MINI-STRUCTURES INSTRUCTIONS

S4501 150ft. Howe Truss Bridge

The S4501 MINI-STRUCTURES BRIDGE KIT is designed to fulfill the need of the meticulous scale modeler with its exact details and yet allow the beginer to construct an equally fine model. Before starting, take time to familiarize yourself with all the parts and their places in the model, so that you will have a clear mental picture of your task. This procedure will greatly aid you in the assembly of this kit. In cementing the parts together, we recommend a good quality white cement. After cementing the parts together, make sure that the joint is strong before proceeding to the next assembly step. In order to conform to the NMRA S-7 sheet some dimentions were were changed from the original drawings.

STEP 1 ..... Attach drawing to a flat surface or board to be used as a template to hold parts while the cement is setting.

STEP 2 ..... Separate all parts into catagories, banisters and platform.

STEP 3 ..... Use pins to hold parts on template by driving them into the board along side of the part to be held. Be sure to keep pins from areas where parts are to be installed later.

STEP 4 ..... BUILD BANISTERS ...LOWER CHORDS ... Place two beams S4502 on template, end to end. Pin them to template. Mark areas where spacers S4538 and S4539 are to be cemented. Seven spacers S4539 and 22 spacers S4538. S4539 are used at spicing points and at end of chords. S4538 are used one on each side of area where vertical tention rods are install between the beams. Cement these spacers to beans. Next cement one beam S4502 and two S4503 with S4502 in center and one S4503 at each end. Now, cement the second set of spacers to top of these beams. Now, cement two beams S4502 to the top of the second set of spacers. Next, cement the forthset of beams to the third set of spacers. The forth beams consist of one S4502 and two S4503. Let this assembly set until hard. Remove and sandpaper all sides smooth. Make two assemblies.

STEP 5 ..... BUILD BANISTERS... UPPER CHORDS ... Move pins to top of banister on template. Place two beams S4504 on template, end to end. Pin them to the template. Mark areas where spacers S4540 and S4541 are to be cemented. Five spacers S4541 and 24 spacers S4540 are used on the top chord. The spacer S4541 are used at ends and at splicing points. Spacers S4540 are used one on each side of of area where vertical rod passes between the beams. Cement these spacers to the beams. Next, cement one beam S4504 and two beams S4505 on top of first set of spacers, S4504 in the middle and one S4505 at each end. Now, cement the second set of spacers to the second set of beams. Next, cement the third set of beams on top of second set of spacers. These beams are two S4504. Next, cement the third set of spacers on third set of beams. Now cement the final or fourth set of beams on third set of spacers, consisting of one S4504 and two S4505. Let this assembly set until hard. Remove and sandpaper all sides smooth. Make two assemblies.

STEP 6 ..... Locate and cement to chord 14 saddles on top side of bottom chord and 12 to the bottom side of top chord. Make sure that the two beams end to end side of chord is to the out side of the assembly. Locate the saddles over areas where the vertical rods are to be installed later.

STEP 7 ..... Using a drill (1/32 inch dia. 0.032), drill through holes in top of saddles down through the area between the beams of the chords so that when time comes to install rods that this area will be clean of cement.

STEP 8 ..... BUILD BANISTER ... ASSEMBLE ... Place upper chord on drawing and pin in place.. Place lower chord on drawing and pin in place. Starting at each end and working toward the center cut and fit the bracings starting with S4506 to S4519 as shown on drawing. First fit four S4506, two at each ends. Next, fit the braces in this order S4507, S4509, S4511, S4513, S4515 and S4517. Now fit in the next set S4508, S4510, S4512, S4514, S4516. Now, fit in the third and final set S4507, S4509, S4511, S4513, S4515 and S4517. Now, cut the tongue on end of brace S4519 and cement in at each end of banister.

STEP 9 ..... Install vertical rods S4528 as follows: Caution: these rod are quite fragile and will be bent easily, so be sure the holes are open before trying to force the rod through. The first four areas must have five verticals rods installed. Three of the rods goes through the beams and saddles. the remaining two are on the outside of the beams and must wait until the nut bars are installed to complete. The four center installations are three each and can be complated now. Next cement in place on top of upper chord and on bottom of lower chord the four nut bars S4530 and eight nut bars S4529. Make two assemblies.

STEP 10 ..... BUILD PLATFORM ... Lay the 82 cross supports S4520 on the platform template and space them and secure each piece untill next step. Now, cement two stringers S4521 end to end on first position. Cement one stringer S4521 and two stringers S4522 in second position, and two stringers S4521 in third position. Now cement the same operation on the other side of center line. Let set until hard. Now, cement the ties S4523 on top of the spacers as shown on drawing. Next, cement the four tie hold down guard beams S4524, two on each side. Now locate and cement to the ties two rails S4534 using one connector S4535 and now gauge two rails S4534 to them. Now, install four guard rails S4534 inside of running rails. May I suggest that the guard rails be gauged at 3ft so that if you care to run your narrow gauge through the bridge on a gauntlet track using the guard rails.

STEP 11 ..... ASSEMBLE BANISTERS TO PLATFORM ... Place one banister on each side of platform assembly. If the horizontal cross supports were placed correctly, the banisters should fit. Place assembly on it top and cement four shoes S4533 on each end of each banister. Now cement three crib supports S4544 on shoes as shown on drawing. Next, cement 19 crib ties S4543 on the cross supports as shown. Now, cement three Piling supports S4545 on each end as shown. This will hold bridge assembly together. Now, install 14 bottom rods S4527 by drilling holes through lower chord as shown using s 1/32 drill (0.032). and next, cement in the bottom bracing S4537 after cutting notch as indicated. Bottom bracing includes S4532 nad S4536.

STEP 12 ..... INSTALLING TOP DETAIL ... Place assembly top up. Drill holes through top chord using 1/32 drill and install 12 rods S4526. Now, cut and notch the top bracing S4531 using same methods as was used on bottom. Next, cut and install the two end cross braces S4525 as shown on drawing.

STEP 13 ..... PAINT STRUCTURE ... The original structure usually was painted box car red and by now should be faided out to a color known as TERRA-COTTA. You may paint it to suit your self.

HAVE FUN BUILDING MINI-STRUCTURES KITS

MINI- STRUCTURES PART LIST

S4501 Howe Truss Bridge Kit

	S4501		Howe Truss Bridge Kit
2	S4502	12	Beams, Bottom, long
3	S4503	8	Beams, bottom, short
4	S4504	12	Beams, top, long
5	S4505	8	Beams, top, short
6	S4506	8	Braces, ends, long
7	S4507	8	Braces, No. 1 section
8	S4508	4	Braces, No. 1 section
9	S4509	8	Braces, No. 2 section
10	S4510	4	Braces, No. 2 section
11	S4511	8	Braces, No. 3 section
12	S4512	4	Braces, No. 3 section
13	S4513	8	Braces, No. 4 section
14	S4514	4	Braces, No. 4 section
15	S4515	8	Braces, No. 5 section
16	S4516	4	Braces, No. 5 section
17	S4517	4	Braces, No. 6 section
18	S4518	2	Braces, No. 6 section
19	S4519	4	Braces, ends, short
20	S4520	82	Supports, platform, cross
21	S4521	9	Stringers, long
22	S4522	6	Stringers, short
23	S4523	100	Ties, bridge type
24	S4524	4	Planks, tie hold down
25	S4525	2	Braces, top, ends
26	S4526	12	Rods, top
27	S4527	14	Rods, bottom
28	S4528	104	Rods, vertical, tention
29	S4529	32	Bars, nut (five hole)
30	S4530	16	Bars, nut (three hole)
31	S4531	22	Braces, top X
32	S4532	8	Braces, bottom X
33	S4533	16	Shoes, bridge support
34	S4534	8	Rails, code 100
35	S4535	4	Connectors, rails
36	S4536	8	Braces, bottom X
37	S4537	10	Braces, bottom X
38	S4538	144	Spacers, chord, bottom
39	S4539	42	Spacers, chord, bottom
40	S4540	144	Spacers, chord, top
41	S4541	30	Spacers, chord, top
42	S4542	56	Saddles
43	S4543	38	ties, crib
44	S4544	6	Supports, crib
45	S4545	6	Supports, crib
46	S4546	64	SUPPORTS, RODS & BRACING
47	S4547	48	GUSSETS, ON
		1	Instruction
		1	Drawing
		I	part List
		1	Box, shipping
		1	Lable

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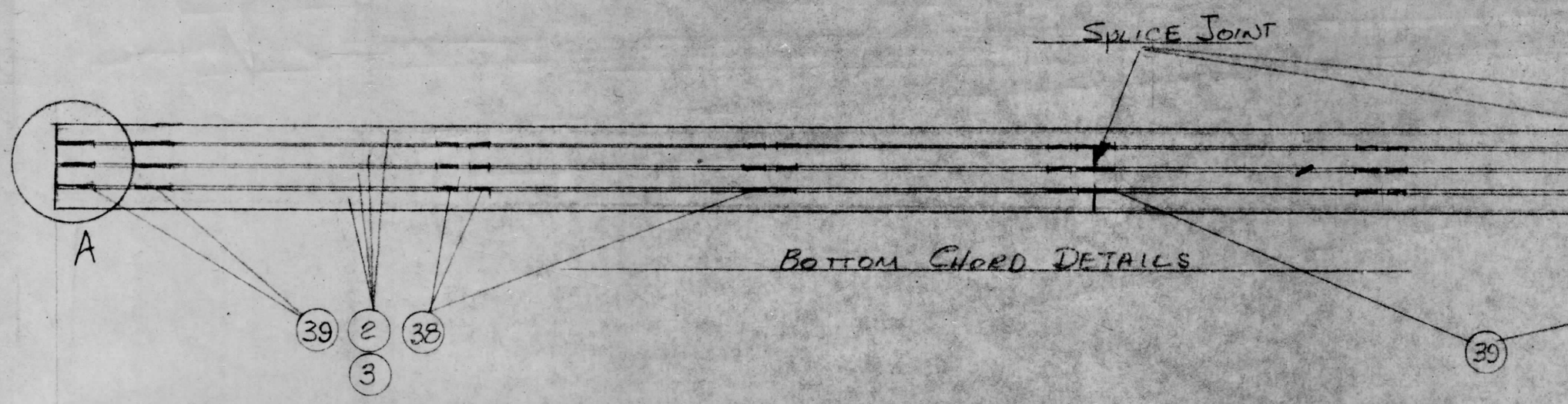
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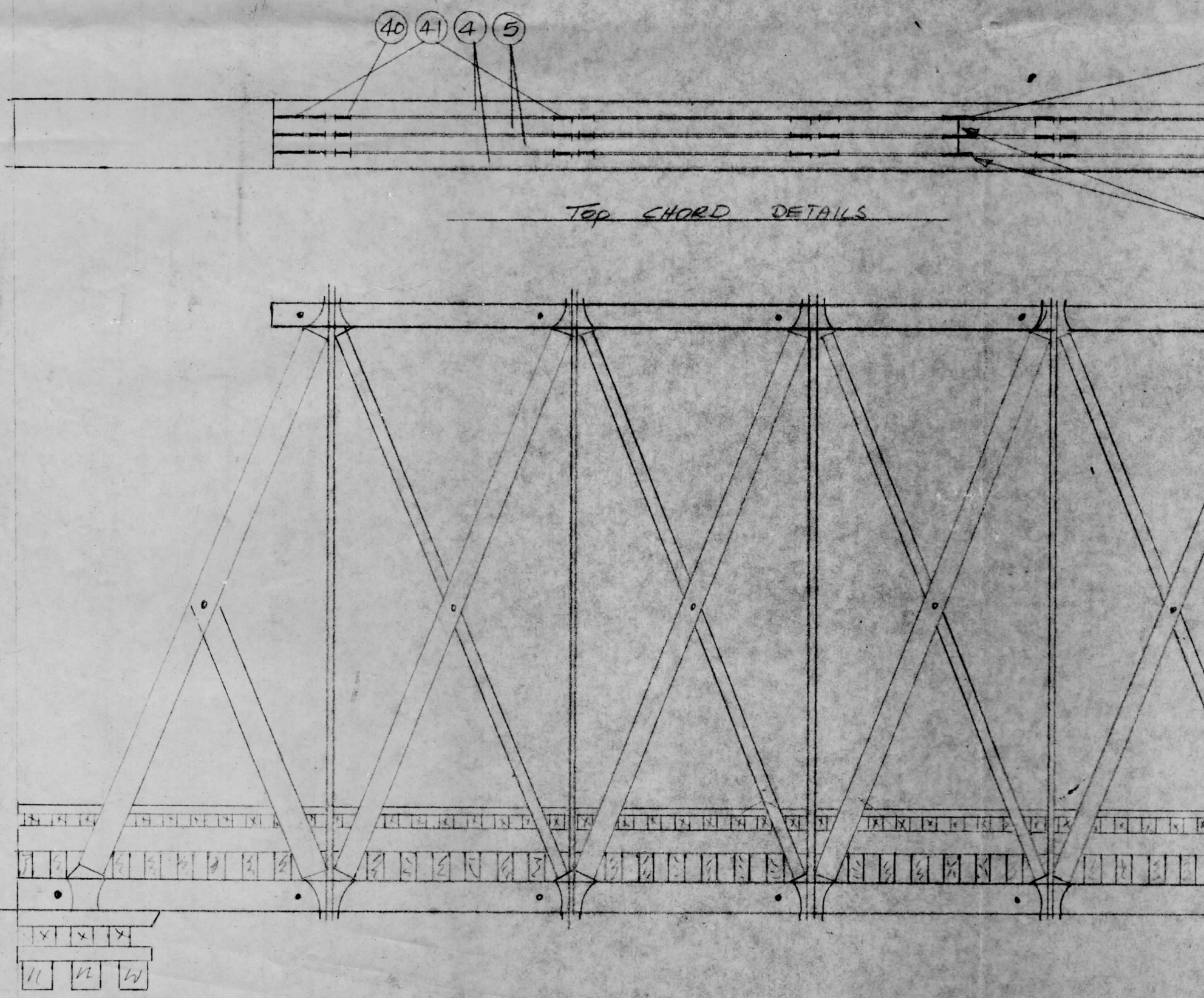
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TOP CHORD DETAILS

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SPLICE JOINTS

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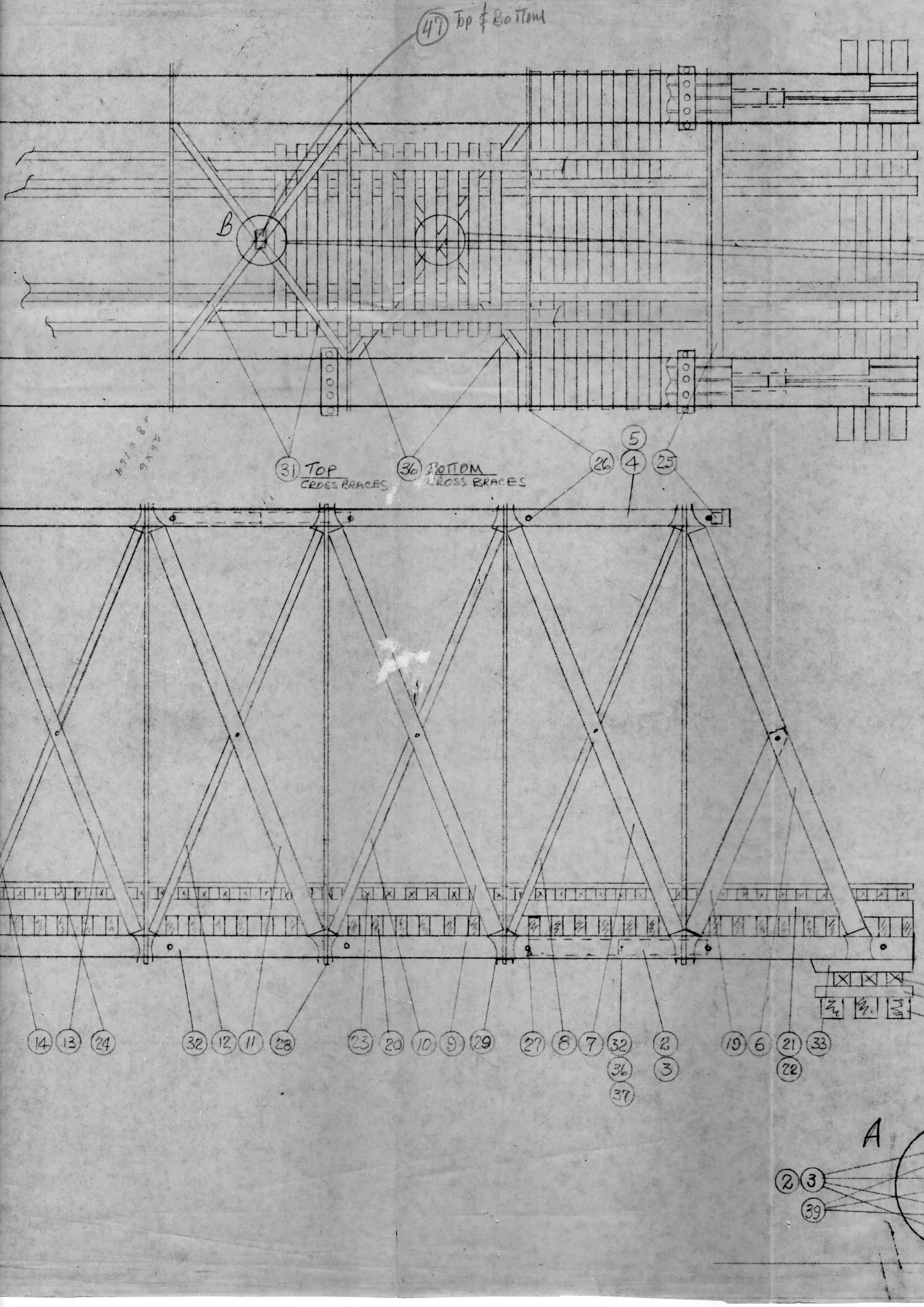
47 Top & Bottom
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31 TOP CROSS BRACES
36 BOTTOM CROSS BRACES
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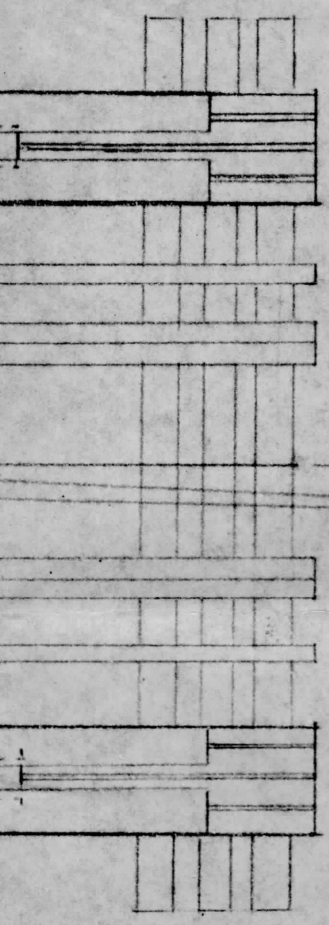
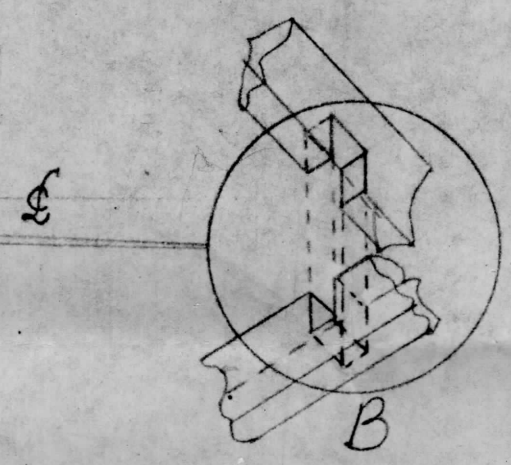
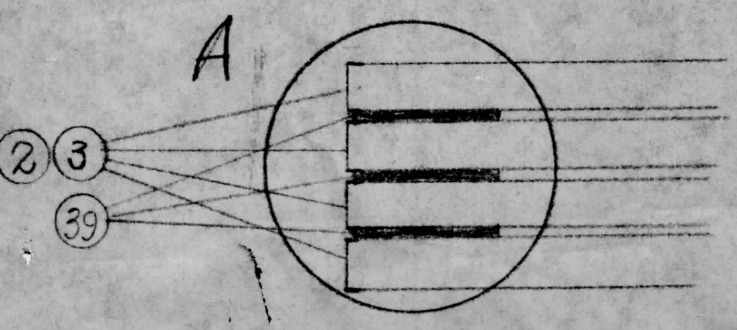




S-7 CLEARENCES



MINI STRUCTURES
S4501 150FT HOWE TRUSS
BRIDGE KIT
NORTHERN PACIFIC PROTOTYPE
ALSO GREAT NORTHERN
S SCALE
H.E. Maier
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