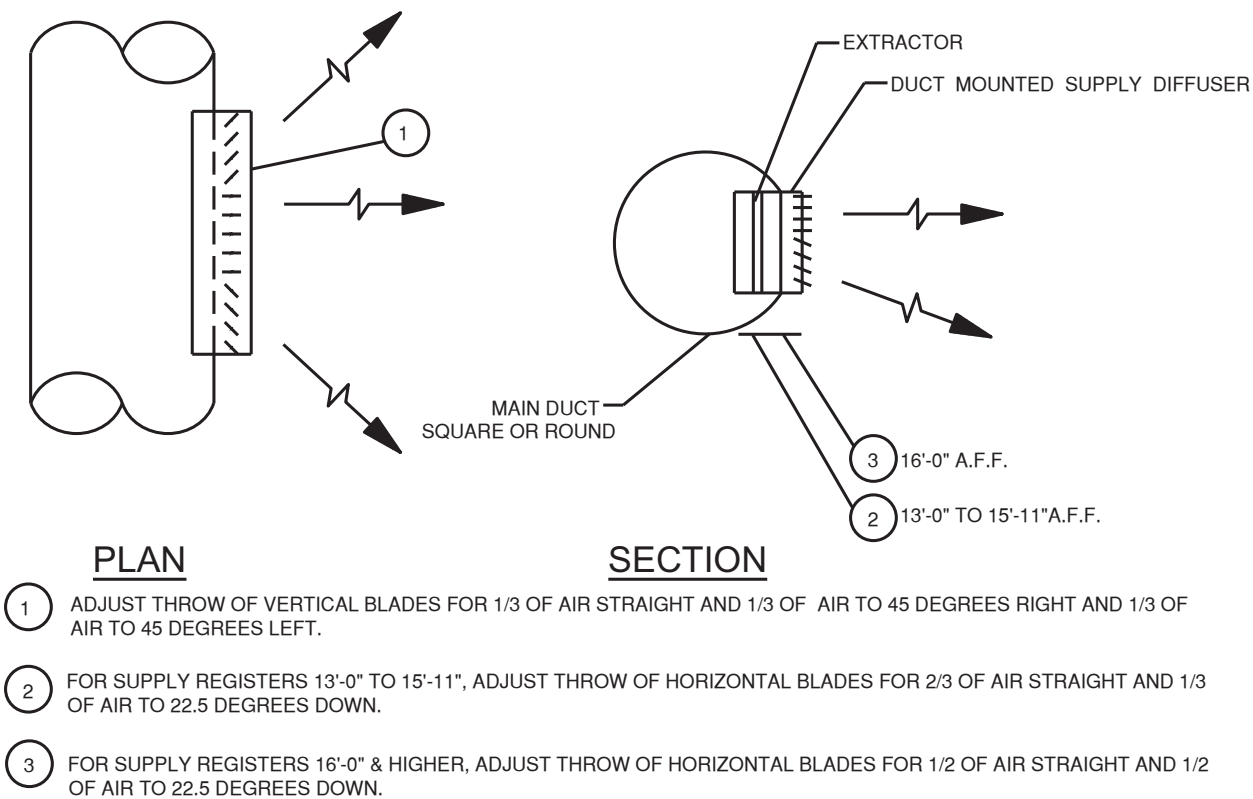
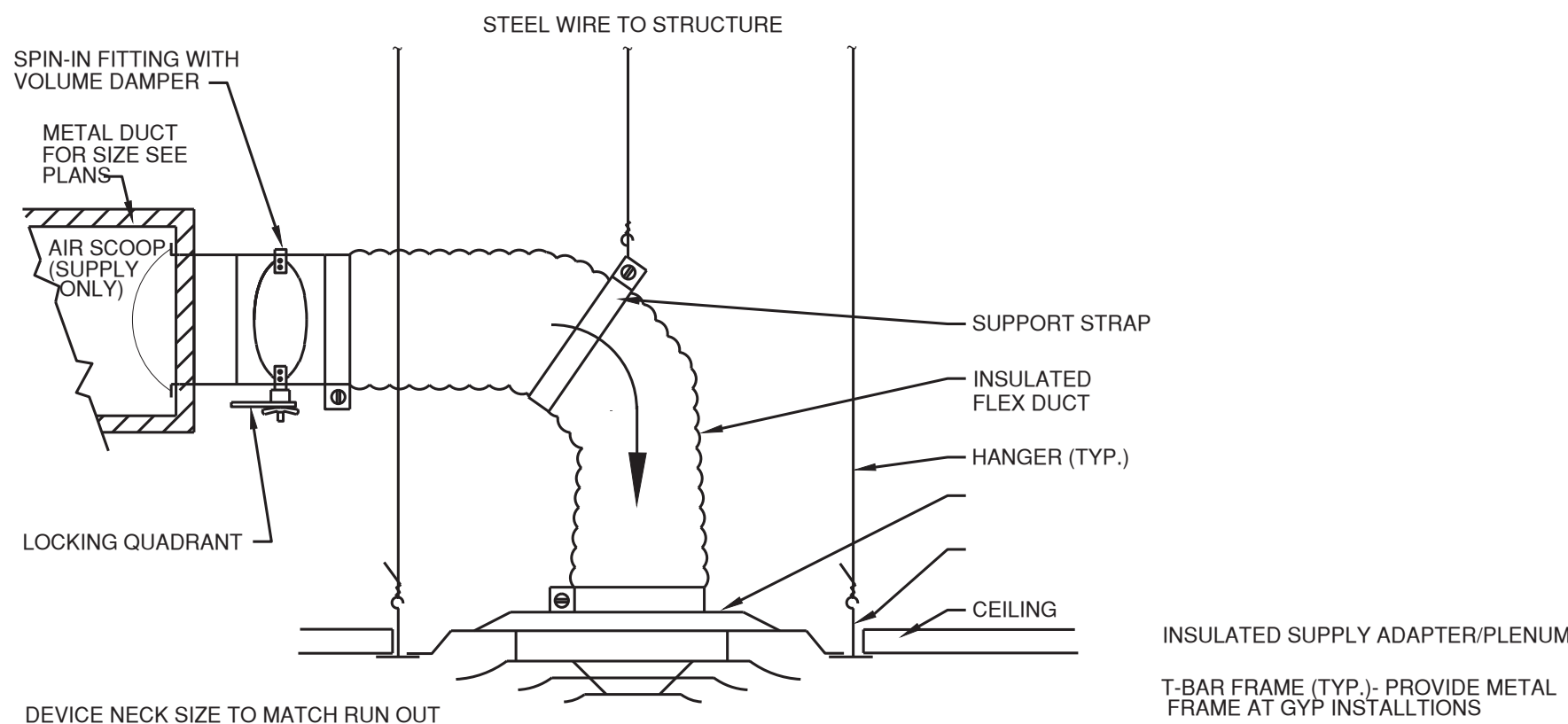


GENERAL MECHANICAL NOTES

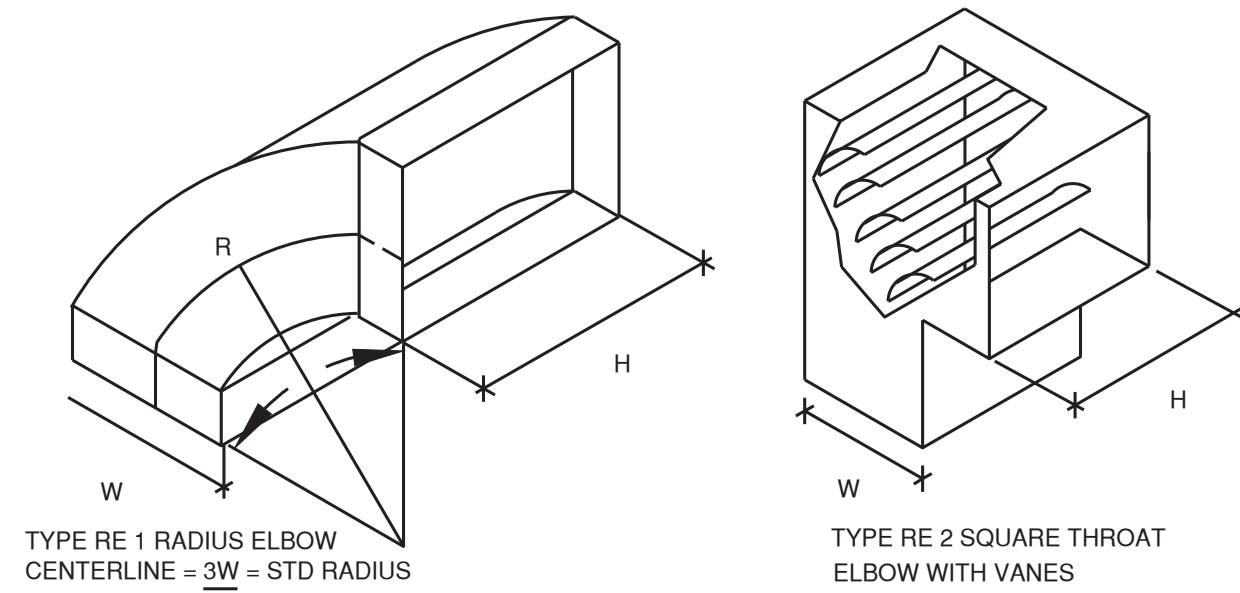
- COORDINATE LOCATIONS WHERE NEW DUCTWORK CROSSES EXISTING CONDUITS, ETC. PROVIDE OFFSETS AS REQUIRED.
- INSTALL FIRE DAMPERS AS REQUIRED WHENEVER NEW OR EXISTING DUCTWORK PASSES THROUGH FIRE RATED WALLS OR FLOORS. RETURN AIR OPENING IN FIRE RATED WALLS SHALL BE EQUIPPED WITH FIRE DAMPERS. SEE ARCH. DRAWINGS FOR RATED WALLS.
- CONTRACTOR TO VERIFY FIELD CONDITIONS PRIOR TO BEGINNING WORK. NOTIFY ENGINEER WITH ANY DISCREPANCIES BETWEEN DRAWINGS AND EXISTING CONDITIONS.
- COORDINATE EXACT LOCATIONS OF EQUIPMENT ON ROOF. PROVIDE DUCTED OUTSIDE AIR INTAKE DUCTS TO MAINTAIN 10'-0" CLEARANCE FROM EXHAUST OR FLUE DISCHARGE OPENINGS.
- NEW KITCHEN HOODS, EXHAUST FANS AND MAKE UP AIR UNIT BY KITCHEN EQUIPMENT SUPPLIER. VERIFY REQUIREMENTS AND PROVIDE GAS, ELECTRICAL CONNECTIONS AS REQUIRED. EXHAUST DUCT TO BE STAINLESS OR BLACK STEEL, ZERO CLEARANCE TO COMBUSTIBLE, INSULATED WRAP. HOOD SHALL BE EQUIPPED WITH AN ANSUL FIRE SUPPRESSION SYSTEM. MINIMUM AIR VELOCITY IN EXHAUST DUCTWORK SHALL BE A MINIMUM OF 1500 FPM.
- COORDINATE ALL WORK WITH ALL OTHER TRADES. RESOLVE CONFLICT PRIOR TO INSTALLATION OF EQUIPMENT. COORDINATE NEW DIFFUSER LOCATIONS WITH LIGHT FIXTURES, SPRINKLER HEADS AND PIPING. CEILING GRID LOCATION PRIOR TO INSTALLATION.
- ALL NEW HVAC EQUIPMENT INCLUDING FANS, RTU AND MUA SHALL BE PROPERLY SUPPORTED FROM THE STRUCTURE. MOUNT ALL ROOFTOP UNITS ON CURBS. PROVIDE VIBRATION ISOLATORS ON ALL EQUIPMENT. ALL EQUIPMENT SHALL BE APPROVED FOR ITS SPECIFIC INTENDED INSTALLATION AND OPERATION.
- DIFFUSER PER SCHEDULE. EACH SHALL BE PROVIDED WITH BALANCING DEVICE AT DIFFUSER RUNOUT WHERE POSSIBLE AND DEVICE FACE-MOUNTED DAMPER OTHERWISE.
- THERMOSTATS FOR NEW RTU'S SHALL BE PROGRAMMABLE STYLE BY HONEYWELL. SUBMIT SHOP DRAWINGS AND VERIFY MODEL NUMBER PRIOR TO PURCHASE. THERMOSTATS MOUNTED AT 42" AFF.
- PROVIDE ROOF TOP AIR HANDLING UNIT AS INDICATED ON DRAWINGS. VERIFY EXACT LOCATION WITH ROOF PLAN AND STRUCTURAL DRAWINGS. PROVIDE GAS PIPING CONNECTION AND COORDINATE ELECTRICAL CONNECTION. MOUNT ALL UNITS ON 14" ROOF CURB. ROOF CURBS ABOVE OR A SINGLE FLOOR ABOVE MUSIC INSTRUCTION OR ASSEMBLY AREAS SHALL BE PROVIDED WITH VIBRATION ISOLATION ROOF CURBS.
- PROVIDE NEW GAS SERVICE FROM NEW METER UP TO RTU'S AND EQUIPMENT GAS PIPING TO BE SCHEDULE 40 BLACK STEEL. PROVIDE METER AND PIPING CONNECTION TO ALL AHU'S DUCT FURNACES, HOT WATER HEATER, MAKE UP AIR UNITS AND KITCHEN COOKING EQUIPMENT. GAS PIPING FOR KITCHEN COOKING EQUIPMENT TO BE EQUIPPED WITH A SOLENOID SHUT-OFF VALVES CONNECTED TO HOOD FIRE SUPPRESSION SYSTEM DUCTWORK FOR GRILL HOOD (TYPE I) SHALL BE WELDED 16 GAGE BLACK IRON, OR STAINLESS STEEL.
- MAKE UP AIR UNITS AND ROOFTOP UNIT FANS AND OUTDOOR AIR DAMPERS SHALL BE INTERLOCKED WITH EXHAUST FANS.
- TYPE I EXHAUST FAN TO TERMINATE AT A MINIMUM 40' ABOVE ROOF. PROVIDE FAN WITH 24" METAL ROOF CURB OR WITH HEIGHT SUFFICIENT FOR 18" CLEARANCE FROM ROOF FLASHING TO FAN BASE.
- ALL MECHANICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LOCALLY ADOPTED MECHANICAL CODE WITH ALL CURRENTLY APPLICABLE ERATAS AND AMENDMENTS.
- CONTRACTOR SHALL COORDINATE MECHANICAL WORK WITH ALL OTHER TRADES PRIOR TO FABRICATION AND INSTALLATION. DO NOT SCALE FROM DRAWINGS FOR ANY EXACT DIMENSIONS. SEE ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF DOORS, WINDOWS, AIR DISTRIBUTION DEVICES.
- COORDINATE THE SIZE OF ALL WALL OPENINGS, ROOF OPENINGS AND EQUIPMENT PADS WITH ACTUAL EQUIPMENT PURCHASED. ALL MECHANICAL ITEMS EXTENDING THRU WALL & ROOF SHALL BE FLASHED AND COUNTER FLASHED. ALL ROOF CURBS FOR MECHANICAL EQUIPMENT SHALL BE BY MECHANICAL CONTRACTOR.
- ROUTE FULL SIZE CONDENSATE DRAINS WITH P-TRAP AND VENT ON OUTLET SIDE. PIPE 12" AWAY FROM UNIT. SPILL ON CONCRETE SPLASH BLOCK WHERE ROUTED TO ROOF.
- DUCT SMOKE DETECTORS IN SUPPLIES AND RETURNS PER LOCALLY ADOPTED CODE SHALL BE FURNISHED & WIRED BY DIV 16. INSTALLED BY DIV. 15.
- ALL DUCTWORK SIZES OR ALL WALL OPENINGS, ROOF OPENINGS AND EQUIPMENT PADS WITH ACTUAL EQUIPMENT PURCHASED. ALL MECHANICAL ITEMS EXTENDING THRU WALL & ROOF SHALL BE FLASHED AND COUNTER FLASHED. ALL ROOF CURBS FOR MECHANICAL EQUIPMENT SHALL BE BY MECHANICAL CONTRACTOR.
- MOTOR STARTERS AND DISCONNECTS SHALL BE FURNISHED UNDER DIVISION 15 AND INSTALLED BY THE ELECTRICAL CONTRACTOR. COORDINATE ELECTRICAL CHARACTERISTICS OF HVAC EQUIPMENT AND CONTROL SYSTEM REQUIREMENTS (VOLTAGE/PHASE, SIGNAL TYPE, AUXILIARY CONTACTS ETC.) PRIOR TO PURCHASING.
- CONTRACTOR SHALL NOTE THAT THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT INDICATE ALL OFFSETS, TRANSITIONS, OR OTHER APPURTENANCES REQUIRED FOR A COMPLETE HVAC SYSTEM. PROVIDE ALL EQUIPMENT NECESSARY FOR A COMPLETE SYSTEM.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL ITEMS NECESSARY FOR THE IMPLEMENTATION OF THE SEQUENCE OF OPERATIONS. ENGINEER WILL REVIEW CONTROLS SHOP DRAWINGS AT THE REQUEST OF THE CONTRACTOR (CONTROL WIRING, THERMOSTATS, DAMPER OPERATORS, CONTROL TRANSFORMERS, DAMPERS, ETC.).
- ALL PIPING AND DUCTWORK SHALL RUN CONTINUOUSLY THROUGH FLOORS, ROOFS AND PARTITIONS. ENGINEER WILL REVIEW DUCT/PIPING SHOP DRAWINGS AT THE REQUEST OF THE CONTRACTOR. NO EXHAUST HOOD SHALL BE LEFT OPEN INTO BUILDING SPACE.
- THIS CONTRACTOR SHALL PROVIDE & INSTALL ALL MISCELLANEOUS STEEL AS REQUIRED FOR INSTALLATION OF ALL MECHANICAL ITEMS.
- ALL DIFFUSERS LOCATED IN CEILINGS WITH A NON-RETURN AIR PLENUM SHALL BE INSULATED AIR TIGHT WITH FOIL FACES 1 INCH FIBERGLASS INSULATION.
- CONTRACTOR SHALL PURCHASE AIR FILTERS FROM THE OWNER-APPROVED AIR FILTER VENDOR WHERE OWNER HAS A SUPPLIER. ALL FILTERS SHALL BE REPLACED IMMEDIATELY PRIOR TO SUBSTANTIAL COMPLETION.
- CONTRACTOR SHALL SUBMIT THE TAB AGENCY, 2 WEEKS PRIOR TO SCHEDULE TESTING AND BALANCING OF THE SYSTEM, AN UP-TO-DATE SET OF HVAC DRAWINGS, AND RELATED PRODUCT DATASUBMITTALS SUCH AS HVAC UNITS, FANS, DIFFUSERS, AND CONTROL DIAGRAMS.
- THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. IT IS INTENDED THAT A COMPLETE MECHANICAL SYSTEM IS PROVIDED WITH ALL NECESSARY EQUIPMENT AND CONTROLS.
- REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL SYSTEM REQUIREMENTS.
- TESTING AND BALANCE: CONTRACTOR SHALL CONTRACT AN INDEPENDENT TESTING AND BALANCING COMPANY TO TEST THE EQUIPMENT AND ADJUST THE HVAC SYSTEM TO OBTAIN THE DESIGN AIR FLOWS AS SHOWN ON PLANS. THE TAB AGENCY SHALL BE NEBB CERTIFIED AND SHALL SUBMIT TAB REPORT AS REQUIRED BY THE NEBB.
- ALL SUPPLY, RETURN AND OUTSIDE AIR DUCTWORK SHALL BE INSULATED. DUCT LINER SHALL BE 1-1/2" ELASTOMERIC RUBBER (ARMAFLEX OR EQ.); EXTERNAL INSULATION SHALL BE 2" THICK, 1 LB./CU.FT. DENSITY, FIBERGLASS TYPE, FOIL-FACED DUCT WRAP, COMMERCIAL GRADE. ALL EXPOSED DUCTWORK SHALL BE LINED. R-VALUE SHALL BE ADJUSTED PER LOCAL ENERGY CODE REQUIREMENTS. EXPOSED DUCT SHALL BE PROVIDED WITH APTIP GRIP FINISH.
- DUCTWORK SHALL BE GALVANIZED STEEL FABRICATED PER SMACNA STANDARDS. VOLUME DAMPERS SHALL BE INSTALLED AT ALL DUCT BRANCHES AND DIFFUSER TAKE OFFS TO BE ABLE TO BALANCE THE AIR SYSTEM. DUCT SHALL BE HUNG WITH 1" WIDE DUCT STRAPS.
- EACH AC UNIT SHALL BE CONTROLLED BY LANDLORD. TENANT SHALL PROVIDE SENSOR WITH SETPOINT INPUT TO TIE INTO LL CONTROL SYSTEM. COORDINATE WITH LANDLORD FOR SENSOR REQUIREMENTS.
- ALL PIPING SHALL BE INSULATED COMPLETELY AIR TIGHT WITH NO EXPOSED INSULATION MATERIAL. PROVIDE INSULATION OUTSIDE OF PIPING HANGERS OR SUPPORTS WITH RIGID INSULATION AND PIPING SADDLES AT SUPPORTS SUFFICIENT TO PREVENT DEFORMATION OF INSULATION.
- PROVIDE SIEMENS FITTINGS AND SUPPORTS AS REQUIRED BY THE LOCAL BUILDING CODE AND SEISMIC CHARACTERISTICS FOR THE CONSTRUCTION LOCATION.
- ALL COOLING UNITS SHALL BE PROVIDED WITH DRAIN PANS AND FLOAT SWITCHES TO PREVENT UNIT OPERATION WHERE CONDENSATE DRAINAGE CAN BE UNEXPECTEDLY INHIBITED. NO EQUIPMENT SHALL SIT DIRECTLY IN A DRAIN PAN.



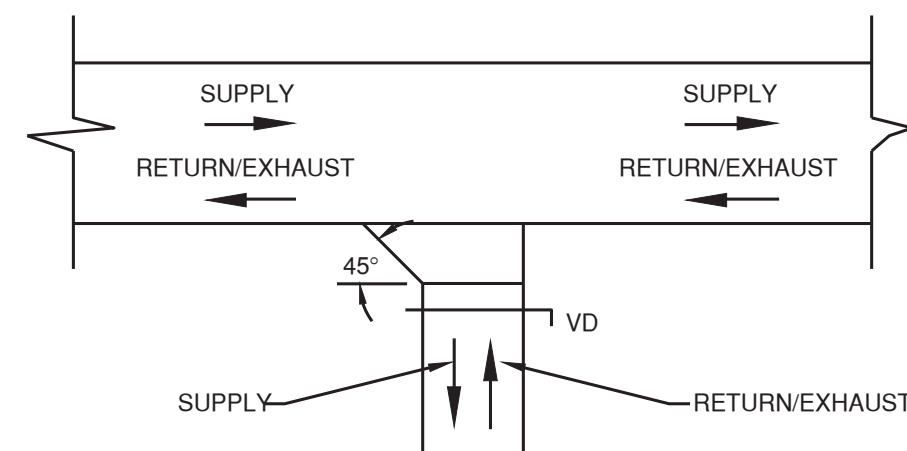
SIDEWALL DIFFUSER DETAIL



DIFFUSER / RETURN DETAIL



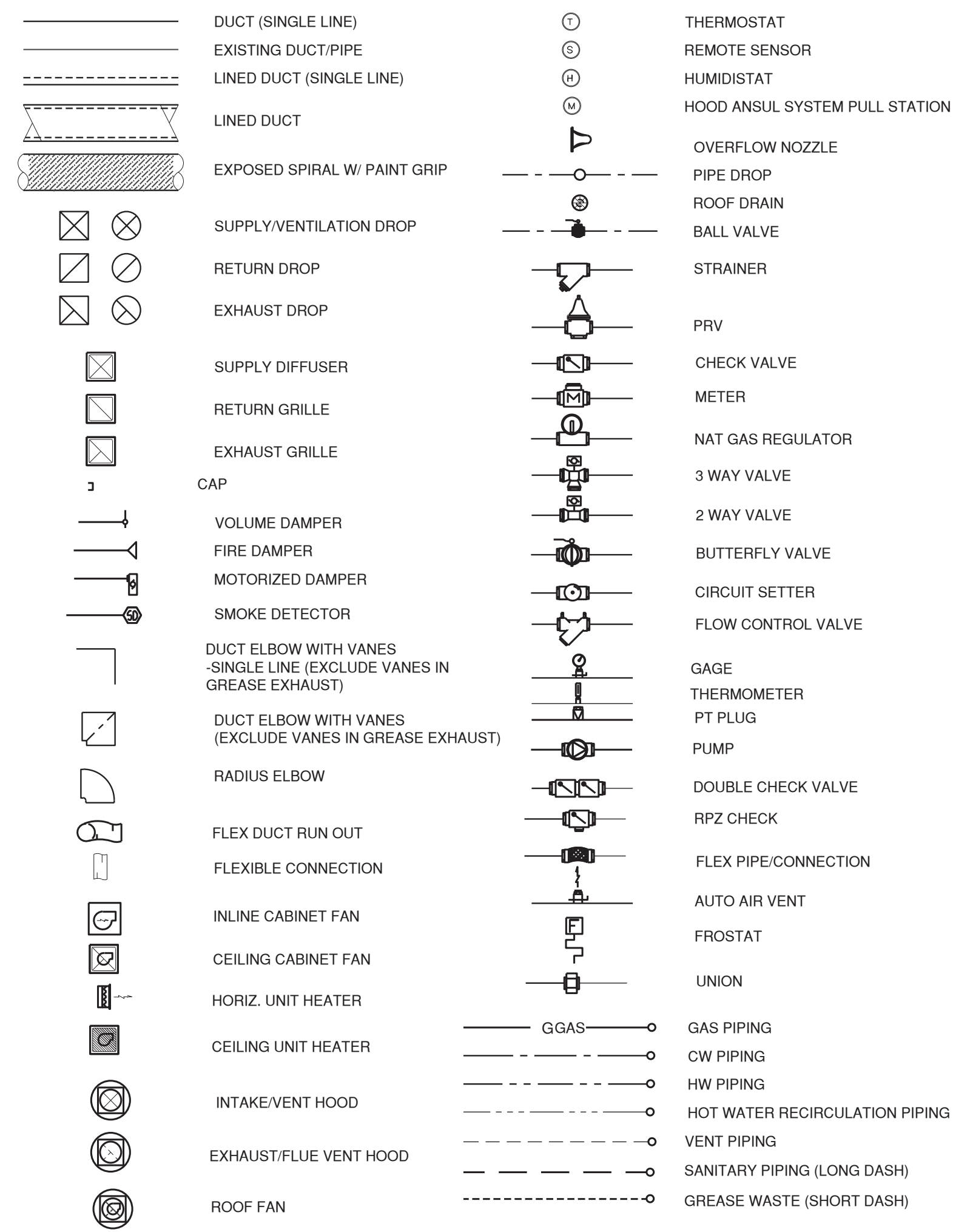
DUCT ELBOW DETAIL



DUCT BRANCH DETAIL

ABBREVIATIONS			
AC	ABOVE CEILING	HR	HOUR
ACC	ACCESS	HW	HOT WATER
ACU	AIR CONDITIONING UNIT	HZ	HERTZ
AFF	ABOVE FINISHED FLOOR	IE	INVERT ELEVATION
AHU	AIR HANDLING UNIT	LAT	LEAVING AIR TEMPERATURE
AP	ACCESS PANEL	LBS	POUNDS
ARCH	ARCHITECT	LOB	LEAVING DRY BULB
BDD	BACKDRAFT DAMPER	LWB	LEAVING WET BULB
BTUH	BTU PER HOUR	LWT	LEAVING WATER TEMP.
CC	COOLING COIL	MAX	MAXIMUM
CCP	CENTRAL CONTROL PANEL	MBH	THOUSAND BTU PER HOUR
CD	CEILING DIFFUSER	EVAP	EVAPORATOR
CFM	CUBIC FEET PER MINUTE	MIN	MINIMUM
CG	CEILING GRID	MOD	MOTORIZED DAMPER
CONC.	CONCRETE	MTD	MOUNTED
CR	CEILING REGISTER	N.C.	NORMALLY CLOSED
CV	CONTROL VALVE	NIC	NOT IN CONTRACT
D	DROP	N.O.	NORMALLY OPENED
DB	DRY BULB	NO.	NUMBER
DIA	DIAMETER	NPSH	NET POSITIVE SUCTION HEAD
DN	DOWN	NTS	NOT TO SCALE
DWG	DRAWING	OA	OUTSIDE AIR
EA	EXHAUST AIR	OD	OUTSIDE DIAMETER
EAT	ENTERING AIR TEMP	OS&Y	OUTSIDE SCREW AND YOKE
EDB	ENTERING DRY BULB	PD	PRESSURE DROP
EF	EXHAUST FAN	PSI	POUNDS PER SQUARE INCH
ELEV	ELEVATION	RA	RETURN AIR
ELEC	ELECTRIC	RM	ROOM
EWB	ENTERING WET BULB	RPM	REVOLUTION PER MINUTE
EWT	ENTERING WATER TEMP	SD	SMOKE DAMPER
ESP	EXTERNAL STATIC PRESSURE	SF	SUPPLY FAN
SP	STATIC PRESSURE	SF	SUPPLY FAN
EXH	EXHAUST	SP	STATIC PRESSURE
EXT	EXTERNAL	SPEC	SPECIFICATIONS
F	DEGREES FAHRENHEIT	SR	SUPPLY REGISTER
FC	FLEXIBLE CONNECTION	SS	STAINLESS STEEL
FCU	FAN COIL UNIT	TDH	TOTAL DYNAMIC HEAD
FD	FIRE DAMPER	TEMP	TEMPERATURE
AFG	ABOVE FINISHED GRADE	TG	TRANSFER GRILLE
FID	FLOOR DRAIN	TV	TURNING VANES
FPI	FINS PER INCH	TYP.	TYPICAL
FFM	FEET PER MINUTE	UH	UNIT HEATER
FT	FEET	UC	3/4" UNDERCUT
GV	GATE VALVE	V	VOLTS
G	GAUGE	VAV	VARIABLE AIR VOLUME
GAL	GALLON	VEL	VELOCITY
GPH	GALLONS PER HOUR	VERT.	VERTICAL
GPM	GALLONS PER MINUTE	W	WIDTH
HP	HORSE POWER	W	WITHOUT
HT	HEIGHT	W/O	WITHOUT
H2O	WATER	WB	WET BULB
HORIZ.	HORIZONTAL	W.C.	WATER COLUMN

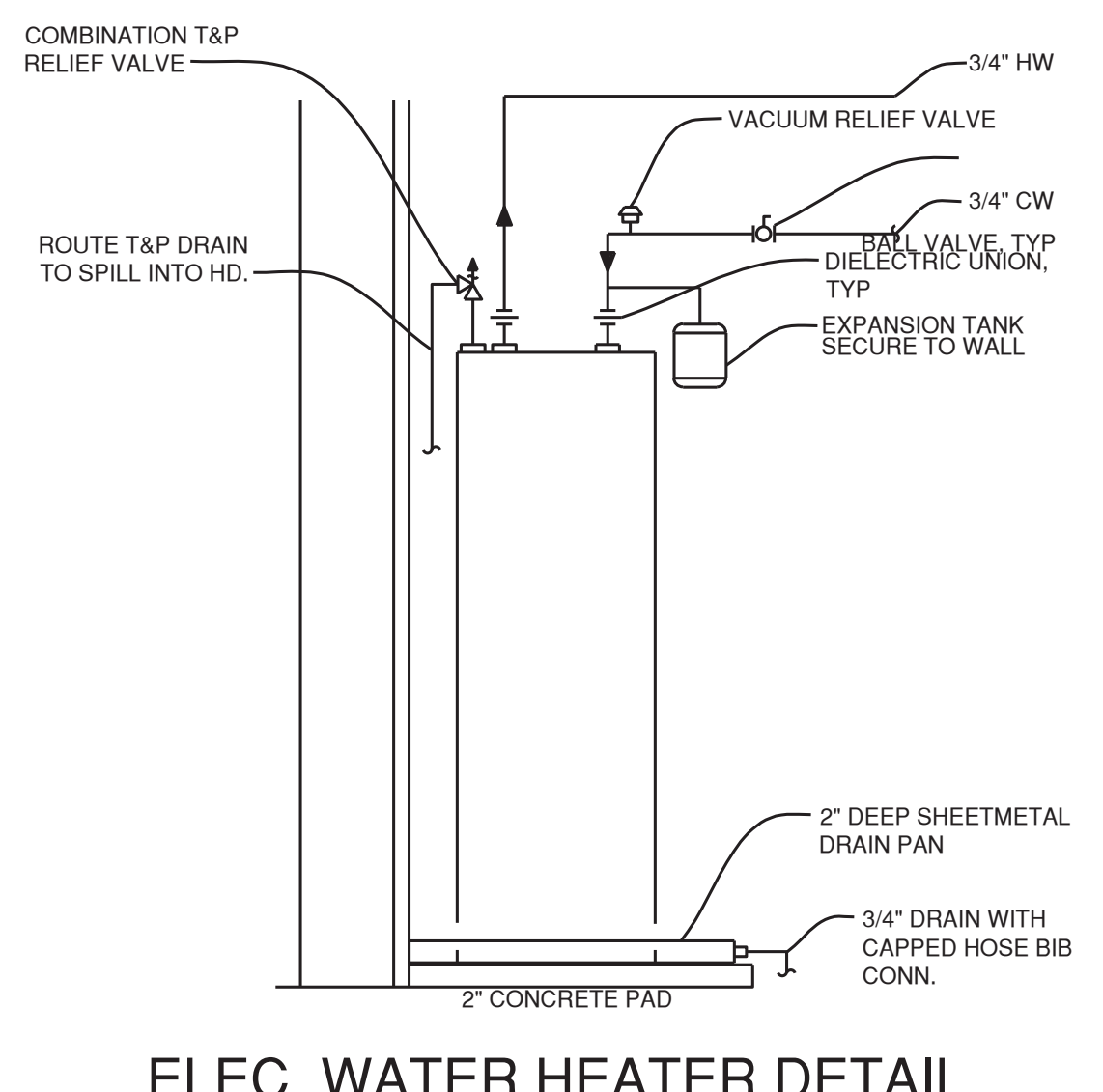
LEGEND



AIR DEVICE SCHEDULE							
MARK	LAYOUT BASIS	TYPE	FACE SIZE	MOUNTING	DESIGN FINISH	MATERIAL	NOTES
S-1	TITUS 300 S	ADJUSTABLE DBL DEFLECTION SIDEWALL	PER PLANS	WALL/DUCT	WHITE	STEEL	1,2,4
S-2	TITUS TMS	CEILING DIFFUSER	24X24/12X12	2X2 T-BAR	WHITE	STEEL	1,2,4
R-1	TITUS 50 F	1/2" EGGRATE RETURN	24X24/12X12	2X2 T-BAR	WHITE	ALUMINUM	1,2,4
NOTES							
1. NECK SIZE TO MATCH DUCT RUN OUT SIZE AS SHOWN ON MECHANICAL PLANS.							
2. PROVIDE MANUFACTURER'S ACCESSORY INSULATED PLENUM WITH RUN OUT SIZED CONNECTION.							
3. BALANCING DEVICE AT AIR DEVICE FACE							
4. BALANCING DEVICE AT RUN OUT TAKEOFF							
5. PROVIDE RADIUS GRILL FACE TO MATCH INDICATED DUCT SIZE.							
END							

PACKAGED GAS/ELECTRIC ROOFTOP UNIT SCHEDULE													
MARK	SERVES	MODEL	NOM TONS	UNIT CONFIGURATION	QTY	FAN CFM	MIN OA CFM	FAN ESP	FAN HP	COOLING MBH	HEATING MBH	HEATING MBH	VOLTS/PHASE
RTU-1	GYM	TRANE YHC120	10	DOWNFLOW	2.00	4000	1000	0.5	3.8	114.21	88.22	150	208/3
RTU-2	GYM	TRANE YHC120	10	DOWNFLOW	2.00	4000	1000	0.5	3.8	114.21	88.22	150	208/3
NOTE 1: INDOOR COIL EAT = 80/67 FOR COOLING, 70 FOR HEATING.													
NOTE 2: OUTDOOR COIL EAT = 95 FOR COOLING, 17 FOR HEATING.													
NOTE 3: ESP DOES NOT INCLUDE FILTERS. FAN PERFORMANCE FOR DIRECT DRIVE UNITS IS AT HIGH SPEED.													
NOTE 5: PROVIDE NEW SMOKE DETECTOR IN SUPPLY DUCT AND INTERNAL FLOAT SWITCH WIRED FOR UNIT SHUTDOWN.													
NOTE 7: RETROFIT ECONOMIZER WITH COMP ENTHALPHY CONTROL IF NOT PROVIDED.													
NOTE 8: EXISTING UNITS IN EXISTING ROOF CURB. COORDINATE DUCT LAYOUT WITH FIELD INSTALLED ORIENTATION.													
NOTE 11: UNIT INSTALLED WITH GAS PIPING PREVIOUSLY ROUTED TO UNITS. GAS PIPING NOT IN CURRENT SCOPE.													
NOTE 15: PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT WITH REMOTE SENSOR FOR EACH UNIT.													
END													

EXHAUST/VENTILATION FAN SCHEDULE													
TAG	COOK MODEL	TYPE	SERVES	CFM	ESP	MOTOR HP	RPM	SONES	DRIVE	VOLTS/PHASE	FAN INTERLOCK	NOTES	
F-1	ACED	ROOF DOWNBLAST	RESTROOMS JAN	1,925	0,250	1/3	1,325	8.9	DIRECT	120/1	TIMECLOCK SET FOR OCCUPIED SCHEDULE	1,2,3,4	
1. UNIT MOUNTED DISCONNECT.													
2. EXHAUST FANS SHALL BE SCHEDULED TO OPERATE CORRESPONDING TO RTU OCCUPIED MODE (FANS RUNNING CONTINUOUSLY WITH OA DAMPERS OPENED)													
3. COORDINATE VOLTAGES WITH ELECTRICAL DRAWINGS.													
4. PROVIDE WITH FACTORY SPEED CONTROLLER.													
END													

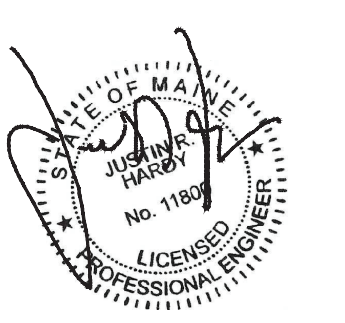


ELEC. WATER HEATER DETAIL



PINE TREE SHOPPING CNTR
1100 BRIGHTON AVE
UNIT 12
PORTLAND, ME 04102

MEP CONTACT: JUSTIN R. HARDY, PE
5014 KINGSBRIDGE PASS
POWDER SPRINGS, GA
Phone: (678) 234-8156



PROJECT NO:	08-19-15
DRAWN BY:	
CHECKED BY:	
ISSUE DATE:	08-19-15
RELEASED FOR CONSTRUCTION	
MECHANICAL REFERENCE	

M0.2