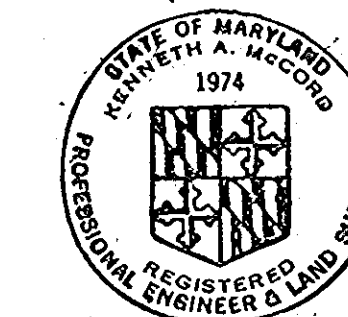


Water and Sewer Code
County Use
Sewer No. 1,400; 200
Water No.

Waste Water Disposal - Patapsco W.T.P.
Type of Building - S.F.
No. of SHC. 24
No. of W.I.C. 31

CONTRACT NO. 661 W&S
WATER AND SEWER EXTENSIONS
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

QUANTITIES			
ITEMS	BID	AS-BUILT	MATERIAL/SUPPLIER
8" Sewer	4840 LF	4720 LF	ACP - certain Teed
Manhole	280 VF	254 VF	Pre-cast Concrete - Atlantic
6" Water	1430 LF	1420 LF	DIP - Atlantic States
Fire Hydrants	2	2	Dresser - MH



Kenneth A. McLeod

Ellicott City - Project No. S-4-6033
Mulligan's Hill - Project No. W-5-8080
College Avenue - Project No. S-4-6068
Contract No. 661-W&S

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>George F. Nunn</i> 3-5-79 DIRECTOR OF PUBLIC WORKS - DATE	CONTRACT NO. <u>661-W&S</u> PROJECT NO. <u>S-4-6033, S-4-6068</u> W-5-8080	LOCATION MAP	ELECTION DISTRICT ELICOTT CITY NO.2	DRAWING NO. <u>1</u> OF <u>7</u>	SCALE 1" = 600'
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W. O. 6201-2, 6998-2, 6946-2

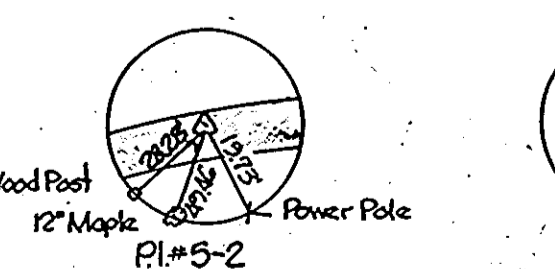
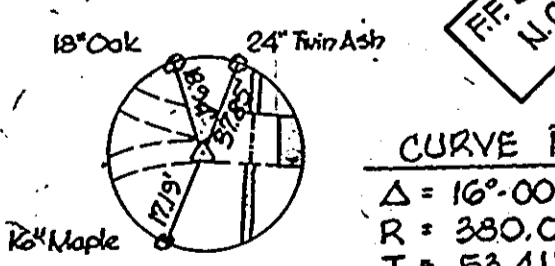
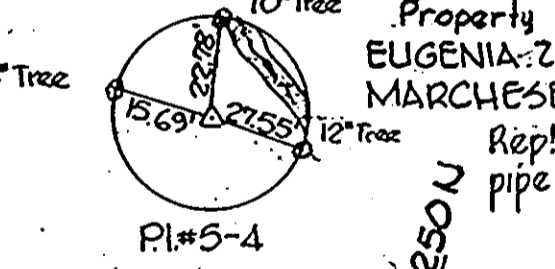
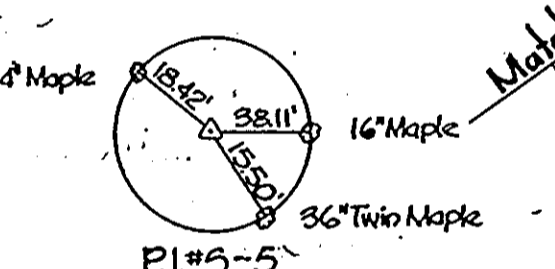
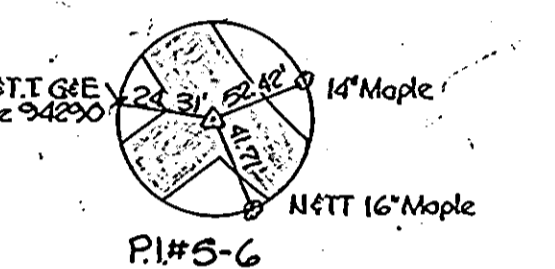
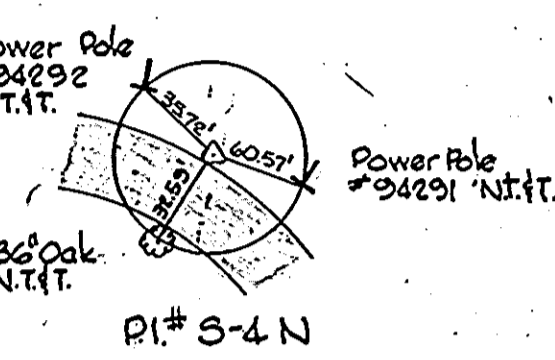
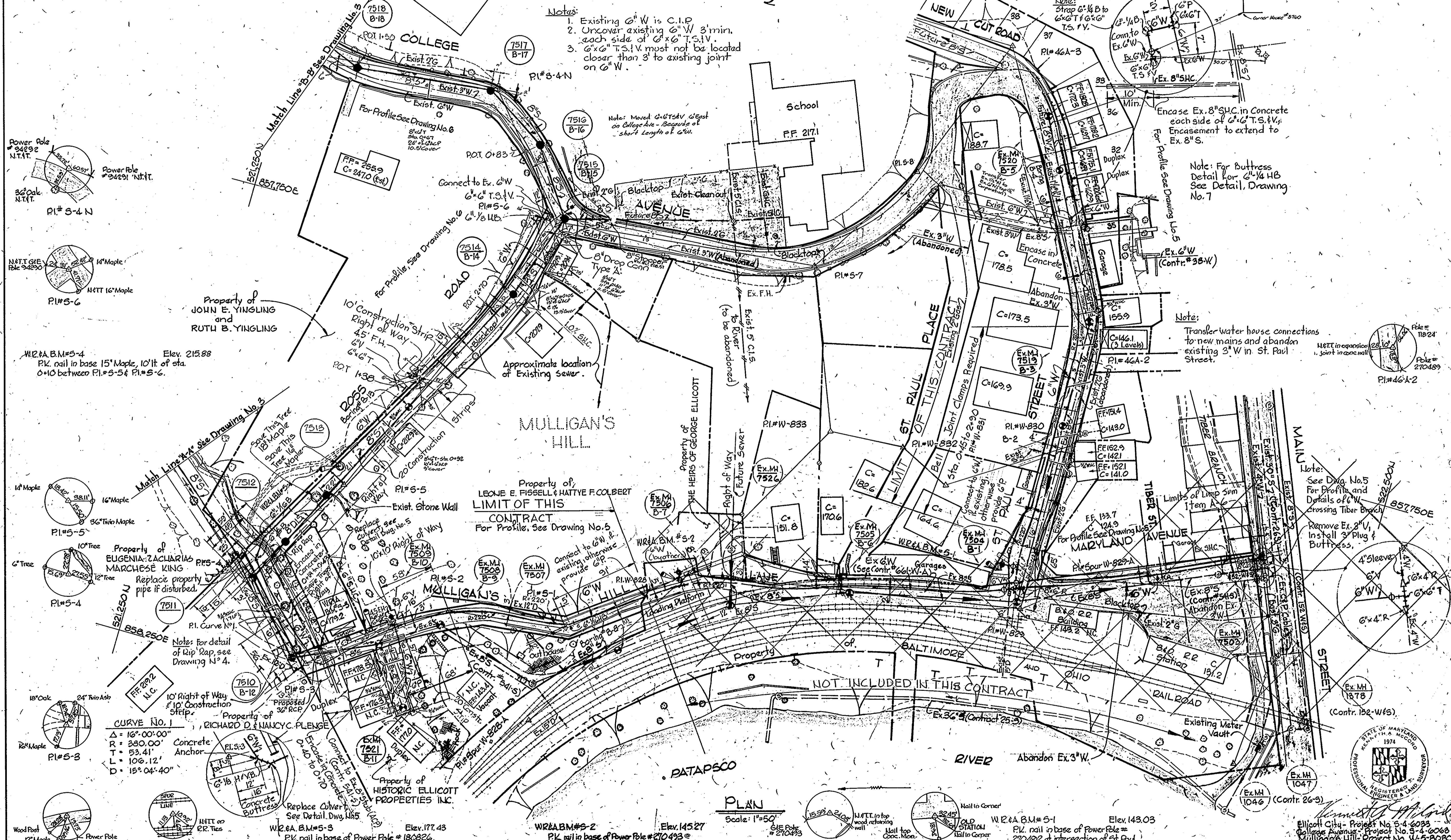
"AS-BUILT" JULY 6, 1979 March 27, 1981

MS 661 W-5/1

Note:
 Borings were taken for Howard County D.P.W. by National Foundation Engineering, Inc. in July, 1973. Logs of borings are available for examination at Howard County. Borings were made with a T diamater auger. Bottom of borings are at refusal (R) or 1' minimum below sewer (L). Borings were taken at M's unless otherwise shown.

Notes:
 1. Existing 6" W is C.I.P.
 2. Uncover existing 6" W 3' min. each side of 6" x 6" T.S.V.
 3. 6" x 6" T.S.V. must not be located closer than 3' to existing joint on 6" W.

Note:
 Payment for concrete encasement of existing 8" S.H.C. including excavation, backfill and repair of openings cut in existing paving, will be included in the unit price bid for furnishing and laying of 6" water main.



CURVE NO. 1
 $\Delta = 16^\circ 00' 00''$
 $R = 380.00'$ Concrete Anchor
 $T = 53.41'$
 $L = 106.12'$
 $D = 15^\circ 04' 40''$

PLAN
 Scale: 1"=50'



WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works - DATE Chief - Bureau of Engineering - DATE	CONTRACT NO. 66L-WBS PROJECT NO. S-4-6033, S-4-6068 W-5-8080	PLAN OF WATER AND SEWER MAINS	ELECTION DISTRICT ELLICOTT CITY NO. 2	DRAWING NO. 2 OF 7 SCALE AS SHOWN
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W.O. 6601-2, 6946-2 & 6998-2 "AS-BUILT" March 27, 1981 FB# 2649 5195 5287 JULY 6, 1973 5387

WS 661 W-5/2

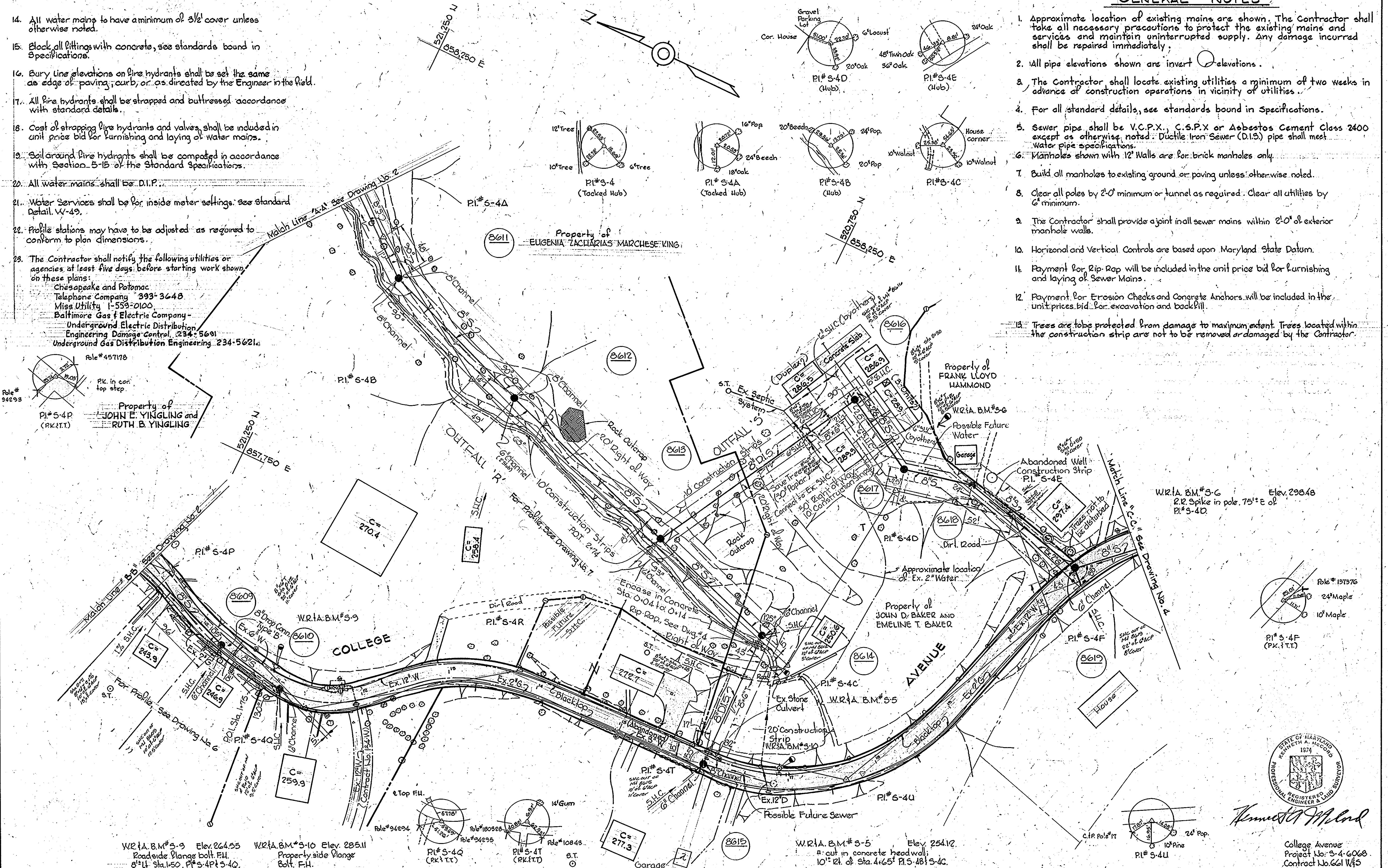
WS 661 W-5/3

ENGINEERING 44510 18392

- 14. All water mains to have a minimum of 3 1/2' cover unless otherwise noted.
- 15. Block all fittings with concrete, see standards bound in Specifications.
- 16. Bury line elevations on fire hydrants shall be set the same as edge of paving, curb, or as directed by the Engineer in the field.
- 17. All fire hydrants shall be strapped and buttressed accordance with standard details.
- 18. Cost of strapping fire hydrants and valves shall be included in unit price bid for furnishing and laying of water mains.
- 19. Soil around fire hydrants shall be compacted in accordance with Section 5-15 of the Standard Specifications.
- 20. All water mains shall be D.I.P.
- 21. Water Services shall be for inside meter settings. See Standard Detail W-49.
- 22. Profile stations may have to be adjusted as required to conform to plan dimensions.
- 23. The Contractor shall notify the following utilities or agencies at least five days before starting work shown on these plans:
 - Chesapeake and Potomac Telephone Company 393-3648
 - Miss Utility 1-559-0100
 - Baltimore Gas & Electric Company
 - Underground Electric Distribution Engineering Damage Control 234-5691
 - Underground Gas Distribution Engineering 234-5621

GENERAL NOTES

- 1. Approximate location of existing mains are shown. The Contractor shall take all necessary precautions to protect the existing mains and services and maintain uninterrupted supply. Any damage incurred shall be repaired immediately.
- 2. All pipe elevations shown are invert elevations.
- 3. The Contractor shall locate existing utilities a minimum of two weeks in advance of construction operations in vicinity of utilities.
- 4. For all standard details, see standards bound in Specifications.
- 5. Sewer pipe shall be V.C.P.X., C.S.P.X. or Asbestos Cement Class 2400 except as otherwise noted. Ductile Iron Sewer (D.I.S.) pipe shall meet water pipe specifications.
- 6. Manholes shown with 12" Walls are for brick manholes only.
- 7. Build all manholes to existing ground or paving unless otherwise noted.
- 8. Clear all poles by 2'-0" minimum or tunnel as required. Clear all utilities by 6" minimum.
- 9. The Contractor shall provide a joint in all sewer mains within 2'-0" of exterior manhole walls.
- 10. Horizontal and Vertical Controls are based upon Maryland State Datum.
- 11. Payment for Rip, Rap will be included in the unit price bid for furnishing and laying of Sewer Mains.
- 12. Payment for Erosion Checks and Concrete Anchors will be included in the unit price bid for excavation and backfill.
- 13. 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.



WHITMAN, REARDT & ASSOCIATES
 ENGINEERS
 1304 ST. PAUL ST.
 BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director: F. [Signature] 3-5-77
 Chief: W. [Signature] 227-79

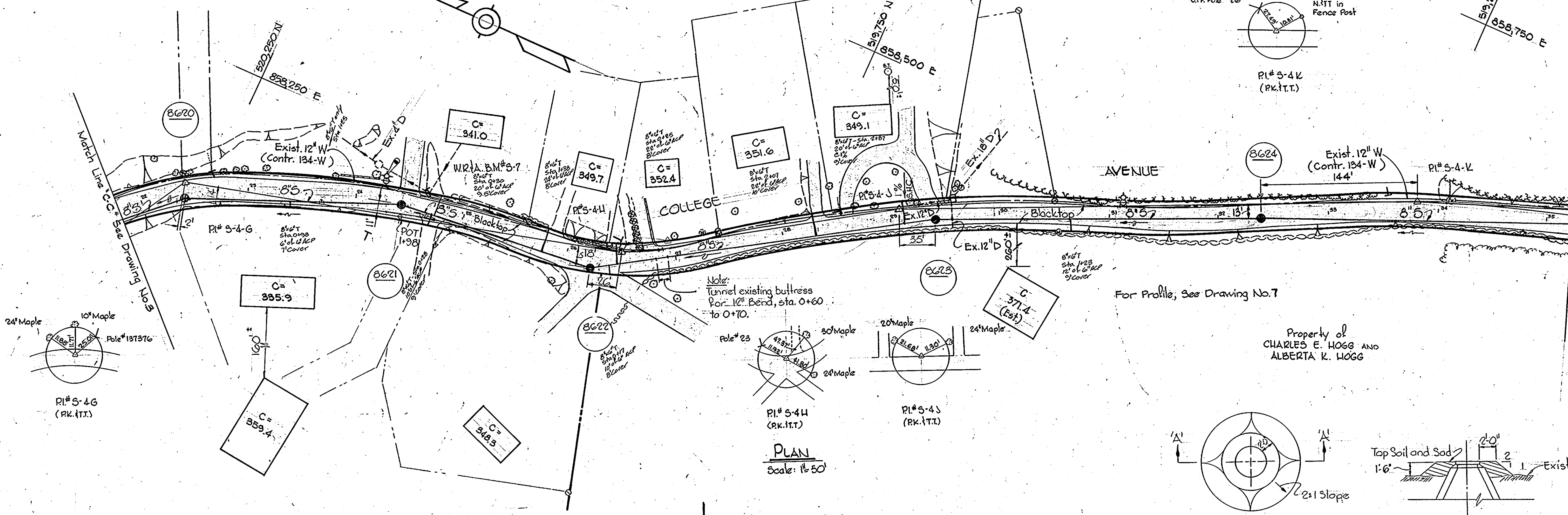
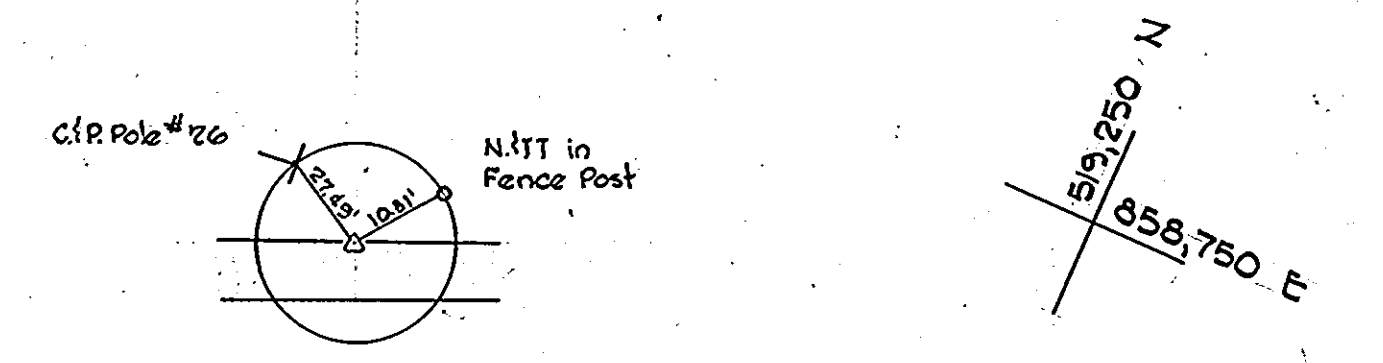
CONTRACT NO. 661-W&S
PROJECT NO. S-4-6068

PLAN OF SEWER MAINS

ELECTION DISTRICT ELLICOTT CITY NO. 2

DRAWING NO. 3 OF 7
SCALE 1" = 50'

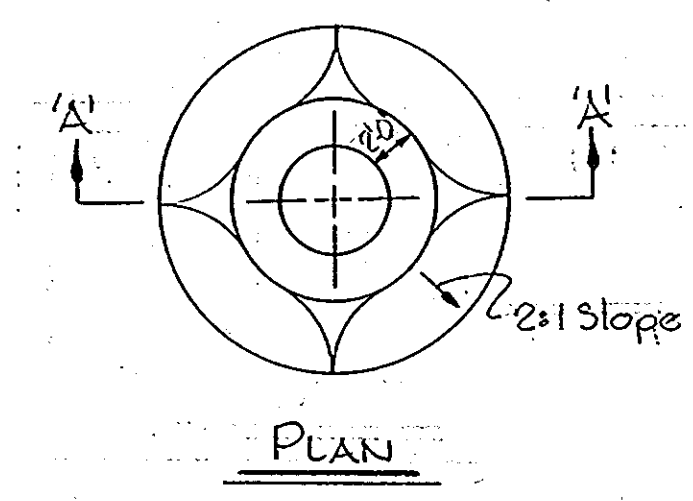
W.R.A. B.M.# 3-7 Elev. 336.31
 Road side Plunge bolt, F.H. 28"
 L.P. Sta. 180' P.I.# 3-46 & 3-44.



Note:
 Tunnel existing buttress
 For 12" Bend, sta. 0+60
 to 0+70.

Property of
 CHARLES E. HOGG AND
 ALBERTA K. HOGG

PLAN
 Scale: 1"=50'



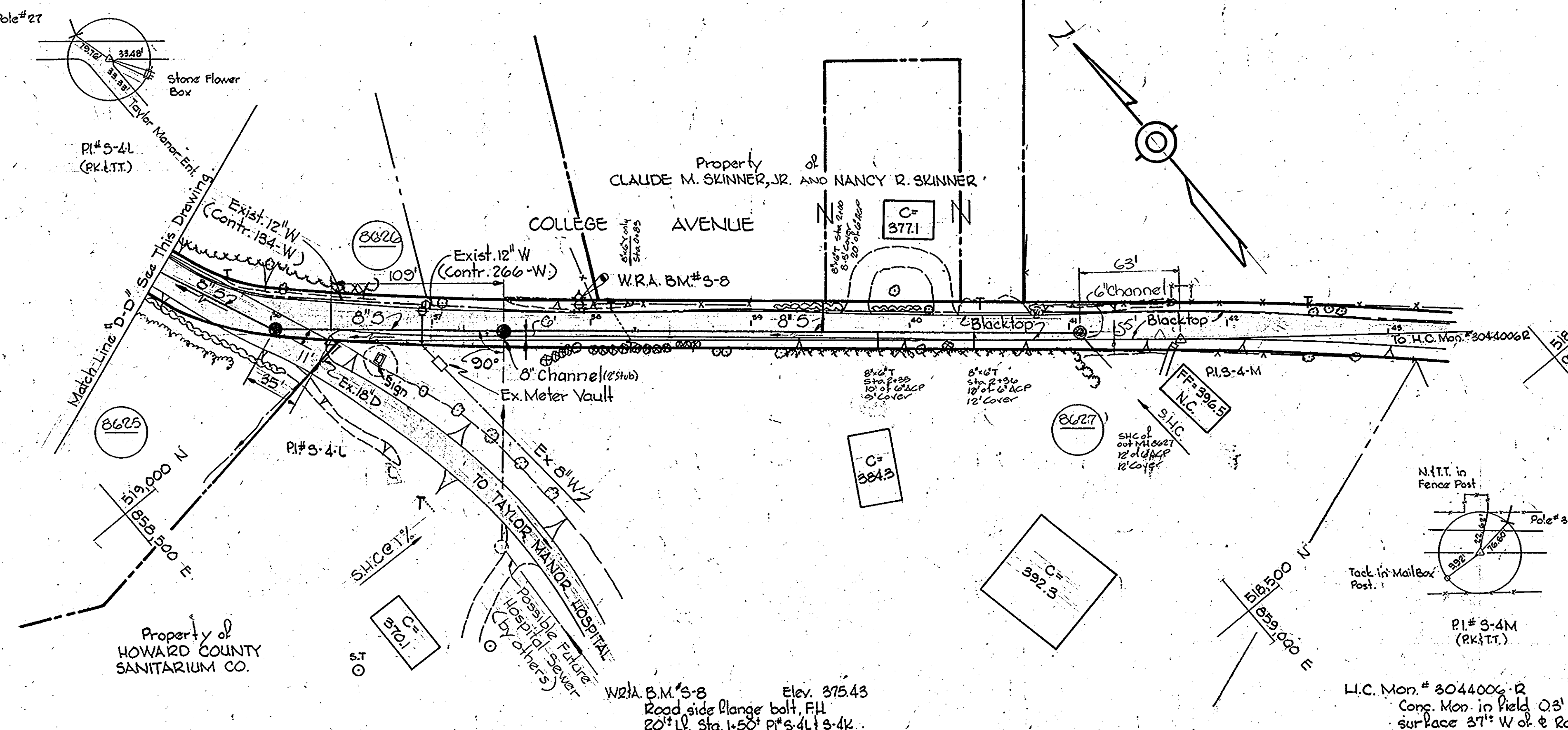
FILL AT MANHOLES NO'S 8611, 8612, 8613, AND 8614
 Scale: 1/8"=1'-0"

Note:
 Erosion Control Fabric shall be Poly Filter-X
 as manufactured by Carthage Mills Inc., Erosion
 Control Division, 124 W. 66th Street Cincinnati,
 Ohio; Laurel Erosion Control Cloth as manufactured
 by Laurel Plastics Inc. Madison, Maine
 or approved equal.

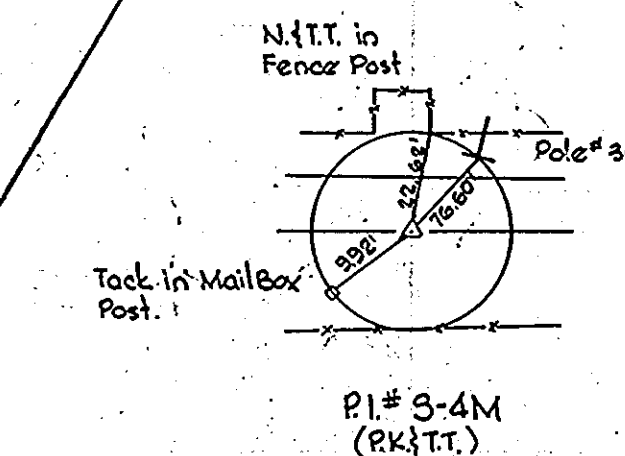
Rip-Rap shall consist of dense
 rocks of random shapes and sizes,
 resistant to the action of air and
 water, and suitable for bank
 protection. All rocks shall
 weigh a minimum of 150
 pounds.

Note:
 Rip-Rap shall be placed
 6' minimum each side
 of sewer.

RIP-RAP DETAIL
 Scale: 3/8"=1'-0"



Note:
 Maintain 1' minimum
 clearance between
 Rip-Rap and top of
 Pipe



WHITMAN, REQUARDT & ASSOCIATES
 ENGINEERS
 1304 ST. PAUL ST.
 BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 W.F. Nunn 3-5-79
 W.O. Lubert 2-27-79
 DIRECTOR OF PUBLIC WORKS - DATE CHIEF-BUREAU OF ENGINEERING - DATE

CONTRACT NO. 661-W&S
 PROJECT NO. S-4-6068

PLAN AND DETAILS

ELECTION DISTRICT
 ELLICOTT CITY NO. 2

DRAWING NO. 4 OF 7
 SCALE AS SHOWN
 520-7
 519-7
 518-8
 518-8



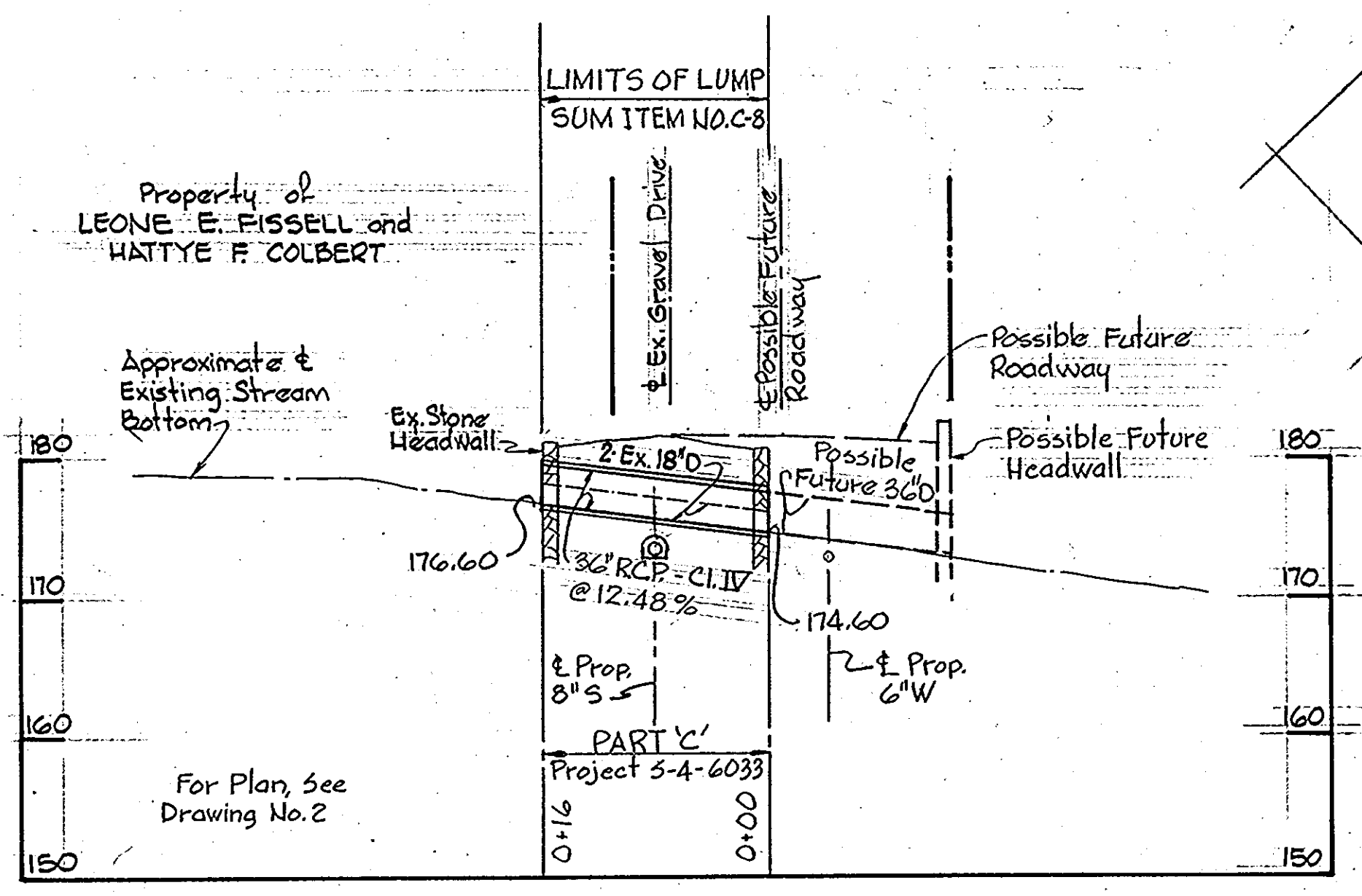
College Avenue
 Project No. S-4-6068
 Contract No. 661W&S

W. O. 6946-2

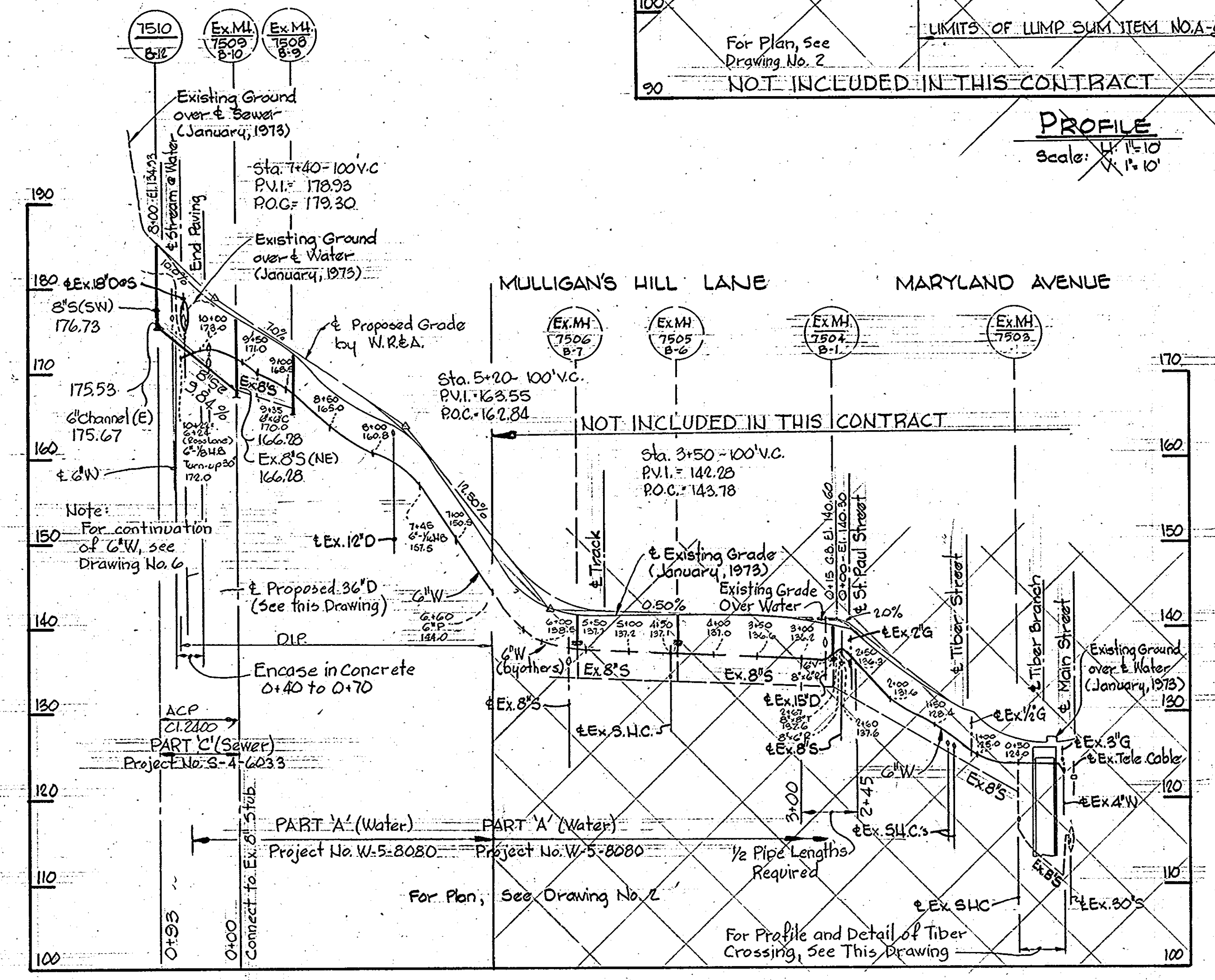
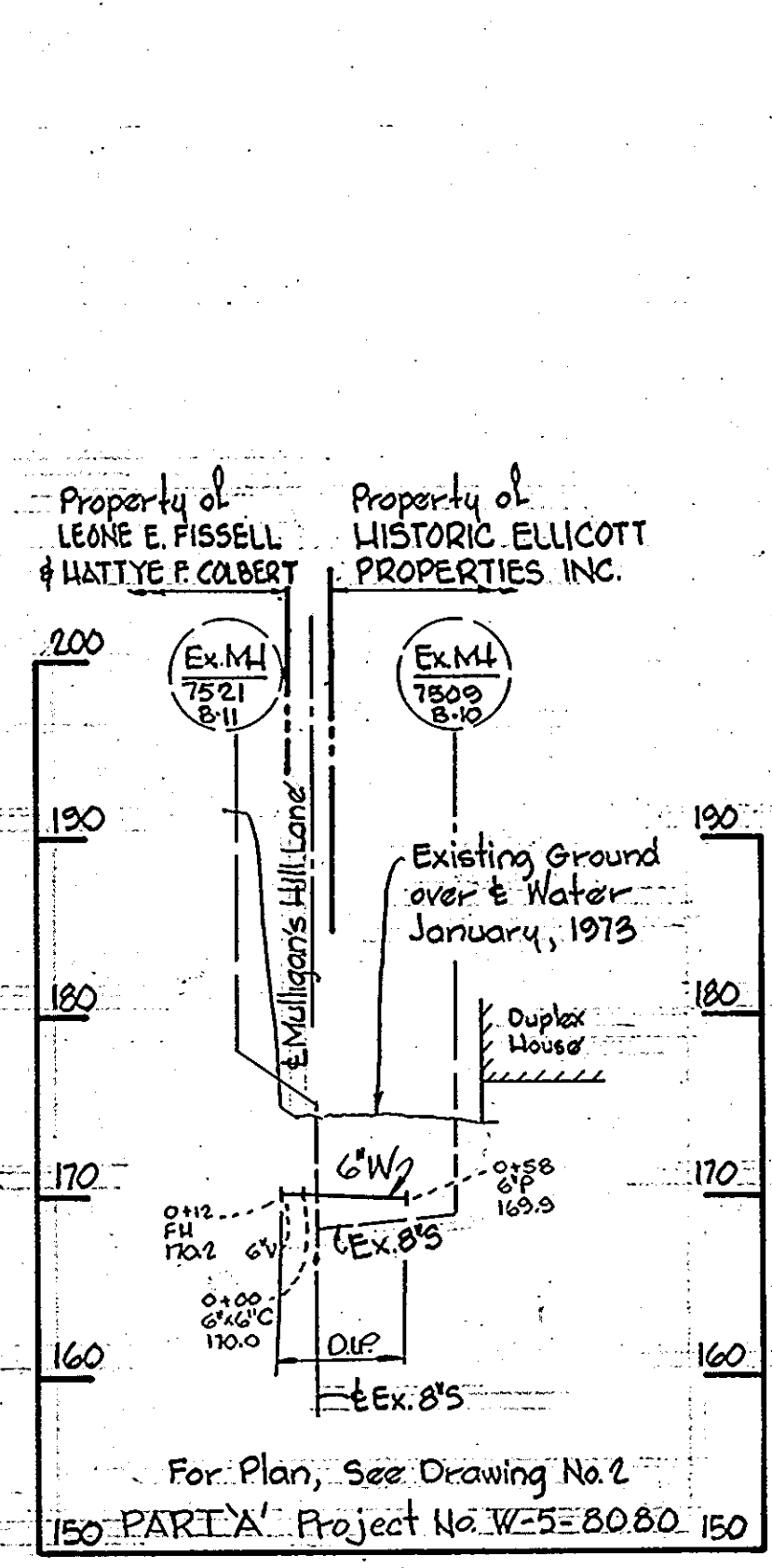
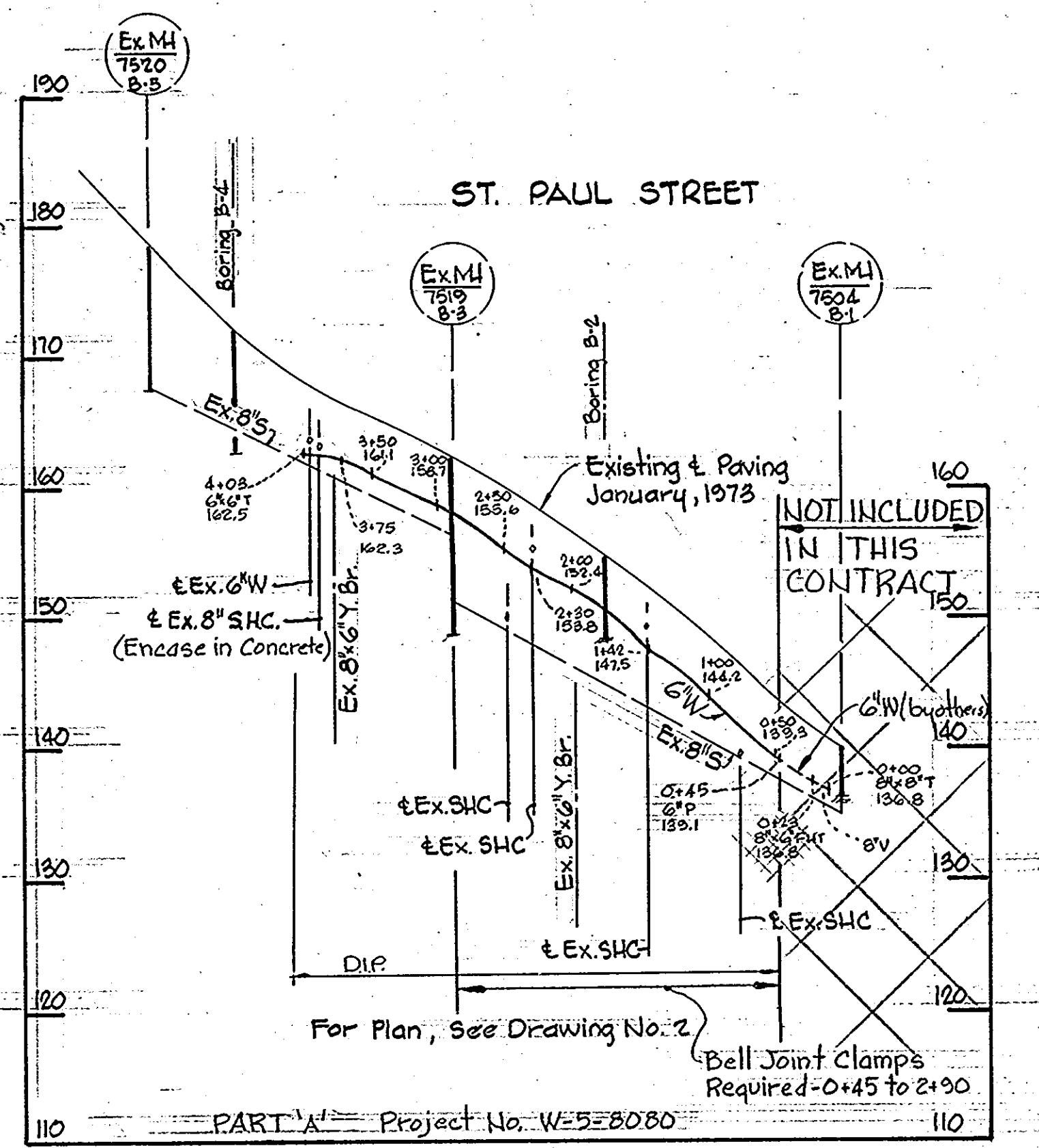
'AS-BUILT'
 F.B.# 5221, 5221,
 3636, 4200
 JULY 6, 1979 March 27, 1981

WS 661 W-S/4

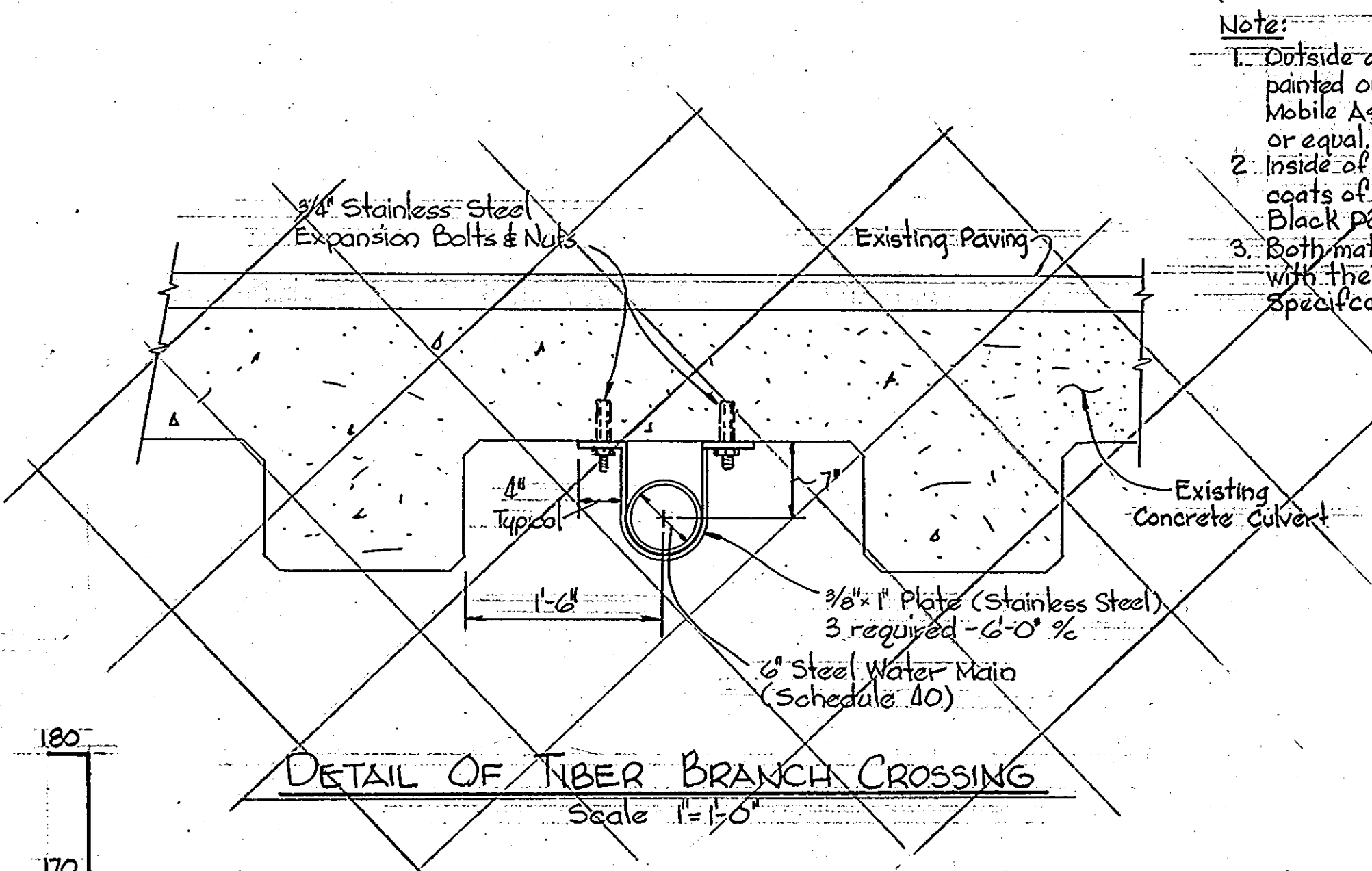
BRUNING 44510 18392



PROFILE OF CULVERT REPLACEMENT
Scale: H: 1"=10'
V: 1"=10'

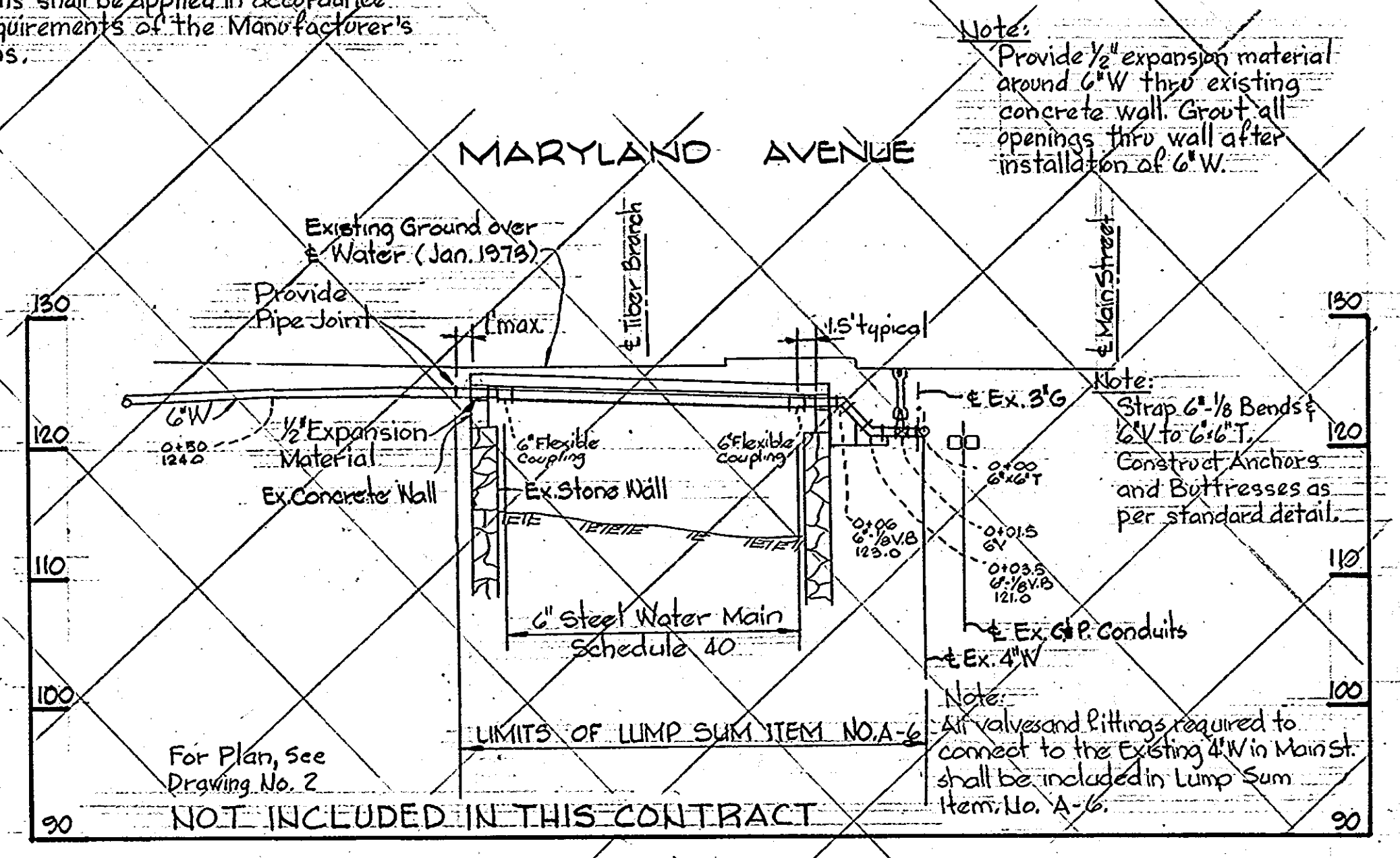


PROFILES
Scale: H: 1"=100'
V: 1"=10'



DETAIL OF TIBER BRANCH CROSSING
Scale: 1"=10'

- Note:**
1. Outside of 6" steel water pipe shall be painted outside only with two coats of Mobile Asphalt Black Paint 35-J-11 or equal.
 2. Inside of steel water pipe to be given three coats of Quigley Triple A No. 111 Hydraulic Black Paint.
 3. Both materials shall be applied in accordance with the requirements of the Manufacturer's specifications.



PROFILE
Scale: H: 1"=10'
V: 1"=10'

W5 661 W-5/5

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
J. F. Nunn 3-5-79
Director of Public Works - DATE

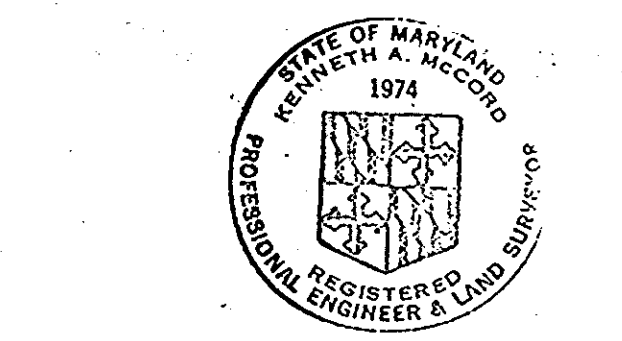
W. O. Abbott 2-27-79
Chief Bureau of Engineering - DATE

CONTRACT NO. 661-W&S
PROJECT NO. W-5-8080
S-4-6033

PROFILE AND DETAILS OF
WATER AND SEWER MAINS

ELECTION DISTRICT
ELLICOTT CITY NO. 2

DRAWING NO. 5 OF 7
SCALE AS SHOWN

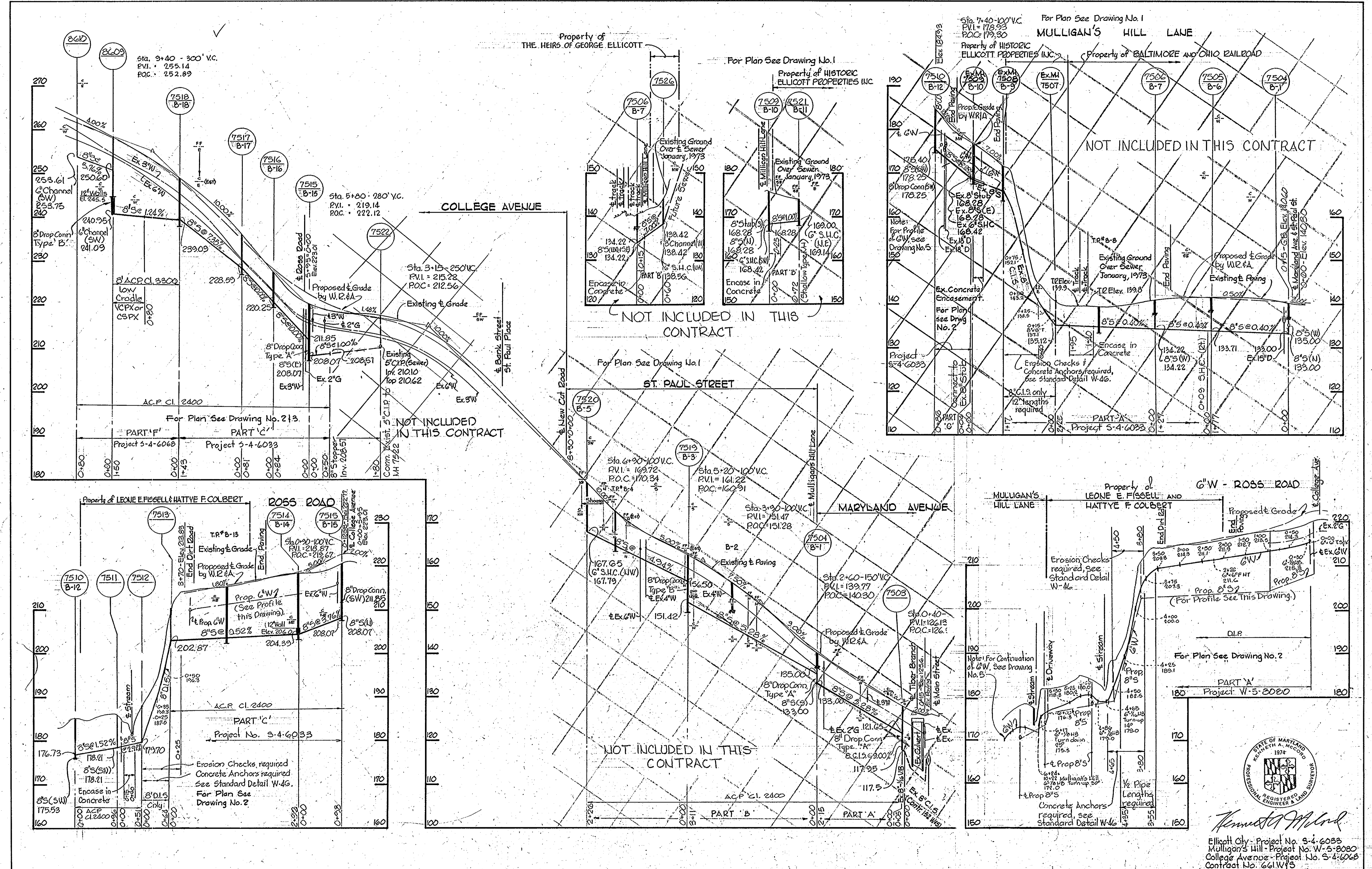


Mulligan's Hill Water - Project No. W-5-8080
Contract No. 661-W&S

'AS-BUILT' March 27, 1981
JULY 6, 1979

WS 661 W-5/6

BRUNING 44510 18322



WHITMAN, REQUARDT & ASSOCIATES
 ENGINEERS
 1304 ST. PAUL ST.
 BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 J. F. [Signature] 3-5-79
 DIRECTOR OF PUBLIC WORKS - DATE

W. O. [Signature] 2-27-79
 CHIEF - BUREAU OF ENGINEERING - DATE

CONTRACT NO. 661-W&S
 PROJECT NO. S-4-6033, W-5-8080

PROFILES OF
 WATER AND SEWER MAINS

ELECTION DISTRICT
 ELLICOTT CITY NO. 2

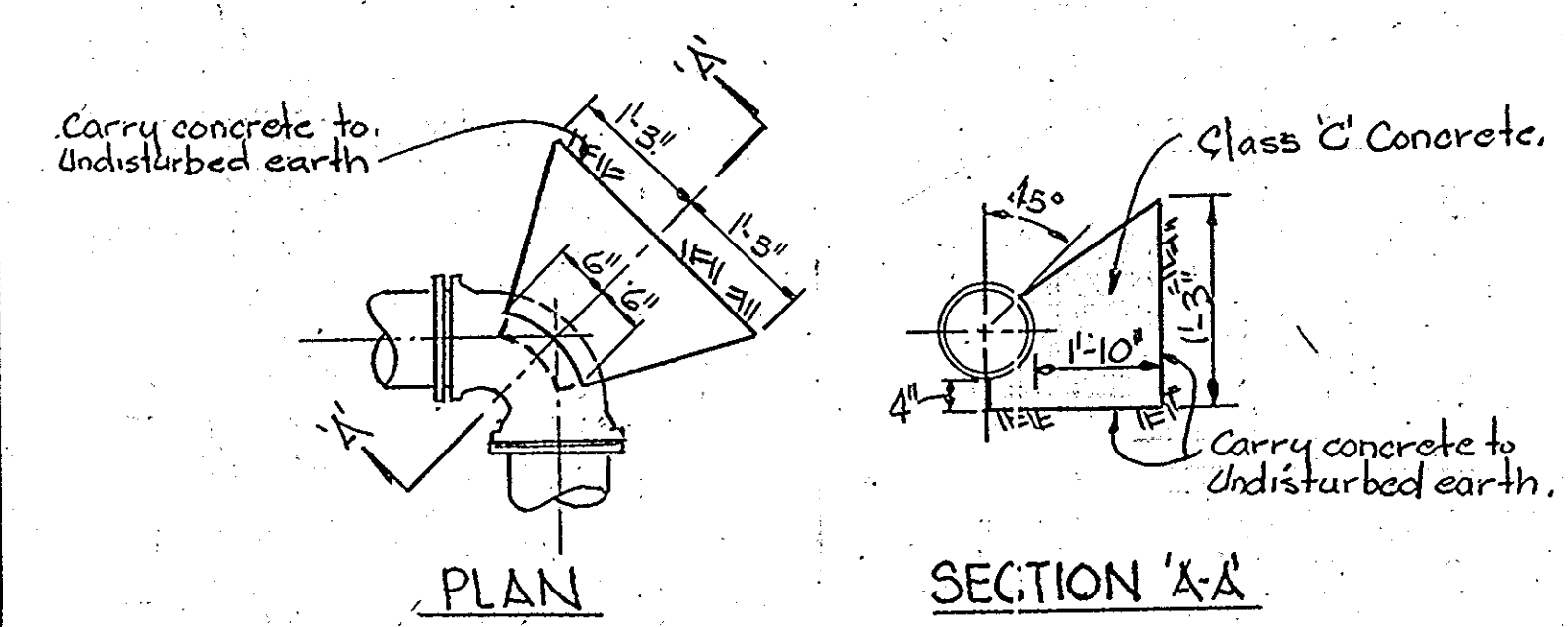
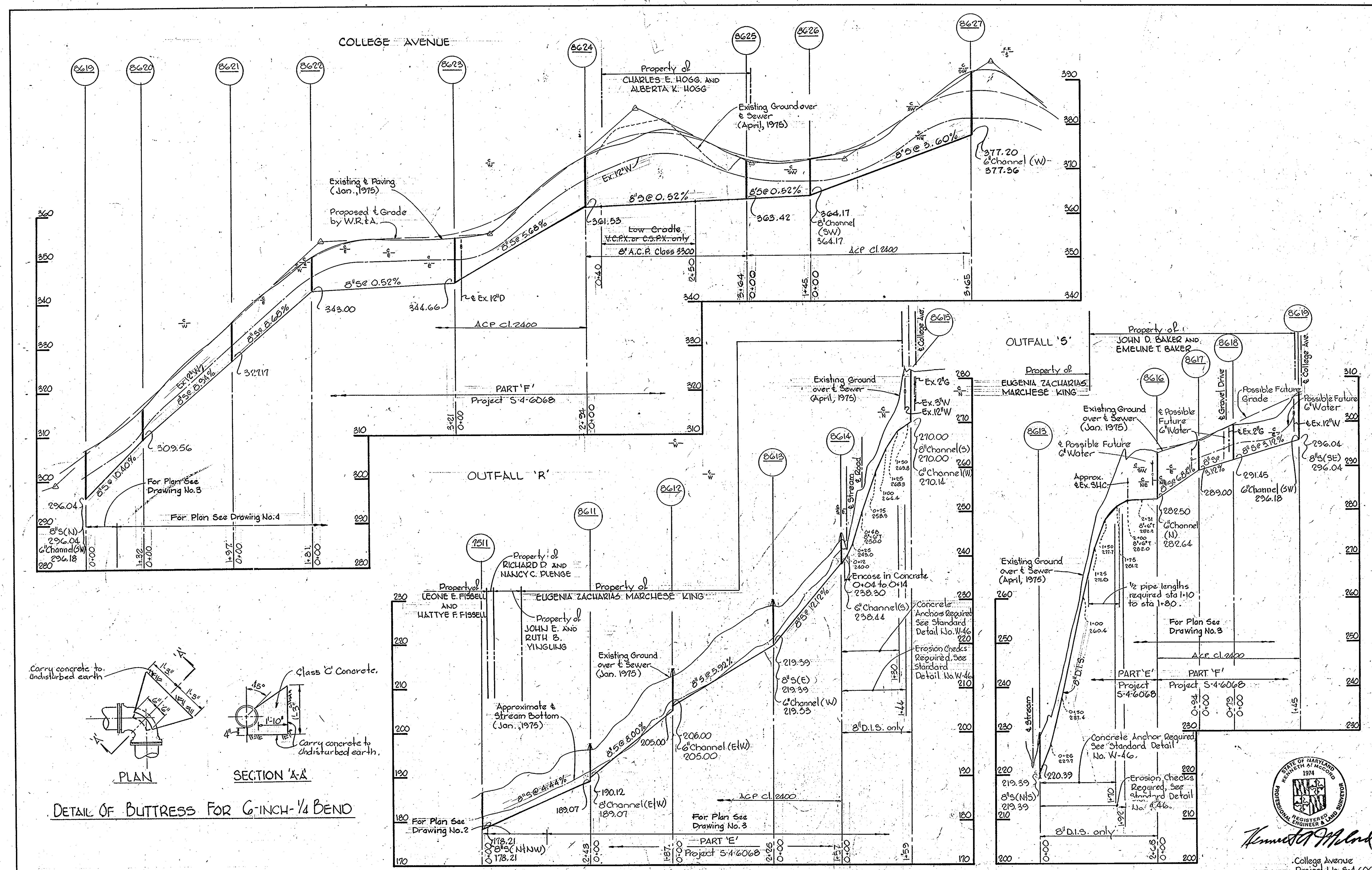
DRAWING NO. 6 OF 7
 SCALE H:V=100' V:1=10'
 AS-BUILT March 27, 1981



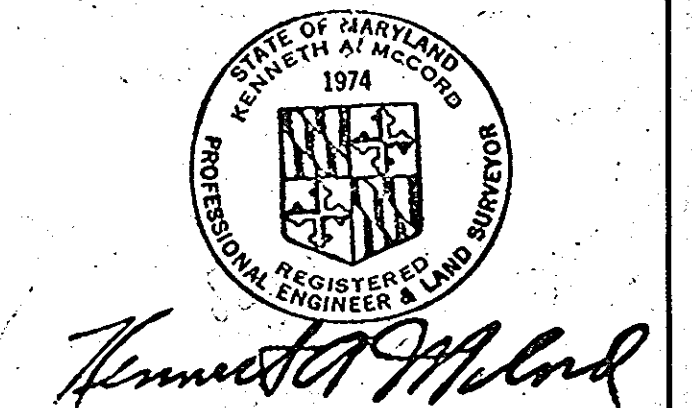
Ellicott City - Project No. S-4-6033
 Mulligan's Hill - Project No. W-5-8080
 College Avenue - Project No. S-4-6068
 Contract No. 661W&S

JULY 6 1979

WS 661 W-5/7



<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3-5-71 DIRECTOR OF PUBLIC WORKS</p>	<p>CONTRACT NO. 661-W&S PROJECT NO. S-4-6068</p>	<p>PROFILES OF SEWER MAINS</p>	<p>ELECTION DISTRICT ELLICOTT CITY NO. 2</p>	<p>DRAWING NO. 7 OF 7 SCALE H:1"=100' V:1"=10'</p>
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College Avenue
Project No. S-4-6068
Contract No. 661-W&S
AS-BUILT March 27, 1981
JULY 6, 1979