**Reasoned Document for Item Specific Guidelines & Schedule of Technical Requirements for manufacture of Fabricated Curved Switches:**

<table>
<tr><th>SN</th><th>Provisions of Existing Document</th><th>Provisions of Document uploaded on RDSO's website for comments of stakeholders</th><th>Comments of stakeholders</th><th>RDSO's remark & change in specification</th></tr>
<tr><td>1.</td><td>Document No. : TDG 0018, 0019 & 0020 Rev. '0'</td><td>Document No. : ~~QC-G-7.1-18~~ TDG 0018 (Version 1.0)</td><td>No comments received.</td><td>Document No. : TDG 0018 (Version 1.0) is renamed as "Document No. : TDG 0018" as version detail are already mentioned on header of this document.</td></tr>
<tr><td>2.</td><td>Document Title:<br>Item Specific Guidelines for manufacture of Fabricated Curved Switches and Fabricated Crossings</td><td>Document Title:<br>Item Specific Guidelines & Schedule of Technical Requirements for manufacture of Fabricated Curved Switches and Fabricated Crossings</td><td>M/s Veera Technotrec Pvt. Ltd., Rohtak<br><br>Item Specific Guidelines & Schedule of Technical Requirements for manufacture of Fabricated Curved Switches</td><td>Comment of M/s Veera Technotrec Pvt. Ltd., Rohtak is acceptable as the item Fabricated Crossings is decontrolled.<br>The specification title is changed to "Item Specific Guidelines & Schedule of Technical Requirements for manufacture of Fabricated Curved Switches ~~and Fabricated Crossings,~~"</td></tr>
<tr><td>3.</td><td>--</td><td>1.0 Amendment History:<br><table><tr><th>S. No.</th><th>Amend-ment Date</th><th>Ver-sion Versi on</th><th>Reason for Amendment</th></tr><tr><td>1.</td><td>01.12.2001</td><td>0.0</td><td>First Issue under new documentation system</td></tr><tr><td>2.</td><td>00.00.2023</td><td>1.0</td><td>1. In Para-3 (i.e. Scope of Application) 'Initial capability assessment' is changed to 'Fresh vendor registration', a word 'approved list of vendor' is modified from 'approved list' and the line 'The competent authority wherever referred to in this document shall mean Executive Director, Quality Assurance Civil Dte'., is deleted<br>~~2.~~ Table-8 (i.e. Responsibility and Authority) and Table-9 (i.e. Abbreviations) are revised.<br>3. 1:16 is added in addition</td></tr></table></td><td>M/s Veera Technotrec Pvt. Ltd., Rohtak<br><br><u>For SN 3</u>:-<br><br>1:20 should also be added.<br><br><u>For SN 4</u>:-<br><br>Planning Machines can be replaced with Plano Milling Machine in phased manner. CNC Plano Milling machine can be 'optional'.</td><td><u>For SN 3</u>:-<br><br>Comment of M/s Veera Technotrec Pvt. Ltd., Rohtak' is acceptable & 1:20 is added accordingly.<br><br><u>The Para revised as</u><br><br>"3. 1:20 & 1:16 is added in addition 1:12 & 1:8½ Fabricated Curve Switch in the heading, ITEM SPECIFIC GUIDELINES FOR ASSESSMENT / QUALITY AUDIT OF FIRMS MANUFACTURING and Para -1 , Para-2, Para-5 under thereof."<br><br><u>For SN 4</u>:-</td></tr>
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|---|---|---|---|---|---|---|---|
| | | | | | 1:12 & 1:8½ Fabricated Curve Switch in the heading, ITEM SPECIFIC GUIDELINES FOR ASSESSMENT / QUALITY AUDIT OF FIRMS MANUFACTURING, and Para -1 , Para-2, Para-5 under thereof<br>**4.** Planning Machine requirement to be replaced with CNC Plano Milling Machine (i.e. 'Optional' in phased manner).<br>**5.** Electronic dimensional measurements with auto recording facility is added in this document at Minimum Facilities & Machineries required.<br>**6.** New Para added in Item Specific Guidelines for minimum quantity for up gradation of the firm from developmental vendor to Approved vendor<br>**7.** New Para added in Section –III: Declaration | | Comment of **M/s Veera Technotrec Pvt. Ltd., Rohtak** is not acceptable as the function of Planning Machines is different with Plano Milling Machine and Plano Milling Machine is required for formation of relief planning in the Fabricated Curved Switches. |
| 4. | -- | | | | **2.0 Purpose:**<br><br>This guideline covers all technical requirement for manufacture and supply of Fabricated Curved Switch and Fabricated Crossings used for Initial capability assessment / Fresh vendor registration / Quality Audit of Vendor. These guidelines replaces the provisions of earlier guidelines issued on the subject ~~i.e., QC-G-7.1-14 rev '0'~~ TDG 0018, 0019 & 0020 Rev. '0'. | No comments received. | Item Fabricated Crossings is decontrolled therefore Fabricated Crossings is deleted.<br><br>**<u>The Para revised as</u>**<br><br>**"2.0 Purpose:**<br><br>This guideline covers all technical requirements for manufacture and supply of Fabricated Curved Switch ~~and Fabricated Crossings~~ used for Initial capability assessment / Fresh vendor registration / Quality Audit of Vendor. These |

<table>
<tr><td></td><td></td><td></td><td></td><td>guidelines replaces the provisions of earlier guidelines issued on the subject TDG 0018, 0019 & 0020 Rev. ‘0’”.</td></tr>
<tr><td>5.</td><td>--</td><td>3.0 Scope of Application:<br>This shall be applicable for Initial capability assessment / Fresh vendor registration, Quality Audit, Up-gradation of Vendors and maintaining their ~~approved~~ Vendor list. In case of any variation between the procedure / provision given in the work instructions and that in this ‘Item Specific Guidelines’, the later shall prevail. The competent authority wherever referred to in this document shall mean Executive Director Track – II / Principal Executive Director, Infra-I.</td><td>No comments received.</td><td>No change</td></tr>
<tr><td>6.</td><td>--</td><td>4.0 Procedure / Details:<br>Procedure / details are annexed.</td><td>No comments received.</td><td>No change</td></tr>
<tr><td>7.</td><td>--</td><td>5.0 Referred Document:<br><table><tr><th>S. No.</th><th>Document Name</th><th>Document No.</th></tr><tr><td>1.</td><td>~~Indian Railway Standard Specification IRS: T-10-2000~~<br>Indian Railway Standard Specification for Fabricated Switches and Crossings, Welded/Heat Treated Crossings and Switch Expansion Joints (SEJ)</td><td>~~NIL~~<br>IRS: T-10-2023 (latest revision)</td></tr></table></td><td>No comments received.</td><td>No change</td></tr>
<tr><td>8.</td><td>--</td><td>6.0 Referred Documents of External Origin:<br>None.</td><td>No comments received.</td><td>No change</td></tr>
<tr><td>9.</td><td>--</td><td>7.0 Associated Records:<br>None.</td><td>No comments received.</td><td>No change</td></tr>
<tr><td>10.</td><td>--</td><td>8.0 Responsibility and Authority:<br><table><tr><th>Activity</th><th>Responsible</th><th>Approver</th><th>Supporting</th><th>Consulted</th><th>Informed</th></tr><tr><td>Creation, maintenance of this document</td><td>ED/Track Design-II/ Director/Track Design-III</td><td>PED/Infra-I</td><td>DD/AIE/ ADE</td><td>M&C Dte.</td><td>All vendors / concerned through website</td></tr><tr><td>Compliance of directives contained in this document</td><td>DD/AIE/ADE</td><td>Director/ Track Design-III</td><td>-</td><td>-</td><td>-</td></tr><tr><td>Requirement of deviation from this directive</td><td>ED/Track Design-II/ Director/Track Design-III</td><td>PED/ Infra-I</td><td>DD/AIE/ ADE</td><td>M&C Dte.</td><td>All vendors / concerned through website</td></tr></table></td><td>No comments received.</td><td>No change</td></tr>
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<td>11.</td>
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<td>9.0 Abbreviations:<br><table>
<tr><td>PED/ Infra-I</td><td>Principal Executive Director/ Infrastructure-I.</td></tr>
<tr><td>ED/ Track Design-II</td><td>Executive Director/ Track Design-II</td></tr>
<tr><td>RDSO</td><td>Research Designs & Standards Organisation</td></tr>
<tr><td>M&C Dte.</td><td>Metallurgical & Chemical Directorate</td></tr>
<tr><td>DD</td><td>Deputy Director</td></tr>
<tr><td>AIE</td><td>Assistant Inspecting Engineer</td></tr>
<tr><td>ADE</td><td>Assistant Design Engineer</td></tr>
</table></td>
<td>No comments received.</td>
<td>No change</td>
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<td>12.</td>
<td>Item Specific Guidelines for Assessment/Reassessment of firms manufacturing 1:12, 1:8.5 Fabricated Curved Switches & Fabricated Crossing<br><br>In addition to the “General Guidelines for Vendor Approval”, the following shall also be applicable for assessment / re-assessment of firms for manufacturing 1:12 and 1:8.5 Fabricated curved switches and Fabricated crossings:<br>i) Separate list shall be maintained for 1:12 Fabricated curved switches, 1:8½ Fabricated curved switches and fabricated crossings.<br>ii) For the purpose of assessment of switches, the firm vendor shall be required to manufacture proto-type of the design for which the firm has to be approved comprising of two sets - one set of left hand and one set of right-hand switch complete. One set of switch shall consist of two tongue rails, two stock rails and all components as per Part List of the respective drawing.<br>iii) For the purpose of assessment of fabricated crossings, one set of proto-type of any design shall be required to be manufactured.<br>iv) For the purpose of assessment of the firm for switches, one sample set of switch (either left hand or right hand switch) of the design for which the firm is approved shall be required to be offered for inspection. In case, the firm is approved in both the lists i.e. for 1:12 curved switches, 1:8½ curved switches, the sample set of one design can be offered for inspection.<br>v) For the purpose of re-assessment of fabricated crossings, one sample set of any design will be required to be offered for inspection.<br>vi) The gauges shall be approved / revalidated at the time of inspection of infrastructural facilities during assessment/ reassessment of the firm.<br>vii) The inspection gauges and proto-type shall be required to be approved by RDSO for each design of Switches / Crossings on order before regular</td>
<td>Item Specific Guidelines for ~~Assessment~~ Initial capability assessment / Fresh vendor registration, Quality Audit of ~~firms~~ vendor for manufacturing of 1:20, 1:16, 1:12 and 1:8.5 Fabricated Curved Switches ~~& Fabricated Crossing~~<br><br>In addition to the “ISO Apex document (latest version) of RDSO” the following specific guidelines shall also be applicable for ~~assessment/re-assessment~~ Initial capability assessment / Fresh vendor registration, Quality Audit of ~~firms~~ vendors for manufacturing 1:20, 1:16, 1:12 and 1:8.5 Fabricated curved switches and ~~Fabricated crossings:~~<br>~~1) Separate list shall be maintained for 1:12 Fabricated curved switches, 1:8 ½ and 1:16 Fabricated curved switches and fabricated crossings.~~ Vendor list shall be maintained for variants of 1:20, 1:16, 1:12 and 1:8.5 Fabricated curved switches.<br>2) For the purpose of ~~assessment~~ fresh approval of vendor for manufacturing of Fabricated curved switches, the ~~firm~~ vendor shall be required to manufacture Prototype sets of Fabricated curved switches for any of the design/ drawing (variant) comprising of two sets-one set of left hand and one set of right-hand Fabricated curved switch complete. One set of switches shall consist of two tongue rails, two stock rails and all components as per Part List of the respective drawing. Prototype approval for the other variants shall be carried out subsequently as and when offered by the vendor.<br>~~3) For the purpose of assessment of fabricated crossings, one set of proto-type of any design shall be required to be manufactured.~~<br>4) For the purpose of ~~assessment~~ Quality Audit of the ~~firm~~ vendor for Fabricated curved switches, one sample set of Fabricated curved switch (either left hand or right hand switch) of any design/ drawing (variant) ~~the design for which the firm is approved shall be required to be offered for inspection. In case, the firm is approved in both the lists i.e., for 1:12 curved switches, 1:8 ½ curved switches and 1:16 curved switches the sample set of one design~~ can be offered for inspection, provided vendor is approved for that variant.<br>~~5) For the purpose of re-assessment of fabricated~~</td>
<td>No comments received.</td>
<td>No change</td>
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<td></td>
<td>production.</td>
<td>~~crossings, one sample set of any design will be required to be offered for inspection.~~<br>6) The gauges shall be approved / revalidated at the time of inspection of infrastructural facilities during ~~assessment/reassessment~~ Fresh vendor registration / Quality audit of the firm.<br>7) The inspection gauges and Prototype sets shall be required to be approved by RDSO for each design of Switches/~~Crossings~~ on order before regular production.<br>8) For up gradation of the vendor from “Developmental vendor” to “Approved vendor”, the minimum quantity of Fabricated curved switches of any design/ drawing (variant) is required i.e. 75 sets, and as per ISO Apex documents of RDSO.</td>
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<td>13.</td>
<td>Minimum Facilities & Machineries required for manufacture of Fabricated Curved Switches and Fabricated Crossings
<table>
<tr><th>S. N.</th><th>Description</th><th>Minimum Capacity</th><th>Minimum Quantity</th></tr>
<tr><td>1</td><td>Covered Area</td><td>-</td><td>1500 $m^2$</td></tr>
<tr><td>2</td><td>Gantry Crane facilities</td><td>4 T</td><td>1 No.</td></tr>
<tr><td>3</td><td>Circular saw/ circular band saw</td><td>900 mm dia.</td><td>1 No.</td></tr>
<tr><td>4</td><td>Hydraulic horizontal bending / straightening machines</td><td>350-500 T</td><td>1 No.</td></tr>
<tr><td>5</td><td>Radial drill</td><td>32 mm dia.</td><td>1 No.</td></tr>
<tr><td>6</td><td>Shapers</td><td>600 mm stroke</td><td>3 Nos.</td></tr>
<tr><td rowspan="3">7</td><td rowspan="3">Planning machines</td><td>i) 13 m stroke</td><td>1 No.</td></tr>
<tr><td>ii) 8.5m stroke</td><td>1 No.</td></tr>
<tr><td>iii) 5m stroke</td><td>1 No.</td></tr>
<tr><td rowspan="2">8</td><td>i) Universal Testing Machine</td><td>40 T (minimum)</td><td>1 No.</td></tr>
<tr><td>ii) Charpy impact testing machine</td><td>-</td><td>1 No.</td></tr>
<tr><td>9</td><td>Compressor with riveting arrangement</td><td>-</td><td>One complete set including furnace & riveting gun etc</td></tr>
</table>
</td>
<td>Minimum Facilities & Machineries required for manufacture of Fabricated Curved Switches and Fabricated Crossings<br>(Schedule of Technical Requirements)
<table>
<tr><th>S. N.</th><th>Description</th><th>Minimum Capacity</th><th>Minimum Quantity</th></tr>
<tr><td>1</td><td>Covered Area</td><td>-</td><td>1500 $m^2$</td></tr>
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<tr><td>iii) 5m stroke</td><td>1 No.</td></tr>
<tr><td>CNC Plano-Milling machine (optional)</td><td>iv) 13 m stroke</td><td>1 No.</td></tr>
<tr><td>8</td><td>Universal Testing Machine</td><td>40 T (minimum)</td><td>1 No.</td></tr>
<tr><td>9</td><td>Charpy impact testing machine</td><td>-</td><td>1 No.</td></tr>
<tr><td>10</td><td>Hardness tester Poldi / Rockwell</td><td>-</td><td>1 No.</td></tr>
<tr><td>11</td><td>Compressor with riveting arrangement</td><td>-</td><td>One complete set including furnace & riveting gun etc</td></tr>
<tr><td>12</td><td>$CO_2$ / Mig welding equipment</td><td>-</td><td>One complete set with approved brand of welding</td></tr>
</table>
</td>
<td>1. M/s Veera Technotrec Pvt. Ltd., Rohtak:-<br>i) At S.N. 6:-<br>1 No. is sufficient for maintenance purpose.<br>ii) At S.N. 7:-<br>CNC Plano – Milling machine (optional)<br>iii) At S.N. 18:-<br>Electronic Dimensional measurements with auto recording facility can be implemented in combination with RDSO approved gauges<br>2. M/s Hindusthan Engineering Industries Ltd., Kolkata:<br>At S.N. 18:-<br>i) It will be more helpful if some more details specification of “Electronic Dimensional measurements with auto recording facility” i.e., Size,</td>
<td>i) Item Fabricated Crossings is decontrolled therefore Fabricated Crossings is deleted.<br>ii) At S.N. 6:-<br>Comment of M/s Jekay International Track Pvt. Ltd, M/s RV Rail Products Pvt. Ltd. & M/s Ganpati Industrial Pvt. Ltd. Is partially acceptable and M/s Veera Technotrec Pvt. Ltd., Rohtak & Track design Inspection Unit is acceptable as therefore numbers of shaper is reduce from 03Nos. to 01Nos. and 01Nos. Plano milling machine added as Plano Milling Machine is required for formation of relief planning in the Fabricated Curved Switches.<br>iii) At S.N. 7:-<br>Comment of M/s Veera Technotrec Pvt. Ltd., Rohtak is already incorporated hence no modification required & Comments from Track design (Inspection Unit) is acceptable as Plano Milling Machine is required for formation of relief planning in the Fabricated Curved Switches. Therefore, 01 Nos. Plano milling machine added.<br>iv) At S.N. 10:-<br>Comments from Track design (Inspection Unit) is acceptable however, it either 01Nos. Brinell Hardness testing machine/Rockwell Hardness</td>
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| 10 | $CO_2$ / Mig welding equipment | - | One complete set with approved brand of welding wires |
| 11 | Hardness tester Poldi / Rockwell | - | 1 No. |
| 12 | Jigs & fixtures for drilling stock & tongue rails for switches & fabricated crossings. | - | At least one set for each item separately |
| 13 | Assembly & Inspection Bay | - | A separate area to be dedicated with proper levelled flooring |
| 14 | Chemical lab | For Chemical Analysis of MS, Medium & Low alloy steel | 1 Unit installed in house |
| 15 | Non-destructive testing facilities | i) USFD | 1 No. |
| | | ii) D.P. test | 1 No. |
| | | iii) Magna flux | 1 No. |
| | | iv) Metallurgical Microscope | 1 No. |
| | | v) Polishing Machine. | 1 No. |
| 16 | Dedicated area with all above machines installed in proper flow line. | - | 1500 $m^2$ |

| | | | |
|---|---|---|---|
| | | | wires |
| 13 | Jigs & fixtures for drilling stock & tongue rails for switches & fabricated crossings. | - | At least one set for each item separately |
| 14 | Assembly & Inspection Bay | - | A separate area to be dedicated with proper levelled floor |
| 15 | Chemical lab | For Chemical Analysis of MS, Medium & Low alloy steel or Spectrometer | 1 Unit installed in house |
| 16 | Non-destructive testing facilities | i) USFD | 1 No. |
| | | ii) D.P. test | 1 No. |
| | | iii)Magnaflux | 1 No. |
| | | iv)Metallurgical Microscope | 1 No. |
| | | v)Polishing Machine. | 1 No. |
| 17 | Dedicated area with all above machines installed in proper flow line. | - | 1500 $m^2$ |
| 18 | Electronic Dimensional measurements with auto recording facility | Adequate for measurement of Tongue rail machining from ATS to JOH/ critical points (as per drawing) | 1 No. |

Range, Accuracy etc. is mentioned in the STR.

ii) Presently the Fabricated Curved Switches are machined on Planer Machines and no such surface finish is mentioned in the machined surface of Tongue Rails. Whether CMM can give exact dimensional accuracy in this case?

### 3. M/s Jekay International Track Pvt. Ltd, Raipur M/s RV Rail Products Pvt. Ltd. & M/s Ganpati Industrial Pvt. Ltd., Raipur:-

| S.N. | Description |
|---|---|
| 6 | It is no more needed for manufacturers who have a Plano Milling Machine. It may be deleted |
| 18 | As the dimension of the Fabricated Switches is adequate for measurement of Tongue Rail machining from ATS to JOH/Critical point (as per Drawing) are measured by approved gauges and said gauge drawings are already approved by RDSO. So it is not required. |

### 4. Track Design Dte. (Inspection Unit):-

| S.N. | Description |
|---|---|
| 6 | Only 01 shaper will be sufficient if 01 Plano miller is added. |
| 7. | "At least 01 Plano milling machine"<br>Plano milling machine is required for formation of relief at the Switch foot. |
| 10. | "01 No. Brinell Hardness testing machine"<br>Brinell Hardness testing machine is required. |
| 15 | "Spectrometer with printing |

testing machine along with 01Nos. Poldi.

### v) At S.N. 15:-

Comments from **Track design (Inspection Unit)** is acceptable regarding "Spectrometer with printing facilities" and incorporated accordingly however, comment on Chemical Lab may be replaced with Spectrometer in phased manner is not acceptable it either 01unit chemical lab or 01 Nos. Spectrometer hence no change.

### vi) At S.N. 18:-

i) Comment of **M/s Veera Technotrec Pvt. Ltd., Rohtak** regarding use of Electronic Dimensional measurements with auto recording facility can be implemented in combination with RDSO approved gauges is implemented in combination with RDSO approved already given in STR.

ii) Comment of **M/s Hindusthan Engineering Industries Ltd., Kolkata** is not acceptable as it is the requirement of specification (IRS: T-10-2023) issued vide this office letter no. CT/Specification/T-10 dated 28.02.2023 to all stakeholder and as Para 7.4 of this specification that :

" As the geometry of the Fabricated Switches, Crossings & SEJs is complex at several locations, hence for capturing various dimensional tolerances of the various track components covered in this specification, their critical dimensions can also be measured with the help of electronic methods of measurement like computer-based Coordinate Measuring Machines (CMM) duly calibrated by a reputed lab. The electronic method of measurement should have facility for preservation of the records of measurements."

"Electronic Dimensional measurements with auto recording facility" i.e., Size, Range,

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|---|---|---|---|---|---|
| | | | | facilities"<br>Chemical Lab may be replaced with Spectrometer in phased manner | Accuracy etc and exact dimensional accuracy will be adequate for measurement of Tongue rail machining from ATS to JOH/ critical points (as per drawing)<br><br>**The Para revised as**<br><br>**Minimum Facilities & Machineries required for manufacture of Fabricated Curved Switches ~~and Fabricated Crossings~~**<br><br>**(Schedule of Technical Requirements)** |

| S. N. | Description | Minimum Capacity | Minimum Quantity |
|---|---|---|---|
| 6 | Shapers | 600 mm stroke | ~~3 Nos.~~ 1 No. |
| 7 | Planning machines | iv) 13 m stroke | 1 No. |
| | | v) 8.5m stroke | 1 No. |
| | | vi) 5m stroke | 1 No. |
| | Plano- Milling machine | vii) 5m stroke | 1 No. |
| | CNC Plano-Milling machine (optional) | viii) 13 m stroke | 1 No. |
| 10 | ~~Hardness tester Poldi / Rockwell~~ Hardness testers<br>a) Brinell Hardness testing machine / Rockwell Hardness testing machine<br>b) Poldi | -<br><br>BHN hardness tester with ball size 2.5 to 10 mm dia.<br>- | ~~1 No.~~<br><br>1 No.<br><br>1 No. |
| 15 | Chemical lab OR Spectrometer | For Chemical Analysis of MS, Medium & Low alloy steel OR Spectrometer having vacuum emission CCD/PMT | 1 Unit installed in house for wet chemical analysis OR 1 No. Spectr |

| | | | | |
|---|---|---|---|---|
| | | | | <table><tr><td></td><td></td><td>with printing facilities should be available for carrying out chemical analysis</td><td>ometer</td></tr></table><br>* The CNC Plano milling machine shall be installed and shall be in working order at the firm's premises in India to handle thick web and stock rails in the required length (minimum table length of 13m) in one setup for milling operation along all x, y & z axes without handling/ re-handling of rails involved in fabrication of tongue and stock rails. The firm shall furnish complete details of this machine such as performance characteristics, machining length, number of milling heads, make & photographs etc. |
| 14. | **ASSESSMENT PERFORMA FOR APPROVAL OF MANUFACTURE (FRESH / RENEWAL) OF FABRICATED CURVED SWITCHES AND FABRICATED CROSSINGS.**<br>(To be prepared in duplicate)<br>**SECTION–I: GENERAL INFORMATION**<br><br>**1.** Name of the firm :<br>**2.** Postal address of :<br>2.1. Head office :<br>2.2. Works :<br>**3.** Telephone No. (with STD Code):<br>3.1. Head office :<br>3.2. Works :<br>**4.** E-mail address :<br>4.1. Head office :<br>4.2. Works:<br>**5.** Description of works:<br>5.1. Total land area (in Sq. meters) :<br>5.2. Total covered area (in Sq. meters) :<br>5.3. Different sub-units:<br>5.4. A fully dimensioned plan of the works showing covered area and different shops shall be enclosed :<br>5.5. Special features, if any:<br>**6.** Number of personnel employed (category-wise)<br>6.1. Managerial :<br>6.2. Supervisory :<br>(Enclose list of Managers / Technical Supervisors)<br>6.3. Skilled / Artisans : | **ASSESSMENT PERFORMA FOR APPROVAL OF MANUFACTURE (FRESH / RENEWAL) OF FABRICATED CURVED SWITCHES ~~AND FABRICATED CROSSINGS~~**<br><br>(To be prepared in duplicate)<br>**SECTION–I: GENERAL INFORMATION**<br><br>**1.** Name of the firm :<br>**2.** Postal address of :<br>2.1. Head office :<br>2.2. Works :<br>**3.** Telephone No. (with STD Code):<br>3.1. Head office :<br>3.2. Works :<br>**4.** E-mail address :<br>4.1. Head office :<br>4.2. Works:<br>**5.** Description of works:<br>5.1. Total land area (in Sq. meters) :<br>5.2. Total covered area (in Sq. meters) :<br>5.3. Different sub-units:<br>5.4. A fully dimensioned plan of the works showing covered area and different shops shall be enclosed :<br>5.5. Special features, if any:<br>**6.** Number of personnel employed (category-wise)<br>6.1. Managerial :<br>6.2. Supervisory :<br>(Enclose list of Managers / Technical Supervisors)<br>6.3. Skilled / Artisans :<br>6.4. Unskilled : | No comments received. | No change |

| | | | | |
|---|---|---|---|---|
| | 6.4. Unskilled :<br>**7.** Hours of working :<br>**8.** Weekly off day :<br>**9.** State whether the firm is already in approved List with RDSO for supply of Switches / crossings. If so, please give details of last approval.<br>9.1. Letter dated and issued by<br>9.2. Date of expiry of validity of approval.<br>**10.** Details of important orders executed in past for switches and crossings separately. :<br>10.1. To other important firms / companies / undertakings.<br>10.2. Directly to Railways. | **7.** Hours of working :<br>**8.** Weekly off day :<br>**9.** State whether the firm is already in ~~approved~~ Vendor List ~~with RDSO~~ for supply of Fabricated Switches~~/crossings~~. If so, please give details of last approval.<br>9.1. Letter dated and issued by<br>9.2. Date of expiry of validity of approval.<br>**10.** Details of important orders executed in past for switches and crossings separately<br>10.1. To other important firms / companies / undertakings.<br>10.2. Directly to Railways. | | |
| 15. | **SECTION II: TECHNICAL INFORMATION**<br>1. Production Capacity-<br>i) Per month<br>ii) Per Year<br>2. Type of Stores/Items which the firm is capable of manufacturing:<br>3. Crane facilities No. of cranes Make of crane capacity<br>3.1 EOT Crane<br>3.2 Mobile Crane<br>3.3 Jib Crane-<br>4. Total Power Availability (in kVA / kW )<br>a) From the State Electricity Board or other regular source (Enclose a copy of current electricity bill).<br>b) From own stand by generating sets (Also give make, capacity and other details of each generating set).<br>5. Machines (For manufacturing of Points and Crossings and related components) | **SECTION II: TECHNICAL INFORMATION**<br>1. Production Capacity-<br>i) Per month<br>ii) Per Year<br>iii) Type of Stores/Items which the firm is capable of manufacturing:<br>3. Crane facilities No. of cranes Make of crane capacity<br>3.1 EOT Crane<br>3.2 Mobile Crane<br>3.3 Jib Crane-<br>~~4.~~ Total Power Availability (in kVA / kW)<br>~~a)~~ From the State Electricity Board or other regular source (Enclose a copy of current electricity bill).<br>~~b)~~ From own stand by generating sets (Also give make, capacity and other details of each generating set).<br>5. Machines (For manufacturing of Fabricated curved switches and related components) | **Track Design Dte. (Inspection Unit):-**<br>Type of Stores/Items which the firm is capable of manufacturing should be given S.N.2<br>**M/s Veera Technotrec Pvt. Ltd., Rohtak:-**<br>i) The Title "Type of Stores/Items which the firm is capable of manufacturing" should be given Sl. No. 2 in place of Sl. No.1 (iii).<br>ii) Machines (For manufacturing of Fabricated curved switches and related components) | Comment of **M/s Veera Technotrec Pvt. Ltd., Rohtak** regarding "Type of Stores/Items which the firm is capable of manufacturing should be given S.N.2 in place of Sl. No.1 (iii)" is acceptable and corrected.<br>Comment of **Track Design Dte. (Inspection Unit), M/s Veera Technotrec Pvt. Ltd., Rohtak, M/s Jekay International Track Pvt. Ltd, Raipur, M/s R.V. Rail Products Pvt. Ltd., Raipur & M/s Ganpati Industrial Pvt. Ltd., Raipur** regarding item no. 5 of Section II: Technical Information, **SN 5.3,5.4,5.9,5.10,5.11,5.12,5.13,5.14,5.17,5.20, 9.5.8, 9.5.9, 9.5.10, 9.5.12, 9.5.13, 9.5.14, SN 7.5,SN13,** addition of **Drilling Jig & Fixture for drilling of tie plate for Tie** are as under: |

| S. No. | Name of Machine | No. of Machine | Make of the Machine | Size & capacity of Machine |
|---|---|---|---|---|
| 5.1 | Circular band /Circular Saw | | | |
| 5.2 | Radial Drill | | | |
| 5.3 | Hydraulic Bending Machine (Horizontal 350 T & 500T) | | | |
| 5.4 | Milling Machine | | | |
| 5.5 | Shapers | | | |
| 5.6 | Pillar Drills | | | |
| 5.7 | Grinding | | | |

| S. No. | Name of Machine | No. of Machine | Make of the Machine | Size & capacity of Machine |
|---|---|---|---|---|
| 5.1 | Circular band Saw | | | |
| 5.2 | Radial Drill | | | |
| 5.3 | Hydraulic Bending Machine (Horizontal 350 T & 500T) | | | |
| 5.4 | Milling Machine | | | |
| 5.5 | Shapers | | | |
| 5.6 | Pillar Drills | | | |
| 5.7 | Grinding Machine | | | |
| 5.8 | Portable Grinders | | | |
| 5.9 | Power Hammer | | | |
| 5.10 | Forging Press | | | |
| 5.11 | Forming Press | | | |

| S. No. | Comments/Suggestion |
|---|---|
| 5.3 | Hydraulic Bending Machine (Horizontal 350 T to 500T) |
| 5.4 | Plano Milling Machine required |
| 5.9 | Not required may be deleted |
| 5.10 | Not required may be deleted |
| 5.11 | Not required may be deleted |
| 5.12 | Not required (Slide chair straightening can be done on Horizontal Hydraulic Press) |
| 5.13 | "Oil Fired/Coal Fired furnace/Induction furnace." |
| 5.14 | Electric welding sets (CO2 / Mig welding set) with approved brand of welding wires |

| S. No. | Comments/Suggestion | RDSO observation |
|---|---|---|
| 5.3 | Hydraulic Bending Machine (Horizontal 350 T to 500T) | Accepted corrected accordingly |
| 5.4 | Plano Milling Machine required | Accepted added accordingly |
| 5.9 | Not required may be deleted | Not Accepted |
| 5.10 | Not required may be deleted | Not Accepted |
| 5.11 | Not required may be deleted | Not Accepted |
| 5.12 | i) Not required(Slide chair | Accepted d can be done on Horizontal |

| | | | | |
|---|---|---|---|---|
| | Machine | | | |
| 5.8 | Portable Grinders | | | |
| 5.9 | Power Hammer | | | |
| 5.10 | Forging Press | | | |
| 5.11 | Forming Press | | | |
| 5.12 | Slide chair straightening machine | | | |
| 5.13 | Oil Fired Furnaces for rivets | | | |
| 5.14 | Electric welding sets (CO2 / Mig welding set) with RDSO approved brand of welding wires | | | |
| 5.15 | Gas-welding / Gas cutting Facilities (Including preheating arrangements ) | | | |
| 5.16 | Jim Crow | | | |
| 5.17 | Planning machines / having stroke of 5m, 8.5m, 10m & 13m. | | | |
| 5.18 | Air-compressor | | | |
| 5.19 | Pneumatic riveting Gun for 1:12 or flatter angle switches. | | | |

6. Heat Treatment Facilities

6.1 Heat Treatment facilities for high speed steel.

6.2 Heat treatment facility for hot die steel

6.3 hardening furnace

6.4 Tempering furnace.

6.5 Salt bath furnace.

7. Testing Equipment / facilities Nos. Make Size / Capacity

| | | | | |
|---|---|---|---|---|
| 5.12 | ~~Forming Press~~ Slide chair straightening machine | | | |
| 5.13 | Oil Fired Furnaces for rivets | | | |
| 5.14 | Electric welding sets (CO2 / Mig welding set) with ~~RDSO~~ approved brand of welding wires | | | |
| 5.15 | Gas-welding / Gas cutting Facilities (Including preheating arrangements) | | | |
| 5.16 | Jim Crow | | | |
| 5.17 | Planning machines / CNC Plano- Milling machine (optional) having stroke of 5m, 8.5m, ~~10m~~ & 13m. | | | |
| 5.18 | Air-compressor | | | |
| 5.19 | Pneumatic riveting Gun for 1:12 or flatter angle switches. | | | |
| 5.20 | Electronic Dimensional measurements with auto recording facility | | | |

| | |
|---|---|
| 5.17 | Planing Machine Planer/Plano Milling Machine having stroke of 5m, 8.5m, 10m & 13m<br>(CNC Plano Milling Machine optional having stroke of 5m, 8.5, 10m & 13m) |
| 5.20 | 1 No. required |
| -- | Drilling Jig for Tie Plate should be added. |

**M/s Jekay Internation Track Pvt. Ltd, M/s RV Rail Products Pvt. Ltd. & M/s Ganpati Industrial Pvt. Ltd.**

Machines (For manufacturing of Fabricated curved switches and related components)

| S. No. | Comments/Suggestion |
|---|---|
| 5.12 | Type of machine may be defined. We propose to use Hydraulic Press Machine with minimum capacity of 100 T |

**Track Design Dte. (Inspection Unit):-**

At SN 7.5 Brinell Hardness testing is required.

| | | |
|---|---|---|
| | straightening can be done on Horizontal Hydraulic Press)<br><br>ii) Type of machine may be defined. We propose to use Hydraulic Press Machine with minimum capacity of 100 T | Hydraulic Press deleted accordingly |
| 5.13 | "Oil Fired/Coal Fired furnace/Induction furnace." | Accepted corrected accordingly |
| 5.14 | Electric welding sets (CO2 / Mig welding set) with approved brand of welding wires | Already corrected |
| 5.17 | Planning Machine Planer/Plano Milling Machine having stroke of 5m, 8.5m, 10m & 13m<br>(CNC Plano Milling Machine optional having stroke of 5m, 8.5, 10m & 13m) | Not Accepted, however modified as given below:<br><br>i) Planning machines having stroke of 5m, 8.5m & 13m.<br>ii) CNC Plano-Milling machine (optional) having stroke of 13m. |
| 5.20 | 1 No. required | Quantity already mentioned in STR. Hence, here it is not required |
| In 8.1 | Drilling Jig for Tie Plate should be added. | Accepted added accordingly |
| 7.5 | Brinell Hardness testing is required. | Accepted however, it either 01Nos. Brinell Hardness testing machine/Rockwell Hardness testing |

7.1 Ultrasonic test of rails
7.2 Magnaflux

7.3 Tensile testing machine (UTM Machine)
7.4 Polishing Machine

7.5 Hardness testing machine
i)Poldi
ii) Rockwell
7.6 Charpy Impact testing machine
7.7 Lab for finding out the chemical composition of any sample.
7.8 Other NDT facilities (DP test etc.)

8. Handling facilities (It should be mentioned whether there is proper facilities for handling of finished switches & crossings)

9. Jigs and fixtures
9.1 Drilling Jigs (for switches)
Name of the Jigs No. of Jig Drg. No.
9.1.1 Tongue Rail Drilling Jig
9.1.2 Stock Rail Drilling Jig

9.1.3 Check Rail Drilling Jig

9.1.4 Drilling jigs for stretcher bars
9.1.5 Drilling jigs for slide chairs
9.1.6 Drilling jigs for Bearing Plates
9.1.7 Drilling jigs for Brackets
9.2 Drilling jigs for crossings
9.2.1 Point Rail Drilling Jig
9.2.2 Splice Rail Drilling Jig
9.2.3 Wing Rail Drilling Jig
9.2.4 Drilling Jigs for Diamond crossings
9.3 Bending Jigs & Fixtures

9.3.1 Jig & fixture for Tongue Rail (for switches)

9.3.2 Jig & fixture for Splice Rail (for normal & diamond crossings)

9.3.3 Jig & fixture for Point Rail (for normal & diamond crossings)

9.3.4 Jig & fixture for Wing Rail (for normal & diamond

**M/s Veera Technotrec Pvt. Ltd., Rohtak:-**

| | | |
|---|---|---|
| | | machine along with 01Nos. Poldi. |
| 9.5.8 | Fixtures for machining of bearing plates (for switches) not required | Accepted deleted accordingly |
| 9.5.9 | Fixtures for multiple drilling of slide chair base holes (for switches not required ) | Accepted deleted accordingly |
| 9.5.10 | Fixtures for Drilling (for switches) not required | Accepted deleted accordingly |
| 9.5.12 | Brackets (for switches) not required | Accepted deleted accordingly |
| 9.5.13 | Lugs (for switches) not required | Accepted deleted accordingly |
| 9.5.14 | Fixtures for Drilling of Special Chairs (for switches) not required | Accepted deleted accordingly |
| In 8.3 | Fixture for drilling of tie plate should be added | Accepted added accordingly |
| 13 | Railway siding facilities is Not applicable (should be deleted). | Accepted deleted accordingly |

**The Para revised as:-**

5. Machines (For manufacturing of Fabricated curved switches and related components)

| S. No. | Name of Machine | No. of | Make of | Size & |
|---|---|---|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | crossings)<br><br>9.3.5 Jig & fixture for Obtuse Elbow Rail (for normal & diamond crossings)<br><br>9.4 Fixtures for Milling (for crossings)<br><br>Fixtures for Milling Splice Rails<br><br>Fixtures for Milling Point Rails<br><br>9.5 Other Fixtures<br>Fixtures for planning of-<br>9.5.1 Tongue Rail Head Machining (for switches)<br>9.5.2 Tongue Rail Flange Machining (for switches)<br>9.5.3 Check Rail Machining (for switches)<br>9.5.4 Point Rail Machining (for crossings )<br>9.5.5 Splice Rail Machining (for crossings)<br>9.5.6 Wing Rail Machining (for crossings)<br>9.5.7 Assembled Vee Machining (for crossings)<br>9.5.8 Fixtures for machining of bearing plates (for switches)<br>9.5.9 Fixtures for multiple drilling of slide chair base holes (for switches)<br>9.5.10 Fixtures for drilling of Slide Chair Lug Hole (for switches)<br>9.5.11 Fixtures for Drilling (for switches)<br>9.5.12 Brackets (for switches)<br>9.5.13 Lugs (for switches)<br>9.5.14 Fixtures for Drilling of Special Chairs (for switches)<br>9.5.15 Fixtures required for the assembly of 'Vee' of all types and sizes (for crossings)<br>9.5.16 Fixtures for all sizes of blacks (for crossings)<br>9.5.17 Nose Block (for crossings)<br><br>**10.** Checking Gauges<br><br>Drawings of relevant inspection gauges for checking dimensions of switches, crossings & check rails etc including components shall be made available along with relevant gauges to inspecting agency at the time of Assessment / Reassessment. | ~~6. Heat Treatment Facilities~~<br><br>~~6.1 Heat Treatment facilities for high speed steel~~<br><br>~~6.2 Heat treatment facility for hot die steel~~<br><br>~~6.3 hardening furnace~~<br><br>~~6.4 Tempering furnace~~<br><br>~~6.5 Salt bath furnace~~<br><br>~~7.~~ Testing Equipment / facilities Nos. Make Size / Capacity<br>7.1 Ultrasonic test of rails<br>7.2 Magnaflux<br><br>7.3 Tensile testing machine (UTM Machine)<br>7.4 Polishing Machine<br><br>7.5 Hardness testing machine<br>i)Poldi<br>ii) Rockwell<br>7.6 Charpy Impact testing machine<br>7.7 Lab for finding out the chemical composition of any sample.<br>7.8 Other NDT facilities (DP test etc.)<br><br>~~8.~~ Handling facilities (It should be mentioned whether there is proper facilities for handling of finished switches & crossings)<br><br>~~9.~~ Jigs and fixtures<br><br>9.1 Drilling Jigs (for switches)<br>Name of the Jigs No. of Jig Drg. No.<br><br>9.1.1 Tongue Rail Drilling Jig<br>9.1.2 Stock Rail Drilling Jig<br><br>9.1.3 Check Rail Drilling Jig<br><br>9.1.4 Drilling jigs for stretcher bars<br>9.1.5 Drilling jigs for slide chairs<br>9.1.6 Drilling jigs for Bearing Plates<br>9.1.7 Drilling jigs for Brackets<br>~~9.2 Drilling jigs for crossings~~<br>~~9.2.1 Point rail Drilling Jig~~ | iii) Item mentioned at Para 9.5.8, 9.5.9, 9.5.10, 9.5.12, 9.5.13 & 9.5.14 is Not required.<br>iv) Fixture for drilling of tie plate should be added<br>v) SN 13, Railway siding facilities is Not applicable (should be deleted). | | | | | | |
| | | | | | | | | |

| | | | | |
|---|---|---|---|---|
| | | Machine | the Machine | capacity of Machine |
| 5.3 | Hydraulic Bending Machine (Horizontal 350 T & to 500T) | | | |
| 5.4 | Plano-Milling Machine having stroke of 5m | | | |
| ~~5.12~~ | ~~Slide chair straightening machine~~ | | | |
| ~~5.13~~ 5.12 | Oil Fired / Coal Fired / Induction Furnaces for rivets | | | |
| ~~5.14~~ 5.13 | Electric welding sets (CO2 / Mig welding set) with RDSO approved brand of welding wires | | | |
| ~~5.15~~ 5.14 | Gas-welding / Gas cutting Facilities(Including preheating arrangements) | | | |
| ~~5.16~~ 5.15 | Jim Crow | | | |
| ~~5.17~~ 5.16 | ~~Planning machines/ CNC Plano-Milling machine (optional) having stroke of 5m, 8.5m & 13m.~~<br>i) Planning machines having stroke of 5m, 8.5m & | | | |

**11.** Assembly of Vee / Crossing / Switches

It should be mentioned that how much leveled area is provided for the assembly section of each 'Vee', 'Crossing' and 'Switches' assembly.

**12.** Leveling -Jogan for laying the full turnout.

It should be mentioned whether there is sufficient leveled space for laying the turnout, it should also be mentioned that there are facilities for track gauge, Jim Crow, Crow Bar, Spirit level, hammer etc.

**13.** Railway siding facilities.

**14.** A fully dimensioned plan of the works showing locations of various equipment and facilities for the manufacture of Fabricated switches and crossings, flow line indicating location of various operations during manufacture in proper sequence and storage facilities for finished products and dispatch may please be enclosed.

**15. QUALITY ASSURANCE**

15.1 Does the factory has any established quality assurance programme as per ISO-9000:2015 series. If yes, please enclose a copy of the ISO-9000:2015 certificate.

15.2 Detail of quality assurance organization, Name of key personal, their qualification, designations and position in overall management structure (Enclose organizational chart for quality control)

15.3 Quality control testing facilities laboratory equipment available to be listed along with the make, year of procurement and commissioning.

15.4 Calibration of laboratory / test equipment / gauge. (Enclose copy of calibration certificate).

15.5 Frequency of calibration.

15.6 Source of procurement of raw materials / bought outs and steps taken to ensure their quality.

15.7 Brief details of manufacturing process as relevant to the items for which registration is sought (Switches and crossings separately).

15.8 Details of inspection / checks done on material during various stages of the above manufacturing process (Enclose copy of QAP of switches & crossing separately).

15.9 Has the acceptable value for the parameters

~~9.2.2 Splice Rail Drilling Jig~~
~~9.2.3 Wing Rail Drilling Jig~~
~~9.2.4 Drilling Jigs for Diamond crossings~~
9.3 Bending Jigs & Fixtures
9.3.1 Jig & fixture for Tongue Rail (for switches)
~~9.3.2 Jig & fixture for Splice Rail (for normal & diamond crossing)~~
~~9.3.3 Jig & fixture for Point Rail (for normal & diamond crossing)~~
~~9.3.4 Jig & fixture for Wing Rail (for normal & diamond crossing)~~
~~9.3.5 Jig & fixture for Obtuse Elbow Rail (for normal & diamond crossing)~~
~~9.4 Fixture for Milling (for crossings)~~
~~Fixture for Milling Splice Rails~~
~~Fixture for Milling Point Rails~~
~~9.5~~ Other Fixtures
Fixtures for planning of-
~~9.5.1~~ Tongue Rail Head Machining (for switches)
~~9.5.2~~ Tongue Rail Flange Machining (for switches)
~~9.5.3~~ Check Rail Machining (for switches)
~~9.5.4 Point Rail Machining (for crossings)~~
~~9.5.5 Splice Rail Machining (for crossings)~~
~~9.5.6 Wing Rail Machining (for crossings)~~
~~9.5.7 Assembled Vee Machining (for crossings)~~
9.5.8 Fixtures for machining of bearing plates (for switches)
9.5.9 Fixtures for multiple drilling of slide chair base holes (for switches)
9.5.10 Fixtures for drilling of Slide Chair Lug Hole (for switches)
9.5.11 Fixtures for Drilling (for switches)
9.5.12 Brackets (for switches)
9.5.13 Lugs (for switches)
9.5.14 Fixtures for Drilling of Special Chairs (for switches)
9.5.15 ~~Fixture required for the assembly of 'Vee' of all types and sizes (for crossings)~~
9.5.16 ~~Fixtures for all sizes of blacks (for crossings)~~
9.5.17 ~~Nose Block (for crossings)~~

**10.** Checking Gauges

Drawings of relevant inspection gauges for checking dimensions of switches, ~~crossings~~ & check rails etc including components shall be made available along with relevant gauges to inspecting agency at the time of ~~Assessment/Reassessment~~ Initial approval / Quality Audit.

**11.** Assembly ~~Vee/Crossing/~~ of Switches

| | | | | |
|---|---|---|---|---|
| | 13m.<br>ii) CNC Plano-Milling machine (optional) having stroke of 13m. | | | |
| ~~5.18~~ 5.17 | Air-compressor | | | |
| ~~5.19~~ 5.18 | Pneumatic riveting Gun for 1:12 or flatter angle switches. | | | |
| ~~5.20~~ 5.19 | Coordinate Measuring Machine (CMM) Electronic Dimensional measurements with auto recording facility | | | |

**6.** ~~7.~~ Testing Equipment/facilities Nos. Make Size / Capacity

6.1 ~~7.1~~ Ultrasonic test of rails
6.2 ~~7.2~~ Magnaflux
6.3 ~~7.3~~ Tensile testing machine (UTM Machine)
6.4 ~~7.4~~ Polishing Machine
6.5 ~~7.5~~ Hardness testing machine
i) Poldi
ii) Brinell / Rockwell
6.6 ~~7.6~~ Charpy Impact testing machine
6.7 ~~7.7~~ Lab for finding out the chemical composition of any sample.
6.8 ~~7.8~~ Other NDT facilities (DP test etc.)

**7.** ~~8.~~ Handling facilities (It should be mentioned whether there is proper facilities for handling of finished switches ~~& crossings~~)

**8.** ~~9.~~ Jigs and fixtures

| | | | | |
|---|---|---|---|---|
| | inspected during the above stages checks been laid down? If yes, the action taken if value of the parameters inspected does not meet the desired laid down value.<br>15.10 System for documentation of the results of the above stage check.<br><br>16. Whether one sample set of switches and crossing separately ready for inspection during reassessment (Report to be submitted by inspecting official).<br><br>17. Whether the firm is possessing officially issued prints of relevant drawings and specifications. | It should be mentioned that how much leveled area is provided for the assembly ~~section of each 'Vee', 'Crossing' and~~ 'Switches' ~~assembly~~.<br><br>**12.** Leveling -Jogan for laying the full turnout.<br><br>It should be mentioned whether there is sufficient leveled space for laying the turnout, it should also be mentioned that there are facilities for track gauge, Jim Crow, Crow Bar, Spirit level, hammer etc.<br><br>**13.** Railway siding facilities.<br><br>**14.** A fully dimensioned plan of the works showing locations of various equipment and facilities for the manufacture of Fabricated curved switches ~~and crossings,~~ flow line indicating location of various operations during manufacture in proper sequence and storage facilities for finished products and dispatch may please be enclosed.<br><br>**15. QUALITY ASSURANCE**<br><br>15.1 Does the factory has any established quality assurance programme as per ISO-9001:2015 series. If yes, please enclose a copy of the ISO-9001:2015 certificate.<br>15.2 Detail of quality assurance organization, Name of key personal, their qualification, designations and position in overall management structure (Enclose organizational chart for quality control)<br>15.3 Quality control testing facilities laboratory equipment available to be listed along with the make, year of procurement and commissioning.<br>15.4 Calibration of laboratory / test equipment / gauge. (Enclose copy of calibration certificate).<br>15.5 Frequency of calibration.<br>15.6 Source of procurement of raw materials / bought outs and steps taken to ensure their quality.<br>15.7 Brief details of manufacturing process as relevant to the items for which registration is sought (Fabricated Switches ~~and crossings~~ separately).<br>15.8 Details of inspection / checks done on material during various stages of the above manufacturing process (Enclose copy of QAP of switches ~~& crossing separately~~).<br>15.9 Has the acceptable value for the parameters inspected during the above stages checks been laid down? If yes, the action taken if value of the parameters inspected does not meet the desired laid down value.<br>15.10 System for documentation of the results of the above | | 8.1 ~~9.1~~ Drilling Jigs (for switches)<br><br>Name of the Jigs No. of Jig Drg. No.<br><br>Drg. No.<br>8.1.1 ~~9.1.1~~ Tongue Rail Drilling Jig<br>8.1.2 ~~9.1.2~~ Stock Rail Drilling Jig<br>8.1.3 ~~9.1.3~~ Check Rail Drilling Jig<br>8.1.4 ~~9.1.4~~ Drilling jigs for stretcher bars<br>8.1.5 9.1.5 Drilling jigs for slide chairs<br>8.1.6 ~~9.1.6~~ Drilling jigs for Bearing Plates<br>8.1.7 ~~9.1.7~~ Drilling jigs for Brackets<br>8.1.8 Drilling jigs for Tie plate<br><br>8.2 ~~9.3~~ Bending Jigs & Fixtures<br><br>8.2.1 ~~9.3.1~~ Jig & fixture for Tongue Rail (for switches)<br><br>8.3 ~~9.5~~ Other Fixtures<br>Fixtures for planning of-<br><br>8.3.1 ~~9.5.1~~ Tongue Rail Head Machining (for switches)<br>8.3.2 ~~9.5.2~~ Tongue Rail Flange Machining (for switches)<br>8.3.3 ~~9.5.3~~ Check Rail Machining (for switches)<br>~~9.5.8 Fixtures for machining of bearing plates (for switches)~~<br>~~9.5.9 Fixtures for multiple drilling of slide chair base holes (for switches)~~<br>~~9.5.10 Fixtures for drilling of Slide Chair Lug Hole (for switches)~~<br>~~8.3.4~~ ~~9.5.11~~ Fixtures for Drilling (for switches)<br>~~9.5.12 Brackets (for switches)~~<br>~~9.5.13 Lugs (for switches)~~<br>~~9.5.14 Fixtures for Drilling of Special Chairs (for switches)~~<br>8.3.5 Fixtures for Drilling of Tie plate<br><br>**9.** ~~**10.**~~ Checking Gauges<br>Drawings of relevant inspection gauges for checking dimensions of switches, ~~crossings~~ & check rails etc including components shall be made available |

| | | | | |
|---|---|---|---|---|
| | | stage check.<br><br>16. Whether one sample set of switches ~~and crossing separately~~ ready for inspection during ~~reassessment~~ Quality Audit (Report to be submitted by inspecting official).<br>17. Whether the firm is possessing officially issued prints of relevant drawings and specifications. | | along with relevant gauges to inspecting agency at the time of ~~Assessment / Reassessment~~ Initial approval / Quality Audit.<br><br>**10.** ~~**11.**~~ Assembly of Switches<br>It should be mentioned that how much leveled area is provided for the assembly 'Switches'.<br><br>**11.** ~~**12.**~~ Leveling -Jogan for laying the full turnout.<br>It should be mentioned whether there is sufficient leveled space for laying the turnout, it should also be mentioned that there are facilities for track gauge, Jim Crow, Crow Bar, Spirit level, hammer etc.<br><br>~~13. Railway siding facilities.~~<br><br>**12.** ~~**13.**~~ A fully dimensioned plan of the works showing locations of various equipment and facilities for the manufacture of Fabricated curved switches flow line indicating location of various operations during manufacture in proper sequence and storage facilities for finished products and dispatch may please be enclosed.<br><br>**13.** ~~**15**~~ **QUALITY ASSURANCE**<br><br>13.1 ~~**15.1**~~ Does the factory has any established quality assurance programme as per ISO-9000:2015 series. If yes, please enclose a copy of the ISO-9000:2015 certificate.<br>13.2 ~~**15.2**~~ Detail of quality assurance organization, Name of key personal, their qualification, designations and position in overall management structure (Enclose organizational chart for quality control)<br>13.3 ~~**15.3**~~ Quality control testing facilities laboratory equipment available |

| | | | | |
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| | | | | to be listed along with the make, year of procurement and commissioning.<br>13.4 ~~15.4~~ Calibration of laboratory / test equipment / gauge. (Enclose copy of calibration certificate).<br>13.5 ~~15.5~~ Frequency of calibration.<br>13.6 ~~15.6~~ Source of procurement of raw materials / bought outs and steps taken to ensure their quality.<br>13.7 ~~15.7~~ Brief details of manufacturing process as relevant to the items for which registration is sought (Switches).<br>13.8 ~~15.8~~ Details of inspection / checks done on material during various stages of the above manufacturing process (Enclose copy of QAP).<br>13.9 ~~15.9~~ Has the acceptable value for the parameters inspected during the above stages checks been laid down? If yes, the action taken if value of the parameters inspected does not meet the desired laid down value.<br>13.10 ~~15.10~~ System for documentation of the results of the above stage check.<br><br>**14.** ~~16~~ Whether one sample set of switches ready for inspection during Quality Audit (Report to be submitted by inspecting official).<br><br>**15.** ~~17~~ Whether the firm is possessing officially issued prints of relevant drawings and specifications. |
| 16. | **SECTION - III: DECLARATION**<br><br>(i) We do hereby declare that the above particulars are correct and no discrepancy shall be found during actual investigation before and during execution of order on our firm.<br><br>(ii) Any change in the plant and machinery and change of place of office and of works site shall be brought to the notice of RDSO for clearance and approval.<br><br>(iii) We also declare that our concern has not been black listed by Railway, Railway Board / RDSO | **SECTION - III: DECLARATION**<br><br>(i) We do hereby declare that the above particulars are correct and no discrepancy shall be found during actual investigation before and during execution of order on our firm.<br><br>(ii) Any change in the plant and machinery and change of place of office and of works site shall be brought to the notice of RDSO for clearance and approval.<br>(iii) We also declare that our concern has not been black listed by Railway, Railway Board / RDSO for business with the Railways.<br>(iv) We hereby undertake that all our equipments for | No comments received. | No change |

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| | for business with the Railways.<br><br>(iv) We hereby undertake that all our equipments for manufacturing and testing as listed above shall be maintained in good working order at all times.<br><br>Signature<br>Name in full of Signing Authority<br>Stamp of the Firm<br>Place :<br>Date: | manufacturing and testing as listed above shall be maintained in good working order at all times.<br>(v) We hereby declare that the contents and the instructions of latest ISO Apex Documents has been read and understood by us and our firm shall abide by all the stipulated laid therein.<br>(vi) We hereby undertake to maintain the record of the procurement of any raw material for production of Fabricated Curve Switch, supply of Fabricated Curve Switch and disposal of scrap of Fabricated Curve Switch in the proper format.<br><br>Signature<br>Name in full of Signing Authority<br>Stamp of the Firm<br>Place :<br>Date: | | |