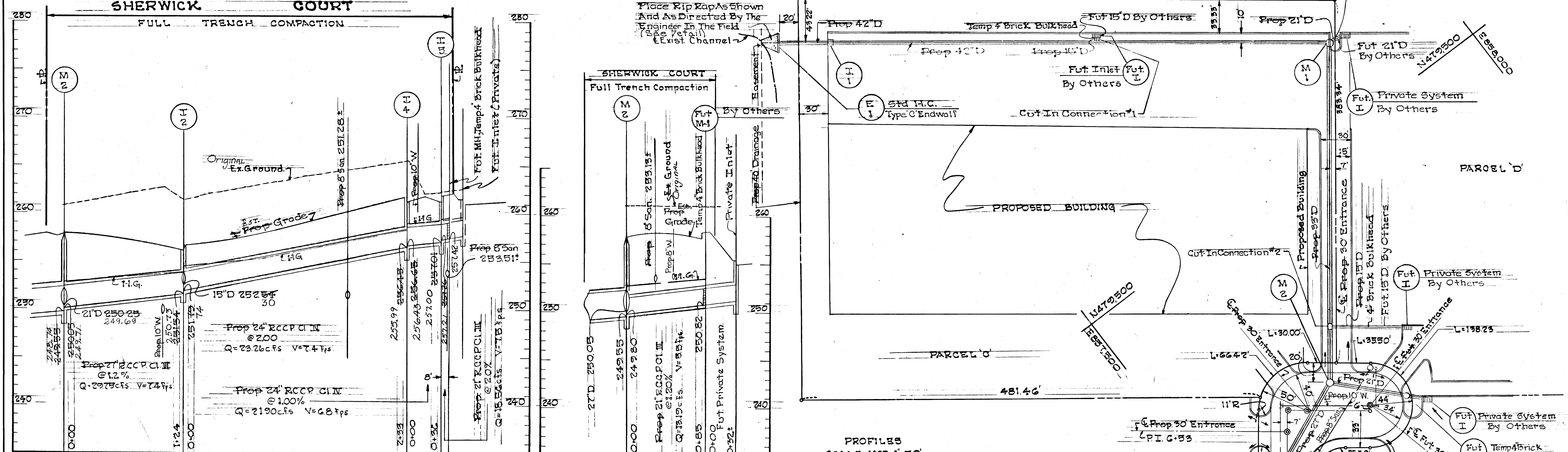
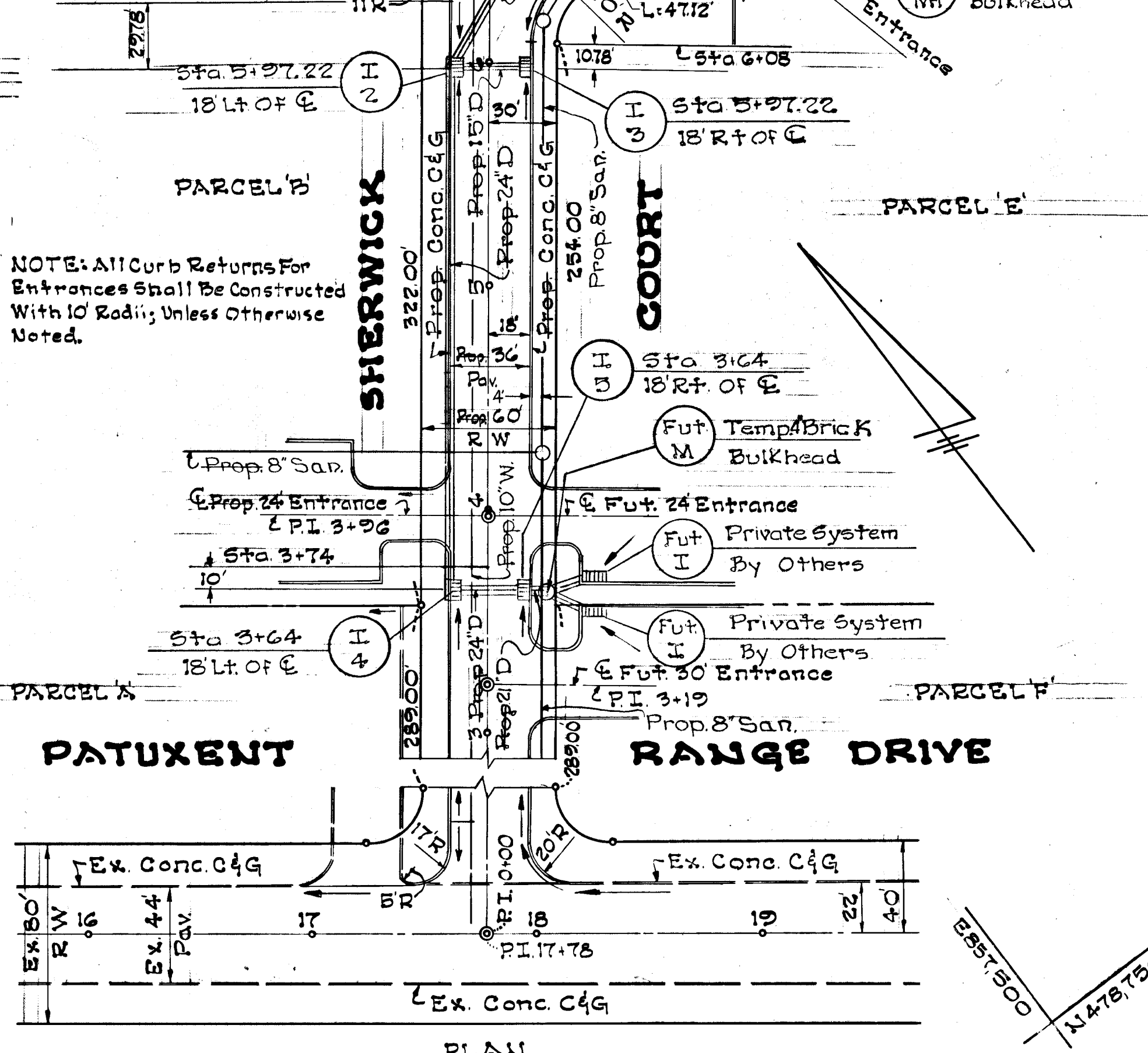
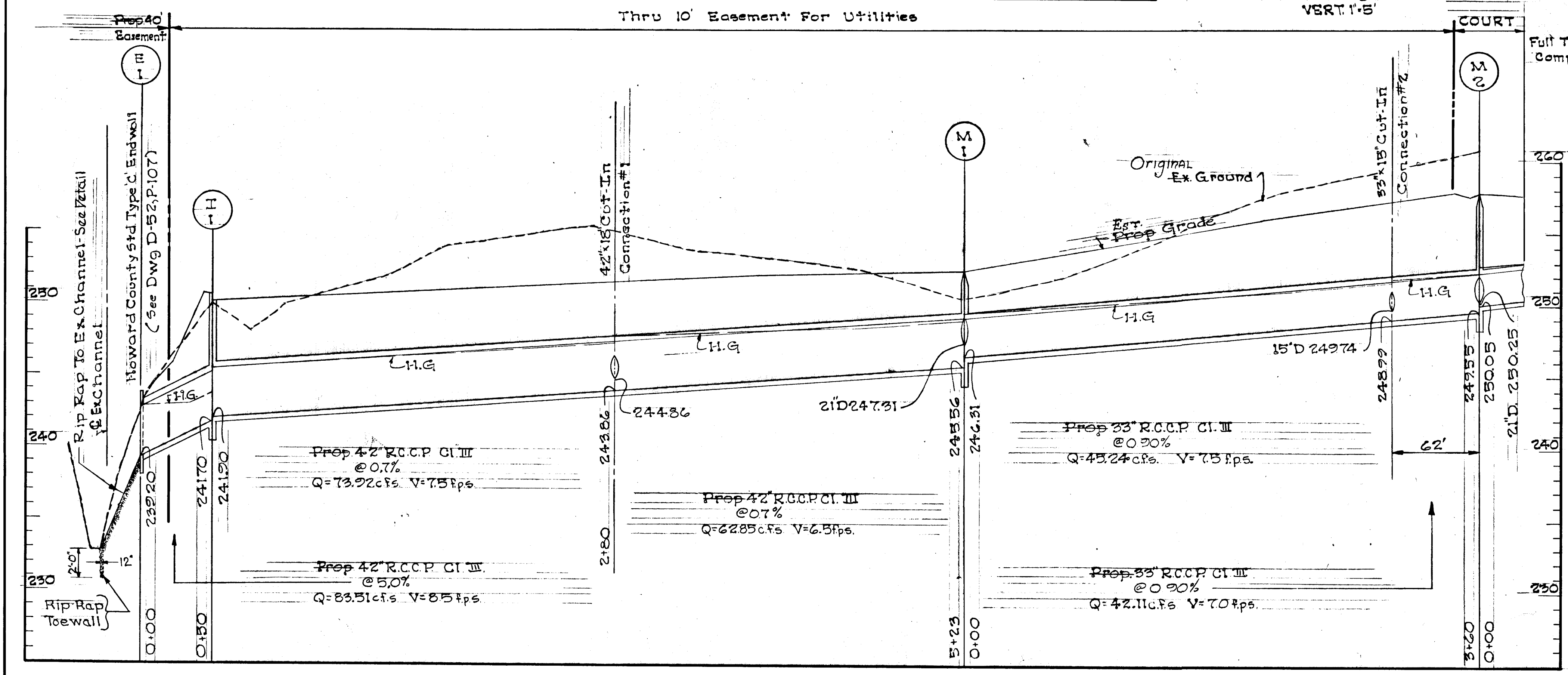


BENCH MARK #1A ELEV. 216.42
 From S.E.C. Book # 1606/17 Spike In Pole # 309591, 1270 Rt Sta 1+57.2
 21.9% Near Intersection Et 324 Washington Boulevard



PROFILES
 SCALE: HOR 1"=50'
 VERT 1"=5'



PLAN
 SCALE: 1"=50'

Topo Easement Map No. _____		NOTE: Existing Ground Topo Taken April 1970		For Manhole, Inlet, & Structure Schedule - see Sheet 2 of 2						
CFH Designer PEX Drawn C.R.M. Checked	ENGINEER GEO WM. STEPHENS, JR AND ASSOCIATES INC. Towson, Md 21204	OWNER AND DEVELOPER PATAPSCO PROPERTIES INCORPORATED 501 ST. PAUL STREET BALTIMORE, MARYLAND 21202	DEPT. OF PUBLIC IMPROVEMENTS APPROVED Principal Eng. Date Principal Arch. SE. ME. EE. CE. LA. Director			HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS Chief, Bureau of Highways <i>S. H. Hurland</i> 7/10/70	OFFICE OF PLANNING AND ZONING Chief Engineer, Division of Land Development <i>J. H. Cloutier</i> 7-10-70	STORM DRAINS BALTIMORE-WASHINGTON INDUSTRIAL PARK HOWARD COUNTY, MARYLAND ELECT. DIST. #6	REVISIONS Date Description By 4/29/70 As Built JWS	Sheet 1 of 2 Drawing No. Contract No.

RP112 #1

F-70-83

STORM DRAIN DESIGN DATA

Storm Frequency 10 Years

Location	From	To	Area No.	Incr. Acres	Total Acres	C. C.A.	Accum. C.A.	Time Conc.	I in/hr	Q c.f.s.	Pipe Size	Slope %	Vel. ft.	L ft.	Time in Pipe	Remarks
Fut.Syst.	I-5	A	2.33		0.90	2.10		5.0	6.8	14.28						
Fut.Syst.	I-5	B	0.74		0.85	0.67		5.0	6.8	4.28						
Fut.Syst.	I-5	A+B		3.07		2.73	5.0	6.8	18.56	21"	1.8	2.0	7.5	10'		
I-5	I-4	A-C		3.96		3.22	5.0	6.8	3.33							
I-4	I-4	D	0.25		0.80	0.20		5.0	6.8	1.76						
I-4	I-2	A-V		4.21		3.42	5.0	6.8	23.26	24"	1.0	2.0	7.4	237'	0.5	
I-3	I-2	E	0.89		0.79	0.64		5.0	6.8	4.35	15"	0.60	0.60	3.90	76'	
I-2	I-2	F	0.48		0.80	0.38		5.0	6.8	2.58						
I-2	M-2	A-F		5.54		4.44	5.0	6.7	29.75	27"	0.90	1.20	7.4	124'	0.3	
Fut.Syst.	M-2	G	2.16		0.90	1.94		5.0	6.8	13.19	21"	0.90	1.20	5.5	100'	
M-2	Cut-In-2	A-G		7.70		6.78	5.0	6.6	42.11	33"	0.67	0.90	7.0	62'	0.1	
Fut.Syst.	Cut-In-2	H	0.68		0.89	0.98		5.0	6.8	3.94	15"	0.48	1.0	3.2	80'	
Cut-In-2	M-1	A-H		8.78		6.96	5.0	6.9	43.24	33"	0.70	0.90	7.5	298'	0.7	
Fut.Syst.	M-1	I	3.18		0.90	2.86		5.0	6.8	19.45	21"	1.80	2.0	11.0	10'	
M-1	Cut-In-1	A-I		11.96		9.82	5.0	6.4	62.85	42"	0.38	0.70	6.9	243'	0.6	
Fut.Syst.	Cut-In-1	J	1.92		0.90	1.77		5.0	6.8	11.76	18"	1.60	1.60	6.5	10'	
Cut-In-1	I-1	A-J		13.48		11.55	5.0	6.4	73.92	42"	0.32	0.70	7.9	280'	0.6	
I-1	I-1	K	2.13		0.90	1.92		5.0	6.8	13.06						
I-1	E-1	A-K		15.61		13.47	5.0	6.2	83.91	42"	0.67	0.90	8.5	30'		

n=0.015 for Pipes <24"
n=0.013 for Pipes 24" & >

STRUCTURE SCHEDULE

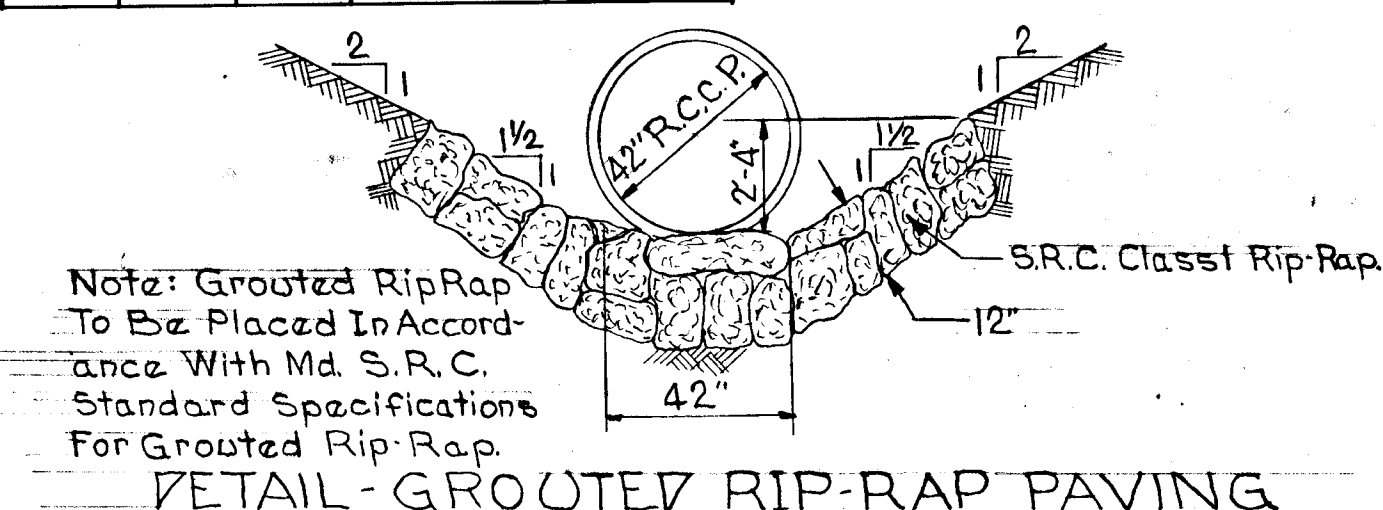
No.	TYPE	SIZE	INV. OUT	TO PELEV.
E-1	C'Endwall	42"	279.20	247.70

INLET SCHEDULE

No.	TYPE	Q	INV. OUT	TO PELEV.
I-1	Vbl.'S Comb	17.06	241.70	250.00
I-2	"	2.58	247.86	256.61
I-3	"	4.35	252.76	256.61
I-4	'S Comb	1.76	256.45	261.81
I-5	'S Comb	3.33	257.01	261.81

MANHOLE SCHEDULE

No.	TYPE	SIZE	INV. OUT	TO PELEV.
M-1	Std.	48"	245.56	252.25
M-2	Std.	48"	249.55	251.82



STORM & DRAIN INLET COMPUTATION

Inlet No.	Remarks	T.C. Min.	A. Acres	C	I in/hr	Q c.f.s.	Q Surch	Street Slope	Inlet Type	Cap. c.f.s.	Surch. c.f.s.
I-1	Sump	4.0	2.13	0.70	6.8	17.06			Vbl.'S Comb	17.0	None
I-2	Sump	3.0	0.48	0.80	6.8	2.58			Vbl.'S Comb	17.0	None
I-3	Sump	3.0	0.89	0.75	6.8	4.35			Vbl.'S Comb	17.0	None
I-4		5.0	0.25	0.80	6.8	1.76		2.6%	'S Comb	6.0	None
I-5		5.0	0.89	0.75	6.8	3.33		2.6%	'S Comb	6.0	None

STORM DRAIN SUMMARY CHART

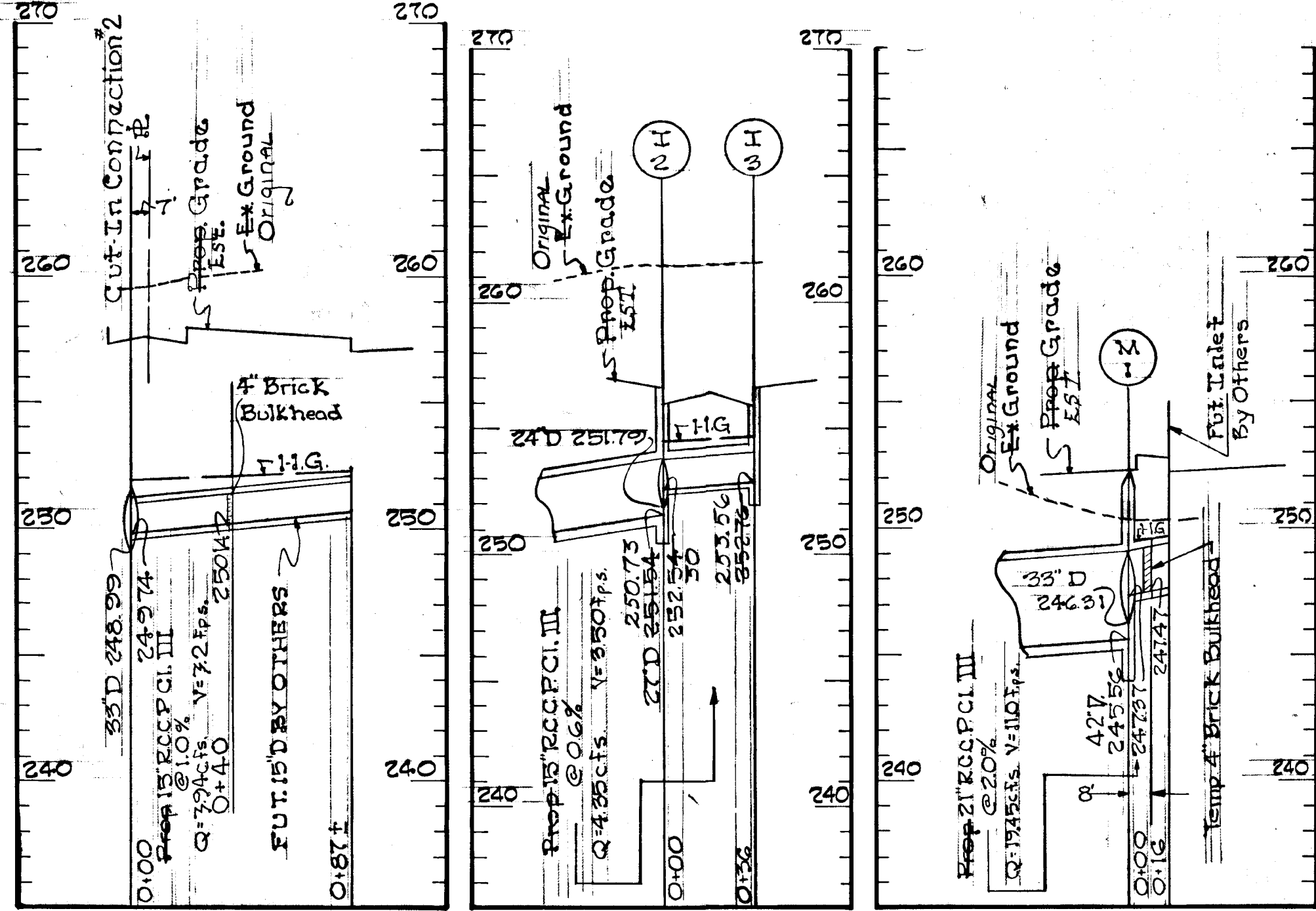
Structure No.	Invert Elevation		Hydraulic Gradient		L.H. In Structure	Pipe			Hyd Grad Slope
	In	Out	In	Out		Size	Length	Slope %	
I-1	241.90	241.70	244.25	247.87	0.45'	42"	30'	0.7	0.67
Cut-In-1	244.86	247.86	247.68	247.22	0.46'	42"	280'	0.7	0.52
M-1	246.71	245.56	249.33	248.78	0.55'	42"	243'	0.7	0.38
Cut-In-2	249.74	248.99	252.05	251.44	0.42'	33"	298'	0.9	0.70
M-2	250.07	249.55	252.95	252.44	0.51'	33"	62'	0.9	0.67
I-2	251.79	251.54	254.64	254.07	0.57'	27"	124'	1.2	0.90
I-3		252.76		254.86	None	15"	76'	0.60	0.60
I-4	256.65	256.45	258.95	258.27	0.68	24"	237'	2.00	1.00
I-5	257.26	257.01	259.42	259.27	0.15'	24"	36'	1.00	0.90

* Top Of Pipe Governs + Partial Flow.

STORM DRAIN STRUCTURE LOSSES

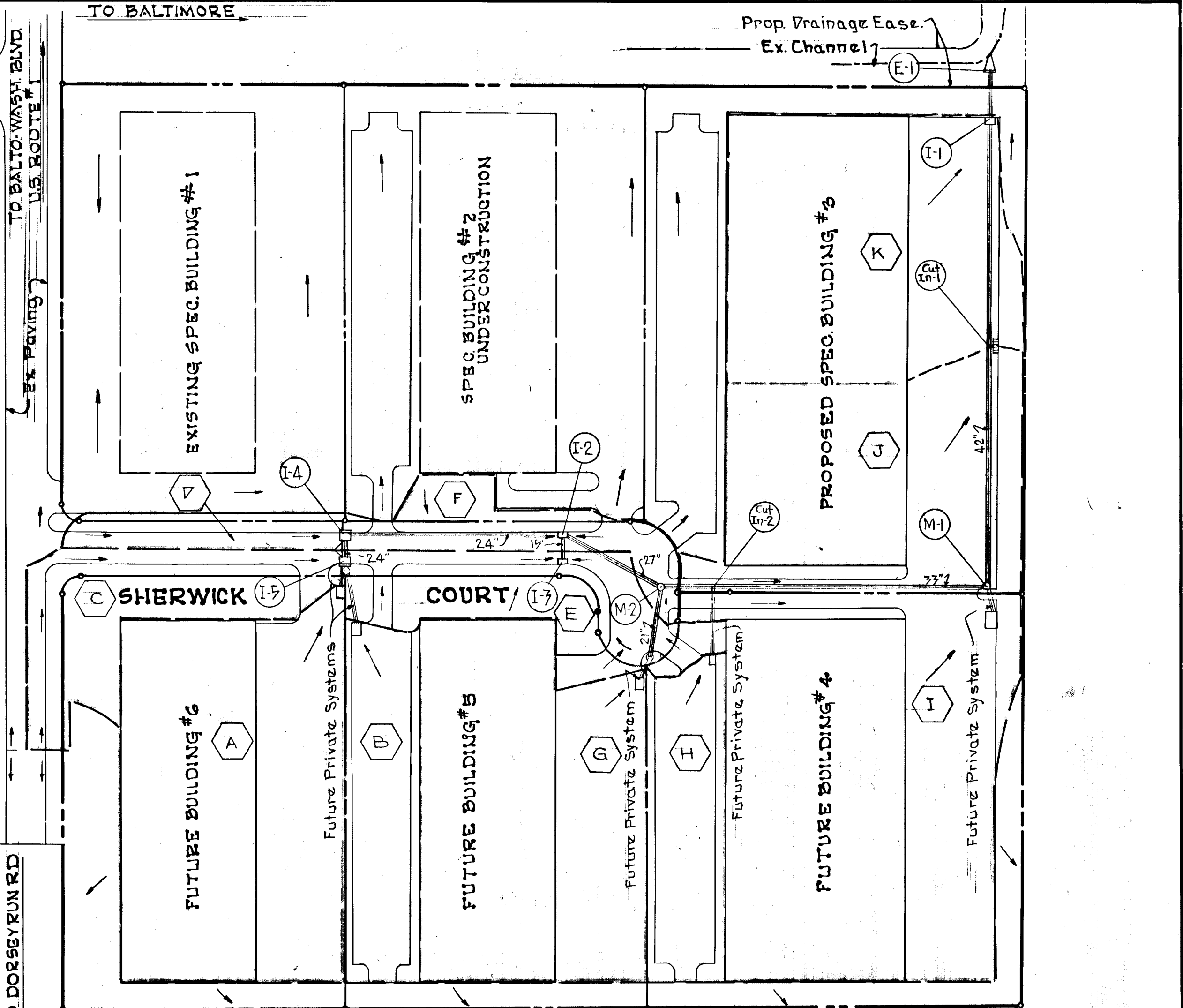
No.	Type	V		Q		Loss %	Loss				Total	Remarks
		f.p.s.	f.p.s.	c.f.s.	c.f.s.		A	B	C	D		
I-1	Vbl.'S Comb	7.5	8.5	17.92	83.91	—	0.22	0.23	—	—	0.45	
Cut-In-1		6.5	7.5	62.85	73.92	11.76	0.21	0.16	0.09	—	0.46	
M-1	Std. H.C. Manhole	7.5	6.5	43.24	62.85	19.45	0.16	0.21	0.32	0.28	0.95	C=2(0.16)
Cut-In-2		7.0	7.5	42.11	45.24	3.94	0.21	0.16	0.07	—	0.42	
M-2	Std. H.C. Manhole	7.4	7.0	29.75	42.11	13.19	0.16	0.09	0.16	0.28	0.51	
I-2	Vbl.'S Comb	7.4	7.4	23.26	29.75	4.35	0.29	—	0.16	0.12	0.57	
I-4	'S Comb	6.8	7.4	21.90	23.26	—	0.29	0.07	0.32	—	0.68	C=2(0.16)
I-5	'S Comb	7.5	6.8	18.56	21.90	—	0.30	0.15	—	—	0.15	

NOTE: Existing Ground Topo Taken April 1970



DRAINAGE AREA MAP
SCALE: 1"=100'

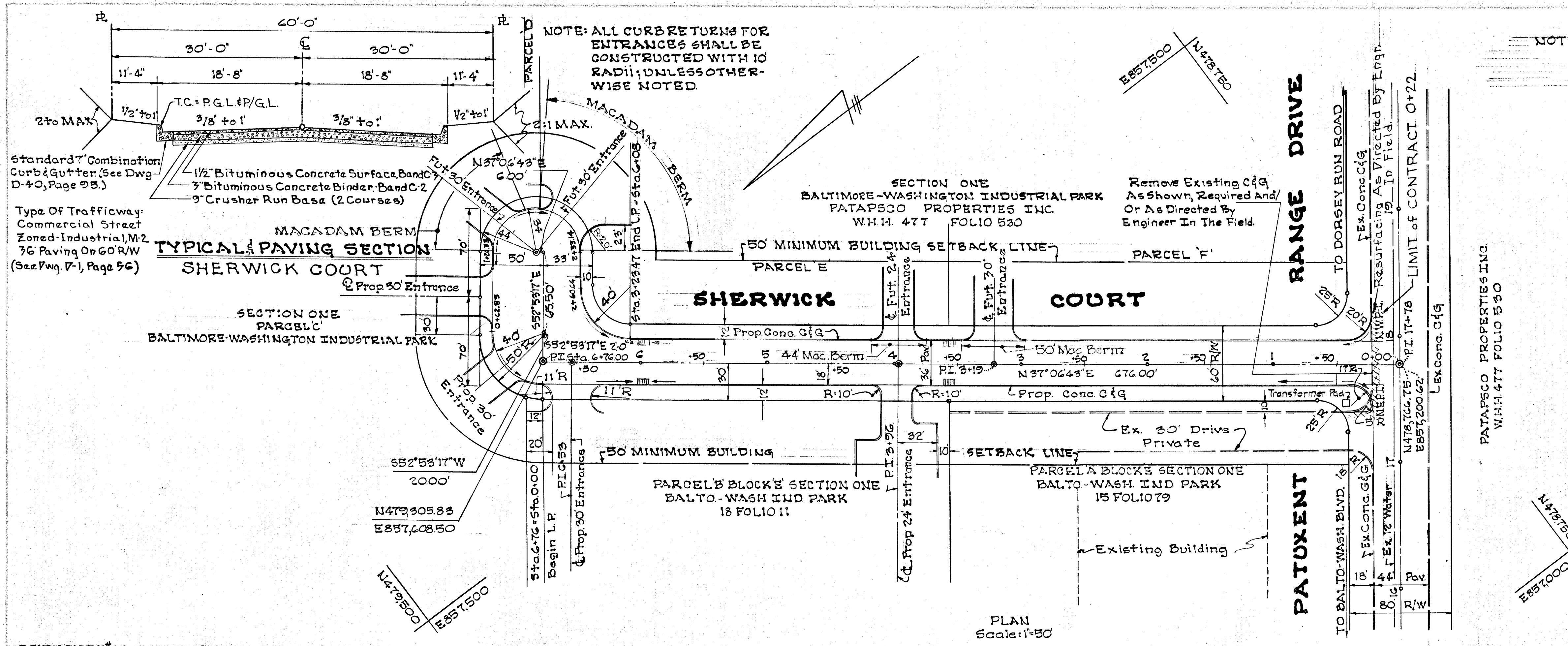
BENCH MARK #1-A
Elev. 216.42
From S.E.C. Book #1606/T Spike In Pole #309591, 1270' Rt.
Sta. 1+52.21' 32' Near Intersection Rt. 32 And Washington
Boulevard.



LOCATION MAP
SCALE: 1"=2000'

TOPO BASE MAP No.

C.F.H. Designed P.E.K. Drawn C.F.H. Checked		ENGINEER GEO. WM. STEPHENS, JR. AND ASSOCIATES INC. Towson, Md. 21204	OWNER AND DEVELOPER PATAPSCO PROPERTIES INCORPORATED 501 ST. PAUL STREET BALTIMORE, MARYLAND 21202	DEPT. OF PUBLIC IMPROVEMENTS APPROVED Principal Eng. Date Principal Arch.	HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS Chief, Bureau of Highways <i>D.H. McKeand 7/10/70</i>	OFFICE OF PLANNING AND ZONING Chief Engineer, Division of Planning and Development <i>J. McKeand 7-10-70</i>	STORM DRAINS BALTIMORE-WASHINGTON INDUSTRIAL PARK HOWARD COUNTY, MARYLAND ELECT. DIST. #6	REVISIONS Date Description By 7/25/70 As Issued SWB	Sheet 2 of 2 Drawing NE Contract NE
		NOTE: Existing Ground Topo Taken April 1970		DATE: 7/10/70		APPROVED:		DATE: 7-10-70	



REVISIONS		
DATE	DESCRIPTION	BY

OWNER & DEVELOPER PATAPSCO PROPERTIES, INC. 501 ST. PAUL STREET BALTIMORE, MARYLAND 21202	ENGINEER GEORGE W. STEPHENS, JR. & ASSOC. 303 ALLEGHENY AVE. TOWSON 4, MARYLAND
HOWARD COUNTY	
DEPARTMENT OF PUBLIC WORKS CHIEF BUREAU OF HIGHWAYS	
<i>Granville W. Nelson</i> 7/10/70 APPROVED DATE	
OFFICE OF PLANNING & ZONING CHIEF ENGINEER, DIVISION OF LAND DEVELOPMENT	
<i>J.H. Clowry</i> 7-10-70 APPROVED DATE	
PLAN & PROFILE SHERWICK COURT SECTION ONE BALTIMORE-WASHINGTON INDUSTRIAL PARK HOWARD CO., MARYLAND ELECT. DIST. NO. 6 SCALE: AS SHOWN MAY 11, 1970	

BENCH MARK #1-A Elev. 21646
From S.R.C. Book #1606/7, Spike In Pole #309531, 1270' Rt. Of Sta. 1+52, R+32 Near Intersection R+32 & Washington Blvd.

LINEAR PROFILE

