B-20-0078

GENERAL NOTES

1) COMPLETE INSTALLATION OF THE MECHANICAL SYSTEM SHALL BE PER THE MOST CURRENT BUILDING, MECHANICAL, ENERGY, PLUMBING, FIRE AND HEALTH CODES AND REGULATIONS AS ADOPTED BY THE LOCAL JURISDICTIONS.
2) ALL AIR-CONDITIONING UNITS WITHOUT INTERNAL TRAP SHALL HAVE A P-TRAP FOR THE CONDENSATE PAN WITH PLUG TEES FOR CLEANING AND CONDENSATE PIPES SHALL BE DISCHARGED TO EXISTING CONDENSATE WASTE PIPING. VERIFY SIZE AND LOCATION AT SITE.
3) MECHANICAL CONTRACTOR SHALL COORDINATE DIFFUSER LOCATIONS AND DUCT ROUTING CLEARANCES WITH THE STRUCTURAL, REFLECTED CEILING AND LIGHTING PLANS.
4) PLUMBING CONTRACTOR SHALL COORDINATE PLUMBING VENT STACKS WITH THE EQUIPMENT TO MAINTAIN A MINIMUM OF 10 FT. FROM THE OUTSIDE AIR INTAKES.
5) ALL FIRE RATED STRUCTURE SHALL BE FIRE DAMPERED. VERIFY WITH THE ARCHITECTURAL AND INSTALL PER THE LOCAL JURISDICTIONS.
6) ALL AIR DISTRIBUTION OUTLETS SHALL HAVE VOLUME CONTROL DEVICES.
7) ALL VOLUME DAMPERS IN NON-ACCESSIBLE CEILINGS SHALL HAVE A CONTROL ARM EXTENDED TO AN ACCESSIBLE LOCATION ("YOUNG" REGULATORS OR ROTO-TWIST). EXACT LOCATION OF CONTROL DEVICES VISIBLE IN FINISHED SPACES SHALL BE COORDINATED WITH THE ARCHITECT.
8) ALL 90 DEGREE TRUNK DUCT ELBOWS SHALL BE SMOOTH-ROUND OR SQUARE WITH TURNING VANES.
9) MECHANICAL CONTRACTOR SHALL LOCATE AND COORDINATE EXACT LOCATION OF PIPING AND DUCTWORK AND PENETRATIONS WITH THE STRUCTURE.
10) MAXIMUM LENGTH OF FLEXIBLE DUCTS SHALL BE 6' OR AS SHOWN ON DRAWINGS.
11) ALL DUCTWORK, EQUIPMENT AND PIPING SHALL BE SEISMICALLY SUPPORTED PER SMACNA AND LOCAL REGULATIONS.
12) ALL AIR FILTERS SHALL HAVE EFFICIENCY BASED ON THE ASHRAE STANDARD 52-76 (ATMOSPHERIC DUST SPOT).
13) ALL MECHANICAL EQUIPMENT SHALL CONFORM TO SMACNA AND LOCAL REGULATIONS FOR SEISMIC RESTRAINT (INCLUDING PIPING AND DUCTWORK).
14) ALL EQUIPMENT AND ACCESSORIES IN CONCEALED SPACES REQUIRING ACCESS SHALL HAVE ACCESS DOORS.
15) TOTAL SYSTEM SHALL BE WARRANTED FOR ONE YEAR; STARTING FROM THE TIME OF OWNER/ENGINEER'S FINAL ACCEPTANCE.
16) HVAC NOTES:
    - A) PROVIDE FLEXIBLE CONNECTION IN ALL DUCTS CONNECTING TO AIR MOVING EQUIPMENT AS CLOSE TO FAN AS POSSIBLE. FLEXIBLE CONNECTION SHALL CONSIST OF 6" OR MORE OF AIR TIGHT, FIREPROOF FLEXIBLE NEOPRENE COATED WOVEN FIBROUS GLASS MATERIAL. VENT FABRICS, INC.
    - B) ALL DUCTWORK SHALL BE SHEET METAL. SOUND LINED RECTANGULAR SUPPLY AND RETURN DUCTS WITHIN 10 FEET FROM THE UNIT OPENINGS. INTERNAL INSULATION OF SUPPLY DUCTS SHALL BE ELASTOMERIC. FIBERGLASS DUCT LINER IS NOT ALLOWED.
    - C) ALL SUPPLY AND RETURN FLEXIBLE DUCTS SHALL BE CONSTRUCTED OF DOUBLE LAMINATION OF POLYESTER ENCAPSULATED STEEL WIRE HELIX FOR INNER CORE HIGH DENSITY FIBERGLASS INSULATION AND GRAY POLYESTER FILM WITH SPIRAL REINFORCEMENTS EQUAL TO "ATCO-70 SERIES" (MIN. POS. PRESS. = 6" W.G., NEG. PRESS = 0.75" W.C.).
    - D) PROVIDE LOCKABLE VOLUME DAMPERS IN ALL AIR DISTRIBUTION OUTLETS.
    - E) DUCT HANGERS, SUPPORTS AND METHODS OF INSTALLATION SHALL CONFORM TO ASHRAE AND SMACNA RECOMMENDATIONS.
    - F) DUCT SIZES SHOWN ON PLANS INDICATE INSIDE FREE AREA.
    - G) ALL DUCTWORK SHALL BE CLASS 1 AIR DUCT AS APPROVED BY U.L.-181.
    - H) DUCTS - SHEET METAL DUCTS SHALL BE INSULATED WITH THE INSULATION AND THICKNESSES AS SHOWN HEREIN (REDUCE THE INSULATION THICKNESS BY THERMAL VALUE OF SOUND LINING).
        1. SUPPLY AIR DUCTS IN HEATED SPACE; NO INSULATION REQUIRED IF SOUNDLINED, OTHERWISE 1" THICK K = 0.23 @ 75 DEGREES F.
        2. SUPPLY AIR DUCTS IN NON-HEATED SPACE; APPROXIMATELY 3" THICK K=0.23 @ 75 DEGREES F., TO PROVIDE A MINIMUM THERMAL RESISTANCE VALUE OF MINIMUM R-11.
        3. SUPPLY AIR DUCTS OUTSIDE OF BUILDING SAME AS CONDITIONED SPACE EXCEPT WITH WEATHERPROOF BARRIER.
        4. RETURN AIR DUCTS; SHALL HAVE SAME INSULATION AS THE SUPPLY AIR DUCTS.
        5. EXHAUST AIR DUCTS; NO INSULATION REQUIRED.
        6. INDOOR DUCTS HANDLING OUTSIDE AIR SHALL HAVE FIBERGLASS BLANKET WITH VAPOR BARRIER JACKET ASJ, 1" THICK, K = 0.23 @ 75 DEGREES F. (ALL DUCTWORK FOR THE BUILDING SUPPLY FAN AND OUTSIDE AIR INTAKES TO INDIVIDUAL HEAT PUMPS).
17) THE CONTRACTOR SHALL NOT OPERATE THE EQUIPMENT FOR TEMPORARY HEATING OR VENTILATION DURING THE CONSTRUCTION. (ALL EQUIPMENT SHALL RUN FOR TESTING AND BALANCING PURPOSES ONLY). NOTIFY THE ENGINEER 48 HOURS (MINIMUM) IN ADVANCE TO ARRANGE A FINAL FIELD INSPECTION PRIOR TO COVERING UP THE CEILING.
18) EACH FAN UNIT OVER 2000 CFM SHALL HAVE A DUCT/SMOKE DETECTOR PER 2015 IMC 606 IN RETURN DUCTS AS REQUIRED BY THE JURISDICTIONS. UNIT SHALL SHUT DOWN UPON SMOKE DETECTION (COORDINATE WITH FIRE ALARM CONSULTANT/CONTRACTOR PRIOR TO BIDDING/ CONSTRUCTION).
19) CONTRACTOR IS TO BRING UP THE DISCREPANCIES AND ITEMS WHICH ARE NOT SPECIFICALLY CALLED FOR OR SHOWN BUT ARE REQUIRED FOR A COMPLETE MECHANICAL SYSTEM AND AFFECT HIS CONTRACT PRIOR TO ENTERING AND SIGNING THE CONTRACT; AFTER AWARDING THE CONTRACT ALL SUCH ITEMS REQUIRED FOR A COMPLETE SYSTEM READY FOR THE OWNER'S BENEFICIAL USE SHALL BE FURNISHED AND INSTALLED INCLUDING ALL SUCH DISCREPANCY ITEMS MENTIONED ABOVE, AT NO ADDITIONAL COST TO THE OWNER AND PER LOCAL CODES. MANUFACTURER'S RECOMMENDATIONS AND APPLICABLE STANDARDS WITH THE ARCHITECT/ENGINEER'S APPROVAL.
20) ALL EQUIPMENT SUPPLIED FOR THESE SPECIFICATIONS SHALL BE FREE FROM DEFECTS IN MATERIAL, WORKMANSHIP, AND TITLE, AND SHALL BE OF THE KIND AND QUALITY DESCRIBED HEREIN. IF IT APPEARS WITHIN ONE YEAR FROM DATE OF FINAL ACCEPTANCE THAT EQUIPMENT DOES NOT MEET THE WARRANTIES ABOVE, THE CONTRACTOR SHALL IMMEDIATELY CORRECT ANY DEFECT AND SHALL RESTORE THE SYSTEM TO THE ORIGINAL SATISFACTORY CONDITIONS AT HIS EXPENSE. THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF OTHER WARRANTIES, WHETHER WRITTEN, ORAL, IMPLIED OR STATUTORY. NO WARRANTY OF MERCHANT ABILITY OF FITNESS FOR PURPOSE SHALL APPLY. (THE WARRANTY SHALL START FROM THE TIME OF ARCHITECT/ENGINEER'S FINAL ACCEPTANCE.)
21) ENTIRE INSTALLATION OF ALL EQUIPMENT, CONTROL, PIPING, DUCTWORK AND RELATED ACCESSORIES SHALL BE PER BASIC OWNERS' STANDARDS. MECHANICAL CONTRACTOR IS TO FAMILIARIZE HIMSELF WITH THESE STANDARDS.
22) MECHANICAL CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ROUTING AND INSTALLATION FEASIBILITY OF ALL EQUIPMENT, PIPING AND DUCTWORK PRIOR TO SUBMITTING HIS BID AND INCLUDE IN HIS BID ADDITIONAL PIPING, DUCTWORK, FITTINGS, OFFSETS, ETC. WHICH MIGHT BE REQUIRED FOR A COMPLETE SYSTEM READY FOR OWNER'S BENEFICIAL USE.
23) COORDINATE THE CONSTRUCTION SCHEDULE WITH THE ARCHITECT AND PERFORM ALL REQUIRED WORK IN STRICT ACCORDANCE WITH THE OWNER'S SCHEDULE.
24) MECHANICAL CONTRACTOR SHALL PAY FOR AND OBTAIN ALL REQUIRED PERMITS AND CERTIFICATES REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.
25) ADJUST ALL EQUIPMENT AND PERFORM A COMPLETE AIR-BALANCING AND PUT ALL MECHANICAL SYSTEMS IN OPERATION AND SUBMIT MINIMUM 4 COPIES OF BALANCING REPORTS TO THE OWNER/ARCHITECT.

PACKAGED THROUGH WALL HEAT PUMP SCHEDULE

DESIGNATION:	PTHP-1	PTHP-2
ZONE:	GUEST ROOM	GUEST ROOM
MANUFACTURER:	AMANA	AMANA
MODEL:	PTH073G	PTH123G
UNIT:	WALL MOUNTED	WALL MOUNTED
COOLING • ARI (BTUH):	7600	12000
E.E.R:	12.0	11.0
HEATING • ARI (BTUH):	6800	11300
COP:	3.4	3.2
CFM HI/LO:	290	290
MIN. OSA CFM	--	--
AUXILLARY HEAT (KW):	2.1	3.0
MCA/MOCP	14/15	19.5/20
VOLTAGE:	208	208
PHASE:	1	1
RECEPTACLE:	-----	-----
WEIGHT (LBS):	112	112
REMARKS:	(1)(2)	(1)(2)

(1) WITH ALUMINUM ARCHITECTURAL OUTDOOR GRILLE, WALL SLEEVE, COMPLETE WITH ROOM CABINET, SUB-BASE KIT, POWER DISCONNECT SWITCH, INSTALL KIT, CASING, CHASSIS, CONDENSATE DRAIN KIT, AMANA OCCUPANCY SENSOR ACCESSORY, LOW VOLTAGE WIRE HARNESS, HARD WIRE KIT, LEVELING LEGS, AND REMOTE THERMOSTAT CONTROL (AMANA OR EQUAL)(COORD. VENTILATION DOOR SHALL PROVIDE MIN 50CFM OF OUTSIDE VENTILATION AIR. COORDINATE AVAILABLE UNIT GRILLE COLORS WITH ARCHITECT AND OWNER. UNIT WITH 2-SPEED FAN ADJUSTMENT.

(2) DRAIN KIT TO BE USED FOR CONCEALED CONDENSATE PIPING & DISCHARGE TO PLUMBING DRAIN RISER.

FAN SCHEDULE

DESIGNATION:	EF-1
ZONE:	BATH RM./TOILET RM
MANUF.:	PANSONIC
MODEL:	FV-05-11VKSL1
TYPE:	CEILING
DRIVE:	DIRECT
CFM:	110
E.S.P. (IN-H20):	0.10"
SONES (dBA):	<0.3
HP FLA:	.10 AMPS
VOLTAGE:	120
PHASE:	1
WEIGHT:	-----
REMARKS:	(1)(2)

(1) SOURCE SPECIFIC FAN SHALL BE AMCA 210 OR HVI 916.

(2) CONTROLLED BY LIGHT SWITCH

ENERGY CODE NOTES:

1) THERMOSTATS SHALL BE A 7 DAY PROGRAMMABLE TYPE WITH A 5 DEGREE DEADBAND AND AUTOMATIC SETBACK CONTROL PER C403.2.4.3.2 & C403.2.4.2 WSEC.
2) HVAC EQUIPMENT SHALL MEET THE MINIMUM ENERGY EFFICIENCY RATINGS PER TABLES C403 WSEC.
3) DUCT INSULATION AND SEALING SHALL MEET WSEC SECTION 403.2.7 REQUIREMENTS.
4) SUPPLY AND RETURN DUCTS IN UNCONDITIONED SPACES SHALL BE INSULATED TO MIN. R-6. ROOFTOP HVAC DUCTWORK SHALL HAVE A WEATHER BARRIER AND INSULATED TO R-8 PER C403.2.7.2 WSEC.
5) SUPPLY AND RETURN DUCTS IN CONDITIONED SPACES SHALL BE INSULATED TO MIN. R-3.3 PER C403.2.7.2 WSEC.
6) PIPING INSULATION SHALL MEET THE REQUIREMENTS OF TABLE 403.2.8 WSEC.
7) OUTSIDE AIR DUCTS SHALL BE INSULATED PER WSEC C403.2.7. OUTSIDE AIR DUCTS SHALL HAVE A MOTORIZED DAMPERS OR AUTOMATIC DAMPER FOR ALL OUTSIDE AIR INTAKES 403.2.4.4 WSEC.
8) HVAC SYSTEMS SHALL BE COMMISSIONED PER C408 WSEC.
9) FRACTIONAL HORSEPOWER MOTORS 1HP AND LESS SHALL MEET THE EFFICIENCIES PER C403.2.10.3.
10) AN AIR BARRIER TEST SHALL BE PERFORMED AND SHALL MEET THE CRITERIA SET FORTH IN C402.5.1.2 WHERE THE BUILDING ENVELOPE SHALL NOT EXCEED 0.40 CFM/SF AT A DIFFERENTIAL PRESSURE OF 0.3" W.G.

City of Puyallup
Building
ACCEPTED
JMontgomery
04/12/2024
10:21:46 AM

REVISION TO CHASE AND SHAFT WALLS

ROOFTOP AIR HANDLER SCHEDULE

DESIGNATION:	RTU-1
ZONE:	CORRIDORS
MANUFACTURER:	AAON
MODEL:	RQ-005-8-V-EA09-359
DISCHARGE:	HORZ
GAS TYPE:	NAT.
NOMINAL TON OF CLG	5.0
COOLING • ARI (MBH):	64.24
HEATING INPUT (MBH):	113.4
HEATING OUTPUT (MBH):	90.72
S.E.E.R:	14.5
IEER:	---
AFUE: (STEADY STATE)	(80%)
FAN MOTOR DRIVE:	DIRECT
CFM:	1500
E.S.P. (IN-H20):	.60"
INDOOR FAN(HP/FLA):	1.0 HP
OUTDOOR FAN(FLA):	2.8 FLA
COMPRESSOR RLA/LRA:	16.9/--
COMB. FAN (FLA):	---
MCA/MOCP	31/45
VOLTAGE:	208
PHASE:	3
WEIGHT (LBS):	1000
REMARKS:	(1)

NOTES:

(1) CRANK CASE HEATER / COMPR. SHORT-CYCLE PROTECTION, DUCTWORK THRU ROOF CURB, FILTER RACK AND 2" PLEATED FILTERS UNIT SAFETY FEATURES / BELT DRIVE OPTION. DUCT STAT AND CONTROLLER. SPRING ISOLATED ROOF CURB (MIN. 2" OF DEFLECTION).

(2) INCLUDE SPRING LOADED ROOF CURB, DUAL BELTS, DUCT STAT AND CONTROLLER, VFD MOTOR AND VFD CONTROLLER (LOCATED INSIDE BLDG OR IN A NEMA VENTED WEATHERPROOF ENCLOSURE)

FULL SIZED LEDGIBLE **COLOR** PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITTEE ON SITE FOR ALL INSPECTIONS **(MIN. PLAN SIZE 24" X 36")**

Approval of submitted plans is not an approval of omissions or oversights by this office or noncompliance with any applicable regulations of local government. The contractor is responsible for making sure that the building complies with all applicable codes and regulations of the local government.

City of Puyallup
Development & Permitting Services
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NOTE:
INTERNAL INSULATION OF SUPPLY DUCTS SHALL BE CLOSED CELL ELASTOMERIC INSULATION. FIBERGLASS DUCT LINER IS NOT ALLOWED.

LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
T/S	T'STAT/SENSOR	THERMOSTAT/SENSOR
	--	DUCTWORK W/ TURNING VANE AND FLEX CONN.
	VD	VOLUME DAMPER
	--	RIGID DUCT
	--	FLEXIBLE DUCT
	--	ROUND SPIN-IN WITH V.D.
	FD	1 HR FIRE DAMPER
	SFD	2 HR SMOKE FIRE DAMPER
	CFD	CEILING RADIATION FIRE DAMPER
	--	1 HR FIRE RATED WALL
	--	2 HR FIRE RATED WALL
	CD	SQUARE CEILING DIFFUSER
	CG	SQUARE CEILING GRILLE
CD	CD	CONDENSATE DRAIN LINE
SD	--	SMOKE DUCT DETECTOR
	A.F.F.	ABOVE FINISHED FLOOR

SHEET INDEX

DESIGN CODES:

ALL CODES WITH WASHINGTON STATE AMENDMENTS

2015 WASHINGTON STATE ENERGY CODE

2015 INTERNATIONAL MECHANICAL CODE

2015 UNIFORM PLUMBING CODE

2015 INTERNATIONAL FIRE CODE

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ADDITION TO HAMPTON INN & SUITES
1515 S. MERIDIAN
PUYALLUP, WA. 98371

SHEET TITLE: GENERAL NOTES, SCHEDULES AND LEGEND

Revisions:
9 03/20/2024 HVAC COORD.
8 01/24/2024
7 02/03/2024 HEAT TRACING ADD.

Job No.: 219007
Date: 01/03/2024

M1.0

B-20-0078

City of Puyallup
Development & Permitting Services
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Building	Planning
Engineering	Public Works
Fire	Traffic

Ventilation Rate per 2018 IMC 403 (based on ASHRAE Std. 62.1)

Equip. Tag	Zone	Occupancy Category	Area (sf)	People Outdoor Air Rate (cfm/person) Table 403.3	Zone Population. Number of people in space.*	Area Outdoor Air Rate (cfm/sf) (Table 403.3)	Occupant Density (#/1000 sf)	Breathing Zone Outdoor Air Flow Vbz/(CFM)	Zone Air Distribution Effectiveness Ez (Table 403.3.1.2)	Zone Outdoor Air Flow (Voz/(CFM)	System Ventilation Efficiency Ev (Table 403.3.2.3.2	Minimum Outdoor Air Intake Flow Vot/(CFM)	Proposesd Design Outdoor Air Intake Flow Vot/(CFM)
1st Floor													
MAU-2 (exist)	Meeting Room 108	Conference/Meeting*	247	5.0	10	0.06	50	50.00	1.00	50.00	0.90	45	90
* In some cases occupancy is less than maximums as allowed per 403.3 exception, in no case shall the occupancy be less than one half per Table 403.3.													

SPLIT SYSTEM HEAT PUMP SCHEDULE

DESIGNATION:	IHP-1	OHP-1
ZONE/FLOOR:	MEETING RM	MEETING RM
MANUFACTURER:	MITSUBISHI	MITSUBISHI
MODEL:	MSZ-FS12NA	MUX-FS12NA
UNIT:	INDOOR	OUTDOOR
NOMINAL TONS	----	1.0
COOLING • ARI (MBH):	----	12
HEATING • LOW ARI 17F (MBH):	----	7.5
SEER (IEER):	----	26.3
COP (HSPF):	----	4.2 (11.1)
CFM:	200	----
E.S.P. (IN-H20):	----	----
(1)AUXILLARY HEAT (KW):	----	----
INDOOR FAN HP(FLA):	.65	----
OUTDOOR FAN(FLA):	----	----
COMPRESSOR RLA/LRA:	----	----
MCA/MOCP	1 AMP	10/15
VOLTAGE:	208	208
PHASE:	1	1
WEIGHT (LBS):	29	63
REMARKS:	(1)(2)(4)	(2)(3)

(1) INSTALL UNIT AS SHOWN AND AS RECOMMENDED BY THE MANUFACTURER AND IN COMPLIANCE WITH LOCAL CODES.
(2) R410A REFRIGERANT, COMPRESSOR SHORT CYCLE PROTECTOR, HIGH/LOW PRESS. SWITCH, DEFROST CONTROL, FILTER DRIER AND LIQUID SOLENOID, HYPER-HEATING OPTION VALVE, THERMOSTATIC EXPANSION VALVE, SINGLE POINT ELECTRICAL CONNECTION, CONDENSATE PUMP ACCESSORY, CONSULT MANUFACTURER FOR ACCESSORIES REQUIRED DUE TO LOCATION OF INDOOR/OUTDOOR UNITS. WITH INTEGRAL CONDENSATE PUMP. PROVIDE CONDENSATE PIPING TO APPROVED PLBG FIXTURE PER UPC AND LOCAL JRSD.
(3) EACH INDOOR/OUTDOOR UNIT SHALL HAVE THE STATE ENERGY CODE APPROVED CERTIFICATIONS IN ORDER TO MEET THE REQUIRED ENERGY RATINGS, TESTS & CERTIFICATIONS AS COMBINED UNITS.

(4) ECONOMIZER EXCEPTION WSEC C403.5, EXCEPTION 3.

NOTE: CONTRACTOR SHALL USE REFRIGERANT LONG LINE GUIDE FOR PIPE SIZING PER MANUFACTURER WHEN LINES EXCEED 50 FT IN LENGTH. VERIFY WITH MFG FOR EXACT SIZES.

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PROFESSIONAL ENGINEER

PUYALLUP, WA. 98371

ADDITION TO HAMPTON INN & SUITES
1515 S. MERIDIAN

SHEET TITLE:
GENERAL NOTES, SCHEDULES AND LEGEND

Revisions:
9 03/20/2024 HVAC COORD.
6 01/24/2024
7 02/03/2024 HEAT TRACING ADD.

Job No.: 219007
Date: 01/03/2024

M1.1

B-20-0078

City of Puyallup
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Engineering	Public Works
Fire	Traffic

KEYED PLAN NOTES:

(A) THRU WALL HEAT PUMP IN WALL SLEEVE. OUTSIDE AIR DOOR TO REMAIN OPEN. UNIT WITH REMOTE T'STAT, HARDWIRED SUB-BASE KIT AND CONDENSATE DRAIN KIT. METAL CONDENSATE PIPING SHALL BE INSULATED WITH CLOSED CELL ELASTOMERIC INSULATION UNIT TO ENERGIZE VIA OCCUPANCY SENSOR (VERIFY W/OWNER) (TYPICAL)

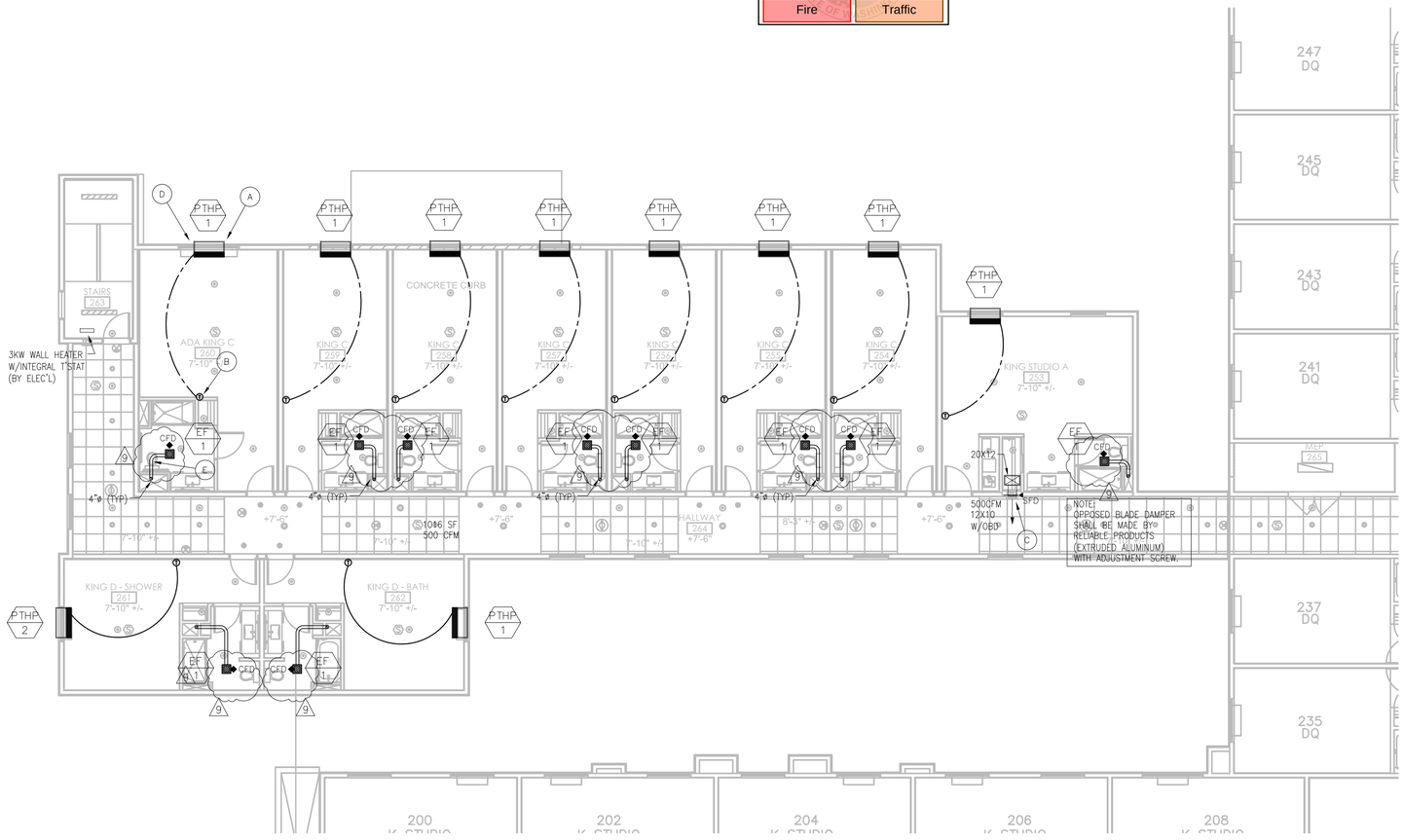
(B) WALL MOUNTED THERMOSTAT. MOUNT AT 48" AFF IN ADA UNITS. (TYPICAL)

(C) FRONT ACCESS TYPE COMBINATION FIRE/SMOKE DAMPER. OVERSIZE SUPPLY GRILLE TO CONCEAL ACTUATOR COMPARTMENT (TYPICAL). SEE DETAIL A/M6.0

(D) SEE PLUMBING DRAWINGS FOR CONDENSATE PIPING (TYP).

(E) DUCTWORK SHALL BE FABRICATED AND SUPPORTED PER SMACNA LATEST EDITION OF DUCT CONSTRUCTION STANDARDS. SEE (TYP).

(F) SEE FIRE DAMPER DETAIL C/M6.0



2ND LEVEL FLOOR PLAN – HVAC

SCALE: 1/8" = 1'-0"

NORTH

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SHEET TITLE: 2ND LEVEL FLOOR PLAN HVAC

Revisions:

9	03/20/2024 HVAC COORD.
6	01/24/2024
7	02/03/2024 HEAT TRACING ADD.

Job No.: 219007

Date: 01/03/2024

M2.0

B-20-0078

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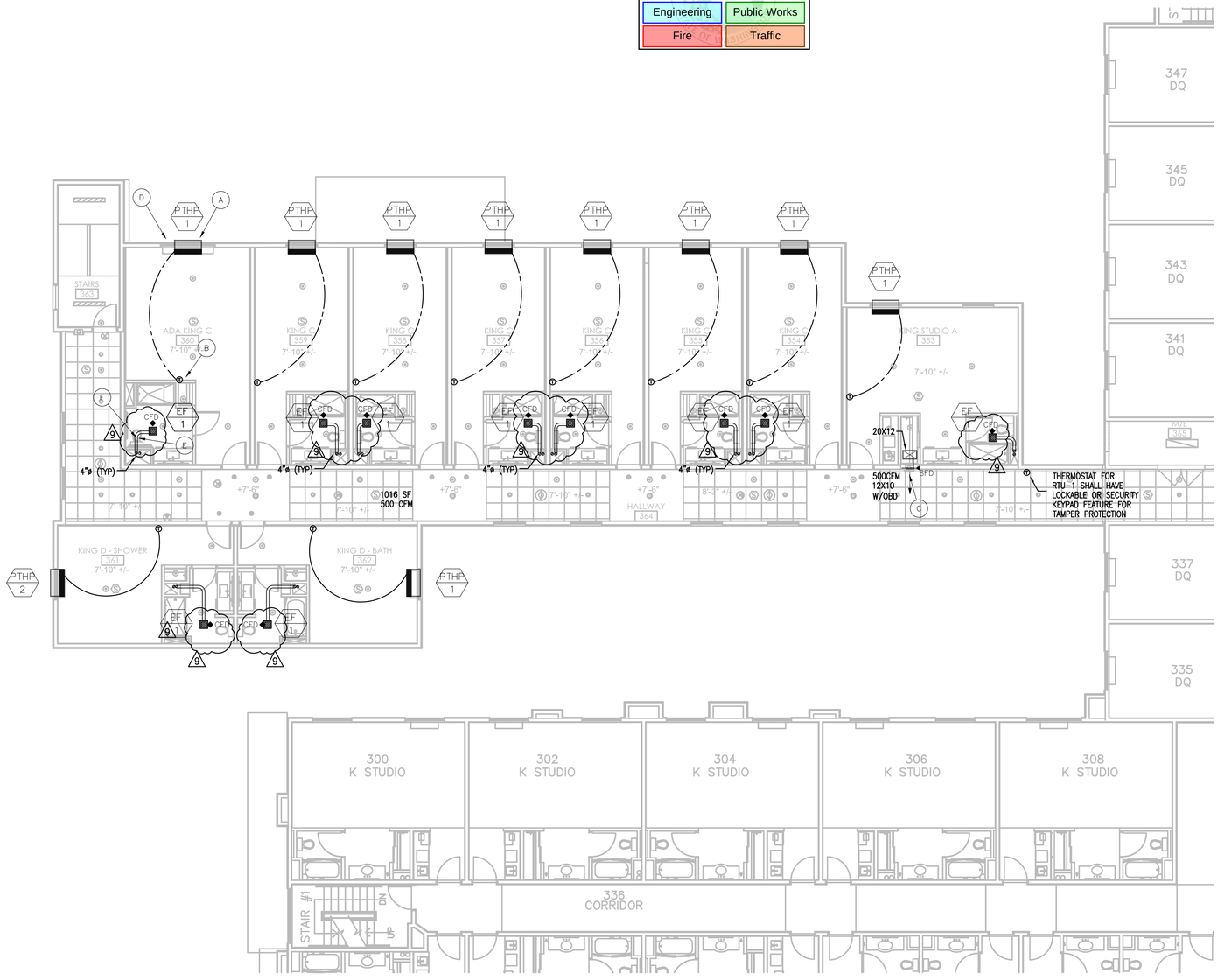

3RD LEVEL FLOOR PLAN – HVAC

SCALE: 1/8" = 1'-0"

NORTH

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SHEET TITLE: 3RD LEVEL FLOOR PLAN HVAC

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M3.0

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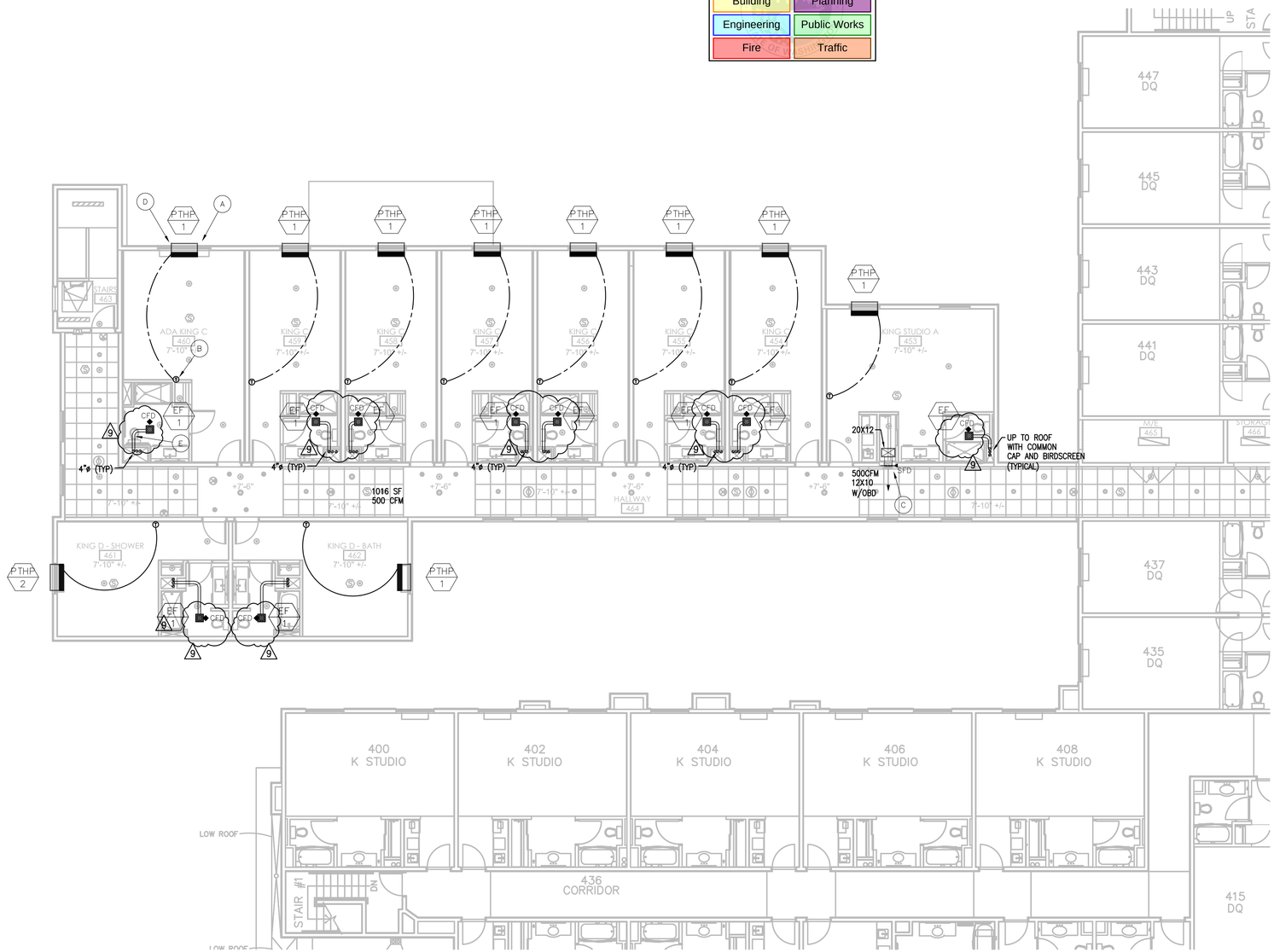
(E) DUCTWORK SHALL BE FABRICATED AND SUPPORTED PER SMACNA LATEST EDITION OF DUCT CONSTRUCTION STANDARDS. SEE (TYP).

(F) SEE FIRE DAMPER DETAIL C/M6.0



4TH LEVEL FLOOR PLAN – HVAC

SCALE: 1/8" = 1'-0"

NORTH

ABOSSEIN ENGINEERING L.L.C

MECHANICAL – ELECTRICAL
LEED – PLUMBING –
FIRE PROTECTION

18465 NE 65TH ST.
#101
REDMOND, WA 98052

OFFICE: (425) 462-9441
FAX: (425) 462-9451

EMAIL:
CService@abossein.com

WEBSITE:
www.abossein.com

ALEXANDER ABOSSEIN
STATE OF WASHINGTON
21891
REGISTERED
PROFESSIONAL ENGINEER

ADDITION TO HAMPTON INN & SUITES

1515 S. MERIDIAN PUYALLUP, WA. 98371

SHEET TITLE:
4TH LEVEL FLOOR PLAN
HVAC

Revisions:

9	03/20/2024 HVAC COORD.
6	01/24/2024
7	02/03/2024 HEAT TRACING ADD.

Job No.: 219007

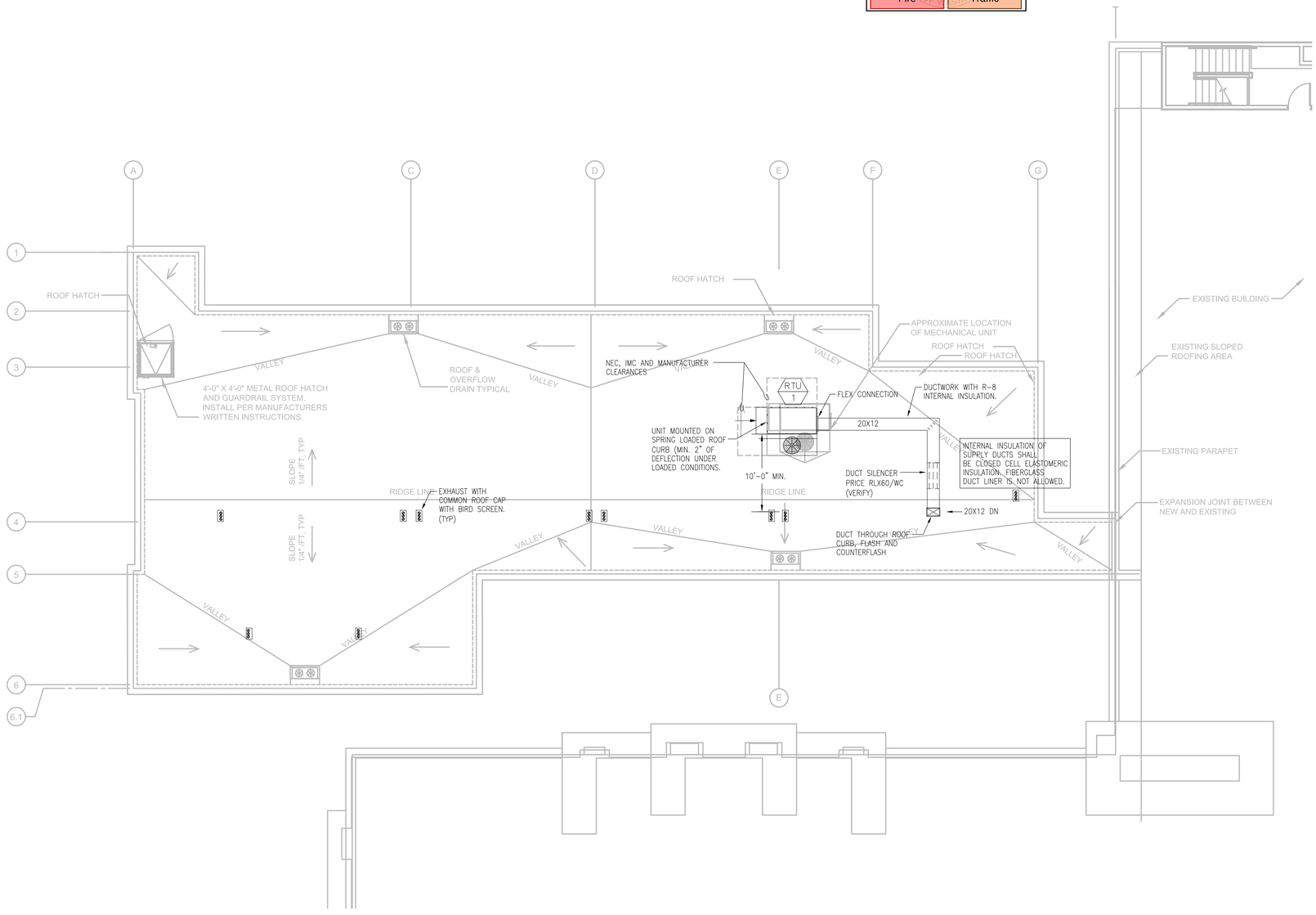
Date: 01/03/2024

M4.0

B-20-0078

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic



ROOF PLAN – HVAC

SCALE: 1/8" = 1'-0"

NORTH

ABOSSEIN ENGINEERING L.L.C

MECHANICAL – ELECTRICAL
LEED – PLUMBING –
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M5.0

B-20-0078

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
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Fire	Traffic

RUSKIN®

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FSD36FA "FRONT ACCESS" COMBINATION FIRE AND SMOKE DAMPER

1½ HOUR UL555 RATED, UL555S LEAKAGE CLASS 2

APPLICATION

The FSD36FA is a combination fire/smoke damper that allows through the grille access to the damper, actuator and heat actuated device. It can be equipped with the industry's shortest sleeve and is ideally suited for shaft wall applications. The FSD36FA damper is rated for maximum velocity of 2,000 fpm, 4" (120) static pressure.

STANDARD CONSTRUCTION

FRAME/SLEEVE
20 gage (.9) galvanized steel, standard integral sleeve with front flange for grille application and integral actuator cabinet. Sleeve is supplied with factory installed insulation on four sides. See page 3 for minimum sleeve requirements.

BLADES
6" (152) wide, 16 (1.6) gage galvanized steel. Triple V-groove shaped approximately 6" (152) on center.

ACTUATOR CABINET
Cabinet is 6" (152) wide on damper 14" (356) wide and larger. Cabinet is 4" (102) wide on dampers less than 14" (356) wide.

LINKAGE
Concealed in frame.

BEARINGS
Stainless steel sleeve, prossed into frame.

JAMB SEALS
Stainless steel, flexible metal conpression type.

BLADE SEALS
Silicone edge type for smoke seal to 450°F (232°C) and galvanized steel for fire/smoke seal to 1500°F (1038°C).

CONTROLLED CLOSURE DEVICE (HEAT-ACTUATED)
EFL 165°F (74°C) is standard. 212°F (100°C), 250°F (121°C), or 350°F (177°C) are options.
PFL 165°F (74°C) is standard. 212°F (100°C) or 285°F (141) are options.

DAMPER SIZES

MINIMUM SIZE
12"w x 8"h (305 x 203). 14"w x 8"h (356 x 203) with SP100 or TS150. Effective damper size is 8"w x 6"h (203 x 203).

MAXIMUM SIZE
36"w x 36"h (915 x 915). Effective damper size is 30"w x 36"h (762 x 915).

OPTIONS

- **FM Approvals** Specification Tested Product.
- **Longer sleeve** for duct connections.
- **TS150 FireStat** for reopenable operation in dynamic smoke management systems.
- **SP100 Switch Package** to remctely indicate damper blade position.
- **MCP** control panels for test purposes or smoke management systems.
- **More Grille depts for OBD.**

NOTES

1. Dampers furnished actual size.
2. Dimensions shown in parentheses ( ) indicate millimeters.

Model FSD36FA meets the requirements for fire, smoke and combination fire/smoke dampers established by:

- **National Fire Protection Association** NFPA Standards 90A, 92A, 92B and 101
- **BOCA National Building Codes**
- **ICBO Uniform Building Codes**
- **SBCCI Standarc Building Codes**
- **ICC International Building Codes**
- **New York City** (BSA Listing #176-82-SM)

UL CLASSIFIED
UL555 Listing R5531, UL555S Listing R5531

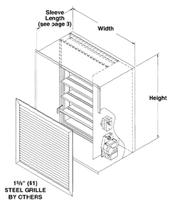
SEE COMPLETE MARKING ON PRODUCT

FM Approvals
Specification Tested Product (Option)

FEATURES

The FSD36FA offers:

- EFL (Electric Fuse Link) or PFL (Pneumatic Fuse Link) heat-actuated release devices permit controlled (rather than instantaneous) closure through the damper actuator. The EFL and PFL allow the damper to automatically reopen after a test, smoke detection or power failure conditions.
- EFL is standard on dampers with electric actuators.
- PFL is standard on dampers with pneumatic actuators.
- EFL's may be ordered on dampers with pneumatic actuators but require an additional EP switch to be ordered.

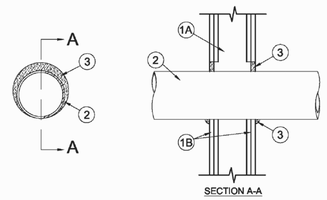


Spec FSD36FA-1107 Replaces FSCFA-1106 *ALL STATED SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION.* ©Ruskin 2007

FIRE DAMPER DETAIL — NO SCALE — A / M6.0

Through Penetrations | Misc. Mechanical | 7000 Series | Gypsum | WL

System No. W-L-7196
July 12, 2010
F Ratings – 1 and 2 Hr (See Item 1)
T Rating – 0 Hr



SECTION A-A

1. **Wall Assembly** – The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400 or V400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
   A. **Studs** – Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC.
   B. **Gypsum Board*** – Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Diam of opening to be max 2 in. (51 mm) larger than OD of steel duct (Item 2). Max diam of opening is 14 in. (356 mm).
   The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
2. **Steel Duct** – Nom 12 in. (305 mm) diam (or smaller) No. 26 gauge (or heavier) spiral wound or long seam galv steel duct. The duct shall be constructed and reinforced in accordance with SMACNA construction standards. Annular space between duct and periphery of opening to be min 0 in. (point contact) to max 2 in. (51 mm). Duct to be rigidly supported on both sides of the wall assembly.
3. **Fill, Void or Cavity Material*** – **Sealant** – Min 5/8 in. (16 mm) thickness of fill material applied within annulus, flush with both surfaces of wall assembly. At point contact location, min 1/4 in. (6 mm) diam bead of fill material applied at steel duct/gypsum board interface on both surfaces of wall.
   3M COMPANY
   3M FIRE PROTECTION PRODUCTS – IC 15WB+, CP 25WB+ or FB-3000 WT sealant

*Bearing the UL Classification Mark

3M Fire Protection Products
www.3m.com/firestop
W-L-7196 • 1 of 1
Product Support Line 1-800-328-1687

DUCTWORK FIRE CAULKING DETAIL — NO SCALE — B / M6.0

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DIBD2 CURTAIN TYPE DYNAMIC FIRE DAMPERS

1½ HOUR UL555 RATED FOR USE IN DYNAMIC AND STATIC SYSTEMS

APPLICATION

Ruskin Model DIBD2 is a 1½ hour UL classifed dynamic (fans on) or static (fans off) curtain style fire damper for use in HVAC systems that remain in operation during a fire. Fire dampers are used for the protection of openings in walls, partitions or masonry floors with fire resistance ratings of less than 3 hours and shall have a 1½ hour fire protection rating. The DIBD2 can be installed vertically in walls or horizontally in masonry floors and is rated for airflow in either direction.

DYNAMIC CLOSURE RATINGS

4000 fpm (20.3 m/s) vertical mount only, up to 24" x 24" (610 x 610).
3000 fpm (15.2 m/s) vertical and horizontal mount, up to 24" x 24" (610 x 610).
2000 fpm (10.2 m/s) vertical or horizontal mount on all sizes.
4 in. w.g. (1 kPa) maximum pressure on all sizes.

STANDARD CONSTRUCTION

Frame and Blades Material
Galvanized steel or stainless steel (in gauges required by UL listing R-5531).

Closure Springs
301 stainless steel constant force or spring clip type.
Note: Vertical mount 24" x 24" (610 x 610) and smaller utilize spring clips only and do not have constant force springs

Fusible Link
165°F (74°C) is standard. 212°F (100°C) and 285°F (141°C) are available as options.

DAMPER SIZES

See pages 2 - 5 for minimum and maximum UL sizes.
See pages 6 - 9 for construction details on multiple section assemblies.

OPTIONS

- **True Round Fire Damper** - See model FDR25
- **Stainless Steel Construction** – See model (D)IBD2SS
- **FM Approvals** as Specification Tested Product
- **SP200** Switch Package to allow remote indication of damper blade position
- **FAST Angles** factory supplied one-sidb installation. Other angles of various sizes and gauges also available for one-side or two-side installation.
- **Factory Sleeves** of various length's and gauges to ensure field compliance with UL installation requirements
- **MCP** Control panels for monitoring purpose
- **Grille Mounting** See (D)IBD2G or (D)IBD20G models
- **'GA' Grille Access** See (D)IBD2GA models
- **'OW' Out of Wall** See (D)IBD2/OW models

Models DIBD2 series meet the requirements for fire dampers established by:

- **National Fire Protection Association** NFPA Standards 80, 90A, 92A, 92B, and 101
- **ICC International Building Codes**
- **CSFM California State Fire Marshal**
  DIBD2 #S225-0245-0005
- **New York City** MEA 450-06-M

UL CLASSIFIED
UL555 Listing R5531

SEE COMPLETE MARKING ON PRODUCT

FM Approvals
Specification Tested Product (Option)

NOTES:
1. Dimensions shown in parentheses ( ) indicate millimeters.
2. Single section dampers ordered with either 12" (305), 14" (356), or 15" (406) long sleeve, the DIBD20, 40, 60, 230, 430, and 630 models may be substituted.

Spec DIBD2-1215 Replaces DIBD2-114 *ALL STATED SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE OR OBLIGATION.* ©Ruskin December 2015

FIRE DAMPER DETAIL — NO SCALE — C / M6.0

ABOSSEIN ENGINEERING L.L.C
MECHANICAL – ELECTRICAL
LEED – PLUMBING – FIRE PROTECTION
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ALEXANDER ABOSSEIN — 21891 — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON

ADDITION TO HAMPTON INN & SUITES
1515 S. MERIDIAN
PUYALLUP, WA. 98371

SHEET TITLE: MECHANICAL DETAILS

Revisions:
3 03/20/2024 HVAC COORD.
6 01/24/2024
7 02/03/2024 HEAT TRACING ADD.

Job No.: 219007
Date: 01/03/2024

M6.0

HVAC SPECIFICATIONS - DIVISION #23

PART 1.00 GENERAL

1.01 LOCAL CONDITIONS: VISIT AND INSPECT THE PREMISES TO ASCERTAIN THE EXISTING CONDITIONS BEFORE SUBMITTING A BID. NO EXTRA PAYMENT WILL BE ALLOWED FOR THE LACK OF KNOWLEDGE OF THESE CONDITIONS.

1.02 CODES: STRICTLY COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL CODES AND REGULATIONS.

IMC – MECHANICAL CODE
IPC – PLUMBING CODE
IFGC – FUEL GAS CODE

1.03 STANDARDS: THE FOLLOWING PUBLICATIONS (LATEST EDITION) FORM A PART OF THESE REQUIREMENTS TO THE EXTENT INDICATED BY THE REFERENCES THERETO:

SHEET METAL AND AIR CONDITIONING CONTRACTOR NATIONAL ASSOCIATION (SMACNA)
LOW VELOCITY DUCT MANUAL

1.04 PLANS AND SPECIFICATIONS: THE MECHANICAL DRAWINGS ARE DIAGRAMMATIC IN CHARACTER INTENDED TO COVEY THE SCOPE OF WORK AND INDICATE THE GENERAL ARRANGEMENT OF EQUIPMENT, DUCTS, PIPING, ETC., AND APPROXIMATE SIZES AND LOCATIONS OF EQUIPMENT AND OUTLETS. DETERMINE THE EXACT LOCATION OF THE ELEMENTS OF THE SYSTEM FROM THE STRUCTURE AND FROM THE EQUIPMENT, NOT FROM THE DRAWINGS. DO NOT SCALE DRAWINGS FOR MEASUREMENTS NOR USE AS SHOP DRAWINGS.

1.05 PROVIDE ALL ITEMS, EQUIPMENT, MATERIALS, OPERATIONS, OR METHODS LISTED, MENTIONED OR SCHEDULED ON THE DRAWINGS, AND/OR HEREIN INCLUDING ALL INCIDENTALS AND ACCESSORIES NECESSARY AND REQUIRED FOR INSTALLATION OR MOUNTING, OR NORMALLY SUPPLIED BY COMMON PRACTICE WHETHER SPECIFICALLY MENTIONED OR NOT, TO PROVIDE COMPLETE AND PROPERLY FUNCTIONING SYSTEMS.

1.06 BRING ANY NON-COMPLIANCES WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND REGULATIONS, CONFLICTS AND DISCREPANCIES TO THE ENGINEER'S ATTENTION BEFORE SUBMITTING BID. A CORRECT, COMPLETE AND EASILY MAINTAINED SYSTEM IS INTENDED.

1.07 THE CONTRACTOR'S BID WILL BE CONSTRUED AS AN AGREEMENT TO COMPLETE THE WORK WITHOUT ADDITIONAL COST TO THE OWNER. WHERE CONFLICTS BETWEEN PLANS AND SPECIFICATIONS OR CONFLICTING INFORMATION ON THE PLANS OCCURS, THE CONFLICTS SHALL BE REPORTED TO THE ARCHITECT PRIOR TO BIDDING. THE MORE COSTLY ALTERNATIVE SHALL BE INCLUDED IN THE BID PRICE.

1.08 MAKE NO CHANGES IN THE WORK SPECIFIED, UNLESS SUCH CHANGES ARE AUTHORIZED IN WRITING BY THE OWNER, ARCHITECT AND/OR ENGINEER. NO CHARGES FOR EXTRA WORK WILL BE PAID UNLESS SUCH EXTRA WORK HAS BEEN AUTHORIZED AND THE AUTHORIZATION CONTAINS A STATEMENT OF THE WORK TO BE ACCOMPLISHED AND THE CHARGES TO BE MADE FOR THE WORK.

1.09 IT IS THE INTENT OF THESE SPECIFICATIONS TO PROVIDE A MECHANICAL SYSTEM COMPLETE, FULLY ADJUSTED, AND READY TO USE.

1.10 IT IS THE INTENTION OF THESE SPECIFICATIONS AND DRAWINGS TO CALL FOR FINISHED WORK, TESTED, AND READY FOR OPERATION. WHEREVER THE WORK "PROVIDE" IS USED, IT SHALL MEAN "FURNISH AND INSTALL COMPLETE AND READY TO USE."

MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER INSTALLATION AND OPERATION, SHALL BE INCLUDED IN THE WORK, THE SAME AS IF HEREIN SPECIFIED OR SHOWN.

1.11 THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS AND PAY ALL GOVERNMENT SALES TAXES, FEES AND OTHER COSTS, INCLUDING UTILITY CONNECTIONS OR EXTENSIONS, IN CONNECTION WITH HIS WORK; FILE ALL NECESSARY PLANS, PREPARE ALL DOCUMENTS AND OBTAIN ALL NECESSARY APPROVALS OF ALL GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION; OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTION OF HIS WORK AND DELIVER SAME TO THE ARCHITECT BEFORE REQUEST FOR ACCEPTANCE AND FINAL PAYMENT FOR WORK.

1.12 THE CONTRACTOR SHALL INCLUDE IN THE WORK, WITHOUT EXTRA COST TO THE OWNER, ANY LABOR, MATERIALS, SERVICES, APPARATUS, DRAWINGS, IN ORDER TO COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES AND REGULATIONS, WHETHER OR NOT SHOWN ON DRAWINGS AND/OR SPECIFIED.

PART 2.00 PRODUCTS

2.01 MATERIALS AND EQUIPMENT SUBSTITUTIONS:
THE BID PRICE SHALL BE BASED ON THE MATERIALS, EQUIPMENT AND/OR SERVICES AS SCHEDULED ON THE DRAWINGS AND/OR SPECIFIED HEREIN, AND/OR AS ACCEPTED PRIOR TO BIDDING.

2.02 REQUESTS FOR ACCEPTANCE OF ALTERNATIVES SHALL BE SUBMITTED TEN (10) DAYS PRIOR TO BID.

2.03 ACCEPTANCE OF ALTERNATE OR SUBSTITUTE EQUIPMENT IN NO WAY VOIDS MATERIAL OR PERFORMANCE REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PERFORMANCE OF ANY MATERIAL OR EQUIPMENT SUBSTITUTED FOR SPECIFIED ITEMS ACCEPTED BY THE ARCHITECT AND/OR ENGINEER BEFORE OR AFTER THE BID DATE. CONTRACTOR SHALL BE RESPONSIBLE FOR INCORPORATING ANY SUBSTITUTE EQUIPMENT IN THE SYSTEM DESIGN.

2.04 CONTRACTOR SHALL PAY FOR ALL EXTRA COSTS BY ANY TRADE FOR CHANGES NECESSITATED BY MATERIAL OR EQUIPMENT SUBSTITUTIONS REGARDLESS OF ACCEPTANCE WITHOUT FURTHER COST TO THE CLIENT.

2.05 REVIEW OF MATERIALS AND EQUIPMENT: WITHIN 30 DAYS OF CONTRACT AWARD, SUBMIT FIVE COPIES OF EACH

2.06 GENERAL MATERIALS AND EQUIPMENT: ALL MATERIAL AND EQUIPMENT SHALL BE NEW AND OF THE BEST OF CATALOG GRADE INDICATED AND/OR SPECIFIED AND SHALL BE FREE FROM ALL DEFECTS.

2.07 MATERIAL AND EQUIPMENT SPECIFIED HEREIN SHALL BE GUARANTEED BY THE MANUFACTURER TO PERFORM TO STANDARDS INDICATED OR INFERRED IN PUBLISHED LITERATURE OR CATALOG DATA. MANUFACTURER'S RECOMMENDATIONS SHALL BE CLOSELY FOLLOWED ON INSTALLATION.

2.08 REFRIGERANT PIPING: TYPE "L" OR TYPE "K" WITH BRAZED HIGH TEMPERATURE SOLDER JOINTS. PIPE SHALL BE CLEAN AND TESTED FOR LEAKS. INSULATE SUCTION PIPING WITH 1 INCH THICK CLOSED CELL ELASTOMERIC INSULATION (NO FIBERGLASS) WITH FRJ JACKET SEALED WATER TIGHT. COVER OUTDOOR INSULATION WITH ALUMINUM OR PLASTIC JACKET APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

2.09 ALL INSULATION SHALL HAVE A COMPOSITE (INSULATION, JACKET OR FACING, AND ADHESIVE) FIRE HAZARD RATING AS TESTED BY ASTM E-84, NFPA 255, OR UL 723, NOT TO EXCEED 25 FLAME SPREAD AND 50 SMOKE DEVELOPED. ACCESSORIES SUCH AS COATINGS, TAPES, AND ADHESIVES SHALL HAVE THE SAME COMPONENT RATINGS. ALL INSULATING MATERIALS OR THEIR CONTAINERS SHALL HAVE A LABEL INDICATING COMPLIANCE WITH THE ABOVE RATING. REFERENCE STANDARDS: NFPA D-255, A.S.T.M. E-84, UL-723, ASHRAE 90-75 AND THE STATE ENERGY CODE. ACCEPTABLE MANUFACTURERS: CERTAINTEED, OWENS-CORNING, KNAUF AND MANVILLE.

PART 3.00 EXECUTION

3.01 PERMITS AND INSPECTIONS: APPLY AND PAY FOR ALL PERMITS AND CERTIFICATES OF INSPECTION REQUIRED FOR THE WORK, AND AT COMPLETION, PRESENT THE OWNER WITH THE SIGNED CERTIFICATES OF FINAL INSPECTION.

3.02 UTILITIES: CHARGES BY UTILITY COMPANIES FOR PROVIDING SERVICES SHALL BE PAID BY OWNER AND WILL NOT BE A PART OF THIS CONTRACT. THE CONTRACTOR SHALL DO INSTALLATION WORK NORMALLY PROVIDED IN THIS CONTRACT.

3.03 PLACE AND ARRANGE EQUIPMENT, PIPING, DUCTS, CONTROLS, ETC., TO FIT THE SPACE AVAILABLE. INCLUDING ALL OFFSETS IN PIPING OR DUCTS, DUCT TRANSFORMATIONS, ETC. REQUIRED.

3.04 SUBMIT SHOP DRAWINGS FOR TEMPERATURE CONTROL SYSTEMS, MECHANICAL EQUIPMENT WIRING, MECHANICAL EQUIPMENT AND MATERIALS WHICH CANNOT BE ADEQUATELY DESCRIBED BY MANUFACTURER'S PRINTED SHEETS, AND FOR SUCH ADDITIONAL ITEMS AS THE ARCHITECT/ENGINEER MAY DIRECT.

3.05 CLEARLY MARK SUBMITTALS AS TO PLAN CODE, SPECIFIC ITEM PROPOSED, CATALOG NUMBERS, RECESS OPENINGS, DIMENSIONS, CAPACITIES, ELECTRICAL CHARACTERISTICS, ETC.. SUBMITTALS WHICH ARE INCOMPLETE WILL BE REJECTED.

3.06 THE ENGINEER'S CHECK SHALL BE GENERAL, AND DOES NOT RELIEVE THE CONTRACTOR OF FINAL RESPONSIBILITY OF COMPLIANCE TO THE INTENT OF THE PLANS AND SPECIFICATIONS.

3.07 SUPERVISION AND WORKMANSHIP: QUALIFIED SUPERVISION FOR EACH TRADE SHALL BE IN CHARGE OF THE WORK AT ALL TIMES AND SHALL BE ON THE JOB SITE WHENEVER WORK IN THAT TRADE IS BEING ACCOMPLISHED.

3.08 ALL WORK SHALL BE DONE IN A FIRST-CLASS MANNER BY WORKMEN SKILLED IN THE TRADE AFFECTED.

3.09 CLEANING PIPING, DUCTS, EQUIPMENT: THOROUGHLY CLEAN ALL DUCTS AND EQUIPMENT OF DIRT, CUTTINGS, AND OTHER FOREIGN SUBSTANCES. REMOVE FROM PREMISES ALL RUBBISH AND DEBRIS, LEAVING THE AREA CLEAN AND READY FOR USE.

3.10 EQUIPMENT START-UP: ADJUST ALL BELTS, OR OTHER DRIVES AND CHECK MOTOR ROTATIONS.

3.11 INSTALL TEMPORARY AIR FILTERS IN AIR HANDLING EQUIPMENT THAT IS BEING USED FOR HEATING OR VENTILATION DURING CONSTRUCTION. INSTALL A NEW SET OF THE SPECIFIED AIR FILTERS FOR THE EQUIPMENT AT THE COMPLETION OF THE JOB.

3.12 COMPLETION: OPERATE ALL MECHANICAL SYSTEMS, INCLUDING ALL EQUIPMENT FURNISHED UNDER THIS DIVISION FOR A PERIOD OF TIME NOT TO EXCEED 5 DAYS OR AS MAY BE REQUIRED AT THE DIRECTION ON THE ARCHITECT/ENGINEER TO PROVE THAT ALL COMPONENTS ARE PROPERLY OPERATING AND THAT THE COMPLETE INSTALLATION IS FUNCTIONING SMOOTHLY AND NOISELESSLY TO THE FULL EXTENT OF PLANS AND SPECIFICATIONS, ANY REBALANCING, READJUSTING OF SYSTEM ELEMENTS FOUND NECESSARY WHEN THE SYSTEMS ARE SUBJECT TO ACTUAL OPERATING CONDITIONS SHALL BE DONE BY THE CONTRACTOR AT NO EXTRA COST TO THE OWNER.

3.13 OPERATING INSTRUCTIONS: SUBMIT 30 DAYS PRIOR TO COMPLETION OF THE PROJECT, FOUR (4) SETS OF OPERATING BROCHURES. EACH BROCHURE SHALL INCLUDE OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS, INSTALLATION INSTRUCTIONS, PARTS LISTS AND WIRING DIAGRAMS FOR EACH ITEM OF MECHANICAL EQUIPMENT WITH MIXING OR MOVABLE PARTS. THE BROCHURE SHALL ALSO INCLUDE OPERATIONAL AND DIAGRAMS OF TEMPERATURE CONTROL SYSTEMS.

3.14 PROVIDE TYPEWRITTEN OPERATING INSTRUCTIONS IN THE BROCHURE COVERING EACH PIECE OF MOTORIZED MECHANICAL EQUIPMENT. GIVE NORMAL STARTING AND STOPPING PROCEDURES, ALONG WITH PROPER PARTIES TO CONTACT IN THE EVENT OF EMERGENCY, FAILURE OF CONTROLS OR EQUIPMENT. OUTLINE OF INSTRUCTIONS AS FOLLOWS:

NORMAL STARTING, STOPPING AND EMERGENCY SHUT-DOWN OF EACH PIECE OF MOTORIZED EQUIPMENT.

PROVIDE LUBRICATION INSTRUCTIONS FOR EACH MOTOR BEARING OR OPERABLE PIECE OF EQUIPMENT. GIVE FREQUENCY OF LUBRICATION, TYPE AND BRAND OF OIL OR GREASE.

INCLUDE CALIBRATION, CLEANING AND ADJUSTMENT SCHEDULES AND PROCEDURES.

INCLUDE COPIES OF MANUFACTURER'S LITERATURE ON MAINTENANCE AND OPERATION OF EACH PIECE OF EQUIPMENT, INCLUDING INSTALLATION INSTRUCTIONS, DIAGRAMS, AND PARTS LISTS, IN EACH BROCHURE.

315 AS-BUILT DRAWINGS: SUBMIT AS-BUILT DRAWINGS AT COMPLETION OF WORK.

3.16 GUARANTEE: THE MECHANICAL SYSTEM SHALL BE LEFT IN PROPER WORKING ORDER. REPLACE ANY WORK, MATERIAL OR EQUIPMENT PROVIDED UNDER THIS CONTRACT WHICH DEVELOPS DEFECTS WITHIN ONE (1) YEAR FROM DATE OF SUBSTANTIAL COMPLETION WITHOUT ADDITIONAL CHARGES. A NEW ONE (1) YEAR GUARANTEE ON THE AFFECTED ITEM OR ITEMS SHALL BE PROVIDED COMMENCING ON THE DATE OF THE APPROVED REPAIR OR REPLACEMENT.

3.17 MECHANICAL EQUIPMENT WIRING AND CONNECTIONS:

ITEM	FURNISHED BY	INSTALLED BY OR MOUNTED BY	WIRED AND/OR CONNECTED BY
EQUIPMENT MOTORS	MC	MC	EC
MOTOR CONTROLLERS, PUSHBUTTON STATIONS, PILOT LIGHTS, ETC.	MC	EC	EC
MULTI-SPEED SWITCHES LINE VOLTAGE THERMOSTATS	MC	EC	EC
DISCONNECT SWITCHES, (FUSED OR UNFUSED), HP RATED SWITCHES, THERMAL OVERLOAD SWITCHES, ETC.	MC	EC	EC
LOW VOLTAGE THERMOSTATS, CONTROL RELAYS, TIME CLOCKS, CONTROL TRANSFORMER, CONTROL PANELS, PRESSURESTATS, MOTOR VALVES, DAMPER MOTORS, SOLENOID VALVES, EP & PE SWITCHES, ETC. AND ALL INTERLOCK WIRING	MC	MC	MC

MC – MECHANICAL CONTRACT
EC – ELECTRICAL CONTRACT

THE MECHANICAL CONTRACTOR SHALL FURNISH ALL MAGNETIC STARTERS OR CONTACTORS.

3.18 ALL MANUAL OR AUTOMATIC CONTROL AND PROTECTIVE OR SIGNAL DEVICES REQUIRED BUT NOT INDICATED ON ELECTRICAL PLANS SHALL BE FURNISHED AND INSTALLED UNDER THIS DIVISION OF THE SPECIFICATIONS. THE WIRING INSTALLATION SHALL CONFORM TO ELECTRICAL DIVISION.

3.19 ALL WIRING CONNECTIONS TO CONTROLS ATTACHED TO DUCT WORK, OR MECHANICAL EQUIPMENT SHALL BE MADE WITH FLEXIBLE CONNECTIONS TO PREVENT VIBRATION.

3.20 COORDINATE WITH THE ELECTRICAL CONTRACTOR BEFORE ORDERING MOTORS AND/OR OTHER ELECTRICAL EQUIPMENT TO ASSURE ELECTRICAL EQUIPMENT BEING OF PROPER ELECTRICAL CHARACTERISTICS.

3.21 FURNISH PROPER NEMA TYPE ENCLOSURES FOR ALL STARTERS AND/OR CONTACTORS AS REQUIRED BY USAGE OR CODE.

3.22 PROVIDE HEAVY DUTY SPEED SELECTOR SWITCHES, THERMAL MAGNETIC SWITCHES, START STOP PUSH BUTTON STATIONS ETC. AS REQUIRED.

3.23 CUTTING AND PATCHING: CAREFULLY PERFORM ALL WORK WHERE CUTTING, CHANNELING, CHASING, OR DRILLING OF FLOORS, WALLS, PARTITIONS, CEILINGS OR OTHER SURFACES IS NECESSARY FOR PROPER INSTALLATION OR SUPPORT OF DUCTS, PIPING OR OTHER MECHANICAL EQUIPMENT.

3.24 ANY DAMAGE TO BUILDING, PIPING, EQUIPMENT, PLASTER, WOODWORK OR METAL WORK SHALL BE REPAIRED BY SKILLED MECHANICS OF TRADES INVOLVED, AT NO ADDITIONAL COST TO THE OWNER.

3.25 DO NOT CUT, CHANNEL, CHASE OR DRILL MASONRY OR TILE; OR CUT, DRILL OR WELD STRUCTURAL MEMBERS OF THE BUILDING, ETC., WITHOUT FIRST OBTAINING ARCHITECT'S PERMISSION, IF PERMISSION IS GRANTED, PERFORM THIS WORK IN A MANNER APPROVED BY THE ARCHITECT.

3.26 CAULKING & WATERPROOFING: CAULK AROUND ALL PIPES, ETC. TO PREVENT AIR AND MOISTURE LEAKAGE WITH COMPOUND APPROVED BY ARCHITECT/ENGINEER.

3.27 SEAL AROUND ALL PIPES AND DUCTS WITH FIREPROOF CAULKING OR GROUT WHERE THEY PASS THROUGH FLOORS, FIREWALLS, AND SHAFTS.

3.28 PROVIDE FLASHINGS WHERE ALL PIPES AND DUCTS PIERCE OUTSIDE WALLS OR ROOF AS NECESSARY TO PREVENT MOISTURE ENTRY.

3.29 INSERTS, SLEEVES & BLOCKOUTS: FURNISH AND INSTALL, PRIOR TO CONCRETE POURING OR OTHER CONSTRUCTION, INSERTS, SLEEVES, OR BLOCKOUTS IN WALLS, FLOOR SLABS, ROOFS AND PARTITIONS FOR PASSAGE OF ALL WORK INSTALLED UNDER THIS DIVISION.

3.30 PROVIDE GALVANIZED IRON AND STEEL PIPE SLEEVES FOR IRON PIPES. USE COPPER SLEEVES FOR COPPER PIPES. PROVIDE WOOD OR STEEL BLOCKOUTS FOR LARGE OPENINGS. SECURE ALL SUCH ITEMS FIRMLY IN POSITION.

3.31 VIBRATION-ABSORBING MOUNTINGS AND CONNECTIONS: ISOLATE EACH ITEM OF EQUIPMENT WITH MOVING PARTS FROM THE BUILDING STRUCTURE ALONG WITH ANY PIPING, CONDUITS, OR DUCTS ATTACHED THERETO. UNLESS OTHERWISE INDICATED, UNITS ISOLATING EQUIPMENT FROM STRUCTURE SHALL BE PROPERLY DESIGNED SPRING-TYPE ISOLATORS.

3.32 BELT DRIVE GUARDS: PROVIDE BELT DRIVE GUARDS FOR ALL EQUIPMENT AND SAFETY SCREENS ON EXPOSED FAN INLETS.

3.33 VALVES: NIBCO BALL VALVES OR EQUAL.

3.34 AIR CONDITIONING UNITS:
PER EQUIPMENT SCHEDULE WITH CAPACITY AS INDICATED. UNIT SHALL BE AN AIR-COOLED CONDENSING UNIT, AIR HANDLING UNIT WITH DX-COILS OR HEAT PUMPS OR GAS FURNACE OR HOT WATER COILS, FILTER MIXING BOX AND VIBRATION ISOLATORS. TOTAL CAPACITY OF EACH UNIT SHALL BE AS SCHEDULED ON THE DRAWINGS.

3.35 CONTROLS – THE COOLING SYSTEM SHALL BE PROTECTED WITH HIGH PRESSURE STAT, LOW PRESSURE STATS, LOSS-OF-CHARGE PROTECTION, INDOOR COIL FREEZESTATS, CURRENT AND TEMPERATURE SENSITIVE OVERLOAD DEVICES.

3.36 PROVIDE PRODUCTS OF COMBUSTION DETECTOR IN SUPPLY AND RETURN AIR IN ALL UNITS 2000 CFM OR OVER TO SHUT DOWN UNIT ON ALARM CONDITION.

3.37 EXHAUST FANS: FANS SHALL MEET CAPACITIES SCHEDULED AND NOT EXCEED SOUND LIMITATIONS SPECIFIED.

3.38 GRILLES & REGISTERS: SCHEDULED ON DRAWINGS. TITUS OR EQUAL.

3.39 DUCT LINING: SHALL BE CLOSED CELL ELASTOMERIC DUCT LINER (NO FIBERGLASS DUCT LINER ALLOWED) MEETING FIRE HAZARD RATING REQUIREMENTS FOR INSULATION. INSTALL WITHIN MINIMUM 10' DUCT LENGTH FROM FANS.

3.40 DUCTWORK: SHEET METAL DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED STEEL. DUCTS SHALL CONFORM ACCURATELY TO THE DIMENSIONS INDICATED AND SHALL BE STRAIGHT AND SMOOTH ON THE INSIDE WITH JOINTS NEATLY FINISHED. DUCT CONSTRUCTION SHALL BE IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT MANUAL, 2" WG FOR SUPPLY & 1" WG FOR EXHAUST DUCTS. ELBOWS, FITTINGS AND BRANCH TAKE-OFFS SHALL BE DESIGNED, CONSTRUCTED AND INSTALLED AS RECOMMENDED IN SMACNA "DUCT CONSTRUCTION STANDARDS" WITH THE USE OF TURNING VANES OR RADIUS ELBOWS. FLEXIBLE RUNOUTS FROM BRANCHES, RISERS OR MAINS TO AIR TERMINAL UNITS, AND OUTLETS SHALL BE FACTORY-FABRICATED, CLASS 1, VAPOR BARRIER INSULATED FLEXIBLE CONNECTORS COMPLYING WITH NFPA STANDARD NO. 90A AND UL 181. FLEXIBLE CONNECTORS SHALL NOT EXCEED 10' IN LENGTH. PRESSURE RATING SHALL BE 4" W.G. FLEXIBLE DUCT CONNECTIONS TO EQUIPMENT AND OTHER DUCTS SHALL BE MADE WITH DRAW BANDS. PROVIDE DAMPER IN RUN OUT TO AIR OUTLETS.

3.41 HINGED DUCT ACCESS DOORS SHALL BE PROVIDED AT ALL AUTOMATIC DAMPERS, FIRE DAMPERS, AND OTHER APPARATUS REQUIRING SERVICE AND INSPECTION IN THE DUCT SYSTEM. DOORS SHALL BE 15 X 18 INCHES UNLESS OTHERWISE INDICATED. WHERE SIZE OF DUCT WILL NOT ACCOMMODATE THIS SIZE, THE DOOR SHALL BE MADE AS LARGE AS PRACTICAL. DOORS SHALL BE PROVIDED WITH AIRTIGHT GASKETS, GALVANIZED HINGES AND APPROVED BRASS FASTENERS. DOORS IN INSULATED DUCTS SHALL BE OF THE INSULATED TYPE. DOORS SHALL SO SWING THAT FAN PRESSURE OR SUCTION HOLD DOOR CLOSED.

3.42 PROVIDE NON-COMBUSTIBLE APPARATUS FLEXIBLE CONNECTIONS OF NOT LESS THAN 15 OUNCE WOVEN FABRIC APPROVED MATERIAL WHERE SHEET METAL DUCTS ARE CONNECTED TO FANS OR OTHER MOVING EQUIPMENT. THE FLEXIBLE CONNECTIONS SHALL BE SECURELY FASTENED.

3.43 DUCT LINER INSULATION: INSULATE INTERIOR SURFACES OF ALL SUPPLY DUCTS FROM AIR CONDITIONING UNIT SUPPLY FANS TO AIR OUTLETS AND INDICATED RETURN OR EXHAUST DUCTS WITH ACOUSTICAL MATERIAL.

3.44 APPLY AND SECURE INSULATION AS RECOMMENDED BY MANUFACTURER AND AS APPROVED. ANY LOOSENING OF INSULATION LINER WILL REQUIRE REMOVAL AND REINSTALLATION OF ALL DUCT WORK, AT NO EXTRA COST.

3.45 INCREASE INDICATED DUCT SIZES TO COMPENSATE FOR THICKNESS OF DUCT LINER INSULATION.
SEALING: ALL TRANSVERSE JOINTS ON THE LOW PRESSURE SYSTEM SHALL BE SEALED WITH "HARDCAST" DUCT TAPE SYSTEM APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS OR OTHER APPROVED SYSTEM.

3.46 IN LIEU OF RECTANGULAR LINED DUCT, RECTANGULAR DUCT INSULATED WITH 1" VAPOR BARRIER DUCT WRAP OR ROUND DUCT OF EQUIVALENT CROSS SECTIONAL AREA AND INSULATED WITH 1" VAPOR BARRIER INSULATION, MAY BE USED. ALL SUPPLY DUCTS SHALL BE LINED OR EXTERNALLY INSULATED.

3.47 GREASE DUCT FROM TYPE 1 HOODS WHERE APPLICABLE TO EXHAUST FAN – 16 GAUGE BLACK IRON – WITH WELDED SEAMS AND JOINTS. WRAP DUCT WITH 2 LAYERS OF THERMAL CERAMICS FIREMASTER DUCT WRAP APPLIED AS RECOMMENDED BY THE MFR. TO MAKE A 2 HOUR RATED INSTALLATION. WRAP TO EXTEND FROM HOOD TO EXHAUST FAN OR RATED SHAFT AND AIR SPACE PER IMC.

3.48 DESCRIPTION: PERFORM TESTING AND BALANCING IN ACCORDANCE WITH THE PROCEDURE OF THE ASSOCIATED AIR BALANCE COUNCIL'S "NATIONAL STANDARDS FOR FIELD MEASUREMENTS AND INSTRUMENTATION TOTAL SYSTEM BALANCE."

3.49 USE ACCURATE INSTRUMENTS FOR BALANCING AIR SYSTEMS THAT HAVE BEEN CALIBRATED WITHIN 6 MONTHS PRIOR TO BALANCING. TYPES, SERIAL NUMBERS, AND DATE OF CALIBRATION OF ALL INSTRUMENTS SHALL BE LISTED IN THE FINAL AIR BALANCE REPORTS.

3.50 MAKE AIR QUANTITY MEASUREMENTS IN MAIN AND BRANCH DUCTS BY PITOT TUBE TRAVERSE OF THE ENTIRE CROSS SECTIONAL AREA OF THE DUCT. DUCTS HAVING VELOCITIES OF 1000 OR MORE FEET PER MINUTE SHALL BE MEASURED WITH INCLINED MANOMETERS (DRAFT GAUGE) OR MAGNEHELIC GAUGES. DUCTS HAVING VELOCITIES OF LESS THAN 1000 FT. PER MINUTE SHALL BE MEASURED WITH MICROMANOMETERS, HOOD GAUGES OR SIMILAR LOW PRESSURE INSTRUMENTS. OPENINGS IN DUCTS FOR PITOT TUBE INSERTION SHALL BE SEALED WITH SNAP-IN PLUGS AFTER AIR BALANCE IS COMPLETE. OUTLET AND INLET AIR QUANTITIES SHALL BE DETERMINED BY AN APPROVED METHOD.

3.51 TOTAL AIR QUANTITIES SHALL BE OBTAINED BY ADJUSTMENT OF FAN SPEEDS. THE BALANCING CONTRACTOR SHALL FURNISH AND INSTALL ANY REQUIRED FAN DRIVE CHANGES AS PART OF THIS CONTRACT.

3.52 VOLUME ADJUSTERS MAY BE USED TO BALANCE AIR QUANTITIES AT OUTLETS AND INLETS PROVIDING FINAL ADJUSTMENTS ARE MINOR AND DO NOT PRODUCE OBJECTIONABLE DRAFTS OR EXCESSIVE SOUND LEVELS.

3.53 CERTIFIED BALANCE REPORTS: THREE (3) COPIES OF THE AIR AND WATER BALANCE REPORT, CERTIFIED BY THE BALANCING FIRM, SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER SEVEN (7) DAYS PRIOR TO FINAL ACCEPTANCE OF THE PROJECT. THE REPORT SHALL INCLUDE ALL AIR AND WATER BALANCE DATE AND HEAT TRANSFER EQUIPMENT TEST DATA LISTED BELOW, AND OTHER DATA AS REQUIRED BY THE "NATIONAL STANDARD FOR FIELD MEASUREMENTS AND INSTRUMENTATION".

3.54 A.C. UNIT: CFM, STATIC PRESSURE, MOTOR HP, RPM, AND AMPS, PERCENT OF OUTSIDE AIR (OR CFM AS APPLICABLE), FAN RPM, FAN BHP, INLET AND OUTLET DRY AND WET BULB TEMPERATURE, FAN DRIVE TYPE AND SIZE, WATER FLOW –

3.55 INDIVIDUAL OUTLET AND INLET TEST RESULTS: OUTLET AND INLET IDENTIFICATION (LOCATION AND NUMBER DESIGNATION).

3.56 FOLLOWING FINAL ACCEPTANCE OF THE SYSTEM BALANCE BY THE OWNER, THE CONTRACTOR SHALL PERMANENTLY MARK THE SETTINGS OF ALL VALVES, SPLITTERS, DAMPERS, AND OTHER ADJUSTMENT DEVICES SO THAT ADJUSTMENT CAN BE RESTORED IF DISTURBED AT ANY TIME. DEVICES SHALL NOT BE MARKED BEFORE FINAL ACCEPTANCE.

3.57 NO STRUCTURAL MEMBERS SHALL BE CUT WITHOUT THE APPROVAL OF THE ARCHITECT, AND ALL SUCH CUTTING SHALL BE DONE IN A MANNER DIRECTED BY HIM.

3.58 PROVIDE WEATHER-PROOF FLASHING AT ALL DUCT, PIPE, ETC. MECHANICAL PENETRATIONS THROUGH THE BUILDING WALLS AND ROOF. FLASHING SHALL BE DESIGNED AND INSTALLED PER SMACNA AND SHALL BE GUARANTEED WEATHER PROOF FOR THE DURATION OF THE GUARANTEE.

3.59 FIRE AND/OR SMOKE DAMPER

1. FURNISH AND INSTALL AT LOCATION SHOWN ON PLANS FIRE/SMOKE DAMPERS MEETING OR EXCEEDING THE FOLLOWING SPECIFICATIONS: FRAME SHALL BE A MINIMUM OF 16 GAUGE GALVANIZED STEEL FORMED INTO A STRUCTURAL HAT CHANNEL SHAPE WITH TABBED CORNERS FOR REINFORCEMENT. THE BLADES SHALL BE SINGLE SKIN 16 GAUGE MINIMUM GALVANIZED WITH THREE LONGITUDINAL GROOVES FOR REINFORCEMENT. BEARING SHALL BE STAINLESS STEEL SLEEVE TURNING IN AN EXTRUDED HOLE IN THE FRAME. BLADE EDGE SEALS SHALL BEW SILICON RUBBER MECHANICALLY LOCKED IN BLADE EDGE (ADHESIVE OR CLIP FASTENED SEALS ARE NOT ACCEPTABLE). JAMB SEALS SHALL BE STAINLESS STEEL FLEXIBLE METAL COMPRESSION TYPE.
2. EACH COMBINATION FIRE/SMOKE DAMPER SHALL BE RATED FOR 1.5 HOURS UNDER UL STANDARD 555 AND SHALL FURTHER BE CLASSIFIED BY UL AS A LEAKAGE RATED DAMPER FOR USE IN SMOKE CONTROL SYSTEMS UNDER UL 555S AND BEAR THE UL LABELS FOR BOTH UL 555 AND UL 555S. FIRE/SMOKE DAMPERS IN TUNNEL CORRIDOR SHALL BE UL LISTED FOR TUNNEL CORRIDOR CONSTRUCTION
3. IN ADDITION TO THE LEAKAGE RATING ALREADY SPECIFIED HEREIN, THE DAMPERS AND THEIR ACTUATORS SHALL BE QUALIFIED UNDER UL 555S TO MINIMUM ELEVATED TEMPERATURE OF 250 DEGREES (F). APPROPRIATE 120 VOLT ELECTRIC ACTUATORS SHALL BE INSTALLED BY THE DAMPER MANUFACTURER AT THE TIME OF DAMPER FABRICATION. DAMPER AND ACTUATOR SHALL BE INSTALLED AS A SINGLE ENTITY WHICH MEETS ALL APPLICABLE UL 555 AND UL 555S QUALIFICATIONS FOR BOTH DAMPERS AND ACTUATORS. ACTUATORS. DAMPERS MUST OPEN AND CLOSE WITHIN 15 SECONDS OF APPROPRIATE SIGNAL AND DAMPERS MUST CLOSE UPON LACK OF POWER.
4. FIRE ALARM CONTRACTOR SHALL PROVIDE ALL NECESSARY SWITCHES AND RELAYS ETC. TO INTERFACE DAMPER BUILDING FIRE ALARM AND CONTROL SYSTEM AS REQUIRED.
5. IN SYSTEMS REQUIRING A SMOKE CONTROL SYSTEM, PROVIDE REMOTE SENSING OF DAMPER POSITION AND DAMPER OVERRIDE OF DAMPER CLOSURE TO PERMIT CONTROLLED OPERATION IN A DYNAMIC SMOKE MANAGEMENT SYSTEM. DEVICE SHALL BE RUSKIN MODEL TS 150 FIRE STAT OR APPROVED.
6. COMBINATION SMOKE/FIRE DAMPERS SHALL BE MANUFACTURED BY SAFEAIR, RUSKIN, GREENHECK, AIR BALANCE, NATIONAL CONTROLLED AIR AND PREFCO.

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3 03/20/2024 HVAC COORD.
2 01/24/2024
1 02/03/2024 HEAT TRACING ADD.

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