

-: SCHEDULE - B :-

Name of Work: Development of car carrier facility at cargo berth no.01 at Kandla.

Contract Price for different components of works shall be calculated as specified below:

Table B.1 Form of Schedule of rates and contract price.

No.	Item description	Qty.	Unit	Rate (In Rs)	Total (In Rs)
A. STEEL PONTOON					
A1	<p>Supply, fabricate, handle and transport Structural steel shapes, plates, special plates and built-up sections in pontoon confirming to steel grades specified in construction drawings and specifications including profile cutting, assembling, hoisting, fixing in position, welding, inspection, transportation and erection at site as per drawings and specification including cost of all materials, fitting charges, all labour charges, and minor tools etc. complete. The cost shall include all fabrication, minor equipment, transportation by suitable means and instruments required for installation of pontoon at site and all labour charges etc. complete. It is hereby explicitly stipulated that all preparatory works associated with the establishment and operation of the fabrication yard—including, without limitation, site levelling, temporary works, access and logistical arrangements, provision of utilities, and all facilities and measures necessary for the safe and proper launching of the pontoon into the water—together with any and all survey works required in connection with these activities, shall be deemed to be fully included within the quoted rate. No separate or additional claim on these grounds shall be admissible or entertained. Following clauses apply to the floating pontoon fabrication and installation.</p> <p>i. Structural steel shall comply with Project Specifications Vol-III – Clause 1.5 and the coating system shall comply with the Project Specifications Vol-III Clause 1.9.</p> <p>ii. Plan approval from classification society has been obtained by Employer including payment to Classification society for plan approval.</p> <p>iii. Contractor shall obtain classification society approval for its material, fabrication including payment to certification agency for inspection and survey, surveyors to visit, inspect and approve the materials, and fabrication.</p> <p>iv. Contractor shall arrange for the transportation of surveyors and pay for the day charges as per the number of visits required during material inspection and fabrication.</p> <p>v. All fabrication, welding, cutting, bending of plates on site to be as per BS 5400 Part 6 / AWS D1.1 and relevant classification society</p>	594.00	MT	2,67,600.00	15,89,54,400.00

	(IRS/ABS/BV etc.) rules etc. including surveying/ supervision of fabrication and obtaining certification approval from classification society (IRS/ABS/BV etc.). vi. All tests on materials + Welds (Ultrasonic, dye penetration for welds + Water tightness test).				
A2	Supply, fabricate, transport, handle and erect in position Structural steel shapes , plates, anchor bolts and built up sections conforming to IS 2062 Grade BR-E250 for secondary steel structures 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. The cost shall include all fabrication, transportation of the steel structure assembly in part or as a whole, lifting using floating crafts and cranes, erection and fixing on the linkspan with appropriate supporting arrangement, roller plates etc complete.	5.00	MT	1,80,552.00	9,02,760.00
A3	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.	8.00	MT	1,74,000.00	13,92,000.00
A4	Supplying and fixing of Dipti Arch fender or equivalent 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, PTFE facial pads (low friction) and drilling and installation on the 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	20.00	m	3,18,500.00	63,70,000.00

	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.				
A5	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 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.	60.00	m	11,500.00	6,90,000.00
A6	Supplying, handling, transporting and fixing in position of Cast iron Bollard (20 ton capacity) with necessary fixtures to mount the bollard onto the pontoon and necessary coal tar painting(whenever required) including all materials, labour, consumable items etc. Complete as per drawing and specifications as directed by the Engineering In Charge.	4.00	Nos	71,170.00	2,84,680.00
A7	Providing and applying surface preparation and anti-corrosive epoxy painting system to the internal and external surfaces of the pontoon, including cleaning, degreasing and abrasive blasting to Sa 2.5 standard in accordance with ISO 8501-1, followed by application of a 4-coat epoxy-based protective coating system to achieve a minimum total dry film thickness (DFT) of 750 microns. The item includes supply of all materials, labour, tools, tackles, blasting media, compressors, spray equipment, safety arrangements, scaffolding and all other incidentals required to complete the work in accordance with the technical specifications, drawings and to the satisfaction of the Engineer-in-Charge.	11,588.00	Sqm	1,430.00	1,65,70,840.00
A8	Providing and applying non-skid coating system on the deck surfaces of the pontoon using Cicol NT Slurry of ROCOL UK or any other approved equivalent, comprising a nominal 5.5 mm thick non-skid slurry layer followed by broadcasting of 5.0 mm compatible anti-skid aggregate on the top surface to achieve a durable, high-friction	600.00	Sqm	5,750.00	34,50,000.00

	wearing course. The item includes surface preparation, supply of all materials, labour, tools, plant, mixers, trowels, safety gear, masking, curing and all incidentals necessary to complete the work in accordance with the technical specifications, manufacturer's recommendations and to the satisfaction of the Engineer-in-Charge.				
A9	Supplying and installing aluminium sacrificial anodes (Galvaalum III or equivalent) for cathodic protection of guide pin piles of 1.25m length and gross weight not less than 132 kg as specified in the drawings and conforming to DNVGL-RP- B401 (latest edition) 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 bolting using stainless steel fasteners, connection of anode to piles using copper strip welding on both ends, 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 copper strips in under water condition, cables, consumables, testing, transportation, handling, labour, and all other incidental works, complete in all respects.	65.00	Nos	95,393.00	62,00,545.00
A10	Supplying, transporting, fixing and installing watertight steel manhole covers on the deck surfaces of the pontoon at locations shown in the drawings, including supply of the manhole covers complete with all accessories such as cover plates, lifting handles, gaskets, bolts, nuts, and fasteners, as required. The item includes all labour, transportation to site, handling, positioning, alignment, minor tools and tackles, testing for watertightness and all incidentals necessary to complete the work in accordance with the drawings, specifications and to the satisfaction of the Engineer-in-Charge.	25.00	Nos	77,050.00	19,26,250.00
A11	Supplying, transporting, fixing and installing UHMW-PE rubber pads at locations shown in the drawings, including supply of the UHMW-PE pads complete with all necessary fittings, fasteners, adhesives or anchoring arrangements as required. The item includes all labour, transportation to site, handling, positioning, alignment, minor tools and tackles and all incidentals necessary to complete the work in accordance with the drawings, specifications and to the satisfaction of the Engineer-in-Charge.	4.00	Nos	43,295.00	1,73,180.00
A12	Providing, Installing and commissioning of Centrifugal Pumps set with accessories for ballasting and de-ballasting having flow rate of 510 Cu/hr, pump head of 6 Mtr. Pump power input at duty point of 10.55 KW, Driver motor of 15 KW and rated speed of 1450 RMP. Note: a) Pump should be Kirloskar or equivalent make b) Cost include all pipeline and commissioning	2.00	Nos	3,22,600.00	6,45,200.00

	of pump for ballasting and deballasting of water in to the pontoon compartments. c) Any residual engineering required to coordinate with the pump vendors, electrical connection and piping within the pontoon shall be carried out by the contractor.				
Total cost of Part A					19,75,59,855.00
B. STEEL LINKSPAN					
B1	<p>Supply, fabricate, transport, handle and erect in position of Link span made of Structural steel tubular members of any diameter (seamless or rolled), tubulars with through thickness property at joints (rolled), steel pins made of alloy steel castings and shapes, plates, anchor bolts and built up sections conforming to specifications including profile cutting, assembling, hoisting, fixing in position, welding, inspection and as per drawings including cost of all materials, fitting charges, all labour charges, transportation charges and minor tools etc. complete. The cost shall include all fabrication, transportation of the linkspan, lifting using floating crafts and cranes, erection, installation of the linkspan bridge in position and fixing on the concrete structure with appropriate sliding and pin arrangement etc. complete.</p> <p>i. Structural steel shall comply with Project Specifications Vol-III – Clause 1.5 and the coating system shall comply with the Project Specifications Vol-III Clause 1.9.</p> <p>ii. Plan approval from classification society has been obtained by DPA/IITM including payment to the classification society will be by DPA/IITM.</p> <p>iii. Contractor shall permit classification society surveyors to visit, inspect and approve the materials, fabrication and installation.</p> <p>iv. Contractor shall arrange for the transportation of surveyors and pay for the day charges as per the number of visits required during fabrication and installation.</p> <p>v. All fabrication, welding, cutting, bending of plates on site to be as per BS 5400 Part 6 / AWS D1.1 and relevant classification society (IRS/ABS/BV etc.) rules etc. including surveying/ supervision of fabrication and obtaining certification approval from classification society (IRS/ABS/BV etc.).</p> <p>vi. All tests on materials + Welds (Ultrasonic, dye penetration for welds + Water tightness test).</p>	169.00	MT	2,89,000.00	4,88,41,000.00
B2	<p>Supply, fabricate, transport, handle and erect in position of Structural steel shapes, plates, special plates and built-up sections in linkspan construction confirming to steel grades specified in construction drawings and specifications including profile cutting, assembling, hoisting, fixing in position, welding, inspection and painting of priming coat and top coat as per drawings and specification including cost of all materials, fitting charges, all labour charges, transportation charges and minor tools etc. complete. The cost shall include all fabrication, transportation of the linkspan assembly, minor</p>	120.00	MT	2,67,600.00	3,21,12,000.00

	<p>equipment, installation of members of linkspan and all labour charges etc. complete. complete. Following clauses apply to the linkspan modification and installation.</p> <p>i. Structural steel shall comply with Project Specifications Vol-III – Clause 1.5 and the coating system shall comply with the Project Specifications Vol-III Clause 1.9.</p> <p>ii. Plan approval from classification society has been obtained by Employer including payment to Classification society for plan approval .</p> <p>iii. Contractor shall obtain classification society approval for its material, fabrication and installation including payment to certification agency for inspection and survey, surveyors to visit, inspect and approve the material and modification.</p> <p>iv. Contractor shall arrange for the transportation of surveyors and pay for the day charges as per the number of visits required during fabrication and installation.</p> <p>v. All modification, welding, cutting, bending of plates on site to be as per BS 5400 Part 6 / AWS D1.1 and relevant classification society (IRS/ABS/BV etc.) rules etc. including surveying/ supervision of fabrication and obtaining certification approval from classification society (IRS/ABS/BV etc.).</p> <p>vi. All tests on materials + Welds (Ultrasonic, dye penetration for welds + Water tightness test).</p>				
B3	<p>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.</p>	5.00	MT	1,74,000.00	8,70,000.00
B4	<p>Providing and applying surface preparation and anti-corrosive epoxy painting system to the internal and external surfaces of the linkspan, including cleaning, degreasing and abrasive blasting to Sa 2.5 standard in accordance with ISO 8501-1, followed by application of a 4-coat epoxy-based protective coating system to achieve a minimum total dry film thickness (DFT) of 750 microns. The item includes supply of all materials, labour, tools, tackles, blasting media, compressors, spray equipment, safety arrangements, scaffolding and all other incidentals required to complete the work in accordance with the technical specifications,</p>	4,261.00	Sqm	1,430.00	60,93,230.00

	drawings and to the satisfaction of the Engineer-in-Charge.				
B5	Providing and applying non-skid coating system on the deck surfaces of the linkspan using Cicol NT Slurry of ROCOL UK or any other approved equivalent, comprising a nominal 5.5 mm thick non-skid slurry layer followed by broadcasting of 5.0 mm compatible anti-skid aggregate on the top surface to achieve a durable, high-friction wearing course. The item includes surface preparation, supply of all materials, labour, tools, plant, mixers, trowels, safety gear, masking, curing and all incidentals necessary to complete the work in accordance with the technical specifications, manufacturer's recommendations and to the satisfaction of the Engineer-in-Charge.	434.00	Sqm	5,750.00	24,95,500.00
B6	Supplying, transporting, fixing and installing ramp protectors at locations shown in the drawings, including supply of the ramp protectors complete with all necessary fittings, anchor bolts, brackets and fasteners as required. The item includes all labour, transportation to site, handling, positioning, alignment, minor tools and tackles and all incidentals necessary to complete the work in accordance with the drawings, specifications and to the satisfaction of the Engineer-in-Charge.	42.00	Sqm	1,86,915.00	78,50,430.00
B7	Supplying, machining, transporting, fixing and installing Chromium-Molybdenum (Cr-Mo) alloy steel pins for the linkspan assembly at locations shown in the drawings, including heat-treated and precision-machined pins of required diameter and length, complete with all necessary bushes, locking arrangements, washers, grease nipples, anti-corrosion protection and accessories as specified. The item includes all labour, handling, alignment, fitting, testing, lubrication, minor tools and tackles and all incidentals required to complete the installation in accordance with the approved drawings, technical specifications and to the satisfaction of the Engineer-in-Charge.	1.00	MT	2,49,550.00	2,49,550.00
Total cost of Part B					9,85,11,710.00
C. APPROACH CUM TURNING PLATFORM					
C1	Setting up of piling gantry / jackup platform necessary equipment platforms, tripods, winches, pile-driving rigs, rotary drilling rigs, bailers, chisels, and all related machinery, at each pile location and shifting for each new pile; fabrication and erection of staging and pile-driving arrangements using steel plates, girders, channels, and angles, including the supply of all steel materials, welding, strutting, fixing, labour, tools, and consumables, together with complete mobilization and demobilization — for carrying out MS liner boring and RC pile concreting works in accordance with the approved	46.00	Nos	35,883.00	16,50,618.00

	methodology and as directed by the Engineer-in-Charge.				
C2	Supplying, fabricating, and driving MS liners for RC 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.	225.00	MT	1,30,361.00	2,93,31,225.00
C3	Boring / drilling / bailing out through all types of soil strata through pile casing for RC piles of 1000mm dia 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.	1,104.00	m	9,713.00	1,07,23,152.00
C4	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 RC PILES at Approach Trestle cum turning platform 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.	1,503.00	Cum	16,829.00	2,52,93,987.00
C5	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.	46.00	Nos	11,173.00	5,13,958.00

C6	Carrying out Routine Dynamic load test on vertical pile in approach trestle cum turning platform 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 incharge for each structure based his judgement and it is to be treated as final.	5.00	Nos	2,80,000.00	14,00,000.00
C7	Manufacturing, supplying, transporting, and erecting in position Reinforced Cement Concrete (RCC) precast elements for marine structures such as approach trestle—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, centring, 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.	394.00	Cum	22,724.00	89,53,256.00
C8	Providing and laying Cast in-situ Reinforced Cement Concrete (RCC) of M-40 grade using 20 mm and down-size graded crushed stone aggregates/gravel for structural components such as pile caps, beams, slabs, pedestals, pipe sleepers, and surface applications in approach trestle. 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, centring, 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.	346.00	Cum	16,698.00	57,77,508.00

C9	Supply, transport to site, deliver, place, compact, cure and test M30 grade plain cement concrete wearing coat of 100 mm average thickness with polypropylene fibres laid at suitable slope on the approach trestle complete as per drawings and specification including expansion joints at approved locations and filling the expansion joints with asphaltic material like mexphalt etc. including cost of plasticizer, bipolar etc. as per manufacturer's specification.	79.00	Cum	11,930.00	9,42,470.00
C10	Supply, deliver and transportation of steel reinforcement bars of grade Fe500D for RC piles with corrosion resistant elements and having a minimum yield strength of 500 N/mm2 and minimum elongation of 16% or equivalent confirming to IS 1786 (with ISI Mark) and fabrication and fixing of reinforcement as per drawing for cast-in-situ piles. 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.	592.00	MT	1,04,481.00	6,18,52,752.00
C11	Supply, deliver and transportation of steel reinforcement bars of grade Fe500D for superstructure with corrosion resistant elements and having a minimum yield strength of 500 N/mm2 and minimum elongation of 16% or equivalent confirming to IS 1786 (with ISI Mark) and fabrication and fixing of reinforcement as per drawing for pile muffs, columns, beams, slab 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.	130.00	MT	1,08,057.00	1,40,47,410.00
C12	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	11.00	MT	1,74,000.00	19,14,000.00

	approved steel primer and top coat of minimum thickness as specified in the specifications made of approved paint after fabrication etc., all complete.				
C13	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.	8.00	Rmt	550.00	4,400.00
Total cost of Part C					16,24,04,736.00
D. TRIPOD STRUCTURE					
D1	Setting up of piling gantry / jackup platform necessary equipment platforms, tripods, winches, pile-driving rigs, rotary drilling rigs, bailers, chisels, and all related machinery, at each pile location and shifting for each new pile; fabrication and erection of staging and pile-driving arrangements using steel plates, girders, channels, and angles, including the supply of all steel materials, welding, strutting, fixing, labour, tools, and consumables, together with complete mobilization and demobilization — for carrying out MS liner boring and RC pile concreting works in accordance with the approved methodology and as directed by the Engineer-in-Charge.	6.00	Nos	35,883.00	2,15,298.00
D2	Supplying, fabricating, transporting, and erecting in position (inside the predrilled hole with a separate casing) the structural steel tubular piles of specified diameter and thickness and length as specified in the drawings, using E350 grade steel conforming to IS 2062 (latest revision), including all cutting, edge preparation, bevelling, 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), transportation of fabricated piles to site, staging, lifting, handling, positioning and welding of pile segments to the specified length and inserting the pile in to the predrilled hole as per approved methodology and drawings and as directed by 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 wastage, splicing, or temporary supports.	58.00	MT	2,10,141.00	1,21,88,178.00

D3	Supplying, fabricating, and driving MS liners for RC 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.	21.00	MT	1,30,361.00	27,37,581.00
D4	Driving of steel pile to the specified termination level and drilling and removal of soil plug inside the pile as per the construction drawing. The cost shall also include positioning the pile at the location as per construction drawings and driving below existing sea bed level to the required depth (the depth shall be as specified in the construction drawings, specifications and as directed by the Engineer in-charge or Authority Engineer) for linkspan support structure including all equipment such as jack up barge, pile driving hammer, drilling equipment for removal of soil plug etc. complete. The cost shall include the required tests to be conducted at site and laboratory as instructed by the engineer-in-charge.	96.00	m	9,713.00	9,32,448.00
D5	Boring / drilling / bailing out through all types of soil strata through pile casing for RC piles of 1000mm dia 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.	48.00	m	1,28,053.00	61,46,544.00
D6	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 RC PILES/steel piles at tripod structure 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	210.00	Cum	16,829.00	35,34,090.00

	specifications, and as directed by the Engineer-in-Charge.				
D7	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.	4.00	Nos	11,173.00	44,692.00
D8	Providing and laying Cast in-situ Reinforced Cement Concrete (RCC) of M-40 grade using 20 mm and down-size graded crushed stone aggregates/gravel for structural components such as pile caps, beams, slabs, pedestals and surface applications in tripod structure. 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, centring, 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.	29.00	Cum	16,698.00	4,84,242.00
D9	Supply, transport to site, deliver, place, compact, cure and test M30 grade plain cement concrete wearing coat of 100 mm average thickness with polypropylene fibres laid at suitable slope on the tripod structure complete as per drawings and specification including expansion joints at approved locations and filling the expansion joints with asphaltic material like mexphalt etc. including cost of plasticizer, bipolar etc. as per manufacturer's specification.	3.00	Cum	11,930.00	35,790.00
D10	Supply, deliver and transportation of steel reinforcement bars of grade Fe500D for piles with corrosion resistant elements and having a minimum yield strength of 500 N/mm ² and minimum elongation of 16% or equivalent confirming to IS 1786 (with ISI Mark) and fabrication and fixing of reinforcement as per drawing for cast-in-situ piles. 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	76.00	MT	1,04,481.00	79,40,556.00

	minor tools etc. complete. All works shall be carried out as per approved drawings, technical specifications, and as directed by the Engineer-in-Charge.				
D11	Supply, deliver and transportation of steel reinforcement bars of grade Fe500D for superstructure with corrosion resistant elements and having a minimum yield strength of 500 N/mm ² and minimum elongation of 16% or equivalent confirming to IS 1786 (with ISI Mark) and fabrication and fixing of reinforcement as per drawing for pile muffs, columns, beams, slab 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.	3.00	MT	1,08,057.00	3,24,171.00
D12	Supply, fabricate, transport, handle and erect in position Structural steel shapes , plates, anchor bolts and built up sections conforming to IS 2062 Grade BR-E250 for secondary steel structures 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. The cost shall include all fabrication, transportation of the steel structure assembly in part or as a whole, lifting using floating crafts and cranes, erection and fixing on the linkspan with appropriate supporting arrangement, roller plates etc complete.	10.00	MT	1,80,552.00	18,05,520.00
D13	Supplying and fixing of V type fender or equivalent 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, PTFE facial pads (low friction) and drilling and installation on the 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	16.00	m	2,20,000.00	35,20,000.00

	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.				
D14	Supplying and installing aluminium sacrificial anodes (Galvaalum III or equivalent) for cathodic protection of guide pin piles of 1.25m length and gross weight not less than 132 kg as specified in the drawings and conforming to DNVGL-RP- B401 (latest edition) 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 bolting using stainless steel fasteners, connection of anode to piles using copper strip welding on both ends, 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 copper strips in under water condition, cables, consumables, testing, transportation, handling, labour, and all other incidental works, complete in all respects.	12.00	Nos	95,393.00	11,44,716.00
Total cost of Part D					4,10,53,826.00
E. GUIDE PIN PILES STRUCTURE					
E1	Setting up of piling gantry / jackup platform necessary equipment platforms, tripods, winches, pile-driving rigs, rotary drilling rigs, bailers, chisels, and all related machinery, at each pile location and shifting for each new pile; fabrication and erection of staging and pile-driving arrangements using steel plates, girders, channels, and angles, including the supply of all steel materials, welding, strutting, fixing, labour, tools, and consumables, together with complete mobilization and demobilization — for carrying out MS liner boring and RC pile concreting works in accordance with the approved methodology and as directed by the Engineer-in-Charge.	4.00	Nos	35,883.00	1,43,532.00
E2	Supplying, fabricating, transporting, and erecting in position (inside the predrilled hole with a separate casing) the structural steel tubular piles of specified diameter and thickness and length as specified in the drawings, using E350 grade steel conforming to IS 2062 (latest revision), including all cutting, edge preparation, bevelling, 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	117.00	MT	2,10,141.00	2,45,86,497.00

	required non-destructive testing (NDT), transportation of fabricated piles to site, staging, lifting, handling, positioning and welding of pile segments to the specified length and inserting the pile in to the predrilled hole as per approved methodology and drawings and as directed by 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 wastage, splicing, or temporary supports.				
E3	Driving of steel pile to the specified termination level and drilling and removal of soil plug inside the pile as per the construction drawing. The cost shall also include positioning the pile at the location as per construction drawings and driving below existing sea bed level to the required depth (the depth shall be as specified in the construction drawings, specifications and as directed by the Engineer in-charge or Authority Engineer) for linkspan support structure including all equipment such as jack up barge, pile driving hammer, drilling equipment for removal of soil plug etc. complete. The cost shall include the required tests to be conducted at site and laboratory as instructed by the engineer-in-charge.	96.00	m	1,28,053.00	1,22,93,088.00
E4	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 steel piles at tripod structure 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 Portland 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.	142.00	Cum	16,829.00	23,89,718.00
E5	Supply, deliver and transportation of steel reinforcement bars of grade Fe500D for piles with corrosion resistant elements and having a minimum yield strength of 500 N/mm ² and minimum elongation of 16% or equivalent confirming to IS 1786 (with ISI Mark) and fabrication and fixing of reinforcement as per drawing for cast-in-situ piles. including cost of	51.00	MT	1,04,481.00	53,28,531.00

	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.				
E6	Supply, fabricate, transport, handle and erect in position of structural steel frame made of structural steel pipes , through thickness steel tubulars, plates, special plates with through thickness quality and built-up sections conforming to steel grades specified in construction drawings and specifications including profile cutting, assembling, hoisting, fixing in position, welding, inspection as per drawings including cost of all materials, fitting charges, all labour charges, transportation charges and minor tools etc. complete. The cost shall include all fabrication, transportation of the frame assembly, minor equipment, installation of frame by lifting and placing and welding with through thickness weld and all labour charges etc. complete.	91.00	MT	2,89,000.00	2,62,99,000.00
E7	Supply, fabricate, transport, handle and erect in position of Structural steel shapes, plates , special plates and built-up sections in link span support frame confirming to steel grades specified in construction drawings and specifications including profile cutting, assembling, hoisting, fixing in position, welding, inspection and painting of priming coat and top coat as per drawings and specification including cost of all materials, fitting charges, all labour charges, transportation charges and minor tools etc. complete. The cost shall include all fabrication, transportation of the support frame assembly, minor equipment, installation of frame on to the piles and all labour charges etc. complete.	10.00	MT	2,67,600.00	26,76,000.00
E8	Providing and applying surface preparation and anti-corrosive epoxy painting system to the internal and external surfaces of the linkspan support structure, including cleaning, degreasing and abrasive blasting to Sa 2.5 standard in accordance with ISO 8501-1, followed by application of a 4-coat epoxy-based protective coating system to achieve a minimum total dry film thickness (DFT) of 750 microns. The item includes supply of all materials, labour, tools, tackles, blasting media, compressors, spray equipment, safety arrangements, scaffolding and all other incidentals required to complete the work in accordance with the technical specifications, drawings and to the satisfaction of the Engineer-in-Charge.	2,504.00	Sqm	1,430.00	35,80,720.00

E9	Supplying and installing aluminium sacrificial anodes (Galvaalum III or equivalent) for cathodic protection of guide pin piles of 1.25m length and gross weight not less than 132 kg as specified in the drawings and conforming to DNVGL-RP- B401 (latest edition) 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 bolting using stainless steel fasteners, connection of anode to piles using copper strip welding on both ends, 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 copper strips in under water condition, cables, consumables, testing, transportation, handling, labour, and all other incidental works, complete in all respects.	24.00	Nos	95,393.00	22,89,432.00
Total cost of Part E					7,95,86,518.00
F. BERTHING FACILITIES					
F1	Supplying, handling, transporting and fixing in position of twin Cast iron Bollard (100 ton capacity) with necessary fixtures to mount the bollard onto the concrete structures including the cost of shear keys etc., and necessary coal tar painting(whenever required) including all materials, labour, consumable items etc. Complete as per drawing and specifications as directed by the Engineering In Charge.	18.00	Nos	181450.0	32,66,100.00
Total cost of Part F					32,66,100.00
G. ELECTRICAL AND FIREFIGHTING WORKS					
G1	Supplying, testing and fixing of LED lighting system including 8 m high single sided lighting poles at the approach trestle and in the parking area, complete with 200 W LED luminaires, poles, mounting brackets/arms, junction boxes, internal and external wiring, cables, conduits, connectors, earthing arrangements, control gear and all other accessories required for proper functioning of the lighting system. The item shall also include transportation of lighting poles, LED lights and fixtures to site, erection, alignment, testing, commissioning, all labour charges, use of minor tools and tackles, and any incidental works necessary for satisfactory completion of the item, as per specifications and directions of the Engineer-in-Charge.	33.00	Nos	58,000.00	19,14,000.00
G2	Supplying, testing and fixing of LED lighting system including 8 m high double sided lighting poles in the parking area, complete with 200 W LED luminaires, poles, mounting brackets/arms, junction boxes, internal and external wiring, cables, conduits, connectors, earthing arrangements, control gear and all other accessories required for proper functioning of the lighting system. The item shall also include transportation of lighting poles, LED lights and	13.00	Nos	87,000.00	11,31,000.00

	fixtures to site, erection, alignment, testing, commissioning, all labour charges, use of minor tools and tackles, and any incidental works necessary for satisfactory completion of the item, as per specifications and directions of the Engineer-in-Charge.				
G3	Supplying, testing and fixing of LED lighting system including 5 m high single sided lighting poles at the approach trestle and in the parking area, complete with 200 W LED luminaires, poles, mounting brackets/arms, junction boxes, internal and external wiring, cables, conduits, connectors, earthing arrangements, control gear and all other accessories required for proper functioning of the lighting system. The item shall also include transportation of lighting poles, LED lights and fixtures to site, erection, alignment, testing, commissioning, all labour charges, use of minor tools and tackles, and any incidental works necessary for satisfactory completion of the item, as per specifications and directions of the Engineer-in-Charge.	11.00	Nos	40,000.00	4,40,000.00
G4	Supplying, Installation, testing and commissioning of Hot dip galvanised 30 mtr height highmast lighting tower of 30 mtr with lighting tower shaft in three sections suitable for 55 mtr/sec wind speed with raising and lowering system comprising head frame, luminaries carriage suitable to install 16 nos luminaries in symmetrical arrangement, double drum winch, 6 mm dia SS wire rope, trailing cable, connector, integral power tool motor, manual handle, junction box, lightning finial, wiring material, power cables between panel and mast, MCB in base compartment, Carriage mounting clamps and bolts etc. Foundation bolts with nuts, Aviation abstraction warning lamp, Outdoor stand mounted feeder pillar with timer device and suitable control gears, LED luminaries of 200 watt - 16 nos / tower including cost of erection at site. (Make - Balal / Crompton / Havells etc)	5.00	Nos	27,79,000.00	1,38,95,000.00
G5	Supplying, installing, testing and commissioning of Miniature Circuit Breakers (MCBs) for External Lighting Distribution Board (DB) suitable for 415V, 3-phase, 50 Hz AC system, conforming to IS/IEC standards, comprising 25A, TPN, 10 kA MCBs (5 Nos. for outgoing feeders and 1 No. spare) and 16A, SPN, 10 kA MCBs (8 Nos. for lighting circuits with contactors and timers and 1 No. spare), complete with thermal-magnetic trip mechanism, Type C characteristics, DIN rail mounting, internal interconnections, identification, and all accessories, ensuring protection against overload and short circuit, including integration with contactors, timers, and indication circuits, complete in all respects as per specifications.	1.00	L.S	9,50,000.00	9,50,000.00
G6	Procurement, supply, laying, dressing, testing and commissioning of LT power cables including end terminations, glands, lugs, excavation, sand bedding, protection, providing				

	PVC pipe for cables and all accessories, complete as per specifications for Electrical Works and as directed by Engineer-in-Charge.				
a)	Supply, Erecting & Terminating of PVC/XLPE insulated armoured PVC sheathed cable of size 4C x 120 sq.mm. heavy duty with Aluminium conductor 1100 volts grade conductor 1100 volts grade 1554/7098(part-I) of 1988 to be laid from Nearest Sub Station to External Lighting DB	650.00	Rmt	1,770.00	11,50,500.00
b)	Supply, Erecting & Terminating of PVC/XLPE insulated armoured PVC sheathed cable of size 4C x 16 sq.mm. heavy duty with Aluminium conductor 1100 volts grade conductor 1100 volts grade 1554/7098(part-I) of 1988 to be laid from External Lighting DB to Each High Mast Panel	400.00	Rmt	722.00	2,88,800.00
c)	Supply, Erecting & Terminating of PVC/XLPE insulated armoured PVC sheathed cable of size 4C x 6 sq.mm. heavy duty with Copper conductor 1100 volts grade conforming to IS 1554/7098 (part-I) of 1988 to be laid from control panel to FPMCB connected High Mast.	100.00	Rmt	1,700.00	1,70,000.00
d)	Supply, Erecting & Terminating of PVC/XLPE insulated armoured PVC sheathed cable of size 3C x 2.5 sq.mm. heavy duty with Copper conductor 1100 volts grade conforming to IS 1554/7098 (part-I) of 1988	3,650.00	Rmt	384.00	14,01,600.00
G7	Supplying, transporting, installing, testing and commissioning of 75 kg Dry Chemical Powder (DCP) fire extinguisher, trolley mounted type, complete with cylinder, discharge hose, nozzle, operating valve, pressure gauge, wheels, trolley frame, safety pin, wall/ground signage, certification tags and all accessories, conforming to relevant IS/IMO/Marine safety standards, including all labour, handling, transportation to site, fixing in position, testing, commissioning and handing over, complete as directed by the Engineer-in-Charge.	8.00	Nos	43,890.00	3,51,120.00
G8	Supplying, transporting, fixing, testing and commissioning of 5 kg Dry Chemical Powder (DCP) fire extinguisher, portable type, complete with cylinder, hose, nozzle, operating valve, pressure gauge, mounting bracket, safety pin, identification signage, certification tags and all required accessories, conforming to applicable IS standards, including all labour, transportation, installation, testing and commissioning, complete as directed by the Engineer-in-Charge.	70.00	Nos	5,055.00	3,53,850.00
G9	Supplying, transporting, fixing, testing and commissioning of 6.8 kg Carbon Dioxide (CO ₂) fire extinguisher, portable type, complete with seamless horn/nozzle, operating valve, safety pin, mounting bracket, identification signage, certification tags and all accessories, conforming to relevant IS/Marine safety standards, cylinder, discharge including all labour, transportation to site, installation, testing and commissioning, complete as directed by the Engineer-in-Charge.	17.00	Nos	8,656.00	1,47,152.00
G10	Supplying and placing of marine-grade life jackets, SOLAS/approved type, made of buoyant material with reflective tapes, whistle, adjustable straps and fastening arrangements, suitable for adult use, complete with inspection tags and markings, including transportation to	40.00	Nos	1,510.00	60,400.00

	site, handling and placement in designated locations, complete as directed by the Engineer-in-Charge.				
G11	Supplying, transporting and fixing of life buoy rings, marine-grade, made of high-visibility buoyant material, complete with grab line/rope, mounting bracket, buoy light (where required), identification markings and accessories, suitable for marine and pontoon applications, including all labour, transportation, fixing in position and making good, complete as directed by the Engineer-in-Charge.	16.00	Nos	3,542.00	56,672.00
G12	Providing and Fixing CI cover of 32mm thickness with frame for cable trench, valve chambers etc including all materials, painting complete as per design and pattern required.	5.00	Nos	3,500.00	17,500.00
	Total cost of Part G				2,23,27,594.00
H. PARKING AREA DEVELOPMENT					
H1	Providing and laying Dry Lean Concrete (DLC) of specified grade as sub-base below paver blocks in parking areas, including supply of cement, aggregates, water and admixtures, batching, mixing, transporting, spreading, leveling, compaction using mechanical vibratory equipment, finishing, curing and all incidental operations required to achieve the specified thickness, line and level. The item shall include preparation of the sub-grade, trimming, watering, protection of finished surface and all labour, tools, plant and materials necessary to complete the work in accordance with the drawings, specifications and to the satisfaction of the Engineer-in-Charge.	1,964.00	Cum	10,751.00	2,11,14,964.00
H2	Excavation in all types of soil, including ordinary soil, sand, silt, clay, gravel, and soft rock (not requiring blasting), to the required lines, levels, and grades; including trimming of sides, dressing of bottom, dewatering if required, shoring and strutting as necessary, stacking of serviceable material, and disposal of excavated earth to the designated location; complete with all labour, tools, equipment, and incidental works as directed.	15,107.00	Cum	581.00	87,77,167.00
H3	Providing and laying approved sand fill as bedding layer below paver blocks in parking areas and pavements, in layers not exceeding the specified thickness, including spreading, levelling, watering and compacting to achieve the required density and uniform surface as per specifications. The item shall include preparation and trimming of the subgrade, testing of compaction, correction of levels, and provision of a smooth and even bedding surface for placement of paver blocks, along with all labour, materials, tools, equipment and incidentals necessary to complete the work as directed by the Engineer-in-Charge.	756.00	Cum	1,081.00	8,17,236.00

H4	Providing and laying load distribution blanket over prepared subgrade in paved and traffic areas, comprising approved graded granular material or engineered fill as specified, laid in layers of required thickness, spread, watered and compacted to the specified density to improve load carrying capacity and reduce differential settlement. The item includes preparation and trimming of subgrade, supply and placement of materials, compaction using suitable mechanical equipment, testing of density and levels, and all labour, tools, plant and incidentals required to complete the work in accordance with the drawings, technical specifications and to the satisfaction of the Engineer-in-Charge.	7,554.00	Cum	960.00	72,51,840.00
H5	Supplying, transporting to site, placing, spreading, grading, watering, compacting, curing and testing Wet Mix Macadam (WMM) of specified thickness, laid to the required line, level and camber on the reclamation area and other structures as shown in the drawings, in accordance with the specifications. The item includes supply of all materials, labour, minor tools and tackles, testing of compaction and levels, and all incidentals required to complete the work to the satisfaction of the Engineer-in-Charge.	3,022.00	Cum	2,672.00	80,74,784.00
H6	Supplying, laying and fixing precast concrete paver blocks of approved type, shape, thickness and colour in parking areas, pavements and other locations as shown in the drawings, over prepared sand bedding layer, including placing, alignment, interlocking, cutting of pavers to required shape and size, filling of joints with fine sand, compaction using plate vibrator and finishing to true line, level and slope. The item includes all labour, tools, equipment, handling, wastage and all incidentals required to complete the work in accordance with the drawings, specifications and to the satisfaction of the Engineer-in-Charge.	15,107.00	Sqm	1,001.00	1,51,22,107.00
H7	Designing, fabricating, supplying, transporting and erecting security unit of specified size and configuration as shown in the drawings, comprising structural steel frame, wall panels, roofing, doors, windows, flooring and all associated fixtures and fittings. The item includes surface preparation, painting or protective coating, electrical conduits, lighting points, switches, glazing, locks, ventilation, anchoring to foundation, alignment, testing and commissioning, along with all labour, materials, tools, plant and incidentals required to complete the unit in accordance with the drawings, specifications and to the satisfaction of the Engineer-in-Charge.	1.00	Nos	10,00,000.00	10,00,000.00
H8	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.	20.00	Rmt	550.00	11,000.00

Total cost of Part H				6,21,69,098.00	
I.STORM DRAIN					
I1	Providing and laying Cast in-situ Reinforced Cement Concrete (RCC) of M-40 grade using 20 mm and down-size graded crushed stone aggregates/gravel for structural components such as foundation, beams and slabs in storm drain. 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, centring, 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.	408.00	Cum	17,221.00	70,26,168.00
I2	Providing and laying Plain Cement Concrete (PCC) of M20 grade using approved cement, fine and coarse aggregates and water, in foundations, beds, plinths or other locations as shown in the drawings, including batching, mixing, transporting, placing, compacting, finishing and curing complete. The item includes preparation of the subgrade, formwork wherever required, all labour, materials, tools, plant and incidentals necessary to complete the work in accordance with the specifications and to the satisfaction of the Engineer-in-Charge.	48.00	Cum	10,818.00	5,19,264.00
I3	Supply, deliver and transportation of steel reinforcement bars of grade Fe500D for storm drain with corrosion resistant elements and having a minimum yield strength of 500 N/mm ² and minimum elongation of 16% or equivalent confirming to IS 1786 (with ISI Mark) and fabrication and fixing of reinforcement as per drawing for foundation, columns, beams, slab 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.	62.00	MT	1,08,057.00	66,99,534.00
I4	Excavation in all types of soil, including ordinary soil, sand, silt, clay, gravel, and soft rock (not requiring blasting), to the required lines, levels, and grades; including trimming of sides, dressing of bottom, dewatering if required, shoring and strutting as necessary, stacking of serviceable material, and disposal of excavated earth to the designated location; complete with	1,131.00	Cum	581.00	6,57,111.00

	all labour, tools, equipment, and incidental works as directed.				
15	Providing and laying approved sand fill as bedding layer below storm drain in parking areas, in layers not exceeding the specified thickness, including spreading, levelling, watering and compacting to achieve the required density and uniform surface as per specifications. The item shall include preparation and trimming of the subgrade, testing of compaction, correction of levels, and provision of a smooth and even bedding surface for construction of storm drains, along with all labour, materials, tools, equipment and incidentals necessary to complete the work as directed by the Engineer-in-Charge.	63.00	Cum	1,081.00	68,103.00
Total cost of Part I					1,49,70,180.00
J. COMPOUND WALL					
J1	Providing and laying Cast in-situ Reinforced Cement Concrete (RCC) of M-40 grade using 20 mm and down-size graded crushed stone aggregates/gravel for structural components such as foundation, columns beams and slabs in compound wall. 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, centring, 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.	695.00	Cum	17,221.00	1,19,68,595.00
J2	Providing and laying Plain Cement Concrete (PCC) of M20 grade using approved cement, fine and coarse aggregates and water, in foundations, beds, plinths or other locations as shown in the drawings, including batching, mixing, transporting, placing, compacting, finishing and curing complete. The item includes preparation of the subgrade, formwork wherever required, all labour, materials, tools, plant and incidentals necessary to complete the work in accordance with the specifications and to the satisfaction of the Engineer-in-Charge.	118.00	Cum	10,818.00	12,76,524.00
J3	Supply, deliver and transportation of steel reinforcement bars of grade Fe500D for compound wall with corrosion resistant elements and having a minimum yield strength of 500 N/mm2 and minimum elongation of 16% or equivalent conforming to IS 1786 (with ISI Mark) and fabrication and fixing of reinforcement as per drawing for foundation, columns, beams, slab etc. including cost of	66.00	MT	1,08,057.00	71,31,762.00

	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.				
J4	Excavation in all types of soil, including ordinary soil, sand, silt, clay, gravel, and soft rock (not requiring blasting), to the required lines, levels, and grades; including trimming of sides, dressing of bottom, dewatering if required, shoring and strutting as necessary, stacking of serviceable material, and disposal of excavated earth to the designated location; complete with all labour, tools, equipment, and incidental works as directed.	5,675.00	Cum	581.00	32,97,175.00
J5	Providing and laying approved sand fill as bedding layer below storm drain in parking areas, in layers not exceeding the specified thickness, including spreading, levelling, watering and compacting to achieve the required density and uniform surface as per specifications. The item shall include preparation and trimming of the subgrade, testing of compaction, correction of levels, and provision of a smooth and even bedding surface for construction of storm drains, along with all labour, materials, tools, equipment and incidentals necessary to complete the work as directed by the Engineer-in-Charge.	111.00	Cum	1,081.00	1,19,991.00
J6	Construction of AAC block masonry for compound wall, using factory-made Autoclaved Aerated Concrete (AAC) blocks of approved make, size, and strength, laid in approved cement mortar of specified grade, including soaking of blocks (where required), proper alignment, plumbing, levelling, and bonding; raking of joints, curing, and scaffolding; cutting and shaping of blocks; and including all materials, labour, tools, tackles, consumables, and incidental works complete — as per drawings, specifications, and the directions of the Engineer-in-Charge.	336.00	Cum	8,722.00	29,30,592.00
J7	Providing and applying 20 mm thick cement plaster in two coats to walls / surfaces, comprising 12 mm thick base coat in cement mortar of specified proportion and 8 mm thick finishing coat in cement mortar of specified proportion, including surface preparation, hacking / roughening, cleaning, wetting, application of plaster with proper line, level, plumb, and finish; rounding of edges where	3,378.00	Sqm	383.00	12,93,774.00

	required; curing for the specified period; and including all materials, labour, scaffolding, tools, tackles, and consumables complete — as per drawings, specifications, and the directions of the Engineer-in-Charge.				
J8	Providing and applying exterior painting with premium quality acrylic exterior emulsion paint , of approved make and shade, in two coats over one coat of suitable exterior primer, to plastered / masonry / concrete surfaces, including surface preparation such as cleaning, scraping, sandpapering, removal of loose paint, dust, dirt, algae, and efflorescence; application of primer and finish coats with proper tools to achieve uniform shade and finish; curing / drying between coats as specified; and including all materials, labour, scaffolding, tools, tackles, and consumables complete — as per manufacturer's recommendations, drawings, specifications, and the directions of the Engineer-in-Charge.	3,378.00	Sqm	157.00	5,30,346.00
J9	Supply, fabricate, transport, handle and erect in position of Structural steel shapes, plates , special plates and built-up sections in compound wall confirming to steel grades specified in construction drawings and specifications including profile cutting, assembling, hoisting, fixing in position, welding, inspection and painting of priming coat and top coat as per drawings and specification including cost of all materials, fitting charges, all labour charges, transportation charges and minor tools etc. complete. The cost shall include all fabrication, transportation of the support frame assembly, minor equipment, installation of frame on to the piles and all labour charges etc. complete.	105.00	MT	1,80,552.00	1,89,57,960.00
J10	Supplying and fixing barbed wire fencing, comprising high-tensile / galvanised barbed wire of approved gauge and make, stretched and fixed in multiple horizontal rows to steel angle fence posts at specified spacing, including straining, tensioning, tying with GI binding wire, and fixing with staples / clamps / bolts; providing and fixing corner posts, end posts, struts, stays, and turnbuckles as required; excavation, concreting, and backfilling for posts; and including all materials, labour, tools, tackles, consumables, scaffolding, and incidental works complete — as per drawings, specifications, and the directions of the Engineer-in-Charge.	215.00	Rmt	225.00	48,375.00
J11	Fabricating, supplying, transporting and installing main gate for the parking area of specified dimensions as shown in the drawings, fabricated from structural steel sections, plates and members including frames, shutters, stiffeners, hinges, locking arrangements, rollers, guides and all necessary fittings. The item includes shop fabrication, welding, surface preparation, application of primer and finishing coats of paint, transportation to site, erection, alignment, fixing in position, testing for smooth operation and all labour, tools, plant and incidentals required to complete the work in	3.00	Nos	2,50,000.00	7,50,000.00

	accordance with the drawings, specifications and to the satisfaction of the Engineer-in-Charge.					
Total cost of Part J						4,83,05,094.00
Total estimated project cost						73,01,54,711.00

Note : The bidders shall submit the plus (+) or (-) percentage to be multiplied on the total contract price in the online bid form.

The above unit rates multiplied by the percentage increase or decrease as quoted by the contractor shall be used for the calculation of actual payment to the contractor.

The payment shall be made for items based on the above calculated unit rates using the stages specified in Table B.2

B.2 Definition of stages for partial payment

Sl. No	Item description	Payment Procedure
(1).	Steel pontoon (For items A1 and A2)	Payment shall be made on supply, fabrication, and erection of pontoon as per the actual quantity completed as a unit. Payment can be divided as follows if required for intermediate payment to facilitate the cash flow. a) 50% upon receipt of material at yard for the fabrication as per approved material and QAP documents or part thereof. b) 40% upon completion of fabrication of the pontoon including testing, 3rd party inspection of fabrication. c) 10 % upon completion of fabrication as single unit, certification and successful commissioning at site in operational condition. a) The above shall be worked out based on the quoted rates by the contractor.
(2).	Steel Linkspan Bridge (For items B1 and B2)	Payment shall be made on supply, fabrication, and erection of linkspan bridge as per the actual quantity completed as a unit. Payment can be divided as follows if required for intermediate payment to facilitate the cash flow. a) 50% upon receipt of material at yard for the fabrication as per approved material and QAP documents or part thereof. b) 40% upon completion of fabrication of the linkspan bridge including testing, 3rd party inspection of fabrication as a single unit. c) 10 % upon certification and successful commissioning at site in operational condition. a) The above shall be worked out based on the quoted rates by the contractor.
(3).	Linkspan support Piles (For items D2 and E2)	Payment shall be made on supply, fabrication, and delivery of piles as per the actual quantity site.

Sl. No	Item description	Payment Procedure
		<p>a) 75% upon receipt of material at yard for the fabrication as per approved material and QAP documents or part thereof.</p> <p>b) 25% upon fabrication and driving of steel piles to the required depth as per drawings and specification.</p> <p>Payment shall be made on actual quantity of certified measurements.</p>
(4).	<p>Linkspan support super structure frame.</p> <p>(For items E6 & E7)</p>	<p>Payment shall be made on supply, fabrication, and delivery of assembled structure as per the actual quantity site.</p> <p>c) 50% upon receipt of material at yard for the fabrication as per approved material and QAP documents or part thereof.</p> <p>d) 25% upon fabrication and assemble of support frame as per GFC drawings.</p> <p>e) 25% upon installation of the superstructure on top of the piles.</p> <p>Payment shall be made on actual quantity of certified measurements.</p>
(5).	<p>Fenders, Bollards, and its Fixtures</p> <p>(For items A4, A5, A6, D13 and F1)</p>	<p>Payment shall be made on supply, erection, and commissioning of items as per the rate quoted by the contractor against each item. Payment can be divided as follows if required for intermediate payment to facilitate the cash flow.</p> <p>a) 70% on Delivery of fenders, bollards and fixtures complete at site.</p> <p>b) 30% on completion of erection of all fenders, bollards, and fixtures.</p> <p>The above shall be worked out based on quoted rates by the contractor.</p>
(6).	<p>Ballast pumps and piping</p> <p>(For items A12)</p>	<p>Payment shall be made on supply, erection, and commissioning of items as per the rate quoted by the contractor against each item. Payment can be divided as follows if required for intermediate payment to facilitate the cash flow.</p> <p>a) 70% On Delivery of equipment, cables, and fixtures at site</p> <p>b) 30% On completion of erection and commissioning</p> <p>The above shall be worked out based on quoted rates by the contractor.</p>
(7).	<p>Precast elements</p> <p>(For items C7)</p>	<p>Payment shall be made on fabrication and erection of precast elements as per the rate quoted by the contractor against each item. Payment can be divided as follows if required for intermediate payment to facilitate the cash flow.</p> <p>a) 60% On fabrication of precast elements at yard</p> <p>b) 40% On erection of the precast elements at site as per drawings and specifications</p> <p>The above shall be worked out based on quoted rates by the contractor.</p>
(8).	<p>All other items of BOQ as per Schedule B</p>	<p>Payment shall be made on completion of work to the satisfactory acceptance by Engineer's Representative and/or Third-Party inspection agency / certification society inspection.</p>

Sl. No	Item description	Payment Procedure
(9).	Electrical works (For items G1, G2 and G3)	<p>Payment shall be made on supply, delivery, erection and commissioning of the electrical items at site. Payment can be divided as follows if required for intermediate payment to facilitate the cash flow.</p> <p>a) 50% upon receipt of material at yard for the electrical items.</p> <p>b) 25% upon erection of the electrical fixtures at site as per drawings and specifications.</p> <p>c) 25% upon commissioning of the electrical fixtures as per required specifications.</p> <p>Payment shall be made on actual quantity of certified measurements.</p>

Contractor

Executive Engineer (H)
Deendayal Port Authority