



MAZAGON DOCK SHIPBUILDERS LIMITED

(Formerly known as Mazagon Dock Ltd.)

CIN : U35100MH1934GOI002079

(A Government of India Undertaking)

Shipbuilders to the Nation

Dockyard Road, Mazagon,

Mumbai 400 010.

INDIA

**Replacement of Roof/ Cladding Sheets,
Painting to the structural members including
minor civil repair and electrical works of cable
shed A, B, 7-C & PPT Plant at Anik Chembur,
MDL, Mumbai**

VOLUME-III

**Scope of Work
List of Tender Drawings
Price Bid (Part-II)**

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1. कार्य का ब्योरा / SCOPE OF WORK

1.1. Scope of Work in brief is as under

1.1.1. Civil Work:

- a) Dismantling all existing AC Sheets along with its accessories (Ridge, Eaves/Gable flashing, corner pieces, Turbo vents etc.) and providing new 0.7mm thick colour coated Galvalume Trapezoidal Steel Sheet at roofing, cladding, side louvers/chajjas, etc. along with accessories (Ridge, Eaves/Gable flashing, corner pieces, etc.).
- b) Dismantling existing GI Sheets along with accessories (Ridge, Eaves/Gable flashing, corner pieces, turbo vents etc.) and providing new 0.7mm thick colour coated Galvalume Trapezoidal Steel Sheet at roofing, cladding, side louvers/chajjas, etc. along with accessories (Ridge, Eaves/Gable flashing, corner pieces, etc.).
- c) Dismantling all existing gutters and providing Aluminium gutter 2mm thick with GI brackets 40x5mm/50x5mm size at a distance of 1m c/c.
- d) Providing 2mm thick Polycarbonate Translucent Roof Sheets as directed by Engineer-in-charge. Polycarbonate Translucent Roof Sheets on South side Roof Area of PPT plant have not been considered to enable the installation/ maintenance of solar plants as per the requirement of SB-MTC Dept.
- e) Providing and fixing turbo ventilators on roof top of all sheds except on South side roof Area of PPT plant as per the requirement of SB-MTC Dept. to enable the installation/ maintenance of solar plants
- f) Dismantling all existing rain water pipe and providing 160mm diameter PVC Rain water pipes at every 10m interval.
- g) Dismantling existing damages plinth protection /Ramp and providing plinth protection at the peripheral of Sheds and Ramp at all Rolling Shutter openings.
- h) Dismantling existing MS glass window and proving Aluminium-Glass Three and Two track sliding window with MS Grill/Jali.
- i) Demolishing/ providing the brick masonry to provide the new Aluminium three and two track sliding windows and for enclosing the alternate windows by brick work for Cable store A & B.
- j) Provide RCC lintel (1:2:4) 230mm thick for windows and door opening.
- k) Dismantling the damaged plaster and repair/provide sand face plaster as directed by Engineer-in-charge.
- l) Providing 18mm thick Granite of approved shade for the window and the door frame work.
- m) Dismantling existing door and providing new 35mm thick made laminated veneer lumber door shutter as directed by Engineer-in-charge.

- n) Dismantling existing damaged & worn out structural steel members/sections and providing new structural steel wherever necessary as directed by Engineer-in-charge.
- o) Providing 10 gauge G I crimped wire mesh of required openings of size 25x25mm at the side louvers/chajja of the Cable store shed A & B.
- p) Providing & Applying Aluminium paint to all exposed MS Structural member such as columns, Truss, purlins, bracing, sag rods, cladding members and other supporting members of Cable Store Shed A & B, PPT plant col. No. 1 to 28, including the scaffolding/working platform, scraping of old paint/grease/oil, cleaning with wire brush/sand paper and preparing surface smooth for the new painting and including application of ready Mix red oxide primer etc. all complete and as directed by Engineer- in-charge.
- q) Providing & Applying ready Mix red oxide primer & Aluminium paint including the scaffolding/working platform, and preparing surface smooth by scraping of old paint/grease/oil, cleaning with wire brush/sand paper for PPT plant column No. 28 to 50, as directed by Engineer- in-charge.
- r) Providing & Applying Synthetic enamel paint including primer to Rolling Shutters.
- s) Providing & Applying plastic emulsion paint along with one coat of cement primer to Internal & Acrylic smooth exterior paint along with exterior primer for External wall surface.
- t) Carting away all debris such as dismantled RCC/PCC members, building rubbish, dismantled AC sheets, etc. from MDL premises to Municipal Dumping Ground.

1.1.2. Electrical Work:

- a) Supply, installation, testing and commissioning of PVC armoured Copper/Aluminium cable for Main power supply.
- b) SITC of main TPN shield fuse unit for incoming power supply.
- c) SITC of main power Supply MCB Distribution Board for power distribution with proper rating MCB.
- d) SITC of 250/400watt/250V, HPSV/HPMV light fittings
- e) SITC of power supply MCB for controlling flood light.

The detailed scope of work has been indicated in the Bill of Quantities (BOQ) Price Bid Part-II at Enclosure-1.

2. निविदा हेतु चित्रकारी की सूची / LIST OF TENDER DRAWINGS:

SR.NO	DESCRIPTION OF DRAWING	TENDER DRAWING NO
01	Existing Plan-Cable Store Shed-A	MDL/IP/Anik/Civil-1
02	Existing Plan-Cable Store Shed-B	MDL/IP/Anik/Civil-3
03	Proposed Plan-Cable Store Shed-A	MDL/IP/Anik/Civil-2
04	Proposed Plan-Cable Store Shed-B	MDL/IP/Anik/Civil-4
05	Proposed Plan PPT Plant Anik Yard	MDL/IP/Anik/Civil-5
06	Proposed Plan Shed 7C- Anik Yard	MDL/IP/Anik/Civil-6

07	Lighting Distribution Board 1-5	MDL/IP/Anik/Electrical-01
08	Power and Fan DB	MDL/IP/Anik/Electrical-02
09	Power and Fan DB 1-2	MDL/IP/Anik/Electrical-03
10	Lighting Distribution Board 1-2	MDL/IP/Anik/Electrical-04
11	Main Distribution Board PPT Plant	MDL/IP/Anik/Electrical-05
12	Main Distribution Board Cable Shed	MDL/IP/Anik/Electrical-06

The above Tender Drawings in PDF form are attached separately along with Tender Document.

Enclosure-1

PRICE BID (PART-II)
BILL OF QUANTITIES
(To be submitted online)

Sub: Replacement of Roof/ Cladding Sheets, Painting to the structural members including minor civil repair and electrical works of cable shed A, B, 7-C & PPT Plant at Anik Chembur, MDL, Mumbai.

Ref: MDL Tender No. 1800000027

INSTRUCTION TO THE BIDDER:

1. The Goods & Service Tax **IS NOT INCLUDED** in the rates indicated below for this section. Bidder is required to quote Goods & Service Tax **SEPERATELY** in Percentage which will be added to the rate quoted for this section during placement of Order.
2. Bidder to note Clause No. 2 (Defect Liability Period), Clause No 3 (Performance bank Guarantee), Clause No 5 (Safety and Training), Clause No 6 (Terms of Payment), Clause No 7 (Prices and Taxes), Clause No 12 (Housekeeping), Clause No 15 (Insurance), Clause No 16 (**Other Site requirements**), Clause No 17 (Bank Guarantee against water leakage) & Clause No 11.10 (Availability of sand/ other construction material) of Volume II before quoting.
3. MDL reserves the right to increase the quantity of any item in the BOQ to 100 % in individual quantity of item provided the increase in the total Estimated Amount due to this change in the quantity over BOQ quantity multiplied by specified rate for all the items put together do not exceed 25% of the Accepted Contract Value. Bidder to note Clause No 13.1 of Volume II before quoting.
4. Bidder should also note Integrity Pact Bank Guarantee Clause in Vol I before quoting.
5. For Sl No C-1 of the Price bid: The amount towards rebate for taking away dismantled steel material shall be recovered from the Contractor's Running Account bill as applicable @ Rs 16835 per MT. (**Refer TEF Clause 6.1.4 of Vol II**).
6. All permissions and passes will be issued in office of MAZAGON DOCK SHIPBUILDERS LIMITED at Dockyard Road, Mumbai. Bidder to note Clause No 21 of Volume I.
7. Please note that the rate indicated below are inclusive of VAT on Input material , Excise, Octroi wherever applicable before implementation of GST Act.

SR. NO	Service Accounting Code (SAC)	ITEM DESCRIPTION	UNIT	QTY	RATE in ₹	AMOUNT
A.		Civil Works				
I		Demolition Work				
1		Dismantling carefully asbestos cement sheet roofing/ cladding including ridges hips, valleys, gutter, coal tar, turbo vents etc., and stacking the material within 50 metres lead and as directed by Engineer In-charge etc. complete. (Measurement shall be paid on roof plan area)	Sqm	16400.00	37.71	618444.00
2		Dismantling carefully GI sheet roofing/ cladding including ridges hips, valleys, gutter, coal tar, turbo vents etc., and stacking the materials within 50meters lead as per direction of Engineer -in-charge. (Measurement shall be paid on roof plan area)	Sqm	5200.00	80.22	417144.00
3		Dismantling doors, windows and clerestory windows (steel or wood)	Number	100.00	180.50	18050.00

		shutter including chowkhats, architrave, holdfasts etc. complete and stacking within 50 metres lead : Of area 3 sq. metres and below				
4		Dismantling doors, windows and clerestory windows (steel or wood) shutter including chowkhats, architrave, holdfasts etc. complete and stacking within 50 metres lead : Of area beyond 3 sq. metres	Number	4.00	247.88	991.52
5		Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge.	Cum	45.00	961.84	43282.80
6		Dismantling carefully damaged portion of cement plaster of any finish from the wall, ceiling, beams etc & raking out the joints to a suitable depth up to 20mm depth & stacking the dismantled material within 50 m lead etc.complete.	Sqm	2850.00	68.81	196108.50
7		Dismantling steel work in built up sections in angles, tees, flats and channels including all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering and stacking within 50metres lead.	Kg.	32920.00	2.75	90530.00
II		Civil Works				
8		Excavation in road carriage ways, foot path, asphalt mixed carpet of any type or concrete plain or reinforced, upto any depth, including all lifts and depositing excavated materials in a radius of 150 M.including cutting of reinforcements manually or using pneumatic jack hammer or by any other mechanical means, as specified and directed.	Cum	265.00	520.56	137948.40
9		Supplying, providing and laying dry stones pitching/ soling of 225mm thick including preparation of surface complete.	Sqm	670.00	563.34	377437.80
10		Providing & laying Plain Cement concrete (PCC) including curing but excluding the cost of centering & shuttering etc;complete as directed.----UPTO PLINTH LEVEL,PCC (1:2:4)	CuM	95.00	6951.41	660383.95
11		Providing & laying Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15° landings, chajjas, lintels, bands, plain window sills excluding the cost of centering, shuttering, finishing and reinforcement with 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size).	CuM	65.00	8625.74	560673.10
12		Centering and shuttering including strutting, propping etc. and removal of form for : Lintels, beams, plinth beams, chajjas, girders, bressumers and cantilevers.	Sqm	110.00	437.56	48131.60

13	Providing & fixing in position reinforcement TMT bars including straightening, cutting, bending, placing in position & binding with binding wires / welding where ever necessary etc. all complete as directed at any locations (Lapping / chairs will be measured & paid)	Kg.	7500.00	93.92	704400.00
14	Providing Brick masonry with conventional / IS type bricks of grater than one brick thickness SET IN CEMENT MORTAR (1 : 4) including scaffolding, watterring, racking out joints etc. complete - In superstructure upto floor V level	Cum	65.00	7805.63	507365.95
15	Repairs to plaster of thickness 12 mm to 20 mm in patches old area 2.5 Sq.M. And under curing the patch in proper shape, raking out the joints and prepering and plastering the surface of the walls etc. complete.	Sqm	1700.00	312.35	530995.00
16	Providing & applying plaster of paris of 2mm thickness over plastered surface to prepare the surface even and smooth etc. complete as directed. to plastered surfaces in all positions including scaffolding etc. complete as directed.	Sqm	3050.00	142.58	434869.00
17	Providing & Applying two coats of plastic emulsion paint of approved brand and manufacture & approved shade to give an even finish on existing painted internal surfaces including applying one coat of cement primer after removing existing paint by scrapping, sand papering and preparing the surface smooth including necessary repairs to scratches incl. scaffolding with the help of brush, Rollers etc. complete as directed.	Sqm	3050.00	123.44	376492.00
18	Providing and applying 20 mm thick waterproof cement plaster(1:4) in two coats for external surface mixed with approved waterproofing material as per manufacturer specification, curing etc; upto 10m height etc. all complete as directed.	Sqm	1615.00	316.02	510372.30
19	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade of approved make (Two or more coats applied @ 1.43 ltr/ 10 sqm. over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm).	Sqm	2425.00	127.12	308266.00
20	Providing and Fixing Granite of 18mm thick gang saw cut mirror polished premoulded and prepolished machine cut for kitchen platforms, vanity counters, window sills, facias and similar location of required size of approved shade, colour and texture laid over 20mm thick base cement mortar	Sqm	155.00	5260.77	815419.35

		1:4 (1 cement : 4 coarse sand) with joints treated with white cement, mixed with matching pigments, epoxy touch ups, including rubbing, curing, moulding and polished to edge to give high gloss finish etc. complete at all levels as directed by Engineer-In-Charge				
21		Providing and fixing Anodised aluminium work (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15) for doors, sliding/ hinged windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners will be paid separately) : for Fixed portions	Kg.	470.00	485.44	228156.80
22		Providing and fixing Anodised aluminium work (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15) for doors, sliding/ hinged windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners will be paid for separately) : For shutters of doors, sliding/ hinged windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of	Kg.	360.00	561.78	202240.80
		EPDM rubber / neoprene gasket				

		required (Fittings shall be paid separately).				
23		Providing and fixing glazing of 5.50mm thickness in wooden/aluminium door, window, ventilator shutters and partitions etc with PVC/ neoprene gasket etc complete as per the architectural drawings and the directions of engineer in charge (Cost of aluminium snap beading shall not be paid separately)	Sqm	115.00	1425.11	163887.65
24		Providing and fixing 35mm thick made laminated veneer lumber door shutter confirming to IS 14616 and TADS 15: 2001 (Part B) including ISI marked black enameled M.S. butt hinges with necessary screws as per direction of Engineer-in charge and panelling with panels of: 12 mm thick prelaminated particle board (decorative lamination on both sides) grade-1, medium density flat pressed, three layer particle board FPT - I or graded wood particle board FPT-I, confirming to IS :3087 bonded with BWP type synthetic resin adhesive as per IS: 848 and pre-laminated confirming to IS : 12823 Grade 1, Type -II marked	Sqm	55.00	3725.21	204886.55
25		Providing and fixing chromium plated brass fittings: 100mm mortice latch and lock with 6 levers and a pair of lever handles with necessary screws etc complete of approved make and quality.	Number	22.00	1005.63	22123.86
26		Providing and fixing chromium plated brass fittings: handles of 125mm with necessary screws etc complete of approved make and quality etc. complete.	Number	22.00	297.95	6554.90
27		Providing and fixing copper oxidised mild steel fittings: Sliding door bolts with nuts and necessary screws etc complete--250*16mm	Number	22.00	218.36	4803.92
28		Providing and fixing bright finished brass hanging type floor door stopper with necessary screws, etc. complete.	Number	22.00	112.43	2473.46
29		Providing and fixing aluminium die cast body tubular type universal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed on the body, door weight upto 35 kg and door width upto 700 mm) with necessary accessories and screws etc. complete.	Number	8.00	1450.82	11606.56
III		Roofing/Cladding Work				
30		Supply & Fixing of High Tensile Alloy Steel 550 MPA having Galvanized + Aluminum Combined Coating of 150 GPSM (AZ150) Colour Coated Trapezoidal Roofing Sheets of 0.70mm TCT to roofs & Side claddings, with packing, transportations, necessary required hard wares, i.e. self tapping and drilling screws as per AS 3566 including	Sqm	20400.00	782.06	15954024.00

		stitching of vertical (side lap) joints with special aluminium roofing rivets and washers at approx 500mm distance including wastage, overlap complete, measurement as per laid area after completion of work to roof, side, gable end etc. complete. NOTE :- Providing & Fixing roofing sheet of approved make, material & type by providing End over lap of 200 mm & Side Overlap 150 mm including necessary fittings like washers, scrwes, bolts etc. completed (cost of Laping shall not be paid seperately)				
31		Design supply & fixing of color coated Accessories of 0.70 mm TCT of suitable required profile, size, shape viz Ridges, North light curves, Apron Flashing, Gable end Flashing, Corner pieces, Eaves Flashing, with hardwares including overlap etc. complete.	Rmt	690.00	475.81	328308.90
32		Providing and fixing of 2mm thick Polycarbonate Translucent Roof / cladding Sheets to match with new roofing sheets including lappings with transportation, labour, wastage complete with hardwares, etc. all complete. (Only Open area covered by sheeting will be measured)	Sqm	1250.00	1683.62	2104525.00
33		Providing & fixing 24" dia Wind Driven Turbo Ventilator system in Aluminium along with FRP Base Plate of Approved make & type with all fittings, nuts, bolts, etc. including FRP base sheet of approved colour.shape & size including cutting of Galvalume sheets for fixing the FRP base to required size & length, lap, scaffolding, staging etc. complete as directed by Engineer in-chagre.	Number	200.00	9547.29	1909458.00
34		Providing & fixing PVC Rain water pipes of 160 mm diameter conforming to I.S.13592-1992 including proper rain water receiving recess with PVC plug bend, necessary fittings such as offsets, shoes including fixing the pipe on wall using approved wooden cleats projecting 25mm to 40mm from face of wall and fixing with clips of approved quality and number, filling the joints using rubber gasket with solvent cement and properly resting the shoe of pipes on cement concrete or masonry blocks, including necessary scaffolding and maintenance for 3 years for any leakages or dislocation of pipes.	Rmt	1585.00	447.16	708748.60
35		Providing and fixing 25cm wide, 80cm overall trapezoidal 2mm thick Aluminium gutter as per existing gutter section, with GI brackets 40x5mm/50x5mm size at a distance of 1m c/c , including bending, cutting,	Rmt	1110.00	961.31	1067054.10

		welding, hoisting, fixing in position with bolts, nuts and washers etc. all complete as directed.				
IV		Steel Work:				
36		Providing welded or bolted structural steel work in single section with or without connecting plate including cutting, hoisting, fixing in position, scaffolding and applying a priming coat of approved steel primer, all complete.	Kg.	32920.00	94.42	3108306.40
37		Providing and fixing G I crimped wire mesh of required openings of size 25x25mm or of any size with main and cross wires of 10 guage approved type as per manufacturer's specification with necessary fittings etc complete as directed and specified including painting.	Sqm	485.00	572.91	277861.35
38		Providing & fixing MS ornamental grill of approved design weighing from 15 to 20 Kg / Sq.M. With necessary hold fast , complete with two coats of synthetic enamel paint of approved make & quality over a coat of approved anti corrosive yellow zinc chromate metal primer.etc all complete.	Sqm	213.00	1729.84	368455.92
39		Removing the existng paint /grease/oil by scrapping, cleaning with wire bursh/ sand paper, etc. including sealing the cracks with enamel putty and making smooth to receive the new paint. After removal of the existing paint and clearance from the Engineer-in-charge, Providing and applying Two coats aluminium paint of approved brand and make to give a even shade to including scafflodng and one coat of ready mix red oxide zinc chromate primer of approved brand & manufacture to all exposed MS strucutral members such as columns, trusses, purlins, bracings, supports/brackets, connection, etc of Cable Store Shed -A. (Mesurement will be taken as per plan area of the Cable Store Shed -A)	Sqm	2690.00	190.41	512202.90
40		Removing the existng paint /grease/oil by scrapping, cleaning with wire bursh/ sand paper, etc. including sealing the cracks with enamel putty and making smooth to receive the new paint. After removal of the existing paint and clearance from the Engineer-in-charge, Providing and applying Two coats aluminium paint of approved brand and make to give a even shade to including scafflodng and one coat of ready mix red oxide zinc chromate primer of approved brand & manufacture to all exposed MS	Sqm	3040.00	174.76	531270.40

		strucutral members such as columns, trusses, purlins, bracings, supports/brackets, connection, etc of Cable Store Shed -B. (Mesurement will be taken as per plan area of the Cable Store Shed -B)				
41		Removing the existitng paint/grease/oil by scrapping, cleaning with wire bursh/ sand paper, etc. including sealing the cracks with enamel putty and making smooth to receive the new paint. After removal of the existing paint and clearance from the Engineer-in-charge, Providing and applying Two coats aluminium paint of approved brand and make to give a even shade to including scafflodng and one coat of primer etc complete to all exposed MS strucutral members such as columns, trusses, purlins, bracings, supports/brackets, connection, side louvers, side purlins etc of PPT Plant from column. no. 1 to 28. (Mesurement will be taken as per plan area of the PPT Plant column. no. 1 to 28)	Sqm	4200.00	420.12	1764504.00
42		Applying priming coat with ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/steel works	Sqm	5700.00	35.24	200868.00
43		Providing and applying Two coats aluminium paint of approved brand and make to give a even shade to including scafflodng, etc. complete	Sqm	4920.00	82.48	405801.60
44		Providing and applying Two or more coats of synthetic enamel paint of approved brand and manufacutre of required colour to give an enven shade including the cleaning the surface and scaffolding etc. all complete.	Sqm	485.00	89.05	43189.25
V		Other Works:				
45		Carriage of Building rubbish by mechanical transport including loading, unloading and carting away up to Municipal Dumping Ground. (Building rebbish includs excavated unserviceable material, dismantled concrete work, asphalt concrete, dismantled plaster, demolished brick masonry, etc. Measurement will taken in cu.m , no additional percentage will considered for void or loose materials)	CuM	460.00	539.08	247976.80
46		Providing & fixing the Safety Net with 12mm Border rope, 4mm knotted, 1mm fishnet size -15mm X 15mm mesh to prevent the debris falling on ground /walkway etc. as per the direction of Engineer in charge.	Sqm	10420.00	101.88	1061589.60
47		Covering the scaffolding with Bardan (Agro Knitted Fabric) by sewing, knotting as required at any height of the	Sqm	10420.00	39.86	415341.20

		building /structure while carrying out external work of the building/structure etc. as per the direction of Engineer Incharge.				
VI		Provisional Items				
48		Providing & fixing in position 0.50mm thick corrugated colour coated steel sheet comprises of cold rolled galvalume steel as per AS 1397, 550 MPa yeild stress with hot dip metallic coating on both side confirming to AS 1377 (150 gsm) including all necessary scaffolding, shop drawings fixing with mechanically galvanized self drilling fastners, EPDM seals to make the roof leak proof, all fittings and fastners. Etc. complete strictly as per manufacturers specification subject to approval of Engineer. (No laps shall be measured and paid for) -For roofing Note: Providing & Fixing roofing sheet of any make, material & type by providing End over lap of 200 mm & Side Overlap 150 mm including necessary fittings like bitumen washer, scrwes, bolts etc. completed (cost of Laping shall not be paid seperately)	Sqm	4800.00	742.12	3562176.00
				Total of Civil Works		42775701.79
B.		Electrical Works				
		MAIN INCOMER				
49		Supplying and erecting Triple pole metal/ iron clad HRC fuse switch 415/ 500V 100 A on angle iron frame as per specification No.SW-SWR/TPHRC.	AU	1	5918.24	5918.24
50		Supplying and erecting Triple pole metal/ iron clad HRC fuse switch 415/ 500V 63A on angle iron frame as per specification No.SW-SWR/TPHRC.	AU	2	2840.80	5681.6
51		Supplying and erecting Triple pole metal/ iron clad switch & fuse 415/ 500V 32A on iron frame/board as per specification No. SW-SWR/MTP	AU	1	1449.60	1449.6
52		Supplying , erecting & Terminating PVC armoured cable 04 core 25 sq mm copper conductor with continuous 5.48 sq mm (12 SWG) G.I. earth wire complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	Rmt	20	1378.91	27578.2
53		Supplying , erecting & Terminating PVC armoured cable 4 core 16 sq mm aluminium conductor with continuous 5.48 sq mm (12 SWG) G.I. earth wire complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL Note:1) Rate of all cables includes cost of	Rmt	100	199.77	19977

		lugs, glands, etc. required for erection and connection of cable. 2) For all type of cables instead of reading supplying and erecting read as a supplying, erecting and terminating.				
		MAIN DB				
54		Supplying & erecting triple pole and neutral distribution board (TPNDB) with door surface/ flush mounted SP/TP MCBs total 36 ways, on iron frame/wooden board. (Vertical Busbar Type) as per specification No. SW-SWR/MCBDB	AU	4	6886.35	27545.4
		INCOMER				
55		Supplying,erecting and marking Four Pole isolators only switch version of miniature circuit breakers of 80/100 A in provided distribution board.	AU	1	928.15	928.15
56		Supplying, erecting and marking FPMCB 40 TO 63 Amp in provided Distribution Board as per specification no. SW-SWR/MCB	AU	2	1426.03	2852.06
57		Providing, erecting & commissioning RCCB of electro magnetic type with 20 kA breaking capacity of 63A. 4 pole,complete as per specification No. SW-RCCB/RCCB	AU	1	3144.03	3144.03
		OUT GOING				
58		Supplying, erecting and marking TPMCB 40 TO 63 Amp C - series in provided Distribution Board as per specification no. SW-SWR/MCB	AU	22	1343.05	29547.1
59		Supplying , erecting & Terminating PVC armoured cable 4 core 6 sq mm copper conductor continuous 5.48 sq mm (12 SWG) G.I. earth wire complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/pipe as per specification no. CB-LT/CU Note:1) Rate of all cables includes cost of lugs, glands, etc. required for erection and connection of cable.	Rmt	1500	409.78	614670
		DISTRIBUTION DB				
		POWER & FAN DB				
60		Supplying & erecting triple pole and neutral distribution board (TPNDB) with door surface/ flush mounted SP/TP MCBs total 24 ways, on iron frame/wooden board. (Vertical Busbar Type) as per specification No. SW-SWR/MCBDB	AU	6	5471.58	32829.48
		LIGHTING DB				
61		Supplying & erecting triple pole and neutral distribution board (TPNDB) with door surface/ flush mounted SP/TP MCBs total 12 ways, on iron frame/wooden board. (Vertical Busbar Type) as per specification No. SW-SWR/MCBDB	AU	9	4127.51	37147.59
		INCOMER				

62	Providing, erecting & commissioning RCCB only of electro magnetic type with 30/100/300mA sensitivity & having capacity of 40A,4 Pole complete as per specification No. SW-RCCB/RCCB	AU	9	2819.28	25373.52
63	Supplying, erecting and marking FPMCB 40 TO 63 Amp in provided Distribution Board as per specification no. SW-SWR/MCB	AU	6	1426.03	8556.18
	OUTGOING				
64	Supplying, erecting & marking SPMCB 6A to 32A, B- series (for lighting) in provided distribution board as per specification No. SW-SWR/MCB	AU	115	165.96	19085.4
65	Supplying, erecting & marking SPMCB 6A to 32A, C- series (for motor/power) in provided distribution board as per specification No. SW-SWR/MCB	AU	85	177.23	15064.55
66	Supplying , erecting & Terminating PVC armoured cable 3 core 2.5 sq mm copper conductor continuous 5.48 sq mm (12 SWG) G.I. earth wire complete erected with glands & lugs, on wall/trusses/pole or laid in provided trench/pipe as per specification no. CB-LT/CU Note:1) Rate of all cables includes cost of lugs, glands, etc. required for erection and connection of cable.	Rmt	4900	182.35	893515
67	Supplying and erecting CRCA Sheet metal one way enclosures suitable For DPMCB/TPMCB/FPMCB complete erected on angle iron frame.	AU	65	423.10	27501.5
68	Supplying and erecting original 1.25 mm CRCA Sheet metal enclosures with 20 A, 2 Pin Plug and earth socket & 20Amp 3 Pin plug top with 20/30 A Single Pole MCB complete erected on angle iron frame	AU	21	896.39	18824.19
	LIGHTING FIXTURES				
69	Supplying and erecting LED flood light fitting above 48W to 60W, having PF > 0.95, class IP65 or above. Housing of pressure die cast aluminium alloy and heat sink extruded aluminium as per specification no. FG-ODF/FLS2 Note: 1) Luminance of LED fittings shall not be less than 90 lumens/watt (resultant efficacy after losses in housing, driver, heat sink, optics) 2) CRI shall be more than 85. 3) Colour temperature shall be as required between 4000K-6500K. 4) THD shall adhere to the Standards applicable. 5) Beam angle shall be given as per site requirement	AU	32	15074.39	482380.48

70	Supplying, erecting, testing and commissioning Highbay luminaire suitable for 400W HPMV lamp complete with lamp complete as directed. Fitting should be Crompton, Philips, Havells make (Integral type) (Cost of Lamp is included). Complete as per attached technical specification TS-12-5	AU	126	5022.41	632823.66
71	Supplying and erecting square shaped CRCA / die-cast aluminium powder coated housing LED Panel light 600X600mm of PREMIUM RANGE suitable for upto 36 W with provision for plane front frame with translucent cover fixed to the housing complete. Note:1) Luminance of LED fittings shall not be less than 90 lumens/watt (resultant efficacy after losses in housing, driver, heat sink, optics) 2) CRI shall be more than 85. 3) Colour temperature shall be as required between 4000K-6500K. 4) THD shall adhere to the Standards applicable. 5) Beam angle shall be as per site requirement.	AU	50	5587.74	279387
72	Supplying and erecting double suspension heavy duty lacquered iron chain with hooks for erecting fluo.tube light fitting with necessary 2 or 3 core copper flexible wire 24/.2 mm for connecting leads.(for measurements half of the actual length used) Note: The item shall be provided only at the time of installation of fitting on trusses / pipe / angle / channel.	Rmt	60	33.81	2028.6
FANS					
73	Supply, Install, testing & commissioning of air circulator 600 m.m. sweep oscillating type, wall mounting 1440 RPM without speed regulator, overheat protection unit, totally enclosed, motor suitable for 230/250 Volts single phase, 50Hz. A.C. Supply with one meter of 3 core lead wire and with moisture proof treatment to winding and 'E' class insulation. Fan should be Almonard/Crompton or approved make	AU	31	6118.01	189658.31
POINT WIRING					
74	Point Wiring in PVC trunking (casing-capping) with 1.0 sqmm FR grade copper wire with flush type switch and required accessories as per specification No.WG-PW/SW. Notes (1)Point wiring starts from Main board/intermediate switchboard and suitable circuit mains are to be provided from D.B to first board and between	Pt	60	311.43	18685.8

	boards. (2) For Concealed point wiring, instead of Modular switches & accessories, ordinary switches & accessories are to be used, than deduct Rs. 179 /- for point wiring & Rs. 201 /- for Independent plug point wiring and Rs. 259 /- for plug on board, from overall rates. (3) Deduct Rs 31/- from overall rate of point wiring for Light/fan/bell/exhaust fan point and Rs 38/- from overall rate of point wiring for IP/Plug on board if point wiring to be provided without modular box (i.e point wiring to be provided on modular furniture or such parallel installations where modular box is not required) (4) For Concealed type wiring only FR Grade wire shall be used. Note: PVC conduit black in colour, should not be used in surface wiring in electrical installation.				
	ANGLES & FLATBARS				
75	Supplying, erecting of Flat Bars 50 mm x 6 mm thick	Rmt	450	207.03	93163.5
76	Supplying, erecting of Flat Bars 25 mm x 3 mm thick	Rmt	500	53.67	26835
77	Supplying, erecting of 40x40x5 mm of M.S angle	Rmt	150	256.88	38532
	CONDUIT				
78	Supplying and laying rigid PVC conduit 20 mm dia. with PVC accessories on wall/ceiling as per specification No: WG-MA/CON, para no. 1.1.1	Rmt	1000	95.27	95270
79	Supplying and erecting UPVC reinforced flexible conduit 25 mm in dia. conforming to I.S. and approved make with required number of couplings, PVC bushes, check nuts etc. complete	Rmt	600	90.15	54090
80	Providing & erecting Hot deeped Galvanised Perforated type Cable tray manufactured from 16 swg (1.6 mm thick) GI sheet of 200 mm width & 75 mm height complete with necessary coupler plates & hardware in approved manner.	Rmt	200	594.18	118836
81	Size of Cable tray- 100mm W x 25 mm H.(18 SWG-1.2mm)	Rmt	500	162.2	81100
	DISMANTLING				
82	Dismantling the existing light, fan, bell, clock, independent plug point, wiring with mains of all types alongwith accessories etc.Complete as per specification No: WGPW/DM Note:1) The rates for item no 500 to 504 are for dismantling and handing over to section office inclusive of transportation upto 25 km, between site and section office.	AU	134	6.15	824.1
83	Dismantling of existing fluorescent fittings of any type & size.	AU	16	10.24	163.84

		Note: 1) The rates for item no 500 to 504 are for dismantling and handing over to section office inclusive of transportation upto 25 km, between site and section office.				
84		Dismantling the existing ceiling fan/exhaust fan/cabin fan/bracket fan complete with accessories, G.I. down rod, frame etc. and making the site clear. Note: 1) The rates for item no 500 to 504 are for dismantling and handing over to section office inclusive of transportation upto 25 km, between site and section office.	AU	13	24.59	319.67
85		Dismantling the existing switchgears, DB, and Bus bar of any size complete with/ without board or angle iron frame Note:1) The rates for item no 505 to 506 are for dismantling and handing over to section office inclusive of transportation upto 25 km, between site and section office.	AU	30	60.44	1813.2
86		Dismantling the existing cables of all types & size upto 10 Sq.mm.	Rmt	2000	10.24	20480
			Total of Electrical Works			3953579.75
			Total Estimated Cost of Civil & Electrical Work (A+B)			46729281.54
			Goods & Service Tax (in Percentage)			
C		Rebate Items				
1		Rebate to be given by Contractor for taking away dismantled MS scrap outside MDL premises as directed by Engineer-In-Charge at any height / Location including loading, transporting and unloading etc. complete.	MT	32.92	16835.00	554208.20
			Total of Rebate Item			554208.20