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**TENDER NO. BHEL/ NR/SCT/YE-MARIB PH-II/CIVIL/727**

**TENDER SPECIFICATIONS**

**FOR**

**“TOTAL CIVIL, STRUCTURAL & ARCHITECTURAL WORKS FOR 400  
MW MARIB PHASE-II GAS TURBINE POWER STATION PROJECT  
AT MARIB, YEMEN”**

**PART II – PRICE BID**



**Bharat Heavy Electricals Limited  
(A Govt. Of India Undertaking)  
Power Sector – Northern Region,  
Plot No. 25 , Sector - 16A ,  
Distt. Gautam Budh Nagar, NOIDA – 201 301 (INDIA)**

## SUMMARY SHEET

### RATE SCHEDULE

SI. No	DESCRIPTION OF WORK	Rate in USD (In figures and words)
1	Total civil work price obtained as per BOQ cum rate schedule including all Taxes , Levies charges in Yemen ( as well as applicable in India, if any) <b>of 400 MW MARIB-PHASE-II Gas Turbine Power station project .</b>	/

#### Notes:

1. **The rate shall be entered in figures as well as in words. In case of difference in rates between words and figures, the lesser of the two will be treated as valid rate.**

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(Seal and signature of tenderer)

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**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
	100	<b>EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION, DRAWINGS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-</b>				
1	101	<b>Earth work in excavation upto 2m depth</b> below ground level for foundation, trenches, pipe lines, storm water drains etc including setting out, clearing & grubbing, removal of debris, dewatering if required, strutting, shoring if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material up to a <b>lead of 1.0 KM etc complete for all types of soils</b> including ash, laterite, morrum, weathered rock, decomposed rock etc which can be excavated by means of crow bar, pick axe, etc but does not require chiselling or blasting.	CUM	82,153		
2	103	<b>Earth work in excavation for depth exceeding 2.0m</b> but not exceeding 4.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material up to a <b>lead of 1.0 KM etc complete for all types of soils</b> including ash, laterite, morrum , weathered rock, decomposed rock etc which can be excavated by means of crow bar, pick axe, etc but does not require chiselling or blasting.	CUM	42,595		
3	105	<b>Earth work in excavation for depth exceeding 4.0m but not exceeding 6.0m</b> below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material up to a <b>lead of 1.0 KM etc complete for all types of soils</b> including ash, laterite, morrum , weathered rock, decomposed rock etc which can be excavated by means of crow bar, pick axe, etc but does not require chiselling or blasting.	CUM	6,482		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
4	109	Extra over item no 101 to 108 for disposal of surplus excavated earth beyond a lead of 1km and upto a maximum lead of 2 Km, dumping and levelling the dumped soil and levelling the area from where the material is transported, complete with all lifts as specified and directed by Engineer.	CUM	49,674		
5	110	Extra over item no 109 for disposal of surplus excavated earth beyond a lead of 2km and upto a maximum lead of 5 Km, dumping and levelling the dumped soil and levelling the area from where the material is transported, complete with all lifts as specified and directed by Engineer.	CUM	27,915		
6	111	Back filling around foundations in plinths etc.to proper grade and level with selected materials within a lead up to 1 Km from available excavated soil including re-excavating loose thickness, watering and ramming in layers of 25 cm. compacted thickness to min. 90% of max. dry density by manual / mechanical means, compaction with mechanised compaction machine, dressing etc. complete including transportation.	CUM	31,390		
7	112	Back filling around foundations in plinths etc.to proper grade and level with selected materials within a lead beyond 1 Km but not exceeding 5 Kms.from available excavated soil including re-excavating loose thickness, watering and ramming in layers of 25 cm. compacted thickness to min. 90% of max. dry density by manual / mechanical means, compaction with mechanised compaction machine, dressing etc. complete including transportation.	CUM	31,390		
8	113	Back filling around foundations in plinths etc.to proper grade and level with selected good earth within a lead beyond 1 Km but not exceeding 5 Kms., including re-excavating loose thickness, watering and ramming in layers of 25 cm. compacted thickness to min. 90% of max. dry denisty by manual / mechanical means, compaction with mechanised compaction machine, dressing etc. complete including transportation.	CUM	7,499		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
9	114	<b>Back filling/filling around foundations, ponds and plinths</b> to proper grade and level <b>with sand</b> including watering and ramming in layers of 25 cm. thickness to min. 85% of relative density by manual/ mechanical means in saturated condition, dressing including transportation etc complete	CUM	1,301		
10	115	<b>Supply and filling sand under floors, in foundation and plinths</b> including cost of sand, transporting for all leads, loading, unloading, spreading in layers in 25 cm loose thickness at all depths, watering, compaction with mechanised compaction machine or manually to minimum 85% of relative density, dressing and levelling etc complete.	CUM	501		
11	116	<b>Providing and laying rubble soling</b> with specified sizes of approved quality hard rock rubble or hand broken <b>hard metal of sizes ranging from 63mm and down</b> , at all position and depths below or above finished ground floor level, below foundations, below flooring, and for providing hard standing etc in one layer of approximately 225 mm thickness, hand packing, filling in interestices with sand including watering, thoroughly compacting the layer all complete as per specification and the direction of the Engineer .	CUM	5,945		
12	117	<b>Providing and laying rubble soling</b> with specified sizes of approved quality hard rock rubble or hand broken <b>hard metal of sizes ranging from 40mm and down</b> , at all position and depths below or above finished ground floor level, below foundations, below flooring, and for providing hard standing etc in one layer of approximately 225 mm thickness, hand packing, filling in interestices with sand including watering, thoroughly compacting the layer all complete as per specification and the direction of the Engineer .	CUM	1,928		
	<b>200</b>	<b>PROVIDING AND PLACING CONCRETE WORK INCLUDING COST OF LABOUR, MATERIALS AND EQUIPMENT FOR HANDLING, TRANSPORTATION, BATCHING, MIXING, PROVIDING COVER BLOCKS, PLACING, VIBRATING AND CURING, (EXCLUDING COST OF CENTERING, SHUTTERING AND REINFORCEMENT) COMPLETE AT ALL ELEVATIONS AS PER DRAWING, SPECIFICATIONS UNLESS SPECIFIED OTHERWISE AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:</b>				

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
13	201	Concrete of grade C15 Standard mix as per BS 5328 as filling/blinding/lean concrete course at any level below finished floor level, under and around foundations/floors etc. as per specification.	CUM	5,737		
14	202	Concrete of grade C20 Standard mix as per BS 5328 as mass concrete, screed concrete on roof at any level all complete as per specification.	CUM	533		
15	203	Concrete of grade C30 Designed mix as per BS 5328 with coarse sand and graded hard stone aggregate 20mm nominal size for <b>all major equipment foundations / other foundations, Floors/pavings</b> at all heights/depths from finished ground floor level including addition of suitable plasticizer/ superplasticizer conforming to BS:5075 (latest) to achieve required slump in concrete all complete and direction of Engineer.	CUM	19,616		
16	204	Concrete of grade C-30 Designed mix as per BS:5328 with coarse sand and graded hard stone aggregate 20mm nominal size for <b>Gas Turbine foundation</b> at all heights/depths from finished ground floor level including addition of suitable plasticizer/ superplasticizer conforming to BS:5075 to achieve a slump more than 125mm in concrete as per manufacturer's recommendation etc all complete. The rate shall also include <b>controlling of temperature</b> of freshly laid concrete to less than 25 degree centigrade using ice including all related arrangements for providing, storing and mixing of ice with water, Conducting Non-destructive Ultrasonic pulse velocity test as per specification to find out soundness of concrete including all equipments, tools, plants, scaffolding required for testing, preparation of test report etc. all complete as directed by Engineer.	CUM	3,003		
17	205	Concrete of grade C30 Designed mix as per BS 5328 in <b>superstructure at all levels and heights</b> including addition of suitable plastisizer confirming to BS 5075 to achieve required slump in concrete as per manufacturers recommendation complete etc. as per specification and direction of Engineer.	CUM	4,816		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
18	206	Concrete of grade C30 Designed mix conforming to BS:5328 with coarse sand and graded hard stone aggregate in <b>precast works</b> like trench covers, paving of pond in slope and bed etc including fair face formwork/moulds for <b>thicknesses varying from 50mm to 250mm including transportation, erection, fixing in position</b> at all elevations <b>with portland cement</b> including addition of suitable plasticizer/ superplasticizer, admixtures to achieve required slump, strength, density, impermeability, etc. all complete as per specification excluding the cost of reinforcement.	CUM	1,109		
19	207	Concrete of grade C25 Designed mix as per BS 5328 in <b>water retaining</b> structures either below or above finished floor level including addition of suitable plastisizer confirming to BS 5075 latest to achieve required slump in concrete as per manufacturers recommendation complete etc. as per specification.	CUM	935		
20	208	<b>Breaking existing concrete work</b> at any level including reinforced concrete, removing the rubbish within a lead of 1Km., including transportation, loading, unloading, etc all complete.	CUM	10		
21	209	<b>Breaking existing concrete work</b> at any level including cutting reinforcements, removing the rubbish within a lead of 1Km., <b>including making good the broken edges/surface with cement mortar, painting, finishing to match</b> with existing finishing, scaffolding/supporting at any level, all complete and as directed by Engineer.	CUM	10		
22	210	<b>Providing and encasing of structural steel</b> member with grade C30 Designed mix concrete work around flanges, webs etc and filling the gap. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc complete as per specification and as directed by Engineer.	CUM	116		
23	213	Minimum Three coats of hot bitumen painting, below ground level, of grade 85/25 @ 1.7 Kg/sqm/coat for water/damp proofing conforming to IS:702 on soil face with anti-stripping compound.	SQM	31350		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
	<b>300</b>	<b>SUPPLYING, FIXING AND REMOVING FORMWORK AT ANY ELEVATION INCLUDING ALL LABOUR, MATERIAL, SCAFFOLDING COMPLETE INCLUDING POCKETS ETC. AS PER SPECIFICATIONS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:</b>				
<b>24</b>	<b>301</b>	<b>Ordinary face Form work</b> as per specification <b>below finished ground floor level for foundations, footings</b> , bases of columns, walls, columns pilasters, beams, mass concrete, trenches etc.	<b>SQM</b>	<b>31,350</b>		
<b>25</b>	<b>302</b>	<b>Fair face Form work</b> as per specification <b>below finished ground floor level for walls, columns</b> , pilasters, beams, trenches etc for exposed concrete works.	<b>SQM</b>	<b>18,210</b>		
<b>26</b>	<b>303</b>	<b>Ordinary face form work</b> as per specification <b>above finished ground floor level for columns, beams, suspended floors, roofs</b> , lintels, cantilevers, staircases, landings, balconies, domes, arches etc for all heights.	<b>SQM</b>	<b>210</b>		
<b>27</b>	<b>304</b>	<b>Fair face form work</b> as per specification <b>above finished ground floor level for columns, beams, suspended floors, roofs</b> , lintels, cantilevers, staircases, landings, balconies, domes, arches etc for all heights.	<b>SQM</b>	<b>17,850</b>		
<b>28</b>	<b>305</b>	<b>Extra over item no.301, 302,303,304</b> for curved form work for beams, walls, trenches etc as per specification.	<b>SQM</b>	<b>210</b>		
<b>29</b>	<b>306</b>	<b>Formwork</b> as per specification <b>in Pockets for foundation bolts</b> , embedments, etc all complete.	<b>SQM</b>	<b>107</b>		
	<b>400</b>	<b>REINFORCEMENTS</b>				

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
30	401	Providing, straightening, cutting, bending, placing in position at any level, binding in position, lapping, welding of <b>mild steel reinforcements</b> confirming to Grade ASTM-Designation A615-80, grade: 40 / BST I (22/34) including cost of binding wire, labour, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.	MT	14		
31	402	Straightening, cutting, bending, placing in position at any level, binding in position, lapping, welding of <b>fusion bonded epoxy coated High Yield Steel Deformed Reinforcements bars confirming to Grade 460 as per BS:4449</b> including cost of binding wire, labour, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.	MT	1,886		
32	403	Providing, straightening, cutting, bending, placing in position at any level, binding in position, lapping, welding of <b>fusion bonded epoxy coated High Yield Steel Deformed Reinforcements bars confirming to Grade 460 as per BS:4449</b> including cost of binding wire, labour, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.	MT	1,000		
	<b>500</b>	<b>WATER PROOFING AS PER SPECIFICATIONS.</b>				
33	501	Providing and mixing approved water proofing compound in concrete or cement mortar for works wherever specified or directed as per specification/ manufacturer's instructions, testing of samples for water proofing etc complete.	KG	594		
34	502	Providing and laying roof water proofing treatment with vapour pressure compensating course of bituminous roofing felt (DIN 52143:V13) with a polyster fiberinlay of 60g/m2 to be placed into an adhesive of bitumen type B115/15 @2Kg/m2 over priming coat of highly evaporating cold bitumen with high solvent content@0.3kg/m2. Vapour barrier as per DIN 52143:A1 01+V60, thermal insulation of 2 layers of 50mm/each roofmate sheetembedded in hot bitumen onto the vapour barrier, foam insulation, top coating, P.E.foil, etc. all complete as per specification including all material, labour, testing, wall covers, coping, roof flashing, cement tiles in gravel bedding at all elevations etc all as per specification and direction of Engineer.	SQM	10,062		

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**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
35	511	Anti termite chemical treatment of soil with Chloropyrifos emulsifiable concentrates (1%) conforming to IS :8944	SQM	3750		
	<b>600</b>	<b>EXPANSION JOINT - SUPPLYING &amp; INSTALLATION OF PREMOULDED JOINT FILLER IN BETWEEN EQUIPMENT FOUNDATIONS, MAT FOUNDATIONS, PILE CAPS, WALLS, BASEMENT SLABS ETC. COMPLETE INCLUDING LABOUR, EQUIPMENT AND MATERIALS, SEALING OF JOINTS INCLUDING COST OF SEALING COMPOUND (POLYSULFIDE BASE SEALANT AS PER IS:12118) ETC. COMPLETE AS PER SPECIFICATIONS AND DRAWINGS OR AS DIRECTED BY ENGINEER FOR THE FOLLOWING:</b>				
36	603	25mm thick joints.	SQM	19		
	<b>700</b>	<b>M.S. EMBEDMENTS</b>				
37	701	Supply, fabricating and fixing of <b>embedments, MS inserts, pipe sleeves, rails, guide rails, angle</b> pieces, rungs of various diameters, plates of dimensions as required including cost of all labour, materials and equipment, transportation, loading, unloading, handling, welding, cutting, drilling, scaffolding and setting complete as per specifications, drawings and as directed by Engineer.	MT	101		
38	702	<b>Supply, fabrication, transportation, delivery at site and erection, installation and alignment of MS Foundation bolts (ASTM A36) assembly in concrete along with nuts, locknuts (as per DIN/ASTM standard), washers, anchor plates, stiffener plates, protective tapes etc. upto &amp; inclusive of 50mm diameter and upto 2000mm long, for columns including pipe sleeves, templates wherever necessary etc. all complete as per specifications and directed by the Engineer.</b>	MT	19		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
39	703	Transportation from stores, delivery at work spot and erection, installation and alignment of <b>embedments, MS inserts, pipe sleeves, rails, guide rails</b> , angle pieces, anchor bolts, foundation bolts of various diameters, plates of dimensions as required including cost of all labour, equipment, material, loading, unloading etc. all complete as per specifications, drawings and as directed by Engineer.	MT	44		
	800	<b>GROUTING AS PER SPECIFICATION FOR THE FOLLOWING:</b>				
40	801	Providing and grouting cement slurry mix 1:1 at any elevation/depth with pressure pump for water retaining concrete structures, including fixing nozzles, cost of approved cement, admixture, curing, etc all complete as per specification and as directed by the Engineer.	SQM	2		
41	802	Providing and grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with mix 1:1:2 (one part Cement : 1part Sand : 2 parts of 6mm down graded stone chips) at any elevation including roughening surface, cleaning, ramming, curing etc complete (non-shrink hand grout using approved admixture) as per specification and as directed by the Engineer.	CUM	33		
42	803	Providing and grouting of pocket holes, pipe sleeves of any shape and size under base plates after erection of necessary structural steel work, machinery with mix 1:1( 1 part cement : 1part sand) at any elevation including roughening surface, cleaning, ramming, curing etc complete (non-shrink flowable grout as per specification using approved admixture) as per specification and as directed by the Engineer.	CUM	12		
43	804	Providing and grouting of pocket holes, pipe sleeves of any shape and size under base plate after erection and alignment if necessary, structural steel work, machinery at any elevations including roughening surface, cleaning, ramming, curing, etcwith <b>CobextraGP-2' Fosroc'/CobextraGP-1' Fosroc' / Pidigrout10 / Pagel</b> or approved equivalent all complete as per specifications. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	5		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
	<b>900</b>	<b>DOORS, WINDOWS, VENTILATORS, LOUVERS, ROOF VENTILATORS, ROLLING SHUTTERS, PARTITIONS ETC. COMPLETE INCLUDING FRAMING, KICK PLATES, STOPPERS AS PER SPECIFICATION, DRAWINGS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-</b>				
<b>44</b>	<b>901</b>	Providing and fixing <b>Wooden flush doors</b> as per specification including stainless steel hardwares, fittings & fixtures, painting/polishing varnish as per specification all complete including test certificates.	<b>SQM</b>	50		
<b>45</b>	<b>902</b>	Providing and fixing <b>Wooden Veneered doors</b> as per specification including stainless steel hardwares, fittings & fixtures, polishing- varnish as per specification all complete.	<b>SQM</b>	50		
<b>46</b>	<b>903</b>	Providing and fixing <b>wooden panelled doors</b> as per specification including stainless steel hardwares, fittings & fixtures, polishing- varnish as per specification all complete.	<b>SQM</b>	162		
<b>47</b>	<b>904</b>	Providing <b>wood work of Kiln seasoned and chemically treated hard wood in frames</b> of doors and fixing in position including providing and fixing 40x3 mm flat iron hold fast with nuts, bolts etc., embedding in cement concrete block and applying a coat of wood primer before installation.	<b>CUM</b>	20		
<b>48</b>	<b>905</b>	Providing and fixing <b>steel single or double door shutters. Shutters shall be 45mm thk flush design</b> comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including all fittings, Mortice lock with handle on both sides, primer painting complete as per specification.	<b>SQM</b>	143		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

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SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
49	906	Providing and fixing <b>steel single or double shutter doors. Shutters shall be of 18 gauge M.S. sheets</b> and shall present a flush surface on the outside. The inside shall be stiffened with semitubular edge and central stiffening rail which shall convey the lock. Complete with fixtures, Mortice lock with handle on both sides, primer painting as per specification.	SQM	131		
50	907	Providing and fixing <b>steel windows of fixed type with glazing shall be of 6mm thk. wired glass</b> panes including all fittings, metal beadings, hold fasts, primer painting as per specification all complete.	SQM	1,250		
51	908	Providing and fixing <b>steel windows of openable type with glazing shall be of 6mm thk. wired glass</b> panes including all fittings, metal beadings, hold fasts, primer painting as per specification all complete.	SQM	182		
52	909	Providing and fixing <b>Fire proof steel door shutters</b> with panic device (single or double shutter) conforming to relevant DIN/ASTM standard. Shutters shall be minimum 60mm thick flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers with mineral wool insulation, primer and epoxy based painting including door frame, all fittings complete as per specification. and shall have 2 hrs. fire rating.	SQM	32		
52	910	Providing and fixing <b>pressed steel frames fabricated from 16 gauge M.S sheet</b> mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars etc complete as per specifications.	KG	1,470		
53	911	Providing and fixing <b>Anodized extruded aluminium doors (single or double shutter), windows &amp; ventilators</b> conforming to DIN/ASTM standard fabricated from extruded sections having minimum 3mm wall thickness and electro color coating of minimum 15 microns thickness. Glazing shall be clear float glass of 6.0mm thickness including snap fit type beading, concealed screws, fixtures, Mortice lock with handle on both sides etc complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Frames shall be measured and paid under separate item).	SQM	269		

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**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
54	912	Providing and fixing in position <b>Anodised aluminium Frame for doors, windows, ventilators</b> having minimum 3mm wall thickness as per DIN/ASTM standard, specification and electro colour coating of minimum 15 micron thickness including holdfast, fillingup of gapes at junctions, at top, bottom and sides etc all complete as per specification.	<b>Kg</b>	1,050		
55	913	Providing and fixing <b>aluminium glazed Partition with double glazing.</b> Aluminium sections shall be of extruded sections of DIN/ASTM standard having minimum 3mm wall thickness and electro color coating of minimum 15 microns thickness. Double glazing shall be of two clear float glass of 5.5mm thickness sealed and separated by 12mm air-gap including colour anodised aluminium beading, concealed screws, hold fast, fixtures, PVC/neoprene gasket, necessary fillingup of gaps at the junctions, at top, bottom and sides, etc complete. Aluminium section shall be smooth, rust free, straight, mitred & jointed mechanically wherever required. Minimum anodising thickness shall be 15micron etc as per specification.	<b>SQM</b>	88		
56	914	Providing and fixing of over head <b>hydraulic door closers</b> as per specification & as directed by Engineer.	<b>Each</b>	40		
57	915	Providing and fixing <b>aluminium windows of fixed type with glazing shall be of 6mm thk. wired glass</b> panes including all fittings, metal beadings, hold fasts, primer painting etc all complete as per specification.	<b>SQM</b>	50		
58	916	Providing and fixing <b>aluminium windows with double glazing.</b> Double glazing shall be of <b>two clear float glass of 5.5mm</b> thickness sealed and separated by 12mm air-gap including colour anodised aluminium beading panes, all fittings, hold fasts, primer painting etc all complete as per specification.	<b>SQM</b>	75		
59	919	Providing and fixing <b>aluminium windows of openable type with glazing shall be of 6mm thk. wired glass</b> panes including all fittings, metal beadings, hold fasts, primer painting etc all complete as per specification.	<b>SQM</b>	25		

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SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
60	920	Providing and fixing in position <b>rolling shutter</b> of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs, top cover, primer & shop coats of approved enamel paint etc, all complete as per specification and of approved make - <b>Mechanically operated</b> . The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles.	SQM	299		
61	921	Providing and fixing in position <b>rolling shutter</b> of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs top cover, primer & shop coats of approved enamel paint etc, all complete as per specification and of approved make - <b>Hand operated</b> . The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles.	SQM	50		
62	922	Providing and fixing in position <b>rolling shutter</b> of hot rolled double dipped galvanised steel lath section of 18 SWG tested mild steel strips at 75mm rolling centres interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation including wire springs top cover, primer & shop coats of approved enamel paint etc, all complete as per specification and of approved make - <b>Electrically operated</b> . The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles.	SQM	215		
63	923	Providing and fixing in position <b>PVC door of approved make in toilet</b> including all fittings, hardwares, etc. complete as per specification and as directed by Engineer.	SQM	32		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
	<b>1000</b>	<b>BLOCK WORKS MASONRY INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR, SCAFFOLDING ETC. COMPLETE AS PER SPECIFICATIONS, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-</b>				
<b>64</b>	<b>1001</b>	Providing and laying <b>250mm thick double wall block work in cement mortar 1:6</b> (1cement : 6 coarse sand) consisting of two layers of hollow concrete block 100mm each with 50mm air gap in between the layer for walls, chambers etc. at all heights, places and position above plinth including raking out joints, curing, scaffolding, etc complete but excluding plastering and painting, having compressive strength of 10N/mm <sup>2</sup> manufactured as per approved methodology and as per specification.	<b>CUM</b>	2,454		
<b>65</b>	<b>1002</b>	Providing and laying <b>200mm thick block work in cement mortar 1:6</b> (1cement : 6 coarse sand) consisting of 200mm hollow concrete block for walls, chambers etc. at all heights, places and position above plinth including raking out joints, curing, scaffolding, etc complete but excluding plastering and painting, having compressive strength of 10N/mm <sup>2</sup> manufactured as per approved methodology and as per specification.	<b>CUM</b>	2,707		
<b>66</b>	<b>1003</b>	Providing and laying <b>150mm thick block work in cement mortar 1:6</b> (1cement : 6 coarse sand) consisting of 150mm hollow concrete block for walls, chambers etc. at all heights, places and position above plinth including raking out joints, curing, scaffolding, etc complete but excluding plastering and painting, having compressive strength of 10N/mm <sup>2</sup> manufactured as per approved methodology and as per specification.	<b>CUM</b>	294		
<b>67</b>	<b>1006</b>	Making <b>openings in existing finished block work wall or partition wall</b> including making good the broken edges/surface with cement mortar, fixing steel /precast concrete section as lintel (steel/precast concrete section to be paid seperately), painting, finishing to match with existing finishing, scaffolding/ staging works, gas cutting of reinforcement/structural work, cleaning and removing of all debris within 1Km lead etc all complete and as directed by Engineer.	<b>SQM</b>	50		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
68	1007	Dismantling existing block work at all level including stacking and removing the debris within a lead of 1Km., including transportation, loading, unloading, etc all complete and as directed by Engineer.	CUM	25		
69	1008	Filling existing block work wall/ partition wall opening at all level including making good the broken edges/surface with cement mortar, painting, finishing to match with existing finishing, scaffolding/supporting at any level, removal of debris etc. all complete and as directed by Engineer.	SQM	47		
	1100	<b>DAMP PROOF COURSE INCLUDING ALL MATERIALS, LABOUR, SHUTTERING, CENTERING, CURING ETC., COMPLETE WITH THICKNESS AS SPECIFIED/SHOWN ON DRAWINGS OR AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-</b>				
70	1101	Damp Proof Course 40mm thick of 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound. Two layers of hot bitumen coating of unbaked 500g/m2 bitumenized felt shall be applied before & after laying of DPC etc all complete as per specification.	SQM	190		
	1200	<b>CEMENT MORTAR PLASTER INCLUDING MAKING GROOVES WHEREVER REQUIRED, ALL MATERIALS, SCAFFOLDING, CURING ETC. COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-</b>				
71	1201	Providing 20mm thick cement mortar plaster in 1:6 on outer face of external walls in two layers finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials etc all complete as per specification.	SQM	22,418		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
72	1202	Providing <b>15mm thick cement mortar plaster</b> on internal face of walls finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials etc all complete as per specification. Plastering shall be done in 2 coats viz rendering coat (12 mm thick) and a setting coat coat (3 mm thick). rendering shall consist of 1 part portland cement 3 parts of fine sand 1/10th part gypsum lime (1:3:1/10) by volume. the setting coat shall be a premixed gypsum lime plaster applied in accordance with the manufacturer's specification as approved by engineer incharge.	SQM	22,418		
73	1203	Providing <b>6mm thick cement mortar plaster in 1:4</b> on ceiling finished to a smooth etc all complete as per specification.	SQM	8,944		
74	1204	Providing <b>pointing work in block work with 1cement : 2 sand</b> including raking, making 1cm deep groove, washing with acid water, providing colour pigments, etc complete as per specification.	SQM	100		
	1300	<b>FINISHES, PAINTING TO CONCRETE, PLASTERED SURFACES, SURFACE PREPARATION INCLUDING ALL MATERIALS, LABOUR, SCAFFOLDING ETC. ALL COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-</b>				
75	1301	Providing and applying <b>Dry distemping</b> of approved brand and manufacture with two or more coats to give an even shade including a priming coat with distemper primer etc all complete as per specifications.	SQM	504		
76	1302	Providing and applying <b>Acrylic exterior grade spray textured paint for external surfaces</b> of approved brand and manufacture with two or more coats to give an even shade including a priming coat etc all complete as per specifications.	SQM	20,540		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**  
**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
77	1303	Providng and applying <b>Acrylic emulsion paint finish</b> of approved brand and manufacture with <b>three coats of Acrylic Latex</b> of DFT 30microns per coat to give an even shade including a priming coat, surface preparation over concrete/plastered surface etc all coplete as per specification.	SQM	19,123		
78	1304	Providng and applying <b>Oil bound washable distemper</b> of approved brand and manufacture with <b>three coats</b> to give an even shade including a priming coat with distemper primer, surface preparation over concrete/plastered surface etc all complete as per specification.	SQM	3,509		
79	1305	Providng and applying <b>Anti Dust paint</b> of approved quality and brand to give an even shade including priming coats, surface preparation over concrete/plastered surface etc all complete as per specification.	SQM	3,045		
80	1306	Providng and applying <b>Acid/Alkali resistant paint</b> of approved quality and brand with three or more coat to give an even shade including priming coats, surface preparation over concrete/plastered surface etc all complete as per specification.	SQM	158		
81	1307	Providing and applying <b>Fire resistant paint</b> with two or more coats to withstand 2 hrs of fire as per approved shade, grade and manufacture to give an even shade etc all complete as per specification.	SQM	21		
82	1308	Providing and applying <b>Synthetic enamel paint on wooden surface</b> including surface preparation to give the smooth & even finish etc all complete as per specification.	SQM	53		
83	1309	Providing and applying <b>varnish paint on wooden surface</b> as per specification including surface preparation, to give the required finish etc all complete as per specification.	SQM	53		
84	1310	Providing and applying <b>Resin based laquer with white active pigments</b> in two or more coats on wooden surface as per specification including surface preparation, etc. complete to give the required finish.	SQM	100		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
85	1311	Providing & applying <b>Vinratex</b> finish of approved brand and manufacture with give an even shade including labour, materials etc all complete as per specifications.	<b>SQM</b>	25		
	1400	<b>FLOORING AND SKIRTING INCLUDING BASE LAYER AND ALL MATERIALS, LABOUR, CURING, POLISHING ETC. COMPLETE IN ALL RESPECTS AS SHOWN ON DRAWINGS, DESCRIBED IN SPECIFICATIONS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-</b>				
86	1401	Providing and laying <b>50 mm thick Granolithic flooring with non matellic hardner</b> topping. Under layer of 38mm thick cement concrete mix 1:1.5:3 and top layer of 12mm thick hardner concrete of mix 1:2 (1 cement hardner mix:2 stone aggregate 6mm nominal size) by volume with non-metalic hardening compound of approved quality is mixed in the ratio 4:1 (4 parts of cement and 1 part of non-metallic floor hardening compound by weight including cement slurry, rounding off edges and aluminium strips etc all complete as per specification and direction of Engineer.	<b>SQM</b>	7,860		
87	1402	Providing and laying <b>20mm thick precast terazzo tiles</b> of approved quality & shade laid <b>in floors, stairs and landings</b> , jointed with pigmented cement slurry to match the shade of the tiles including rubbing and polishing complete with under bed etc all complete as per specification.	<b>SQM</b>	1,630		
88	1403	Providing and laying <b>20 mm thick precast terazzo tiles</b> of approved quility & shade laid in <b>skirtings</b> , jointed with pigmented cement slurry to match the shade of the tiles including rubbing and polishing complete with under bed etc all complete as per specification.	<b>SQM</b>	6,321		
89	1404	Providing and fixing <b>Chemical resistant tiles</b> (Acid & Alkali resistant) including under bed <b>in flooring/Dado</b> . The tiles shall have compressive strength of 700Kg/Sqcm and surface shall be abrasion resistant and durable. The Mortor used for setting or for under bed shall be durable strong and chemical resistant epoxy mortor including pointing etc. all complete as per specification.	<b>SQM</b>	179		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
90	1405	Providing and laying <b>50mm thick Cast-in-situ terrazo finish in floors, landings, treads and risers.</b> Under layer 38mm thk cement concrete 1:1.5:3 bny Volume and topping of 12mm thk. with marble chips of size 1mm to 10mm nominal size laid in white, grey cement or mixture or both in proportion 1:1.5 with white marble powder 3:1 in proposition mixed dry in cement including pigments rubbing/grinding, polishing etc. including 40X3 mm aluminum strips all complete as per specification.	SQM	100		
91	1406	Providing and laying <b>first class polished marble floor/dado</b> of approved quality over underbed including underbed mortar, labour, material, scaffolding, etc all complete as per specification.	SQM	50		
92	1407	Providing and applying <b>Sika or equivalent floor hardener paint</b> of approved quality and shade over floor finish including labour, material, etc all complete as per specification.	SQM	6,676		
93	1408	Providing and laying <b>White glazed tiles</b> of size 200x100x6mm <b>in dado</b> , projecting 6mm uniformly from adjacent plaster or wall finish. The mix for underbed plaster shall consist of 1 part cement and 3 parts coarse sand by weight. Before under bed fairly moist but firm tiles shall be pressed by applying cement slurry with the fine joint including pigments. Curing etc. all complete as per specification.	SQM	53		
94	1409	Providing and laying <b>Matt finish heavy duty ceramic tiles</b> of size 300x300 min. thickness 7 mm on <b>floors</b> . The mix for leveling course shall consist of 1 part cement and 3 parts coarse sand by weight. Before under bed fairly moist but firm tiles shall be pressed by applying cement slurry with the fine joint including pigments. curing etc. complete as per specification.(preperation of underbed shall be measured else where)	SQM	2,153		
95	1410	Providing and laying <b>100 thk foam concrete insulation over roofs</b> laid in panels. Thermal conductivity of the concrete shall not exceed 0.125 KCL/Sqm hr degree C and weight shall be from 0.3 to 0.5 gm/cu.cm, all complete with fillets etc as per specification.	SQM	50		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

<b>SL NO.</b>	<b>ST. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QTY</b>	<b>Unit RATE IN USD</b>	<b>AMOUNT ( IN USD )</b>
96	1411	Providing and laying <b>3mm thick antistatic PVC flooring</b> of approved shade including all labour, material etc all complete as per drawing, specifications and as directed by Engineer.	<b>SQM</b>	100		
97	1412	Design, supply, fabrication, installation of truly levelled and aligned 600mm high <b>Cavity flooring</b> comprising of 35mm thick Nova teak or equivalent make superparticle board of size 610mm x 610mm floor panels having 2mm thick anti-static PVC sheet on top, 2mm thick hard PVC strip lipping on edges and 26 G aluminium sheet fixed with araldite on underside including cutting of panels where required for cables etc with supporting system comprising of 25mm dia galvanised MS threaded rod and pressure die cast zinc alluminium alloy adjustable head attachment at top and welded to 100x100x8mm base plate, pedestal fixed to floor by means of expansion fasteners to existing floor at a distance of 610mm center to center bothways etc all complete as per specification and as directed by Engineer.	<b>SQM</b>	202		
98	1413	Providing and laying <b>screed concrete 1:1.5:3</b> by volume laid in slope (with 6 to 10mm nominal size stone chips) in 2.0mX2.0m panels including all labour, materials, scaffolding etc. complete for all lifts, all leads and of following average thickness including making grooves as expsion joints inbetween panels and filling with bitumen type B 85/40 and screed armoured with light chicken wire mesh.	<b>SQM</b>	509		
99	1414	Providing and laying <b>Epoxy flooring</b> as per specification including, material, labour, fixing etc. all complete as per specification.	<b>SQM</b>	25		
	1500	<b>PROVIDING AND ERECTING ROOFING/SIDE CLADDING INCLUDING LAPS, SCAFFOLDING HOOKS, WASHERS, CORNER PIECES, ETC. COST OF ALL MATERIAL, LABOUR, EQUIPMENT, CLEATS, Z-PURLINS, WIND TIES (HORIZONTAL/VERTICAL) AND ANY OTHER STEEL WORKS ETC. AT ALL ELEVATIONS COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY THE ENGINEER FOR THE FOLLOWING:</b>				

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
100	1501	Designing, providing and fixing permanently color coated galvanised <b>troughed insulated sandwich roofing over roof purlins</b> as per relevant standard and specification. The external sheet shall be of minimum thickness 0.5mm of high tensile sheet having minimum yield strength 550MPa, the coating shall be Al-Zn zinc alumine of not less than 150gm/sqm, the outer face of external sheet will be permanently color coated with fluoro polymer (PVF2) coating of dry film thickness 20 micron minimum over primer, inner side of external sheet shall be provided with pre-coated of minimum 7 microns. The inner sheet shall be of galvanised mild steel of min. 0.6mm thickness and having yield strength of 250MPa minimum. The rate of galvanising shall be min. 275 gm/sqm. The exposed face of inner sheet shall be permanently color coated with silicon modified polyester paint coating of dry film thickness 20 micron minimum over primer, inside face of inner sheet shall be provided with pre-coating of minimum 7 microns. Inner sheets shall be fixed directly on roof purlins and Z-spacer made out of at least 2mm thick galvanised steel sheet.	SQM	1,199		
		The spacing of Z-spacer shall be same as purlins and external sheet shall be fixed on Z-spacer. Fastners shall be of high quality corrosion resistant steel of self drilling type with suitable cap. Insulation shall be minimum 50mm thick mineral wool insulation having a density of min. 50 Kg/Cum. etc all complete as per specification. The rate shall include all metal flashing/ridges/rain water gutters of matching color & material, sealing of joints etc all complete.				

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
101	1502	Designing, providing and fixing permanently color coated galvanised <b>troughed insulated sandwich wall cladding</b> as per relevant standard and specification. The external sheet shall be of minimum thickness 0.5mm of high tensile sheet having minimum yield strength 550MPa, the coating shall be Al-Zn zinc alume of not less than 150gm/sqm, the outer face of external sheet will be permanently color coated with fluoro polymer (PVF2) coating of dry film thickness 20 micron minimum over primer, inner side of external sheet shall be provided with pre-coated of minimum 7 microns. The inner sheet shall be of galvanised mild steel of min. 0.6mm thickness and having yield strength of 250MPa minimum. The rate of galvanising shall be min. 275 gm/sqm. The exposed face of inner sheet shall be permanently color coated with silicon modified polyester paint coating of dry film thickness 20 micron minimum over primer, inside face of inner sheet shall be provided with pre-coating of minimum 7 microns. Inner sheets shall be fixed directly on roof purlines and Z-spacer made out of at least 2mm thick galvanised steel sheet.	SQM	2,906		
		The spacing of Z-spacer shall be same as side runner and external sheet shall be fixed on Z-spacer. Fastners shall be of high quality corrosion resistant steel of self drilling type with suitable cap. Insulation shall be minimum 50mm thick mineral wool insulation having a density of min. 50 Kg/Cum. etc all complete as per specification. The rate shall include all metal flashing of matching color & material, sealing of joints etc all complete.				

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
102	1503	Designing, providing and fixing permanently color coated <b>galvanised MS troughed metal sheet decking plate</b> over roof purlins as per relevant standard and specification. Thickness of deck plate shall be minimum 1mm (thickness of base metal) with minimum trough depth of 44 mm. The yield strength of base metal shall be minimum 240MPa, the sheets shall be permanently coated with silicon modified polyester paint of 20micron DFT on under side and 7 micron on top side. The rate of galvanising shall be of 275gm/sqm and sheets shall supplied with gaurd film. The sheets shall be countinous over at least 3 spans i.e. 4 purlins. Decking sheets shall serve as permanent shuttering to the cast-in-situ roof slab and shall have adequate strength to support weight of green concrete and imposed load during construction including fixing of sheets to purlins, side lapping, end lapping etc.complete as per engineers approval and specification. M.S. Trough decking plate shall be fixed to the top surface of the purlin/top chord of truss/roof beams with self tapping self drilling white zinc plated heat treated high carbon steel screws	<b>SQM</b>	3,675		
		of min 5.6mm diameter at spacing of 390mm C/c in the trough and sealing it with epoxy sealent including all material, labour, tools, etc complete. In addition shear connector of 16mm dia and min 75mm long mild steel studs at spacing 520mm C/c shall be fixed on top cord of purlin passing through the metal decking. (Note:-Leak proofing of the metal decking and concrete system shall be demonstrated by the contractor). Measurement shall be of the plan area of roof covered by MS trough metal decking.				
	1600	<b>PROVIDING AND FIXING FALSE CEILING INCLUDING SUPPLY OF CEILING MATERIAL, SUSPENSION SYSTEM AND ALL OTHER MATERIALS REQUIRED FOR THE WORK INCLUDING POLISHING/ PAINTINGS, LABOUR ETC., ALL COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-</b>				
103	1602	Providing and fixing <b>False ceiling with 12.5mm thick Gypsum board tiles</b> of approved quality and brand in plan or elevation with aluminium grid, metal suspension system, anchor fastener adjustable hangers etc including two or more coats of acrylic emulsion paint of approved colour to give an even shade all complete with smooth finish as per specifications, drawings and as directed by Engineer.	<b>SQM</b>	1,302		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

<b>SL NO.</b>	<b>ST. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QTY</b>	<b>Unit RATE IN USD</b>	<b>AMOUNT ( IN USD )</b>
104	1603	Providing & laying 25 mm thick fibre glass wool insulation bound in polythene bags and laid over false ceiling panels having min. density 32kg/cum etc. all complete as per specifications and drawings.	SQM	302		
105	1604	Providing & fixing 50 mm thick fibre glass wool under deck insulation having min. density 32kg/cum faced with reinforced aluminium foil (FSK) and fixing to ceiling with anchor fasteners at interval of 600mm c/c in both directions, sealing the joint with 75mm wide aluminium foil tape / PVC adhesive tape and held in position with 22 G GI cross wires and wire netting of 12.5mm x 0.71mm (22 G) shall be stretched over the finished insulation and secured with anchor fasteners to prevent any sagging etc. all complete as per specifications and drawings.	SQM	302		
	1700	<b>PROVIDING AND FIXING RAIN WATER DOWN TAKE PIPES INCLUDING 2 COATS OF APPROVED PAINT OVER A PRIMARY COAT, ALL SPECIALS AND ACCESSORIES ETC. COMPLETE AS PER SPECIFICATION.</b>				
106	1703	GI down take pipes of 100 mm dia- Medium quality as per specification complete including hot dipped clamps, supports,etc.	RM	2,618		
107	1704	GI down take pipes of 150 mm dia- Medium quality as per specification complete including hot dipped clamps, supports,etc.	RM	919		
108	1705	HDPE down take pipes of 100 mm dia as per specifications	RM	100		
109	1706	HDPE down take pipes of 150 mm dia as per specifications	RM	147		
	1800	<b>MISCELLANEOUS</b>				
110	1801	Providing and fixing PVC water stops as per relevant international standard and specification complete.	RM	294		
111	1802	Supplying and laying of rounded gravels 40mm and down in transformer area etc as per drgs. & as directed by Engineer.	CUM	75		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

<b>SL NO.</b>	<b>ST. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QTY</b>	<b>Unit RATE IN USD</b>	<b>AMOUNT ( IN USD )</b>
112	1803	Supplying and laying <b>300mm thick layer of rounded gravels of 63mm and down</b> graded in plant area etc, as per drgs. & as directed by Engineer.	<b>CUM</b>	252		
113	1804	Providing <b>50mm thick anticorrosive layer laid to slope</b> consisting of compacted crushed stone screenings, fine gravel, clean sand or similar material as directed by the Engineer, <b>mixed in hot asphalt 10% by volume</b> and rolled or compacted complete as per drawings and specifications, below fuel oil tanks and at such other places as per specifications and as directed by the Engineer.	<b>SQM.</b>	100		
114	1805	Providing <b>50mm thick premix carpet surfacing</b> laid to slope in two layers 30mm and 20mm respectively with 12mm and down broken stone chips mixed with 80/100 grade bitumen @ 52 Kg/Cu.M including compaction and cost of all material, labour all complete as per specification and as directed by the Engineer.	<b>SQM.</b>	100		
115	1806	Providing and fixing <b>aluminium strips minimum 18 SWG thk and 300mm wide</b> over expansion joints with minimum lap of 50mm length including aluminium screws, rawl plugs all complete as per specification.	<b>RM</b>	126		
116	1807	Providing, laying and fixing <b>transformer rails</b> including guide rails in concrete including joining of rails, anchoring lugs etc complete as per specification and as directed by Engineer.	<b>MT</b>	2		
117	1807A	Laying and fixing <b>transformer rails, guide rails</b> in concrete including loading, unloading and transporting from owner's stores, joining of rails, anchoring lugs etc complete as per specification and as directed by Engineer.	<b>MT</b>	38		
118	1808	Supply and fabrication <b>Emblem made out of blade steel</b> of approved size and design, erecting and fixing over plant entrance gate including welding, alignment etc all complete as per drawings, specification and as directed by Engineer.	<b>Kg</b>	100		

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

<b>SL NO.</b>	<b>ST. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QTY</b>	<b>Unit RATE IN USD</b>	<b>AMOUNT ( IN USD )</b>
119	1809	Design, supply and fabricating <b>Motorized sliding MS gate</b> of approved size and design, erecting and fixing at main entrance including all guides, rails, alignments, control panels, switches, paintings etc all complete as per specification and as directed by Engineer.	<b>SQM</b>	30		
120	1809A	Laying of <b>earthing mats/rod</b> including transportation from yard stores, loading, unloading, cutting to length, welding etc complete as per specification and as directed by Engineer.	<b>MT</b>	3		
121	1810	Designing, providing and fixing of <b>Heavy duty galvanised friction anchor fasteners of Hilti/Equivalent make</b> of <b>dia. 16mm</b> and appropriate length in concrete (minimum grade M20) to <b>take direct tension of minimum 1.8Mton</b> including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer.	<b>Each</b>	30		
122	1811	Designing, providing and fixing of <b>Heavy duty galvanised friction anchor fasteners of Hilti/Equivalent make</b> of <b>dia. 20mm</b> and appropriate length in concrete (minimum grade M20) to <b>take direct tension of minimum 2.5Mton</b> including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer.	<b>Each</b>	15		
123	1812	Designing, providing and fixing of <b>Heavy duty galvanised chemical anchor fasteners of Hilti/Equivalent make</b> of <b>dia. 12mm</b> and appropriate length in concrete (minimum grade M20) to <b>take direct tension of minimum 1.0Mton</b> including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer.	<b>Each</b>	10		
124	1813	Designing, providing and fixing of <b>Heavy duty galvanised chemical anchor fasteners of Hilti/Equivalent make</b> of <b>dia. 16mm</b> and appropriate length in concrete (minimum grade M20) to <b>take direct tension of minimum 1.6Mton</b> including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer.	<b>Each</b>	10		
	<b>2000</b>	<b>FENCING AND GATES.</b>				

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

<b>SL NO.</b>	<b>ST. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QTY</b>	<b>Unit RATE IN USD</b>	<b>AMOUNT ( IN USD )</b>
125	2002	Supplying and fixing <b>G.I. barbed wire in fencing 600mm high</b> consisting of min. 3 nos. strands on top of block work boundary wall including mild steel posts, GI clips, anchors, one coat of redoxide zinc chromate primer and two coats of approved aluminium paint etc complete as per specification, drawing and as directed by the Engineer.	<b>RM</b>	2,734		
126	2003	Supplying, fabricating and installing in position and testing <b>Galvanised MS gates</b> made out of channels, joists, angles, flats, plates, pipes and sheets including stiffner bracings, fabricated hinges, MS aldrops, with locking arrangement tempered steel pivot, gide track of MS tee, ball bearing arrangements, caster ways with 600mm high GI barbed wire fencing etc all complete as per drawings, specifications and as directed by Engineer.	<b>MT</b>	15		
127	2004	Supplying and erecting in position 2.4 m high <b>PVC coated gavanised chain linked fencing</b> of minimum 8 gauge (including PVC coating ) of mesh size 75 mm. The diameter of the steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. GI barbed wire fencing confirming to IS 298 at top of chain link fencing shall be provided with 4 strands of height of 600 mm including all accesories as per specification all complete.	<b>SQM</b>	1,050		
	<b>2100</b>	<b>WATER SUPPLY</b>				
128	2101	Providing and fixing in position tested heavy duty type <b>CP Bib cocks</b> as per relevant international standard in specification including sockets, union, nut etc complete - <b>15mm nominal bore.</b>	<b>Each</b>	422		
129	2102	Providing and fixing in position tested heavy duty type <b>CP Stop cocks</b> as per relevant international standard in specification including sockets, union, nut etc complete - <b>15mm nominal bore.</b>	<b>Each</b>	422		
130	2103	Providing and fixing in position tested heavy duty <b>CP brass fullway valve</b> as per relevant international standard in specification including sockets, union, nut etc complete - <b>25mm nominal bore.</b>	<b>Each</b>	50		

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131	2104	Providing and fixing in position tested heavy duty <b>CP brass fullway valve</b> as per relevant international standard in specification including sockets, union, nut etc complete - <b>50mm nominal bore.</b>	<b>Each</b>	8		
132	2105	Providing and fixing <b>GI pipes</b> as per relevant international standard in specification complete with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete - <b>15 mm nominal bore.</b>	<b>RM</b>	1,470		
133	2106	Providing and fixing <b>GI pipes</b> as per relevant international standard in specification complete with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete - <b>20 mm nominal bore.</b>	<b>RM</b>	1,197		
134	2107	Providing and fixing <b>GI pipes</b> as per relevant international standard in specification complete with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete - <b>25 mm nominal bore.</b>	<b>RM</b>	53		
135	2108	Providing and fixing <b>GI pipes</b> as per relevant international standard in specification complete with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete <b>(for external work) - 15mm nominal bore (N.B).</b>	<b>RM</b>	105		
136	2109	Providing and fixing <b>GI pipes</b> as per relevant international standard in specification complete with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete <b>(for external work) - 20mm nominal bore (N.B).</b>	<b>RM</b>	105		
137	2110	Providing and fixing <b>GI pipes</b> as per relevant international standard in specification complete with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete <b>(for external work) - 25mm nominal bore (N.B).</b>	<b>RM</b>	105		

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SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
138	2111	Providing and fixing <b>GI pipes</b> as per relevant international standard in specification complete with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete ( <b>for external work</b> ) - <b>50mm nominal bore (N.B)</b> .	RM	105		
139	2112	Providing and fixing <b>610mmx453mmx6mm thk mirror</b> from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets etc complete with CP screws as per specification.	Each	130		
140	2113	Providing and fixing <b>610mmx127mmx6mm thk clear glass with C.P Guard rails</b> and mounted on C.P. brackets etc complete as per specification.	Each	130		
141	2114	Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted <b>towel rod</b> with C.P. Brackets etc all complete as per specification.	Each	130		
142	2115	Providing and fixing <b>C.P. soap holder</b> mounted with C.P. screws etc complete as per specification.	Each	88		
143	2116	Providing and fixing <b>C.P. liquid soap</b> dispenser. Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc complete as per specification.	Each	88		
144	2117	Providing and fixing <b>C.P. brass shower rose</b> with 15mm or 20mm inlet etc all complete as per specification.	Each	88		
145	2118	Providing & fixing <b>P.V.C. water tank of 1000 litres</b> capacity (Syntex or approved equivalent make) in position. The work to include making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete as per specification and at all heights and levels.	Each	84		
146	2119	Providing & fixing <b>P.V.C. water tank of 2000 litres</b> capacity (Syntex or approved equivalent make) in position. The work to include making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete as per specification at all heights and levels.	Each	2		

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SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
147	2120	Providing & fixing <b>P.V.C. water tank of 5000 litres</b> capacity (Syntex or approved equivalent make) in position. The work to include making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete as per specification at all heights and levels.	Each	1		
	<b>2200</b>	<b>SANITARY WORKS</b>				
148	2201	Supply and fixing <b>vitreous china Wash Basin size 600x450</b> with R.S. or C.I. brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug 32mm chromium plated brass waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, cutting and making good the walls where required etc complete as per specifications	Each	88		
149	2202	Providing and fixing approved vitreous china <b>acid/alkali resistant laboratory sink of size 600x450x200mm</b> with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, CP brass waste and 40mm CP brass trap with necessary union complete including painting the fittings, cutting and making good the wall where required as per specification.	Each	86		
150	2203	Providing and fixing colour glazed <b>vitreous china European type water closet</b> with siphon, open front solid plastic seat and plastic cover, low level <b>12.5 litre glazed vitreous china flushing cistern</b> (same colour as WC) with valveless fittings, necessary C.P connections etc complete as per specification and directed by Engineer.	Each	86		
151	2204	Providing and fixing <b>glazed vitreous china squatting pan</b> with internal foot rests and high level <b>12.5 litre CI flusing cistern</b> with valveless fittings, necessary CP connections all complete with cistern painting, CI bracket etc as per specification and as directed by Engineer.	Each	86		

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SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
152	2205	Providing and fixing <b>wall type glazed vitreous china urinals</b> with C.I. automatic flushing cistern approximately once every five minutes for every four urinals (max.) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings all complete as per specifications.	Each	42		
153	2206	Supply, laying and jointing <b>75mm dia heavy duty cast iron pipes</b> including bends, branches and all other necessary fittings, lead caulking, a coat of bituminous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete and as per specifications.	RM	420		
154	2208	Supply, laying and jointing <b>150mm dia heavy duty cast iron pipes</b> including bends, branches and all other necessary fittings, lead caulking, a coat of bituminous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete and as per specifications.	RM	336		
		<b>Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete as per specification for dia.</b>				
155	2211	<b>300mm dia</b>	RM	189		
		<b>Providing, laying HDPE pipes including jointing with stiff mixture testing of joints etc all complete as per specification for dia.</b>				
156	2214	<b>150mm dia</b>	RM	1,418		
157	2215	<b>200mm dia</b>	RM	105		
158	2216	<b>300mm dia</b>	RM	389		
159	2217	<b>450mm dia</b>	RM	84		
160	2218	Providing and fixing <b>circular heavy duty C.I. manhole cover of 600 mm dia</b> with frame all complete as per specification.	Each	15		

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SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
161	2219	Providing and fixing <b>square mouth S.W Gully trap grade 'A'</b> complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc all complete size - <b>100x100mm P or S Type.</b>	Each	53		
162	2220	Providing and fixing <b>square mouth S.W Gully trap grade 'A'</b> complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc all complete size - <b>150x100mm P or S Type.</b>	Each	42		
163	2221	Providing and fixing <b>square mouth S.W Gully trap grade 'A'</b> complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc all complete size - <b>150x150mm P or S Type.</b>	Each	48		
164	2222	Construction of <b>road /yard gullies in 250mm thick brickwork - 750mm deep</b> with cement concrete M-20 grade foundation, including reinforcement, 12mm cement mortar (1:3) plastering both inside and outside, M.S. rungs @ 250 mm c/c, C.I. Grating along with frames as per IS standards including necessary earthwork in excavation, backfilling etc complete as per drawings/specifications.	Each	11		
165	2223	Providing and laying <b>Stone ware pipes</b> of dia.250mm as per specification including excavation of trenches, laying PCC, SW pipe, encasing with PCC, alignment, jointing, testing all complete.	RM	250		
166	2224	Providing <b>manholes</b> as per specification including excavation, brickwork in 1:6, plaster both inside and outside face (20mm & 15mm), galvanised rungs, neat palster, heavy duty CI covers, SW pipe connection, alignment, jointing, testing all complete.	Each	11		
167	2225	Providing and fixing <b>C.I. floor traps with C.P jalli</b> complete as per specification.	Each	21		

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SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
	<b>2300</b>	<b>STRUCTURAL STEEL WORKS</b> All items shall include painting with suitable primer coat and also inclusive of all necessary quality test to the satisfaction of engineer/customer for the following.				
<b>168</b>	<b>2301</b>	<b>Erection, alignment, welding</b> , applying 1 coats of redoxide zinc-chromate before erection of <b>already fabricated structural steel</b> made from mild steel, pipes, chequered plate and mild steel rounds, at all elevations involving rolled sections, built up sections fabricated out of plates, rolled sections and combination of plates and rolled sections, in columns, beams, gantry girders, roof trusses, portals, laced purlins, space frames, shear connectors, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, diaphragm, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails, toeplates, MS Rungs, insert plates, edge angles, embedments, lugs, posts, stays, louvers, lacings, gusset plates, safety chains for walkways adjacent to crane girders etc including collection of fabricated structural steel from stores, transportation, bolting, erection bolts & nuts	<b>MT</b>	<b>2,380</b>		
		(weight of erection bolts & nuts shall not be payable. Supply of permanent bolt of grade C mild steel bolts & nuts to be paid separately), assembly, use of low hydrogen/ radiogenic electrodes as per specification, post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures (Scaffolding, Access ladders, Working Platforms etc.), setting column bases, surface preparation, touch-up painting, dismantling and removal of all temporary structures (weight of temporary structures not payable) complete with all labour, material, electrodes and other consumables, equipment, testing (mechanical and non-destructive), all other general and special requirements, all other activities required for completion of the work including return of surplus/ waste steel materials to store etc. as per specification, drawings and instructions of the Engineer. (Fabricated Steel will be supplied by owner)				

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SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
169	2302	<p><b>Supply, fabrication, erection, alignment, welding</b>, primer painting (primer coat consisting of 2 coats of redoxide zinc-chromate. One coat to be applied at shop and the other after erection) of structural steel made from mild steel rolled section, buildup section fabricated out of plates, rolled sections and combination of plates and rolled sections, in columns, beams, gantry girders, roof trusses, portals, laced purlins, space frames, shear connectors, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, diaphragm, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails, toeplates, MS Rungs, insert plates, edge angles, embedments, lugs, posts, stays, louvers,</p>	MT	21		
		<p>lacings, gusset plates, safety chains for walkways adjacent to crane girders etc, collection of steel from stores, transportation, straightening, making cutting plan, cutting, bending, rolling, grinding, drilling, bolting, erection bolts &amp; nuts (weight of erection bolts &amp; nuts not payable. Supply of permanent bolt of grade C mild steel bolts &amp; nuts to be paid separately), assembly, edge preparation, preheating(&amp; use of low hydrogen/ radiogenic electrodes as per specification), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures (Scaffolding, Access ladders, Working Platforms etc.), setting column bases, surface preparation, touch-up painting, dismantling and removal of all temporary structures (weight of temporary structures not payable) complete with all labour, material, electrodes and other</p>				
		<p>consumables, equipment, testing (mechanical and non-destructive), preparation of fabrication drawings, joint design calculations and all other general and special requirements, all other activities required for completion of the work including return of surplus/ waste steel materials to store etc. as per specification, drawings and instructions of the Engineer.</p>				

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SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
170	2303	Extra over ST NO. 2301 & 2302 for <b>blast cleaning</b> of steel structures to near white metal surface (Sa 2 1/2 ) and applying <b>epoxy based zinc phosphate primer</b> in coats of minimum 25 micron (DFT) at shop and 25 micron (DFT) after erection, instead of primer coat of red oxide zinc-chromate, including touch-up painting etc complete as per specification.	MT	21		
171	2306	Providing & application of <b>epoxy based colour finish paint</b> in coats with minimum 50 micron (DFT) of approved make and shade over steel sections already having primer coats (as per ST NO. 2303) at all elevations to achieve an even shade with all materials, labour, equipment, handling including protection and cleaning, scaffolding etc. complete as per specification, drawings and instruction of the Engineer.	MT	1,953		
172	2308	Supplying, fabrication , transportation, erection and alignment of factory made <b>electroforged gratings</b> with steel conforming to ASTM A36 at all elevations including preparation of design drawings and fabrication drawings in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads, fixing clamps etc. complete with other fittings and fixtures including all taxes, duties, transportation, packing, grinding, drilling, bolting (supply of steel bolts and nuts to be paid separately under ST NO. 2309(i)), all welding, edge preparation, blast cleaning of steel surfaces, hot dipped galvanisation conforming to ASTM A123, ASTM A153, ASTM A384 testing, complete as per specifications, drawings and instructions of the Engineer.	MT	20		
173	2309	i) Supplying and fixing in position of <b>permanent steel bolts and nuts, washers</b> etc. conforming to Grade A of ASTM A-307 for structural steel work complete as per specification, drawings and instructions of the Engineer.	Quintal	1		
174	2309A	ii) Supply and fixing in positing of <b>high strength structural bolts</b> conforming to ASTM A-325 and high strength structural hardened and tempered nuts with hardened and tempered washers, galvanized locknuts of steel as per ASTM A-36 for structural steel work complete as per specification, drawings and instructions of the Engineer.	Quintal	43		

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SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
175	2310	<b>Dismantling of steel structure at any elevation</b> , lowering of material and carriage of the dismantled material up to field fabrication shop, or, return to projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions, ( weight of such adjacent members and temporarily dismantled members not payable) including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per specification, drawings and instructions of the Engineer.	MT	1		
	2311	Addition to, alterations in and/or modification of " <b>Erection Marks</b> " either in erected position or in the shop including cutting of parts, gouging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to the required level, painting, transportation, return of unutilised steel pieces to the project store, temporarily dismantling, cutting, re-welding, supporting and restoring to correct position of all the temporarily dismantled members, realignment of adjacent connected members, (weight of such temporarily dismantled and adjacent members not payable), complete as per specifications, drawings and instructions of the Engineer.				
176		i) In erected position	MT	231		
177		ii) In fabrication yard	MT	231		
178	2312	<b>Re-erection of dismantled fabricatied structural steel members</b> requiring additions, modification, (dismantling and additions to, alterations in and/or modification to be paid separately under ST NO. 2312 and 2313 respectively) including carriage of modified "Erection Marks" from the field fabrication shop to erection site, lifting to required posiion, aligning in position, tack welding, final welding and touch up painting including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismnatled members, re-alignment of adjacent connected members, (weight of such temporarily dismantled members and adjacent membersnot payable) including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per the specifications, drawings and instructions of the Engineer.	MT	1		

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SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
179	2316	Providing and fixing <b>normal handrail for staircase in buildings</b> as per specification including stainless steel top rail, post, transoms & strips, etc all complete.	RM	142		
	<b>2400</b>	<b>ROAD WORK</b>				
180	2401	<b>Preparation of sub grade by excavating earth</b> to required depth in all types of soil, dressing to camber and compacting the exposed surface of subgrade including making good the undulation, watering etc and stacking/disposal of surplus earth within a lead of 1km etc all complete as per specification and as directed by the engineer.	CUM	8,042		
181	2402	<b>Disposal</b> of surplus excavated earth beyond an <b>initial lead of 1km and upto a lead of 5km</b> including dumping and levelling the dumped material etc complete as per specification and as directed by the engineer.	CUM	8,042		
182	2405	Providing, stacking and laying <b>granular morrum</b> for shoulder including watering, compaction with road roller to required level etc all complete as per specification and as directed by the engineer-in-charge. .	CUM	1,304		
183	2406	Providing and laying <b>water bound macadam sub base course</b> in layers of required thickness with stone aggregates of <b>63mm to 40mm</b> size, stone screenings and binding material including screening, sorting, spreading to template, watering and compaction/consolidation with road roller etc all complete as per specification and as directed by the engineer.	CUM.	2,536		
184	2407	Providing and laying <b>water bound macadam base course</b> in layers of required thickness with stone aggregates of <b>63mm to 40mm</b> size, stone screenings and binding material including screening, sorting, spreading to template, watering and compaction/consolidation with road roller etc all complete as per specification and as directed by the engineer.	CUM	1,521		

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185	2408	Providing and laying <b>water bound macadam base course</b> in layers of required thickness with stone aggregates of <b>50mm to 20mm size</b> , stone screenings and binding material including screening, sorting, spreading to template, watering and compaction/consolidation with road roller etc all complete as per specification and as directed by the engineer.	<b>CUM.</b>	1,014		
186	2409	Providing and applying <b>tack coat</b> of low viscosity liquid bitumen of suitable approved grade conforming to IS:73, 217 or 454/equivalent AASHTO standards as applicable @ 10kg/10sqm on an untreated water bound macadam base surface including scraping and cleaning the base surface with compressed air etc all complete as per specification and as directed by the engineer.	<b>SQM</b>	10,143		
187	2410	Providing, mixing and laying <b>bituminous macadam</b> course of compacted 50mm thickness with a bitumen content of 4% by weight of total mix and aggregates including hot mixing, hot laying, rolling etc all complete as per specification and as directed by the engineer. Bitumen shall be of a suitable approved grade complying with IS:73/ equivalent AASHTO standards.	<b>SQM</b>	10,143		
188	2411	Providing and applying <b>tack coat</b> of low viscosity liquid bitumen of suitable approved grade conforming to IS:73, 217 or 454/equivalent AASHTO standards as applicable @ 5kg/10sqm on a bituminous macadam base surface including cleaning the base surface with a mechanical broom or any other approved equipment/method etc all complete as per specification and as directed by the engineer.	<b>SQM</b>	10,143		
189	2412	Providing, mixing and laying compacted 50mm thick <b>Asphaltic Concrete (Bituminous Concrete)</b> wearing course with a bitumen content of 7.5% by weight of total mix, aggregates and filler including hot mixing, hot laying, rolling etc all complete as per specification and as directed by the engineer. Bitumen shall be of a suitable approved grade complying with IS:73/equivalent AASHTO standards.	<b>SQM</b>	10,143		

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190	2413	Providing and applying <b>liquid seal coat</b> comprising of an application of a layer of bituminous binder at the rate of 9.8kg/10sqm followed by a cover of stone chips at the rate of 0.09 cum/10sqm including rolling etc all complete as per specification and as directed by the engineer. Bitumen shall be of a suitable approved grade complying with IS:73, 217 or 454/equivalent AASHTO standards.	<b>SQM</b>	10,143		
191	2414	Providing and laying 400mm(long)x150mm(thick)x350mm (depth) <b>precast concrete kerb stones</b> with concrete grade C30 and shape as per detailed drawing along edge of blacktopping of road including fixing with 13mm thick 1cement : 2sand mortar in joints, providing 100mm thick PCC (1:3:6) as bedding, finishing the joints with neat cement paste, making drainage openings where required etc all complete as per specification and as directed by the engineer.	<b>RM</b>	2,898		
192	2415	Providing and laying 300mmx300mmx80mm size <b>precast concrete blocks</b> with concrete grade C30 and shape as per detailed drawing including providing 50mm thick screeded sand as bedding, finishing the joints etc all complete as per specification and as directed by the engineer.	<b>SQM</b>	4,347		
193	2416	Providing and laying 150mm diameter R.C.C NP-2 type <b>Hume pipes</b> in raised shoulders as rain water drains as per detailed drawing including fixing with 1cement : 2sand mortar, finishing the joints with neat cement paste etc all complete as per specification and as directed by the engineer.	<b>RM</b>	170		
194	2500	<b>Geotechnical Investigation</b>	<b>LS</b>	1		
195	2600	<b>Topographical survey and Contouring</b>	<b>LS</b>	1		
196	2700	<b>Providing and fixing wooden cabinets in 40 residential units</b>	<b>LS</b>	1		

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**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

SL NO.	ST. NO.	DESCRIPTION	UNIT	QTY	Unit RATE IN USD	AMOUNT ( IN USD )
197	2800	Design , engineering , excution of all civil works , mechanical and electrical works on a turnkey basis including all labour , materials , tools , & plant , consumables , mandatory spares , carrying out performance test etc of borewells etc for construction of Bore wells , pumps , and pump houses as per Technical Specifications PE-TS-210-800-C003 complete ( 60 m3 / hr capacity ) as approved by Engineer	LS	2		
	3000	<b>MICRO GRADING</b>				
198	3001	<b>Earth work in cutting (excavation) for levelling and grading</b> upto a maximum depth of 1 m below ground level in <b>all types of soil</b> including laterite, moorum etc which can be excavated by means of crow bar, pick axe etc but does not require chiselling or blasting including dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of excavated material <b>up to a lead of 1km etc</b> all complete as per specification and as directed by the engineer.	CUM	14,063		
199	3002	<b>Extra over Item no. 1 for disposal of surplus excavated earth</b> beyond a <b>lead of 1km and upto a lead of 2km</b> including levelling the disposed material etc all complete as specified and as directed by the engineer.	CUM	2,813		
200	3003	<b>Earth work in filling for levelling and grading</b> using borrowed approved coarse grained soil (borrowed soil to be arranged by the bidder at his own cost) on prepared surface obtained by compacting with mechanical means after removing debris, grass, vegetation, bushes, trees etc (if any) in horizontal layers not exceeding 20cm in compacted thickness including sorting, breaking clods, watering, compaction with proper moisture content to achieve a minimum 95% maximum dry density (Standard Proctor test) / atleast 80 % relative density, levelling, dressing, finishing to required slopes and grades, transportation including all leads and lifts etc all complete as per specification, drawing and as directed by the engineer.	CUM	15,625		
201	3100	<b>Mobilisation of PLC based automatic Batching Plant ( 30 Cu M / hr ) with Chilling Unit and Civil Laborotary within 2 months of Start of work . Payment will be released on certification of BHEL Engineer</b>	LS	1		
<b>NOTES:</b>						

**RATE SCHEDULE FOR CIVIL, STRUCTURAL ARCHITECTURAL WORKS**

**400 MW MARIB GTPS PH-II REPUBLIC OF YEMEN**

<b>SL NO.</b>	<b>ST. NO.</b>	<b>DESCRIPTION</b>	<b>UNIT</b>	<b>QTY</b>	<b>Unit RATE IN USD</b>	<b>AMOUNT ( IN USD )</b>
1		In case of omission in quoting any rate, the evaluation will be done considering the highest quoted rate obtained against that item but the work, if awarded, will be on the lowest quoted rate obtained against that item.				
2		The rate shall be entered in figures as well as in words. In case of difference in rates between words and figures, the lesser of the two will be treated as valid rate.				
3		Only unit rate shall be considered for evaluation purpose				
4		The quantities indicated against each item above are tentative and are liable to vary depending upon the site requirement. The contractor has to supply / install actual quantities as per advice of BHEL Engineer and accordingly the final contract price shall be worked out.				
5		Evaluation of the bids shall be done based on total price against this BOQ.				