

**EXTERNAL DEVELOPMENT WORKS
AT STAFF QUARTERS AND PET-CT
AT JIPMER, PUDUCHERRY**

Volume- IV

BILL OF QUANTITIES

Tender No: HLL/IDD/CHN/18-19/020

Dated: 02nd Jan 2019



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BILL OF QUANTITIES

**CONSTRUCTION OF RAIN WATER HARVEST BOREWELL AND COLLECTION PIT WORK, AT STAFF QUARTERS TYPE-V,IV & II AT JIPMER,
PUDUCHERRY**

Sl. No.	Description	Unit	Qty	Rate in Figures (in Rs.)	Rate in Words (In Rupees)	Amount in Figures (in Rs.)
1	Boring/drilling bore well of required dia for casing/ strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 90 metre depth below ground level.					
	All types of soil					
1.1	400 mm dia	Metre	640.00			
2	Supplying, assembling, lowering and fixing in vertical position in bore well, unplasticized PVC medium well casing (CM) pipe of required dia, conforming to IS: 12818, including required hire and labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer -in-charge.					

2.1	150 mm nominal size dia	Metre	120.00			
3	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.					
3.1	150 mm nominal size dia	Metre	520.00			
4	Gravel packing in tubewell construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in-charge.	Cum	70.00			
5	Providing and fixing M.S. clamp of required dia to the top of casing/housing pipe of tubewell as per IS: 2800 (part I), including necessary bolts & nuts of required size complete.					
5.1	150 mm clamp	Each	20.00			

6	Providing and fixing Bail plug/ Bottom plug of required dia to the bottom of pipe assembly of tubewell as per IS:2800 (part I).					
6.1	150 mm dia	Each	20.00			
7	Supplying, filling, spreading & leveling stone boulders of size range 5 cm to 20 cm, in recharge pit, in the required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	Cum	23.00			
8	Supplying, filling, spreading & leveling gravels of size range 5 mm to 10 mm, in the recharge pit, over the existing layer of boulders, in required thickness, for all leads & lifts, all complete as per direction of Engineer-in-charge.	Cum	23.00			
9	Supplying, filling, spreading & leveling coarse sand of size range 1.5mm to 2 mm in recharge pit, in required thickness over gravel layer, for all leads & lifts, all complete as per direction of Engineer-in-charge.	Cum	23.00			

10	Running the compressor to clean the borwell against any materials such as mud or clods entering during the operation of boring or sliding.	Job	20.00			
11	Construction of 1500x1500mm of internal dimension chamber with brick masonry thickness 230mm. The work include 1:2:3 cement concrete foundation 150mm thick over 150mm sand bed, plastering in 1:3 cement mortar for internal and external surface finished with floating coat of neat cement, RCC top cover. The work include necessary excavations and backfilling and complete.	Each	20.00			
Sub Total (A):						
PROPOSED EXTERNAL DEVELOPMENT WORKS IN PET-CT AT JIPMER, PUDUCHERRY						
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 upto 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.					

	All kinds of soil.	cum	298.70			
2	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5 m, including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m					
	All kinds of soil					
2.1	Pipes, cables etc, not exceeding 80 mm dia.	metre	255.00			
2.2	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	metre	159.00			
3	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth up to 30 cm measured at a height of 1 m above ground level and removal of rubbish up to a distance of 50 m outside the periphery of the area cleared.	sqm	272.00			

4	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 upto 1.5 m.	cum	304.00			
5	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth with lead upto 50 metres.	sqm	272.00			
6	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :					
6.1	1:1½:3 (1 Cement: 1½ coarse sand (zone-III) : 3 graded stone aggregate 20 mm nominal size).	cum	200.20			
6.2	1:4:8 (1 Cement : 4 coarse sand (zone-III) : 8 graded stone aggregate 40 mm nominal size)	cum	254.85			

7	Centering and shuttering including strutting, propping etc. and removal of form work for					
7.1	Foundations, footings, bases for columns	sqm	168.05			
8	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.					
8.1	Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	1078.50			
9	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:					
9.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	110.40			
10	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level.					

10.1	Cement mortar 1:4 (1 cement :4 coarse sand)	sqm	20.00			
11	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20 mm nominal size) upto plinth level with :					
11.1	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	20.60			
12	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete.	Kg	561.00			
13	12 mm cement plaster of mix :					

13.1	1:4 (1 cement: 4 coarse sand)	sqm	616.00			
14	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications					
14.1	Two or more coats applied on walls @ 1.25 ltr/10 sqm over and including one coat of Special primer applied @0.75 ltr /10 sqm	sqm	534.00			
15	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade					
15.1	Two or more coats on new work	sqm	17.40			

16	Painting road surface marking with adequate nos of coats to give uniform finish with ready mixed road marking paint conforming to IS : 164, on bituminous surface in white/yellow shade, including cleaning the surface of all dirt, scales, oil, grease and foreign material etc. complete.					
16.1	New work (Two or more coats)	sqm	47.00			
17	Providing and laying factory made chamfered edge Cement Concrete paver blocks In foot path, park & lawns driveway or light & traffic parking etc. of required strength, thickness & size/ shape, made by table vibratory method using PU mould, laid in required colour & pattern over 50mm thick compacted bed of course sand, compacting and proper embedding/laying of inter locking paver blocks into the sand bedding layer through vibratory compaction by using plate vibrator, filling the joints with sand and cutting of paver blocks as per required size and pattern, finishing and sweeping extra sand, all complete as per manufacturer's specifications & direction of Engineerin-Charge.					
17.1	60mm thick Cement concrete paver block of M-35 grade with approved colour, design & pattern.	sqm	325.00			

18	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS: 15622 (thickness to be specified by the manufacturer), of approved make, in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados, over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm, including pointing in white cement mixed with pigment of matching shade complete.	sqm	82.00			
19	Providing and laying rectified Glazed Ceramic floor tiles of size 300x300 mm or more (thickness to be specified by the manufacturer), of 1st quality conforming to IS : 15622, of approved make, in all colours, shades, except White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick Cement Mortar 1:4 (1 Cement : 4 Coarse sand), jointing with grey cement slurry @ 3.3kg/sqm including pointing the joints with white cement and matching pigments etc., complete.	sqm	75.00			

20	<p>Providing and fixing PVC Door Frame of size 50x47 mm with a wall thickness of 5 mm (± 0.2 mm), made out of single piece extruded PVC profile, with mitred cut joints and joint with 2 nos of PVC bracket of size 190 mm x 100 mm long arms of cross section size 35 x 15 mm & self driven self tapping screws, the vertical door profiles to be reinforced with 40x20 mm M.S. rectangular tube of 0.8 mm , including providing EPDM rubber gasket weather seal throughout the frame, including jointing 5mm PVC frame strip with PVC solvent cement on the back of the profile. The door frame to be fixed to the wall using 8 x100 mm long anchor fasteners complete, all as per manufacturer's specification and direction of Engineer -in- charge.</p>	metre	20.40			
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21	35 mm thick factory made Solid panel PVC Door shutter, made out of single piece extruded solid PVC profiles, 5 mm (± 0.2 mm) thick, having styles & rails (except lock rail) of size 95 mm x 35 mm x 5 mm, out of which 75 mm shall be flat and 20 mm shall be tapered (on both side), having one side thickness of 15 mm integrally extruded on the hinge side of the profile for better screw holding power, including reinforcing with MS tube of size 40 mm X 20 mm x 1 mm, joints of styles & rails to be mitered cut & joint with the help of PVC solvent cement, self driven self tapping screws & M.S. rectangular pipes bracket of size 190 mm X 100 mm of cross section size 35 mm x 17 mm x 1 mm at each corner. Single piece extruded 5 mm thick solid PVC Lock rail of size 115 mm x 35 mm, out of which 75 mm to be flat and 20 mm to be tapered at both ends, having 15 mm solid core in middle of rail section integrally extruded, fixing the styles & rails with the help of solvent and self driven self tapping screws of 125 mm x 11 mm, including providing 5 mm Single piece solid PVC extruded sheet inserted in the door as panel, all complete as per manufacturer's specification and direction of Engineer-in-charge.					
21.1	Non decorative finish (matt finish)	sqm	7.56			
22	Providing and fixing IS : 12817 marked stainless steel butt hinges with stainless steel screws etc. complete :					

22.1	100X58X1.90 mm	each	16.00			
23	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete :					
23.1	200x10 mm	each	12.00			
24	Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete :					
24.1	75 mm	each	10.00			

25	Providing and fixing water closet squatting pan (Indian type W.C.pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required:					
25.1	White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rests	each	2.00			
26	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. flushing cistern, including flush pipe, with manually controlled device (handle lever), conforming to IS : 7231, with all fittings and fixtures complete, including cutting and making good the walls and floors wherever required.					
26.1	W.C. pan with ISI marked white solid plastic seat and lid.	each	2.00			
27	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require:					

27.1	White Vitreous China Flat back wash basin size 550x400 mm with single 15 mm C.P. brass pillar tap.	each	2.00			
28	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931					
28.1	15mm nominal bore	each	6.00			
29	Providing and fixing PTMT liquid soap container 109 mm wide, 125 mm high and 112 mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour, weighing not less than 105 gms.	each	2.00			
30	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931 :					
30.1	15 mm nominal bore	each	4.00			
31	Providing and fixing uplasticised PVC connection pipe with brass unions :					
31.1	45 cm length					

	15 mm nominal bore	each	6.00			
32	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	each	2.00			
33	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors.					
33.1	100 mm inlet and 100 mm outlet					
	Sand Cast Iron S&S as per IS: 1729	each	4.00			
34	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70kg as per standard design:					

	100x100 mm size P type					
34.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	each	2.00			
35	Making connection of drain or sewer line with existing manhole including breaking into and making good the walls, floors with cement concrete 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) cement plastered on both sides with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement and making necessary channels for the drain etc. complete :					
35.1	For pipes 100 to 250 mm diameter	each	1.00			
36	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size), inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design :					

	Inside size 120x90 cm and 90 cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter, total weight of cover and frame to be not less than 116 kg (weight of cover 58 kg and weight of frame 58 kg) :					
36.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5.	each	3.00			
37	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge.					
37.1	20 mm nominal outer dia Pipes	metre	23.00			
37.2	50 mm nominal outer dia Pipes	metre	52.00			

38	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end).					
38.1	20 mm nominal bore	each	2.00			
38.2	50 mm nominal bore	each	1.00			
39	Demolishing stone rubble masonry manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge :					
39.1	In cement mortar	cum	15.00			
40	Disposal of building rubbish / malba / similar unserviceable, dismantled or waste materials by mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, beyond 50 m initial lead, for all leads including all lifts involved.	cum	15.00			

41	Boring/drilling bore well of required dia for casing/strainer pipe, by suitable method prescribed in IS: 2800 (part I), including collecting samples from different strata, preparing and submitting strata chart/ bore log, including hire & running charges of all equipments, tools, plants & machineries required for the job, all complete as per direction of Engineer-in-charge, upto 90 metre depth below ground level.					
	All types of soil					
41.1	400 mm dia	Metre	50.00			
42	Supplying, assembling, lowering and fixing in vertical position in bore well unplasticized PVC medium well screen (RMS) pipes with ribs, conforming to IS: 12818, including hire & labour charges, fittings & accessories etc. all complete, for all depths, as per direction of Engineer-in-charge.					
42.1	150 mm nominal size dia	Metre	50.00			

43	Gravel packing in tubewell construction in accordance with IS: 4097, including providing gravel fine/ medium/ coarse, in required grading & sizes as per actual requirement, all complete as per direction of Engineer-in-charge.	Cum	5.00			
44	Providing and laying non-pressure NP2 class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc. complete :					
44.1	300 mm dia. R.C.C. pipe	metre	35.00			

45	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash fasteners to be paid for separately) :					
	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of EPDM rubber / neoprene gasket required (Fittings shall be paid for separately)					
45.1	Powder coated aluminium (minimum thickness of powder coating 50 micron)	Kg	94.00			

46	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sq.mm FRLS PVC insulated copper conductor single core cable etc. as required.					
46.1	Group C	point	10			
47.0	Supplying and laying 6 SWG G.I. wire at 0.50 metre below ground level for conductor earth electrode, including connection/ termination with GI thimble etc. as required	Mtr	400			
48.0	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required					
48.1	Upto 35 sq. mm	mtr	400			

49.0	Installation of exhaust fan in the existing opening, including making good the damage, connection, testing, commissioning etc. as required.					
49.1	Upto 450 mm sweep	Each	4			
50.0	Installation, testing and commissioning of pre-wired, fluorescent fitting / compact fluorescent fitting of all types, complete with all accessories and tube etc. directly on ceiling/ wall, including connection with 1.5 sq. mm FRLS PVC insulated, copper conductor, single core cable and earthing etc. as required.	Each	6			

51	Supply & installation of Hot dipped Galvanised (internally and externally), seamless, octagonal pole of overall length 5M with single arm bracket of min 1 m length 48mm dia x 3.25mm thick with standard arm cap. The pole shall have inbuilt cable loop in loop out with flush door and locking facility. The bottom dia of the pole shall be 135mm and top 70mm with 3mm sheet thickness. The pole shall be with base plate of 200x200x12mm and 4nos required size of foundation bolt. The pole shall be mounted on suitable size foundation (design to be got approved) with baseplate arrangement and provided with 6A SP C curve MCB, loop in loop out terminals block, required dia GI / PVC pipe shall be provided in the					
	foundation for taking cable in & out from the pole, 3Cx4sqmm flexible copper cable from loop in loop out to light fixture etc with all required accessories including fixing pole on cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size) foundation of 400 mm dia and 650mm depth (200 mm above ground level) with base layer of 150 mm thick 1:4:8 cement concrete (1 Cement: 4 coarse sand: 8 graded stone aggregate 40 mm nominal size) , grouting 4 nos of foundation bolt nut including excavation, refilling etc., complete. The design of the foundation to be got approved from Engineer-in-charge before execution. (Make: Bajaj, Wipro)	each	15.00			

52	Supplying, installation, testing and commissioning of approved make LED street light luminaire with die cast aluminium housing and toughened glass cover of IP66 protection (minimum),with 100 watts LED light fittings, complete with all accessories and drivers & heatsink etc., on brackets on existing street light poles (Make: Havells ENDURACITYLINERNEOSL100WLED757SASYBOTG or equivalent)	each	15.00			
53	Providing and fixing of uPVC 6 kg/cm ² pipes embedded in floors conforming to IS 4985 : 2000 of approved make including necessary solvent weldable fittings of approved make including trenching, cutting and making good masonry walls and floors wherever necessary required, testing, all complete as per specifications and as directed by the Engineer.					
53.1	110mm dia 6 kg/cm ² uPVC pipes	metre	37.00			
53.2	160mm dia 6 kg/cm ² uPVC pipes	metre	60.00			
54	Cleaning the fully choked up storm water channel by excavating the filled up slit, earth debris, garbage etc., and removing the debris with in a distance of 50m etc., as directed by engineer in charge.	metre	177.00			

55	Supplying of 4 X 16 sq.mm XLPE insulated and PVC sheathed armoured aluminium conductor power cable of 1.1KV grade	metre	400.00			
56	Supply of 10w 2 feet Slim LED batten in aluminium housing and decorative end caps	Nos	6.00			
57	Supply of 300mm sweep 12 inch Exhaust Fan.	Nos	4.00			
Sub Total (B)						
TOTAL (Sub-total A+B)						
GST Amount:						
GRAND TOTAL INCLUDING GST:						
GRAND TOTAL INCLUDING GST IN WORDS:		RUPEES.....				