

BHEL: PS- WR
TS: BHE/PW/PUR/BORLI-CVLMH/576
PRICE BID-PART-II (VOL-III)

3 X 33 MW STG Project at BORL, Bina-Material Handling Systems
Schedule Of Quantities For Civil Works

SL NO	DESCRIPTION	UNIT	QUANTITY	RATE		AMOUNT
				In figures	In words	
1	EXCAVATION					
1.01	Earthwork in excavation in all kinds of ordinary and hard soil (including slushy soil) up to a depth of 2.0 m below ground level and stacking within a lead of 100 m,with necessary shoring, strutting, trimming and dressing of sides etc., including bailing / pumping out of surface water/rain water/sub soil water, cutting minor vegetation, if any, complete as per drawings and specification.					
a)	All kinds of soil (Ordinary and hard soil)	CU. M.	9,000			
b)	Same as item 1.01 above, but for soft rock upto 2.0m below GL which can be excavated by means of crow bar, pick axe, pneumatic rock breaker/chisel attachment with poclain etc. but does not require chiselling or blasting	CU. M.	600			
c)	Same as item 1.01 above, but for hard rock / sheet rock upto 2.0m below GL requiring chieseling/blasting	CU. M.	600			
1.02	Same as Item no-1.01 above but from 2.0 m - 4.0 m depth					
a)	All kinds of soil (Ordinary and hard soil) from 2.0m to 4.0m below GL	CU. M.	6,000			
b)	Same as item 1.01 above, but for soft rock upto 2.0m to 4m depth below GL which can be excavated by means of crow bar, pick axe, pneumatic rock breaker/chisel attachment with poclain etc. but does not require chiselling or blasting	CU. M.	2,400			
c)	Same as item no:-1.01 above, but for hard rock / sheet rock requiring blasting upto 2.0m to 4.0m below GL	CU. M.	600			

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1.03	Extra over item no:- 1.01 for every additional lead of 100 m or part there of (beyond the initial lead of 100m as per item 1.1) and stacking within the compound wall.	CU. M.	3,000			
1.04	Extra over item no:- 1.02 for every additional lift of 1.0 m or part there of	CU. M.	1,000			
2.00	BACKFILLING					
2.01	Earthwork in backfilling & compacting in layers not exceeding 200 mm around foundations, trenches , below grade slabs and all other locations , as per specs, drawings and as directed by the Engineer.					
a)	With earth obtained from stacks within a lead of 100m	CU. M.	6,400			
b)	Extra over 2.01(a) for every additional lead of 100m or part there of within battery limit	CU. M.	500			
c)	With selected earth (CNS/Murum) obtained from contractor's own borrow pit out side the battery limit within a lead of 5 Km inclusive of necessary royalty charges, excavation, loading, transportation.	CU. M.	500			
d)	Extra over 2.1 (c) for every additional lead of 1 Km or part thereof	CU. M.	500			
e)	Supplying, laying and compacting to 95 % of the Maximum Dry Density as per Modified Proctor Test of Mechanically Stabilised Macadam of 300 mm thick below major foundations consisting of graded gravel 90-60 mm size and 44-20 mm size aggregates blinded with sand and murum to provide a firm support, complete as per drawings and specifications.	CU. M.	900			

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2.02	Supplying and filling river sand in layers not exceeding 150mm including compacting by mechanical means, flooding with water etc all complete as per specification and as directed by the Engineer.	CU. M.	1,200			
2.03	Disposal of surplus earth & debris from stock beyond battery limit upto 5 Km lead including re-excavation, loading, transportatin and unloading , dumping, stacking, levelling and dressing etc.complete as per specifications and drawings.	CU. M.	9,600			
a)						
b)	Extra over 2.3a for every additional lead of 1Km or part thereof	CU. M.	500			
2.04	Site grading and levelling by filling excavated earth obtained from foundations in layers not exceeding 250 mm within the project area using mechanical / manual means breaking clods, cutting heaps, compacting using compaction equipment in non-accessible areas and rolling with road roller in open areas to obtain 95% of proctor density for cohesive soils and 85 % for non-cohesive soils, all complete as drgs and spcns.	CU. M.	2,500			
3.00	CONCRETE					
3.01	Supplying, laying in position, compacting and curing as per specification Plain cement concrete (using OPC/PSC/PPC) of the following mix with 20mm down size aggregates below GL and upto 1.0M above GL , including consolidation of subgrade wherever required.					
a)	1:5:10	CU. M.	50			
b)	1:4:8	CU. M.	320			
c)	1:3:6 with cement content of 225 kg / m3 of concrete	CU. M.	50			

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3.02	Supplying, laying in position, curing as per specifications Controlled concrete (using OPC/PSC/PPC/) of the following grades(graded coarse aggregates of 40mm down, 20mm down 12mm down shall be used wherever applicable)					
a)	for all depths below GL and 1.0 m above GL					
i)	Grade M-20 in foundations, floors and pavings etc. with min. 350 kg/m ³ cement	CU. M.	205			
ii)	Grade M-25 in foundations, slabs, columns, floors, beams, tunnels, silos, bunkers .etc.with minimum cement content of 375 kg/m ³	CU. M.	2,485			
b)	for all elevations 1m above G.L.					
i)	Grade M-25 with minimum cement content of 375 kg/m ³ for all levels & structures	CU. M.	200			
3.03	Providing and placing in position RCC of grade M25 (using OPC/PSC/PPC) of 12mm & down graded chips with min. cement content of 375 kg/m ³ for encasing of steel structures at all elevations as per drawings, specifications , all complete.	CU.M	100			
3.04	Providing and placing in position, compating , curing Reinforced concrete for paving of M25 grade with min. cement content of 375 kg/m ³ (using OPC/PPC/PSC) including laying in approved size panels, leaving grooves for sealing joints, cost of form work, finishing of top surface as required but excluding cost of reinforcement which will be paid under relevant items, etc.all complete for floors and pavement as per drawing and specifications.	CU.M	500			
3.05	Providing and placing in position precast reinforced concrete trench covers of grade M25 (using OPC/PPC/PSC) of varying thickness including reinforcement, shuttering, lifting lugs etc., all complete including edge angles as per drawing and specifications. Reinforcement will be paid under item 5.1 (b) and edge angles will be paid for under item 6.1(f)	CU. M	200			

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				In figures	In words	
3.06	Supplying and mixing 'SIKA' or approved equivalent brand of integral water proofing compound in cement concrete / cement mortar etc. all complete as per drawings and specifications.	Kgs	200			
3.07	Providing and Fixing in position 12mm thick 'shalitex' or approved equivalent fibre board in expansion joints etc all complete as per specifications and drawings.	SQ. M.	20			
a)	Providing and Fixing in position 25mm thick 'shalitex' or approved equivalent fibre board in expansion joints etc all complete as per specifications and drawings.	SQ. M.	60			
3.08	Supplying and installing ribbed PVC water stops 6mm thick and 150mm wide in cement concrete including laps by fixing / valcanizing joints and folds as applicable and approved by the Engineer.	RM	100			
a)	Supplying and installing ribbed PVC water stops 6mm thick and 225mm wide in cement concrete including laps by fixing / valcanizing joints and folds as applicable and approved by the Engineer.	RM	300			
3.08	Supplying and installing ribbed PVC water stops 6mm thick and 225mm wide in cement concrete including laps by fixing / valcanizing joints and folds as applicable and approved by the Engineer.	RM	300			
3.09	Grouting under equipment bases as required,curing and finishing the exposed surfaces including all materials, form work etc. as per drawings and directions of the Engineer.					
a)	With 1:1:2 cement sand and 6mm down stone chips nominal mix by volume	CU. M.	10			
b)	Same as item 3.09 (a) but using non shring grout like conbextra GP1 or approved equivalent, including cost of grout mix, form work, finishing , curing etc. , all complete as per drawings and manufacturers' specifications.	CU. M.	8			
c)	Same as item 3.09 (a) but using non shring grout like conbextra GP2 or approved equivalent, including cost of grout mix etc. , all complete as per drawings and manufacturers' specifications.	CU. M.	2			

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801	Providing & grouting cement slurry mix at any elevation/depth with pressure pump for Wagon trippler structures , including fixing nozzles, cost of approved cement, admixture, curing, etc all complete as per specification and as directed by the Engineer.	SQM	500			
3.10	Supplying and laying sealing compound with premium grade Silicon sealant (SILPRUF of GE Silicon or approved equivalent) conforming to IS:1834 as per specification.					
a)	20mm wide,25mm deep	R.M.	20			
b)	10mm wide,40mm deep	R.M.	20			
4.00	FORM WORK					
4.01	Supplying, installing, dismantling and removing the following classes 'of formwork as per drawings and specifications at all levels using reasonably good steel / plywood wood shuttering.					
a)	Straight in plan	SQ.M.	13,500			
b)	Curved in plan	SQ.M.	400			
4.02	Providing Pockets in concrete of sectional area less than 0.1 sq.m in plan by fixing and removing formwork for anchor bolts , pipe sleeves etc. as per drgs including. all materials ,labour etc. complete as per drawings and specifications.					
a)	Up to 300 mm deep	Nos.	50			

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				In figures	In words	
b)	301mm to 600mm deep	Nos.	200			
c)	601mm to 1000mm deep	Nos.	50			
d)	1001 mm to 1500 mm deep	Nos.	10			
5.00	REINFORCEMENT,					
5.01	Taking delivery from BHEL store/store yard, transportating, straightening, bending, binding, transporting to work place and placing in position following types of High Yield Strength Deformed (HYSD) bars reinforcement of all diameters and at all elevations using approved quality binding wires as per specifications and drawings all complete including cost of binding wire.(Reinforcement Steel shall be supplied by BHEL at free of cost)					
a)	MS reinforcement conforming to IS:432	M.T.	10			
b)	HYSD reinforcement conforming to IS:1786 of minimum grade Fe 415	M.T.	400			
5.02	Supplying and fixing steel wire mesh 10 SWG,100X100mm mesh,as reinforcement for encasing steel columns at all elevations as per drawings and specifications.	Sq. m.	250			

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6.00	Taking delivery from BHEL store/store yard, transportation to site, fabrication, erection, alignment, welding etc. of structural steel, mild steel, medium and high strength steel, at all levels involving rolled section, (including rounds) pipes/hollow sections, built-up section fabricated out of plates and / or rolled sections (including pipes/hollow section), plates, chequered plates etc, in columns, beams, gantry girders, crane girders, roof girders, trestles, gallaries, portals, purlins, space frames, shear connectors, hangers, struts,monorail beams, stiffners, wall beams, sheeting runners, brackets, stub collumns, bracings, cleats, base plate, splice plates,chequered plate flooring, floor plates, seal plates, diapharagms steel frames, girder over false ceiling, walk ways, plat forms, ladder, stairs, stringers, treads, landings hand rails toe plates, rungs, insert plate ,edge protection structures, embedments, lugs, posts, stays,gates, louvers, lacings, stiffners, gusset plates, washers, bunkers, silos, hoppers, including design of connections and splicing..... contd					

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	contd..... Preparation and checking of fabrication drawings and getting the same of approved by BHEL PED Hyderabad, site fabrication , straightening preparation of cutting plans, cutting, bending and rolling, grinding, clearances, drilling, assembling, bolting , (Supply of perament bolts & nuts to be paid separatly under the relavent items) erection bolts & nuts (weight not payable), welding, edge prepration, preheating, postheating, sequence of welding, testing of welders,inspection and testing of welds, (vistual inspection, non distructive, distructive /mechanical/special test), rectification/correction of defective welding works, production test plate, including cost of all consumables with a shop coat of approved inorganic zinc silicate primer of 65-75 microne DFT after cleaning with grid blasting to SA 2 1/2 sweedish standards complete as per drawings and EIL spec. No SSPC-SP-10 (Note all structural steel materials shall be provided by BHEL free of cost)contd					
	contd..... erection marks, erection scheme, embedding in concrete, protection against damage in transit, ensuring stablity of structure, installation of temporay structures, (weight of temporary structure not payable), setting column bases etc, with all T&Ps, Cranes, Labour,material, consumable, equipment , handling, trasportation, testing (machnical and non distructive) etc. and all other activities required for completion of works ,all complete including return of surplus/waste steel materials to BHEL store etc. as per specification drawing and instruction of Engineer .					
6.01	FABRICATION					
a)	Steel work consisting of conveyor supporting structures for material handling system , laced & plated columns, beams, farbricated with standard rolled sections, plates , flats, angles pipes etc.	M.T.	1,300			

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b)	Steel work consisting of roof trusses with standard rolled sections, plates, flats, angles, pipes etc.	M.T.	300			
c)	Steel work consisting of purlins, non plated beams , bracings, sag rods with anchor cleats / end plates	M.T.	300			
d)	Steelwork for Bunkers & Hoppers	MT	1,065			
e)	Steelwork for Sole Hard Liners for Bunkers & Hoppers by plug welding etc. complete using special steel such as ' SAIL HARD ' or ' TISCRA L'	MT	164			
f)	Miscellaneous steel work such as cable trench cover frames, fencing poles etc.	M.T.	100			
g	Steelwork for Gutters using 18 gauge sheet	MT	1			
6.02	Erection of structural steel as described in 6.01, grouting under bases using ordinary/non-shrink grouts ,with necessary erection bolts, nuts & washers, welding electrodes of 6013 or low Hydrogen electrodes of 7018 grade, wherever required, etc all complete as per drawings and specifications. (Permanant bolts and Grouting will be paid for under separte items)	M.T	3,229			
6.03	Supplying , fabricating and fixing in positions MS inserts like channels, angles, flats, rounds, plates, pipe sleeves, foundation bolts, nuts and any other structural shape etc. including cost of steel , necessary templates / stagings , cutting to required lengths, bolting, revetting welding etc. as required all complete as per drawings and specifications.	M.T.	20			

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6.04	Taking delivery of foundation hardware supplied by BHEL and transporting to site, fixing in position foundation hardware such as anchor bolts, nuts, washers, anchor assembly etc. as per drawing including fixing to proper level and alignment using contractor's own templates, protecting till handover of the foundation, all complete as per drawings and specifications.	M.T.	1			
6.05	Supplying and erecting hot dip galvanised GI floor gratings with minimum coating of 710 gms per sq.m., in staircase steps as per dwg including all fasteners, painting with two coats of aluminium paint at the places of site welding etc all complete as per EIL drawings No-7-68-0561.	M.T	50			
6.06	Supplying , fabricating, fixing in position by welding 18 gauge MS sheets to steel columns for encasing at various elevations , all complete as per drawings and specifications.	M.T	2			
6.07	Supplying , fabricating, fixing in position welded wire mesh to steel columns for encasing at various elevations , all complete as per drawings and specifications.	SQ.M.	250			
6.08	Supplying , installing and fixing in position 22 G corrugated galvanised steel sheeting for roof cladding of sheds & conveyor galleries with all necessary nuts, bolts and washers and any other fixing material and means as required as per manufacturer specifications and EIL specification at all elevations as per drawings and specifications .	SQ.M.	7,100			
6.09	Supplying , installing and fixing in position 24 G corrugated galvanised steel sheeting for side cladding of sheds & conveyor galleries with all necessary nuts, bolts and washers and any other fixing material and means as required as per manufacturer specifications and EIL specification at all elevations as per drawings and specifications .	SQ.M.	14,500			

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6.10	Supplying , fabricating, fixing in position 32 mm dia MS pipe handrails at various elevation to concrete structures as per EIL drawing no:- 7-75-0037 / R03 including cost of materials, cutting concrete, consummables, labour etc. all complete as per drawing and specifications.	R.M.	10,400			
6.11	Supply , fabrication and fixing transformer rails including guide rails in concrete including jointing of rails, anchoring lugs etc complete as per specification. (Rails & Guide channel shall not be supplied by BHEL free of cost)	M.T.	2			
6.12	Supplying and fixing in position of permanent mild steel bolts (class 4.6 as per IS: 1367 and Grade "C" as per IS: 1363) and nuts , washers etc. up to and inclusive of 39mm diameter and upto 300mm long for structural steel work complete as per specification, drwaings and instructions of engineer.	Quintal	2			
6.13	Supplying and fixing in position of high strength structural bolts, HSFG/HT bolts (of property grade 8.8 and product grade "C" as per IS: 1367 and conforming to IS: 3757 and high strenght structural hardened and tempered nuts (of property class"8" as per IS"1367) conforming to IS:6623 with hardened and tempered washeres as per IS:6649 etc upto and inclusive of 39mm diameter and upto 300mm long for structural steel work complete as per specification, drwaings and instructions of engineer.	Quintal	4			
6.14	Providing & installing the following GI specials and roofing accessories with standard laps including all drilling, cutting & grouting required to give water tight finish with all bolts, nuts, washers, hangers, spacers, etc., complete.					
	a) Ridge with close fitting adjustable ridge pieces including finish.	RM.	600			
	c) Half round gutter.	RM.	600			

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	e) Barge boards with all fixtures.	RM	1,600			
6.15	Providing and installing GI rain water-down comer, 150mm dia. with all heads bends, junctions, cleanout shoes, connection pieces etc., complete.	RM	2,300			
7.00	MASONRY & PLASTERING					
7.01	Supplying and laying in position minimum 75 kg/cm2 brick work in foundation and superstructure in cement sand mortar (1:6) including mixing mortar, laying bricks,raking of joints, curing etc., all complete as per drawings as specifications. (Using OPC/PPC/PSC cement)	CU. M.	200			
	Supplying and laying in position best quality locally available minimum 50 kg/cm2 brick work in foundation and superstructure in cement sand mortar (1:6) including mixing mortar, laying bricks,raking of joints, curing etc., all complete as per drawings as specifications. (Using OPC/PPC/PSC cement)	CU. M.	200			
7.02	Providing 15mm thick cement-sand (1:4) plastering to the exteriorr & interior faces of the walls at various elevations including mixing, laying , finishing,curing, rounding corners, cutting grooves, wherever required, etc. with all materials, scaffolding complete as per drawings and specifications. (using OPC/PSC/PPC)	SQ.M.	1,100			
7.03	Providing minimum 6 mm thick (1:4) cement sand plaster over concrete surfaces of columns, beams, slabs etc. similar to item 7.02 above (Using OPC/PPC/PSC cement)	SQ.M.	300			
7.04	Providing 3mm thick plaster of paris punning to newly plastered surfaces at various elevations with all materials etc., complete as per specifications and directions of engineer.	SQ.M.	150			

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7.05	Drip course at various elevations to parapet, chajja, windows, door heads etc. with all material complete as per drawings, spcns. and directions of the engineer.	R.M.	150			
7.06	Supplying and laying damp proof course 40mm thick with plain concrete (1:1 ^{1/2} : 3) nominal mix by volume with 12mm down size aggregates and minimum 3% admixture of water proofing compound with all materials complete as per specifications.	CU.M.	5			
7.07	Providing 12mm wide x 12 mm deep rectangular grooves in plaster for architectural purposes, including all materials, etc. all complete. as per drawings .	R.M.	150			
7.08	Providing 20 mm thick cement sand plaster in two layes first layer of 14mm in cement mortar 1:4 & second layer of 6mm thickness in cement mortar 1:2 using approved quality sand for second layer, on RCC and brickwork including scaffolding, mixing , laying , finishing curing, rounding corners, cutting groves, wherever required, with all materials complete as per drags. and specifications. (Using OPC/PPC/PSC cement)	SQ.M	1,100			
8.00	PAINTING					
8.01	Providing 2 or 3 coats of Elastomeric high stretch exterior paint of "Asian Paints" or approved equivalent of approved shade, over a coat of exterior sealer, to give an even shade as per manufacturers' instruction over concrete surfaces or newly plastered surfaces including cost of paint, preparation of surfaces, scaffolding, curing etc., all complete as per drawings and EIL specification.	SQ.M.	1,100			

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8.02	Providing and applying two coats of Plastic emulsion paint confirming to IS : 5411 , of approve shade, over a of coat of suitable primer as per manufacturer's recommendation , including cost of paint, surface preparation with 3 mm thick plaster of paris punning , scaffolding etc. all complete including scraping / removing of old paints, making the surface good with plaster of paris wherever required, all complete as per EIL specification and to the satification of engineer / architect incharge.	SQ.M.	500			
8.03	Two or more coats of distempering with oil bound washable distemper as per IS:428 of approved brand and manufacture to give an even shade over prepared surface with 3mm thick plaster of paris punning including a priming coat with distemper primer complete (P.O.P. to be paid separately)	SQ.M.	200			
8.04	Providing three or more coats of white/colour wash to give a smooth and even shade including cleaning and preparation of surface, scaffolding etc. all complete.	SQ.M.	1,100			
8.05	Providing complete Proctective coating system to Stuctural Steel with one coat of Inorganic Zinc Silicate primer as touchup paint at all damagedsurfaces,65 microns DFT+ two coats of Chlorinated Rubber Zinc Phosphate Primer,40 microns DFT each coat + two coats of Chlorinated Rubber finish paint,40 microns DFT each coat , with all materials, consumables and scaffoldings complete as per EIL specifications and drawings.	MT	3,065			
9.00	FLOORING					

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9.01	Supplying and laying granolithic concrete flooring (Heavy duty cement concrete floor) overall 50mm thickness over subbase .Base course(under layer) 35mm thick of cement concrete 1:1.5 & 1:3.5 of 10 mm down aggregates laid over subbase in panels.Each panel not exceeding 1sqm in area bounded by 3x40 mm PVC strips panel divider wearing top layer/finishing layer shall be of cement,hardner and stone aggregate mix of 15 mm thickness laid over the base course.Dry mix of this top layer shall be mixed with stone grit of 6mm and down size in ratio of 1hardner and 1cement mixer : 2 stone grit by volume by adding just enough water to make it workable complete as per EIL spec.	SQ.M.	3,400			
9.02	Supplying and fixing ceramic tiles of sizes 300X300X8mm for flooring including pereparation of base laying underbed, finishing and rounding corners and junctions, curing etc. complete as per drawings and specifications.	SQ.M.	200			
9.03	Supplying and fixing ceramic tiles of sizes 300X200X6 for dado up to 2.2 m elevations including pereparation of base laying underbed, finishing and rounding corners and junctions, curing etc. completcas per drawings and specifications.	SQ.M.	60			
9.04	Laying 20 mm thick grey cement skirting including preparation of base , laying underbed, finishing with neat cement, rounding corners and junctions, curing etc., complete as per drawings and specifications.	SQ.M.	50			
9.05	Supplying laying and fixing cast-in situ white cement based terrazzo tile of approved colour as per IS:2114 at staircase steps and landing at vatiuous elevations including preparation of base laying under bed, finishing polishing etc., as per drawings and specifications.(Total thickness of finish shall be of 25mm)	SQ.M.	50			

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10.00	DOORS & WINDOWS					
10.01	Providing and fixing factory made wooden flush door shutters of overall 35 mm thick consisting of solid core block board bonded with phenol formaldehyde synthetic resin confirming to IS :848.Shutter shall be faced on both sides with 3 mm thick wood veneering confirming to IS :303,BS:476 part -7.1 mm thick approved quality melamaine faced lamination shall be provided on both sides in case of toilet doors.35 x20 mm second class teakwood lipping shall be provided all around the shutters.Teakwood veneering along with liping shall be french polished(Lacequer finish)complete as per EIL specification.Rate shall be inclusive of 125 mm long MS butt hinges,brass body 6 lever mortise lock,handles,tower bolt,vision panel etc. (except hydraulic door closers which shall be paid seperately under different item) complete as per EIL spec.	SQM	10			
10.01	Providing and fixing Steel windows conforming to IS: 1038 and IS:7452 including guard bars, handles, peg stays, stoppers, hinges , and painting with two coats of approved make epoxy paint over a coat of suitable primer etc.all complete as per and EIL specifications and drawings . Glazing shall be paid separately					
a)	Fixed type	SQ.M.	600			
b)	Openable type	SQ.M.	400			

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10.02	Supplying and erecting including assembling fitting and fixing best quality electrostatic Powder coated Pressed steel doors of 18 gauge MS sheets, with 16 gauge pressed steel frames at various elevations including frames, shutters, fittings and fixtures, CP mortice lock cum handle mastic caulking, grouting the frames, painting with 2 coats of approved quality epoxy paint over approved primer/ min. 30 micron etc. complete as per EIL and specifications and drawing No-7-75-0070 and 7-75-0071.					
a)	Single shutter	SQ.M.	40			
b)	Double shutter	SQ.M.	40			
10.03	Same as item 10.02 but with 150mm X 500mm vision panels with 6 mm thk. Plate glass etc. complete as per EIL specifications and drawing No-7-75-0070 and 7-75-0071..					
a)	Single shutter	SQ.M.	10			
b)	Double shutter	SQ.M.	10			
10.04	Supplying,erecting, assembling best quality PVC panelled doors of Sintex make or approved equivalent for toilets including all fittings and fixtures etc. all complete as per drawings and specifications.	SQ.M.	5			
10.05	Providing and fixing approved quality over head hydraulic door closer conforming to IS :3564 as directed by the Engineer.	Nos	5			
10.06	Providing and fixing 2mm thk. approved quality rubber sealing strip around doors and windows for making them air tight including cost of rubber strip adhesive,clips etc. all complete as per specifications and drawings.	R.M.	25			

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SL NO	DESCRIPTION	UNIT	QUANTITY	RATE		AMOUNT
				In figures	In words	
10.07	Supplying fitting and fixing the following glazing specials at various elevations including supplying rubber beading, (cost of putty and glazing clips for fixing to steel windows), all materials etc. complete as per specifications to alluminium windows, doors & partitions / steel windows .					
a)	4mm thick toughened clear glass	SQ.M.	400			
b)	4 mm thick toughened GROUND glass	SQ.M.	100			
c)	6 mm thick toughened clear glass	SQ.M.	40			
d)	6 mm thick wired glass	SQ.M.	500			
10.08	Supplying and erecting including assembling fitting and fixing Powder Coated Aluminium partition frames with matching doors etc., as per drawing no. 7-75-0014 with frames, shutters, double acting heavy duty floor springs, fittings, and fixtures, mortice lock, alluminium beading but excluding glazing etc. complete (aluminium hollow sectins should be infilled with timber of silver oak)	SQ.M.	60			
10.09	Supplying, fitting and fixing 12 mm thick twin laminated Medium Density Fibre(MDF) boards (mannufactured from agrobased lignocellulosic fibres conforming to IS:12406, exterior grade with synthetic resin conforming to IS:848, BWP type) , categorised as Class-I for Surfaces of very low flame spread as per BS:476 and twin laminated with 1.0 mm thick melamine of approved make and shade at various elevations to aluminium windows, doors & partitions, including supplying rubber gaskets, cost of all materials etc. complete as per drawings and EIL specifications.	SQ.M.	20			

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SL NO	DESCRIPTION	UNIT	QUANTITY	RATE		AMOUNT
				In figures	In words	
10.10	Supplying, erecting, assembling, fitting and fixing rolling steel shutters of 18 gauge steel sheets with 16 gauge MS rolled channel frame as per IS:6248 from approved manufacturers including all fixtures, accessories locking arrangements, electrical motor and electrical wiring for mortar driven, shop coat of approved epoxy primer and two coats of epoxy paint of approved brand and shade after erection with all fittings and fixtures etc all complete as per specifications and drawings. (All the rolling shutters irrespective of their size should have mechanical as well as electrical opening arrangements.)	SQ.M.	60			
11.00	FALSE CEILING & INSULATION					
11.01	Supplying and fixing gypsum board false ceiling system comprising of 12mm thick gypsum board tiles of approved qualities and fixing to under side of grid system with 12.5mm dia dry wall screw @ 230mm c/c , and grid system made of 0.9mm thk. 45mm size and two flanges of 15mm each GI main runner suspended from ceiling @ 1.2m by means of bolting to GI cleat fixed the ceiling with dash fastners, 0.5 thk. knurled web of 51.1mm and two flanges of 26mm GI channel shaped cross runners and 0.5mm thick web size of 27mm one flange 20mm other 30mm wall runnersfixed to peripheral walls by rawl plugs/ dash fasteners @ 450mm c/c including finishing, levelling and aligning etc. all complete as per specifications.	SQ. M.	100			

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SL NO	DESCRIPTION	UNIT	QUANTITY	RATE		AMOUNT
				In figures	In words	
11.02	Providing Phenolic Foam under deck insulation on the ceiling system (at soffit of the slab) consisting of 25 mm and approx. 1000 mm X 500 mm size conforming to IS:13204 (having a density of 32 kg/m ³ and K value of 0.016 KCal/hr M C as per BS 4370, Part-2) faced with aluminium foil , as non-combustible as per BS:476, part - 5 including fixing the insulation to soffit / sides of beams by means of approved quality adhesive and providing & fixing 3 mm thick 190 x 25 mm L-shaped M.S. slotted cleats to the soffit of the slab with dash fasteners @ 600 mm c / c, both ways securing the insulation with chicken wire netting stretched tightly over the insulation and held by 14 SWG G.I. wire tied diagonally through the slots of cleats etc., all complete as per drgs. and EIL spec No-6743-31-16-48-SP-0054 .	SQ.M.	100			
12.00	ROOF WATER PROOFING					
12.01	Preparation of grading underbed with 1:2:4 mix using 12mm down graded coarse aggregate at various elevations including mixing, laying, curing etc. in varying thickness with all materials complete as per drawings and specifications.	CU.M.	60			
12.02	Preparation of average 25 mm thick grading underbed with 1:4 cement coarse sand mortar and mixing 2% water proofing chemical admixtures of approved brand at various elevations including mixing laying, curing etc. with all materials complete as per drawings & specifications.	SQ.M.	200			
12.03	Supplying and laying Polyurethane Water Proofing as per specification EIL specification Clause No- 3.3.2.5 of Document No-C3.2 of Spec No- 6743-31-16-48-SP-0054 Rev-A, Pg-22 of 22, all complete with mateterial, consumables, scaffoldings, labour etc.	SQ.M.	200			

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SL NO	DESCRIPTION	UNIT	QUANTITY	RATE		AMOUNT
				In figures	In words	
12.04	Same as Item No-12.3 above but for flashing at junction of slab and parapet wall including preparation of surfaces, cutting grooves, caulking the end of flashing etc. complete as per EIL Drawing No-7-75-0068 <i>and spec.</i>	SQ.M.	20			
12.05	Providing and making 150x150mm size fillets in cement concrete 1:2:4 at junctions of roof slab and parapet wall including cutting grooves, rounding corners, finishing etc. all complete as per drawings and specifications.	CU.M.	5			
13.00	MISCELLANEOUS					
13.01	Consolidating subbase before providing sand layer with road roller including watering, if required to obtain 95% proctor density including making good undulation etc. all complete as per drawing and specifications , in Petcoke & Limestone Stock Yards.	SQ.M.	20,000			
13.02	Supplying and laying Sand Bed 75 mm thick below Murram layer in Pet Coke & Lime Stone Stock Yards	SQ.M.	28,000			
13.03	Supplying and laying Low Density Poly Eurethene (LDPE) film 150 micron thick, within sand layers, below Murram layer in Petcoke & Limestone Stock Yards.	SQ.M.	14,000			
13.04	Supplying ,laying and compacting to 95 % of the Maximum Dry Density as per Modified Proctor Test 250 mm thick Murram Layer in Petcoke & Limestone Stock Yards	SQ.M.	14,000			
13.05	Supplying and laying Graded Gravel using Sandstone/Basalt/Granite aggregates of size 10 to 40 mm for drainage arrangement in Pet Coke & Lime Stone Stock Yards	Cu M	700			
13.06	Supplying and spreading 40mm size stone chips / gravels in transformer yards	CUM	100			

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SL NO	DESCRIPTION	UNIT	QUANTITY	RATE		AMOUNT
				In figures	In words	
13.07	Supply, fabricating and fixing in position transformer gate / fencing as per drg. no:7-75-0051 including painting with aluminium paint two coats over suitable primer etc.complete., excavation,concreting and post etc to be measured separately.	SQ.M.	50			
13.08	Supplying, laying and compacting Stone soling of consolidated thickness 250mm in 2layers (using 63 - 90mm stone) including spreading binding material(sand / morrum) watering and rolling with road roller etc. all complete as per drawings and specifications .	SQ.M.	45,100			
13.09	Supplying and installing of PVC pipes (Medium Duty with wall thickness 3mm) of following diameter as per specifications and drawing.					
	100mm	RM	10			
	150mm	RM	25			
	200mm	RM	25			
	250mm	RM	25			
13.10	Providing Anti-termite treatment to building columns and floors of Chloropyrifos emulsifiable concentrates (1%) conforming to IS:8499 and IS: 6313 with cost of material, labour, consumables etc, all complete as per drawings and EIL specifications	Sq. m	5,800			
14.00	SANITARY & PLUMBING					

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SL NO	DESCRIPTION	UNIT	QUANTITY	RATE		AMOUNT
				In figures	In words	
14.01	Supplying, fitting fixing the following best quality sanitary fixtures of " Hindustan Sanitaryware" or approved equivalent make at various elevations including all necessary accessories, cutting and making good of concrete / brickwork for concealing all connecting pipes and bends with all materials etc all complete as per specifications and drawings.					
a)	European type type water closet conforming to IS:2556 with white glazed stone ware basin with plastic seats & cover and low level PVC cistern of 15 litre discharge capacity including valveless fittings, flush bends, supply connections, syphon , integral 'S' or 'P' trap etc. all complete as per EIL Drg. No-7-75-0062	NOS	1			
b)	Indian pattern water closet (Orissa pan size 580 mm conforming to IS:2556) with white glazed stone ware and integral 'footrest; 15 litre capacity highlevel PVC flushing cistern including valveless fittings, with all necessary fixtures, integral with 'S' or 'P' trap etc. all complete as per EIL drg. No-7-75-0060 and specifications .	Nos.	1			
c)	610 x 410 x 380 mm large flat back urinals with a pair of 250 X 125 mm white ceramic foot rest with concealed hangers and brackets, CP brass spreader for concealed piping work, CP brass waste fittings, 30 mm dia heavy duty bottle trap etc all complete as per EIL drg No-7-75-0063 and specifications.	Nos.	2			
d)	Automatic high level PVC cistern with mosquito proof lid, interior painted with 2 coats of anti corrosive paint complete with loose key CP brass bibcock					
e)	Cistern capacity 5 ltrs.	Nos.	2			

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				In figures	In words	
f)	Cistern capacity 10 ltrs	Nos.	2			
g)	White poreclain division plate of size 840 X 300 mm with CP brass screws	Nos.	1			
h)	550 x 400 mm wall hung white glazed stone ware flat back wash basin with provision for tap holes in three locations with supporting brackets,C.P brass 30mm dia waste fittings,heavy duty CP bottle trap,one no. 15mm dia long nose C.P brass pillar cock,one number supply connection with 300.mm long,15 mm dia P.V.C pipe with brass nuts at both ends and C.P brass stop cock etc,complete as per drgs and specifications .	Nos.	2			
i)	150 x 150 mm recessed white glazed porcelain soap tray.	Nos.	2			
j)	Chromium plated shower set with 100/150 mm dia brass shower rose with rim arm,wall flange,hot/ cold water mixing valves including handle and concealed supply pipe including 600mm long C.P grab bar,bibcock etc, as per specifications all complete.	Nos.	1			
k)	600 x 450 x 6 mm thk bevelled edge mirror of superier glass with necessary fixtures as per specifications.	Nos.	2			
l)	600mmX120mmX4mm thick clear glass shelves with chromium plated brackets, guard rails etc, all complete	Nos.	2			
m)	600 mm long, 20 mm dia and 1.25 mm thick chromium plated brass towel rail with brackets fittings, etc, complete.	Nos.	2			
n)	All Chromium plated standard liquid soap dispenser of approved make with all fittings etc, complete.	Nos.	2			
o)	12 mm dia CP brass ablution tap with all fittings complete.	Nos.	4			

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SL NO	DESCRIPTION	UNIT	QUANTITY	RATE		AMOUNT
				In figures	In words	
14.02	Supplying, fitting fixing the following best quality Automatic Urinal flush Control System of approved make at various elevations including all necessary accessories, cutting and making good of concrete / brickwork for concealing all connecting pipes and bends with all materials etc all complete as per specifications and drawings.	Nos.	2			
14.03	Supplying, fitting and fixing 100 mm dia inlet and 80/100 mm dia outlet SS floor drain with trap and with screwed or hinged CP brass gratings.	Nos.	2			
14.04	Providing 300 x 300 x 675 mm chamber in 1:4 brickwork 115 mm thick with plain concrete 1:2:4 foundation cement mortar including supplying and fixing 100 mm. dia square mouth gully trap, gratings, CI frame and cover, all complete as per specifications.	Nos.	2			
14.05	Supplying, laying, fitting, fixing and jointing concealed GI pipes conforming to IS:1239 for water lines at various elevations pipes underground with all fittings bends, teas, reducers etc. including excavation, backfilling, supports, caulking, chases, grooves, hangers, supports, straps etc. painting as specified all complete as per specification and drawings.					
a)	12 mm dia	R.M.	20			
b)	19mm dia	R.M.	20			
c)	25 mm dia	R.M.	150			
14.06	Supplying, laying, fitting, fixing and jointing extra heavy cast iron soil and drain pipes underground with all fittings bends, tees, reducers etc. including excavation, backfilling, supports, caulking, chases, grooves, hangers, supports, straps etc. painting as specified all complete as per specification and drawings.					

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SL NO	DESCRIPTION	UNIT	QUANTITY	RATE		AMOUNT
				In figures	In words	
a)	100 mm	R.M.	25			
b)	150 mm	R.M.	25			
14.07	Same as 15.11 but over ground, including vent pipes and cowls.					
a)	100 mm	R.M.	10			
b)	150 mm	R.M.	10			
14.08	Supplying fitting and fixing CI heavy duty man hole cover of 50 cm dia of approved brand as per specification	Nos.	2			
14.09	Supplying, fitting and fixing of best quality PVC rain water drain pipes of min. wall thickness 4mm of approved make at various elevations including shoe bends junctions sockets, adapters, brackets, hanger supports etc., jointing with appropriate adhesives, including all materials complete as per drawings and specifications.					
a)	100 mm dia pipes	R.M.	50			
b)	150 mm dia pipes	R.M.	150			
14.10	Supply and fixing best quality PVC of min. wall thickness 4mm of approved make roof drain heads					
a)	100 mm pipe	Nos.	4			
b)	150 mm pipe	Nos.	8			

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SL NO	DESCRIPTION	UNIT	QUANTITY	RATE		AMOUNT
				In figures	In words	
14.11	Providing and installing RCC Hume pipes of class NP-2 of following diameters with collars,at all depths including bedding, jointing etc. all complete as per drawing and EIL specifications . (excavation and backfilling to be measured seperatly under relevant items)					
	150 mm	R.M.	10			
	250 mm	R.M.	10			
	300 mm	R.M.	10			
15.00	DISMANTLING OF STRUCTURE					
15.01	Dismantling and removal before modification of the following items in the existing structures with all labour, tools, transport etc. all complete including delivering as directed by Engineer.					
a)	Plain Concrete	CU.M.	1			
b)	Rein forced Concrete	CU.M.	1			
c)	Brickwork	CU.M.	5			
d)	Existing BT roads	SQM	20			
e)	Existing WBM roads	SQM	20			
f)	Pipe hand rail	RM	25			
g)	GI sheetings	SQM	25			
h)	Structural Steel	MT	1			
16.00	GROUNDING					

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SL NO	DESCRIPTION	UNIT	QUANTITY	RATE		AMOUNT
				In figures	In words	
16.01	Drawing from B H E L stores fabricating, erecting, testing ground conductors including cost of excavation (Min. width 300mm & depth 600mm), backfilling, welding, construction of masonry chambers with M S covers (for pipe electrodes), filling with sand, charcoal and salt (for test pit electrodes), labour, material etc. complete All ground conductors will be issued by BHEL free of cost					
a)	Earthing strip 75 X 10 mm GI Strip,2 Runs	R.M.	2,000			
b)	Earth risers of 75X10 mm GI strip	R.M.	500			
c)	Test Pit Electrode as per drg. no.:GT57191 with chambers	Nos.	5			
d)	Pipe Electrode as per drg. no.GT57191 sheet 2.(Ref. specs.)	R.M.	5			
	TOTAL OF ALLABOVE ITEMS IN RS					