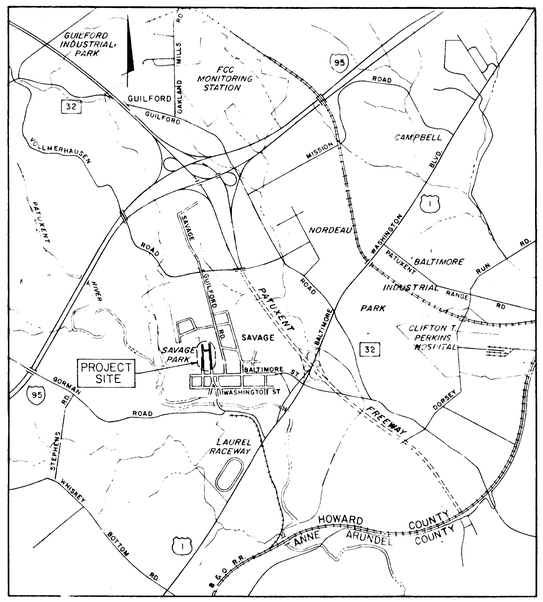
INDEX OF DRAWINGS

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

SAVAGE AREA - PHASE B
ROAD AND STORM DRAIN IMPROVEMENTS

CAPITAL PROJECT NO. J-4-4008B



LOCATION MAP

SCALE IN MILES

TABULATION OF LENGTHS

STREET NAME	LENGTHS FEET	LENGTHS MILES
Commercial St. Sta. 416+00 to Sta. 427+68.42	1163.42	0.221
Foundry St. Sta. 520+75 to Sta. 533+58.04	1283.04	0.243
Commerce St. Sta. 10+10.72 to Sta. 12+85.50	274.78	0.052
TOTAL	2726.24	0.516

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 — 3-15-84
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, Chief, Bureau of Engineering — Date

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

Signature — 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.

C0124201

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

PUBLIC WORKS
TY, MARYLAND
F. BUREAU OF ENGINEERING — DATE
STORM DRAINS DIVISION — DATE
DIRECTO

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

Kenneth L. Evans #4683

TITLE SHEET

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

DRAWING NO. 1 OF 14

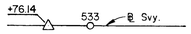
SCALE: AS SHOWN

K.L.E. DESIGNED BY
DRAFTED BY
K.L.E. CHECKED BY

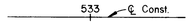
977

LEGEND

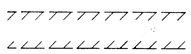
HOWARD COUNTY STANDARD SYMBOLS APPLY EXCEPT AS FOLLOWS:



BASE LINE OF SURVEY



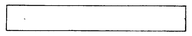
CENTERLINE OF CONSTRUCTION

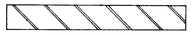

EXISTING ROAD EDGES

EXISTING UTILITY POLES


EXISTING ABANDONED UTILITY

REMOVE EXISTING PIPE, STRUCTURE, ETC.


NEW PAVEMENT


RESURFACED PAVEMENT


TEMPORARY PAVEMENT

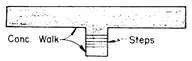

CONCRETE DRIVEWAY


BITUMINOUS CONCRETE DRIVEWAY


GRAVEL DRIVEWAY

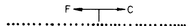
CONCRETE CURB AND GUTTER

BITUMINOUS CURB

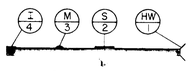


CONCRETE WALK AND STEPS

PROPOSED RETAINING WALL



APPROXIMATE CONSTRUCTION LIMITS



NEW STORM DRAINS


RIP RAP CHANNEL

CONCRETE DITCH OR SWALE

SOD DITCH

ABBREVIATIONS

AHD	AHEAD
BC	BOTTOM OF CURB
BK	BACK
℄ SVY	BASE LINE OF SURVEY
BM	BENCH MARK
C&P	CHESAPEAKE & POTOMAC TELEPHONE CO.
℄ CONST	CENTERLINE OF CONSTRUCTION
CO	CLEANOUT
ENTR	ENTRANCE
FH	FIRE HYDRANT
G&E	GAS & ELECTRIC CO.
GR	GUARD RAIL
H.C. MON.	HOWARD COUNTY HORIZONTAL CONTROL STATION
HGL	HYDRAULIC GRADE LINE
HP	HIGH POINT ON VERTICAL CURVE
HSD	HEADLIGHT SIGHT DISTANCE
LF	LINEAR FEET
MD. SHA	MARYLAND STATE HIGHWAY ADMINISTRATION
P/GE	PROFILE GRADE ELEVATION
P/GL	PROFILE OF THE GROUND LINE
P.G.L.	PROFILE GRADE LINE
P/R	POINT OF ROTATION
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE CULVERT PIPE
RDWY	ROADWAY
R/W	RIGHT OF WAY LINE
SE	SUPERELEVATION
SSD	STOPPING SIGHT DISTANCE
TC	TOP OF CURB
VC	VERTICAL CURVE LENGTH

GENERAL NOTES

1. The Specifications and Standard Details for this project shall be the Howard County Design Manual, Volume IV, Standard Specifications and Details for Construction, latest issue, all Errata and Addenda thereto and the Special Provisions.
2. All horizontal controls are based on the Maryland State Plane Coordinate System.
3. All vertical controls are based on the U.S.C.& G.S. Mean Sea Level Datum, 1929 General Adjustment.
4. The right of way and easement lines shown on these Plans are for assistance in interpreting the Plans only. These lines do not represent the official property acquisition lines. For official right of way information see the appropriate right of way plat or plats on file in the Department of Public Works.
5. Existing utility locations shown on the plans are approximate. It shall be the Contractor's responsibility to verify the exact locations by test pits and other methods prior to commencing work.
6. Before grading operations begin in areas of recent roadside development, the cross sections in these areas will checked by the Engineer for conformity to new conditions.
7. Cut and fill slopes throughout developed areas shall be graded so as to best meet existing roadside landscaping with the least inconvenience to the property owners.
8. All existing entrance walkway and steps disturbed during the construction work shall be replaced to the satisfaction of the Engineer. Construct entrance walkways and steps from the new sidewalk or curb to the existing walk as directed by the Engineer. The new walkway and steps are to be the same width and material as the existing.
9. Reset existing mailboxes adjacent to the new curb line.
10. An item for 3" P.V.C. Sidewalk Drains is provided in the Proposal for use in connecting existing underground cellar or roof drains from private dwellings into the curb flow line. Connections shall be made only when so directed by the Engineer.
11. The frames and covers of all existing water valves, water meters, sanitary sewer manholes, sanitary cleanouts, gas boxes, etc. are to be adjusted to the new grade as directed by the Engineer.
12. All existing fire hydrants are to be adjusted and/or relocated to suit the new roadway construction as indicated on the Plans.
13. All existing storm drain pipes, inlets, headwalls, etc., located within the construction limits are to be removed, plugged or connected to the new systems as indicated on the Plans or directed by the Engineer.
14. STORM DRAINS:
    a. All drainage structures shall be constructed in accordance with Howard County Standards unless otherwise indicated on the Plans.
    b. Locations of proposed manholes, yard inlets and special structures are described by the distance from the project ℄ Construction to the intersection point of the longitudinal and transverse centerlines of the structure.
    c. Locations of proposed endwalls are described by the distance from the project ℄ Construction to the face of the endwall at its transverse centerline.
    d. Locations of curb inlets are described by the distance from the ℄ Construction to the face of the curb at the transverse centerline of the inlet. The top of curb elevations are given at the same point.
    e. Lengths and locations of all drainage facilities are subject to field adjustment as directed by the Engineer.
15. The Contractor shall notify the following utilities or agencies at least five (5) working days before starting work shown on these Plans:

    Howard County Construction Inspection/Survey Division - 992-2417

    Baltimore Gas & Electric Company - Underground Electric Distribution Customer Service - 685-0123

    Baltimore Gas & Electric Company - Underground Gas Distbibution Customer Service - 685-0123

    Engineering - "Damage Control" - 234-5621

    "Miss Utility" - 1-559-0100

    Chesapeake & Potomac (C&P) Telephone Company - 720-9976

    American Telephone and Telegraph - Cable Location Division 393-3553

    Colonial Pipeline Company - 781-4641

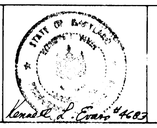
    Bureau of Utilities Howard County - 992-2366
16. Sidewalk ramps shall be constructed at all street intersections and from the curb line to the entrance walkway of all public buildings as directed by the Engineer. The cost for forming, placing and finishing sidewalk ramps is to be included in the unit prices bid for concrete curb and gutter and concrete sidewalk.

NO.	DATE	DESCRIPTION	APPROVED

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
CHIEF, BUREAU OF ENGINEERING — DATE
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE

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



GENERAL NOTES,
LEGEND AND ABBREVIATIONS

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

DRAWING NO 2 OF 14

SCALE NONE

DESIGNED BY
DRAWN BY
CHECKED BY

HOWARD COUNTY MONUMENTS

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

WASHINGTON ST. ℄ SVY.

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. ℄ SVY.

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. ℄ SVY.

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. ℄ SVY.

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. ℄ SVY.

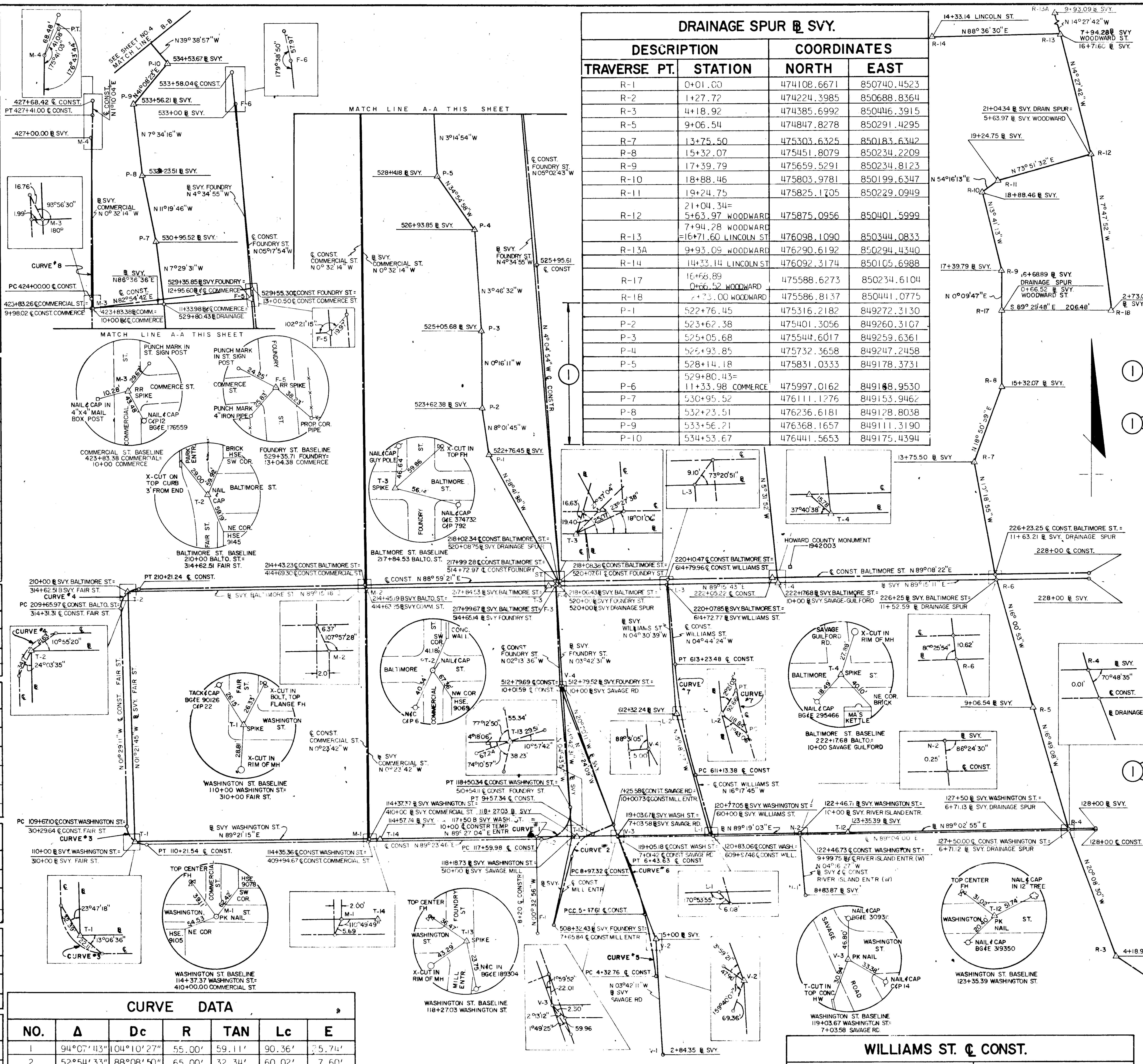
TRAVERSE PT.	STATION	NORTH	EAST
M-3	423+83.38 COMMERCIAL ST =10+00 COMMERCE ST.	475989.0939	849035.2074
M-4	427+00 COMMERCIAL ST	476305.7040	849032.2381

WILLIAMS ST. ℄ SVY.

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

COMMERCIAL ST. ℄ CONST.

STATION	NORTH	EAST
(1) 423+83.26 COMMERCIAL ST. =9+98.02 COMMERCE ST.	475988.9765	849033.2259
(1) P.C. 424+00.00 COMMERCIAL ST.	476005.7139	849033.0690
(1) P.T. 427+41.00 COMMERCIAL ST.	476346.6981	849034.9455



DRAINAGE SPUR ℄ SVY.

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

WASHINGTON ST. ℄ CONST.

STATION	NORTH	EAST
PC 109+57.10 =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	NORTH	EAST
PC 209+65.97 =314+31.31 FAIR ST.	475031.7042	848585.4991
PT 210+21.34	475067.6066	848619.8698
(1) 214+43.23 =414+69.30 COMMERCIAL ST.	475075.0518	849041.7949
217+99.28 =514+72.97 FOUNDRY ST. SOUTH	475081.3335	849397.7841
(1) 218+02.34 =520+08.75 DRAINAGE SPUR	475081.3875	849400.8459
(1) 218+08.38 =520+07.61 FOUNDRY ST. NORTH	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	NORTH	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	849535.9200
7+25.58 =10+00.73 MILL ENTRANCE	474631.2295	849506.0145

FOUNDRY ST. ℄ CONST.

STATION	NORTH	EAST
512+79.69 = 10+01.59 SAVAGE RD.	474888.2073	849405.2932
(1) 525+95.61	475668.0015	849365.0305
(1) 529+55.30 = 13+00.50 COMMERCE ST.	476026.3025	849333.3979
(1) 533+58.04	476427.3211	849296.2086

MILL ENTRANCE ℄ CONST.

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

TEMPORARY MILL ENTRANCE

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

(1) STAKEOUT DATA APPLICABLE TO THIS CONTRACT

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′	105.41′	210.11′	5.32′
(1) 8	1°42′18″	0°30′00″	11459.16′	170.51′	341.00′	1.27′

RIVER ISLAND ENTRANCE ℄ SVY.

TRAVERSE PT.	STATION	NORTH	EAST
N-1	8+83.87	474498.7381	849864.9770

WILLIAMS ST. ℄ CONST.

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

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[illegible]

DIRECTOR OF PUBLIC WORKS DATE CHIEF - BUREAU OF ENGINEERING DATE

CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION DATE

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

[illegible] #4683.

CENTERLINE CONSTRUCTION STAKEOUT DATA

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

DRAWING NO. 3 OF 14

SCALE: 1" = 100'

DESIGNED BY
DRAFTED BY
CHECKED BY

SEQUENCE OF CONSTRUCTION

GENERAL

1. The following sequence of operations refers specifically to the critical areas of work which must be completed during a certain 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. 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.
4. 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.
5. 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.
6. All standard regulatory and warning signs used for maintenance of traffic shall be 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 produce the latest edition and supplements of each of these publications for his use.

CONSTRUCTION

1. Construct the Commercial/Foundry drain.
2. Construct the storm drain systems for Foundry and Commerce streets.
3. Grade, construct curb&gutter and pave Foundry and Commerce streets.
4. Construct the Commercial street water main relocation.
5. Construct the Commercial street storm drain system.
6. Grade, construct curb&gutter and pave Commercial street.

TRAFFIC CONTROL

1. Provide flagger control at locations where construction vehicles enter and exit public roads.
2. See General Note number 5.
3. Close Foundry St. north of Baltimore St. and Commerce St. to through traffic. Maintain access to the area via Commercial St. and Baltimore St.
4. See General Note number 5.
5. See General Note number 5.
6. Close Commercial St. to through traffic. Maintain access via Baltimore St., Foundry St. and Commerce St.

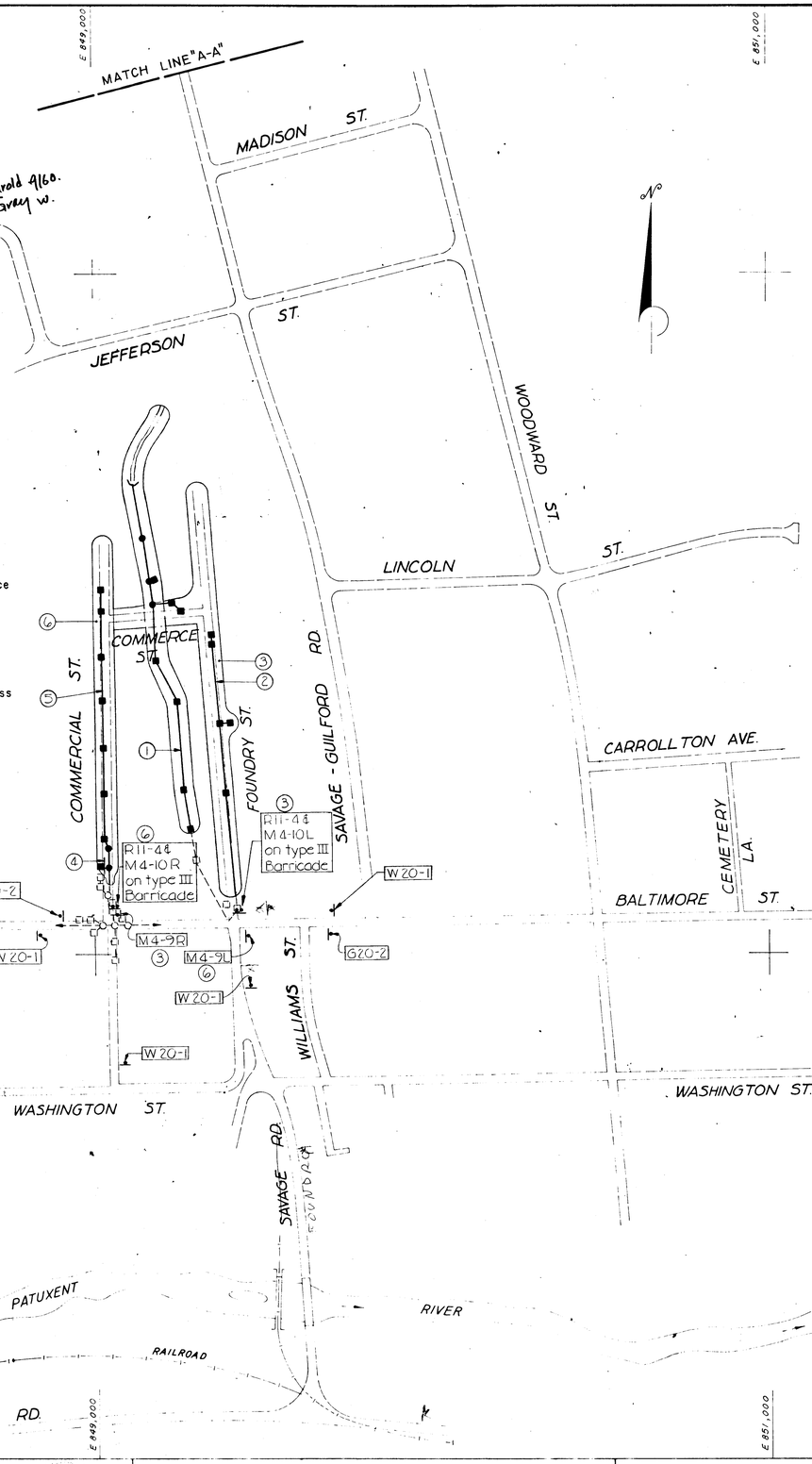
SIGN LOCATION AND MOUNTING NOTES

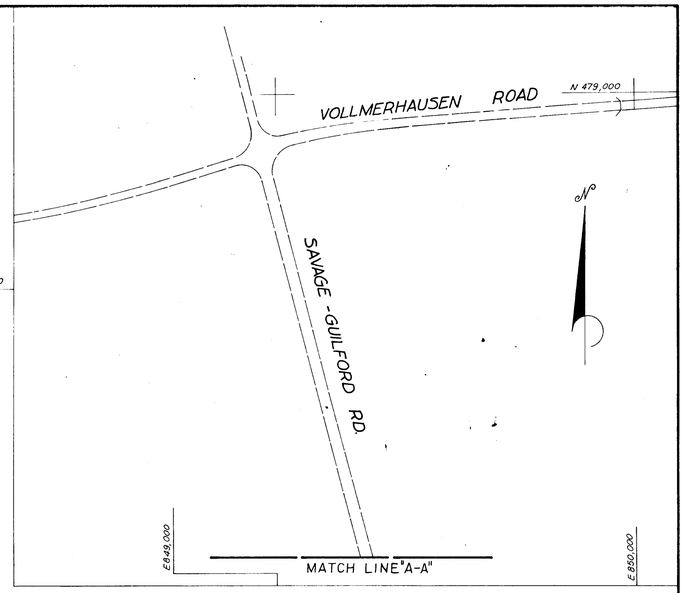
Signs shall be erected at the locations shown on the plans and/or directed by the engineer in accordance with the following criteria:

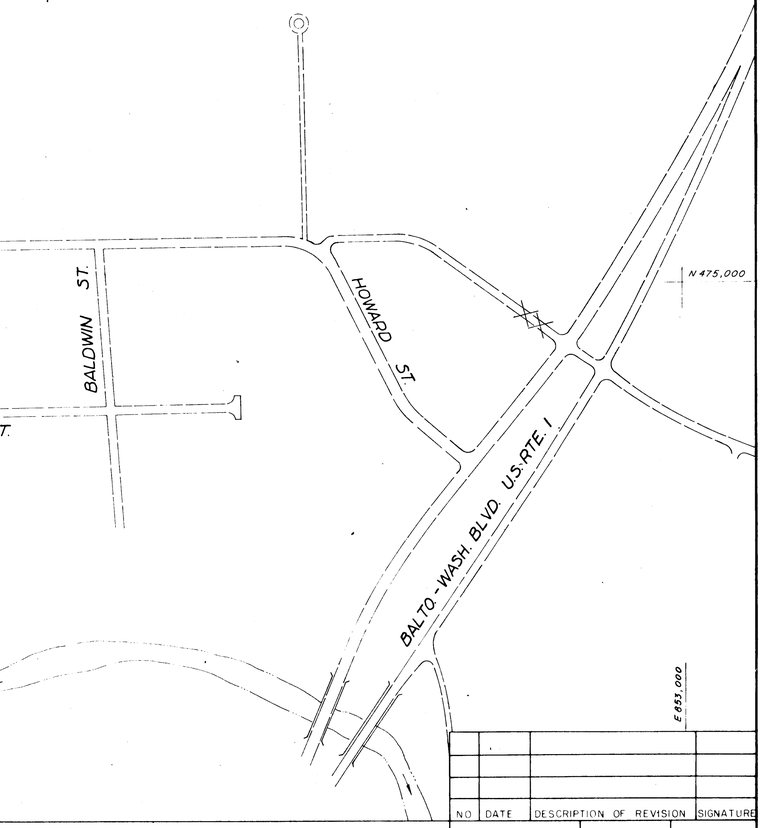
1. Horizontal clearance between edge of sign and edge of roadway shall be two (2) feet.
2. Vertical clearance between bottom edge of sign and ground shall be seven (7) feet except for barricade mounted signs where the bottom of the sign shall be at least one (1) foot off the ground.
3. All maintainance 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" dia. stainless steel or clear anodized aluminum hex. head bolts with washers and nuts. Exceptions to the above is END CONSTRUCTION (G20-2) sign. The G20-2 sign shall be mounted on two (2) four (4) inch by four (4) inch supports
4. All advanced warning signs shall have one (1) low intensity flashing light attached to the top of the sign.

LEGEND

- (3) Construction Stage
- [M4-10L] MUTCD Sign Designation
- Ground Mounted Temporary Sign for Maintenance of Traffic
- Prop. Inlet and Pipe
- Prop. Headwall and Pipe
- Prop. Manhole
- Exist. Inlet and Pipe







NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DIRECTOR OF PUBLIC WORKS — DATE
CHIEF, BUREAU OF ENGINEERING — DATE
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE

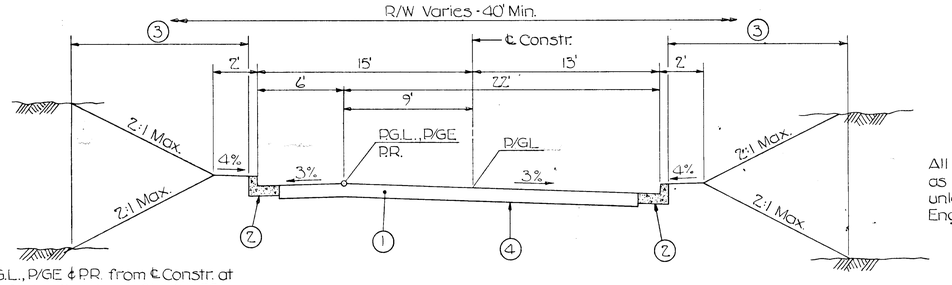
PREPARED BY
THE WILSON T BALLARD CO
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL NO 363-0150

Kenneth L. Evans 14683

TRAFFIC CONTROL PLAN, CONSTRUCTION SEQUENCE AND SIGNING

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

DRAWING NO. 4 OF 14
SCALE 1"=200'
K.L.E. DESIGNED BY
J.S.L. DRAFTED BY
K.L.E. CHECKED BY

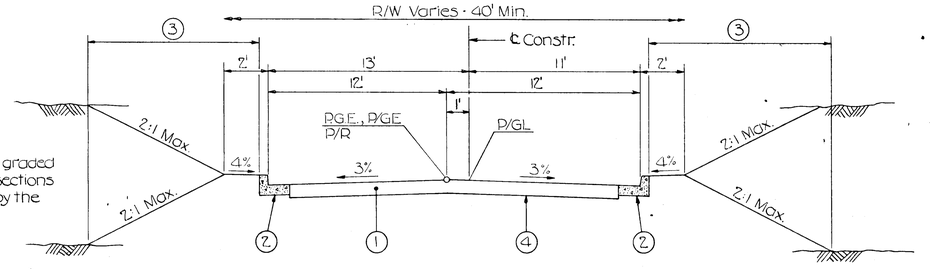


NOTE: Transition P.G.L., P/GE ℄ P.R. from ℄ Constr. at Sta. 416+00 to 9' Lt. ℄ Constr. at Sta. 416+90 Transition east curb line from 15' Rt. Sta. 416+00 to 13' Rt. Sta. 416+90.

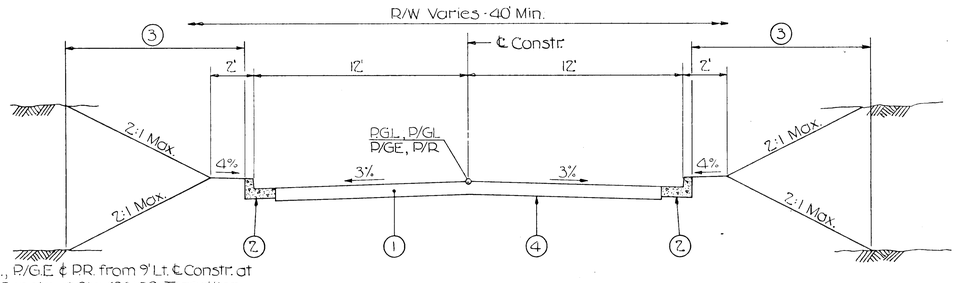
COMMERCIAL STREET
STA. 416+90 TO STA. 423+60

GRADING NOTE

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

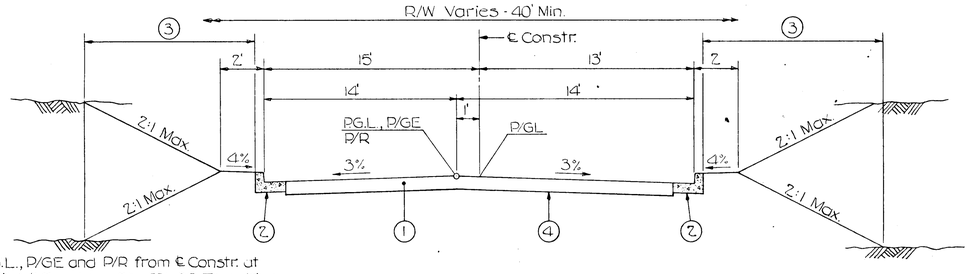


COMMERCE STREET
STA. 10+34 TO STA. 12+64



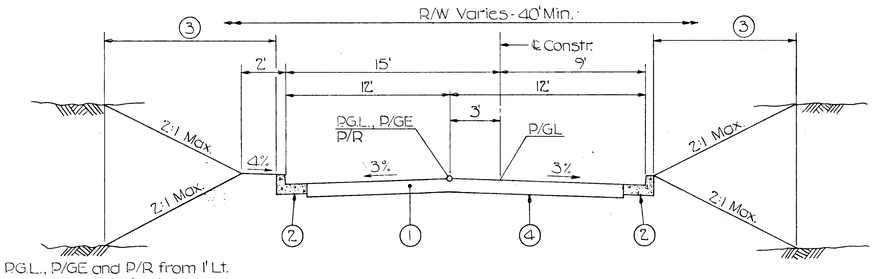
NOTE: Transition P.G.L., P/G.E ℄ P.R. from 9' Lt. ℄ Constr. at Sta. 423+60 to ℄ Constr. at Sta. 424+50. Transition west curb line from 15' Lt. ℄ Constr. at Sta. 423+60 to 12' Lt. ℄ Constr. at Sta. 424+20.

COMMERCIAL STREET
STA. 424+50 TO STA. 427+68.42



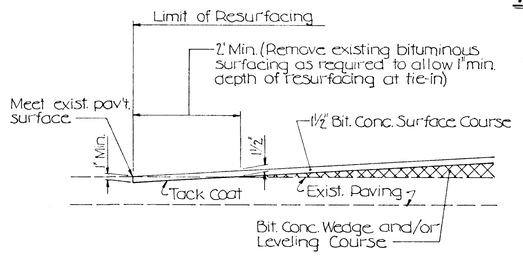
NOTE: Transition P.G.L., P/GE and P/R from ℄ Constr. at Sta. 520+75 to 1' Lt. ℄ Constr. at Sta. 521+00. Transition east curb line from 15' Rt. ℄ Constr. at Sta. 520+75 to 13' Rt. ℄ Constr. at Sta. 521+50.

FOUNDRY STREET
STA. 521 +00 TO STA. 529+23

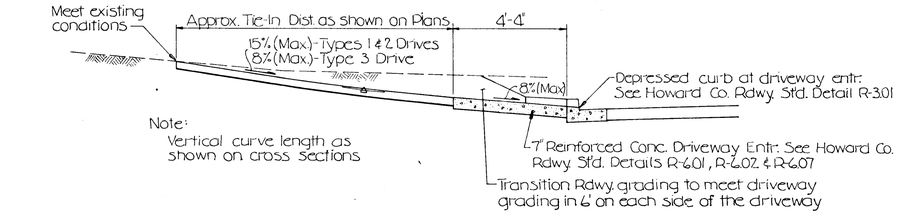


NOTE: Transition P.G.L., P/GE and P/R from 1' Lt. ℄ Constr. at Sta. 529+73± to 3' Lt. ℄ Constr. at Sta. 529+87±. Transition east curb line from 13' Rt. ℄ Constr. at Sta. 529+73± to 9' Rt. ℄ Constr. at Sta. 529+87±

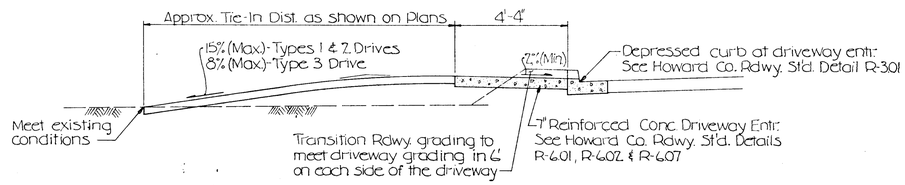
FOUNDRY STREET
STA. 529+87.22 TO STA. 533+58.04



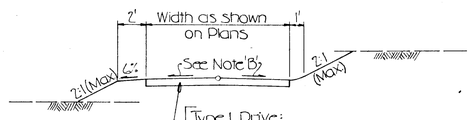
TYPICAL DETAIL - BITUMINOUS CONCRETE RESURFACING HEEL-IN



CUT AREAS



FILL AREAS



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 Pav't. (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)

TYPICAL SECTION

PRIVATE DRIVEWAY DETAILS

TYPICAL SECTION LEGEND

1. Standard Section P-3 Full Depth Bituminous Concrete Alternate or Granular Base Alternate (Granular Base is to extend under combination curb & gutter)
2. Standard Combination Concrete Curb and Gutter
3. 2" Topsoil, Seed and Mulch
4. Limit of Class 1 Excavation

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE | CHIEF - BUREAU OF ENGINEERING DATE

CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION DATE

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

Kenneth P. Evans #4693

TYPICAL ROAD SECTIONS AND DETAILS

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

DRAWING NO. 5 OF 14

SCALE NONE

C.A.J. DESIGNED BY
T.G.S. DRAFTED BY
K.L.E. 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.	Grd @ Top W= 178.36	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. 5	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. 5	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+57.1 Balto. St.	199.47	195.90
I-11	Std. WR	18' Lt. Sta. 217+64.9 Balto. St.	199.58	195.80
M-7	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.	219.95	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+99.82 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. 5	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		Deleted (2-1-84)		

NOT IN CONTRACT

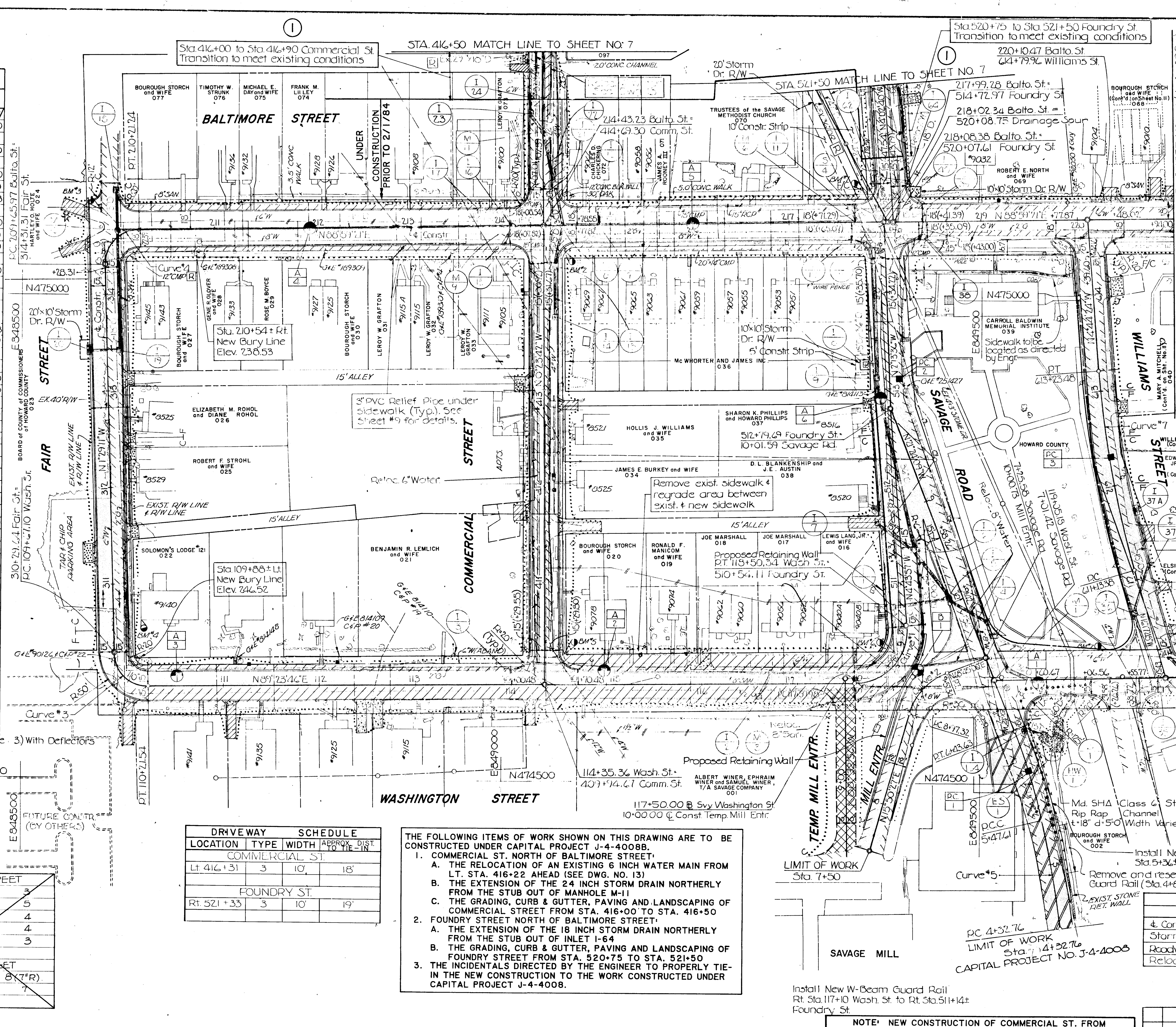
1) See Storm Drain Details Sh't #36 2.) With Reticular Grate 3.) With Deflectors
4) Brick Invert shall be One-half developed

STEP SCHEDULE

LOCATION	WIDTH	NO. RISERS
WASHINGTON STREET		
Rt. 110+79.1	4'	3
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
Rt. 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

NOT IN CONTRACT

NOT IN CONTRACT



DRIVEWAY SCHEDULE

LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
COMMERCIAL ST.			
Lt. 416+31	3	10'	18'
FOUNDRY ST.			
Rt. 521+33	3	10'	19'

THE FOLLOWING ITEMS OF WORK SHOWN ON THIS DRAWING ARE TO BE CONSTRUCTED UNDER CAPITAL PROJECT J-4-4008B.

1. COMMERCIAL ST. NORTH OF BALTIMORE STREET:
   A. THE RELOCATION OF AN EXISTING 6 INCH WATER MAIN FROM LT. STA. 416+22 AHEAD (SEE DWG. NO. 13)
   B. THE EXTENSION OF THE 24 INCH STORM DRAIN NORTHERLY FROM THE STUB OUT OF MANHOLE M-11
   C. THE GRADING, CURB & GUTTER, PAVING AND LANDSCAPING OF COMMERCIAL STREET FROM STA. 416+00 TO STA. 416+50
2. FOUNDRY STREET NORTH OF BALTIMORE STREET:
   A. THE EXTENSION OF THE 18 INCH STORM DRAIN NORTHERLY FROM THE STUB OUT OF INLET I-64
   B. THE GRADING, CURB & GUTTER, PAVING AND LANDSCAPING OF FOUNDRY STREET FROM STA. 520+75 TO STA. 521+50
3. THE INCIDENTALS DIRECTED BY THE ENGINEER TO PROPERLY TIE-IN THE NEW CONSTRUCTION TO THE WORK CONSTRUCTED UNDER CAPITAL PROJECT J-4-4008.

B.M.#1: ▫ cut on Southeast end of walk at Northwest corner of Baltimore St. and Foundry St. Elev. 198.703

B.M.#2: ▫ cut on Southwest corner of inlet at Southeast corner of Baltimore St. and Commercial St. Elev. 217.683

B.M.#3: × cut 3' from end of curb Northwest corner of Baltimore St. and Savage Park Entrance. Elev. 243.687

B.M.#4: ▫ cut in top of brick foundation cornerstone at Southwest corner brick Masonic Temple at Northeast corner of Washington St. and Fair St. Elev. 249.891

B.M.#5: ▫ cut in top of 2' high granite stone on Northeast corner of Washington St. and Commercial St. Elev. 227.825

B.M.#6: ▫ cut in top of granite stone on Northwest corner of Washington St. and Foundry St. Elev. 205.077

B.M.#7: ▫ cut in center of curb at P.T. joint on Northwest corner of Washington St. and Williams St. Elev. 192.080

CROSS REFERENCES

ITEM	SHT. NO.
℄ Construction Stakeout Data	3
Storm Drain Profiles	10
Roadway Profiles	8,9
Reloc. Water Mains	13

NOTE: (1) NEW CONSTRUCTION OF COMMERCIAL ST. FROM STA. 416+00 TO STA. 416+50 AND FOUNDRY ST. FROM STA. 520+75 TO STA. 521+50 ADDED 2-1-84

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE
[illegible] 4/6/84
CHIEF - BUREAU OF ENGINEERING DATE
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
#4683
Kenneth L. Evans

PLAN
COMMERCIAL ST. STA. 416+00 TO STA. 416+50
FOUNDRY ST. STA. 520+75 TO STA. 521+50

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

DRAWING NO. 6 OF 14

SCALE: 1" = 50'

K.L.E. DESIGNED BY
T.G.S. DRAFTED BY
K.L.E. CHECKED BY

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

Note: Transition Commercial St. east curb line from 15' Rt. ℄ Constr. at Sta. 416+00 to 13' Rt. ℄ Constr. at Sta. 416+90

DRIVEWAY SCHEDULE

LOCATION	TYPE	WIDTH	APPROX. DIST TO TIE-IN	LOCATION	TYPE	WIDTH	APPROX. DIST TO TIE-IN
COMMERCIAL ST.				COMMERCE ST.			
Lt. 417+08	3	10'	5'	Rt. 10+48	1	11'	42'
Lt. 417+71	3	10'	13'				
Lt. 417+90	3	10'	14'	FOUNDRY STREET			
Rt. 418+75	2	10'	8'	Lt. 521+62	3	18'	5'
Lt. 419+67	2	12'	16'	Lt. 522+62	3	10'	9'
Rt. 419+67	1	25'	3'	Rt. 525+03	2	14'	7'
Lt. 421+13	2	12'	8'	Lt. 525+72	1	10'	13'
Rt. 421+33	1	10'	6'	Rt. 525+93	2	15'	8'
Lt. 423+60	1	10'	35'	Lt. 526+87	3	11'	12'
Rt. 424+76	2	12'	35'	Rt. 528+15	2	10'	23'
Rt. 425+02	2	15'	22'	Lt. 528+61	3	10'	14'
Lt. 425+16	2	13'	4'	Lt. 530+50	2	12'	10'
Lt. 425+42	2	13'	18'	Lt. 530+74	3	10'	12'
Rt. 425+45	3	10'	23'	Rt. 531+21	2	16'	19'
Lt. 426+52	2	12'	4'	Lt. 531+97	2	17'	20'
Lt. 427+36	2	10'	5'	Lt. 532+94	2	10'	22'

NOT IN CONTRACT

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

NOT IN CONTRACT

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

STORM DRAIN STRUCTURE SCHEDULE

NEW CONSTRUCTION ADDED 2/1/84

STRUC. NO	TYPE	LOCATION		TOP ELEV.	INV. OUT
M-12	G5.05	0' Offset Sta. 417+17	Commercial St.	221.18	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.	229.64	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	13.01' 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-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	Fdry. 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	232.79	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+91.75	Commerce St.	231.30	226.67
I-47	A-5	11' Rt. Sta. 12+18.61	Commerce St.	231.11	227.48
I-41A	Dbl. S①	20' Rt. Sta. 523+18	Foundry St. Drainage Spur	203.00	197.70
I-41	Dbl. S①	6' Rt. Sta. 522+27	Foundry St. Drainage Spur	200.80	195.35
HW-3	A	6' Rt. Sta. 537+10	Foundry St. Drainage Spur		246.00
I-49	A-5	Rt. Sta. 6+98	Jefferson St.	260.74	253.59
	G5.05	5' Lt. Sta. 6+95	Jefferson St.	261.70	254.80

NOT IN CONTRACT

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 ex. ditch)			263.30
M-19	G5.05	28' Lt. Sta. 4+45	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	13' Rt. Sta. 522+25	Foundry St.	203.82	200.20
**I-69	A-10	13' Rt. Sta. 524+00	Foundry St.	209.63	206.00
I-65	A-10	13' Rt. Sta. 526+10	Foundry St.	217.21	212.00
I-68	Std. S	23' Rt. Sta. 526+10	Foundry St.	215.90	212.30
**I-66	A-10	13' Rt. Sta. 528+45	Foundry St.	226.69	223.35
**I-67	A-10	13' Rt. Sta. 528+65	Foundry St.	227.60	224.00
M-16A	G 5.02	4' Rt. Sta. 530+71	Foundry St. Drainage Spur	229.60	221.25
M-17	G 5.02	3' Rt. Sta. 532+00	Foundry St. Drainage Spur	238.40	229.65
HW-2	A	1' Lt. Sta. 533+62	Foundry St. Drainage Spur		233.90

NOT IN CONTRACT

UNDER CONSTRUCTION PRIOR TO 2/1/84

** Inside width to be 2'-6"
① See SHA Std. MD 378.02 For Conc. Gutter Approach Details
* Std. Type 'S' Inlet w/ 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'	4
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'	2
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.
D_c = 0°30'00"
R = 11,459.16'
T = 170.51
L_c = 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±

Install 18" R.C.C.P. Conc. End Section and construct 5'×5' Md. S.H.A. Cl. 6 Stone Rip-Rap Apron (T=12"). See Cross Sections

NOTE: ALL WORK SHOWN ON THIS DRAWING EXCEPT THE WORK INDICATED AS "UNDER CONSTRUCTION PRIOR TO 2-1-84" IS TO BE PERFORMED

CROSS REFERENCES

ITEM	SHEET NO.
Construction Stake-out Data	3
Commercial Street Profile	8
Foundry Street Profile	8
Commerce Street Profile	9
Storm Drain Profile	10 & 11

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE — [illegible] CHIEF - BUREAU OF ENGINEERING — DATE
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE

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

#7693 [illegible]

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

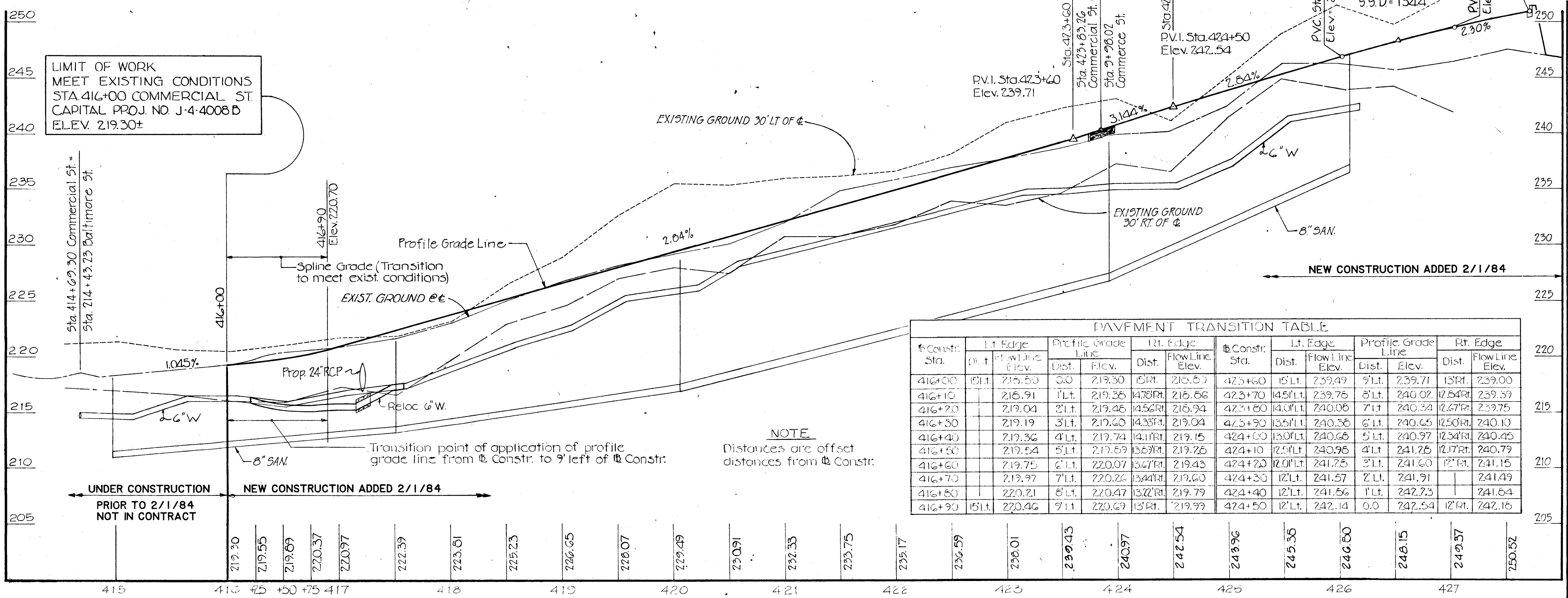
SAVAGE AREA - PHASE B
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-4-4008 B
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 7 OF 14

SCALE: 1" = 50'

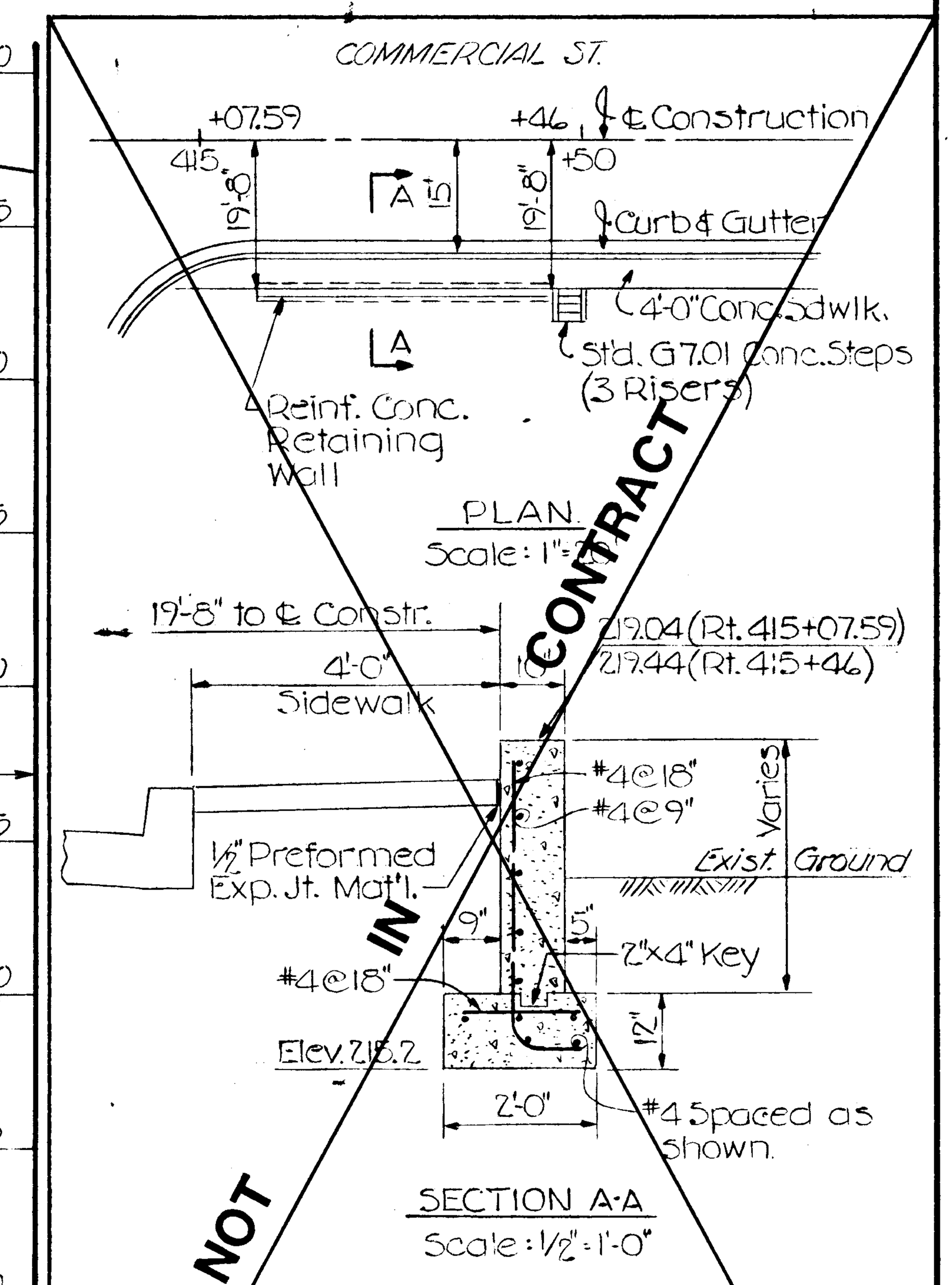
K.L.E. DESIGNED BY
R.A.W. DRAFTED BY
K.L.E. CHECKED BY

COMMERCIAL STREET



PAVEMENT TRANSITION TABLE

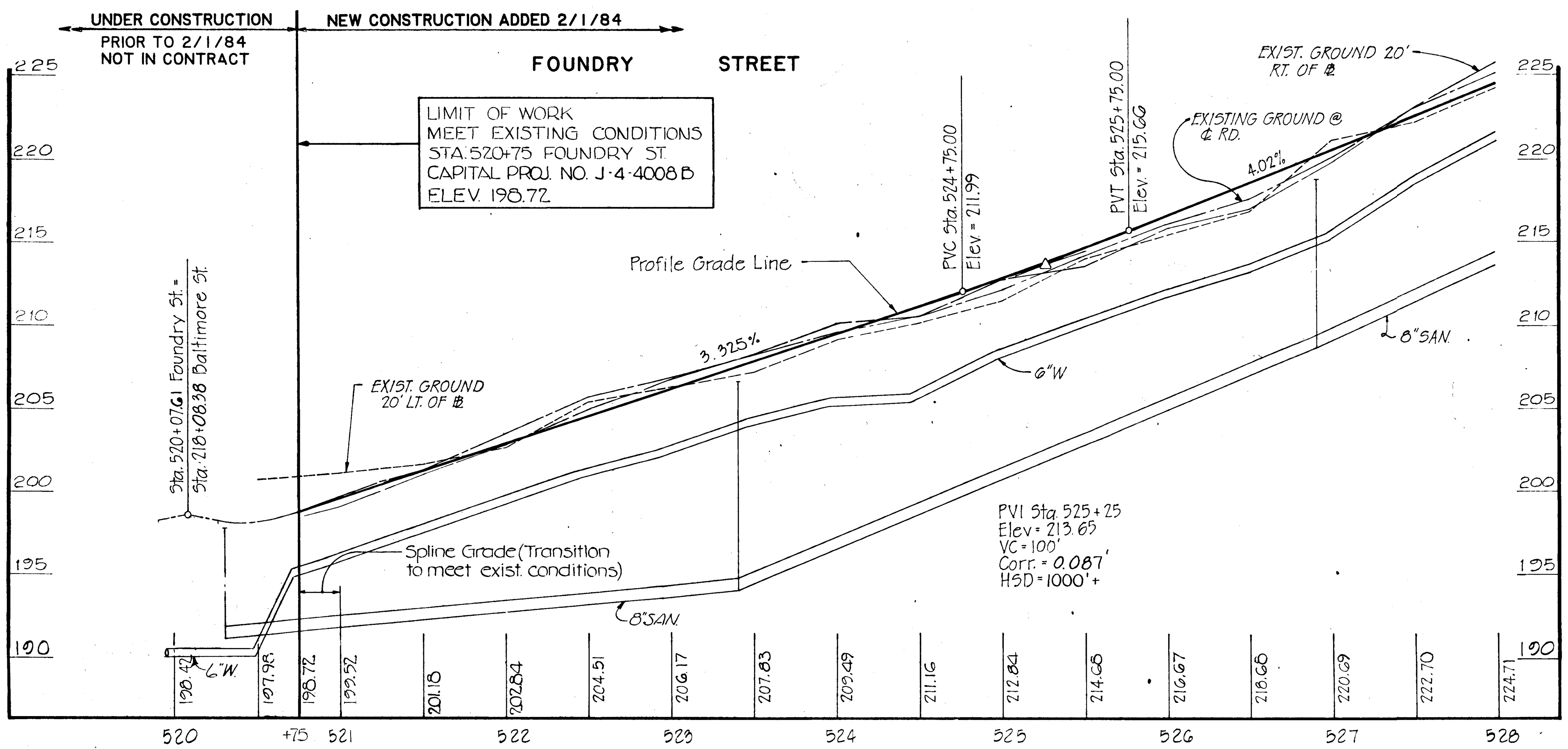
℄ Constr. Sta.	Lt. Edge Dist.	Lt. Edge Flow Line Elev.	Profile Grade Line Dist.	Profile Grade Line Elev.	Rt. Edge Dist.	Rt. Edge Flow Line Elev.	℄ Constr. Sta.	Lt. Edge Dist.	Lt. Edge Flow Line Elev.	Profile Grade Line Dist.	Profile Grade Line Elev.	Rt. Edge Dist.	Rt. Edge Flow Line Elev.
416+00	15'Lt.	218.80	0.0	219.30	15'Rt.	218.80	423+60	15'Lt.	239.49	9'Lt.	239.71	13'Rt.	239.00
416+10		218.91	1'Lt.	219.38	14.78'Rt.	218.86	423+70	14.51'Lt.	239.78	8'Lt.	240.02	12.84'Rt.	239.39
416+20		219.04	2'Lt.	219.48	14.56'Rt.	218.94	423+80	14.01'Lt.	240.08	7'Lt.	240.34	12.67'Rt.	239.75
416+30		219.19	3'Lt.	219.60	14.33'Rt.	219.04	423+90	13.51'Lt.	240.38	6'Lt.	240.65	12.50'Rt.	240.10
416+40		219.36	4'Lt.	219.74	14.11'Rt.	219.15	424+00	13.01'Lt.	240.68	5'Lt.	240.97	12.34'Rt.	240.45
416+50		219.54	5'Lt.	219.89	13.89'Rt.	219.28	424+10	12.51'Lt.	240.98	4'Lt.	241.28	12.17'Rt.	240.79
416+60		219.75	6'Lt.	220.07	13.67'Rt.	219.43	424+20	12.01'Lt.	241.28	3'Lt.	241.60	12'Rt.	241.15
416+70		219.97	7'Lt.	220.26	13.44'Rt.	219.60	424+30	12'Lt.	241.57	2'Lt.	241.91		241.49
416+80		220.21	8'Lt.	220.47	13.22'Rt.	219.79	424+40	12'Lt.	241.56	1'Lt.	242.23		241.84
416+90	15'Lt.	220.46	9'Lt.	220.69	13'Rt.	219.99	424+50	12'Lt.	242.14	0.0	242.54	12'Rt.	242.18



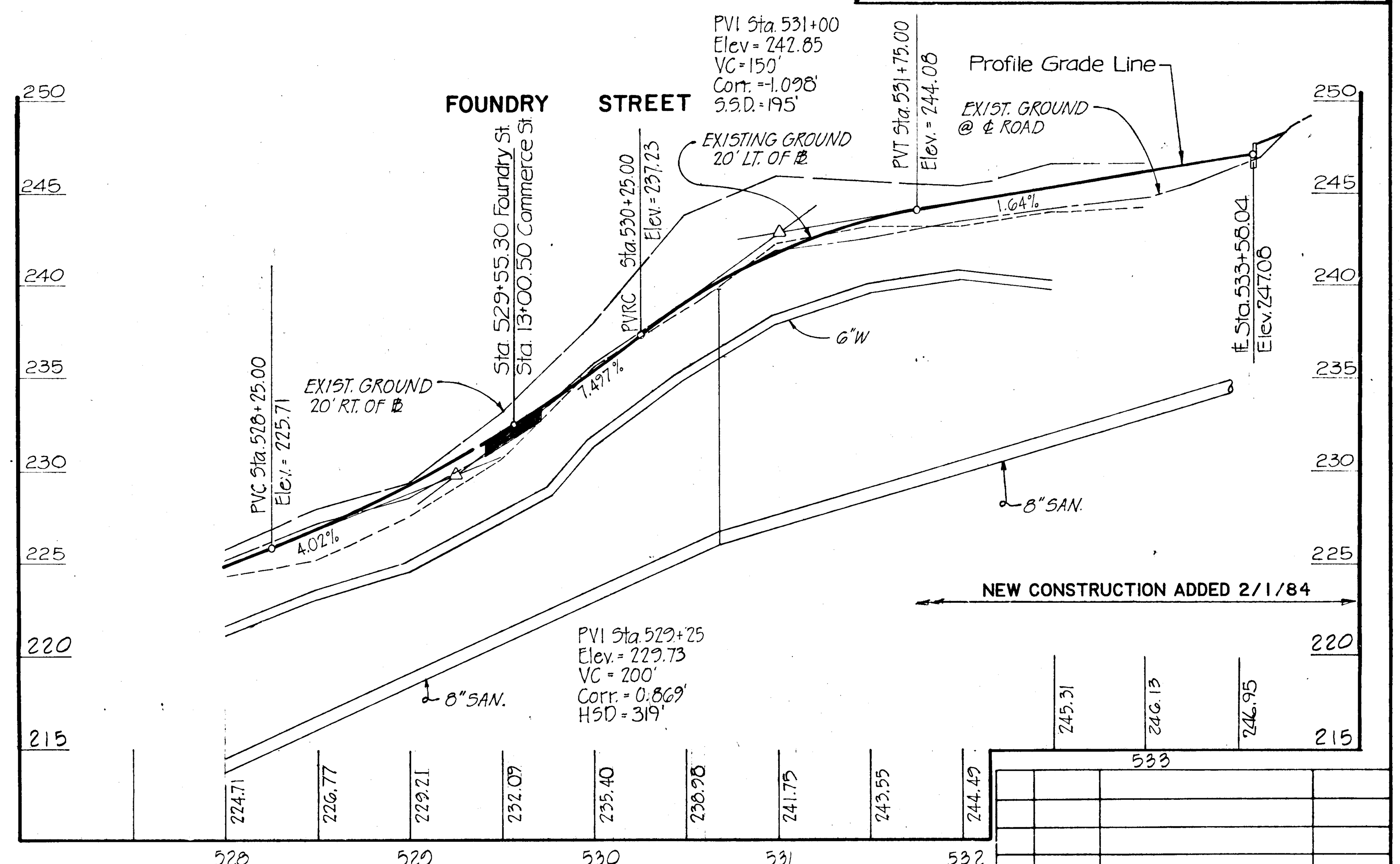
NOTES
1. See Dwg. No. 37 for Structural General Notes.
2. Reset picket fence on top of wall as directed by the Engineer.

RETAINING WALL NO. 5
CHARLES D. CHICKERING PROPERTY
UNDER CONSTRUCTION PRIOR TO 2/1/84

FOUNDRY STREET



FOUNDRY STREET



NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[illegible] — DIRECTOR OF PUBLIC WORKS — DATE
[illegible] 6/6/83 — CHIEF - BUREAU OF ENGINEERING — DATE
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE

977

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

STATE OF MARYLAND — KENNETH L. [illegible] — #4693 — Kenneth L. [illegible]

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

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

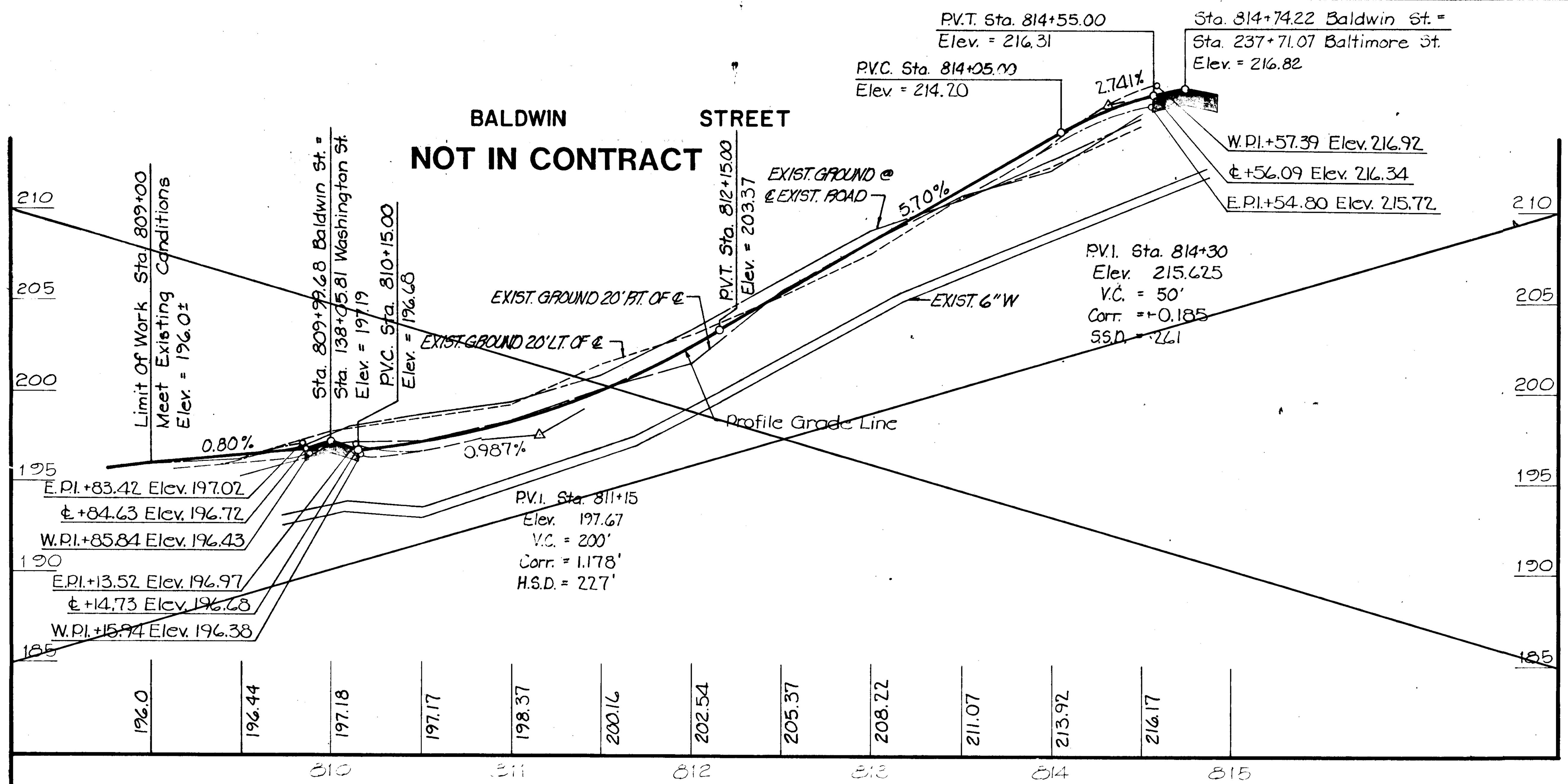
DRAWING NO. 8 OF 14

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

K.L.E. DESIGNED BY
R.A.W. DRAFTED BY
K.L.E. CHECKED BY

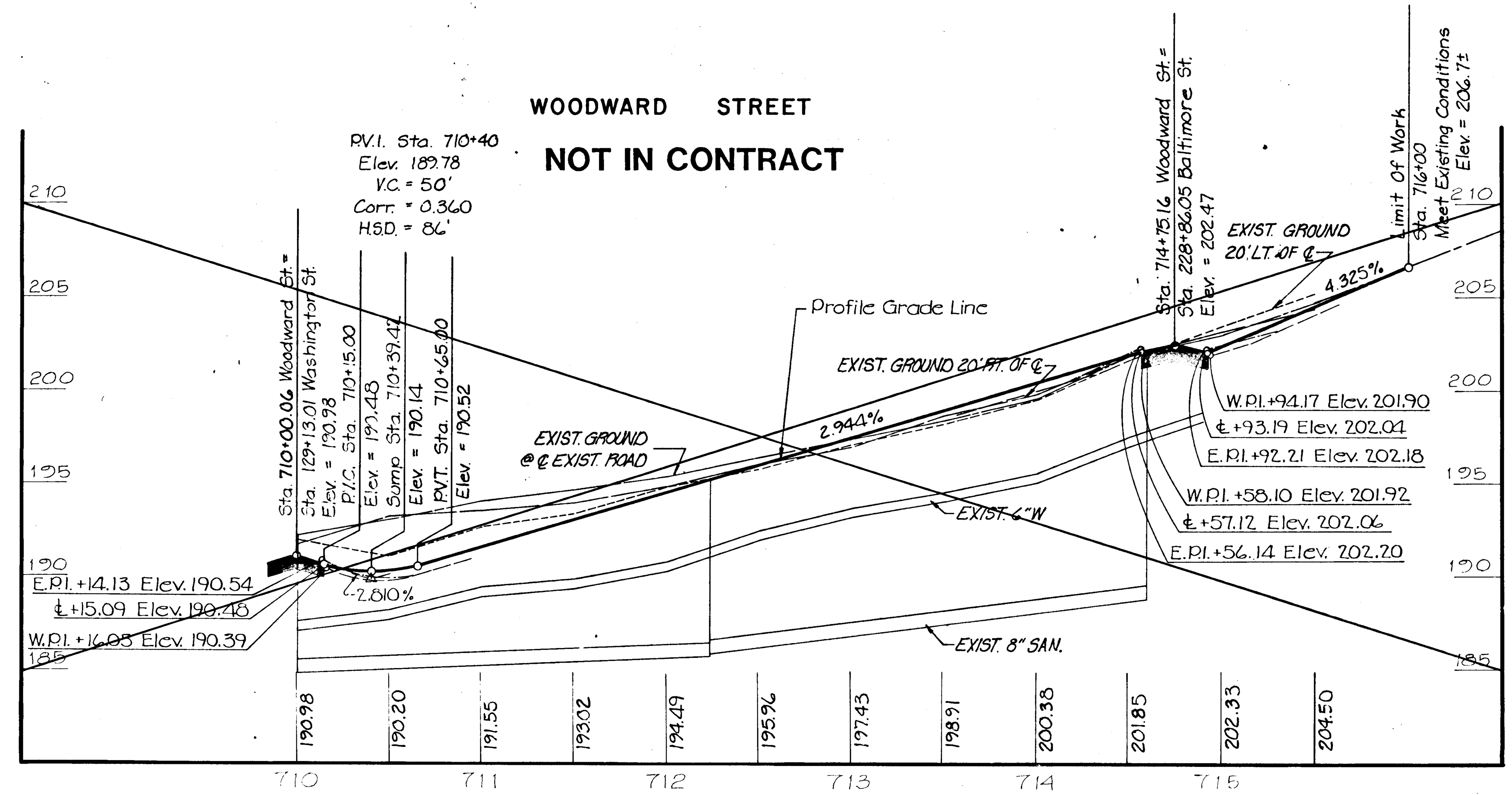
BALDWIN STREET

NOT IN CONTRACT



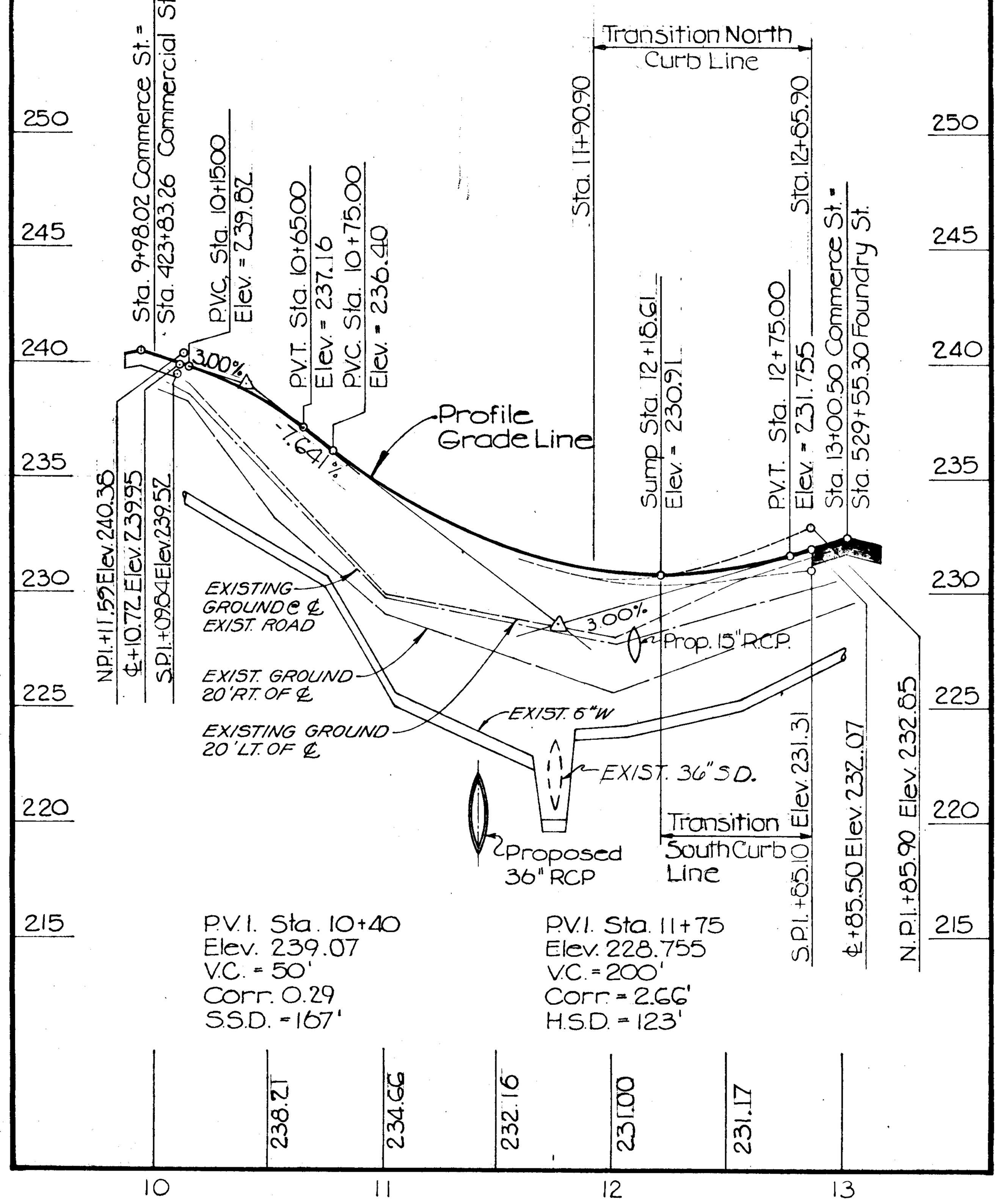
WOODWARD STREET

NOT IN CONTRACT



NEW CONSTRUCTION ADDED 2/1/84

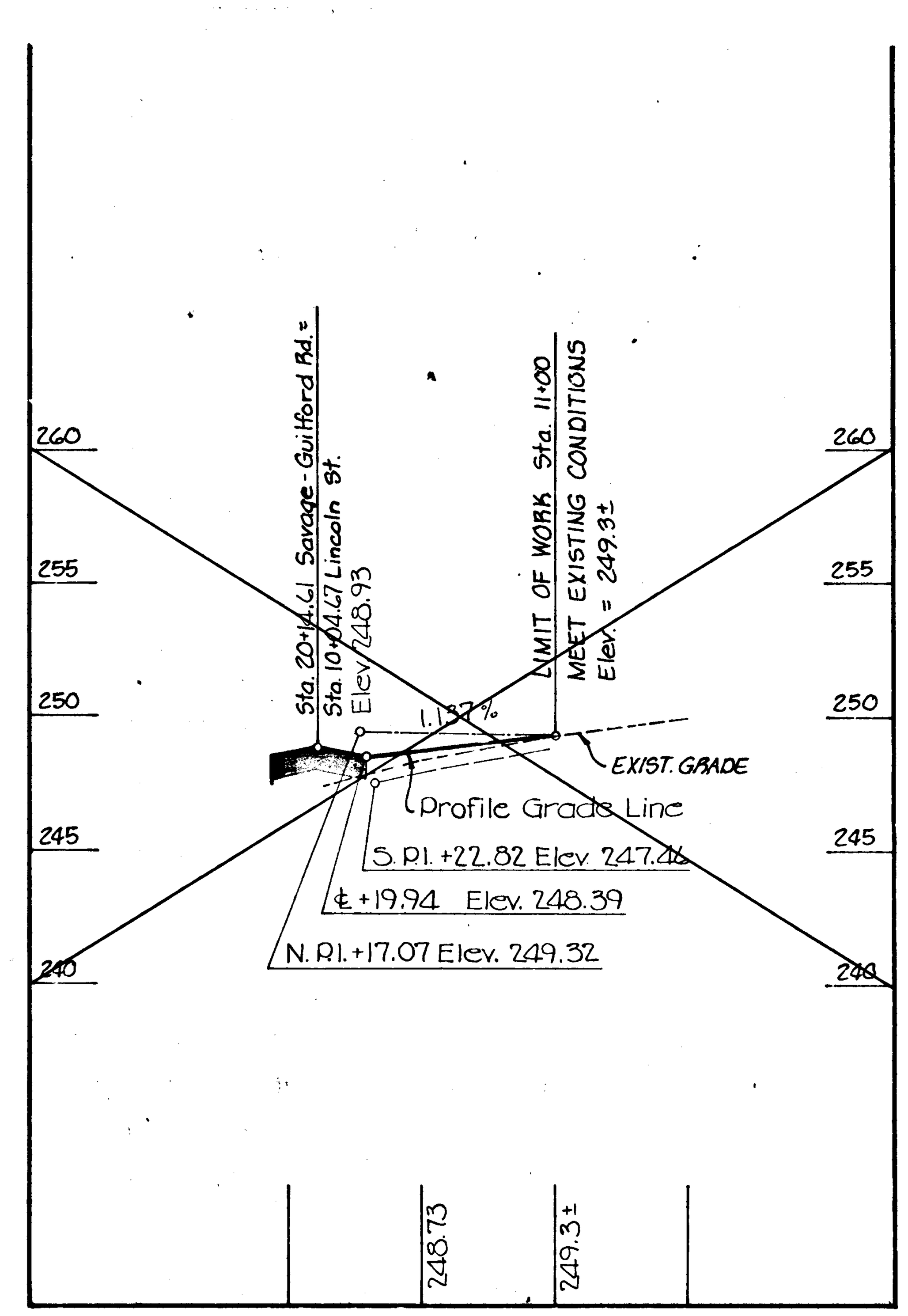
COMMERCE STREET



UNDER CONSTRUCTION PRIOR TO 2/1/84

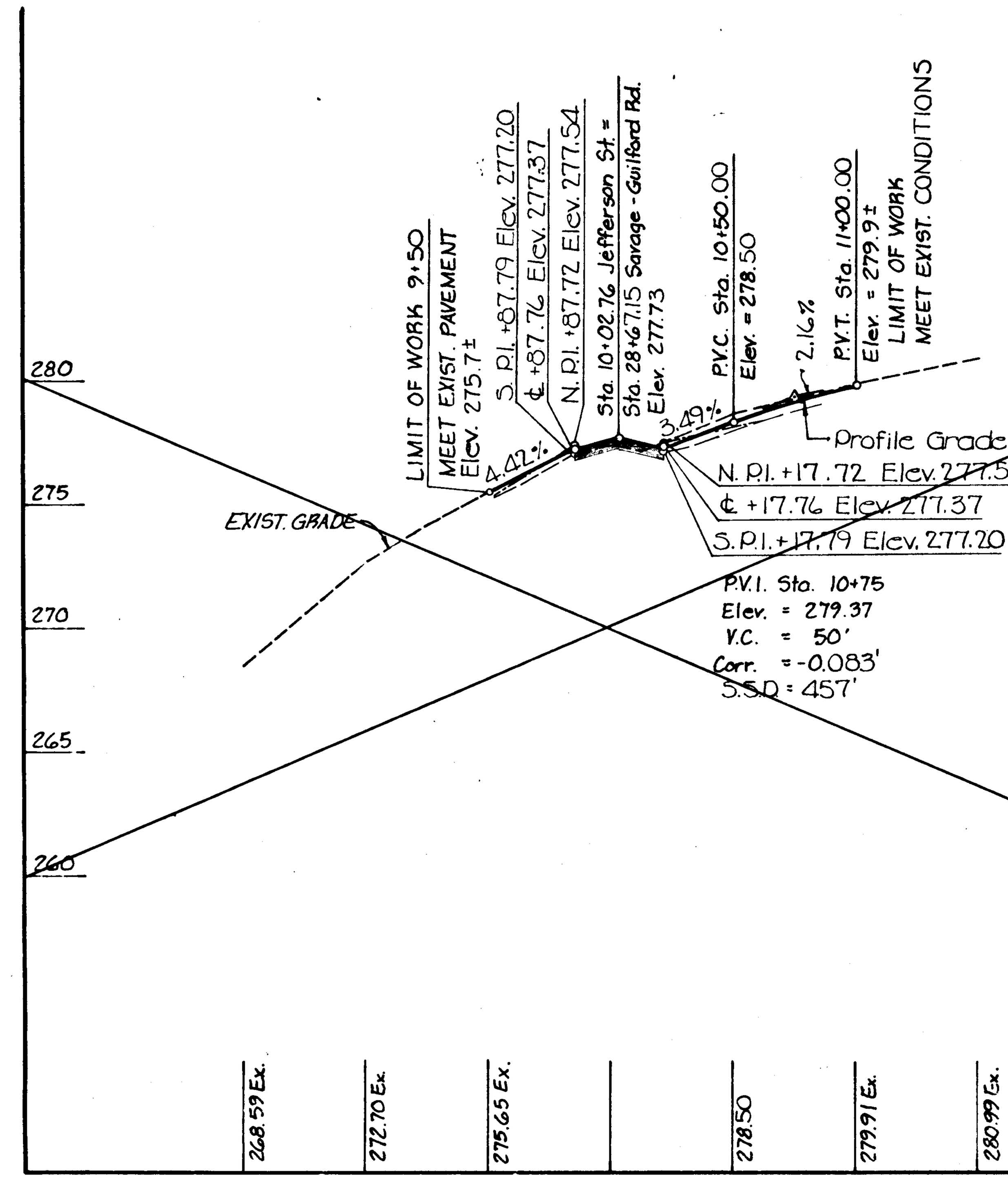
LINCOLN STREET

NOT IN CONTRACT



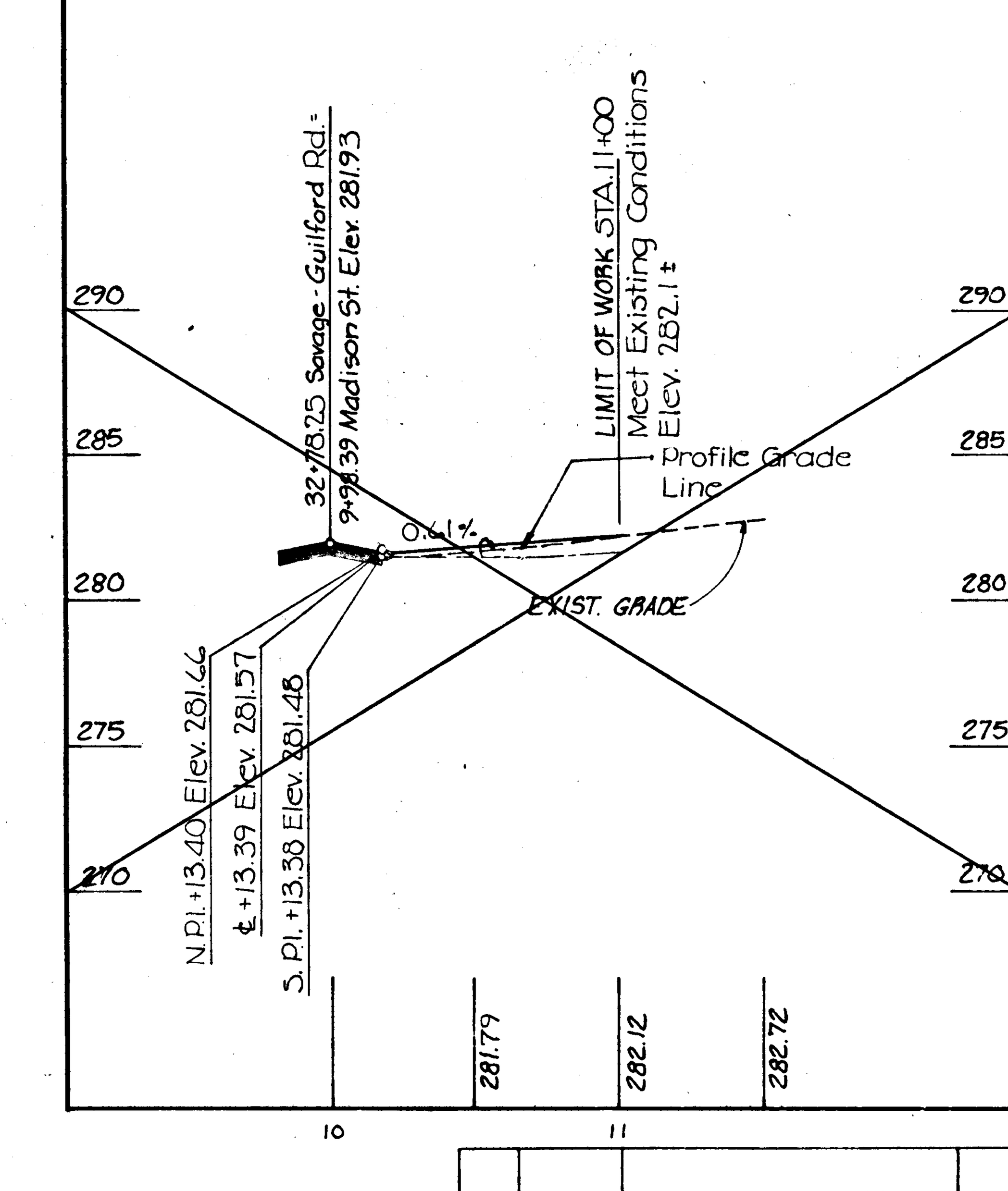
JEFFERSON STREET

NOT IN CONTRACT



MADISON STREET

NOT IN CONTRACT



NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

977

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[illegible] — DIRECTOR OF PUBLIC WORKS — DATE
[illegible] 4-1-8- — CHIEF - BUREAU OF ENGINEERING — DATE
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION — DATE

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

[illegible] 7A693

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

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

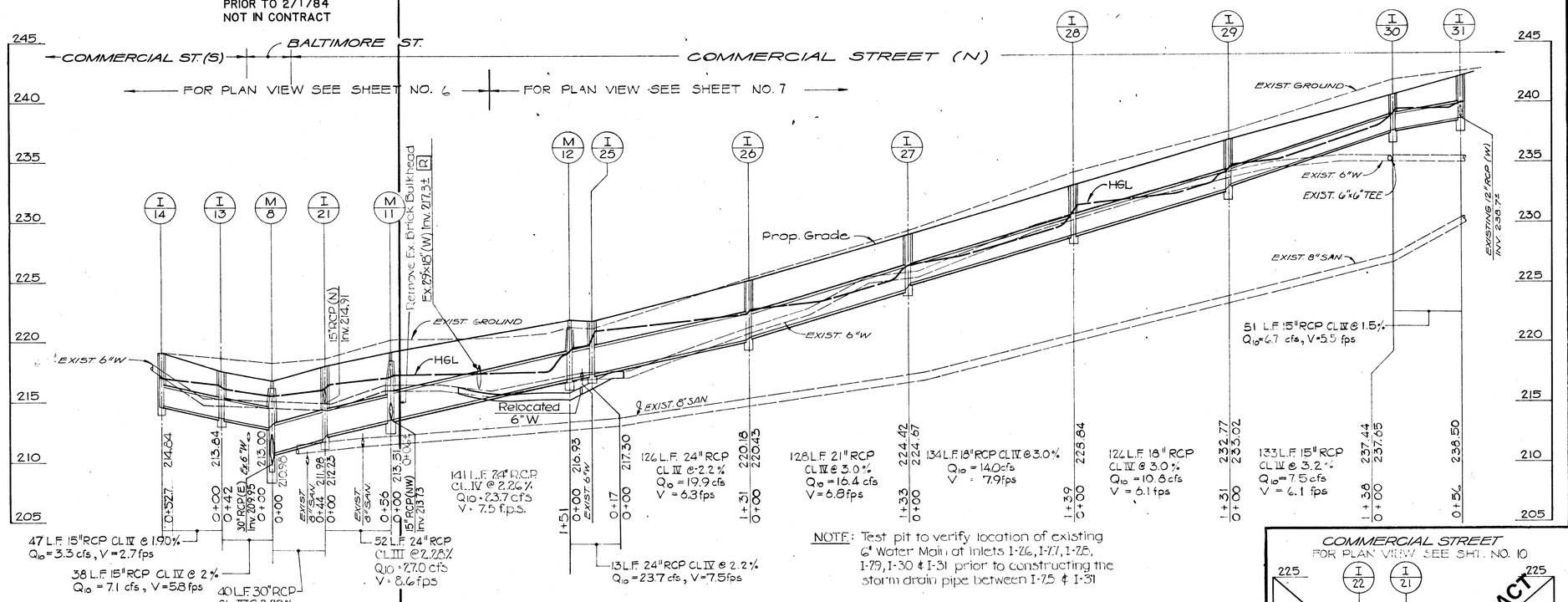
DRAWING NO. 9 OF 14

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

K.L.E. DESIGNED BY
D.V.M. DRAFTED BY
K.L.E. CHECKED BY

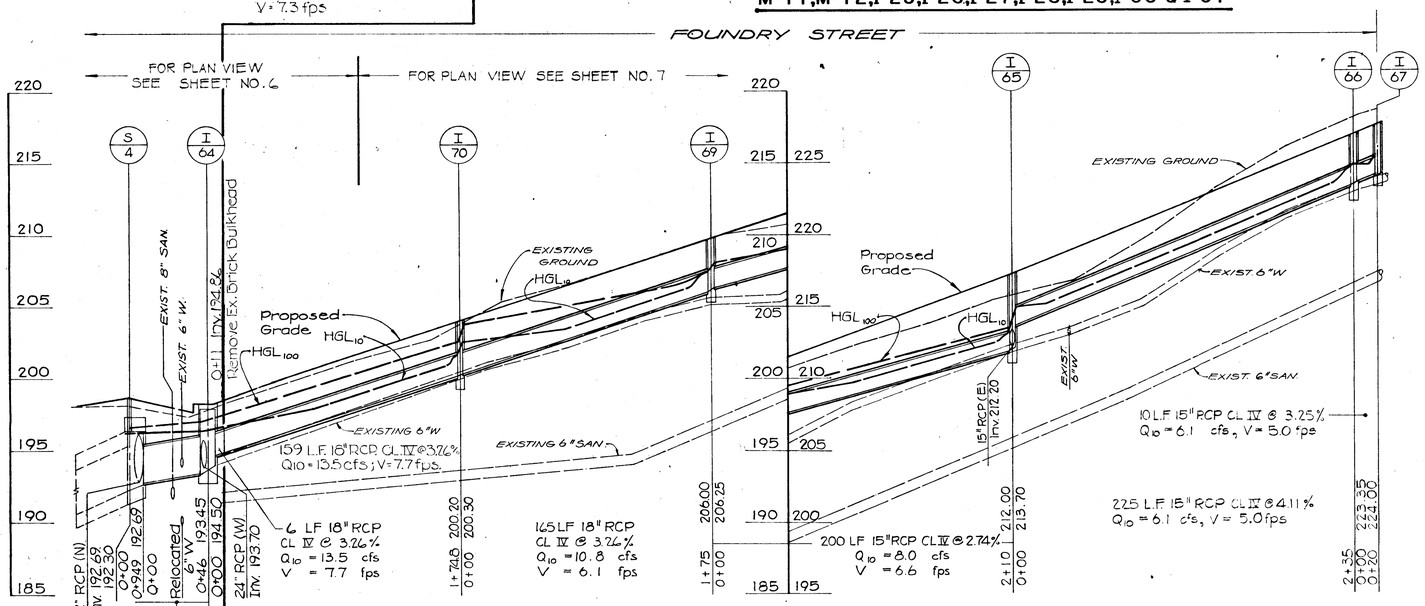
UNDER CONSTRUCTION
PRIOR TO 2/1/84
NOT IN CONTRACT

NEW CONSTRUCTION ADDED 2/1/84

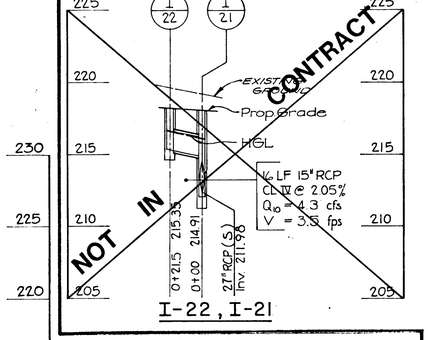


NOTE: Test pit to verify location of existing 6" Water Main at inlets I-26, I-27, I-28, I-29, I-30 & I-31 prior to constructing the storm drain pipe between I-25 & I-31

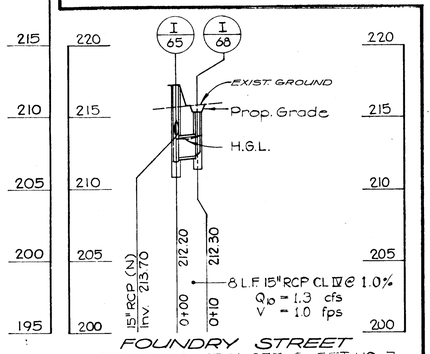
M-11, M-12, I-25, I-26, I-27, I-28, I-29, I-30 & I-31



I-64, I-70, I-69, I-65, I-66 & I-67

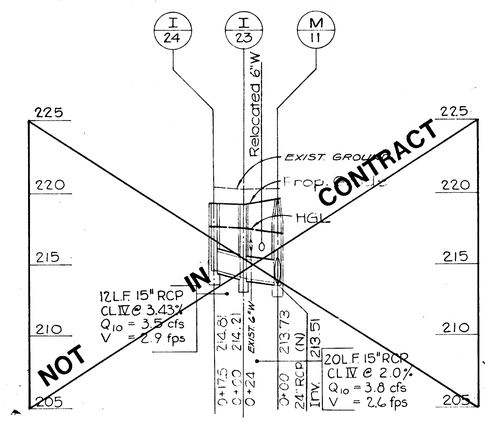


I-22, I-21



FOUNDRY STREET
FOR PLAN VIEW SEE SHEET NO. 7

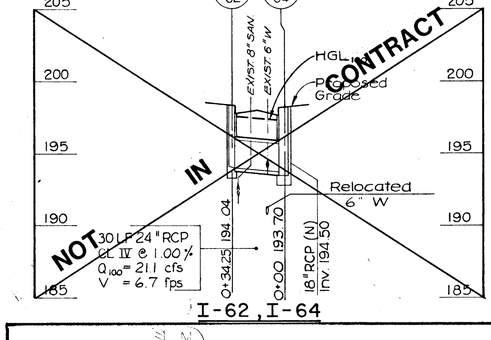
I-65, I-68



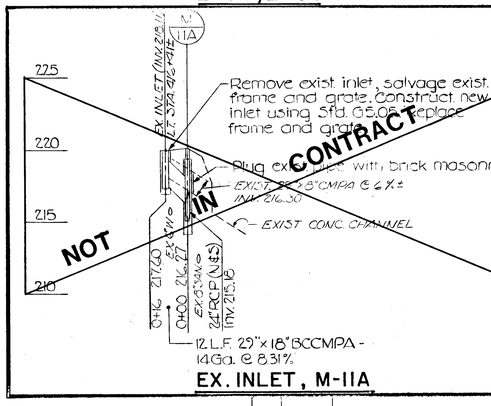
I-24, I-23, M-11

UNDER CONSTRUCTION PRIOR TO 2/1/84
NOT IN CONTRACT

FOUNDRY STREET
FOR PLAN VIEW SEE SHEET NO. 10



I-62, I-64



EX. INLET, M-11A

UNDER CONSTRUCTION
PRIOR TO 2/1/84
NOT IN CONTRACT

NEW CONSTRUCTION ADDED 2/1/84

NO	DATE	DESCRIPTION OF REVISION	SIGNATURE

977

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

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

Kenneth K. Ewing No. 14483

STORM DRAIN PROFILES
COMMERCIAL AND FOUNDRY STREETS
(N. OF BALTO. ST.)

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

DRAWING NO. 10 OF 14
SCALE: HORZ. 1"=50' VERT. 1"= 5'
K.L.E. DESIGNED BY
J.L.E. DRAFTED BY
K.L.E. CHECKED BY

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
[illegible] DIRECTOR OF PUBLIC WORKS DATE
[illegible] 4/1/84 CHIEF-BUREAU OF ENGINEERING DATE
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
[illegible] #9668

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

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

DRAWING NO. 11 OF 14
SCALE: HORZ. 1"=50' VERT. 1"= 5'
K.L.E. DESIGNED BY
C.F. DRAFTED BY
K.L.E. 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	LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
COMMERCIAL ST.				COMMERCE ST.			
Lt. 417+08	3	10'	5'	Rt. 10+48	1	11'	42'
Lt. 417+71	3	10'	13'				
Lt. 417+90	3	10'	14'	FOUNDRY STREET			
Rt. 418+75	2	10'	8'	Lt. 521+62	3	18'	5'
Lt. 419+67	2	12'	16'	Lt. 522+62	3	10'	9'
Rt. 419+67	1	25'	3'	Rt. 525+03	2	14'	7'
Lt. 421+13	2	12'	8'	Lt. 525+72	1	10'	13'
Rt. 421+33	1	10'	6'	Rt. 525+93	2	15'	8'
Lt. 423+60	1	10'	35'	Lt. 526+87	3	11'	12'
Rt. 424+76	2	12'	35'	Rt. 528+15	2	10'	23'
Rt. 425+02	2	15'	22'	Lt. 528+61	3	10'	14'
Lt. 425+16	2	13'	4'	Lt. 530+50	2	12'	10'
Lt. 425+42	2	13'	18'	Lt. 530+74	3	10'	12'
Rt. 425+45	3	10'	23'	Rt. 531+21	2	16'	19'
Lt. 426+52	2	12'	4'	Lt. 531+97	2	17'	20'
Lt. 427+36	2	10'	5'	Lt. 532+94	2	10'	22'

NOT IN CONTRACT

LOCATION	TYPE	WIDTH	APPROX. DIST. TO TIE-IN
JEFFERSON ST.			
Rt. 6+18		10'	5'

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.

NOT IN CONTRACT

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

STORM DRAIN STRUCTURE SCHEDULE				
STRUC. NO	TYPE	LOCATION	TOP ELEV.	INV. OUT
M-12	G5.05	O'Offset Sta. 417+17 Commercial St.	221.18	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.	229.64	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	13.01' 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-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 Fdry 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	233.16	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+91.75 Commerce St.	231.30	226.67
I-47	A-5	11' Rt. Sta. 12+18.61 Commerce St.	231.11	227.48
I-41A	Dbl. S①	20' Rt. Sta. 523+18 Foundry St. Drainage Spur	203.00	197.70
I-41	Dbl. S①	6' Rt. Sta. 522+27 Foundry St. Drainage Spur	200.80	195.35
HW-3	A	6' Rt. Sta. [illegible] Foundry St. Drainage Spur		246.00
I-49	Std. S	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

New Construction Added 2-1-84

NOT IN CONTRACT

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 (… exist. ditch)		263.30
M-19	G5.05	28' Lt. Sta. 4+45 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	13' Rt. Sta. 522+25 Foundry St.	203.82	200.20
**I-69	A-10	13' Rt. Sta. 524+00 Foundry St.	209.63	206.00
I-65	A-10	13' Rt. Sta. 526+10 Foundry St.	217.21	212.00
I-68	Std. S	23' Rt. Sta. 526+10 Foundry St.	215.90	212.30
**I-66	A-10	13' Rt. Sta. 528+45 Foundry St.	226.69	223.35
**I-67	A-10	13' Rt. Sta. 528+65 Foundry St.	227.60	224.00
M-16-A	G 5.02	4' Rt. Sta. 530+71 Foundry St. Drainage Spur	229.60	221.25
M-17	G 5.02	3' Rt. Sta. 532+00 Foundry St. Drainage Spur	238.40	229.65
HW-2	A	O'offset Sta. 533+60 Foundry St. Drainage Spur		233.90

Under Construction Prior to 2-1-84

NOT IN CONTRACT

** Inside width to be 2'-6"
① See S.H.A. Std. MD-378.02 For Conc. Gutter Approach Details

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'	4
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'	2
Rt. 422+34	3.3'	5
Lt. 423+86	3'	3
Lt. 425+50	3'	5
FOUNDRY ST.		
Lt. 532+57	3'	3

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

COMMERCIAL ST CURVE NO. 8 DATA
Δ = 1°42'18" Rt
D_c = 0°30'00"
R = 11,459.16'
T = 170.51
L_c = 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±
Install 18" R.C.C.P. Conc. End Section and construct 5'×5' Md. S.H.A. Cl. 6 Stone Rip-Rap Apron (T=12"). See Cross Sections

NOTE: ALL WORK SHOWN ON THIS DRAWING EXCEPT THE WORK INDICATED AS "UNDER CONSTRUCTION PRIOR TO 2-1-84" IS TO BE PERFORMED

CROSS REFERENCES	
ITEM	SHEET NO.
Construction Stake-out Data	3
Commercial Street Profile	8
Foundry Street Profile	8
Commerce Street Profile	9
Storm Drain Profile	10 & 11

NO	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
[illegible] DIRECTOR OF PUBLIC WORKS DATE
[illegible] 4/1/84 CHIEF - BUREAU OF ENGINEERING DATE
CHIEF ROADS, BRIDGES, STORM DRAINS DIVISION DATE

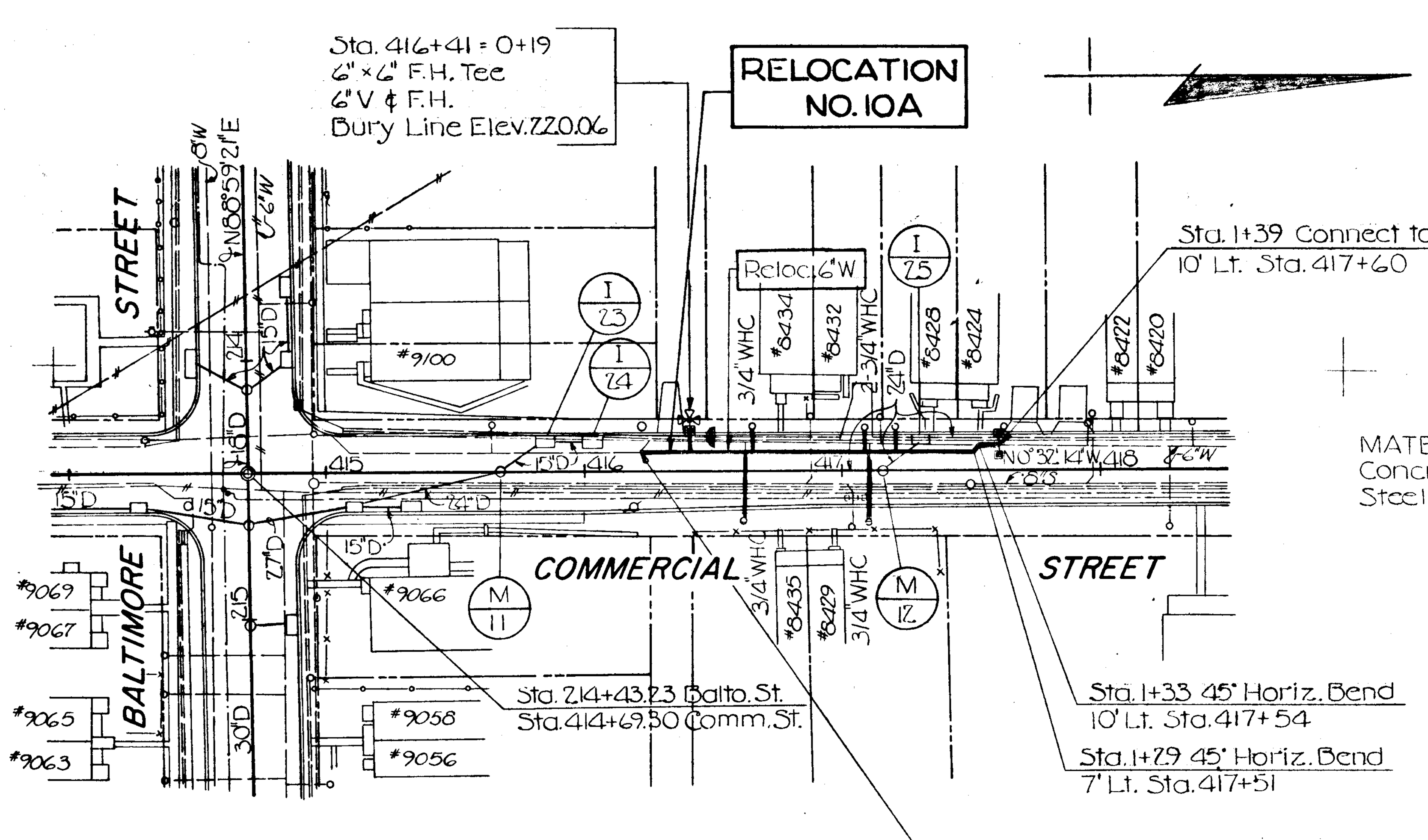
PREPARED BY:
THE WILSON T. BALLARD CO.
CONSULTING ENGINEERS
OWINGS MILLS, MARYLAND
TEL. NO. 363-0150

[illegible] #9681

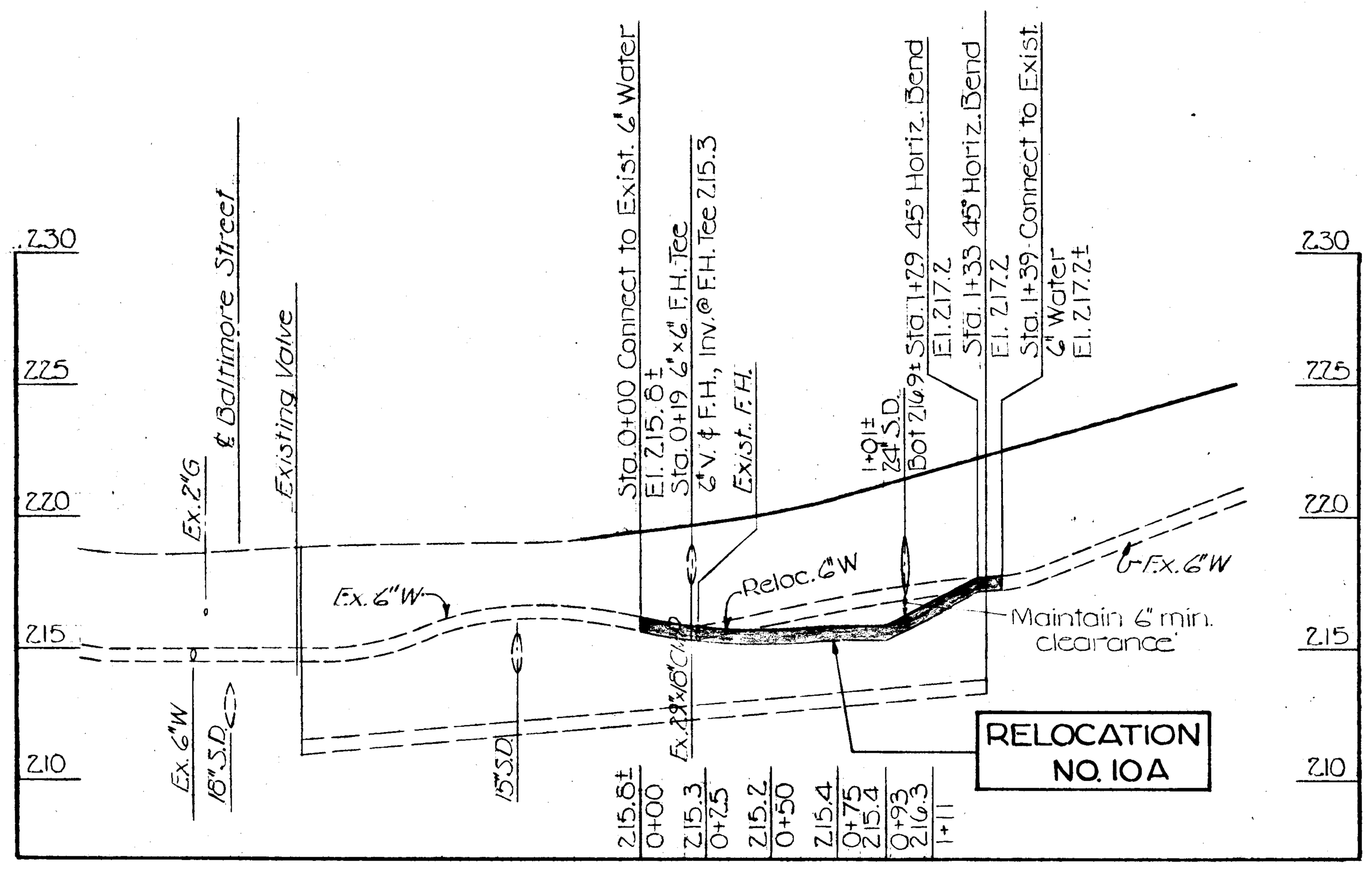
SEDIMENT CONTROL PLAN
COMMERCIAL ST. STA. 416+ TO STA. 427+
FOUNDRY ST. STA. 521+ TO STA. 533+
COMMERCE ST.

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

DRAWING NO. 12 OF 14
SCALE: 1" = 50'
K.L.E. DESIGNED BY
G.L.M. DRAFTED BY
K.L.E. CHECKED BY



NOTE:
All valve operations and reconnection of services are to be coordinated with Howard County Bureau of Utilities per Howard County Code.

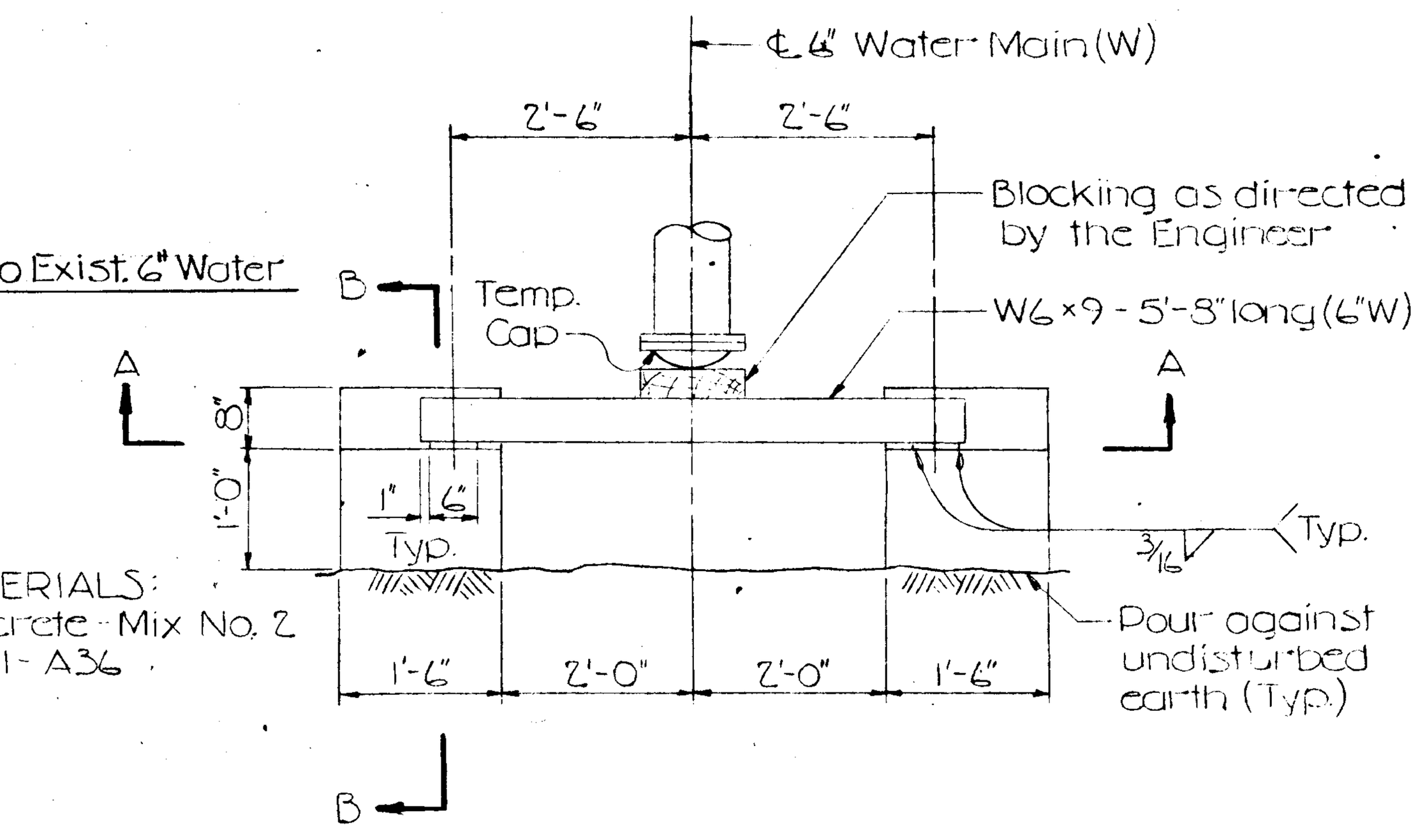


COMMERCIAL STREET

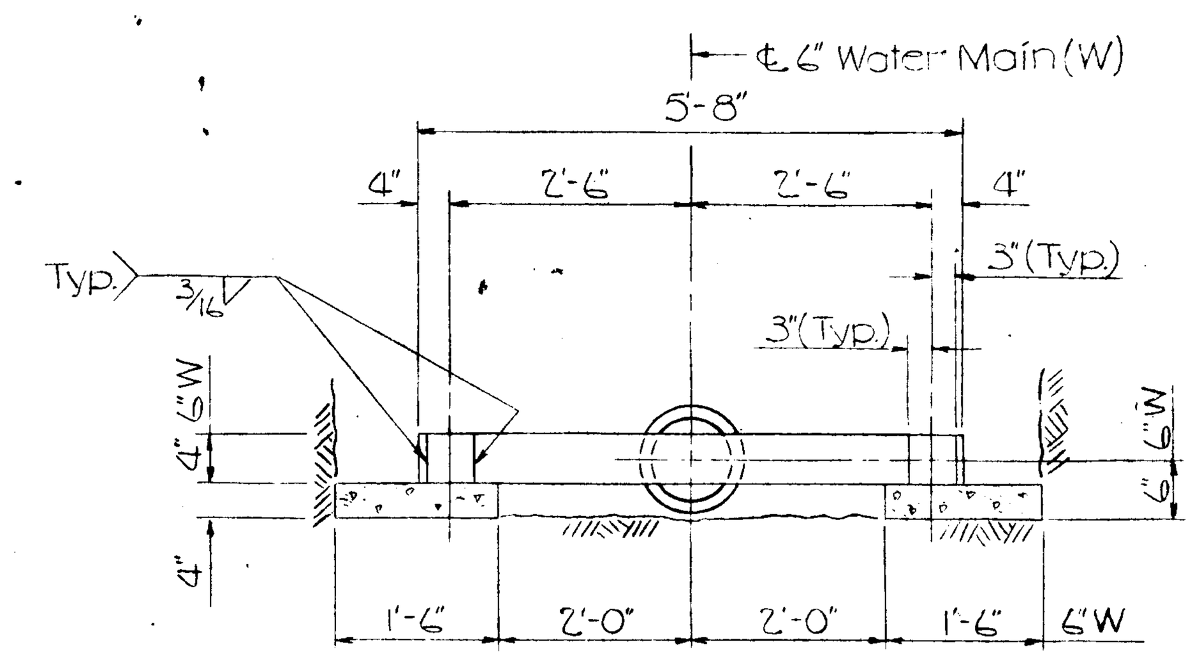
SUGGESTED SEQUENCE OF CONSTRUCTION, WATER RELOCATION NO. 10A

1. Install new 6" Water from Sta.416+32 to Sta.417+40 including fire hydrant at Sta.416+41. Place temporary cap and blocking at Sta.416+32 and Temporary Split Beam Buttress at Sta. 417+40±. Test new main.
2. Close existing valves at Commercial St. north of Baltimore Street and Commercial St. south of Commerce St.
3. Place temporary cap and buttress on the existing 6" Water Lt. Sta. 416+50 and open the Commercial St. valve south of Commerce St.
4. Remove the Temporary Cap and blocking at Sta.416+32 and connect the new main to the existing main Lt. Sta. 416+22
5. Open the Commercial St. valve north of Baltimore St. and lay new water house connections to the new main. Connect the new water services to the existing services at the meter. Control existing water service at meter shut-off valve.
6. Pre-pour buttress for horizontal bend Lt. Sta.417+51 and anchor for horizontal bend Lt. Sta.417+34±.
7. Close existing valves at Commercial St. north of Baltimore St. and Commercial St. south of Commerce St. Cut existing main Lt. Sta.417+60. Extend new main from Lt. Sta.417+40 to Lt. Sta.417+60 and make connection.
8. Open all valves after all buttresses and anchors are in place.

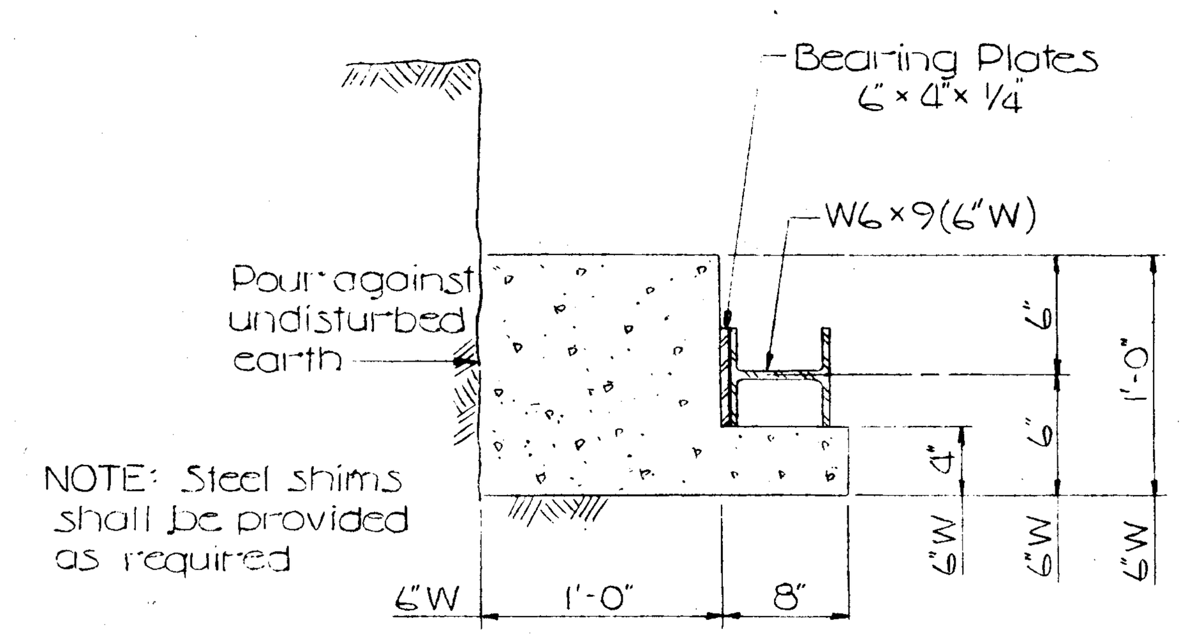
QUANTITIES - RELOCATION NO. 10A			
ITEM	ESTIMATED	'AS BUILT'	SUPPLIER
6in. Water	150 L.F.		
6in. 45° Bend	2 Ea.		
6in. x 6in. Tee	1 Ea.		
6in. Valve	1 Ea.		
Fire Hydrant	1 Ea.		
3/4in. Copper Water Service	86 L.F.		



PLAN
Scale: 1/2" = 1'-0"

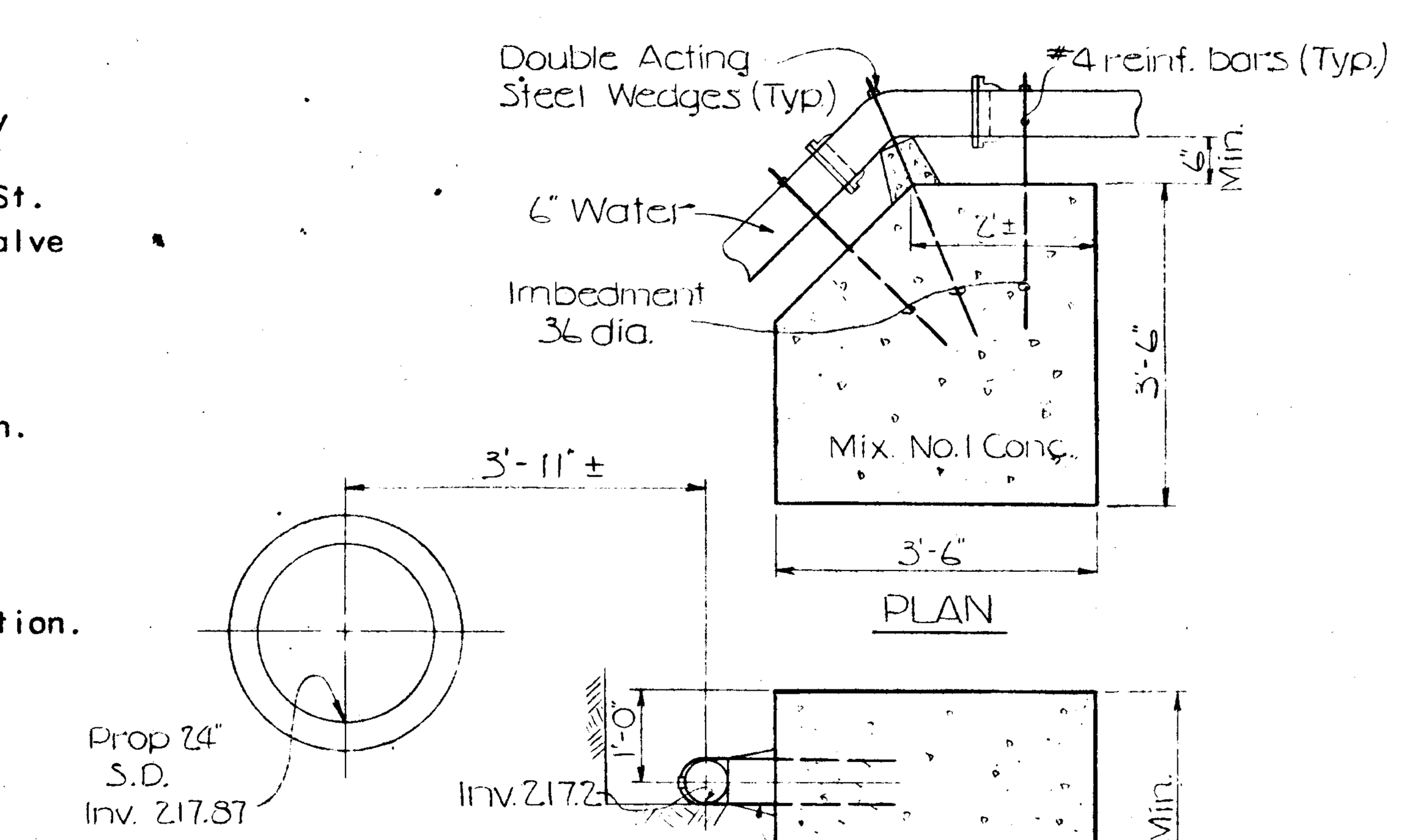


SECTION A-A
Scale: 1/2" = 1'-0"



SECTION B-B
Scale: 1/2" = 1'-0"

TEMPORARY SPLIT BEAM BUTTRESS DETAILS



NOTE:
Paint Exposed Bars with 2 coats of coal tar protective coating per AWWA C-203

PRE-POURED HORIZONTAL ANCHOR
Scale: 1/2" = 1'-0"

GENERAL NOTES

PARTS I & II

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 Cooridanates.
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 St'd. 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 - 585-0123
   - Engineering - "Damage Control" - 234-5621
   - "Miss Utility" - 1-559-0100
   - Cheasapeake & 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

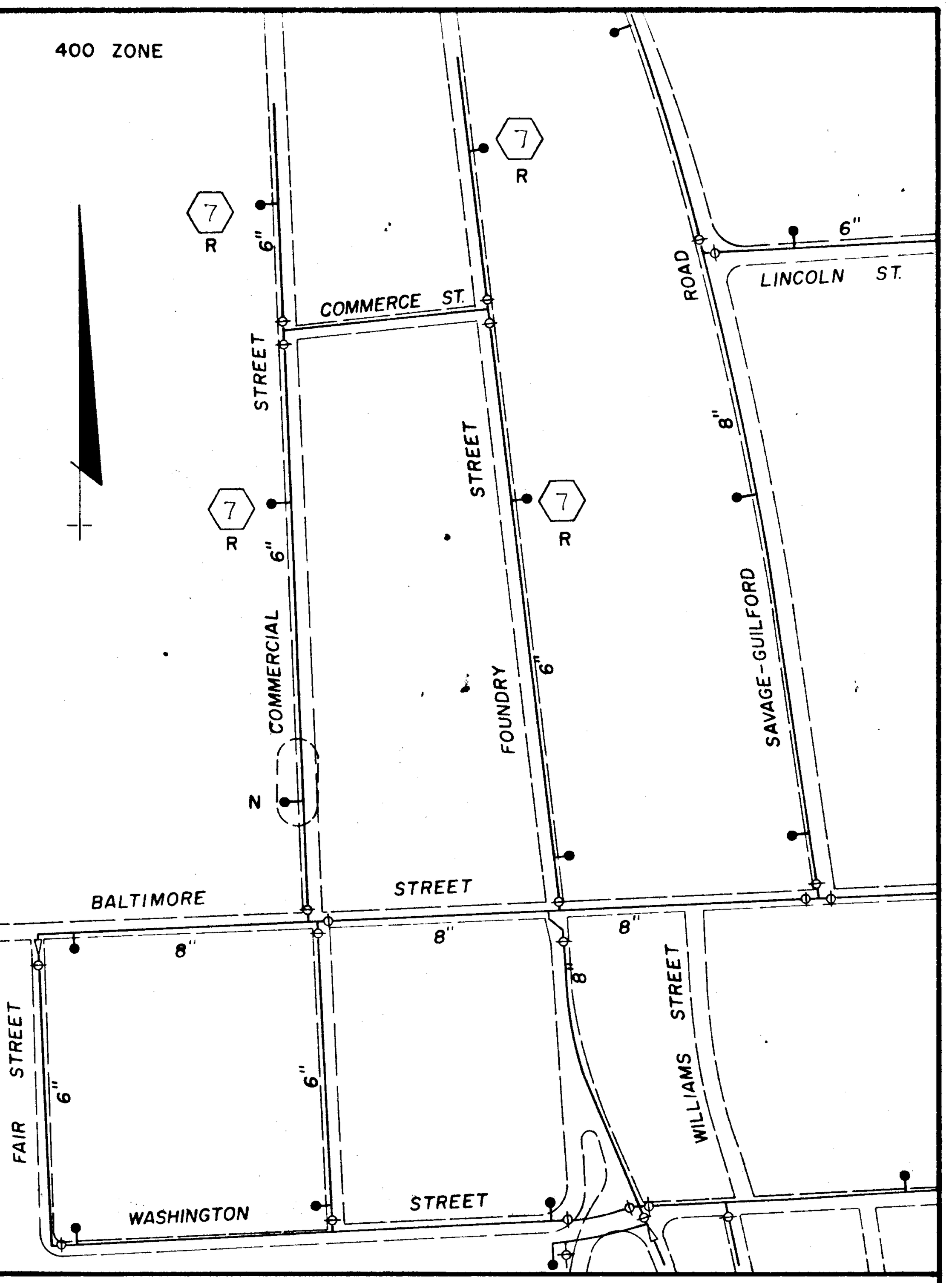
1. All water mains to be D.I.P. unless otherwise noted.
2. Top of all water mains to have a minimum of 3-1/2' cover unless otherwise noted.
3. Valves adjacent to tees shall be strapped to tees.
4. Block all fittings with concrete. Anchors and buttresses are to be high early strength concrete.
5. Bury 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 St'd. 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.

MODIFIED DIMENSIONS FOR BUTTRESSES FOR HORIZONTAL BENDS AND TEES

MINIMUM DIMENSIONS OF BUTTRESSES FOR HORIZONTAL BENDS (HOW. CO. ST'D. W 2.21)		
BEND		SIZE
		6"
1/8 (45°)	A	1'-8"
	B	8"
	C	9"

MINIMUM DIMENSIONS OF BUTTRESSES FOR TEES (HOW. CO. ST'D. W 2.23)	
	SIZE OF BRANCH
	6"
H	9"
I	1'-1"
J	8"
K	6"

NOTE:
The 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 2,000 p.s.f. Where actual field conditions are different the area of bearing shall be increased as determined by the Engineer.



UTILITY LOCATION KEY PLAN
SCALE: 1" = 200'

KEY PLAN LEGEND

- 6" - Existing Water Main and Size
- Existing Water Valve
- Existing Fire Hydrant
- Approximate Limits of Relocation
- (24) - Existing Fire Hydrant to be relocated as shown on the referenced Plan Sheet Number
- R - Relocate Fire Hydrant
- N - Install new Fire Hydrant
- New Water Valve

UTILITY RELOCATION PLAN LEGEND

- 6"W. - Existing Utility
- Reloc. 6"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 4-2-84
CHIEF - BUREAU OF ENGINEERING — DATE 4/1/84
CHIEF, UTILITY DIVISION — DATE 4/1/84
CHIEF, BUREAU OF UTILITIES — DATE 4-2-84

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

4683

WATER MAIN RELOCATION
NO. 10A - STA. 416+22 TO STA. 417+60 COMMERCIAL ST.

SAVAGE AREA - PHASE B
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NOS. J-8-4008B
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 13 OF 14

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

K.L.E. DESIGNED BY
T.G.S. DRAFTED BY
K.L.E. CHECKED BY

GRADING SUMMARY

LOCATION	CUT C.Y.	FILL C.Y.	TOPSOIL CUT C.Y.	TOPSOIL FILL C.Y.	ROOT MAT CUT C.Y.	ROOT MAT FILL C.Y.	CUT ADJUSTED C.Y.	CUT DENSIFIED C.Y.
COMMERCIAL STREET	1187	954	123	133		76	1064	904
FOUNDRY STREET	1410	191	114	76			1296	1102
COMMERCE STREET		1181		95				
TOTALS	2597	2326	237	304		76	2360	2006

SUMMARY OF EARTHWORK

CLASS 1 EXCAVATION

Cut	2597 C.Y.
Plus top soil removed under fill	304
Plus root mat removed under fill	76
TOTAL CLASS 1 EXCAVATION	2977 C.Y.

EXCAVATION AVAILABLE FOR EMBANKMENT

Cut adjusted	2360 C.Y.
Cut densified (85%)	2006
Class 2 excavation available for embankment	629
TOTAL EXCAVATION AVAILABLE FOR EMBANKMENT	2635 C.Y.

CLASS 2 EXCAVATION

From Cross Sections	898 C.Y.
Loss due to handling & densification (30%)	269
TOTAL CLASS 2 EXCAVATION AVAILABLE FOR EMB.	629 C.Y.

EMBANKMENT REQUIRED

Roadway embankment	2326 C.Y.
Drainage Spur Embankment	656
Refill for top soil (fill areas)	304
Refill for root mat (fill areas)	76
EMBANKMENT REQUIRED	3362 C.Y.
TOTAL EXCAVATION AVAILABLE	2635 C.Y.
APPARENT BORROW	727 C.Y.
Plus 15% shrinkage	109 C.Y.
BORROW EXCAVATION	836 C.Y.

PROPOSAL QUANTITIES

Item 201 Class 1 Excavation	3000 C.Y.
Item 203 Class 2 Excavation	900 C.Y.
Item 204 Borrow Excavation	1000 C.Y.

NOTE: The above grading analysis is based on the Granular Base Pavement Alternate. If full depth bituminous concrete pavement is used, the Clase 1 Excavation, will be approximately 2500 C.Y. and the Borrow Excavation will be approximately 1750 C.Y.

TOP SOIL ANALYSIS

TOP SOIL AVAILABLE FOR PLACEMENT

Top Soil removed in cut	237 C.Y.
Top Soil removed under fill	304
	541 C.Y.
Less Shrinkage Losses (15%)	81
	460 C.Y.

TOP SOIL REQUIRED

Top Soil Seeding and Mulching = 3105 S.Y. (From Plans and Cross Sections)
SAY 3100 S.Y.

Top Soil, Solid Sodding = 655 S.Y. (From Plans and Cross Sections)
SAY 700 S.Y.

TOTAL TOP SOIL 2" DEPTH REQUIRED = 2/3 x 3400 x 1/18 + 700 x 1/18 = 165 C.Y.

TOTAL TOP SOIL 4" DEPTH REQUIRED = 1/3 x 3400 x 1/9 = 126

TOTAL TOP SOIL REQUIRED 291 C.Y.

PROPOSAL QUANTITIES

Item 701 Placing salvaged Topsoil 2 inch depth	2300 S.Y.
Item 702 Placing salvaged Topsoil 4 inch depth	1100 S.Y.
Item 705 Seeding and Mulching	3400 S.Y.
Item 706 Solid Sodding	700 S.Y.

SUMMARY OF QUANTITIES

ITEM NO.	PAY ITEM	UNIT	QUANTITY	CONTINGENT QUANTITY	PROPOSAL QUANTITY
	PRELIMINARY ITEMS				
101	CLEARING AND GRUBBING	L.S.			L.S.
102	ENGINEER'S FIELD OFFICE NO. 2	L.S.			L.S.
103	MAINTENANCE OF TRAFFIC	L.S.			L.S.
104	GRADED AGGREGATE SUB-BASE FOR MAINTENANCE OF TRAFFIC	TON		75	75
105	BITUMINOUS CONCRETE FOR MAINTENANCE OF TRAFFIC	TON		50	50
106	ARROW BOARD	U.N.		8	8
107	TEMPORARY TRAFFIC SIGNS	S.F.		110	110
108	MOBILIZATION	L.S.			L.S.
109	ADJUSTING AND REPLACING FENCES, SHRUBS, TREES, HEDGES, ETC.	L.S.			L.S.
110	ADJUST EXISTING UTILITY APPURTENANCES TO FINISHED GRADE	Ea.		15	15
	EXCAVATION				
201	CLASS 1 EXCAVATION	C.Y.	3000		3000
202	CLASS 1-A EXCAVATION	C.Y.		500	500
203	CLASS 2 EXCAVATION	C.Y.	900		900
204	BORROW EXCAVATION	C.Y.	1000		1000
205	SELECT BORROW EXCAVATION	C.Y.		100	100
206	TEST PIT EXCAVATION	C.Y.		25	25
207	REMOVAL OF EXISTING CURB	L.F.		50	50
208	REMOVAL OF EXISTING COMBINATION CURB AND GUTTER	L.F.		50	50
209	REMOVAL OF EXISTING PAVEMENT	S.Y.		50	50
210	REMOVAL OF EXISTING SIDEWALK	S.Y.		25	25
211	REMOVAL OF EXISTING MASONRY	C.Y.		5	5
	DRAINAGE ITEMS				
301	CLASS 3 EXCAVATION FOR INCIDENTAL CONSTRUCTION	C.Y.		10	10
302	TRIMMING EXISTING DITCHES	L.F.		50	50
303	SELECTED BACKFILL	C.Y.		50	50
304	BORROW FOR PIPE BACKFILL	C.Y.		100	100
305	36 INCH R.C.C.P., CLASS 3	L.F.	188		188
306	15 INCH R.C.C.P., CLASS 4	L.F.	724		724
307	18 INCH R.C.C.P., CLASS 4	L.F.	584		584
308	21 INCH R.C.C.P., CLASS 4	L.F.	128		128
309	24 INCH R.C.C.P., CLASS 4	L.F.	280		280
310	36 INCH R.C.C.P., CLASS 4	L.F.	667		667
311	42 INCH R.C.C.P., CLASS 4	L.F.	158		158
312	MIX NO. 1 CONCRETE FOR INCIDENTAL CONSTRUCTION	C.Y.		5	5
313	STANDARD TYPE A HEADWALL FOR 42 INCH PIPE	Ea.	1		1
314	STANDARD CONCRETE END SECTION FOR 18 INCH R.C.C.P.	Ea.	1		1
315	STANDARD TYPE A-5 INLET, 3'-6" Min. DEPTH	Ea.	2		2
316	STANDARD TYPE A-5 INLET, VERTICAL DEPTH	L.F.	2		2
317	STANDARD TYPE A-10 INLET, 3'-6" Min. DEPTH	Ea.	5		5
318	STANDARD TYPE A-10 INLET, VERTICAL DEPTH	L.F.	3		3
319	STANDARD TYPE 'S' INLET, 3'-6" Min. DEPTH	Ea.	2		2
320	STANDARD TYPE 'S' INLET, VERTICAL DEPTH	L.F.	1		1
321	STANDARD DOUBLE TYPE 'S' INLET, 3'-6" Min. DEPTH	Ea.	4		4
322	STANDARD DOUBLE TYPE 'S' INLET, VERTICAL DEPTH	L.F.	8		8
323	STANDARD TYPE WR INLET, 3'-6" Min. DEPTH	Ea.	7		7
324	STANDARD TYPE WR INLET, VERTICAL DEPTH	L.F.	5		5
325	STANDARD G-5.02 MANHOLE, 8'-4" Min. DEPTH	Ea.	3		3
326	STANDARD G-5.02 MANHOLE, VERTICAL DEPTH	L.F.	6		6
327	STANDARD G-5.05 MANHOLE, 3'-10" Min. DEPTH	Ea.	1		1
328	STANDARD G-5.05 MANHOLE, VERTICAL DEPTH	L.F.	1		1
329	MIX NO. 3 CONCRETE FOR MISCELLANEOUS STRUCTURES	C.Y.		5	5
330	BRICK MASONRY FOR MISCELLANEOUS STRUCTURES	C.Y.		5	5
331	6 INCH PERFORATED CIRCULAR PIPE UNDERDRAIN	L.F.		100	100
332	6 INCH CIRCULAR PIPE UNDERDRAIN OUTLETS	L.F.		25	25
333	AGGREGATE BACKFILL FOR UNDERDRAIN	C.Y.		5	5
334	STRAW BALES FOR SEDIMENT CONTROL	L.F.	2400		2400
335	NO. 2 STONE FOR SEDIMENT CONTROL	TON	5		5
336	5 INCH CONCRETE GUTTER	S.Y.	125		125
337	CLASS 1 STONE FOR CHANNEL PROTECTION	S.Y.	340		340
338	SHEETING AND SHORING LEFT IN PLACE	M.B.F.		10	10
339	REMOVAL OF OLD PIPE CULVERTS, ANY SIZE	L.F.		50	50

ITEM NO.	PAY ITEM	UNIT	QUANTITY	CONTINGENT QUANTITY	PROPOSAL QUANTITY
	PAVING ITEMS				
501	6 INCH SURFACE COURSE USING BANK RUN GRAVEL BASE	S.Y.	150		150
	— GRANULAR BASE ALTERNATE —				
502	6 INCH BASE COURSE USING GRADED AGGREGATE SUB-BASE	S.Y.	8590		8590
503	ANTI-STRIPPING ADDITIVE FOR BITUMINOUS CONCRETE	Tr. Ton	2540		2540
504	BITUMINOUS CONCRETE SURFACE, STONE AGGREGATE ALTERNATE	Ton	640		640
504A	BITUMINOUS CONCRETE SURFACE, SLAG AGGREGATE ALTERNATE	Ton	640		640
505	BITUMINOUS CONCRETE BASE, STONE AGGREGATE ALTERNATE	Ton	1900		1900
505A	BITUMINOUS CONCRETE BASE, SLAG AGGREGATE ALTERNATE	Ton	1900		1900
	— FULL DEPTH BITUMINOUS CONCRETE ALTERNATE —				
506	ANTI-STRIPPING ADDITIVE FOR BITUMINOUS CONCRETE	Tr.Ton.	3355		3355
507	BITUMINOUS CONCRETE SURFACE, STONE AGGREGATE ALTERNATE	Ton	640		640
507A	BITUMINOUS CONCRETE SURFACE, SLAG AGGREGATE ALTERNATE	Ton	640		640
508	BITUMINOUS CONCRETE BASE, STONE AGGREGATE ALTERNATE	Ton	2715		2715
508A	BITUMINOUS CONCRETE BASE, SLAG AGGREGATE ALTERNATE	Ton	2715		2715
509	BITUMINOUS CONCRETE FOR WEDGE AND/OR LEVELING COURSE	Ton		200	200
510	7 INCH PLAIN CEMENT CONCRETE PAVEMENT	S.Y.	120		120
511	7 INCH REINFORCED CEMENT CONCRETE PAVEMENT	S.Y.	250		250
512	CALCIUM CHLORIDE	Ton		5	5
	SHOULDER ITEMS				
601	STANDARD TYPE A COMBINATION CURB AND GUTTER	L.F.	5430		5430
602	4 INCH CONCRETE SIDEWALK	S.F.	380		380
603	FLAGSTONE WALK	S.F.		100	100
604	BRICK WALK	S.F.		100	100
605	MIX NO. 2 CONCTRETE FOR MISCELLANEOUS STRUCTURES	C.Y.	16		16
606	ORNAMENTAL HANDRAIL FOR CONCRETE STAIRS	L.F.	100		100
607	DEAD END BARRICADE, TYPE C	L.F.	113		113
608	RESET EXISTING FENCE	L.F.		200	200
	LANDSCAPING ITEMS				
701	PLACING SALVAGED TOP SOIL, 2 INCH DEPTH	S.Y.	2300		2300
702	PLACING SALVAGED TOP SOIL, 4 INCH DEPTH	S.Y.	1100		1100
703	TEMPORARY MULCHING	S.Y.		500	500
704	TEMPORARY SEEDING	S.Y.		500	500
705	SEEDING AND MULCHING	S.Y.	3400		3400
706	SOLID SODDING	S.Y.	700		700
	UTILITY ITEMS*				
801	6 INCH DUCTILE IRON PIPE AND FITTINGS	L.F.	232		232
802	6 INCH VALVE AND ROADWAY BOX	Ea.	5		5
803	3/4 INCH WATER SERVICE	L.F.	240		240
804	RELOCATE EXISTING WATER METER, ANY SIZE	Ea.	30		30
805	RELOCATE EXISTING FIRE HYDRANT	Ea.	4		4
806	NEW FIRE HYDRANT	Ea.	1		1
807	SPLIT BEAM BUTTRESS FOR 6 INCH WATER MAIN	Ea.	1		1
808	HORIZONTAL CONCRETE ANCHOR FOR 6 INCH WATER MAIN	Ea.	1		1
809	MIX NO. 3 CONCRETE FOR MISCELLANEOUS STRUCTURES	C.Y.		5	5
810	BORROW FOR PIPE BACKFILL	C.Y.		10	10
811	CLASS 3 EXCAVATION	C.Y.		5	5
812	SELECTED BACKFILL	C.Y.		10	10
813	SHEETING AND SHORING LEFT IN PLACE	M.B.F.		2	2
814	MIX NO. 1 CONCRETE	C.Y.		5	5
815	TEST PIT EXCAVATION	C.Y.		5	5
816	CONTINGENT 6 INCH DUCTILE IRON PIPE AND FITTINGS	L.F.		150	150

*NOTE: QUANTITIES SHOWN INCLUDE QUANTITIES FOR MISCELLANEOUS WATER MAIN WORK REQUIRED BY THE ROADWAY AND STORM DRAIN CONSTRUCTION SHOWN ON DRAWING NO. 7.

NO.	DATE	DESCRIPTION OF REVISION	SIGNATURE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE
CHIEF - BUREAU OF ENGINEERING — DATE 9/21/90
CHIEF, ROADS, BRIDGES, STORM DRAINS DIVISION — DATE

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

Kenneth L. Eaton 14403

SUMMARY OF QUANTITIES

SAVAGE AREA - PHASE B
ROAD AND STORM DRAIN IMPROVEMENTS
CAPITAL PROJECT NO. J-8-4008B
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND

DRAWING NO. 14 OF 14

SCALE NONE

K.L.E. DESIGNED BY
W.V.A. DRAFTED BY
K.L.E. CHECKED BY