

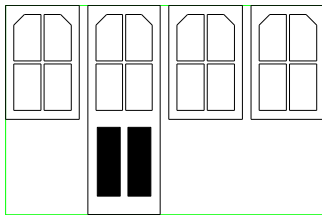
MR Signal Box Configurations

Exceptions always occur with standardisation. The MR signal box “kits” have several distinct eras but as these eras changed it is more than possible combinations of old and new parts occur. Much has been said about the different periods of box design and there is plenty written about the lever frame designs, we are looking at the different appearance that boxes can have even within the same period classification.

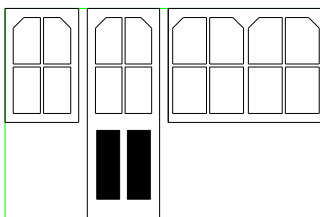
We have used the designation of Period1 onwards to outline the signal box designs as introduced by others. In order not to impinge on any copyrights only references to photographs of signal boxes are made. A selection of different platform window designs are included drawn from “pre-fabricated” panel dimensions drawn from some of those photographs.

General Survey

It is well known that from around 1870 prefabricated signal boxes to a simple design philosophy for panels in timber became a hallmark of the Midland Railway. The corner posts used the tapered signal post timbers where the slope applied to the outer surfaces. Tie rods (as in wooden wagon construction) kept the panels together and the washered rod ends were quite visible punctuating the vertical posts. In period 1 boxes would often be 10ft square and usually quite tall. But at Lincoln Station the box was 15ft wide. There was no sign of any external walkway, bar the veranda by the entrance door. Very few Period 1 boxes remained to be photographed or recorded.



Common Period 1/2 doorway



Early Period 2 doorway

In period 2 the 15ft and 20ft boxes were commonplace and would usually be lower than in period 1 and the four pane windows gave way to 6 panes, at least at the front. Then the end windows were given 6 pane windows.

Subsequently 12 and 13ft wide boxes were built, apparently to cope with the larger (longer?) tappet frame interlocking, though some smaller wide boxes suggest this was not necessarily because of interlocking requirements but perhaps by the introduction of interlocking at the lever frame.

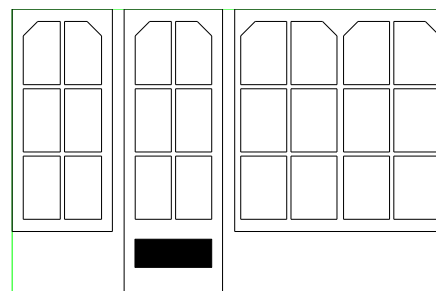
Designated period 2a the door end panel had three equal size windows whereas period 2b used a single window and a pair plus a door, dispensing with one vertical frame member. These changes could be to use the pairs of 4 pane windows previously used at the front and the non doorway end windows, which had become surplus with the introduction of the 6 pane windows.

When 6 pane windows at the door end were introduced the door also acquired matching 6 pane window glasses. The wider boxes designated period 2w could have 5 windows at the door end and two pairs of wider windows at the other end and some were recorded as 13 ft wide. During the life of period 2 boxes the vertical boarding beneath and above windows changed from 6in to 3.5 inch widths - possibly initially as the result of repairs and then the availability of timber rather than a deliberate design change.

Period 3 boxes occur when the glazing was changed to 3 pane windows, and period 4 when the feather edge boards used to clad the “locking room” were changed to a lapped design. However it is incorrect to see the space beneath the lever frame as the room with the lever locking as the locking was part of the tumbler lever frame design, but that term seems to “stick” to that space for any signal box.

The windows to the locking room move around the building. Usually a door is beneath the veranda balanced by a window and two more at the other end. These windows can be rectangular or have the characteristic top corners filleted. It appears the filleted windows were again surpluses from the period 1 box design and later rectangular windows were introduced.

Some boxes had 6 pane windows (not 2 wide by 3 high, but 3 wide by 2 high) in the centre of the front of the locking room. Others usually consisting of several 10 ft panels might have one 2 by 2 pane window in the centre of each panel. Some boxes using 15ft front panels have a pair of 2 by 2 windows to the locking room at the front. Very low boxes, such as those located on platforms are more likely to have small 2 pane rectangular windows. At least one box at Cheltenham has the same window (2 pane) inserted in the roof. It appears those with front facing windows to the locking room did not have windows in the end panels and it appears that the lever frame would usually be located at the rear of the box, this is indicated by where the stove chimney is located in the roof.



Later period 2 doorway

Along with changes to the windows and panel boarding period 4 boxes were built with a concrete base which projected beyond the walls of the box. This appears to be an attempt to prevent the structures failing from the result of decaying ground level horizontal timbers. Similar remedial works to earlier boxes is also possible. During period 4 the lever locking system was redesigned and the 10ft deep box returned although some were still built to a 12ft width. Some period 4 boxes - identified by the lapped boarding retained the 6 pane windows suggesting exceptions to the period designation process is not an exact science - perhaps the windows have been recently replaced with old windows.

There are some well known exceptions such as the High Street box at Burton-on-Trent which was only the doorway wide at one end - giving it a trapezoidal shape. There are also a number of "square" boxes. We have found some exceptions to the standardisation of Midland Railway signal boxes. These exceptions are a small percentage of all Midland Railway signal boxes, even counting others we have not listed.

A list of Midland Railway signal boxes still existent at that moment appeared in the Spring 1988 issue of the Journal of the Midland Railway Trust, this included boxes on joint lines.

Searching for Linby Signal Box produced a number of useful videos which show the interior of smaller Midland Signal boxes on YouTube.

Specific Signal Boxes

Leytonstone, London

This was built on a joint line until the Midland absorbed the Tottenham & Forest Gate line in 1912. It is particularly unusual as it was 15 by 7ft 6ins with four pane windows (period 2 style) at the ends and deep 6 pane windows at the front. One unusual other feature is the walkway along the front of the box, probably a late addition as it is not a Midland Railway pattern and is fixed just below the windows, not at the veranda height. The locking room has a door and window at left and right corners of the doorway end and the veranda is braced by curved timbers.

Reference Journal of the Midland Railway Trust No.72 early 1988.

Duffield Junction.

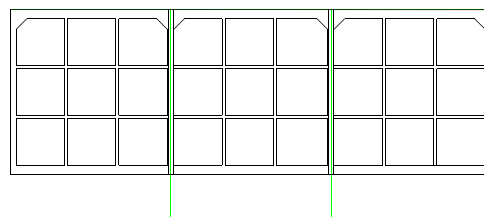
This is a 30ft long box with a period 1 doorway end, including doors and locking room window. But on the branch side(back) there are on two of the 10ft panels, single 2by2 windows to the locking frame room. The far end finishes at the station platform and on the branch side (right-hand) is another window to the locking

room. There is also a wrap around walkway (on all sides of the box). It is said this box was extended by one panel, hence on off centre ventilator in the roof line, which presumably was when 6 pane front windows were fitted. The stove was located on at the rear (branch side) in the middle of the box. This side also had a 2 by 2 pane window in the box end by the platform. On the left panel at the box platform height were two separate windows centrally located. The central panel had two pairs of windows to the left and then a narrow solid panel and a mirror image of these windows occupied the right panel. It would appear that these rear windows would each be about 2 feet wide or four feet for a pair, whereas the usual pairs of windows would span about 5 feet. The stairway to the box is above the locking room door both at the back (branch line side) of the box end.

Reference P Kibble photographs, used in Vol 2 Midland Railway Journal, The Wirksworth Branch by Howard Sprenger, Oakwood Press

Barton Street Junction, Gloucester

Is a very exceptional box. We currently know of five elevated boxes, all different. This box was suspended above the running lines on a metal frame and had 48 levers and a gate wheel for the adjacent level crossing. The signal rodding exits along the rear wall. Entrance was also at the rear by a corridor and from the position of the stove flue - on the front side of the box - the lever frame would also be at the rear and have to be circumvented to allow entry. The box is a 2 by 1 shape, 30 by 15 feet, as all the windows were the same size - using a 9 pane frame. These windows used wider panes than the usual window as they would be about 5 feet wide, quite unusual for the Midland Railway. The design of these window frames (from a distance) appears to have a shallower fillet to the top corners than is usual.



Barton Street Junction - 15ft

Reference T Heavyside in the Middleton Press Book Gloucester to Bristol, Flickr and Peter Smith drawing in his book "Midland in Gloucestershire" by OPC.

Fish Ponds, Bristol

The area is actually Fishponds but the signal box name used two words. This is a 25 lever box, situated in a 25ft long building, by using one 15ft panel and one 10ft panel. It has 6 pane windows to the front and four pane windows at both ends and a walkway. Later photographs show a W.C. attached to the veranda above the locking room door. This obscured another 4 pane window.

Reference Lens of Sutton, in the Middleton Press Book Gloucester to Bristol and Flickr

Ripley Junction, Derbyshire

Is a 20 by 10 ft box fairly standard design except the doorway end is from period 1 - individual 4 pane glass panels and the front from period 2 - 6 pane windows in pairs. Its walkway is not connected to the veranda and the steps leading to the box have a tablet exchange platform inserted into them. The photograph taken in Midland Railway days shows no additional wire strings on the stairs or veranda (and also at Duffield) suggesting these strings were a later addition.

At some point in time the curved braces to the veranda design were changed to straight braces, though this is difficult to determine when it first started to occur.

Reference British Railways, used in Vol. 2 Midland Railway Journal.

Denby North, Derbyshire

Is very similar to Ripley Junction, a 20 by 10ft box, controlling a level crossing. There is a suggestion one 4 pane window existed in the rear wall overlooking the approaching road. The doorway end has period 2 6

pane windows, there is no sign of an external walkway but the stairway is punctuated by a tablet exchange platform.

Reference Rails to Ripley by Howard Sprenger, Kestrel Books

Little Eaton Village Crossing, Derbyshire

Is a 10 ft square box , had 8 levers and controlled a hand worked level crossing. It had a period 2 doorway end with 4 pane windows and 6 pane front windows. The rear wall has a single 4 pane window - presumably to see advancing road traffic. The veranda has straight braces and a walkway extended around all the windows. Unusually the staircase was located at the front edge of the box, whereas usually it was placed in the middle. There is no evidence of any locking room windows although the far end away from the doorway panel is not visible, the locking room doorway is in the usual position in the doorway end panel.

Reference Rails to Ripley by Howard Sprenger, Kestrel Books

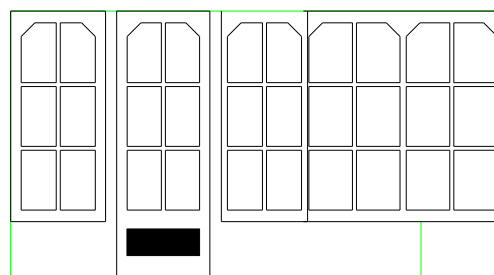
Marehay Crossing, Derbyshire

Is a 15 by 10ft box, very low mounted with period 2 details - 6 pane windows on three sides. There is an external walkway around all the windows and the veranda has curved braces. It is most unusual with a 4 by 1 pane window to the locking room at the front which could have a 3ft headroom from rail height but the room appears several feet lower from the rear. It appears to have had a locking room doorway at the rear opposite end to the box door panel.

Reference Rails to Ripley by Howard Sprenger, Kestrel Books

Ironville Junction, Derbyshire

A small 15 ft box with 16 levers, but curiously deeper than usual. It has 5 sections to the doorway end and is 12ft deep. All windows are 3 panes high, the doorway end is a pair of windows, a single window, the door and another single window. The stairway is aligned to the box front and a walkway extends around the windows. At the base of the stairway is a platform leading towards the track, immediately adjacent is bridge 25 which may explain the presence of this platform and railings. The veranda is supported by straight braces and beneath is the locking room door and on the right-hand side a square frame window (without the typical top corner fillets). The non doorway end window arrangement at the other end of the box, is two pairs of wider 6 pane windows.



Ironville Junction - 12ft

Wingfield box is very similar but is 20ft by 12ft in size.(Journal of the Midland Railway Trust, Summer 2014)

Reference Rails to Ripley by Howard Sprenger, Kestrel Books,

Swanwick Sidings, Derbyshire

This is another 25 by 10ft box. Photographed long after closure it shows the following characteristics, it is higher than normal and had 6 pane windows to the front and 4 pane windows at both ends, at the door end there was a pair of windows (period 2). The veranda was supported by straight braces while the walkway extended along the front and end it was not connected to the veranda. A door at the back and a locking room window was at the front of the box at the doorway end. Two further locking room windows can be seen, one to the right centre of the 15ft panel and the other in the centre of the 10ft panel. However all these windows were rectangular and were located two planks higher than the top of the locking room door. Possibly through repairs the lower planks are not even across the frontage, especially on the 15ft panel. Above the lower vertical planking used wide timbers on the 15ft box and half the 10ft panel to the front and beneath the double window to the (visible) end, all other planking being the newer narrow version. This suggests this box was substantially rebuilt/extended after initial installation.

Reference Rails to Ripley by Howard Sprenger, Kestrel Books

Bedford South, Bedford

An unusual arrangement apparently two adjacent boxes, with a filler section, under one roof. It appears to be one plank lower than most boxes – 8 planks high plus a skirting board. These are 20 by 10 boxes with a five foot filler panel making it 20 by 25 feet overall. The 20ft sides have 2 by 3 windows whilst one 25ft side has 2 by 2 windows and a blank filler panel, behind which is one stove. It is unclear if the other 25ft side has the same arrangement or where the entrance is though a walkway extends along both visible sides. Beneath the 2 by 2 windows are locking room windows while the doorway is not visible.

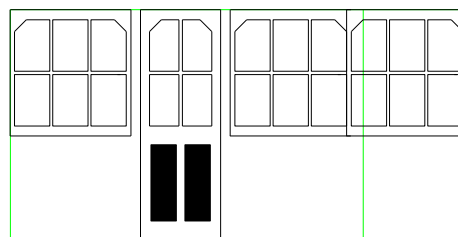
A second reference to this box shows the second long side, from right to left consisting of two pairs of 2 by 2 windows the blank section over which a stove chimney can be seen and then three 2 by 2 windows and a narrow blank panel (approximately 2ft6in wide). The most curious feature is the apparent dark red/brown timber on the upper section (probably the colour used on buildings) usually used to highlight main timbers and beading.

Reference Journal of the Midland Railway Trust No.71, Autumn 1987
and Railway Nostalgia Around Bedfordshire by David Eatwell

Note St Pancras Station also had a large squarish signal box of a similar style.

Bedford North, Bedford

Appears to be a 30 by 13ft box. It has three 10ft panels to the front with pairs of 6 pane windows. It is slightly higher than most boxes and possesses a continuous walkway. The doorway end has three 3 by 2 windows (3 panes wide and 2 high) in the order left to right window, door, window and window. At the other end there were three pairs of 2 by 2 windows (period 2 design). The stairway has been strengthened by a thick middle timber whilst the veranda appears to have a single wire brace.



Bedford North & Treeton Junction - 13ft

Reference Bedford to Wellingborough, Middleton Press

Haresfield, Gloucestershire

This is a fairly standard box, mounted around 3 feet from rail level it has a walkway around the windows. Its main variation we wish to point out is the use of rectangular 2 by 1 windows to the locking room.

Reference Midland in Gloucester, Peter Smith, OPC

Wirksworth, Derbyshire

This box was removed in the 1930's from the station platform and replaced by ground frames. An early end on photograph shows a 7ft 6in wide cabin - or three windows wide, on the right was a door. These were the same as period 1, 2 by 2 panes windows. It was reported in 1927 the box was 27ft 6in by 9ft 8 ins and it was proposed but never carried out that a new box 22ft 1in by 11ft 6in replace it. The report says the proposed and existing boxes were 11ft 3in above rail height. As Midland Railway boxes were built on a 10ft (or 15ft) panel length this does not include the corner and intermediate posts, it would suggest the box may have had the equivalent of one 10ft and one 15ft panel to the front. This box however precedes the classification system now in use to describe the signal boxes and is likely to be wrong - similar buildings existed at Derby as huts for many years. The removal of this box coincides with the introduction of an electric token and "one engine in steam" operation of the branch in 1934 when home signals were removed at Wirksworth.

Reference The Wirksworth Branch by Howard Sprenger, Oakwood Press, Midland Signal Boxes
- The Wyvern - journal of the Midland Railway Trust summer 1986 edition.

High Street Crossing, Burton-on-Trent

Possibly the oddest shaped signal box - a 20 ft long box but only a doorway width to the left and half a panel wide on the right end. The front had 6 panel windows although the lower panes appear obscured, to the left end is a locking room door and either side of the middle post are filleted 2 by 2 windows. The left hand end has the box stairway, there is no external walkway and at the right-hand end are a pair of 2by2 windows and beneath to the right another locking room door directly accessed from the street. It is not clear if another window in the rear of the box gave a view down the road.

References: Railways in Burton by H N Twells, Trent Valley, Midland Signal Boxes
- The Wyvern - journal of the Midland Railway Trust autumn 1987 edition.

Matlock, Derbyshire

Is the second elevated box we are aware of, located above a siding adjacent to the goods shed it was a 30 by 10ft box. Generally fairly standard design of period 3 except it is mounted on a largely timber frame and is cantilevered about 4 feet outwards from the frame. In 1952 it had 2 pane windows in pairs around the front and two ends as the entrance door was located in the left corner of the rear panels with a locking room door beneath. A walkway runs around all glazed areas and the locking room has three rectangular windows each mounted centrally in the front panels. There are two stoves to the rear. A rectangular window was located left of centre in the rear wall high up under the gutter.

Reference Through Limestone Hills - Bill Hudson OPC

Armley Station, Leeds

Is another elevated signal box. It is a 30 by 10ft version with period 4 details, the 2 pane deep windows and lapped boarding to the locking room. It appears as a standard dimensioned box, it has a walkway around the glazed area; what appears to be a rear access, three rectangular windows to the locking room one in each panel. The operating rods are at the front of the box, the box being perched on a substantial frame of girders held up by lattice posts. There is one photograph of this box we are aware of taken from below left - a three quarters view hence some details are uncertain.

Reference Midland Railway Record No 21, Wild Swan

Morecombe, Lancashire

One of the larger and late construction boxes, was 50ft long and said to be 12ft wide of 1907 classed as period 4b. The box depth looks more like 15ft than 12. A signal inspection panel in the roof extended to half the end roof and on the front from beneath the finial to the gutter line at the left end - the size of the glass panels used here is unusual. Three pane glazing was standard all round while the end opposite the doorway has wider panes. Every front panel had a 6 pane (3 wide 2 high) window to the locking room. The locking room door was at the front on the left side and a walkway existed around the glazed area. There were two stoves to this box identified by the chimney flues, at the front of the box, so the lever frame was at the rear.

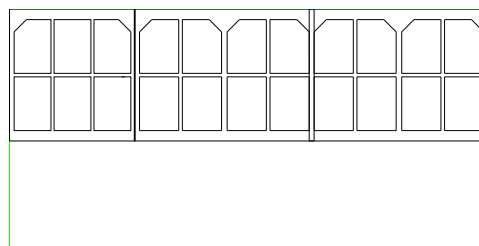
ReferenceS;, Midland Signal Boxes - The Wyvern - journal of the Midland Railway Trust summer 1987 edition

Midland Railway Signal Boxes - Peter Smith, Midland Railway Record Issue No.2 , Wild Swan

Treeton Junction, Sheffield

This was a 3 panel (30ft box) but said to be 13ft wide to period 2w design. The end windows were in two pairs of 4 panes and a 3by2 pane window. There are two stoves to the front and a locking room door to the front side (left) at the far end from the stairway. A walkway extends around the glazed area.

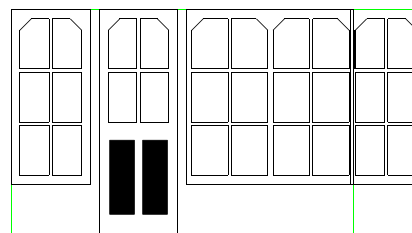
Reference , Midland Signal Boxes - The Wyvern -
Journal of the Midland Railway Trust spring 1987 ed.,
also www.signalboxes.com



Treeton Junction - 13ft

Leicester Junction (Burton), Burton-on-Trent

This is a 40ft long box which is probably 12 ft wide. Although it has the early locking room timbering the main windows are all three pane designs. The stairway end (left - from front) has a single window, door with a 4 pane window, then a pair and finally a single window. Unusually the door is to the right of the stairway whilst a walkway extends under all glazing. There are two stoves at the front of the box, meaning it has a lever frame located at the rear. At the far end to the stairway there are two pairs of wide windows again 3 pane deep specimens. At a normal height there are two locking room windows of the rectangular pattern, one more centrally located in both the central panels to the front but no window beneath the veranda end where the locking room door is, located at the front corner. Also the roof still has finials all of which suggest the windows were later replacements for any original fittings or possibly some parts (such as the door and locking room walls) were recycled from an earlier box.



Leicester Junction (Burton) - 12ft

Reference, Railways in and around Burton-on-Trent, HN Twells, Challenger Publications

St Pauls Road Goods Junction, London

This was a narrow box apparently 20ft long. It was only 7ft 6ins wide - a pair of windows and door at the stairway end, but the roof is a standard 10 ft box design with a large overhang to the front. It is unclear but it appears to be made from period 2 components. As there was limited space for this box there is no walkway, but the rear wall has a window just right of centre which overlooks the passenger lines with which this box has no connection.

Reference The London Extension of the Midland Railway, Geoff Goslin, Irwell Press.

North London Incline, London

This is generally a standard 20 by 10ft box on a low height locking room base, but it is mounted on and cantilevered outwards from a narrow (about 4ft wide) high rectangular box of similar design. It has 6 pane windows all round, whilst the doorway is hung to the right as a three part stairway arrives at the platform height at the rear alignment of the box abutting St Pancras Goods Depot main building. There are end locking room windows (rectangular) but no door beneath the veranda. A walkway extends under the glazing. A further locking room window is in the end mounting box wall above a locking room door located at ground level. This box used a token system for the single line to the NLR the first return on the stairway appears to have a projecting platform to enable an exchange of tokens to happen.

Reference The London Extension of the Midland Railway, Geoff Goslin, Irwell Press.

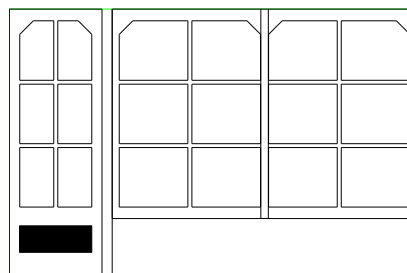
St Pancras, St Pancras Station

Is a fairly unusual box 20 ft square, made by joining two 20 by 10 boxes back to back. It has some period 2/3 features such as the feather-edge locking room boarding but in 1936 it possessed 3 pane windows. There were two lever frames in this box both facing the running lines whilst the platform end had the usual two rectangular windows to the locking room in both 10 ft panels. The roof consisted of two normal design hipped roofs both of which had small gable like projections facing outwards from the centre of the roofs - these were air vents. There were two stoves located back to back in the centre of the building and one doorway to this box, located at the back of the right-hand box, the remainder of this side being windows.

References: The London Extension of the Midland Railway, Geoff Goslin, Irwell Press, Midland Railway Society Journal No.51, Winter 2012, John Gough, photograph from Kidderminster Railway Museum, Midland Railway Record, preview edition.

Redditch South, Worcestershire

This is also a tablet exchange point for the single line to Alcester and has a reverse in the stairway to the box to assist the exchange of tablets. It is unusual for a 15ft box that appears to be 10 ft deep with the early feather boarding locking room with a double 4 pane filleted locking room windows in the centre front panel but has a rare (maybe unique) end panel, possibly because it abuts a rocky face. The entrance door is hung to the left on the right end of the box and the veranda is about 5 feet long although a walkway extends along the front and then around the opposite end. Next to the doorway are two wide separate 6 pane windows, the left hand one may slide to the right. The stove is located at the front of the box meaning the lever frame is located at the rear of the box and is not adjacent to the entrance door.



Redditch South - 10ft

Reference Ashchurch to Barnt Green Line - the Evesham Route, R J Essery OPC
By-lines Page 407, Vol 27, August 2022, Issue 9.

Redditch North

This is a high 20 by 10ft box, generally very standard with deep 6 pane windows all around. The right hand end has the entrance door, this time left of centre and hung on the left side. There is a walkway from the veranda around the box windows and the locking room door is also on the left side of the right hand end. The main variations in this box is the appearance of two stove pipes at the front of the box and the locking room windows are also at the front in the centre of each panel but in this case made of 3 wide by 2 high rectangular windows. The long stairway has a timber brace at under half height (whether this is a strengthener applied late is not clear) and also a second timber rail the length of the stairway.

Reference Ashchurch to Barnt Green Line - the Evesham Route, R J Essery OPC

Loughboro, Loughborough

This box appears to be a 30 by 10 ft design with a later 10ft addition. The first 30ft is of the feather board pattern timbering whilst the later 10 ft has the lapped boarding. The doorway end to the left as the 2 by 2 pattern windows although the door has 6 panes to it. The front and far end all have 6 pane pairs of windows. There is no walkway beyond the 5ft long veranda. In 1986 the roof finials did not exist and the locking room has no visible windows, its door being located below the main box door. The Midland Railway box name is seen as Loughboro'.

Reference Signal Boxes and Semaphores of the Leicester Gap, Mike Spencer, Alan Sutton Publishing

Kettering Station (now at Swanwick Junction, Midland Railway Trust)

This is a 35 by 10 ft high box with 2 pane deep windows all round the building. It comprises a 10ft, 15ft and 10ft panels and was remounted on concrete footings following its move. The doorway is to the left of centre at the left hand end and beneath is the locking room door at the back of the end panel. The front is punctuated by a single, double and single windows to the locking room, the rear and non doorway ends are plain. A walkway extends around the box and two stoves were located at the rear just within the middle 15ft panel. This was classed as a period 4c box and should have lapped boards in the base.

Reference Autumn 1988 Journal of the Midland Railway Trust and later issues.

Linby Colliery Sidings (removed to Midland Railway Trust as Brands Crossing)

This is a very unusual box being 20ft by 10ft, but made up of a 15ft and 5ft panels. It possessed a gate wheel for an adjacent level crossing and was formed of period 2 parts. That is the end windows were 2by2 panes while the front was deep 6 pane pairs. A walkway existed around the front and end panels, but the stairway at the right hand end turned through 90 degrees to lead toward the running lines. An observation window -

a 2by2 version was placed in the second section from the left of the rear panel. A locking room door was located at the rear of the right hand end and a locking room window appears to be located at the other end of the box, front and rear walls are plain. When the box was removed to the Midland Railway Trust site it was put onto a brick base.

Reference Brands Crossing Midland Railway Trust, You Tube video

Syston South Junction, Leicestershire

This is a 35ft long box 10 ft wide, consisting of 10, 15 and 10ft panels. It has deep windows all round, in 1986 these were all 2 pane versions. The doorway was to the right hand end, right of centre, whilst the stairway was close to the front of the box. A walkway extended from the veranda around the glazing to the box. A locking room door was at the right-hand side offset from the veranda. Locking room windows were at the front 4 pane filleted in the centre of the 10ft panels with a pair in the middle of the 15ft panel.

Reference Signal Boxes and Semaphores of the Leicester Gap, Mike Spencer, Alan Sutton Publishing

Leicester North, Leicester

This was a 40 by 10ft box located between running lines it had all round visibility but was of a normal height. The windows were deep 2 pane units, whilst the locking room appears to have feather edged board. The doorway end had a small veranda, the door being to the right of the centre and a locking room door was at the back of the box below and to the right of the doorway. A walkway existed in the front and at the other end of the box but may not have been connected to the veranda. The rear of the box was from left to right a 10ft panel with two pairs of deep windows, a plain 10 ft panel except for a 2 by 2 window adjacent to the centre line, the remainder of the rear was a mirror image of the left hand end, but no walkway exists at the rear.

Reference The Birmingham to Leicester line, Chris Banks, OPC

Bell Lane, Leicestershire

This is a high 30 by 10ft box. It was mounted on the side of an embankment access being by a stairway across the rear wall with a veranda and door just offset from the left hand end. The front panels have 6 pane windows whereas the end are pairs of 4 pane windows. A walkway extends from the rear veranda around the glazed areas. It is not clear where the locking room door was but the front panels are plain and two rectangular windows lie in the end panel nearest the doorway (right-hand side from the front) so this door may be at the other end than is usual.

Reference Signal Boxes and Semaphores of the Leicester Gap, Mike Spencer, Alan Sutton Publishing

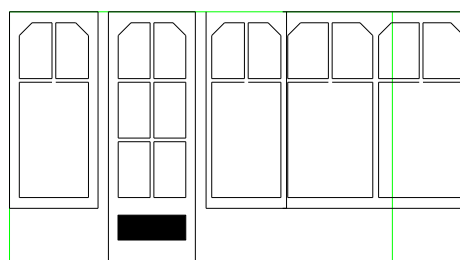
Wigston South Junction, Leicestershire

This was a high, forty foot long box cantilevered outwards at the front at platform level about 2 feet on a 10ft base. It has three pane deep windows all round, two wide pairs at the opposite end to the doorway and from the front a pair, single, doorway and single window at the left hand end, these windows being equal in size but narrower than usual. Opposite the doorway end are two rectangular locking room windows, the front is plain.

References: Signal Boxes and Semaphores of the Leicester Gap, Mike Spencer, Alan Sutton Publishing,
Birmingham to Leicester Line, Chris Banks OPC

Kilby Bridge, Leicestershire (now Hammersmith, Midland Railway Trust site)

This high box is cantilevered outwards on both sides. It is 20ft long and about 12 ft wide on a 8ft wide base. It has 3 pane deep windows and a walkway all round the glazing. A locking room door lies directly beneath the box doorway, windows to the locking room are single 2 by2 windows either side of the centre post at the rear of the box. It is doubtful there was trackwork behind the box, although it is cantilevered out, as there are no overlooking windows to the rear.

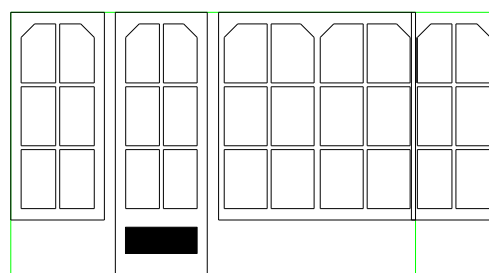


Kilby Bridge - now Butterley - 12ft

References: Signal Boxes and Semaphores of the Leicester Gap, Mike Spencer, Alan Sutton Publishing, Autumn 1995 Journal of the Midland Railway Trust.

Glendon North Junction, Leicestershire

This is a 20 by 12ft box slightly higher than normal for a Midland Railway box. It has 6 pane windows at the front and doorway (left hand) end. The doorway end reads from the front pair, single, door and single windows. A five foot veranda is extended by a walkway around the front and other end glazing. The locking room has a doorway to the left of the staircase end and a rectangular window at the front, the front wall is plain feather boarding and at the other end probably there are two rectangular windows. A stove is located at the rear of the box.



Glendon North Junction - 12ft

Reference Signal Boxes and Semaphores of the Leicester Gap, Mike Spencer, Alan Sutton Publishing

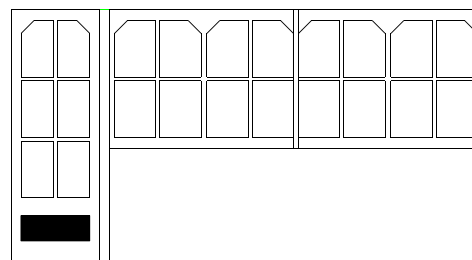
Irchester South, Leicestershire

This box has all round vision and is 20 by 10 ft and is of a normal height. It has 6 pane windows at the front and rear and four pane (period 2) windows at the ends. The rear windows are narrow - about 4 ft long pairs as there is a plain section at the ends of each panel in the centre. Behind this plain section is the stove. A walkway extends round the whole box from the veranda at the left hand end. The doorway is hung left of centre and the stairs right of centre. The stairs and veranda have been fitted with a wooden additional brace - usually it appears 2 wires were used. The locking room has windows and doors at the ends, the door being to the back of the box.

Reference Signal Boxes and Semaphores of the Leicester Gap, Mike Spencer, Alan Sutton Publishing

Manton Junction, Leicestershire

Again this is a four sided box, 20 by 12 ft. In 1986 it has 2 pane windows that had probably been repaired or replaced other windows. The doorway end had the shallow (ex 4 pane size) windows whereas the other three sides had deep windows. The doorway end (left from front) was configured door, then 2 pairs of windows. The rear had a pair of windows either side on the central post and a further window at the left hand end though this was photographed obscured to the top pane. A stove is located off centre to the roof truss at the rear. Only a locking room door is seen at the doorway end on the left side of the panel.



Manton Junction - 12ft

Reference Signal Boxes and Semaphores of the Leicester Gap, Mike Spencer, Alan Sutton Publishing

Barrow-on-Soar, Leicestershire

Was rebuilt in 1919 as a high cantilevered box. Details are limited but it would have been cantilevered about 4 feet forwards as the box end is similar to the Redditch South box, with (from the front) a door and two 3 by 3 pane windows. It had a two 10 ft front panels. A veranda extends the whole width of the box and extends as a walkway around the front and other end of the box. The locking room uses the lapped boarding of the later period whilst the braces to the veranda and main cabin are castings with a curved edge similar to signal post details. Usually timber braces to the veranda were common and cantilevering was achieved by using heavy timber beams, it appears that only later repairs introducing braces. An entrance to the locking room is not visible so will be at the rear of the box, a filleted window (2 by 2) is central to each 10ft panel at the front just above the height of the platform to which the box abuts. As with other cantilevered boxes the stove is at the front and the lever frame at the rear. Later a box (a W.C.?) was located to the right of the stairway on the veranda, obscuring the windows there.

Reference Midland Railway Record No.5 and No.14 - Wild Swan

Landor Street Junction, Birmingham

A two panel long box that appears to be 15ft wide. The doorway end is from left to right a 3 by 3 pane window, a four pane door, and a pair of sliding windows one 3 by 3 panes and the other equally sized window with 4 panes. This pair of windows have no fillets and may be later repair(s). The locking room is beneath the veranda, door to the left and rectangular window to the right. A walkway goes around the box, there being windows on all sides. Unusually the stairway seems as wide as the 3 by 3 pane window. From the doorway end the right side are pairs deep of sliding windows, the left side (rear?) has a two pairs of narrow 3 pane deep sliding windows then a plain section and this is mirrored in the next panel (this could also be a later repair as the windows are rectangular). It appears the far end of the box has 2 pane deep windows in what appears to be 2 pairs of 2 by 2 windows and then a 3 by 2 pane window (as Treeton Junction).

References: Midland Railway Record No.4 and No.22 - Wild Swan,
Birmingham-Bristol, Part One, Runpast Publications

Walworth Road Sidings, London

There appears to be some rebuilding/repairing of this box between the first picture dated 1906 and ones dated 1957. It appears to be a 20 by 12ft example, a low height box located on a iron/steel frame above a sidings road, possibly with a WC attached to the rear, as there are no huts associated with signal boxes (lamp store, coal bin or toilet) at rail level. A much steeper stairway goes to the veranda to the box on its right hand side and has heavy diagonal cross bracing. Site constraints limited the slope of the staircase. The door is hung to the right and is central to the box end with two pairs of rectangular 4 by 4 pane windows one on either side, although the window sill appears to be at a lower level than 4 pane windows and higher than 6 pane windows. A walkway extends around the box but at window sill (not platform) height. There appears to be two pairs of rear windows one at each corner of the box. A hipped roof covers the box overhanging around 2 feet to the rear (to cover the W.C. (?))

The earlier photograph shows only a pair of windows and a central door to the box with horizontal timbers to the right, no W.C. (?) rear extension and a narrower roof.

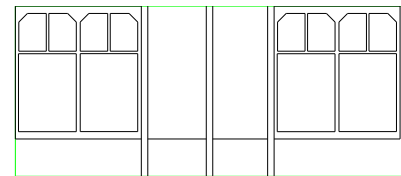
Although this box has some MR design features it is possible this is not a standard Midland Railway design though operated by the Midland Railway to service its adjacent coal depot.

Reference Midland Railway Record No.14 - Wild Swan

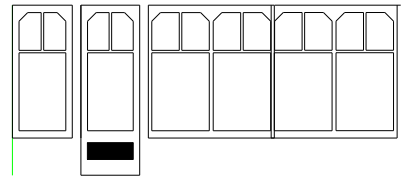
Maple, Derbyshire

This is a 20 by 15 ft square box which replaced two earlier boxes in 1905. It is located on the station platform about 3 feet above the platform surface. Entry is by a short stairway adjacent to the side of the box (on most boxes it is at a right angle). The doorway is one of 6 sections to the 15ft panel, a narrow window is

to the left and there are two pairs of windows to the right. These are deep three pane windows. Both 20ft faces have four pairs of windows of the same design. The rear face has two pairs of windows and a plain centre section, behind the centre section is the stove whilst the lever frame is along the long side facing the main running lines. There is no walkway around the box. The locking room presumably is level to or below rail height. Below the box platform at the doorway end and rear face are pairs of 2 panes wide, one high windows. At the door end these are under the doorway and on the right corner and on the rear face in both corners. It appears a locking room door is to the left of the main door dug down to floor level though this is far from clear as no protective handrail appears to exist to prevent passengers falling in to a pit.



Maple - 15ft



Maple - 15ft

Reference Manchester to Hayfield, Ian Smith & GK Fox, Foxline

Cheltenham Spa (Lansdown), Cheltenham

Another platform mounted box that appears to be 20 by 10 ft that was taken out of use. It was mounted on the platform with no sign of any locking room. The windows are period 1 style, 2 by 2 filleted windows, the doorway being left of centre at the left hand end (from the front). It has a standard hipped roof, although perhaps half is under a canopy on the platform, in other circumstances with a lower headroom a flat roof may have been used. In the doorway end roof is a 2 pane skylight (although the right pane looks to be in 2 pieces). These skylights were provided to give visibility to adjacent and high mounted signals though no signals are visible in the photograph.

Reference Railway Signalling and Track Plans - Bob Essery, Ian Allan

Coalville Crossing, Leicestershire

At this location there was once a signal box similar to the Wirksworth box until 1907 when it was replaced by a high cantilevered box at the same location. It was built to see past the adjacent public footbridge, the station canopy and control an acute angled level crossing. It was built in period 2/3 style with deep six pane windows, overhanging the running lines by about 3ft 6 ins, supported by curved brackets. It was a 20 by 10 ft box with a stove to the front. The adjacent gates were managed by a gate wheel in the box overlooking the road. There appear to be two levels to the locking room - four filleted 2 by 2 windows punctuate the front laid out in a square pattern the box platform being about 17ft from the ground. The locking room door was on the left side towards the front at ground level and a walkway ran around the glazed area. The stairway into the box was initially on the road side reversing about one third up reaching the platform level in line with the rear of the box, the door being to the left of centre creating a veranda about 7ft 6in long. However this doorway was subsequently changed to the other end of the box with a short stairway from the public footbridge and shorter veranda. The old entrance doorway was moved to the rear of the box evidently sealed up. A pair of windows were put in the middle of the panel leaving (perhaps) the original left window and left doorframe in place. The veranda was removed and replaced by a full length walkway.

Reference The Leicester and Burton Branch Railway, H N Twells, Trent Valley Publications.

There are of course many other Midland Railway signal boxes, many of whom could be fairly standard. Furthermore we have not really touched upon Period 4 boxes and what changes they brought in, so this investigation is really just scratching the surface of this subject.

Version 1.

AJA 1/3/2017, revised 19/5/2022.

Part 2 - Further Variations

There are more variations in the design of MR signal boxes that have been uncovered through accessing photographic libraries in publications, this notes a few more than those already listed in Part 1.

When level crossings were the purpose of a signal box the box is usually named "xxx Crossing".

Also "xxx Station" was used only when there were other adjacent boxes in the same area such as "Earby Crossing" and "Earby Station".

The regular layout for windows opposite to the door end for wider (i.e. 12 foot boxes) is two pairs of wider than normal 3 by 2 windows. There were some boxes with 3 pane wide windows, normally only 2 panes high.

Bedford North

It would appear Bedford North box was about 12 feet wide, not 15ft as suggested in Part 1. A pair of 3 pane wide windows would be about 6ft wide so adding a door and another 3 pane window would add up to around 12ft. There is an unfilleted window to the locking room to the right of the access stairway and a row of fire buckets on the left flake at the front of the box (when visible these are usually found beneath the access veranda). To the right hand end are three pairs of 2 by 2 windows (this usually would indicate a 13 ft wide box unless there were even more window sizes).

Reference – Bedford to Wellingborough – Middleton Press

Ouse Bridge, Bedford

This box has many virtues of a period 2 box. It is 15 by 10 with 2 by 3 (6 pane) windows and a walkway around the lookout windows. However it has "tongue & grove" locking room wall boarding, two adjacent 2 by 2 locking room windows centrally at the front of the box and no sign of finials on the roof – period 4 attributes.

Reference – Bedford to Wellingborough – Middleton Press

Milford Tunnel North

This appears to be a box 15 ft long and about 12ft wide as it had three 3 by 3 pane wide windows and a door on one side. The front of the box has 3 pane deep windows. A veranda is at the front of the box but it is not connected to the entrance platform. It had 16 levers but other details are obscure.

Reference "Derby to Chesterfield - Midland Main lines" By Middleton Press

Whittington Rd Crossing.

This is at ground level - a 10ft square box - with 2 pane deep windows. Facing the road are two 3 pane wide windows and a door, the door is on the rail side. Facing the railway are two pairs of 2 by 2 windows and on the opposite side at least one lookout widow for road traffic. Other details are obscured by the level crossing gates and fencing. It appears the gates were hand operated.

Reference "North Midland- A Famous Route" Part One by Bob Pinxton.

Eckington & Renishaw

Possibly the most well known elevated signal box in Midland lines. It is 30ft by 10ft and has period 4 windows (one high and one lower large panes). The box looks as though it was lifted about 15ft from the ground. There is a rear lever frame and two stoves at the front of the box, access being from the rear. A veranda appears to run around all windows. The steps leading to the box rise to the right and unusually for entrances to the cabin there is a landing some half way up. The "locking room" walls extend over the stairway, but actual entrance details are obscured. In 1974 when it was photographed there were heavy timber supports added under the rear wall of the box. This box has one centrally placed "locking room" window with fillets to each "flake" of the box and no windows at the visible end. Moving these windows to the front elevation appears to be applying a "period 4" standard.

It would appear this box was installed after 1910 as another photograph shows a small low level signal box at the end of the station platform (possibly a period 1 10ft square version) and no elevated box by the goods shed where the elevated box was constructed.

Reference: North Midland - Part Two Chesterfield - Rotherham by Bob Pinxton

Sheffield Midland South No.2

This appears to be a 30ft by "12ft" tall box - some 15ft from rail level. It has windows on four sides and two stoves. It oversails its base on the front and rear by about three feet on timber beams. There are no large "locking room" windows just four two pane windows located high at the corners of the ends - this includes one two timbers above the access door. The lookout windows are all deep windows, on the main side each "flake" has three 3 (high)by2(wide) pane windows and at the access end two pane "period 4" windows, although it is recorded there was considerable blast damage so these are probably not original windows. (the front windows could be a 6 pane version of the windows used at Barton Street)

Reference: North Midland - Part Two Chesterfield - Rotherham by Bob Pinxton

Manton Junction

This was a 35 lever frame. The box was 20 by 13 (?). At the access end (left) there are four small windows filleted but each of two equal sized panes and (appears to have a) wide doorway (right hand, to the rail side). The front has deep "period 4" windows and it appears there are rear windows (approximately in the middle) as a full width veranda exists. The right hand end did have four 2 by 2 windows, later replaced with four deep 2 pane windows. The locking room as a 3 by 2 pane window in each "flake" on the front side only, though the right hand end is obscured by an arc roofed building possibly one time a "shunter's cabin" though there is no apparent reason for one at this location.

Reference: Kettering to Nottingham - Middleton Press

Braunston Crossing (Oakham)

This is a very small crossing box more in the style of a shunter's cabin as it has a simple arched roof. It is elevated by 6 steps/4 planks and bore a two line original name board located just under the windows. The two windows facing the railway were 3 by 2 pane windows and one small 2 pane window illuminated the under floor area and no visible horizontal beam at floor height. The left side facing the road had two 4 pane (unfilleted) windows and an outward opening door with a non standard 2 by 3 (6 pane) window. There was a lookout window to the approach road at the rear and windows to the right side that appear to be 3 by 2, other details are obscure. There is no sign of a stove but there may be an external brick chimney at the right rear. A lever frame faces to the right and there is no sign of gate operating equipment, the crossing had four gates and what appears to be a pair of foot crossing gates and there is no sign of any gate locking mechanism.

Reference: Kettering to Nottingham - Middleton Press

Grassington & Threshfield

This is a 20 by 12ft box, fairly standard in all components except it is 12ft wide. The front and door end uses 3 by 2 windows while the other end has 2 pane deep windows. The stairway ascends in the centre of the end with the doorway to the back. Whilst there is no stove chimney seen in the photograph it probably has a lever frame at the front of the box. It has a fairly standard height and has a veranda from the doorway around the remaining lookout windows. The locking room door is to the back of the box and an unfilleted window to the locking room is at the front edge. In this photo the stairway and veranda area seems to be of a steel construction (approximately 1961).

Reference :LMS Branch Lines 1945-1965, CJ Gammell, Oxford Publishing 1980 - photo 18, text with photo 45.

Morecambe

This is a 50 ft by 12ft box. It had three stoves at the front meaning it had a rear frame. Each "flake" has a locking room window each 3 by 2 panes. A subsequent photo shows just two stove chimneys the left one is missing. There was a glazed section to the roof (for visibility to adjacent gantry signals), it extended across half the end roof and from the apex down to the gutter on the front. This glazing appears to have mullions at about 2ft spacing and three panes from gutter to apex. The entrance end has a "locking room" door on the rail side and is otherwise plain. The stairs to the veranda are directly above the locking room door, windows are from right to left Single, Double, Door, Single. The veranda stops at the doorway then a walkway proceeds around all the other lookout windows. The main windows are 3 pane (one large and two small top panes) and this is annotated as a "period 4b" box.

References: Midland Record No.2 Midland Railway Signal Boxes By Peter Smith;
No.25 "The J S Moore Story" by Graham Warburton

Toton Yard Cabins

These are really shunters cabins each controlling a number of point switches. They appear to all be of a similar design which might be named "period 0", as they are all 7ft 6ins deep i.e. three 2 by 2 windows and 15ft long, again using 2 by 2 windows. These cabins were given a sign "No.1" and so on. These later disappeared as Toton yard was modified.

Reference: Midland Record No.21 Toton Marshalling Yards by Bob Essery

Rowsley Down Goods

By 1928 Rowsley Sidings had been enlarged and the single Down Goods box has disappeared to be replaced by two boxes. The first box is similar to the Toton cabins being 7ft 6ins deep and 15ft long - it has 3 side windows, not four as a 10ft box would have. The box had a veranda to the left side the stairway in the centre and door to the left. Beneath the stairway is the locking room door and to its right a filleted window. Unusually there is only one plank above the locking room door. The front windows were 2 by 3 with six panes but the veranda side had 2 by 2 windows. The stove was at the rear where two lookout windows – one at the left hand end and two to the right can be seen. The right hand end is obscured but it appears the roof was extended over the rear 5ft by around 2ft6in with an access door located in the corner of the signal box, this side also has 2 by 2 windows. This may well have been a "shunter's platform" where wagons may be checked and shunting directed as another independent shunter's platform appears in a photograph at the rear. The veranda is supported by curved brackets and there is no sign of any name board above the doorway (an LMS era change to the location of the name board) or on the front of the box, although it is referred to as a signal box the levers are an unusual type and there maybe no interlocking (Plate 169, Foxline), it is more like a ground frame.

References: Midland Railway Society – Rowsley A Rural Railway Centre
Midland Railway Portrait - Foxline , Plate 165

Popular Docks, London

Another 7ft6ins box, 20 ft long. This is mounted low between two tracks and adjacent to an overbridge. The access steps lead directly to the door. It has 2by2 windows on all visible faces.. There are no evident windows to the locking room area. As there is no visible stove chimney it is unclear where the lever frame is situated, except two signal wires emerge from the box on the visible side and it appears rodding emerges from the rear (from where the photograph is taken).

A cantilevered two arm signal appears attached to the far side of the box at roof level as space for a post is very limited but it probably does exist as must a ladder to reach the signal lamps. There is no skylight for inspecting those signals but as taken in 1956 these may have existed but were lost during WW2. The box name board is attached immediately below the windows just to the right of the centre of the side.

Reference: Londons East End Railways Part 2, by D Brennand, Book Law Publications.

Wilhampstead Station, Bedfordshire

This is not really a Midland Railway box as it was opened in 1941. However at least some LMS era boxes contain Midland components, the most notable difference being the use of gable end roofs. This was a very small box - 10ft square and had a gable end roof. However the wall panels appear purely MR - with period 4 T&G panelling to the lower section. There is one central locking room window (2 by 2) at the front, a walkway around the lookout windows and a usual entrance stairway to the left. The windows however are very nondescript plain 5ft wide two upper and two lower panels to the front and right hand side - the door side is obscured. The name board is attached under the gutter to the front and there is a stove centrally at the rear of the box.

Reference: Railway Nostalgia Around Bedfordshire by David Eatwell

Finally a splendid close up of a "standard" 15 by 10 signal box - Stanton New Works Sidings appears in Midland Mainline Loughborough to Ilkeston by Middleton Press for anyone looking for construction details.

AJA 1/1/2021, amended 19/5/2022, 9/9/2022.