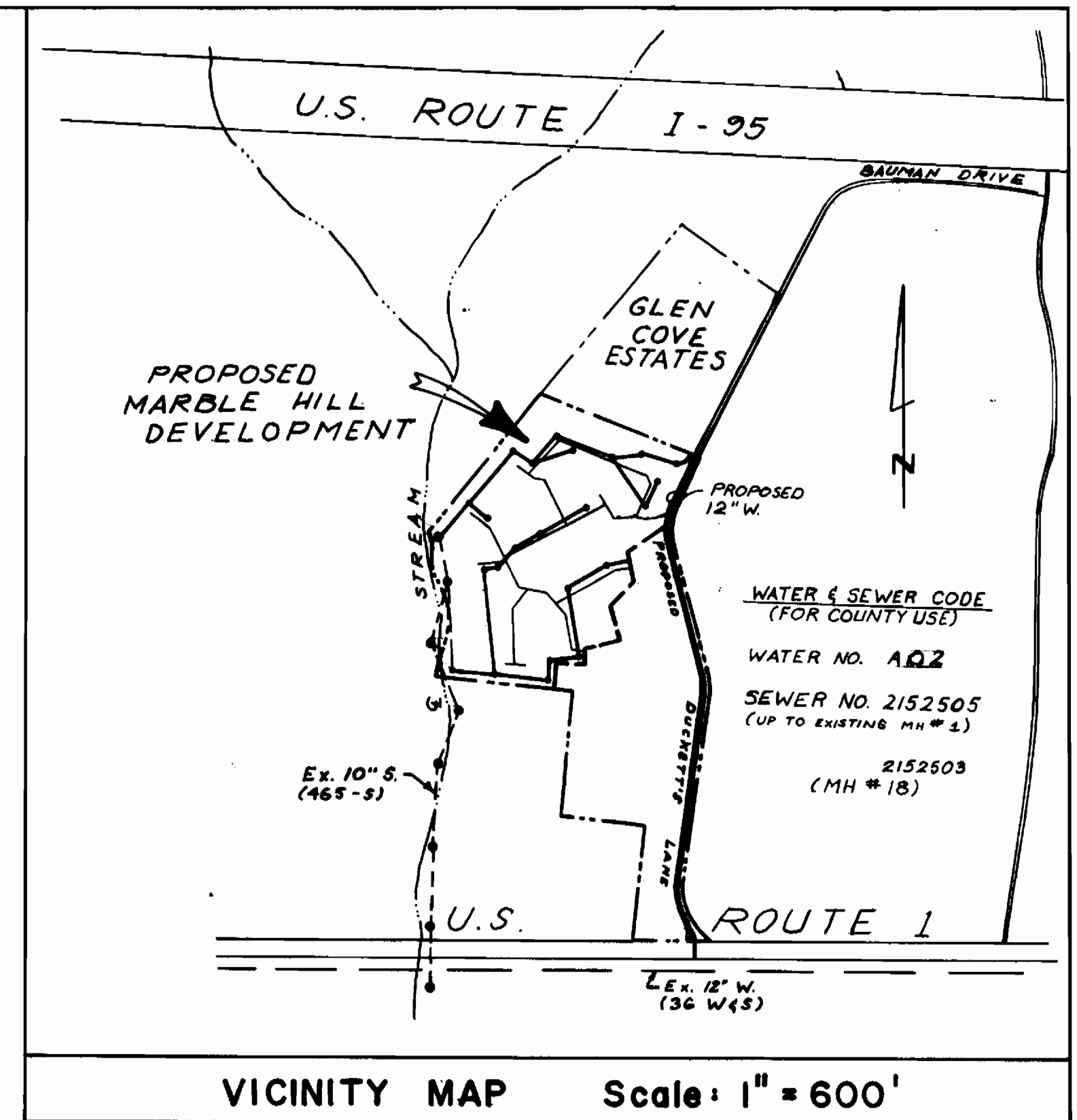


MARBLE HILL - PHASE I

PLAN OF WATER & SEWER MAINS



VICINITY MAP Scale: 1" = 600'

INDEX OF DRAWINGS

1. INDEX & VICINITY MAP
2. 12" WATER - DUCKETT'S LANE
3. 12" WATER - DUCKETT'S LANE
4. MARBLE HILL WATER & SEWER PLAN
5. PROFILES
6. PROFILES

LIST OF ABBREVIATIONS

N	NORTH	W	WATER
S	SOUTH	S	SEWER
E	EAST	RCP	REINFORCED CONCRETE PIPE
W	WEST	W/	WITH
HB	HORIZONTAL BEND	SHC	SEWER HOUSE CONNECTION
VB	VERTICAL BEND	WHC	WATER HOUSE CONNECTION
V	VALVE	NIC	NOT IN THIS CONTRACT
FH	FIRE HYDRANT	Ho. Co.	HOWARD COUNTY
EX, EXIST.	EXISTING	BM	BENCHMARK
C	CELLAR	CONN.	CONNECTION
STA.	STATION	IN.	INCHES
MAX.	MAXIMUM	FT.	FEET
MIN.	MINIMUM	EA.	EACH
+	AND	MH	MANHOLE
R/W	RIGHT OF WAY		
STD.	STANDARD		
CONC.	CONCRETE		
HORIZ.	HORIZONTAL		
VERT.	VERTICAL		
No., #	NUMBER		
DWG.	DRAWING		
RTE.	ROUTE		
R	RADIUS		
A	ARC		
TYP.	TYPICAL		
INV.	INVERT		

GENERAL NOTES

1. Approximate location of existing mains are shown. The Contractor shall take all necessary precautions to protect existing mains and maintain uninterrupted supply. Any damage incurred shall be repaired immediately.
2. All pipe elevation shown are invert \ominus elevations.
3. The Contractor shall locate existing utilities a minimum of two weeks in advance of construction operations in vicinity of utilities.
4. The Contractor shall notify the following utilities or agencies at least five days before starting work on this plan:
Baltimore Gas and Electric Company
Underground Gas Distribution Engineering 599-D100
Underground Electric Distribution Engineering "Damage Control" 234-5691
Chesapeake and Potomac Telephone Company 727-9976
5. For all standard details see standards bound in Specifications.
6. All horizontal and vertical controls are based on Maryland State Datum.
7. Clear all utilities by a minimum of 6", clear all poles by a minimum of 2'-0" or tunnel as required.
8. All water mains shall be C.I.P., D.I.R. or A.C.P. unless otherwise noted.
9. All water mains shall have a minimum of 3 1/2' cover.
10. Block all fittings with concrete, see standards bound in Specifications.
11. All valves shall be stepped to trees where applicable in accordance with standard details.
12. Payment for strapping fire hydrants and valves will be included in unit price bid for furnishing and laying water mains.
13. All fire hydrants shall be strapped and buttressed in accordance with standard details. Soil around the fire hydrants shall be compacted in accordance with section 5-15 of the Standard Specs.
14. Bury Line elevations on fire hydrants shall be set to elevations shown on drawings.
15. All W.H.C.'s shall be 3/4" diameter unless otherwise noted.
16. Water services shall be for inside meter setting.
17. All sewer mains shall be C.S.P.X., V.C.P.X., or A.C.P. Class 2400 unless otherwise noted.
18. All manholes shall be 4'-0" inside diameter.
19. The contractor shall provide a joint in all sewer mains within 2'-0" of exterior manhole walls.
20. All sewer house connection shall be 2.0% slope.

QUANTITIES			
ITEM	PROPOSED	AS-BUILT	MATERIAL
12" W.	2378	2463	U.S.
8" W.	1490	1666	U.S.
6" W.	3020	2716	U.S.
FIRE HYDRANTS	10	10	MMH
8" S.	4641	4527	CERTAIN-TEED



MARBLE HILL PHASE I
C. 768-D-W45

Kamber Engineering, Inc.
2301 RESEARCH BOULEVARD
ROCKVILLE, MARYLAND 20850

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Richard E. Freudenberger 9/6/78
DIRECTOR OF PUBLIC WORKS DATE CHIEF BUREAU OF ENGINEERING DATE

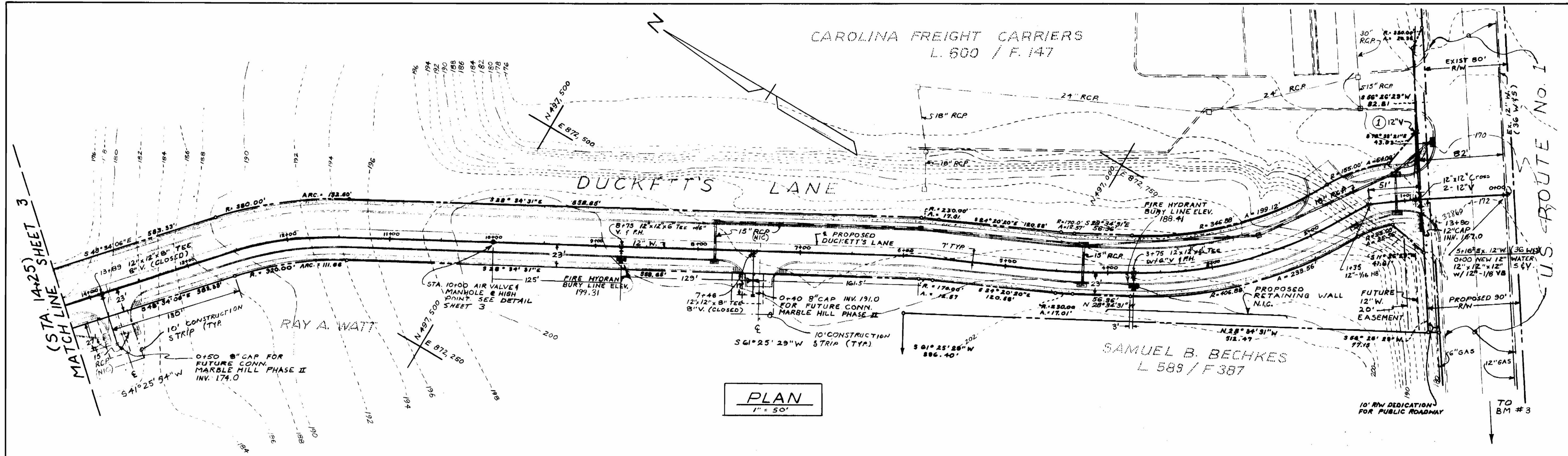
CONTRACT NO. 768-D-W85

INDEX & VICINITY MAP

MARBLE HILL PHASE I
ELECTION DISTRICT ELKBRIDGE NO. 1

DRAWING NO. 1 OF 6	SCALE AS SHOWN	DES. JLF, SWS DRAFT MJE CHK. DMK
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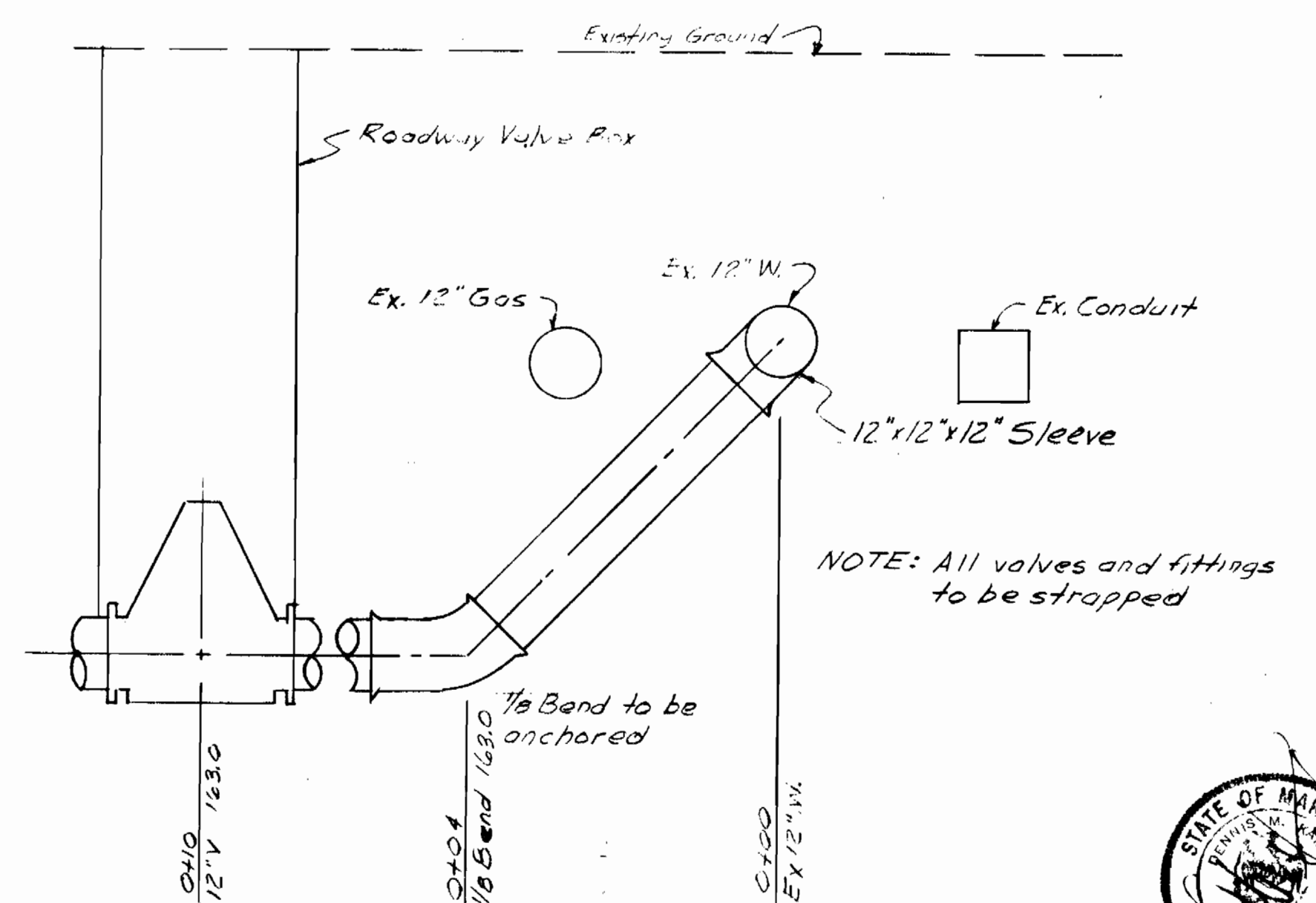
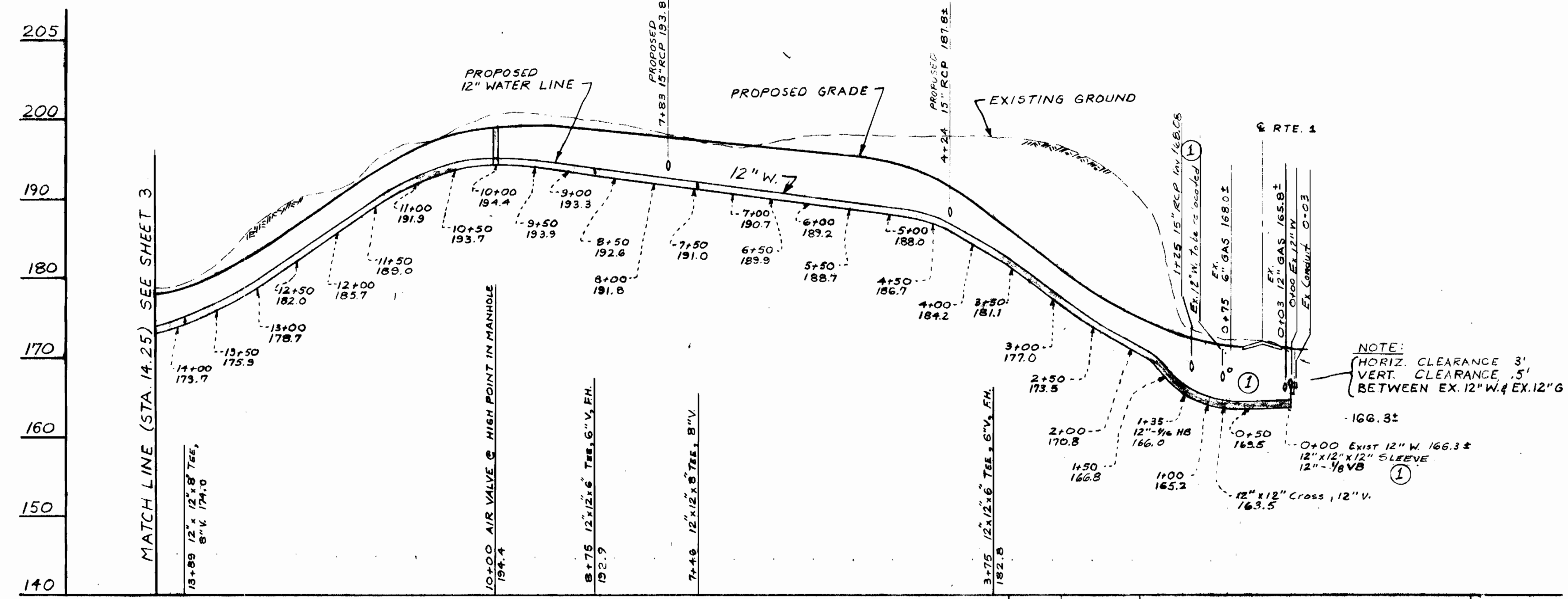
AS-BUILT OCT. 22, 1979



PLAN
1" = 50'

NOTES

1. BM #3 Ho. Co. Md., Sta. # 2546003-R, R.B. 1' Below Macadam @ Top Hill, Elev. 175.639
N 49°43'7.762 E 87°25'56.788
2. Contractor shall locate exist. 12" gas line in Rte. 1 by digging test pit.
3. Contractor shall cut and repair existing concrete roadway (rigid) in accordance with Maryland Standard No. Md. - 578.01, and as per Md. State Highway Permit 7-10-1978.
4. Contractor shall notify all users at least 48 hours prior to any shut down of water service.
5. Contractor shall notify the Bureau of Utilities at least 48 hours prior to any shut down of water service.



12" WATER - DUCKETT'S LANE

SCALE: HORIZ. 1" = 100'
VERT. 1" = 10'

Rev.	Date	Remarks
1	5/14/79	Revise 12"W. 0+00 to 1+75 Change 12"TS&V to 12"V&S 0+00 Add 12"V to existing 12"W.

CONNECTION DETAIL
(NOT TO SCALE)

MARBLE HILL PHASE I
C.768-D-W45



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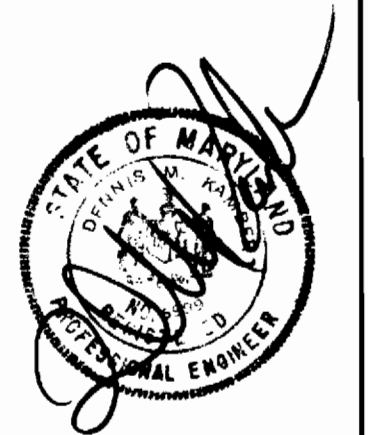
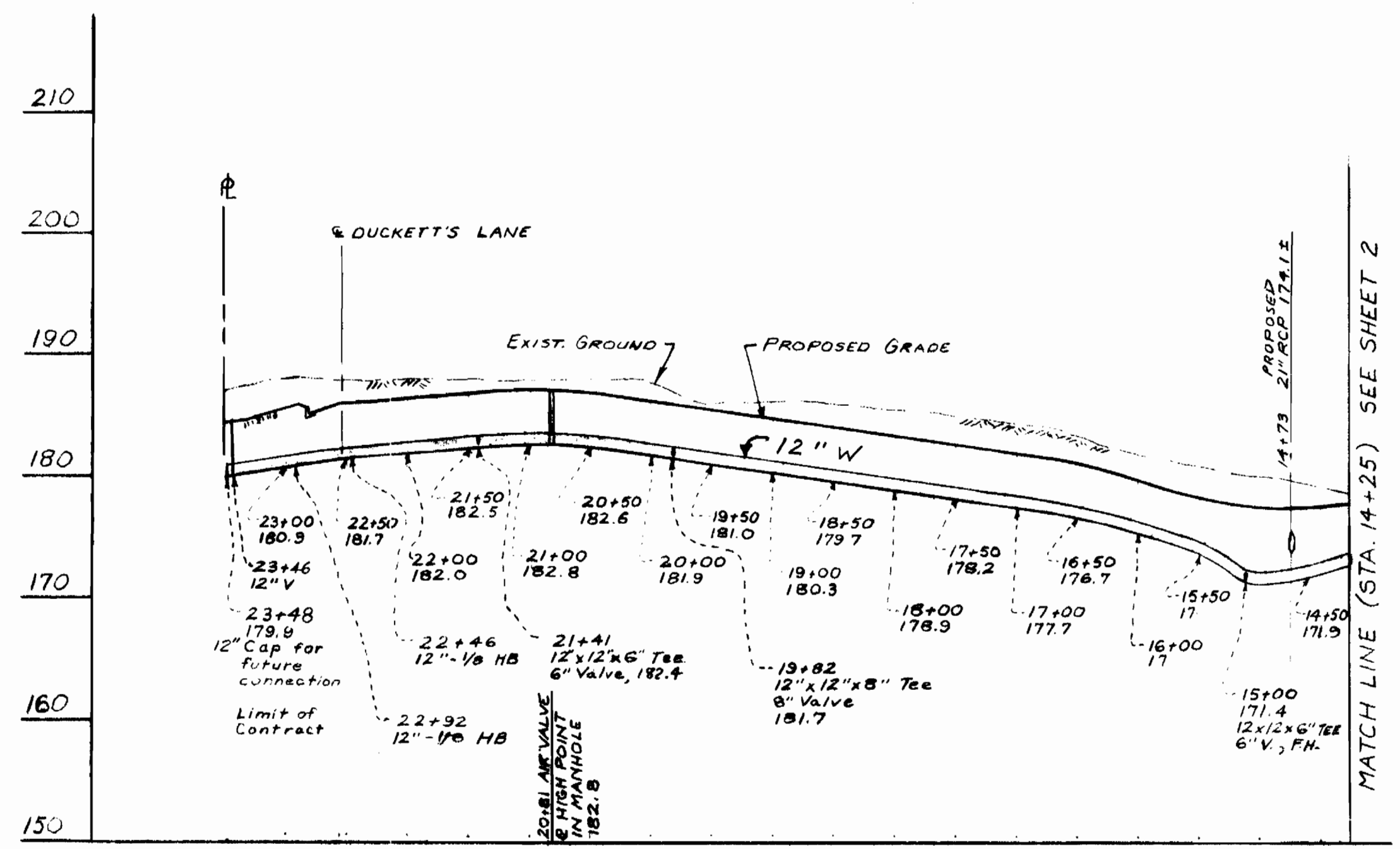
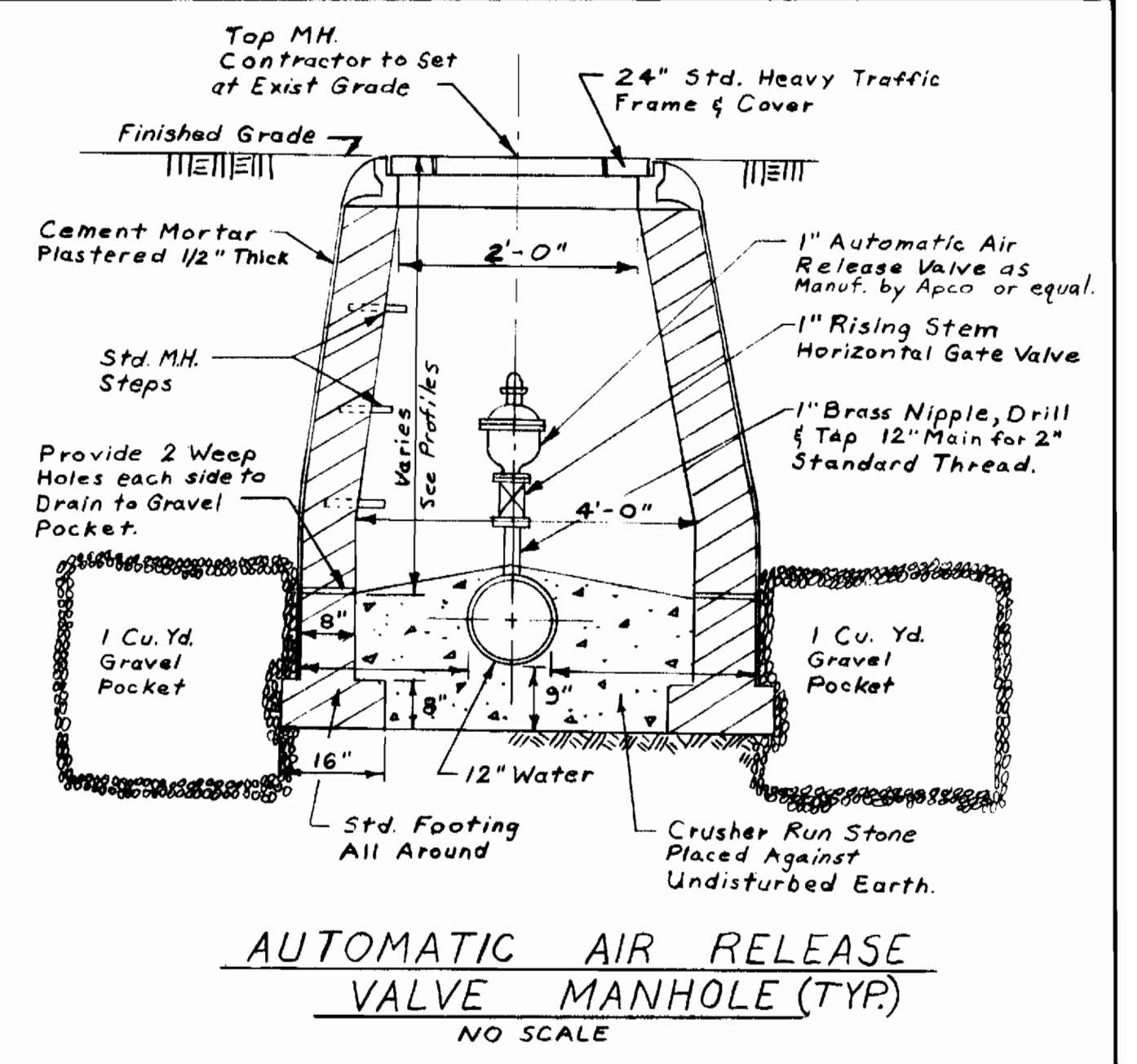
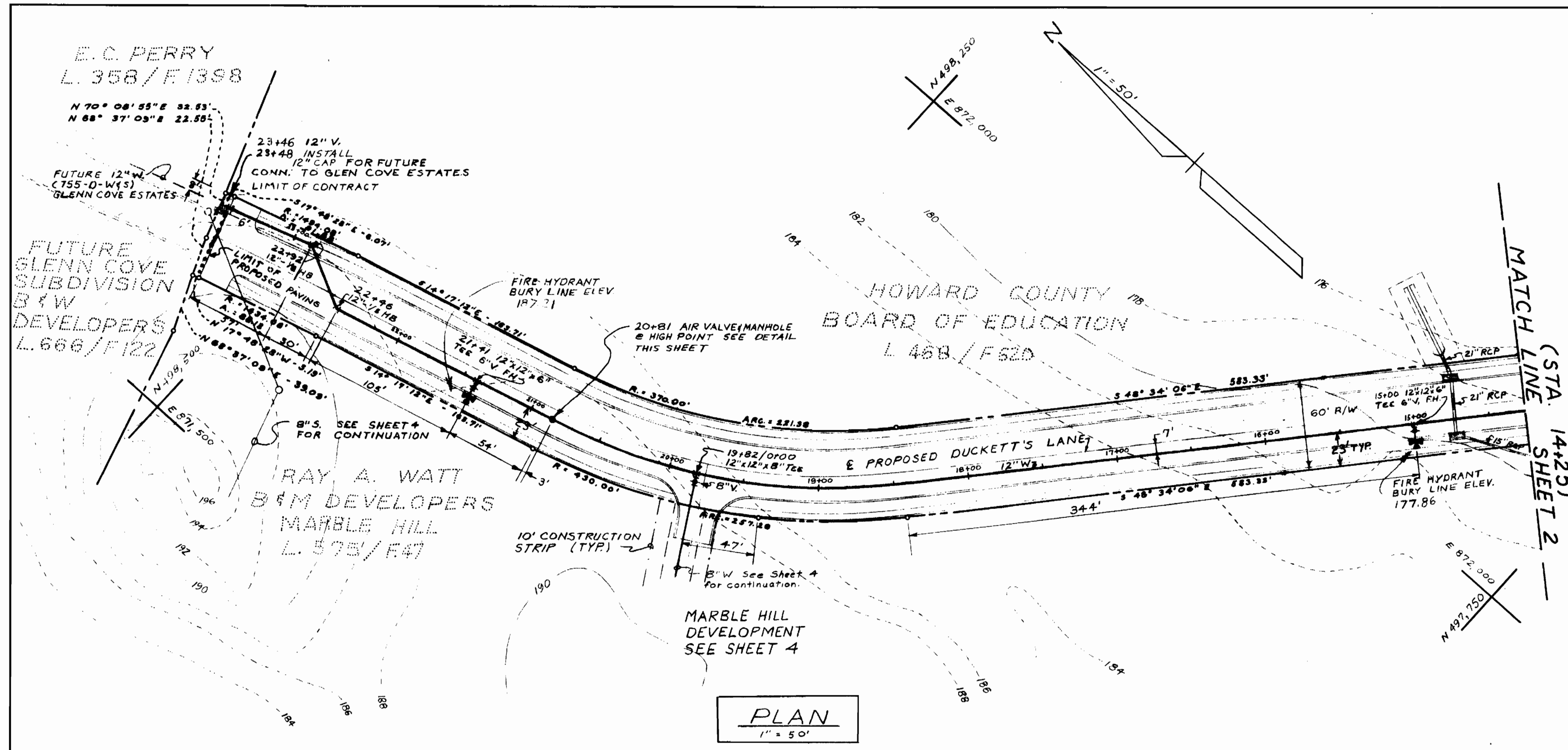
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Richard E. Brendenbryn 9/6/78
DIRECTOR OF PUBLIC WORKS DATE CHIEF BUREAU OF ENGINEERING DATE

CONTRACT NO. 768-D-W45

**12" WATER
DUCKETT'S LANE**

**MARBLE HILL PHASE I
ELECTION DISTRICT ELKRIDGE NO. 1**

DRAWING	SCALE	DES. J.L.S.W.
NO. 2	AS SHOWN	DRAFT M.T.B.
OF 6		CHK. DMK



MARBLE HILL PHASE I
C 768 D - W & S



Kamber Engineering, Inc.
2301 RESEARCH BOULEVARD
ROCKVILLE, MARYLAND 20850

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Robert J. Freudenberger 9/6/78 *W.D. Gilbert* 9-6-78
DIRECTOR OF PUBLIC WORKS DATE CHIEF BUREAU OF ENGINEERING DATE

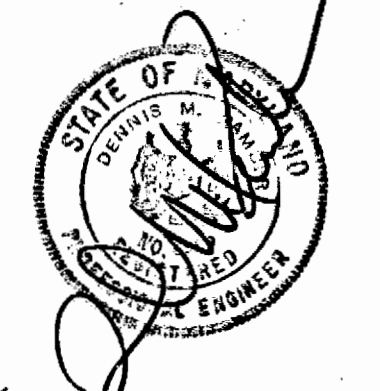
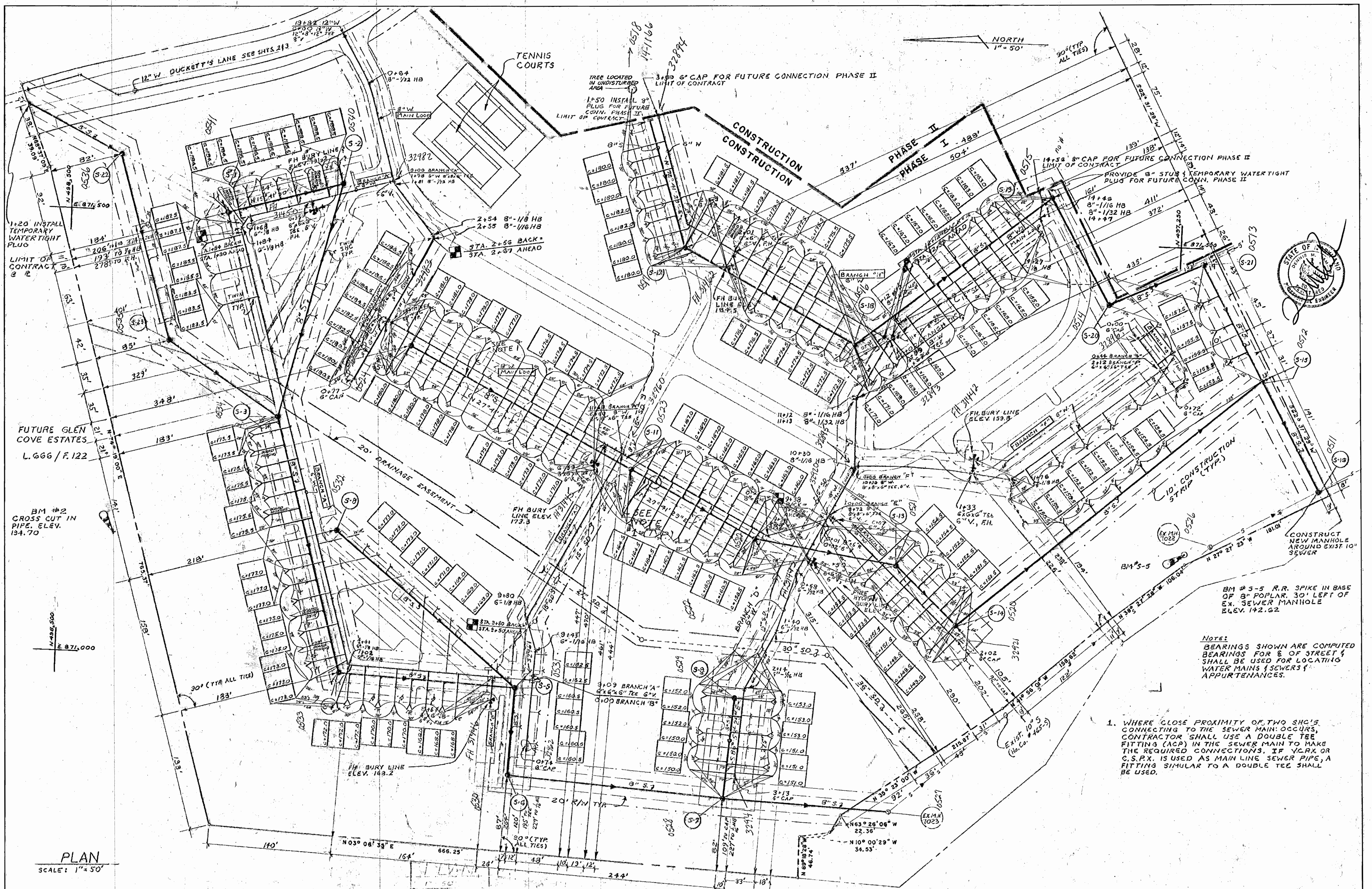
CONTRACT NO. 768-D-W&S

12" WATER
DUCKETT'S LANE

MARBLE HILL PHASE I
ELECTION DISTRICT ELKRIDGE NO. 1

DRAWING
NO. 3
OF 6

SCALE
AS SHOWN
DES. J.L.F., S.W.S.
DRAFT M.J.B.
CHK. D.M.K.



NOTE:
BEARINGS SHOWN ARE COMPUTED
BEARINGS FOR E OF STREET &
SHALL BE USED FOR LOCATING
WATER MAINS & SEWERS &
APPURTENANCES.

1. WHERE CLOSE PROXIMITY OF TWO SHC'S
CONNECTING TO THE SEWER MAIN OCCURS,
CONTRACTOR SHALL USE A DOUBLE TEE
FITTING (JAC) IN THE SEWER MAIN TO MAKE
THE REQUIRED CONNECTIONS. IF V.C.P. OR
C.S.P. IS USED AS MAIN LINE SEWER PIPE, A
FITTING SIMILAR TO A DOUBLE TEE SHALL
BE USED.

PLAN
SCALE: 1"=50'

Kamber Engineering, Inc.
2301 RESEARCH BOULEVARD
ROCKVILLE, MARYLAND 20850

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Richard L. Brundage 9/6/78
DIRECTOR OF PUBLIC WORKS DATE CHIEF BUREAU OF ENGINEERING DATE

CONTRACT NO. 768-D-WAS

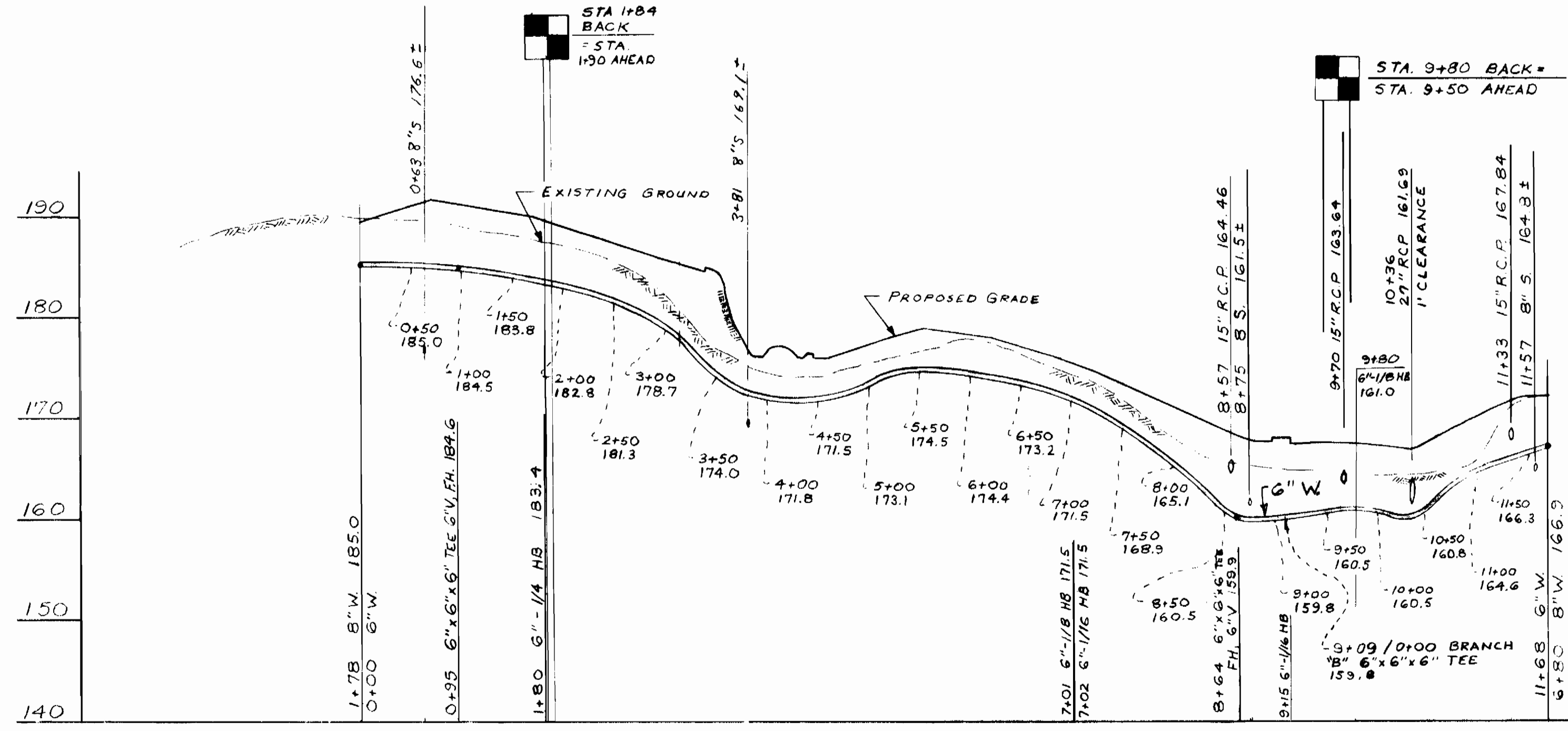
MARBLE HILL
WATER & SEWER PLAN

MARBLE HILL PHASE I
ELECTION DISTRICT ELKCRIDGE NO. 1

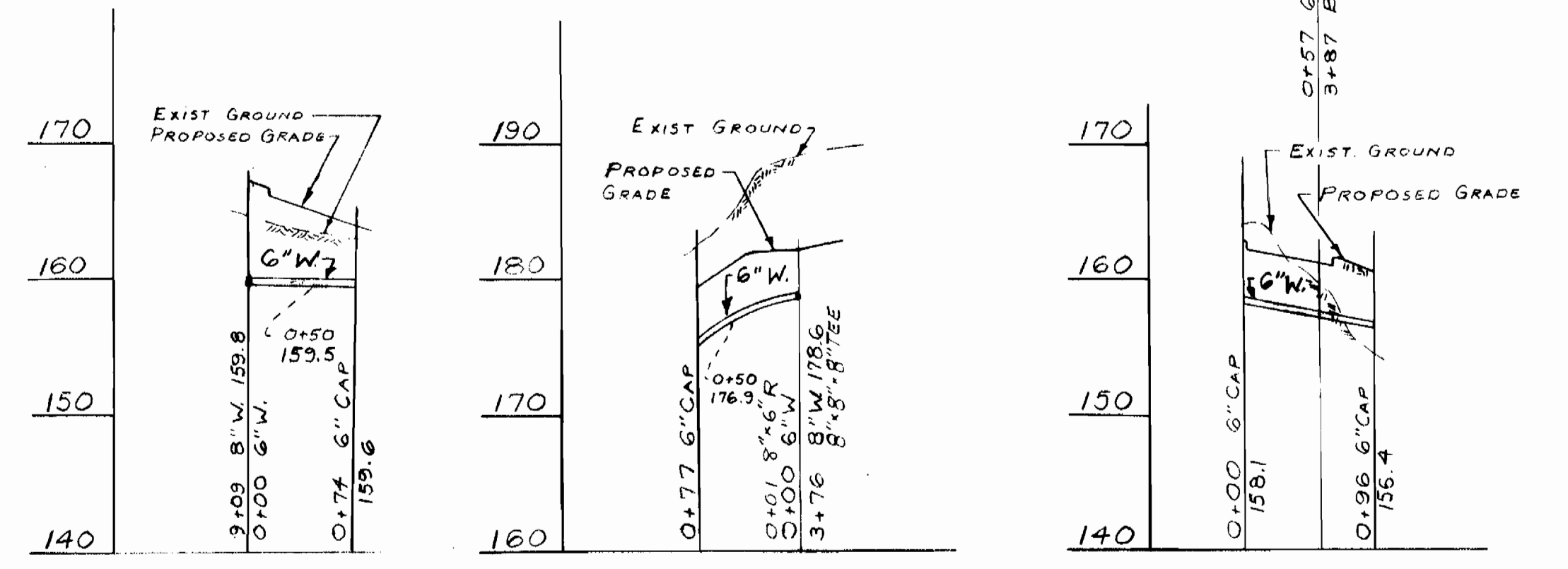
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OF 6		DRAFT MJB
		CHK. DMK

AS-BUILT OCT. 22, 1979

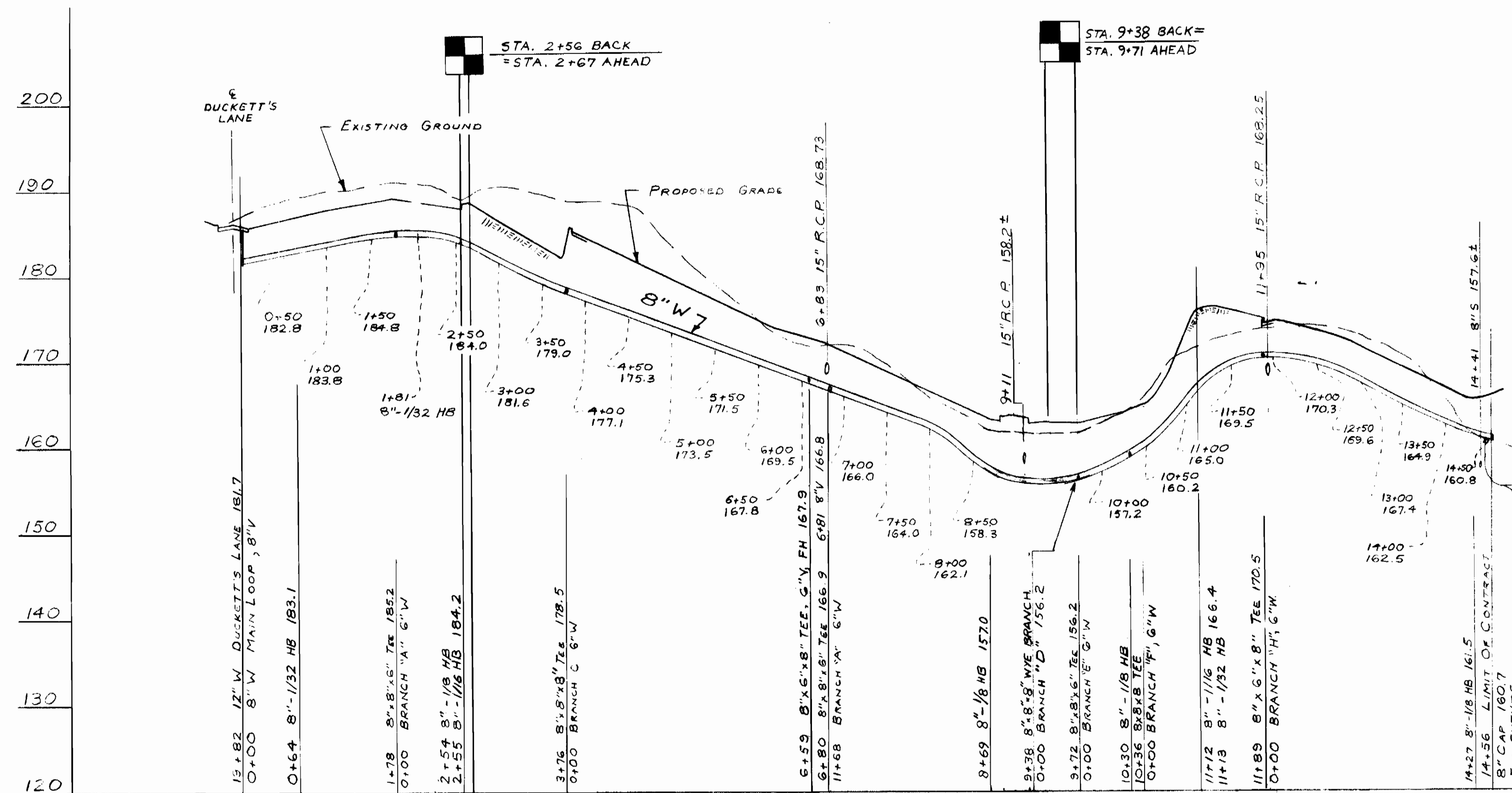
1.) DATE OF EXISTING GROUND, APRIL 1977, ALL PROFILES.



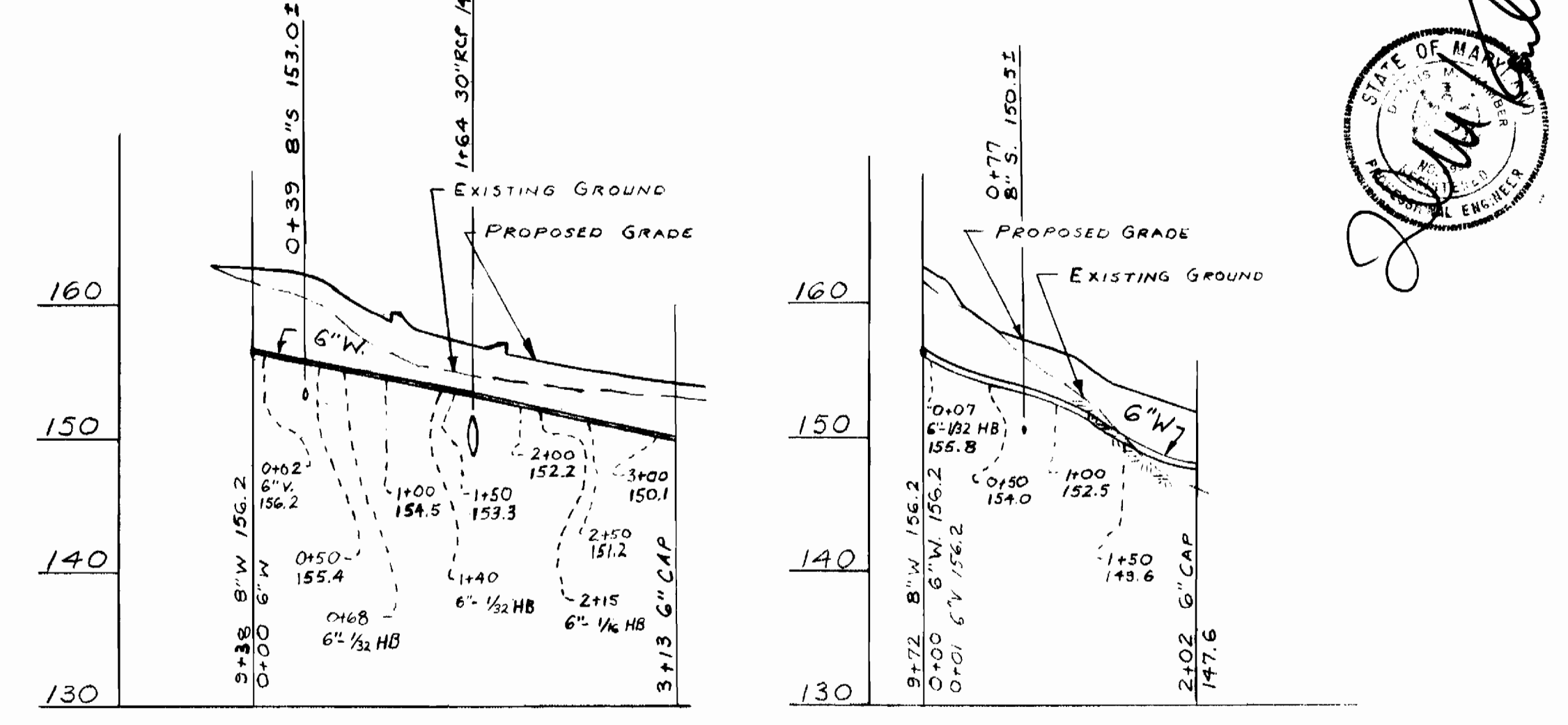
6" WATER - BRANCH "A"
SCALE: HORIZ. 1"=100'
VERT. 1"=10'



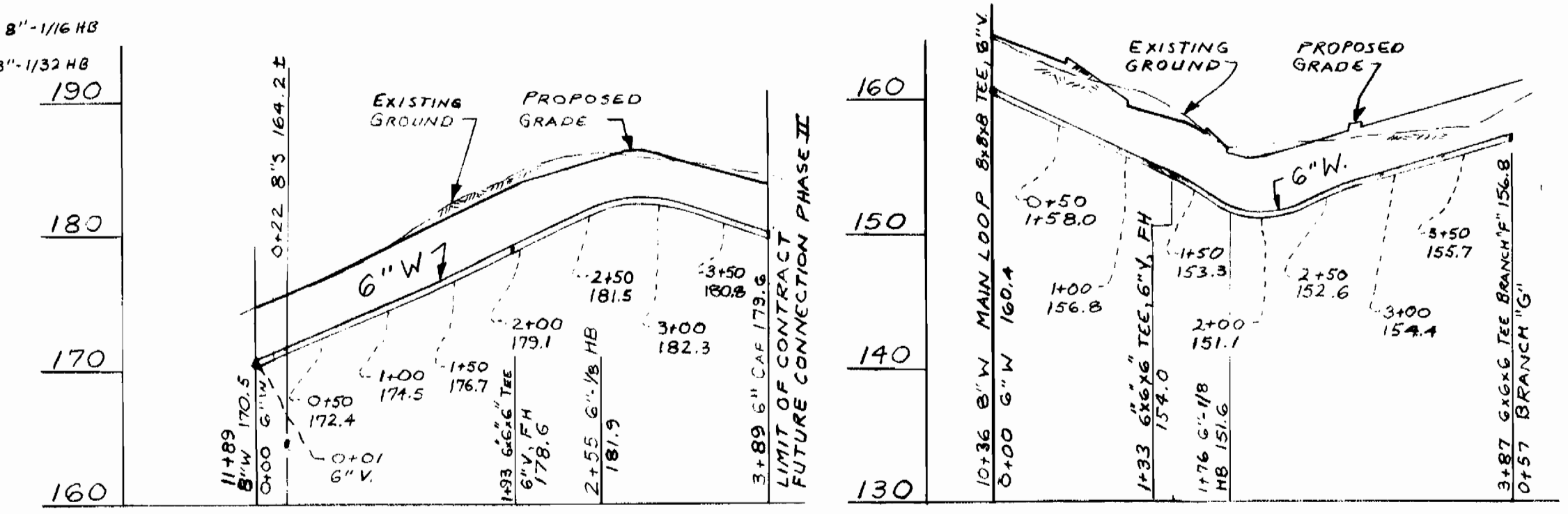
6" WATER LINE - BRANCH "B" 6" WATER LINE - BRANCH "C" 6" WATER LINE - BRANCH "G"
SCALE: HORIZ. 1"=100' SCALE: HORIZ. 1"=100' SCALE: HORIZ. 1"=100'
VERT. 1"=10' VERT. 1"=10' VERT. 1"=10'



8" WATER LINE - MAIN LOOP
SCALE: HORIZ. 1"=100'
VERT. 1"=10'



6" WATER LINE - BRANCH "D" 6" WATER LINE - BRANCH "E"
SCALE: HORIZ. 1"=100' SCALE: HORIZ. 1"=100'
VERT. 1"=10' VERT. 1"=10'



6" WATER LINE - BRANCH "H" 6" WATER LINE - BRANCH "F"
SCALE: HORIZ. 1"=100' SCALE: HORIZ. 1"=100'
VERT. 1"=10' VERT. 1"=10'



MARBLE HILL PHASE I
C. 768-D-W45



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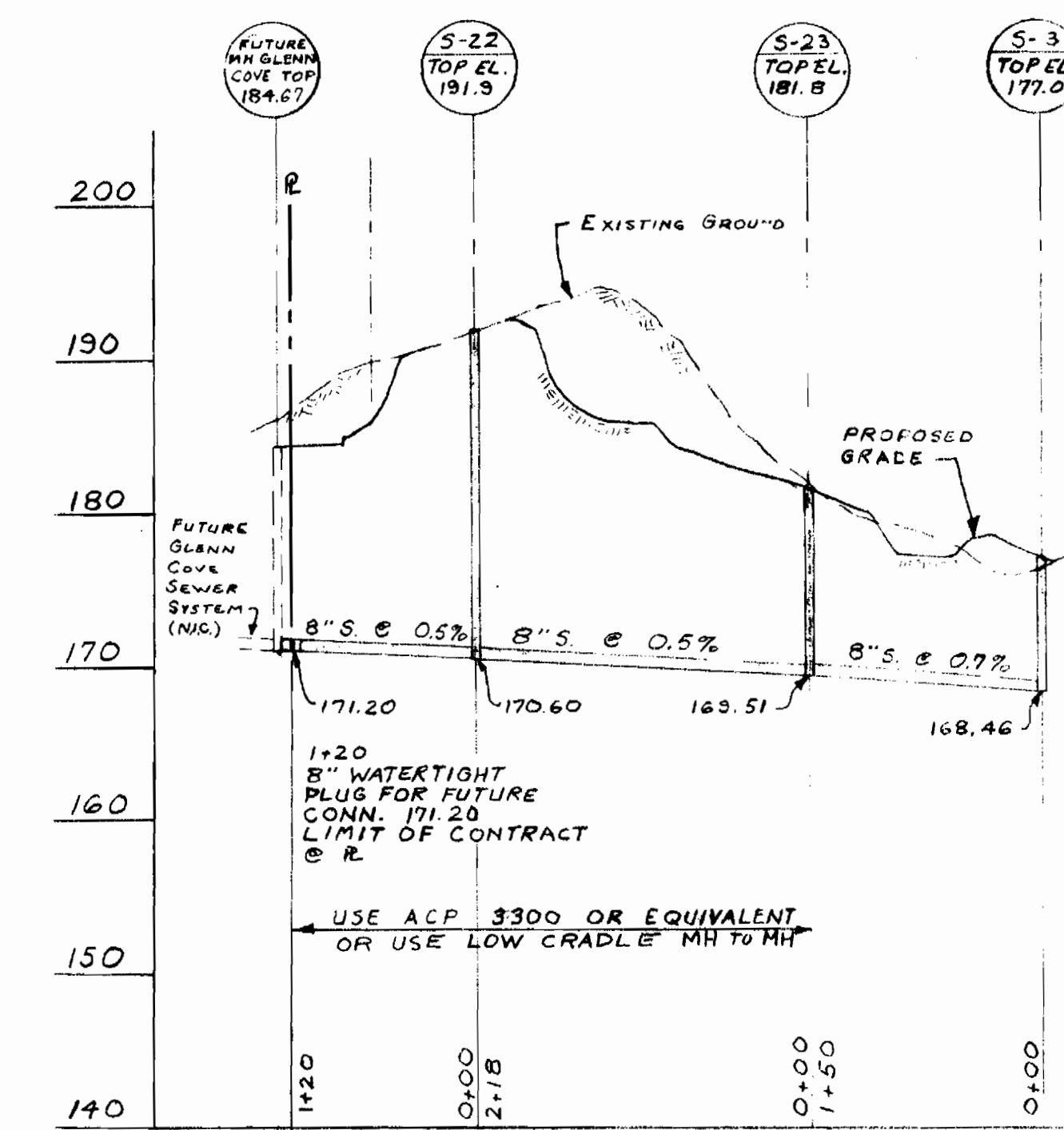
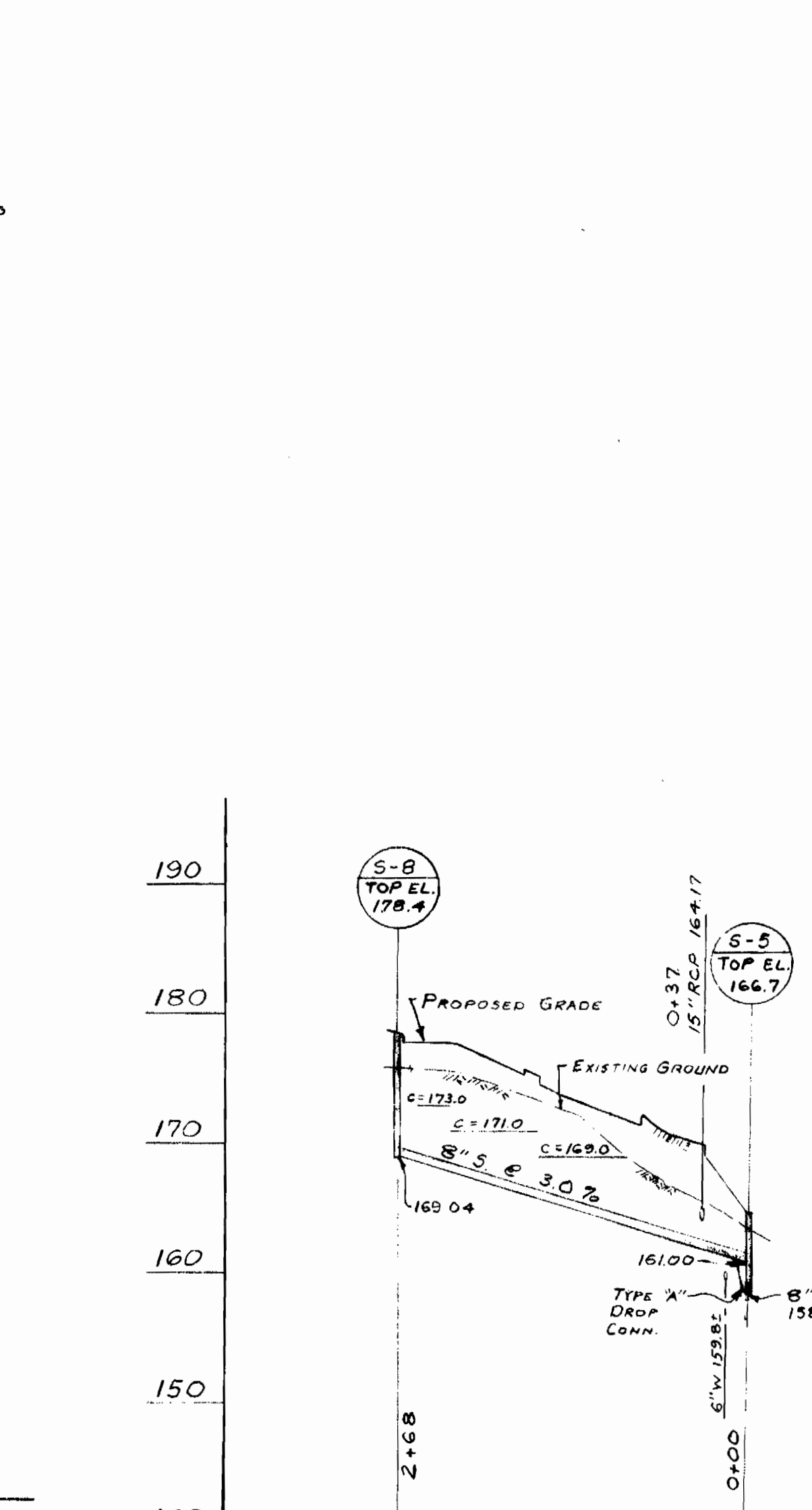
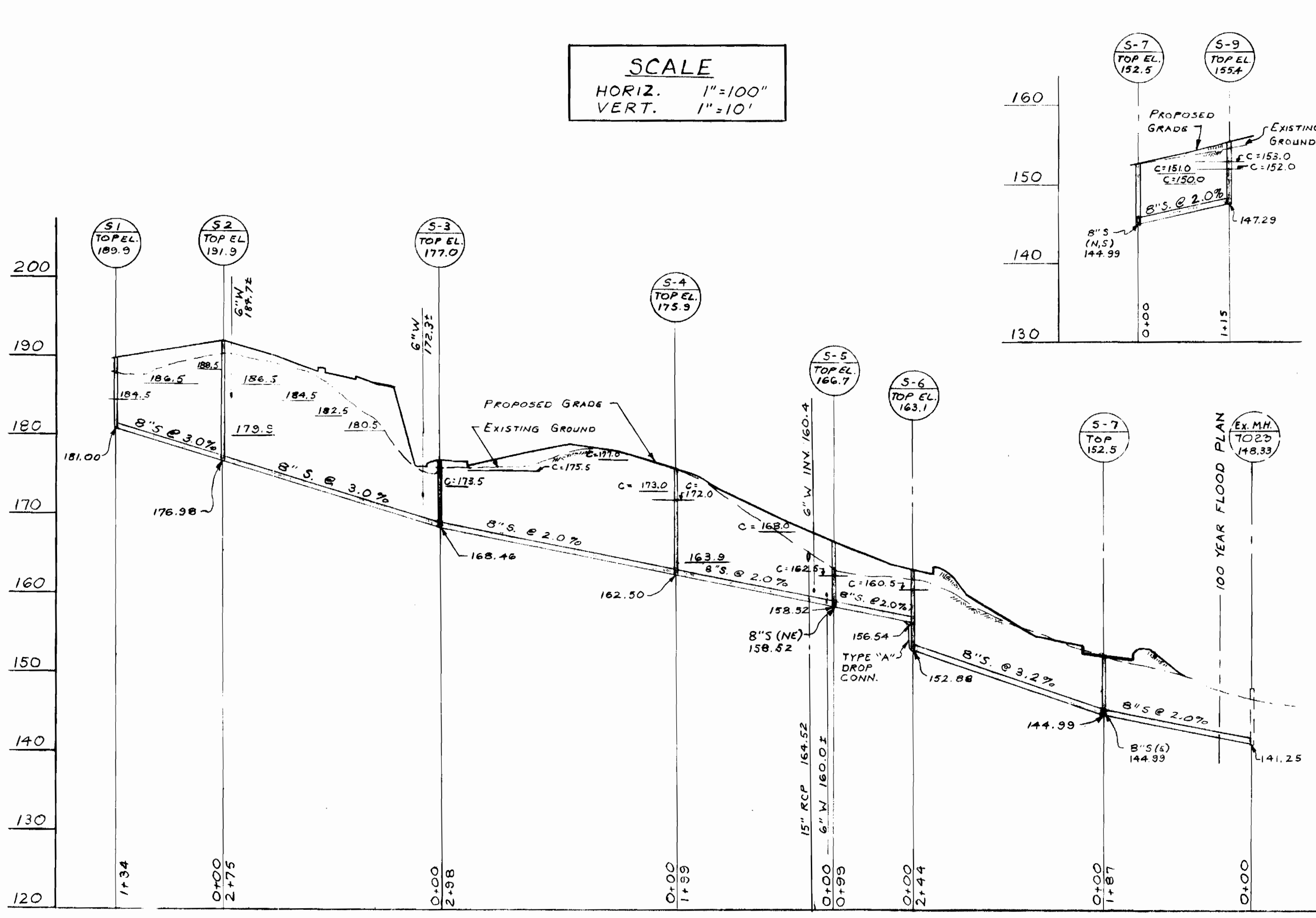
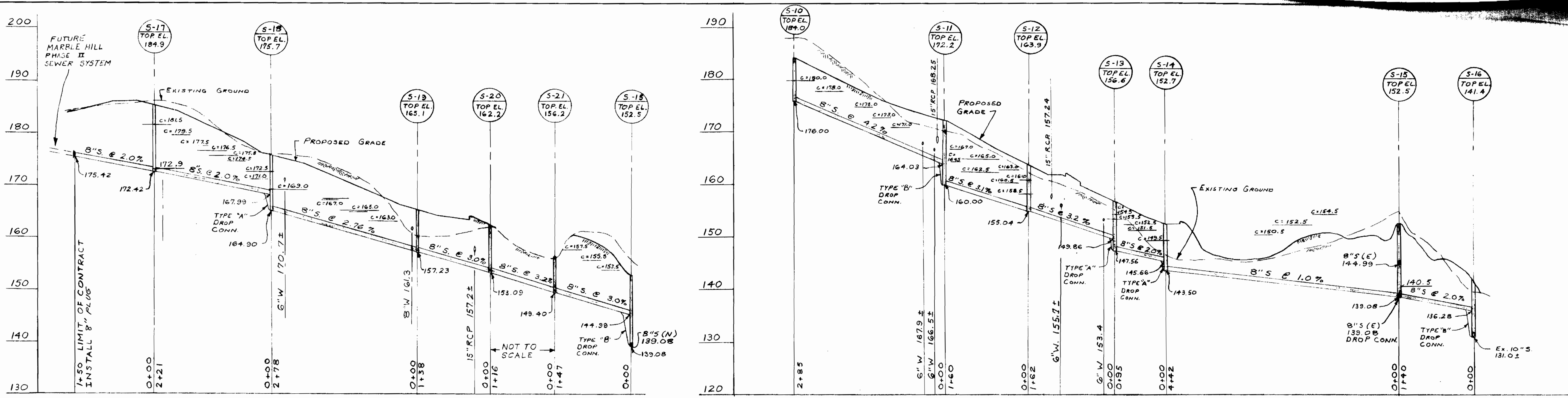
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Richard S. Greenberg 9/6/78 *1100* 9-6-78
DIRECTOR OF PUBLIC WORKS DATE CHIEF BUREAU OF ENGINEERING DATE

CONTRACT NO. 768-D-W45

PROFILES

MARBLE HILL PHASE I
ELECTION DISTRICT ELKRIDGE NO. 1

DRAWING NO.	5	DES. JLF, JWS
SCALE	AS SHOWN	DRAFT MJS
	6	CHK. DMK



SCALE
 HORIZ. 1"=100'
 VERT. 1"=10'

- 1) ALL ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED.
- 2) AT ALL LOCATIONS WHERE CLEARANCE BETWEEN WATER MAIN & SEWER IS LESS THAN 12 IN., ENCASE SEWER IN CONC. 10 FT. EA. SIDE OF WATER MAIN. SEE No. C-0. STD. DETAIL S1 & S1A.
- 3) WHERE PRECAST MANHOLE SECTIONS ARE NOT USED IN CONSTRUCTING MANHOLES, NO. CO. STD. DETAIL S2 SHALL APPLY. NOTE THAT MANHOLES SECTIONS DEEPER THAN 12 FEET SHALL HAVE THE 12" THICK WALLS AS PER THE ABOVE DETAIL BEGINNING AT THE ELEVATION SHOWN ON THE PROFILE.

MARBLE HILL PHASE I
 C. 768-D-W45

K Kamber Engineering, Inc.
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 ROCKVILLE, MARYLAND 20850

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Richard E. Freudenberger 9/6/78 *W.D. Miller* 9-6-78
 DIRECTOR OF PUBLIC WORKS DATE CHIEF BUREAU OF ENGINEERING DATE

CONTRACT NO. 768-D-W45

PROFILES

MARBLE HILL PHASE I
 ELECTION DISTRICT ELKRIDGE NO. 1

DRAWING NO. 6 OF 6
 SCALE AS SHOWN
 DES. JLF/SMS
 DRAFT MJS
 CHK. DMK