

FAN SCHEDULE									
FAN NO.	SERVES	TYPE	CFM	APPROX. S.P.	SELECTION CRITERIA	MOTOR		ACCESSORIES	CONTROL OR INTERLOCK WITH
						HP	VOLTAGE		
SEF-1A-1	SMOKE EVAC	CENTRIFUGAL UPBLAST UL LISTED	17000	0.5	44.5" WHEEL DIA. 20 SONES MAX 436 RPM MAX	5	208/3/60	2,4,5,6,9	SMOKE EVAC CONTROL** SYSTEM
SEF-1A-2	SMOKE EVAC	CENTRIFUGAL UPBLAST UL LISTED	17000	0.5	44.5" WHEEL DIA. 20 SONES MAX 436 RPM MAX	5	208/3/60	2,4,5,6,9	SMOKE EVAC CONTROL** SYSTEM
SEF-1B-1	SMOKE EVAC	CENTRIFUGAL UPBLAST UL LISTED	17500	0.625	44.5" WHEEL DIA. 20 SONES MAX 473 RPM MAX	5	208/3/60	2,4,5,6,9	SMOKE EVAC CONTROL** SYSTEM
SEF-1B-2	SMOKE EVAC	CENTRIFUGAL UPBLAST UL LISTED	17500	0.625	44.5" WHEEL DIA. 20 SONES MAX 473 RPM MAX	5	208/3/60	2,4,5,6,9	SMOKE EVAC CONTROL** SYSTEM
SEF-2A-1	SMOKE EVAC	CENTRIFUGAL UPBLAST UL LISTED	13500	0.5	44.5" WHEEL DIA. 20 SONES MAX 373 RPM MAX	3	208/3/60	2,4,5,6,9	SMOKE EVAC CONTROL** SYSTEM
SEF-2A-2	SMOKE EVAC	CENTRIFUGAL UPBLAST UL LISTED	13500	0.5	44.5" WHEEL DIA. 20 SONES MAX 373 RPM MAX	3	208/3/60	2,4,5,6,9	SMOKE EVAC CONTROL** SYSTEM
SEF-2B-1	SMOKE EVAC	CENTRIFUGAL UPBLAST UL LISTED	14500	0.5	44.5" WHEEL DIA. 20 SONES MAX 373 RPM MAX	5	208/3/60	2,4,5,6,9	SMOKE EVAC CONTROL** SYSTEM
SEF-2B-2	SMOKE EVAC	CENTRIFUGAL UPBLAST UL LISTED	14500	0.5	44.5" WHEEL DIA. 20 SONES MAX 373 RPM MAX	5	208/3/60	2,4,5,6,9	SMOKE EVAC CONTROL** SYSTEM
SSF-1A	SMOKE EVAC	CENTRIFUGAL VENT SET UL LISTED	14000	0.5	44" WHEEL DIA. 20 SONES MAX 408 RPM MAX	5	208/3/60	2,5,6,9	SMOKE EVAC CONTROL** SYSTEM
SEF-3A-1	SMOKE EVAC	CENTRIFUGAL UPBLAST UL LISTED	10000	0.5	44.5" WHEEL DIA. 20 SONES MAX 373 RPM MAX	3	208/3/60	2,4,5,6,9	SMOKE EVAC CONTROL** SYSTEM
SEF-3A-2	SMOKE EVAC	CENTRIFUGAL UPBLAST UL LISTED	10000	0.5	44.5" WHEEL DIA. 20 SONES MAX 373 RPM MAX	3	208/3/60	2,4,5,6,9	SMOKE EVAC CONTROL** SYSTEM
SEF-3A-3	SMOKE EVAC	CENTRIFUGAL UPBLAST UL LISTED	10000	0.5	44.5" WHEEL DIA. 20 SONES MAX 373 RPM MAX	3	208/3/60	2,4,5,6,9	SMOKE EVAC CONTROL** SYSTEM
SEF-3B-1	SMOKE EVAC	CENTRIFUGAL UPBLAST UL LISTED	10000	0.5	44.5" WHEEL DIA. 20 SONES MAX 373 RPM MAX	3	208/3/60	2,4,5,6,9	SMOKE EVAC CONTROL** SYSTEM
SEF-3B-2	SMOKE EVAC	CENTRIFUGAL UPBLAST UL LISTED	10000	0.5	44.5" WHEEL DIA. 20 SONES MAX 373 RPM MAX	3	208/3/60	2,4,5,6,9	SMOKE EVAC CONTROL** SYSTEM
SEF-3B-3	SMOKE EVAC	CENTRIFUGAL UPBLAST UL LISTED	10000	0.5	44.5" WHEEL DIA. 20 SONES MAX 373 RPM MAX	3	208/3/60	2,4,5,6,9	SMOKE EVAC CONTROL** SYSTEM

** PROVIDE VFD TO MODULATE FAN SPEED

FAN ACCESSORIES AND NOTES:

- DIRECT DRIVE WITH FAN MOUNTED SOLID STATE SPEED CONTROL
- BELT DRIVE WITH VFD TO MODULATE FAN SPEED
- DISCONNECT SWITCH
- PREFABRICATED ROOF CURB
- BACKDRAFT DAMPER
- BIRDSCREEN
- DUCT TO WALL OR ROOF AS INDICATED ON PLAN
- PROVIDE FIRE RATED ENCLOSURE FOR FAN OR FIRE DAMPER AT CEILING
- AIRFOIL WHEEL

BUILDING ENVELOPE TESTING:

IN ORDER FOR THE SMOKE CONTROL SYSTEM TO PROPERLY FUNCTION, EACH SMOKE BARRIER AND THE BUILDING ENVELOPE MUST BE PROPERLY SEALED. LEAKAGE REQUIREMENTS ARE SET FORTH IN THE 2015 IMC PARAGRAPH 513.5 AND TESTING REQUIREMENT IS IN PARAGRAPH 513.5.2.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING LEAKAGE (SEE "TESTING SMOKE CONTROL SYSTEM" THIS SHEET) IN ORDER TO OBTAIN THE DESIGNED LEAKAGE RATE. RECOMMEND PERFORMING THIS TEST PRIOR TO CEILING INSTALLATION. FACILITATE ADDITIONAL SEALING IF REQUIRED. THIS WILL REQUIRE THAT FANS BE WIRED AND FUNCTIONAL EARLIER THAN NORMAL. DUCTWORK AND GRILLES ARE INSTALLED AT THE TEST AND BALANCE COMPANY BE PRESENT IN ORDER TO DETERMINE LEAKAGE RATE.

AT A MINIMUM DURING CONSTRUCTION, THE CONTRACTOR SHALL CAULK JOINTS, SEAMS, JOINTS IN SMOKE BARRIER WALLS, FLOORS AND TOP WITH FIRE RATED ASSEMBLIES. ALL DUCT PENETRATIONS, PIPE PENETRATIONS, CONDUIT PENETRATIONS SHALL BE COMPLETELY SEALED. CAULK AROUND WINDOWS, DOOR FRAMES AND ANY OTHER PENETRATION IN BUILDING ENVELOPE.

PRIOR TO TESTING, CAP OPENINGS IN RUMBLING BEAMS ARE NOT SET. VERIFY ALL EXTERIOR DOORS HAVE WEATHERSTRIPING. NOTE THAT THE SUPPLY FAN SEF-1 IS NOT REQUIRED FOR LEAKAGE TESTING. ENERGIZE FANS TO CFM SPECIFIED IN "TESTING SMOKE CONTROL SYSTEM" ITEMS #3 AND #6. ADVISE THAT BUILDING PRESSURE READINGS AVERAGE TO MINIMUM -0.1" WATER GAUGE PRESSURE. IF NOT, CONTRACTOR IS RESPONSIBLE FOR ADDITIONAL SEALING OF SMOKE COMPARTMENTS UNTIL LEAKAGE RATE COMPLIES.

SEE ARCHITECTURAL SECTIONS FOR MEANS AND METHODS OF SEALING SMOKE PARTITIONS.

TESTING SMOKE CONTROL SYSTEM:

- SMOKE ZONE 1A WITH FIRE ORIGINATING IN SALLYPORT:
 - SIMULATE FIRE IN SALLYPORT BY ACTIVATING SMOKE DETECTOR IN THE SALLYPORT.
 - VERIFY THE WEST ROLL-UP DOOR TO THE SALLYPORT AUTOMATICALLY OPENS
 - VERIFY SMOKE CONTROL DAMPERS SERVING HVAC EXHAUST DUCTS FULLY CLOSE
 - VERIFY SMOKE CONTROL DAMPER SCD 1A-1 FULLY CLOSES
 - VERIFY SMOKE CONTROL DAMPER SCD 1A-2 FULLY CLOSES
 - VERIFY SMOKE CONTROL DAMPER SCD-1A-3 FULLY OPENS
 - VERIFY SMOKE CONTROL EXHAUST FANS SEF-1A-1 AND SEF-1A-2 ARE NOT ENERGIZED
 - VERIFY SMOKE CONTROL SUPPLY FAN SSF ENERGIZES
 - READ PRESSURE DIFFERENTIAL FROM ALL THREE BUILDING PRESSURE MONITORS SERVING SMOKE CONTROL ZONE 1A. THE SYSTEM IS DESIGNED TO PRODUCE 0.1" WATER GAUGE PRESSURE WITHIN THE SPACE. ZONE PRESSURE SENSORS SHOULD HAVE AVERAGE READING OF 0.1" WITH FAN FLOWING 19,400 CFM AND ALL DOORS CLOSED. IF THIS IS NOT THE CASE, BUILDING ENVELOPE MUST BE CHECKED FOR LEAKAGE AND ALL LEAKAGE ADDRESSED UNTIL THIS CRITERIA IS MET
 - VERIFY CONTROL SYSTEM IS MODULATING SUPPLY FAN SSF-1 SO THAT BUILDING PRESSURE DOES NOT EXCEED 0.25" WATER GAUGE. PERFORM THIS VERIFICATION BY CLOSING ALL DOORS TO THE SPACE AND SEALING GAPS AROUND THE SLIDING DOOR THAT SEPARATES SALLYPORT FROM MAIN BUILDING.
 - VERIFY ALL EGRESS DOORS OPEN FREELY AND REQUIRE LESS THAN 30 LBS FORCE TO SET DOOR IN MOTION AND 15 LBS FORCE TO SWING TO FULL OPEN POSITION
 - GRILLES NEED NOT BE BALANCED FOR AIRFLOW FOR THIS SCENARIO. SEE BALANCING REQUIREMENTS FOR SMOKE ZONE 1A WITH FIRE ORIGINATING IN MAIN BUILDING
- SMOKE ZONE 1A WITH FIRE ORIGINATING IN MAIN BUILDING:
 - SIMULATE FIRE IN ZONE 1A MAIN BUILDING BY ACTIVATING SMOKE DETECTOR
 - VERIFY SMOKE CONTROL DAMPER SCD-1A-1 FULLY OPENS
 - VERIFY SMOKE CONTROL DAMPER SCD-1A-2 FULLY OPENS
 - VERIFY SMOKE CONTROL DAMPER SCD-1A-3 FULLY CLOSES
 - VERIFY SMOKE CONTROL SUPPLY FAN SSF-1A IS NOT ENERGIZED
 - VERIFY SMOKE CONTROL FANS SEF-1A-1 AND SEF-1A-2 ARE ENERGIZED
 - VERIFY SMOKE CONTROL DAMPERS IN HVAC UNIT SUPPLY AND RETURN/EXHAUST DUCTS ARE FULLY CLOSED AND ARE OF THE "FAIL CLOSED" TYPE
 - DECREASE FAN SPEED AT VFD'S TO PROVIDE 19,400 CFM AS MEASURED BY DUCT TRAVERSES. NOTE FREQUENCY ON VFD'S THAT PROVIDES THIS AIRFLOW FOR FUTURE USE. PROVIDE PERMANENT LABEL AT EACH VFD WITH THIS INFORMATION. READ PRESSURE DIFFERENTIAL FROM ALL THREE BUILDING PRESSURE MONITORS SERVING SMOKE CONTROL ZONE 1A. THE SYSTEM IS DESIGNED TO PRODUCE -0.1" WATER GAUGE PRESSURE WITHIN THE SPACE. ZONE PRESSURE SENSORS SHOULD HAVE AVERAGE READING OF 0.1" WITH FAN FLOWING 19,400 CFM AND ALL DOORS CLOSED. IF THIS IS NOT THE CASE, BUILDING ENVELOPE MUST BE CHECKED FOR LEAKAGE AND ALL LEAKAGE ADDRESSED UNTIL THIS CRITERIA IS MET
 - OPEN DOORS BETWEEN THIS SMOKE COMPARTMENT AND ADJACENT SMOKE COMPARTMENT. THE DOOR AT HALL 1136 AND EXTERIOR DOOR EXITING THIS SMOKE COMPARTMENT TO ALLOW FREE AIRFLOW THROUGHOUT THE SMOKE COMPARTMENT
 - INCREASE FAN SPEED TO PROVIDE FULL SPECIFIED AIRFLOW AND BALANCE SMOKE CONTROL GRILLES TO SPECIFIED CFM
 - CLOSE ALL DOORS. PLACE SYSTEM INTO AUTOMATIC MODE AND VERIFY CONTROLS SYSTEM PROPERLY MODULATES SEF-1A-1 AND SEF-1A-2 TO MAINTAIN SPACE PRESSURE AT MAXIMUM -0.2" WATER GAUGE
- SMOKE ZONE 1B:
 - SIMULATE FIRE IN ZONE 1B BY ACTIVATING SMOKE DETECTOR
 - VERIFY SMOKE CONTROL FANS SEF-1B-1 AND SEF-1B-2 ARE ENERGIZED
 - VERIFY SMOKE CONTROL DAMPERS IN HVAC UNIT SUPPLY AND RETURN/EXHAUST DUCTS ARE FULLY CLOSED AND ARE OF THE "FAIL CLOSED" TYPE
 - DECREASE FAN SPEED AT VFD'S TO PROVIDE 17,000 CFM (17,000 CFM IF 2ND FLOOR ALTERNATE IS ACCEPTED) TO ELEVATORS/STAIR DOOR) AS MEASURED BY DUCT TRAVERSES. NOTE FREQUENCY ON VFD'S THAT PROVIDES THIS AIRFLOW FOR FUTURE USE. PROVIDE PERMANENT LABEL AT EACH VFD WITH THIS INFORMATION. READ PRESSURE DIFFERENTIAL FROM ALL THREE BUILDING PRESSURE MONITORS SERVING SMOKE CONTROL ZONE 1B. THE SYSTEM IS DESIGNED TO PRODUCE -0.1" WATER GAUGE PRESSURE WITHIN THE SPACE. ZONE PRESSURE SENSORS SHOULD HAVE AVERAGE READING OF 0.1" WITH FANS FLOWING 14,000 CFM (17,000 CFM IF 2ND FLOOR ALTERNATE IS ACCEPTED) TOTAL AND ALL DOORS CLOSED. IF THIS IS NOT THE CASE, BUILDING ENVELOPE MUST BE CHECKED FOR LEAKAGE AND ALL LEAKAGE ADDRESSED UNTIL THIS CRITERIA IS MET
 - OPEN DOORS BETWEEN THIS SMOKE COMPARTMENT AND ADJACENT SMOKE COMPARTMENT. DOORS ALONG CORRIDOR 1315, DOORS ALONG CORRIDOR 1317 AND EXTERIOR DOORS EXITING THIS SMOKE COMPARTMENT TO ALLOW FREE AIRFLOW THROUGHOUT THE SMOKE COMPARTMENT
 - INCREASE FAN SPEED TO PROVIDE FULL SPECIFIED AIRFLOW AND BALANCE SMOKE CONTROL GRILLES TO SPECIFIED CFM
 - CLOSE ALL DOORS. PLACE SYSTEM INTO AUTOMATIC MODE AND VERIFY CONTROLS SYSTEM PROPERLY MODULATES SEF-1B-1 AND SEF-1B-2 TO MAINTAIN SPACE PRESSURE AT MAXIMUM -0.2" WATER GAUGE

SMOKE CONTROL SYSTEM:

CONTRACTOR SHALL PROVIDE A FULLY FUNCTIONAL SMOKE CONTROL SYSTEM INCLUDING ALL CONTROL PANELS, WIRING, DAMPERS, PRESSURE SENSORS, FIRE ALARM INTERFACES AS REQUIRED. ANY HIGH VOLTAGE WIRING NOT SHOWN ON ELECTRICAL PLANS IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.

PROVIDE SMOKE CONTROL FUNCTIONALITY FOR THE TRANE BUILDING MANAGEMENT SYSTEM.

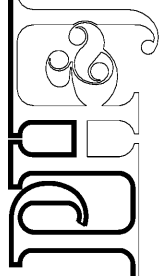
CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE SPECIAL INSPECTIONS PERSONNEL AND COMPLY WITH ANY REVISIONS REQUIRED.

PROVIDE FIRE FIGHTERS SMOKE CONTROL PANEL PER NFPA AND LOCAL FIRE MARSHAL.

- SMOKE ZONE 2A, 2B, 3A & 3B:
 - SIMULATE FIRE IN RESPECTIVE ZONE BY ACTIVATING SMOKE DETECTOR
 - VERIFY RESPECTIVE SMOKE CONTROL FANS ARE ENERGIZED
 - DECREASE FAN SPEED AT VFD'S TO PROVIDE SCHEDULED AIRFLOW CFM AS MEASURED BY DUCT TRAVERSES. NOTE FREQUENCY ON VFD'S THAT PROVIDES THIS AIRFLOW FOR FUTURE USE. PROVIDE PERMANENT LABEL AT EACH VFD WITH THIS INFORMATION. READ PRESSURE DIFFERENTIAL FROM ALL THREE BUILDING PRESSURE MONITORS SERVING RESPECTIVE SMOKE CONTROL ZONE. THE SYSTEM IS DESIGNED TO PRODUCE -0.1" WATER GAUGE PRESSURE WITHIN THE SPACE. ZONE PRESSURE SENSORS SHOULD HAVE AVERAGE READING OF 0.1" WITH FANS FLOWING SCHEDULED CFM WITH ALL DOORS CLOSED. IF THIS IS NOT THE CASE, BUILDING ENVELOPE MUST BE CHECKED FOR LEAKAGE AND ALL LEAKAGE ADDRESSED UNTIL THIS CRITERIA IS MET
 - OPEN DOORS BETWEEN THIS SMOKE COMPARTMENT AND ADJACENT SMOKE COMPARTMENT AND EXTERIOR STAIR DOORS EXITING THIS SMOKE COMPARTMENT TO ALLOW FREE AIRFLOW THROUGHOUT THE SMOKE COMPARTMENT
 - INCREASE FAN SPEED TO PROVIDE FULL SPECIFIED AIRFLOW AND BALANCE SMOKE CONTROL INLET DUCTS TO SPECIFIED CFM.
 - CLOSE ALL DOORS. PLACE SYSTEM INTO AUTOMATIC MODE AND VERIFY CONTROLS SYSTEM PROPERLY MODULATES SEF-1B-1 AND SEF-1B-2 TO MAINTAIN SPACE PRESSURE AT MAXIMUM -0.2" WATER GAUGE

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UPGRADES TO THE MOBILE COUNTY METRO JAIL
For The MOBILE COUNTY COMMISSION
MOBILE, ALABAMA



DRAWN: CW CHECK: TZ
DATE: APRIL 2, 2019 RTA
REVISED:
REVISED:

SHEET TITLE
SMOKE CONTROL SCHEDULES
AND NOTES

JOB NO.
PH&J#1801GV

SEQUENCE
NO. 130 OF 175

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