

<b>SPECIAL CONDITIONS RELATING TO SITE DATA &amp; SPECIFICATION</b>	
1.0	<b>SCOPE OF WORK:</b>
1.1	<b>Construction of 4 ROB's (i) 2 lane ROB in lieu of LC- C-28 at KM. 18/1-2 on Jalandhar Cantt - Hoshiarpur section of Firozpur Division ii) 2 lane ROB in lieu of LC-48 at KM. 71.461 on Bathinda - Shri Ganganagar section of Ambala Division (iii) 2 lane ROB in lieu of LC-B-20 at KM. 28/0-1 on Bathinda -Sriganganagar section of Ambala Division (iv) 2 lane ROB in lieu of LC-58 at KM.86.541 on Bathinda -Sriganganagar section of Ambala Division (including LHS) of Northern Railway under the Road Safety Projects Unit (RSPU)/NR New Delhi.</b>
1.2	Construction of foundations, open raft/piles/other type as approved, piers (including pier caps), pedestal, pile cap, substructure, vertical and lateral load test on test piles and working piles including integrity, CHSL and dynamic test of ROB as per railway standards. RCC closure wall/retaining wall/boundary wall as per requirement at all locations.
1.3	Supplying, fabrication and assembling composite steel/Bow string/Camel Back type of girders as per approved drawings & specifications. In case Railway land is not available, the contractor shall arrange suitable land for the fabrication yard from external sources at their own cost and responsibility.
1.4	Launching steel girders by any launching method duly approved by Railway under non traffic/traffic/power block condition with cranes of adequate capacity. Nothing extra will be paid for launching over tracks.
1.5	Ancillary works like fixing bearings, casting of deck slab, anti-crash barrier, foot path, wearing coat, railing, painting including road painting, signage and drainage arrangements, fixing of road furniture's etc.
1.6	Preparation and Submission of launching /erection methodology of steel girders and getting it approved from Railway authority and submission to CRS/Pr. CE for obtaining prior approval of launching scheme and also for execution of ROB work.
1.7	Construction of RCC Boxes as per approved drawings. Construction of ballast wall, return wall, wing wall/retaining wall/sump& provision of height gauge at both ends of ROB and LHS etc.as per direction of Engineer-in-charge
1.8	Providing & launching of protection arrangement having structural steel members before pushing the RCC box under the Railway track with machinery, T & P, crane, labour etc. complete job during traffic block.
1.9	On completion of pushing the boxes, protection arrangement following activities are to be done during traffic & OHE block. i) Dismantling track after cutting the Rails. ii) Removal & stacking of ballast. iii) Providing/removal of protection arrangements with crane/alternate means. iv) Linking of track. v) Ballasting & packing.
1.10	Submission of drawing/design of RCC box and pushing scheme of RCC box which will be done with jacks and power pack as per methodology approved by the Engineer-in-charge. Casting of thrust bed and casting/fabrication of other enabling work as per approved scheme. Soil stabilization by nailing/grouting before/during pushing, if required.
1.11	Providing & laying wearing coat in road as per approved drawings.
1.12	Any other allied work incidental to main work as per direction of Engineer-in- charge.
1.13	Any other item/activity of work not included above but required for successful completion of work as decided by the site Engineer/In-charge.
1.14	Submission of completion drawings, in case non submission Rs. 50,000/- will be deducted for each site.
1.15	All the necessary diversions warning, information and mandatory boards shall be installed at appropriate places for the guidance of general public.

1.16	Making arrangements for exploring & exposing signal and telecommunication cables if required by the department concerned before undertaking excavation for construction work. Payment for the same will be limited to actual work done and same will be paid for under relevant items. No excavation should be carried out without approval of the concerned department as per NR JPO for the same.
1.17	<p><b>SCHEDULE OF COMPLETION OF WORK</b></p> <p>(a) The overall period for the completion of work in all respects is <b>18 (Eighteen) months</b>. The time is the essence of the contract.</p> <p>(b) The contractor shall be required to complete the work in phased and programmed manner and submit a detailed program for completion of work within time schedule (immediately after receipt of tender acceptance letter maximum up to 15 (fifteen) days' time. The program may be altered/modified by Engineer-in-charge depending on priority of the work. The contractor shall ensure that the work is done as per the schedule. Any departure from the agreed schedule will attract action against the contractor as per the IR GCC-2022 including latest correction slips.</p>
1.18	<p><b>MAINTENANCE:</b></p> <p><b>Maintenance Period:</b> During the Maintenance Period, the scope of works shall include, but not be limited to, brooming/cleaning, cleaning of drains, painting and surface repairs, and attending to wear and tear, defects and any theft as required to keep the works in satisfactory condition, as per the directions of the Engineer-in-Charge.</p> <p>a) Contractor's primary obligation under this contract is to carry out and complete the works to the high-quality standard set out in the contract, i.e., only new material of specified quality and high standard of workmanship shall be ensured during execution. The Maintenance period is intended to complement this liability by remedying the defective work i.e., deficiency in quality of work including defects due to faulty material or workmanship which may become apparent during the Maintenance period reckoned from date of issue of completion certificate. Any damage due to an act or omission not attributable to the contractor, shall be excluded from the liability of the contractor under this clause. The Maintenance period shall be 48 months for the works consisting of construction of (i) Construction of ROB/RUB/LHS, (ii) Work of construction of new rail bridges/ROR, (iii) Work related to re-building of existing bridges, unless specifically mentioned otherwise and liability of the contractor shall be as under:</p> <p>1) If any defect is found during the Maintenance period, the contractor must, promptly and at its own cost repair, replace or otherwise make good (in consultation with the Engineer) the defect as well as any damage to the facility caused by the defect. The Contractor will bear all incidental costs, including any costs of removal associated with the repair, replacement or making good of the defect or damage.</p> <p>2) If the contractor fails to commence the work necessary to remedy the defect or any damage to the facility caused by the defect within a period of 21 days of issue of such notice, the Railway may proceed to do the work, or engage any other agency to do the work and the costs, including incidental costs, incurred by the Railway as a result will be a debt due and payable to the Railway on demand and may be deducted from Security Deposit or from any payments otherwise due to the contractor in any other contract anywhere in Indian Railways.</p> <p>3a) Where the Railway, acting reasonably, considers that substantial repair, replacement or making good is done during last quarters of Maintenance period or during 21 days notice period which fails beyond original maintenance period, the maintenance period shall extend by a suitable period in such a manner that any repair, replacement or making good the works shall have cover of 3 months of extended Maintenance period.</p>

	<p>3b) Accordingly, Bank guarantee submitted towards security deposit shall be extended up to the extended maintenance period plus 60 days.</p> <p>4) The acceptance at any time of Materials or Equipment by or on behalf of the Railway shall not be a bar to future rejection if they are subsequently found to be defective, inferior in quality, or uniformity to the Material or Equipment specified, or are not as represented to the Railway.</p> <p>5) The decision of the Engineer for determination of the defects needing repair/replacement or the cost incurred by Railways in defect rectification or estimated cost of repair, if the contractor fails to do the work within specified period shall be final and binding on the Contractor.</p> <p>6) Only after successful completion of aforesaid liability by the Contractor, SD money shall be released after deductions, if any due to failure on the part of the Contractor.</p> <p>7) The rights of the Railway under this clause are in addition to and do not limit any other rights which the Railways has under this contract or under any law of the land.</p> <p>8) The “Maintenance Period” shall supplement the liability of the contractor during Maintenance Period “specified elsewhere in the contract” and the conditions under this Clause shall supersede such conditions of the contract to the extent of contradiction.</p> <p>9) Any determination by the engineer under Maintenance Clause shall be treated as “Excepted Matter” and shall not be arbitrable.</p>
1.19	<p><b>RESPONSIBILITY FOR AND ANY MISHAP DERAILEMENT, ACCIDENT ARISING OUT OF THIS WORK.</b></p> <p>In the event of any accident arising out of this work or in the event of any accident during handling, assembling materials or any accident on the existing running lines, arising on account of the contractor or his men not observing necessary safety precautions for the various operations required for the execution of this work the contractor shall be fully responsible for all damages.</p>
1.20	<p><b>As per the extant instructions of Railway board, the tendering firm shall be from RDSO approved list of firms for Steel Bridge Girder; in case the tendering firm is not in the list of RDSO approved firms for Steel Bridge Girder, then he will have to get the Steel Girder manufactured through an RDSO approved firm in the RDSO approved premises only. Further subject to condition that the tendering firm fulfils other Technical and Financial Eligibility criteria, as prescribed by the Railways in the tender and the Steel Girder to be manufactured in the RDSO approved premises only.</b></p> <p><b>Inspection of Composite/Bow String/Camel Back Steel Girder for ROBs shall be done by Engineer/officer/ any other inspection agency (hereinafter called I.O.) as nominated /approved by the Railway.</b></p> <p>A portal for Rail -Road Inspection &amp; Stage Management – Steel Girder (PRISM-SG) has been developed for inspection of steel girder fabrication for ROBs. All the approvals by Inspecting Agency/Railway officials for QAPs, WPSS, WPQR, fabrication, welding, Painting including final stage Inspection etc. for fabrication of Standard and Non- Standard girders used in ROBs shall be processed through this portal. The GADs and structural drawings will be uploaded, and contractors will be assigned through PRISM-SG portal.</p> <p><b>B.</b> The Metallurgical Engineer /Consultant of Recognized testing House deployed by Contractor at his own Cost before start of and/or during fabrication works as nominated/ approved by the Railway In case, the contractor(s) fails to deploy the Metallurgical Engineer /Consultant of Recognized testing House as aforesaid, he shall be liable to pay Rs 50,000/- (Rs Fifty thousand only) for each month of default or part thereof.</p>
1.21	<b>PROTECTION OF EXISTING RUNNING TRACK</b>

	<p>The work is to be executed on proximity to the running tracks and as such the contractor will have to plan and execute work in such way so as to avoid interference with the existing tracks. Contractor shall ensure all precautionary measures so as not to endanger the safety of running tracks and protect all men and material which shall entirely be the responsibility of the contractor. The contractor should make a special note of this clause. Nothing extra shall be payable on this account.</p> <p>At some places contractor may be required to bring men/material etc. from or through the other side of the existing tracks. He must take all precaution for protection of men and material as well as the running tracks if required for crossing them in connection with executing the work. No crossing of material will be permitted without traffic block. No extra payment whatsoever on this account will be made to the contractor.</p>
1.22	<p>Every effort shall be made for timely shifting/removal of obstructions, if any, as the work progresses. However, the contractor/s must specifically note that neither any claim whatsoever, nor any interruption delay or rescheduling on account of any delay on shifting of overhead and/or underground services or any such causes shall be entertained nor shall all the same be taken as reason for non-fulfilment of the contract.</p>
1.23	<p>1)The Contractor shall arrange in accordance with Applicable Laws and with the proactive support &amp; assistance of the Authority, cause shifting of any utility (including water pipeline, gas pipeline, oil pipeline and &amp;telephone cables, signal, electric cables etc ) to an appropriate location or alignment, if such utility or obstruction adversely affects/infringes the execution of Works in accordance with this Agreement. The actual cost of shifting/relocation of such utilities, as approved &amp; communicated by the entity owning such utility, shall be paid by Railway after obtaining approval of competent Authority.</p> <p>2) The utilities which are not to be diverted, proper supporting shall be done to prevent any damage. No payment shall however be made for supporting and protecting the utilities during execution of the work.</p>

<b>2.0</b>	<b>GENERAL &amp; BRIEF DESCRIPTION OF SITE:</b>
2.1	<p><b>Construction of 4 ROB's (i) 2 lane ROB in lieu of LC- C-28 at KM. 18/1-2 on Jalandhar Cantt - Hoshiarpur section of Firozpur Division (ii) 2 lane ROB in lieu of LC-48 at KM. 71.461 on Bathinda - Shri Ganganagar section of Ambala Division (iii) 2 lane ROB in lieu of LC-B-20 at KM. 28/0-1 on Bathinda -Sriganganagar section of Ambala Division (iv) 2 lane ROB in lieu of LC-58 at KM.86.541 on Bathinda -Sriganganagar section of Ambala Division (including LHS) of Northern Railway under the Road Safety Projects Unit (RSPU)/NR New Delhi.</b></p>
2.2	<p>All safety measures should be adopted to ensure safety of all road users, Railway users and Railway traffic etc.</p>
2.3	<p><b>For ROB's</b>-Construction work is to be started simultaneously as the work is of very urgent nature and being monitored by the highest authorities of Railway.</p>
2.4	<p>The above information is only for general guidance of the tenderer(s), and they are advised to visit the site and acquaint himself/themselves fully with the site conditions, especially regarding the approaches for transporting the materials/machinery etc., storage area, local conditions etc.</p>
2.5	<p>All environmental provisions to be followed by the agency during construction.</p>
2.6	<p>Safety of site workers will be sole responsibility of the contractor. Railway will not be responsible for any mishappening and no claim on this account will be entertained by Railway.</p>
2.7	<p>No Malaba/ material etc. should be kept on the main road while carrying out civil works.All malba to be disposed of outside Railway land by contractor at his own cost, as per municipality byelaws.</p>
2.8	<p>The drainage system of the working site has to be maintained clear during rainy season or so. Necessary dewatering arrangements are to be made by the contractor in case of rain or any other conditions leading to water logging.</p>
2.9	<p>The Contractor shall provide, install, and maintain hard barricading of approved design and specification around the worksite to ensure the safety of the public, railway traffic, and workmen.</p>

	<p>The barricading shall be painted in a visible colour and fitted with reflective strips, warning signage, and night-time illumination as required, especially in areas adjacent to railway tracks, platforms, roads, or public movement zones.</p> <p>The entire cost of supply, erection, maintenance, and eventual removal of the barricading shall be paid in relevant item. The Contractor shall also ensure that barricading is relocated or modified as per site requirements or instructions of the Engineer-in-Charge during the progress of work.</p>
2.10	<p><b>SITE VISIT AND OBSERVATIONS OF RULES AND REGULATIONS:</b></p> <p>I. The tenderer/s is/are strongly advised to visit and thoroughly inspect the site of work and ascertain all the conditions regarding nature of work, site difficulties and the extent of lead handling and rehandling involved in the execution of work before quoting rates. The tenderers shall have to make his/their own arrangements for all operations. No claim of contractor shall be entertained on account of site conditions.</p> <p>II. It shall be noted by the tenderer/s that the work involves working in close proximity to the existing track. The contractor shall ensure that no damage injury or loss is caused or likely to be caused to any person or property. The rate quoted shall be inclusive of all lead, lifts, ascent, descent, handling, rehandling if any due to any reasons including crossing of track and also shall cover risk to track, life and property during execution of work. The contractor shall adopt all precautionary measures to safeguard track, life of manpower deployed, property, structure etc. and the rates shall include all measures.</p> <p>III. At such locations where contractor road vehicles are permitted to ply adjacent to the running lines, experienced &amp; trained flagman will be deployed by contractor to prevent accident. Nothing extra would be paid on this account. Such movements will be permitted under supervision of PSSA/Railway officials only.</p> <p>IV. The contractor shall be responsible for the observances of rules and regulations under the mines act and mineral rules, Indian metalliferous rules and regulations of the state concerned.</p> <p>V. The contractor shall indemnify the Railway against all the penalties that may be imposed by the Govt. of India or State Govt. for infringement of any of the clause of the mines act and rules made there under in respect of quarries from which the material is procured. Railway administration will not be liable to pay any amount against this.</p> <p>VI. The contractor shall be responsible for observing the stipulations of the mines act in force and if any facility is provided by the railway in case of railway ballast quarries, the contractor shall be required to pay rent for the same which shall be deducted from his/their dues.</p> <p>VII. The contractor shall comply with all instructions issued by the Chief Inspector of mines in respect to the safety of the workmen and the working of quarried and maintain register in which shall be recorded such information for supply annually to Chief Inspector of mines to the Govt. of India as required by him.</p> <p>VIII. The contractor shall carry out the provisions of any laws rules and regulations that may be enforced in the areas in which work is/are to be done at his/their own cost.</p> <p>IX. The contractor shall be required to nominate and arrange continuous attendance of his authorized agent for various operations of the work.</p> <p>X. The contractor will have no claim for compensation in case of delay in handing over the stacking area that may take place during the execution of work.</p>

<b>3.0</b>	<b><u>SPECIFICATIONS AND CODES:</u></b>
3.1	“Indian Railways Unified Standard Specifications-2021 ” with latest correction slips shall govern the specifications of all items of USSOR-2021 appearing in the Tender Schedule. In case, specifications of any item are not covered in above document. The relevant IRS/BIS Code shall be applicable.
3.1.1	In case of any conflict among provisions in various documents, the following will be the order of preference:

a)	Letter of Award/Acceptance (LOA)
b)	Bill(s) of Quantities
c)	Special Conditions of Contract
d)	Technical Specifications as given in tender documents
e)	Drawings
f)	Indian Railways Standard General Conditions of Contract updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.
g)	Indian Railways Unified Standard Specification (IRUSS-2021) updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents, if applicable in the contract.
h)	CPWD Specifications 2019 Vol I & II updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents, if applicable in the contract.
i)	Indian Railways Unified Standard Specifications (Works and Material) 2021 updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents, if applicable in the contract.
j)	IR Specifications/Guidelines updated with correction slips issued up to date of inviting tender or as otherwise specified in the tender documents.
k)	Relevant B.I.S. Codes updated with correction slips issued up to date of invitation tender or as otherwise specified in the tender documents.
3.2	All materials to be used in the works shall be in conformity with the requirement laid down in the “Indian Railways Unified Standard Specifications- 2021 ” or the relevant BIS Code/or any other relevant code applicable.
3.3	The decision of the Chief Engineer/Construction/Road Safety Project shall be final and binding regarding the interpretation of various provisions of the Codes and Specifications as well as the provisions/Clauses of the contract and no claim whatsoever shall be entertained on this account.
3.4	IRS-CBC will be applicable for concreting work.

<b>4.0</b>	<b><u>EMPLOYMENT OF TECHNICAL STAFF:</u></b>
4.1	The contractors(s) shall employ following Qualified Engineers for each site during the execution of the allotted work:
a)	One Qualified Graduate Engineer when cost of work to be executed is <b>Rs 200 lakh and more.</b>
b)	One Qualified Diploma Engineer when cost of work to be executed is more than <b>Rs 25 lakh</b> , but less than <b>Rs 200 lakh.</b>
	<b>Note:</b> For track related contractual works of value as specified in 4.1 (b) above, individuals having Diploma in Railway Engineering awarded by IPWE (India) shall also be considered as qualified Diploma Holder Engineers and contractors for track contract works can employ such individuals at their worksite on Railway.
4.2	Further, in case the contractor(s) fails to employ the Qualified Engineer aforesaid in para 4 above, he, in terms of provisions of Clause 26A to the General Conditions of Contract, shall be liable to pay an amount <b>Rs. 40,000/- and Rs. 25,000/-</b> for each month or part thereof for the default period for the provisions, as contained in para 4 (a) and 4 (b) above respectively.
4.3	The contractor(s) shall submit the copy of biodata and Degree/ Diploma certificate of the above technical staff employed by him for the scrutiny by Railway and for the record. Railway reserves the right to scrutinize the records of the contractor to ascertain as to whether the qualified staff has been actually employed by him and is paid for.
4.4	While passing each “on” account bill, the AXEN/XEN in charge will certify the availability of technical staff on a regular basis; otherwise, the recovery as above shall be made from every bill.
4.5	The decision of the Engineer In charge, whether the required technical staff was not employed by the contractor shall be final and binding upon the contractor(s).

<b>5.0</b>	<b><u>APPROVED RAILWAY DRAWINGS:</u></b>
5.1	The work shall be carried out as per the approved railway drawings. The copies of the approved plan (GAD) and additional information as required by the tenderer(s) may be obtained (subject to availability) from the office of Dy. Chief Engineer/Const./Road Safety Project, Northern Railway, 9 <sup>th</sup> Floor, Konnectus Tower, New Delhi during office hours on any working day by prior appointment.
5.2	In addition to the drawings, if any, enumerated above, copies of various drawings may be supplied on application by the tenderer(s) at the under noted rates as applicable, subject to availability:
a)	Copies of Standard Northern Railway type plans as prepared for the work-Rs 200.00 per copy.
b)	Copies of plans prepared especially for projects of major works like major building, L-sections, longitudinal plan etc. Rs 200.00 per copy.
c)	All plans which are prepared especially on account of tenderer(s)' request like copies of cross section etc Rs 200.00 per copy.
5.3	Additional information as required by tenderers may be obtained from the Office of Chief Administrative Officer/Construction/Road Safety Project or Dy. Chief Engineer / Construction/Road Safety Project Northern Railway, 9th Floor, Konnectus Tower New Delhi during office hours on any working day by prior appointment.
5.4	The Chief Engineer/Const (RSP) shall have full power to make any alteration in the Drawings and to give such further instructions and directions as may appear to him necessary or proper for the guidance of contractor(s) and for the efficient execution, completion and maintenance of the work. The contractor(s) should plan the execution of various works in close co-ordination with the Engineer or his authorized representative.
5.5	The design of foundations including depth of foundations below the bed level as well as other drawings may have to be varied during the progress of the work according to actual site conditions. The drawings already prepared, and which may be prepared afterwards, are not to be taken as final or binding on the Railway in any respect. The contractor(s) shall have no claim on Railway, if any change is made in the approved drawings. Also, his inability to make timely arrangements for necessary plants and machinery due to any such change which the Engineer may make will not be taken as an excuse for slow performance or non- performance of the work.

<b>6.0</b>	<b><u>SUPPLY OF CEMENT:</u></b>
6.1	Ordinary Portland Cement of 43 grade/53 grade conforming to IS:269 respectively will normally be used. However, wherever permissible & required SCM may be used with the approval of CE/C/RSP.
6.2	Cement shall be procured by the contractor from the main producers or their authorized dealer of approved make such as <b>Ultratech, Ambuja, A.C.C., JK Super, Birla cement</b> or any other reputed make as approved by Engineer in charge.
6.3	To improve the workability of concrete and cement grout, admixture (Plasticizer/Super- plasticizer) conforming to IS: 6925 and IS: 9103 in accordance with clause 5.5 and clause 10.3.3 of IS 456:2000 may be permitted as directed & approved by Engineer-in- Charge subject to satisfactory proven use, manufacturer's certificate and laboratory tests as applicable. The decision of the Engineer-in-Charge shall be final in this regard. Plasticizer/super- plasticizer generating hydrogen, nitrogen etc. shall not be permitted.
6.4	Normally OPC 53 will be used for PSC concrete work and OPC 43 for other concrete work.
<b>7.0</b>	<b>STRUCTURAL STEEL FOR SUPER STRUCTURE OF RAILWAY BRIDGES/ROBs/RUBs/FOBs</b>
7.1	<b>General:</b> All structural steel shall be procured as per specifications mentioned in BIS's document- IS:2062. Independent tests shall be conducted, wherever required, to ensure that the materials procured

	confirm to the specifications. This steel shall be procured only from those firms, which are established, reliable, indigenous & primary producers of steel, having integrated steel plants (ISP), using iron ore as the basic raw material and having in-house iron rolling facilities, followed by production of liquid steel and crude steel, as per ministry of steels guidelines. The structural steels for Railway projects/ contracts are to be procured from approved primary producers having integrated steel plants namely <b>TATA, SAIL, TISCO, RINL, IISCO, JINDAL and shall confirm to stipulated BIS/IRS specifications</b> applicable.
7.2	Before use, contractor(s) will be required to get the test certificate from the manufacturer pertaining to the various quality tests on structural steel as specified in the relevant BIS Code.
7.3	In addition, Railway will also take samples during work at Requisite frequency and get the steel tested to ascertain its conformity to the laid down Specifications at contractor's cost. Frequency of testing shall be as prescribed by the relevant Code and as per approved ITP by Railway.
7.4	For railway bridge steel super structure, the Quality Assurance Plan (QAP) and Welding Procedure Specifications Sheet (WPSS) shall have to be got approved from RDSO before starting the work. However, for ROB/RUB/FOB steel super structure, the QAP & WPSS will be got approved from Railway. All welds shall be done by SAW process (automatic/semi-automatic), MIG welding or SMAW may be done only for welds of very short run or of minor importance or where the access of the locations of welds does not permit automatic/semi-automatic welding.
7.5	In drawing/USSOR-2021/NS items wherever <b>Fe 410 B or E250-B0</b> is mentioned, grade of steel to be used shall be E250-B0 as per IS 2062. Similarly, in drawing/USSOR-2021 wherever <b>Fe 490 B or E350-0B</b> is mentioned, the grade of steel to be used shall be <b>E350-B0 as per IS 2062.</b>

<b>8.0</b>	<b><u>REINFORCEMENT STEEL:</u></b>
8.1	All reinforcement steel shall be procured as per specifications mentioned in BIS document- IS:1786. Independent tests shall be conducted, wherever required to ensure that the materials procured confirm to the specifications. This steel shall be procured from only those firms, which are established, reliable, indigenous & primary producers of steel, having integrated steel plants (ISP), using iron ore as the basic raw material and having in-house iron rolling facilities, followed by production of liquid steel and crude steel, as per ministry of steel's guidelines. The reinforcement steels for railway projects/ contracts are to be procured from approved primary producers having integrated steel plants such as SAIL, TISCO, RINL, IISCO, JSW, through their authorized dealers/ authorized stock yard which should confirm to latest relevant BIS specifications.
8.2	Reinforcement steel bars shall normally be the TMT steel bars or cold twisted deformed bars of grade Fe-500/500D/550D.
8.3	Before use, contractor(s) will be required to get the test certificate from the manufacturer pertaining to the various quality tests on steel reinforcement as specified in the relevant BIS Code (IS:1786) and further every lot to be tested when material arrived at site for use.
8.4	In addition, Railway will also take sample during work at requisite frequency and get the steel test ascertain its conformity to the BIS Specification at contractor's cost. Frequency of testing shall prescribed by the relevant BIS Code and approved ITP by Railway. <b>Note:</b> For testing of different materials details ITP (Inspection Testing Plan) is to be prepared by the contractor and to be approved by GC or Railway. All testing is to be done at the contractors' cost.
<b>9.0</b>	<b><u>USE OF RMC (READY MIXED CONCRETE):</u></b>
9.1	For the items of RCC/CC/PSC/MCC, the use of RMC shall be mandatory in works of "Important Bridges" or in works of "Group of Major Bridges located in close vicinity" as well as in works of "Major structures/buildings concentrated in one location" (such as work of mega- terminals/multi-story buildings/washable aprons/ platform surface / circulating area, etc.), provided the total quantity of



	RCC/PSC/CC/ MCC involved in the contract is significant (say 10,000 cum or more). In such contracts, the contractor(s) shall preferably set up his own RMC plant at site or shall make suitable exclusive arrangement close to the site to ensure high quality RMC supply. The RMC plant shall be inspected and approved by Dy. CE/Cs. The accepted rates of items of RCC/PSC/CC in such contracts shall be deemed to be for RMC. Nothing extra shall be payable for RMC in above category of works. However, if RMC is not feasible in certain isolated portions of work, then conventional concreting with weigh batching and mechanical mixing can be allowed by Engineer-in-Charge in such isolated locations/portions.
9.2	Use of RMC shall also be mandatory in works where substantial quantity (say 500 cum or more) of RCC/PSC/MCC is involved and the work site is located in urban areas and RMC Plants are readily available nearby (where transit time is less than 120 minutes). Some such types of works include ROB's with PSC/RCC girders, RUBs with RCC Box, multi-storeyed buildings, washable aprons, platform surface/ circulating area and vacuum dewatered concrete floors of workshops, etc. located in urban areas. The accepted rates of items of RCC/PSC/MCC in such contracts shall be deemed to be for RMC. Nothing extra shall be payable for RMC for above category of works.
9.3	The specifications of RMC shall conform to IS: 4926-2003. The RMC Plant shall be got inspected and approved by the Dy. CE/C/RSP concerned.
<b>10</b>	<b>CONTRACTOR'S RESPONSIBILITY FOR TEMPORARY WORKS/MATERIALS, SITE OFFICE AND FIELD LABORATORY:</b>
10.1	The contractor(s) shall from time to time provide at his own cost all dams, coffer dams and all other temporary works of whatever nature and temporary materials necessary for the construction, completion and maintenance of the works which are the subject of the contract and shall from time to time submit for the information of the Engineer, drawing showing in detail, the type and construction of temporary embankment and other works which he proposes to adopt and construct and the exact position in which he proposes to construct and employ them during the progress of the works as directed by the Engineer, furnish particulars and drawings of any other temporary works and details of other temporary materials in use for the sufficient security and safety of all embankment, temporary railway connections and other temporary works or temporary materials which he may construct and/or employ and for all claims for damage to property or injury to persons arising out of any failure or accident to such materials from whatever cause such damage, injury, failure or accident may arise or happen and shall replace, construct, repair and maintain the whole or such embankment or other temporary works or temporary materials until they are certified by the Engineer to be no longer required for the purpose of the contract. Critical temp. structures involving safety structure should be designed by 3 <sup>rd</sup> party and should be reviewed by GC/PSSA.
10.2	Dewatering or any other suitable arrangements may be required for carrying out the foundations of works and part of the substructures up to water level. It should be clearly noted that nothing extra shall be paid for all these arrangements and rates are deemed to be inclusive of all labour and materials and working under water etc. including timbering, shoring, strutting etc., if required. However, an extra rate, wherever applicable as per USSOR/NS, might be paid for items of work executed below water level.
10.3	(i) For the works costing more than Rs 8 Crores, the Contractor should construct the temporary site offices & toilets (for each site separately) for the proper working of Railway/PSSA staff at required location, of appropriate size commensurate with the magnitude of work but not less than 30 sqm. & not more than 100 sqm. & also provide all necessary furniture, almirah, clock, display boards, phones, curtains, computer with printers (all in one) HP/DEL/Lenovo similar make or any other approved brand, electricity, fans, AC, unlimited wi-fi facility, Drinking water etc. for the use of Railway/PSSA staffs, for a period up to the expiry of maintenance period, after that it will be the property of the contractor. If not provided within 02 (two) months from the date of issue of LOA, the recovery shall be made @ Rs. 50,000/- (Rs Twenty-five thousand) per month for the period up to the completion of the work. The maintenance, upkeep and all consumables shall be borne by contractor at his own cost.

	However, this office will be the property of contractor, and the contractor can take back the released material after completion of maintenance period. (ii) The Contractor will arrange transportation for PSSA/GC officials to facilitate site inspection within 5kms distance from worksite. Nothing extra will be paid for the same.
10.4	The Engineer shall be at liberty to modify any or all of the drawings submitted by the contractor(s) in connection with any of the aforesaid temporary works and the execution of such temporary works shall not be commenced until the said drawings or modified drawings have been approved. But examination by the Engineer of the contractor's drawings or any approval expressed by him regarding the rate, or to the materials, thereof or there for either with or without modification shall not absolve or relieve the contractor(s) from any of his liabilities in connection there with under the contract.
10.5	The contractor(s) shall before handing over the works or any part thereof to Railway dis- mantle and remove all temporary works and temporary materials but such removal shall not be effected without the previous written approval of the Engineer and the contractor(s) shall comply with the directions, if any, given by him as to the method of removal and/or disposal.
10.6	<b><u>SETTING UP OF FIELD LABORATORY:</u></b> For works costing above Rs 5.00 crore, the contractor(s) shall be required to set up a well- equipped field laboratory size in proportion to the magnitude of work and to suit the nature of work, at his own cost at the work site (all sites separately) which shall be open for use and inspection by the Railway at any time. The laboratory shall be equipped with necessary equipment's as directed by Engineer, to carry out the various tests re- quired based on nature of work involved & their conforming to Relevant Codal provisions and specifications. All the pressure gauge, machines, equipment and other measuring equipment's of the laboratory shall be of BIS approved makes and will be got checked / calibrated regularly as directed by the Engineer and necessary certificate furnished to the Engineer by the contractor(s). The contractor(s) shall render all reasonable assistance and help in carrying out the checks and tests. In contracts having quantity of earth work more than 2.0 lakh cum, the contractor(s) will be required to arrange the nuclear testing gauge of approved make to measure the Insite moisture content and field density.
	All the equipment, machinery, etc. shall be kept in good working conditions. The cost of setting up the laboratory, equipping and maintaining the same including the cost of electricity/lights & conducting tests on materials and cubes shall be borne by the contractor(s) and nothing extra will be paid for the material used in cubes. Failure to provide field laboratory within 2 months of commencement of work shall attract a penalty of Rs 50,000/- per month, recoverable from the running bill.
11.0	<b><u>APPROVED BRANDS (Except Cement &amp; Steel):</u></b> The contractor(s) shall use the following items of approved makes only as given below: -
(a)	Admixture-BASF, MYK, SIKAMENT, CICO, PROTECT, FOSROC, MBT or as approved by Engineer-in- charge
(b)	HT Strands-TATA, Usha Martin or as approved by Engineer- in- charge.
(c)	<b>Electrodes/Wires/Flux</b> – Advani –Oerlikon, D&H, Mangalam, Ador, Welding Electrodes (India) Ltd and Esab India or as approved by Engineer- in- charge.
(d)	<b>Bolts, Nuts and Washers</b> - Umbraco, Precision Fasteners Ltd, Deepak Fasteners, GKW, Laxmi Precision Screw, Pooja Forge Ltd. or as approved by Engineer- in- charge.
(e)	<b>Paint, Primer and cement paint: Asian, Nerolac, Berger, Shalimar, Dulux &amp; John- son &amp; Nicholson or as approved by Engineer -in charge.</b>
(f)	<b>MS Pipe/GI Pipe : Jindal, TATA, Apollo, Swastik, Prakash Surya or as approved by Engineer -in charge.</b>
12.0	<b><u>ROUTINE TESTS AND ADDITIONAL TESTS:</u></b> Routine tests on various materials shall be carried out as per "IR Unified Standard Specifications for Works & Materials" or as per the relevant BIS Codes and as per approved ITP. In addition to the tests required under clauses thereof, the Engineer or his representative may order tests to be carried out by

	an independent person appointed by him at such place or in such laboratory as he may determine in accordance with the appropriate clauses of relevant Standard Specifications and the cost of such tests shall be borne by the contractor(s).			
12.1	<b>As per Railway Boards letter No. 2022/19/CE-III/BR/RDSO/1 (E-3422013) dated 19.05.2026 additional tests ie Core Test, Permeability Test and Ultrasonic Pulse Velocity (UPV) Test shall also be conducted for all works involving construction of Mega and Major Bridges.</b> <b>The frequency and locations for conducting these tests for various structural elements shall be as specified below:</b>			
	<b>BRIDGE ELEMENT</b>	<b>CORE TEST</b>	<b>PERMEABILITY TEST</b>	<b>ULTRASONIC PULSE VELOCITY (UPV) TESTING</b>
	<b>Foundation (Each)</b>	Minimum 4 cores shall be obtained from: a) different lifts in case of open foundation b) Pile cap by dividing the cap in 4 zones and one core from every zone in case of pile foundation c) Well cap by dividing the cap in 4 zones and one core from every zone in case of well foundation. <b>Equivalent cube strength of minimum three Cores:</b> Average core strength $\geq 0.85$ fck Individual core strength $\geq 0.75$ fck	One test per 300 cum of concrete subject to minimum one test. The test should be conducted in accordance with clause 5.4.2 of IRS CBC.	Random 5 spots of 0.6 m x 0.6 m size shall be identified and Ultrasonic Pulse velocity testing shall be carried out in accordance with IS:516 (Part 5/Sec 1). The concrete quality shall be excellent.
	<b>Pier/Abutment (Each)</b>	The pier/abutment shall be divided into 4 zones. Minimum one core shall be obtained from each zone. <b>Equivalent cube strength of minimum three Cores:</b> Average core strength $> 0.85$ fck. Individual core strength $> 0.75$ fck.	One test per 300 cum of concrete subject to minimum one test. The test should be conducted in accordance with clause 5.4.2 of IRS CBC.	Random 5 spots of 0.6 m x 0.6 m size shall be identified and Ultrasonic Pulse velocity testing shall be carried out in accordance with IS:516 (Part 5/Sec 1). The concrete quality shall be excellent.
	<b>Piercap/Abutment cap (Each)</b>	Minimum 4 cores shall be obtained from different region of cap <b>Equivalent cube strength of minimum three Cores:</b> Average core strength $> 0.85$ fck. Individual core strength $> 0.75$ fck.	One test per 300 cum of concrete subject to minimum one test. The test should be conducted in accordance with clause 5.4.2 of IRS CBC.	Random 2 spots of 0.6 m x 0.6 m size shall be identified and Ultrasonic Pulse velocity testing shall be carried out in accordance with IS:516 (Part 5/Sec 1). The concrete quality shall be excellent.
	<b>Concrete Super-structure (Slat/Girder),</b>	Minimum 4 cores shall be obtained from different region of one span/super-structure and	One test per 300 cum of concrete subject to	Random 5 spots of 0.6 m x 0.6 m size shall be identified, and

	Deck slab of concrete composite Girder	from deck slab <b>Equivalent cube strength of minimum three Cores:</b> Average core strength > 0.85 fck. Individual core strength > 0.75 fck.	minimum one test per slab/girder and deck slab. The test should be conducted in accordance with clause 5.4.2 of IRS CBC.	Ultrasonic Pulse velocity testing shall be carried out in accordance with IS:516 (Part 5/Sec 1). The concrete quality shall be excellent.
	<p>Note:</p> <ol style="list-style-type: none"> <li>1. Cube Test results shall satisfy the acceptance criteria as per clause 8.7.6 of IRS CBC.</li> <li>2. Acceptance of core test results shall be based on Annex B of IS 516 (Part-4).</li> <li>3. Wherever core test is not possible due to any reason at any location/zone, the dispensation shall be given by Chief Engineer/Construction or CBE as the case may be by satisfying personally that extraction of core for testing is not practically possible.</li> <li>4. The acceptance of any element of bridge shall be based on the results of cube test, core test, permeability test and ultrasonic pulse velocity test. If the concrete is deemed not to comply to requirement mentioned herein, the structural adequacy of the parts affected shall be investigated and any consequential action as needed shall be taken.</li> </ol>			
<b>13.0</b>	<b>INSPECTION OF MATERIALS:</b>			
13.1	Whenever the Engineer or his representative gives notice to the contractor(s) That materials are to be inspected at the site, the contractor(s) shall have regard to the inspection, test or examination required give to the Engineer or his representative sufficient notice of such materials being ready for inspection.			
13.2	Delay to works arising from the late submission of such notice will not be acceptable as a reason for delay in the completion of the works.			
<b>14.0</b>	<b>REJECTION OF MATERIALS:</b>			
14.1	Factory made material shall have to be tested before leaving the manufacturer's premises. However, appropriate materials may also be tested at the site, and they may be rejected if found not suitable or not in accordance with the specifications, notwithstanding the result of tests at manufacturer's works or elsewhere or test certificate.			
14.2	The Engineer or his representative shall have the right to order, at any time, that any construction materials which do not meet with his approval shall not be used in the works. Such rejected materials shall be removed from the site by the contractor(s) at his own expenses, notwithstanding any prior approval which might have been given earlier. Once a particular material is rejected by Engineer, an entry to that effect should be made in material passing register.			
14.3	The instructions to the contractor(s) to remove the rejected material within reasonable time as given by the Engineer should be complied by the contractor(s) at his own cost.			
14.4	In case of default on the part of the contractor(s) in removing rejected materials within the time specified in notice, the Engineer shall be at liberty to have them removed by other means at the cost of the contractor(s). In addition, a penalty of up to Rs 50,000/- per case for above default may also be levied on the contractor(s).			
14.5	<b>MISCELLANEOUS:</b>			
	The railway shall not be responsible for any loss or damage to the contractor/s men, materials, equipment, tools and plants etc. from any cause whatsoever. No claim for idle labour, idle machinery and plant etc., on any account will be entertained. Similarly, no claim shall be entertained for business loss or any such loss.			
<b>15.0</b>	<b>TIMELY NOTICE FOR INSPECTION OF FOUNDATIONS ON WORKS:</b>			

	The contractor(s) shall give notice to the Engineer when and as soon as the excavation of any portion of site for obtaining foundation or bottom, whether above or below water has reached the depth and width shown on the drawings. The contractor(s) shall also give further notice to the Engineer, whenever any foundation or bottom is ready for inspection and whenever it is necessary to cover up a work in respect of which previous inspection is desired by the Engineer, so that the Engineer may inspect the same before it is covered up. No foundation or bottom of work shall be covered up or filled or built upon without the previous consent of the Engineer in writing. In default of such notice and consent in writing aforesaid, the foundation or bottom of work shall on the order of the Engineer in writing, be uncovered and any filling put in or work built thereon be removed or pulled down by the contractor(s) at his own cost.
<b>16.0</b>	<b>GENERAL:</b>
16.1	The Railway shall not be responsible for any loss or damage to contractor's men, material equipment, tools and plants, etc. due to any cause whatsoever.
16.2	If any work (whether temporary or permanent) or materials, the value of which has been included in an on accountabilities destroyed or damaged or has/have for any other reasons to be replaced or restored by the contractor(s), the value of the work or other materials as destroyed may be recovered by the railway administration from any payment due to the contractor(s) or may be recovered at any time from the contractor(s) as debit due to the contractor(s) and no payment made by the Railway to the contractor(s) after the aforesaid amount becomes due and recoverable shall in any way prejudice Railway's right for law full recovery.
16.3	The contractor(s) will ensure that if minimum waterway of the bridge is blocked during construction, then such blockage is removed by him at his own cost before the middle of June every year or as directed by the Engineer. Any damage to the bridge on this account will be the contractor's responsibility.
16.4	In any case, in which by virtue of section 20(a) and 21(4) of the Contract Labour Regulation and Abolition Act-1970, the Railway is obliged to provide amenities and/or pay wages to labour employed by the contractor(s) directly or through petty contractor(s) or sub-contractor(s) under this contract, then the contractor(s) shall indemnify the Railway fully and the Railway shall be entitled to recover from the contractor(s), the expenditure incurred on providing the said amenities and/or wages so paid by deducting it from the Security Deposit or from any sum due to the contractor(s) provided that if any dispute arises as to the expenditure incurred by the Railway or provision of the said amenities, the decision of the Engineer thereof shall be final and binding.
16.5	The contractor(s) shall arrange for effective technical supervision of the work and shall be represented by the authorized representative at the site of work during the currency of the contract. He will arrange to receive all the correspondence at the site of work during execution of work.
16.6	No claim for extra payment shall be entertained on account of interruption to Work due to rain, floods or due to delay in acquisition of land in some portion, delay in arranging closure of water channels, etc.
16.7	The pathways for the piers in water and elsewhere will have to be made and Maintained by the contractor(s) and nothing extra shall be payable on this account.
16.8	There may be a water supply/sewerage/electrical any other underground/overhead line passing at the site of work and any delay on contractor's account in its shifting/adjusting will not be entitled to any claim whatsoever.
16.9	Work will have to be done in close co-operation with the other Departments/ agencies, if any.
16.10	The contractor(s) shall always protect the site of work right from start by means of wooden bamboo/ballies and duly painted MS sheets. The height should not be less than 1.8 meter and shall be strong enough to prevent un- authorized entry, etc.
16.11	<b>NOTICE TO PUBLIC BODIES:</b> The contractor(s) shall give to the Municipality, Police and other authorities all notices that may be required by law and obtain all requisite licenses for temporary obstructions, enclosures and pay all fees, taxes and charges, which may be levied on account of his

	operations while executing the contract. He should make good any damage to adjoining premises whether public or private and supply and maintain any lights, etc. required at night. Nothing extra shall be payable on any such account and accepted rates of various items in the Schedule of Items, Rates and Quantities shall be deemed to cover any such aspect.
16.12	<b>Supervision for Construction of 4 ROB (i) 2 lane ROB in lieu of LC- C-28 at KM. 18/1-2 on Jalandhar Cantt - Hoshiarpur section of Firozpur Division ii) 2 lane ROB in lieu of LC-48 at KM. 71.461 on Bathinda - Shri Ganganagar section of Ambala Division (iii) 2 lane ROB in lieu of LC-B-20 at KM. 28/0-1 on Bathinda - Sriganganagar section of Ambala Division (iv) 2 lane ROB in lieu of LC-58 at KM.86.541 on Bathinda - Sriganganagar section of Ambala Division (including LHS) of Northern Railway under the Road Safety Projects Unit (RSPU)/NR New Delhi., shall be carried out either by Railways directly or through a PSSA/PC nominated by the RSP unit at the discretion of the Engineer in Charge . Relevant guidelines issued by Railway Board shall be applicable in such cases.</b>
16.13	<p>Tree Cutting/Transplantation</p> <ol style="list-style-type: none"> <li>I. The provisions of the applicable State Tree Preservation Act / Forest Act, relevant rules, standard operating procedures, tree transplantation policy (wherever applicable) and all directions issued by the competent Forest Authority shall be strictly complied with. No tree shall be cut, shifted or transplanted without prior written permission of the competent authority. The Railway shall assist the Contractor in obtaining the necessary statutory approvals and permissions and pay all security deposit levied by forest/concerned department.</li> <li>II. The survey of trees shall be in the scope of contractor and shall be carried out in accordance with the latest guidelines of concerned forest department policy.</li> <li>III. The cost of tree shifting, transplantation , compensatory plantation and its maintenance &amp; upkeep upto the actual maintenance period of contract shall be done by the contractor at his own cost.</li> <li>IV. The Railway shall provide the required land for transplanting trees and compensatory transplantation free of cost to the Contractor. The designated land area will be made available by the Railway prior to the commencement of transplantation activities.</li> <li>V. Compensatory afforestation shall be carried out strictly in accordance with the latest guidelines, norms and policy issued by the State Forest Department, as applicable from time to time</li> </ol>
16.14	All Permissions/Approvals/NOCs required from local bodies, Municipalities, ASI, or any other Statutory Authority shall be arranged by the Contractor .The Employer (Northern Railway) may assist the Contractor in obtaining such approvals, wherever necessary; however, the responsibility shall remain entirely with the Contractor. The Railway shall deposit/pay the statutory fees levied for obtaining the required permissions/NOC from the competent authority.

<b>17.0</b>	<b><u>SAFETY MEASURES/PRECAUTIONS AND PENALTIES FOR VIOLATIONS:</u></b>
17.1	The contractor(s) shall take all precautionary measures in order to ensure the protection of his own personnel, machinery and equipment moving about or working on the railway yard/premises and shall have to conform to the rules and regulations of the Railway. If any unforeseen accident or injury happens at site of work, the contractor(s) shall be solely responsible for the same. If and when in the course of the work, there is likely to be any danger to persons in the employment of the contractor(s) due to running traffic while working in the railway yard/ premises, the contractor(s) shall apply in writing to the Railway to provide flagmen or lookout men for protection of such persons. The Railway will, however, decide as to whether it is necessary to post such flagmen for various types of work and also the number of such men required to protect the gang or gangs of the contractor(s) working at site. The Railway shall remain indemnified by the contractor(s) in the event of any accident occurring in the

	normal course of work, arising out of the failure of contractor(s) or his men to exercise reasonable precautions at all places of work whether the Railway decides to post flagmen at any particular site of work. Notwithstanding the above provision, it should be clearly understood that the safety of men and material at the worksite will be the sole responsibility of the contractor(s).
17.2	The contractor(s) shall abide by the railway regulations in force for the time being and ensure that the same are followed by his representative, agents or sub-contractor(s) or workmen. He shall give due notices and training to his employees and workers about provision of the above Para.
17.3	While working within station limits especially on passenger platforms, the contractor(s) shall always ensure that sufficient space is left for free movement of passenger traffic. He must cover and/or barricade the excavations carried out in such areas and continue to maintain these till the work is completed with a view to avoid any accident to public or to railway staff or his own workmen, machinery and equipment.
17.4	The work must be carried out most carefully without any infringement of the Indian Railway Act or the General and Subsidiary Rules in force on the Railway in such a way that they do not hinder railway operation or affect the proper functioning or damage any railway equipment, structure or rolling stock except as agreed to by the Railway provided that all damages and disfiguration caused by the contractor(s) to any railway property must be made good by the contractor(s) at his own cost failing which cost of such repairs shall be recovered from the contractor(s). The work must be carried out in the yard without any infringement to the Schedule of Dimensions applicable for BG as issued by the Railway Board. It will be the responsibility of the contractor(s) to ensure that there is no infringement to the track which will affect the smooth and efficient running of traffic.
17.5	Moreover, if at any time the works to be carried out directly concern the safety to trains & locos, the contractor's staff must comply fully with the railway regulations given to him by authorized railway staff. The contractor's employee and workers may for no reasons operate an installation concerning train safety or train movement. They shall notify the authorized representative of the Railway who will take all necessary steps in this regard. Special attention of contractor(s) is drawn to relevant clauses of Indian Railways Standard General Conditions of Contract, April-2022 and advised to take all precautions for the safety of public, railway staff and his own personnel.
17.6	If the work is to be executed in proximity of the running railway track, the contractor(s) will be required to follow all precautions and carry out all works that may be necessary to ensure the safety of the running track/trains, without imposition of any speed restriction thereon as may be directed by the Engineer or his authorized representative. No claim whatsoever will be entertained for either any inconvenience or interruption caused to the contractor(s) or for the rescheduling of the operations or for any other reasons on this account.
17.7	The contractor(s) shall be responsible for safe custody of tools and for the safety of his labour. He should ensure that labour on work removes their tools clear of the track on the approach of any trains. After the day's work, the contractor(s) should ensure that the tools are deposited in the proper toolbox before the labour proceed for their home. Tools issued should not be allowed to fall in unwanted hands that can tamper with the railway track. The contractor(s) shall employ suitable supervisor to supervise the work at site. Though all the work relating to the safety of running trains shall be executed under railway supervision, presence of a qualified supervisor from the contractor's side is a must at the site of work.
17.8	In case of failure to adhere to above provisions or if unsafe practices/ safety violation by contractor(s)/his staff are noticed at the site of work, the contractor(s) shall be levied with a penalty of Rs 20,000/- for the 1st incident, Rs 50,000/- for the 2nd incident and Rs 1,00,000/- for subsequent such incident. Repeated safety violations shall become a valid ground for initiating the contract termination proceedings under Clause- 62 of Indian Railways Standard General Conditions of Contract 2022.
17.9	In the event of occurrence of an accident at the work site, a departmental enquiry shall be held and in case it is established that the accident has occurred on account of contractor's negligence or the

	negligence of his men, penalties up to an upper limit of 10% of the total cost of the work shall be imposed on the contractor(s). Further, the railway administration reserves the right to terminate the contract with immediate effect if the contractor(s) is found responsible for causing an accident after giving “show cause notice/notices” to the contractor(s) in addition to lodging criminal case under Railway Act/IPC.
17.10	In the event of the contractor(s) not completing the work or leaving it unsafe at the end of day's work, warranting speed restrictions to be imposed, track shall be attended by the Railway immediately at the contractor's cost without any further notice. In addition to the labour charges recoverable from the contractor(s), supervision charges @ 12½% and train detention charges @ Rs 5,000/- every half an hour of delay or part thereof shall also be recovered.
17.11	<b>In case of any damage to OFC/Cable occurred due to fault of contractor(s), a flat penalty of Rupees One lakh will be imposed (Ref: - CAO/C's letter No. 74- W/O/WA/ Pt. X/CP dated 02.08.2007).</b>
17.12	<b>Annexure-1</b> Attached (Para 826 of IRPWM, correction slip No. 69 dated 23.05.01) <b>Annexure-2</b> Attached (Training to Supervisors and Operators of contractor) <b>Annexure-3</b> Attached (Safety Compendium) <b>Annexure-4</b> Safety precautions & measures to be observed during execution of ROB/ RUB works (Railway Board's letter No. 97/CE-1/BRO/158 (Policy) Pt.- II dated 16.07.09) <b>Annexure-5:</b> JOINT PROCEDURE FOR UNDERTAKING DIGGING WORK IN THE VICINITY OF UNDERGROUND SIGNALLING, ELECTRICAL AND TELECOMMUNICATION CABLES.
<b>18.0</b>	<b><u>GENERAL RESPONSIBILITY AND LIABILITY OF CONTRACTOR:</u></b>
18.1	The contractor(s) shall be responsible for any type of structural damage to property or injury caused by work or his workmen to persons, animals, or things and shall indemnify the Railway in respect thereof and shall be held entirely responsible for all works carried out by him until it is finally taken over by the Railway and he will be liable to be called upon to make good any damage or loss which may occur to the bridge work by inclemency of weather, flood, etc. or due to any other cause during entire period until the work is taken over.
18.2	Examination or approval by the Railways of any drawings or other documents submitted by the contractor(s) shall not relieve the contractor(s) of his responsibilities and/or liabilities under this contract.
18.3	Notwithstanding the specifications and conditions stated in the contract, the Contractor shall keep Northern Railway authorities fully indemnified and free from all liabilities and risks consequential to any lapse on his part in respect of material quality, standard of workmanship, accuracy of fabrication and the like. He shall provide all labour and material required for execution of the work as per listed standards and in absence of any IRS & BIS specifications to the relevant British/American Standards.
18.4	Latest edition of relevant Codes including up-to-date correction slips, on date of submission of tender/negotiated rates shall govern. These Codes of Practice are available from the Manager, Government of India publication Branch, Patiala House, New Delhi and Director, Indian Standards Institution, Manak Bhawan, Bahadur Shah Zafar Marg, New Delhi.
18.5	The contractor(s) must have one copy of each relevant Code at site as applicable for ready reference of Site Engineer/other inspecting officials.
<b>19.0</b>	<b><u>SCHEDULE FOR TIMELY COMPLETION OF WORK AND PENALTY FOR DELAYS:</u></b>
19.1	The whole work shall be completed within the stipulated completion period from the date of issue of acceptance letter.
19.2	The sequence in which the various works & activities are programmed & scheduled to be carried out shall be prepared by contractor(s) in the form of Primavera/Histograms/S-curve/Gantt chart etc. and



	will be submitted to Railway within 30 days of the allotment of the work and the same shall be got approved from the Contract Signing Authority.
19.3	<b>Mid-term progress review and token penalty for slow progress:</b> The contractor(s) shall be required to maintain proportional progress in accordance with the Bar Chart/CPM chart approved by the Railway. During the course of work, the progress will be reviewed every 6 months and if the progress achieved by the contractor(s) is found to be significantly lagging behind the proportional progress shown in the approved schedule due to reasons entirely attributable to the contractor(s), then a token penalty of up to Rs 1,00,000/- per month of delay, can be imposed by the Contract Signing Authority on the contractor(s) after issuing 15 days “Show Cause Notice”. However, the penalty so imposed shall be waived off, if the contractor(s) achieves the scheduled cumulative progress as per approved Bar Chart/CPM chart in the subsequent quarters.
<b>20.0</b>	<b><u>RECORDS OF CONSTRUCTION WORK:</u></b>
20.1	The contractor(s) is required to take and supply to the Engineer-in-Charge, coloured photographs and films on construction activities including the one prior to the work.
20.2	The coloured photographs shall be taken by the contractor(s) of all the construction activities pertaining to the work at regular intervals as directed by Engineer-in-Charge. Three sets of 5” x 7” prints of each snap shall be supplied. Out of the above, the contractor(s) shall be required to supply, as directed by Engineer-in-Charge, blow up size colour prints of up to 36” x 36” size up to 5 photographs of each important site (minimum 03 copies of each). The soft copies of all the photographs taken shall also be supplied to the Engineer-in-Charge. The contractor(s) shall show extreme promptness in supplying the photographs on the directions of Engineer-in- Charge.
20.3	All the cost of reels, taking and recording, developing and printing, etc. shall be deemed to have been included in rates quoted against various items and nothing extra shall be paid for the items of work under this Clause as above.
20.4	The Railways shall have full ownership and copyright of all these photographs, and the contractor(s)/tenderer(s) shall indemnify the Railways against any claim of any sort. The contractor(s) shall maintain accurate plans and charts showing the dates and progress of all main operations and the Engineer shall have access to this information at all reasonable times. Records of tests shall be handed over to the Engineer’s representative after carrying out the tests.
<b>21.0</b>	<b><u>SITE REGISTERS:</u></b>
21.1	The following registers will be maintained at each site by the contractor(s):
(i)	<b><u>Site Order Register</u></b>
	The contractor(s) shall promptly sign orders given therein by the Engineer or his representative or his superior officers and comply with them. The compliance shall be reported by the contractor(s) to the Engineer in a reasonable time so that it can be checked/verified.
(ii)	<b><u>Cement Register</u></b>
	The register will be maintained to record daily receipt and issue of cement, thus indicating the balance quantity. The quantum of work done for the cement issued on particular date will also be mentioned.
(iii)	<b><u>Steel Register</u></b>
	This register will be maintained to record the receipts of steel items and details of reinforcement and members wherever steel is used.
(iv)	<b><u>Labour Register</u></b> This register will be maintained to show daily strength of labour in different categories employed by the contractor(s).
(v)	<b><u>Plant and Machinery Register</u></b>
	This register will record daily particulars of machinery with the contractor(s) and will be signed jointly by the Engineer’s representative and the contractor(s).
(vi)	Compaction Register (for earthwork in filling)
(vii)	Soil samples test register (for earthwork in filling)
(viii)	Quality control register for various materials

(ix)	Cube testing register
(x)	Daily progress register
(xi)	<b>Hindrance register:</b> This register will maintain the number of days when work could not progress/remained suspended and reason thereof. This list given above is not exhaustive, contractor(s) may be asked to maintain additional registers, if required by Engineer-in-Charge.
<b>22.0</b>	<b><u>INTERRUPTION OF WORKS DURING MONSOONS:</u></b>
	The contract period may extend over a monsoon, and the stipulated completion period is inclusive of the monsoon/rainy season. The contractor(s) should, therefore, plan and prepare his work keeping this fact in mind.
<b>23.0</b>	<b><u>CONSTRUCTION EQUIPMENTS:</u></b>
23.1	The contractor(s) shall arrange and operate at his own cost, all necessary tools, plants, machinery and equipment's necessary for successful and timely completion of work.
23.2	If in the opinion of the Engineer, equipment/plants brought by the contractor(s) are not suitable for the work concerned, the Engineer shall have the right to order the contractor(s) to replace them by suitable plants/ equipment's. In the interest of public convenience, the Engineer may insist on a specific way of execution of the work.
23.3	The contractor(s) shall be required to give a trial run of the equipment's for establishing their capacity to achieve the laid down specifications and tolerance to the entire satisfactions of the Engineer before commencement of any work.
23.4	All equipment's provided shall be of proven efficiency and shall be operated and maintained in a manner acceptable to Engineer-in-Charge.
23.5	No equipment shall be removed from the site without prior permission of the Engineer-in- Charge.
<b>24.0</b>	<b><u>MACHINERY AND PLANT:</u></b>
24.1	The contractor(s) will be entirely responsible to arrange all necessary machinery including concrete mixers, weigh batcher, vibrators, compressors, pumps, pneumatic equipment's, dredges, derricks, cranes, service girders, staging, motor vehicles, trailer, tools and plants and their spare parts required for sufficient and methodical execution of work and transport them to the site of work. Delay in procurement of such items due to their non-availability on account of import difficulties or any other cause whatsoever, will not be taken as an excuse for slow or non-performance of the work. Safety of plants and machinery will be the responsibility of the contractor(s) and for any loss due to any cause or wash away in flood or otherwise, no claim will be entertained on this account whatsoever.
24.2	The Railways may give on hire to the contractor(s) any plant or equipment, if available. But it will not entertain any claim due to the Railway's failure to do so nor can the Railway's inability to supply such plant be taken as an excuse for slow progress or non-performance of the work.
24.3	If, any plant is loaned by the Railway to the contractor(s) on hire, charges will be levied, as detailed below, and separate agreements will have to be entered into before the plant is issued.
(A)	The cost of the plant for the purpose of calculating the hire charges shall be its book value plus freight charges and all other incidental charges to which supervision charges at the rate of 12½% on total cost will be added.
(B)	The charges per annum will be calculated at the following rates on the cost of plant as per (A) above:
(i)	Ordinary repair and maintenance charges 5%.
(ii)	Interest on the capital cost at the ruling rate, dividend payable by the Railways to the General Revenue.
(iii)	Special repair and maintenance charges at 10%.
(iv)	Depreciation charges at the following rates:
	Light plant – 16% per annum
	Heavy plant – 10% per annum
	Special plant – 6% per annum

	The classification of the plants shall be as per Para 1202 of Indian Railway Bridge Manual 1998.
v	An additional 10% on the total (i) to (iii) above to meet contingencies.
	The hire charges per day shall be arrived at by dividing the annual hire charges vide (B) above by 250 which shall be assumed number of working days in a year for this purpose. These hire charges will be payable from the day ; the plant is handed over till it is returned by the Firm/contractor(s) to the Railways. However, during this period if the plant remains out of order for reasons beyond the control of the hirers or is sent for periodical overhaul, such periods shall not be counted for levy of hire charges provided a certificate to that effect is given by the Engineer. In case of any difference of opinion between the Engineer and the contractor(s), the decision of the Chief Engineer/Const. will be final and binding.
24.4	Running expenses including fuel, lubricants and stores and labour if supplied by the Railway will also be paid by the contractor(s) at the cost to be determined by the Railway. In general, the contractor(s) should make his own arrangements for the fuel, transporting them to the site of work and storing them for use as per the prescribed rules.
24.5	Staff and stores running the plant may be supplied by the contractor(s) with approval of Engineer. The staff must be properly skilled in operating the plant concerned.
24.6	Items of plant leased to the contractor shall be handed over to him at the railway workshop or at any place convenient to the Railway. Carriage charges, hire charges and other incidental charges including leading, loading and unloading etc. to the place of work as also back to the place of delivery or the railway workshop at nominated place, as required by the Railway, when a plant is no longer required by the contractor, will be borne by the contractor.
24.7	The tenderer must inspect the approach roads right up to/from site and should ensure that it would be possible for him to transport the materials by Road. <b>The firm who are on the RDSO's approved list of venders for fabrication of steel girder should only be engaged for the fabrication of ROB girders.</b>
24.8	<b>A).</b> The workshop staff shall have requisite experience, proven skill and experience in the technique of fabricating large components. Accuracy of fabrication shall be realized and ensured through controlled high precision jigs, fixtures and templates, which shall be inspected and passed by Engineer/ Any other inspection agency/officer (herein after called I.O) as nominated/ approved by the Railway. A portal for Rail -Road Inspection & Stage Management – Steel Girder (PRISM-SG) has been developed for inspection of steel girder fabrication for ROB. All the approvals by Inspecting Agency/Railway officials for QAPs, WPSS, WPQR, fabrication, welding, Painting including final stage Inspection etc. for fabrication of Standard and Non- Standard girders used in ROB. shall be processed through this portal. The GADs and structural drawings will be uploaded, and contractors will be assigned through PRISM-SG portal.  <b>B.</b> The Metallurgical Engineer /Consultant of Recognized testing House deployed by Contractor at his own Cost before start of and/or during fabrication works as nominated/ approved by the Railway In case, the contractor(s) fails to deploy the Metallurgical Engineer /Consultant of Recognized testing House as aforesaid, he shall be liable to pay Rs 50,000/- (Rs Fifty thousand only) for each month of default or part thereof.
24.9	The contractor (at his own cost) shall provide new Two (02) Nos. Desk Top computer (All-in-one) including all necessary accessories' & Colour Printer-cum scanner and copier with wi-fi and USB enabled to the satisfaction of engineer-in-charge Intel Core i5 or higher version having MS Office software and other relevant essential software along with Wi-Fi facility and experienced operator having knowledge of Auto CAD and good typing speed (minimum 30 wpm) in the office of Dy. CE/C/RSP office/PSSA office, for a period up to the expiry of maintenance period, after that it will be the property of the contractor. If not provided within one month from the date of issue of LOA, the recovery shall be made @ Rs. 25,000/- (Rs Twenty-five thousand) per month for the period up to the

	completion of the work. The maintenance, upkeep and all consumables shall be borne by contractor at his own cost.
24.10	The contractor will be required to set approximately 8 web-enabled cameras at each work site duly giving live feed through suitable app or web link to Railway/PSSA officers as decided by Engineer- in-charge, for a period up to the expiry of maintenance period, after that it will be the property of the contractor. If not provided within one month from the date of issue of LOA, the recovery shall be made @ Rs. 25,000/- (Rs Twenty-five thousand) per month for the period up to the completion of the work. The maintenance, upkeep and all consumables shall be borne by the contractor at his own cost.
24.11	The contractor (at his own cost) will keep deployed at least one survey team, the survey team consisting of one competent surveyor, Auto CAD Operator, two competent survey staff and a Total Station Survey Instrument of approved configuration with all other for exact and precise setting out of the all the works. Contractors shall also have to make/maintain adequate numbers of secondary reference survey pillars/points/towers of suitable dimensions.
24.12	<b>Availability of Vehicle:</b> Contractor shall provide (1) one four-wheeler (TATA SUMO/Mahindra Bolero or similar) of Model not older than 2023 within 7 days after date of award or when instructed by Railway officials , in good running condition at his own cost for the carrying of Railway/PSSA staffs for day- to- day testing of materials/ liasioning with state govt. offices and other incidental works. Vehicle will run for approx. 3000 Km. per month for 18 months or till the completion of work whichever is later, else recovery shall be made @ Rs. 60,000/- (Rs. Sixty Thousand only) per month for the period of absence on prorate basis.
25.0	<p><b>Method Statement</b></p> <p><b>Method statement for execution planning of the work including quality assurance plan (QAP) shall be submitted by contractor for approval of Dy. Chief Engineer/Const/RSP/NR before execution of work and followed strictly.</b></p> <p>The contractor should identify the various major activities required for successful completion of the work and submit the method statement for each major activity before start of activity for approval of Railway. The method statement shall be submitted activity wise and should broadly contain the following:</p> <ol style="list-style-type: none"> <li>1. Purpose</li> <li>2. Scope</li> <li>3. List of references used for preparation of method statement and that required during execution of activity</li> <li>4. The responsibilities of its staff involved in execution.</li> <li>5. The detailed methodology of execution for the activity including its sub activities step by step along with sketches/drawings/photographs/other relevant details, as required.</li> <li>6. List of various equipment's/tools/plants, their capacity and numbers required.</li> <li>7. List of technical persons to be deployed for supervision.</li> <li>8. List of type of other staff along with their numbers.</li> <li>9. Tests required/ to be carried out, if, any, before start of activity, during activities or after completion of activity, if any, duly referring to various IS, IRS, IRC, other codes as applicable along with acceptance criteria for various tests.</li> <li>10. Quality Assurance Plan with Quality Control measures.</li> <li>11. Various Performa's required for recording of data/tests results/observations during the activity for ensuring proper Quality Control.</li> <li>12. Check list to be observed at various stages of activity as applicable.</li> <li>13. Safety measures to be adopted at site.</li> <li>14. Any other details as considered necessary for specific activity.</li> </ol>

	<b>Contractors should submit a method statement well in advance of the likely start of activity. The contractor shall not have any claim for extension of the time of completion due to delay in approval of the method statement.</b>
26.0	<p><b>GENERAL:</b></p> <ul style="list-style-type: none"> <li>(i) For effective means of communication in Railway working, the contractor shall provide to Railway/PSSA staffs 05 (five) no's of new walkie-talkie of approved brands at each work site for a period up to the completion of work, after that it will be the property of the contractor. If not provided within two months from the date of issue of LOA, the recovery shall be made @ Rs. 25,000/- (Rs Twenty-five thousand) per month for the period up to the completion of the work. The maintenance, upkeep and all bills shall be borne by the contractor at his own cost.</li> <li>(ii) Contractor will have to produce a license for labour to be engaged on for this work from the concerned Labour Enforcement Officer under Contractor Labour Regulation and Abolition Act-1970 prior to the commencement of the work failing which payment for the work done will not be made.</li> <li>(iii) Tenderers are required to observe all safety precautions at all times as contained in Annexure attached with the tender documents, nothing shall be paid on this account.</li> <li>(iv) The contractor will have to arrange Electric connection if required at his own cost. However, necessary assistance in arranging Electric connection will be given by Railway on the written request of contractor. In case, Railway is unable to arrange Electric connection, Railway will not be responsible at all, and the contractor will have to make his own arrangements.</li> <li>(v) If proper approach road for transporting the various material is not available, the contractor may have to handle the material involving head load etc. Proper space for stacking the material may not be given in the yard and it may be away from the yard. The contractor will be required to stack the material at the specified area nominated by the Engineer In-charge.</li> <li>(vi) The work is to be completed on a strict time-bound schedule. The contractor(s) who have sound experience and necessary resources, requisite tools and plants, equipment and finance to handle the job shall be considered. Tenderer(s) are required to submit credentials about the experience of having executed these kinds of various works.</li> <li>(vii) After the acceptance letter is issued, contractor will be required to submit the detailed program for completion of work.</li> </ul>
27.0	<p><b>SITE OFFICE</b></p> <ul style="list-style-type: none"> <li>(i) In continuation of special condition no. <b>10.3</b>, the contractor shall provide a temporary site office with adequate facilities i.e. furniture, bathroom and WC at each location of the work also immediately afterward of the work with following details at his own cost.</li> <li>(ii) Contractor will provide one digital camera at site for main activities at site and for taking photograph/snap shots at various stages of construction activities for display in site office and other important offices.</li> <li>(iii) The above-mentioned items from item No. 27.0(i) to 27.0(ii) shall remain with Railways during the currency of the contract and will be returned to the contractor after the passing of maintenance period of the contract.</li> </ul>
28.0	<b>BARRICADING:</b>
28.1	<p>The contractor before starting the excavation work along the running line or towards road shall have to barricade the entire length of the running line as well as road along which the work has to be carried out. Barricading must be done as per approved plan and to the entire satisfaction of the Engineer-in-charge. Contractor has to take precaution that the barricading should not fall towards the railway running line or fall inside excavated portion or pedestrians.</p> <p>Payment for barricading will be made under relevant item.</p>

	Excavation for thrust bed shall not be permitted in any case until barricading as per approved design & plan are provided at site.
29.0	<b>RCC BOX PUSHING WORK:</b>
29.1	Procurement/Fabrication of necessary plants and equipment like jacking jigs, jacks, pumps and any other plant equipment required for execution of this work, will be borne by contractor at his own cost.
29.2	Casting of RCC box will include fixing of front-end frame/cutting shield/Edge, as per design/drawing submitted by contractor & approved by Railway with all fabricated enabling work. The structural steel work in cutting edge will be the property of the contractor after completion of the work and nothing extra will be paid for this.
29.3	Design and casting of thrust bed including pile foundation, if required, will be done by the contractor at his own cost as per their design duly approved by the Railways. The design shall be from reputed consultant/ Technical institution and will be got approved by the Railway. The contractor has to make his designer available for any clarifications for checking of design/drawings by the Northern Railway and nothing extra will be paid for the same. The casting of thrust bed all ancillary works are deemed to be included in the relevant USSOR item, RCC, cement and steel actually required as per specification and approved drawing for the thrust bed will be paid by the Railway through the relevant USSOR items. The contractor shall provide 5mm thick steel lining in jacking pin pockets and nothing extra shall be paid on this account. The 5mm thick steel lining shall be the property of the contractor after completion of work. The contractor shall be fully responsible for the safe functioning of the thrust bed. Any modification of the design and drawing of thrust bed necessitated due to presence of any underground services located during execution of work shall be done by the contractor expeditiously after obtaining approval from Railways and nothing extra will be paid for the same
29.4	The working drawings of scheme for pushing the box segments through existing embankment shall be furnished by the contractor and same shall be approved by the Railway. For this, all drawings and technical detailing, modus operandi sequence operations etc. shall be got done from reputed consultants having good experience in this field. However, the pushing of boxes shall be done under running traffic conditions. The contractor shall ensure the stability of the existing embankment during pushing under all circumstances. The temporary supporting arrangement of the embankment shall be arranged by the contractor as per site requirements for safety consideration & nothing extra shall be payable on this account.
29.5	Earthwork in excavation by manual means in all types of soil for box pushing including disposal of excavated earth outside/within the Railway land as directed by Engineer in charge of the work including all lead and lift is covered in the item of box pushing and nothing extra is payable.
29.6	The item of Box pushing also covers the Design, drawing, manufacturing and fabrication of the front and frame/cutting shield and intermediate jacking stations with design calculation to be approved by the Railway.
29.7	During the jacking of precast RCC boxes to form the opening under running traffic conditions, precaution will be taken to control deviation in level as well as alignment. However in unavoidable circumstances based on soil strata, the maximum allowable deviation of the precast boxes at any time from the theoretical alignment will be limited to 300mm horizontal and 150mm in vertical direction. Recovery for the deviation over and above the maximum allowable deviation limit upto a certain limit for which the decision of the Engineer in charge shall be final and binding, shall be made at the following rates: - Rs 10,000/- (Rupees ten thousand only) per ten mm or part thereof in horizontal direction. Rs 10,000/- (Rupees ten thousand only) per ten mm or part thereof in vertical direction.
29.8	Grouting of gaps with suitable material such as Epoxy or as directed by the Engineer in charge, having adequate structural strength at intermediate jacking station of pushing will be done so that no leakage occurs from any of the joints during service of the bridge.

29.9	The casting of thrust beds for each location as per contractor's design duly approved by the Railway is included in the scope of work under the relevant USSOR item. Thrust bed will be left at site as it is after the completion of the pushing of the boxes.
29.10	Thrust bed shall be cast in such a way that it does not endanger safety of the existing/new embankment/ Railway track. The contractor shall do the protection of the embankment and nothing extra will be paid on this account.
29.11	<b>DRAG SHEET:</b> Drag sheets shall be provided by the contractor to minimize drag and disturbances of soil cushion on the boxes during box pushing operations. Minimum number of drag sheets/layers as directed by Engineer-in- charge, will be provided based on numbers of tracks to be crossed (One layer per track). Cost of all arrangements re- quired in connection with drag sheet will be provided free of cost by contractor and nothing extra shall be paid. Design & drawing for provision of drag sheets shall be furnished by the contractor and got approved from the railways. Contractor has to make his designer available for any clarifications for checking of design/ drawing by the railway and nothing extra will be paid for the same.
29.12	Design & casting of boxes will be as per Railway's design and drawing. Each box will be casted on thrust bed and will be pushed through the embankment under running traffic condition or by air pushing as per approved plan by Railways i.e. CE/C/RSP.
29.13	Providing of wearing coat of specified mix on the floor of the RCC boxes with designed slope. Providing longitudinal drainage arrangements within the RCC boxes with about 100mm depth and 150mm wide drain on either side of the boxes with provision of catch water drain at approaches of boxes if required as per drawing approved by Railway.
29.14	Construction of footpaths, wheel guards in boxes and parapet wall as per design & drawing of the railway.
29.15	Earthwork in excavation in all type of soil including cutting of road surface/soling/wearing coat and masonry etc. in RCC box including all lead and lift and disposal of the excavated/ surplus earth outside Railway land during pushing is included in the item of Box pushing.
29.16	During pushing box, for safe running of rail traffic certain supporting system of provision of R.S. beams/girders/cribs etc. duly approved by the Railways, has to be arranged by the contractor nothing extra will be paid for the same. Contractor shall also supply labour and track supervisor with track T&P to ensure safe running of trains including watchmen with all safety equipment to ensure that there is no disruption/suspension of road/railway traffic during pushing of the boxes. For any suspension/disruption of traffic due to the fault of the contractor or due to not adopting the safety measures, he/ they shall be liable to pay a penalty of Rs. 1.00 lac (Rs. One Lac only) per hour or part there of suspension of rail traffic subject to a maximum of 5% of the contract value. The period of disruption of traffic on contractor's account will be decided by the Chief Engineer/Const./Road Safety Project and shall be binding on the contractor(s).
29.17	Adequate length of thrust bed should be provided so that work of casting, curing, box pushing etc. can be done simultaneously to ensure continuous pushing of box segment one after another. However, length of thrust bed should be planned to accommodate full length of box segments to be pushed.
29.18	During the execution of work, if any sub soil water is met with, the contractor will make their own arrangements to bail out /pump out such water from the site free of cost. Any unforeseen accumulated water including rainwater, during the progress of work, will be bailed out /pump out by the contractor free of cost and the rates quoted should include all these elements.
29.19	Lateral / Longitudinal pushing of boxes from auxiliary to main thrust bed will be required to be done in air for positioning the box segments prior to pushing in embankment as per site condition. No payment for such pushing in air shall be paid.
30	<b>CRITERIA FOR DESIGN OF THRUST BED:</b>
30.1	Size of Thrust Bed:

	Adequate length of thrust bed should be provided so that work of casting, curing, box pushing etc. can be done simultaneously to ensure continuous pushing of box segment one after another. However, length of thrust bed should accommodate all boxes as far as possible.
30.2	<b>Material:</b> 75 mm thick M-10 /M-15 or any other design mix Plain Cement Concrete at bottom. M-30/M-35 or any other design mix Reinforced cement concrete slab with ready mix concrete (RMC) & 50 mm thick 1:2:4 cement concrete screed at top.
30.3	<b>Jacking load:</b> Jacking load required to push the box segment through bank arch depends on several parameters including several site conditions but for a minimum, the following criteria may be adopted for guidance. However, the overall safety of the structure would be the contractor's responsibility. Frictional resistance between bottom slab of box and the soil in contact. The coefficient of friction shall be taken as $\tan$ , being the angle of shearing resistance of the soil in contact. When multiplied by the total downward load will give the frictional resistance. Frictional resistance between side walls of the box & soil in contact. The as defined earlier when multiplied by the earth pressure at rest and the dead load surcharge (Calculated as per IRS Sub structure code) would give frictional resistance from side walls. Frictional resistance between the drag sheets on top slab of box and the soil in contact. The total downward load on top slab of box (Track Wt +Wt of earth retained on top) when multiplied by " $\mu$ " (being on higher side) will give frictional resistance on top. Passive resistance of soil at front end of box (cutting edge)
30.4	1/3rd of the passive earth pressure as calculated by the Coulomb's theory vide IRS Sub-structure code clause 5.7.1.6 shall be taken at rear end of the thrust bed and back side of shear key for calculating stability of the thrust bed.
30.5	Factor of safety: Factor of safety against sliding shall be minimum of 1.5.
30.6	Analysis: The calculated jacking load would induce a direct axial thrust on the thrust bed, a bending moment due to the lever arm of the jacking load.
30.7	Design: The section should be designed by Limit state method as per IRS Concrete Bridge Code.
30.8	The structure of thrust bed would consist of a grid of beams on the direction of pushing. Main beams being between Pin Pockets.
31	<b>SUBMISSION OF DESIGN AND DRAWINGS FOR APPROVAL:</b>
31.1	After award of the tender, the contractor shall engage a structural designer having minimum 10 years of relevant experience and submit the structural detailed design calculations for RCC box, thrust bed and other connected structures in three copies along with the drawings after obtaining proof check from IIT within a period of 02 month after issue of LOA to Railway administration for approval.
31.2	It shall be the responsibility of the tenderer/s to ensure continuous attendance and assistance of his design Engineer's representative and get the design and drawings approved by the Chief Engineer/ Construction, Northern Railway, Delhi.
31.3	After the design and drawings have been approved, the contractor is required to submit six copies of the approved design. The original being typed on electronic machine on bond paper, the report being bound suitably on the format being decided and approved by Engineer-in-charge. The final design report shall be comprehensive text giving all the detailed design calculations, brief theory for the basis of design etc. as directed by the Engineer-in-charge. The tenderers shall also submit eight copies of approved detail drawings including one reproducible (tracing) media to the full drawing sheet size 71x56cm as well as 4 sets of drawings reduced to (A-4) size using the standard reduction procedure.



31.4	The cost of above will be deemed to have been included in rates, in the relevant USSOR/DSR/NS item of tender schedule and nothing extra shall be payable.
31.5	The tenderer/s shall especially note that, while every effort shall be made to approve the design and drawings expeditiously, no claim shall be entertained on account of delay in approval of design and drawings for whatsoever reasons.
31.6	The design and drawings after approval shall be the property of the Northern railway and Northern Railway shall have exclusive right to use and reuse it elsewhere. The Contractor shall have no claim, whatsoever, in this regard.

### **ADDITIONAL SPECIAL CONDITIONS RELATING TO SITE DATA & SPECIFICATION FOR ROB/RUBs**

**NAME OF WORK:** Construction of 4 ROB (i) 2 lane ROB in lieu of LC- C-28 at KM. 18/1-2 on Jalandhar Cantt - Hoshiarpur section of Firozpur Division ii) 2 lane ROB in lieu of LC-48 at KM. 71.461 on Bathinda - Shri Ganganagar section of Ambala Division (iii) 2 lane ROB in lieu of LC-B-20 at KM. 28/0-1 on Bathinda -Sriganganagar section of Ambala Division (iv) 2 lane ROB in lieu of LC-58 at KM.86.541 on Bathinda -Sriganganagar section of Ambala Division (including LHS) of Northern Railway under the Road Safety Projects Unit (RSPU)/NR New Delhi.

1.0	<b>SPECIAL CONDITIONS:</b>
1.1	The detailed scope of work shall be as same as elaborated in clauses 1.0 to 2.0 of special conditions relating to site data & specification of this tender with observing all safety norms.
1.2	Fabrication of Composite/Bow String/Camel Back steel girder in RDSO approved fabrication yard as per approved drawing & Specification. The land will have to be arranged by the contractor at his /their own cost for establishing a fabrication yard with prior approval of the Railway. In case railway land is available and spare able for setting up of fabrication yard, same shall be provided to contractor free of cost. However, no claim on account of no availability of railway land for setting up of the casting yard shall be entertained.

1.3	<p>i. Fabrication of bow string type steel girder can be taken up in RDSO approved workshops.</p> <p>ii. Approved workshop must have a complete tracking system of raw material procured and utilized for various components and same should be duly reflected in the material inspection register. In addition to MTC/test certificates available, engineers shall have the right to ask the contractor at any time to draw samples of any material from its stock piles or any other locations approved by engineers. The samples are to be drawn as per provisions of IS 2062 and tested in terms of provisions of IS 2062 in the laboratory approved by engineer, at the cost of contractor.</p> <p>iii. The work of fabrication in the approved workshop shall be at all times open for inspection by railway.</p> <p>iv. The contractor shall transport with loading/unloading and stacking all fabricated material in his own trucks/trailors, tools, labour and machinery and nothing extra on this account shall be payable. Though approach roads are available to site of works, railway does not take any responsibility for maintaining it fit for movement of trucks/trailors. The contractor must take all precautions in transportation and in case of damage in any part/member during transit/handling, same shall be repaired/replaced at no extra cost.</p> <p>v. No girder/component shall leave workshop premises without inspection and final passing of girder/member with embossment of railway. Embossment is essential on each component also before application of surface coating.</p> <p>vi. <b>Payment of girder (material + fabrication) shall be made after same is brought to site of work. In case, contractor prefers to claim payment for procuring material in terms of provision of item 041010, Bank Guarantee of equal amount with validity of minimum 1 year which can be extended if required, shall be furnished before release of payment. Bank Guarantee shall be returned after girders are transported to site in safe condition without any damage to any girder/component. Dy. Chief Engineer/Const. to fully satisfy himself in this regard before the release of the Bank Guarantee.</b></p> <p><b><u>Payment Schedule: -</u></b></p> <p><b>Material at site =40%</b></p> <p><b>Fabrication at site =15%</b></p> <p><b>Erection /Launching =20%</b></p> <p><b>Completion including painting and finishing =25%</b></p> <p><b>Out of 25% payment at Sl. No. 4, 10% payment will be released after completion of deck slab, railing, anti- crash barrier, wearing coat etc. Pro rata payment shall be made in intermediate stages as decided by Engineer in-charge.</b></p> <p><b>Payment shall be made on actual cut size except gusset plates. No payment shall be made for any temporary work such as staging &amp; its foundation for erection of girder.</b></p>
1.4	Launching of steel girder, casting of deck slab as per approved methodology over/other than track/running track under traffic & power block observing all safety precautions approved by Engineer In charge and nothing extra will be paid on this account.
1.4A	<b>The agency should visit the site before quoting the rates. All the enabling work required for crane working and launching of the girder are part of the launching work. No separate payment shall be made for enabling works.</b>
1.5	Shuttering plates used for open/pile cap foundation, piers, pier caps, pedestal etc. shall have minimum 5 mm thickness for ensuring smooth finish and to prevent bulging during concreting. Piers shall be cast in the minimum number of lifts and normally height of one lift shall not be less than 2m.
1.6	<b>For smooth execution, HSFG Bolts in place of rivets are to be provided in steel girders, no extra payment will be made for using HSFG bolts in fabrication.</b>
1.7	Wherever applicable, the tenderer must take permission/approval from the local bodies

	/Authorities. Railway will give recommendatory letters on demand of tenderer to help the tenderer in this issue but the responsibility to obtain such permission will be of the tenderer.				
1.8	It is expected that the contractor will work in close coordination with other agencies. No additional claim for any restriction of space etc. by working of other agency should be entertained.				
1.9	The contractor should cover the Insurance Policy for the workers at site as per GCC 2022 relevant clause as well as cover the workmen compensation policy.				
1.10	Any root or branch of tree coming in the way of foundation/pile excavation etc. shall be cut/trimmed by the contractor at his own cost. No extra payment shall be made.				
1.11	Contractor will not be entitled for any claims if any of the items indicated in the schedule is not done or not given to him.				
1.12	Execution of all items is governed by general and special conditions of contact.				
1.13	Rates include all taxes i.e. sales tax, octroi, excise duty, other levies etc. and all other incidental and unforeseen expenditure if any and no claim shall be entertained in this regard. The tenderers shall quote their rates accordingly.				
1.14	The contractor shall have to arrange precision measuring equipment like, total station, levelling instrument, staff, calibrated measuring tape etc. during execution of work, as per the requirement and as directed the Engineer-in-charge and no extra payment will be made for the same.				
1.15	Rates include the charges of mix design of controlled concrete, cube test for checking strength of concrete at site and quantity of cement concrete consumed in cube preparation and it may be noted that mix design shall be got done in any Govt. approved laboratory or any Government Engineering College as per IS Code 10262-2008 <b>Note: The contractor should submit the mix design within two months after issuing LOA.</b>				
1.16	In case of USSOR/NS/DSR items of reinforced cement concrete inclusive of cement and admixture, minimum cement content, maximum permissible water cement ratio and desired slump to ensure proper pumping of concrete for different type of members shall be as per following:				
	S No	Item	Minimum cement content (kg)	Max water cement ratio	Slump (mm)
	1	Road Over Bridge			
		Piles	400	0.4	150-200
		Substructure & Superstructure RCC PSC	300 400	0.45 0.4	150-175
		Railway Bridge			
		Piles	400	0.4	150-200

	Substructure & Superstructure (RCC)	400	0.4	150-175
	Superstructure (PSC)	400	0.4	100-120
	<b>Building</b>			
	Piles up to 600mm Dia & 10mlength	350	0.4	150-200
	Structure	320	0.45	100-120
The quality of cement and admixture should be adjusted to ensure proper strength, durability and workability as per site requirement				
1.17	Being a composite item of RCC, acceptance criteria for the concrete is of paramount importance and provision of clause 18.6 of IRC-112-2011 (as amended from time to time) should be strictly adhered to. Accordingly, all relevant tests as per the specified sampling frequency in the above noted clause shall be strictly adhered to. In case concrete is not found to comply with acceptance criteria, the tenderer will demolish the affected part at his own cost and recast it. Nothing extra shall be paid for it, including the cost of reinforcement required to be replaced in such process.			
1.18	The tenderer is supposed to estimate the cement consumption at his end before submitting his offer and accommodate the cost of any alteration in cement content over the minimum cement content specified as nothing extra is payable for any increase in cement content during design mix. In case PPC Cement is used in place of OPC Cement in the NS items, suitable deduction as per relevant SOR Item/Chapter will be done.			
1.19	Material ingredients of concrete shall be as per clause 18.4 of IRC-112-2011 (as updated from time to time).			
1.20	Detail report along with sketches about the work done will have to be submitted by contractor in two (2) copies duly incorporating photographs and video recording of the work done at various stages. Completion drawing prepared in Auto CAD is also to be submitted in 6 copies along with the original tracing and in CD.			
1.21	Cement will be supplied by the contractor. However, NS items for RCC (if any) have been prepared including cost of cement, payment for cement in other items will be made under the relevant USSOR-2021 item.			
1.22	Shuttering plates used for open/pile cap foundation, piers, pier caps, pedestal, deck slab etc shall have minimum 5 mm thickness for ensuring smooth finish and to prevent bulging during concreting. Piers shall be cast in minimum number of lifts and normally the height of one lift shall not be less than 2m.			
1.23	Rates include the charges of mix design of controlled concrete, cube test for checking strength of concrete at site and quantity of cement concrete consumed in cube preparation and it may be noted that mix design shall be got done in any Govt. approved laboratory or any Government Engineering College as per IS Code 10262-2008.			
1.24	Test Certificate for steel will be furnished by the contractor at his own cost from a laboratory approved by the Engineer-in-charge.			

1.25	<p>In case of discrepancies in the description or conflicting interpretation of provisions kept in different sections of contract or among various specifications/codes, following order of preference shall be followed:</p> <p><b>Technical Matters:</b></p> <ol style="list-style-type: none"> <li>Description of the item of BOQ.</li> <li>The specifications mentioned in this document including specifications of USSOR shall be prime governing. Codes/specifications specifically mentioned in these documents shall have overriding preference over other codal provisions.</li> <li>Where there is conflict between provisions in IRS &amp; IS specifications, provisions in IRS specifications shall prevail.</li> <li>Where there is no provision of specifications in IRS, provisions in IS specifications should be adopted. Where there are no provisions in IRS and IS Specifications, provisions in IRC Specifications should be followed.</li> <li>The decision of Engineer shall be final and binding in the interpretation of the clause of the codes of practice and specifications of this tender and no claim whatsoever shall be entertained on this account from the Contractor.</li> </ol> <p><b><u>General/Other than Technical Matters</u></b> –For general matters, order of preference shall be as follows:</p> <ol style="list-style-type: none"> <li>Description in the item of BOQ.</li> <li>Provisions contained in “ site data and specifications section of the tender document”</li> <li>Provisions contained in special tender conditions and instructions to tenderer.</li> <li>General Conditions of Contract.</li> <li>Provisions contained in code of practice for Engineering department.</li> </ol>
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### **SPECIFICATION FOR NS ITEMS**

SN	NS Item
2.0	<b>Stud shear connector shall conform to BS EN ISO 13918: 2008. Salient provisions of ISO 13918: 2008/RDSO drawing are as under:</b>
2.1	<b>Stud shear connector</b> – Stud shear connector shall have minimum tensile strength minimum yield strength and minimum elongation conforming to property class SD1 of BSENISO 13918:2008.
2.2	Only weldable material shall be used for studs. Non alloyed steel studs are weldable if hardness increase is low for which carbon content shall be less than 0.2%. Tensile properties as determined by test of bar stock after drawing GAR of finished studs shall conform to IS:3935- 1966
2.3	Dimensions of shear studs shall be as specified in RDSO Drawing No. RDSO/B- 11758/1. Area of weld shall be at least twice the cross-section area of stud.
2.4	Diameter (D7) of ceramic ferrule is essential for weld quality and dimensions of ferrule shall be as specified in figure 13/table18 of the ISO13918 and Dia shall be 25mm+0.5 - 0.
2.5	Tip of the shear connector may be chosen by the manufacturer. The stud tip is supplied with flux in the form of a pressed fitted aluminium ball or aluminium spray coating.
2.6	Crack in the head of shear connector shall be permissible only up to following dimensions, $CD < 0.25 \times (\text{head diameter of stud} - \text{nominal diameter of stud})$
2.7	Mass of shear connector of 25mm diameter with 200mm shall not be less than 85Kg per 100 pieces.
2.8	Finish length of 200mm long stud shall have tolerance of +1/-2mm. Diameter of weld collar shall be minimum 31mm and height of weld collar shall be minimum 7mm for 25mm Dia studs.

2.9	To check fixing of studs ring test and bend test shall be performed. Ring test involves striking the head of studs with a 2 Kg hammer. A ringing tone indicates good fusion whereas dull tone indicates lack of fusion.
2.10	<p>Technical Matters:</p> <p>Description of the item of schedule item &amp; quantities.</p> <p>The specifications mentioned in this document, including specifications of USSOR, shall be prime governing. Codes/specifications specifically mentioned in this document shall have overriding preference over other codal provisions. Where there is conflict between provisions in IRS &amp; IS specifications, provisions in IRS specifications shall prevail.</p> <p>Where there is no provision of specifications in IRS, provisions in IS specifications should be adopted.</p> <p>Where there are no provisions in IRS and IS Specifications, provisions in IRC Specifications should be followed.</p> <p>The decision of the Engineer-in charge shall be final and binding in the interpretation of the clause of the codes of practice and specifications of this tender and no claim whatsoever shall be entertained on this account from the Contractor.</p>
2.11	Bend test requires displacing latterly 25% of height of stud using 6 Kg. hammer. Weld should then be checked for sign of cracking or lack of fusion. Bend studs should not be straightened back. 2% of studs shall be subject to testing.
<u>2.12</u>	In case of defective stud no attempt should be made to replace defective stud. Additional stud may be provided as close to defective stud as possible.
<b>3.0</b>	<b><u>SPECIFICATION FOR LAUNCHING OF STEEL GIRDERS WITH ROAD CRANE</u></b>
3.1	Prior to traffic block hours fabricated girder will be shifted from manufacturing workshop to launching site near railway track by using road vehicle. The launching of girder shall be done by road crane (CR) as per design load capacity of girders.
3.2	The methodology for launching girders onto the top of the pier cap is elaborated here under. If proposed road over bridge is in right angle or skew angle, the access available for crane to lift and place the girder on pier cap to be checked before shifting of girders at site, which necessitates cranes with high load capacity and boom length.
3.3	<b><u>Modus Operandi For ROB Girder Launching</u></b>
3.4	<b><u>PRE BLOCK ACTIVITY</u></b>
3.4.1	Ground preparation for crane placement and girder erection.
3.4.2	Erection of girder (G) G1, G2, G3 etc – All girders to be erected near piers. Nearest girders shall be kept at distance not less than 5 m from nearest track centre.
3.4.3	Sandbags placement between track for crane movement during block.
3.4.4	Positioning of adequate capacity crane CR1, CR2 and CR3 etc depending on the weight of the girders near erection site on either end of the girders and its trial for lifting capacity.
3.5	<b><u>BLOCK ACTIVITY FOR GIRDER G1</u></b>
3.5.1	Lifting first girder G1 on either end by cranes CR1 or CR2 and placing It on road vehicle Trailor.
3.5.2	De-Propping of cranes CR1 and CR2 and its movement to near launch site including propping on already prepared ground.
3.5.3	Movement of cranes CR3 to near abutment (A) A1 and its proper positioning and propping.
3.5.4	Clamping of girders G1 by crane CR1 placed near abutment and by crane CR2 placed another side abutment/mid pier. Orientation of girder G1 shall be across the railway track along the ROB crossing angle. Using crane CR1 and CR2 and its placement on pre-positioned CC Cribs/Wooden blocks. By this orientation shall be within the reach of crane CR1 and CR3 for crane capacity at a maximum encountered reach and boom height. 20 Men on either side of girder shall control excessive sway using by chain tied to the girder.

3.5.5	Clamping of girder G1 on either end using CR1 and CR3 within its maximum allowed reach and lift ensuring proper balance of girders. Lifting of girders in tandem using CR1 and CR3 to place it on steel stool/C.C. cribs A1. 20 men on either end of the girder shall control excessive sway using by tied to the girder.
3.5.6	Securing the launching girder G1 as per standard securing arrangement drawing
3.5.7	Block activity for girder G2, G3 etc.
3.5.8	Same sequence to be repeated except security arrangement. Launching girder shall be secured using cross girder/casting of cross beam on abutment/piers connection with adjoining with launched girder.
3.5.9	De-propping the crane CR1, CR2 & CR3 etc. and it's positioning away from railway track infringement
3.6	<p>Requirement of T &amp; P for launching of girders</p> <p>Road crane of adequate capacity – 2+1 (1 for reserve).</p> <p>Tractor trolley- 2 Set</p> <p>Manpower - 60 No.</p> <p>Road Trailer - 2 No (extendable length)</p> <p>Lightening arrangement during night with generator of suitable capacity as per direction of engineer-in-charge. Further the requirement of machinery (T&amp;P) for launching of girders may vary from site to site and decision of Engineer in Charge will be final and nothing extra will be paid for additional machinery.</p>

Signature of the Tenderer(s) Address

	<b>ANNEXURE-1</b>
	IRPWM C/S No. 13 to the (IRPWM 2020) dated 14.06.2023
	(Authority RB letter No. 2022/CE-II/CS/IRPWM2020 dated 14.06.2023)
	A new Para No.826 be added to Chapter VII of the IRPWM, 1986 to read as under:-
826	Safe working of contractor(s) – A large number of men and machinery are deployed by the contractors for track renewals, gauge conversions, doublings, bridge rebuilding, etc. It is, therefore, essential that adequate safety measures are taken for safety of the trains as well as that of the work force. The following measures should invariably be adopted:
(i)	The contractor(s) shall not start any work without the presence of railway Supervisor at site.
(ii)	Wherever the road vehicles and/or machinery are required to work in the close vicinity of railway line, the work shall be so carried out that there is no infringement to the Railway's Schedule of Dimensions. For this purpose, the area where road vehicles and/or machinery are required to ply, shall be demarcated and acknowledged by the contractor(s). Special care shall be taken for turning/ reversal of road vehicles/machinery without infringing the running track. Barricading shall be provided wherever justified and feasible as per site conditions.
(iii)	The look out and whistle caution orders shall be issued to the trains and speed restrictions imposed where considered necessary. Suitable flagmen/detonators shall be provided where necessary for protection of trains.
(iv)	The Supervisor/Workmen should be counselled about safety measures. A Competency Certificate to the contractor(s) as per Performa annexed shall be issued by AXEN, which will be valid only for the work for which it has been issued.
(v)	The unloaded ballast/rails/sleepers/other P. Way materials after unloading along track should be kept clear off moving dimensions and stacked as per the specified heights and distance from the running track.
(vi)	Supplementary site-specific instructions, wherever considered necessary shall be issued by the Engineer-in-Charge.
<b>Competency Certificate</b> Certified that Shri..... P. Way Supervisor of M/s ... has been examined regarding P. Way working on..... Work. His knowledge has been found satisfactory, and he is capable of supervising the work safely.	
Signature of Tenderer(s)      Asstt. Executive Engineer	



	<b>ANNEXURE-2</b>
	<b>Special Conditions of Contract</b>
	<b>Training to Supervisors and Operators of the Contractor(s):</b>
	The Supervisors and Operators of the Contractor(s) proposed to be deployed at the work site, which is close to the running track, shall be imparted mandatory training by the Railway about the safety measures to be adopted while working in the vicinity of running track. Engineer-in-Charge of the work shall decide the scale, extent & adequacy of training. In case training is imparted at a recognized Railway Training Institute, the charges for the same, as decided by Railway shall be recovered from contractor(s). A Competency Certificate to this effect to the individual Supervisor/ Operator shall be issued as given below, by a Railway Officer not below the rank of Assistant level. No Supervisor/Operator of the contractor(s) shall work or be allowed to work in the vicinity of running track who is not in possession of valid Competency Certificate.
	All the labour, materials, tools, plants, etc. required for ensuring safe running of trains shall be provided by Contractor(s) at his own cost.
	<b>Competency Certificate</b>
	Certified that Shri..... Supervisor/Operator of M/s..... ..... has been trained and examined in safety measures to be followed while working in the vicinity of running railway track for the work
	This Certificate is valid only for the work mentioned in this Certificate.

Signature and designation of the Officer

Signature of Tenderer(s)

	<b>ANNEXURE-3</b>
	<b><u>COMPENDIUM OF INSTRUCTIONS ON SAFETY AT WORK SITES</u></b>
1.0	The contractor(s) shall not allow any road vehicle belonging to him or his suppliers, etc. to ply in railway land next to the running line. If for execution of certain works viz. earthwork for parallel railway line and supply of ballast for new or existing rail line, gauge conversion, etc. road vehicles are necessary to be used in railway land next to the railway line, the contractor(s) shall apply to the Engineer-in-Charge for permission giving the type and number of individual vehicles, names and license particulars of the drivers, location, duration and timings for such work/movement. The Engineer-in-Charge or his authorized representative will personally counsel, examine and certify the road vehicle drivers, contractor(s)' flagmen and supervisors and will give written permission giving names of road vehicle drivers, contractor(s)' flagmen and supervisors to be deployed on the work, location, period and timing of the work. This permission will be subject to be following obligatory conditions:
1.1	The road vehicles will play only between sunrise and sunset.
1.2	Nominated vehicles & drivers will be utilized for the work in the presence of at least one flagman and one supervisor certified for such work.
1.3	The vehicles shall ply 6m clear of track. Any movement/work at less than 6m and up to minimum 3.5m clear of track centre shall be done only in the presence of a railway employee authorized by the Engineer-in-Charge. No part of the road vehicle will be allowed at less than 3.5m from track centre. Cost of such railway employee shall be borne by the Railway.
1.4	The contractor(s) shall remain fully responsible for ensuring safety and in case of any accident, shall bear cost of all damages to his equipment, men and damages to Railway & its passengers.
2.0	Engineer-in-Charge may impose any other condition necessary for a particular work or site. (Ref. Railway Board's letter No. 98/CE-I/CT/15 dated 13.08.98, Annexure-VIII)
2.1	Assistant Officer/Sr. Scale Officer shall be the overall in-Charge for the safety at the site of work. It will be personal responsibility of the Inspectors (both in-Charge and supervisory) to ensure safety.
2.2	Contractor(s) shall provide 150mm thick white line with lime at a distance of 3.5m from the centre of existing track. This white line shall be in the entire length where work is going on and/or the vehicles/machineries are plying along the track. Nothing extra shall be paid for this.
2.3	Barricading with the help of portable fencing shall be provided in the length where the day's work is to be done in close vicinity of the track. The fencing shall consist of self-supporting steel column connected with at least 20mm thick red nylon rope. The columns shall be of 1.2m height. This will be placed at a distance of 3.5m, from centre line of the nearest track. This shall be paid under relevant item.
2.4	Assistant Officer/Sr. Scale Officer shall issue Competency Certificate after checking license and their working to all drivers of nominated vehicle/machinery. Inspector at site shall ensure that the driver who does not possess Competency Certificate will not work at site.
2.5	The area between running line and white line shall not be permitted to become slushy and adequate drainage must be always ensured.
2.6	Machine/vehicles shall ply 6m clear of track and movement/work at less than 6m and up to 3.5m clear of track Centre, shall be done in the presence of railway employee authorized by Engineer-in-Charge. The railway employee so deputed shall ensure safety of the track, with banner flags, hand signal lamps and detonators
2.7	If vehicle/machinery/materials are to come within 3.5m of the existing track, work must be done under the presence of a Railway Inspector authorized to do safety works. A caution order shall be issued, and track will be protected with the banner flags, hand signal lamps and detonators.
2.8	Normally, night working shall be avoided. However, in certain areas like Delhi, the night working in unavoidable. The night working shall be permitted by AXEN in writing. One Inspector shall be

	specifically deputed to supervise the night working. The site/area where night working is to be done shall be adequately lit. Nothing extra shall be paid for this. (Ref. CAO/C's letter No. 62-W/0/T/3/0/W.Spl/Gen. dated 22.05.2000, Annexure-V)
3.0	An authorized OHE staff should invariably be present, when relaying work or any major work on track is carried out in order to ensure the following points:
3.1	Power Block is correctly taken and "Permit to Work" (PTW) is issued.
3.2	The structure bonds, track bonds, cross bonds, longitudinal rail bonds, etc. are not disturbed and if disconnected for the work, they are reconnected properly when the work is completed.
3.3	The return feeder connections to the rails at the feeding posts are proper and not disturb.
3.4	The setting distance of the structures is not disturbed/ affected during the slewing.
3.5	The track level is not raised beyond the permissible limits during the work.
3.6	Excavation or digging near a mast foundation is done in such a manner that the foundation is not exposed.
3.7	The clearance, particularly at over line structure, is maintained to the required standards.
3.8	Precautions for the safety of staff working under the OHE are taken correctly.
3.9	The Engineering Officials-in-Charge of such major works shall ensure that intimation to their counterpart for OHE maintenance work is given with adequate notice. (Ref. Para 20714 of AC Traction Manual, Vol.-II, Part.)
3.10	All staff should be warned that contact within 2 meters (unless protected by the screen) to live portion of 25 KV traction OHE is dangerous and shall be strictly avoided. (Ref. G.R. 17.04 and S.R. 17.04 (I/a).
3.11	No work on overhead lines or in the zone within two meters of any live equipment shall be carried out unless a regular "Permit to Work" is obtained from the authorized traction staff and line is made dead and earthed. (Ref. G.R. 17.04 and their S.R.A.C.T.M. Chapter X).
3.12	Before any overhead equipment bonding is disturbed, provisions of G.R. 17.05 and their SRs shall be complied with.
4.	During the execution of works, unless otherwise specified the contractor(s) shall at his own cost provide materials for and execute all shoring, timbering and strutting works as is necessary for the stability and safety of all structures, excavation and works and shall ensure that no damage, injury or loss is caused or likely to be caused to any person or property (Ref. GCC-2022).
5.	Existing roads or water courses shall not be blocked, cut through, altered, diverted or obstructed in any way by the contractor(s), except with the permission of the Engineer. All compensation claimed for any unauthorized closure, cutting through, alteration, diversion or obstruction to such roads or water courses by the contractor(s) or his agent or his staff shall be recoverable from the contractor's bills/security deposit or any other dues of contractor with the Government of India (Ref. GCC-2022).
6.	During progress of work in any street or thorough fare, the contractor(s) shall make adequate provision for the passage of traffic, for securing safe access to all premises approached from such street or thorough fare and for any drainage, water supply or means of lighting which may be interrupted by reason of the execution of the works and shall erect and maintain at his own.
7.	Cost barriers, lights and other safeguards as prescribed by the Engineer for the regulation of the traffic and provide watchmen necessary to prevent accidents. The work shall in such cases be executed night and day if so, ordered by the Engineer and with such vigour so that the traffic way is impeded for as short a time as possible (Ref. GCC-2022).
8.	The Contractor shall be responsible to take all precautions to ensure the safety of the public whether on public or railway property and shall post such look out men as may, in the opinion of the Engineer, be required to comply with regulations appertaining to the work. Contractor shall ensure placement of barricading / partitions at the place of work to ensure safety of habitants of adjacent area, failing which Engineer may advise stop page of work as per his discretion (Ref. GCC-2022).
9.	The contractor(s) shall be responsible for the safety of all employees directly or through petty contractor(s) or sub-contractor employed by him on the works and shall report serious accidents to any of them, however, and wherever occurring on the work to the Engineer or the Engineer's Representative and shall make every arrangement to tender all-possible assistance (Ref. GCC-2022).

10.	The contractor(s) shall be responsible for all risk to the works and for trespass and shall make good at his own expense all loss or damage whether to the works themselves or to any other property of the Railway or the lives, persons or property of others from whatsoever cause in connection with the works until they are taken over by the Railway and this although all reasonable and proper precautions may have been taken by the contractor(s), and in case the Railway shall be called upon to make good the costs, loss or damages, or to pay any compensation, including that payable under the provisions of the Workmen's Compensation Act or any statutory amendments thereof to any person or persons sustaining damages as aforesaid by reason of any act, or any negligence or omissions on the part of the contractor(s), the amount of any costs or charges including costs and charges in connection with legal proceedings which the Railway may incur in reference thereto, shall be charged to the contractor(s). The Railway shall have the power and right to pay or to defend or compromise any claim of threatened legal proceedings or in anticipation of legal proceedings being instituted consequent on the action or default of the contractor(s), to take such steps as may be considered necessary or desirable to ward off or mitigate the effect of such proceedings, charging to contractor(s) as afore- said, any sum or sums of money which may be paid and any expenses whether for reinstatement or otherwise which may be incurred and the propriety of any such payment, defence or compromise, and the incurring of any such expenses shall not be called in question by the contractor(s) (Ref. GCC-2022).
11.	Vulnerable locations where construction work adjacent to running line can cause accident should be protected by suitable strong barriers which should be included as a paid item in contract schedule. These locations should be decided by Executive Engineer-in-Charge of the work at the beginning of construction and intimated to contractor(s) in writing. The barrier should be painted with retro reflective paint at suitable intervals to give warning at night. (Ref. Railway Board's letter No. 99/WI/S/Accident – Mangla Express dated 23.08.1999, Annexure-VII).
12.	No work adjacent to running track should be carried out at night without express written authority from the Executive Engineer-in-Charge of the work. In fact, no contractor(s) should do any kind of night working unless the Executive Engineer-in-Charge of the work gives the specified spots according to priority of work where night working has to be done. These spots should be well lit at night. In addition, the work should always be done under supervision of railway supervisors in addition to contractor(s)' supervisors. Suitable railway personnel should be posted at site with safety equipment like banner flags, hand signal flags, hand signal lamps and detonators to arrange protection of trains. The railway Supervisor-in-Charge of such work should also give suitable message to adjacent stations as well as through control for issuing caution orders to the trains approaching the work site. For this purpose, he should be equipped with field telephone/walkie-talkie set. (Ref. Railway Board's letter No.99/WI/S/Accident – Mangla Express dated 23.08.1999, Annexure-VII)
13	The training to the operators and supervisors of the work executing agencies in safe working along and on the track should be provided by Railways. The training could be imparted to such supervisors at Zonal/Divisional training schools or even by existing Officers and staff of the Construction Organization itself. The intention is to ensure that the supervisors of the work executing agencies get acquainted with the safety practices that are required to be taken while executing all those works which have bearing on the safety of the running tracks. The cost of training shall, however, be borne by the contractor(s). (Ref. Railway Board's letter Nos. 99/CE-II/PRA/32(CRS) dated 05.07.2000, Annexure-IV & 99/CE-II/PRA/32 dated 20.04.2000, Annexure-VI)
13.1	Train drivers must be served with caution orders to look on for any obstructions at the place of work.
13.2	Arrangements should be made to protect the track in case of emergency at work sites.
13.3	The area of work should be demarcated by providing barricades and sign board which will enable the workmen posted at site and the lorry drivers to have clear guidelines for movement of vehicles.
13.4	Movement of lorries near the track should be prohibited during the night. In case it is unavoidable, adequate protective measures, including lighting, must be ensured.

13.5	Work should not be allowed to progress without the prior approval of the Engineer-in-Charge in case movement of vehicles close to the track is involved.
13.6	Machines and vehicles should ply 6 meters clear of track. In case movement at less than 6 meters away from track is inescapable, it should be permitted in the presence of railway employee authorized by the Engineer-in-Charge.

14	Contractor(s)' representative should be issued a certificate by XEN/AXEN to the effect that they have acquired sufficient knowledge about the safety precautions that are needed to be followed while working near the track. (Ref. Railway Board's letter No. 99/CE-II/PRA/32(CRS) dated 21.07.2000, Annexure-III)
14.1	All permissible or sanctioned infringements should be consolidated for each Division traffic section wise. The consolidated list should be in possession of DRM, ADRM, Sr. DSO or DSO, Construction Officers-in-Charge of Division and relevant extracts with each Divisional and other Officers. These should be checked once a year at Assistant Officer's level, and it should be ensured that there is no aggravation of any permitted infringement.
14.2	All works planned for execution close to the running lines and fixed structures, on bridges, inside tunnels, cuttings, constructed areas, etc. should be carried out only after preparation of detailed plans for the same, getting clearances from the Engineering Department of the Open Line and approval of Competent Authority to ensure that the execution of the works will not in any way infringe the prescribed Schedule of Dimensions or aggravate existing permissible infringements.
14.3	Special training and counselling should be imparted to all field staff engaged in maintenance of railway assets regarding the safety at work sites and all of them should be in possessions of a compendium.
14.4	Similar training should also be organized for Railway's Associates and Contractors working in proximity of the running track and specific Para to this effect should also be included in all future contracts requiring execution of work in the near vicinity of running lines.
14.5	All the work inside a tunnel, deep cuttings, on bridges, constructed areas, etc. should be carried out in accordance with the provisions in Chapter VIII of IRPWM and Para- 1009 of Bridge Manual-1998 and preferably under block protection. (Ref. Railway Board's letter No. 2000/CE-II/PRA/12 dated 16.05.2002, Annexure-II)

15	Wherever it is difficult to ply the trucks on the road during day light hours for bringing building materials such as chips, sand, supply of ballast and bringing out earth in case of suburban sections, the additional staff should be posted during night working duly properly lighted to ensure safety of the running tracks. In order to ensure that no short cuts or unsafe practices are adopted at construction site, Sr. Officials should inspect the safety aspect in detail during their inspection and guide the staff in adopting safe practices. They should record corrective action to be taken in site order books/ inspection books and their compliance followed up. In addition, periodic drives should be carried out to ensure safety at construction sites. In order to ensure safety, the provision of mobile phones based on the needs of the individual work sites and keeping the provision in the estimate may be provided. (Ref. Railway Board's letter No. 2001/CE-II/PRA/10 (CRS) dated 16.05.2002, Annexure-I)
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#### ANNEXURE-4

#### **SAFETY PRECAUTIONS AND MEASURES TO BE OBSERVED DURING EXECUTION OF ROB/RUB WORKS IN RAILWAY AND ADJOINING AREA**

1.0	The contractor(s) shall not allow any road vehicle belonging to him or his suppliers, etc. to ply in railway land next to the running line. If for execution of certain works viz. earthwork for parallel railway line and supply of ballast for new or existing rail line gauge conversion, etc. road vehicles are necessary to
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	be used in railway land next to the railway line, the contractor(s) shall apply to the Engineer-in-Charge for permission giving the type and number of individual vehicles, names and license particulars of the drivers, location, duration and timings for such work/movement. The Engineer-in-Charge or his authorized representative will personally counsel, examine and certify the road vehicle drivers, contractor(s)' flagmen and supervisors and will give written permission giving names of road vehicle drivers, contractor(s)' flagmen and supervisors to be deployed on the work, location, period and timing of the work. This permission will be subject to be following obligatory conditions:
2.0	<u>Construction Activities and Safety:</u>
(a)	The 'Methodology of Working' shall be incorporated in GAD and Temporary Arrangement Drawings.
(b)	The activities of work to be taken up during the railway traffic block/under speed restriction, etc. should be clearly mentioned in such drawings.
(c)	If at any stage of execution, any discrepancy is found in the drawing with respect to the site condition affecting safety or some new activity of work is required to be done, the same should be brought to the notice of Railway Engineer and such works should be done only after approval by Railways. In such cases, the scheme may be modified and, if required, fresh CRS sanction shall have to be obtained.
2.1	The works required to be done under traffic block protection are to be carried out only in the presence of Railway Engineering Officials. The Railway's Supervisor has to certify safe conditions for passage of trains before resumption of traffic. The works to be done under traffic shall be carried out under the provision of banner flag and protection by Engineering Flagman. If considered necessary, the Railway Flagman may be posted on account of the contractor(s).
2.2	Following important activities of works shall be carried out under supervision of Railway Engineer or his nominated Supervisor:
(a)	Excavation at foundation/ground level near to railway track
(b)	Concrete casting and/or masonry work very close to railway track
(c)	Erection of temporary structures near to running lines
(d)	The stage-prestressing of girder when placed across Railway tracks properly supported.
(e)	Launching of precast/pre-assembled girders across railway tracks
(f)	Any work of lifting, side shifting and slewing of girders over the railway track
(g)	Dismantling of temporary structures, shuttering, scaffolding, etc. adjacent to and above the railway track for carrying out activities of casting, erection, launching, handling and dismantling as listed above, the Contractor's Engineer shall furnish the Construction Program in advance to Railway Supervising Engineer. No such work should be taken up in the absence of the Supervising Railway Engineer. For the activities which are to be done in the presence of the Railway Engineer, prior intimation shall be given in writing and acknowledgement obtained from Railway's representative. Such activities of work shall not be carried out without the presence of Railway Engineer
2.3	To ensure 'Safety' during construction activities, Railway Engineer may direct the Contractor's Supervisor/Engineer or their nominated representative for safe working procedures/ instructions, notwithstanding the contractual or MOU conditions prevailing between/ among Railways/other Departments like NHAI / Contractors/ Concessionaire.
2.4	All the records of Quality Assurance/Quality Control, testing of the materials and satisfactory completion of an activity shall be maintained at site by the Contractor's Engineer and Supervisor. Based on these records, Railway Engineer shall do stage-wise clearance of the works at following stages: Completion of foundation. Completion of substructure. Completion of superstructure. Without such stage clearance, the work in next stage of construction shall not be allowed by the Railway Supervisor, unless proper system of check and exercise is followed at the site.

2.5	Normally, the high beam PSC girders are designed with wider top flange and shorter bottom flange with very high beam which makes the girder unsuitable during lowering, slewing and launching time.
2.6	<p>During launching of girders and subsequent adjustments for placement of bearing, special attention and precautions are required at site to be followed rigorously without resorting to shortcut practice or leaving the work at site to untrained or inexperienced Engineers. Normally, end diaphragms are not cast for the extreme both side girders. These shall be cast minimum 300mm on both sides for all 'I' beam girders to provide temporary supports for ensuring stability.</p> <p><b>"OR"</b></p> <p>For side adjustments and bearing placements below 'I' section girders, end brackets made of steel angles should be provided for all 'I' beams sequentially to avoid side titling of individual girders. End brackets shall be removed only after placing girders on bearing and casting of diaphragms.</p>
2.7	During lowering, the jacks shall be operated duly keeping wooden packing of various thicknesses fixing the amount of lowering to the barest minimum, so that even if the jack fails, the wooden packing will take load and further stability of girder is not endangered.
2.8	<p>Temporary crib support staging shall be interlaced with clamps and angles. Adequate base width shall be maintained proportionate to the height of stage, which is very essential for avoiding the oblong effect during launching of girders. During launching by RH girder method, the movement of the PSC girders shall be controlled both from front and rear with sync mechanism having simultaneous operation, so that the speed of the launching is always under the control. Spare hydraulic jacks shall always be kept at site.</p> <p>Lowering of girder shall always be carried out at one end only. Further, other end should be adequately secured by wire ropes, end brackets, etc. Thereafter, the process shall be continued alternately.</p>
2.9	As far as possible, launching of girders by temporary staging shall be avoided and launching by heavy capacity cranes, wherever feasible, shall be adopted.
2.10	Steel girder launcher if used for launching of PSC girders should be pre-tested for the critical loading (likely to be encountered during actual launching) before deployment on the approaches regarding its strength as well as amount of permissible deflection using actual test PSC girder as a testing load. Connections at supports shall be inspected and certified prior to actual launching. It shall be adequately secured to the base support system on the pier cap.
3.0	<u>General Construction Safety:</u>
3.1	General safety precautions as applicable for bridge/civil works shall be adopted in field.
3.2	Working near running line: Safe practices at site and at all times non-infringement to moving trains shall be ensured. Road vehicles, material trolleys, dollies with any tendency to roll off towards the running lines to be checked by providing chains, locking arrangements, blocks, etc. shall be ensured and the Site-in-Charge of the Contractor shall be primarily responsible, secondary responsibility being of the Contractor's Consultant.
3.3	Testing of cranes, lifting jacks and other equipment: All equipment like cranes, lifting jacks, shall be tested, duly calibrated and certified prior to the use at construction site.
3.4	Construction workers at site shall be provided with personal safety gear like reflective vest, helmet, leather shoes, gloves & eyewear approved as per construction industry standards. For persons working at pier top/girder level, temporary supports, hand railing, protection with help of ropes, slings and temporary railings shall be provided.
3.5	Routine safety checks, validity of test certificates for load bearing equipment especially for cranes outsourced from third party shall be ensured prior to deployment.
3.6	<p>1. The Contractor shall prepare and submit a Traffic Diversion Plan for approval of the Engineer/Employer prior to commencement of work and shall obtain all statutory permissions and no-objection certificates from the concerned Local Authorities. No work which may affect traffic movement shall be commenced without such approvals.</p> <p>2. The Contractor shall provide, install, operate, maintain and remove all temporary traffic diversion arrangements, including but not limited to diversion roads, barricading, reflective drums, crash barriers, warning lights, blinkers, speed calming measures and road markings as per latest traffic guidelines. All traffic signboards,</p>

	cautionary, regulatory and informatory signs, including night-time reflective signage and illumination, shall be provided and maintained in good condition for the entire duration of the works 3. The Contractor shall deploy adequate number of trained traffic marshals / flagmen round-the-clock, wherever required, for safe and smooth regulation of traffic, pedestrian safety and guidance of vehicles. The cost of traffic marshals shall be paid in relevant DSR item
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**Annexure-5**

<b><u>JOINT PROCEDURE FOR UNDERTAKING DIGGING WORK IN THE VICINITY OF UNDERGROUND SIGNALLING, ELECTRICAL AND TELECOMMUNICATION CABLES:</u></b>	
A	A number of Engineering works in connection with gauge conversion/doubling/third line are in progress on various Railways, which require extensive digging work near the running track, in close vicinity of the working S&T cables carrying vital safety circuits as well as electrical cables feeding the power supply to cabins, ASM room, RRI cabin, Intermediate Block Huts (IBH) etc. Similarly, S&T organizations under open line or construction units under CAO/C, are executing various Signalling and Telecom works requiring digging of earth for laying of cables or casting of foundations for the erection of signal posts etc. Rail Tel is also executing the work of laying of quad cable and OFC on various Railways as a part of sanction works for exclusives use of Railways for carrying voice and data i. e. administrative and control communication, PRS, FOIS etc. or shared by Rail Tel Corporation of India Ltd. On certain sections digging is also required for laying of electrical cable and casting of foundation for the erection of OHE masts by Electrical Deptt. Generally, these works are executed by contractors employed by these organizations.
B	However, while carrying out these works in the vicinity of working signalling, telecommunication and electrical cables, at times cable cuts take place due to JCB machines working along the track or during the digging work being done by contractors carrying out the Civil Engineering works. Similarly, such cable cuts are also resulting due to works undertaken by S&T or Electrical departments. Such cable faults results in the failure of vital signalling and telecommunication circuits installations.
C	Henceforth, the following joint procedure shall be followed by Engineering Electrical and S&T (and Rail Tel Organisation, wherever such works are being done by them) officers of the respective divisions and by the construction Organisation, while carrying out any digging work near to existing signalling and telecommunication and electrical cables, so that the instances of cable cut due to execution of works, can be controlled and minimized.
1.	S&T Department (and Rail Tel, where they have laid the cables) and Electrical department shall provide a detailed cable route plan showing exact location of cable at an interval of 200m or wherever there is change in alignment so that the same is located easily by the Engineering official/contractor. In addition, S&T department and Electrical Department shall also provide cable markers along the alignment of the cable. These cable route plans shall be made available to the Sr. DEN/DEN or Dy. CE/C, as the case may be, by Sr. DSTE/DSTE or Sr. DEE/DEE of the divisions or Dy. CSTE/C or Dy. CEE/C within 15 days in duplicate. Sr. DEN/DEN or Dy. CE/C will send copies to their field unit i.e. AEN/SE/P. Way and works.
2.	Before taking up any digging activity on a particular work by any agency, Sr. DSTE/DSTE or Sr. DEE/DEE or the section shall be approached in writing by the concerned Engg. or S&T or Electrical Officer for permitting to undertake the work. SR. DSTE/DSTE or Sr. DEE/DEE, after ensuring that the concerned execution agencies including the contractor have fully understood the S&T and Electrical cable route plan, shall permit the work in writing within 07 days of the request by concerned department.
3.	After getting the permission from S&T or Electrical Department as the case may be, the relevant portion of the cable route plan shall be attached to the letter through which permission is issued to the contractor



	by concerned Eng. official for commencement of work and ensuring that the contractors have fully understood the cable route plan and precautions to be taken to prevent damage to the underground cables. The contractor shall be asked to study the cable plan and follow it meticulously to ensure that the safety of the cable is not endangered. Such a provision, including any penalty for default, should form part of agreement also. It is advisable that a suitable post of SE/Sig. or SE/Tele or SE/Electrical (TRD or G) shall be created chargeable to the estimates of doubling/gauge conversion, who can help Engg. agencies in the execution of the work. However, the basic responsibility will be of the department executing the work and the contractor. Creation of posts is not mandatory.
4.	The SE/P. Way or SE/Works shall pass on the information to the concerned SE/Sig. or SE/Tele or SE/Electrical (TRD or G) about the works being taken up by the contractors in their sections at least 03 days in advance of the day of the work. In addition, Engineering control shall also be informed by SE/P. Way or SE/Works, who is turn shall pass on the information to the test room/network operation centre of Rail Tel/TPC/Electrical Control.
5.	On receiving the above information, SE/Sig or SE/Tele or SE/Electrical (TRD or G) shall visit the site on or before the date of taking up the work and issue permission to the contractor to commence the work after checking that adequate precautions have been taken to avoid the damage to the cables. Permission shall be granted within 03 days of submission of such requests.
6.	The name of the contractor, his contract telephone number, and the nature of the work shall be notified in the Engineering control as soon as the concerned Engineering officials issue the letter authorizing commencement of work to the contractor. Test room shall be given copies. Test room shall collect any further details from the Engineering control and shall pass it on the S&T/Rail Tel & Electrical officials regularly. In case the supervisors of concerned departments do not turn up on the day as advised in terms of para 4 and 5 above, the works of contractor should not be stopped on this account.
7.	In case of works being taken up by the State Government, National Highway Authority etc., the details of the permission given i.e. the nature of work, kilometre etc. be given to the Engineering control person's number so that the work can be done in a planned manner. The permission letter shall indicate the contact number of Test room/Network Operating Centre of Rail Tel/TPC/Elect. Control.
8.	Where the nature of the work taken up by the Engineering Department is such that the OFC or other S&T cables or Electrical cables is to be shifted and relocated, notice of minimum one week shall be given so that the Division/Rail Tel/Construction can plan the works properly for shifting. Such shifting works shall be in addition, for security and integrity of the cables, be supervised by S & T supervisors/ Rail Tel Supervisors/ Electrical Supervisors.
9.	The concerned SE/P. Way/SE/Works/SE/Sig/SE/Tele/SE/Electrical (TRD or G) or Rail Tel supervisors supervising the work of the contractor shall ensure that the existing emergency sockets are not damaged in view of their importance in providing communication during accident/emergency.
10.	In case of minor nature of works where shifting of cable is not required, in order to prevent damage to the cable, the Engineering contractor shall take out the S & T or optical fibre cable or Electrical cable carefully from the trench and place it properly alongside at a safe location before starting the earthwork under the supervision of SE/Sig. or SE/Tele or SE/Electrical (TRD or G). The cable shall be reburied soon after completion of excavation with proper care including placement of the brick over the cable under the supervision of S&T or Electrical supervisors. However, the work will be charged to the concerned engineering works. The responsibility for ensuring availability of SE (Signal), SE (Electrical) as per para 4 and 5 above lies with the respective department. The Contractor will go ahead with the shifting of cables as per the program decided and he will not be held responsible for any cable cut.
11.	In all the sections where major projects are to be taken up/going on Rail Tel/S&T department shall deploy their official to take preventive/corrective action at site of work. As regards Electrical Department, the official may be deputed on need basis.
12.	No new OFC or quad cable shall be laid close to the existing track. It shall be laid close to the Railway boundary on one side of the Railway track to the extent possible to avoid any interference with the future works (doubling etc.). It shall be ensured in the new works of cable laying that the cable recite is properly identified with electronic or concrete markers. Wherever multiple cables are laid

	in a trench, RFID markers may be provided for easy identification of the cable. Henceforth, wherever cable laying is planned, before undertaking the cable laying work, the cable route plan of the same shall be prepared by the Dy. CSTE/C or Dy. CEE/C and shall be got approved from the concerned Sr. DSTE/DSTE or Sr. DEE/DEE and also from the concerned Dy. CE/C for new lines and from the concerned Sr. DEN for all other projects including doubling GC etc., to avoid possible damage in future. Such approval shall be granted within 15 days of the submission of the request.
13.	The works of excavating the trench and laying of the cable should proceed in quick succession, leaving a minimum time between the two activities.
14	In case damage is caused to OFC/Quad cable during execution of the work, the contractor is liable to pay a penalty for damaging the cable. Penalty shall not be levied in case of the following.
14(a)	Detailed cable route plan as per clause C-1 not provided by concerned department or cable is not protected as per laid down procedures.
14(b)	The alignment of the cable does not tally with the information provided to the contractor.
14(c)	The cable depth is found to be less than 800mm from normal ground level.
14(d)	No representative of S&T department/RailTel was available at site guarding the cables on the fixed pre- determined date and time.
<b>15.</b>	<b>The penalty to be imposed for damages to cable shall be as under:</b>
	Necessary debit in this regard shall be raised on the department undertaking the work who shall in turn levy the penalty on the defaulting contractor. S & T department should raise the debits in case of damage to OFC or Quad or Signalling cable and the Electrical department shall raise the debits in case of damage to Electrical cable.

<b>Cable damaged</b>	<b>Penalty per location</b>
Only Quad cable or Signalling Cable	Rs. 1.0 Lakh
Only OFC	Rs. 1.25 Lakh
Both OFC & Quad	Rs. 1.5 Lakh
Electrical Cable	Rs 1.0 Lakh

16.	Railways will not lodge FIR with RPF in cases of works being executed by authorized contractors of Railways who have been duly permitted to execute the works in accordance with this JPO. Joint note by the supervisors of the concerned department shall be prepared and the responsibility of the cable cut should be decided without involving RPF. The joint note deciding the fact whether the contractor should be penalized shall be completed in a day's time from the occurrence of cable cut. In all other cases, when the cable is cut by an agency that was not permitted to execute any work, FIR should be lodged with RPF.
17.	While giving permission to take up the works, concerned departments may note that earthwork by engineering contractors will normally be done by machines except in a few isolated locations where the quantity of earth work is very loss.
18.	Railways shall make necessary correction in their future contract so that this JP can also be enforced contractually.
19.	In case of damage to OFC, Rail Tel should be paid 5/6 to of the penalty recovered. Rail Tel shall raise demands on the S&T department in this regard.
20.	All types of signalling & OHE bonds i.e., rail bond, cross bond and structure bond shall be restored by the contractor with a view to keep the rail voltage low to ensure safety of personnel.

21.	Above joint circular shall be applicable for construction as well as open line organization of Engineering, S&T and Electrical.
22.	S&T cable and electrical cable route plan should be prepared by the concerned S&T and Electrical officers respectively and got approved as stipulated in para-C-12 before undertaking the work. The completion cable route plan should be finalized block section by block section as soon as the work is completed.
23.	All cable laying works shall be executed as per laid down technical specifications, such as protection measures/protective cover, compaction of refilled material etc.

## Annexure 6

Other Special Conditions for fabrication of Bridge Girder Work:

1. The detailed scope of work shall be as follow.

Open girder will be paid under item no. 041012 of USSOR-2021. Open web girder, for calculation of weight of the fabricated girder for payment, the measurements of different components of fabricated girder shall be done as per finished dimensions of each component of girder given in the approved drawing

### **1.SPECIAL CONDITION FOR S&T SIGNALING CABLE & EQUIPMENT DAMAGED DURING ROB WORK.**

The contractor is required to carry out a broad survey of the station to assess & plan the works to be carried out jointly with the railway officials.

**The scope of cables involves in working of bridge work:**

#### **a) Outdoor Signalling work if to be replaced during bridge work:**

- i. Laying and termination of Signalling/Power/Telecom cable on CT rack to connect outdoor functions either directly or through location boxes to the EI.
- ii. Foundation work for Signals, Location boxes, LC, gate etc.
- iii. Erection, preparation and wiring of location boxes.
- iv. Earthing work
- v. Concreting work

#### **b) Services**

- i. Installation, testing and commissioning of signalling system including transportation of all the equipment to site of installation from Store of Concern Sr. Section Engineer /Sig or any other store of Northern Railway.
- ii. Depositing the released material to the stores of concerned Sr. Section Engineer /Sig/ or Scrap depot depending on the conditions of the released materials being serviceable/ non serviceable.
- iii. Leading of material to site

#### **c) Name of material**

- i. Signaling cable of sorts, Telecom cable, Quad cable, OFC Cable, Power cable etc.
- ii. Any other material damaged during work to be replaced free of cost by the contractor

**Note:** Materials supplied by the Railway for execution of the work shall be made available to the contractor at the Store of Concern Sr. Section Engineer/Sig/ or any other store in Northern Railway. These materials are to be transported to the site of work by the contractor and balance materials after completion of the work, if any, shall also be transported back to the store of concerned SSE/Sig by the contractor at his own expenses and cost of material to be deducted from his bill.

**Note:** - No extra cost to be paid for execution of laying signal cable, and other fittings and material etc.

## **2. SPECIAL CONDITION FOR TRD WORK, NO TRD EQUIPEMENT SHOULD BE DAMAGED DURING ROB WORK.**

- i. No equipment of TRD Jumper cable, Jumper bond, TRD pole, and traction wire should be damaged. If any damage is due to the contractor's fault the cost of material is to be recovered from his bill.
- ii. If TRD Pole and Traction wire are damaged by the agency, the cost of TRD Pole & wire to be deducted from contractor's bill and Penalty also to be deducted from his bill Rs 1.0Lakh per damages.

## **3. SPECIAL CONDITIONS/SPECIFICATIONS FOR DISMANTELING OF EXISTING ROB**

### **GENERAL**

- i. These special conditions and the work schedule shall govern the der this contract in addition to and/or in part supersession of the General Conditions of Contract (GCC edition April 2022) and Standard Specifications.
- ii. Where there is any conflict between these Special Conditions of Contract on one hand and Standard Specifications and Indian Railway General Conditions of Contract July - 2020 on the other hand, the former shall prevail.
- iii. Any special condition stated by the tenderer(s) in the covering letter submitted along with the tender shall be deemed as part of contract to such extent only as have explicitly been accepted by the Railway.

### **3.1 Use of Railway Land**

Use of Railway land required by the contractor(s) for constructing temporary offices, quarters, hutments, etc., for staff and for storing materials, etc., will be permitted to him/them free of cost by the Railway, if available. The location of these offices, hutments, stores, etc., shall be subject to the approval of the Engineer or his representative. The land shall be restored to the Railway by the contractor(s) in the same condition as when taken over or in a vacant condition as desired by the Engineer, after completion of the work or on any earlier date as specified by the Engineer. Failure to do so shall render the contractor(s) liable to pay the cost incurred by the Railway in regaining possession of the land. Any structure, if available, may be given on licence fee as in force at the time of handing over the structure for use.

Whenever non-Railway bodies/persons are permitted to use Railway premises with the approval of the competent authority, conservancy charges, as applicable from time to time, may be levied.

### **3.2 Use of Private Land**

The Contractor shall make his/their own arrangements for the use of private land outside Railway limits for the due fulfilment of the contract or for borrow pits, approaches, etc., directly with the landowners or local authorities, and shall pay such rent, if any, as may be mutually agreed upon between them

#### **4.0 Cess Charges**

- a) For Contractor's labour employed/ residing at stations and in colonies where Railway sanitary facilities exist, Contractor(s) will be required to pay cess charges as per rules in force on the Railway from time to time.
- b) For labour working between stations or at isolated places where railway facilities do not exist, the Contractor(s) shall be required to provide necessary facilities for their labour in terms of clause 59(4) of the General Conditions of Contract. In case of any failure on his/their part, the necessary facilities shall be provided by the Railway Administration at the cost of Contractor(s) and the expenditure thus incurred will be recovered from his/their bills.

#### **5.0 Contractor's Responsibility to arrange Tools, Plants, Machinery etc.**

**5.1** The Contractor should make his/their own arrangements for all plants and tools required for the successful completion of the work in time. However railway may, if available, provide on their terms and at the cost of the Contractor(s) (cost and terms as fixed by the Railway as per extant rules) Railway's tools and plants, machinery and stores such as pumps, compressors, drills, motor lorries, tractor, trailers, rails, sleepers C.G.I. sheets, etc. and other facilities, which the Contractor may require for the expeditious completion of this contract and which in the opinion of Engineer is necessary but the Railway undertakes no responsibility for doing so. The decision of the Engineer as to the necessity for the works facilities of stores will be final. The rates quoted by the tenderer will include cost of all tools & plants, machineries, lab ours, materials etc. that will be required for successful and methodical completion of the work. Nothing extra will be paid on this account.

**5.2** The tenderer/s shall supply along with his/their offer a list of special tools, plants and equipment required for proper Inspection/maintenance of work. The detailed descriptions/ specification of these with full cost of each and the sources of availability thereof shall be indicated along with the offer.

**5.3** Either at the contractor/s request or suo-moto in order to prevent possible delay in the execution of the work or due to contractor/s inability to make adequate arrangements for plant or machinery tools and other equipment or due to any other reasons, the Railway may give such plant and machinery, tools and other equipment on hire as can be readily made available and as can be conveniently spared from Railway's Stock.

**5.4** The decision of the Engineer in regard to hiring of equipment will be final and binding on the Contractor/s and the non-supply of such equipment shall not be entertained as a reason for delay in the execution of works or the cause of any claims.

**5.5** If the Railways make arrangements to supply tools, plants and machinery the same will be given on hire basis to the Contractor/s on such terms and conditions as may be prescribed by the Railways and incorporated in Special Conditions. The Hire and Staff charges for operational and maintenance of plants will be fixed as per the Railway rules, terms and conditions as prevailing at the time of hire.

#### **6.0 Materials supplied by Railway**

**6.1** The tenderer shall be responsible to see that the materials such as cement, steel etc., supplied by the Administration are utilized for the sole purpose for, which they have been issued to him, failing which, he is liable to be dealt according to law for any misuse of these commodities by himself, his agents or workmen, etc.

**6.2** The material released during the dismantling of track/item/work shall be returned to the Railway. In case contractor fails to return the material, the recovery shall be made @ of twice the price of the 65 % of the new material and for the new material the recovery shall be made @ of twice of the procurement price or as per prevailing market rates whichever is more plus 7 % freight/incidental charges and 12.50 % Departmental charges. It would be the sole responsibility of the contractor to deposit the material received during dismantling or excess issued within three months from the date of dismantling or issue failing which the recovery of such materials shall be recovered from the next running bill itself and in case of any tools and plants, it would also be the responsibility of the Railway supervisor or officer in charge at site that the T & P issued are exclusively meant for the work and rates be got vetted by the associate finance and HRs (plus and minus) are properly accounted for. The released material shall be deposited as directed by Engineer in Charge or his authorized representative.

**6.3** Tools, Plant and Materials Supplied by Railway: The Contractor shall take all reasonable care of all tools, plant and materials or other property whether of a like description or not belonging to the Railway and committed to his charge for the purpose of the works and shall be responsible for all damage or loss caused by him, his agents, permitted sub-contractor, or his workmen or others while they are in his charge. The Contractors shall sign accountable receipts for tools, plants and materials made over to him by the Engineer and on completion of the works shall hand over the unused balance of the same to the Engineer in good order and repair, fair wear and tear excepted and shall be responsible for any failure to account for the same or any damage done thereto.

**6.4** Hire of Railway's Plant: The Railway may hire to the Contractor such plant as concrete mixers, compressors and portable engines for use during execution of the works on such terms as may be specified in the special conditions or in a separate agreement for Hire of Plant.

## **7.0 (a) Precautions while Working in the Vicinity of Track**

(i) When the work is required to be done along or near the existing Railway track, the contractor(s) shall take such steps as are necessary for the safety of the track and labour working at site. He/They will also be required to program his/their working so as not to interfere with the movement of trains. No extra payment shall be allowed for these precautions and also for crossing track/tracks if required during execution of the work. It should be ensured that the ballast of the track(s) is not spoiled or mixed with earth.

(ii) In addition to the precautions taken by the Contractor(s) for the safety of the track and labour, it may be necessary to post flagmen in some locations as an additional safety measure; they will be posted by Railway free of cost. The contractor(s) shall be fully responsible for any damage to or trespass caused by his/their men to any surrounding structure. Railways bear no liability whatsoever on this account.

**(b) Returns:** The tenderer shall furnish to the Engineer-In-charge every week during the progress of the work, a classified return of the number of the people employed on the work during the week preceding the period. The contractor shall also furnish to the In-charge Engineer a report of any accident which may have occurred within 24 hours of its occurrence.

## **8.0 Provision of Efficient and Competent Staff at Work Sites by the Contractor:**

**8.1** The Contractor shall place and keep on the works at all times efficient and competent staff to give the necessary directions to his workmen and to see that they execute their work in sound & proper manner and shall employ only such supervisors, workmen & labourers in or about the execution of any of these works as are careful and skilled in the various trades.

**8.2** The Contractor shall at once remove from the works any agents, permitted sub-contractor, supervisor, workman or labourer who shall be objected to by the Engineer and if and whenever required by the Engineer, he shall submit a correct return showing the names of all staff and workmen employed by him.

**8.3** In the event of the Engineer being of the opinion that the Contractor is not employing on the works a sufficient number of staff and workmen as is necessary for proper completion of the works within the time prescribed, the Contractor shall forthwith on receiving intimation to this effect deploy the additional number of staff and labour as specified by the Engineer within seven days of being so required and failure on the part of the Contractor to comply with such instructions will entitle the Railway to rescind the contract under Clause 62 of these conditions.

## **9.0 SAFETY PRECAUTIONS**

**9.1** The Contractor/s shall at all times adopt such safe methods of work as will ensure safety of structure, equipment and labour. If at any time the Railway finds the safety arrangements unsafe, the contractor/s shall take immediate corrective action as directed by the Railway's in the matter. Railways instructions shall in no way absolve the contractors of his/their sole responsibility to adopt safe working methods.

**9.2** The Contractor/s shall design and execute temporary works such as formwork and supports, so as to ensure absolute safety of contractor/s personnel as well as Railway staff and personnel engaged on the work. The Contractor/s should indemnify the Railway against damages and injury to workmen. Railway reserves the right to enforce safety regulations on the contractors and recover any cost, which may be incurred for the purpose.

## **10.0 COMPLETION PERIOD**

**10.1** The Contractor/s shall have to complete entire work in all respects within a specified period of (including monsoon) from the date of issue of acceptance letter of the tender.

**10.2** The contractor/s shall strictly adhere to the program framed by the Engineer or his representative taking into account of the stipulation such as availability of land and other site conditions so as to complete the work within the time allotted to the contractor/s. In case there are slippages in adhering to the stipulated progress of work, his/their contract is liable to be rescinded as per relevant clause of GCC.

**10.3** The Contractor/s will have to employ labour in full strength commensurate with working areas available. He will also arrange for materials and equipment to complete the job most expeditiously within the stipulated completion period. The Engineer's decision as to what is full strength will be final.

**10.4** The contractor shall be required to complete the various sub work or items of sub-work in phased and programmed manner and submit a detailed program for completing the same, within time schedule immediately after receipt of tender acceptance letter. The pro-gram me may be altered/modified by Engineer-in-Charge depending on the priority of the work. The PERT CHART may have to be drawn up for such works for which the contractor will have to fully co-operate for successful and expeditious completion of work.

**10.5** Imposition of token penalty for delay in the completion of work.

The existing clause 17(B) of GCC April - 2022 provides for recovery of liquidated damages from the contractor for delay in completion of work. Further, competent authority while granting extension to the currency of contract under Clause 17(B) of GCC may also consider levy of token penalty, as deemed fit based on the merit of the case.