

**PROJECT : Residential Complex AIIMS Rishikesh (Balance Works of Fire Fighting Works )**

**SUBHEAD : BALANCE WORKS OF FIRE FIGHTING SYSTEM**

**BILL OF QUANTITIES**

S.NO.	DSR CODE 2013 NO.	DESCRIPTION	QTY	UNIT	Rate in Figure (Rs.)	Rate in Words (Rs.)	Amount inFigure (Rs.)	Amount in Words (Rs.)
1.0		<b>HYDRANT SYSTEM (DOWNCOMER SYSTEM)</b>						
1.1		Providing, fixing, jointing and testing heavy quality (Class C) M.S. pipe conforming to IS:1239(Part I)-1990 for pipes up to 150 mm dia. including weldable ( 65 mm dia and above) and threaded forged fittings ( 50 mm dia and below) i.e. tees, bends, elbows, unions, reducers, draining arrangement, flange joints, rubber insertion, nuts & bolts etc. as required including fixing of pipework on walls, slabs etc. with M. S. supports, adjustable hangers, including painting with two coats of enamel paint of fire red shade over a coat of primer (Internal work). <b>Note:</b> Joints for pipes and fittings up to 50 mm diameter shall be threaded joints using Teflon Tape or equivalent bonding tape on the threads. Joints for pipe and fittings above 50 mm diameter shall be welded joints. <b>(Internal works).</b>						
1.1a								
		a) 100 mm dia	125	Mtr				
		b) 80 mm dia pipe	30	Mtr				
		c) 25 mm dia pipe	100	Mtr				
1.1b		For Fixing,jointing,testing and commissioning heavy quality (Class C) M.S. pipe conforming to IS:1239(Part I)-1990 for pipes up to 150 mm dia. including weldable ( 65 mm dia and above) and threaded forged fittings ( 50 mm dia and below) i.e. tees, bends, elbows, unions, reducers, draining arrangement, flange joints, rubber insertion, nuts & bolts etc. as required including fixing of pipework on walls, slabs etc. with M. S. supports, adjustable hangers, including painting with two coats of enamel paint of fire red shade over a coat of primer, cutting holes and chases in the brick or RCC wall and making good complete.						
		a) 100 mm dia	75	Mtr				
		b) 80 mm dia pipe	40	Mtr				
		c) 25 mm dia pipe	39	Mtr				
1.1c		Painting of existing pipes with one coat of red oxide primer and to or more coats of synthetic enamel paint to given an even shade including materials as required.						
		a) 100 mm dia	400	Mtr				
		b) 80 mm dia pipe	80	Mtr				

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		c) 25 mm dia pipe	75	Mtr				
1.2		<b>Butterfly valve</b>						
1.2a		Providing and fixing <b>Cast Iron butterfly valve</b> as per IS: 13095 of <b>Class PN 16</b> , having epoxy coated disc, carbon steel shaft, EPDM / nitrile rubber field replicable body lining and of approved make. including a set of MS flanges, required nos. of nut & bolts all complete.						
		100 mm dia( with lever)	53	No.				
1.2b		Fixing Cast Iron butterfly valve as per IS: 13095 of Class PN 16, having epoxy coated disc, carbon steel shaft, EPDM / nitrile rubber field replicable body lining and of approved make. including a set of MS flanges, required nos. of nut & bolts all complete. HLL shall provide the Valves.All other accessories required in fixing shall be provided by the contractor without any						
		100 mm dia( with lever)	15	No.				
1.3		<b>NRV</b>						
1.3a		Providing and fixing cast iron double flanged horizontal type non return valve PN 16 (as per IS:5312)including nuts,bolts,1.5 mm thick CAF gasket sheets complete in all respect.						
		100 mm dia	16	No.				
1.3b		Fixing cast iron double flanged horizontal type non return valve PN 16 (as per IS:5312)including nuts,bolts,1.5 mm thick CAF gasket sheets complete in all respect all complete. HLL shall provide the Valves.All other accessories required in fixing shall be provided by the contractor without any extra charge and as per direction of Engineer in Charge.						
		100 mm dia	18	No.				
1.4								
1.4a		Providing and fixing of nickel plated <b>brass/ nonferrous alloy fully way ball valve</b> ( minimum working pressure of 20 bar ) with operating handle of approved make.						
		25 mm dia.	44	No.				
1.4b		Fixing of nickel plated brass/ nonferrous alloy fully way ball valve ( minimum working pressure of 20 bar ) with operating handle of approved make. HLL shall provide the Valves.All other accessories required in fixing shall be provided by the contractor without any extra charge and as per direction of Engineer in Charge.						
		25 mm dia.	16	No.				

S.NO.	DSR CODE 2013 NO.	DESCRIPTION	QTY	UNIT	Rate in Figure (Rs.)	Rate in Words (Rs.)	Amount inFigure (Rs.)	Amount in Words (Rs.)
1.5		<b>Single headed gun metal landing valve</b>						
1.5a		Providing and fixing <b>single headed gun metal landing valve</b> (hydrant) with 63 mm female instantaneous outlet connections, with blank caps and chains complete with suitable orifice plate assembly, conforming to IS:903	31	No.				
1.5b		Fixing single headed gun metal landing valve (hydrant) with 63 mm female instantaneous outlet connections, with blank caps and chains complete with suitable orifice plate assembly, conforming to IS:903. HLL shall provide the Valves.All other accessories required in fixing shall be provided by the contractor without any extra charge and as per direction of Engineer in Charge.	46	No.				
1.6		<b>RRL Hose Pipe</b>						
1.6a		Providing and fixing impact, abrasion and weathering resistant <b>rubberised fabric lined (RRL) hose pipe</b> conforming to IS : 636-1979 (Type -A) of 63 mm dia and 15 m length with gunmetal instantaneous male and female couplings conforming to IS: 903-1975.	230	No.				
1.7		Providing and fixing dial type pressure gauge with isolation cock at hydrant station. Dial diameter 100 mm and calibration 0-10 kg./sq.cm.	24	No.				
1.8		<b>First aid fire hose reel</b>						
1.8a		Providing and fixing swinging type <b>first aid fire hose reel</b> comprising 20 mm dia 36 m long reinforced rubber tubing conforming to IS :444 Type II / thermoplastic reinforced hose reel tubing conforming to IS :12585 Type II, MS drum with fixing bracket conforming to IS:884 and with 5 mm dia gun metal shut off nozzle conforming to IS:8090, all complete	49	No.				
1.8b		Fixing swinging type <b>first aid fire hose reel</b> comprising 20 mm dia 36 m long reinforced rubber tubing conforming to IS :444 Type II / thermoplastic reinforced hose reel tubing conforming to IS :12585 Type II, MS drum with fixing bracket conforming to IS:884 and with 5 mm dia gun metal shut off nozzle conforming to IS:8090, all complete. HLL shall provide the first aid Fire Hose reel.All other accessories required in fixing shall be provided by the contractor without any extra charge and as per direction of Engineer in Charge.	16	No.				
1.9		<b>Gunmetal branch pipe</b>						

S.NO.	DSR CODE 2013 NO.	DESCRIPTION	QTY	UNIT	Rate in Figure (Rs.)	Rate in Words (Rs.)	Amount inFigure (Rs.)	Amount in Words (Rs.)
1.9a		Providing and fixing <b>gunmetal branch pipe</b> nozzle conforming to IS : 903, suitable for instantaneous connections to hose coupling etc. as required:	24	No.				
1.9b		For Fixing,jointing,testing and commissioning. HLL shall provide the Gunmetal branch pipe.All other accessories required in fixing shall be provided by the contractor without any extra charge and as per direction of Engineer in Charge.	91	No.				
1.10		Providing and fixing standard Fireman's Axe with heavy insulated rubber handle.	115	No.				
1.11		<b>Fire hose cabinet</b>						
1.11a		Providing and fixing fire hose cabinet of size 900X600x500 fabricated from 16 gauge MS sheet of fully welded construction with hinged double front door with locking arrangement and partially glazed with 5 mm thick glass stove enamelled fire red finish with fire hose written on front suitable to house 2X 15 M synthetic non percolated hose with coupling ,one branch pipe .	38	No.				
1.11b		For Fixing,jointing,testing and commissioning all complete. HLL shall provide the hose cabinet .All other accessories required in fixing shall be provided by the contractor without any extra charge and as per direction of Engineer in Charge.	51	No.				
1.12		Fixing and testing forged brass 25 mm dia screwed inlet single acting air release valve with 25 mm dia ball valve on inlet side and pressure gauge with isolating cock. HLL shall provide the air release Valves.All other accessories required in fixing shall be provided by the contractor without any extra charge and as per direction of Engineer in Charge.	17	No.				
1.13		Providing Fixing,jointing,testing and commissioning of CI type Y strainer of 100 mm	12	No.				
1.15		<b>Two way Collecting Head</b>						
1.15a		Providing and fixing gun meal two way collecting head with 63 mm dia instantaneous type inlet coupling with cap and chain as required for 100 mm dia. MS Pipe connection.	2	Nos.				
1.15b		Fixing gun meal two way collecting head with 63 mm dia instantaneous type inlet coupling with cap and chain as required for 100 mm dia. MS Pipe connection. HLL shall provide the two way collecting head.All other accessories required in fixing shall be provided by the contractor without any extra charge and as per direction of Engineer in Charge.	8	Nos.				

S.NO.	DSR CODE 2013 NO.	DESCRIPTION	QTY	UNIT	Rate in Figure (Rs.)	Rate in Words (Rs.)	Amount inFigure (Rs.)	Amount in Words (Rs.)
		<b>Sub TOTAL FOR "Down Comer System System" carried over to SUMMARY</b>						
<b>2.0</b>		<b>FIRE PUMPS &amp; CONTROL PANELS</b>						
<b>2.1a</b>		Installing, testing and commissioning of clear water <b>packaged Fire Fighting Pumping System at Terrace Level</b> ( fixed speed type) as per following details: (suitable foundation shall be in the scope of contractor. Nothing shall be paid extra for it). HLL shall provide the pumps.All other accessories required in fixing shall be provided by the contractor without any extra charge and as per direction of Engineer in Charge.						
		The packaged unit shall be complete with :						
		<b>a) Pumps:</b> Horizontal monoblock mechanical seal - 2 Nos.(1 W+1 S)	5	Nos.				
<b>2.1b</b>		Installing, testing and commissioning of clear water <b>packaged Fire Fighting Pumping System at Terrace Level</b> ( fixed speed type) as per following details: (suitable foundation shall be in the scope of contractor. Nothing shall be paid extra for it) HLL shall provide the pump.All other accessories required in fixing shall be provided by the contractor without any extra charge and as per direction of Engineer in Charge.						
		The packaged unit shall be complete with :						
		<b>a) Pumps:</b> Horizontal monoblock mechanical seal - 1 no.	7	Nos.				
<b>2.1C</b>		<b>Supply, Installation ,testing and commissioning of suitable for above pumping set Electric control panel</b> , cubical type, made out of 14 gauge MS sheet stove enamelled, for automatic/manual/remote operation of the fire pump above. Control panel (to be installed at terrace near the pump) with incoming 63A TPN switch disconnect , DOL starter automatic pressure switch complete with isolation valve and syphon operated starters with push buttons for manual over ride, control wiring, ammeter, voltmeter, phase indicators for manual operation all complete (The Contractor must submit the Single Line Diagram and Fabrication drawing for Consultant's approval before supplying the panel).Note: The suitable water protection cover shall be provided to the Control Panel . Nothing shall be paid extra for it .The works shall be as per direction of EIC.						

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		<b>b) Shade:</b> The entire package including pump, skid, interconnecting piping shall be finished in Fire Red Colour.						
		Control panel for Pumping Set(two pumps 1W +1S)	5	Set				
		Control panel for Pumping Set(Single pumps)	7	Set				
		Supplying, laying and connecting of following size 1.1 kV grade <b>copper</b> conductor armoured <b>cable</b> (conforming to IS:1554 Part I) on wall or on existing cable tray with clamping, dressing, end termination as required.						
		a) 4C x6 sq.mm.(for power)	300	Mtr				
		b) 2X1.5 sqmm(for Control)	1000	Mtr				
		Supplying and drawing following sizes of FRLS PVC insulated copper conductor, single core cable in the existing surface/recessed steel / PVC conduit as required.						
		2 x 1.5 sq. mm	1250	Mtr				
		Supplying and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required.						
		25 mm	400	Mtr				
		Providing and fixing following size G.I. strip / wire on surface or in recess for body earthing of motors as required.						
		a) 8 SWG dia.	1000	Mtr				
		<b>Sub TOTAL for "Fire Pump and Control Panel" carried over to SUMMARY</b>						
		<b>3.0 FIRE EXTINGUISHERS</b>						
		<b>Note :</b> All fire extinguishers shall be ISI marked						
		Providing and fixing fully charged <b>following type</b> portable fire extinguishers conforming to IS:15683, fixed to wall with brackets complete with initial charge.						
		Carbon-di- oxide type fire extinguisher of 4.5 kgs. Capacity, CO2 gas filled in brand new seamless cylinder with powder coated finish, made out of Manganese steel, with wheel type valve, discharge nozzle, bend & horn, wall mounting bracket etc. complete, conforming to IS : 2878	48	No.				
		Fixing of fully charged following type portable fire extinguishers , fixed to wall with suitable brackets complete in all respect.						

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3.2a		ABC type fire extinguisher of 5 Kgs. Capacity	23	No.				
3.2b		Water type fire extinguisher 9 lts. Capacity	50	No.				
3.2c		Carbon-di- oxide type fire extinguisher of 4.5 kgs. Capacity	23	No.				
		<b>Sub TOTAL for "Fire Extinguishers" carried over to SUMMARY</b>						
4		<b>ALARM PANEL , HOOTERS</b>						
4.1		Supplying,Installation,testing and commissioning of microprocessor based main fire alarm control panel of 10 zone capacity ,with LCD display, digital fire detection principle ,100 event memory log, user password protection,programable relay contacts, hotter activation,autodialler etc. Built in battery charger and batteries etc. and providing & fixing of low water level alarm for overhead fire water tanks (Cabling shall be paid extra) complete as required as per direction of EIC.	12	No.				
4.2		<b>Hooter</b>						
4.2a		Supplying,installation,testing and commissioning of dual tone electronic hooter for wall/ceiling mounted complete with mounting arrangement as required.	57	each				
4.2b		Installation,testing and commissioning of dual tone electronic hooter all complete. HLL shall supply the Hooters. All other accessories required in fixing shall be provided by the contractor without any extra charge and as per EIC.	33	each				
4.3		<b>Manual Call Box</b>						
4.3a		Supplying,Installation,testing and commissioning of manual call box as per specifications.	55	each				
4.3b		Installation,testing and commissioning of manual call box all complete. HLL shall supply the Manual Call box. All other accessories required in fixing shall be provided by the contractor without any extra charge and as per EIC.	35	each				
		<b>Sub TOTAL for "ALARM PANEL, HOOTERS " carried over to SUMMARY</b>						
		<b>Water Tanks and related works</b>						
5	18.10	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, i/c cutting and making good the walls etc.						

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	18.10.4	32 mm dia nominal bore metre	975	Metre				
6	18.13	Making connection of G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including cutting and threading the pipe etc. complete :						
	18.13.1	25 to 40 mm nominal bore	145	each				
7	18.17	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :						
	18.17.2	32 mm nominal bore	68	each				
8	18.46	Providing and fixing G.I. Union in G.I. pipe including cutting and threading the pipe and making long screws etc. complete (New work) :						
	18.46.4	32 mm nominal bore	38	each				
9	18.47	Providing and fixing G.I. Union in existing G.I. pipe line, cutting and threading the pipe and making long screws, including excavation, refilling the earth or cutting of wall and making good the same complete wherever required :						
	18.47.4	32 mm nominal bore	35	each				
10	18.48	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes (max 10mtr) including connections, pipe settings ,ball valve, float valve tank nipples etc as required by Engineer in Charge but without the base support for tank.	101000	per litre				
	derried							



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11	<b>DSR Code 4.1.3 Derived</b>	Making CC 1:2:4 foundation for installation of PVC tanks on suitable size foundation as per site requirement including all material ,Form works & labour etc as required and as per direction of EIC .	25	Cum				
		<b>Sub Total PVC Tanks and related works</b>						

Note-1	The contractor before procuring any of the above materials will calculate quantity requirement for project .
Note-2	The contractor shall use the materials given by HLL first and further quantity if required shall be reported to EIC . Any BOQ Materials shall only be purchased after the approval of EIC (Engineer In Charge-EIC)
Note-3	NOC from Fire authority shall be in the scope of the Contractor. Nothing shall be paid extra for it. Only actual fee shall be reimbursed against the receipt.
Note-4	All the Fire Fighting system shall be tested and commissioned and be made functional by the contractor with out any extra charges.
Note-5	As Built Drawings shall be prepared by the contractor . Nothing shall be paid extra for it.
Note-6	All interested bidders are requested to visit the project before attending the prebid meeting.

**Total (NDSR + DSR) Rs.**

**Authorised Signature of Bidder**