

This is the second in our new **Standard Plans** series that will feature reprints of original Frisco standard plan designs. This installment is a November 1, 1922, Frisco design for Ballast Deck Pile Trestle Bridges.

**BILL OF MATERIAL FOR ONE PILE BENT**  
(PILES NOT INCLUDED)

BASE OF RAIL TO TOP OF PILE	SPANS	SASH AND SWAY BRACES	TIMBER TOTAL FEET B.M.	WROUGHT IRON NUMBER REQUIRED	SPICES	TOTAL WEIGHT WROUGHT IRON, POUNDS	TOTAL WEIGHT CAST IRON, POUNDS
16	18	20	22	24	26		
6	1		262	6	6	18	
7	1		262	6	6	18	
8	2		342	12	6	24	52
9	2		342	12	6	24	52
10	2		352	12	6	24	52
11	2		352	12	6	24	52
12	2		352	12	6	24	52
13	2		352	12	6	24	52
14	2		362	12	6	24	52
15	2		362	12	6	24	52
16	2		362	12	6	24	52
17	2		372	12	6	24	52
18	2		372	12	6	24	52
19	2		382	12	6	24	52
20	2		382	12	6	24	52
21	2		382	12	6	24	52
22	2	4	552	12	6	60	102
23	2	4	552	12	6	60	102
24	2	4	552	12	6	60	102
25	2	2	562	12	6	60	102
26	2	2	562	12	6	60	102
27	2	2	562	12	6	60	102
28	2	2	572	12	6	60	102
29	2	2	572	12	6	60	102
30	2	2	572	12	6	60	102
31	2	2	792	18	6	96	151
32	2	2	792	18	6	96	151
33	2	2	792	18	6	96	151
34	2	2	792	18	6	96	151
35	2	2	792	18	6	96	151
36	2	2	792	18	6	96	151
37	2	2	792	18	6	96	151
38	2	2	802	18	6	96	151
39	2	2	802	18	6	96	151
40	2	2	802	18	6	96	151

**BILL OF LUMBER FOR DECK**

NUMBER OF SPANS	TOTAL LENGTH	NUMBER OF STRINGERS	NUMBER OF GUARD RAILS	FLOOR PLANK	TOTAL FEET B.M.
		8" x 16"	8" x 12"	14" x 12"	
1	14	10	2	774	743
2	27	20	4	1497	4926
3	40	30	6	2210	7361
4	53	40	8	2923	9796
EACH SPAN ADDITIONAL	13	10	2	718	2435

**BILL OF HARDWARE FOR DECK**

NUMBER OF SPANS	WROUGHT IRON	CAST IRON	TOTAL LBS.	TOTAL LBS.	
	DRIFT BOLTS	WASHERS	WROUGHT IRON	CAST IRON	
1	8	4	3	74	74
2	12	6	12	110	110
3	16	8	18	146	146
4	20	10	24	182	182
EACH SPAN ADDITIONAL	4	2	8	100	100

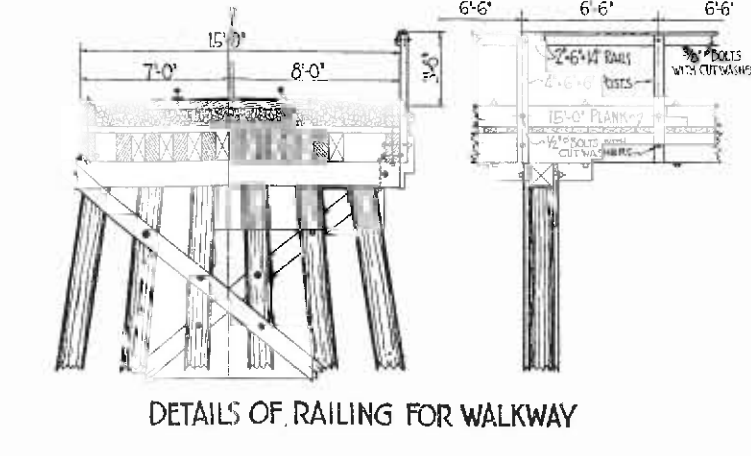
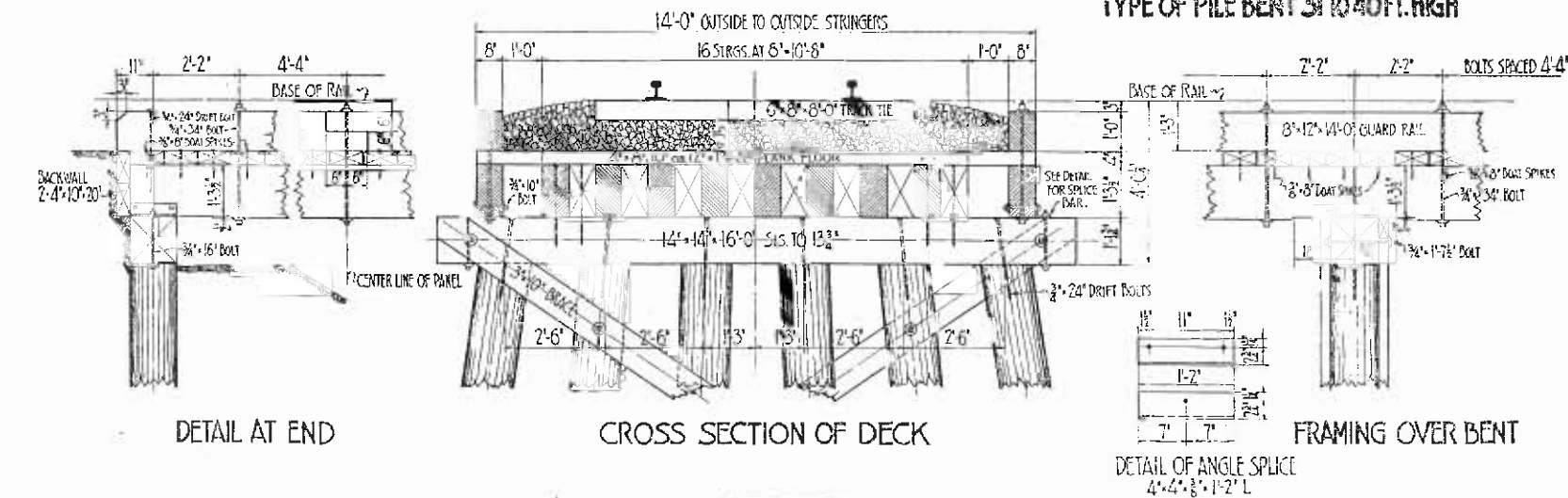
**BILL OF MATERIAL FOR TWO BACKWALLS**

NUMBER OF PCS	PLANK	TOTAL FEET B.M.	NUMBER OF BOAT SPIKES	POUNDS OF BOAT SPIKES
	4" x 10" x 20"		3/4" x 5"	
4		267	16	5 1/2 LBS.

LOADING - COOPER'S E-60  
 BENDING MOMENT DEAD - - - 46,500 FT. LBS.  
 LIVE - - - 285,000 FT. LBS.  
 FIBRE STRESS DEAD LOAD ON 10 STRINGERS  
 LIVE LOAD ON 8 STRINGERS  
 DEAD LOAD - - - 163 LBS PER SQ.  
 LIVE LOAD - - - 1250 " "  
 TOTAL - - - 1413 LBS PER SQ.  
 LOAD ON BENT DEAD LOAD - - - 26,500 LBS.  
 LIVE LOAD - - - 147,500 " "  
 TOTAL - - - 174,000 LBS.  
 LOAD PER PILE - - 14.5 TONS

SPACING OF PILES AT GROUND LINE

NUMBER OF PILES	DISTANCE " "
6	2'-6"
7	2'-6"
8	2'-9"
9	2'-9 1/2"
10	2'-10"
11	2'-11"
12	3'-0"
13	3'-0 1/2"
14	3'-1 1/2"
15	3'-2 1/2"
16	3'-3"
17	3'-3 1/2"
18	3'-4 1/4"
19	3'-5 1/4"
20	3'-6"
21	3'-6 1/2"
22	3'-7 1/2"
23	3'-8 1/4"
24	3'-9"
25	3'-9 1/2"
26	3'-10 1/2"
27	3'-11 1/4"
28	4'-0"
29	4'-0 1/2"
30	4'-1 1/4"
31	4'-2 1/4"
32	4'-3"
33	4'-3 1/2"
34	4'-4 1/2"
35	4'-5 1/4"
36	4'-6"
37	4'-6 1/2"
38	4'-7 1/4"
39	4'-8 1/4"
40	4'-9"



**GENERAL NOTES**  
 ALL TIMBER INCLUDING SWAY AND LONGITUDINAL BRACES TO BE TREATED WITH CREOSOTE OIL. CAPS WILL BE PURCHASED SURFACED ON ONE SIDE TO 1 1/2 INCHES AND MUST NOT BE DAPPED IN FIELD FOR PILE HEADS. STRINGERS WILL BE DAPPED AT ENDS TO 1 1/2 INCHES BEFORE TREATMENT. THE TOPS OF PILES WHERE CUT OFF SHALL BE GIVEN TWO COATS OF HOT CREOSOTE OIL IN THE FIELD AND A THIRD COAT OF A MIXTURE OF THREE PARTS HEAVY ROAD OIL AND ONE PART CREOSOTE OIL. THE SURFACE OF TIMBER WHEREVER BROKEN OR CUT SHALL BE GIVEN TWO COATS OF HOT CREOSOTE OIL.  
 ALL BOLT HOLES SHALL BE FILLED WITH CREOSOTE OIL AND BOLTS AND SPIKES DIPPED IN CREOSOTE OIL BEFORE PLACING.  
 OPEN HOLES OF ANY KIND TO BE COATED WITH CREOSOTE OIL AND FILLED WITH CREOSOTED WOOD PLUGS.  
 DO NOT CHAMFER TOPS OF PILES.

THIS PLAN CONFORMS TO THE RECOMMENDATIONS OF THE AMERICAN RAILWAY ENGINEERING ASSOCIATION.

ST. LOUIS - SAN FRANCISCO RAILWAY  
 BALLAST DECK PILE TRESTLE BRIDGE WITH CREOSOTED TIMBER & PILING  
 ADOPTED, NOVEMBER, 1922  
 APPROVED: *John Hamilton* CHIEF ENGINEER  
 APPROVED: *J. M. Hamilton* GENERAL MANAGER  
 APPROVED: *W. H. Hamilton* VICE-PRESIDENT  
 APPROVED: *J. M. Hamilton* PRESIDENT  
 DRAWING NO. 20130-540