355.50	"
MH 1008	"	361.04	353.85	353.03	"
MH 1009	"		352.88	352.03	"
EX MH 27		362.00	354.78	344.57	See Plan
EX MH 30		360.00	354.01	343.00	

Note: Storm Drain structures shown are public.

DRAINAGE AREA TABULATION

DRAINAGE AREA	INLET/STUB NO.	AREA (SQ. ACRES)	C VALUE	% ROOFED & PAVED	% AREA GRASSSED
1	EX I 3305	15.70	0.52		
2	I 1001	1.35	0.04	0%	32%
3	I 1002	1.77	0.50	40%	54%
4	I 1003	1.20	0.50	45%	53%
5	I 1004	1.17	0.55	57%	43%
6	I 1005	0.94	0.30	23%	77%
7	I 1006	0.58	0.30	14%	80%
8	I 1007	0.30	0.33	14%	80%
9	I 1008	0.60	0.60	68%	32%
10	I 1009	0.10	0.85		
11	I 1010	0.59	0.59	61%	39%
12	I 1011	0.10	0.09	75%	25%
13	I 1012	0.77	0.45	44%	56%
14	I 1013	0.10	0.09	75%	25%
15	I 1014	0.73	0.40	30%	64%
16	I 1015	0.20	0.09	75%	25%
17	I 1016	2.19	0.71	80%	20%
18	I 1017	0.85	0.72	79%	21%
19					
20					
21	STUB 1001	1.20	0.77	89%	11%
22	STUB 1002	1.50	0.70	87%	13%
23	STUB 1003	3.70	0.81	93%	7%
24	STUB 1004	0.04	0.00	0%	32%
25	STUB 1005	2.93	0.80	92%	8%
26	STUB 1006	1.71	0.82	96%	4%
27	STUB 1007	1.02	0.85		
28	STUB 1008	4.79	0.80	93%	7%
29	STUB 1009	1.29	0.85		
30	STUB 1010	1.53	0.81	99%	5%
31	STUB 1011	2.44	0.85		
32	STUB 1012	2.52	0.81	94%	6%
33	STUB 1013	1.11	0.49	45%	55%
34	STUB 1014	1.50	0.57	56%	44%
35	STUB 1015	0.84	0.03	67%	33%
36	STUB 1016	1.10	0.03	60%	34%
37	STUB 1017	0.08	0.03	60%	34%
38	STUB 1018	0.00	0.05	68%	32%
39	STUB 1019	1.73	0.85		
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					
51	STUB 1020	2.98	0.74	82%	18%

STREET LIGHT SCHEDULE

LOCATION	LAMP TYPE	MOUNTING	POLE TYPE
1+44 SNOWDEN SQUARE DRIVE 45' LEFT	HIGH PRESSURE SODIUM VAPOR	PENDANT	MOUNT ON TRAFFIC SIGNAL POST
3+26 SNOWDEN SQUARE DRIVE 30.5' LEFT	"	"	BRONZE POLE + TRANSFORMER PAD
6+70 SNOWDEN SQUARE DRIVE 20' LEFT	"	"	"
11+45 SNOWDEN SQUARE DRIVE 32' LEFT	"	"	"
1+05 ROAD 'C' 20' LEFT	"	"	"
5+82 ROAD 'C' 20' LEFT	"	"	"
2+05 ROAD 'C' 20' LEFT	"	"	"
13+60 ROAD 'C' 20' LEFT	"	"	"
17+72 ROAD 'C' 20' LEFT	"	"	"

Street Light Symbols

◆ Typical bronze pole + transformer pad at all other locations.

PIPE SCHEDULE

SIZE	LENGTH
15" RCP (C.I.V)	255 L.F.
18" RCP (C.I.V)	001 L.F.
21" RCP (C.I.V)	050 L.F.
24" RCP (C.I.V)	19
30" RCP (C.I.V)	201
36" RCP (C.I.V)	298
48" RCP (C.I.V)	1297
24" x 36" HERC	370

The quantities shown are the total lengths required for the storm drains proposed in this submission.

TREE PLANTING NOTES

- CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND UTILITIES PRIOR TO DIGGING.
- FINAL LOCATION OF TREES MAY BE ADJUSTED SLIGHTLY TO ACCOMMODATE FIELD.
- 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 10.01 OF THE HOWARD COUNTY SUBDIVISION REQUIREMENTS.

STREET TREES

THE LOCATION, TYPE AND NUMBER OF TREES SHOWN ON THESE PLANS ARE TENTATIVE AND ARE 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 10.01 OF THE HOWARD COUNTY SUBDIVISION REQUIREMENTS AS APPROVED BY THE OFFICE OF PLANNING AND ZONING.

Symbol	Plant Name	Size	Remarks	Quantity
	Acer Rubrum / Red Maple	3"-3 1/2" Col. 14' Ht.	Big Heavyheads	43

1158

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

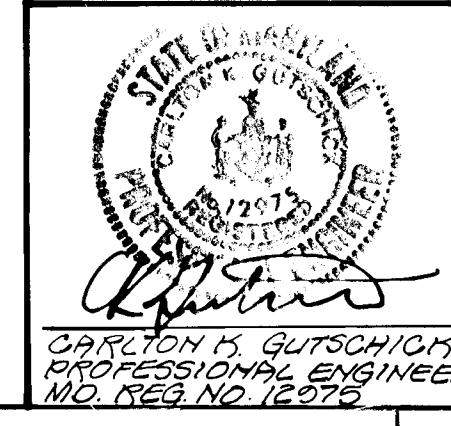
DATE	REVISION	BY	APP'R.
7/14	Add note about storm drains being public	d.e.w.	

PREPARED FOR:
THE HOWARD RESEARCH DEVELOPMENT CORP.
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
(301) 992-6007

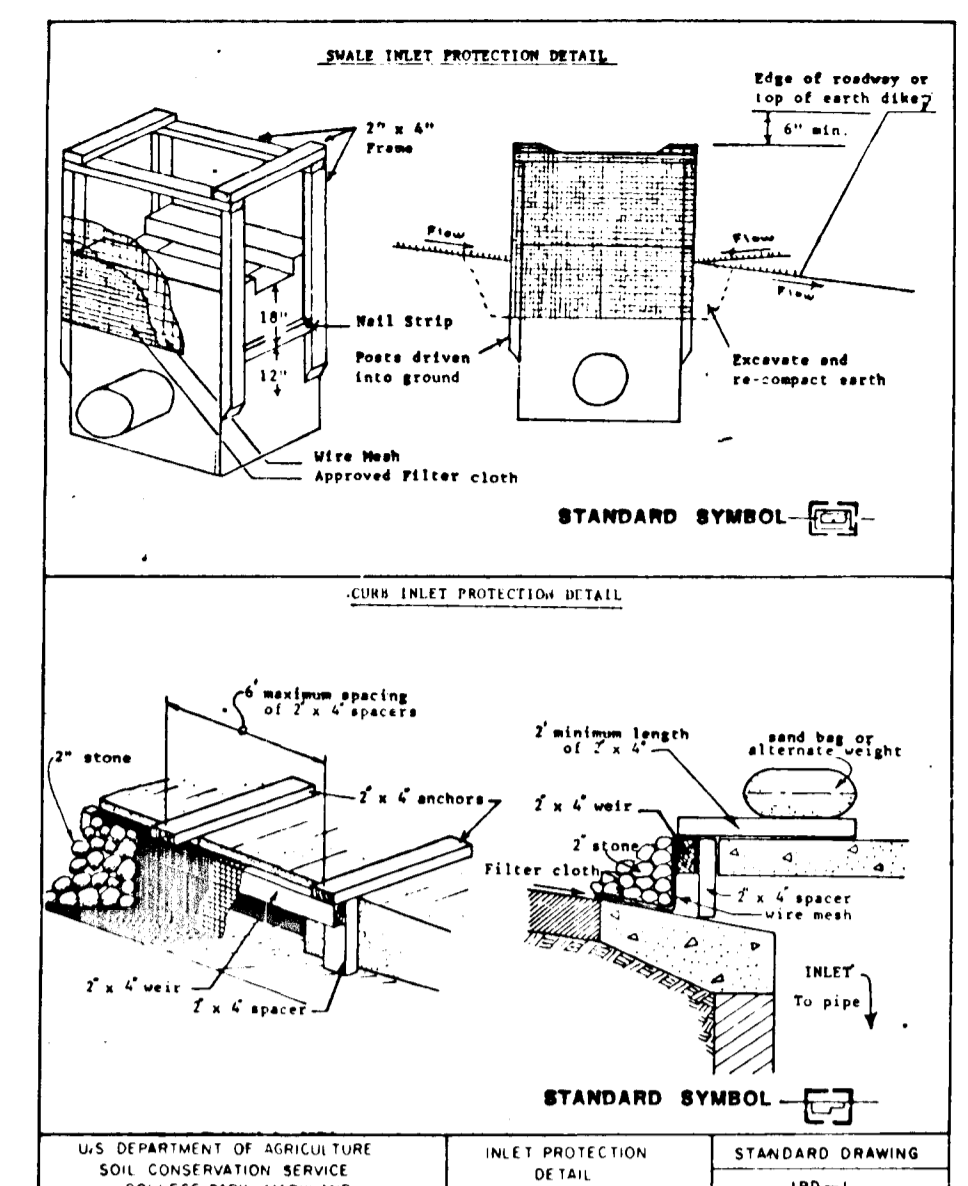
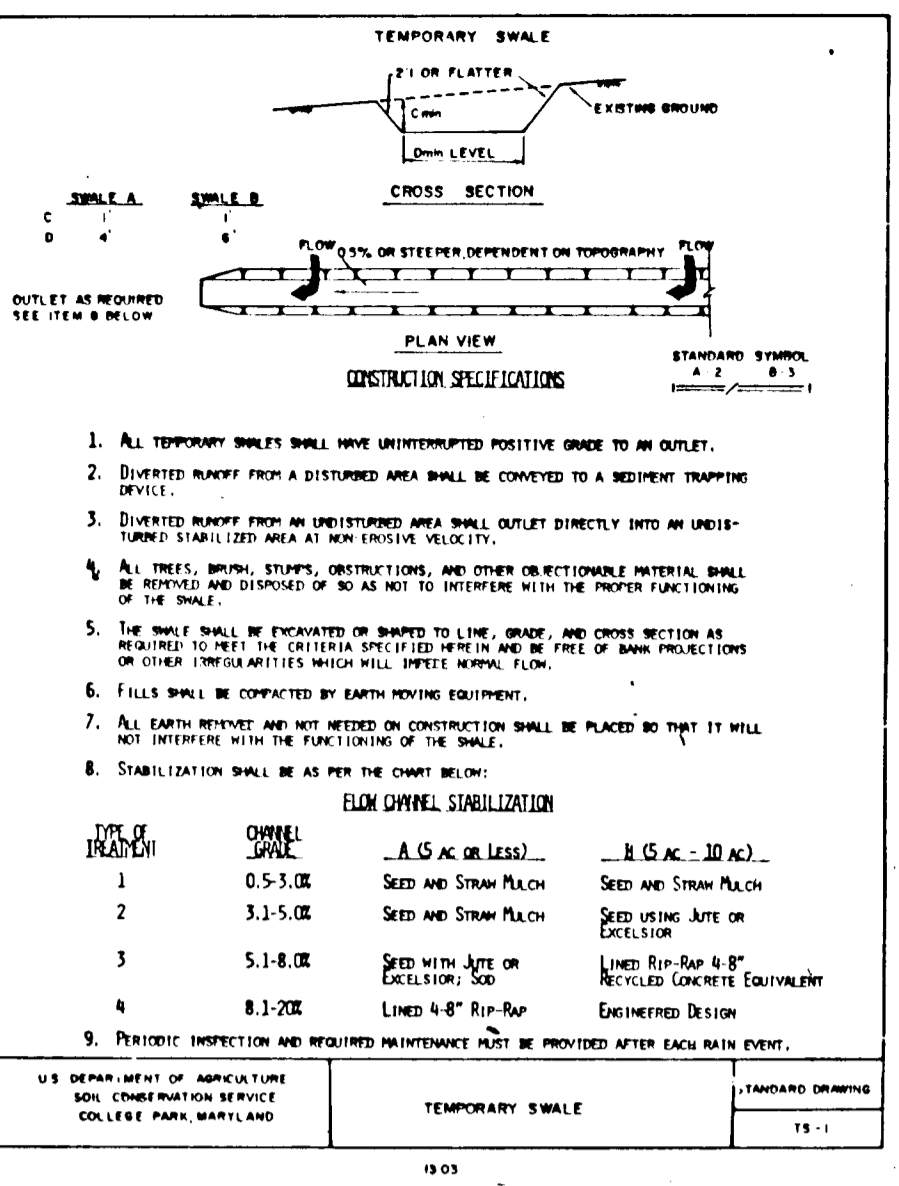
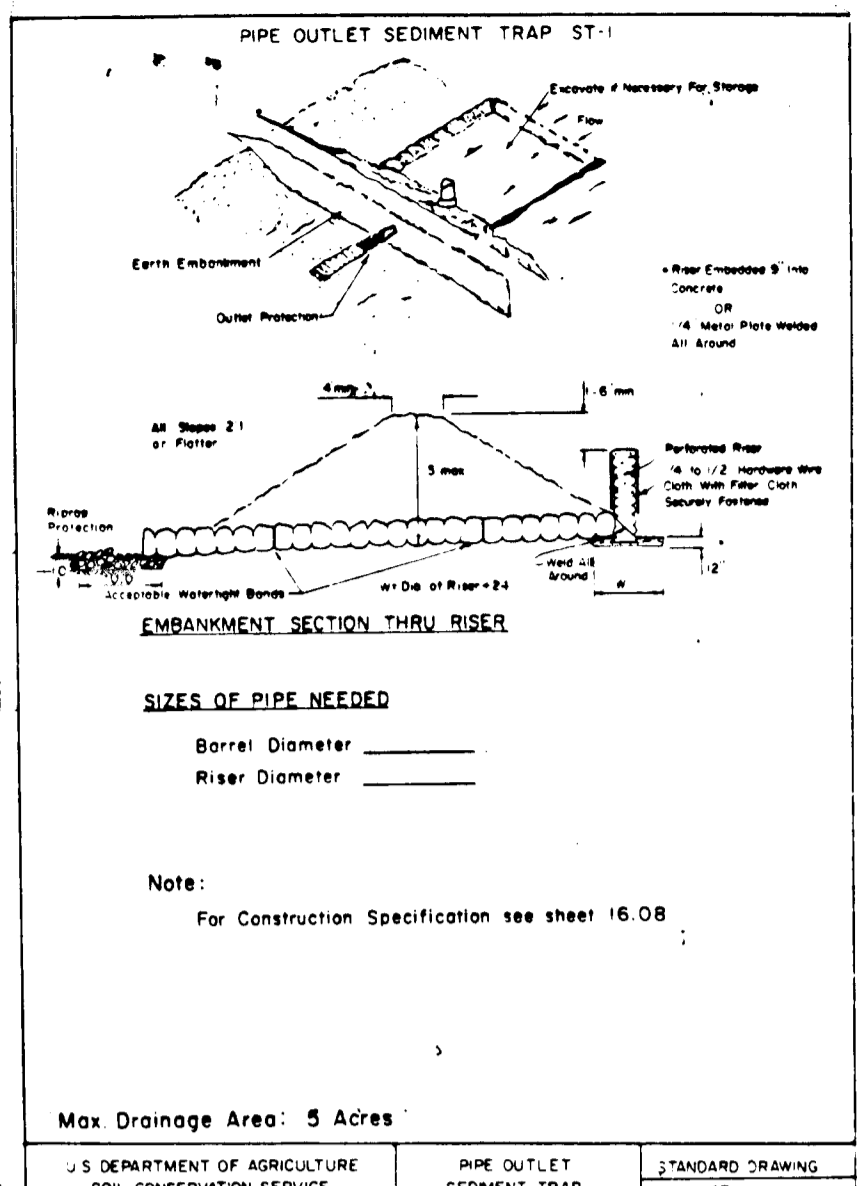
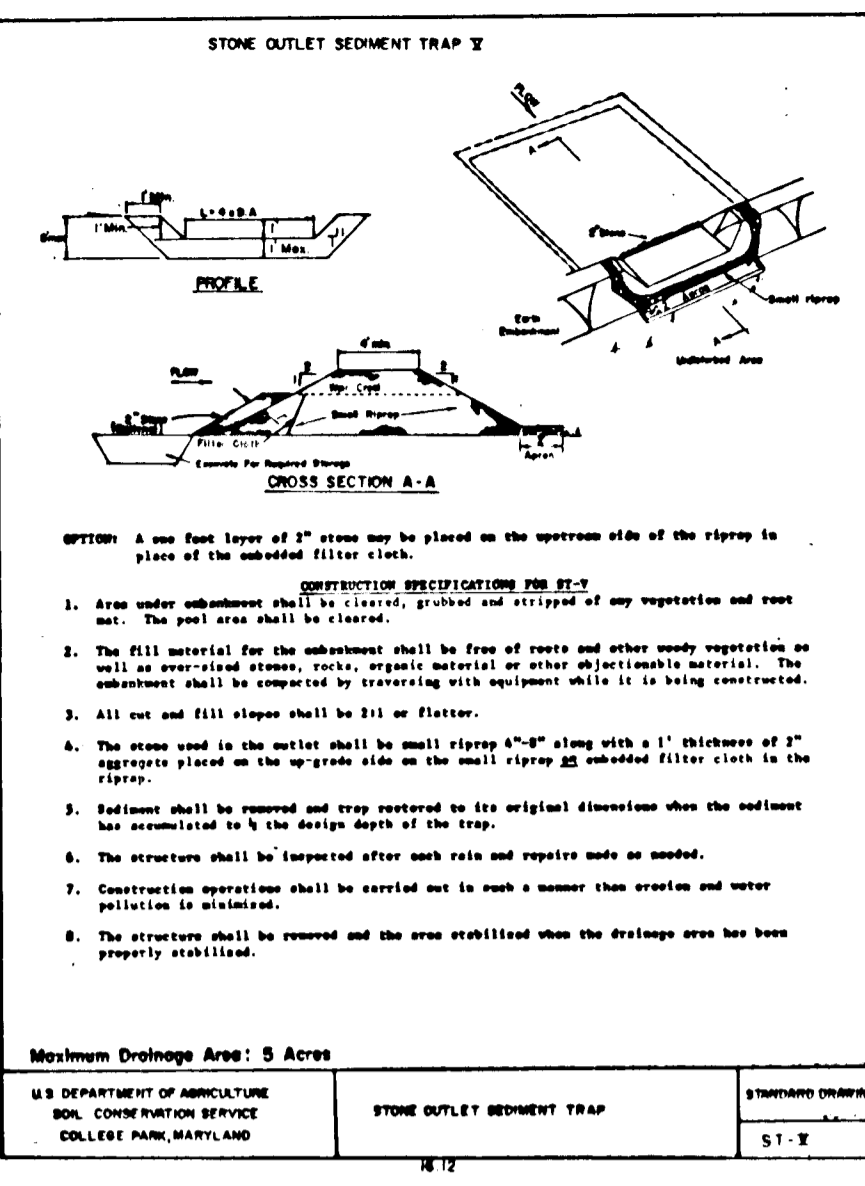
NOTES & DETAILS
GATEWAY COMMERCE CENTER
PARCELS A-15, THRU A-21
A RESUBDIVISION OF PARCEL A-11
GTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

APPROVED:
DEPARTMENT OF PUBLIC WORKS
[Signature] 8/1/92
CHIEF LAND DEVELOPMENT DIVISION DATE
[Signature] 8/1/92
CHIEF BUREAU OF HIGHWAYS DATE
[Signature] 8/3/92
CHIEF BUREAU OF ENGINEERING DATE

APPROVED:
DEPARTMENT OF PLANNING AND ZONING
[Signature] 8/1/92
CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE



DES.	SCALE	ZONING	G.L.W. FILE NO.
	AS SHOWN	M-102	01-055
DRN.	DATE	TAX MAP No.	SHEET
	July 31, 1992	42	13 of 10



SEDIMENT CONTROL NOTES

1. A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (992-2437)
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
3. Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes and perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSIONS AND SEDIMENT CONTROL for permanent seedings (Sec. 51), sod (Sec. 54), temporary seedings (Sec. 50) and mulching (Sec. 52). Temporary stabilization, with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:
Total Area of Site: 270.22 Acres
Area Disturbed: 17.04 Acres
Area to be roofed or paved: 7.98 Acres
Area to be vegetatively stabilized: 10.56 Acres
Total Cut: 7.00 Cu. Yds.
Total Fill: 7.00 Cu. Yds.
Off-Site waste/borrow area location N/A
8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment control must be provided, if deemed necessary by the Howard County DPW Sediment Control Inspector.
10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

PERMANENT SEEDING NOTES

- Apply to graded or cleared area not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
- Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (unless previously loosened).
- Soil Amendments: In lieu of soil test recommendations, use one of the following schedules
- 1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square feet) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000 sq ft).
 - 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 square feet) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq ft) before seeding. Harrow or disc into upper three inches of soil.

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

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

Maintenance: Inspect all seeded areas and make needed repairs, replacements and reseeding.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.

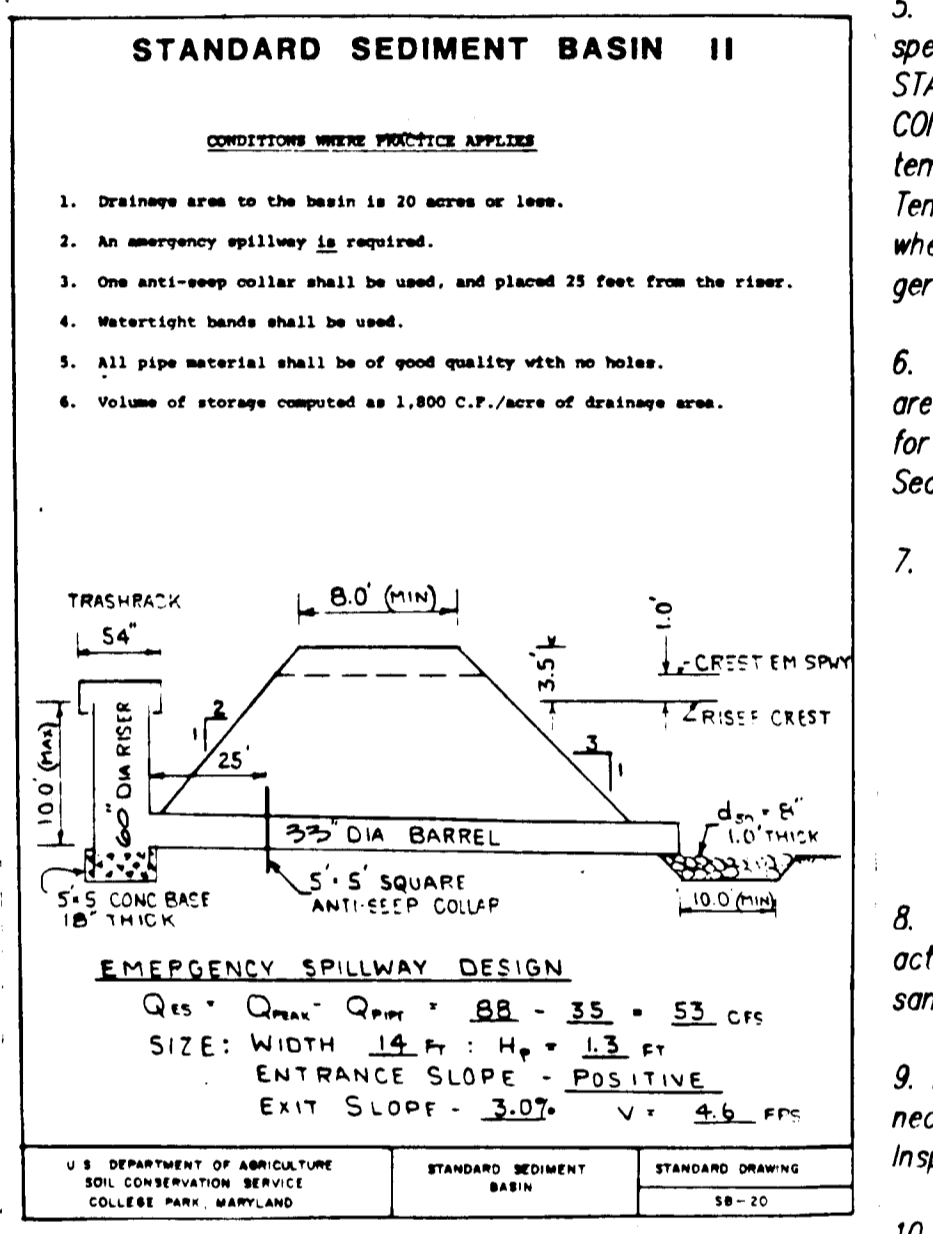
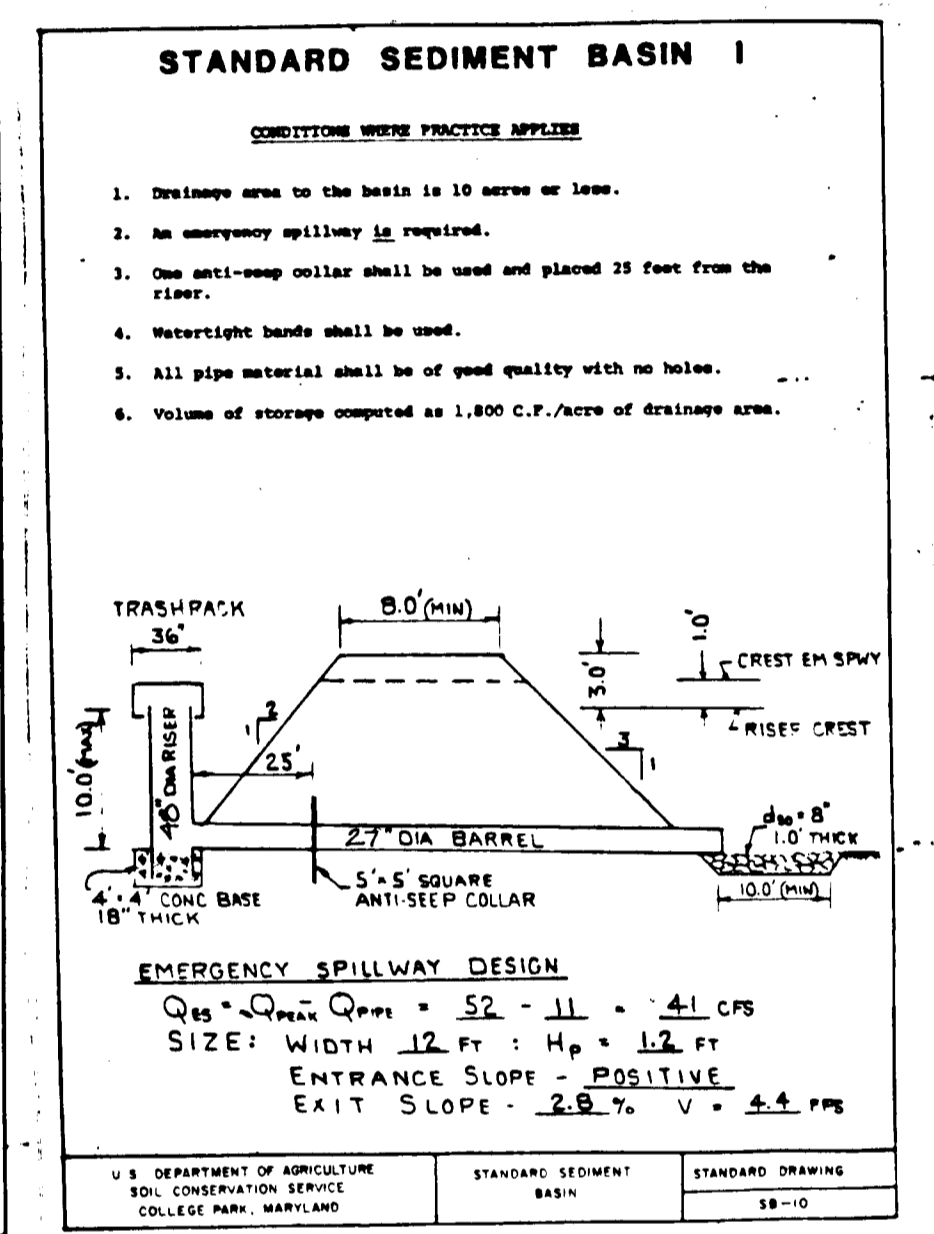
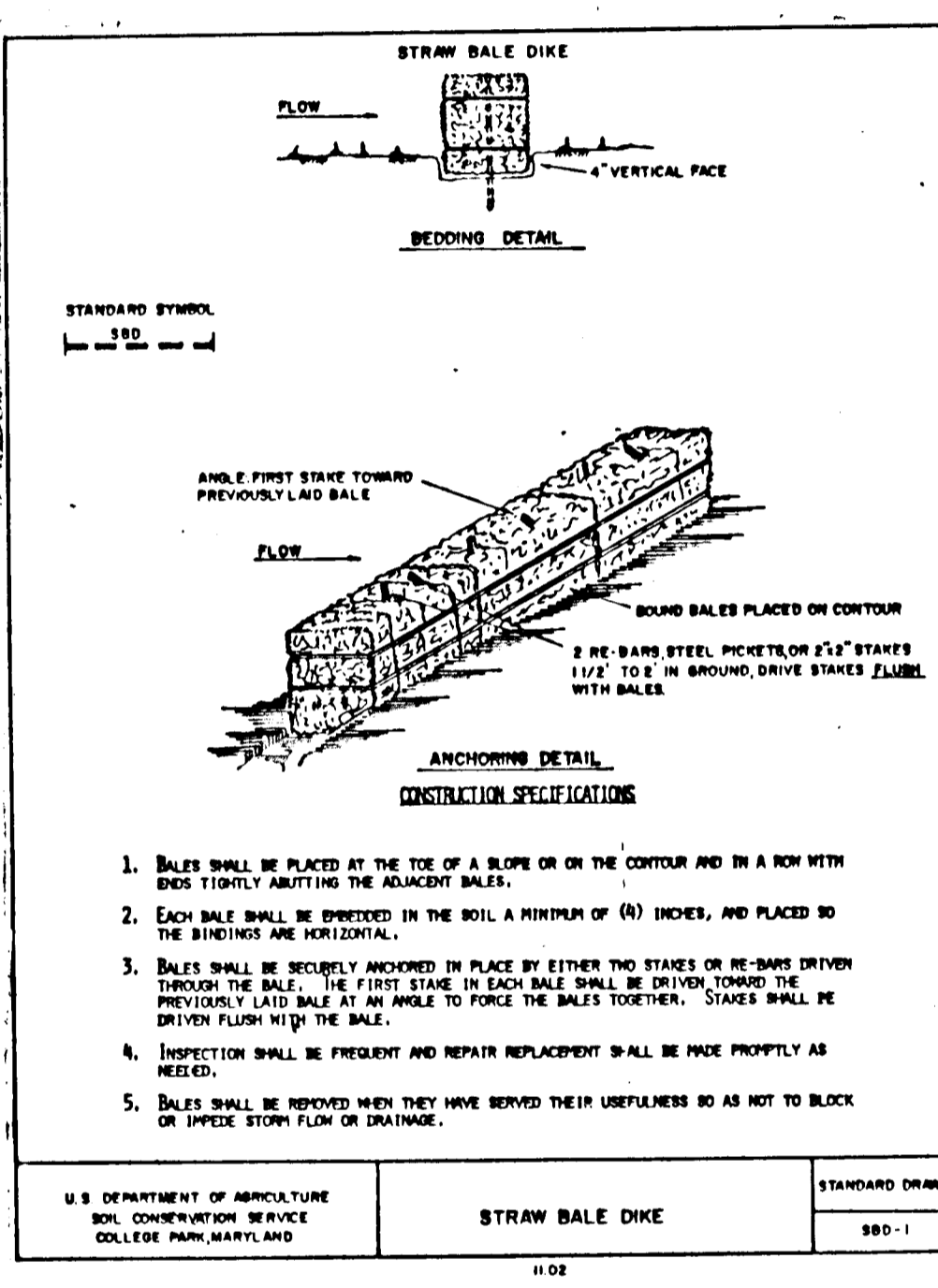
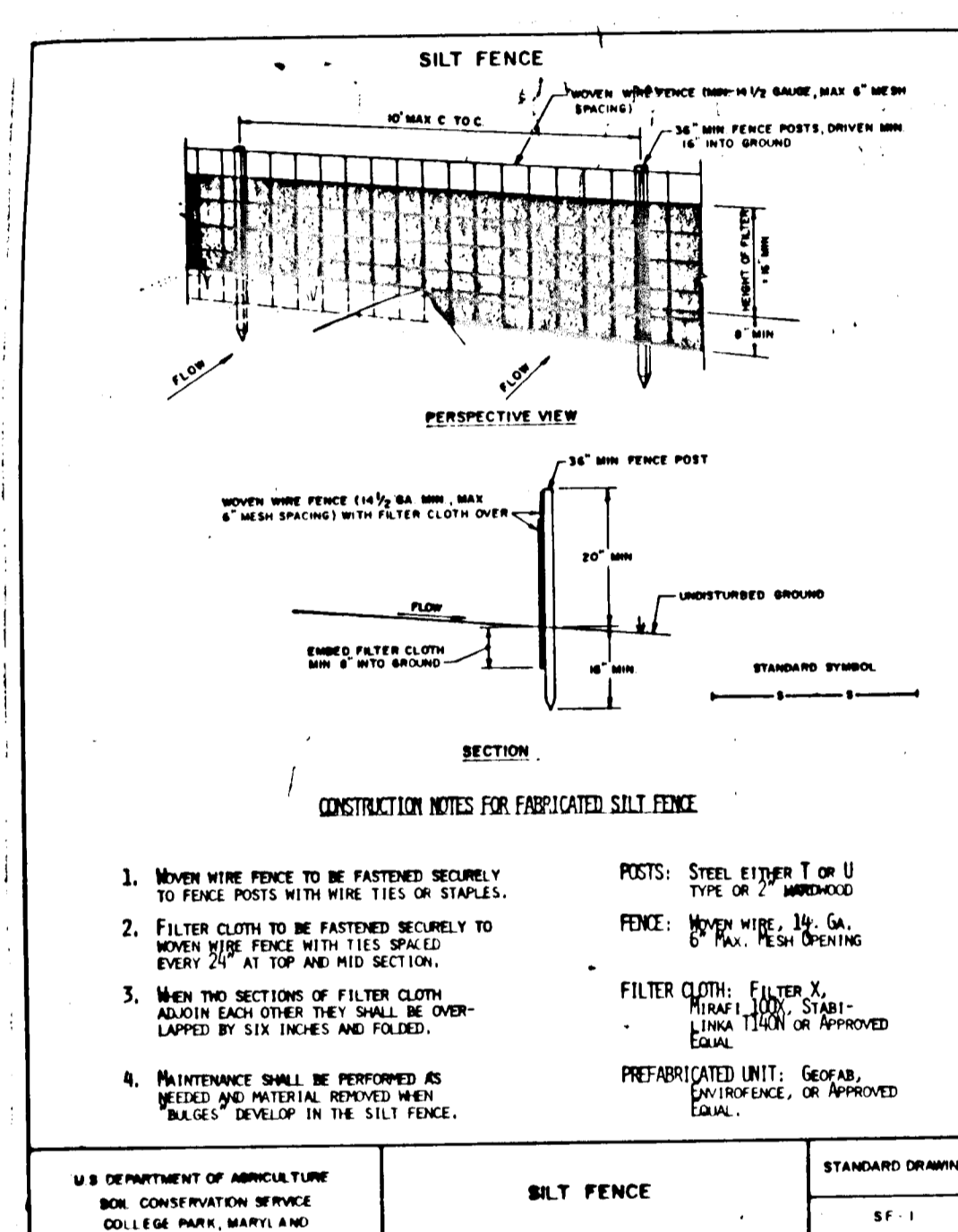
Seedbed Preparation: Loosen upper three inches of soil by raking, discing or other acceptable means before seeding (unless previously loosened).

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 ryegrass (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 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.



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 of 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 HSD.

Albert Lehl 5-5-92
Signature of Developer/Builder Date

ENGINEER'S CERTIFICATE

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

John P. Blanton 8/19/92
Howard S.C.D. Date

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.

John P. Blanton 8/19/92
U.S. Soil Conservation Service Date

Approved Department of Public Works

William J. Daniels 9/3/92
Chief, Land Development Div. M.M. Data

Olga M. Pagan 7/6/92
Chief, Bureau of Highways Data

William J. Riley 9-3-92
Chief, Bureau of Engineering Data

Approved Department of Planning and Community Development

Carlton K. Gutschick 7/6/92
Chief, Division of Community Data, Planning and Land Development M.M. Data

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

NO.	DATE	REVISION	BY	APPR.

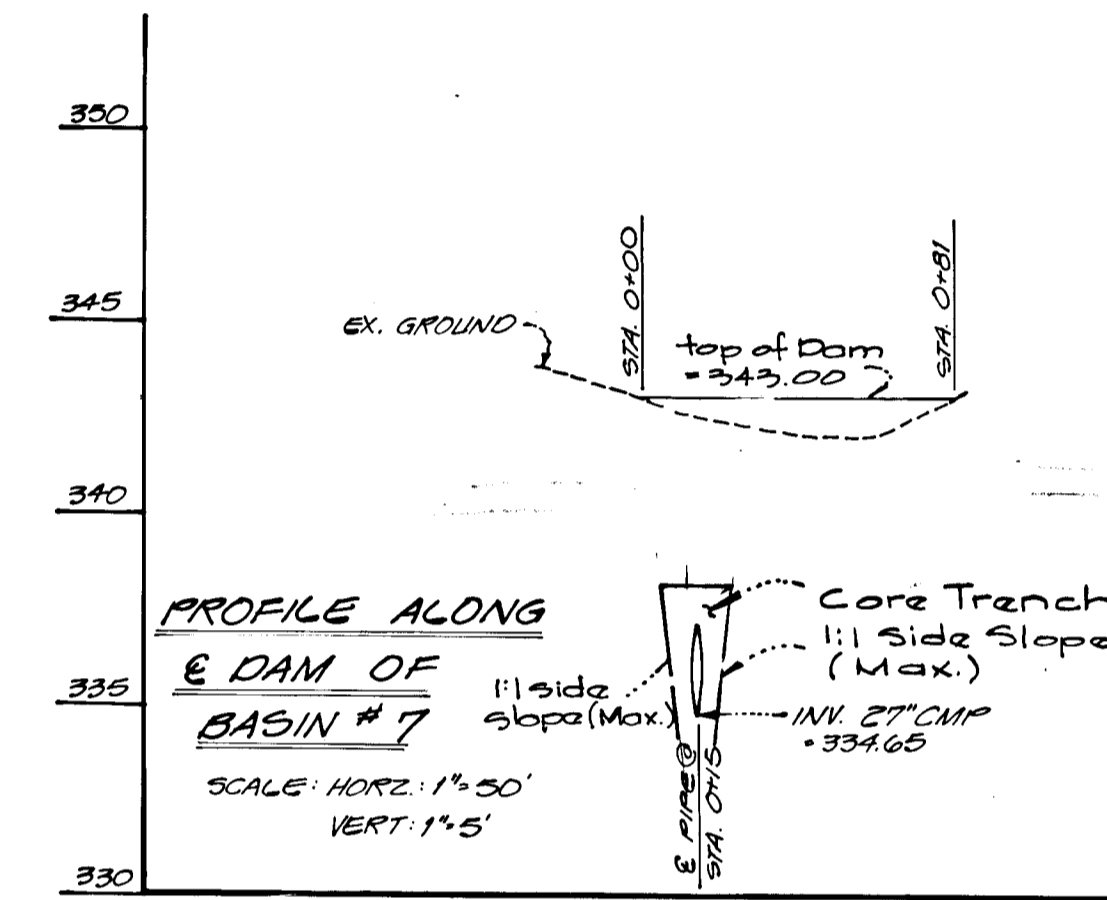
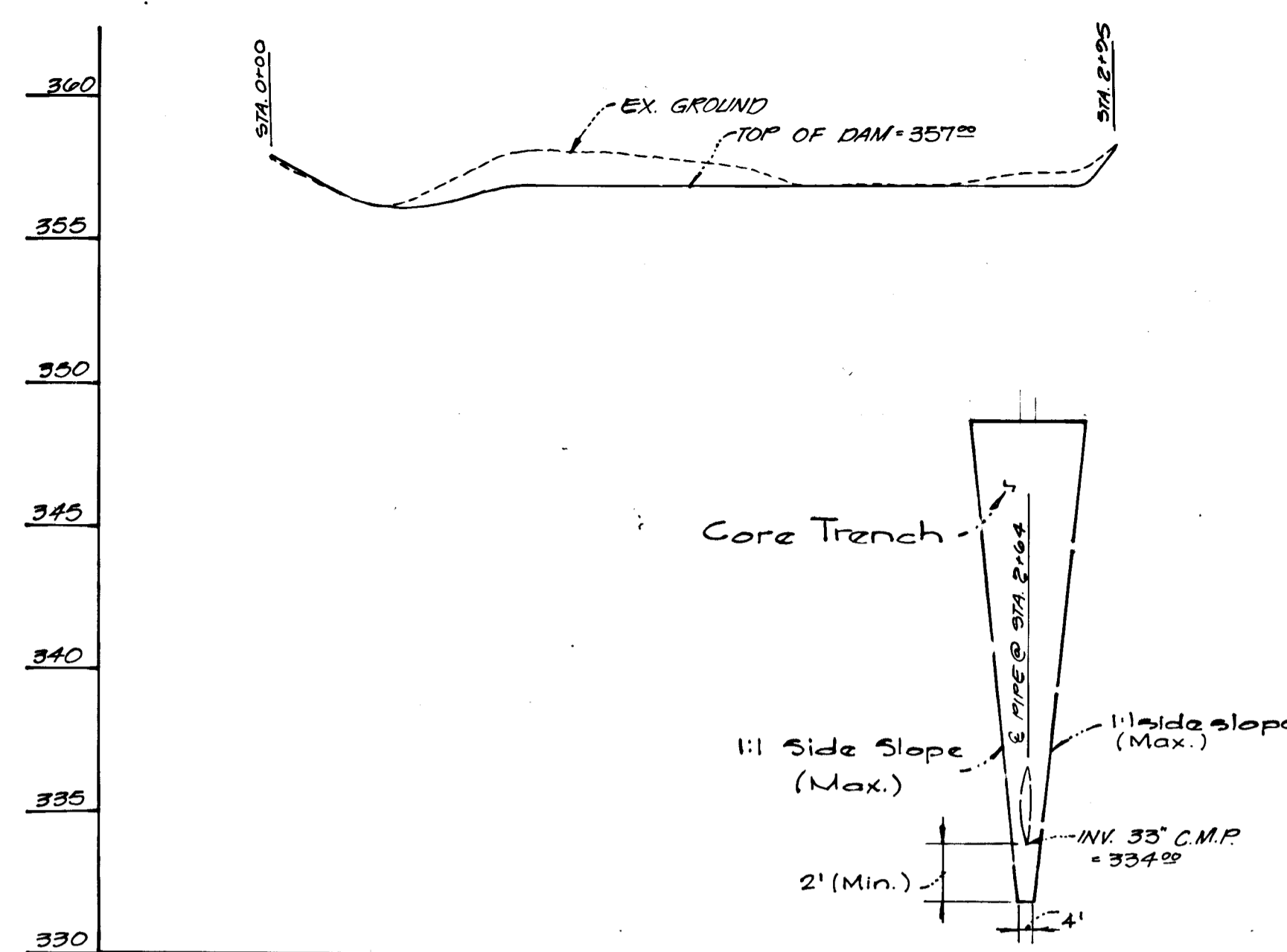
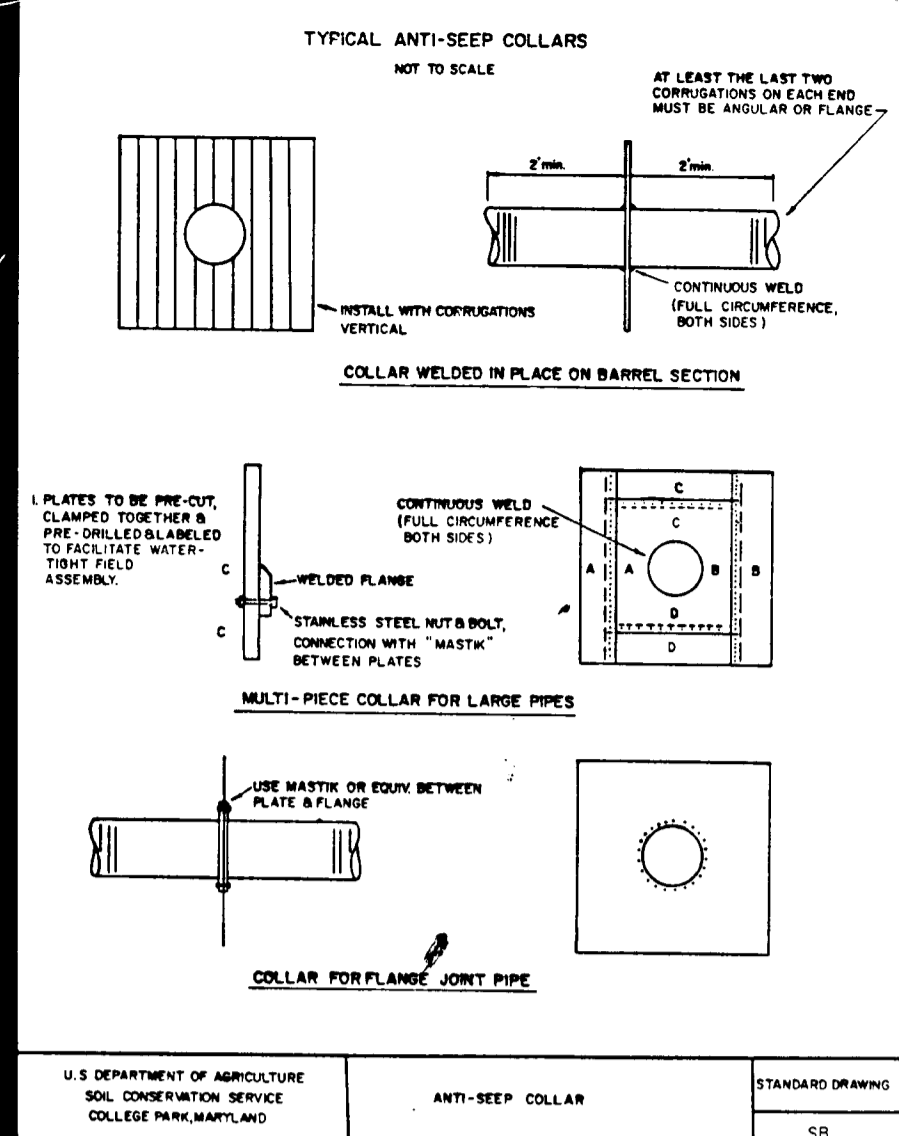
PREPARED FOR
THE HOWARD RESEARCH & DEVELOPMENT CENTER
10275 LITTLE PATIENT PARKWAY
COLUMBIA, MARYLAND 21044
(301) 602-6087

NOTES & DETAILS

GATEWAY COMMERCE CENTER
PARCELS 1-15 THRU 15
A REDUPLICATION OF PARCEL A-11
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE	ZONING	G.L.W. FILE NO.
As Shown	M-1, B-2	01-055
DATE	TAX MAP No.	SHEET
July 31, '92	42	15 of 16

1581



STORM WATER MANAGEMENT POND NOTES

I. SITE PREPARATION:

- A. Areas designated for borrow areas, embankment, and structural works shall be cleared grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped no steeper than 1:1.
- B. Areas to be covered by pond or reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, logs, and stumps shall be cut approximately level with the ground surface.
- C. All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

II. EARTH FILL

- A. MATERIAL: The fill material shall be taken from approved designated borrow area or areas. It shall be free of roots, stumps, wood, rubbish, oversized stones, frozen or other objectionable materials. The embankment shall be constructed to an elevation which provides for anticipated settlement to the design elevation. The fill height will along the length of the embankment shall be increased above the design elevation (including freeboard) as shown on the plans.
- B. PLACEMENT: Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in 8-inch maximum thickness (before compaction) layers which are to be continuous over the entire length of the fill. The most porous borrow material shall be placed in the downstream portions of the embankment.

- C. COMPACTION: The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired, or vibratory roller. Fill material shall contain sufficient moisture so that the required degree of compaction can be obtained with the equipment used. Where a minimum required density is specified, each layer of fill shall be compacted as necessary to obtain that density and is to be certified by the Geotechnical Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99. The dam embankment should be formed of material conforming to the Unified Soil Classification; G2, G3, SM, SC, ML, MH, CH and CL.
- D. CUTOFF TRENCH: The 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 governed by the equipment used for excavation, 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, such as SG, CL, ML, CL, and CH; and shall be compacted with construction 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.

- 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 replaced with cold applied bituminous coating compound. Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. The following coatings are commercially available: Mexon, Plast-Cote, Bloc-Klod, and Beth-Cu-Lox. Coated corrugated steel pipe shall meet the requirements of AASHTO M-245 and M-246.
 - 2. MATERIALS (Aluminum 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-190 or M-271 with watertight coupling bands or flanges. Coupling bands, anti-seep collars, and sections, etc. must be composed of the same material as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness. 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-301. An approved equivalent is ANWA 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 to 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 and 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 as 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.

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

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

- 5. REINFORCING STEEL - The reinforcing steel shall be deformed bars of intermediate grade B101 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-charging operations. Excessive overmixing requiring the addition of water to preserve the required 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 shall be mortar-tight and constructed so they can be removed without hammering or prying against the concrete. The inside of the forms shall be lined 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, scales, 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 the first 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 compounds may also be used.

VI. ROCK RIPRAP

- All rock shall be dense, sound and free from cracks, seams and other defects conducive to accelerated weathering. The rock fragments shall be angular to subangular in shape. The least dimension of an individual rock fragment shall not be less than one-third the greatest dimension of the fragment.

- The rock shall have the following properties:
 - A. Bulk specific gravity (saturated surface-dry basis) not less than 2.5.
 - B. Absorption not more than two percent.
 - C. Soundness: Weight loss in five cycles not more than 10 percent when sodium sulfate is used or 15 percent when magnesium sulfate is used.

- Bulk specific gravity and absorption shall be determined according to ASTM C 127. The test for soundness shall be performed according to ASTM C 88.

- Rock that fails to meet the requirements stated in A, B and C above may be accepted only if similar rock from the same source has been demonstrated to be sound after 5 years or more of service under conditions of weather, wetting and drying and erosive forces similar to those anticipated for the rock to be installed under this specification.

- The riprap shall be placed to the required thickness in one operation. The rock shall be delivered and placed in a manner that will insure the riprap in place shall be reasonable homogeneous with the larger rocks uniformly distributed and firmly in contact with one another with the smaller rocks filling the voids between the larger rocks.

VII. CARE OF WATER DURING CONSTRUCTION

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

VIII. STABILIZATION

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

IX. 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.

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

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

APPROVED:

[Signature] 8/19/92
CHIEF, LAND DEVELOPMENT DIVISION M.K. DATE

[Signature] 8/24/92
CHIEF, BUREAU OF HIGHWAYS DATE

[Signature] 8-23-92
CHIEF, BUREAU OF ENGINEERING DATE

APPROVED:

[Signature] 9/6/92
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

ENGINEER'S CERTIFICATE

I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the developer that he must provide the Howard Soil Conservation District with a soil bank plan of the pond within 30 days of completion.

[Signature] 5/5/92
Date

DEVELOPER'S/BUILDER'S CERTIFICATE

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

[Signature] 5-5-92
Signature of Developer/Builder Date

GLW 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)880-1820 FAX (301)421-4186

DATE	REVISION	BY	APP.

PREPARED FOR

The Howard Research & Development Corp.
The Rouse Building
10275 Little Patuxent Pkwy
Columbia, Maryland 21044
(301) 492-1007

Notes & Details

Gateway Commerce Center

Parcels A-15 thru A-31
A Resubdivision of Parcel A-11

4th Election District
Howard County, MD

DES:	SCALE	ZONING	G.L.W. FILE NO.
DEV	As Shown	M-1	21-055
DRN:	DATE	TAX MAP NO.	SHEET
MCF	July 31, 1992	42	10 of 10
CHK:			
CKG			

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