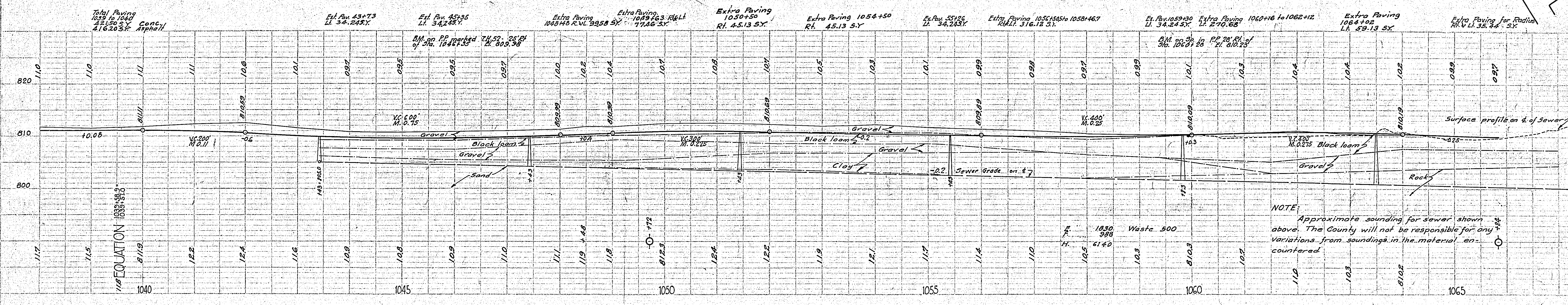
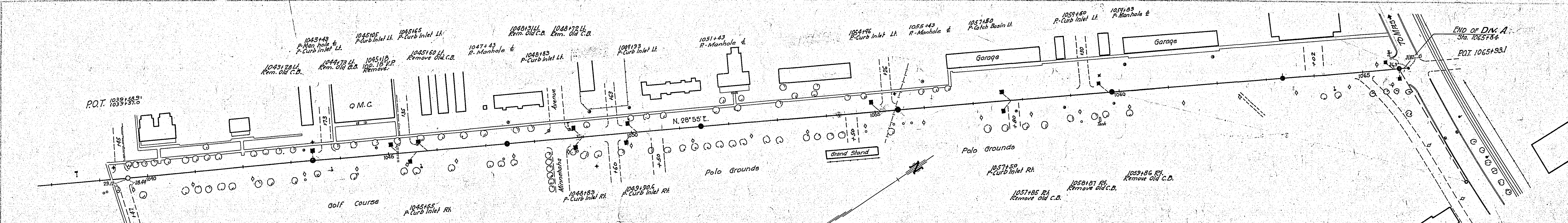


PLAN
 1/16" EQUATION 10333+89.3
 1/16" EQUATION 10333+89.3
 1/16" EQUATION 10333+89.3

PROFILE
 1/16" EQUATION 10333+89.3
 1/16" EQUATION 10333+89.3
 1/16" EQUATION 10333+89.3



NOTE
 For Details see
 sheets 11 & 16.

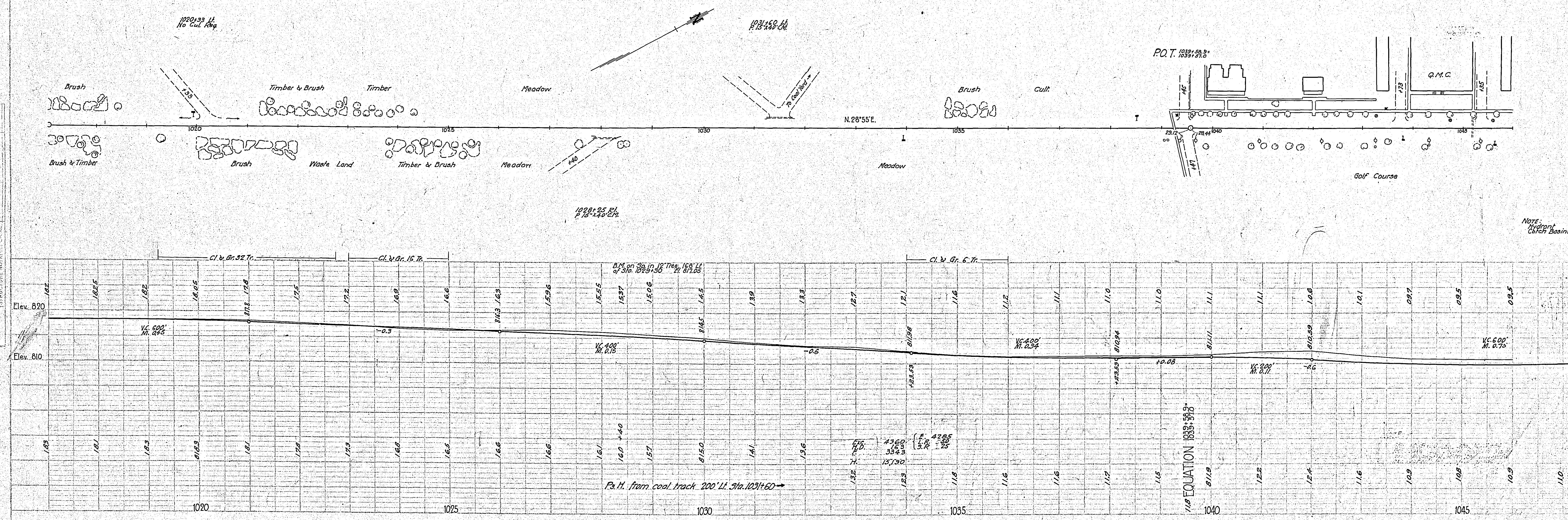
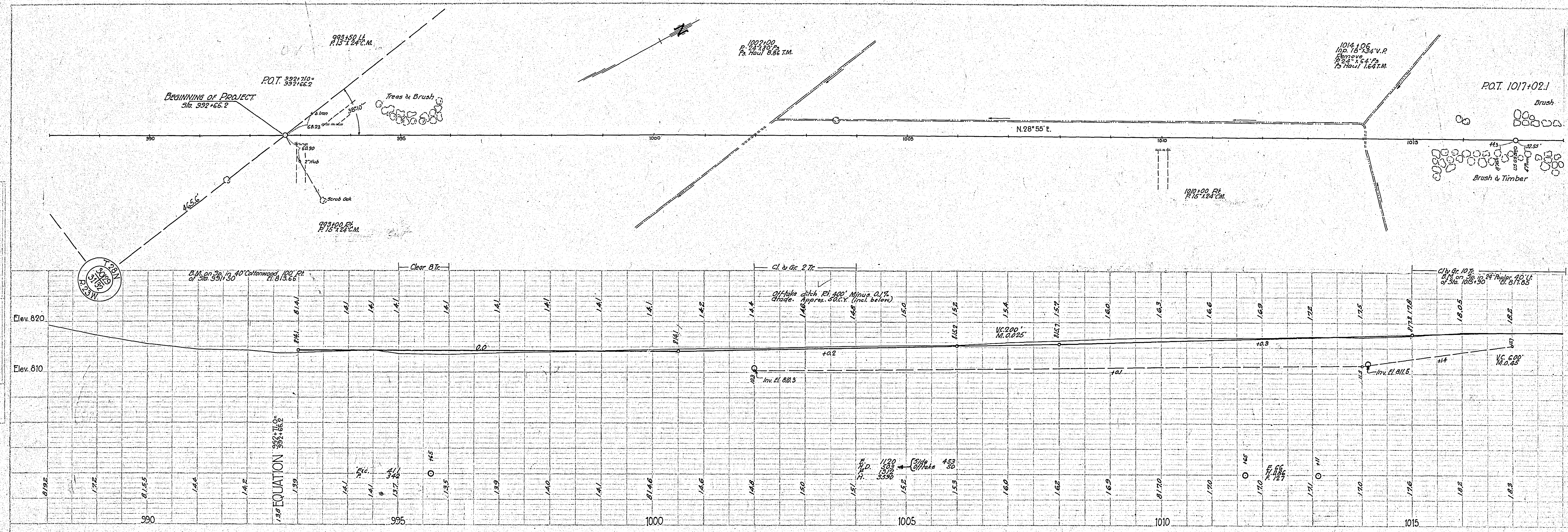
ESTIMATED QUANTITIES
 STA. 992+66.2 to 1065+84.0

Clearing trees	74'
Grubbing	66
Exc. Earth Cu Yds.	7712
L.R.	30
S.R.	25
H.D.	152
O.H.	24920
Install 15" C.M. Lin.Ft.	152
24" Ps	144
P3 Culvert haul T.M.	10.50
Remove old Curb Lin.Ft.	34
Curb	54.3
C. B. Each	8
Brick Manholes Each	7
10" Vit Clay Pipe Lin.Ft.	772
12"	800
15"	1295
Vit Clay Pipe Y's Each	11
Conc. base Sp.Yds.	24396.09
Black Top	24075.97
Curb & gutter Str Lin.Ft.	4211.7
Rad.	642.5
5" x 10" Fir Header	687
Catch Basins Each	1
Curb Inlets	13
Finishing Shoulders Sp.Yds.	10573
Bituminous Filled Joint Lin.Ft.	96
Scarifying Slots	73.20
T.C.C. Pavement Sp.Yds.	25154.63
Curb Straight Lin.Ft.	4211.7
Radius	642.5
Extra reinforcing steel Lbs.	37000

NOTE:
 Approximate sounding for sewer shown
 above. The County will not be responsible for any
 variations from soundings in the material en-
 countered.

PLAN
 SURVEYED BY: [Signature]
 DATE: [Date]
 NOTE: BOOK ALIGNMENT CHECKED
 BY: [Signature]
 DATE: [Date]

PROFILE
 SURVEYED BY: [Signature]
 DATE: [Date]
 NOTE: BOOK ALIGNMENT CHECKED
 BY: [Signature]
 DATE: [Date]



NOTE:
 Catch Basins (Old)

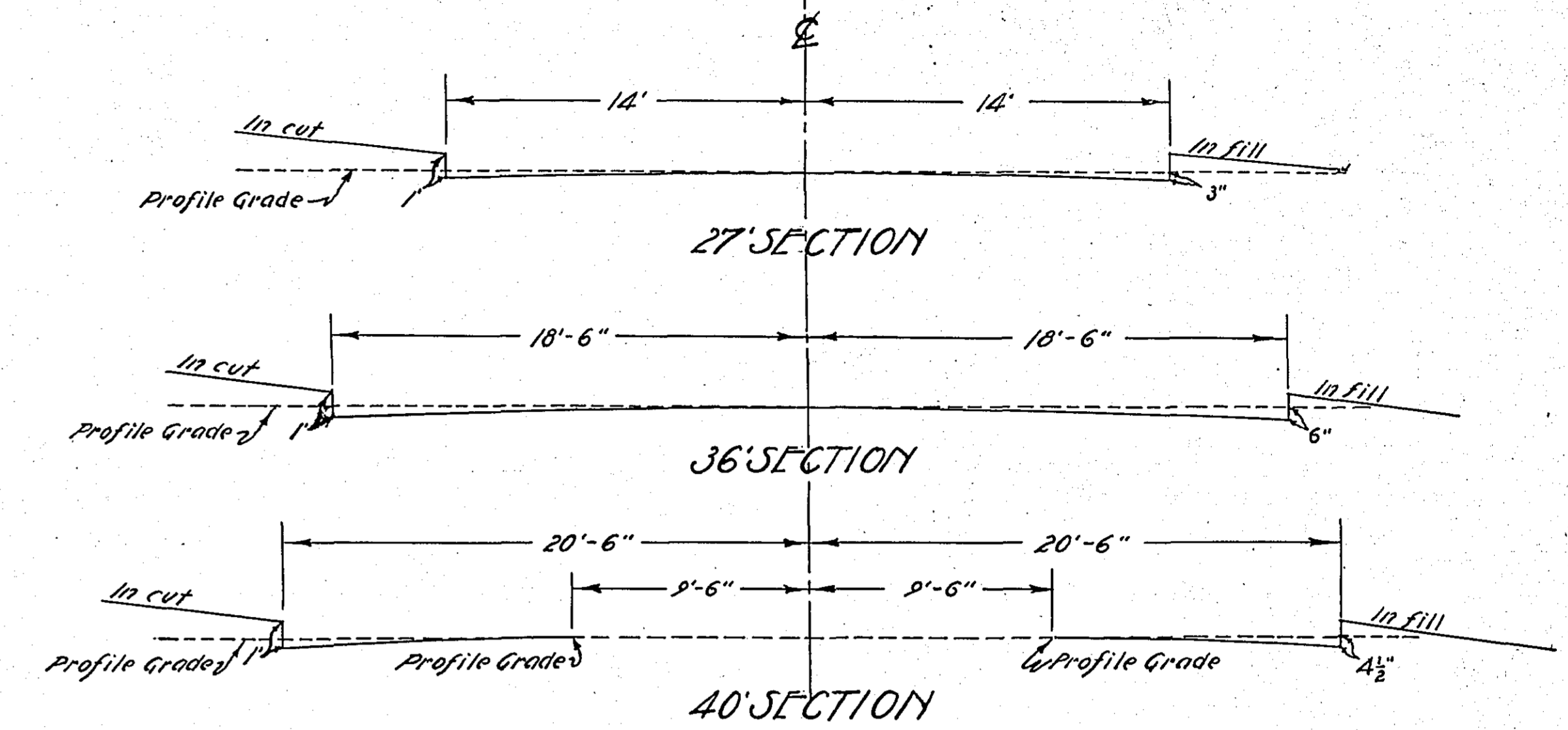
STATEMENT OF ESTIMATED QUANTITIES AND COSTS.

ITEM	UNIT	MILE														TOTAL ESTIMATED QUANTITIES	ESTIMATED UNIT PRICES	AMOUNTS	TOTALS
		Sta. 1029+00 to Sta. 1031+00	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.				
1	Clearing	Acre																	
2	Clearing	Tree	5																
3	Grubbing	Acre																	
4	Grubbing	Tree	5																
5	Excavation - Earth	Cu. Yd.	918																
6	Excavation - Loose Rock	Cu. Yd.	15																
7	Excavation - Solid Rock	Cu. Yd.	10																
8	Excavation - Overhaul	Cu. Yd.																	
9	Special Excavation	Lin. Ft.																	
10	Scarifying	Sq. Yds.	15.68																
11	Tile Drain	in. Lin. Ft.																	
12	Tile Drain	in. Lin. Ft.																	
13	Tile Drain	in. Lin. Ft.																	
14	Porous Back Fill Material	Cu. Yd.																	
15	Stone Rip - Rap	Cu. Yd.																	
16	Hauling Rip-Rap or Stone Gravel Material	Cu. Yd. mile																	
17	Install 15" C.M.	Lin. Ft.	160																
18	Install	Lin. Ft.																	
19	Install	Lin. Ft.																	
20	Install	Lin. Ft.																	
21	Install	Lin. Ft.																	
22	Install	Lin. Ft.																	
23	Install	Lin. Ft.																	
24	Remove Old Culv.	Lin. Ft.	68																
25	Install 24" P ₃	Lin. Ft.																	
26	Install 30" P ₃	Lin. Ft.																	
27	Install 36" P ₃	Lin. Ft.																	
28	P ₁ Culvert Haul	Ton Mile																	
29	P ₃ Culvert Haul	Ton Mile																	
30	Remove Old Curb	Lin. Ft.	268.4																
31	Remove Old Sidewalk	Sq. Yds.	49.2																
32	TOTAL ESTIMATED COST OF GRADING (IN 'TOTALS' COLUMN)																		
33	C.M. Culv. Material 15"	Lin. Ft.	160																
34	Culv. Material	Lin. Ft.																	
35	Culv. Material	Lin. Ft.																	
36	Culv. Material	Lin. Ft.																	
37	Culv. Material	Lin. Ft.																	
38	Culv. Material	Lin. Ft.																	
39	P ₃ Culv. Material 24"	Lin. Ft.																	
40	P ₃ Culv. Material 30"	Lin. Ft.																	
41	P ₃ Culv. Material 36"	Lin. Ft.																	
42	TOTAL ESTIMATED COST OF PORTABLE CULVERT MATERIAL (IN 'TOTALS' COLUMN)																		
42	Gravel Pit Stripping	Cu. Yd.																	
43	Screening	Cu. Yd.																	
44	Loading	Cu. Yd.																	
45	Hauling	Cu. Yd. Mile																	
46	Shaping & Compacting	Man Hour																	
47	Shaping & Compacting	Man & Team Hour																	
48																			
49																			
50																			
51	TOTAL ESTIMATED COST OF GRAVEL HAUL (IN 'TOTALS' COLUMN)																		
52	Gravel Material F. O. B. PIT	Cu. Yd.																	
53	Freight (If any)	Cu. Yd.																	
54	Unloading from Cars	Cu. Yd.																	
55	TOTAL ESTIMATED COST OF GRAVEL MATERIAL (IN 'TOTALS' COLUMN)																		
55	Fine Grading - Exc. & Emb.	Cu. Yd.																	
56	Shoulders - Finishing	Sq. Yd.	1465																
57																			
58	Pavement - Conc. Base	Sq. Yd.	4728.38																
59	Pavement - Black Top	Sq. Yd.	4728.38																
60	Straight Curb & Gutter	Lin. Ft.	2159.2																
61	Radius	Lin. Ft.	429.7																
62	Pavement I.C.C.	Sq. Yds.	5303.66																
63	Curb Str.	Lin. Ft.	2159.2																
64	Shoulder Road	Sq. Yd.	4227																
65	Special Paving Tracks	Sq. Yds.	1374.26																
66	3" x 10" Fir Header	Lin. Ft.	620.8																
67	Bit. Filled Joint		141.5																
68	TOTAL ESTIMATED COST OF PAVEMENT CONSTRUCTION (IN 'TOTALS' COLUMN)																		
69	Concrete	Cu. Yd.																	
70	Reinforcing Steel	Lb.																	
71	Excavation - Earth	Cu. Yd.																	
72	Excavation - Loose Rock	Cu. Yd.																	
73	Excavation - Solid Rock	Cu. Yd.																	
74	Bridge	Br. No.																	
75	Station																		
76	Concrete	Cu. Yd.																	
77	Reinforcing Steel	Lb.																	
78	Structural Steel	Lb.																	
79	Piling	Lin. Ft.																	
80	Temporary Crossing	Lump Sum																	
81	Removing old Bridge	Lump Sum																	
82	Bituminous Surface	Sq. Yd.																	
83																			
84	TOTAL ESTIMATED COST OF STRUCTURES (IN 'TOTALS' COLUMN)																		
85	Guard Rail	Lin. Ft.																	
86	Gutter	Lin. Ft.																	
87	Excavation for Gutter	Cu. Yd.																	
88	TOTAL ESTIMATED COST OF MISCELLANEOUS ITEMS (IN 'TOTALS' COLUMN)																		
89	REMOVE AND REBUILD POST EXC. ENTRANCE	Lump Sum	1																
90	Place New Sidewalk	Sq. Yds.	4584																

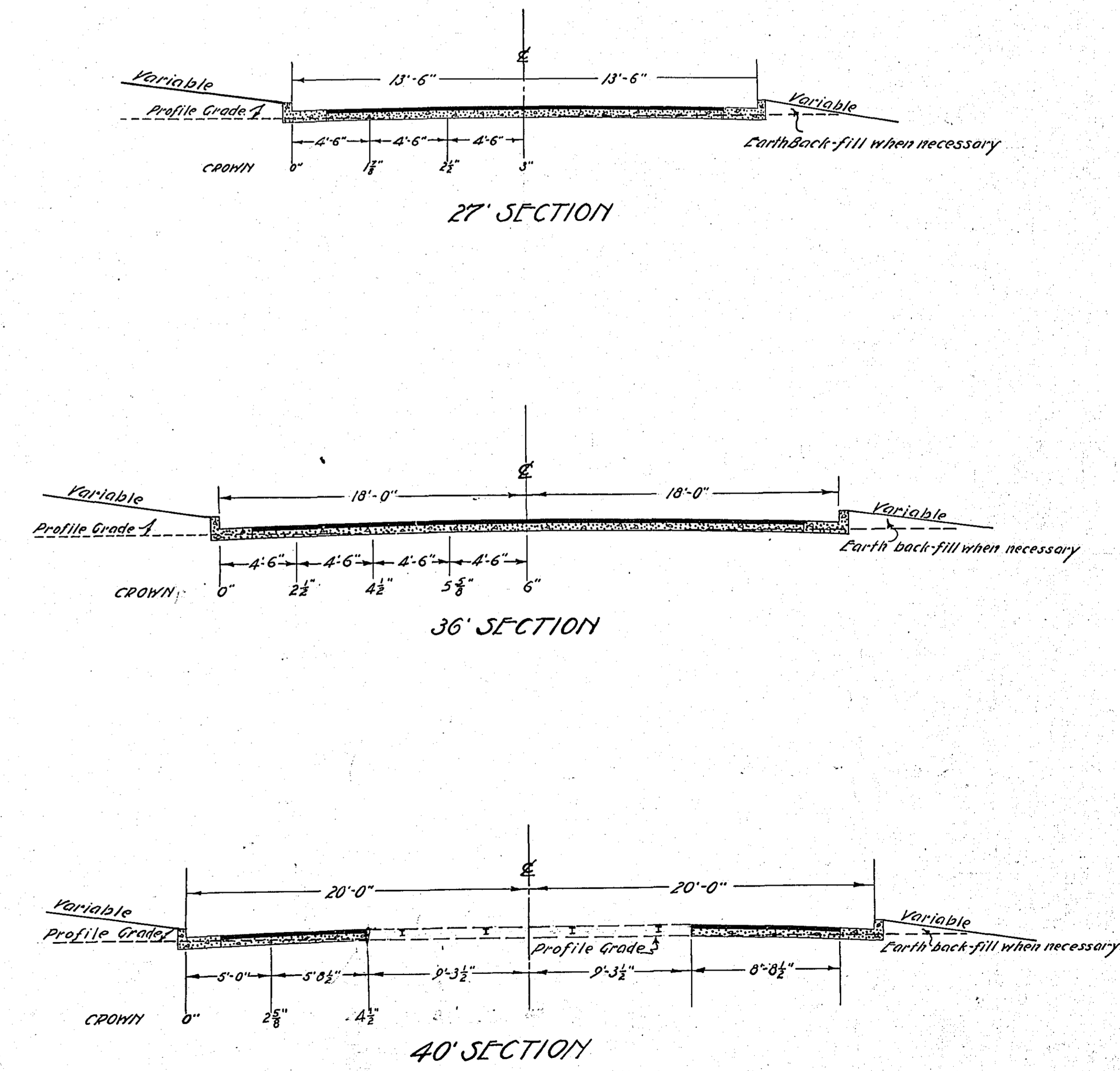
TYPICAL CROSS SECTIONS AND DETAILS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SEC.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	MINN.					

GRADING SECTIONS DIV. "B"



PAVING SECTIONS



Note: 2" Asphaltic Concrete or 1 1/2" Natural Back Asphalt surface, 5" reinforced conc. base.

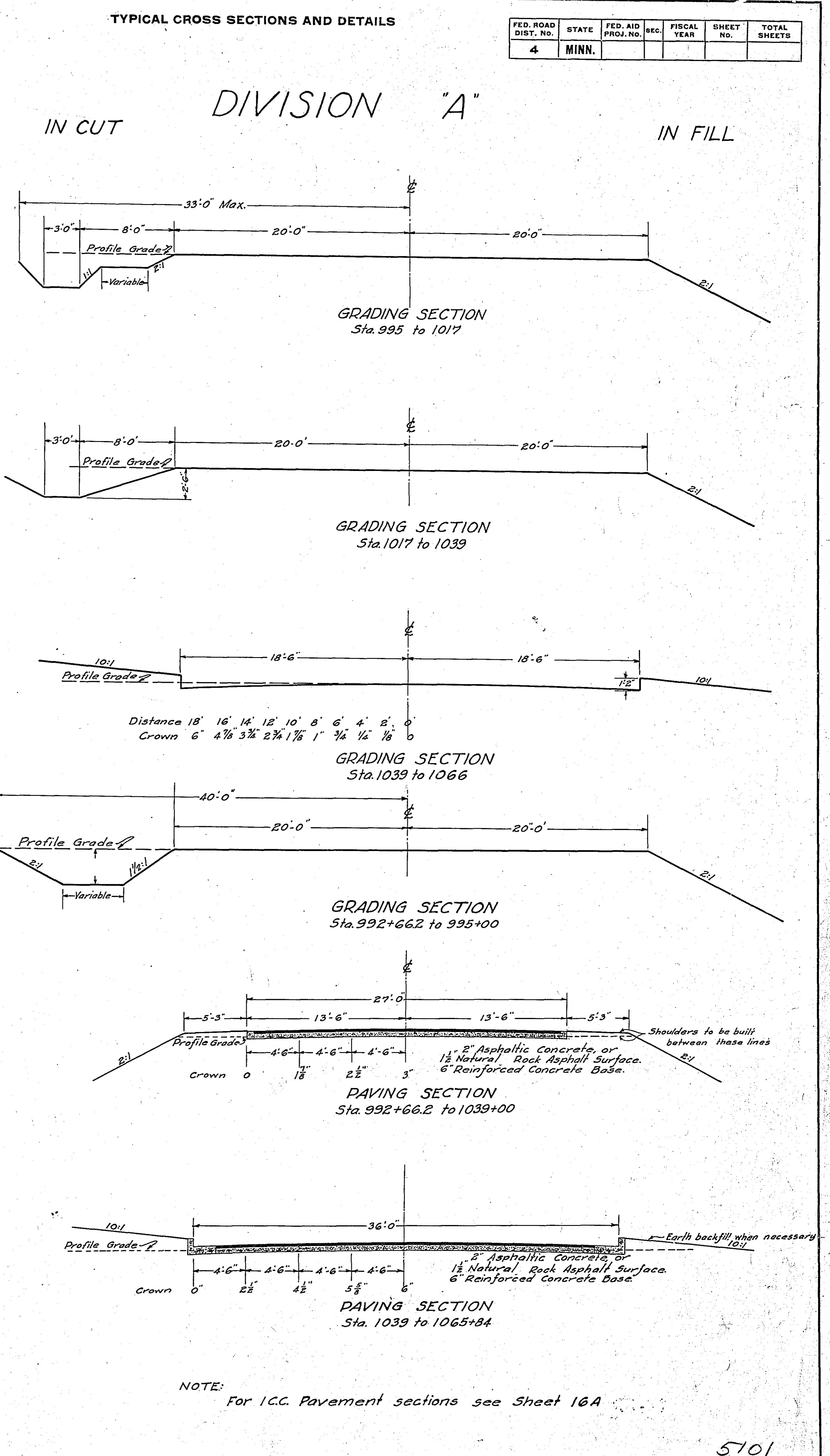
NOTE: For I.C.C. Pavement sections see Sheet 16A

5/01

* NOTE: BRIDGE ITEMS LISTED UNDER BRIDGE NUMBERS IN MILE COLUMNS REGARDLESS OF LOCATION

STATEMENT OF ESTIMATED QUANTITIES AND COSTS.

ITEM	UNIT	MILE		MILE		MILE		MILE		MILE		MILE		MILE		TOTAL ESTIMATED QUANTITIES	ESTIMATED UNIT PRICES	AMOUNTS	TOTALS	
		Sta. 992+62.2	Sta. 1065+84.2	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.	Sta. to Sta.						
1	Clearing	Acre																		
2	Clearing	Tree	74																	
3	Grubbing	Acre																		
4	Grubbing	Tree	66																	
5	Excavation - Earth	Cu. Yd.	7712																	
6	Excavation - Loose Rock	Cu. Yd.	50																	
7	Excavation - Solid Rock	Cu. Yd.	85																	
8	Excavation - Overhaul	Cu. Yd.	24920																	
9	Scarifying	Sq. Yds.	73.20																	
10	Hand Ditching	Cu. Yd.	752																	
11	Tile Drain	in. Lin. Ft.																		
12	Tile Drain	in. Lin. Ft.																		
13	Tile Drain	in. Lin. Ft.																		
14	Perous Back Fill Material	Cu. Yd.																		
15	Stone Rip - Rap	Cu. Yd.																		
16	Hauling Rip-Rap or Stone Drain Material	Cu. Yd. mile																		
17	Install 1/5" CM	Lin. Ft.	152																	
18	Install	Lin. Ft.																		
19	Install	Lin. Ft.																		
20	Install	Lin. Ft.																		
21	Install	Lin. Ft.																		
22	Install	Lin. Ft.																		
23	Install	Lin. Ft.																		
24	Install	Lin. Ft.																		
25	Install 24" P3	Lin. Ft.	144																	
26	Install 30" P3	Lin. Ft.																		
27	Install 36" P3	Lin. Ft.																		
28	P3 Culvert Haul	Ton Mile																		
29	P3 Culvert Haul	Ton Mile	10.50																	
30	Remove old Culvert	Lin. Ft.	34																	
31	Remove old Curb	Lin. Ft.	54.3																	
32	Remove old C.B. Each	Each	8																	
TOTAL ESTIMATED COST OF GRADING (IN 'TOTALS' COLUMN)																				
33	Culv. Material	Lin. Ft.																		
34	C.M. Culv. Material 1/5	Lin. Ft.	152																	
35	Culv. Material	Lin. Ft.																		
36	Culv. Material	Lin. Ft.																		
37	Culv. Material	Lin. Ft.																		
38	Culv. Material	Lin. Ft.																		
39	P3 Culv. Material 24"	Lin. Ft.	144																	
40	P3 Culv. Material 30"	Lin. Ft.																		
41	P3 Culv. Material 36"	Lin. Ft.																		
TOTAL ESTIMATED COST OF PORTABLE CULVERT MATERIAL (IN 'TOTALS' COLUMN)																				
42	Brick Manhole (Complete)	Each	7																	
43	10" Vit. Clay Pipe (Inp)	Lin. Ft.	772																	
44	12" Vit. Clay Pipe (Inp)	Lin. Ft.	800																	
45	15" Vit. Clay Pipe (Inp)	Lin. Ft.	1295																	
46	Vit. Clay Pipes (Inp)	Each	11																	
47																				
48																				
49																				
50																				
51																				
TOTAL ESTIMATED COST OF MISCELLANEOUS (IN 'TOTALS' COLUMN)																				
52	Gravel Material F. O. B. PIT	Cu. Yd.																		
53	Freight (If any)	Cu. Yd.																		
54	Unloading from Cars	Cu. Yd.																		
TOTAL ESTIMATED COST OF GRAVEL MATERIAL (IN 'TOTALS' COLUMN)																				
55	Pavement Conc base	Sq. Yds.	24,596.09																	
56	Pavement Black top	Sq. Yds.	24,075.92																	
57	Straight Curb & Gutter	Lin. Ft.	4211.70																	
58	Radius Curb & Gutter	Lin. Ft.	642.50																	
59	3"x10" Fir Header	Lin. Ft.	687																	
60	Catch Basins	Each	1																	
61	Curb Inlets	Each	13																	
62	Finishing Shoulders	Sq. Yds.	10573																	
63	Br. Filled Joint	Lin. Ft.	96																	
64	Pavement I.C.C.	Sq. Yds.	25,154.63																	
65	Curb str.	Lin. Ft.	4211.70																	
66	" Rad.	"	642.50																	
67																				
68																				
TOTAL ESTIMATED COST OF PAVEMENT CONSTRUCTION (IN 'TOTALS' COLUMN)																				
69	Concrete	Cu. Yd.																		
70	Reinforcing Steel	Lb.																		
71	Excavation - Earth	Cu. Yd.																		
72	Excavation - Loose Rock	Cu. Yd.																		
73	Excavation - Solid Rock	Cu. Yd.																		
74	Bridge	* Bridge No.	Br. No.	Br. No.	Br. No.	Br. No.	Br. No.	Br. No.	Br. No.	Br. No.	Br. No.	Br. No.	Br. No.	Br. No.	Br. No.	Br. No.	Br. No.	Br. No.	Br. No.	Br. No.
75	Station																			
76	Concrete	Cu. Yd.																		
77	Reinforcing Steel	Lb.																		
78	Structural Steel	Lb.																		
79	Piling	Lin. Ft.																		
80	Temporary Crossing	Lump Sum																		
81	Removing old Bridge	Lump Sum																		
82	Bituminous Surface	Sq. Yd.																		
83																				
84																				
TOTAL ESTIMATED COST OF STRUCTURES (IN 'TOTALS' COLUMN)																				
85	Guard Rail	Lin. Ft.																		
86	Gutter	Lin. Ft.																		
87	Excavation for Gutter	Cu. Yd.																		
TOTAL ESTIMATED COST OF MISCELLANEOUS ITEMS IN 'TOTALS' COLUMN																				



* NOTE: BRIDGE ITEMS LISTED UNDER BRIDGE NUMBERS IN MILE COLUMNS REGARDLESS OF LOCATION

CONVENTIONAL SIGNS & ABBREVIATIONS

STATE LINE	-----	EXCAVATION	-----	F
COUNTY LINE	-----	EMBANKMENT	-----	F
TOWNSHIP LINE	-----	OVERHAUL	-----	H
SECTION LINE	-----	SURFACING	-----	S
CITY, VILLAGE, OR BOROUGH	-----	GUARD RAIL	-----	GR
FENCE LINE	-----	INTERSECTION ANGLE	-----	A
RIGHT-OF-WAY LINE	-----	RADIUS	-----	R
TRAVELLED WAY	-----	ELEVATION	-----	EL
RAILROADS	-----	VERTICAL CURVE	-----	VC
RETAINING WALL	-----	BEACH MARK	-----	B.M.
BASE OR SURVEY LINE	-----	SECTIONAL CONCRETE CULVERT	-----	P.1
LEVEE	-----	CORRUGATED METAL CULVERT	-----	C.M.
GRAVEL PIT	-----	CULVERT HAUL	-----	P.L.H.
SAND PIT	-----	TON MILES	-----	T.M.
CLAY PIT	-----	IN PLACE	-----	INP.
ROCK QUARRY	-----	REPLACE	-----	REP.
CULVERTS	-----	RIGHT	-----	R
PLAIN	-----	LEFT	-----	L
With FACEWALLS	-----	HAND DITCHING	-----	H.D.
With WINGWALLS	-----	POINT OF CURVE	-----	P.C.
DROP INLET	-----	POINT OF TANGENT	-----	P.T.
POWER POLE LINE	-----	POINT OF INTERSECTION	-----	P.I.
TELEPHONE OR TELEGRAPH LINE	-----	SPECIAL EXCAVATION	-----	S.E.
MARSH	-----	SPECIAL FLOWING	-----	S.P.
HEDGE, BRUSH, OR TIMBER	-----	TELEPHONE POLE	-----	Tel.P.
GROUND ELEVATION	-----			
GRADE ELEVATION	-----			

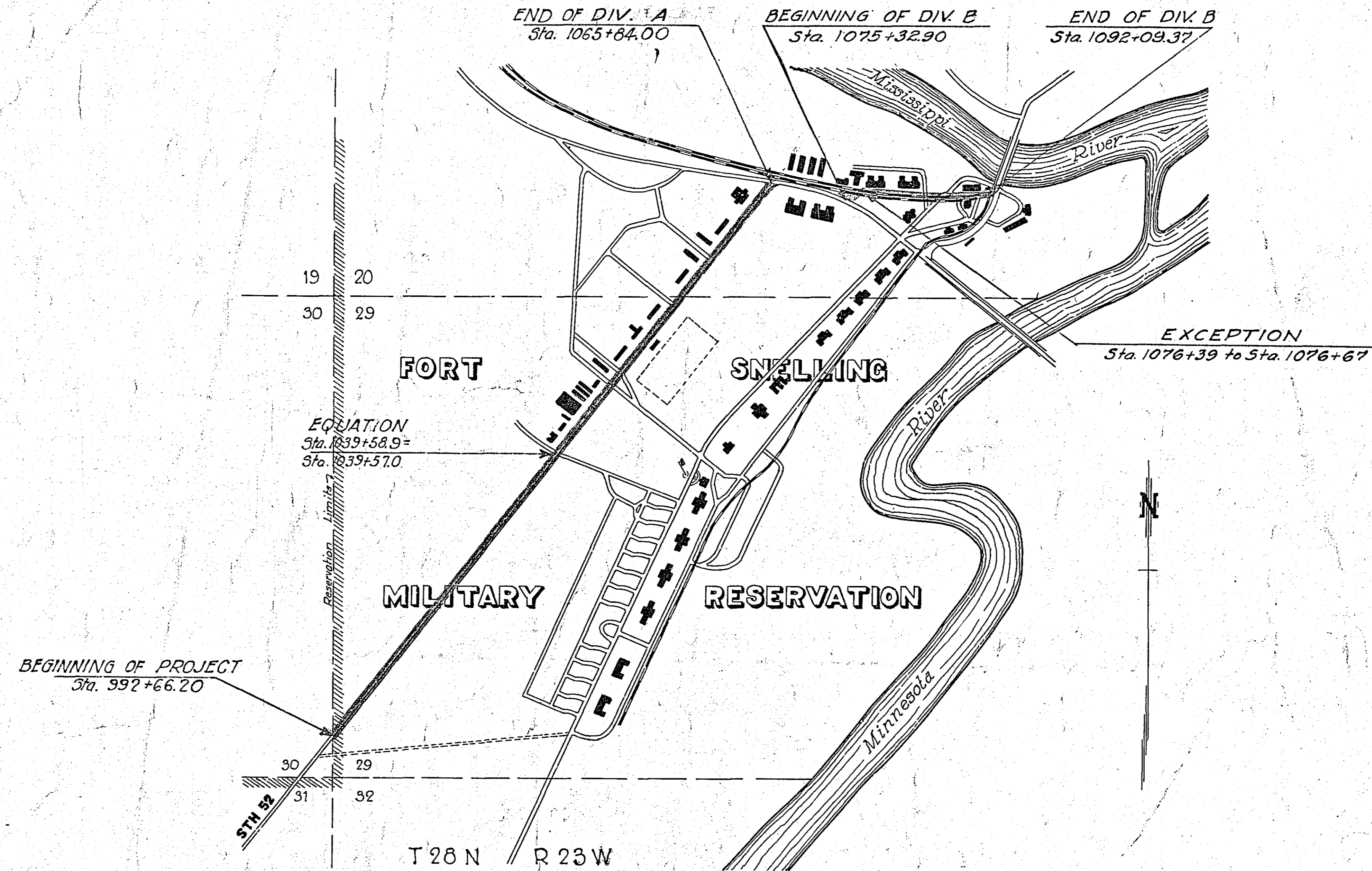
OFFICE OF COUNTY SURVEYOR
RAMSEY COUNTY

Plan and Profile of County Project No. 27-52
a point 465.6 ft. north
From of SW Cor. Sec. 29-28-23 To South bridge head of U.S. Engrs. Bridge

GROSS LENGTH 8996.17 FEET 1.704 MILES
LENGTH OF EXCEPTIONS 28.0 FEET .005 MILES
NET LENGTH 8968.17 FEET 1.699 MILES

PLAN DIV. A 1"=100'
DIV. B 1"=50'
SCALES WORKING PLANS DIV. A Horiz. 1"=100', Vert. 1"=10'
DIV. B 1"=50', " 1"=5'
Cross Sections: DIV. A 1"=10', DIV. B 1"=5'

LAYOUT
SCALE, 1 Inch = 1000. Feet



INDEX OF SHEETS

Sheet No. 1.	Title Sheet and Layout Map	
" No. 2.	Typical Cross-Sections and Statement	Div. A
" No. 3.	"	B
" No. 4-5	Plan & Profile	A
No. 6.	"	B
No. 7-8	Cross Sections	A
No. 9.	"	B
No. 10.	Detail of Curb and Drain	A
No. 11-13	Staking Plans for Intersections	A
No. 14.	Intersection Details	B
No. 15	Section Details	
No. 16	Miscellaneous Details	
No. 16A	Pavement Construction Details	
No. 16B	Detail of Post Exchange Entrance	

4-20-27
8-1"

PLAN
27-101
INDEX

Date of Resolution for Preparation of Plans September 13, 1926

Planned by *Paul J. Goetz*
ASSISTANT ENGINEER

Recommended for Approval *Wood Mackintosh*
CONSTRUCTION ENGINEER

Plans Approved and Recommended for Consideration *Paul J. Goetz*
COUNTY SURVEYOR

Approved by County Board 7/27 1927 *L. C. Studeman*
CHAIRMAN OF COUNTY BOARD

Approved 11/19 1927 *W. B. Mead*
COMMANDING OFFICER - FORT SNELLING