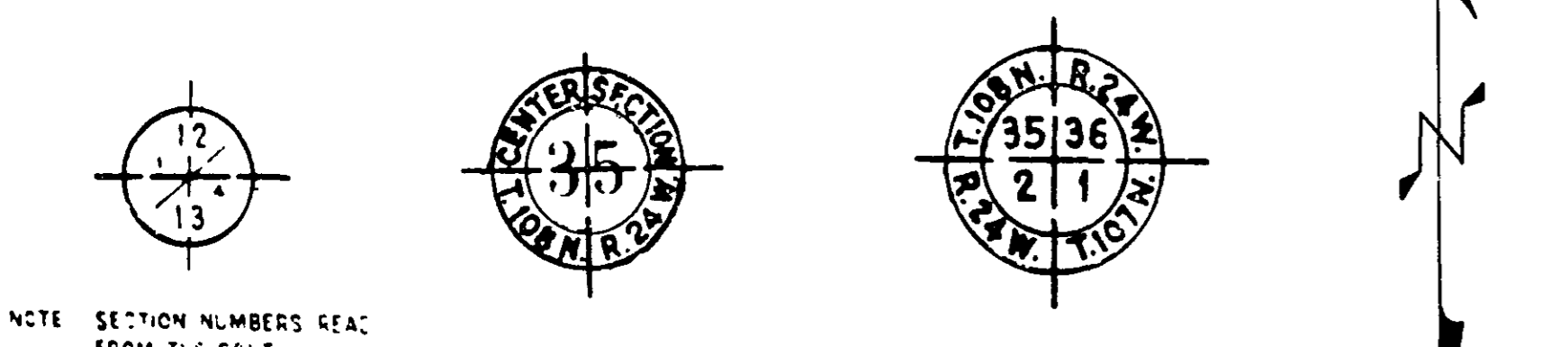


PLANS SYMBOLS

STATE LINE	-----	SPRINGS	○
COUNTY LINE	-----	MARSH	-----
TOWNSHIP OR RANGE LINE	-----	TIMBER	(TIMBER)
SECTION LINE	-----	ORCHARD	-----
QUARTER LINE	-----	BRUSH	-----
SIXTEENTH LINE	-----	NURSERY	-----
RIGHT-OF-WAY LINE	-----	CATCH BASIN	C.B. □
PRESENT RIGHT-OF-WAY LINE	-----	FIRE HYDRANT	▽
CONTROL OF ACCESS LINE	-----	CATTLE GUARD	-----
PROPERTY LINE (Except Land Lines)	-----	OVERPASS (Highway Over)	-----
VACATED PLATTED PROPERTY	-----	UNDERPASS (Highway Under)	-----
CORPORATE OR CITY LIMITS	-----	BRIDGE	-----
TRUNK HIGHWAY CENTER LINE	-----	BUILDING (One Story Frame)	-----
RAILROAD	-----	F FRAME	□
RAILROAD RIGHT-OF-WAY LINE	-----	C CONCRETE	□
RIVER OR CREEK	-----	S STONE	□
DRY RUN	-----	B BRICK	□
DRAINAGE DITCH	-----	T TILE	□
DRAIN TILE	-----	ST STUCCO	□
CULVERT	-----	IRON PIPE OR ROD	○
DROP INLET	-----	MONUMENT (STONE, CONCRETE, OR METAL)	○
GUARD RAIL	-----	WOODEN HUB	○
BARBED WIRE FENCE	-----	GRAVEL PIT	⊙
WOVEN WIRE FENCE	-----	SAND PIT	⊙
CHAIN LINK FENCE	-----	BORROW PIT	⊙
RAILROAD SNOW FENCE	-----	ROCK QUARRY	⊙
STONE WALL OR FENCE	-----		
HEDGE	-----		
RAILROAD CROSSING SIGN	-----		
RAILROAD CROSSING BELL	-----		
ELECTRIC WARNING SIGN	-----		
CROSSING GATE	-----		
MEANDER CORNER	-----		

UTILITIES SYMBOLS

POWER POLE LINE	-----	CONDUIT	-----
TELEPHONE OR TELEGRAPH POLE LINE	-----	TELEPHONE CABLE IN CONDUIT	-----
JOINT TELEPHONE AND POWER ON TELEPHONE POLES	-----	ELECTRIC CABLE IN CONDUIT	-----
ANCHOR	-----	TELEPHONE MANHOLE	□
STEEL TOWER	△	ELECTRIC MANHOLE	□
STREET LIGHT	☆	BURIED TELEPHONE CABLE	T-BUR
PEDESTAL (TELEPHONE CABLE TERMINAL)	□	BURIED ELECTRIC CABLE	P-BUR
GAS MAIN	G	AERIAL TELEPHONE CABLE	T-AE
WATER MAIN	I	SEWER, (SANITARY OR STORM)	-----
		SEWER MANHOLE	-----



PIT DATA

PIT NO. _____	Located in _____
PIT NO. _____	Located in _____

**OFFICE OF COUNTY ENGINEER
RAMSEY COUNTY**
CONSTRUCTION PLAN FOR GRADING AND BITUMINOUS SURFACING
ELEVENTH AVE. AND CASTLE AVE.
BETWEEN: MCKNIGHT RD. AND: HELEN ST.

FROM: A POINT 660 FEET NORTH AND 22 FEET EASTERLY OF THE WEST 1/4 CORNER OF SECTION 12, T.29N., R.22W. TO: A POINT 1526.23 FEET SOUTH OF THE NORTH 1/4 CORNER OF SECTION 12 T.29N., R.22W.

GROSS LENGTH	2778 FEET 0.5261 MILES
BRIDGES-LENGTH	0 FEET 0 MILES
EXCEPTIONS-LENGTH	0 FEET 0 MILES
NET LENGTH	2778 FEET 0.5261 MILES

SCALES: PLAN, 1 inch = 50 Feet
PROFILE, Horiz. 1 inch = 50 Feet Vert. 1 inch = 5 Feet
CROSS-SECTIONS, 1 inch = 10 Feet
LAYOUT, 1 inch = 5280 Feet

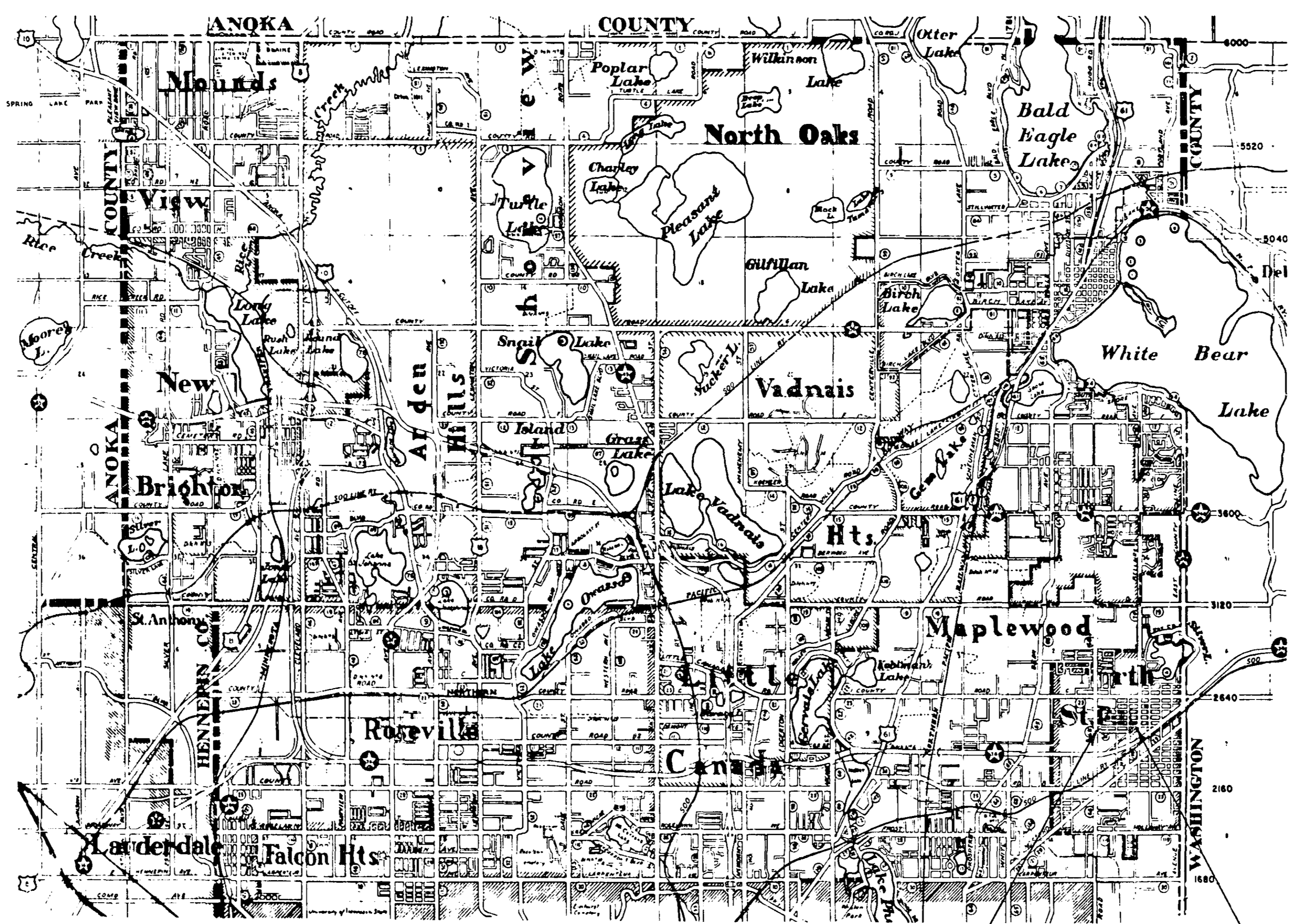
DESIGN DESIGNATION

A.D.T. 1967	= 700
A.D.T. 1985	= 3000
DHV	= 360
D (DIRECTIONAL DISTRIBUTION)	= 50-50
T (HEAVY COMMERCIAL) 1985	= 150-300

DESIGN LOAD = 9 TON
SOIL FACTOR = 100 %
DESIGN SPEED = 30 M.P.H. MCKNIGHT RD. TO SECOND ST.
25 M.P.H. SECOND ST. TO HELEN ST.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	TYPICAL SECTION & ESTIMATED QUANTITIES
3	DRAINAGE CHART
4-6	PLAN PROFILES
7	CONSTRUCTION PLAN
8-14	CROSS-SECTIONS



CITY OF ST. PAUL

BEGIN PROJECT STA. 0+22
END PROJECT STA. 28+00

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Thomas A. Anderson REG. NO. 2042 DATE 2-1-68
ENGINEER

RECOMMENDED FOR APPROVAL *Dean R. Gault* DATE 2-1-68
COUNTY ENGINEER

APPROVED *Thomas R. Byrnes* DATE 2-5-68
CHAIRMAN OF THE RAMSEY COUNTY BOARD

APPROVED _____ DATE _____

APPROVED _____ DATE _____

MINNESOTA STATE HIGHWAY DEPARTMENT

RECOMMENDED FOR APPROVAL *C.E. Wackelbaum* DATE 3-7-68

RECOMMENDED FOR APPROVAL *W. B. Anderson* DATE 3-6-68
DISTRICT STATE AID ENGINEER

APPROVAL *W. B. Anderson* DATE 3-8-68
STATE AID ENGINEER

-SPECIFICATIONS-
THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION DATED JANUARY 1, 1968 SHALL GOVERN.

STATEMENT OF ESTIMATED QUANTITIES

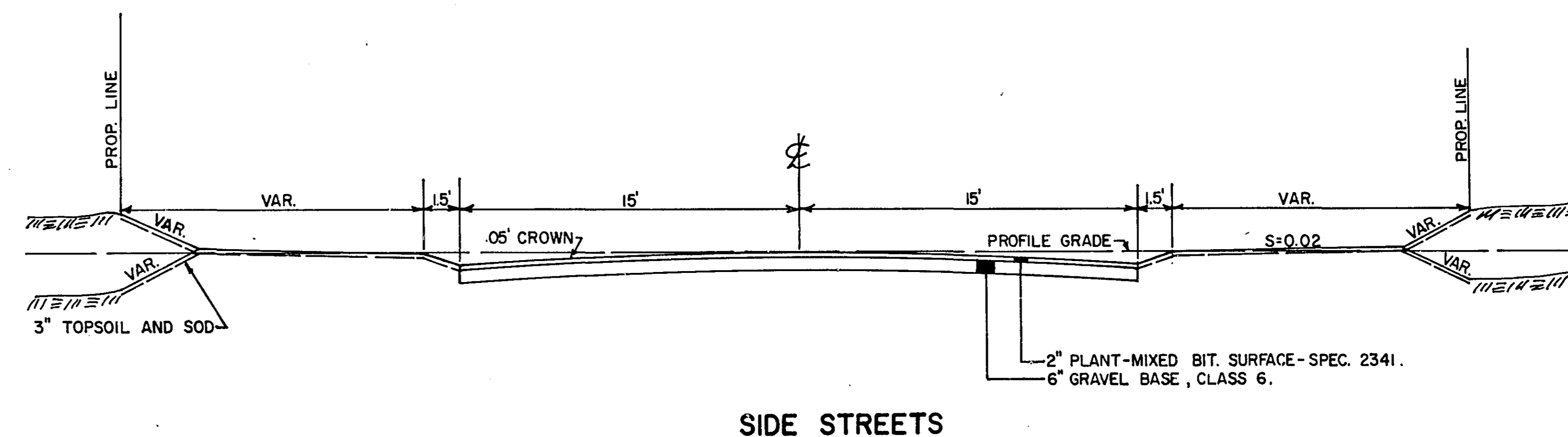
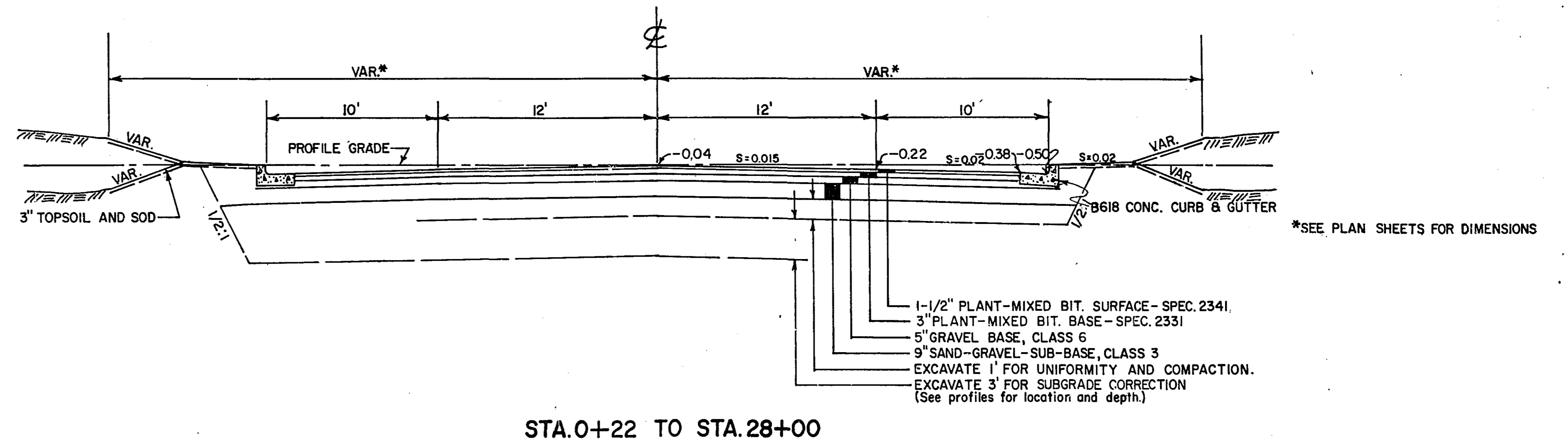
ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES
2031.503	FIELD LABORATORY, TYPE A	EACH	1
2101.502	CLEARING	TREE	46
2101.507	GRUBBING	TREE	44
2104.504	REMOVE CURB	L.F.	38
2104.506	REMOVE SIDEWALK	SQ. FT.	550
2104.511	REMOVE CATCH BASINS	STRUCTURE	4
2104.515	REMOVE PIPE SEWERS	L.F.	158
2104.521	REMOVE WALL	L.F.	33
2105.501	COMMON EXCAVATION	C.Y.	21,750
2130.501	WATER	(M) GAL.	100
2211.501	AGGREGATE BASE, CLASS 3	TON	6200
2211.501	AGGREGATE BASE, CLASS 6	TON	4125
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	86
2331.514	BASE COURSE MIXTURE	TON	1900
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	75
2341.509	WEARING COURSE MIXTURE + FILLER	TON	160
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL.	620
2358.501	BITUMINOUS MATERIAL FOR PRIME COAT	GAL.	4020
2451.503	GRANULAR BACKFILL	C.Y.	165
2503.502	12" REINFORCED CONCRETE SEWER, CLASS IV	L.F.	456
2503.502	18" REINFORCED CONCRETE SEWER, CLASS IV	L.F.	46
2503.502	24" REINFORCED CONCRETE SEWER, CLASS II	L.F.	34
2503.504	12" METAL SEWER, 16 GAUGE	L.F.	10
2501.532	12" METAL APRON	APRON	1
2506.509	CONSTRUCT CATCH BASINS, DESIGN L.P.4 H	STRUCTURE	2
2506.509	CONSTRUCT CATCH BASINS, DESIGN R.C.2	STRUCTURE	6
2506.509	CONSTRUCT CATCH BASINS, DESIGN F	STRUCTURE	1
2506.511	RECONSTRUCT MANHOLES	L.F.	6.0
2506.521	INSTALL CASTINGS	ASSEMBLY	1
2506.522	ADJUST FRAME & RING CASTING	ASSEMBLY	23
2521.501	4" CONCRETE WALK	S.F.	233
2531.501	CONCRETE CURB AND GUTTER, DESIGN B618	L.F.	5714
2531.502	CONCRETE CURB, DESIGN B6	L.F.	36
2531.507	CONCRETE DRIVEWAY PAVEMENT, 6" THICK	S.Y.	136
2575.505	SODDING	S.Y.	5600
2575.531	COMMERCIAL FERTILIZER, ANALYSIS 12-12-12	TON	0.35
2575.551	TOPSOIL	C.Y.	490
507.679	ADJUST VALVE BOX	BOX	20
2461.501	CONCRETE STEPS, MIX NO. 3A32	C.Y.	4.0
421.512	MORTAR RUBBLE MASONRY	C.Y.	23.7
2411.501	CONCRETE MIX NO. 1C32	C.Y.	5.4
557.685	PIPE RAIL FENCE (1-1/4" GALV.)	L.F.	182

(U) THE PROVISIONS OF 1903 SHALL NOT APPLY TO THESE ITEMS.

STANDARD DETAIL PLATES

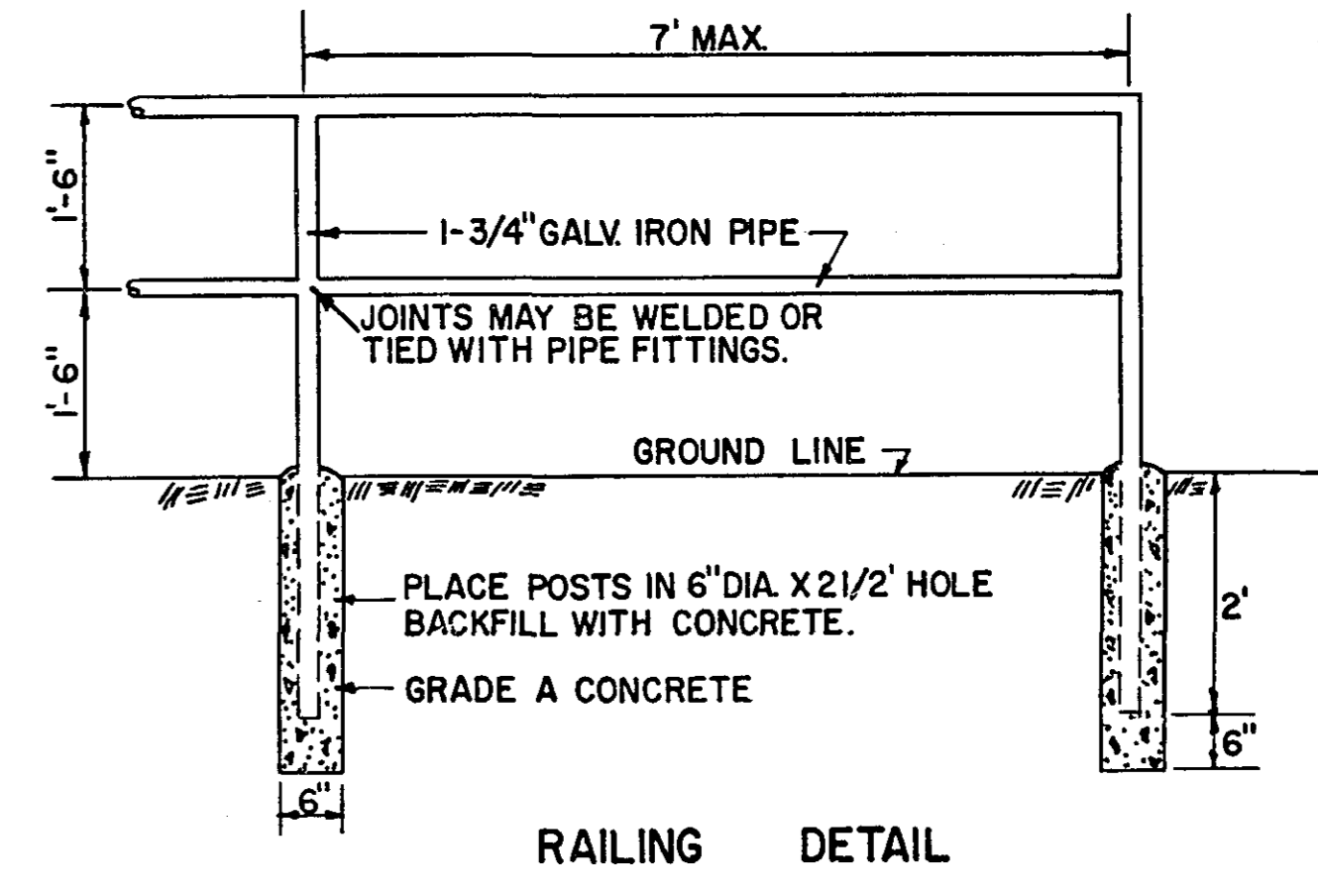
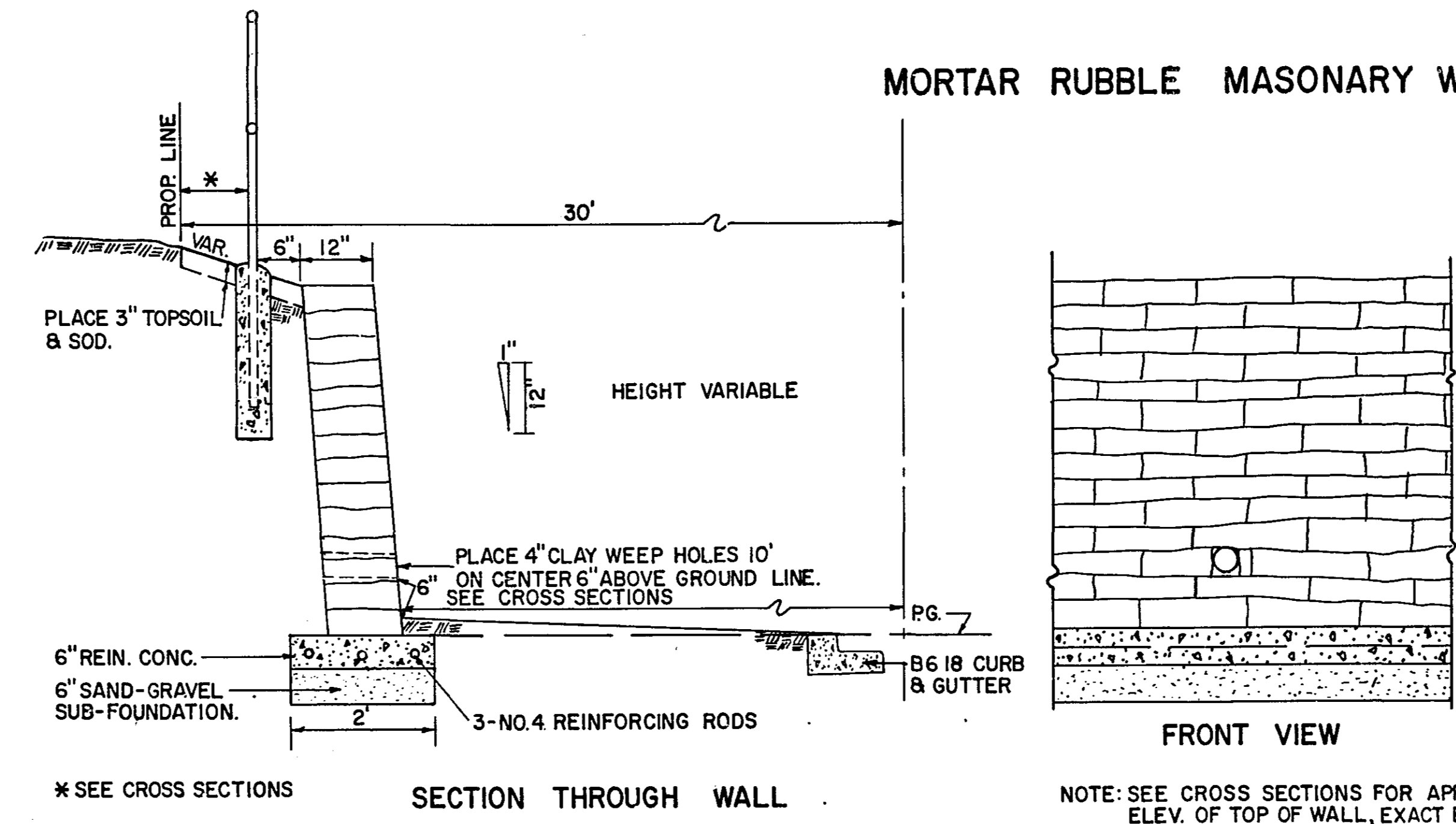
3000 F	REINFORCED CONCRETE PIPE
3123 E	METAL APRON FOR C.M. PIPES
4005 G	MANHOLE OR CATCH BASIN
4016 A	CURB OPENING CATCH BASIN
4101 B	RING CASTING FOR MANHOLE OR CATCH BASIN
4140 D	SPECIAL GRATE CASTING FOR CATCH BASIN
7035 E	CONCRETE WALK & CURB RETURNS AT ENTRANCES
7100 D	CONCRETE CURB AND GUTTERS
7111 D	INSTALLATION OF CATCH BASIN CASTING
7020 D	CONCRETE CURB
8000 C-8002 B	STANDARD BARRICADES
8008 C	CONTRACTORS SIGN
9102 B	SODDING AT PIPE CULVERT ENDS

TYPICAL SECTION



NOTE: BITUMINOUS MATERIAL SHALL BE:
 2331 Base A.C.-1 (120-150 Penetration) 3151
 2341 Wearing A.C.-1 (85-100 Penetration) 3151
 2357 Tack Coat M.C.-250 or M.C.-800 3151
 2358 Prime Coat M.C.-70 3151

MORTAR RUBBLE MASONRY WALL



NOTE: SEE CROSS SECTIONS FOR APPROX. ELEV. OF TOP OF WALL, EXACT ELEV. WILL BE DETERMINED BY ENGINEER IN THE FIELD.

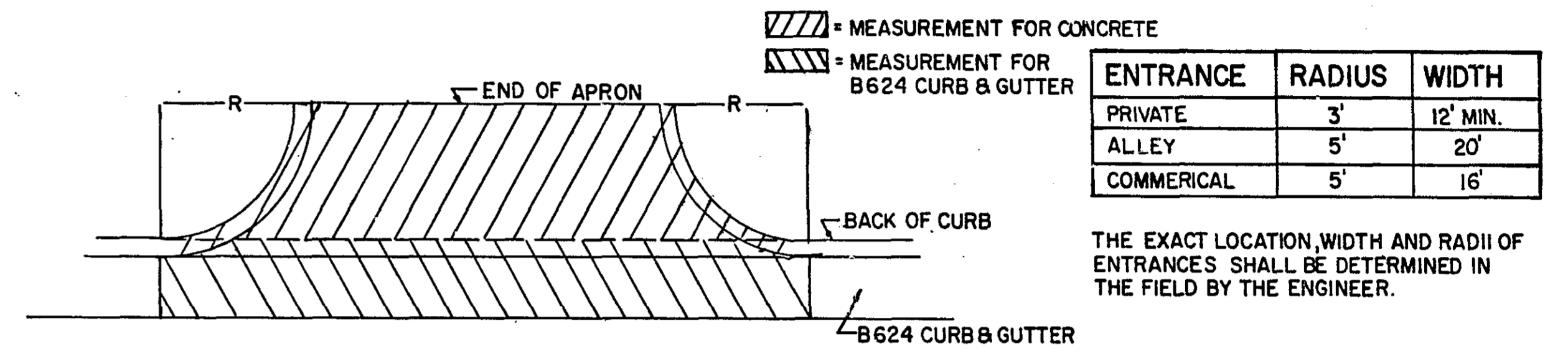
SCALE: 1/2" = 1'0"

DRAINAGE

STRUCTURES

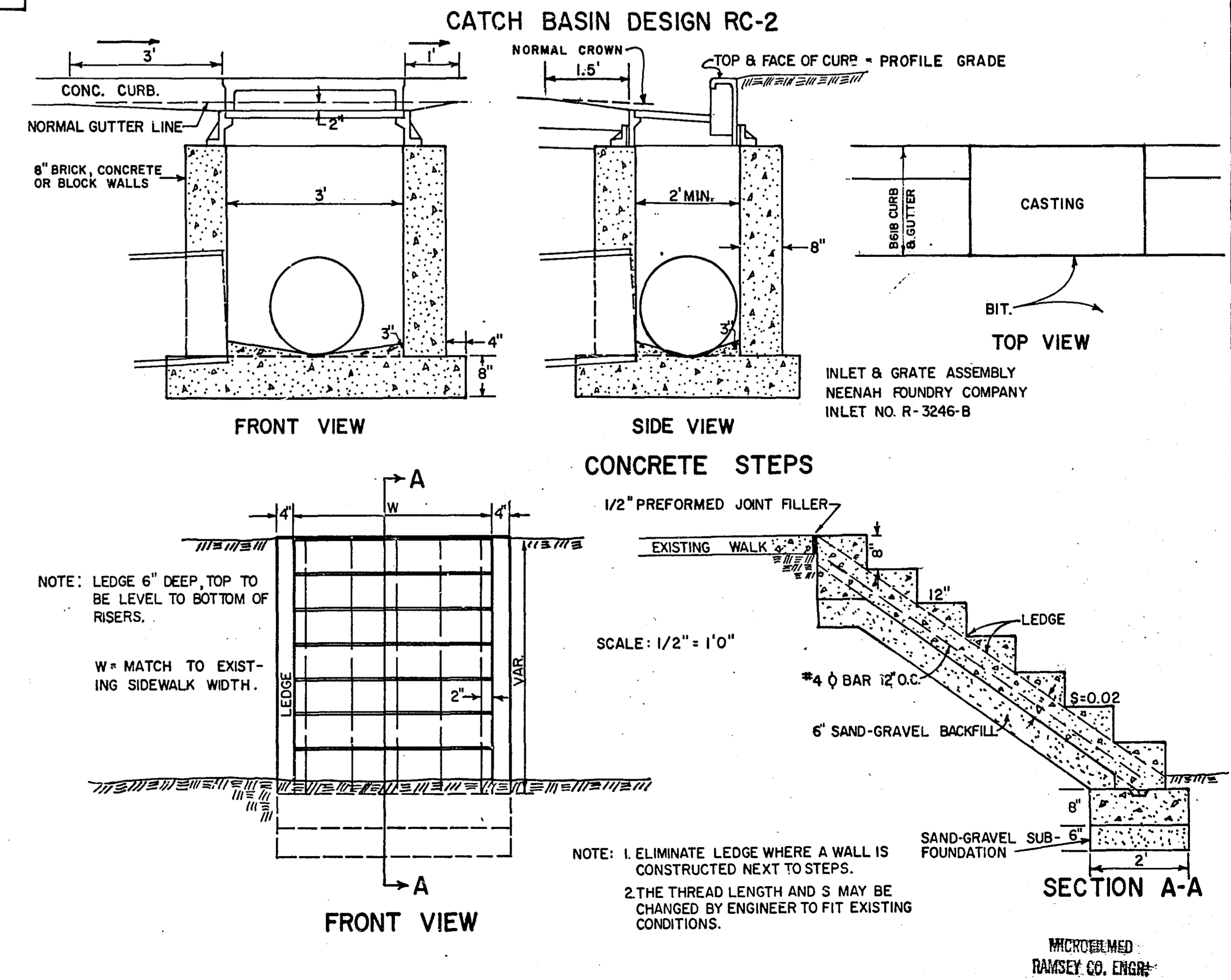
STATION	LOCATION	NO.	TYPE	DESIGN	CONST. HEIGHT LIN. FT.	F.B.I. CASTING ASSEMBLY	ELEVATION			ADJUST CASTING ASSEMBLY	RECONSTRUCT C.B. OR M.H. LIN. FT.	INSTALL CASTING ASSEMBLY	FURNISH AND INSTALL				REMOVE PIPE SEWER LIN. FT.	REMOVE M.H. OR C.B.	CLASS	DRAINS TO		REMARK			
							PROFILE	ORIGINAL GRATE OR RING	NEW GRATE OR RING				C.B. OR M.H. INVERT	CONCRETE PIPE SEWER LINEAR FEET		C.M. PIPE LINEAR FEET				STRUCTURE NO.	INV. EL.				
														12"	15"	18"							24"	12"	APRON
0-05	RT. 3'	1	M.H.				937.95																		
0+45	RT. 29'	2	C.B.																			REMOVE			
0+46	LT. 16'	3	C.B.																			REMOVE			
0+47	RT. 22'	4	C.B.	L.P. 4	5.48		937.81		937.81	933.0								II	0+36± RT 56 ±	932.0±					
0+47	LT. 22'	5	C.B.	L.P. 4	4.97		937.81		937.81	933.5								IV	4	933.0					
3+21	RT. 2'	6	M.H.				939.85	940.05	939.78		0.27														
3+34	RT. 17'	7	M.H.				940.01	938.31	939.69		1.38														
6+46	RT. 5'	8	M.H.				943.23	943.47	943.18		0.29														
6+35	LT. 46'	9	C.B.				943.18	942.66														O.K. LEAVE			
6+60	RT. 27'	10	M.H.				943.30	943.04	942.6±		0.44														
6+64	LT. 46'	11	C.B.				943.32	942.77														O.K. LEAVE			
6+64	RT. 15'	12	M.H.				943.32	943.24	943.04		0.25														
6+68	LT. 47'	13	M.H.				943.34	943.43														O.K. LEAVE			
6+86	RT. 22'	14	C.B.				943.43	942.68	942.86		0.18														
6+87	LT. 21'	15	C.B.				943.44	942.71	942.87		0.16														
9+77	2	16	M.H.				945.77	945.73	945.73		0.00														
9+84	RT. 17'	17	M.H.				945.84	945.78	945.52		0.26														
12+69	LT. 10'	18	M.H.				948.52	948.55	948.33		0.22														
12+87	RT. 16'	19	M.H.				948.70	948.03	948.34		0.31														
12+90	LT. 34'	20	C.B.				948.12				0.50±											ADJUST IN FIELD			
13+02	LT. 0.3'	21	M.H.				948.90	948.27	948.86		0.59														
13+18	LT. 35'	22	C.B.				948.83				0.50±											ADJUST IN FIELD			
13+21	LT. 9'	23	M.H.				949.30	949.13	949.14		0.01														
13+41	RT. 21'	24	C.B.				949.86	949.23	949.29		0.06														
13+41	LT. 22'	25	C.B.				949.86	948.57	949.29		0.72														
15+57.5	LT. 1'	26	M.H.				959.56	959.90	959.50		0.40														
18+06	LT. 2'	27	M.H.				970.60	972.31	970.53			6.0	1												
19+35	LT. 15'	28	C.B.																			REMOVE			
19+42±	LT. 45±	29	C.B.	R.C.-2	3.56	B	970.00		969.4	966.0												IV	31	965.5	
19+72	RT. 65'	30	M.H.						965.93		0.07														
19+	LT.	31	C.B.	R.C.-2		B	970.00		969.2	965.5													IV	31.4	965.25
19+86	RT. 36'	32	C.B.																						
19+88	RT. 86'	33	C.B.																						
19+93	LT. 21.5'	31A	C.B.	R.C.-2		B	970.00		969.4														IV	34	965.0
20+03	RT. 21.5'	34	C.B.	R.C.-2	4.66	B	970.07		969.5	965.0													IV	30	964.0
22+23	RT. 0.5'	35	M.H.				978.00	978.30	977.88		0.42														
22+23	LT. 35'	36	S.D.	F	4.0	A			978.00	974.0													IV	34	965.0
23+63	RT. 1'	37	M.H.				984.90	985.05	984.84		0.21														
25+24	RT. 1'	38	M.H.				992.17	992.49	992.05		0.44														
25+81	RT. 6	39	M.H.				994.28	994.39	994.15		0.44														
22+50	LT. 21.5'	40	C.B.	R.C.-2	4.19	A	979.10		978.53	974.5															
22+50	RT. 21.5'	41	C.B.	R.C.-2	3.99	A	979.40		978.83	975.0															

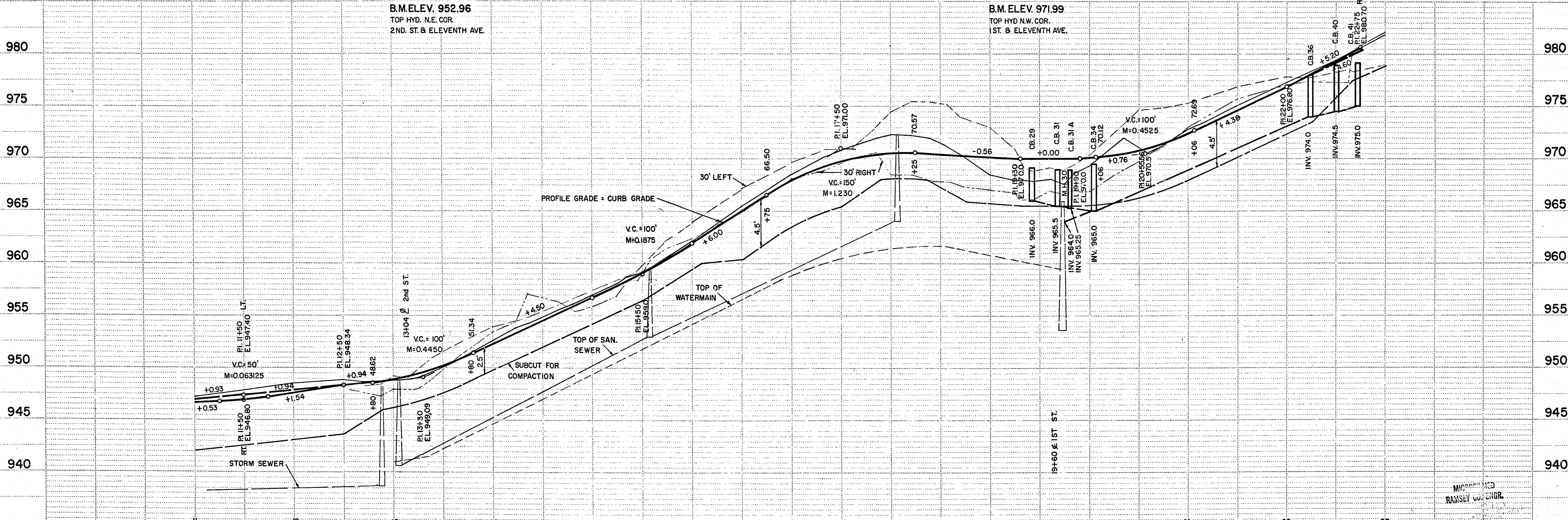
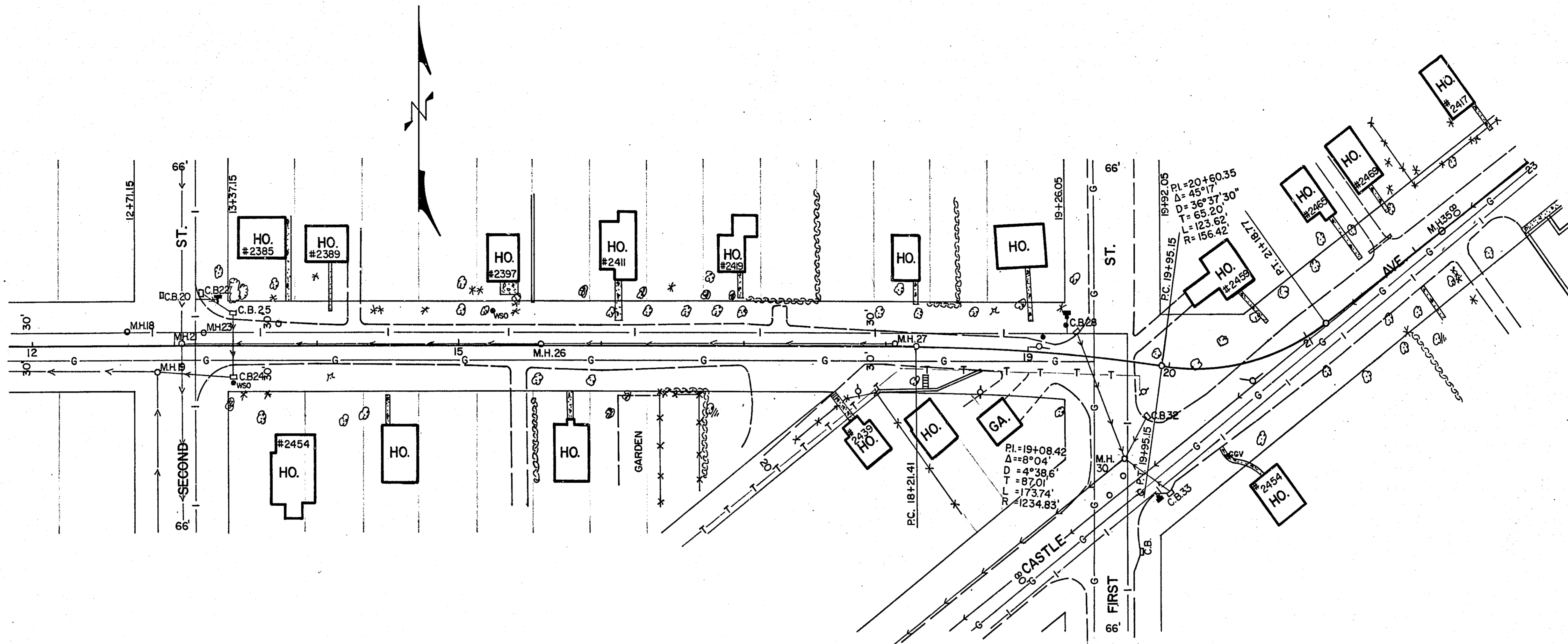
CATCH BASIN F = STANDARD PLATE NO. 40056
 A = CASTING NO. 700-B, GRATE NO. 720
 CASTINGS B = NEENAH INLET FRAME, GRATE, CURB BOX, NO. R-3246-B OR EQUAL



CLEARING AND GRUBBING

STATION	LOCATION	TYPE	CLEAR	GRUB
0+83 TO 0+94	LT. 21' TO 23'	4" COTTONS	6	6
1+36	LT. 23'	TW. 8" COTT.	2	1
7+95	LT. 19'	8" ELM	1	1
8+50	RT. 22'	18" ELM	1	1
8+55	LT. 18'	6" B.E.	1	1
8+58	LT. 18'	10" ELM	1	1
8+73	LT. 20'	8" ELM	1	1
8+76	LT. 20'	8" B.E.	1	1
8+84	LT. 21'	TW. 7" B.E.	2	1
9+89	RT. 22'	18" ELM	1	1
10+72	LT. 17'	8" ELM	1	1
10+76	LT. 17'	6" ELM	1	1
10+85	LT. 17'	6" ELM	1	1
10+89	LT. 17'	14" ELM	1	1
11+25	LT. 25'	30" ELM	1	1
11+26	RT. 23'	24" ELM	1	1
11+56	RT. 23'	18" ELM	1	1
11+61	LT. 26'	33" MAPLE	1	1
11+90	RY 23'	18" ELM	1	1
12+25	RT. 22'	26" ELM	1	1
14+10	RT. 22'	STUMP	0	1
15+02	LT. 23'	10" B.E.	1	1
15+18	LT. 24'	10" B.E.	1	1
15+53	RT. 23'	14" ELM	1	1
15+89	RT. 23'	28" MAPLE	1	1
16+06	LT. 23'	22" B.E.	1	1
16+31	LT. 23'	8" B.E.	1	1
16+58	LT. 23'	28" MAPLE	1	1
16+80	LT. 23'	10" ELM	1	1
16+99	LT. 23'	40" MAPLE	1	1
17+95	LT. 23'	30" MAPLE	1	1
18+20	RT. 21'	14" OAK	1	1
18+22	LT. 22'	28" MAPLE	1	1
18+62	LT. 23'	26" MAPLE	1	1
18+76	LT. 25'	STUMP	0	1
20+18	LT. 2'	28" ASH	1	1
20+41	LT. 17'	18" ASH	1	1
20+71	LT. 27'	30" ASH	1	1
23+41	LT. 21'	TR. 4" ASH	3	1
TOTALS			46	44





B.M. ELEV. 952.96
TOP HYD. N.E. COR.
2ND. ST. & ELEVENTH AVE.

B.M. ELEV. 971.99
TOP HYD. N.W. COR.
ST. B. ELEVENTH AVE.

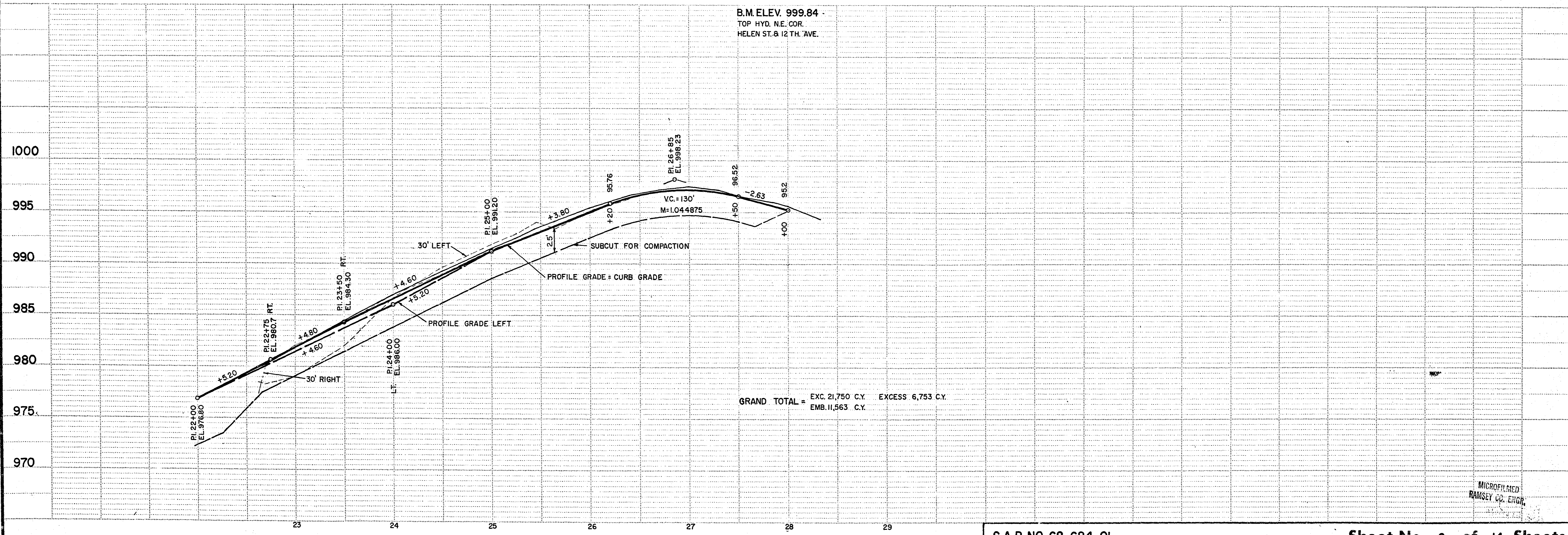
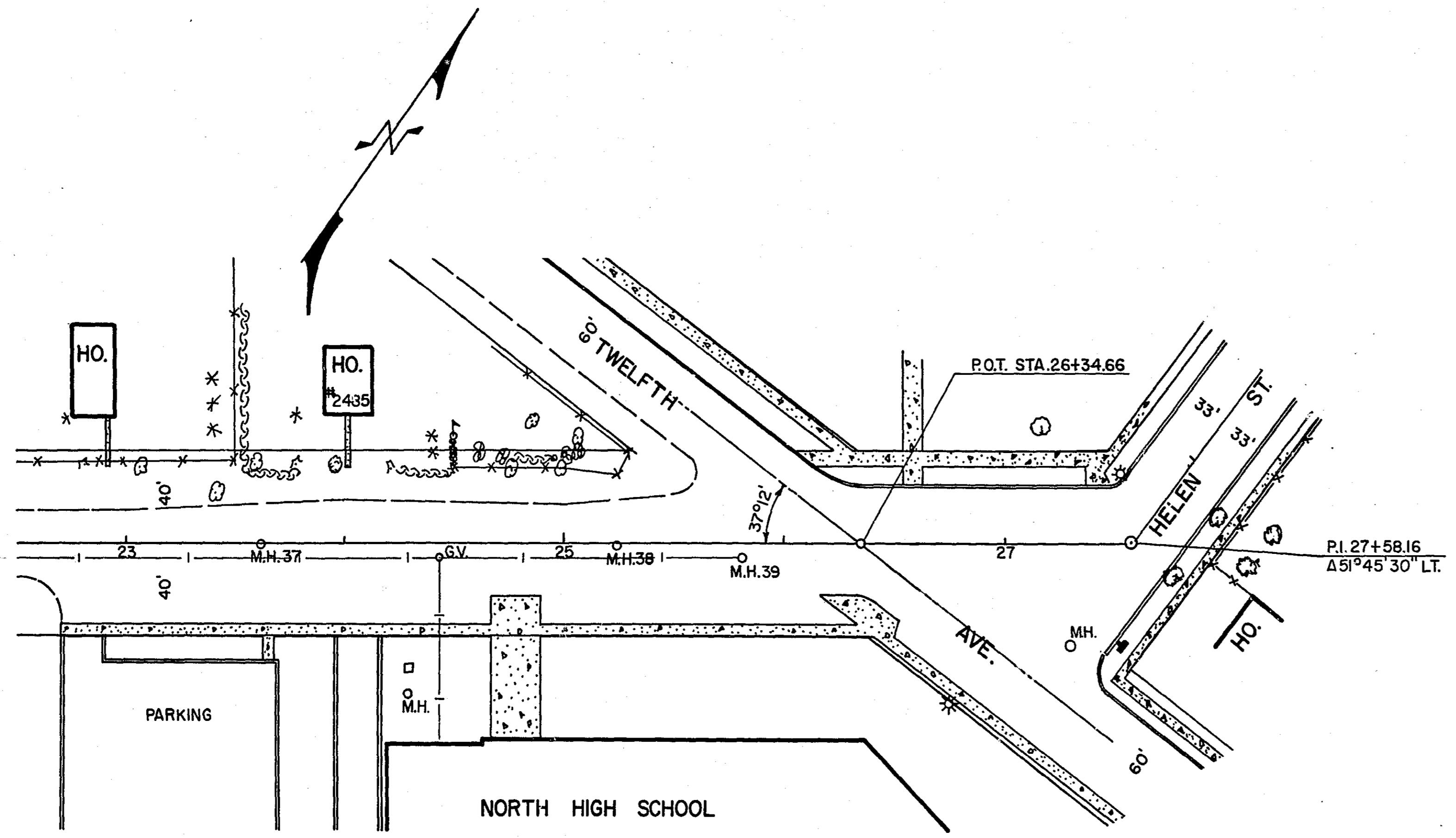
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Sheet No. 5 of 14 Sheets

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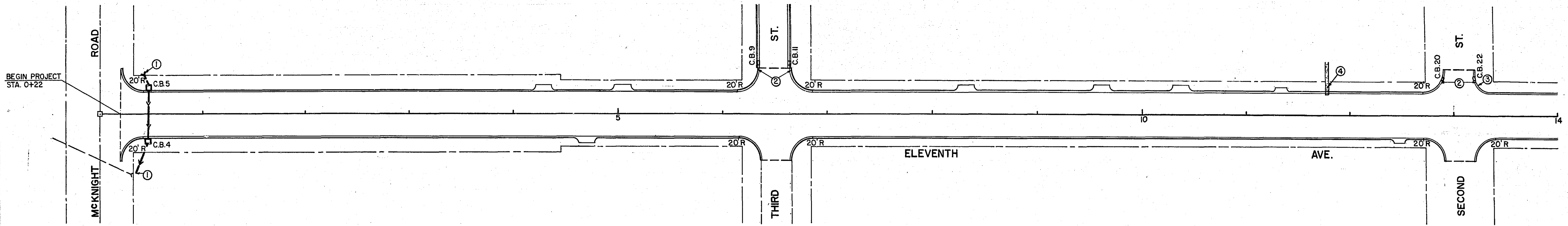
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MINNEAPOLIS
RAMSEY ENGINEER

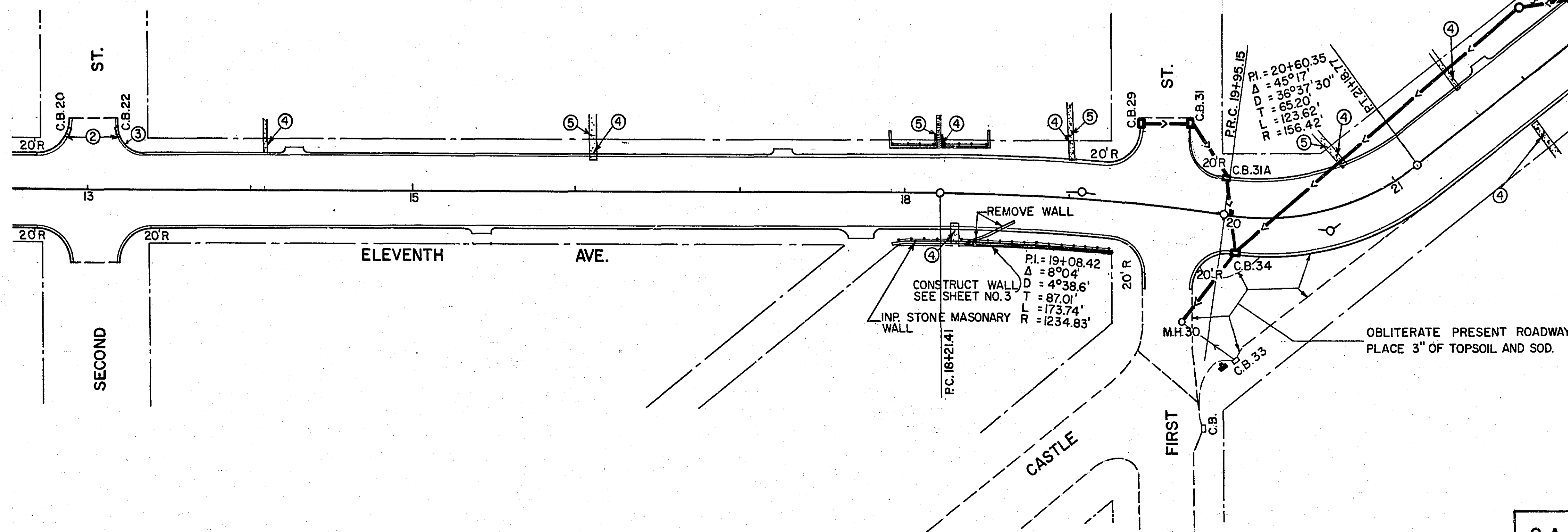
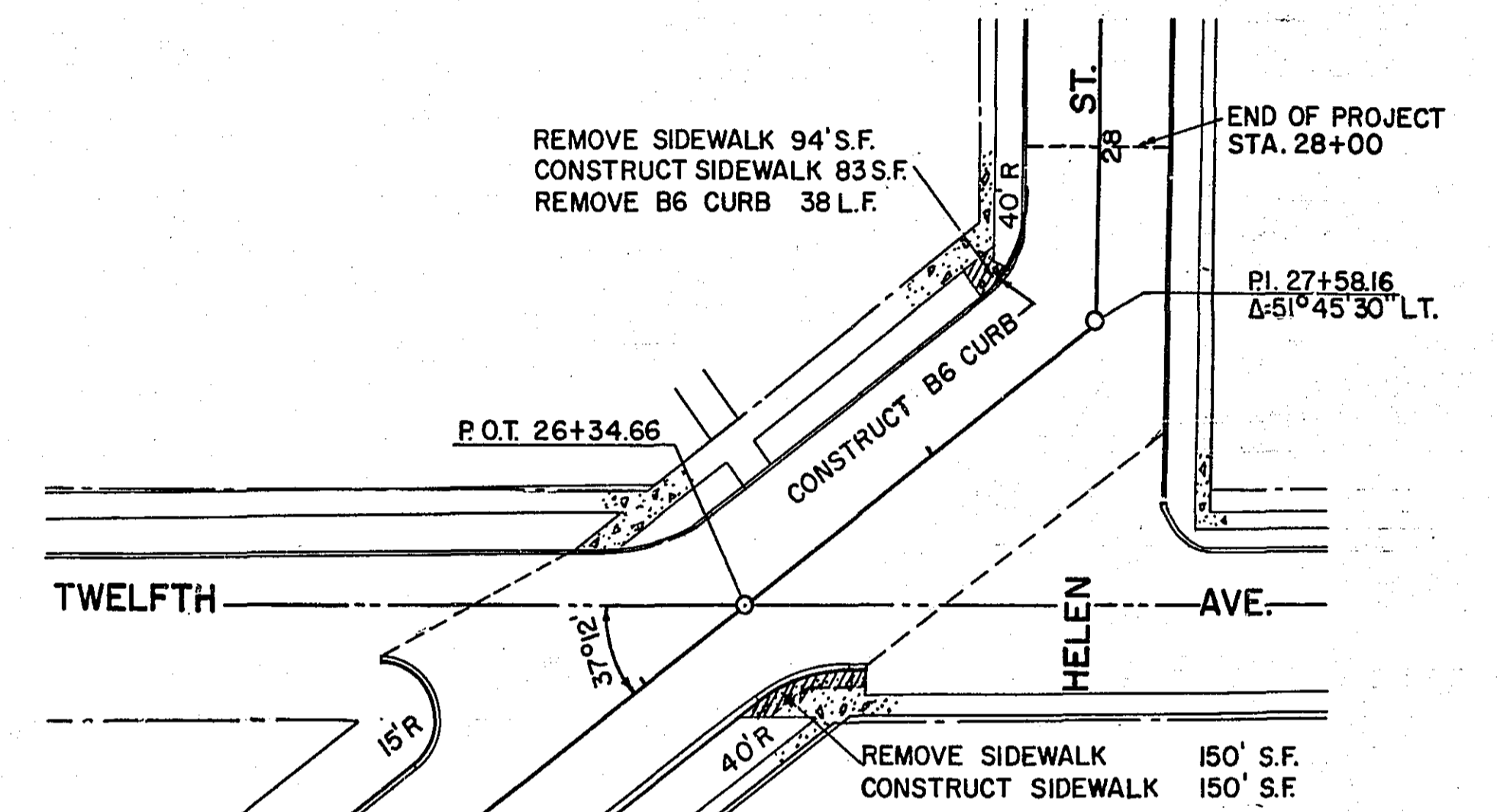


KORSAK & NO. 102 ST. PAUL - MINNEAPOLIS, MINNESOTA ©

MICROFILMED
RAMSEY CO. ENGR.



- NOTES: ① DETERMINE EXACT LOCATION AND ELEVATION IN FIELD AS DIRECTED BY ENGINEER.
 ② MATCH RADII TO EXISTING CATCH BASINS.
 ③ DETERMINE RADIUS IN FIELD.
 ④ REMOVE SIDEWALK AS DIRECTED BY ENGINEER.
 ⑤ CONSTRUCT STEPS WHERE AND AS DIRECTED BY ENGINEER.



CONSTRUCTION PLAN