CHENNAI METRO RAIL LIMITED

CHENNAI METRO RAIL PROJECT PHASE-1 EXTENSION

ADDENDUM-1

TO BIDDING DOCUMENTS

for

CONTRACT ATW-07

Installation, Testing and Commissioning of Ballastless Track of Standard Gauge in Elevated, Underground Sections and Wimco Nagar Depot along with supply and installation of Buffer stops for Chennai Metro Phase-1 Extension Project

Employer: Chennai Metro Rail Limited

Country: India

Project: Chennai Metro Rail Project Phase 1 – Extension

Loan Agreement No.: *ID-P258*

The following clauses to be changed in the ATW-07 contracts.

<table>
<tr><th>S. No</th><th>Page reference No.</th><th>Tender Clause</th><th>Description</th><th>Addendum/Amendments to the Tender document</th></tr>
<tr><td>1</td><td>44 of 767</td><td>Clause No.2.3.2 of Section IV Bidding Forms- Eligibility- Financial status- Average Annual Construction Turnover</td><td>Minimum average annual construction turnover of INR 100 Crore/ USD 15 Million, calculated as total certified payments received for contracts in progress and/ or completed, within the last Five years, divided by Five years.</td><td>Minimum average annual construction turnover of INR 60 Crore/ USD 9.2 Million, calculated as total certified payments received for contracts in progress and/ or completed, within the last Five years, divided by Five years.</td></tr>
<tr><td>2</td><td>44 of 767</td><td>Clause No.2.3.2 of Section IV Bidding Forms- Eligibility- Financial status- Average Annual Construction Turnover.</td><td>
<table>
<tr><th colspan="3">Joint Venture
(existing or intended)</th></tr>
<tr><td>All parties combined</td><td>Each Member</td><td>One Member</td></tr>
<tr><td>Must meet requirement</td><td>Must meet 30% of the requirement</td><td>Must meet 50% of the requirement</td></tr>
</table>
Notes for the Bidder

(i) A management contractor is a firm which takes on the role of contract management as a “general” contractor of sort could do. It does not normally perform directly the construction work(s) associated with the contract. Rather, it manages the work of other (sub) contractors, while bearing full responsibility and risk for price, quality, and timely performance of the work contract.
(ii) Similar works shall mean installation of tracks. The value of rails, fasteners or turnouts if supplied by the installation contractor can additionally be included.</td><td>
<table>
<tr><th colspan="2">Joint Venture
(existing or intended)</th></tr>
<tr><td>All parties combined</td><td>One Member</td></tr>
<tr><td>Must meet requirement</td><td>Must meet 50% of the requirement</td></tr>
</table>
Notes for the Bidder

(i) A management contractor is a firm which takes on the role of contract management as a “general” contractor of sort could do. It does not normally perform directly the construction work(s) associated with the contract. Rather, it manages the work of other (sub) contractors, while bearing full responsibility and risk for price, quality, and timely performance of the work contract.
(ii) Similar works shall mean installation of tracks. The value of rails, fasteners or</td></tr>
</table>

			Summation of number of small value contracts (less than the value specified under requirement) to meet the overall requirement will not be accepted. (iii) Substantial completion shall be based on 80% or more of the works completed under the contract. For contracts under which the Bidder participated as a JV member, only the Bidder's share, by value, shall be considered to meet this requirement. (v) In case of a JV, the value of contracts completed by its members shall not be aggregated to determine whether the requirement of the minimum value of a single contract has been met. Instead, each contract performed by each member shall satisfy the minimum value of a single contract as required for single entity. In determining whether the JV meets the requirement of total number of contracts, only the number of contracts completed by all members, each of value equal or more than the minimum value required shall be aggregated. (vi) Experience certificate for Prime Contractor, Management Contractor and Sub-Contractor issued by the project Client will only be considered. The certificate issued by the Main-Contractor or others will not be considered.	turnouts if supplied by the installation contractor can additionally be included. Summation of number of small value contracts (less than the value specified under requirement) to meet the overall requirement will not be accepted. (iii) Substantial completion shall be based on 80% or more of the works completed under the contract. For contracts under which the Bidder participated as a JV member, only the Bidder's share, by value, shall be considered to meet this requirement. (v) In case of a JV, the value of contracts completed by its members shall be aggregated to determine whether the requirement of the minimum value of a single contract has been met. (vi) Experience certificate for Prime Contractor, Management Contractor and Sub-Contractor issued by the project Client will only be considered. The certificate issued by the Main-Contractor or others will not be considered.
3	45 of 767	Clause No.2.4.2 (a) of Section IV Bidding Forms-Eligibility-Specific Construction Experience.	A minimum number of work(s) that have been satisfactorily and substantially [(iii)] completed as a prime contractor (single entity or JV member) [(iv)] between 1st January *2013* and Bid submission deadline a1). One work [(ii)] of value **INR 30 Cr.** or above or a2). Two works [(ii)] each of value **INR 20 Cr.** or above or	A minimum number of work(s) that have been satisfactorily and substantially [(iii)] completed as a prime contractor (single entity or JV member) [(iv)] between 1st January *2013* and Bid submission deadline a1). One work [(ii)] of value **INR 20.244 Cr.** or above or a2). Two works [(ii)] each of value **INR 14.16 Cr.** or abov

			a3). Three works [(ii)] each of value **INR 15 Cr.** or above. For the above or other contracts completed and under implementation as prime contractor (single entity or JV member), management contractor or subcontractor [(vi)] between 1st January *2013* and Bid submission deadline, a minimum construction experience in the following key activities successfully completed [(iii)] b1) One work of installation of ballast less track for a metro or railway project of 15 track km or more or b2) Two works of installation of ballast less track for a metro or railway project, each 10 track km or more or b3) Three works of installation of ballastless track for a metro or railway project, each 7.5 track km or more	or a3). Three works [(ii)] each of value **INR 11.56 Cr.** or above. For the above or other contracts completed and under implementation as prime contractor (single entity or JV member), management contractor or subcontractor [(vi)] between 1st January *2013* and Bid submission deadline, a minimum construction experience in the following key activities successfully completed [(iii)] b1) One work of installation of ballast less track for a metro or railway project of 15 track km or more or b2) Two works of installation of ballast less track for a metro or railway project, each 10 track km or more or b3) Three works of installation of ballastless track for a metro or railway project, each 7.5 track km or more
4	48 of 767	Clause No.2.5.1 of Section IV Bidding Forms-Eligibility-Financial Resources.	(i) The Bidder shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements estimated as ***INR 16.8 Cr (USD 2.6 Million)*** *per month* for the subject contract(s) net of the Bidder's other commitments.	i) The Bidder shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements estimated as ***INR 9 Cr(USD 1.4 Million)*** ***(****per month* for the subject contract(s) net of the Bidder's other commitments.

GENERAL INFORMATION

CMRL Bank Account Details

Beneficiary name: M/s Chennai Metro Rail Limited
Bank: Corporation Bank, Ashok Nagar Branch, Chennai
Account no: 510341000054264
IFSC Code: CORP0000578
Loan agreement No. **ID-P258**

The project title shall be revised as follows

S. No.	Clause of Bid Document	Original Clause	Revised Clause
	Title	Supply, Installation, Testing and Commissioning of Ballastless Track of Standard Gauge in Elevated and Underground Sections along with Ballastless Track in Wimco Nagar Depot of Chennai Metro Phase-1 Extension Project	Replace with the following Installation, Testing and Commissioning of Ballastless Track of Standard Gauge in Elevated, Underground Sections and Wimco Nagar Depot along with supply and installation of Buffer stops for Chennai Metro Phase-1 Extension Project

The changes shall be made in all Title Pages, Form of Invitation of Bids, ITB 1.1 of Bid Data Sheet, Letter of Technical Bid, Letter of Price Bid, 1.1.1 Scope and Purpose in Particular Specification (Part 2, Volume 2) etc.

ADDENDUM TO PART–1: BIDDING PROCEDURES

S. No.	Clause of Bid Document	Original Clause	Revised Clause
A	**Part 1**		
A1.	Section IV Bidding Forms	Pg. 63 of 767 of tender document 1.6 Pricing Schedule 1.6.1 Pricing Summary – TO BE FILLED ONLY IN THE PRICE BID	Replace the title with the following 1.6 Deleted 1.7 Pricing Schedule 1.7.1 Pricing Summary – TO BE FILLED ONLY IN THE PRICE BID
A2.	Section IV Bidding Forms	1.7.2 Payment Schedule (BoQ)	Replace 1.7.2 Payment Schedule completely with the following

1.7.2 Payment Schedule

Price Centre B

S. No.			Code	Description	Unit	Qty	IN Foreign Currency		IN INR	
							Rate	Amount	Rate	Amount
Section A				General Requirements						
	1			Plan Submission and Approval						
		a	Section A - 1.(a)	Quality System Assurance Plan	Set	1				
		b	Section A - 1.(b)	Health & Safety Manual	Set	1				
		c	Section A - 1.(c)	Environmental Management Plan	Set	1				
		d	Section A - 1.(d)	Project Implementation Plan	Set	1				
		e	Section A - 1.(e)	Testing Procedure Plan	Set	1				
	2			Drawings						
		a	Section A - 2.(a)	As Built Drawings as per Employer's Requirements	Set	1				
	3			Misc.						
		a	Section A - 3.(a)	Office Accommodation of Engineers	LS	1				
		b	Section A - 3.(b)	Integrated Testing and Commissioning	Set	1				
				Sub-Total Section A						
Section B				Supply of P-Way Materials						
	1			Buffer Stop (Friction Type)						
		a	Section B - 1.(a)	Buffer Stop (Friction type) for Main Line for 25 kmph Standard Gauge	Nos	3				
		b	Section B - 1.(b)	Buffer Stop (Friction type) for Depot Line for 10 kmph Standard Gauge	Nos	14				
		c	Section B - 1.(c)	Wheel Stop for 5 kmph	Nos	5				
	2			Joggled Fish Plate						

Price Centre B

S. No.			Code	Description	Unit	Qty	IN Foreign Currency		IN INR	
							Rate	Amount	Rate	Amount
		a	Section B - 2.(a)	Joggled Fish Plate with Clamps for UIC 60 Rails (60E1 Profile) as per RDSO drawing No. T-4016	Per Set	100				
		b	Section B - 2.(b)	Point clamps to clamp turnouts for UIC 60 Rails	Nos	100				
		c	Section B - 2.(c)	Rate for Supply of an approved Mass Spring System between 1st and 2nd Stage concrete in Circular and Box tunnels in UG section for width as required	Track m	600				
		d	Section B - 2.(d)	Handling, loading and transportation of head hardened rails and unloading at site	MT	2780				
		e	Section B - 2.(e)	Handling, loading, transportation and unloading of turnouts of all types, along with all fittings and fixtures at site	MT	500				
		f	Section B - 2.(f)	Handling, loading, transportation and unloading of fasteners of all types, along with all fittings and fixtures at site	MT	2610				
		g	Section B - 2.(g)	In-situ-fabrication of Insulated Glued Joints	Nos.	78				
				Sub-Total Section B						
Section C				Installation of Ballastless Track						
	1			Laying of Plinth/ Slab in Reinforced Cement Concrete with derailment guard wherever required as per procedure for safety certification and technical clearance (if needed with Self Compacting Concrete) & Installation of Track Work for Plain Track with UIC 60 Rail (60E1 Profile) with all fittings and fastenings etc. complete in underground Corridor (The Rails and Fastenings shall be supplied by the Client, handed over in facility of the client, further cartage to the site for assembly is in scope of the installation contractor.) protected with anti corrossive Bitumen Black Paint as per IS : 9862						
		a	Section C - 1.(a)	Where Shear key is already provided	Track m	6020				
		b	Section C - 1.(b)	Rate over and above (a) if Shear Connector to be provided by contractor	Track m	753				
		c	Section C - 1.(c)	Rate over and above (a) if shear key to be provided by contractor at every 1.4m in Box Tunnel / NATM	Nos	100				
		d	Section C - 1.(d)	Rate over and above 1.(a) for Provision of an approved Mass Spring System between 1st and 2nd Stage concrete in Circular and Box tunnels for width as required	Track m	600				

Price Centre B

S. No.			Code	Description	Unit	Qty	IN Foreign Currency		IN INR	
							Rate	Amount	Rate	Amount
		e	Section C - 1.(e)	Rate over and above (a) if rebar insulation is to be provided	Track m	500				
	2			Laying of Plinth Reinforced Cement Concrete with derailment guard (if needed with Self Compacting Concrete) & Installation of Track Work for Plain Track with UIC 60 Rail (60E1 Profile) with all fittings and fastenings etc. complete on Viaduct and Ramp (The Rails and Fastenings shall be supplied by the Client, further cartage to the site for assembly is in scope of the installation contractor.) protected with anti corrossive Bitumen Black Paint as per IS : 9862						
		a	Section C - 2.(a)	Where Shear key is already provided	Track m	16770				
		b	Section C - 2.(b)	Rate over and above (a) if Shear Connector to be provided by contractor	Track m	2097				
	3			Laying of RCC Slab with derailment guard (if needed with Self Compacting Concrete) & installation of turnout with UIC 60 Rails with all fittings and Fixings (The Rails, Turnouts and Fastenings shall be supplied by the Client, further cartage to the site for assembly is in scope of the installation contractor.) protected with anti corrossive Bitumen Black Paint as per IS: 9862 on viaduct and ramp						
		a	Section C - 3.(a)	1 in 9 Turnout, R=300	Set	14				
		b	Section C - 3.(b)	1 in 7 R=190 Turnout	Set	7				
		c	Section C - 3.(c)	1 in 7 R=140 Turnout	Set	8				
		d	Section C - 3.(d)	1 in 7 Derailment Switch	Set	7				
	4			Installation of Friction type Buffer Stops/ Wheel Stops						
		a	Section C - 4.(a)	Buffer Stop (Friction type) for Main Line for 25 kmph Standard Gauge	Nos	3				
		b	Section C - 4.(b)	Buffer Stop (Friction type) for Depot Line for 10 kmph Standard Gauge	Nos	14				
		c	Section C - 4.(c)	Wheel Stop for Inspection and Emergency Repair	Nos	5				
	5			Welding of UIC 60 1080 Grde HH Rails						

Price Centre B

S. No.			Code	Description	Unit	Qty	IN Foreign Currency		IN INR	
							Rate	Amount	Rate	Amount
		a	Section C - 5.(a)	Flash Butt Welds	Nos	2172				
		b	Section C - 5.(b)	Alumino Thermit Weld	Nos	400				
	6			Welding of UIC 60 880 Grde Rails						
		a	Section C - 6.(a)	Flash Butt Welds	Nos	205				
		b	Section C - 6.(b)	Alumino Thermit Weld	Nos	50				
	7			Other Misc.						
		a	Section C - 7.(a)	Payments for all expenditure over and above for plinths height specified in tender drawing (Qty over and above maximum height of plinth as specified in tender drawing and negative variation for qty less than the minimum height of plinth as specified in tender drawing shall be considered)	cum	150				
				Sub-Total Section C						
Section D				Depot Track						
	1			Special Track form						
		a	Section D - 1.(a)	Laying Plinth and installation of Trackwork for Plain Track on Washable Apron etc. UIC 60 IRS-T-12-2009, 880- Grade Rails with all fittings and Fastenings etc. complete	Track m	54				
		b	Section D - 1.(b)	Installation of Trackwork on Steel Column in Workshop with UIC 60 IRS-T-12-2009, 880- Grade Rails with all fittings and Fastenings etc. complete	Track m	549				
		c	Section D - 1.(c)	Installation of Embedded Rail Type Ballastless Track in Workshop with UIC 60 IRS-T-12-2009, 880- Grade Rails with all fittings and Fastenings etc. complete	Track m	183				
				Sub-Total Section D						
Section E				Misc. Work						
	1			Other DSR Item						

Price Centre B

S. No.			Code	Description	Unit	Qty	IN Foreign Currency		IN INR	
							Rate	Amount	Rate	Amount
		a	Section E - 1.(a)	Development of covered shed for storage For stacking of rails, fasteners and turnouts in the designated location, developing the area by surface dressing, consolidation, laying concrete floor, walls etc. and providing foundation, columns, truss and roof for the covered shed, and after completion, dismantling the same to restore to the original condition including disposal of waste and providing landscaping in the restored area	m^2	3000				
		b	Section E - 1.(b)	Miscellaneous other Items covered under DSR 2016 but not covered in this BOQ (Including upstands at expansion joints, Signages): to be paid as per items under DSR 2016 (of CPWD) schedule items for LS Value of Rs. 50 Lakhs as a corpus amount The Amount to be quoted considering .....% Above / Below the DSR 2016 Items	LS	50 Lakhs				
				Sub-Total Section E						

Summary Sheet of Price Centre B

1	Section A	General Requirements					
2	Section B	Supply of P-Way Materials					
3	Section C	Installation of Ballastless Track					
4	Section D	Depot Track					
5	Section E	Misc. Work					
				Total Amount			

Price Centre B

S. No.	Code	Description	Unit	Qty	IN Foreign Currency		IN INR	
					Rate	Amount	Rate	Amount

The Total Amount is (in Words) _____

Name of the Bidder _____ Signature _____ Date _____

Price Centre C

Currencies in accordance with ITB 15.1

Date: _____
IFB No.: _____
Alternative No. _____
Page No. _____ of _____

1	2	3	4	5	6	7	8
Item No	Description of Works	Quantity	unit	Unit Rate	Total price (Col. 3×5)	GST and other taxes payable per line item	Total Amount (Col 6+7)
F	Supply of Anchor Bolt for the Track Fastening System as per the drawings approved by the Engineer-in-Charge	41000	Nos.				
	Total Amount						

Note: Quantity under this item may be operated 0% to 100%. The Tenderer shall not have any claim over this variation

Name of Bidder _____ Signature of Bidder _____ Date _____

Appendix A: Explanatory Notes to BOQ

The item description is intended to briefly describe the work to be performed under that item and to identify associated work. It is not a full and complete description of the work to be performed and the Contractor shall carry out all the work necessary to meet the requirements of the Specification.

These explanatory notes are to be read in conjunction with the Bill of Quantities, Employer's Requirement, and Tender Drawings.

Section A: General Requirements

Item No.	BOQ Description	Explanation
A – 1(a)	Quality System Assurance Plan (QSAP)	This item shall cover the QSAP as specified in the Employer's Requirements. It shall essentially include, but not limited to: • Quality manual • Work instructions • Method statement for construction and installation, quality inspection • Inspection and test plans • Test procedures • FAT plans The price shall also include the QSAP development, maintenance and implementation as well as cost of document originals, 2 copies, and electronic files.
A – 1(b)	Health and Safety Management Plan (HSMP)	This item shall cover the HSMP as specified in the Employer's Requirements. It shall essentially include, but not limited to the following. • Occupational Health and Safety manual; • Site safety plan; • Risks assessments; • Method statements • Site accommodation proposals and provisions. The price shall also include the HSMP development, maintenance and implementation as well as cost of documents originals, 2 copies, and electronic files.
A – 1(c)	Environmental Management Plan	This item shall cover the Environmental Plan as specified in the Employer's Requirements. It shall essentially include, but not limited to: • Environmental Management plan; • Detailed spoil management plan; • Dust control plan • Diesel emission mitigation plan The price shall also include plan development, maintenance and implementation as well as cost of

		documents originals, 2 copies, and electronic files
A – 1(d)	Project Implementation Plan	This item shall cover the Project Implementation plan as specified in the Employer's Requirements. It shall essentially include but not limited to: • Project implementation plan including initial works program, three months rolling program, detailed works program, monthly progress report etc., • Software support plan, backup copies of the software submission, • interface management plan, interface matrix and specific contract interface sheets, all interfacing works within the project and other interfacing contractors • Project management information system • Contractors staff organization plan • Procurement and manufacturing plan; • Installation plan; • Temporary traffic and control plan • Maintenance support plans The price shall also include plan development, maintenance and implementation as well as cost of document originals, 2 copies, and electronic files.
A – 1(e)	Testing Procedure Plan	This item shall cover the Testing Procedure Plan including integrated testing and commissioning as specified in the Employer's Requirements It shall essentially include but not limited to the details of tests to be carried out and the procedures and acceptable values to perform them. The price shall also include the plan development, maintenance and implementation as well as cost of documents originals, 2 copies, and electronic files.
A – 2(a)	As Built Drawings	The price under this item shall include the cost of supplying as-built drawings, as specified in the Particular Specification of Employer's Requirements including preparation, submission and all subsequent revisions, changes required and re-submittals as required until accepted by the Engineer. The as-built drawings shall be submitted in original, 2 copies and electronic files.
A – 3(a)	Office accommodation for Engineer	This item shall cover provision of office accommodation and facilities as specified in the Employer's Requirements. It shall essentially include but not be limited to: • Provision and Maintenance of office accommodation and facilities; • Provision and Maintenance of all other deliverables.

A – 3(b)	Integrated Testing and Commissioning	These items shall cover the Integrated Testing and Commissioning as specified in Employer's Requirements. It shall essentially include but not limited to the following. • Integrated Testing and Commissioning; • Tools, Instruments, Tackles and documents required; • Providing attendance to the employer's representatives • Carrying out the appropriate integrated testing and commissioning functions.

Section B and C: Supply of Permanent Way Materials and Installation of Ballastless Track

Item No.	**BOQ Description**	**Explanation**
B – 1 and C – 4	Buffer Stop and Wheel Stop – supply and installation	The price shall include the cost of supplying and installation of buffer/ wheel stop as per Employer's Requirements, mainly consisting but not limited to the following. • Cost of developing, manufacturing and supplying of Buffer and Wheel Stop including cost of deployment of all plant and machinery required. • Cost of inspection and acceptance test. • Detailed documentation including drawings, technical details, calculations and procurement as per Employer's Requirements • Shipping, handling, transportation, loading, unloading, stacking/ storing up to project site. • Cost of all material and labour including all fittings fastening and fixtures etc. complete and installation on track. No additional payments shall be made for handling, re-handling, loading unloading, transportation or for any other activities.
B – 2(a)	Joggled fishplate with Clamps for UIC 60 Rails	The price shall include the cost of supplying and installation as per Employer's Requirements, mainly consisting but not limited to the following. • Joggled fish plate as per railway's latest drawing. • Clamp. • Joggled fish plate with clamps per joint means

		two clamps and two joggled fish plates
B – 2(b)	Point Clamps	The price shall include the cost of procurement, supplying and installation of point clamps to clamp turnout for UIC 60 rails as per Employer's Requirements. The clamps shall be suitable for the plinth/ slab track assembly and should meet the RDSO requirements
B – 2(c) and C – 1(d)	Approved Mass Spring System (MSS) in tunnels – Supply and Installation	The price of item includes mainly consisting but not limited to the following. • Providing an approved Mass Spring System between 1st and 2nd stage of concrete in tunnels. • Each section of MSS will be equipped with the transition zone of adequate length on both sides of such stretch of MSS consisting of half thickness approved MSS. • Cost of additional RCC and other resources over and above that for installation of track. • The contractor will be responsible for proper grading of the base for achieving uniform Rail level in main as well as transition zone • The cost includes procurement of MSS materials including shipping, handling, transportation to site inclusive of all duties and taxes and placing/ fixing to the correct location below track plinth/ slabs. • Inspection and acceptance test. • Experts for supervision and installation of the MSS.
B – 2(d)	Handling, loading and transportation of head hardened rails and unloading at site (Rails will be supplied by the Employer)	The price shall include the cost as per the Employer's Requirements, mainly consisting, but not limited to the following: • Mechanized handling/ re-handling, loading, local transport, temporary storage (if required) of rails from storage yard as per RDSO handling instruction for handling of 110 UTS HH rails specified in Manual for Flash butt welding of rails 2012 with latest amendments, unloading and leading the rails to the site of work as per the method statement approved by the employer, coordination with road authorities, obtaining necessary permits for transportation etc. • Transit insurance and safe transportation without any damage to these rails including arrangement of special trailers duly taking proper care and precaution and following the methods statement approved by the employer • Mechanized unloading, stacking/ storage on firm and level base etc. complete. • All the cost and charges including all duties, taxes, levies, etc. if any shall be paid by the

		Contractor. Average lead length shall be 10km.
B – 2(e)	Handling, loading, transportation and unloading of turnouts of all types, along with all fittings and fixtures (Supplied by the Employer)	The price shall include the cost as per Employer's requirement mainly consisting of, but not limited to the following: • Handling, loading and transportation of turnouts, crossover, trap switches and any other type of switches with fittings and fastening, duly coordinating with road authorities, obtaining necessary permits for transportation etc. and unloading at site as per the method statement approved by the Employer. • Transit insurance and safe transportation without any damage to these turnouts including arrangement of special trailers duly taking proper care and precaution and following the method statement approved by the employer • Mechanized unloading and leading the turnouts/ crossover to the site of work, stacking/ storage on firm and level base etc. complete. • All the cost and charges including all duties, taxes, levies, etc. if any shall be paid by the Contractor
B – 2(f)	Handling, loading, transportation and unloading of fasteners of all types, along with all fittings and fixtures (Supplied by the Employer)	The price shall include the cost as per Employer's requirement mainly consisting of, but not limited to the following: • Handling, loading and transportation of fasteners with fittings, duly coordinating with road authorities, obtaining necessary permits for transportation etc. and unloading at site as per the method statement approved by the Employer. • Transit insurance and safe transportation without any damage to these fasteners including arrangement of special trailers duly taking proper care and precaution and following the method statement approved by the employer • Mechanized unloading the fasteners to the site of work, stacking/ storage on firm and level base etc. complete. • All the cost and charges including all duties, taxes, levies, etc. if any shall be paid by the Contractor
B – 2(g)	In-situ-fabrication of Insulated Glued Joints as per RDSO Manual for Glued Insulated Rail Joints 1998 with latest amendments	The price shall include the cost of procurement of materials and in-situ manufacturing of glued Insulated Rail Joint (IRJ) as per Employer's Requirements and drawings, and installation at site mainly consisting but not limited to the following. • Loading, handling/ re-handling, transportation and unloading of all materials including rails

		from stock area to site including cost of cutting, drilling, cost of deployment of plant, equipment and machineries, • In-situ-fabrication of IRJ as per RDSO specifications • Materials, materials specification and equipment for fabrication of IRJs should comply with RDSO specification and it shall be procured only from RDSO approved Vendors. • Price is inclusive of procurement of fish plates, bolts, glue, washers etc. • Fabrication of in-situ-IRJ has be carried out only by the RDSO approved vendors. • Inspection and acceptance tests by interfacing signalling contractor to satisfy the signalling requirement. • Detailed documentation and records as per Employers requirements • Rail for fabrication of in-situ-Glued Insulated Rail Joints will be supplied by the Employer.
C – 1 and C – 2	Laying RCC slab/ plinth over first stage concrete with design mix approved by the employer and installation of track work for plain track with UIC 60 head hardened rails with all fittings and fastenings etc. complete	The Price shall include complete laying of track on reinforced concrete plinth / RCC Slab as per Employer's Requirements and drawings mainly consisting but not limited to the following. • Cost of survey and setting out including cost of deployment of all survey equipment, pegging markers, reference markers etc. • Loading, handling/ re-handling, transportation and unloading of all materials (including the materials supplied by the Employer) from stock area to site including cost of deployment of plant, equipment and machinery. • Cost of handling/ re-handling, transportation/ placement of rail panels of all lengths. • Cost of all temporary works including service/ temporary track and permanent works etc. to carry out the work. • Setting up of formwork, false work including deployment of all equipment, plant and machinery and cost of track supporting work including jigs and fixtures. • Fixing of reinforcement for RCC slab as per the approved design, provision of Plastic Clips for Stray Current insulation. • Assembling the track as per the approved design co-ordinates with Track master device or any other approved method and laying of track with all fittings and fastenings including Glued Insulated Joints, etc. complete. • Cost of RCC, supply and welding of M.S. Plate to the slab reinforcement, supply and connecting copper cables with M.S. Plates for electrical continuity. • Installation of stray current collection mat

		including all welding work, installation of MS strip connecting (with welded connection) all nominated rebars, earth point (for connection to structure earth cable) • Cost of all PVC/ HDPE pipes required for track crossing as per requirements of S&T and Power Supply Contractor. • Anti-corrosive Painting of rails as per Employers requirement • De-stressing of the CWR and final fastening down of track including cost of deployment of necessary equipment to comply with the track tolerances. • Cost of all temporary/ permanent markers including paint markers on rail. • Cost of cutting, drilling, jointing, except rail welded joints • Cost of drilling, chamfering etc. (in the running rails) for cable connections, as required by S&T and Power Supply Contractors. • As built checking to comply with Employers requirement, rectifying the deviations if any by the approved method statements. • Mill grinding of the rails as per the specifications • Cost of all rail welding shall not be included as it is separately paid. • Provision of track drainage as per Employer's Requirements and drawings including provision of grating slab for the collection pits over second stage concrete. • Design, Procurement and Fixing of signs and markers • Inspection, measurement and acceptance tests. • Detailed documentation and records. • The payment of this item shall be made to the contractor after completion of all works required for making the track to final form including compliance to laying tolerances.
C – 3	Laying RCC slab/ plinth over first stage concrete with design mix approved by the employer and installation of turnout/ scissors crossover with UIC 60 head hardened rails with all fittings and fastenings etc. complete	The Price shall include complete laying of turnout on reinforced concrete as per Employer's Requirements and drawings mainly consisting but not limited to the following. • Cost of survey and setting out including cost of deployment of all survey equipment, pegging markers, reference markers etc. • Loading, handling/re-handling, transportation and unloading of all materials (including the materials supplied by the Employer) from stock area to site including cost of deployment of plant, equipment and machinery. • Cost of handling/ re-handling, transportation/ placement of rail panels of all lengths. • Cost of all temporary works including service/

		temporary track & permanent works etc. to carry out the work. • Setting up of formwork, false work including deployment of all equipment, plant and machinery and cost of track supporting work including jigs and fixtures. • Fixing of reinforcement for RCC slab as per the approved design, provision of Plastic Clips for Stray Current insulation. • Assembling and laying of turnout with all fittings and fastenings including glued insulated joints etc. complete. • Cost of RCC, supply & welding of MS Plates to the slab reinforcement, supply & connecting copper cables with MS Plates for electrical continuity. • Concreting under the base plates upto 25mm and carrying out Epoxy grouting under the base plates upto 25mm with contractor's epoxy based grouting material approved by the Engineer duly ensuring correct alignment and level by grinding the top surface of epoxy. • Installation of stray current collection mat including all welding work (with the already provided shear connectors and others), installation of MS strip connecting (with welded connection) all nominated rebars, earth point (for connection to structure earth cable). • Cost of all PVC/ HDPE pipes required for track crossing as per requirements of S&T and Power Supply Contractor. • Incorporation of turnout in CWR including cost of deployment of necessary equipment. • Cost of all temporary/ permanent markers including paint markers on rail. • Design, Procurement and Fixing of signs and markers. • Cost of cutting, drilling, jointing, except rail welded joints • Cost of drilling, chamfering etc. (in the running rails) for cable connections, as required by S&T and Power Supply Contractors
C – 5(a), C – 6(a)	Flash Butt Weld	The prices shall include carrying out of flash butt welding of UIC 60 1080 grade, Head hardened rails as per Employer's Requirements and as per the Manual for Flash Butt Welding of Rails- Jan 2017(With latest amendments) consisting but not limited to the following: • Cost of all arrangements including temporary arrangements, loading and unloading, deployment/ redeployment of mobile flash butt welding plant at the site of work. • Cost of operation, fuel, staffing, maintenance

		etc. complete for the plant. • Cost of cutting, straightening (pre-weld and post weld). • Carrying out welding as per RDSO approved specification and as per Employers Requirement with RDSO approved welding parameters. • Cost of post weld treatment. • Cost of carrying out all inspection and acceptance tests, test welds including USFD test for all welds. This shall include deployment of all necessary equipment, plant, machinery and staffing. • Cost of all labour, lead, lift, lifting tools, equipment and other related expenses. • Cost of re-testing and re-placement of defective weld and associated rail length. • Cost of handling/ re-handling, transportation, placement of rails for welding. The payment under this item shall be made to the contractor only for number of finished and accepted welds in the track
C – 5(b), C – 6(b)	Alumino-thermit weld	The price shall include carrying out of alumino- thermic welding of UIC 60, 1080 grade, Head hardened rails as per Employer's Requirements, manual for fusion welding of rails by the alumino-thermic process-rev 2012(with latest revision) and Indian Railway Standard Specification for Fusion Welding of Rails By Alumino – Thermic Process Serial No. IRST-19-2012(with latest correction slip), consisting but not limited to the following. • Cost of welding material and equipment as per specifications including handling, transportation, loading, unloading, stacking/storing up to project site/ work site. • Cost of carrying out all inspection and acceptance tests, test welds including USFD test for all welds. This shall include deployment of all necessary equipment, plant and machinery and staffing. • Cost of carrying out welding as per RDSO approved methods, with RDSO approved materials and approved welder and welding supervisor. • Cost of post weld treatment • Cost of cutting of rails, cost of all labour, lead, lift, tools, equipment and other related expenses. • Cost of re-testing and re-placement of defective weld and associated rail length. The payment under this item shall be made to the

		contractor only for number of finished and accepted welds in the track.

Section E: Miscellaneous Work

Item No.	**BOQ Description**	**Explanation**
E – 1(a)	Development of covered shed for storage	The rails, fasteners and turnouts shall be handed over to the installation contractor who shall be responsible for their safe custody. The installation contractor shall develop a covered shed for stacking the supplied materials as per Railway standards The price shall include but not limited to the following • Surface dressing of the ground including removing vegetation and disposal of rubbish • Preparation and consolidation of sub grade • Providing and laying in position concrete floor, foundations of columns • Steel columns for supporting the steel roof truss • Steel truss including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer. • Providing corrugated G.S. sheet roofing • Supplying and fixing of rolling shutters of approved make • Dismantling and Disposal of the covered shed at the end of the project