

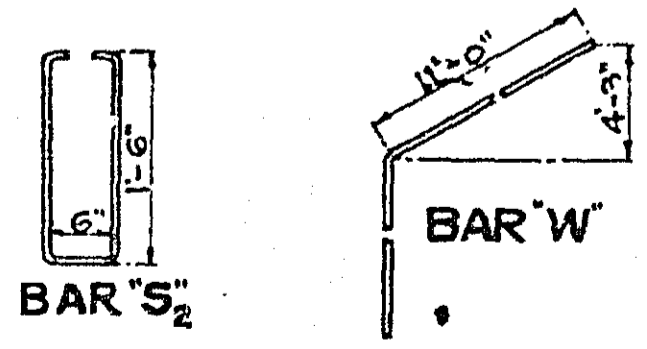
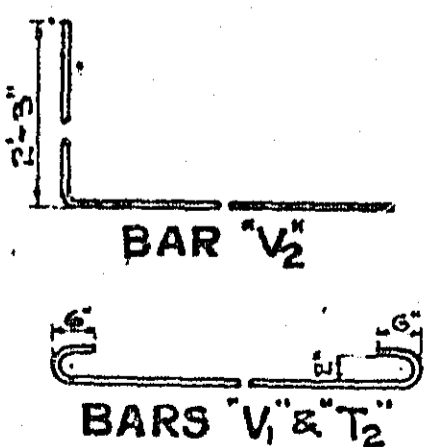
Railing to be given three coats of white paint. Omit railing on all culverts over 27 feet in length.

GENERAL NOTES
 Concrete shall consist of one part Portland cement, Standard Spec, two parts of sand and four parts of crushed rock or gravel retained on a quarter inch screen and passing a one and one half inch screen. All ingredients must be free from clay, loam or other deleterious matter. Forms shall conform to designated dimensions and shall be tight to prevent leakage of mortar. The lumber used for exposed surfaces shall be dressed to uniform thickness and clean from wet concrete. Reinforcing bars shall be medium open hearth steel. Rods T_1 & T_2 may be spliced by lapping 30". Length of culvert should equal width of roadway plus 3(H-1), minimum length 24 ft. Culvert to have minimum grade in direction of flow of $\frac{1}{8}$ " per foot of length.

BILL OF MATERIAL

BAR NO	SIZE	LENGTH	SHAPE	LOCATION
① F	$\frac{3}{8}$ "	17'-0"	STRAIGHT	FLOOR TRANSVERSE
② T ₁	$\frac{1}{2}$ "			4 SIDES LONGITUDINAL
③ T ₂	$\frac{1}{2}$ "		BENT	TOP & "
④ V ₁	$\frac{1}{2}$ "	9'-6"		SIDE WALL VERTICAL
⑤ V ₂	$\frac{3}{8}$ "	8'-0"		WING "
⑥ W	$\frac{1}{2}$ "	10'-0"		" INCLINED
⑦ S ₁	$\frac{3}{8}$ "	16'-3"	STRAIGHT	TOP SLAB TRANSVERSE
⑧ S ₂	$\frac{3}{8}$ "	4'-0"	BENT	" "
TOTAL STEEL WGT. OF = 125.5L + 875 =				LB.
TOTAL CONCRETE = 1.78L + 19.4 =				CUYDS.
RAILING APP. WGT. = 925				LB.

① N^o F BARS = 1.2L + 10
 ② LT₁ BARS = (L + 2) + 5
 ③ LT₂ BARS = L + 1
 L = LI OF CULVERT IN FEET.
 ④ N^o V₁ BARS = 3.6L + 4
 ⑤ N^o S₁ BARS = 2.4L - 1
 ⑥ N^o S₂ BARS = 4.8L + 12



QUARTER PLAN

QUARTER STAKING PLAN

BRIDGE No
STANDARD REINFORCED CONCRETE CULVERT
 7' x 7' Double Box Culvert Length.....ft.
 SEC. T. N. R. W.
 TWP. COUNTY

Station No..... SRoad No.....
 Approved as to type of construction
 COMMR. OF HIGHWAYS. DISTRICT ENGR.

Date. Road Plan No. 2926 Job No.

CONVENTIONAL SIGNS & ABBREVIATIONS

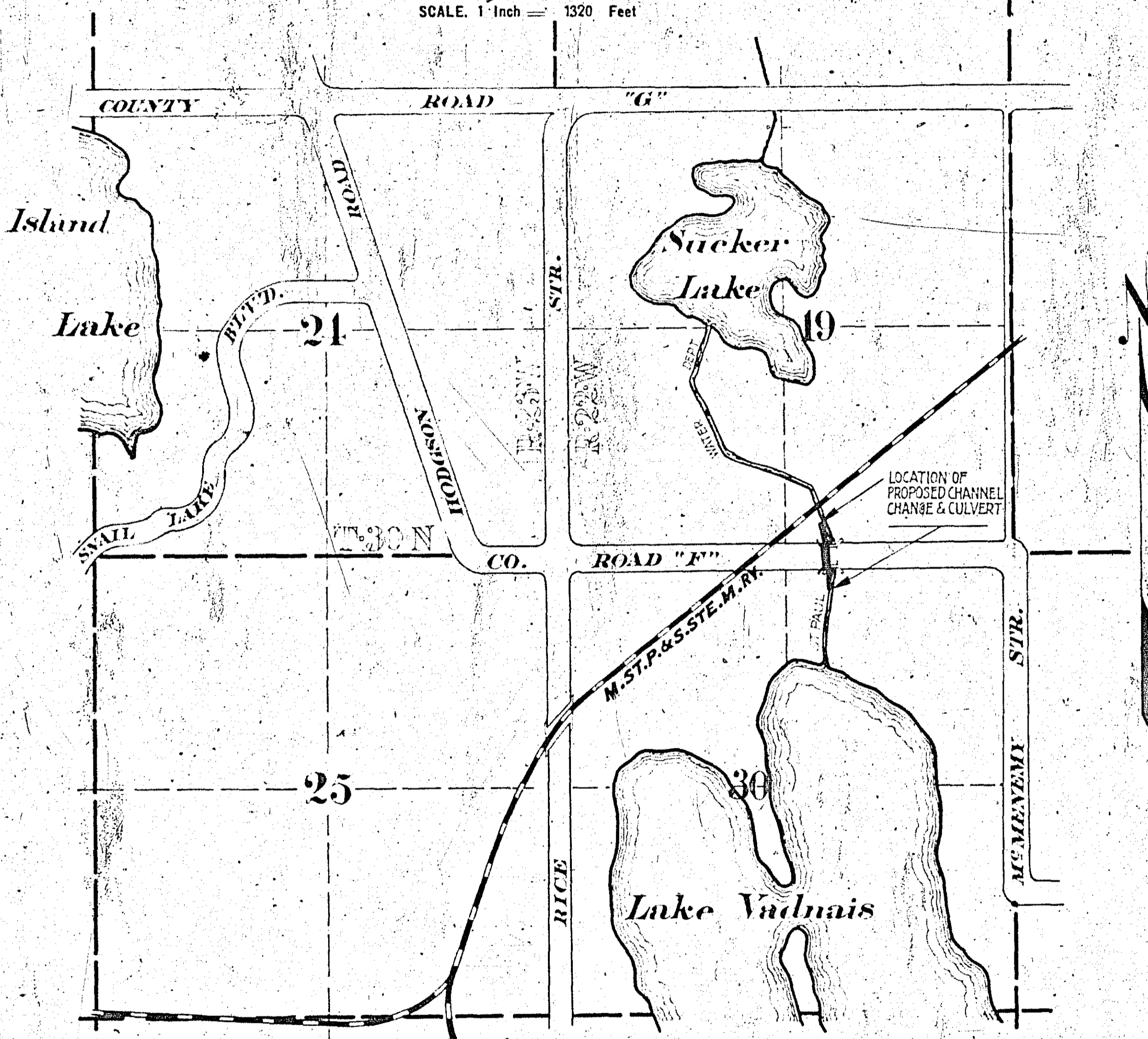
STATE LINE	-----	EXCAVATION	-----	E
COUNTY LINE	-----	EMBANKMENT	-----	F
TOWNSHIP LINE	-----	OVERHAUL	-----	H
SECTION LINE	-----	SURFACING	-----	S
CITY, VILLAGE, OR BOROUGH	-----	GUARD RAIL	-----	GR
FENCE LINE	-----	INTERSECTION ANGLE	-----	A
RIGHT-OF-WAY LINE	-----	RADIUS	-----	R
TRAVELLED WAY	-----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

OFFICE OF COUNTY ENGINEER
 RAMSEY COUNTY
 Plan and Profile of County Project No. 24-61

On Co. Road "F", 0.56 of a mile East of Rice Str. bet. Secs. 19-30

GROSS LENGTH	FEET	MILES
LENGTH OF EXCEPTIONS	FEET	MILES
NET LENGTH	FEET	MILES
PLAN: 1 Inch = 200 Feet		
PROFILE: Horz. 1 Inch = 200 Feet. Vert. 1 Inch = 20 Feet		
SCALES		
WORKING PLANS: Horz. 1 Inch = 100 Feet. Vert. 1 Inch = 10 Feet		
Cross-Sections: 1 Inch = Feet		

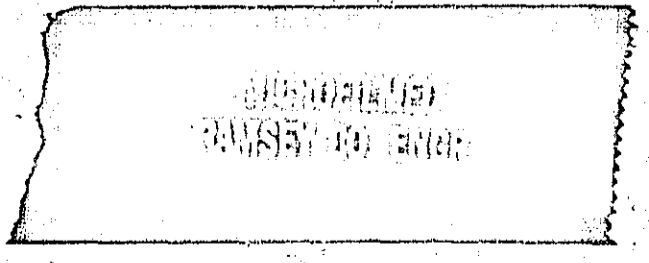
LAYOUT
 SCALE: 1 Inch = 320 Feet



INDEX OF SHEETS

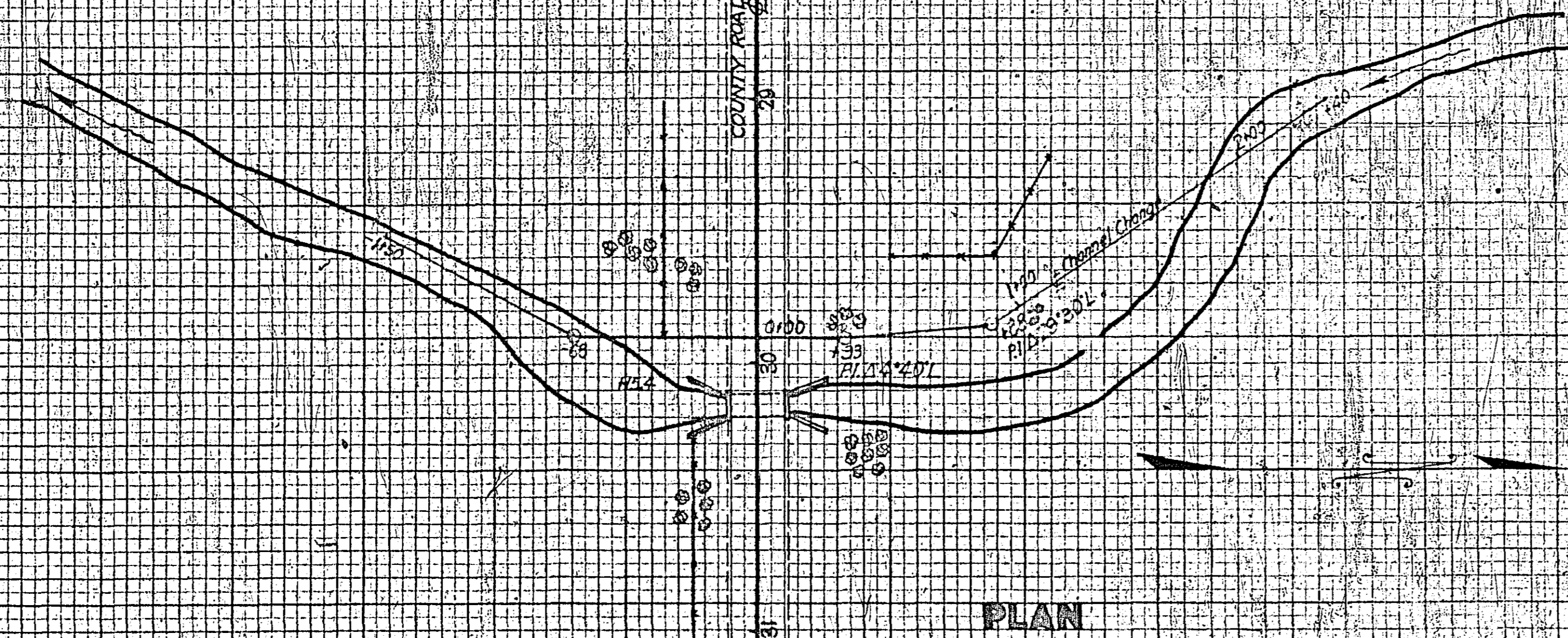
Sheet No. 1.	Title Sheet and Layout Map
No. 2.	Statement
No. 3.	Plan Sheet
No. 4.	Plan and Profile with Cross Sections
No. 5.	

Date of Resolution for Preparation of Plans Aug. 1924
 Planned by P. H. Janske DESIGNING HIGHWAY ENGINEER
 Recommended for Approval E. J. ... CONSTRUCTION ENGINEER
 Plans Approved and Recommended for Consideration Paul H. Coates COUNTY ENGINEER
 Approved by County Board 19 CHAIRMAN OF COUNTY BOARD

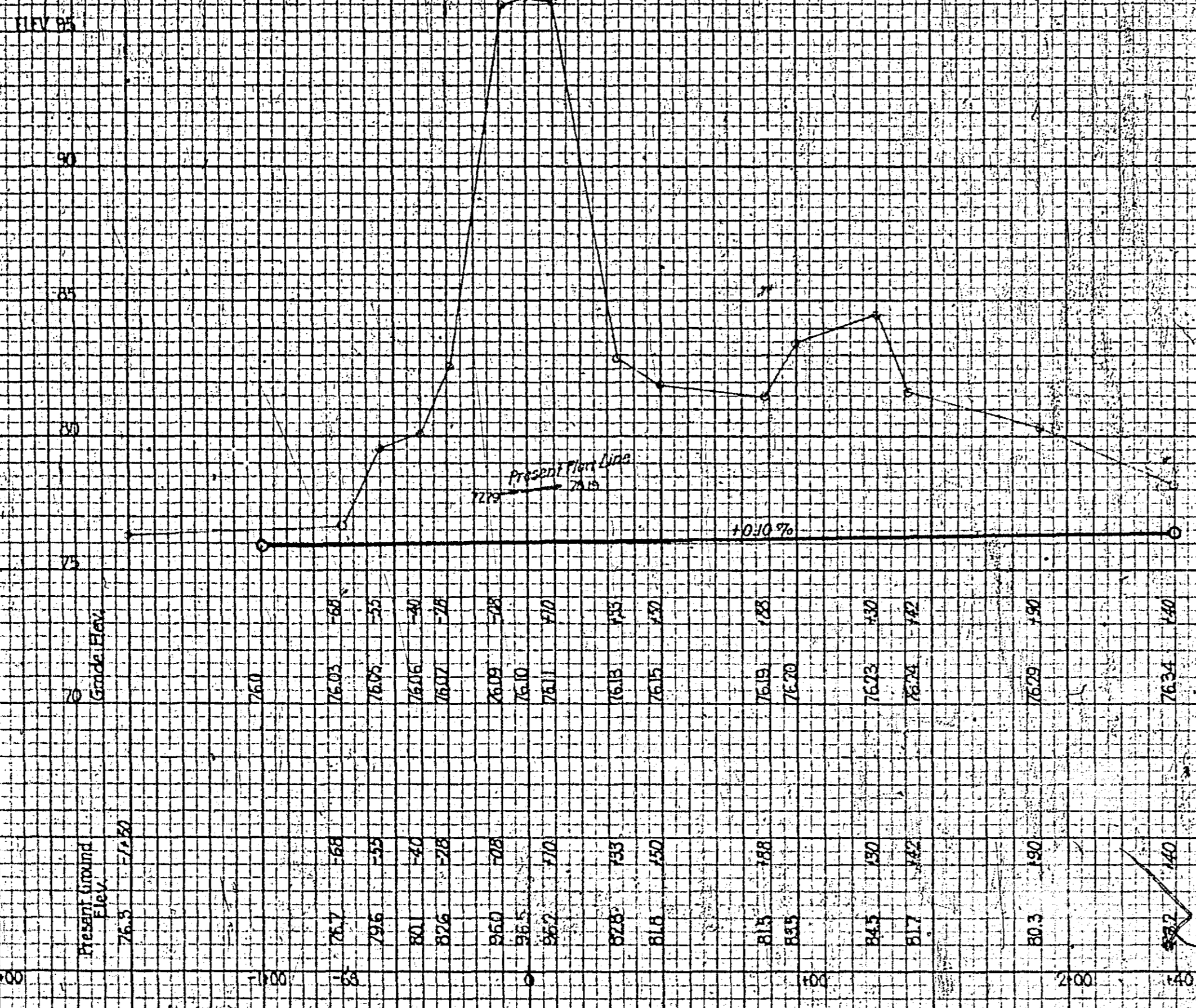


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PLAN

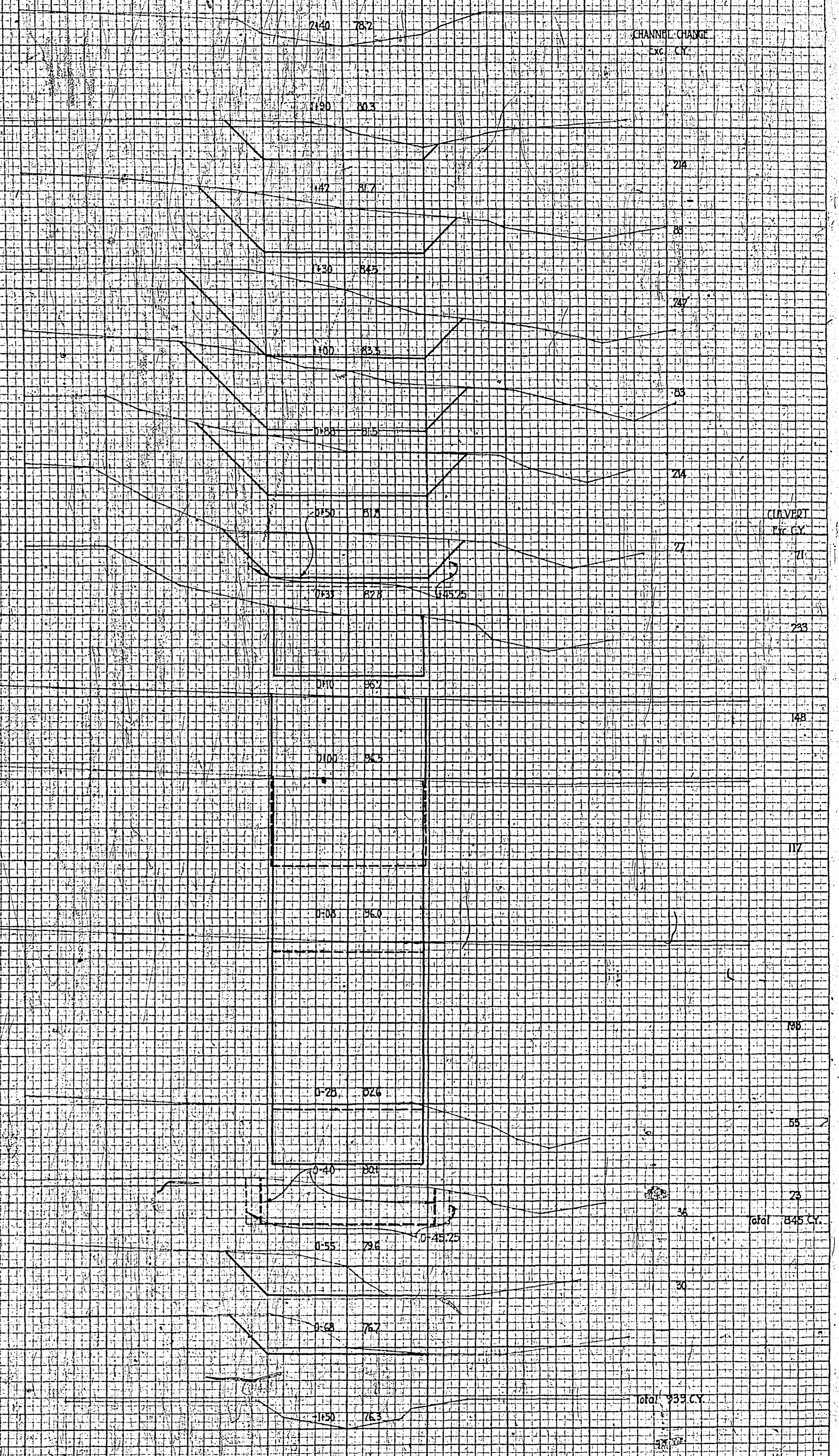


PROFILE

B.M. Nail in 12' Oak
 LL 28+22
 Elev. 100.00 (Assumed)

ESTIMATE QUANTITIES

Clearing	10	
Grubbing	10	
Channel Change Exc.	830 CY	Earth 830 CY
		L.R. 10 CY
		S.R. 5 CY
Culvert Excavation	830 CY	Earth 830 CY
		L.R. 10 CY
		S.R. 5 CY
W 27.00 x 24"	10	conc. 151.12 CY
		See 10,162 Jbs.



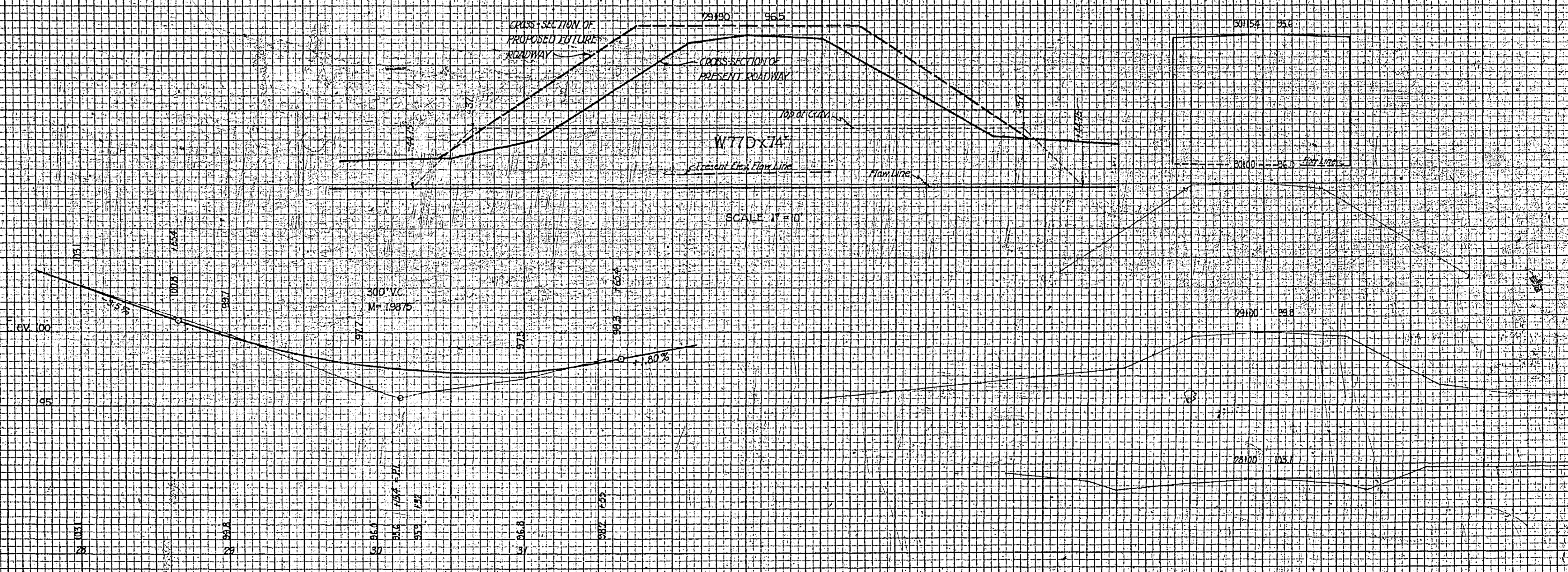
RAMSEY CO. ENGINEERS

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**PROFILE & CROSS-SECTION
 OF
 COUNTY ROAD "F"
 ON
 & OF PROPOSED CULVERT
 PROJ. 24-61**



ENGINEERED
 CONSULTING

2926