

# SABARMATI RIVER FRONT DEVELOPMENT



**Sabarmati River Front Development  
Corporation Limited**

**2<sup>nd</sup> Floor, Riverfront House,  
B/h H. K. Arts College,  
Between Gandhi Bridge and Nehru Bridge,  
Puja Pramukh Swami Marg (River Front Road –  
West)  
Ahmedabad - 380 009**

## **BID DOCUMENT**

**SRFD PHASE 1 - CONSTRUCTION  
OF WALL CLIMBING NEAR  
SARDAR BRIDGE ON WEST BANK  
OF RIVER SABARMATI**

**Contract Package: SRFDCL**

**VOLUME- 02**

**IV) Technical Specification**



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## **SECTION IV**

## **TECHNICAL SPECIFICATIONS**



**SUB SECTION 4.1  
TECHNICAL SPECIFICATION  
FOR  
CIVIL WORKS**



## GENERAL

The specifications to be followed for this work are the specification for road & bridges are published by the MORTH for relevant Items. This specification shall be supplemented by the technical specification as given here under in this document and also the provision in the relevant IRC & IS codes.

In case of any discrepancy or contradiction if any in the provision of above specification the order of the precedence shall be followed.

1. MORTH
2. IRC Provisions
3. Technical Specification in this Volume
4. IS Provisions
5. Sound Engineering Practice
6. Manufacture specification for special items

All work shall be carried out in confirmation with the above specifications. These specifications broadly cover all major aspects of the work involved. Minor details may not be specified here however if these are necessary for completion of work the contractor shall execute such minor items without any additions to the costs.

All work shall be executed in accordance with good engineering practices.

The Contractor shall remain responsible for workmen's compensation if any, when such case occurs, the contractor shall arrange for red lamps at night and fencing etc. shall be responsible for any damage of life and or property if any happen, during the execution of work. In case of dispute for unseen or overlooked items, the decision of Engineer in charge shall be final. The Contractor shall have to give site clean of all rubbish on completion of work and handover the bridge with final finishing as directed. All the rejected materials shall be removed from site within 24 hours by Contractor at his risk and cost.

The Contractor shall have to make his own arrangement for water required for the work.

If in the interest of SRFDCL, it is necessary to change either any site or the design of the proposed work the Contractor shall carry out the works and he will be paid at the rates quoted by him and no claim for extra for subsequent changes made, entertained.



The cubical contents of the cement bag shall be taken as per actual weight of bag and the Contractor shall have to prepare the concrete mixes using weigh batches.

Contractor will be fully responsible for compliance of the various provisions under Contract Labour Act, 1970 and the Rules framed there under.

Contractor is requested to procure their quarry materials required for construction work through legal sources i.e. only from the quarry lease holders permit holders or middleman who satisfies the contractor as to the legality of the source of purchase by him of these materials.

### **GENERAL DETAILS**

All work shall be carried out in confirmation with these specifications. In general, provisions of Indian Standard, Indian Road Congress codes and other national standards shall be followed unless otherwise specified. These specifications are not intended to cover the minor details. The work shall be executed in accordance with best modern practices & all latest codes and standards referred to in these specifications shall be read in conjunction with the various other documents forming the contract, tender specifications, BOQ, contract drawings and other related documents.

### **Measurement and payments**

- a) The methods of measurement and payment shall be as described under various items and in Price Bid. Where specific definitions are not given, the methods described in MORTH will be followed. Should there be any detail of construction of materials which has not been referred to in the specifications or in Price Bid and drawings but the necessity for which may be implied or inferred there from, or which are usual or essential for the completion of the work in the trades, the same shall be deemed to be included in the rates quoted by the contractor in Price Bid.
- b) Unacceptable work

All defective works are liable to be demolished, rebuilt and defective materials replaced by the contractor at his own cost. In the event of such works being accepted by carrying out repairs etc. as specified by the engineer in charge, the cost of repairs will be borne by the contractor and will be paid for the works actually carried out by him at reduced rates of the tendered rates, as may be considered reasonable by the engineer in charge, in the preparation of final or on account bills.



## **SPECIFICATION FOR CIVIL WORKS**

1. The specification for various items of work shall be same as specified for such items in the MORTH SPECIFICATIONS FOR ROAD AND BRIDGE WORKS, latest published prior to 1 month before issue of tender.
2. The inclusions and exclusions from quoted rates are specified in the details of each item of work in the specifications and the Bill of Quantities. In case there is no specific mention of a particular detail, the mode of specification as prescribed in MORTH SPECIFICATIONS for such an item shall be followed.
3. In the event of contradiction between the MORTH specifications referred to above and this Contract document, the provisions of this Contract document shall prevail.



## **List of Approved Makes For Civil Work**



**Section B - List of Approved Make for Civil Works**

Sr. No.	Material / Item	Make
1	Play equipment system	Koochie, Hags, funplay
2	Rubber flooring interlocking tile Carpet	Koochie, Terrene sports, Moldo sports, Gerflor
3	Anchor Fastener, Rebar, Chemical/ Mechanical fastener, Expandable fasteners	Hilti, Fischer, Wuerth

**NOTE:**

- i All materials and products shall conform to the relevant standards (IS, EN, BS, ASTM, ISO, AS/NZS) and shall be of approved make and design.
- ii The Architect shall give the approval of a manufacturer only after a review of the sample/ mock-up. In case the same is not available in the market or in case of change in trade name, equivalent makes/ re-designated manufacturer then an equivalent approved make shall be used with the approval of Architect. The complete system and installation shall also be in conformity with applicable Codes & Standards and Tender specifications.
- iii Architect and Engineer-in-charge reserves the right to choose any of the approved makes as per this list.
- iv In case of products not indicated in this list, the name of the manufacturer shall be given by the Architect and Engineer-in-charge.



## PLAY EQUIPMENTS

### Item No. 1

#### Wall Trainers

Supply and Fixing of Wall Trainer as per the approved make and as per design intent. The product to match the colours, design, size, contours and aesthetics exactly as per the image attached/ design intent for all level, all height, all lift by any means. "As per NIUA Guidelines, all products must be tested and certified to meet EN 1176 safety standards. The EN 1176 certificates must be issued by a reputed notified International Certifying Body such as IPEMA, TUV, CPSC, or SGS only. All components shall meet the EN-16630 safety standards.

The Contractor shall submit a methodology statement with all relevant details in illustrative sketch and technical data sheet form before execution as per manufacturers' specifications. The Contractor shall be fully responsible for the structural stability & performance of the whole system. All execution work shall be executed through an approved specialised agency of an approved manufacturer or shall be executed by the manufacturer itself. also the technical specification mentioned is as follows.

Manufacturers shall provide warranty of minimum 1 year from the date of the handover for that the System (s) shall be free from defects in materials and workmanship (the Materials and Workmanship Warranty), and shall work properly in accordance with the requirement and all parts i.e.

Structural/Non structural Metallic Parts, all Non metallic parts, PLASTIC parts and all other parts which is included in this system. Rate shall be inclusive of maintenance and Defect Liability for a period of 5 years from the date of substantial handover without any extra cost, including replacing same approved any type of parts/systems within a minimum of 1 week of the complaint. preventive maintenance is also included.

In this item, with the mode of measurement of LOT, 2 Sets of Double ring system, 1 set of Pull up bar system & 2 sets of Pull up rack system, safety signage as per design requirement shall be provided as per design intent and as mentioned below. approximate Overall dimension of the whole wall trainer system shall be 8.5 X 3.25 m. All type of incidental work, Civil work or other work to complete this system up to the satisfaction of the engineer in charge and as per manufacturers prescription is included in this item.

**Double Ring:** Approximate dimension: 1.5 m x 1 m x 1.75 m

2 sets per lot of double ring shall be provided, which shall be made of approximately 40 X 80 mm square pipe. Main Framework on both sides, Minimum 2 mm thick Galvanized Steel Plate to cover the Main Framework as per design intent. the required length SS 304 chain with a lifting ring shall be provided as per design intent. Minimum weight of the 1 set of the double ring shall be 90 Kg.

**Pull-up bar:** Approximate dimensions: 1.6 m x 1.15 m x 1.04 m

Main pole made of approximately 60 x 3 mm Hot-galvanised Steel Pipe, Handrail made of approximately 32 x 3 mm Hot-galvanised Steel Pipe as per design intent. Minimum weight of the 1 set of pull-up bar shall be 30 Kg.

**PULL UP RACK:** 1.25 m x 1.0 m x 0.75 m

2 sets per lot of main framework shall be provided, which shall be made of approximately 40 X 80 mm square pipe, with a minimum 2 mm thick Galvanized Steel Plate to cover the Main Framework as per design intent. the required length SS 304 chain with a lifting ring shall be provided as per design intent.

For all systems, all joints shall be robotic welded and color pallet of the system shall be approved before execution. All systems shall be fixed to an existing wall of any material with the required capacity of the anchor bolt/chemical anchor/mechanical anchor/washer, Lock nut with cap cover, threaded rod, LED screw, Wall connecting plate/base plate with required thickness and size, etc as per manufacturers specification. and it shall be as per the requirement of weight lifting capacity of the system. Necessary pull-out test shall be made as per manufacturers specifications, and Certification of pull-out testing is to be produced by the anchoring manufacturer. all metal surfaces shall be of any colour, any shade powder-coated as per design intent if nowhere else specified.



### **Item No. 2 Wall Climbing Play System**

Supply and Fixing of the wall climbing play system as per the approved make and as per design intent. The product to match the colours, design, size, contours and aesthetics exactly as per the image attached/ design intent for all level, all height, all lift by any means."As per NIUA Guidelines, all products must be tested and certified to meet EN 1176 safety standards. The EN 1176 certificates must be issued by a reputed notified International Certifying Body such as IPEMA, TUV, CPSC, or SGS only. All components shall meet to EN-16630 safety standards.

The Contractor shall submit a methodology statement with all relevant details in illustrative sketch and technical data sheet form before execution as per manufacturers' specifications. The Contractor shall be fully responsible for the structural stability & performance of the whole system. All execution work shall be executed through an approved specialised agency of an approved manufacturer or shall be executed by the manufacturer itself. also the technical specification mentioned is as follows.

Manufacturers shall provide warranty of minimum 1 year from the date of the handover for that the System (s) shall be free from defects in materials and workmanship (the Materials and Workmanship Warranty), and shall work properly in accordance with the requirement and all parts i.e.

Structural/Non structural Metallic Parts, all Non metallic parts, PLASTIC parts and all other parts which is included in this system. Rate shall be inclusive of maintenance and Defect Liability for a period of 5 years from the date of substantial handover without any extra cost, including replacing the same approved any type of parts/systems within a minimum of 1 week of the complaint. preventive maintenance is also included.

In this item, with the mode of measurement of LOT, the whole system consisting HDPE Panels, Elements like clouds, Ring, Car, pegs etc, Monkey trail, Ladder & climbing rope, safety signage as per design requirement etc shall be provided as per design intent and as mentioned below.

approximate Overall dimension of wall climbing play system shall be 8.5 X 3.25 m. All type of incidental work, Civil work or other work to complete this system up to the satisfaction of the engineer in charge and as per manufacturers prescription is included in this item.

Minimum 30 mm thick HDPE panels in any shape, any size, any color and any shade, any finish shall be fixed on the existing wall by suitable means as per manufacturers specifications. HDPE panel shall have reserved holes for fixing arrangement through anchor bolt, hexagonal socket head cap screw, washer, nylon rods, furniture nut etc. and it shall be properly fixed with the existing wall as per capacity required. also, elements like clouds, rings, wooden blocks, climbing pegs and other shapes etc shall be fixed on HDPE panel as per design intent and as per manufacturers specification and it shall be fixed up to the RCC wall through necessary accessories/fixing arrangement. Also, required size Monkey trail made of SS 304 48 mm dia metal frame & SS 304 32 mm dia handrail shall be fixed to wall as per design intent with required capacity and type anchor fastners. minimum 3 sets of SS ladder & and 6 no of polypropylene ropes with covered braided multifilament shall be fixed to monkey ladder for climbing purpose with required fixing arrangement.

For all systems, all joints shall be robotic welded and color pallet of the system shall be approved before execution. All systems shall be fixed to an existing wall of any material with the required capacity of the anchor bolt/chemical anchor/mechanical anchor/washer etc as per manufacturers specification. and it shall be as per the requirement of weight lifting capacity of the system. Necessary pull-out test shall be made as per manufacturers specifications, and Certification of pull-out testing is to be produced by the anchoring manufacturer. all metal surfaces shall be of any colour, any shade powder-coated as per design intent if nowhere else specified.

### **Item No. 3 Play Area Flooring**

Providing & Fixing of minimum 30 mm thick Rubber flooring interlocking tile Carpet with any size, any shape, any color, any finish and any shade as per design intent for all floor, all height, all level including fixing adhesive as per manufacturer's specifications and self levelling compound (if required) of required thickness of approved make and series as per design intent. Rubber flooring shall be with



15% EPDM & 85% SBR, Density (kg/m<sup>3</sup>):1000/1200, Hardness (Shore a):68, Stretch (MPA):2.2, Abrasion resistance: 0.0075g (ASTM-D4060-01), Rebound resistance: 55%, Shape deformation: 42%, Warranty - 3 years. The sample shall be approved by engineer in charge before procurement. The rate shall be inclusive of fixing adhesive, self levelling compound, wastage, materials, installation, transportation charges, taxes, labour for all floors/all heights and all levels etc. The actual laid area shall be measured for payment without considering any wastage.

## **PREPARATORY WORKS**

### **Item No. 4**

#### **Cutting in stone, concrete, or bituminous surface**

Labour charge for cutting in stone, concrete, or bituminous surface to facilitate further execution work using heavy duty cutting machine consist of diamond blade or any other required means. cutting depth shall be up to 200 mm or as per actual requirement. Cutting shall be perfectly in line. dismountle material shall be carefully removed so that the cutting edge shall not be disturbed. all debris shall be disposed for all lead and lift at non objectional place and as per the direction of the engineer in charge. Surroundings shall be cleaned up to the satisfaction of engineer in charge.

## **DISMANTLING WORKS**

### **Note: -**

- 1) The method of demolition work shall be approved by the Engineer-in-charge before execution of work.**
- 2) Demolition work shall be carried out by any means and as per approved method without damaging adjoining elements/ building and any building/ campus property.**
- 3) The rate includes all necessary machinery, labour, tools, and tackles for the dismantling of specified elements in any condition, by any means, etc. complete as directed by the Engineer-in-charge including disposing of serviceable material within the campus and unserviceable material outside the campus for all lead and lift at the non-objectional place as directed by Engineer-in-charge.**

### **Item No. 5**

#### **Dismantling of existing concrete, reinforced cement concrete (RCC)**

Dismantling of existing concrete, reinforced cement concrete (RCC) work of any grade and any type, using mechanical or manual methods as advised by the Engineer-in-Charge. This includes cutting reinforcement and providing necessary tools, plant, and scaffolding. The work also involves sorting the dismantled material, disposing of unserviceable material at an approved location, and stacking the serviceable material with all necessary all lifts and all leads, as directed by the Engineer-in-Charge. The volume of the existing RCC work shall be measured for payment before the dismantling begins. The method for calculating the volume for payment shall be approved by the Engineer-in-Charge..

### **1.0. Workmanship**

- 1.1.** The demolition shall consist of demolition of one or more parts of the building as specified or shown in the drawings. Demolition implies taking up or down or breaking up. This shall consist of demolishing whole or part of work including all relevant items as specified or shown in the drawings.
- 1.2.** Necessary propping, shoring and under pinning shall be provided for the safety of the adjoining work or property, which is to be left intact, before dismantling and demolishing is taken up and the work shall be carried out in such a way that no damage is caused to the adjoining property.
- 1.3.** Dismantling shall be commenced in a systematic manner. All materials which are likely to be damaged by dropping from a height or demolishing roof, masonry etc. shall be carefully dismantled first. The dismantled articles shall be properly stacked as directed.



- 1.4.** All materials obtained from demolition shall be the property of Client unless otherwise specified and shall be kept in safe custody until handed over to the Engineer-in-charge.
- 1.5.** Any serviceable materials, obtained during dismantling or demolition shall be separated out and stacked properly as directed with all lead and lift. All unserviceable materials, rubbish etc., shall be stacked as directed by the Engineer-in-charge.
- 1.6.** On completion of work, the site shall be cleared of all debris rubbish and cleaned as directed.
- 1.7.** Cutting depth and width shall be as per actual site requirement and as instructed by the Engineer-in-Charge.
- 1.8.** Cutting shall be done perfectly in line, level, and alignment to avoid damage to adjoining surfaces.

**2.0. Mode of measurements and payment**

- 2.1.** Measurements of all work except hidden work shall be taken before demolition or dismantling and no allowance for increase in bulk shall be allowed. Specification for deduction for voids, openings etc. shall be on same basis as that employed for construction of work.
- 2.2.** All work shall be measured in decimal system as fixed in its place subject to the following limits; unless otherwise stated hereinafter: (a) Dimensions shall be measured to the nearest 0.01 mt. (b) Area shall be worked out to the nearest 0.01 sqm. (c) Cubical contents shall be worked out to the nearest 0.01 cum.
- 2.3.** The rate shall include cost of all labour involved and tools used in demolishing and dismantling including scaffolding.
- 2.4.** The rate shall also include the charges for disposing the unserviceable materials with all lead and lift.
- 2.5.** The rate also includes for temporary shoring for the safety of the portion not required to be pulled down or of adjoining property and providing temporary enclosures or portions where considered necessary.
- 2.6.** Unit for measurement shall be as per respective items description.