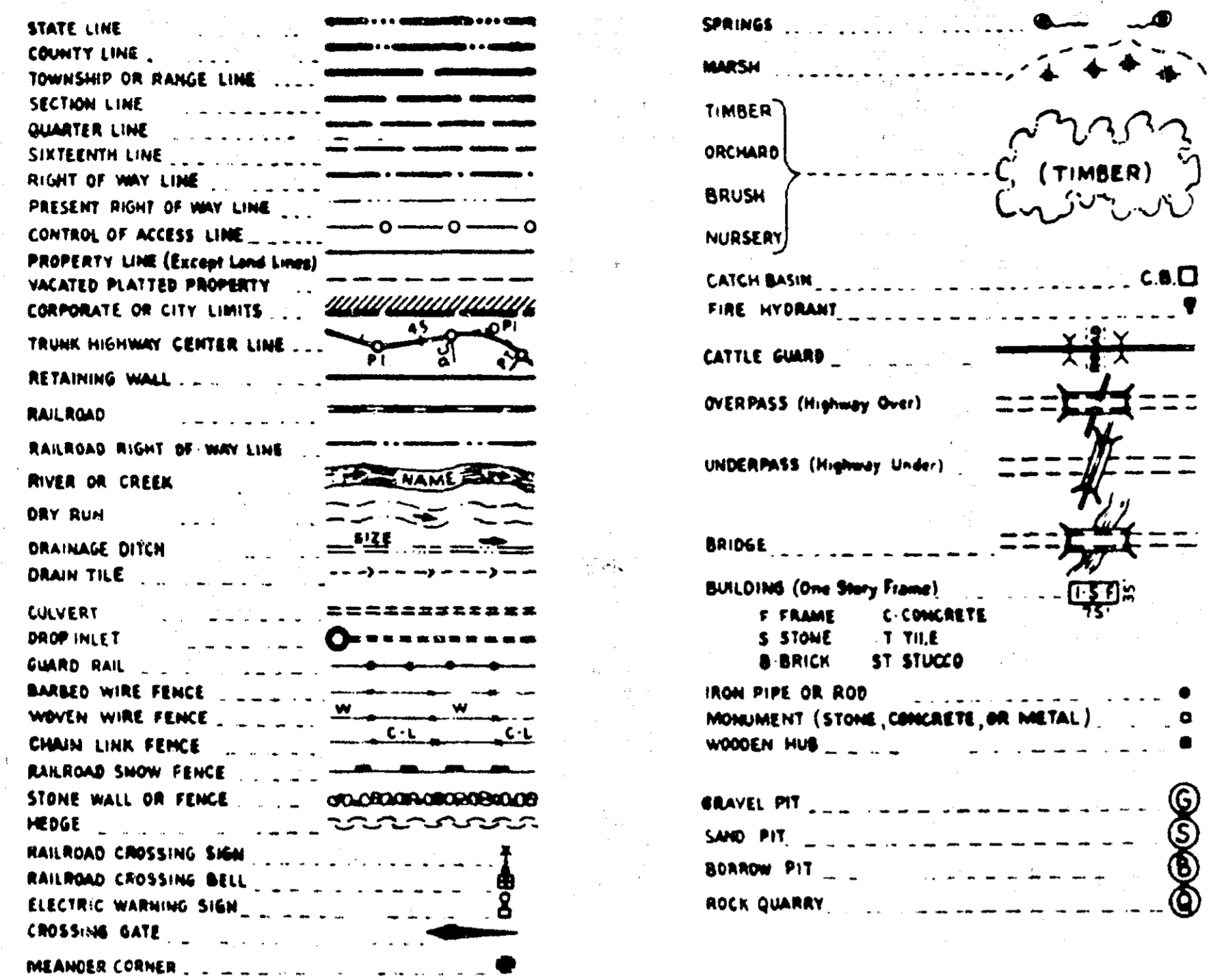
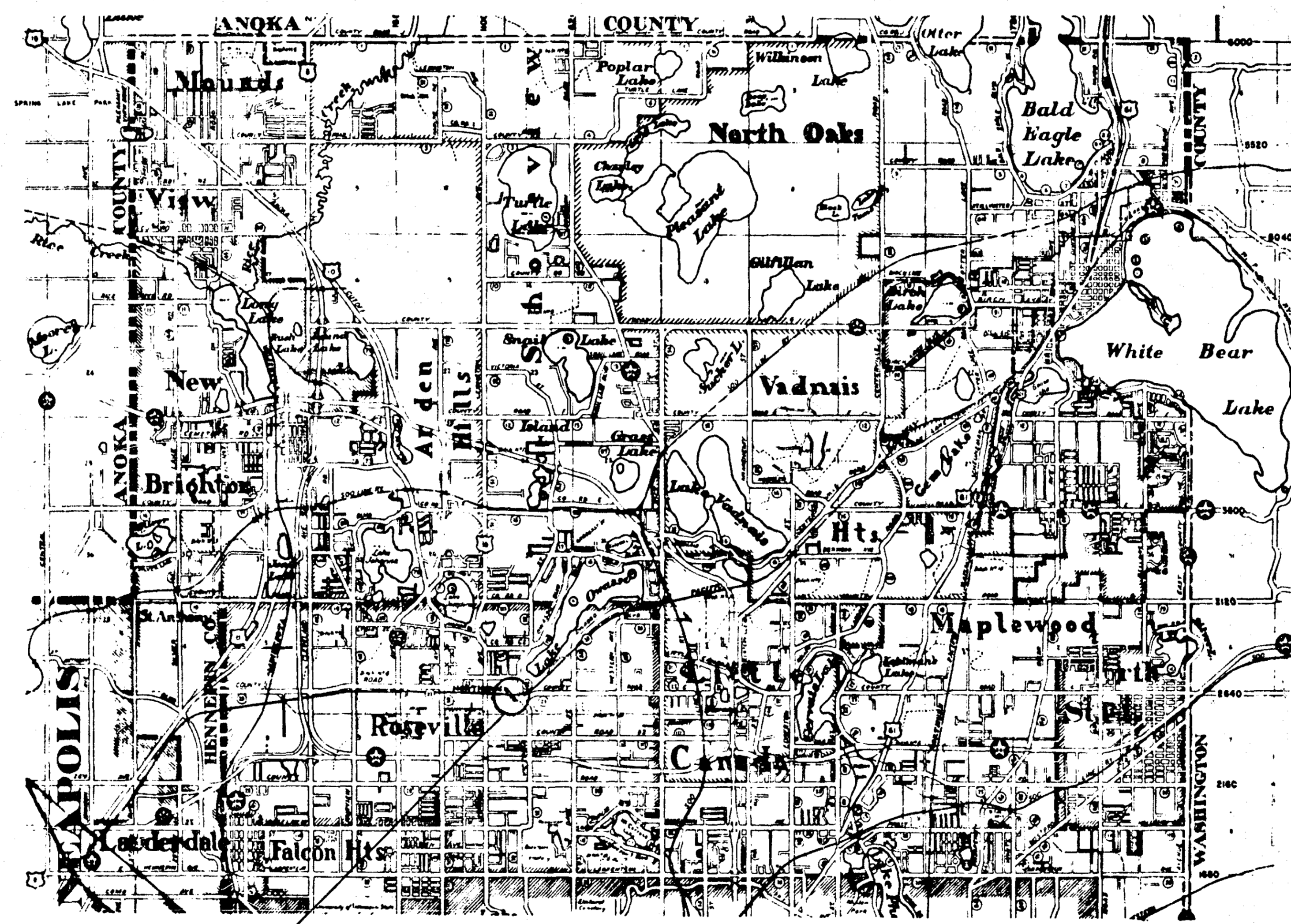
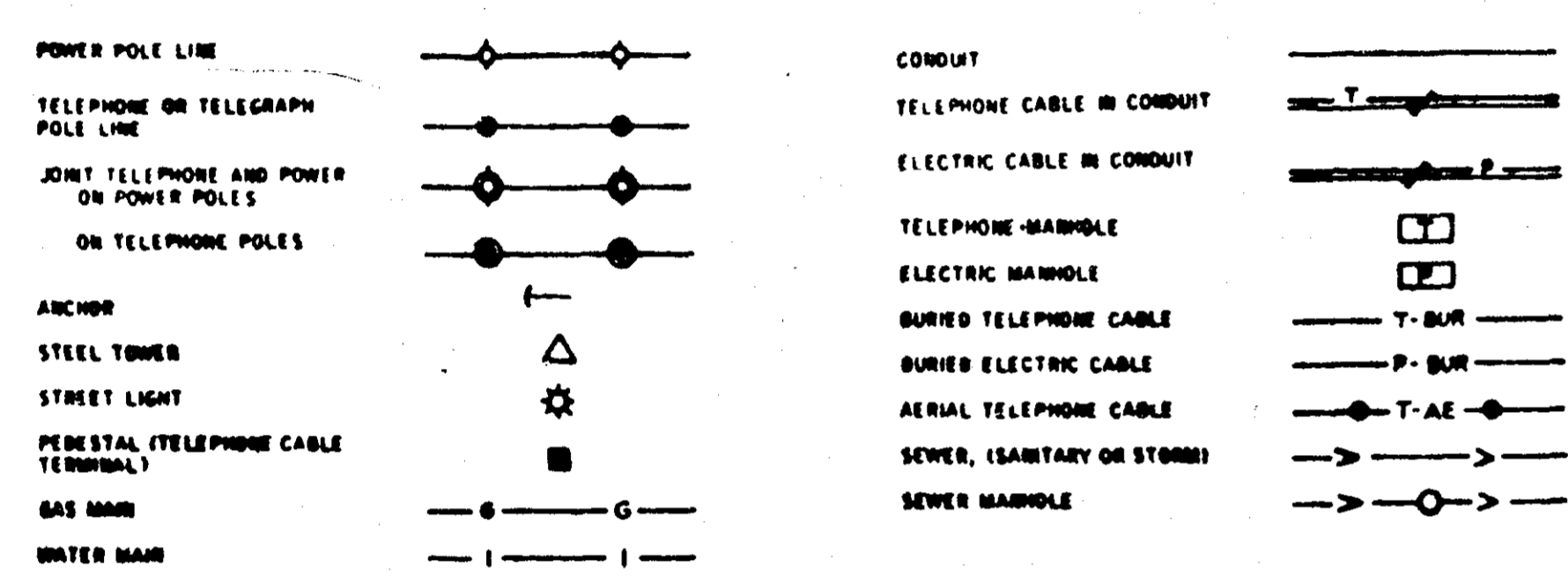


**OFFICE OF COUNTY ENGINEER
RAMSEY COUNTY
CONSTRUCTION PLAN
FOR
BRIDGE NO. 62519
COUNTY ROAD "C" OVER N.P. R.R.
0.28 MILE EAST OF JCT. OF LEXINGTON AVE. & N.P. R.R.**

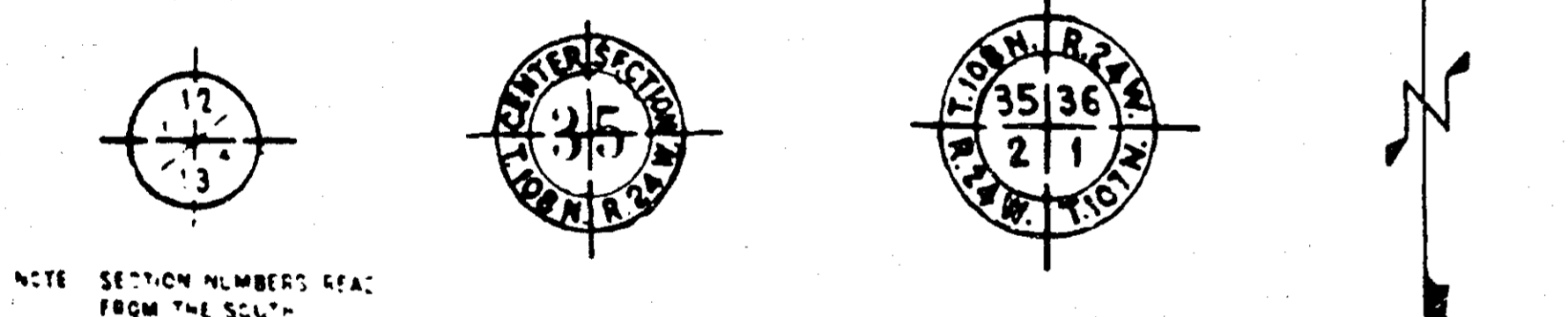
PLANS SYMBOLS



UTILITIES SYMBOLS



INDEX	
1	TITLE SHEET
2	GENERAL PLAN & ELEVATION
3	BRIDGE LAYOUT
4	CORNER & PIER DETAILS
5	WEST ABUTMENT DETAILS
6	WEST ABUTMENT REINFORCEMENT
7	EAST ABUTMENT DETAILS
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10	PIER DETAILS
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16	BILL OF REINFORCEMENT
17	DETAILS
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19	CLASS B SLOPE PAVING
20	DETAILS
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22	BRIDGE SURVEY PLAN & PROFILE



PIT DATA

PIT NO. _____ Located in _____
Dead Haul _____

PIT NO. _____ Located in _____
Dead Haul _____

—SPECIFICATIONS—
THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION DATED JANUARY 1, 1968 SHALL APPLY

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.

John H. Taylor REG. NO. 3129 DATE 9-27-68
ENGINEER

RECOMMENDED FOR APPROVAL *Dean L. Ankla* DATE 5-9-69
COUNTY ENGINEER

APPROVED *John D. DeWitt* DATE 5-12-69
CHAIRMAN OF THE RAMSEY COUNTY BOARD

APPROVED *Shelburne S. Fulkerson* DATE 6-9-69
VILLAGE ENGINEER

APPROVED *A. Donald Moll* DATE 4/9/69
MAYOR

MINNESOTA STATE HIGHWAY DEPARTMENT

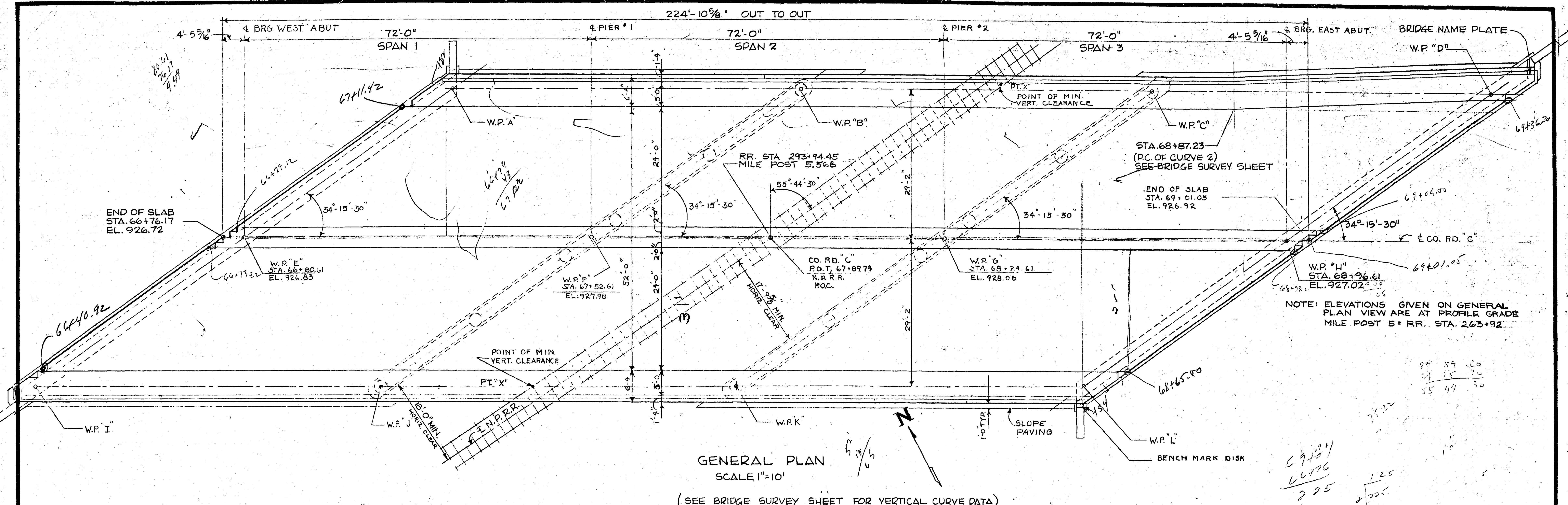
RECOMMENDED FOR APPROVAL *John H. Taylor* DATE 3-4-69
BRIDGE DESIGN AND PLANNING

RECOMMENDED FOR APPROVAL *John H. Taylor* DATE 3-3-69
DISTRICT STATE AID ENGINEER

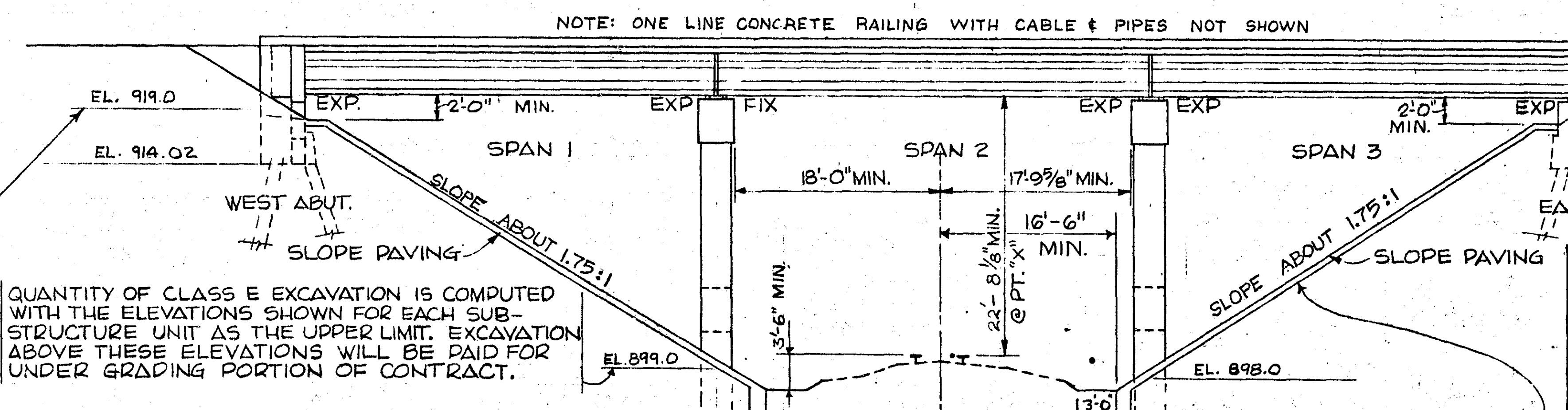
APPROVAL *John H. Taylor* DATE 4/16/69
STATE AID ENGINEER

MICROFILMED
RAMSEY CO. ENGR.

6891



CONSTRUCTION OF EACH ABUTMENT SHALL NOT BE STARTED UNTIL THE APPROACH FILL AT THAT ABUTMENT HAS BEEN CONSTRUCTED TO THE FULL HEIGHT AND CROSS SECTION BY OTHERS.



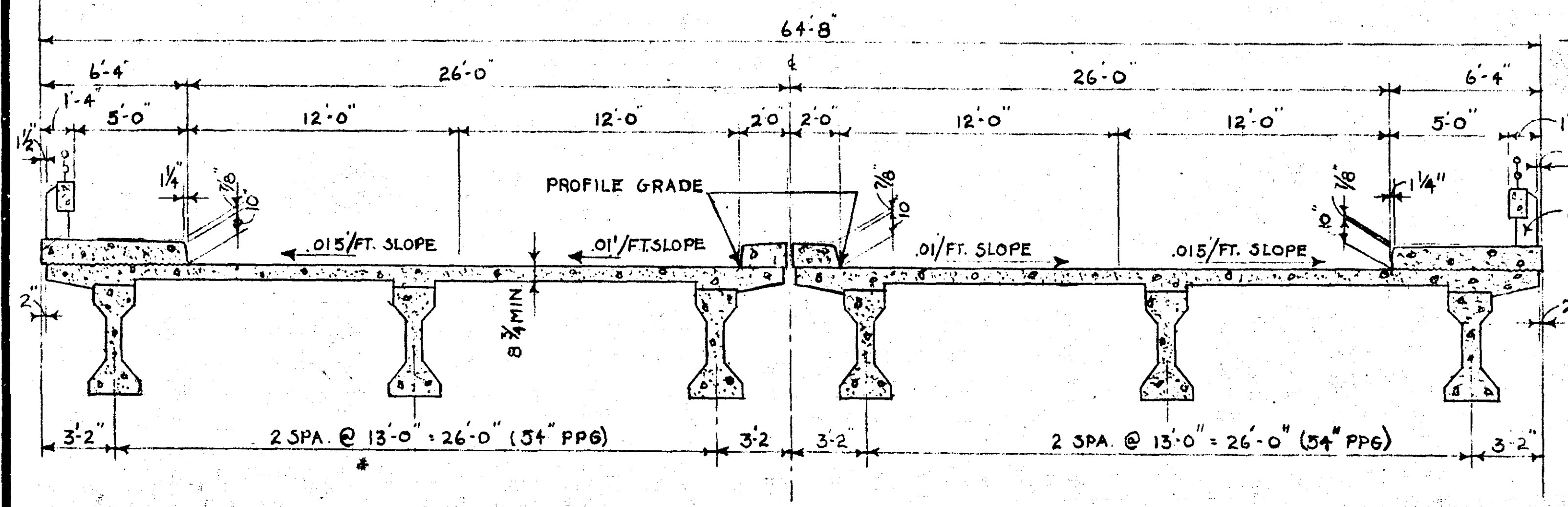
QUANTITY OF CLASS E EXCAVATION IS COMPUTED WITH THE ELEVATIONS SHOWN FOR EACH SUB-STRUCTURE UNIT AS THE UPPER LIMIT. EXCAVATION ABOVE THESE ELEVATIONS WILL BE PAID FOR UNDER GRADING PORTION OF CONTRACT.

DESIGN DATA
 1965 A.A.S.H.O. DESIGN SPECIFICATIONS
 HS20 LOADING.
 MAXIMUM ALLOWABLE DESIGN STRESSES
 FC = 1600 PSI n=8
 FS = 20,000 PSI REINFORCEMENT

DECK AREA 14,543 SQ.FT.

CONSTRUCTION NOTES
 THE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" DATED JANUARY 1, 1968 SHALL APPLY.
 THE FIRST NUMBER OF THE FIRST TWO NUMBERS OF EACH BAR MARK INDICATE THE BAR SIZE.
 REINFORCEMENT OTHER THAN SPIRAL ROD STOCK SHALL BE DEFORMED BILLET STEEL BARS CONFORMING TO ASTM A615 GRADE 40
 CONC. JT. SEALER OTHER THAN PREFORMED TYPE SHALL COMPLY WITH MHD 3723 OR 3725

RESTORE SIDE DITCHES AFTER PLACEMENT OF SLOPE PAVING TO PROVIDE DRAINAGE AS DIRECTED BY ENGINEER. RESTORATION COSTS SHALL BE INCLUDED IN UNIT PRICE BID FOR CLASS E EXCAVATION.
 BENCH MARK EL. 895.61
 TOP BOLT N. SIDE N.E. LEG
 NSP TRANSMISSION LINE TOWER.



TRANSVERSE SECTION (LOOKING EAST)
 SCALE 1"=5'

SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE * SEE SPECIAL PROVISIONS

ITEM NO.	2401.521	2401.501	2401.501	2401.501	2401.541	2401.543	2402.583	2402.593	2402.594	2405.501	2452.507	2452.508	2452.519	2452.526	401.601	2402.521	2452.519	2452.519
ITEM	STRUCTURE EXCAVATION (CLASS E)	CONCRETE MIX NO. 1A43	CONCRETE MIX NO. 3Y43	CONCRETE MIX NO. 3Y46A	REINFORCEMENT BARS	SPIRAL REINFORCEMENT	ORNAMENTAL METAL RAILING	FIXED BEARING ASSEMBLIES (TYPE I)	EXP. BEARING ASSEMBLIES (TYPE 2)	PRESTRESSED CONCRETE GIRDERS (TYPE 54-72)	CAST-IN-PLACE CONCRETE PILING DRIVEN	CAST-IN-PLACE CONCRETE TEST PILES, 30FT. LG.	PILE LOAD TESTS	SLOPE PAVING	STRUCTURAL STEEL (3306)	CAST-IN-PLACE CONCRETE TEST PILES 40 FT. LG.	CAST-IN-PLACE CONCRETE TEST PILES 80 FT. LG.	
QUANTITY	760	221	918	138	204170	1080	450	6	30	18	3080	3004	2	2	1300	1210	4	2
UNIT	CU. YD.	CU. YD.	CU. YD.	CU. YD.	POUND	POUND	LIN. FT.	UNIT	UNIT	GIRDER	LIN. FT.	LIN. FT.	PILE	PILE	SQ. YD.	POUND	PILE	PILE

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.
 DATE 9-27-65 REG. NO. 3129

DESIGNED BY
TOLTZ, KING, DUVAL, ANDERSON AND ASSOCIATES INC.
 ENGINEERS & ARCHITECTS
 ST. PAUL, MINNESOTA

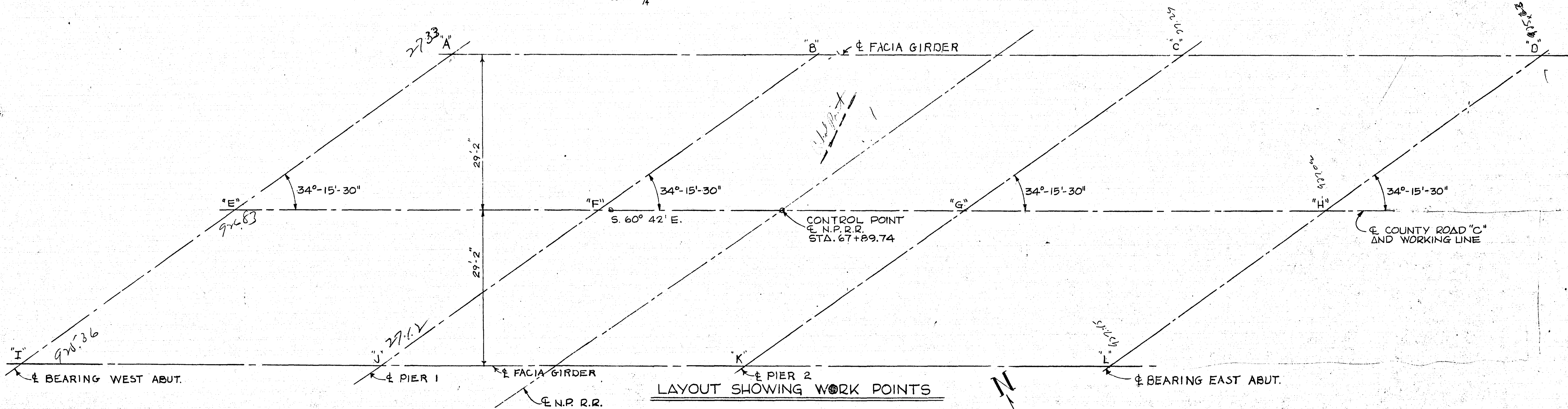
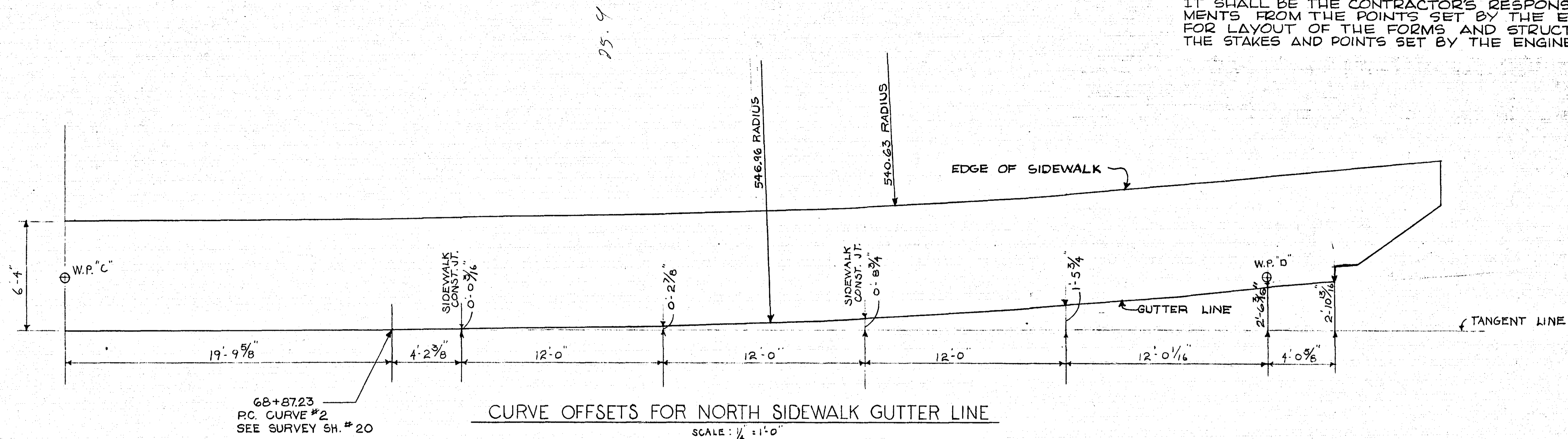
RAMSEY COUNTY
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 62519
 COUNTY ROAD "C" OVER N.P.R.R. 0.28 MILE EAST OF JCT. OF LEXINGTON AVE. & N.P.R.R.

72'-72'-72' PRESTRESSED CONC. GIRDERS
 52' ROADWAY WITH 4' CENTER ISLAND
 TWO-5' SIDEWALKS
GENERAL PLAN & ELEVATION
 SECT. II TWP 29N
 RAMSEY COUNTY
 APPROVED *[Signature]*
 BRIDGE DESIGN & PLANNING ENG. DES.

THE ENGINEER WILL SET STAKES FOR THE CONTROL POINT AND THE WORKING POINTS SHOWN ON THIS SHEET, AND WILL RESET THESE POINTS AS HE DEEMS NECESSARY FOR PROPER PERFORMANCE OF THE WORK. HE WILL ALSO SET ONE OR MORE BENCH MARKS IN THE VICINITY OF EACH SUBSTRUCTURE UNIT FOR THE CONTRACTOR'S REFERENCE WHEN EXCAVATING FOR THESE UNITS, AND WILL SET GRADE POINTS FOR THE SUBSTRUCTURE AND SUPERSTRUCTURE FORMS AND FURNISH BEAM STOOL HEIGHTS AS HE DEEMS NECESSARY FOR PROPER PERFORMANCE OF THE WORK. THE COUNTY WILL BE RESPONSIBLE FOR THE ACCURACY OF THE POINTS SET BY ITS PERSONNEL AS DEFINED ABOVE.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE SUCH MEASUREMENTS FROM THE POINTS SET BY THE ENGINEER AS MAY BE NECESSARY FOR LAYOUT OF THE FORMS AND STRUCTURAL MEMBERS, AND TO PRESERVE THE STAKES AND POINTS SET BY THE ENGINEER AS SET FORTH IN 1508.



DIMENSIONS BETWEEN WORKING POINTS

WORK POINT	STATION	A	B	C	D	E	F	G	H	I	J	K	L
A	67+23.43		72.00	144.00		51.81	41.25	105.30		103.63	59.91	82.51	
B	67+95.43			72.00	144.00	118.47	51.81	41.25	105.30	168.09	103.63	59.91	82.51
C	68+67.43				72.00	189.09	118.47	51.81	41.25	236.94	168.09	103.63	59.81
D	69+39.43					189.09	118.47	51.81		236.94	168.09	103.63	
E	66+80.61						72.00	144.00		51.81	41.25	105.30	
F	67+52.61							72.00	144.00	118.47	51.81	41.25	105.30
G	68+24.61								72.00	189.09	118.47	51.81	41.25
H	68+96.61									189.09	118.47	51.81	
I	66+37.79										72.00	144.00	
J	67+09.79											72.00	144.00
K	67+81.79												72.00
L	68+53.79												

ELEVATIONS

WORK POINT	TOP SLAB ELEV.	SLAB TO BRIDGE ST.	BRIDGE ST. ELEV.
A	927.33	5.60	921.73
B	927.88	5.60	922.28
C	927.26	5.60	921.66
D	925.63	5.60	920.03
E	926.83		
F	927.98		
G	928.06		
H	927.02		
I	925.36	5.60	919.76
J	927.12	5.60	921.52
K	927.86	5.60	922.26
L	927.45	5.60	921.85

RAMSEY COUNTY
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

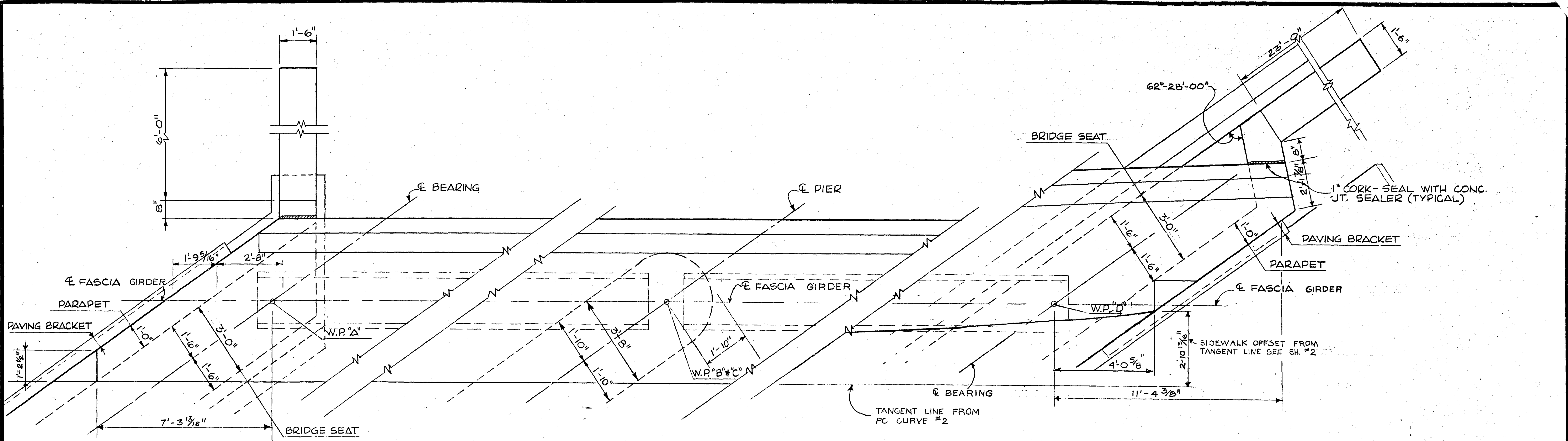
BRIDGE NO. 62519

BRIDGE LAYOUT

APPROVED 3-4-69

MICROFILMED
RAMSEY CO. ENGR.

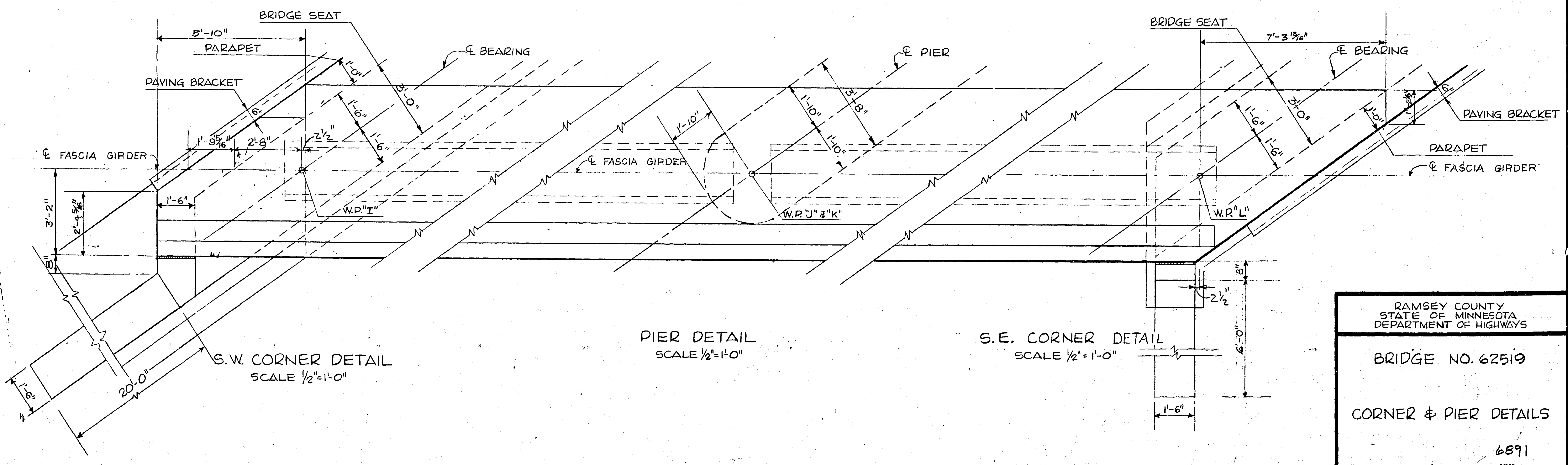
DES. RW
DR. ER
CK. S



N. W. CORNER DETAIL
SCALE 1/2"=1'-0"

PIER DETAIL
SCALE 1/2"=1'-0"

N. E. CORNER DETAIL
SCALE 1/2"=1'-0"



S. W. CORNER DETAIL
SCALE 1/2"=1'-0"

PIER DETAIL
SCALE 1/2"=1'-0"

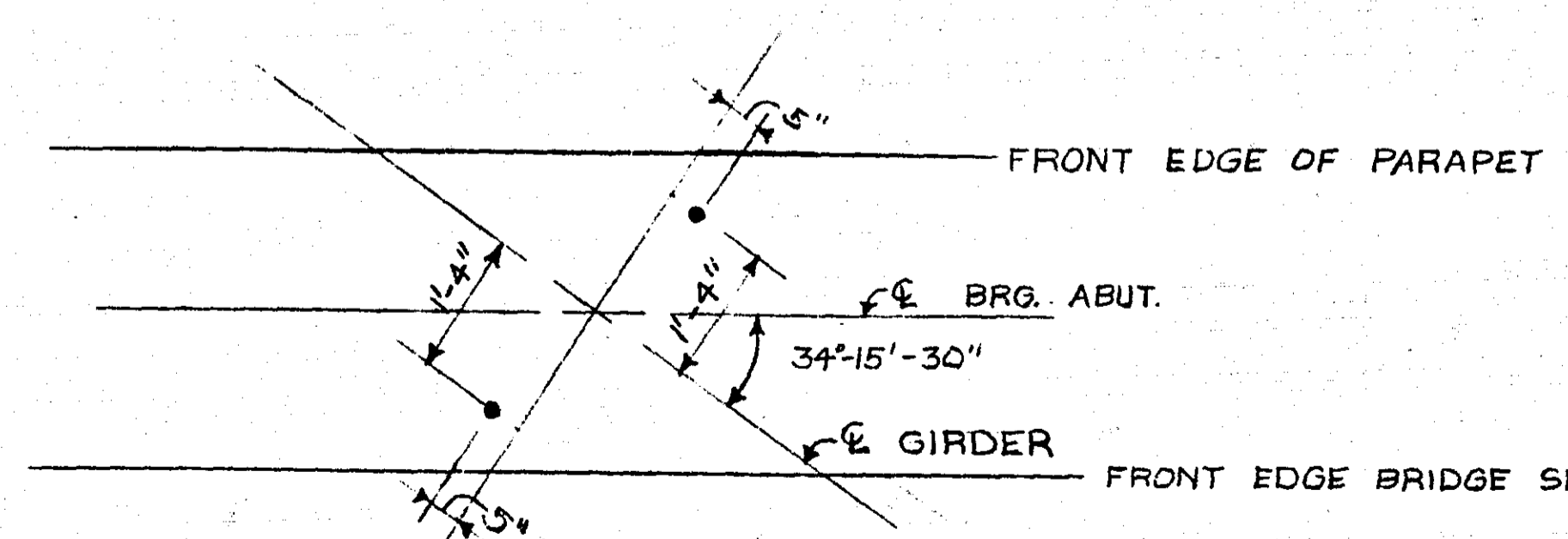
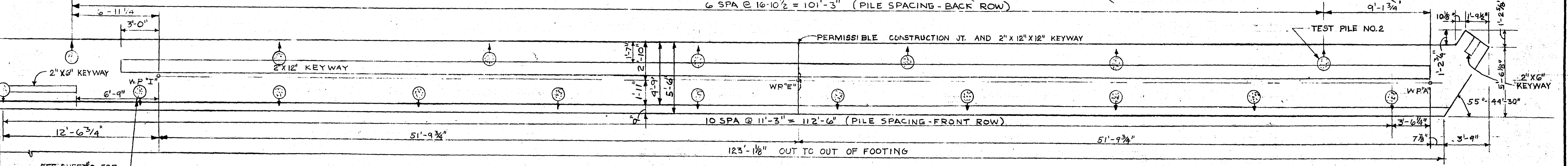
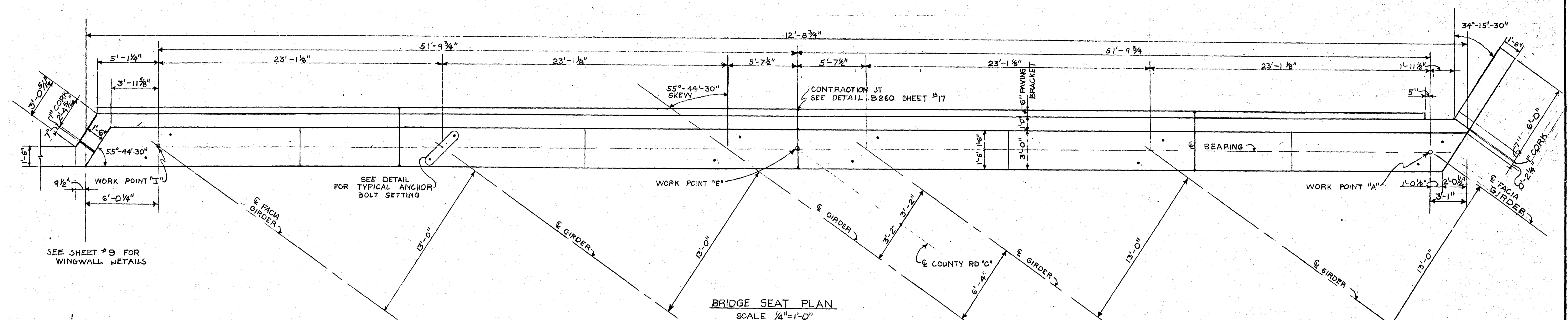
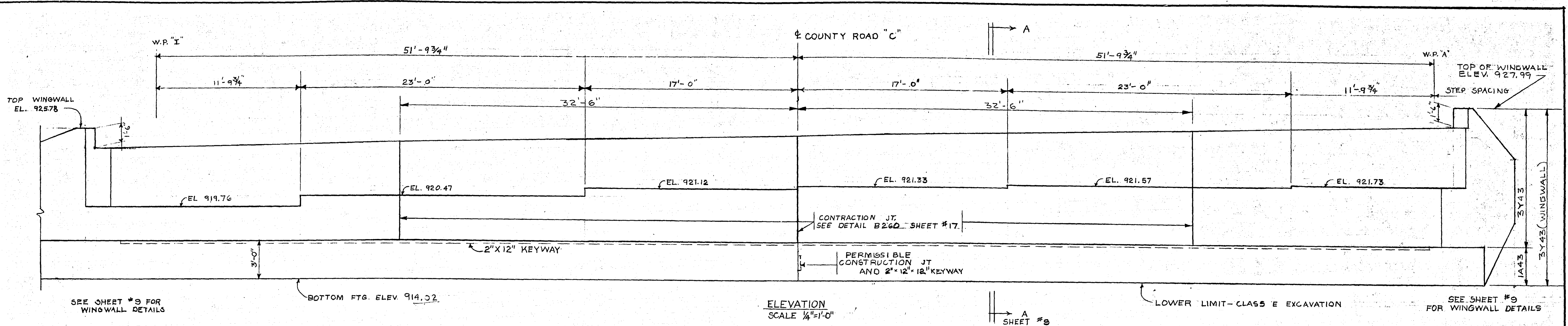
S. E. CORNER DETAIL
SCALE 1/2"=1'-0"

RAMSEY COUNTY
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 62519

CORNER & PIER DETAILS

DES. J.W.
6891
MICROFILMED
APPROVED 3-4-69 RAMSEY CO. ENGRS.



COMPUTED PILE LOADS	TONS / PILE
DEAD LOAD + EARTH PRESSURE	50.0
LIVELOAD	4.3
TOTAL	54.3

- PILE NOTES**
- 2 CAST-IN-PLACE CONC. TEST PILES 40 FT. LG
 - 16 CAST-IN-PLACE CONC. PILES ESTIMATED LENGTH 35 FT.
 - 18 CAST-IN-PLACE CONCRETE PILES FOR WEST ABUTMENT
 1. PILES TO HAVE A NOMINAL DIAMETER OF 12 3/4"
 2. FOR FABRICATION AND MATERIAL, SEE SPECIAL PROVISIONS
 3. ESTIMATED PENETRATION, 1 FT. LESS THAN LENGTH GIVEN
 4. PILES MARKED THUS \odot TO BE BATTERED 2" PER FT. IN DIRECTION SHOWN
 5. PILE SPACING IS AT BOTTOM OF FOOTING

① DOES NOT INCLUDE TEST PILES

SUMMARY OF QUANTITIES FOR WEST ABUT.	
STRUCTURE EXC. (CLASS E)	215 C.Y.
CONC MIX NO. 1A43	71 C.Y.
CONC MIX NO. 3Y43	97 C.Y.
REINFORCEMENT BARS	7760 LB
C-I-P CONC. PILING DELIVERED	560 LF
C-I-P CONC. PILING DRIVEN	544 LF
C-I-P CONC. TEST PILES 40 FT. LG	2 PILE
LOAD TEST	ONE

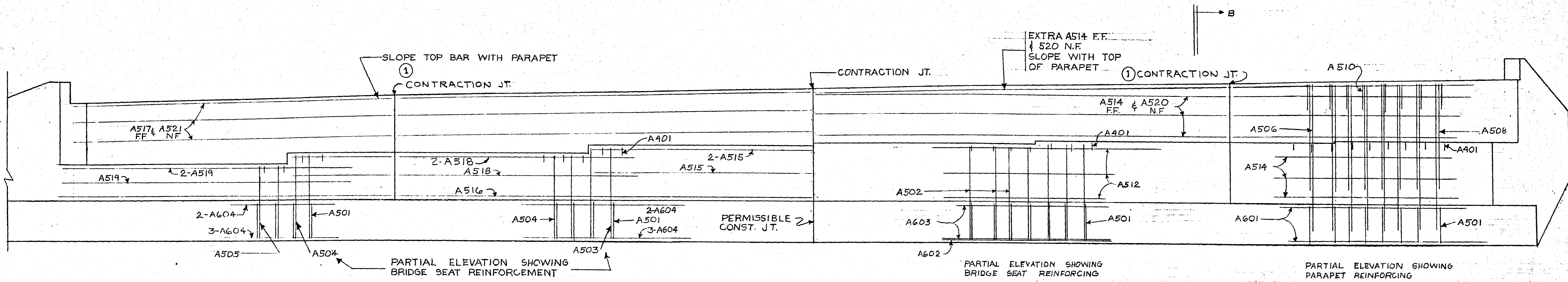
RAMSEY COUNTY
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 62519

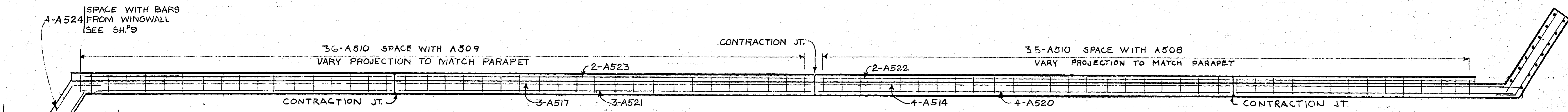
**WEST ABUTMENT
DETAILS**

MICROFILMED
RAMSEY CO. ENGR.
6891

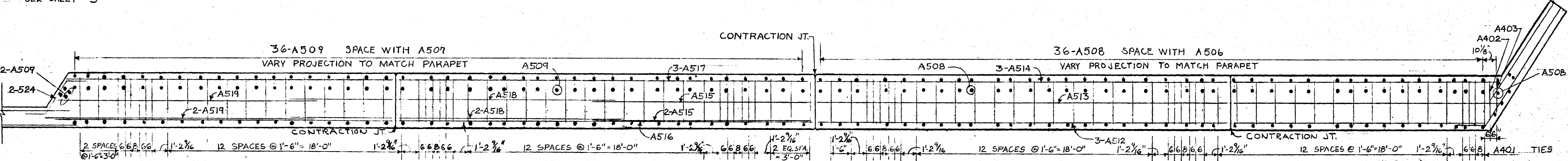
APPROVED 3-4-69



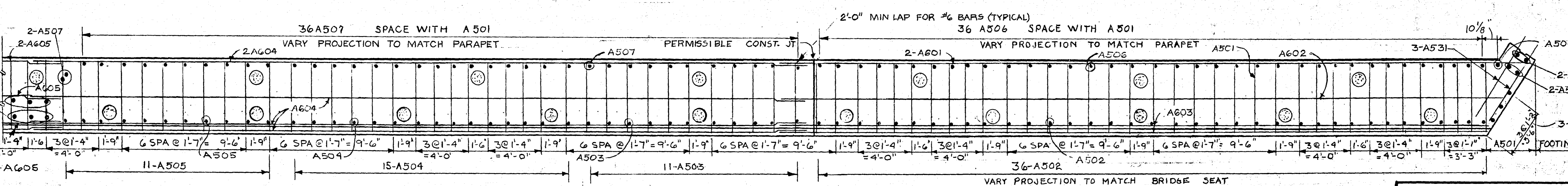
ELEVATION
SCALE: 1/4" = 1'-0"



PARAPET PLAN
SCALE: 1/4" = 1'-0"



BRIDGE SEAT PLAN
SCALE: 1/4" = 1'-0"



FOOTING PLAN
SCALE: 1/4" = 1'-0"

NOTE: BRIDGE SEAT REINFORCEMENT SHALL BE CAREFULLY PLACED TO AVOID INTERFERENCE WITH DRILLING HOLES FOR ANCHOR BOLTS. THE SUPERSTRUCTURE BEAMS SHALL BE ERECTED IN FINAL POSITION PRIOR TO DRILLING HOLES FOR AND PLACING ANCHOR BOLTS

SEE SHEET NO. 16 FOR REINFORCEMENT SCHEDULE AND BENDING DETAILS

FF MEANS FAR FACE
NF MEANS NEAR FACE
① CUT REINF. BARS FOR CONTRACTION JT. SEE DETAIL B760

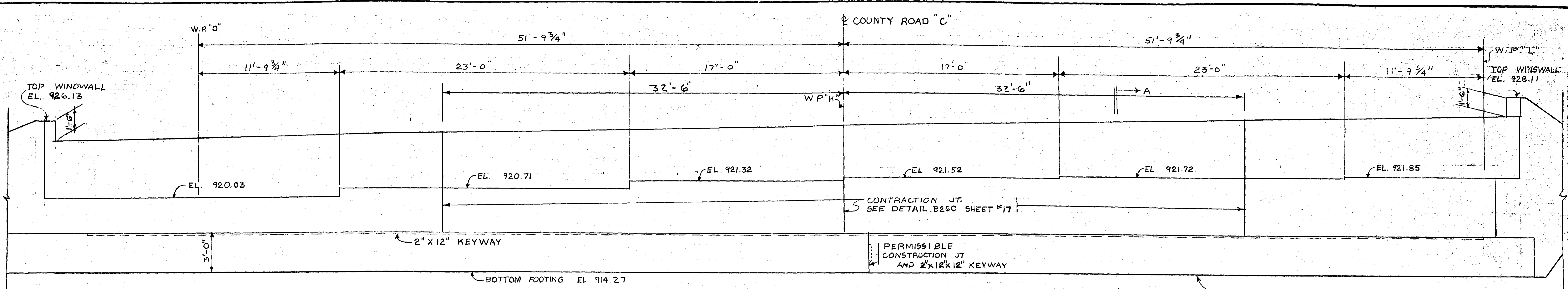
RAMSEY COUNTY
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 62519
WEST ABUTMENT
REINFORCEMENT

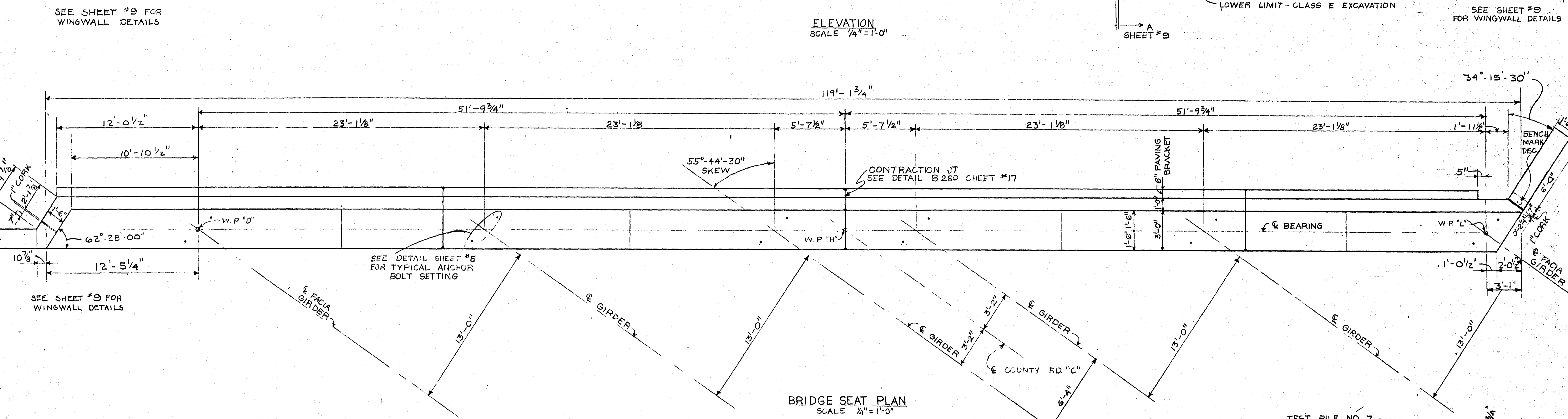
APPROVED 3-4-69

MICROFILMED
RAMSEY CO. ENGR.

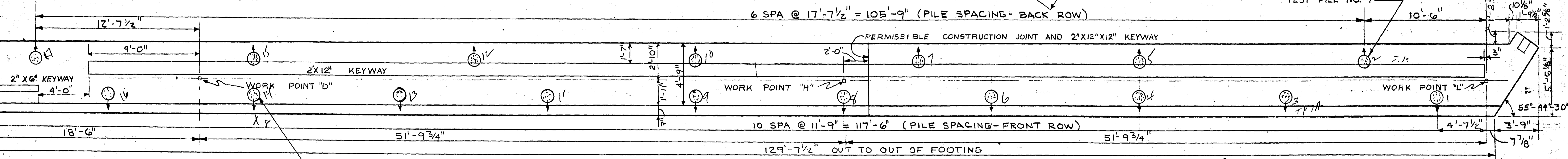
DES	R.W.
OR	DC
CK	



ELEVATION
SCALE 1/4" = 1'-0"



BRIDGE SEAT PLAN
SCALE 1/4" = 1'-0"



FOOTING PLAN
SCALE 1/4" = 1'-0"

PILE NOTES

- 2 CAST-IN-PLACE CONC. TEST PILES 80 FT. LONG
- 16 CAST-IN-PLACE CONC. PILES ESTIMATED LENGTH 75 FT.
- 18 CAST-IN-PLACE CONCRETE PILES FOR WEST ABUTMENT
- 1. PILES TO HAVE A NOMINAL DIAMETER OF 12 3/4"
- 2. FOR FABRICATION AND MATERIAL SEE SPECIAL PROVISIONS
- 3. ESTIMATED PENETRATION, 1 FT. LESS THAN LENGTH GIVEN
- 4. PILES MARKED THUS O TO BE BATTERED 2" PER FT. IN DIRECTION SHOWN
- 5. PILE SPACING SHOWN IS AT BOTTOM OF FOOTING

COMPUTED PILE LOADS	TONS/PILE
DEAD LOAD + EARTH PRESSURE	50.0
LIVELoad	4.3
TOTAL	54.3

② DOES NOT INCLUDE TEST PILES
① COUNTY WILL FURNISH DISK PAYMENT FOR PLACING TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS. SEE STD. PLATE NO. 9301, MINN. HIGHWAY DEPT., FOR PLACING

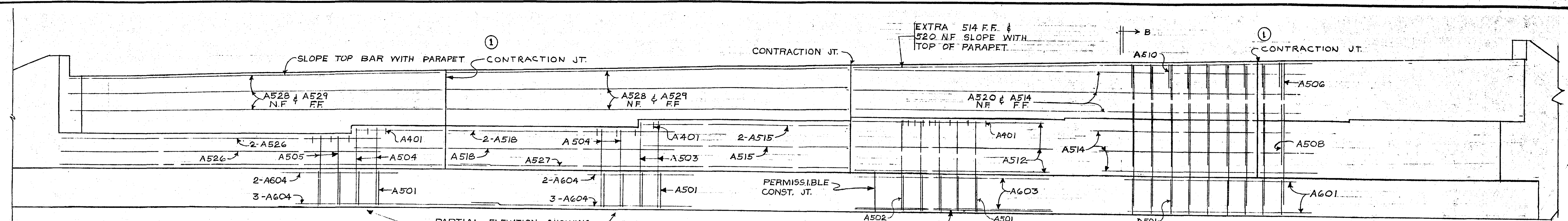
SUMMARY OF QUANTITIES FOR EAST ABUT.	
STRUCTURE EXC. (CLASS E)	225 CY.
CONC. MIX NO. 1A43	75 CY.
CONC. MIX NO. 3Y43	101 CY.
REINFORCEMENT BARS	8130 LB
C-I-P CONC. PILING DELIVERED	1200 LF
C-I-P CONC. PILING DRIVEN	1184 LF
C-I-P CONC. TEST PILES 80 FT. LG.	2 PILE
LOAD TEST	ONE
BENCH MARK DISK	ONE

RAMSEY COUNTY
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 62519
EAST ABUTMENT
DETAILS

APPROVED 3-4-69

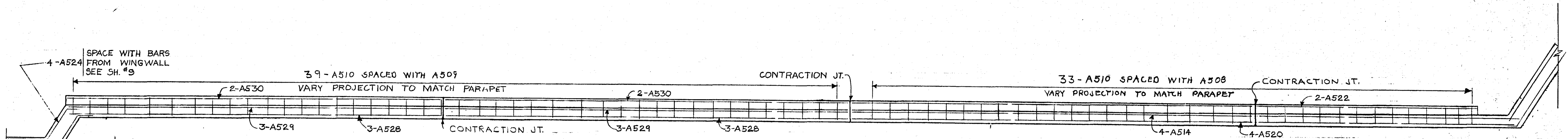
MICROFILMED
RAMSEY CO. ENGR.



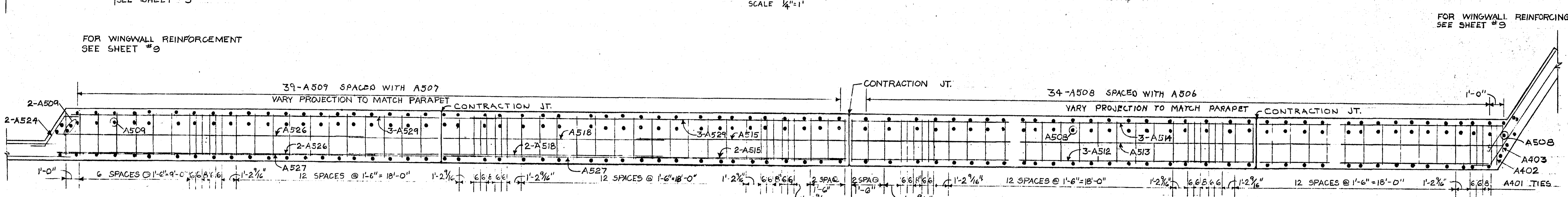
ELEVATION
SCALE 1/4"=1'

PARTIAL ELEVATION SHOWING REINFORCING IN BRIDGE SEAT

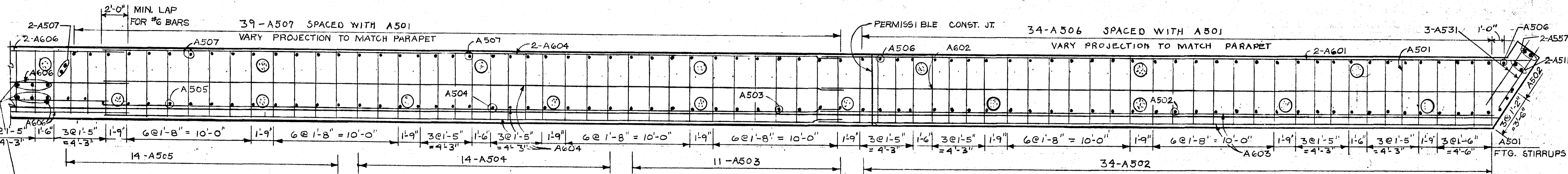
PARTIAL ELEVATION SHOWING PARAPET REINFORCING



PARAPET PLAN
SCALE 1/4"=1'



BRIDGE SEAT PLAN
SCALE 1/4"=1'-0"



FOOTING PLAN
SCALE 1/4"=1'-0"

SEE SHEET NO 16 FOR REINFORCEMENT SCHEDULE AND BAR BENDING DETAILS

NOTE: BRIDGE SEAT REINFORCEMENT SHALL BE CAREFULLY PLACED TO AVOID INTERFERENCE WITH DRILLING HOLES FOR ANCHOR BOLTS. THE SUPERSTRUCTURE BEAMS SHALL BE ERECTED IN FINAL POSITION PRIOR TO DRILLING HOLES FOR AND PLACING ANCHOR BOLTS.

FF MEANS FAR FACE
N.F. MEANS NEAR FACE
① CUT REINF. BARS FOR CONTRACTION JT. SEE DETAIL B260

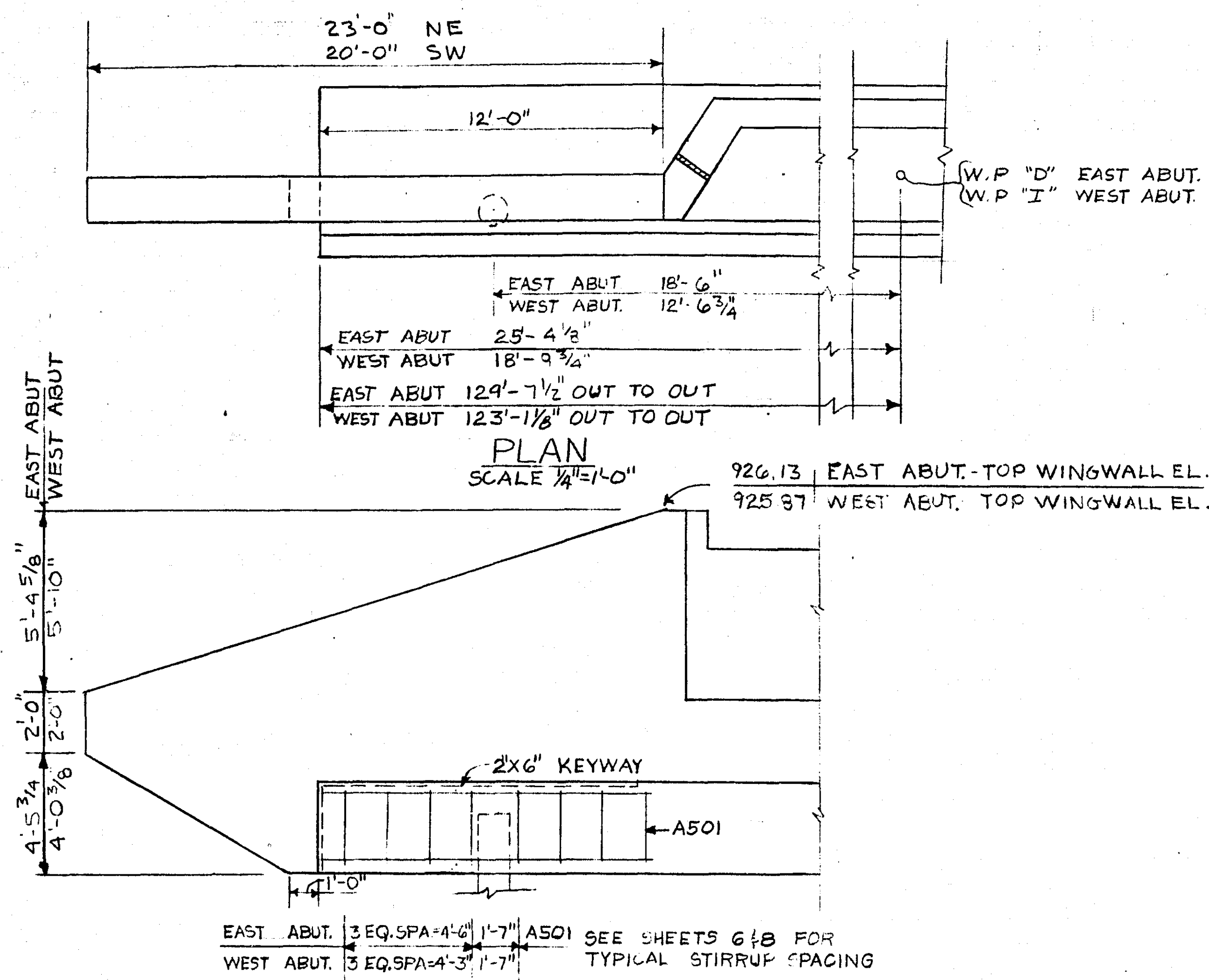
RAMSEY COUNTY
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 62519

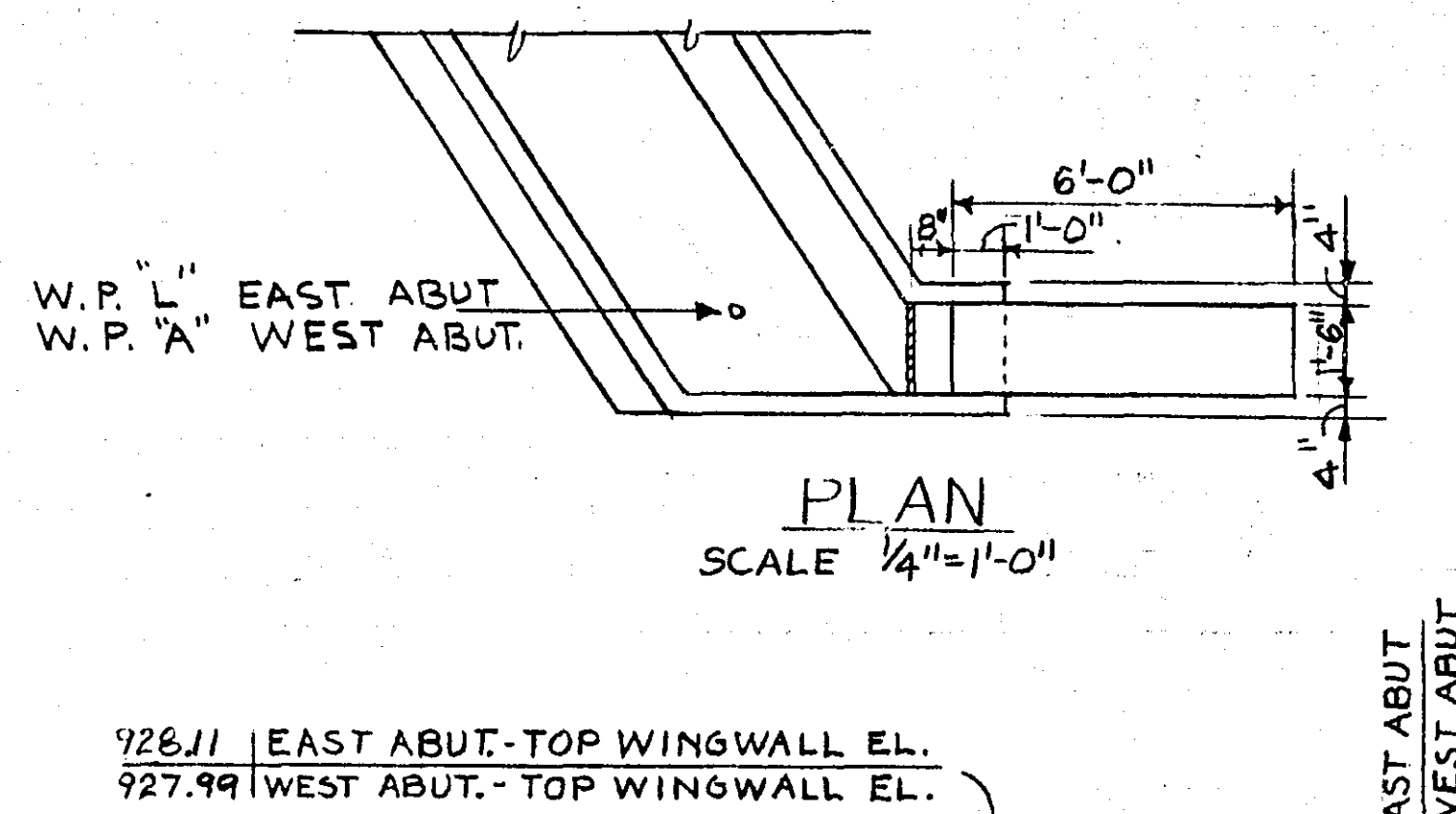
EAST ABUTMENT REINFORCEMENT

MICROFILMED
RAMSEY CO. ENGR.

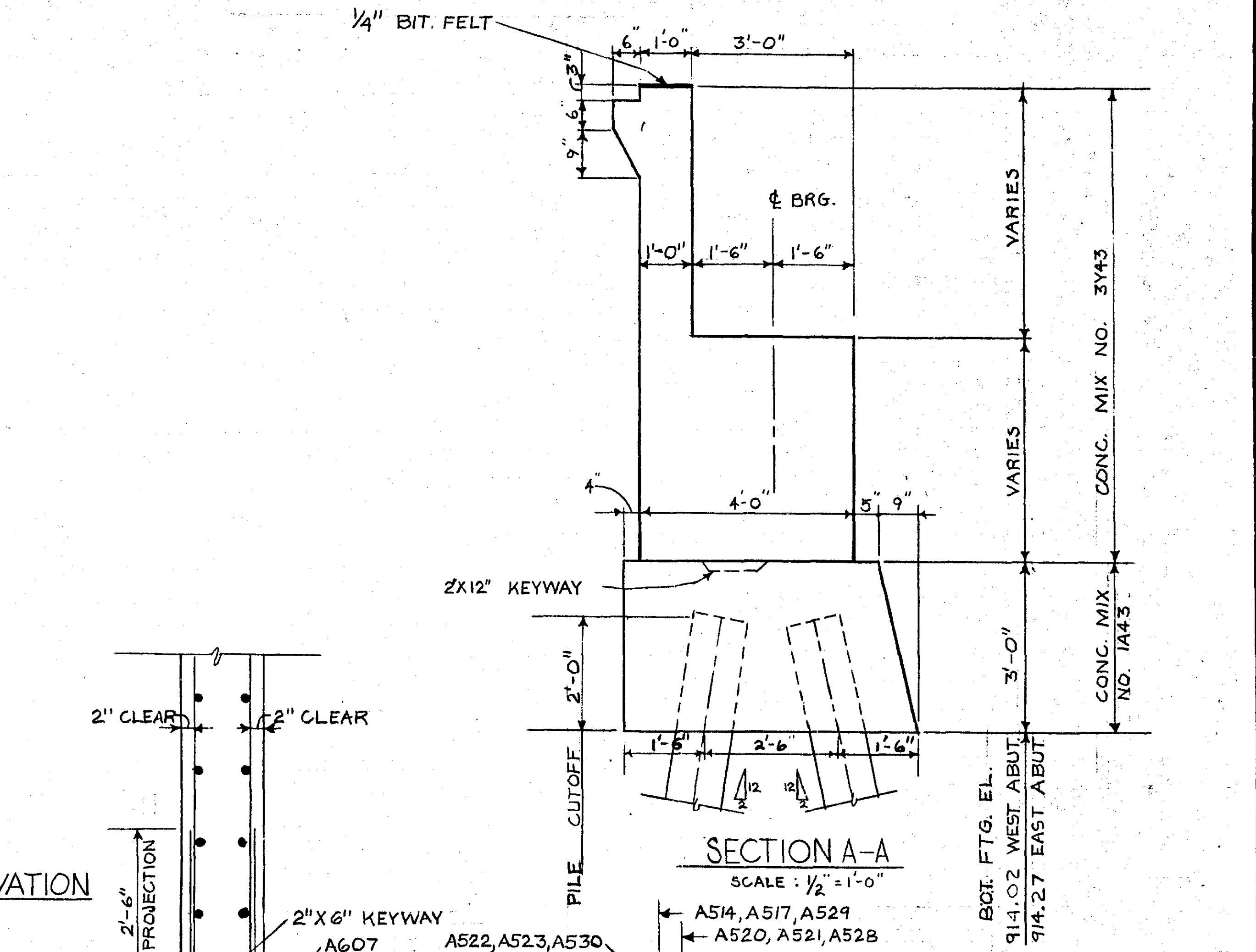
APPROVED 3-4-69



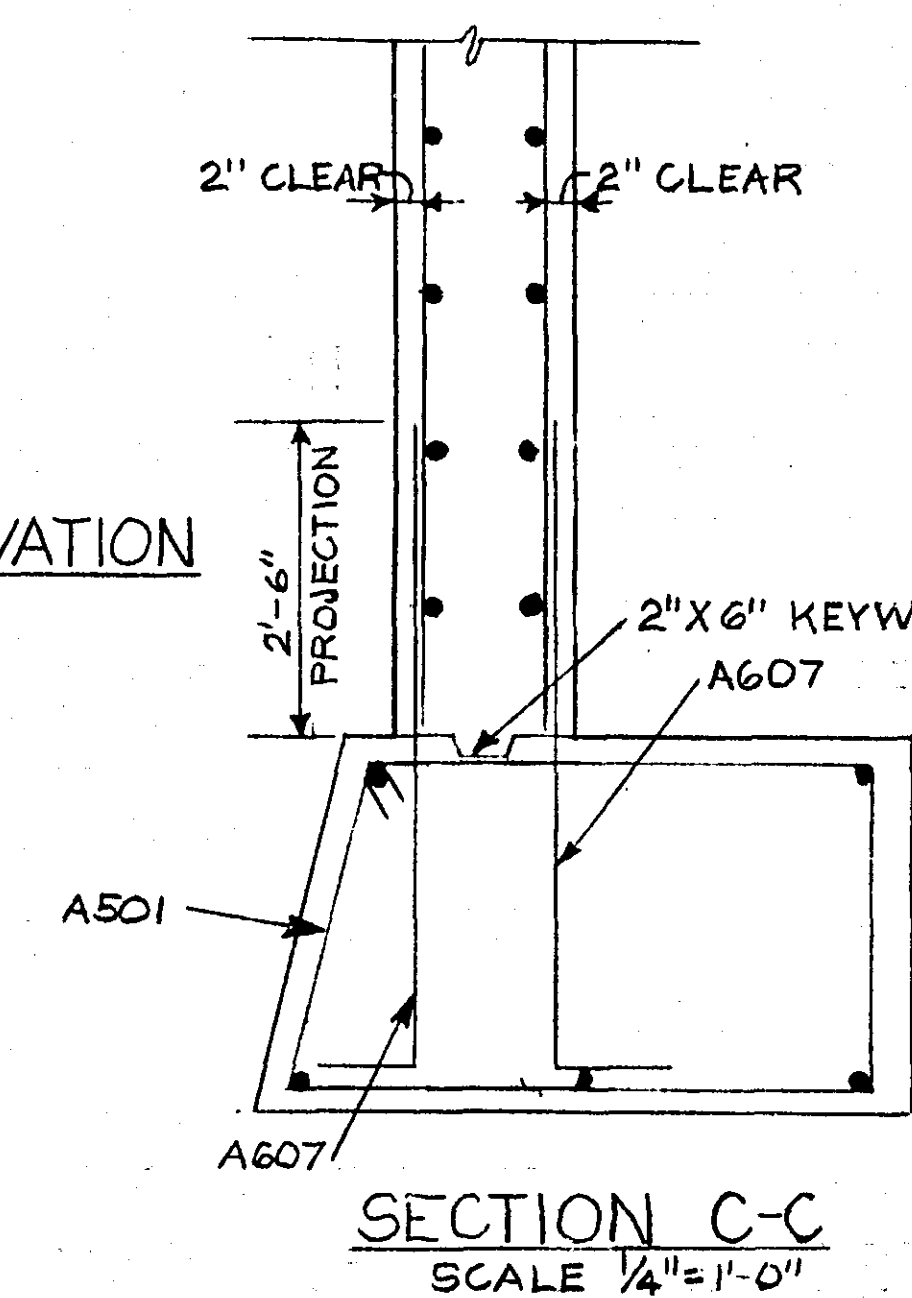
NORTHEAST & SOUTHWEST WINGWALL ELEVATION
SCALE 1/4" = 1'-0"



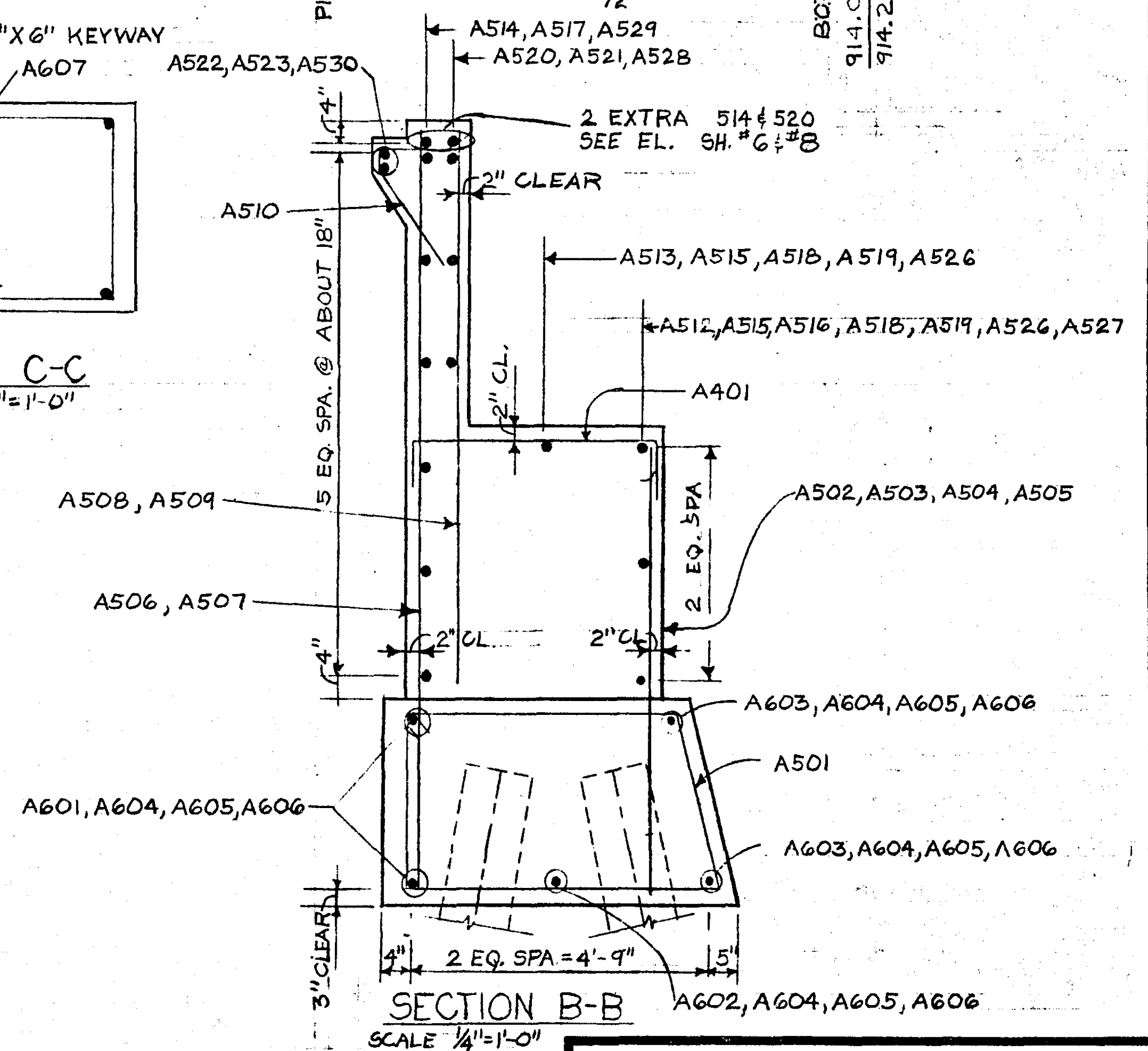
NORTHWEST & SOUTHEAST WINGWALL ELEVATION
SCALE 1/4" = 1'-0"



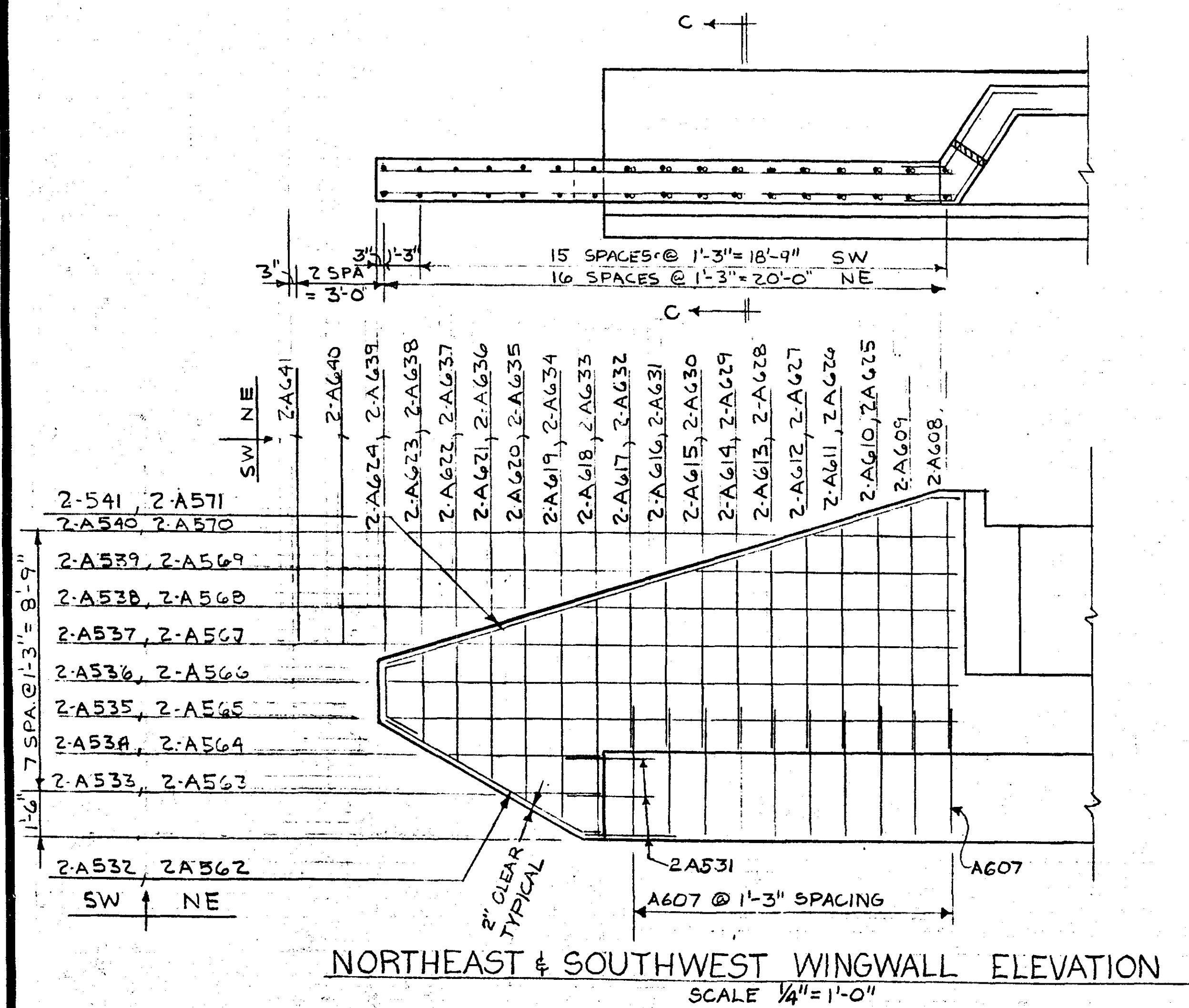
SECTION A-A
SCALE 1/2" = 1'-0"



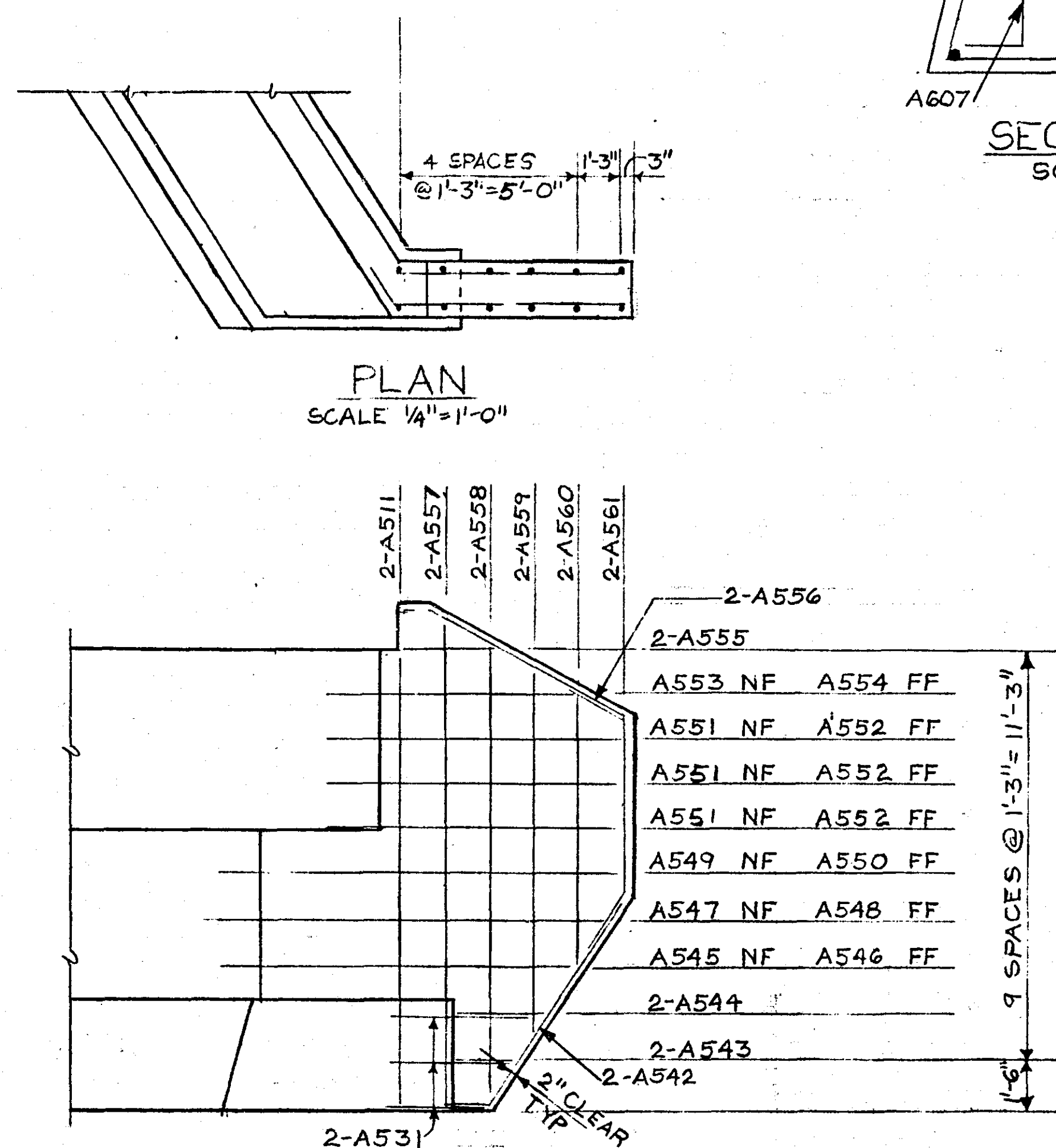
SECTION C-C
SCALE 1/4" = 1'-0"



SECTION B-B
SCALE 1/4" = 1'-0"



NORTHEAST & SOUTHWEST WINGWALL ELEVATION
SCALE 1/4" = 1'-0"



NORTHWEST & SOUTHEAST WINGWALL ELEVATION
SCALE 1/4" = 1'-0"

SEE SHEET NO 16 FOR REINFORCEMENT SCHEDULE AND BAR BENDING DETAILS

RAMSEY COUNTY
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

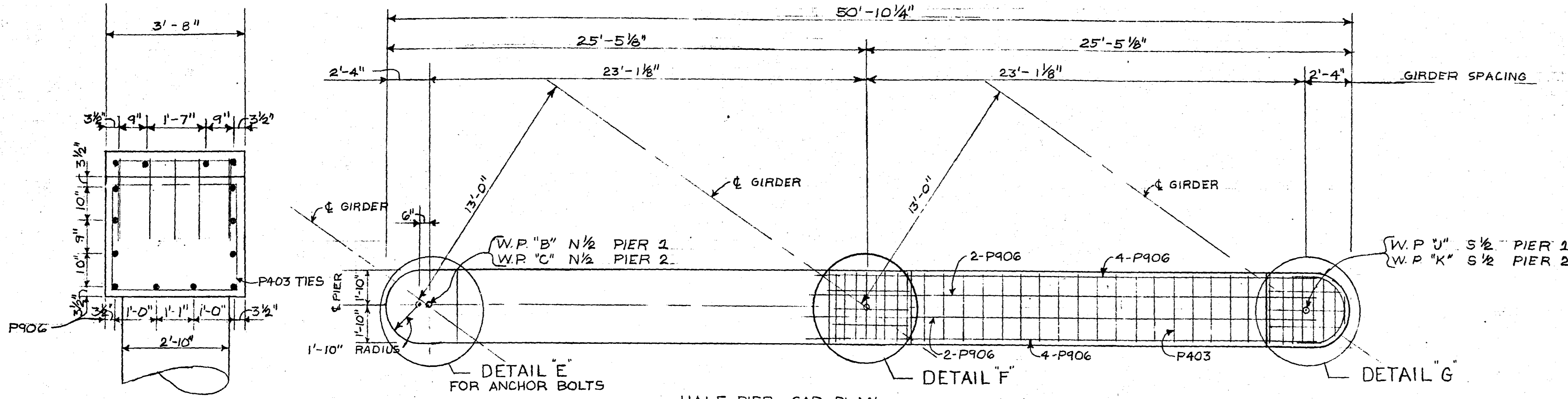
BRIDGE NO. 62519

WINGWALL DETAILS
&
SECTIONS

MICROFILMED
RAMSEY CO. ENGR.

APPROVED 3-4-69

DES	RW
DR	DC
CK	

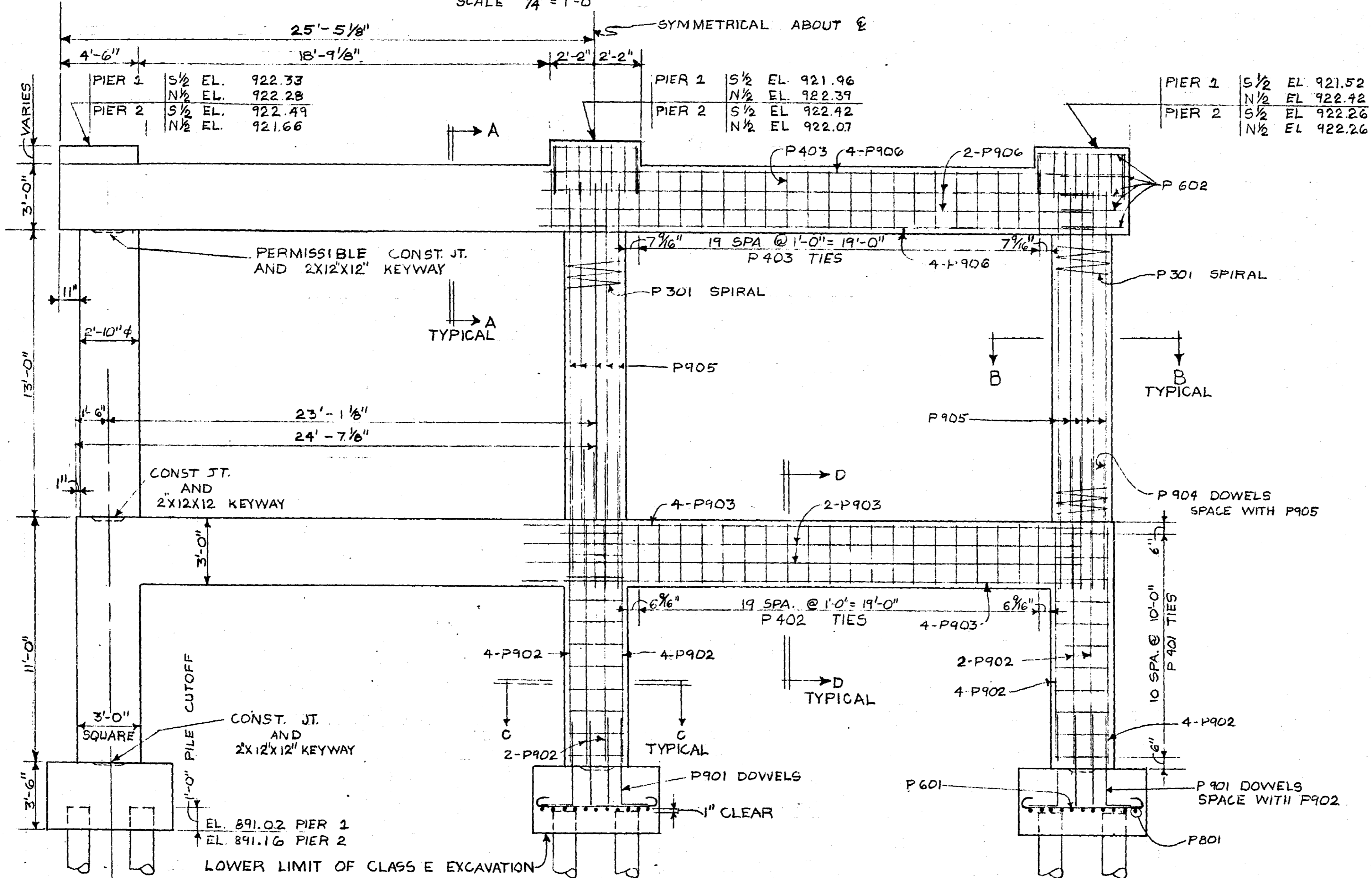
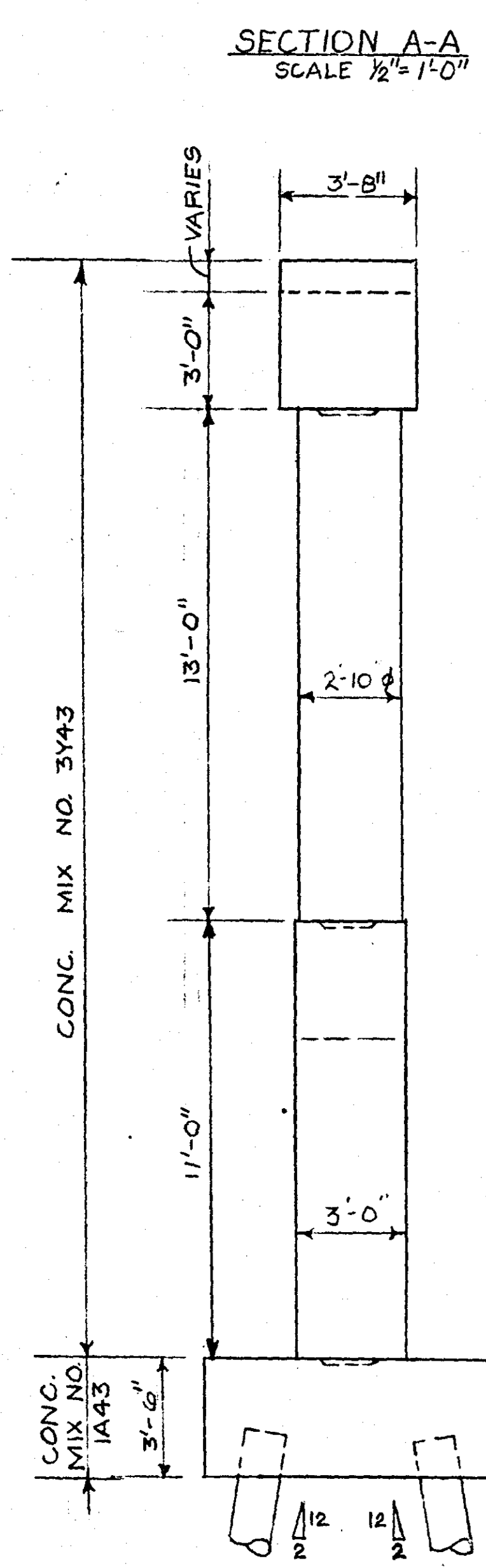


BRIDGE SEAT REINFORCEMENT SHALL BE CAREFULLY PLACED TO AVOID INTERFERENCE WITH DRILLING HOLES FOR ANCHOR BOLTS. THE SUPERSTRUCTURE BEAMS SHALL BE ERECTED IN FINAL POSITION PRIOR TO DRILLING HOLES FOR AND PLACING ANCHOR BOLTS.

SUMMARY OF QUANTITIES FOR 2 PIERS	
STRUCTURE EXCAVATION CLASS E	320 CY
CONC. MIX NO. 1A43	75 CY
CONC. MIX NO. 3Y43	224 CY
REINFORCEMENT BARS	41,700 LB
SPIRAL REINFORCEMENT	1080 LB
C-I-P CONC. PILING DELV'D	1320 L.F.
C-I-P CONC. PILING DRIVEN	1276 L.F.
C-I-P CONC. TEST PILES 30FT LG	2
C-I-P CONC. TEST PILES 40FT LG	2
DOES NOT INCLUDE SPIRALS	

COMPUTED PILE LOADS	TONS/PILE
DEAD LOAD	39.5
LIVE LOAD	11.1
OVERTURNING	14.1
TOTAL	64.7*

* GROUP III CRITICAL
64.7 = 51.8 TONS/PILE - REDUCTION
1.25 PER AASHO: L2.22



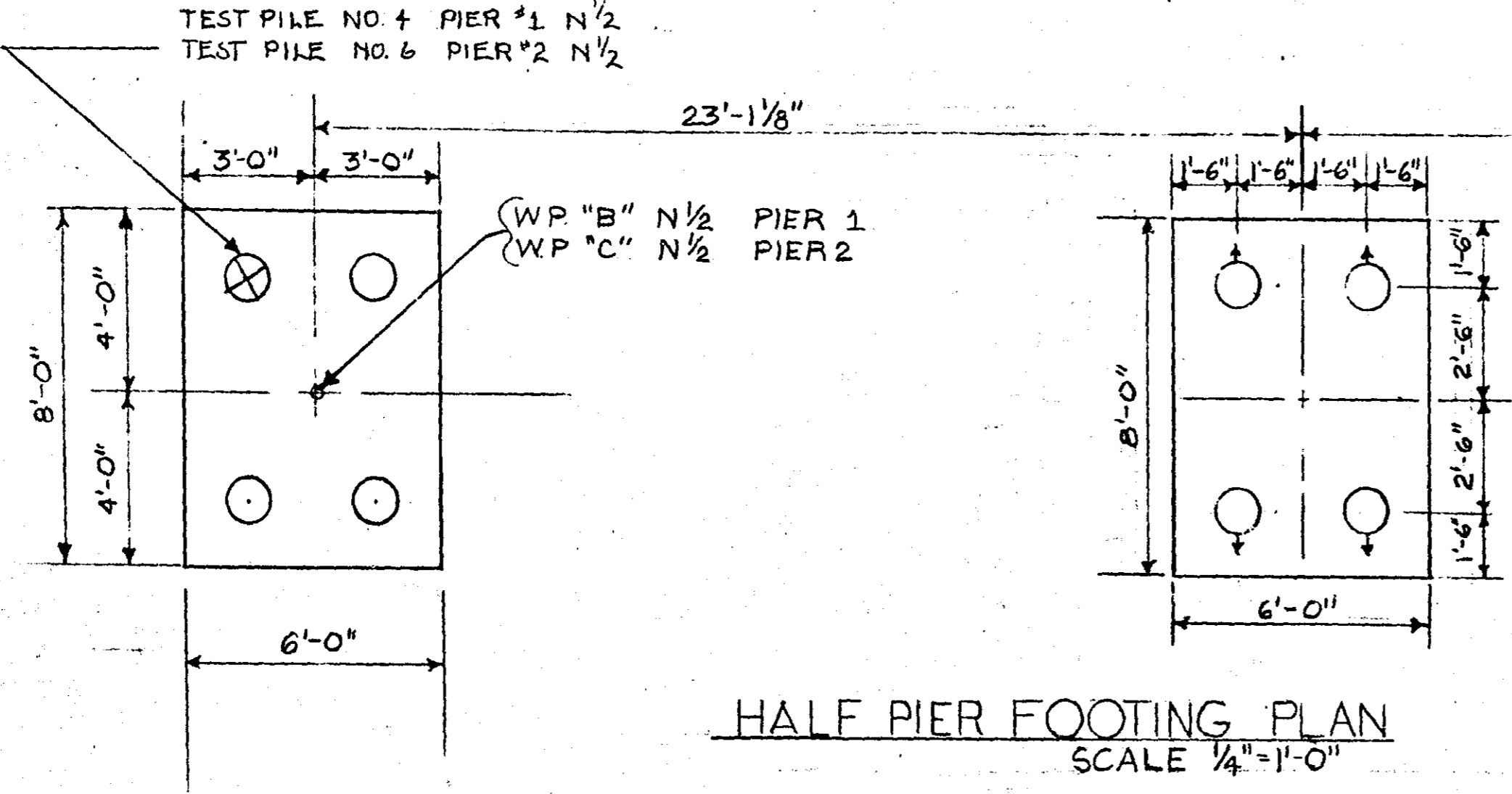
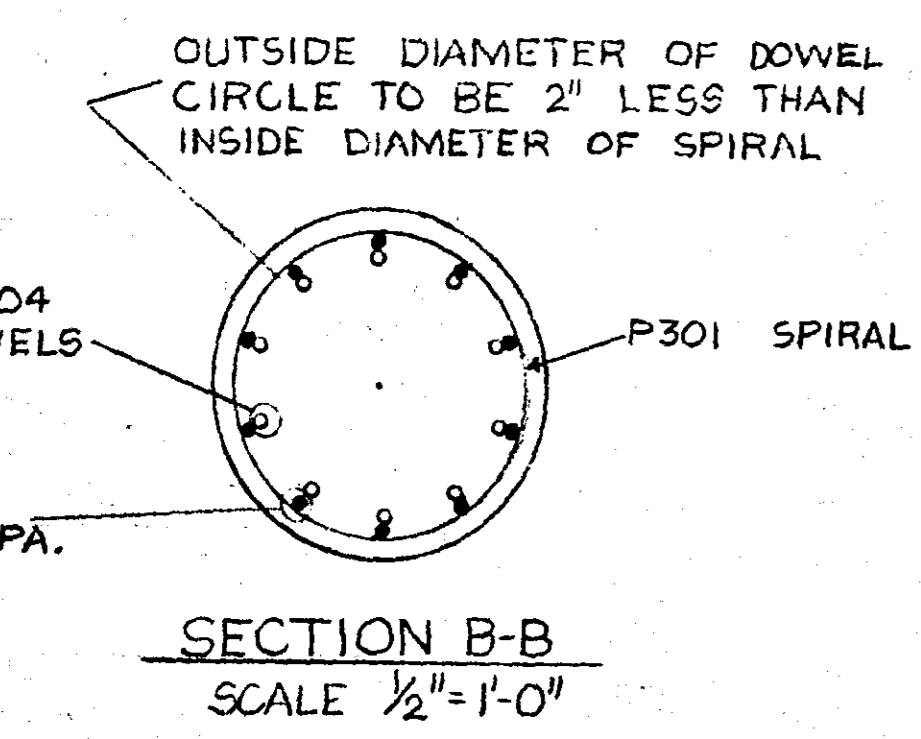
- PIER 1**
- 2 CAST-IN-PLACE CONC. TEST PILES, 30 FT. LG.
 - 22 CAST-IN-PLACE CONC. PILES, ESTIMATED LENGTH 25 FT.
 - 24 CAST-IN-PLACE CONC. PILES FOR PIER 1
- PIER 2**
- 2 CAST-IN-PLACE CONC. TEST PILES, 40 FT. LG.
 - 22 CAST-IN-PLACE CONC. PILES, ESTIMATED LENGTH 35 FT.
 - 24 CAST-IN-PLACE CONC. PILES FOR PIER 2
- PILES TO HAVE NOMINAL DIAMETER OF 12 3/4"
 - FOR FABRICATION AND MATERIALS, SEE SPECIAL PROVISIONS
 - ESTIMATED PENETRATION 1 FT. LESS THAN LENGTH GIVEN
 - PILES MARKED THUS O TO BE BATTERED 2" PER FT. IN DIRECTION SHOWN
 - PILE SPACING SHOWN IS AT BOTTOM OF FOOTING

END ELEVATION
SCALE: 1/4" = 1'-0"

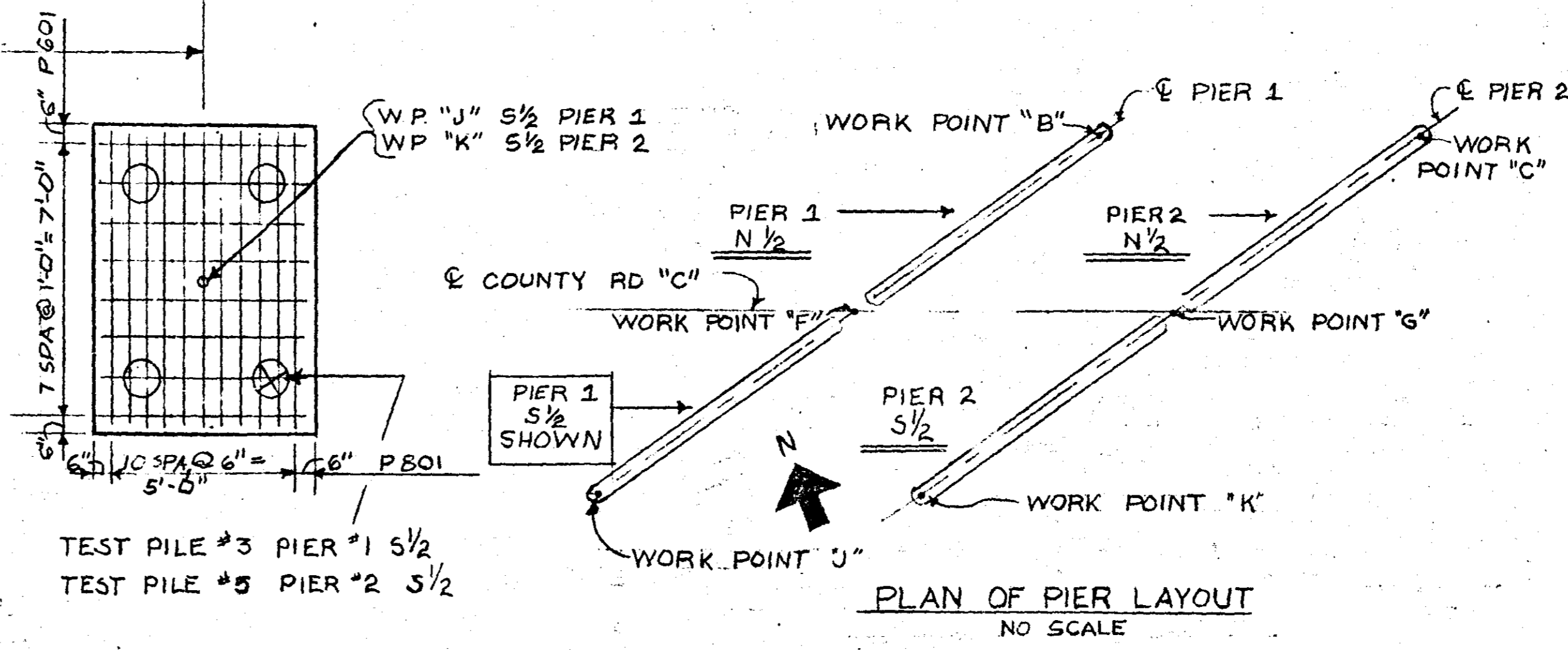
PIER #1 SOUTH HALF ELEVATION
(LOOKING EAST)
SCALE: 1/4" = 1'-0"

SECTION D-D
SCALE: 1/2" = 1'-0"

SECTION C-C
SCALE: 1/2" = 1'-0"



HALF PIER FOOTING PLAN
SCALE: 1/4" = 1'-0"



PLAN OF PIER LAYOUT
NO SCALE

SEE SHEET NO. 16 FOR REINFORCEMENT SCHEDULE AND BAR BENDING DETAILS

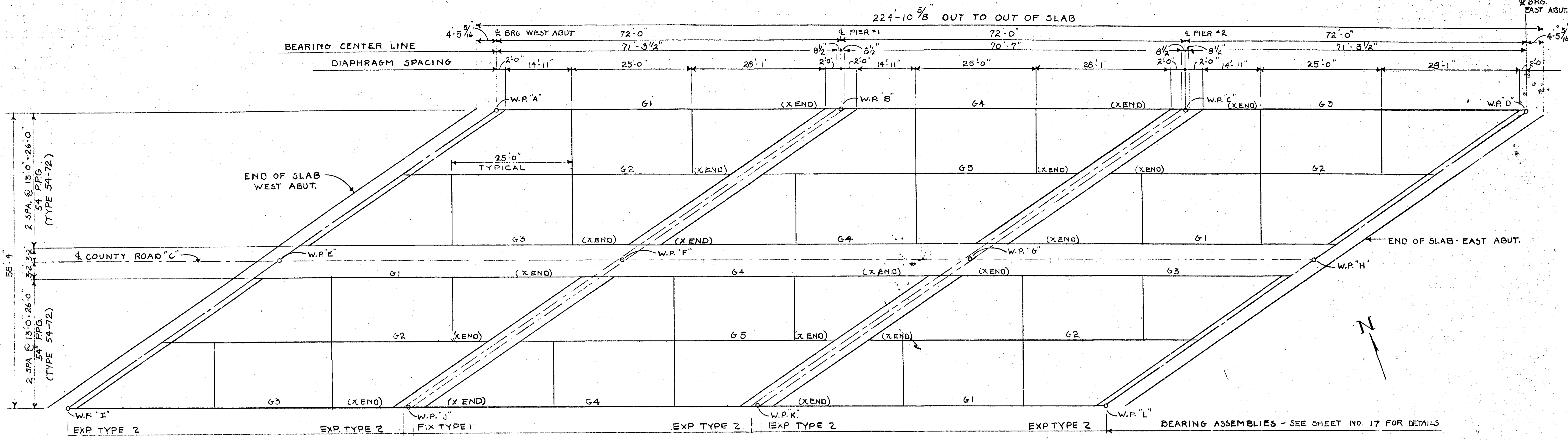
RAMSEY COUNTY
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 62519

PIER DETAILS

MICROFILMED
RAMSEY CO. ENGR.

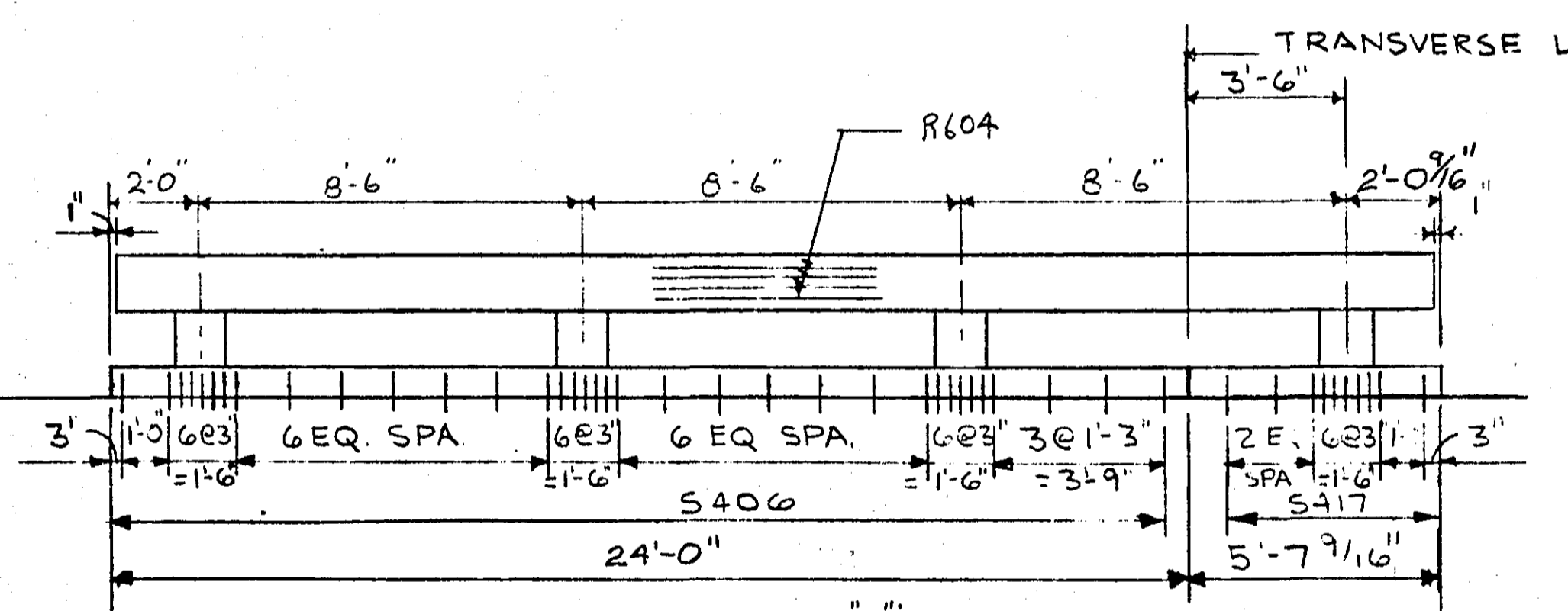
APPROVED 3-4-69



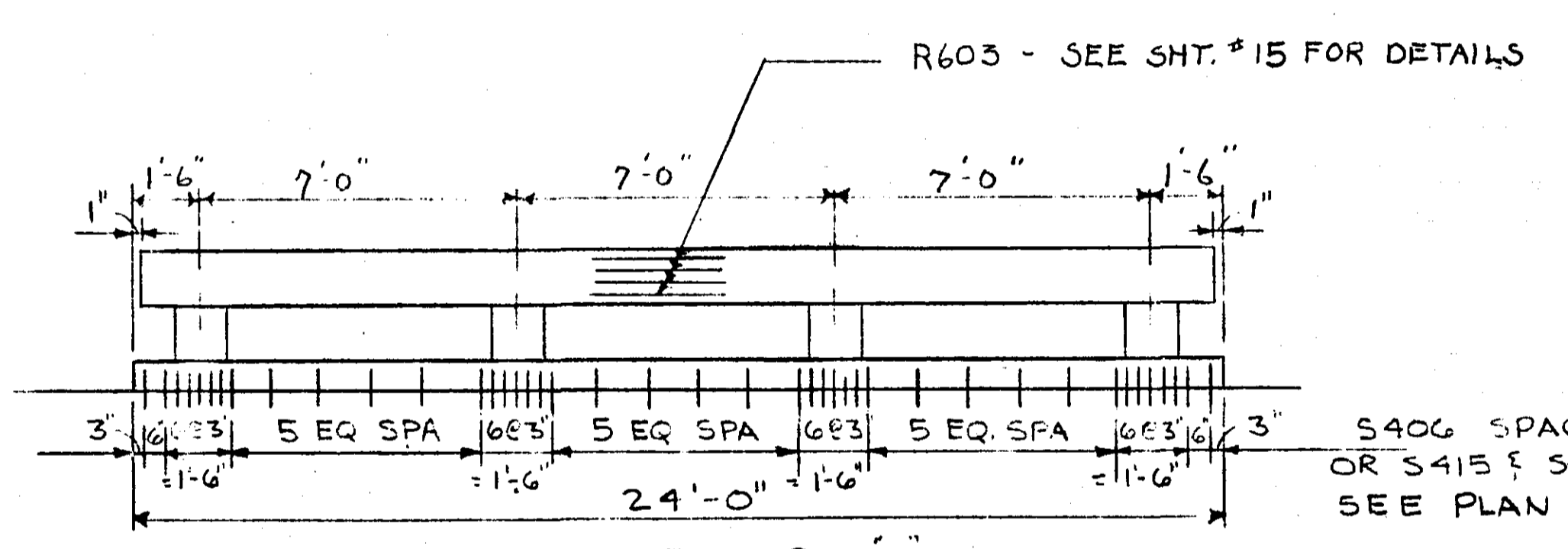
FRAMING PLAN
SCALE: 3/32" = 1'-0"

- ① INCLUDES RAILING QUANTITIES
- ② TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS
- ③ BRIDGE NO. 62519
DATE 1969
- ④ THE VOLUME OF DECK CONCRETE FOR PAYMENT SHALL BE COMPUTED USING AN AVERAGE STOOL HEIGHT OF ONE INCH.

QUANTITIES FOR SUPERSTR.	
④ CONC. MIX 3Y43	496 CY.
① CONC. MIX 3Y46A	138 CY.
① REINFORCEMENT	146580 LB
PRESTR. CONC. GIR (54-72)	18 EA.
BRG ASSEM. FIX TYPE I	6 EA.
BRG ASSEM. EXP. TYPE 2-1	12 EA.
BRG ASSEM. EXP. TYPE 2-2	18 EA.
STRUCTURAL STEEL (3306)	1210 LB.
ORNAMENTAL MET. RAILING	450 L.F.
③ ② BRIDGE NAME PLATE (2104) ONE	
② PREFORMED JT. FILLER - SEE SCHED.	
② 1/2" # BUTYL ROD STOCK	225 LF.

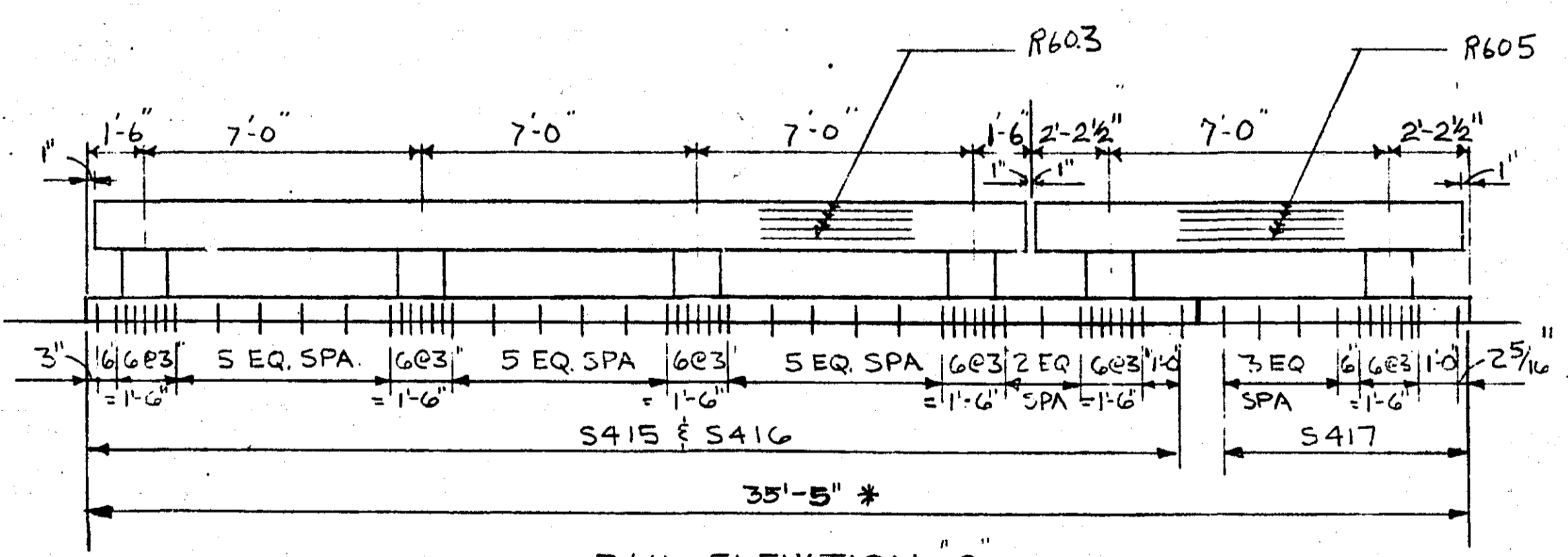


RAIL ELEVATION "A"
ONE THUS

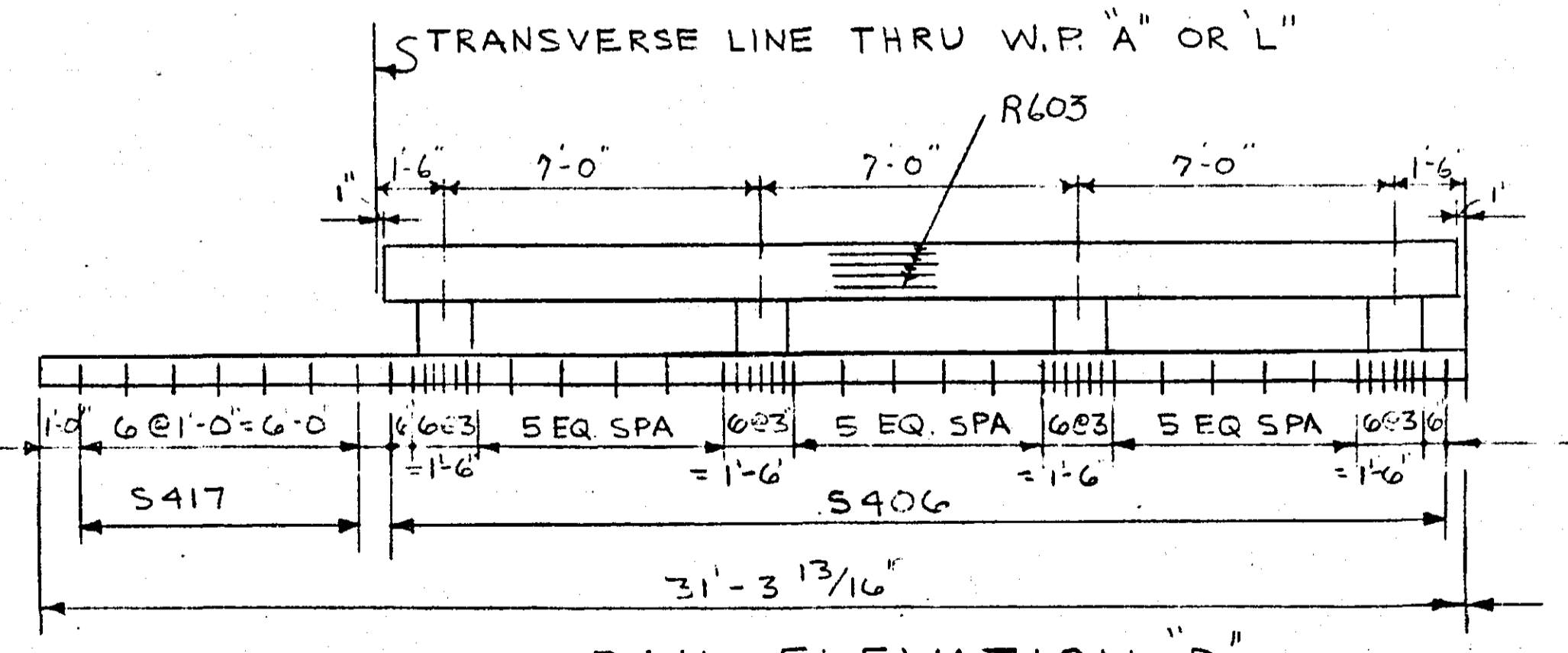


RAIL ELEVATION "B"
14 THUS
(13 THUS FOR S406)
(1 THUS FOR S415 & S416)

SEE DET. B. SHEET #14 FOR PLACING OF S415 & S416 BARS



RAIL ELEVATION "C"
ONE THUS
* ALONG INSIDE FACE OF RAIL



RAIL ELEVATION "D"
TWO THUS

THE LIST OF JOINT FILLER IS FOR THE CONTRACTORS CONVENIENCE ONLY. ANY ADDITIONAL JOINT FILLER REQUIRED AS SHOWN ON THE PLANS SHALL BE FURNISHED BY THE CONTRACTOR AT NO ADDITIONAL COMPENSATION.

LIST OF PREFORMED CORK JT. FILLER		
NO.	SIZE	LOCATION
4	1" x 15" x 1'-6"	ABUTMENT CORNERS
1	1" x 10" x 225'	MEDIAN

LIST OF PREFORMED BIT. FELT. JT. FILLER		
NO.	SIZE	LOCATION
1	1/4" x 12" x 111'	TOP OF ABUT. PARAPET
1	1/4" x 12" x 111.7'	" " " "
2	1/4" x 18" x 2'-6"	" " " "

RAIL ELEVATION
SCALE: 1/4" = 1'-0"

NOTES FOR JOINTS & JOINT FILLER

1. POURED CONCRETE JT. SEALER SHALL COMPLY WITH MHD 3723 OR 3725
2. BIT. FELT SHALL COMPLY WITH MHD 3701
3. CORK SHALL COMPLY WITH MHD 3702. SECURE CORK WITH 2 1/2" LB. #11 GA. COPPER NAILS ABOUT 18" CENTERS. INCLUDE IN PRICE BID FOR OTHER ITEMS.
4. FINISH TOP OF ALL SIDEWALK & MEDIAN JOINTS WITH SMALL RADIUS EDGER AND VERTICAL EDGES WITH 1/2" V. STRIP. PAINT JOINT WITH ASPHALT OR APPROVED EQUAL TO BREAK BOND. NO REINF. THRU JOINTS. SEAL TOP AND FRONT FACE OF JOINT WITH CONC. JOINT SEALER.
5. MAKE SAWCUT IN ROADWAY SLAB OVER CENTER LINE OF PIERS AS SOON AS THE CUTTING CAN BE DONE WITHOUT RAVELLING THE CONCRETE.
6. SEAL ALL SAW CUTS WITH CONC. JOINT SEALER.

RAMSEY COUNTY
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

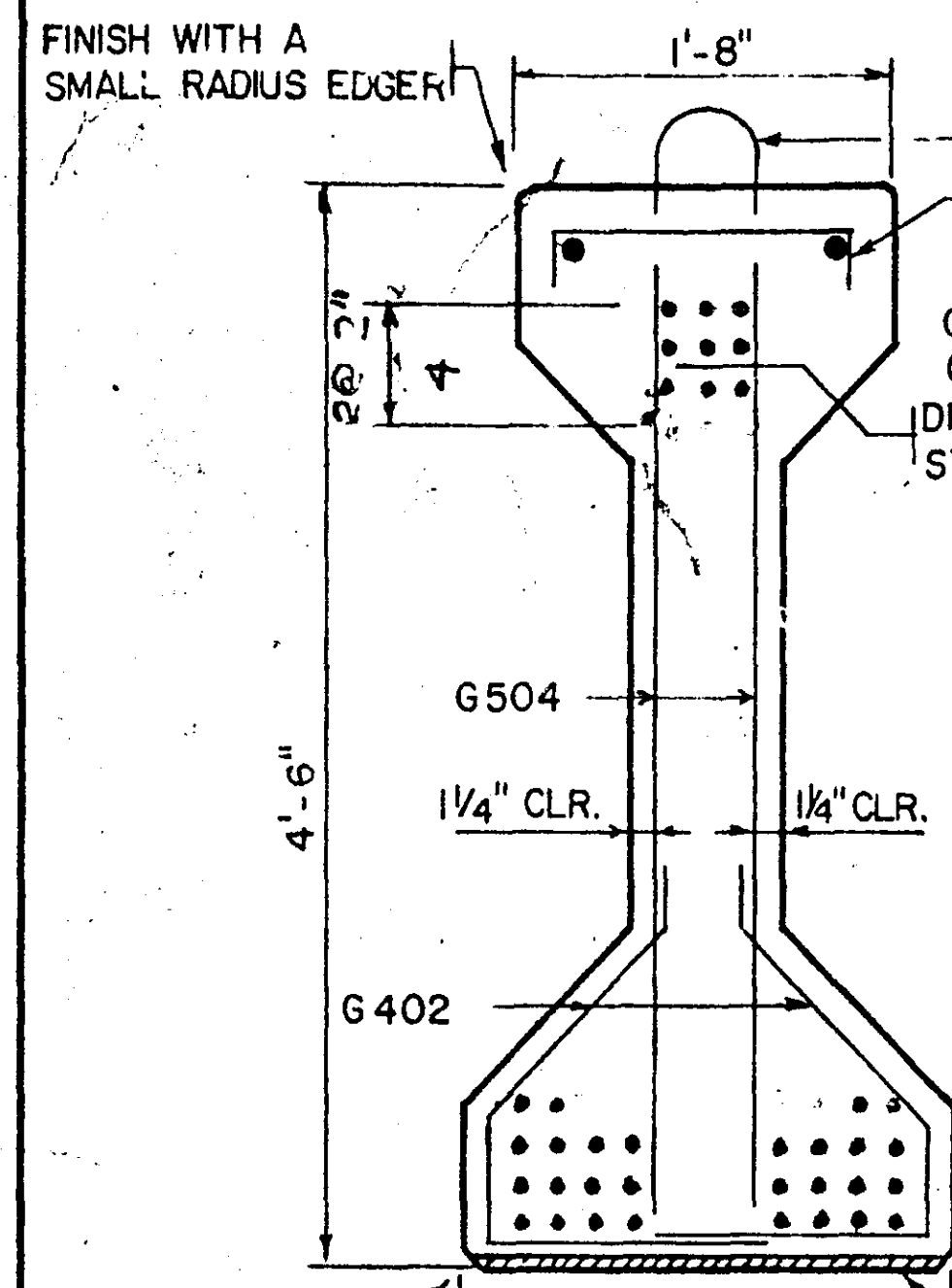
BRIDGE NO. 62519

FRAMING PLAN

APPROVED 3-4-69

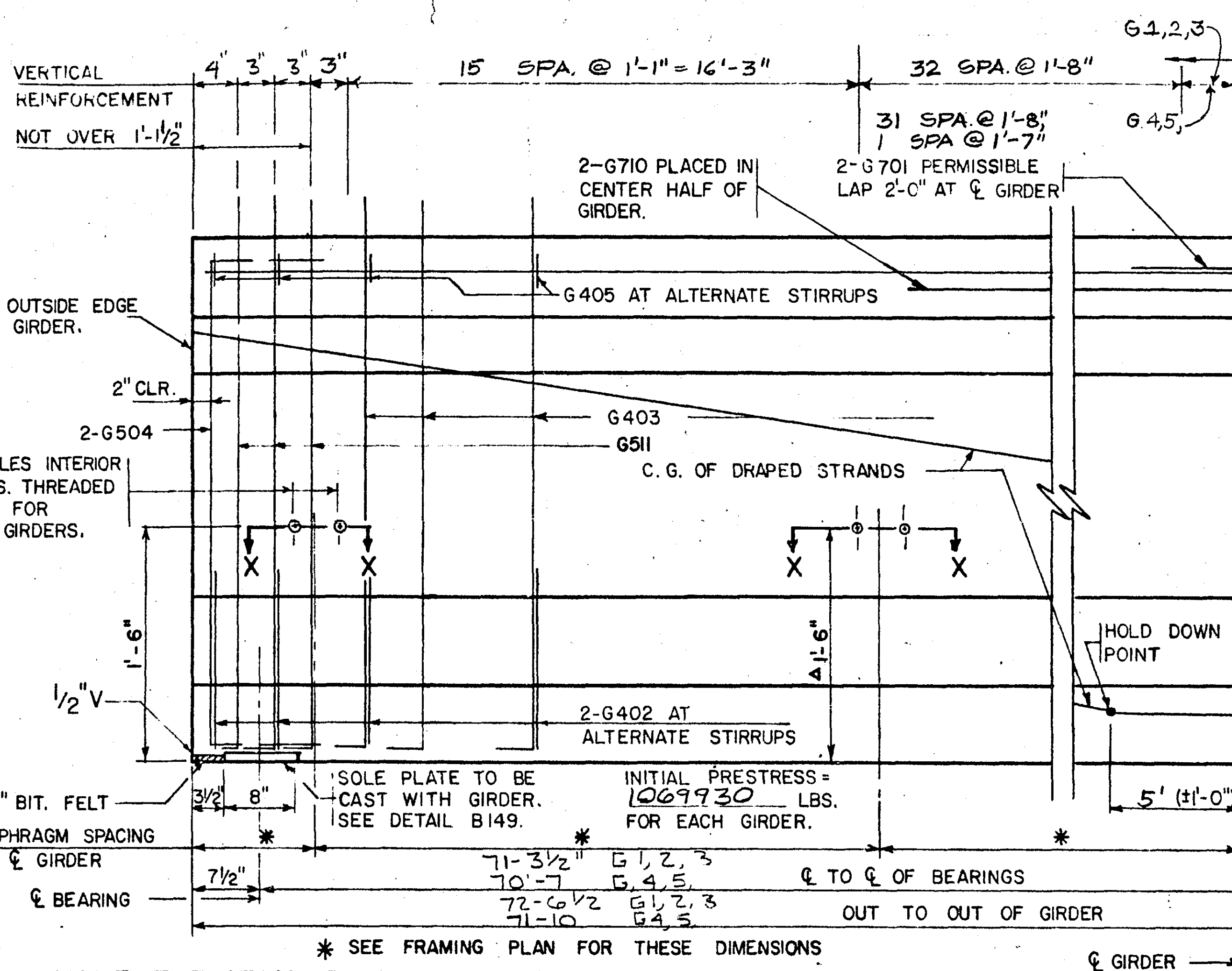
MICROFILMED
RAMSEY CO. ENGR.

CUT PRE-TENSIONED STRANDS FLUSH WITH CONCRETE. PAINT END WITH A PROTECTIVE COATING OF A GRAY EPOXY FORMULATION.



END VIEW

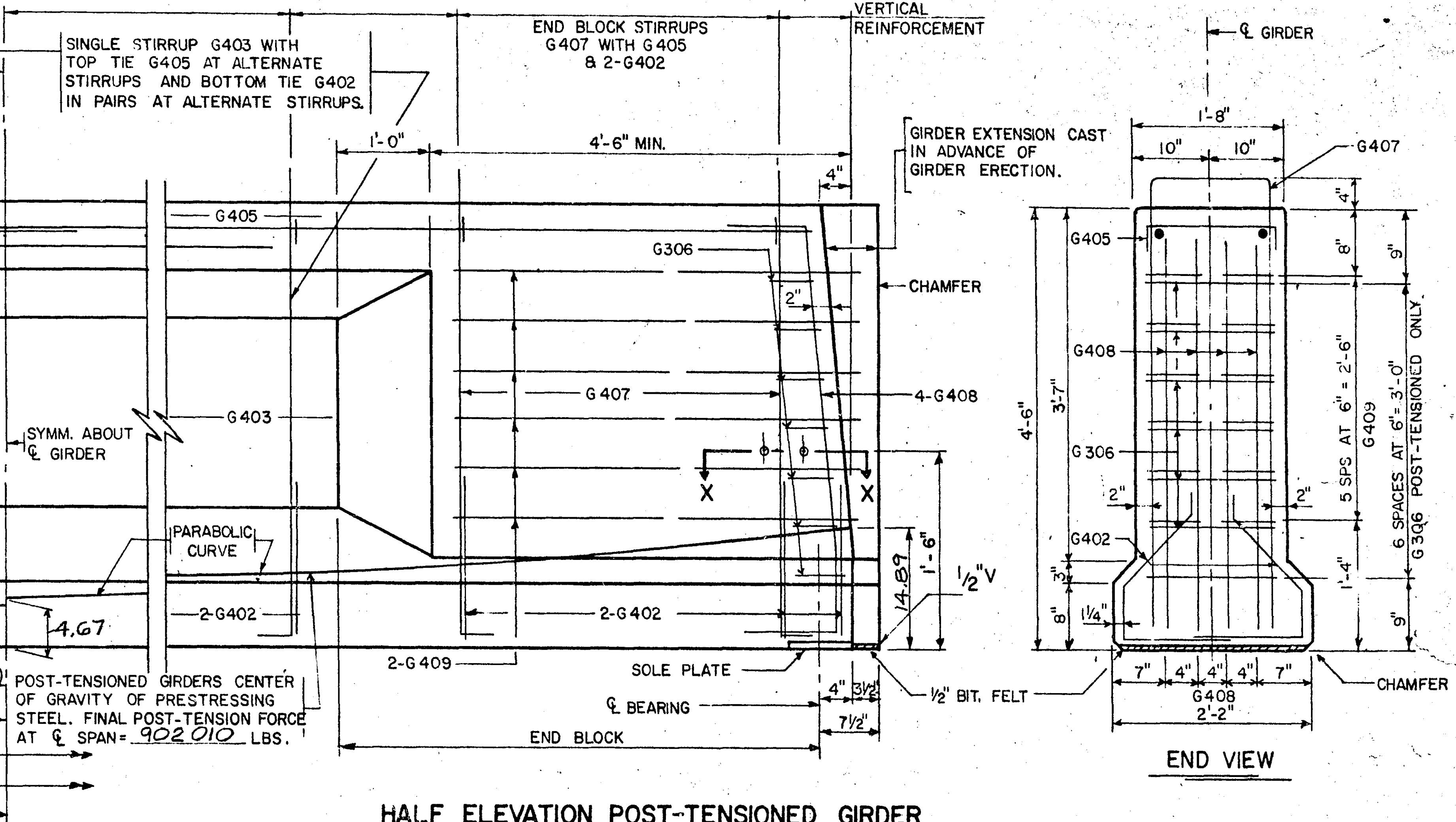
DETAILS NOT SHOWN ARE THE SAME AS SECTION AT \bar{C} GIRDER.



HALF ELEVATION PRE-TENSIONED GIRDER

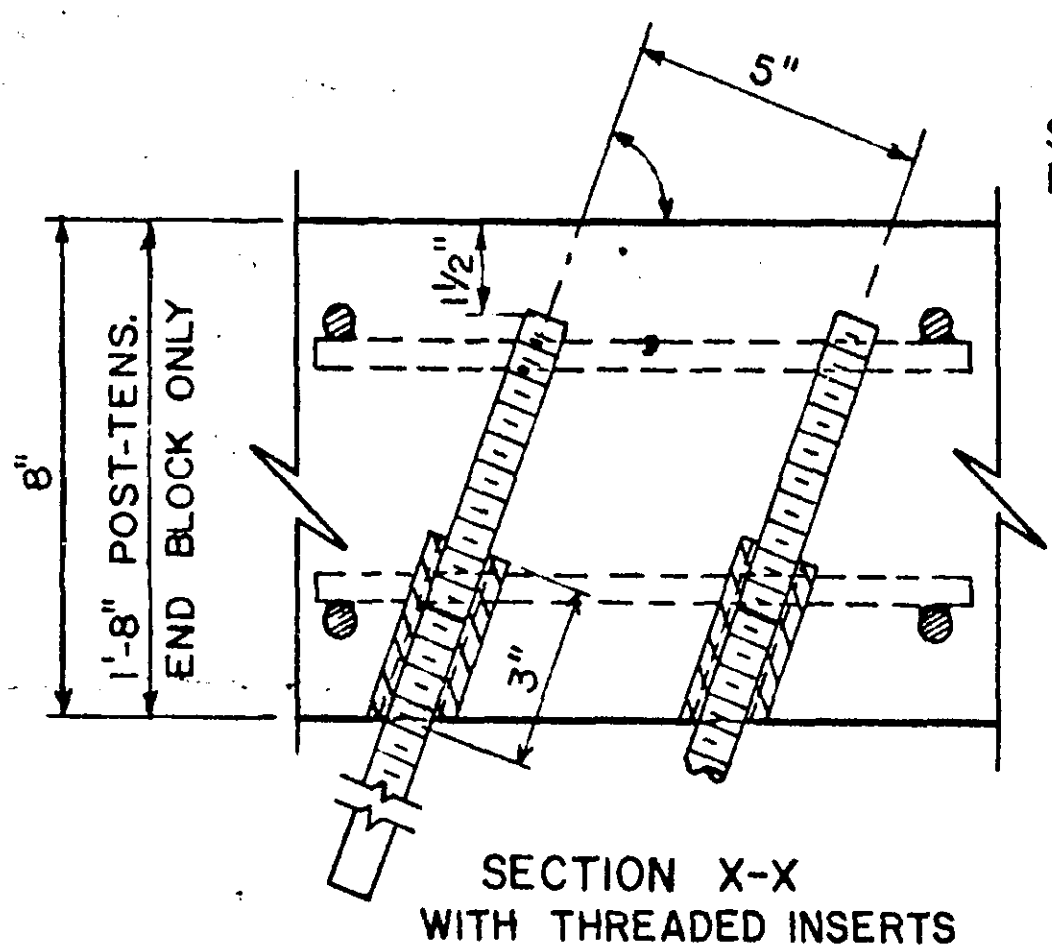
APPROX. WT. 29.8 TONS G1,2,3
29.5 TONS G4,5,6

A TOLERANCE OF $\pm 6''$ WILL BE PERMITTED IN THIS DIMENSION.

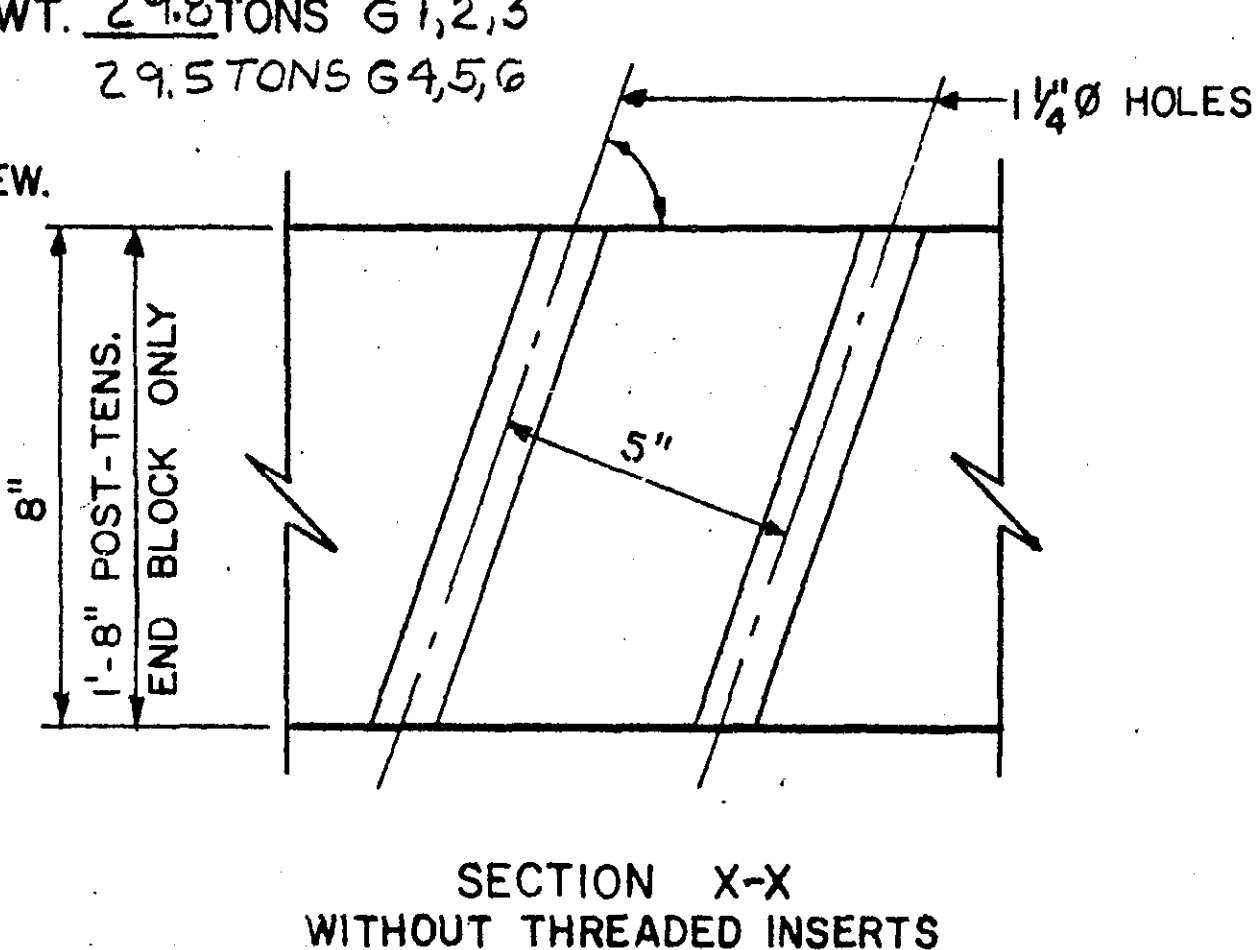


HALF ELEVATION POST-TENSIONED GIRDER

DETAILS AND DIMENSIONS NOT SHOWN ARE THE SAME AS FOR PRE-TENSIONED GIRDERS.

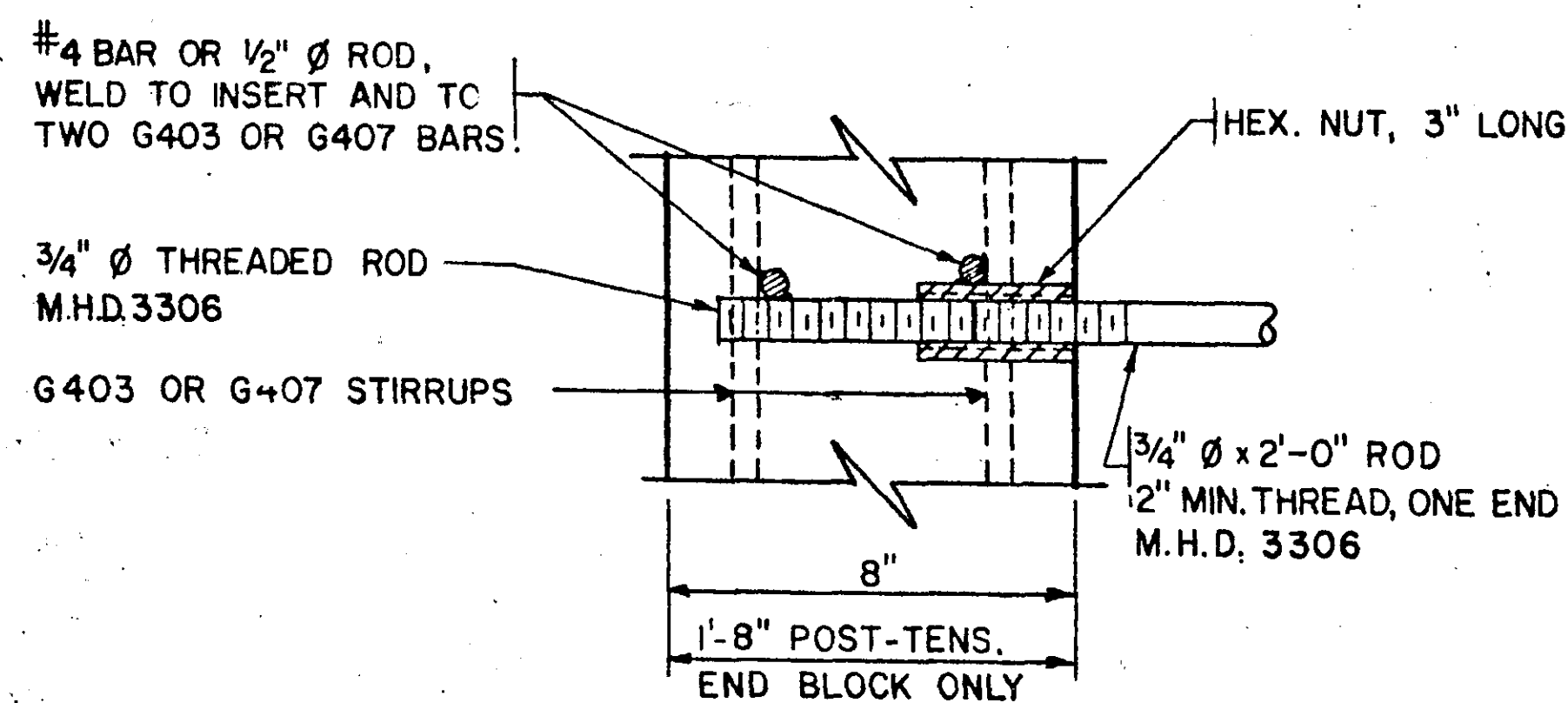


SECTION X-X WITH THREADED INSERTS

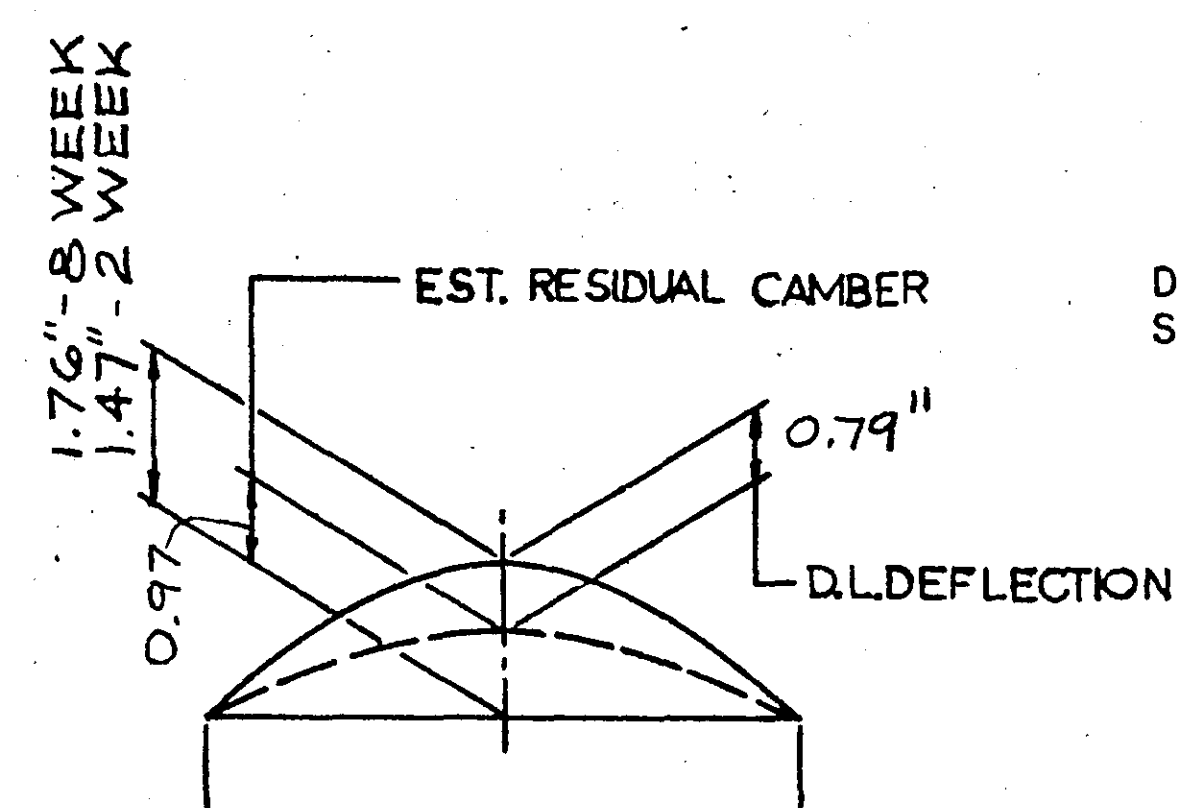


SECTION X-X WITHOUT THREADED INSERTS

INTERMEDIATE STIRRUPS MAY BE SHIFTED THE MINIMUM DISTANCE REQUIRED TO CLEAR HOLES OR INSERTS FOR INTERMEDIATE DIAPHRAGMS.

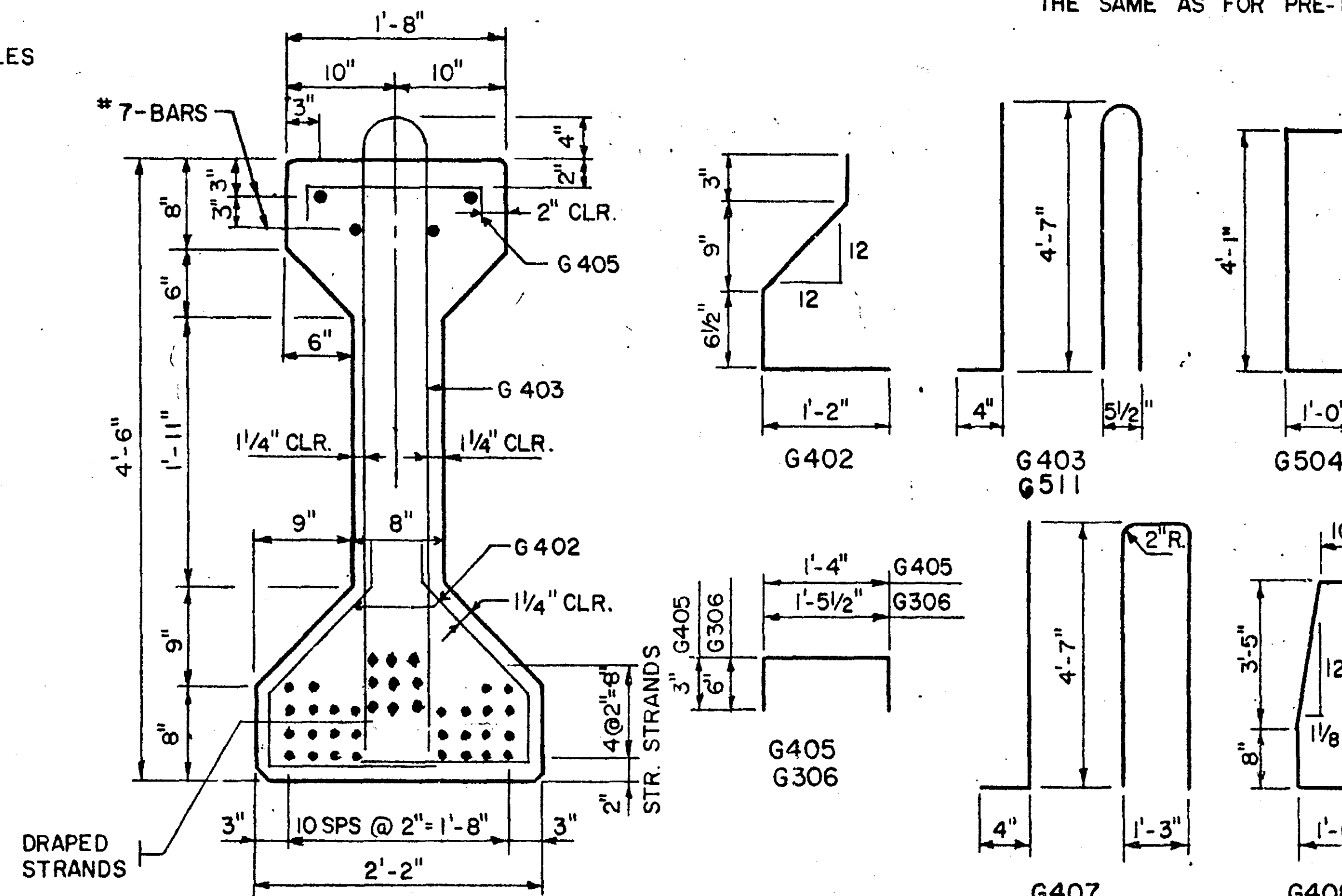


SECTION THRU THREADED INSERTS AND RODS IN FACIA GIRDERS AND IN INTERMEDIATE GIRDERS AT STAGGERED DIAPHRAGMS. (NO PAINT)



CAMBER DIAGRAM

DEFLECTIONS SHOWN ARE FOR WEIGHT OF SLAB, CURB, RAILING, AND DIAPHRAGMS ONLY. THE ENGINEER WILL TAKE ELEVATIONS AT TOP OF GIRDERS AFTER ERECTION AND WILL ALLOW FOR DEFLECTIONS SHOWN TO ENABLE THE CONTRACTOR TO BUILD FORMS TO CORRECT GRADE AND SPECIFIED SLAB THICKNESS.



SECTION AT \bar{C} GIRDER (STRANDS FOR PRE-TENSIONED SHOWN)

Y DISTANCES (IN INCHES)			
	NO.	\bar{C} SPAN	END
STRAIGHT STRANDS	28	4.57	
DRAPED STRANDS	9	5.0	47" \square
TOTAL STRANDS	37	4.67	

Y = DISTANCE OF CENTER OF GRAVITY OF PRE-TENSIONED STRANDS FROM BOTTOM OF GIRDER. ALL STRANDS SPACED AT 2" CENTERS BOTH DIRECTIONS.

ALL STRANDS $1/2'' \phi$, 270 KIP

A TOLERANCE OF $\pm 2''$ WILL BE PERMITTED IN THIS DIMENSION.

GENERAL NOTES

- SEE FRAMING PLAN FOR GIRDER ENDS MARKED "X"
- TOPS OF GIRDERS SHALL BE ROUGH FLOATED & BROOMED TRANSVERSELY FOR BOND.
- PROVIDE HANDLING HOOKS OR DEVICES AS REQUIRED BY CONTRACTOR. HOOKS OR DEVICES PROVIDED WILL BE SUBJECT TO APPROVAL OF ENGINEER AND SHALL BE INSTALLED WITHIN 4'-0" OF THE END OF GIRDER.
- A MODIFIED STRAND PATTERN WHICH DOES NOT CHANGE CENTER OF GRAVITY OF STRANDS MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
- EACH GIRDER SHALL BE MARKED, SHOWING BRIDGE NUMBER, CASTING DATE, AND INDIVIDUAL IDENTIFICATION LETTERS AND NUMBERS. MARKINGS SHALL BE MADE ON THE FACE OF THE GIRDER, NEAR THE END, SO LOCATED THAT THEY WILL BE EXPOSED AFTER THE END DIAPHRAGMS HAVE BEEN CAST. FACIA GIRDERS SHALL BE MARKED ON AN INSIDE FACE. ALL MARKINGS SHALL BE STENCILLED, AND BE CLEARLY LEGIBLE. FOR LOCATION OF GIRDERS, SEE FRAMING PLAN.
- ALL MATERIAL AND WORK SHOWN OR NOTED ON THIS SHEET SHALL BE INCLUDED IN UNIT PRICE BID FOR PRESTRESSED CONCRETE GIRDERS. SEE M.H.D. 2405.

	MINIMUM CONCRETE STRENGTHS - P.S.I.		
	PRE-TENSIONED	POST-TENSIONED	
	①③④ f'ci	②③④ f'c	①②③④ f'c
COMPUTED MIN. CONC. STRENGTH	4422	5768	5670
REQUIRED MIN. CONC. STRENGTH	4500	5768	5670

- ① MINIMUM CONCRETE STRENGTH AT TIME OF PRESTRESS TRANSFER.
- ② MINIMUM CONCRETE STRENGTH WHEN CURING CAN BE DISCONTINUED AND GIRDER TRANSPORTED AND INSTALLED.
- ③ REQUIRED MINIMUM CONCRETE STRENGTH SHALL BE USED. COMPUTED MINIMUM CONCRETE STRENGTH IS FOR INFORMATION ONLY.
- ④ WHEN THE REQUIRED MINIMUM CONCRETE STRENGTH IS GREATER THAN 5000 P.S.I., SEE SPECIAL PROVISIONS.

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 62519

54" PRESTRESSED
CONCRETE GIRDER
TYPE (54-72)

APPROVED: 3-1-69

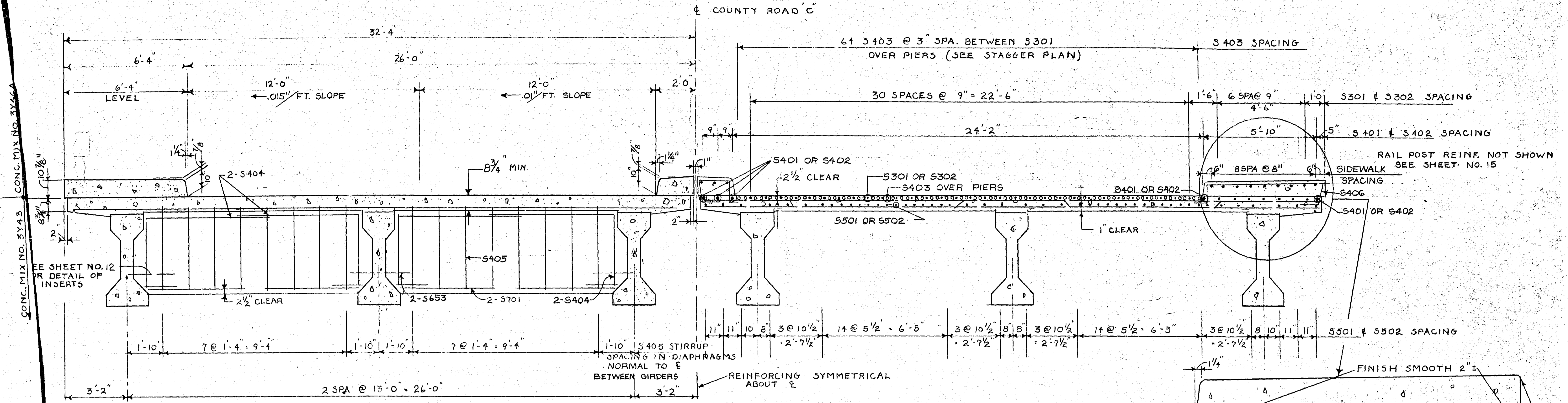
GIRDERS G1,2,3,4,5,6

1968 SPECIFICATIONS

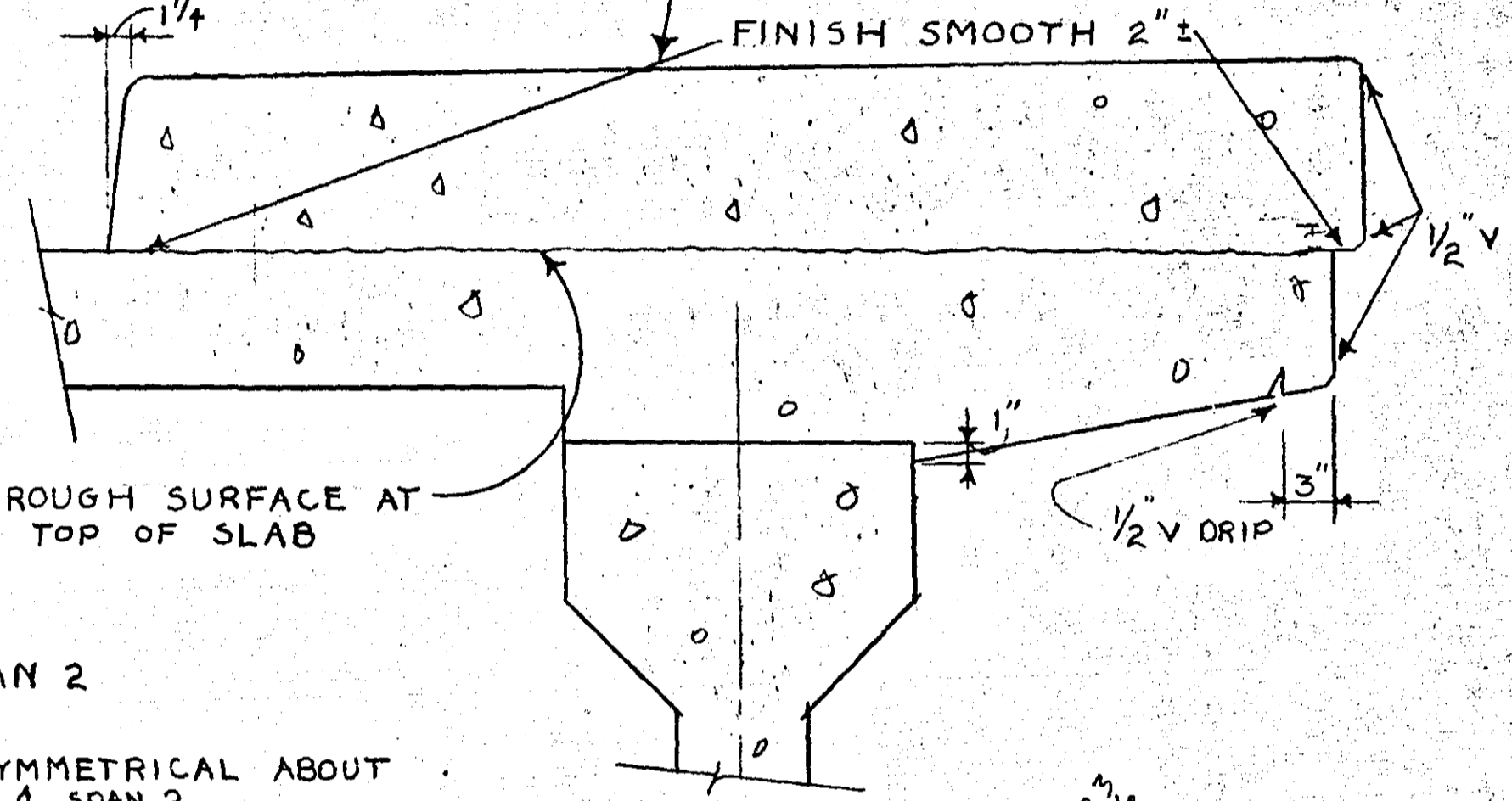
SHEET 12 OF 22 SHEETS 62519

DRAWN: 7-1-63 4-27-66 2-19-68
REVISED: 10-25-63 3-10-67 4-9-68
2-17-64 6-22-67
5-25-64 8-1-67
11-16-64 8-18-67

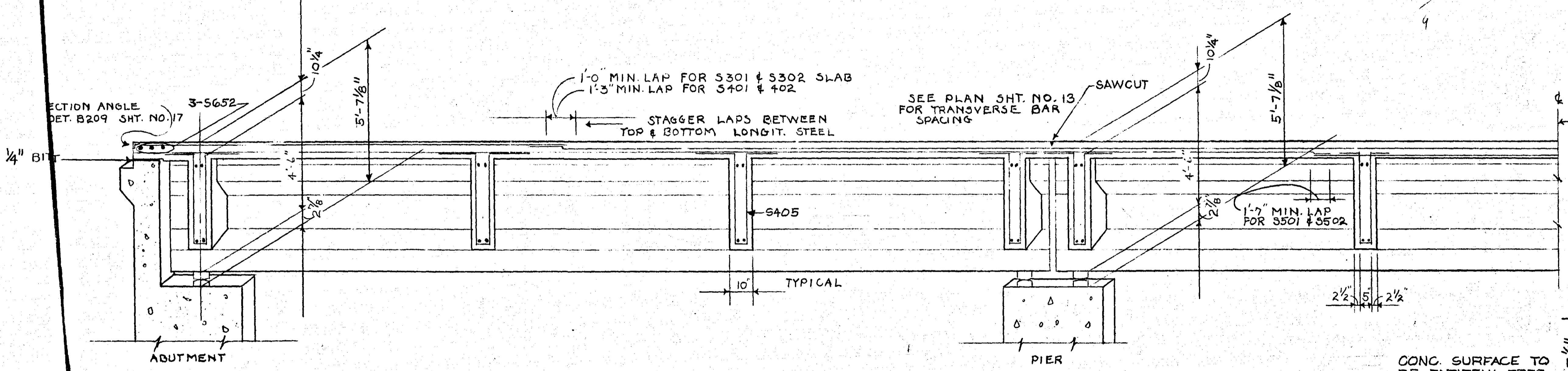
ONE LINE CAST IN PLACE CONC. RAILING WITH CABLE PIPES NOT SHOWN SEE SHEET NO. 12



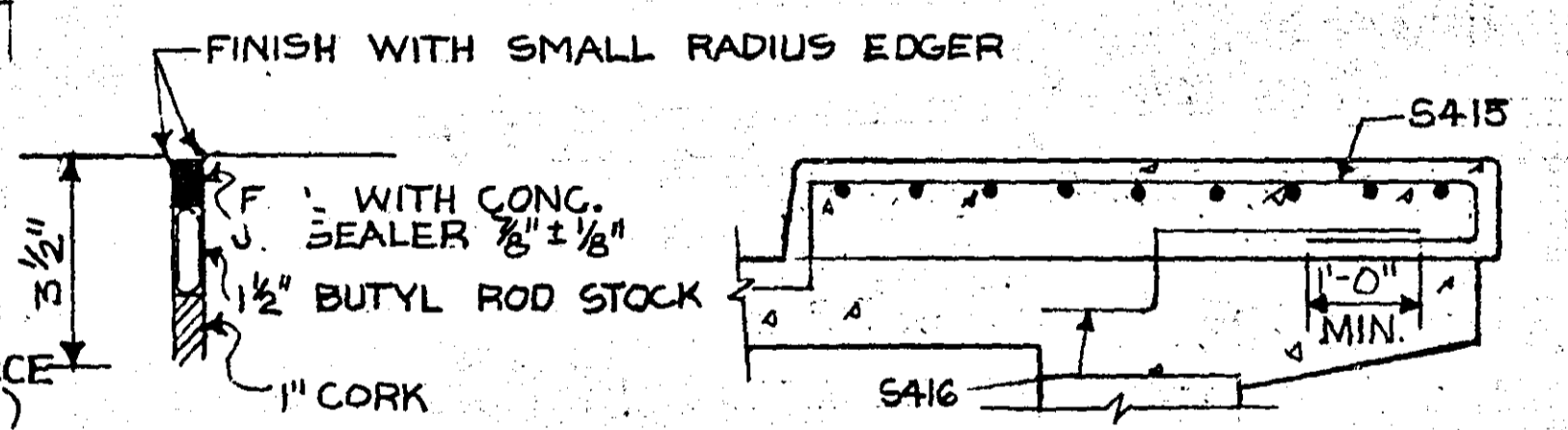
TRANSVERSE SECTION SCALE: 3/8" = 1'-0"



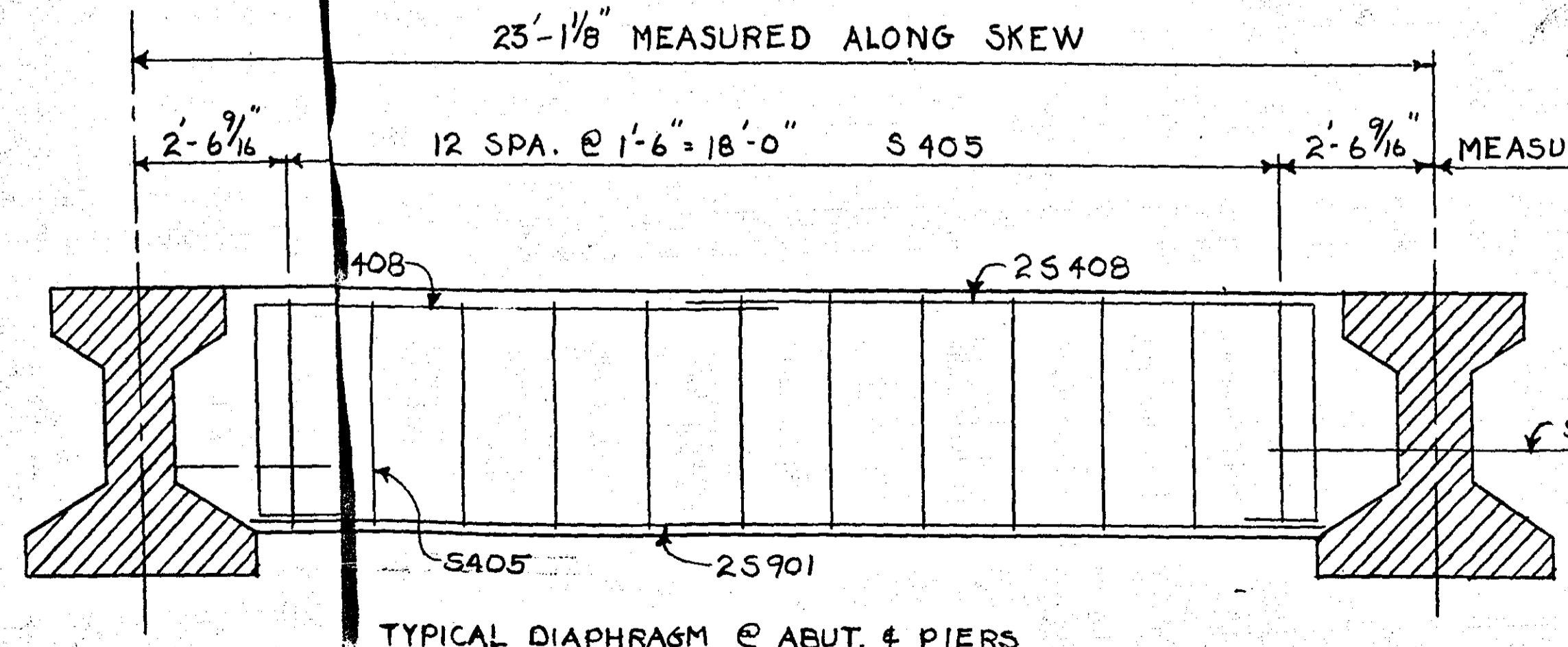
DETAIL A SCALE: 1" = 1'-0"



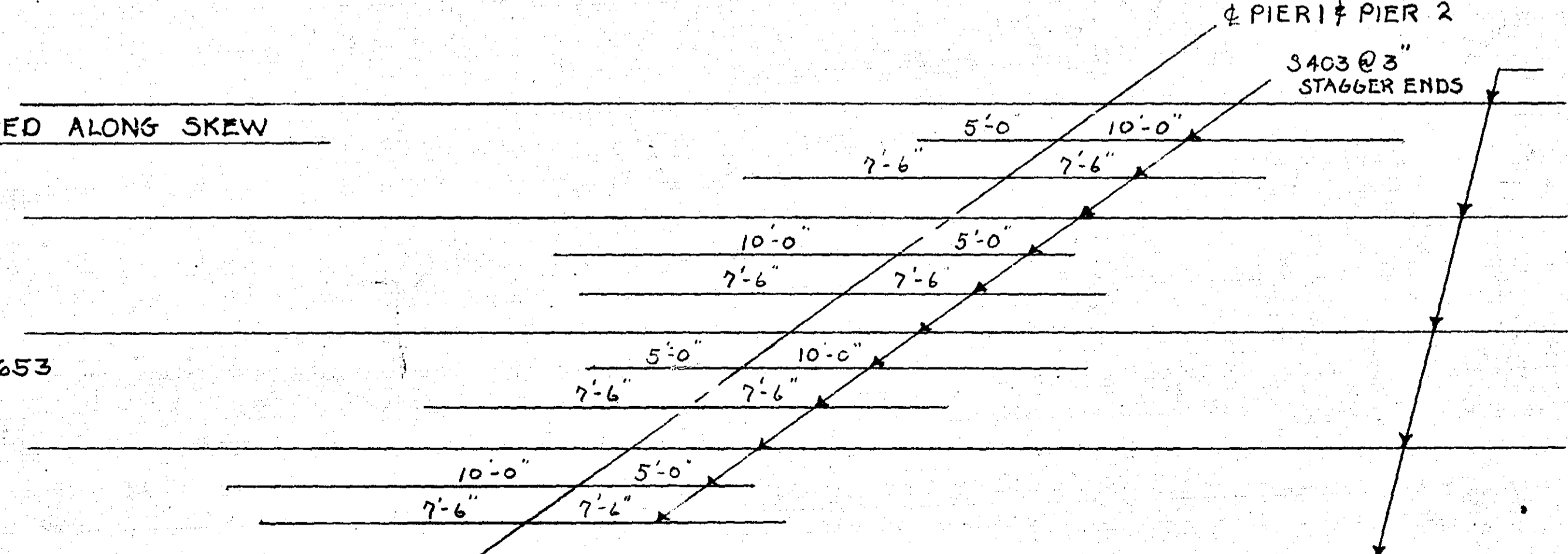
LONGITUDINAL SECTION NO SCALE



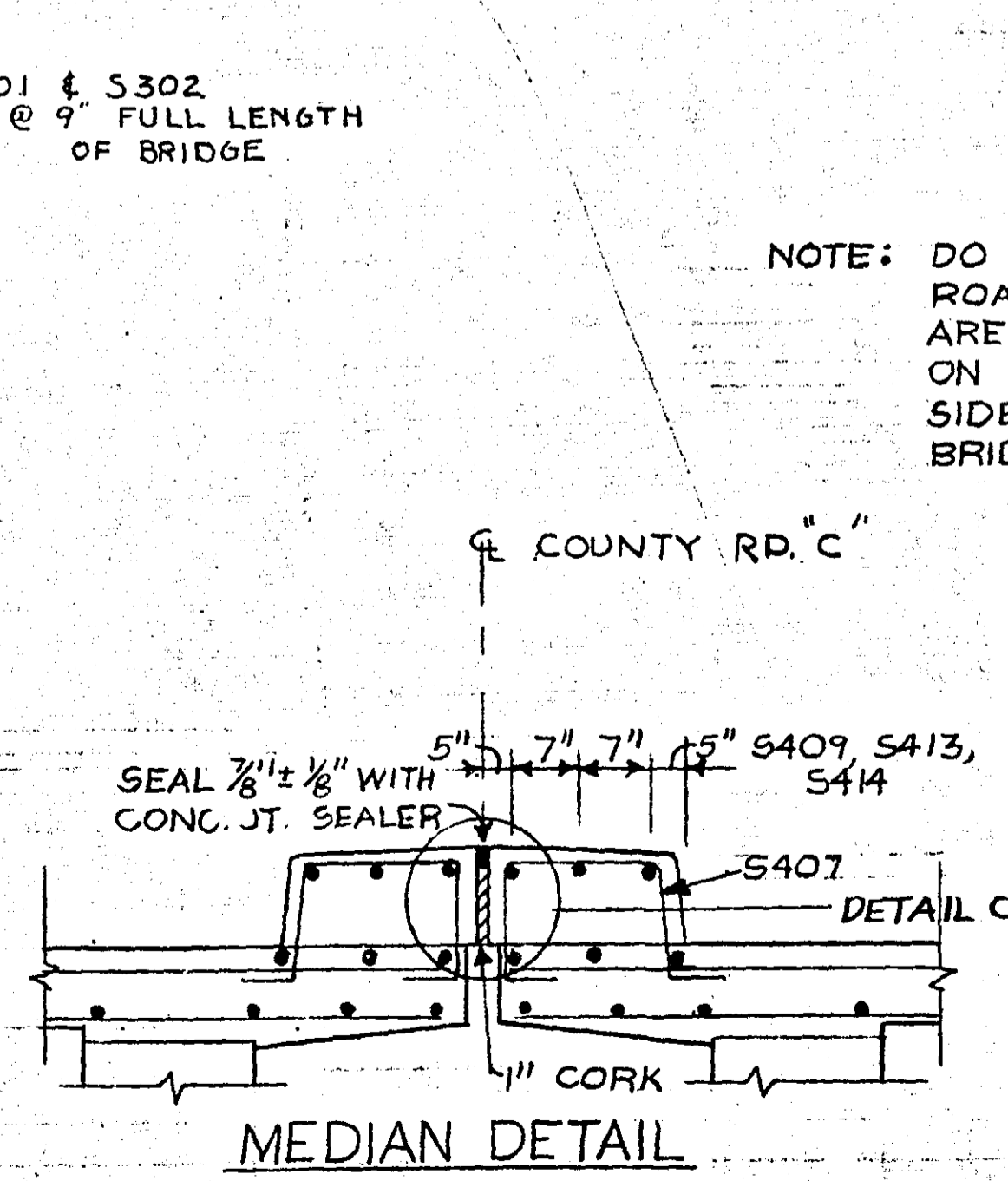
DETAIL B



TYPICAL DIAPHRAGM @ ABUT. & PIERS



S403 STAGGER PLAN

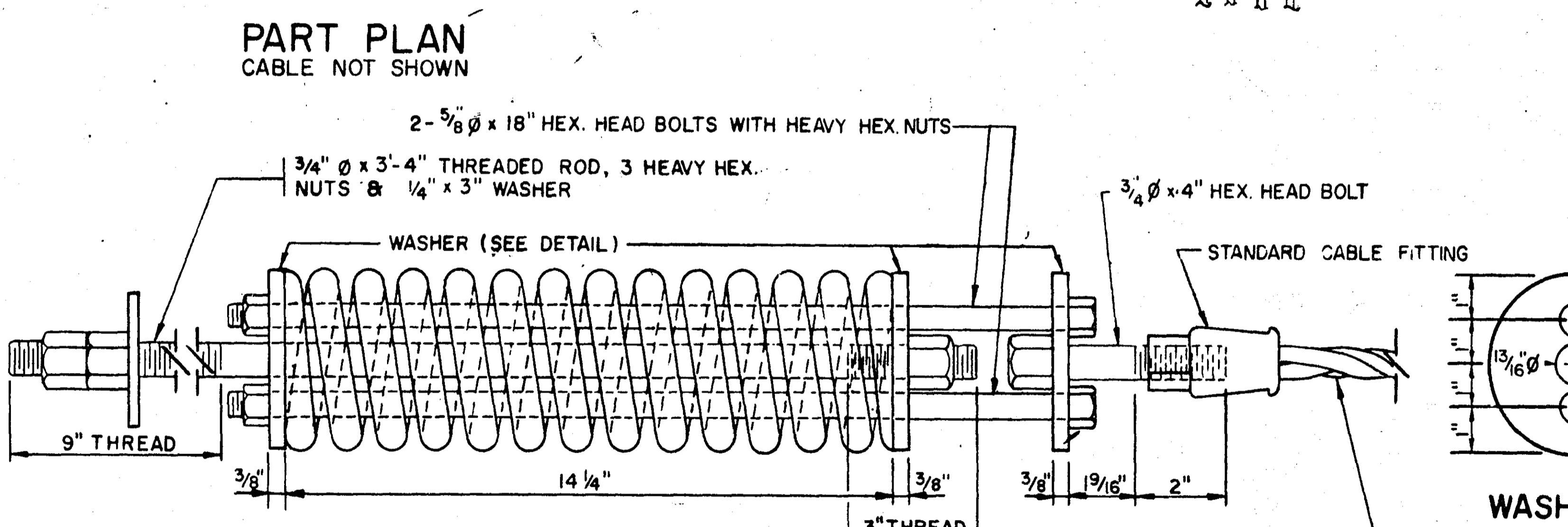
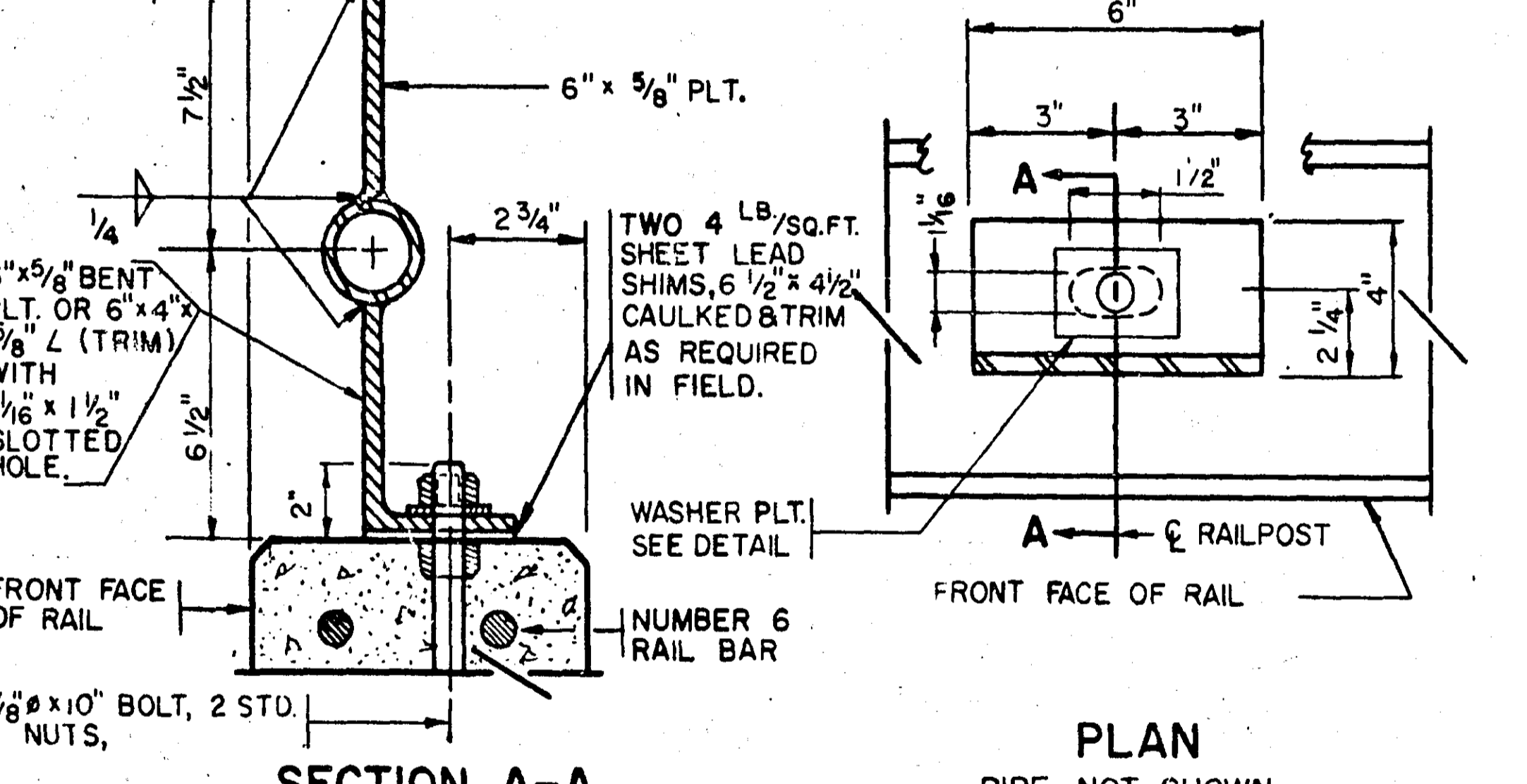
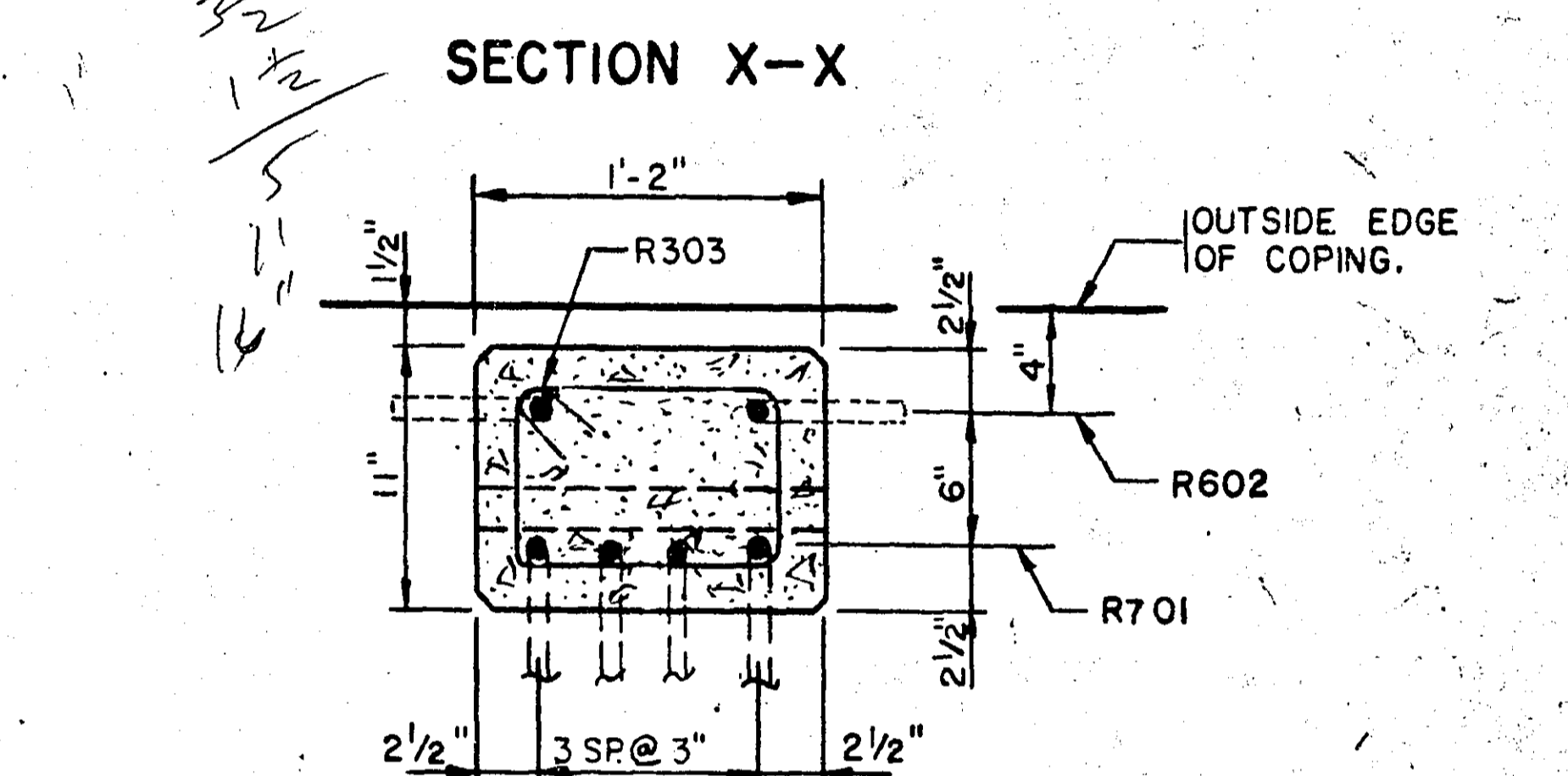
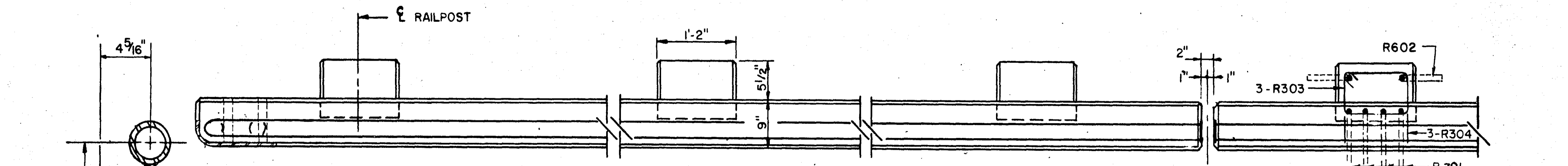
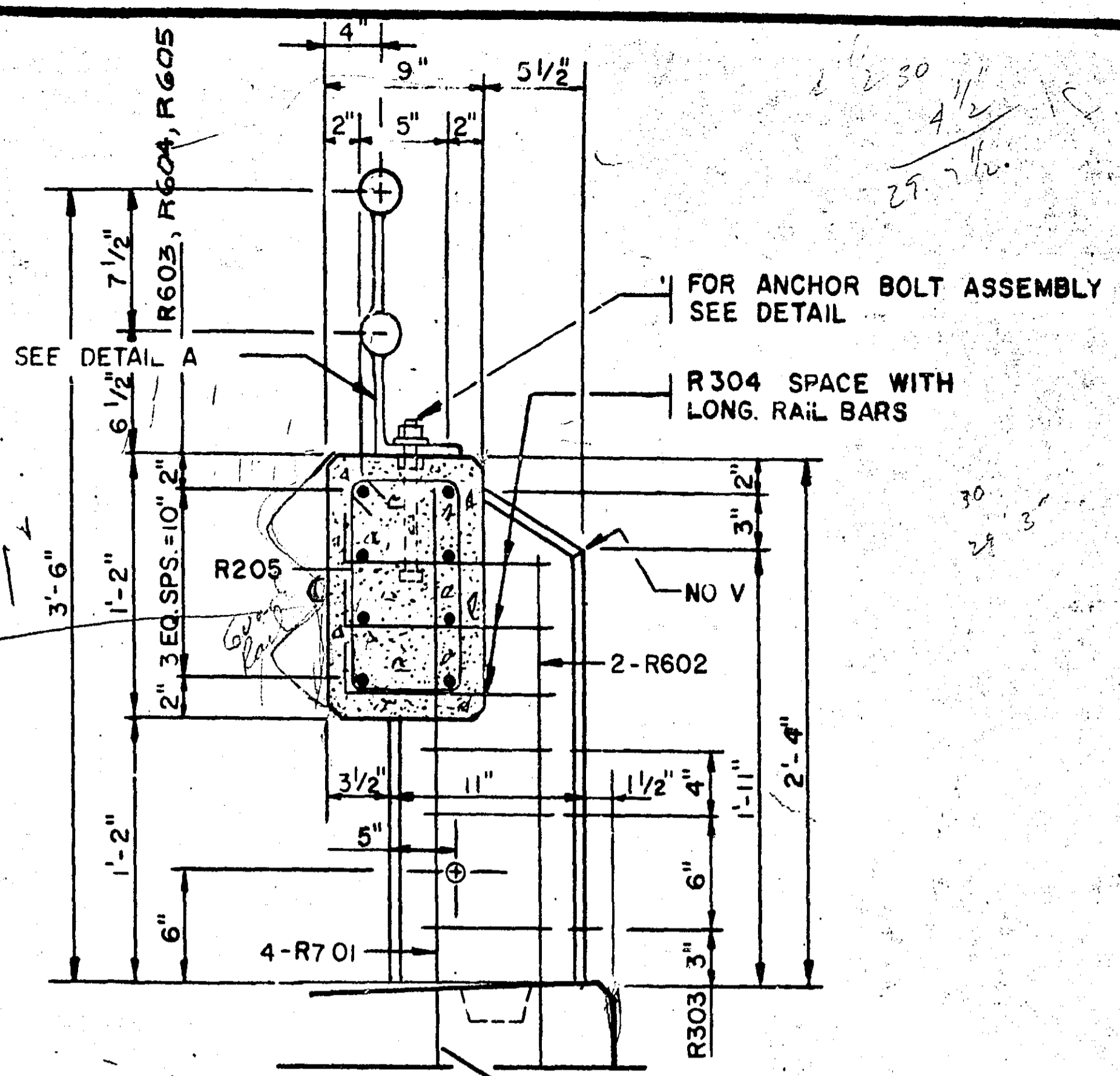
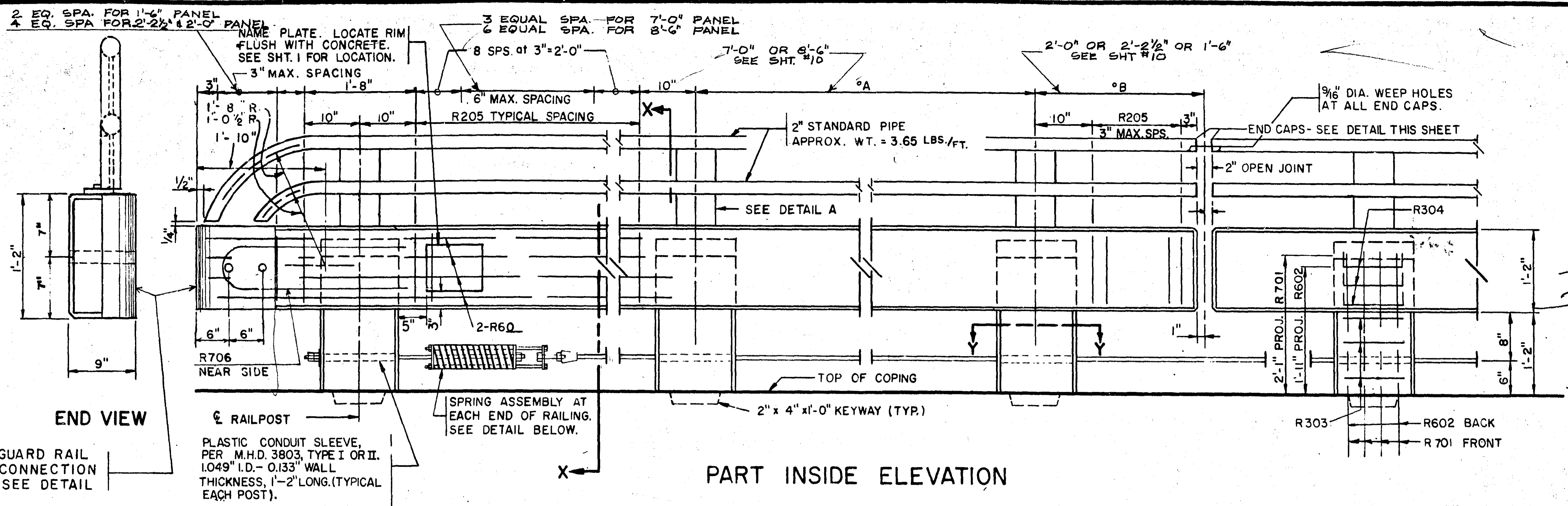


MEDIAN DETAIL

NOTE: DO NOT PLACE MEDIAN UNTIL ENTIRE ROADWAY SLAB ON BOTH HALVES OF BRIDGE ARE IN PLACE. AFTER ENTIRE ROADWAY SLAB ON ONE SIDE OF BRIDGE IS IN PLACE, THE SIDEWALK AND RAILING ON THAT SIDE OF BRIDGE MAY BE PLACED.

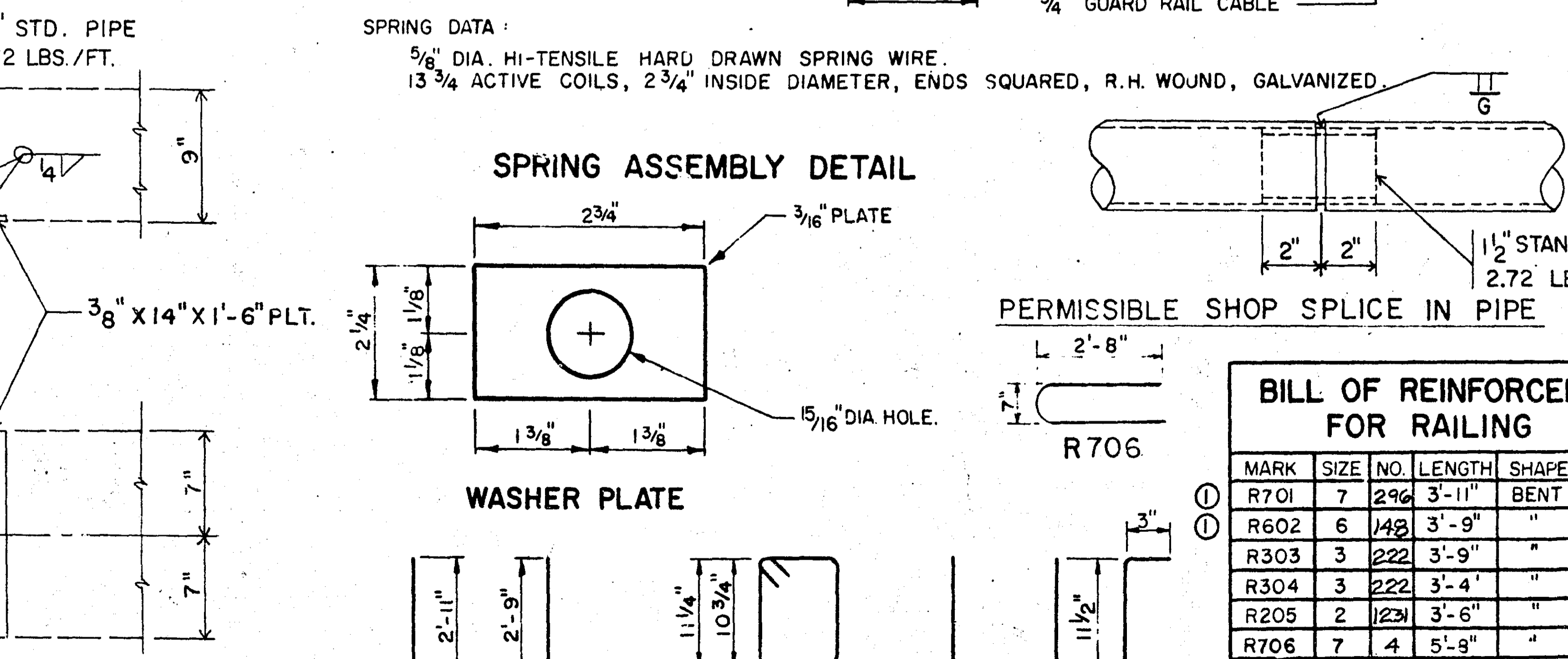
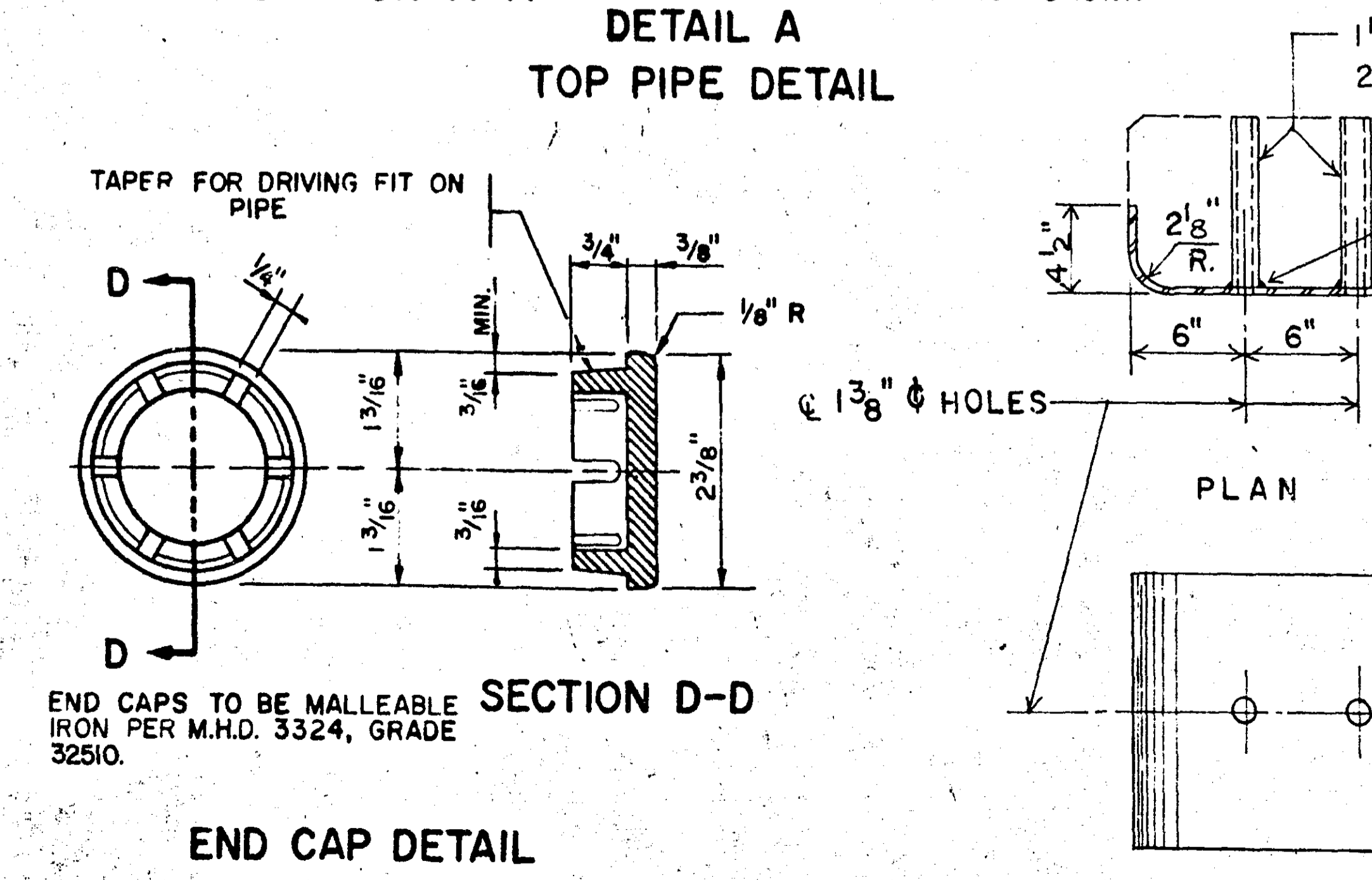
RAMSEY COUNTY STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS BRIDGE NO. 62519 SUPERSTRUCTURE DETAILS APPROVED 3-4-69

Table with columns: DES, RW, DR, RB, CK



GENERAL NOTES

- RAIL POSTS SHALL BE NORMAL TO GRADE.
- FINISH ALL EDGES OF CONCRETE TO A 1/2\" V UNLESS OTHERWISE NOTED. CONCRETE TO BE MIX NO. 3Y46A
- PIPE SHALL COMPLY WITH M.H.D. 3362. GRADE A OR B OR M.H.D. 3306
- ALL OTHER STRUCTURAL MATERIAL EXCEPT END CAPS, SPRINGS, & CABLE FITTINGS SHALL BE STRUCTURAL STEEL PER M.H.D. 3306.
- CABLE AND FITTINGS SHALL COMPLY WITH M.H.D. 2554, M.H.D. 3381, EXCEPT AS NOTED.
- GALVANIZE BOLTS, RODS, NUTS, SPRING ASSEMBLIES, AND CABLE FITTINGS PER M.H.D. 3392.
- GALVANIZE ALL OTHER STRUCTURAL MATERIAL PER M.H.D. 3394 AFTER FABRICATION.
- NO. 2 REINFORCEMENT BARS SHALL COMPLY WITH ASTM A306.



- DIMENSION A NOT OVER 10'-0\"
- DIMENSION B NOT OVER 2'-4\"
- ALL CONCRETE, REINFORCEMENT AND GUARD RAIL CONN. ARE INCLUDED IN SUPERSTRUCTURE QUANTITIES. ALL OTHER MATERIAL ON THIS SHEET IS INCLUDED IN PRICE BID FOR "ORNAMENTAL METAL RAILING."

LENGTH OF "ORNAMENTAL METAL RAILING" FOR PAYMENT WILL BE MEASURED END TO END OF CONCRETE RAIL, WITH NO DEDUCTION FOR OPEN JOINTS. CABLE SHALL BE ACCURATELY CUT SO THERE WILL BE NO SAG BEFORE TIGHTENING SPRING NUTS.

DRAWN 1-25-65
REVISED 11-4-68

GALV. AFTER FABRICATION M.H.D. 3394
GUARD RAIL CONNECTION DETAIL

BILL OF REINFORCEMENT FOR RAILING					
MARK	SIZE	NO.	LENGTH	SHAPE	LOCATION
R701	7	296	3'-11"	BENT	POST
R602	6	148	3'-9"	"	"
R303	3	222	3'-9"	"	"
R304	3	222	3'-4"	"	"
R205	2	222	3'-6"	"	RAIL
R706	7	4	5'-9"	"	"
R603	6	136	23'-6"	STR.	"
R604	6	8	29'-0"	"	"
R605	6	8	10'-11"	"	"

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

Bridge No. 62519

CONCRETE RAILING WITH CABLE & PIPES TYPE I

APPROVED *JRS*

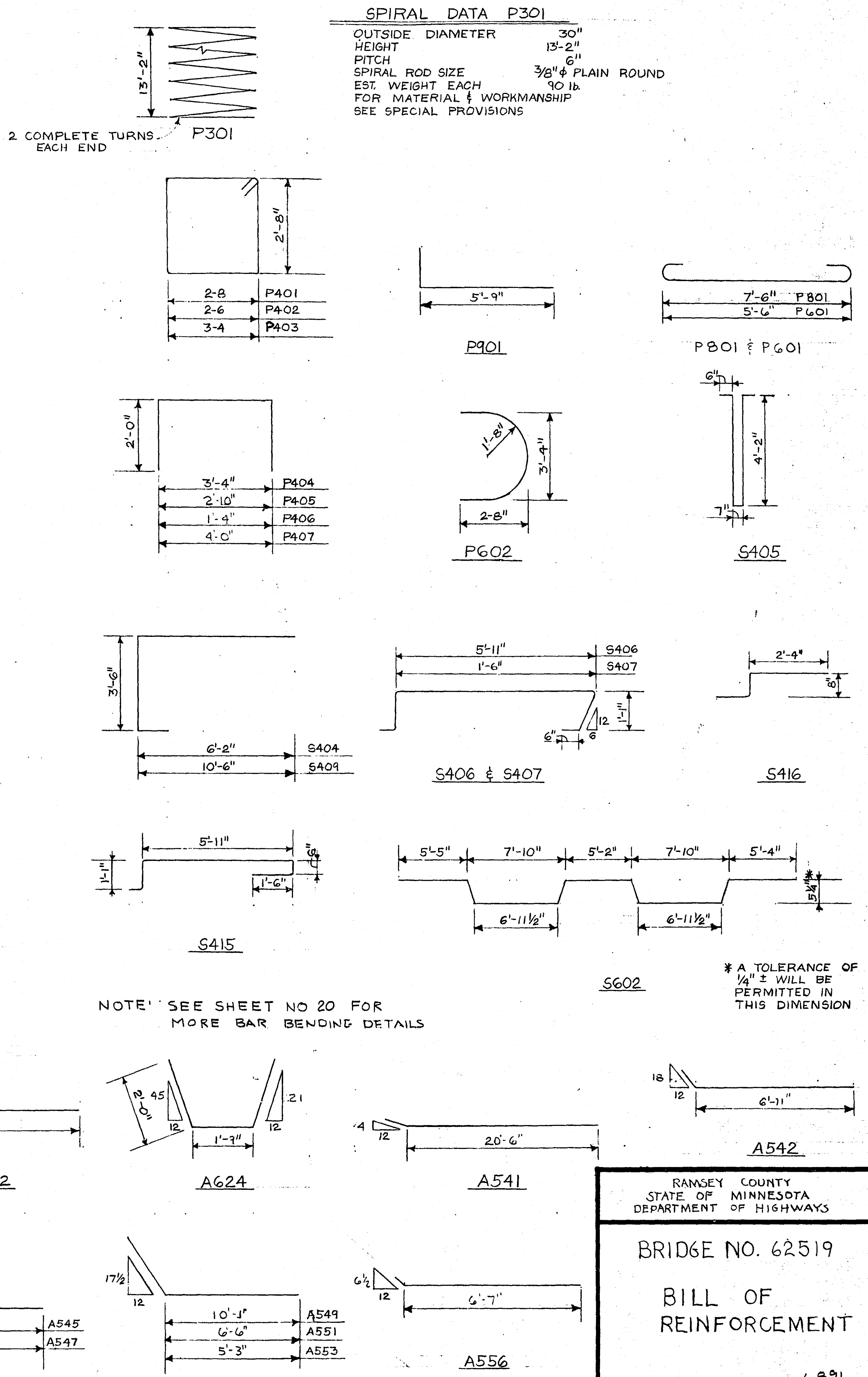
DES. MICROFILMED DR.
BY RAMSEY CO. ENGR. CHK. **62519**

Sheet No. 15 of 22 Sheets

BILL OF REINFORCEMENT FOR TWO ABUT					
BAR	NO.	SIZE	LENGTH	SHAPE	LOCATION
A401	192	4	5'-8"		BRIDGE SEAT TIES - E W
A402	2	4	5'-8"		BRIDGE SEAT TIE - E W
A403	2	4	5'-1"		BRIDGE SEAT TIE - E W
A501	164	5	16'-0"		FOOTING STIRRUP - E W
A502	76	5	6'-9"		FOOTING DOWEL - E W
A503	22	5	6'-6"		FOOTING DOWEL - E W
A504	29	5	6'-0"		FOOTING DOWEL - E W
A505	25	5	5'-3"		FOOTING DOWEL - E W
A506	72	5	9'-9"		FOOTING DOWEL - E W
A507	79	5	10'-9"		FOOTING DOWEL - E W
A508	72	5	6'-9"		PARAPET VERT. - E W
A509	79	5	7'-9"		PARAPET VERT. - E W
A510	143	5	4'-2"		PAVING BRKT. - E W
A511	4	5	10'-8"		FOOTING DOWEL - E W
A512	6	5	52'-9"		BR. ST. HORIZ. - E W
A513	2	5	53'-8"		BR. ST. HORIZ. - E W
A514	14	5	54'-9"		BR. ST. HORIZ. - E W
A515	6	5	16'-9"		BR. ST. HORIZ. - E W
A516	1	5	57'-9"		BR. ST. HORIZ. - W
A517	6	5	56'-8"		BR. ST. HORIZ. - W
A518	6	5	24'-6"		BR. ST. HORIZ. - E W
A519	3	5	20'-0"		BR. ST. HORIZ. - W
A520	8	5	54'-8"		PARAPET HORIZ. - E W
A521	3	5	56'-2"		PARAPET HORIZ. - W
A522	4	5	51'-2"		PAVING BRACKET - E W
A523	2	5	56'-8"		PAVING BRACKET - W
A524	12	5	6'-5"		PARAPET WALL - E W
A525	8	5	7'-0"		PARAPET WALL - E W
A526	3	5	25'-9"		BR. ST. HORIZ. - E
A527	2	5	32'-10"		BR. ST. HORIZ. - E
A528	6	5	32'-1"		PARAPET HORIZ. - E
A529	6	5	32'-4"		PARAPET HORIZ. - E
A530	4	5	32'-4"		PAVING BRACKET - E
A531	24	5	6'-0"		FOOTING DOWEL - E W
A532	2	5	8'-7"		WING WALL HORIZ. - W
A533	2	5	3'-3"		WING WALL HORIZ. - W
A534	2	5	5'-4"		WING WALL HORIZ. - W
A535	2	5	22'-6"		WING WALL HORIZ. - W
A536	2	5	22'-6"		WING WALL HORIZ. - W
A537	2	5	18'-3"		WING WALL HORIZ. - W
A538	2	5	14'-0"		WING WALL HORIZ. - W
A539	2	5	9'-10"		WING WALL HORIZ. - W
A540	2	5	5'-6"		WING WALL HORIZ. - W
A541	2	5	20'-10"		WING WALL HORIZ. - W
A542	4	5	7'-9"		WING WALL HORIZ. - E W
A543	4	5	1'-9"		WING WALL HORIZ. - E W
A544	4	5	2'-7"		WING WALL HORIZ. - E W
A545	2	5	10'-9"		WING WALL HORIZ. - E W
A546	2	5	8'-9"		WING WALL HORIZ. - E W
A547	2	5	11'-7"		WING WALL HORIZ. - E W
A548	2	5	9'-7"		WING WALL HORIZ. - E W
A549	2	5	12'-1"		WING WALL HORIZ. - E W
A550	2	5	10'-1"		WING WALL HORIZ. - E W
A551	6	5	8'-6"		WING WALL HORIZ. - E W
A552	6	5	7'-0"		WING WALL HORIZ. - E W
A553	2	5	7'-3"		WING WALL HORIZ. - E W
A554	2	5	5'-9"		WING WALL HORIZ. - E W
A555	4	5	2'-6"		WING WALL HORIZ. - E W
A556	4	5	6'-11"		WING WALL HORIZ. - E W
A557	4	5	10'-3"		FOOTING DOWEL - E W
A558	4	5	12'-6"		WING WALL VERT. - E W
A559	4	5	10'-0"		WING WALL VERT. - E W
A560	4	5	7'-6"		WING WALL VERT. - E W
A601	4	6	57'-8"		FOOTING LONGIT. - E W
A602	2	6	5'-10"		FOOTING LONGIT. - E W
A603	4	6	54'-4"		FOOTING LONGIT. - E W
A604	10	6	60'-0"		FOOTING LONGIT. - E W
A605	5	6	12'-8"		FOOTING LONGIT. - W
A606	5	6	18'-8"		FOOTING LONGIT. - E
A607	40	6	8'-3"		FOOTING DOWEL - E W
A608	4	6	8'-8"		WING WALL VERT. - E W
A609	4	6	8'-4"		WING WALL VERT. - E W
A610	2	6	7'-11"		WING WALL VERT. - W
A611	2	6	7'-7"		WING WALL VERT. - W
A612	2	6	7'-3"		WING WALL VERT. - W
A613	2	6	6'-10"		WING WALL VERT. - W
A614	2	6	6'-6"		WING WALL VERT. - W
A615	2	6	6'-2"		WING WALL VERT. - W

BILL OF REINFORCEMENT FOR TWO ABUT. CONTINUED					
BAR	NO.	SIZE	LENGTH	SHAPE	LOCATION
A616	2	6	5'-9"		WING WALL VERT. - W
A616	2	6	5'-5"		WING WALL VERT. - W
A618	2	6	7'-11"		WING WALL VERT. - W
A619	2	6	7'-3"		WING WALL VERT. - W
A620	2	6	6'-2"		WING WALL VERT. - W
A621	2	6	5'-1"		WING WALL VERT. - W
A622	2	6	4'-0"		WING WALL VERT. - W
A623	2	6	2'-11"		WING WALL VERT. - W
A624	2	6	5'-9"		WING WALL VERT. - W
A661	4	5	8'-1"		WING WALL VERT. - E W
BILL OF REINFORCEMENT FOR 2 PIERS					
BAR	NO.	SIZE	LENGTH	SHAPE	LOCATION
P301	12	SEE SPIRAL DATA			COLUMN TIE
P401	132	4	11'-5"		SQ. COL. TIES
P402	160	4	11'-1"		STRUT TIES
P403	160	4	12'-9"		PIER CAP TIES
P404	60	4	7'-9"		BEARING PAD TIE
P405	8	4	6'-10"		BEARING PAD TIE
P406	8	4	5'-4"		BEARING PAD TIE
P407	44	4	8'-0"		BEARING PAD TIE
P601	96	6	6'-10"		FOOTING
P602	40	6	7'-3"		PIER CAP ENDS
P801	132	8	9'-4"		FOOTING
P802	144	9	7'-3"		FOOTING DOWELS
P803	144	9	10'-9"		SQ. COLUMN
P804	48	9	46'-3"		STRUT
P804	120	9	6'-0"		SQ. COL. DOWELS
P805	120	9	15'-0"		ROUND COLUMN
P906	48	9	47'-11"		PIER CAP
BILL OF REINFORCEMENT FOR SUPERSTRUCTURE					
BAR	NO.	SIZE	LENGTH	SHAPE	LOCATION
S301	532	3	30'-0"		SLAB LONGIT. TOP
S302	78	3	21'-6"		SLAB LONGIT. TOP
S401	70	4	30'-0"		SLAB LONGIT. TOP
S402	10	4	24'-9"		SLAB LONGIT. TOP
S403	256	4	15'-0"		SLAB LONGIT. TOP
S404	96	4	10'-10"		DIAPHRAGM
S405	504	4	9'-11"		DIAPHRAGM
S406	665	4	9'-2"		SIDEWALK TIES
S407	388	4	4'-9"		MEDIAN TIES
S408	96	4	15'-2"		DIAPHRAGMS
S409	168	4	23'-8"		SW & MEDIAN LONGIT.
S410	4	4	29'-6"		SW LONGIT.
S411	18	4	31'-0"		SW LONGIT.
S412	9	4	34'-6"		SW LONGIT.
S413	6	4	28'-8"		MEDIAN LONGIT.
S414	6	4	26'-7"		MEDIAN LONGIT.
S501	672	5	30'-0"		SLAB LONGIT. BOT.
S502	96	5	25'-8"		SLAB LONGIT. BOT.
S601	856	6	31'-7"		SLAB TRANSVERSE
S602	426	6	32'-4"		SLAB TRANSVERSE
S603	16	6	31'-2"		SLAB TRANSVERSE
S604	16	6	30'-7"		SLAB TRANSVERSE
S605	16	6	30'-0"		SLAB TRANSVERSE
S606	16	6	29'-5"		SLAB TRANSVERSE
S607	16	6	28'-11"		SLAB TRANSVERSE
S608	16	6	28'-4"		SLAB TRANSVERSE
S609	16	6	27'-9"		SLAB TRANSVERSE
S610	16	6	27'-2"		SLAB TRANSVERSE
S611	16	6	26'-7"		SLAB TRANSVERSE
S612	16	6	26'-1"		SLAB TRANSVERSE
S613	16	6	25'-6"		SLAB TRANSVERSE
S614	16	6	24'-11"		SLAB TRANSVERSE
S615	16	6	24'-4"		SLAB TRANSVERSE
S616	16	6	23'-9"		SLAB TRANSVERSE
S617	16	6	23'-3"		SLAB TRANSVERSE
S618	16	6	22'-8"		SLAB TRANSVERSE
S619	16	6	22'-1"		SLAB TRANSVERSE
S620	16	6	21'-6"		SLAB TRANSVERSE
S621	16	6	20'-11"		SLAB TRANSVERSE
S622	16	6	20'-4"		SLAB TRANSVERSE
S623	16	6	19'-10"		SLAB TRANSVERSE
S624	16	6	19'-3"		SLAB TRANSVERSE
S625	16	6	18'-8"		SLAB TRANSVERSE
S626	16	6	18'-1"		SLAB TRANSVERSE
S627	16	6	17'-6"		SLAB TRANSVERSE
S628	16	6	17'-0"		SLAB TRANSVERSE

BILL OF REINFORCEMENT FOR TWO ABUT.					
BAR	NO.	SIZE	LENGTH	SHAPE	LOCATION
S629	16	6	16'-5"		SLAB TRANSVERSE
S630	16	6	15'-10"		SLAB TRANSVERSE
S631	16	6	15'-3"		SLAB TRANSVERSE
S632	16	6	14'-8"		SLAB TRANSVERSE
S633	16	6	14'-2"		SLAB TRANSVERSE
S634	16	6	13'-7"		SLAB TRANSVERSE
S635	16	6	13'-0"		SLAB TRANSVERSE
S636	16	6	12'-5"		SLAB TRANSVERSE
S637	16	6	11'-10"		SLAB TRANSVERSE
S638	16	6	11'-4"		SLAB TRANSVERSE
S639	16	6	10'-9"		SLAB TRANSVERSE
S640	16	6	10'-2"		SLAB TRANSVERSE
S641	16	6	9'-7"		SLAB TRANSVERSE
S642	16	6	9'-0"		SLAB TRANSVERSE
S643	16	6	8'-5"		SLAB TRANSVERSE
S644	16	6	7'-11"		SLAB TRANSVERSE
S645	16	6	7'-4"		SLAB TRANSVERSE
S646	16	6	6'-9"		SLAB TRANSVERSE
S647	16	6	6'-2"		SLAB TRANSVERSE
S648	16	6	5'-8"		SLAB TRANSVERSE
S649	16	6	5'-1"		SLAB TRANSVERSE
S650	16	6	4'-6"		SLAB TRANSVERSE
S651	16	6	3'-11"		SLAB TRANSVERSE
S701	48	7	11'-0"		DIAPHRAGM
S901	48	9	19'-9"		DIAPHRAGM
S415	92	4	9'-6"		SIDEWALK TIES
S416	92	4	4'-0"		SIDEWALK TIES
S417	36	4	6'-0"		SIDEWALK TIES
S652	12	6	55'-0"		SLAB DIAGONAL
S653	36	6	4'-6"		DIAPHRAGM
A562	2	5	11'-7"		WW HORIZ. - E
A563	2	5	3'-11"		WW HORIZ. - E
A564	2	5	6'-7"		WW HORIZ. - E
A565	2	5	24'-3"		WW HORIZ. - E
A566	2	5	25'-6"		WW HORIZ. - E
A567	2	5	23'-0"		WW HORIZ. - E
A568	2	5	17'-10"		WW HORIZ. - E
A569	2	5	12'-4"		WW HORIZ. - E
A570	2	5	6'-11"		WW HORIZ. - E
A571	2	5	23'-8"		WW HORIZ. - E
A625	2	6	8'-1"		WW VERT. - E
A626	2	6	7'-10"		WW VERT. - E
A627	2	6	7'-6"		WW VERT. - E
A628	2	6	7'-3"		WW VERT. - E
A629	2	6	7'-0"		WW VERT. - E
A630	2	6	6'-8"		WW VERT. - E
A631	2	6	6'-5"		WW VERT. - E
A632	2	6	6'-1"		WW VERT. - E
A633	2	6	8'-8"		WW VERT. - E
A634	2	6	8'-2"		WW VERT. - E
A635	2	6	7'-4"		WW VERT. - E
A636	2	6	6'-6"		WW VERT. - E
A637	2	6	6'-7"		WW VERT. - E
A638	2	6	4'-9"		WW VERT. - E
A639	2	6	3'-11"		WW VERT. - E
A640	2	6	2'-11"		WW VERT. - E
A641	2	6	5'-9"		WW VERT. - E



NOTE: SEE SHEET NO 20 FOR MORE BAR BENDING DETAILS

* A TOLERANCE OF 1/4" ± WILL BE PERMITTED IN THIS DIMENSION

(1) NOTE - CUT BARS S410 THRU S414 & S417 IN FIELD TO FIT. E DENOTES EAST ABUT. REINF. W DENOTES WEST ABUT. REINF. E W DENOTES REINF IN BOTH ABUT.

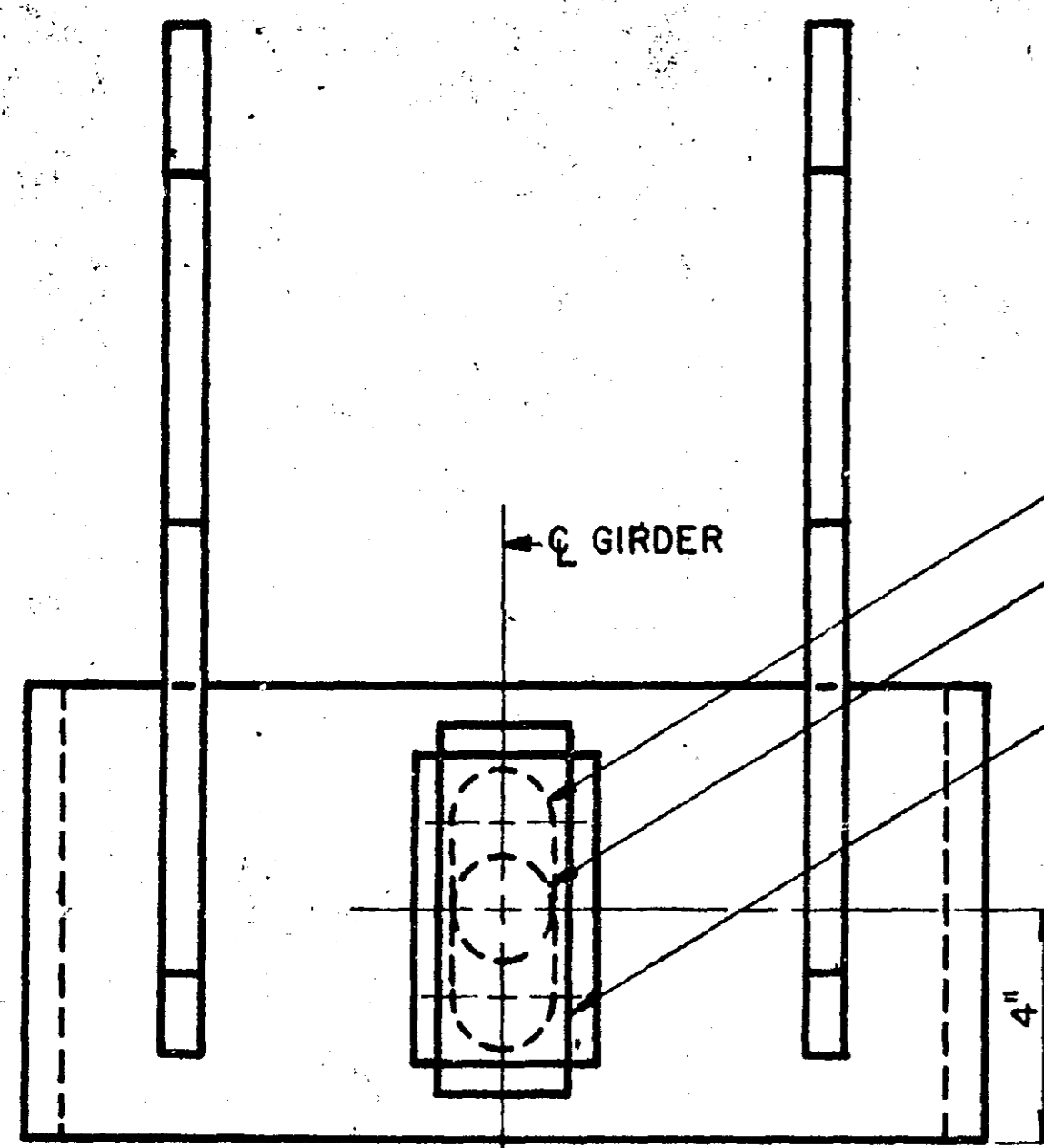
RAMSEY COUNTY
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 62519

BILL OF REINFORCEMENT

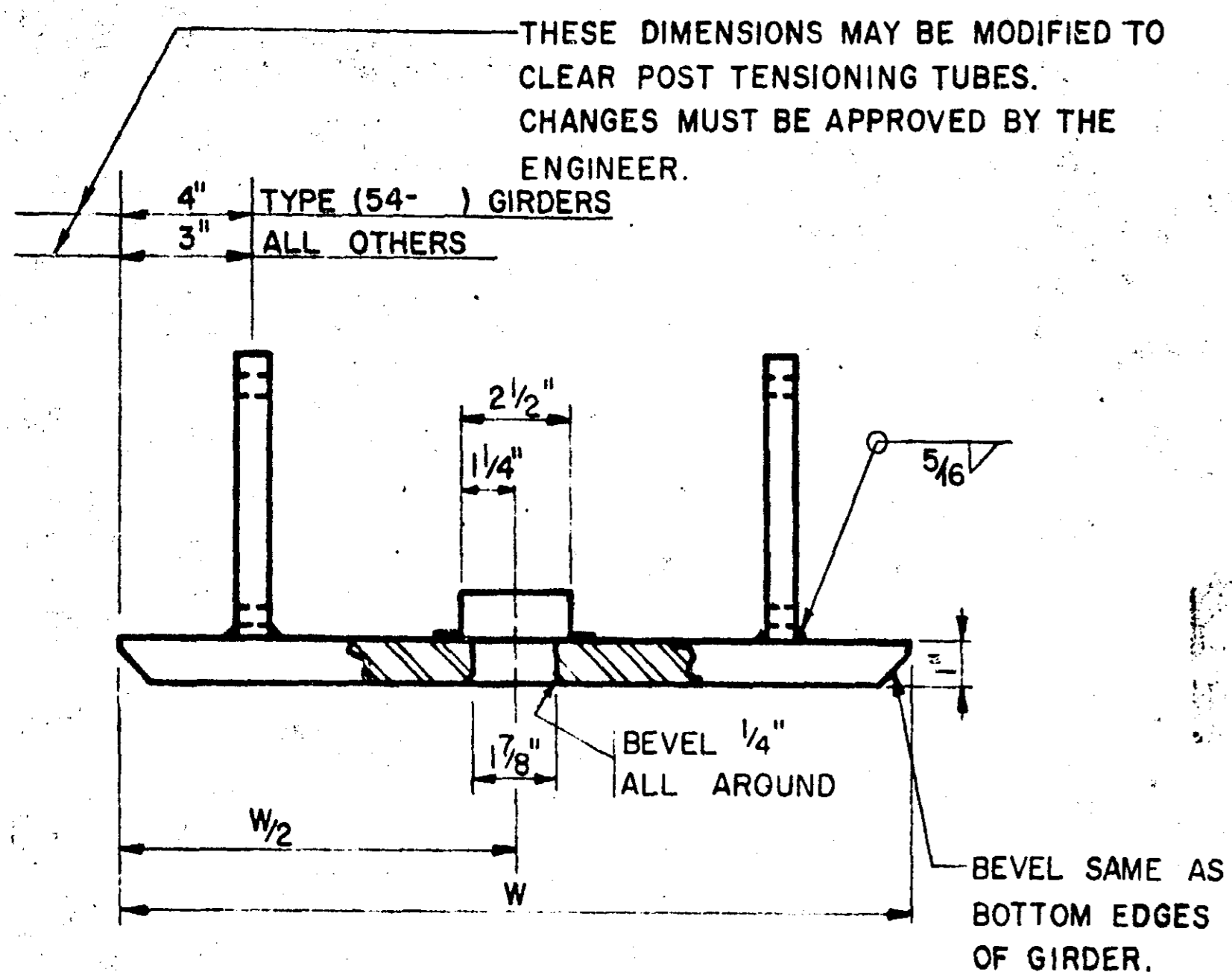
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APPROVED 3-4-69



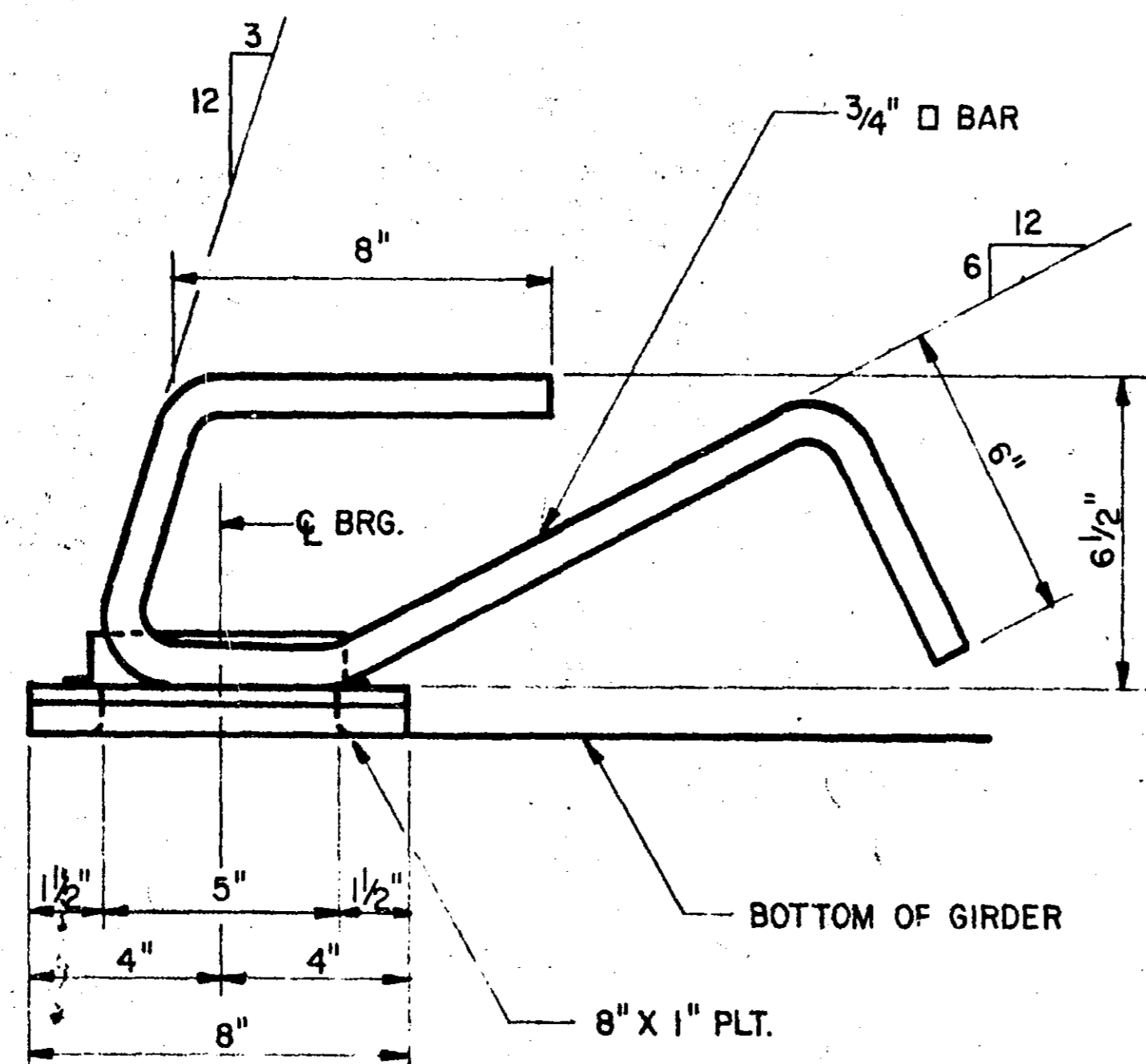
PLAN

1 7/8" x 5" SLOTTED HOLE - EXPANSION BEARINGS - TYPE 2.
 1 7/8" Ø HOLE - FIXED BEARINGS - TYPE I.
 BOX - 2 1/2" x 1" x 5 1/2" 16 GA. SHEET METAL.
 FASTEN TO PLATE AFTER PLATE IS GALVANIZED.
 ALL JOINTS MUST BE WATERPROOF TO PREVENT
 SEEPAGE INTO PINTLE RECESS.
 APPROVED ALTERNATE METHODS OF COVERING
 PINTLE RECESS MAY BE USED.
 HOLE AND BOX NOT REQUIRED FOR
 EXPANSION BEARINGS TYPE I.



END VIEW

AREA AT HOLE SHOWN AS A SECTION.
 DIMENSION "W" TO BE THE WIDTH AT BOTTOM
 FLANGE OF THE GIRDER.

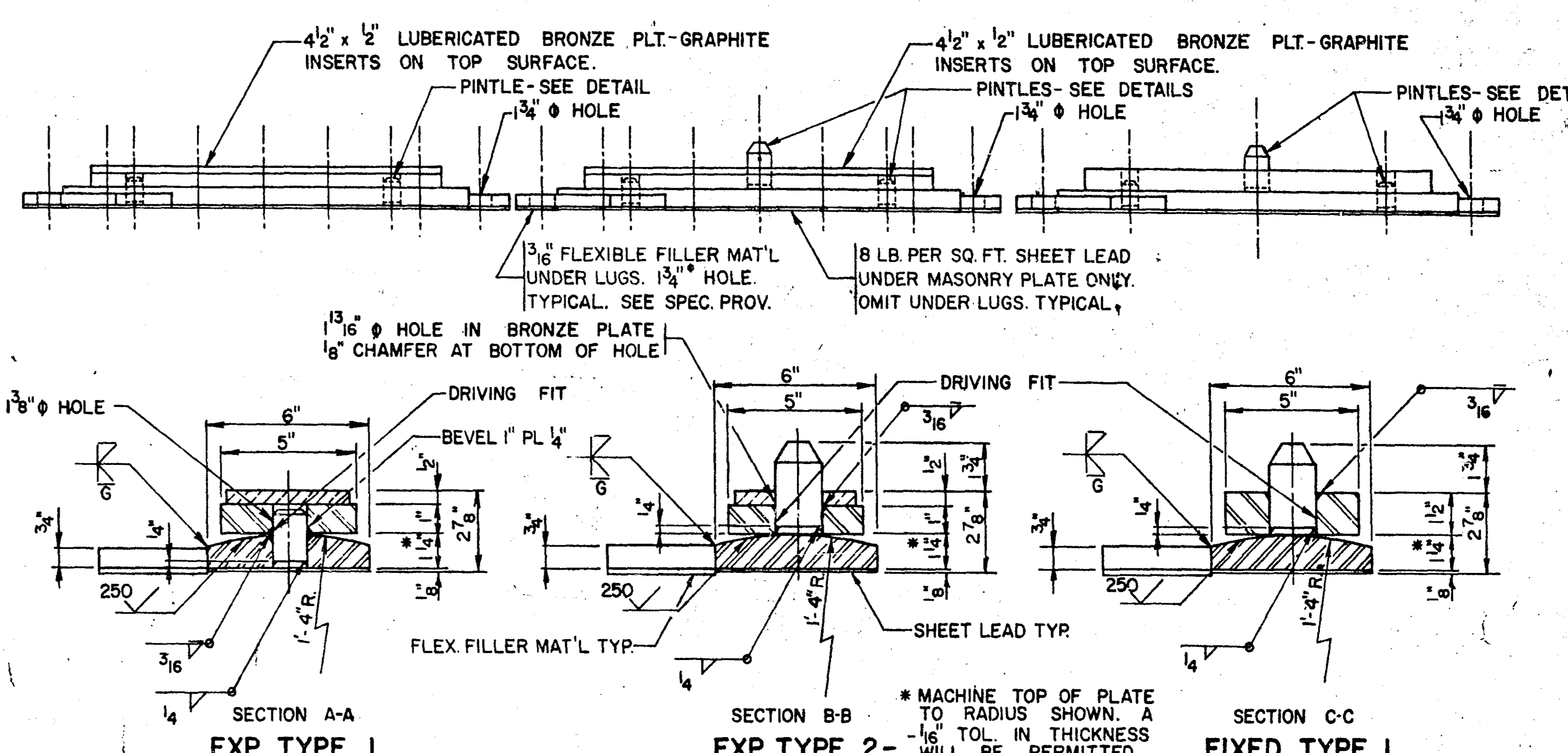
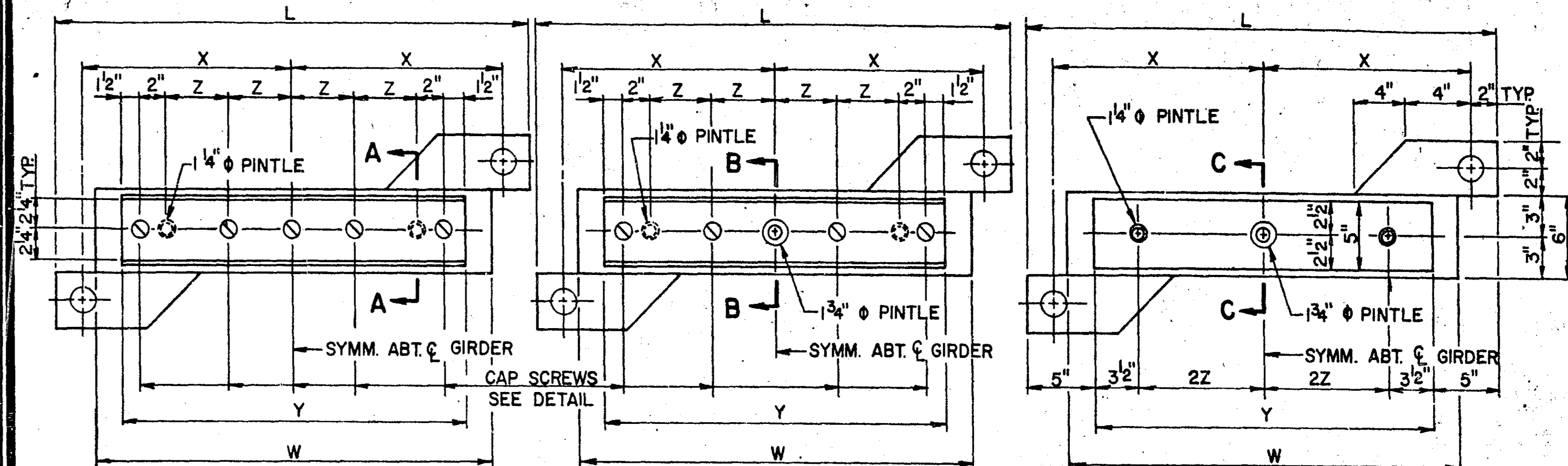


SIDE ELEVATION

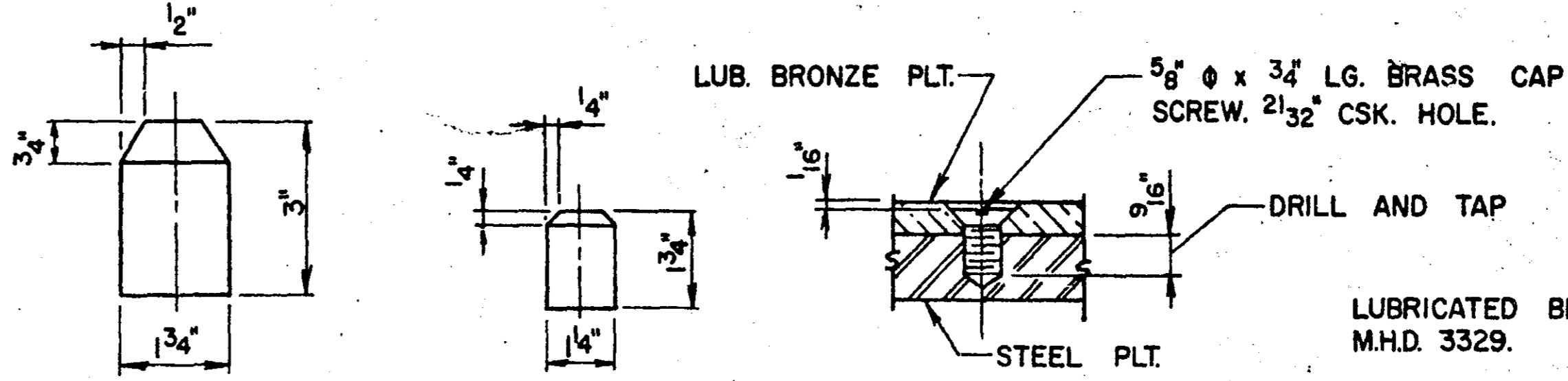
SHOWING PLACEMENT IN GIRDER

NOTES:
 MATERIAL TO BE STRUCTURAL STEEL PER M.H.D. 3306.
 SOLE PLATE TO BE HOT DIPPED GALVANIZED AS PER M.H.D. 3394
 AFTER FABRICATION.
 PAYMENT FOR SOLE PLATES TO BE INCLUDED IN PRICE BID FOR
 PRESTRESSED CONCRETE GIRDERS.

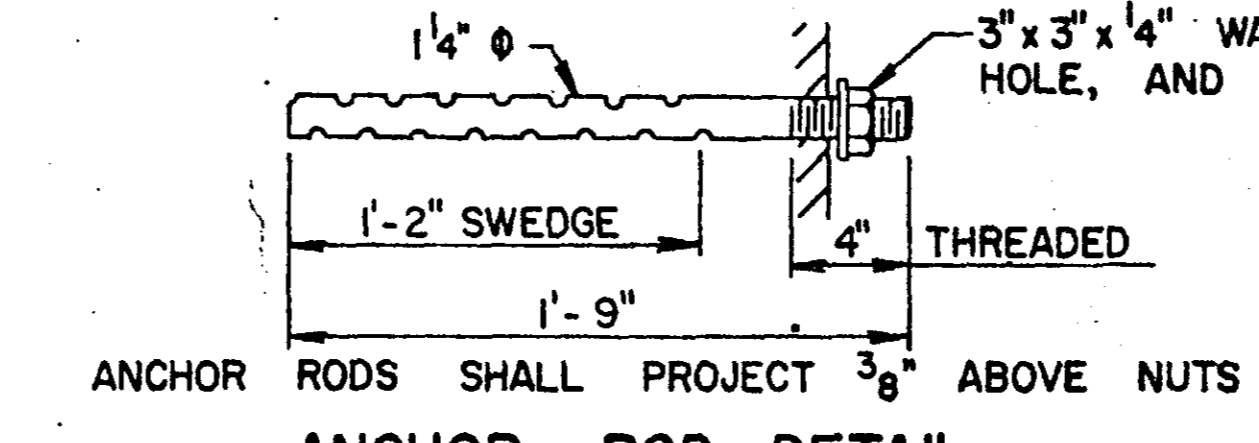
1964 AND 1968 SPECIF.



SECTION A-A EXP. TYPE I
 SECTION B-B EXP. TYPE 2-
 SECTION C-C FIXED TYPE I



PINTLE DETAILS
 CAP SCREW DETAIL



ANCHOR ROD DETAIL

NOTES

LUBRICATED BRONZE PLATE SHALL COMPLY WITH
 M.H.D. 3329.
 ALL PLATES, EXCEPT LUBRICATED BRONZE, SHALL
 COMPLY WITH M.H.D. 3306.
 PINTLES SHALL COMPLY WITH M.H.D. 3314, TYPE II.
 STEEL PLATES AND PINTLES SHALL BE GALVANIZED PER
 M.H.D. 3394. NO PAINT.
 ANCHOR RODS SHALL BE GALVANIZED PER M.H.D. 3392
 NO PAINT.
 PAYMENT FOR BEARING ASSEMBLY SHALL INCLUDE ALL
 MATERIAL ON THIS DETAIL.
 POSITION OF ANCHOR ROD LUGS SHOWN IS FOR LEFT
 SKEWS; FOR RIGHT SKEWS LUGS ARE TO BE REVERSED.

BEARING ASSEMBLY SCHEDULE

WIDTH OF BOTTOM FLANGE OF GIRDER	L	W	X	Y	Z	MAX. REACTION (KIPS)
1'-4"	2'-2"	1'-8"	0'-11"	1'-4"	2'-4"	120
1'-6"	2'-4"	1'-10"	1'-0"	1'-6"	2'-3"	132
1'-10"	2'-8"	2'-2"	1'-2"	1'-10"	3'-3"	156
2'-2"	3'-0"	2'-6"	1'-4"	2'-2"	4'-3"	180

1964 AND 1968 SPEC.

APPROVED 12/22 1959
 A. L. LaRonde
 BRIDGE ENGINEER

STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS
 SOLE PLATE FOR
 PRESTRESSED CONCRETE GIRDERS

REVISIONS
 6-13-60A
 11-2-62-B
 8-20-64
 8-9-65
 11-15-65
 2-8-68

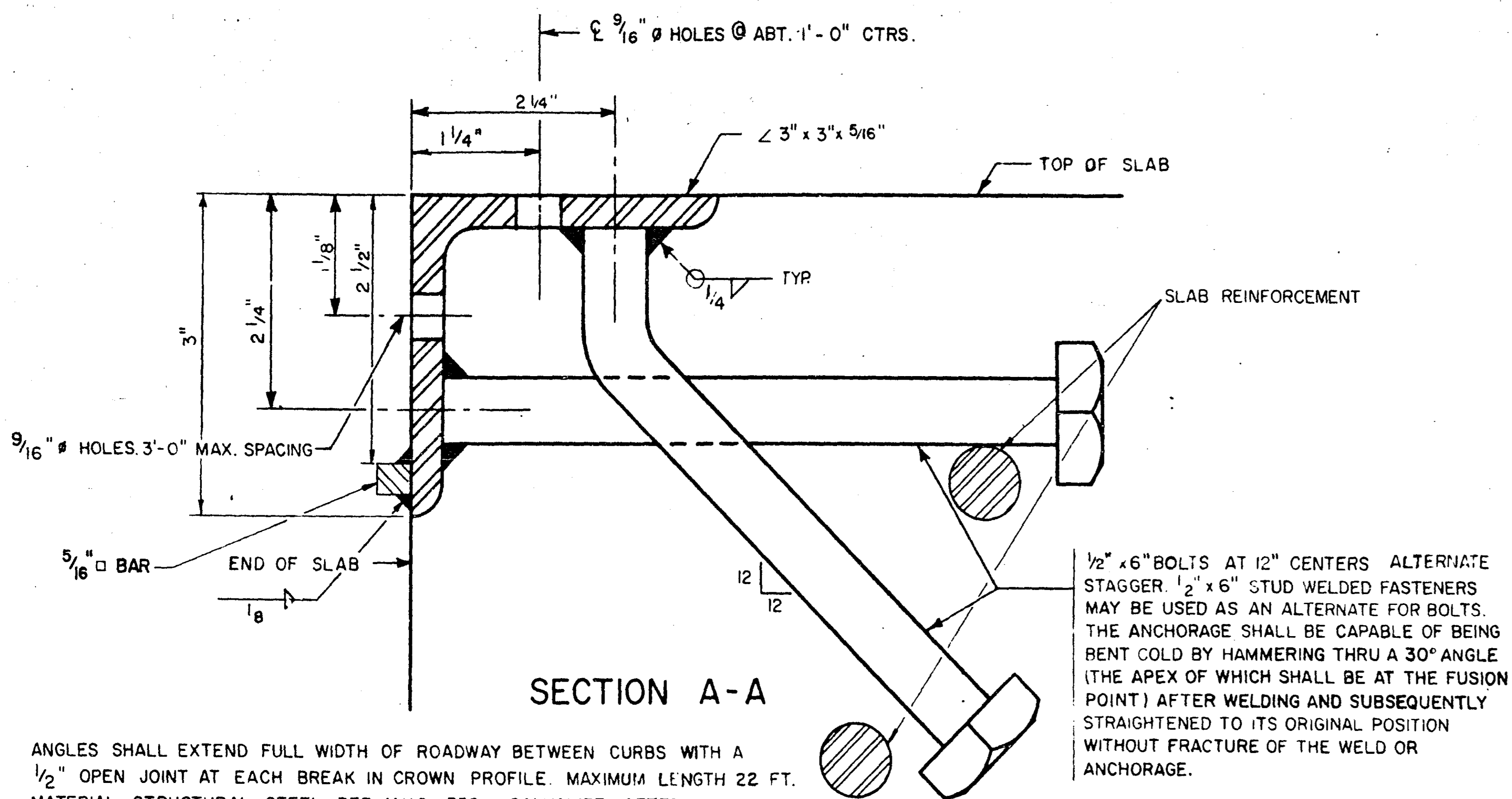
DETAIL NO.
 B149

APPROVED _____ 1968
 BRIDGE ENGINEER

STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS
 BEARING ASSEMBLY WITH LUGS
 FOR PRESTRESSED CONCRETE GIRDERS

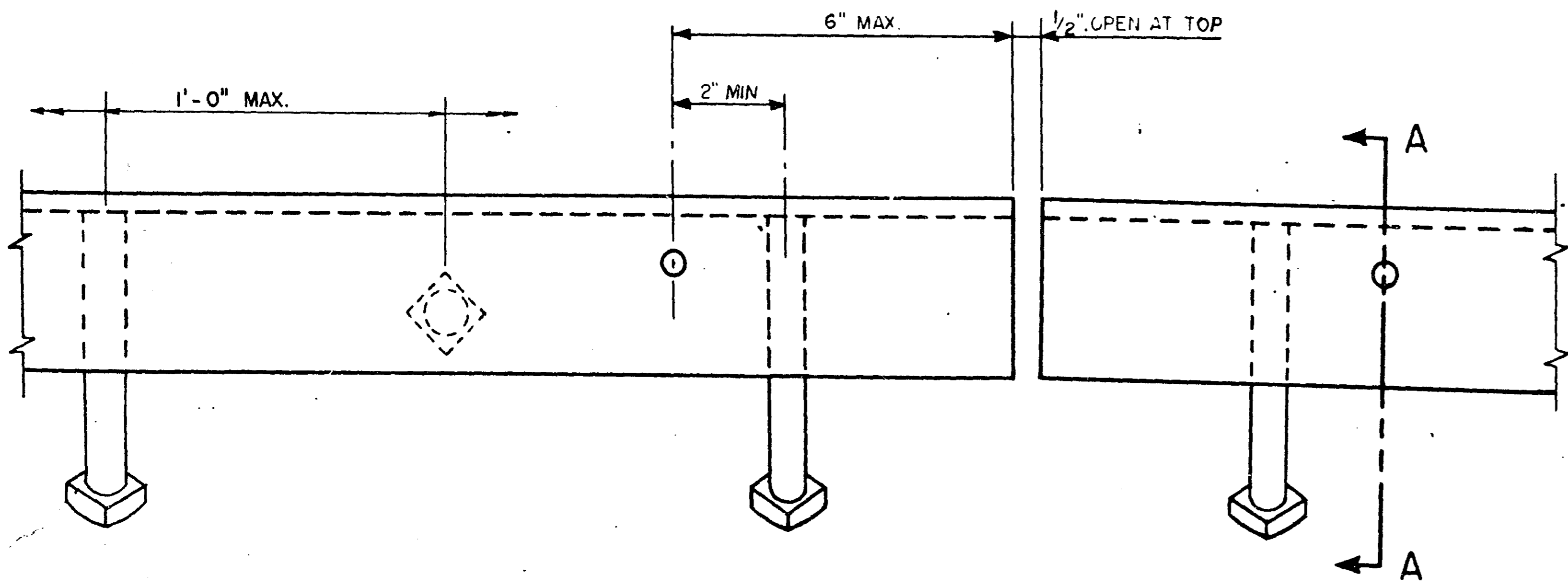
REVISIONS
 DETAIL NO.
 B147
 MICROFILMED
 RAMSEY CO. ENGR.

STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS
 Bridge No.
 62519
 DETAILS
 APPROVED 3-4-62
 62519
 Sheet No. 17 of
 22 Sheets

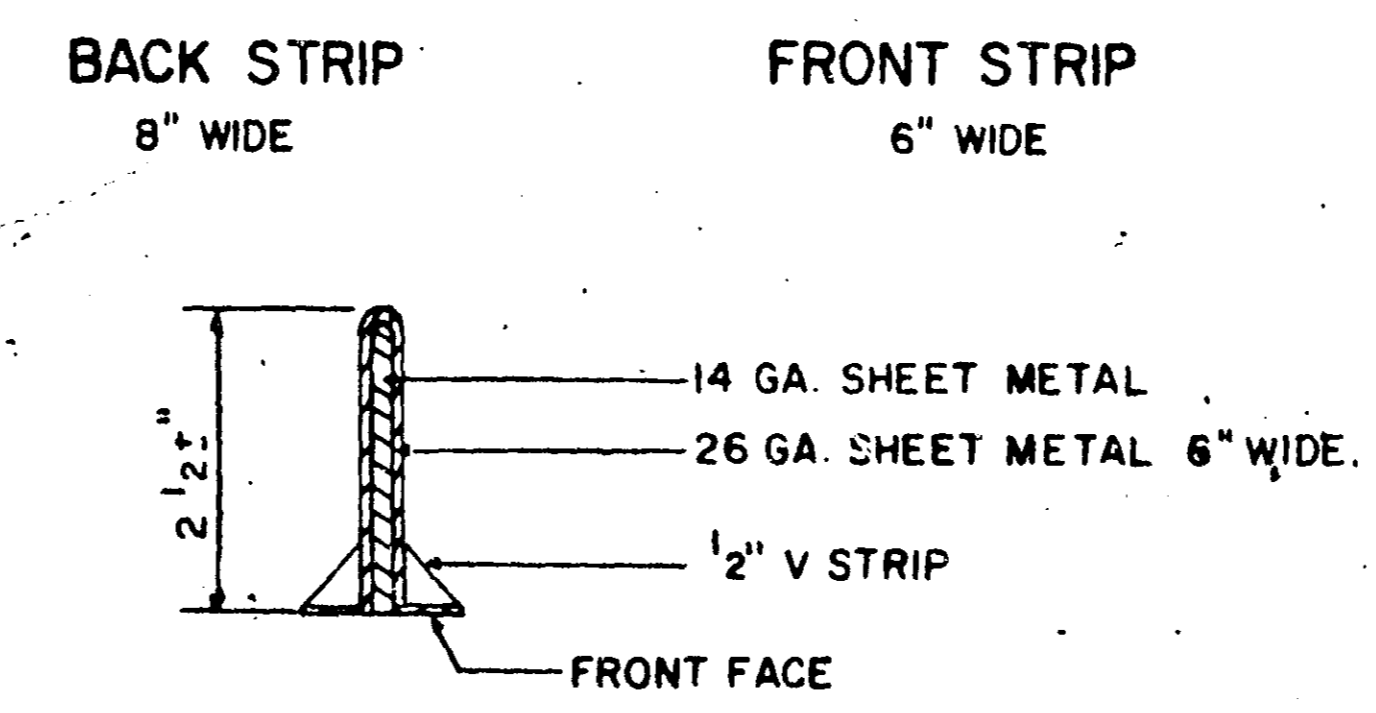
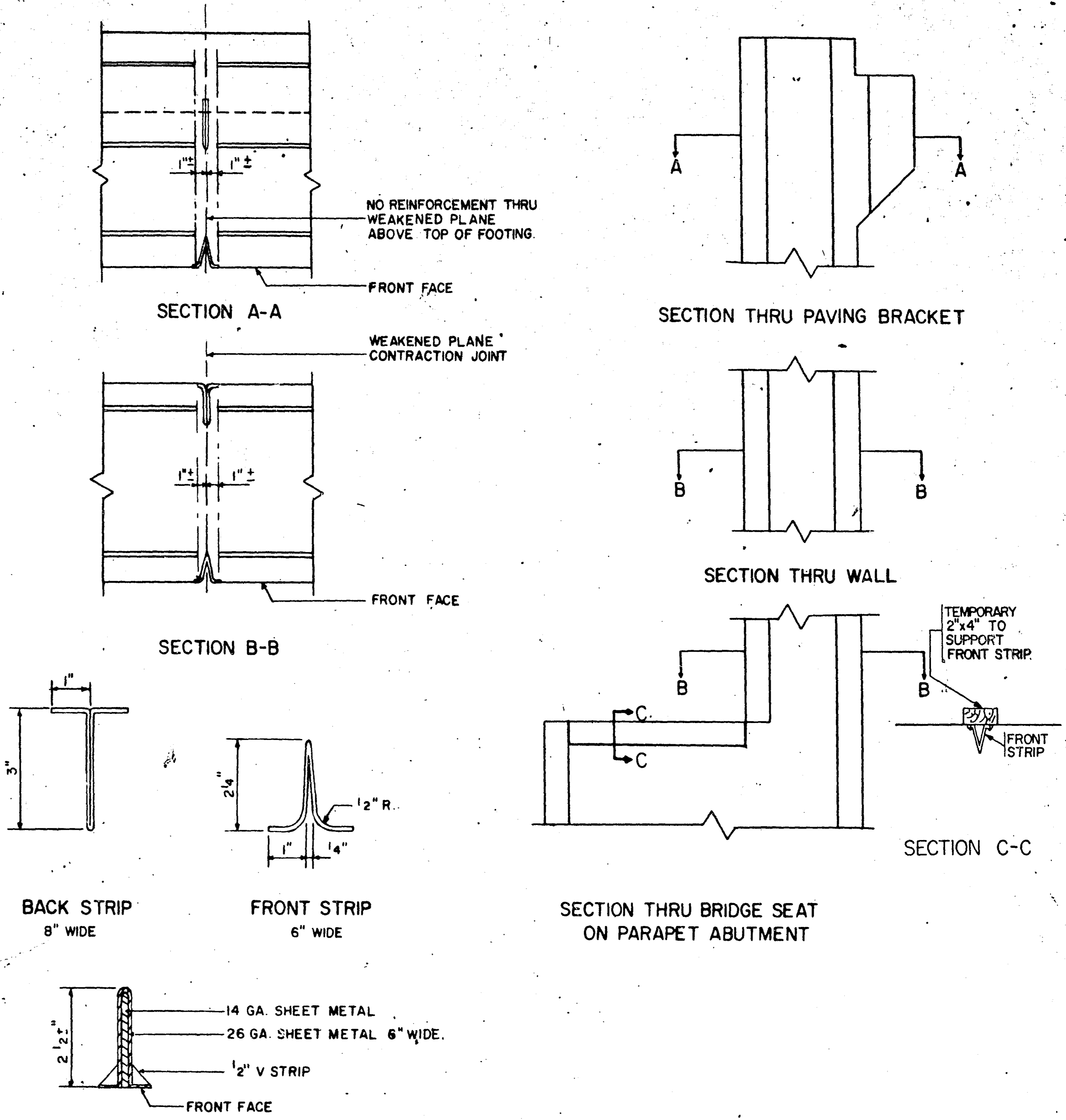


ANGLES SHALL EXTEND FULL WIDTH OF ROADWAY BETWEEN CURBS WITH A 1/2" OPEN JOINT AT EACH BREAK IN CROWN PROFILE. MAXIMUM LENGTH 22 FT. MATERIAL- STRUCTURAL STEEL PER M.H.D. 3306 GALVANIZE AFTER FABRICATION PER M.H.D. 3394. SET ANGLE TO PROPER GRADE AND CROWN.

1/2" x 6" BOLTS AT 12" CENTERS ALTERNATE STAGGER. 1/2" x 6" STUD WELDED FASTENERS MAY BE USED AS AN ALTERNATE FOR BOLTS. THE ANCHORAGE SHALL BE CAPABLE OF BEING BENT COLD BY HAMMERING THRU A 30° ANGLE (THE APEX OF WHICH SHALL BE AT THE FUSION POINT) AFTER WELDING AND SUBSEQUENTLY STRAIGHTENED TO ITS ORIGINAL POSITION WITHOUT FRACTURE OF THE WELD OR ANCHORAGE.



ELEVATION



NOTES
 METAL STRIP TO BE 26 GA. GALVANIZED SHEET METAL.
 FASTEN TO FORMS WITH 7/8" ROOFING NAILS ABOUT 6" CENTERS.
 FRONT STRIP TO BE REMOVED WITH FORMS.
 BACK STRIP REMAINS IN PLACE.
 ALL METAL IN FRONT FACE TO BE OILED FOR EASY REMOVAL.
 COST OF FORMING JOINT TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.

NOTE:
 THE METHODS AND MATERIALS INDICATED HEREON SHALL BE CONSIDERED AS SUGGESTED ONLY. VARIATIONS WILL BE PERMITTED, SUBJECT TO APPROVAL BY THE ENGINEER, BUT MUST PROVIDE DUMMY JOINTS OF A DEPTH NOT LESS THAN THE DEPTH SHOWN, AND A WIDTH AT THE FRONT FACE OF THE ABUTMENT OF NOT GREATER THAN 5/16". THE SEPARATION OF THE HORIZONTAL REINFORCEMENT BARS SHALL BE NOT LESS THAN 1/2" NOR MORE THAN 3", CENTERED AS SHOWN, REGARDLESS OF THE PROCEDURE USED FOR FORMING THE DUMMY JOINT.
 IF A SUITABLE PLASTIC OR OTHER DURABLE MATERIAL, SATISFACTORY TO THE ENGINEER, IS USED FOR THE FRONT STRIP, THE MATERIAL MAY BE LEFT IN PLACE.
 STRIPS TO BE REMOVED SHALL BE OILED OR GREASED AS NECESSARY TO PERMIT REMOVAL WITHOUT SPALLING THE CONCRETE.

APPROVED 9-24-1963	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS 11-6-68	DETAIL NO. B209	APPROVED SEPT 5 1963	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS 8-26-64 9-1-65 2-19-68	DETAIL NO. B260
PROTECTION ANGLE FOR END OF SLAB				CONTRACTION JOINT			
BRIDGE ENGINEER				BRIDGE ENGINEER			

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

Bridge No.
62519

DETAILS

APPROVED 3-4-69

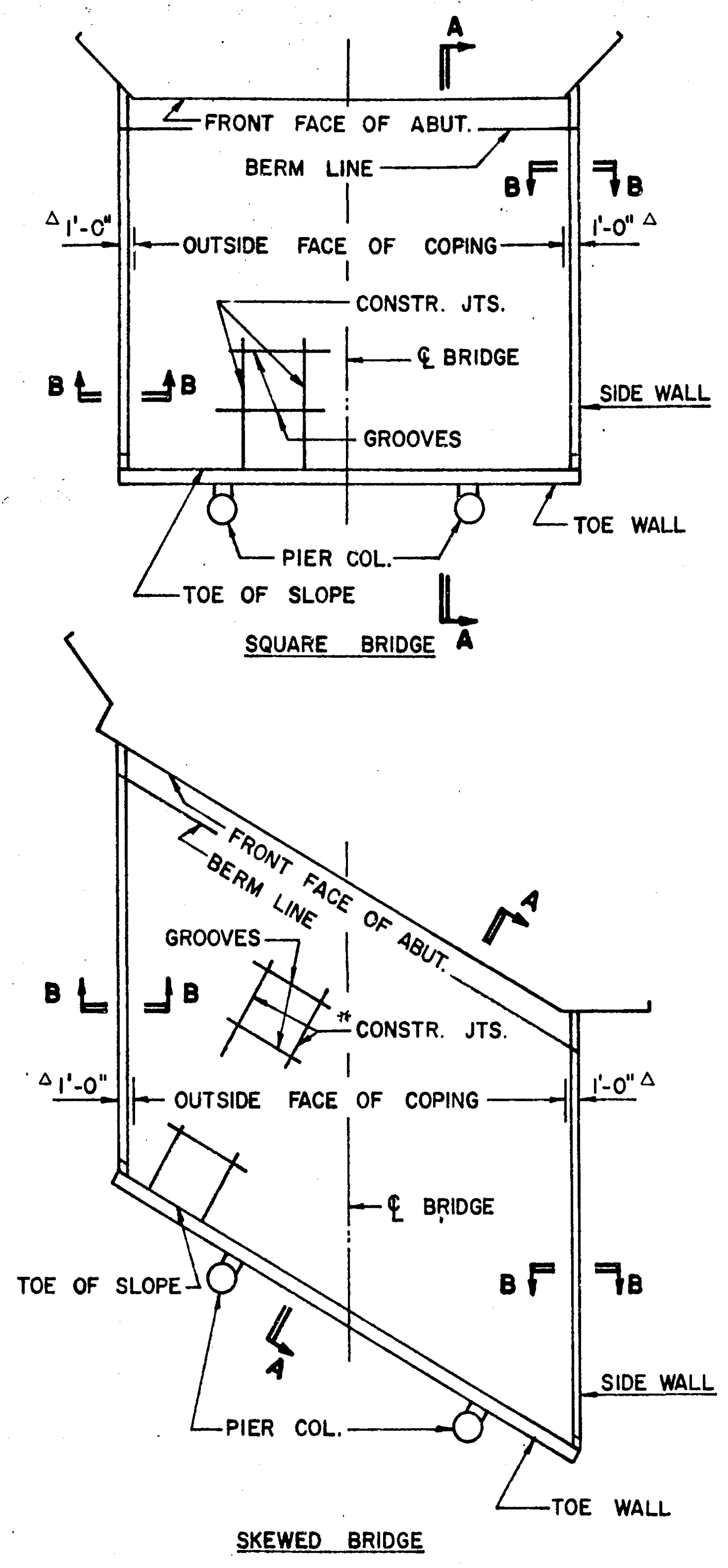
62519

Sheet No. 13 of
22 Sheets

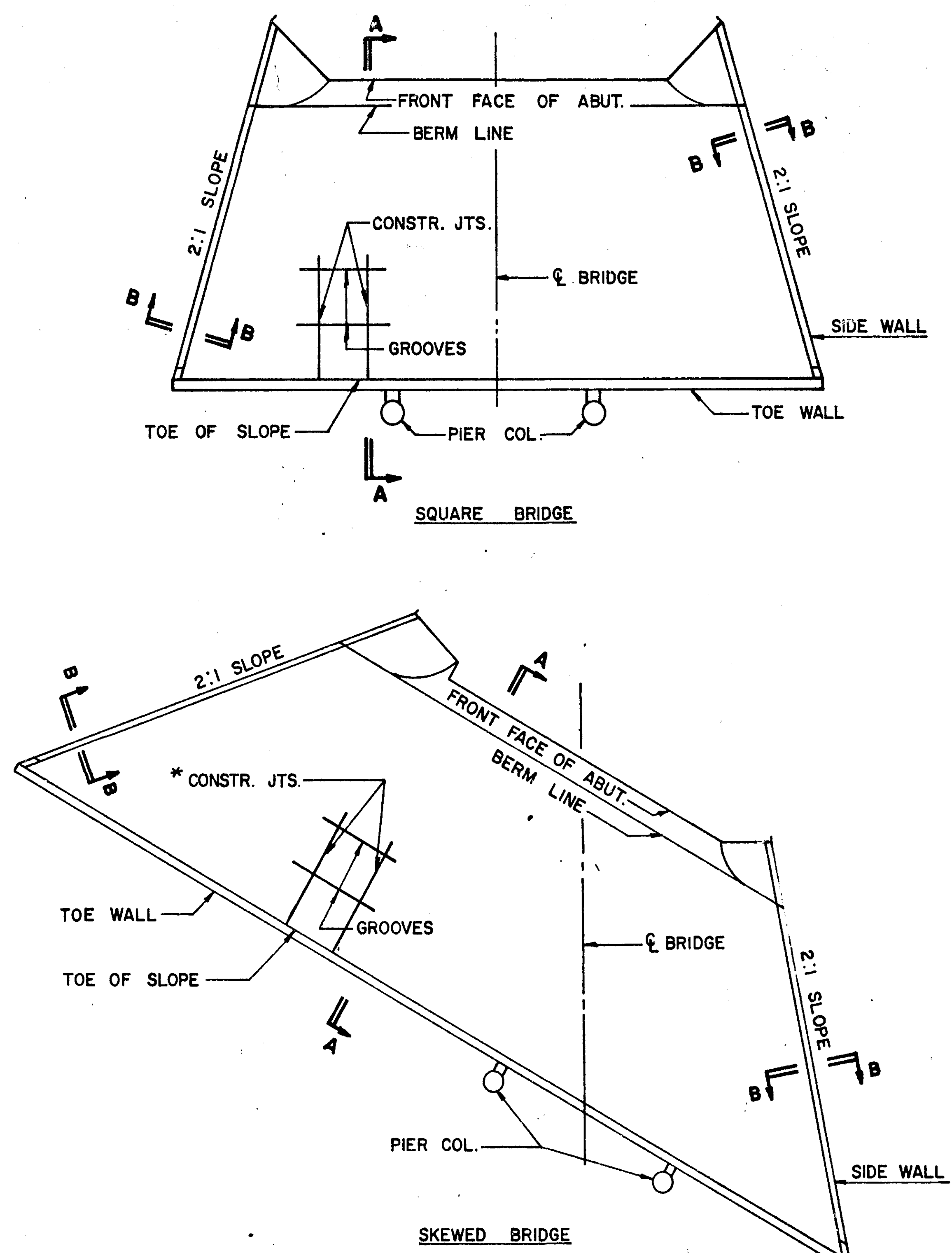
CONSTRUCTION NOTES

The slope paving shall be constructed of cast-in-place concrete, in accordance with the applicable sections of MHD 2401, and the following:

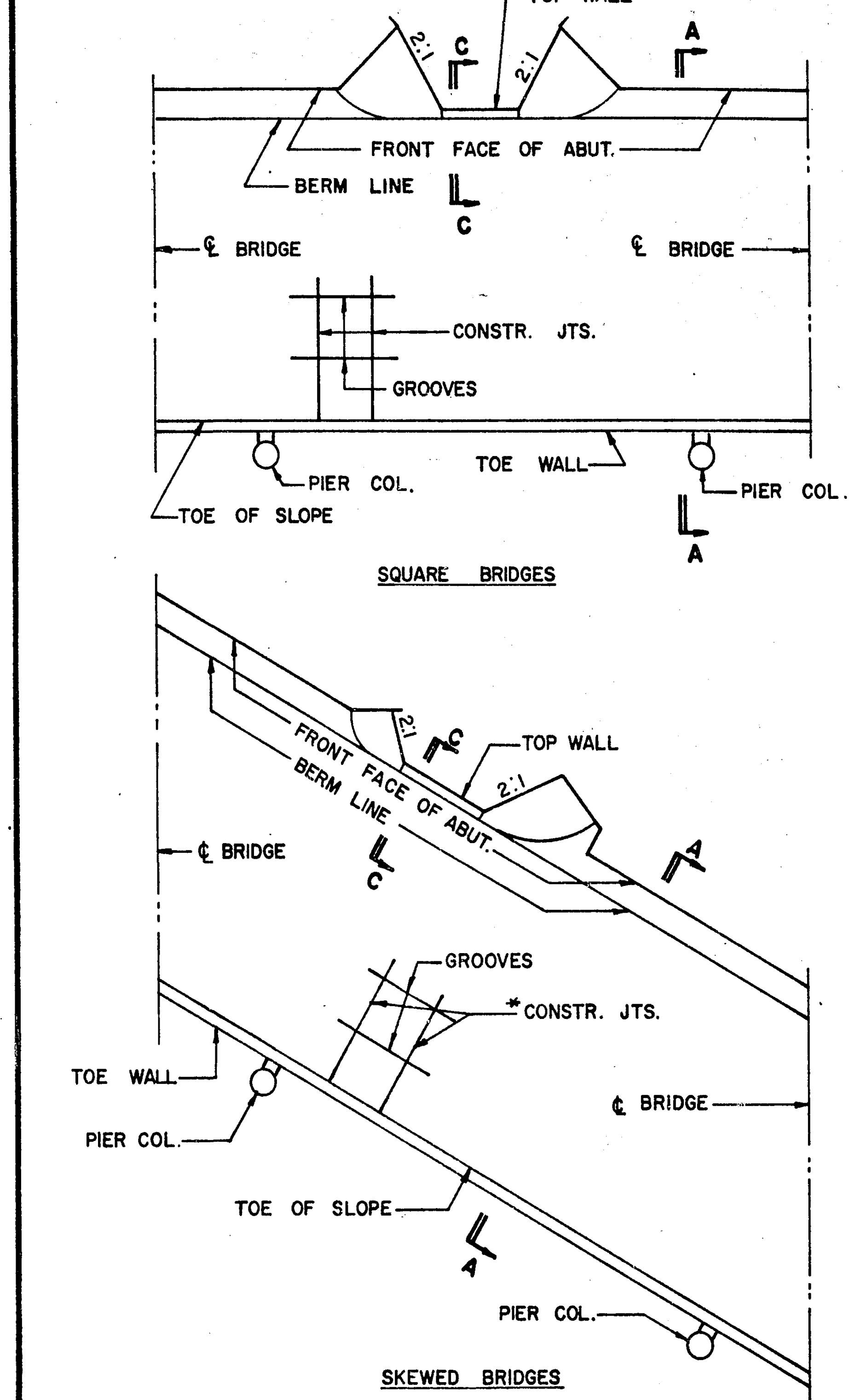
- The concrete shall be Mix 3A34
- The concrete slump may be adjusted, subject to approval of the Engineer, as may be necessary to obtain the desired results.
- Metal reinforcement shall conform to MHD 3301. Lap 30 diameters at splices.
- The slopes shall conform to the section shown on the General Plan and Elevation sheet in these Plans, except as otherwise provided for below: In the event the Engineer determines that a deficiency in material exists on the approach embankments constructed by others, he may order that the dimensions shown for the berm (see upper left of Section A-A) be revised to the extent necessary to construct the slope without hauling additional material. Such revision should, however, be limited to a decrease of not more than three inches, as applied to the height and/or width of the berm. In the event additional fill is required in order to conform to the slope lines staked by the Engineer, on approach embankments completed by others, the cost of furnishing, hauling, placing and compacting additional material ordered by the Engineer will be paid for as Extra Work. In the event the Engineer determines that an excess of material is present on approach embankments completed by others, he may order that the width of the berm be increased to the extent necessary to utilize such material, but not by more than 1'-6". Excess material, beyond that which is required to dress the slope to true lines and to the grades staked by the Engineer, shall be used as directed by the Engineer for purposes such as widening the shoulders adjacent to the sidewalks, flaring out these shoulders, and shaping up adjacent side slopes. The disposal of excess material, except material deposited by the Contractor during excavation for substructure units or related work, which can not be incorporated into the slopes as hereinbefore defined, and which the Engineer directs to be hauled from the site, will be paid for as Extra Work. Any revision in berm grades and dimensions should be applied uniformly for the full length of the berm. Compaction will be required.
- Toe and side walls shall be in place before casting remainder of slope paving.
- Slope paving shall, in general, be poured in equal alternate vertical strips with a maximum width of 6 ft. The strips shall be cut into sections by grooves spaced at equal distances not exceeding 6 ft. and shall be at right angles to the strips. Other patterns for strips and grooves will be considered if requested by the contractor. Subgrade shall be moist when concrete is placed.
- The forms shall be set to accurate grade and alignment, and shall be rigidly supported. Deviations of greater than 1/4" from a ten-foot straight edge shall be corrected.
- Care shall be taken in placement of concrete so as not to disturb the grade on which it is placed, or to contaminate the concrete.
- Sufficient hand spading and/or tamping shall be done to secure a dense paving relatively free of voids and honeycomb.
- The top surface shall be struck off immediately after placing the concrete. When the concrete has set sufficiently to hold its shape, it shall be struck off again, after which it shall be given a final finish by hand floating with a cork or wooden float. The finished appearance shall be reasonably smooth and uniform. The finished concrete shall not vary more than 3/8" from a ten-foot straight edge.
- All edges shall be finished with an edger unless otherwise noted. Grooves shall be cut using a sidewalk grooving tool. The trails left by the flanges of these tools shall be removed by floating.
- The concrete shall be cured for at least 72 hours after casting by any of the methods outlined in MHD 2401.3G.
- Reinforcement shall be supported on concrete bricks or mortar blocks, or other support satisfactory to the Engineer.
- For correct position of abut. wings and piers, see bridge plans.
- Where piers extend thru slope paving, provide 1/2"x 4" bit. felt around piers.
- Slope paving will be measured by area of the top surface bounded by the outside edges of the toewall and sidewalls and the front face of the abutment.
- Payment for furnishing and placing the slope paving will be made as Item No. 401.601 at the Contract price per square yard, which price shall be compensation in full for all costs of furnishing all materials, equipment, tools, and labor necessary for the satisfactory completion of the work.



LAYOUTS FOR SLOPES 2:1 OR FLATTER

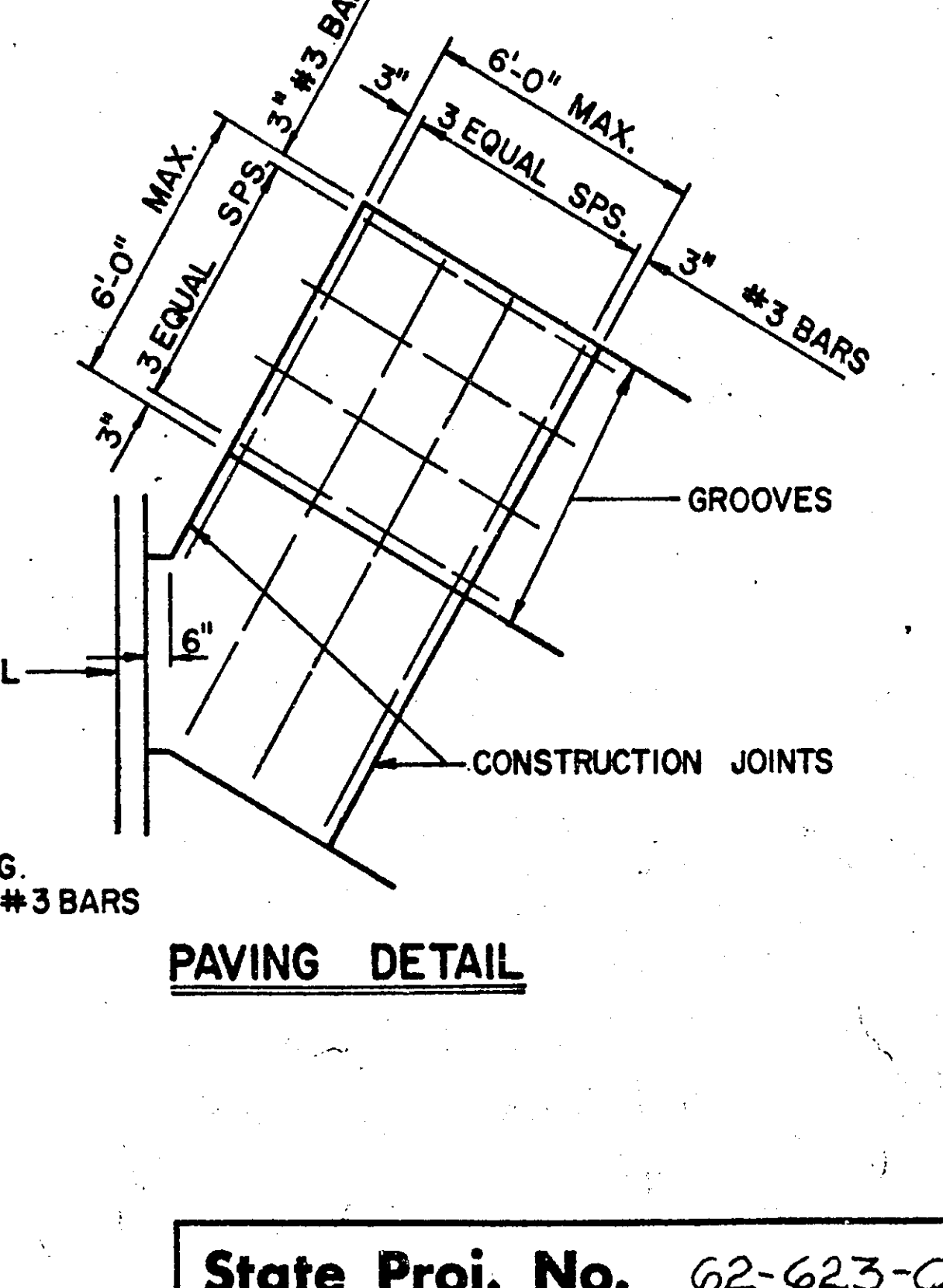
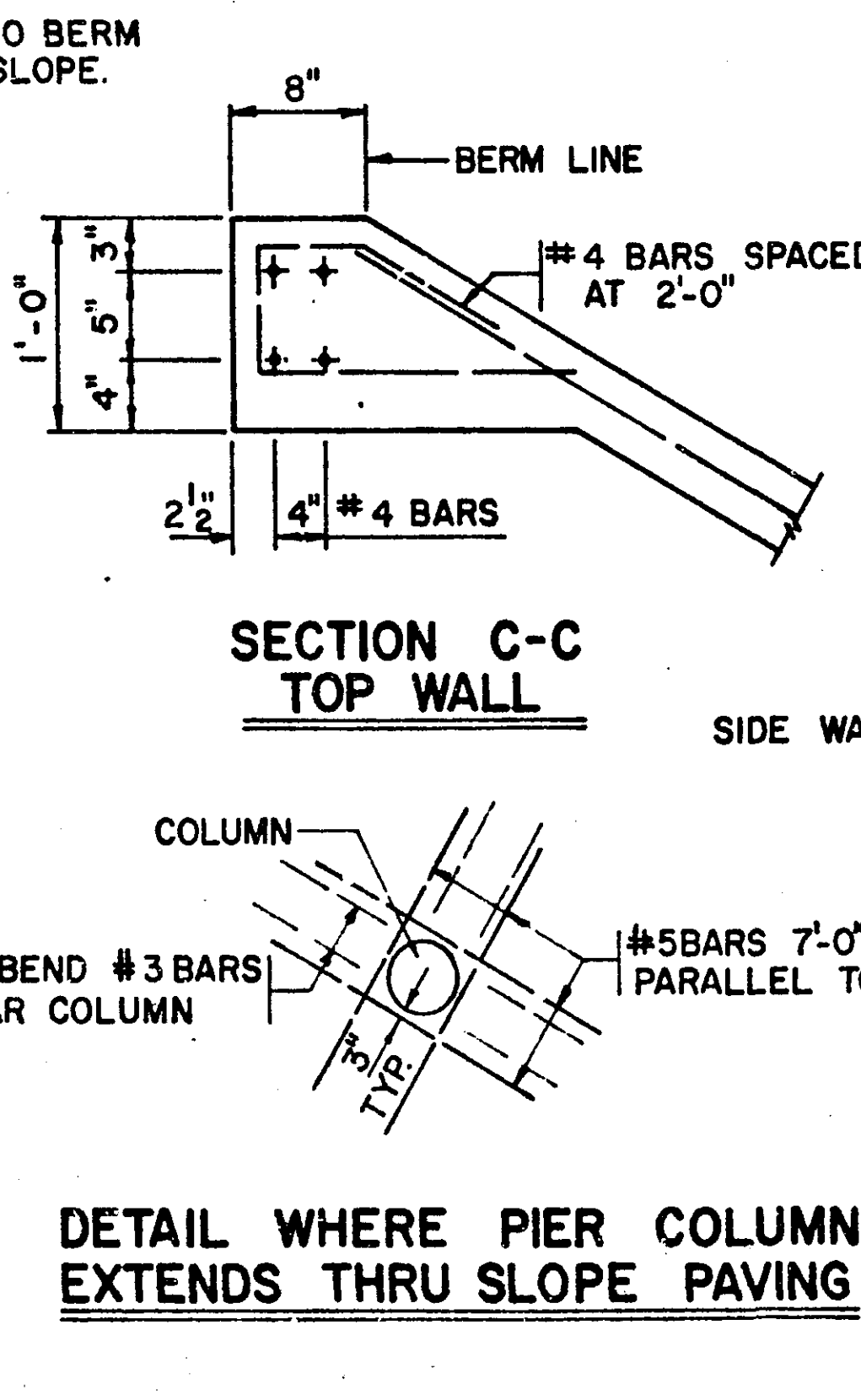
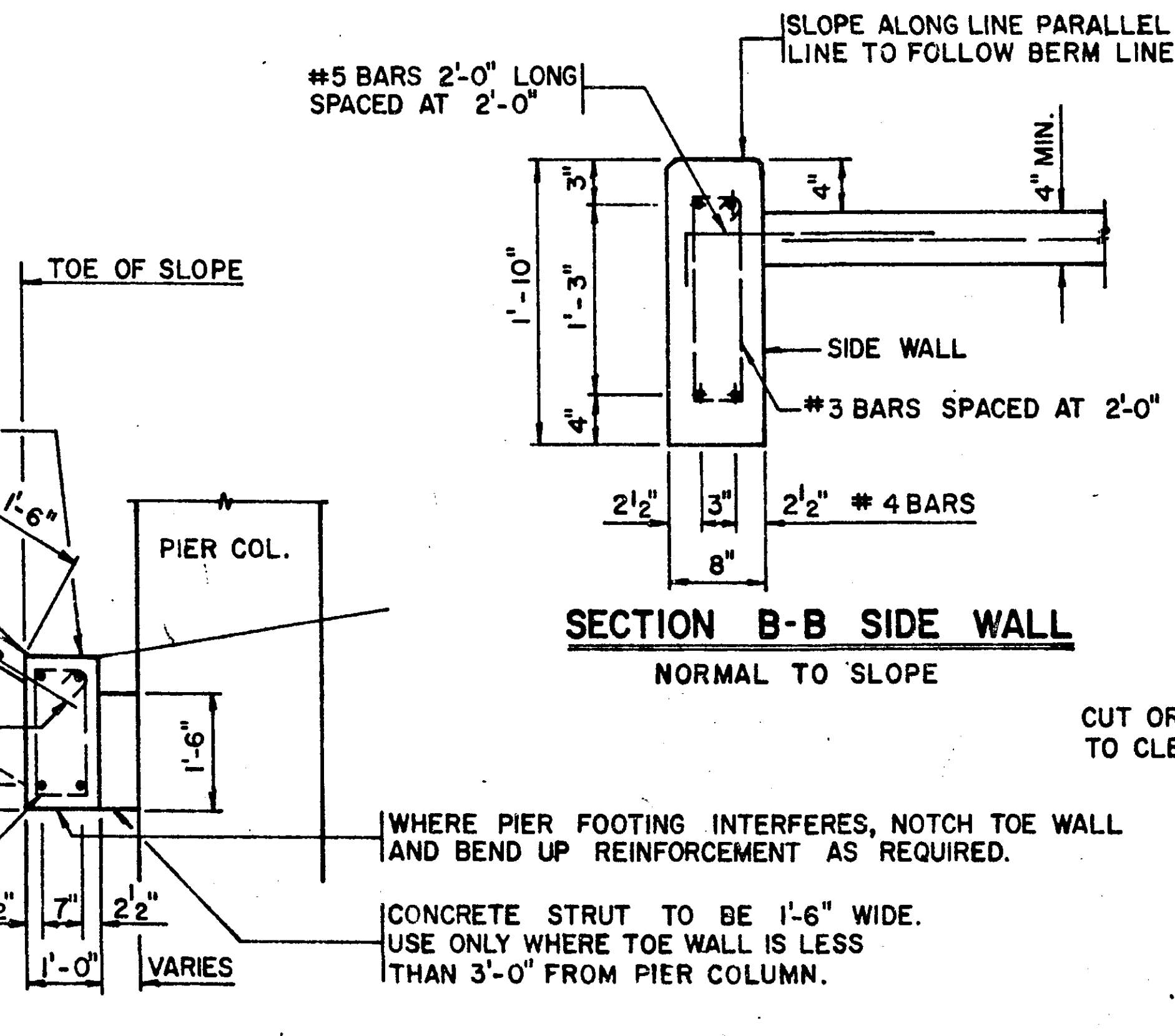
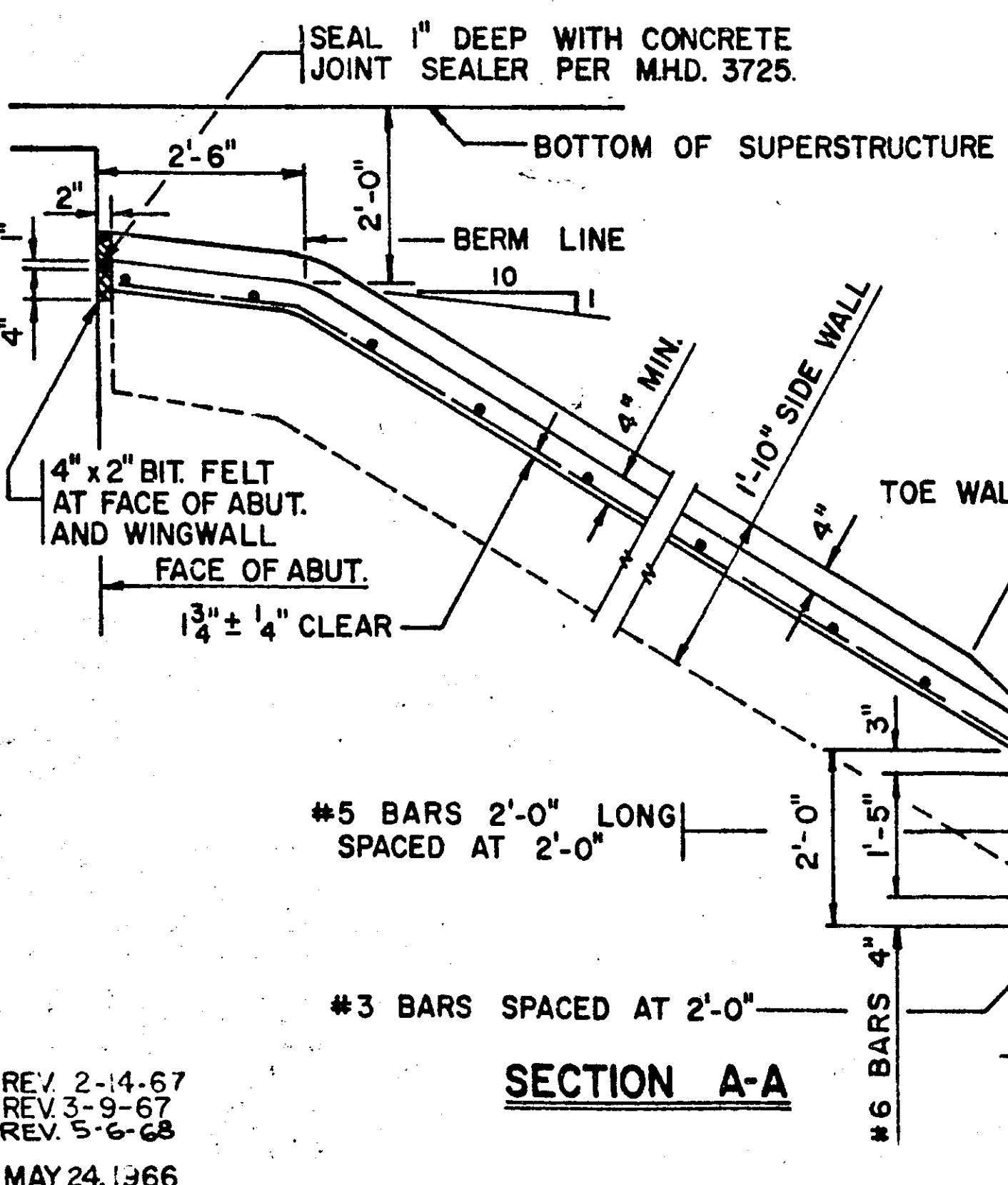


LAYOUTS FOR SLOPES STEEPER THAN 2:1



LAYOUTS BETWEEN BRIDGES FOR SLOPES STEEPER THAN 2:1

* VERTICAL CONSTRUCTION JOINTS MAY BE CONSTRUCTED PARALLEL TO ϕ OF BRIDGE FOR SKEWS TO 10° ONLY.
 Δ 1'-0" FOR TANGENT BRIDGE SUPERSTRUCTURES. VARIES 1'-0" MINIMUM FOR CURVED BRIDGE SUPERSTRUCTURES.



REV. 2-4-67
 REV. 3-9-67
 REV. 5-6-68
 MAY 24, 1966

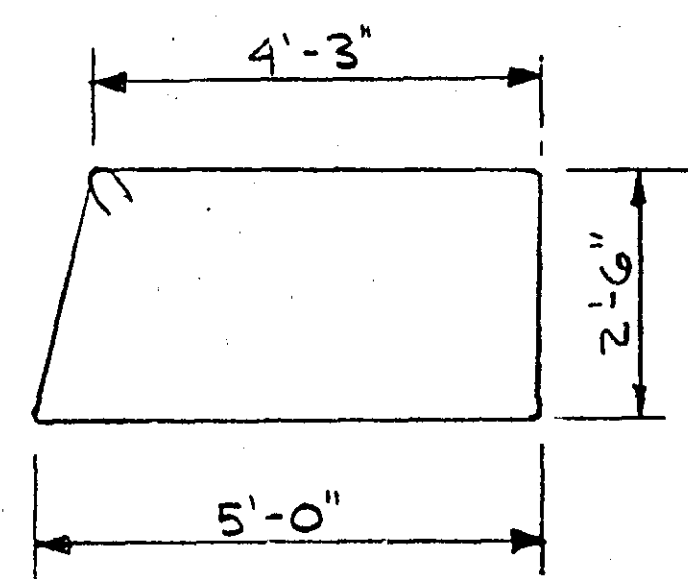
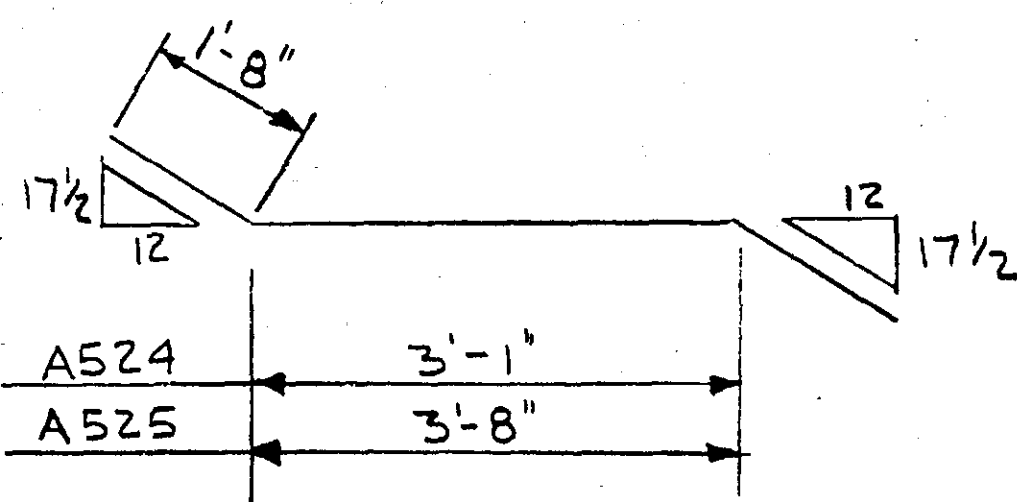
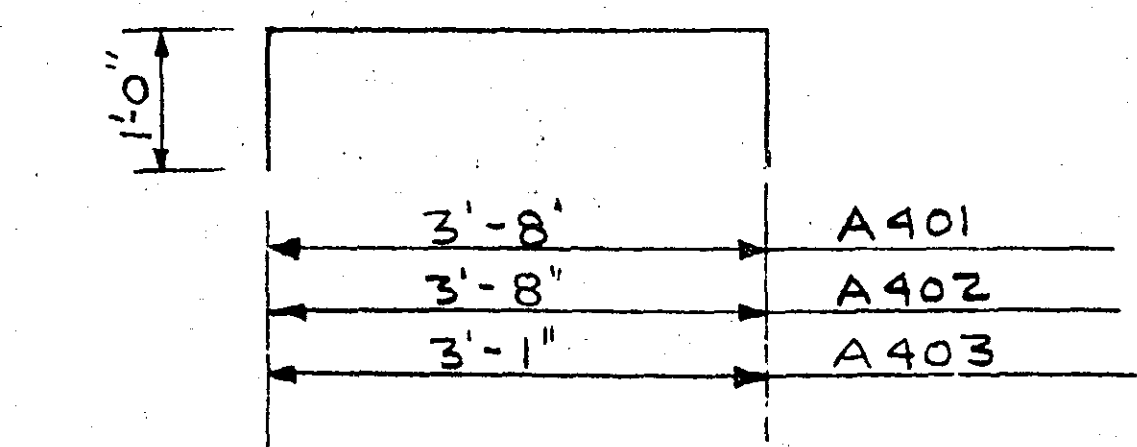
STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS		
Bridge No. 62519		
CLASS B SLOPE PAVING UNDER BRIDGES		
APPROVED: 3-4-69		
DES.	DR.	MICROFILMED
CHK.	CHK.	RAMSEY CO. ENGR.

State Proj. No. 62-623-06

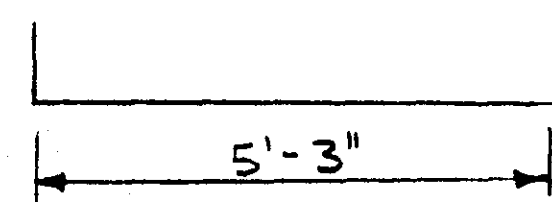
Sheet No. 19 of 22 Sheets

689

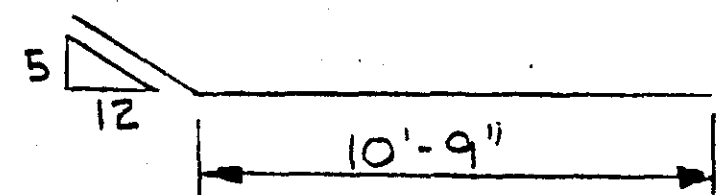
BAR BENDING DETAILS



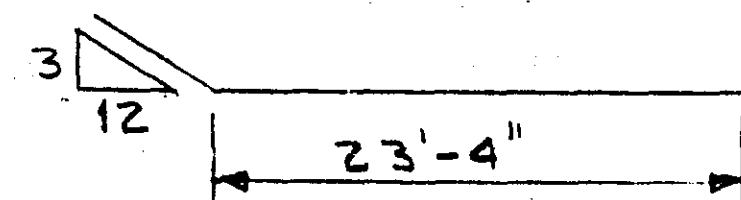
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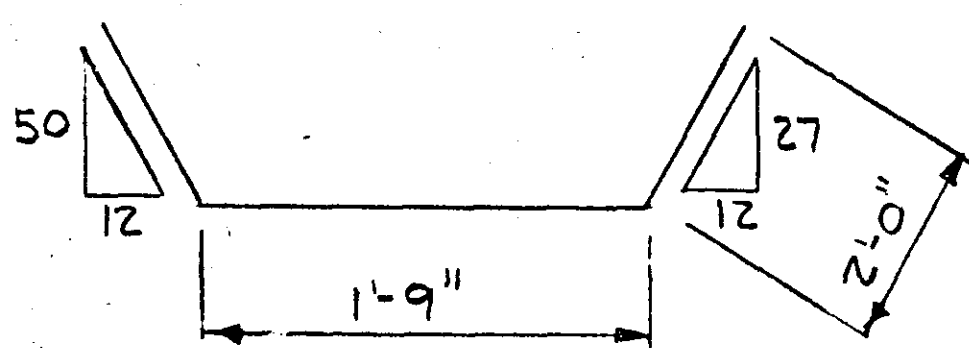
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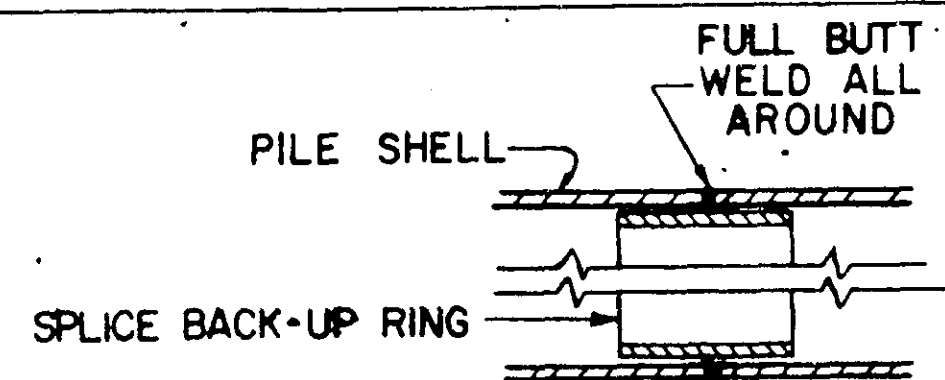
A641

ABCDEFGHIJKLMNOPQRSTUVWXYZ
 1234567890

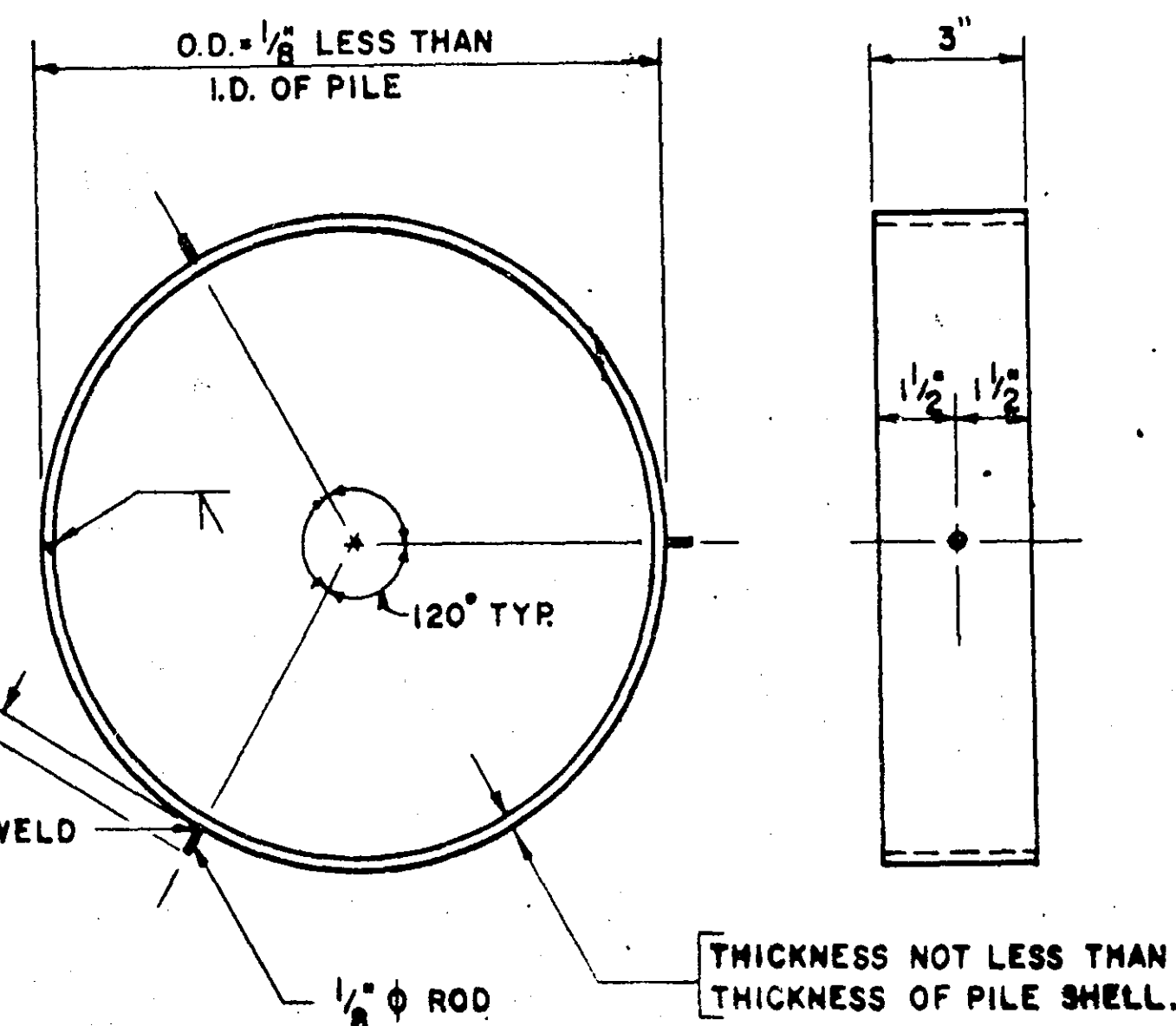
NOTE:
 ALL DIMENSIONS FOR 3/4" HIGH LETTERS AND NUMBERS SHALL BE IN DIRECT PROPORTION TO THOSE SHOWN ABOVE FOR THE 1" HIGH LETTERS AND NUMBERS. THE THICKNESS OF THE LETTERS AND NUMBERS SHALL BE 3/16".

1964 & 1968 SPEC.

APPROVED: 7/2/1959	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS	DETAIL NO.
<i>A. E. LaBonte</i> BRIDGE ENGINEER	LETTERS FOR BRIDGE NAME PLATES		2102



DETAIL OF SPLICE RING



FOR 35000 PSI. YIELD MATERIAL IN PILE SHELL
 USE WELDING ELECTRODE AWS-ASTM CLASS E 6010, 6011, 6016, OR 7016.

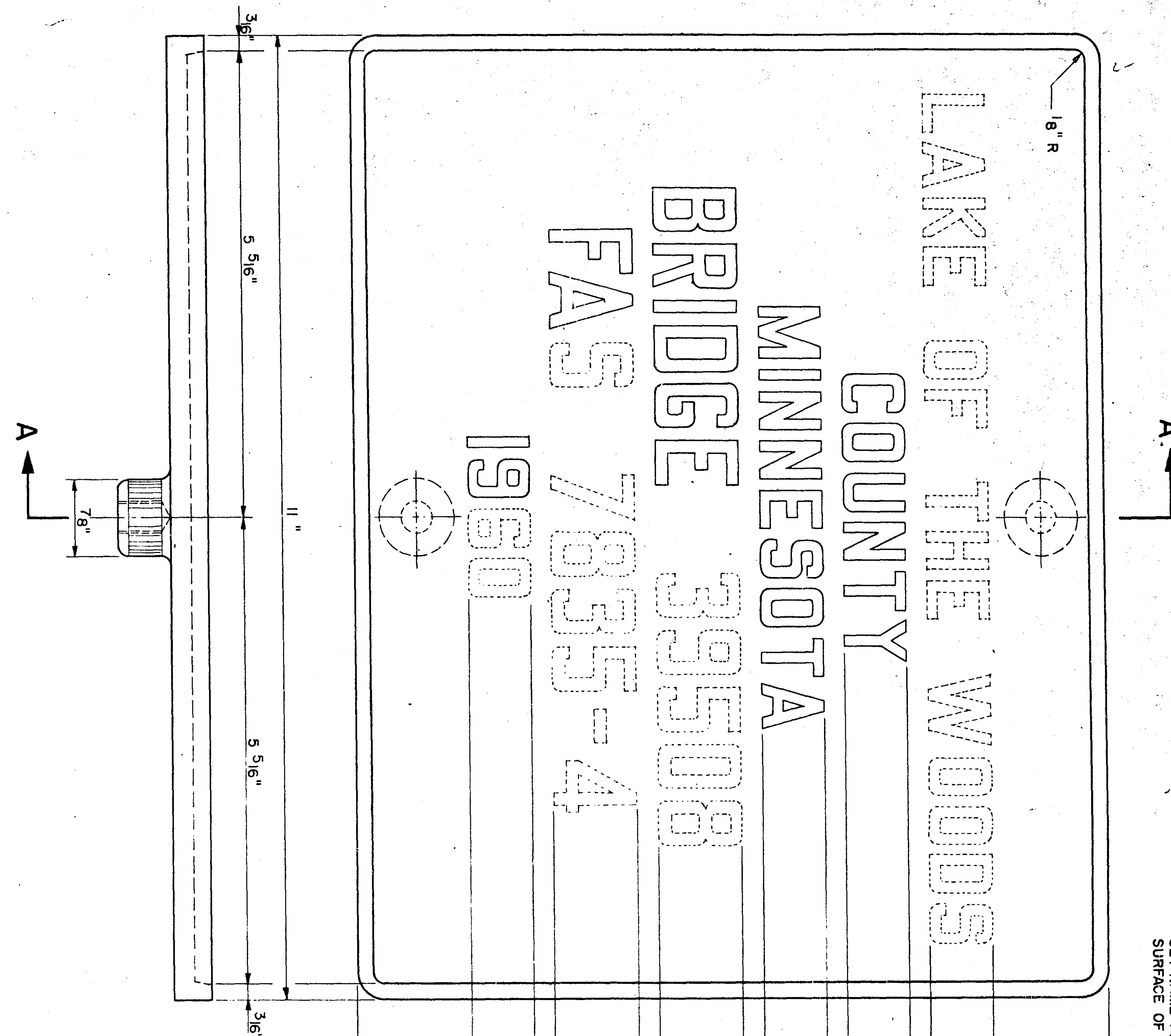
FOR 45000 PSI. YIELD MATERIAL IN PILE SHELL
 USE WELDING ELECTRODE AWS-ASTM CLASS E 7016.

ELECTRODES CONTAINING IRON
 POWDER SHALL NOT BE USED.

STRUCTURAL STEEL FOR THE RING
 SHALL BE PER M.M.D. 3306 OR
 MATERIAL FROM A PILE SHELL.

APPROVED: 2-23-58	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS	DETAIL NO.
<i>A. E. LaBonte</i> BRIDGE ENGINEER	SPLICES FOR CAST IN PLACE CONCRETE PILES	6/2/59 1/17/64 10/27/64 9/14/65	B220

1964 & 1968 SPEC.



NOTES:
 NUMBERS AND LETTERS SHALL CONFORM TO THOSE SHOWN ON DETAIL NO. 2102.
 DRAFT ON LETTERS SHALL NOT BE MORE THAN 3" IN 12".
 HORIZONTAL SPACING OF LETTERS SHALL PRODUCE A BALANCED LAYOUT IN PROPORTION TO SPACING SHOWN.
 TOP SURFACE OF LETTERS AND FRAMES SHALL BE BURNISHED.
 BACKGROUND OF PLATE SHALL HAVE A DEEP BROWN OXIDIZED FINISH.
 FURNISH 2 STEEL BOLTS 3/8" X 3" LONG WITH EACH PLATE.
 PLATES ORDERED IN PAIRS SHALL BE CAST FROM THE SAME HEAT.

NUMBERS AND LETTERS SHOWN DOTTED ARE TO BE OBTAINED FROM BRIDGE PLANS.

SPECIFICATION REFERENCE 2471.3 H, 3327 (BRONZE CASTINGS)

1964 & 1968 SPECS.

APPROVED: JULY 3, 1959	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS	DETAIL NO.
<i>A. E. LaBonte</i> BRIDGE ENGINEER	BRIDGE NAME PLATE FOR COUNTY BRIDGES	2-19-68	2101

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

Bridge No.

62519

DETAILS

APPROVED: 3-4-62

62519

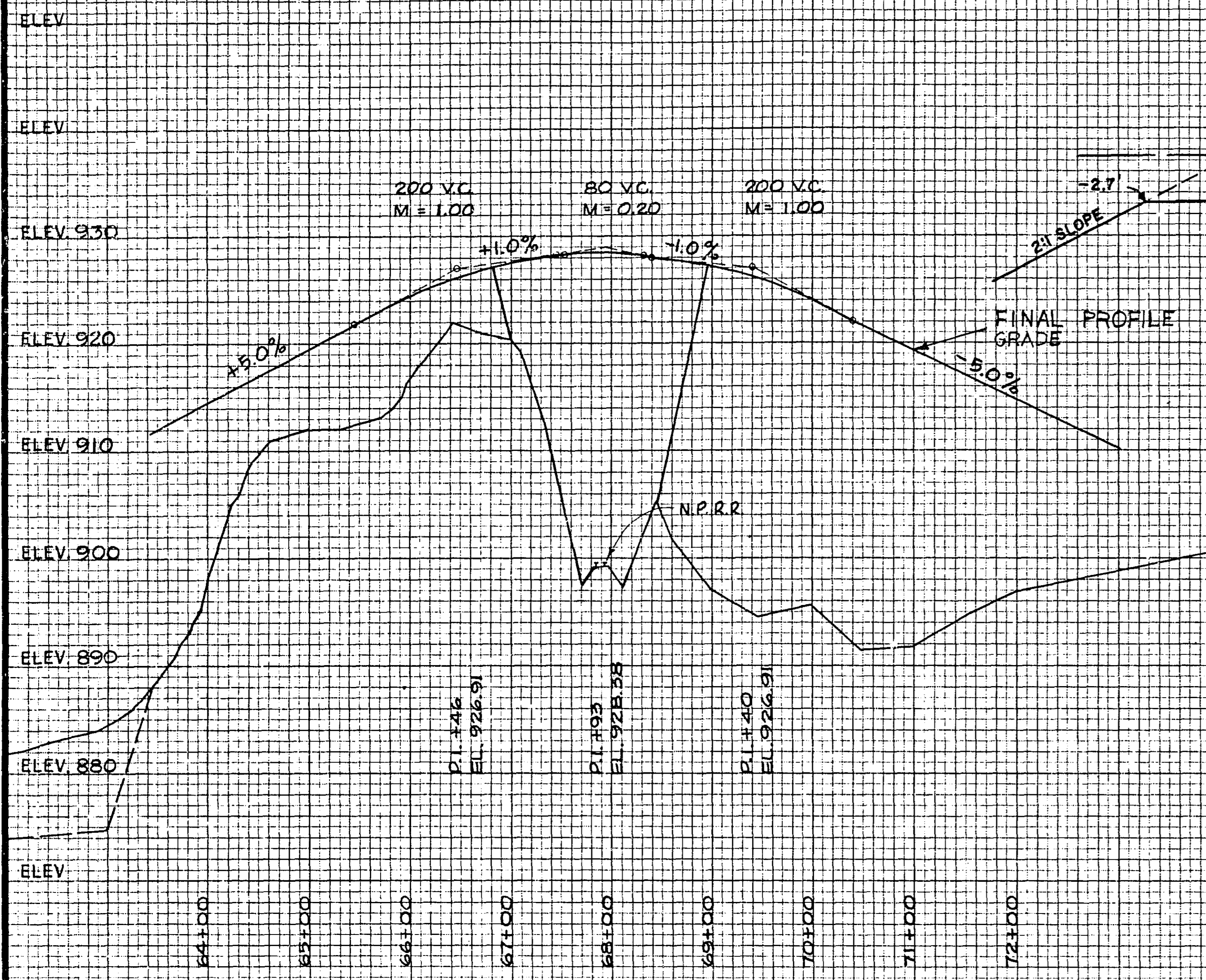
Sheet No. 20 of
22 Sheets

6891

SAP NO. 62-623-06

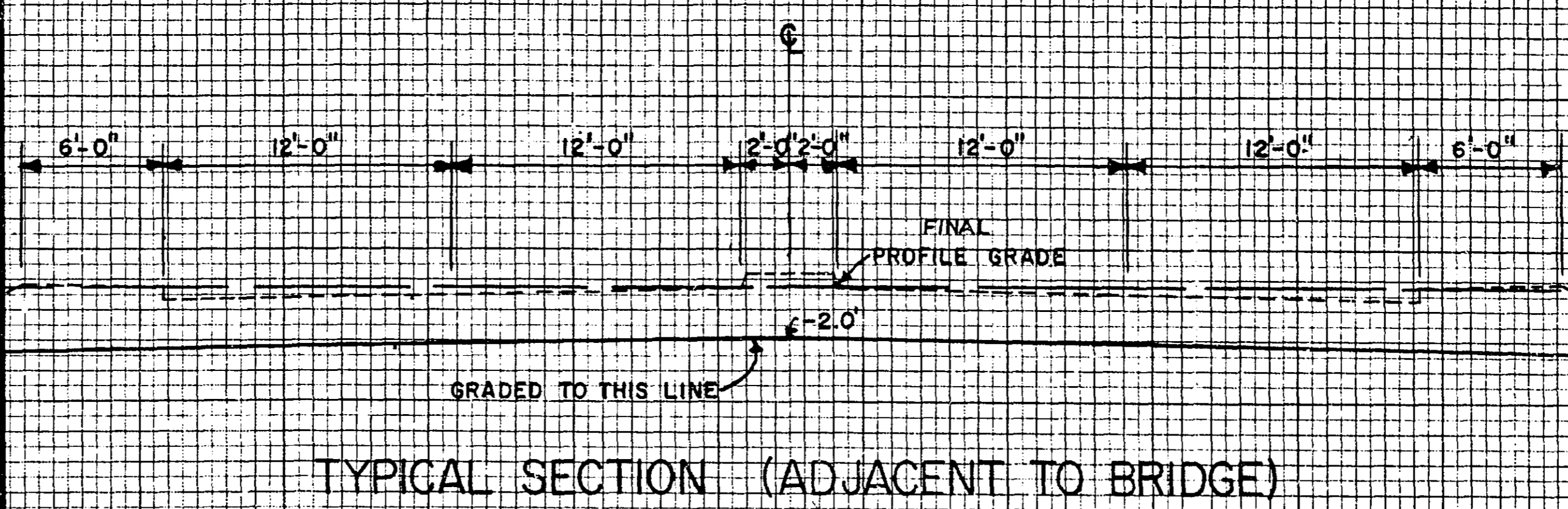
CONTRACTED PROFILE

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

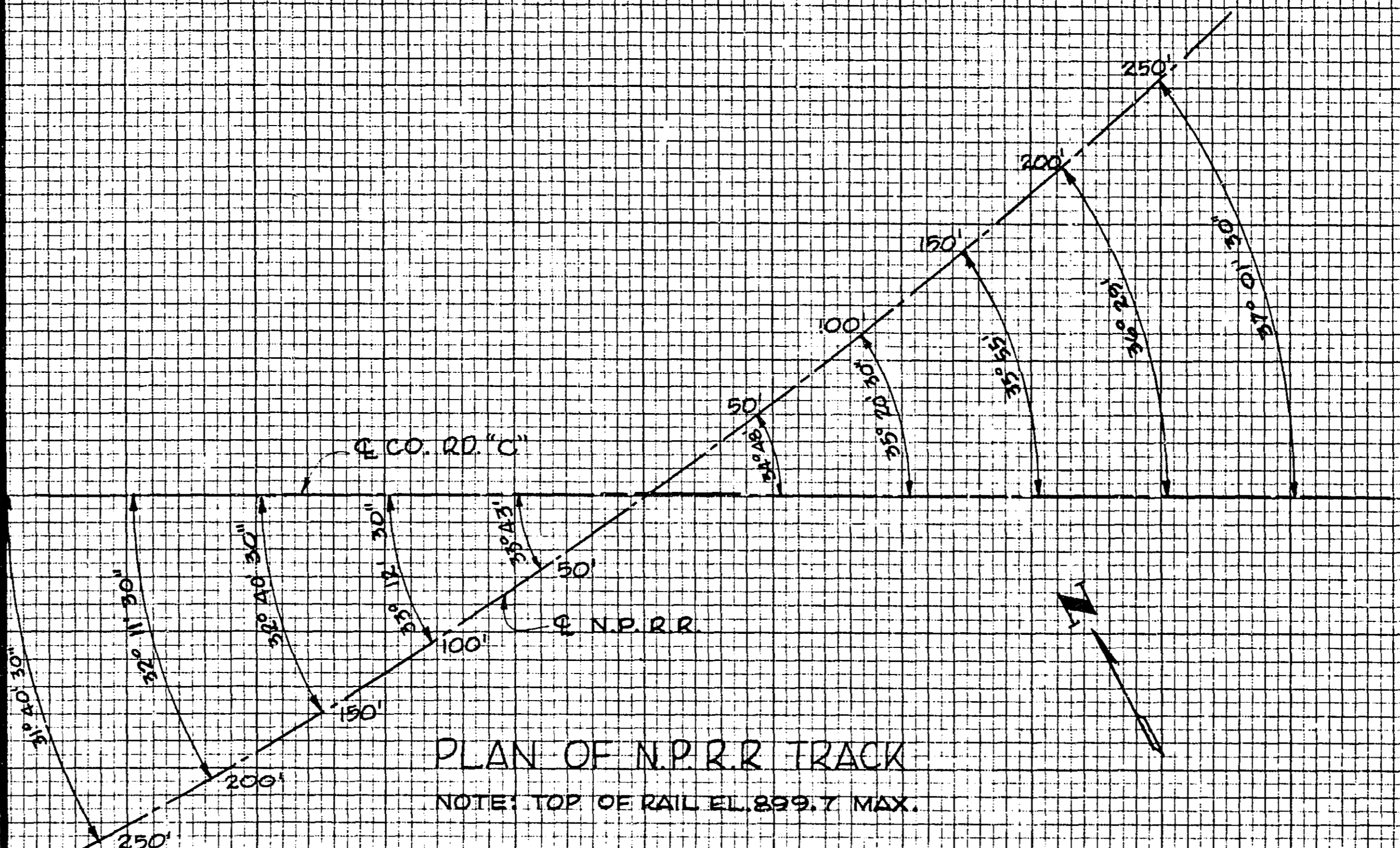


TYPICAL SECTIONS & PERTINENT DATA

SCALES AS SHOWN

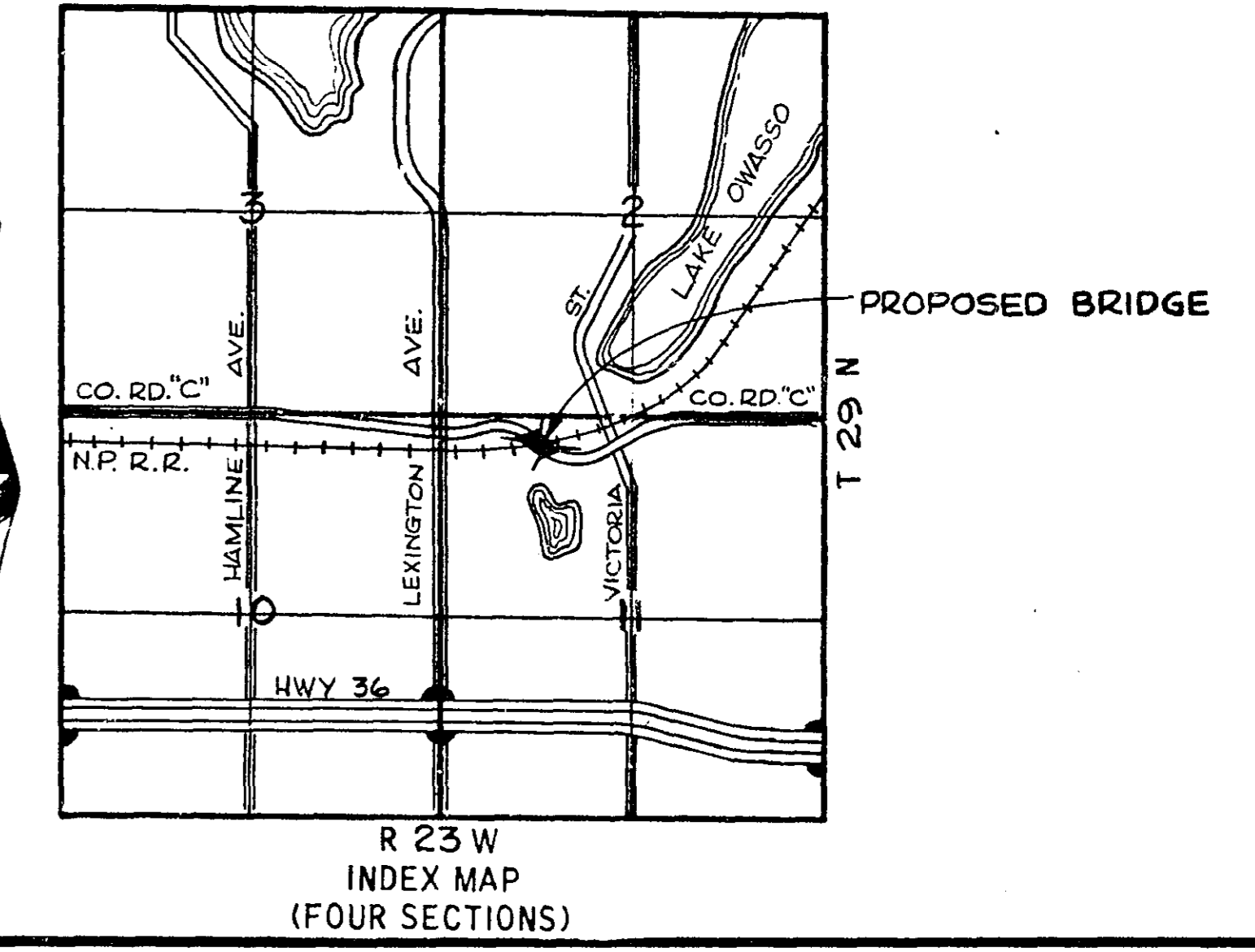


TYPICAL SECTION (ADJACENT TO BRIDGE)



PLAN OF N.P.R.R. TRACK
NOTE: TOP OF RAIL EL. 899.7 MAX.

Fed. Proj. No.



R 23 W
INDEX MAP
(FOUR SECTIONS)

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

DATA

- Preliminary recommendations of Engineer in charge of Bridge Survey:
 - Net span length and type of bridge: 72-72-72 PRESTRESSED CONCRETE GIRDERS SPAN
 - Width of roadway on bridge: 52' WITH 4' CENTER ISLAND
 - Number and width of sidewalks, etc.: TWO AT 5'
 - Locate center of bridge at station: 70+00
 - If a skew bridge is recommended, the angle of skew should be: 55°-44'-30"
 - Is piling required? YES
- Special features: Waterfalls, dams, exceptional floods, ice, driftwood, sliding banks, logging, etc.
- Changes: In height or length from that of old bridge, and reasons why
- Other bridges in vicinity:
 - Over same stream (particularly structures which carry high water without overflow of roadway); give location, length, height above water, net cross-sectional area at high water stage and estimated age
 - Over or under same highway or railroad; give location, length, horizontal and vertical clearances and estimated age
 - Reasons why these bridges are, or are not, fair indications of what length the proposed bridge should be
- If structure is over a drainage ditch, is ditch gradient liable to be altered?
- Navigation clearances required, if any
- Information and evidence in regard to high water stages was obtained as follows
- Must contractor provide for traffic during construction of proposed bridge? NO
If so, by what means?

HYDRAULIC ENGINEERS RECOMMENDATION

.....

HIGH AND LOW WATER ELEVATIONS

Data obtained from
 reflects highest water elevation in the area of this construction to be and the lowest water elevation to be 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.

SHIPPING POINT

Proposed Bridge is miles of which is the nearest
 Railroad shipping point.
 *(Give name of town, station or siding)

Date Project or County Engineer
 Date District Engineer

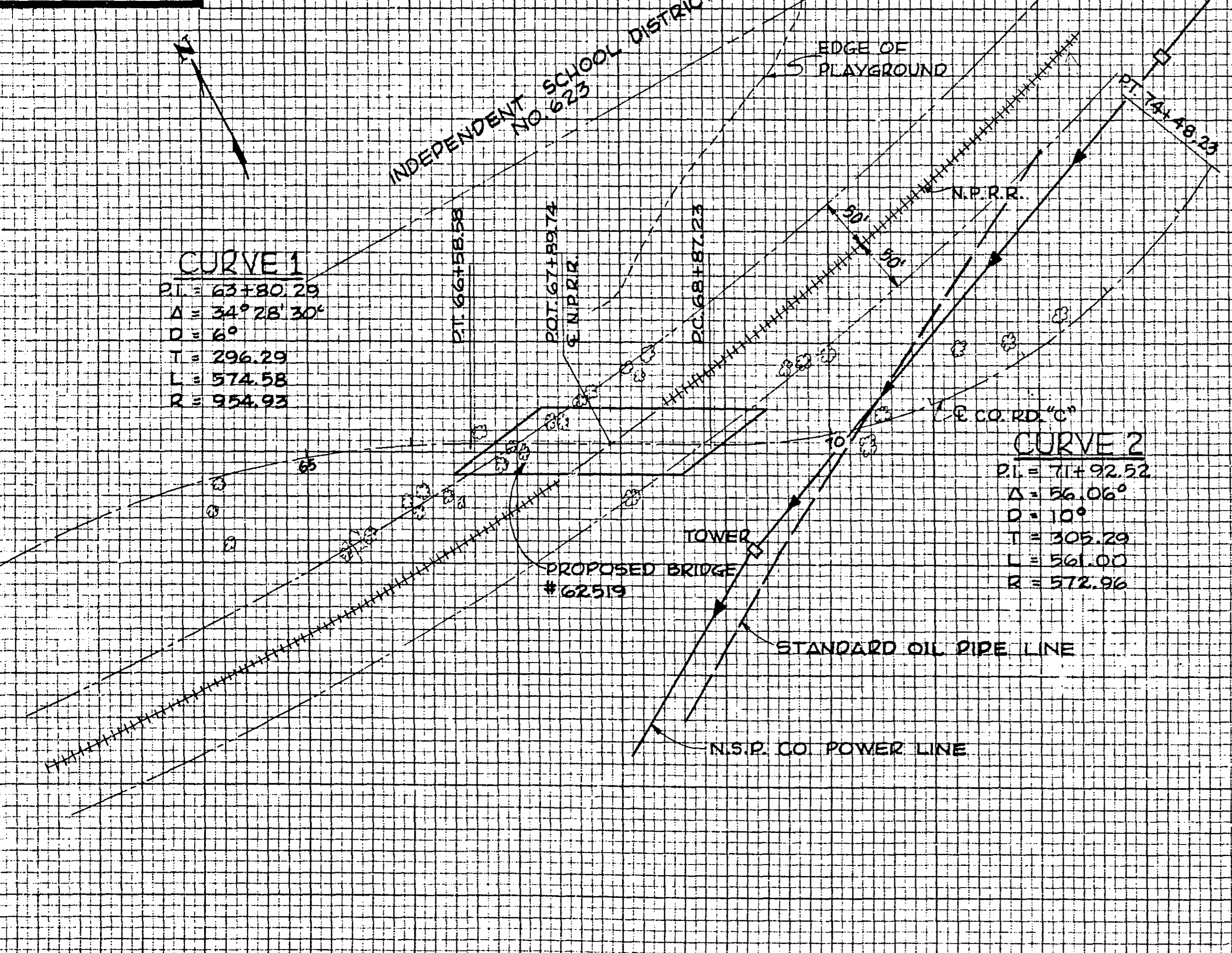
STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE SURVEY

FOR
 PROPOSED BRIDGE LOCATED 1/2 MILES EAST OF
 JCT. LEXINGTON AVE & COUNTY RD. C
 N.P.R.R. IN ROSEVILLE COUNTY, RD. C
 (TOWN OR CITY) (T.N., C.S.A.H. OR C.A.R. NUMBER)
 SEC. 11 TWP. 29 N. R. 23 W.
 TOWNSHIP ROSEVILLE COUNTY RAMSEY
 SURVEY MADE DURING MONTH OF DECEMBER 19 67
 SURVEY MADE BY COUNTY OF RAMSEY
 MICROFILMED
 RAMSEY CO. ENR BRIDGE NO. 62519

PLAT

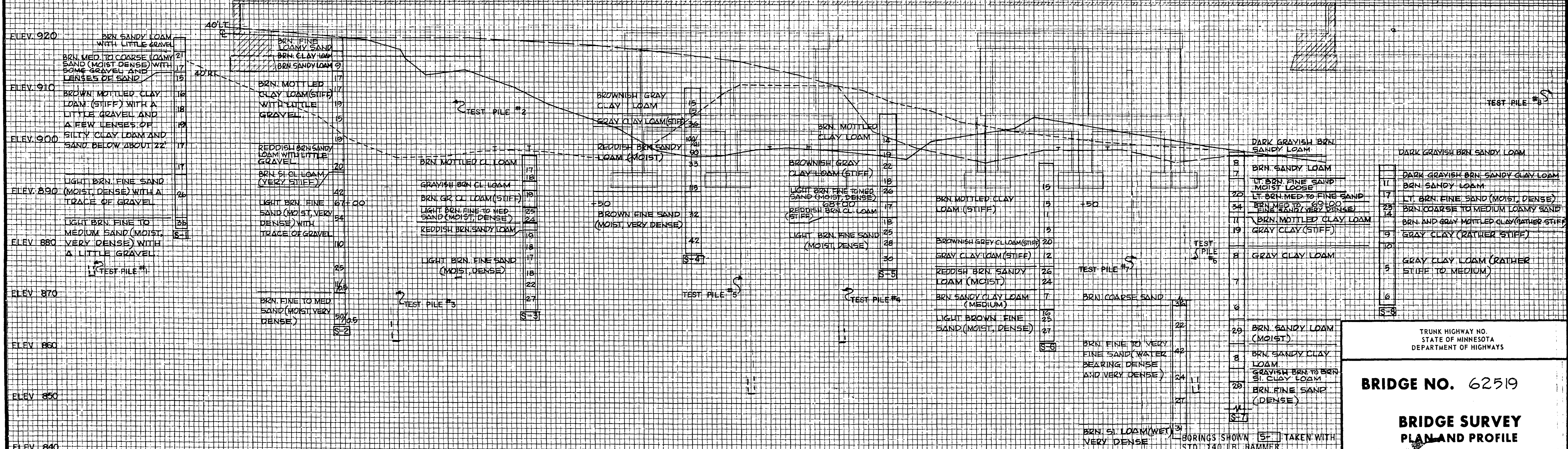
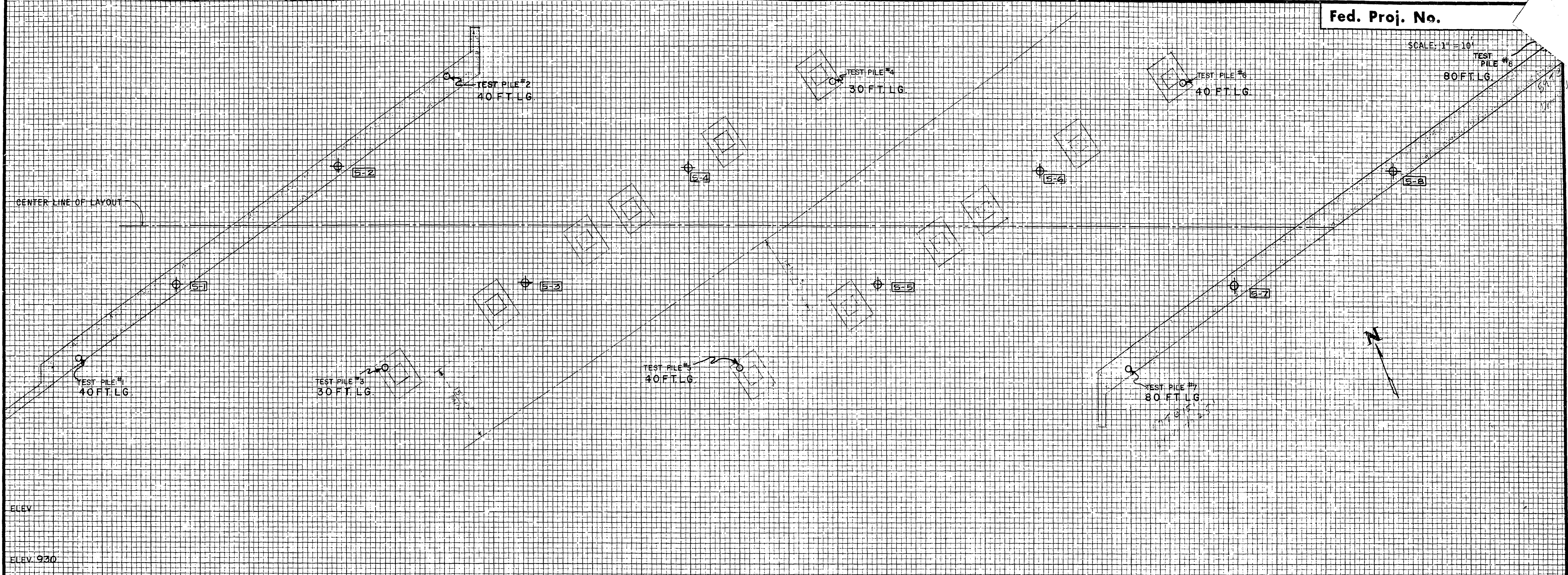
SCALE: 1" = 100'



B.M. ELEV. 895.61 (M.S.L. 1929 ADJ.)
 TOP BOLT N. SIDE N.E. LEG N.S.P.
 TRANSMISSION LINE TOWER

SEE SHEET 22 OF 22 SHEETS FOR PLAN AND PROFILE

Bridge Survey Sheet (Sheet 1 of 2)



B.M. ELEV. 898.61 (M.S.L. 1928 ADJ.)
 TOP OF T. N. SIDE ONE LEG. N. S.P.
 TRANSMISSION LINE TOWER

BORINGS SHOWN TAKEN WITH
 STD. 140 LBT. HAMMER
 30 INCH DROP
 2 INCH O.D. SAMPLER

TRUNK HIGHWAY NO.
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 62519

**BRIDGE SURVEY
 PLAN AND PROFILE**

MICROFILMED
 RAMSEY CO. ENGR.
 SHEET NO. 21 FOR ADDITIONAL INFORMATION