FORM 129B
REVISED 1956

FED. ROAD DIST. NO.	STATE	FEDERAL PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5 N	MINN.				

CONVENTIONAL SIGNS

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

TIMBER
BRUSH
ORCHARD
ROCK LEDGE
SAND
EDGE OF CUT
TOE OF EMBANKMENT
CATCH BASIN
MANHOLE
FIRE HYDRANT
ARC LAMP
OTHER LAMPS (State Kind)
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
CATTLE GUARD
OVERHEAD (Highway Over)
UNDERPASS (Highway Under)
ABUTMENT, WALL & PIER
BRIDGE
BUILDING (One Story Frame)
F-FRAME C-CONCRETE
S-STONE T-TILE
B-BRICK ST-STUCCO
IRON PIPE
STONE MONUMENT
WOOD STAKE OR HUB
MEANDER CORNER

NOTE: SECTION NUMBERS READ FROM THE SOUTH

PIT DATA

Located in ..... PIT NO. ..... Dead Haul .....
Located in ..... PIT NO. ..... Dead Haul .....
Located in ..... PIT NO. ..... Dead Haul .....
Located in ..... PIT NO. ..... Dead Haul .....

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
CONSTRUCTION PLAN FOR BRIDGE 7231
C.S.A.H. NO. 30
RAMSEY COUNTY

From A POINT 1175.2' W AND 4.1'N OF S 1/4 CORNER SEC. 17 T29N R22W To A POINT 1016.7'W AND 2.5'N OF S 1/4 CORNER SEC. 17 T29N R22W
Give proper reference to Sections, Township and Range

MINNESOTA PROJECT .....

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

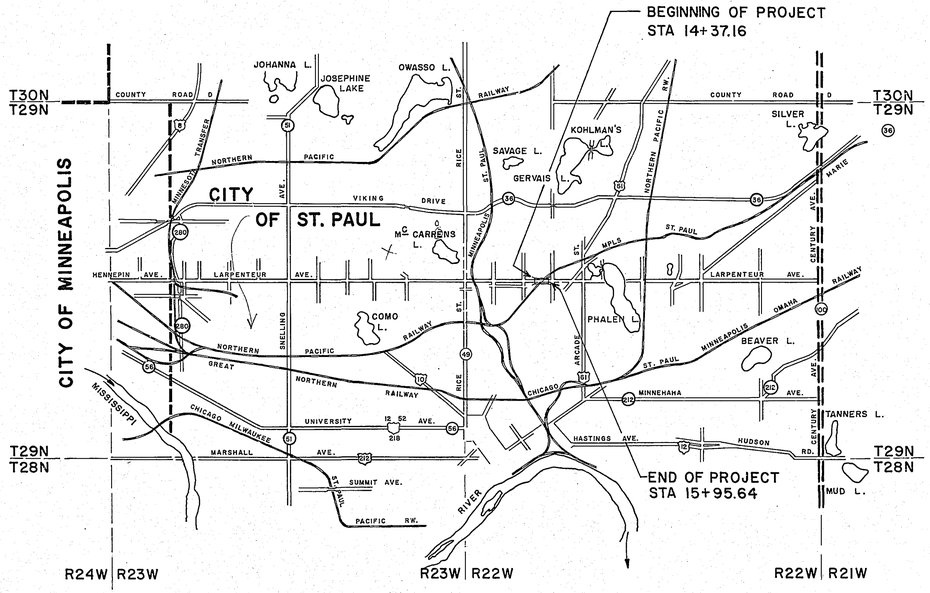
S. A. P. NO. 62-606-05

	FEET	MILES
GROSS LENGTH		
BRIDGES-LENGTH	158.48	.030
EXCEPTIONS-LENGTH		
NET LENGTH	158.48	.030

SCALES { PLAN. 1 inch = ____ Feet
PROFILE. Horz. 1 inch = ____ Feet. Vert. 1 inch = ____ Feet

LAYOUT
Scale 1 inch = ____ Feet

SPECIFICATIONS



INDEX

TITLE SHEET	
GENERAL PLAN & ELEVATIONS	SHEET 1
ABUTMENTS	SHEET 2
PIERS 1 & 2	SHEET 3
SUPERSTRUCTURE DETAILS	SHEET 4
FRAMING PLAN & GIRDER DETAILS	SHEET 5
GIRDER DETAILS & BEARING ASSEMBLIES	SHEET 6
DECK PLAN	SHEET 7
RAILING DETAILS	SHEET 8
BRIDGE SURVEY	SHEET 9

Approved H. J. Goodrich Date 7/21/58
VICE CHAIRMAN OF RAMSEY COUNTY BOARD

Planned By & Right Of Way Approved Harry A. Berman 7/15 1958
RAMSEY COUNTY ENGINEER

Recommended for Approval E. P. MacKubray 8-8 1958
DISTRICT ENGINEER

Recommended for Approval A. E. LaBonte 8-8 1958
BRIDGE ENGINEER

Approved 8-27 1958 R. M. Evans
STATE AID ENGINEER

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.

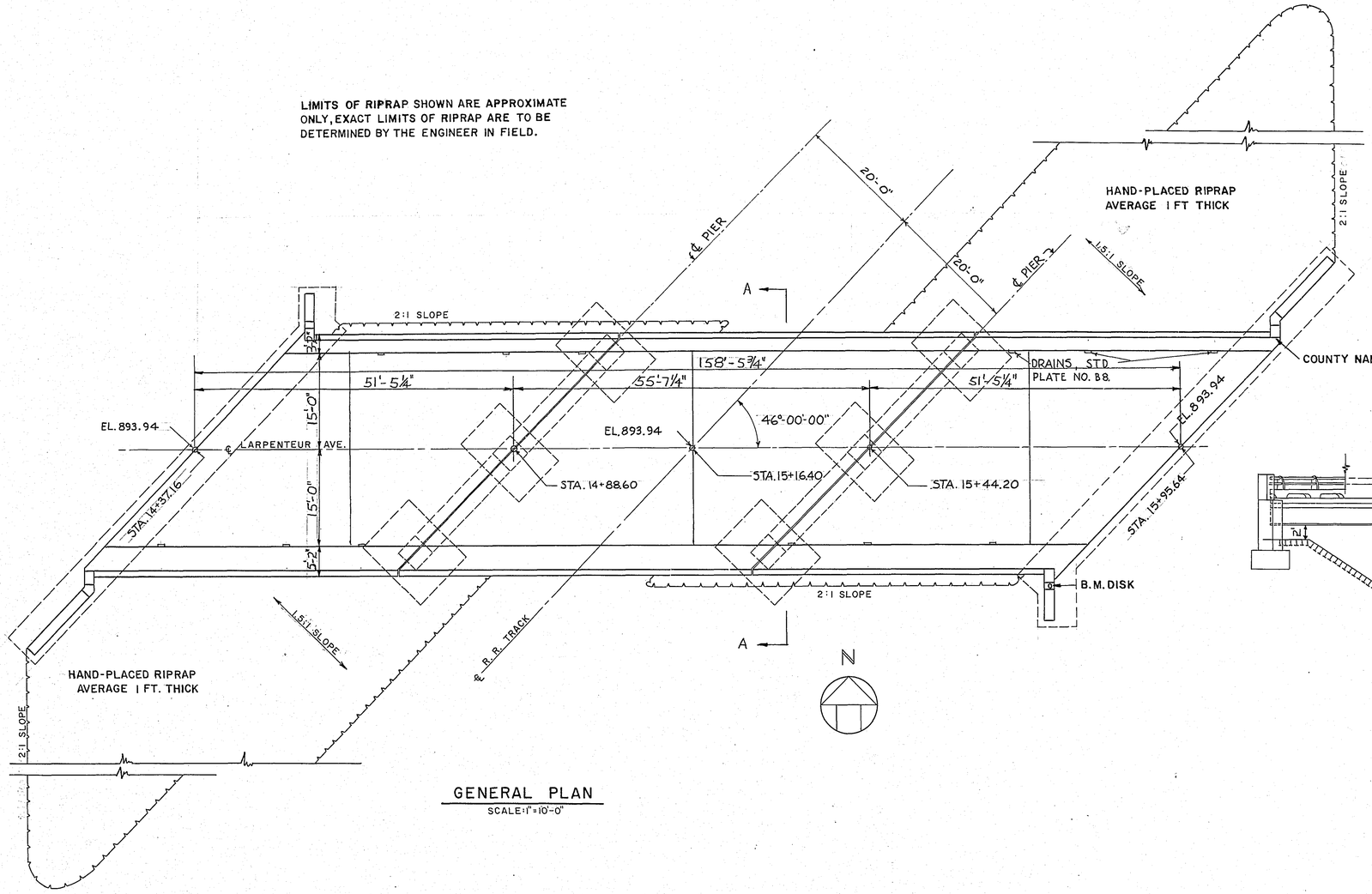
B. J. Kolinske

DATE JULY 14, 1958 REG. NO. 1366

DIETZGEN NO. 135 IMPERIAL

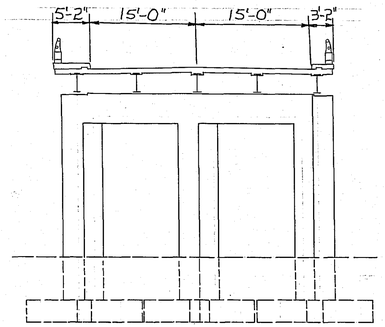
File no. 6123

LIMITS OF RIPRAP SHOWN ARE APPROXIMATE ONLY, EXACT LIMITS OF RIPRAP ARE TO BE DETERMINED BY THE ENGINEER IN FIELD.

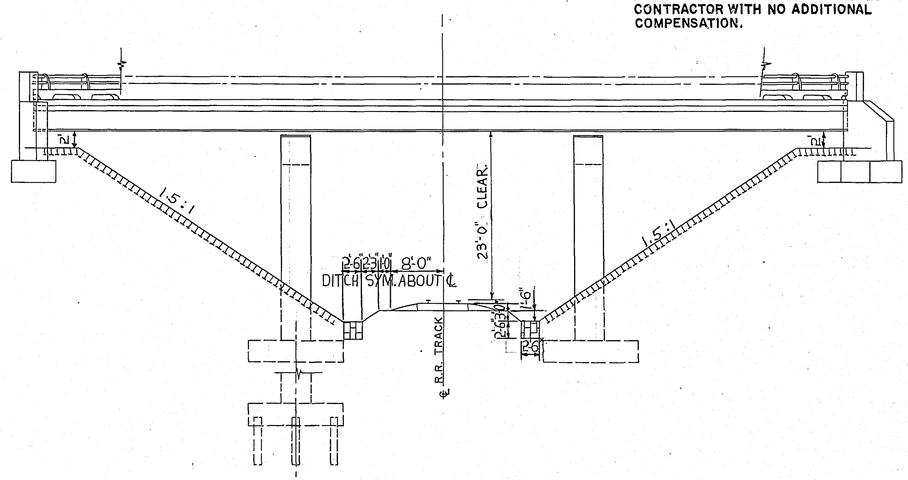


GENERAL PLAN
SCALE: 1"=10'-0"

ELEVATION PARALLEL TO LARPENTEUR AVE.
SCALE: 1"=10'-0"



SECTION A-A
SCALE: 1"=10'



ELEVATION NORMAL TO ℄ OF R.R. TRACK
SCALE: 1"=10'

DESIGN DATA

1953 AASHO DESIGN SPECIFICATIONS
H20-44 LOADING

f'_c = 3000 f_c = 1200 n = 10
f_s = 20,000 INTER. GRADE REINF.
STRUCTURAL CARBON STEEL

COMPRESSION & AXIAL TENSION	18,000
FIBER STRESS IN BENDING	18,000
SHEAR IN GIRDER WEB GROSS SECTION	12,000
BEARING ON BRONZE	2,000
WOOD PILING	40K

CONSTRUCTION NOTES

THE MINNESOTA SPECIFICATIONS FOR HIGHWAY CONSTRUCTION DATED JULY 1, 1947 & SUBMITTED FOR APPROVAL BY THE DIVISION ENGINEER OF THE BUREAU OF PUBLIC ROADS ON OCTOBER 15, 1947, AS MODIFIED BY SUPPLEMENT NO. 1 THERETO, DATED APRIL 15, 1953 & SUBMITTED FOR APPROVAL BY THE DIVISION ENGINEER OF THE BUREAU OF PUBLIC ROADS ON MARCH 25, 1953 SHALL GOVERN.

ALL REINFORCEMENT BARS SHALL BE INTERMEDIATE GRADE DEFORMED BARS. THE LISTS OF JOINT FILLER MATERIAL ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY: ANY ADDITIONAL JOINT FILLER REQUIRED AS SHOWN IN THE PLANS SHALL BE FURNISHED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION.

SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE

ITEM NO.	ITEM	QUANTITY	UNIT
2401,521	CLASS DE EXCAVATION	1140	CU. YD.
2401.501	CONCRETE MIX NO. 1A6	336.2	CU. YD.
2401.501	CONCRETE MIX NO. 3Y6	302.9	CU. YD.
2461.501	CONCRETE GRADE Y MIX NO. 3Y6	13.2	CU. YD.
2401.541	REINFORCEMENT BARS	66665	LB
2402.505	WROUGHT BRONZE	304	LB
2402.521	STRUCTURAL STEEL	113800	LB
2402.577	STANDARD NAME PLATES	ONE	UNIT
2402.583	ORNAMENTAL METAL RAILING	310.96	LIN. FT.
2452.503	TREATED TIMBER PILING DELIVERED	5205	LIN. FT.
2452,504	TREATED TIMBER PILING DRIVEN	4917	LIN. FT.
2452.517	TREATED TIMBER TEST PILES IN PLACE 50 FT. LONG	7	PILE
2452.517	TR. TBR. TEST PILES IN PLACE 20 FT. LONG	ONE	PILE
2452.517	TR. TBR. TEST PILES IN PLACE 40 FT. LONG	ONE	PILE
2452.517	TR. TBR. TEST PILES IN PLACE 60 FT. LONG	ONE	PILE
452.562*	LOAD TEST FOR BEARING CAPACITY	2	LOAD TEST
2512.501	HAND-PLACED RIPRAP	445	CU. YD.
2442.501	REMOVE OLD STRUCTURE	ONE	STRUCT.

* SEE SPECIAL PROVISIONS

C.S.A.H. NO. 30 — RAMSEY COUNTY

GENERAL PLAN & ELEVATIONS

51'-56'-51' BEAM SPAN 44° SKEW 30' ROADWAY

TOLTZ, KING, DUVALL, ANDERSON AND ASSOCIATES, INC.
ST. PAUL, MINNESOTA
ENGINEERS AND ARCHITECTS

BRIDGE NO. 7231
OVER M.ST.P.&S.S.M.RY. TRACKS AT ST. PAUL
SEC. 17 T 29 N R 22 W
RAMSEY COUNTY

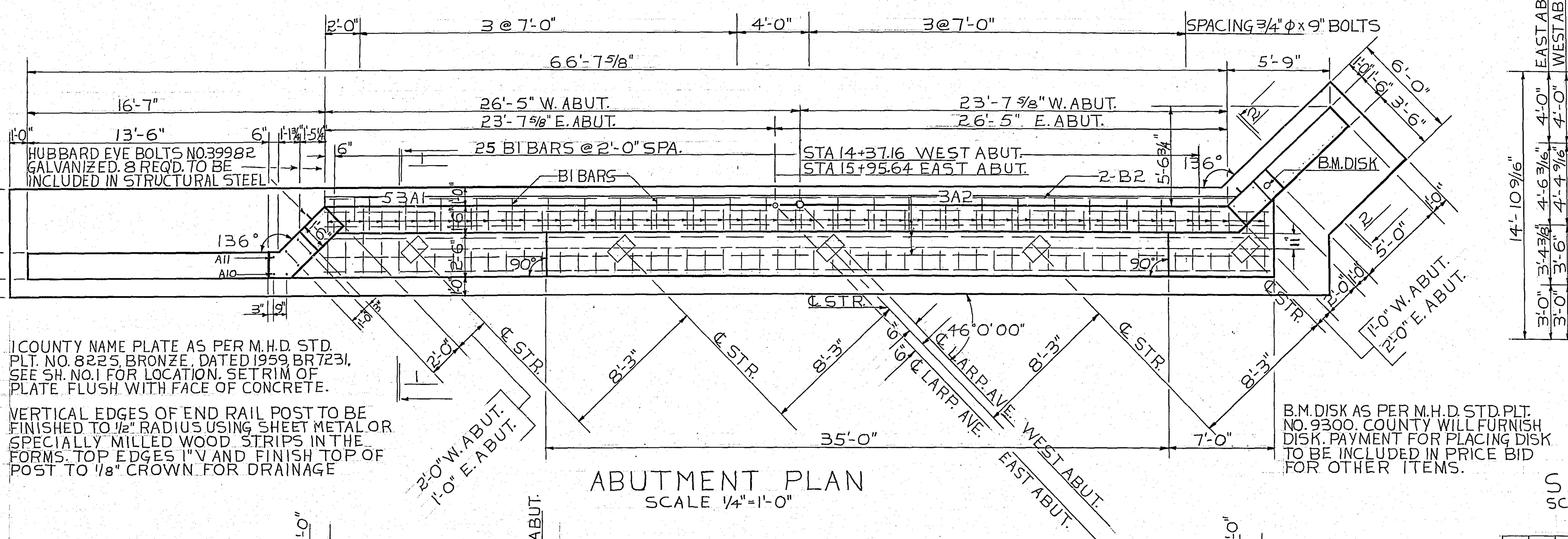
M.H.D. APPROVED A. E. La Bonte, BRIDGE ENGINEER
DATE 8-8-58

S.A.P. NO. 62-606-05 (C.S.A.H. 30)

SHEET NO. 1 OF 9 SHEETS

7231

File No. 6123

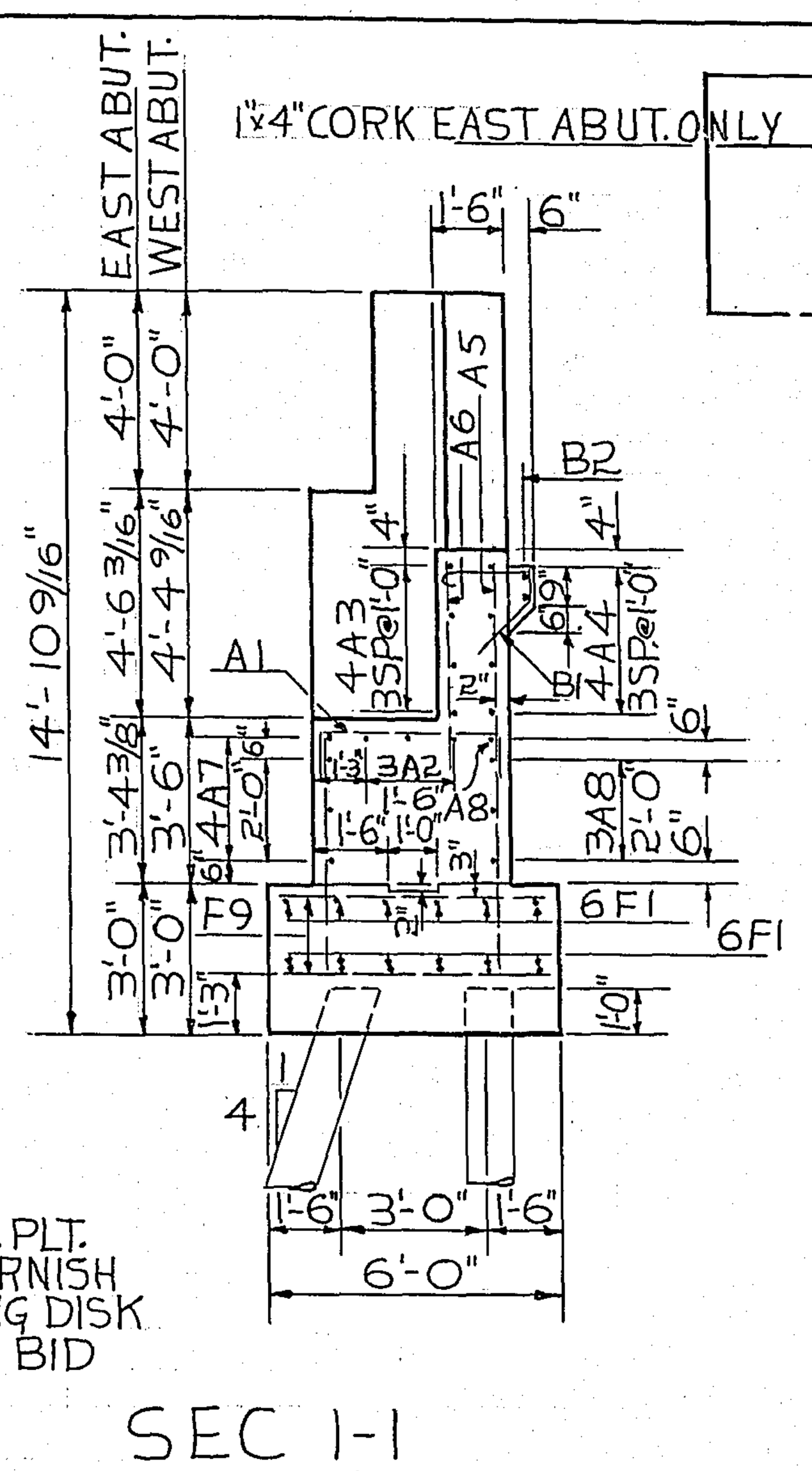


I COUNTY NAME PLATE AS PER M.H.D. STD. PLT. NO. 8225, BRONZE, DATED 1959, BR 7231. SEE SH. NO. 1 FOR LOCATION. SET RIM OF PLATE FLUSH WITH FACE OF CONCRETE.

VERTICAL EDGES OF END RAIL POST TO BE FINISHED TO 1/2" RADIUS USING SHEET METAL OR SPECIALLY MILLED WOOD STRIPS IN THE FORMS. TOP EDGES 1" V AND FINISH TOP OF POST TO 1/8" CROWN FOR DRAINAGE

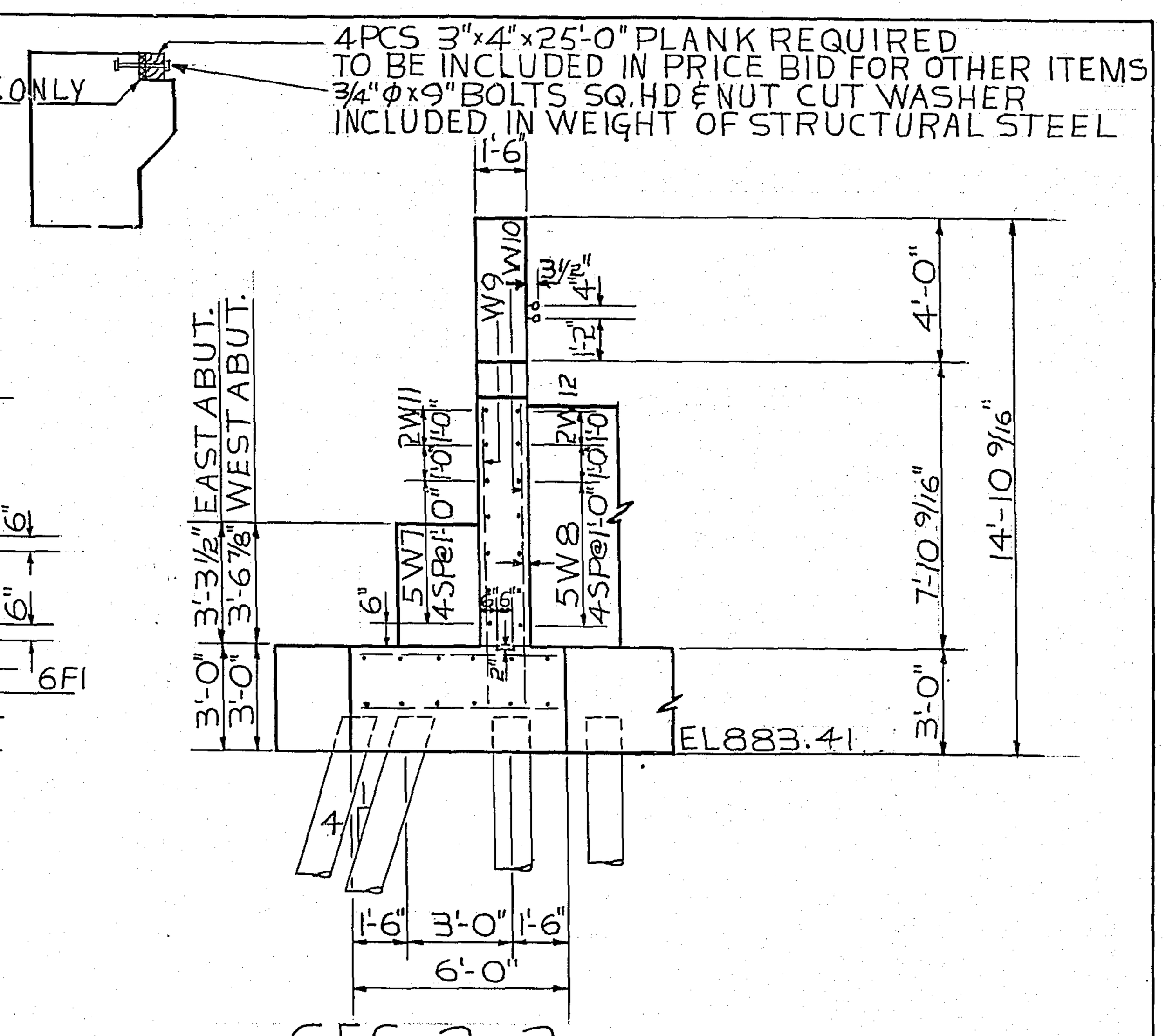
B.M. DISK AS PER M.H.D. STD. PLT. NO. 9300. COUNTY WILL FURNISH DISK. PAYMENT FOR PLACING DISK TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.

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

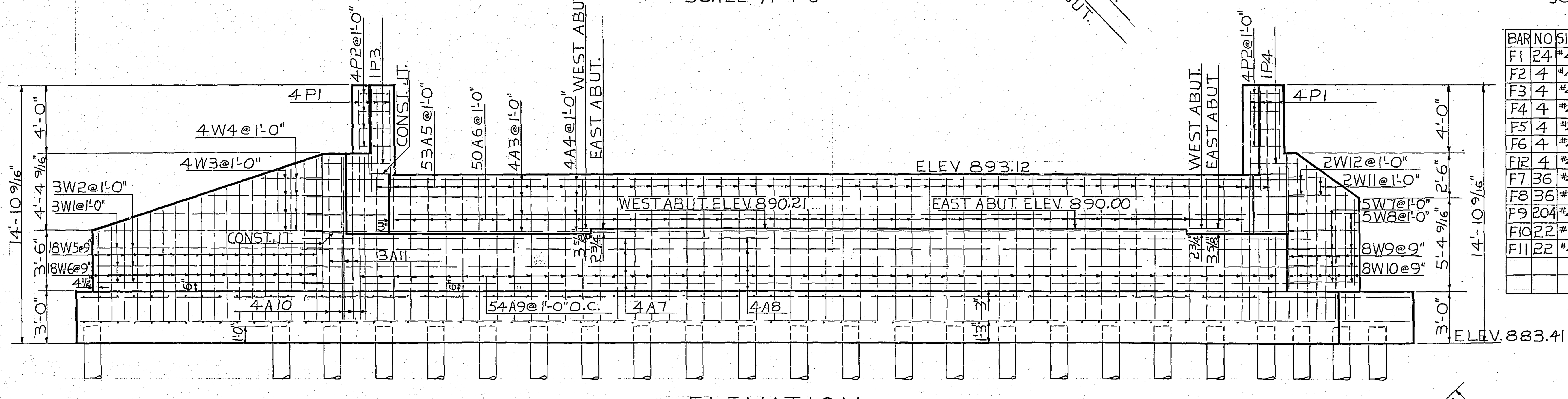


SEC 1-1
SCALE 1/4"=1'-0"

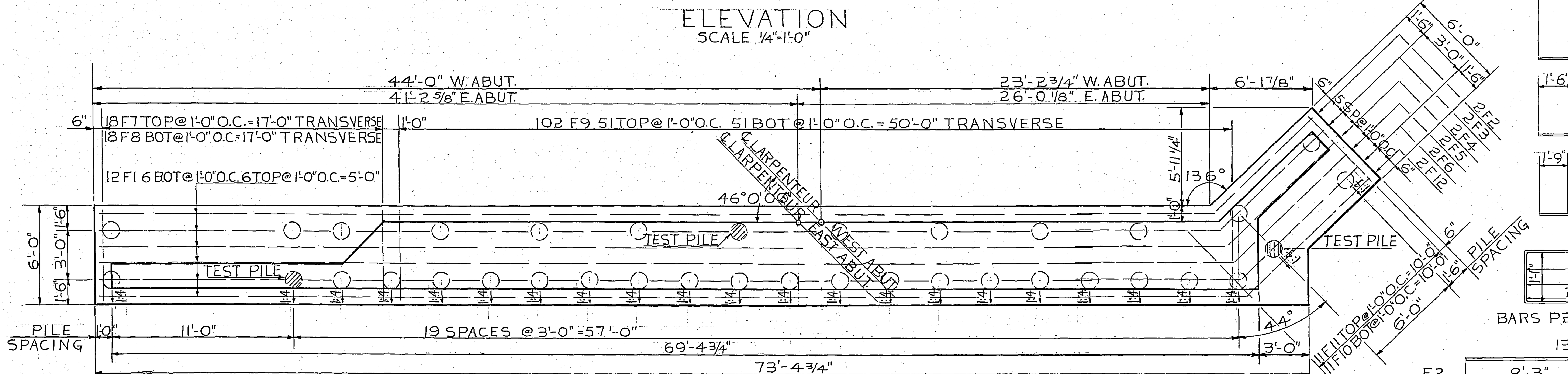
4 PCS 3"x4"x25'-0" PLANK REQUIRED TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS
3/4"φx9" BOLTS SQ. HD & NUT CUT WASHER INCLUDED IN WEIGHT OF STRUCTURAL STEEL



SEC 2-2
SCALE 1/4"=1'-0"



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



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

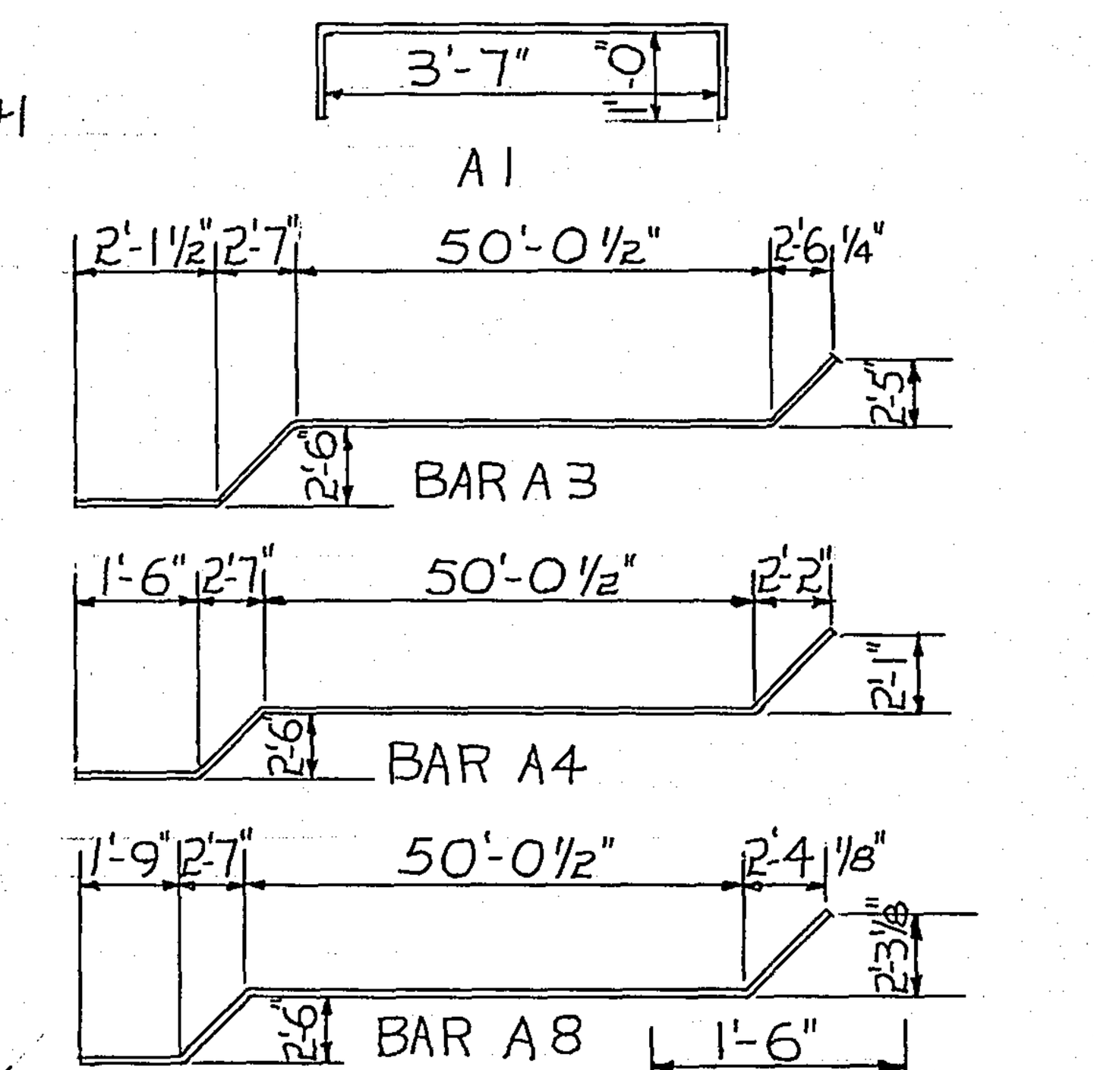
PILE NOTES:
MINIMUM BEARING OF PILE 22 TONS EACH
COMPUTED D.L. + O.T. = 19.8 TONS PER PILE
ESTIMATED LENGTH OF PILING - 40'-0" LONG 66 REQ'D
6 TEST PILES REQUIRED 50'-0" LONG
ESTIMATED PENETRATION 2 FT LESS THAN THE LENGTH GIVEN
PILES MARKED THUS ○ TO BE BATTERED IN DIRECTION SHOWN
ALL PILES TO BE CREOSOTED PER M.H.D. SPECIFICATION 3491
TEST PILE MARKED THUS ⊘

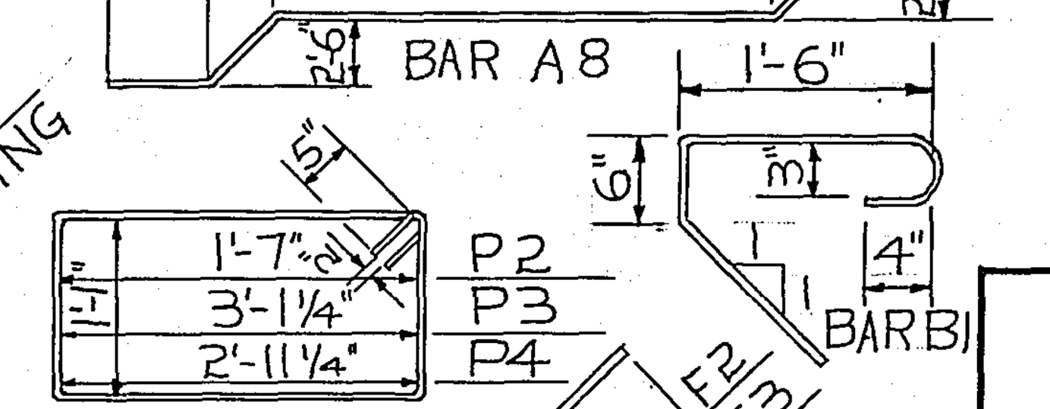
BILL OF REINFORCEMENT FOR TWO ABUTMENTS

BAR	NO	SIZE	LENGTH	SHAPE	LOCATION
F1	24	#4	60'-0"	—	FTG. LONGITUDINAL TOP & BOT
F2	4	#4	16'-9"	bent	"
F3	4	#4	17'-5"	bent	"
F4	4	#4	18'-2"	bent	"
F5	4	#4	18'-10"	bent	"
F6	4	#4	19'-8"	bent	"
F12	4	#4	20'-5	bent	"
F7	36	#4	5'-6"	—	FTG. TRANSVERSE TOP
F8	36	#5	5'-6"	—	" " BOT
F9	204	#4	5'-6"	—	" " TOP & BOT
F10	22	#5	5'-6"	—	" " BOT
F11	22	#4	5'-6"	—	" " TOP

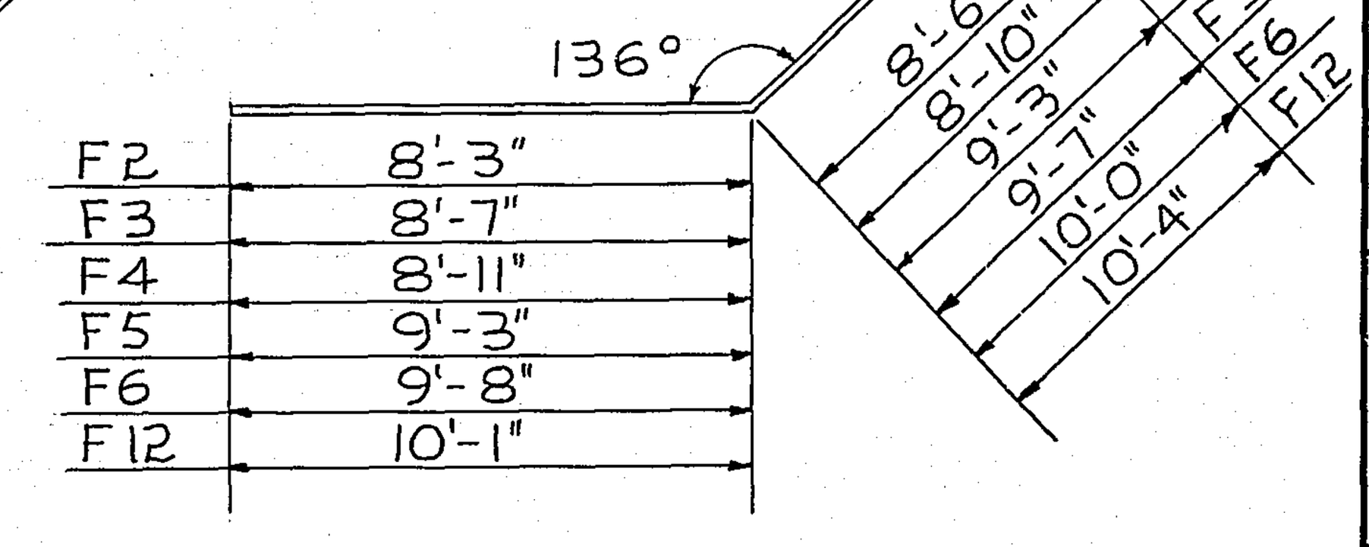
BAR	NO	SIZE	LENGTH	SHAPE	LOCATION
W1	6	#4	13'-4"	—	13'-6" WING HORIZ FRONT
W2	6	#4	13'-4"	—	" " " BACK
*W3	4	#4	17'-6"	—	" " " FRONT
*W4	4	#4	17'-6"	—	" " " BACK
*W5	18	#4	14'-6"	—	" " VERT FRONT
*W6	18	#4	14'-6"	—	" " " BACK
W7	10	#4	5'-10"	—	6'-0" WING HORIZ FRONT
W8	10	#4	5'-10"	—	" " " BACK
*W9	8	#4	16'-5"	—	" " VERT FRONT
*W10	8	#4	16'-5"	—	" " " BACK
*W11	2	#4	9'-2"	—	" " HORIZ FRONT
*W12	2	#4	9'-2"	—	" " " BACK
A1	106	#4	5'-7"	⊓	BRG. SEAT HORIZ. TRANV.
A2	6	#4	52'-6"	—	BRG. SEAT HORIZ LONGIT.
A3	8	#4	59'-3"	bent	PARAPET WALL HORIZ FRONT
A4	8	#4	58'-1 1/2"	bent	" " " BACK
A5	106	#6	8'-4"	—	ABUT. BACK FACE VERT
A6	100	#4	4'-3"	—	PARAPET WALL FRONT VERT
A7	8	#5	57'-0"	—	ABUT. FRONT FACE HORIZ
A8	8	#5	58'-7 1/2"	bent	" BACK " "
A9	108	#6	5'-0"	—	" FRONT " VERT.
A10	8	#4	9'-6"	—	" " " "
A11	6	#4	9'-6"	—	" BACK " "
P1	16	#4	6'-0"	—	POST FRONT & BACK VERT
P2	16	#4	6'-0"	▭	" HORIZ.
P3	2	#4	9'-4 1/2"	▭	" "
P4	2	#4	9'-0 1/2"	▭	" "
B1	50	#4	4'-0"	⊂	PAVING BRACKET
B2	4	#4	50'-0"	—	" "

*CUT TWO BARS FROM EACH W3 W4 W5 W6 W9 W10 W11 W12 ONE LONG AND ONE SHORT





BARS P2 P3 P4



BARS F2 F3 F4 F5 F6 F12

SUMMARY OF QUANTITIES		EAST ABUT.	WEST ABUT.
CLASS DE EXCAVATION	C.Y.	290	290
CONCRETE MIX NO 1A6 (FTGS)	C.Y.	52.0	52.0
REINFORCEMENT BARS	LBS.	4255	4255
○ TREATED TIMBER PILING	L.F.	1320	1320
CONCRETE MIX NO 3Y6 (WINGS, WALLS)	C.Y.	47.3	48.4
TREATED TIMBER TEST PILES 50FT	EA.	3	3
COUNTY NAME PLATE	EA.	1	

○ DOES NOT INCLUDE TEST PILES

C.S.A.H. NO. 30 RAMSEY COUNTY

ABUTMENTS

TOLTZ, KING, DUVALL, ANDERSON AND ASSOCIATES, INC.
ST. PAUL, MINNESOTA
ENGINEERS AND ARCHITECTS

DESIGNED
CHECKED

BRIDGE NO. 7231

APPROVED AUGUST 8, 1958

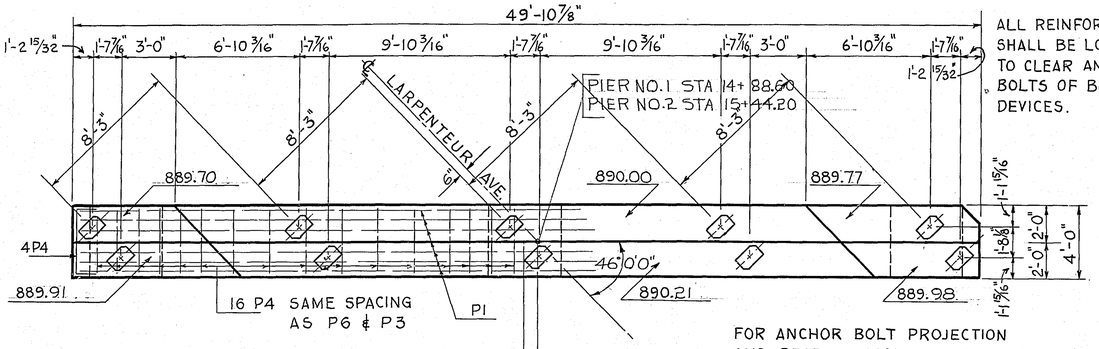
COM.
DRG.

S.A.P. NO. **62-606-05** (C.S.A.H 30)

SHEET NO. 2 OF 9 SHEETS

7231

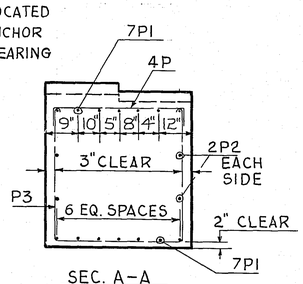
File No 6123



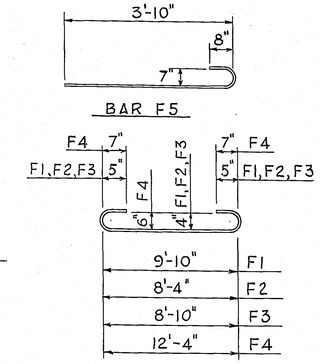
PLAN OF PIER

ALL REINFORCING SHALL BE LOCATED TO CLEAR ANCHOR BOLTS OF BEARING DEVICES.

FOR ANCHOR BOLT PROJECTION AND BEARING ASSEMBLY DETAILS SEE SHEET 6



SEC. A-A
SCALE: ½"=1'-0"



BARS F1, F2, F3, F4

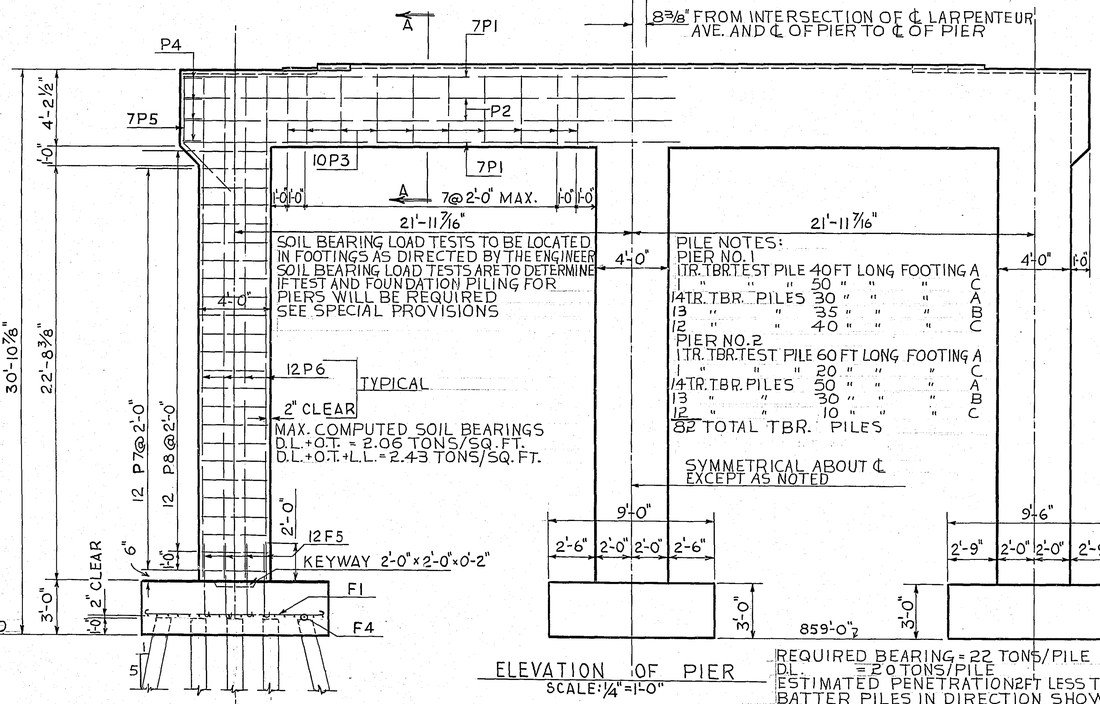
BILL OF REINFORCEMENT FOR TWO PIERS

MARK	NO.	SIZE	LENGTH	SHAPE	LOCATION
P1	28	11	49'-6"	STRT	BEAM
P2	8	5	49'-6"	"	"
P3	40	4	11'-9"	BENT	"
P4	80	4	6'-1"	"	"
P5	28	5	8'-9"	"	"
P6	72	9	27'-6"	STRT	COL.
P7	72	4	15'-7"	BENT	"
P8	72	4	12'-11"	"	"
F1	34	5	11'-2"	BENT	FOOTING
F2	34	5	9'-8"	"	"
F3	44	5	10'-2"	"	"
F4	116	8	14'-4"	"	"
F5	72	9	5'-0"	"	"

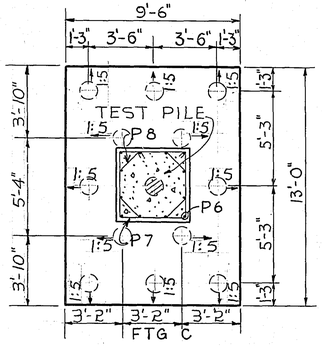
SUMMARY OF QUANTITIES FOR PIER1 PIER 2

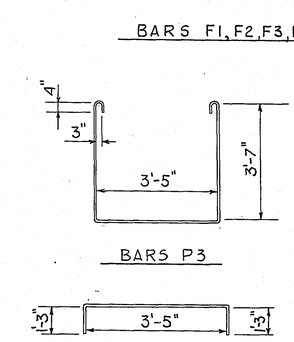
CLASS DE EXCAVATION	270 C.Y.	290 C.Y.
CONCRETE MIX. NO. 1A6	116.1 C.Y.	116.1 C.Y.
REINFORCMENT BARS	11820 LBS	11820 LBS
TR. TBR. PILING DELIVERED	1355 L.F.	1210 L.F.
SOIL BEARING LOAD TEST	1 EA.	1EA.
TR. TBR TEST PILES 20 FT. LG. IN PLACE		1
TR. TBR TEST PILES 40 FT. LG. IN PLACE	1	
TR. TBR TEST PILES 50 FT. LG. IN PLACE	1	
TR. TBR. TEST PILES 60 FT. LG. IN PLACE		1

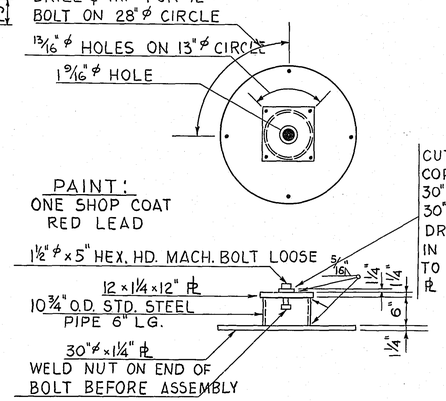
o DOES NOT INCLUDE TEST PILES

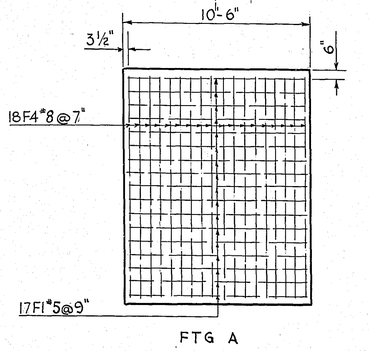


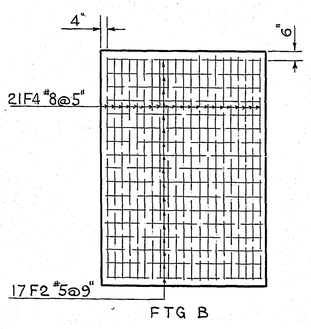
ELEVATION OF PIER
SCALE: ¼"=1'-0"

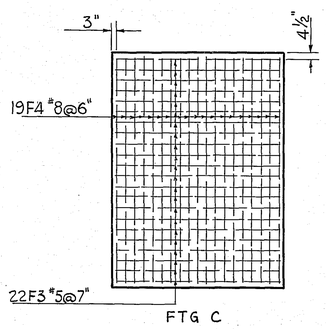


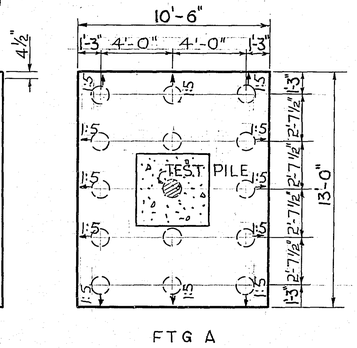






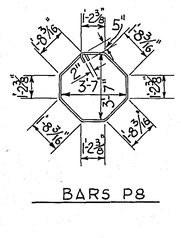






REINFORCING PLANS OF FOOTINGS

PILE PLANS OF FOOTINGS



C.S.A.H. NO. 30 — RAMSEY COUNTY

PIERS 1 & 2

TOLTZ, KING, DUVALL, ANDERSON AND ASSOCIATES, INC.
ST. PAUL, MINNESOTA
ENGINEERS AND ARCHITECTS

DESIGNED
DRAWN
CHECKED

BRIDGE NO. 7231

APPROVED AUGUST 8, 1958

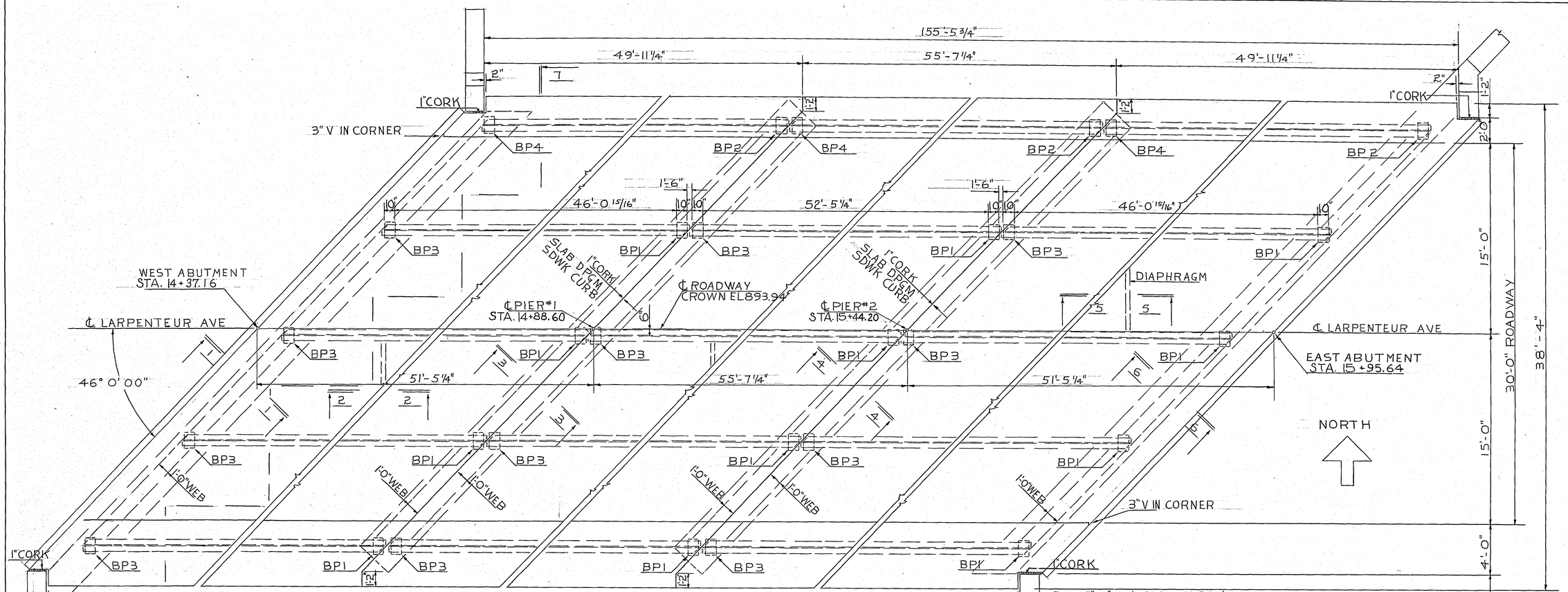
COM.
DRG.

S.A.P. NO. 62-606-05 (C.S.A.H. 30)

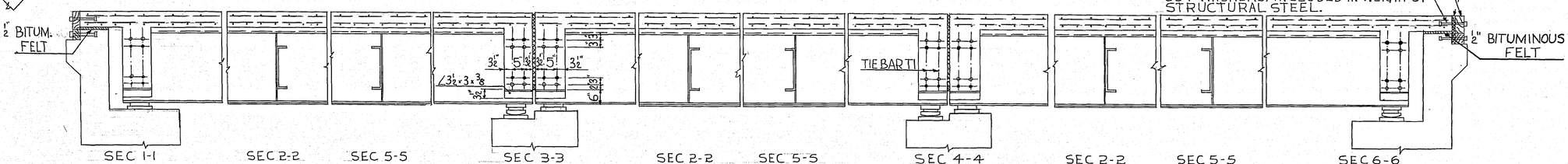
SHEET NO. 3 OF 9 SHEETS

7231

File No 6123



DECK DETAILS
SCALE: 1/4" – 1'-0"



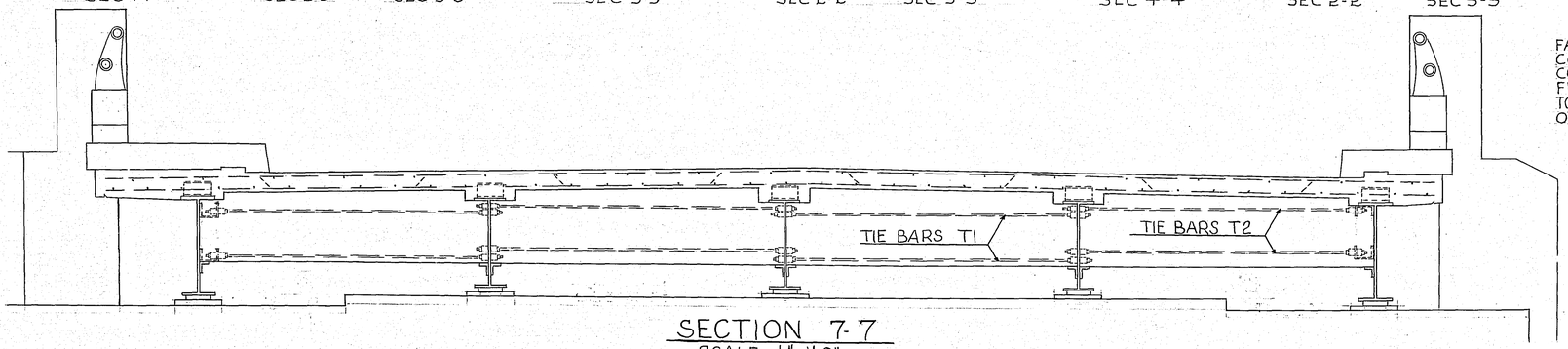
4 PCS 12"x3"x25'-0" PLANK REQ'D TRIM TO FIT FINISHED ROADWAY SURFACE TO BE INCLUDED IN PRICE BID FOR OTHER ITEM. 3/4"ø x 9" BOLTS SQ. HD. & NUT CUT WASHERS. INCLUDED IN WEIGHT OF STRUCTURAL STEEL.

1"x12" CORK EAST ABUT. ONLY

LIST OF JOINT FILLERS

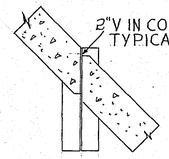
BITUMINOUS FELT	2 PC. 1'-6" x 52'-0" x 1/2"	2 ABUTMENTS
CORK	2 PC. 3'-0" x 46'-0" x 1"	EXP. JNTS. RDWY.
CORK	1 PC. 1'-0" x 22'-0" x 1"	EXP. JNTS. CURB & SDWK
CORK	6 PC. 1'-0" x 1'-0" x 1/4"	RAILING JOINTS
CORK	2 PC. 4" x 25'-0" x 1"	PAV. BRKT. E.A.
CORK	2 PC. 12" x 25'-0" x 1"	PAV. BRKT. E.A.
CORK	4 PC. 1'-6" x 5'-0" x 1"	ABUT. WINGS

PREFORMED BITUMINOUS JOINT FILLER MATERIAL AS PER AASHO SPEC M 33.
PREFORMED CORK JOINT FILLER MATERIAL AS PER AASHO SPEC. M 153 TYPE I
TRIM JOINT FILLER MATERIAL IN FIELD AS REQ'D



SECTION 7-7
SCALE: 1/2" = 1'-0"

FASTEN JOINT FILLER MATERIAL TO CONCRETE WITH 2 1/2" LONG 11GA COPPER NAILS @ 18" MAX SPACING. JOINT FILLER MATERIAL AND COPPER NAILS TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.



SECTION THRU CONCRETE DIAPH.

C.S.A.H. NO. 30 — RAMSEY COUNTY

SUPERSTRUCTURE DETAILS

TOLTZ, KING, DUVALL, ANDERSON AND ASSOCIATES, INC.
ST. PAUL, MINNESOTA
ENGINEERS AND ARCHITECTS

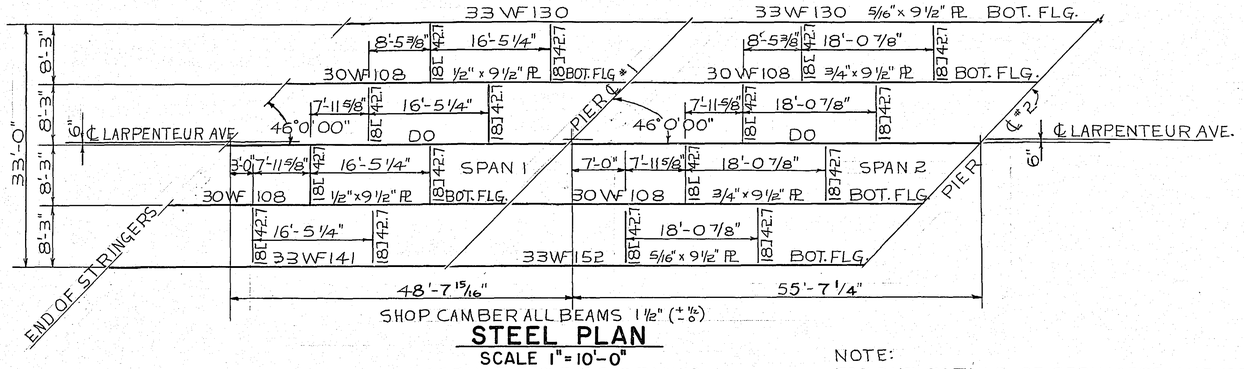
DESIGNED	BRIDGE NO. 7231	COM.
DRAWN		
CHECKED	APPROVED August 8, 1958	DRG.

S.A.P. NO. 62-606-05 (C.S.A.H. 30)

SHEET NO. 4 OF 9 SHEETS

7231

File No. 6123

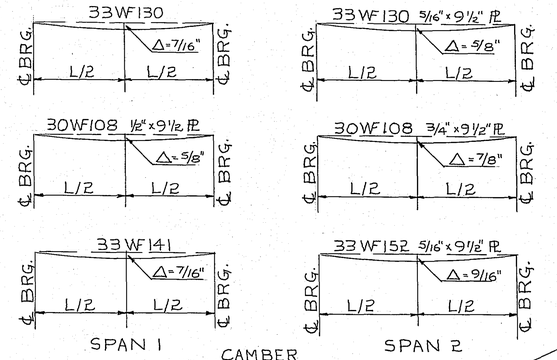


STEEL PLAN

SCALE 1" = 10'-0"

(SPAN 3 SAME AS SPAN 1)

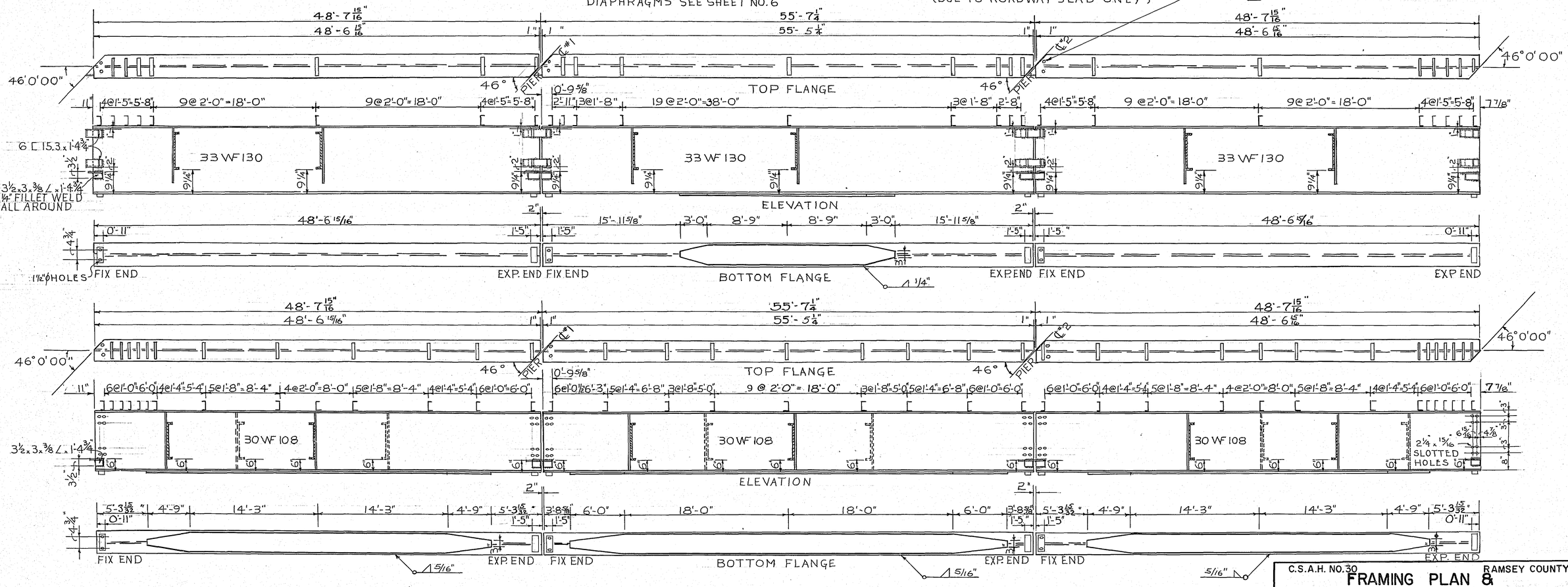
NOTE:
FOR END DETAILS OF STRINGERS AND 18L42.7 DIAPHRAGMS SEE SHEET NO. 6



CAMBER DEFLECTION DIAGRAMS
(DUE TO ROADWAY SLAB ONLY)

STRUCTURAL STEEL NOTES
PAINT ALL STRUCTURAL STEEL EXCEPT WHERE GALVANIZED OR AS NOTED AS FOLLOWS:
SHOP COAT - RED LEAD - M.H.D. 3506
1ST FIELD COAT - GRAY - M.H.D. 3522
2ND FIELD COAT - ALUMINUM - M.H.D. 3527

1½"Φ HOLES IN TOP FLANGE, CHANNELS AND ANGLES AT FIXED ENDS ONLY (ALL SPANS). HOLES TO LINE UP VERTICALLY WITH BOLT HOLES IN BOTTOM FLANGE



C.S.A.H. NO. 30	RAMSEY COUNTY

FRAMING PLAN & GIRDER DETAILS

TOLTZ, KING, DUVALL, ANDERSON AND ASSOCIATES, INC.
ST. PAUL, MINNESOTA
ENGINEERS AND ARCHITECTS

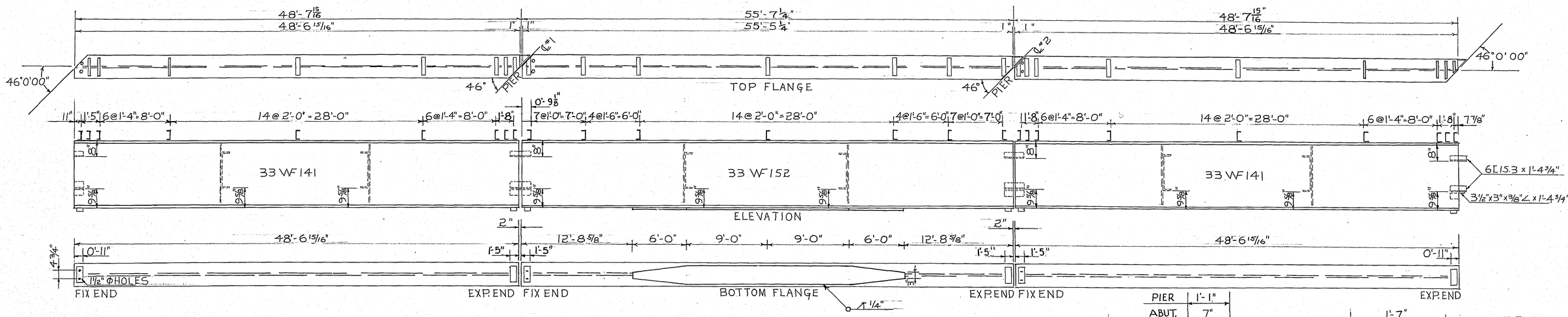
DESIGNED	BRIDGE NO. 7231	COM.
CHECKED	APPROVED AUGUST 8, 1958	DRG.

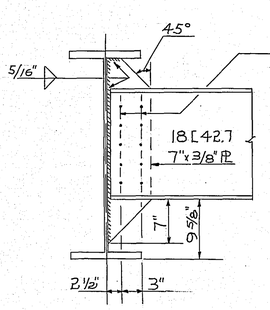
S.A.P. NO. 62-606-05 (C.S.A.H. 30)

SHEET NO. 5 OF 9 SHEETS

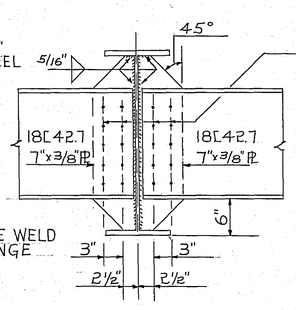
7231

File No 6123


48'-7 15/16"
48'-6 15/16"
55'-7 1/4"
55'-5 1/4"
46°0'00"
46°
PIER
℄ #1
℄ #2
TOP FLANGE
11"
1'-5"
6@1'-4"=8'-0"
14@2'-0"=28'-0"
1'-8"
0'-9 1/8"
7@1'-0"=7'-0"
4@1'-6"=6'-0"
33 WF 141
33 WF 152
6 [15.3 x 1'-4 3/4"
3 1/2"x3"x 3/8" ∠ x 1'-4 3/4"
ELEVATION
2"
12'-8 5/8"
6'-0"
9'-0"
0'-11"
1 1/2" ϕ HOLES
FIX END
EXP. END
BOTTOM FLANGE
1/4"

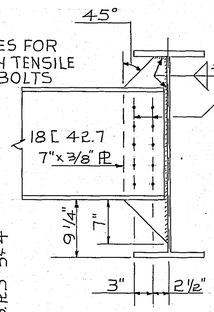


FACIA STRINGER SIDEWALK SIDE

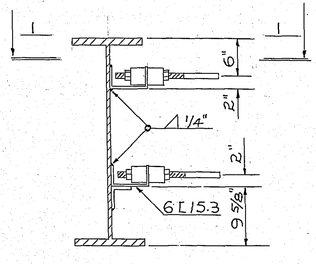


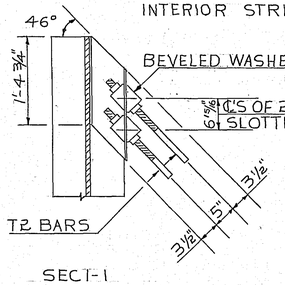
NO TRANSVERSE WELD ON BOTTOM FLANGE

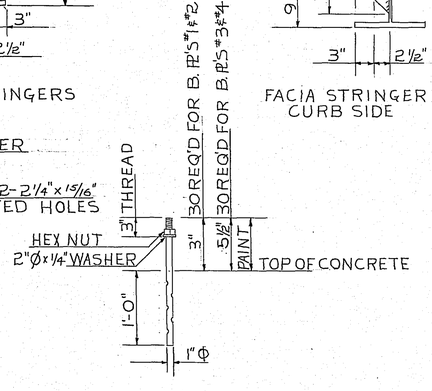
INTERIOR STRINGERS



FACIA STRINGER CURB SIDE

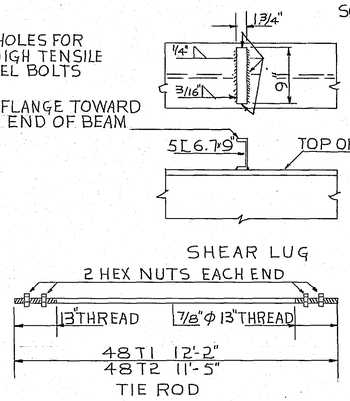


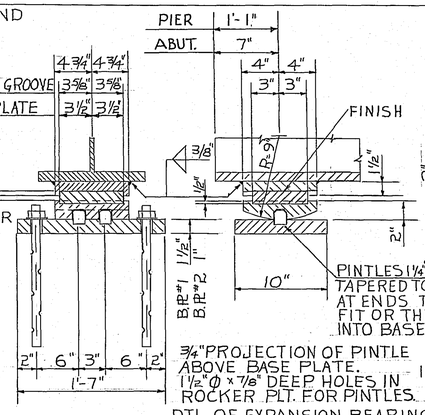


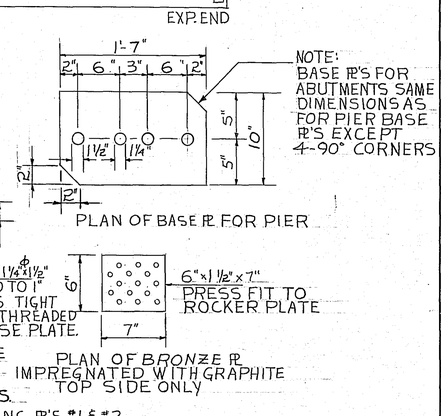


DTL. FOR CONCRETE DIAPHRAGM-SIDEWALK FACIA STRINGER (CURB SIDE FACIA STRINGER SIMILAR)

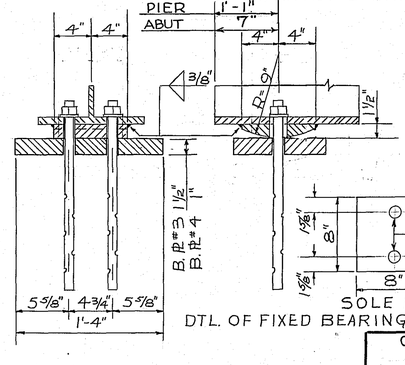
DETAIL OF ANCHOR BOLTS

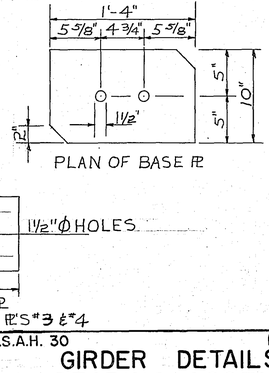






DTL. OF EXPANSION BEARING PL'S #1 & #2





DTL. OF FIXED BEARING PL'S #3 & #4

C.S.A.H. 30 — RAMSEY COUNTY

GIRDER DETAILS & BEARING ASSEMBLIES

TOLTZ, KING, DUVALL, ANDERSON AND ASSOCIATES, INC.
ST. PAUL, MINNESOTA
ENGINEERS AND ARCHITECTS

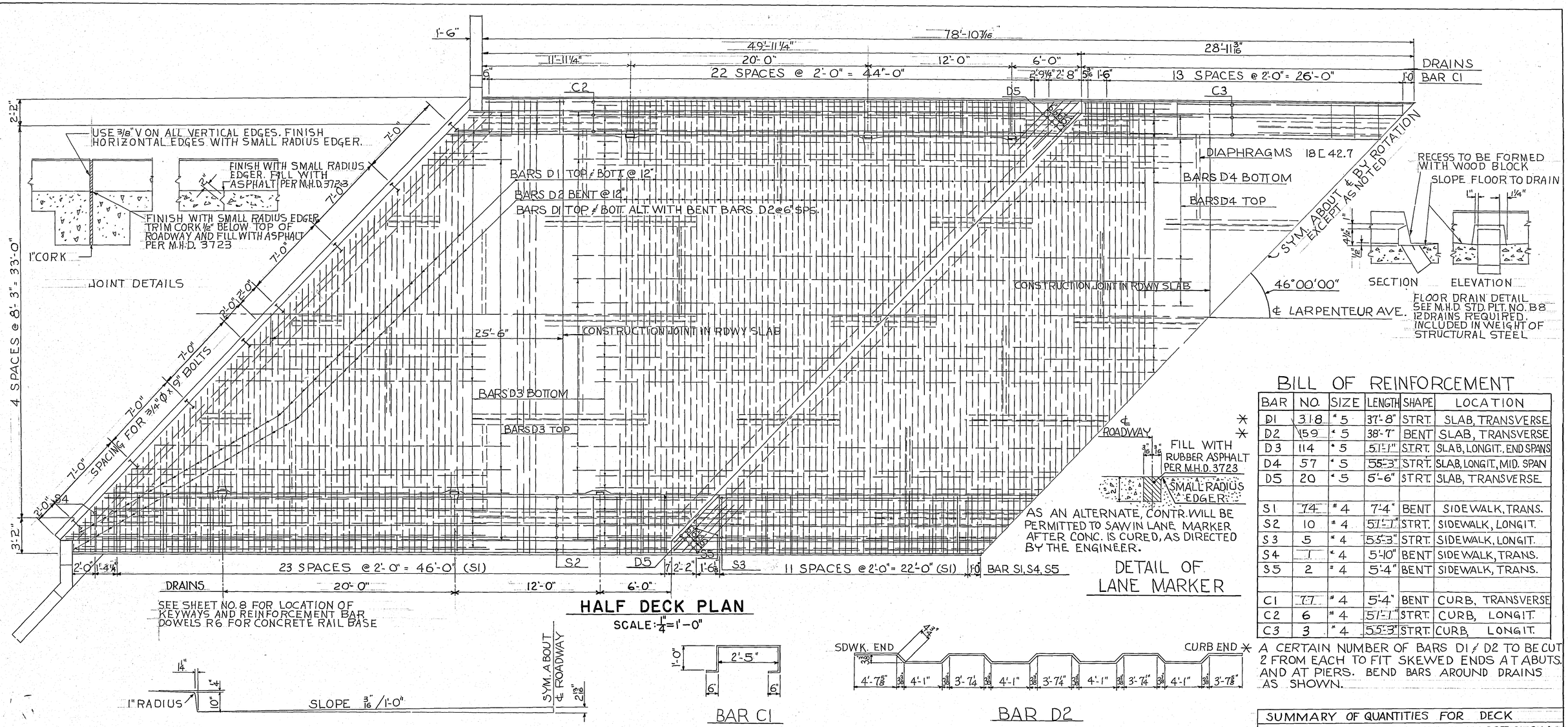
DESIGNED	BRIDGE NO. 7231	COM.
DRAWN		DRG.
CHECKED	APPROVED: AUGUST 8, 1958	

S.A.P. NO. 62-606-05 (C.S.A.H. 30)

SHEET NO. 6 OF 9 SHEETS

7231

File No. 6123



BILL OF REINFORCEMENT

BAR	NO.	SIZE	LENGTH	SHAPE	LOCATION
D1	318	# 5	37'-8"	STRT.	SLAB, TRANSVERSE
D2	159	# 5	38'-7"	BENT	SLAB, TRANSVERSE
D3	114	# 5	51'-1"	STRT.	SLAB, LONGIT., END SPANS
D4	57	# 5	55'-3"	STRT.	SLAB, LONGIT., MID. SPAN
D5	20	# 5	5'-6"	STRT.	SLAB, TRANSVERSE
S1	74	# 4	7'-4"	BENT	SIDEWALK, TRANS.
S2	10	# 4	51'-1"	STRT.	SIDEWALK, LONGIT.
S3	5	# 4	55'-3"	STRT.	SIDEWALK, LONGIT.
S4	1	# 4	5'-10"	BENT	SIDEWALK, TRANS.
S5	2	# 4	5'-4"	BENT	SIDEWALK, TRANS.
C1	77	# 4	5'-4"	BENT	CURB, TRANSVERSE
C2	6	# 4	51'-1"	STRT.	CURB, LONGIT.
C3	3	# 4	55'-3"	STRT.	CURB, LONGIT.

SUMMARY OF QUANTITIES FOR DECK

CONCRETE MIX NO. 3Y6	207.2	C.Y.
REINFORCEMENT BARS	29855	LB.
STRUCTURAL STEEL	113800	LBS.
WROUGHT BRONZE	304	LBS.

C.S.A.H. NO. 30 — RAMSEY COUNTY

DECK PLAN

TOLTZ, KING, DUVALL, ANDERSON AND ASSOCIATES, INC.
ST. PAUL, MINNESOTA
ENGINEERS AND ARCHITECTS

DESIGNED — DRAWN — CHECKED

BRIDGE NO. 7231

APPROVED: AUGUST 8, 1958

COM. — DRG.

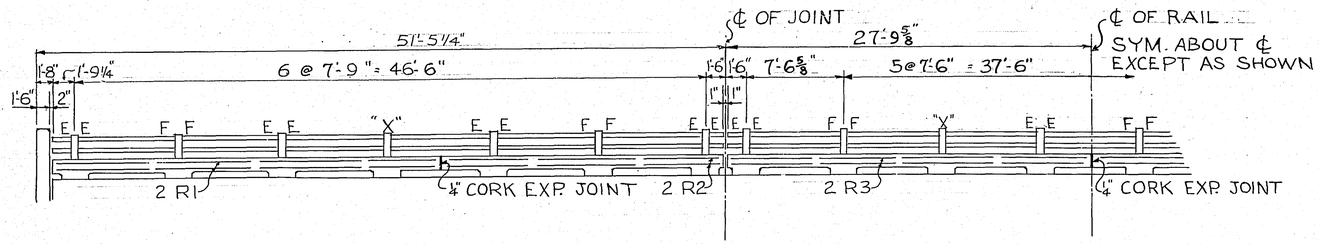
S.A.P. NO. 62-606-05 (C.S.A.H. 30)

SHEET NO. 7 OF 9 SHEETS

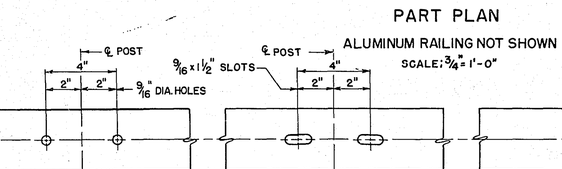
7231

File No. 6123

SUMMARY OF QUANTITIES FOR RAILING	
CONCRETE GRADE Y MIX NO. 3Y6	13.2 CU. YD.
REINFORCEMENT BARS	4660 LB.
ORNAMENTAL METAL RAILING	310.96 LIN. FT.

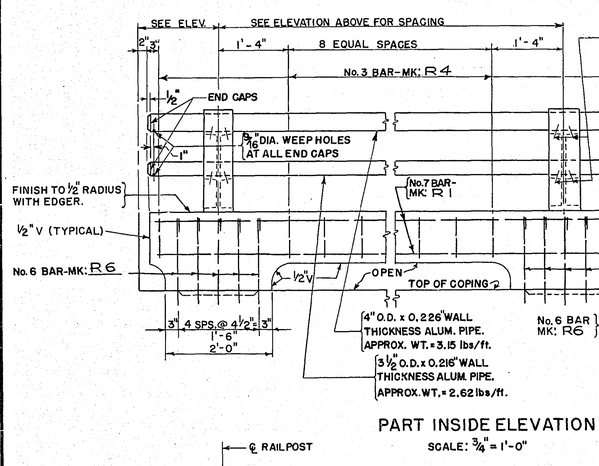


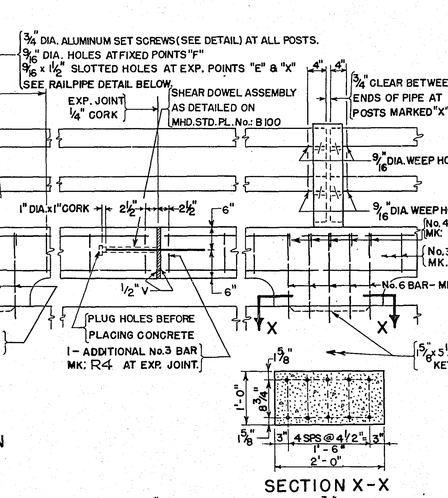
HALF SIDE ELEVATION OF RAILING

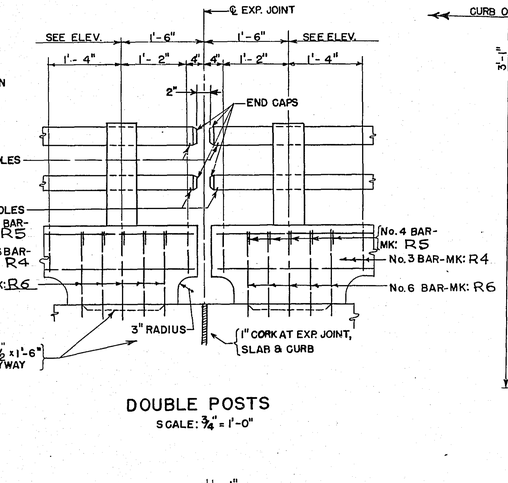


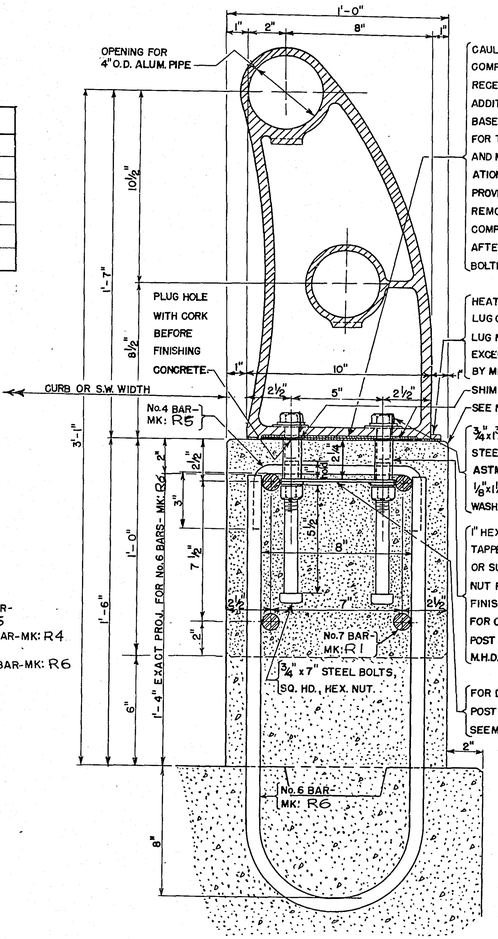
BILL OF REINFORCEMENT

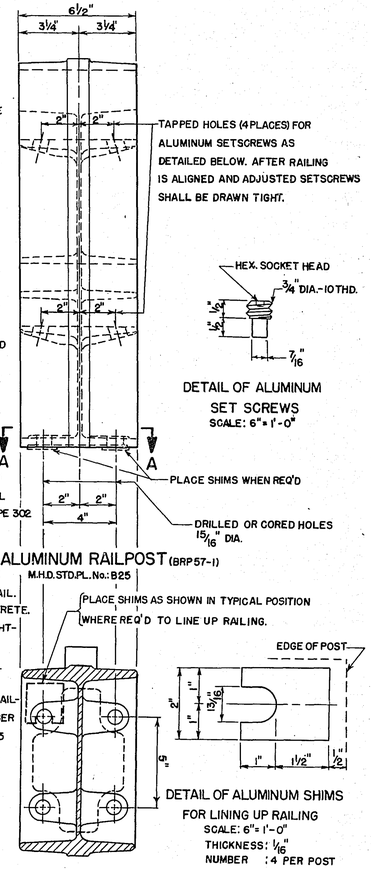
BAR	NO.	SIZE	LENGTH	SHAPE	LOCATION
R1	16	#7	28'-6"	STRT.	PARAPET, LONG.
R2	16	#7	20'-6"	STRT.	DO.
R3	16	#7	27'-6"	STRT.	DO.
R4	360	#3	3'-8"	BENT	PARAPET
R5	220	#4	1'-2"	BENT	DO.
R6	220	#6	4'-6"	BENT	DO.

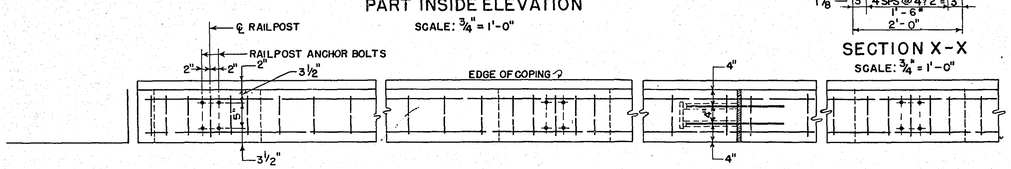


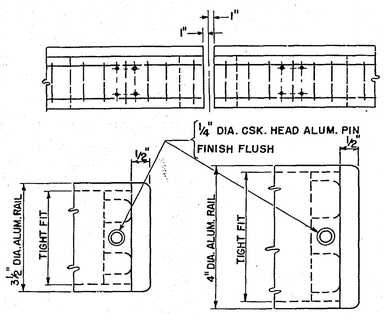












ALL RAILPOSTS TO BE SET NORMAL TO GRADE.
CONCRETE POSTS AND CONCRETE BASE TO BE GRADE Y, MIX No. 3Y6.
ALL PIPE, RAIL POSTS, ANCHOR BOLT ASSEMBLIES, BOLTS, SCREWS, SHEAR DOWEL ASSEMBLIES, CAPS, SHIMS, PINS, AND COMPOUND TO BE INCLUDED IN PRICE BID FOR ORNAMENTAL METAL RAILING.
LENGTH OF RAILING FOR PAYMENT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

DR	R.S.W.
TR	R.S.W.
CK	G.E.K.

REVISED 2-26-58

TYPICAL FOR RECEIVING SETSCREWS AS INDICATED IN "PART INSIDE ELEVATION" FOR CONNECTION TO ALUMINUM RAILPOST

C.S.A.H. NO. 30 RAMSEY COUNTY
BRIDGE NO. 7231

RAILING DETAILS

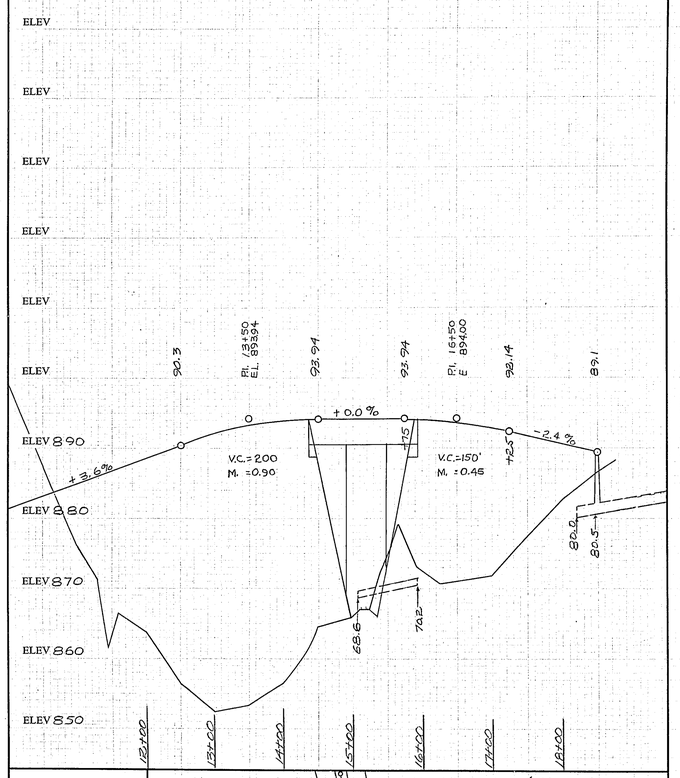
APPROVED: AUGUST 8, 1958

DES.	
DR.	
TR.	
1-CK.	
2-CK.	

File No 6123

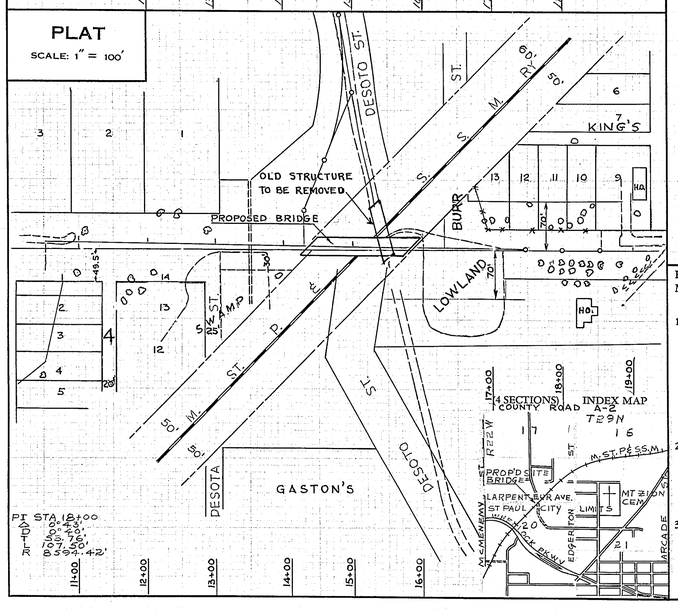
CONTRACTED PROFILE

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



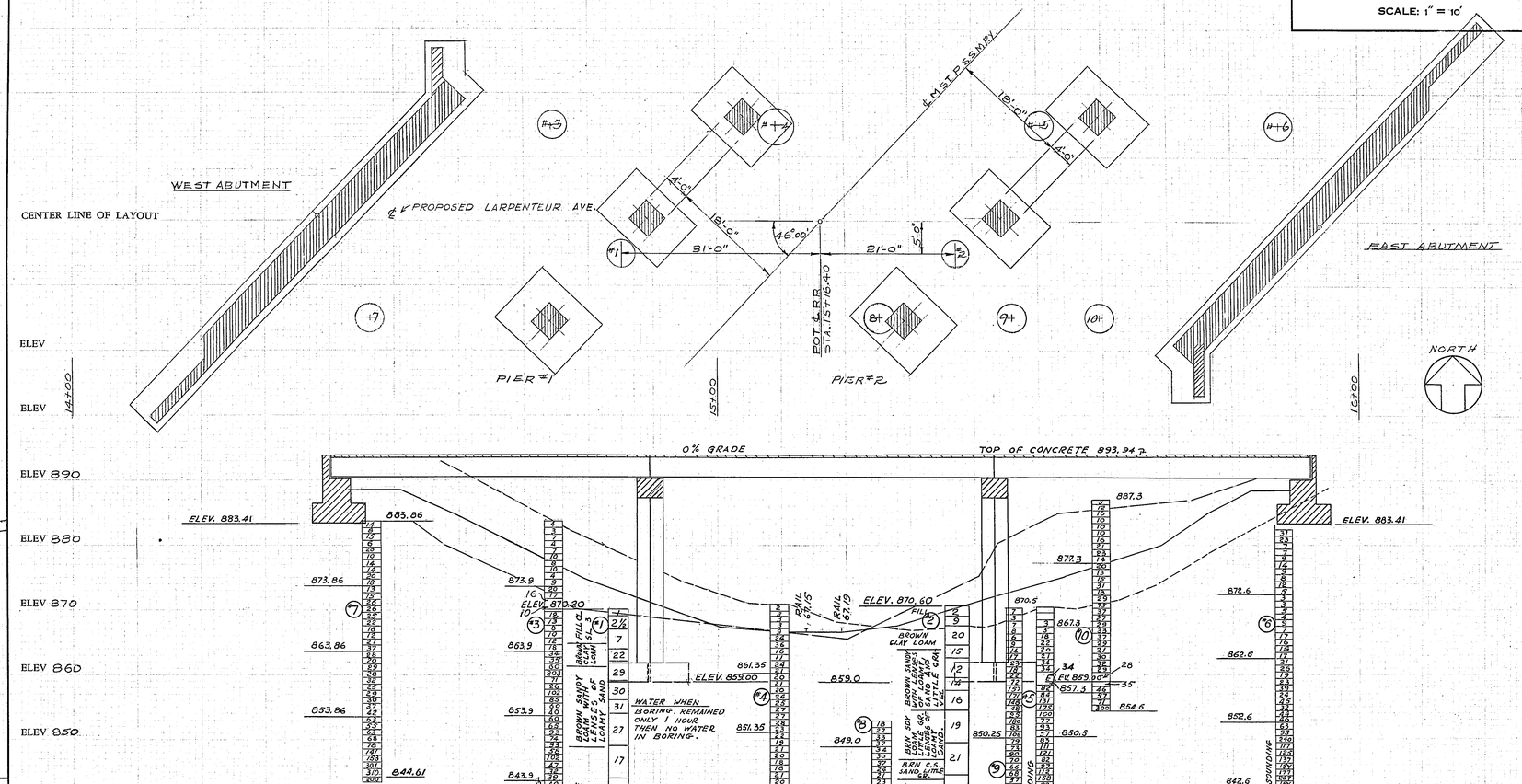
PLAT

SCALE: 1" = 100'



PLAN AND PROFILE

SCALE: 1" = 10'



TOLTZ, KING, DUVALL, ANDERSON AND ASSOCIATES INC.
ENGINEERS AND ARCHITECTS
ST. PAUL MINNESOTA

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

DATA

1. Preliminary recommendations of Engineer in charge of Bridge Survey:
   - a. Net span length and type of bridge 51'-56'-51' B.S.
   - b. Width of roadway on bridge 30 FT.
   - c. Number and width of sidewalks, if any 1 @ 4'-0"
   - d. Locate center of bridge at station 15+16.40
   - e. If a skew bridge is recommended, the angle of skew should be 44°-00'-00"
   - f. Is piling required? YES
2. Special features: Waterfalls, dams, exceptional floods, ice, driftwood, sliding banks, logging, etc.
3. Changes: In height or length from that of old bridge, and reasons why.

DATA (Contd.)

4. Other bridges in vicinity:
   - a. 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.
   - b. Over or under same highway or railroad; give location, length, horizontal and vertical clearances and estimated age.
   - c. Reasons why these bridges are, or are not, fair indications of what length the proposed bridge should be.
5. If structure is over a drainage ditch, is ditch gradient liable to be altered?
6. Navigation clearances required, if any.
7. Information and evidence in regard to high water stages was obtained as follows.
8. Must contractor provide for traffic during construction of proposed bridge? If so, by what means?

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 * AT ST. PAUL ..... 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 ..... MILES ..... OF AT ST. PAUL (TOWN OR CITY) ON C.S.A.H. 30 (T.H., S.A.R. OR C.A.R. NUMBER)

SEC. 17 TWP. 29 N. R. 22 W

TOWNSHIP ..... COUNTY RAMSEY

SURVEY MADE DURING MONTH OF ..... 19 .....

SURVEY MADE BY .....

BRIDGE No. 7231

S.A.P. NO. 62-606-05 (C.S.A.H. 30)

File No 6123