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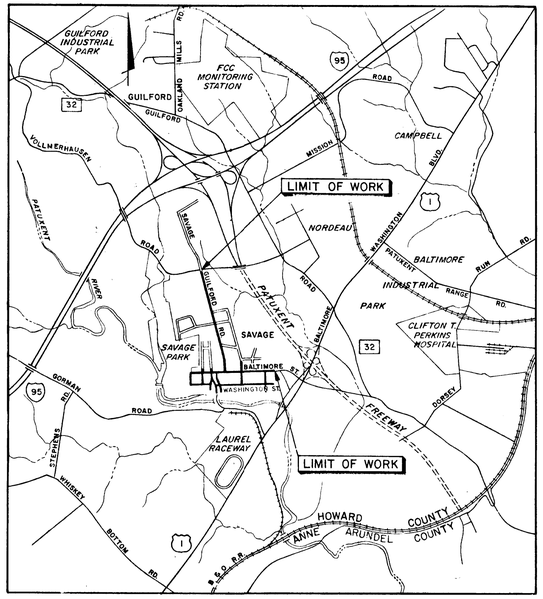
RECEIVED
JAN 05 1983
BUREAU OF ENGINEERING

SAVAGE METHODIST CHURCH PARKING AREA

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

SAVAGE AREA ROAD IMPROVEMENTS
CAPITAL PROJECT NO. J-4-4008

SAVAGE AREA DRAINAGE IMPROVEMENTS
CAPITAL PROJECT NO. J-4-4008



LOCATION MAP

3/4 1/2 1/4 0 1
SCALE IN MILES

TABULATION OF LENGTHS		
STREET NAME	LENGTH FEET	LENGTH MILES
Washington St. Sta. 109+67.10 To Sta. 118+50.34	883.24	0.167
Washington St. Sta. 119+19.04 To Sta. 141+39.30	2,220.26	0.421
Baltimore St. Sta. 209+65.97 To Sta. 243+70	3,404.03	0.645
Savage- Guilford Rd. Sta. 10+26.88 To Sta. 48+55	3,838.12	0.725
Fair St. Sta. 310+29.64 To Sta. 314+31.31	401.67	0.076
Commercial St. Sta. 410+09.67 To Sta. 414+51.30	441.63	0.084
Commercial St. Sta. 414+87.30 To Sta. 416+50.00	162.70	0.031
Savage Rd. Sta. 4+32.76 To Sta. 9+48.83	516.70	0.098
Savage Mill Entrance Sta. 7+65.84 To Sta. 9+85.73	219.89	0.042
Foundry St. Sta. 510+54.11 To Sta. 514+54.97	400.86	0.076
Foundry St. Sta. 520+25.64 To Sta. 521+25	99.36	0.019
Commerce St. (Not in Contract)		
Williams St. Sta. 610+13.02 To Sta. 614+61.92	448.90	0.085
Woodward St. Sta. 710+14.97 To Sta. 714+57.00	442.03	0.084
Baldwin St. Sta. 810+14.73 To Sta. 814+56.16	441.43	0.084
Tie-ins To Misc. Streets	749.53	0.142
TOTAL	14,670.35	2.779

By the Engineer:
"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."

Kenneth L. Evans — June 1, 1982
Kenneth L. Evans, The Wilson T. Ballard Company — Date

By the County:

"I/We certify that all development and 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 Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project."

William E. Riley — Date
William E. Riley, Chief, Bureau of Engineering

Reviewed for Howard S.C.D. and meets Technical Requirements
Signature — 12/29/82 Date
U.S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
Approved — Date
Howard S.C.D.

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — 12/30/82 DATE
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — 12/29/82 DATE

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — KENNETH L. EVANS — 4683 — REGISTERED PROFESSIONAL ENGINEER

TITLE SHEET

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 1 OF 59
SCALE: 1" = 50'
DESIGNED BY
DRAFTED BY
CHECKED BY

HOWARD COUNTY MONUMENTS

DESCRIPTION	COORDINATES NORTH	COORDINATES EAST	REMARKS
NO. 1942003	475108.3848	849838.4063	CONC. MON./BRONZE DI.

WASHINGTON ST. BL SVY.

DESCRIPTION		COORDINATES	
TRAVERSE PT.	STATION	NORTH	EAST
T-1	110+00 WASHINGTON ST =310+00 FAIR ST	474600.8499	848609.6835
M-1	114+37.37 WASHINGTON ST. =410+00 COMMERCIAL ST	474605.7795	849047.0296
T-14	114+57.74 WASHINGTON ST.	474606.0091	849067.3983
F-2	118+18.73 WASHINGTON ST. =510+00 FOUNDRY ST.	474609.4669	849428.3692
T-13	118+27.03 WASHINGTON ST	474609.5464	849436.6688
V-3	119+03.67 WASHINGTON ST =7+03.58 SAVAGE RD.	474610.4592	849513.3039
L-1	120+77.05 WASHINGTON ST =610+00 WILLIAM ST.	474612.5243	849686.6741
N-2	122+46.71 WASHINGTON ST. =10+00 ENTR. RIVER ISL.W	474614.5451	849856.3220
T-12	123+35.39 WASHINGTON ST	474615.6013	849944.9912
R-4	127+50.00 WASHINGTON ST =6+71.13 DRAINAGE SPUR	474622.4852	850359.5450

BALTIMORE ST. BL SVY.

DESCRIPTION		COORDINATES	
TRAVERSE PT.	STATION	NORTH	EAST
T-2	210+00 BALTIMORE ST 314+62.51 FAIR ST	475063.2322	848598.6857
M-2	214+45.19 BALTIMORE ST= 414+63.25 COMMERICIAL ST	475069.0211	849043.8365
T-3	217+84.53 BALTO. ST.	475073.4337	849383.1468
F-3	217+99.67 BALTIMORE ST. =514+65.14 FOUNDRY ST.	475073.6287	849398.2835
F-4	218+06.43 BALTIMORE ST. =520+00 FOUDRY ST.	475073.7158	849405.0450
L-3	220+07.85 BALTIMORE ST. =614+72.77 WILLIAM ST.	475076.3105	849606.4463
T-4	222+17.68 BALTIMORE ST. =10+00.00 SAVAGE/GUILFORD	475079.0137	849816.2678
R-6	226+25.00 BALTIMORE ST. =11+52.59 DRAINAGE SPUR	475084.3240	850223.5492

SAVAGE RD. BL SVY.

DESCRIPTION		COORDINATES	
TRAVERSE PT.	STATION	NORTH	EAST
V-1	2+84.35 SAVAGE RD.	474204.3670	849597.9826
V-2	5+00 SAVAGE RD.	474419.5667	849584.0549

FOUNDRY ST. BL SVY.

DESCRIPTION		COORDINATES	
TRAVERSE PT.	STATION	NORTH	EAST
F-1	508+32.43 FOUNDRY ST. = 7+65.84 ℄ CONST. MILL ENT	474446.1828	849390.7128
V-4	512+79.52 FOUNDRY ST =10+00 SAVAGE RD.	474888.4016	849410.2894
F-5	529+35.85 FOUNDRY ST =12+95.60 COMMERCE ST	476006.5725	849330.2856
F-6	533+00 FOUNDRY ST.	476369.5617	849301.1955

COMMERCIAL ST. BL SVY.

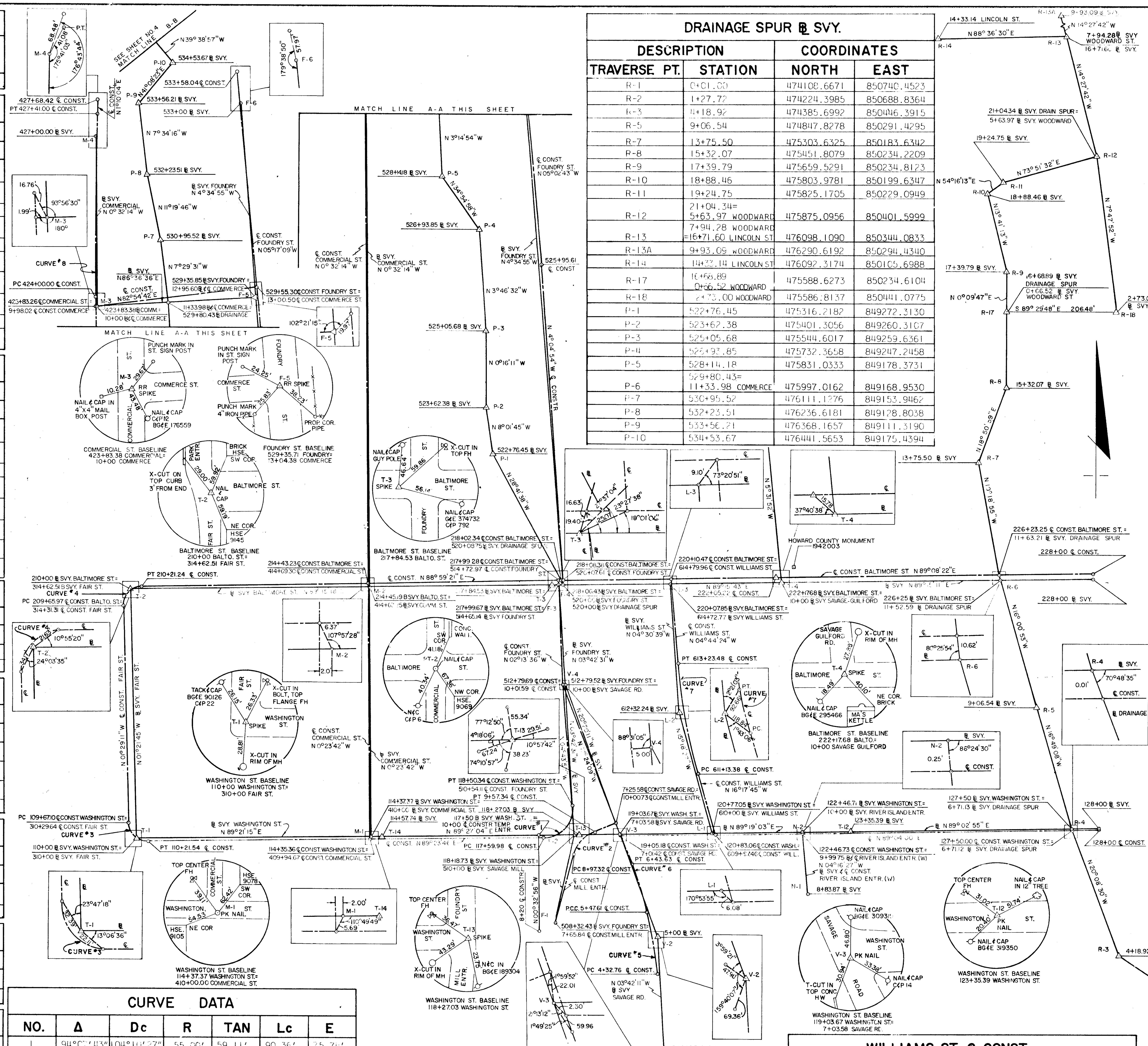
DESCRIPTION		COORDINATES	
TRAVERSE PT.	STATION	NORTH	EAST
M-3	423+83.38 COMMERCIAL ST =10+00 COMMERCE ST.	475989.0939	849035.2074
M-4	427+00 COMMERCIAL ST	476305.7040	849032.2381

WILLIAMS ST. BL SVY.

DESCRIPTION		COORDINATES	
TRAVERSE PT.	STATION	NORTH	EAST
L-2	612+32.24 WILLIAM ST	474836.5252	849625.3631

COMMERCIAL ST. ℄ CONST.

STATION	COORDINATES NORTH	COORDINATES EAST
423+83.26 COMMERCIAL ST. =9+98.02 COMMERCE ST.	475988.9765	849033.2259
P.C. 424+00.00 COMMERCIAL ST.	476005.7139	849033.0690
P.T. 427+41.00 COMMERCIAL ST.	476346.6981	849034.9455



DRAINAGE SPUR BL SVY.

DESCRIPTION		COORDINATES	
TRAVERSE PT.	STATION	NORTH	EAST
R-1	0+01.00	474108.6671	850740.4523
R-2	1+27.72	474224.3985	850688.8364
R-3	4+18.92	474385.6992	850446.3915
R-5	9+06.54	474847.8278	850291.4295
R-7	13+75.50	475303.6325	850183.6342
R-8	15+32.07	475451.8079	850234.2209
R-9	17+39.79	475659.5291	850234.8123
R-10	18+88.46	475803.9781	850199.6347
R-11	19+24.75	475825.1705	850229.0949
R-12	21+04.34= 5+63.97 WOODWARD	475875.0956	850401.5999
R-13	7+94.28 WOODWARD =16+71.60 LINCOLN ST	476098.1090	850344.0833
R-13A	9+93.09 WOODWARD	476290.6192	850294.4340
R-14	14+33.14 LINCOLN ST	476092.3174	850105.6988
R-17	16+68.89 0+66.52 WOODWARD	475588.6273	850234.6104
R-18	2+73.00 WOODWARD	475586.8137	850441.0775
P-1	522+76.45	475316.2182	849272.3130
P-2	523+62.38	475401.3056	849260.3107
P-3	525+05.68	475544.6017	849259.6361
P-4	526+93.85	475732.3658	849247.2458
P-5	528+14.18	475831.0333	849178.3731
P-6	529+80.43= 11+33.98 COMMERCE	475997.0162	849168.9530
P-7	530+95.52	476111.1276	849153.9462
P-8	532+23.51	476236.6181	849128.8038
P-9	533+56.21	476368.1657	849111.3190
P-10	534+53.67	476441.5653	849175.4394

CURVE DATA

NO.	Δ	Dc	R	TAN	Lc	E
1	94°07'43"	104°10'27"	55.00'	59.11'	90.36'	25.74'
2	52°54'33"	88°08'50"	65.00'	32.34'	60.02'	7.60'
3	89°07'03"	163°42'08"	35.00'	34.47'	54.44'	14.12'
4	90°28'32"	163°42'08"	35.00'	35.29'	55.27'	14.70'
5	6°10'06"	5°22'12"	1066.82'	57.48'	114.85'	1.55'
6	8°24'06"	8°45'00"	654.81'	48.10'	96.02'	1.76'
7	11°33'21"	5°30'00"	1041.74'	10[illegible].41'	210.11'	5.32'
8	1°42'18"	0°30'00"	11459.16'	170.51'	341.00'	1.27'

RIVER ISLAND ENTRANCE BL SVY.

DESCRIPTION		COORDINATES	
TRAVERSE PT.	STATION	NORTH	EAST
N-1	8+83.87	474098.7381	849864.9770

WILLIAMS ST. ℄ CONST.

STATION	COORDINATES NORTH	COORDINATES EAST
P.C. 611+13.38	474722.8962	849660.1588
P.T. 613+23.48	474929.1217	849621.8707

WASHINGTON ST. ℄ CONST.

STATION	COORDINATES NORTH	COORDINATES EAST
PC 109+67.10 =310+29.64 FAIR ST.	474630.1674	848595.9184
PT 110+21.54	474596.0773	848631.2755
=409+94.67 COMMERCIAL ST.	474600.4391	849045.0664
PC 117+59.98	474603.8609	849369.6719
PT 118+50.34 =510+54.11 FOUNDRY ST.	474663.3955	849423.9046
119+05.18 = 7+01.42 SAVAGE RD.	474608.7375	849514.8301
120+83.06 =609+97.46 WILLIAMS ST.	474611.6347	849692.6850
122+46.73 = 9+99.75 RIVER ISLAND ENTR.	474614.3005	849856.3403
127+50.00 = 6+71.12 DRAINAGE SPUR	474622.4973	850359.5406

BALTIMORE ST. ℄ CONST.

STATION	COORDINATES NORTH	COORDINATES EAST
PC 209+65.97 =314+31.31 FAIR ST.	475031.7042	848585.4991
PT 210+21.34	475067.6066	848619.8698
214+43.23 =414+69.30 COMMERCIAL ST.	475075.0518	849041.7949
217+99.28 =514+72.97 FOUNDRY ST.	475081.3335	849397.7841
218+02.34 =520+08.75 DRAINAGE SPUR	475081.3875	849400.8459
218+08.38 =520+07.61 FOUNDRY ST.	475081.4940	849406.8830
220+10.47 =614+79.96 WILLIAMS ST.	475085.0595	849608.9409
222+05.21	475088.4954	849803.6573
226+23.25 = 11+63.21 DRAINAGE SPUR	475094.7735	850221.6474

SAVAGE RD. ℄ CONST.

STATION	COORDINATES NORTH	COORDINATES EAST
P.C. 4+32.76	474350.2040	849584.0608
P.C.C. 5+47.61	474463.2869	849564.2909
P.T. 6+43.63	474554.9293	8495[illegible].[illegible]200
7+25.58 =10+00.73 MILL ENTRANCE	474631.2295	849506.0145

FOUNDRY ST. ℄ CONST.

STATION	COORDINATES NORTH	COORDINATES EAST
512+79.69 = 10+01.59 SAVAGE RD.	474888.2073	849405.2932
525+95.61	475668.0015	849365.0305
529+55.30 = 13+00.50 COMMERCE ST.	476026.3025	849333.3979
533+28.83	4763[illegible].[illegible]388	849298.9056

MILL ENTRANCE ℄ CONST.

STATION	COORDINATES NORTH	COORDINATES EAST
P.C. 8+97.32	474572.6652	849426.6010
P.T. 9+57.34	474615.5030	849465.5740

TEMPORARY MILL ENTRANCE

STATION	COORDINATES NORTH	COORDINATES EAST
117+50 BL SVY. WASH. ST. = 10+00	474608.8089	849359.6449
8+20	474428.8171	849361.3692

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — 12/30/82 DATE
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — 12/29/82 DATE

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

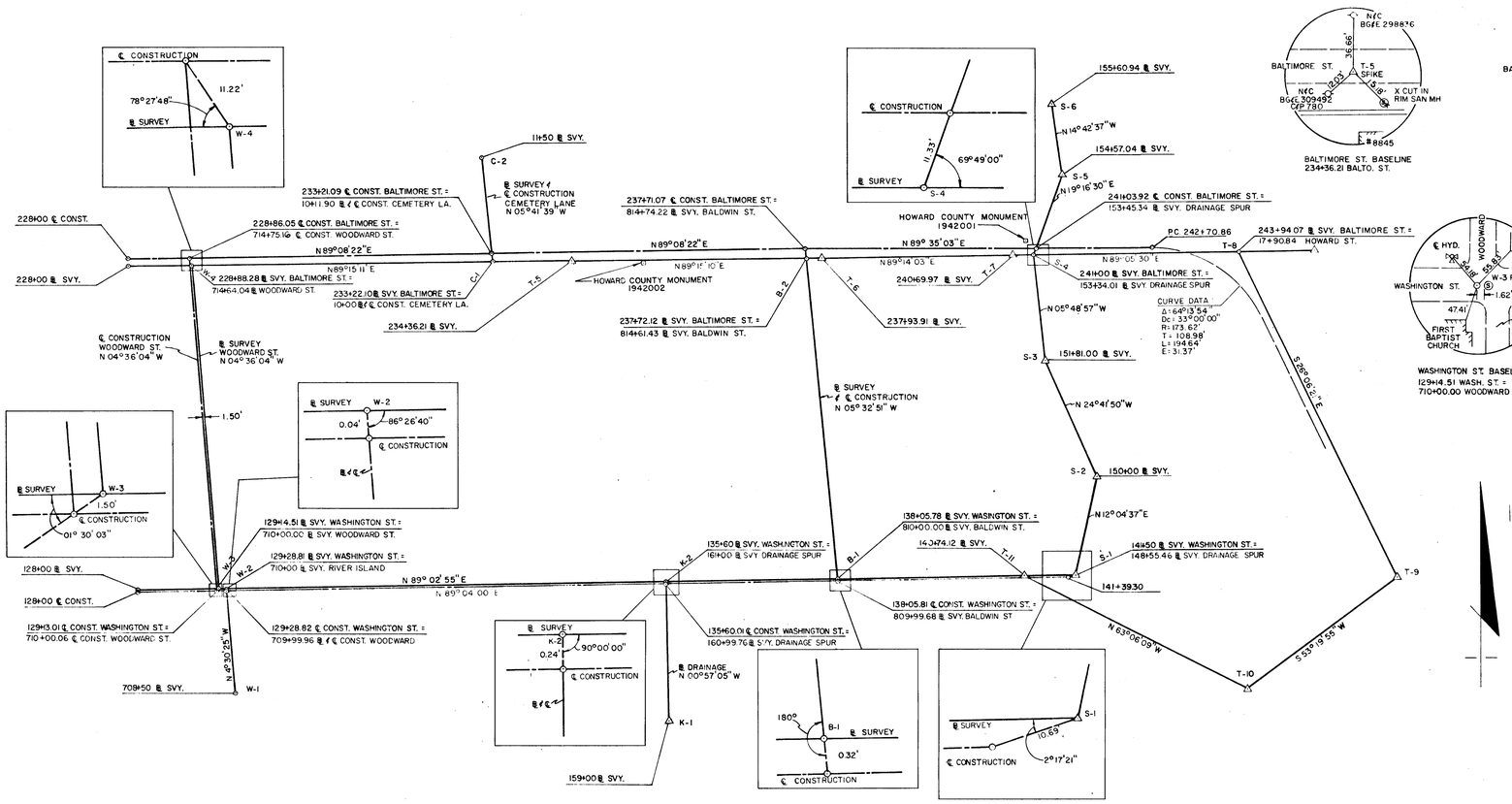
CENTERLINE CONSTRUCTION STAKEOUT DATA

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 2 OF 59

SCALE: 1" = 100'

DESIGNED BY
DRAFTED BY
CHECKED BY



BALTIMORE ST. ℄ CONST.

STATION	COORDINATES NORTH	COORDINATES EAST
228 + 86.05 = 714 + 75.16 WOODWARD ST.	475098.7202	850484.4176
233 + 21.09 = 10 + 11.90 CEMETERY LA.	475105.2536	850919.4072
237 + 71.07 = 814 + 74.22 BALDWIN ST.	475112.0114	851369.3396
241 + 03.92 = 153 + 45.34 DRAINAGE SPUR	475114.4266	851702.1823
P.C. 242+70.86	475115.6379	851869.1220
WASHINGTON ST. ℄ CONST.		
129 + 12.01 = 710 + 00.06 WOODWARD ST.	474625.1523	850522.5297
129 + 28.82 = 709 + 99.96 RIVER ISLAND	474625.4097	850538.3339
135 + 60.01 = 160 + 99.76 DRAINAGE SPUR	474635.6900	851169.4404
138 + 05.81 = 809 + 99.68 BALDWIN ST.	474639.6935	851415.2137
141 + 39.30	474645.1251	851748.6585

℄ SURVEY

STATION	COORDINATES NORTH	COORDINATES EAST
T-9 12+70.27 HOWARD ST.	474640.9311	852221.5205
T-10 STORCH WOODS TRAVERSE POINT	474490.7064	852006.3131

HOWARD COUNTY MONUMENTS

DESCRIPTION	COORDINATES NORTH	COORDINATES EAST	REMARKS
NO. 1942001	475123.981	851686.679	CONC. MONUMENT (BRONZE DISK)
NO. 1942002	475091.353	851137.705	CONC. MONUMENT (BRONZE DISK)

BALTIMORE ST. ℄ SURVEY

DESCRIPTION TRAVERSE PT.	DESCRIPTION STATION	COORDINATES NORTH	COORDINATES EAST	REMARKS
W-4	228 + 88.28	475087.7564	850486.8048	714+64.04 WOODWARD ST.
C-1	233 + 22.10	475093.4122	850920.5879	10+00 CEMETERY LA.
T-5	234 + 36.21	475094.9000	851034.6937	P.I.
B-2	237 + 72.12	475099.2809	851370.5761	=814+61.43 BALDWIN ST.
T-6	237 + 93.91	475099.5651	851392.3647	P.I.
T-7	240 + 69.97	475103.2551	851668.3950	P.I.
S-4	241 + 00.00	475103.7315	851698.4422	153+34.01 DRAINAGE SPUR
T-8	243 + 94.07	475108.3933	851992.4535	17+90.84 HOWARD ST. (SHA STATIONING)
CEMETERY LANE ℄ SURVEY				
C-1	10+00	475093.4122	850920.5879	=233+22.10 ℄ SVY. BALTO.
C-2	11+50	475242.6721	850905.7050	

WASHINGTON ST. ℄ SURVEY

DESCRIPTION TRAVERSE PT.	DESCRIPTION STATION	COORDINATES NORTH	COORDINATES EAST	REMARKS
W-1	129 + 14.51	474625.1695	850548.0298	=710+00.00 WOODWARD ST.
W-2	129 + 28.81	474625.4580	850538.3304	= 709 + 00.00 RIVER ISLAND
K-2	135 + 60.00	474635.9338	851169.4364	= 161 + 00.00 DRAINAGE SPUR
B-1	138 + 05.78	474640.0146	851415.1825	= 810 + 00.00 BALDWIN ST.
T-11	140 + 74.12	474644.4699	851683.4825	P.I.
S-1	141 + 50.00	474645.7294	851759.3321	=148+55.46 DRAINAGE SPUR
WOODWARD ST. ℄ SURVEY				
W-1	708 + 50.00	474475.9178	850556.1173	
W-2	710 + 00.00	474625.4580	850538.3304	=129+28.81 WASH. ST.
DRAINAGE SPUR ℄ SURVEY				
K-1	159 + 00.00	474655.9615	851172.7570	
K-2	161 + 00.00	474635.9338	851169.4364	=135+60.00 WASH. ST.
DRAINAGE SPUR ℄ SURVEY				
S-1	148 + 55.46	474645.7298	851759.3321	=141+50.00 WASH. ST.
S-2	150 + 00.00	474787.0680	851789.5729	P.I.
S-3	151 + 81.00	474951.5129	851713.9463	P.I.
S-4	153 + 34.01	475103.7315	851698.4422	=241+00.00 BALTO. ST.
S-5	154 + 57.04	475219.8651	851739.0546	P.I.
S-6	155 + 60.94	475320.3595	851712.6710	

NO	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/87
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/87

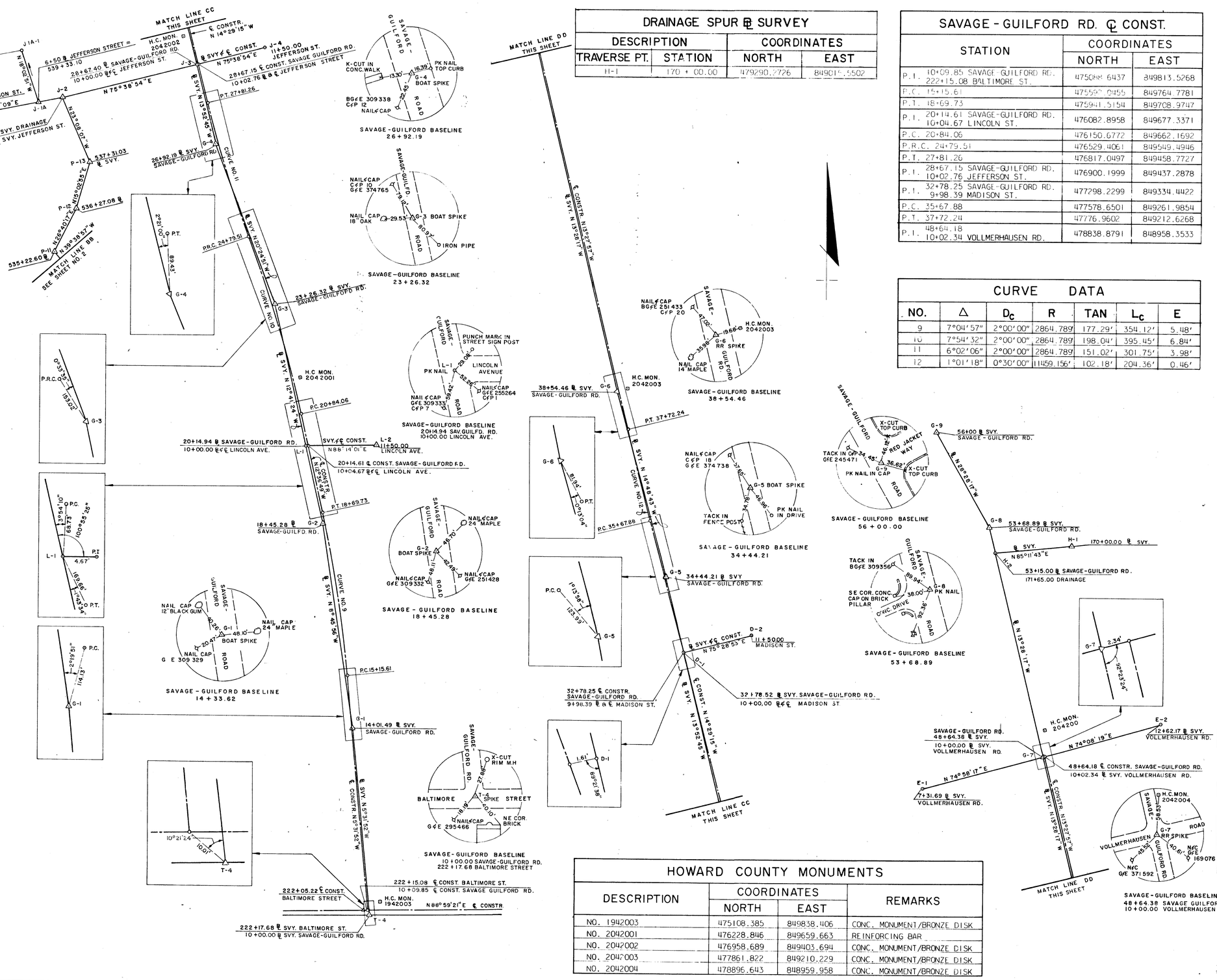
PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

Kenneth L. Evans 11685

CENTERLINE CONSTRUCTION STAKEOUT DATA

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 3 OF 59
SCALE: 1" = 100'
DESIGNED BY
DRAFTED BY
CHECKED BY



DRAINAGE SPUR ℄ SURVEY

DESCRIPTION		COORDINATES	
TRAVERSE PT.	STATION	NORTH	EAST
H-1	170 + 00.00	479290.2726	849015.5502

SAVAGE - GUILFORD RD. ℄ CONST.

STATION	COORDINATES	
	NORTH	EAST
P.I. 10+09.85 SAVAGE GUILFORD RD. 222+15.08 BALTIMORE ST.	475088.6437	849813.5268
P.C. 15+15.61	475592.0455	849764.7781
P.T. 18+69.73	475941.5154	849708.9747
P.I. 20+14.61 SAVAGE-GUILFORD RD. 10+04.67 LINCOLN ST.	476082.8958	849677.3371
P.C. 20+84.06	476150.6772	849662.1692
P.R.C. 24+79.51	476529.4061	849549.4946
P.T. 27+81.26	476817.0497	849458.7727
P.I. 28+67.15 SAVAGE-GUILFORD RD. 10+02.76 JEFFERSON ST.	476900.1999	849437.2878
P.I. 32+78.25 SAVAGE-GUILFORD RD. 9+98.39 MADISON ST.	477298.2299	849334.4422
P.C. 35+67.88	477578.6501	849261.9854
P.T. 37+72.24	47776.9602	849212.6268
P.I. 48+64.18 10+02.34 VOLLMERHAUSEN RD.	478838.8791	848958.3533

SAVAGE-GUILFORD RD. ℄ SURVEY

DESCRIPTION		COORDINATES	
TRAVERSE PT.	STATION	NORTH	EAST
T-4	10+00.00 =222+17.68 BALTO. ST	475079.0137	849816.2678
G-1	14+01.49	475478.6326	849777.5693
G-2	18+45.28	475917.2361	849709.9396
L-1	20+14.94 =10+00.00 LINCOLN AVE.	476082.7518	849672.6693
G-3	23+26.32	476386.5286	849604.2657
G-4	26+92.19	476729.4243	849476.6467
J-3	28+67.40 = 10+00.00 JEFFERSON	476899.5169	849434.6186
D-1	32+78.52 =10+00.00 MADISON ST.	477298.6336	849336.0009
G-5	34+44.21	477459.4857	849296.2560
G-6	38+54.46	477856.0986	849191.3775
G-7	48+64.38 10+00.00 VOLLERHAUSEN	478838.2401	848956.1042
H-2	53+15.00 171+65.00 DRAINAGE	479276.4521	848851.1300
G-8	53+68.89	479328.8594	848838.5758
G-9	56+00.00	479532.0178	848728.4010

CURVE DATA

NO.	Δ	D_C	R	TAN	L_C	E
9	7°04'57"	2°00'00"	2864.789'	177.29'	354.12'	5.48'
10	7°54'32"	2°00'00"	2864.789'	198.04'	395.45'	6.84'
11	6°02'06"	2°00'00"	2864.789'	151.02'	301.75'	3.98'
12	1°01'18"	0°30'00"	11459.156'	102.18'	204.36'	0.46'

LINCOLN ST. ℄ SURVEY

DESCRIPTION		COORDINATES	
TRAVERSE PT.	STATION	NORTH	EAST
L-2	11 + 50.00	476087.3755	849822.5980

JEFFERSON ST. ℄ SURVEY

DESCRIPTION		COORDINATES	
TRAVERSE PT.	STATION	NORTH	EAST
J-1	4 + 50.00	476777.4026	848898.5791
J-2	7+02.73 538+80.50 DRAINAGE	476825.8316	849146.6257
J-4	11 + 50.00	476936.6979	849579.9374
J-1A	6 + 50.00 = 539+33.10 DRAINAGE	476815.7273	849094.8729
J 1A-1	540 + 50 DRAINAGE	476926.8758	849058.6565

MADISON ST. ℄ SURVEY

DESCRIPTION		COORDINATES	
TRAVERSE PT.	STATION	NORTH	EAST
D-2	11 + 50.00	477336.2379	849481.2108

VOLLMERHAUSEN RD. ℄ SURVEY

DESCRIPTION		COORDINATES	
TRAVERSE PT.	STATION	NORTH	EAST
E-1	7 + 31.69	478768.6668	848696.9714
E-2	12 + 62.17	478909.8942	849208.2922

DRAINAGE SPUR ℄ SURVEY

DESCRIPTION		COORDINATES	
TRAVERSE PT.	STATION	NORTH	EAST
P-11	535 + 22.60	476494.6327	849131.4612
P-12	536 + 27.08	476587.9984	849178.3608
P-13	537 + 31.03	476688.3868	849205.3511

HOWARD COUNTY MONUMENTS

DESCRIPTION	COORDINATES		REMARKS
	NORTH	EAST	
NO. 1942003	475108.385	849838.406	CONC. MONUMENT/BRONZE DISK
NO. 2042001	476228.846	849659.663	REINFORCING BAR
NO. 2042002	476958.689	849403.694	CONC. MONUMENT/BRONZE DISK
NO. 2042003	477861.822	849210.229	CONC. MONUMENT/BRONZE DISK
NO. 2042004	478896.643	848959.958	CONC. MONUMENT/BRONZE DISK

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
CHIEF, BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

Kenneth L. Evans 14403

CENTERLINE CONSTRUCTION STAKEOUT DATA

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 4 OF 59
SCALE: 1" = 100'
DESIGNED BY
DRAFTED BY
CHECKED BY

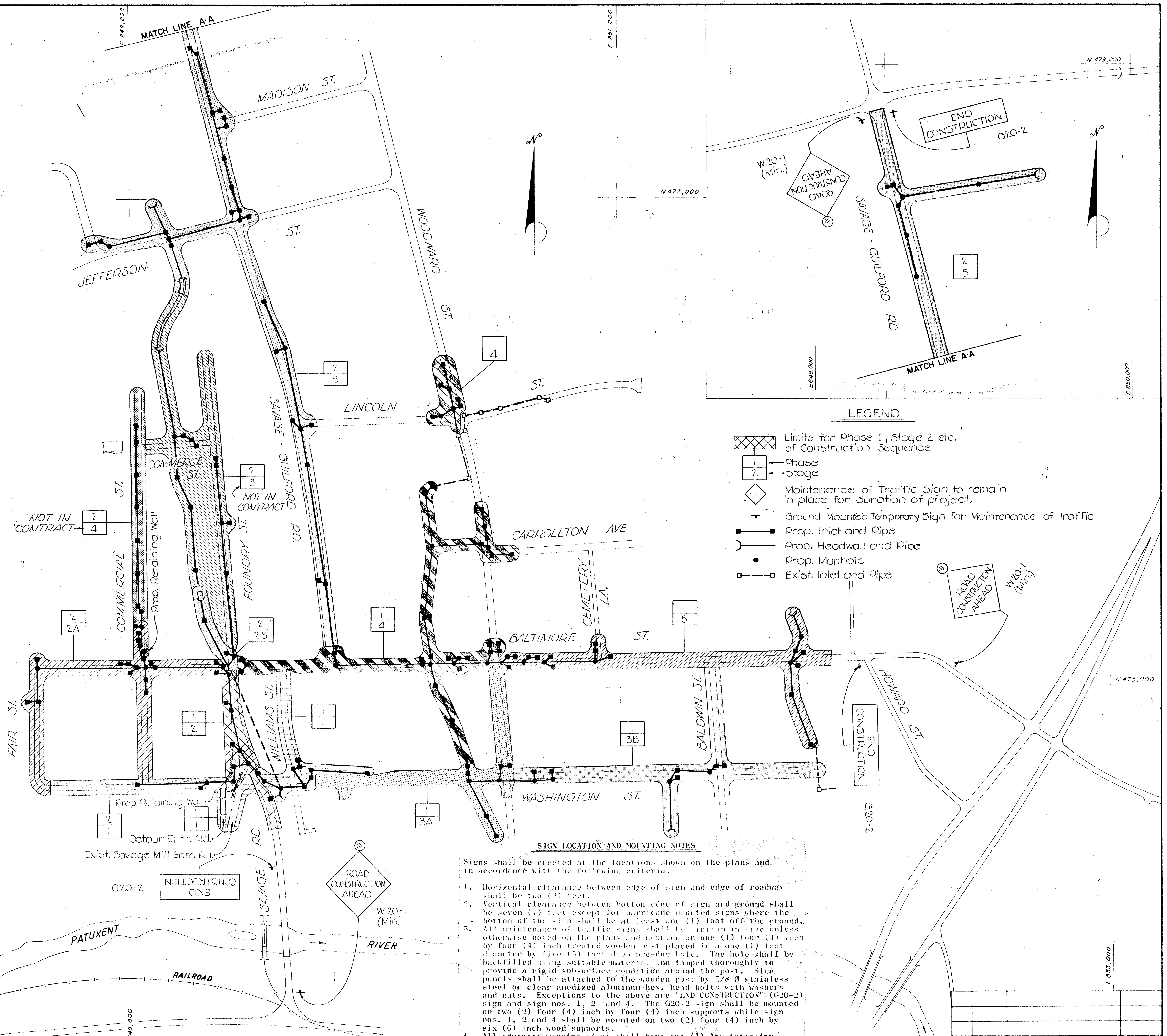
SEQUENCE OF CONSTRUCTION

General

1. The following sequence of operations for Phase 1 and Phase 2 refers specifically to the critical areas of work which must be completed during a certain construction stage before the next construction stage may be commenced. The listed items under each stage are a suggested schedule of work to be followed to assure orderly progress to complete the project. The many items of work which may be performed during any of the stages without interrupting traffic or the construction scheduling and do not control the overall schedule of completion for the Project are not listed.
2. Prior to commencing any construction on this project the contractor shall submit a detailed progress schedule and sequence of constructions to the Howard County Bureau of Public Works for approval.
3. Phase 1 construction includes, but is not limited to the construction of the road and storm drain improvements east of and including Foundry St. and south of and including Baltimore St. Phase 2 includes, but is not limited to, construction of all remaining road and drainage improvements for the project.
4. Egress and ingress to properties located on streets under construction shall be maintained at all times. Thru traffic using the street shall be detoured as noted in the text and details that follow.
5. One (1) lane, twelve (12) feet in width, shall be maintained on all streets within the project for emergency vehicle use for the duration of the project.
6. During storm drain construction within the roadway, two-way traffic shall be maintained on one operating lane (nine (9) foot minimum clear width) with flagger control during work hours. Plating or backfilling of all excavations shall be required at the end of each working day and the street restored to two-lane two-way traffic.
7. All standard regulatory and warning signs used for maintenance of traffic shall be in accordance with the "Manual on Uniform Traffic Control Devices," (MUTCD 1978) and the Maryland edition of the booklet, "Standard Highway Signs". It shall be the responsibility of the contractor to procure the latest edition and supplements of each of these publications for his use.

CONSTRUCTION	TRAFFIC CONTROL
PHASE 1	
Stage 1	
1. Construct Savage Mill Entrance Detour and open to traffic	1. None required.
2. Construct storm drains, grading, and paving on Washington St. between Savage Rd. and Williams St. and on Williams St. between Baltimore and Washington Sts. and reopen to traffic.	2. Close Washington St. between Savage Rd. and Williams St. and Williams St. between Baltimore and Washington Sts. to thru traffic. Detour traffic via Savage Rd., Baltimore St., and Woodward St.
3. After opening Savage Mill Entr. Detour to traffic construct the Reinforced Concrete Retaining Wall between Washington St. and Savage Mill Entr; complete grading and paving Savage Mill Entr. and open to traffic.	3. Maintain ingress and egress to Savage Mill via the Savage Mill Entr. Detour and Washington St.
Stage 2	
1. Construct the storm drains in Foundry St. between Washington and Baltimore Sts. and along the west side of Savage Rd. Complete grading and paving of Savage Rd., Foundry, and Washington Sts. to the maximum limit the retaining wall co construction will allow and reopen Savage Rd. and Foundry St. to thru traffic between Washington & Baltimore Sts.	1. Close Savage Rd. to thru traffic between Washington and Baltimore Sts. Detour traffic via Washington, Williams, and Baltimore Sts.
2. Resurface Savage Rd. south of Washington St.	2. Paving operation to be done under traffic. One half the road shall be available for maintenance of traffic at all times.
Stage 3A	
1. Construct the storm drain outfall system west of Woodward St. from the connection to the existing drain south of Washing- St. to the inlet on the north side of Washington St. and the storm drains within Washington St. and Woodward St. to the limits indicated on the plan.	1. See No. 6 under "General".
2. Grade and pave Washington St. between the previously completed section under Stage 1 and Woodward St. Reopen to traffic.	2. Close Washington St. to thru traffic from Williams St. to Woodward St. Detour traffic via Williams, Baltimore, and Woodward Sts.
3. Grade and pave Woodward St. between Washington St. and Baltimore St. Reopen Woodward St. to traffic.	3. Close Woodward St. between Washington and Baltimore Sts. and detour traffic via Washington St., Williams St., and Baltimore Sts.
Stage 3B	
1. Construct the storm drain systems in Washington St., east of Woodward St., and Baldwin St.	1. See No. 6 under "General".
2. Grade and pave Washington St. from Woodward St. to its eastern terminus at the cul-de-sac and Baldwin St. from Washington St. to Baltimore St.	2. Close Washington St. to thru traffic east of Woodward St. and Baldwin St. south of Baltimore St. Detour traffic via Baltimore St. and Woodward St.
Stage 4 (May be constructed concurrent with Stage 3B.)	
1. Continue construction of the Storm Drain Outfall System west of Woodward St. northward from Washington St. (completed under Stage 3A) to tie into the existing storm drain just south of Lincoln St.	1. See No. 6 under "General".
2. Construct the storm drain system within Baltimore St. between Savage-Guilford Rd. and Woodward St.; the storm drains on Woodward St. north of its intersection with Baltimore St.; and construct the system on the east side of the intersection of Baltimore and Foundry Sts. and connect to storm drainage previously constructed under Stage 2.	2. Close Baltimore St. to thru traffic east of the Savage-Guilford Rd. intersection and west of Woodward St. intersection. Detour traffic as indicated on Sht. #6. Maintain traffic during drainage construction across Woodward St. and Baltimore St. at Foundry under No. 6 of General notes.
3. Grade and pave Baltimore St. between Foundry St. and Woodward St. and reopen to traffic.	3. Close Baltimore St. to thru traffic east of Foundry St. to west of Woodward St. Detour traffic as indicated on Sht. #6.

Cont'd. on sheet no. 6



LEGEND

▨	Limits for Phase 1, Stage 2 etc. of Construction Sequence
1 / 2	Phase / Stage
◇	Maintenance of Traffic Sign to remain in place for duration of project.
┬	Ground Mounted Temporary Sign for Maintenance of Traffic
■—■	Prop. Inlet and Pipe
)—	Prop. Headwall and Pipe
●	Prop. Manhole
□- - -□	Exist. Inlet and Pipe

SIGN LOCATION AND MOUNTING NOTES

Signs shall be erected at the locations shown on the plans and in accordance with the following criteria:

1. Horizontal clearance between edge of sign and edge of roadway shall be two (2) feet.
2. Vertical clearance between bottom edge of sign and ground shall be seven (7) feet except for barricade mounted signs where the bottom of the sign shall be at least one (1) foot off the ground.
3. All maintenance of traffic signs shall be minimum in size unless otherwise noted on the plans and mounted on one (1) four (4) inch by four (4) inch treated wooden post placed in a one (1) foot diameter by five (5) foot deep pre-dug hole. The hole shall be backfilled using suitable material and tamped thoroughly to provide a rigid subsurface condition around the post. Sign panels shall be attached to the wooden post by 5/8 Ø stainless steel or clear anodized aluminum hex. head bolts with washers and nuts. Exceptions to the above are "END CONSTRUCTION" (G20-2) sign and sign nos. 1, 2 and 4. The G20-2 sign shall be mounted on two (2) four (4) inch by four (4) inch supports while sign nos. 1, 2 and 4 shall be mounted on two (2) four (4) inch by six (6) inch wood supports.
4. All advanced warning signs shall have one (1) low intensity flashing light attached to the top of the sign.

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[illegible] 12-30-82 — DIRECTOR OF PUBLIC WORKS, DATE
William E. Riley 12/30/82 — CHIEF - BUREAU OF ENGINEERING, DATE
[illegible] 12/29/82 — CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION, DATE

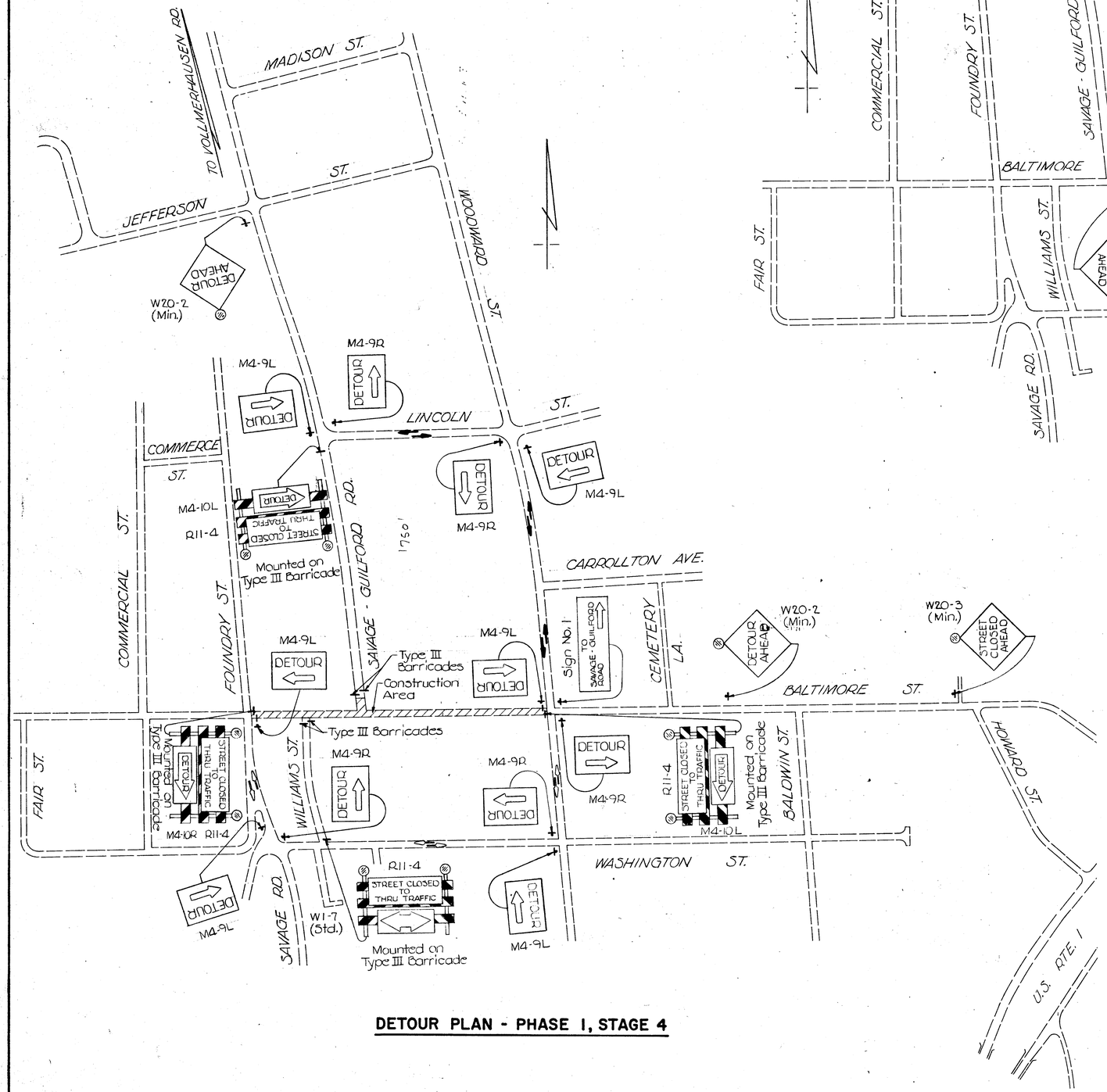
PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — PROFESSIONAL ENGINEER
Kenneth T. Evans #4683

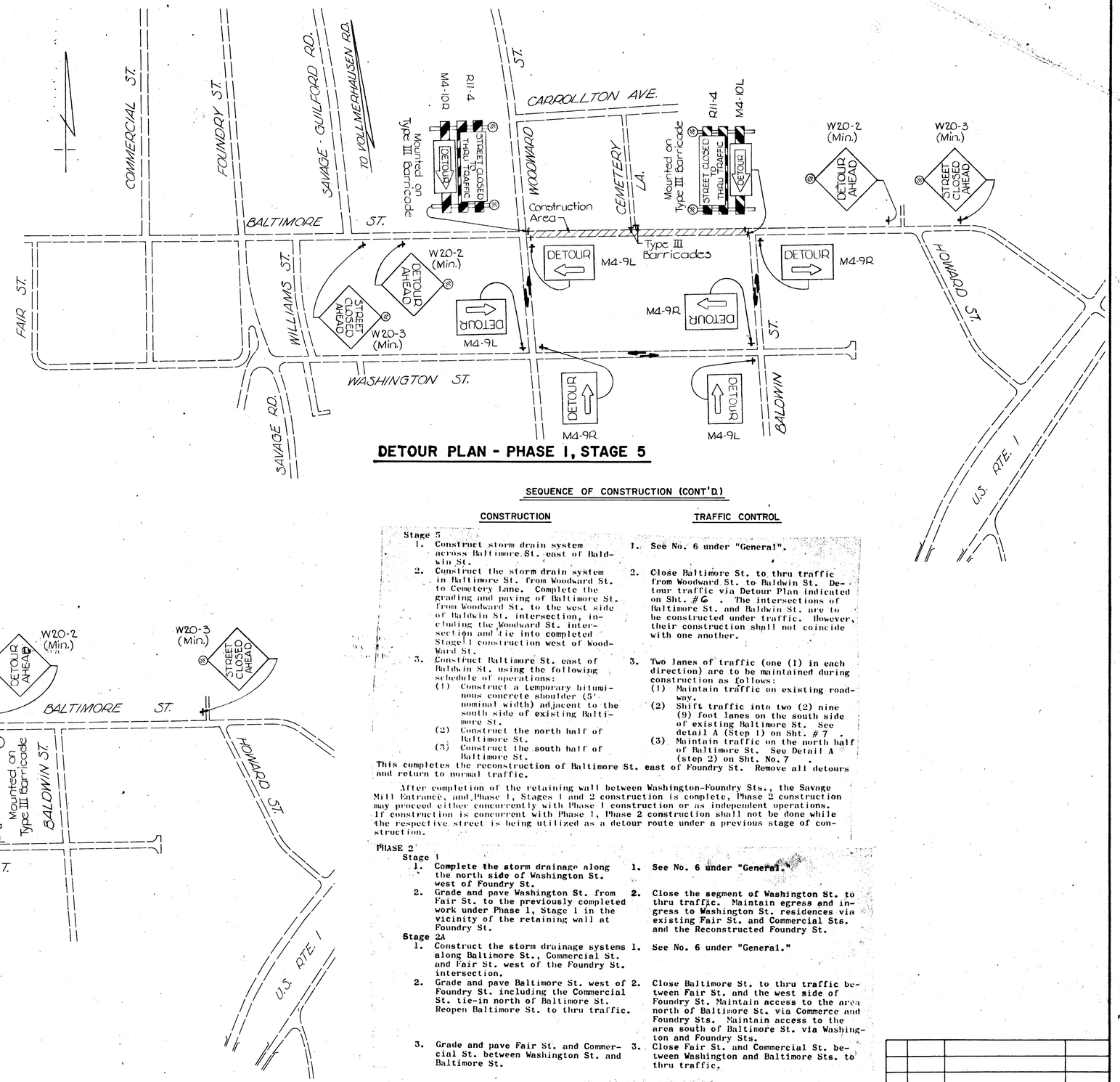
TRAFFIC CONTROL PLAN
CONSTRUCTION SEQUENCE AND SIGNING

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 5 OF 59
SCALE: 1"=200'
DESIGNED BY
DRAFTED BY
CHECKED BY



DETOUR PLAN - PHASE 1, STAGE 4



DETOUR PLAN - PHASE 1, STAGE 5

SEQUENCE OF CONSTRUCTION (CONT'D.)

CONSTRUCTION	TRAFFIC CONTROL
Stage 5	
1. Construct storm drain system across Baltimore St. east of Baldwin St.	1. See No. 6 under "General".
2. Construct the storm drain system in Baltimore St. from Woodward St. to Cemetery Lane. Complete the grading and paving of Baltimore St. from Woodward St. to the west side of Baldwin St. intersection, including the Woodward St. Intersection and tie into completed Stage 1 construction west of Woodward St.	2. Close Baltimore St. to thru traffic from Woodward St. to Baldwin St. Detour traffic via Detour Plan indicated on Sht. #6 . The intersections of Baltimore St. and Baldwin St. are to be constructed under traffic. However, their construction shall not coincide with one another.
3. Construct Baltimore St. east of Baldwin St. using the following schedule of operations: (1) Construct a temporary bituminous concrete shoulder (5' nominal width) adjacent to the south side of existing Baltimore St. (2) Construct the north half of Baltimore St. (3) Construct the south half of Baltimore St.	3. Two lanes of traffic (one (1) in each direction) are to be maintained during construction as follows: (1) Maintain traffic on existing roadway. (2) Shift traffic into two (2) nine (9) foot lanes on the south side of existing Baltimore St. See detail A (Step 1) on Sht. #7 . (3) Maintain traffic on the north half of Baltimore St. See Detail A (step 2) on Sht. No.7 .

This completes the reconstruction of Baltimore St. east of Foundry St. Remove all detours and return to normal traffic.

After completion of the retaining wall between Washington-Foundry Sts., the Savage Mill Entrance, and Phase 1, Stages 1 and 2 construction is complete, Phase 2 construction may proceed either concurrently with Phase 1 construction or as independent operations. If construction is concurrent with Phase 1, Phase 2 construction shall not be done while the respective street is being utilized as a detour route under a previous stage of construction.

PHASE 2		
Stage 1		
1. Complete the storm drainage along the north side of Washington St. west of Foundry St.	1. See No. 6 under "General".
2. Grade and pave Washington St. from Fair St. to the previously completed work under Phase 1, Stage 1 in the vicinity of the retaining wall at Foundry St.	2. Close the segment of Washington St. to thru traffic. Maintain egress and ingress to Washington St. residences via existing Fair St. and Commercial Sts. and the Reconstructed Foundry St.
Stage 2A	
1. Construct the storm drainage systems along Baltimore St., Commercial St. and Fair St. west of the Foundry St. intersection.	1. See No. 6 under "General."
2. Grade and pave Baltimore St. west of Foundry St. including the Commercial St. tie-in north of Baltimore St. Reopen Baltimore St. to thru traffic.	2. Close Baltimore St. to thru traffic between Fair St. and the west side of Foundry St. Maintain access to the area north of Baltimore St. via Commerce and Foundry Sts. Maintain access to the area south of Baltimore St. via Washington and Foundry Sts.
3. Grade and pave Fair St. and Commercial St. between Washington St. and Baltimore St.	3. Close Fair St. and Commercial St. between Washington and Baltimore Sts. to thru traffic.

Cont'd. on sheet no. 7

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 12-30-82
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

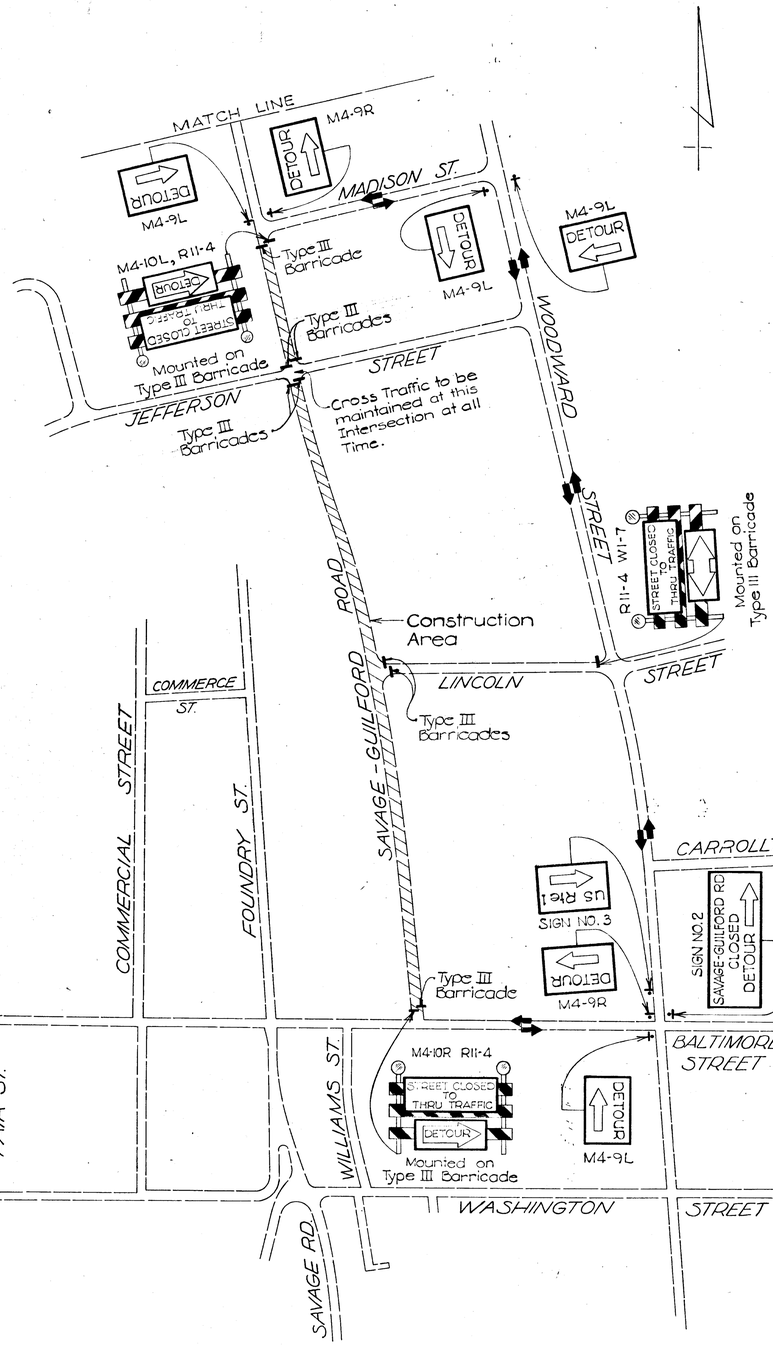
PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — KENNETH L. SADLER — No. 4493 — REGISTERED PROFESSIONAL ENGINEER

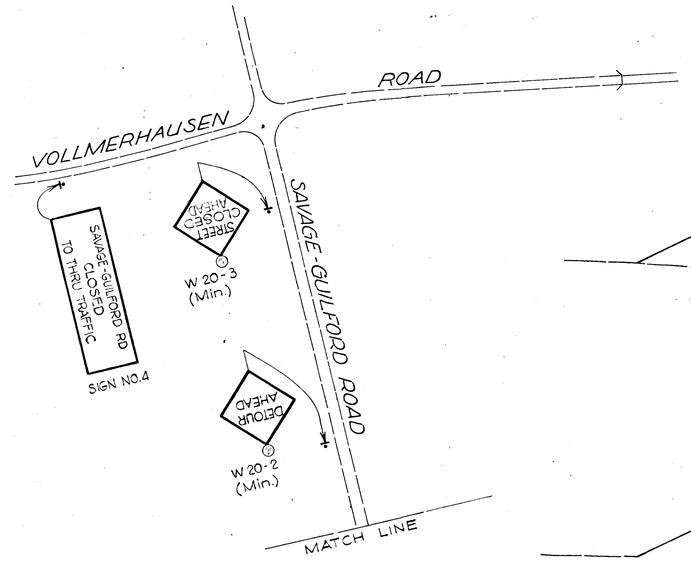
TRAFFIC CONTROL PLAN
DETOUR ROUTES AND SIGNING

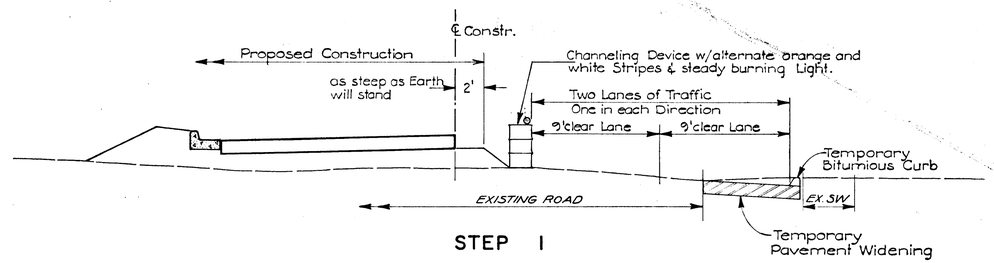
SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008 .
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 6 OF 59
SCALE: 1"=200'
DESIGNED BY
DRAFTED BY
CHECKED BY

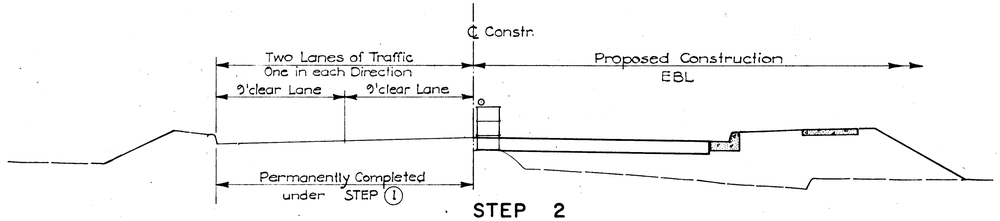


DETOUR PLAN - PHASE II, STAGE 5





STEP 1



STEP 2

DETAIL 'A' BALTIMORE ST. - STAGE CONSTRUCTION

SEQUENCE OF CONSTRUCTION (CONT'D.)

CONSTRUCTION	TRAFFIC CONTROL
Stage 2B	
1. Complete the drainage, grading and paving within the intersection of Baltimore and Foundry Streets and the drainage system west of Foundry St.	1. During reconstruction of this intersection all traffic shall use Commercial St., Washington, Foundry Sts. and Williams St. as access to the area.
Stage 3 *(NOT IN CONTRACT)*	
1. Construct the storm drain along Foundry St. north of Baltimore St. and complete the system between Commercial St. and Foundry St. north of Baltimore St.	1. See No. 6 under "General".
2. Grade and pave Foundry St. north of Baltimore St. and Commerce St. between Commercial St. & Foundry St.	2. Close Foundry St. north of Baltimore St. and Commerce St. to through traffic. Maintain access to the area via Commercial St. and Baltimore St.
Stage 1 *(NOT IN CONTRACT)*	
1. Construct the storm drain along Commercial St. north of Baltimore St.	1. See No. 6 under "General".
2. Grade and pave Commercial St. north of Baltimore St.	2. Close Commercial St. to through traffic. Maintain access via Baltimore St., Foundry St., and Commerce St.
Stage 5	
1. Construct the storm drain system along Savage-Guilford Road from its intersection with Baltimore St. to north of Lincoln St.	1. See No. 6 under "General".
2. Construct the Jefferson St. drainage system and the Savage-Guilford drainage system from Jefferson St. to the south side of Madison St.	2. See No. 6 under "General".
3. Grade and pave Savage-Guilford Road between Baltimore St. and the south side of the Madison St. intersection.	3. Close Savage-Guilford Road between Baltimore St. and Madison St. Detour traffic via Detour Plan on this sht.
4. Construct the storm drainage across and along Savage-Guilford Road just south of Vollmerhausen Road.	4. See No. 6 under "General".
5. Construct Savage-Guilford Road between Madison St. and Vollmerhausen Rd. using the following schedule of operations: (1) Construct west half of Savage-Guilford Rd. except for final surface course. (2) Construct east half of Savage-Guilford Rd. except for final surface course. (3) Construct final surface course for the full roadway width.	5. Maintain two-way traffic during working hours using flagger control. Secure site at end of each working day so that two lanes of traffic, one (1) in each direction, are maintained during non-working hours. Place temporary surfacing and grade transitions between new construction and existing pavement to allow normal traffic operations during non-working hours. Place channelizing devices to delineate vehicle travel paths through the construction area.

NOT IN CONTRACT

NOTES:

The Channelization Devices shall be a min. of Type II Barricades, wooden Drums or plastic Drums w/Type C steady burn Lights (2 Face) attached to the inner Barricades. The first Barricade in either Direction will have attached to it a Type A low Intensity flashing Light (2 Face). All Type III Barricades will have attached to them two Type A low Intensity flashing Lights.

Traffic Cones used on this Job shall be 36" in Height w/ the predominate Color being orange in Accordance w/ Section 6C-3 of the MUTCD. No Improvisations will be accepted.

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 1-3-83
CHIEF-BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

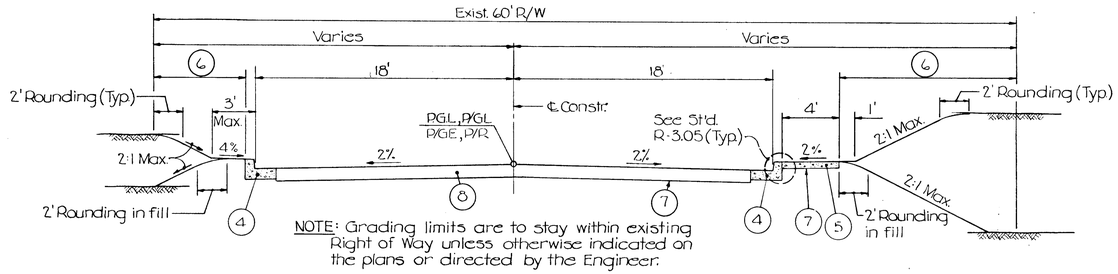
STATE OF MARYLAND — KENNETH A. CRAM — 14870 — REGISTERED ENGINEER

TRAFFIC CONTROL PLAN DETOUR ROUTE, SIGNING AND STAGE CONSTRUCTION

SAVAGE AREA ROAD AND STORM DRAIN IMPROVEMENTS

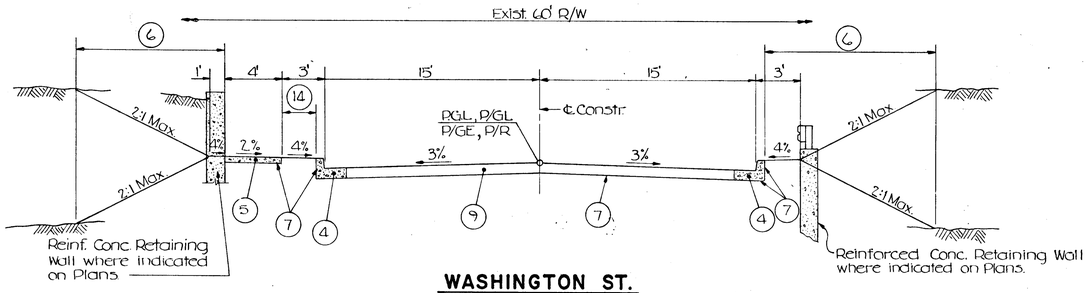
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 7 OF 59
SCALE: 1"=200'
DESIGNED BY
DRAFTED BY
CHECKED BY

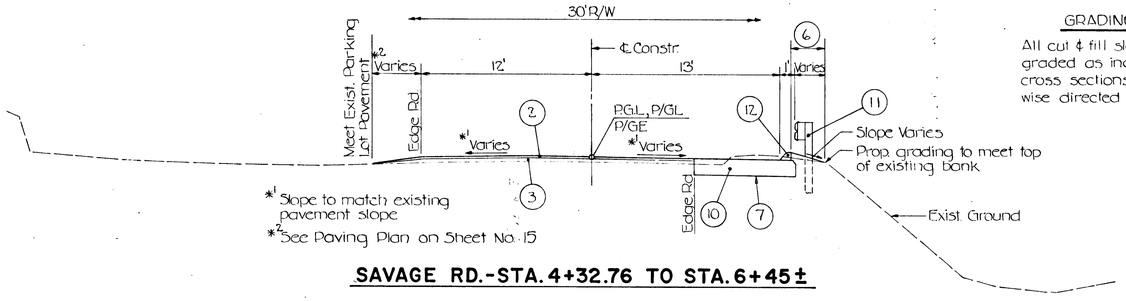


NOTE: Grading limits are to stay within existing Right of Way unless otherwise indicated on the plans or directed by the Engineer.

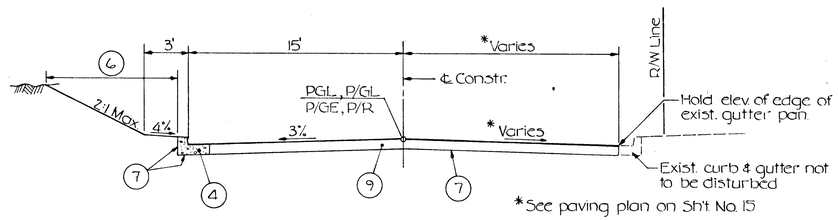
BALTIMORE ST.



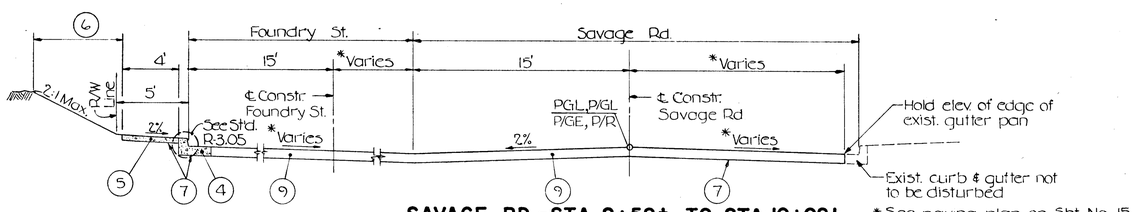
WASHINGTON ST.



SAVAGE RD. - STA. 4+32.76 TO STA. 6+45±



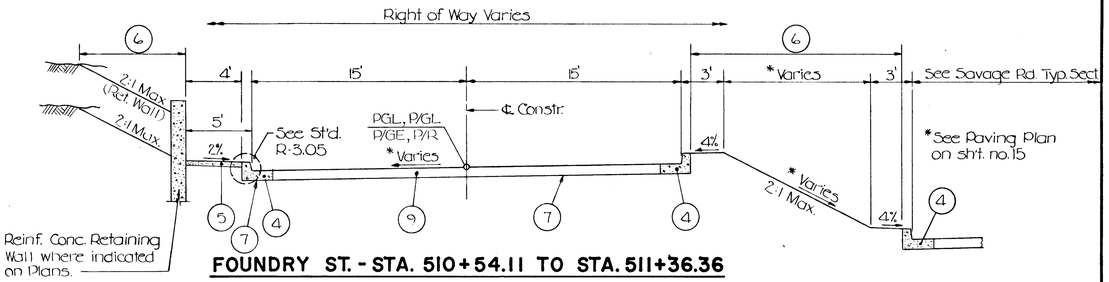
SAVAGE RD. - STA. 6+45± TO STA. 8+58±
FOUNDRY ST. - STA. 513+00± TO STA. 514+35±



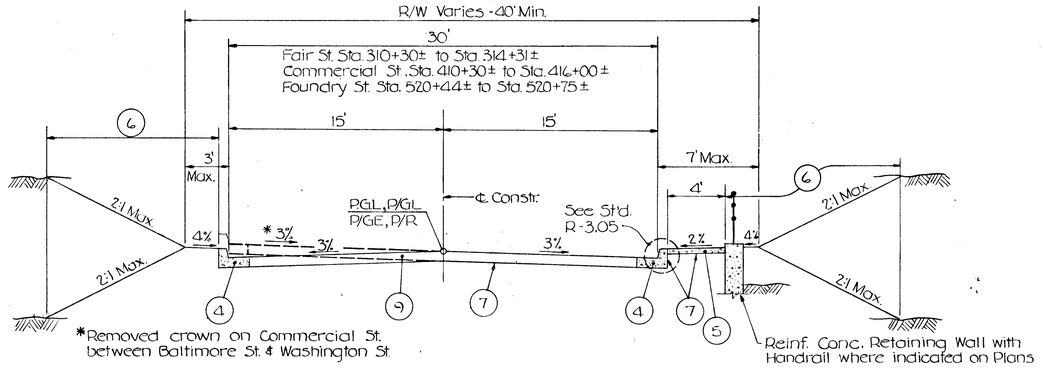
SAVAGE RD. - STA. 8+58± TO STA. 10+02±
FOUNDRY ST. - STA. 511+36± TO STA. 513+00±

GRADING NOTE

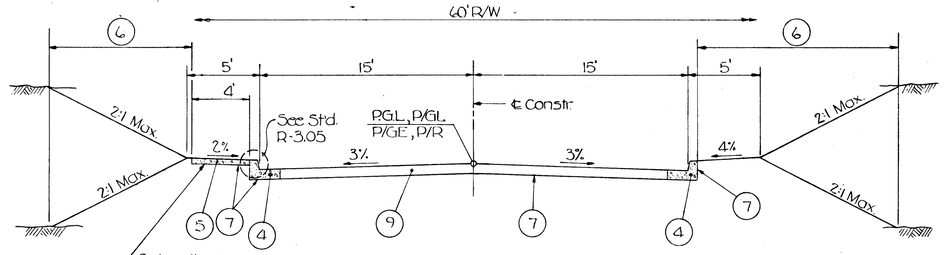
All cut & fill slopes shall be graded as indicated on the cross sections unless otherwise directed by the Engineer.



FOUNDRY ST. - STA. 510+54.11 TO STA. 511+36.36



FOUNDRY (NORTH OF BALTIMORE ST.), COMMERCIAL, COMMERCE & FAIR STS.



WOODWARD & BALDWIN STS.

TYPICAL SECTION LEGEND:

1. Base Widening - Standard Section P-4 using Granular Base Alternate
2. 1 1/2" Bituminous Concrete Surface Course
3. Wedge and/or Leveling using Bituminous Concrete Base (10" ± nominal maximum depth)
4. Standard Combination Concrete Curb and Gutter
5. Standard Concrete Sidewalk at Location shown on the Plans
6. 2" Topsoil, Seed and Mulch
7. Limit of Class 1 Excavation
8. Full depth paving - Standard Section P-4 Full depth Bituminous Concrete Alternate
9. Full depth paving - Standard Section P-3 Full depth Bituminous Concrete Alternate
10. Base Widening - Standard Section P-3 using Granular Base Alternate
11. Standard Guard Rail W Beam
12. Standard Bituminous Curb
13. Full depth paving - Standard Section P-1 Full depth Bituminous Concrete Alternate
14. 2" Topsoil, Solid Sodding

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Virgil F. Nowlin 12/30/82
DIRECTOR OF PUBLIC WORKS — DATE

Theodore G. Zellers 12/30/82
CHIEF, BUREAU OF ENGINEERING — DATE

Herbert A. Sobel 12/29/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — CHARLES E. LUCAS — No. 4693 — REGISTERED PROFESSIONAL ENGINEER

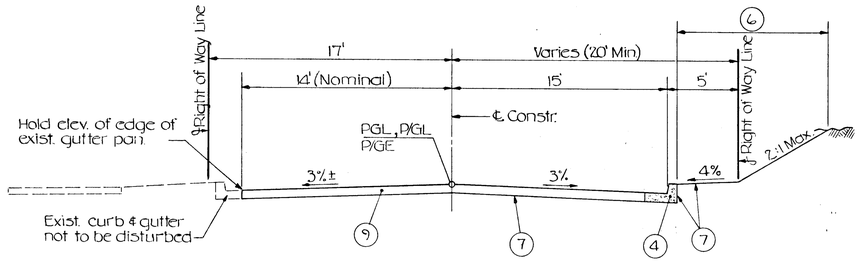
TYPICAL ROAD SECTIONS

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008.
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

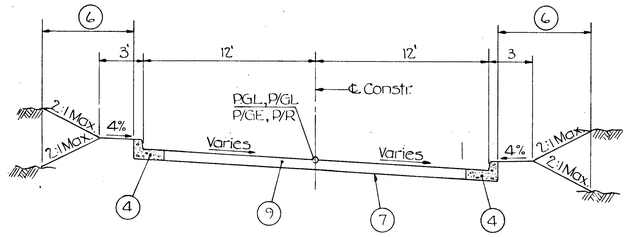
DRAWING NO. 8 OF 59

SCALE: NONE

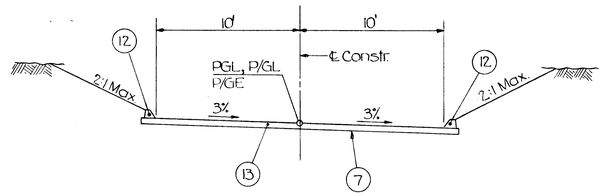
DESIGNED BY
DRAFTED BY
CHECKED BY



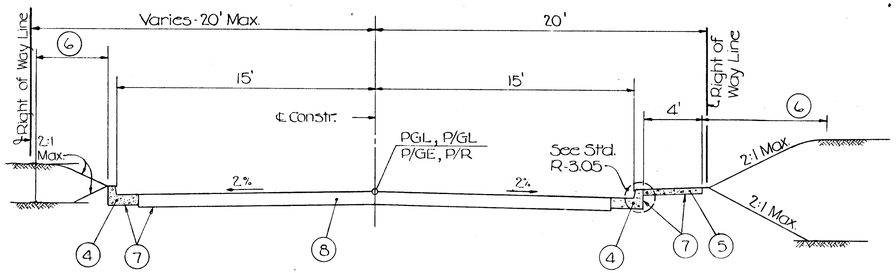
WILLIAMS ST.



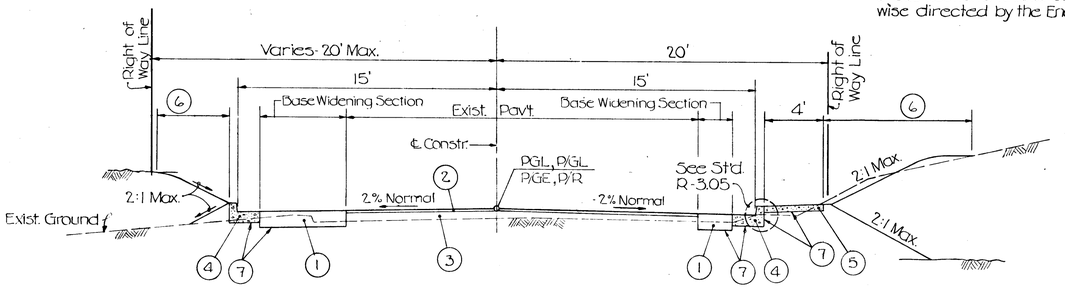
SAVAGE MILL ENTR.



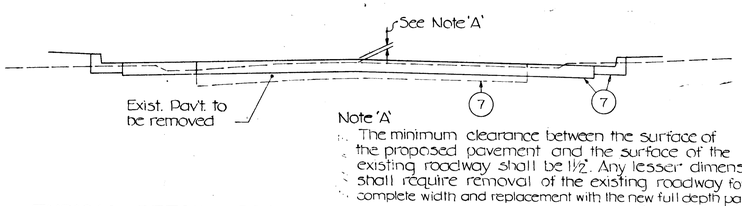
SAVAGE MILL ENTR. DETOUR RD.



SAVAGE - GUILFORD RD.
STA. 10+27± TO STA. 28+00
STA. 37+75 TO STA. 38+75
STA. 45+50 TO STA. 48+55±



SAVAGE - GUILFORD RD.
STA. 28+00 TO STA. 37+75
STA. 38+75 TO STA. 45+50

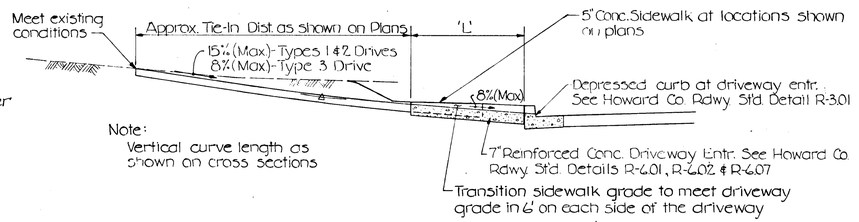


Note 'A'
The minimum clearance between the surface of the proposed pavement and the surface of the existing roadway shall be 1½". Any lesser dimension shall require removal of the existing roadway for its complete width and replacement with the new full depth pavt. section.

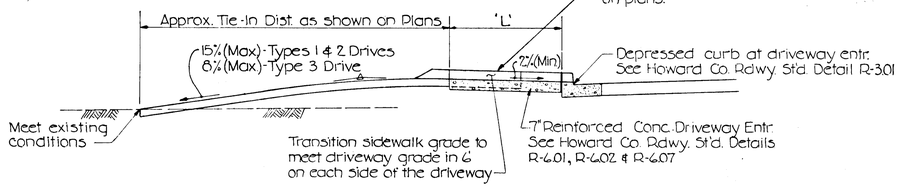
TYPICAL DETAIL - REQUIREMENT FOR EXISTING PAVEMENT REMOVAL WITHIN RESURFACING AREA

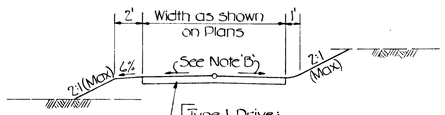
GRADING NOTE

All cut & fill slopes shall be graded as indicated on the cross sections unless otherwise directed by the Engineer



Note:
Vertical curve length as shown on cross sections



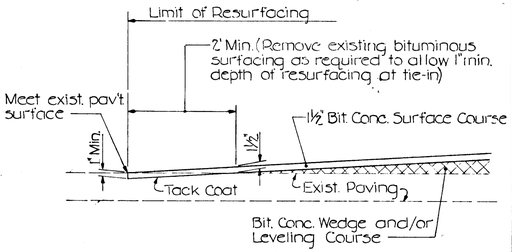


Note 'B'
Cross slope shall be transitioned to meet the grade of the public road and the cross slope of the existing entrance as directed by the Engineer

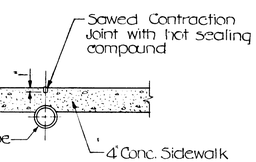
Type 1 Drive:
7" Plain Cement Concrete Pavt. (Md. S.H.A. Mix 6)
Type 2 Drive:
Howard Co. Paving Section P-8 (Full Depth)
Type 3 Drive:
6" Gravel Surface Course (One Course)

PRIVATE DRIVEWAY TYPICAL SECTIONS

CONC. DRIVEWAY APRON LENGTH		
LOCATION	LT. 'L'	RT. 'L'
Savage/Guilford Rd.	To R/W	To R/W
Washington St.	4'-4"	4'-4"
Baltimore St. (Sta. 220+ to Sta. 225+)	To R/W	4'-0"
Baltimore St. (Sta. 226+ to Sta. 247+)	To R/W	4'-0"
Fair St.	4'-4"	4'-4"
Commercial St.	4'-4"	4'-4"
Foundry St. (South of Balto St.)	4'-0"	
Foundry St. (North of Balto St.)	4'-4"	4'-4"
Commerce St.		4'-4"
Williams St.		4'-4"
Woodward St.	4'-0"	4'-4"
Cemetery La.	4'-4"	
Baldwin St.	4'-4"	4'-4"
Jefferson St.		4'-4"
Madison St.	4'-4"	



TYPICAL DETAIL - BITUMINOUS CONCRETE RESURFACING HEEL-IN



SECTION A-A

TYPICAL DETAIL RELIEF PIPE UNDER SIDEWALK AND CONNECTION TO CURB

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — Kenneth A. Loar — #4463

TYPICAL ROAD SECTIONS AND DETAILS

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 9 OF 59
SCALE: NONE
DESIGNED BY
DRAFTED BY
CHECKED BY

STORM DRAIN STRUCTURE SCHEDULE

STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
HW 1	Headwall w/GRID	42" Rt. Sta. 119+77.5 Wash. St.	End of Top W 178.56	172.37
S-1	Spec. Struc.[1]	21.5' Rt. Sta. 119+85.5± Wash. St.	188.45	172.50
I-35	Std. WR	15' Rt. Sta. 120+80 Wash. St.	192.45	185.00
I-36	Std. WR	15' Lt. Sta. 610+70.8 Williams St.	192.97	186.17
I-37	A-5	15' Rt. Sta. 611+12. Williams St.	194.00	190.40
I-32	Std. WR	15' Lt. Sta. 121+13.7 Wash. St.	193.51	186.80
I-33	Std. S	28' Lt. Sta. 121+14 Wash. St.	193.40	187.08
M-1	G5.02	10' Lt. Sta. 119+20 Wash. St.	188.38	179.45
I-4	Std. WRM	13.3' Rt. Sta. 7+58.1 Savage Rd.	191.52	183.80
I-5	Std. WRM	15' Lt. Sta. 7+95.4 Savage Rd.	192.61	186.40
I-1	Std. WR	15' Lt. Sta. 510+74.1 Foundry St.	200.64	195.00
M-2	G5.01	5' Rt. Sta. 118+05 Wash. St.	204.79	198.29
M-3	G5.01	12' Lt. Sta. 116+75 Wash. St.	213.74	207.80
I-2	Std. WR	15' Rt. Sta. 116+60 Wash. St.	215.28	211.74
I-3	Std. WR	15' Lt. Sta. 113+96.5 Wash. St.	228.68	225.18
I-6	Std. WR	15' Rt. Sta. 511+32.3 Foundry St.	196.11	188.81
I-7	Dbl. S [2]	21' Lt. Sta. 511+61.7 Foundry St.	196.75	193.81
I-9	Std. WR	15' Lt. Sta. 513+10 Foundry St.	197.20	190.58
I-8	Std. S	24' Lt. Sta. 513+25 Foundry St.	196.50	192.79
M-5	G5.05	12.5' Lt. Sta. 514+50 Foundry St.	197.83	191.97
M-6	G5.05	℄ Sta. 217+70 Balto. St.	199.07	192.25
I-10	A-10	18' Rt. Sta. 217+57 Balto. St.	199.47	195.90
I-11	Std. WR	18' Lt. Sta. 217+64.9 Balto. St. [4]	~~199.37~~ EX. TOP W	195.80
M-7	G5.05	℄ Sta. 215+01 Balto. St.	214.73	207.44
I-12	Std. WR	18' Lt. Sta. 215+00 Balto. St.	214.98	211.50
M-8	G5.05	℄ Sta. 214+63 Balto. St.	217.24	209.95
I-13	Std. WR	15' Rt. Sta. 414+27.7 Commercial St.	217.85	213.84
I-14	Std. WR	15' Rt. Sta. 413+75 Commercial St.	219.93	214.84
I-21	Std. WR	15' Rt. Sta. 415+11.6 Commercial St.	218.37	211.98
I-22	Std. WR	15' Rt. Sta. 415+33.1 Commercial St.	218.71	215.35
M-11	G5.05	℄ Sta. 415+66 Commercial St.	218.94	213.51
I-23	Std. WR	15' Lt. Sta. 415+86 Commercial St.	219.33	214.21
I-24	Std. WR	15' Lt. Sta. 416+03.5 Commercial St.	219.44	214.81
M-9	G5.01	℄ Sta. 214+10 Balto. St.	220.72	212.80
I-15	A-10 [3]	18' Rt. Sta. 213+99.8 Balto. St.	221.54	216.54
I-16	Std. WR	18' Lt. Sta. 213+98 Balto. St.	221.66	218.18
I-17	Std. WR	18' Lt. Sta. 213+70. Balto. St.	223.34	219.48
M-10	G5.01	℄ Sta. 210+00 Balto. St.	240.99	232.47
I-18	Std. WR	42" Lt. Sta. 210+01 Balto. St.	243.44	239.92
I-19	Std. WR	15' Rt. Sta. 313+42.74 Fair Street	240.78	234.35
I-20	A-10	15' Lt. Sta. 313+42.74 Fair Street	240.78	235.29
I-38	Std. WR	18' Rt. Sta. 218+39.1 Balto. St.	198.85	192.75
I-39	Std. WR	18' Lt. Sta. 218+43.1 Balto. St.	198.89	194.12
I-40	Std. S	28' Lt. Sta. 218+29 Balto. St.	197.56	194.62
S-4	Spec. Struc.[1]	℄ Const. Sta. 217+95± Balto. St.	198.7±	192.3±
I-62	A-10	15' Lt. Sta. 520+52.5 Foundry St.	198.35	194.04
I-64	A-10 [4]	15' Rt. Sta. 520+50.2 Foundry St.	198.18	193.45
I-37A	A-10	15' Rt. Sta. 611+72 Williams St.	195.85	192.90
I-154	Std. WR	13' Rt. Sta. 6+41 Savage Rd.	183.96	179.86
ES-1	End Section	22' Rt. Sta. 6+34 Savage Rd.		177.84
M-11A	G5.05	℄ Sta. 416+40 Commercial St.	220.1±	215.18

1) See Storm Drain Details Sht #36 2) With Reticular Grate 3) With Deflectors
4) Brick Invert shall be One-half developed

STEP SCHEDULE

LOCATION	WIDTH	NO. RISERS
WASHINGTON STREET		
Rt. 110+79.1	4'	6
Lt. 111+14	3'	5
Rt. 111+41.5	4'	3
Lt. 112+03	4'	5
Rt. 113+05	4'	6
Rt. 113+75.5	9'	5
BALTIMORE STREET		
Rt. 214+97	3.5'	2
Rt. 216+47.5	3'	3
Lt. 216+97.1	3'	3
Lt. 218+99.1	3'	2
Lt. 220+17	3'	3
Lt. 220+72.5	3'	4
Rt. 219+16.4	Pedestrian Ramp	

COMMERCIAL STREET		
Rt. 410+90	3'	3
Rt. 412+03	4'	5
Rt. 412+56	3.5'	4
Lt. 413+99.2	3'	4
Rt. 415+43	3'	3
FOUNDRY STREET		
Lt. 510+64	3.5'	8 (7"R)
Lt. 511+76	3'	7

DRIVEWAY SCHEDULE

LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
WASHINGTON ST.			
Rt. 110+10	2	10'	45'
Rt. 111+10	2	10'	35'
Rt. 112+455	1	10'	30'
Rt. 112+62	1	10'	25'
Rt. 114+21	2	10'	23'
Lt. 115+90	1	12'	13'
Lt. 116+05	1	10'	13'
COMMERCIAL ST.			
Rt. 411+58	2	10'	38'
Lt. 411+72	2	16'	13'
Rt. 412+84	2	10'	13'
Lt. 413+06	3	15'	10'
Lt. 416+31	3	10'	18'

LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
FOUNDRY ST.			
Lt. 511+63	2	10'	33'
Lt. 512+84.5	3	10'	8'
Rt. 521+33	3	10'	19'
WILLIAMS ST.			
Rt. 610+49	2	10'	11'
Rt. 610+97	2	10'	13'
Rt. 611+54	2	16'	10'
Rt. 612+86	3	12'	7'
Rt. 614+07.5	3	20'	12'
BALTIMORE ST.			
Lt. 220+35	2	15'	11'
Lt. 220+80.5	2	11'	20'

LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
FAIR STREET			
Lt. 311+31	3'	20'	10'
Rt. 311+53	3'	10'	5'
Rt. 312+33	3'	10'	5'
Rt. 312+50	3'	10'	5'
Rt. 313+12	3'	10'	5'
Lt. 314+50*	2'	10'	30'
Lt. 314+85*	2'	8'	27'

*Tangent extended

CROSS REFERENCES

ITEM	SHT. NO.
℄ Construction Stakeout Data	2
Storm Drain Profiles	27,28,29
Roadway Profiles	16,17,18,20
Sav. Rd.-Sav. Mill Entr. Intersection	15
Retaining Wall Details	37
Reloc. Sewer and Water Mains	50,51,53,54

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE
1	5/10/84	REVISE I-11 TOP ELEV. PER LETTER 5/15/84 W.T. BALLARD	DAC

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE — CHIEF - BUREAU OF ENGINEERING — DATE 12/31/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/28/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — KENNETH L. EVANS — No. 11483 — REGISTERED PROFESSIONAL ENGINEER

PLAN
WASHINGTON ST. STA. 109+ TO STA. 121+
BALTIMORE ST. STA. 209+ TO STA. 220+

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 10 OF 59
SCALE: 1" = 50'
DESIGNED BY
DRAFTED BY
CHECKED

BM#8: ▫ cut on East end of bottom step at First Baptist Church at Southwest corner of Washington St. & Woodward St. Elev. 192.574

BM#12: ⊕ Svy. Sta. 132+00 Washington St. Elev. 199.041

BM-Howard County Monument 1942003: Northeast corner of Baltimore St. and Savage Guilford Rd. Elev. 209.121

Note: For Savage-Guilford Rd. Plan see Sheet No. 23

Existing electrified brick pillar & picket fence to be removed & reset such that the face of the brick pillars is along the existing R/W Line.

STEP SCHEDULE		
LOCATION	WIDTH	NO. RISERS
BALTIMORE STREET		
Rt. 221+71	3'	2
Rt. 223+15	3'	3
Rt. 223+99	4'	3
Rt. 224+63	3'	5
Lt. 225+75	3'	1
Rt. 225+80	3'	6
Rt. 226+63	3'	4
Rt. 227+35	3'	3
Rt. 228+12	3'	5
Rt. 229+49	3'	3
Rt 229+97	3'	4
Lt. 230+09	3'	1
Rt. 230+51	3'	7
Rt. 231+34	3'	9
Lt. 231+50	3'	3
Rt. 231+88	3'	6
Lt. 232+64	3'	3
Rt. 232+90	3'	6
SAVAGE-GUILFORD ROAD		
Rt. 11+00	3'	3
WASHINGTON ST.		
Rt. 123+13	3'	4
Rt. 123+72	3'	4
Rt. 124+31	3'	3
Rt. 124+83	3'	2
Lt. 124+97	3'	2
Lt. 125+64	3'	2
Rt. 130+85	3'	3
WOODWARD STREET		
Lt. 710+83	3'	2

STORM DRAIN STRUCTURE SCHEDULE NOTES

1. Brick invert shall be one-half developed.
2. Brick invert shall be fully developed.
3. Without gutter depression.
4. See SHA Std. MD-378.02 for Conc. Gutter Approach Details

STORM DRAIN STRUCTURE SCHEDULE				
STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
E-2	Ex. Inlet	13.89' Rt. Sta. 3+90.09 Woodward St. Drainage Spur	180.86	175.86
④ I-149	Dbl. S	18' Rt. Sta. 5+00 Woodward St. Drainage Spur	183.00	176.70
I-71	A-5	15' Rt. Sta. 127+57.89 Wash. St.	189.86	178.00
M-34	G5.01	18' Rt. Sta. 128+90 Wash. St.	190.70	179.91
I-114	A-5	15' Lt. Sta. 710+42.76 Woodwd St.	190.20	185.23
I-115	A-5	15' Rt. Sta. 710+40.18 Woodwd St.	190.35	186.76
M-35	G5.01	18' Rt. Sta. 130+47 Wash. St.	190.52	181.01
I-113	Std. S	27' Lt. Sta. 130+47 Wash. St.	189.25	183.81
I-111	A-5 ③	15' Rt. Sta. 131+23 Wash. St.	189.85	181.76
I-112	A-5	15' Lt. Sta. 131+15.54 Wash. St.	189.64	182.51
I-72	A-5	15' Lt. Sta. 127+57.89 Wash. St.	189.86	178.75
④ I-73	Dbl. S ①	32' Lt. Sta. 127+57.89 Wash. St.	188.00	179.25
④ I-74	Dbl. S ①	13' Rt. Sta. 9+12 Woodward St. Drainage Spur	192.00	185.50
④ I-75	Dbl. S ①	10' Lt. Sta. 10+70 Woodward St. Drainage Spur	195.00	189.00
S-2	Junction Structure	See Detail on Sheet No. 36	201.75	193.50
S-3	Junction Structure	See Detail on Sheet No. 36	201.09	194.57
I-98	A-5	18' Rt. Sta. 227+17.50 Balto. St.	201.37	196.50
I-99	A-10 ②	18' Lt. Sta. 227+17.50 Balto. St.	201.37	195.87
I-147	A-10	18' Lt. Sta. 226+97.5 Balto. St.	201.40	197.37
I-148	A-10	18' Lt. Sta. 227+42.5 Balto. St.	201.42	197.62
M-45	G5.05	5' Lt. Sta. 228+62 Balto. St.	202.15	197.15
I-96	Sgl. WR	13.9 Lt. Sta. 715+18.47 Woodwd. St.	203.32	199.49
I-97	Std. WR	13.9 Lt. Sta. 715+33.47 Woodwd. St.	203.96	200.04
I-94	Sgl. WR	13.9 Rt. Sta. 715+22.24 Woodwd. St.	203.57	199.99
I-95	Std. WR	13.9 Rt. Sta. 715+37.24 Woodwd. St.	204.09	200.39
M-29	G5.05	5' Lt. Sta. 229+17.56 Balto. St.	202.75	197.82
I-144	Std. WR	18' Rt. Sta. 229+27.61 Balto. St.	203.03	199.05
I-143	A-5	18' Lt. Sta. 229+21.56 Balto. St.	202.98	198.82
I-142	A-10	18' Lt. Sta. 229+36.56 Balto. St.	203.12	199.37
M-43	G5.05	5' Lt. Sta. 229+96 Balto. St.	203.56	199.50
I-93	A-5	18' Lt. Sta. 230+00 Balto. St.	203.90	200.00
M-42	G5.05	5' Lt. Sta. 230+96 Balto. St.	206.04	201.75
I-92	Std. WR	18' Rt. Sta. 231+15 Balto. St.	206.98	203.00
I-90	Std. WR	18' Lt. Sta. 231+00 Balto. St.	206.46	202.25
M-30	G5.05	5' Lt. Sta. 233+00 Balto. St.	215.30	211.50
I-91	Std. WR	12' Lt. Sta. 10+44 Cemetery La.	217.52	213.20
I-145	Std. WR	12' Lt. Sta. 10+60 Cemetery La.	219.12	215.00
I-146	A-10	18' Lt. Sta. 233+54 Balto. St.	217.78	214.50
M-31	G5.01	5' Lt. Sta. 222+49 Balto. St.	209.21	200.59
I-100	Std. WR	15' Rt. Sta. 10+59.20 Savage Guilford Rd.	209.05	201.71
I-101	Std. WR	15' Lt. Sta. 10+59.50 Savage Guilford Rd.	209.05	202.77
④ I-76	Dbl. S ①	30' Lt. Sta. 226+25.38 Balto. St.	199.40	194.50
I-34	Std. S	28' Lt. Sta. 123+49 Wash. St.	194.50	191.60
I-152	A-10	18' Lt. Sta. 230+21 Balto. St.	204.30	200.82
I-153	Std. WR	18' Lt. Sta. 225+87 Balto. St.	202.73	199.25
M-47	G5.05	5' Lt. Sta. 225+91 Balto. St.	202.37	196.13

DRIVEWAY SCHEDULE											
LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN	LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN	LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
BALTIMORE STREET				Lt. 231+13	3	16'	7'	Lt. 125+24	3	11'	5'
Lt. 221+04	2	24'	10'	Rt. 231+71	2	10'	35'	Rt. 126+05	3	10'	6'
Rt. 222+60	2	31'	28'	Rt. 233+14	2	10'	27'	Lt. 126+07	3	10'	12'
Rt. 223+62	2	16'	23'	Lt. 233+21	2	24'	62'	Rt. 126+57	3	10'	6'
Lt. 223+95	2	10'	38'	Rt. 233+65	2	11'	52'	Lt. 126+80	3	11'	5'
Lt. 224+53	2	70'	9'	Lt. 233+85	2	24'	28'	Rt. 127+13	2	10'	5'
Lt. 225+25	2	27'	21'	WASHINGTON STREET				Rt. 127+27	2	10'	10'
Rt. 225+50	2	19'	40'	Lt. 121+56	3	10'	23'	Lt. 127+43	3	10'	35'
Lt. 226+01	3	11'	5'	Rt. 121+93	2	18'	5'	Lt. 127+93	3	10'	10'
Rt. 226+92	3	35'	30'	Lt. 122+07	3	10'	11'	Rt. 130+70	3	10'	32'
Rt. 227+47	1	10'	21'	Lt. 122+99	3	14'	5'	Rt. 131+08	3	13'	24'
Rt. 229+76	2	10'	34'	Rt. 123+38	2	10'	33'	Rt. 131+37	3	10'	16'
Lt. 229+79	3	10'	5'	Rt. 123+53	3	10'	34'	Lt. 131+56	2	20'	5'
Lt. 230+55	3	17'	5'	Lt. 123+74	2	10'	5'	Rt. 132+08	3	20'	9'
Rt. 230+88	1	8'	37'	Rt. 124+07	2	10'	24'	Lt. 132+79	2	22'	5'
Rt. 231+02	2	10'	37'	Rt. 125+09	3	16'	5'	Rt. 133+17	3	16'	5'

DRIVEWAY SCHEDULE			
LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
WASHINGTON STREET (cont'd.)			
Lt. 133+44	3	10'	5'
Lt. 134+00	3	10'	5'
WOODWARD STREET			
Rt. 7.0+76	2	11'	19'
Rt 711+38	2	10'	21'
Lt. 711+79	2	10'	11'
Lt. 712+49	3	10'	5'
Rt. 712+59	2	10'	5'
CEMETERY LANE			
Lt. 10+90	3	10'	5'

CROSS REFERENCES	
ITEM	SHT. NO.
℄ Construction Stakeout Data	2 & 3
Storm Drain Profiles	28, 31, 32, 33 & 34
Baltimore St. Profile	18 & 19
Washington St. Profile	17
Woodward St.	17 & 22
Savage Guilford Rd.	23
Reloc. Water Mains	51, 53, 55

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works — Date 1-3-83
Chief - Bureau of Engineering — Date 12/30/82
Chief Roads, Bridges, Storm Drains Division — Date 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — KENNETH E. EVANS — 4693

PLAN

WASHINGTON ST. STA. 121+ TO STA. 134+
BALTIMORE ST. STA. 221+ TO STA. 242+

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 11 OF 59
SCALE: 1" = 50'
DESIGNED BY
DRAFTED BY
CHECKED BY

DRIVEWAY SCHEDULE

LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
WASHINGTON ST.			
134+00± Lt.	3	10'	5'
134+52± Rt.	3	22'	23'
134+69± Lt.	3	10'	20'
134+90± Rt.	2	12'	17'
135+14± Rt.	2	10'	15'
135+22± Lt.	2	10'	8'
136+30± Lt.	3	12'	5'
136+44± Lt.	3	16'	5'
139+57± Rt.	3	16	5
139+90± Lt.	3	10'	5'
140+73± Rt.	2	12	19'
141+31± Lt.	3	10'	18'
BALDWIN ST.			
809+11± Lt.	3	13'	5'
811+06± Rt.	2	20'	12'
811+17± Lt.	2	12'	7'
811+78± Rt.	2	31'	11'(Av.)
813+59± Rt.	2	13'	13'
BALTIMORE ST.			
235+25± Rt.	2	10'	34
236+28± Rt.	2	10'	44
236+92± Lt.	3	15'	5'
237+83± Lt.	2	14'	12'
238+63± Lt.	2	10'	10'
239+21± Lt.	2	15'	5'
239+28± Rt.	2	10'	9'
241+46± Rt.	2	10'	37'
242+29± Rt.	3	10'	30'
239+60± Lt.	2	22'	5'
240+45± Lt.	2	25'	20'
241+75± Lt.	3	11'	10'
242+37± Lt.	3	16'	6'
243+29± Rt.	3	15'	
813+90± Lt.	1	20'	19'

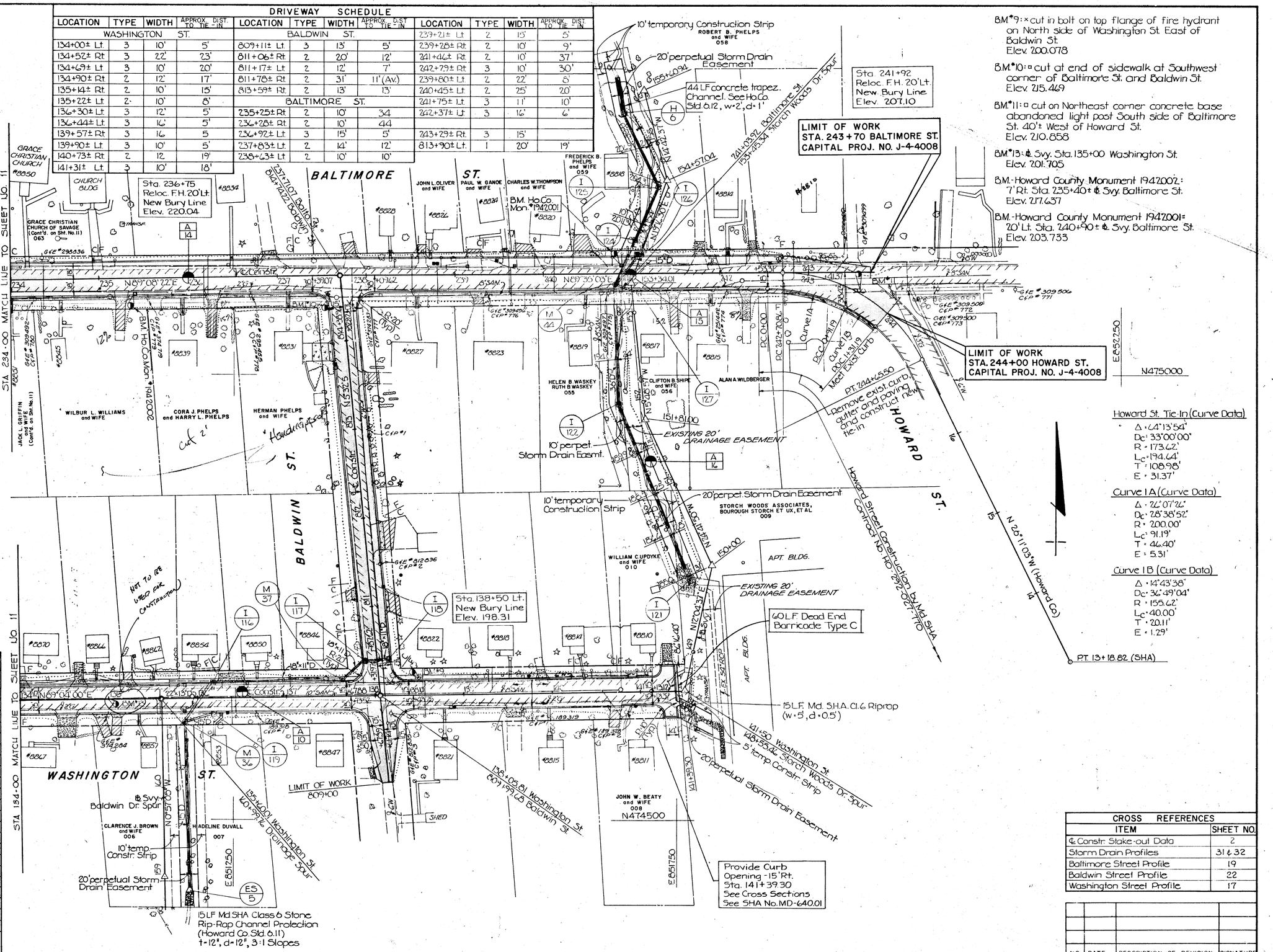
STEP SCHEDULE

LOCATION	WIDTH	NO. RISERS
WASHINGTON ST.		
134+86± Lt.	3'	2
135+38± Rt.	3.5'	3
136+27± Rt.	3'	3
135+94± Lt.	3'	1
138+78± Rt.	3'	2
140+88± Rt.	3'	3
141+12± Lt.	3'	2
BALDWIN ST.		
813+81± Lt.	3'	4
BALTIMORE ST.		
234+20± Lt.	4.5'	1
234+97± Lt.	9.0'	1
234+02± Rt.	3'	5
234+57± Rt.	3'	3
235+93± Rt.	3'	9
236+50± Lt.	3'	2
237+14± Rt.	3'	9
238+27± Lt.	3'	2
238+75± Lt.	3'	2
240+48± Rt.	3'	6
241+89± Rt	3'	4

STORM DRAIN STRUCTURE SCHEDULE

STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
ES-5	end Section	28' Rt. Sta. 138+86 Baldwin Spur		183.10
M-36	G5.05	25' Rt. Sta. 140+74 Baldwin Spur	192.9	188.01
I-116	A-5	15' Lt. Sta. 134+17.57 Wash. St.	194.91	191.20
M-37	G5.05	18' Lt. Sta. 137+63 Wash. St.	196.58	193.44
I-117	Std. W.R	15' Lt. Sta. 810+40 Baldwin St.	197.11	194.00
I-118	Std. W.R	15' Rt. Sta. 810+40 Baldwin St.	197.30	194.25
I-119	A-5	15' Rt. Sta. 136+17.57 Wash. St.	194.91	191.48
I-121	*Dbl.-5	20'± Lt. (Ex. Headwall) Sta. 149+77± Storch Woods Spur	184.7	177.60
I-122	*Dbl.-5	28' Lt. Sta. 152+00 Storch Wds. S.	192.22	186.04
M-44	G5.02	12' Rt. Sta. 240+82 Balto. St.	206.04	190.41
I-124	*Dbl.-5	37' Lt. Sta. 241+04 Balto. St.	200.20	193.25
I-125	*Dbl.-5	6' Lt. Sta. 154+46 Storch Wds. S.	203.92	199.30
H-6	A	29' Lt. Sta. 155+40 Storch Wds. S.	208.97	204.97
I-126	A-10	18' Lt. Sta. 241+12.21 Balto. St.	206.37	202.83
I-127	A-5	18' Rt. Sta. 241+12.21 Balto. St.	206.37	202.83

* See SHA Std. Md. 378.02 for Conc. Gutter Approach Details



B.M.#9: × cut in bolt on top flange of fire hydrant on North side of Washington St. East of Baldwin St.
Elev. 200.078

B.M.#10: □ cut at end of sidewalk at Southwest corner of Baltimore St. and Baldwin St.
Elev. 215.469

B.M.#11: □ cut on Northeast corner concrete base abandoned light post South side of Baltimore St. 40'± West of Howard St.
Elev. 210.858

B.M.#13: ℄ Svy. Sta. 135+00 Washington St.
Elev. 201.705

B.M.-Howard County Monument 1947002:
7' Rt. Sta. 235+40± ℄ Svy. Baltimore St.
Elev. 217.637

B.M.-Howard County Monument 1947001=
20' Lt. Sta. 240+90± ℄ Svy. Baltimore St.
Elev. 203.733

Howard St. Tie-In (Curve Data)
Δ = 44°13'54"
Dc = 33°00'00"
R = 173.62'
Lc = 194.44'
T = 108.98'
E = 31.37'

Curve 1A (Curve Data)
Δ = 22°07'24"
Dc = 28°38'52"
R = 200.00'
Lc = 91.19'
T = 46.40'
E = 5.31'

Curve 1B (Curve Data)
Δ = 14°43'38"
Dc = 36°49'04"
R = 155.62'
Lc = 40.00'
T = 20.11'
E = 1.29'

PT. 13+18.82 (SHA)

CROSS REFERENCES	
ITEM	SHEET NO.
℄ Constr. Stake-out Data	2
Storm Drain Profiles	31 & 32
Baltimore Street Profile	19
Baldwin Street Profile	22
Washington Street Profile	17

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE 12-3-82
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — KENNETH L. EVANS — No. 4492 — REGISTERED PROFESSIONAL ENGINEER

PLAN
WASHINGTON ST. STA. 134+ TO STA. 141+
BALTIMORE ST. STA. 234+ TO STA. 242+

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 12 OF 59
SCALE: 1" = 50'
DESIGNED BY
DRAFTED BY
CHECKED BY

B.M.#15: ⌑ cut on granite stone on Northwest corner of Foundry St. and Commerce St. Elev. 230.630

DRIVEWAY SCHEDULE

LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
COMMERCIAL ST.			
Lt. 417+08	3	10'	5'
Lt. 417+71	3	10'	13'
Lt. 417+90	3	10'	14'
Rt. 418+75	2	10'	24'
Lt. 419+67	2	12'	14'
Rt. 419+67	1	2.5'	14'
Lt. 421+13	2	12'	8'
Rt. 421+33	1	10'	11'
Lt. 423+60	1	10'	35'
Rt. 424+76	2	12'	35'
Rt. 425+02	2	15'	22'
Lt. 425+16	2	13'	4'
Lt. 425+42	2	13'	18'
Rt. 425+45	3	10'	23'
Lt. 426+52	2	12'	4'
Lt. 427+36	2	10'	5'

LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
COMMERCE ST.			
Rt. 10+48	1	11'	38'
FOUNDRY STREET			
Lt. 521+62	3	18'	5'
Lt. 522+62	3	10'	9'
Rt. 525+03	2	14'	7'
Lt. 525+72	1	10'	13'
Rt. 525+93	2	15'	8'
Lt. 526+87	3	11'	12'
Rt. 528+15	2	10'	23'
Lt. 528+61	3	10'	14'
Lt. 530+50	2	12'	10'
Lt. 530+74	3	10'	12'
Rt. 531+21	2	16'	19'
Lt. 531+97	2	17'	20'
Lt. 532+94	2	10'	22'

LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
JEFFERSON ST.			
Rt. 6+78	1	10'	5'

Sta. 425+80
Reloc. FH. 14' Lt. of ℄
New Bury Line
Elev. 246.51
Install New 6" Valve

Sta. 423+83.26 Commercial St. =
9+98.02 Commerce St.

Rt. Sta. 537+74± To Rt. Sta. 538+74± Drainage Spur

1. Remove and stockpile existing Chain Link Fence.
2. Furnish and install temporary fence to adequately complete enclosure of swimming pool during construction.
3. Reset existing fence along the existing drainage and utility easement line after construction in the area is completed.

Note A: See Concrete Channel Transition Details on Sheet No 35

COMMERCIAL

STREET

JEFFERSON STREET

WINDEMERE WAY

STA. 416+50 MATCH LINE TO SHEET NO. 10

STA. 521+50 MATCH LINE TO SHEET NO. 10

STA. 533+75 MATCH LINE - THIS SHEET

Reloc. 6" Water See Sheet No. 54 For Details

Retaining Wall #3 See sheet no. 38

Retaining Wall #4 See sheet no. 38

NOT IN CONTRACT

35 L.F. Conc. Channel Sta. S.D. 6+12 (W=3', d=3')

Ex. 4.42'x2.3' conc. box culvert

10' temporary Construction Strip

Sta. 421+25 Reloc. F.H. 11' Lt. of ℄ New Bury Line Elev. 233.50 Install New 6" Valve

Sta. 524+75± Rt. Fill ex. Drainage Ditch & grade to drain to I-42

20' perpetual Storm Drain Easement

Remove exist. S.W., regrade Area to meet new Sidewalk

Meet exist. channel Rt. Sta. 523+50

20' Slope Easement

3' Hedge row not to be disturbed during constr.

Sod Side Ditch w=1', d=9" See Howard Co. Std. No. 6.12 3:1 Side Slopes

Sta. 526+67 Reloc. F.H. 17' Rt. of ℄ New Bury Line Elev. 219.58 Install New 6" Valve

525+95.61 Foundry St.

63 L.F. Dead End Barricade Type C

Revertible Slope Easement

Md. SHA CL. 6 Stone Rip-Rap Channel w=3', d=1'-6", t=18"; for Details see Sht. 35.

538+80.50 Drainage Spur

533+73.42 Jefferson St.

10' Temporary Constr. Strip

Perpetual Storm Drain Easement

Sod Vee Ditch @ 2%, 3:1 Slopes

20' perpetual Storm Drain Easement

Meet exist. channel Rt. Sta. 536+50

10' Revertible Slope Easement

50 L.F. Dead End Barricade Type C

Sta. 531+85 Reloc. F.H. 11' Rt. of ℄ New Bury Line Elev. 244.52 Install New 6" Valve

529+55.30 Foundry St. 13+00.50 Commerce St.

Provide Curb Opening w/ Curb Gutter & Apron STA Std. No. MD 14.00

Conc. Triangular Channel Rt. Sta. 530+14 To Sta. 530+87 Drainage Spur 1.80 LF d=.6" 3:1 Slopes. See Howard Co. Std. No. 6.11

STA. 7+50 MATCH LINE TO SHEET NO. 24

Transition new curb to match existing ℄ in 10 ft. - configuration in 10 ft.

Sta. 535+75 MATCH LINE - THIS SHEET

10' Temp. Construction Strip. 27 L.F. Md. SHA Cl. 6 Rip-Rap (W=2', d=1', t=18")

10' Temp. constr. Strip

20' perpetual Storm Drain Easement

COMMERCIAL ST. CURVE NO. 8 DATA
Δ = 1°42'18" Rt.
Dc = 0°30'00"
R = 11,459.16'
T = 170.51
Lc = 341.00'
E = 1.27'

COMMERCIAL ST.
LT. STA. 426+92±
Remove exist. inlet grate, extend inlet walls and construct Type "B" Manhole (Shallow) Top Slab, Frame and Cover.

COMMERCIAL ST.
RT. STA. 427+00±
Extend exist. 18" RCCP 4 L.F. at 4.0%, install Conc. End Section and construct 5'x5' Md. S.H.A. Cl. 6 Stone Rip-Rap Apron (T=12"). See Cross Sections

STORM DRAIN STRUCTURE SCHEDULE

STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
M-12	G5.05	0' Offset Sta. 417+17 Commercial St.	221.72	216.93
I-25	Std. WR	15' Lt. Sta. 417+28 Commercial St.	222.14	217.30
I-26	Std. WR	15' Lt. Sta. 418+59 Commercial St.	225.87	220.18
I-27	Std. WR	15' Lt. Sta. 419+92 Commercial St.	229.44	224.42
I-28	Std. WR	15' Lt. Sta. 421+31 Commercial St.	233.59	228.84
I-29	Std. WR	15' Lt. Sta. 422+62 Commercial St.	237.31	232.77
I-30	Std. WR	12.95' Lt. Sta. 424+00 Commercial St.	241.29	237.44
I-31	Std. WR	12' Lt. Sta. 424+56 Commercial St.	242.91	238.50
I-41	Dbl. S①	6' Rt. Sta. 522+27 Foundry St. Drainage Spur	200.80	195.35
I-42	Dbl. S①	2' Rt. Sta. 524+50 Foundry St. Drainage Spur	207.00	202.00
I-43	Dbl. S①	0' Offset Sta. 526+93 Foundry St. Drain Spur	216.20	209.90
I-44	Dbl. S①	8' Rt. Sta. 528+41 Foundry St. Drainage Spur	219.40	214.40
M-16	G5.02	7' Rt. Sta. 530+06 Foundry St. Drainage Spur	223.16	219.80
I-45	Std. S	19' Rt. Sta. 530+75 Foundry St. Drainage Spur	225.20	222.20
I-46	A-5	13' Lt. Sta. 11+92.6 Commerce St.	231.18	226.67
I-47	A-5	15' Rt. Sta. 12+20.08 Commerce St.	230.92	227.08
I-41	Dbl. S①	6' Rt. Sta. 522+27 Foundry St. Drainage Spur	200.80	195.35
HW-2	A	20' Rt. Sta. 523+16 Foundry St. Drainage Spur		197.70
HW-3	A	6' Rt. Sta. 537+10 Foundry St. Drainage Spur		246.00
I-49	A-5	3.5' Rt. Sta. 6+98 Jefferson St.	260.74	253.59
M-18	G5.05	5' Lt. Sta. 6+95 Jefferson St.	261.70	254.80

STORM DRAIN STRUCTURE SCHEDULE

STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
I-50	Std. S	29' Lt. Sta. 6+90 Jefferson St.	261.00	257.20
HW-4	A	83' from I-50 (In center exist. ditch)		263.30
M-19	G5.05	28' Lt. Sta. 4+43 Jefferson St.	275.00	269.65
I-51	Std. S *	49' Lt. Sta. 4+31.5 Jefferson St.	275.10	272.25
I-52	Std. S *	58' Lt. Sta. 3+96 Jefferson St.	276.00	273.05
**I-70	A-10	15' Rt. Sta. 522+25 Foundry St.	203.82	200.20
**I-69	A-10	15' Rt. Sta. 524+00 Foundry St.	209.63	206.00
I-65	A-10	15' Rt. Sta. 526+10 Foundry St.	217.21	212.00
I-68	Std. S	25' Rt. Sta. 526+16 Foundry St.	215.90	212.30
**I-66	A-10	15' Rt. Sta. 528+45 Foundry St.	226.69	223.35
**I-67	A-10	15' Rt. Sta. 528+65 Foundry St.	227.40	224.00
M-16A	G 5.02	4' Rt. Sta. 530+71 Foundry St. Drainage Spur	229.60	281.25

** Inside with 18" to be 24"

① See S.H.A. Std. MD-378.02 For Conc. Gutter Approach Details

* Std. Type S Inlet with Reticular Grate

STEP SCHEDULE

LOCATION	WIDTH	NO. RISERS
COMMERCIAL ST.		
Lt. 416+77	3.5'	1
Rt. 416+78	4'	6
Rt. 416+98	3'	7
Lt. 417+34	3'	5
Lt. 417+55	3'	3
Lt. 418+07	3'	3
Lt. 418+25	4'	2
Rt. 418+40	3'	6
Lt. 418+75	3'	2
Lt. 418+95	2.7'	3
Lt. 419+46	4'	7
Lt. 420+89	3'	6
Rt. 421+10	3'	4
Rt. 422+34	3.3'	5
Lt. 423+66	3'	3
Lt. 423+50	3'	5
FOUNDRY ST.		
Lt. 532+57	3'	3

NOTE: THE FOLLOWING IS NOT PART OF THIS CONTRACT

1. COMMERCIAL ST.-STA. 416+50 TO STA. 427+68+
2. COMMERCE ST.
3. FOUNDRY ST.-STA. 521+25 TO STA. 533+58+
4. FOUNDRY ST. DRAINAGE SPUR-STA. 523+50 TO STA. 536+50

CROSS REFERENCES

ITEM	SHEET NO.
Construction Stake-out Data	2 & 4
Commercial Street Profile	21
Foundry Street Profile	21
Commerce Street Profile	22
Storm Drain Profile	29 & 30

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

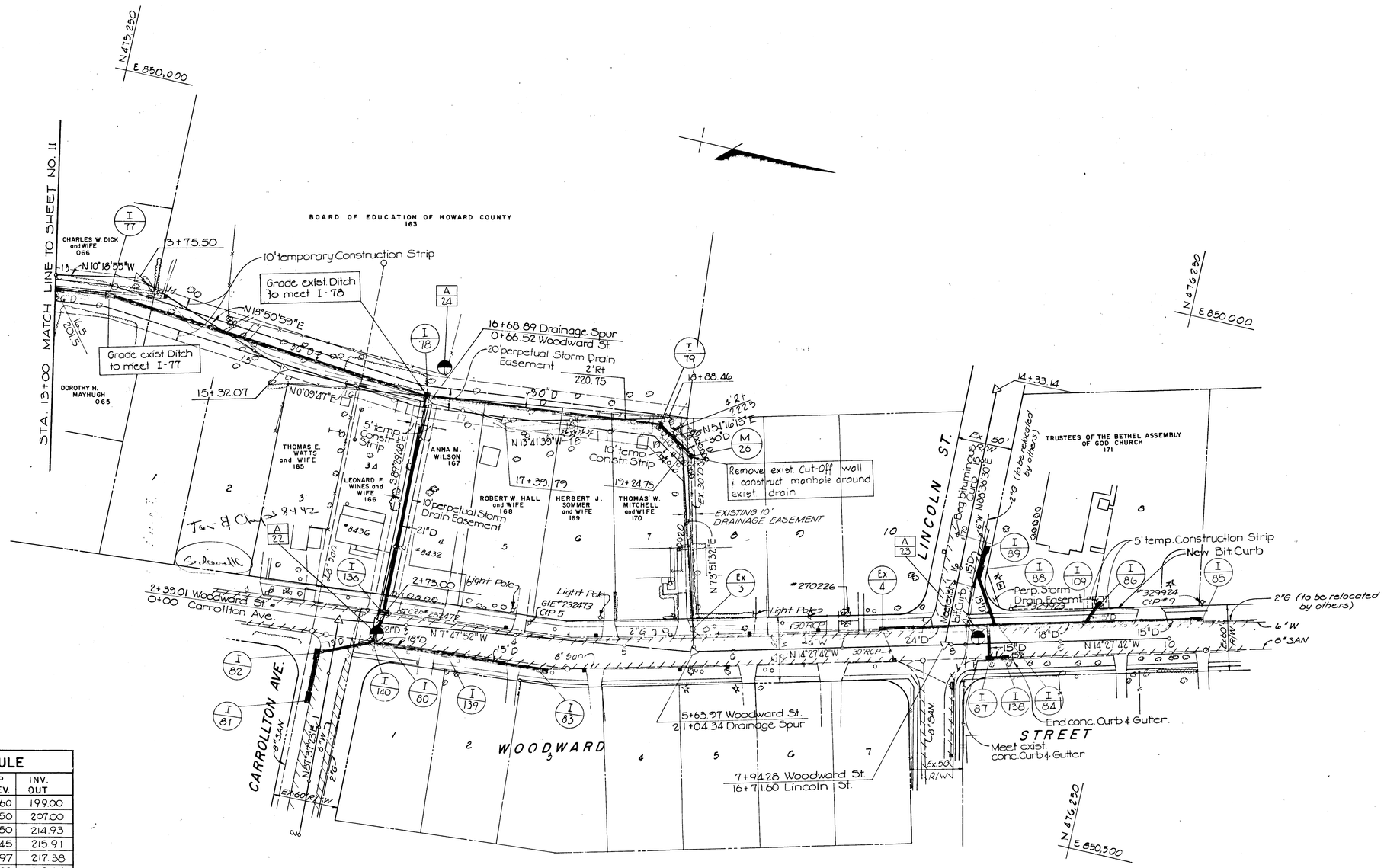
PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — PROFESSIONAL ENGINEER — #4403

PLAN
COMMERCIAL ST. STA. 416+ TO STA. 427+
FOUNDRY ST. STA. 521 + TO STA. 533+
COMMERCE ST.

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 13 OF 59
SCALE: 1" = 50'
DESIGNED BY
DRAFTED BY
CHECKED BY



STORM DRAIN STRUCTURE SCHEDULE

STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
I-77	Dbl. S ①	17' Rt. Sta. 13+50 Woodward St. Drainage Spur	203.60	199.00
I-78	Dbl. S ①	5' Lt. Sta. 16+66 Woodward St. Drainage Spur	211.50	207.00
I-136	A-10	10' Lt. Sta. 2+80 Woodward St.	220.50	214.93
I-140	A-5	17' Rt. Sta. 2+70 Woodward St.	220.45	215.91
I-80	A-10	18' Rt. Sta. 2+85 Woodward St.	220.97	217.38
I-139	A-10w/Dfl.	22' Rt. Sta. 3+50 Woodward St.	223.23	219.64
I-83	A-10	28' Rt. Sta. 4+28 Woodward St.	225.93	222.59
I-82	A-10w/Dfl.	12.7' Rt. Sta. 0+36 Carrollton Ave.	220.22	216.70
I-81	A-10w/Dfl.	12.7' Rt. Sta. 0+75 Carrollton Ave.	223.06	219.50
I-79	Dbl. S ①	7' Rt. Sta. 18+80 Woodward St. Drainage Spur	222.10	218.00
M-26	G5.05	7.8' Lt. Sta. 19+25.34 Woodward St. Drainage Spur	227.08	220.00
Ex 3	Ex. Inlet		230.11(T)	
Ex 4	Ex. Inlet	16.7' Lt. Sta. 7+37.18 Woodward St.	235.28 ft.	231.35
I-84	A-10w/Dfl.	13.2' Lt. Sta. 8+39 Woodward St.	242.92	233.41
I-87	Std. WR	15.2' Rt. Sta. 8+34 Woodward St.	242.38	238.35
I-138	Std. WR	15' Rt. Sta. 8+49 Woodward St.	243.43	239.26
I-88	A-10w/Dfl.	15' Lt. Sta. 16+00 Lincoln St.	243.06	239.31
I-89	A-5w/Dfl.	16.5' Lt. Sta. 15+80 Lincoln St.	243.87	240.11
I-109*	A-5w/Dfl.	14.2' Lt. Sta. 9+25 Woodward St.	247.85	244.07
I-86	Std. S	Cor. Pkg Lot 9+50± Woodward St.	249.26	245.73
I-85	A-10w/Dfl.	14' Lt. Sta. 10+25 Woodward St.	253.10	249.57

① See SHA Std. Md 378.02 for Conc. Gutter Approach Details

* Std. Type S Inlet with Reticular Grate

CROSS REFERENCES	
ITEM	
Storm Drain Profiles	33
Constr. Stake-out-Data	2

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
CHIEF, BUREAU OF ENGINEERING — DATE 12/31/82
CHIEF, ROADS & BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

PLAN

WOODWARD ST. AND CARROLLTON AVE. DRAINS

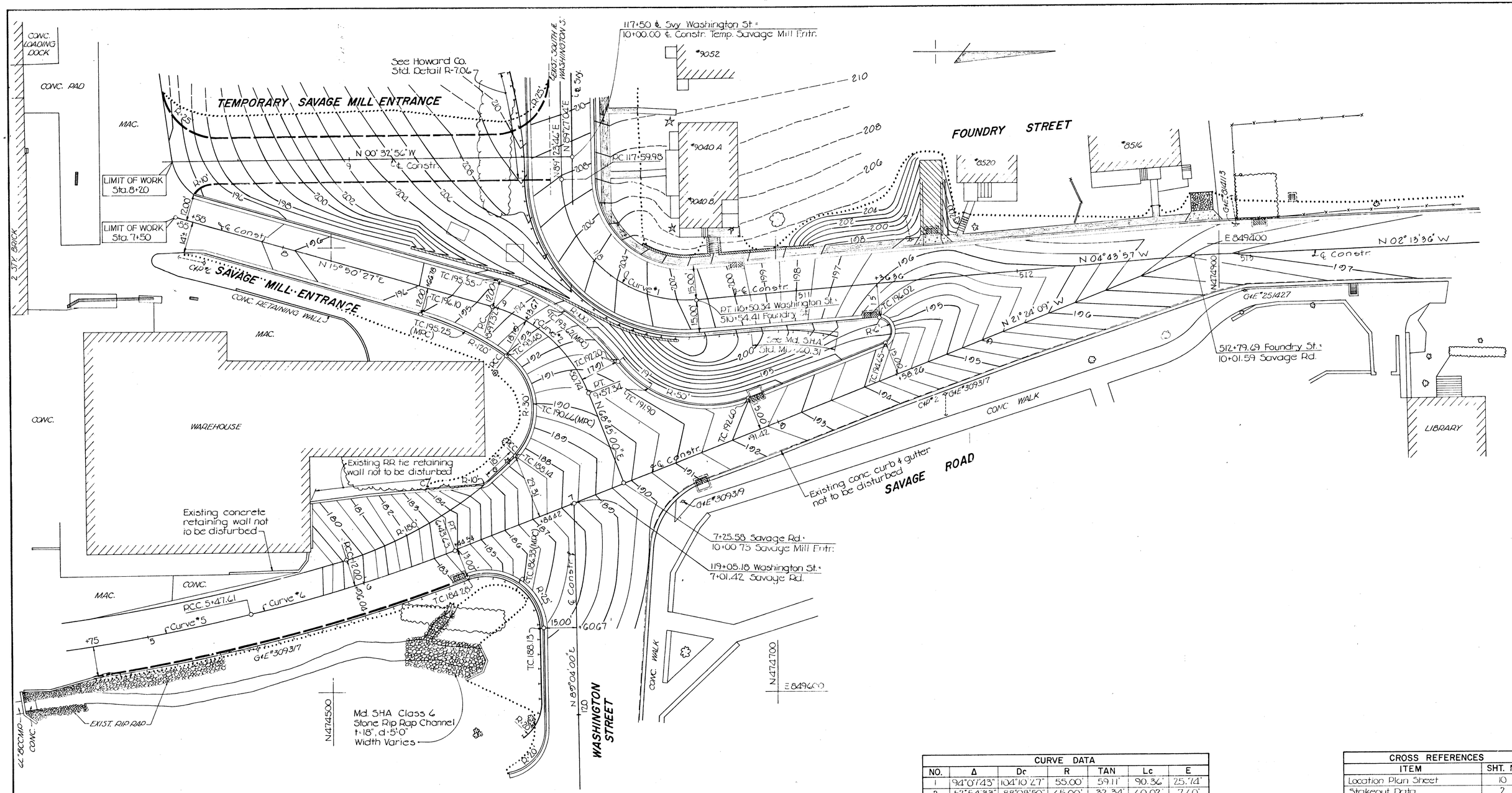
SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS

CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 14 OF 59

SCALE: 1" = 50'

DESIGNED BY
DRAFTED BY
CHECKED BY



CURVE DATA						
NO.	Δ	Dc	R	TAN	Lc	E
1	94°07'43"	104°10'27"	55.00'	59.11'	90.36'	25.14'
2	52°54'33"	88°08'50"	65.00'	32.34'	60.02'	7.60'
5	6°10'06"	5°22.12'	1066.82'	57.48'	114.85'	1.55'
6	8°24'04"	8°45'00"	654.81'	48.10'	96.02'	1.76'

CROSS REFERENCES	
ITEM	SHT. NO.
Location Plan Sheet	10
Stakeout Data	2
Roadway Profiles	16, 17, 20
Storm Drain Profiles	27, 28
Retaining Walls	37, 38

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE — CHIEF - BUREAU OF ENGINEERING — 12/30/82 — DATE
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — 12/29/82 — DATE

PREPARED BY:
THE WILSON T BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

Kenneth A. Evans

PLAN
SAVAGE ROAD - SAVAGE MILL ENTRANCE INTERSECTION

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 15 OF 59
SCALE: 1" = 20'
DESIGNED BY
DRAFTED BY
CHECKED BY

FAIR ST. WEST BOTTOM CURB ELEVATIONS	
Sta. 313+42.74	240.17
Sta. 313+50	240.30
Sta. 313+75	240.72
Sta. 314+00	241.32
Sta. 314+25	241.72
Sta. 314+50 (Tangent)	241.94
Sta. 314+75 (Tangent)	242.15

NO	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF ROADS & BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

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OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

PROFILES
WASHINGTON ST. STA. 109+ TO STA. 121+
COMMERCIAL ST. STA. 409+ TO STA. 414+
FAIR ST. STA. 310+ TO STA. 314+

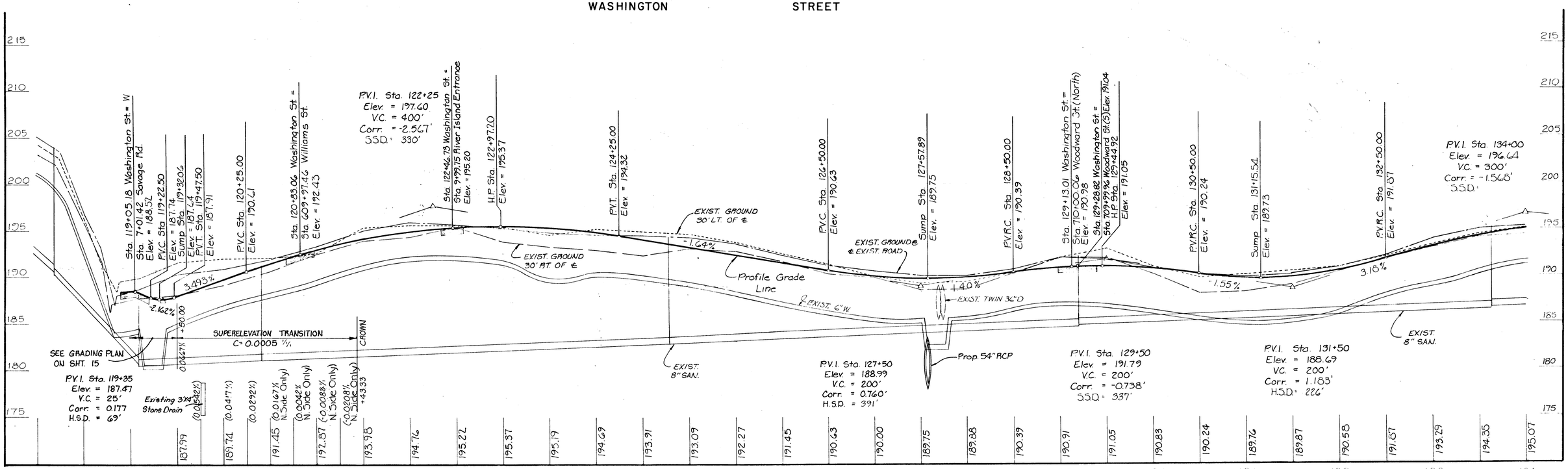
SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

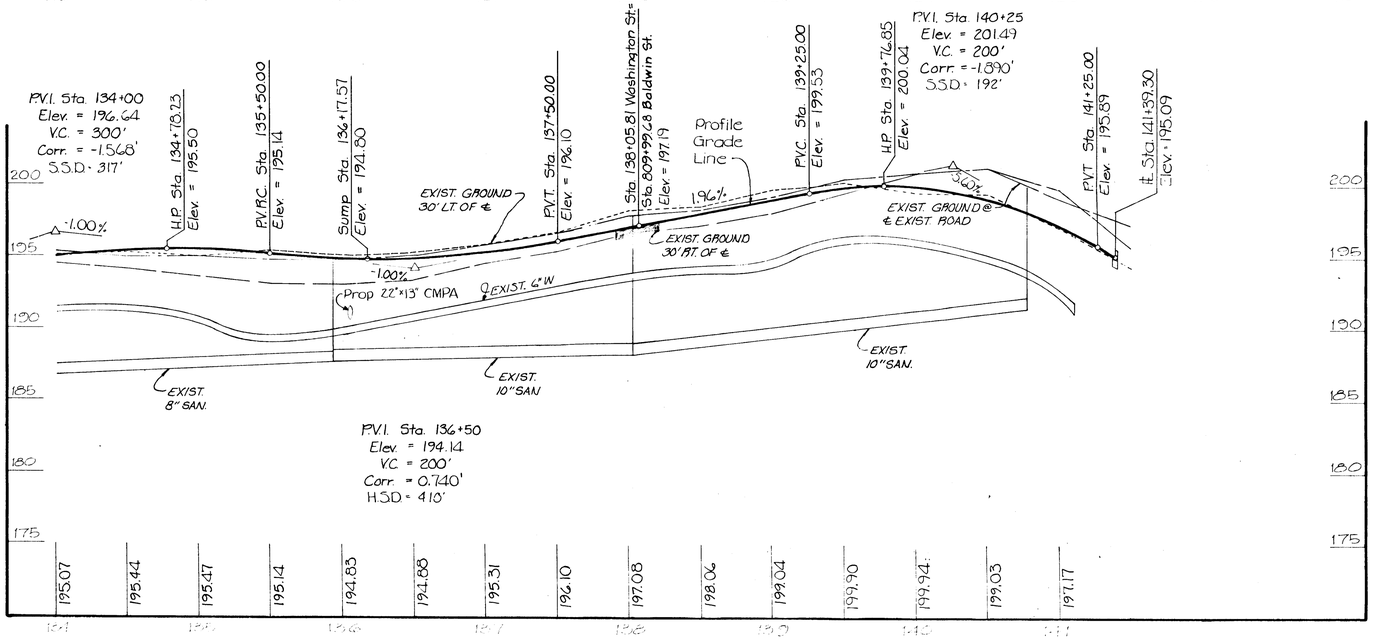
DRAWING NO. 16 OF 59

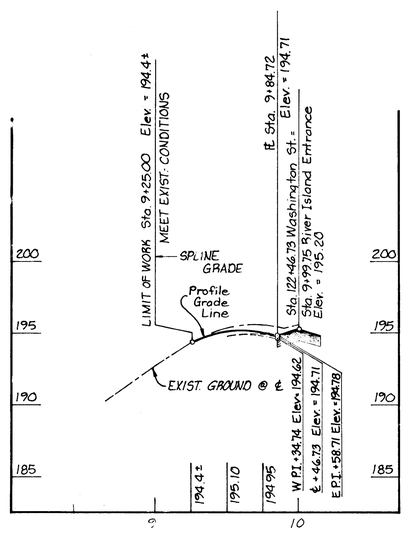
SCALE: HORZ. 1" = 50' VERT. 1" = 5'

DESIGNED BY
DRAFTED BY
CHECKED BY

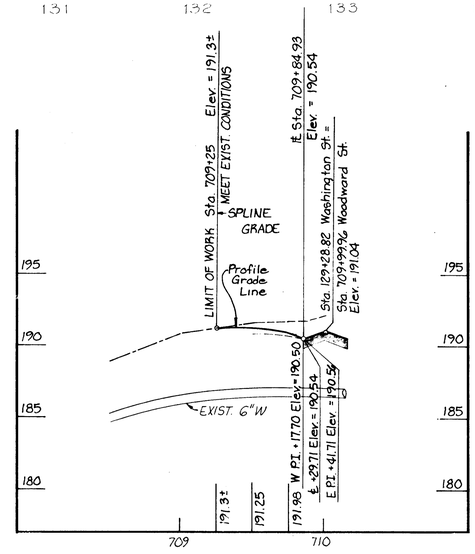
WASHINGTON STREET







RIVER ISLAND WEST ENTRANCE



WOODWARD ST. SOUTH OF WASHINGTON ST.

WASHINGTON STREET

NO	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE 12/30/82
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

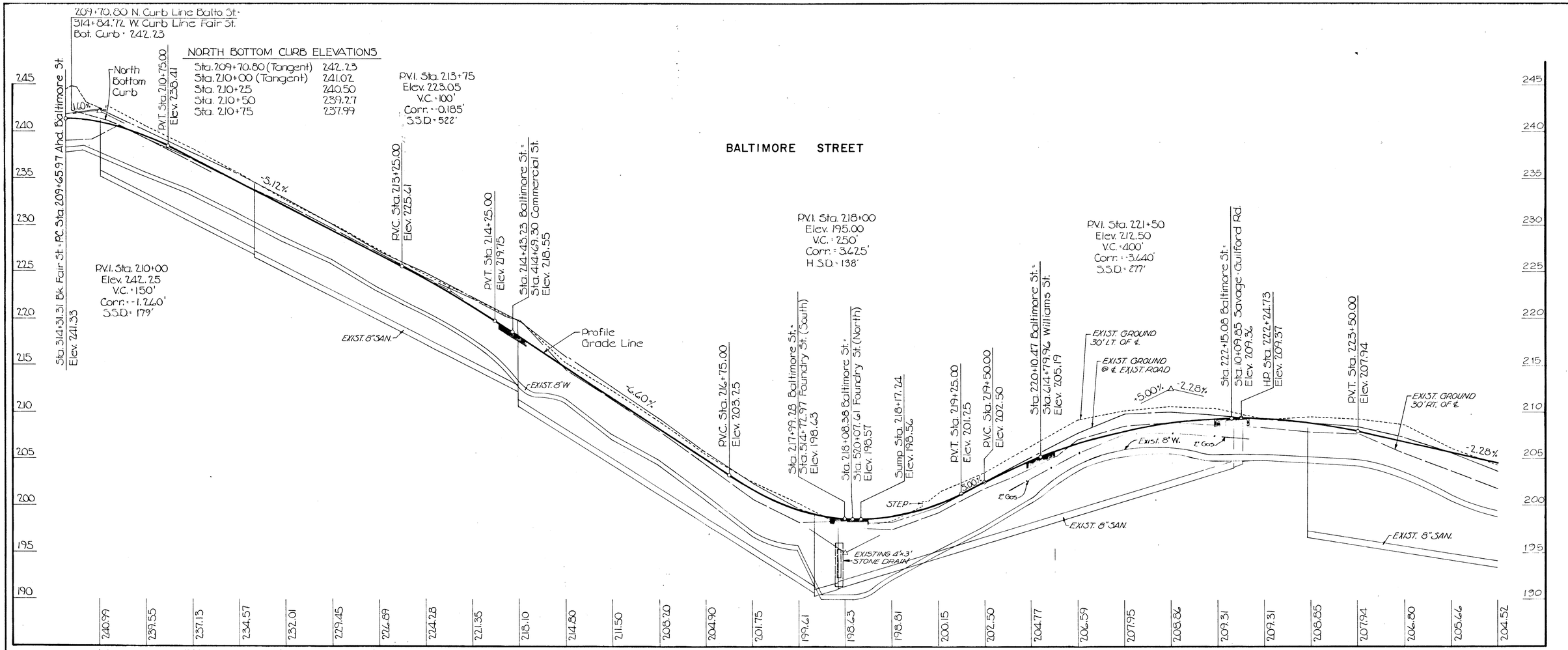
PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

Kenneth L. Evans #4489

PROFILE
WASHINGTON ST.
STA. 118+ TO STA. 141+

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 17 OF 59
SCALE: HORZ. 1"=50' VERT. 1"= 5'
DESIGNED BY
DRAFTED BY
CHECKED BY



NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE

CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82

CHIEF ROADS & BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — #4603 — Kenneth L. Evans

PROFILE

BALTIMORE ST.

STA. 209+ TO STA. 225+

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS

CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 18 OF 59

SCALE: HORZ. 1"=50' VERT. 1"= 5'

DESIGNED BY
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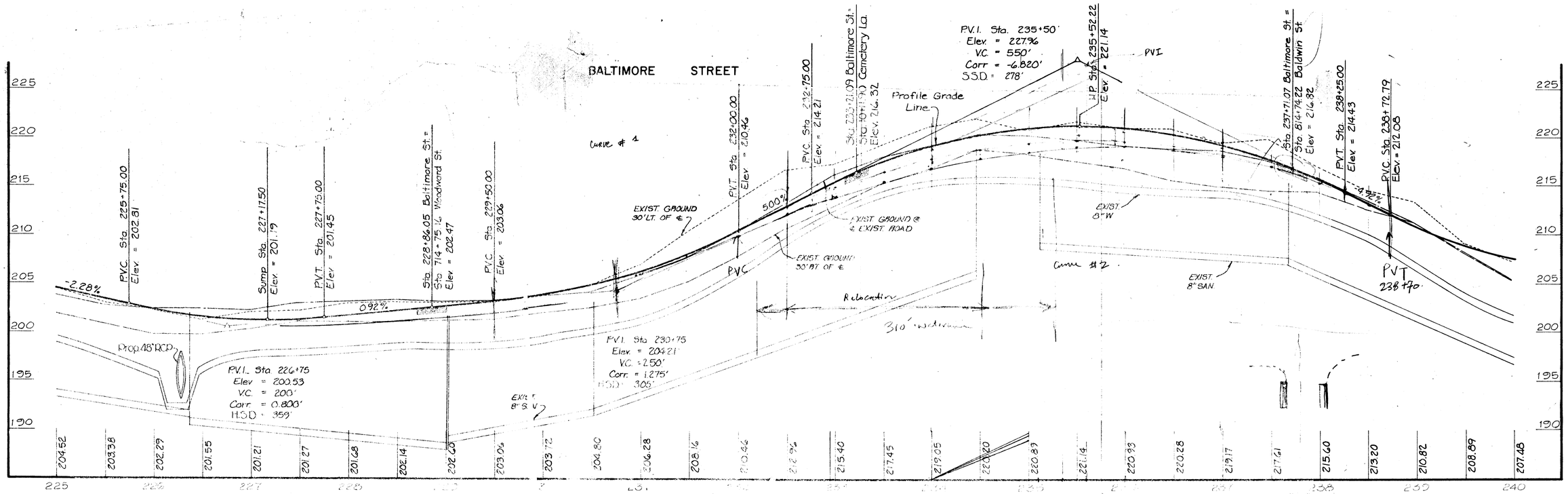
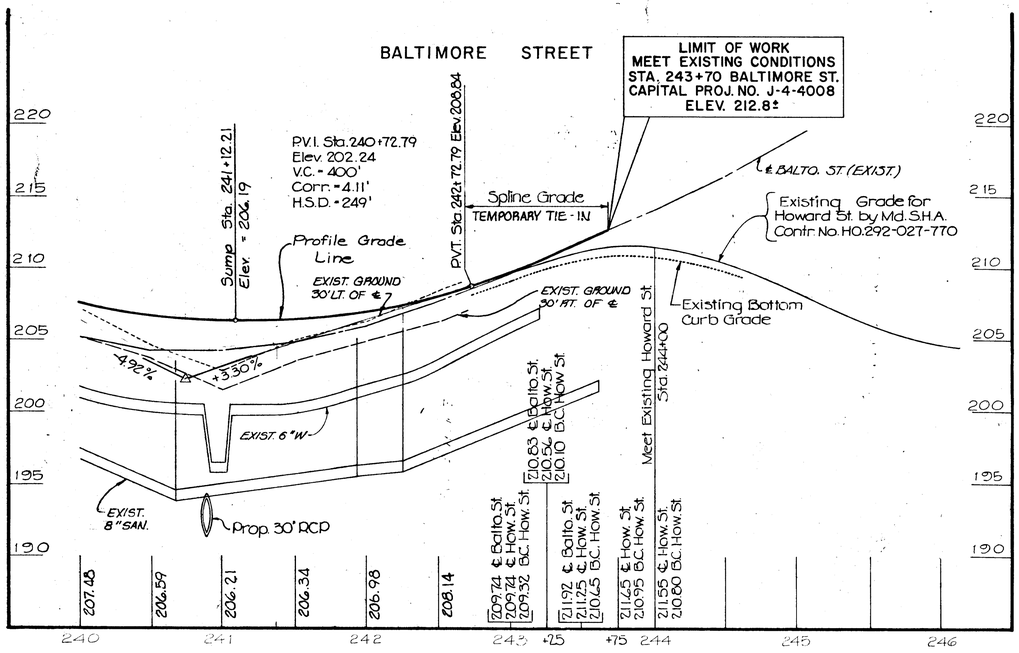
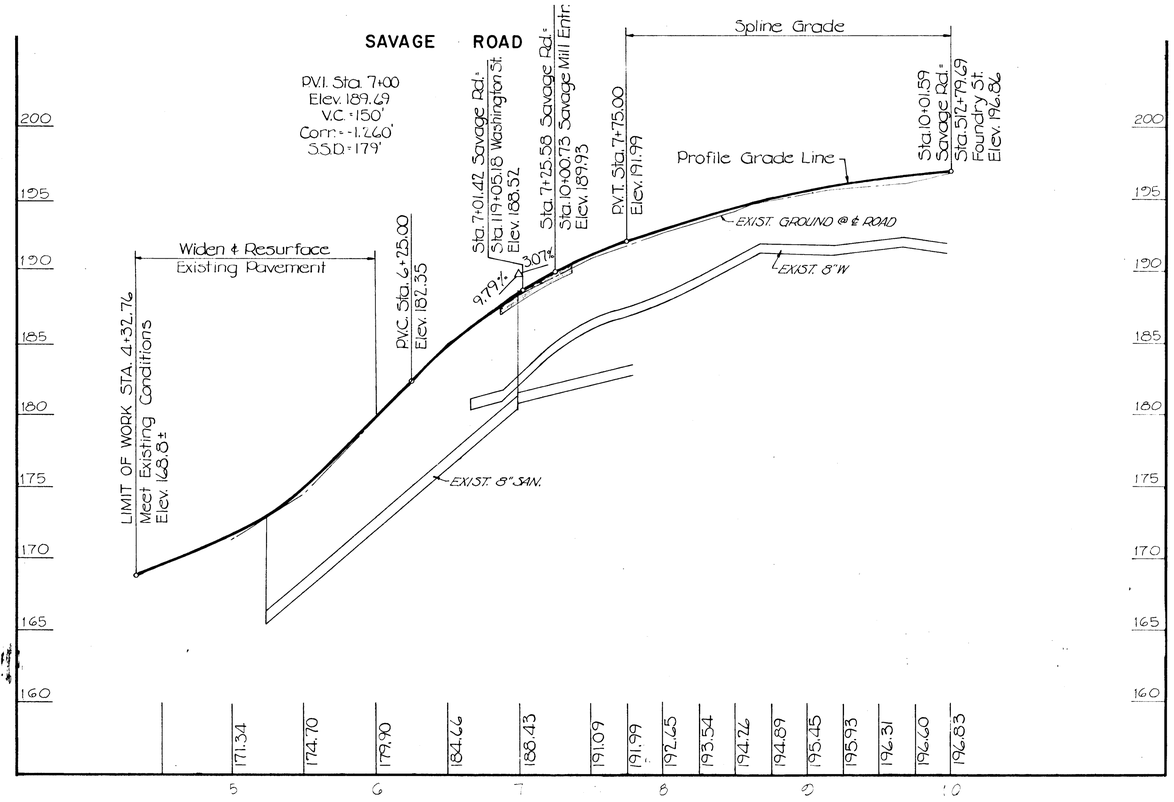
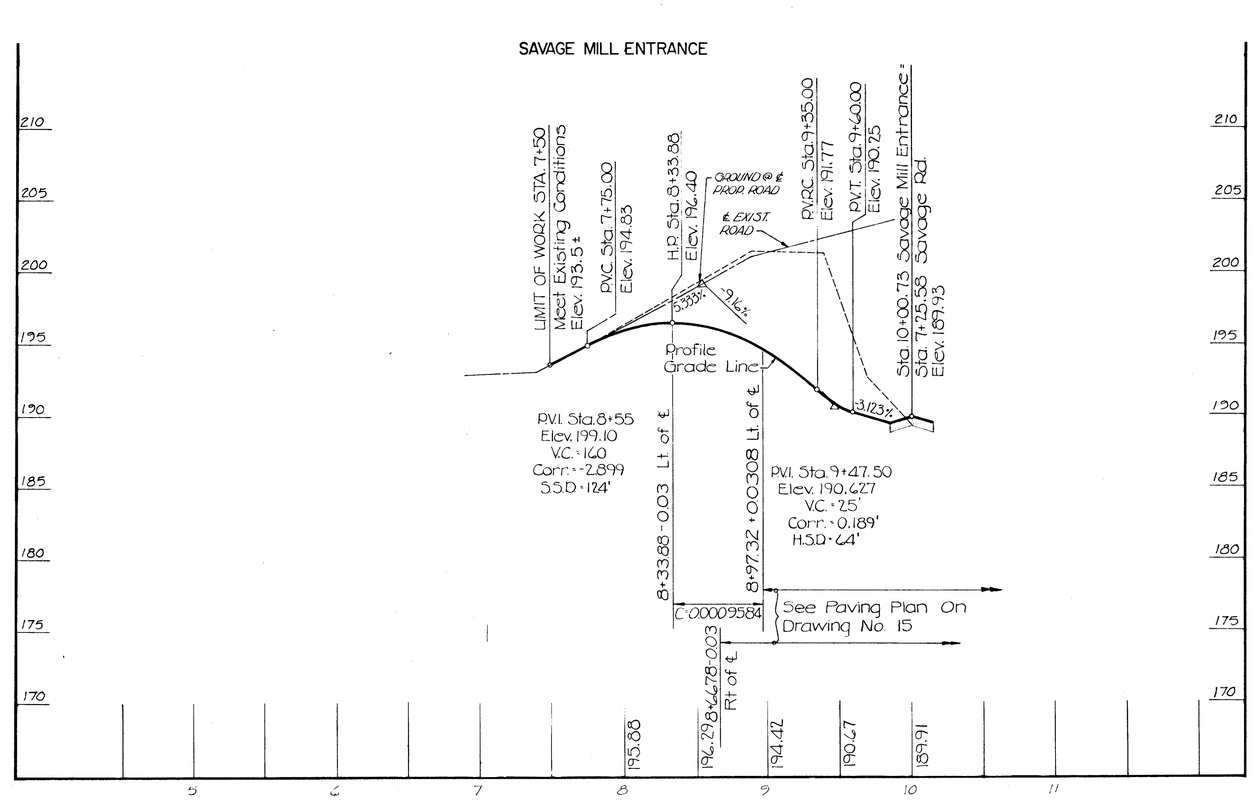


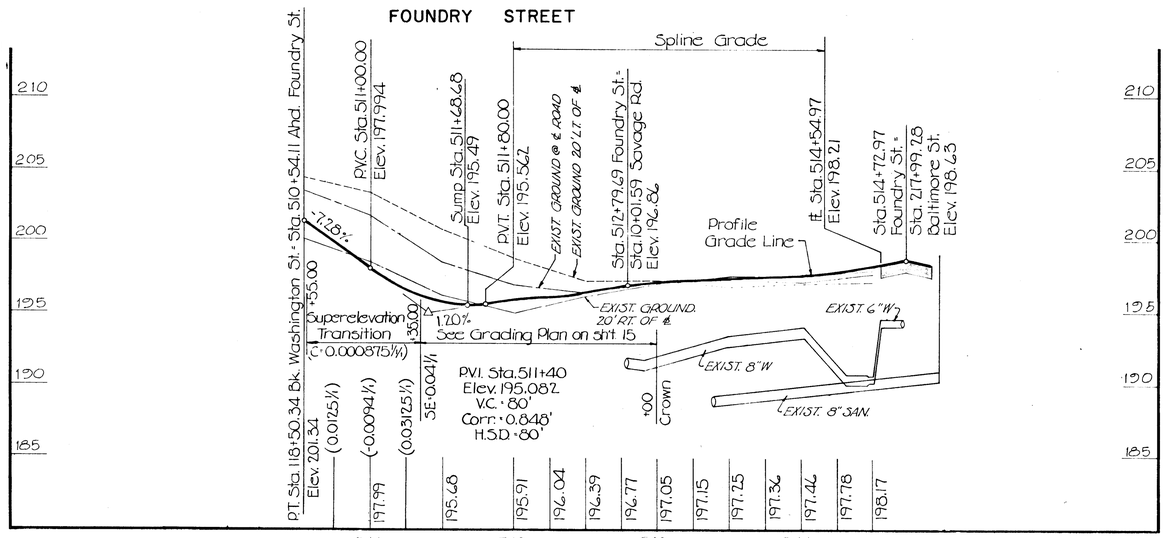


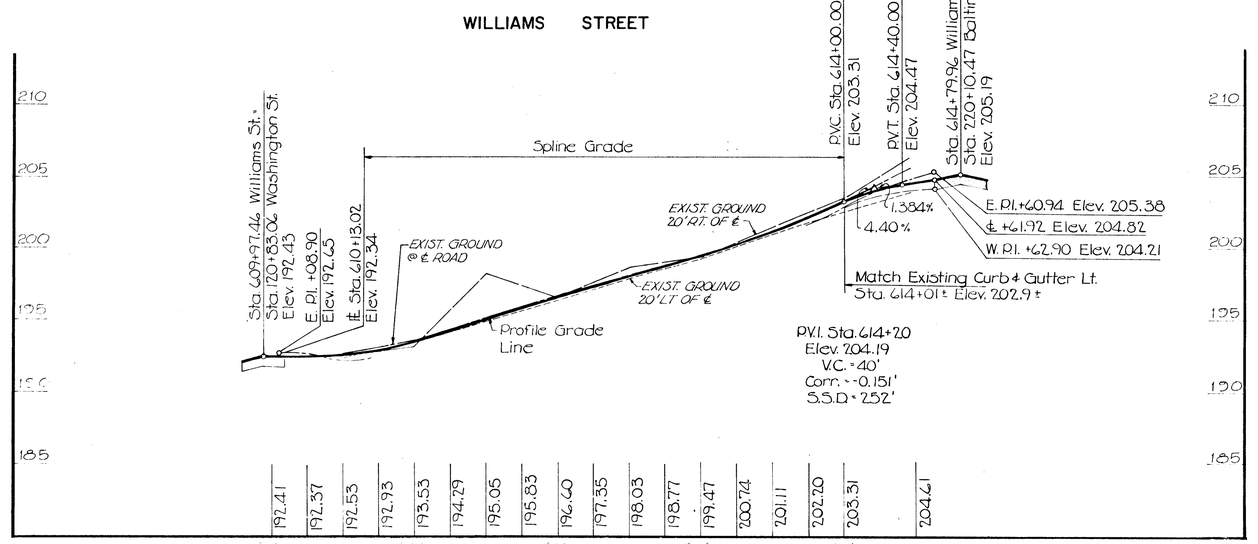
DEPARTMENT OF PUBLIC WORKS	PREPARED BY:		PROFILE	SAVAGE AREA ROAD AND STORM DRAIN IMPROVEMENTS	DRAWING	SCALE:	
HOWARD COUNTY, MARYLAND	THE WILSON T. BALLARD CO. CONSULTING ENGINEERS OWINGS MILLS, MARYLAND TEL. NO. 363-0150		BALTIMORE ST. STA. 225+ TO STA. 242+	CAPITAL PROJECT NOS. J-4-4008 ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	NO. 19 OF 59	HORZ. 1"=50' VERT. 1"= 5'	DESIGNED BY / DRAFTED BY / CHECKED BY
DIRECTOR OF PUBLIC WORKS DATE 12-31-82	CHIEF - BUREAU OF ENGINEERING DATE 12/30/82						
CHIEF ROADS & BRIDGES, STORM DRAINS DIVISION DATE 12/29/82							

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE









NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE — CHIEF - BUREAU OF ENGINEERING — DATE 12/31/82

CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
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CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

Kenneth T. Evans P-4683

PROFILES
SAVAGE RD.; SAVAGE MILL ENTR.; FOUNDRY ST. STA. 510+ TO STA. 514+; WILLIAMS ST.

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 20 OF 59

SCALE: HORZ. 1"=50' VERT. 1"= 5'

DESIGNED BY
DRAFTED BY
CHECKED BY

COMMERCIAL STREET

LIMIT OF WORK
MEET EXISTING CONDITIONS
STA 416+50 COMMERCIAL ST
CAPITAL PROJ. NO. J-4-4008
ELEV. 220.3 ±

NOT IN CONTRACT

PAVEMENT TRANSITION TABLE			
STA.	LT. EDGE	℄	RT EDGE
416+00	218.80	219.30	218.80
416+10	218.99	219.47	218.95
416+25	219.41	219.81	219.24
416+40	219.82	220.16	219.53
416+50	220.03(Ex.)	220.33(Ex.)	219.69(Ex.)

Sta. 414+69.30 Commercial St. =
Sta. 214+43.23 Baltimore St.
Elev = 216.55
W. P.I. +87.17 Elev. 219.11
℄ +87.30 Elev. 218.12
E. P.I. +87.42 Elev. 217.13

416+00

Spline Grade (Transition to meet exist conditions)

EXIST. GROUND @ ℄

Future Profile Grade Line

EXISTING GROUND 30' LT OF ℄

EXISTING GROUND 30' RT. OF ℄

Prop. 24" RCP

1.045%

2.84%

2-6"W

8" SAN.

See Sht. no 16 for Commercial St. (South)

Sta. 423+63.26 Commercial St. =
Sta. 9+96.02 Commerce St.
Elev. = 240.64

P.V.C. Sta 426+00
Elev. 246.80

P.V.I. Sta. 426+50
Elev. = 248.22
V.C. = 100'
Corr. = -0.068'
S.S.D. = 1344'

P.V.T. Sta 427+00
Elev 249.37

2.30%

ℓ Sta. 427+68.42
Elev. 250.94

TRANSITION NOTES
1. End concrete curb and gutter left of ℄ at location directed by the Engineer
2. End concrete curb and gutter and sidewalk right of ℄ at Sta. 416+00

215.25 | 216.78 | 219.30 | 220.33 (Ex ℄) 220.24 (Future) | 220.92 (Ex ℄) 221.24 (Future) | 222.66 (Future) | 224.08 | 225.50 | 226.92 | 228.34 | 229.76 | 231.18 | 232.60 | 234.02 | 235.44 | 236.86 | 238.28 | 239.70 | 241.12 | 242.54 | 243.96 | 245.38 | 246.80 | 248.15 | 249.37 | 250.52

415 | 416 | 417 | 418 | 419 | 420 | 421 | 422 | 423 | 424 | 425 | 426 | 427

COMMERCIAL ST.

+07.59 | +46 | ℄ Construction | +50 | 19'-8" | 4'-0" | 10" | Curb & Gutter | 4'-0" Conc. Sdwlk. | Std. G7.01 Conc. Steps (3 Risers) | Reinf. Conc. Retaining Wall | ℓ ALTIMORE ST

PLAN
Scale: 1"=20'

19'-8" to ℄ Constr. | 4'-0" Sidewalk | 10" | 219.04 (Rt. 415+07.59) | 219.44 (Rt. 415+46) | #4@18" | #4@9" | Varies | Exist Ground | ½" Preformed Exp. Jt. Mat'l. | 9" | 12" | 2"x4" Key | #4@18" | Elev. 215.2 | 12" | 2'-0" | #4 Spaced as Shown.

SECTION A-A
Scale: ½"=1'-0"

NOTES
1. See Dwg. No. 37 for Structural General Notes.
2. Reset picket fence on top of wall as directed by the Engineer.

RETAINING WALL NO. 5
CHARLES D. CHICKERING PROPERTY

ℓ Sta. 533+58.04
Elev. 247.08

FOUNDRY STREET

PVI Sta 520+45
Elev. = 197.72
VC = 30'
Corr. = 0.210'
H.S.D. = 74'

LIMIT OF WORK
MEET EXISTING CONDITIONS
STA. 521+25 FOUNDRY ST.
CAPITAL PROJ. NO. J-4-4008
ELEV. 200.6 ±

NOT IN CONTRACT

Future Profile Grade Line

Sta. 520+07.61 Foundry St. =
Sta. 218+08.38 Baltimore St.
Elev = 198.57
PVC Sta. 520+30.00
Elev. = 198.06
Sump Sta. 520+42.18
Elev. = 197.92
PVT Sta. 520+60.00
Elev. = 198.22

EXIST. GROUND 20' LT. OF ℄

3.325%

PVC Sta. 524+75.00
Elev = 212.02

PVT Sta. 525+75.00
Elev. = 215.69

EXIST. GROUND 20' RT. OF ℄

EXISTING GROUND @ ℄ RD.

4.02%

6"W

8" SAN.

W. P.I. +26.44 Elev. 198.28
℄ +25.63 Elev. 198.16
E. P.I. +24.83 Elev. 198.14

2.272%

Spline Grade (Transition to meet exist. conditions)

8" SAN.

PAVEMENT TRANSITION TABLE			
STA	LT. EDGE	℄	RT. EDGE
520+75	198.22	198.72	198.22
520+85	198.57	199.08	198.61
521+00	199.11	199.66	199.26
521+15	199.65	200.23	199.90
521+25	199.96(Ex)	200.57(Ex)	200.28(Ex)

TRANSITION NOTES
1. End concrete curb and gutter and sidewalk left of ℄ at location directed by the Engineer
2. End concrete curb and gutter right of ℄ at Sta 520+75

PVI Sta 525+25
Elev = 213.68
VC = 100'
Corr. = 0.087'
H.S.D. = 1000'+

198.42 | 197.98 | +75 | 199.66 | 201.31 (Ex ℄) 201.21 (Future) | 203.47 (Ex ℄) 202.87 (Future) | 204.54 | 206.20 | 207.86 | 209.52 | 211.19 | 212.87 | 214.71 | 216.70 | 218.71 | 220.72 | 222.73 | 224.74

520 | 521 | 522 | 523 | 524 | 525 | 526 | 527 | 528

FOUNDRY STREET

NOT IN CONTRACT

PVI Sta 531+00
Elev. = 242.85
VC = 150'
Corr. = -1.095'
S.S.D. = 195'

PVT Sta 531+75.00
Elev. = 244.08

Profile Grade Line

EXIST. GROUND @ ℄ ROAD

EXISTING GROUND 20' LT. OF ℄

1.614%

PVC Sta 530+25.00
Elev. = 237.24

Sta 529+55.30 Foundry St.
Sta 13+00.50 Commerce St.
Elev. 232.45

6"W

PVC Sta 528+25.00
Elev. = 225.74

EXIST. GROUND 20' RT. OF ℄

7.60%

4.02%

8" SAN.

PVI Sta 529+25
Elev. = 229.76
VC = 200'
Corr. = 0.865'
H.S.D. = 319'

8" SAN.

224.74 | 226.80 | 229.24 | 232.12 | 235.42 | 238.99 | 241.76 | 243.55 | 244.49 | 245.31 | 246.13 | 246.95

528 | 529 | 530 | 531 | 532 | 533

NO	DATE	DESCRIPTION OF REVISION	SIGNATURE

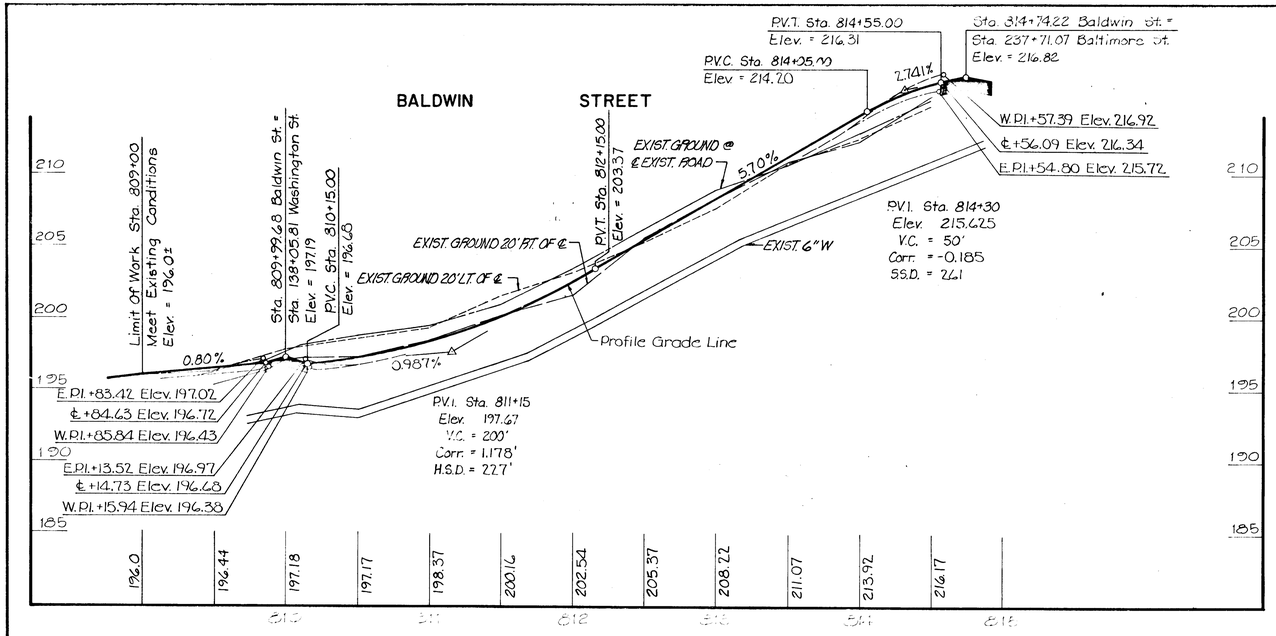
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works — Date: 1-3-83
Chief - Bureau of Engineering — Date: 12/29/82
Chief, Roads, Bridges, Storm Drains Division — Date

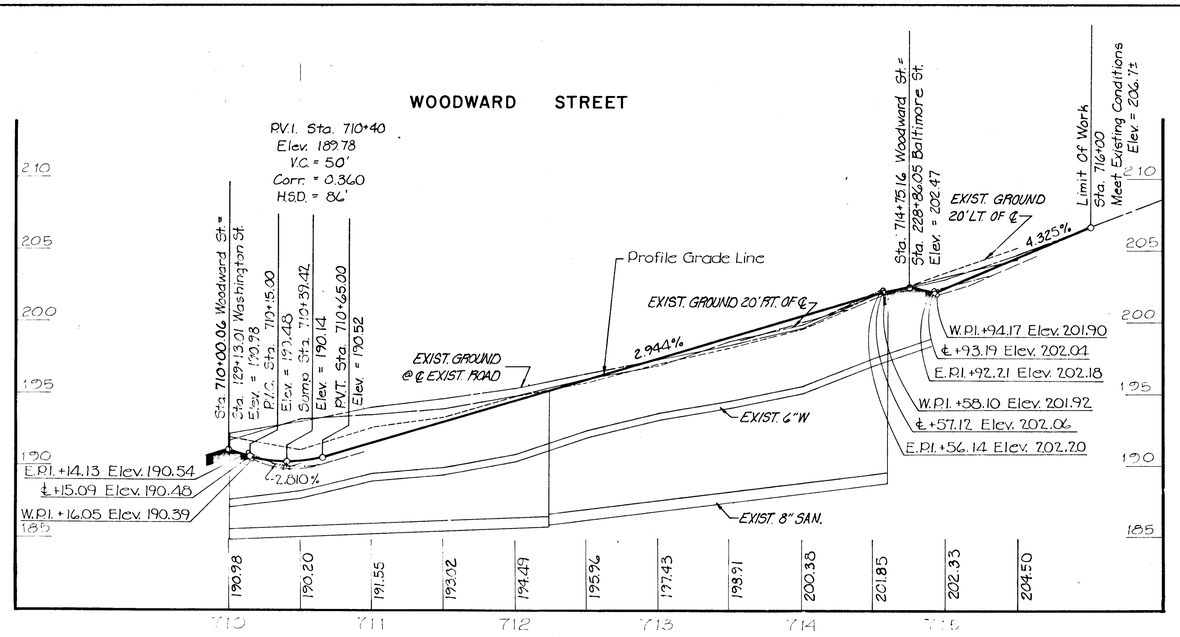
PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

PROFILES
COMMERCIAL ST. STA. 416+ TO STA. 427+
FOUNDRY ST. STA. 520+ TO STA. 533+

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

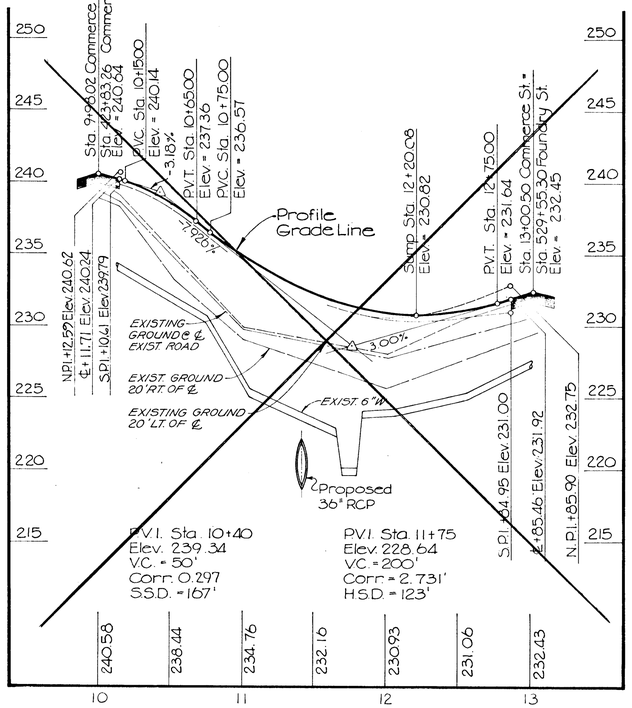
DRAWING NO. 21 OF 59
SCALE: HORZ. 1"=50' VERT. 1"= 5'
DESIGNED BY | DRAFTED BY | CHECKED BY



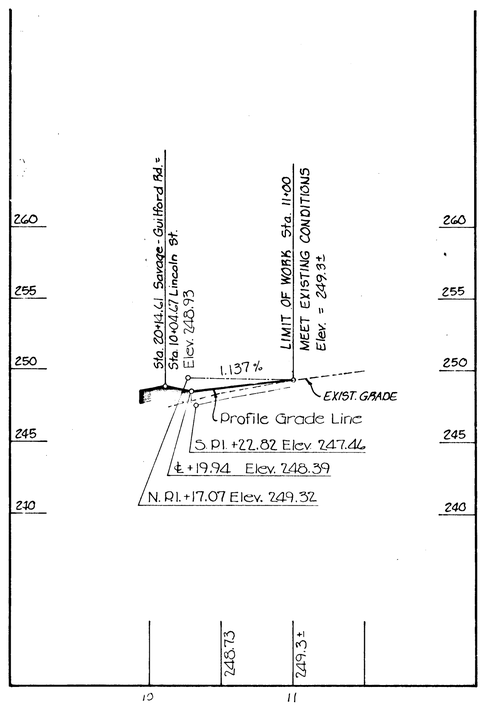


COMMERCE STREET

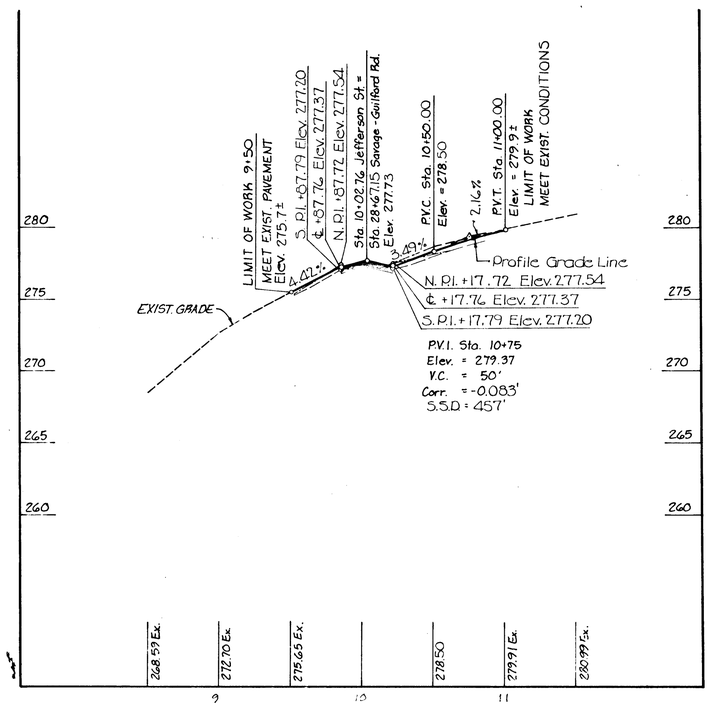
NOT IN CONTRACT



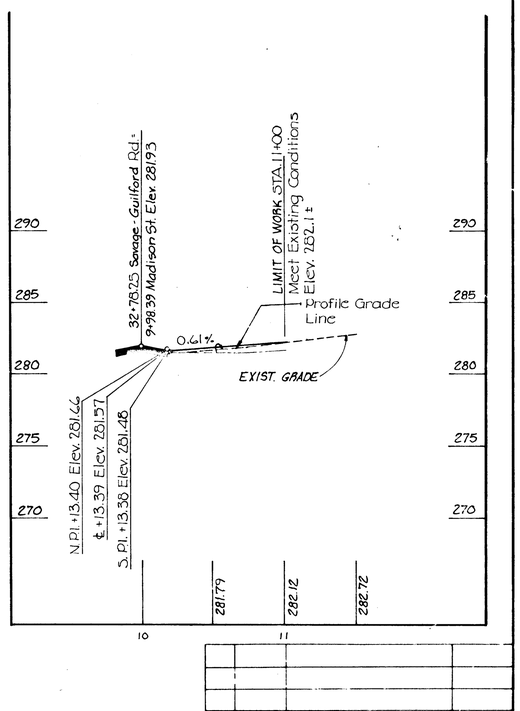
LINCOLN STREET



JEFFERSON STREET



MADISON STREET



NO	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

Kenneth R. Sapp 14693

PROFILES
BALDWIN STREET, WOODWARD STREET, COMMERCE STREET, LINCOLN STREET, JEFFERSON STREET, AND MADISON STREET

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 22 OF 59
SCALE: HORZ. 1"=50' VERT. 1"= 5'
DESIGNED BY
DRAFTED BY
CHECKED BY

STEP SCHEDULE		
LOCATION	WIDTH	No. RISERS
RT. 12+63	3.5'	1
LT. 19+86	3.0'	2
LT. 20+68	3.5'	2
RT. 21+92	3.0'	4

Reloc. 8" Water
See sht. no. 55
for details.

STORM DRAIN STRUCTURE SCHEDULE				
STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
I-102	Std. WR	15' Rt. Sta. 13+55 Savage Guilford Rd.	217.53	210.41
I-103	Std. WR	15' Rt. Sta. 18+45 Savage Guilford Rd.	238.84	232.44
M-32	G5.01	7' Rt. Sta. 19+90 Savage Guilford Rd.	247.29	241.36
I-105a	Std. WR	15' Rt. Sta. 23+25 Savage Guilford Rd.	264.92	259.16
I-106	Std. WR	15' Lt. Sta. 23+25 Savage Guilford Rd.	264.92	260.89
I-108	A-10	15' Rt. Sta. 10+55 Lincoln St.	248.70	244.70
I-102a	Std. WR	15' Lt. Sta. 13+68 Savage Guilford Rd.	217.91	214.35
I-106a	A-10	15' Lt. Sta. 20+55 Savage Guilford Rd.	251.62	248.19
I-105b	Std. WR	15' Rt. Sta. 20+50 Savage Guilford Rd.	251.32	241.75
I-100	Std. WR	15' Rt. Sta. 10+59.20 Savage Guilford Rd.	208.99	201.71
I-101	Std. WR	15' Lt. Sta. 10+59.50 Savage Guilford Rd.	208.99	202.68
M-31	G5.01	5' Lt. Sta. 222+49 Balto. St.	209.21	200.59

* Inside width to be 2'-6"

DRIVEWAY SCHEDULE			
LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
RT. 11+77	3	20'	15'
LT. 11+87	2	24'	8'
RT. 12+31	3	11'	9'
LT. 12+40	2	60	8'
RT. 13+15	2	20'	4'
RT. 14+79	2	35'	22'
LT. 14+97	2	12'	6'
LT. 15+38	2	19'	13'
RT. 15+97	3	10'	5'
RT. 16+20	2	12'	5'
LT. 17+84	3	14'	12'
RT. 17+92	2	10'	22'
RT. 18+25	2	10'	23'

DRIVEWAY SCHEDULE			
LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
LT. 18+85	1	10'	15'
LT. 19+48	2	11'	3'
LT. 20+11	2	24'	16'
RT. 21+45	2	36'	29'
LT. 22+22	2	14'	3'
LT. 22+45	3	20'	5'
RT. 22+65	2	10'	21'
LT. 23+65	2	32'	27'
RT. 23+68	2	10'	10'

B.M.- Howard County Monument 2042001:
19' Rt. Sta. 21+59 ℄ Sky. Savage Guilford Rd.
Elev. 259.56

Sta. 23+92
Reloc. F.H. 17' Lt.
New Bury Line
Elev. 267.18'

10+09.85 Savage Guilford Rd.
222+15.08 Baltimore St.

BALTIMORE STREET

B.M. - Howard Co.
Mon. #1942003

CURVE NO. 9 DATA
Δ = 7°04'57" Lt.
Dc = 2°00'00"
R = 2864.789'
T = 177.29'
L = 354.12'
E = 5.48'

CURVE NO. 10 DATA
Δ = 7°54'32" Lt.
Dc = 2°00'00"
R = 2864.789'
T = 198.04'
L = 395.45'
E = 6.84'

NOTE:
See sheet no. 11 for Baltimore St. plan

N 5° 31' 52" W

24' Drive (By Others)

BOUROUGH STORCH and WIFE (Cont'd. on Sht. No. 11) 068

CONSTANCE L. MERSON and OTHERS 111

JAMES D. WILLIAMSON and WIFE 112

MARY HELEN REELEY, WIDOW

HOWARD M. BALDWIN AND WIFE 114

PAUL W. GANOE and WIFE 114

WARREN E. WHEELER and WIFE 115

RALPH J. WALTER and WIFE (Cont'd. on Sht. No. 24) 116

PAUL W. GANOE ET AL (Cont'd. on Sht. No. 11) 067

PAUL W. GANOE and WIFE 164

8455 SCHOOL

BOARD OF EDUCATION OF HOWARD COUNTY 163

Prop. R/W

Curve 9

Curve 10

EXIST. 8"W

G&E 309327
G&E 309329 C&P #3
G&E 309328 C&P #2
G&E 309330 C&P #5
G&E 374763 C&P #3
G&E 309332 C&P #6
G&E 309333 C&P #7
G&E 309334 C&P #8
G&E 140469 C&P #1
G&E 251428
G&E 255264 C&P
G&E 143659
C&P #10 G&E 374765
C&P #9 G&E 125249

20+14.61 SAVAGE-GUILFORD = 10+04.71 LINCOLN ST.
P.C. 20+84.06

SAVAGE - GUILFORD ROAD

THORA BEGHTOL and CHARLES E. FINAMORE 162

ALICE E. PHELPS and SISTER 161

THOMAS R. SCOTT and WIFE 160

RICHARD MILLS and WIFE 159

MARY LUCILLE SHERMAN 158

LIMIT OF WORK Sta. 11+00
Meet Existing Conditions

Lt. Sta. 11+65± to Lt. Sta. 12+00±
Exist. bldgs. to be removed by others

LINCOLN STREET

JOHN A. GRIMES and WIFE 157

CHARLES W. DICK and WIFE 156

R. PAUL REYNOLD and WIFE 155

WILLIAM A. LAMBERT and WIFE (Cont'd. on Sht. No. 24) 154

B.M. Co. Mon. 2042001

EXIST. CONC. BLK'D RETAINING WALL

Sta 24+00 MATCH LINE TO SHEET NO. 24

N 12° 26' 49" W

N 475,250
E 849,500

PROFILE

PVI Sta. 10+55
Elev. 208.45
V.C. = 50'
Corr. = 0.297'
H.S.D. = 107

E. PI +26.68 Elev. 208.95
℄ +27.90 Elev. 208.94
W. PI +29.12 Elev. 208.88

Sta. 10+09.85 Savage-Guilford Rd.: Sta. 222+15.08 Baltimore St. Elev. 209.36

PVC Sta. 10+30.00 Elev. 208.90

Sump Sta. 10+49.02 Elev. 208.73

PVT Sta. 10+80.00 Elev. 209.19

Profile Grade Line

2.986%

-1.808%

EXIST. GROUND 35' RT. OF ℄ EXIST. ROAD

EXIST. GROUND AT ℄ EXIST. ROAD

EXIST. GROUND 15'+LT. OF ℄ EXIST. ROAD

EXIST. 2"G

EXIST. 8"W

EXIST. 8" SAN.

PVI Sta. 16+25
Elev. 225.24
V.C. = 200'
Corr. = 0.783'
H.S.D. = 371'

PVC Sta. 15+25.00 Elev. 222.29

PVT Sta. 17+25.00 Elev. 231.32

6.08%

PVI Sta. 22+2.5
Elev. 241.72
V.C. = 300'
Corr. = -1.125'
S.S.D. = 383'

PVC Sta. 20+75.00 Elev. 252.60

PVT Sta. 23+75.00 Elev. 244.34

3.08%

Sta. 20+14.61 Savage-Guilford Rd. = Sta. 10+04.67 Lincoln St. Elev. 248.68

CROSS REFERENCES	
ITEM	SHEET NO.
℄ Const. Stake-out Data	4
Storm Drain Profiles	34
Lincoln St. Profile	22

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — #4693 — Kenneth A. Evans

PLAN AND PROFILE
SAVAGE - GUILFORD RD.
STA. 10+ TO STA. 24+

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 23 OF 59
SCALE: HORZ. 1"=50' VERT. 1"= 5'
DESIGNED BY
DRAFTED BY
CHECKED BY

B.M.#14: a cut on edge of sidewalk on Northeast corner of Savage Guilford Rd at Madison St. Elev. 281.735

B.M.-Howard County Monument 2042002: 17' Lt. Sta. 29+32± & 5vy. Savage Guilford Rd. Elev. 277.447

STORM DRAIN STRUCTURE SCHEDULE

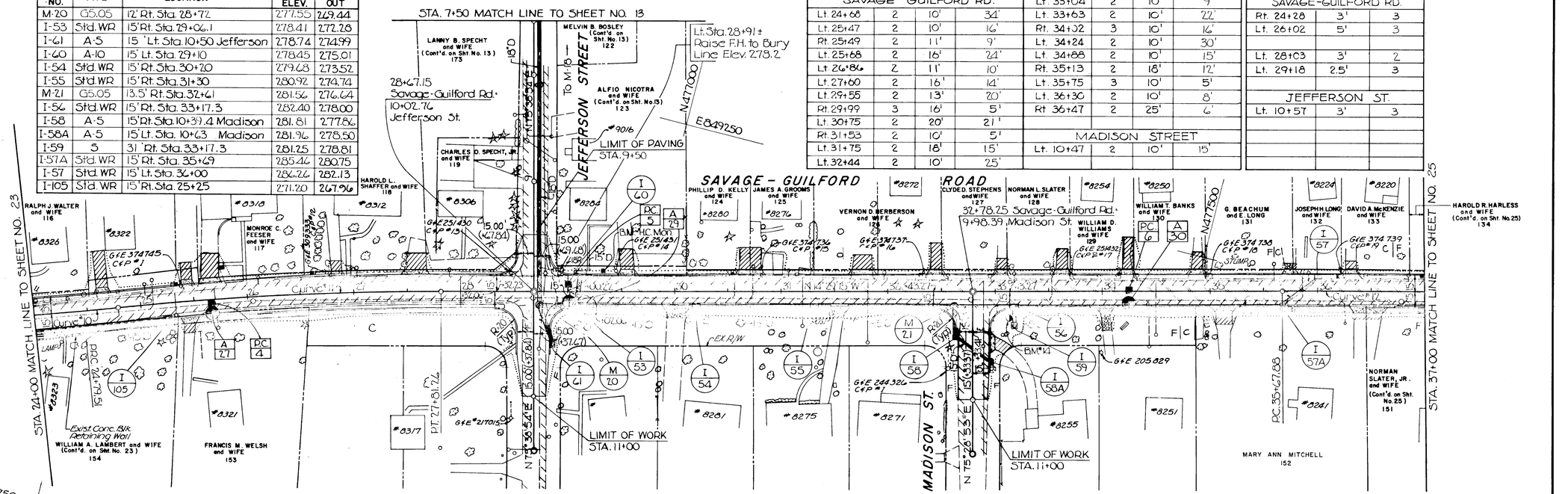
STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
M-20	G5.05	12' Rt. Sta. 28+72	277.55	269.44
I-53	Std. WR	15' Rt. Sta. 29+06.1	278.41	272.28
I-61	A-5	15 ' Lt. Sta. 10+50 Jefferson	278.74	274.99
I-60	A-10	15' Lt. Sta. 29+10	278.45	275.01
I-54	Std. WR	15' Rt. Sta. 30+20	279.68	273.52
I-55	Std. WR	15' Rt. Sta. 31+30	280.92	274.74
M-21	G5.05	13.5' Rt. Sta. 32+61	281.56	276.64
I-56	Std. WR	15' Rt. Sta. 33+17.3	282.40	278.00
I-58	A-5	15' Rt. Sta. 10+39.4 Madison	281.81	277.86
I-58A	A-5	15 Lt. Sta. 10+63 Madison	281.96	278.50
I-59	S	31 ' Rt. Sta. 33+17.3	281.25	278.81
I-57A	Std. WR	15' Rt. Sta. 35+69	285.46	280.75
I-57	Std. WR	15' Lt. Sta. 36+00	286.26	282.13
I-105	Std. WR	15' Rt. Sta. 25+25	271.20	267.96

DRIVEWAY SCHEDULE

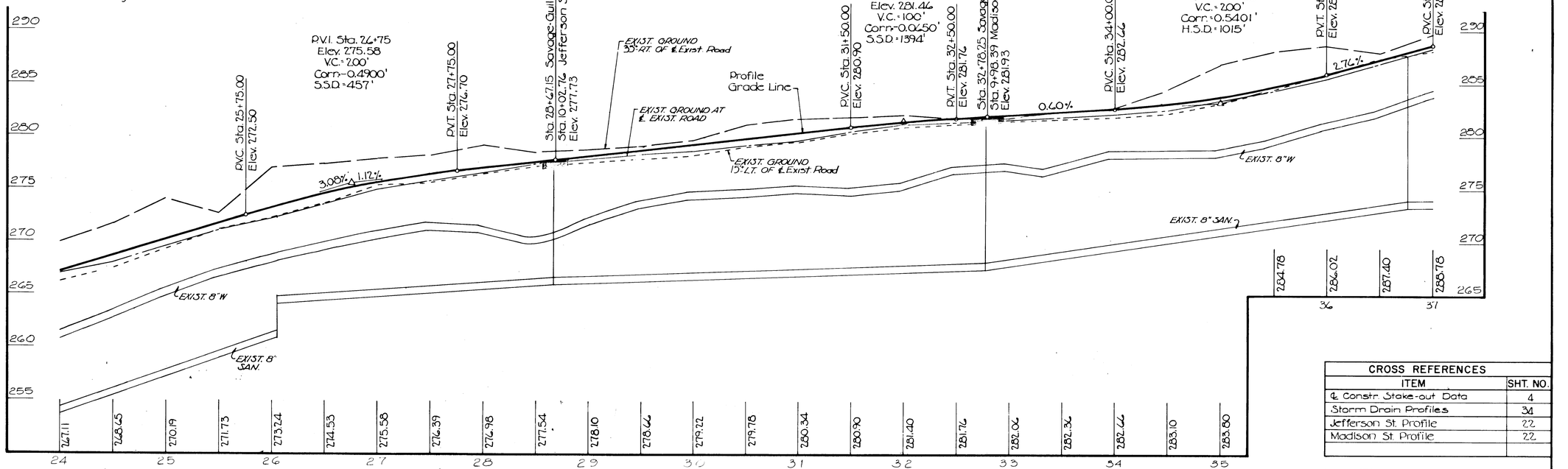
LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
SAVAGE-GUILFORD RD.			
Lt. 24+68	2	10'	34'
Lt. 25+47	2	10'	16'
Rt. 25+49	2	11'	9'
Lt. 25+68	2	16'	24'
Lt. 26+86	2	11'	10'
Lt. 27+60	2	16'	14'
Lt. 29+55	2	13'	20'
Rt. 29+99	3	16'	5'
Lt. 30+75	2	20'	21'
Rt. 31+53	2	10'	5'
Lt. 31+75	2	18'	15'
Lt. 32+44	2	10'	25'
Lt. 33+04	2	10'	9'
Lt. 33+63	2	10'	22'
Rt. 34+02	3	10'	16'
Lt. 34+24	2	10'	30'
Lt. 34+88	2	10'	15'
Rt. 35+13	2	18'	12'
Lt. 35+75	3	10'	5'
Lt. 36+30	2	10'	8'
Rt. 36+47	2	25'	6'
MADISON STREET			
Lt. 10+47	2	10'	15'

STEP SCHEDULE

LOCATION	WIDTH	NO. RISERS
SAVAGE-GUILFORD RD.		
Rt. 24+28	3'	3
Lt. 26+02	5'	3
Lt. 28+03	3'	2
Lt. 29+18	2.5'	3
JEFFERSON ST.		
Lt. 10+57	3'	3



Rt. Sta. 23+75± to Rt. Sta. 24+40±
Do not disturb existing concrete block retaining wall.



CURVE NO. 10 DATA
Δ = 7°54'32.3" Lt.
Dc = 2°00'00"
R = 2864.789'
T = 198.04'
L = 395.45'
E = 6.84'

CURVE NO. 11 DATA
Δ = 6°02'06" Rt.
Dc = 2°00'00"
R = 2864.789'
T = 151.02'
L = 301.75'
E = 3.98'

CURVE NO. 12 DATA
Δ = 1°01'18" Rt.
Dc = 0°30'00"
R = 11,459.152'
T = 102.18'
L = 204.36'
E = 0.46'

CROSS REFERENCES

ITEM	SHT. NO.
℄ Constr. Stake-out Data	4
Storm Drain Profiles	34
Jefferson St. Profile	22
Madison St. Profile	22

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — WILLIAM P. GRAY — 11463 — REGISTERED PROFESSIONAL ENGINEER

PLAN AND PROFILE
SAVAGE-GUILFORD RD.
STA. 24+ TO STA. 37+

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 24 OF 59
SCALE: HORZ. 1"=50' VERT. 1"= 5'
DESIGNED BY
DRAFTED BY
CHECKED BY

CURVE NO. 12 DATA
Δ = 1°01'18.5"
Dc = 0°30'00"
R = 11459.156'
T = 102.18'
L = 204.36'
E = 0.46'

STORM DRAIN STRUCTURE SCHEDULE

STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
I-128	A-10	15' Rt. Sta. 44+66 Sav.-Guil. Rd.	285.87	279.40
I-129	A-5	15' Lt. Sta. 44+56 Sav.-Guil. Rd.	285.84	281.75
HW-7	A	See Plan	–	245.23
I-131*	A-10	15' Lt. Sta. 43+40 Sav.-Guil. Rd.	286.78	282.72
M-42	G5.05	See Plan	251.9±	247.97
I-137	Std. 5	25' Lt. Sta. 45+50 Sav.-Guil. Rd.	284.50	282.00
I-131a*	A-10	15' Lt. Sta. 41+50 Sav.-Guil. Rd.	290.59	286.92
I-131a	A-5	See Plan	289.18	285.54
M42A	G5.05	See Plan	275.0±	268.10

*Inside width to be 2'-6"

STEP SCHEDULE

LOCATION	WIDTH	RISERS
Lt. 47+76±	3'	3

DRIVEWAY SCHEDULE

LOCATION	TYPE	WIDTH	APPROX. DIST. TO TYE-IN
Lt. 37+45±	2	10'	13'
Lt. 38+48±	2	10'	11'
Rt. 37+91±	2	10'	2'
Rt. 38+35±	3	12'	14'
Rt. 39+69±	2	24'	14'
Rt. 40+59±	3	16'	13'
Rt. 40+98±	2	16'	17'
Rt. 42+42±	2	12'	15'
Lt. 43+03±	2	12'	2'
Rt. 43+77±	2	12'	5'
Rt. 45+77±	2	10'	26'
Rt. 45+91±	2	10'	24'
Rt. 46+90±	2	12'	14'
Rt. 47+74±	2	18'	9'
Lt. 47+29±	2	10'	24'

BM-Howard County Monument 204.2003: 20' Rt. Sta. 38+54± Savage Guilford Rd. Elev. 291.824

BM-Howard County Monument 204.2004: 18' Rt. Sta. 49+20± Savage Guilford Rd. Elev. 288.845

LIMIT OF WORK MEET EXISTING CONDITIONS STA. 48+60 SAVAGE GUILFORD RD. CAPITAL PROJ. NO. J-4-4008

135 L.F. Conc. Side Ditch (Std. 612) W=2', d=9" 4:1 Side Slopes

Perpetual Storm Drain Easement

Prop. R/W

Exercise extreme caution in excavating around existing shrubs

Sta. 45+08± Do not disturb exist. F.H. Raise F.H. valve box to Elev. 286.0

Match Line A-A This Sheet

10' Perpetual Storm Drain Easement

10' Temporary Constr. Strip

18°D-N81°06'05"E 337.07' (℄ M42A to ℄ M42)

18°D-N84°23'01"E 76.41' (℄ M42 to HW 7)

10 L.F. Md. SHA Cl. 6 Rip-Rap Channel W=1', d=2', t=18"

10 L.F. Rip-Rap along Ex. Stream d=2'±, t=18"

10' perpetual Storm Drain Easement

10' temporary Construction Strip

18°D-N81°06'05"E 337.07' (℄ M42A to ℄ M42)

Match Line A-A This Sheet

SAVAGE - GUILFORD ROAD

VOLLMERHAUSEN ROAD

48+65.14 Savage-Guilford Rd. = 9+98.79 Vollmerhausen Rd.

46+64.18 Savage-Guilford Rd. = 10+02.34 Vollmerhausen Rd.

Sta. 50+50 Match Line See Sht. No. 26

P.V.C. Sta. 37+00.00 Elev. 288.78
P.V.I. Sta. 38+25 Elev. 292.23 V.C. = 250' Corr: +1.0375' S.S.D. = 336'
H.P. Sta. 39+07.83 Elev. 291.65
P.V.T. Sta. 39+50.00 Elev. 291.53
EXIST. GROUND AT ℄ EXIST. ROAD
P.V.I. Sta. 41+75 Elev. 290.27 V.C. = 100' Corr: -0.2350' S.S.D. = 456'
P.V.C. Sta. 41+25.00 Elev. 290.55
P.V.T. Sta. 42+25.00 Elev. 289.05
P.V.C. Sta. 42+75.00 Elev. 287.33
EXIST. GROUND 30'± LT. OF ℄ EXIST. RD.
Sump Sta. 44+55.93 Elev. 285.62
P.V.I. Sta. 44+50 Elev. 283.56 V.C. = 350' Corr: +2.0650' H.S.D. = 335'
Profile Grade Line
P.V.R.C. Sta. 44+25.00 Elev. 287.55
P.V.I. Sta. 47+25 Elev. 289.83 V.C. = 200' Corr: +0.7500' S.S.D. = 333'
H.P. Sta. 47+77.00 Elev. 289.25
P.V.T. Sta. 48+25.00 Elev. 289.11
EXIST. 8" W
EXIST. 8" SAN.
2.76% -0.56% -0.56% -2.44% -2.44% 2.28% 0.72%

LIMIT OF WORK MEET EXISTING CONDITIONS STA. 48+60 SAVAGE GUILFORD RD. CAPITAL PROJ. NO. J-4-4008 ELEV. 288.9±

37	38	39	40	41	42	43	44	45	46	47	48	49
288.78	289.99	290.88	291.43	291.64	291.53	291.25	290.97	290.69	290.35	289.40	286.44	287.24	286.38	285.83	285.63	285.75	286.22	287.02	288.07	288.84	289.23	289.24	288.93

CROSS REFERENCES

ITEM	SHEET NO.
℄ Constr. Stake-out Data	4
Storm Drain Profiles	35

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE — CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — KENNETH A. CRAIG — No. 11483 — REGISTERED PROFESSIONAL ENGINEER

PLAN AND PROFILE
SAVAGE - GUILFORD RD.
STA. 37+ TO STA. 50+

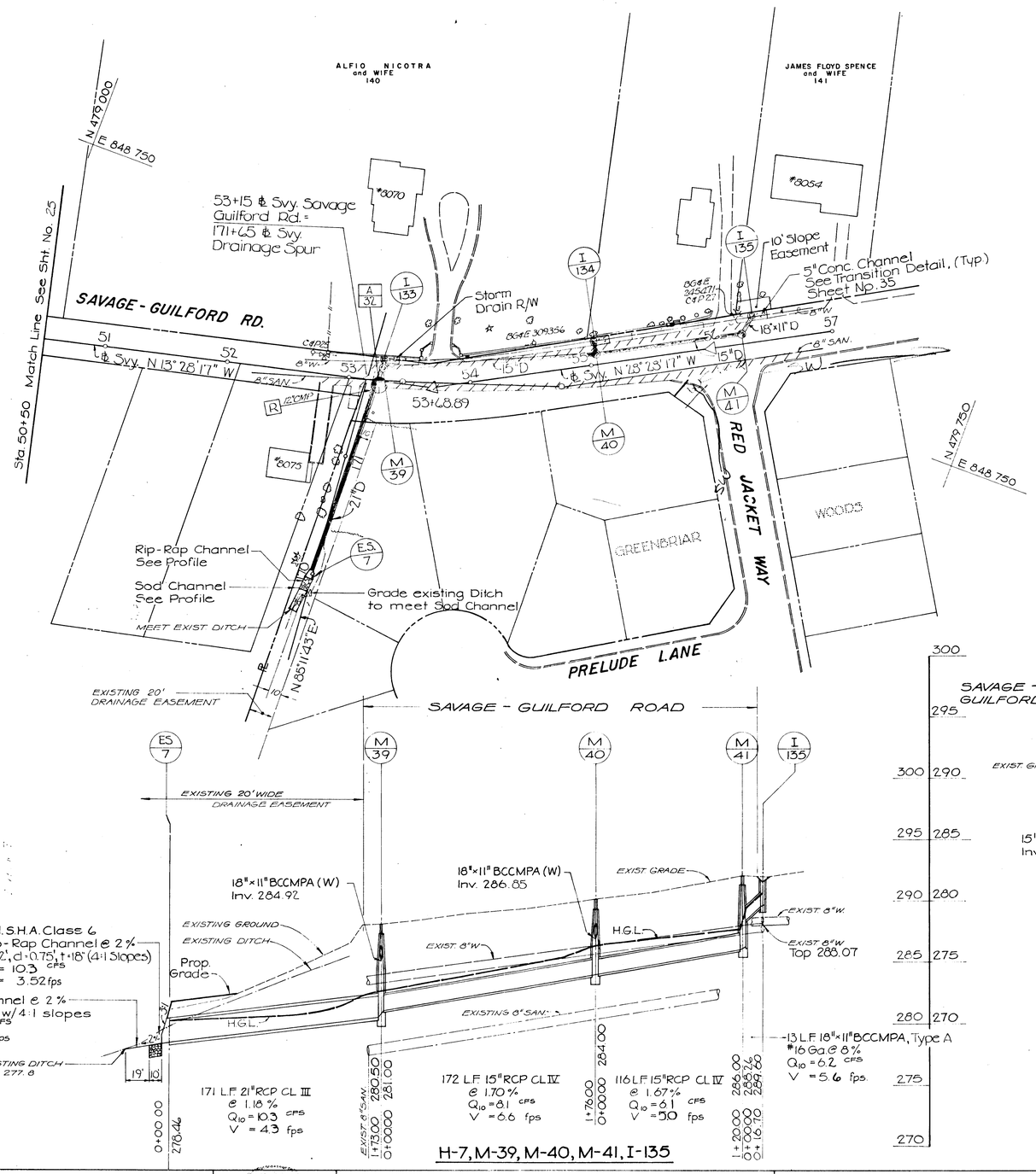
SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 25 OF 59
SCALE: HORZ. 1"=50' VERT. 1"= 5'
DESIGNED BY
DRAFTED BY
CHECKED BY

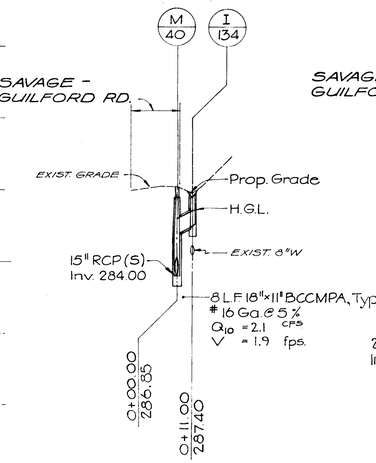
STORM DRAIN STRUCTURE SCHEDULE

STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
I-133	Type S*	18' Lt. Sta. 53+29 S-G ℄ Svy.	287.40	285.40
I-134	Type S*	20' Lt. Sta. 55+05 S-G ℄ Svy.	289.40	287.40
I-135	Type S*	21' Lt. Sta. 56+36 S-G ℄ Svy.	291.60	289.60
M-39	G5.05	9' Lt. Sta. 53+26 S-G ℄ Svy.	288.06	280.50
M-40	G5.05	9' Lt. Sta. 55+05 S-G ℄ Svy.	290.15	284.00
M-41	G5.05	7' Lt. Sta. 56+25 S-G ℄ Svy.	292.08	286.00
E.S.-7	End Section	2' Lt. Sta. 170+03 Drainage Spur ℄ Svy.	281.50	278.46

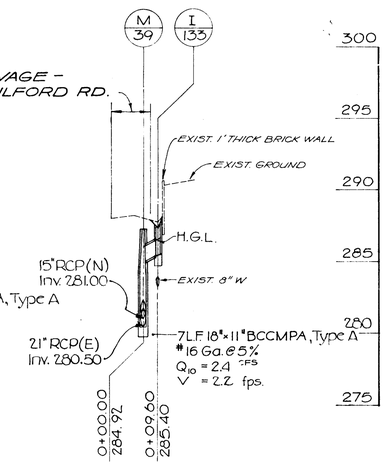
* Standard Type S Inlet with reticular Grate.



H-7, M-39, M-40, M-41, I-135



M-40, I-134



M-39, I-133

NOTE:
Construct 6 inch minimum thickness no. 6 stone foundation for inlets I-133, I-134 and I-135.

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

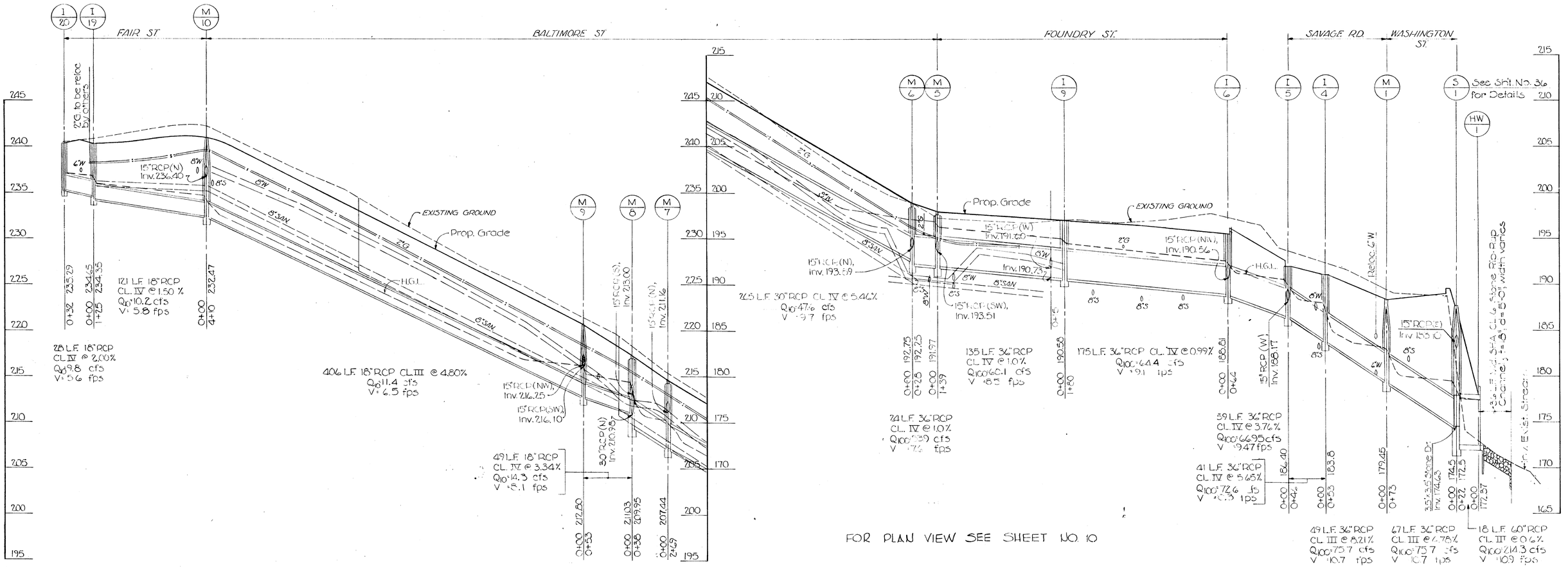
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/31/82
CHIEF ROADS & BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

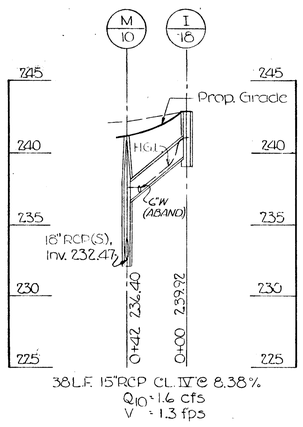
PLAN AND PROFILE
SAVAGE— GUILFORD RD.
STA. 50+ TO STA. 56+

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

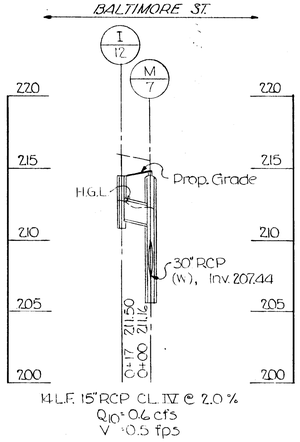
DRAWING NO. 26 OF 59
SCALE: HORZ. 1"=50' VERT. 1"= 5'
DESIGNED BY
DRAFTED BY
CHECKED BY



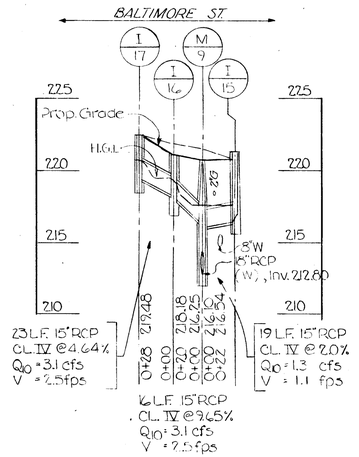
I-20, I-19, M-10, M-9, M-8, M-7, M-6, M-5, I-9, I-6, I-5, I-4, M-1, S-1 & HW-1



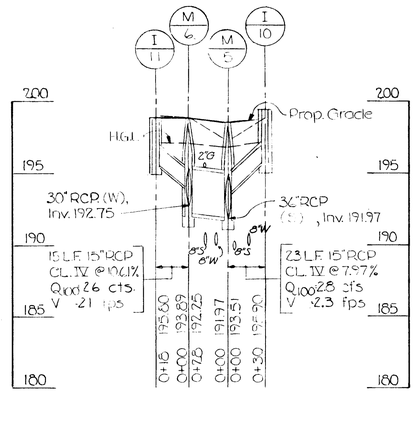
M-10 & I-18



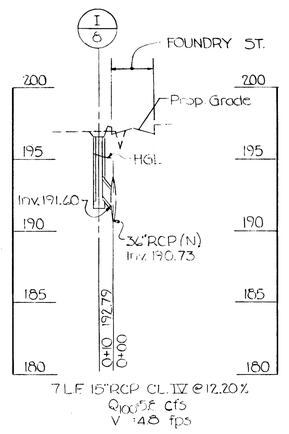
I-12 & M-7



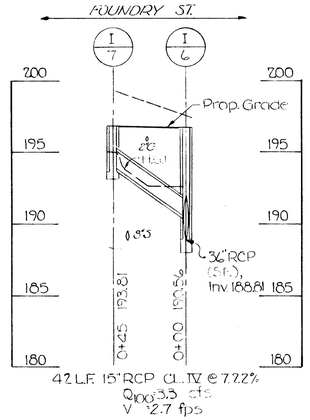
I-17, I-16, M-9 & I-15



I-11, M-6, M-5 & I-10



I-8 CUT-IN



I-6 & I-7

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

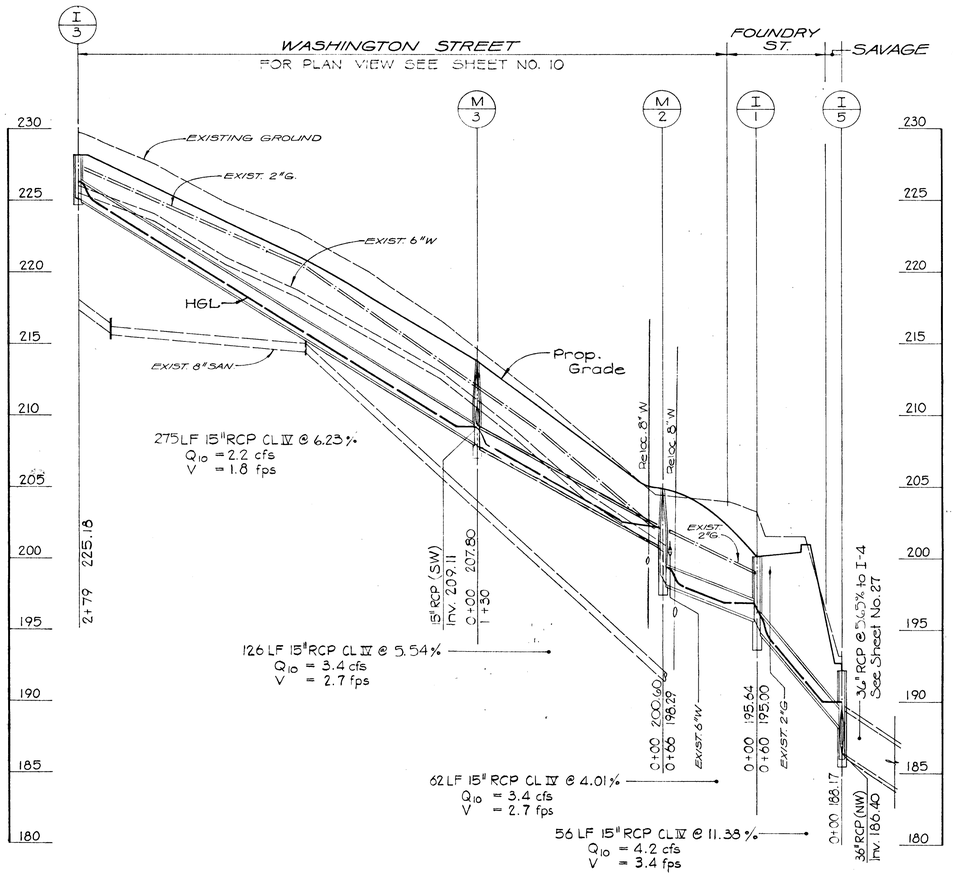
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/21/82
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

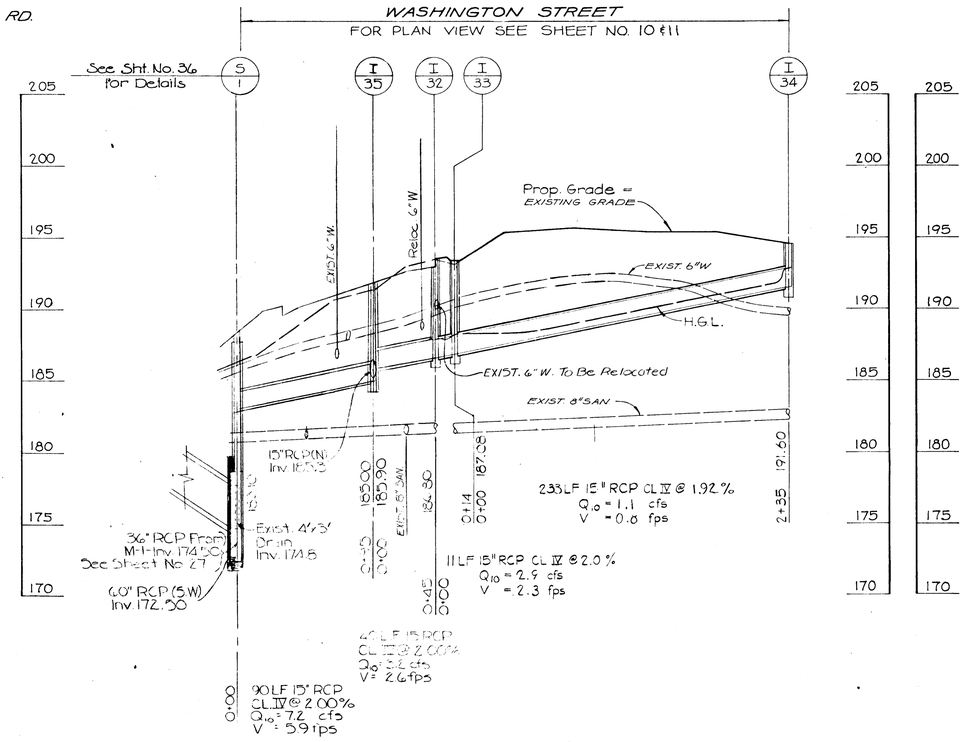
STORM DRAIN PROFILES
SAVAGE ROAD
FOUNDRY ST. (S. OF BALTO. ST.)
BALTIMORE ST. (W. OF FOUNDRY ST.)

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

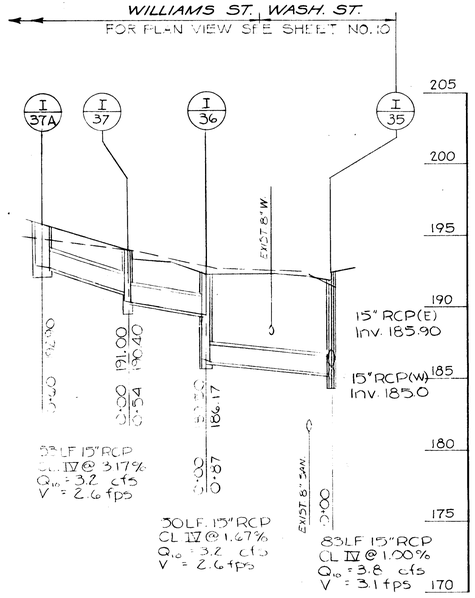
DRAWING NO. 27 OF 59
SCALE: HORZ. 1"=50' VERT. 1"= 5'
DESIGNED BY
DRAFTED BY
CHECKED BY



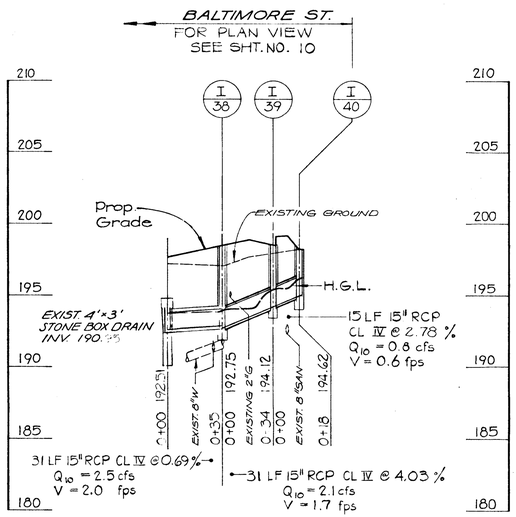
I-3, M-3, M-2, I-1, I-5



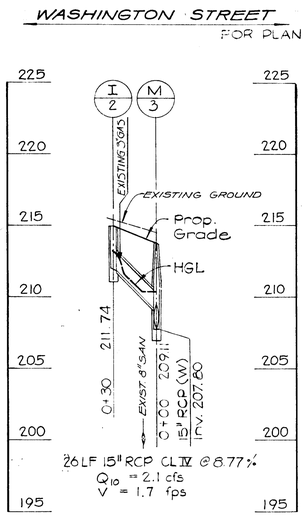
S-1, I-35, I-32, I-33, I-34



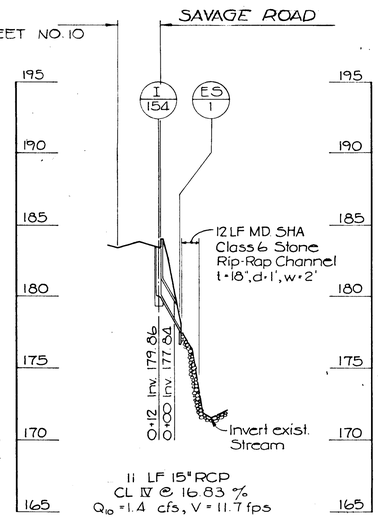
I-37A, I-37, I-36, I-35



I-38, I-39, I-40



I-2, M-3



I-154, ES-1

NO	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Jack E. Nimmo 12-30-97 — DIRECTOR OF PUBLIC WORKS — DATE
[signature] 12/31/97 — CHIEF - BUREAU OF ENGINEERING — DATE
Elizabeth A. Calvi 12/29/97 — CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — HOWARD P. CRANE — 14603 — PROFESSIONAL ENGINEER
Howard P. Crane

STORM DRAIN PROFILES

WASHINGTON STREET
(E & W OF SAVAGE RD.)

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 28 OF 59
SCALE: HORZ. 1"=50' VERT. 1"= 5'
DESIGNED BY
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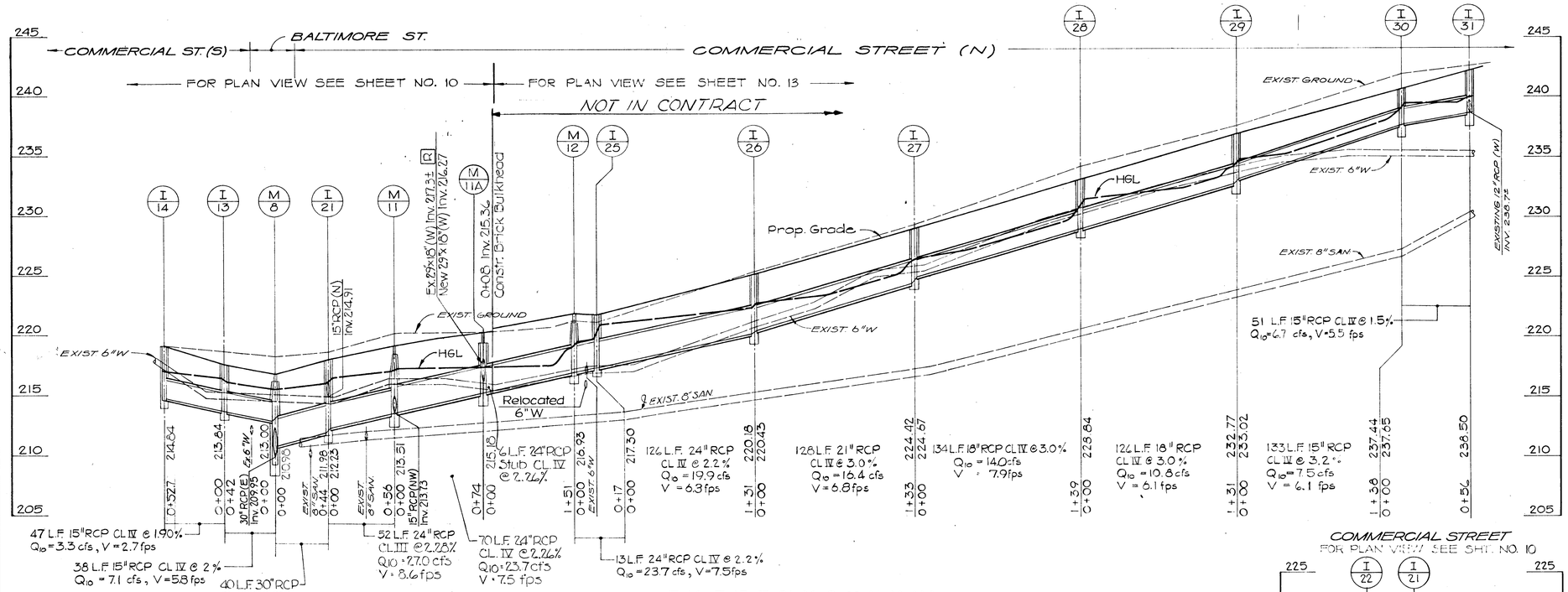
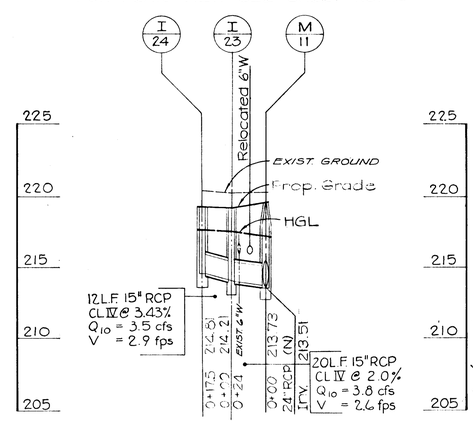
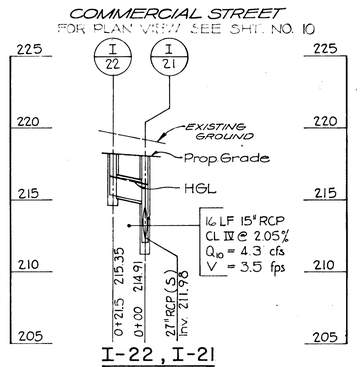


I-14, I-13, I-21, M-8, M-11, M-11A

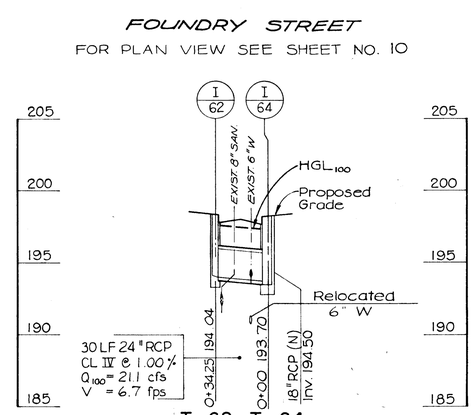


I-24, I-23, M-11

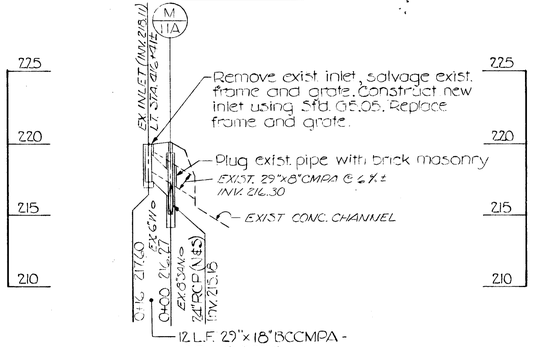


I-65, I-68

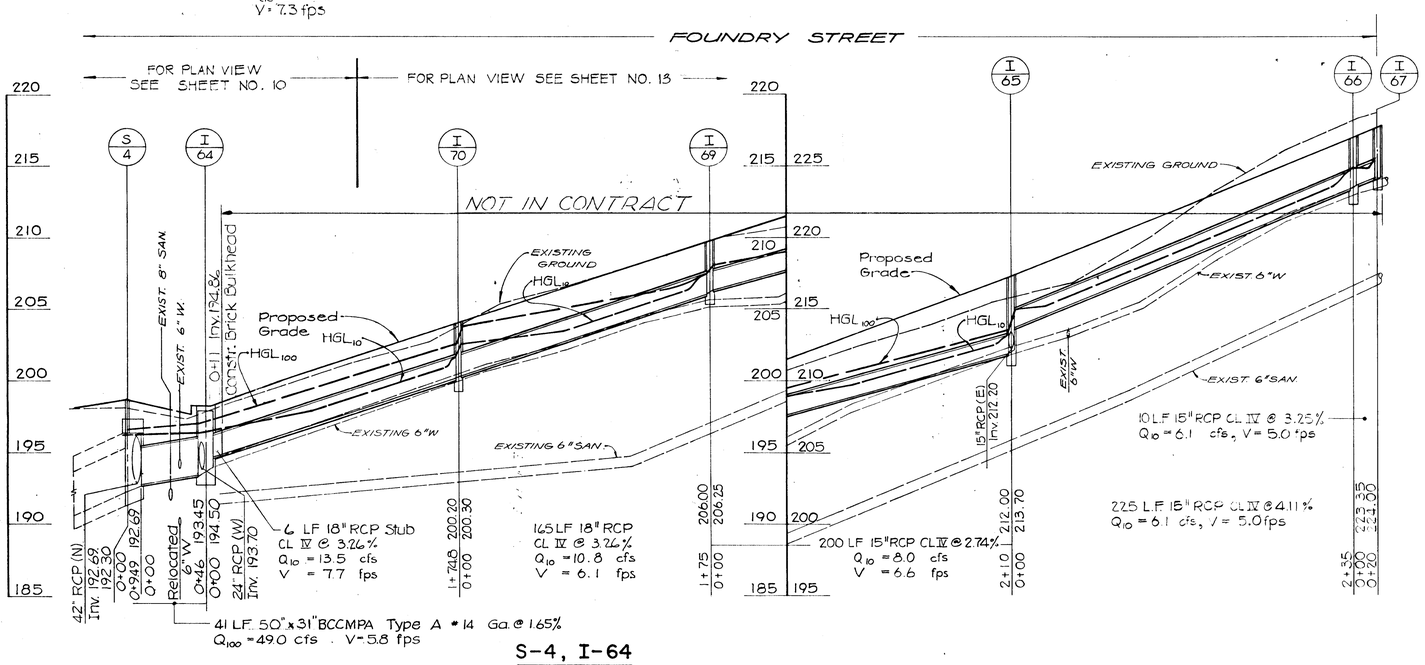
NOT IN CONTRACT



I-62, I-64



EX. INLET, M-11A



S-4, I-64

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 4/3/82
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

Kenneth E. Craig #4463

STORM DRAIN PROFILES

COMMERCIAL AND FOUNDRY STREETS (N. OF BALTO. ST.)

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 29 OF 59

SCALE: HORZ. 1"=50' VERT. 1"= 5'

DESIGNED BY
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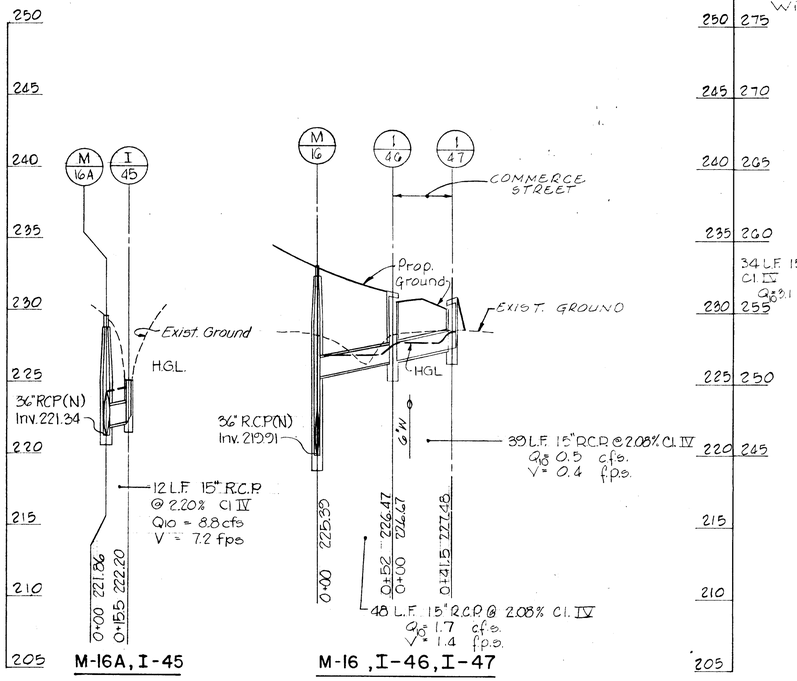
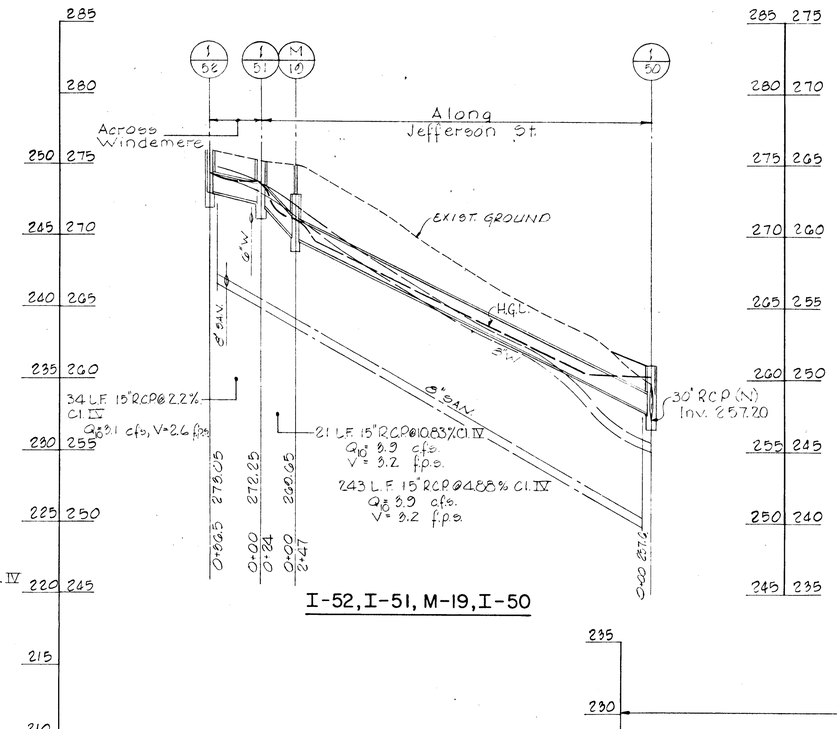
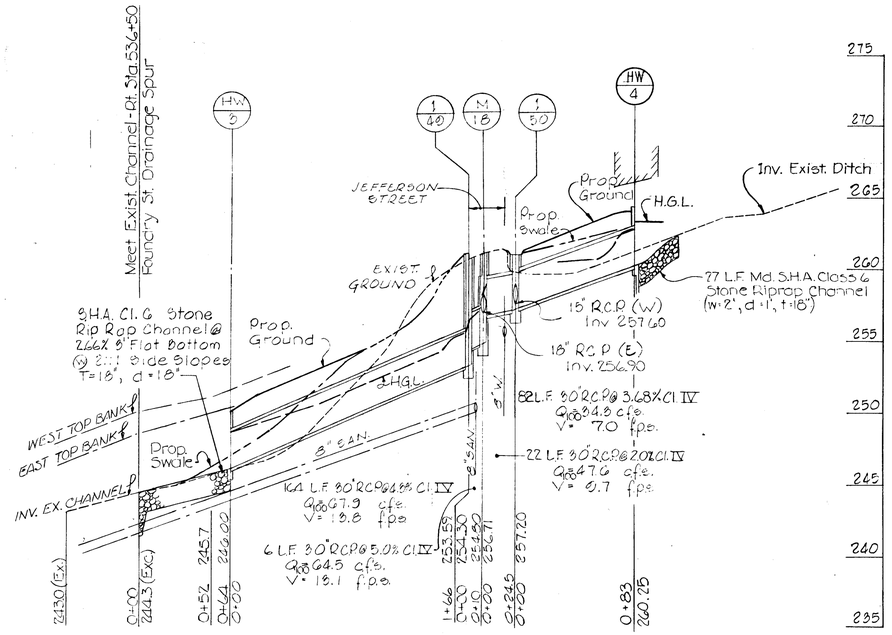


M-16A, I-45

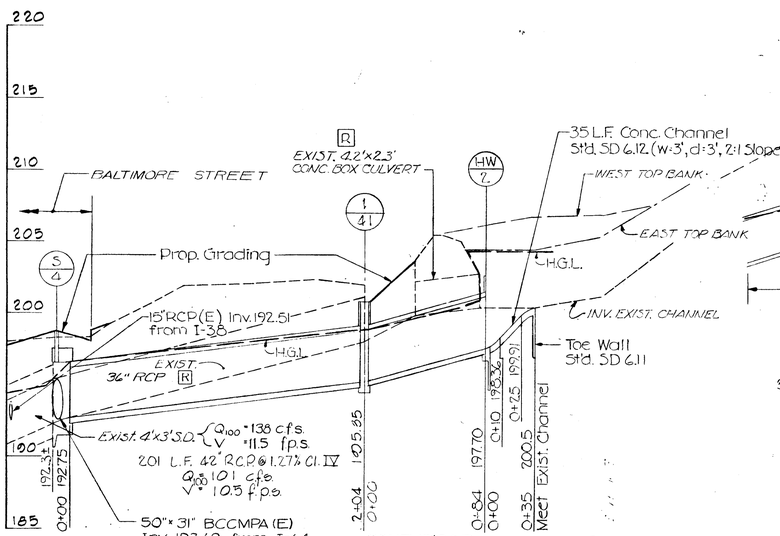
M-16 , I-46, I-47



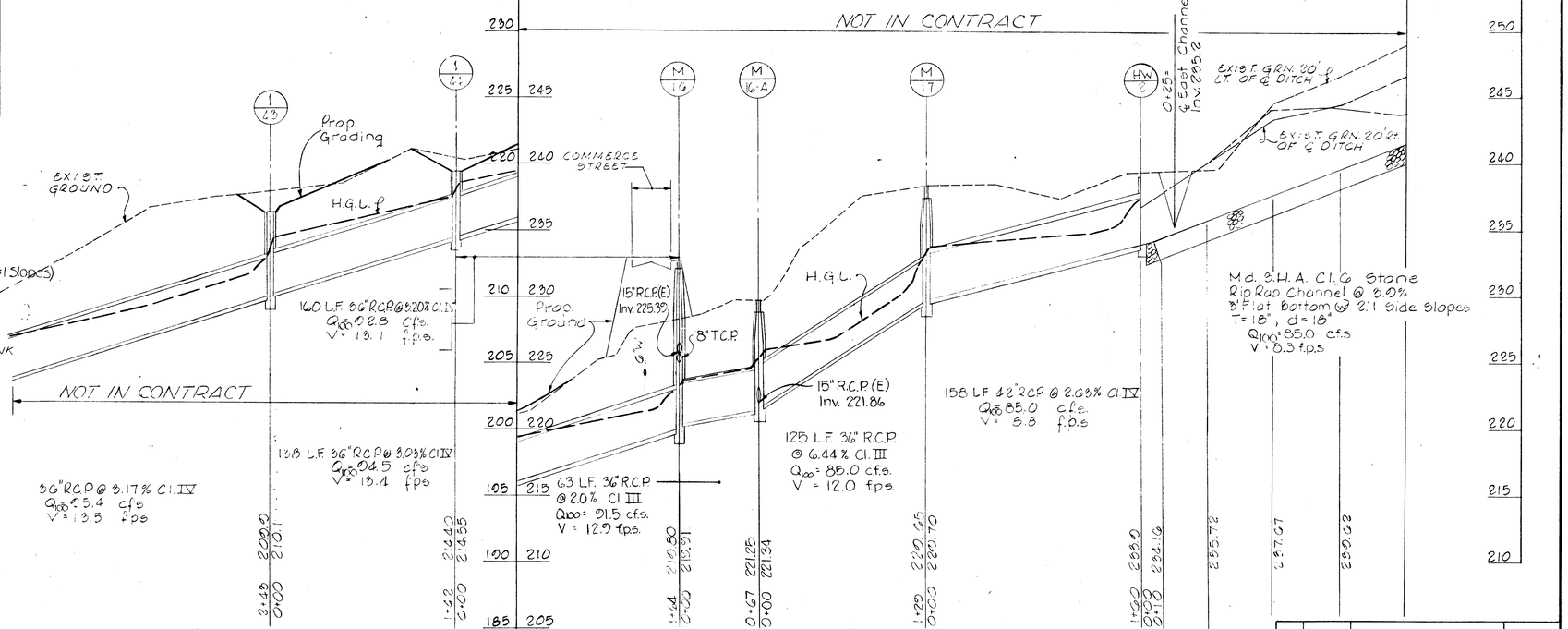
I-52, I-51, M-19, I-50



HW-3, I-49, M-18, I-50, HW-4



S-4, I-41, HW-2



M-16, M-16-A, M-17, HW-2

FOR PLAN VIEW SEE SHEET NO. 13

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STORM DRAIN PROFILES

COMMERCIAL/FOUNDRY DRAIN
(BALTO. ST. TO JEFFERSON ST.)

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008.
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 30 OF 59

SCALE: HORZ. 1"=50' VERT. 1"= 5'

DESIGNED BY
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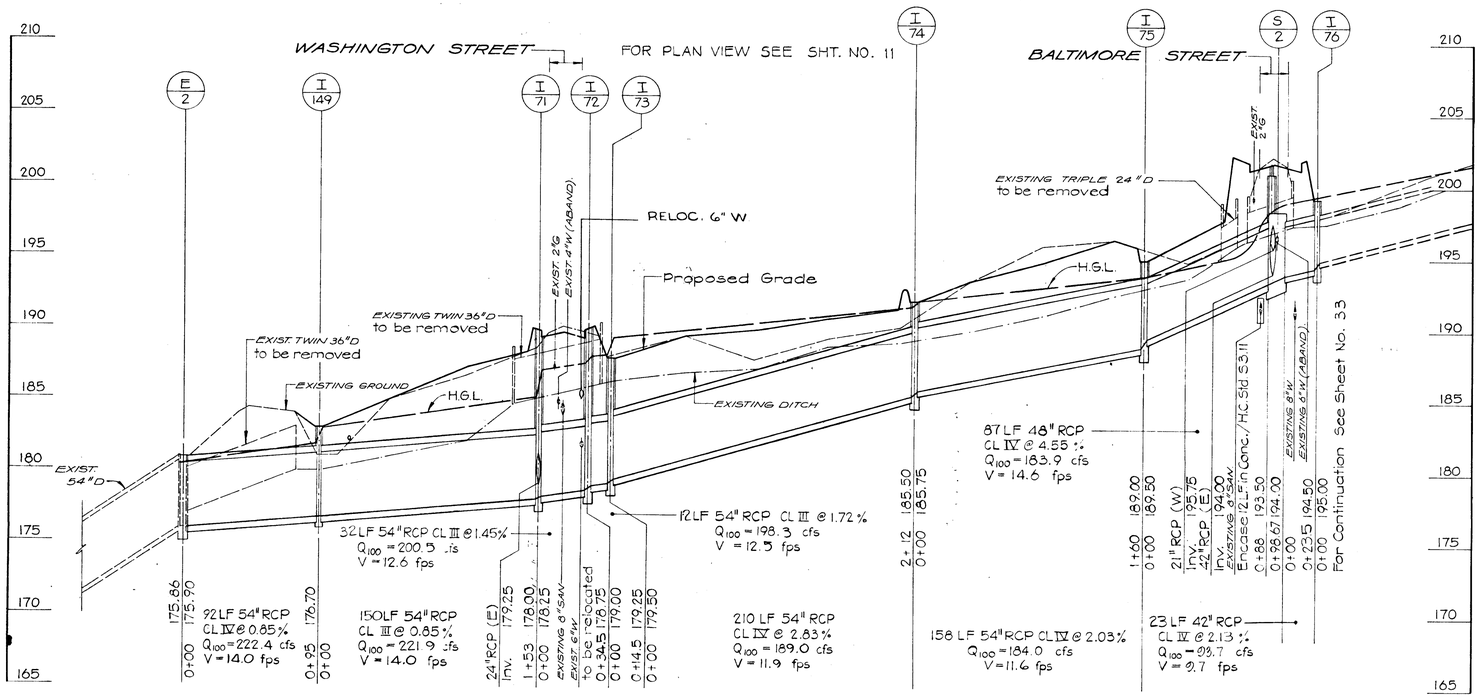
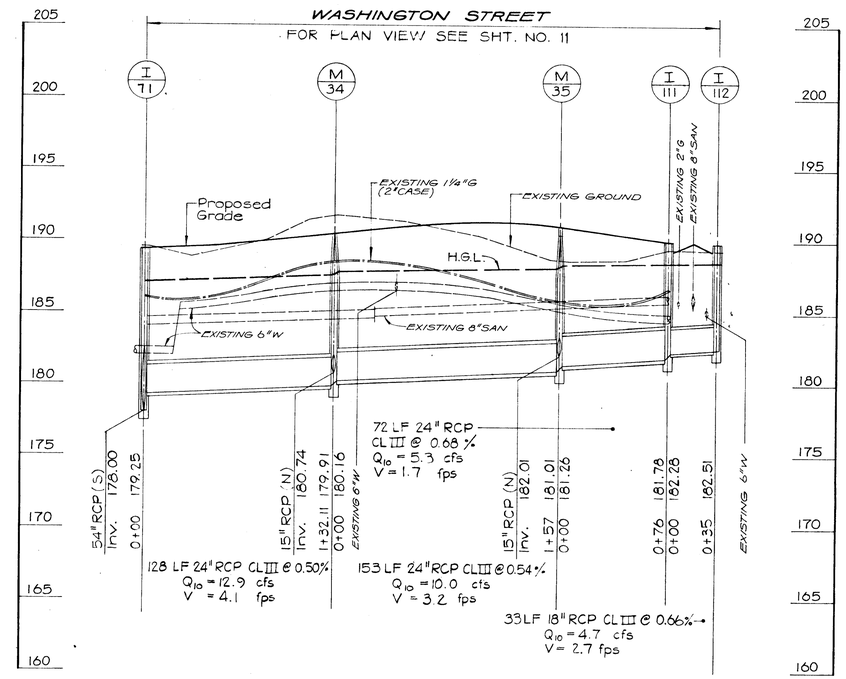
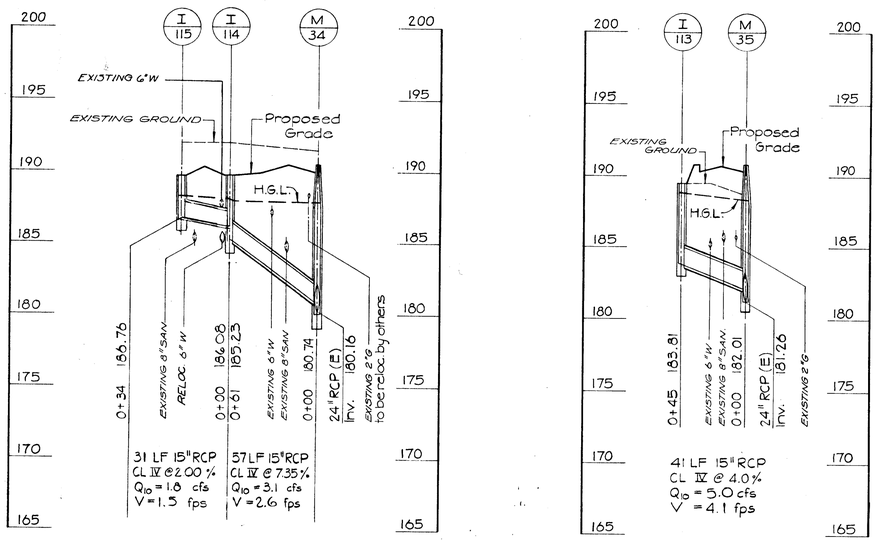


E-2, I-149, I-71, I-72, I-73, I-74, I-75, S-2, I-76

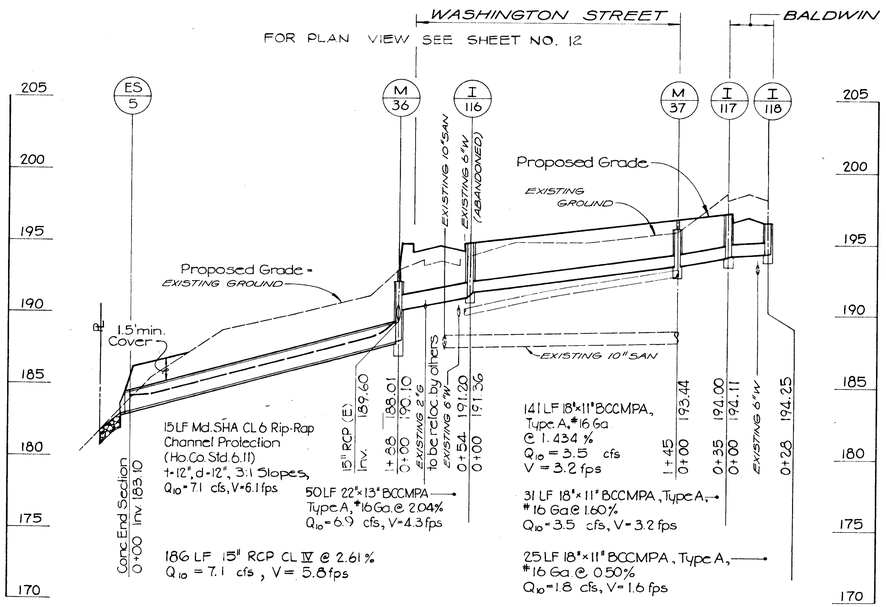


I-21, M-34, M-35, I-111, I-112

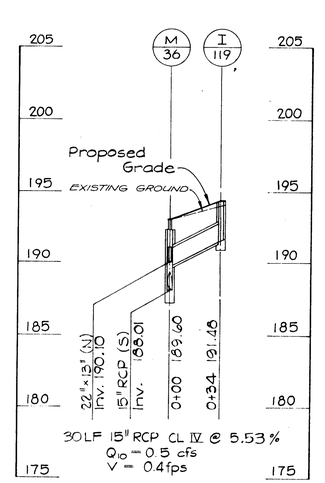


I-115, I-114, M-34

I-113, M-35



ES-5, M-36, I-116, M-37, I-117, I-118



M-36, I-119

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE — CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82

CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

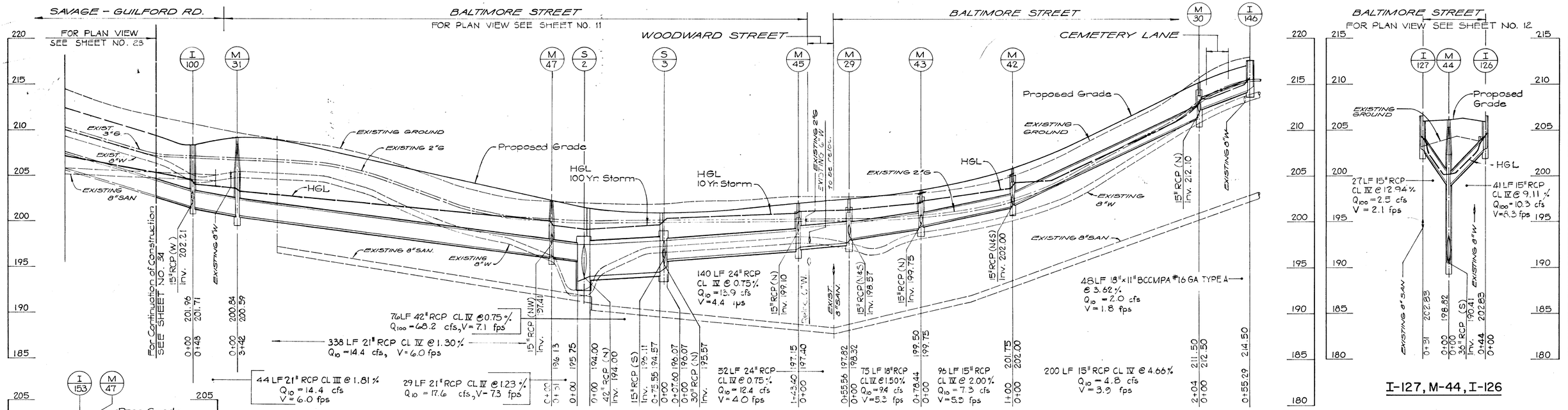
PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — CHARLES WILSON BALLARD — No. 3466 — REGISTERED PROFESSIONAL ENGINEER

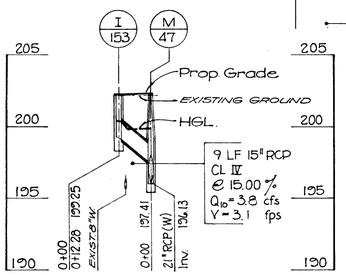
STORM DRAIN PROFILES
WEST OF WOODWARD DRAIN (S of Wash. to Balto. St)
WASHINGTON ST. (E. & W. of Woodward St.)
WASHINGTON ST. (W. of Baldwin)

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 31 OF 59
SCALE: HORZ. 1"=50' VERT. 1"= 5'
DESIGNED BY
DRAFTED BY
CHECKED BY

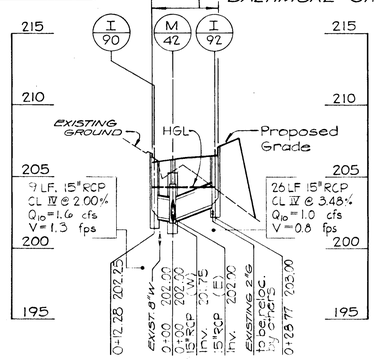


I-100, M-31, M-47, S-2, S-3, M-45, M-29, M-43, M-42, M-30, I-146

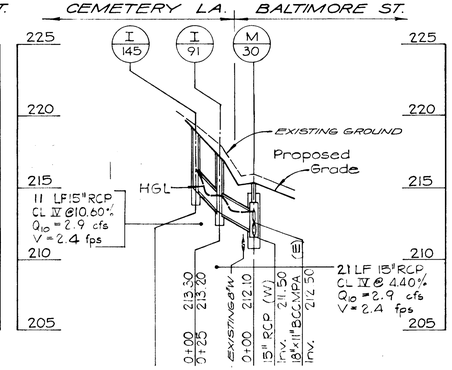


I-153, M-47

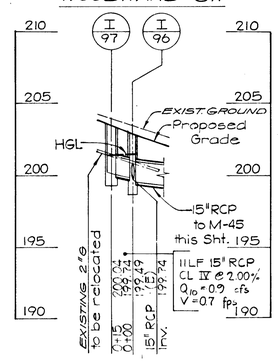
I-121, I-122, M-44, I-124, I-125, H-6



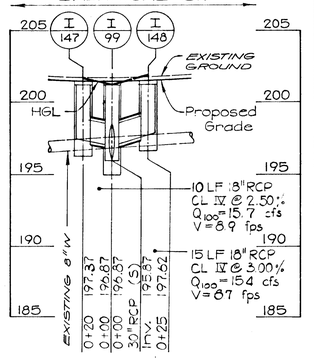
I-90, M-42, I-92



I-145, I-91, M-30

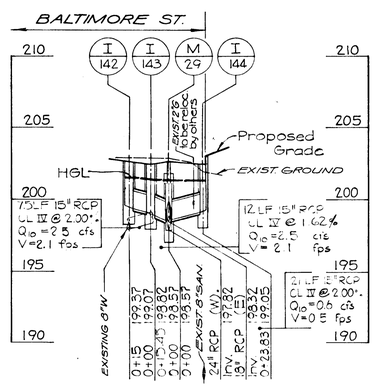


I-97, I-96

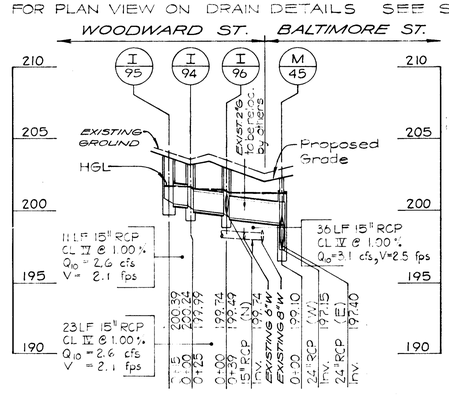


I-147, I-99, I-148

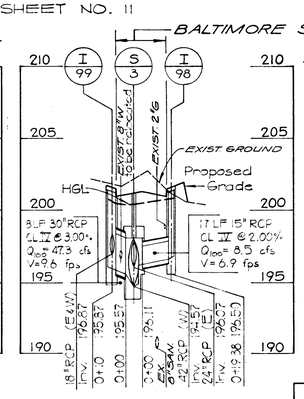
FOR PLAN VIEW ON DRAIN DETAILS SEE SHEET NO. 11



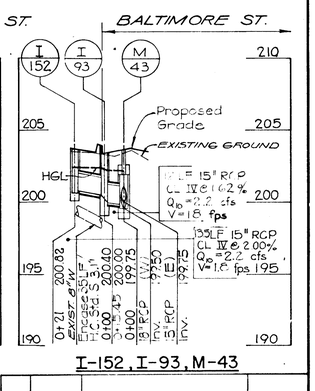
I-142, I-143, M-29, I-144



I-95, I-94, I-96, M-45



I-99, S-3, I-98



I-152, I-93, M-43

NO	DATE	DESCRIPTION OF REVISION	SIGNATURE

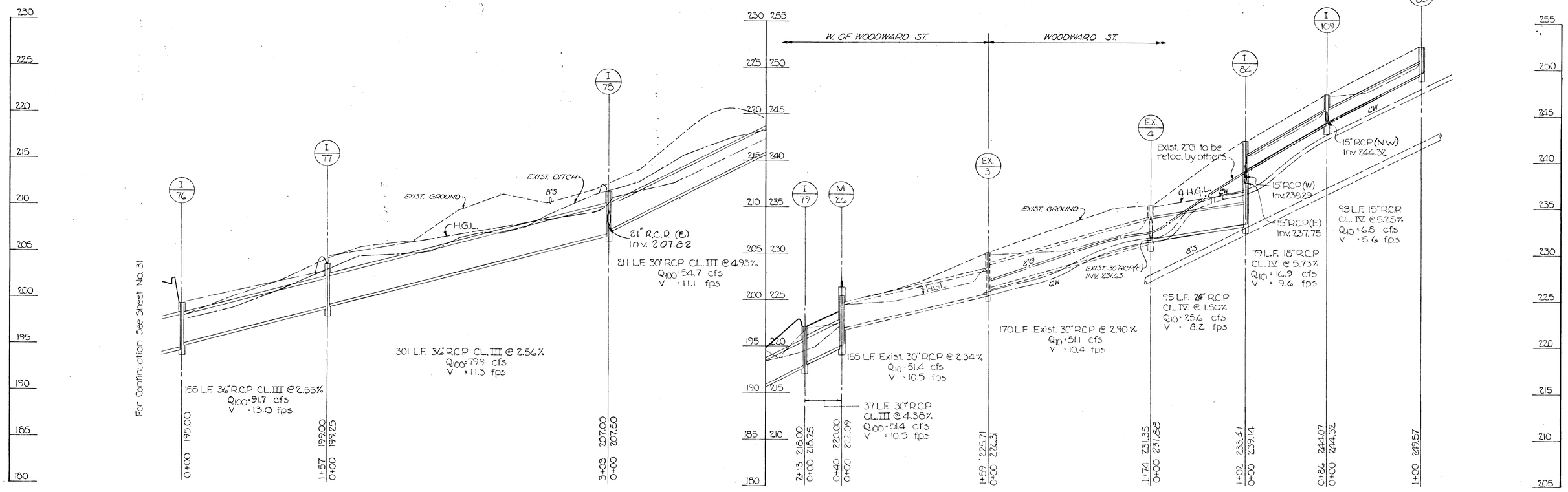
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/31/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STORM DRAIN PROFILES
BALTIMORE STREET
(SAVAGE-GUILFORD RD. TO CEMETERY ENTR)
BALTIMORE STREET STATION 241+00

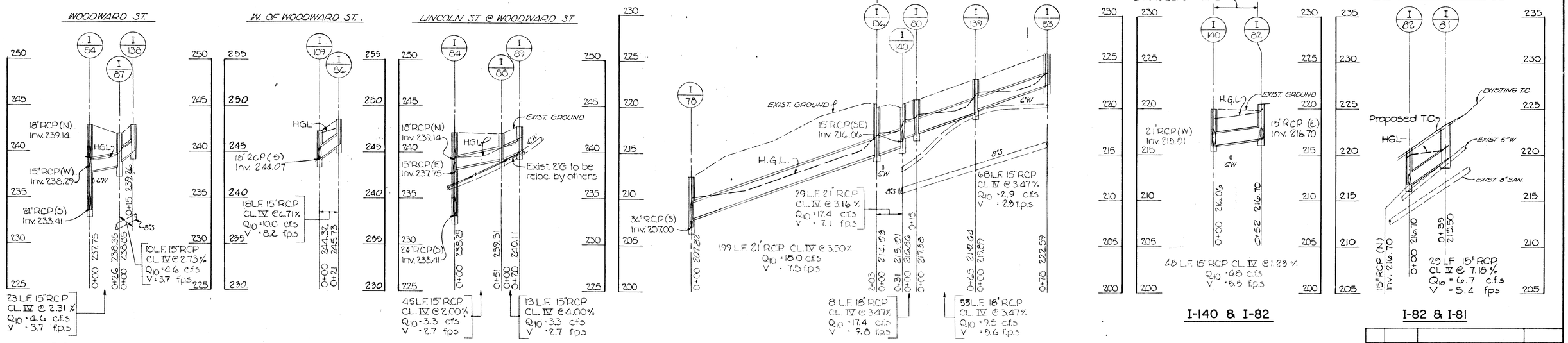
SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 32 OF 59
SCALE: HORZ. 1"=50' VERT. 1"= 5'
DESIGNED BY
DRAFTED BY
CHECKED BY



I-76, I-77, I-78, I-79, M-26, EX.-3, EX.-4, I-84, I-109 & I-85

FOR PLAN VIEW SEE SHEET NO. 14



NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE — CHIEF - BUREAU OF ENGINEERING — 12/23/82 — DATE

CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — 12/29/82 — DATE

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

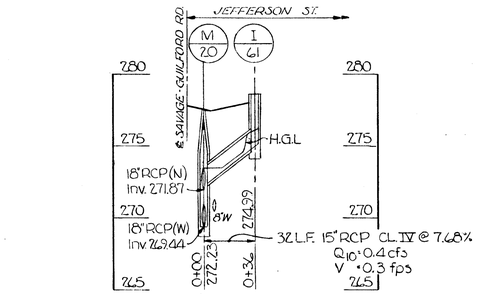
STORM DRAIN PROFILES
WEST OF WOODWARD DRAIN (Balto. St. to Lincoln St)
CARROLLTON AVENUE
AND WOODWARD STREET

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

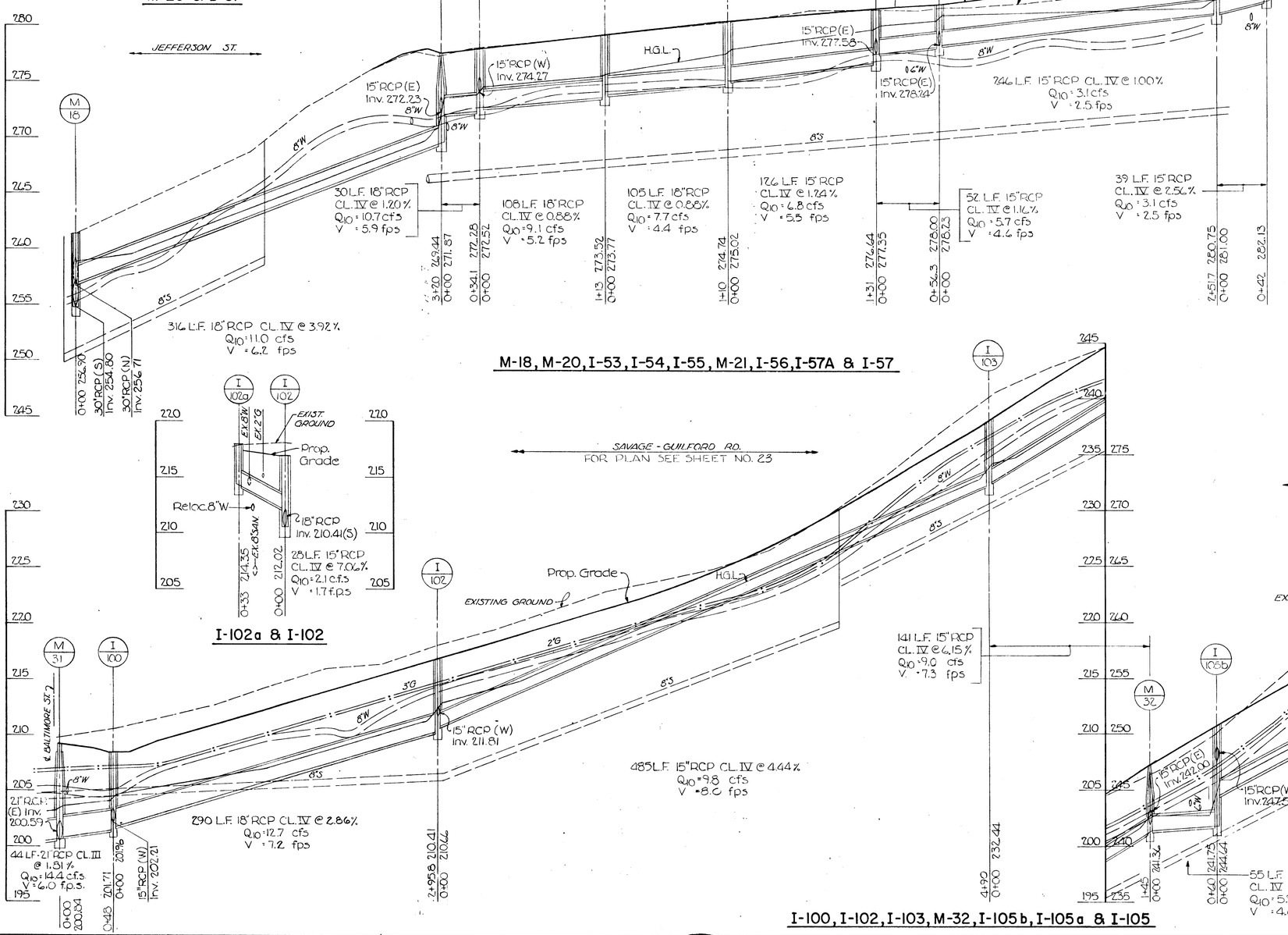
DRAWING NO. 33 OF 59

SCALE: HORZ. 1"=50' VERT. 1"= 5'

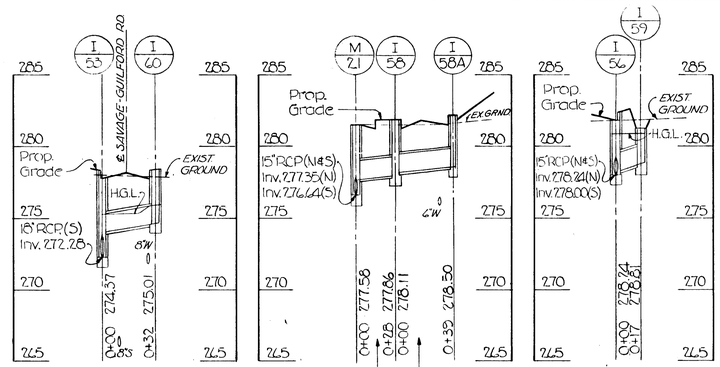
DESIGNED BY
DRAFTED BY
CHECKED BY



M-20 & I-61



M-18, M-20, I-53, I-54, I-55, M-21, I-56, I-57A & I-57

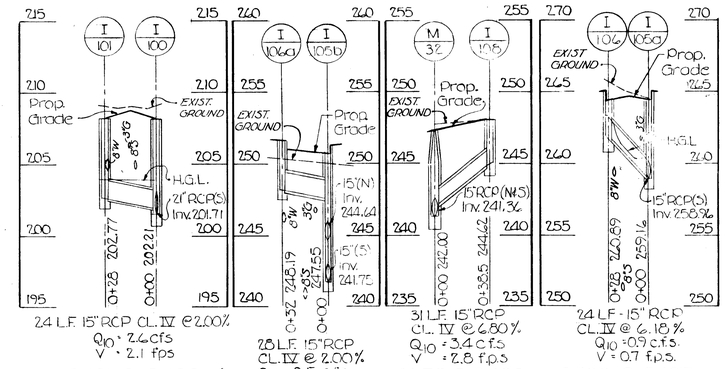


I-53 & I-60

M-21, I-58 & I-58A

FOR PLAN SEE SHEET NO. 24

I-56 & I-59



I-101 & I-100

I-106a & I-105b

I-106 & I-105a

I-102a & I-102

I-100, I-102, I-103, M-32, I-105b, I-105a & I-105

NO	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE — CHIEF - BUREAU OF ENGINEERING — DATE 12/31/82

CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — Kenneth R. Wilson — #6603 — PROFESSIONAL ENGINEER

STORM DRAIN PROFILES

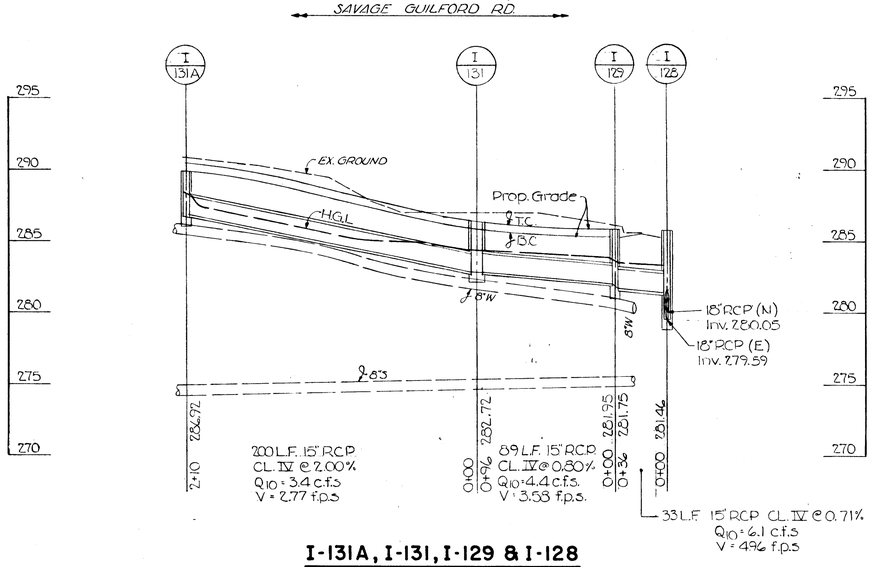
SAVAGE-GUILFORD ROAD
(BALTO. ST. TO STA. 36+00)

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 34 OF 59

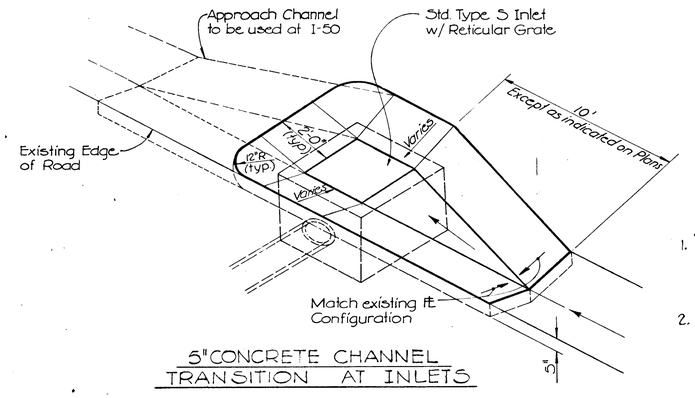
SCALE: HORZ. 1"=50' VERT. 1"= 5'

DESIGNED BY
DRAFTED BY
CHECKED BY



I-131A, I-131, I-129 & I-128

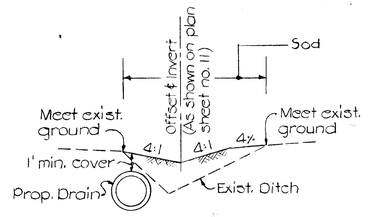
(FOR PLAN VIEW SEE SHEET NO. 25)



5" CONCRETE CHANNEL TRANSITION AT INLETS

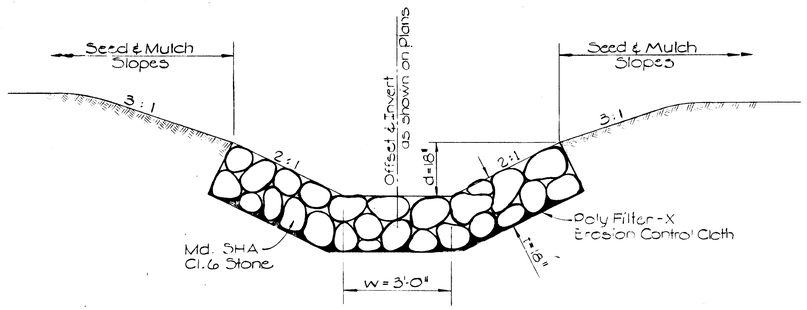
NOTES :

1. Transition the 5" Concrete Channel from the Inlet Section to the existing Road Section in ten (10) Feet or as indicated on the Plans.
2. See Howard County Standard No's. 4.22 and 4.93 for Details of Type S Inlet and Reticular Grate.

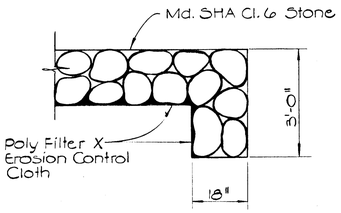


TYPICAL DITCH DETAIL

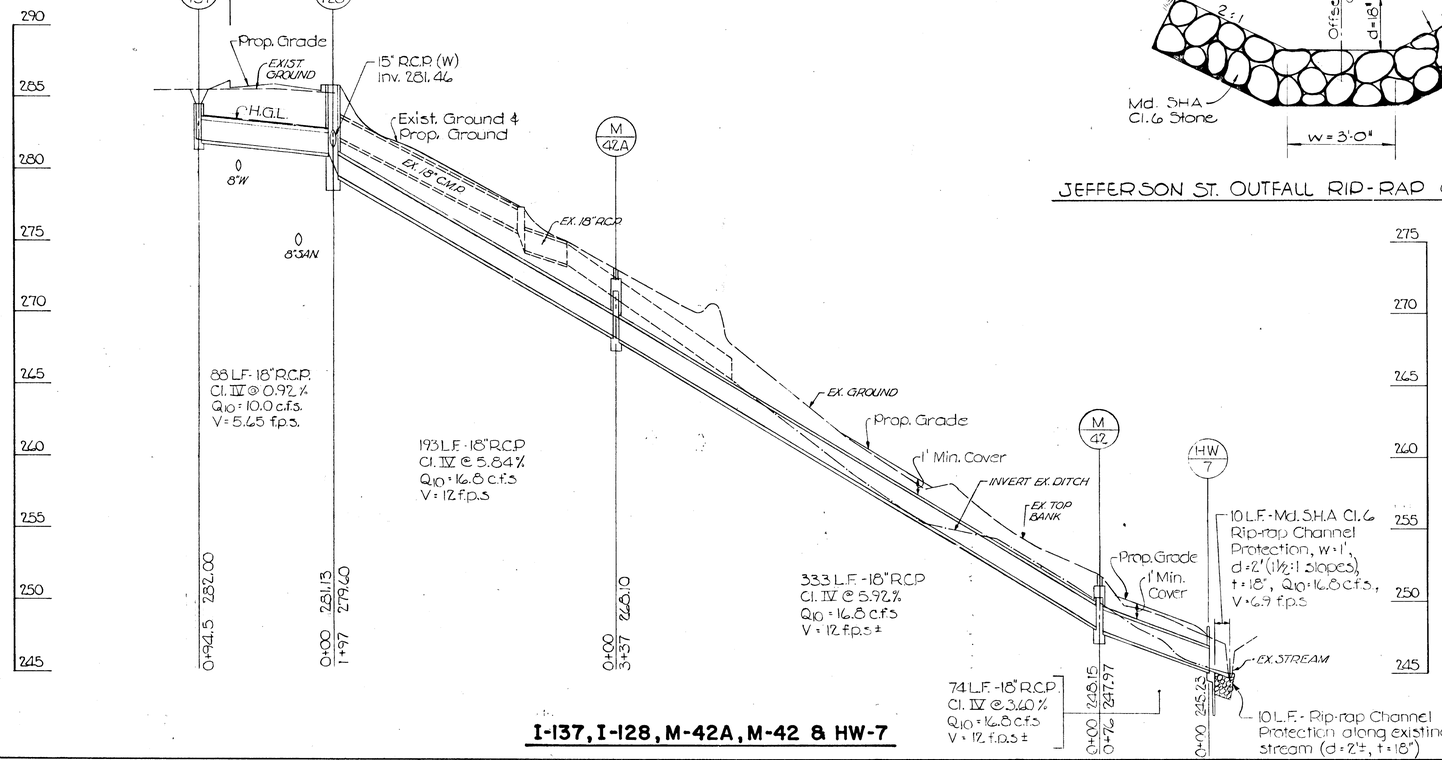
NOT TO SCALE



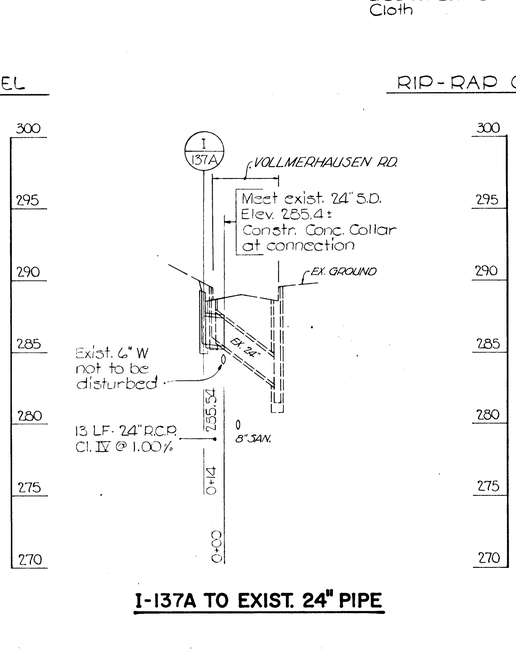
JEFFERSON ST. OUTFALL RIP-RAP CHANNEL



RIP-RAP CUT-OFF WALL



I-137, I-128, M-42A, M-42 & HW-7



I-137A TO EXIST. 24" PIPE

NO	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

Kenneth L. Evans — 4683

STORM DRAIN PROFILES & DETAILS

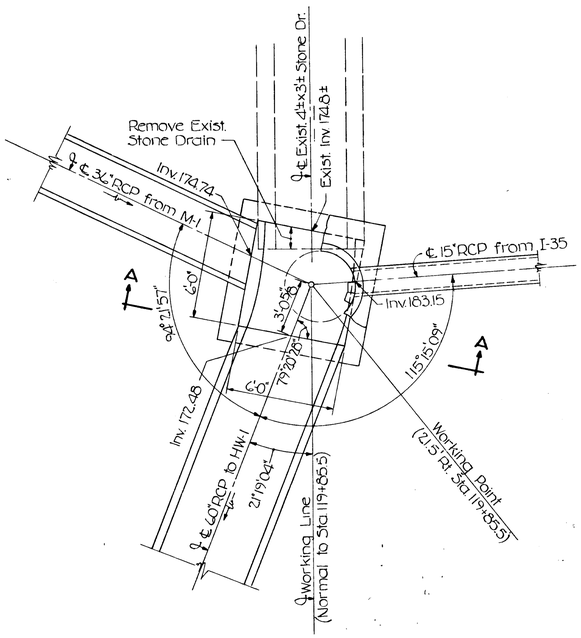
SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS

CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

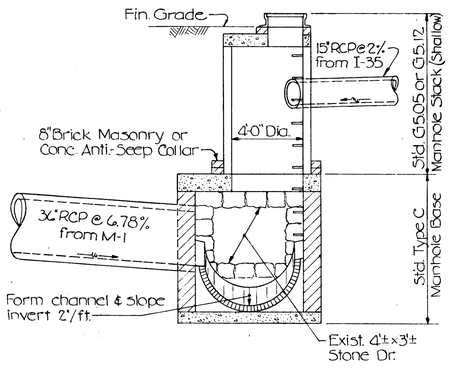
DRAWING NO. 35 OF 59

SCALE
HORZ. 1"=50'
VERT. 1"=5'

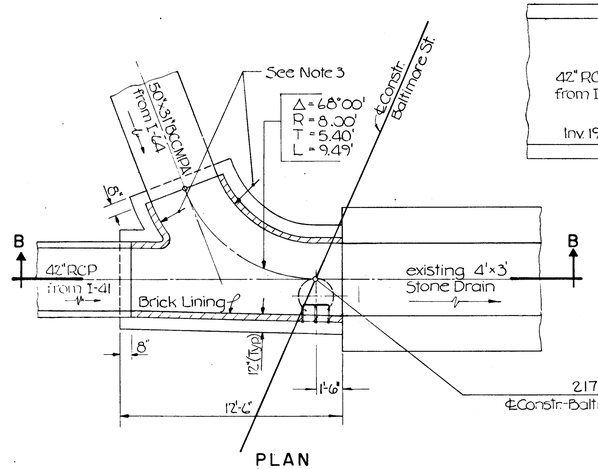
DESIGNED BY
DRAFTED BY
CHECKED BY



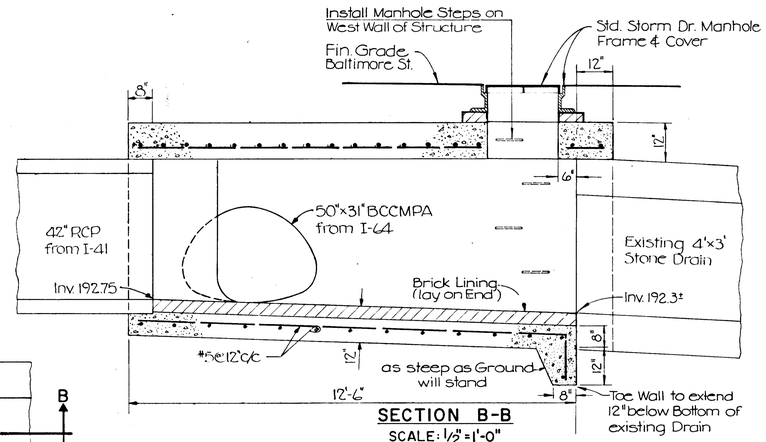
PLAN



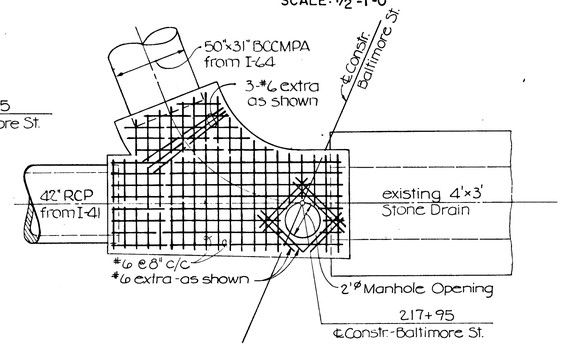
SECTION A-A



PLAN



SECTION B-B



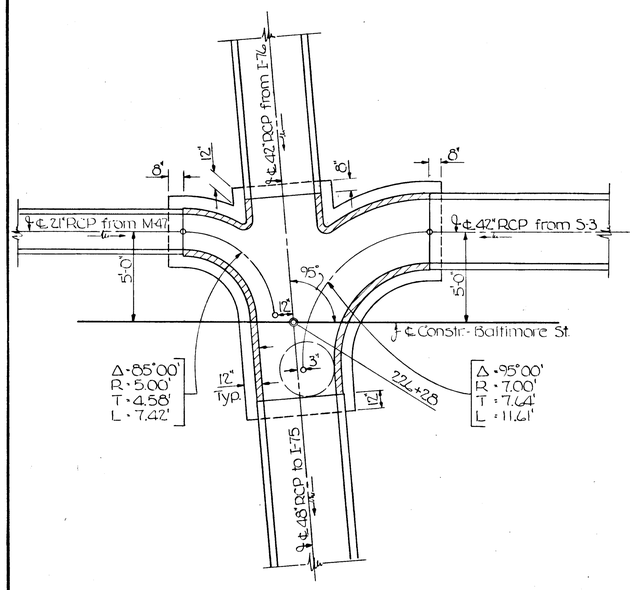
TOP SLAB REINFORCING

STRUCTURE S-1

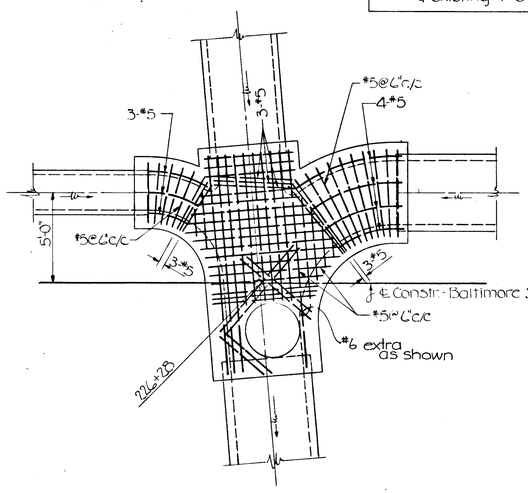
SCALE: 1/4"=1'-0"

Notes:

1. See Howard County Std. S.D.101 for reinforcing Steel Details.
2. Form Channel in Inverts of all Structures as directed by the Engineer.
3. Vary radii to form smooth taper between 50"x31" BCCMPA & existing 4'x3' Stone Drain.



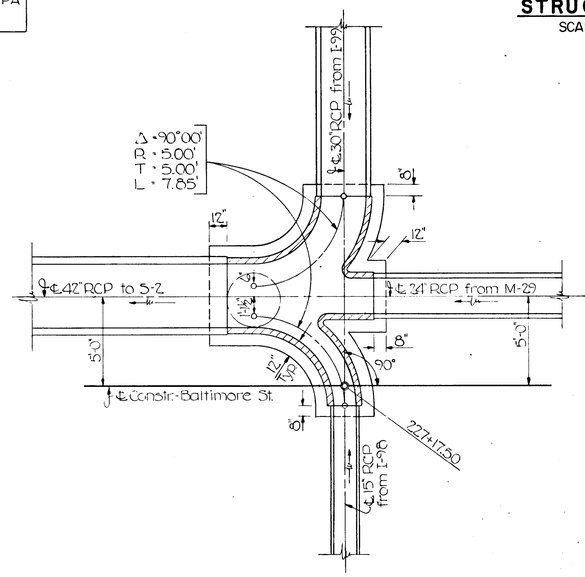
PLAN



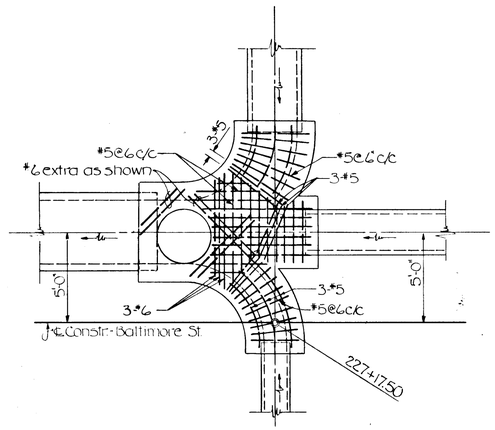
TOP SLAB REINFORCING

STRUCTURE S-2

SCALE: 1/4"=1'-0"



PLAN



TOP SLAB REINFORCING

STRUCTURE S-3

SCALE: 1/4"=1'-0"

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE — CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82

CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

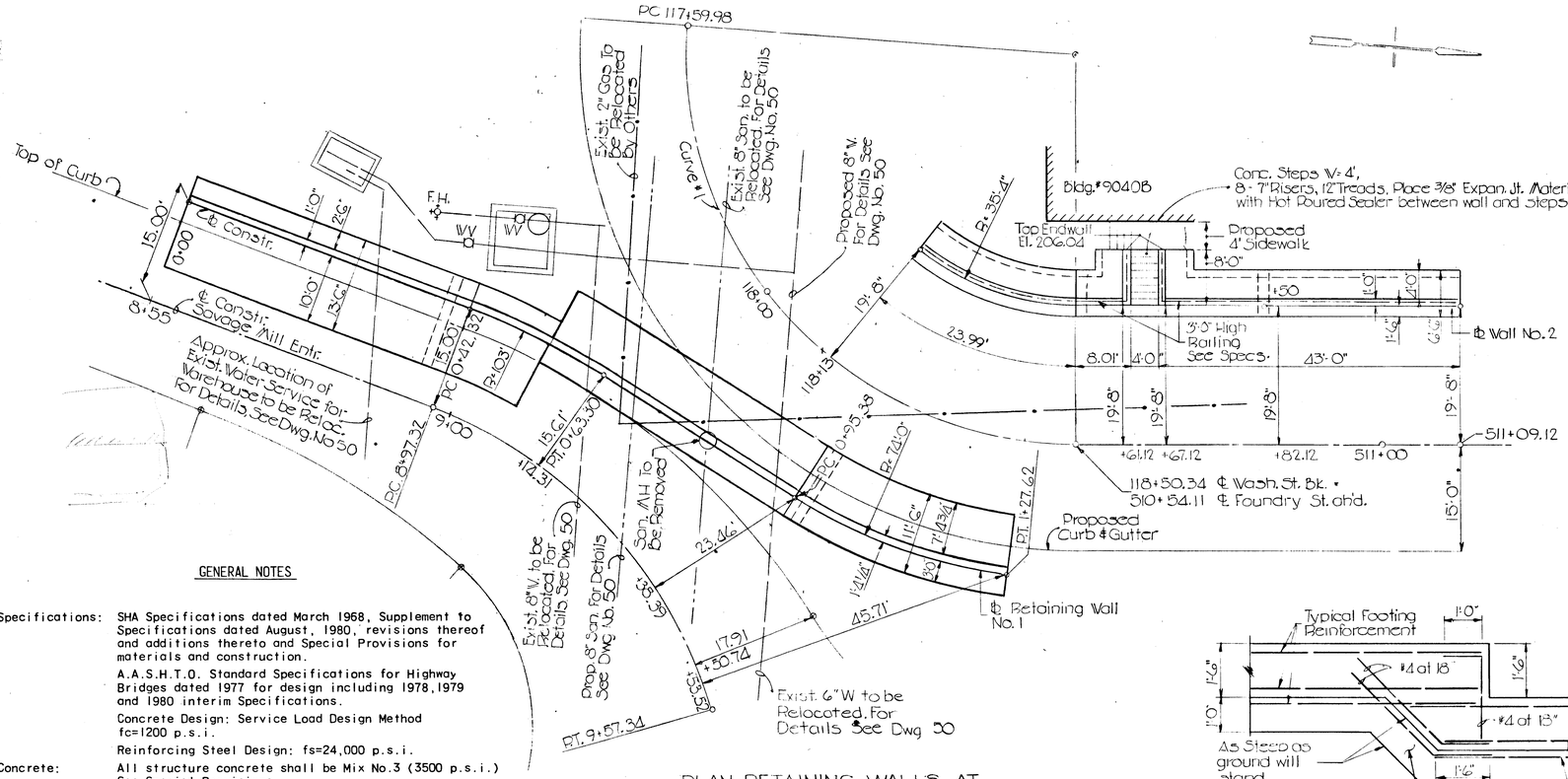
STORM DRAIN DETAILS

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 36 OF 59

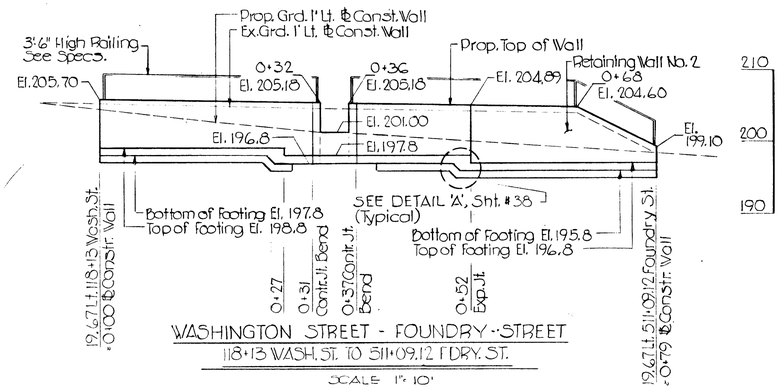
SCALE: AS SHOWN

DESIGNED BY
DRAFTED BY
CHECKED BY



PLAN-RETAINING WALLS AT WASHINGTON ST., FOUNDRY ST., AND SAVAGE MILL ENTRANCE

SCALE 1"=10'



WASHINGTON STREET - FOUNDRY STREET

118+13 WASH. ST. TO 511+09.12 FDRY. ST.

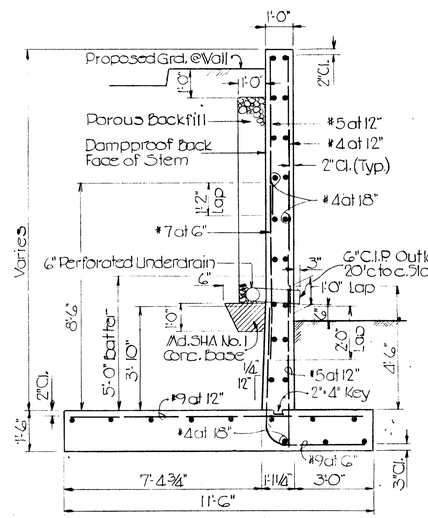
SCALE 1"=10'

TYP. FOOTING STEP ELEVATION

DETAIL 'B'

RETAINING WALL NO. 1

SCALE 1/2"=1'-0"



(TYPICAL SECTION NO. 2)

RETAINING WALL NO. 1

STA 0+55.00 TO 1+27.62

SCALE 3/8"=1'-0"

GENERAL NOTES

Specifications: SHA Specifications dated March 1968, Supplement to Specifications dated August, 1980, revisions thereof and additions thereto and Special Provisions for materials and construction.

A.A.S.H.T.O. Standard Specifications for Highway Bridges dated 1977 for design including 1978, 1979 and 1980 interim Specifications.

Concrete Design: Service Load Design Method fc=1200 p.s.i.

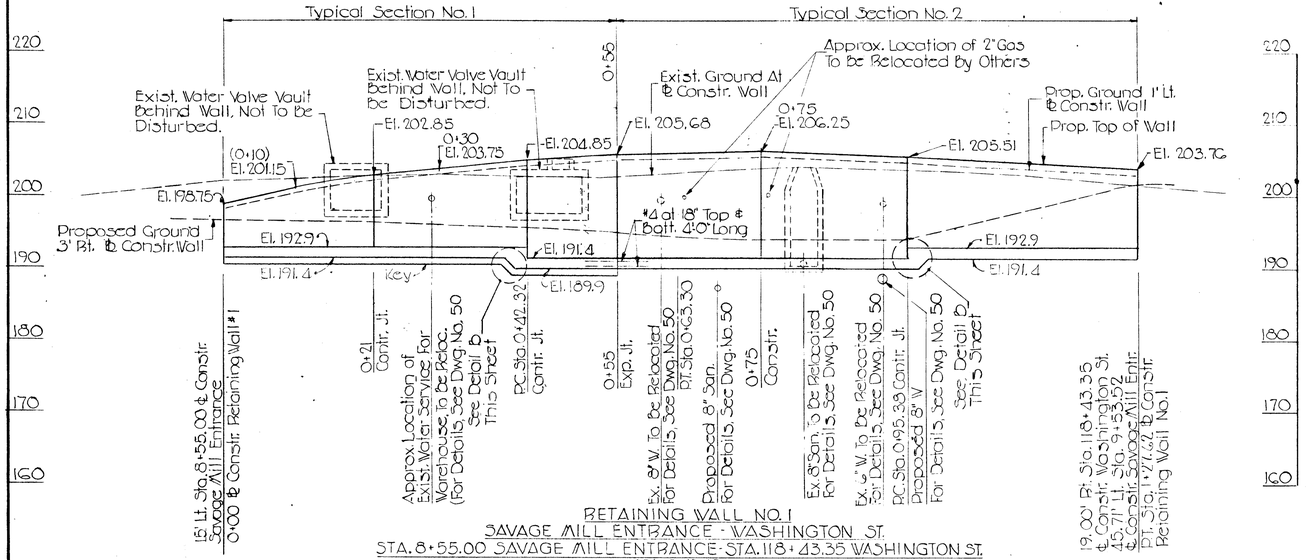
Reinforcing Steel Design: fs=24,000 p.s.i.

Concrete: All structure concrete shall be Mix No. 3 (3500 p.s.i.) See Special Provisions.

Chamfer: All exposed corners of concrete shall be chamfered with 3/4"x3/4" milled chamfer strips, except on unexposed footings or where indicated by the following notation on the Plans "Do Not Chamfer".

Reinforcing Steel: Reinforcing Steel shall conform to A.S.T.M. Designation A-615 Grade 60. All splices shall be lapped as per bar lap charts.

Excavation: See Special Provisions.

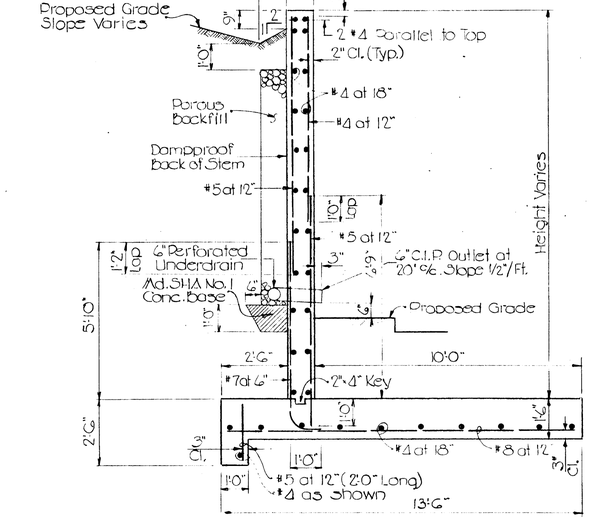


RETAINING WALL NO. 1

SAVAGE MILL ENTRANCE - WASHINGTON ST.

STA. 8+55.00 SAVAGE MILL ENTRANCE - STA. 118+43.35 WASHINGTON ST.

SCALE 1"=10'



TYPICAL SECTION NO. 1 - RETAINING WALL NO. 1, STA 0+00 TO 0+55.00

SCALE 3/8"=1'-0"

Bar Size	* LOCATION CATEGORY		
	A	B	C
#4	2'-5"	1'-9"	1'-5"
#5	3'-0"	2'-2"	1'-9"
#6	3'-7"	2'-7"	2'-1"
#7	4'-10"	3'-6"	2'-9"
#8	6'-5"	4'-7"	3'-8"
#9	8'-1"	5'-9"	4'-8"
#10	10'-3"	7'-4"	5'-10"
#11	12'-7"	9'-0"	7'-2"

*LOCATION CATEGORY

A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as; in footings, pier caps, etc.
B - All bars not in Category A spaced less than 6 inches apart
C - All bars not in Category A spaced 6 inches or more apart.

BAR LAP CHART

NO	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE — CHIEF - BUREAU OF ENGINEERING — DATE 12/6/82

CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/6/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

Registered Professional Engineer No. 4693

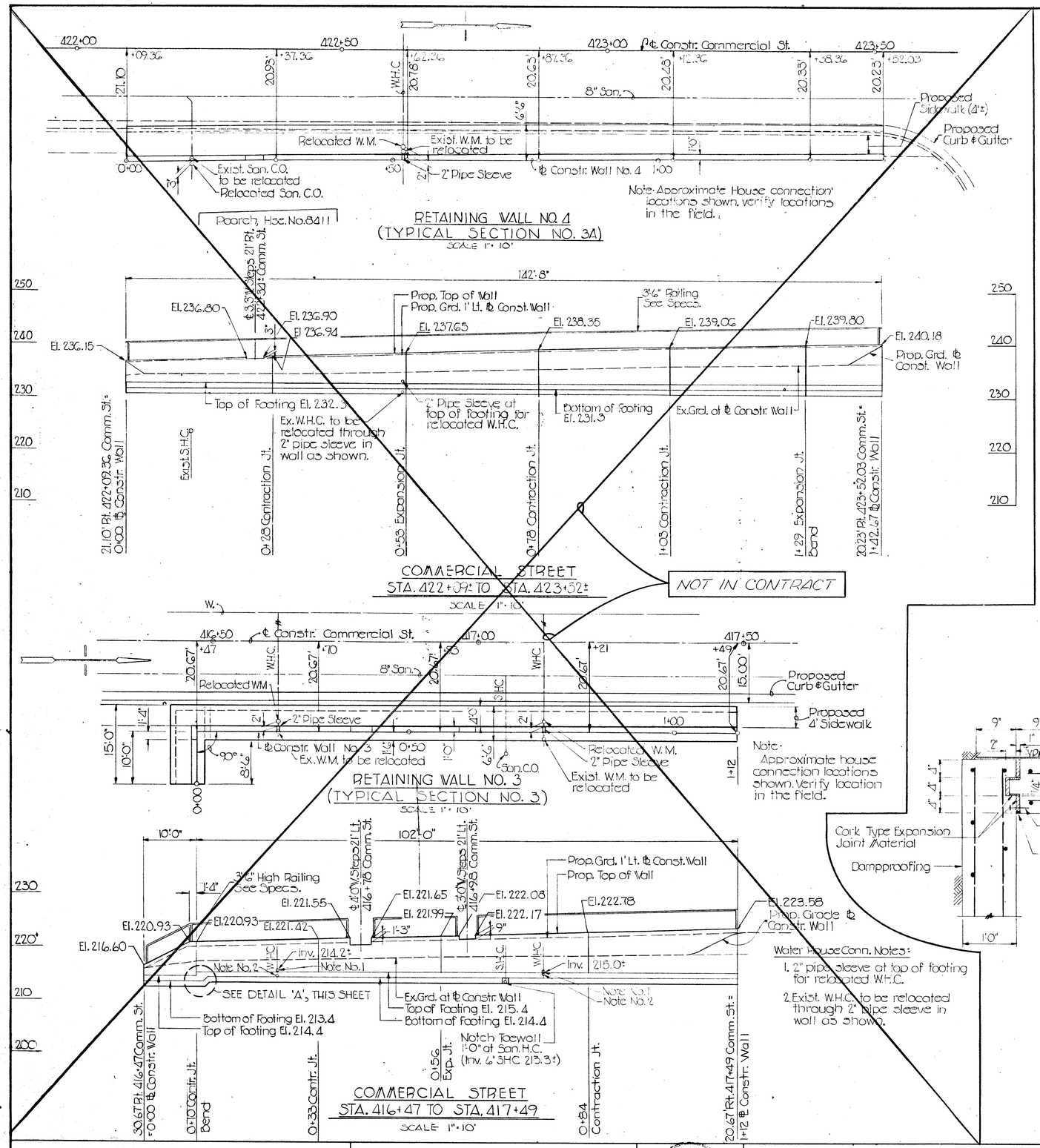
RETAINING WALLS
PLANS AND PROFILES

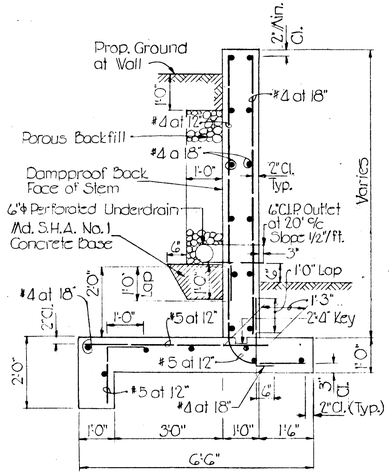
SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 37 OF 59

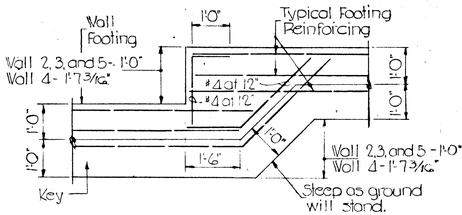
SCALE

DESIGNED BY
DRAFTED BY
CHECKED BY

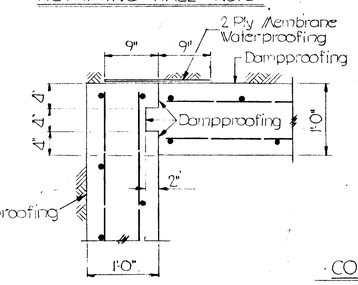




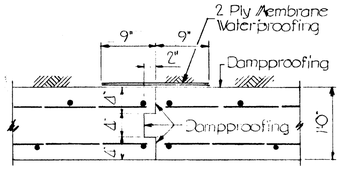
TYPICAL SECTION NO. 3
SCALE 1/2"=1'0"
RETAINING WALL NO. 2

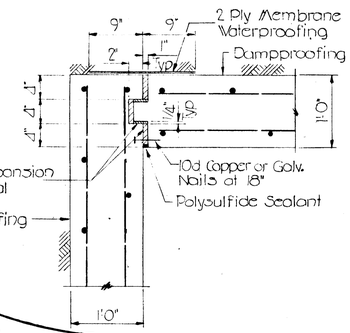


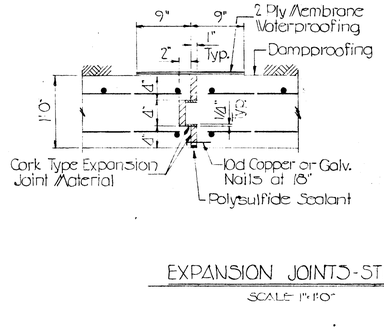
TYPICAL FOOTING STEP ELEVATION
DETAIL 'A'
RETAINING WALL NO. 2
SCALE 1/2"=1'0"

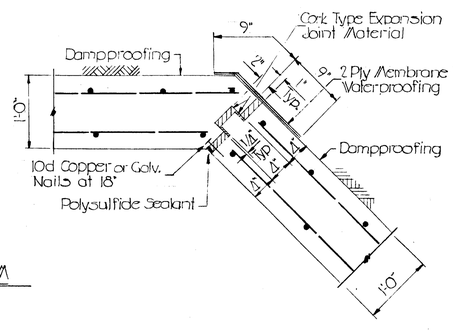


CONTRACTION JOINTS STEM
SCALE 1"=1'0"

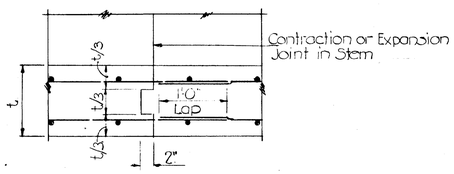








EXPANSION JOINTS-STEM
SCALE 1"=1'0"



FOOTING CONSTRUCTION JOINT
SCALE 1"=1'0"

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER — No. 4403
Kenneth Evans

RETAINING WALLS
PLANS, PROFILES, AND DETAILS

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 38 OF 59
SCALE
WK DESIGNED BY
RV DRAFTED BY
AKK CHECKED BY

MATCH LINE - THIS SHEET

MATCH LINE - THIS SHEET

Drainage facilities within encircled area are not in contract

N 480,000 E 848,000 E 849,000 N 480,000 N 479,000 E 848,000 N 478,000 N 477,000 E 851,000 N 476,000 E 848,000 N 476,000 E 852,000 N 475,000 E 848,000 N 474,000 E 850,000 E 851,000 E 852,000 N 474,000

ANDIRON LA. RED JACKET WAY PRELUDE LA. ROUND MOON CIRCLE SAVAGE - GUILFORD ROAD VOLLMERHAUSEN ROAD MADISON ST. WINDMERE WAY JEFFERSON STREET WOODWARD STREET LINCOLN STREET COMMERCE ST. COMMERCIAL STREET FOUNDRY STREET SAVAGE GUILFORD ROAD JAMES ST. FAIR ST. WASHINGTON STREET CARROLLTON AVE CEMETERY LA. BALTIMORE STREET BALDWIN ST. HOWARD ST. BALTO.-WASH. BLVD. (US RTE 1) LITTLE PATUXENT RIVER

A B C D E F

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE 2/30/02
CHIEF - BUREAU OF ENGINEERING — DATE
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/19/01

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — WILSON T. BALLARD — PROFESSIONAL ENGINEER — 4483

DRAINAGE AREA MAP

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 39 OF 59

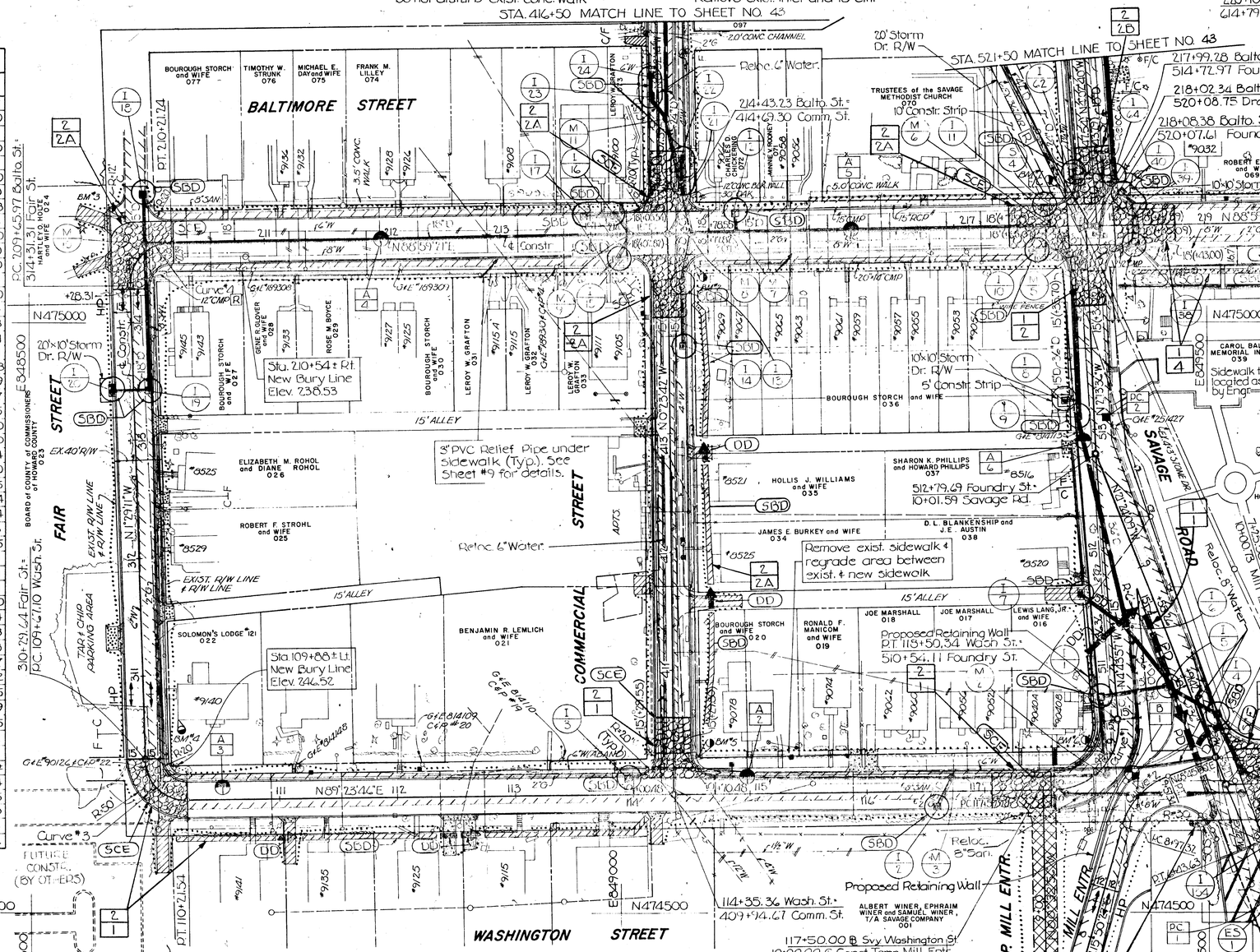
SCALE 1"=200'

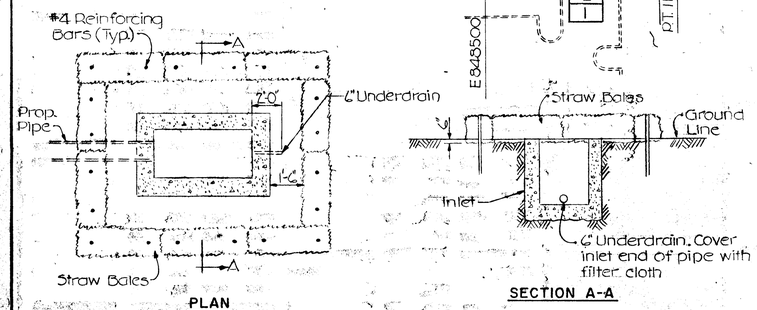
DESIGNED BY
DRAFTED BY
CHECKED BY

STORM DRAIN STRUCTURE SCHEDULE

STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
HW 1	Headwall 60"RCP	42' Rt. Sta. 119+77.5 Wash. St.	End of Top W 178.36	172.37
S-1	Spec. Struc.[4]	21.5' Rt. Sta. 119+85.5 ± Wash. St.	188.45	172.50
I-35	Std. WR	15' Rt Sta. 120 +80 Wash. St.	192.45	185.00
I-36	Std. WR	15' Lt. Sta. 610 + 70.8 Williams St.	192.97	186.17
I-37	A- 5	15' Rt Sta. 611+12. Williams St.	194.00	190.40
I-32	Std. WR	15' Lt. Sta. 121 +13.7 Wash. St.	193.51	186.80
I-33	Std. S	28' Lt. Sta. 121+14. Wash. St.	193.40	187.08
M-1	A-2 MH	10' Lt. Sta. 119 + 20. Wash. St.	188.38	179.45
I-4	Std. WRM	13.3' Rt. Sta 7 + 58.1 Savage Rd.	191.52	183.80
I-5	Std. WRM	15' Lt. Sta. 7 + 95.4 Savage Rd.	192.61	186.40
I-1	Std. WR	15' Lt. Sta. 510 + 74.1 Foundry St.	200.64	195.00
M-2	A-2 MH	5' Rt Sta. 118 + 05 Wash. St.	204.79	198.29
M-3	A-2 MH	12' Lt. Sta. 116 + 75 Wash. St.	213.74	207.80
I-2	Std. WR	15' Rt. Sta. 116 + 60 Wash St.	215.28	211.74
I-3	Std. WR	15' Lt. Sta. 113+96.5 Wash. St.	228.68	225.18
I-6	Std. WR	15' Rt Sta. 511+32.3 Foundry St.	196.11	188.81
I-7	Dbl. S [2]	21' Lt. Sta. 511+61.7 Foundry St.	196.75	193.81
I-9	Std. WR	15' Lt. Sta. 513 +10 Foundry St.	197.20	190.58
I-8	Std. S	24' Lt. Sta. 513 + 25 Foundry St.	196.50	192.79
M-5	'B' MH	12.5' Lt. Sta. 514+50 Foundry St.	197.83	191.97
M-6	'B' MH	℄ Sta. 217 + 70 Balto. St.	199.07	192.25
I-10	A -10	18' Rt Sta. 217 +57.1 Balto. St.	199.47	195.90
I-11	Std. WR	18' Lt. Sta. 217+64.9 Balto. St.	199.58	195.80
M-7	A-3 MH	℄ Sta. 215+01 Balto. St.	214.73	207.44
I-12	Std. WR	18' Lt. Sta. 215+00 Balto. St.	214.98	211.50
M-8	A-3 MH	℄ Sta. 214+63 Balto St.	217.24	209.95
I-13	Std. WR	15' Rt Sta. 414+27.7 Commercial St.	217.85	213.84
I-14	Std. WR	15' Rt Sta. 413+ 75 Commercial St.	219.96	214.84
I-21	Std. WR	15' Rt Sta. 415+11.6 Commercial St.	216.37	211.98
I-22	Std. WR	15' Rt Sta. 415+33.1 Commercial St.	218.71	215.35
M-11	B	℄ Sta. 415+66 Commercial St.	218.94	213.51
I-23	Std. WR	15' Lt. Sta. 415+88.6 Commercial St.	219.33	214.21
I-24	Std. WR	15' Lt. Sta. 416 +03.5 Commercial St.	219.51	214.81
M- 9	A-2 MH	℄ Sta. 214 + 10 Balto. St.	220.72	212.80
I-15	A-10 [3]	18' Rt Sta. 213+99.2 Balto. St.	221.54	216.54
I-16	Std. WR	18' Lt. Sta. 213+ 98 Balto. St.	221.66	218.18
I-17	Std. WR	18' Lt. Sta. 213+ 70. Balto. St.	223.34	219.48
M-10	A-2 MH	℄ Sta. 210+00 Balto. St.	240.94	232.47
I-18	Std. WR	42' Lt. Sta. 210+01 Balto. St.	243.44	239.92
I-19	Std. WR	15' Rt Sta. 313+42.74 Fair Street	240.78	234.35
I-20	A-10	15' Lt. Sta. 313+42.74 Fair Street	240.78	235.29
I-38	Std. WR	16' Rt Sta. 218+39.1 Balto. St.	198.85	192.75
I-39	Std. WR	18' Lt. Sta. 218+43.1 Balto. St.	198.89	194.12
I-40	Std. S	28' Lt. Sta. 218+29 Balto. St.	197.56	194.62
S-4	Spec. Struc.[1]	℄ Const. Sta. 217+95± Balto. St.	198.7±	192.3±
I-62	A-10	15' Lt. Sta. 520+52.5 Foundry St.	198.35	194.04
I-64	A-10 [4]	15' Rt. Sta. 520+50.2 Foundry St.	196.18	193.45
I-37A	A-10	15' Rt. Sta 611+72. Williams St.	195.85	192.90
I-154	Std. WR	13' Rt Sta. 6 + 41 Savage Rd.	183.96	179.86
ES-1	End Section	22' Rt Sta. 6+34 Savage Rd		177.84

1) See Storm Drain Details Sheet No. 36
2) With Reticular Grate 3) With Deflectors
4) Brick Invert shall be One-half developed





STRAW BALES FOR SEDIMENT CONTROL AT INLETS

NOT TO SCALE

SEDIMENT CONTROL NOTES

1. Sediment control provisions are to be constructed in accordance with the requirements and standards of the U.S. Soil Conservation Service handbook of Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas, as modified by the Howard County Soil Conservation District for specific jurisdiction requirements.
2. Sediment control provisions are to be installed by the Contractor prior to general clearing and grubbing and site preparation operations for work during a given stage of construction and are to remain functional until all areas contributing runoff to a sediment control measure have been stabilized.
3. Install sediment control measures adjacent to construction areas were deemed necessary by the Engineer to prevent sediment resulting from construction operations from reaching private properties.
4. Straw bale dikes are to be provided around all inlets receiving runoff from areas disturbed during construction. See details this sheet.

LEGEND AND ABBREVIATIONS:

Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas and the following apply:

(SBD) (■) — Inlet Straw Bale Dike

1 / 4 — Construction Phase / Construction Stage within Phase (See Traffic Control Plans)

CROSS REFERENCES

ITEM	SHT. NO.
℄ Construction Stakeout Data	2
Storm Drain Profiles	27,28,29
Roadway Profiles	4,17,18,20
Sav. Rd.-Sav. Mill Entr. Intersection	15
Retaining Wall Details	37
Reloc. Sewer and Water Mains	50,51,53,54
Sediment Control Details	44

FOR SEDIMENT CONTROL ONLY
SEE DWG. NO. 10 FOR ROADWAY & STORM DRAIN CONSTRUCTION DETAILS

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 12/30/82 — CHIEF - BUREAU OF ENGINEERING — DATE 12/29/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — KENNETH L. EVANS — No. 4603 — REGISTERED PROFESSIONAL ENGINEER

SEDIMENT CONTROL PLAN
WASHINGTON ST. STA. 109+ TO STA. 121+
BALTIMORE ST. STA. 209+ TO STA. 220+

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 40 OF 59
SCALE: 1" = 50'
DESIGNED BY
DRAFTED BY
CHECKED BY

B.M.#8: ▫ cut on East end of bottom step at First Baptist Church at Southwest corner of Washington St. & Woodward St. Elev. 192.574.

B.M.#12: ℄ Svy. Sta. 132+00 Washington St. Elev. 199.041

B.M.-Howard County Monument 1942003: Northeast corner of Baltimore St. and Savage Guilford Rd. Elev. 209.121

STEP SCHEDULE		
LOCATION	WIDTH	NO. RISERS
BALTIMORE STREET		
Rt. 221+71	3'	5
Rt. 223+15	3'	3
Rt. 223+99	4'	4
Rt. 224+63	3'	5
Lt. 225+75	3'	1
Rt. 225+80	3'	7
Rt. 226+63	3'	4
Rt. 227+35	3'	3
Rt. 228+12	3'	5
Rt. 229+49	3'	4
Rt. 229+97	3'	5
Lt. 230+09	3'	1
Rt. 230+51	3'	7
Rt. 231+34	3'	11
Lt. 231+50	3'	3
Rt. 231+88	3'	7
Lt. 232+64	3'	3
Rt. 232+90	3'	6
SAVAGE-GUILFORD ROAD		
Rt. 11+00	3'	3
WASHINGTON ST.		
Rt. 123+13	3'	4
Rt. 123+72	3'	4
Rt. 124+31	3'	3
Rt. 124+83	3'	2
Lt. 124+97	3'	2
Lt. 125+64	3'	2
Rt. 130+85	3'	3
WOODWARD STREET		
Lt. 7.10+83	3'	2

STORM DRAIN STRUCTURE SCHEDULE NOTES

1. Brick invert shall be one-half developed.
2. Brick invert shall be fully developed.
3. Without gutter depression.
4. See SHA Sta. MD-378.02 for Conc. Gutter Approach Details

STORM DRAIN STRUCTURE SCHEDULE				
STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
E-2	Ex. Inlet	13.69' Rt. Sta. 3+90.09 Woodward St. Drainage Spur	180.86	175.86
I-149	Dbl. S	18' Rt. Sta. 5+00 Woodward St. Drainage Spur	183.00	176.70
I-71	A-5	15' Rt. Sta. 127+57.89 Wash. St	189.86	178.00
M-34	A-2 M.H.	18' Rt. Sta. 128+90 Wash. St.	190.70	179.91
I-114	A-5	15' Lt. Sta. 7.10+42.76 Woodwd St.	190.20	185.23
I-115	A-5	15' Rt. Sta. 7.10+40.18 Woodwd St.	190.35	186.76
M-35	A-2 M.H.	18' Rt. Sta. 130+47 Wash. St.	190.52	181.01
I-113	Std. S	27' Lt. Sta. 130+47 Wash. St	189.25	183.81
I-111	A-5 ③	15' Rt. Sta. 131+23 Wash. St.	189.85	181.78
I-112	A-5	15' Lt. Sta. 131+15.54 Wash. St.	189.84	182.51
I-72	A-5	15' Lt. Sta. 127+57.89 Wash. St.	189.86	178.75
I-73	Dbl. S ①	32' Lt. Sta. 127+57.89 Wash. St.	188.00	179.25
I-74	Dbl. S ①	13' Rt. Sta. 9+12 Woodward St. Drainage Spur	192.00	185.50
I-75	Dbl. S ①	10' Lt. Sta. 10+70 Woodward St. Drainage Spur	195.00	189.00
S-2	Junction Structure	See Detail on Sheet No. 36	201.75	193.50
S-3	Junction Structure	See Detail on Sheet No. 36	201.09	194.57
I-98	A-5	18' Lt. Sta. 227+17.50 Balto. St.	201.37	196.50
I-99	A-10 ②	18' Lt. Sta. 227+17.50 Balto. St.	201.37	195.87
I-147	A-10	18' Lt. Sta. 226+97.5 Balto. St.	201.40	197.37
I-148	A-10	18' Lt. Sta. 227+42.5 Balto. St.	201.42	197.62
M-45	A-3 M.H.	5' Lt. Sta. 228+62 Balto. St.	202.15	197.15
I-96	Sgl. WR	13.9 Lt. Sta. 7.15+18.47 Woodwd. St.	203.32	199.49
I-97	Std. WR	13.9 Lt. Sta. 7.15+33.47 Woodwd. St.	203.96	200.04
I-94	Sgl. WR	13.9 Rt. Sta. 7.15+22.24 Woodwd. St.	203.57	199.99
I-95	Std. WR	13.9 Rt. Sta. 7.15+37.24 Woodwd. St.	204.09	200.39
M-29	A-3 M.H.	5' Lt. Sta. 229+17.56 Balto. St.	202.75	197.82
I-144	Std. WR	18' Rt. Sta. 229+27.61 Balto. St.	203.03	199.05
I-143	A-5	18' Lt. Sta. 229+21.56 Balto. St.	202.98	198.82
I-142	A-10	18' Lt. Sta. 229+36.56 Balto. St.	203.12	199.37
M-43	A-3 M.H.	5' Lt. Sta. 229+9.96 Balto. St.	203.56	199.50
I-93	A-5	18' Lt. Sta. 230+00 Balto. St.	203.90	200.00
M-42	A-3 M.H.	5' Lt. Sta. 230+19.96 Balto. St.	206.04	201.75
I-92	Std. WR	18' Rt. Sta. 231+1.5 Balto. St.	206.98	203.00
I-90	Std. WR	18' Lt. Sta. 231+1.00 Balto. St.	206.46	202.25
M-30	A-3 M.H.	5' Lt. Sta. 233+1.00 Balto. St.	215.30	211.50
I-91	Std. WR	12' Lt. Sta. 10+0.44 Cemetery La.	217.52	213.20
I-145	Std. WR	12' Lt. Sta. 10+6.0 Cemetery La.	219.12	215.00
I-146	A-10	18' Lt. Sta. 233+5.4 Balto. St.	217.78	214.50
M-31	A-2 M.H.	5' Lt. Sta. 232+4.9 Balto. St.	209.21	200.59
I-100	Std. WR	18' Rt. Sta. 10+59.20 Savage Guilford Rd.	206.99	201.71
I-101	Std. WR	18' Lt. Sta. 10+59.50 Savage Guilford Rd.	208.99	202.68
I-76	Dbl. S ①	30' Lt. Sta. 226+25.38 Balto. St.	199.40	194.50
I-34	Std. S	28' Lt. Sta. 123+4.9 Wash. St.	194.50	191.60
I-152	A-10	18' Lt. Sta. 230+21 Balto. St.	204.30	200.82
I-153	Std. WR	16' Lt. Sta. 225+87 Balto. St.	202.73	199.25
M-47	A-3	5' Lt. Sta. 225+91 Balto. St.	202.37	196.13

DRIVEWAY SCHEDULE											
LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN	LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN	LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
BALTIMORE STREET				Lt. 231+13	3	16'	7'	Lt. 125+24	3	11'	5'
				Rt. 231+71	2	10'	31'	Rt. 126+05	3	10'	6'
Rt. 222+60	2	31'	21'	Rt. 233+14	2	10'	23'	Lt. 126+07	3	10'	12'
Rt. 223+62	2	16'	16'	Lt. 233+21	2	24'	62'	Rt. 126+57	3	10'	6'
Lt. 223+95	2	10'	38'	Rt. 233+45	2	11'	48'	Lt. 126+80	3	11'	5'
Lt. 224+53	2	70'	9'	Lt. 233+85	2	24'	28'	Rt. 127+13	2	10'	5'
Lt. 225+25	2	27'	21'	WASHINGTON STREET				Rt. 127+27	2	10'	10'
Rt. 225+50	2	19'	33'	Lt. 121+56	3	10'	23'	Lt. 127+43	3	10'	35'
Lt. 226+01	3	11'	5'	Rt. 121+93	2	18'	5'	Rt. 127+93	3	10'	10'
Rt. 226+92	3	35'	26'	Lt. 122+07	3	10'	11'	Rt. 130+70	3	10'	32'
Rt. 227+47	1	10'	17'	Lt. 122+99	3	14'	5'	Rt. 131+08	3	13'	24'
Rt. 229+76	2	10'	30'	Rt. 123+38	2	10'	33'	Rt. 131+37	3	10'	16'
Lt. 229+79	3	10'	5'	Rt. 123+53	3	10'	34'	Lt. 131+56	2	20'	5'
Lt. 230+55	3	17'	5'	Lt. 123+74	2	10'	5'	Rt. 132+08	3	20'	9'
Rt. 230+88	1	8'	33'	Rt. 124+07	2	10'	24'	Lt. 132+79	2	22'	5'
Rt. 231+02	2	10'	33'	Rt. 126+09	3	16'	5'	Rt. 133+17	3	16'	5'

DRIVEWAY SCHEDULE			
LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
WASHINGTON STREET (cont'd.)			
Lt. 133+44	3	10'	5'
Lt. 134+00	3	10'	5'
WOODWARD STREET			
Rt. 7.06+76	2	11'	19'
Rt. 711+38	2	10'	21'
Lt. 711+79	2	10'	11'
Lt. 712+49	3	10'	5'
Rt. 712+59	2	10'	5'
CEMETERY LANE			
Lt. 10+90	3	10'	5'

CROSS REFERENCES	
ITEM	SHT. NO.
℄ Construction Stakeout Data	2 & 3
Storm Drain Profiles	28, 31, 32, 33 & 34
Baltimore St. Profile	18 & 19
Washington St. Profile	17
Woodward St.	17 & 22
Savage Guilford Rd.	23
Reloc. Water Mains	51, 53, 55
Sediment Control Details	44

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

FOR SEDIMENT CONTROL ONLY
SEE DWG. NO. 11 FOR ROADWAY & STORM DRAIN CONSTRUCTION DETAILS

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE 1-3-83
CHIEF-BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — "HOWARD" — REGISTERED PROFESSIONAL ENGINEER — No. 4483

SEDIMENT CONTROL PLAN
WASHINGTON ST. STA. 121+ TO STA. 134+
BALTIMORE ST. STA. 221+ TO STA. 242+

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 41 OF 59
SCALE: 1" = 50'
DESIGNED BY
DRAFTED BY
CHECKED BY

DRIVEWAY SCHEDULE

LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
WASHINGTON ST.			
134+00± Lt.	3	10'	5'
134+52± Rt.	3	22'	23'
134+69± Rt.	3	10'	20'
134+90± Rt.	2	12'	17'
135+14± Rt.	2	10'	15'
135+22± Lt.	2	10'	8'
136+30± Lt.	3	12'	5'
136+44± Lt.	3	16'	5'
139+57± Rt.	3	16	5
139+90± Lt.	3	10'	5'
140+73± Rt.	2	12	19'
141+31± Lt.	3	10'	18'
BALDWIN ST.			
809+11± Lt.	3	13'	5'
811+06± Rt.	2	20'	12'
811+17± Lt.	2	12'	7'
811+78± Rt.	2	31'	11' (Av.)
813+59± Rt.	2	13'	13'
BALTIMORE ST.			
235+25± Rt.	2	10'	30'
236+28± Rt.	2	10'	40'
236+92± Lt.	3	15'	5'
237+83± Lt.	2	14'	12'
238+43± Lt.	2	10"	10'
239+21± Lt.	2	15'	5'
239+28± Rt.	2	10'	5'
241+14± Rt.	2	10'	33'
242+29± Rt.	3	10'	24'
239+80± Lt.	2	22'	5'
240+45± Lt.	2	25'	20'
241+75± Lt.	3	11'	10'
242+37± Lt.	3	16'	6'
243+50± Lt.	3	11'	5'
243+29± Rt.	3	15'	5'
813+90± Lt.	1	20'	19'

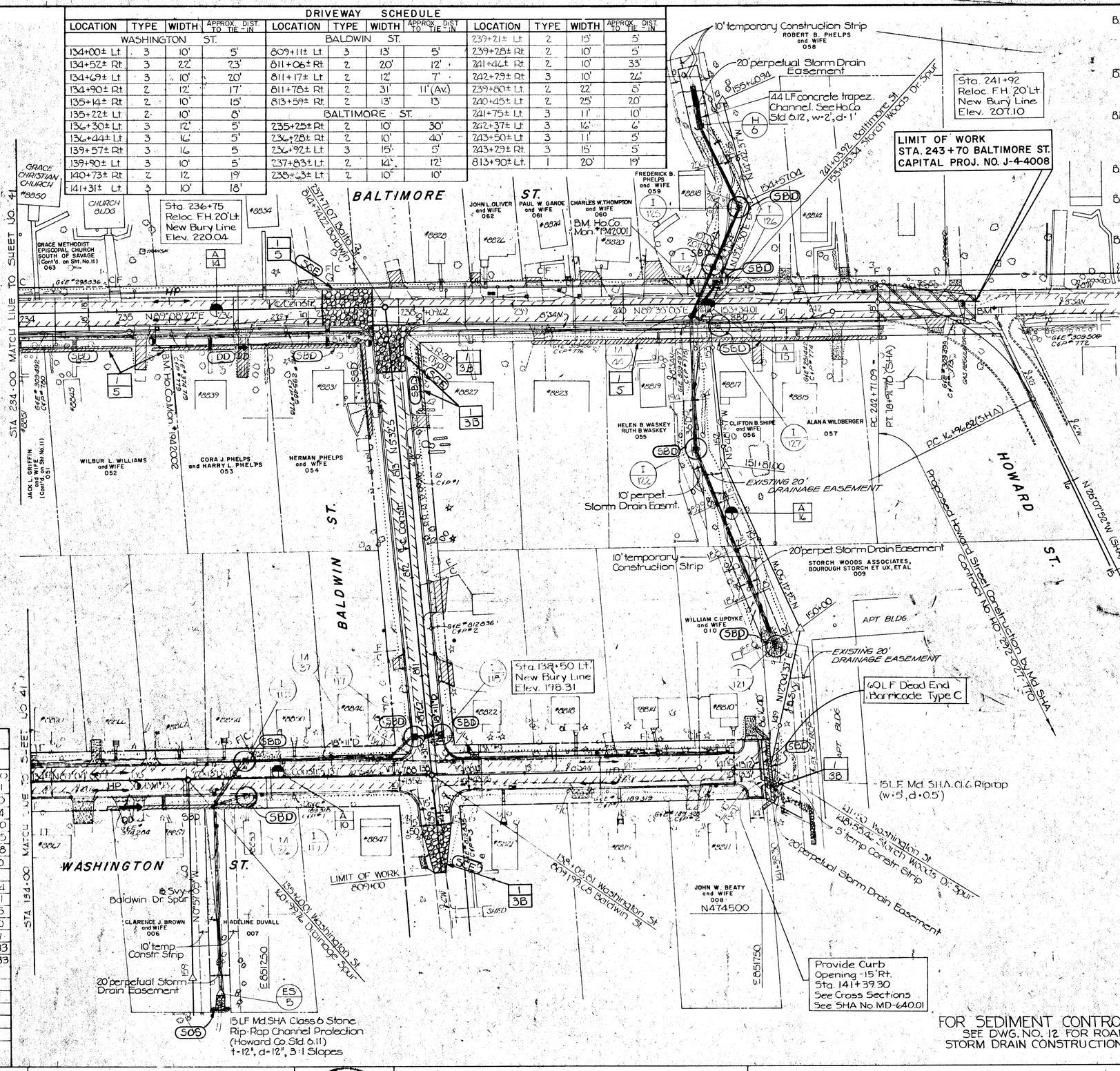
STEP SCHEDULE

LOCATION	WIDTH	NO. RISERS
WASHINGTON ST.		
134+86± Lt.	3'	2
135+38± Rt.	3.5'	3
136+27± Rt.	3'	3
135+96± Lt.	3'	1
138+78± Rt.	3'	2'
140+88± Rt.	3'	3
141+12± Lt.	3'	2
BALDWIN ST.		
813+81± Lt.	3'	4
BALTIMORE ST.		
234+20± Lt.	45'	1
234+97± Lt.	9.0'	1
234+02± Rt.	3'	6
234+57± Rt.	3'	4
235+93± Rt.	3'	9
236+50± Lt.	3'	2
237+14± Rt.	3'	9
238+27± Lt.	3'	2
238+75± Lt.	3'	2
240+46± Rt.	3'	6
241+89± Rt.	3'	4'

STORM DRAIN STRUCTURE SCHEDULE

STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
I-125	Std. Section	28' Rt. Sta. 154+36 Baldwin Spur		193.10
M-36	B	7' Rt. Sta. 160+61 Baldwin Spur	192.10	190.01
I-116	A-5	15' Lt. Sta. 134+17.57 Wash. St.	194.91	191.20
M-37	B	18' Lt. Sta. 137+63 Wash. St.	196.58	193.44
I-117	Std. WR	15' Lt. Sta. 810+40 Baldwin St.	197.11	194.00
I-118	Std. WR	15' Rt. Sta. 810+40 Baldwin St.	197.30	194.25
I-119	A-5	15' Rt. Sta. 136+17.57 Wash. St.	194.91	191.48
I-121	* Dbl-5	20.4' Lt. (Ex. Headwall) Sta. 149+77±	184.7	177.60
		Storch Woods Spur		
I-122	* Dbl-5	28' Lt. Sta. 152+00 Storch Wds. S.	192.22	186.04
M-44	A-2	12' Rt. Sta. 240+82 Balto. St.	206.04	190.41
I-124	* Dbl-5	37' Lt. Sta. 241+04 Balto. St.	200.20	193.25
I-125	* Dbl-5	6' Lt. Sta. 154+46 Storch Wds. S.	203.92	199.30
H-6	A	29' Lt. Sta. 155+40 Storch Wds. S.	208.97	204.97
I-126	A-10	18' Lt. Sta. 241+12.21 Balto. St.	206.37	202.83
I-127	A-5	18' Rt. Sta. 241+12.21 Balto. St.	206.37	202.83

* See SHA Std. Md. 378.02 for Conc. Gutter Approach Details



B.M. "9": × cut in bolt on top flange of fire hydrant on North side of Washington St. East of Baldwin St. Elev. 200.078

B.M. "10": □ cut at end of sidewalk at Southwest corner of Baltimore St. and Baldwin St. Elev. 215.469

B.M. "11": □ cut on Northeast corner concrete base abandoned light post South side of Baltimore St. 40'± West of Howard St. Elev. 210.858

B.M. "13": ℄ Svy. Sta. 135+00 Washington St. Elev. 201.705

B.M.-Howard County Monument 1947002: 7' Rt. Sta. 235+40± ℄ Svy. Baltimore St. Elev. 217.637

B.M.-Howard County Monument 1947001: 20' Lt. Sta. 240+90± ℄ Svy. Baltimore St. Elev. 203.733

CROSS REFERENCE

ITEM	SHEET NO.
℄ Constr. Stake-out Data	2
Storm Drain Profiles	31 & 32
Baltimore Street Profile	19
Baldwin Street Profile	22
Washington Street Profile	17
Sediment Control Details	44

FOR SEDIMENT CONTROL ONLY
SEE DWG. NO. 12 FOR ROADWAY & STORM DRAIN CONSTRUCTION DETAILS

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE 1-3-83
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — KENNETH W. WARD — REGISTERED PROFESSIONAL ENGINEER — No. 4423

SEDIMENT CONTROL PLAN
WASHINGTON ST. STA. 134+ TO STA. 141+
BALTIMORE ST. STA. 234+ TO STA. 242+

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 42 OF 59
SCALE: 1" = 50'
DESIGNED BY
DRAFTED BY
CHECKED BY

B.M.#15: a cut on granite stone on Northwest corner of Foundry St. and Commerce St. Elev. 230.630

DRIVEWAY SCHEDULE

LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
COMMERCIAL ST.			
Lt. 417+08	3	10'	5'
Lt. 417+71	3	10'	13'
Lt. 417+90	3	10'	14'
Rt. 418+75	2	10'	24'
Lt. 419+67	2	12'	16'
Rt. 419+67	1	25'	14'
Lt. 421+13	2	12'	8'
Rt. 421+33	1	10'	11'
Lt. 423+60	1	10'	35'
Rt. 424+76	2	12'	35'
Rt. 425+02	2	15'	22'
Lt. 425+16	2	13'	4'
Lt. 425+42	2	13'	16'
Rt. 425+45	3	10'	23'
Lt. 426+52	2	12'	4'
Lt. 427+36	2	10'	5'

LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
COMMERCE ST.			
Rt. 10+48	1	11'	38'
FOUNDRY STREET			
Lt. 521+62	3	18'	5'
Lt. 522+62	3	10'	9'
Rt. 525+03	2	14'	7'
Lt. 525+72	1	10'	13'
Rt. 525+93	2	15'	8'
Lt. 526+87	3	11'	12'
Rt. 528+15	2	10'	23'
Lt. 528+61	3	10'	14'
Lt. 530+50	2	12'	10'
Lt. 530+74	3	10'	12'
Rt. 531+21	2	16'	19'
Lt. 531+97	2	17'	20'
Lt. 532+94		10'	22'

LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
JEFFERSON ST.			
Rt. 6+78	1	10'	5'

Sta. 425+80
Reloc. F.H. 14' Lt. of ℄
New Bury Line
Elev. 246.51
Install New 6" Valve

Rt. Sta. 537+74± To Rt. Sta. 538+74± Drainage Spur

1. Remove and stockpile existing Chain Link Fence.
2. Furnish and install temporary fence to adequately complete enclosure of swimming pool during construction.
3. Reset existing fence along the existing drainage and utility easement line after construction in the area is completed.

Note A: See Concrete Channel Transition Details on Sheet No 35

COMMERCIAL STREET

FOUNDRY STREET

COMMERCE STREET

JEFFERSON STREET

WINDEMERE WAY

Reloc. 6" Water See Sheet No For Details

STA. 416+50 MATCH LINE TO SHEET NO. 40

STA. 521+50 MATCH LINE TO SHEET NO. 40

423+83.26 Commercial St. = 9+98.02 Commerce St.

P.C. 424+00.00

P.T. 427+41.00

Sta. 421+25
Reloc. F.H. 17' Lt. of ℄
New Bury Line
Elev. 233.50
Install New 6" Valve

Sta. 524+75± Rt.
Fill ex. Drainage Ditch & grade to drain to I-42
20' perpetual Storm Drain Easement

Ex. 4.2'x2.3' Conc. Box Culvert

10' temporary Construction Strip

Slope Easement

Sta. 526+67
Reloc. F.H. 17' Rt. of ℄
New Bury Line
Elev. 219.58
Install New 6" Valve

525+95.61 Foundry St.

Sod. Side Ditch w=1', d=9"
See Howard Co. Std. No. 6.12
3:1 Side Slopes

Hedge row not to be disturbed during const.

Remove exist. SW, regrade Area to meet new Sidewalk

Sta. 531+85
Reloc. F.H. 11' Rt. of ℄
New Bury Line
Elev. 244.52
Install New 6" Valve

529+55.30 Foundry St.
13+00.50 Commerce St.

Provide Curb Opening w/ 2'-6" Type C Inlet & 2'-6" Type STA Std. No. MD 740.01

63 L.F. Dead End Barricade Type C

Remove Bldg.

Construct Stone Outlet Structure across exist. channel. Use CL 6 Stone

Md SHA CL 6 Stone Rip-Rap Channel w=3', d=1'-6", t=18", for Details see Sht 35

530+80.50 Drainage Spur = 7+02.73 Jefferson St.

Sod Vee Ditch @ 2%, 3:1 Slopes

20' perpetual Storm Drain Easement

Temp. Slope Easement

50 L.F. Dead End Barricade Type C

STA. 7+50 MATCH LINE TO SHEET NO. 24

Transition new curb to match existing ℄ configuration in 10 ft.

10' Temp. Construction Strip. 20 L.F. Md. SHA Cl. 6 Rip-Rap

STA. 539+75 MATCH LINE - THIS SHEET

N 476500

E 849000

E 849500

N 476500

E 849500

N 78°57' 00" E

N 18°02' 51" W

N 26°40' 17" E

N 15°02' 45" E

N 23°08' 07" W

N 16°02' 51" W

N 41°08' 23" E

N 25°41' 38" W

N 8°01' 45" W

N 0°16' 11" W

N 0°32' 14" W

N 3°46' 32" W

N 34°54' 56" W

N 3°45' 54" W

N 7°34' 16" W

N 1°29' 31" W

N 11°19' 46" W

N 5°17' 09" W

N 5°52' 43" W

N 9°04' 54" W

STORM DRAIN STRUCTURE SCHEDULE

STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
M-12	B	0' Offset Sta. 417+17 Commercial St.	221.72	216.93
I-25	Std. WR	15' Lt. Sta. 417+28 Commercial St.	222.14	217.30
I-26	Std. WR	15' Lt. Sta. 418+59 Commercial St.	225.87	220.18
I-27	Std. WR	15' Lt. Sta. 419+92 Commercial St.	229.44	224.42
I-28	Std. WR	15' Lt. Sta. 421+31 Commercial St.	233.59	228.84
I-29	Std. WR	15' Lt. Sta. 422+62 Commercial St.	237.31	232.77
I-30	Std. WR	12.95' Lt. Sta. 424+00 Commercial St.	241.29	237.44
I-31	Std. WR	12' Lt. Sta. 424+56 Commercial St.	242.91	238.50
I-41	Dbl. S ①	6' Rt. Sta. 522+27 Foundry St.	200.80	195.35
I-42	Dbl. S ①	2' Rt. Sta. 524+50 Foundry St. Drainage Spur	207.00	202.00
I-43	Dbl. S ①	0' Offset Sta. 526+93 Foundry St. Drainage Spur	216.20	209.70
I-44	Dbl. S ①	8' Rt. Sta. 528+41 Foundry St. Drainage Spur	219.40	214.40
M-16	A-2	8' Rt. Sta. 530+11 Foundry St. Drainage Spur	232.82	219.96
I-45	Std. S	30' Rt. Sta. 530+78 Foundry St. Drainage Spur	225.24	222.00
I-46	A-5	15' Lt. Sta. 11+92.4 Commerce St.	231.18	226.67
I-47	A-5	15' Rt. Sta. 12+20.08 Commerce St.	230.92	227.48
M-17	C	3' Rt. Sta. 532+00 Foundry St. Drainage Spur	238.30	229.65
HW-2	A	1' Lt. Sta. 533+62 Foundry St. Drainage Spur		233.90
HW-3	A	6' Rt. Sta. 537+10 Foundry St. Drainage Spur		246.00
I-49	A-5	3.5' Rt. Sta. 6+98 Jefferson St.	260.74	253.59
M-18	A-3	5' Lt. Sta. 6+95 Jefferson St.	261.70	254.80

STORM DRAIN STRUCTURE SCHEDULE

STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
I-50	Std. S	29' Lt. Sta. 6+90 Jefferson St.	261.00	257.20
HW-4	A	166' from I-50 (In center exist. ditch)		263.30
M-19	A-3	28' Lt. Sta. 4+43 Jefferson St.	275.00	269.65
I-51	Std. S *	49' Lt. Sta. 4+31.5 Jefferson St.	275.10	272.25
I-52	Std. S *	58' Lt. Sta. 3+96 Jefferson St.	276.00	273.05
I-70	A-10	15' Rt. Sta. 522+25 Foundry St.	203.82	200.20
I-69	A-10	15' Rt. Sta. 524+00 Foundry St.	209.63	206.00
I-65	A-10	15' Rt. Sta. 526+10 Foundry St.	217.21	212.00
I-68	Std. S	25' Rt. Sta. 526+10 Foundry St.	215.90	212.30
I-66	A-10	15' Rt. Sta. 528+45 Foundry St.	226.69	223.35
I-67	A-10	15' Rt. Sta. 528+65 Foundry St.	227.60	224.00

① See SHA Std. MD-378.02 For Conc. Gutter Approach Details

* Std. Type S Inlet with Reticular Grate

STEP SCHEDULE

LOCATION	WIDTH	NO. RISERS
COMMERCIAL ST.		
Lt. 416+77	3.5'	1
Rt. 416+78	4'	6
Rt. 416+98	3'	7
Lt. 417+34	3'	5
Lt. 417+55	3'	3
Lt. 418+07	3'	3
Lt. 418+25	4'	2
Rt. 418+40	3'	6
Lt. 418+75	3'	2
Lt. 418+95	4.7'	3
Lt. 419+46	4'	7
Lt. 420+89	3'	6
Rt. 421+10	3'	4
Rt. 422+34	3.3'	5
Lt. 423+86	3'	3
Lt. 425+50	3'	5
FOUNDRY ST.		
Lt. 532+57	3'	3

COMMERCIAL ST. CURVE NO. 8 DATA
Δ = 1°42'18" Rt
Dc = 0°30'00"
R = 11,459.16'
T = 170.51
Lc = 341.00'
E = 1.27'

COMMERCIAL ST. LT. STA. 426+92±
Remove exist. inlet grate, extend inlet walls and construct Type "B" Manhole (Shallow) Top Slab, Frame and Cover.

COMMERCIAL ST. RT. STA. 427+00±
Extend exist. 18" RCCP 4 L.F. at 4.0%, install Conc. End Section and construct 5'x5' Md. S.H.A. Cl. 6 Stone Rip-Rap Apron (T=12"). See Cross Sections

Conc. Triangular Channel Rt. Sta. 530+14 To Sta. 530+87 Drainage Spur. 80 LF d=6" 3:1 Slopes, See Howard Co. Std. No. 6.11

NOTE: THE FOLLOWING IS NOT PART OF THIS CONTRACT

1. COMMERCIAL ST.-STA. 416+50 TO STA. 427+68+
2. COMMERCE ST.
3. FOUNDRY ST.-STA. 521+25 TO STA. 533+58+
4. FOUNDRY ST. DRAINAGE SPUR-STA. 523+50 TO STA. 536+50

FOR SEDIMENT CONTROL ONLY
SEE DWG. NO. 13 FOR ROADWAY & STORM DRAIN CONSTRUCTION DETAILS

CROSS REFERENCES

ITEM	SHEET NO.
Construction Stake-out Data	2 & 4
Commercial Street Profile	21
Foundry Street Profile	21
Commerce Street Profile	22
Storm Drain Profile	29 & 30
Sediment Control Details	44

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/3/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

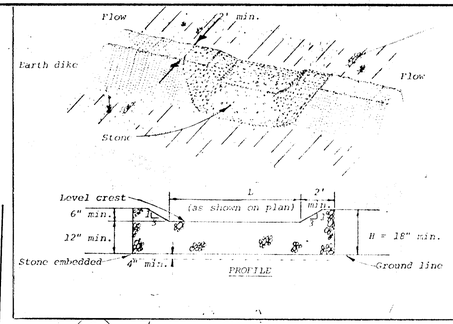
PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — HOWARD WILSON BALLARD — REGISTERED PROFESSIONAL ENGINEER

SEDIMENT CONTROL PLAN
COMMERCIAL ST. STA. 416+ TO STA. 427+
FOUNDRY ST. STA. 521 + TO STA. 533+
COMMERCE ST.

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 43 OF 59
SCALE: 1" = 50'
DESIGNED BY
DRAFTED BY
CHECKED BY



Construction Specifications

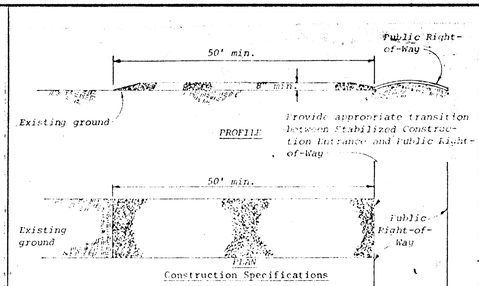
1. The stone shall be crushed stone. Gravel may be used if crushed stone is not available. The stone shall meet MSHA Size No. 2 or AASHTO designation M43, Size No. 2 or 24 or as specified on plans.
2. The crest of the stone dike shall be at least six inches lower than the lowest elevation of the top of the earth dike and shall be level.
3. The stone outlet structure shall be embedded into the soil a minimum of four inches.
4. The minimum length, in feet, of the crest of the stone outlet structure shall be equal to six times the number of acres of contributing drainage area.
5. The stone outlet structure shall be inspected after each rain, and the stone shall be replaced when the structure ceases to function as intended due to silt accumulation among the stone, washout, construction traffic damage, etc.

Standard Symbol SOS

L =

* Drainage area less than 5 acres

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE College Park, Md.	STONE OUTLET STRUCTURE	Standard Drawing SOS-1

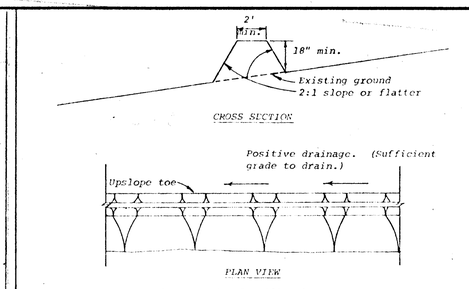


Construction Specifications

1. Stone size - Use MSHA size No. 2 (2-1/2" to 1") or AASHTO designation M43, size No. 2 (2-1/2" to 1-1/2"). Use crushed stone.
2. Length - As effective, but not less than 50 feet.
3. Thickness - Not less than eight (8) inches.
4. Width - Not less than full width of all points of ingress or egress.
5. Washing - When necessary, wheels shall be cleaned to remove sediment prior to entrance onto public right-of-way. When washing is required, it shall be done on an area stabilized with crushed stone which drains into an approved sediment trap or sediment basin. All sediment shall be prevented from entering any storm drain, ditch, or watercourse through use of sand bags, gravel, boards or other approved methods.
6. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.

Standard Symbol SCE

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE College Park, Md.	STABILIZED CONSTRUCTION ENTRANCE	Standard Drawing SCE-1



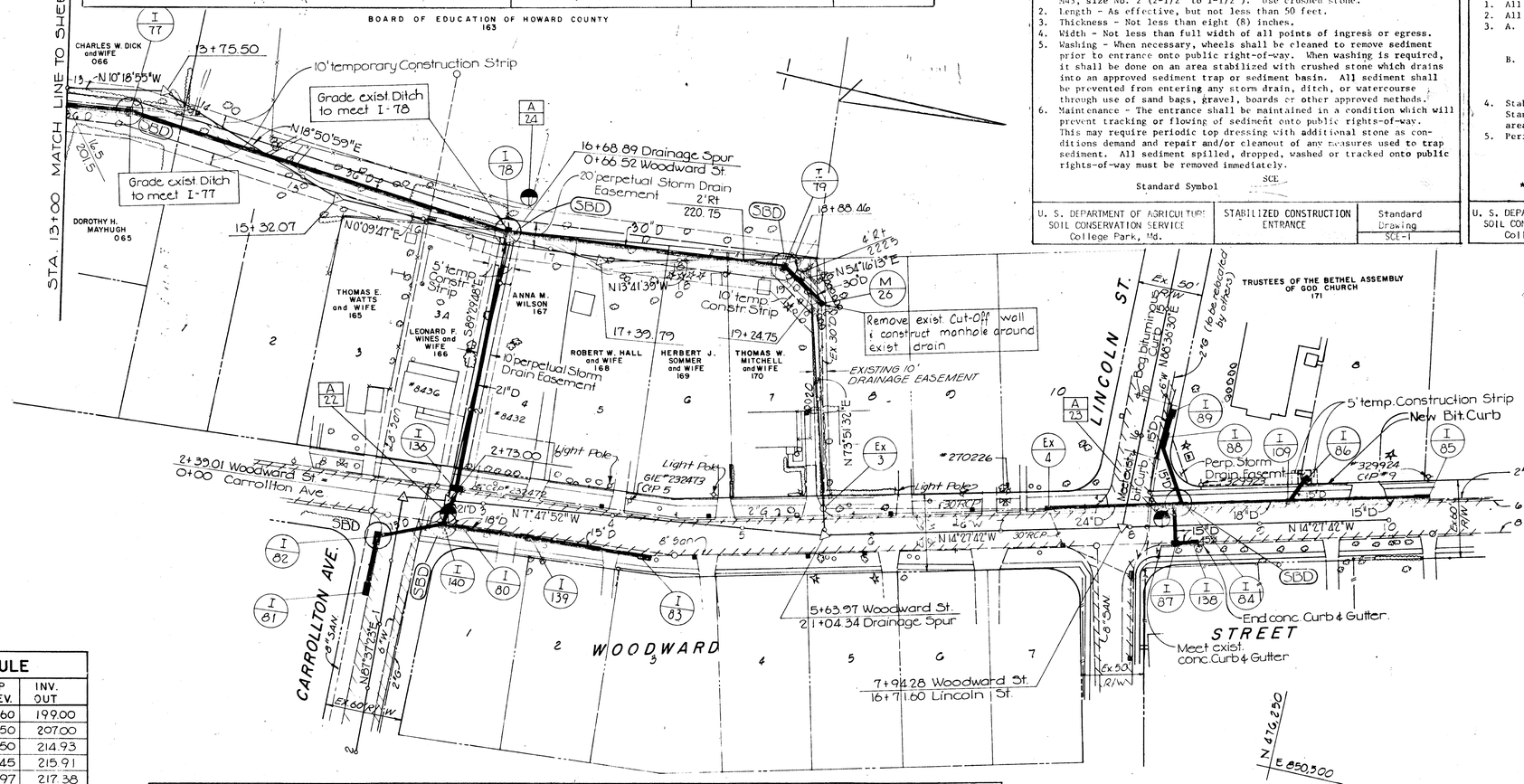
Construction Specifications

1. All dikes shall be machine compacted.
2. All perimeter dikes shall have positive drainage to an outlet.
3. A. Diverted runoff from a protected or stabilized upland area shall outlet directly onto an undisturbed stabilized area or into a level spreader or grade stabilization structure.
   B. Diverted runoff from a disturbed or exposed upland area shall be conveyed to a sediment trapping device such as sediment trap or a sediment basin or to an area protected by any of these practices.
4. Stabilization, when required, shall be done in accordance with Standard and Specifications for Grassed Waterway. The minimum area to be stabilized shall be the channel flow area.
5. Periodic inspection and required maintenance shall be provided.

Standard Symbol PD

* Drainage area less than 5 acres

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE College Park, Md.	PERIMETER DIKE	Standard Drawing PD-1

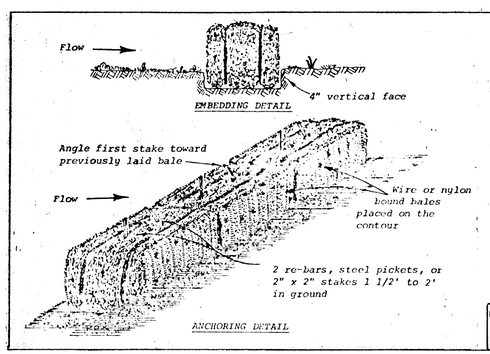


STORM DRAIN STRUCTURE SCHEDULE

STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
I-77	Dbl. S ①	17' Rt. Sta. 13+50 Woodward St. Drainage Spur	203.60	199.00
I-78	Dbl. S ①	5' Lt. Sta. 16+66 Woodward St. Drainage Spur	211.50	207.00
I-136	A-10	10' Lt. Sta. 2+80 Woodward St.	220.50	214.93
I-140	A-5	17' Rt. Sta. 2+70 Woodward St.	220.45	215.91
I-80	A-10	18' Rt. Sta. 2+85 Woodward St.	220.97	217.38
I-139	A-10w/Dfl.	22' Rt. Sta. 3+50 Woodward St.	223.23	219.64
I-83	A-10	28' Rt. Sta. 4+28 Woodward St.	225.93	222.59
I-82	A-10w/Dfl.	127' Rt. Sta. 0+36 Carrollton Ave.	220.22	216.70
I-81	A-10w/Dfl.	127' Rt. Sta. 0+75 Carrollton Ave.	223.06	219.50
I-79	Dbl. S ①	7' Rt. Sta. 18+80 Woodward St. Drainage Spur	222.10	218.00
M-26	B	7.8' Lt. Sta. 19+25.34 Woodward St. Drainage Spur	227.08	220.00
Ex 3	Ex. Inlet		230.11(T)	
Ex 4	Ex. Inlet	16.7' Lt. Sta. 7+37.18 Woodward St.	235.28 ft.	231.35
I-84	A-10w/Dfl.	132' Lt. Sta. 8+39 Woodward St.	242.92	233.41
I-87	Std. WR	152' Rt. Sta. 8+34 Woodward St.	242.38	238.35
I-138	Std. WR	15' Rt. Sta. 8+49 Woodward St.	243.43	239.26
I-88	A-10w/Dfl.	15' Lt. Sta. 16+00 Lincoln St.	243.06	239.31
I-89	A-5w/Dfl.	16.5' Lt. Sta. 15+80 Lincoln St.	243.87	240.11
I-109	A-5w/Dfl.	14.2' Lt. Sta. 9+25 Woodward St.	247.85	244.07
I-86	Std. S	Cor. Pkg. Lot 9+50 Woodward St.	249.26	245.73
I-85	A-10w/Dfl.	14' Lt. Sta. 10+25 Woodward St.	253.10	249.57

① See SHA Std Md 378.02 for Conc. Gutter Approach Details

* Std. Type S Inlet with Reticular Grate



Construction Specifications

1. Bales shall be placed in a row with ends tightly abutting the adjacent bales.
2. Each bale shall be embedded in the soil a minimum of 4".
3. Bales shall be securely anchored in place by stakes or re-bars driven through the bales. The first stake in each bale shall be angled toward previously laid bale to force bales together.
4. Inspection shall be frequent and repair or replacement shall be made promptly as needed.
5. Bales shall be removed when they have served their usefulness so as not to block or impede storm flow or drainage.

Standard Symbol SBD

* Drainage area less than 1/2 acre.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE College Park, Md.	STRAW BALE DIKE	Standard Drawing SBD-1

CROSS REFERENCES	
ITEM	
Storm Drain Profiles	33
Constr. Stake-out-Data	2

FOR SEDIMENT CONTROL ONLY
SEE DWG. NO. 14 FOR ROADWAY & STORM DRAIN CONSTRUCTION DETAILS

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 12/31/82 — CHIEF - BUREAU OF ENGINEERING — DATE

CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — ROBERT D. BALLARD — 4482 — PROFESSIONAL ENGINEER

SEDIMENT CONTROL PLAN
WOODWARD ST. AND CARROLLTON AVE. DRAINS

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 44 OF 59

SCALE: 1" = 50'

DESIGNED BY
DRAFTED BY
CHECKED BY

STEP SCHEDULE		
LOCATION	WIDTH	No. RISERS
RT. 12+63	3.5'	1
LT. 19+86	3.0'	2
LT. 20+68	3.5'	2
RT. 21+92	3.0'	4

STORM DRAIN STRUCTURE SCHEDULE				
STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
I-102	Std WR	15' Rt. Sta. 13+55 Savage Guilford Rd.	217.53	210.41
I-103	Std WR	15' Rt. Sta. 18+45 Savage Guilford Rd.	238.84	232.44
M-32	A-2	7' Rt. Sta. 19+90 Savage Guilford Rd.	247.29	241.36
I-105a	Std. WR	15' Rt. Sta. 23+25 Savage Guilford Rd.	264.92	259.16
I-106	Std WR	15' Lt. Sta. 23+25 Savage Guilford Rd.	264.92	260.89
I-108	A-10	15' Rt. Sta 10+55 Lincoln St.	248.70	244.70
I-102a	Std. WR	15' Lt. Sta. 13+68 Savage Guilford Rd.	217.91	214.35
I-106a	A-10	15' Lt. Sta. 20+55 Savage Guilford Rd.	251.62	248.19
I-105b	Std. WR	15' Rt. Sta. 20+50 Savage Guilford Rd.	251.32	241.75
I-100	Std. WR	15' Rt. Sta. 10+59.20 Savage Guilford Rd.	208.99	201.71
I-101	Std. WR	15' Lt. Sta. 10+59.50 Savage Guilford Rd.	208.99	202.48
M-31	A-2 M.H.	5' Lt. Sta. 222+49 Balto. St.	209.21	200.59

DRIVEWAY SCHEDULE			
LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
RT. 11+77	3	20'	15'
LT. 11+87	2	24'	8'
RT. 12+31	3	11'	9'
LT. 12+40	2	60	8'
RT. 13+15	2	20'	4'
RT. 14+79	2	35'	22'
LT. 14+97	2	12'	6'
LT. 15+38	2	19'	13'
RT. 15+97	3	10'	5'
RT. 16+20	2	12'	5'
LT. 17+84	3	14'	12'
RT. 17+92	2	10'	22'
RT. 18+25	2	10'	23'

DRIVEWAY SCHEDULE			
LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
LT. 18+85	1	10'	15'
LT. 19+48	2	11'	3'
LT. 20+11	2	24'	16'
RT. 21+45	2	36'	29'
LT. 22+22	2	14'	3'
LT. 22+45	3	20'	5'
RT. 22+65	2	10'	21'
LT. 23+65	2	32'	27'
RT. 23+68	2	10'	10'

B.M.- Howard County Monument 204.2001: 19' Rt. Sta. 21+59 & 5vy. Savage Guilford Rd. Elev. 259.56

Reloc. 8" Water See sht. no. 55 for details.

10+09.85 Savage Guilford Rd. 222+15.08 Baltimore St.

BALTIMORE STREET

B.M.- Howard Co Mon. #194.2003

N 5°31'52" W

24' Drive (By Others)

SAVAGE BEAUTY SHOP

BOURQUIN STORCH and WIFE (Cont'd. on Sht. No. II) 068

CONSTANCE L. MERSON and OTHERS 111

JAMES D. WILLIAMSON and WIFE 112

MARY HELEN REELEY, WIDOW 113

HOWARD M. BALDWIN AND WIFE PAUL W. GANOE and WIFE 114

WARREN E. WHEELER and WIFE 115

RALPH J. WALTER and WIFE (Cont'd on Sht No. 24) 116

PAUL W. GANOE ET AL (Cont'd. on Sht. No. II) 067

PAUL W. GANOE and WIFE 164

BOARD OF EDUCATION OF HOWARD COUNTY 163

8455 SCHOOL

NOTE: See sheet no. 41 for Baltimore St. plan

CURVE NO. 9 DATA
Δ = 7°04'57" Lt.
Dc = 2°00'00"
R = 2864.789'
T = 177.29'
L = 354.12'
E = 5.48'

CURVE NO. 10 DATA
Δ = 7°54'32" Lt.
Dc = 2°00'00"
R = 2864.789'
T = 198.04'
L = 395.45'
E = 6.84'

N 475,230 E 850,000

N 475,750

N 476,250 E 849,500

Sta 23+92 Reloc. F.H. 17' Lt. New Bury Line Elev. 267.18'

20+14.61 SAVAGE-GUILFORD= 10+04.47 LINCOLN ST. P.C. 20+84.04

Prop R/W

Curve #9

Curve #10

EXIST. ASPH.

EXIST. CONC. BLK'S RETAINING WALL

Sta 24+00 MATCH LINE TO SHEET NO. 46

SAVAGE - GUILFORD ROAD

THORA BEGHTOL and CHARLES E. FINAMORE 162

ALICE E. PHELPS and SISTER 161

THOMAS R. SCOTT and WIFE 160

RICHARD MILLS and WIFE 159

MARY LUCILLE SHERMAN 158

LIMIT OF WORK Sta. 11+00 Meet Existing Conditions

LINCOLN STREET

JOHN A. GRIMES and WIFE 157

CHARLES W. DICK and WIFE 156

R. PAUL REYNOLD and WIFE 155

WILLIAM A. LAMBERT and WIFE (Cont'd. on Sht. No. 24) 154

O.M.H. CO. MON #204.2001

Lt. Sta. 11+65± to Lt. Sta. 12+00± Exist. bldgs. to be removed by others

PVI Sta. 10+55 Elev. 208.45 V.C. = 50' Corr. = 0.29' H.S.D. = 1.07'

E PI + 24.68 Elev 208.95
℄ + 27.00 Elev 208.94
W PI + 29.12 Elev 208.88

Sta 10+03.35 Savage Guilford Rd. Sta 222+15.08 Baltimore St. Elev. 209.36

PVC Sta. 10+30.00 Elev. 208.90

Sump Sta 10+49.32 Elev. 208.73

PVT Sta 10+80.00 Elev 209.19

Profile Grade Line

EXIST. GROUND 35' RT OF ℄ EXIST. ROAD

EXIST. GROUND AT ℄ EXIST. ROAD

EXIST. GROUND 15' LT. OF ℄ EXIST. ROAD

PVC Sta. 15+25.00 Elev. 222.29

PVI Sta. 16+25 Elev. 225.24 V.C. = 200' Corr. = 0.783' H.S.D. = 3.71'

PVT Sta. 17+25.00 Elev. 231.32

EXIST. 8"W

EXIST. 8"SAN.

EXIST. 8"G

2.916%

1.008%

6.08%

3.08%

208.73	209.78	211.25	212.72	214.19	215.67	217.14	218.61	220.08	221.54	223.08	224.94	227.20	229.85	232.84	235.88	238.92	241.96
11	12	13	14	15	16	17	18	19									

PVI Sta. 22+25 Elev. 261.72 V.C. = 300' Corr. = 1.125' S.S.D. = 3.83'

PVT Sta. 23+75.00 Elev. 266.34

Sta. 20+14.61 Savage Guilford Rd. Sta 10+04.47 Lincoln St. Elev. 248.88

PVC Sta. 20+75.00 Elev. 252.60

241.96	245.00	248.04	251.08	254.09	256.88	259.42
19	20	21	22			

241.71	243.75	245.54	247.11
23			24

CROSS REFERENCES	
ITEM	SHEET NO.
℄ Const. Stake-out Data	4
Storm Drain Profiles	34
Lincoln St. Profile	22
Sediment Control Details	44

FOR SEDIMENT CONTROL ONLY
SEE DWG. NO. 23 FOR ROADWAY & STORM DRAIN CONSTRUCTION DETAILS

NO	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE 1-3-83
CHIEF - BUREAU OF ENGINEERING — DATE 12/21/82
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — VINCENT T. HELM — No. 12858 — REGISTERED PROFESSIONAL ENGINEER

SEDIMENT CONTROL PLAN AND PROFILE
SAVAGE - GUILFORD RD.
STA. 10+ TO STA. 24+

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 45 OF 59

SCALE: HORZ. 1"=50' VERT. 1"= 5'

DESIGNED BY
DRAFTED BY
CHECKED BY

B.M.#14: ▫ cut on edge of sidewalk on Northeast corner of Savage Guilford Rd at Madison St. Elev. 281.735

B.M.-Howard County Monument 2042002: 17' Lt. Sta. 29+32.2± & 5vy. Savage Guilford Rd Elev. 277.447

STORM DRAIN STRUCTURE SCHEDULE

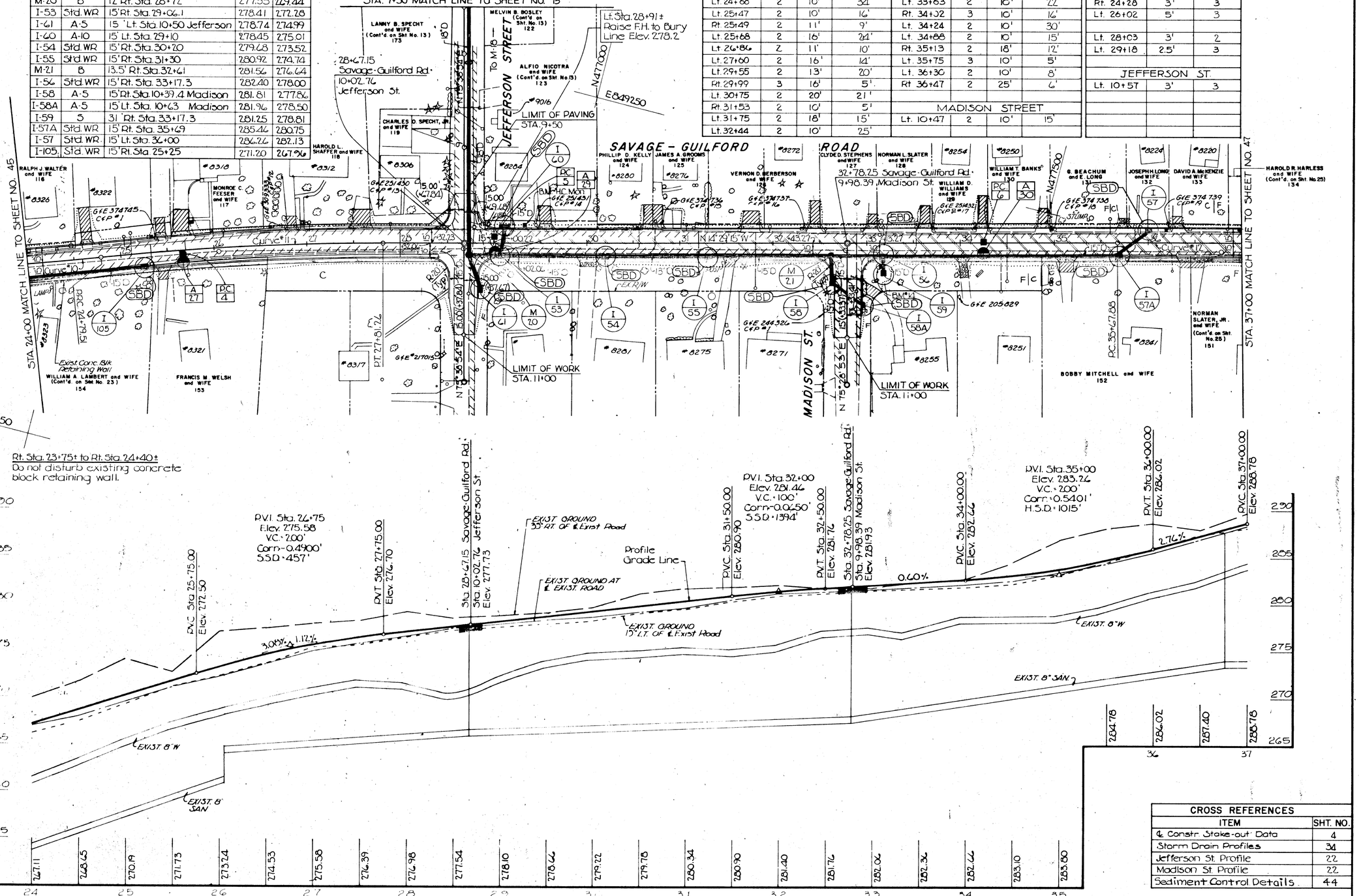
STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
M-20	B	12' Rt. Sta. 28+72	277.55	269.44
I-53	Std. WR	15' Rt. Sta. 29+06.1	278.41	272.28
I-61	A-5	15' Lt. Sta. 10+50 Jefferson	278.74	274.99
I-60	A-10	15' Lt. Sta. 29+10	278.45	275.01
I-54	Std. WR	15' Rt. Sta. 30+20	279.68	273.52
I-55	Std. WR	15' Rt. Sta. 31+30	280.92	274.74
M-21	B	13.5' Rt. Sta. 32+61	281.56	276.64
I-56	Std. WR	15' Rt. Sta. 33+17.3	282.40	278.00
I-58	A-5	15' Rt. Sta. 10+39.4 Madison	281.81	277.86
I-58A	A-5	15' Lt. Sta. 10+63 Madison	281.96	278.50
I-59	S	31' Rt. Sta. 33+17.3	281.25	278.81
I-57A	Std. WR	15' Rt. Sta. 35+69	285.46	280.75
I-57	Std. WR	15' Lt. Sta. 34+00	284.24	282.13
I-105	Std. WR	15' Rt. Sta. 25+25	271.20	267.96

DRIVEWAY SCHEDULE

LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN	LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
SAVAGE-GUILFORD RD.				Lt. 33+04	2	10'	9'
Lt. 24+68	2	10'	34'	Lt. 33+63	2	10'	22'
Lt. 25+47	2	10'	16'	Rt. 34+02	3	10'	14'
Rt. 25+49	2	11'	9'	Lt. 34+24	2	10'	30'
Lt. 25+68	2	16'	24'	Lt. 34+88	2	10'	15'
Lt. 26+84	2	11'	10'	Rt. 35+13	2	18'	12'
Lt. 27+60	2	16'	14'	Lt. 35+75	3	10'	5'
Lt. 29+55	2	13'	20'	Lt. 36+30	2	10'	8'
Rt. 29+99	3	16'	5'	Rt. 36+47	2	25'	6'
Lt. 30+75	2	20'	21'				
Rt. 31+53	2	10'	5'	MADISON STREET			
Lt. 31+75	2	18'	15'	Lt. 10+47	2	10'	15'
Lt. 32+44	2	10'	25'				

STEP SCHEDULE

LOCATION	WIDTH	NO. RISERS
SAVAGE-GUILFORD RD.		
Rt. 24+28	3'	3
Lt. 26+02	5'	3
Lt. 28+03	3'	2
Lt. 29+18	2.5'	3
JEFFERSON ST.		
Lt. 10+57	3'	3



CURVE NO. 10 DATA
Δ = 7°54'32.3" Lt.
Dc = 2°00'00"
R = 2864.789'
T = 198.04'
L = 395.45'
E = 6.84'

CURVE NO. 11 DATA
Δ = 6°02'04" Rt.
Dc = 2°00'00"
R = 2864.789'
T = 151.02'
L = 301.75'
E = 3.98'

CURVE NO. 12 DATA
Δ = 1°01'18" Rt.
Dc = 0°30'00"
R = 11,459.156'
T = 102.18'
L = 204.36'
E = 0.46'

CROSS REFERENCES

ITEM	SHT. NO.
℄ Constr. Stake-out Data	4
Storm Drain Profiles	34
Jefferson St. Profile	22
Madison St. Profile	22
Sediment Control Details	44

FOR SEDIMENT CONTROL ONLY
SEE DWG. NO. 24 FOR ROADWAY & STORM DRAIN CONSTRUCTION DETAILS

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE 3-2-82
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12-29-82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — VIRGINIA WEST — REGISTERED PROFESSIONAL ENGINEER

SEDIMENT CONTROL PLAN AND PROFILE
SAVAGE-GUILFORD RD.
STA. 24+ TO STA. 37+

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 46 OF 59
SCALE: HORZ. 1"=50' VERT. 1"= 5'
DESIGNED BY
DRAFTED BY
CHECKED BY

CURVE NO. 12 DATA
Δ = 1°01' 15.5"
Dc = 0°30'00"
R = 11459.156'
T = 102.18'
L = 204.36'
E = 0.46'

STORM DRAIN STRUCTURE SCHEDULE

STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
I-128	A-10	15' Rt. Sta. 44+66 Sav.-Guil. Rd.	285.87	279.40
I-129	A-5	15' Lt. Sta. 44+56 Sav.-Guil. Rd.	285.86	281.75
ES-8	End Section	See Plan	–	249.00
I-131	A-10	15' Lt. Sta. 43+40 Sav.-Guil. Rd.	286.28	282.72
M-42	A-3	See Plan	285.1±	281.14
I-137	Std. 5	25' Lt. Sta. 45+50 Sav.-Guil. Rd.	284.50	282.00
I-136a	A-10	15' Lt. Sta. 41+50 Sav.-Guil. Rd.	290.59	286.92
I-137a	A-5	See Plan	289.18	285.54

STEP SCHEDULE

LOCATION	WIDTH	RISERS
Lt. 47+76±	3'	3

DRIVEWAY SCHEDULE

LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
Lt. 37+45±	2	10'	13'
Lt. 38+48±	2	10'	11'
Rt. 37+91±	2	10'	2'
Rt. 38+35±	3	12'	14'
Rt. 39+69±	2	24'	14'
Rt. 40+59±	3	16'	13'
Rt. 40+98±	2	16'	17'
Rt. 42+42±	2	12'	15'
Lt. 43+03±	2	12'	2'
Rt. 43+77±	2	12'	5'
Rt. 45+77±	2	10'	26'
Rt. 45+91±	2	10'	24'
Rt. 46+90±	2	12'	14'
Rt. 47+74±	2	18'	9'
Lt. 47+29±	2	10'	24'

BM-Howard County Monument 204.2003:
20' Rt. Sta. 38+54± Savage Guilford Rd.
Elev. 291.824

BM-Howard County Monument 204.2004:
18' Rt. Sta. 49+20± Savage Guilford Rd.
Elev. 288.845

LIMIT OF WORK
MEET EXISTING CONDITIONS
STA. 48+60 SAVAGE GUILFORD RD.
CAPITAL PROJ. NO. J-4-4008

135 L.F. Conc. Side Ditch (Std. 6.12) W=2', d=9" 4:1 Side Slopes

Sta 39+50 Reloc. F.H. 20' Lt. New Bury Line Elev. 291.79

Sta 45+08± Do not disturb exist. F.H. Raise F.H. valve box to Elev. 286.0

Exercise extreme caution in excavating around existing shrubs

10' perpetual Storm Drain Easement

10' temporary Construction Strip

Perpetual Storm Drain Easement

Prop. R/W

48+65.14 Savage-Guilford Rd. = 9+98.79 Vollmerhausen Rd.

Sta 50+50 Match Line See Sht. No. 48

Match Line A-A This Sheet

10' Perpetual Storm Drain Easement

10' Temporary Constr. Strip

25 L.F. Md. SHA Cl. 6 Riprap Channel W=2', d=1', t=18"

See Dwg. No. 25 for revised outfall. Construct Stone Outlet Structure at pipe outfall. Use Md. SHA Cl. 6 Stone

HAROLD R. HARLESS and WIFE 134 · JOHN W. HITT and WIFE 135 · BOARD OF EDUCATION OF HOWARD COUNTY 137 · LOUIS E. KEENEY and WIFE 136 · FRED MICHEL and WIFE 139 · ARTHUR K. ARBER and WIFE 138 · NORMAN SLATER, JR. and WIFE (Cont'd. on Sht. No. 24) 151 · JAMES D. GRUBB and WIFE 150 · RAYMOND E. WHITE and WIFE 149 · MARY L. SHERMAN 148 · FRANCIS R. DeCHEUBEL and WIFE 147 · ELMER L. JESS and MOTHER 146 · LARRY D. WEBSTER and WIFE 145 · ANDREW R. GABOR and WIFE 144 · HELEN M. TRIPLETT and HUSBAND 143 · RAYMOND T. CURLEY and WIFE 142

SAVAGE - GUILFORD ROAD

VOLLMERHAUSEN ROAD

STA 37+00 MATCH LINE TO SHEET NO 46

PVI Sta. 38+25 Elev. 292.23 V.C. = 250' Corr. = +1.0375' S.S.D. = 336'

PVI Sta. 41+75 Elev. 290.27 V.C. = 100' Corr. = -0.2350' S.S.D. = 456'

PVI Sta. 44+50 Elev. 283.54 V.C. = 350' Corr. = 2.0450' H.S.D. = 335'

PVI Sta. 47+25 Elev. 289.83 V.C. = 200' Corr. = -0.7500' S.S.D. = 333'

PVC Sta. 37+00.00 Elev. 288.78 · H.P. Sta. 39+07.83 Elev. 291.65 · PVT Sta. 39+50.00 Elev. 291.53 · EXIST. GROUND AT ℄ EXIST. ROAD · PVC Sta. 41+25.00 Elev. 290.55 · PVT Sta. 42+25.00 Elev. 289.05 · PVC Sta. 42+75.00 Elev. 287.83 · EXIST. GROUND 30' LT OF ℄ EXIST. RD · Sump Sta. 44+55.93 Elev. 285.62 · PVRC Sta. 44+25.00 Elev. 287.55 · H.P. Sta. 47+77.00 Elev. 289.28 · PVT Sta. 48+25.00 Elev. 289.11

Profile Grade Line

LIMIT OF WORK
MEET EXISTING CONDITIONS
STA. 48+60 SAVAGE GUILFORD RD.
CAPITAL PROJ. NO. J-4-4008
ELEV. 288.9±

37	38	39	40	41	42	43	44	45	46	47	48	49
288.78	289.99	290.86	291.43	291.64	291.53	291.25	290.97	290.69	290.35	289.90	286.44	287.26	286.36	285.83	285.63	285.75	286.22	287.02	288.07	288.84	289.23	289.24	288.93

CROSS REFERENCES

ITEM	SHEET NO
℄ Constr. Stake-out Data	4
Storm Drain Profiles	35
Sediment Control Details	44

FOR SEDIMENT CONTROL ONLY
SEE DWG. NO. 25 FOR ROADWAY & STORM DRAIN CONSTRUCTION DETAILS

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE 1-3-83
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND · WILSON T. BALLARD · REGISTERED PROFESSIONAL ENGINEER

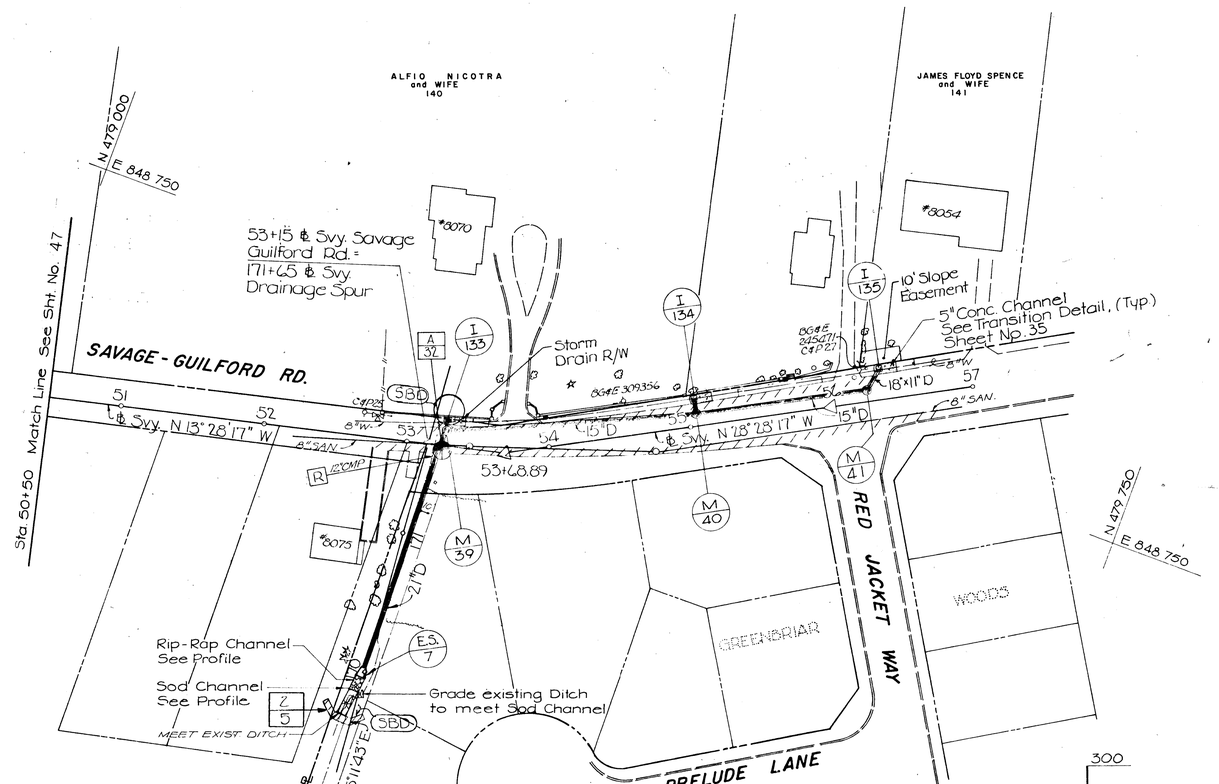
SEDIMENT CONTROL PLAN AND PROFILE
SAVAGE - GUILFORD RD.
STA. 37+ TO STA. 50+

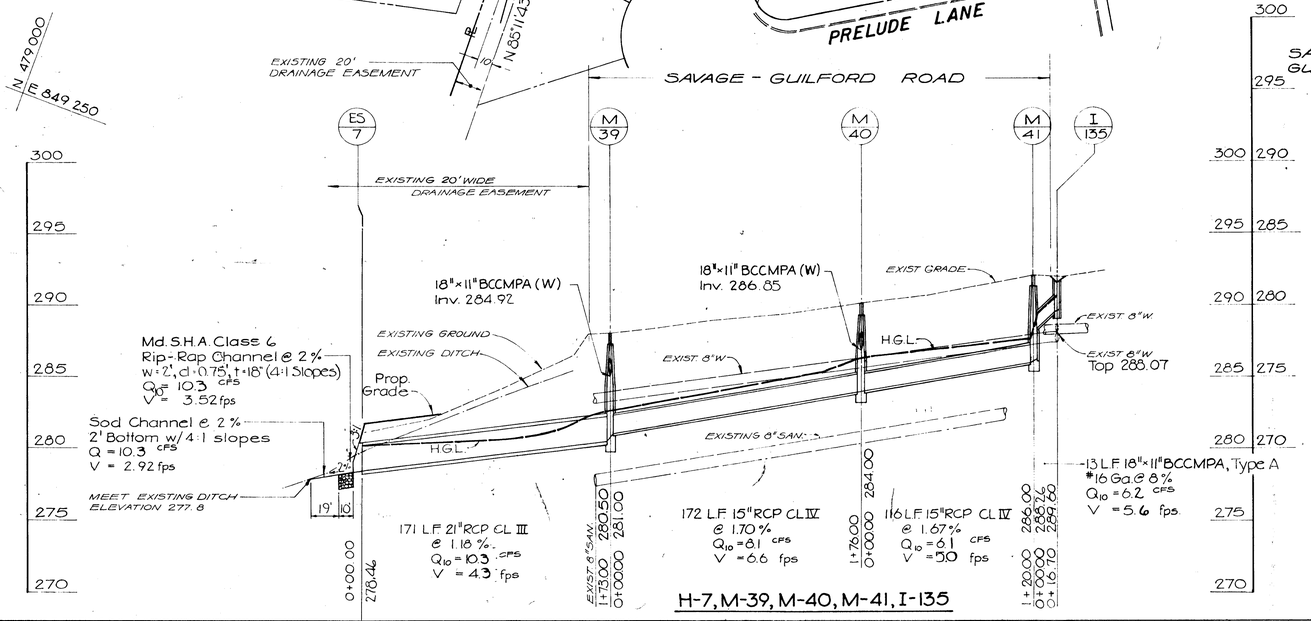
SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 47 OF 59
SCALE: HORZ. 1"=50' VERT. 1"= 5'
DESIGNED BY · DRAFTED BY · CHECKED BY

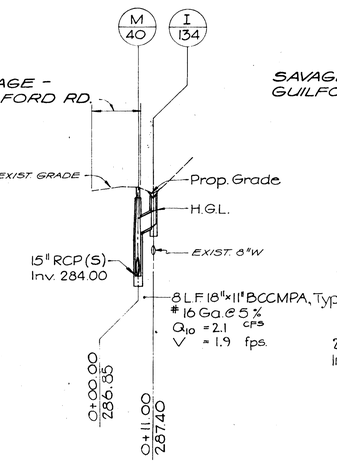
STORM DRAIN STRUCTURE SCHEDULE				
STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
I-133	Type S*	18' Lt. Sta. 53+29 S-G ℄ Svy.	287.40	285.40
I-134	Type S*	20' Lt Sta. 55+05 S-G ℄ Svy.	289.40	287.40
I-135	Type S*	21' Lt Sta. 56+36 S-G ℄ Svy.	291.60	289.60
M-39	A-2	9' Lt Sta. 53+26 S-G ℄ Svy.	288.06	280.50
M-40	A-2	9' Lt Sta. 55+05 S-G ℄ Svy.	290.15	284.00
M-41	A-2	7' Lt/Sta. 56+25 S-G ℄ Svy.	292.08	286.00
E.S.-7	End Section	2' Lt Sta. 170+03 Drainage Spur ℄ Svy.	281.50	278.46

* Standard Type S Inlet with reticular Grate.

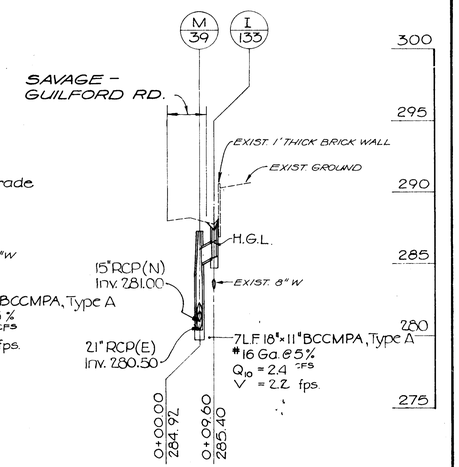




H-7, M-39, M-40, M-41, I-135



M-40, I-134



M-39, I-133

NOTE:
Construct 6 inch minimum thickness no. 6 stone foundation for inlets I-133, I-134 and I-135.

NOTE: See Dwg 44 for Sediment Control Details.

FOR SEDIMENT CONTROL ONLY
SEE DWG. NO. 26 FOR ROADWAY & STORM DRAIN CONSTRUCTION DETAILS

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — REGISTERED PROFESSIONAL ENGINEER

SEDIMENT CONTROL PLAN
SAVAGE— GUILFORD RD.
STA. 50+ TO STA. 56+

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 48 OF 59
SCALE: HORZ. 1"=50' VERT. 1"= 5'
DESIGNED BY
DRAFTED BY
CHECKED BY

GENERAL NOTES

PARTS I, II & III

PART I - GENERAL

1. Approximate location of existing mains are shown. The contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted supply. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer, at the Contractor's expense.
2. All horizontal controls are based on Maryland State Coordinates.
3. All vertical controls are based on U.S.G.S. Datum.
4. All pipe elevations shown are invert elevations.
5. Clear all utilities by a minimum of 6". Clear all poles by 2'-0" minimum or tunnel as required. Any cost incurred to the contractor for tunneling or bracing at poles shall be included in unit prices bid for excavation and backfill.
6. For details not shown on the drawings use Howard County Standard Details.
7. For materials and construction methods use Howard County Standard Specifications.
8. Contractor shall locate existing utilities a minimum of two (2) weeks in advance of construction operations in the vicinity of proposed utilities at his own expense.
9. Contractor shall notify the following utilities or agencies at least five (5) working days before starting work shown on these plans:
   - State Highway Administration - 531-5533
   - Baltimore Gas & Electric Company - Underground Electric Distribution Customer Service - 685-0123
   - Baltimore Gas & Electric Company - Underground Gas Distribution Customer Service - 685-0123
   - Engineering - "Damage Control" - 234-5621
   - "Miss Utility" - 1-559-0100
   - Chesapeake & Potomac (C&P) Telephone Company - 725-9976
   - American Telephone and Telegraph - Cable Location Division - 393-3553
   - Colonial Pipeline Company - 781-4641
   - Bureau of Utilities Howard County - 992-2366
10. Trees are to be protected from damage to maximum extent. Trees located within the construction strip are not to be removed or damaged by the contractor.
11. Contractor shall remove trees, stumps and roots along line of excavation as directed by the Engineer. Payment for such removal shall be included in the unit price bid for excavation and backfill.
12. Place regulation "Men Working" and warning signs as required to comply with Maryland State Highway Administration Manual of Traffic Control for Highway Construction and Maintenance Operations.

PART II - WATER

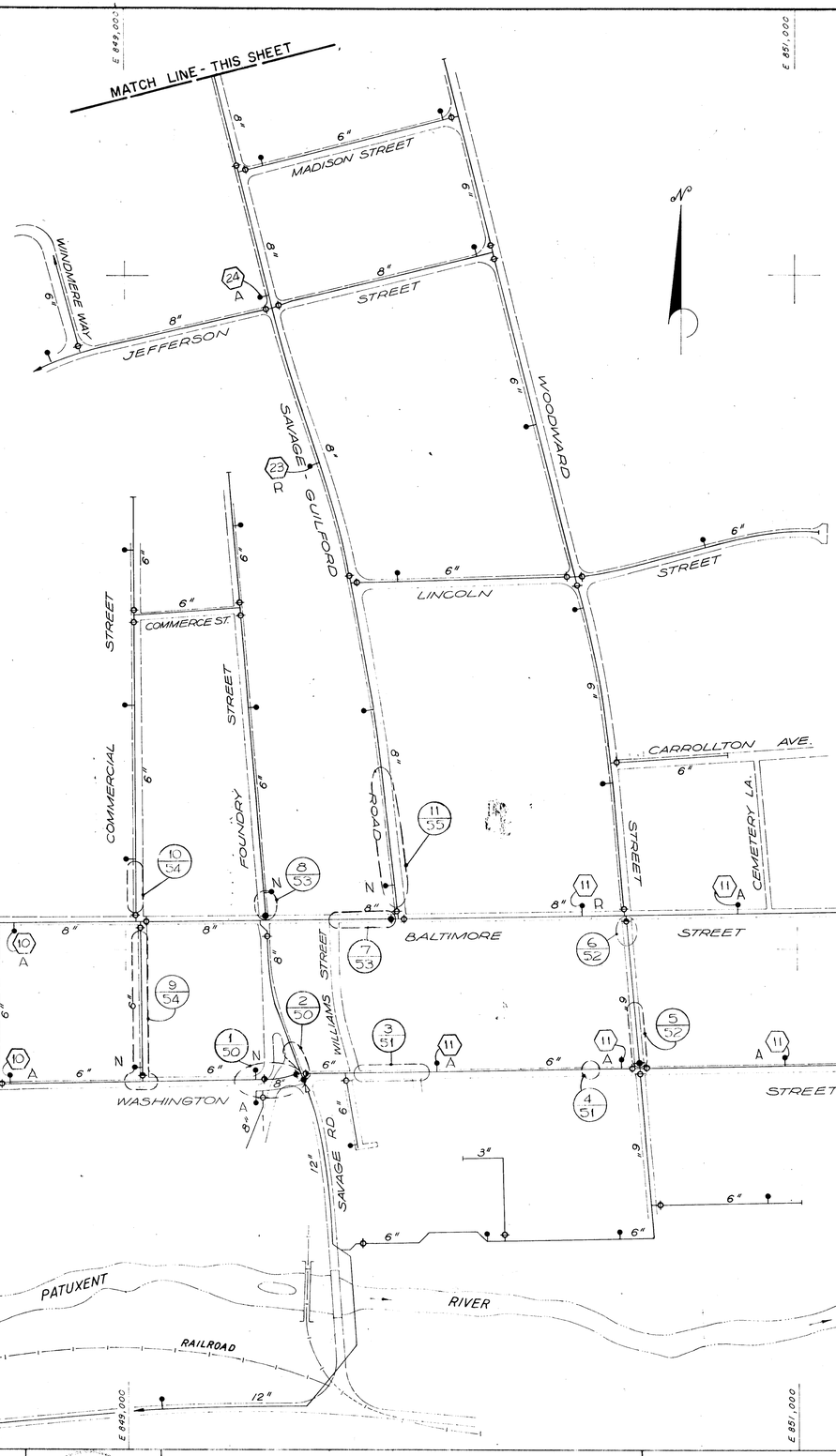
1. All water mains to be C.I.P. or D.I.P. unless otherwise noted.
2. Top of all water mains to have a minimum of 3-1/2' cover unless otherwise noted.
3. Valves adjacent to tees shall be strapped to tees.
4. Block all fittings with concrete. Anchors and buttresses are to be high early strength concrete.
5. Bury line elevations on fire hydrants shall be set to the elevations shown on the drawings. All fire hydrants shall be strapped and buttressed with concrete in accordance with standard details. Soil around the fire hydrants to be compacted in accordance with Section 37.01-3 of the Standard Specifications.
6. All water house connections shall be for the existing type meter setting.
7. All water house connections are to be 3/4" unless otherwise indicated on the plans.
8. The contractor shall not operate any water main valves on the existing system. The Bureau of Utilities will operate the water main valves.

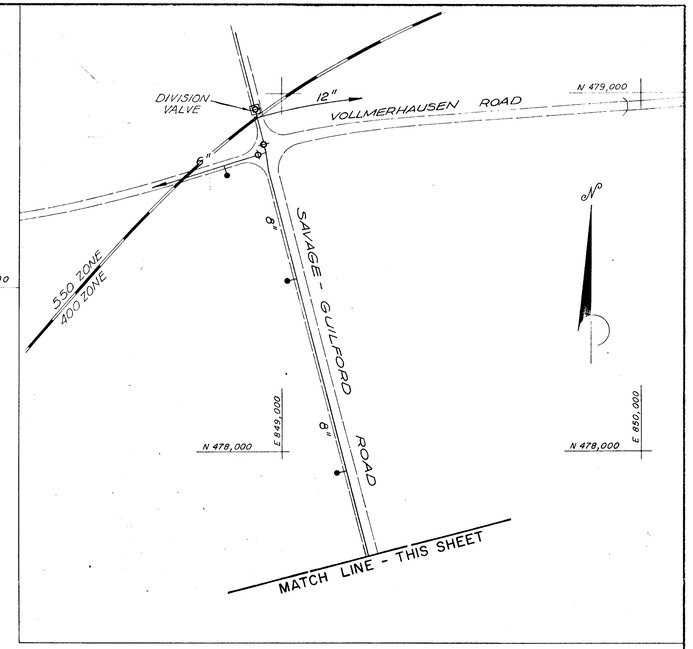
PART III - SEWER

1. All sewer mains shall be D.I.P. unless otherwise noted.
2. The contractor shall provide a joint in all sewer mains within 2'-0" of exterior manhole wall.
3. All manholes shall be 4'-0" inside diameter, unless otherwise noted.

KEY PLAN LEGEND

- 6" — Existing Water Main and Size
- — Existing Water Valve
- — Existing Fire Hydrant
- 10/54 — Water Relocation No. / Plan Sheet No.
- — Approximate Limits of Relocation
- — Temporary Cap and Buttress where indicated on Utility Relocation Plan
- 24 — Existing Fire Hydrant to be adjusted as shown on the referenced Plan Sheet Number
- A — Adjust Fire Hydrant in place to new grade
- R — Relocate Fire Hydrant
- N — Install new Fire Hydrant
- — New Water Valve
- — Replace existing valve with new valve





LEGEND UTILITY RELOCATION PLANS

- 6"W — Existing Utility
- # # # — Existing Abandoned Utility
- X X X — Existing Utility to be Abandoned by work under this Contract
- RELOC. 8"W — Proposed Relocated Utility
- — Temporary Cap and Split Buttress
- — Temporary Cap and Blocking against exist. pipe

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — 12/30/82 — DATE
CHIEF, UTILITY DIVISION — DATE
CHIEF BUREAU OF UTILITIES — DATE

PREPARED BY:
THE WILSON T BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

WATER AND SEWER MAIN RELOCATIONS

UTILITY RELOCATION KEY PLAN

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 49 OF 59

SCALE 1"=200'

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DRAFTED BY
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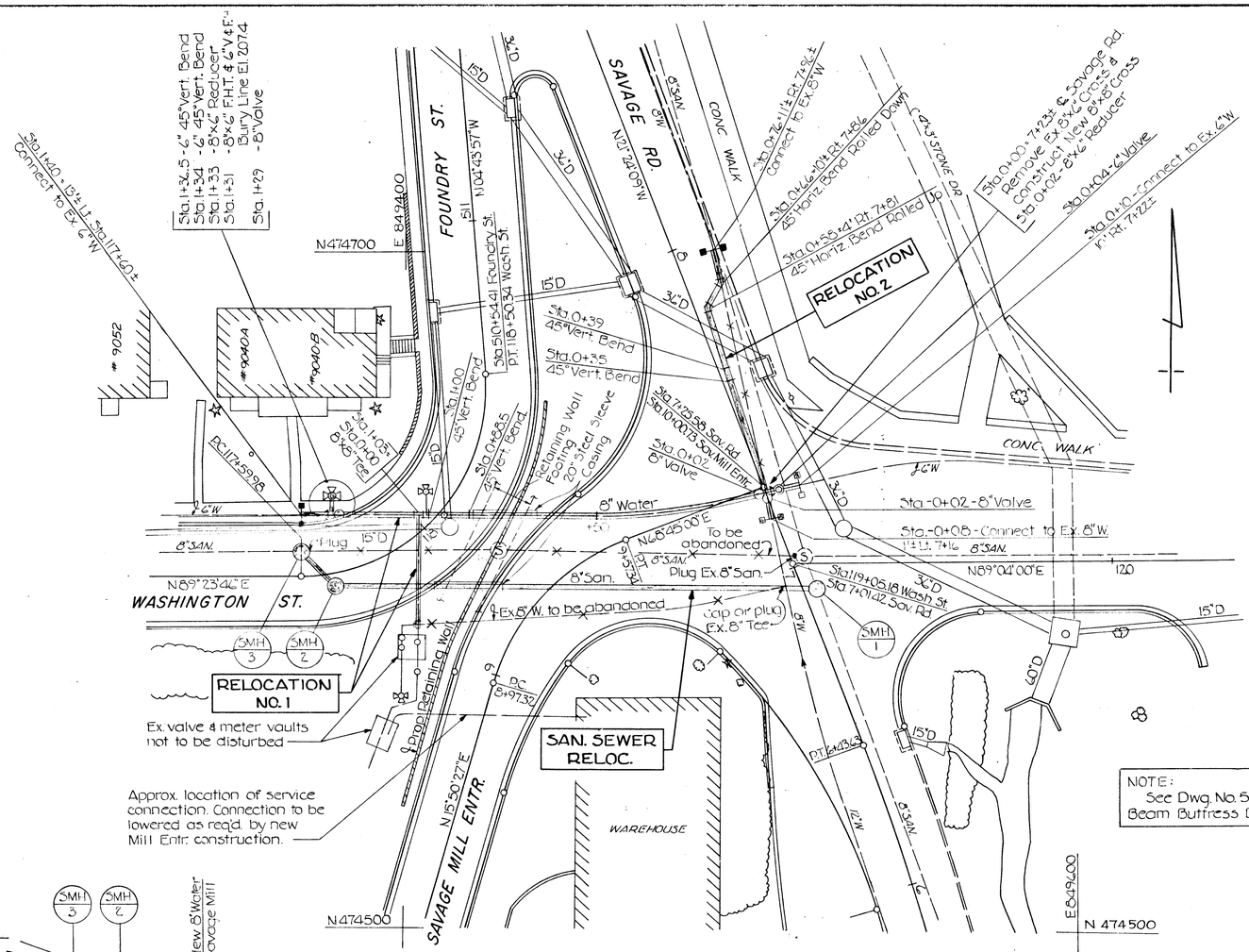
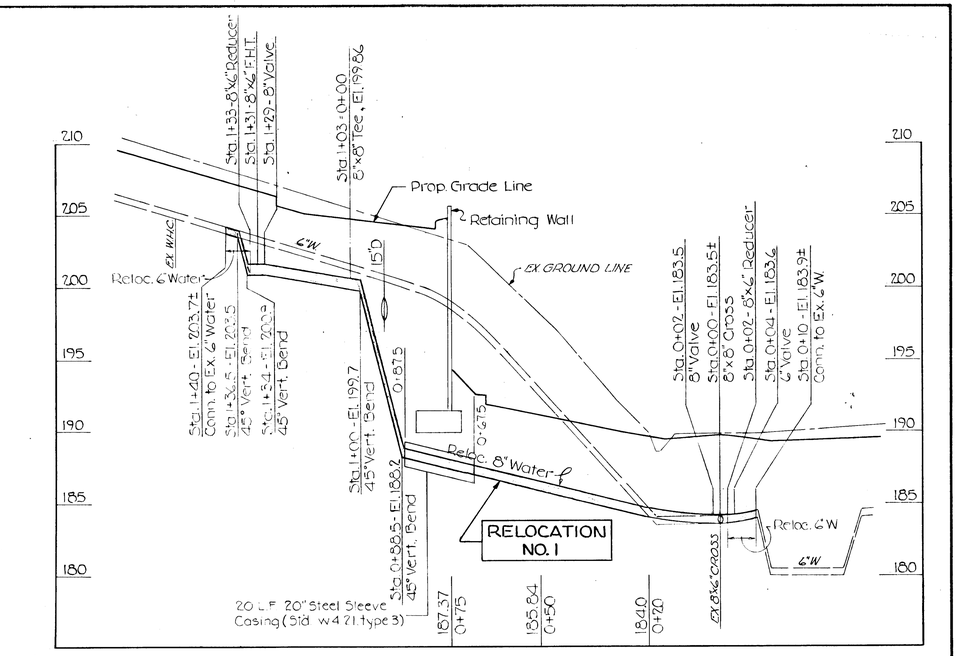
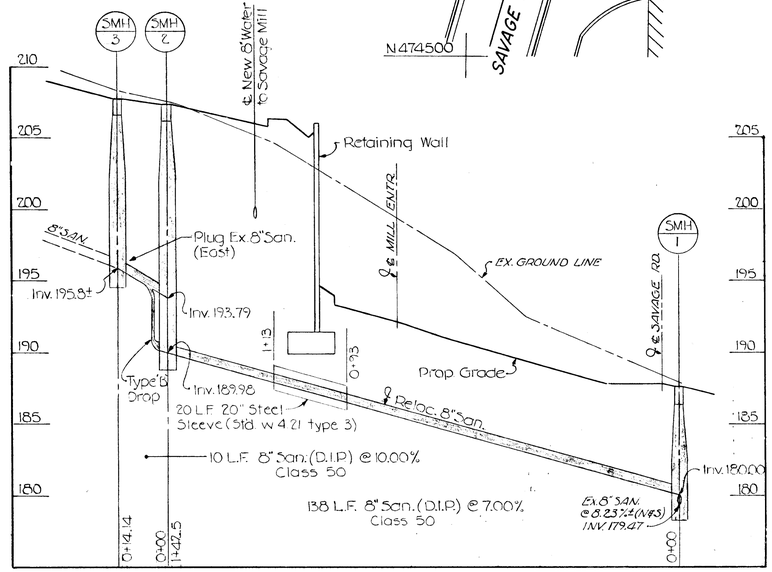
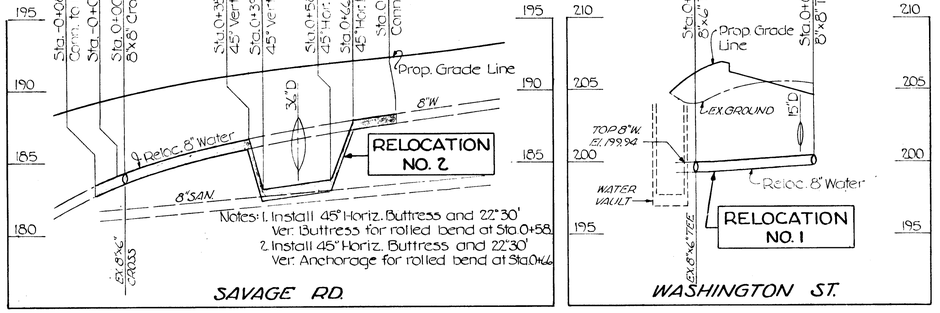




WASHINGTON ST. TO SAVAGE RD.



SANITARY SEWER RELOCATION (WASHINGTON ST. TO SAVAGE RD.)



SAVAGE RD.

WASHINGTON ST.

SANITARY SEWER STRUCTURE SCHEDULE

STRUC. NO.	TYPE	LOCATION	TOP ELEV.	INV. OUT
SMH-1	Howard Co. Std. G5.14	4'± Rt. Sta. 6+91.2 Savage Rd.	187.73	179.47
SMH-2	Howard Co. Std. S1.32	3.5' Rt. Sta. 117+70 Wash. St.	207.29	189.95
SMH-3	Howard Co. Std. G5.14	7'± Lt. Sta. 117+40 Wash. St.	207.70	195.80

WATER RELOCATION NO. 1 & NO. 2

The following work shall be preformed with a sufficient number of personnel so as to limit the out of service time of the existing mains to 8 hours maximum.

1. Install temporary split buttress on the existing mains at the following locations leaving the existing mains inservice
   a) Lt. Sta. 7+15 Savage Rd.
   b) 10 feet Rt. Sta. 7+22 Savage Rd. (Wash. St. main)
   c) Rt. Sta. 7+96 Savage Rd.
   d) Lt. Sta. 117+60 Washington St.
2. Close the following valves:
   a) Commercial St. North of Washington St.
   b) Washington St. East of Fair St.
   c) Washington St. West of Woodward St.
   d) 12 In. valve in Gorman Rd. approx. 1200' West of Savage Rd.
   e) Foundry St. South of Baltimore St.
   f) River Island East of Savage Rd.
3. Cap the existing mains in the order listed for Step 1 and return the associated main to service.
4. Construct the relocated water main and appurtenances for Savage Rd., Washington St. east of Savage Rd. and the new valve Washington St. west of Savage Rd. Cap the new valve for Washington St. west and tie to the 8"x8" cross.
5. Close valves "c", "d", "e", & "f" listed under Step 2.

SUGGESTED SEQUENCE OF CONSTRUCTION.

WATER RELOCATION NO. 1 & NO. 2 CON'T.

6. Connect new mains to the existing mains and return main to service.
7. Construct the relocated mains for Washington St. west of Savage Rd. and the new service connection for Savage Mill.
8. Close valves "a" and "b" listed in Step 2 and the new valve west of the cross in Savage Rd. and make connection for the new main.
9. Open valves "a" and "b" and close the new valve at Washington St. water main Sta. 1+29.
10. Close the 12" valve in Gorman Rd., River Island Entrance valve and the new valve in Savage Rd. south of the Washington St. main.
11. Complete installation of the new service main to Savage Mill. Cap and buttress existing 8 inch tee branch 6'± Lt. Sta. 6+96 Savage Rd. and tie cap to tee.
12. Open all valves and return all mains to service.

SANITARY SEWER RELOCATION

1. Construct SMH-1 around existing 8" Sanitary Line.
2. Lay 8" Sewer Pipe to SMH-2 and construct SMH-2.
3. Lay 8" Sewer Pipe to SMH-3 and construct SMH-3 around the existing 8" Sanitary Line.
4. Breakaway the top half of the existing 8" Sanitary Line in SMH-1.
5. Shut off water service for Washington St. west of Foundry St.
6. Adjust Channel in SMH-3 to direct flow to reloc. 8" Sanitary Line and plug existing 8" outlet in east side of SMH-3.
7. Return water service.
8. Plug existing 8" main in the west side of existing Sanitary MH at Sta. 7+02± 4' Rt. Savage Rd.

QUANTITIES			
ITEM	ESTIMATED	'AS BUILT'	SUPPLIER
6 in. Water	21 L.F.		
8 in. Water	260 L.F.		
6 in. 45° Bend	2 ea.		
8 in. 45° Bend	6 ea.		
8 in. x 6 in. Tee	2 ea.		
8 in. x 8 in. Tee	1 ea.		
8 in. x 8 in. Cross	1 ea.		

20" STEEL CASING PIPE	40 L.F.		
QUANTITIES			
ITEM	ESTIMATED	'AS BUILT'	SUPPLIER
8 in. x 6 in. Reducer	2 ea.		
6 in. Valve	2 ea.		
8 in. Valve	3 ea.		
Fire Hydrant	1 ea.		
8 in. San. (D.I.P.C.I. 50)	148 L.F.		
St'd. San MH	2 ea.		
Type B Drop MH	1 ea.		

NO	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE — CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF, UTILITY DIVISION — DATE — CHIEF BUREAU OF UTILITIES — DATE

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

WATER AND SEWER MAIN RELOCATIONS
NO. 1 AND NO. 2 SAVAGE RD., WASHINGTON ST., SAVAGE MILL ENTR. INTERSECTION

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 50 OF 59
SCALE HORZ. 1" = 20' VERT. 1" = 5'
DESIGNED BY
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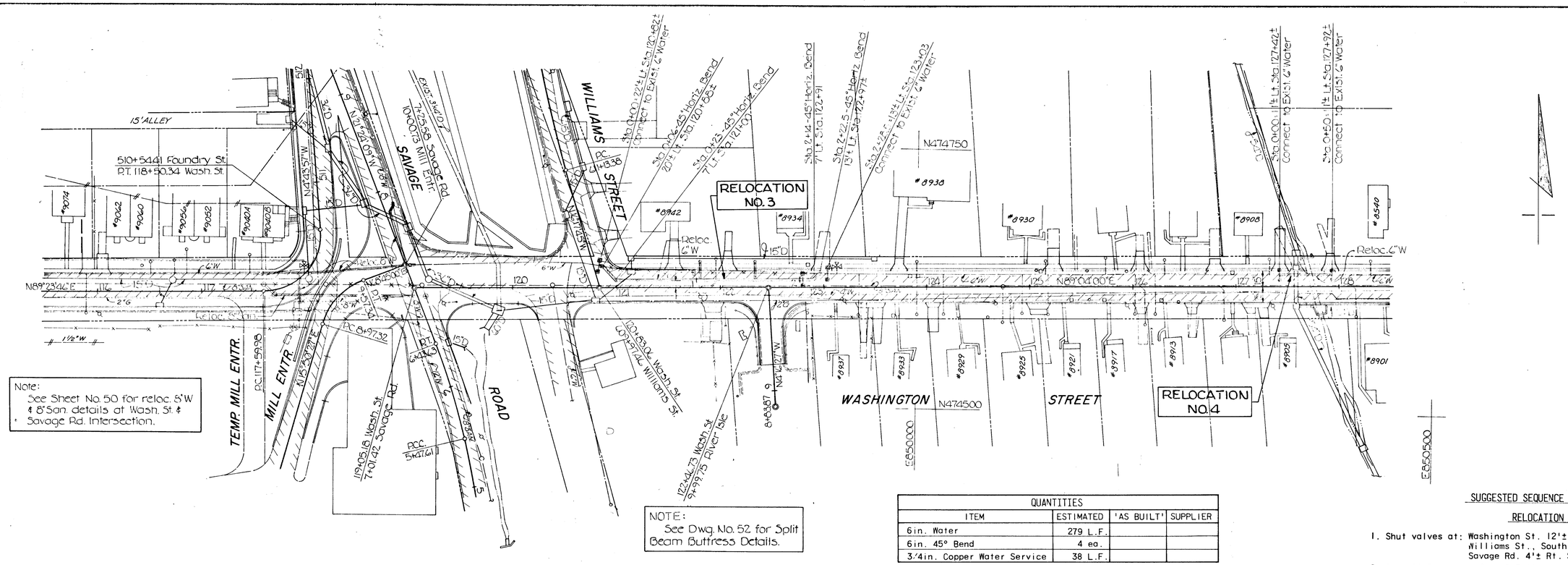
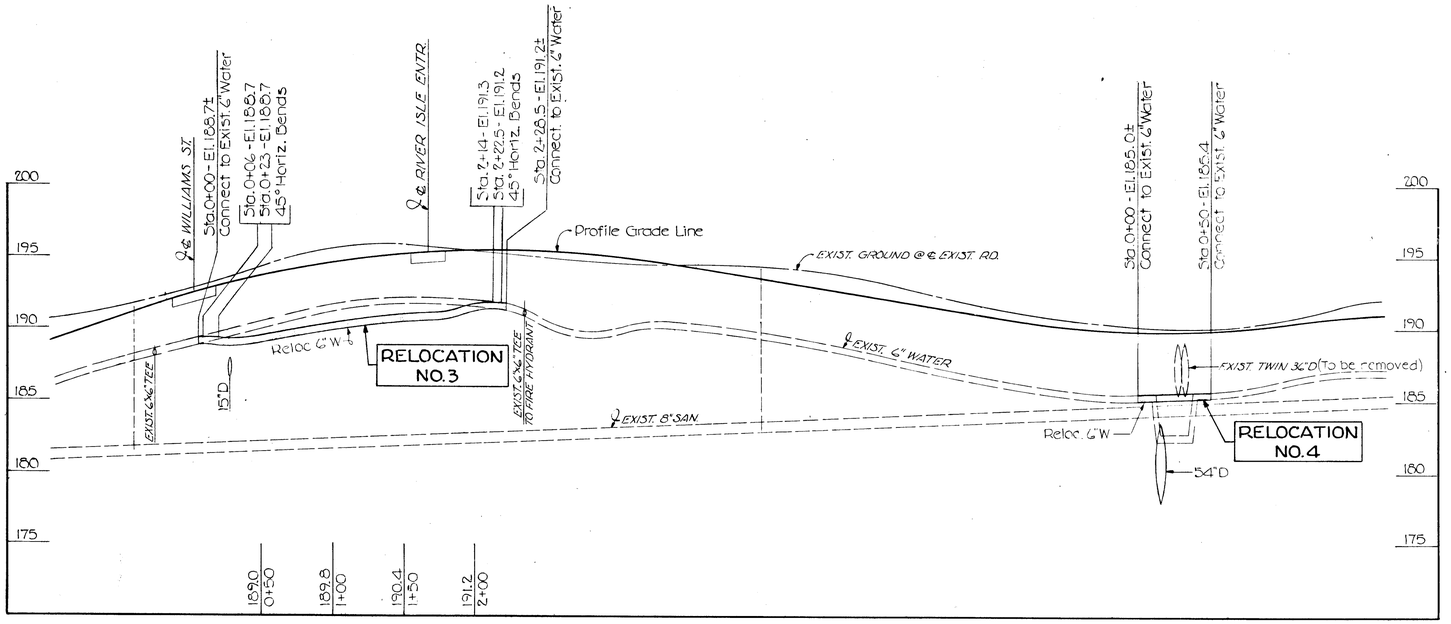


Note:
See Sheet No. 50 for reloc. 6"W & 8"San. details at Wash. St. & Savage Rd. Intersection.

NOTE:
See Dwg. No. 52 for Split Beam Buttress Details.

QUANTITIES			
ITEM	ESTIMATED	'AS BUILT'	SUPPLIER
6in. Water	279 L.F.		
6in. 45° Bend	4 ea.		
3/4in. Copper Water Service	38 L.F.		



SUGGESTED SEQUENCE OF CONSTRUCTION

RELOCATION NO. 3

1. Shut valves at; Washington St. 12'± Lt. Sta. 128+87±
   Williams St., South of Washington St.
   Savage Rd. 4'± Rt. Sta. 7+23± (New 6" Valve Reloc. No. 2)
2. Install Temporary Caps & Buttresses at Sta. 120+85± and Sta. 121+75±.
3. Open all valves.
4. Lay new 6" water main from Sta. 121+00± to Sta. 122+81± , Install Temporary Cap & Buttress at Sta. 122+81±
5. Shut all valves.
6. Install Temporary Cap & Buttress at Sta. 123+03±
7. Remove Temporary Cap & Buttress at Sta. 120+82± and connect new system to existing system.
8. Open all valves.
9. Lay new water house connections to new main.
10. Shut all valves.
11. Remove Temporary Cap & Buttress at Sta. 122+81± and connect new system to existing system.
12. Open all valves.

RELOCATION NO. 4

1. Shut valves at;
   1) Washington St., 12'± Lt. Sta. 128+87±
   2) Williams St., South of Washington St.
   3) Savage Rd., 4'± Rt. Sta. 7+23± (New 6" Valve Reloc. No. 2)
2. Install Temporary Cap & Buttress on existing 6" Water at Sta. 127+42± & Sta. 127+92±.
3. Open all valves.
4. Install 54" SD across Washington St.
5. Lay new 6" water main w/o connecting to existing system.
6. Shut all valves.
7. Remove Caps & Buttresses and connect new system to existing system.
8. Open all valves.

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/31/87
CHIEF, UTILITY DIVISION — DATE 12/28/87
CHIEF BUREAU OF UTILITIES — DATE

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — KENNETH E. [illegible] — No. 4613

WATER MAIN RELOCATIONS
NO. 3 STA 120+85 TO STA 123+00 WASHINGTON ST
NO. 4 STA 127+42 TO STA 127+92 WASHINGTON ST

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 51 OF 59
SCALE HORZ. 1"=50' VERT. 1"=5'
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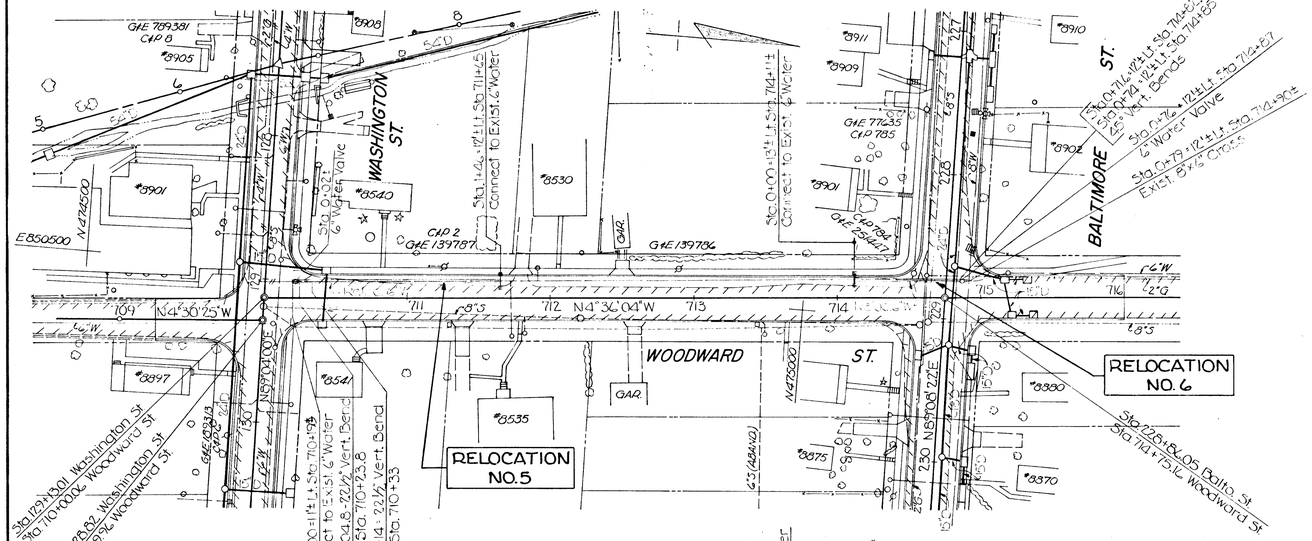
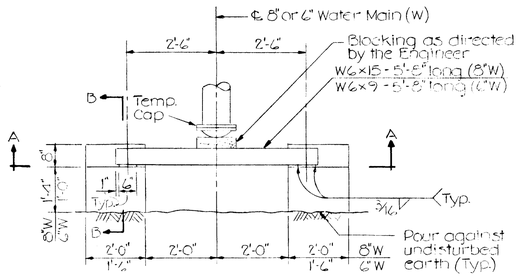


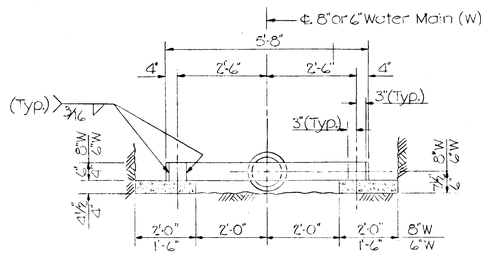
NOTE:
See this sheet for Split Beam Buttress Details.

QUANTITIES			
ITEM	ESTIMATED	'AS BUILT'	SUPPLIER
6in. Water	224 L.F.		
6in. 45° Bend	2 ea.		
6in. 22°30' Bend	2 ea.		
6in. Valve	2 ea.		

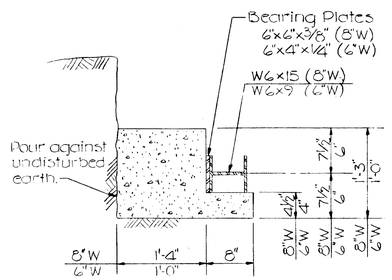


MATERIALS:
Concrete - Mix No 2
Steel - A-36

PLAN
Scale: ½"=1'-0"



SECTION A-A
Scale: ½"=1'-0"



NOTE: Steel shims shall be provided as required.

SECTION B-B
Scale: 1"=1'-0"

SPLIT BEAM BUTTRESS DETAILS

SUGGESTED SEQUENCE OF CONSTRUCTION

WATER RELOCATION NO. 5

1. Shut valves at: 1) Washington St. and Woodward St. (3)
   2) Baltimore St. and Woodward St. (12'± Lt. Sta. 714+87± Woodward St.)
2. Install Temporary Cap & Buttress at Sta. 711+65±.
3. Open valve at Baltimore St.
4. Construct new 6" water from Sta. 710+19± to Sta. 711+65±.
5. Shut valve at Baltimore St.
6. Remove Temporary Cap & Buttress and complete construction of water main.
7. Open all valves.

WATER RELOCATION NO. 6

1. Shut valves at:
   1) Washington St. and Woodward St.(3)
   2) Woodward St., 17'± Lt. Sta. 715+20±
   3) Baltimore St., 12'± Lt. Sta. 222+18±
   4) Baltimore St., 10'± Lt. Sta. 237+09±
2. Install new valve at cross. Cap valve and strap valve and cap to 8"x 6" cross.
3. Open valves on Baltimore St.(2) & Woodward St., Sta. 715+20±.
4. Install Temporary Cap & Buttress at Sta. 714+11±, Woodward St.
5. Open valves at Washington St. & Woodward St.(3).
6. Lay 6" water main w/o connecting to existing system.
7. Shut valves on Baltimore St.(2) & Woodward St., Sta. 715+20±.
8. Remove cap at new valve and connect new system to existing system.
9. Shut valves at Washington St. & Woodward St.(3).
10. Remove Cap & Buttress at Sta. 714+11± and connect new system to existing 6" W.
11. Open all valves.

MODIFIED DIMENSIONS FOR BUTTRESSES FOR HORIZONTAL BENDS & TEES

MINIMUM DIMENSIONS OF BUTTRESSES FOR HORIZONTAL BENDS (HOW. CO. ST'D. W2.21 & W2.24)

BEND		SIZE 6"	SIZE 8"
1/8 (45°)	A	1'-8"	2'-0"
	B	6"	1'-0"
	C	9"	1'-0"
1/4 (90°)	O		1'-10"
	P		2'-0"
	R		1'-8"
	S		6"

MINIMUM DIMENSIONS OF BUTTRESSES FOR TEES (HOW. CO. ST'D. W2.23)

		SIZE OF BRANCH 6"	SIZE OF BRANCH 8"
H		9"	10"
I		1'-1"	1'-4"
J		8"	1'-0"
K		6"	7"

MODIFIED DIMENSIONS FOR BUTTRESSES & ANCHORAGES FOR VERTICAL BENDS (HOW. CO. ST'D. W 2.22)

ANCHORAGES FOR VERTICAL BENDS

BEND		SIZE 6"	SIZE 8"
1/32 (11¼°)	A	1'-5"	
	B	2'-0"	
	C	2'-5"	
1/16 (22½°)	A	2'-5"	2'-6"
	B	2'-7"	3'-3"
	C	2'-7"	3'-3"
1/8 (45°)	A	2'-2"	3'-0"
	B	3'-6"	4'-6"
	C	3'-6"	4'-6"

BUTTRESSES FOR VERTICAL BENDS

BEND		SIZE 6"	SIZE 8"
1/32 (11¼°)	A	10"	
	B	5"	
	C	5"	
1/16 (22½°)	A	1'-2"	1'-10"
	B	6"	7"
	C	6"	7"
1/8 (45°)	A	2'-0"	2'-7"
	B	7"	9"
	C	7"	9"

NOTE: The modified dimensions for anchorages and buttresses are based on the static water pressure determined from a pool elevation of 410 plus a surge pressure of 100 p.s.i. and a presumptive soil bearing value of 2000 p.s.f. Where actual field conditions are different, the area of bearing shall be increased as determined by the Engineer.

NO	DATE	DESCRIPTION OF REVISION	SIGNATURE
1	1/5/83	Rev. Buttresses & Anchorages	K.L.Evans

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE — CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF, UTILITY DIVISION — DATE — CHIEF BUREAU OF UTILITIES — DATE

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — KENNETH L. EVANS — #4693

WATER MAIN RELOCATIONS
NO.5-STA. 710+19 TO STA. 711+65 WOODWARD ST.
NO.6-STA. 714+11 TO STA. 714+90 WOODWARD ST.

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 52 OF 59
SCALE HORZ. 1"=50' VERT. 1"=5'
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DRAFTED BY
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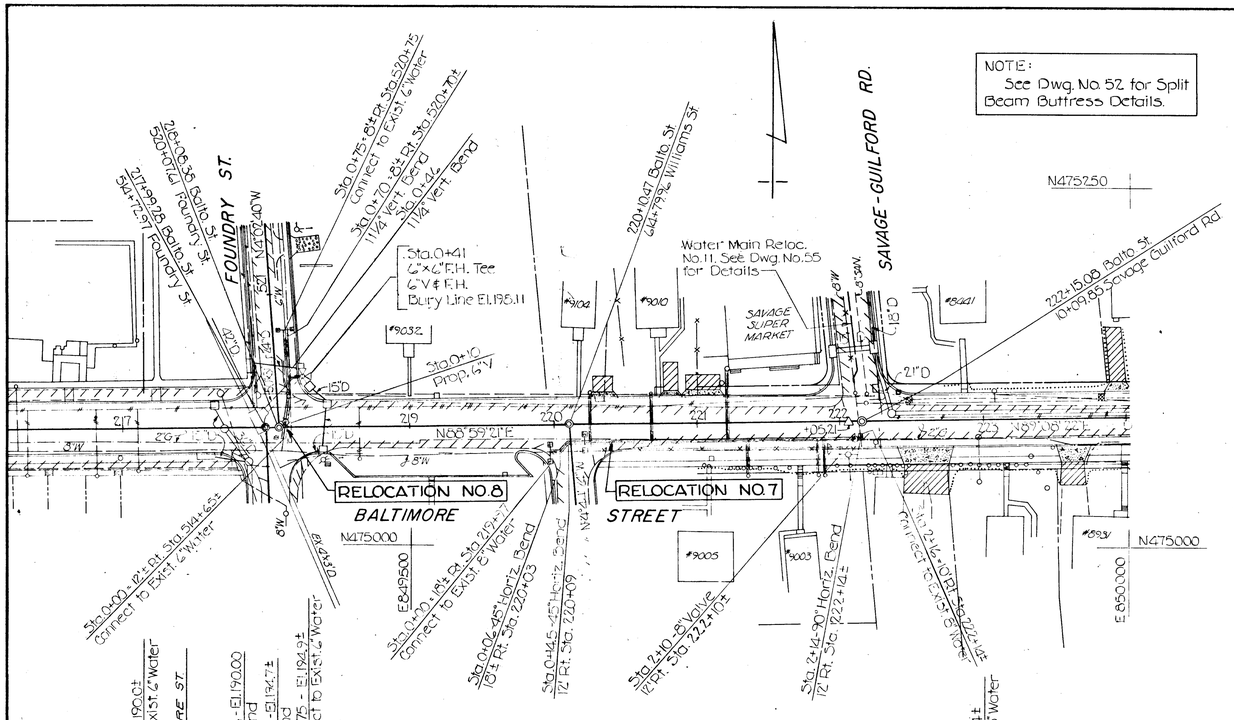


QUANTITIES			
ITEM	ESTIMATED	'AS BUILT'	SUPPLIER
6in. Water	84 L.F.		
8in. Water	216 L.F.		
6in. 11 1/4° Bend	2 ea.		
8in. 45° Bend	2 ea.		
8in. 90° Bend	1 ea.		
6in.x 6in. Tee	1 ea.		
6in. Valve	2 ea.		
8in. Valve	1 ea.		
Fire Hydrant	1 ea.		
3/4in. Copper Water Service	195 L.F.		

SUGGESTED SEQUENCE OF CONSTRUCTION

WATER RELOCATION NO. 7

1. Lay new 8"W from Rt. Sta. 220+20 to Rt. Sta. 222+09 without connecting to existing system. Place Temporary Cap & Buttress Rt. of Sta. 220+20 on new 8" water.
2. Shut water valves at:
   1) Baltimore St.: 14'± Rt. Sta. 214+64±, 19'± Lt. Sta. 222+11±, and 12'± Lt. Sta. 222+18±.
   2) Foundry St.; 11'± Rt. Sta. 514+13± and 9'± Rt. Sta. 520+29±.
3. Place Temporary Cap & Buttress on existing 8" water 18'± Rt. Sta. 221+95.
4. Open 2 valves on Foundry St. at Baltimore St. and Baltimore St. valve 14'± Rt. Sta. 214+64±.
5. Lay new 8" water from Sta. 222+09, including new 8" valve, and connect to existing 8" water Sta. 2+16 = 10' Rt. Sta. 222+14±.
6. Open 2 valves on Baltimore St. at Savage/Guilford Rd.
7. Lay new water house services to new 8" water.
8. Shut 2 valves on Foundry St. at Baltimore St. and Baltimore St. valve 14'± Rt. Sta. 214+64±.
9. Place Temporary Cap & Buttress on existing 8" water 18'± Rt. Sta.219+97±
10. Open 2 valves on Foundry St. at Baltimore St. and Baltimore St. valve 14'± Rt. Sta. 214+64±.
11. Lay new 8" water from Rt. Sta.219+97± to Rt.Sta. 220+20
12. Shut 2 valves on Foundry St. at Baltimore St. and Baltimore St. valve 14'± Rt. Sta. 214+64±.
13. Complete installation of new 8" water.
14. Open all valves.

WATER RELOCATION NO. 8

1. Place Temporary Cap & Buttress on existing 6" water 12'± Rt. Sta. 514+65 and 8'± Rt. Sta. 520+75.
2. Shut valves at:
   1) Baltimore St., 12'± Rt. Sta. 222+10±(New 8" valve, Reloc. No.7)
   2) Baltimore St., 14'± Rt. Sta. 214+64±
   3) Foundry St., 11'± Rt. Sta. 514+13±
   4) Foundry St. South of Commerce St. 5'± Rt. Sta. 529+49±
3. Cap existing 6" water at Temporary Buttress locations.
4. Open valves listed above.
5. Lay new 6" main without connecting to existing main.
6. Shut valves listed in step 2
7. Remove Temporary Caps & Buttresses and connect to existing system.
8. Open all valves.

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF, UTILITY DIVISION — DATE 12/6/82
CHIEF BUREAU OF UTILITIES — DATE 12/13/82

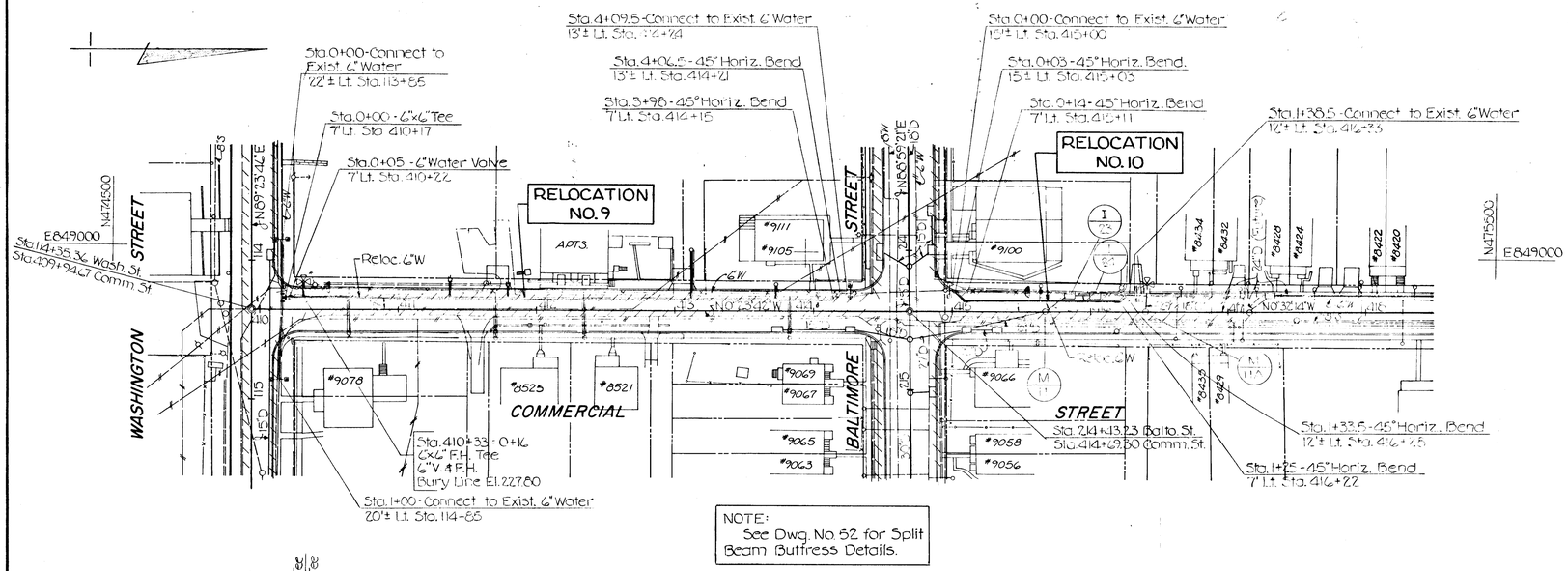
PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — DONALD H. WILSON — No. 4683 — REGISTERED PROFESSIONAL ENGINEER

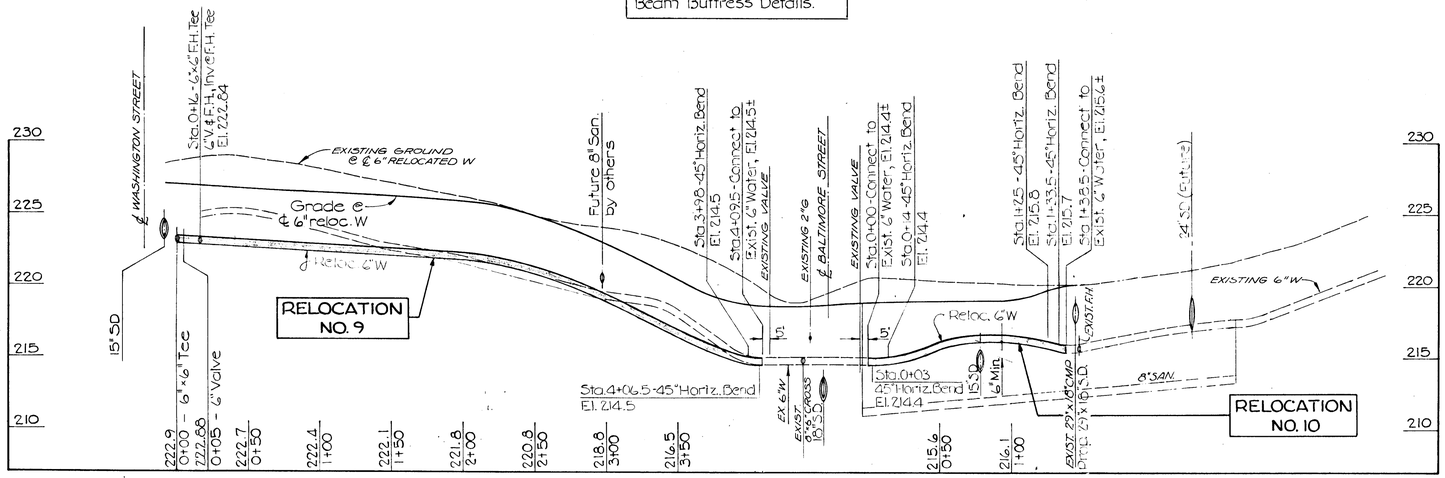
WATER MAIN RELOCATIONS
NO. 7-STA. 220+02 TO STA. 222+14 BALTIMORE ST.
NO. 8-STA. 520+00 TO STA. 520+70 FOUNDRY ST.

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

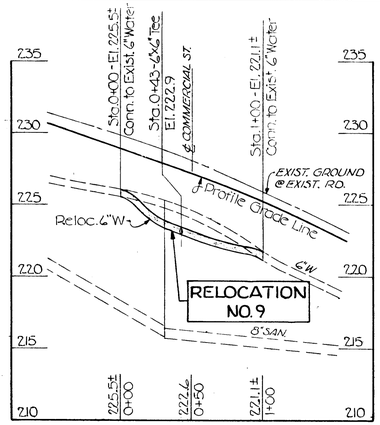
DRAWING NO. 53 OF 59
SCALE HORZ. 1"= 50' VERT. 1"= 5'
DESIGNED BY
DRAFTED BY
CHECKED BY



NOTE:
See Dwg. No. 52 for Split Beam Buttress Details.



COMMERCIAL STREET



WASHINGTON STREET

QUANTITIES			
ITEM	ESTIMATED	'AS BUILT'	SUPPLIER
6in. Water	660 L.F.		
6in. 45° Bend	6 ea.		
6in. x 6in. Tee	2 ea.		
6in. Valve	2 ea.		
Fire Hydrant	1 ea.		
3/4in. Copper Water Service	208 L.F.		

SUGGESTED SEQUENCE OF CONSTRUCTION

WATER RELOCATION NO. 9

1. Shut valves at:
   1) Fair St. and Washington St.
   2) Washington St. Sta. 1+29 (New 8" Valve, Reloc. No. 1)
   3) Commercial St. and Washington St.
   4) Commercial St. Lt. Sta. 414+29
2. Place Temporary Cap and Buttress on existing 6" water Washington St. Rt. Sta. 113+85 & 114+85 and on existing 6" water in commercial St. Lt. Sta. 410+50.
3. Open valves 1,2,&4.
4. Lay new 6" water on Washington St. and Commercial St. without connecting to existing systems including fire hydrant at Commercial St. Sta. 410+33. Place Temporary Cap and Buttress on new 6" water Lt. Sta. 414+04 Commercial St.
5. Close new valve at Sta. 410+22 and existing valves 1&2.
6. Connect new 6" water on Washington St. to existing 6" water
7. Open new valve at Sta. 410+22 and valves 1&2.
8. Lay new water house connections to new 6" main.
9. Construct Temporary Buttress for valve '4'. Close existing valves at Baltimore and Fair Sts., Commercial St. North of Baltimore St. and Baltimore St. East of Commercial St., Cap valve '4' and reopen valves.
10. Construct new 6" water to existing 6" water from Sta. 414+12.
11. Close new valve at Sta. 410+22 and existing valves listed for step 9 and complete installation of new 6" water.
12. Open all valves.

WATER RELOCATION NO. 10

1. Install 15" S.D. from M-11 to I-23. Do not construct I-23
2. Close valves at:
   1) Fair St., South of Baltimore St.
   2) Commercial St., South of Baltimore St.
   3) Baltimore St., East of Commercial St.
   4) Commercial St., South of Commerce St.
3. Place Temporary Cap and Buttress on the existing Commercial St. valve on the North side of Baltimore St. and on the existing 6" water Lt. Sta. 415+55.
4. Open all valves.
5. Install new 6" water from Sta. 415+03 to Sta. 416+12± .Place Temporary Cap and Buttress at Sta.416+12± on new 6" water.
6. Close valves '1','2' and '3' and connect new main to the existing main Lt. Sta. 415+00±.
7. Open all valves and lay new water house connections to the new main.
8. Close valve '4', construct Temporary Cap and Buttress on the existing main Lt. Sta. 416+33± and open valve '4'.
9. Lay new 6" main from Sta. 416+12± to Sta. 416+33±.
10. Close valve '4' and the Commercial St. valve on the North side of Baltimore St.
11. Complete installation of the new main and open all valves.

NO	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 12/30/87
CHIEF, UTILITY DIVISION — DATE 12/30/87
CHIEF - BUREAU OF ENGINEERING — DATE
CHIEF BUREAU OF UTILITIES — DATE

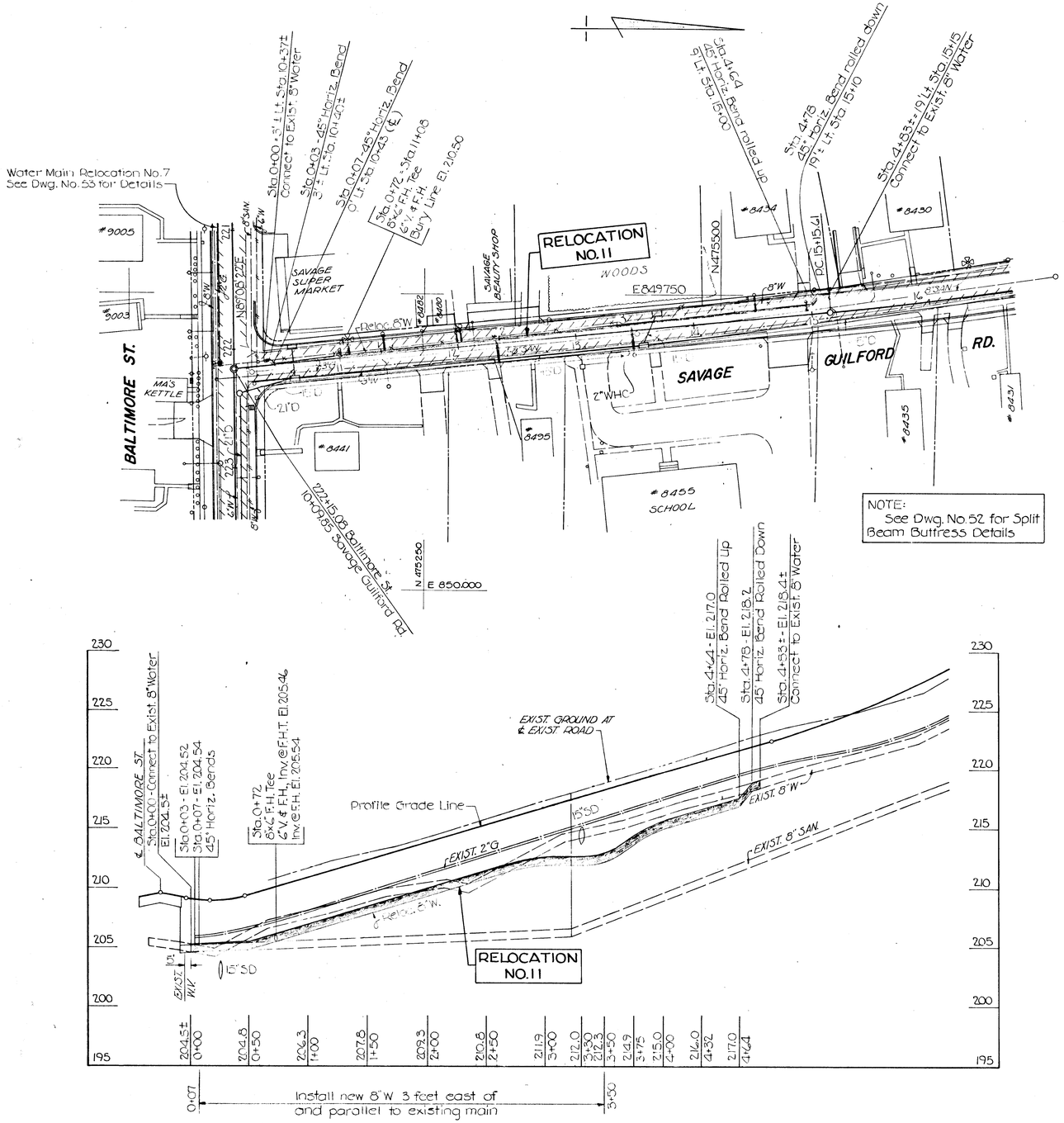
PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — KENNETH R. KLEIN — No. 11421

WATER MAIN RELOCATIONS
NO. 9 STA.113+85 TO STA 114+85 WASHINGTON ST.
STA.410+17 TO STA. 414+24 COMMERCIAL ST.
NO.10-STA.415+00 TO STA.416+33 COMMERCIAL ST.

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 54 OF 59
SCALE HORZ. 1"=50' VERT. 1"=5'
DESIGNED BY
DRAFTED BY
CHECKED BY



SUGGESTED SEQUENCE OF CONSTRUCTION

WATER RELOCATION NO. 11

1. Lay new 8" water from Sta. 10+46 to Sta. 14+89 without connecting to existing system. Place Temporary Cap and Buttress at Sta. 14+89 on new 8" water.
2. Shut valves at:
   1) Savage Guilford Rd. at Lincoln St.(2)
   2) Baltimore St. at Savage Guilford Rd. 12'± Rt. Sta. 222+10± (New 8" Valve, Reloc. No.7) & 12'± Lt. Sta. 222+18±
3. Place Temporary Cap and Buttress on existing 8" water 4'± Lt. Sta. 11+00.
4. Open valves at Savage Guilford Rd. and Lincoln St.(2).
5. Connect to existing 8" water 3'± Lt. Sta. 10+37 and lay new 8" water to Sta. 0+10.
6. Open valve at Baltimore St. and Savage Guilford Rd.(2).
7. Lay new water house services to new 8" water including the fire hydrant at Sta. 11+08±.
8. Shut valve at Savage Guilford Rd. and Lincoln St.(2).
9. Place Temporary Cap and Buttress on existing 8" water 19'± Lt. Sta. 15+15.
10. Open valves at Savage Guilford Rd. and Lincoln St.(2).
11. Lay new 8" water from Sta. 14+89 to Sta. 15+15.
12. Shut valves at Savcge Guilford Rd. and Lincoln St.(2) and existing valve 15'± Lt. Sta. 10+29 Savage Guilford Rd.
13. Complete installation of 8" water.
14. Open all valves.

QUANTITIES			
ITEM	ESTIMATED	'AS BUILT'	SUPPLIER
8 in. Water	483 L.F.		
6 in. Water	16 L.F.		
8 in. - 45° Bend	4 ea.		
8 in. × 6 in. Tee	1 ea		
6 in Valve	1 ea.		
Fire Hydrant	1 ea.		
2 in. Water Service	27 L.F.		
¾ in. Copper Water Service	80 L.F.		

NO	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF, UTILITY DIVISION — DATE 12/30/82
CHIEF BUREAU OF UTILITIES — DATE

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

WATER MAIN RELOCATION
NO. 11 - STA. 10+37 TO STA. 14+34
SAVAGE GUILFORD RD.

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 55 OF 59
SCALE HORZ. 1"= 50' VERT. 1"= 5'
DESIGNED BY
DRAFTED BY
CHECKED BY

GRADING SUMMARY

LOCATION		CUT	FILL	TOP SOIL		ROOT MAT		CUT ADJUSTED	CUT DENSIFIED*	REMARKS
FROM	TO	C.Y.	C.Y.	CUT C.Y.	FILL C.Y.	CUT C.Y.	FILL C.Y.	C.Y.	C.Y.	
WASHINGTON STREET										
109+67	110+22	42	51							
110+22	117+50	1,504	304	13	26					
117+50	118+50	189	51		3					
119+20	121+50	428	175	2	7					
121+50	130+00	1,538	231	4	24					Includes River Isle
130+00	141+39	1,636	333							
	Sub-totals	5,337	1,145	19	60			5,318	4,520	
BALTIMORE STREET										
209+66	217+75	1,661	167							
217+75	218+25	26	7							
218+25	228+50	1,821	510	4	16					
228+50	243+70	1,267	2,070	46	75					
	Sub-totals	4,775	2,754	50	91			4,725	4,016	
TEMPORARY MILL ENTRANCE										
0+25	1+80	366		43						
	Sub-totals	366		43				323	275	
SAVAGE MILL ENTRANCE										
7+50	9+86	1,767	21							
	Sub-totals	1,767	21					1,757	1,502	
SAVAGE ROAD										
4+33	9+65	260	2							
	Sub-totals	260	2					260	221	
FAIR STREET										
310+30	314+31	821	29		6	205				
	Sub-totals	821	29		6	205		616	524	
COMMERCIAL STREET										
410+10	414+51	1,021	260		32					
414+87	416+50	318	60	16	18					
	Sub-totals	1,339	320	16	50			1,323	1,125	
COMMERCE STREET										NOT IN CONTRACT
10+13	12+85									
	Sub-totals									
FOUNDRY STREET										
510+54	514+55	1,137	41	43						
520+26	521+25	89	2	7	2					
	Sub-totals	1,226	43	50	2			1,176	1,000	
WILLIAMS STREET										
610+25	614+62	532	21	48						
	Sub-totals	532	21	48				484	411	
SAVAGE/GUILFORD ROAD										
10+27	10+50	58		5						
10+50	20+50	1,959	73	118	3					Includes Lincoln St.
20+50	29+00	856	132	56	21					Includes Jefferson St.
29+00	33+50	148	50	19	26					Includes Madison St.
33+50	48+60	1,039	348	34	112					
	Sub-totals	4,060	603	232	162			3,828	3,254	
WOODWARD STREET										
709+25	714+57	833	79	17	2					
714+93	716+00	115	6	5						
	Sub-totals	948	85	22	2			926	787	
CEMETERY LANE										
10+30	11+05	182		5						
	Sub-totals	182		5				177	150	
BALDWIN STREET										
809+00	809+85	38	16	11						
810+15	814+56	545	219	22	39					
	Sub-totals	583	235	33	39			550	468	
	TOTALS	22,196	5,258	518	412	205		21,473	18,253	

* 85% SHRINKAGE FACTOR

LOCATION		CLASS II EXCAVATION	EMBANKMENT
FROM	TO	C.Y.	C.Y.
FOUNDRY STREET			
Drainage System			
I-41	523+50	54	43
536+50	HW-3	54	21
HW-3	HW-4	46	283
WOODWARD STREET			
Drainage System			
I-149	M-26	42	439
STORCH WOODS			
Drainage System			
I-121	HW-6	80	450
	TOTALS	276	1,236

SUMMARY OF EARTHWORK

CLASS I EXCAVATION

Cut	22,196 Cu. Yds.
Plus top soil removed under fill	+ 412 Cu. Yds.
Plus root mat removed under fill	0 Cu. Yds.
TOTAL CLASS I EXCAVATION	22,608 Cu. Yds.

EXCAVATION AVAILABLE FOR EMBANKMENT

Total Class I Excavation	22,608 Cu. Yds.
Minus:	
Top soil removed in cut	- 518 Cu. Yds.
Top soil removed under fill	- 412 Cu. Yds.
Root mat removed in cut	- 205 Cu. Yds.
Root mat removed under fill	- 0 Cu. Yds.
Cut Adjusted	21,473 Cu. Yds.
Cut Densified (85%)	18,253 Cu. Yds.
Class 2 Excavation available for Embankment	+ 193 Cu. Yds.
TOTAL EXCAVATION AVAILABLE FOR EMBANKMENT	18,446 Cu. Yds.

CLASS 2 EXCAVATION

From Cross Sections	276 Cu. Yds.
Loss due to handling & densification (30%)	- 83 Cu. Yds.
TOTAL CLASS 2 EXCAVATION AVAILABLE FOR EMB.	193 Cu. Yds.

EMBANKMENT REQUIRED

Roadway Embankment	5,258 Cu. Yds.
Drainage Spur Embankment	1,236 Cu. Yds.
Refill for top soil removed under fill	412 Cu. Yds.
Refill for root mat removed under fill	+ 0 Cu. Yds.
EMBANKMENT REQUIRED	6,906 Cu. Yds.
TOTAL EXCAVATION AVAILABLE	18,446 Cu. Yds.
APPARENT WASTE	11,540 Cu. Yds.

LANDSCAPING QUANTITIES

TOP SOIL AVAILABLE FOR PLACEMENT

Top soil removed in cut	518 C.Y.
Top soil removed under fill	412 C.Y.
	930 C.Y.
Less Shrinkage Losses	170 C.Y.
TOTAL TOP SOIL AVAILABLE FOR PLACEMENT	760 C.Y.*

TOP SOIL REQUIRED*

Top soil, Seeding & Mulching = 26,150 S.Y. (From Plans & Cross Sections)
Say = 26,150 S.Y.
Top soil, Solid Sodding = 1,990 S.Y. (From Plans & Cross Sections)
Say = 2,000 S.Y.
TOTAL TOP SOIL 2" DEPTH REQUIRED = (17,450* S.Y.)/18 + (2,000 S.Y.)/18
= 1,080 C.Y.
TOTAL TOP SOIL 4" DEPTH REQUIRED = (8,700* S.Y.)/ 9
= 967 C.Y.
*Assume 2/3 of area for 2" depth and 1/3 of area for 4" depth top soil

SEEDING AND MULCHING REQUIRED

For 2" Depth Top soil: Seeding = [(17,450 S.Y.)(9)/1,000] (3 Lbs)
= 471 Lbs.
For 4" Depth Top soil: Seeding = [(8,700 S.Y.)(9)/1,000] (3 Lbs)
= 235 Lbs.
TOTAL SEEDING = 706 Lbs.

SOLID SODDING

Adjacent to roadways	720 S.Y.
Drainage ditch linings	1,270 S.Y.
TOTAL SOLID SODDING	1,990 S.Y.

PROPOSAL QUANTITIES

Item 701: PLACING SALVAGED TOP SOIL, 2" DEPTH	USE 9,100 S.Y.
Item 702: PLACING SALVAGED TOP SOIL, 4" DEPTH	USE 2,300 S.Y.
Item 703: TOP SOIL FURNISHED AND PLACED 2" DEPTH	Use 10,350 S.Y.
Item 704: TOP SOIL FURNISHED AND PLACED 4" DEPTH	Use 6,400 S.Y.
Item 705: TEMPORARY MULCHING	Use 3,000 S.Y.
Item 706: TEMPORARY SEEDING	Use 4,000 S.Y.
Item 707: SEEDING AND MULCHING	Use 26,150 S.Y.
Item 708: SOLID SODDING	Use 2,100 S.Y.

* Assume: 507 C.Y. for 2" depth = 9,125 S.Y. Use 9,100
253 C.Y. for 4" depth = 2,280 S.Y. Use 2,300

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/92
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/92

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

STATE OF MARYLAND — PROFESSIONAL ENGINEER

SUMMARY OF QUANTITIES
GRADING AND LANDSCAPING

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 56 OF 59
SCALE
D.C.S. DESIGNED BY
T.G.S. DRAFTED BY
K.L.E. CHECKED BY

STORM DRAIN QUANTITIES

PLAN SHEET NO.	LOCATION	TRIM EXISTING DITCHES	RCCP (CLASS 3) 18"	21"	24"	30"	36"	54"	60"	RCCP (CLASS 4) 15"	18"	21"	24"	30"	36"	42"	48"	54"	18"x11" BCCMP ARCH TYPE A 16 GA.	22"x13" BCCMP ARCH TYPE A 16 GA.	51"x31" BCCMP ARCH TYPE A 14 GA.	STANDARD TYPE A HEADWALL 30" PIPE	42" PIPE	60" PIPE	STANDARD PIPE END SECTIONS 15" RCP		21" RCP	STANDARD TYPE A-5 INLET 3'-6" MIN. DEPTH	W/DEFLECTORS 3'-6" MIN. DEPTH	VERTICAL DEPTH	STANDARD TYPE A-10 INLET 3'-6" MIN. DEPTH	W/DEFLECTORS 3'-6" MIN. DEPTH	VERTICAL DEPTH	STANDARD TYPE S INLET 3'-6" MIN. DEPTH	W/RETICULAR GRATE	VERTICAL DEPTH	ST'D. DOUBLE TYPE S INLET 3'-6" MIN. DEPTH	W/RETICULAR GRATE	VERTICAL DEPTH	SGL. TYPE WR INLET 3'-6" MIN. DEPTH	STANDARD TYPE WR INLET 3'-6" MIN. DEPTH	VERTICAL DEPTH	STANDARD G 5.01 MANHOLE 8'-4" MIN. DEPTH	VERTICAL DEPTH	STANDARD G 5.05 MANHOLE 3'-10" MIN. DEPTH	VERTICAL DEPTH	STANDARD TYPE WRM INLET 4'-0" MIN. DEPTH	VERTICAL DEPTH	SPECIAL STRUCTURE S-1	S-2	S-3	S-4	SUM	15" CONCRETE GUTTER	CL. 6 STONE FOR CHANNEL PROTECTION	REMARKS
		L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	EA.	EA.	EA.	EA.		EA.	EA.	EA.	L.F.	EA.	EA.	L.F.	EA.	EA.	L.F.	EA.	EA.	L.F.	EA.	L.F.	EA.	L.F.	EA.	L.F.	EA.	L.F.	EA.	L.F.	EA.	L.F.	LUMP	SUM	S.Y.	S.Y.	
10	Sta.119+20 to Sta.123+49 Washington St.						67		18	374													1							2		2.82						2	5.96																			97		M-1 to S-1 to HW-1; S-1 to I-35 to I-32 to I-33 to I-34; and INLET CONNECTIONS
	Sta.610+19 to Sta.611+72 Williams St.									186																	1		0.1	1		–						1	2.70																					I-35 to I-36 to I-37 & I-37A
	Sta.6+34 to Sta.7+95 Savage Rd. to Sta.511+32 Foundry St. to Sta.514+50 Foundry St.						49			60					410															1		0.21		1				3	5.72			1	2.03	2	5.93					6		M-1 to I-4 to I-5 to I-6 to I-9 I-9 to M-5; and INLET CONNECTIONS I-54 to ES-1
	Sta.113+96 Washington St. to Savage Rd.									545																												3	1.54	2																				1-3 to M-3 to M-2 to I-1 to I-5; and INLET CONNECTIONS
	Sta.210+00 to Sta.217+85 Baltimore St.		406							233	49			299	24															1	1	1.57						7	1.02	2	0.19	3	9.91																	I-18 to M-10 to M-9 to M-8 to M-7 to M-6 to M-5; and INLET CONNECTIONS
	Sta.313+43 Fair St. to Baltimore St.										149																			1		1.99						1	2.33																							I-20 to I-19 to M-10
	Sta.218+40 Baltimore St.									77																												2	2.67																							Ex.8'x3' Box to I-38 to I-39 to I-40
11	Sta.3+90 to Sta.7+00 Woodward St. Drainage Spur							182										92									2		15.97						1		2.8																							E-2 to I-149 to I-71 to I-72
	Sta.127+58 to Sta.131+23 Washington St.		33		353					129																	4		9.96						1		1.94																							I-71 to M-34 to M-35 to I-111 to I-112; and INLET CONNECTIONS
	Sta.7+00 to Sta.11+93 Woodward St. Drainage Spur							12								23	87	368																		4		12.15																							I-73 to I-74 to I-75 to S-2 to I-76
	Sta.222+49 to Sta.226+28 Baltimore St.									9		367																										1		1	0.29	1	2.41																							M-31 to M-47 to S-2; and INLET CONNECTIONS
	Sta.226+28 to Sta.233+54 Baltimore St.									527	100		192	8		76			48								3		2.43	6		3.08						2	7	0.35			5	2.96			1																							S-2 to S-3 to M-45 to M-29 to M-43 to M-47 to M-30 to I-146; and INLET CONNECTIONS
12	Sta.160+74 Rt. Washington St. to Baldwin St.									216									197	50				1			2		0.21									2				2	1.06																							ES-5 to M-36 to I-116 to M-37 to I-117 to I-118; and INLET CONNECTIONS
	Baltimore St. Rt. and Lt. Sta.241+00					51				68				150	345							1					1		0.04	1		0.04						4		10.85																							96		I-121 to I-122 to M-44 to I-124 to I-125 to HW-6; and INLET CONNECTIONS
																																																																		M-8 to I-21 to M-11 to M-11A; and INLET CONNECTIONS
13	Commercial St.; Baltimore St. to Sta.416+50				52					48			76	40																								4	3.84			2	2.69																							
	Foundry St.; Baltimore St. to Sta.521+25										6		30								41									2		2.04																																	S-4 to I-62 to I-64 ; and INLET CONNECTIONS
	Foundry St. Drainage Spur; Baltimore St. to Sta.523+50															284							1														1		1.95																							84		S-4 to I-41 TO HW-2
	Sta.536+50to Sta.540+70 Foundry St. Drainage Spur													274									2				1		3.65				1		0.30								1	3.07																	31	89	HW-3 to I-49 to M-18 to I-50 to HW-4
	Sta.3+96 to Sta.6+90 Jefferson St.									298																							2										1	1.52																	51		I-52 to I-51 to M-19 to I-50
14	Sta.11+93 to Sta.19+25 Woodward St. Drainage Spur					248	456																													3		2.70				1	3.25																	67		I-76 to I-77 to I-78 to I-79 to M-26
	Woodward St. and Lincoln St.									202	79		95															2	0.54		3	6.29	1		0.03						2	0.07																							Ex.4 to I-84 to I-109 to I-85; and INLET CONNECTIONS
	Woodward St. and Carrollton Ave.									145	63	228																1		1.04	3	3	2.33																																	I-78 to I-136 to I-140 to I-82 to I-81 and I-140 to I-80 to I-139 to I-83
23	Savage/Guilford Rd., Baltimore St. to Sta.25+25			44						1281	290																				2		0.50						9	17.76	1																							M-31 to I-100 to I-102 to I-103 to M-32 to I-105a & b to I-105c & INLET CONNECTIONS
24	Sta.6+95 to Sta.10+50 Jefferson St.									32	316																	1		0.05														1	4.29																							M-18 to M-20 to I-61
	Sta.28+73 to Sta.36+00 Savage/Guilford Rd.									555	243																	2		0.45	1					1						5	7.11			1	1.09																							M-20 to I-53 to I-54 to I-55 to M-21 to I-56 to M-57a to I-57; and INLET CONNECTIONS
25	Sta.41+50 to Sta.45+47 Savage/Guilford Rd.									322	688		13															2		0.75	3		3.00	1										2	1.17																	67	18	I-131A to I-131 to I-129 to I-128 to M-42a to M-42 to HW-7 and I-128 to I-137
26	Sta.53+ to Sta.56+36 Savage/Guilford Rd.			171						288									28							1							3										3	8.30																	30	9	ES-7 to M-39 to M-40 to M-41 and INLET CONNECTIONS
	TOTALS		439	215	405	299	572	194	18	5605	1983	595	406	771	779	383	87	460	273	50	41	3	1	1	1	1	20	2	35.19	21	7	20.84	9	5	5.30	13	1	30.45	2	50	51.07	8	4.12	24	43.75	2	5.93	1	1	1	527	219	

ITEM NO.		350	351	371	323				
		STANDARD G 5.02 MANHOLE		STD. TYPE A HEADWALL 18"PIPE	29"x18" BCCMP ARCH TYPE A 14 GA.				
	LOCATION	8'-4" MIN. DEPTH	VERTICAL DEPTH						REMARKS
		EA.	L.F.	EA.	L.F.				
10	(SEE ABOVE)	1	0.60						M-1
12	(SEE ABOVE)	1	7.30						M-44
13	(SEE ABOVE)				12				
25	(SEE ABOVE)			1					HW-7
	TOTALS	2	7.90	1	12				

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 12/30/82
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE 12/29/82

PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

Kenneth L. Cross #4603

STORM DRAIN QUANTITIES

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 57 OF 59

SCALE

DESIGNED BY
DRAFTED BY
CHECKED BY

TABULATION OF PAVING AND SHOULDER ITEMS

PLAN SHEET NO.	ITEM NO.	501	502	503	504	505	506	507	508	509	510	601	602	603	604	605	606	607	608	609	610	611	612	613	614
	LOCATION	4 INCH SUB-BASE USING CRUSHER RUN	5 INCH SUB-BASE USING CRUSHER RUN	VARIABLE DEPTH SUB-BASE USING CRUSHER RUN	6 INCH GRAVEL SURFACE COURSE	ANTI-STRIPPING ADDITIVE FOR BITUMINOUS CONCRETE	BITUMINOUS CONCRETE SURFACE	BITUMINOUS CONCRETE BASE	BITUMINOUS CONCRETE FOR WEDGING AND/OR LEVELING	7 INCH PLAIN CEMENT CONCRETE PAVEMENT	7 INCH REINFORCED CEMENT CONCRETE PAVEMENT	BITUMINOUS CONCRETE CURB	STANDARD TYPE A COMBINATION CURB AND GUTTER	STANDARD CURB OPENING FOR CURB AND GUTTER	4 INCH CONCRETE SIDEWALK	FLAGSTONE WALK	BRICK WALK	MIX NO.2 CONCRETE FOR MISCELLANEOUS STRUCTURES	ORNAMENTAL HANDRAIL	GUARD RAIL W BEAM	DEAD END BARRICADE, TYPE-C	GUARD RAIL W BEAM TRAIL END ANCHORAGE	GUARD RAIL W BEAM END FLARE	REMOVE AND RESET EXISTING GUARD RAIL	RESET EXISTING FENCE
		S.Y.	S.Y.	TON	S.Y.	TR.TON	TON	TON	TON	S.Y.	S.Y.	L.F.	L.F.	EA.	S.F.	S.F.	S.F.	C.Y.	L.F.	L.F.	L.F.	EA.	EA.	LF.	LF.
10	Washington St. 109+67.10 to 118+50.34					1,227	230	997					2,014		3,776		10	7	54	192		1	1		
	Driveways					29	10	19		93	55														
	Washington St. 119+18.18 to 121+50					593	111	482														1			
	Baltimore St. 209+65.97 to 221+00					2,739	411	2,328					2,134		4,769			4	8						
	Driveways																								
	Fair St. 310+29.64 to 314+31.31					543	102	441					881		1,443										
	Driveways				44	16	5	11			64														
	Commercial St. 409+94.67 to 416+50					731	137	594					954		2,016			4	26						
	Driveways				31	19	6	13			39														
	Foundry St. 510+54.41 to 521+25					623	117	506					519		1,234			3	32						
	Driveways				9	9	3	6			14														
	Williams St. 609+94.48 to 614+79.96					522	98	424					413												
	Driveways				36	11	4	7			42														
	Savage Rd. 4+32.76 to 9+52.79		129			529	130	399				211	214							206				52	
	Savage Mill Entr. 7+50 to 9+85.73					442	83	359					432												
	Savage Mill Detour Rd.					124	25	99				370													
11	Washington St. 121+50 to 134+00					1,819	341	1,478					2,491		5,210			4	16						
	Driveways				320	30	10	20			248														
	Baltimore St. 221+00 to 234+00					2,858	430	2,438					2,555		4,726			14	104						
	Driveways				150	176	59	117		55	291														
	Woodward St. 709+25 to 716+00					682	128	554					956		1,598			1							
	Driveways				6	16	5	11			34														
	Savage/Guilford Rd. 10+50.76 to 11+00					83	12	71					86		240			1							
	Cemetery Lane					68	16	52				137													
	Driveways				6						7														
	River Isle Entr. 9+25 to 9+84.75					8	8						20												
12	Washington St. 134+00 to 141+39					1,120	210	910					1,534	1	2,635			4			60				
	Driveways				134	20	7	13			119														
	Baltimore St. 234+00 to 243+70					2,042	306	1,736				200	1,733		3,355			9	66						
	Driveways				65	63	21	42			144														
	Baldwin St. 809+00 to 814+74.22					602	113	489					818		21			1	8						
	Driveways				7	18	6	12			41														
13	Commercial St. 416+50 to 427+44.42																								
	Driveways (Inc. Jefferson St.)									6	7														
	Foundry St. 521+50 to 533+58.04																								
	Driveways																								
	Commerce St. 10+31.74 to 12+65.41																								
	Driveways																								
23	Savage/Guilford Rd. 11+00 to 24+00					2,319	348	1,971					2,550		4,638			2	8						
	Driveways				60	145	48	97		17	238														
	Lincoln St.					99	15	84					119												
24	Savage/Guilford Rd. 24+00 to 37+00		370			1,794	352	830	512				2,525		4,486			3							
	Driveways				32	107	36	71			172														
	Jefferson St. 9+25 to 11+00					125	19	106					162		46			1							
	Madison St. 9+98.39 to 11+00					114	17	97					133												
	Driveways					4	1	3			7														
25	Savage/Guilford Rd. 37+00 to 48+60		282			1,655	333	994	358				2,348		3,918			1							
	Driveways				42	57	21	36			122														
14	Lincoln St. at Woodward St.											45	35												
	TOTALS		781		962	24,201	4,304	18,917	980	172	1,644	963	25,626	1	44,111		10	59	322	398	60	2	1	52	

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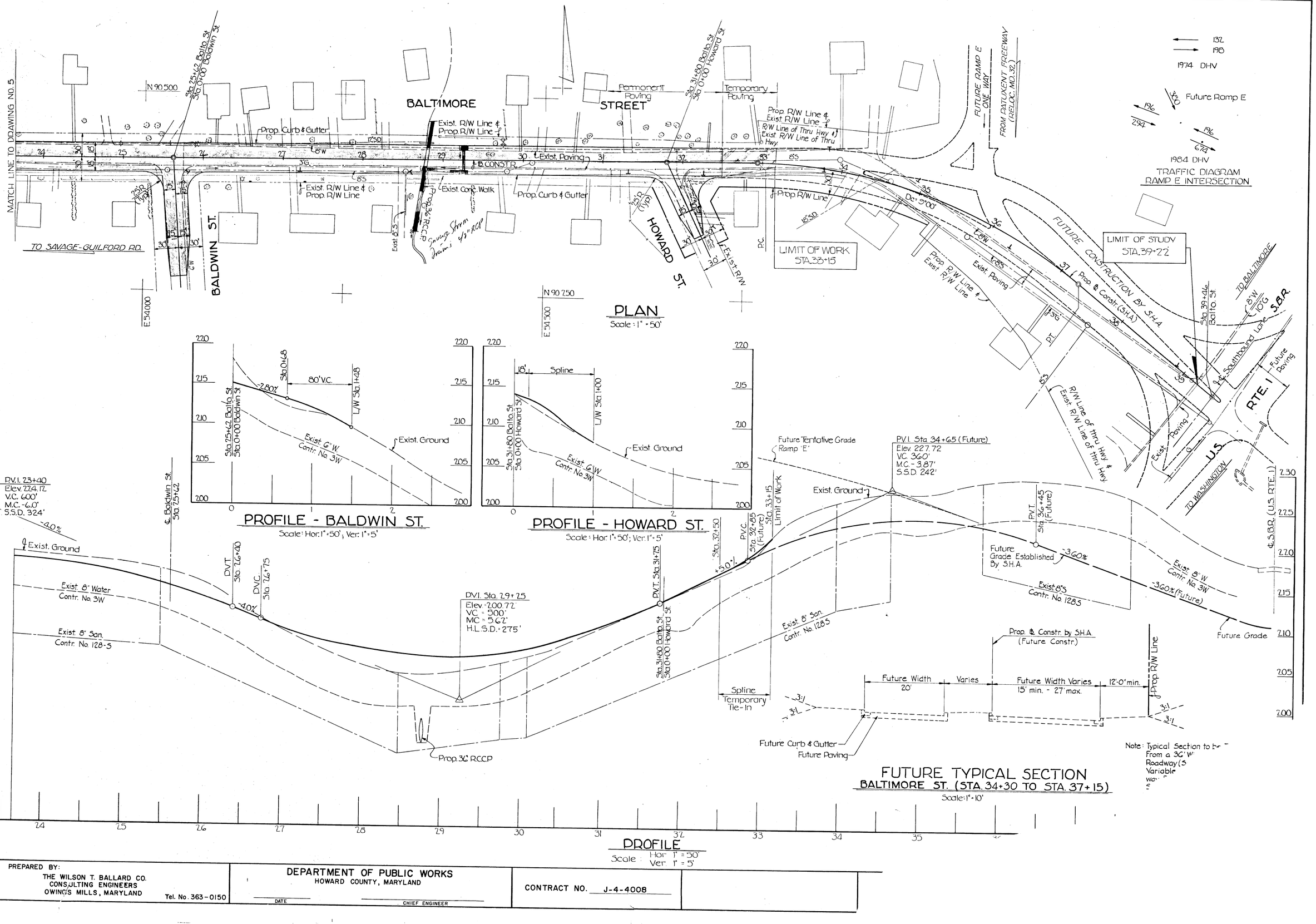
SUMMARY OF QUANTITIES
PAVING AND SHOULDER ITEMS

SAVAGE AREA
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 58 OF 59

SCALE

DESIGNED BY
DRAFTED BY
CHECKED BY



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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE
CHIEF ENGINEER

CONTRACT NO. J-4-4008