MUMBAI PORT AUTHORITY

CIVIL ENGINEERING DEPARTMENT

TENDER NO.E.57/2025

CONSTRUCTION OF MARINA IN MUMBAI HARBOUR

BILL OF QUANTITIES

ITEM NO	QTY	DESCRIPTION	UNIT	RATE (RS.)	AMOUNT (RS.)
1	2.00	Supply, transport to site, deliver, construct test and anchor piles/system, install testing arrangements equipment and spares, barges, reaction anchors, structural frame systems with working platforms and access ways as necessary with provision of specialist personal, to carry out initial vertical pile load test on test pile (bored cast in-situ pile) location and diameter specified by the Engineer-in-charge including construction of test pile, anchor pile, anchorage system, kent ledge frame, testing equipment, labour, etc with interpretation of test results complete. The cost of all materials such as RCC (cement, sand, aggregate, water), reinforcement, structural steel, nuts and bolts, prestressing wires, testing equipment, etc all complete shall be paid under this item. Load test shall be conducted on test piles with a maximum load of 3 times the working load on piles. Test pile and anchor piles or anchorage system if any shall be completely cut and removed above seabed after the completion of test. Note : Topper armoured cable from the nearby feeder point to the pole, including all terminations, glands and lugs. Each pole shall be provided with a proper earthing arrangement using copper earth plate	Nos	94,80,281.00	1,89,60,562.00
2	84.00	Carrying out Routine Dynamic load test on vertical pile in jetty and approach trestle with test load and testing procedure as per ASTM 4945 latest, including cost of all materials for making platform with steel members, weight materials, all labour charges, workmanship instrumentation, electronic devices, mechanical handling equipment, all other materials required for successful completion of load test, including removal of added portion of pile for testing after completion of test. Note : Dynamic load test shall be carried out on working piles and the pile head shall be extended by at least 2m above the pile cut-off level. The test piles shall be selected by the Authority Engineer for each structure based his judgement and it is to be treated as final.	Nos	2,50,000.00	2,10,00,000.00
3	1110.00	Mobilization, transportation, shifting, and setting up of piling equipment including gantries, jack-up rigs/platforms, tripods, winches, pile driving rigs, rotary drilling rigs, bailers, chisels, etc., for each pile location; fabrication and erection of staging and pile driving arrangements using steel plates, girders, channels, angles, including all steel materials, welding, strutting, fixing, labour, tools, consumables, and complete mobilization and demobilization — for carrying out MS liner boring and pile concreting works as per approved methodology and Engineer-in-Charge's directions.	Nos	35,110.00	3,89,72,100.00
4	2670.64	Supplying, fabricating, and driving MS liners for piles up to refusal level, including provision of stiffeners, bending, cutting, welding, and installation in position through all types of soil up to the specified level below seabed; providing temporary bracings and supports to maintain alignment and stability until completion of deck works, all complete as per drawings, specifications, and instructions of Engineer-in-Charge.	MT	1,23,841.00	33,07,34,728.24

ITEM NO	QTY	DESCRIPTION	UNIT	RATE (RS.)	AMOUNT (RS.)
5	140.00	Boring / drilling / bailing out through all types of soil / rock strata for 1400 mm dia for piles from the existing sea bed level to pile termination level including cost of winch / Pile driving rig, rotary drilling machine, RCD machine, bailer, chisel, POL, all labour charges, minor tools and plant etc. complete. Pile termination criteria shall be as specified in the construction drawings and specifications. Any tests including SPT, rock strength etc., as required shall be carried out by the contractor in addition to the energy criteria specified in the construction drawings. The cost includes all such testing at the specified laboratories or field, and no extra claim whatsoever shall be entertained in this regard.	Rmt	16,225.57	22,71,579.80
6	4778.20	Boring / drilling / bailing out through all types of soil / rock strata for 1200 mm dia for piles from the existing sea bed level to pile termination level including cost of winch / Pile driving rig, rotary drilling machine, RCD machine, bailer, chisel, POL, all labour charges, minor tools and plant etc. complete. Pile termination criteria shall be as specified in the construction drawings and specifications. Any tests including SPT, rock strength etc as required shall be carried out by the contractor in addition to the energy criteria specified in the construction drawings. The cost includes all such testing at the specified laboratories or field and no extra claim whatsoever shall be entertained in this regard.	Rmt	14,751.50	7,04,85,617.30
7	324.00	Boring / drilling / bailing out through all types of soil / rock strata for 1000 mm dia for piles from the existing seabed level to pile termination level including cost of winch / Pile driving rig, rotary drilling machine, RCD machine, bailer, chisel, POL, all labour charges, minor tools and plant etc. complete. Pile termination criteria shall be as specified in the construction drawings and specifications. Any tests including SPT, rock strength etc as required shall be carried out by the contractor in addition to the energy criteria specified in the construction drawings. The cost includes all such testing at the specified laboratories or field and no extra claim whatsoever shall be entertained in this regard.	Rmt	13,055.33	42,29,926.92
8	10085.50	Boring / drilling / bailing out through all types of soil / rock strata for 750 mm dia for piles from the existing sea bed level to pile termination level including cost of winch / Pile driving rig, rotary drilling machine, RCD machine, bailer, chisel, POL, all labour charges, minor tools and plant etc. complete. Pile termination criteria shall be as specified in the construction drawings and specifications. Any tests including SPT, rock strength etc as required shall be carried out by the contractor in addition to the energy criteria specified in the construction drawings. The cost includes all such testing at the specified laboratories or field and no extra claim whatsoever shall be entertained in this regard.	Rmt	10,160.38	10,24,72,512.49
9	2631.94	Providing and placing underwater grout in the annular space between the outer casing and the structural steel pile, including the cost of procurement, mixing, and placement of high-strength, non-shrink underwater grout conforming to relevant IS standards. The underwater grout shall be suitable for marine and corrosive environments, with high bond strength and chemical resistance. The material shall be placed using approved methodology to ensure complete filling of the annular space without voids or segregation. The scope includes surface preparation, cleaning, leak-proof shuttering or formwork where necessary, handling, mixing as per manufacturer's recommendations, pouring or pumping into position, and finishing. All labour, tools, equipment, material handling, curing if specified, and incidental works required to complete the activity in all respects shall be deemed to be included in the rate. Measurement shall be done in cubic meters of underwater grout placed.	Cum	35,000.00	9,21,17,900.00

ITEM NO	QTY	DESCRIPTION	UNIT	RATE (RS.)	AMOUNT (RS.)
10	11494.40	Providing and laying REINFORCED CEMENT CONCRETE OF M-40 GRADE in accordance with IS 456 (Latest Edition) using graded crushed coarse aggregate 20 mm and down size in PILES at Approach Trestle and piled platforms and breakwater by using tremie with hopper arrangements , providing pockets, openings, recesses, chamfering, etc., wherever required, vibrating, tamping, curing and rendering if required to give a smooth and even surface etc. including providing window of suitable size 600 mm above cut-off level and letting the concrete to overflow and including plasticizer and Bipolar as per manufacture's specification .etc. all complete as specified, shown and directed. (Payment will be made for effective length of pile i.e. from founding level to cut-off level.) (Excluding the cost of Reinforcement) .The cement shall be Porland Slag Cement confirming to IS 455(Latest Edition). All works shall be carried out as per approved drawings, technical specifications, and as directed by the Engineer-in-Charge.	Cum	17,956.00	20,63,93,446.40
11	836.00	Dressing / chipping of the RCC pile head including cutting of steel liners & trimming of extra concreted pile above the designed cut off level and exposing the reinforcement to receive fresh concrete for beams, bracing, pile caps etc., bending the reinforcement for new works, cost of all equipment, all labour charges, minor tools etc.	Nos	9,250.00	77,33,000.00
12	9435.00	Manufacturing, supplying, transporting, and erecting in position Reinforced Cement Concrete (RCC) precast elements for marine structures such as approach trestle, piled platforms, and breakwater—including pile muffs, beams, slabs, and other components—of M-40 grade concrete using 20 mm and down-size graded crushed stone aggregates/gravel. The rate shall include the cost of all moulds, shuttering, centering, concrete batching and mixing, vibration, tamping, curing, chamfering wherever required, finishing of top surfaces, provision of lifting hooks, metal inserts, making of recesses/pockets, transportation to site, and erection, levelling, aligning and fixing in position at all levels and locations. Also includes cost of plasticizer and bipolar admixtures as per manufacturer's specifications. Excludes cost of reinforcement and MS inserts. Cement shall be Portland Slag Cement conforming to IS:455 (latest edition). All works shall be carried out as per approved drawings, technical specifications, and as directed by the Engineer-in-Charge.	Cum	30,956.57	29,20,75,237.95
13	10452.86	Providing and laying Reinforced Cement Concrete (RCC) of M-40 grade using 20 mm and down-size graded crushed stone aggregates/gravel for structural components such as foundations, pile caps, beams, slabs, pedestals, pipe sleepers, and surface applications in approach trestle, piled platforms, and breakwater structures. The rate shall include the cost of mixing, transporting, placing in position, vibrating, tamping, curing, rendering (if required) to obtain a smooth and even finish, including the provision of plasticizer and bipolar admixtures as per manufacturer's specifications. The item shall also include necessary formwork, staging, shuttering, centering, fixing and removal, as well as forming pockets, recesses, openings, chamfering edges, and concreting in all shapes, levels, depths, and thicknesses as per drawings and directions. The cement used shall be Portland Slag Cement conforming to IS:455 (latest edition). Excludes cost of reinforcement steel. All works to be executed as per technical specifications and as directed by the Engineer-in-Charge.	Cum	18,196.00	19,02,00,240.56

ITEM NO	QTY	DESCRIPTION	UNIT	RATE (RS.)	AMOUNT (RS.)
14	7847.30	Manufacturing, supplying, transporting, and erecting in position Reinforced Cement Concrete (RCC) pontoon units using M-45 grade concrete with Portland Slag Cement conforming to IS:455 (latest edition) and well-graded crushed stone aggregate of 10 mm size or less. The rate shall include the cost of batching, mixing, placing, compacting by vibration, tamping, curing, rendering (if required) to achieve the specified surface finish, and all necessary arrangements for ensuring structural integrity and floatation performance. The rate shall also include all required staging, formwork, shuttering, and support systems necessary for casting, as well as the complete transportation of the pontoon to site, erection and fixing in position, including alignment and securing with guide pin piles using locking mechanisms as per drawings and specifications. Additionally, the rate shall cover the cost of obtaining necessary third-party certifications from approved inspection agencies for compliance with quality and dimensional requirements. Excludes the cost of reinforcement steel. Payment shall be made in accordance with Table H2 of the Agreement. All works shall be carried out as per approved construction methodology, technical specifications, and as directed by the Engineer-in-Charge.	Cum	49,627.00	38,94,37,957.10
15	21063.88	Supplying and placing closed-cell, water-resistant, lightweight foam (such as Expanded Polystyrene (EPS) or equivalent marine-grade foam) inside the cavity of concrete pontoon units for buoyancy and structural support. The foam shall conform to relevant marine specifications for density, compressive strength, and water absorption, ensuring long-term durability and resistance to marine environmental conditions. The rate shall include the cost of procurement, cutting/trimming to fit the pontoon cavities, handling, placement, bonding (if required), sealing joints, all necessary labour, tools, equipment, and materials required for complete installation. The item also includes surface preparation inside the pontoon to ensure proper placement of foam and compliance with design drawings and specifications. All work shall be carried out as per approved methodology and to the satisfaction of the Engineer-in-Charge. The foam material shall be certified by an approved inspection agency. Measurement and payment shall be made as per the unit of volume (cubic metre) or as specified in the contract.	Cum	12,417.00	26,15,50,197.96
16	2251.18	Supplying, fabricating, and installing Stainless Steel (SS 304/316 grade) trench covers of 3 mm thickness over concrete pontoons including provision of manholes at required locations as per the approved construction drawings. The trench covers shall be of adequate size, shape, and finish, with anti-skid surface (e.g., chequered plate pattern) suitable for marine environments, and designed to withstand expected loading conditions. The rate shall include the cost of all materials, fabrication, cutting, edge preparation, handles, hinges (if specified), support framing (if required), and necessary surface treatment to prevent corrosion. It shall also include transportation to site, placement, alignment, bolting/welding as required, sealing around edges to prevent water ingress, and securing of all trench covers and manholes in position over the pontoon. All works shall be carried out in accordance with relevant standards, approved specifications, and to the satisfaction of the Engineer-in-Charge. Measurement shall be based on the surface area covered (in square metres) unless otherwise specified.	Sqm	14,519.00	3,26,84,882.42

ITEM NO	QTY	DESCRIPTION	UNIT	RATE (RS.)	AMOUNT (RS.)
17	910.00	Supplying, fabricating, and installing solid Stainless Steel (SS 316 grade) pins of size and dimensions as specified in the drawings for interconnection of adjacent pontoon units, including necessary accessories such as stainless steel nuts, washers, retaining plates, and locking arrangements. The pins shall be machined to precision tolerances, with smooth surface finish, and corrosion-resistant properties suitable for continuous marine exposure. The rate shall include the cost of all materials, fabrication, threading, drilling, chamfering, cleaning, and assembly of components; transportation to site; insertion and alignment of pins in the pontoon connection sleeves; bolting, locking and final tightening as per manufacturer's or design specifications; and all tools, tackles, labour, and incidental items required to complete the work in all respects. All work shall be carried out in accordance with the approved design, technical specifications, and to the satisfaction of the Engineer-in-Charge. Measurement shall be made per number of pin assemblies installed, complete with all accessories.	Nos	1,452.00	13,21,320.00
18	910.00	Supplying, fabricating, and installing aluminium protection boxes of specified size (e.g., 300 mm x 300 mm or as per drawing) at the ends of concrete pontoon units for securing and enclosing the solid stainless steel connection pins. The boxes shall be made from marine-grade aluminium alloy (minimum grade 5052 or equivalent), corrosion-resistant and suitable for marine environmental conditions. The work shall include provision of covers/lids with proper fastening mechanism (screws or hinges), drainage holes (if required), and all necessary surface finishing, edge rounding, welding, and corner sealing to ensure structural stability and durability. The rate shall include all materials, labour, tools, fabrication charges, transportation to site, installation on the pontoon face including alignment, fixing with SS fasteners, sealing, and testing for proper fitment. All works shall be executed as per the approved drawings and specifications and to the satisfaction of the Engineer-in-Charge. Measurement shall be made per number of aluminium boxes installed complete in all respects.	Nos	4,066.00	37,00,060.00
19	4608.00	Supplying and fixing of D-Type rubber fenders of size, length, and profile as specified in the approved drawings, including all necessary fasteners, fixing bolts (SS 316 or hot-dip galvanized as per design), washers, backing plates, and drilling and installation on the concrete or steel surface. The fender shall be manufactured from high-quality, UV-resistant, ozone-resistant, and marine-grade natural or synthetic rubber suitable for long-term marine exposure and heavy-duty applications. The fenders shall be free from surface cracks, voids, air pockets, or deformities and shall be designed to absorb high impact energy from berthing vessels while minimizing reaction force. The rate shall include all materials, labour, tools, surface preparation, alignment, and secure fixing as per design and site conditions. All work shall be carried out in accordance with the manufacturer's recommendations, relevant standards (such as IS, PIANC guidelines, or equivalent), and to the satisfaction of the Engineer-in-Charge. Measurement shall be made in running metres of fender installed, complete in all respects.	Rmt	12,196.00	5,61,99,168.00

ITEM NO	QTY	DESCRIPTION	UNIT	RATE (RS.)	AMOUNT (RS.)
20	2542.00	Supplying and installing marine-grade mooring cleats fabricated from Stainless Steel conforming to IS 6911 (Grade: SS316 or SS316L), of size, type, and capacity as specified in the approved drawings, including all necessary fixtures such as stainless steel anchor bolts, nuts, washers, and base plates. The cleats shall be suitable for marine applications and capable of withstanding the mooring loads as per design. Installation shall include drilling, alignment, fixing over concrete pontoons or platforms, grouting where required, and ensuring proper embedment and anchorage. All works shall be carried out as per IS: 10096 (Code of practice for installation of mooring and berthing fittings on jetties), relevant BIS specifications, approved drawings, and directions of the Engineer-in-Charge. The rate shall be inclusive of all procurement, transport, handling, labour, tools, equipment, erection, and all incidental works required to complete the installation in all respects	Nos	5,227.00	1,32,87,034.00
21	548.20	Supplying and fixing neoprene elastomeric pad of 60 mm thickness at the interface of adjacent concrete pontoons, of shape, size, and configuration as specified in the approved drawings. The neoprene pad shall be manufactured from chloroprene rubber (neoprene) conforming to IS 3400 (Parts 1 to 14) and IS 13360, with physical properties suitable for marine and structural applications, including high resistance to UV, salt water, oil, and aging. The pad shall be provided with grooves or profiles (if required), accurately cut and finished, and fixed in position using approved marine-grade adhesive/sealant or fasteners as per the manufacturer's recommendation. All works shall be executed as per relevant IS codes, approved methodology, and as directed by the Engineer-in-Charge. The rate shall be inclusive of cost of material, transportation, handling, fabrication, surface preparation, placement, alignment, installation tools, labour, and all other incidental works complete.	Sqm	28,225.00	1,54,72,945.00
22	568.00	Supplying and installing aluminium sacrificial anodes for cathodic protection of concrete pontoons and associated marine steel structures, of type, shape, size, and weight as specified in the drawings and conforming to IS 4682 (Part 1):1992 and relevant international standards for marine-grade sacrificial anodes. The aluminium anodes shall be high-efficiency marine-grade alloy (typically Al-Zn-In alloy), with steel inserts for welding/bolting and coated at the interface to avoid passivation. Installation shall include surface preparation, attachment by welding or bolting using stainless steel fasteners, connection of anode cables, sealing, and testing of electrical continuity and potential readings, all as per the approved protection scheme and under supervision of the Engineer-in-Charge. The rate shall be inclusive of cost of anode, insert materials, welding or bolting, cables, consumables, testing, transportation, handling, labour, and all other incidental works, complete in all respects.	Nos	87,113.00	4,94,80,184.00

ITEM NO	QTY	DESCRIPTION	UNIT	RATE (RS.)	AMOUNT (RS.)
23	28.33	Designing, fabricating, transporting, and erecting aluminium gangway of dimensions, profile, and configuration as specified in the drawings, using marine grade aluminium conforming to IS 12874 and alloy 5052. The gangway shall be suitable for marine environments, allowing for tidal variations and safe pedestrian movement between pontoons and fixed structures. The work includes cutting, welding, bolting, and assembling aluminium components such as structural framing, handrails, rollers, stoppers, and hinges as required. All structural design parameters shall adhere to relevant IS codes including IS 875 (for live loads) and IS 1893 (for seismic loads, if applicable). The quoted rate shall be inclusive of all costs towards material procurement (including aluminium 5052 alloy sections and plates), fabrication, transportation to site, mechanical lifting, installation in position, anchoring to pontoon and jetty ends, and securing all connections as per drawings. It shall also include all labour, tools, fixtures, fasteners, consumables, supports during erection, and all incidental works required to complete the item in all respects. The item shall also include coordination and submission of quality assurance documents, and obtaining required third-party inspection and certification as directed by the Engineer-in-Charge.	MT	8,09,389.00	2,29,29,990.37
24	1.00	Supply, fabrication, and installation of all necessary accessories for the aluminium gangway as specified in Section 7 of Volume I of the tender document, including but not limited to hinge pin assembly with nylon bush, bearing pads, conical bolts, aluminium handrails, side curb plates, lifting eye plates, drainage provisions, rubber buffer strips (if applicable), mounting/fixing brackets, end roller assemblies (where required), expansion fasteners, and identification nameplates. All accessories shall be of marine-grade aluminium, stainless steel (SS316), high-density UV-resistant nylon, or other specified corrosion-resistant materials as per the design requirements. The scope shall include procurement, transportation, handling, fabrication in a covered workshop environment, surface finishing (if specified), inspection, testing, marking, and complete installation at site in accordance with the technical specifications, drawings, and instructions of the Engineer-in-Charge. The quoted rate shall be inclusive of all materials, labour, tools, consumables, transport, taxes, and duties required for the complete execution of the work on a lump sum basis.	L.S	75,00,000.00	75,00,000.00
25	369.60	Supplying, transporting, and installing Wood Plastic Composite (WPC) decking boards of 22mm thickness and specified width, manufactured from high-quality composite material comprising recycled wood fibres and thermoplastics, designed for enhanced durability, UV resistance, slip resistance, and resistance to rot, corrosion, and termites. The decking shall be suitable for use in marine or outdoor environments, conforming to relevant Indian Standards and technical specifications. The boards shall be fixed over leveled structural supports using aluminium fasteners, clips, or brackets as per the manufacturer's installation guidelines, ensuring appropriate spacing for expansion and drainage. The cost shall include procurement, transportation to site, complete installation with necessary edge trims and skirtings, and all required accessories, cutting, shaping, and securely fixing in position. The quoted rate shall be per square meter and shall include all labour charges, minor tools, consumables, and incidentals required to complete the work in all respects as per the drawings and as directed by the Engineer-in-Charge.	Sqm	7,550.00	27,90,480.00

ITEM NO	QTY	DESCRIPTION	UNIT	RATE (RS.)	AMOUNT (RS.)
26	4.09	Providing and placing Fibre Impregnated Expansion Joint Board of approved make and quality, conforming to IS 1838 (Part 1): 1983 or latest revision, of required thickness and depth as indicated in the drawings and specifications. The expansion joint shall be composed of bitumen-saturated fibreboard with uniform impregnation and density, suitable for use in concrete structures exposed to weather, water, and marine conditions. The joint board shall be cut to required sizes and installed vertically in expansion joints between concrete panels, ensuring firm contact with adjacent surfaces. The cost shall include supplying, transporting, cutting to size, and placing in position the expansion joint board, including all labour, tools, and materials required for proper placement. The rate shall be inclusive of all wastage, overlaps, sealant applications (if specified), and ensuring continuity of the joint along the full depth and length as shown in drawings or as directed by the Engineer-in-Charge. Payment shall be made per square meter of surface area covered.	Sqm	2,904.00	11,877.36
27	201.45	Supply, fabricate, transport, handle and erect in position stainless steel handrails using pipes and toe plates using stainless steel conforming to SS316L including profile cutting, assembling, hoisting, fixing in position, welding, inspection and applying a priming coat of approved steel primer and top coat of minimum thickness as specified in the specifications made of approved paint all as per specifications and drawings including cost of all materials, fitting charges, all labour charges, transportation charges and minor tools etc. complete.	Rmt	7,762.00	15,63,654.90
28	1258.63	Supply, transport to site, deliver, place, compact, cure and test M30 grade plain cement concrete wearing coat of 100 mm average thickness with polyproplene fibers laid at suitable slope on the piled platforms, breakwater and approach trestle complete as per drawings and specification including expansion joints at approved locations and filling the expansion joints with asphaltic material like mexphlt etc. including cost of plastciser, bipolar etc. as per manufacturer's specification.	Cum	11,149.00	1,40,32,410.13
29	7440.00	Supply, deliver and transportation of CR reinforcement steel with a minimum yield strength of 500 N/mm2 and minimum elongation of 16% or equivalent confirming to IS 1786 (with ISI Mark) with corrosion resistant (CR) element for Fabrication and fixing of reinforcement cages as per drawing for cast-in-situ piles , columns, beams, slabs, in buildings etc including cost of fabrication, fixing dowels, shear ties, cutting, bending, tying, lapping and welding in position wherever necessary with stainless steel 18 SWG annealed binding wire, all labour charges, transportation charges of all materials to Work Site, cost of binding wires, all other items including cover blocks required for the work and minor tools etc. complete. All works shall be carried out as per approved drawings, technical specifications, and as directed by the Engineer-in-Charge, (45% of the item rate shall be paid on supply of steel at site & 55% of the item rate shall be paid after fixing of reinforcement and completion of concrete)	MT	84,322.00	62,73,55,680.00
30	242.94	Supplying, transporting, storing, fabricating & erecting in position and testing/examining bolted and/ or welded hot dipped galvanized (120 microns) STEEL WORKS of Grade E250(confirming to per IS:2062) at all locations and levels, including all builtup sections/ compound sections made out of rolled sections and/or plates/ insert plates/ bent plates in all types of structural frameworks, guide yoke or any other structural items or accessories to support pontoons or such other structures, etc., cutting to required size, straightening/ bending if required, edge preparation, cleaning, preheating, bolting/ welding of joints, (including sealing the joints of box sections with continuous welding and plugging any open ends & holes of box sections), finishing edges by grinding, fixing in line and level with temporary staging & bracing and removal of the same after erection and submission of detailed fabrication drawings etc., all complete.	MT	1,54,700.00	3,75,82,044.50

ITEM NO	QTY	DESCRIPTION	UNIT	RATE (RS.)	AMOUNT (RS.)
31	2767.71	Supplying, fabricating, transporting, and erecting in position structural steel tubular piles of required diameter, wall thickness, and length as specified in the drawings, using E350 grade steel conforming to IS 2062 (latest revision), including all cutting, edge preparation, beveling, rolling (if required), welding, fitting of stiffeners or internal rings, and provision of driving shoes where specified. The item includes the cost of all materials, fabrication at an approved yard or site, full-length welding with required non-destructive testing (NDT), application of protective coating (if specified), transportation of fabricated piles to site, staging, lifting, handling, positioning, and driving of piles to the specified depth or to refusal, as per approved methodology and directions of the Engineer-in-Charge. The rate shall include the cost of all labour, tools, tackles, cranes/barges or other lifting equipment, setting out and positioning of piles with proper alignment and orientation as per drawings, consumables, welding rods, inspection/testing charges, and all incidental items required to complete the work in all respects. Payment shall be made based on the actual weight of E350 grade structural steel used (in metric tonnes), and no separate payment shall be made for laps, wastage, splicing, or temporary supports.	MT	1,60,110.00	44,31,38,033.69
32	213.10	Supply, fabricate, transport, handle and install UPVC SWR Type B conforming to IS - 13592 (With ISI Mark) drainpipes including fittings of diameter 110mm as per drawings and specifications including cutting, hoisting, fixing in position and including cost of all materials, fitting charges, all labour charges, transportation charges and minor tools etc. complete.	Rmt	550	1,17,205.00
33	58.80	Supply, transport to site, deliver, place, compact, cure and test Granular subbase of thickness laid at suitable slope on the reclamation area and other structures complete as per drawings and specification including labour and minor tools complete.	Cum	2,533.00	1,48,940.40
34	2.68	Supplying, fabricating, and fixing crane rail of specified section and profile as indicated in the drawings, including procurement, cutting to length, aligning, levelling, and fixing in position over the top surface of the supporting concrete or steel beam using approved methods. The scope shall include providing necessary rail clips, anchor bolts, steel base plates, grout pockets, neoprene pads (if specified), and other associated accessories to ensure proper installation and load transfer. All operations including drilling, welding, or bolting, grinding of joints, installation of expansion joints, and ensuring linear alignment and level tolerances shall be carried out in accordance with relevant IS standards and technical specifications. The work shall also include grouting beneath the base plates with non-shrink grout and application of corrosion protection wherever required. The cost shall include all labour, tools, equipment, scaffolding, consumables, and transportation of materials to site, including all incidental works required to complete the job in all respects as per drawings and engineer's direction. Measurement shall be in MT of crane rail laid and fixed.	MT	3,80,000.00	10,16,500.00
35	310.00	Supplying, transporting, storing, fabricating & erecting in position and testing/examining bolted and/ or welded hot dipped galvanized (120 microns) crash barrier(confirming to per IS:2062) cutting to required size, straightening/ bending if required, edge preparation, cleaning, preheating, bolting/ welding of joints, (including sealing the joints of box sections with continuous welding and plugging any open ends & holes of box sections), finishing edges by grinding, fixing in line and level with temporary staging & bracing and removal of the same after erection and submission of detailed fabrication drawings, preparing the specified, surface for painting and applying a priming coat of approved steel primer and top coat of minimum thickness as specified in the specifications made of approved paint after fabrication etc., all complete.	MT	1,36,224.00	4,22,29,440.00

ITEM NO	QTY	DESCRIPTION	UNIT	RATE (RS.)	AMOUNT (RS.)
36	354.00	Supplying, fabricating, transporting, erecting and commissioning 12-meter-high octagonal or round tapered lighting poles made of hot-dip galvanized steel, complete with base plates, anchor bolts and all necessary mounting accessories, conforming to IS 875 (Part 3) for structural stability and IS 2062 for material specifications. The galvanization shall be done in accordance with IS 2629 / IS 4759 with a minimum zinc coating of 610 g/m² to ensure durability in marine and corrosive environments. Each pole shall be fitted with two energy-efficient LED luminaires of minimum 150W each or as specified in the drawings, with IP66-rated housing, electronic driver, and a system efficacy of not less than 120 lumens/watt, conforming to IS 16101 and IS 16106. The work shall include fabrication and casting of reinforced cement concrete (M25 grade) foundation blocks with embedded anchor bolts, cable entry sleeves and templates for bolt alignment, and shall also include the supply, laying and termination of 4-core, 6 sq.mm copper armoured cable from the nearby feeder point to the pole, including all terminations, glands and lugs. Each pole shall be provided with a proper earthing arrangement using copper earth plate, GI flat strip and earth pit as per IS 3043. The item also includes all electrical connections within the pole, mounting of luminaires, testing, commissioning, and obtaining necessary approvals and certifications from the designated inspection authority. The quoted rate shall be inclusive of all labour, materials, transportation, fabrication, minor civil works, and incidentals required to complete the work in all respects as per drawings and technical specifications.	Nos	2,55,530.00	9,04,57,620.00
				TOTAL	**3,49,16,54,477.00**