

ANOKA COUNTY PARKS DEPARTMENT

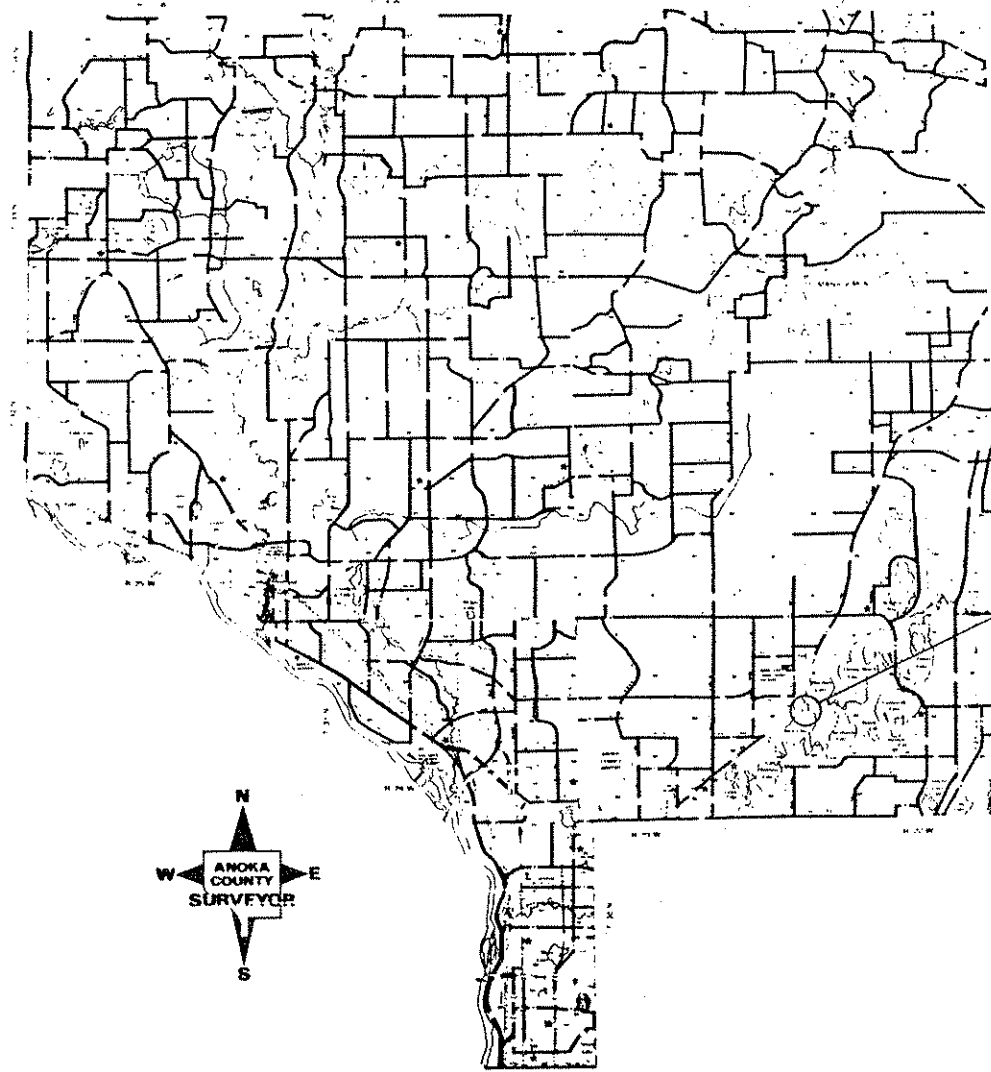
FISCHER

CONSTRUCTION PLAN FOR BRIDGE NO. 02554

LOCATED ON AQUA LANE OVER RICE CREEK (Geographic Description)

COUNTY PROJ. NO. 88-27-00

88-27-00

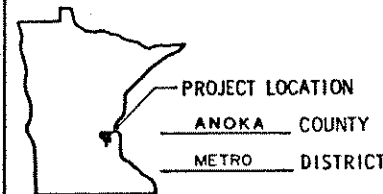


SCALES

PLAN _____ 50
 PROFILE _____ 50 H _____ 5 V
 INDEX MAP _____ 2 MI.
 CROSS SECTION _____ 10

DESIGN DATA

FUNCTIONAL CLASSIFICATION	PARK ACCESS ROAD	NO. OF PARKING LANES	0
NO. OF TRAFFIC LANES	= 2	7 TON DESIGN SHOULDER WIDTH	4
ADT (CURRENT YEAR) 1990	= 82	DESIGN SPEED	MPH
ADT (FUTURE YEAR) 2010	= 140	BASED ON	SIGHT DISTANCE
DHV (DESIGN HR. VOL.)	= NA	HEIGHT OF EYE	HEIGHT OF OBJECT
D (DIRECTIONAL DISTR.)	= 50%	DESIGN SPEED NOT ACHIEVED AT:	
T (HEAVY COMMERCIAL)	= NA	STA. _____ TO STA. _____	MPH
SOIL FACTOR	= 50%	STA. _____ TO STA. _____	MPH
		R-VALUE	OR N 18 FACTOR



FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO.	AREA	JOB
_____	_____	_____
_____	_____	_____
_____	_____	_____

STATE AID PROJ. NO. _____ COUNTY PROJ. NO. 88-27-00
 STATE PROJ. NO. _____ SHEET NO. 1 OF 11 SHEETS

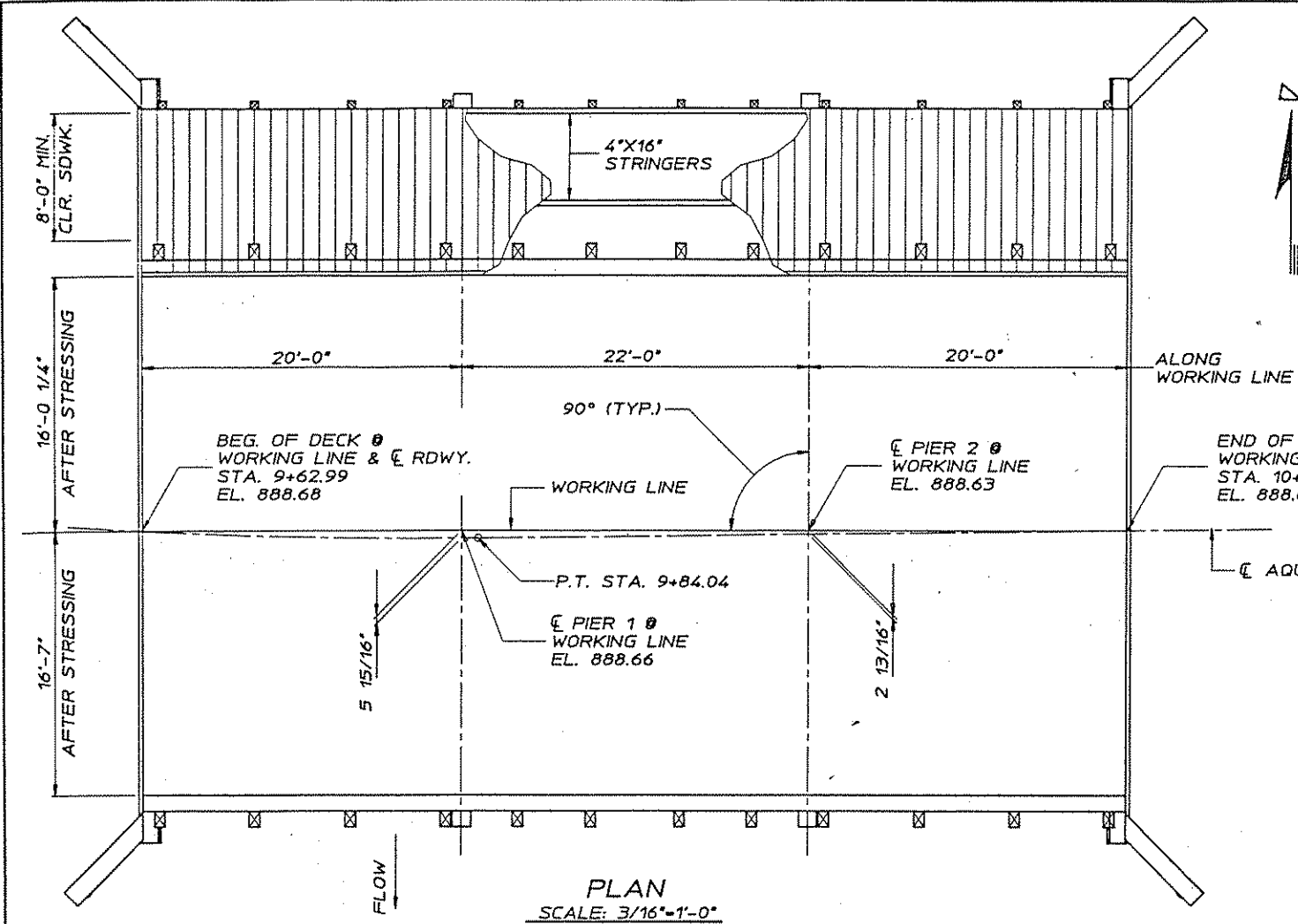
FED. PROJ. NO. _____
GOVERNING SPECIFICATIONS
 THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND "SUPPLEMENTAL SPECIFICATIONS TO THE 1988 STANDARD SPECIFICATIONS FOR CONSTRUCTION", DATED JANUARY 2, 1991, SHALL GOVERN.

INDEX

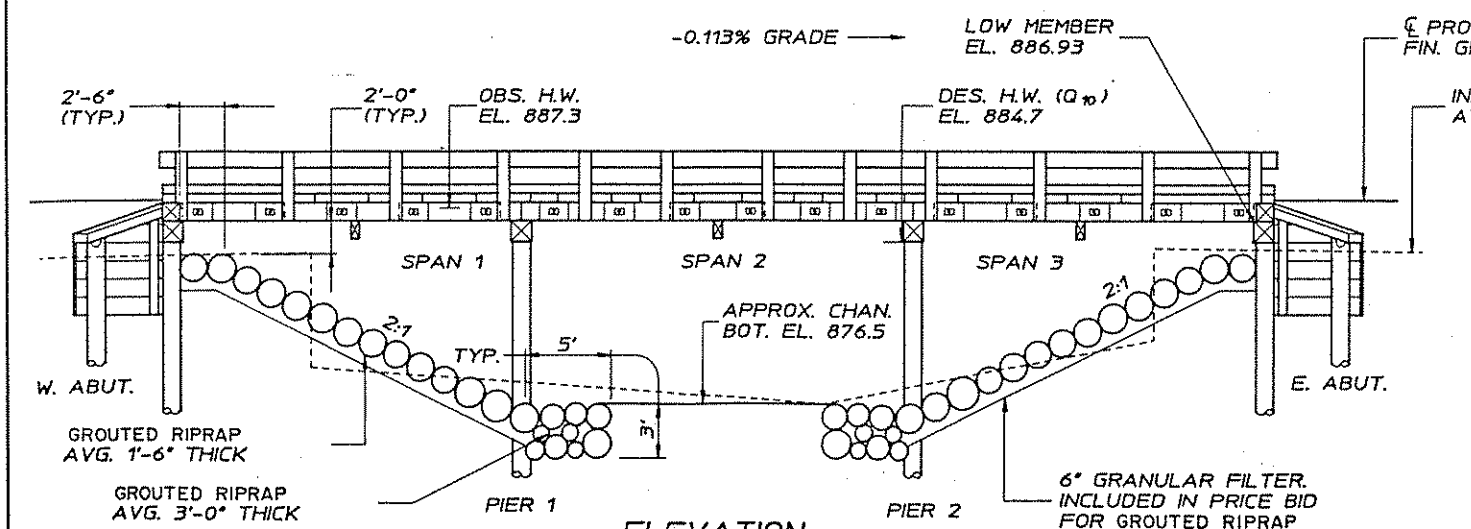
SHEET NO.	DESCRIPTION
2-11	BRIDGE NO. 02554

Recommended for Approval David L. Takellon Aug 16 1991
 ANOKA COUNTY PARKS DIRECTOR
 Approved Aug 16 1991
 ANOKA COUNTY ENGINEER

I HEREBY CERTIFY THAT THE FINAL FIELD REVISIONS, IF ANY, OF THIS PLAN WERE MADE 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 _____ REG. NO. _____



PLAN
SCALE: 3/16"=1'-0"



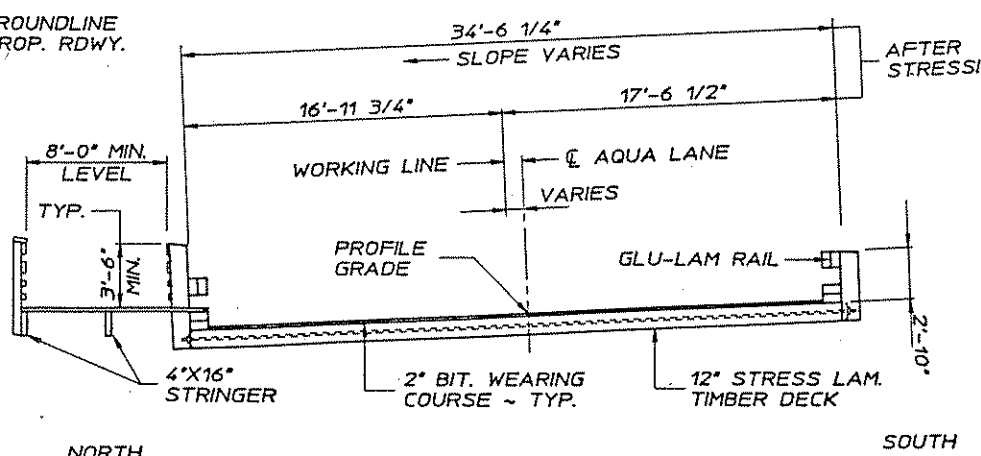
ELEVATION
SCALE: 3/16"=1'-0"

GOVERNING SPECIFICATIONS
 THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS AMENDED BY THE JANUARY 2, 1991, SUPPLEMENTAL SPECIFICATIONS SHALL GOVERN.

NOTE:
 WORKING LINE IS A STRAIGHT LINE FROM STA. 9+62.99 TO STA. 10+25.00

CONSTRUCTION NOTES

- CONSTRUCTION REQUIREMENTS SHALL CONFORM TO SPEC. 2403.3.
- ALL TIMBER IS TO BE PRESSURE TREATED PER SPEC 3491.
- ALL HARDWARE IS TO BE GALVANIZED PER SPEC. 3392.
- ALL STRUCTURAL STEEL (BEARING & ANCHOR PLATES) TO BE GALVANIZED PER SPEC. 3394.
- ALL TIMBER IS ROUGH UNLESS OTHERWISE NOTED.
- ALL TIMBER PILING IS TO MEET THE REQUIREMENTS OF SPEC. 3471 AND IS TO BE CREOSOTE PRESSURE TREATED PER SPEC. 3491.
- STRESSED DECK: TIMBER DECK PANELS ARE TO BE ASSEMBLED USING 1" STRESSING RODS WITH A 12"x16"x1" BEARING PLATE, A 4"x6 1/2"x1 1/4" ANCHOR PLATE AND AN ANCHOR NUT AT EACH END. STRESSING SEQUENCE SHALL CONFORM TO THE SPECIAL PROVISIONS.
- PRESTRESSING SYSTEM SHALL BE AS MANUFACTURED BY DYWIDAG SYSTEMS, INT'L OR APPROVED EQUAL.
- NO PUBLIC VEHICLES WILL BE ALLOWED ON THE BRIDGE UNTIL THE COMPLETION OF STAGE 2 STRESSING.
- ALL DECK PLANKS SHALL BE PREDRILLED PRIOR TO TREATMENT.
- ALL HOLES DRILLED IN FIELD WHERE DM. HD. DR. SPIKES ARE USED ARE TO BE 1/16" SMALLER THAN SPIKE SIZE. ALL HOLES DRILLED FOR BOLTS ARE TO BE 1/16" LARGER THAN BOLT SIZE.
- TIMBER FABRICATOR SHALL PROVIDE PREFRAMING DETAILS TO THE OWNER PRIOR TO TREATMENT OF MATERIALS.



TRANSVERSE SECTION THRU DECK
SCALE: 3/16"=1'-0"

DESIGN DATA
 1989 & INTERIM A.A.S.H.T.O. DESIGN SPECIFICATIONS
 HS-20 LOADING ~ NO IMPACT ~ 2 LANES
 DECK AREA = 2232 S.F. A.D.T.-126 (PROJ. 2010)

LIST OF SHEETS

NO.	TITLE
1	TITLE SHEET
2	GENERAL PLAN & ELEVATION
3	ABUTMENT DETAILS
4	PIER DETAILS
5-8	SUPERSTRUCTURE DETAILS
9	DETAILS
10	BRIDGE SURVEY
11	BRIDGE SURVEY ~ PLAN & PROFILE

B.M. ELEV. 884.48 (M.S.L. 1929 ADJ.)
 LOCATION:
 HUB AT RICE LAKE OUTLET
 N.E. OF N.E. WINGWALL

APPROVED:
 COUNTY ENGINEER
 ANOKA COUNTY

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.

Kenneth A. Johnson
 REG. NO. 99946

DATE: July 31, 1991

PLANS PREPARED BY:
 ERICKSON ENGINEERING
 3340 REPUBLIC AVENUE
 ST. LOUIS PARK, MN 55426

AQUA LANE ANOKA COUNTY
 MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 02554

LOCATED 0.2 MILES EAST OF THE JCT. WITH T.H. 49 ON AQUA LANE OVER RICE CREEK.

20'-22'-20' TRTD. TBR. STRESSED SPANS
 32 FT. MIN. RDWY. ~ 18°-53'-52" CURVE
 SPAN IDENTIFICATION NO. 709

GENERAL PLAN & ELEVATION

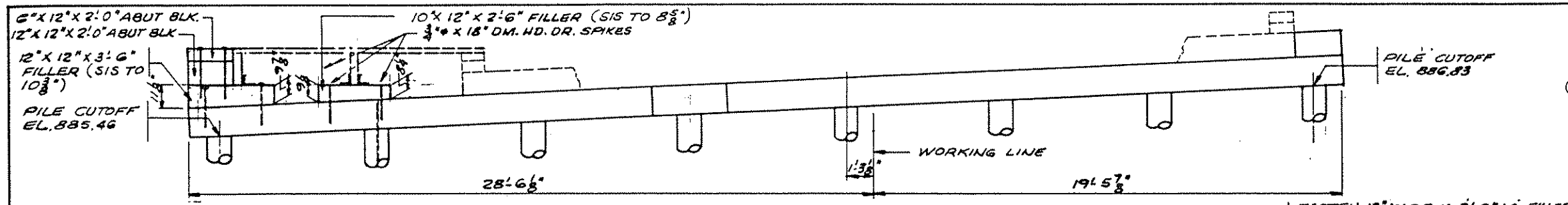
SEC. 20 TWP. 31N R 22W

COUNTY: ANOKA

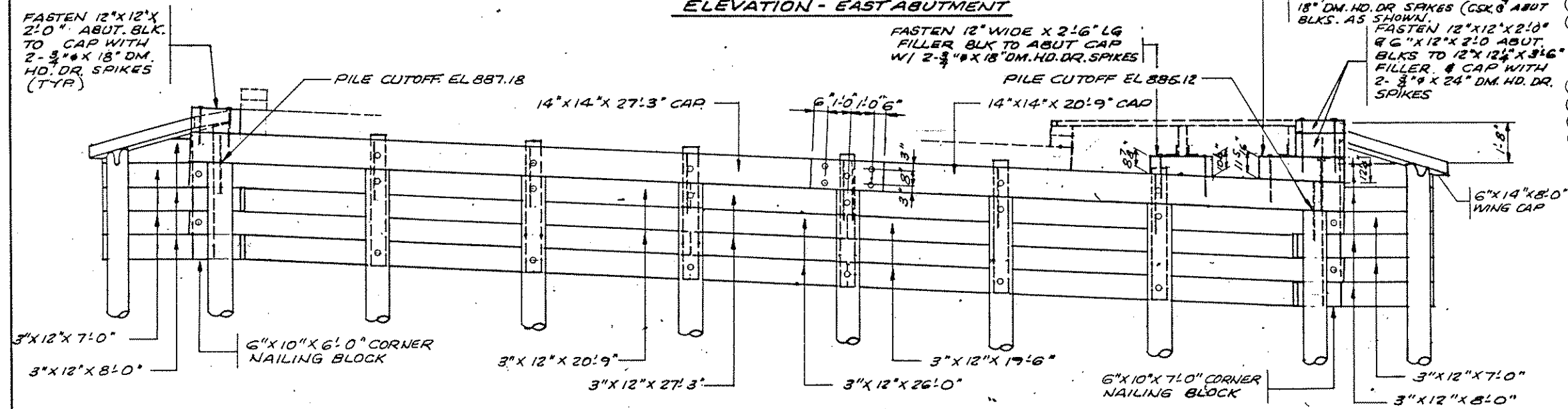
SHEET 2 OF 11 SHEETS
 02554 RMT BDW

SCHEDULE OF QUANTITIES FOR THE ENTIRE BRIDGE

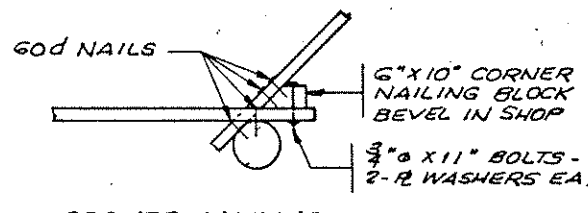
ITEM NO.	2403.502	2403.506	2402.521	2511.507	0403.604	0403.602	0401.601	0331.601	2452.503	2452.504	2452.517	2452.507	2452.508	2452.519	2442.501
ITEM	TREATED TIMBER	HARDWARE	STRUCTURAL STEEL (3306)	GROUDED RIPRAP	GLUED LAMINATED RAIL, TYPE 1	STRESSED DECK	SLOPE PREP-ARATION	2" THICK BITUMINOUS WEARING COURSE	TREATED TIMBER PILING DELIVERED	TREATED TIMBER PILING DRIVEN	TREATED TIMBER TEST PILES, 50 FT. LONG	C.I.P. CONCRETE PILING DELIVERED	C.I.P. CONCRETE PILING DRIVEN	C.I.P. CONCRETE TEST PILES 50 FT. LONG	REMOVE OLD BRIDGE ①
QUANTITY	12.80 (P)	2752 (P)	1015 (P)	210	125 (P)	1	1	229	660	660	2	480	480	2	1
UNIT	M.B.M.	POUND	POUND	CU.YD.	LIN. FT.	LUMP SUM	LUMP SUM	SQ. YD.	LIN. FT.	LIN. FT.	EACH	LIN. FT.	LIN. FT.	EACH	LUMP SUM



ELEVATION - EAST ABUTMENT

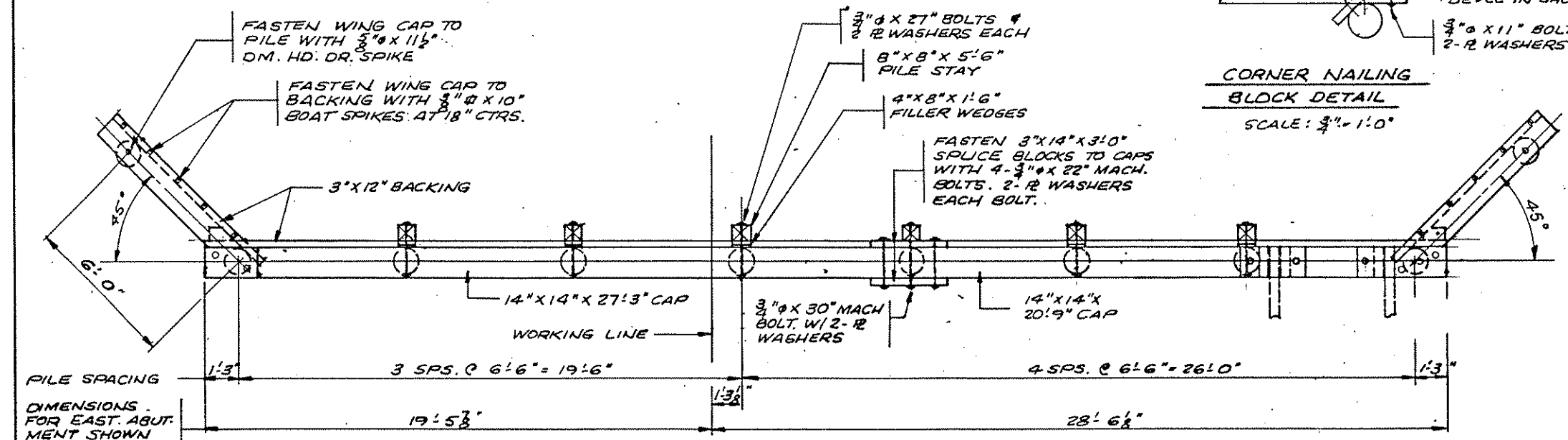


ELEVATION - WEST ABUTMENT



CORNER NAILING BLOCK DETAIL

SCALE: 3/4\"/>



PLAN - WEST ABUTMENT

SCALE: 3/4\"/>

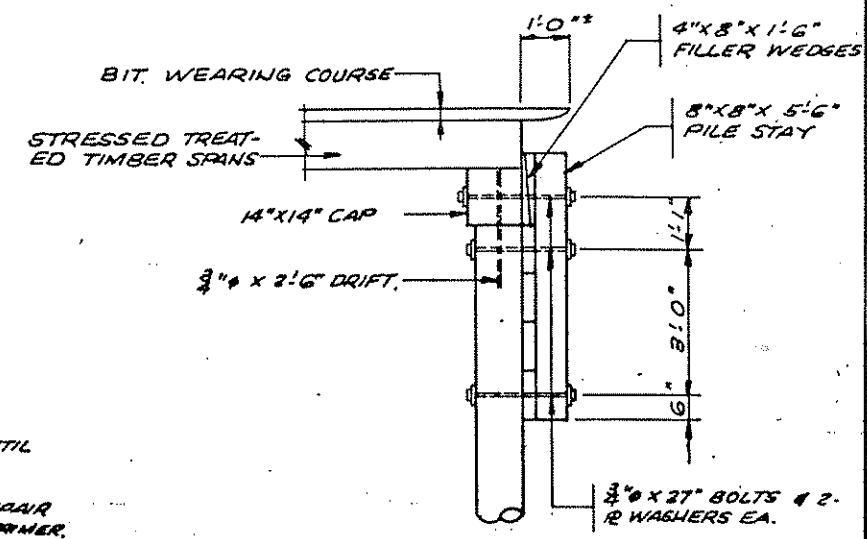
BILL OF TREATED TIMBER FOR 2 ABUTMENTS

ITEM	NO.	FIN.	SIZE	LENGTH	F.B.M.
PILE CAP	2	R	14X14	20'9"	678
"	2	R	14X14	27'3"	890
② CORNER NAILING BLOCK	2	R	6X10	7'0"	70
SPLICE BLOCKS	4	R	3X14	3'0"	42
ABUTMENT BACKING	4	R	3X12	19'6"	234
"	4	R	3X12	20'9"	249
"	4	R	3X12	26'0"	312
"	4	R	3X12	27'3"	327
ABUTMENT BLOCKS	4	R	12X12	2'0"	96
"	2	R	6X12	2'0"	24
PILE STAYS	12	R	8X8	5'6"	352
① FILLER WEDGES	12	R	4X8	1'6"	48
② CORNER NAILING BLOCK	2	R	6X10	6'0"	60
WING CAP	4	R	6X14	8'0"	224
WING BACKING	8	R	3X12	7'0"	168
"	16	R	3X12	8'0"	384
③ FILLER BLOCK - EAST ABUT	1	SIS	10X12	2'6"	25
③ " - WEST "	1	SIS	12X12	2'6"	30
③ " - EAST ABUT	1	SIS	12X12	3'6"	42
③ " - WEST ABUT	1	SIS	12X14	3'6"	49
TOTAL TREATED TIMBER FOR 2 ABUTMENTS (F.B.M.)					4304

BILL OF HARDWARE FOR 2 ABUTMENTS

WT/EA	ITEM	WT.
3.72	34 3/4" x 27" MACH. BOLT - PILE STAY	126
4.10	2 3/4" x 30" " - AT SPLICE BLK	8
3.08	8 3/4" x 22" " - SPLICE BLK.	25
3.34	8 3/4" x 24" " - FILLER BLOCK	27
2.31	8 3/4" x 11" " - COR. NAIL BLK.	18
2.55	4 3/4" x 18" DM. HD. DR. SPIKE - ABUT BLKS	10
3.32	4 3/4" x 24" " " " " " "	13
1.32	4 3/4" x 11 1/2" " " " " " "	5
0.41	20 3/4" x 10" BOAT SPIKES - " " "	8
10/4	60d NAILS	40
0.85	120 3" x 3" x 5/16" R WASHERS FOR 3/4" BOLTS	102
3.78	18 3/4" x 30" DRIFT PIN - CAP TO PILES	68
2.65	8 3/4" x 18" DM. HD. DR. SPIKE - FILLER BLKS	20
	TOTAL HARDWARE FOR 2 ABUTMENTS (LBS)	470

- ① CUT 2 FROM 1 IN SHOP
- ② BEVEL IN SHOP
- ③ TAPER IN SHOP



SECTION THRU ABUTMENT

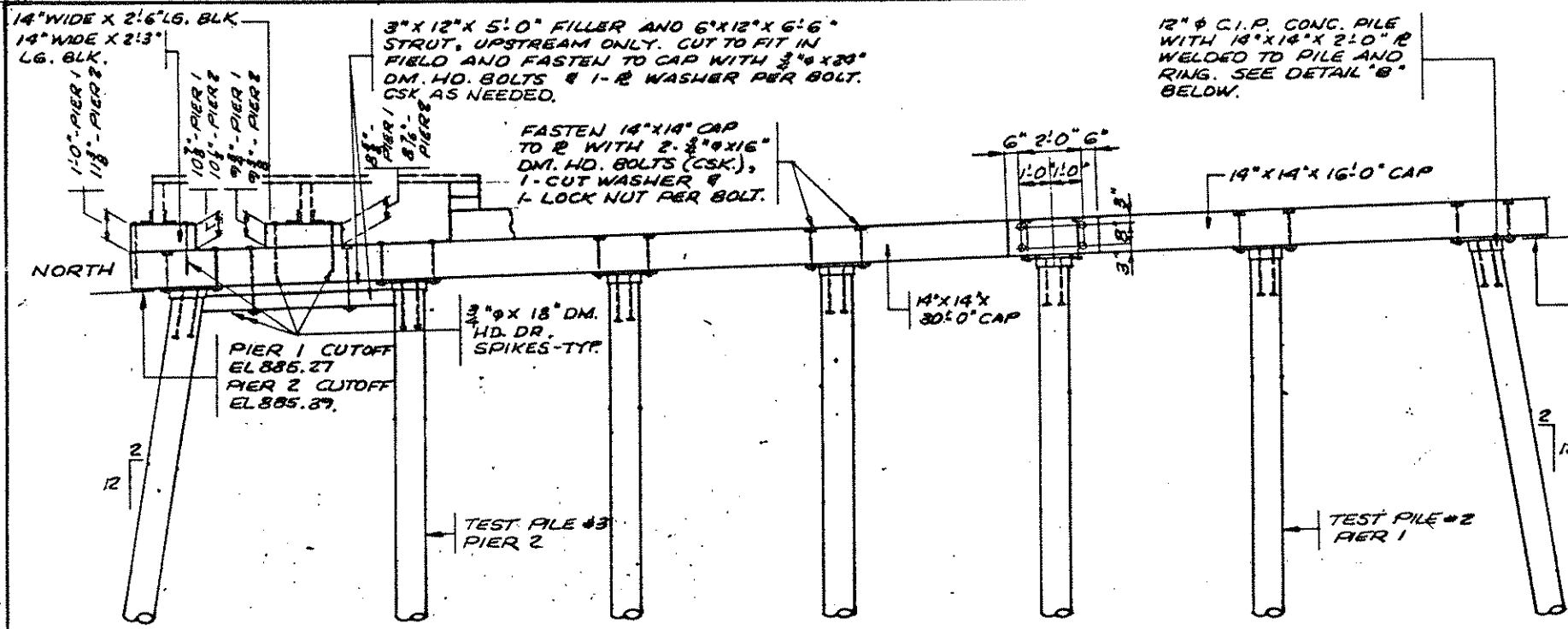
SCALE: 1/2\"/>

NOTES:
 FILL IN BACK OF ABUTMENTS SHALL NOT BE PLACED UNTIL THE SUPERSTRUCTURE HAS BEEN COMPLETED.
 BOLT PROJECTIONS EXCEEDING 1" SHALL BE CUT OFF. REPAIR END OF BOLT BY PAINTING WITH AN APPROVED ZINC RICH PRIMER.
 FASTEN BACKING TO PILES WITH 2-60d NAIL AT EACH INTERSECTION.

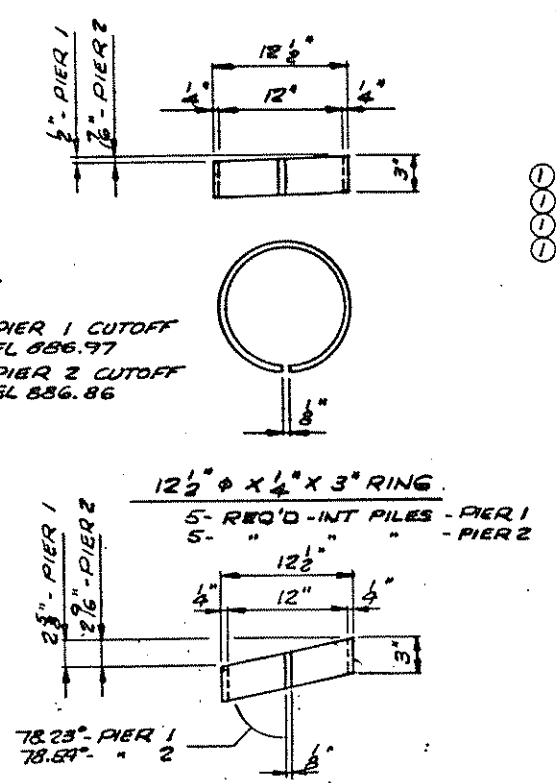
PILE NOTES

2- TREATED TIMBER TEST PILES, 50 FT. LG.
 14- " " PILES, EST. LENGTH. 40 FT.
 4- " " WING PILES 25 FT. LG.
 20- " " PILES REQ'D FOR 2 ABUTMENTS

ALL PILES ARE TO BE DRIVEN TO A BEARING OF NOT LESS THAN 28 TONS PER PILE, EXCEPT WING PILES
 SEE SURVEY SHEET FOR TEST PILE LOCATION.



ELEVATION
SCALE: 3/8" = 1'0"



BILL OF TREATED TIMBER FOR 2 PIERS

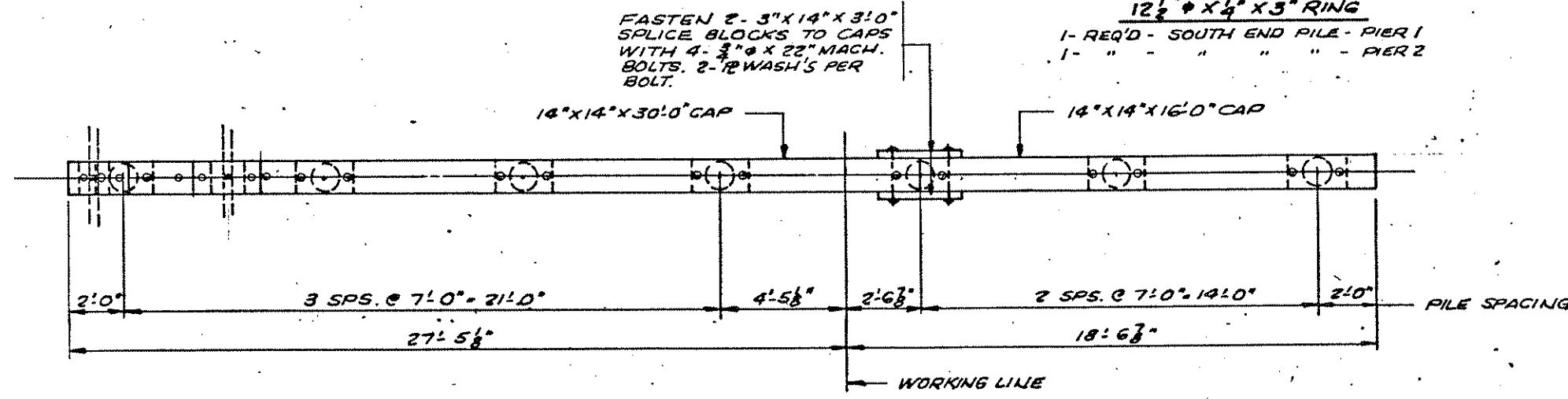
ITEM	NO.	FIN.	SIZE	LENGTH	F.B.M.
PILE CAP	2	R	14X14	16'0"	523
STRUT	2	R	6X12	6'6"	78
FILLER	2	R	3X12	5'0"	30
PILE CAP	2	R	14X14	30'0"	980
SPLICE BLKCS	4	R	3X14	3'0"	42
FILLER BLK - PIER 1	1	R	12X14	2'3"	32
" " - PIER 2	1	R	12X14	2'3"	32
FILLER " - PIER 1	1	R	10X14	2'6"	29
" " - " 2	1	R	10X14	2'6"	29
TOTAL TREATED TIMBER FOR 2 PIERS (F.B.M.)					1775

BILL OF HARDWARE FOR 2 PIERS

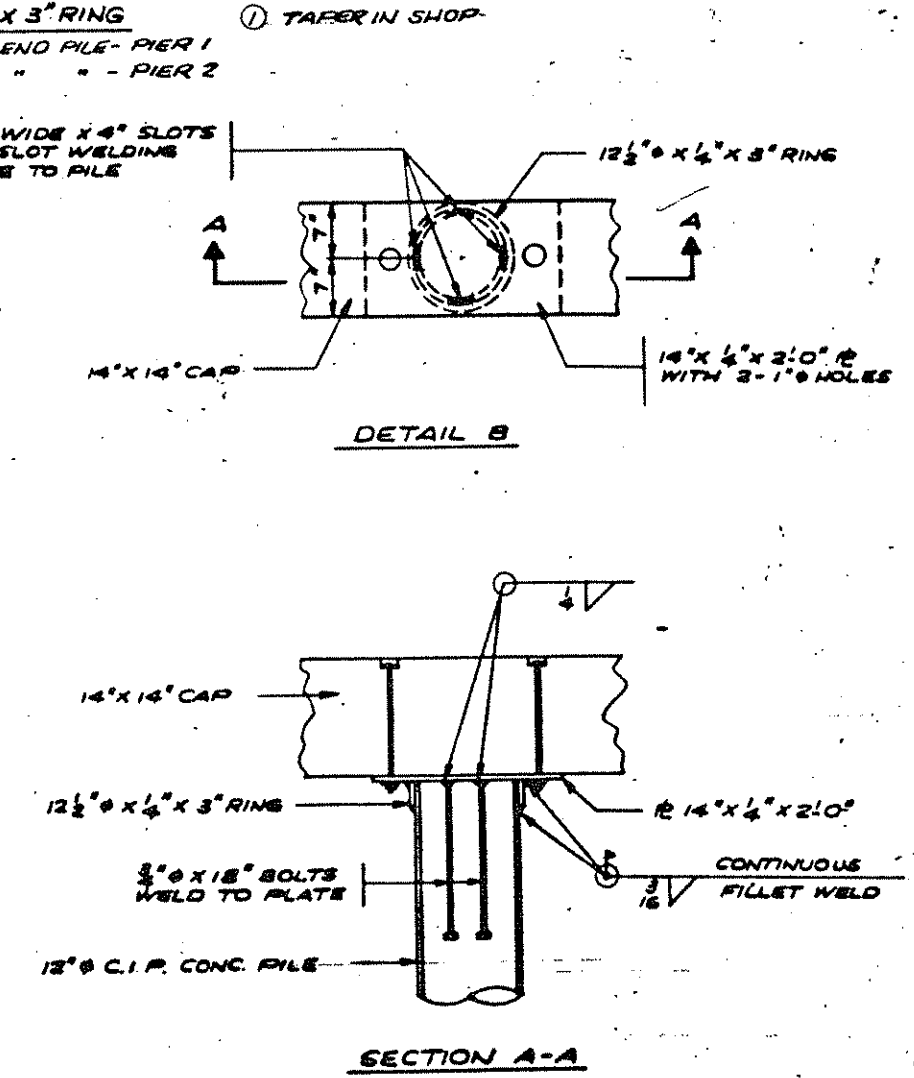
WT/EA	NO.	ITEM	WT.
3.91	4	3/4" Ø 24 DM. HD. BOLTS - STRUT	16
0.85	20	3" X 3" X 5/16" R WASHER FOR 3/8" BOLTS	17
3.08	8	3/4" Ø X 22" MACH. BOLTS - SPLICE BLKCS	25
2.31	28	3/4" Ø X 16" DM. HD. BOLTS - CAP TO R	65
0.15	28	CUT WASHERS FOR 3/8" BOLTS	4
2.55	8	3/4" Ø X 18" DM. HD. DR. SPIKES - FILLER BLK	20
TOTAL HARDWARE FOR 2 PIERS (LBS.)			147

BILL OF STRUCTURAL STEEL FOR 2 PIERS

WT/EA	NO.	ITEM	TOTAL WT.
24.16	14	14" X 4" X 2'0" R	338
8.70	14	12" Ø X 4" X 3" RING	122
2.57	28	3/4" Ø X 18" BOLT - PILE R	72
TOTAL STRUCTURAL STEEL FOR 2 PIERS 632 LBS.			



PLAN
SCALE: 3/8" = 1'0"



SECTION A-A

FILE NOTES

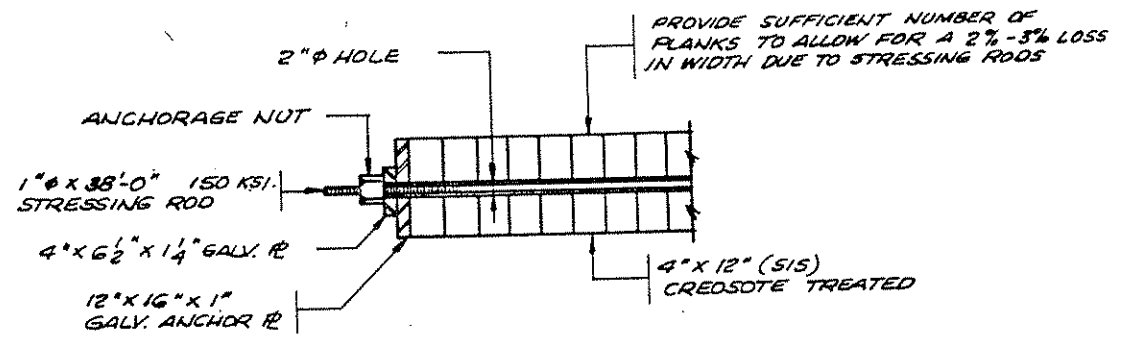
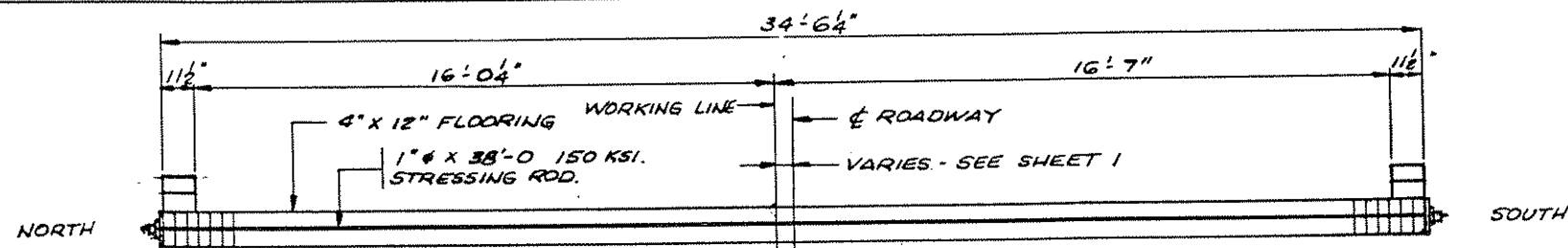
2- CAST-IN-PLACE CONCRETE TEST PILES 50 FT. LG.
12- " " " " PILES, EST. LENGTH 40 FT.
14- " " " " REQ'D FOR 2 PIERS

PILES TO HAVE A NOMINAL DIAMETER OF 12"
END PILES TO BE BATTERED 3" PER FOOT IN DIRECTION SHOWN.
PILE SPACING SHOWN IS AT BOTTOM OF CAP.
ALL PILES TO BE DRIVEN TO A BEARING OF NOT LESS THAN 28 TONS PER PILE.

PAINT & STRUCTURAL STEEL NOTES

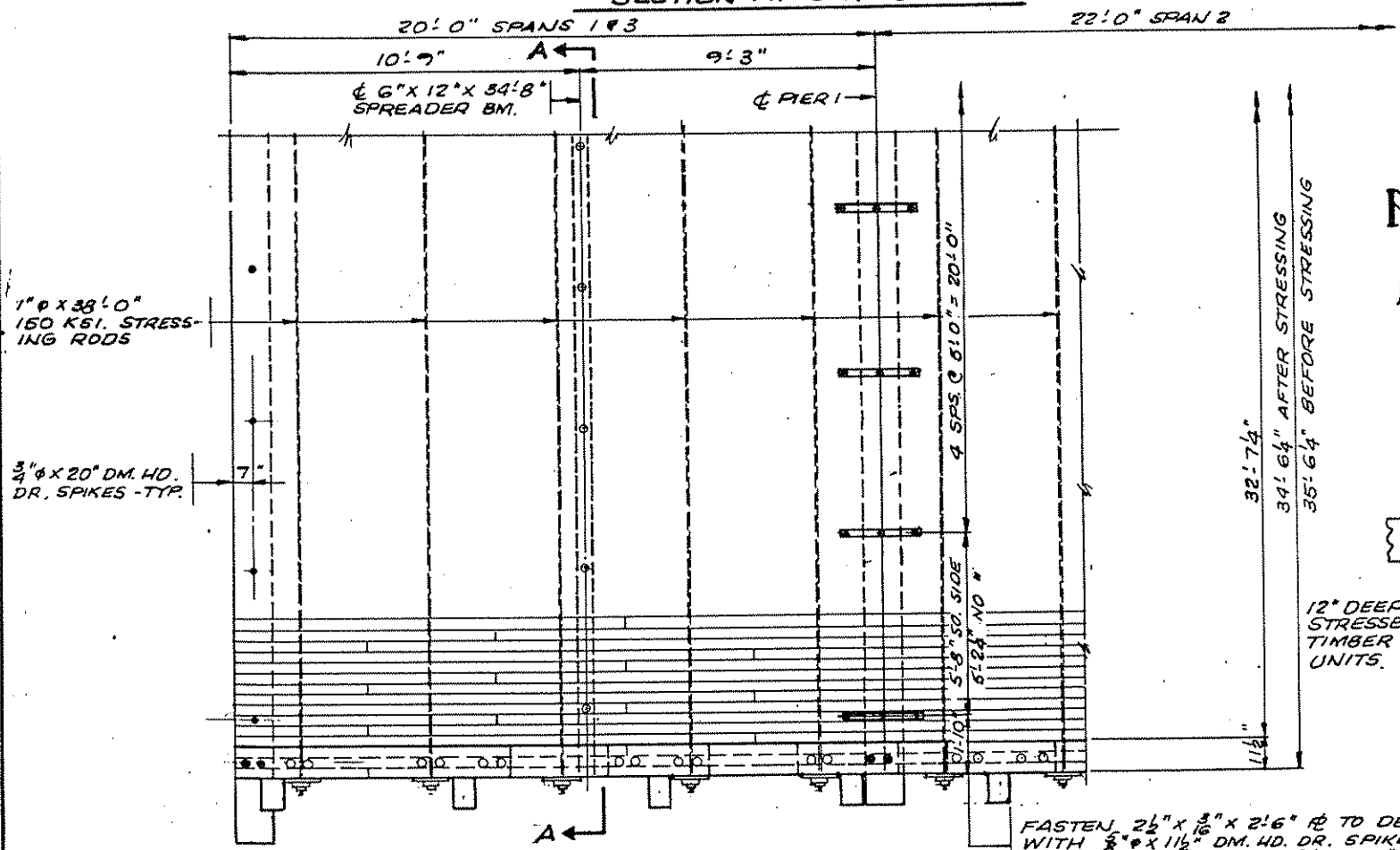
PAINT PIER PILES, PLATES, AND RINGS PER SPEC. 2477 AND SPECIAL PROVISIONS.
PLATES & RINGS TO BE STRUCTURAL STEEL PER SPEC. 5306.
AREAS OF PILES, PLATES, AND RINGS BURNED DURING WELDING ARE TO BE CLEANED AND SPOT COATED WITH ZINC-RICH PRIMER PER 5508.
FIELD PAINTING OF PLATES & RINGS FOR ALL COATS WILL BE PERMITTED.

PIER DETAILS	DRAWN	CHECKED	APPROVED	BRIDGE NO. 02554
	W.N.J.	B.D.W.		
SHEET 4 OF 11 SHEETS				

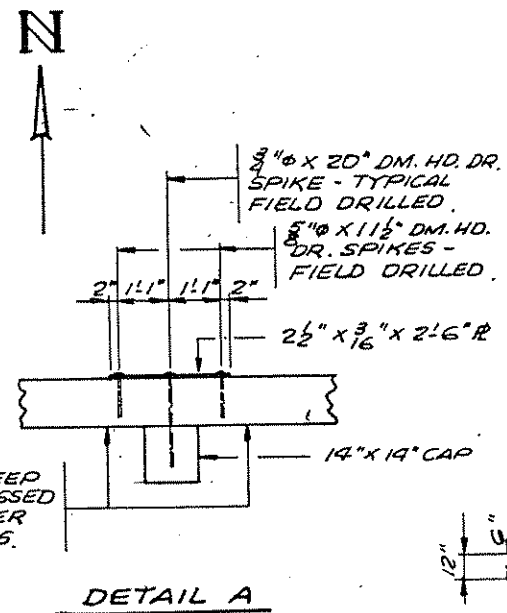


SECTION AT STRESS ROD

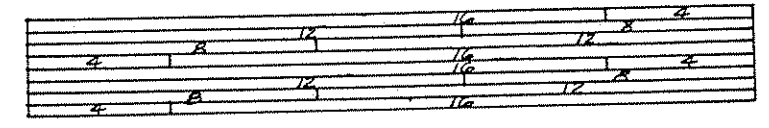
STRESS ROD ANCHOR DETAIL



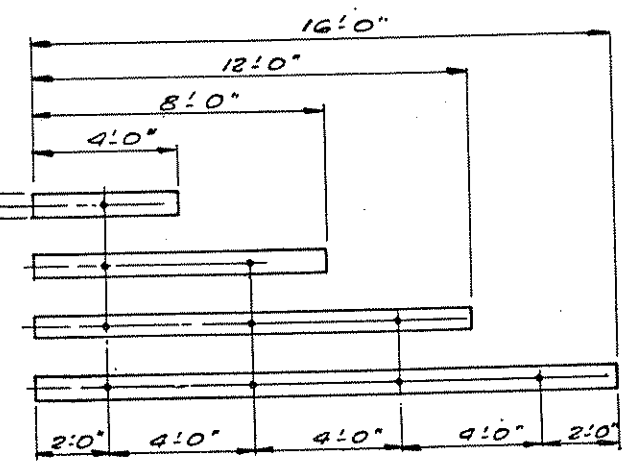
PART PLAN



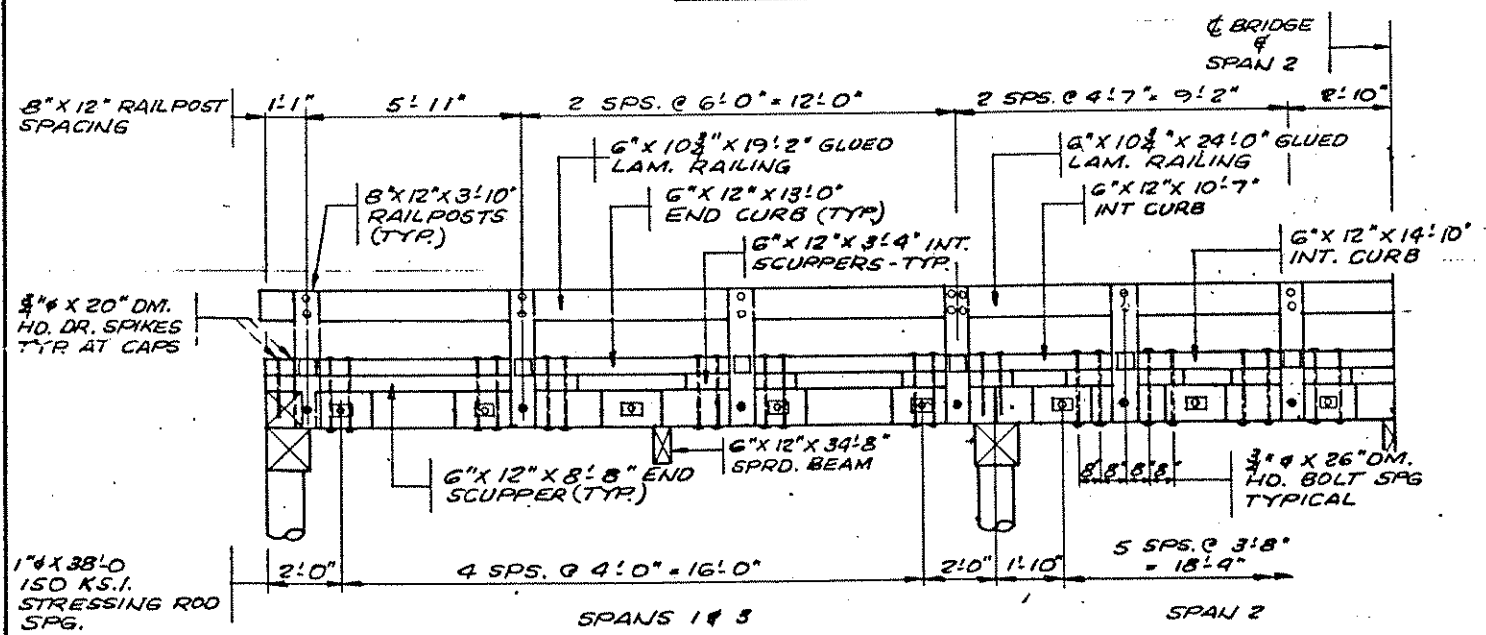
DETAIL A



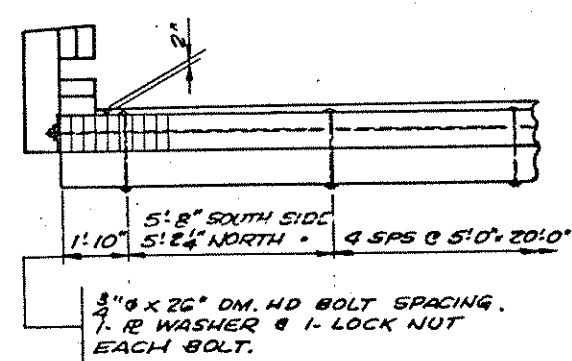
NOTES:
LAYOUT IS REPEATED SUCCESSIVELY FOR ALL DECK LAMINATIONS - SPANS 1 & 3



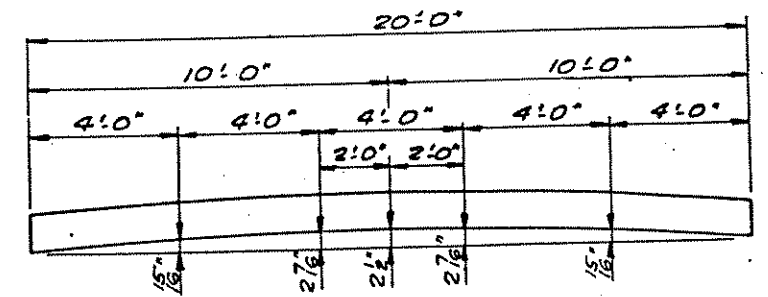
DECK PLANK LAYOUT



PART ELEVATION

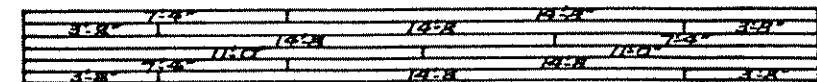
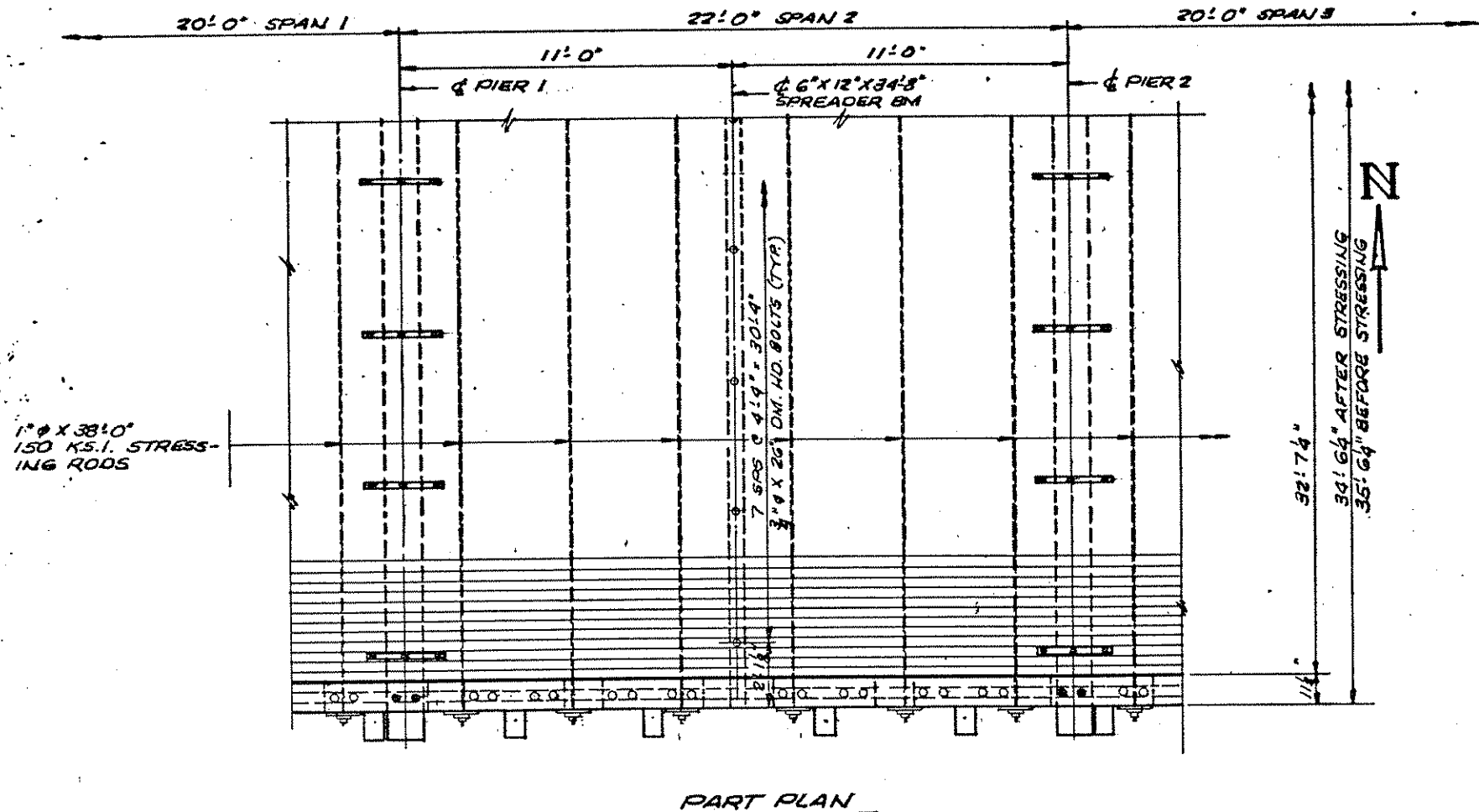
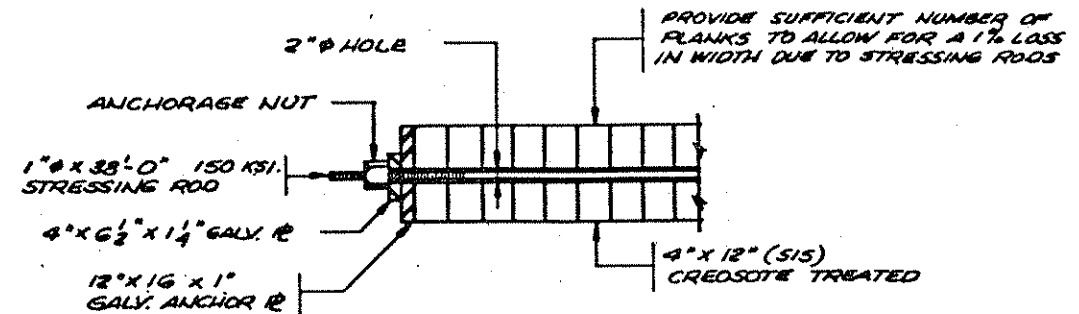
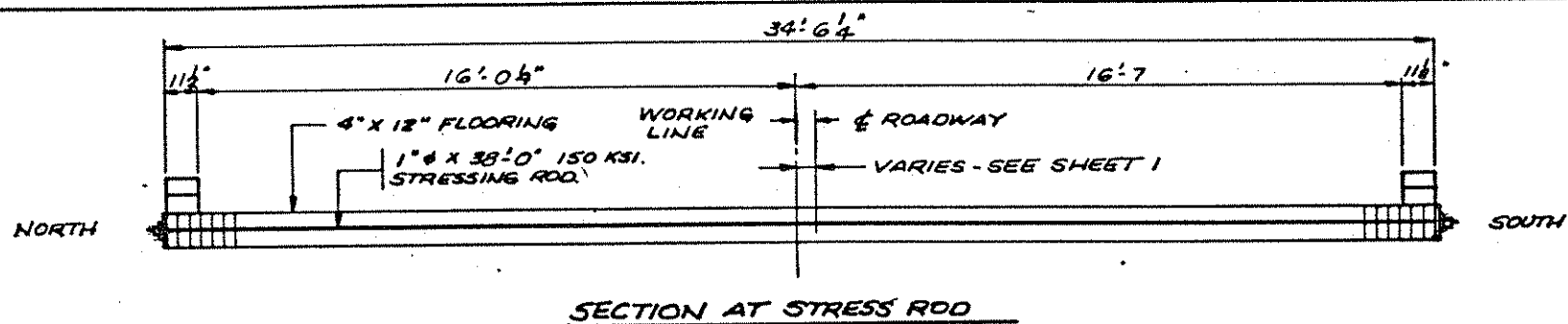


SECTION A-A

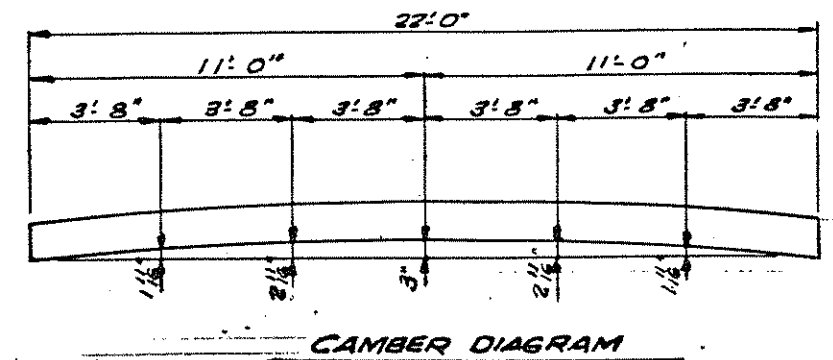
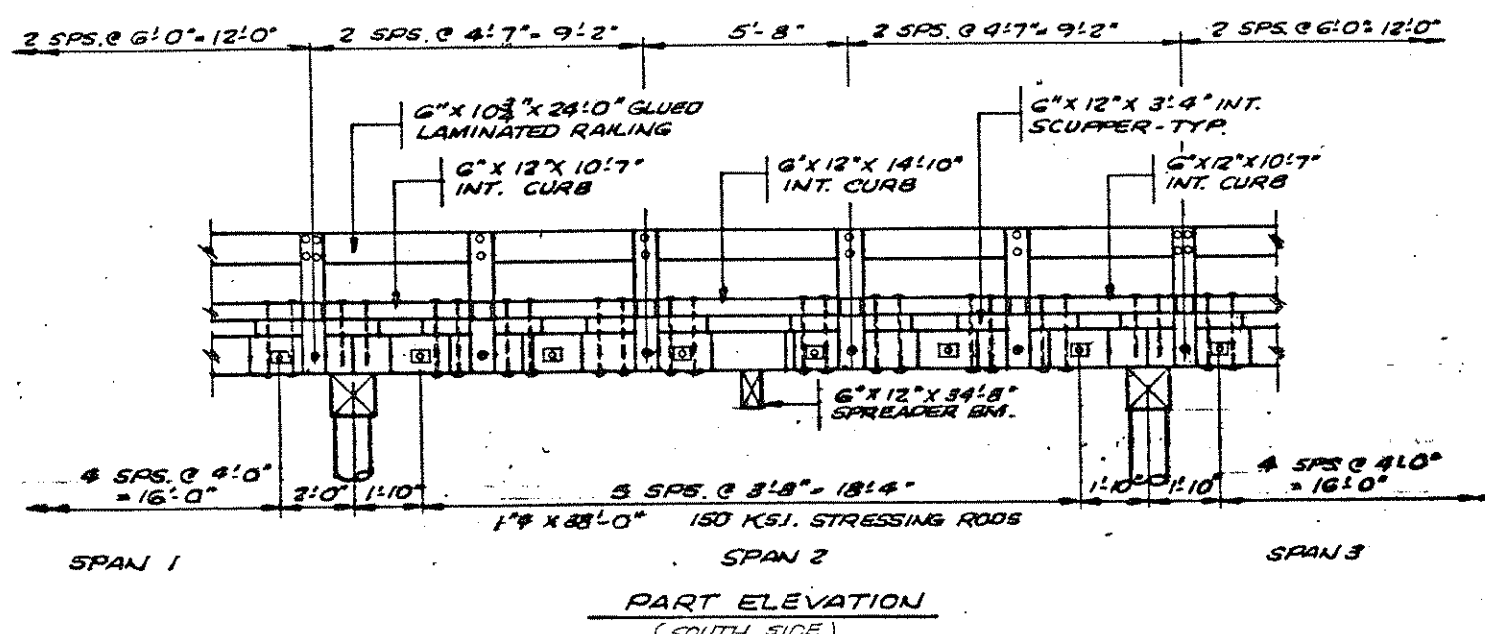
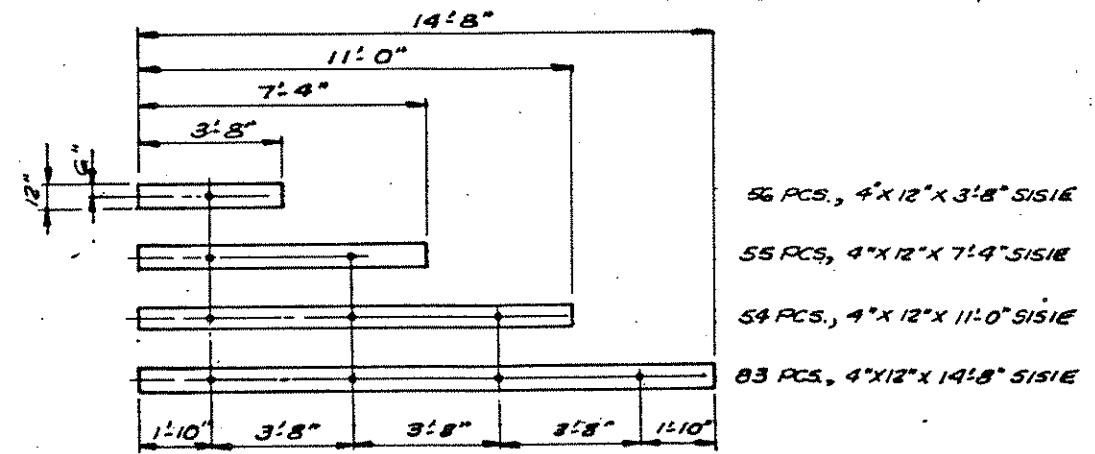


CAMBER DIAGRAM

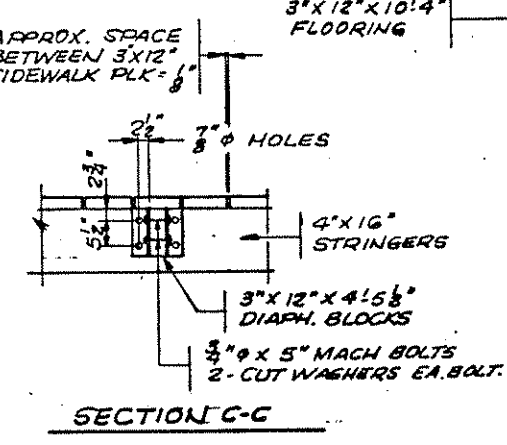
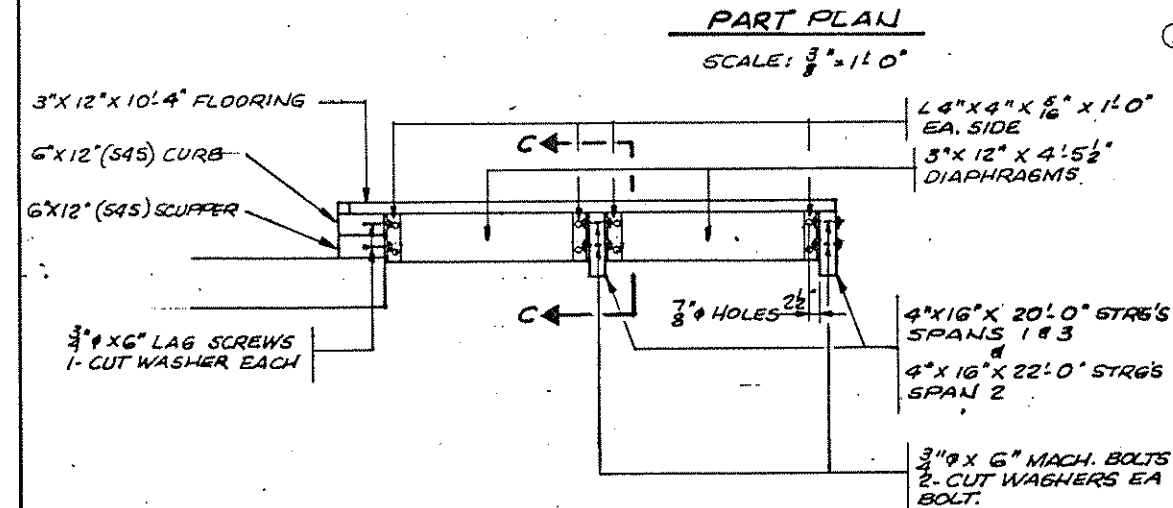
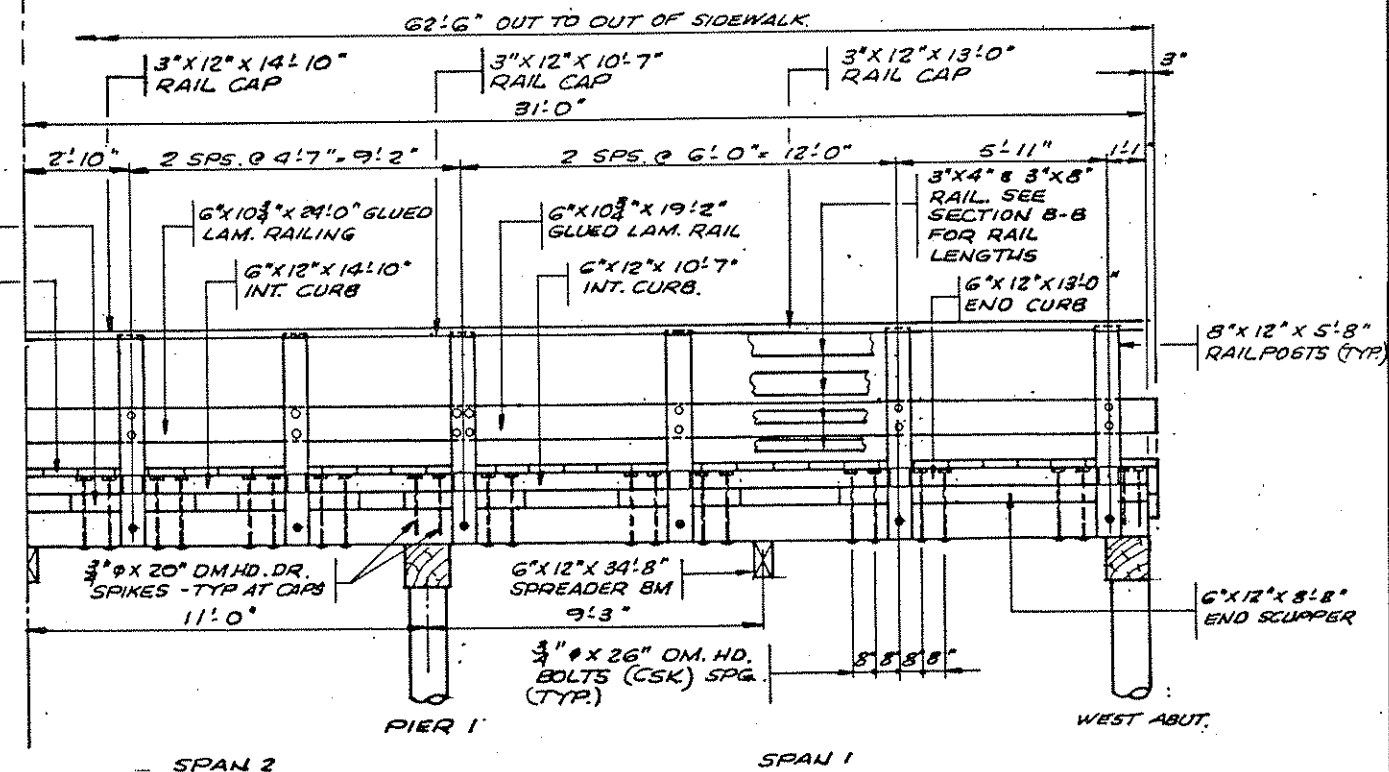
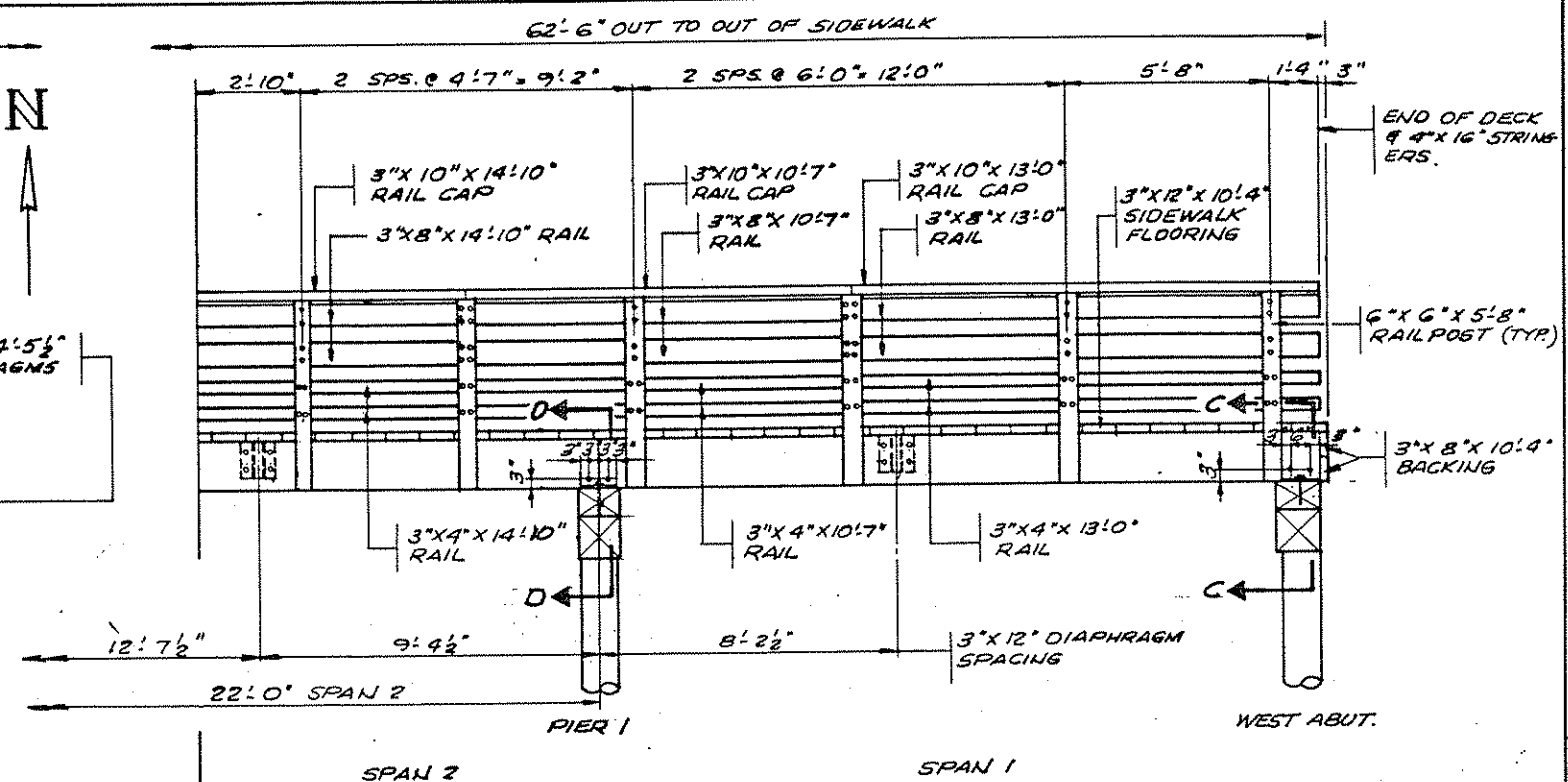
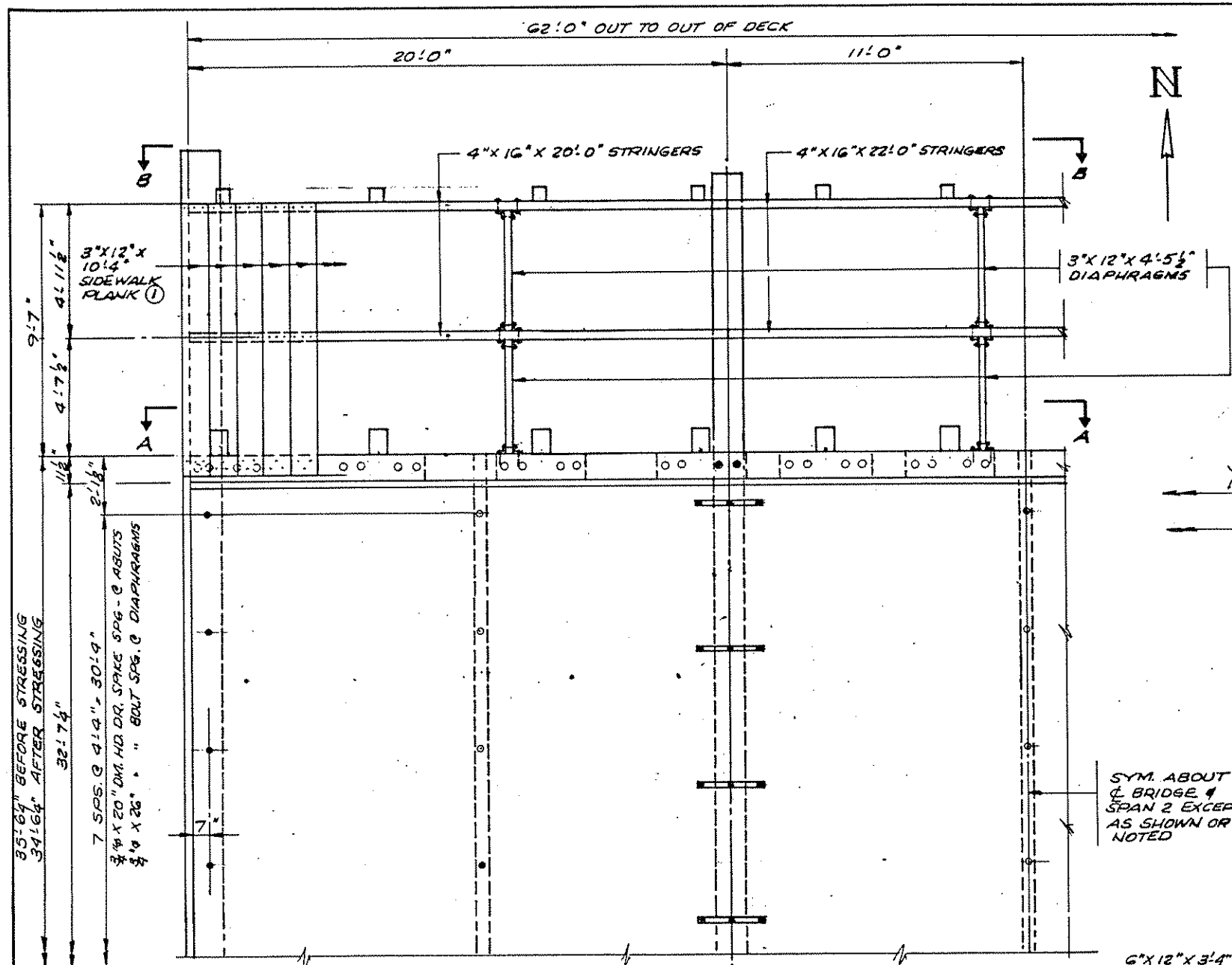
SUPERSTRUCTURE DETAILS (SPANS 1 & 3)	DRAWN W.N.J.	CHECKED	APPROVED	BRIDGE NO. 02554
	SHEET 5 OF 11 SHEETS			



NOTES:
LAYOUT IS REPEATED SUCCESSIVELY FOR ALL DECK LAMINATIONS FOR SPAN 2.



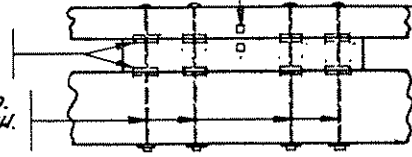
SUPERSTRUCTURE DETAILS (SPAN 2)	DRAWN WNJ	CHECKED B.D.W	APPROVED	BRIDGE NO. 02554
	SHEET 6 OF 11 SHEETS			



SUPERSTRUCTURE DETAILS	DRAWN W.N.J.	CHECKED B.D.W.	APPROVED	BRIDGE NO 02554
	SHEET 7 OF 11 SHEETS			

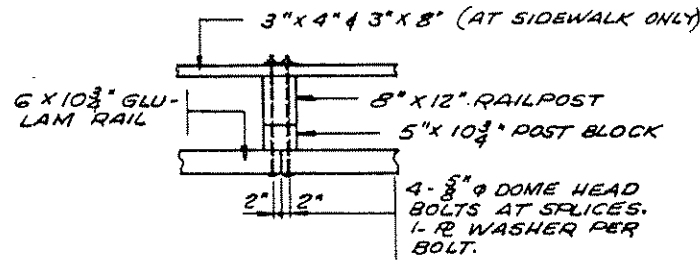
CURBS ARE TO BE PLACED SO TAGS SHOW FROM ROADWAY. MATCH CURBS AND SCUPPERS PER SHOP PLACED TAG NUMBERS.

4" Ø SPLIT RING CONNECTORS
3/4" Ø X 26" DM. HD. BOLTS (1-R WASH. PER BOLT).

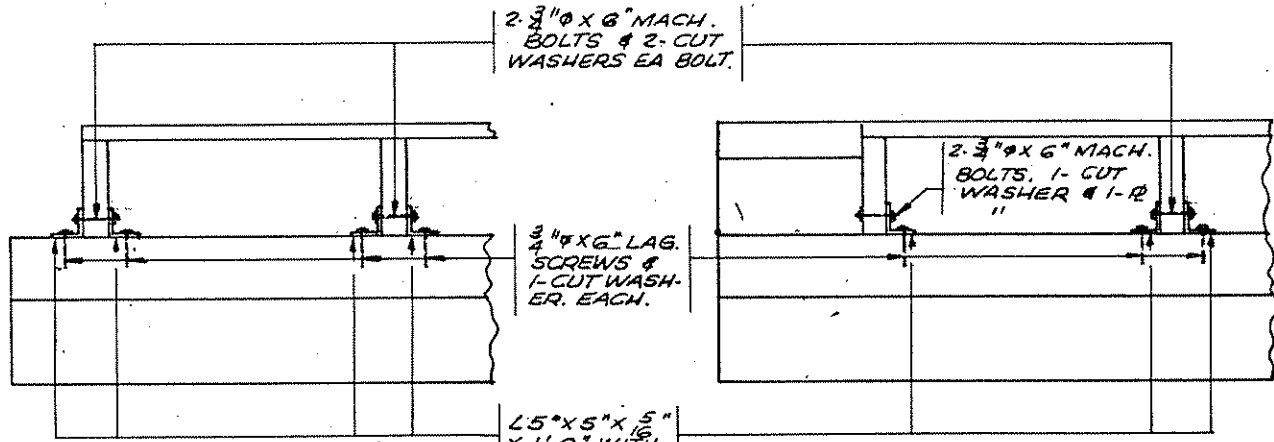


CONTRACTOR IS TO ASSEMBLE CURB AND SCUPPER IN PLACE, MARK & DRILL DECK. DISASSEMBLE, GROOVE DECK FOR SPLIT RINGS, REASSEMBLE AND BOLT DOWN.

CURB & SCUPPER ASSEMBLY DETAIL.

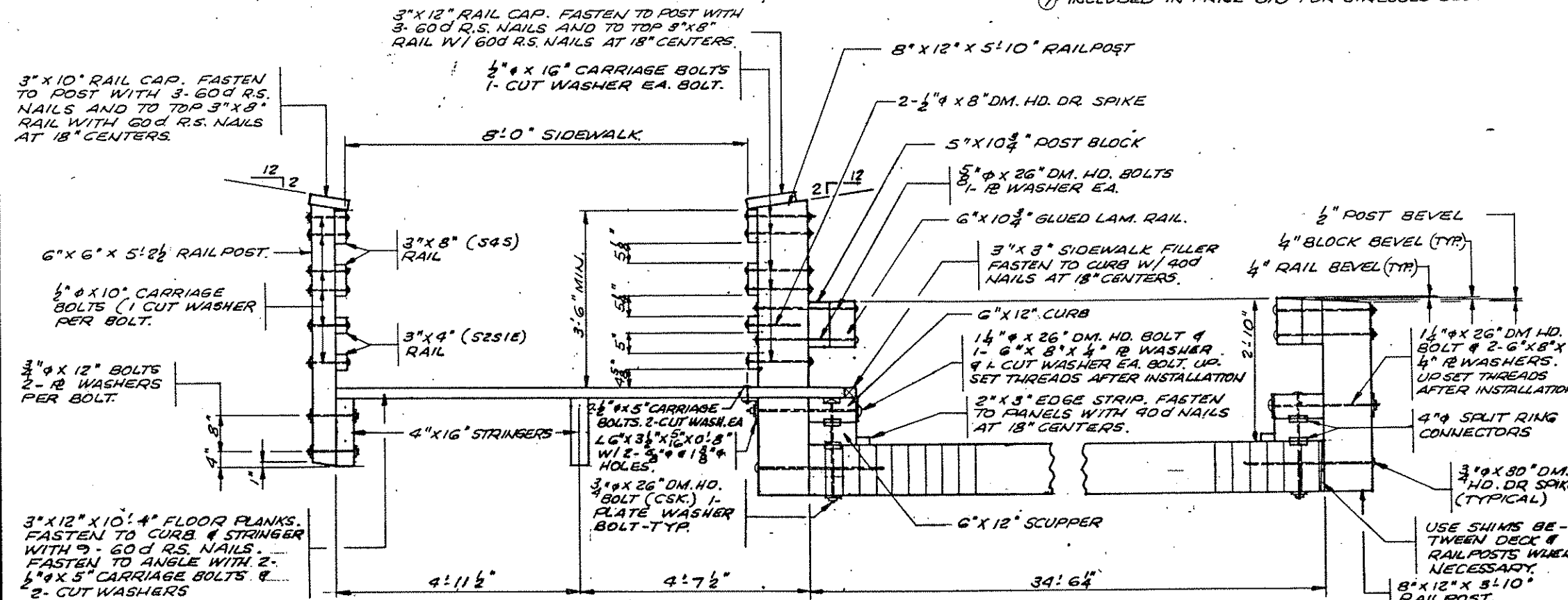


RAIL SPLICE



SECTION D-D
SCALE: 3/4" = 1'-0"

SECTION C-C
SCALE: 3/4" = 1'-0"



PART SECTION THRU DECK & SIDEWALK
SCALE: 3/4" = 1'-0"

BILL OF STRUCTURAL STEEL (3306) - SUPERSTR.

WT. EA	NO.	ITEM	WT.
4.05	14	2 1/2" X 3 1/2" X 2 1/2" R - FLOORING	57
6.63	12	2 1/2" X 3 1/2" X 3" X 0.8" - " AT POSTS	80
8.32	24	2 1/2" X 4" X 3 1/2" X 1'-0" - SIDEWALK DIAPHR.	200
10.45	14	2 1/2" X 5" X 3 1/2" X 1'-0" - STRINGERS	146
TOTAL STRUCTURAL STEEL (3306)			483 LBS.

BILL OF GLUED LAMINATED RAILING (5)

WT. EA	NO.	ITEM	WT.
76.67	4	PCS 6" X 10 1/2" X 19' 2"	76.67 LIN. FT.
48.0	2	PCS 6" X 10 1/2" X 24' 0"	48.0 " "
TOTAL GLU-LAM RAILING			125 LIN FT

BILL OF TREATED TIMBER FOR STRESSED DECK PANELS

ITEM	NO.	FIN.	SIZE	LENGTH	F.B.M.
DECK PLANK	56	SISIE	4 X 12	3'-8"	821
"	110	"	4 X 12	4'-0"	1760
"	55	"	4 X 12	7'-4"	1613
"	110	"	4 X 12	8'-0"	3520
"	54	"	4 X 12	11'-0"	2376
"	110	"	4 X 12	12'-0"	5280
"	83	"	4 X 12	14'-8"	4869
"	110	"	4 X 12	16'-0"	7040
TOTAL TREATED TIMBER FOR DECK PANELS					27279

BILL OF GALV. STRUCTURAL STEEL FOR STRESSED DECK PANELS

WT. EA	NO.	ITEM	WT.
106.40	16	1" Ø X 38'-0" (150KLS.) STRESSING ROD	1702
55.22	32	12" X 16" X 1" ANCHOR PLATE (3306)	1767
9.76	32	4" X 6 1/2" X 1/4" PL (3306)	312
1.50	32	ANCHORAGE NUT FOR 1" Ø RODS	48
TOTAL GALV. STRUCTURAL STEEL FOR DECK PANELS			3829 LBS

INCLUDED IN PRICE B10 FOR STRESSED DECK

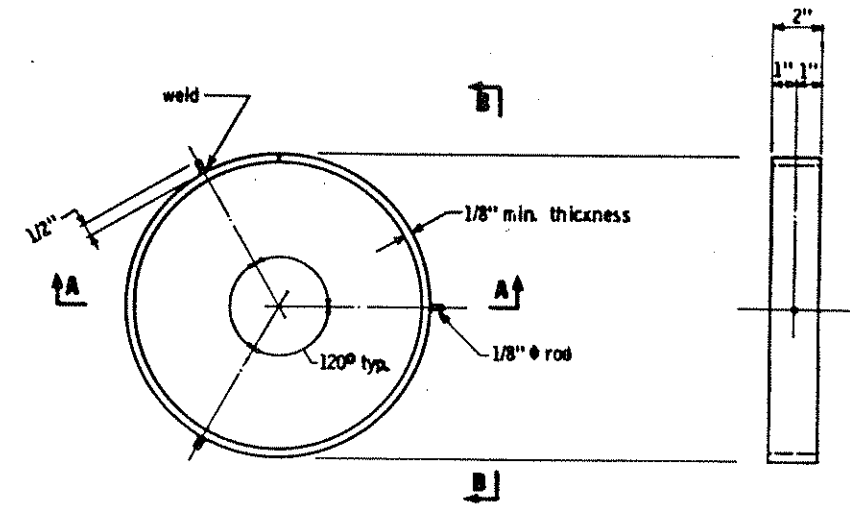
BILL OF TREATED TIMBER FOR SUPERSTRUCTURE

ITEM	NO.	FIN.	SIZE	LENGTH	F.B.M.
SPREADER BEAM	3	R	6 X 12	34'-8"	624
END SCUPPER	4	S4S	6 X 12	8'-8"	208
INT. SCUPPER	16	S4S	6 X 12	3'-4"	320
END CURB	4	S4S	6 X 12	13'-0"	312
INT. CURB	4	S4S	6 X 12	10'-7"	254
"	2	S4S	6 X 12	14'-10"	178
RAILPOST	12	R	8 X 8	5'-10"	373
"	12	R	8 X 8	3'-10"	245
EDGE STRIP	8	R	2 X 3	12'-0"	48
"	2	R	2 X 3	14'-0"	14
RAIL BLOCK	24	S1S	6 X 8	0'-10 1/2"	84
SIDEWALK-STRINGER	4	R	4 X 16	20'-0"	427
"	2	R	4 X 16	22'-0"	235
" - FLOOR	63	S1S1E	3 X 12	10'-4"	1953
" - FILLER	4	S1S1E	3 X 3	14'-0"	42
"	6	S1S1E	3 X 3	12'-0"	54
" - DIAPHRAGMS	6	R	3 X 12	4'-5 1/2"	80
" - RAILPOSTS	12	S4S	6 X 6	5'-2 1/2"	187
" - RAIL	8	S4S	3 X 8	10'-7"	169
"	8	S4S	3 X 8	13'-0"	208
"	4	S4S	3 X 8	14'-10"	119
"	8	S2S1E	3 X 4	10'-7"	85
"	4	S2S1E	3 X 4	13'-0"	104
"	4	S2S1E	3 X 4	14'-10"	59
" - RAILPOST CAP	2	S4S	3 X 10	10'-7"	53
"	2	"	3 X 10	13'-0"	65
"	1	"	3 X 10	14'-10"	37
"	2	"	3 X 12	10'-7"	63
"	2	"	3 X 12	13'-0"	78
"	1	"	3 X 12	14'-10"	44
TOTAL TREATED TIMBER FOR SUPERSTRUCTURE					6722

BILL OF HARDWARE FOR SUPERSTRUCTURE

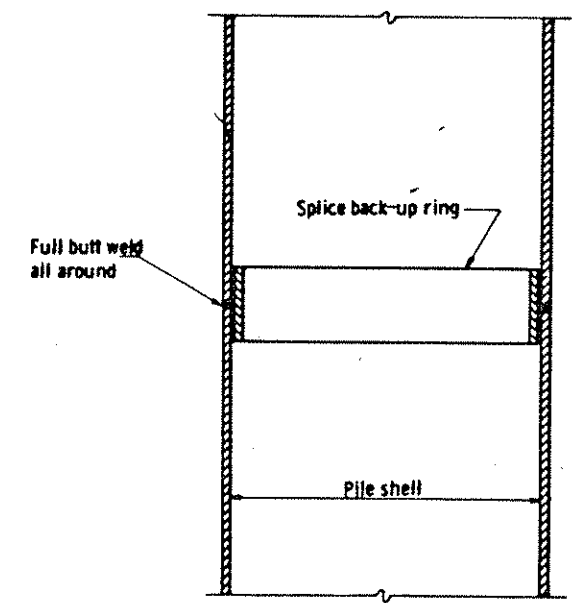
WT. EA	NO.	ITEM	WT.
4.17	24	3/4" Ø X 26" DOME HD. BOLT - SPREADER BEAM	100
4.93	80	3/4" Ø X 26" " " - CURB TO FLOOR	394
1.50	80	4" X 4" X 3/16" R WASHERS (3/4" Ø CURB BOLTS)	120
2.81	16	3/4" Ø X 20" DM. HD. DR. SPIKES - CURB TO FLOOR	45
0.70	192	4" Ø SPLIT RING CONNECTORS - " " "	134
13.17	24	1 1/2" Ø X 26" DM. HD. BOLT - POST TO CURB	316
3.60	36	5" X 8" X 1/4" R WASHERS (1 1/2" Ø BOLTS)	130
0.28	12	CUT WASHER FOR 1 1/2" Ø BOLTS	3
4.08	24	3/4" Ø X 30" DM HD DR SPIKES - POST TO FLOOR	98
2.70	56	3/4" Ø X 26" " " - RAIL TO POST	151
17.14		40D NAILS - EDGE STRIP TO DECK & FILLER TO CURB	20
0.83	26	3/4" Ø X 6" LAG SCREWS - L'S TO FILLER BUS. CURBS	22
1.03	16	3/4" Ø X 6" MACH. BOLTS - STRINGERS TO BASE L'S	16
0.15	150	CUT WASHERS FOR 3/4" Ø BOLTS & LAG SCREWS	23
0.35	24	1/2" Ø X 5" CARRIAGE BOLTS - FLOOR TO L AT POSTS	8
10.14		60D R.S. NAILS - SIDEWALK-FLOORING & RAIL CAP	83
1.80	24	3/4" Ø X 12" MACH. BOLTS - SIDE POSTS TO STRINGERS	43
0.63	112	3/4" Ø X 10" CARRIAGE BOLTS - RAIL TO POSTS	71
1.10	88	1/2" Ø X 16" " " " " " "	97
0.55	24	1/2" Ø X 8" DM HD. DR. SPIKES - " " " "	13
0.06	248	CUT WASHERS FOR 1/2" Ø BOLTS	15
1.32	28	3/4" Ø X 1 1/2" DM. HD. DR. SPIKES - R OVER PIERS	37
2.81	14	3/4" Ø X 20" " " " " " "	39
0.14	24	3/4" LOCK NUTS	3
2.81	16	3/4" Ø X 20" DM. HD DR SPIKES - FLOOR TO ABOY CAP	45
0.90	24	3/4" Ø X 5" MACH. BOLTS - DIAPHRAGMS TO ANGLES	22
1.03	24	3/4" Ø X 6" " " - DIAPH'S TO STRINGER L'S	25
0.68	56	3" X 3" X 1/4" R WASHERS FOR 3/4" Ø BOLTS	38
0.85	28	3" X 3" X 5/16" R " " 3/4" Ø "	24
			2135

- ① SIS TO 5"
- ② S2S TO 2 1/2" & S1E TO 3 1/2"
- ③ A325
- ④ 4" Ø HEAD
- ⑤ BEVEL IN SHOP (CURBS ON SIDEWALK SIDE ONLY)
- ⑥ TIMBER TREATED WITH WATER BORNE PRESERVATIVE



PLAN VIEW
(Pile not shown)

SECTION B - B
(Pile not shown)



SECTION A - A

NOTES:

- Approved commercial pile splice back-up ring may be used in lieu of the type detailed. Back-up ring shall have a tight fit.
- Welding electrodes shall be A. W. S. Type E7016 or E7018 (low-hydrogen).
- Low-hydrogen electrodes shall be supplied in hermetically (air-tight) sealed containers.
- Low-hydrogen electrodes shall be stored in holding ovens at a temperature of not less than 250° F.
- Low-hydrogen electrodes shall be placed in a holding oven for at least 8 hours, after having been exposed to the atmosphere for more than 2 hours.
- Electrodes which have become wet, soiled or damaged shall not be used.
- Welding shall not be done when the ambient temperature is lower than 0° F. or when the pile is wet or exposed to falling rain or snow. When the pile metal temperature is below 32° F., the pile metal in the area of the weld shall be heated to a minimum temperature of 70° F. and maintained at this temperature during welding.

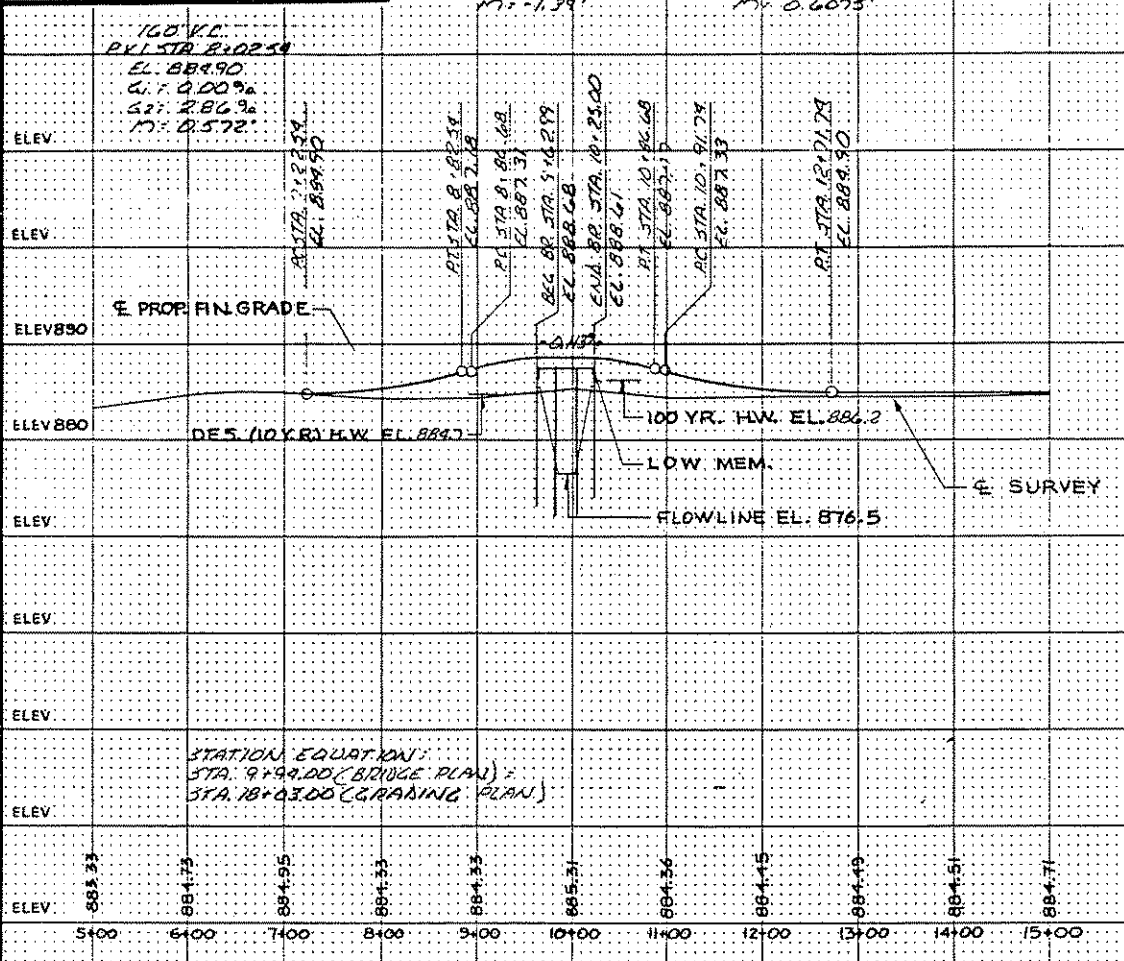
APPROVED July 21, 1972
Stanley A. Dillit
 Engineering Standards Engineer
 RESEARCH AND STANDARDS
 DIVISION

MINNESOTA
 DEPARTMENT OF TRANSPORTATION
PILE SPLICE
 CAST-IN-PLACE CONCRETE PILES

DETAIL NO.
B201

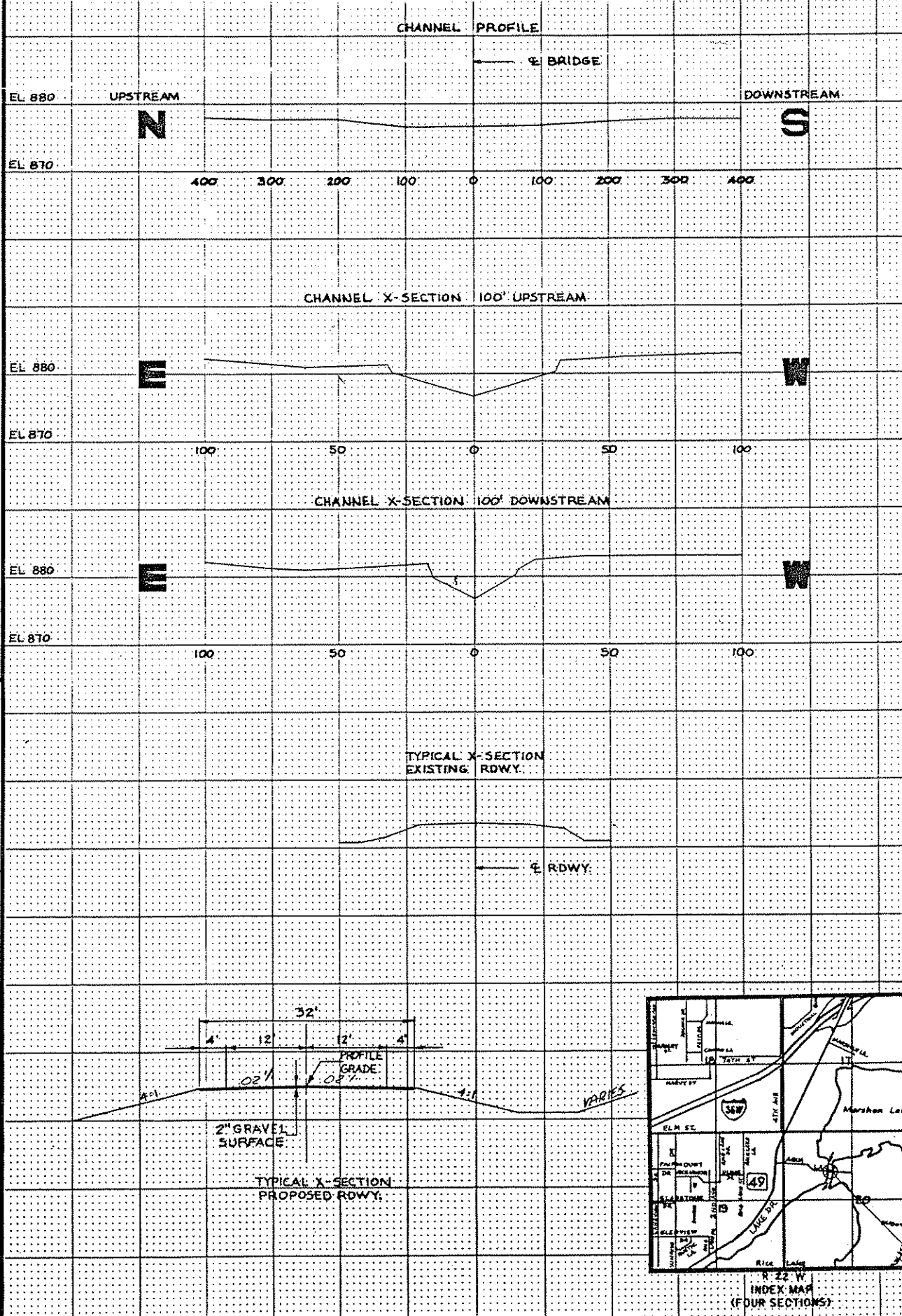
CONTRACTED PROFILE

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



TYPICAL SECTIONS & PERTINENT DATA

SCALES AS SHOWN



Fed. Proj. No.

LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE

- Special Features: Waterfalls, dams, floods, ice, debris, shifting banks, recreational boating.
- Other bridges or culverts over the same stream (particularly structures which carry high water without overflow of roadway): Given location, type, length, height above high water, cross-sectional area etc.
- Apparent highwater elevation: Obtained from
- Other data: Approx. velocity of water at time of survey

HYDRAULIC ENGINEERS RECOMMENDATION

DATE 1/23/91

Stream or ditch designation RICE CREEK
 Drainage area 120 SQ. MI.
 Max. flood on record UNK. Design flood (10 yr. freq.) 740 C.F.S.
 Max. observed highwater elevation 887.3 Design highwater elevation 884.7
 Design mean velocity through structure 2.2 F.P.S.
 Low superstructure at or above elevation 886.0
 Flowline elevation 876.5 Skew angle NONE
 Waterway area req'd. below elevation 884.7 = 330 Sq. Ft. at Rt. angles to channel

In the interest of flood plain zoning the regional flood (100 yr. freq.) is 1510 C.F.S. at stage 886.2 and mean velocity of 0.6 F.P.S. with 0.1 Ft. swellhead. The above recommendation will provide a structure of adequate waterway to pass the regional flood within criteria established by the Dept. of Natural Resources.

ENGINEERS RECOMMENDATION

DATE

20/22/20 STRESS LAMINATED WOOD BEAMS

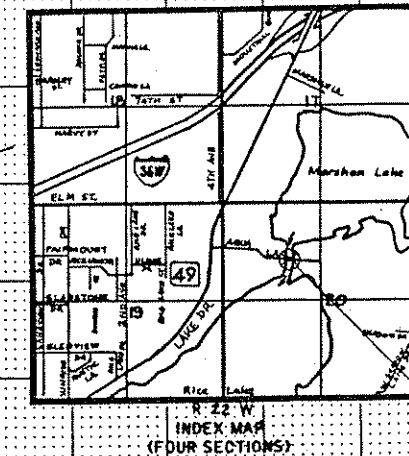
Bridge survey sheets made from: ERICKSON ENGINEERING SURVEY NOTES

Bench mark elevation 884.48 (M.S.L. 1929 Adj.)
 Location: HUB AT RICE LAKE OUTLET N.E. OF N.E. WINGWALL

MINNESOTA DEPARTMENT OF TRANSPORTATION

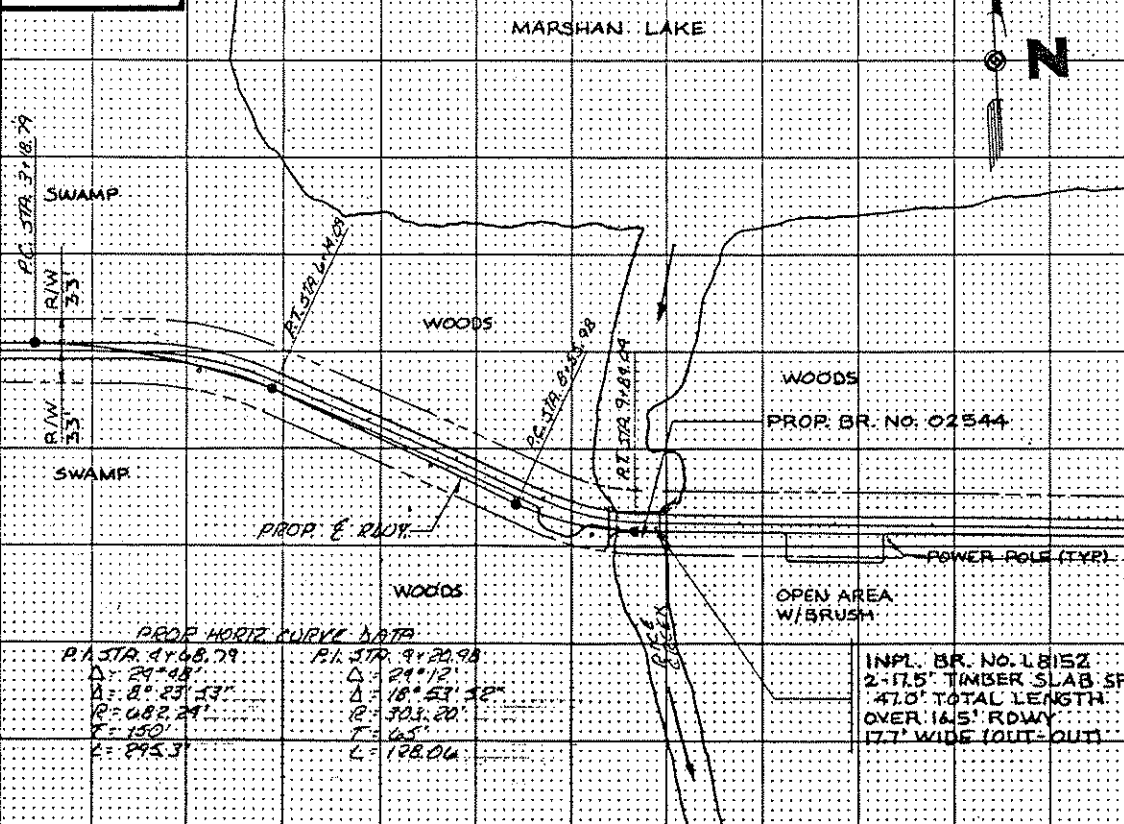
BRIDGE SURVEY

AT MILE POINT _____ ON _____ (T.H., C.S.A.H., C.R., etc.)
 PROPOSED BRIDGE LOCATED 0.2 MILES EAST OF JCT T.H. 49
 SEC. 20 TWP. 31 N R. 22 W
 TOWNSHIP _____ COUNTY ANOKA
 BRIDGE NO. Q254



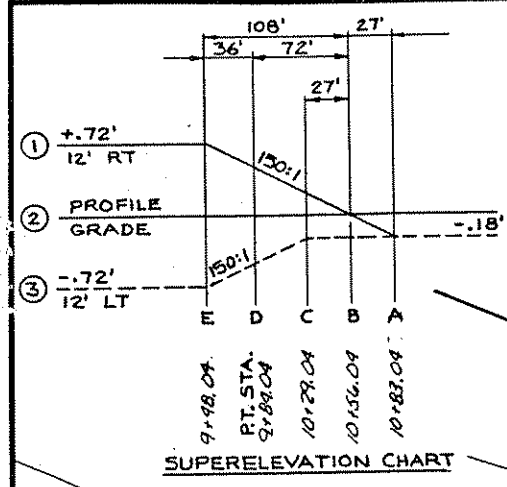
PLAT

SCALE: 1" = 100'



PROP. HORIZ. CURVE DATA
 P.I. STA. 4+68.79 Δ: 29° 48' L: 150'
 P.I. STA. 9+20.98 Δ: 29° 12' L: 128.06
 P.I. STA. 8+15.88 Δ: 18° 53' 18" L: 128.06
 P.I. STA. 9+88.49 Δ: 30° 20' L: 128.06

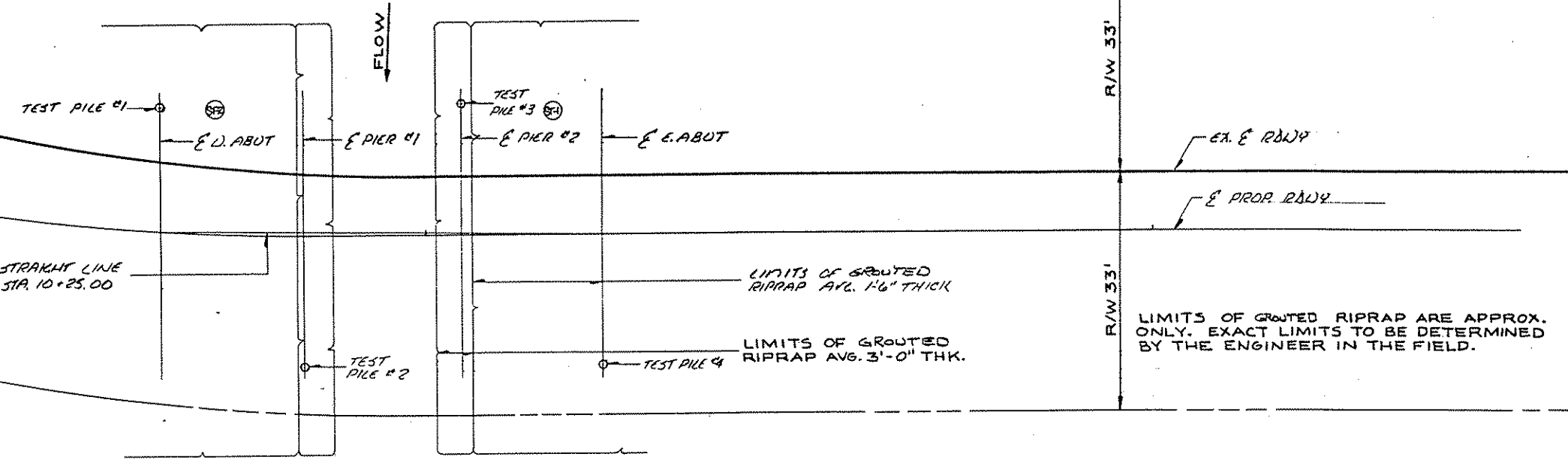
INPL. BR. NO. 18152
 2-17.5' TIMBER SLAB SP
 47.0' TOTAL LENGTH
 OVER 16.5' RDWAY
 17.7' WIDE (OUT-OUT)



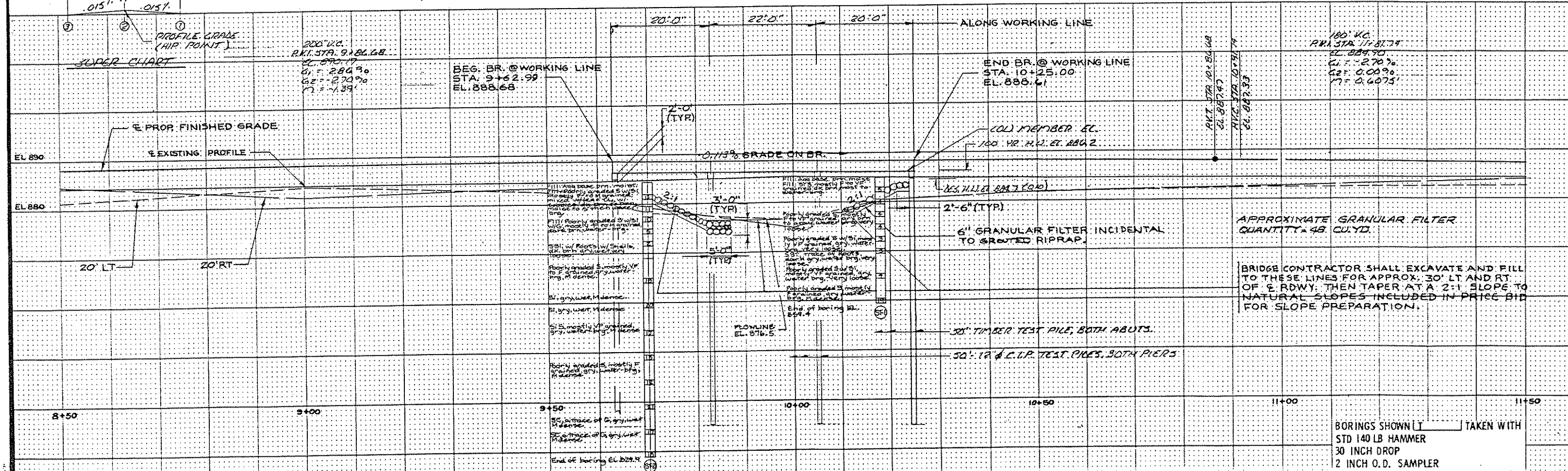
PROP. HORIZ. CURVE DATA
 P.I. STA. 9+20.98
 $\Delta = 24^\circ 12'$
 $\delta = 18^\circ 53' 52''$
 $R = 303.20$
 $T = 65'$
 $L = 128.06$

WORKING LINE IS A STRAIGHT LINE FROM STA. 9+62.99 TO STA. 10+25.00

STATION EQUATION
 STA. 9+94.00 (BRIDGE PLAN)
 STA. 10+03.00 (GRADING PLAN)



APPROACH GRADING BY OTHERS UNDER SEPERATE CONTRACT.



APPROXIMATE GRANULAR FILTER QUANTITY = 48 CU. YD.

BRIDGE CONTRACTOR SHALL EXCAVATE AND FILL TO THESE LINES FOR APPROX. 30' LT AND RT OF E. RDWY. THEN TAPER AT A 2:1 SLOPE TO NATURAL SLOPES INCLUDED IN PRICE BID FOR SLOPE PREPARATION.

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

BRIDGE SURVEY PLAN AND PROFILE

State Proj. No.

DES: DR: APPROVED:

Sheet No. 11 of 11