

**Construction of Superstructure of Bridges in Bairabi-Sarang Section of N.F.Railway**

| Schedule |         | Schedule A-Execution of NS item of works   |      |          |             |                   |
|----------|---------|--|------|----------|-------------|-------------------|
| Item-1   |         |  |      |          |             |                   |
| SL No.   | Item No | Description of Item  | Unit | Qty      | Rate        | Amount            |
| 1        | 1       | <p>Supplying of all types of structural steel conforming to Fe 410 B0/Fe 450 B0, E250 B0 of IS 2062-2011, fabrication, transportation for each type of Girder, trial assembly, assembly erection/slewing/end launching of steel girders(Not requiring traffic block) on Sub-structure, surface preparation ,sand blasting, painting and metalizing etc., with approved brand complete in all respect as per approved drawing with contractor's materials and equipment as per drawing/specification, contract condition and as approved engineer in charge. The work also includes supply of HD bolts/HSFG bolts and nuts with anchorage, washer. Welding shall be done with electrode as per Railway approved drawing. The rate shall be inclusive of labour, tools&amp; plants viz. drilling machine, welding, compressor with gas cutter, oxygen, acetylene etc. complete in all respect with all lead/lift etc. fabrication is to be done as per specification laid in RDSO Booklet Sl. No. B-1-2001. Detailed sub-drawings for fabrication and erection and launching methodology will be prepared by the successful contractor and got approved from Railway. Rate includes fabrication of all the type of battens, bracings, ties, stiffeners, packing, diaphragms, shop rivets/welding, HSFG bolting, T&amp;P bolts, steel drifts, templates, jigs, fixtures, back up supports, accessories, templates staging of CC cribs of sufficient quantity for flooring and camber jacks. Mechanical and Hydraulic jacks(in sufficient number), steel wire ropes and with cribs launching arrangements and any other suitable requirement and marking each member for site identification and transporting various components from fabrication yard (If workshop is not at site) to bridge site in packages, bundles and other means with due care and safe guards as describes in the specification, including loading, unloading sorting member wise, systematic matching etc. and compete in all respect and it also include all inspection and testing of raw materials (excluding ultrasonic testing), erection of bearings in correct position, grouting of bolts and nuts, painting and metalizing of bearing along with minor modification in the bearing pedestal and pier caps accessories, transporting various components from fabrication shop to site, including loading, uploading lift and taxes complete, assembly of girders on drifts/bolts, field riveting/welding, assembling of temporary support for site slewing, raising of girders to the bed block level, providing sliding arrangement and slewing the girder in position, lowering of girder on bearing and bed plates, grouting holes in the bed block for fixing of HD bolts/anchor pins of bed plates, all temporary arrangements. Rate includes contractors own cranes of sufficient capacity and boom length, steel textiles as per site condition or floating barge of safe and adequate capacity or other manual/mechanical method of erection and launching of truss members/girders. Sand blasting and metalizing the bridge components with aluminium wire as per IRS B1-2001 including applying one coat of primer of IS-5666 &amp; followed by one coat Zinc chromate primer of IS-104 &amp; two coats of Aluminium paint of IS-2339 (One coat of Aluminium paint is to be applied before erection and another coat ofSupplying of all types of structural steel conforming to Fe 410 B0/Fe 450 B0, E250 B0 of IS 2062-2011, fabrication, transportation for each type of Girder, trial assembly, assembly erection/slewing/end launching of steel girders(Not requiring traffic block) on Sub-structure, surface preparation ,sand blasting, painting and metalizing etc., with approved brand complete in all respect as per approved drawing with contractor's materials and equipment as per drawing/specification, contract condition and as approved engineer in charge. The work also includes supply of HD bolts/HSFG bolts and nuts with anchorage, washer. Welding shall be done with electrode as per Railway approved drawing. The rate shall be inclusive of labour. tools&amp; plants viz. drilling machine. welding. compressor with gas cutter. oxygen. acetylene etc. complete in all</p> | MT   | 6600.000 | 1,72,829.18 | 1,14,06,72,614.40 |

**Construction of Superstructure of Bridges in Bairabi-Sarang Section of N.F.Railway**

respect with all lead/lift etc. fabrication is to be done as per specification laid in RDSO Booklet Sl. No. B-1-2001. Detailed sub-drawings for fabrication and erection and launching methodology will be prepared by the successful contractor and got approved from Railway. Rate includes fabrication of all the type of battens, bracings, ties, stiffeners, packing, diaphragms, shop rivets/welding, HSFG bolting, T&P bolts, steel drifts, templates, jigs, fixtures, back up supports, accessories, templates staging of CC cribs of sufficient quantity for flooring and camber jacks. Mechanical and Hydraulic jacks(in sufficient number), steel wire ropes and with cribs launching arrangements and any other suitable requirement and marking each member for site identification and transporting various components from fabrication yard (If workshop is not at site) to bridge site in packages, bundles and other means with due care and safe guards as describes in the specification, including loading, unloading sorting member wise, systematic matching etc. and compete in all respect and it also include all inspection and testing of raw materials (excluding ultrasonic testing), erection of bearings in correct position, grouting of bolts and nuts, painting and metalizing of bearing along with minor modification in the bearing pedestal and pier caps accessories, transporting various components from fabrication shop to site, including loading, uploading lift and taxes complete, assembly of girders on drifts/bolts, field riveting/welding, assembling of temporary support for site slewing, raising of girders to the bed block level, providing sliding arrangement and slewing the girder in position, lowering of girder on bearing and bed plates, grouting holes in the bed block for fixing of HD bolts/anchor pins of bed plates, all temporary arrangements. Rate includes contractors own cranes of sufficient capacity and boom length, steel textiles as per site condition or floating barge of safe and adequate capacity or other manual/mechanical method of erection and launching of truss members/girders. Sand blasting and metalizing the bridge components with aluminium wire as per IRS B1-2001 including applying one coat of primer of IS-5666 & followed by one coat Zinc chromate primer of IS-104 & two coats of Aluminium paint of IS-2339 (One coat of Aluminium paint is to be applied before erection and another coat of Aluminium paint to be applied after erection). During sand blasting the surface should be thoroughly cleaned & roughened by compressed air with suitable abrasive material & grade of blasting shall confirm to IS-9954.

**Payment Schedule:**

| Stage  | % Payment | Cumm % Payment |
|--|-----------|----------------|
| (i) Procurement of Material (Against indemnity bond)                     | 25%       | 25%            |
| (ii) Fabrication Materials   | 15%       | 40%            |
| (iii) Transportation of fabricated members to site                       | 15%       | 55%            |
| (iv) Launching & erection at site  | 25%       | 80%            |
| (v) Completion of all leftover riveting & welding                        | 10%       | 90%            |
| (vi) Completion of metalizing & final coat of painting and commissioning | 10%       | 100%           |

**1,14,06,72,614.40**

**Construction of Superstructure of Bridges in Bairabi-Sarang Section of N.F.Railway**

| <b>Schedule B-Execution of USSOR item of works</b> |                   |  |             |            |             |                |
|--|-------------------|--|-------------|------------|-------------|----------------|
| <b>Item-2</b>                                      |                   |  |             |            |             |                |
| <b>SL No.</b>                                      | <b>USSOR Item</b> | <b>Description of Item</b>   | <b>Unit</b> | <b>Qty</b> | <b>Rate</b> | <b>Amount</b>  |
| 1  | 81050             | Erecting roof trusses, tank stagings, steel tanks etc. including rivetting for work upto 10m height above GL   | Quintal     | 2500       | 240.42      | 6,01,058.70    |
| 2  | 81060             | Extra to item no 081050 for every subsequent 5m height, or part thereof, over 10m height above GL  | Quintal     | 5000       | 60.10       | 3,00,517.36    |
|  |                   | Applying Priming Coat  |             |            |             |                |
| 3  | 121013            | With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanized iron/steel works   | Sqm         | 1775       | 21.04       | 37,354.61      |
|  |                   | Painting with black anti-corrosive bitumastic paint of approved brand and manufacture to give an even shade  |             |            |             |                |
| 4  | 121111            | Two or more coats on new work  | Sqm         | 1775       | 37.28       | 66,179.28      |
| 5  | 192030            | Providing and laying Plain Cement Concrete 1:3:6 with graded stone aggregate of 40 mm nominal size, in foundation and floors, retaining walls of bridges including mechanical mixing, vibrating, pumping and bailing out water where ever required with all materials and labour complete but excluding the cost of cement and shuttering as per drawings and technical specifications as directed by Engineer   | cum         | 250        | 1,992.29    | 4,98,071.79    |
| 6  | 192050            | Providing and laying in position machine mixed, machine vibrated and machine batched Design Mix Cement Concrete M20 grade (Cast - in Situ) using 20 mm graded crushed stone aggregate and coarse sand of approved quality in Abutment, pier, wing walls and return walls of Mass cement concrete above RCC raft Including finishing complete as per specifications and direction of the Engineer in charge. Payment for cement, reinforcement and shuttering shall be paid extra                         | cum         | 150        | 2,770.57    | 4,15,585.87    |
|  |                   | Centring and shuttering including strutting, propping etc. and removal of form for :   |             |            |             |                |
| 7  | 195032            | Abutment, pier, wing walls and return walls  | Sqm         | 100        | 250.64      | 25,063.90      |
| 8  | 195033            | Abutment cap, Pier Cap, Inspection Platform & Pedestal over Pier cap, Fender wall, Diaphragm wall, etc   | Sqm         | 250        | 237.78      | 59,444.02      |
| 9  | 211040            | Fabricating, supplying and fixing of 6 to 8 mm thick steel chequered plate conforming to IS: 3502 for pathway, trolley refuges, floor for the bridge including fixing the same over steel channel sleepers by drilling holes in channel sleepers and trolley refuges incl. nuts & bolts, tools and plants, labour as a complete job  | MT          | 415        | 87,268.93   | 3,62,16,604.80 |
| 10   | 211060            | Providing and fixing 65/50 mm nominal dia B class G.I. pipe railing used in rows for footpath or anti-crash barrier railing incl. cost of M.S. angle and channels in vertical posts, riveting, welding / rivetting, priming painting two coats, at all heights labour and material as a complete job   | Kg          | 60650      | 60.02       | 36,40,039.78   |
| 11   | 211070            | Supplying and fixing anti-slip M.S. Angles/nosing 65mmx 65x 8mm or any other size confirming to IS: 2062 fixing 10mm dia, anchor bar 600mm C/C and fixing with main girder with M.S. flat on top of step of stair case, making anti-slip grooves 7 nos.arrangement for keeping and maintaining in position as per approved plan with all labour and material as a complete job   | Kg          | 10000      | 55.58       | 5,55,760.48    |
| 12   | 222080            | Patching of damaged concrete surface with Pre packed polymer concrete with average thickness of 25mm. Curing compounds, initiator and promoter, available in the formulations, to be applied as per instructions of manufacturer and as approved by the Engineer   | Sqm         | 100        | 478.54      | 47,853.53      |
| 13   | 222140            | Providing, cutting, fabricating, treating, fixing structural steel as per IS: 2062 in access ladders (top of girder/slab to pier cap), inserts, platforms, railing, trolley refuges, drain pipes etc. by drilling holes and grouting with C.C as per specifications including painting with two coats of approved paint over two coats of primer. (Cement for grouting shall be paid separately)   | MT          | 122.5      | 72,328.45   | 88,60,234.78   |
| 14   | 222150            | Providing/ fixing/ grouting various size HTS holding down bolt in concrete column or in other structural steel member incl. drilling holes of required size, bolts threaded at both ends shall be fixed with proper size nuts bolts, plates, washers complete including all labour and material  | Kg          | 10000      | 151.50      | 15,14,960.48   |
| 15   | 222240            | Providing cast in situ bridge number plaques as per Railway drawing in cement concrete 1:2:4 mix using 20mm hard stone aggregate embedded in 30mm notch in Bridge parapet coping duly engraving the letter and figures and an arrow indicating the direction of flow and finishing the top exposed surface with cement mortar 1:3, painting letters and figures with two coats of black enamel paint on two coats of white back ground with all labour, tools, cement, paint etc.with all lead and lifts | Each        | 21         | 471.93      | 9,910.45       |



**Construction of Superstructure of Bridges in Bairabi-Sarang Section of N.F.Railway**

| Schedule |         | Schedule C-Execution of NS item of works   |      |      |          |                       |
|----------|---------|--|------|------|----------|-----------------------|
| Item- 3  |         |  |      |      |          |                       |
| Sl No.   | Item No | Description of Item  | Unit | Qty  | Rate     | Amount                |
| 1        | 1       | Carrying out Ultrasonic testing of all structural steel in the contractor's fabrication workshop with contractor's testing equipment,manpower and all other arrangement complete item as per relevant codes and direction/approval of the Engineer | MT   | 6600 | 2,390.08 | 1,57,74,528.00        |
|          |         |  |      |      |          | <b>1,57,74,528.00</b> |

**Construction of Superstructure of Bridges in Bairabi-Sarang Section of N.F.Railway**

| Schedule |         | Schedule D-Execution of NS item of works  |           |        |           |              |
|----------|---------|---|-----------|--------|-----------|--------------|
| Item- 4  |         |   |           |        |           |              |
| Sl No.   | Item No | Description of Item   | Unit      | Qty    | Rate      | Amount       |
| 1        | 1       | Fixing of galvanized H-Beam sleepers as per RDSO's drawing No-B/1636/4,5,6 & RH-1122 with latest alteration on approved drawing supplied by Railway and specifications thereto complete with all fittings and fixtures and fastenings including the cost of all steel sections, all fixtures and fastenings, galvanized MS pad plates, galvanized bolts, nuts, washer, track circulating components, insulating components etc., labour, lead & lift, tools & plants and equipments including galvanizing work of full steel components complete in all respects as per approved drawings and technical specifications & as per direction of engineer. The rate also includes the cost of supply of approved quality of epoxy/adhesive and fixing of elastomeric pads with different components of steel sleepers in accordance with approved drawings. The structural steel to be supplied by the contractor for fabrication of steel H beam sleepers and shall confirm to IS 2062-2006, Grade-B only & from only approved RDSO steel manufacturers. The rate is inclusive of inspection charges of components of sleepers, including all fixtures & fastening, galvanization etc from the reputed laboratory/organization | Numbers   | 2000   | 1,730.08  | 34,60,160.00 |
| 2        | 2       | Linking of new BG track including laying with 60 kg/52 Kg Rails (LWR) on H-Beam sleepers as per RDSO's drawings or any other railways drawings for linking including laying, fitting and fixing of 90R/52 kg (SH) guard rails on girder bridge as per standard Drawings & as per IRPWM, De - stressing of LWR, fixing of tie angles with all fittings, fixing materials, gauging and aligning including loading, unloading of materials with all leads, lift, ascent and descent, crossing of tracks, obstruction etc. with contractor's own materials, labour, tools and plants, machineries etc. required for the execution of the work as per direction & satisfaction of the Engineer-in-Charge or his authorized representative. Rails will be issued from depot/godown.   | RM        | 4000   | 1,038.58  | 41,54,304.00 |
| 3        | 3       | Laying 52Kg/60Kg Switch Expansion Joint (SEJ) on special H-Beam sleepers as per RDSO's Drawing No T-4160-Alt-4 at the required locations with contractors's labours and tools inclusive of all lead and lift complete. The item mainly includes laying SEJ special H-beam sleepers to correct spacing over Girder, laying of stock and tongue rails (two pairs), providing the fittings and fastening, fixing two angle spacers, lifting the SEJ track to desired longitudinal profile, fixing of reference rail post, correcting gauge, cross levels, alignment and longitudinal level marking sleepers spacing, respacing, squaring and packing the sleepers, oiling & greasing the tongue rails and stock rails, etc or any other item required as per the directives of Engineer-in-charge or his authorized representatives. SEJ materials will be issued for depot/godown and payment for carriage to site will be inclusive.   | Set       | 9.37   | 29,803.62 | 2,79,259.92  |
| 4        | 4       | Cutting of new/released/SH 60kg/52kg single rail/short welded panel/LWR/CWR in site/or cess with contractor's hacksaw, abrasive type rail cutting machine, labours, tools and plants inclusive of all lead and lifts complete as per direction of the engineer in charge.   | Each Cut  | 234.31 | 100.69    | 23,592.27    |
| 5        | 5       | Drilling of holes in 60kg/52kg rails both on cess and in situ of required diameter as per direction of the Engineer in charge and chamfering for fixing fish plates with contractor's rail drilling machine, labours, tools and plants inclusive of all lead and lift complete. (i) 32mm diameter for fish bolts  | Each Hole | 140.58 | 76.62     | 10,770.97    |
| 6        | 6       | Drilling of holes in 60kg/52kg rails both on cess and in situ of required diameter as per direction of the Engineer in charge and chamfering for fixing fish plates with contractor's rail drilling machine, labours, tools and plants inclusive of all lead and lift complete. (ii) 27mm dia for fish bolts  | Each Hole | 328.03 | 69.52     | 22,805.22    |
| 7        | 7       | Making of guard rails from railway 90R/52kg rails and fixing it on bridges and its approaches on PSC sleepers as per railway standard drawing/approved sketch with contractors labours, tools and plants inclusive of all lead and lifts complete. The item mainly includes cutting of the rail to required length, bending it to prepare the splayed portion as per the approved drawing/sketch, drilling of holes, notching if required, putting guard rail in position, fastening it to PSC sleepers, making and providing wooden blocks and bolts for its fixing at the end of the splayed portion, burying ends of guard rails, etc or any other item required in making and fixing of guard rails as per directives of Engineer-in-charge or his authorized representative. The fittings to be supplied by the Railway will be issued from depot/godown and payment for carriage to site will be paid separately. (a) Straight portion on bridge  | RM        | 3046   | 511.88    | 15,59,178.93 |

**Construction of Superstructure of Bridges in Bairabi-Sarang Section of N.F.Railway**

|   |   |  |     |      |          |                     |
|---|---|--|-----|------|----------|---------------------|
| 8 | 8 | Making of guard rails from railway 90R/52kg rails and fixing it on bridges and its approaches on PSC sleepers as per railway standard drawing/approved sketch with contractors labors, tools and plants inclusive of all lead and lifts complete. The item mainly includes cutting of the rail to required length, bending it to prepare the splayed portion as per the approved drawing/sketch, drilling of holes, notching if required, putting guard rail in position, fastening it to PSC sleepers, making and providing wooden blocks and bolts for its fixing at the end of the splayed portion, burying ends of guard rails, etc or any other item required in making and fixing of guard rails as per directives of Engineer-in-charge or his authorized representative. The fittings to be supplied by the Railway will be issued from depot/godown and payment for carriage to site will be paid separately. (b) Splayed portion. One set consists of 1 no. on either side of the bridge | Set | 9.84 | 8,013.01 | 78,848.03           |
|   |   |  |     |      |          | <b>95,88,919.34</b> |

**Construction of Superstructure of Bridges in Bairabi-Sarang Section of N.F.Railway**

| Schedule |         | Schedule E-USSOR item of works  |        |     |              |                     |
|----------|---------|---|--------|-----|--------------|---------------------|
| Item- 5  |         |   |        |     |              |                     |
| Sl No.   | Item No | Description of Item   | Unit   | Qty | Rate         | Amount              |
|          | 1       | Any other item of work not included in Sch A-J, but reqd. to be executed for successful | Rupees | 1   | 27,50,000.00 | 27,50,000.00        |
|          |         |   |        |     | <b>Total</b> | <b>27,50,000.00</b> |



**Construction of Superstructure of Bridges in Bairabi-Sarang Section of N.F.Railway**

| Schedule |       | Schedule F-USSOR item of works   |      |       |              |                     |
|----------|-------|--|------|-------|--------------|---------------------|
| Item- 6  |       |  |      |       |              |                     |
| Sl No.   |       | Description of Item  | Unit | Qty   | Rate         | Amount              |
| 1        |       | Earthwork in cutting in formation, Trolley Refuge, Side drains, Level Crossing, Approaches, platform, Catchwater drains etc. | Cum  |       |              |                     |
| a        | 13111 | In all conditions and classifications of soil except rock  |      | 27300 | 77.35        | 21,11,709.60        |
| b        | 13112 | Soft rock not requiring blasting   |      | 10500 | 121.98       | 12,80,802.60        |
| c        | 13113 | In hard rock requiring blasting with explosives etc  |      | 4200  | 247.63       | 10,40,054.40        |
|          |       |  |      |       | <b>Total</b> | <b>44,32,566.60</b> |

**Construction of Superstructure of Bridges in Bairabi-Sarang Section of N.F.Railway**

| Schedule |               | Schedule G-USSOR item of works   |      |     |              |                  |
|----------|---------------|----------------------------------|------|-----|--------------|------------------|
| Item- 7  |               |                                  |      |     |              |                  |
| Sl No.   | USSOR Item No | Description of Item              | Unit | Qty | Rate         | Amount           |
| 1        |               | Felling trees of girth           | Each |     |              |                  |
| a        | 14031         | Girth over 30 cm and upto 60cm   |      | 100 | 98.47        | 9,847.20         |
| b        | 14032         | Girth over 60 cm and upto 150cm  |      | 100 | 269.54       | 26,954.40        |
| c        | 14033         | Girth over 150 cm and upto 300cm |      | 100 | 535.66       | 53,565.60        |
|          |               |                                  |      |     | <b>Total</b> | <b>90,367.20</b> |

**Construction of Superstructure of Bridges in Bairabi-Sarang Section of N.F.Railway**

| Schedule |       | Schedule H-USSOR item of works   |      |       |              |                     |
|----------|-------|--|------|-------|--------------|---------------------|
| Item- 8  |       |  |      |       |              |                     |
| Sl No.   | USSOR | Description of Item  | Unit | Qty   | Rate         | Amount              |
| 1        | 13120 | Earthwork in filling in embankment, Guide Bandhs, around abutments, ridge gaps, Trolley Refuges, Rain Bundhs, platforms. extra with earth from outside railway | Cum  | 63000 | 135.64       | 85,45,216.68        |
| 2        | 13130 | Extra for mechanical compaction of earth/blanketing material filled in embankment with contractor's rollers of suitable capacity, type and size to achieve     | Cum  | 63000 | 4.58         | 2,88,814.68         |
|          |       |  |      |       | <b>Total</b> | <b>88,34,031.36</b> |

**Construction of Superstructure of Bridges in Bairabi-Sarang Section of N.F.Railway**

| Schedule |        | Schedule I-USSOR item of works   |      |      |                    |                          |
|----------|--------|--|------|------|--------------------|--------------------------|
| Item- 9  |        |  |      |      |                    |                          |
| Sl No.   | USSOR  | Description of Item  | Unit | Qty  | Rate               | Amount                   |
| 1        |        | Supplying of structural steel to Fe 410B, fabrication, assembling, erection/slew/end launching of steel girders (not requiring traffic block) upto 45.7m span on substructure including provision of trolley refuges, if reqd, |      |      |                    |                          |
| a        | 211011 | Plate Girder /semi through Girder  | MT   | 95   | 1,63,318.14        | 1,55,15,223.68           |
| b        | 211013 | Extra for metalising including preparaton of surface and applying on coat etch primer to IS 5666   | Sqm  | 1600 | 23.82              | 38,117.38                |
| c        | 211050 | Metalising of steel work of girder with grit blasting as per IRS B1-2001 followed by one coat etch primer (IS 5666), one coat Zinc chrome primer (IS 104) and 2 coats of Aluminium paint (IS 2339)                             | Sqm  | 1600 | 188.22             | 3,01,154.30              |
|          |        |  |      |      | <b>Total</b>       | <b>1,58,54,495.36</b>    |
|          |        |  |      |      | <b>GRAND TOTAL</b> | <b>1,25,09,35,770.57</b> |