

# PO248/9 00/HO TAPERED RETAINING WALLS

## READ THROUGH ALL THE INSTRUCTIONS BEFORE YOU START.

To construct this kit you will need the following:

1. A Modellers knife.
2. A steel ruler.
3. Glue - UHU Clear Adhesive is our favourite.
4. Ultra Fine Tip Glue Applicator, *see right*.
5. A cutting surface - a sheet of card or a cutting mat.
6. Fine point tweezers to hold the smaller components.
7. Water colour paints and a very fine brush, for painting the edges and corners.

## GETTING STARTED

### 1 EXTRACTING COMPONENTS FROM SHEETS.

To stop the components from falling off the sheets, they are held secure with scorelines. These are cuts that only go about 75% of the way through the card.

To release them simply run the point of your knife along the scorelines and they will come seamlessly away.

These scorelines are indicated with blue arrows: →

**WARNING,** Cut with care using a knife that is not too sharp, this will reduce the risk of the blade running out of the score and cutting the kit components.

### 2 MAKE YOUR 'BUILDERS YARD'.

This is an area kept away from your working surface, where you store ALL components extracted from the base sheets until needed.

Use a piece of thick card or a tray for your builders yard.

### CUT THE COMPONENTS OUT IN THE FOLLOWING ORDER:

**1. Extract the components from SHEET A ONLY EXCEPT FOR ONE ITEM ON SHEET 'B'** That you need

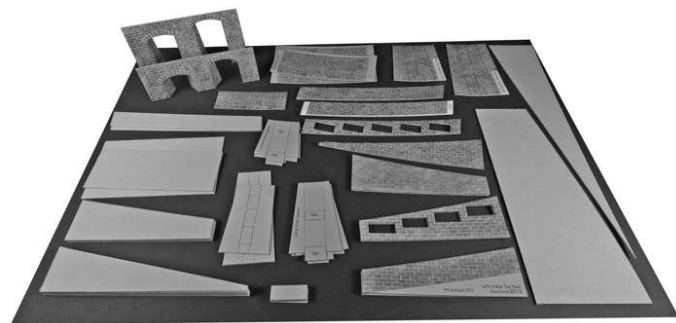
This is **LT3.3** Rear LEFT hand wall.

Leave the rest of sheet 'B' to one side until needed.

This is best done to avoid any confusion and mixing up of very similar looking components.

**2. Extract components from the Plain Grey Cards**

There is also a small laser cut sheet with wall capping strips and squares - leave it alone for now and only extract these components as needed.



Your **WORKING** area should have a clean flat surface, and should only contain the kit parts you are actually working on.

EVERYTHING ELSE SHOULD BE KEPT NEATLY ARRANGED IN THE BUILDERS YARD, UNTIL NEEDED.

PLEASE NOTE: Don't throw anything away. Keep all offcuts and waste card in a box until the kit is finished, just in case you can't find anything. The chances are that it will be there.

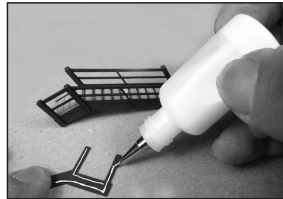
# INSTRUCTION SHEET 1

## CHECK LIST

This kit pack should contain the following:

- 1 x SHEET A - Printed parts for left hand wall.
- 1 x SHEET B - Printed parts for right hand wall.
- 2 x PLAIN GREY CARDS Sheet 1 - Strengthening parts.
- 2 x PLAIN GREY CARDS Sheet 2 - Strengthening parts.
- 1 x Small Laser cut grey card with wall top strips.
- 1 x Tarmac strips sheet. (may be supplied as 2 separate strip).
- 2 x INSTRUCTION SHEETS.

The **METCALFE Ultra Fine Tip Glue Bottles** are essential for gluing the smaller components in this kit.



Tiny strips or spots of glue can be accurately laid down with precision.



Always replace the pin after use and store the bottles upside down to keep the glue moist.

### UHU Solvent Free All Purpose Adhesive Glue

Works superbly well in our fine glue applicators. Dries quickly, but allows time for positioning of kit parts as described further on in the instructions.

### Speed Bond by Deluxe Materials

This is an excellent *PVA*. based glue that dries quickly, but also allows time to get parts into position. [www.deluxematerials.com](http://www.deluxematerials.com)

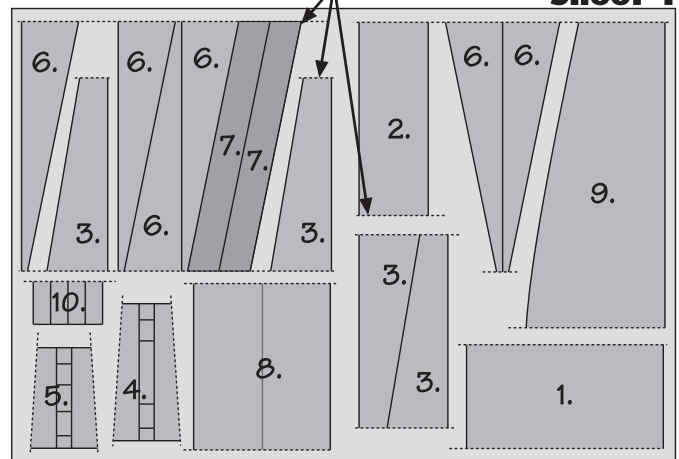
### GREY CARD STRENGTHENERS Sheets 1 & 2

These sheets contains all the un-printed components that fit inside the walls to make them thicker and stronger.

There are two each of these in this kit.

Note: The dotted lines shown here represent the score lines you need to cut along to release components.

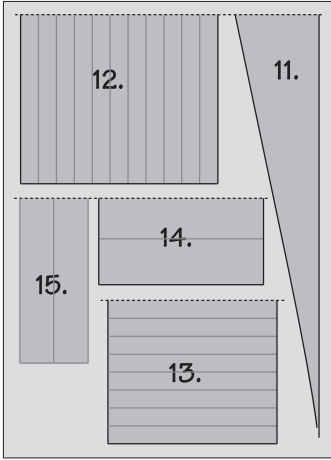
#### Sheet 1



#### Key to components.

1. Backing card for RB1.2 & LB1.2 (2 in total).
2. Backing card for RB2.2 & LB2.2 (2 in total).
3. Spacers for top walls (8 in total).
4. Large column former (2 in total).
5. Small column former (2 in total).
6. Base wall spacers (12 in total).
7. Spacers for top walls (4 in total).
8. Folding spacer to fit between walls (2 in total).
9. Large backing card to align walls (2 in total).
10. Wall end pillar inner brace cards (8 in total).

## Grey Sheet 2



- Key.
11. Small backing card, runs with large card (2 in total).
  12. Deck card with scorelines to allow it to bend when fitted. (2 in total).
  13. As above but smaller. (2 in total).
  - 14/15. Folding spacers, for same use as spacer no.8 on grey sheet 1.

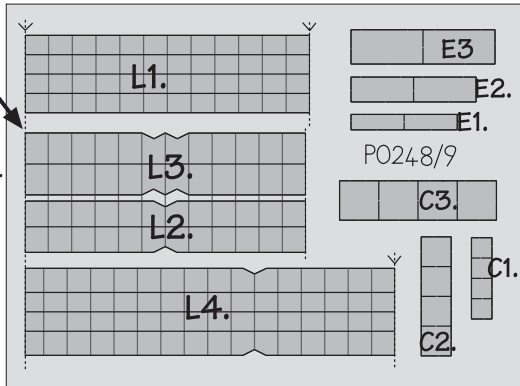
PLEASE NOTE: The strengtheners shown on these sheets numbered 8, 12, 13, & 14 are for use only if you are making the two tapered walls into a ramp for use with our Railway Bridge kits PO246 and PO247.

## LASER CUT CARD COMPONENTS

This is a smaller plain grey card with finer laser cut wall top strips and capping stones. There are two identical sets for each wall.

Cut down the dotted lines to release the strips.

Smaller squares and oblongs simply push out.



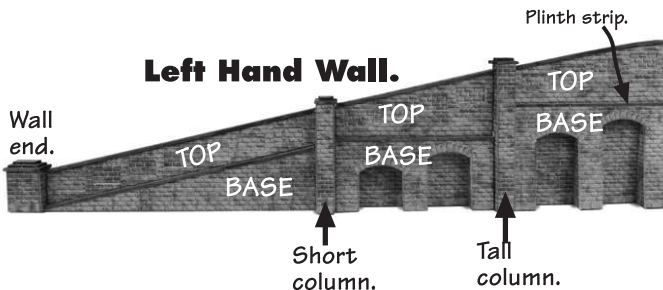
Key:

- L1. Capping stone strips for upper walls
- L2. Plinths for base walls RB1.1 & LB1.1
- L3. Plinths for base walls RB2.2 & LB2.1
- L4. Plinths (marked with v cutout) and top stone strips for the longer base and top walls.
- C1, 2 & 3. Cap stones for the columns (3 sets of 4).
- E1, 2 & 3. Cap stones for the end pillar.

## BRIEF DESCRIPTION OF FINISHED KIT.

There are a lot of similar and identical components in this kit, so it's best if you take the time to understand what the finished thing is supposed to look like.

All the components from Sheet 'A' (with the exception of one rear upper wall) are for the left hand wall.



All the right hand wall components (with the exception of the one rear upper wall) are in Sheet 'B' and are an exact mirror image of sheet A. and is constructed in exactly the same way.

## PAINTING CORNERS & EDGES.

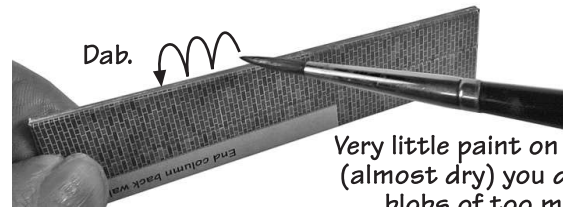
Before you start any construction, you may want to paint over the exposed corners where the plain card shows through. This is not a hard job and only takes a few moments, and is much easier than trying to paint the edges after the kit has been built.

**NOTE:** the stone structures PO245, 247 and 249 should not need edges painting as the base card is of a very similar colour. Painting can make it look worse.

A set of very simple child's water colour paints is all you need and a fine paint brush.

Mix your colour with lots and lots of water, apx. 1 part paint to 5 parts water, maybe more. **TEST ON WASTE CARD FIRST UNTIL YOU HAVE THE CORRECT SHADE AND COLOUR, AND HAVE PERFECTED THE TECHNIQUE FOR APPLYING TO BEST EFFECT.**

Fold the edges of the card back fully and gently dab your brush along the exposed card to give a dappled effect.



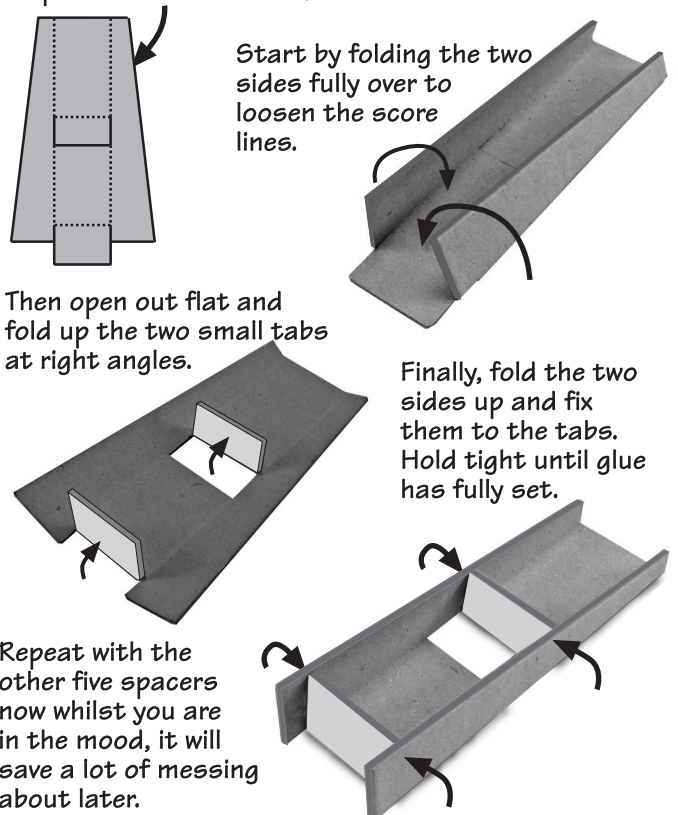
Very little paint on the brush (almost dry) you don't want blobs of too much paint.

Remember, you only need to just slightly tint the card with a little colour, DON'T paint a thick solid line down the edges, you will only make it look worse.

**IF YOU HAVE READ AND UNDERSTAND EVERYTHING SO FAR, THEN YOU ARE NOW READY TO START BUILDING.**

## Fig.1. INNER SPACERS for front wall.

There are 12 inner spacers (6pink & 6blue, small & large) shaped like this in the kit, 3 for each wall section.



Start by folding the two sides fully over to loosen the score lines.

Then open out flat and fold up the two small tabs at right angles.

Finally, fold the two sides up and fix them to the tabs. Hold tight until glue has fully set.

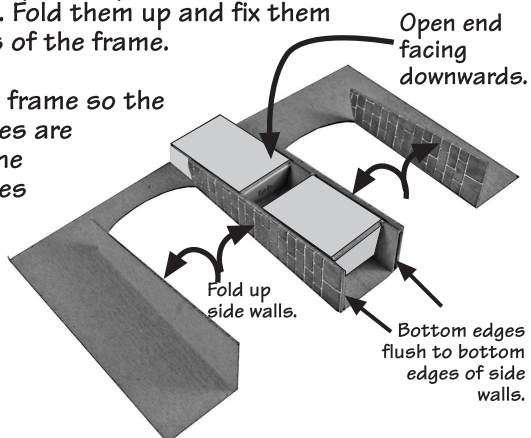
Repeat with the other five spacers now whilst you are in the mood, it will save a lot of messing about later.



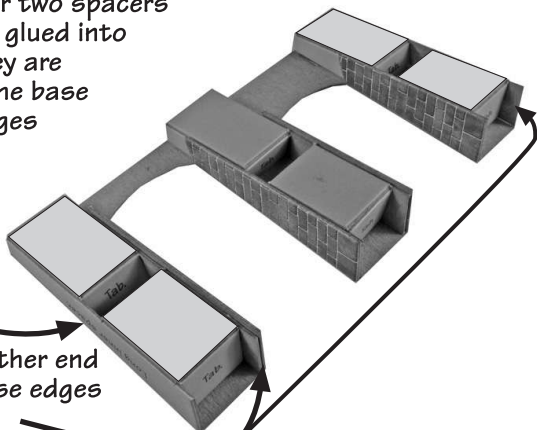
## Fig.2. FIX SPACERS TO BASE WALLS.

Place base wall section face down on work surface and fold the four small side wall sections up at right angles. Fit the first spacer, open end down, in between the two centre walls. Fold them up and fix them to the sides of the frame.

Position the frame so the bottom edges are flush with the bottom edges of the walls.

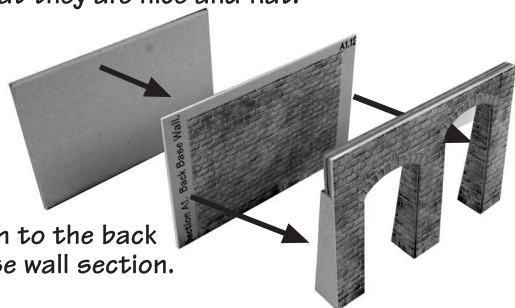


Fit the other two spacers at each end glued into place so they are flush with the base wall side edges here.

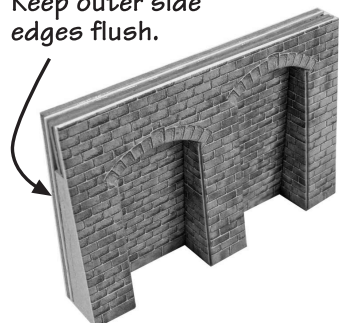


## Fig.3. BACK WALLS.

Fix one plain grey back wall (No's 1 & 2 on grey card.) behind each corresponding printed back wall. Place under flat weight (a book will do) until glue has dried so that they are nice and flat.



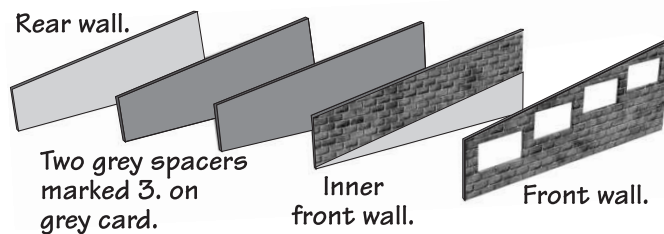
Keep outer side edges flush.



Place under a weight to hold nice and straight whilst the glue dries. Because it is wedge shaped, this is a good way to get the weight to sit on top.

## Fig.4. TOP WALL SECTIONS.

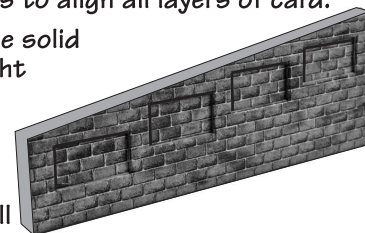
Each wall is made up of 5 layers of card printed front and back with grey card spacers in between.



Make sure all edges line up flush. Stand on flat surface whilst glue is still wet and push down from the top and inwards from both sides to align all layers of card.

So that you end up nice solid wall that stands upright on its own.

Like this!

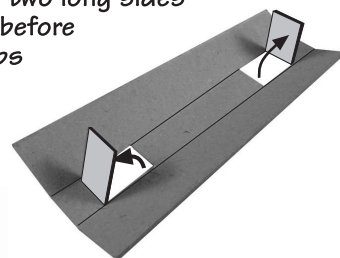


Build the other top wall in just the same way.

## Fig.5. COLUMNS.

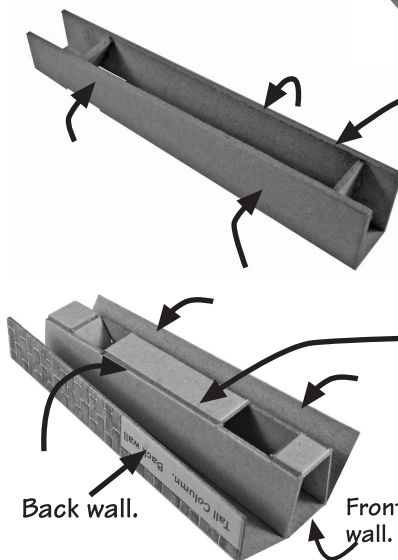
Let's start with the inner formers (Grey sheet 4 & 5). These assemble in the same way as the lower wall inner spacers in Fig. 1. Bend the two long sides over and then flatten out before folding up the two tiny tabs as shown here.

Fold the two sides up and fix to the tabs to form a box structure.



NOTE: This is the OPEN side.

And this is the Back side.



Fit the frame to the column with its open side facing down against the front wall of the column. So when you fold the walls around, the back wall is fixed to the 'back side' of the frame

Fold walls around and fix.



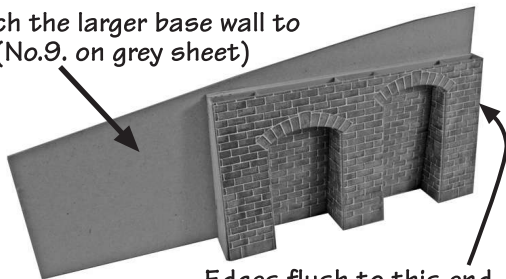
Like so.



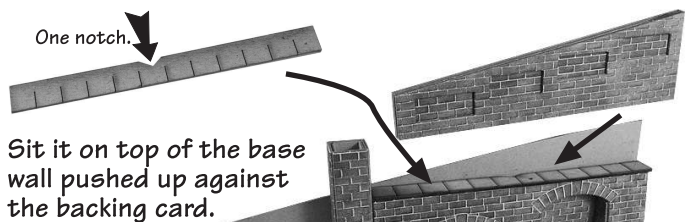
## Fig.6. BRING IT TOGETHER.

Now that both recessed base walls and the two sloping top walls, not to mention the two columns, are ready and built, you can start attaching them to the backing card.

**1.** First attach the larger base wall to the grey card (No.9. on grey sheet)



**2.** Attach the plinth strip with ONE NOTCH cut in back edge.

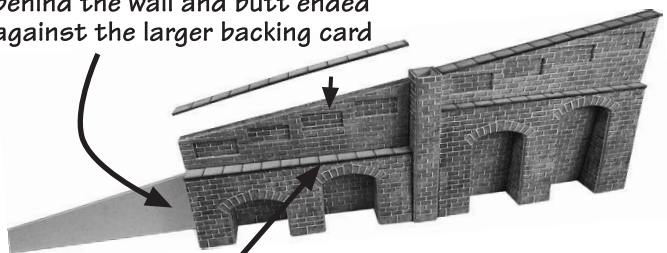


**3.** Attach the larger column fixed firmly up against the backing card and base wall.



**5.** Fit the smaller base wall to the backing card then fit the smaller bracing card (NO.11. on grey sheet) behind the wall and butt ended against the larger backing card

**4.** Fit one of the sloping top walls directly on top of the plinth, then firmly against the backing card and the column



**6.** Attach the plinth strip with TWO NOTCHES cut in back edge.

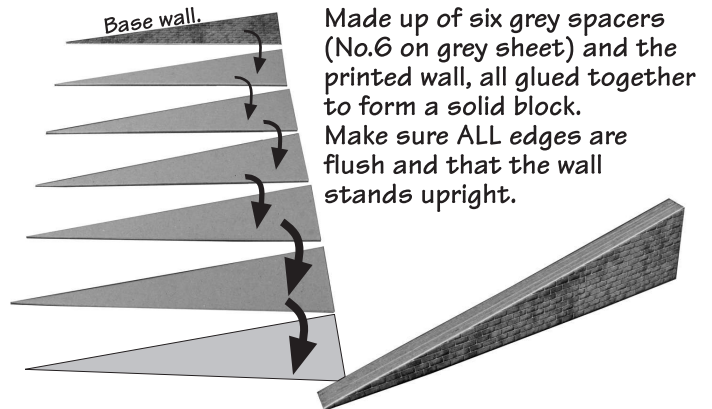
**7.** Fit the other sloping top wall directly on top of the plinth, then firmly against the backing card and the column

**8.** Attach the capping stone strips to the wall tops so they overhang equally on both edges. Finally attach the small column as you did with the big'un.

The whole structure is best laid on its back whilst the glue dries with a few weights on top to hold it flat.

## Fig.7. END LONG BASE WALL.

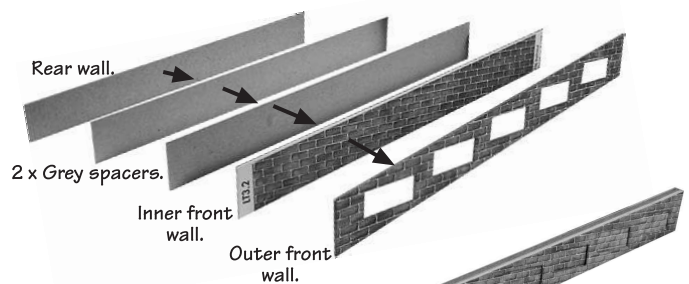
The base section for this wall is a simple tapered wall.



## Fig.8. END LONG TOP WALL.

The top wall is similar to the other walls there are two printed front walls, two grey inner spacers (No.7. on grey sheet) and a rear printed wall, all glued together to form a very solid wall.

Make sure all edges are absolutely flush.



**NOTE:**  
The rear wall for this left hand wall is located on sheet 'B' and vice versa for the right hand wall.

Like this.

Attach the long plinth (again with the V cut into the back edge)

Attach the top wall then lay on its back so that all the back edges are lined up nice and flat.

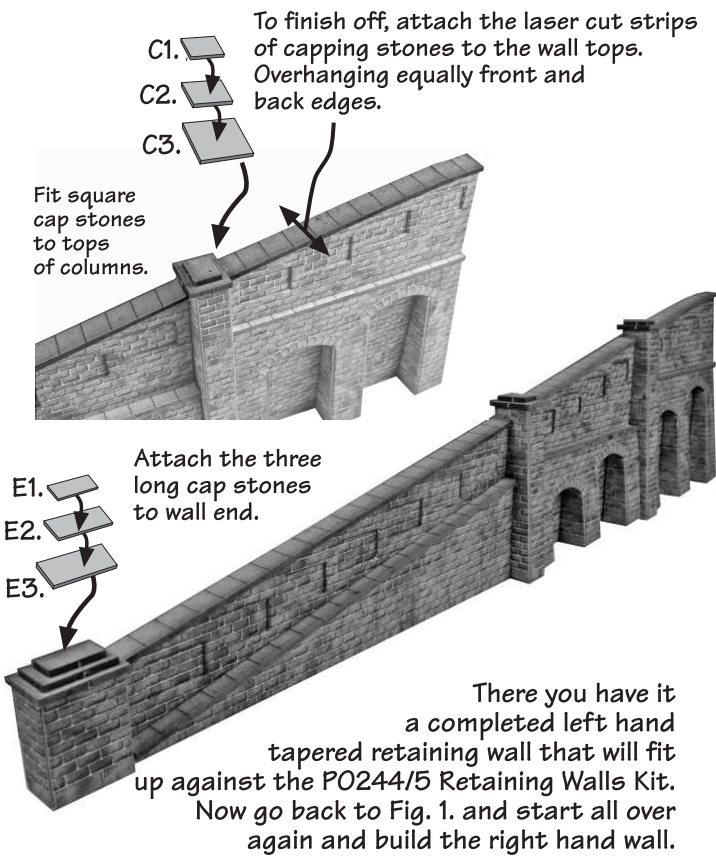
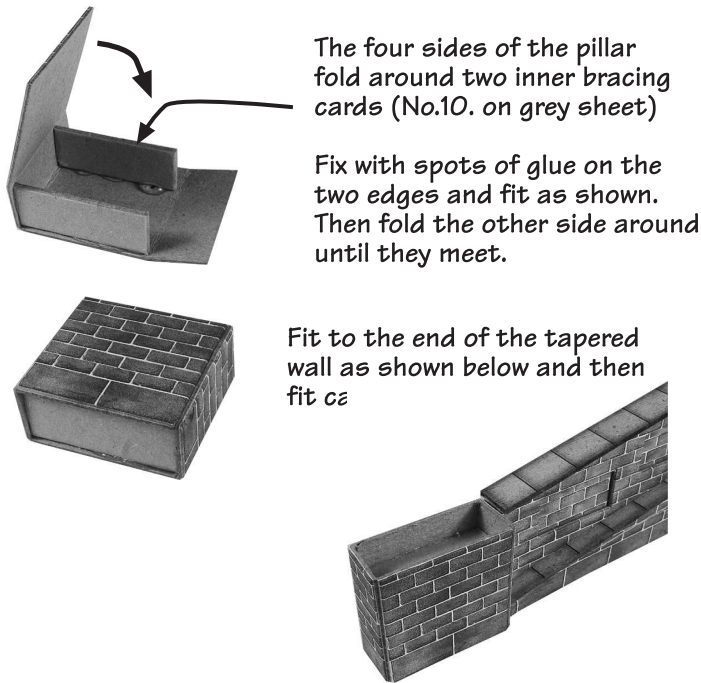
When dry, fix in place as shown here against the tapered backing card.



**CONTINUED ON SHEET 2**

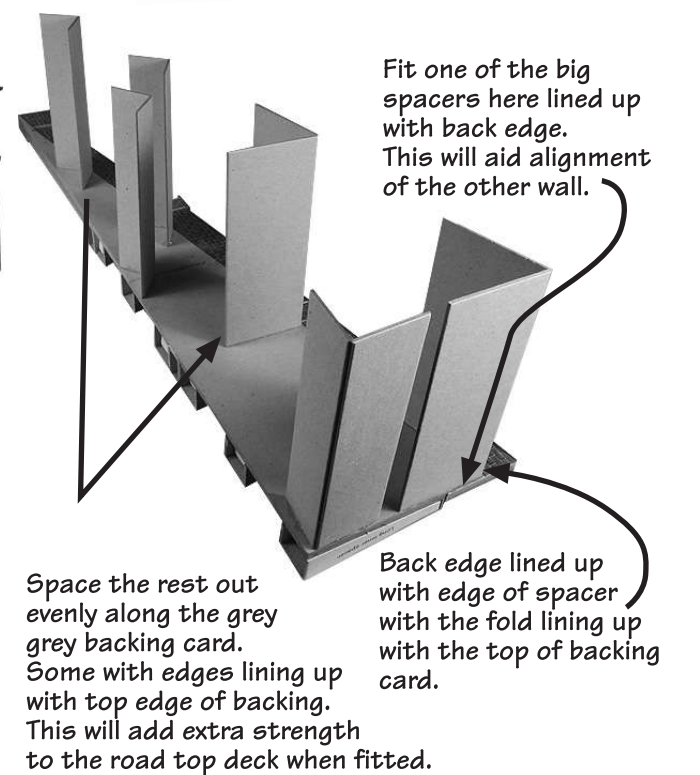
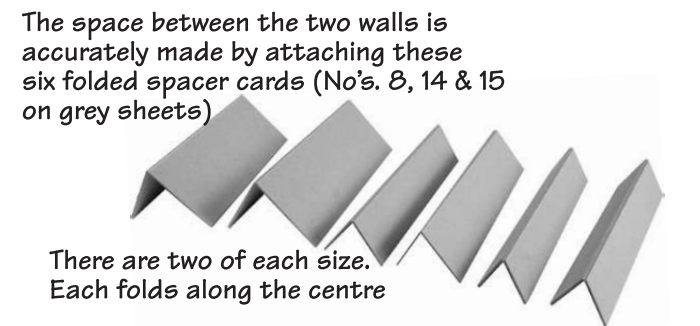
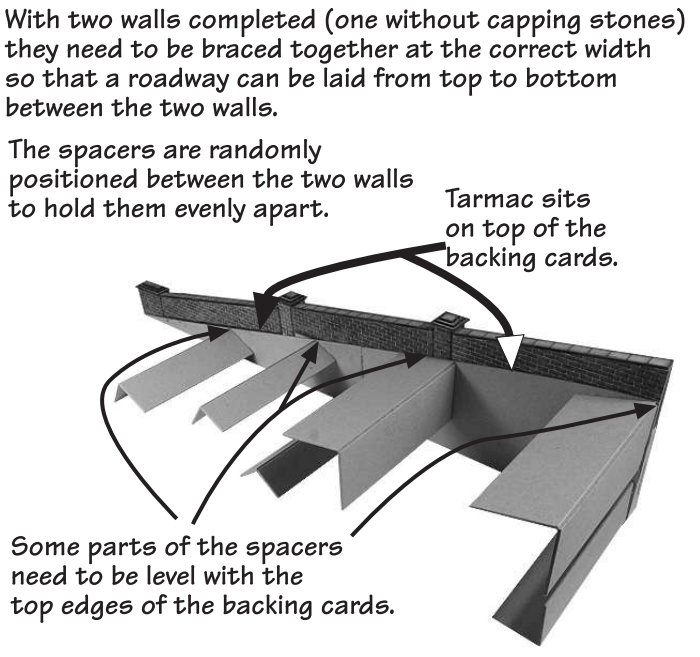


**Fig.9. WALL END PILLAR.**



**EXTRA NOTE:**  
WHEN YOU BUILD THE RIGHT HAND WALL, IF YOU INTEND MAKING A RAMP WHEN ITS FINISHED, DON'T ATTACH ANY OF THE CAPPING STONES TO THE WALL TOPS AND COLUMNS. THIS WILL MAKE IT MUCH EASIER FOR YOU TO DROP IN THE RAMP BASE.

**Fig.10. MAKING A RAMP.**



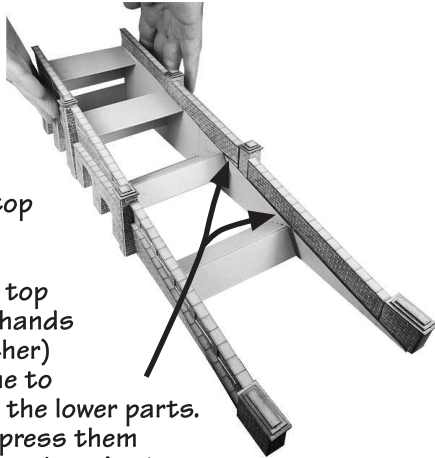
LET GLUE FULLY SET BEFORE TURNING THE WALL UPRIGHT AND ATTACHING THE OPPOSITE WALL.

## Fig.11. JOINING WALLS TOGETHER.

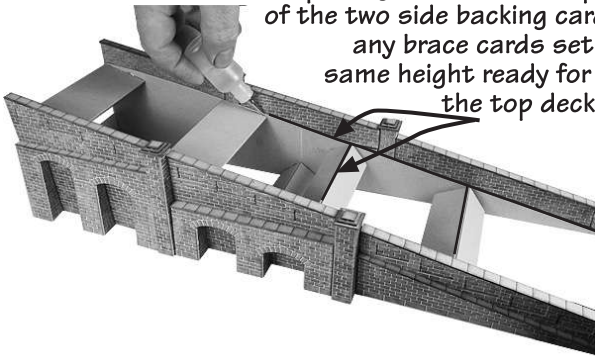
Carefully align the opposite wall and fix to the spacers.

If the wall is not dead straight, glue in two stages to stop it pulling apart.

Start by gluing the top section (where the hands are holding it together) and wait for the glue to fully set. Then glue the lower parts. That way when you press them together, the other end won't ping apart

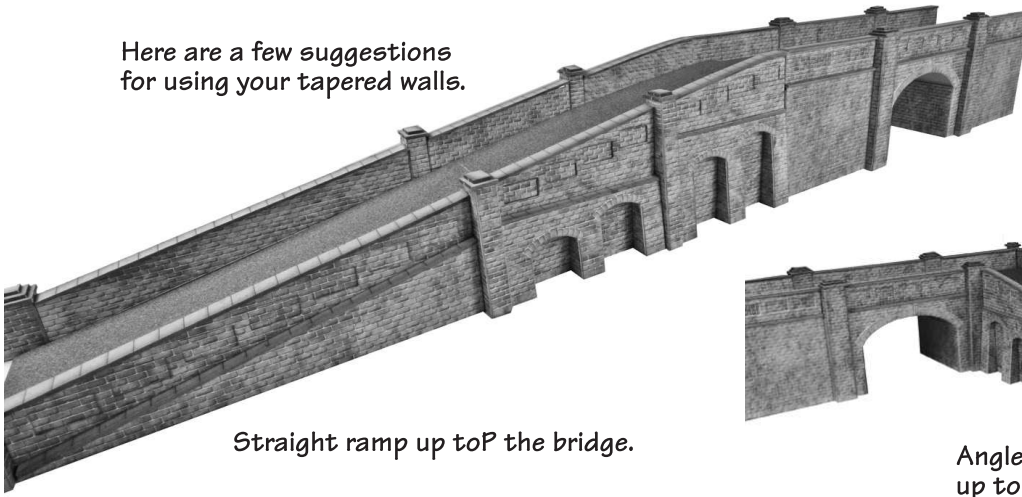


Now place glue on all the top edges of the two side backing cards and any brace cards set at the same height ready for fitting the top deck cards.

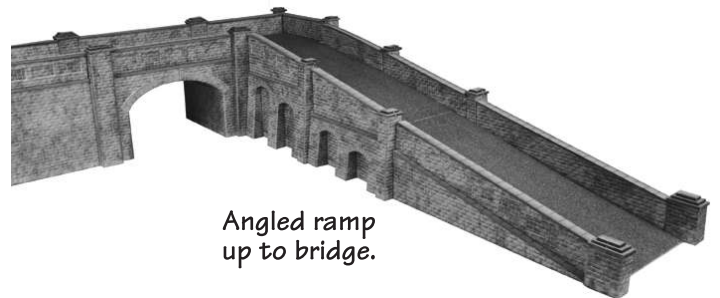


Remember that the inner ramp former has a curved shape along the top edge so you will need to make sure the decking and tarmac are pressed down firmly whilst the glue sets.

Here are a few suggestions for using your tapered walls.

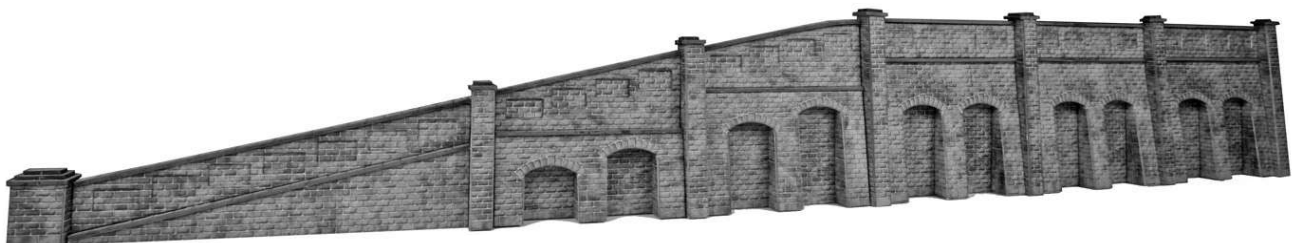


Straight ramp up toP the bridge.



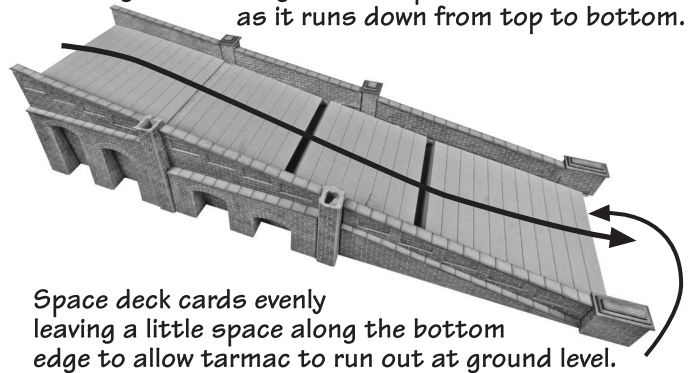
Angled ramp up to bridge.

Used with retaining wall.

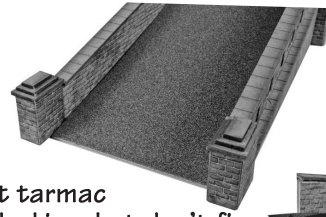


## Fig.12. ADD DECKING AND TARMAC.

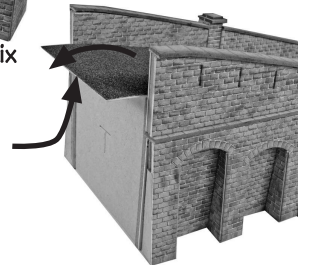
The grey decking cards have lots of score lines running from side to side. This is to help the card bend when fitted onto the edges of the backing card which has a slight curve to give the slope a more natural look as it runs down from top to bottom.



Space deck cards evenly leaving a little space along the bottom edge to allow tarmac to run out at ground level.



Cut and fit tarmac onto the decking, but don't fix until you have lined up an overhanging portion at the top with the tarmac on the bridge.



Also note that the top of the roadway curves slightly, so the tarmac will need bending to fit. It will then line up level with the bridge.