ENGINEERING SPECIFICATIONS

SCHEDULE – I

General details of standard conventional godown of 4000 Metric tonne capacity (MTC)

(A) Details for 21.80 m C/C span godown (capacity = 4000 MT, compartment = 2 Nos.):

- Godown size (Centre to Centre) = 93.00m x 21.80m
- Godown size (Outer to Outer) = 93.46m x 22.26m
- Godown size excluding Verandah = 93.46m x 22.26m
- Godown size including one Verandah (1.83m) = 93.46m x 24.09m

General details for both the spans:

1. Front Road side Verandah Width: 1.83m
2. Plinth level: 0.60m to 0.91m depending upon the topography of plot.
3. 4000 MT godowns: Two compartments for 21.80m span.
4. Compartments C/C length (10 panels): 46.50m.
5. Total No. of stacks (size = 6.10m x 9.14m): 24 Nos. + 6 half sized stacks.
6. Godown height on each side: 5.48m from plinth/floor level.
7. Verandah Truss height on road side: 3.48m from plinth/floor level.
8. No. of Rolling shutters/steel garage doors: 12 Nos.
9. Size of rolling shutters/garage doors (clear opening): 1.83m x 2.44m.
10. Bottom ventilators (V6) size 0.60m x 0.60m: 28 Nos. (Both long walls).
11. Top ventilators size 1.50m x 0.60m: 40 Nos. (Both long walls and one in each panel).

NOTE:

(i) Continuous platform of 1.83 meter width shall be provided on front side of the godowns. On the back side, 0.23 mt projected RCC nosing is provided only in front of garage doors/rolling shutters or 0.90 mt wide platform is provided in front of garage shutters/rolling shutters openings only as per site requirement.

(ii) Any details not mentioned above will be as per the CWC existing specifications for conventional godowns. In case CWC does not have any specifications, then relevant IS code 607 of 1971 for construction of godowns will be followed.

(iii) Tubular Trusses: As per the wind speed zone (33m/sec to 55m/sec) classified in the relevant latest BIS code.

(iv) Total Carpet area of the godowns: (46.04m+46.04) x 21.34m = 1964.98 Sqm.

(v) Ancillaries Required: Compound wall, office block alongwith sanitary, electrification & water supply work as per the requirement.

(vi) Length of each compartment may be changed according to suitability for accommodating stacks for storage …….. instead 10 each compartment it may be kept as two compartment of 11 panels and 9 panels of 4.65m centre to centre length of each panel.

SCHEDULE-II

SPECIFICATIONS FOR THE CONSTRUCTION OF CONVENTIONAL TYPE GODOWNS

GODOWN

1. Normal Size of Godown of 4,000 MT capacity.
Internal dimensions of the godown:

2 x 46.04m x 21.34m = 1964.99 sq.mt

1. **FOUNDATION:** The depth of foundation is proposed for Ordinary Soils at 1.30 M for columns and 1.20 M for panel walls (foundation design is based on for soil capacity of 10 tonnes per sq.mt).For expensive soils/black cotton soils, foundation should be suitably designed alongwith requirement of pile foundations as per site requirement.
PCC 1:5:10 (1 cement: 5 coarse sand: 10 stone aggregate of 40 mm nominal size) is provided under columns and panel walls respectively. R.R. Masonry/Brick Masonry in cement mortar 1:6 (1 cement: 6coarse sand) is proposed for the foundation and superstructure. The excavated good quality of earth shall be reused to fill in the wall-trenches and remaining earth is used for filling under floors. Blanket course of sand/moorum under bed concrete are provided for black cotton soils/poor soils to increase soil bearing capacity. Design of footings of structure should be in accordance with the bearing capacity of soil at site.

2. **PLINTH BEAM, TIE BEAM & COLUMNS:** All RCC works shall be executed in design mix of M 25 or nominal mix of 1:1½:3 (1 cement: 1½ coarse sand: 3 stone aggregate of 20 mm nominal size). 0.15m thick RCC tie beam is provided on all the walls at a height of 5.18m from floor level in the godown. Grade beam at ground level & an additional beam at door level are to be provided in earthquake Zone iii &iv as per design to withstand the bearing loads & earthquake forces.

3. **SUPER STRUCTURE:** All the walls are to be provided with 34 cm thick brick masonry or 38 cm thick RR masonry in cement mortar 1:6 (1 cement: 6 coarse sand).

4. **FINISHINGS:** 12mm thick cement plaster in cement mortar 1:6 (1 cement: 6 fine sand) on both sides of walls, 6mm thick plaster in cement mortar 1:3 (1cement:3 fine sand) on exposed surface of columns is provided. 3 or more coats of white wash on inner side of walls & colour wash/ snowcem on external side of walls are to be provided.

5. **PLATFORM:** Covered verandah of 1.83 m wide with cantilever Truss on road side to be provided.

6. **FLOORING:**

(A) In Ordinary soils:

(a) Rammed Earth filing as per requirement. (b) 150 mm thick sand filling (c) WBM with 150 mm thick stone aggregate of grade II in two layers and 75mm thick layer of stone aggregate of grade III(d) 50mm thick C.C flooring 1:2:4 (1 cement: 2 coarse sand: 4 coarse aggregate 20 mm nominal size)with a floating coat of neat cement. Total crust thickness of flooring is 27.5 cm.

(B) In Expansive soils/Black cotton soils:

(a) WBM with 150 mm thick stone aggregate of grade I, 100 mm thick layer of stone aggregate grade II and 75 mm thick layer of stone aggregate grade III (b) 50 mm thick CC flooring 1:2:4 (1 cement: 2coarse sand: 4 coarse aggregate 20 mm nominal size) with a floating coat of neat cement.

Total crust thickness of the flooring is 37.5 cm.

An additional 235 mm thick blanket course of moorum underneath the WBM grade-I is provided in such soils.

7. **ROOFING:** Tubular trusses on RCC columns to support Pre-painted polyester coated sheets/GI/Galvalume sheeting shall be provided. Fibre glass (Translucent) sheets are provided for about 2% of the roofing area for natural light. Inside height of godown from Plinth level to Bottom of Trusses is 5.48 m. Pre-engineered steel structures with pre-painted polyester coated sheets with turbo ventilators, translucent sheets etc. are also used in the warehouses.

8. **WINDOWS, VENTILATORS, ROLLING SHUTTERS AND STEEL DOORS:** Previously we were providing Rolling shutters (clear opening) of size 1.83m x 2.44m in the godowns. Now1.83x2.44m size steel garage doors are provided in place of rolling shutters and these doors are to be fixed on outer edge of the walls for easy and full opening of the doors. Windows of size 0.60m X0.60m and ventilators of size 1.50m X 0.60 m with angle iron frame as shown in the relevant drawing fixed on inner edge of the walls. Top ventilators are also covered with semi barrel type expanded metal grill for checking the entry of birds.

9. **ROADS:**

(A) In ordinary soils:

(a) WBM with 100 mm thick layer of stone aggregate grade I, over it 20 cm thick plane cement concrete road in the mix of 1:1½:3 (1 cement: 1½ coarse sand:3 stone aggregate 40mm nominal size)

Total thickness is 30 cm.

(B) In Expansive soils/Black cotton soils:
(a) WBM with 230 mm thick layer of stone aggregate grade I, over it 20 cm thick plane cement concrete road in the mix of 1:1½:3 (1 cement: 1½ coarse sand:3 stone aggregate 40mm nominal size)
Total thickness is 43 cm.
An additional 300 mm thick blanket course of moorum beneath the WBM of grade-I is provided in such soils.

10. **COMPOUND WALL:** 1.83 m high boundary wall in brick/RR masonry above Ground level with0.6m high, 6 rows of barbed wire/concertina coils with angle iron posts 1.02m C/C on top of wall is to be provided. 15mm thick plastering in cement mortar 1:6 on rough side of the wall and 12mm thick plastering with cement mortar 1:6 on plain side of the wall is to be provided.

11. **BOUNDARY WALL GATE & WICKET GATE:** 4.90 m wide main steel gate and 0.91mwide wicket gate are provided as per drawing.

12. **OFFICE BUILDING:** Office space is provided as per the requirement of the staff/external customer's alongwith all allied facilities of toilets, drinking water etc.

The above specifications are general specifications and these are not exhaustive. These specifications would vary as per need of the site and as per the design requirement at a particular site.

ABSTRACT OF COST/BILL OF QUANTITIES FOR THE CONSTRUCTION OF 4000 MT CAPACITY GODOWN

(CIVIL WORKS)

SL. NO.	DESCRIPTION	QTY.	UNIT	RATE	AMOUNT	Remark
1.	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm. on plan) including dressing of sides and ramming of bottoms, lift up to 1.5 m including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m. a) All kinds of soil	527.00	Cum			2.8.1 72
2.	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.	527.00	Cum			2.25 75
3.	Supplying and filling in plinth with fine sand under floors including, watering, ramming consolidating and dressing complete.	32.00	Cum.			2.27 75
4	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering – All work up to plinth level: a) 1:5:10 (1 Cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size).	98.00	Cum			4.1.10 85

5.	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets etc. up to floor five level, excluding the cost of centering, shuttering and finishing: a) 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size).	4.80	Cum			4.2.3 85
6.	Supply & filling selected earth obtained from approved source (excluding rock) in layers not exceeding 20 cm. in depth breaking clods, watering and consolidation of each layer by half tonne roller or by using wooden or steel hammer and rolling every third and top most layer with power roller of minimum 8 tonnes and dressing up in embankments or roads plinth filling or filling of ground depressions within the campus, i/c of all leads and lifts (no royalty or segonorage shall be paid by the CWC to contractor)	438.00	Cum			4AR-12
7	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering, shuttering, finishing and reinforcement – All work up to plinth level: a) 1:1.5:3 (1 Cement 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size).	62.90	Cum			5.1.2 96

8	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. up to floor five level excluding cost of centering, shuttering, finishing and reinforcement: a) 1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	61.00	Cum			5.2 96
9	Reinforced cement concrete work in beams, suspended floors, roofs having slope up to 15 degree landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral stair cases up to floor five level excluding the cost of centering, shuttering, finishing and reinforcement with 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size).	15.50	Cum			5.3 96
10	Reinforced cement concrete work in vertical and horizontal fins individually or forming box louvers, facias and eaves boards up to floor five level excluding the cost of centering, shuttering, finishing and reinforcement with 1: 1.5 : 3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size).	0.40	Cum			5.8 97
11.	"steel work in single section for door frame, made of M.S. angle 75× 75× 6 mm, joints mitered welded with 8 nos. 30 cm long lugs of M.S angle 40x40× 6 mm to act as hold fasts, complete " as per drg. No. CWC/PG/380/5 i/c applying priming coat of yellow zinc chromate primer, fixing of Cement. Conc Block of Cement. Concrete 1:2:4(1 cement : 2 coarse and : 4 graded stone aggregate 20 mm nominal size) of size 30× 30× 23 cm etc. (Cement.conc. Blocks shall be paid separately)	609.00	Kg.			24 AR-12

12.	Providing, hoisting and fixing up to floor five level precast reinforced cement concrete in small lintels not exceeding 1.5m clear span up to floor five level including the cost of required centering, shuttering and finishing smooth with 6 mm thick cement plaster 1:3 (1 cement : 3 fine sand) on exposed surfaces but excluding the cost of reinforcement with 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size)	0.25	Cum			5.13 98
13.	Centering and shuttering including strutting, propping etc. and removal of form for : a) Foundations, footings, bases of columns, etc. for mass concrete. b) Columns, Pillars, piers, Abutments, Posts and Struts. c) Lintels, beams, plinth beams, girders, bressumers and cantilevers. d) Walls (any thickness) including attached pilasters, butteresses, plinth and string courses etc. e) Vertical and horizontal fins individually or forming box louvers band, facias and eaves boards. f) Small lintels not exceeding 1.5m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like.	178.40 562.40 149.00 54.00 11.60 25.60	Sqm Sqm. Sqm. Sqm Sqm Sqm.			5.9 97
14.	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto floor V level: a) TMT bars b) Mild steel & medium tensile steel bars	7861.00 1541.00	K.G. Kg			5.22.6 99
15.	Brick work with common brunt clay FPS (Non modular) bricks of class designation 7.5 in					6.4.2

	superstructure above plinth level up to floor V level in all shapes and sizes. Cement Mortar 1:6 (1 cement : 6 Coarse Sand)	526.80	Cum			
16.	Brick work with common brunt clay F.P.S.(non-modular) bricks of class designation 7.5 in foundation and plinth in : a) Cement mortar 1:6 (1 cement : 6 coarse sand)	243.00	Sqm.			6.1.2
17.	Structural steel work in single section fixed with or without connecting plate including cutting, hosting, fixing in position and applying a priming coat of approved steel primer all complete: a) For steel fenders 100 X 100 X 8 mm.	1351.00	Kg.			10.1 176
18.	Providing and fixing M.S. round holding down bolts with nuts and washer plates complete for fixing platform trusses and embedded in RCC column as per drawing No. CWC/PG/393/A/1: a) 20mm dia bolts 0.91m long with 10mm thick MS anchor plate size 10 x 10 cm. b) 20 mm dia .3 mt. long with 100 mm thick MS plate of size 20 X 8 cm for every pair of bolts.	481.60 128.00	Kg. Kg.			10.19 179
19.	Providing and fixing bolts including nuts and washers complete.	166.00	Kg.			10.20 179
20.	Steel frame work in single section including cutting hoisting fixing including applying priming coat of zinc chromate yellow primer for fire bucket stand" embedded in C.C. 1:2:4 (1 cement: 2 coarse sand : 4 graded stone aggregate 20mmnominal size) Blocks of size 0.26m x 0.15m x 0.15m including providing and fixing of 6 nos of fire buckets					31 AR-12

	of 10Ltrs/capacity each having hemispherical bottom of approved quality with 6 nos of 16mm dia hooks for hanging fire buckets including making holes welding, lettering on fire buckets complete as per the instruction of Engineer in Charge and drawings No.CWC/PG/226. a) In angles of size 50x50x6 mm.	5 sets	Each Set			
21.	a) Providing and fixing steel glazed ventilators of steel sections of 40x40x6 mm size Angle iron, 40x40x6 mm Tee Section for ventilators frame and 25x25x4 mm. Angle iron for ventilator shutter with 15x3 M.S. flat, Beading, Joints mitered with M.S. fittings and 40x40x6 mm M.S. angle hold fasts 30 cm. Long embedded in cement concrete block of size 35x10x10 cm of C.Conc. Mix 1:3:6 (1 cement : 3 coarse sand: 6 graded stone aggregate 20 mm nominal size) including providing and fixing of glass panes of nominal thickness 4 mm (weighing not less than 10.00 Kg)/Sqm.) with glazing clips and special metal sash putty of approved quality and manufacture complete including a priming coat with ready mixed Zinc Chromate yellow primer of approved brand and manufacture with necessary M.S. pivot/hinges 50 mm projecting type catchers/handles, M.S. Tower bolts 100 mm long and necessary eyes welded to frame. Note: the ventilator to be fabricated as per drg. No. CWC/PG/380/5 and as per latest CPWD specifications)Rate includes cost of all materials and labour but excluding cement conc. Blocks which shall be paid separately and measurement would be done for outer to outer dimension of frame)	41.00	Sqm.			8 AR-12
22.	Providing and fixing 1.25 mm thick M.S sheet steel door with frame of 40X40X6 mm Angle, 3 mm thick gusset plates at junction and	43.70	Sqm.			22 AR-12

	corners by using MS angle 40X40X6 mm diagonal braces, necessary fittings like Bush hinges, handles, tower bolts sliding door bolts as per Drg. No. CWC/PG/380/5 including a priming coat of approved steel primer of zinc chromate yellow.					
23.	Providing & fixing expanded metal mesh frame with expanded metal 20x6 mm strands 3.25 mm wide and 1.6 mm thick, weighing not less than 4.078 kg/sqm and frame made of 25x4 mm M.S. flat sub divided into three equal panels with 25x4 mm M.S. flat expanded metal to be fixed with 19x3 mm M.S. beading tack welded, 4 nos. of M.S. cleats of size 50x50x4 mm size with holes for 12 mm dia bolt i/c and manufacture complete as per drg. No.CWC/PG/382 and as per instructions of Engineer in charge. The whole frame with expanded metal mesh is to be fixed on the outer side of V4 openings with 12 mm dia 250 mm long bolts with nuts & washers embedded in C.Conc. Blocks of size 75x75x125 mm of C.Conc. 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) in brick bands/RCC lintel if any of the ventilators. NOTE: Payment for cement conc. Blocks, Bolts, shall be paid separately under relevant items, payment for M.S. frame shall be paid on area basis of outer to outer dimension of frame.	53.50	Sqm			21 AR-12

24	Cement concrete flooring 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry but excluding the cost of nosing of steps etc. complete.: a) 50 mm thick with 20 mm nominal size stone aggregate	2245.00	Sqm.			36 AR-12
25.	Providing and fixing Glass strips in joints terrazzo/cement concrete floors: a) 50mm wide and 4 mm thick.	3817.00	Metre			23 AR-12
26.	Supplying and stacking at site a) Moorum	57.30	Cum			16.3.10 263
27	Laying spreading and compacting stone aggregate of specified sizes to WBM specifications including spreading in uniform thickness, hand picking, rolling with 3 wheeled road/vibratory roller 8-10 tonne in stages to proper grade and camber, applying and brooming requisite type of screening/binding material to fill up interstices of coarse aggregate watering and compacting to the required density.	477.00	Cum			16.4 263
28	12 mm cement plaster of mix: a) 1:6 (1 cement : 6 fine sand)	3459.00	Sqm			13.1.2 222
29.	6 mm cement plaster of mix: a) 1:3 (1 cement : 3 fine sand)	295.00	Sqm.			13.16 223
30.	White washing with lime to give an even shade (a) New work (three or more coats)	2194.00	Sqm			13.37.1 225
31.	Colour Wash such as green, blue or buff to give an even shade a) New Work (Two or more coats) with a	1470.00	Sqm			13.39.1 225

	base of white washing with lime.					
32.	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade: a) Two or more coats on new work	1345.00	Sqm.			13.61.1 222
33.	**Supply & stacking of graded stone aggregate at site of size range.:** (a) 63 mm to 45 mm size stone aggregate (b) 53 mm to 22.4 mm size stone aggregate (c) Stone screening 13.2 mm nominal size (Type A) (d) Stone screening 11.2 mm nominal size (Type B)	386.00 193.00 51.00 38.00	Cum Cum Cum Cum			16.3 263
34	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm bed by dry brick ballast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth.	115.60	Sqm.			4.17 88
35.	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10mm and down gauge) including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design : a) In 75x75 mm deep chase	176.00	Metre			12.21.1 207
36.	Steel work in built up tubular trusses including cutting hoisting fixing in position and applying a priming coat of approved steel primer, welded and bolted including special shaped washers etc. complete. This includes the cost of trusses, rafter purlins, sleeves false rafter base plates lacing and bracing MS bolts and nuts and base plate on top of column as per relevant approved drawings and direction of Engineer-in-charge (There is no trusses over G/walls and partition walls) The work including cost of material shall be					

	executed as per latest CPWD specification and I.S. code of design. The trusses shall be fabricated by the contractor at his own cost exactly as per approved drawings of CWC and nothing extra shall be paid. Payment on weight basis would be made as per the theoretical or actual weight whichever is less: a) Electric resistance or butt welded tubes	28840.00	Kg.			
37.	Providing and fixing percoated galvanized iron profiles sheets (size, shape and pitch for corrugation as approved by Engineer –in –charge) 0.55 mm (+0.05%) total coated thickness with zinc coating 120 grams per sqm as per IS:277, in 240 mpa steel grade ,5-7 microns epoxy primer on both side of the sheet and polyster top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches during transportation and should be supplied in single length upto 12 metre or as desired by Engineer –in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5 x5.5 mm) with EPDM seal, complete upto any pitch in horizontal /vertical or curved surfaces, excluding the cost of purlins, rafters and trusses and including cutting of size and shape wherever required.	2614.00	Sqm.			12.50 212
38	Providing and fixing precoated galvanized steel sheet roofing accessories 0.50mm (+0.05%) total coated thickness, Zinc coating 120 grams per sqm as per IS:277, in 240 mpa steel grade ,5-7 microns epoxy primer on both side of the street and polyster top coat 15-18 microns using self drilling /self	100.00	Metre			12.51.1 212

	tapping screws complete. a)Ridges plain (500 -600mm)					
39.	Providing and fixing plastic translucent corrugated sheets made from thermox setting polyester Resin, (Glass fiber reinforced) of thickness 3.00 mm (with variation up to 15% having minimum total light transmission of 80% confirming to IS : 12866 – 1989, having length, width and profile in accordance with those of adjoining main roofing sheet, including supplying and fixing fixtures like 8 mm dia G.I. 'J' hook bolts & nuts, GI limpet washer and bitumen washers as per the direction of Engineer-in-charge. Excluding the cost of purlins, rafters and trusses.: a) Over lapping with one and a half Corrugation	44.00	Sqm.			1 AR-12
40.	Supply & laying saturated felt type 3 grade-I (Hessian base) on top of AC Ridges with suitable residual petroleum bitumen of grade VG-10 of approved quality by applying 1.45 Kgs./Sqm. (The Hessian type tarfelt should be approved quality and confirm to I.S.1322).	100.00	Sqm.			11 AR-12
41.	Supply & fixing fire extinguishers of approved I.S.I. mark each of 9 litres capacity in the existing recess or on wall as per instruction of Engineer-in-charge: a) Water/carbon dioxide gas pressure type fire extinguishers capacity 9 litre as per IS- 15683 -2006. b) Mechanical type fire extinguishers foam type 9 ltrs. Capacity as per I.S. 15683 -2006. c) Dry Chemical powder type fire extinguishers capacity 10 kg. As per I.S. 15683 -2006.	2.00 2.00. 1.00.	Each Each Each			30 AR-12
42.	Steel frame work in single section for air inlet of MS joint mitred welded with 4 Nos. 15 cm long lugs of MS flat 20X6mm to act as hold fast to be fixed in cement concrete blocks of size 200X100X100mm in cement concrete mix 1:2:4 (1 cement : 2 coarse sand :4					37 AR-12

	graded stone aggregate 12.5 mm nominal size) including providing and fixing GI fabric (jail) in squared mesh of size not more than 17 mm X 17 mm, made of GI wire of dia 2mm , weighing 2.15 kg/sqm. In GI wire fabric to be fixed with 15X3mm MS flat beading, tack welded including applying priming coat of zinc chromate yellow primer. Cleats are to be provided on inner side of withhold/support the covering. Slanted MS flat strip of size 40 mm X 4 mm to be provided as per the drawing. Complete air inlet to be manufactured and fixed in position as per drawing No. CWC/PG/414 and as per direction for Engineer in Charge. Note: Cement concrete block shall be paid separately under relevant item.	598.00	Kg.			
43.	Applying a coat of residual petroleum bitumen of grade VG-10 of approved quality using 1.7 kg. per square metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	82.50	Sqm.			4.13 87
44.	Providing and laying damp proof coarse 50 mm thick with cement concrete 1:2:4(**(1 cement : 2 coarse sand :4 graded stone aggregate 20 mm nominal size**	82.50	SQM			4.11 87

ABSTRACT OF COST/BILL OF QUANTITIES FOR THE CONSTRUCTION OF 4000 MT CAPACITY

(ELECTRICAL WORK)

S. No.	Description of work	Quantity	Unit	Rate	Amount	Remarks
1	Supplying and fixing of following sizes of steel conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.(ISI Marked) (a) 25mm	565.00	Meter			DSR 2012(EL) P-5 I-20.2
2	Supplying and drawing following sizes of FR PVC insulated copper conductor, single core cable in the existing surface/recessed steel/PVC conduit as required. (a) 3x1.5 sqmm (b) 4x1.5 sqmm (C) 5x1.5 sqmm (d) 6x1.5 sqmm (e) 7x1.5 sqmm (f)8x1.5sqmm (g) 9x1.5sqmm (h)3x2.5 sqmm (i)6x2.5sqmm (j)3x4sqmm	150.00 60.00 55.00 110.00 40.00 6.00 6.00 84.00 30.00 50.00	Meter Meter Meter Meter Meter Meter Meter Meter Meter Meter			DSR 2012 (EL) P-4 I-1.17.3 I-1.17.4 I-1.17.5 I-1.17.6 I-1.17.7 I-1.17.8 I-1.17.9 I-1.17.12 I-1.17.15 I-1.17.21
3	Supplying and fixing 12/13 mm flexible metal conduit including connection,					

	painting etc on surface/recessed as per direction of Engineer in Charge.	18.00	Meter			Market rate
4	Supplying and fixing 3 pin,5 amp. Ceiling rose on the existing junction box/wooden block including connection etc as required	56.00	Each			DSR 2012 (E) P-8 I-1.33
5	Supplying of 1X28 watt T-5 lamp luminaries, prewired with electronic choke, and T-5 28 W lamp having powder coated CRCA M.S. Box complete with all accessories as required. Make surya – UNIARY-Cat/Sub 128 T-5 EB-I/P-3/Crompton cat ref. T-5 RSF 28 E/ or equivalent in Bajaj For office block and godown	49.00	Each			Market rate
6	Installation, testing and commissioning of prewired, fluorescent fitting/compact fluorescent fitting of all types, complete with all accessories and tube etc. directly on ceiling/wall/truss, including connection with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable and earthing etc. as required.	49.00	Each			DSR-2012(E) P-8 I-1.41
7	Supplying, installation, testing commissioning of 36 w/40w LED warm white , street light fitting, operating voltage 90-270 V. A.C, beam angle 30/90, IP 65/66, lumen more than 4000, pole die 60mm, life span 50000 hour, antiglare, driver etc. complete with all accessories etc. (with manufacturer certificate) make - NTL- Pharox -40watts LED or equivalent in Bajaj and Crompton	7.00	Each			Market rate
8	Supplying and fixing GI Pipe bracket on wall, suitable for fixing above street light					

	made out of 40mm OD B-class GI pipe up to 2.00 meter length along with 2 sets suitable clamps, nut bolts/fastners including bending the shape, smoke gray painted with primer etc. as required.	7.00	Each			Market rate
9	Supplying and fixing following way, single pole and neutral, prewired, sheet steel, MCB distribution board, 240 volts, on surface/recess, complete with tinned copper busbar, neutral link, earth bar, din bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator) (a) 2+12 way, Double Door (b) 2+ 8 way, Double Door	 6 4	 Each Each			DSR-2012 P-11 I-2.3.8 I-2.3.7
10	Supplying and fixing following rating, double pole, 240 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required. (a) 40 amps	 4	 Each			DSR2012 (EL) P-13 I-2.12.1

11	Supplying and fixing 5 amps to 32 amps rating, 240 volts, 'C' curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections,testing and commissioning etc. as required. (a) Single Pole	116.00	Each			DSR2012 (EL)p-13 I-2.10.1
12	Providing and fixing M.V. danger notice plate of 200 mm x 150 mm, made of mild steel at least 2 mm thick, and vitreous enameled white on both sides, and with inscription in single red color on front side as required.	1.00	Each			DSR 2012 (EL)P-14 I-2.21
13	Earthing with G.I. earth pipe 4.5 meter long, 40 mm dia including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal / coke and salt as required.	1.00	Set			DSR 2012 (EL)P-23 I-5.2
14	Proving and laying earth connection from earth electrode with 6 SWG dia G.I. Wire in 15mm dia G.I Pipe from earth electrode including connection with G.I thimble excavation and re-filling as required.	15.00	meter			DSR 2012 (EL)P-24 I-5.12

15	Supplying of aluminum conductor PVC insulated, PVC sheathed/xLPE inner sheathed flat steel strip armoured power cable of 1.1 KV grade conforming to IS:1554 (Part-I) 1988 or latest amended following sizes etc Make - Havels /NICCO/GRANDLAY (a) 2x16 sqmm	30.00	Meter			Market rate
16	Laying of one number PVC insulated and PVC sheathed/XLPE power cable of 1.1 KV grade of size not exceeding 25 Sq. mm direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required. Upto 35 sq mm	20.00	Meter			DSR 2012 P-26 I-7.1.1
17	Laying of one number PVC insulated and PVC sheathed/XLPE power cable of 1.1 KV grade of size not exceeding 25 sq. mm in the existing RCC / HUME / STONEWARE/METAL pipe as required Upto 35 sq mm	10.00	Meter			DSR 2012(E) P-26 I-7.5

18	Providing and fixing G.I. Pipes complete with G.I. Fitting including trenching and refilling etc (external work) (a) 50 mm dia nominal bore	10.00	Meter			DSR-2012 (C) P-314 I-18.12.6
19	Supplying and fixing 20 amps, 415 volts, SPN industrial type, socket outlet, with 2 pole and earth, metal enclosed plug top along with 20 amps "C" curve, SP,MCB in steel sheet enclosure on surface or in recess with chained metal cover for the socket out let and complete with connections, testing and commissioning etc as required	2	each			DSR-2012 (EL) P-14 I-2.18
20	Supplying and making indoor end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed /XLPE aluminium conductor cable of 1.1 KV grade as required. a)2x16 sq. mm(22mm)	02	Each			DSR-2012(EL) P-30 I-9.1.3

NOTE:

1. **The above quantification of items is for godown only and does not include office, boundary wall and road etc. These may vary from place to place as per the site conditions.**
2. **Cost estimate may be prepared by applying the local schedule of rates of PWD/CPWD or any other Govt. Authority.**
3. **Drawings of the godown, office block and the layout plan have also been uploaded for guidance.**