

AVIATION COMPLEX At BLUE AREA, ISLAMABAD

BILL NO. 2.B: FIREFIGHTING SYSTEM

BILL OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT RATE (Rs.)	TOTAL AMOUNT (Rs.)
(a)	(b)	(c)	(d)	(e)	(f)

GENERAL NOTE

Supply, installation, testing and commissioning of the following items of work, including all labour, tools, plant, accessories, etc. required for completion of each item as per drawings, specifications and as approved by the Engineer.

FIRE FIGHTING

(Ref. Specs 5150)

MS seamless pipes with specials and clamps etc, conforming to ASTM A-106 / A-53 Sch-40 Grade-B, including malleable iron threaded fittings, FM approved/UL listed, Class-150 for pipes upto 02 inches diameter and welded fittings for above 02 inches diameter pipes, fixing, cutting, welding, fixing & support, seismic supports & bracing systems; and other fittings complete with and including the cost of breaking through walls and slabs, making walls & slabs good thereafter, etc, painting with two coats of approved enamel paint after cleaning the pipe.

FF-01	(a) 1 inches	Rft	63,700		
FF-02	(b) 1.25 inches	Rft	17,400		
FF-03	(c) 1.5 inches	Rft	19,600		
FF-04	(d) 2 inches	Rft	13,700		
FF-05	(e) 2.5 inches	Rft	10,800		
FF-06	(f) 3 inches	Rft	5,600		
FF-07	(g) 4 inches	Rft	9,800		
FF-08	(h) 6 inches	Rft	17,500		
FF-09	(j) 8 inches	Rft	1,500		
FF-10	Steel fire hose cabinet, double compartment, recessed mounted, comprising FM approved/UL listed accessories, including fire hose reel, 1"diax100feet long fire hose, automatic operation, swinging type with pressure guage and pressure reducing valve, 1" hydrant valve, adjustable type hose nozzle (multispray) in upper compartment; and 2.5 inches pressure restricting landing valve, 2.5"diax100feet long fire hose with spray nozzle and couplings in lower compartment; with all accessories for complete installation.	Each	150		

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FF-11	Steel fire hose cabinet, double compartment, recessed mounted, comprising FM approved/UL listed accessories, including fire hose reel, 1"diax100feet long fire hose, automatic operation, swinging type with pressure guage and pressure reducing valve, 1" hydrant valve, adjustable type hose nozzle (multispray) in upper compartment; and fire extinguisher to be placed in lower compartment; with all accessories for complete installation.	Each	1		
FF-12	Single Compartment Steel Fire Extinguisher Cabinet, to accommodate two fire extinguishers with all accessories for complete installation.	Each	24		
	Fire Extinguisher, Certified, of following types.				
FF-13	(a) Dry Chemical Powder (DCP) Fire Extinguisher 6Kg Capacity.	Each	280		
FF-14	(b) CO ₂ Type Fire Extinguisher 05kg Capacity.	Each	262		
FF-15	(c) Foam Type Fire Extinguisher 09 litres Capacity.	Each	4		
FF-16	(d) Wet Chemical Fire extinguisher 06 litres Capacity.	Each	8		
	Ceiling Hung Automatic Fire extinguisher, Certified, of following types.				
FF-17	(a) DCP type ceiling hung automatic fire extinguisher 15Kg Capacity	Each	330		
	Trolley type Fire extinguisher, Certified, of following types.				
FF-18	(a) DCP Trolley Type Fire Extinguisher of 50kg Capacity	Each	17		
FF-19	(b) Foam Trolley Type Fire Extinguisher of 50 Liter Capacity	Each	17		
FF-20	(c) CO ₂ Trolley Type Fire Extinguisher of 25kg Capacity	Each	2		
FF-21	Certified, 04 ways breeching inlet with Stainless steel cabinet for fire pumper connection of minimum 20Bars test pressure with integral check valve & drain valve with all accessories for complete installation.	Each	2		
FF-22	Certified, 02 ways breeching inlet with Stainless steel cabinet for fire pumper connection of minimum 20Bars test pressure with integral check valve & drain valve with all accessories for complete installation.	Each	1		

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(a)	(b)	(c)	(d)	(e)	(f)
FF-23	Wet Fire pillar Hydrant of dia 06" barrel with 02 outlets of dia 2.5" with pressure regulating/ restricting type control valves with outlet pressure setting at 07bars & female 2.5" instantaneous coupling; including stand pipe, Adapter, transition pipe pieces with flanges, nuts & bolts, making required type of joints; complete in all respects.	Each	6		
FF-24	Fire hydrant cabinet, floor mounted, including 02 Nos. 2-1/2" dia x 100 feet long fire hoses with 02 Nos. spray nozzles with all accessories for complete installation.	Each	6		
FF-25	FM Approved /UL Listed Alarm Check valve assembly 06inches diameter including alarm check valve, retard chamber, alarm, pressure switch and all other installation accessories, complete in all respects. NOTE: This item will include integration requirements with BMS. This integration shall be done over industry standard BACNet over IP Protocol and respective equipment suppliers are required to provide communication interfaces/cards supporting said Protocol, including providing, installing, testing & commissioning all required equipment/accessories for completion of each item, as per BMS specifications and as approved by the Engineer.	Job	2		
FF-26	FM approved/UL listed, Floor Control Valve Assembly (FCVA), Class 300, on dia 04 inches fire main for sprinkler network including Butterfly valve with supervisory switch, check valve, Pressure reducing valve, flow sensors switch, 01" inspector Test & drain valve with sight glass, 02No.pressure gauges, drain valve etc complete in all respect. NOTE: This item will include integration requirements with BMS. This integration shall be done over industry standard BACNet over IP Protocol and respective equipment suppliers are required to provide communication interfaces/cards supporting said Protocol, including providing, installing, testing & commissioning all required equipment/accessories for completion of each item, as per BMS specifications and as approved by the Engineer.	Each	52		

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(a)	(b)	(c)	(d)	(e)	(f)
FF-27	FM approved/UL listed, Floor Control Valve Assembly (FCVA), Class 300, on dia 06 inches fire main for sprinkler network including Butterfly valve with supervisory switch, check valve, Pressure reducing valve, flow sensors switch, 01" inspector Test & drain valve with sight glass, 02No.pressure gauges, drain valve etc complete in all respect. NOTE: This item will include integration requirements with BMS. This integration shall be done over industry standard BACNet over IP Protocol and respective equipment suppliers are required to provide communication interfaces/cards supporting said Protocol, including providing, installing, testing & commissioning all required equipment/accessories for completion of each item, as per BMS specifications and as approved by the Engineer.	Each	24		
	FM Approved/ UL listed fire Sprinklers and accessories of following types.				
FF-28	(a) FM Approved/ UL listed Concealed Pendent fire Sprinkler, Standard response, 5.6 K factor, Ordinary temperature range (68°C)	Each	5,720		
FF-29	(b) FM Approved/ UL listed Recessed Pendent fire Sprinkler with Escutcheon plate, Standard response, 5.6 K factor, Ordinary temperature range (68°C)	Each	150		
FF-30	(c) FM Approved/ UL listed Pendent fire Sprinkler, Standard response, 5.6 K factor, Ordinary temperature range (68°C)	Each	20		
FF-31	(d) FM Approved/ UL listed Upright fire Sprinkler, Standard response, 5.6 K factor, Ordinary temperature range (68°C)	Each	4,470		
FF-32	(e) FM Approved/ UL listed Sidewall fire Sprinkler with Escutcheon plate, Standard response, 5.6 K factor, Ordinary temperature range (68°C)	Each	280		
FF-33	(f) FM Approved/ UL listed Upright fire Sprinkler, Standard response, 5.6 K factor, Intermediate temperature range	Each	10		
FF-34	(g) FM approved/UL listed stainless steel flexible sprinkler hose/drop, braided type, of required outlet size and length.	Each	5,820		
FF-35	(h) Sprinkler Guard for pendent, upright and side wall sprinkler	Each	270		

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	FM approved/UL listed, Ductile Iron gate valves, class 300, including Adapters, flanges, nuts & bolts, transition pipe pieces with flanges, rubber seal, making required type of joints on both ends complete in all respect; of following diameters.				
FF-36	(a) Dia 8 inches	Each	6		
FF-37	(b) Dia 6 inches	Each	24		
FF-38	(c) Dia 4 inches	Each	2		
	FM approved/UL listed, Ductile Iron check valves, class 300, including Adapters, flanges, nuts & bolts, transition pipe pieces with flanges, rubber seal, making required type of joints on both ends complete in all respect; of following diameters.				
FF-39	(b) Dia 6 inches	Each	6		
	FM Approved / UL listed Pressure reducing arrangement, class 300; comprising pressure reducing valve (PRV), 03 nos. gate valves, 02 nos. pressure gauge, including Adapters, flanges, nuts & bolts, transition pipe pieces with flanges, rubber seal, making required type of joints on both ends complete in all respect; of following diameters.				
FF-40	(a) Dia 8 inches	Each	2		
FF-41	(b) Dia 6 inches	Each	44		
FF-42	(c) Dia 4 inches	Each	22		
FF-43	FM approved/UL listed 01 inch diameter Inspectors test and drain valve with sight glass, on sprinkler main line, including jointing arrangement, complete installation in all respect.	Each	76		
FF-44	FM approved/UL listed, dia 1" air release valve on fire risers with isolation valve, including Adapters, flanges, nuts & bolts, transition pipe pieces with flanges, rubber seal, making required type of joints with pipe complete in all respect.	Job	12		
FF-45	Sprinkler Cabinet for placing stock of 24 nos. spare sprinklers along with appropriate size wrench and tools	Job	2		

PUMPING MACHINERY**SPECIAL NOTE**

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(a)	(b)	(c)	(d)	(e)	(f)
	All jobs under this section will include system control unit integration requirements with BMS. This integration shall be done over industry standard BACNet over IP Protocol and respective equipment suppliers are required to provide communication interfaces/cards supporting said Protocol, including providing, installing, testing & commissioning all required equipment/accessories for completion of each item, as per BMS specifications and as approved by the Engineer.				
FF-46	FM Approved/UL Listed, Firefighting pumping unit consisting 01 No. Main Split Case Electric Driven Fire Pump of Q=1000 USgpm & H=13Bars, 01 No. Main Split case Diesel Engine Driven Fire Pump of Q=1000 USgpm & H=13Bars, 01 No. Jockey Vertical Centrifugal Pump of Q=25 USgpm & H=13 Bars with electric motor; including motor control units, diesel day tank of capacity as per NFPA requirements, pressure tank, gate valves, check valves, return line with automatic recirculation valve/pressure relief valve, check line with flow meter and 02 gate valves, pressure switches, pressure gauges, flexible joints, strainers, anti vortex plate at suction ends, exhaust flue upto ground level from diesel engine and all other accessories, manual, tools, spare parts; unit complete in all respects	Job	2		
FF-47	Automatically operated 01 No. Horizontal centrifugal pump with electric motor, Q=500 USgpm & H=10 Bars; for lifting water from Underground water tank to Service floor fire water tank, including motor control unit, level switches to be installed in over head & underground water tank for automatic operation of pumps at set levels, dry running protection, gate valves, check valves, flexible joints, check line with flow meter and 02 gate valves, pressure gauges, strainers and all other accessories, manual, tools, spare parts; unit complete in all respects.	Job	1		
FF-48	FM Approved/UL Listed 01 No. Diesel Engine Driven Fire Pump of Q=500 USgpm & H=10 Bars; for lifting water from Underground fire water tank to Service floor fire water tank, including motor control unit, diesel day tank of capacity as per NFPA requirements, level switches to be installed in over head & underground water tank for automatic operation of pump at set levels, gate valves, check valves, return line with automatic recirculation valve/pressure relief valve, check line with flow meter and 02 gate valves, pressure gauges, flexible joints, strainers, exhaust flue upto ground level from diesel engine and all other accessories, manual, tools, spare parts; unit complete in all respects	Job	1		

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CLEAN AGENT FK-5-1-12 FIRE FIGHTING SYSTEM**SPECIAL NOTE**

All jobs under this section will include system control unit integration requirements with BMS. This integration shall be done over industry standard BACNet over IP Protocol and respective equipment suppliers are required to provide communication interfaces/cards supporting said Protocol, including providing, installing, testing & commissioning all required equipment/accessories for completion of each item, as per BMS specifications and as approved by the Engineer.

FM Approved/ UL Listed **CLEAN AGENT FK-5-1-12** Fire Extinguishing and Detection system comprising of the following components:

Storage cylinder (01 working & 01 standby) with filled FK-5-1-12 clean agent gas; quantity of which is based on Manufacturer's flow calculations as per NFPA standard; Control panel, solenoid electric actuator, manual actuator, pressure supervisory switch, abort switch, smoke detectors, discharge nozzles, pull station, warning sign, remote indicator, pipes & fittings, fire resistance cables and all other components & their associated accessories, complete in all respects as per standard; of the following rooms.

FF-49	(a) BMS & CCTV Room (20'-4" x 29'-0" x 19'-6")	Job	1		
FF-50	(b) Internet Service Provider Room (20'-4" x 13'-0" x 12'-6")	Job	1		
FF-51	(c) Communication Room (Type-I) (9'-6" x 9'-6" x 10'-0")	Job	10		
FF-52	(d) Communication Room (Type-II) (9'-6" x 9'-6" x 13'-6")	Job	54		
FF-53	(e) Communication Room (Type-III) (9'-6" x 9'-6" x 19'-6")	Job	2		

Total Amount (Rs.) _____