

RAMSEY COUNTY, MINNESOTA

CONSTRUCTION PLANS

FOR

IMPROVEMENT OF COUNTY DITCH 2

RAMSEY COUNTY BOARD
OF
COMMISSIONERS

THOMAS R. BYRNE, CHAIRMAN

JOHN E. DAUBNEY

MRS. DONALD M. DECOURCY

ARTHUR T. GIBBONS

GEORGE A. HARDENBERGH

ROY P. NADEAU

ED SALVERDA

LEGEND

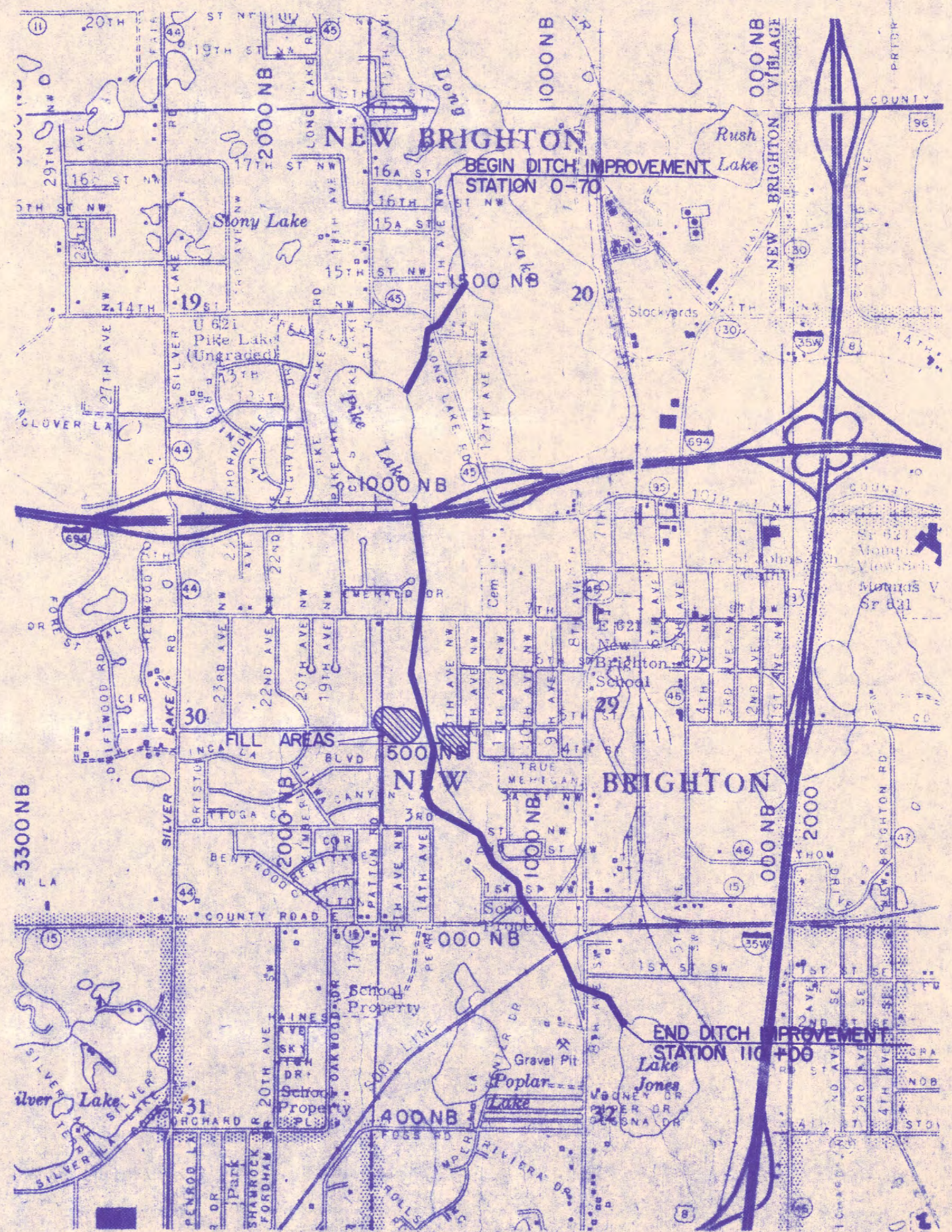
CHAIN LINK FENCE	
CULVERTS IN P	
EXISTING DITCH	
FENCE, MISC. TYPE	
FIRE HYDRANT	
FORCE MAIN	
GAS	
MANHOLE	
RAILROAD	
SANITARY SEWER	
STORM SEWER	
TELEPHONE CABLE, BURIED	
TELEPHONE DUCT, BURIED	
TREE, SHRUB, BRUSH	
UTILITY POLE	
WATER GATE VALVE	
RIP-RAP	
SURVEY LINE	
CONSTRUCTION MONUMENT	
1/6, 1/4 & SECTION LINES	
	DETAIL NO.
	SHEET NO.

INDEX

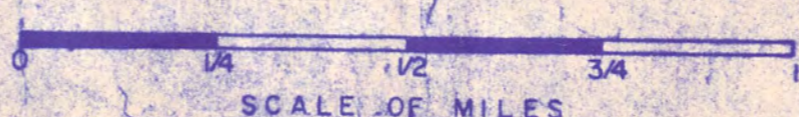
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	QUANTITY SHEET
3-5	DETAILS
6-13	DITCH PLAN & PROFILE
14	8th AVE. BY-PASS
15-22	DITCH CROSS-SECTIONS
23 & 24	BY-PASS CROSS-SECTIONS

SPECIFICATIONS

THE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" DATED JANUARY 1, 1964 AND AMENDED FEBRUARY 1, 1966, SHALL GOVERN EXCEPT AS MODIFIED BY "SPECIFICATIONS FOR IMPROVEMENT OF DITCH 2" RAMSEY COUNTY, MINNESOTA.



LOCATION MAP



I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT 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.

Alaska Papp
DATE: 6/7/1967 REG. NO. 3065

RECOMMENDED FOR APPROVAL:
Thomas R. Byrne 6-27-67
RAMSEY COUNTY ENGINEER DATE

APPROVED:
Thomas R. Byrne 7-10-67
CHAIRMAN OF THE RAMSEY CO. BOARD DATE

ATTESTED TO:
Ed Salverda
RAMSEY COUNTY AUDITOR DATE

RAMSEY COUNTY, MINN.

Survey by: C.T.B.L.S.
Designed by: M.V.R.
Drawn by: E.A.M.
Approved by: R.B.S.

TITLE SHEET

BANISTER ENGINEERING CO.
ST. PAUL, MINN. 55101
SHEET 13 OF 24 SHEETS

RECORDS TO
DATE *Alaska Papp*

STATEMENT OF ESTIMATED QUANTITIES

SPEC. REF.	ITEM NO.	ITEM	UNIT	S.P. QUANTITIES	
				EST.	FINAL
B-1	2101.502	Clearing	Tree	91	
	2101.507	Grubbing	Tree	93	
B-2	2104.501	Remove Portable Culverts	Linear Foot	276	
	2104.511	Remove Manholes & Catch Basins	Structure	3	
	2104.515	Remove Pipe Sewers	Linear Foot	467	
	2104.516	Remove Pavement for Trench	Square Yard	1,260	
B-3	2108.511	Channel Excavation (Class A)	Cubic Yard	25,300	
B-4	2121.527	Aggregate Shouldering in Place (Class 2) 3" Thick	Ton	68	
B-5	2202.526	Gravel Base in Place (Class 5) 12" Thick	Ton	1500	
B-6	2302.512	(1) 8" Reinforced Concrete Base (Standard Strength)	Square Yard	1,260	
B-7	2323.511	(2) Bituminous Mixture in Place	Ton	280	
B-8	2411.	Concrete Box Culvert	Structure	1	
B-9	2441.501	Double Lane By-Pass	By-Pass	1	
B-10	2451.505	Sand-Gravel Backfill (Class 6) 8	Cubic Yard	800	
	2451.509	Porous Backfill (Class 8)	Cubic Yard	500	
B-11	2463.503	Dry Rubble Masonry in Place	Cubic Yard	5	
B-12	2501.521-24	F. & I. 24" RCP. Culv. (Class II)	Linear Foot	35	
	2501.521-48	F. & I. 48" RCP. Culv. (Class II)	Linear Foot	252	
	2501.521-48	F. & I. 48" RCP. Culv. (Class III)	Linear Foot	360	
	2501.521-78	F. & I. 78" RCP. Culv. (Class IV)	Linear Foot	214	
B-13	2503.512-15	F. & I. 15" RCP. Sewer (Class II)	Linear Foot	52	
	2503.512-18	F. & I. 18" RCP. Sewer (Class II)	Linear Foot	44	
	2503.531-65	F. & I. 65" Span RCP-A Sewer (Class IV)	Linear Foot	2,172	
B-14	2506.508	Construct Manholes, Design J	Structure	3	
	2506.509	Construct Catch Basins, Design C or G	Structure	2	
	2506.513	Construct Drain Basin	Basin	1	
B-15	2511.501	Random RipRap Class A	Cubic Yard	1,030	
	2511.506	Filter Blanket Type 1	Cubic Yard	260	
B-16	2515.541	F. & I. Concrete Aprons for 18" SCP	Apron	1	
	2515.541	F. & I. Concrete Aprons for 24" SCP	Apron	2	
	2515.541	F. & I. Concrete Aprons for 48" SCP	Apron	14	
	2515.541	F. & I. Concrete Aprons for 78" SCP	Apron	2	
	2515.542	F. & I. Concrete Aprons for 65" Span SCP-A	Apron	6	
B-17	2557.512	Chain Link Fence (Steel Fabric) 60" High	Linear Foot	215	
B-18	2574.501	Roadside Seeding	Acre	.7	
B-19	2576.501	(3) Sodding	Square Yard	2,324	
B-20	Modification to Existing New 8" RCP Sanitary Sewer & Water Systems.	Raise or Lower Watermain or Force Main	Linear Foot	105	
		Sanitary Sewer Encasement	Lump Sum	1	
		Sanitary Sewer Duct, Complete	Lump Sum	1	
		(1) Includes Reinforcement (2) Includes Prime & Bituminous Material for Mixture (3) Includes 2" Top Soil			

FORM 21169 - 10-58

STATION (TO STATION)		LOC.	DESCRIPTION	UNIT				ABAND.
				LN. FT.	SQ. YD.	CU. YD.	STRUCTURE	
7 + 75	7' LT.		36" RCP. (LONG LAKE ROAD)	66				
46 + 75	20' LT.		18" CMP (7TH ST. N.W.)	276				
89 + 00	10' RT.		36" CMP (1ST ST. N.W.)	95				
88 + 62	RT.		12" CMP (DRIVEWAY)	30				
(LOCATE IN FIELD) S.T.H. NO. 8	3 BBL. 65" SPAN		CONCRETE PAVEMENT (BIT. SURFACE)		1260			
95 + 76	5' LT.		24" RCP. (S.T.H. NO. 8)	40				
100 + 03	6' RT.		STORM SEWER MANHOLE				1	
100 + 68	5' LT.		STORM SEWER MANHOLE				1	
101 + 15	15' LT.		36" RCP. (1ST. ST. S.W.)	111				
102 + 62	12' RT.		SANITARY SEWER MANHOLE				1	
102 + 55	LT & RT.		21" RCP. SANITARY SEWER	35'				
103 + 05	5' RT.		30" RCP. (8TH AVE. S.W.)	90'				

FORM 21166 - 10-58

The following Standard Detail plates, approved by the Bureau of Public Roads, shall apply on this project.

STANDARD DETAIL PLATES	
PLATE NO.	DESCRIPTION
3000 C	REINFORCED CONCRETE PIPE
3014 B	REINFORCED CONCRETE PIPE - ARCH
3100 D	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3102 C	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110 B	CONCRETE APRON FOR REINFORCED CONCRETE PIPE - ARCH
3112 B	CONCRETE APRON FOR REINFORCED CONCRETE PIPE - ARCH
4002 C	MANHOLE OR CATCH BASIN
4006 D	MANHOLE OR CATCH BASIN
4008 C	CATCH BASIN
4009 C	MANHOLE OR CATCH BASIN
4015	PRECAST CONCRETE MEDIAN DRAIN
4101 A	RING CASTING FOR MANHOLE OR CATCH BASIN (700 - 10)
4111 C	COVER CASTING FOR MANHOLE
4140 D	GRATE CASTING FOR CATCH BASIN
4181	MANHOLE STEP CASTING
9322 A	URBAN FENCE FOR FREeways & EXPRESSWAYS

FORM 21167 - 2-65

CLEARING AND GRUBBING			
STATION (TO STATION)	LOC.	CLEARING TREE/ACRE	GRUBBING TREE/ACRE
3 + 00	RT	3	3
4 + 60	RT	4	4
8 + 60	RT	1	1
10 + 50	RT	1	1
11 + 90	RT	1	1
12 + 00	LT.	2	2
12 + 25	RT	1	1
12 + 55	RT	1	1
13 + 00 TO 13 + 50	RT	10	10
13 + 50 TO 15 + 40	RT & LT	12	12
39 + 35	RT	12	12
44 + 00	LT	1	1
45 + 15	LT	6	6
46 + 90	LT	2	2
55 + 45	LT	2	2
56 + 00	LT	2	2
73 + 35	LT	1	1
73 + 65	RT	1	1
81 + 00 TO 81 + 25	LT & RT	4	4
82 + 00	LT	1	1
82 + 10	LT	1	1
82 + 65	LT	1	1
82 + 85	RT	1	1
83 + 12	E	1	1
83 + 50 TO 84 + 20	LT & RT	7	7
85 + 20 TO 86 + 75	LT & RT	8	8
87 + 40	LT	1	1
89 + 60	RT	2	2
90 + 00	LT	1	1
90 + 80	LT	1	1
101 + 70	LT	1	1
TOTALS		91	93

FORM 21168 - 10-58

SODDING AND MULCHING			
STATION TO STATION	LOCATION	SOD SQ. YD.	MULCH SQ. YD.
5 + 50 TO 7 + 10	LT. DITCH SLOPE	175	
7 + 80	CULVERT ENDS	175	
33 + 62	CULVERT ENDS	50	
46 + 85	CULVERT ENDS	225	
79 + 10 TO 84 + 75	DITCH SLOPES	1300	
89 + 10	CULVERT ENDS	180	
88 + 62	43' RT CULVERT END	11	
95 + 60	CULVERT ENDS	118	
103 + 00	CULVERT ENDS	90	
			SEED ACRE
97 + 00 TO 100 + 35	EAST DITCH & SLOPES OF S.T.H. 8		.2
100 + 85 TO 102 + 35	MEDIAN		.5

CULVERT & DRAINAGE SCHEDULE

LINE	STRUCTURE NO.	STATION	LOCATION AT INLET	CONSTRUCTION		TOP OF CASTING OR INLET	OUTLET	F. & I. CASTING ASSEMBLY TYPE	REMOVE	LINE	FURNISH AND INSTALL PIPE SEWER								CLASS	LINE	APRONS		DRAINS TO		SODDING				
				DESIGN	APPROX. DEPTH.						15" RCP		18" RCP		24" RCP		30" RCP				36" RCP		SPAN	5' X 20" BOX CULVERT		NO.	GRADE%	INL. EL.	SQ. YD.
											M.H.	C.B.	LN. FT.	C.Y.	LN. FT.	LN. FT.	LN. FT.	LN. FT.			LN. FT.	LN. FT.							
1	1	7 + 80	E							1	15"	18"	24"	30"	36"	78'	IV	1		DITCH	0.28	864.68	175						
2	2	33 + 62	E							2						214	IV	2	Z	DITCH	0.32	865.84	50						
3	3	46 + 85	E							3						256'	II	3	6	DITCH	0.28	869.44	225						
4	4	46 + 17	8' LT	J	14.3	883.5	869.25	NEENAH 3250-A		4							II	4											
5	5	46 + 48	10' LT		3.9	883.7	879.8	NEENAH 3250-A		5	36"						II	5			1.00	878.7							
6	6	89 + 10	E							6						384	III	6	8	DITCH	0.36	887.02	180						
7	7	88 + 22	16' RT	J	15.8	902.5	886.74	NEENAH 3250-A		7							II	7											
8	8	88 + 62	43' RT			897.0	896.7			8						44	II	8	1	7	1.00	896.7	11						
9	9	95 + 57	22' LT			889.81	888.70			9						42'	II	9	2	DITCH	0.50	889.81	28						
10	10	103 + 00	E							10						2175	IV	10	6	DITCH	0.36	891.50	205						
11	11	100 + 68	8.5' LT	J	11.5	902.2	890.66	FRAMES 700-10 GRATE 710		11							II	11											
12	12	100 + 46	8.5' LT		4.3	901.3	897.0	FRAMES 700-10 GRATE 710		12	25"						II	12		11	2.30	896.5							
13	13	102 + 00	8.5' LT			896.5	891.14	MEDIAN DRAIN WITHOUT ACCESS		13								13											
14	14	102 + 55	E	SPECIAL	15.0	905.4	890.4	FRAMES 700-10 GRATE 710		14								14											
15										15								15											
16										16								16											

REVISIONS TO CONSTRUCTION RECORDS
DATE 4/30/70 RAM

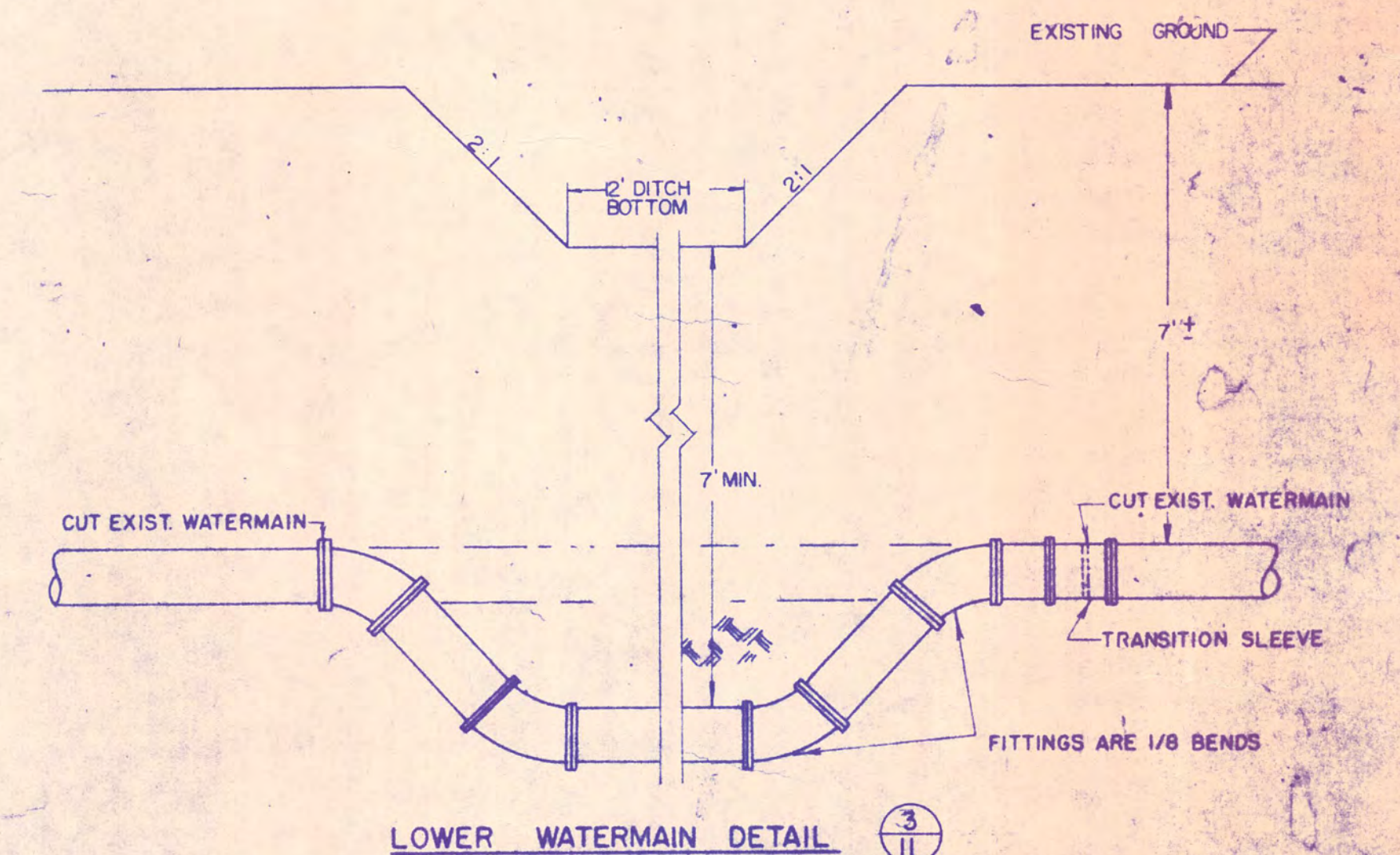
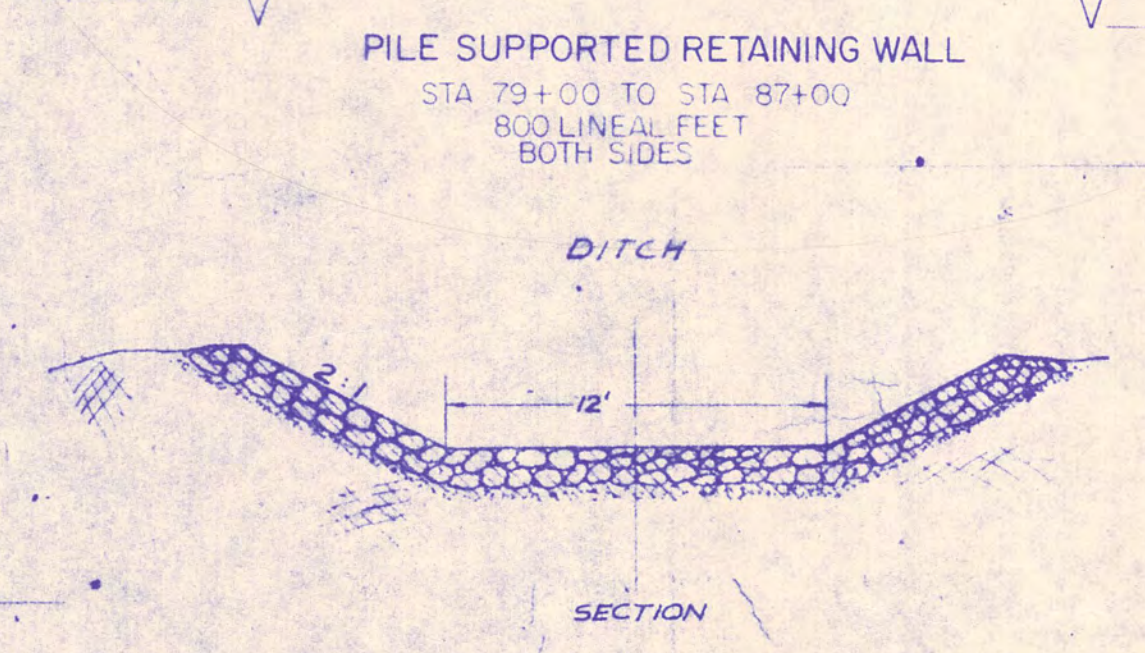
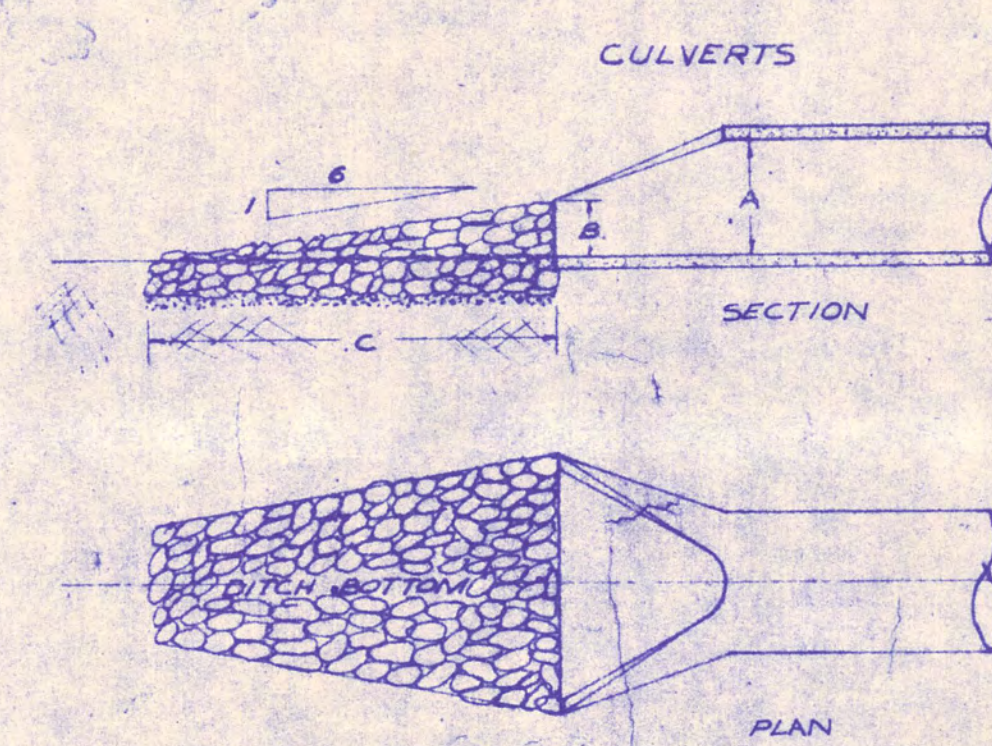
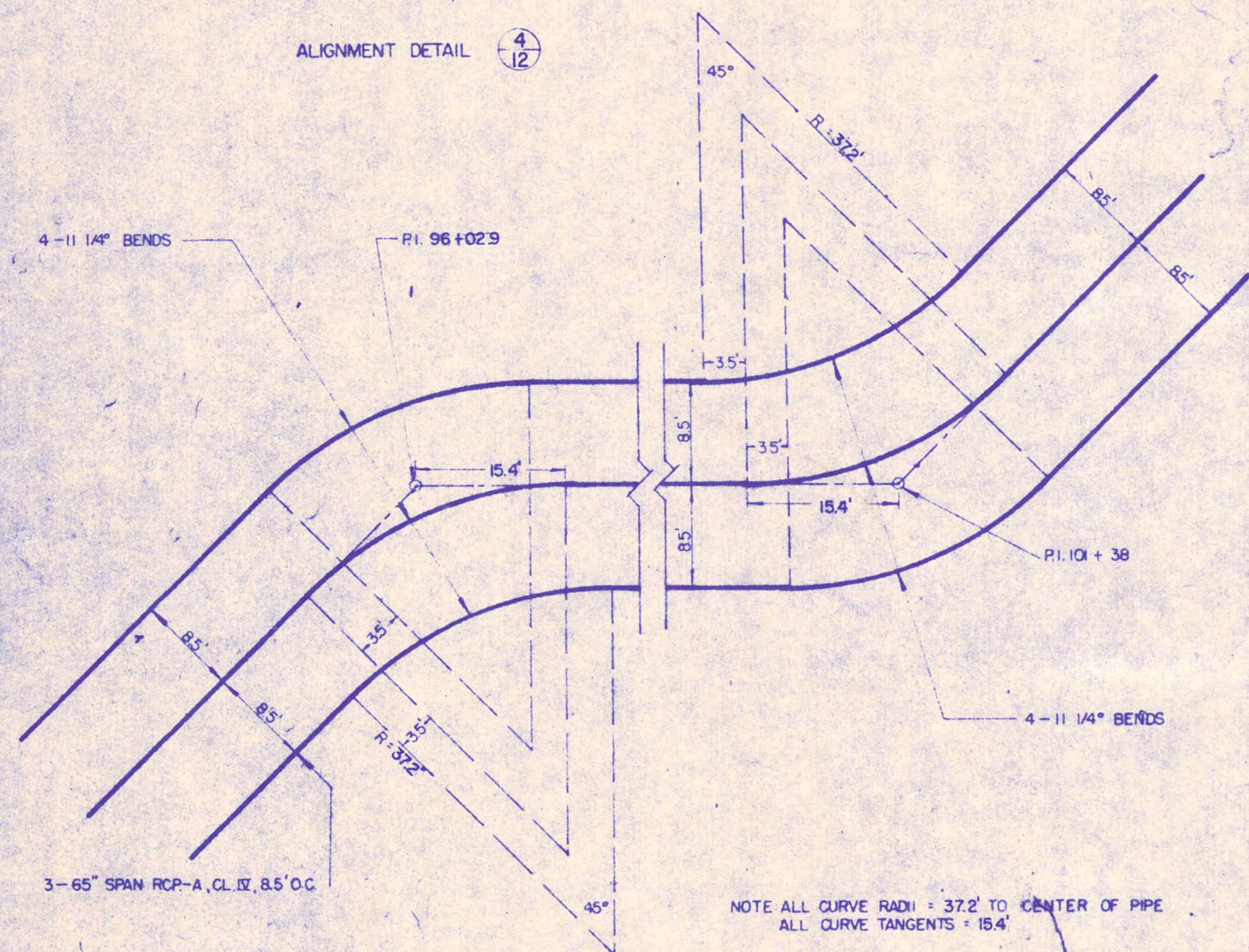
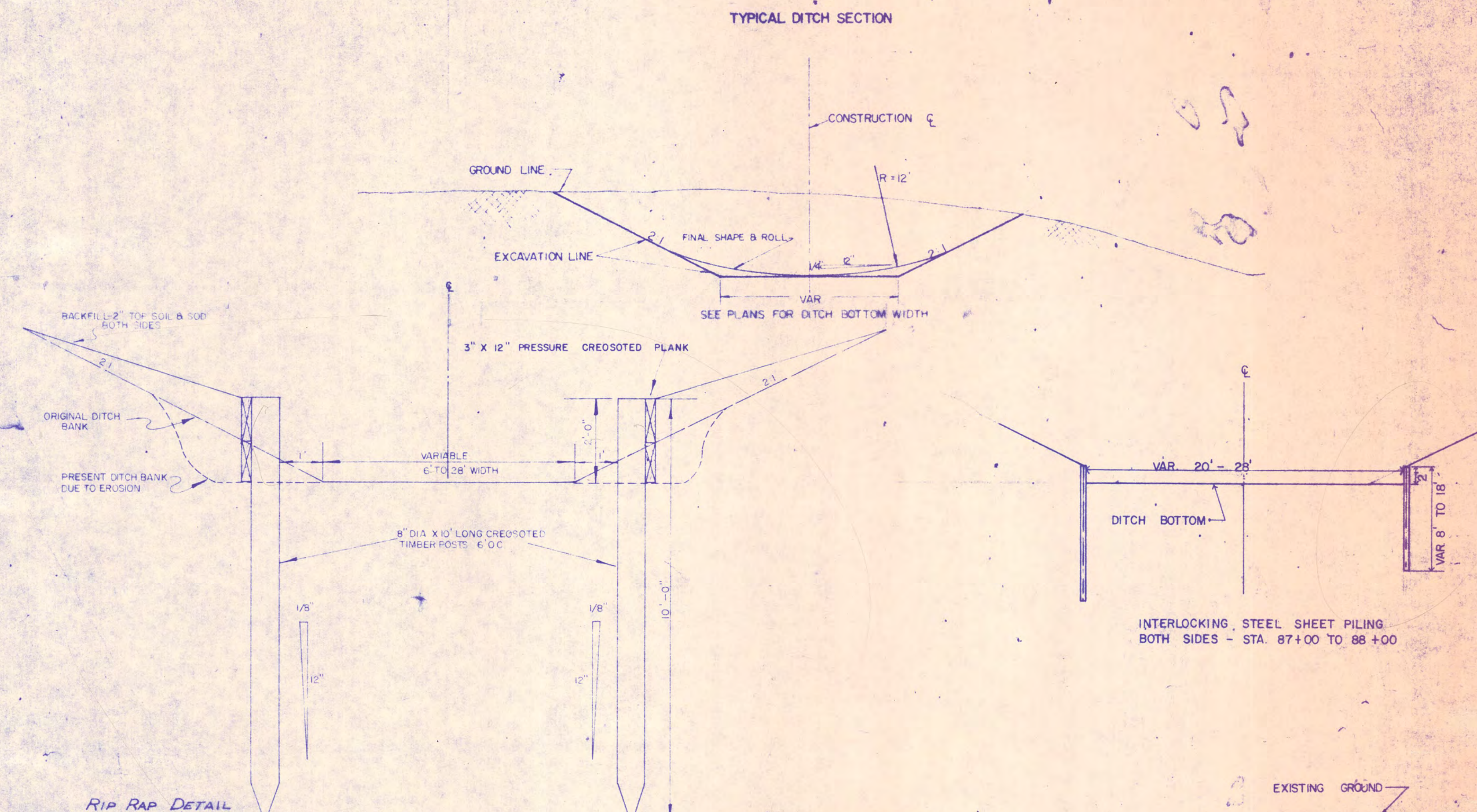
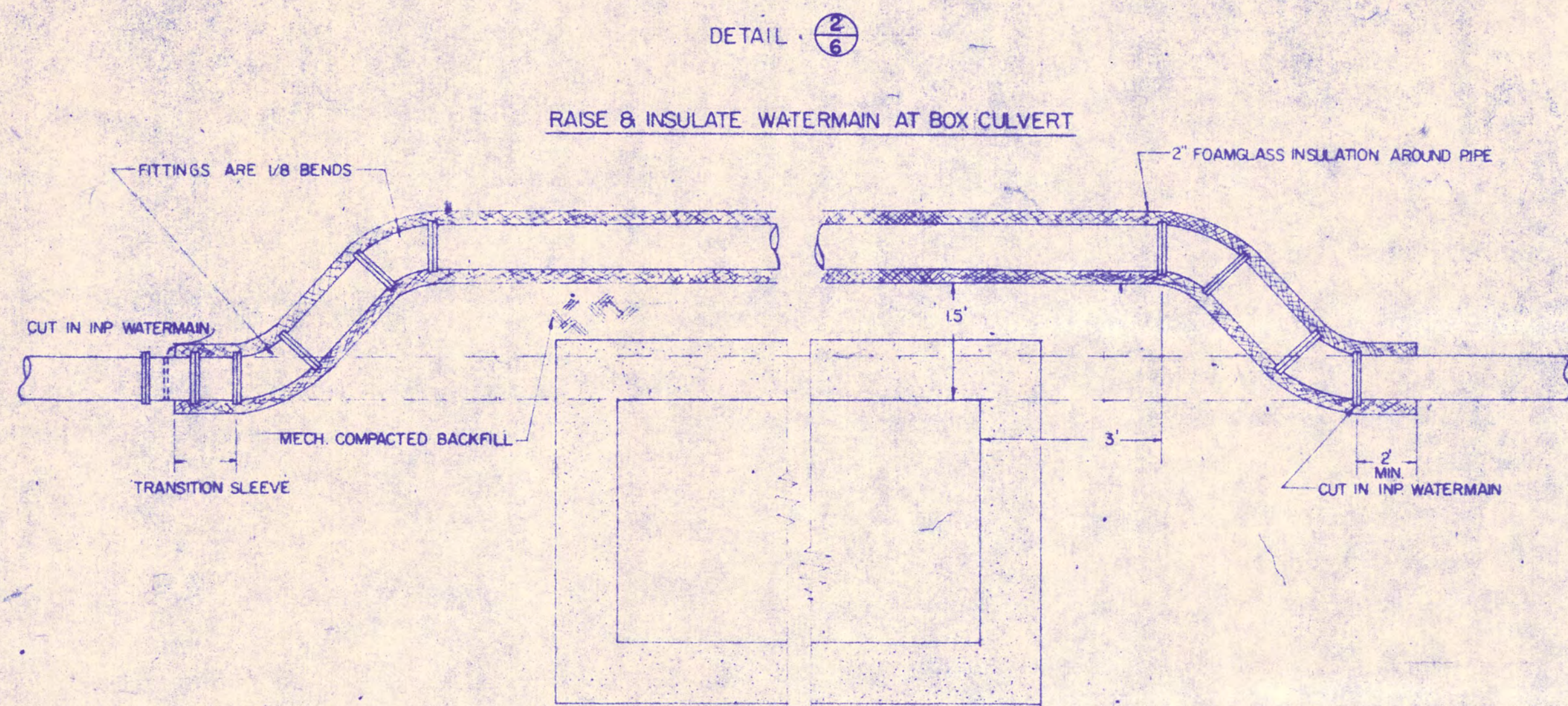
RAMSEY COUNTY, MINN.

Survey by _____
 Designed by _____
 Drawn by RAM
 Approved by R.B.S.

**ESTIMATED QUANTITIES
 DRAINAGE SCHEDULE
 & STANDARD PLATES**

BANISTER ENGINEERING CO.
 ST. PAUL, MINN. JUNE 7, 1967

SHEET 2 OF 24 SHEETS
 RAMSEY COUNTY, MINN. DITCH 2



ALL RIP RAP 2" THICK (CLASS A, SPEC 2511)

ALL TYPE I FILTER BLANKET 6" THICK

STRUCTURE	A	B	C	QUANTITY — CU YDS			
				OUTLET RIP RAP	FILTER BLANKET	INLET RIP RAP	FILTER BLANKET
1	5'	28'	40'	76	20	76	20
2	78'	36'	18'	41	10	41	10
3	36'	24'	12'	25	6	25	6
DITCH BOTTOM & SLOPES STA 75+95 TO 76+90				237	60	237	60
6	48'	24'	12'	33	7	33	7
9	30'	12'	5'	5	1/2	5	1/2
JUNCTION BOTTOM & SLOPES STA 84+30 TO 85+60				475	120	475	120
10	48'	28'	15'	28	7	28	7

1. See Box Culvert Detail
 2. To include in place 48" RCP
 3. To include outlets of 3-65" spans, 24" RCP, in place 66" RCP & 42" CIP.

FOR RECORD
 CONFORMING TO
 CONST. RECORDS
 DATE 4/30/70 P.M.

RAMSEY COUNTY, MINN.

Survey by
 Designed by
 Drawn by
 Approved by

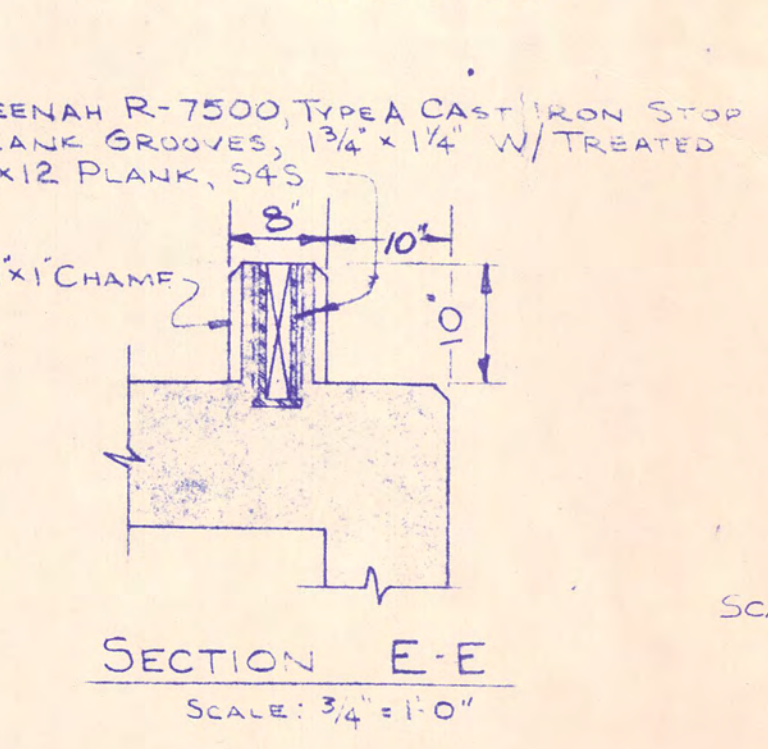
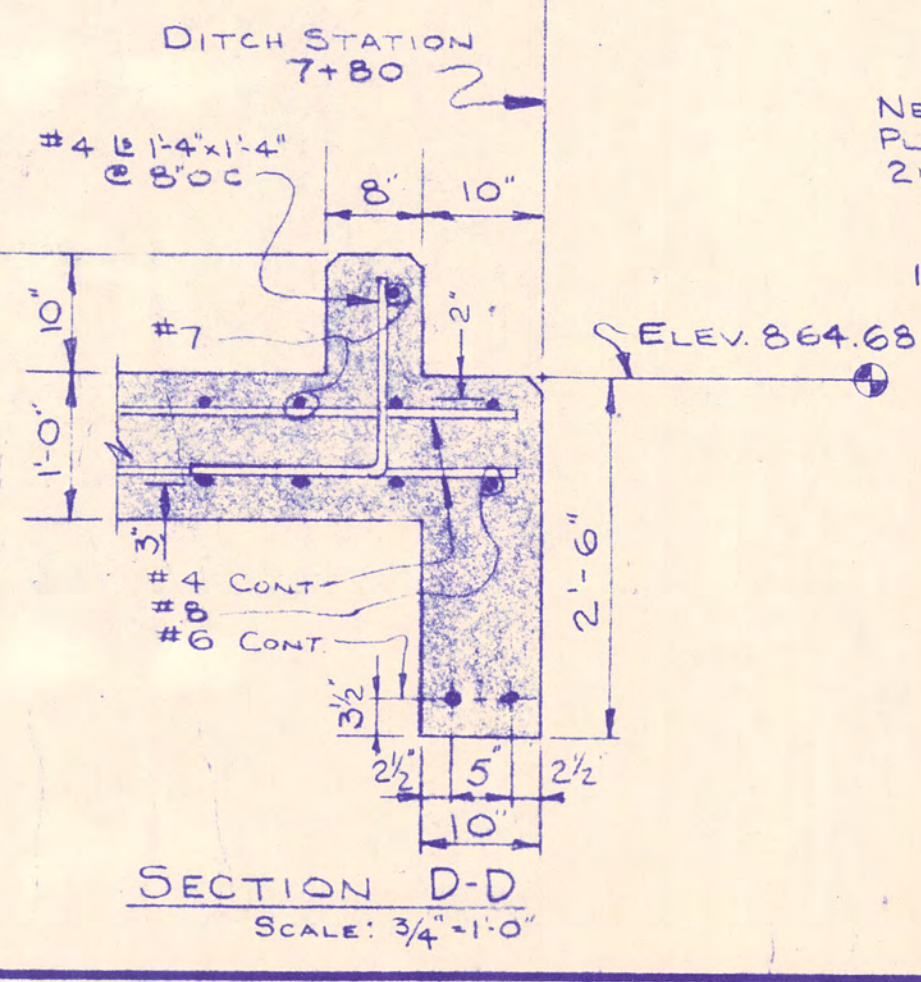
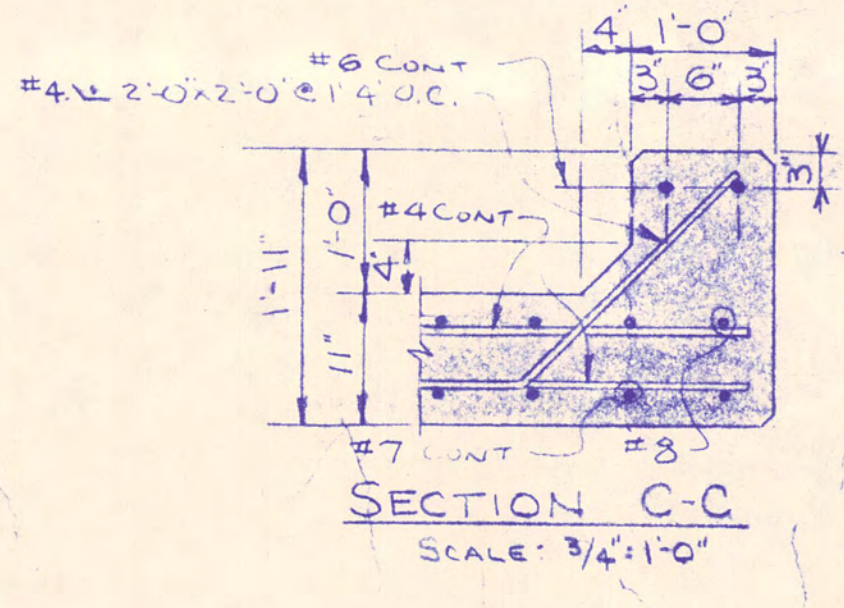
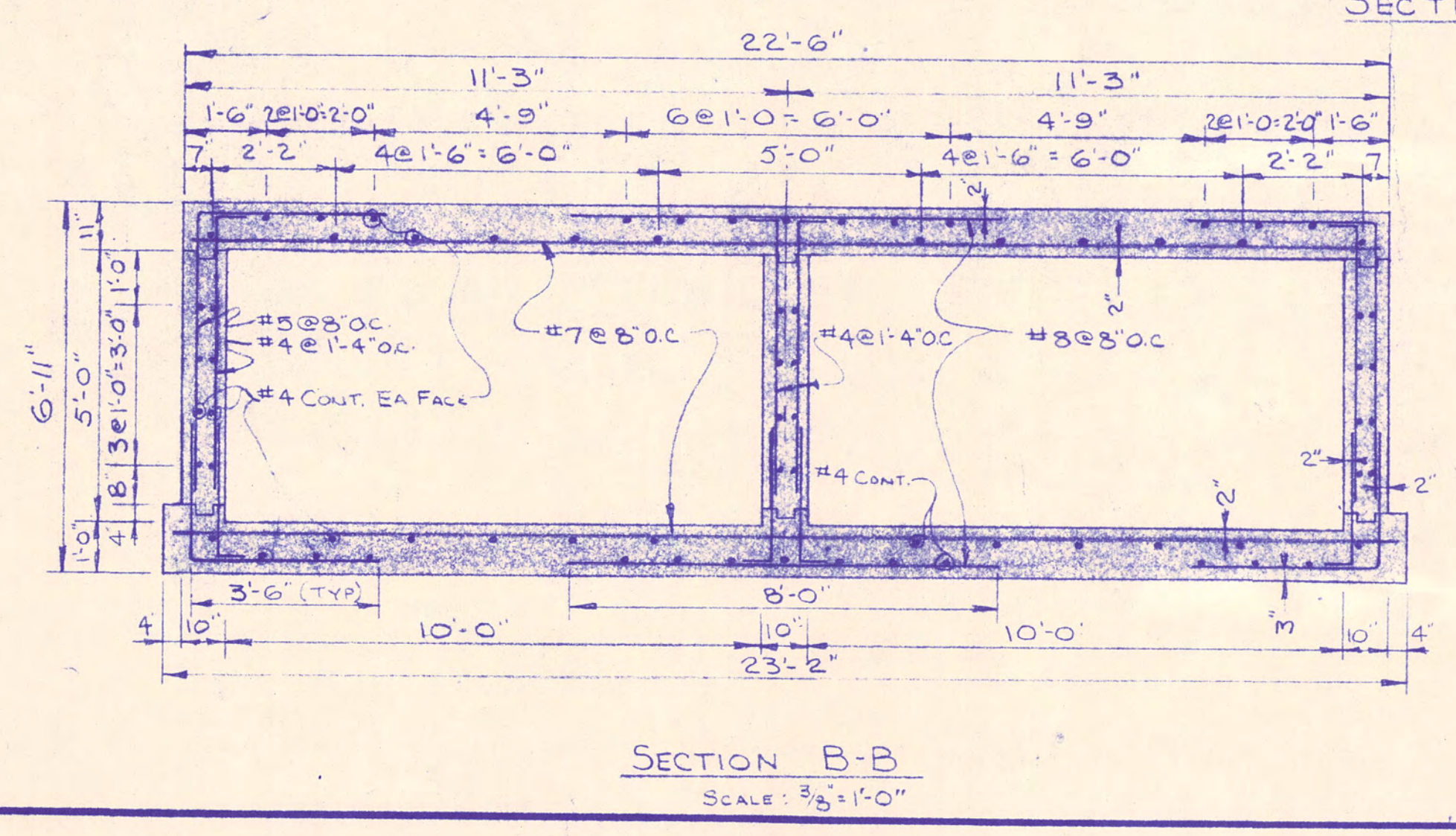
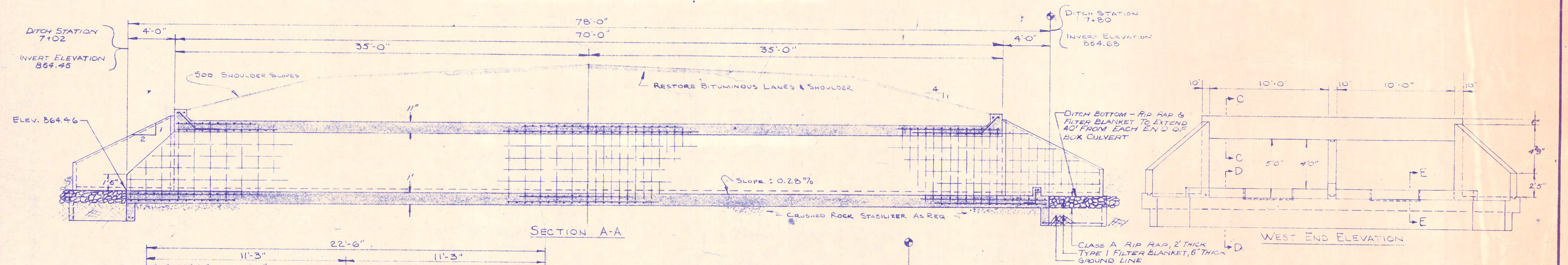
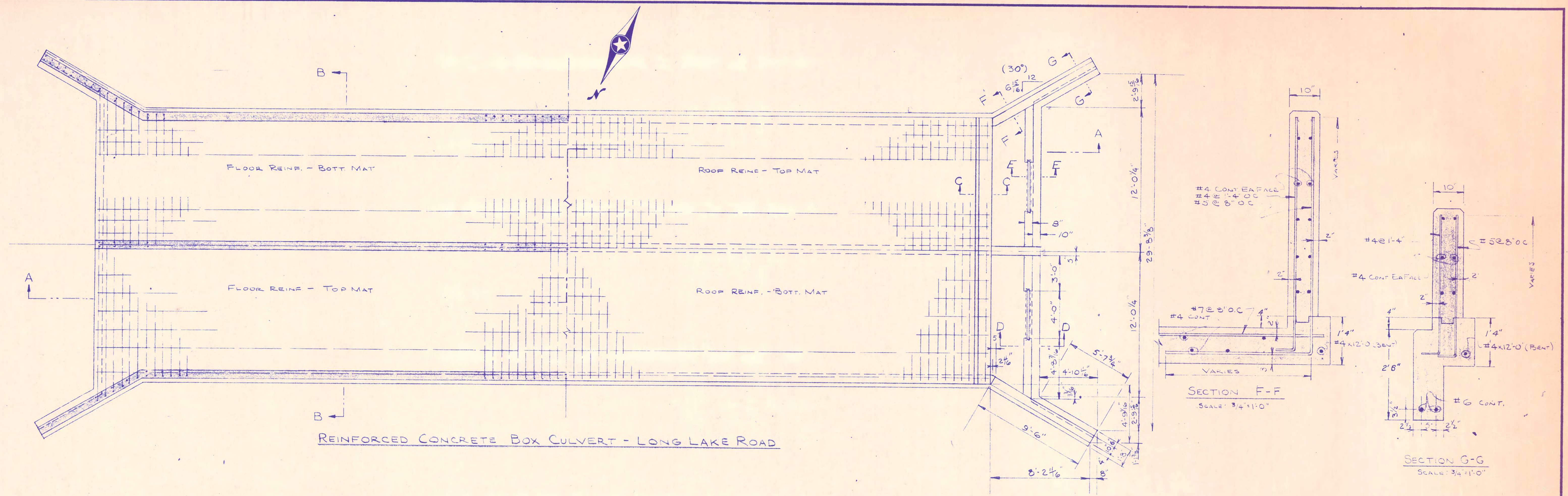
Revisions
 PLING SECTION
 11-5-68 RAM

DETAILS

BANISTER ENGINEERING CO.
 ST. PAUL, MINN. JUNE 7, 1967

SHEET 3 OF 24 SHEETS

RAMSEY COUNTY, MINN. DITCH 2



GENERAL NOTES:

- 1" x 1" CHAMFER ALL EXPOSED EDGES.
- CONST. JOINT KEYWAYS 2" x 4"
- ALL REINF. TO BE DETAILED AND PLACED ACCORDING TO THE LATEST A.C.I. CODE AND MANUAL OF STANDARD PRACTICE
- PROVIDE FRESH SPACERS AND SUPPORTS FOR ALL REINF. INCLUDING TIE BARS. REINF. TO BE SECURELY TIED INP. BEFORE POURING CONCRETE.

DATE 4/20/70 RHP

SCALE 1/4" = 1' EXCEPT AS NOTED

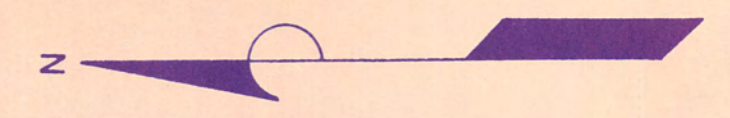
RAMSEY COUNTY, MINN.	
Survey by MVR	Revisions
Designed by MVR	BOX CULVERT
Drawn by MVR	
Approved by B.S.S.	BANISTER ENGINEERING CO.
ST. PAUL, MINN.	JUNE 7, 1967
SHEET 4 OF 24 SHEETS	

S.A.P. 60-217-03
S.A.P. 60-219-04
S.A.P. 60-227-03

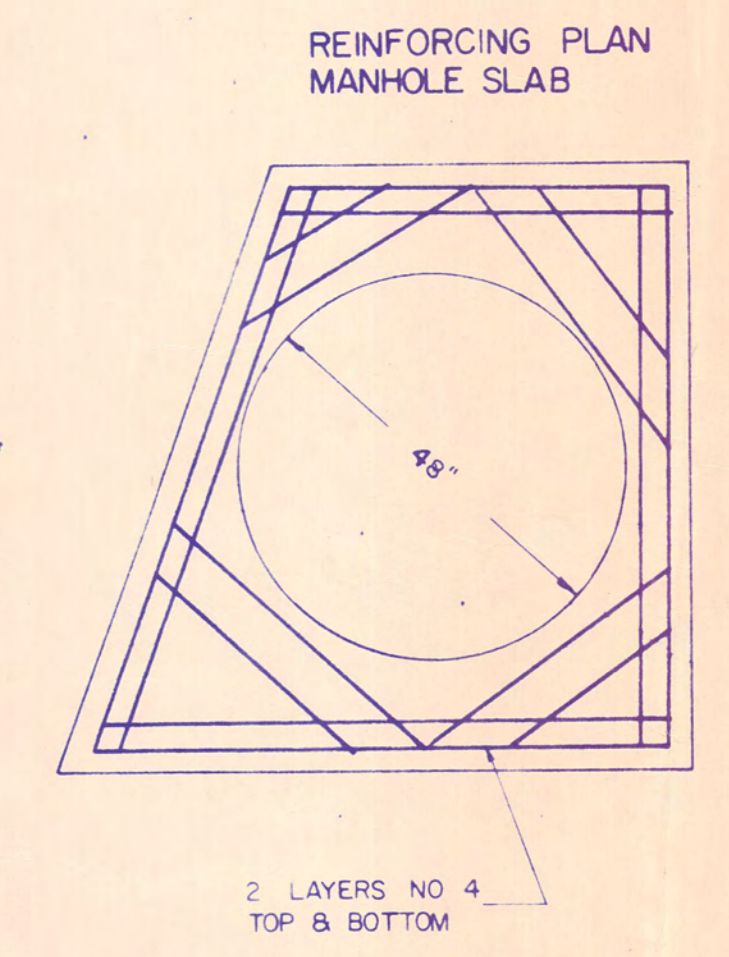
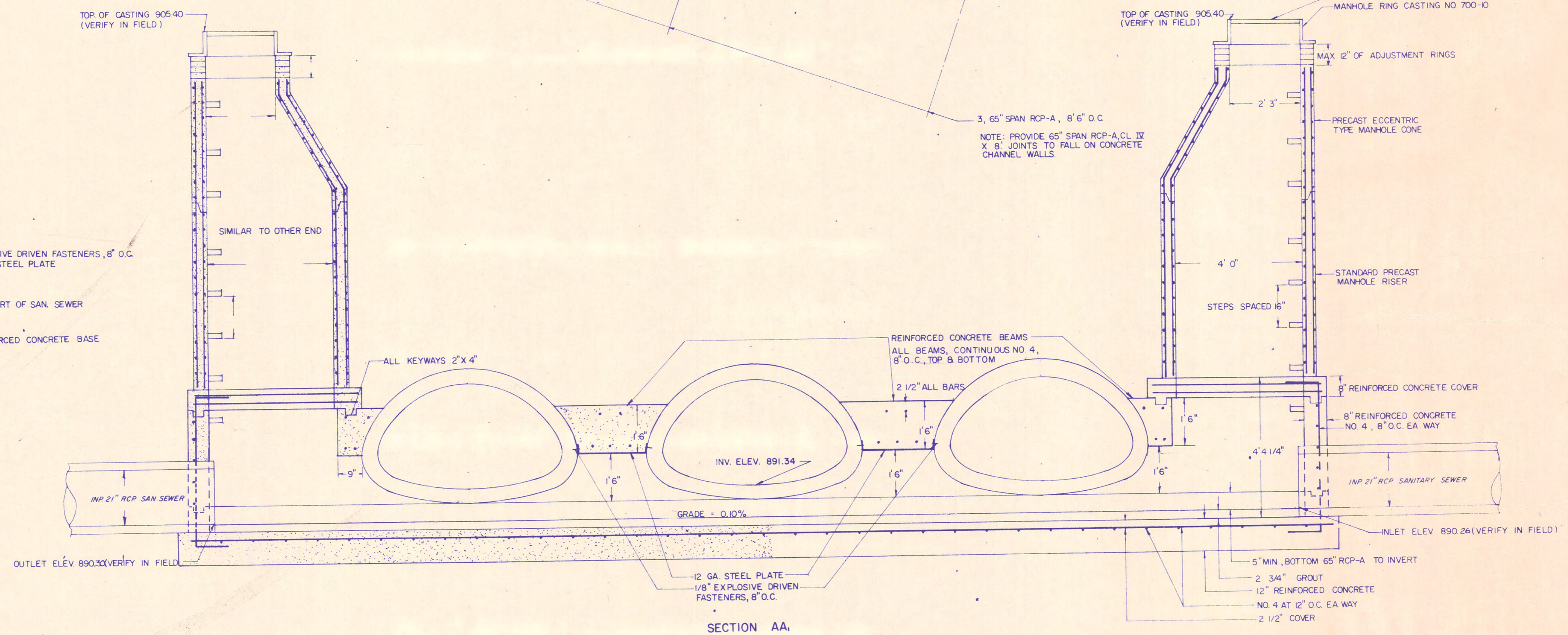
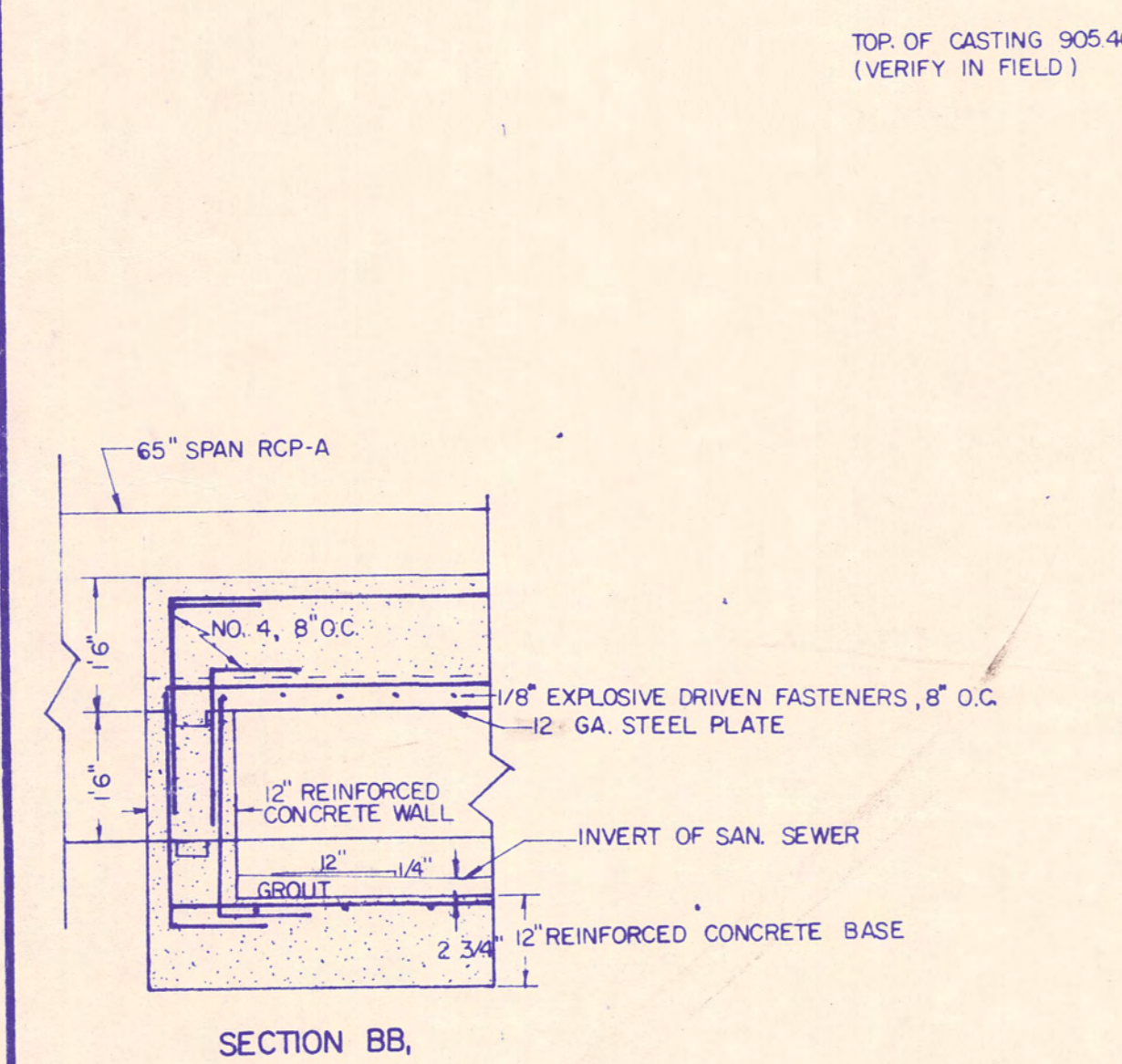
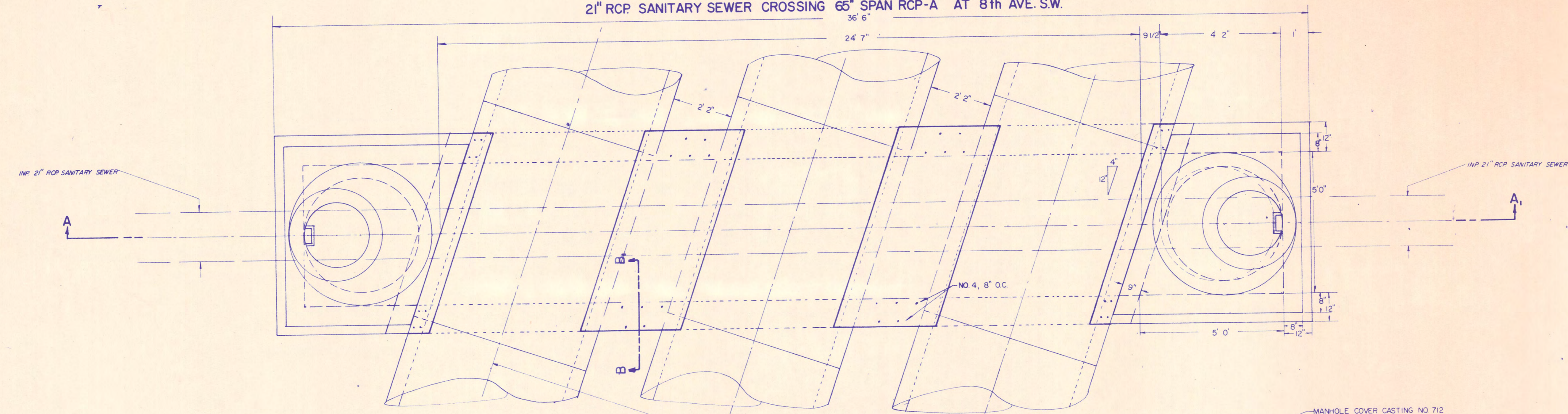
RAMSEY COUNTY, MINN. DITCH 2

DETAIL NO. $\frac{5}{13}$

21" RCP SANITARY SEWER CROSSING 65" SPAN RCP-A AT 8th AVE. SW.

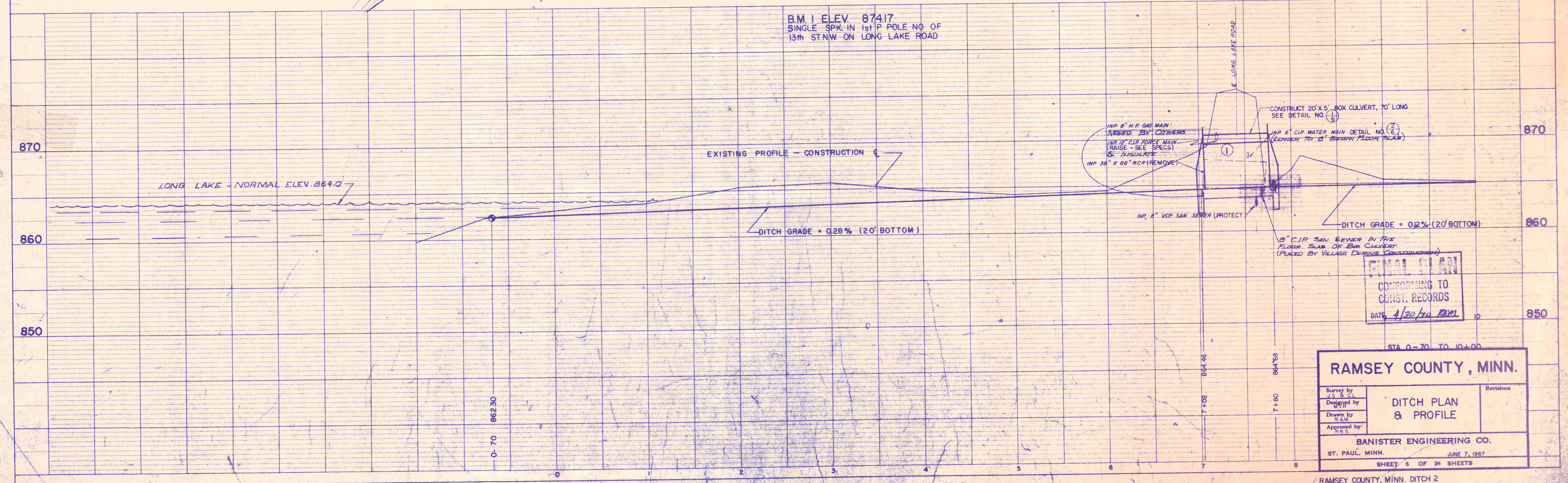
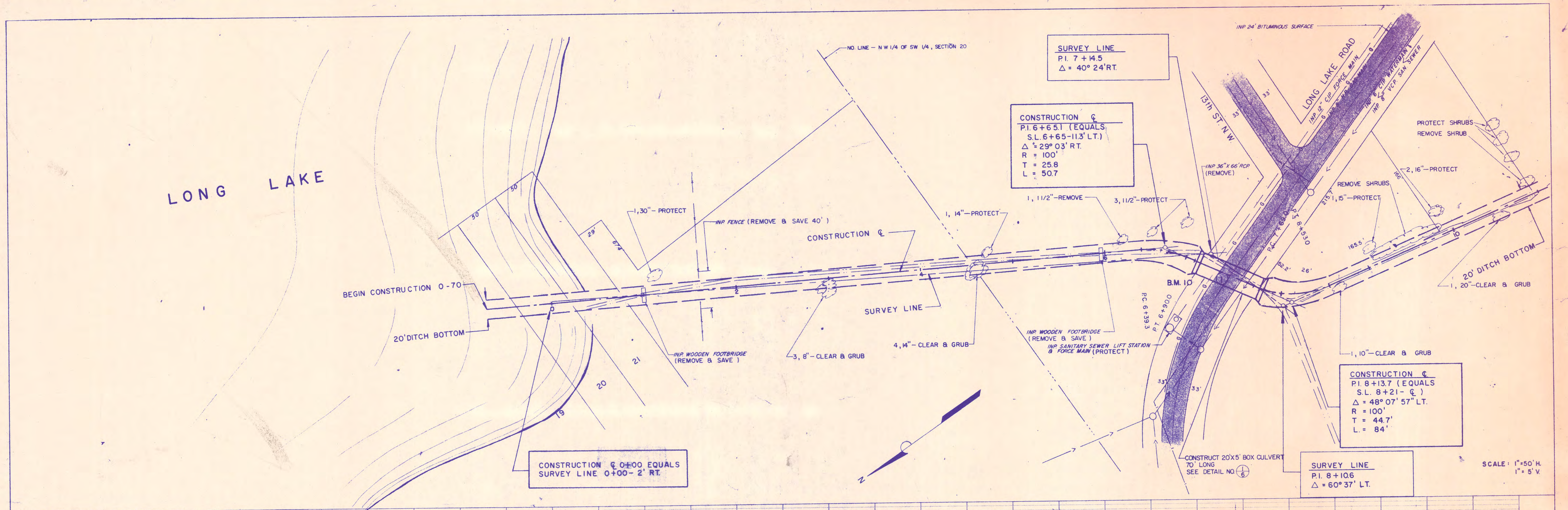


SCALE: 1/2" = 1'

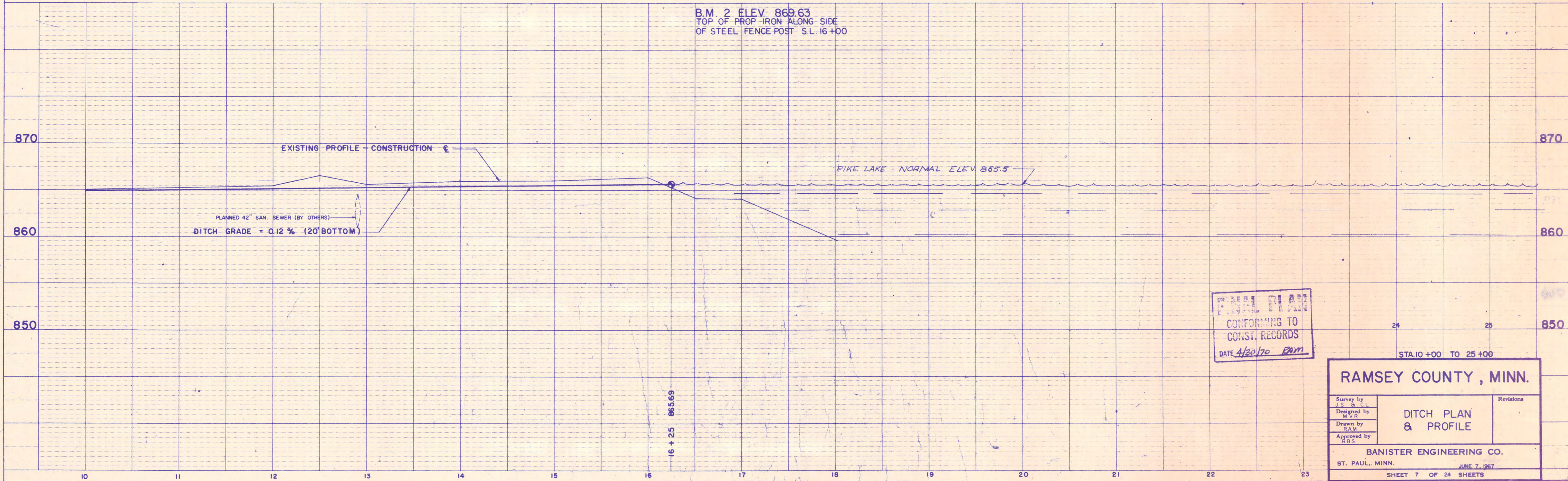
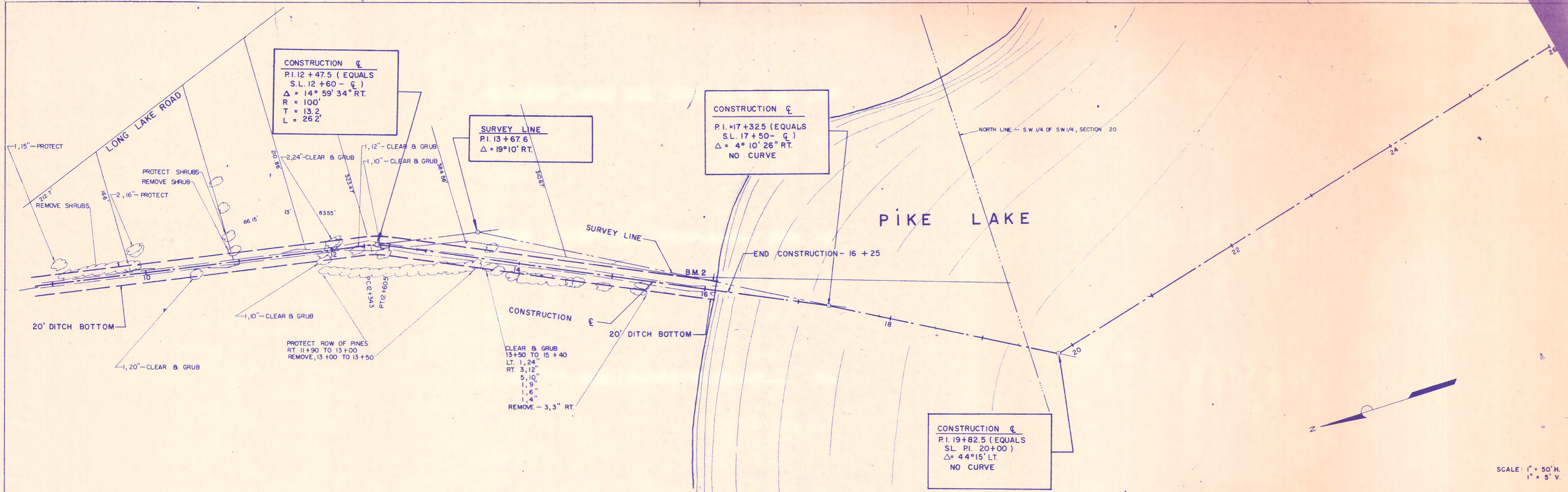


DATE 4/20/70
 [Signature]

RAMSEY COUNTY, MINN.		Revisions
Survey by J.S. B. CL.	SEWER DETAIL	
Designed by MVR		
Drawn by E.A.M.		
Approved by E.S.S.		
BANISTER ENGINEERING CO.		
ST. PAUL, MINN.		JUNE 7, 1967
SHEET 5 OF 24 SHEETS		



RAMSEY COUNTY, MINN.
 Survey by J.S. & Co.
 Designed by MVR
 Drawn by R.S.M.
 Approved by H.B.S.
DITCH PLAN & PROFILE
 BANISTER ENGINEERING CO.
 ST. PAUL, MINN. JUNE 7, 1967
 SHEET 6 OF 24 SHEETS
 RAMSEY COUNTY, MINN. DITCH 2



FINAL PLAN
 CONFORMING TO
 CONST. RECORDS
 DATE 4/20/70 *RAM*

STA. 10+00 TO 25+00

RAMSEY COUNTY, MINN.

Survey by J.S. & C.	Designed by M.V.R.	Drawn by RAM	Approved by R.B.S.	Revisions
DITCH PLAN & PROFILE				
BANISTER ENGINEERING CO.				
ST. PAUL, MINN. JUNE 7, 1967				

PIKE LAKE

CONSTRUCTION ϵ
 P.I. 31+10.5 (EQUALS
 S.L. 31+25 - 20' LT.)
 $\Delta = 16^\circ 33' 10''$ RT.
 NO CURVE

CONSTRUCTION ϵ
 P.I. 29+82.5 (EQUALS
 S.L. 30+00 - ϵ)
 $\Delta = 7^\circ 50'$ LT.
 NO CURVE

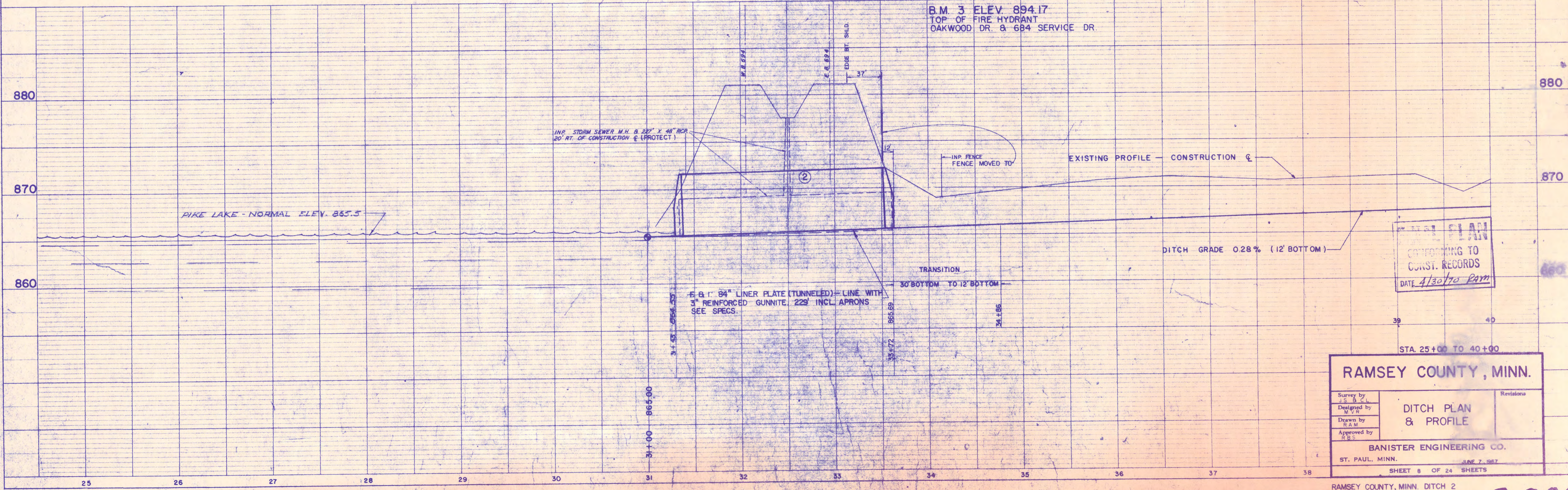
SURVEY LINE
 P.I. 31+00
 $\Delta = 5^\circ 40'$ RT.

CONSTRUCTION ϵ
 P.I. 34+86 (EQUALS
 S.L. 35+00 - ϵ)
 $\Delta = 3^\circ 03' 10''$ LT.
 NO CURVE

CONSTRUCTION ϵ
 P.I. 39+47.3 (EQUALS
 S.L. P.I. 39+61.3)
 $\Delta = 13^\circ$ RT.
 R = 100'
 T = 11.4'
 L = 22.7'



SCALE: 1" = 50' H.
 1" = 5' V.



PLAN
 CONFORMING TO
 CONST. RECORDS
 DATE 4/30/70 Ram

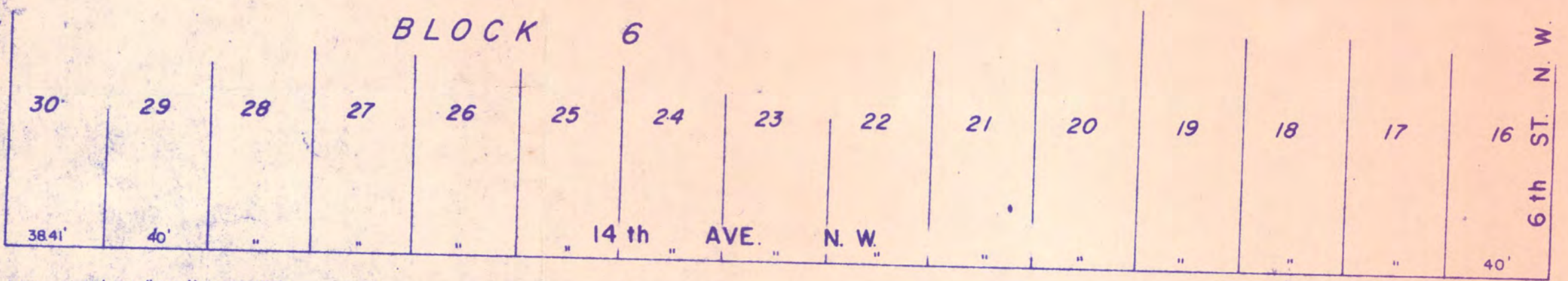
RAMSEY COUNTY, MINN.

Survey by J.S. & C.	Designed by M.V.R.	Drawn by R.A.M.	Approved by R.B.S.	Revisions
BANISTER ENGINEERING CO. ST. PAUL, MINN. JUNE 7, 1967				

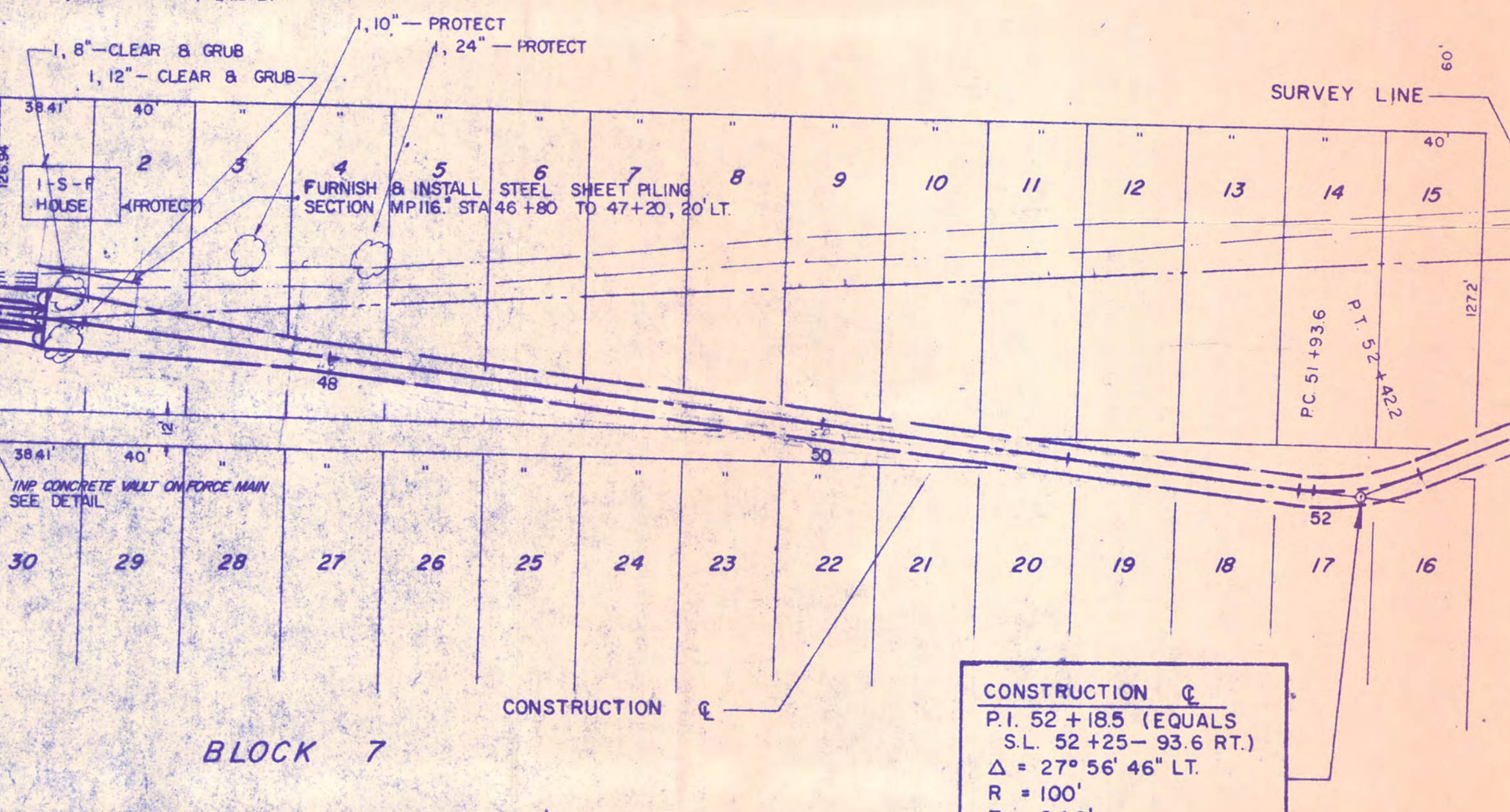
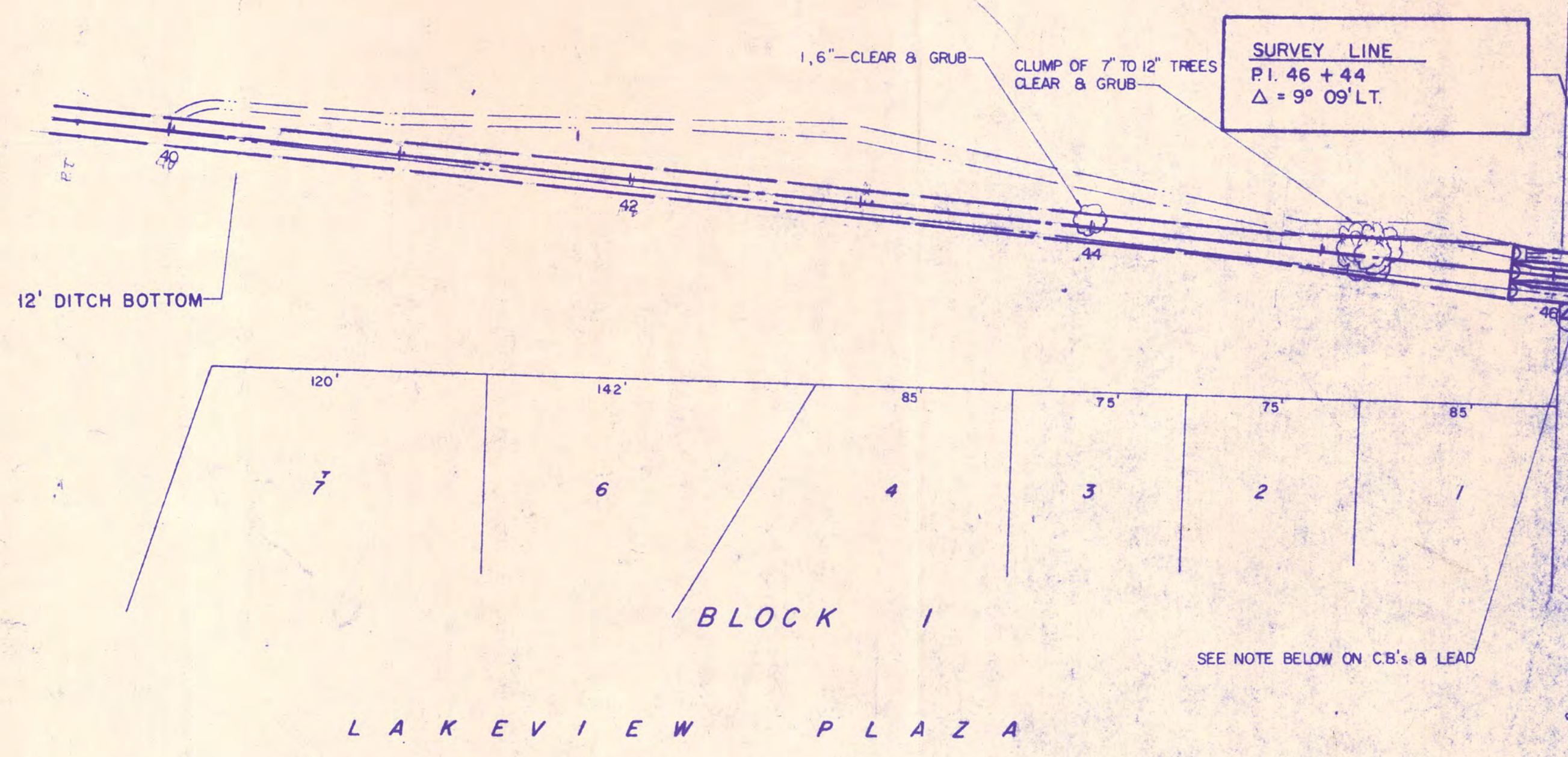
SHEET 8 OF 24 SHEETS

R-209

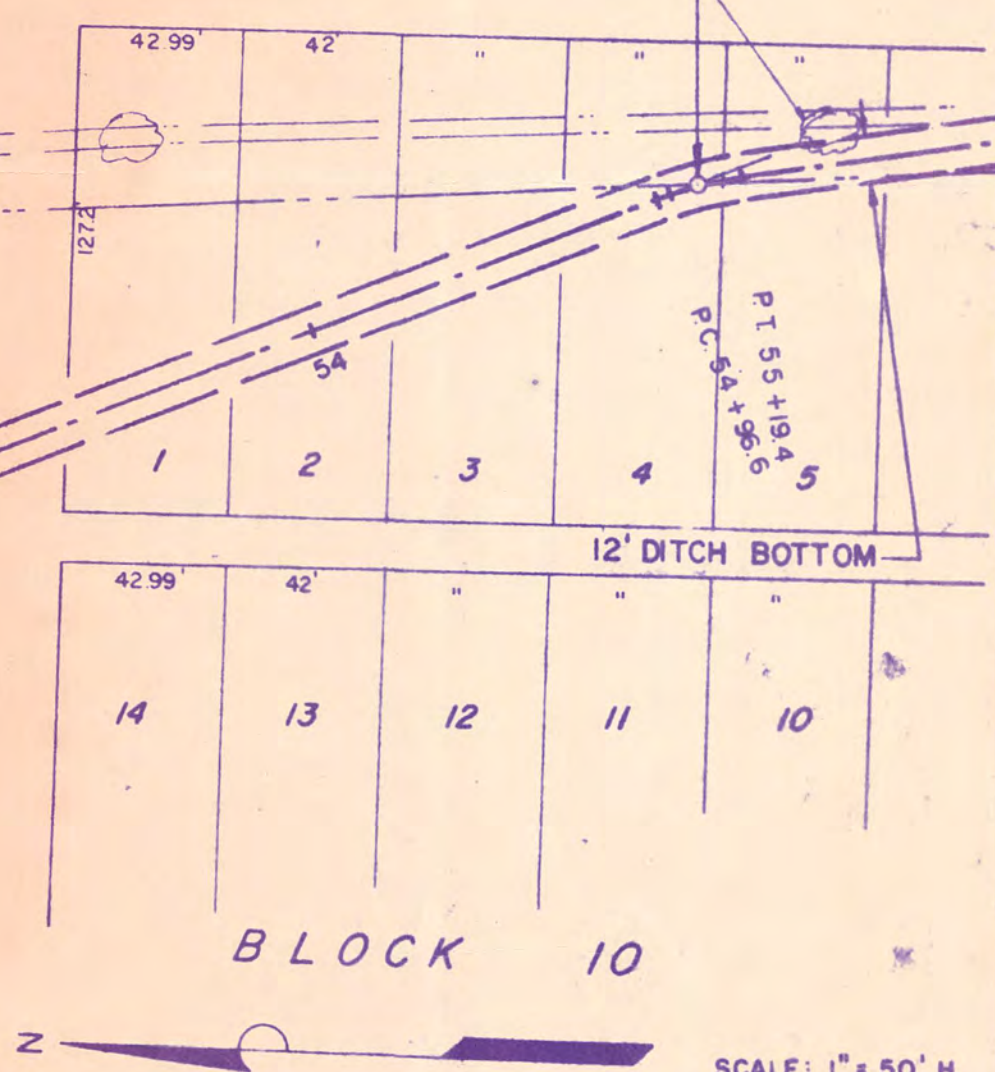
SYNDICATE ADDITION TO MPLS. STOCK YDS. BLOCK 11



CONSTRUCTION C
 P.I. 55+08.0 (EQUALS
 S.L. 55+00 - G)
 Δ = 13° 02' 14" RT
 R = 100'
 T = 11.4'
 L = 22.8'

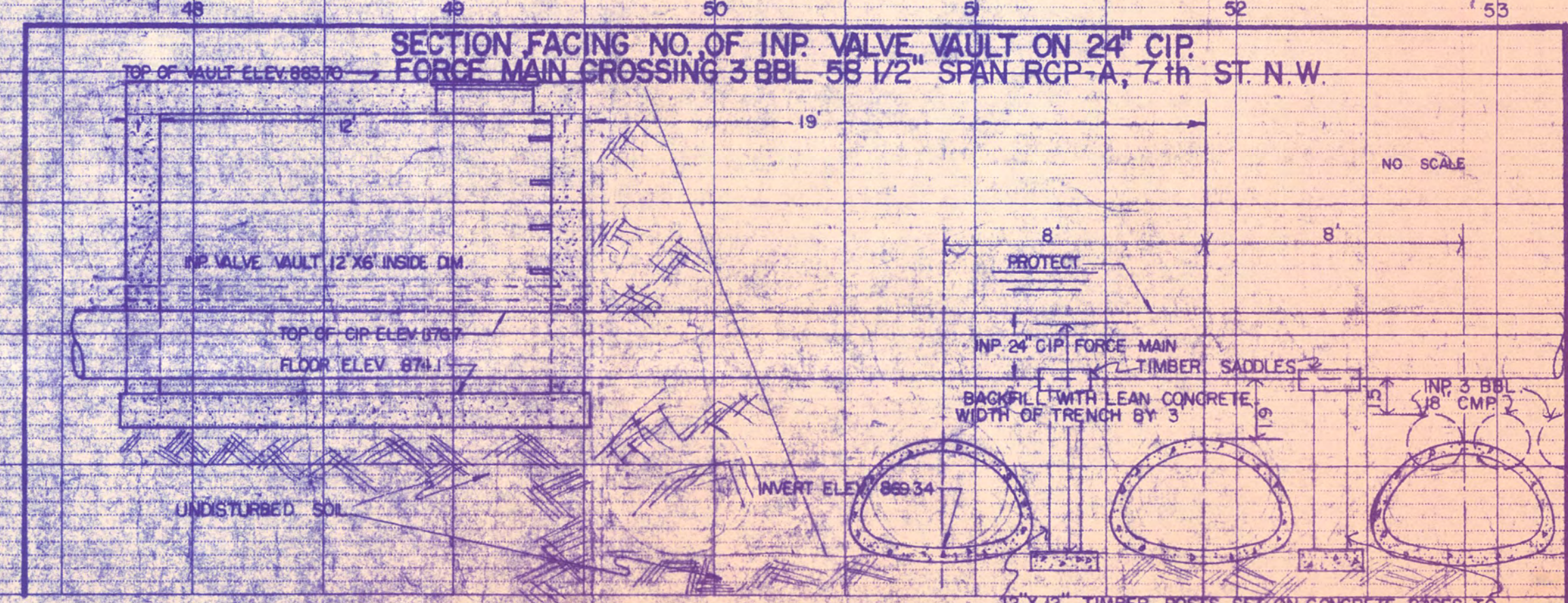
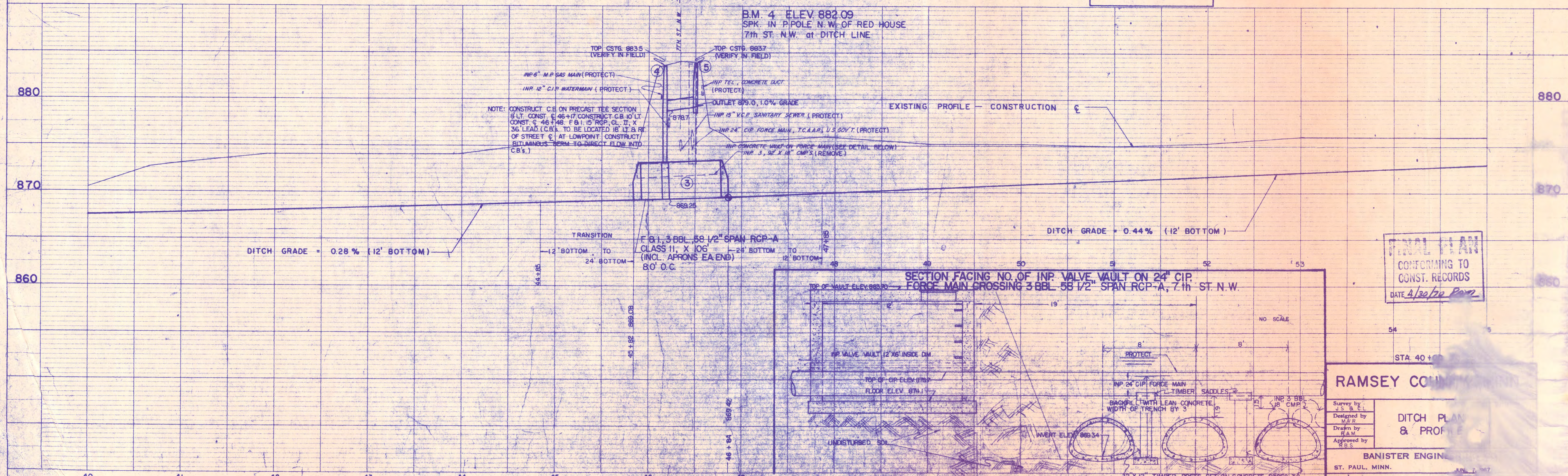


CONSTRUCTION C
 P.I. 52+18.5 (EQUALS
 S.L. 52+25 - 93.6 RT.)
 Δ = 27° 56' 46" LT.
 R = 100'
 T = 24.9'
 L = 48.8'



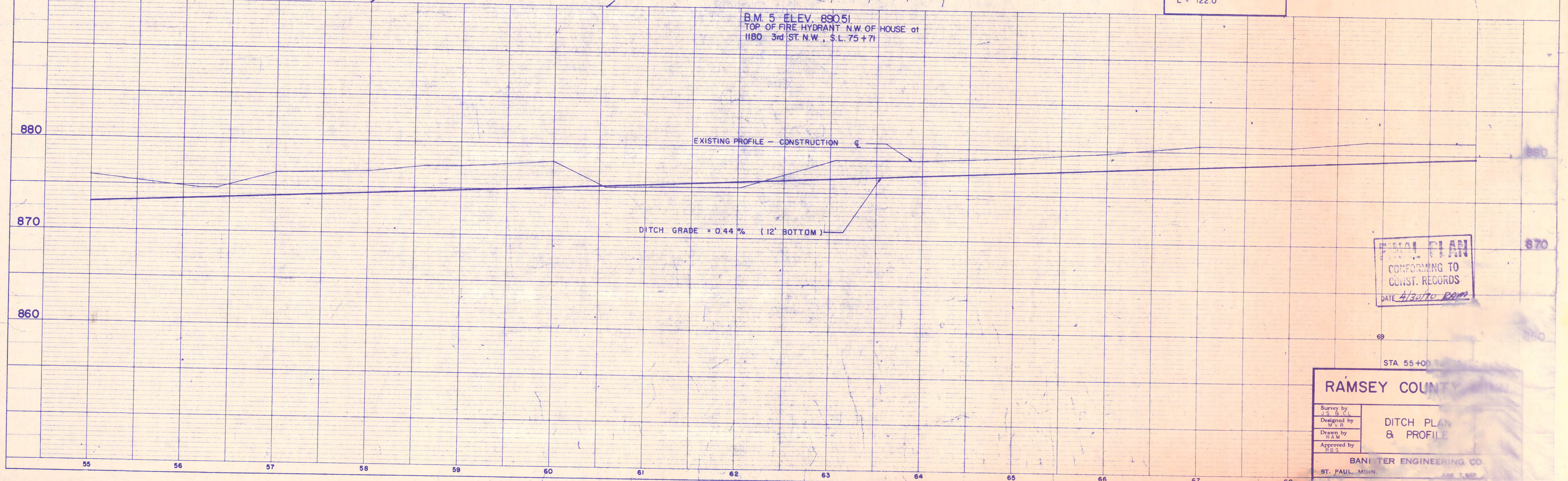
SCALE: 1" = 50' H.
 1" = 5' V.

B.M. 4 ELEV 882.09
 SPK. IN PIPE N.W. OF RED HOUSE
 7th ST. N.W. at DITCH LINE



FINAL PLAN
 CONFORMING TO
 CONST. RECORDS
 DATE 4/30/20 PER

RAMSEY COUNTY
 DITCH PLAN
 & PROFILE
 BANISTER ENGINEERS
 ST. PAUL, MINN.



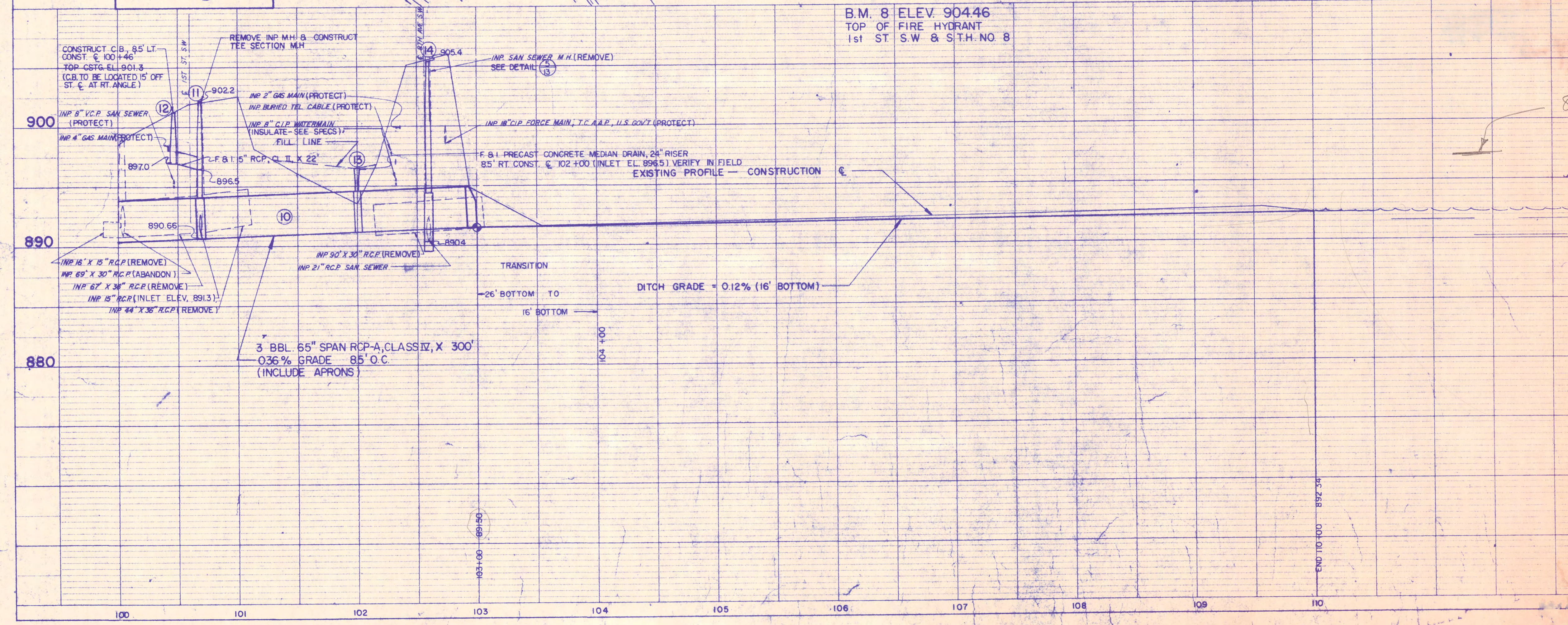
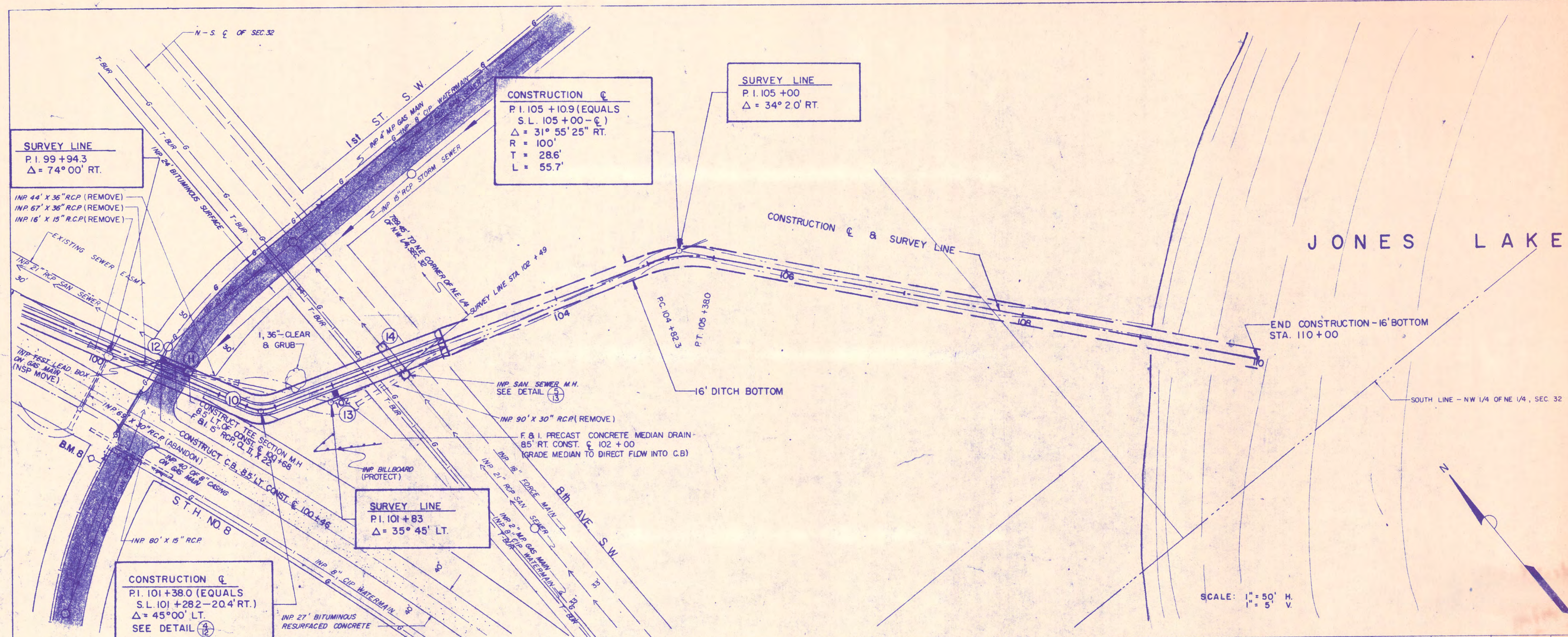
FINAL PLAN
 CONFORMING TO
 CONST. RECORDS
 DATE 4/30/70 R.M.

RAMSEY COUNTY

Survey by J.S. & C.	DITCH PLAN & PROFILE
Designed by W.V.R.	
Drawn by R.M.	
Approved by R.S.	

BANISTER ENGINEERING CO.
 ST. PAUL, MINN. 55102

SHEET 10 OF 24 SHEETS



897 - Flood 25' report as per
 Plan to Detail 2 Report

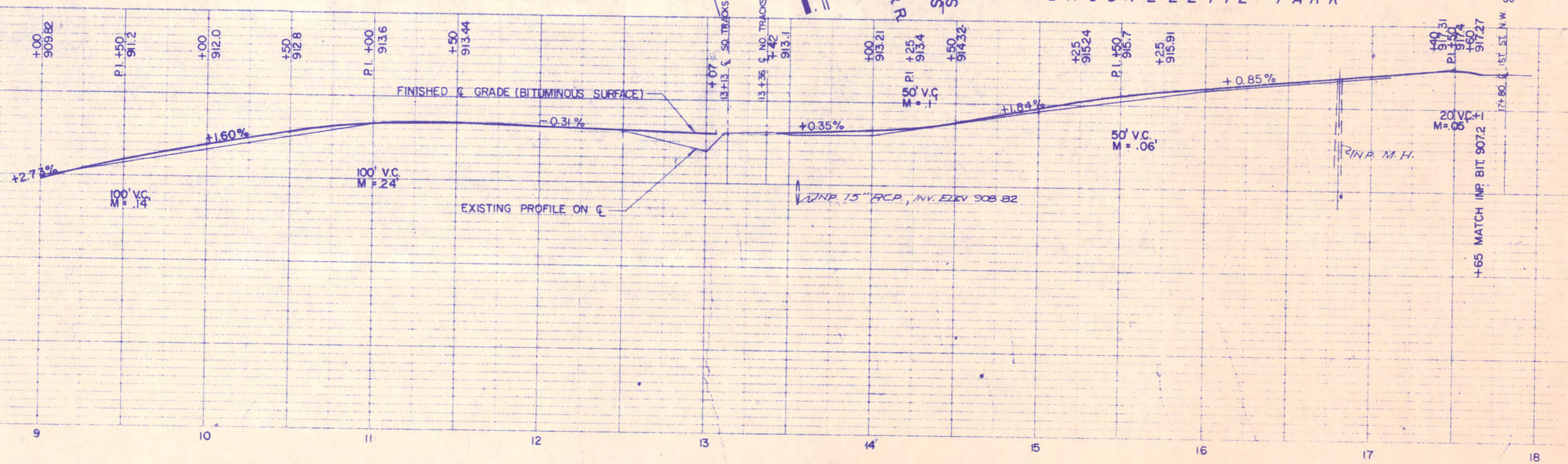
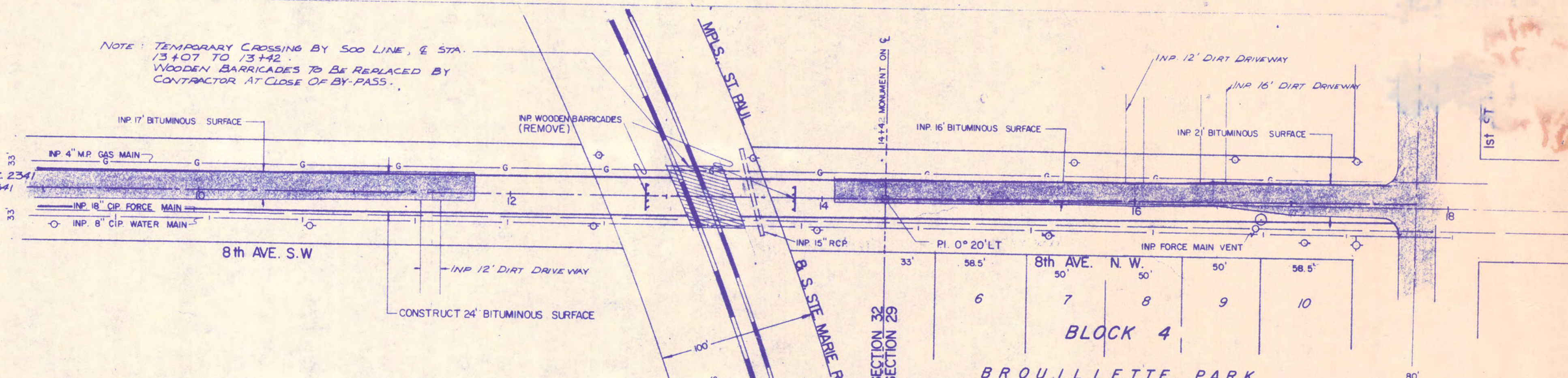
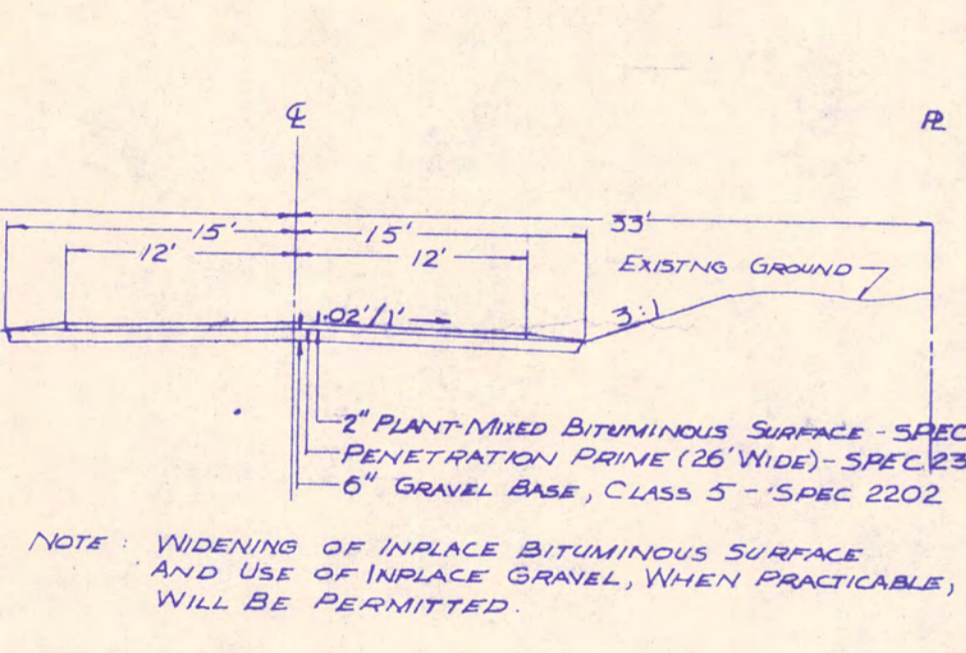
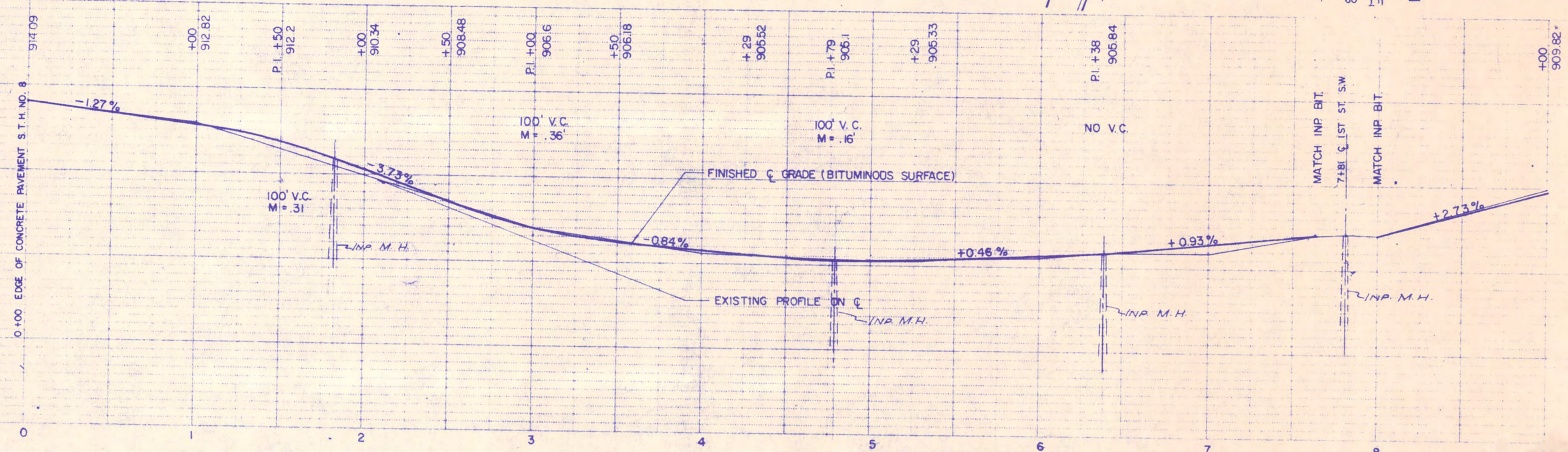
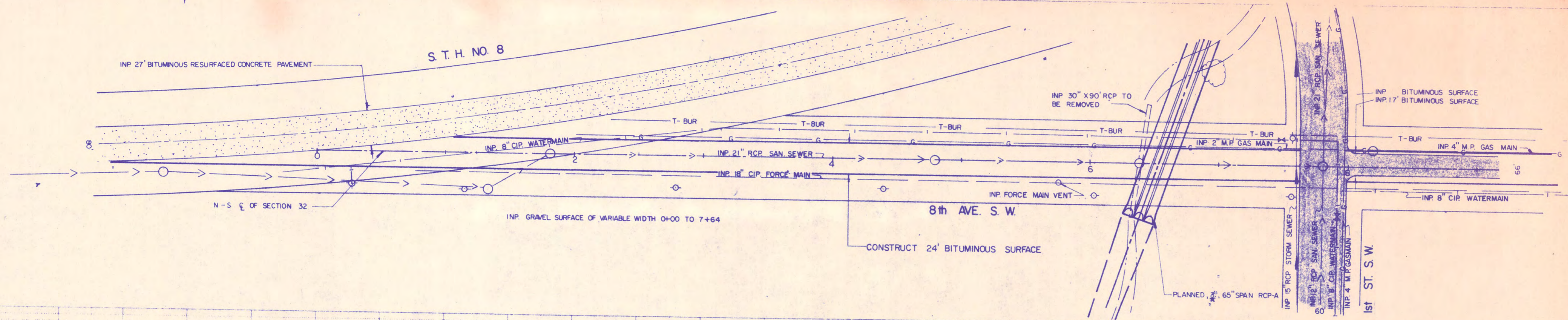
JONES LAKE - NORMAL FLEV 892.3

FINAL PLAN
 CONFORMING TO
 CONST. RECORDS
 DATE 4/30/90

RAMSEY COUNTY MINN.

Survey by
 J.S. & V.
 Designed by
 J.S.
 Drawn by
 J.S.
 Approved
 J.S.
 ST. PAUL, MINN.

**DITCH PLAN
& PROFILE**



RAMSEY COUNTY
 SHEET 14 OF 24
 RAMSEY COUNTY, MINN. DITCH 2

COMM. DITCH # 5