

LEGEND	
	PENDANT SPRINKLER HEAD
	UPRIGHT SPRINKLER HEAD
	SPRINKLER WATER LINE
	SIDEWALL SPRINKLER HEAD
	DIRECTION OF FLOW
	DIRECTION OF PIPE SLOPE
	FIRE MAIN
	FOAM / WATER SUPPLY PIPING
	FLOW SWITCH
	PRESSURE SWITCH
	CHECK VALVE
	GATE VALVE
	BUTTERFLY VALVE
	VALVE ON RISER
	PRESSURE GAUGE
	ELBOW DOWN
	ELBOW UP
	BRANCH CONNECTION - (BOTTOM)
	BRANCH CONNECTION - (TOP)
	UNION
	REDUCER
	AUTOMATIC/MANUAL OSCILLATING MONITOR
	NET PIPE RISER/ALARM VALVE
	PREACTION RISER/AUTOMATIC WATER CONTROL VALVE
	HIGH INTENSITY STROBE FIRE ALARM
	HEAT DETECTOR
	MANUAL MONITOR AFFF RELEASE STATION
	MONITOR ABORT STATION, DEADMAN TYPE
	114 db AFFF ACTIVATION FIRE ALARM SIREN
	DIESEL SUPPLY PIPING
	DIESEL RETURN PIPING

SEQUENCE OF OPERATIONS	
AFFF SYSTEMS - DETECTION AND SEQUENCE OF OPERATIONS.	
OVERHEAD PRE-ACTION, CLOSED HEAD, FOAM-WATER SPRINKLER & UNDERWING MONITOR NOZZLE SYSTEM.	
A) DETECTION - AUTOMATIC HEAT DETECTION SYSTEM WILL BE PROVIDED FOR EACH RESPECTIVE SPRINKLER SYSTEM ZONE. ACTIVATION OF ANY SINGLE DETECTOR WILL SOUND AN ALARM AND CAUSE TRIPPING OF THE SPRINKLER SYSTEM WITHIN THE PROTECTED AREA SERVED BY THE RESPECTIVE DETECTORS.	
(1) HEAT DETECTORS WILL BE RATE-COMPENSATING TYPE RATED 190-225°F.	
(2) ACTIVATION OF ONE (1) DETECTOR (CONFIRMED FIRE) WILL:	
(a) SOUND THE AFFF DISCHARGE SIGNAL.	
(b) ANNUNCIATE AN ACTUAL AFFF DISCHARGE AT THE BUILDING FACILITY AND ALSO TRANSMIT SAME TO BASE FIRE DEPARTMENT.	
(c) ACTIVATE ANY DIVERSION/SHUTDOWN VALVES ON THE HANGER FLOOR STORAGE SYSTEM.	
(d) OPEN THE CONCENTRATE SOLENOID VALVE SUPPLYING THE PROPORTION.	
(e) START THE FIRE PUMPS AND FOAM CONCENTRATE PUMPS.	
(f) TRIP THE AUTOMATIC WATER CONTROL VALVE ON THE SPRINKLER SYSTEM WITHIN THE PROTECTED AREA SERVED BY THE RESPECTIVE DETECTORS. THIS WILL FILL THE SYSTEM WITH FOAM-WATER SOLUTION.	
(g) ACTIVATE AUTOMATIC WATER CONTROL VALVES SUPPLYING AFFF SOLUTION TO THE MONITOR NOZZLES.	
(h) ACTIVATE HANGAR BAY EXHAUST FAN SHUTDOWN SYSTEMS.	
(i) INTERACTS WITH FACILITY DCS SHUTDOWN ALL HVAC EQUIPMENT.	
B.) AFFF SOLUTION RELEASE WILL OCCUR AT INDIVIDUAL SPRINKLER HEADS THAT HAVE OPENED AS A RESULT OF THE MELTING OF THEIR INDIVIDUAL FUSIBLE ELEMENT.	
C.) THE OVERHEAD AFFF SYSTEM DOES NOT HAVE ANY "MANUAL ACTIVATION" OR "ABORT" CAPABILITIES.	
D.) MANUAL ACTIVATION DEVICES WILL BE PROVIDED AT EACH MONITOR NOZZLE AND AT HANGAR EXITS. THESE DEVICES WILL BE OF THE DOUBLE-ACTION TYPE REQUIRING TWO (2) SEPARATE AND DISTINCT ACTIONS TO OPERATE. THEY WILL ALSO BE DISTINCTLY MARKED AND NOT BE OF THE SAME COLOR AS MANUAL BUILDING EVACUATION ALARM DEVICES AND NOT HAVE THE WORD "TRIP" DISPLAYED ON THEM. THEY ALSO ACTIVATE ALL MONITOR NOZZLES SIMULTANEOUSLY AND PROVIDE THE ACTION LISTED IN 2.4. THRU 2.6.	
E.) ABORT STATIONS WILL BE PROVIDED AT EACH MONITOR NOZZLE. THE ABORT STATIONS SHALL BE CLEARLY DESIGNATED TO ALLOW FOR RECOGNITION FROM STANDARD FIRE ALARM STATIONS AND MONITOR MANUAL ACTIVATION STATIONS. THEY WILL CLOSE ALL MONITOR CONTROL VALVES SIMULTANEOUSLY TO ALLOW THE OPERATOR TO SUSPEND THE DISCHARGE OF THE UNDERWING SUPPRESSION SYSTEM.	

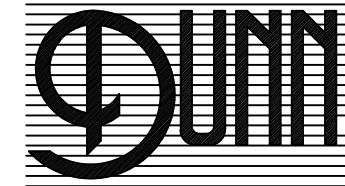
GENERAL NOTES	
1. A COMPLETE FIRE PROTECTION SYSTEM SHALL BE PROVIDED WITH ALL NECESSARY EQUIPMENT, APPURTENANCES AND CONTROLS, COMPLETELY COORDINATED WITH ALL DISCIPLINES. ALL PARAMETERS GIVEN IN THESE DOCUMENTS SHALL BE STRICTLY COMPLIED TO. ANY ITEMS AND LABOR REQUIRED FOR A COMPLETE FIRE PROTECTION SYSTEM, IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS, LOCAL AUTHORITIES AND THESE CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT INCURRING ANY ADDITIONAL COST TO THE GOVERNMENT. CAREFULLY REVIEW ALL CONTRACT DOCUMENTS AND DESIGN OF OTHER TRADES BEFORE PREPARING SHOP DRAWINGS.	
2. COORDINATE ALL WORK WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL TRADES. PIPE ROUTING SHOWN IS DIAGNOSTIC. PROVIDE ALL OFFSETS, ETC., TO AVOID INTERFERENCE WITH EQUIPMENT, PIPING, DUCT WORK, LIGHTS, CONDUIT, STRUCTURAL MEMBERS, ETC.	
3. COORDINATE ALL WALL PENETRATIONS WITH STRUCTURAL DRAWINGS. SET SLEEVES IN WALLS AND ATTACHMENTS FOR HANGERS AS CONSTRUCTION PROGRESSES. COORDINATE THE EXACT SIZE AND LOCATION OF ALL SLEEVES. ALL PENETRATIONS MUST BE SEALED AND HELD AS TIGHT TO COLUMNS OR WALLS AS POSSIBLE.	
4. HOLD ALL PIPING ABOVE CEILING AS HIGH AS POSSIBLE.	
5. BOLT PUMPS AND TANKS TO CONCRETE EQUIPMENT PADS.	
6. DO NOT RUN FIRE PROTECTION PIPING THROUGH ELECTRICAL ROOMS.	
7. PROVIDE AND EXPANSION JOINT OR FABRICATED EXPANSION LOOP ON ALL PIPING SYSTEMS THAT CROSS BUILDING EXPANSION JOINTS.	
8. RACK EXPRESS FIRE USE AND AFFF ZONE SUPPLY LINES IN HANGAR FROM PIPE RACK (REFER TO STRUCTURAL PLANS FOR DIMENSIONS).	

FIRE PUMP SCHEDULE										
EQUIP. NO.	LOCATION	SERVICE	TYPE OF PUMP	FLOW GPM	PSI	RPM	MIN. % EFF.	ELECTRIC HP	SERVICE V/F	REMARKS
FP-1	FIRE PUMP RM-103	FIRE	CENTRIFUGAL	2000	145	2100	---	270	120 V	① ② ③
FP-2	FIRE PUMP RM-103	FIRE	CENTRIFUGAL	2000	145	2100	---	270	120 V	① ② ③
FP-3	FIRE PUMP RM-103	FIRE	CENTRIFUGAL	2000	145	2100	---	270	120 V	① ② ③
JF-1	JOCKEY PUMP RM-103	FIRE	CENTRIFUGAL CLOSED-COUPLED VERTICAL INLINE PUMP	20	145	---	---	5	480/3P	①
FOP-1	AFFF ROOM - 102	FOAM CONCENTRATE	POSITIVE DISPLACEMENT	140	80	1800	---	30	480/3P	①
FOP-2	AFFF ROOM - 102	FOAM CONCENTRATE	POSITIVE DISPLACEMENT	140	80	1800	---	30	480/3P	①
FFP-1	AFFF ROOM - 102	FOAM FILL	POSITIVE DISPLACEMENT	12	1600	---	---	1/3	120/1P	①

① DIESEL DRIVE
② PROVIDE 360 GALLON DOUBLE WALL DIESEL STORAGE TANK ON STAND
③ EMERGENCY POWER

SYSTEM INPUTS	SYSTEM OUTPUTS																										
	ANNUNCIATION AT LOCAL PANEL(S)						FIRE SUPPRESSION SYSTEM FUNCTIONS						TRANSMIT SIGNAL TO FIRE DEPARTMENT						AUX FUNC.		EVACUATION SIGNALS						
FIRE ALARMS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y		
1 SPOT- TYPE SMOKE DETECTORS	X						X																	X	X	X	
2 IN-DUCT SMOKE DETECTORS	X					X																		X	X	X	
3 RATE-COMPENSATED TYPE HEAT DETECTOR ON HANGAR CLG.	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X	X		
4 FLOW SWITCHES - WET - PIPE SPRINKLER SYSTEMS	X					X														X				X	X	X	
5 PRESSURE SWITCHES - UNDERWING AFFF MONITORS	X			X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X	X		
6 ELECTRIC MONITOR MANUAL RELEASES	X					X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X	X		
7 PRESSURE SWITCHES - OVERHEAD AFFF SPRINKLER SYSTEM	X			X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X	X		
8 PRESSURE SWITCHES - DRY PIPE PREACTION SYSTEM	X					X														X			X	X	X		
SUPERVISORY SIGNALS																											
20 VALVE SUPERVISORY SWITCH - WET PIPE SPRINKLER RISER	X					X																			X		
21 VALVE SUPERVISORY SWITCHES - PRE-ACTION SPRINKLER RISER	X					X																				X	
22 VALVE SUPERVISORY SWITCHES - UNDERWING AFFF MONITORS	X					X																			X		
23 VALVE SUPERVISORY SWITCHES - DRY-PIPE PREACTION SYSTEM	X					X																			X		
24 HI-LO PRESSURE SWITCHES - PRE-ACTION SPRINKLERS	X					X																			X		
25 CONTROL COMPONENT COMMON TROUBLE CONDITION	X					X																			X		
26 UNDERWING AFFF SYSTEM "OFF" SWITCH (ABORT STATION)	X					X									X										X		
27 UNDERWING AFFF SYSTEM AUTO DISABLE SWITCH	X					X									X										X		
28 REMOTE SIGNALING MODULE DISCONNECT SWITCH ACTIVATED	X					X									X										X		
29 FIRE PUMP # 1 SUPERVISORY SIGNAL - ENGINE RUNNING	X					X									X										X		
30 FIRE PUMP # 1 SUPERVISORY SIGNAL-CONTROLLER MAIN SWITCH TURN "OFF" OR TO "MANUAL" POSITION	X					X				X					X										X		
31 FIRE PUMP # 1 SUPERVISORY SIGNAL - TROUBLE ON THE CONTR OR ENGINE	X					X				X					X										X		
32 FIRE PUMP # 2 SUPERVISORY SIGNAL - ENGINE RUNNING	X					X				X					X										X		
33 FIRE PUMP # 2 SUPERVISORY SIGNAL - CONTROLLER MAIN SWITCH TURN "OFF" OR TO "MANUAL" POSITION	X					X				X					X										X		
34 FIRE PUMP # 2 SUPERVISORY SIGNAL - TROUBLE ON THE CONTR OR ENGINE	X					X				X					X										X		
35 FIRE PUMP # 3 SUPERVISORY SIGNAL - ENGINE RUNNING	X					X				X					X										X		
36 FIRE PUMP # 3 SUPERVISORY SIGNAL - CONTROLLER MAIN SWITCH TURN "OFF" OR TO "MANUAL" POSITION	X					X				X					X										X		
37 FIRE PUMP # 3 SUPERVISORY SIGNAL - TROUBLE ON THE CONTR OR ENGINE	X					X				X					X										X		
38 JOCKEY PUMP SUPERVISORY SIGNAL - TROUBLE ON THE CONTROLLER PUMP	X					X				X					X										X		
39 O.S.& Y. VALVE SUPERVISORY SWITCHES - ROOM 102 (FIRE PUMP ROOM)	X					X				X					X										X		
40 O.S.& Y. VALVE SUPERVISORY SWITCHES - ROOM 103 (AFFF ROOM)	X					X				X					X										X		
41 O.S.& Y. VALVE SUPERVISORY SIGNAL - ROOM 108	X					X				X					X										X		
TROUBLE CONDITIONS																											
50 LOW BATTERY VOLTAGE						X																				X	
51 OROUT FAULT						X	X																			X	
52 SUPERVISED COMPONENT FAILURE						X									X											X	
53 AC POWER FAILURE						X									X											X	
54 LOW AIR PRESSURE						X									X											X	

- NOTES:
- FIRE ALARM SIGNALS AND SUPERVISORY ALARM SIGNALS SHALL BE CLEARLY DIFFERENTIATED AT THE FIRE ALARM CONTROL PANEL.
 - ONLY ONE CATEGORY OF EVACUATION SIGNALS SHALL SOUND AT A TIME. AFFF DISCHARGE SIGNALS SHALL OVERRIDE LOCAL FIRE ALARM SIGNALS. EVACUATION SIGNALS SHALL CONTINUE TO SOUND UNTIL THEY ARE RESET FROM THEIR RESPECTIVE FIRE ALARM PANEL(S).
 - GENERAL AREA MEANS THE SHOPS, OFFICE AREA, MECHANICAL AREA, ETC. SYSTEM ZONING SHALL BE SUBJECT TO DIRECT RESPONDING FIREFIGHTERS DIRECTLY TO THE FIRE AREA.
 - EVACUATION SIGNAL SHALL CONTINUE TO SOUND UNTIL RESET FROM THE FIRE ALARM CONTROL PANEL AND ELECTRIC MONITOR MANUAL RELEASES.



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REPLACE AIRCRAFT MAINTENANCE HANGAR
J15E998090A
CMT - OLE PAVILION, MISSISSIPPI

LEGEND, NOTES, & SCHEDULE - FIRE PROTECTION
DATE: 10-13-09
DESIGNED BY: HVC
CHECKED BY: HVC
DRAWING NO: 97/115/17
SCALE: AS SHOWN
FP101