

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
EARTHEN RAW WATER RESERVOIR				
1	Earth work in stripping of top soil upto a maximum depth of 300 mm below ground level so as to exclude all debris, grass, vegetation, bushes, trees having girth upto 300mm including roots and organic materials etc including dressing to specified levels & grades and compacting the graded/stripped surface by manual/mechanical means, disposal of stripped materials within a lead upto 1km etc all complete as per specification, drawing and as directed by the engineer-in-charge.	SQM	265740	3.00174506
2	Earth work in excavation upto any depth below ground level in all types of soil including moorum, ash which can be excavated by any means inside reservoir/ash pond area and for foundation of reservoir/ash pond embankment and cut-off trench including site clearance, setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), dressing the sides & bottom, levelling to grade, all lifts, ramming/compacting the excavated bottom, stacking/disposal of surplus excavated materials within a lead upto 1km , spreading/levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.	CUM	157212	3.51246077
A2	Earth work in excavation upto any depth below ground level in soft rock (rock without any recovery of excavated materials in the form of hard stone/boulder) including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc (but does not require chiselling or blasting) inside reservoir area and for foundation of reservoir embankment and cut-off trench including setting out, levelling, dewatering (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking/disposal of surplus excavated materials within a lead upto 1km , spreading/levelling of disposed materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.	CUM	1000	0.06806574
A4	Earth work in embankment filling/bed filling upto any level below/above ground level in layers not exceeding 250 mm loose thickness with selected approved soil (CL/CI/CH soil) from compulsorily excavated soil available within a lead upto 1km and compacted so as to achieve atleast 95% of maximum dry density (modified Proctor Test) as per IS:2720, Part-8 including setting out, re-excavation of stacked earth, sorting, handling, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing, dewatering if required, all lifts etc all complete as per specification, drawing and as directed by the engineer-in-charge.	CUM	112241	2.65350713
5	Extra over ST No. 1, 2, A2, A4, 101, 103 & 107 for carriage of soil/excavated materials beyond initial lead of 1 km or part thereof as below;			
a	Carriage beyond initial lead of 1 km or part thereof but not exceeding 2 km	CUM	32510	0.12626573
b	Carriage beyond 2 km or part thereof but not exceeding 3 km	CUM	26010	0.18595853

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

1 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
c	Carriage beyond 3 km or part thereof but not exceeding 4 km	CUM	19505	0.23755320
d	Carriage beyond 4 km or part thereof but not exceeding 5 km	CUM	13005	0.24633424
e	Carriage beyond 5 km or part thereof but not exceeding 6 km	CUM	13005	0.29630384
f	Carriage beyond 6 km or part thereof but not exceeding 7 km	CUM	6500	0.17737622
g	Carriage beyond 7 km or part thereof but not exceeding 8 km	CUM	6500	0.20665748
h	Carriage beyond 8 km or part thereof but not exceeding 9 km	CUM	6500	0.23509442
i	Carriage beyond 9 km or part thereof but not exceeding 10 km	CUM	6500	0.26522001
A6	Earth work in embankment filling/bed filling upto any level below/above ground level in layers not exceeding 250 mm loose thickness with selected approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted so as to achieve atleast 95% of maximum dry density (modified Proctor Test) as per IS:2720, Part-8, including setting out, supplying borrowed soil, royalty/seignorage fee (if any), sorting, handling, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, testing, dewatering if required, all leads and lifts etc all complete as per specification, drawing and as directed by the engineer-in-charge.	CUM	222834	17.36720979
8	Supplying, stacking and laying sand of approved quality as sand blanket/cushion over base/bed and on slopes of embankment including screening, washing (wherever required), watering, compaction, dressing, necessary trimming if any including all leads and lifts etc all complete as per specification and as directed by the engineer-in-charge.	CUM	23094	4.54744084
9	Supplying, stacking and laying sand filter of approved quality inside the body/ slope of embankment including screening, washing (wherever required), watering, compaction, dressing, necessary trimming if any including all leads and lifts etc all complete as per specification and as directed by the engineer-in-charge.	CUM	23209	6.19172874
10	Supplying, stacking and laying 150mm thick graded gravel filter of approved quality below/above rock-toe in slopes, on the embankment including screening, washing (wherever required), watering, compaction, dressing, necessary trimming if any including all leads and lifts etc all complete as per specification and as directed by the engineer-in-charge.	CUM	383	0.10217726

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

2 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
11	Providing and placing approved quality of 500 micron thick heavy duty low density polyethylene liner (LDPE) films manufactured from polyethylene resin in the base/bed of reservoir as well as on side slopes of embankment to prevent seepage including joining with approved method including testing, fixing at the edges in plain cement concrete by providing 400mm wide and 300mm thick plain cement concrete 1:2:4 on the top of embankment (the cost of plain cement concrete 1:2:4 shall be excluded and shall be payable separately) as shown in the drawing etc all complete as per specification and as directed by the engineer-in-charge. Minimum width of LDPE liner shall be 6m.	SQM	153957	3.59972470
12	Providing and placing 300mmx300mm size and 50mm thick precast concrete tiles of grade M-20 including providing 15mm thick 1cement:4sand mortar on LDPE liner at the bed of reservoir and on side slopes of embankment, filling joints with 1cement : 3sand mortar etc all complete as per specification and as directed by the engineer-in-charge. (Cement for mortar shall be provided by BHEL free of cost)	SQM	153957	8.96891409
13	Supplying, stacking and laying hand placed rock toe at the down stream side of embankment with approved quality of rock fragments including materials etc all complete as per specification, drawing and as directed by the engineer-in-charge.	CUM	5424	4.83718827
14	Supplying, stacking and laying 300mm thick rip rap on the slopes of embankment with approved quality of rock fragments including materials etc all complete as per drawing, specification and as directed by the engineer-in-charge.	CUM	4381	2.27630571
15	Providing and placing turfing with approved quality of grass on the outer slopes of embankment including materials, transportation, watering etc all complete as per drawing, specification and as directed by the engineer-in-charge.	SQM	9736	0.16079040
16	Providing and laying of 450 mm diameter R.C.C hume pipes of class NP3 conforming to IS:458 with collars, jointing the pipes with 1cement : 1sand mortar and testing of joints etc all complete as per specification and as directed by the engineer-in-charge. (Cement for mortar for jointing shall be provided by BHEL free of cost)	RM	270	0.14827479
17	Providing and fixing of 150mm square and 900mm long guard stones over the top of embankment (cost of PCC grade M10 for encasement will be paid seperately) etc all complete as per drawing, specification and as directed by the engineer-in-charge.	EACH	90	0.00891811

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

3 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
18	Providing and laying Water Bound Macadam (WBM) as per IRC 19 using crushed or broken stone aggregates of size 63mm to 40mm including packing with screenings, binding materials, watering and consolidation/compaction with road roller to make required line, slope and level etc all complete as per drawing, specification and as directed by the engineer-in-charge.	CUM	2227	1.01608823
19	Providing and laying compacted 50mm thick moorum over WBM base course including watering and compaction with road roller to make required line, slope and levels etc all complete as per drawing, specification and as directed by the engineer-in-charge.	CUM	668	0.20746560
Earth work in excavation for foundations, trenches, drains, pipelines, sumps, substructures etc, backfilling and disposal including necessary labour, materials, equipment, loading, transportation, unloading, dewatering etc as per specification, drawing and as directed by engineer- in-charge for the following.				
20	Earth work in excavation up to any depth in all types of soil including moorum, ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1km, spreading/levelling of disposed materials etc all complete.	CUM	5068	0.12099835
21	Back filling upto any depth below ground level around foundations, plinths, trenches, drains, pipe lines, sumps, substructures etc to proper grade and level in layers not exceeding 250 mm thickness with selected materials from compulsorily excavated soil available within a lead upto 1km and compacted so as to acheive at least 90% maximum dry density as per IS-2720 (Part-VII) including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete.	CUM	1513	0.03144533
21x	Providing and laying 225mm thick stone pitching including caulking with 1 cement: 4 sand mortar on the slopes of earth fill/cut with approved quality of rock fragments including materials, testing, necessary excavations if any, compaction etc all complete as per specification, drawing and as directed by the engineer.	CUM	9680	0.56404351
Providing and placing concrete work including cost of labour, materials and equipment for handling, transportation, batching, mixing, placing, vibrating and curing, (excluding cost of centering, shuttering and reinforcement) with mechanised equipments like batching plant, transit mixer, concrete pump etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.				

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

4 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
22	Concrete of grade M10 (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as lean concrete/ levelling course/encasement , mud mat under and around foundations/floors, drains, pits, sumps etc at all levels complete.	CUM	444	0.23334913
23	Concrete of grade 1:2:4 (1 part cement,2 part sand, 4 parts of 20mm graded aggregate by volume) as levelling course, pipe encasement and anchoring of LDPE liner etc at all levels complete.	CUM	320	0.20866568
24	Providing and laying design mix cement concrete of grade M25 conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in foundations/ substructure , superstructures, drains, under floors, sumps, culverts etc at all levels including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete.	CUM	2034	1.54509667
A24	Providing and laying design mix cement concrete of grade M20 conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in foundations/ substructure , superstructures, drains, under floors, sumps, culverts etc at all levels including encasing of pipes use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete.	CUM	300	0.19110368
25	Breaking/dismantling existing concrete work at any level including reinforced concrete, removing the rubbish materials and disposal of the same within a lead of 2 km including transportation, loading, unloading etc all complete.	CUM	5	0.00331885
Providing, fixing and removing formwork at any elevation for all structures as per specification including labour, materials, scaffolding, centering, providing pockets etc. complete as per drawing, specification and as per directions of engineer in charge for the following.				
26	Fairface form work with good quality water proof ply wood of required thickness and smooth surface at any level/elevation for foundations, footings, base of columns, walls, columns, pilasters, beams, drains, sumps mass concrete, trenches etc for enexposed/exposed concrete works all complete.	SQM	12384	0.99735547
REINFORCEMENTS				

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

5 of 38

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
28	Taking delivery of steel from BHEL stores/ store yard, loading, transporting and unloading at site, straightening, cutting, bending, placing in position at all levels, binding in position of steel reinforcements of TMT steel of grade Fe-500 or 500EQR confirming to IS:1786 including cost of binding wire, labour etc all complete per specification, drawing and as directed by engineer-in-charge.	MT	233	0.43702655
MISCELLANEOUS				
A31	Providing & applying tack coat of low viscosity liquid bitumen of grade 80/100 confirming to IS 73, 217 or 454 as applicable @ 10 kg/ 10 sqm for untreated WBM surface including scraping, cleaning with compressed air etc all complete.	SQM	8908	0.25350135
A32	Providing, mixing & laying of bituminous macadam course of specified thickness using bitumen of grade 60/70 conforming to IS 73, aggregates and binder material including hot mixing, hot laying, rolling etc all complete for 50mm compacted thickness.	SQM	8908	1.29687442
A33	Providing, mixing & laying 20 mm compacted thick premix carpet in a single course composed of suitable small size aggregate premixed with bituminous binder using medium setting grade bitumen on a prepared base including mixing, applying, rolling etc all complete.	SQM	8908	0.94154670
A34	Providing and applying liquid seal coat comprising of an application of a layer of bituminous binder using medium setting grade bitumen 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.	SQM	8908	0.45266446
A35	Supply, fabrication and fixing of GI pipe hand railing (1000 mm (min) high not exceeding 1.5m (max) c/c) of 32 NB heavy duty as per relevant codes and shall be galvanized with class-1 galvanisation (as per IS-277) including transportation, loading/unloading, painting etc. all complete.	RM	2,646	1.04877090
A36	Providing and spraying antiweed treatment using approved weedicides on the embankment etc all complete as per specification and as directed by engineer-in-charge.	SQM	98803	0.07700496

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

6 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
A37	Design, supply, fabrication, erection of stop gates with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as structural steel, cast steel, stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fastners etc., cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc 750 gms/sqm., following by an application of etching primer and dipping in black bitumen as per B.S. 3416, erection along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc all complete. The leakage through rubber seal shall not be more than 5 lit/min/metre length of seal under maximum head.(only weight of structural steel including embedments shall be considered for payment purpose) (SS component shall be measured separately for payment)	MT	8	0.29699112
A38	SS component mentioned under ST No. A37	MT	1	0.07572964
A39	Supplying, fabricating, erecting in position and testing / examining bolted and / or welded structural steel work for stationary screens/trap gates with embedment required made out of rolled sections and / or plates including cutting, straightening if required, edge preparation, bolting / welding of joints, cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc as 750 gms./sqm. followed by application of an etching primer and dipping in black bitumen as per BS 3416 etc all complete.	MT	6	0.20328693
A40	Providing and fixing PVC pressure release valve of minimum dia 90mm in water retaining structure including 160 mm dia housing pipe of minimum length 3.75 m with perforation as per IS4558, nylon jali, perforated end plug, collar, graded filter, excavation, fixing in concrete slab/wall etc. all complete.	EACH	1,976	0.77002626
RAW WATER PUMP HOUSE, PT PLANT LINE (Raw Water Reservoir to PT Plant)				
100 EARTH WORK				
Earth work In excavation, backfilling and disposal including necessary men/women, materials, equipment, loading, transportation, unloading, dewatering etc as per specification, drawing and as directed by engineer- in-charge for the following.				
101	Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1 km, spreading/levelling of disposed materials etc all complete for following depths below ground level.			
a	Depth from ground level but not exceeding 2 m	CUM	4308	0.11192745
b	Depth exceeding 2 m but not exceeding 4 m	CUM	3878	0.13699920

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

7 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
c	Depth exceeding 4 m but not exceeding 6 m	CUM	440	0.02023267
d	Depth exceeding 6 m but not exceeding 8 m	CUM	183	0.01238346
e	Depth exceeding 8 m but not exceeding 10 m	CUM	73	0.00499148
103	Earth work in excavation in soft rock (rock without any recovery of excavated materials in the form of hard stone/boulder) including weathered rock which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with excavator machine etc but does not require chiselling or blasting including setting out, levelling, dewatering (wherever required), shoring & strutting (wherever required), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead upto 1 km, spreading / levelling of disposed materials etc all complete for following depths below ground level.			
b	Depth exceeding 2 m but not exceeding 4 m	CUM	431	0.02596716
c	Depth exceeding 4 m but not exceeding 6 m	CUM	293	0.02103283
d	Depth exceeding 6 m but not exceeding 8 m	CUM	550	0.04486624
e	Depth exceeding 8 m but not exceeding 10 m	CUM	275	0.02429063
107	Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness using/with selected materials from compulsorily excavated soil available within a lead upto 1 km and compacted as specified including re-excavation of stacked earth, watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.			
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	4046	0.08724314
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	2084	0.04493690
108	Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness using/with selected materials directly from excavation and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.			
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	1011	0.02101205
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	521	0.01082816
110	Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 250 mm thickness using/with approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying borrowed soil, royalty (if any), watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following.			
a	Each layer compacted so as to achieve at least 95% maximum dry density as per IS-2720 (Part-VII)	CUM	726	0.05299931

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

8 of 38

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	CUM	374	0.02710835
111	Supplying and filling sand upto any depth under floors, around foundations, plinths etc. in layers not exceeding 250 mm thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete.	CUM	850	0.13161110
200 CONCRETE WORKS				
Providing and placing concrete work including cost of labour, materials and equipment for handling, transportation, batching,				
201	Concrete of grade M7.5 (1 part cement, 4 part sand, 8 parts of 40 mm graded aggregate by volume) as filling course at any depth below finished floor level, under and around foundations/floors, mass fill etc.	CUM	100	0.04141099
202	Concrete of grade M10 (1 part cement, 3 part sand, 6 parts of 40 mm graded aggregate by volume) as lean concrete, levelling course , mud mat under and around foundations/floors at any depth below finished floor level etc.	CUM	244	0.12823691
204	Concrete under floors, paving, plinth protection, pipe encasing etc complete with 20 mm nominal size graded aggregate at any depth below finished floor level for the following grades.			
b	M20 Grade	CUM	200	0.12740245
205	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in foundations/substructure, grade slab, paving, drains, under floors etc at any level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.			
a	M25 Grade	CUM	800	0.60770763
206	Providing and laying Design Mix cement concrete conforming to IS:456 & IS 10262-2009 for reinforced concrete works with coarse sand and graded hard stone aggregate of 20mm nominal size in superstructure at any level above finished floor level, any shape, position or thickness etc complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete as per specification & drawing for the following.			
a	M25 Grade	CUM	250	0.20374261

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

9 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
211	Providing and encasing of structural steel member with concrete using nominal aggregate size of 12.5mm down. Encased member shall be wrapped with welded wire mesh/chicken wire mesh with proper lap etc. complete as per specification for the following grades. (Payment of welded wire mesh, chicken wire mesh shall be made separately)			
a	M20 grade	CUM	40	0.02366194
212	Screed concrete conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at any level or thickness, drains etc complete as per following.			
a	1:2:4 (1 part cement, 2 part sand, 4 parts of aggregate by volume)	CUM	20	0.01654881
213	Providing and laying Design Mix cement concrete as per IS:456 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in precast works like roof slabs/trench covers, fins, lintels, chajas, beams, columns, wall panels, facias etc.at all levels in all kinds of work including formwork/moulds, curing, rendering the top exposed surface with cement sand mortar (1:3), handling, storing, transpoting, all leads, erection without damage, setting in position with cement sand mortar (1:3), filling the gaps between adjacent precast units with M30 grade concrete or cement sand mortar (1:3) and including making of holes for bolts for fixing, welding etc.complete with graded aggregate (20/12.5/10 mm) and as per specification and drawing for following grades.			
a	M 25 grade	CUM	10	0.01442889
214	Providing and laying Design Mix cement concrete as per IS:456, IS 3370 & IS 10262-2009 for reinforced concrete works using graded aggregate for Concrete in water retaining/conveying structures including addition of suitable plastisizer cum waterproofing cement additives confirming to IS 9103 latest to achieve a slump more than 125 mm in concrete as per manufacturers recommendation and conforming to limits of permeability as per IS 2545 and specification with 20 mm nominal size graded aggregate for following grades.			
b	M 30 grade	CUM	600	0.57409043
215	Dismantling concrete work for all types of structures at all levels including stacking of servicable material to a lead of 500 m and disposal of unservicable material upto a lead of 2 km, cutting of reinforcement, labour, equipment, safety precautions etc all complete as per drawings, specifications and instructions of engineer in charge.			
b	Reinforced cement concrete of all grades	CUM	10	0.00663770
216	Chipping of concrete in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials upto a lead of 2 km as directed by engineer including equipment, safety precautions, making good the broken surface etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement .	CUDM	2	0.00004832

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

10 of 38

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
217	Extra over and above St No 216 for cutting of reinforcement , all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer in charge. Measurement shall be on the cross sectional area of reinforcement cut.	SQCM	2	0.00005507
219	Providing and applying curing compound of approved make where ever required as per manufacturer's specification.	SQM	750	0.00837832
300 FORM WORKS				
Providing, fixing and removing formwork at any elevations for all structures, as per specifications and including all labour, material, scaffoldings and centering complete including pockets etc. complete as per drawing, specifications and as per direction of engineer in charge for the following.				
301	Fairface form work with good quality water proof ply wood of required thickness and smooth surface below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc.	SQM	550	0.04429469
302	Fairface form work with good quality water proof ply wood of required thickness and smooth surface above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches, circular overhead tanks etc. for all heights.	SQM	350	0.03573451
304	Providing, fixing and removing formwork in block-outs/pockets and openings (below 0.1 sqm plan area) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.			
a	Upto 150 mm depth	Each	5	0.00048061
b	Pockets of depths more than 150mm and upto 300 mm depth	Each	5	0.00049880
c	Pockets of depths more than 300mm and upto 600 mm depth	Each	5	0.00079366
d	Pockets of depths more than 600mm and upto 1000 mm depth	Each	5	0.00110152
e	Pockets of depths more than 1000mm and upto 1500 mm depth	Each	5	0.00161980
400 REINFORCEMENT				
402	Taking delivery of steel from BHEL stores/ store yard, loading, transporting and unloading at site, straightening, cutting, bending, placing in position at any level, binding in position of steel reinforcements of TMT steel of grade Fe-500 conforming to IS:1786 including cost of binding wire, labour, scaffolding, transportation to & from stores etc complete all as per specifications, drawings and as directed by Engineer.	MT	155	0.29072581

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

11 of 38

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
500 WATER PROOFING WORKS				
Water proofing works including all labour, material, equipment, transportation, handling, curing, sampling, testing etc at any level as per specification, drawings and as directed by engineer - in - charge.				
A501	Providing and laying underbed grading plaster with cement mortar 1:4 (1 cement : 4 sand) and average thickness of 15 mm including preparation of surface, batching, mixing, leveling etc. all complete.	SQM	250	0.00362605
A502	Providing and laying rigid insulation (extruded polystyrene blocks) as per relevant IS Code in suitable panels over roofs followed by a layer of 15 mm thick cement sand plaster 1:4 (1 cement: 4 coarse sand) and providing of expansion joint at intervals and filling with sealant in both directions as per the recommendation of manufacturer. The block shall be strong enough to withstand without deformation the workload and standard loads expected on the roof. Cost shall include making of fillets, cleaning & preparation of surface, expansion joints including filling with sealants at suitable intervals etc all complete as per specification for following.			
a	Average 50 mm thickness	SQM	250	0.05520080
A506	Providing and applying PU based water proofing treatment with elastomeric, seamless waterproof membrane applied in 2 coats to a DFT of 1.2 mm thick having an elongation capacity of over 600% and average tensile strength of 1 MPa, tear resistance as per GBT 19250-2003 >20N/m. The material shall comply with – ASTM C 836 National Std. of Canada 37.58 – M86 by CGSB. All complete as per specifications and directions of engineer in charge.	SQM	250	0.03013598
B506	Providing and applying a separation layer of non-woven polypropylene geo-textile membrane of 120 gsm for water proofing as per technical specification.	SQM	250	0.00441647
C506	Providing and applying 4 mm thick APP modified Bituminous Polyester membrane for waterproofing manufactured from a rich mixture of bitumen and selected polymers blended together to obtain excellent heat resistant, flexibility, UV resistance etc. Modified bitumen then coated onto a dimensionally stable carrier to obtain excellent tensile strength, tear and puncture resistance etc complete as per technical specification.	SQM	250	0.01948447
A508	Providing and laying pressed precast concrete tiles of 20 mm thickness and size 600x600 mm conforming to IS 13801 with 15 mm thick 1:4 cement mortar over the top most layer of roofing treatment with fine joints including sealing of joints (silicon/elastomeric sealant) etc all complete. (Water proofing paid elsewhere)	SQM	250	0.03326843

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

12 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
509	Providing and applying two coats of bitumen grade 85/25 as per IS 702 (@ 1.7kg/sqm)with 1% antistripping compound conforming to IS 6241 in foundation, wall, column etc on concrete surfaces exposed to soil / ash including surface preparation etc. all complete.	SQM	300	0.01153480
512	Anti termite chemical treatment of soil with Chloropyrifos emulsifiable concentrates (1%) conforming to IS :8944 all complete.	SQM	100	0.00202638
600 JOINTS AND FILLERS				
Joints & fillers including all labour, material, equipment, transportation, handling etc at any level as per specification, drawings and as directed by engineer - in - charge.				
601	Supplying & installation of bitumen impregnated fibre board confirming to IS 1838 as joint filler at joints in concrete including nailing, coating of both faces with coal tar pitch/bitumin etc. all complete.			
a	12 mm wide joints.	SQM	50	0.01282078
b	20 mm wide joints.	SQM	50	0.01699045
c	25 mm wide joints	SQM	50	0.02077044
d	50 mm wide joints	SQM	50	0.02675867
602	Providing and applying polysulphide based sealant conforming to IS:12118 in expansion joints in concrete including cleaning of joints, raking out groove, application of primer, scaffolding etc. all complete for following size grooves:			
a	12mm X 25mm	RM	50	0.00185751
b	20mmX25mm	RM	50	0.00290968
c	25mmX25mm	RM	50	0.00514390
d	50mmX25mm	RM	50	0.01028780
603	Supplying and filling in position hot applied bitumin sealing compound (Grade A) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.			
a	10mm X 40mm	RM	50	0.00015587
b	12mm X 25mm	RM	50	0.00011690
c	20mmX25mm	RM	50	0.00019484
604	Supplying and filling in position hot applied bitumin sealing compound (Grade B) confirming to IS 1834 including cleaning, mixing, heating, pouring/injecting sealing compound in gaps in joints including application of primer etc. all complete.			

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

13 of 38

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
a	10mm X 40mm	RM	50	0.00012989
b	12mm X 25mm	RM	50	0.00010391
c	20mmX25mm	RM	50	0.00016886
606	Providing and fixing PVC water stops in joints conforming to IS 12200 & IS 15058 all complete for the following:			
a	150 mm wide and 8 mm thick	RM	50	0.00389689
b	230 mm wide and 8 mm thick	RM	50	0.00536472
c	150 mm wide and 6 mm thick	RM	50	0.00306555
d	230 mm wide and 6 mm thick	RM	50	0.00936553
700 MS EMBEDMENTS				
Embedments including all labour, material, equipment, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge.				
701	Supply, fabricating and fixing of mild steel embedments, inserts, pipe sleeves, channel, beams, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete.	MT	5	0.08971559
702	Same as above with BHEL supplied material free of cost including loading, transportation, unloading etc. all complete from BHEL store to plant site.	MT	5	0.02822000
703	Fixing of embedments, inserts, pipe sleeves, angle pieces, anchor bolts of various diameters, plates of dimensions as required etc. including scaffolding, setting in position, transportation from BHEL site stores to work spot etc. all complete.	MT	5	0.01892721
704	Supply, Fabrication, transportation, delivery at site and erection, installation and alignment of mild steel foundation bolt assembly conforming to IS:2062 and grade 1 of IS:432 in concrete along with nuts, lock nuts (as per IS:1363, 1364 and IS:3138), washers, anchor plates, stiffner plates, protective tape, pipe sleeves, templates etc. including welding, cutting, grinding, threading, drilling etc. all complete.	MT	5	0.11124333
705	Supplying, fabricating, erecting and installing following items in concrete/brickwall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.			
a	MS pipes of all diameters	Quintal	4	0.00902832

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

14 of 38

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
b	PVC pipes / conduits of all diameters	Quintal	4	0.01829877
c	UPVC pipes / conduits of all diameters	Quintal	4	0.02353478
d	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:			
i	Upto 250 kg	Each	5	0.00035461
ii	Beyond 250 Kg and upto 500 kg	Each	5	0.00055076
iii	Beyond 500 Kg and upto 750 kg	Each	5	0.00088849
e	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with expansion sleeve of stainless steel:			
i	Upto 250 kg	Each	5	0.00041956
ii	Beyond 250 Kg and upto 500 kg	Each	5	0.00063909
iii	Beyond 500 Kg and upto 750 kg	Each	5	0.00100409
A705	Anchor fasteners (Chemical type, galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work.:			
i	Upto 250 kg	Each	4	0.00066298
ii	Beyond 250 Kg and upto 500 kg	Each	4	0.00085386
iii	Beyond 500 Kg and upto 750 kg	Each	4	0.00105604
800 GROUTING				
Grouting including all labour, material, equipment, roughening surface, cleaning, ramming, curing etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.				
801	Providing & grouting with cement slurry mix of approved ratio using pressure pump for water retaining concrete structures as per approved procedure including cost of nipples/ nozzles, cement, admixture, curing, pressure pumps, slurry agitator etc. all complete. Cost shall include fixing of nipples at minimum 500 mm centre to centre spacing, cutting of nipples after completing of grouting, making good of the nipple hole with appropriate non-shrink cement paste, water tightness test etc. all complete wherever specified in the drawing.	SQM	5	0.00060401

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

15 of 38

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
802	Providing & grouting of pocket holes, pipe sleeves under base plates, machinery, pipe supporting structures etc. with mix 1:1 (1 cement :1 sand) using non shrink admixture etc. all Complete. (Cement for mix shall be provided by BHEL free of cost)	CUM	4	0.01873418
803	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips) using non shrink admixture. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor). (Cement for mix shall be provided by BHEL free of cost)	CUM	4	0.01112952
804	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with Conbextra GP-1 or equivalent. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	4	0.05514988
805	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing, etc. all complete with Conbextra GP-2 or equivalent. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	4	0.06124150
A805	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing, etc. all complete with Conbextra GPX-2 or equivalent. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	3	0.04593113
900 DOORS, WINDOWS, VENTILATORS, LOUVERS				
Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material, equipments, transportation, handling, preparation of working drawings etc. at any level as per specification, drawings and as directed by engineer in - charge.				

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

16 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
901	Providing and fixing wooden frame conforming to IS 4021 made of best quality seasoned CP teakwood free from large or loose knots, cracks or other defects including sand paper smoothening, hold fasts, beading, primer and finish painting / polishing etc. all complete with proper wood joinery, accurately set to required lines or levels and rigidly secured in place. (Finish painting / polishing paid separately)	CUM	2	0.05427022
A901	Providing and fixing wooden frame conforming to IS 4021 made of best quality seasoned hardwood free from large or loose knots, cracks or other defects including sand paper smoothening, hold fasts, beading, primer and finish painting / polishing etc. all complete with proper wood joinery, accurately set to required lines or levels and rigidly secured in place. (Finish painting / polishing paid separately)	CUM	2	0.02011520
902	Providing and fixing teakwood frame panel door shutter as per IS 1003 with 35 mm x 150 mm vertical rail & 35mm x 125 mm horizontal rail and 12 mm thick interlocked panels of teakwood with proper wood joinery including beading, preparation of working drawings, godrej or equivalent make mortice lock with handels on both sides, approved ISI mark anodised fittings like door stopper, 300mm long tower bolts, 16x300mm long aldrops, 125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fitting shall be anodised aluminium color dyed), screws, primer and finish painting / polishing etc. all complete. (Finish painting / polishing paid separately)	SQM	5	0.00471004
B902	Providing and fixing teakwood frame panel door with PVC lamination on both sides shutter as per IS 1003 with 35 mm x 150 mm vertical rail & 35mm x 125 mm horizontal rail and 12 mm thick interlocked panels of teakwood with proper wood joinery including beading, preparation of working drawings, godrej or equivalent make mortice lock with handels on both sides, approved ISI mark anodised fittings like door stopper, 300mm long tower bolts, 16x300mm long aldrops, 125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fitting shall be anodised aluminium color dyed), screws, primer and finish painting / polishing etc. all complete. (Finish painting / polishing paid separately)	SQM	4	0.00378258
903	Providing, fitting and fixing solid core flush door shutter as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, partial board core conforming to IS 3087 type I, 35x12 mm thick teakwood beading all around including preparation of working drawings. godrej or equivalent make mortice lock with handels on both sides, approved ISI mark anodised fittings like door stopper, 300mm long tower bolts, 16x300mm long aldrops, 125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), finish synthetic paint over primer, screws etc. all complete as per drawing, specification and instruction of engineer in charge. with commercial faces and teak wood edges. (Finish painting paid separately)	SQM	4	0.00396236

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

17 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
A903	Providing, fitting and fixing solid core wooden flush door shutter with PVC lamination on both sides as per IS 2202 part II, 35mm thick homogenous particle board bonded with BWP type phenolformaldehyde synthetic resin, partial board core conforming to IS 3087 type I, 35x12 mm thick teakwood beading all around including preparation of working drawings. godrej or equivalent make mortice lock with handels on both sides,approved ISI mark anodised fittings like door stopper,300mm long tower bolts,16x300mm long aldrops ,125mm long handles on both sides etc. butt hinges, sliding bolt, knobs, (all fittings shall be anodised aluminium color dyed), finish synthetic paint over primer, screws etc. all complete as per drawing, specification and instruction of engineer in charge. with commercial faces and teak wood edges. (Finish painting paid separately)	SQM	10	0.00452593
904	Providing and fixing single or double steel door shutters with 45mm thk flush design shutter 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 void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.	SQM	10	0.01501862
906	Providing and fixing anodized extruded aluminium doors (single or double shutter) conforming to IS:1948, IS:1949 fabricated from extruded sections of HINDALCO/JINDAL or equivalent make having minimum 3mm wall thickness as per IS:1285, IS:733 and anodized and electro color coating of required shade as per IS 1868 (minimum anodized coating of grade AC15). fixed with rawl plugs, expansion fasteners,SS screws / fixing clips necessary filling of gaps at Junctions, at top, bottom & sides with required PVC / neoprene felt for bi-metallic protection etc. Glazing shall be clear float glass of 6mm thickness including snap fit type beading, concealed screws, fixtures, Godrej or equivalent make Mortice lock with handle on both sides, etc all complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. (Glazing shall be paid separately)	SQM	10	0.01410935
907	Providing and fixing fire proof steel doors (single or double shutter) with panic devices shall be 45mm thk 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 including all fittings, shop painting with approved post office/signal red color fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs.	SQM	8	0.03039161

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

18 of 38

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
A907	Providing and fixing fire proof steel doors (single or double shutter) with panic devices and vision panel shall be 45mm thk 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 including all fittings, shop painting with approved post office/signal red color fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs.	SQM	8	0.03039161
908	Providing and fixing steel windows/ventilator with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision.including all fittings, metal beadings, hold fasts, shop and final painting ,glazing etc. all complete. (Glazing shall be paid separately)			
a	openable type	SQM	8	0.00576532
b	fixed type	SQM	8	0.00552423
A908	Providing and fixing windows/ventilator with M.S. grills as per approved design for security purpose made of 25 mm X 6mm M.S. Flats / 12mm – 20mm M.S. square bar of approved design shall be provided to suit security requirements.	Kg	10	0.00024888
909	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door frames, windows, ventilators, partitions, railing etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-metallc protection etc.including preperation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid seperately).Weight of aluminium section only shall be measure.	Kg	25	0.00293566

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

19 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
A909	Providing and fixing anodised aluminium work of Jindal, Hindalco or other equivalent approved make for door/window frames, door/window shutters, ventilators, partitions, railing, grills etc with extruded standard tubular and other sections including all fittings & fixtures and accessories of approved make conforming to IS733 and IS1285, anodised and electro color dyed to required shade according to IS 1868 (minimum anodic coating of grade AC15), fixed with rawl plugs, expansion fasteners, SS screws or with fixing clips, including necessary filling of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt for bi-mettalic protection etc.including preperation of working drawings, aluminium cleat angle, aluminium snap-on-beading for glazing/panelling, stair case tread nosing, with all fittings and fixtures (like tower bolts, handles, door stopper with rubber shoes, 'L' drops, stays, floor springs, hydraulic door closures etc.), CP brass/stainless steel screws, providing and fixing hinges/pivots, and making provision for fixing of fitting wherever required including cost of PVC/neoprene gasket, all complete as per drawing, specification and instructions of engineer in charge (Glazing and panelling shall be paid seperately).Weight of aluminium section only shall be measured.	Kg	450	0.05284188
A910	Providing and fixing of aluminium composite panel (ACP) 3mm thick fixed in aluminium frame including sealant with minimum 0.2mm topping of precotaed aluminium foil on both side of approved manufacturer & approved shade, all complete as per specification.	SQM	15	0.01222845
911	Providing and fixing of door closers as per IS 3564 ,of approved make & quality all complete of following type :			
a	Over head hydraulic door closures	Each	5	0.00198481
b	Floor mounted Hydraulic door closers	Each	5	0.00337860
912	Providing and fixing pressed steel frames fabricated from 16 gauge M.S sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles/weather bars, paintings etc all complete as per specifications.	Kg	100	0.00285772
913	Providing and fixing in position rolling shutter 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 IS 6248 and specification of approved make of following types: The bottom lath shall be coupled to a lock plate fabricated from 3mm thick galvanised steel plate and securely rivetted with stiffening angles.(partly coiled and lath/full lath).			
a	Hand Operated	SQM	15	0.01212713

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

20 of 38

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
b	Mechanically Operated	SQM	20	0.01995729
914	Providing and fixing PVC doors(25 thk double skin) of sintex or equivalent make including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	10	0.00688711
A914	Providing and fixing Solid core PVC doors (25 thk double skin) with PVC frame of sintex or equivalent make including all fitting & fixtures as per specification, drawing and instructions of engineer in charge.	SQM	10	0.01810369
915	Providing, fixing and fitting of glazing of first grade class in steel/aluminium/wooden frames, where ever required, cleaning after fixing including hardware, gaskets, clips, beadings etc. all complete.			
b	4 mm thick clear float glass	SQM	20	0.00274341
c	5.5 mm thick clear float glass	SQM	25	0.00480616
d	6 mm thick wired glass	SQM	25	0.00481266
e	6mm thick Polycarbonate sheet multi (twin) wall fire retardant and ultra violet resistant with sealed open edges.	SQM	5	0.00271873
f	4 mm thick ground glass	SQM	8	0.00116802
A915m	6 mm thick clear float glass with itching	SQM	5	0.00084283
A915n	One outer 6mm thick tinted heat-reflecting type float glass and one inner 6mm thick toughened float glass hermetically sealed and seperated by 12 mm thick gap for thermal insulation (only single elevation area to be measured).	SQM	10	0.00301728
916	Supplying and fixing weather stripping of approved make and quality to doors as per instructions of engineer in charge and specification complete.	RM	5	0.00605525
917	Providing and fixing 12 mm thick BWP particle board , decorative veneer (prelaminated) on both sides, as panels in aluminium framed door shutter, fixed with necessary snap-on-beading etc. all complete (excluding aluminium works).	SQM	5	0.00226296
918	Providing and fixing steel louvered window with ISMC 100 frame all round including verticals with 18G pressed steel louvers, painting etc. all complete.	SQM	5	0.00389949
1000 BRICKWORK				
Brickwork masonry including all labour, material, equipment, transportation, handling, scaffolding etc. at all levels as per specification, drawings and as directed by engineer - in - charge.				
A1001	Providing brick work in cement mortar 1:6 (1 part cement 6 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.			

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

21 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
a	Using fly ash lime/cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm ²	CUM	20	0.01318968
A1002	Providing brick work in cement mortar 1:6 (1 cement 6 coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting.			
a	Using fly ash lime/cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm ²	CUM	160	0.14064150
A1003	Providing brick work in cement mortar 1:4 (1 cement 4 coarse sand) in partition walls, chambers etc. in thickness 115mm at all heights, places and position above or below plinth/graded level including providing two nos. 6 mm diameter MS bars at every third layer, raking out joints, curing, scaffolding etc complete excluding plastering and painting as per specification. (MS bars shall be supplied by BHEL free of cost)			
a	Using fly ash lime/cement bricks confirming to IS 12894 with crushing strength of 75 kg/cm ²	SQM	20	0.00242698
1006	Breaking of existing brick work at all levels including plastering, removing the rubbish up to a distance of 500 m including transportation, loading, unloading etc. all complete as directed by the engineer.	CUM	2	0.00044580
1007	Providing and encasing of structural steel member with masonry work around flanges, webs etc. and filling the gap between steel and masonry by minimum 12mm thick mortar. Encased member shall be wrapped with chicken wire mesh with 50mm lap etc. complete as per specification. (Chicken wire mesh shall be paid separately under item no. 1010)	CUM	2	0.00044892
1008	Providing and laying 75 mm thick bed of dry brick aggregate including of excavation, disposal of surplus earth spreading of earth, ramming, watering etc. complete in all respects as directed by the engineer.	SQM	5	0.00021043
1009	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar etc. complete.	CUM	3	0.00089628
1010	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in masonry work & concrete including cutting, bending, fixing etc. complete.	SQM	5	0.00032604
1012	Providing and filling brick bats in soak pits all complete.	CUM	4	0.00111399
1100 DAMP PROOF COURSE				
Damp proof course including all labour, material, equipment, transportation, handling, shuttering, centering, curing etc at any level as per specification, drawings and as directed by engineer - in - charge.				

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

22 of 38

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
1101	Providing Damp Proof Course 40mm thick 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound all complete. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg/sqm shall be applied one before & one after the DPC.	SQM	30	0.00220875
1200 CEMENT MORTAR PLASTER				
Cement mortar plaster including making grooves wherever required including all labour, material, scaffolding, curing etc at any level as per specification, drawings and as directed by engineer - in - charge.				
A1201	Providing 20mm thick plaster in two layers outside of the building wall/rough surface of internal wall in 1:4 cement sand mortar of 12mm thick first layer and 1:3 cement sand mortar with 8mm second layer, finished to a smooth finish including providing 3mmx3mm size grooves at junctions of two dissimilar materials all complete.	SQM	650	0.01757888
A1202	Providing 12mm thick plaster inside the building/boundary wall in cement mortar 1:4 on walls finished to a smooth finish as per specification all complete.	SQM	750	0.01814588
A1204	Providing 6mm thick plaster on ceiling in cement mortar 1:3 finished to a smooth all complete.	SQM	200	0.00439621
1205	Providing 12mm thick plaster in walls, drains/culverts with a paste of neat cement @ 1kg/sqm and rubbed smooth with trowel etc. all complete.	SQM	20	0.00049849
1206	Providing and making decorative plaster of all types and design on walls, ceilings, arcs, columns with various thickness upto 18 mm including finishing all complete.	SQM	20	0.00084848
1207	Forming groove of uniform size from 12X12 mm upto 20X15 mm in plastered surface as per approved pattern, using wooden battens nailed to the under layer, including removal of wooden battons, repair of the edges of plaster panel and finishing the groove etc. complete as per specification, drawing and the instructions of engineer in charge.	RM	15	0.00012470
1208	Providing drip coarse on plastered surface at all elevations for all type of work such as chajjas, parapet, projections etc. including scaffolding, finishing etc. complete with all labour, tools and plants as per specification, drawing and instructions of engineer in charge.	RM	20	0.00012470

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

23 of 38

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
1209	Providing and laying encasement to box type steel beams at all levels with lath plaster 50 mm nominal thickness with cement plaster (1:4) over chicken wire mesh including all labour, materials, equipment, handling, transporting, mixing, placing, leveling, curing and cleaning, finishing the exposed surfaces etc including centering and shuttering all complete as per specification, drawing and instructions of engineer in charge. (Chicken wire mesh shall be paid seperately under item no. 1010)	SQM	10	0.00042372
1210	Ruled pointing in masonry in CM 1:3 (1 cement and 3 fine sand) including raking out joints, curing etc. complete.	SQM	10	0.00016548
1300 FINISHES TO CONCRETE / PLASTERED SURFACES				
Finishes, painting to concrete, plastered surfaces including all labour, material, equipment, surface preparation, scaffolding etc. at any level as per specification, drawings and as directed by engineer - in - charge.				
1301	Two or more coats of white wash/ colour wash as per IS 627 of approved brand and manufacture to give an even shade including a priming coat as per specifications.	SQM	40	0.00016626
1302	Two or more coats of Exterior masonry paint (water or solvent base) of special resins, adhesives and additives mixed with fine, hard stone aggregate and suitable pigment. The paint shall be applied on a coat of primer over dried, prepared plaster surface as manufacturers guidelines. The final finished coating shall be fungus resistant, UV resistant, water repellant, alkali resistant and extremely durable with color fastness as per specification.	SQM	100	0.00280576
1303	Providing and applying two or more coats of oil bound distemper as per IS 428 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.	SQM	40	0.00077937
1304	Two or more coats of acrylic distemper of approved brand and manufacture to give an even shade including a priming coat with distemper primer complete as per spec.	SQM	600	0.01169068
1305	Providing and applying two or more coats of acrylic emulsion paint as per IS 5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.	SQM	200	0.00618307
A1305	Providing and applying two or more coats of external quality acrylic emulsion paint as per IS 5411 of approved brand, shade and manufacture to give smooth, hard, durable & glossy finish over a coat of primer over prepared plaster surface as per manufacturers guideline.	SQM	250	0.00772883

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

24 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
1306	Providing and applying 2 or more coats of acid/alkali resistant paint of approved brand and colour to floors, walls and ceiling including preparation of surface to receive paint, providing and applying bitumen primer conforming to IS 158 complete all as per manufacturer's recommendations and as approved by engineer, at all heights above or below grade level, complete as per specifications.	SQM	30	0.00245504
1309	Two or more coats of synthetic enamel paint of approved make made from synthetic resins and drying oil with rutile titanium dioxide and other selected pigments to give smooth, hard, durable & glossy finish to all interior and exterior surfaces complete.	SQM	400	0.00935254
1310	Providing and applying 3 coats of water proof cement paint of approved make and color on exterior surface at all heights including material, labour, scaffolding, curing etc including primer coat complete as per specification.	SQM	100	0.00148081
1312	Providing and applying 2 mm thick plaster of paris punning on walls including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	500	0.00883295
A1312	Providing and applying 3 mm thick white cement putty punning on walls (Birla White/ JK White or Similar approved) including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer.	SQM	300	0.00794966
1314	Providing and applying Synthetic plaster for external applications composed of synthetic fibre and petroleum based chemical similar to RENOVO or equivalent and of approved natural color/shade applied on cured and dried plaster surface. The final finish Paint shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with polysulfide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.	SQM	80	0.01005918
1400 FLOORING AND SKIRTING				
Flooring and skirting at any level including base layer, labour, material, equipments, transportation, handling, curing, polishing etc. at any level as per specification, drawings and as directed by engineer - in - charge.				
1401	Providing and laying 50 mm thick heavy duty cement concrete in flooring with metallic hardener pigmented topping 12mm thick uniform graded treated iron particles in flooring. Under layer of 38mm thick cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates 12.5mm well graded) and top layer of 12mm thick metallic concrete of mix 1:2 (1 cement hardner mix with approved quality metallic hardening compound :2 stone aggregate 6mm nominal size) by volume including cement slurry, rounding off edges, aluminium strips etc. all complete for following (Quoted item rate shall be inclusive of providing glass joint strips):	SQM	150	0.00978471

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

25 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
1402	Providing and laying 25 mm thick heavy duty cement concrete mix 1:2:4 (1 cement: 2 sand : 4 stone aggregates) flooring with metallic hardener pigmented topping of 10 mm thick uniform graded treated iron particles in skirting and dado complete as per specification.	SQM	50	0.00430671
1418	Providing and laying 10 mm thick non-skid fully vitrified tiles of make 'MARBONITE' or 'FERRASTONE of BOSS Profile limited' or equivalent in flooring and skirting over 30 mm thick underbed of 1 part cement and 3 parts coarse sand by weight mixed with sufficient water, complete as per specification laid in pattern of following sizes			
a	400X400 mm	SQM	100	0.03123958
b	600X600 mm	SQM	100	0.03053814
A1423	Providing & fixing Acid / Alkali resistant (Chemical resistant) tiles confirming to IS:4457 in flooring/Dado beded and jointed with epoxy mortar all complete for following thicknesses. The tiles should be abrasion resistant & durable.			
a	20mm thick	SQM	40	0.02612477
b	40 mm thick	SQM	40	0.03996654
1428	Providing and laying 3mm thick antistatic PVC flooring / skirting of approved shade,as per IS:3462 and laying as per IS:5318 all complete.	SQM	80	0.01589932
1430	Providing and fixing dividing strips in joints of cast in situ floorings at various elevations, finishing, all labour, material etc. complete as per drawing, specification and instructions of engineer in charge.			
a	Glass strips 40 mm wide and minimum 6 mm thick.	RM	20	0.00018705
b	Aluminium strips 40 mm wide and minimum 3 mm thick	RM	20	0.00045723
c	Brass strips 20 mm wide and minimum 4 mm thick.	RM	20	0.00062869
1500 ROOFING / SIDE CLADDING				
Roofing / side cladding work including all labour, material, equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at any level as per specification, drawings and as directed by engineer - in - charge.				

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

26 of 38

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
A1501	Designing, providing and fixing permanently color coated galvanised MS troughed metal sheet decking plate of approved colour and conforming to class3 of IS 14246 over roof purlins for cast-in-situ roof slab as per relevant IS code and specification. Bare metal thickness of deck plate shall be minimum 0.8mm with minimum trough depth of 44 mm having minimum yield strength of 250 MPa and shall serve as permanent shuttering to the roof slab 100mm thick measured over crest of metal decking & shall have adequate strength to support weight of green concrete and imposed loads of min 150 kg/sqm during construction between purlins as per manufacturer's recommendations/ calculations/ test certificates for approval including fixing of plates to purlins, side lapping, end lapping etc. all complete for below mentioned spans. The sheet shall be permanently coated with silicon modified polyster paint of minimum 20 micron DFT on exposed surface (facing operating floor) and minimum 7 micron on other face over epoxy primer applied over hot dipped galvanising @ 275 gm/sqm including fixing of sheet to purlin with self drilling white zinc plated heat treated carbon steel screws of minimum 5.6 mm dia @ 260mm c/c in the trough and stich screws between two adjacent sheets and sealing with epoxy sealant. Measurement of profile sheeting shall be of the plan area of roof covered by MS trough metal decking.			
a	Span Upto 1800mm	SQM	150	0.04976333
1502	Providing and fixing shear connectors of mild steel studs having 16mm dia and minimum 75 mm projected length above purlin passing through metal decking as per relevant IS codes and specification.	QUINTAL	4	0.00736876
1508	Providing and installing under deck insulation using minimum 0.05 mm thick aluminium foil on exposed surface followed by 0.56 mm dia and 25 mm mesh GI wire netting, fixed at various elevations with rawl plugs including clips but excluding cost of insulation.	SQM	100	0.01135295
1510	Providing and fixing 1 mm thick corrugated/semicorrugated G.I. sheet in roofs, cladding of minimum galvanisation of 275 gsm total on both sides with minimum 150mm overlapping, 8 dia G.I. hook bolts or 'J' Bolts and nuts @305 mm c/c along with G.I. and bitumen washers including cutting of sheets for opening etc. all complete.	SQM	50	0.01951044
A1511	Providing and installing under deck insulation using Closed Cell Elastomeric Nitrile Rubber of density 40 to 60 kg/cum fixed at various elevations with rawl plugs including clips etc as per specification.	SQM	50	0.00691464
1600 FALSE CEILING				
False ceiling including all labour, material, equipment, transportation, handling, suspension system etc at any level as per specification, drawings and as directed by engineer - in - charge.				

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

27 of 38

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
1601	Providing and fixing glass fibre reinforced gypsum plaster board (GRG) ceiling (having gypsum core mixed with glass fibre) system consisting of metal supporting grid system forming panels of specified size, suspended from RCC slab/structural steel or catwalkway grid above with 4 mm (minimum) galvanised wires (rods) with special height adjustment clips, including preparation of working drawing, providing openings for AC ducts, return air grills, light fixtures etc all complete as per drawings, specification and instructions of the engineer. (Materials for catwalkway grid made up of MS Channels/ Beams / Angles shall be supplied by BHEL free of cost and shall be paid under ST No 702)			
a	12 mm thick GRG board with galvanised light gauge steel load bearing supporting GI frame and finished flat (seamless).	SQM	80	0.02352684
b	12 mm thick GRG board in profile (dome, curved profiled etc.) with galvanised light gauge steel load bearing supporting GI frame and finished smooth (seamless).	SQM	80	0.02412956
1603	Providing and fixing permanently colour coated aluminium false ceiling of approved colour and Luxalon 84 C or approved equivalent with corrosion resistant aluminium alloy panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation (density 48 kg/cum) conforming to IS:8183 bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures, A.C. ducts etc all complete. Suitable M.S. channel grid with minimum MC 75 shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. (Materials for structural platform grid made up of MS Channels/ Beams / Angles shall be supplied by BHEL free of cost and shall be paid under ST No 702)	SQM	50	0.03053865

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

28 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
A1604	Providing, fixing and laying Acoustic permanently colour coated aluminium false ceiling of approved colour with stove enamel finish of approved make of either lineal panel system or aluminium tile/plank system with corrosion resistance aluminium alloys panels of minimum thickness 0.5mm including 50mm thick mineral wool insulation (as per IS:8183) bound in polythene bags on top of panels. Additional hangers and height adjustment clips shall be provided for return air grills, light fixtures. A.C. ducts etc. suitable M.S. channel (minimum MC 75) grid 1200 c/c maximum shall also be provided above the false ceiling level for movement of personnel to facilitate maintenance of lighting fixtures, AC ducts etc. The work to be complete as per specifications, drawings and direction of engineer. (Materials for structural platform grid for movement made up of MS Channels/ Beams / Angles shall be supplied by BHEL free of cost and shall be paid under ST No 702)	SQM	80	0.02715563
1700 RAIN WATER DOWN TAKE PIPES				
Rain water down take pipes including all labour, material, transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc at any level as per specification, drawings and as directed by engineer - in - charge.				
1707	Providing and fixing GI down take pipes conforming to IS:1239 /IS:3589 of medium duty all complete for following diameters.			
a	100 mm Dia	RM	50	0.01363912
b	150 mm Dia	RM	50	0.01967931
c	200 mm Dia	RM	50	0.02983721
1708	Providing and fixing HDPE down take pipes conforming to IS:4984 as per specification of following diameters.			
a	110 mm Dia	RM	25	0.00226019
b	160 mm Dia	RM	25	0.00318895
c	200 mm Dia	RM	25	0.00425410
1800 MISCELLANEOUS WORKS				
Miscellaneous works including all labour, material, equipment etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.				

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

29 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
1801	Providing and Filling in trenches, plinths, area paving and other underground structures with graded stone aggregate of size range 63 mm to 45 mm in layers not exceeding 230 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	CUM	100	0.03447452
1802	Providing and mixing approved Bipolar Concrete penetrating Corrosion inhibiting admixture in concrete as per detail specification of manufacturer etc. all complete.	Kg	50	0.00235112
1806	Providing 50mm thick anti corrosive layer laid to required slope consisting of clean & well graded coarse sand mixed with A90 grade bitumen for softening point upto 45 degree Celcius or A65 grade bitumen for softening point above 45 degree celcius as per IS: 73 or its equivalent quality 8 to 10% by volume and rolled or compacted all complete.	SQM	20	0.00257714
1807	Providing and fixing G.I strips minimum 1.5mm thk and 150mm wide including fixing accessories etc. all complete.	Kg	20	0.00131974
1808	Providing and fixing aluminium strips minimum 18 SWG thk and 300mm wide over expansion joints with minimum lap of 50mm length including brass / aluminium screws, rawl plugs etc. all complete.	Kg	20	0.00241087
1809	Providing Chemical injection grouting with pressure pump for water retaining concrete structures conforming to IS:6494, including fixing nozzles, cost of approved cement, admixture, curing etc. all complete . Payment shall be made as per the consumption of chemical grout.	Kg	100	0.02795372
1812	Laying of earthing mats/rods including risers, transportation from yard stores, loading, unloading, cutting to length, welding, protective painting of joints etc. all complete. (Excavation & Back filling shall be paid separately under respective item of earth work. (Earthing mats/rods shall be supplied by BHEL free of cost)	MT	5	0.01585646
1813	Providing Earthing pit as per drawing with charcoal & salt, GI pipes, GI earth electrodes, GI wire, GI strips, brick chamber with covers including associated earthwork etc. all complete. Rate is inclusive of cement.	EACH	5	0.01320267
1814	Construction of below ground earthing system test pits as per drawing / sketches including brickwork, plaster, concreting, reinforcement, formwork, providing & fixing GI strips / pipes, GI wires, covers etc as per drawing & specification including associated earthwork. Rate is inclusive of cement.	EACH	5	0.00614280
1815	Providing and fixing GI rungs in concrete/brick walls having zinc coating of minimum 900 g/sqm etc. all complete.	Kg	50	0.00132494

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

30 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
1817	Providing and fixing HDPE pipes in concrete/ brick work of following sizes including cutting, fixing and levelling in position etc. all complete.			
a	Upto 75 mm dia	RM	10	0.00075080
b	100 mm dia	RM	10	0.00085731
c	150 mm dia	RM	10	0.00140288
d	200 mm dia	RM	10	0.00226279
1818	Providing and laying dry stone pitching of 230 mm thickness for slope protection in cement mortar 1:6 including hammer dressing, raking of joints, pointing, preparing the bedding surface and voids filling with stone aggregate etc. all complete.	SQM	10	0.00282857
1819	Design, supply, fabrication, erection of stoplog gates in CW/RW Pumps with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as structural steel, cast steel, stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fastners etc., cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc 750 gms/sqm., following by an application of etching primer and dipping in black bitumen as per B.S. 3416, erection along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc all complete. The leakage through rubber seal shall not be more than 5 lit/min/metre length of seal under maximum head. (only weight of structural steel including embedments shall be considered for payment purpose). (SS component shall be measured separately for payment)	MT	15	0.55685836
1820	SS Component mentioned under ST No. 1819	MT	1	0.07572964
1821	Supplying, fabricating, erecting in position and testing / examining bolted and / or welded structural steel work for stationary screens made out of rolled sections and / or plates including cutting, straightening if required, edge preparation, bolting / welding of joints, cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc as 750 gms./sqm. followed by application of an etching primer and dipping in black bitumen as per BS 3416 etc all complete.	MT	20	0.67762311
1822	Cutting of groove of 10mm X 40mm size with groove cutting machine in concrete paving all complete.	RM	15	0.00012859
1823	Fire proofing of steel structures with VERMICULITE cementitious coating including supply of all materials for vermiculite materials, reinforcement mesh (3mm thick wire, 50x50 size mesh) , nuts, tie wires, weldings, surface preparation, curing, staging, compatible paintings etc. all complete.	CUM	2	0.04525921
1824	Supply & fixing expanded metal steel sheet conforming to IS:412. Size of mesh shall be 10mmX40mm with strands of 2.5mm width and 1mm thickness to the structural steel for facilitating fireproofing works.	SQM	2	0.00018705

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

31 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
1828	Dismantling old existing reinforced/non-reinforced brickwork / blockwork / stone masonry work in mud / lime / cement mortar at any level including clearing/cleaning, stacking the serviceable materials at plant site and disposal of unserviceable materials within a lead upto 1km all complete.	CUM	2	0.00041307
1829	Dismantling old existing plain/re-inforced concrete work at any level including clearing/cleaning, stacking the serviceable materials at plant site and disposal of unserviceable materials within a lead upto 1km all complete.	CUM	2	0.00122778
1830	Dismantling old existing structural steel work at any level including plates, bolts, cutting rivets, welding, dismembering and stacking the dismantled materials within a lead upto 1km etc all complete.	MT	2	0.00508882
1831	Sprinkling of water by water tanker fitted with perforated GI pipe (portable tanker minimum 3000 litre capacity) for roads and miscellaneous area within plant boundary, for dust suppression and reduction of suspended material at site for day to day work, as directed by BHEL site engineer (water for this purpose shall be provided by BHEL free of cost and utilisation of machine will be in terms of Tank-hour put in actual use for water sprinkling).	TANK-HR	100	0.00574142
1833	Supply & fixing FRP (fibre reinforced plastic) sheets 2 mm thick including GI hooks/ J or L bolts, nuts, washers, bitumen washers etc. complete including overlap 100mm .	SQM	2	0.00045152
A1834	Providing and fixing sliding layer of bitumen paper or craft paper over the screed layer for water retaining structures to destroy the bond between the screed and the base slab concrete of the water retaining structure etc all complete.	Sqm	2	0.00005028
2000 FENCING AND GATES				
Fencing and gates including all labour, material, equipment etc at any level as per specification, drawings and as directed by engineer in - charge.				
A2003	Supplying and erecting in position 2.4 m high PVC coated galvanised chain linked fencing of minimum 4 mm (including PVC coating) of mesh size 75mm x 75mm. The diameter of the hot dip galvanised steel wire for chain link fencing excluding PVC coating shall not be less than 2.5 mm. Concertina of height of 600 mm at top of chain link fencing shall be provided with all accessories. Concertina shall be from tensile serrated galvanised wire (HTSW) made with wire diameter of 2.5 mm which will be stretched to 6m and attached on two strands of galvanised HTSSW (high tensile spring steel wire) of 2.5mm dia by means of clips at 1m interval. These two HTSSW strands will be attached to the fence posts/ angles with 12 mm security fasteners. Cost to include for GI hook bolts, rings & washers, hot dip galvanised tension wires, 25X6 mm GI flat stretcher bar at end posts etc. all complete. (Structural post shall be separately under ST No. 2007)	RM	25	0.01150233

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

32 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
2007	Supply and fixing of hot dip galvanised mild steel posts for fencing. Rate of zinc coating shall not be less than 710 g/m ² on steel posts.	MT	2	0.04964954
2008	Supply, fabrication and fixing of mild steel posts for fencing including painting etc all complete.	MT	2	0.03709791
2009	Supply, fabrication and installing in position and testing galvanised MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete.	MT	2	0.05021849
2010	Supply, fabrication and installing in position and testing MS Gates out of channels, joists, angles, flats, plates, pipes, welded steel wire mesh & sheets including stiffeners, bracings, fabricated hinges, MS Aldrops with locking arrangement, tempered steel pivot, guide track of MS Tee, bronze aluminium ball bearing arrangements, castor wheels, paintings etc. all complete.	MT	2	0.04816405
2100 WATER SUPPLY				
Water supply work including men, material, equipment etc. at any level as per specification, drawings and as directed by engineer - in charge.				
2101	Providing and fixing in position tested heavy duty type chromium plated (CP) brass long neck bib cocks including sockets, union, nuts etc all complete - 15mm nominal bore.	EACH	2	0.00039384
2102	Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc all complete - 15mm nominal bore.	EACH	2	0.00033928
2104	Providing and fixing GI pipes class B medium class conforming to IS:1239 pipes shall be concealed and painted with anticorrosive paint, complete for internal works with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc all complete for following sizes:			
a	15 mm nominal bore.	RM	10	0.00067546
b	20 mm nominal bore.	RM	10	0.00079496
c	25 mm nominal bore.	RM	10	0.00099500
A2104	Providing and fixing Galvanised MS pipes class B medium class conforming to IS:1239 pipes shall be concealed and painted with anticorrosive paint, complete for internal works with MS sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc all complete for following sizes:			
a	15 mm nominal bore.	RM	10	0.00067546
b	20 mm nominal bore.	RM	10	0.00079496
c	25 mm nominal bore.	RM	10	0.00099500

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

33 of 38

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
2105	Providing and fixing GI pipes class B complete for external work with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete for following sizes:			
a	15 mm nominal bore.	RM	10	0.00076638
b	20 mm nominal bore.	RM	10	0.00085212
c	25 mm nominal bore.	RM	10	0.00106515
d	50 mm nominal bore.	RM	10	0.00169125
A2106	Providing and fixing 450X 750 mm high square edge 6 mm thick float glass mirror of adequate width to match toilet lay-out and interior decor and as per spec.	EACH	2	0.00048789
2107	Providing and fixing 610mmx127mmx6mm thk clear glass with C.P Guard rails and mounted on C.P. brackets etc all complete.	EACH	2	0.00040060
2108	Providing and fixing 25 mm diameter stainless steel towel rails (600mm X 25mm) all complete.	EACH	2	0.00048113
2109	Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted towel rod with C.P. Brackets etc all complete.	EACH	2	0.00032214
2110	Providing and fixing C.P. soap holder mounted with C.P. screws etc all complete.	EACH	2	0.00020991
2111	Providing and fixing stainless steel / C.P. liquid soap dispenser . Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc all complete.	EACH	2	0.00032058
2112	Providing and fixing glazed vitreous wall mounted paper holder with suitable cover cum cutter fitted with CP screws etc. sll complete.	EACH	2	0.00029304
2113	Providing and fixing chromium plated brass shower rose with 15 or 20 mm inlet all complete.	EACH	2	0.00046399
2114	Providing & fixing in position P.V.C. water tank of Syntex or approved equivalent including making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete for following capacities. GI pipes shall be paid separately under ST No. 2105.			
a	1000 litres capacity	EACH	1	0.00207964
2200 SANITARY WORKS				
Sanitary work including all labour, material, equipment etc. at any level as per specification, drawings and as directed by engineer - in - charge.				
2201	Supply and fixing glazed vitreous china Wash Basin conforming to IS:2556 part 4 of oval shape 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 bottle trap and waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, fittings, cutting and making good the walls where required etc all complete.			

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

34 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
a	White	EACH	1	0.00120959
b	Colored	EACH	1	0.00138703
2202	Providing and fixing approved vitreous china laboratory sink of size 600x400x200mm conforming to IS:2556 (part-5) 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 etc. all complete.	EACH	1	0.00149588
2204	Providing and fixing colour glazed vitreous china European type water closet conforming to IS:2556 with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre PVC flushing cistern (same colour as WC) with valveless fittings, necessary C.P connections etc all complete.			
a	Floor mounted	EACH	1	0.00150913
b	Wall mounted	EACH	1	0.00164319
2205	Providing and fixing colour glazed vitreous indian type Orissa pattern (580x440mm) water closet conforming to IS:2556 part 3 with all fittings including foot rests, low level 12.5 litre PVC flushing cistern with valveless fittings, necessary C.P connections etc all complete.	EACH	1	0.00137014
2206	Providing and fixing white flat back glazed vitreous china urinals of size 440x265x355 mm with photo voltaic control flushing system as per IS:2556 (part 6, section 1) with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings etc. all complete.	EACH	2	0.00471160
2207	Supply, laying and jointing UPVC pipes of class 3 as per IS:4985 including bends, branches and all other necessary fittings, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete for following.			
a	75mm dia pipes	RM	2	0.00049464
b	110mm dia pipes	RM	10	0.00351240
c	160mm dia pipes	RM	10	0.00531536
d	200mm dia pipes	RM	10	0.00543486
2208	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 all complete for following.			
a	200mm dia	RM	10	0.00204716
b	300mm dia	RM	10	0.00316687
c	450mm dia	RM	10	0.00613111
d	600mm dia	RM	10	0.00724042
e	900mm dia	RM	10	0.01381319

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

35 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
2209	Providing, laying light duty non pressure NP2 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following.			
a	150mm dia	RM	10	0.00155096
b	250mm dia	RM	10	0.00186531
c	300mm dia	RM	10	0.00255896
d	500mm dia	RM	10	0.00382674
2210	Providing, laying light duty non pressure NP4 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete for following:			
a	450mm dia	RM	10	0.00546344
b	600mm dia	RM	15	0.01106328
c	900mm dia	RM	20	0.02692493
2211	Providing and fixing C.I Manhole heavy duty cover of size 600mmx450mm including frame from reputed manufacture etc. all complete.	EACH	5	0.00716249
2212	Providing and fixing circular heavy duty C.I. manhole cover of 600 mm dia with frame etc. all complete.	EACH	5	0.01366900
2213	Providing and fixing square mouth S.W Gully trap grade 'A' 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 etc all complete for following sizes:			
a	100x100mm P or S Type.	EACH	2	0.00101163
b	150x100mm P or S Type.	EACH	2	0.00110100
c	150x150mm P or S Type.	EACH	2	0.00117790
2215	Providing and fixing C.I. floor traps with C.P jalli all complete.	EACH	2	0.00037929
2400 ROAD WORKS				
Providing Road Work including necessary material, labour, machinery, transportation etc as per specification, drawing, relevant IRC & IS codes and as directed by the Engineer-in-charge for the following.				
2401	Preparation of sub grade by excavating earth to required depth for all types of soil/ rock, dressing to camber and consolidating the base including making good the undulation etc and disposal of surplus earth within a lead upto 1 km etc. all complete.	CUM	8100	0.36577338

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

36 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
2402	Supplying and filling with selected good earth of approved quality in layers not exceeding 300 mm loose thickness using borrowed soil (borrowed soil to be arranged by the bidder) and compacted so as to achieve at least 95 % maximum dry density as per IS-2720 (Part-VII) including royalty/seignorage fee (if any), sorting, spreading, breaking clods, watering, ramming/compaction by manual/mechanical means, dressing, finishing to required lines, grades and slopes, tesing etc all complete.	CUM	4500	0.29441813
2403	Providing, stacking & laying granular morrum for shoulder including watering, compaction with road roller to required camber etc all complete.	CUM	300	0.05434218
2404	Providing & laying water bound macadam sub base course in layers of required thickness with crushed stone aggregates 90 to 40 mm down size, stone screening & blinding material including screening, sorting, spreading to template & consolidation with road roller including carriage, spreading & consolidation of blinding material moorum etc all complete.	CUM	975	0.31869968
2405	Providing & laying water bound macadam base course in layers of required thickness with stone aggregate 63mm to 40mm size, stone screening and blinding material including screening sorting, spreading to template and consolidation with road roller including carriage, spreading and consolidation of blinding material moorum etc all complete.	CUM	975	0.36773060
2407	Providing & applying tack coat of low viscosity liquid bitumen of grade 80/100 conforming to IS 73, 217 or 454 as applicable @ 10 kg/ 10 sqm for untreated WBM surface including scraping, cleaning with compressed air etc all complete.	SQM	16572	0.47160130
2409	Providing, mixing & laying of bituminous macadam course of 50mm compacted thickness using bitumen of grade 60/70 conforming to IS 73, aggregates and binder material including hot mixing, hot laying, rolling etc all complete for the following.	SQM	55239	8.04198991
A2409	Providing, mixing & laying of dense bituminous macadam course of 70mm compacted thickness using bitumen of grade 60/70 conforming to IS 73, aggregates and binder material conforming to Grade-I of MORT-H & specification including hot mixing, hot laying, rolling etc all complete for the following.	SQM	27620	4.37237929
B2409	Providing, mixing & laying of bituminous concrete of 40mm compacted thickness using bitumen of grade 60/70 conforming to IS 73, aggregates and binder material conforming to Table 500-18 of MORT-H & specification including hot mixing, hot laying, rolling etc all complete for the following.	SQM	27620	3.12513720
2410	Providing, mixing & laying 20 mm compacted thick premix carpet in a single course composed of suitable small size aggregate premixed with bituminous binder using medium setting grade bitumen on a prepared base including mixing, applying, rolling etc all complete.	SQM	55239	2.35853788

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

37 of 38

VOL-IA TECHNICAL CONDITIONS OF CONTRACT (TCC)

CHAPTER XI –
BILL OF QUANTITY AND % WEIGHTAGES FOR ITEM RATES W.R.T TOTAL LUMPSUM PRICE (PART-B)

All Civil and Architectural work for raw water reservoir & Pump House, Pipe Line from Raw water pump house PT plant etc for Unit # 01, 02, 03 & 04 (i.e. All Four Units) AT 4X270 MW Thermal Power Stations, Manuguru, Distt- Khammam, Telangana				
ST. NO	DESCRIPTION OF ITEM	UNIT	QTY	WEIGHTAGE
2411	Providing and applying liquid seal coat comprising of an application of a layer of bituminous binder using medium setting grade bitumen 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.	SQM	55239	1.24721951
A2412	Supplying and laying 450mm long x 250mm wide x 500mm deep precast concrete kerb stone of grade M-25 with 20 mm nominal size stone aggregate and of shape as per detailed drawing including fixing with cement mortar (1:6) in 13mm thick joints, finishing of joints with neat cement paste, making drainage opening where required etc all complete.	RM	23694	1.83367197
2414	Supply and laying 200mm dia NP3 type Hume pipe in raised shoulders as rain water drains as per detailed drawing including fixing with cement mortar (1:2) in 13mm thick joints, finishing of joints with neat cement paste etc all complete.	RM	790	0.16022396
2415	Dismantling of existing road consisting of premix carpet, kerb stone/ brick on edge, bitumen macadem course, WBM, preparing subgrade to receive new WBM including camber consolidation including disposal of debris within a lead of 1 km etc all complete.	SQM	1050	0.01185240
Total Estimated Value (Rounded off to zero decimal)				100.000000

SEAL AND SIGN OF BIDDER

Place

T S No: BHE/PW/PUR/MANUT-RWR/1563

38 of 38