

CIVIL ENGINEERING DEPARTMENT

TENDER SCHEDULE

File No: CIV / 112 / 2009/ AGM (CE)

Extension of Quay III - Construction of Quay wall, Crane track and allied works

Sl No.	Description of work	Qty	Unit	Rate	Amount
<u>Part I - Quay wall, Crane track, Drain & other allied works</u>					
1	Dismantling barbed wire and concertina wire fencing and M S angle frame above the compound wall, stacking reusable materials and disposal of debris with in CSL premises including all labour, other incidentals, hire charges for trucks / Lorry etc. complete. (Measurement will be per running metre of compound wall)	320 m	m		
2	Dismantling, clearing away and carefully stacking materials useful for reuse for any thickness of wall of brick/ concrete blocks rubble masonry foundation of compound wall in cement mortar and disposal of debris & stacking useful materials within CSL premises, cost of earth work, back filling including all labour, other incidentals, hire for tools and plants etc. complete.	240.00 m ³	m ³		
3	Dismantling , clearing away and carefully stacking materials useful for reuse the rubble foundation for compound wall (hand packed rubble revetment over double layered bamboo mat) foundation below water level, clearing away the base mat, disposal of debris and stacking usable materials within CSL premises including all labour, other incidentals, hire for tools and plants etc. complete. (Rate is inclusive of demolishing the RCC belt / blocks and separately stacking the reinforcement and disposing of debris and stacking reusable materials within CSL premises)	1640.00 m ³	m ³		

4	Dismantling, clearing away and carefully stacking materials within CSL premises the existing drainage pipe of cast Iron approx. 685mm dia including all labour, cost of excavation, backfilling, other incidentals etc. complete.	50 m	m
5	Dismantling existing RCC catch pits of size approx.1.3m x 1.4m x 2m depth and disposal of debris and stacking usefull materials including reinforcement within CSL premises including all labour, cost of excavation, backfilling, other incidentals etc. complete.	1 No.	E
6	Dismantling carefully without any damage existing oxygen gas pipe line of size approx. 50mm dia G.I pipe and stacking with in CSL premises including all labour, hire for tools and plants, other incidentals etc. complete.	300.00 m	m
7	Demolishing the existing bituminious road consisting of various stratas appx. 400mm thick such as concreting, water bound macadam, soling stone, bitumen concrete/cement concrete and carefully stacking the reusable material and disposal of debris with in CSL premises etc. complete.	110.00 m ³	m ³
8	Demolishing dumped concrete to line and level with the excavation in the old batching plant area to enable for laying tie rod/ connecting anchor wall etc. (anchor wall beam at (- 3.10m level) using mechanicl equipments in line and level with the excavation and clearing away the debris within CSL premises, spreading to level including hire charges for trucks, hire charges of all equipments, tools, all labour, other incidentals etc.complete.	4000.00 m ³	m ³
9	Dismantling soling stone of 150mm size approx. at pile locations of proposed trolley duct in the existing Quay for enabling RCC piling including carefully stacking the		

	usable material and disposal of all materials with in CSL premises including all labour, other incidentals, earth work excavation, hire charges for trucks / Lorry etc. complete.	25 m ³	m ³
10	Demolishing/ cutting by chipping / machine cutting the existing RCC M 25 quay wall, anchor wall, trolley duct, endstopper, existing 100 T bitt foundation top etc. for extending the service ducts to line and level without damaging the structure/ SSP / tie rods for joining the new S.S.P for quay wall extension and disposal of demolished materials with in CSL premises including all labour,hire charges of tools and plants, hire charges of trucks/ lorry, other incidentals etc. complete.(Rate is inclusive of thorough cleaning the chipped surface using compressed air/ water jet etc.)	45.00 m ³	m ³
11	Uprooting and removing stumps of trees of all girths including all labour, cost of earth work excavation, back filling, hire charges of tools and plants, hire charges of trucks/ lorry, disposal within CSL premises, other incidentals etc. complete.	75.00 Nos.	E
12	Earthwork excavation to line & level in all kinds of soils except hard rocks as per approved drawing including cost of shuttering, shoring, strutting wherever required, dewatering the area by means of well point system and disposing the excavated earth at areas designated for the purpose (inside or outside CSL) spread to line and level and dressing up neatly including grading the top surface for easy drainage and lift as specified below including all labour, hire charges of equipments, trucks/ lorry, other incidentals etc. complete for the successful completion of the work.(Rate is inclusive of installing, maintaining, dismantling and removing the well point system after completion of works or after getting approval from Engineer - in charge, clearing & removing materials such		

as steel scraps, wooden piece, concrete blocks, rubble etc. if any burried in the area of excavation and dismantling and removing the shoring/strutting after the successful completion of the work. (The layout for the well point system shall be prepared by the contractor and got it approved by the engineer-in-charge before execution)

(I) Upto 3.5m	18500.00 m ³	m ³
(ii) Beyond 3.50m	3000.00 m ³	m ³
(iii) Disposal within CSL premises	17700.00 m ³	m ³
(iv) Disposal outside CSL within 3 Km	1000.00 m ³	m ³
(v) Extra for every additional 1 Km lead and part there of outside CSL	1000.00 m ³	m ³

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|----|---|------------------------|----------------|
| 13 | Earthwork excavation in ordinary soil for lift upto 1.5m including shuttering, dewatering, leading water into drains, depositing the excavated earth within a lead of 50m, all labour, other incidentals etc. complete for the successful completion of the work. | 4200.00 m ³ | m ³ |
| 14 | Supplying and fixing in position by welding stainless steel nuts for 25 mm dia bolts to sheet piles prior to driving down to facilitate fixing of aluminium anodes as per approved drawing including cost and conveyance of all materials, all labour, other incidentals etc. complete (Grade of SS shall be 316/ 316 L) | 320.00 Nos | E |
| 15 | Supplying and driving down Z type steel sheet piles having section modulus not less than 2510cm ³ per metre length of wall of approximate 24m length to line and level including making reformed steel sheet piles at required positions as corners, junction, wedges etc. as per approved drawing and specification in single or group jointing by welding properly, driven vertically through the grooves to interlock together, wedges to make up for the permissible deviation of piles from the plumb lines caused during pile driving, slipped piles with the adjacent | | |

ones are found or loosened or dislocated during or after driving, sheet piles shall be pulled out and replaced with new ones or redone including necessary modification to the sheet pile to suit the groove of existing sheet pile (Nipon Z type), cost and conveyance of all materials, hire charges of equipments, hire charges of crane/rigs, cost of electrodes, mobilisation and demobilisation charges, all labour, other incidentals etc complete. (No extra payment shall be made for cost of extraction and replacement for driving of sheet pile violating specification or rejected by Engineer -in-charge. The rate is inclusive of providing guide frames, cost of driving pit, formation and removal of earthen bund and all cost of drilling holes for connecting waling channel, Tie rods etc.)

670.00 T T

16 Supplying, fabricating and installing in position waling channel I.S 226 / 2062 quality to sheet piles to correct line and level as per approved drawing and specification with required accessories such as plates, bolt & nuts etc. for connecting with sheet piles as well as for splicing the channels, welding the channel joints to achieve the properties of the section / welding of connecting plates etc including cost and conveyance of all materials, cost of drilling holes, hire charges of equipments, hire charges of crane, cost of electrodes, cost of fixing with bolts, nuts & washers, all labour, painting one coat of zinchromite primer after rubbing and cleaning the surface with mechanical wire brushing, sand paper, other incidentals etc complete.(Rate quoted shall be for supplying, fabricating, drilling holes and fixing waling channels to SSP only and cost of accessories such as connecting plates, bolts & nuts etc shall be measured and paid seperately)

9.00 T T

17 Cleaning the tierods and accessories with mechanical wire brushing and painting with two coats of coal tar epoxy paint over one coat of coal tar epoxy primer

	including cost and conveyance of all materials, labour, other incidentals etc. complete.		
	(a) 50mm dia	100.00 Sets	Set
	(b) 55mm dia	24.00 Sets	Set
	(c) 70mm dia	12.00 Sets	Set
18	Spirally wrapping the tie rods with 50 percent overlap, twice with bitumen impregnated hessian cloth conforming to I.S 1322 type 3, grade II using blown grade bitumen 90/15 or 85 / 25 grade including cost and conveyance of all materials, labour, other incidentals etc. complete.		
	(a) 50mm dia	100.00 Sets	Set
	(b) 55mm dia	24.00 Sets	Set
	(c) 70mm dia	12.00 Sets	Set
19	Supplying assembling and installing in position tie rods and accessories of following dia of assembled length of approximate 26m in 4 different pieces as per approved drawing and specifications and construction sequence using the required accessories such as ring joints, turn buckle, bolts and nuts, washers as per approved drawing and specification, aligned and tightened well and connecting with ssp waling channel already installed and anchor wall including hire charges of equipments, tools & plants, all labour, other incidentals etc. complete. (Rate quoted shall be inclusive of cost of all accessories like ring joint, turn buckle, bolts, nuts and washers.)		
	(I) 50mm dia	100.00 Sets	Set
	(il) 55mm dia.	24.00 Sets	Set
	(iii) 70mm dia.	12.00 Sets	Set
20	Supplying and filling gravel in layers not exceeding 150mm thick each and consolidated well to line and level including cost and conveyance of materials, hire charges of tools and plants, all labour, other incidentals etc complete	1000.00 m ³	m ³

21	Supplying and packing soling stone of 150mm to 200mm size I.S hard granite broken stone in front of anchor wall in layers not more than 600mm thick including hand packing and wedging them tightly, spreading departmental river sand / M sand, sweeping the same and watering profusely to fill the voids so that the whole is formed as a solid mass to line and level the including cost and conveyance of all materials, hire charges of tools and plants, hire charges of vehicles, all labour, other incidentals etc complete. (Payment will be made for the quantity as per the final dimension of packing)	4700.00 m ³	m ³
22	Supplying and stacking at site good quality river sand / M sand in standard stack for soling stone packing, including cost and conveyance of materials, labour other incidentals etc. complete for pre-measurement.	1500.00 m ³	m ³
23	Guniting the top and sides of cobble stone (above the tie rod level) with cement mortar 1:3, 50mm thk including providing a layer of chicken mesh of size 20x20x22gx22g or nearest size as reinforcement including cost and conveyance of all materials, hire charges of tools and plants, all labour, curing, incidentals etc complete.	1800.00 m ²	m ²
24	Supplying and banking with river sand / M sand in layers not exceeding 200mm thick each and consolidated by watering, ramming with steel rammers / mechanical vibrators and mechanical compaction on each layer for maximum consolidation (minimum compaction is 75 % proctor optimum density) and the topmost surface shall be dressed neatly to line and level and consolidated with 1/2 ton roller as per approved drawing including cost and conveyance of materials, hire charges of tools and plants, roller, all labour, other incidentals etc complete.	10000.00 m ³	m ³
25	Banking with available good excavated earth / river sand in layers not exceeding 200mm thk each and		

	consolidated by watering, ramming with steel rammers/ mechanical vibrators and top most surface shall be dressed neatly to line and level and consolidated with 1/2 ton roller, including cost and conveyance of all materials, hire charges of tools and plants, roller, all labour, other incidentals etc complete.	6000.00 m ³	m ³
26	Providing and laying P.C.C 1:3:6 using 20mm I.S nominal size hard granite broken stone as per approved drawing including cost and conveyance of all materials, labour for mixing, laying, consolidating by ramming, curing, cost of formwork, hire charges for tools and plants, cost for dewatering and leading water to drains, other incidentals etc. complete excluding cost of cement.	320.00 m ³	m ³
27	Providing and laying P.C.C 1:4:8 for drain using 40mm I.S nominal size hard granite broken stone as per approved drawing including dewatering and leading water into drain, cost and conveyance of all materials, labour for mixing, laying, consolidating by ramming, curing, cost of formwork, hire charges for tools and plants, cost for dewatering and leading water to drains, other incidentals etc. complete excluding cost of cement.	100.00 m ³	m ³
28	Providing and laying R.C.C 1:2:4 for drain using 20mm I.S nominal size hard granite broken stone as per approved drawing including cost and conveyance of all materials, labour for mixing, laying, consolidating, curing, cost of formwork, hire charges for tools and plants, cost for dewatering and leading water to drains, other incidentals etc. complete excluding cost of cement.	290.00 m ³	m ³
29	Fabricating and placing in position torsteel reinforcement to size and shape as per approved drawing including cost and conveyance of all materials, labour for uncoiling, straightening, cutting, bending, binding, lapping / welding the reinforcement to sheet pile etc. for RCC items, hire		

charges of welding equipment, tools and plants, cost of welding electrodes etc. complete but excluding cost of reinforcement. (Rate is inclusive of cost of binding wire 22 guage and supplying & fixing by welding 32 x 5 M.S flat @ 2m interval to the reinforcement for piles)

(a) Piling

270.00 T T

(b) Quay wall & crane track works, ducts and drain

345.00 T T

30 Testing the load carrying capacity of the RCC piles 650mm dia of length approximate 45m by routine test at a maximum load 210T or upto the load at which the total settlement attains a value of 12mm whichever is earlier including cost and conveyance of all materials, labour as per I.S 21911

1 No E

31 Conducting insitu standard penetration text at a depth of 40m to 45m inside the pile bore hole of diameter 650mm dia. (2Nos.) & 500mm dia. (2Nos.) to ascertain the N value, all complete and as directed by Engineer in charge.

4 Nos. E

32 Providing in position cast in place reinforced concrete, M-30 grade bored piles (DMC piles) of following dia, 40 to 45m long in line and level using 20mm I.S. nominal size hard granite broken stone as per approved drawing and specification. The rate shall include boring through various classes of soil except rock, cost of labour, hire charges of equipments, cost and conveyance of all materials except cost and fabrication charge of reinforcement, cost of cement, but includes cost of bentonite slurry, hire charges of piling equipments, consumables, tools and plants, vehicles, mobilisation and demobilisation charges, all over heads, disposing off used bentonite, muck and debris outside Cochin Shipyard and removal of laitenance. (Pile length for payment will be reckoned from cutoff level only but cement consumption for casting excess length required

above cutoff level will be accounted and paid under cement supply item).

(a) 650mm dia	7700.00 m	m
(b) 500mm dia	4500.00 m	m

33 Chipping, cutting and removing excess length of RCC piles of following dia in line and level carefully without damaging the remaining portion, exposing the reinforcement and cleaning the reinforcement with wire brush for embedding in concrete as per approved drawing, sawing, gas cutting the reinforcement and removal of debris within CSL premises etc. complete all as directed by Engineer - in- charge.

(a) 650mm dia	170.00 Nos	E
(b) 500mm dia	100.00 Nos	E

34 Providing and laying R.C.C M 25 using 20mm I.S nominal size hard granite broken stone as per approved drawing including cost and conveyance of all materials, labour for mixing, laying, consolidating using power vibrators, curing, hire charges for tools and plants, cost for dewatering and leading water to drains, wherever necessary for placing the concrete in dry condition, including cost of shuttering and deshuttering, other incidentals etc. complete but excluding cost and fabrication charges of reinforcement and cost of cement. (Rate is inclusive of labour for fixing in line and level all the nylon cased steel coils, other hardware embedments etc. during concreting for coping beam, crane track and other structures).

(i) Coping wall, anchor wall, bott foundation & crane track	3050.00 m ³	m ³
(ii) Cable pit, Piping duct, cable duct, drain crossing & catch pit	550.00 m ³	m ³

35 Supplying and installing in position bolt and nuts conforming to I.S 1362 / 1367 for fixing waling channel and splicing web & flange as per approved drawing and

	specification including cost and conveyance of all materials, all labour, other incidentals etc. complete.	6.00 T	T
36	Supplying and installing in position steel plates with necessary fixing horns wherever necessary including cost and conveyance of all materials, all labour for straightening, cutting, fabricating, welding/ bolting by drilling holes hire charges of tools and plants, cost of welding electrodes, painting one coat of epoxy primer for encased plates and two coats epoxy resin paint over one coat epoxy primer on exposed plates after rubbing and cleaning the surface by mechanical wire brushing, other incidentals etc. complete.	15.00 T	T
37	Furnishing and installing in position M.S chequered plate of 8mm thickness for covers of service ducts, trolley ducts on cutting to suit the shape and size including cost and conveyance of all materials, all labour for straightening, cutting, welding/ providing countersunk bolt holes for 16mm dia screws wherever necessary, painting two coats of coal tar epoxy paint over two coats of epoxy primer after rubbing and cleaning the surface, other incidentals etc. complete. (Cost of counter sunk screws will be paid separately)	77.00 T	T
38	Supplying and installing in position 16mm dia counter sunk brass screw as per approved drawing and specification including cost and conveyance of all materials, all labour, other incidentals etc. complete	2100.00 Nos	E
39	Supplying and installing M.S angle / flats with necessary fixing horns wherever necessary as per approved drawing and specification including cost and conveyance of all materials, all labour for straightening, cutting ,welding / bolting, all labour, hire charges of equipments, painting two coats of epoxy resin paint over two coats of epoxy primer, cost of electrodes, all labour, other		

	incidentals etc complete.	68.00 T	T
40	Supplying and installing M.S dipped galvanised angle with necessary fixing horns for trolley duct to line and level as per approved drawing and specification including cost and conveyance of all materials, all labour for straightening, cutting ,welding, all labour, hire charges of equipments, cost of electrodes, all labour, other incidentals etc complete.	1.75 T	T
41	Supplying, Fabricating and erecting in position Stainless steel pipe of grade 316-L, schedule 10 for staircase hand rail as per approved drawing including cost and conveyance of all materials, all labour for straightening,cutting, bending, welding / bolting, hire charges of tools and plants, welding equipment, cost of electrodes consumables, closing the ends of pipes etc.complete.(Rate shall include supplying and fixing SS anchor plates in concrete for fixing the hand rail.)		
	(i) 40mm OD	40.00 m	m
	(ii)SS anchor plate & fixing horn	20.00 kg	kg
42	Supplying and installing in position M.S ring in 25mm dia bars along with 30mm dia M.S anchor rods as per approved drawing including cost and conveyance of all materials, hire charges of tools and plants, welding equipment, cost of electrodes consumables, painting two coats of coal tar epoxy paint over two coats of epoxy primer on exposed surface, all labour for cutting, welding, bolting etc.complete.	75 Nos	E
43	Supplying and installing in position M.S festoon chain as per approved drawing and specification including cost and conveyance of all materials, all labour, painting two coats coal tar epoxy paint over two coats of epoxy primer, other incidentals etc. complete.	150.00 m	m

44	Supplying and installing Filter using crushed stone 5 to 20mm size uniformly graded including cost and conveyance of materials, hire charges of tools and plants, all labour, other incidentals etc complete.	45.00 m ³	m ³
45	Furnishing and installing in position vinyl chloride pipe following dia or nearest available dia., 600mm long for tie rods as per approved drawing and specification including cost and conveyance of all materials, labour, other incidentals etc. complete.		
	(I) 65mm ID (minimum 2.1mm thk)	70.00 Nos	E
	(ii) 70mm ID (minimum 2.1mm thk)	20.00 Nos	E
	(iii) 85mm ID (minimum 2.5mm thk)	10.00 Nos	E
	(iv) 100mm ID (minimum 2.5mm thk)	30.00 m	m
	(v) 150mm ID (minimum 3.7mm thk)	2000.00 m	m
46	Supplying and fixing PVC screen to suit 150mm dia. PVC pipe including cost and conveyance of all materials, labour, other incidentals etc. complete. (Thickness shall not be less than 4 mm)	60 Nos.	E
47	Supplying and laying 12mm thk or nearest available thickness bitumen impregnated resilient board for expansion joints to line and level including cost and conveyance of materials, labour, other incidentals etc. complete.	380.00 m ²	m ²
48	Supplying and installing in position m.s fabricated Bits of following capacity in position as per approved drawing and specification including cost and conveyance of all materials, hire charges of tools and plants, welding equipment, cost of electrodes consumables, all labour for cutting, welding, bolting, filling inside with M 25 grade concrete painting two coats of coal tar epoxy paint over two coats of epoxy primer on exposed surface etc. complete.(The rate shall include cost of welding the top plate after filling with concrete)		

	(I) 100 T Bitt	3.00 Nos	E
	(ii) 50 T Bitt	11.00 Nos	E
	(iii) 10 T Bitt	10.00 Nos	E
49	Furnishing and installing in position rubber fender of following size and specification(detailed under the head specification) to line and level as per approved drawing including cost and conveyance of all materials, labour, other incidentals etc. complete.(Rate quoted shall be inclusive of cost of bolts and all other accessories including drilling and fixing bolts wherever required, in existing concrete coping wall)		
	(i) 600 H x 2500 L	34.00 Nos	E
	(ii) 600 H x 2000 L	17.00 Nos	E
50	Supplying, straightening, cutting the edges (as detailed under the head specification) and fixing in position crane rail CR -100 as per I.S 3443 to line and level and fixing tightly with packings, clip fittings etc as per approved drawings including cost and conveyance of all materials, but excluding cost of all accessories for rail fixing, all labour, drilling, welding/bolting, cost of electrodes and consumables, hire charges of tools & plants, welding equipments, painting two coats of coal tar epoxy paint over two coats of epoxy primer on exposed surface after rubbing and cleaning by mechanical wire brushing etc.complete. (Measurement shall be made for running metre of crane rail. Rate shall be inclusive of producing certification from a approved agency for the rail alignment to be within the tolerance limit given under the head specification)	540.00 m	m
51	Supplying and erecting in position to line and level rail fastening devices and seating as per approved drawing for rail fixing including cost and conveyance of all materials such as rail clips, clip cushion, nylon cased steel coil, insert supporter, water tight spacer, stud bolt,		

	nut & washer, sole plate, all labour, cost of welding electrodes and consumables, hire charges of welding equipment, tools & plants, fixing the Nylon cased steel coil during concreting, painting two coats of coal tar epoxy paint over two coats of epoxy primer on exposed surface after rubbing and cleaning by mechanical wire brushing, other incidentals etc. complete.(Rate quoted shall be excluding cost of belt shaped pad)	1300.00 set	set
52	Furnishing and installing in position belt shaped pad as per approved drawing and specification including cost and conveyance of all materials, all labour, other incidentals etc. complete.	540.00 m	m
53	Supplying, fabricating and erecting in position structural steel work for jacking base and clamping device conforming to IS 226/2062 including erecting in position, aligning the erected structures in line and level during concreting, bolting or welding wherever required as per approved drawing, cost and conveyance of all materials, all accessories, hire charge of tools and plants, welding equipment, cost of electrodes, consumables, cost of bolts, nuts and washers, painting two coats of coal tar epoxy paint over two coats of epoxy primer on exposed surface after rubbing and cleaning by mechanical wire brushing, all labour, other incidentals, etc. complete. (Provision of bolt holes to be made as required at no extra cost).	10.00 T	T
54	Supplying and installing rail joint seat as per approved drawing including cost and conveyance of all materials, all accessories, hire charge of tools and plants, welding equipment, cost of electrodes, consumables, cost of bolts, nuts and washers all labour, other incidentals, etc. complete.(Rate shall be inclusive of painting two coats of coal tar epoxy paint over two coats of epoxy primer on exposed surface after rubbing and cleaning by		

	mechanical wire brushing)	2.00 T	T
55	Dismantling and refixing in position tie cover plate anchor in line and level as per approved drawing including cost and conveyance of all accessories such as 12 Nos of 16mm dia bolts, nuts, washers etc, welding wherever required, cost of welding electrodes, hire charges of tools and plants, all labour, other incidentals, painting with two coats of coal tar epoxy primer and two coats of coal tar epoxy paint after rubbing and cleaning the surface etc. complete.	2.00 Nos.	E
56	Supplying and fixing in position 250mm wide PVC water seal as per drawing and specification including cost and conveyance of all materials, labour, other incidentals etc. complete.	120.00 m	m
57	Supplying and laying mortar 1:2 comprising of 1 part cement and 2 part of sand as per drawing and specification including cost and conveyance of all materials, labour, other incidentals etc. complete.	25.00 m ³	m ³
58	Dismantling the existing end stopper and refixing in new position with threaded 'J' bolt 16mm dia. 500mm long with nuts and washers to line and level as per approved drawing including cost and conveyance of all materials, all accessories, hire charges of tools and plants, welding equipments, cost of welding electrodes, cost of bolts, nuts and washers, all labour, painting with two coats of coal tar epoxy paint over two coats of coal tar epoxy primer after rubbing and cleaning by mechanical wire brushing etc. complete excluding cost of end stopper but including cost of J bolts, nuts & washers.	2.00 Set	Set
59	Supplying and installing in position in position M.S round bar 16mm dia. as per approved drawing and specification including cost and conveyance of all materials, labour for		

	straightening, cutting ,welding, hire charges of equipments, cost of electrodes, painting two coats coal tar epoxy paint over two coat of epoxy primer after rubbing and cleaning by mechanical wire brushing , other incidentals etc complete.	1.00 T	T
60	Supplying, Fabricating and installing in position M.S escape ladders including fixing horns as per approved drawing including cost and conveyance of all materials, all labour, fixing the emedments during concreting, painting two coats coal tar epoxy paint over two coats of epoxy primer, other incidentals etc. complete.	5.00 Nos	E
61	Furnishing and installing in position aluminium alloy anode type H-110 of dimension (110 + 130) X 125X 1250mm to steel sheet piles under water by bolting with stainless steel bolts 20mm dia to the already welded nut on the steel sheet pileas per approved drawing and specification including cost and conveyance of all materials, all accessories, hire charge of tools and plants, consumables, cost of bolts, nuts and washers all labour, other incidentals, etc. complete.(Grade of S.S shall be 316/ 316L)	160.00 Nos.	E
62	Cement concrete 1:2:4 using 20mm nominal size broken stones and 40mm broken stones in proportion 1:1 for making precast concrete blocks (300mm square at top, 325mm square at bottom for edge connections all within a depth of 200mm) including cost and conveyance of all materials, formwork, mixing, placing, curing and providing chequered lines on the top surface, all labour, cost of conveying from place of casting other incidentals etc. complete excluding cost of cement.	800.00 m ³	m ³
63	Laying in position to correct line and level the departmental precast concrete block of size 300mmsquare x 320mmsquare x200mm thick and filling		

	the gaps with bitumen sand mix (bitumen @ 112 kg/m ³ of sand) finishing the surface neatly to line and level including cost and conveyance of all materials,conveyance of precast concrete blocks, all labour for mixing, laying and jointing,hire charges of tools & plants other incidentals etc. complete excluding the cost of precast concrete blocks.	4000.00 m ²	m ²
64	Plastering inside drain with CM 1:3, 12mm thick in one coat floated hard and trowelled smooth including cost and conveyance of all materials, labour, other incidentals etc complete, excluding cost of cement.	1500.00 m ²	m ²
65	Providing neat cement flushing coat over the plastered surface including cost and conveyance of all materials, labour, curing and other incidentals etc complete excluding cost of cement.	700.00 m ²	m ²
66	Supplying, fabricating and fixing in position M.S. Grill cover for drain as per approved drawing using 75mm x 8mm M.S flat in line and level including cost and conveyance of all materials, labour for cutting, welding, fabricating and conveying and placing in position, hire charges of welding equipment, tools and plants, cost of welding rods, painting the grill work with two coats coal tar epoxy paint over two coats of epoxy primer after rubbing and cleaning by mechanical wire brushing etc. complete.	34.00 T	T
67	Providing and laying in position C I pipe class B, 500mm dia. Conforming to relevant IS for drainage including providing strainers wherever required including cost and conveyance of all materials, labour, other incidentals etc. complete.	35.00 m	m
68	R.R. masonry in CM 1:6 using departmental rubble including cost and conveyance of all materials,labour and		

	other incidentals etc.complete but excluding cost of cement and rubble.	2.00 m ³	m ³
69	Providing solid block masonry using departmental blocks of size 300x 200x150mm / 300x150x100mm in CM 1:4 for all thickness of walls including cost and conveyance of all materials, labour, scaffolding, other incidentals etc. complete, excluding cost of cement.	5.00 m ³	m ³
70	Fencing with iron barbed wire 2 strand 12 gauge and concertina wire fencing through holes of M.S. 'Y' angle frame (both Y angle frame and fencing wire departmentally supplied free of cost) and fixing in line and level with necessary staples excluding cost of Y angle frame and barbed wire, concertina wire but including cost and conveyance of all materials, labour, all other incidentals, painting with two coats of aluminium paint over one coat of zinchromite primer after rubbing and cleaning the surface with mechanical wire brushing etc. complete (cost of PCC for fixing Y angle frame will be measured and paid seperately).	5.00 m	m
71	Supplying and stacking at site cement conforming to I.S. 8112/ 12269 (43/ 53) grade) portland cement.	3590.00 T	T
72	Supplying and stacking at site torsteel reinforcement bars conforming to I.S. 1786 of different diametres.	676.00 T	T

Part II - Road work

1	Sectioning upto 150mm thick and fixing the surface to line & level for water bound maccadam surfacing including all labour and consolidation by watering and bed rolling the surface, other incidentals etc. complete.	9300.00 m ²	m ²
2	Supplying and stacking at site good quality hard granite soling stone 150mm nominal size in standard stacks,		

	including cost and conveyance of all materials, labour, other incidentals etc. complete for pre-measurement.(measurement will be made after deducting 15% volume of voids from stack measurement)	1860.00 m ³	m ³
3	Supplying and stacking at site good quality silicious gravel in standard stacks, including cost and conveyance of all materials, labour other incidentals etc. complete for pre-measurement.	540.00 m ³	m ³
4	Supplying and stacking at site the following size hard granite broken stone in standard stack, including cost and conveyance of all materials, labour other incidentals etc. complete for pre-measurement.		
	(a) 40 mm & downgraded	1860.00 m ³	m ³
	(b) 36 mm	120.00 m ³	m ³
	(c) 12 mm	40.00 m ³	m ³
5	Supplying and stacking at site good quality river sand in standard stack, including cost and conveyance of all materials, labour other incidentals etc. complete for pre-measurement.	20.00 m ³	m ³
6	Supplying and stacking 80/100 grade bitumen in sealed drums (packed bitumen) produced by CRL/BPCL/HPCL/IOC at site, including cost and conveyance of all materials, loading and unloading charges, labour and other incidentals etc. complete.	7.00 T	T
7	Gravelling 75mm thick in two layers with departmental gravel and blinding material, spreading and forming gravel to template section watering, spreading and consolidating with power roller including hire charges of roller, all labour fencing, lighting, watching and maintaining the surface etc. complete.	1400.00 m ³	m ³

<p>8 Laying of stone soling with departmental soling stone spreading 200mm thk & consolidating upto 150mm thk. including packing with smaller stones wedging them tightly so that the whole is formed as a solid mass,spreading 25mm thick gravel earth and sweeping the same to fill the voids,watering properly and consolidating with power roller including all labour, hire charges of roller, other incidentals etc complete. (Payment will be made for quantity of only stone soling excluding binding material.)</p>	<p>1400.00 m³ m³</p>
<p>9 Metalling the area 100mm thick Compacted to 75mm using departmental 40mm downgraded coarse aggregate @ 1m³ /10m² and gravel for blinding material @0.33m³/10m² bed rolling, spreading broken stone uniformly to template rolling dry to compaction with power roller from sides to centre (sprinkling water slightly if necessary)until the movements of broken stone ceases,spreading silicious gravel @ 0.20m³/10m² over the surface uniformly at slow rate,booming the same into crevices dry rolling so that the voids are filled up,then copiously watering the surface and rerolling and then spreading gravel @ 0.13m³/10m² uniformly in successive thin layers watering properly and rerolling until the fines creamup ,sweeping the slurry into joints,watering the surface and rerolling until the slurry formed well after filling the voids form a wave ahead of wheels of the moving roller and then allowing the surface to dry for 24hrs fencing, lighthing,watching and maintaining the surface free of ruts for 10days etc complete including hire charges of roller,tools& plants labour and all other incidentals etc complete all as directed by the engineer-in-charge</p> <p>(i) Ist laver</p> <p>(ii) IInd laver</p>	<p>9300.00 m² m²</p> <p>9300.00 m² m²</p>

10 Semigrouting with hot bitumen 50mm finished thickness with sandflushing seal coat using departmental materials viz. 36mm metal @ 0.60m³ /10m² dry rolling with power roller 8T to 10T capacity, watering slightly and wet rolling, allowing the surface to dry for 24hrs uniformly applying bitumen @ 22kg/10m², then spreading 12mm broken stone @ 0.18m³ /10m² rolling with power roller, brooming the aggregate wherever required continuously rolling, and brooming till the surface is true to line and level and then providing sand flushing seal coat using departmental materials viz bitumen 6.72kg/10m² and sand 0.10m³/10m² after applying a tack coat of bitumen @ 5 kg/10m² including hire for roller, boiler & sprayer, labour, lighting, watching and all other sundry stores etc complete all as directed by the engineer-in-charge.

1900.00 m² m²

Total

Signature, Name & Address
of the Tenderer :

ASSISTANT GENERAL MANAGER (CIVIL)

Date :