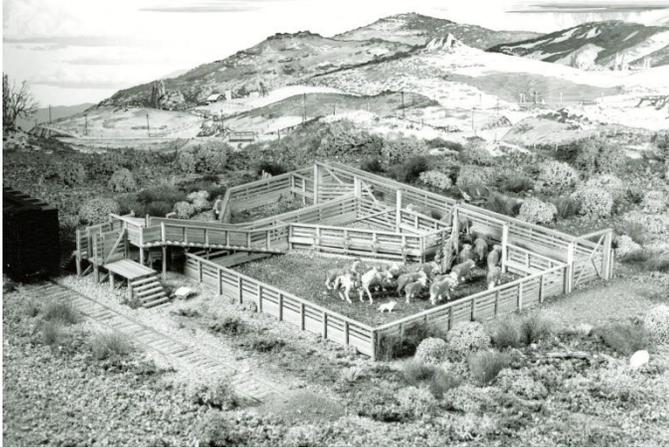


Campbell Scale Models

STOCKPENS

With DOUBLE CHUTES



Kit #437

43701

#4370982

The Stock Pens with double chutes were copied directly from Denver and Rio Grande Western drawings. These pens and chutes were designed for use with either single deck stock cars (for cattle) or double-deck stock cars (for sheep and pigs). These pens could be seen along every portion of the Rio Grande system.

Before you begin construction examine the parts and familiarize yourself with their locations on the model. Read thru the instructions and try to visualize each step before starting the construction. The orthographic drawings are full size to enable using them as templates. In using these drawings as templates first check them against the wood parts. Sometimes changes in humidity or temperature will cause the paper and wood to shrink or swell making these drawings slightly out of scale. If the wood parts do not fit the drawings exactly work from the center, splitting the difference. The stock-length wood must be cut to fit by the modeler as construction progresses. Remember to use this wood wisely. Do not discard any excess material after a part has been cut. Save all end-cuts and when cutting other parts use the shortest pieces possible.

Whatever wood parts are to be stained they should be done before construction begins since the glue will seal the wood and the stain will not "take" at these joints. We would recommend a "weathered" stain for all wood parts. All of the wood parts may need to be lightly rubbed with fine steel wool before the first coat, if painted, to help obtain a smooth finish.

STEP 1: THE FENCES

| | | | |
|----|---------|------------------------------|----------------------|
| A1 | 40 pcs. | 1/32 x 1/16 x 11 in. | Fence board material |
| A2 | 5 pcs. | 1/32 x 1/8 x 11-1/16 in. | Fence cap material |
| A6 | 1 pc. | 1/16 x 3/32 x 5 in. | Fence post material |
| B1 | 53 pcs. | 3/32 dia. Dowel x 25/32 in. | Fence posts |
| B3 | 7 pcs. | 1/8 x dia. Dowel x 1-3/8 in. | Gate Posts |

The A1 fence and chute boards are shown unshaded throughout the template sheets. Tack or tape the fence sections side of the

template sheet to a flat surface. Begin by running three strips of scotch tape sticky-side-up vertically across the fence A template.

Attach the eight A1 fence boards to the scotch tape over their drawing counterparts. Glue the A2 fence cap to the top A1 board leaving 1/32" overhang past both sides of the board. Glue the fifteen B1 posts to the A1 boards and A2 cap. Allow this assembly to dry thoroughly. Attach scotch tape sticky-side-up to the three fence sections (separated by gates) of fence B. Cut the A1 boards to length as shown in the drawing and attach to the tape. Glue four B3 gate posts to the A1 boards over their drawing counterparts. Cut and glue the three A2 cap strips in place as shown. (Note how the right cap strip must be trimmed as shown in the small diagram).

Cut the two A2 fence gate caps as shown. Glue these to the B3 posts. Glue the last B3 post to the center of the A2 cap as shown at the double gates. Allow this assembly to dry thoroughly. Glue the B1 posts in place to the A1 boards as shown.

Referring to fence C cut the eight A1 boards to length and attach to scotch tape in the same manner as before. Cut and glue the A2 cap strip in place to the top A1 board. Cut two rectangular posts from the A6 material 25/32" long each and glue in place to both ends of the fence as shown. Glue the B1 round posts to the A1 boards as shown and allow to dry.

There is a fence gate in fence C. Cut an A2 fence cap 1-5/8" long and glue in place to the B3 posts. Do not glue this assembly to the fence C assembly. Construct fence sections D, H, I, J and K in the same manner as already done. Be certain to cut the A2 cap strip corners as shown where necessary. Also be certain to properly locate the A6 rectangular posts where shown on fences I and K.

When all of these assemblies have thoroughly dried (24-48 hours) carefully remove them from the tape and set aside.

STEP 2: THE GATES

| | | | |
|----|--------|----------------------|---------------|
| A1 | 7 pcs. | 1/32 x 1/16 x 11 in. | Gate material |
|----|--------|----------------------|---------------|

Begin by laying scotch tape sticky-side-up horizontally over the fence gate drawings. From remnant A2 cap strip cut four hinge board 1-11/32" long each. Attach to the tape over its drawing counterparts. Cut four A1 vertical gate boards 11/16" long each and attach these to the tape on the right side of the gates.

Cut the horizontal gate boards to length as shown and glue in place to the hinge and vertical support boards over their drawing counterparts. Cut the four A1 diagonal cross braces to length and glue in place to the fence boards as shown. Allow these assemblies to dry.

Carefully remove the gates from the tape and turn them over. From A1 material and using the templates as a guide cut the remaining "back" braces for the gates and glue in place.

As before, attach scotch tape vertically over the Figure 1 Chute Gate Template. From A1 material cut fourteen A1 horizontal slats 1/2" long each, cut eight vertical braces 13/16" long each and cut four diagonal braces. Attach seven horizontal slats to the tape

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over their drawing counterparts. Glue two vertical and one diagonal brace in place to the slats and allow to dry.

When dry remove the gate from the tape, turn the gate over and glue the braces to this side the same as before. Repeat this process for the second gate.

Attach tape over the Figure 2 Loading Gate Template. From the A1 material, cut twenty-six fence slats 23/32" long each, fourteen vertical braces 13/16" long each and two diagonal braces. If these gates are constructed with care, they will be removable. Attach the top stationary slat (top left side) to the tape over the drawing. Now attach the top movable slat and keep repeating this procedure all the way down the gate so as to make a smooth fit.

Glue the vertical braces in place to the slats making certain that glue is only applied to the stationary slats on the center brace. Glue the diagonal brace in place to the stationary slats. Allow this assembly to dry. Carefully remove the gate from the tape and turn it over.

Glue the four remaining vertical braces in place as shown in the Gate Top View at both ends of the stationary and moveable slats. Repeat this process for the second loading gate.

STEP 3: THE CHUTES

| | | | |
|----|---------|------------------------------|--------------------|
| A1 | 20 pcs. | 1/32 x 1/16 x 11 in. | Chute boards |
| A2 | 2 pcs. | 1/32 x 1/8 x 11-1/16 in. | Cap strip material |
| B1 | 7 pcs. | 3/32 dia. dowel x 25/32 in. | Fence posts |
| B2 | 18 pcs. | 3/32 dia. dowel x 1-3/16 in. | Chute posts |

Lay three vertical strips of scotch tape sticky-side-up over the chute E template. Cut the four angled B2 posts to size as shown and set aside. Using the drawing as a guide cut the A1 chute and fence boards to size and attach to the tape. (Note that on this template there are A1 boards on the "outside" of the posts, cut these and set aside for now). Cut the A2 cap strip to size and glue in place to the A1 boards as shown. Glue the six B2 chute posts and two A1 fence posts in place as shown. Glue the outer A1 boards in place to the posts as shown. Allow this to dry thoroughly.

Attach three or four strips of scotch tape over the chute F, Left Side Template. Cut the B2 posts to size and set aside for now. From the A1 material cut all of the chute and fence boards as shown and attach to the tape over their drawing counterparts.

Cut an A2 cap strip to fit along the top of the fence portion of chute F, and glue in place to the top A1 board as shown. Cut an A6 rectangular post 25/32" long and glue in place to the end of the fence where shown. Glue the B1 and B2 posts in place to the A1 boards. Cut the remaining A2 chute cap to size and glue in place to the top of the chute posts. Allow this to dry thoroughly.

Lay scotch tape sticky-side-up over the chute F, right side template as with the left side. Cut the A1 boards to size as shown and attach to the tape. Carefully remove the chute F, left side assembly from the tape, flip it over and glue in place to the right-side boards. Allow this assembly to dry thoroughly.

Cut the A1 boards and the B2 chute posts to size as shown in the chute G Template. Attach tape over chute G as before. Attach the boards to the tape. Cut and glue the A2 cap strip in place to the top A1 board. Glue the B2 posts in place to the boards and cap strip. When all of the chute assemblies are dry carefully remove them from the tape and set them aside.

STEP 4: THE RAMPS

| | | | |
|----|--------|--------------------------|-------------------------|
| A3 | 8 pcs. | 1/32 x 3/32 x 11-1/2 in. | Ramp & walkway material |
| A5 | 4 pcs. | 1/32 x 3/64 x 11-1/2 in. | Cleat material |

On a flat surface edge-glue six of the A3 planks together and weight to dry straight and flat. Now glue the remaining two A3 sections together and weight this unit to dry flat. When thoroughly dry cut the assemblies to the lengths shown in the Figure 3 Template. Note on the long ramp and walkway there is another cut to be made where the two units bend at the top of the chute; the locations of these cuts are shown by two small x's. Notch the long ramp as shown in Figure 3.

From the A5 material cut forty cleats 3/4" long for the ramps and thirty-four cleats 5/16" long for the walkways. Lay the ramps over their drawing counterparts and using the marks as guides, glue the cleats to the A3 ramps allowing overhang on both sides. Do the same with the walkways and the short cleats. Allow these assemblies to dry thoroughly.

When these assemblies are dry turn them over and trim the cleats flush with both sides of the ramps and walkways. Set these assemblies aside.

STEP 5: THE DROP GATE

| | | | |
|----|-------|----------------------------|--------------------|
| A3 | 1 pc. | 1/32 x 3/32 x 11-11/16 in. | Drop gate material |
| B6 | 1 pc. | 3/8" rail | Counter balance |

Cut six drop gate platform boards 5/8" long each from the A3 material and edge-glue them together as shown in Figure 4. From remnant A1 material cut two counterbalance supports 1-5/16" long and glue in place to the A3 boards. Cut an A3 counter balance support 3/8" long and attach it to the A1 boards.

From spare A1 and A5 material build up the "direction" wall and glue in place to the A3 drop gate as shown in Figure 4 and the Plan View. Glue the B6 counter balance rail in place to the A3 support.

STEP 6: ASSEMBLING THE CHUTES

| | | | |
|----|-------|-----------------------|-----------------------|
| A3 | 1 pc. | 1/32 x 3/32 x 11-1/4" | Ramp support material |
|----|-------|-----------------------|-----------------------|

Begin by gluing the long ramp in place between chute E and the right side of chute F. Glue the ramp flush against the B2 chute posts and with the A5 cleats against the bottom of the A1 chute boards. Glue the top part of the ramp (where it levels) to the A1 chute boards between the tall B2 posts.

Glue the short ramp in place between the left side of chute F and chute G making certain all of the front B2 posts are aligned. Allow this assembly to dry thoroughly. From the A3 support material cut seven ramp and walkway supports for chute E and F as shown in Figure 5. Glue these supports in place to the B2 posts flush against the underside of the long ramp.

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From the A3 material cut five supports for the F and G chute supports 11/16" long each and glue these in place as before and shown in Figure 5. Glue the long walkway to the chute E supports. Allow this to dry thoroughly. Again, using Figure 5, build up six chute G walkway supports as shown. Set these aside for now, as this walkway will be placed after completion of the pens and loading dock.

Cut a section of remnant A2 material 1-11/32" long and glue in place on top of the front three B2 posts as shown in the Chute Front View.

STEP 7: ASSEMBLING THE FENCES

| | | | |
|----|-------|-------------------------|----------------------|
| A2 | 1 pc. | 1/32 x 1/8 x 11-1/4 in. | Fence guard material |
|----|-------|-------------------------|----------------------|

Use the Plan View as a template for this step. Due to individual tolerances, it may be necessary to trim a particular fence or cap section to make a perfect fit, however, test-fit all fence sections before gluing or trimming.

Begin by gluing fence I to fence A, fence B to fence I then glue the fence C gate frame between fences A and B. Now glue fences B and C together then fence D to C. Attach the chute assembly to fence D as shown also connecting the fence portion of chute F to the double gate center post of fence B.

Glue fence H in place between chute G and fence I. Glue fence sections J and K in place between chute E and fence B as shown. Allow this assembly to dry thoroughly. Note the A2 fence guard in Figure 7 and along fence B, J and K in the Plan View. These are to keep livestock from rubbing against the back of chute boards and prying them loose. Using the Plan View cut the guard boards and glue in place as shown level with the A1 chute boards.

STEP 8: THE LOADING DOCK

| | | | |
|----|--------|---------------------------|------------------------------|
| A1 | 1 pc. | 1/32 x 1/16 x 11 in. | Cross brace material |
| A4 | 2 pcs. | 1/16 x 1/8 x 11-1/16 in. | Dock & dock support material |
| B4 | 8 pcs. | 1/8 dia. dowel x 9/16 in. | Dock legs |

Cut four A4 dock supports 3/4" long each. Glue these in place centered on top of the B4 posts as shown in the Plan View and Chute Front View and allow to dry. Using Figure 6 as a guide cut eight cross braces and glue in place to the B4 posts as shown. Allow these assemblies to dry.

Cut six dock planks from the A4 material 2-3/4" long each and edge-glue them together as shown. Mark the locations of the dock supports on the underside of the dock. Glue the dock supports in place on these marks. Glue the dock in place. Referring to the Chute Front View cut four A1 boards from remnant A1 material 23/32" long each and glue in place to the center and right B2 post and against the dock as shown.

Again, referring to the right side of the Chute Front View and using remnant A1 material build up a small ladder to go from the dock to the upper walkway. Glue the ladder in place.

STEP 9: THE DOCK STAIRS

| | | | |
|----|--------|--------------------------|----------------------|
| A2 | 1 pc. | 1/32 x 1/8 x 11-1/16 in. | Stair tread material |
| B5 | 2 pcs. | #933Plastic or wood | Stair Stringers |

Using the Chute Front View as a guide cut the B5 stair stringers to size. Cut twelve stair stringers 3/4" long each from the A2

material. Lay scotch tape sticky-side-up over the Figure 8 Stair Stringer Template. Stand two of the stringers on their back edges, over their drawing counterparts, pressed to the tape. Keep the bottom edges even.

Begin gluing the treads at the bottom step and work up leaving equal overhang on both sides. Do not glue a tread onto the top step. When this unit is completely dry remove it from the scotch tape and glue it in place as shown in the drawings. Repeat this procedure for the other set of stairs.

STEP 10: THE FEED TROUGH

Using Figure 7 as a template build up a feed trough from remnant A1 and A2 material. Shown on the left-hand side of the Feed Trough Template is the "rack" portion of the trough and how it is attached to the fence. Build up four of these "racks" and glue them in place to fence J, B1 posts. Cut two A1 and one A2 cross members to run the length of the rack and glue in place to the racks as shown in the template.

STEP 11: FINISHING THE STOCK PENS

Glue the chute G walkway in place flush with the fence H cap strip and the loading dock. Glue the six walkway supports made earlier to the walkway and B2 chute posts. Glue the fence gates, chute gates, and loading gates in their proper locations either closed or ajar. Your stock pens are now completed. These pens can be greatly enhanced by the addition of a herd of cattle or a flock of sheep, a couple of cowboys or shepherds, bales of hay and maybe an old bath tub converted to use as a watering trough. The Stock Pens with Double Chutes are ready to be an interesting addition to your layout.

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