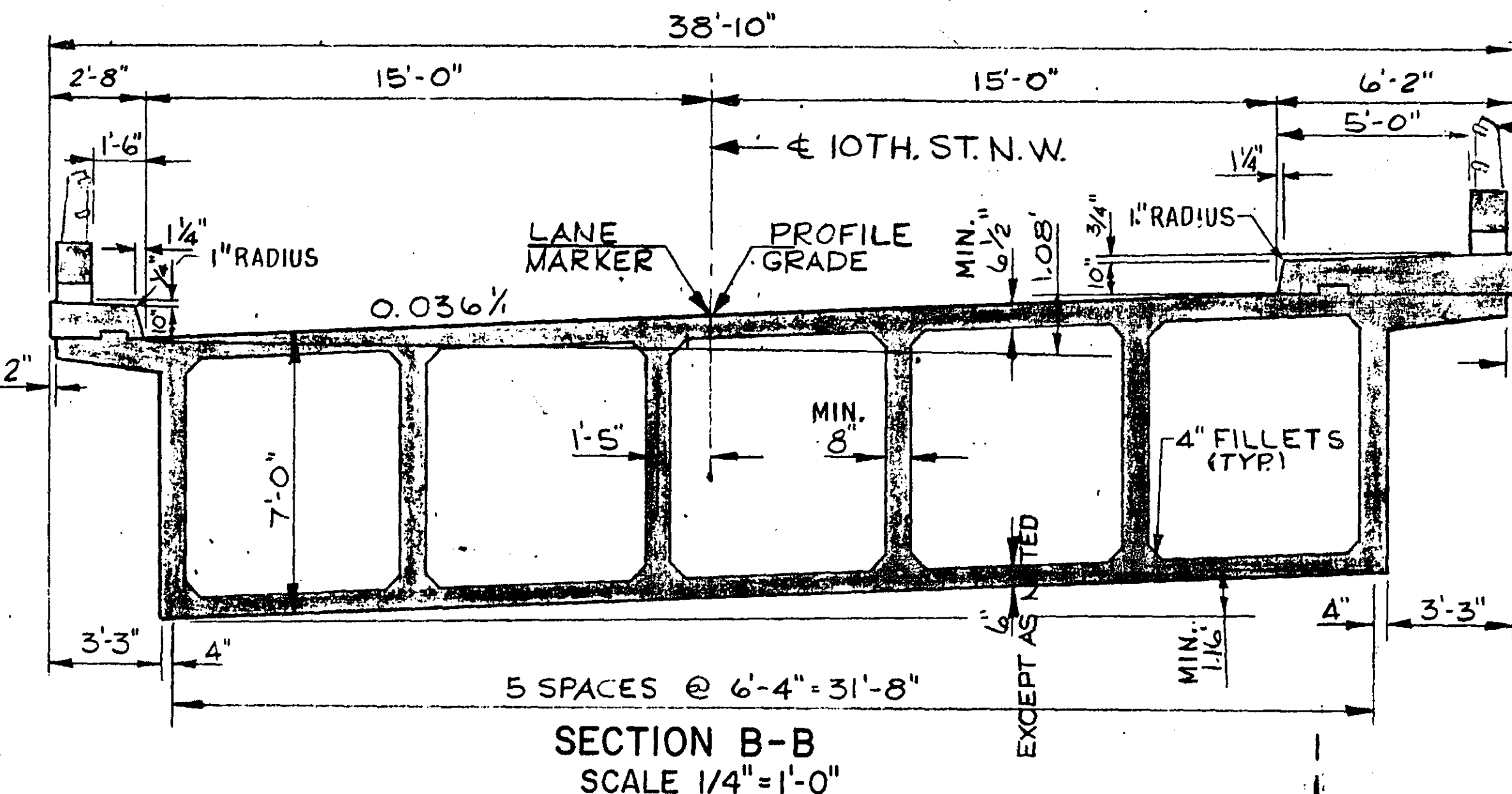
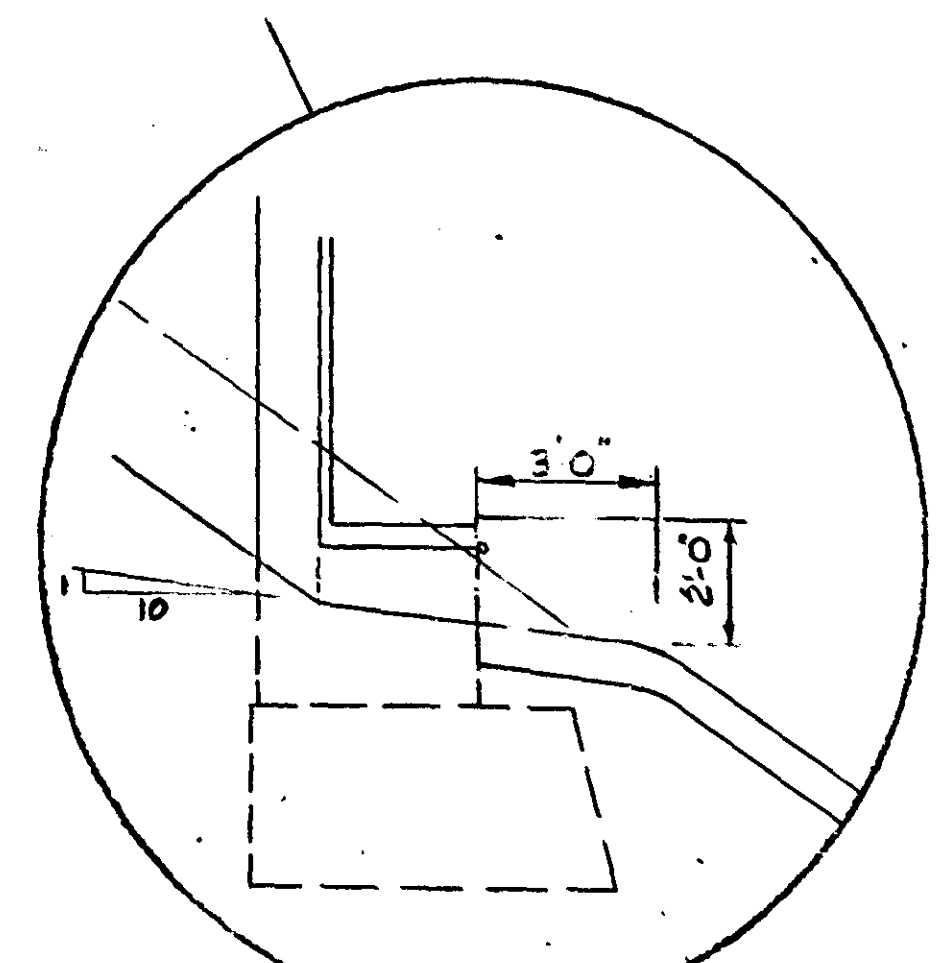
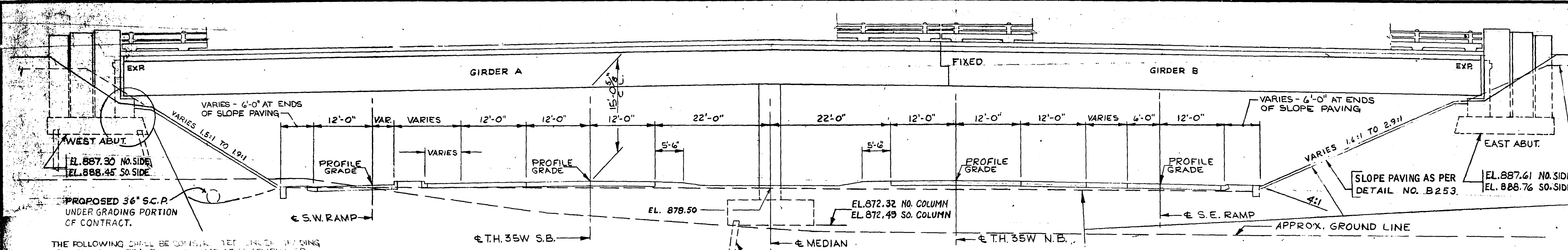


DESIGN DATA:
1961 A.A.S.H.O. DESIGN SPECIFICATIONS
H20 - S16 LOADING
K = 1600 n = 8
fs = 20,000 - INTERMEDIATE GRADE
REINFORCEMENT
fs = 18,000 - STRUCT. STEEL M.H.D.
3305.

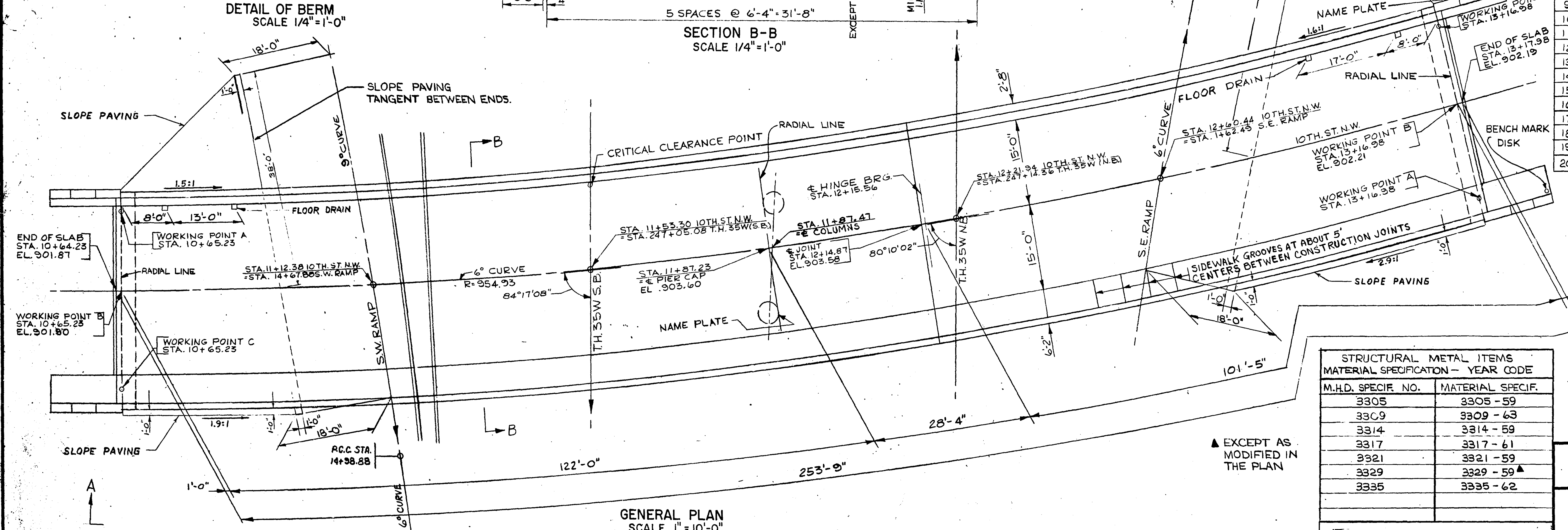
CONSTRUCTION NOTES:
THE "SPECIFICATIONS FOR HIGHWAY
CONSTRUCTION" DATED MAY 1, 1959, AND
SUBMITTED FOR APPROVAL BY THE DIVISION
ENGINEER OF THE BUREAU OF PUBLIC ROADS
ON MARCH 26, 1959, SHALL GOVERN.
THE CURB & SIDEWALK SHALL NOT BE
PLACED UNTIL ALL FALSE WORK HAS BEEN
REMOVED FROM SUPERSTRUCTURE.
STRUCTURAL STEEL SHALL CONFORM TO
M.H.D. 3305 EXCEPT AS NOTED.
ALL KEYWAY SIZES ARE NOMINAL.
FOR CONCRETE JOINT SEALER, SEE
SPECIAL PROVISIONS.
ASPHALT FOR PAINTED JOINT TO
BREAK BOND SHALL BE M.H.D. 3166 OR
APPROVED EQUAL.



QUANTITY OF CLASS U EXCAVATION IS
COMPUTED WITH THIS SECTION AS THE
UPPER LIMIT. PAYMENT WILL BE BASED ON
PLAN QUANTITY. SEE SPECIAL PROVISIONS.

THE FOLLOWING LINES SHALL BE
CURVED IN ACCORDANCE WITH
ALIGNMENT DATA: INSIDE AND OUT-
SIDE FACE OF CURB AND SIDEWALK,
OUTSIDE FACE OF ROADWAY SLAB,
OUTSIDE FACE OF BOX GIRDER AND
RAILINGS.

LIST OF SHEETS	
SH. NO.	TITLE
1	GENERAL PLAN & ELEVATION
2	BEARING LAYOUT PLAN
3	BEARING LAYOUT SECTIONS
4	WEST ABUTMENT DETAILS
5	EAST ABUTMENT DETAILS
6	ABUTMENT DETAILS & REINFORCEMENT
7	PIER DETAILS & REINFORCEMENT
8	DETAILS OF BOX GIRDER "A"
9	DETAILS OF BOX GIRDER "B"
10	TYPICAL SECTIONS & DETAILS
11	DIAPHRAGM & HINGE SECTIONS
12	BOTTOM SLAB REINFORCEMENT
13	WEB REINFORCEMENT
14	TOP SLAB REINFORCEMENT
15	2-LINE FLAT TUBE STEEL RAIL
16	DETAILS
17	DETAILS
18	DETAILS
19	BRIDGE SURVEY
20	BRIDGE SURVEY-SOUNDINGS & BORINGS



SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE														
ITEM NO.	2401.525	2401.501	2401.501	2401.501	*401.641	*401.741	2452.503	2452.504	2452.517	2452.517	2402.593	2402.594	2402.596	2402.577
ITEM	CLASS U EXCAVATION	CONCRETE (MIX NO. 1A6)	CONCRETE (MIX NO. 3Y60)	CONCRETE (MIX NO. 3Y60)	FURNISHING REINFORCEMENT BARS	FLAGING REINFORCEMENT BARS	TREATED TIMBER PILING DELIVERED	TREATED TIMBER PILING DRIVEN	TREATED TIMBER TEST PILES IN PLACE	TREATED TIMBER JOINT WATER PROOFING	FIX. BEARING ASSEMBLIES (TYPE 2)	EXP. BEARING ASSEMBLIES (TYPE 1)	FLOOR DRAIN (TYPE 1)	STANDARD NAME PLATES
UNIT	CU. YD.	CU. YD.	CU. YD.	CU. YD.	LB.	LB.	LIN. FT.	LIN. FT.	PILE	PILE	UNIT	UNIT	UNIT	UNIT
QUANTITY	570	180	834	100	302020	302020	3550	3356	2	2	6	12	4	2

STRUCTURAL METAL ITEMS MATERIAL SPECIFICATION - YEAR CODE	
M.H.D. SPECIF. NO.	MATERIAL SPECIF.
3305	3305 - 59
3309	3309 - 63
3314	3314 - 59
3317	3317 - 61
3321	3321 - 59
3329	3329 - 59
3335	3335 - 62

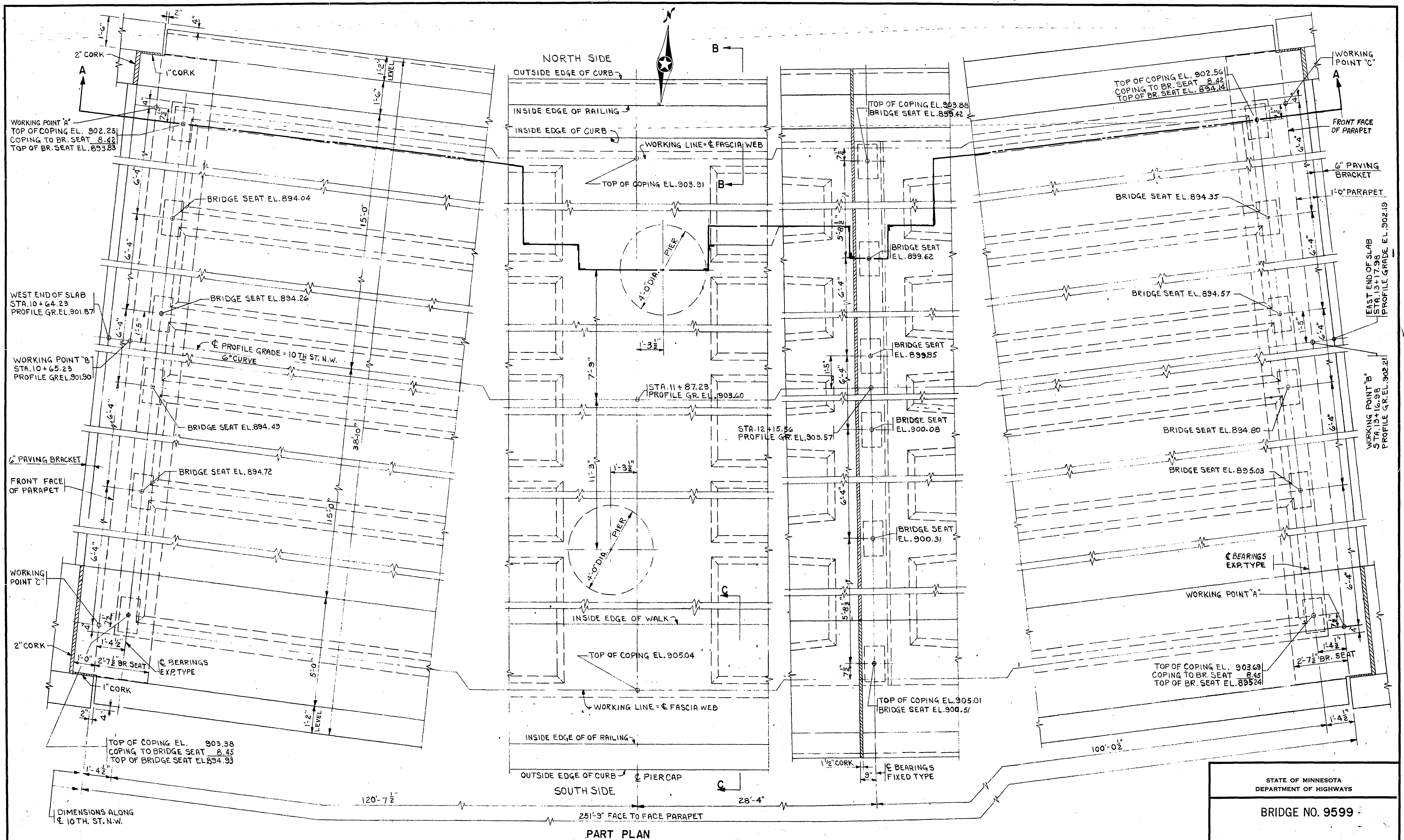
MINNESOTA ENGINEERING COMPANY, INC.
1015 SOUTH SIXTH STREET
MINNEAPOLIS 4, MINNESOTA
I HEREBY CERTIFY THAT THIS PLAN WAS
PREPARED BY ME OR UNDER MY DIRECT SUPER-
VISION AND THAT I AM A DULY REGISTERED
PROFESSIONAL ENGINEER UNDER THE LAWS
OF THE STATE OF MINNESOTA.
DATE 7-19-60 REG. NO. 5762

TRUNK HIGHWAY NO. 35W
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9599
T.H. 35W UNDER 10TH. ST. N.W.
0.1 MI. SQ. OF JCT. (IN NEW BRISTON)
OF T.H. 694 & T.H. 35W
122'x130' CONC. BOX GIRDER SPANS
30'-0" ROADWAY 5'-0" SIDEWALK 1'-6" CURB

GENERAL PLAN & ELEVATION

SEC 21/28 T30N R23W
MOUNDSVIEW TWP. RAMSEY COUNTY
APPROVED: 3-11-65
A. E. Va. Bort
BRIDGE ENGINEER
MICROFILMED
RAMSEY CO. ENGR.
1965 T. COMMISSIONER



STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9599

BEARING LAYOUT PLAN

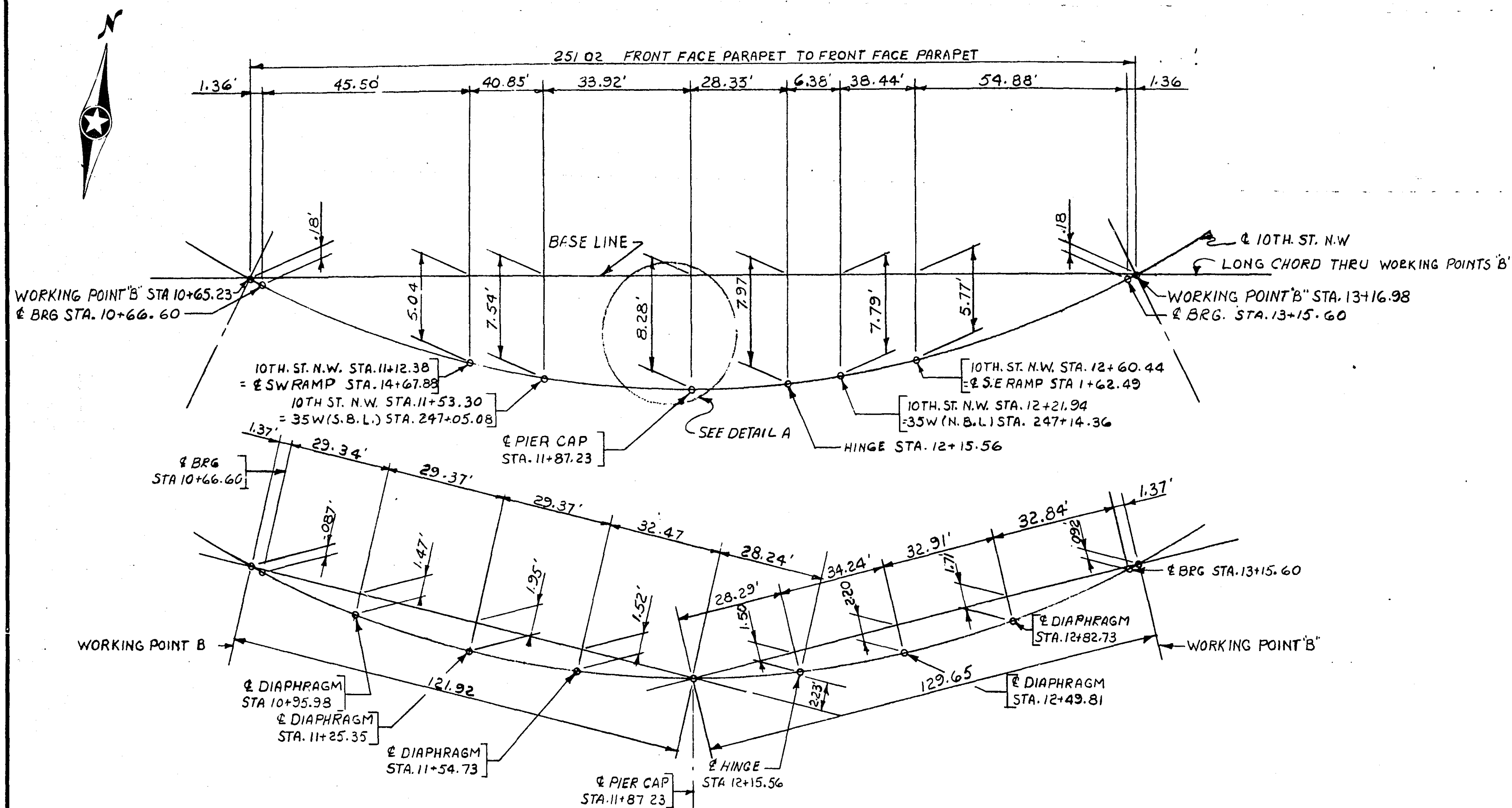
APPROVED: 3-11-63

MICROFILMED RAMSEY CO. ENGR	YES	TCS
	DR	M.E.B

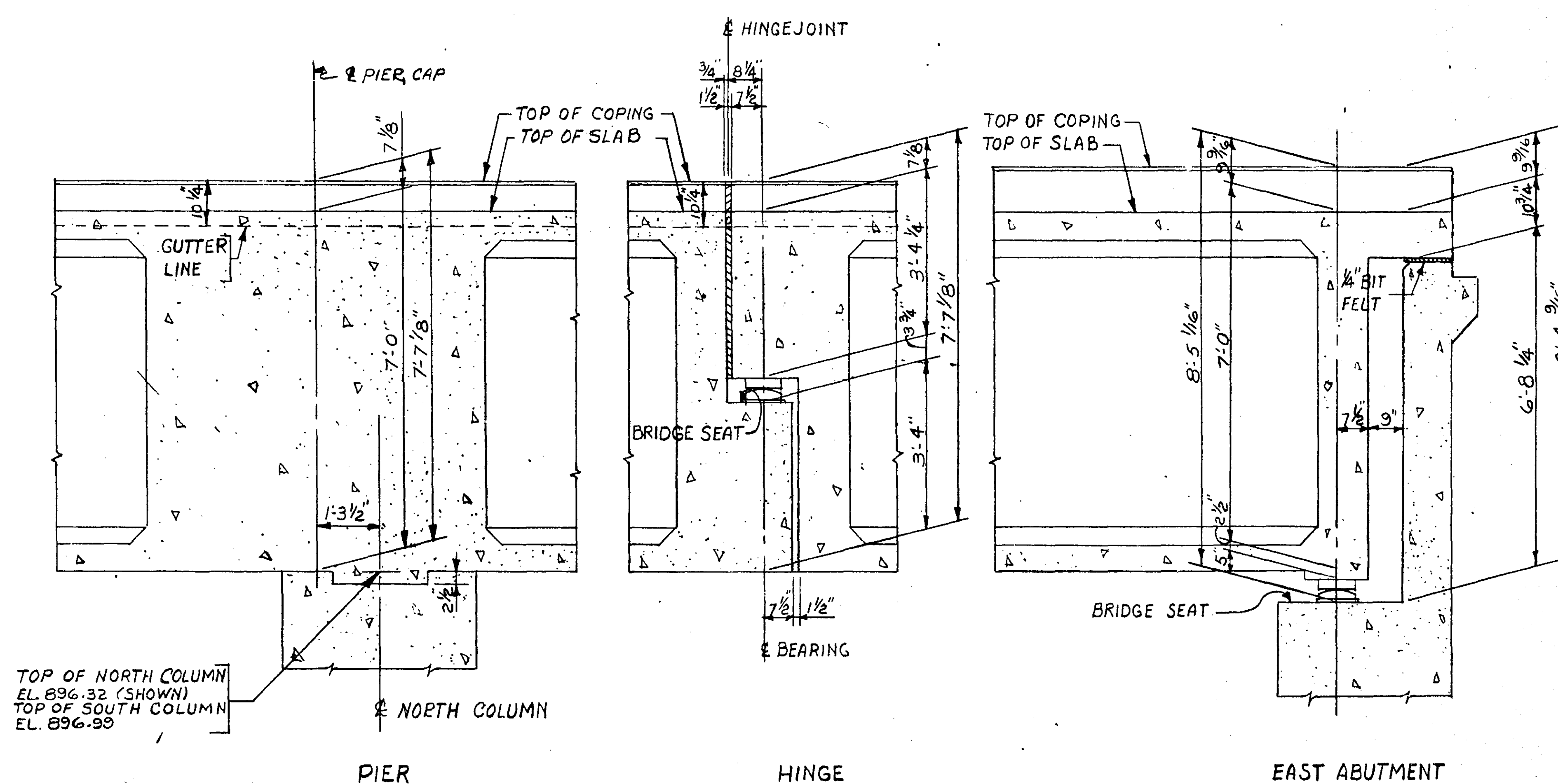
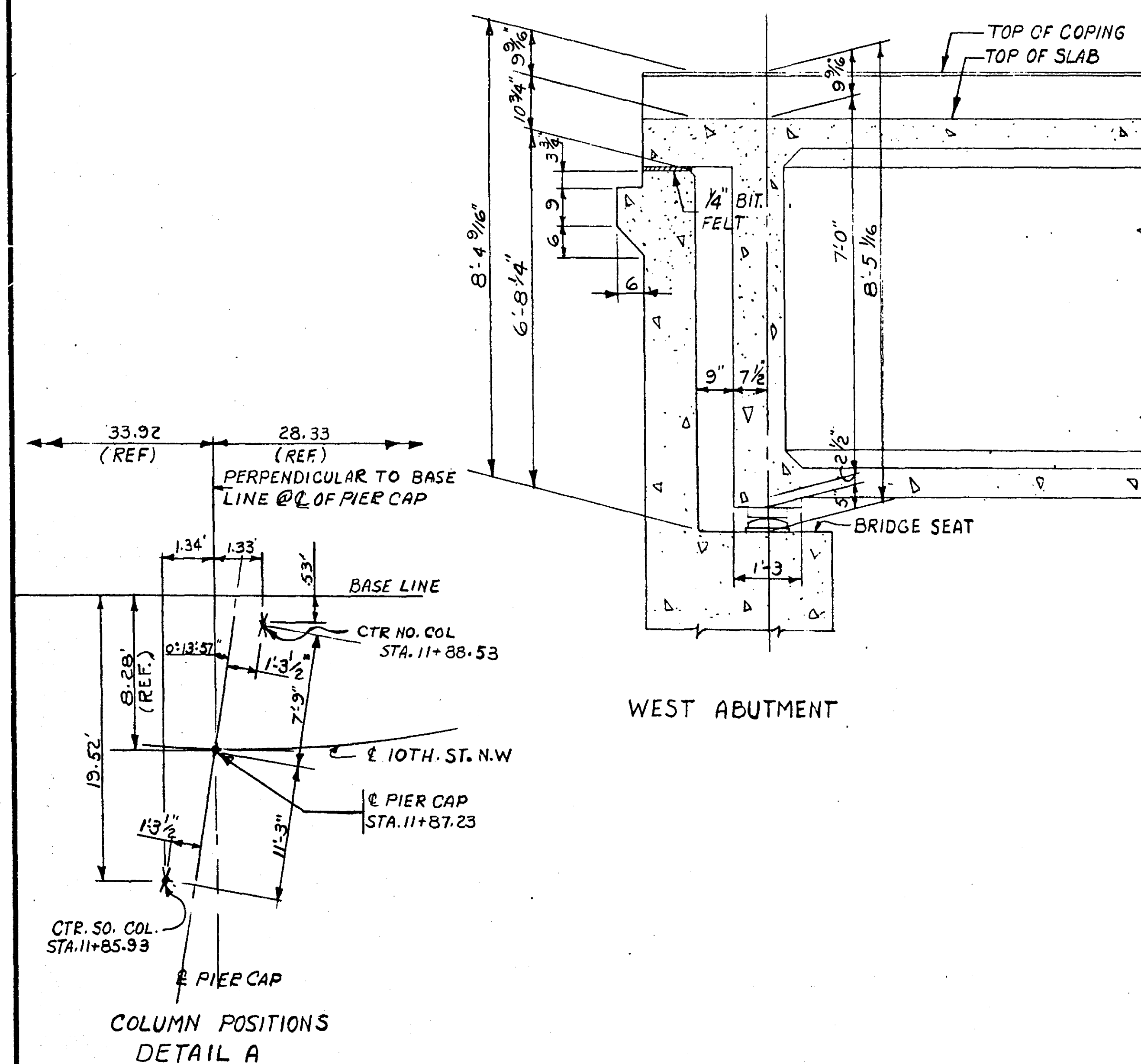
SHEET NO. 2 OF 20 SHEETS

9599

15-140



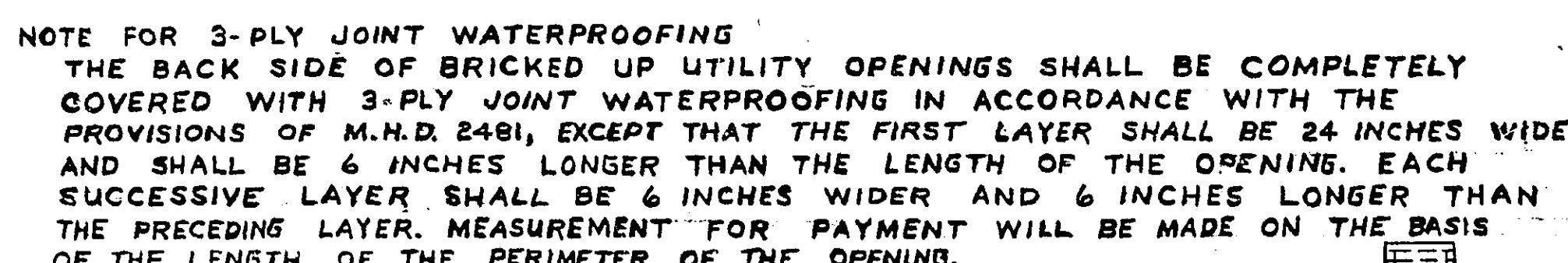
PLAN OF INTERSECTION OF 10TH ST. N.W., T.H. 35 W.(S.B) & T.H. 35 W.(N.B)



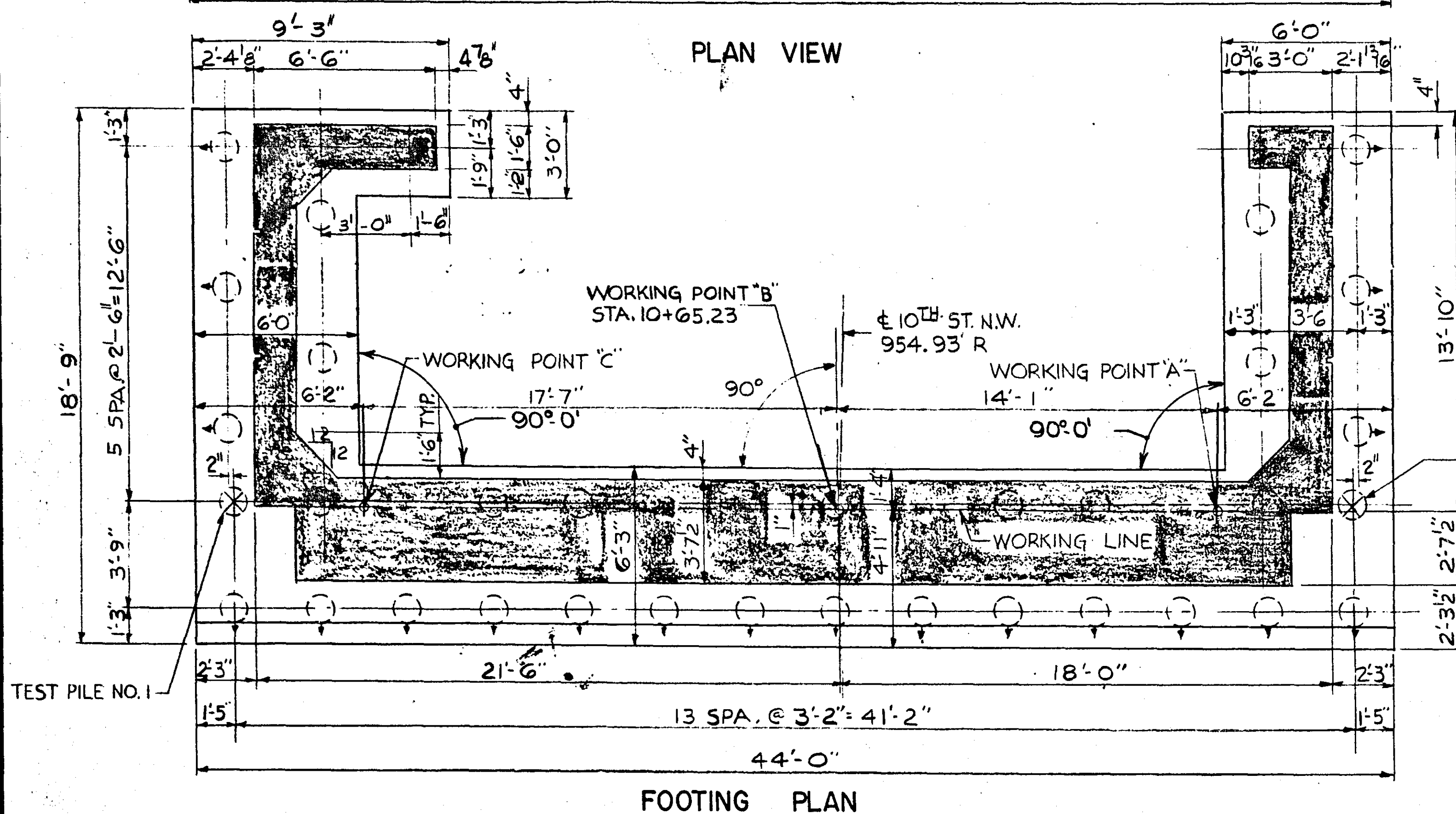
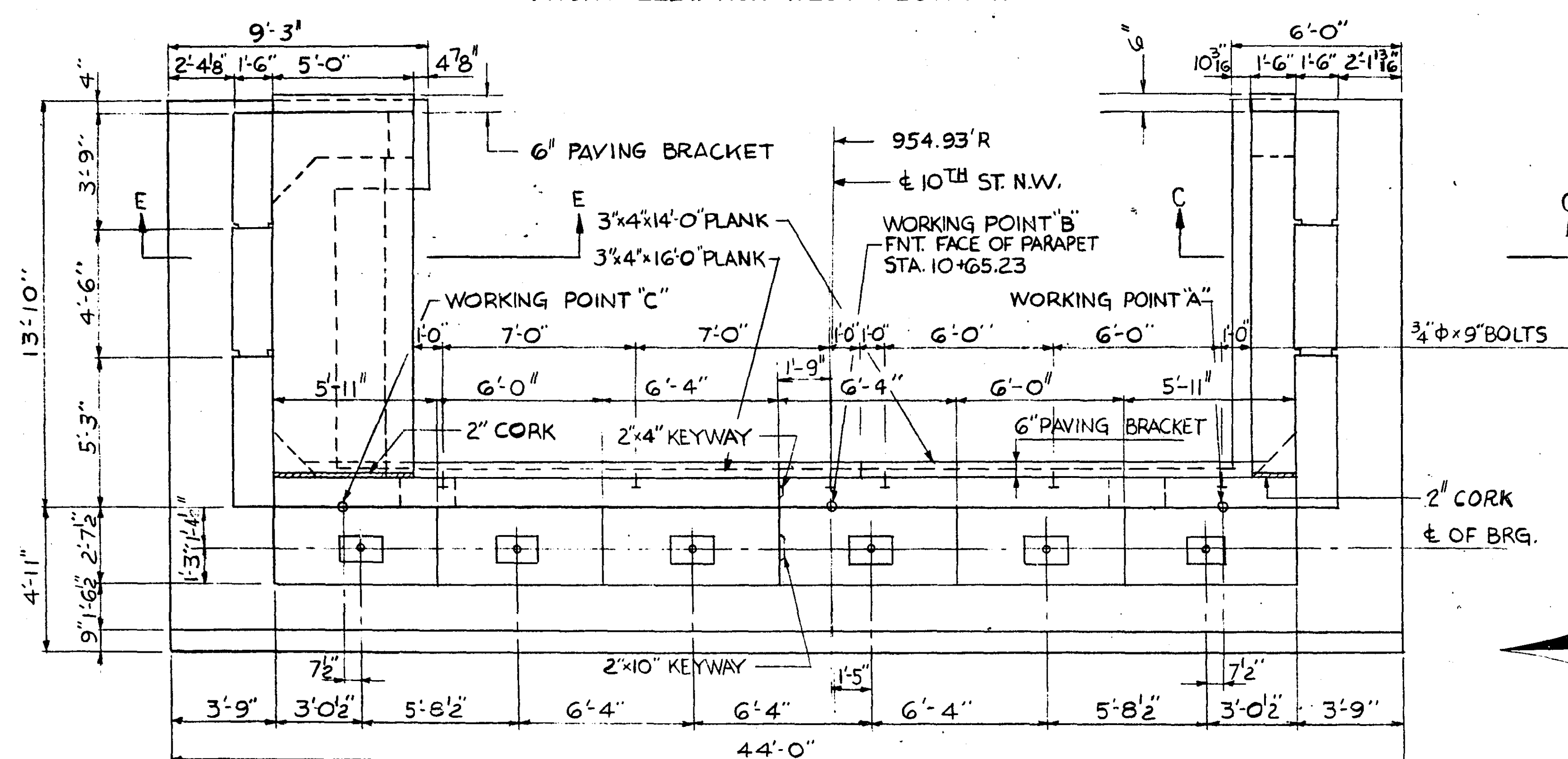
PART LONGITUDINAL SECTION A-A

NOTE:
 FOR SECTION LOCATIONS
 SEE SHEET NO. 2

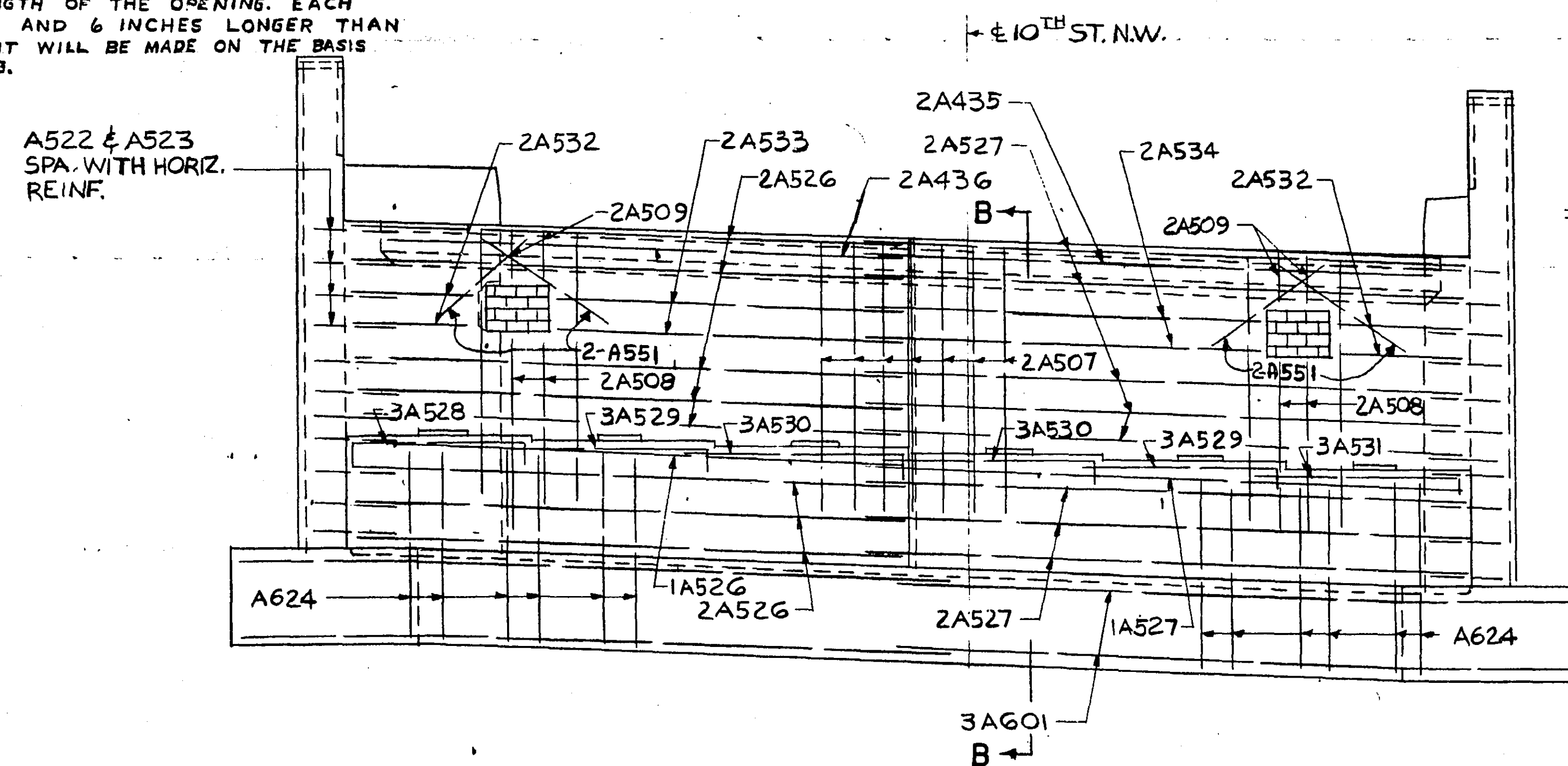
STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	
BRIDGE NO. 9599	
BEARING LAYOUT SECTIONS	
APPROVED: 3-11-63	
MICROFILMED RAMSEY CO., ENGR.	
DES. TCB	DR. DLM
TR. WPL	3-CK TCB



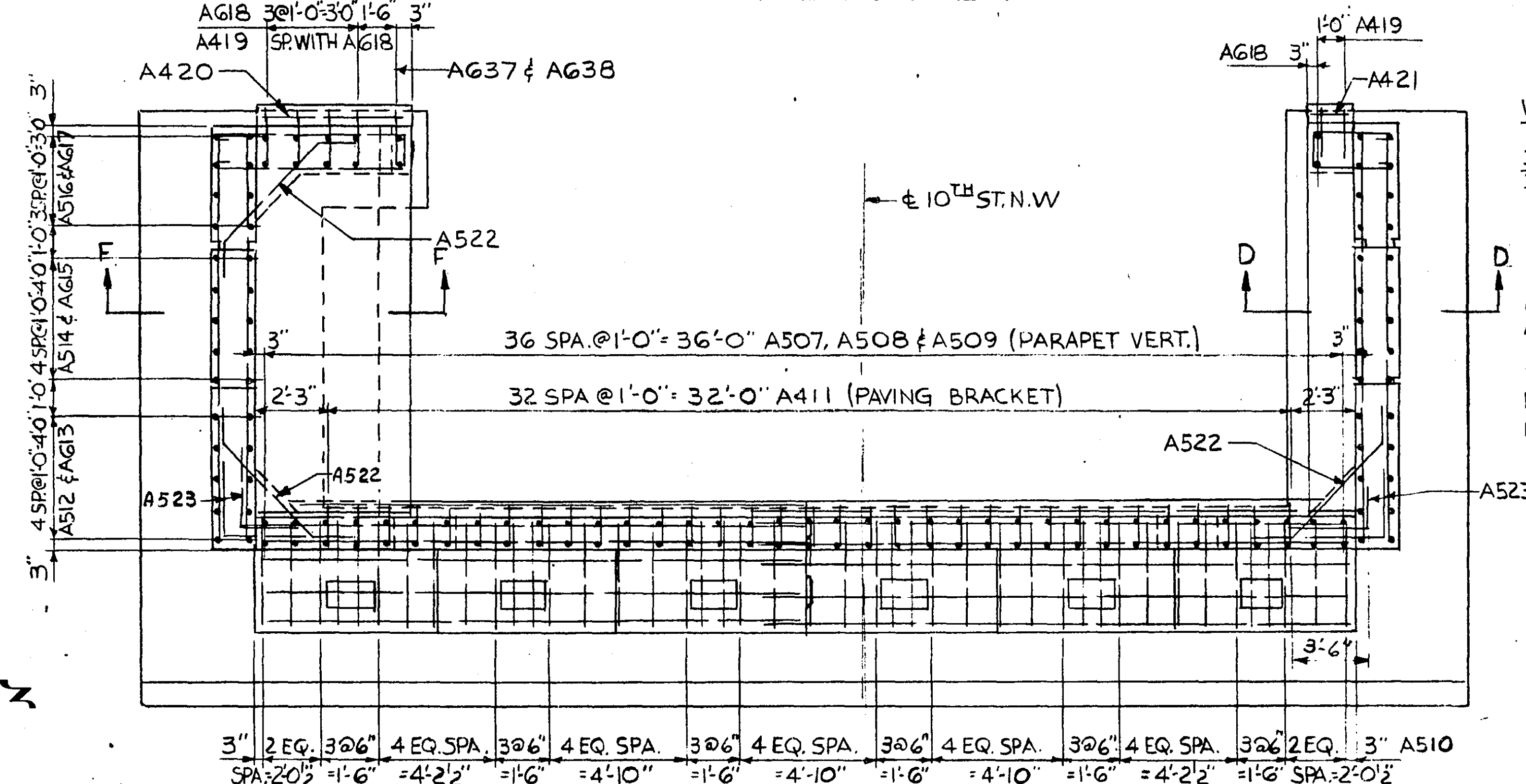
FRONT ELEVATION WEST ABUTMENT



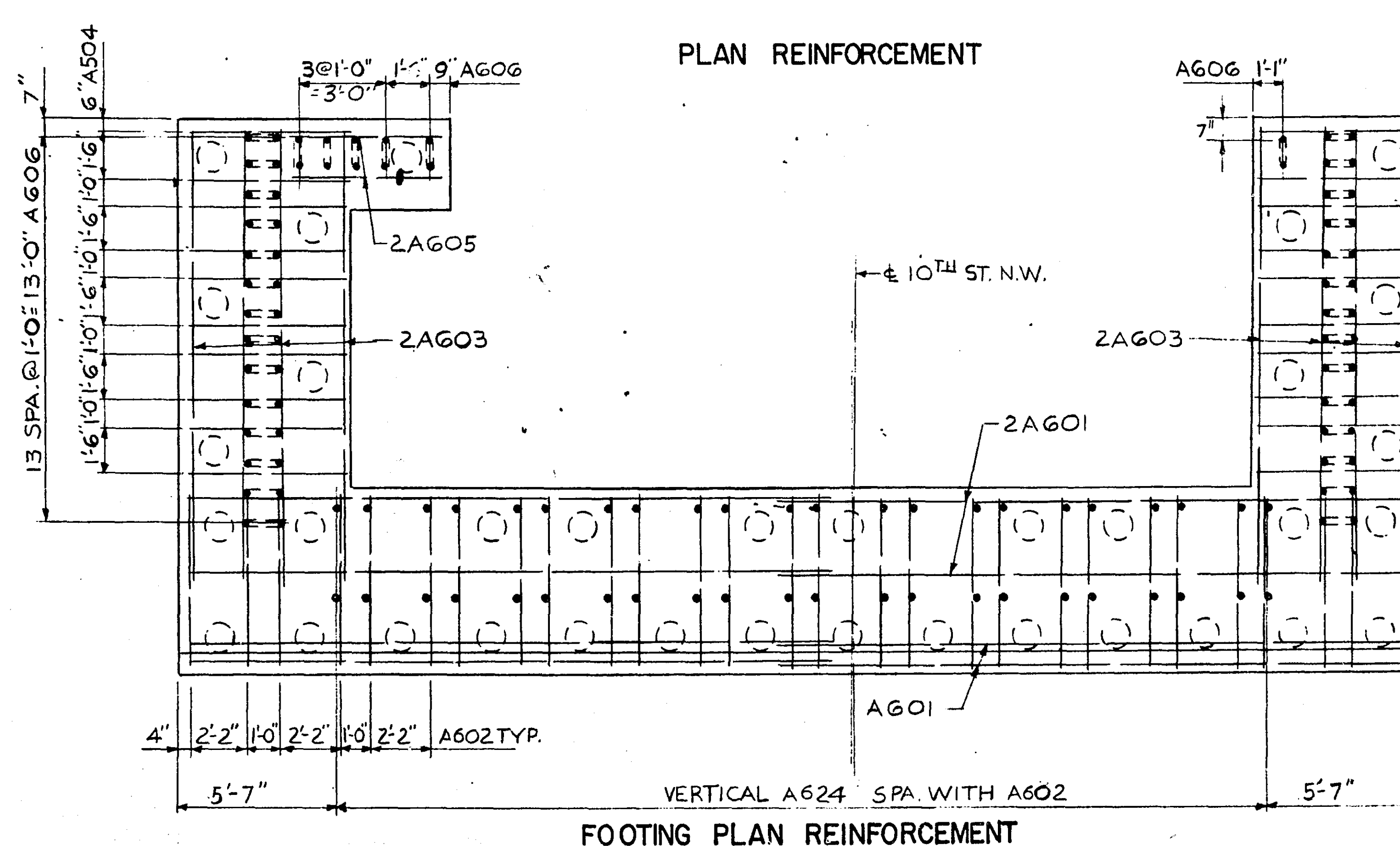
FOOTING PLAN



ELEVATION REINFORCEMENT



PLAN REINFORCEMENT



FOOTING PLAN REINFORCEMENT

SUMMARY OF QUANTITIES FOR 2 ABUT'S		
CLASS U EXCAVATION	420	CU. YDS.
CONC. MIX NO. 1A6	93	CU. YDS.
CONC. MIX NO. 3Y6	109	CU. YDS.
CONC. MIX NO. 3Y60	8	CU. YDS.
REINFORCEMENT BARS	16190	LBS.
3 PLY JOINT WATERPROOFING	49	LIN. FT.
1 BRIDGE NAME PLATE #210Q SEE SHEET NO.18		
1 BENCH MARK DISK		
PREFORMED ORK & BIT, JOINT FILLER		
12-3/4" x 9" SQ. HD. BOLTS & NUTS W/CUT WASHERS		
2 PCS. 3" x 4" x 16'-0" PLANKS		
BEARING ASSEMBLIES EXPANSION (TYPE IX SEE DETAIL SHT. 13)		
2 PCS. 3" x 4" x 14'-0" PLANKS		
TREATED TIMBER PILING	390	LIN. FT.
2 TREATED TIMBER TEST PILES IN PLACE - 40 FT. LONG		

- ▲ TO BE INCLUDED IN WEIGHT OF STRUCTURAL STEEL.
- * TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
- ⊗ STATE WILL FURNISH DISK. PAYMENT FOR PLACING TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.
SEE STD. PLT. NO. 9301 FOR PLACING.
- DOES NOT INCLUDE TEST PILES.
- SEE SCHEDULE ON SHT. NO. 8
- ✕ BRIDGE 9599 FAI 35W-3-49, 1964
- * LISTED WITH SUPERSTRUCTURE QUANTITIES.

PILE NOTES FOR W.ABUTMENT

WEST ABUTMENT
2 TREATED TIMBER TEST PILES 40 FT. LG.
33 TREATED TIMBER PILES EST. LENGTH 30 FT. LG.
35 TREATED TIMBER PILES REQ'D. FOR WEST ABUTMENT.

ESTIMATED PENETRATION 2' LESS THAN LENGTH GIVEN.
ALL PILES TO BE DRIVEN TO A MINIMUM BEARING OF
24 TONS PER PILE
PILES MARKED THUS  TO BE BATTERED 3" PER FT.
IN DIRECTION SHOWN.
PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.

COMPUTED PILE LOADS	TONS/PILE
D.L. + EARTH PRESSURE	20.3
L.L.	2.1
TOTAL	22.4

NOTE: PLACE BARS IN WINGWALL CAREFULLY TO MISS GROOVES.

NOTE: WINGWALLS MAY BE CONSTRUCTED
ON CHORDS BETWEEN ENDS OF WINGWALLS.

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9599

WEST ABUTMENT DETAILS

APPROVED: 3-11-63

MICROFILMED
RAMSEY CO. ENGR.

DR
DR

TR
TR

SHEET NO. 4 OF 20 SHEETS

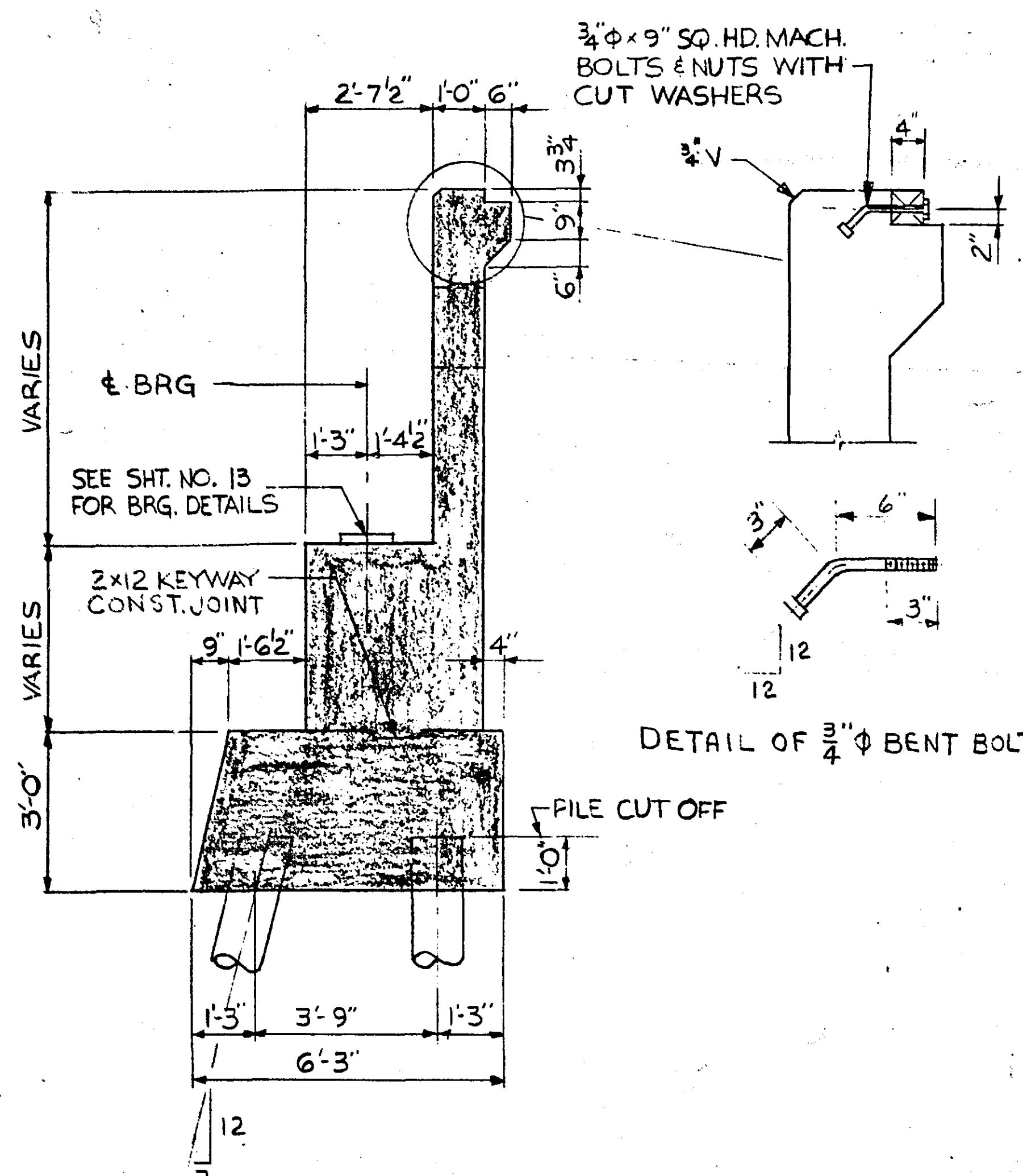
9599

THE BACK SIDE OF BRICKED UP UTILITY OPENINGS SHALL BE COMPLETELY COVERED WITH 3-PLY JOINT WATERPROOFING IN ACCORDANCE WITH THE PROVISIONS OF M.H.D. 2481, EXCEPT THAT THE FIRST LAYER SHALL BE 24 INCHES WIDE AND SHALL BE 6 INCHES LONGER THAN THE LENGTH OF THE OPENING. EACH SUCCESSIVE LAYER SHALL BE 6 INCHES WIDER AND 6 INCHES LONGER THAN THE PRECEDING LAYER. MEASUREMENT FOR PAYMENT WILL BE MADE ON THE BASIS OF THE LENGTH OF THE PERIMETER OF THE OPENING.



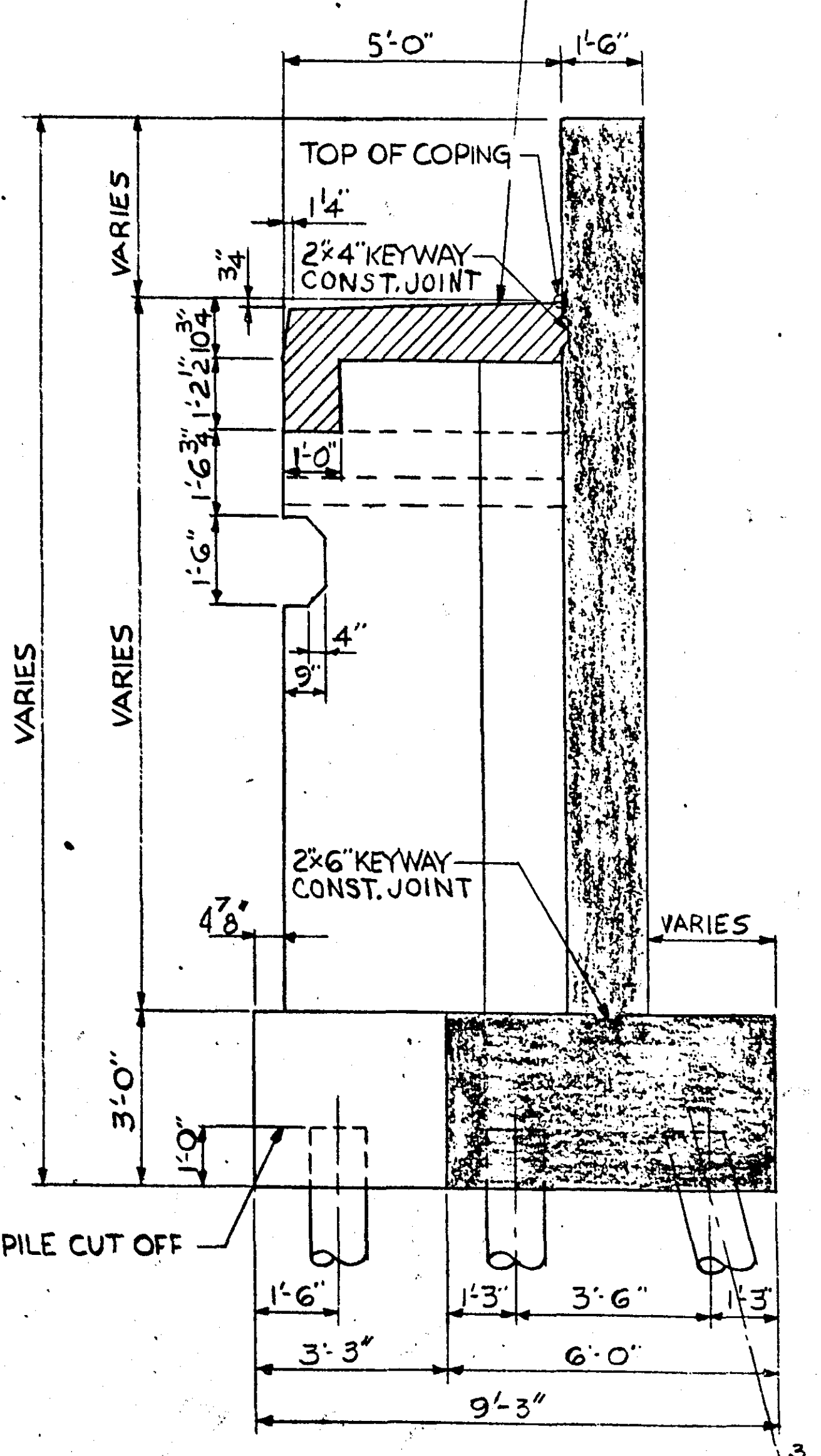
NOTE: WINGWALLS MAY BE CONSTRUCTED ON
CHORDS BETWEEN ENDS OF WINGWALLS.

MICROFILMED
RAMSEY CO. ENGR.

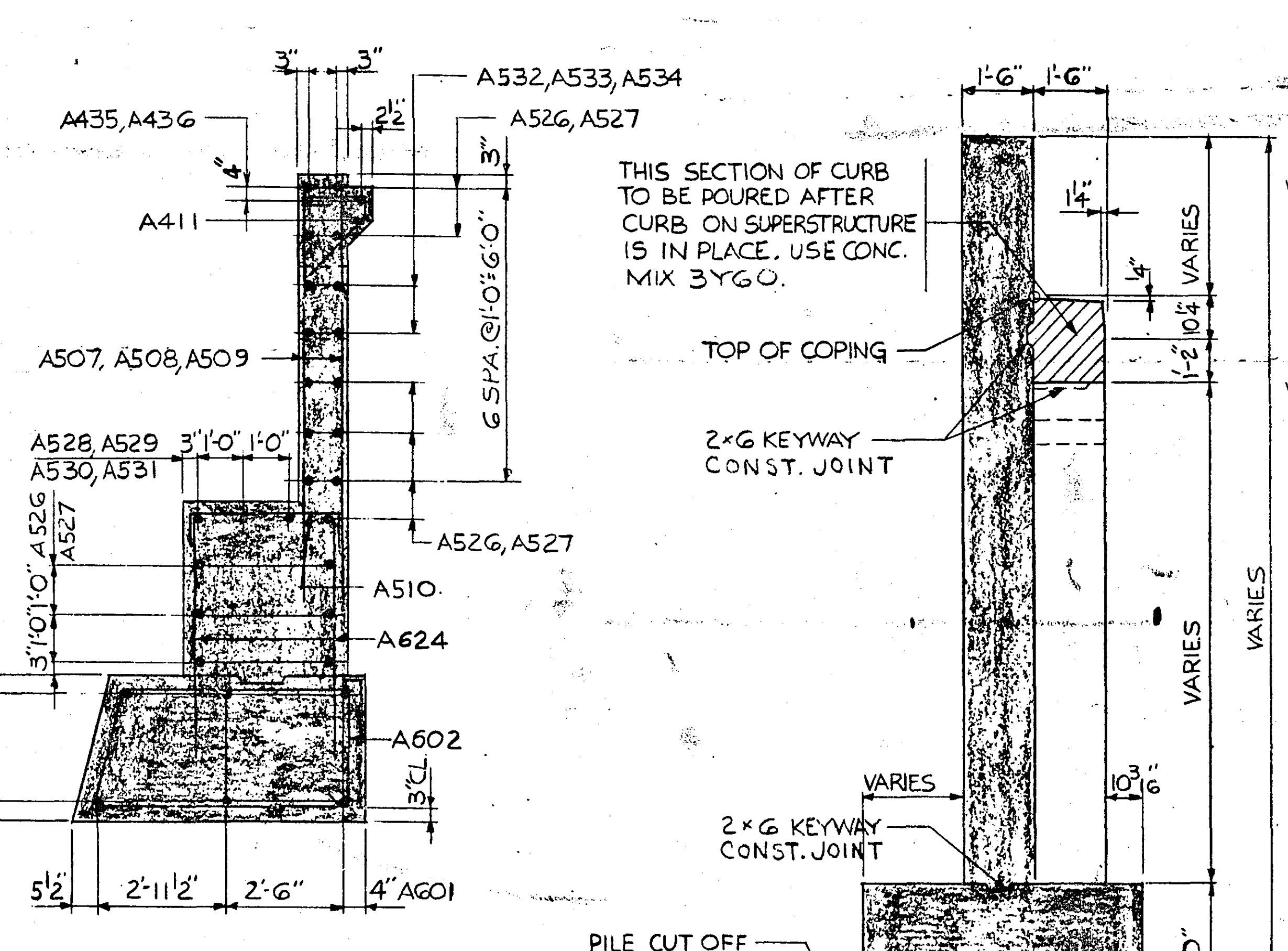


SECTION A-A

THIS SECTION OF SIDEWALK TO BE POURED AFTER SIDEWALK ON SUPERSTRUCTURE IS IN PLACE. USE CONC. MIX 3Y60.



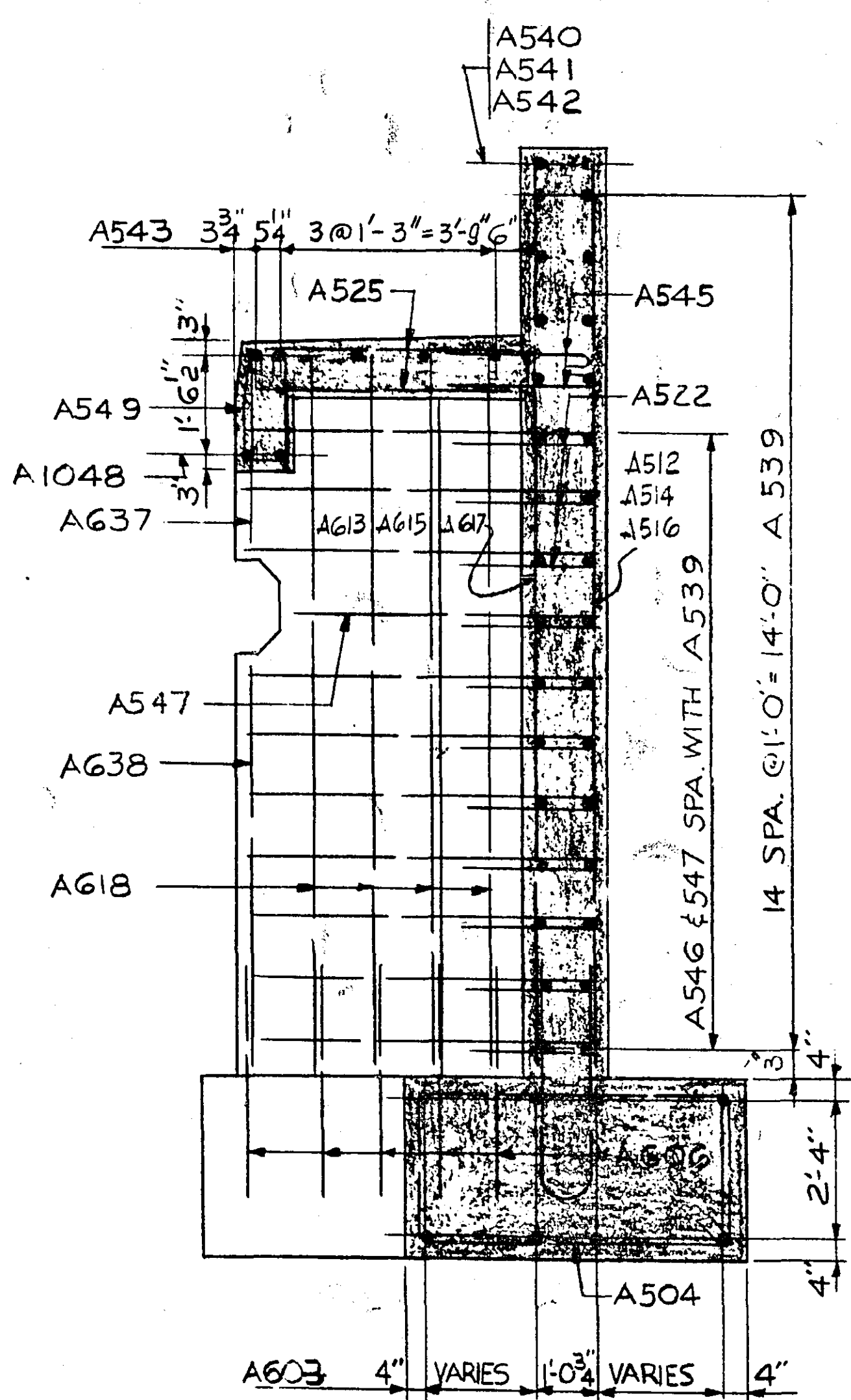
SECTION E-E
EAST ABUTMENT SHOWN
WEST ABUTMENT OPPOSITE HAND



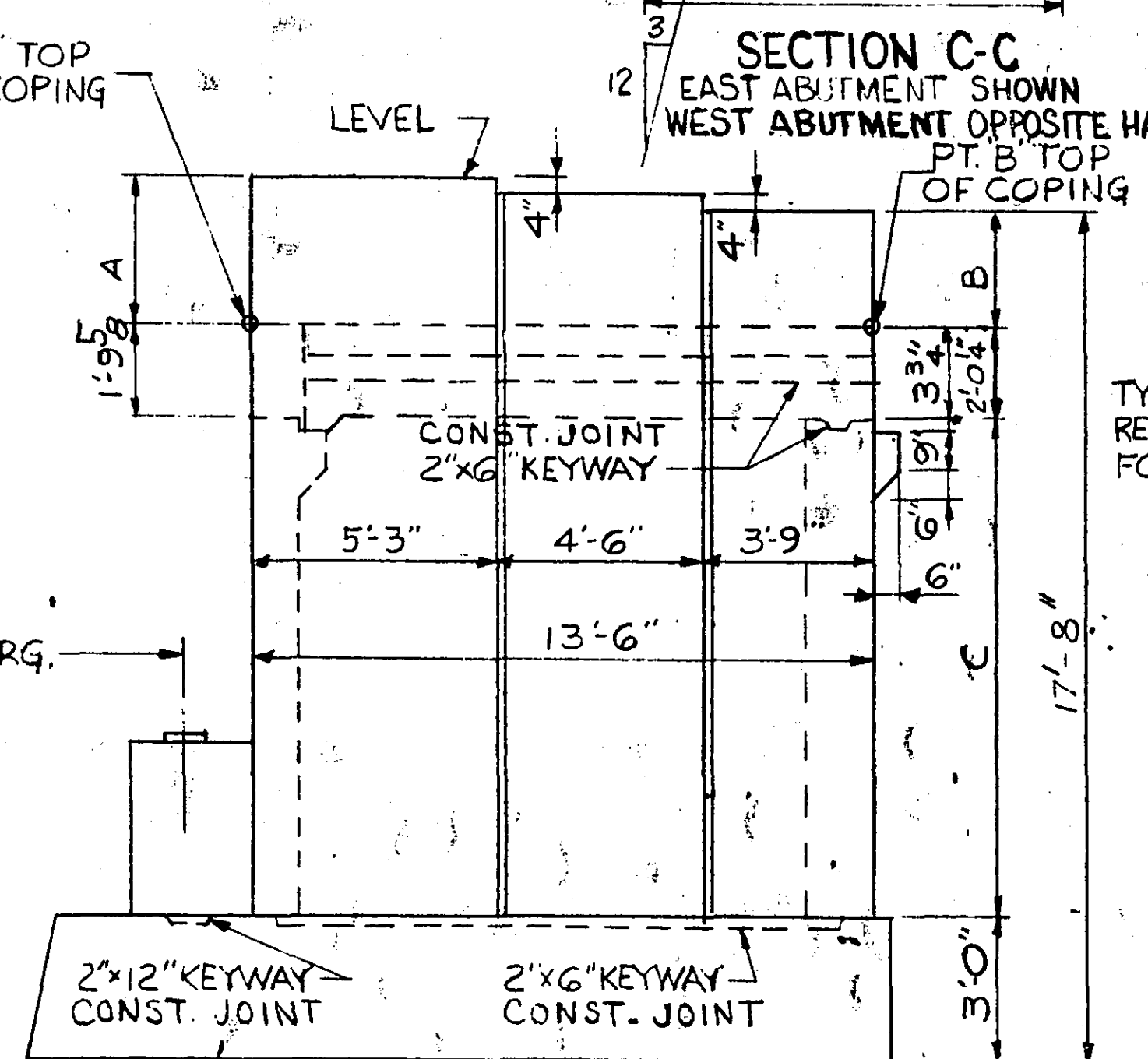
SECTION B-B

NOTE: FINISH ALL EXPOSED EDGES OF WINGWALLS ABOVE GROUND TO 1/2\" V. FINISH TOP OF WINGWALL WITH 1/8\" CROWN FOR DRAINAGE.

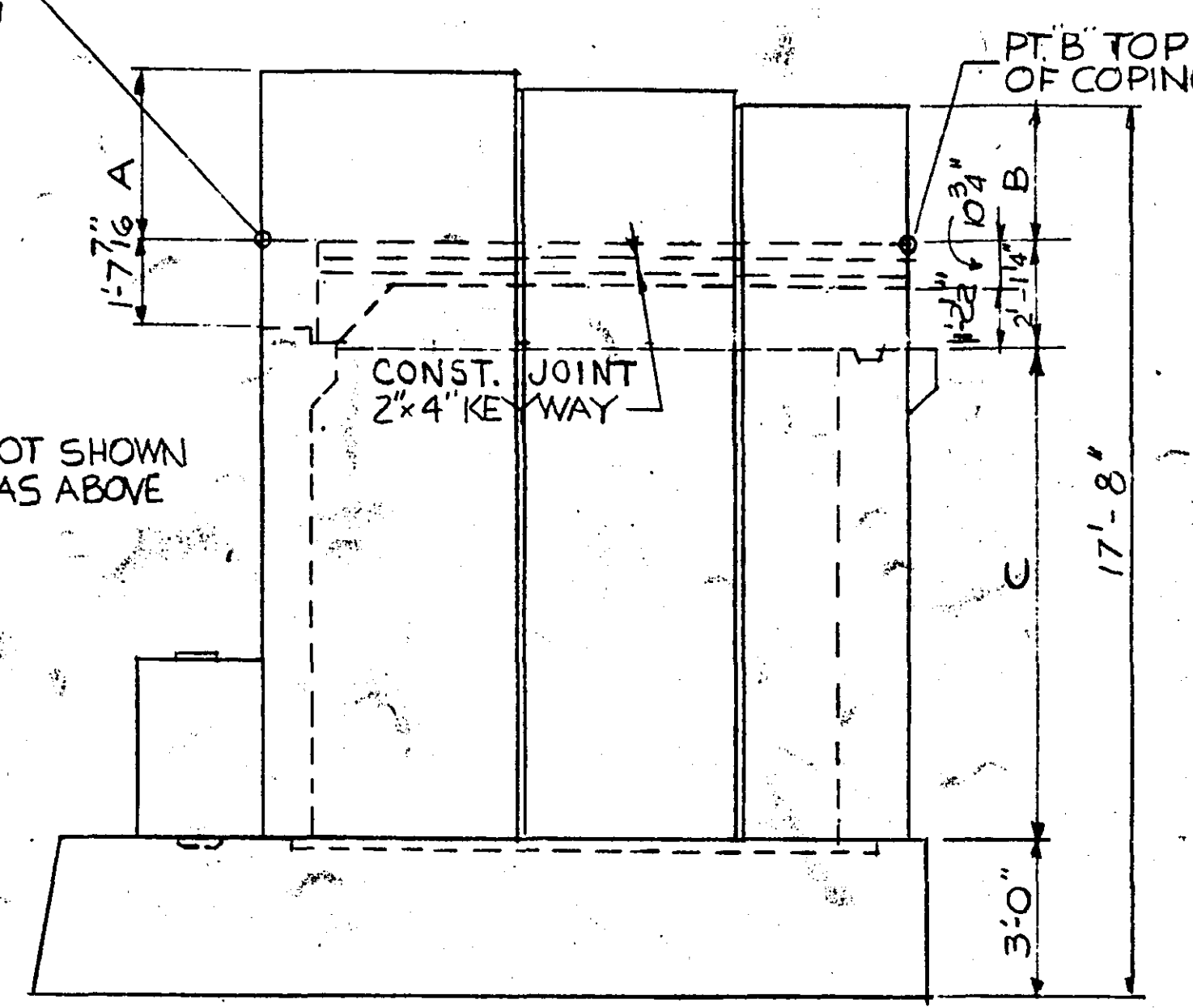
	ELPT. A	ELPT. B	DIM. A	DIM. B	DIM. C
N.W. WINGWALL	902.21	901.85	3'-5 1/2"	3'-1 3/8"	9'-6 3/8"
S.W. WINGWALL	903.34	902.98	3'-5 1/2"	3'-1 3/8"	9'-5 1/8"
N.E. WINGWALL	902.52	902.14	3'-5 1/2"	3'-1 1/4"	9'-6 3/8"
S.E. WINGWALL	903.65	903.32	3'-5 1/2"	3'-0 1/2"	9'-6 1/2"



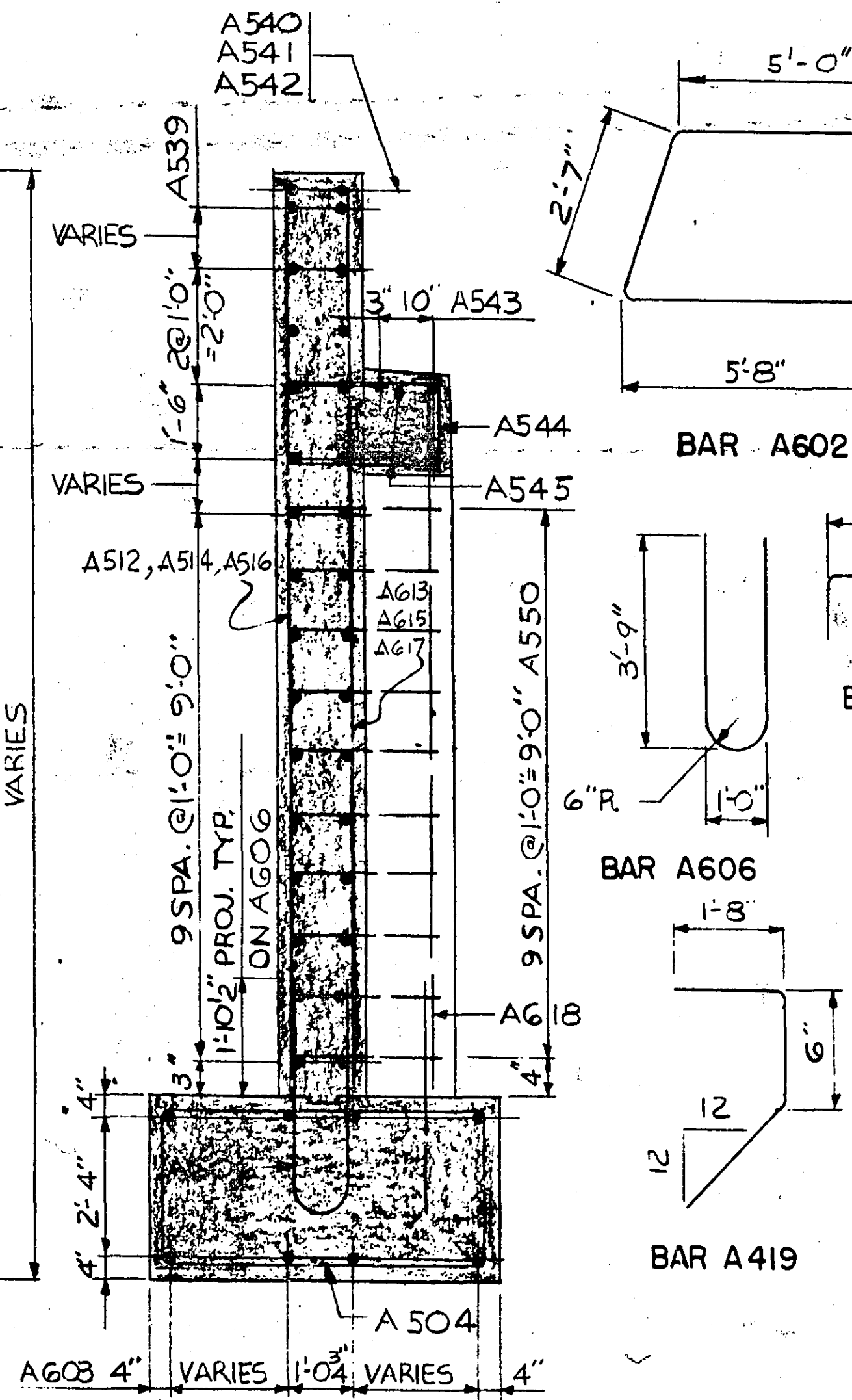
SECTION F-F
EAST ABUTMENT SHOWN
WEST ABUTMENT OPPOSITE HAND



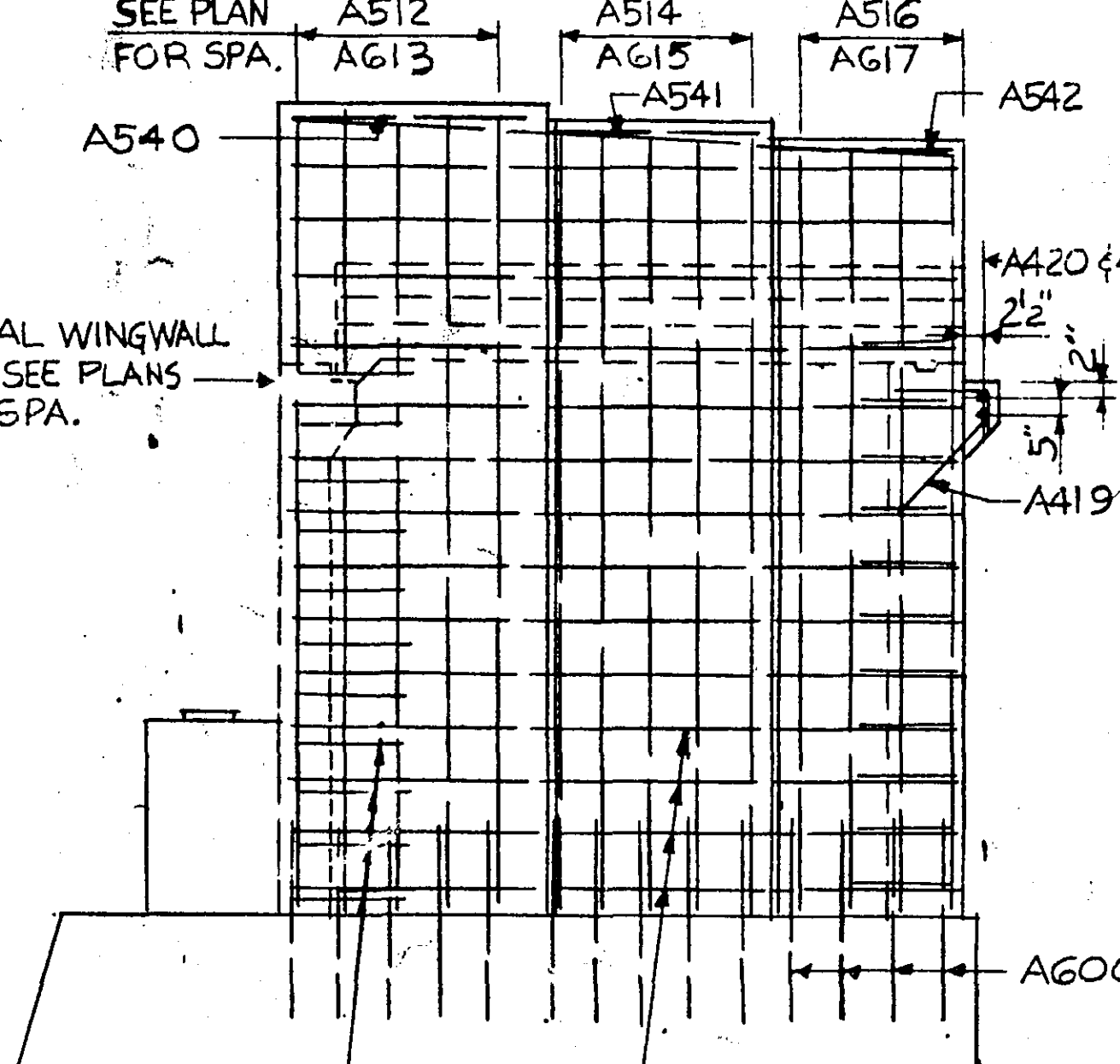
ELEVATION N.W. & N.E. WINGWALL



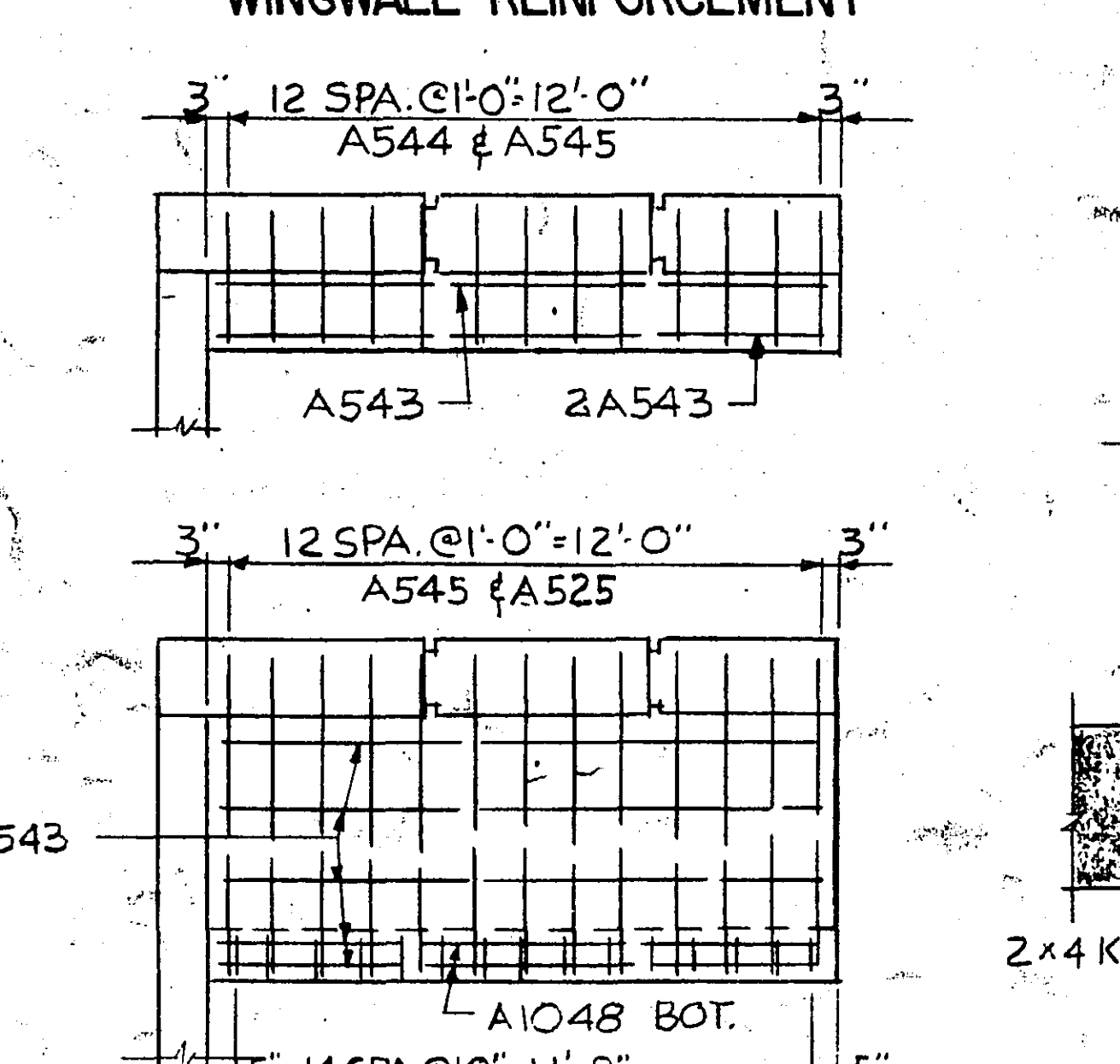
ELEVATION S.W. & S.E. WINGWALL



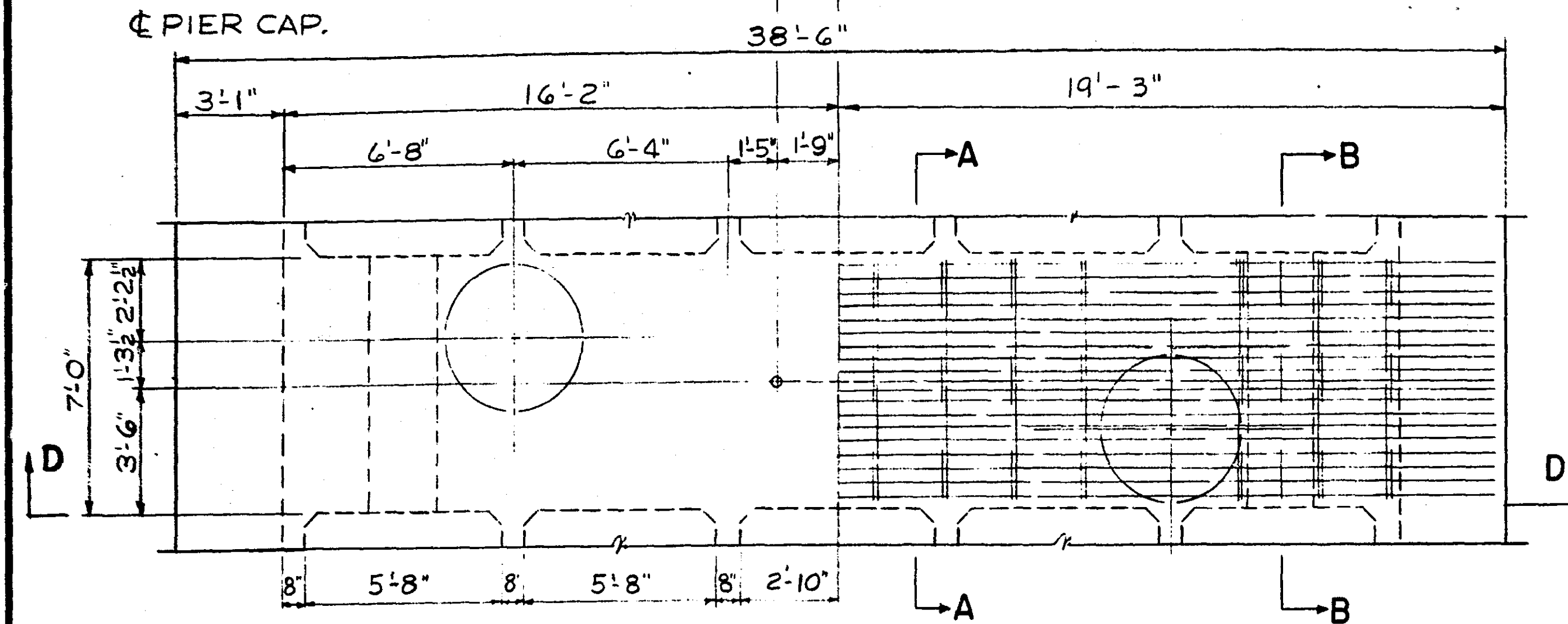
SECTION D-D
EAST ABUTMENT SHOWN
WEST ABUTMENT OPPOSITE HAND



WINGWALL REINFORCEMENT

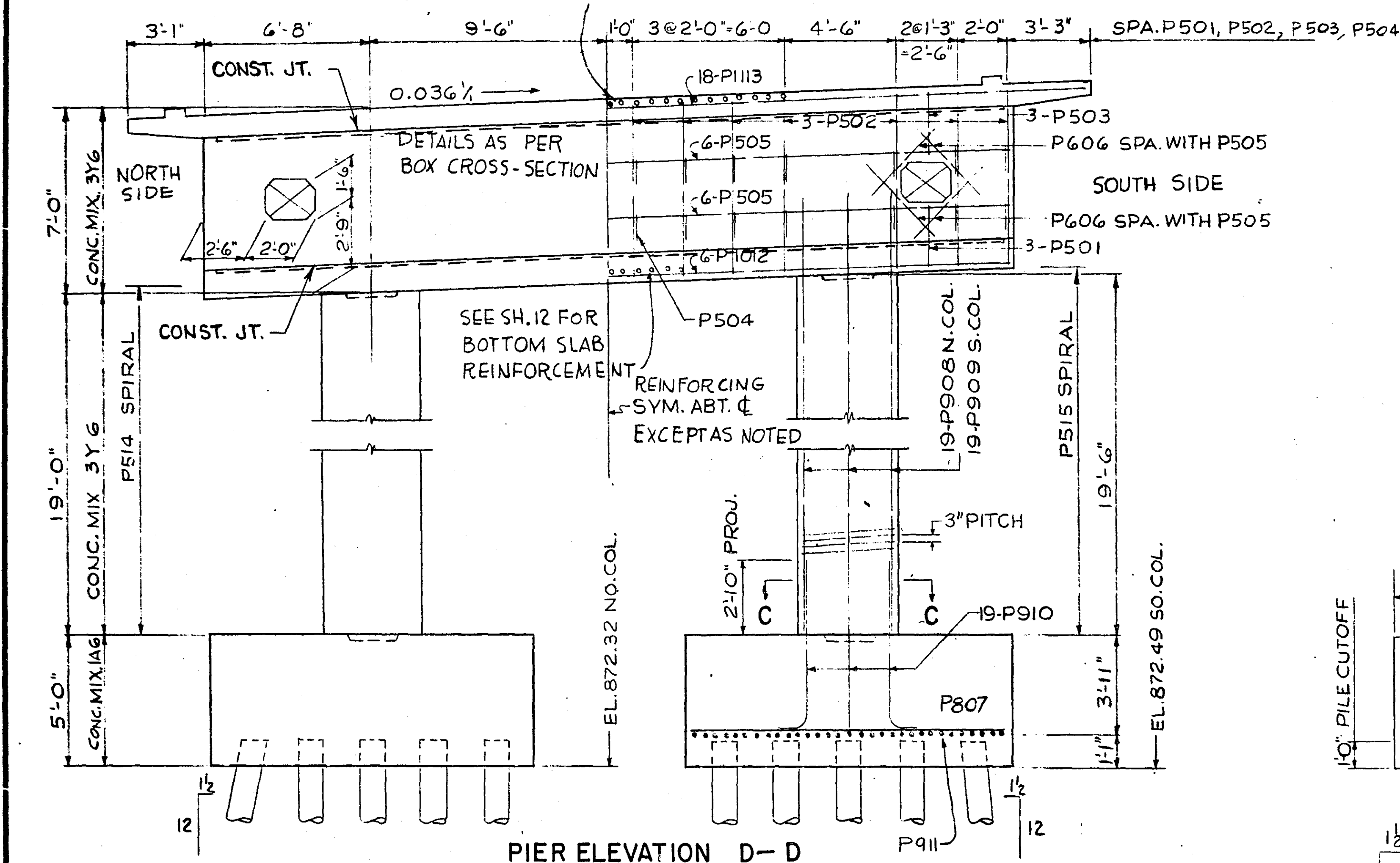


10 TH. ST. N.W.
PLAN SYM. ABT. ϕ BY ROTATION

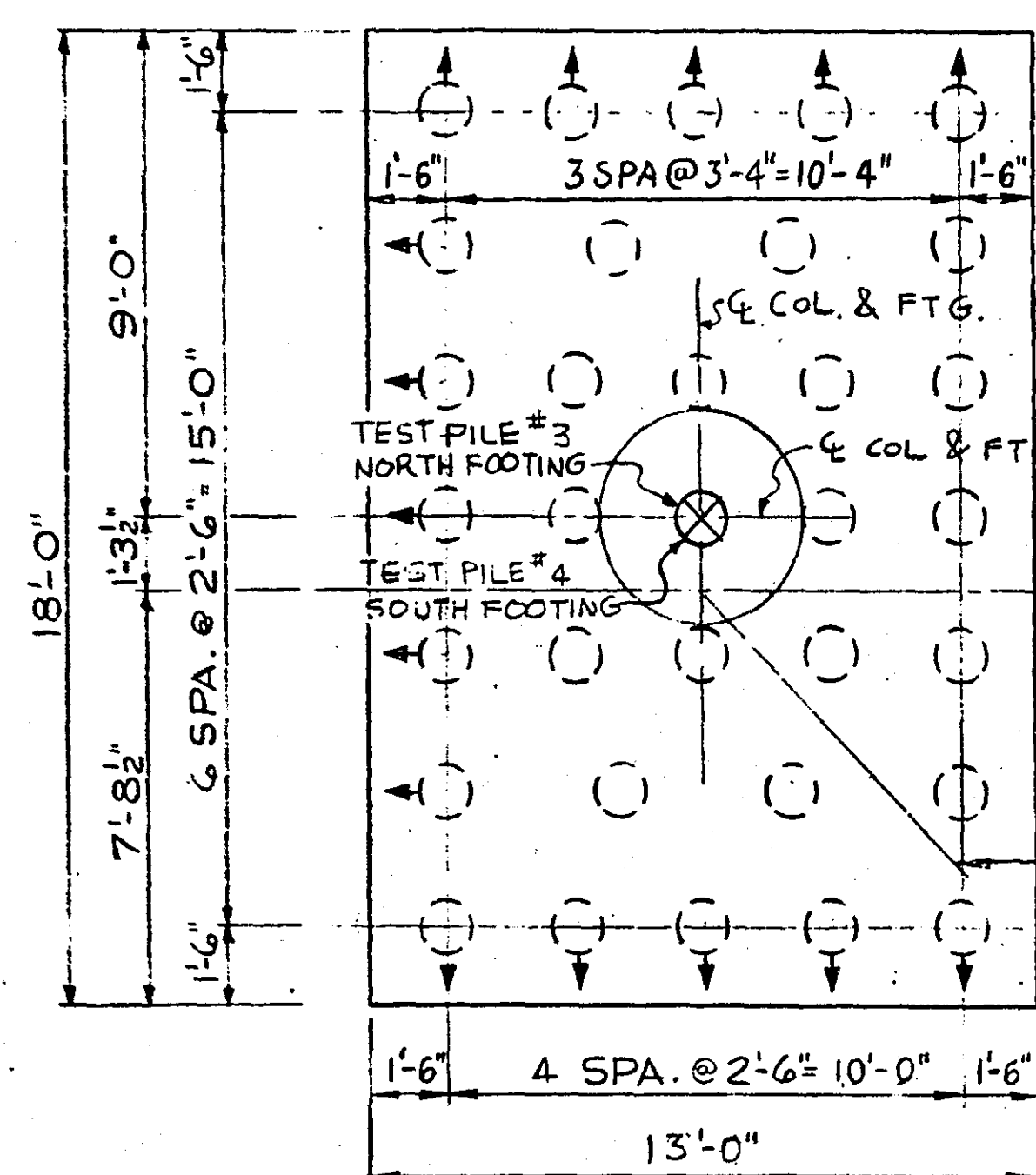


PIER PLAN

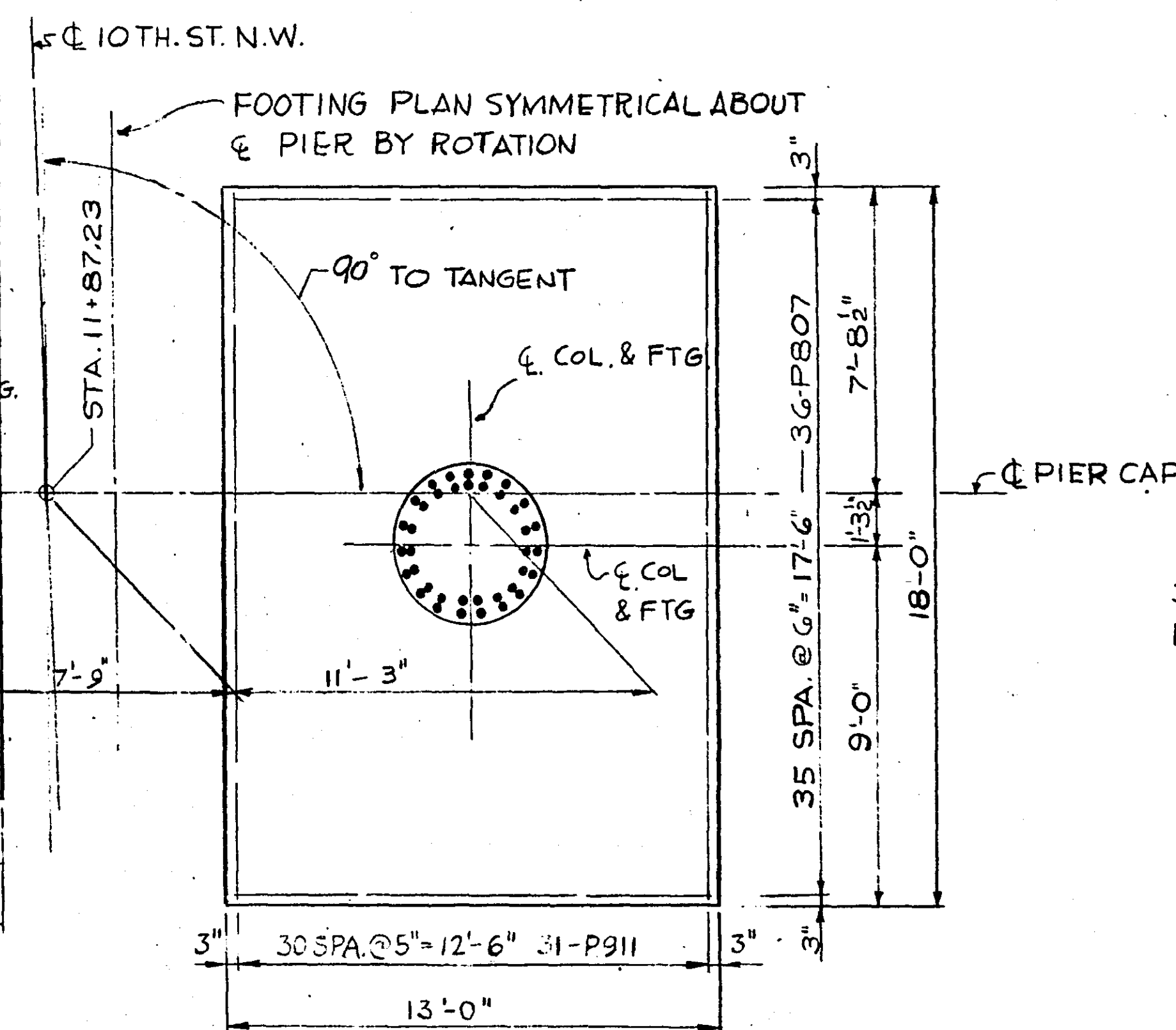
SEE SH.14 FOR TOP
SLAB REINFORCEMENT



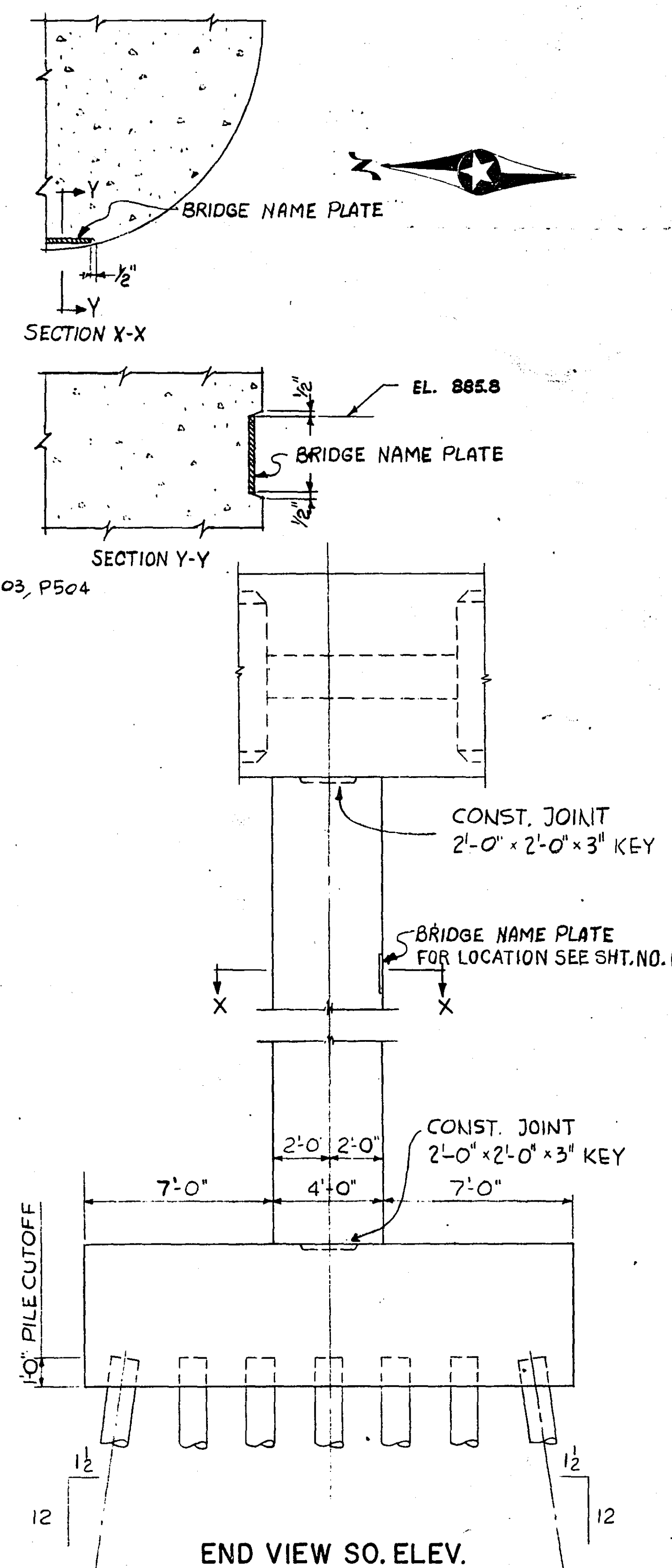
PIER ELEVATION D-D



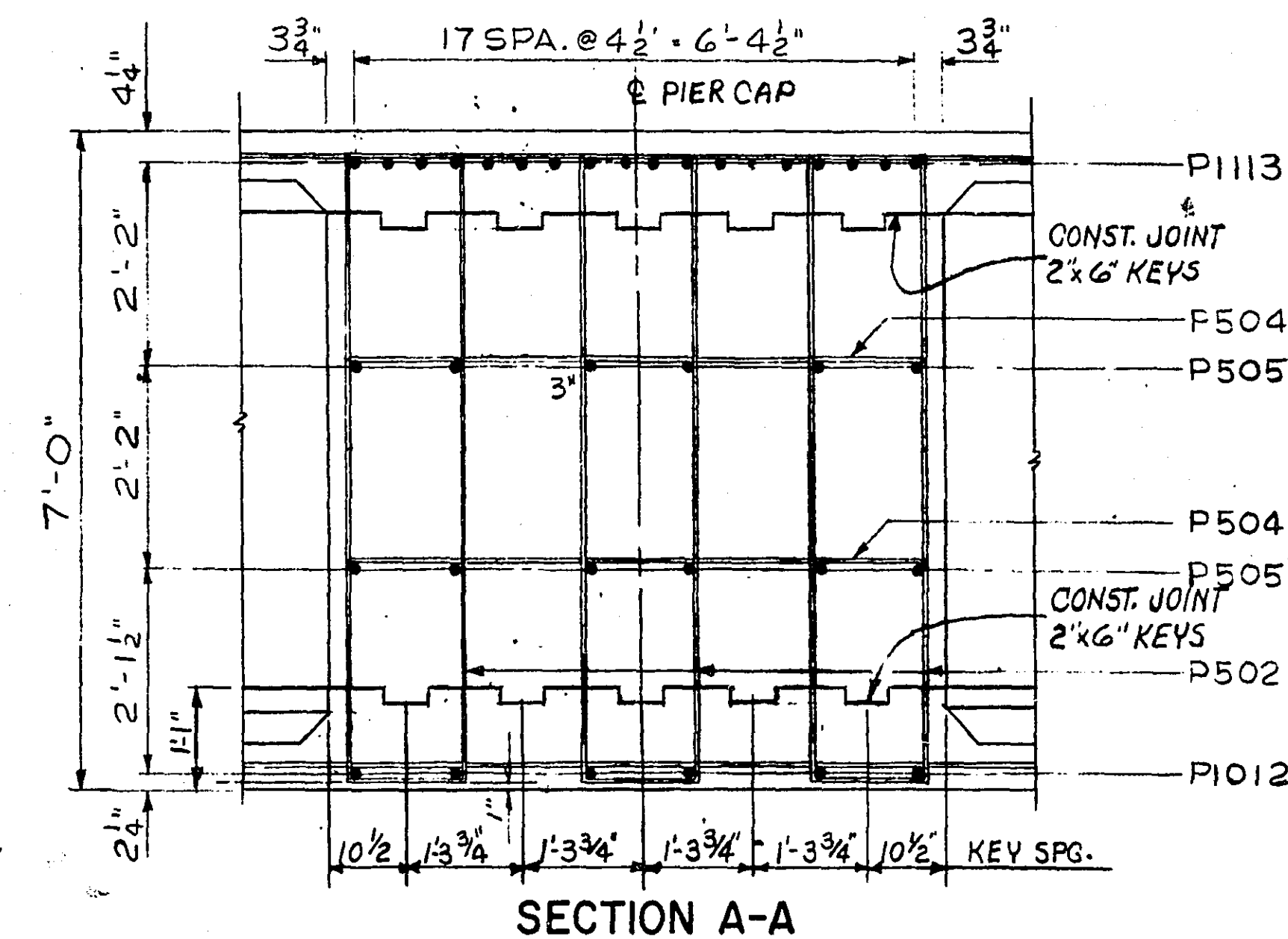
FOOTING PLAN-PILES & REINF.



SECTION C-C

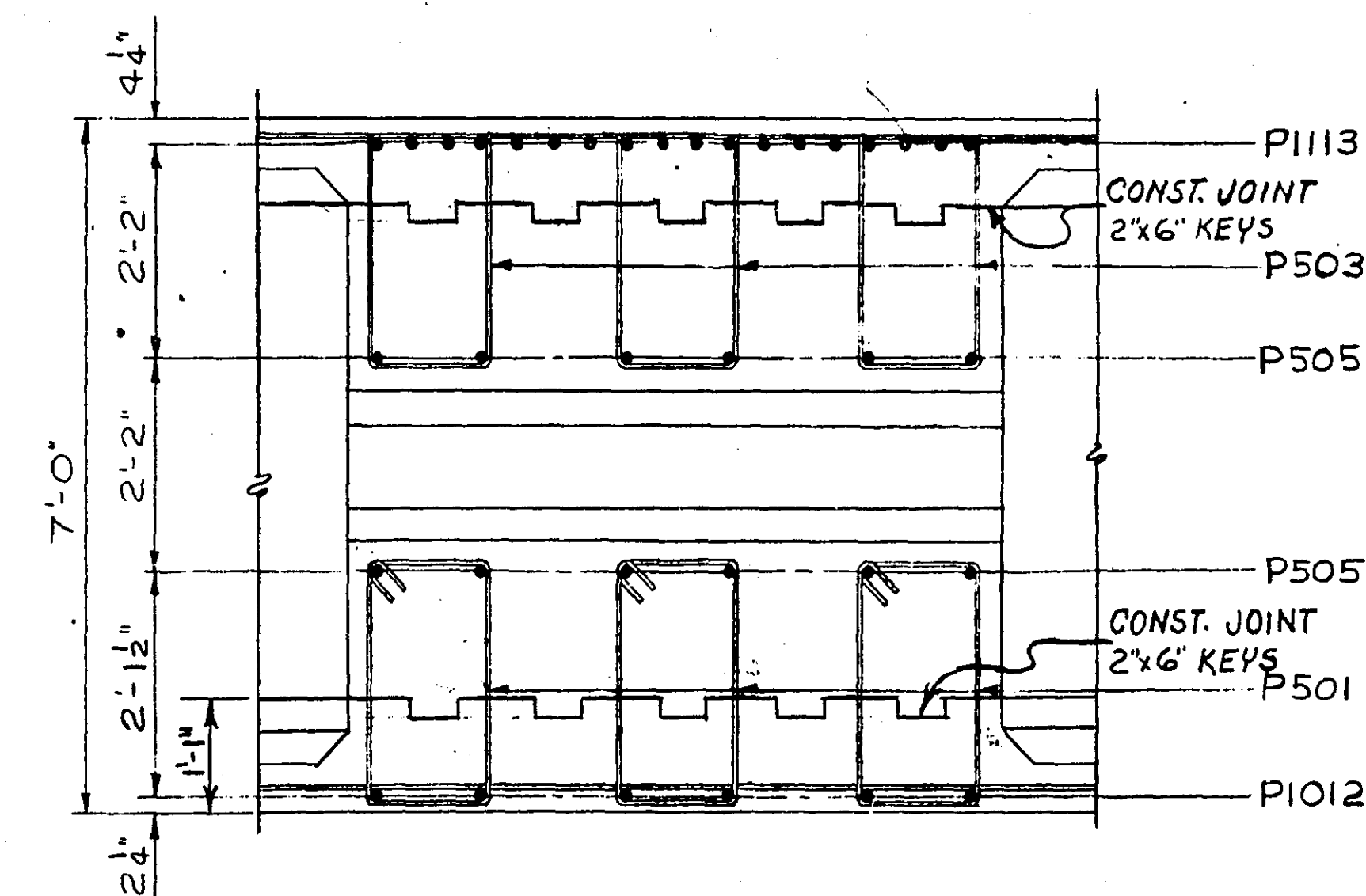


END VIEW SO. ELEV.



SECTION A-A

NOTE: END 2"x6" KEYWAYS 6" FROM
OUTSIDE FACE OF CONCRETE



SECTION B-B

BILL OF REINFORCEMENT FOR ONE PIER

BAR	SIZE	NO.	LENGTH	SHAPE	LOCATION
P501	5	6	8'-6"	BENT	PIER CAP
P502	5	42	15'-10"	BENT	PIER CAP
P503	5	6	7'-10"	BENT	PIER CAP
P504	5	28	8'-8"	BENT	PIER CAP
P505	5	12	32'-0"	STR.	PIER CAP
P606	6	48	4'-0"	STR.	PIER CAP
P607	8	72	12'-8"	STR.	FOOTING
P908	9	19	21'-10"	STR.	COL. VERT.
P909	9	19	22'-4"	STR.	COL. VERT.
P910	9	38	8'-1"	BENT	FTG. DOWELS
P911	9	62	17'-8"	STR.	FOOTING
P1012	10	6	32'-0"	STR.	PIER CAP
P1113	11	18	38'-2"	STR.	PIER CAP
P514	5	1	————	BENT	COL. SPIRAL
P515	5	1	————	BENT	COL. SPIRAL

ALL BAR DIMENSIONS ARE OUT TO OUT.
USE ACI STANDARD BEND UNLESS NOTED.

SPIRAL DATA

OUTSIDE DIAMETER.= 3'-8"
HEIGHT. P514= 19'-2" P515= 19'-8"
PITCH. 3"
SPIRAL ROD SIZE. $\frac{5}{8}" \phi$
ESTIMATED WT. OF P514= 955 LB. P515= 979 LB.
FOR MATERIAL AND WORKMANSHIP SEE SPECIAL
PROVISIONS.
OUTSIDE DIAMETER OF DOWEL CIRCLE TO BE 2"
LESS THAN INSIDE DIAMETER OF SPIRAL.

SUMMARY OF QUANTITIES FOR ONE PIER

	CLASS V EXCAVATION	150	CU. YDS.
	CONCRETE MIX NO. 1A6	87	CU. YDS.
O	CONCRETE MIX NO. 3Y6	18	CU. YDS.
*	REINFORCEMENT BARS	182.00	LBS.
	2 TREATED TIMBER TEST PILES IN PLACE	50	FT. LG.
Δ	TREATED TIMBER PILING	2560	LIN. FT.
F	NAME PLATE - DET. NO. 2100 SEE SH. NO. 18	- ONE	

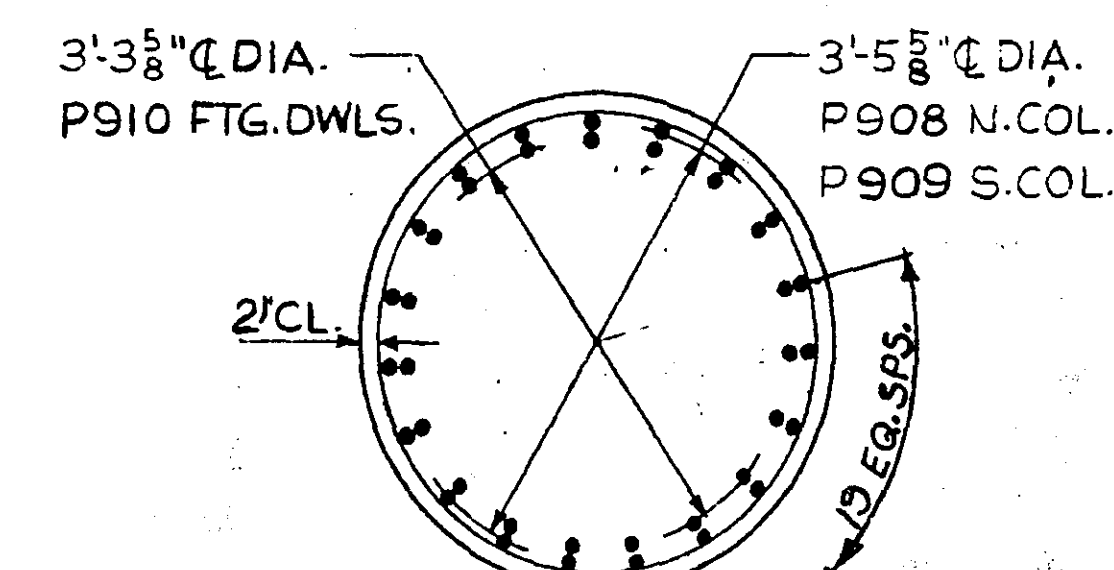
- * INCLUDES WT. OF SPIRAL.
- △ DOES NOT INCLUDE TEST PILES.
- DOES NOT INCLUDE QUANTITY IN PIER CAP
- ✕ BRIDGE 9599, FAI ~~35W-349~~, 1964

PILE NOTES

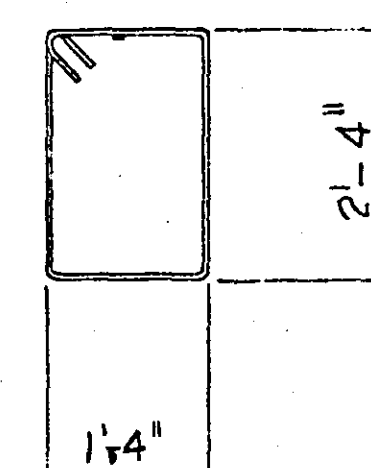
64 TREATED TIMBER PILES ESTIMATED LENGTH 40 FT.
2 TREATED TIMBER TEST PILES 50 FT. LONG
66 TREATED TIMBER PILES REQUIRED FOR ONE PIER
ALL PILES TO BE DRIVEN TO A MINIMUM BEARING OF
24 TONS/PILE.
ESTIMATED PENETRATION 2' LESS THAN LENGTH GIVEN

COMPUTED PILE LOADS	TONS/PILE
D.L.	20.5
L.L.	1.9
O.T	2.0
TOTAL	24.4

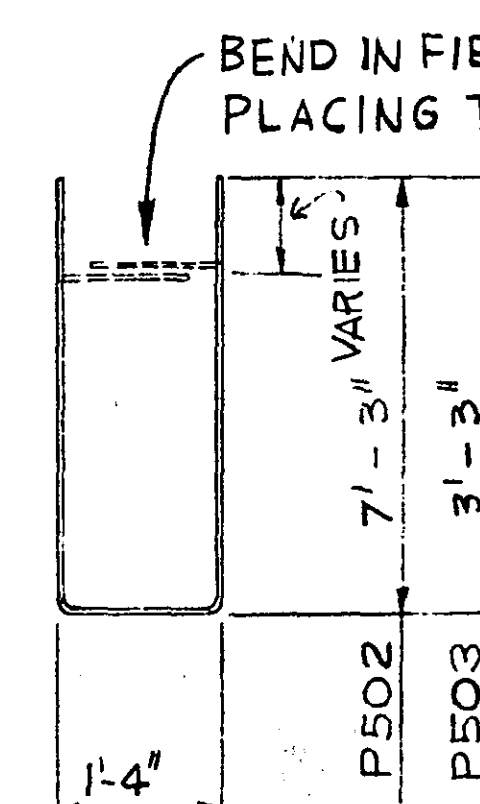
PILES MARKED THUS  TO BE BATTERED 1-1/2" PER FOOT IN DIRECTION SHOWN.
PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.



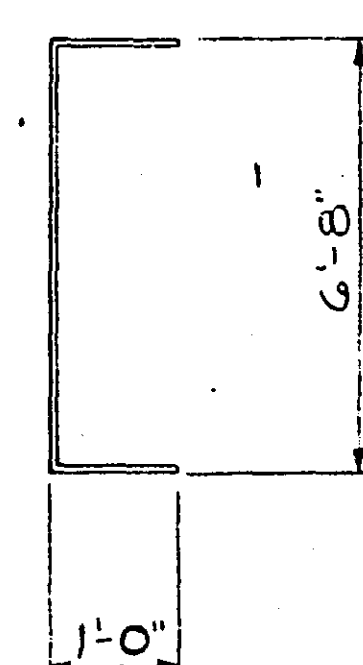
BAR P50I



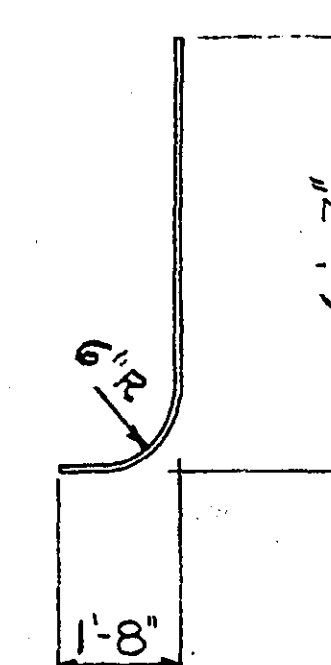
BAR P502
& P503



BAR P504



BAR P910



STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9599

PIER DETAILS & REINFORCEMENT

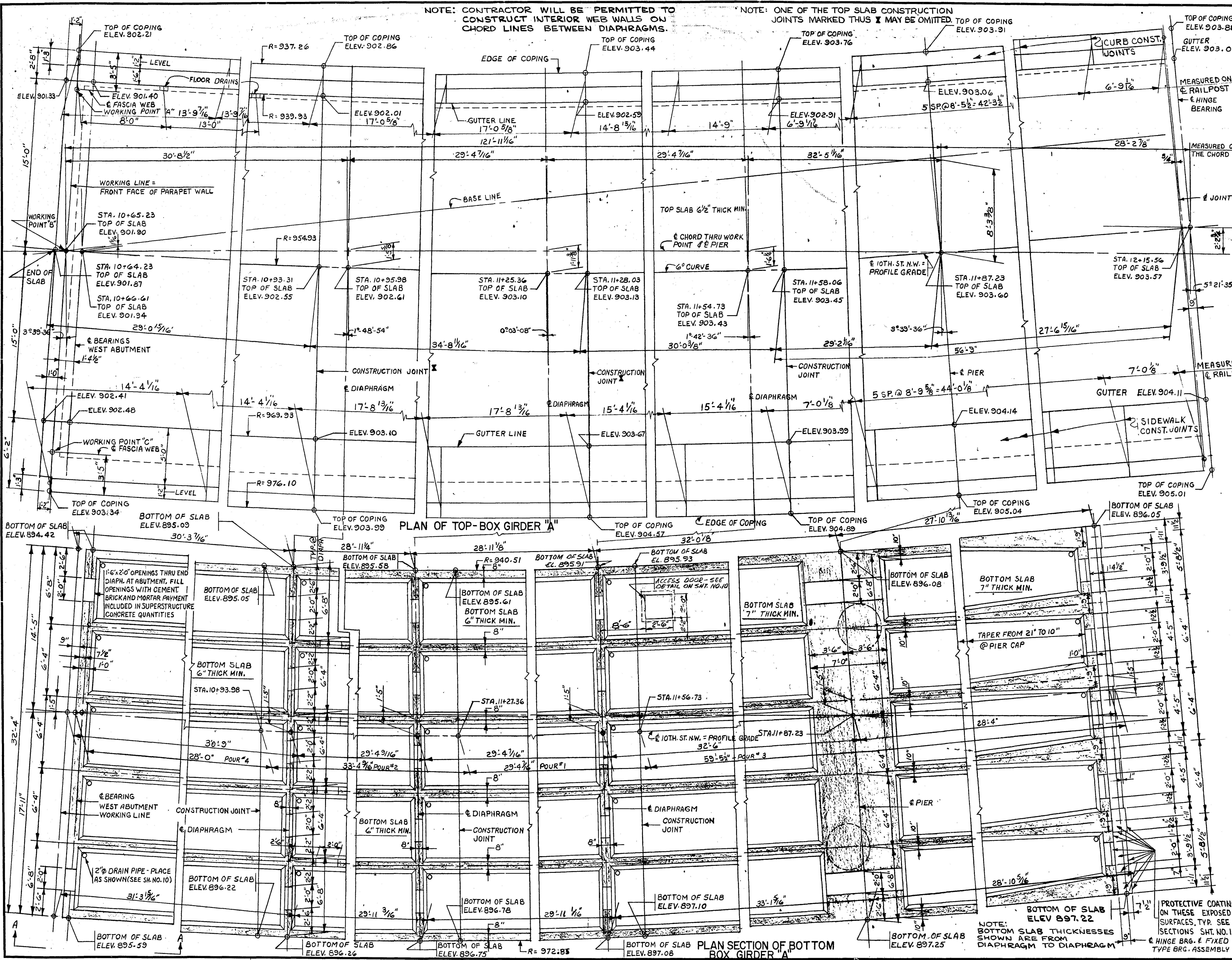
APPROVED: 3-11-63

MICROFILMED
RAMSEY CO. ENGR.

SHEET NO. 7 OF 20 SHEETS

9599

15-140



LIST OF PREFORMED CORK JOINT FILLER

2 PCS 15' x 2 1/4" x 2"	BETW. CURBS @ ABUT.
2 PCS 25' x 5' 0" x 2"	BETW. SIDEWALKS @ ABUT.
2 PCS 12' x 1' 9" x 1"	BETW. CURB & W.W. @ ABUT.
2 PCS 12' x 1' 9" x 1"	BETW. SIDEWALK & W.W. @ ABUT.
1 PC 8' x 38' 6" x 1 1/2"	BETW. SLABS @ HINGE
6 PCS 23' x 2' 8" x 1 1/2"	BETW. GIRDERS @ HINGE
20 PCS 12' x 1' 0" x 1/4"	RAILCURBS
1 PC 10 3/4' x 6' 2 1/2" x 1 1/2"	BETW. WALKS @ HINGE
1 PC 10 3/4' x 2' 8" x 1 1/2"	BETW. CURB @ HINGE

CORK FASTENED WITH 2 1/2" LONG COPPER NAILS (11 GAGE) SPACED ABOUT 18" O.C. MAXIMUM. NAILS INCLUDED IN PRICE BID FOR OTHER ITEMS. PREFORMED CORK JOINT FILLER AS PER A.A.S.H.O. SPEC. M153 TYPE I

LIST OF PREFORMED BITUMINOUS JOINT FILLER (BIT. FELT)

2 PCS 12' x 36' 6" x 1"	BETW. PARAPET & SLAB
2 PCS 4' x 2' x 44' 9"	BETW. SLOPE PAVING & ABUT.

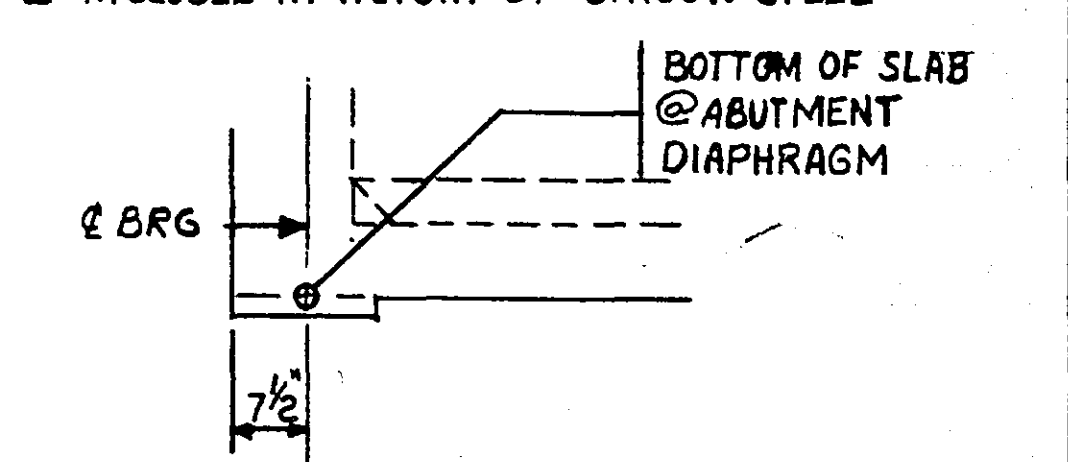
PREFORMED BITUMINOUS JOINT FILLER AS PER M.H.D. 3701

THE LISTS OF JOINT FILLER ARE FOR THE CONTRACTORS CONVENIENCE ONLY. ANY ADDITIONAL JOINT FILLER MATERIAL REQUIRED AS SHOWN ON THE PLANS SHALL BE FURNISHED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION. TRIM JOINT FILLER MATERIAL AS REQUIRED IN THE FIELD. JOINT FILLER INCLUDED IN PRICE BID FOR OTHER ITEMS. SLAB POURING SEQUENCE SHALL BE AS INDICATED ON PLAN AND THE CURB & S.W. SHALL NOT BE PLACED UNTIL ALL FALSEWORK HAS BEEN REMOVED FROM SUPERSTRUCTURE.

SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE

CONCRETE MIX NO. 3V6	707 CU. YDS
CONCRETE MIX NO. 3V60	92 CU. YDS
REINFORCEMENT BARS	267,630 LBS
STRUCTURAL STEEL	430 LBS
ORNAMENTAL METAL RAILING	504 LINT.
6 FIXED BEARING ASSEMBLIES (TYPE I)	
12 EXPANSION BEARING ASSEMBLIES (TYPE I)	
4 FLOOR DRAINS (SEE DETAIL SHT. NO. 10)	
40 PIPE DRAINS (SEE DETAIL SHT. NO. 10)	
24-3/4" Ø x 9" SQ. HD. BOLTS W/ NUT & COT. WASHER	
PREFORMED CORK JT. FILLER (SEE SCHEDULE)	
PREFORMED BIT. FELT JT. FILLER (SEE SCHEDULE)	
2 ACCESS DOORS (SEE DETAIL SHT. NO. 10)	
2 PLANKS 3x12 x 16'-0"	
2 PLANKS 3x12 x 14'-0"	
2" Ø BUTYL ROD STOCK	

○ INCLUDED IN PRICE BID FOR OTHER ITEMS
□ INCLUDED IN WEIGHT OF STRUCT. STEEL



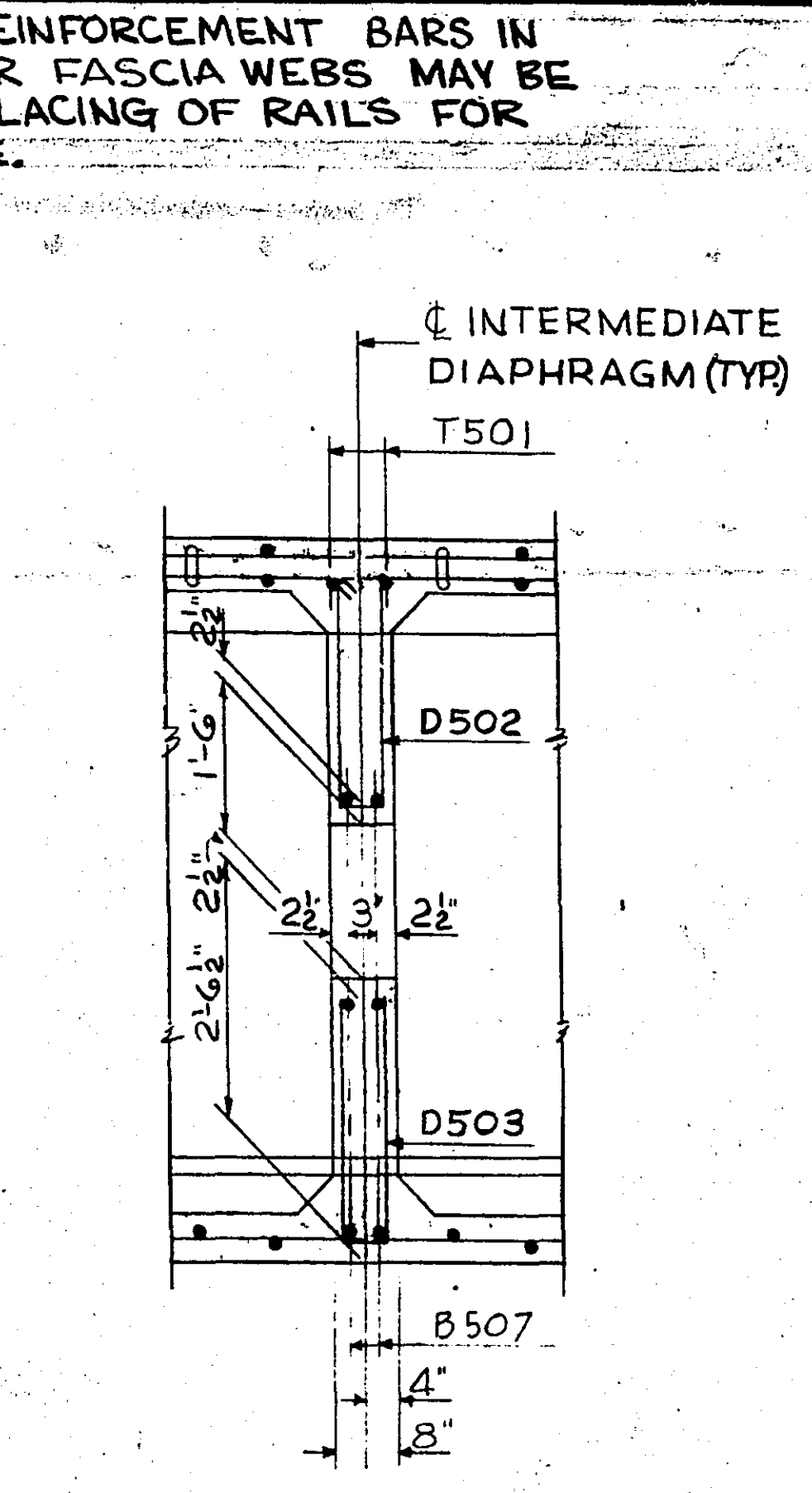
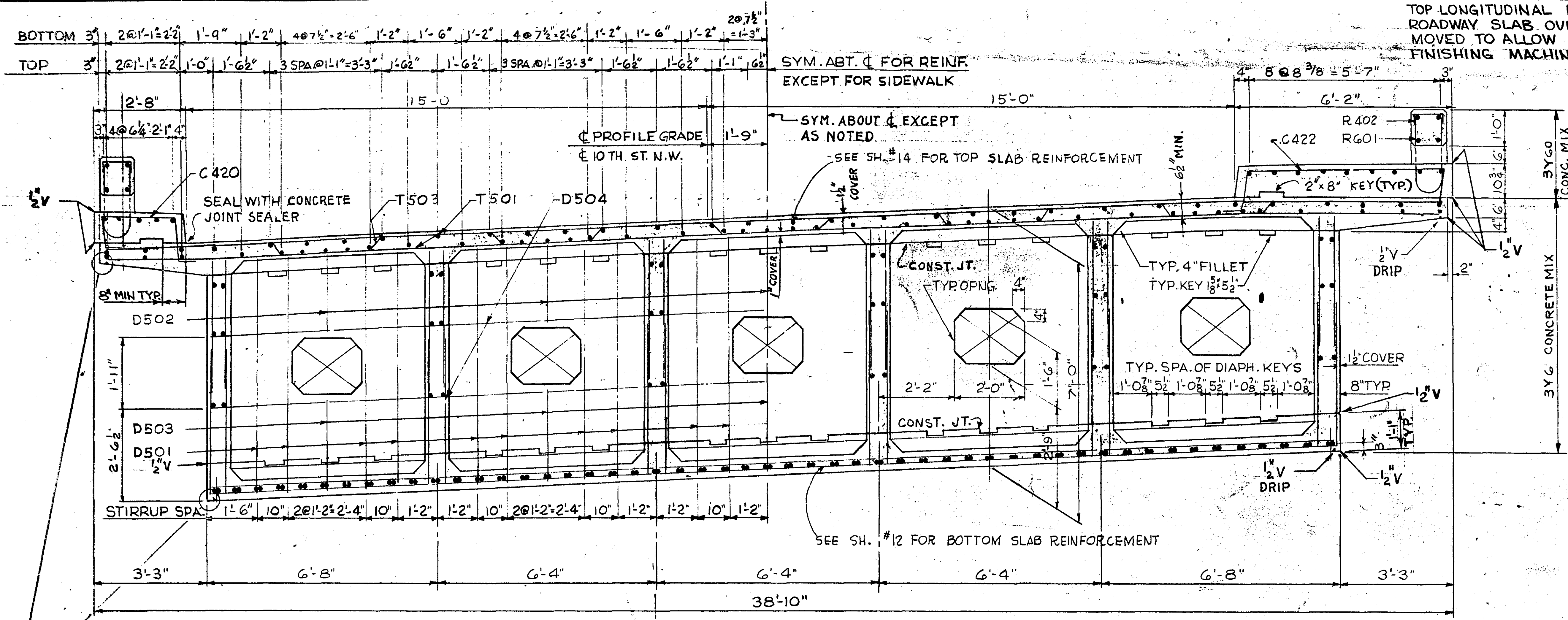
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9599

DETAILS BOX GIRDER "A"

APPROVED: 3-11-63

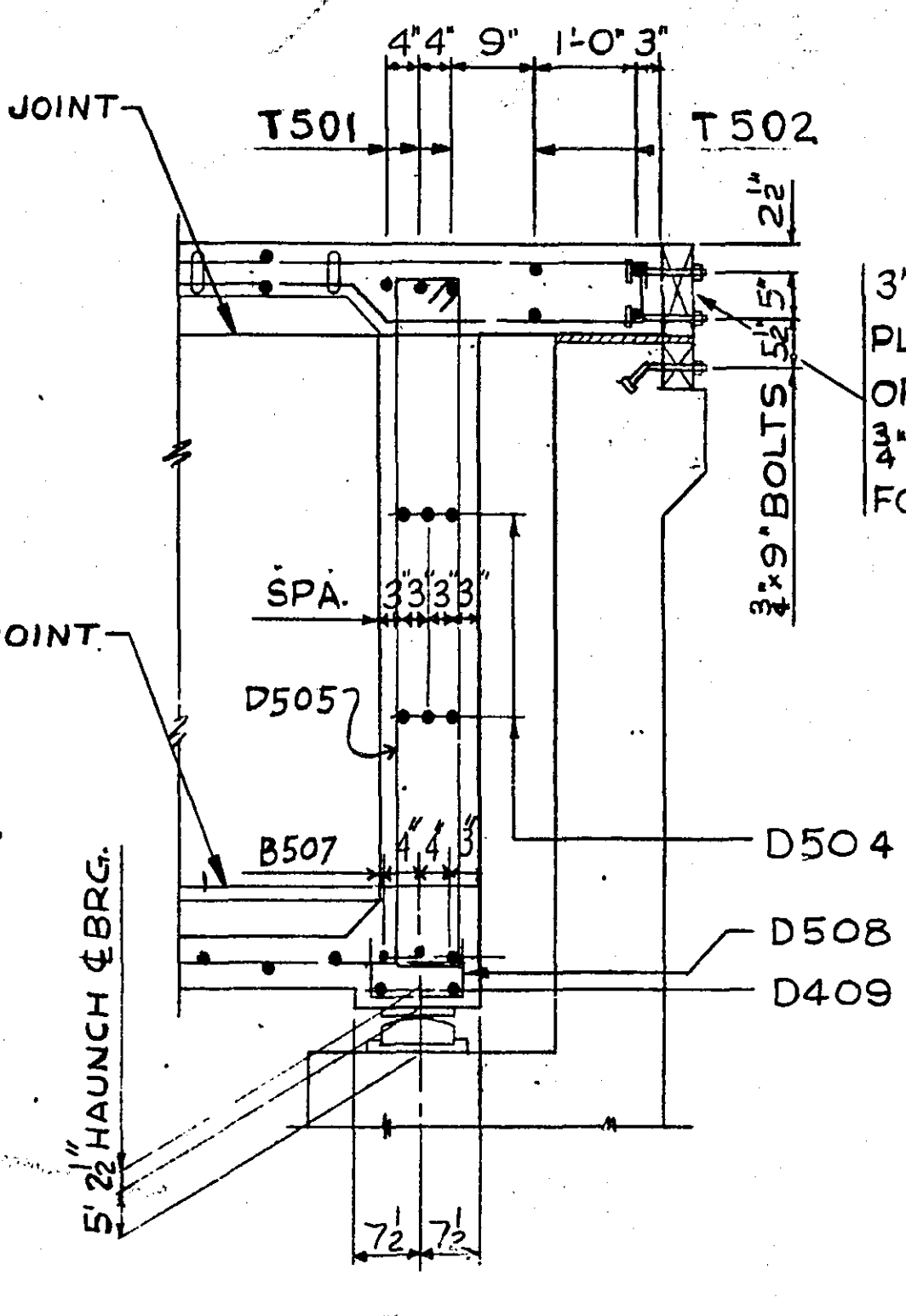
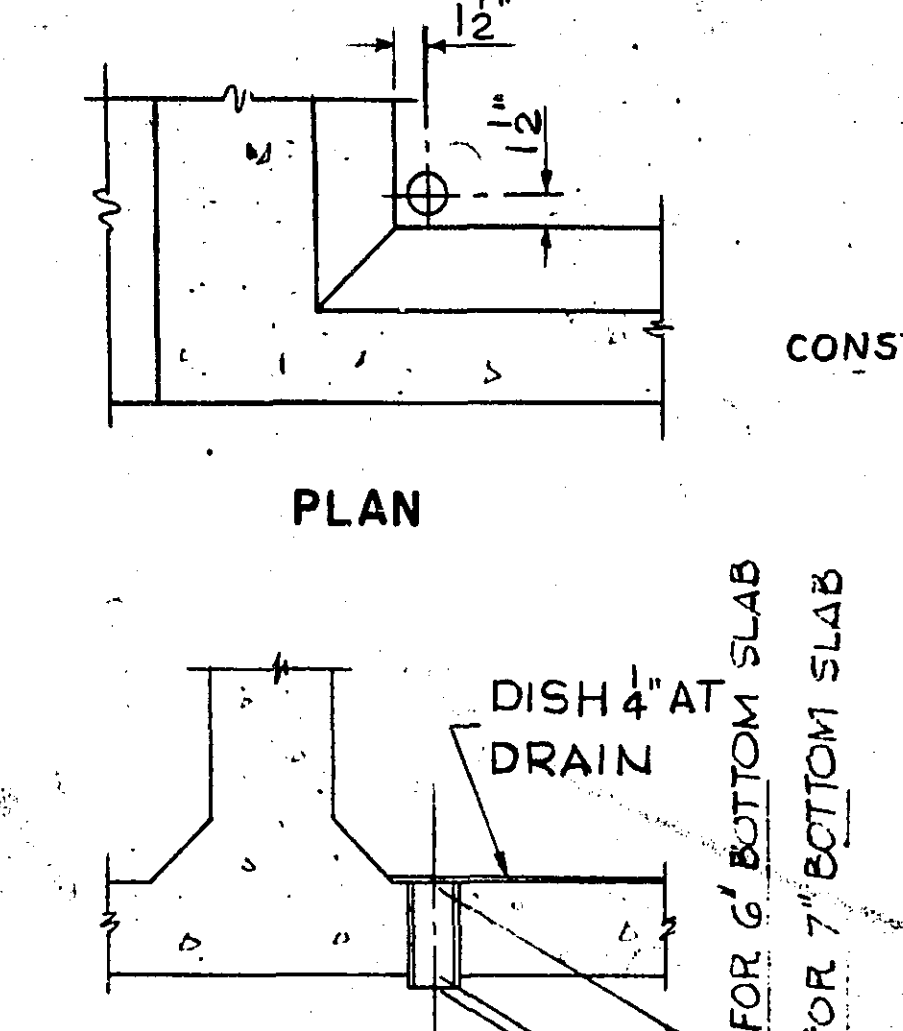
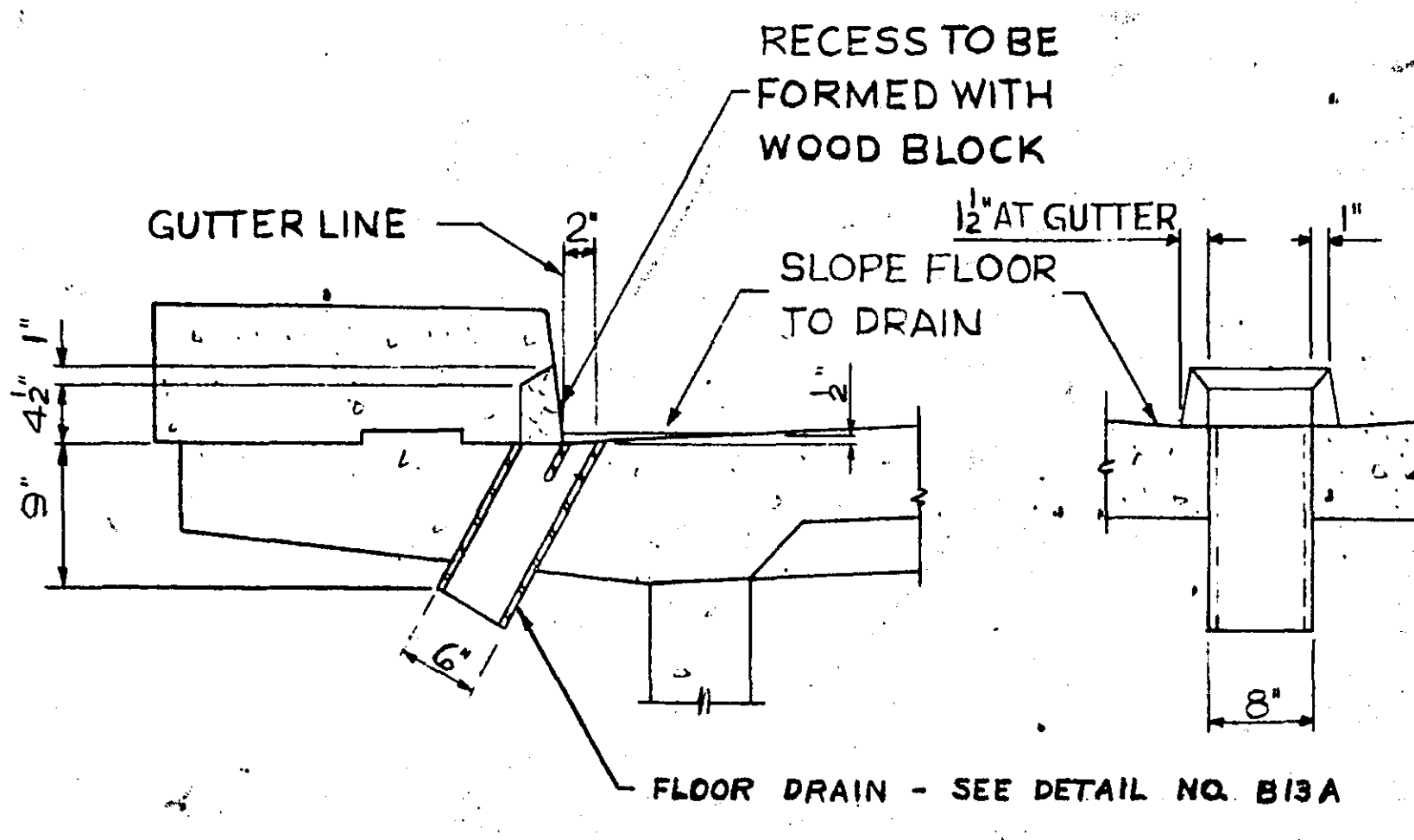
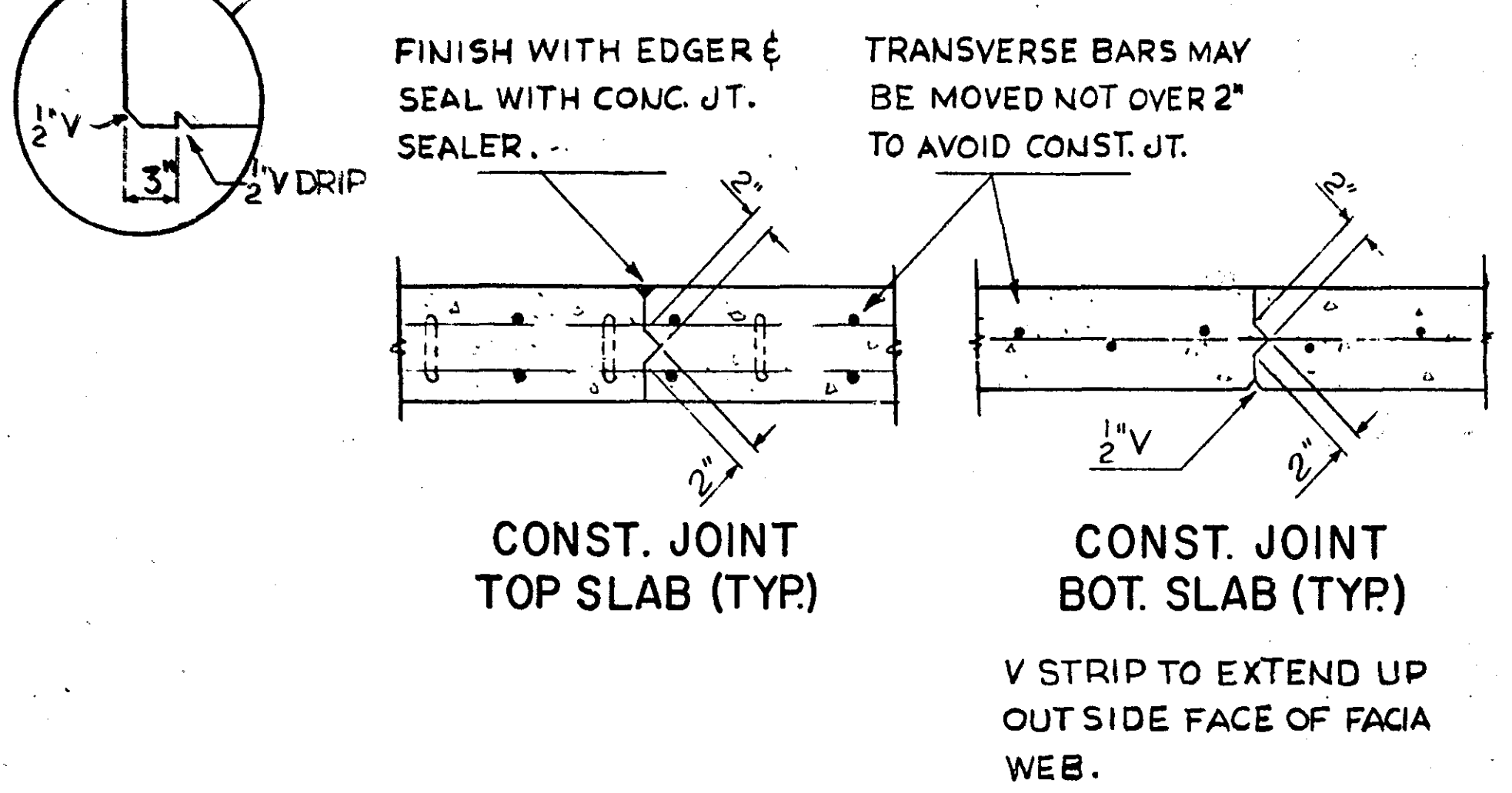
MICROFILMED
RAMSEY CO. ENGR.



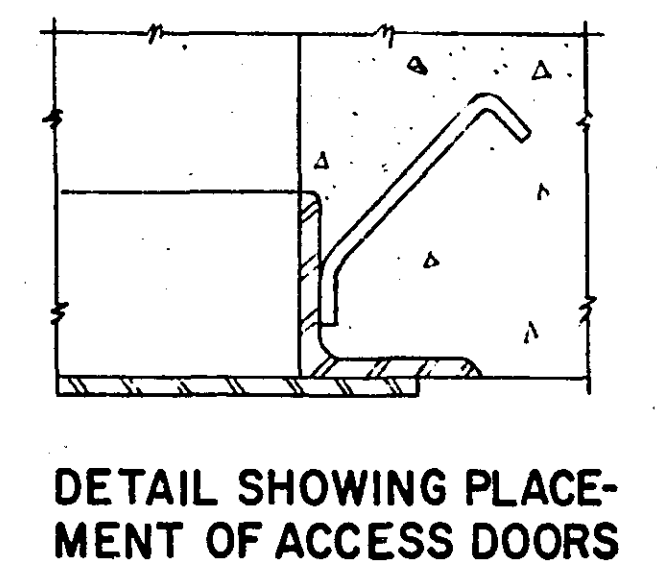
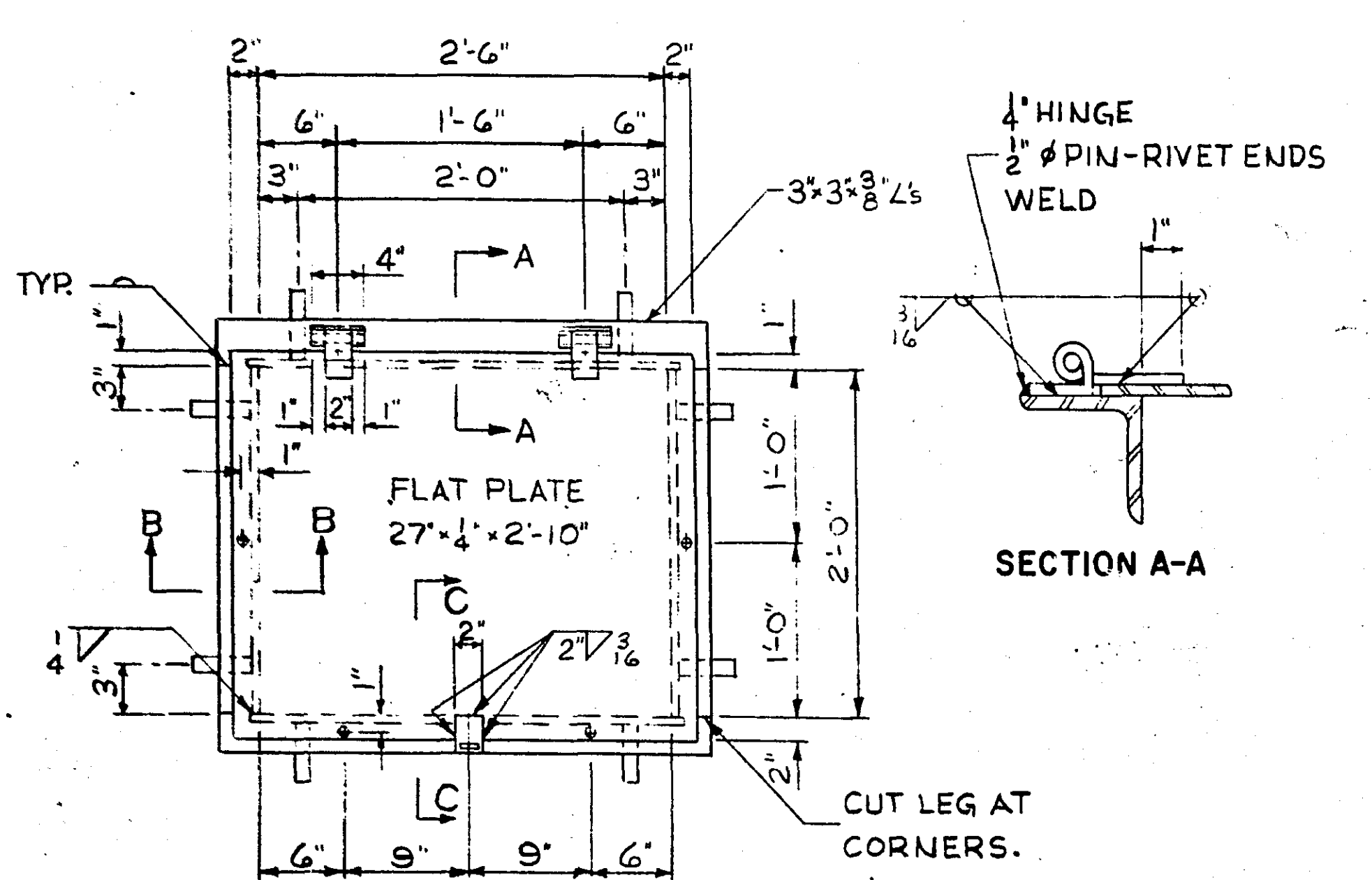
DIAPHRAGM REINFORCEMENT					
MARK	NO.	SIZE	LENGTH	SHAPE	LOCATION
D 501	100	5	14'-11"	BENT	INTER. DIAPH.
D 502	25	5	6'-5"	BENT	" "
D 503	25	5	5'-3"	BENT	" "
D 504	44	5	32'-0"	STR.	TRANSVERSE
D 505	80	5	15'-7"	BENT	END DIAPH. & HINGE DIAPH.
D 506	28	5	7'-1"	BENT	END DIAPH. & HINGE DIAPH.
D 507	28	5	5'-7"	BENT	END DIAPH. & HINGE DIAPH.
D 508	36	5	1'-11"	BENT	ABUT. DIAPH. BRG. PAD
D 409	24	4	1'-8"	STR.	" " " "

TYPICAL SECTION THRU MIDSPANS (SHOWING INTERMEDIATE DIAPHRAGM)

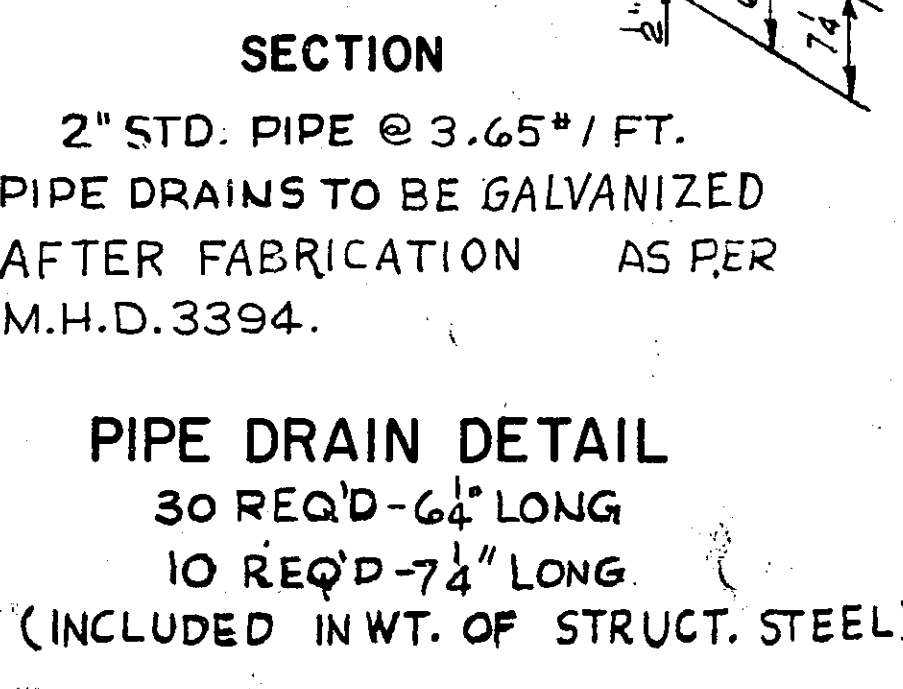
* BEND IN FIELD WHERE NECESSARY
ALL BAR DIMENSIONS ARE OUT TO OUT.
USE ACI RECOMMENDED RADII FOR BENDS
EXCEPT AS NOTED.



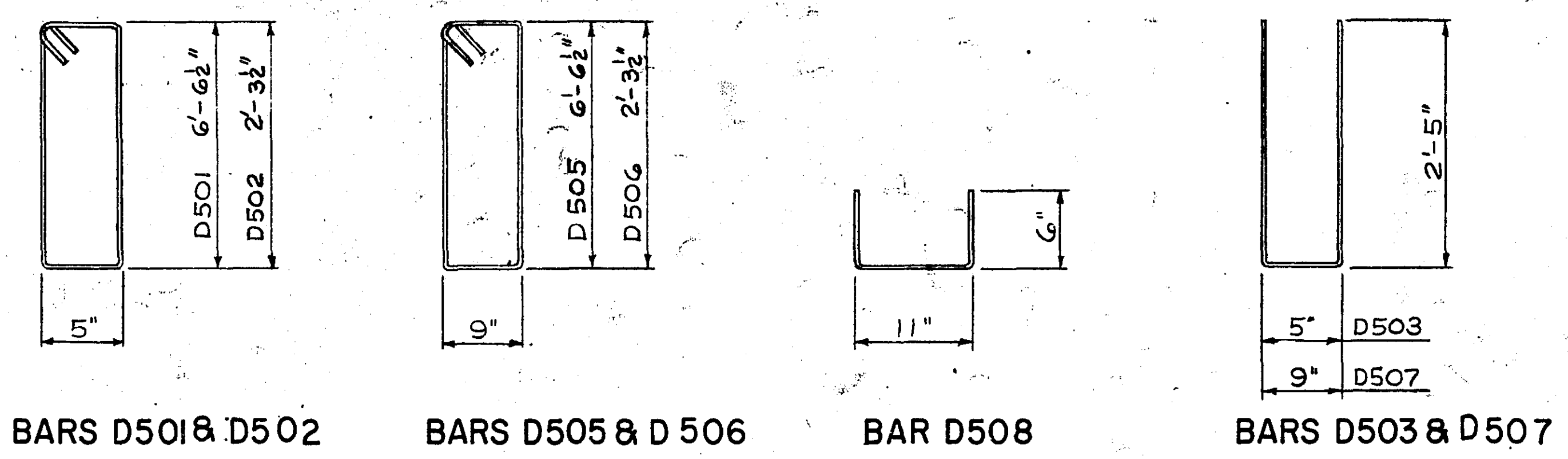
CONST. JOINT THRU CURB AND SIDEWALK. NO STEEL TO RUN THRU JOINT. PAINT FACE OF CONCRETE SECTION PLACED FIRST WITH ASPHALT (M.H.D.3166).
FINISH TOP EDGES WITH SMALL RADIUS EDGER. FINISH VERTICAL EDGES WITH 1/2\"/>



DRILL AND TAP FOR 1/4\"/>



TYPICAL CONSTRUCTION JOINT THRU CURB AND SIDEWALK

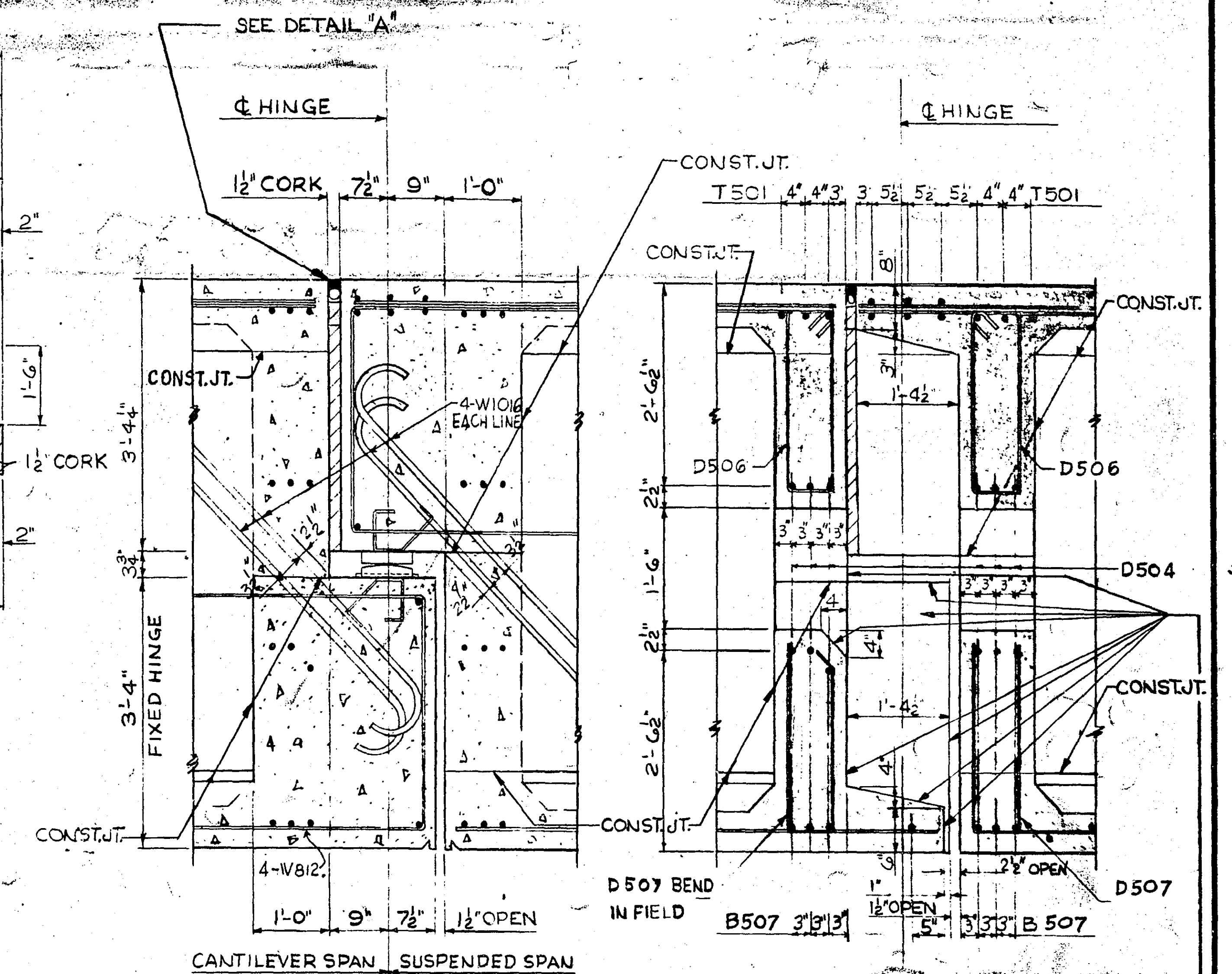


STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

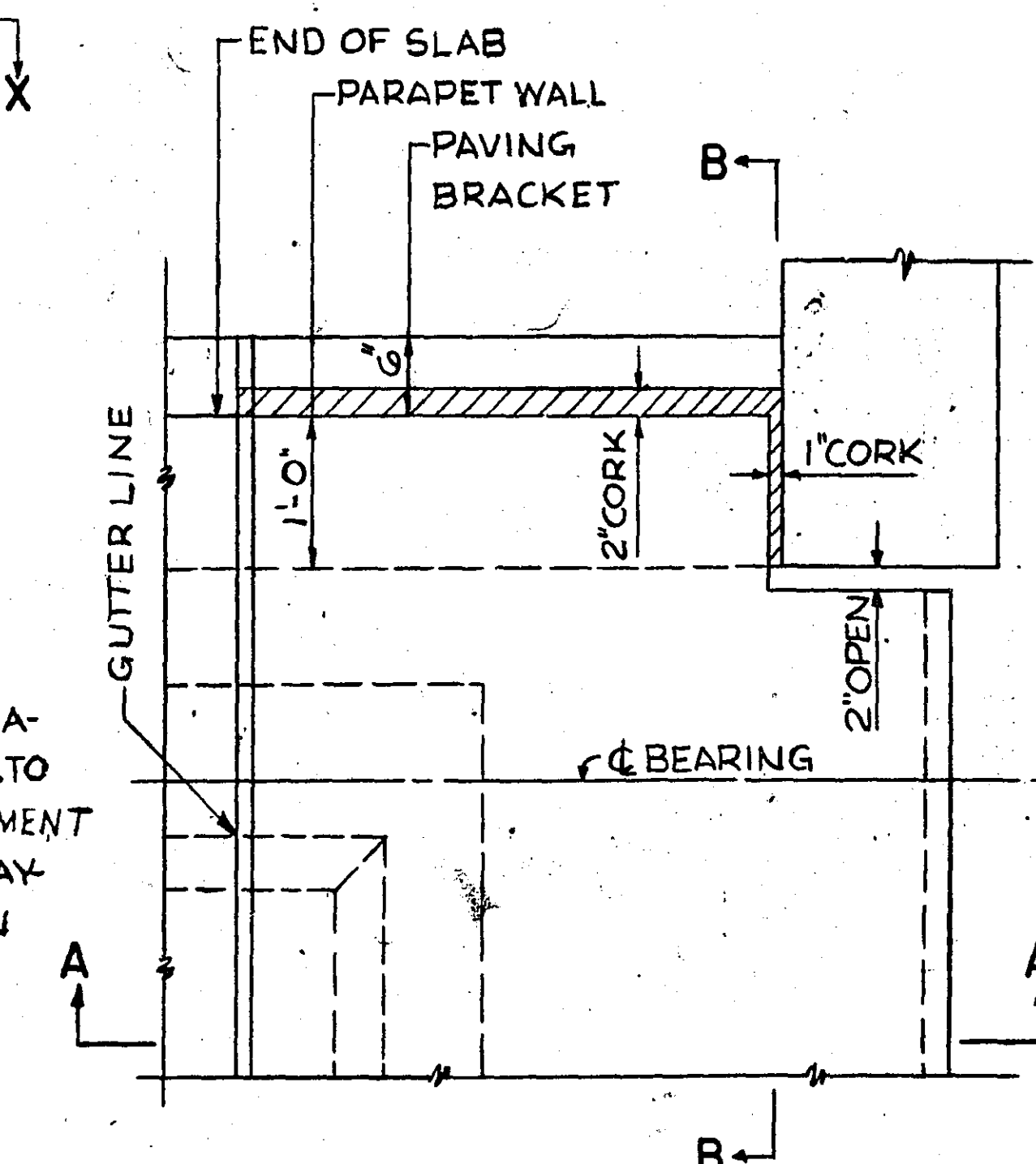
BRIDGE NO.9599

TYPICAL SECTIONS & DETAILS

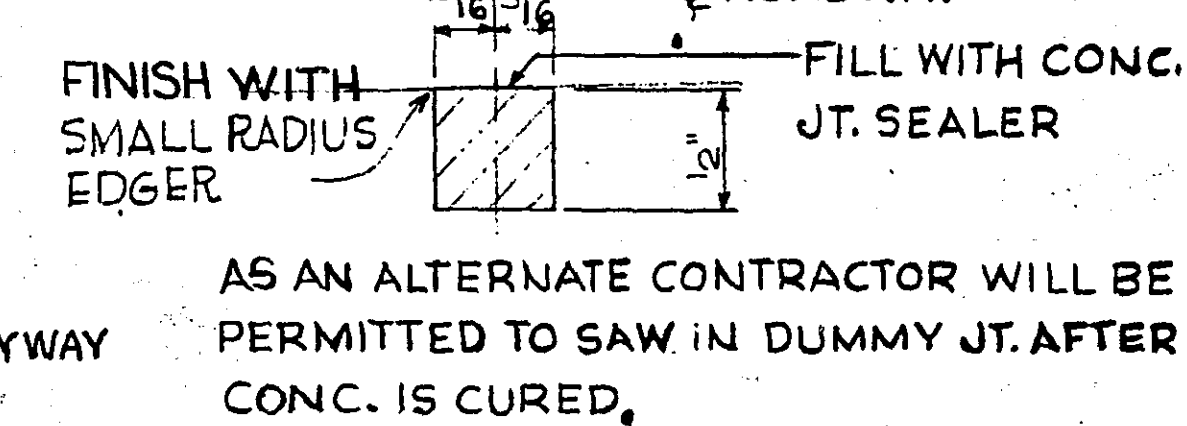
APPROVED: 3-11-63
MICROFILMED
RAMSEY CO. ENGR.



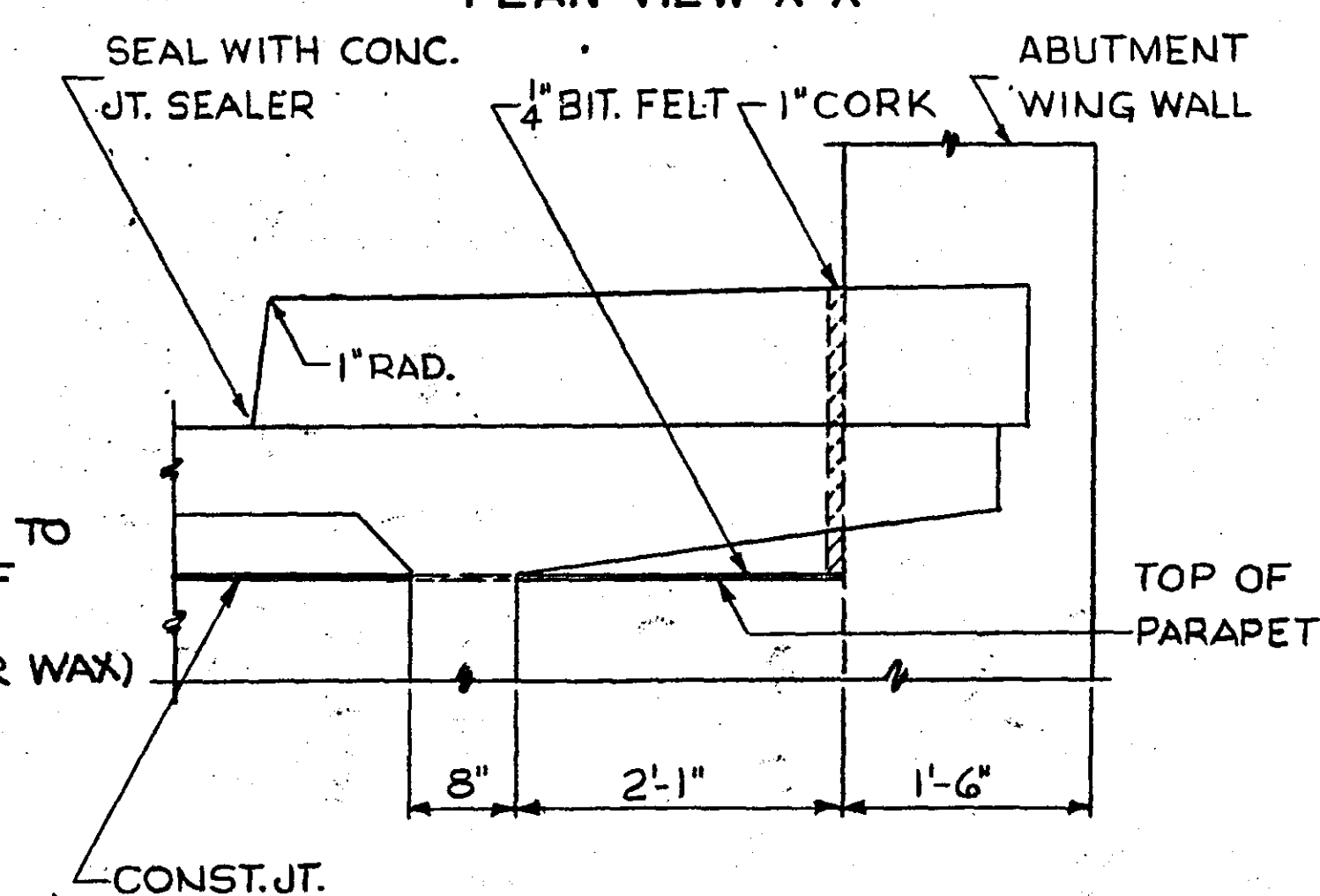
SECTION THRU HINGE BETWEEN BEARINGS



SECTION B-B

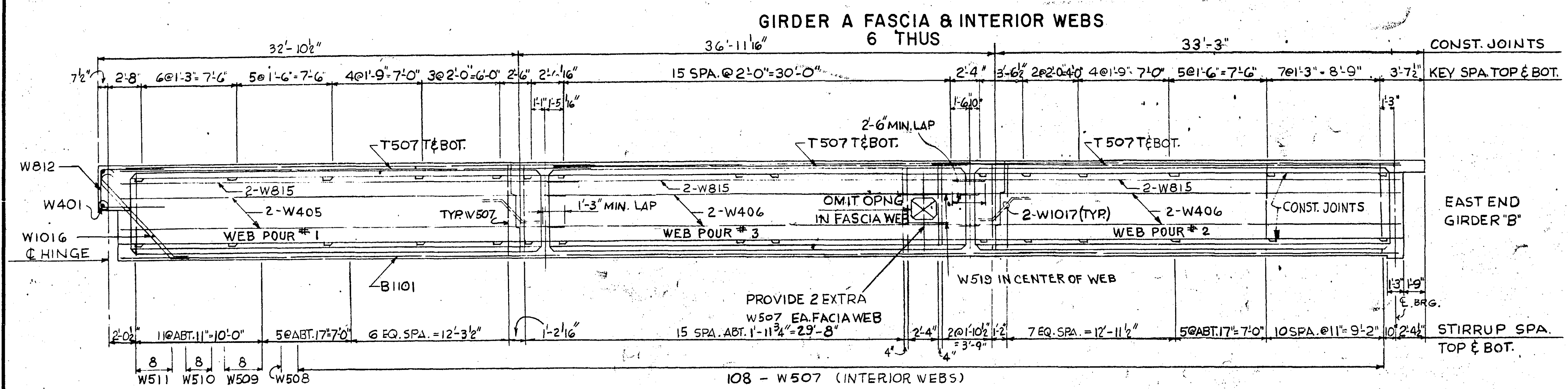
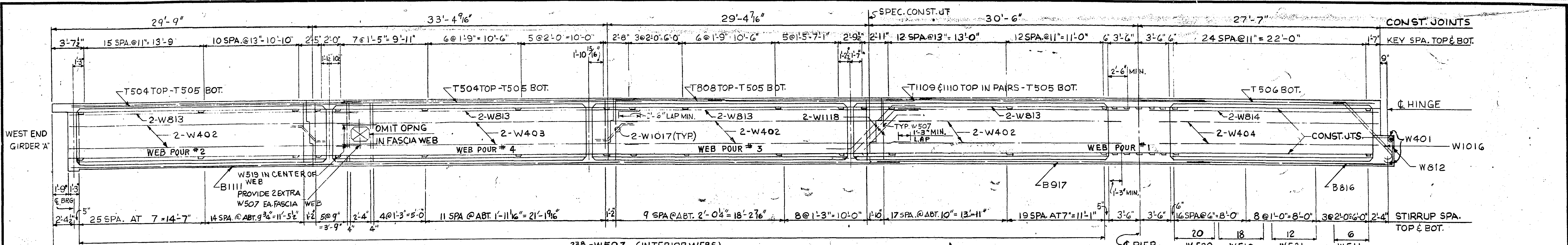


LANE MARKER DETAIL

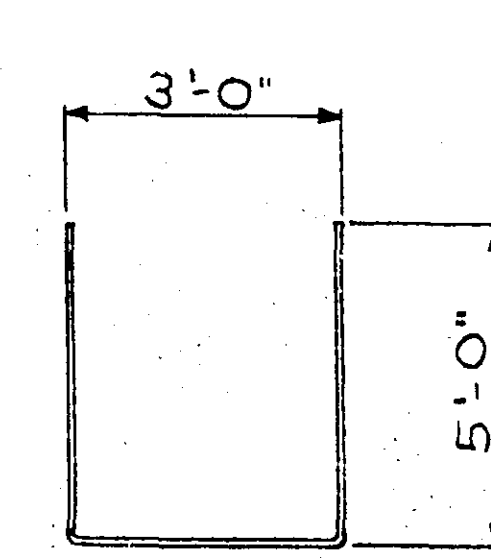


SECTION A-A

MICROFILMED
ASEY CO. ENGR.

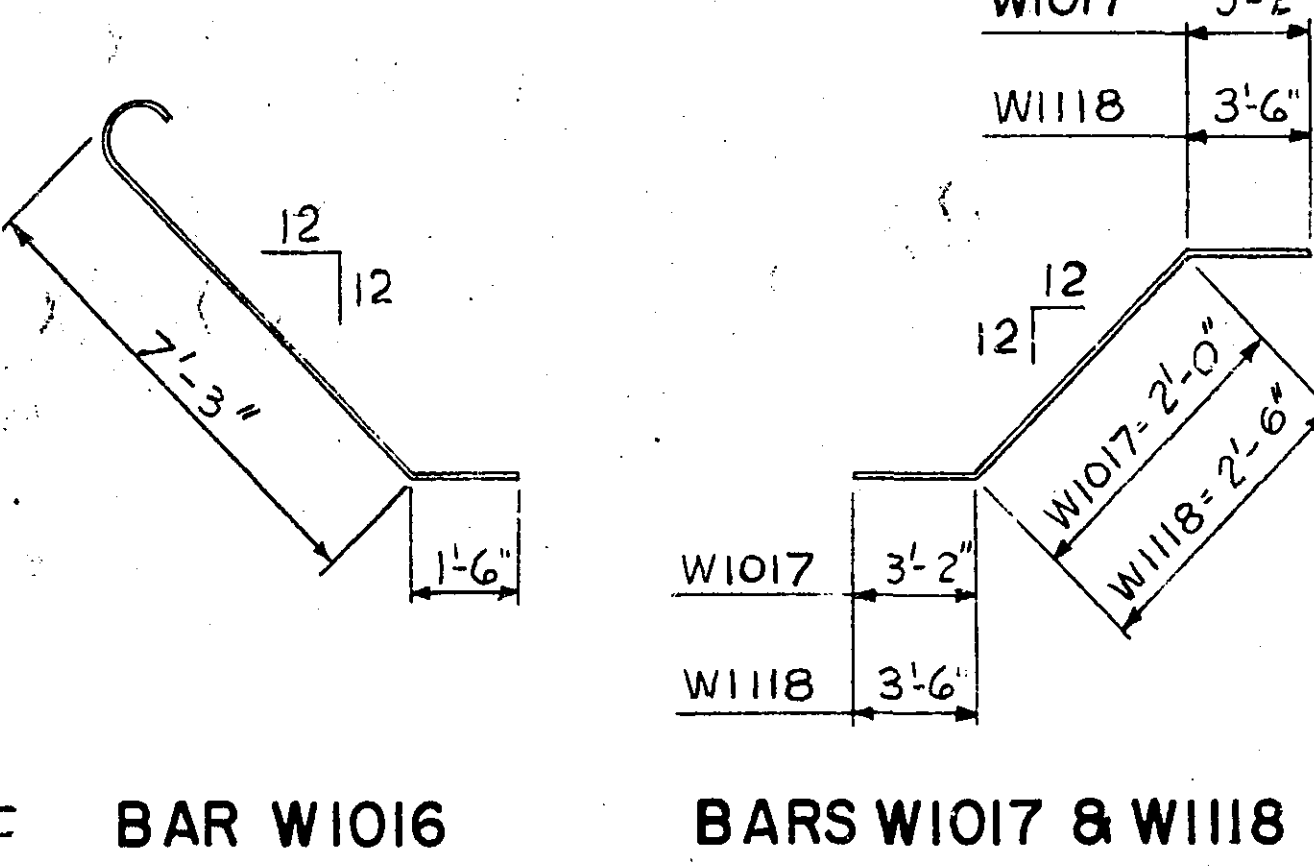
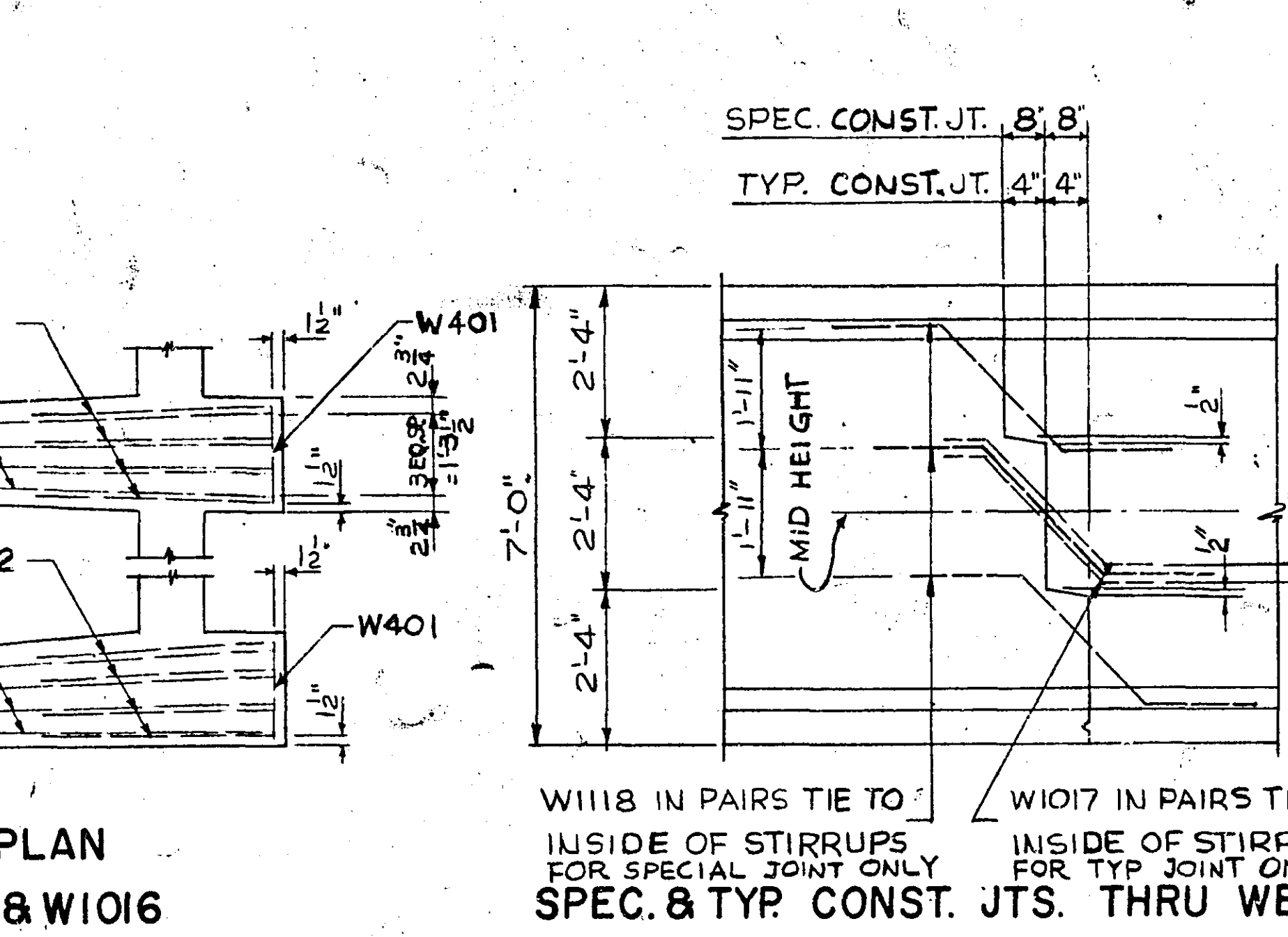
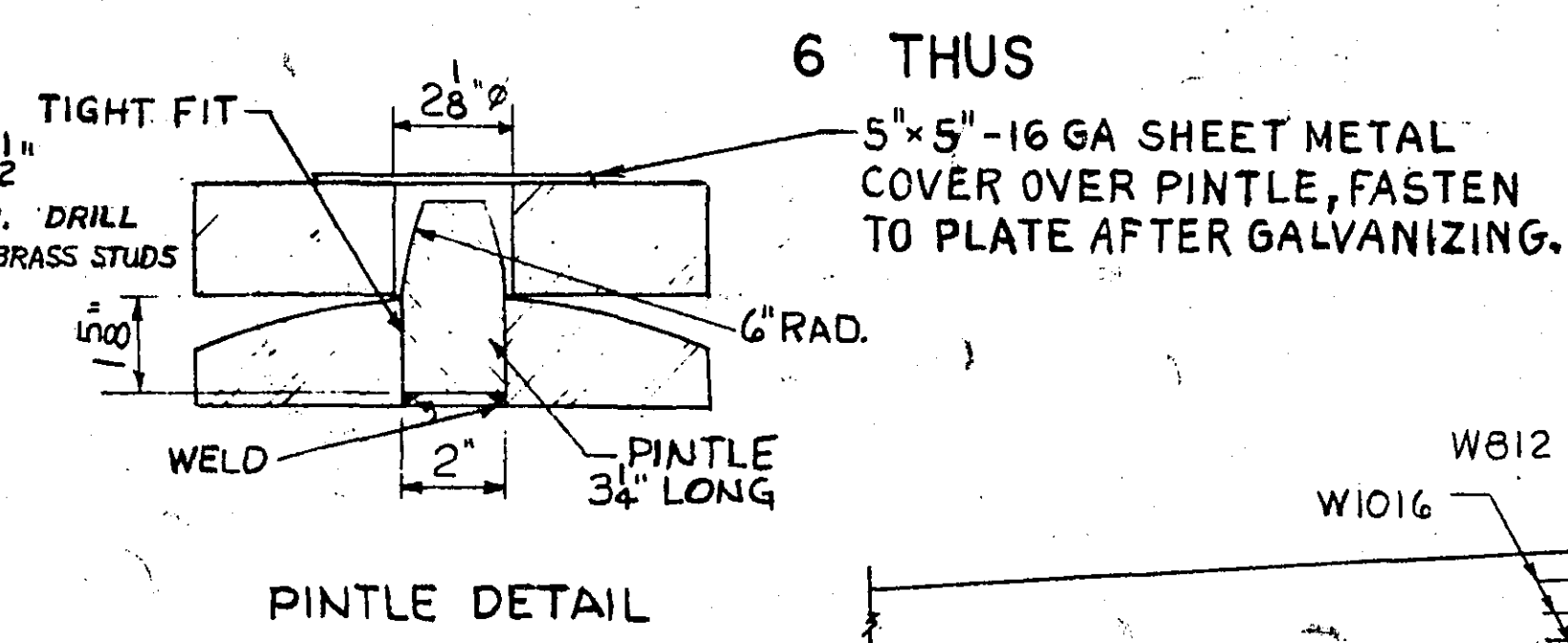
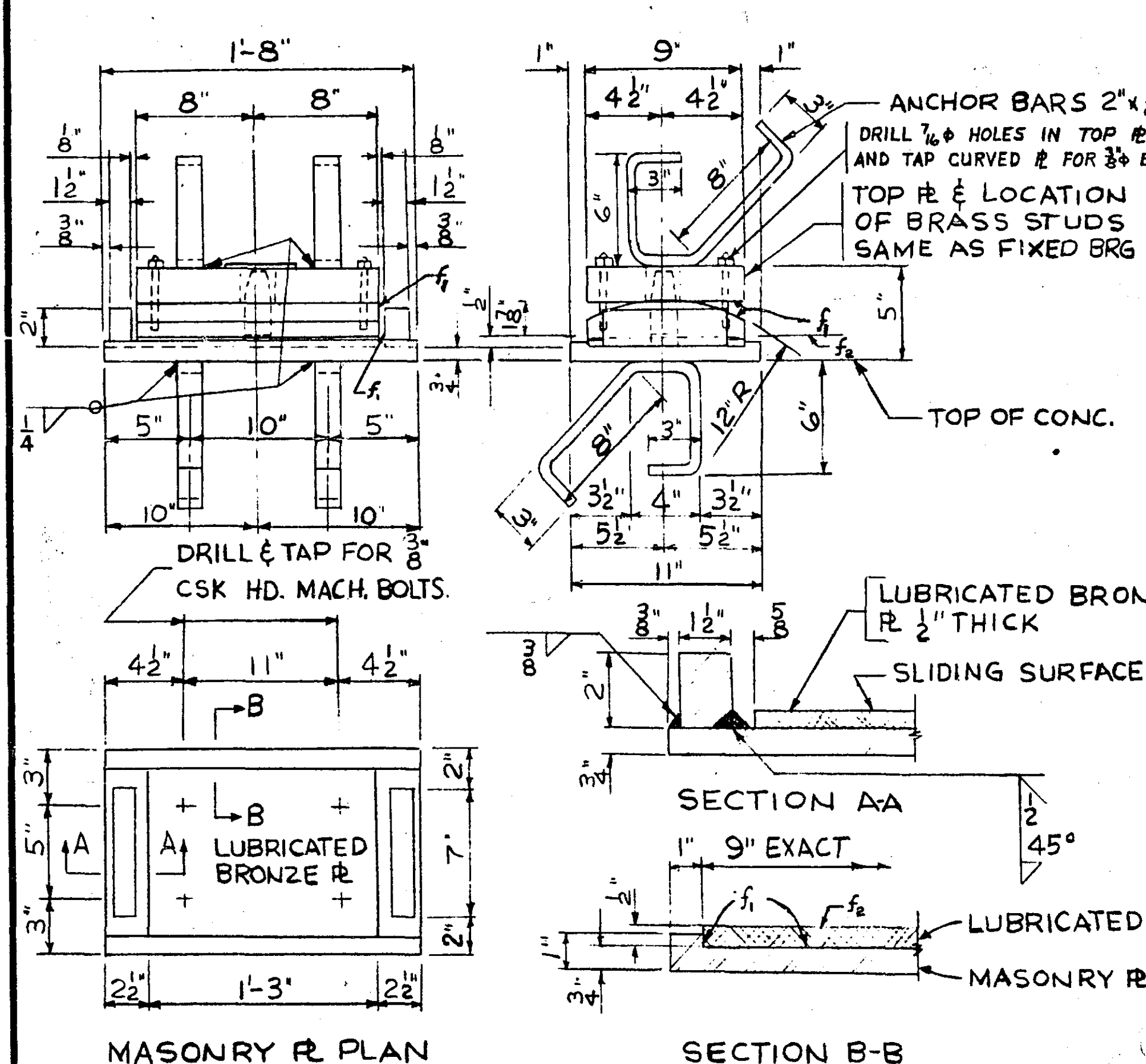


16" W511
12" W510
10" W509
7" W508
5" W507
4" W520
14" W521



BILL OF REINFORCEMENT FOR WEBS

MARK	GIRDER		SIZE	LENGTH	SHAPE
	A	B			
W401	12	12	4	1'-7"	STR.
W402	72		4	30'-4"	STR.
W403	24		4	34'-0"	STR.
W404	24		4	25'-9"	STR.
W405		24	4	35'-0"	STR.
W406		48	4	34'-6"	STR.
W507	1432	652	5	8'-11"	BENT
W508		12	5	9'-1"	BENT
W509		48	5	9'-4"	BENT
W510	108	48	5	9'-6"	BENT
W511	36	48	5	9'-10"	BENT
W812	24	24	8	13'-0"	BENT
W813	48		8	32'-6"	STR.
W814	12		8	27'-0"	STR.
W815		36	8	35'-6"	STR.
W1016	48	48	10	10'-2"	BENT
W1017	48	48	10	8'-4"	BENT
W1118	36		11	9'-6"	BENT
W519	8	8	5	4'-0"	STR.
W520	120		5	9'-3"	BENT
W521	72		5	9'-8"	BENT



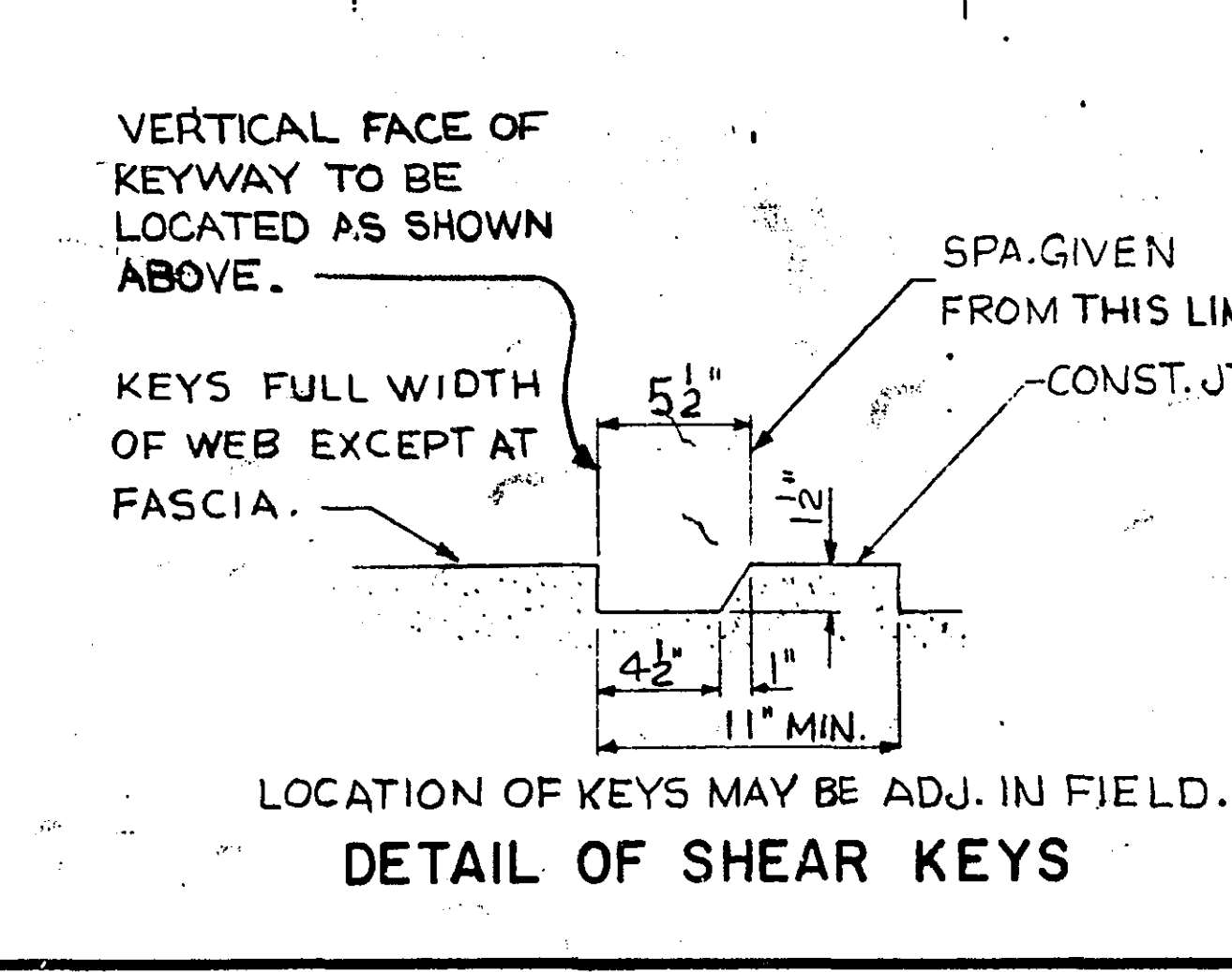
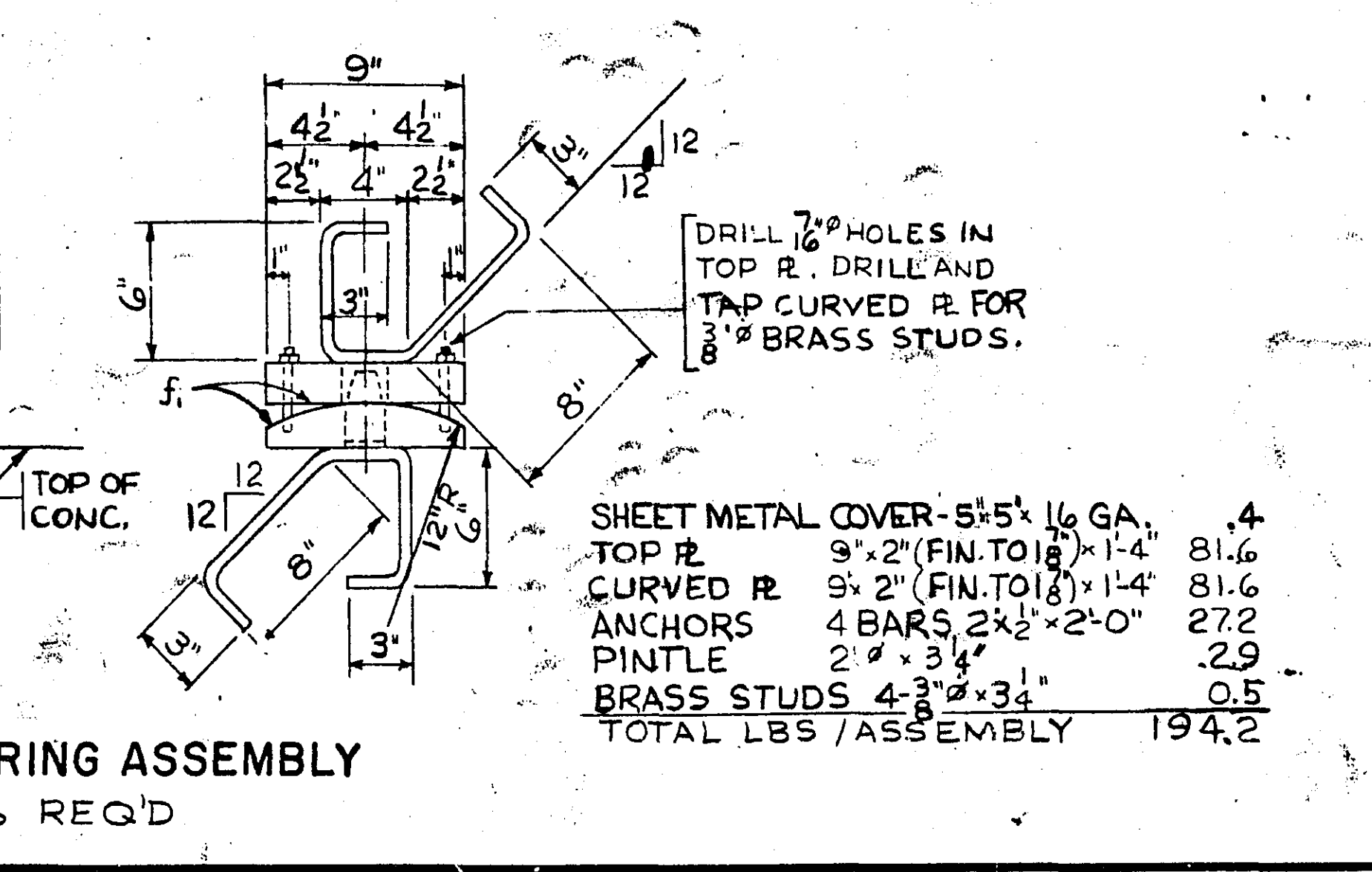
NOTE:
ALL DIMENSIONS ARE OUT TO OUT. USE STANDARD A.C.I. RADII FOR ALL BENDS EXCEPT AS NOTED.
HORIZONTAL DIMENSIONS SHOWN ON & RDVY. VARY KEY & STIRRUP SPACING TO COMPENSATE FOR CURVE ACCORDING TO LOCATION OF WEB. LENGTH OF LONGITUDINAL BARS ARE BASED ON SOUTH FACIA GIRDER PLUS MINIMUM LAP, INCREASE LAP PROPORTIONATELY WHEN WORKING OTHER GIRDERS.

EXPANSION BEARING ASSEMBLY (TYPE I) 12 REQ'D

BEARING NOTES:
STEEL FOR ANCHORS PER M.H.D. 3305.
STEEL FOR MASONRY PLATES AND KEEPER BARS PER M.H.D. 3309.
STEEL FOR TOP PLATES AND CURVED PLATES PER M.H.D. 3309.
STEEL FOR PINTLES PER M.H.D. 3314, TYPE II.
BRONZE TO BE ROLLED ALUMINUM BRONZE PLATE A.S.T.M. B148, ALLOY D, SOFT TEMPER, MILL FINISH, OR CAST ALUMINUM BRONZE A.S.T.M. B148, ALLOY 9C OR 9D, FOR LUBRICATION SEE M.H.D. 3329.
PLATE SHALL BE FLAT AFTER WELDING, GALVANIZE AFTER FABRICATION AND BEFORE BRONZE IS FITTED IN PLACE PER M.H.D. 3394, NO PAINT.
5. 250 MICRO FINISH.
5. 125 MICRO FINISH.
PAYMENT FOR BEARING ASSEMBLIES SHALL INCLUDE ALL MATERIAL SHOWN OR NOTED IN EXPANSION BEARING ASSEMBLY DETAIL OR FIXED BEARING ASSEMBLY DETAIL.

FIXED BEARING ASSEMBLY (TYPE I) 6 REQ'D

SHEET METAL COVER-5'5 1/2" GA. .4
TOP R 9'2" (FIN. TO 1/8") x 1'-4" 81.6
CURVED R 9'2" (FIN. TO 1/8") x 1'-4" 81.6
MASONRY R 11'1" x 1'-8" 62.3
LUB. BRONZE R 9'2" x 1'-3" 19.1
ANCHORS 4-BARS 2'1/2" x 2'-0" 27.2
PINTLE 2" x 3/4" LONG 2.9
KEEPERS 2-BARS 2'1/2" x 0'-7" 11.9
CSK. HD. MACH. BOLTS 4-3/8" 0.2
BRASS STUDS 4-3/8" x 3/4" 0.5
TOTAL LBS/ASSEMBLY 287.7



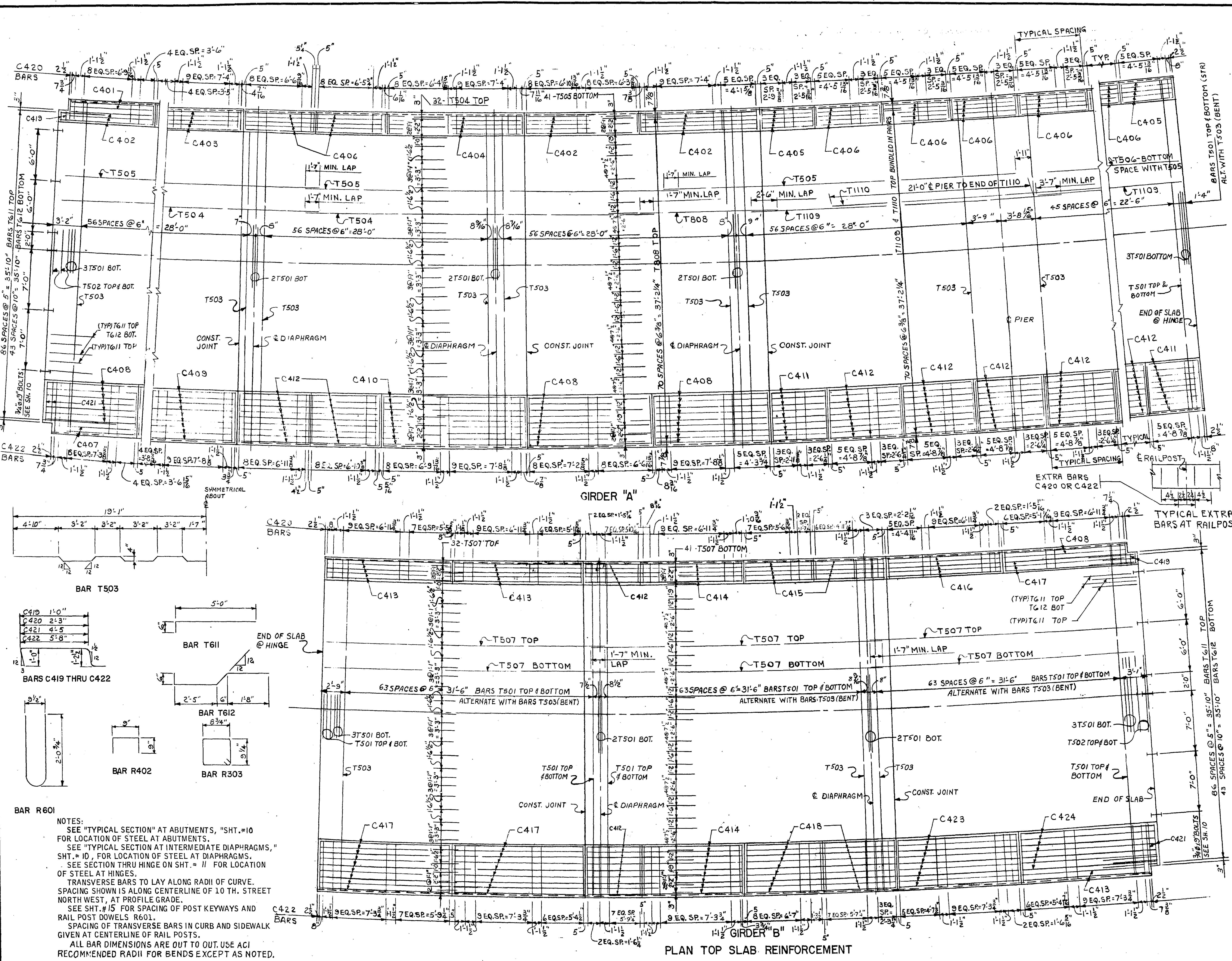
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9599

WEB REINFORCEMENT

APPROVED: 3-11-63

MICROFILMED
RAMSEY CO. ENGR.



TOP SLAB REINFORCEMENT						
MARK	GIRDERS		SIZE	LENGTH	SHAPE	LOCATION
	A	B				
T501	282	208	5	38'-2"	STR	TRANSVERSE
T502	4	4	5	36'-0"	STR	TRANSVERSE
T503	139	96	5	39'-5"	BENT	TRANSVERSE
T504	64	5	5	42'-8"	STR	LONGITUDINAL
T505	123	5	5	42'-4"	STR.	LONGITUDINAL
T506	41	5	5	26'-4"	STR.	LONGITUDINAL
T507	219	5	5	36'-3"	STR.	LONGITUDINAL
T508	71	8	8	16'-4"	STR.	LONGITUDINAL
T509	142	11	11	30'-6"	STR.	LONGITUDINAL
T510	71	11	11	36'-6"	STR.	LONGITUDINAL
T611	87	87	6	5'-6"	BENT	LONG-SLAB ENDS
T612	44	44	6	5'-4"	BENT	LONG-SLAB ENDS

CURB REINFORCEMENT						
MARK	GIRDER		SIZE	LENGTH	SHAPE	LOCATION
	A	B				
C401	2		4	13'-3"	STR.	LONGITUDINAL
C402	13		4	14'-5"	STR.	LONGITUDINAL
C403	5		4	13'-5"	STR.	LONGITUDINAL
C404	5		4	16'-9"	STR.	LONGITUDINAL
C405	10		4	6'-5"	STR.	LONGITUDINAL
C406	35		4	8'-1"	STR.	LONGITUDINAL
C407	2		4	13'-10"	STR.	LONGITUDINAL
C408	25		4	15'-0"	STR.	LONGITUDINAL
C409	9		4	14'-0"	TR.	LONGITUDINAL
C410	9		4	17'-5"	STR.	LONGITUDINAL
C411	18		4	6'-8"	STR.	LONGITUDINAL
C412	77		4	8'-6"	STR.	LONGITUDINAL
C413		12	4	15'-7"	STR.	LONGITUDINAL
C414		14	4	11'-1"	STR.	LONGITUDINAL
C415		10	4	8'-4"	STR.	LONGITUDINAL
C416		5	4	15'-2"	STR.	LONGITUDINAL
C417		21	4	16'-2"	STR.	LONGITUDINAL
C418		18	4	9'-2"	STR.	LONGITUDINAL
C419	2	2	4	3'-9"	BENT	TRANSVERSE
C420	214	150	4	5'-0"	BENT	TRANSVERSE
C421	2	2	4	7'-2"	BENT	TRANSVERSE
C422	214	151	4	8'-5"	BENT	TRANSVERSE
C423		9	4	15'-10"	STR.	LONGITUDINAL
C424		7	4	16'-10"	STR.	LONGITUDINAL

RAILING REINFORCEMENT						
MARK	GIRDER		SIZE	LENGTH	SHAPE	LOCATION
	A	B				
R601	180	130	6	4'-6"	BENT	RAIL POST VERT.
R402	180	130	4	2'-3"	BENT	RAIL POST VERT.
R303	324	230	3	3'-8"	BENT	RAIL TIE
R704	4	8	7	13'-3"	STR.	RAIL LONG.
R705	12	12	7	16'-8"	STR.	RAIL LONG.
R706	4		7	16'-11"	STR.	RAIL LONG.
R707	4		7	25'-5"	STR.	RAIL LONG.
R708	4	4	7	25'-1"	STR.	RAIL LONG.
R709	4	8	7	13'-0"	STR.	RAIL LONG.
R710	4		7	13'-11"	STR.	RAIL LONG.
R711	12		7	17'-4"	STR.	RAIL LONG.
R712	4		7	17'-7"	STR.	RAIL LONG.
R713	4		7	26'-5"	STR.	RAIL LONG.
R714	4		7	26'-1"	STR.	RAIL LONG.
R715	4		7	14'-4"	STR.	RAIL LONG.
R716		12	7	16'-0"	STR.	RAIL LONG.
R717		4	7	24'-1"	STR.	RAIL LONG.

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9599

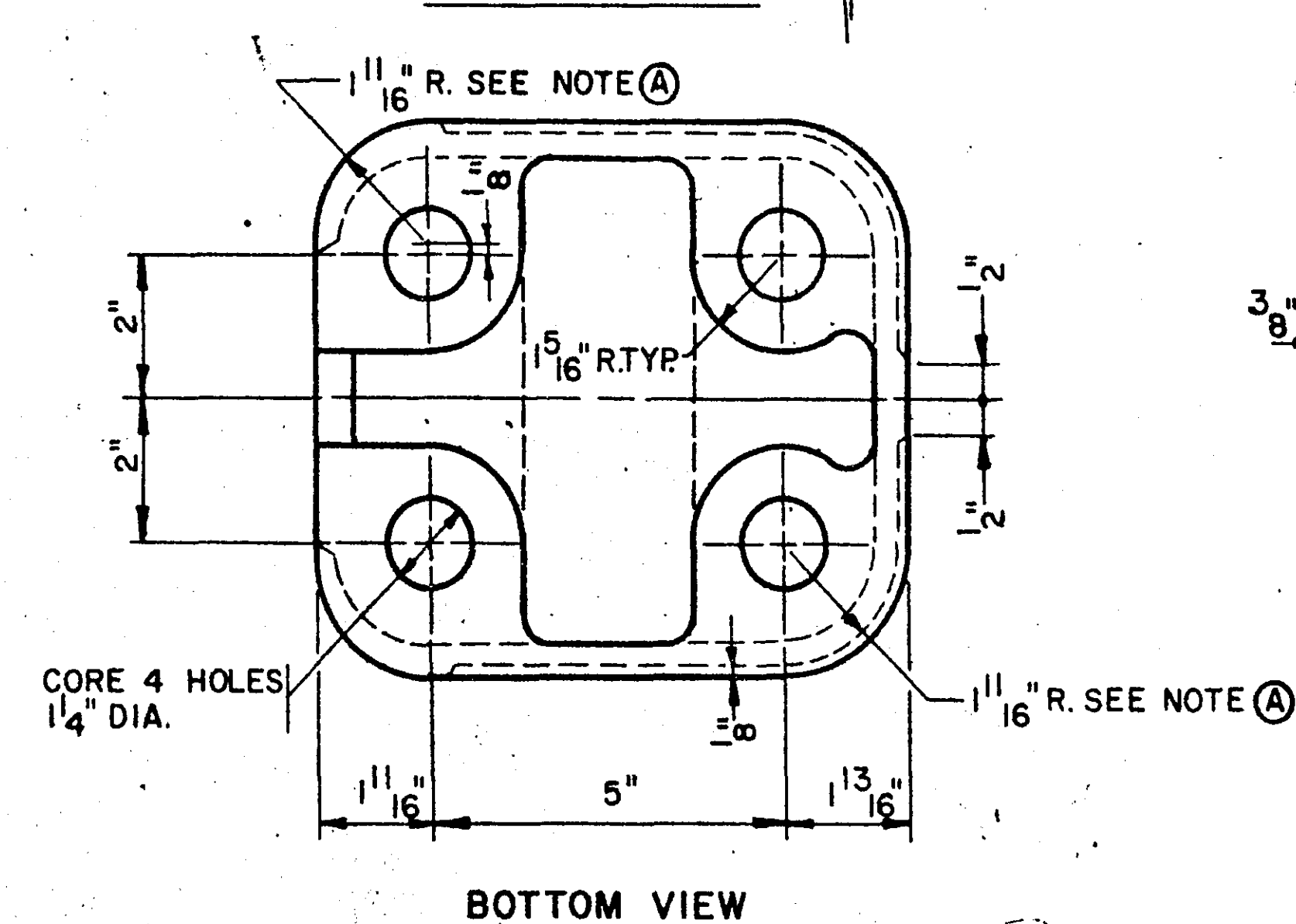
TOP SLAB REINFORCEMENT

APPROVED: 3-11-63 MICROFILMED
RAINEY CO. ENGR.

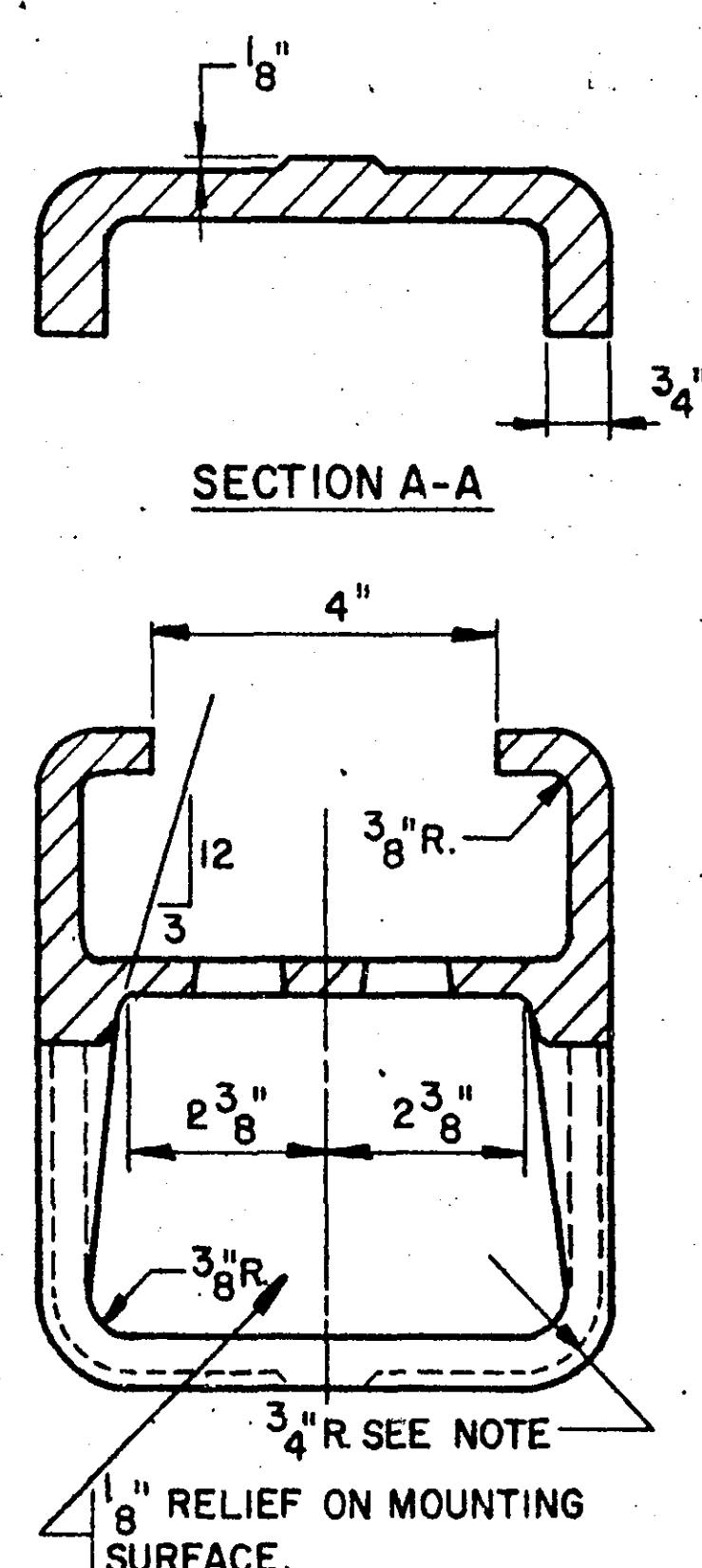
SHEET NO. 14 OF 20 SHEETS 9599

NOTES:
SEE "TYPICAL SECTION" AT ABUTMENTS, "SHT. #10 FOR LOCATION OF STEEL AT ABUTMENTS."
SEE "TYPICAL SECTION AT INTERMEDIATE DIAPHRAGMS," SHT. #10, FOR LOCATION OF STEEL AT DIAPHRAGMS.
SEE SECTION THRU HINGE ON SHT. #11 FOR LOCATION OF STEEL AT HINGES.
TRANSVERSE BARS TO LAY ALONG RADII OF CURVE.
SPACING SHOWN IS ALONG CENTERLINE OF 10 TH. STREET NORTH WEST, AT PROFILE GRADE.
SEE SHT. #15 FOR SPACING OF POST KEYWAYS AND RAIL POST DOWELS R601.
SPACING OF TRANSVERSE BARS IN CURB AND SIDEWALK GIVEN AT CENTERLINE OF RAIL POSTS.
ALL BAR DIMENSIONS ARE OUT TO OUT. USE ACI RECOMMENDED RADII FOR BENDS EXCEPT AS NOTED.

PLAN TOP SLAB REINFORCEMENT



SECTION A-A

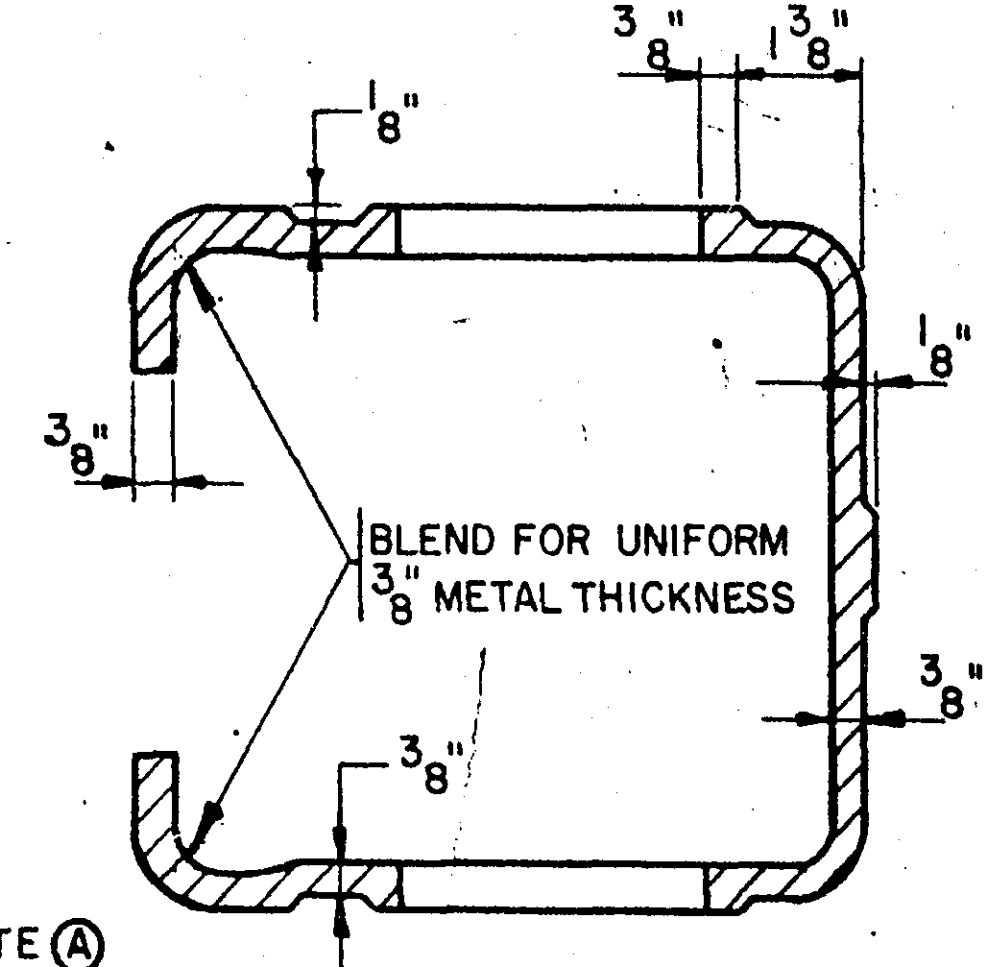


SECTION B-B

LOWER RAIL SIMILAR

NOTE: (A)
RADI ON FRONT AND
REAR EDGES. TAPER
AND BLEND FROM 3/4
AT THE TOP TO 1/16
AT THE BASE.

SECTION C-C

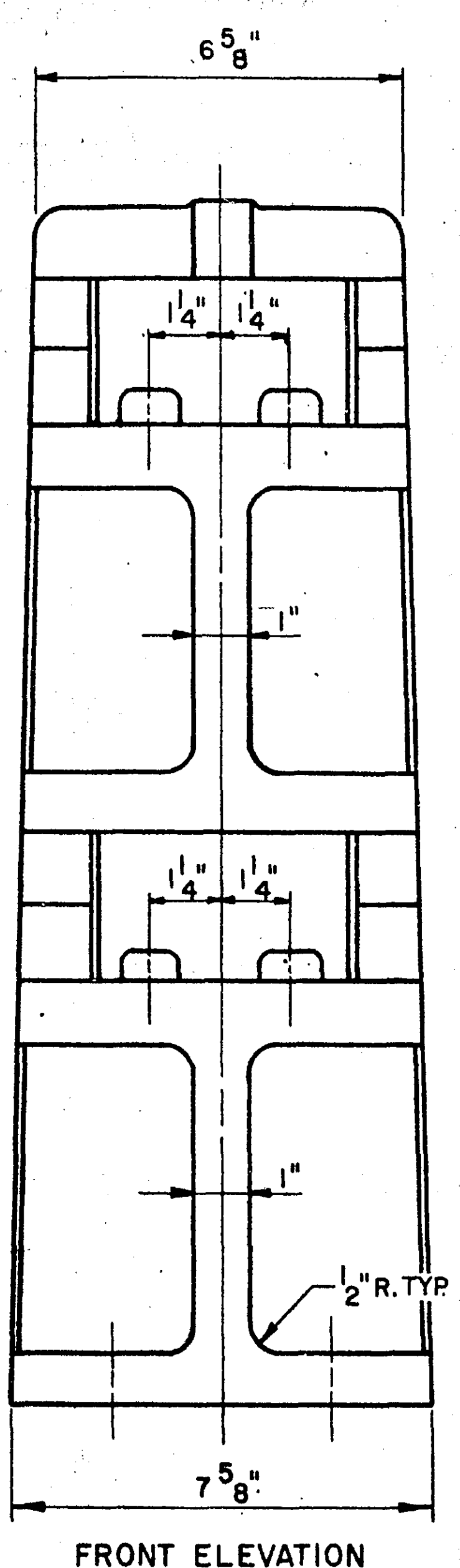


MATERIAL FOR CASTING:

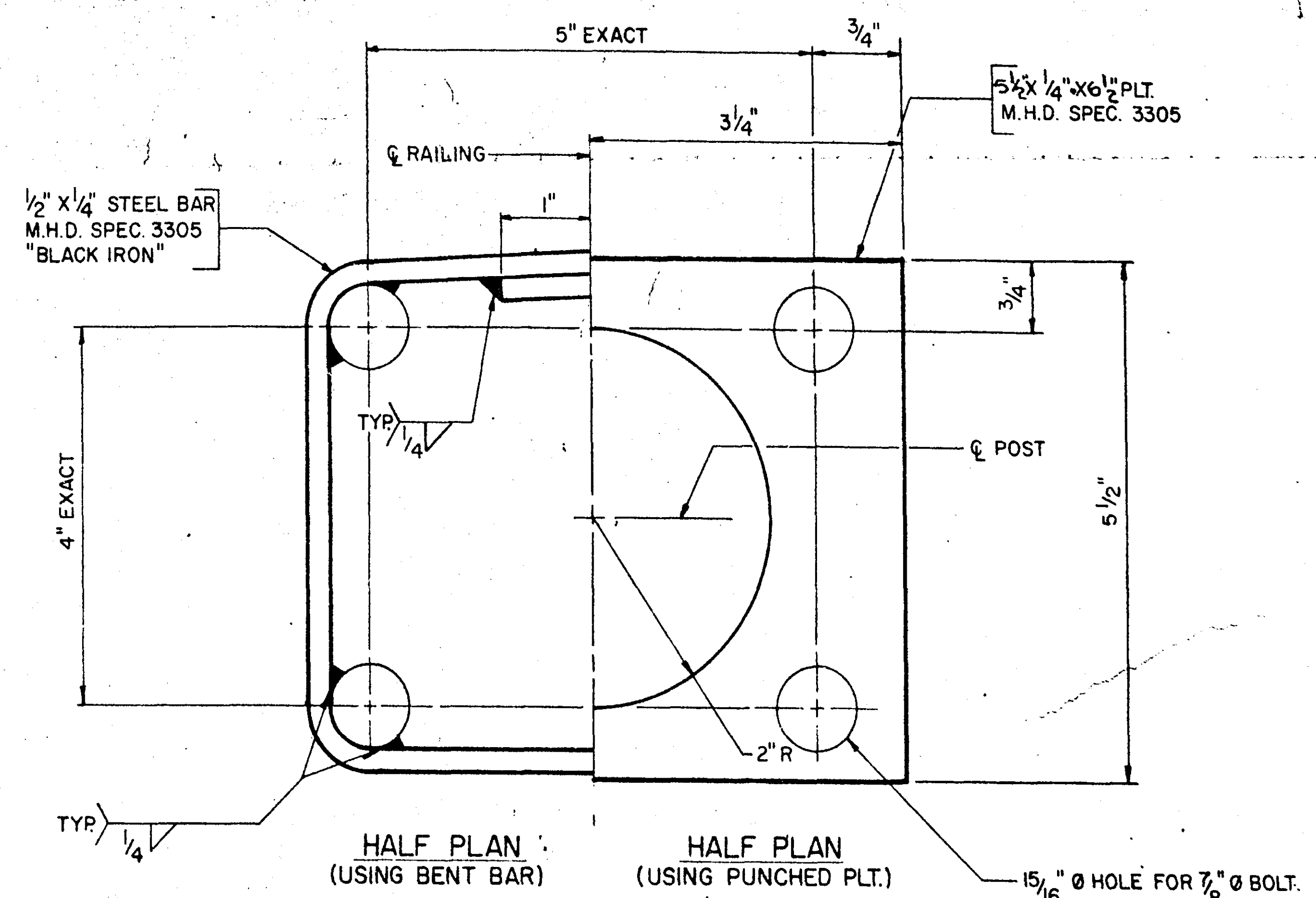
MALLEABLE IRON M.H.D. 3324 GRADE NO.35018,AS MODIFIED.
GALVANIZE PER M.H.D. 3394.

WORKMANSHIP;
M.H.D. 2471.

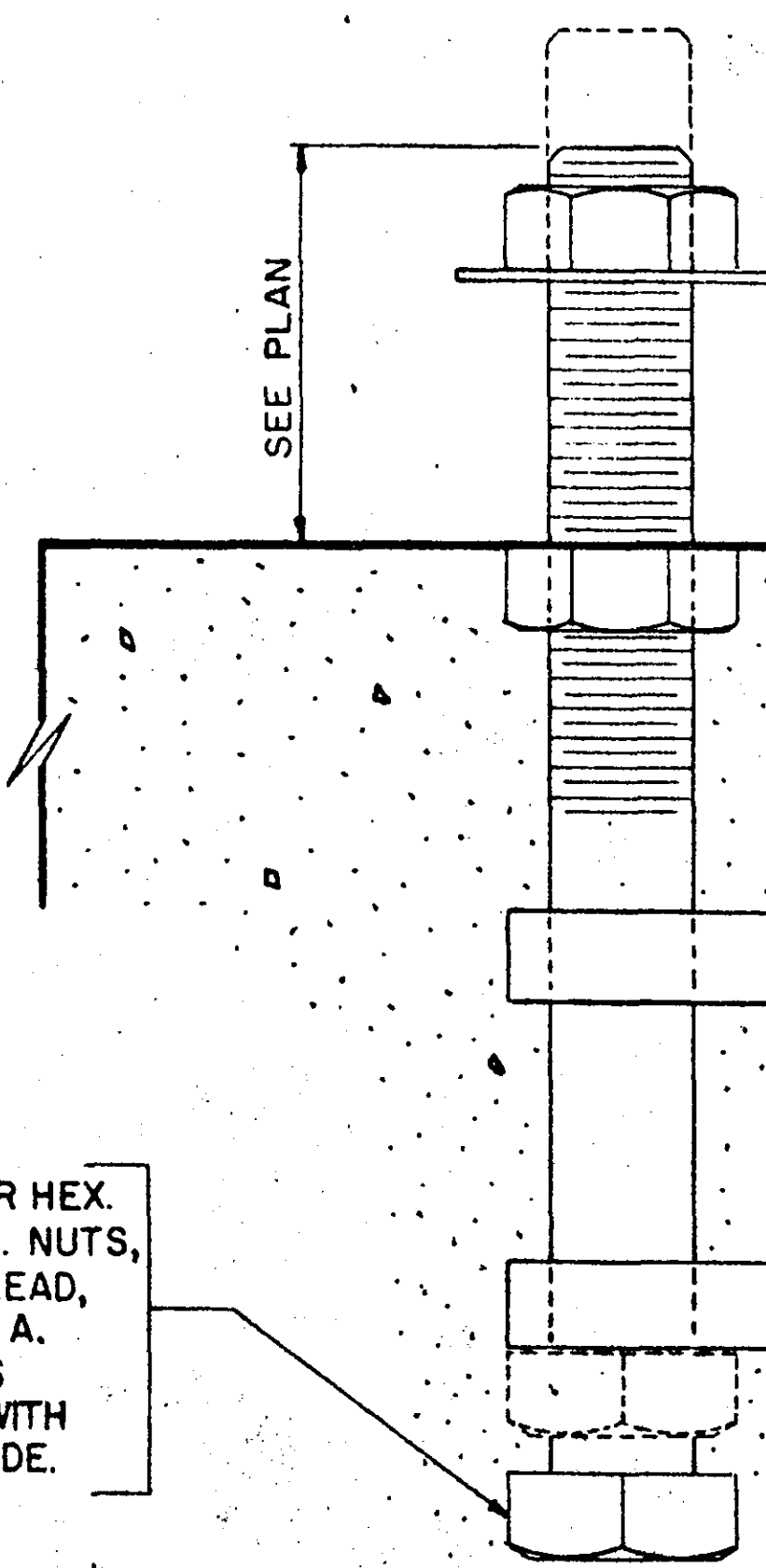
ALL FILLETS TO BE $\frac{1}{4}$ " UNLESS OTHERWISE NOTED.



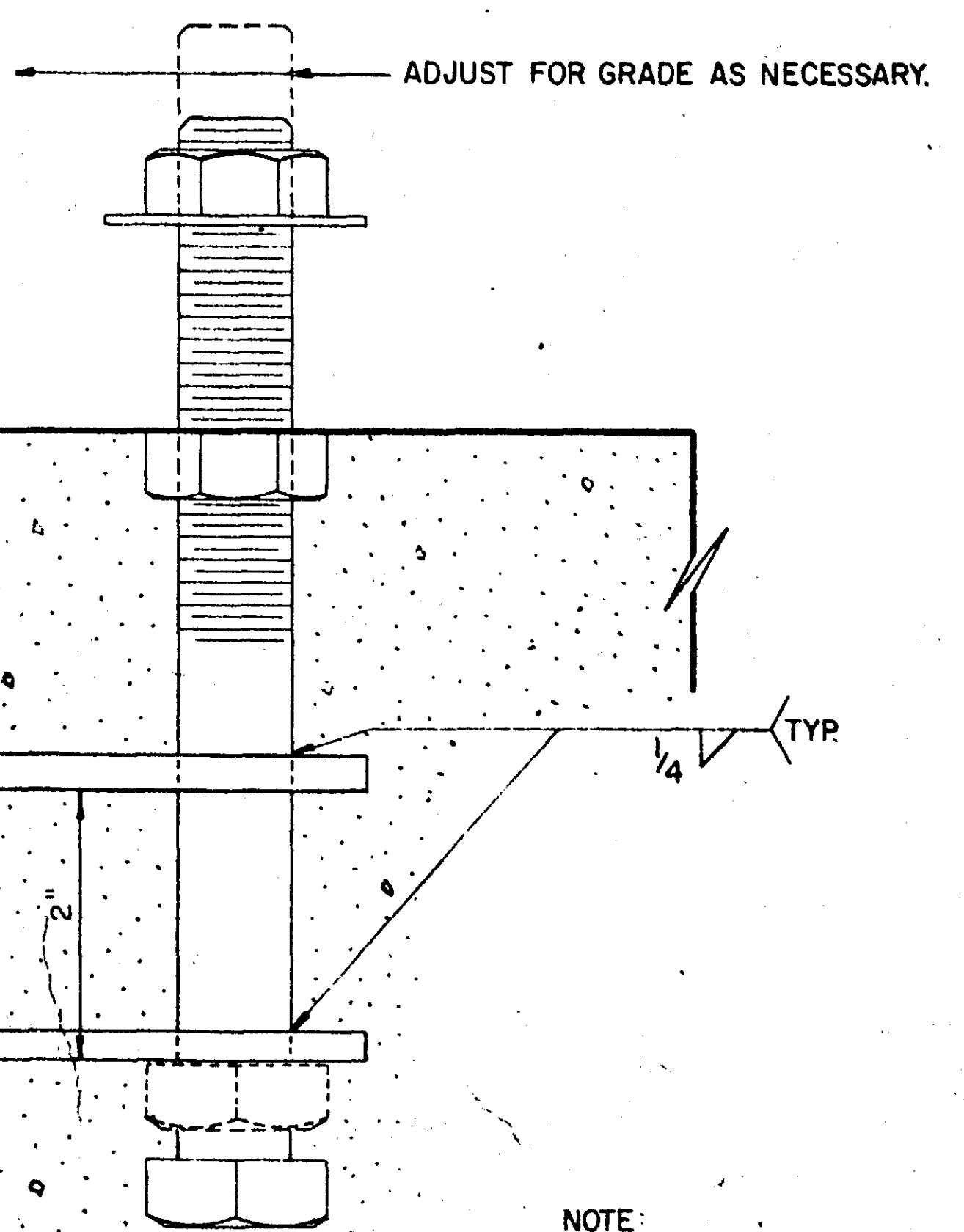
7/8" DIA. X 8" BOLT, SQ. OR HEX.
HEAD, TWO HEAVY HEX. NUTS,
CUT WASHER, 3 3/4" THREAD,
M.H.D. SPEC. 3391, TYPE A.
GALV. BOLTS AND NUTS
PER M.H.D. 3392. PLACE WITH
BOLTS NORMAL TO GRADE.



HALF ELEVATION
(USING BENT BAR)



HALF ELEVATION
(USING PUNCHED PLT.)



NOTE:
EITHER BENT BARS OR PUNCHED
PLATES MAY BE USED AS SPACERS.

APPROVED 8-28 1961

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
MALLEABLE IRON RAIL POST
TYPE-BRP-58-5
FOR 2-LINE RAIL

REVISIONS
4/30/59 - A
10/1/59 - B
7/10/61 - C

DETAIL NO.
B 32 C

APPROVED _____ 1960

BRIDGE ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

ANCHOR BOLT ASSEMBLY (FOR STEEL AND FLAT TUBE RAILING)

REVISIONS
5/26/61 - A
12/19/61 - B
11/9/62 - C

DETAIL NO
BIIOC

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 9599

DETAILS

**MICROFILMED
RAMSEY CO. ENGR.**

APPROVED: 3-11-63

SHEET 16 OF 20 SHEETS

9599

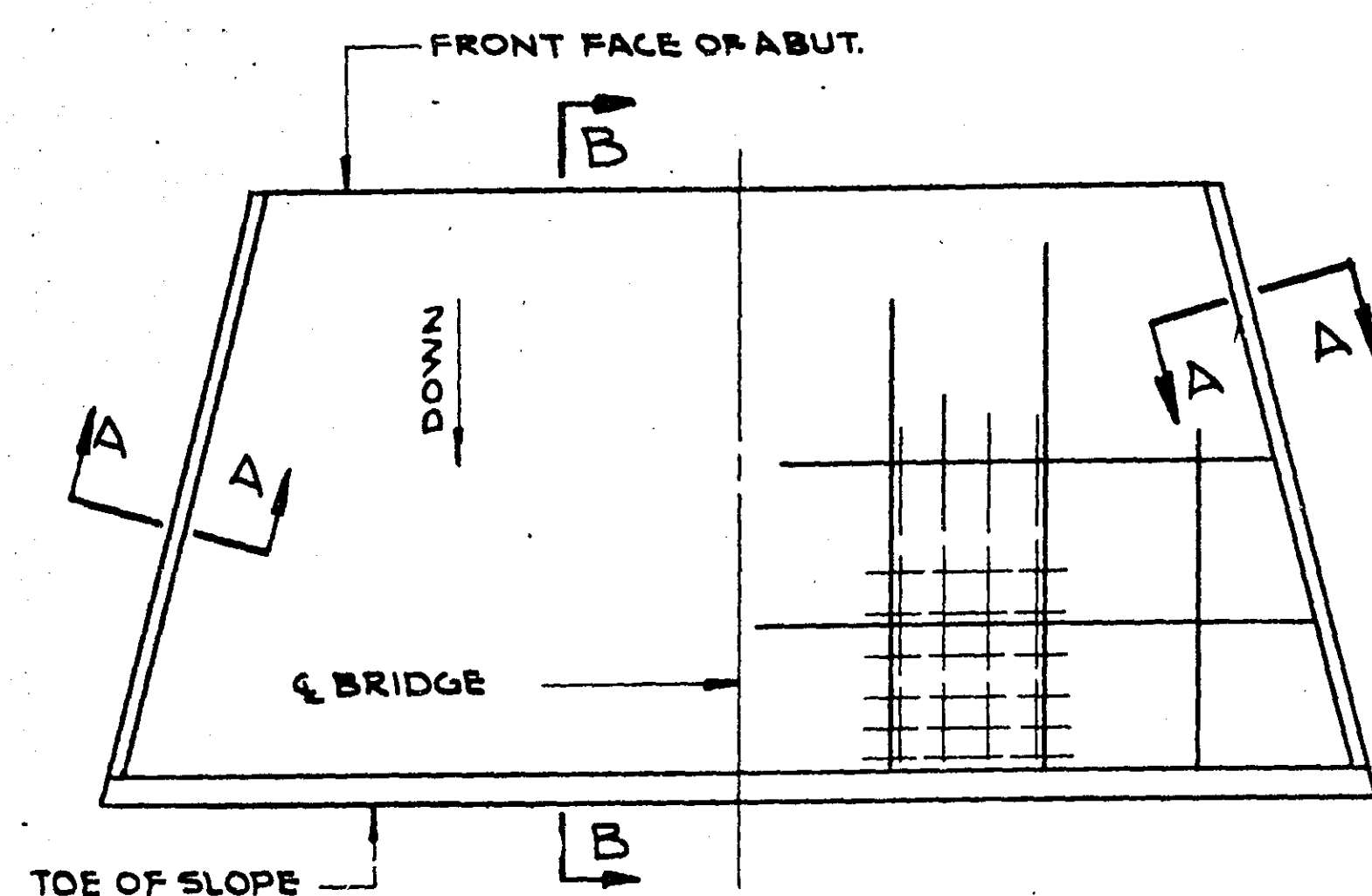
15-140

SLOPE PAVING CLASS B

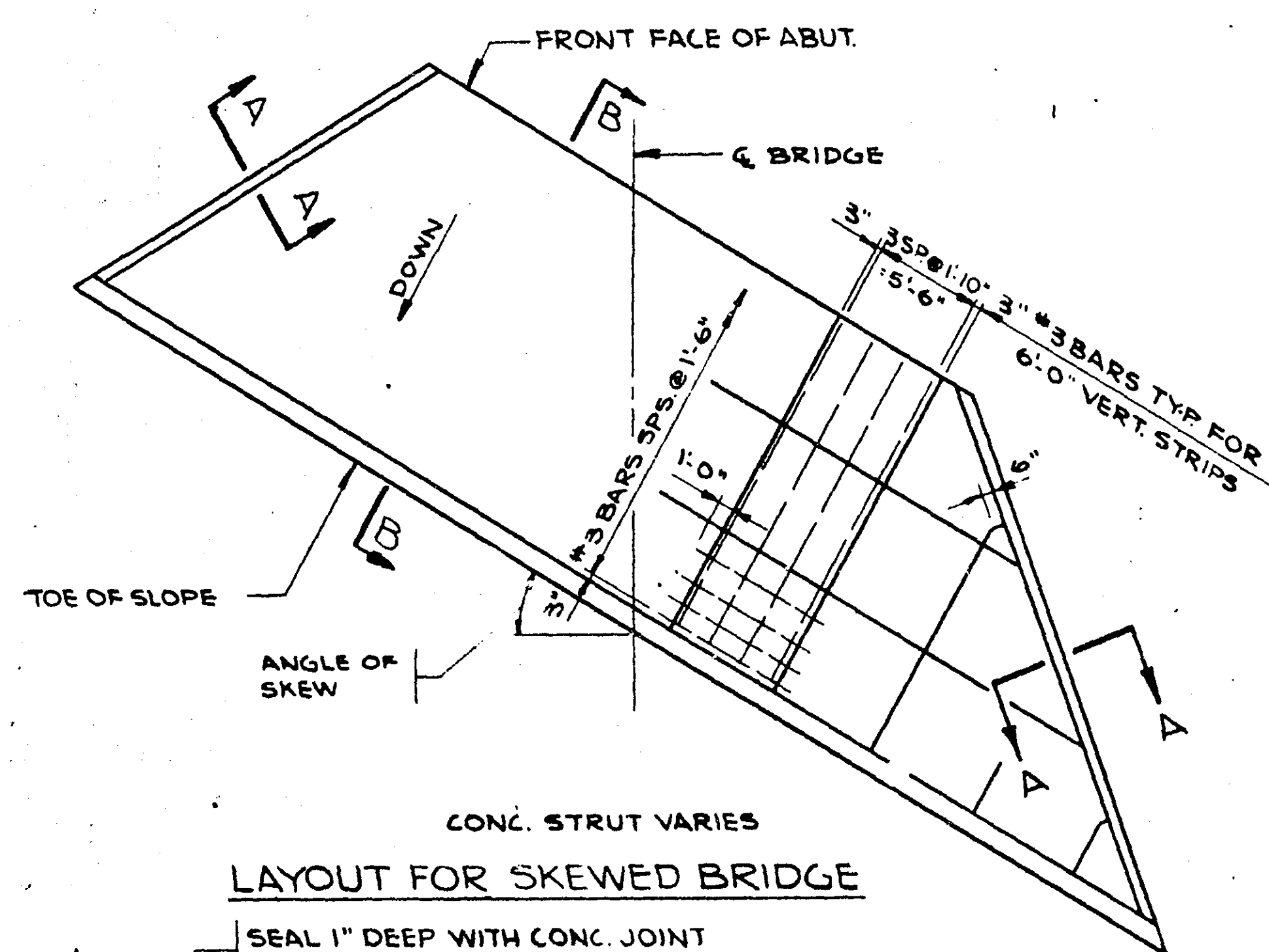
Construction Notes

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

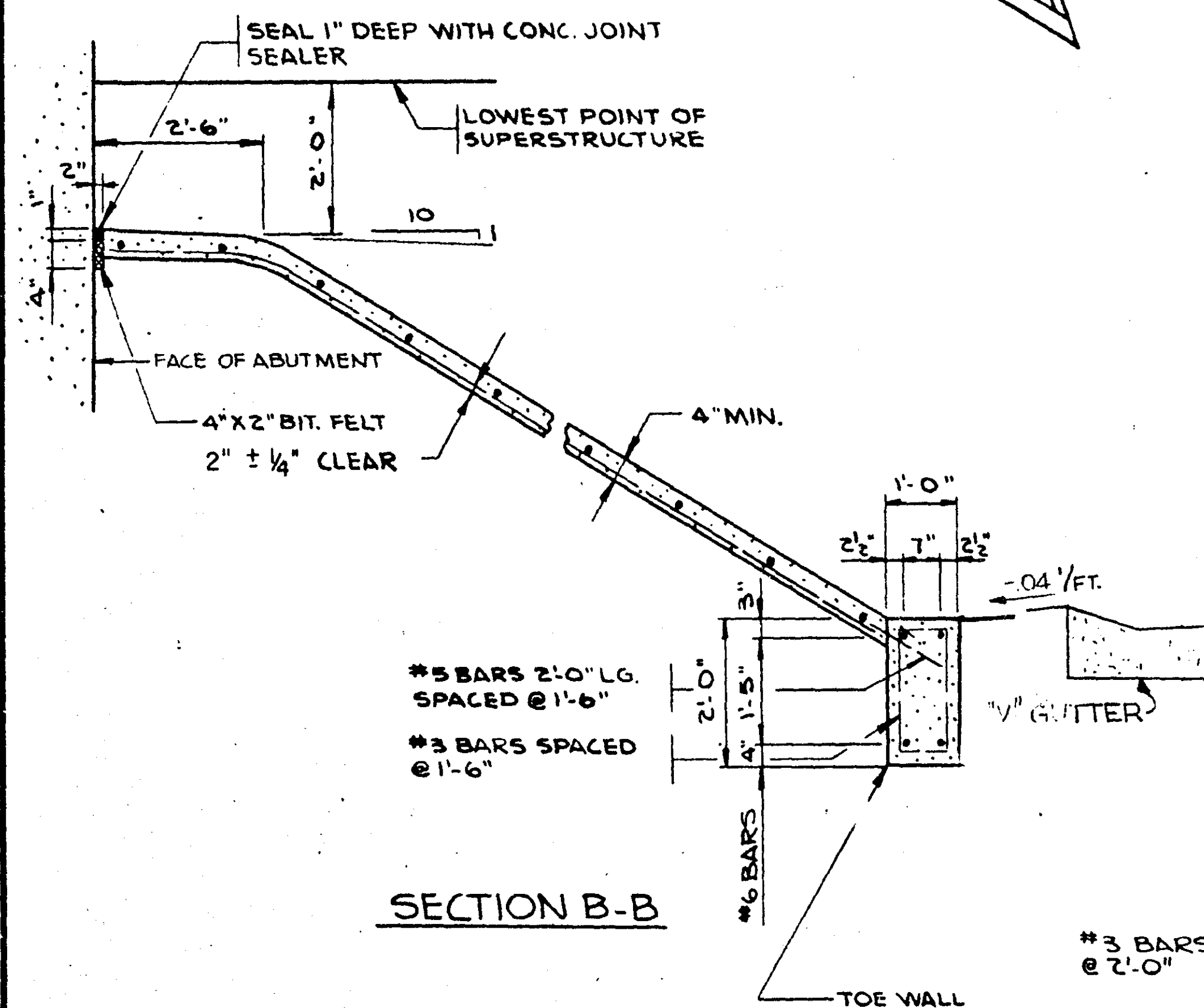
- The concrete shall be any mix of Type 3, Grade A or stronger as provided in M.H.D. 2461.
- Metal reinforcement shall conform to MHD 3301. Lap 30 diameters at splices.
- The slopes shall conform to the section shown on the General Plan and Elevation sheet in these Plans, except as otherwise provided 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 B-B) 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.
- 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 2401.3G2, except Earth Cover.
- Method of Measurement.
Slope paving will be measured by area of the top surface bounded by the outside edges of the toe and side walls and the front face of the abutment, unless otherwise shown and noted in the plans.
- Basis of Payment.
Payment for slope paving at the contract price per square yard shall be construed to include compensation for all labor, equipment, and material required for the satisfactory completion of this work.



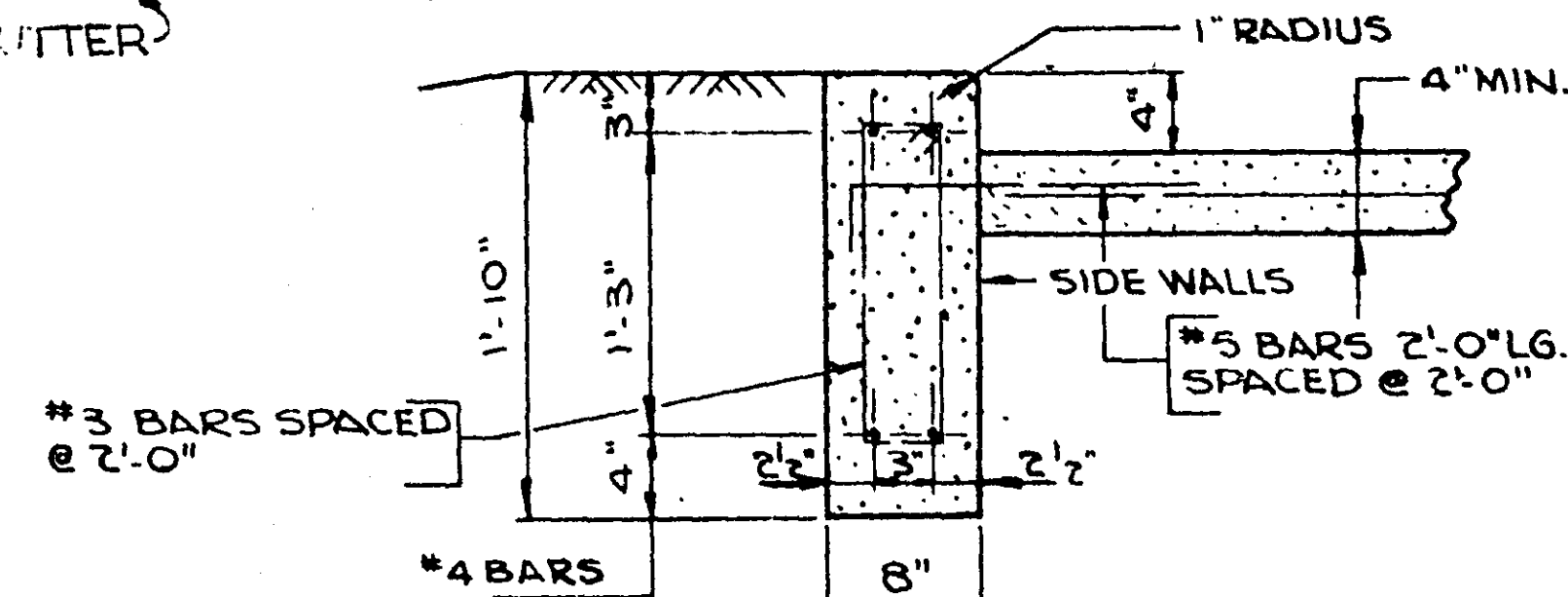
LAYOUT FOR SQUARE BRIDGE



LAYOUT FOR SKEWED BRIDGE



SECTION B-B



SECTION A-A

APPROVED 9-22-1961

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

SLOPE PAVING UNDER BRIDGE
CLASS B

(CAST-IN-PLACE CONCRETE SLAB-FLARED SIDES)

REVISIONS
1/11/62
12/20/62

DETAIL NO.

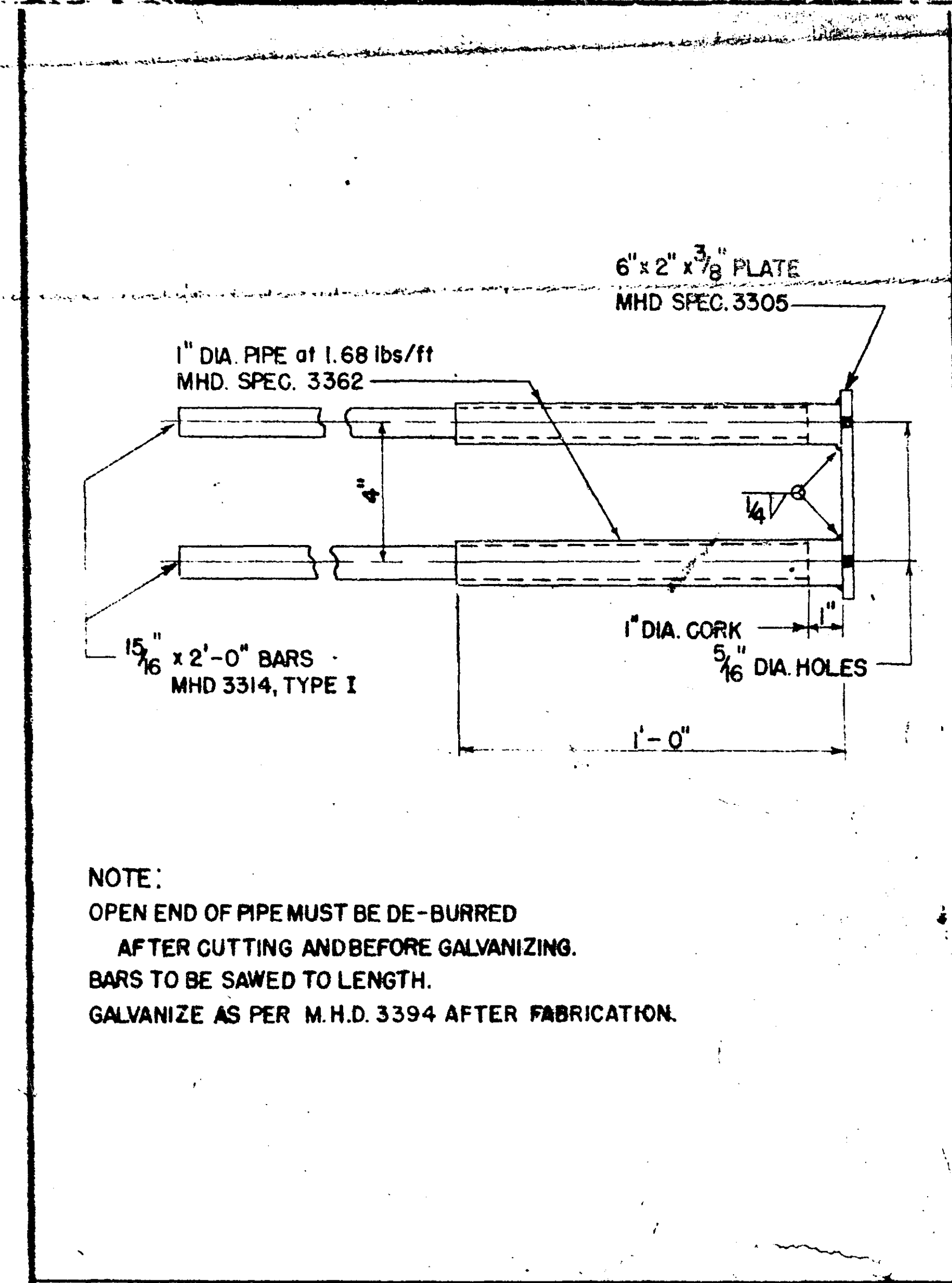
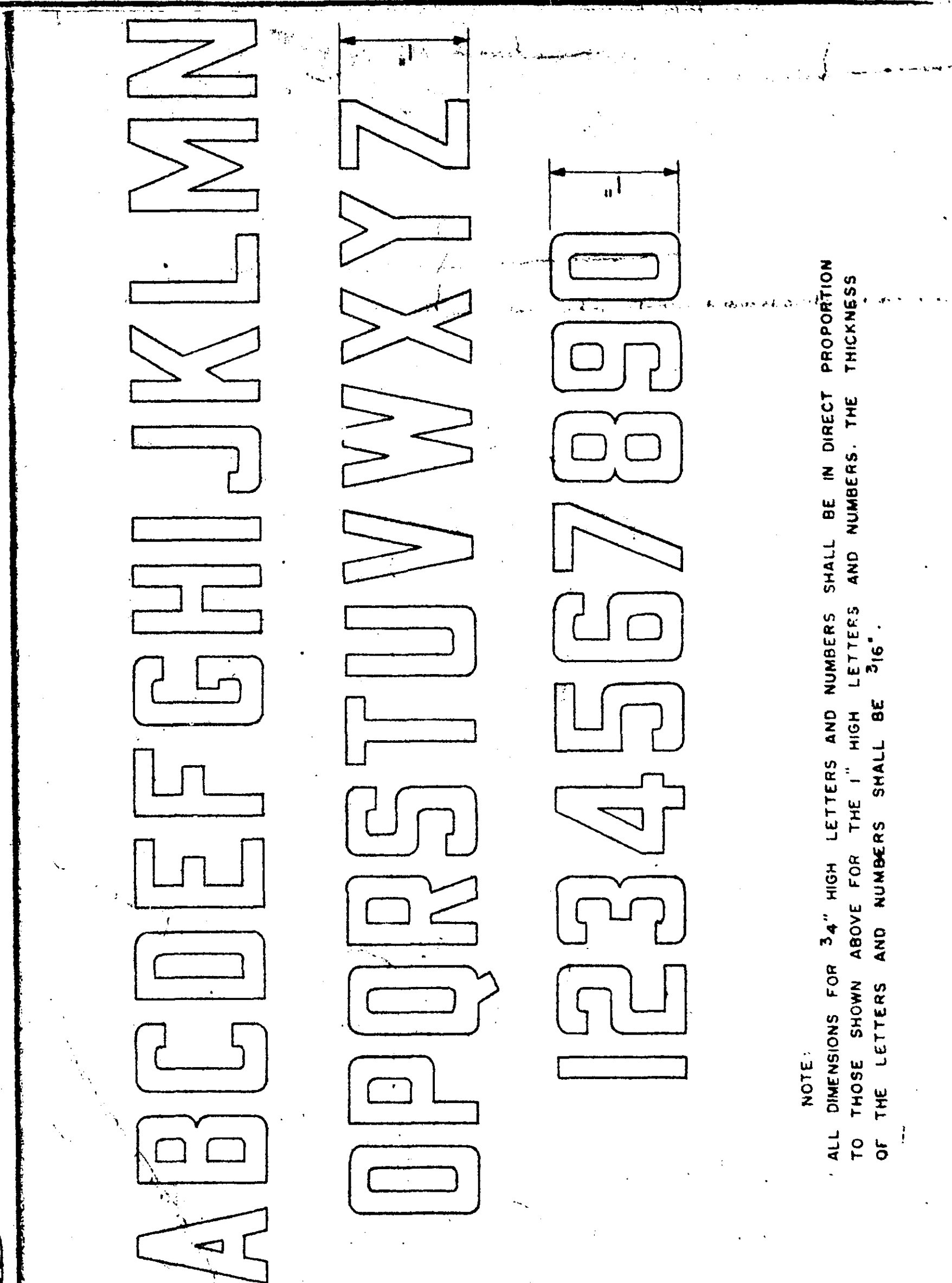
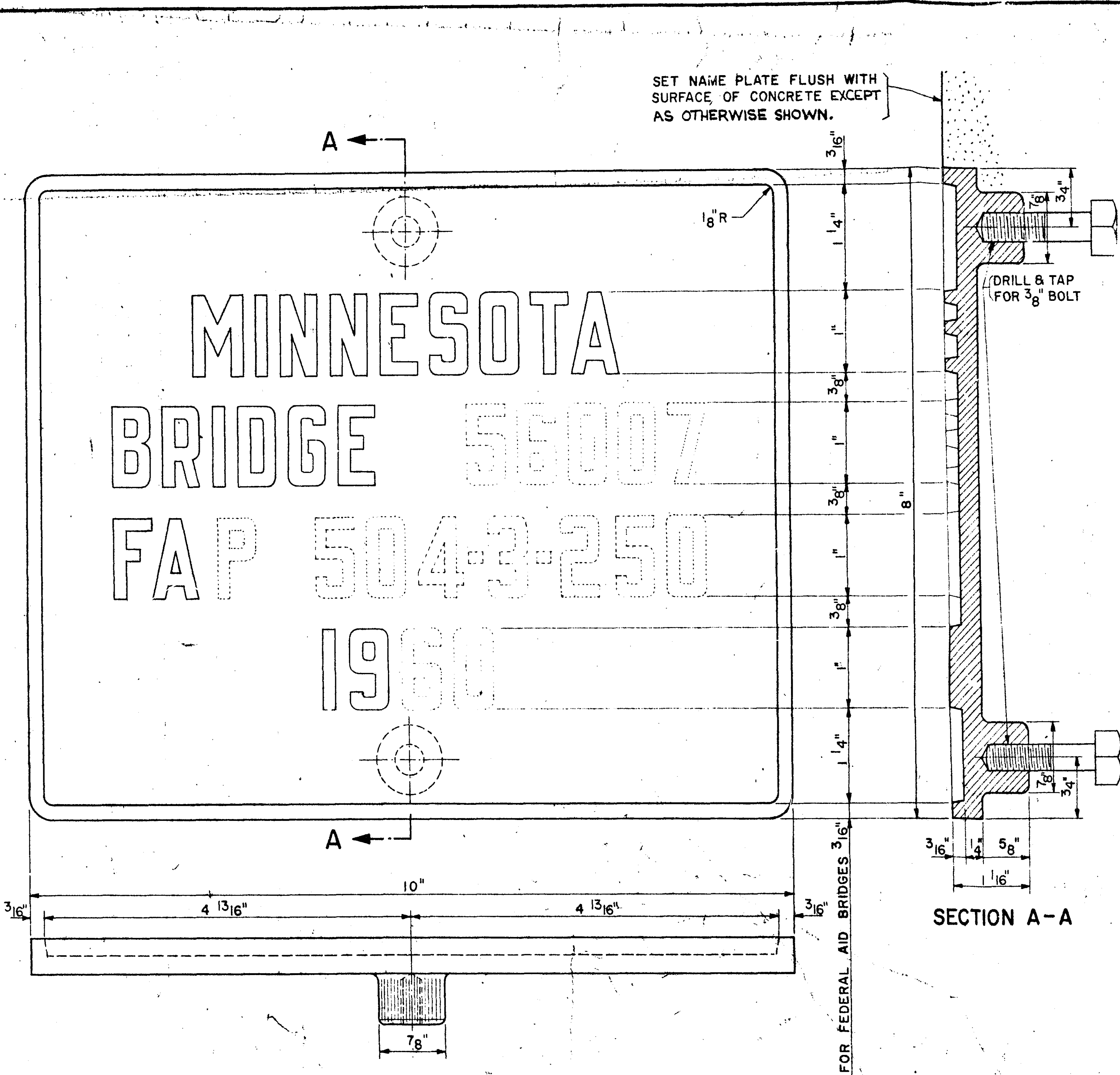
B253

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO 9599

DETAILS

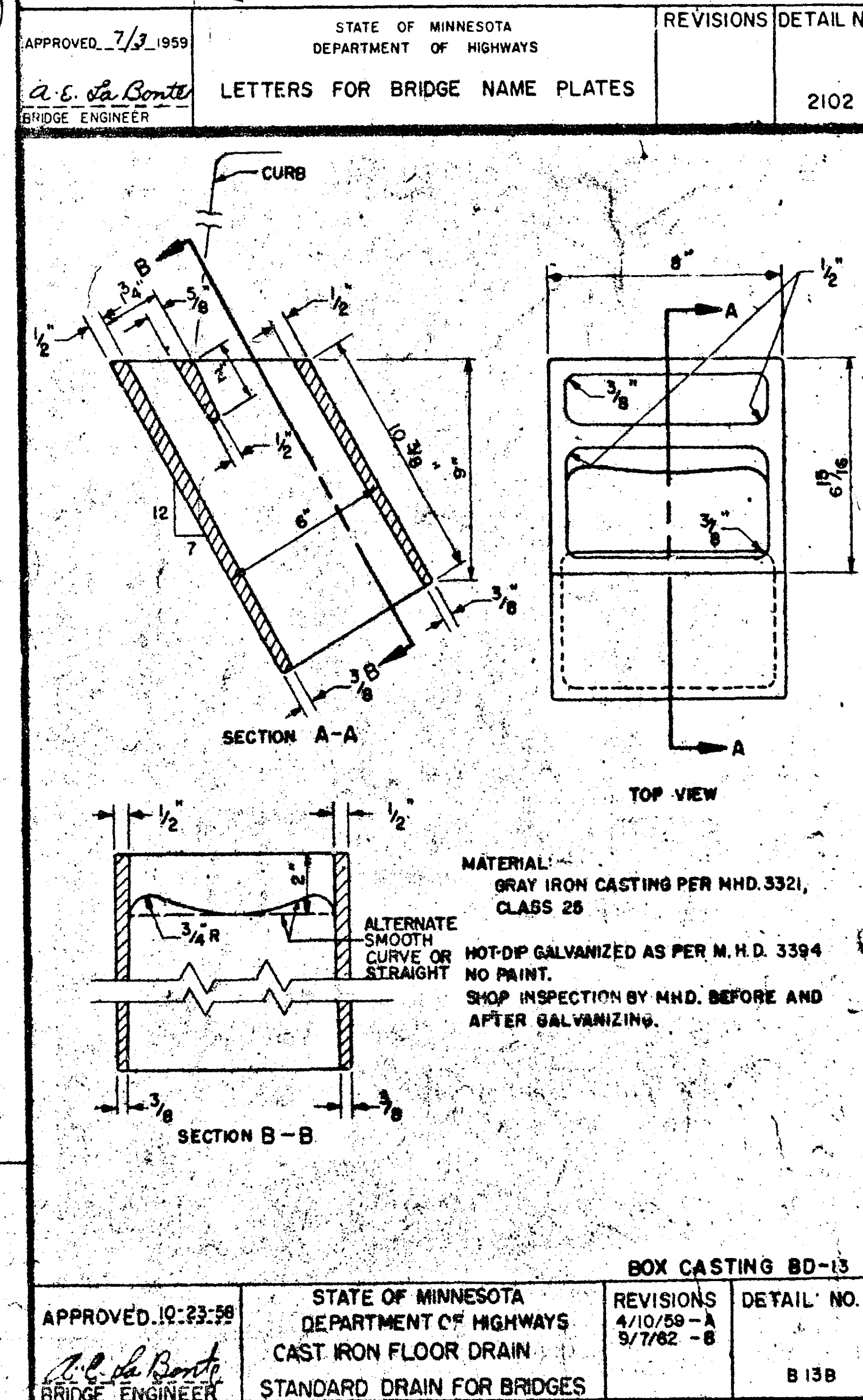
MICROFILMED
RAMSEY CO. ENGR
APPROVED: 3-11-63



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, TYPE 2)



APPROVED 7/3 1959

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE ENGINEER

BRIDGE NO. 9599

DETAILS

APPROVED 3-11-63

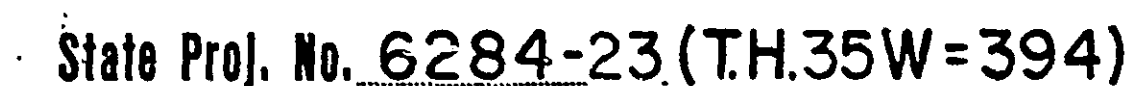
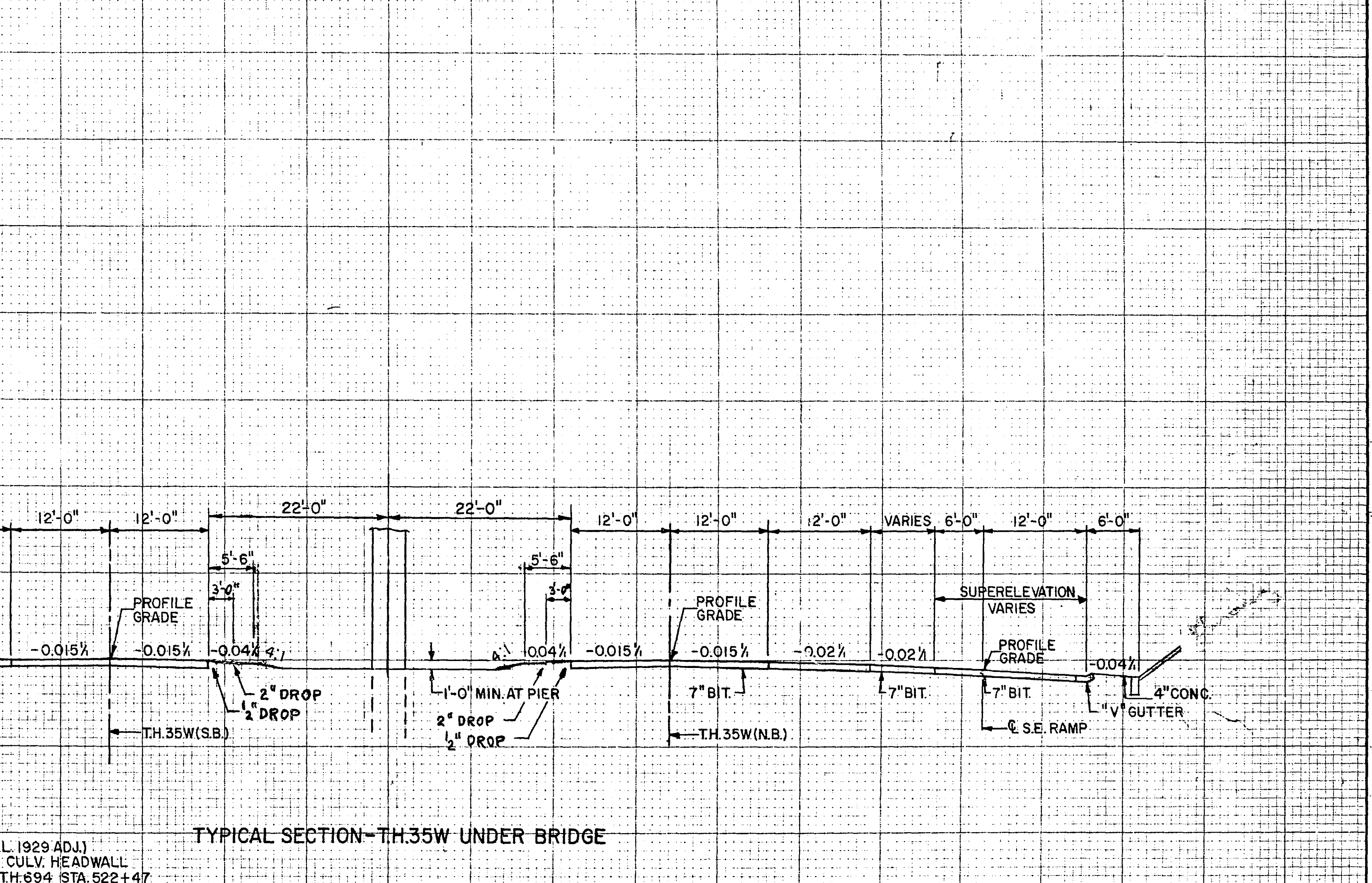
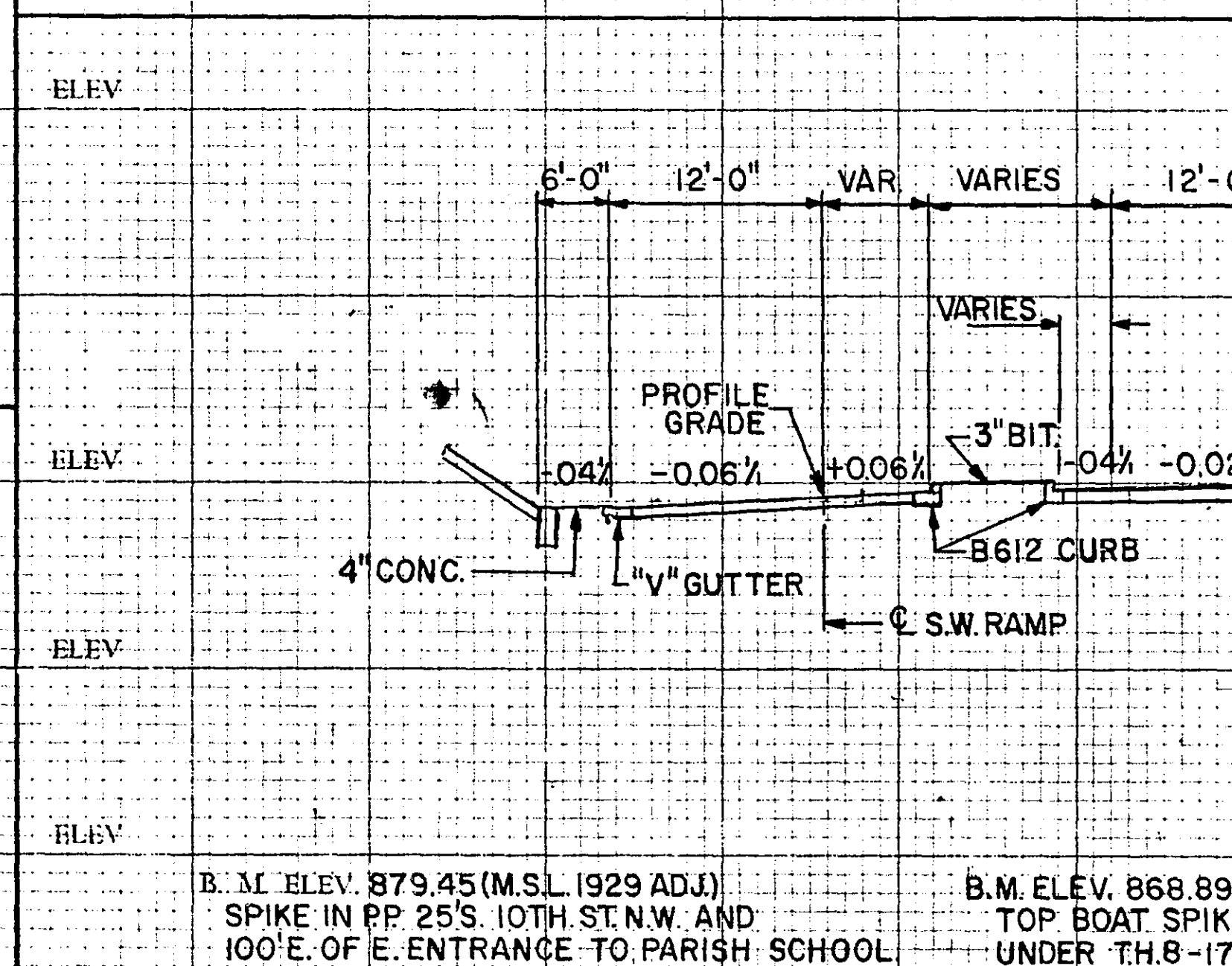
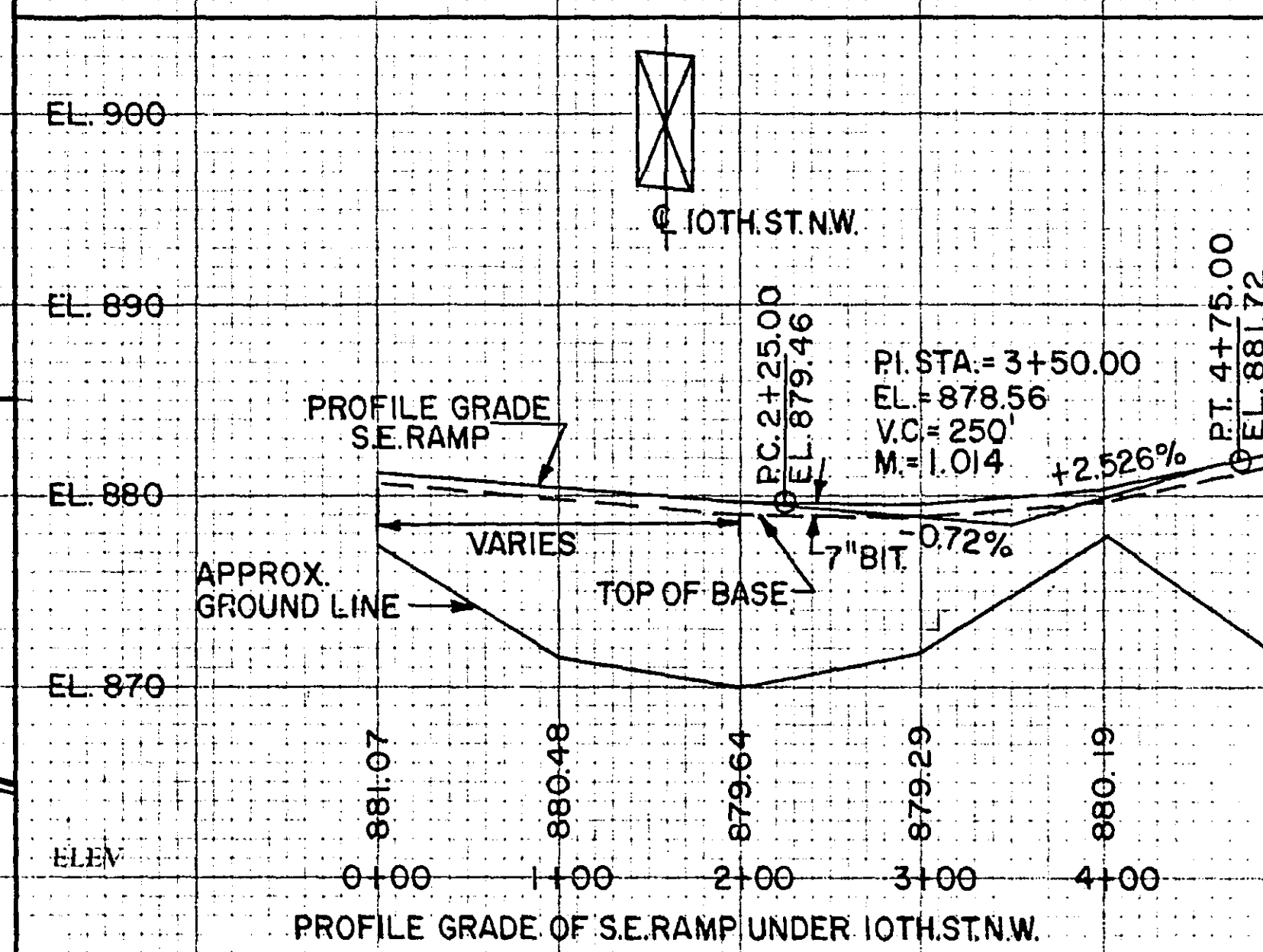
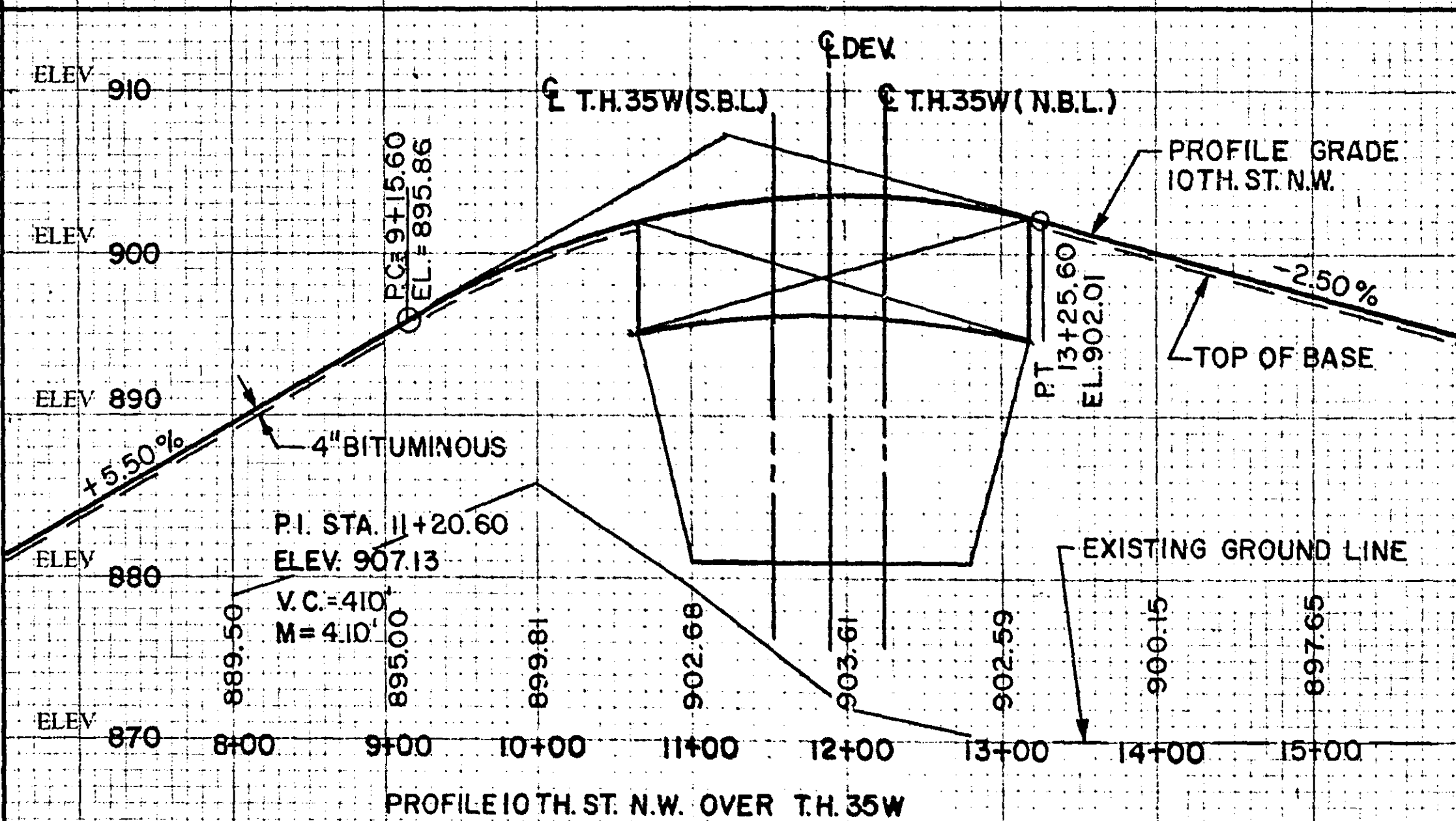
MICROFILMED
RAMSEY CO. ENGR.

APPROVED 7/3 1959	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS	DETAIL NO.
<i>A. E. LaBonte</i> BRIDGE ENGINEER	BRIDGE NAME PLATE FOR TRUNK HIGHWAY BRIDGES		2100

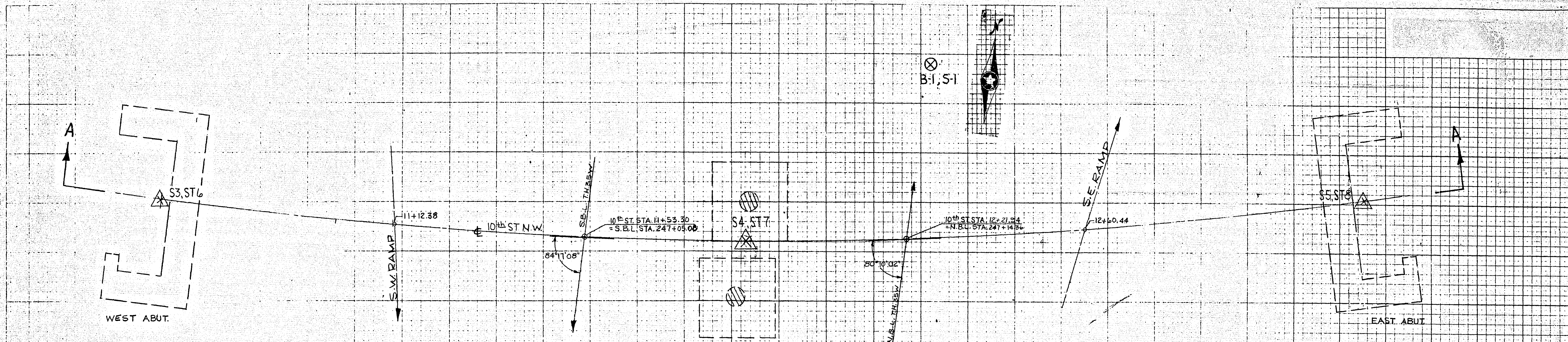
APPROVED 10-23-59	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS	DETAIL NO.
<i>A. E. LaBonte</i> BRIDGE ENGINEER	CAST IRON FLOOR DRAIN STANDARD DRAIN FOR BRIDGES	4/10/59-A 5/7/62-B	B 13B

APPROVED 8-15-1957	STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS	REVISIONS	DETAIL NO.
<i>A. E. LaBonte</i> BRIDGE ENGINEER	SHEAR DOWEL ASSEMBLY	4/10/59-A	B 100A

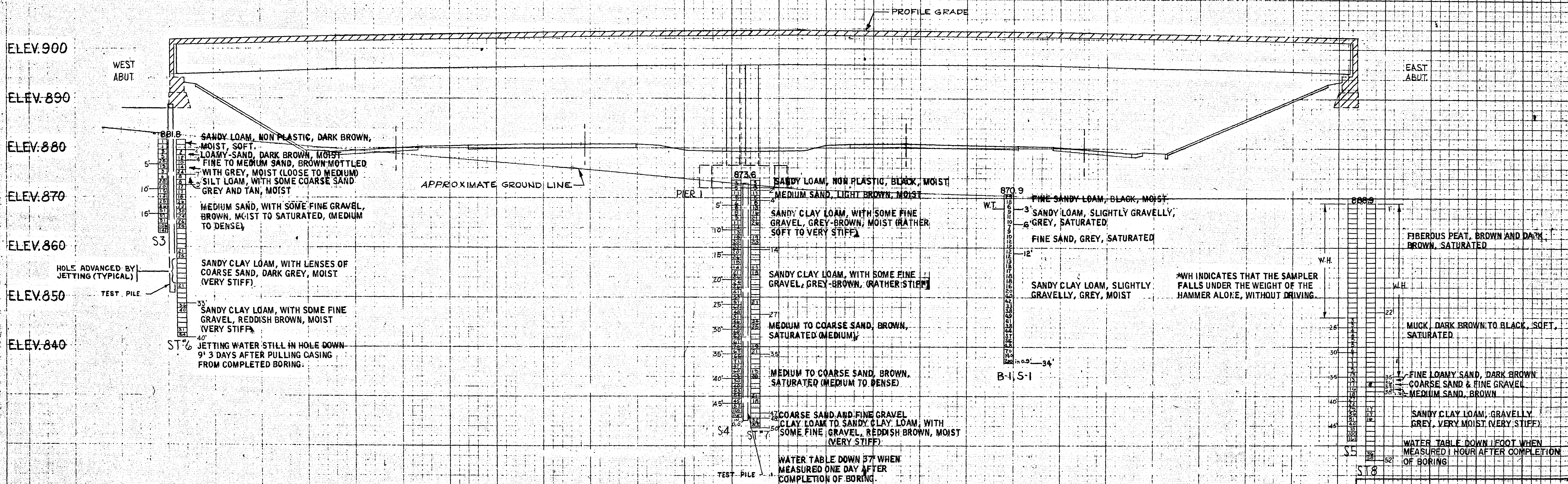
SCALE: HOR. 1" = 100' VER. 1" = 10'



ORIGINAL SURVEY
NOT TO BE USED
FOR ANY OTHER
PURPOSE
DATE 10-1-54
BY E. D. D.



PLAN
(SCALE: 1"=10')



ELEVATION
SECTION A-A
(SCALE: 1"=10')

SOUNDINGS MARKED X MADE WITH W.H.D.
STANDARD EQUIPMENT 50 LB. HAMMER
1/2" Ø ROD AND 2'-0" FREE FALL
SOUNDINGS MARKED Δ MADE WITH 140 LB.
HAMMER 2" Ø D. SPLIT TUBE SAMPLER
2'-6" FREE FALL
X SOUNDING
O BORING
Δ SPLIT TUBE
WT WATER TABLE

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
BRIDGE NO. 9599
BRIDGE SURVEY
SOUNDINGS & BORINGS
MICROFILMED
RAMSEY CO. ENGR.