Improvements to Eaton Downs

Eaton Downs is constructed from twelve rectangular baseboards each of nominal size 1214mm by 896mm by 5mm ply supported on nominal X by Y mm finished timber. They are formed into a rectangular layout nominally 5440mm by 3650mm as in Fig.1. The four corner boards each have 2 pairs of folding legs thus making them self standing. The adjacent boards on the long side each have a single pair of folding legs and therefore piggyback off the corner boards. The remaining four boards do not have legs; three of them are totally supported by other boards whilst the fourth is hinged from an adjacent board.

The track layout consists of two 32mm gauge circuits each with a loop along a long side and a single 45mm gauge circuit with four stub sidings, one in each corner; see Fig.2. The sidings do offer steaming facilities but are too short to hold anything other than a single bogie coach or two or three 4-wheeled vehicles.

A proposal to incorporate a loop to the 45mm circuit was put together, which involved the construction of four additional baseboards nominally 1815mm by 260mm, mounted (somehow) onto the outside of a long side of the existing boards as shown in Fig.3. The track formation is shown in Fig.4 and would have improved the operation of the 45mm circuit.

However, the problems with Eaton Downs are more fundamental. The layout of the boards is not conducive to laying the (relatively) large radius curves required by our scale, which has, in some locations, resulted in the curved tracks crossing the joints between boards at oblique angles of between 12.0° and 42.1° away from the 'normal' of 90°. The solution to add extra boards down one side is also flawed in that the loop track would cross two board joints at an angle of almost 61° away from the normal, an arrangement that would be almost impossible to maintain the rails in alignment unless an alternative approach was taken to the conventional soldering of rails to brass screws; Fig.5 refers. The mechanical connections between the boards are not ideal and result in poor alignment between the rails, and with the lack of board end protection, the rail ends are becoming damaged. Whilst the erection process is logical, it is not intuitive unlike that of *Ridgmont* or Carol & Graham's layout *Prayle Grove,* both of which follow a repetitive process around the layout. This has led to confusion over how Eaton Downs goes together, possibly not helped by its lack of use, which may in turn be down to a perceived difficulty in putting it together and its poor performance.

A series of 'what if' improvements were put together in some idle moments, initially seeing what could be achieved by reusing the four corner boards in different configurations, and using outriggers to maintain the boards' surface. The main requirements I set myself were to improve the alignment of rails across board joints and a loop for the 45mm gauge circuit.

An initial thought of making new baseboards was seen as being wasteful when the corner boards were there and could conceivably be reused, modified to ease the corners so that tracks could cross the joints at (or near) right angles. The layout as is, was draw full size in a computer based design program, copied and manipulated as the designs evolved. Figs.6 and 8 show what could be achieved, with a typical track layout shown in Figs.7 and 9, but it became clear that the reworked boards had became considerably larger and consequently heavier and more difficult to handle.

Figure 10 shows what could be done if new purpose built corners are produced although they are still about 1½ times the size of the existing corner boards; the resultant track formations shown in Fig.11 show that it is viable.

After the group's AGM in February, where my thoughts on this subject were made public, a number of group members showed interest in my ideas and have since made suggestions. Those associated with the layout of boards and track formations are considered here.

New corner boards shown in Fig.10 are almost able to accommodate curves of the same radii as at present, but none of the tracks will cross board joints at right angles as shown in Fig.11. But the corner boards are large and probably quite unwieldy being about 1½ times the area of an existing board. The first 'other member' suggestion was to split the board in to two. By adjusting the size of the half boards, as shown in Fig.12, it becomes possible to accommodate larger radii curves completely so that tracks cross the board joints at most locations as shown in Fig.13.

A second 'other member' suggestion was about having a second 45mm gauge circuit, and if there wasn't enough space then why not make it, or part of it, dual gauge, 32mm and 45mm. Keeping the board layout as in Fig.12, there is insufficient room for a second, separate 45mm gauge circuit. However, the outer 32mm circuit has space down one long side for an additional 45mm gauge track, and on the other side, the outer track of the loop is shown as dual gauge; Fig.14 refers. Two gauge diverging turnouts will be needed if adopted as shown and they will not need moving blades, although the 45mm circuit doesn't have a specific loop or siding for streaming purposes, but the 32mm circuit retains its loop. An enlarged scrap view of the turnout is shown on Fig.14.

What then of the four corner boards not used? The most obvious answer is to use them to extend the length of the layout by having the option to insert them into the long sides of the layout.

Other suggestions for improvement relate to the arrangement of legs, the mechanical connection between boards and protection of the rail ends, all of which would combine to ease the erection of the layout. Two of the side boards could both have two pairs of legs, with all other boards having just one pair and assembled in a similar manner to *Ridgmont* or Carol & Graham's layout *Prayle Grove.* Self aligning board supports like on *Prayle Grove* could be arranged on the board ends and the hinged board could be arranged to be removable, again similar to that on *Prayle Grove,* to ease handling. The rail ends would be given some protection if side barriers were fitted like on *Prayle Grove* and the rear boards on *Ridgmont.*

Notes on the Diagrams:

Apologies for the diagrams not being in colour – my aging laptop refuses to print in colour from the CAD program, even to 'pdf'; they have also been converted to photos for inclusion in this document.

All boards are shown with a 2mm gap between them for tolerances.

The track layouts are all idealised and may not appear exactly as shown leaving room for easing curves at pointwork.

All dimensions are in mm, rounded to the nearest whole number and generated from the drawing, as are angles which are in degrees and the areas of the corner boards which are in square metres.

End.

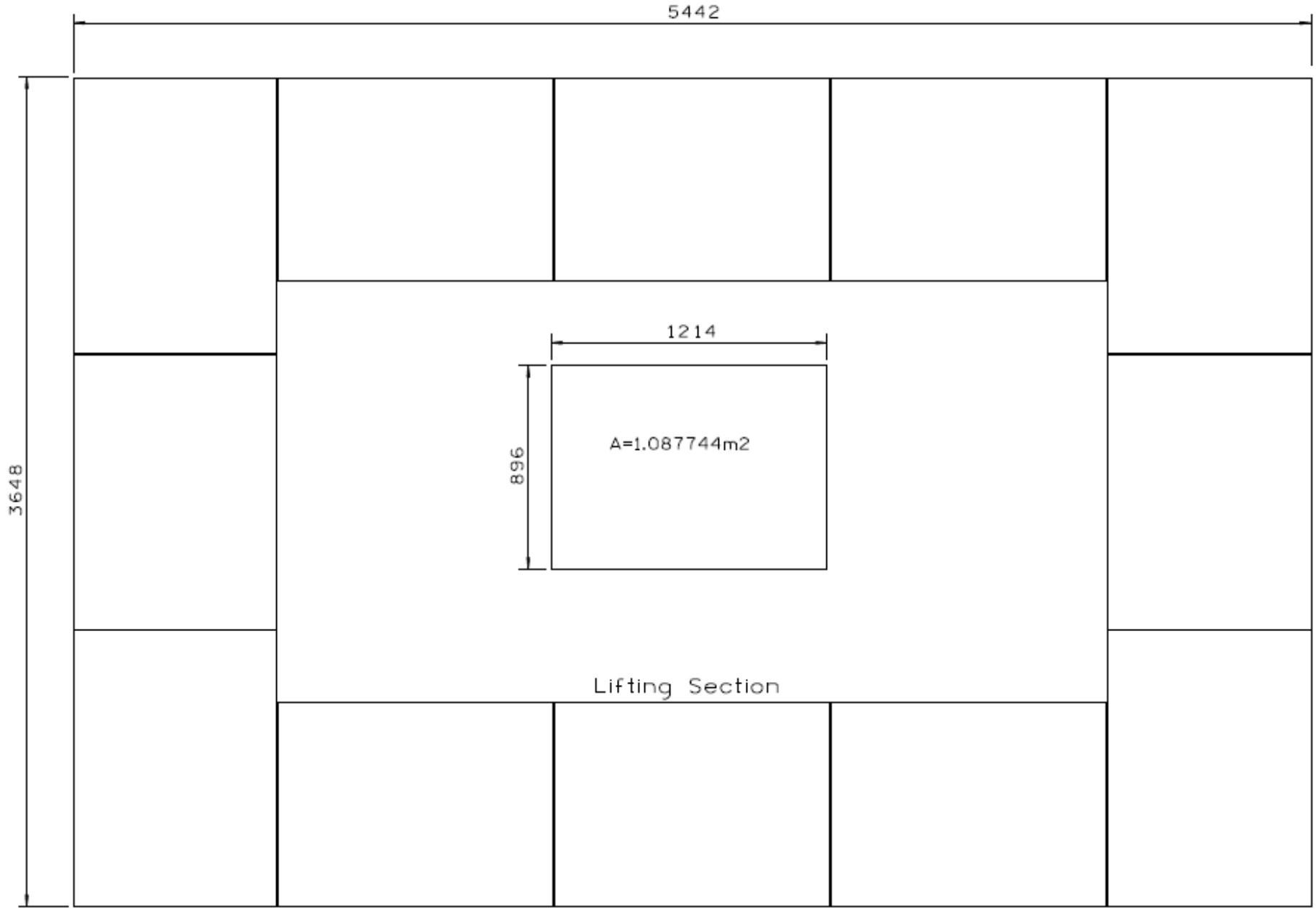

Fig.1

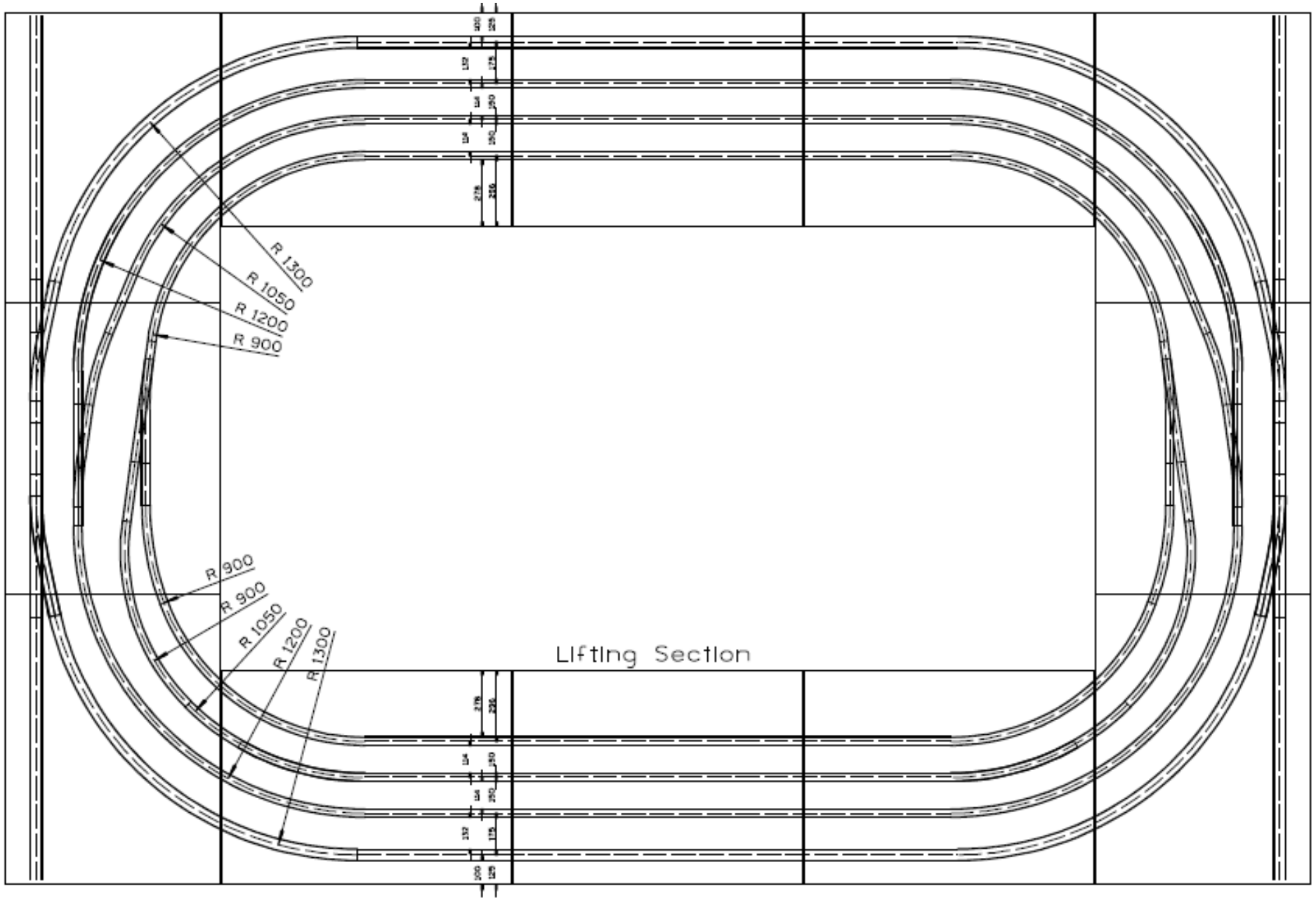

Fig.2

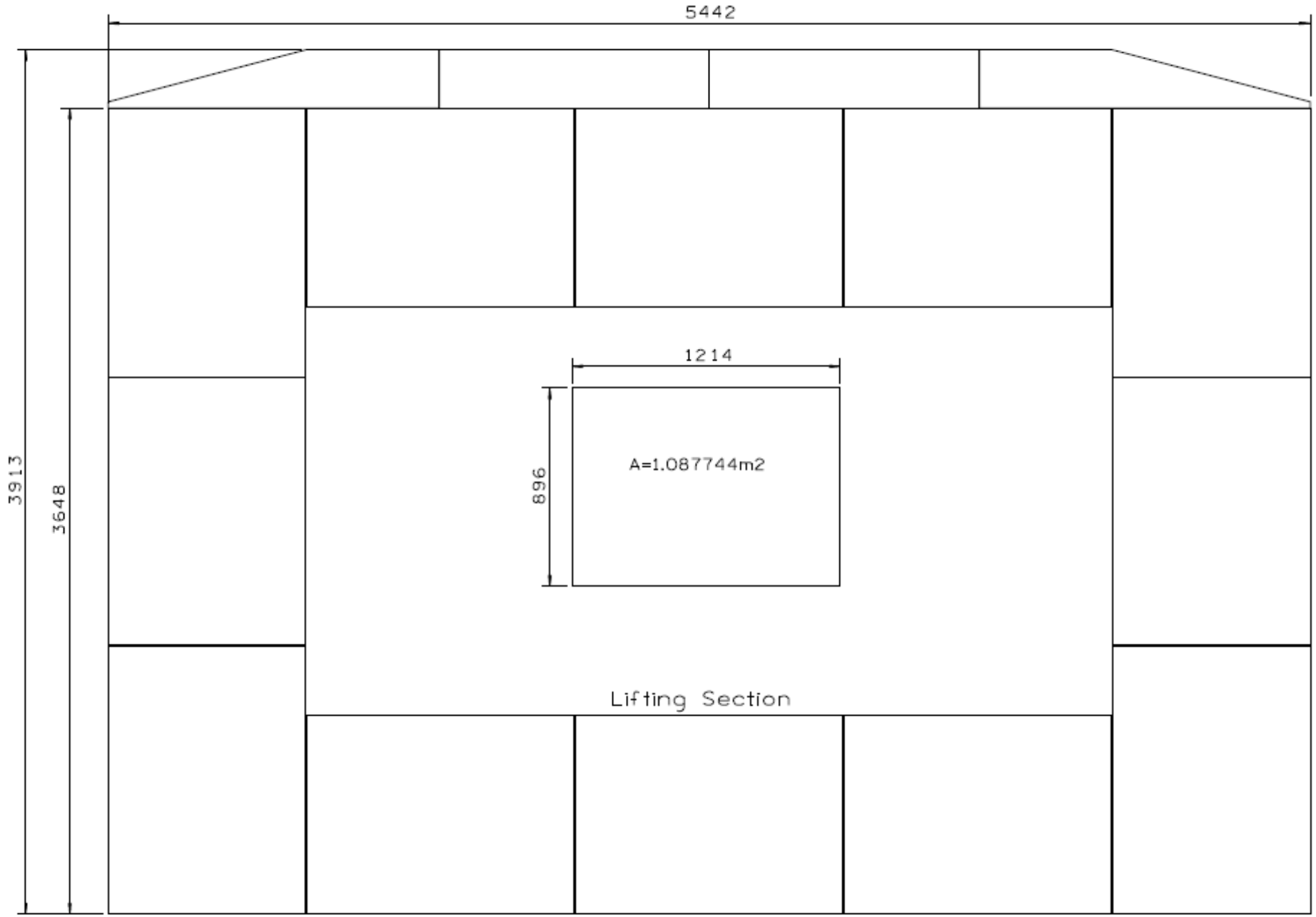

Fig.3

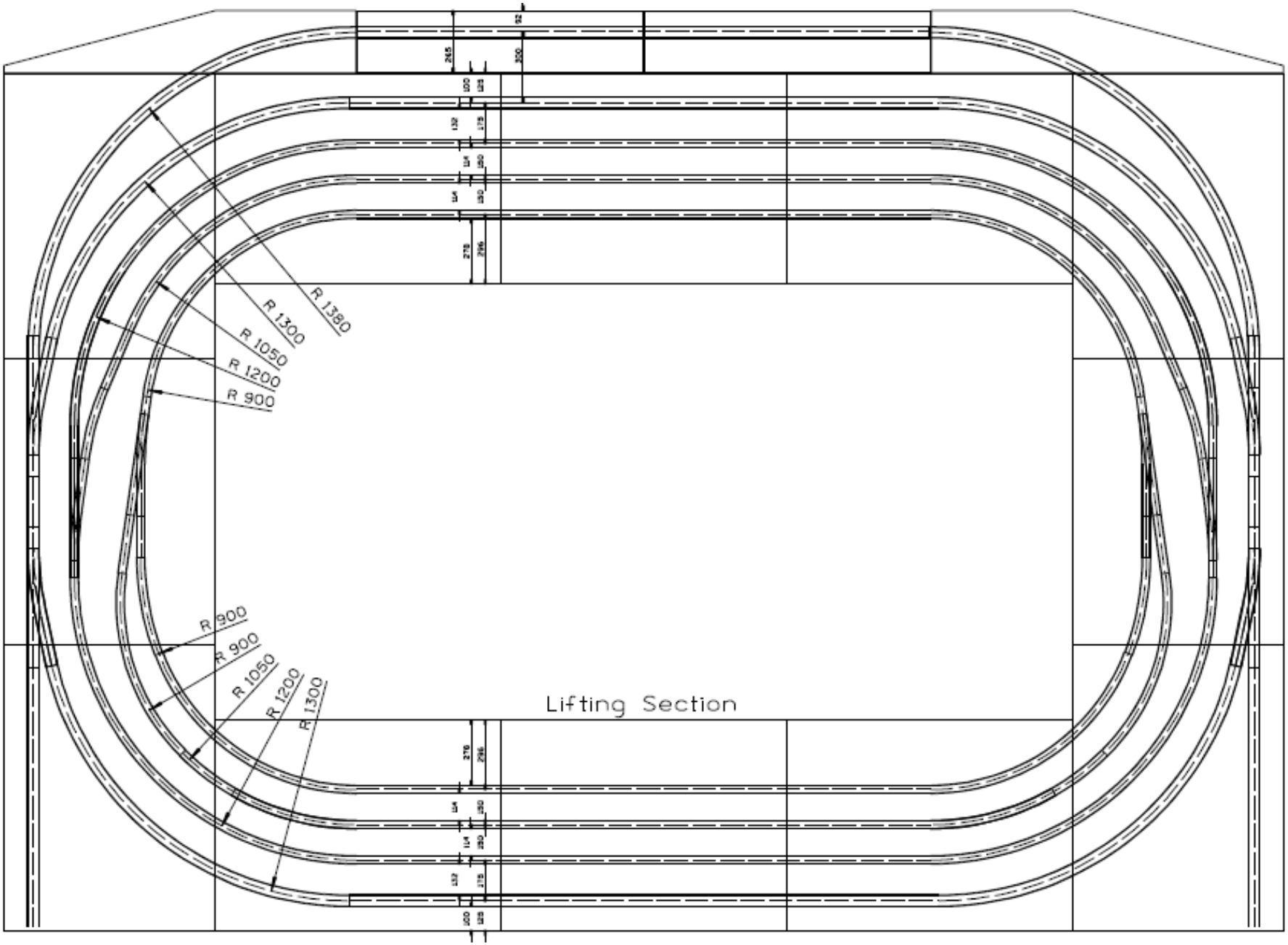

Fig.4

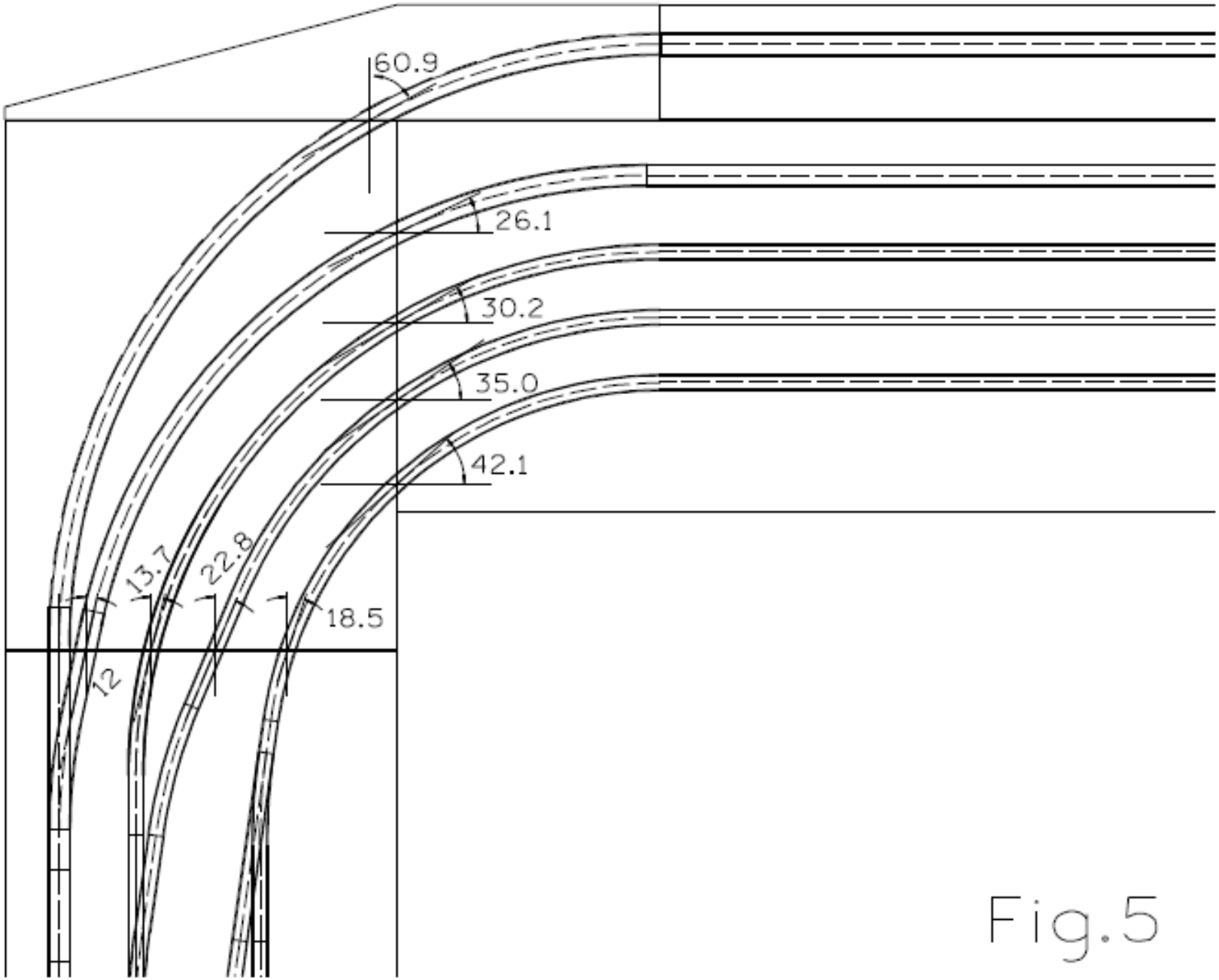

Fig.5

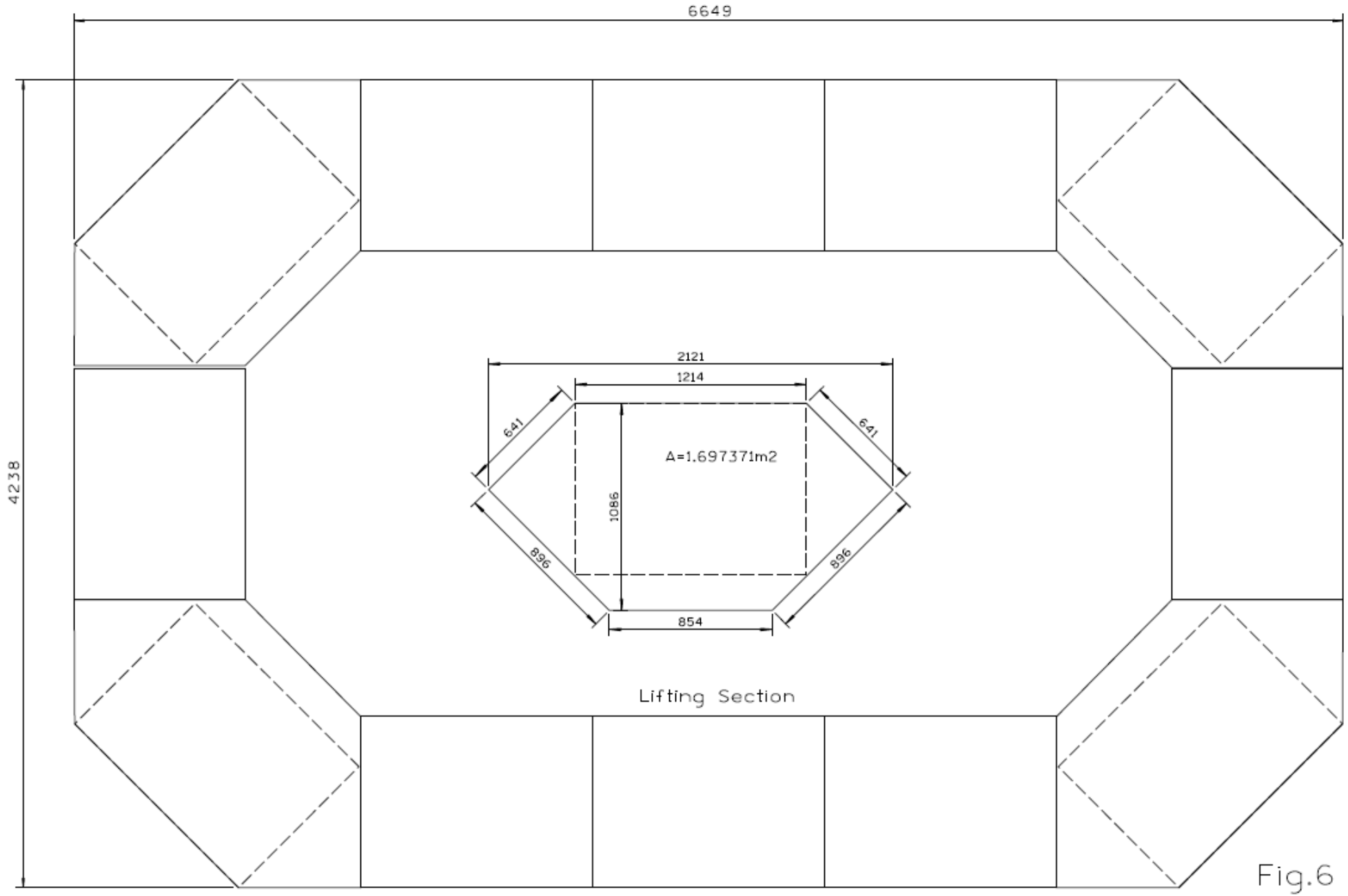

Fig.6

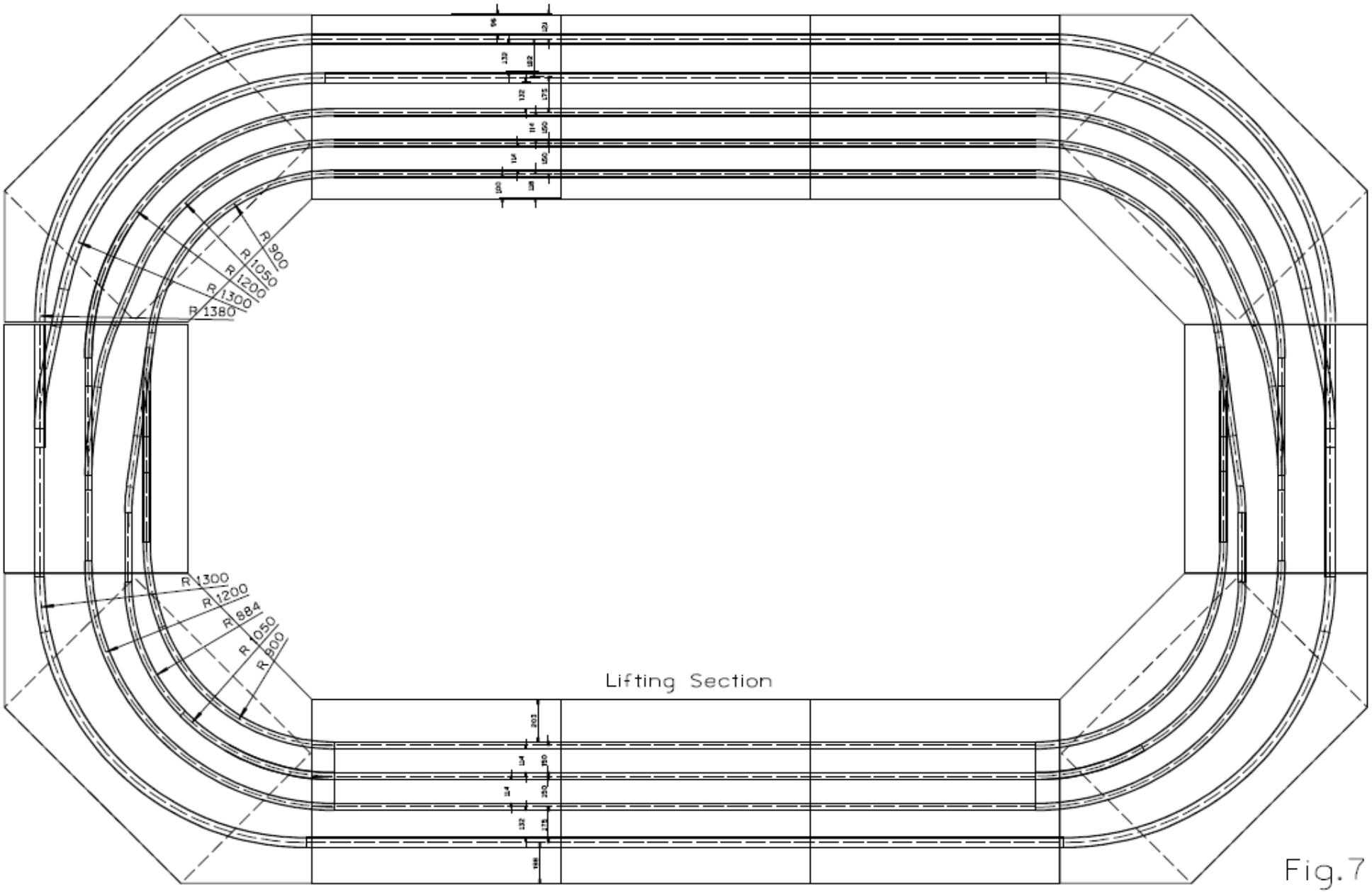

Fig.7

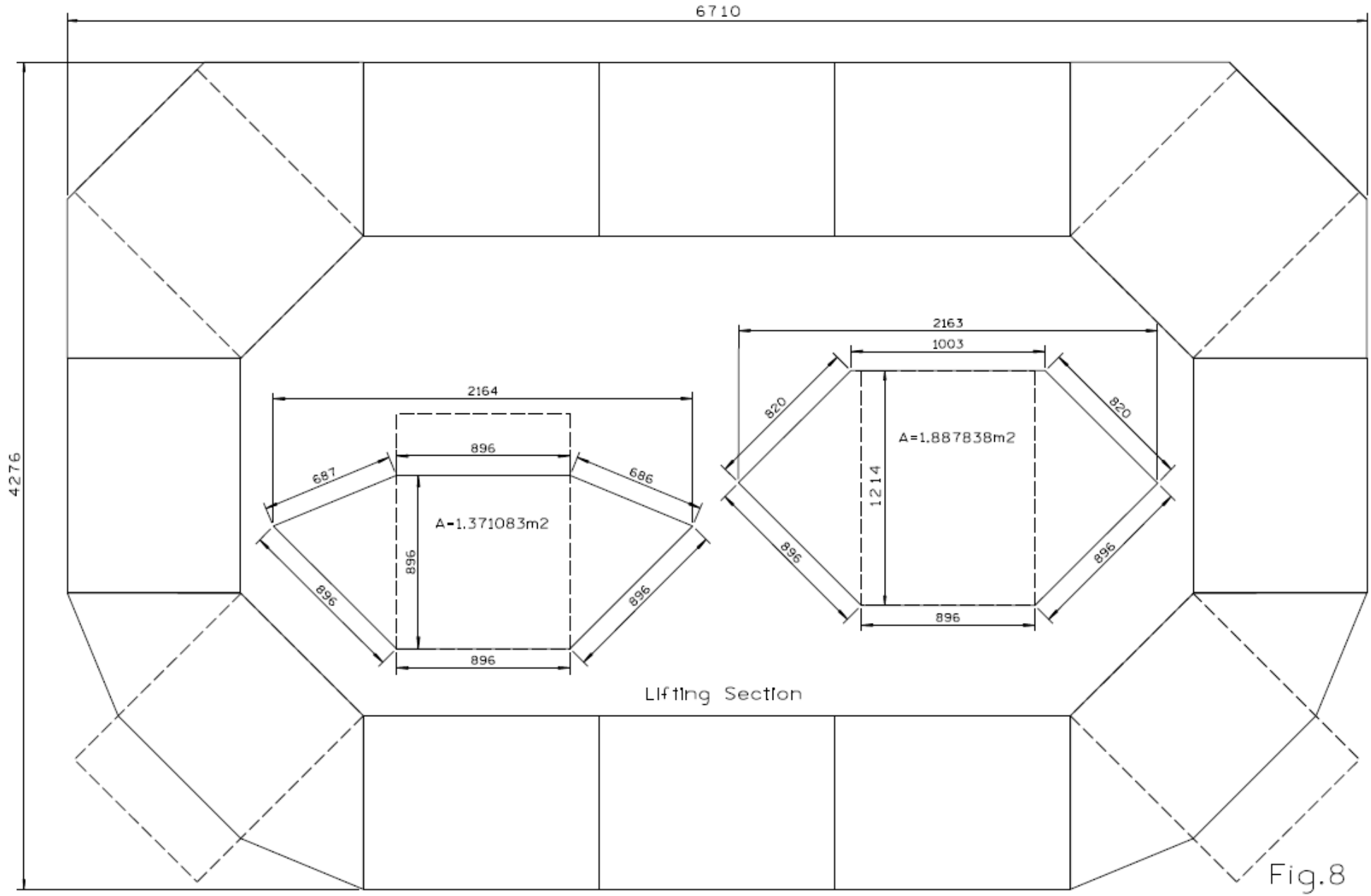

Fig.8

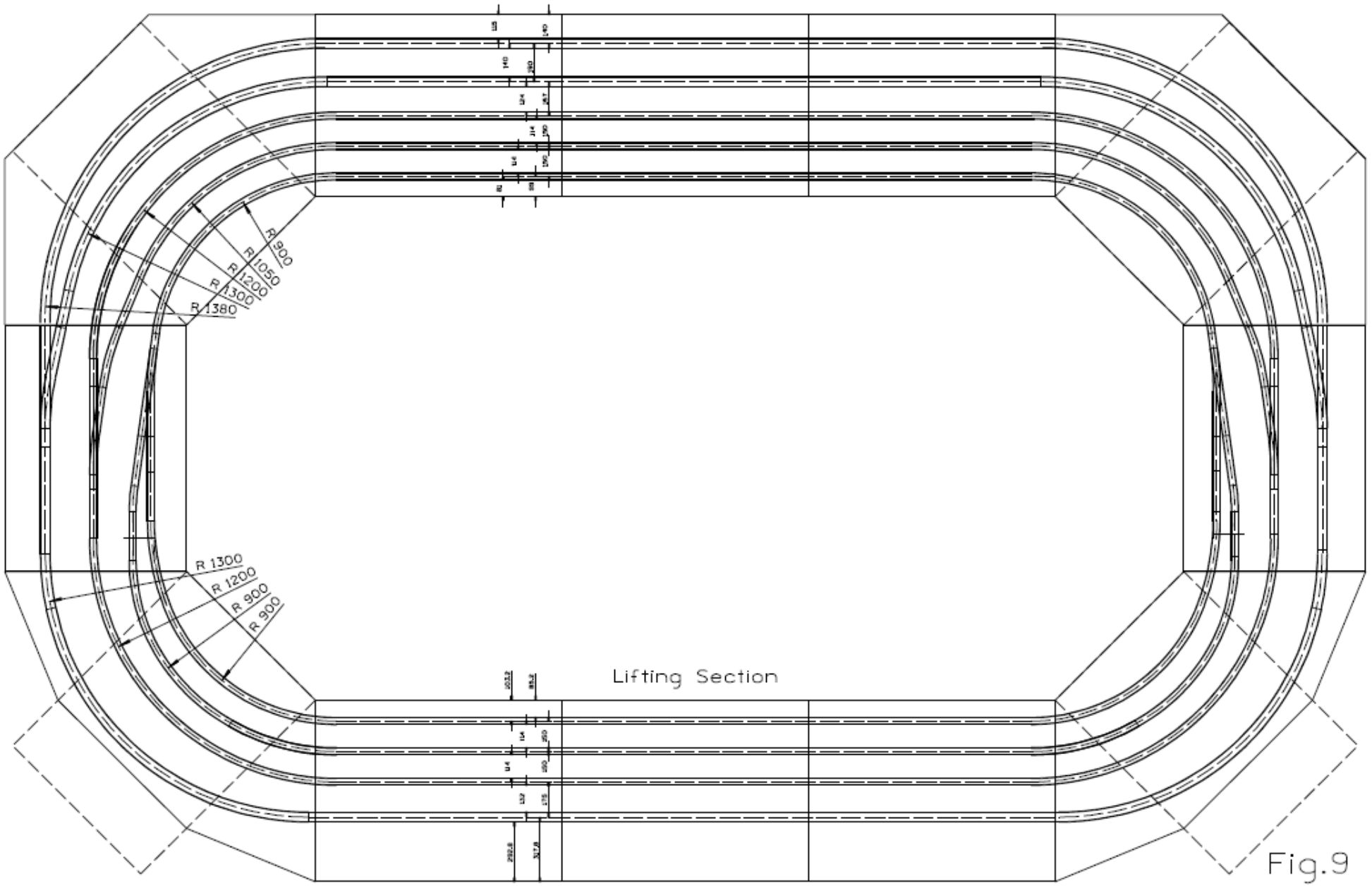

Fig.9

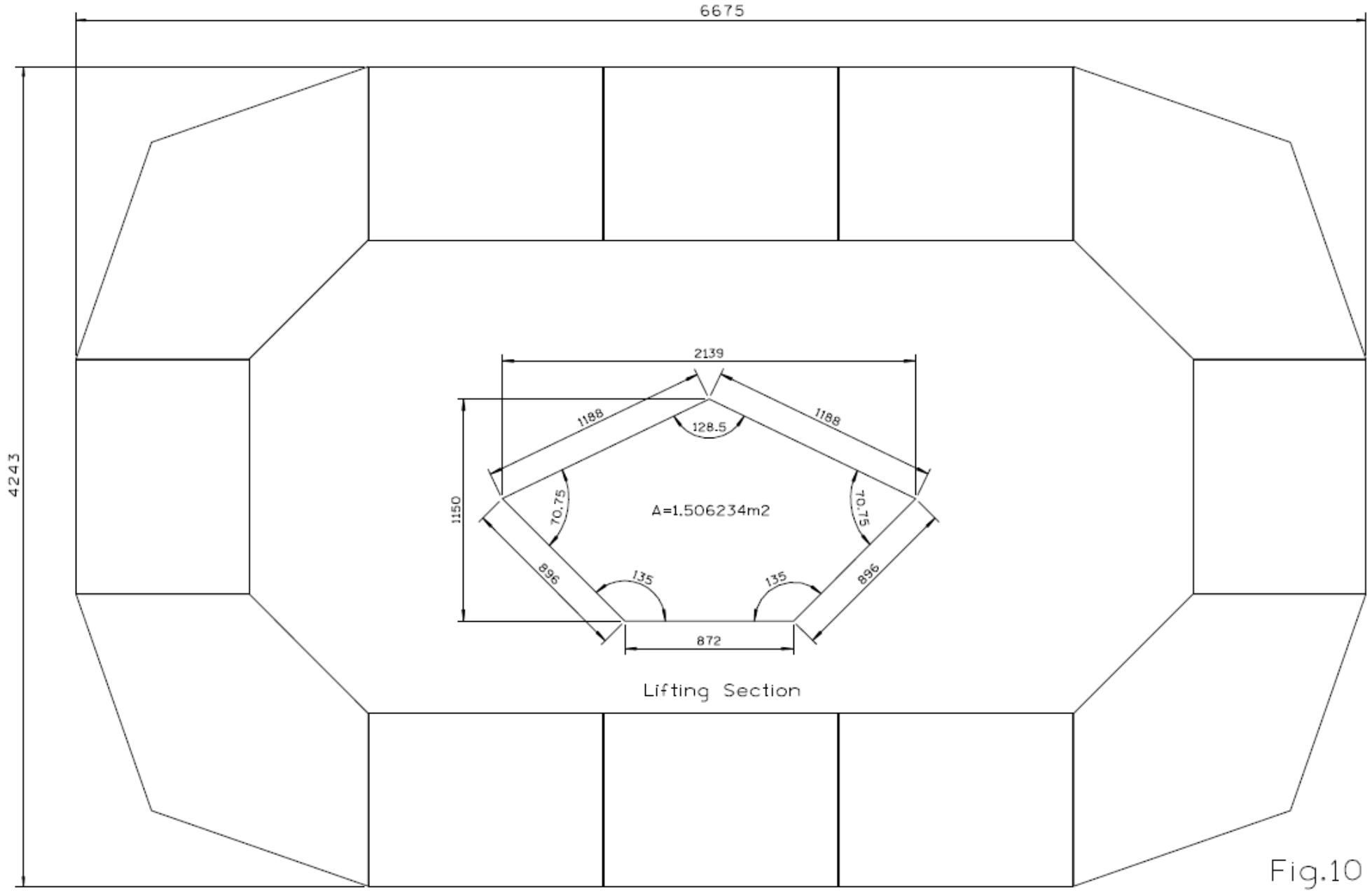

Fig.10

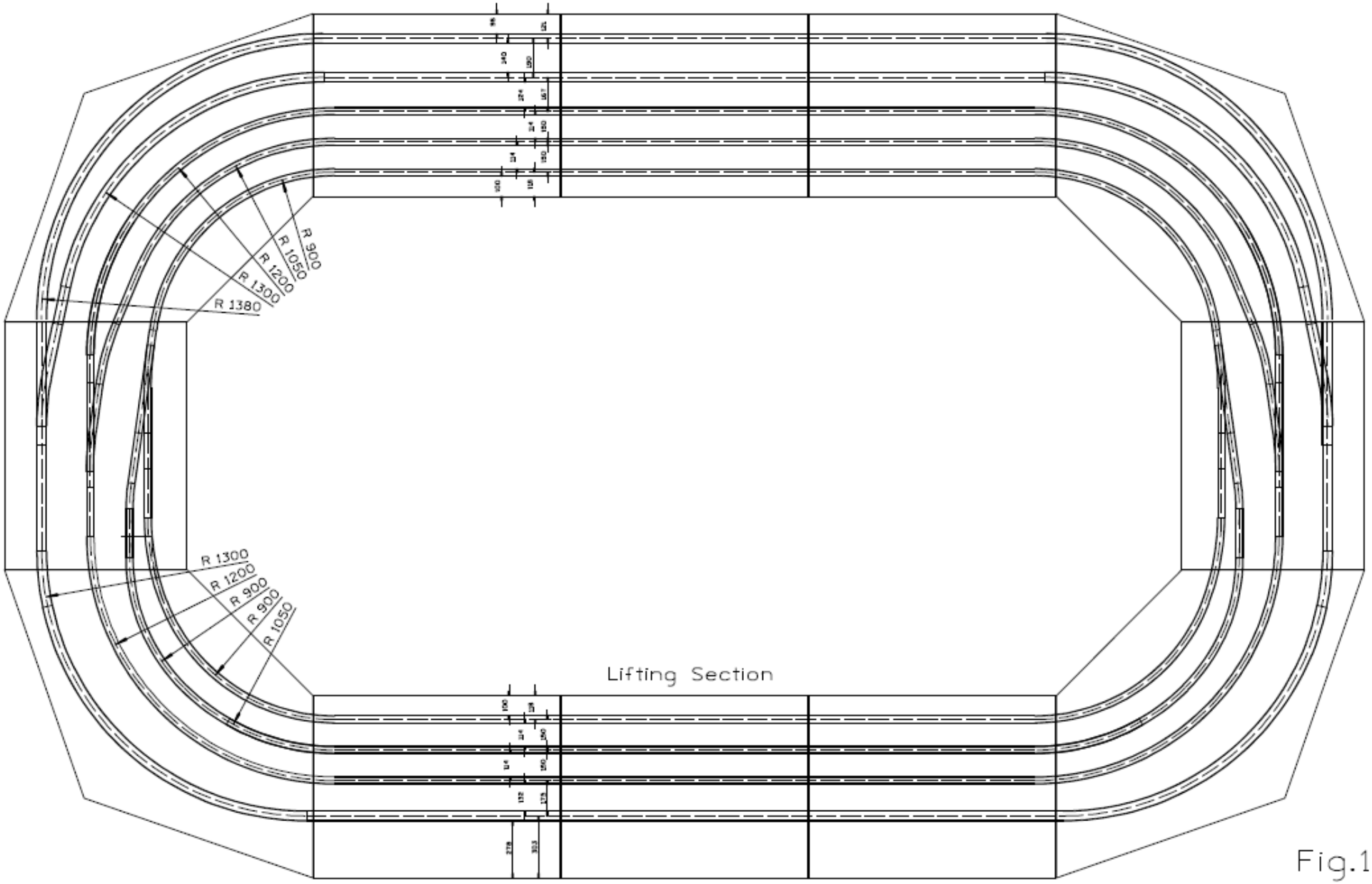

Fig.11

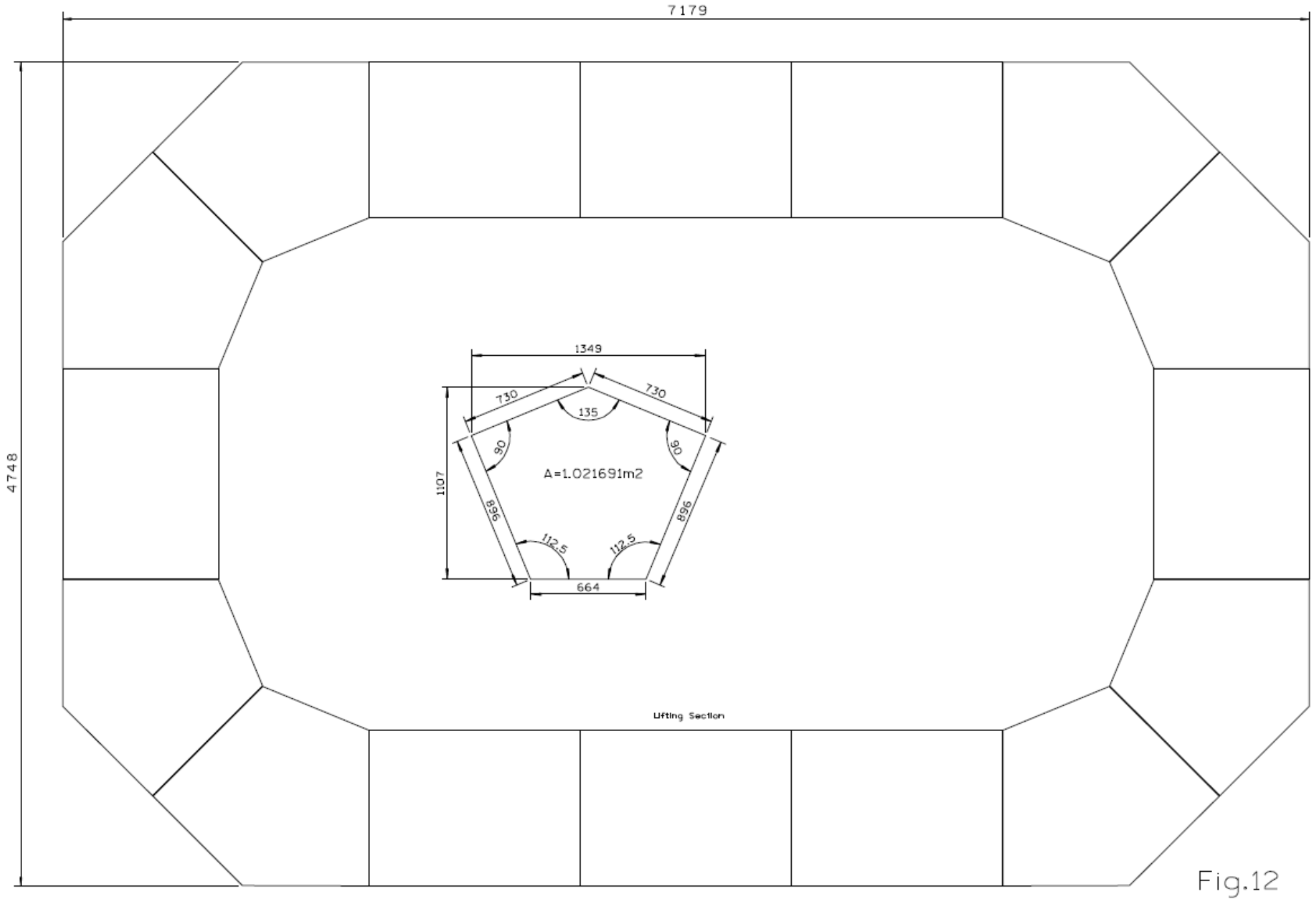

Fig.12

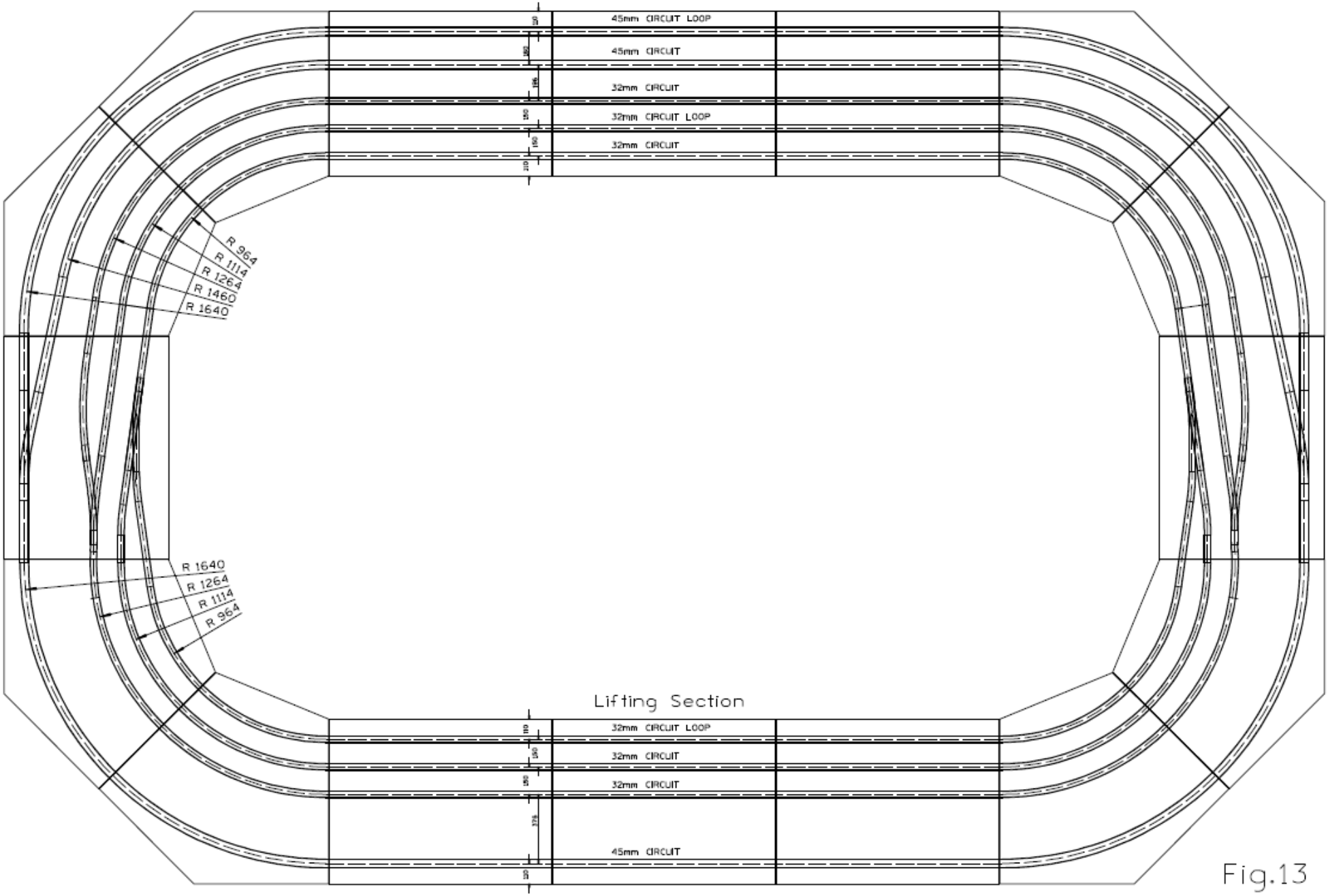

Fig.13

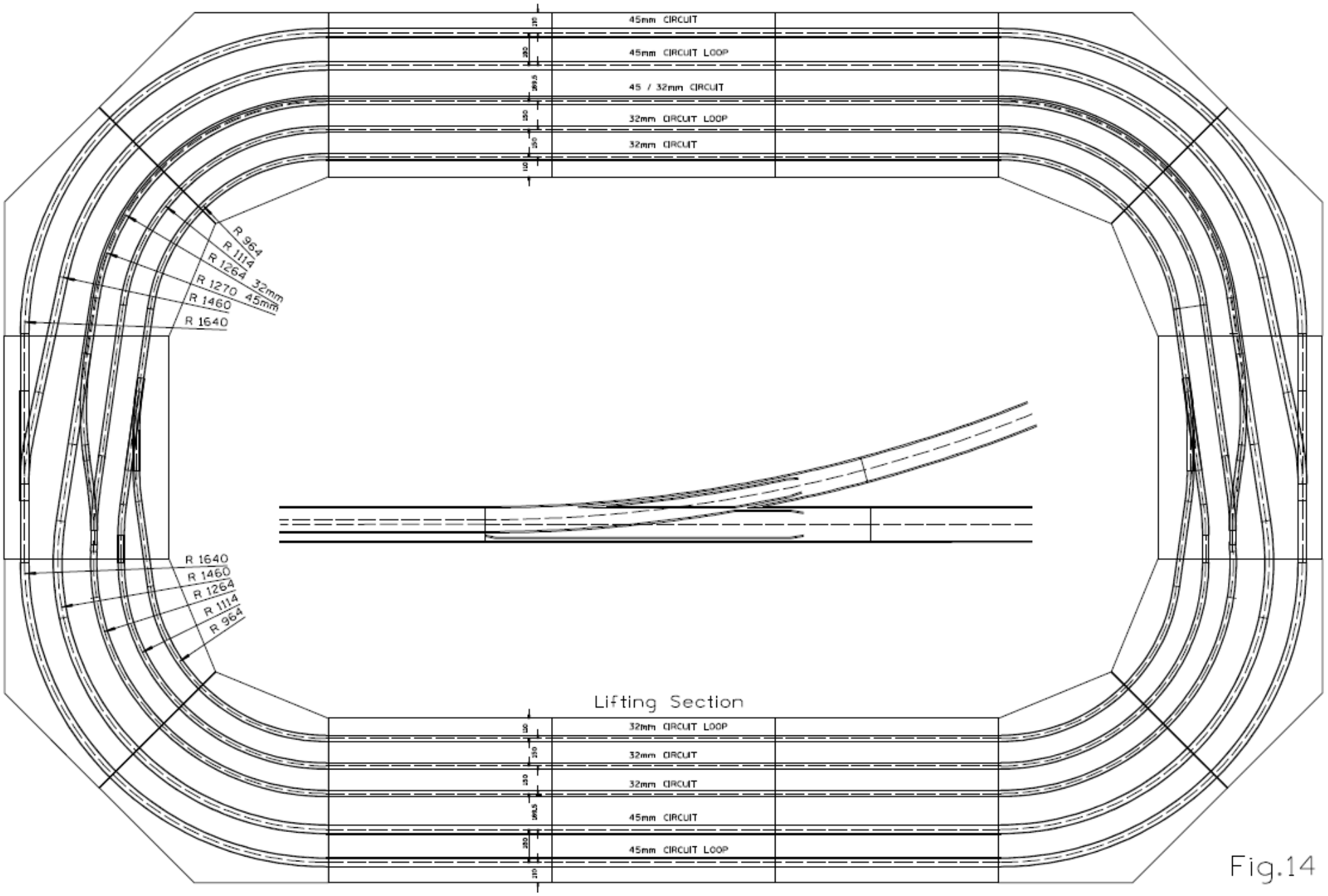

Fig.14