NOTES

1. The following are two of the four standard temporary fences that are suggested for highway works and the type required or any variations of these details shall be as shown on the Drawings:
   - Type 1 – BS 1722 Part 2
   - Type SW120 with mild steel barbed wire complying with BS 4102 fixed to the top line wire and the third line wire from the ground and as shown on this detail;
   - Type 2 – BS 1722 Part 2
   - and as shown on this detail.

2. All line wire, stirrup wire and barbed wire shall be zinc coated to comply with BS EN 10244-2.

3. When these type fences or variation of these are used for accommodation work fences, the requirements are included in Appendix 1/15 and on the Drawings.

4. ALL DIMENSIONS ARE IN MILLIMETRES.

<table>
<thead>
<tr>
<th>HIGHWAY CONSTRUCTION DETAILS</th>
<th>FENCES, STILES &amp; GATES</th>
<th>TEMPORARY FENCES TYPES 1 &amp; 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>C MAY 04</td>
<td>B MAY 01</td>
<td>A DEC 91</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H1</td>
</tr>
</tbody>
</table>
NOT TO EXCEED 70 METRES

Round timber straining posts 230–250 girth at top, 1800 long, to be provided at all ends

Round or cleft timber intermediate posts 190–230 girth at mid-length 1800 long

Two 30 x 3.55 staples to each wire

Round or cleft struts 190–230 girth at top 1800 long

NOT TO EXCEED 150 METRES

Round timber straining post 100 dia at top x 1750 long straining post to be provided at all ends

40 x 4 dia staple to each wire

2.5 dia wires at 300 centres

Round timber intermediate post 65 dia at top x 1600 long, at 3500 intervals

Four wires 1.9 dia minimum twisted together between poles

NOTES

1. The following are two of the four standard temporary fences that are suggested for highway works and the type required, or any variations of these details shall be as shown on the Drawings:
   Type 3 – BS 1722 Port 4 Type CW120 and as shown on this detail;
   Type 4 – BS 1722 Port 2 Type C6/80/30 and as shown on this detail.

2. All line wire, stirrup wire and barbed wire shall be zinc coated to comply with BS EN 10244–2.

3. If posts are to be driven then bottom end shall be pointed for 225.

4. When these type of fences or variations of these are used for accommodation work fences the requirements are included in Appendix 1/15 and on the Drawings.

5. ALL DIMENSIONS ARE IN MILLIMETRES.
NOTES
1. Specification Clause 306 applies unless otherwise stated in Appendix 3/1 or Appendix 1/15.
2a). Where plain or barbed wire is required in Appendix 3/1 or Appendix 1/15 it shall be zinc coated and comply with BS 4102.
2b). 4 rail fence - BS 1722 Part 7 Type SPR 13/4 applies unless otherwise stated.
2c). 5 rail fence - BS 1722 Part 7 Type SPR 13/4 applies (except for the addition of a fifth rail, rails spaced as shown) unless otherwise stated.
3. Where the fence forms a boundary between the highway and private property, the rails shall be fixed to the private property side unless otherwise stated in Appendix 3/1 or 1/15.
4. Posts can be supported by rammed backfill or ST2 concrete unless Appendix 1/15 or Appendix 3/1 require ST2 concrete to be used.
5. ALL DIMENSIONS ARE IN MILLIMETRES.
NOTES

1. Specification Clause 306 applies unless otherwise stated in Appendix 3/1 or 1/15

2. Plastic coating shall comply with Specification Clauses 2604 and 2605.

3. Details of general arrangements shall be in accordance with Drawing Nos. H8, H9 and H10

4. Where a fence forms a boundary between a highway and private property both the dropper and wire shall be fixed on the private property side unless otherwise described in Appendix 3/1 or 1/15.

5. Plastic coating material shall not be acceptable where serious damage has occurred to the coating before or during erection. Minor defects must be sprayed with an approved plastic paint within 24 hours of erection.

6. Where barbed wire is required in Appendix 3/1 or 1/15, unless otherwise stated, it shall consist of twin strand of zinc coated mild steel fixed to the top and third from top wire at 450 centres with zinc and plastic coated tie wire. It shall pass the intermediate posts and be secured to the straining posts as shown on Drawing No. H10

7. All dimensions are in millimetres.
**NOTEs**

1. Specification Clause 306 applies unless otherwise stated in Appendix 3/1 or 1/15.
2. Plastic coating shall comply with Specification Clauses 2604 and 2605.
3. Details of general arrangements shall be in accordance with Drawing Nos. H8, H9 and H10.
4. Where a fence forms a boundary between a highway and private property both the dropper and wire shall be fixed on the private property side unless otherwise described in Appendix 3/1 or 1/15.
5. Plastic coating material will not be acceptable where serious damage has occurred to the coating before or during erection. Minor defects must be sprayed with an approved plastic paint within 24 hours of erection.
6. All dimensions are in millimetres.

**STRAINING POST**

3025 long
100 x 50 x 4 R.H.S.
Max. spacing 300m

**INTERMEDIATE POST**

2875 long
50 x 50 x 3 R.H.S.
TYPICAL TURNING POST
FOR 1.35m FENCE
76.1 x 4 x 2275 long

TYPICAL TURNING POST
FOR 1.8m FENCE
88.9 x 4 x 2725 long

TYPICAL TURNING POST
FOR 2.1m FENCE
88.9 x 4 x 3025 long

NOTES
ALL DIMENSIONS ARE IN MILLIMETRES.
STRAINING ARRANGEMENT FOR STRAINING POSTS
FENCE HEIGHT 1.35m

END POSTS

INTERMEDIATE POSTS

NOTES
1. The dropper shall be made of steel not less than 0.66kg per metre galvanized to comply with Clause 1909. Dropper clip wire must be zinc coated and sprayed with plastic paint when required in Appendix 3/1.
2. ALL DIMENSIONS ARE IN MILLIMETRES.
Alternative Arrangements for Straining Posts
Fence Height 1.8m and 2.1m

End Posts
- 50 x 50 x 4 R.H.S.
- 16 dia hole for lube bolt
- 19 dia hole for 16 dia bolts
- Filet weld
- 100 x 50 x 6 plate

Intermediate Posts
- 100 x 50 x 4 R.H.S.
- 19 dia hole for 16 dia bolts
- Filet weld
- 100 x 50 x 6 plate

Alternative Methods of Joining Line Wire

Arrangement of Dowels at Base of Posts and Struts
10 dowels push fit

Paint mark for position of line wire ends

Preformed Connector
- Extruded plastic coatings to be stripped off for lengths of splice before applying the fixing and then coated with plastic on completion

Note: All dimensions are in millimetres.
STAINLESS STEEL CUP

PLASTIC PLUG

INTERMEDIATE POST - PLAIN WIRE FIXING
(See Fig No. H8 for barbed wire)

ALTERNATIVE ARRANGEMENTS FOR WIRE CONNECTIONS TO END STRAINING POSTS

ALTERNATIVE ARRANGEMENTS FOR WIRE CONNECTIONS TO INTERMEDIATE STRAINING POSTS

NOTE: ALL DIMENSIONS ARE IN MILLIMETRES.

HIGHWAY CONSTRUCTION DETAILS

FENCES, STILES & GATES

GENERAL DETAILS
STRAINED WIRE FENCES

DRAWING NO. H10

ADEC 91

ISSUE DATE
NOTES
1. B.S.1722 Part 1 applies unless otherwise stated.
2. Dimensions of foundation, type and size of posts, struts, mesh, etc. shall be taken from B.S.1722 Part appropriate to the height and with any other requirement described in Appendix 1/15 and on the Drawings.
3. Plastic coating when required in Appendix 1/15 shall comply with Specification Clauses 2604 and 2605.
4. Plastic coating material shall not be acceptable where serious damage has occurred to the coating before or during erection. Minor defects must be sprayed with an approved plastic paint within 24 hours of erection.
5. All timber shall comply with Specification Clause 304 unless otherwise stated in Appendix 1/15.
6. Where a fence forms a boundary between the highway and private property the wire shall be fixed to the highway side unless otherwise stated in Appendix 1/15.
7. Timber posts and struts may be supported in rammed backfill unless otherwise stated in Appendix 1/15.
8. ALL DIMENSIONS ARE IN MILLIMETRES.
NOTES
1. B.S.1722 Part 2 applies unless otherwise stated.
2. Dimensions of foundations, type and size of posts, struts, mesh, etc. shall be taken from B.S.1722 Part 2 appropriate to the height and purpose of the fence and with any other requirement described in Appendix 1/15 and on the Drawings.
3. Plastic coating when required in Appendix 1/15 shall comply with Specification Clauses 2604 and 2605.
4. Plastic coating material will not be acceptable where serious damage has occurred to the coating before or during erection. Minor defects must be sprayed with an approved plastic point within 24 hours of erection.
5. All timber shall comply with Specification Clause 304 unless otherwise stated in Appendix 1/15.
6. Where a fence forms a boundary between the highway and private property the wire shall be fixed to the highway side unless otherwise stated in Appendix 1/15.
7. Timber posts and struts may be supported in rammed backfill unless otherwise stated in Appendix 1/15.
8. ALL DIMENSIONS ARE IN MILLIMETRES.
NOTES

1. B.S. 1722 Port 2 applies unless otherwise stated.

2. Dimensions of foundation, type and sizes of posts, struts and wire etc. shall be taken from B.S.1722 Port 2 as appropriate to the height and purpose of the fence and with any other requirements described in Appendix 1/15 and on the Drawings.

3. All timber shall comply with Specification Clause 304 unless otherwise stated in Appendix 1/15.

4. When plastic coating is required in Appendix 1/15 it shall comply with Specification Clause 2604 and 2605.

5. Details of posts and connections shall be in accordance with Drawing Nos. H7 to H10.

6. Where a fence forms a boundary between the highway and private property, the wire shall be fixed on the highway side unless otherwise stated in Appendix 1/15.

7. Plastic coating material will not be acceptable where serious damage has occurred to the coating before or during erection. Minor defects must be sprayed with an approved plastic paint within 24 hours of erection.

8. Timber posts and struts may be supported in rammed backfill unless otherwise stated in Appendix 1/15.

9. ALL DIMENSIONS ARE IN MILLIMETRES.
NOTES
1. B.S. 1722 Part 5 applies unless otherwise stated.
2. Dimension d and types and sizes of posts, rails, palisades and feather edged board fitting shall be taken from B.S. 1722 Part 5 as appropriate to the height and type of fence and with any other requirements described in Appendix 1/15 and on the Drawings.
3. All timber shall comply with Clause 30A unless otherwise stated in Appendix 1/15.
4. Timber posts may be supported in rammed backfill unless otherwise stated in Appendix 1/15.
5. ALL DIMENSIONS ARE IN MILLIMETRES.
NOTES

1. B.S.1722 Part 7 applies unless otherwise stated.

2. Where plain or barbed wire is required in Appendix 1/15 it shall be zinc coated and comply with BS 4102.

3. Where the fence forms a boundary between the highway and private property, the rails shall be fixed to the private property side unless otherwise stated in Appendix 1/15.

4. Posts may be supported by rammed backfill or ST2 concrete unless Appendix 1/15 requires ST2 concrete to be used.

5. ALL DIMENSIONS ARE IN MILLIMETRES.
NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. BS 1722 Part 11 applies unless otherwise stated.
3. Dimension d and sizes of posts, and infill shall be taken from BS 1722 Part 11 as appropriate to the height and type of fence described in Appendix 1/15 and on the Drawings.
4. All timber shall comply with Specification Clause 304 unless otherwise stated in Appendix 1/15.
5. Timber posts may be driven or supported in rammed backfill unless otherwise stated in Appendix 1/15.
Hinges may be positioned thus BUT distance between posts will decrease by 102

**NOTES**

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. Gates shall comply with the appropriate Clauses in Series 300, any further requirements in Appendix 1/15 or 3/1, and with BS 3470. (Cattle yard).
3. For details of latches and fittings see Drawing Nos. H26, H27 & H28.
4. Gate stops to be provided in accordance with Drawing No. H33.
5. The gate shall open into the owner’s property.
6. The corners of the main frame may be rounded, rounded and mitred (as drawn), mitred, saddled or crimped.
7. Protective treatment to be as described in Appendix 1/15 or 3/1.

<table>
<thead>
<tr>
<th>DESCRIPTION OF MATERIAL</th>
<th>SIZE</th>
<th>FIXINGS AND FITTINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hanging post</td>
<td>114.3 outer dia.x 3.6 thick</td>
<td>Top capping plate 4.8 thick Two 230x150x4.8 wing plates stitch welded to post</td>
</tr>
<tr>
<td>Shutting post</td>
<td>88.9 outer dia.x 3.2 thick</td>
<td>Base plate 250x250x4.8 Cap and base plates to be continuously flush welded to tube</td>
</tr>
<tr>
<td>Outer frames</td>
<td>48.3 outer dia.x 2.9 thick</td>
<td>Fillet welded to each gate member crossed by braces</td>
</tr>
<tr>
<td>Infilling horizontal rolls</td>
<td>42.4 outer dia.x 2.6 thick</td>
<td></td>
</tr>
<tr>
<td>Vertical braces (steel flat)</td>
<td>Three 38x4.8</td>
<td></td>
</tr>
<tr>
<td>Diagonal braces (steel flat)</td>
<td>Two 38x4.8</td>
<td></td>
</tr>
</tbody>
</table>
Hinges may be positioned thus BUT distance between posts will decrease by 115

### Table: Fixings and Fittings

<table>
<thead>
<tr>
<th>Description of Material</th>
<th>Size</th>
<th>Fixings and Fittings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hanging post (Tubular steel)</td>
<td>138.7 outer dia.x 4.5 thick</td>
<td>Top capping plate 4.8 thick Two 230x150x4.8 wing plates stitch welded to post Base plate 250x250x4.8 Cap and base plates to be continuously flush welded to tube</td>
</tr>
<tr>
<td>Shutting post (Tubular steel)</td>
<td>114.3 outer dia.x 3.6 thick</td>
<td></td>
</tr>
<tr>
<td>Outer frames</td>
<td>48.3 outer dia.x 2.9 thick</td>
<td></td>
</tr>
<tr>
<td>Vertical braces (steel fillet)</td>
<td>One 38x4.8</td>
<td>Fillet welded to each gate member crossed by braces</td>
</tr>
<tr>
<td>Diagonal braces (steel fillet)</td>
<td>Two 38x4.8</td>
<td></td>
</tr>
<tr>
<td>Steel square welded mesh fabric</td>
<td>51 square x4.1 dia.</td>
<td></td>
</tr>
</tbody>
</table>

Alternative position of hinge to give a full 180° opening when required in Appendix 1/15 or 3/1.

### Notes
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. Gates shall comply with the appropriate Clauses in Series 300, any further requirements in Appendix 1/15 or 3/1 and with BS 3470. (Cattle yard).
3. For details of latches and fittings see Drawing Nos. H26, H27 & H28.
4. Gate stops to be provided in accordance with Drawing No. H33.
5. The gate shall open into the owner's property.
6. The corners of the main frame may be rounded, rounded and mitred (as drawn), mitred, saddled or crimped.
7. Protective treatment to be as described in Appendix 1/15 or 3/1.
Hinges may be positioned thus BUT distance between posts will decrease by 115

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Hanging post (Tubular steel)</td>
<td>139.7</td>
<td>Top capping plate 4.8 thick</td>
</tr>
<tr>
<td></td>
<td>outer dia.x</td>
<td>Two 230x150x4.8 wing plates stitch</td>
</tr>
<tr>
<td></td>
<td>4.5</td>
<td>welded to post</td>
</tr>
<tr>
<td>Shutting post (Tubular steel)</td>
<td>114.3</td>
<td>Base plate 250x250x4.8</td>
</tr>
<tr>
<td></td>
<td>outer dia.x</td>
<td>Cap and base plates to be</td>
</tr>
<tr>
<td></td>
<td>3.6</td>
<td>continuously flush welded to tube</td>
</tr>
<tr>
<td>Outer frames</td>
<td>48.3</td>
<td>Four 38x4.8</td>
</tr>
<tr>
<td>infilling horizontal rails</td>
<td>2.9</td>
<td>Fillet welded to each gate member</td>
</tr>
<tr>
<td>(All tubular steel)</td>
<td></td>
<td>crossed by braces</td>
</tr>
<tr>
<td>Vertical braces (steel flat)</td>
<td>42.4</td>
<td>Two 38x4.8</td>
</tr>
<tr>
<td>Diagonal braces (steel flat)</td>
<td>2.6</td>
<td></td>
</tr>
</tbody>
</table>

NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. Gates shall comply with the appropriate Clauses in Series 300, any further requirements in Appendix 1/15 or 3/1, and with BS 3470. (Cattle yard).
3. For details of latches and fittings see Drawing Nos. H26, H27 & H28.
4. Gate stops to be provided in accordance with Drawing no. H33.
5. The gate shall open into the owner's property.
6. The corners of the main frame may be rounded, rounded and mitred (as drawn), mitred, saddled or crimped.
7. Protective treatment to be as described in Appendix 1/15 or 3/1.
Hinges may be positioned thus BUT distance between posts will decrease by 204

<table>
<thead>
<tr>
<th>DESCRIPTION OF MATERIAL</th>
<th>SIZE</th>
<th>FIXINGS AND FITTINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posts (Tubular steel)</td>
<td>114.3 outer dia.x 3.6 thick</td>
<td>Top capping plate 4.8 thick Two 230x150x4.8 wing plates stitch welded to post Base plate 250x250x4.8 Cap and base plates to be continuously flush welded to tube</td>
</tr>
<tr>
<td>Outer frames</td>
<td>48.3 outer dia.x 2.9 thick 42.4 outer dia.x 2.6 thick</td>
<td></td>
</tr>
<tr>
<td>Infilling horizontal rails (All Tubular steel)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical broces (steel flat)</td>
<td>Four 38x4.8</td>
<td>Fillet welded to each gate member crossed by broces</td>
</tr>
</tbody>
</table>

NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. Gates shall comply with the appropriate Clauses in Series 300, any further requirements in Appendix 1/15 or 3/1 and with BS 3470. (Cattle yard.)
3. For details of latches and fittings see Drawing Nos. H26 and H29
4. Gate stops to be provided in accordance with Drawing No. H33.
5. The gate shall open into the owner's property.
6. The corners of the main frame may be rounded mitred,mitred (as drawn),padded or crimped.
7. Protective treatment to be as described in Appendix 1/15 or 3/1.
<table>
<thead>
<tr>
<th>DESCRIPTION OF TIMBER MATERIALS</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hanging post</td>
<td>200x200x2100 long</td>
</tr>
<tr>
<td>Shutting post</td>
<td>175x175x2100 long</td>
</tr>
<tr>
<td>Hanging stile</td>
<td>100x75 for 3m gate</td>
</tr>
<tr>
<td></td>
<td>125x75 for 3.6m gate</td>
</tr>
<tr>
<td>Shutting stile</td>
<td>75x75</td>
</tr>
<tr>
<td>Top rail</td>
<td>100x75 for 3m gate</td>
</tr>
<tr>
<td></td>
<td>125x75 for 3.6m gate</td>
</tr>
<tr>
<td></td>
<td>both tapering to 75x75</td>
</tr>
<tr>
<td>Under rails</td>
<td>75x25</td>
</tr>
<tr>
<td>Braces housed in top rail</td>
<td>75x25</td>
</tr>
</tbody>
</table>

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. Gates shall comply with the appropriate Clauses in Series 300, any further requirements in Appendix 1/15 or 3/1 and with BS 3470.
3. All through tenons shall be pegged with 13 dia oak dowels.
4. For details of fittings for hanging and fastening see Drawing Nos. H30 and H31.
5. The gate shall be hung as shown for self closing with self latching stop post as shown on Drawing No. H33.
6. The gate shall open into the owner’s property.
NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. Gates shall comply with the appropriate Clauses in Series 300, any further requirements in Appendix 1/15 or 3/1 and with BS 3470.
3. Drop bolts and catches shall be galvanized to comply with BS 729.
4. All through tenons shall be pegged with 13 dia oak dowels.
5. For details of fittings for hanging and fastening see Drawing Nos. H30 and H32.
6. The gate shall be hung as shown for self closing with self latching stop post as shown on Drawing No. H33.
7. The gate shall open into the owner’s property.
<table>
<thead>
<tr>
<th>DESCRIPTION OF TIMBER MATERIALS</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hanging post</td>
<td>200x200x2100 long</td>
</tr>
<tr>
<td>Shutting post</td>
<td>175x175x2100 long</td>
</tr>
<tr>
<td>Hanging stile</td>
<td>100x75</td>
</tr>
<tr>
<td>Shutting stile</td>
<td>75x75</td>
</tr>
<tr>
<td>Top rail</td>
<td>100x75 tapering to 75x75</td>
</tr>
<tr>
<td>Under rails</td>
<td>75x25</td>
</tr>
<tr>
<td>Brace housed in top rail</td>
<td>75x25</td>
</tr>
</tbody>
</table>

NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. Gates shall comply with the appropriate Clauses in Series 300, any further requirements in Appendix 1/15 or 3/1 and the appropriate Clauses in both BS 3470 and BS 5709.
3. All through tenons shall be pegged with 13 dia oak dowels.
4. For details of fittings for hanging and fastening see Drawing Nos. H30 and H31.
5. The gate shall open into the owner's property.
**NOTES**

1. **ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.**
2. Gates shall comply with the appropriate Clauses in Series 300, any further requirements in Appendix 1/15 or 3/1 and the appropriate Clauses in both BS 3470 and BS 5709.
3. All tenons shall be pegged with 13 dia oak dowels.
4. For details of fittings for hanging and fastening see Drawing Nos. H30 and H31.
5. The gate shall open into the owner’s property.

<table>
<thead>
<tr>
<th>DESCRIPTION OF TIMBER MATERIALS</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hanging post</td>
<td>200x200x2100 long</td>
</tr>
<tr>
<td>Shutting post</td>
<td>175x175x2100 long</td>
</tr>
<tr>
<td>Hanging stile</td>
<td>100x75</td>
</tr>
<tr>
<td>Shutting stile</td>
<td>75x75</td>
</tr>
<tr>
<td>Top rail</td>
<td>100x50</td>
</tr>
<tr>
<td>Bottom rail</td>
<td>75x50</td>
</tr>
<tr>
<td>Broce housed in both rails</td>
<td>75x25</td>
</tr>
<tr>
<td>Ripes with pointed tops secured to each rail and the braces by two galvanized 63x10 s.w.g. nails dovetail driven.</td>
<td>75x25x1220 long</td>
</tr>
</tbody>
</table>

**Detail of joint between top & bottom rails and hanging stiles.**

---

**HIGHWAY CONSTRUCTION DETAILS**

<table>
<thead>
<tr>
<th>FENCES, STILES &amp; GATES</th>
</tr>
</thead>
<tbody>
<tr>
<td>B MAY 04</td>
</tr>
<tr>
<td>A DEC 91</td>
</tr>
</tbody>
</table>

**TIMBER WICKET GATE**

**TYPE 2**

**Drawing No.**

H24
**NOTES**

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. Gates shall comply with the appropriate Clauses in Series 300, any further requirements in Appendix 1/15 or 3/1 and the appropriate Clauses in BS 5709.
3. Gate itself shall be wicket gate Type 2 (Drawing No. H24).
4. All rails shall be galvanized.
5. All tenons shall be pegged with 13 dia oak dowels.

**DESCRIPTION OF TIMBER MATERIALS**

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wing posts</td>
<td>125x100x2100 long</td>
</tr>
<tr>
<td>Apex posts</td>
<td>150x150x2100 long</td>
</tr>
<tr>
<td>Fence rails cut to</td>
<td>87x35x1600 long</td>
</tr>
<tr>
<td>length and housed</td>
<td></td>
</tr>
<tr>
<td>in the apex post</td>
<td></td>
</tr>
</tbody>
</table>
3 x 45° chamfer

Drill 4 dia. hole and fit 3 dia. x 32 long stainless steel split pin. See Note 3

20 dia. bolt shank x 115 long with two nuts and washers

See Note 3

Two nylon washers 40 dia. x 3 thick

3 x 45° chamfer

ELEVATION

ELEVATION

PLAN

PLAN

TOP HINGE

BOTTOM HINGE

Notes:
1. All dimensions are in millimetres unless otherwise stated.
2. Gates shall comply with BS 3470 and any further requirements in Appendix 1/15 or 3/1.
3. Where stated in Appendix 1/15 or 3/1 the split pin on top hinge shall be omitted and replaced with washers welded to both top and bottom hinges, together with a spot weld to the top hinge locking nut.
4. All fittings and bolts shall be galvanized steel.
NOTES
1. ALL DIMENSIONS ARE IN MILLTIMETRES UNLESS OTHERWISE STATED.
2. Gate fittings shall comply with BS 3470 and any further requirements in Appendix 1/15 or 3/1.
3. All fittings shall be galvanized steel.
NOTES
1. All dimensions are in millimetres unless otherwise stated.
2. Gate fittings shall comply with BS 3470 and any further requirements in Appendix 1/15 or 3/1.
3. All fittings shall be galvanized steel.
Outline of double field gates shown dotted.

Hole for 10 dia. cup head bolt.

One 10 dia. galvanized cup head bolt, nut and locknut

NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. Gate fittings shall comply with BS 3470 and any further requirements in Appendix 1/15 or 3/1.
3. Steel tubes shall be 25 dia. x 3.25 thick to comply with BS 6323.
4. The latch shall be galvanized.
Provision shall be made in the top hinge for three 10 dia. cup head square shanked bolts as shown.

NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. Gate fittings shall comply with BS 3470 or BS 5709 and any other further requirements in Appendix 1/15 or 3/1.
3. Fittings shall be malleable iron or steel galvanized.
Drill and countersink for number 8 countersunk head cadmium plated wood screw x 25 long to be supplied with catch.

One hole for 10 dia. cup head square shank bolt x 95 long to be supplied complete with washer and nut.

This lever may be forged as an alternative to the fabricated one shown, provided it maintains the dimensions given.

Two holes for 10 dia. cup head square shank bolts x 100 long to be supplied each with one nut as shown.

NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. Gate fittings shall comply with BS 3470 or BS 5708 and any other further requirements in Appendix 1/10 or 3/1.
3. Fittings shall be malleable iron or steel with the exception of the spring catch which shall be tempered steel, painted as shown.
4. All ferrous metal shall be galvanized.
Provision shall be made in latch for one 10 dia. cup head square shank bolt 110 long complete with nut as shown.

End of bolt turned over after assembly with gate.

Countersunk hole for number 8 countersunk head cadmium plated wood screw x 25 long to be supplied with drop bolt.

Hole for padlock.

Notes:
1. All dimensions are in millimetres unless otherwise stated.
2. Gate fittings shall comply with BS 3470 or BS 5709 as appropriate and any other further requirements in Appendix 1/15 or 3/1.
3. All metal fittings and bolts shall be galvanized mild steel.
10 dia. bolt x 70 long complete with two washers, one nut and locknut (alternatively one self-locking nut).

12 dia. bolt x 100 long complete with one washer (18 o/da x 7 thick) and nut and locknut.

60.3 o/da. tube 3.2 minimum wall thickness.

<table>
<thead>
<tr>
<th>Dimension &quot;X&quot;</th>
<th>Suitable for gates on Drawing nos.</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 mm</td>
<td>H17, H19, H20</td>
</tr>
<tr>
<td>635 mm</td>
<td>H18</td>
</tr>
</tbody>
</table>

**NOTES**

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. Gate fittings shall comply with BS 3470 or BS 5703 as appropriate, and any other further requirements in Appendix 1/5 or 3/1.
3. All metal fittings and bolts shall be galvanized steel.

SELF LATCHING STOP POST
FOR TIMBER GATES

HOLDING BACK STOP POST
FOR STEEL GATES

40x40x4 Angle x40 long fitted to gate with two 40 long cadmium plated woodscrews.

Tubular steel post set in 230x230x60 of concrete mix ST2.
1. All dimensions are in millimetres unless otherwise stated.
2. All timber shall be in accordance with the appropriate Clauses in Series 300 and any other requirements in Appendix 1/15 and 3/1 and BS 5709.
3. All steelwork shall be galvanized to comply with BS EN ISO 1461
4. Stile posts shall be set in line of fence.

**DESCRIPTION OF TIMBER MATERIALS**

<table>
<thead>
<tr>
<th>Material Description</th>
<th>Section Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posts top doubled chamfered</td>
<td>100x100</td>
</tr>
<tr>
<td>Crosshead wrought, top edge</td>
<td>87x38 minimum</td>
</tr>
<tr>
<td>double chamfered</td>
<td></td>
</tr>
<tr>
<td>Steps</td>
<td>175x50</td>
</tr>
<tr>
<td>Supports</td>
<td></td>
</tr>
<tr>
<td>Secured by two 100 long x 4 galvanized round wire nails</td>
<td>175x50</td>
</tr>
</tbody>
</table>
SECTION Y-Y

SECTION X-X

**TIMBER MATERIALS**

<table>
<thead>
<tr>
<th>DESCRIPTION OF</th>
<th>SECTION SIZES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posts</td>
<td>100x100</td>
</tr>
<tr>
<td>Top rail of fence shall be wrought and top edge double chamfered between the posts as shown.</td>
<td>87x38 (min)</td>
</tr>
<tr>
<td>Steps</td>
<td>175x50</td>
</tr>
<tr>
<td>Supports</td>
<td>150x75</td>
</tr>
</tbody>
</table>

**NOTES**

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. All timber shall be in accordance with the appropriate clauses in Series 300 and any further requirements in Appendix 3/1 or 1/15 and BS 5709.
3. All steelwork shall be galvanized to comply with BS EN ISO 1461.
WING WALL TO POST AND WIRE FENCE

Galvanized steel plate with eye bolts attached, fixed to concrete wing wall with bolts so fixed to avoid reinforcement (i.e., when possible with sockets cast into concrete)

Concrete wing wall

WING WALL TO POST AND RAIL FENCE

2 No. bolts and washers
180mm length countersunk positioned to avoid reinforcement (i.e., when possible with sockets cast into concrete)

Concrete wing wall

Note: See also TD 19 (DMRB 2.2.9) for guidance relating to pedestrian restraint and protection at head walls, wing walls and retaining walls.
1 Knots (live)

Edge knot
Acceptable if x is less than 2b/3

Spray knot
Acceptable if x is less than 2b/3

Aris knot
Acceptable if x + y/3 is less than d/3

Face knot
Acceptable if the largest dimension of x or y is less than d/2 and knot is contained within the middle half of face.

Margin knot
Acceptable if knot of type x1 occurs and x1 is less than d/3
Acceptable if knot of type x2 occurs and x2 is less than d/3
Acceptable if both types occur together as illustrated and if x1 + x2 is less than d/3

Knots showing both on the edge and within the outer quarter of the face

Shallow knots on heart side.
Acceptable

Face knots other than those contained within the middle half of the face.
Acceptable if maximum dimension of knot is less than d/3

Knot cluster
Knots overlapping when viewed on section

Consider as one knot. Acceptable if overall dimension x is less than d/2

Groups of knots
No overlapping of knot when viewed on section

Consider separately providing grain recovery between knots. Otherwise treat as knot cluster.

HIGHWAY CONSTRUCTION DETAILS
2 Knots (dead)
A knot whose fibres are intergrown with those of the surrounding wood to an extent of less than 1/4 of the cross sectional area
Acceptable
If the largest diameter is less than 20mm.

3 Slope of Grain
Screeded line on line of surface
Fissures indicating grain
Growth rings (figure) NOT to be confused with grain
Acceptable if less than 1/6 excluding local deviations and grain swaying about knots.

4 Rate of Growth
10 rings in 70mm average ring width

5 Checks
Check on opposing surfaces. Acceptable if less than 1/2 penetration
Treat together Treat separately

6 Wormholes
Acceptable if scattered wormholes are less than 4mm diameter.

7 Stain
Evidence of black or blue discolouration is acceptable.

8 Mechanical Damage
Not acceptable.

9 Rot
Any evidence of brown or white discolouration which when pressed appears softer or weaker than the surrounding timber is not acceptable
(CLE. Pith is not to be considered a defect under this rule)

10 Distortion
Excessive distortion which would render the piece incapable of meeting the tolerances required by the design or end product is not acceptable.

11 Wane
Not acceptable.
END POSTS & STRUTS

Round timber post
125 top dia. Type 1
150 top dia. Type 2
Fence connectors
100 Type 1
500 Type 2
40 x 4 staples
2.65 dia. spring steel line wire at ground level
31 hexagonal mesh See table
Round timber strut
80 top dia.
Wire rings @ 300 c/c
600 split rail flat side toward the post
Concrete foundation. See note 6

INTERMEDIATE POSTS

Round timber post
65 top dia. Type 1
80 top dia. Type 2
Fence connectors
900 Type 1
1450 Type 2
670 Type 2
560 Type 2
2.65 dia. spring steel retaining wire
600 split rail flat side toward the post

STRAINING AND TURNING POST

(Staples on turning post not needed where initial angle is greater than 110°)
Round timber strut
80 top dia.

SECTION OF RABBIT FENCING

2 No. 125 x 5 galvanised nails
Bottom 250 buried 100 vertically and turned out 150 horizontally. See Note 7.

END STRAINING AND TURNING POST ASSEMBLY

750 Type 1
1270 Type 2
100 Type 2

NOT TO EXCEED 15m Type 1, 10m Type 2
NOT TO EXCEED 200m BETWEEN STRAINING POSTS

CONCRETE FOUNDATION. SEE NOTE 6

NOTES
1. All strained line wire finishing at a post shall be terminated by looping back on itself and jointed with a preformed fence connector.
2. All joints in the spring steel wire shall be made by either a preformed fence connector or wire connector.
3. Where the ground is undulating, ground anchors or extra intermediate posts shall be used to maintain the constant distance of the line wires from the ground.
4. BS 1722 Part 2 Section 8, 10 & 11 shall apply unless otherwise stated.
5. All timber shall comply with Specification Clause 304.
6. For details of foundations see Drawing No. H13.
7. For alternative treatments to 'turned out' mesh see Clause 306.
8. ALL DIMENSIONS ARE IN MILLI METRES UNLESS OTHERWISE STATED.
2 No. 600 x 600 x 50° slabs bedded on 25 thick sand
450 dia. augured hole (or 450 sq.). Mix ST2 concrete

<table>
<thead>
<tr>
<th>DESCRIPTION OF MATERIAL</th>
<th>SIZE</th>
<th>FIXINGS AND FITTINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hanging and shutting posts</td>
<td>50 x 50 x 4.0 RHS</td>
<td>Top capping and base plates 4.0 thick continuously flush welded to tube.</td>
</tr>
<tr>
<td>Vertical frames</td>
<td>50 x 30 x 4.0 RHS</td>
<td></td>
</tr>
<tr>
<td>Horizontal frames and central rail</td>
<td>42.4 x 2.6 CHS</td>
<td></td>
</tr>
<tr>
<td>Infilling rails and diagonal braces</td>
<td>8 diameter mild steel bar</td>
<td>Diagonal braces fillet welded to circular hollow section frame/rail.</td>
</tr>
</tbody>
</table>

NOTES
1. Gates shall comply with the appropriate Clauses in the 300 Series and any additional requirements in Appendix 3/1.
2. Gates shall be set in line of the fence as shown.
3. All gate fittings shall be galvanised steel.
4. Mesh and netting shall be fixed in accordance with the appropriate HCD drawing.
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
Half round timber rolls 100 mm across the face and thickness of 55

100 long x 4 galvanised round wire nails

40 x 4 staples at 200 centres
Round timber post 100 top dia.

1 No. 40 x 4 staple to each line wire

Half round timber rolls 100 mm across the face and thickness of 55

100 long x 4 galvanised round wire rolls

40 x 4 staples at 200 centres
Round timber post 100 top dia.

1 No. 40 x 4 staple to each line wire

NOTES
1. All timber shall be in accordance with the appropriate clauses in the Specification.
2. Stile posts shall be set in the line of the fence.
3. Stile posts may be used to substitute an intermediate post in the fence.
4. Fence mesh and netting shall be fixed in accordance with the appropriate HCD drawing.
5. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
NOTES
1. The bottom 450 of spiles, the bottom 600 of posts and the bottom 850 of struts shall be coated with a cold applied black bitumen material complying with the requirements of BS 3416.
2. Straining and turning posts shall be erected at corners and changes of direction.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
50 x 50 x 355 cross member secured to top of posts with 100 long woodscrews

Pivot bar fixed to 12 thick plywood door section with pipe brackets

Ground level

150 x 75 window with mesh attached by means of 215 x 202 x 12 marine ply secured with 25 long woodscrews

300 x 12 dia. copper pipe pivot bar in 15 dia. x 25 deep drilled hole in posts

Galvanised mesh secured with 40 x 4 staples

370 x 215 x 12 marine ply

355 x 102 x 25 marine ply secured to posts with mesh attached to ply

50 x 50 x 725 timber post

450 x 600 x 50 precast concrete flag cut to 225 x 600 x 50 to fit between posts and lid flush with ground level

SECTION X-X

50 x 32 timber batten placed over mesh and secured with 70 long woodscrews at 100 intervals into cross member

50 x 32 x 355 gate stop secured with 2 No. 70 long woodscrews. See Note 1.

50 x 32 timber batten placed over mesh and secured with 70 long woodscrews at 100 intervals into posts.

One-way gate opening direction

Buried mesh

NOTES
1. Gate stop shall be omitted where two-way access gate is specified in Appendix 3/1.
2. All woodscrews to be galvanised or similarly treated to prevent rust.
3. All dimensions are in millimetres unless otherwise stated.
### Wire Mesh

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Dimension A</th>
<th>Dimension B</th>
<th>Dimension C</th>
<th>Line Wires</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Rabbit</td>
<td>Hexagonal steel wire netting to BS EN 10223-2 Classification 31 x 1050 x 18</td>
<td>800</td>
<td>100</td>
<td>150</td>
<td>2 No.</td>
</tr>
<tr>
<td>2 - Munific Deel (+ Rabbit)</td>
<td>Hexagonal steel wire netting to BS EN 10223-2 Classification 31 x 1200 x 18</td>
<td>950</td>
<td>100</td>
<td>150</td>
<td>2 No.</td>
</tr>
<tr>
<td>3 - Badger See Note 3</td>
<td>Steel wire woven hinged joint fencing to BS EN 10223-6 Classification HE. 160/130. See Note 4</td>
<td>1000</td>
<td>300</td>
<td>300</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Steel wire chain link fencing to BS EN 10223-6 Zinc/alloy and black organic coating 50 mesh x 2,50,55 gauge, 1800 height</td>
<td>1250</td>
<td>250</td>
<td>300</td>
<td>2 No.</td>
</tr>
<tr>
<td>4 - Badger See Note 3</td>
<td>Hexagonal steel wire netting to BS EN 10223-2 Classification 31 x 1200 x18 AND</td>
<td>950</td>
<td>250</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Steel wire woven hinged joint fencing to BS EN 10223-6 Classification HE. 160/130. See Notes 4 &amp; 5</td>
<td>1000</td>
<td>300</td>
<td>300</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Steel wire chain link fencing to BS EN 10223-6 Zinc/alloy and black organic coating 50 mesh x 2,50,55 gauge, 1800 height, See Note 5</td>
<td>1250</td>
<td>250</td>
<td>300</td>
<td>2 No.</td>
</tr>
</tbody>
</table>

**Notes**

1. All dimensions are in millimetres unless otherwise stated.
2. Fencing Types 1, 3 and 4 apply to new fencing and to the attachment of wire mesh (and additional line wires) where the existing fence height is greater than Dimension A. Fencing Type 6 is required instead of Type 2 if the existing fence height is less than 1350.
3. Two alternatives are given for this type.
4. Alternatives within height range 1580 to 1700 are acceptable, but horizontal spacing of vertical stay wires must not exceed 100.
5. Where two layers of wire mesh are required, dimensions A, B & C are given in order inner/outer mesh.
6. Hexagonal mesh and chain link fencing attached to additional line wires at top of mesh and at ground level.
7. BS 1722: Part 2 shall apply unless otherwise stated. Wire mesh to be attached to fence with a minimum of 16 No. anchorages per square metre of mesh.
NOTES
1. Specification Clause 306 applies unless otherwise stated in Appendix 3/1 or 1/15.
2. Details of general arrangements shall be in accordance with Drawing Nos. H5, H8 & H10.
3. When a fence forms a boundary between a highway and private property the wire mesh shall be fixed on the private property side unless otherwise described in Appendix 3/1 or 1/15.
4. Plastic coating shall comply with Specification Clauses 2604 and 2605. Plastic coated material will not be acceptable where damage has occurred to the coating before or during erection unless the Overseeing Organisation agrees that minor defects can be sprayed with a plastic paint within 24 hours of erection.
5. Two alternatives are given for Type 5 fence.
6. Alternatives within height range 1580 to 1700 are acceptable, but horizontal spacing of vertical stay wires must not exceed 100. Dimension C to be adjusted accordingly.
7. Where wire mesh is attached at time of erection of high tensile strained wire fencing, some wires may be omitted as shown and longer droppers incorporated where necessary.
8. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
### Wire Mesh

<table>
<thead>
<tr>
<th>Type</th>
<th>Wire Mesh</th>
<th>Dim A</th>
<th>Dim B</th>
<th>Dim C</th>
<th>Dim D</th>
<th>Dim E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 7 - Deer &amp; Otter</td>
<td>Steel wire chain link fencing to BS EN 10223-6 zinc/zinc alloy and black organic coating, 50 mesh x 2.5/3.55 gauge, 2150 height.</td>
<td>1950</td>
<td>200</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Type 8 - Deer, Badger &amp; Otter</td>
<td>Steel wire chain link fencing to BS EN 10223-6 zinc/zinc alloy and black organic coating, 50 mesh x 2.5/3.55 gauge, 1400 height x 2 No.</td>
<td>-</td>
<td>300</td>
<td>1400</td>
<td>800</td>
<td>300</td>
</tr>
</tbody>
</table>

### Notes

1. Specification Clause 306 applies unless otherwise stated in Appendix 3/1 or 1/15.
2. Details of general arrangements shall be in accordance with Drawing Nos. H6, H9 & H10.
3. When a fence forms a boundary between a highway and private property the wire mesh shall be fixed on the private property side unless otherwise described in Appendix 3/1 or 1/15.
4. Plastic coating shall comply with Specification Clauses 2504 and 2605. Plastic coated material will not be acceptable where damage has occurred to the coating before or during erection unless the Overseeing Organisation agrees that minor defects can be sprayed with a plastic paint within 24 hours of erection.
5. Where wire mesh is attached at time of erection of high tensile stranded wire fencing, droppers and some line wires may be omitted as shown.
6. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.