



"TRACK MAINTENANCE WORK OF EW CORRIDOR (THALTEJ GAM STATION TO VASTRAL GAM STATION WITH DEAD ENDS INCLUDING APPAREL PARK DEPOT & RAMPS) OF AHMEDABAD METRO PHASE-1"

TENDER NO. GMRC/O&M/TRACK MAINTENANCE/EW/PH-1/2026

**Technical Specifications
(Employer's Requirements)**

Gujarat Metro Rail Corporation (GMRC) Limited

(SPV of Govt. of Gujarat and Govt. of India)

Formerly known as Metro Link Express for Gandhinagar and Ahmedabad (MEGA) Co. Ltd.

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A. EMPLOYER'S REQUIREMENTS

1. Objective

The objective of this contract is to ensure the **Permanent Way (P-Way)** is maintained in a state of operational readiness, ensuring maximum safety, passenger comfort, and minimal wear and tear on running rail. The Contractor shall perform all routine, preventive, and corrective maintenance for the Mainline, Depot, and Test Track as per requirement of GMRC Track maintenance manual/ specifications (IR Standards) and conditions of contract. Contractor shall maintain the quality of maintenance, track parameters considering the following:-

1. Gujarat Metro Track Maintenance Manual/ OEM Manual
2. Relevant specifications and IR standards
3. Schedule of Dimensions
4. MRGR
5. Circulars/SOP's/Orders issued by GMRC.

2. Technical Asset Coverage

The scope covers the following track components:

- **Track Form:** Ballastless track (Slab type) in Viaducts/Tunnels and Ballasted track in Depots.
- **Rails:** Head Hardened (HH) 60kg/m, Grade 1080/880 rails.
- **Turnouts:** 1:9 R300 & R190 and 1:7 R140 type.
- **Fittings:** Fastening systems (e.g., Vossloh 336,) including baseplates, anchors, SKL-12 and pads.
- **Buffer Stops:** Friction-type buffer stops.

3. Detailed Task Categorization

3.1 Inspection & Testing Schedule

The Contractor shall execute inspections as per the **Permanent Way Maintenance Manual** of the Metro:

- **Foot Patrolling:** Daily inspection of the entire section to identify loose fittings or obstructions.
- **Points & Crossings:** Thorough monthly inspection of switches, stock rails, and clearance gaps.

3.2 Preventive & Routine Maintenance

- **Fastening Upkeep:** Systematic tightening of all bolts/anchors and replacement of worn-out rubber pads or liners.
- **Fastening Maintenance:** Detailed Inspection of fastening components & replacement of damaged components (i.e Insulation Bush, Pads, Base Plates, Spring/Washer, etc.)

- **Lubrication:** Manual lubrication of the gauge face on curves with a radius less than 500m.
- **Ballast Management:** (For Depot/) Squaring of sleepers, boxing of ballast, and removal of vegetation.

3.3 Corrective Maintenance (Breakdown)

- **Rail Fracture Repair:** Immediate clamping and subsequent thermit welding of fractured rails.
- **Emergency Response:** 24/7 availability of a "Breakdown Gang" to attend to track-related failures reported by the Train Control Centre (OCC).

4. Obligations of the Contractor

- **Manpower:** Provide a dedicated team including a Track Manager, P-Way Supervisors, and skilled Trackmen.
- **Safety:** Ensure all "Maintenance Blocks" (Night shifts) are executed under strict PTW (Permit to Work) protocols.
- **Reporting:** Submission of Daily, Weekly, and Monthly Progress Reports (MPR) via the Metro's Asset Management System/ERP.

ESTIMATED MAN POWER REQUIREMENT FOR CARRING OUT WORK

ITEM NO	DESCRIPTION OF WORK	MANPOWER REQUIRED AT NIGHT			MANPOWER REQUIRED AT DAY		
		SUPERVISOR	SKILLED	UNSKILLED	SUPERVISOR	SKILLED	UNSKILLED
1	Cleaning of Viaduct	1	2	6	1	1	6
2	Cleaning of Grill						
3	Packing						
4	De weeding						
5	Dressing of Shoulder ballast						
6	Partial Overhauling	0	2	4	0	2	2
7	Proving Work man (Skilled/unskilled)						
8	Patrolling of track						
9	Greasing of Curves	1	2	4	1	2	4
10	Greasing of Pandrol Clip						
11	Toe Load measurement						
12	Marking of station						
This manpower calculation is tentative and may vary according to actual site requirement							

B. SCOPE OF WORK

Works to be carried out

Schedule-A (USSOR Items)

Any P-way item from USSOR 2021 or latest except items mentioned in the schedule B is to be executed as and when required in Main line section or in Depot in day/night shift as per the directions of Engineer- in- charge.

Schedule-B (NON-USSOR Items)

B.1 Thorough cleaning of track beds, central drain of viaduct, cleaning of water logged Track area excluding stations platform by brush, broom, other required suitable means etc. The disposal of rubbish, muck etc. after cleaning, has to be done by contractor to the dumping ground with co-ordination of Municipality. For the waste disposal, contractor shall use clean dustbins, which are filled & then are completely sealed & in the sealed condition they are transported to local authority's approved dumping ground in such manner that Environment is least affected by this activity. All tools and plants required for the work will be that of the contractor. This work has to be done once in 30 days or as directed by Engineer-in-charge. This work has to be done as per the direction of Engineer-in-charge.

B.2 Cleaning of hand rails on viaducts by contractor's own tools, consumables and equipment. This work is to be done at the frequency same as that of item no. 1 or as directed by Engineer-in-charge or his authorized representative.

B.3 Picking up of slacks of curved/straight track and point and crossing as directed by the engineer in charge to restore track parameters within the prescribed tolerances to the satisfaction of the engineer as and when required on depot/ main lines with contractor's tools and plants as listed. Small Track Machines as required for the work will be supplied by GMRC on loan free of cost, which shall be returned after completion of work in good & in working condition without causing any damage to the machine. If any damage, the contractor must repair/replace the machine with same specifications. If not returned or deviated quantity shall be charged at the double value of Book Rate as prescribed by the GMRC & in all such cases, the decision of the GMRC shall be final.

B.4 Greasing of gauge face of running rails in curves/Turn out by GMRC approved grease or equivalent quality with contractor's labour, material and tools etc. Care should be taken during greasing that no grease should come in contact with Rail Top table. The excess and hardened grease should be removed before application. This item is to be operated on curves of radius up to 500m as per directions of Engineer in charge.

B.5 Marking of stations of curves/Turnouts/welds to be carried out as and where required in Main Line/Depot track. The work involves surface preparation by proper cleaning of surface from all dirt, scales, oil, grease and other foreign material and making station base with adequate nos.

B.6 Greasing of ERC to be done at day hours in Depot lines under PTW. ERC to be opened alternate sleepers and cleaning to be done by brush. After cleaning, greasing of ERC to be done by 0 grade Graphite grease. During working it is to be ensured that work to be done in desired temperature only.

B.7 Dressing of Shoulder ballast to be done under PTW. The shoulder ballast should be dressed property as per the LWR profile as per the requirement given by Engineer in Charge.

B.8 Toe load measurement of Tension clamp in ballast less track during night shift by ITI qualified personnel, proficient device and other equipment shall be provided by GMRC which shall be returned in good condition after the work. it is to be ensured that the reading of Toe load is recorded in register which is kept in P. Way office in respective Depot

B.9 Repair of broken or cracked Baseplate Pedestals of turnouts using Sikadur 53 UF Epoxy grout or equivalent as per manufacturer's specifications with contractor's labour, material, tools & plants etc.

B.10 Providing and injecting epoxy based grout material Conbextra EP10 of M/s Fosroc or equivalent as per the site requirement with the help of suitable pressure grouting machine.

B.11 Repair and filling of RCC plinth using Conbextra EP 75 of make Fosroc or equivalent

B.12 Providing and laying of micro concrete for repair of small damaged patches in RCC plinth of track, including provision and installing of frame work

B.13 Grass/Bushes cutting work on main line have to be done generally during non-revenue hours however efforts will be made to get this work done during day time with complete safety precautions as laid down, However, this activity in GMRC Depot & yard and outside GMRC boundary will be carried out in day time with contractor's own tools & plants. After cutting, disposal of the same has to be done in local authority's nominated Dumping Ground on the same day or as directed by the Engineer-in-charge.

B.14 MSS level checking work using Total Station/Digital Level Machine as directed by Engineer in charge. The cost of the work will include supply of machine, all necessary tools and equipment

B.15 Supply of Hydra/JCB as and when required as per the directions of Engineer in charge. The works includes providing of Hydra/ JCB with operator as and when required as per the direction of Engineer in charge. All taxes, duties, levies, permissions from concerned authority etc. shall be arranged by the agency and nothing shall be paid extra. This work shall be carried out on approval and as per the directions of Engineer in charge

B.16 Execution of in-situ glued joint by opening the old nuts with help of gas cutter, providing new 1 mtr fish plates, bolts insulating material, making holes in rails as per required location with transporting all material at site anywhere in GMRC network.

B.17 Manual Transportation of Rail panel / Crossing/ Switch over Dip Lorry from depot to Main line or Mainline to depot or Mainline to Mainline (per KM) and unloading .

B.18 Crossing Replacement (with all pads, plates, fittings & fastenings etc. if required) at Main line/Depot.

B.19 Half set Switch replacement with all sliding chairs, pads, plates, fittings & fastening etc. (if required) at Main line/Depot

B.20 Manual Transportation of Rail panel / Crossing/ Switch (equivalent weight as per weight bridge to be consider for Crossing/switch) on Trailer (30 Ton Capacity) from one location to other as per the direction of Engineer in charge.

B.21 AT Welding of rail joints by RDSO competent welder in LWR of 1080 HH/880 on cess/in- situ [as per IRS specification (with latest amendment)] should include pairing of rails and cleaning of welds by mechanical means completed job (Portion will be supplied by GMRC) including all tools and plants prefab mould , skilled RDSO competent welder and unskilled labor , technical supervisor with grinding ,trimming & finishing of Joints etc.

B.22 & 23 De-stressing of the track in Depot of 60kg 880/1080 grade LWR/CWR track by duly removing the fastening ,lifting and placing the rails on rollers and (as per the procedure laid down in the Indian Railway LWR Manual)

B.24 Maintenance & inspection of Buffer Stop on mainline/Depot , maintaining buffer stops including resetting to its original position with replacing worn-out friction elements as per the standard specification, manual and Engineer/Employer in charge with approved checklist

B.25 Replacement/Fixing of signage Boards for Turnout/ Fouling mark /speed restriction / Chainage /Hectometer/curve etc. As per approved drawings of GMRC as per direction of engineer/Employer in charge

B.26 The activity includes opening and cleaning of all fittings and fastenings, base plate's T-Head insert location, and tightening of fittings during PTW. The fittings and fastenings if found broken is to be replaced with new one (fittings and fastenings to be replaced will be provided by GMRC). The activity includes all manpower and all other required tools and plants as per ITT. The tools and plants required for the execution of this activity are to be shifted by the agency from depot store to Main line site and vice-versa after completion of work. Nothing shall be paid extra. Released material if any must be handed over to GMRC at Store/Depot. The work shall be carried out as per the directions of Engineer in charge

Schedule-C (Manpower Supply)

C.1: Providing of work man proficient in track work for assisting in inspections of GMRC officials and in other miscellaneous activities for items not covered in Schedule A & B above as per requirement of Engineer in-charge.(In Day/Night Shift)

C.2: Providing of Trained and qualified Track Personnel having minimum qualification of ITI for assisting in inspections of GMRC officials and in other miscellaneous activities for items not covered in Schedule A & B above in Main line and Depots as per requirement of Engineer In-charge. (In Day/Night Shift)

C. TRACK WORK

1. All activities generally on mainlines shall be carried out during non-traffic hours at night and on depot lines during day times. The work shall be carried on approved block/PTW only. The approved block details will be made available by Engineer in-charge. In case of emergency/ unusual occurrences, the work may have to be done at any hour of day and night. Contractor shall make his own arrangement of lighting for deep screening & other track work. No extra payment will be made for the same.
2. GMRC track is covered on both sides by boundary walls. The approach to the main line track is only from station. Any contractor's person entering section for carrying out works under the contract shall have to obtain permission from the competent authority.
3. Contractor shall ensure that all precautions mentioned in chapter-II part J of IRPWM 3416 reprinted in 1999 for maintenance of track on Electrified area (25 KV AC Traction) as applicable is followed and all his staff are well versed with it. In this regard Safety Precautions & Essential Instructions for working in A.C. Traction area of GMRC are also to be followed.
4. Contractor shall ensure that all precautions to be taken while working in Track circuited area is observed as per Para 279 of IRPWM.
5. After completion of days/nights works contractor shall ensure that all equipment, tools and plants P. Way material, etc. either released or new are cleared before leaving the site. No material what so ever shall be left behind.
6. The quantum of work to be done under each item will be indicated to the contractor from time to time, during the currency of the contract & contractor shall instantaneously rise to the occasion and complete the work expeditiously.
7. For cleaning purpose, the width of viaduct is taken as 6m. At location, where the width of via duct is more, the payment shall be made on prorate basis.
8. Small Track Machines required for the same shall be provided by GMRC to the contractor free of cost but fuel and consumables cost shall be paid by the contractor. The list of small track machines is as under.

a)	Dip lorry	f)	Rail dolly.
b)	Abrasive rail cutter.	g)	Track Jacks
c)	Cutting wheels.	h)	Rail tensors
d)	Drilling machine.	i)	Off track tampers
e)	Drill bits	j)	Generator

After completion of the work, these items will have to be returned to the GMRC without causing any damage to them.

9. Contractor shall provide all tools and plants to his labour with no extra cost to GMRC. Following are the tools and plants used in track maintenance.

a)	Rake ballast 4 prong.	f)	Pan iron mortar.
b)	Wire Claw 8 prong.	g)	Keying/spiking hammer.
c)	Beater	j)	Consumable for Necessary Lighting arrangements
d)	Crow bar	i)	Screener for ballast screening
e)	Tommy Bar		

Contractor and GMRC scope regarding Tools/Machinery and Consumables Tabulated in details

Vendor Scope	GMRCCL Scope
Contractor shall provide all tools and plants to his labour with no extra cost to GMRC. Following are the tools and plants used in track maintenance.	Small Track Machines required for the same shall be provided by GMRC to the contractor free of cost but fuel and consumables cost shall be paid by the contractor. The list of small track machines is as under
a) Rake ballast 4 prong	a) Dip lorry
b) Wire Claw 8 prong	b) Abrasive rail cutter
c) Beater	c) Cutting wheels
d) Crow bar	d) Drilling machine
e) Tommy Bar	e) Drill bits.
f) Pan iron mortar	f) Rail dolly
g) Keying/ spiking hammer	g) Track Jacks
h) All lightning equipment, arrangement and Consumable for Necessary Lighting arrangement.	h) Rail tensors
i) Screener for ballast screening	i) Off track tampers
j) Cotton waste/cloth for hand rail cleaning	j) Generator
k) Brush, broom and dustbins	k) Toe Load Machine & consumables
l) Grease for curve, check rails & ERC and tools used for removing old grease.	l) All P.Way materials (i.e. Rails Fish Plates, other P.Way fittings)
j) Dhariya, Sickle and Khurpi	m) Motor Trolley

k) Tractor Trolley for Garbage/Grasses disposal work only.	n) Impact Wrench- Bolt Tightening Machine (Electronic/Battery/Fuel Operated)
l) Yellow & Black Paint, Cleansing agent or tools to remove dirt, scales, oil, grease and other foreign material from rails and P&C.	
m) Hydra/JCB	
n) All PPE & safety related items.	p) Torque Wrench
All the above listed items to be provided by AMC contractor only for his scope of work to his supervisors & labours.	q) Track Gauge cum Level & Versine Kit with chord
	r) T-Spanners, Rail Tongue, Ring spanner, Thermometer and Small Track Trolley
	s) AT welding sets
	t) Vernier (digital or Scale base), tool bags, Engineers square, Tapered Gauge, ring spanner, PWI tool kit and Rail wear Measuring Gauge, etc.
	u) Ultrasonic Flaw Detector Machine (USFD)
	v) Gauge calibration system
	-After completion of the work, these items will have to be returned to the GMRC without causing any damage to them.
	The above listed items are provided to contractor for their scope of work only. The any other items required which are not listed above or required in near future or procured in future will be in scope of GMRC only.
	-All the maintenance activities which to be looked by GMRC track staff and are not in contractor's scope, the required material for these will be provided by GMRC only.

10. In case of emergency contractor has to mobilize resources and carry out works at any time of the day and night instantaneously at short notice if directed. The Response time in case of Emergency shall be one hour during commercial

hours & Two hours during non-commercial hours. The contractor shall be always ready to attend any emergency if so arise.

11. While doing the works, the contractor shall cause least inconvenience either to the traveling public or to the station staff or to the GMRC rakes.
12. The contractor is advised to inspect the entire length of track on via-duct between specified chainages where different works will be executed after obtaining permission during Non- commercial hours on Power Block day only to acquaint him-self and assess beforehand difficulties likely to come across in respect to men, material, access to site, restrictions on At- grade/Via-duct/yard,

restrictions in plying the trucks on roads imposed by police, lighting, water supply and so on.

13. The P.Way materials shall be issued to the contractor for using for the Bonafide works covered by the contract only and acknowledgement of the same shall be given by the contractor's supervisor in charge of work. After completion of work, the contractor will have to be give a detailed account of the materials used & balance materials shall be returned to the GMRC. **If balance materials are not returned or any deviation is found, then the quantity not returned or deviated quantity shall be charged at the double value of Book Rate as prescribed by the GMRC & in all such cases, the decision of the GMRC shall be final.**
14. The quantity used shall be in proportion of the requirement which shall be justified by the contractor & will be verified by the GMRC.
15. The issue of P.Way material to the contractor shall be progressive as the works progresses and the contractor shall not demand unreasonable large quantities of material to be issued to him in advance. GMRC reserves the right to determine the quantity of materials to be issued at any stage and their decision in the matter shall be final and shall not be the basis for any claim by the contractor.
16. Such P.Way material as has been issued to the contractor but left behind with him not utilized shall be returned by the contractor at no extra cost to GMRC to any nominated depot /PWI store of GMRC. If the contractor fails to return such material, cost of such materials will be recovered from him at double the book rates. The material to be returned shall however be in reasonably good condition as originally issued.
17. GMRC reserves the right to inspect any of the depots of the contractor where GMRC's material has been stored and also to inspect the places where the contractor fabricates or otherwise processes these materials and the contractor shall provide all facilities for such inspections
18. The contractor shall not transfer any of the material issued to him by the depots or fabrication yard or the site of work.

19. The contractor shall ensure that all his staff shall wear proper uniform with personal protective equipment including helmet, safety shoes and illuminated jacket etc. while working.
20. No advances shall be paid to contractor.
21. The contractor will not cause any damage to the GMRC property or assets. If any such damage is caused, the contractor will have to pay the cost of such Damage & GMRC Decision in the issue will be final.
22. The contractor will have to complete the work during specified time. While working in the non- commercial hours works have to be completed & men & materials will have to be removed by PTW closing time or as specified from time to time. Instructions of the employer given from time to time shall be followed.
23. The quality of the work shall be as per the standards.
24. The contractor shall use standard tools & materials as specified or as per the requirement of Approved or reputed Brands as the case may be.
25. The contractor shall take all necessary safety measures & precautions and the contractor shall be entirely responsible for the safety & security of his men & materials.
26. The contractor may have to use necessary communication equipment like mobiles/WLL/Walky- talky as per requirement.
27. If the same item or condition features in the special conditions of the contract & General conditions of the contract, then the item or condition mentioned in the special conditions of the contract alone will be applicable
28. Contractor shall provide Photo-identity cards to all his staff & supervisors.

1. Materials to be supplied by GMRC.

1. All P. Way material (i.e. Rails, fish plates, other P. Way fittings) are to be supplied by GMRC free of cost unless otherwise specified elsewhere in the tender documents.
2. The P.Way material required in para (1) above shall be issued from GMRC nominated Depot/PWI store with in GMRCL area.
3. The contractor shall make his own arrangement for getting the departmental small track machines used for the work, unloaded, handling, leading of such material including any other incidental and transporting to site of work, for use without any extra cost.
4. The contractor shall be fully responsible for safe handling and safe custody of small track machines and P.Way materials & fittings. In case

of their loss due to any cause what so ever, or the materials becoming unsuitable for use for any reason what so ever, the cost of material shall be recovered from the contractor at double the book rate.

2. Maintenance of Track in Track Circuited Areas (Lengths)

2.1 Precautions to be taken while working in track: -

1. The Permanent Way Inspector should instruct the staff not to place across or touching two rails in the track, any tool or metal object which may cause short circuiting.
2. Steel or C.I. pipes used for carrying water/gas under the track should be run sufficiently below the rails to prevent any short circuiting.
3. While carrying out track maintenance, care should be taken to see that no damage of track circuit fittings like rail bonding wires, lead wires to rails, bott legs, jumper wires etc., takes place.
4. Ballast must be kept clean throughout the track circuited section and care should be taken to see that the ballast is kept clear of the rails and rail fastenings. The clearance from the foot of the rail should not be less than 50mm. During every packing this point should be taken note of.

2.2 Glued insulated joints:-

1. General-
 - a. Glued insulated joints have been developed using resin adhesives. These joints consist of web fitting fish-plates glued to the rails with a high polymer adhesive and bolted with high tensile steel bolts. The insulation is provided by special type of insulating side channels, bushes and end posts made of fiber glass cloth rovings. In all future works of Track circuiting Glued insulated joints which have better insulation qualities should preferably be provided in place of standard insulated joints.
 - b. The instructions for fabrication, installation and maintenance of glued insulated rail joints as given in the "Manual for Glued Insulated Rail Joints, 1998" issued by RDSO. Should be strictly followed.
2. Maintenance of Glued Insulated Joints-
 - a. The joint normally does not need any special maintenance other than that required for normal track
 - b. The ballast used in track in the vicinity of glued insulated joints shall be clean to ensure efficient packing and drainage. Care should be taken to see that the ballast is clear of rails and rail fastenings. The clearance from underside of the rail must not be less than 50mm.

- c. As in the case of standard insulated joints, the metal burrs at the end of the rails shall be removed well in time to avoid short circuiting, without damaging end posts.
- d. In the glued joints, normally no relative movement occurs between rails and fish plates. In case, failure of joint occurs by separation of rail, fish-plate surfaces, with consequent relative movement, the damaged glued joint shall be replaced.
- e. It shall be ensured that live cinders which can cause damage to glued insulated joints are removed from the vicinity of joints. At locations prone to such droppings, provision of protective boxes of asbestos or other material of suitable design may be thought of.

3. Maintenance in Electrified Areas

3.1 General Instructions to staff. -

- 1. General Knowledge of Engineering Staff-
- (a) Every engineering official working in electrical traction area shall be in the position of a copy of rules framed for the purpose of the operation of the Traction Power Distribution system pertaining to Engineering Department and ensure that staffs working under him are also acquainted with the rules. He will ensure that rules pertaining to carrying out engineering works are strictly observed.
- (b) All electrical equipment, every power line or cable shall be regarded as being 'live' at all times unless and until power block taken by Engineer In-charge. No work shall be commenced adjacent to any electrical equipment except Permit To Work issued by Engineer.
- (c) Traction return current passing through the running rail is may be dangerous to life. Care must be taken not to touch the running rail at the same time.

3.2 Special Instructions to Staff Working in Traction Area -

- 1. Alteration to tracks: - The relative alignments of the centreline or the track with respect to the alignment of the contact wire must be maintained within the specified tolerances. This applies to both horizontal and vertical clearances. Slewing or lifting of track must not be done outside the agreed maintenance limits, unless the position of the contact wire is altered at the same time. Adjustment of cant has a magnified effect of the horizontal displacement of the centre line of the track with respect to the alignment of the contact wire. Horizontal clearances to structures within the limits laid down in the Schedule of Dimensions must be maintained. For Slewing or alterations to track involving adjustment of contact wire (outside the agreed

maintenance limits) sufficient notice should be given to the traction staff so that they arrange to adjust the overhead equipment.

2. Working of Cranes: - No crane shall be worked except an authorized 'permit-to-work'. In every case of working a crane, arrangement should be made for the presence of authorized overhead equipment staff to ensure that all safety precautions are taken.
3. Steel tapes or metallic tapes with woven metal reinforcement should not be used in electrified tracks. Linen tapes are safer and, therefore, should be used even though they are not accurate.

3.3 Maintaining continuity of track:

1. during maintenance or renewal of track, continuity of the rails serving electrified tracks shall invariably be maintained. For bridging gaps, which may be caused during removal of fishplates or rails, temporary metallic

jumpers of approved design shall be provided as under. The necessary jumper will be provided by the Electrical Department on requisition.

2. In case fracture of rail, the two ends of the fractured rail shall be first temporarily connected by a temporary metallic jumper of approved design. In all cases of discontinuity of rails, the two parts of the rail shall not be touched with bare hands. Gloves of approved quality shall be used.
3. In the case of track renewals temporary connection shall be made as shown.
4. In the case of broken or defective rail bond, temporary connections shall be made as shown.
5. Before fishplates are loosened or removed temporary connections shall be made.

3.4 Fire in electrified areas.

- The Permanent Way Officials noticing a fire likely to result in loss of life or cause damage to property shall take all possible steps to prevent it from spreading and to extinguish it. In case the fire is on adjacent to any electrified equipment the Permanent Way Official shall make no attempt to extinguish the fire but shall report the occurrence of fire to the nearest Station controller by most expeditious means.

3.5 Permanent way tools.

- Permanent Way tools (insulated and uninsulated) along with gloves shall be used in manner as approved.

DO's and DONT's of Third Rail Traction Power System:

DO(s):

1. Assume that third rail is always live unless power block has been granted and permit to work has been issued.
2. Always take power block and permit to work before working in the vicinity of third rail traction system.
3. Ensure "Caution-men at work" boards are prominently displayed on the breakers/switch gear items switched OFF to grant power blocks and PTWs.
4. Ensure availability of proper tools and personal safety gear with staff deputed for maintenance activity.
5. Before start of any work on the main line or the Depot ensure that the third rail is in de-energized condition by application of voltage tester, and after ensuring that the third rail is in de- energized/Dead condition and there is no power on the third rail, apply portable SCD (Short Circuit Device) between third rail and the running rail on either end of the section where work is taken up before taking up any maintenance work on the track with third rail.
6. Always use electrical safety equipment when at work, viz. Safety helmet, safety shoe, high visibility vest and safety sling.
7. Wear cotton/non-inflammable clothes when at work.
8. Use gloves when working with any metallic parts, viz. Third rail, traction systems, etc.
9. Ensure that only staff with valid competency certificate (s) are deputed for maintenance work.
10. Ensure all the working staff have undergone first aid training viz. Treating for electric shock, physical injury. etc.
11. Ensure that no person is ever deputed for doing any maintenance work alone- at least two people should be deputed for any maintenance work.
12. Ensure that adequate lighting and ventilation are available in the working area.
13. Availability of validated fire extinguishers at substations/switch rooms.
 - a. Availability of shock treatment boards in all substations/switch rooms.

- b.Ensure that all equipment/installations are provided with protective earthing as per the related standards.
 - c.Check earth resistance as per prescribed periodicity and ensure that the values are within the acceptance limits.
 - d.Periodically check for working of all safety devices.
 - e.Ensure cleanliness and orderliness in substations, switch rooms and other electrical installations.
 - f. Ensuring adequate working space in substations, switch rooms and other electrical installations.
- 14.Watch out for visible sign of overheating/damage/deterioration of equipment/Installation.
- 15.Ensure that all maintenance schedules for electrical installations are strictly followed.
- 16.Ensure that high voltage installations are beyond the reach of unauthorized personnel.

DON'T(s):

- 1.Do not wear nylon/inflammable clothes when at work.
 - 2.Do not wear chappals/work barefoot when at work.
 - 3.Do not assume that third rail is dead unless you possess a PTW/power block
 - 4.Never work on any third rail installation without a power block/PTW.
- 5.Do not work on any third rail declared as Switched OFF without confirming that it is dead by applying voltage sensor and thereafter applying SCDs at defined location in the intended work area.
6. Do not depute a staff for maintenance work unless the person is fully fit.
7. Do not Cancel a power block without ensuring that:
- i) The planned work has been satisfactorily completed.
 - ii) Normally restored in respect of the installation where the work has been carried out.
 - iii) Men, material and tools have been withdrawn.
8. Do not forego any maintenance schedule.
9. Do not allow the use of any defective maintenance equipment.

10. Do not ignore any signs & symptoms of malfunction/deterioration of equipment/installation.
11. Do not allow entry of animals/unauthorized personnel in electrical installations.
12. Do not bypass any safety device or a safety procedure.
13. Do not allow any improper (temporary) termination of cables/improper (temporary) installation of equipment.

OTHER POINTS TO BE REMEMBERED

1. It is dangerous to go within 2 meters (7 feet) of the live equipment. This is 'DANGER ZONE'.
2. Power Block means blocking of section of the line to the electric traffic only.
3. No material should be stacked either on the mast or on mast foundation.
4. When a motor vehicle with rubber type is to be transported in an open wagon, the metal body shall be bonded to the wagon body by means of two independent solid connections by copper wire or galvanized iron flat or steel ropes. It is preferable that lashing used to secure the vehicle are of metallic ropes instead of manilla or other coil ropes.
5. Do not bridge insulated joints with bare hand or any metallic article in track-circuited area.
6. Do not use the rails and Third Rail as a footpath, a seat or for such other purposes.
7. Do not use steel tape or metallic tape or tape with woven metal reinforcement in electrified area.
8. Do not expose the foundations while excavating.

4. OTHER CONDITIONS/REQUIREMENT

4.1 RIGHT OF WAY.

Right of way (within GMRC land) to the work site will be provided to the Contractor.

4.2 RESPONSIBILITY FOR SPECIFICATIONS

Specifications

Testing and reporting is to be done as per the "Indian Railway P.Way Manual (Provisional) Revised," (Addendum & Corrigendum issued by RDSO/Indian Railway will supersede wherever applicable & compliance to provisions of specification with correction slips issued up to date shall be ensured). In case of any conflict, the Special GMRC

Conditions shall prevail.

The Contractor shall promptly inform the Engineer of any error, omission, fault and other defects in the Specifications, which are discovered when reviewing the Contract Documents or in the process of execution of the Works.

4.3 USE AND CARE OF SITE

The Contractor shall not demolish, remove or alter structures or other facilities on the site without prior approval of the in charge.

Necessary permissions/approval of the Employers representative shall be obtained before carryout.

4.4 ACCIDENTS

It shall be the entire responsibility of the contractor to adopt all the safety measures & deploy the personnel who are adequately trained in safety. If any accident occurs within the GMRC jurisdiction while carrying out the works or due to negligence on the part of the contractor's personnel, it shall be the full responsibility of the contractor.

4.5 ACCESS ROADS AND HAUL ROADS

Existing roads and other public roads may be used by the Contractor to carry out works with prior approval of the competent authority. The Contractor shall pay the statutory vehicle license and permit fees for use of public roads.

The Contractor shall repair any damage to the road or bear the cost thereof due to movement of contractor's plants and equipment, vehicles etc. to the specifications and satisfaction of road authorities as well as of Engineer.

4.6 PROGRAM OF WORKS

The period of contract is **24 Months** from the date of commencement of work. However, the work should be started within 7 days after issue of LOA by the competent authority as and when required. The contractor should work round the clock if required. The major activities, which are affecting the commuters/traffic to be done at the non-operational hours.

4.7 PENALTY

If the work is failed due to unavailability of labourers the Minimum Penalty of **Rs. 5000 / per day** shall be charged.

If the delay of block and TSR due to contractor fault the minimum penalty of **Rs. 10000/- of per delay of block** shall be charged.

If the unavailability of supervisor the minimum penalty of **Rs. 1500/- per day** shall be

charged.

4.8 MAINTENANCE RECORDS

Contractor will have to maintain proper records of Track Maintenance activities. Some of the records to be maintained are as below.

- i) Deployment of Manpower in each shift.
- ii) Availability of Track Machines.
- iii) Details of deep screening work, packing of sleepers and other track activities carried out in each traffic block.

Apart from above, all supervisors & all track personnel will have to sign in attendance register which will be kept in P.Way office at the starting of shift.

SUBMITTAL BY THE SUCCESSFUL TENDERER AND COMMENCEMENT OF WORK.

Successful Tenderer shall ensure that only trained staff having Railways / GMRC's track maintenance / construction experience is deployed.

Deployment of Track machines along with Technical details like make, capacity, present conditions etc. are to be submitted for approval.

Deployment of supervisors as mentioned in Form T- III along with CVs of the personnel and Police Verification Report.

Each CV shall have the current photographs of the person and shall be signed by the person. Each CV shall be submitted duly verified by the contractor.
CV shall contain the following information but not limited to: -

Name in full
Father's name
Date of Birth
Present
Address
Permanent Address
Educational Qualification
Track Maintenance
Experience. Any other
experience

On top of every CV, the proposed category is also to be indicated.

Deployment of labor as mentioned in Form T- III along with ID Cards of the personnel and Police Verification Report.