

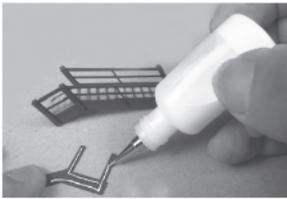
# PN140/141 N Scale Viaduct Kit

## READ THROUGH ALL THE INSTRUCTIONS BEFORE YOU START.

To construct this kit you will need the following:

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

**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 All Purpose Adhesive Glue

Is available in standard and solvent free. Both types are fine for use in our glue bottles, even though the instructions on the back of the packs warn against solvent based glues, we have tested the UHU solvent based glue and it works fine. The solvent free glue doesn't string as much, but can be a little harder to clean off if it drips onto unwanted areas.

### Speed Bond by Deluxe Materials

This is an excellent PVA. based glue that dries quickly, but also allows time to get parts into position. It has the added advantage that it dries clear leaving little evidence if it oozes out of joints etc. Used in our fine glue applicator bottles a 112g bottle lasts for ages. [www.deluxematerials.com](http://www.deluxematerials.com)

## 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. The Laser cut components are held to the sheet with tiny score points, these parts can be carefully pushed out from the base sheet.

## INSTRUCTION SHEET 1

### CHECK LIST

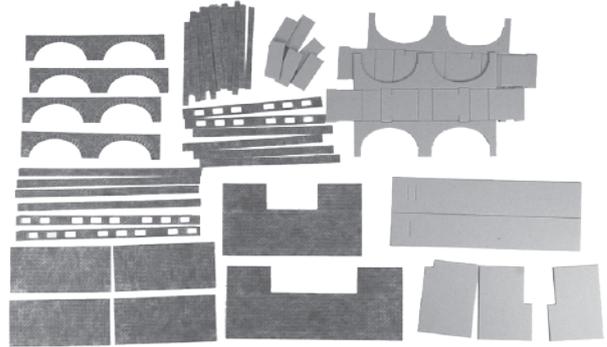
This kit pack should contain the following:

- 2 x SHEET A - Viaduct Walls & Arches
- 1 x SHEET B - Track bed
- 1 x SHEET C - Inner Arches
- 2 x PLAIN GREY CARD - Inner strengthening parts.
- 1 x PLAIN LASER CUT GREY CARD - Coping Stones
- 1 x INSTRUCTION SHEET.

### 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 to make your builders yard.



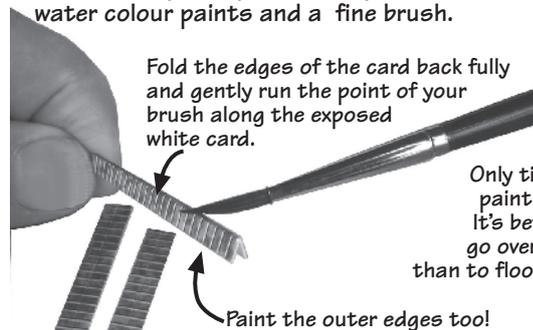
Your **WORKING** area should have a clean flat surface, and should only contain the kit parts you are actually working on.

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

PLEASE NOTE: Don't throw anything away. Keep all the 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.

### 3 PAINTING CORNERS & EDGES.

As you proceed with this kit you will notice that the white card this kit is printed on shows through on the edges and corners. To make a perfect job of things these areas look a lot better if they are hidden by painting over them. And this is best done as you are constructing the kit before fitting, and it is very easily done. All you need is simple set of child's water colour paints and a fine brush.



Fold the edges of the card back fully and gently run the point of your brush along the exposed white card.

Only tiny amounts of paint on your brush. It's better to have to go over it a few times than to flood it with paint.

Paint the outer edges too!

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.

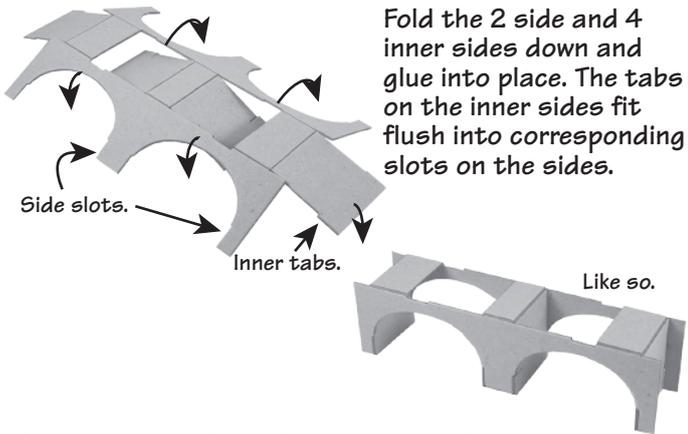
Before the paint dries, run your finger along the edge to rub the colour into the absorbent white card. Then wipe away any paint that has run onto the printed surface before it dries.

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.

This kit can be made as a double or single track viaduct, much of the kit is assembled the same way unless stated. Please read through each stage carefully to avoid mistakes. You will have a few parts left over at the end.

### Fig. 1. INNER STRENGTHENER

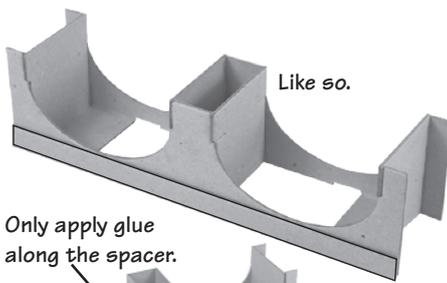
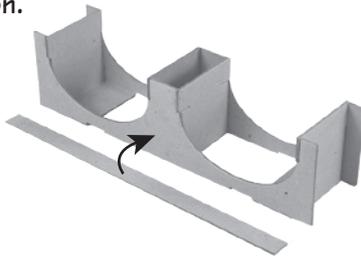
Start off with the 4 inner strengtheners.



Fold the 2 side and 4 inner sides down and glue into place. The tabs on the inner sides fit flush into corresponding slots on the sides.

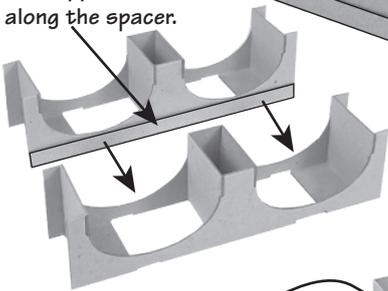
If making a single track version, put the 4 inner strengtheners to one side, and proceed to fig. 2. For the double track, read on.

Flip the strengthener upside down and rest on a flat surface. Next attach a strengthener spacer flush to the main body.

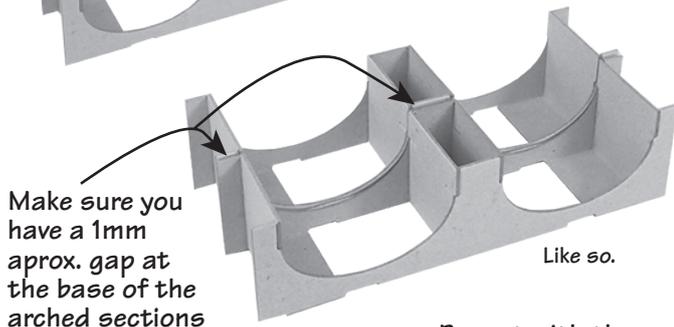


Make sure the spacer does not overlap the arched sections.

Only apply glue along the spacer.



Now glue 2 of the strengtheners together via the spacer. ONLY ATTACH them via the spacer.

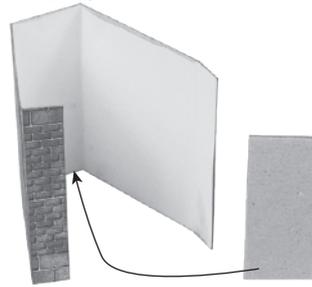


Make sure you have a 1mm approx. gap at the base of the arched sections

Repeat with the second pair.

### Fig. 2. PILLARS

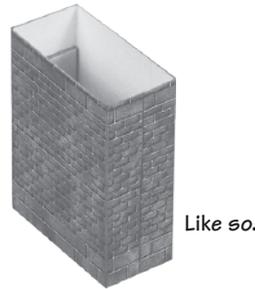
For a double track viaduct you will need 6 pillars, the single track viaduct requires 7 pillars (if making the full length)



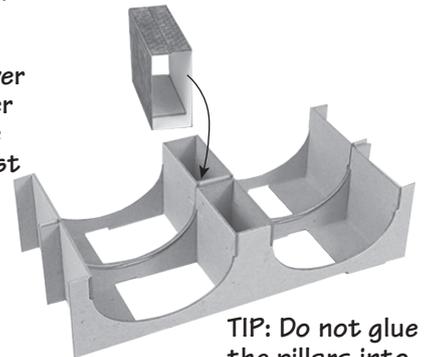
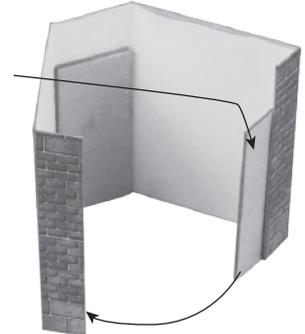
There are 16 small bracers. (8 per strengthener sheet)

Make sure you have the pillar the correct way around. The spacer fits flush to the base edge. PN140 - The wider section of blue brick. PN141 - The edge with 2 courses of large stones.

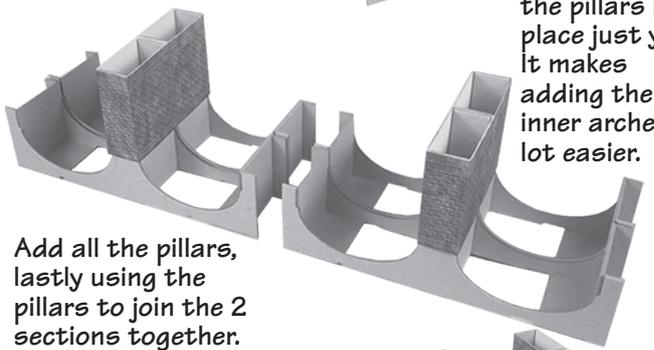
Then attach a second bracer to the joined side, and glue together.



The pillars then slot over the corresponding inner strengthener part. The bracer fits snug against the strengthener.

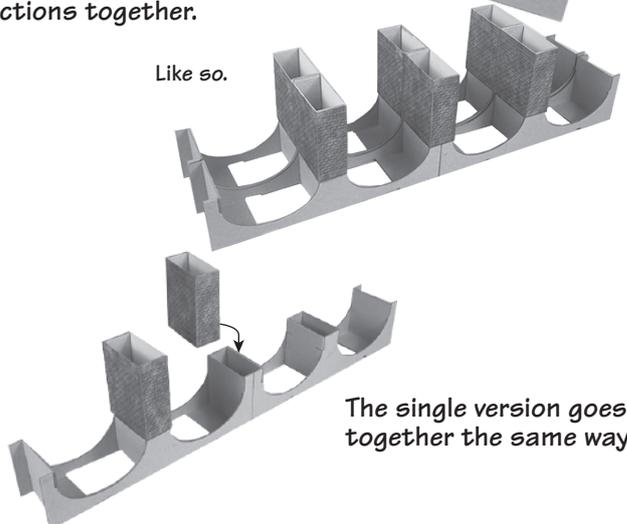


TIP: Do not glue the pillars into place just yet. It makes adding the inner arches a lot easier.



Add all the pillars, lastly using the pillars to join the 2 sections together.

Like so.

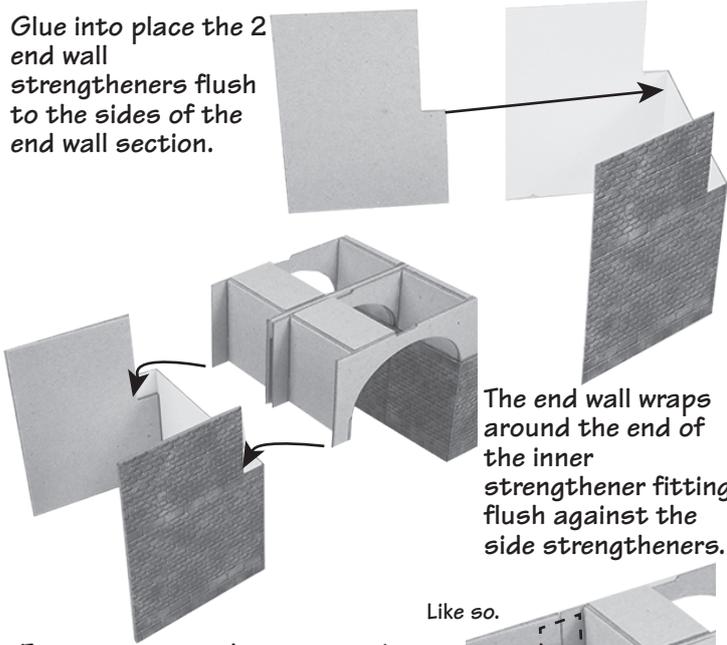


The single version goes together the same way.

### Fig. 3. END WALLS

The end wall sections single and double are assembled the same way.

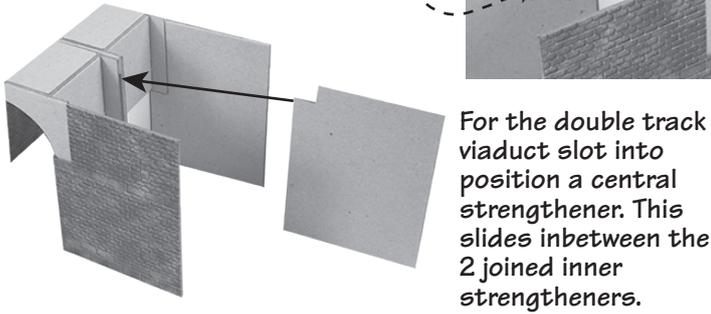
Glue into place the 2 end wall strengtheners flush to the sides of the end wall section.



The end wall wraps around the end of the inner strengthener fitting flush against the side strengtheners.

Like so.

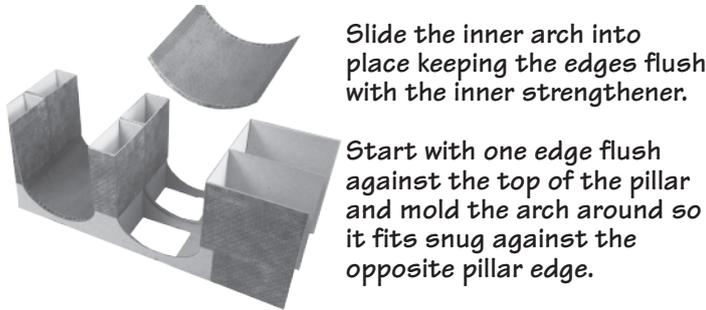
For extra strength use a section of waste card to brace across the join (as shown by the dashed line).



For the double track viaduct slot into position a central strengthener. This slides inbetween the 2 joined inner strengtheners.

### Fig. 4. INNER ARCHES

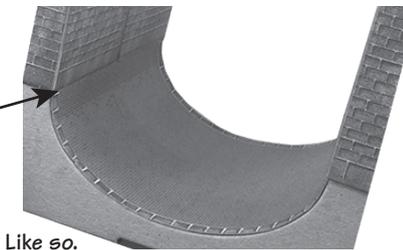
Now fit the inner arches, again the method is the same for either single or double track. Start by curling the paper arch, to help mold to the inner strengthener. TEST THE FIT BEFORE APPLYING GLUE, YOU MAY NEED TO TRIM AN EDGE TO GET THE ARCH TO FIT CORRECTLY.



Slide the inner arch into place keeping the edges flush with the inner strengthener.

Start with one edge flush against the top of the pillar and mold the arch around so it fits snug against the opposite pillar edge.

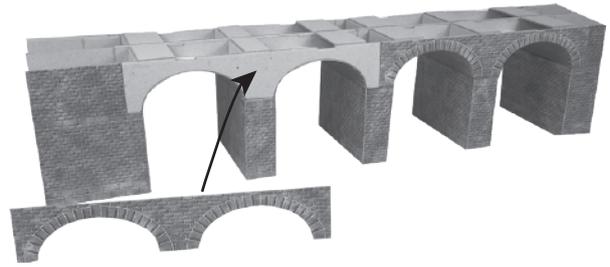
Have the arch edges fit flush against the top of the pillar.



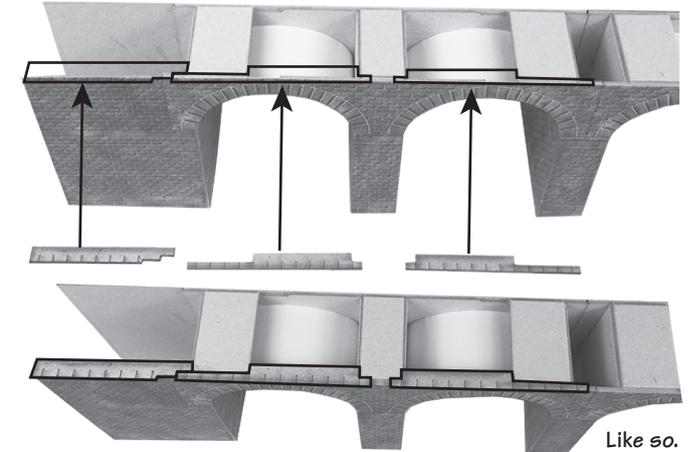
Like so.

### Fig. 5. ARCH SIDE WALLS

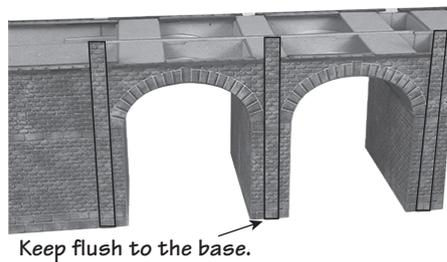
Now glue into place the arch side wall sections. Again test the fit and alignment before applying glue, especially if building a long viaduct.



Next the laser cut belt course stones. These go above the arches slotting into the inner strengthener fold lines. Carefully study the pictures below so that you are sure how they fit.



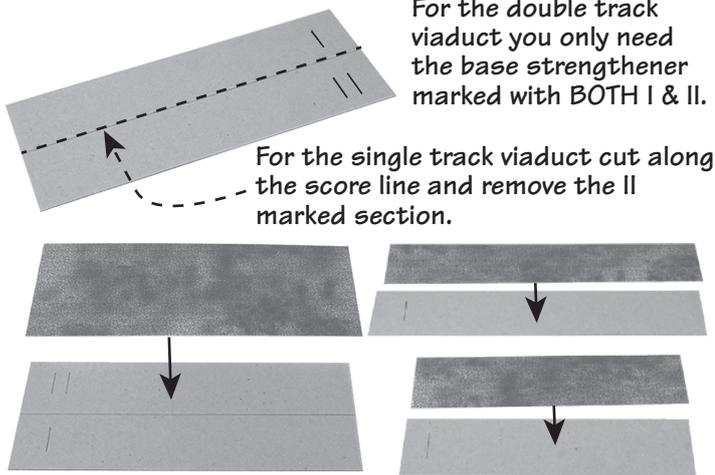
Like so.



Keep flush to the base.

The Abutments then slot neatly into the gap inbetween the laser cut belt course stones. If you'd like a more prominent abutment, double up! There's plenty.

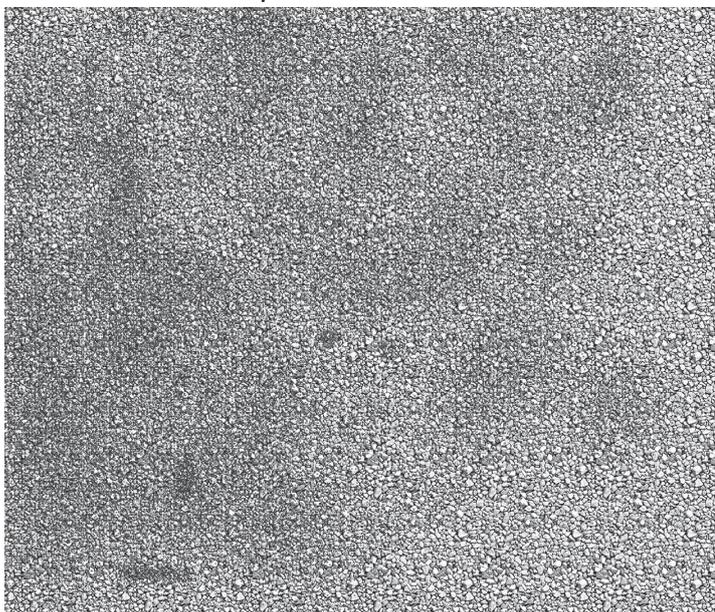
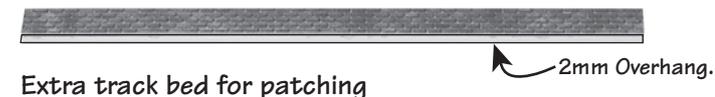
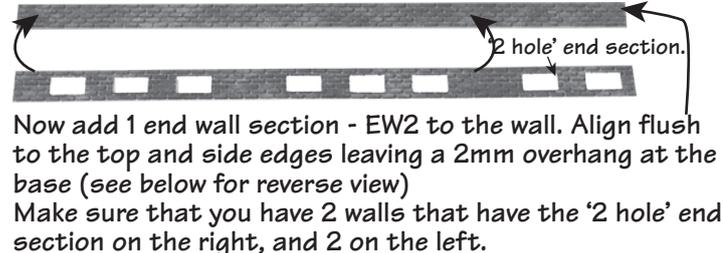
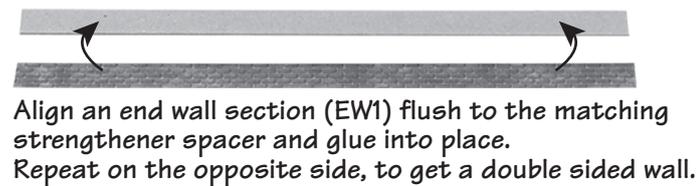
**Fig. 6. TRACK BED**



Now align and glue with all edges flush the track bed sections to the strengtheners.

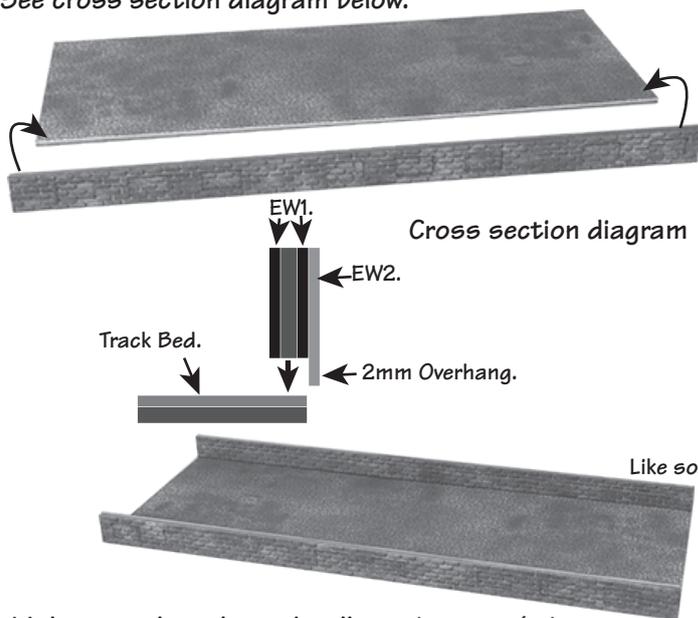
**Fig. 7. SIDE WALLS**

First assemble the side walls, the same instructions apply to the end (EW1+2) and centre walls (CW1+2). The instructions will guide you through the End Wall components, construct the centre wall the same way.

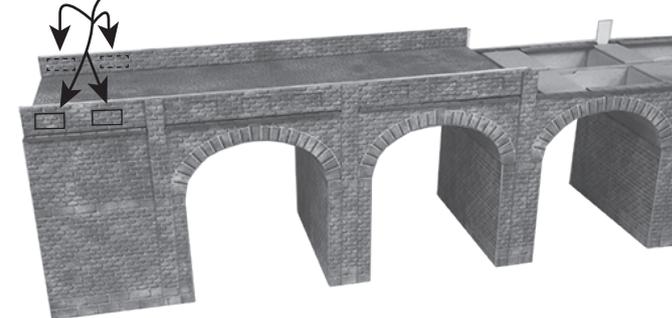


**Fig. 8. LAYING THE TRACK BED**

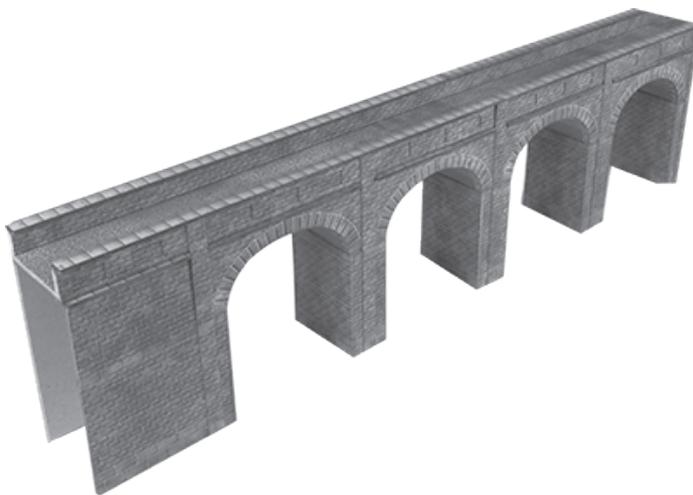
Now fix the side walls to the track bed. The 2mm gap allows the wall to sit on top of the edge of the track bed with the outer wall EW2 covering the exposed edge. See cross section diagram below.



Make sure that the end wall sections are 'mirror images' of each other with the '2 hole' end section at the same end so that they align with the abutments.



Now lay the track bed using the extruded abutments to fix it into place.



Finally add the laser cut coping stones to the wall top.