

CONVENTIONAL SIGNS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
EIGHTH LINE
RIGHT OF WAY LINE
PRO. ERTY LINE (Except Land Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER-LINE
RETAINING WALL
STEAM RAILROAD
ELECTRIC RAILROAD
RAILROAD RIGHT-OF-WAY LINE
CREEK
RAPIDS OR WATERFALL
DRY RUN
DRAINAGE DITCH
HIGH TENSION LINE
POWER POLE LINE
TELEPHONE OR TELEGRAPH LINE
CULVERT
DRAIN INLET
CLEARD RAIL
WIRE FENCE
RAILROAD SNOW FENCE
BOARD OR HIGHWAY SNOW FENCE
STONE WALL OR FENCE
HEDGE
WATER PIPE
SEWER PIPE
DRAIN TILE
GRAVEL PIT
SAND PIT
CLAY PIT
ROCK QUARRY
SPRINGS
WELSH
TRUNK HIGHWAY R.W.
RAILROAD F.W.
PRESENT ROAD R.W.
LIMITED ACCESS

TIMBER
BRUSH
ORCHARD
POCA LEDGE
SAND
EDGE OF CUT
TOE OF EMBANKMENT
CATCH BASIN
MANHOLE
FIRE HYDRANT
AND LAMP
OTHER LAMPS (State Road)
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
CATTLE GUARD
OVERHEAD (Highway Over)
UNDERPASS (Highway Under)
ABUTMENT WALL & PIER
BRIDGE
BUILDING (One Story Frame)
2 FRAME 1 CONCRETE
3 STONE 1 T-PILE
4 BRICK 5 STUCCO
IRON PIPE
STONE MONUMENT
WOOD STAKE ON HIGH
MEANER CORNER

35
36
21
35
36
21
35
36
21

NOTE: SECTION NUMBERS READ FROM THE SOUTH

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
CONSTRUCTION PLAN FOR BRIDGES NO. 9209, 9210 AND 9345
TRUNK HIGHWAY NO. 694-393

BRIDGE NO. 9209: FROM A POINT 307.5' SOUTH AND 1975.9' WEST OF THE EAST 1/4 CORNER SECTION 26, T.30N, R.23W TO A POINT 288.5' SOUTH AND 2037.0' WEST OF THE EAST 1/4 CORNER SECTION 26, T.30N, R.23W.
BRIDGE NO. 9210: FROM A POINT 227.3' SOUTH AND 1950.9' WEST OF THE EAST 1/4 CORNER SECTION 26, T.30N, R.23W TO A POINT 208.3' SOUTH AND 1912.0' WEST OF THE EAST 1/4 CORNER SECTION 26, T.30N, R.23W.
BRIDGE NO. 9345: FROM A POINT 352.4' SOUTH AND 1989.9' WEST OF THE EAST 1/4 CORNER SECTION 26, T.30N, R.23W TO A POINT 333.3' SOUTH AND 2051.0' WEST OF THE EAST 1/4 CORNER SECTION 26, T.30N, R.23W.

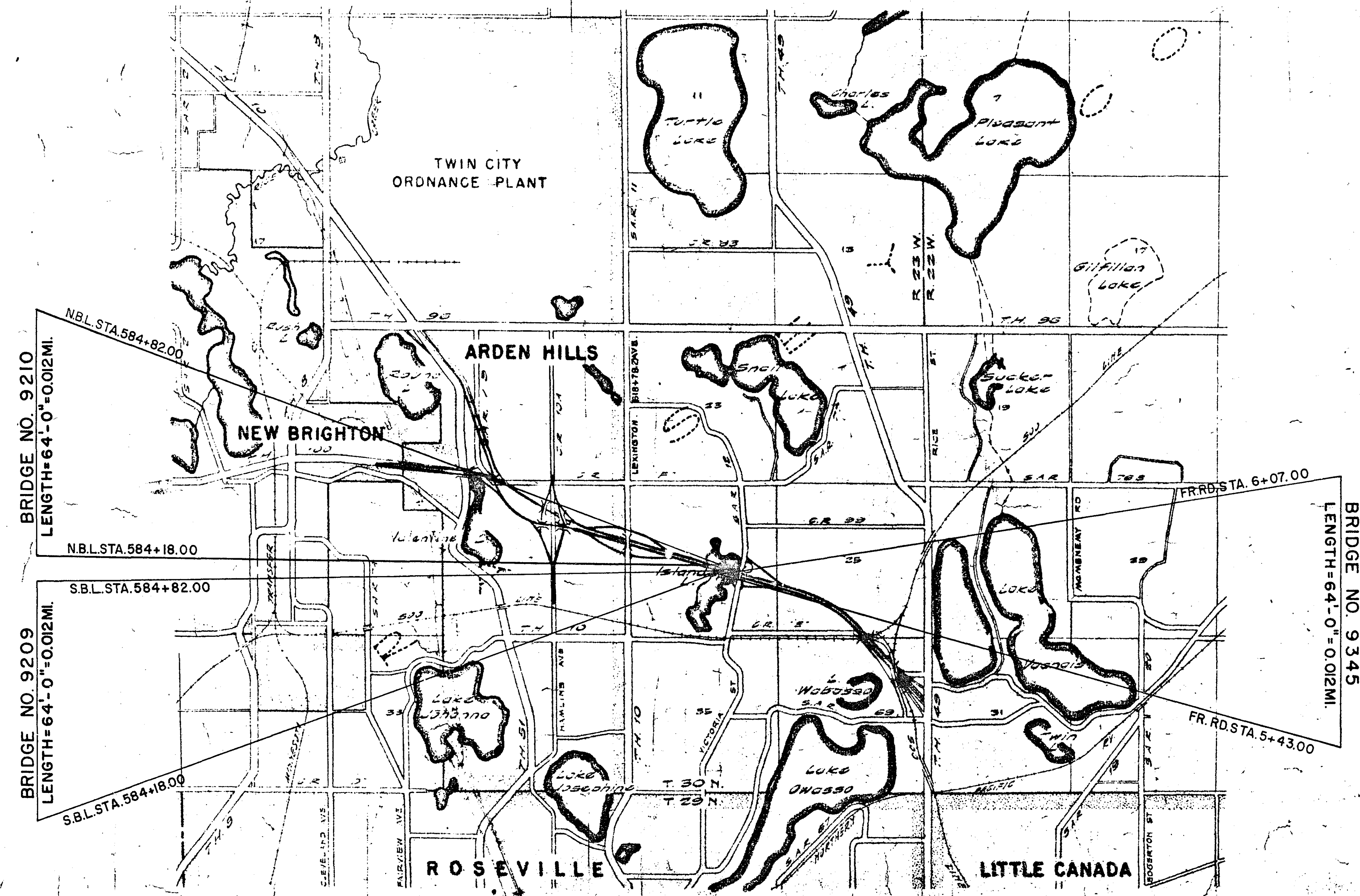
MINNESOTA PROJECT 1694-5(12) 230

GROSS LENGTH	FEET	MILES
BRIDGES-LENGTH	192 FEET	0.036 MILES
EXCEPTIONS-LENGTH	FEET	MILES
NET LENGTH	192 FEET	0.036 MILES

STATE PROJECT NO. 6285-12 (T.H. 694=393)

GROSS LENGTH	FEET	MILES
BRIDGES-LENGTH	192 FEET	0.036 MILES
EXCEPTIONS-LENGTH	FEET	MILES
NET LENGTH	192 FEET	0.036 MILES

LAYOUT
Scale 1 inch = 2640 Feet



Right of Way Approval: *[Signature]* 3-13-59
Recommended for Approval: *A.C. de Bonte* 3-6-59
Recommended for Approval: *E.J. Maloney* 4-8-59
Recommended for Approval: *D.T. Barnes* 3-10-59
Approved: 3/6/59 *[Signature]*

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED: *[Signature]*
DISTRICT ENGINEER

DATE: _____

MICRO-FILMED
RAMSEY CO. ENGR.

$f_s = 20,000$ REINFORCEMENT
 $f_c = 1,350$ $n = 10$

THE MINNESOTA "SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" DATED JULY 1, 1947 AND SUBMITTED FOR APPROVAL BY THE DIVISION ENGINEER OF THE BUREAU OF PUBLIC ROADS ON OCT 15, 1947, AS MODIFIED BY "SUPPLEMENT NO. 1 THERETO" DATED APRIL 15, 1953 AND SUBMITTED FOR APPROVAL BY THE DIVISION ENGINEER OF THE BUREAU OF PUBLIC ROADS ON MARCH 15, 1953 SHALL GOVERN.

EDGES OF CONCRETE ON ALL EXPOSED CONSTRUCTION OR EXPANSION JOINTS SHALL BE FORMED WITH $\frac{1}{2}$ " V STRIPS UNLESS OTHERWISE NOTED.

OTHERWISE NOTED.
ASPHALT FOR PAINTED JOINTS TO
BREAK CONC. BOND SHALL BE M.H.D. 3166
OR APPROVED EQUAL.
ALL KEYWAY SIZES ARE NOMINAL.

STANDARD B SERIES REFERENCE
PLATES: B25, B100, B105.

NO.	DESCRIPTION
	TITLE SHEET
1	GENERAL PLAN AND ELEVATION
2	DETAILS OF ABUTMENTS
3	PIER, CONC. PILE, & DETAILS.
4	SUPERSTRUCTURE DETAILS
5	RAILING & DRAIN DETAILS
6	SURVEY SHEET

Val. 5. *Morse*
Date 3/1/57 Reg. No. 3505

B. M. ELEV. 950.36 (M.S.L. 1929 ADJ.)
SPIKE IN 18" OAK
55' RT. STA. 582+60

TRUNK HIGHWAY NO. 694
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9345

FRONTAGE ROAD OVER ISLAND LAKE
IN SHOREVIEW

20'-24'-20' CONTINUOUS SLAB SPAN

26 FT. ROADWAY, 15 FT. SIDEWALK, 15 FT. CURB

GENERAL PLAN AND ELEVATION
SEP 26 T. 30 N. R. 32 W.

SEC. 26
MOUNDS VIEW TWR
APPROVED: B-2-50

APPROVED: 5-2-5
J. C. B. T. [Signature]

BRIDGE ENGINEER

NO.	DATE	PLAN REVISIONS	BY	CK.
1	4-14-59	BR. 9209 MOVED 2 FT. SOUTH	RT.	L.B.

S.P. NO 6285-12 (TH. 694-393)

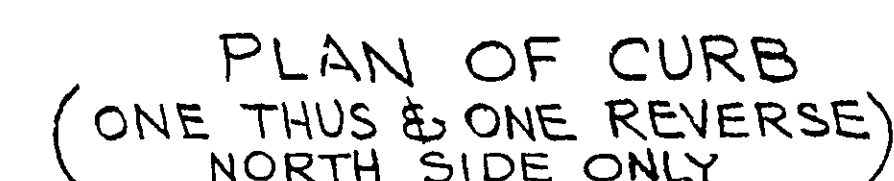
SHEET NO. 1 OF 6 SHEETS 9245



PILE NOTES

PLAN OF SIDEWALK SLAB

(ONE THUS & ONE REV.)
SOUTH SIDE ONLY
NOTE: CURB & SIDEWALK TO BE ON SAME
GRADE AS BRIDGE & ARE TO BE
PLACED AFTER CONCRETE DECK HAS
BEEN PLACED.



○ CUT ONE LONG & ONE SHORT BAR FROM EACH.

NOTE: SEE LIST ON THIS SHEET FOR JOINT FILLER MAT.

□ PAYMENT PER LIN. FT. INCLUDES CONC., REINFORCEMENT
AND ALL MATERIALS AND LABOR NECESSARY TO
FURNISH CONC. PILES AT BRIDGE SITE. (SEE SPEC. PROV.)

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9345

DETAILS OF ABUTMENTS

APPROVED: 3-2-59

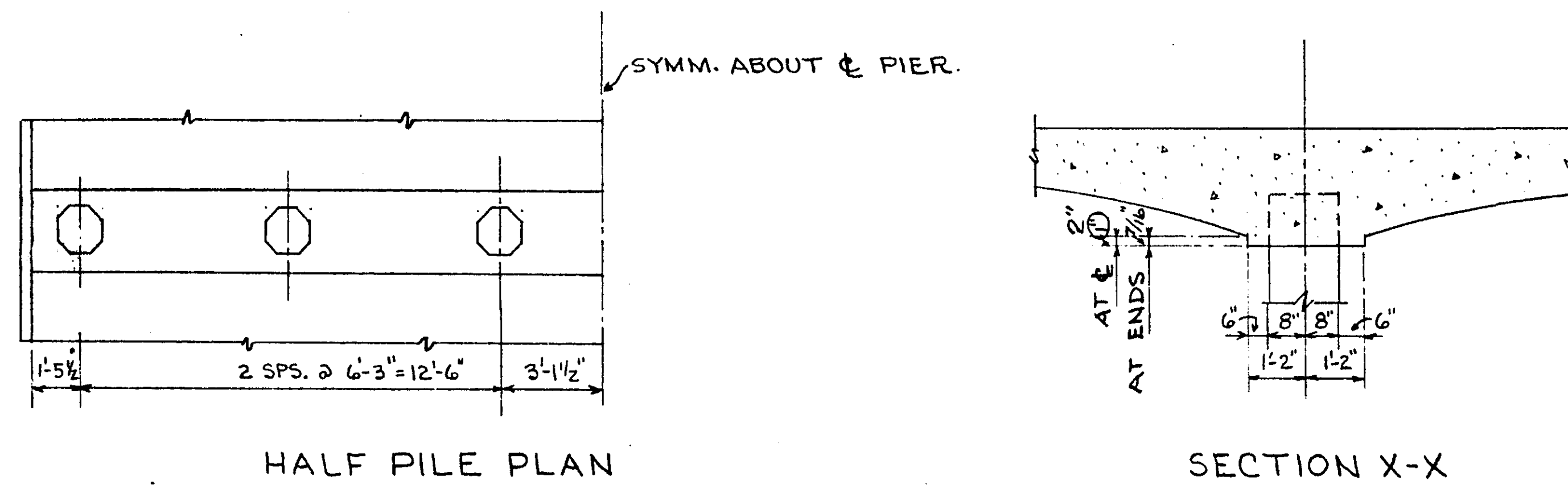
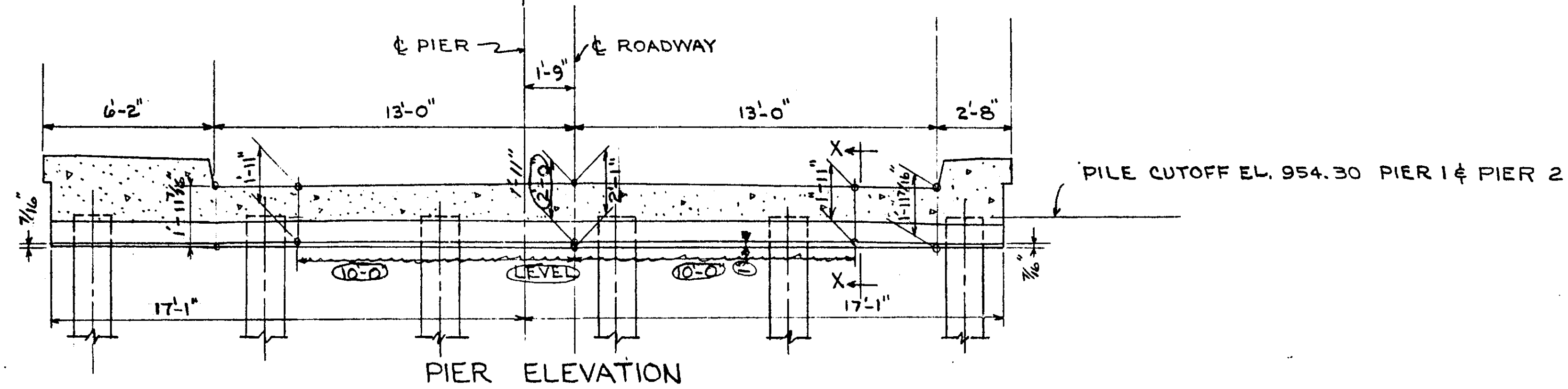
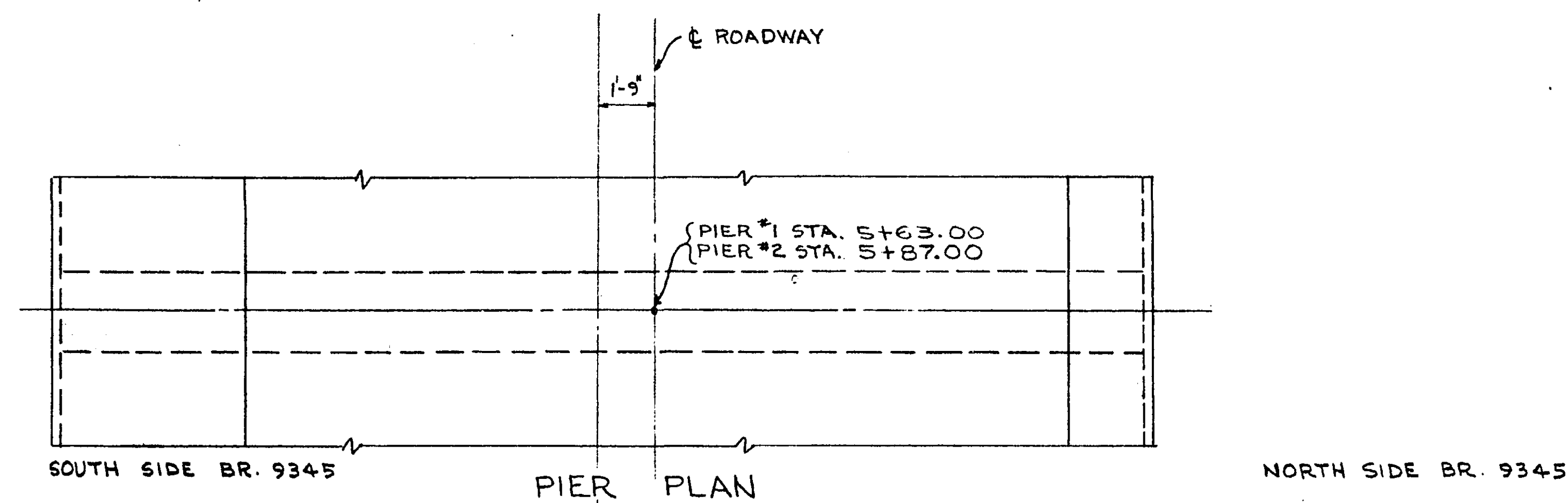
Microfilm

SHEET NO. 2 OF 6 SHEETS

0343

5750

MAKE 2 ABUTS. THUS AS NOTED

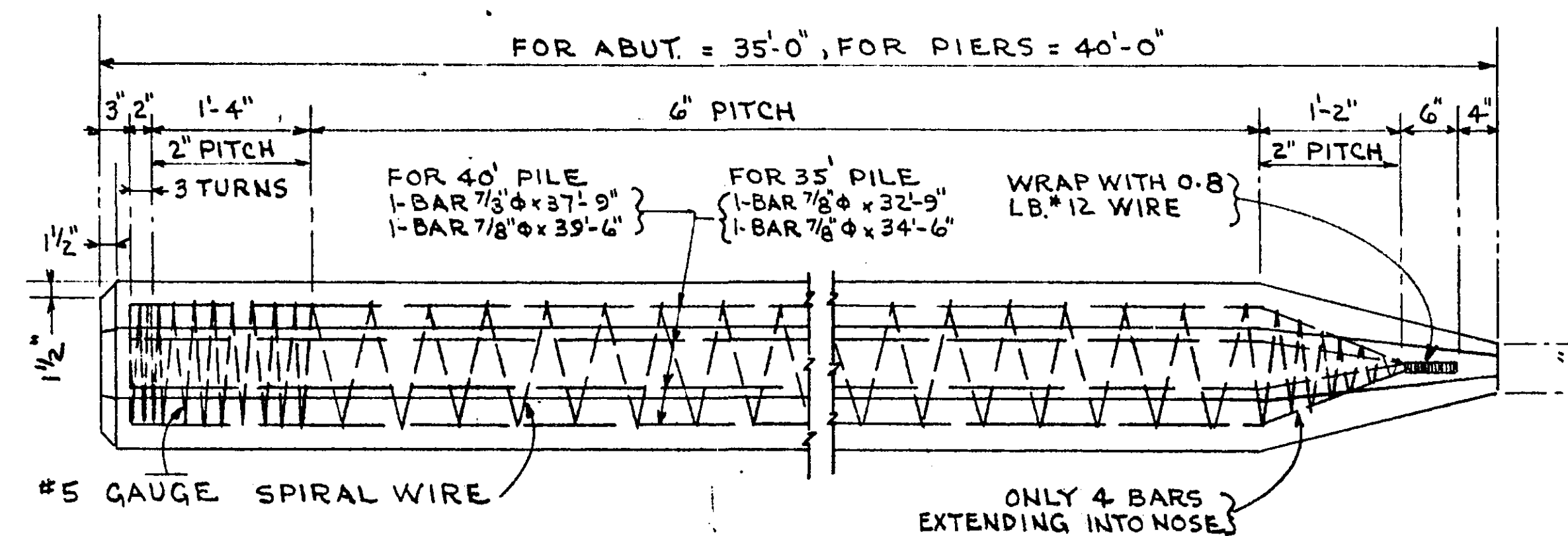
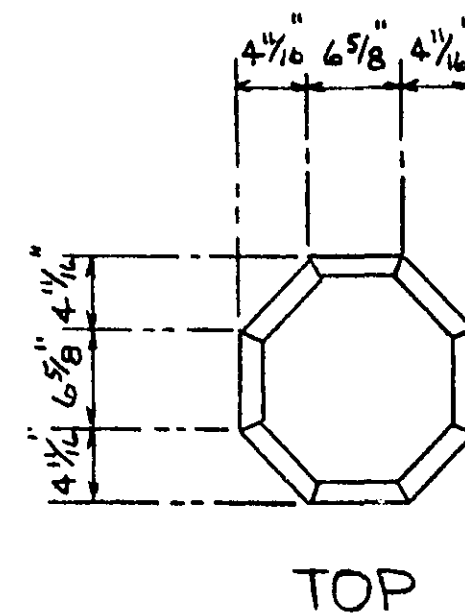


NOTE: SEE SHEET NO. 4 FOR PIER REINF.

NOTE:
ONE END PILE TO BE DRIVEN FIRST, IN ORDER TO
PERMIT DRIVING ADDITIONAL PILING IF REQUIRED
BEARING IS NOT OBTAINED.

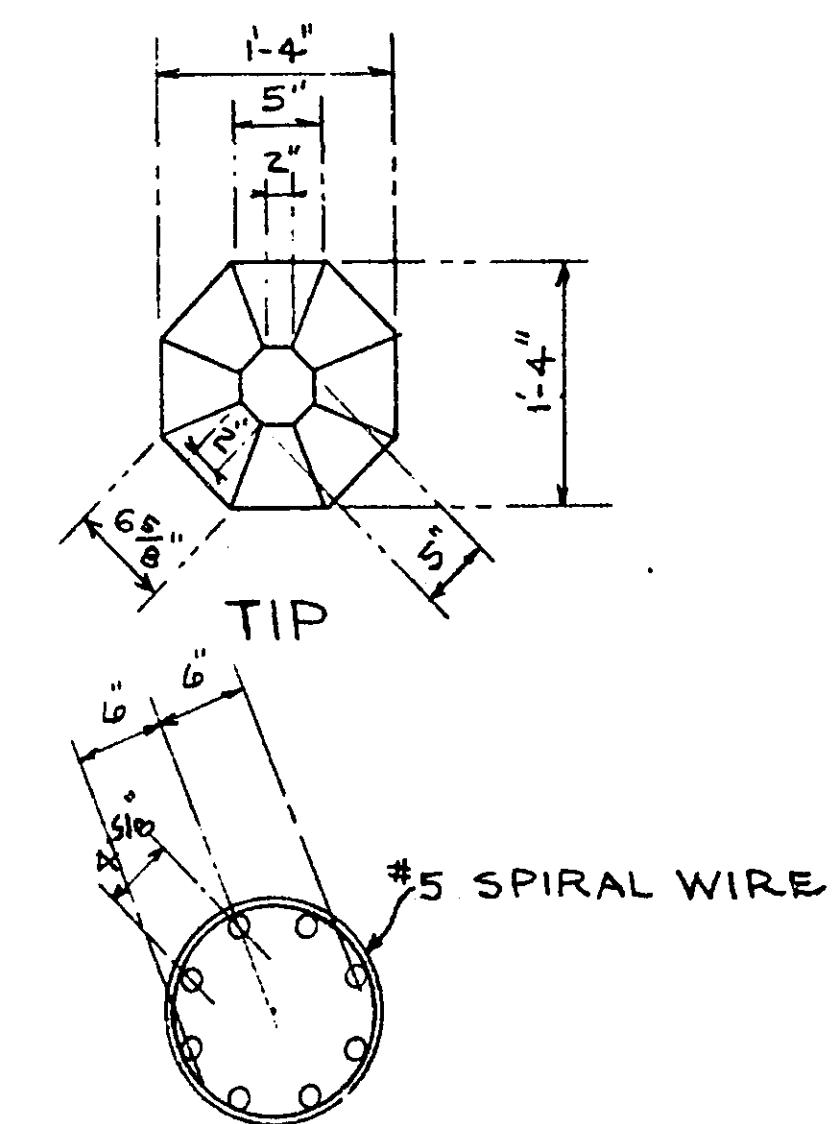
PILE NOTES

12 PRECAST CONCRETE PILES 40 FT. LONG REQUIRED FOR 2 PIERS - BR. 9345
ESTIMATED PENETRATION - SAME AS LENGTHS GIVEN.
ALL PILES TO BE DRIVEN TO A MINIMUM BEARING OF 30 TONS EACH.
VERTICAL DEAD LOAD PER PILE = 15.9 TONS (COMPUTED).
JETTING OF PILES MAY BE REQUIRED TO OBTAIN
SATISFACTORY PENETRATION.
CARE MUST BE USED TO ASSURE PILING TO BE VERTICAL AND
IN STRAIGHT ALIGNMENT (SEE SPEC. PROVISIONS)



DETAIL OF 16" PRECAST CONCRETE PILE

MAKING, HANDLING & DRIVING PRECAST CONCRETE PILING
TO CONFORM TO M.H.D. 2452.
ESTIMATED CONCRETE FOR 1-35' PILE = 1.86 CU. YDS. , WT. = 7,550#
" REINFORCEMENT BARS FOR 1-35' PILE = 599 LBS.
" CONCRETE FOR 1-40' PILE = 2.13 CU. YDS. , WT. = 8,660#
" REINFORCEMENT BARS FOR 1-40' PILE = 620 LBS.
SPECIFICATION FOR WIRE IS A.S.T.M. SPEC. A82 NO. 5 COLD DRAWN.
CONCRETE MIX. 3Y4
SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS.



SUMMARY OF QUANT. FOR 2 PIERS BR. 9345
REINF. & CONC. INCLUDED WITH SUPERST. SH. #4
PRECAST CONC. PILING. 480 LIN. FT.

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9345

PIER & PILE DETAILS

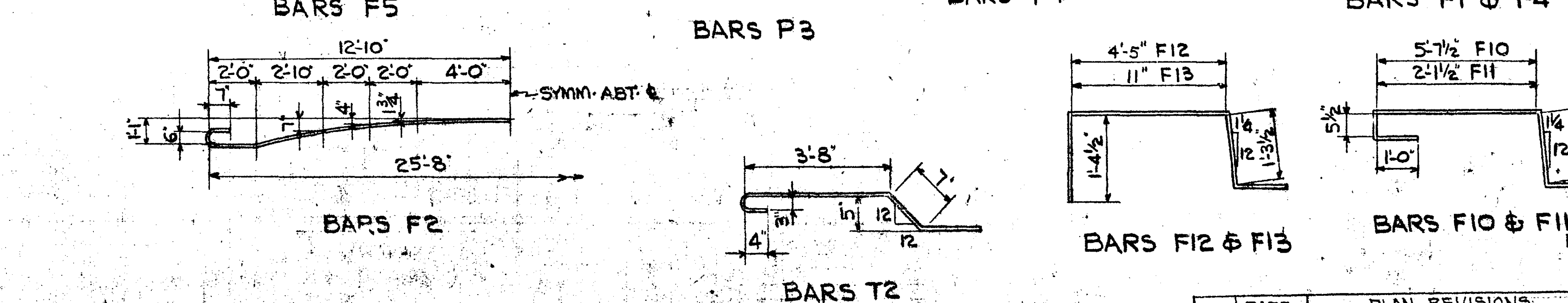
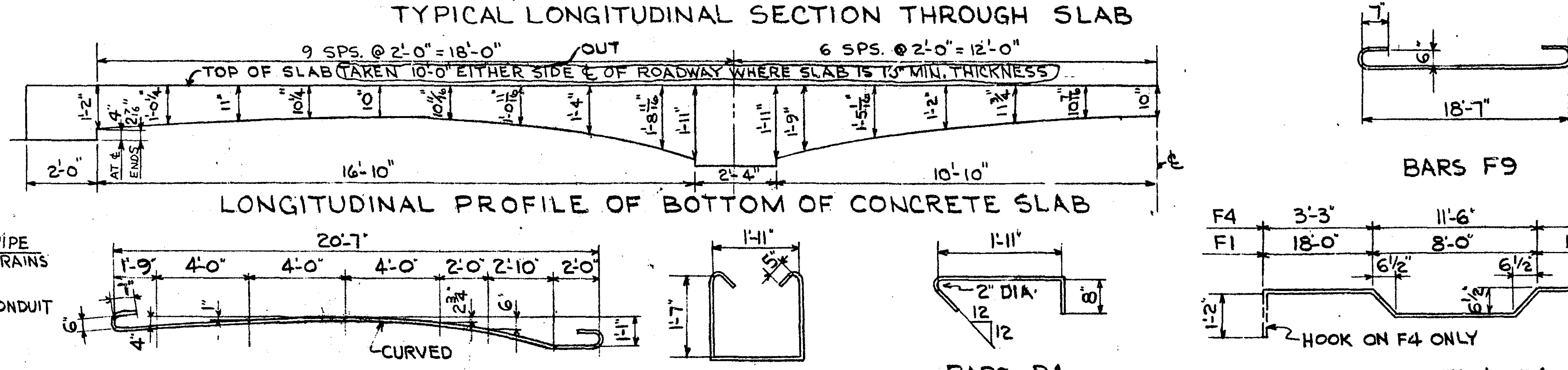
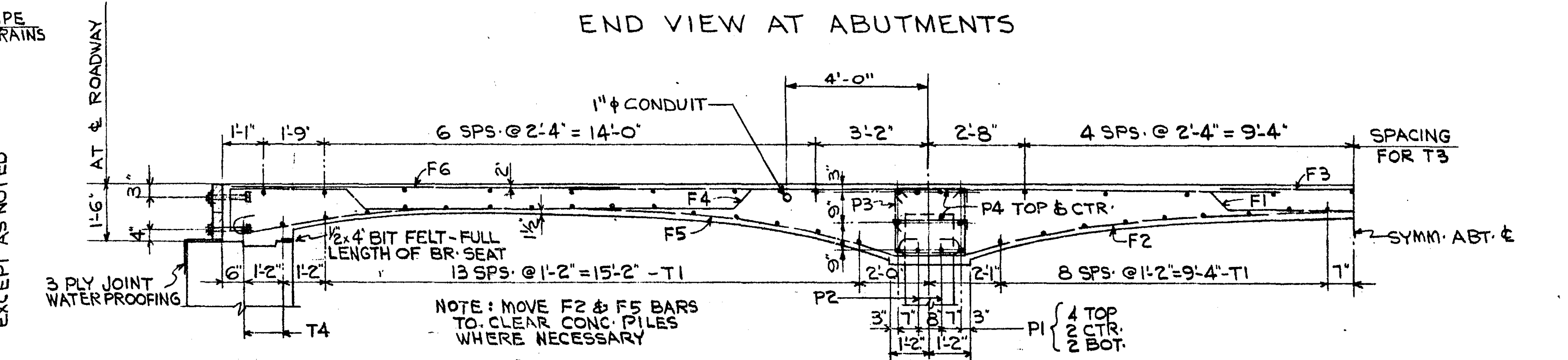
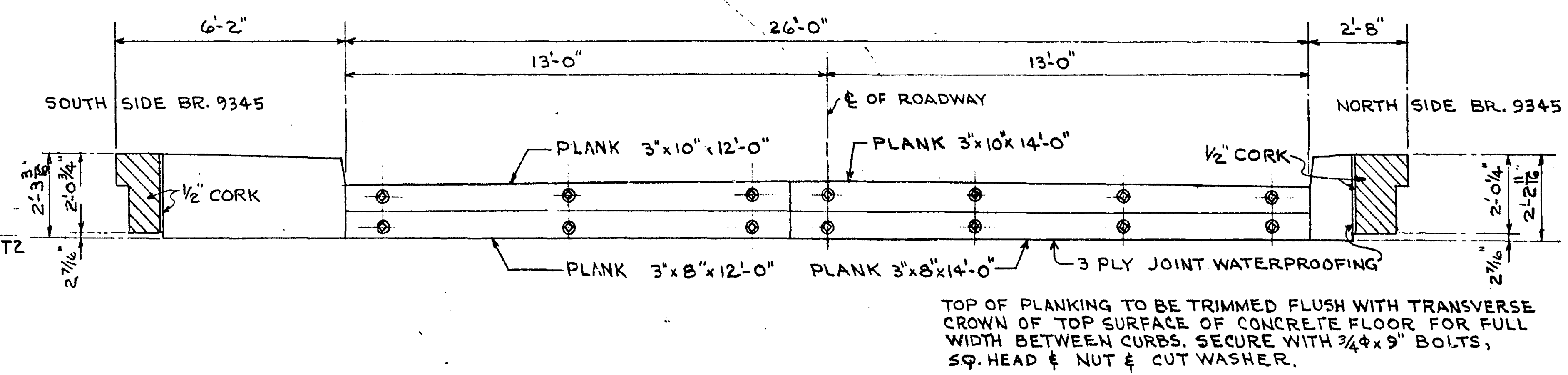
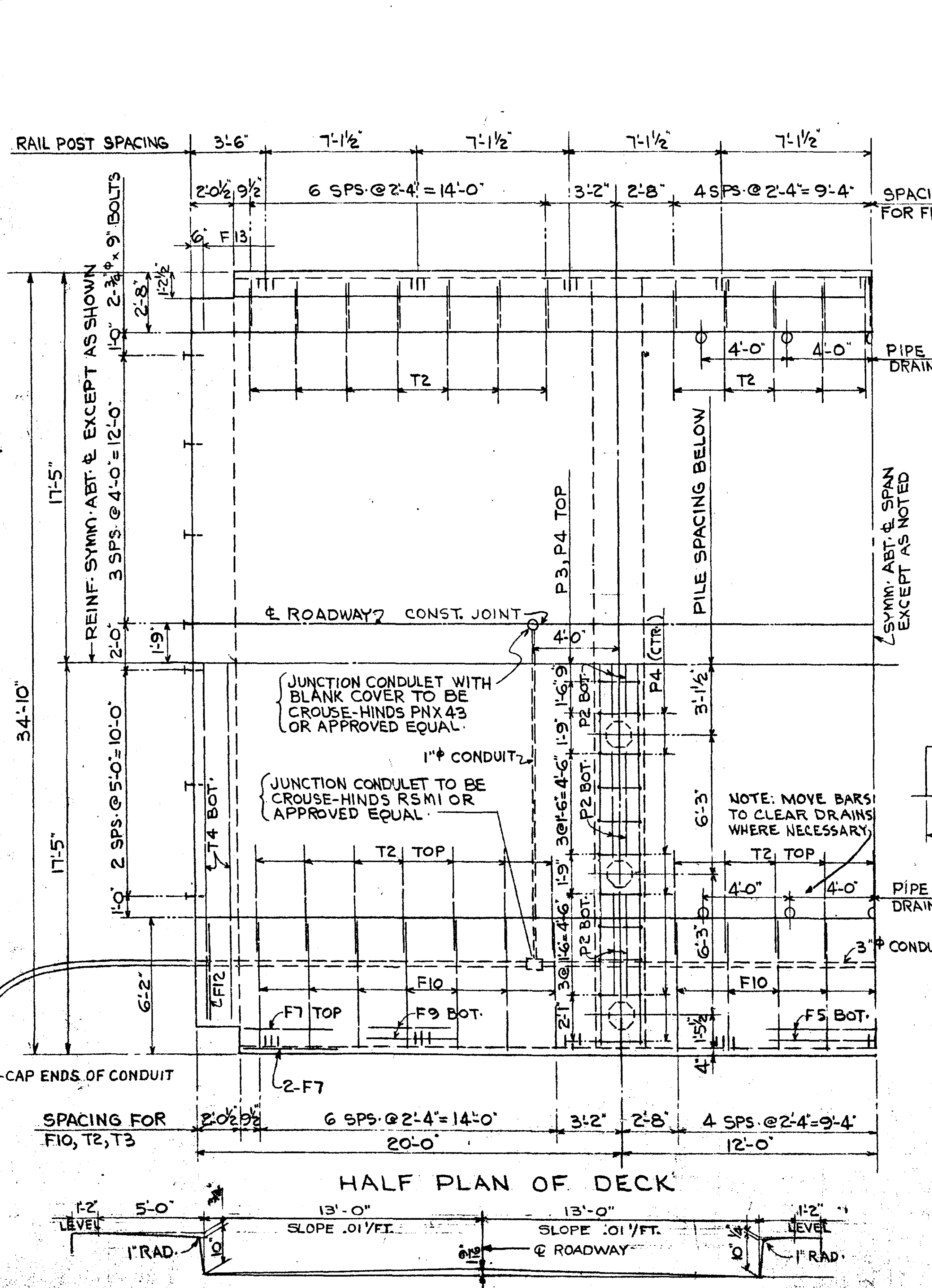
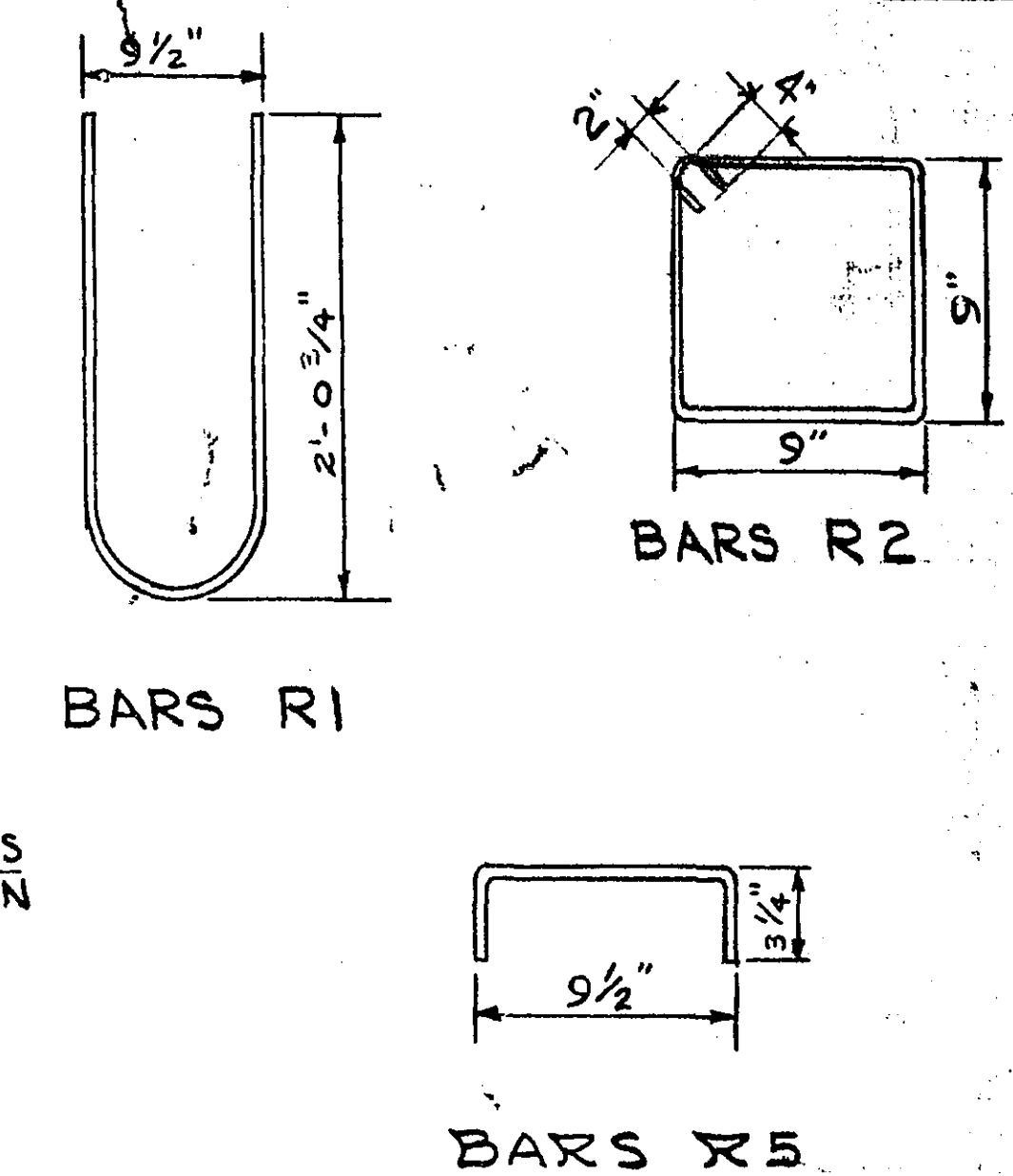
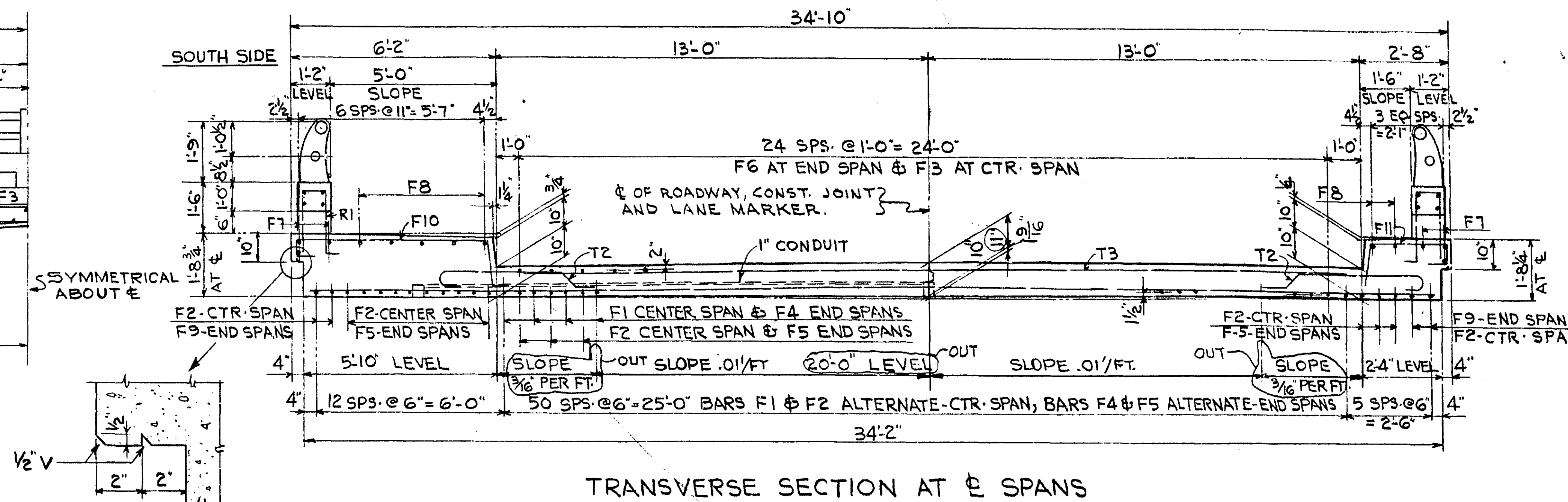
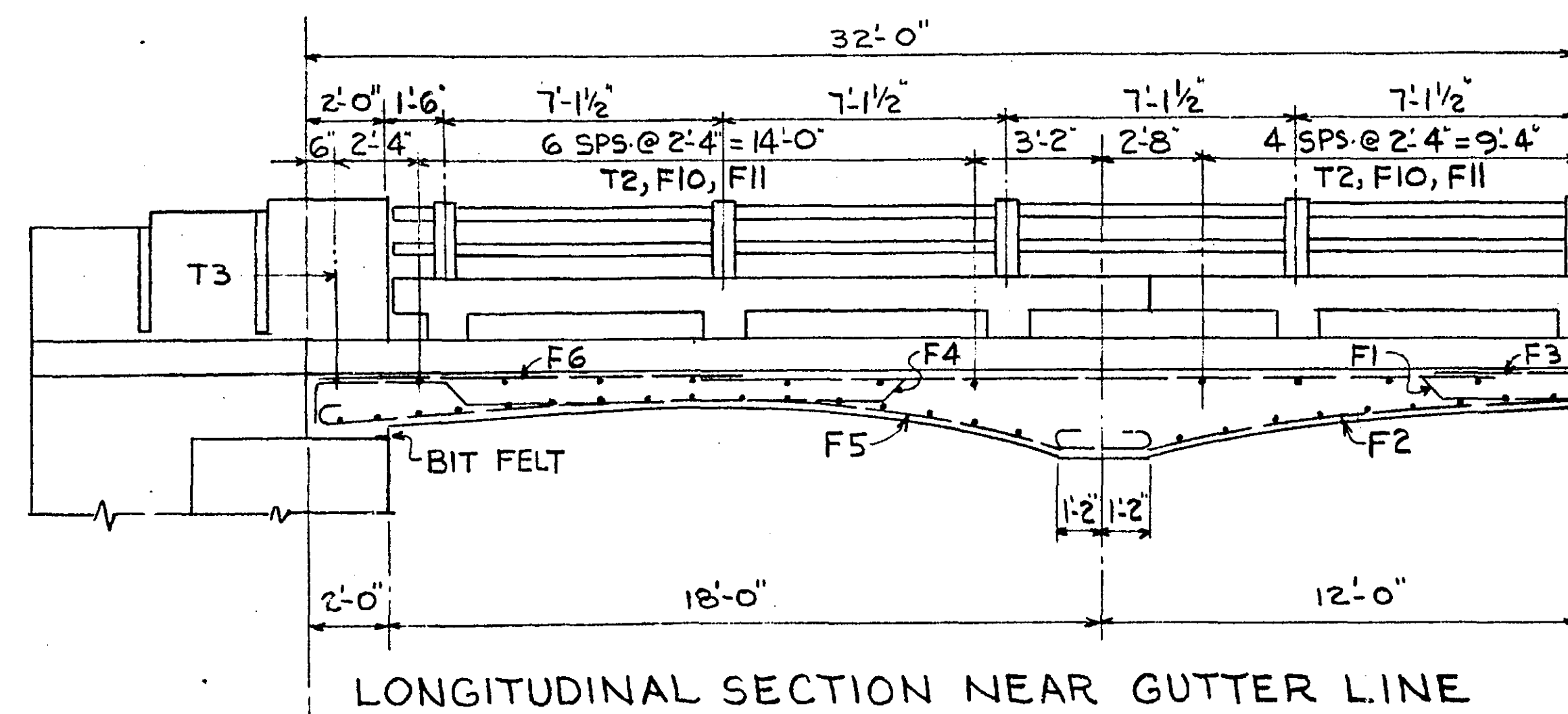
APPROVED: 3-2-59

MICRO-FILM

NO.	DATE	PLANS REVISIONS	BY	CK.
1	12-7-59	SLAB CROSS SECTION REVISED	LB	RT

SHEET NO. 3 OF 6 SHEETS

9345



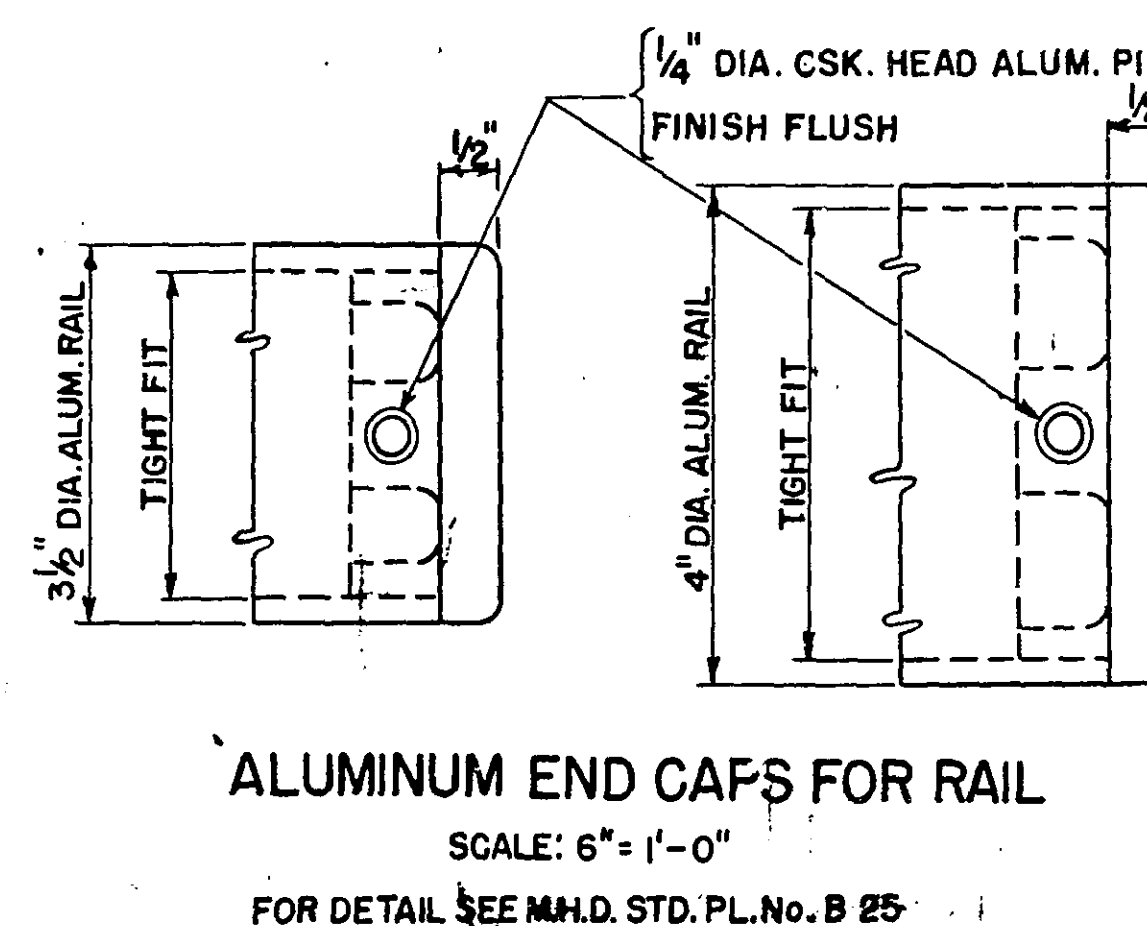
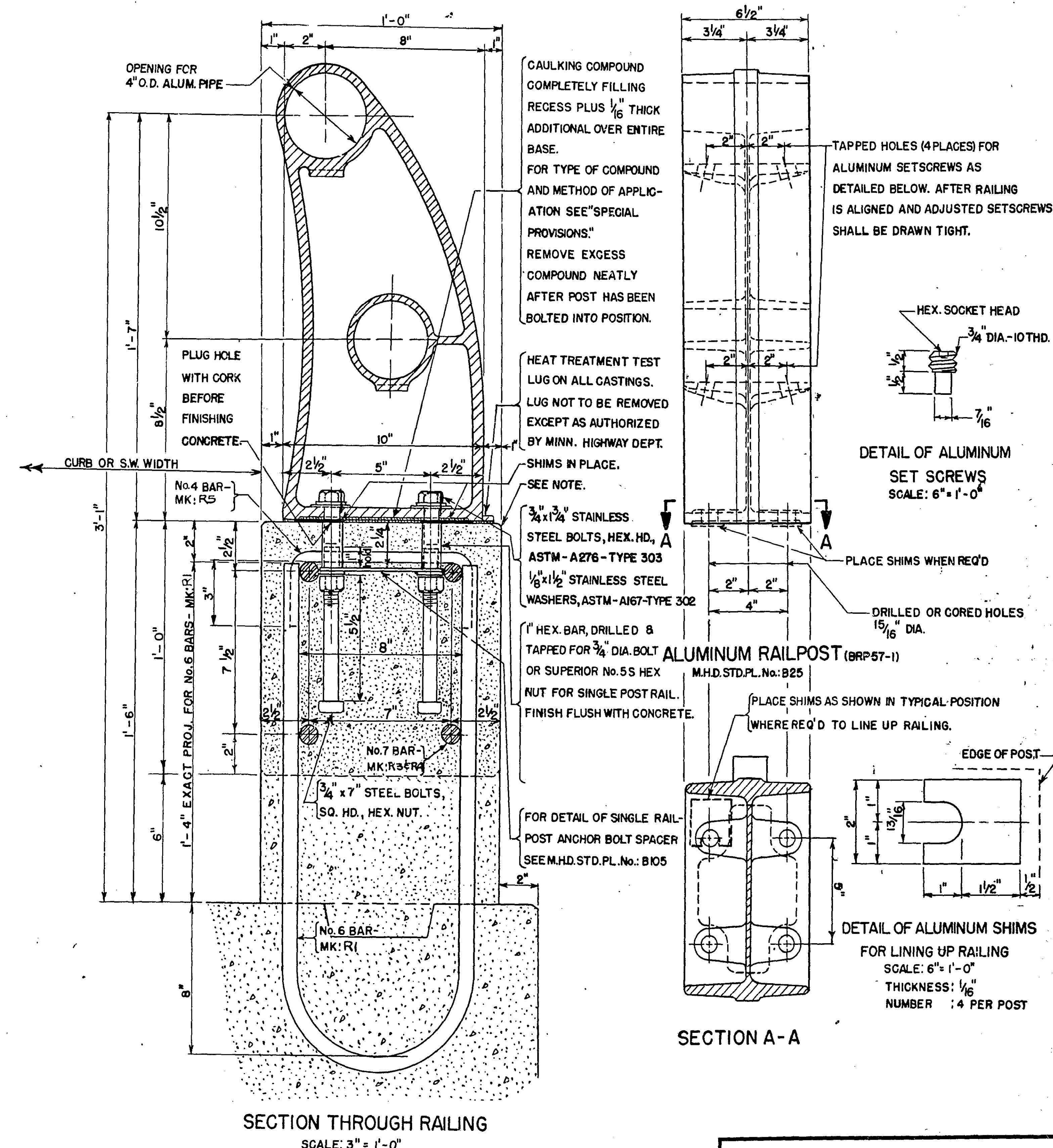
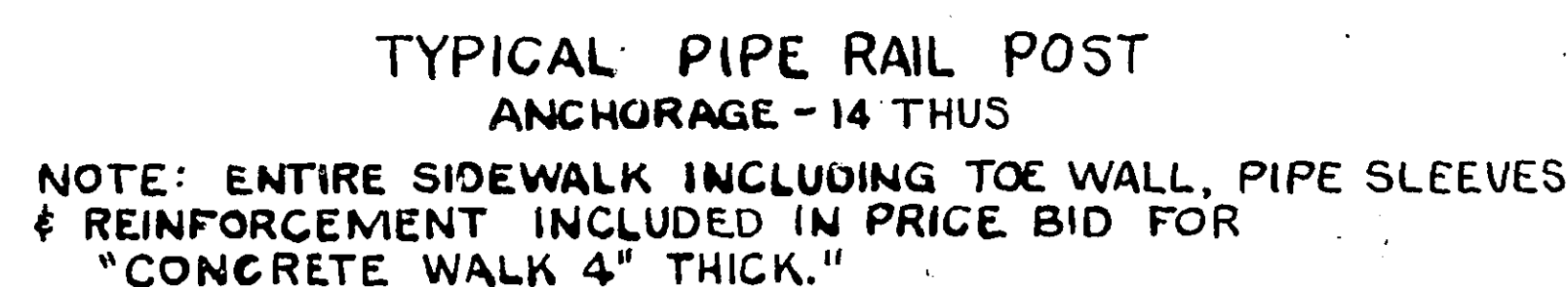
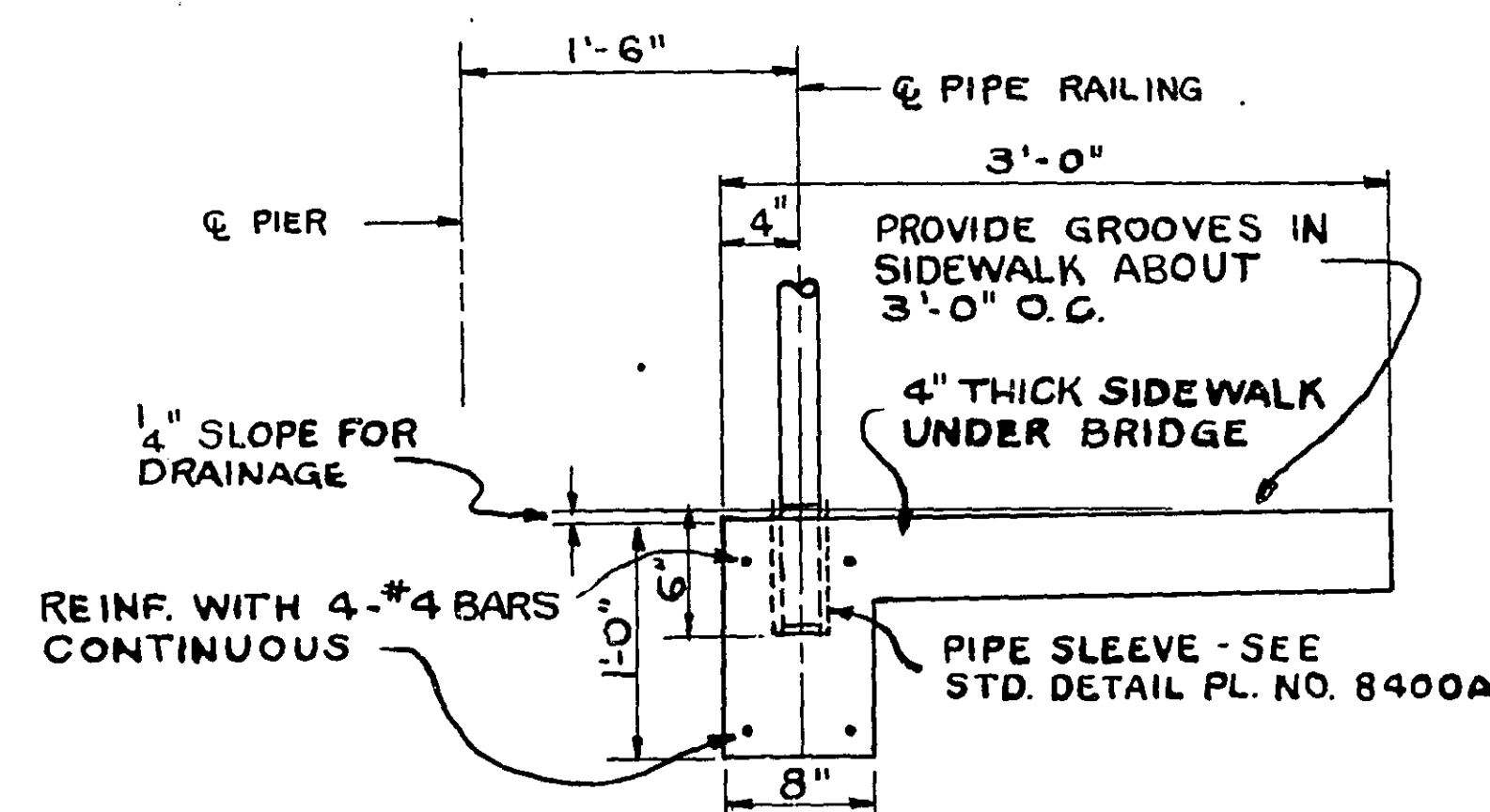
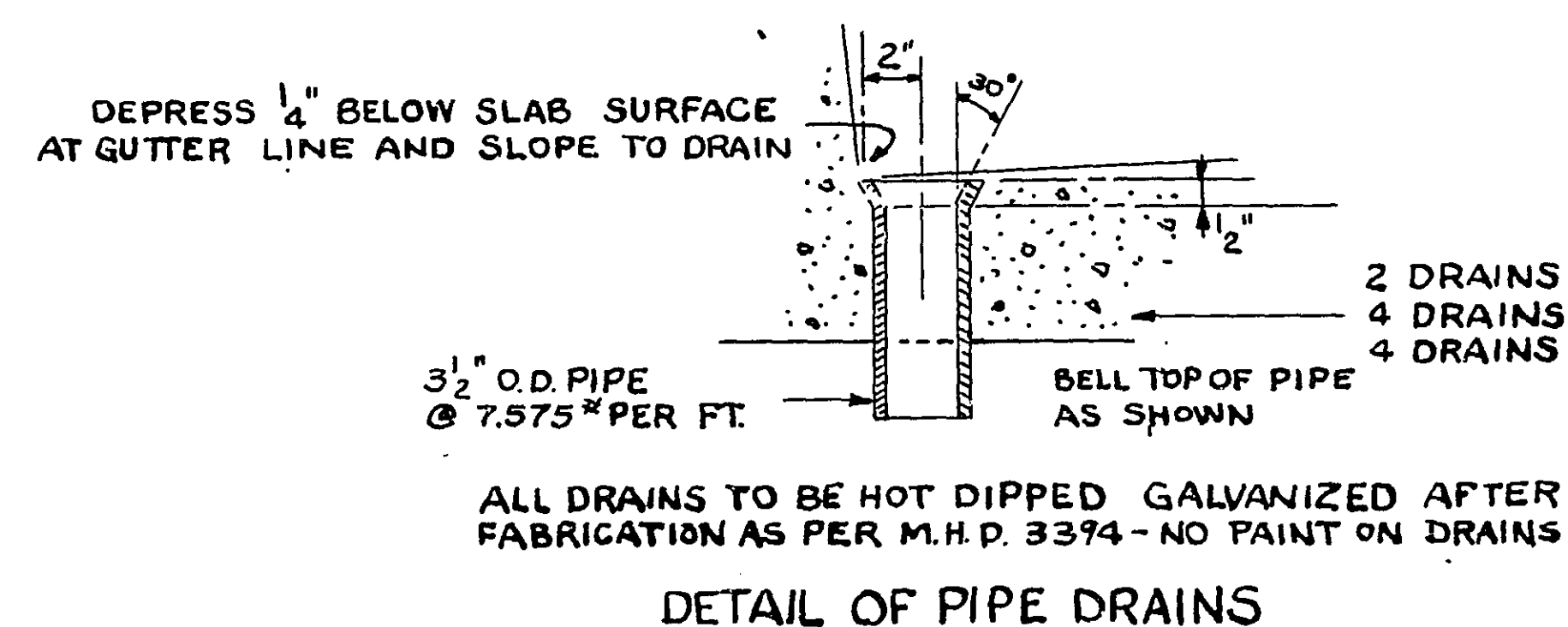
BILL OF REINF BARS FOR SUPERST. BR. 9345				
BAR NO.	SIZE	LENGTH	SHAPE	LOCATION
F1	26	44'-5"	TRUSS	FLR SLAB LONGIT. CTR. SP.
F2	42	21'-10"	BNT.	" " " " " "
F3	25	7'-6"	STRT.	" " " " " "
F4	52	31'-4"	TRUSS	" " " " " "
F5	76	22'-9"	BNT.	" " " " " "
F6	50	11'-0"	STRT.	" " " " " "
F7	6	59'-6"	"	" " " " " "
F8	14	32'-9"	"	" " " " " "
F9	8	20'-7"	2HKS.	" " " " " "
F10	23	9'-0"	BNT.	CURB TIES
F11	23	5'-6"	"	" " " " " "
F12	2	7'-8"	"	" " " " " "
F13	2	4'-2"	"	" " " " " "
T1	46	33'-10"	STRT. FLR SLAB TRUSS BOT.	" " " " " "
T2	46	5'-5"	BNT. TRANS. AT CURB	" " " " " "
T3	25	24'-6"	STRT. FLR SLAB TRUSS BOT.	" " " " " "
T4	4	32'-1"	"	" " " " " "
P1	16	33'-10"	STRT. PIER MAIN REIN.	" " " " " "
P2	20	4'-7"	"	" " " " " "
P3	44	6'-1"	BNT.	STIRRUPS
P4	68	3'-4"	"	" " " " " "
R1	90	4'-6"	BNT. RAIL POSTS	" " " " " "
R2	152	3'-8"	"	" " " " " "
R3	16	18'-10"	STRT.	" " " " " "
R4	8	2'-1"	"	" " " " " "
R5	90	1'-4"	BNT.	" " " " " "

SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE		
CONCRETE MIX NO. 3YG	118.8	CU. YDS.
REINFORCEMENT BARS	21,500	LBS.
STRUCTURAL STEEL	130	LBS.
ORNAMENTAL METAL RAILING	120	LINEAL FT.
3 PLY JOINT WATERPROOFING	79	LINEAL FT.
10 GALV. PIPE DRAINS (SEE DETAIL ON SH. NO. 5)		
28-3/4" 9-BOLTS-50 HD. & NUT-CUT WASHERS		
2 PCS. PLANK 3" x 10" x 12'-0"		
2 PCS. PLANK 3" x 10" x 14'-0"		
2 PCS. " 3" x 8" x 12'-0"		
2 PCS. " 3" x 8" x 14'-0"		
CONCRETE MIX NO. 3YG GRADE Y. 5.1 CU. YD.		
CONDUIT SYSTEM		
INCLUDES RAILING		

Δ INCLUDED IN WEIGHT OF STRUCTURAL STEEL
* INCLUDED IN PRICE BID FOR OTHER ITEMS.

□ CONDUIT SYSTEM INCLUDES ALL CONDUITS, CONDUITS, HUB PLATES, CAP SCREWS, COVERS & GASKETS.

STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	
BRIDGE NO. 9345	
SUPERSTRUCTURE DETAILS	
APPROVED: 3-2-59	MICROFILMED RAMSEY CO. ENGR.
NO. DATE PLAN REVISIONS BY CK	
1 12-7-59 SLAB CROSS SECTION REVISED L.B.R.T.	



ALL RAILPOSTS TO BE SET NORMAL TO GRADE.
CONCRETE POSTS AND CONCRETE BASE TO BE GRADE Y, MIX NO. 3 Y6.
ALL PIPE, RAILPOSTS, ANCHOR BOLT ASSEMBLIES, BOLTS, SCREWS, SHEAR DOWEL ASSEMBLIES, CAPS, SHIMS, PINS, AND COMPOUND TO BE INCLUDED IN PRICE BID FOR ORNAMENTAL METAL RAILING.
LENGTH OF RAILING FOR PAYMENT TO BE MEASURED BETWEEN FACES OF CONCRETE ABUTMENT POSTS.
FOR MATERIAL AND WORKMANSHIP SEE "SPECIAL PROVISIONS" AND MHO 2471.

APPROVED: 3-2-59

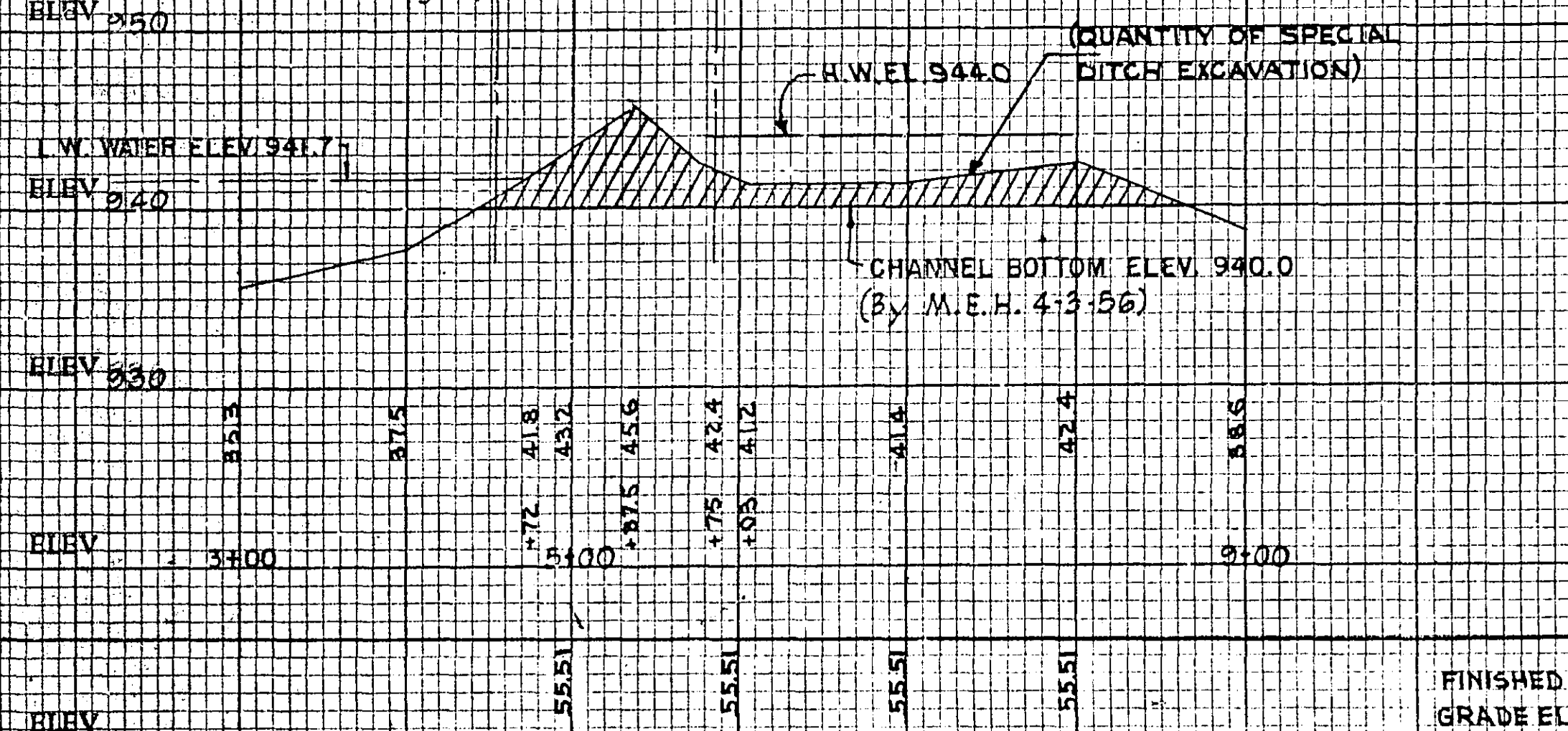
MICROFILMED
RAMSEY CO. ENGR

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

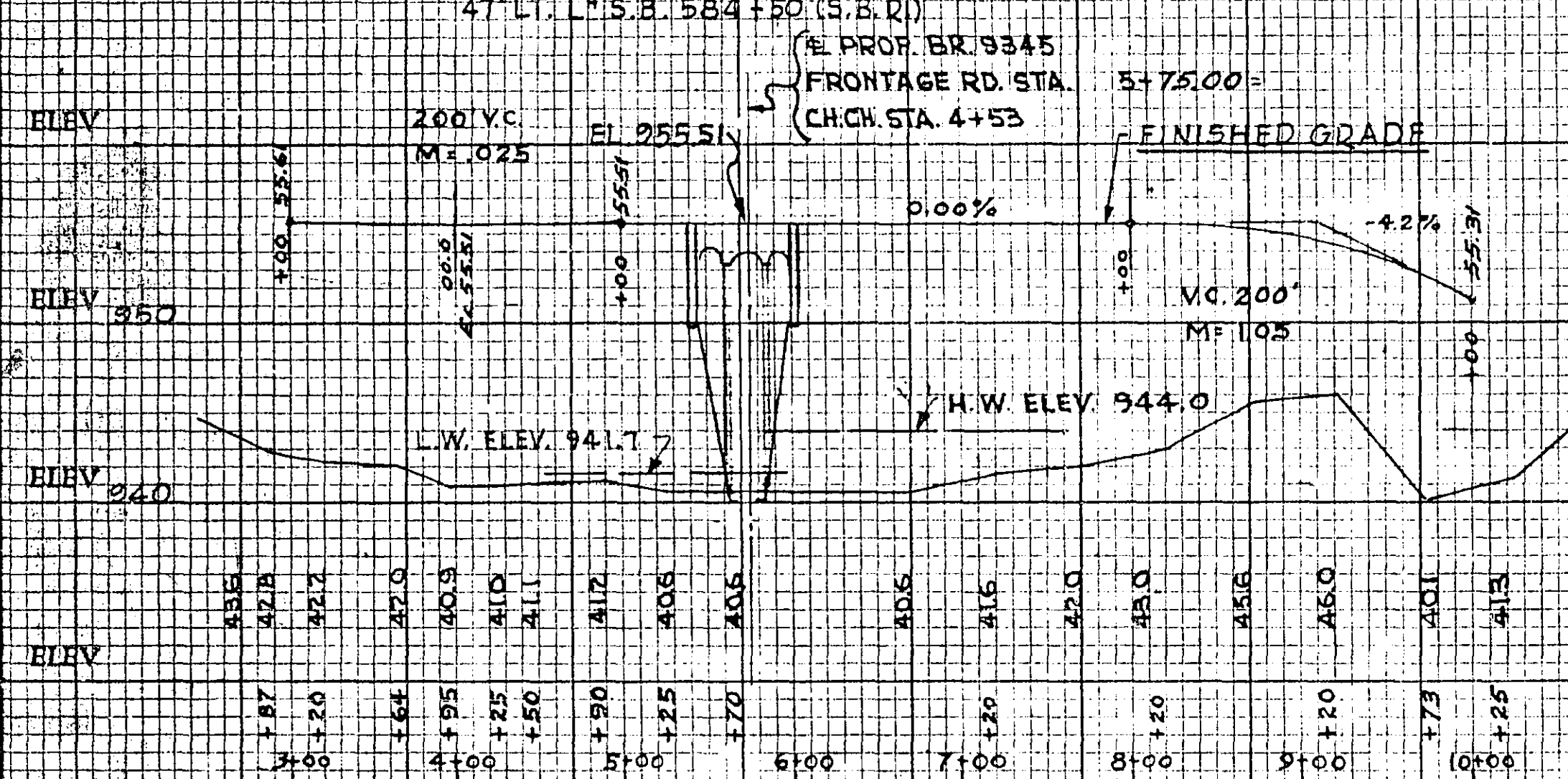
FUTURE BITUMINOUS SURFACING
FUTURE GRAVEL BASE



4 S.B. ROWY. STA. 584+50=
 STA. 5+00 CHANNEL C
 FRONTAGE RD. STA. 5+75.00=
 CHICK STA. 4+55.0
 BLVD 350

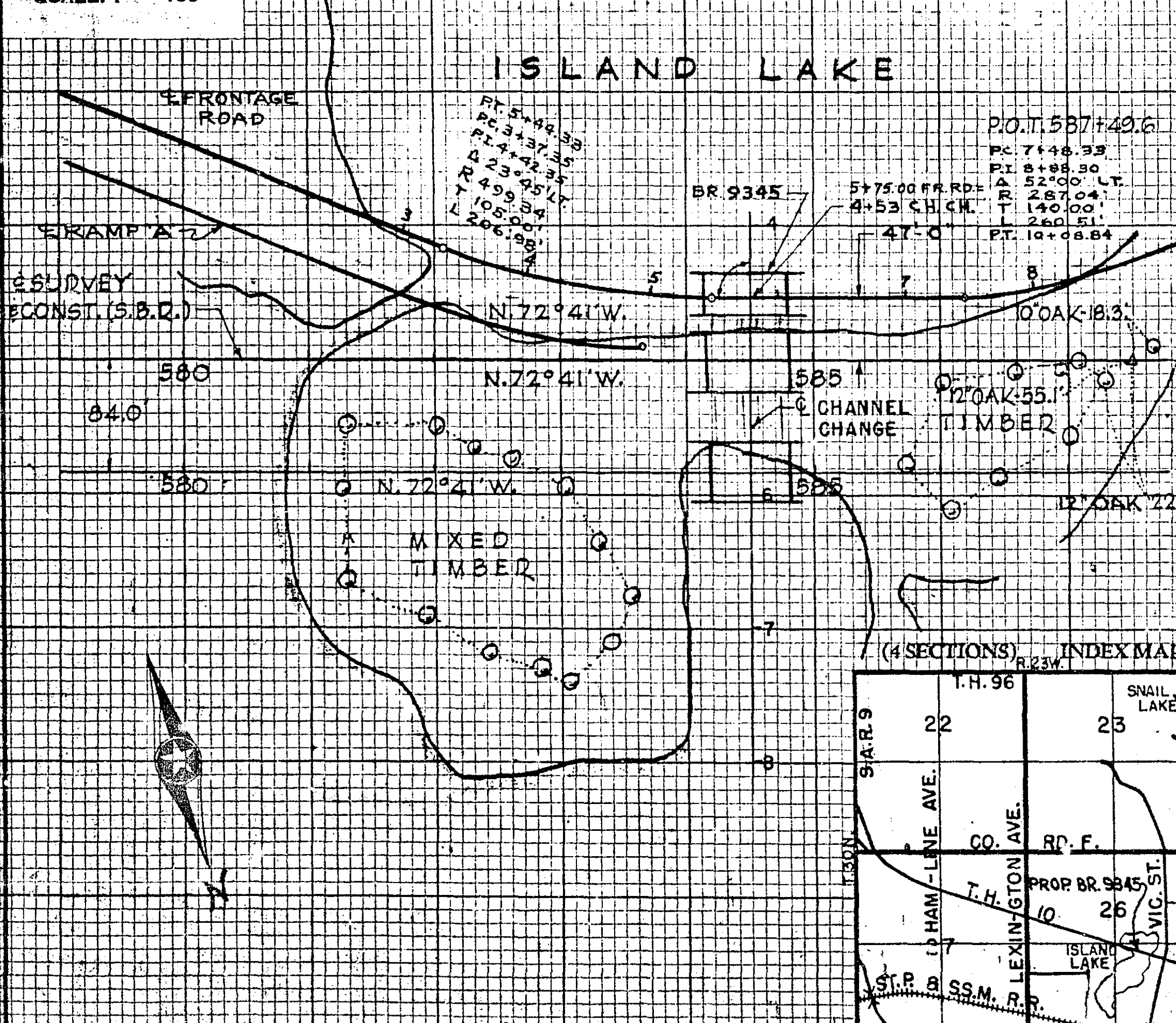


PROFILE FRONTAGE ROAD
47' LT. N S B 584+50 (S.B.D)



PLAT

SCALE: 1" = 100'

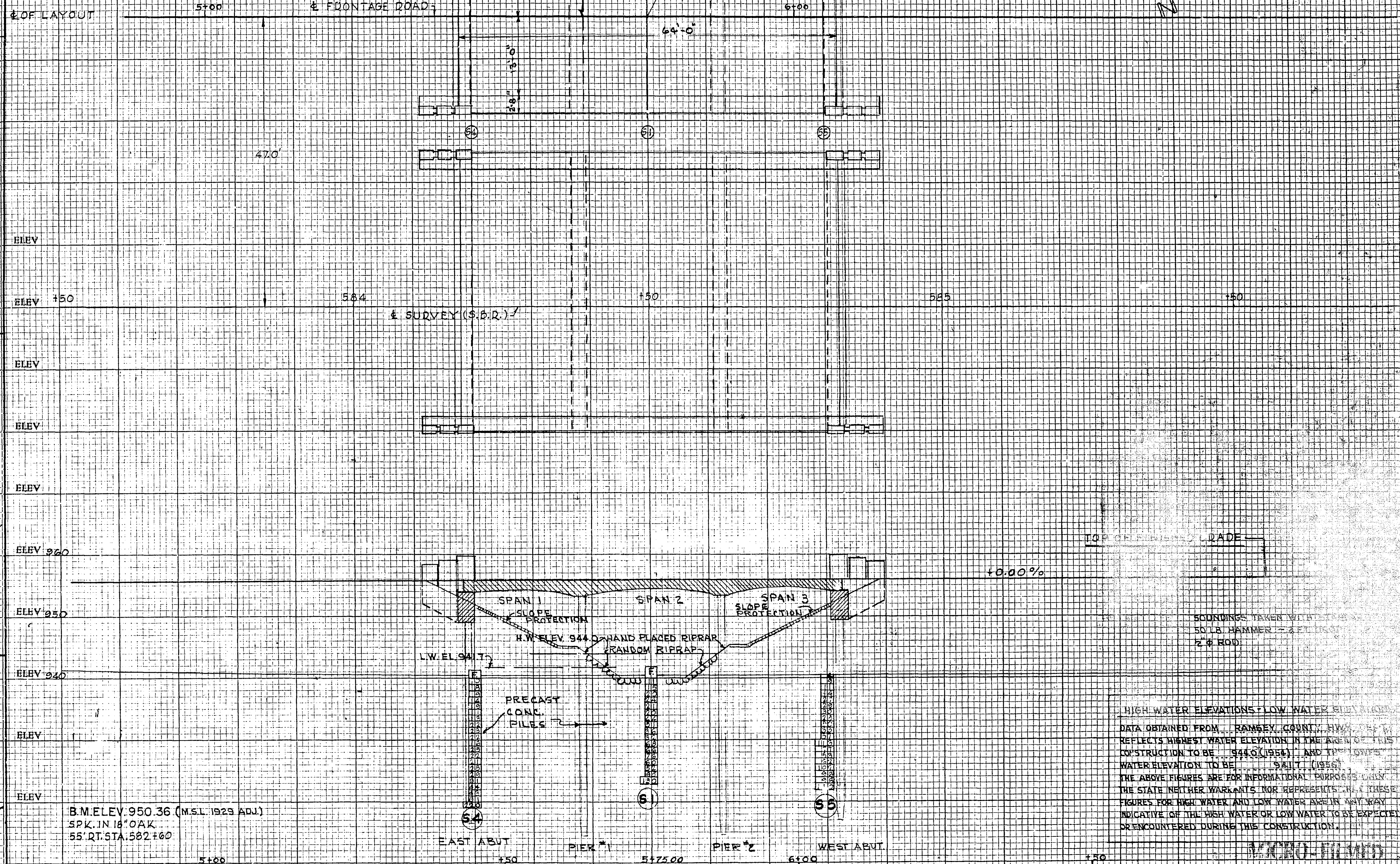


PLAN AND PROFILE

SCALE: 1" = 10'



4 OF LAYOUT



HIGH WATER ELEVATIONS: LOW WATER SLUG (LOW)
DATA OBTAINED FROM RAMSEY COUNTY, HWY 101
REFLECTS MINEST WATER ELEVATION IN THE AREA OF THIS
CONSTRUCTION TO BE 544.0 (1954) AND 10' DEEPS
WATER ELEVATION TO BE 541.1 (1954).
THE ABOVE FIGURES ARE FOR INFORMATIONAL PURPOSES ONLY.
THE STATE NEITHER WARRANTS NOR REPRESENTS THAT THESE
FIGURES FOR HIGH WATER AND LOW WATER ARE IN ANY WAY
INDICATIVE OF THE HIGH WATER OR LOW WATER TO BE EXPECTED
OR ENCOUNTERED DURING THIS CONSTRUCTION.

FOLLOW SEPARATE "INSTRUCTIONS FOR PREPARATION OF BRIDGE SURVEYS" WHEN MAKING BRIDGE SURVEYS.

DATA

1. Preliminary recommendations of Engineer in charge of Bridge Survey:
- a. Net Span Length and Type of Bridge.....
 - b. Width of Roadway on Bridge.....
 - c. Number and width of Sidewalks, if any.....
 - d. Locate center of Bridge at Station FRONTAGE RD. STA. 5175.00.....
 - e. If a skew bridge is recommended, the angle of skew should be.....
 - f. Is piling required?.....
2. Special features: Waterfalls, dams, exceptional floods, ice, driftwood, sliding banks, logging, etc.....
3. Changes: In height or length from that of old bridge, and reasons why.....

DATA (Contd.)

- DATA (Contd.)
4. Other bridges in vicinity:
- a. Over same stream (particularly structures which carry high water without overflow of road-way); give location, length, height above water, net cross-sectional area at high water stage and estimated age.....
- b. Over or under same highway or railroad; give location, length, horizontal and vertical clearances and estimated age.....
- c. Reasons why these bridges are, or are not, fair indications of what length the proposed bridge should be?.....
5. If structure is over a drainage ditch, is ditch gradient liable to be altered?.....
6. State navigation or boating clearances required, if any:.....
7. Information and evidence in regard to high water stages was obtained as follows.....
8. Must contractor provide for traffic during construction of proposed bridge?
If so, by what means? SEE SPECIAL PROVISIONS.

MATERIAL

Proposed Bridge is 1.5 miles N.W. of
* CARDIGAN. JCT., which is the nearest
Railroad shipping point.

*(Give name of town, station or siding)

Date	Project or County Engineer
Date	District Engineer
Date	Bridge Engineer

MICROFILMED
RAMSEY CO. ENGR.

STATE OF MINNESOTA

DEPARTMENT OF HIGHWAYS

BRIDGE SURVEY

ON

FRONTAGE RD. AT ISLAND LAK

(DESIGNATE COUNTY AID — STATE AID OR TRUNK HIGHWAY NUMBER)

IN SHOREVIEW

SEC 26 TIME 30 N. 23 W.

MOUND VIEW

MOONDS VIEW TOWNSHIP

RAMSEY	COUNT
--------	-------

January

SURVEY MADE DURING MONTH OF SEPTEMBER 1949

SURVEY MADE BY: J.T. PAWLAK

9345

BRIDGE No. 1000

MINN. PROJ. NO. I 694-5(12)230

State Prot. No. 6285-12 (694-393)

Sheet No. 6 of 6