

PN144/5 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.

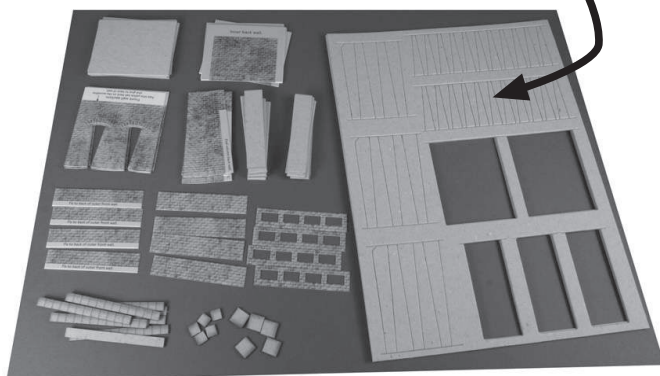
2 MAKE YOUR 'BUILDERS YARD'.

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 to make your builders yard.

Cut out all the components from sheets A & B and just the larger plain grey components from the unprinted thick card sheets as shown here.

Don't extract the long thin spacers until 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.

BE EXTRA METHODICAL WHEN YOU GET TO Fig.3. If you don't follow the instructions carefully you can easily get in a mess and start losing parts of the kit. You have been warned!

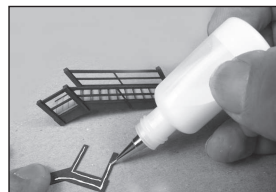
INSTRUCTION SHEET

CHECK LIST

This kit pack should contain the following:

- 1 x SHEET A - Main lower walls and piers.
- 1 x SHEET B - Upper walls and spare stonework.
- 2 x PLAIN GREY CARDS - Strengthening parts.
- 1 x Small Laser cut grey card with wall top strips.
- 1 x INSTRUCTION SHEET.

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

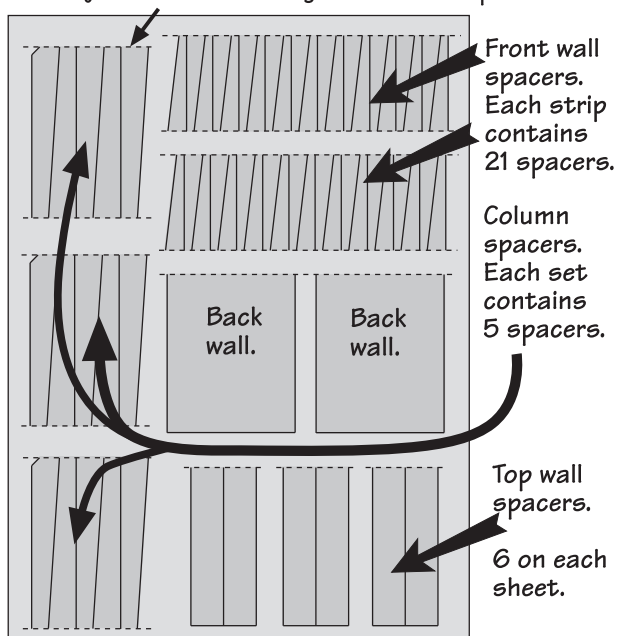
Is available in standard and solvent free. Both types are fine for use in our glue bottles, even though the instructions on the back of the packs warn against solvent based glues, we have tested the UHU solvent based glue and it works fine. The solvent free glue doesn't string as much, but can be a little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

GREY CARD STRENGTHENERS

This sheet contains all the un-printed components that fit inside the walls to make them thicker and stronger. There are two of these sheets in this kit. Note: The dotted lines shown here represent the scores you need to cut along to release components.



LASER CUT CARD COMPONENTS

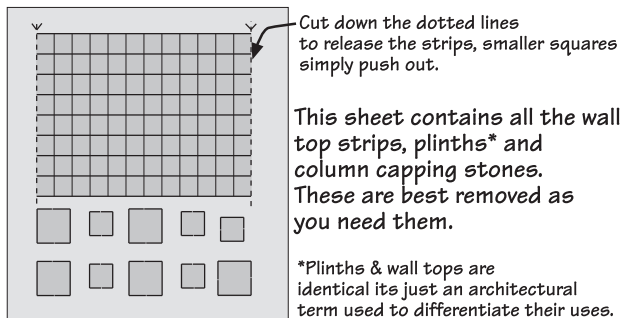


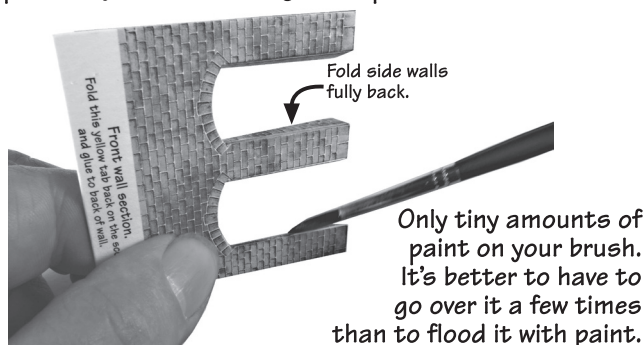
Fig.1. PAINTING CORNERS & EDGES.

Before you start any construction, you need to paint over the white strips of card that show on every edge and corner. 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.

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.

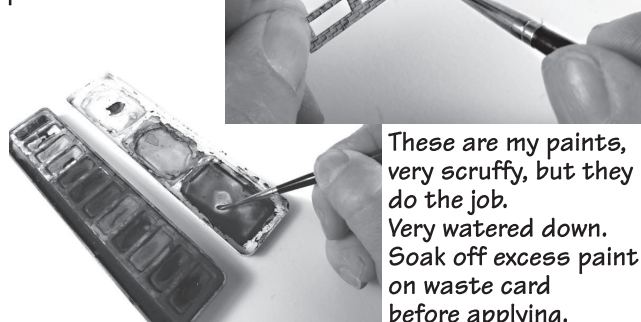
Fold the edges of the card back fully and gently run the point of your brush along the exposed white card.



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.

The only other edges that will show on this kit are the corners on the end columns and the inside recessed edges on the top outer front wall strips.

It's important to have a good quality fine paint brush.



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.

Fig.2. FRONT WALL SECTION.

This is the base section of the wall. There are four of them in this kit. Each builds up in the same way.

Fold over the top yellow tab and fix to the back of the wall.

Fold the four recessed wall sides back (paint as shown) at right angles.

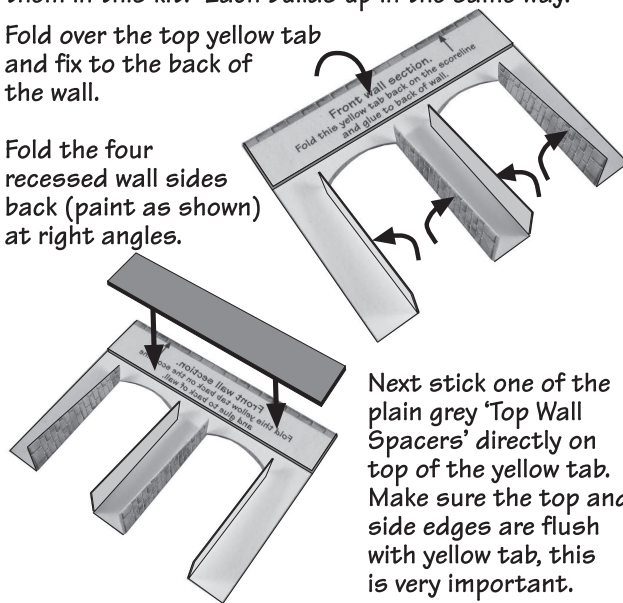
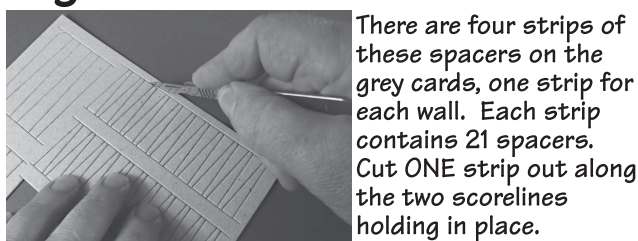
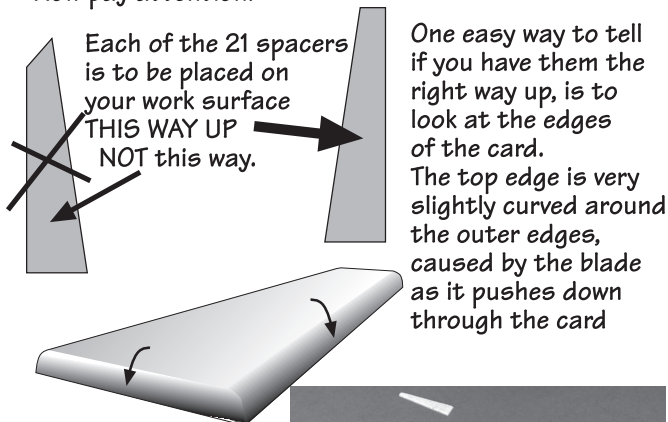


Fig.3. FRONT WALL SPACERS.



Now pay attention!



Count them out into three rows of 7. Put the end one on each row further away.

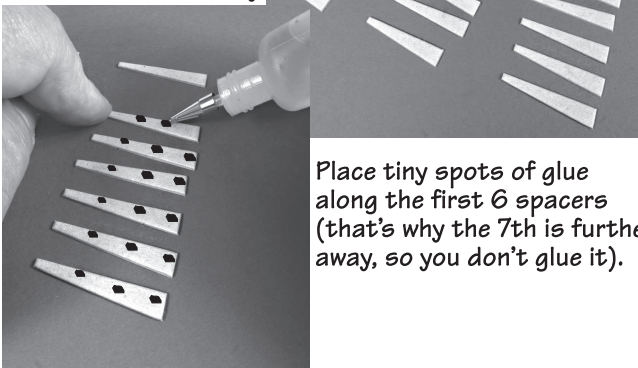
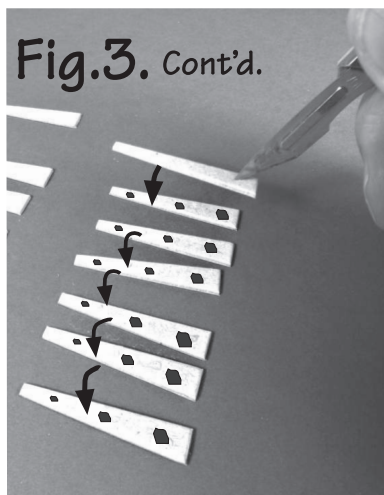
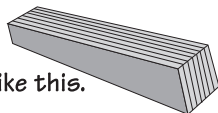


Fig.3. Cont'd.

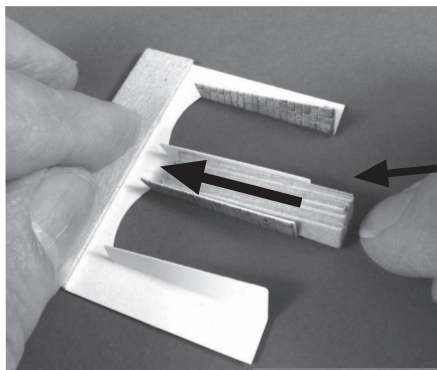


Pick up the 7th. unglued spacer with the point of your knife and place on top of the 6th. then the 5th. and so on until you have all seven together in a block.



Like this.

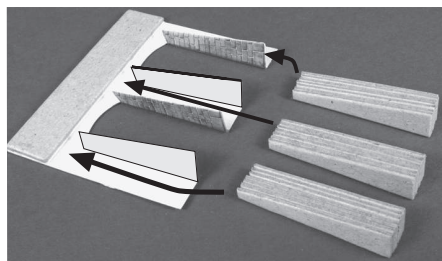
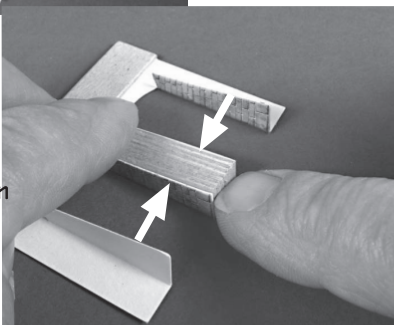
Before the glue has time to set, place the block into the centre section of the wall



But DON'T GLUE. Just fold the sides around it and push it up to the top

Make sure you keep them this way up as they go in so it matches the sides of the recessed walls.

Whilst the glue's still wet mould the block to fit. Push up against the top, squeeze in the sides, and push down to form a nicely squared up spacer. Take out and repeat with the other two sets of spacers.



So you now end up with three perfectly squared up sets like this.

Now fix these spacers into the wall as shown.

Make sure all side walls are set at right angles nice and neat and that the two end spacers don't stick out past the ends of the front card.

A nice solid structure.

Edges flush.

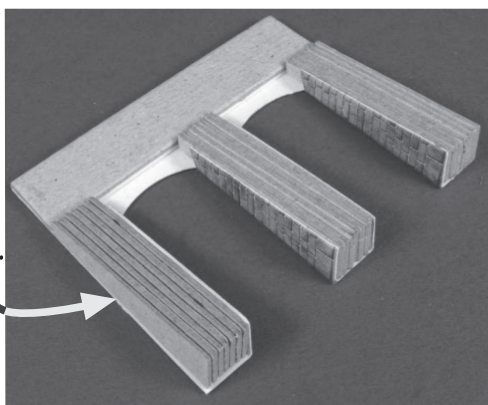
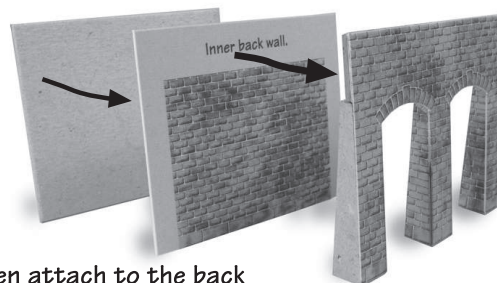


Fig.4. BACK WALLS.

Fix one plain grey back wall behind the printed inner back wall, keeping all four edges absolutely flush.



Then attach to the back of the recessed front wall section.

Keep outer side edges flush

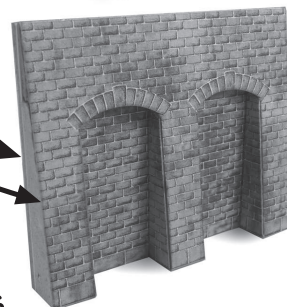
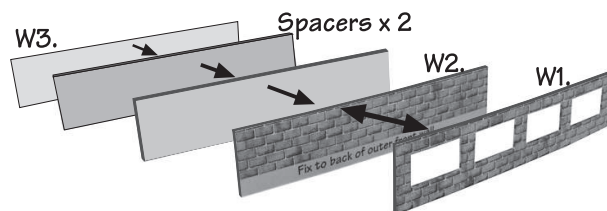


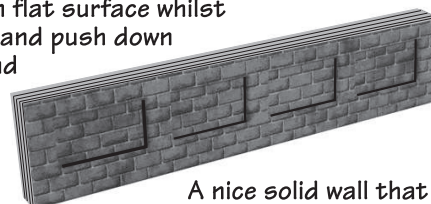
Fig.5.

TOP WALL SECTIONS.

The top wall is made up by laminating 5 layers of card as shown here, with W1. at the front and W3. at the back.



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.



A nice solid wall that stands upright on its own.

Fig.6. ATTACH TOP WALL TO BASE.

Lay flat on work surface and glue the top wall down on to the base wall with a strip of laser cut plinth stones sandwiched in between.

The darker edge of the plinth strip is the best edge to have sticking out from under the top wall.

Plinth.

DON'T GLUE UNTIL YOU HAVE SEEN THE NEXT PICTURE. See overleaf.

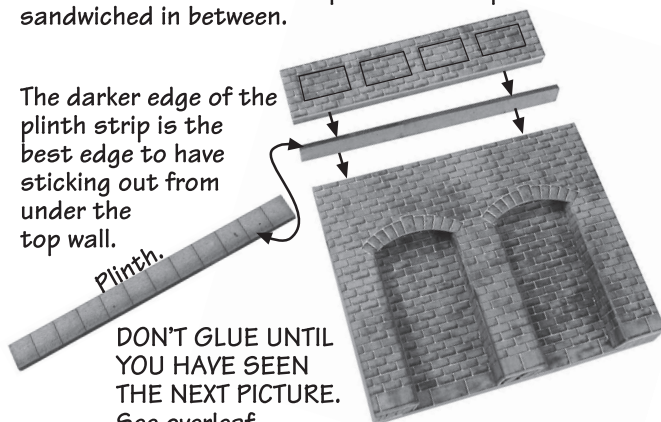
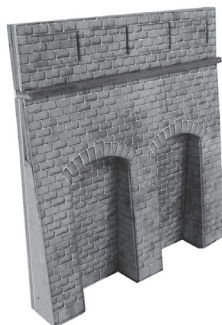
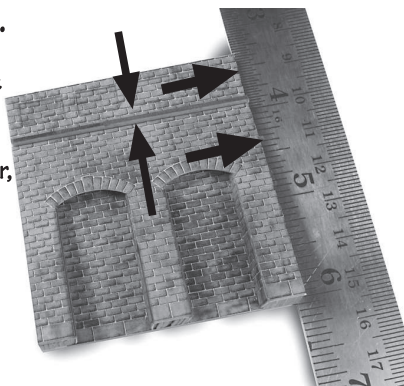


Fig.6. Cont'd.

Keep laid down on flat surface and as you press the top and bottom walls together, also butt one side up against a straight edge so that all side edges stay lined up.

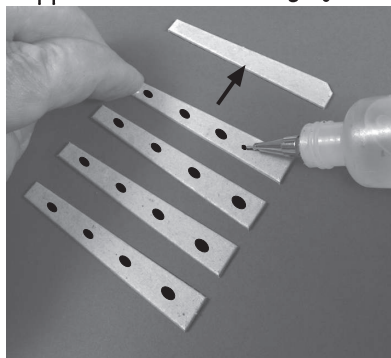


Hold firmly for a while to let the glue set, and then leave untouched for a good few minutes to allow the glue to harden fully.

You now have a wall that should look like this.

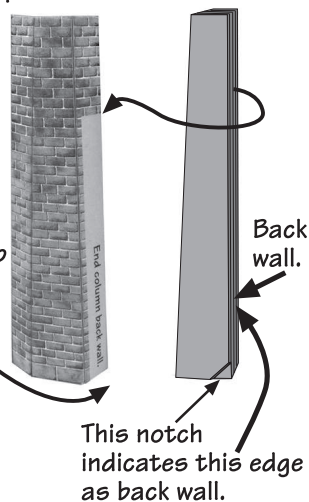
Fig.7. THE END COLUMN.

The column has four sides that fold around a central support made from five grey card spacers.



Cut out 5 spacers and place on surface as shown with 4 together and the 5th. one with the bottom corner cut off, slightly further away in just the same way as you did with the spacers in Fig.3. They must all be the same way up as described in Fig.3.

Place spots of glue on the 4 spacers, then pick them up to form solid block in just the same way as with the small spacers in Fig.3. Before the glue sets, place the spacer block inside the column with the indicated back wall fitting behind the column back wall, then wrap around and glue shut.



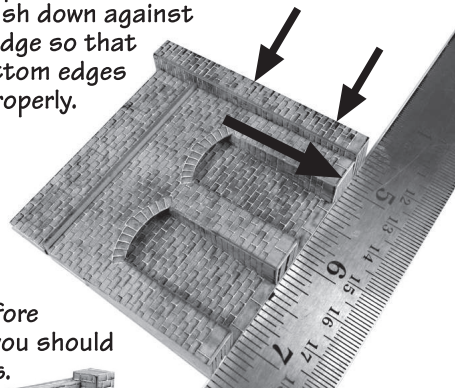
Whilst the glue is still wet make sure tops and bottoms of spacers are all lined up inside the column and then make sure all edges are squared up with all four corners at perfect right angles. Hold firm until glue sets.

Fig.8. FIX END COLUMN TO WALL.

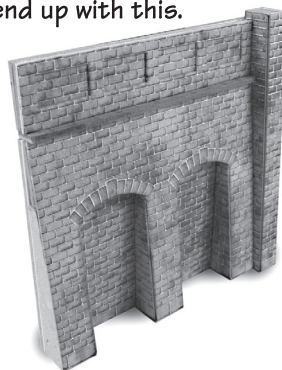


With the wall laid flat on its back, fit the column, also laid flat on its back, up against the side of the wall.

As you press it against the side of the wall, also push down against a flat edge so that the bottom edges align properly.



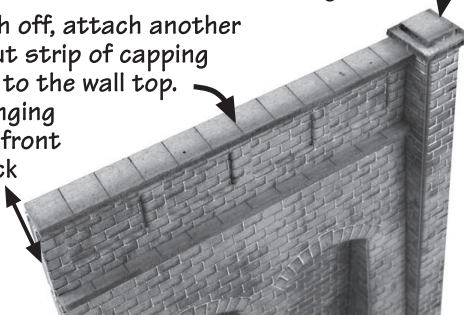
Leave to dry before moving it, and you should end up with this.



Attach one of the small laser cut square capping stones in the middle of one of the larger stones.

When dry fix to the top of the column overhanging equally on all edges

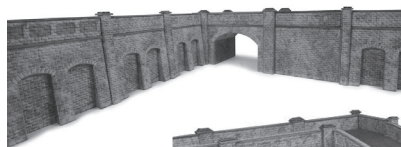
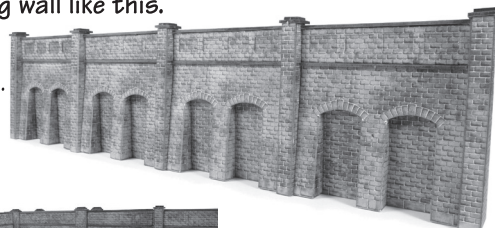
To finish off, attach another laser cut strip of capping stones to the wall top. Overhanging equally front and back edges.



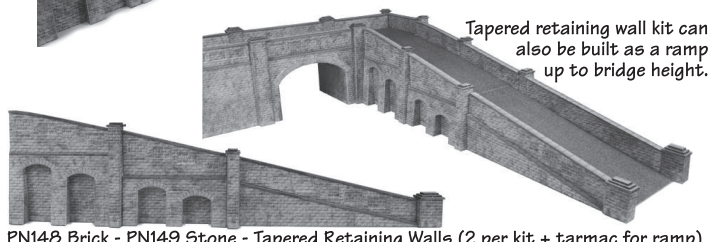
You have now completed one wall section. There are three more like this to make plus one extra column. Please note there is an extra set of grey inner strengtheners for the columns - These are not needed.

Once the walls are all built, they can be stood together to form a long wall like this.

Total length of wall 294mm.



Designed to stand with our Bridge kit PN146 Brick or PN147 Stone.



PN148 Brick - PN149 Stone - Tapered Retaining Walls (2 per kit + tarmac for ramp)