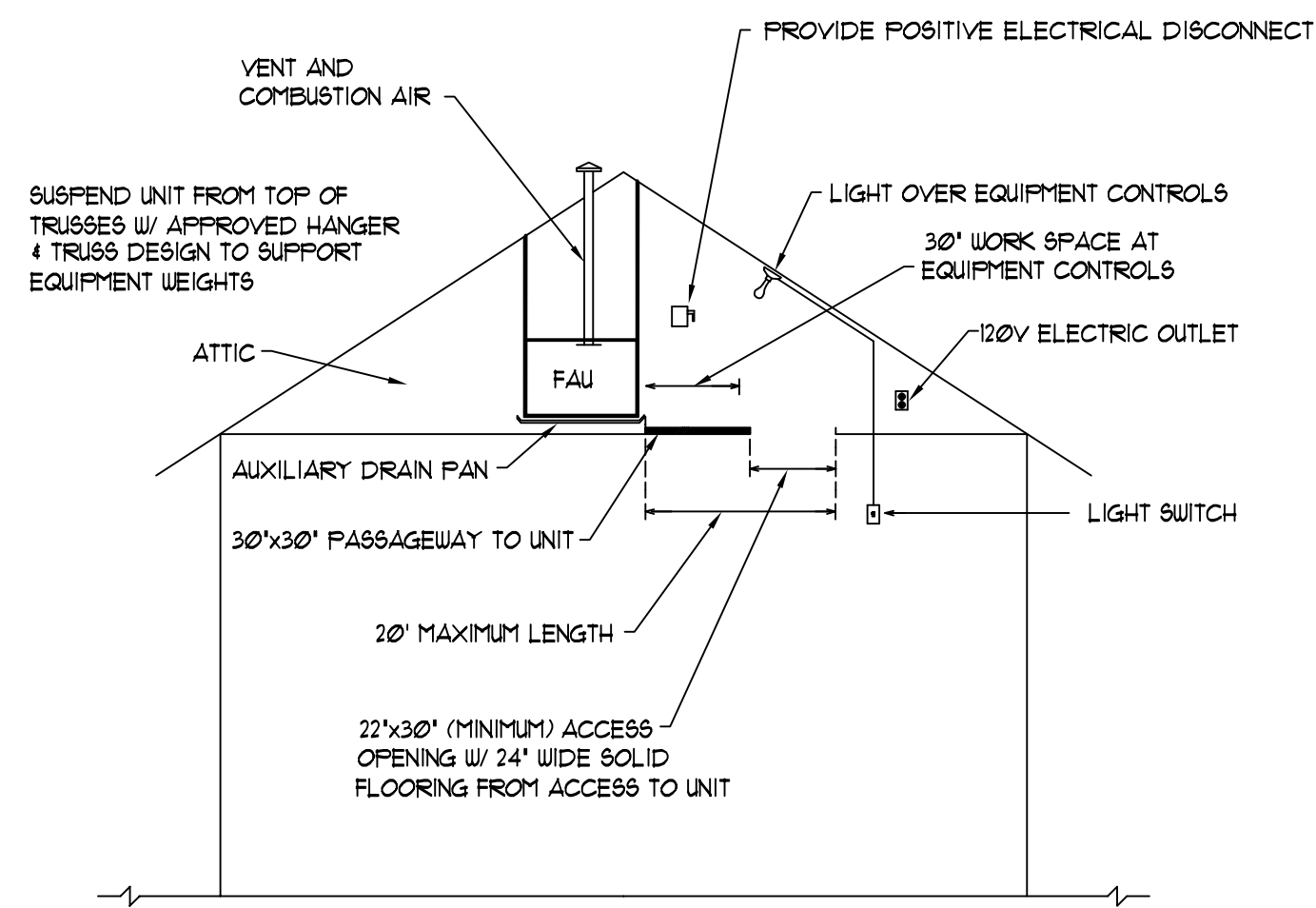
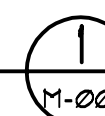


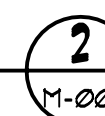
RETURN AIR W/ OA CONNECTION

NO SCALE
 *2012 UNIFORM MECHANICAL CODE AND ASHRAE 62.2
 WHOLE-BUILDING VENTILATION CALCULATION:
FAU-1
 (24) (1.5) = 22.5 CFM
 (142 SF) (0.01) = 1.5 CFM
 TOTAL = 30 CFM (5* DUCT)
FAU-2
 (24) (1.5) = 22.5 CFM
 (837 SF) (0.01) = 8 CFM
 TOTAL = 31 CFM (5* DUCT)
FAU-3
 (24) (1.5) = 22.5 CFM
 (199 SF) (0.01) = 2 CFM
 TOTAL = 24 CFM (5* DUCT)
FAU-4
 (14) (1.5) = 15 CFM
 (516 SF) (0.01) = 5 CFM
 TOTAL = 20 CFM (5* DUCT)
FAU-5
 (14) (1.5) = 15 CFM
 (582 SF) (0.01) = 6 CFM
 TOTAL = 21 CFM (5* DUCT)



ATTIC FURNACE UNIT DETAIL

NO SCALE
 *2012 UNIFORM MECHANICAL CODE (UMC)
 *2011 NATIONAL ELECTRICAL CODE (NEC)



SPLIT SYSTEM W/ GAS HEAT SCHEDULE																		
MARK	AIR FLOW (CFM)	E.S.P. (IN. W.C.)	O.A. (CFM)	INDOOR UNIT 96%		ELECTRICAL		MANUFACTURER/ MODEL NUMBER	UT. LBS.	COOLING COIL		OUTDOOR UNIT		REMARKS				
				GAS HEAT (BTU/H)	OVER (BTU/H)	VOLTS / # / AMPS	UT. LBS.			MARK	ELECTRICAL VOLTS / # / MCA / MOCP	COOLING CAP. (BTU/H)	SEER		MANUFACTURER/ MODEL NUMBER	UT. LBS.		
FAU 1	800	0.50	30	44	42	120 / 1 / 1.1		LENNOX EL796UH045A	130	LENNOX CH33-25A	38	CU 1	230 / 1 / 181 / 30	24.0	20	LENNOX XC20-024	243	REFER TO NOTE 1
FAU 2	1200	0.50	31	44	42	120 / 1 / 1.1		LENNOX EL796UH045B	130	LENNOX CH33-36B	44	CU 2	230 / 1 / 206 / 30	34.4	20	LENNOX XC20-024	243	REFER TO NOTE 1
FAU 3	800	0.50	31	44	42	120 / 1 / 1.1		LENNOX EL796UH045A	130	LENNOX CH33-25A	38	CU 3	230 / 1 / 181 / 30	24.0	20	LENNOX XC20-024	243	REFER TO NOTE 1
FAU 4	800	0.50	20	44	42	120 / 1 / 1.1		LENNOX EL796UH045A	130	LENNOX CH33-25A	38	CU 4	230 / 1 / 181 / 30	24.0	20	LENNOX XC20-024	243	REFER TO NOTE 1
FAU 5	800	0.50	21	44	42	120 / 1 / 1.1		LENNOX EL796UH045A	130	LENNOX CH33-25A	38	CU 5	230 / 1 / 181 / 30	24.0	20	LENNOX XC20-024	243	REFER TO NOTE 1

NOTE:
 1. PROVIDE AUXILIARY DRAIN PAN WITH SAFETY FLOAT SWITCH AND PROGRAMMABLE THERMOSTAT.

DUCTLESS SPLIT SYSTEM UNIT SCHEDULE (FIRE RISER)																			
MARK	AIR FLOW (CFM)	O.A. (CFM)	INDOOR UNIT		ELECTRICAL		MANUFACTURER/ MODEL NUMBER	UT. LBS.	OUTDOOR UNIT		REMARKS								
			GAS HEAT (BTU/H)	OVER (BTU/H)	VOLTS / # / MCA / MOCP	UT. LBS.			MARK	ELECTRICAL VOLTS / # / MCA / MOCP		COOLING CAP. (BTU/H)	SEER						
U 1	419	---	208-230	1 / -		24	---	RUITSU ASU2RL6	120	CU 1	208-230 / 1 / 10 / 15	12,000	25	16,000	12	88	RUITSU ACU2RL6		REFER TO NOTES 1, 2

NOTE:
 1. PROVIDE MANUFACTURER THERMOSTAT.
 2. PROVIDE CONDENSATE PUMP IF REQUIRED.

EXHAUST FAN SCHEDULE

MARK	MANUFACTURER AND MODEL #	TYPE	DRIVE	CFM	S.P. IN. W.G.	FAN RPM	MAX SONES	ELECTRICAL		WEIGHT (LBS)	REMARKS	
								V / PH / HZ	CONTROLLED BY			
EF 1	BROAN XB80	CABINET CEILING	DIRECT	80	0.15	--	03	120/160	03 A	SWITCH	12.5	PROVIDE BACKDRIFT DAMPER, ROOF CAP OR WALL CAP W/ BIRD SCREEN AND VENT TO EXTERIOR.

COMcheck Software Version 4.0.6.1
Mechanical Compliance Certificate

Project Information: 2012 IECC, 150 COPPER APTS, Henderson, Nevada, 3b, New Construction.

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2012 IECC requirements in COMcheck Version 4.0.6.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Mechanical Systems List:
 1. HVAC System 1 (Single Zone): Heating 1 ton, Capacity = 42 MBtu/h, Efficiency = 80.0% EER, Required Efficiency = 80.0% EER. Cooling 1 ton, Capacity = 42 MBtu/h, Efficiency = 15.00 SEER, Required Efficiency = 15.00 SEER + 0.2 EER.
 2. HVAC System 2 (Single Zone): Heating 1 ton, Capacity = 42 MBtu/h, Efficiency = 80.0% EER, Required Efficiency = 80.0% EER. Cooling 1 ton, Capacity = 42 MBtu/h, Efficiency = 15.00 SEER, Required Efficiency = 15.00 SEER + 0.2 EER.
 3. HVAC System 3 (Single Zone): Heating 1 ton, Capacity = 42 MBtu/h, Efficiency = 80.0% EER, Required Efficiency = 80.0% EER. Cooling 1 ton, Capacity = 42 MBtu/h, Efficiency = 15.00 SEER, Required Efficiency = 15.00 SEER + 0.2 EER.
 4. HVAC System 4 (Single Zone): Heating 1 ton, Capacity = 42 MBtu/h, Efficiency = 80.0% EER, Required Efficiency = 80.0% EER. Cooling 1 ton, Capacity = 42 MBtu/h, Efficiency = 15.00 SEER, Required Efficiency = 15.00 SEER + 0.2 EER.

COMcheck Software Version 4.0.6.1
Envelope Compliance Certificate

Project Information: 2012 IECC, 150 COPPER APTS, Henderson, Nevada, 3b, New Construction.

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 2012 IECC requirements in COMcheck Version 4.0.6.1 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Envelope Assemblies Table:
 Roof 1: 1-1/2" Rigid Insulation, 1/2" Gypsum Board, 1/2" Metal Deck, 1/2" Gypsum Board, 1-1/2" Rigid Insulation. U-Factor: 0.027, Budget U-Factor: 0.027.
 Exterior Wall 1: Wood Frame, 1/2" Gypsum Board, 1/2" Metal Deck, 1/2" Gypsum Board, 1-1/2" Rigid Insulation. U-Factor: 0.067, Budget U-Factor: 0.064.
 Exterior Wall 2: Wood Frame, 1/2" Gypsum Board, 1/2" Metal Deck, 1/2" Gypsum Board, 1-1/2" Rigid Insulation. U-Factor: 0.067, Budget U-Factor: 0.064.
 Exterior Wall 3: Wood Frame, 1/2" Gypsum Board, 1/2" Metal Deck, 1/2" Gypsum Board, 1-1/2" Rigid Insulation. U-Factor: 0.067, Budget U-Factor: 0.064.
 Exterior Wall 4: Wood Frame, 1/2" Gypsum Board, 1/2" Metal Deck, 1/2" Gypsum Board, 1-1/2" Rigid Insulation. U-Factor: 0.067, Budget U-Factor: 0.064.
 Door 1: Wood, Swinging, 1/2" Gypsum Board, 1/2" Metal Deck, 1/2" Gypsum Board, 1-1/2" Rigid Insulation. U-Factor: 0.330, Budget U-Factor: 0.310.
 Door 2: Wood, Swinging, 1/2" Gypsum Board, 1/2" Metal Deck, 1/2" Gypsum Board, 1-1/2" Rigid Insulation. U-Factor: 0.330, Budget U-Factor: 0.310.

COMcheck Software Version 4.0.6.1
Envelope Compliance Certificate

Project Information: 2012 IECC, 150 COPPER APTS, Henderson, Nevada, 3b, New Construction.

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 Exterior Wall 1: Wood Frame, 1/2" Gypsum Board, 1/2" Metal Deck, 1/2" Gypsum Board, 1-1/2" Rigid Insulation. U-Factor: 0.067, Budget U-Factor: 0.064.
 Exterior Wall 2: Wood Frame, 1/2" Gypsum Board, 1/2" Metal Deck, 1/2" Gypsum Board, 1-1/2" Rigid Insulation. U-Factor: 0.067, Budget U-Factor: 0.064.
 Exterior Wall 3: Wood Frame, 1/2" Gypsum Board, 1/2" Metal Deck, 1/2" Gypsum Board, 1-1/2" Rigid Insulation. U-Factor: 0.067, Budget U-Factor: 0.064.
 Exterior Wall 4: Wood Frame, 1/2" Gypsum Board, 1/2" Metal Deck, 1/2" Gypsum Board, 1-1/2" Rigid Insulation. U-Factor: 0.067, Budget U-Factor: 0.064.
 Door 1: Wood, Swinging, 1/2" Gypsum Board, 1/2" Metal Deck, 1/2" Gypsum Board, 1-1/2" Rigid Insulation. U-Factor: 0.330, Budget U-Factor: 0.310.
 Door 2: Wood, Swinging, 1/2" Gypsum Board, 1/2" Metal Deck, 1/2" Gypsum Board, 1-1/2" Rigid Insulation. U-Factor: 0.330, Budget U-Factor: 0.310.

MECHANICAL SPECIFICATIONS

- HVAC SYSTEM INSTALLATION(S) SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND ORDINANCES. IF CONFLICTS ARE FOUND BETWEEN CODE REQUIREMENTS, THE MORE STRINGENT SHALL COMPLY. IF CONFLICTS ARE FOUND BETWEEN THE CODE REQUIREMENTS AND THE HVAC PLANS, THE CODE SHALL TAKE PRECEDENCE.
- ALL DUCTS SHALL BE INSTALLED PER THE UNIFORM MECHANICAL CODE.
- ALL DUCTS PENETRATING FIRE SEPARATIONS SHALL BE INSTALLED PER CODE (IE: FIRE DAMPERS, UL-LISTED PENETRATIONS, ETC.)
- PROVIDE ATTIC ACCESS(ES), ATTIC LIGHT(S), COMBUSTION AIR, AND VENTING TO GAS APPLIANCES AS REQUIRED BY CODE.
- HVAC SYSTEM EQUIPMENT SHALL BE INSTALLED, PER MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS.
- CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL BUILDING CONDITIONS FOR THE HVAC SYSTEM INSTALLATION. MECHANICAL PLANS AND SYSTEM DESIGN ARE BASED ON SPECIFIC ARCHITECTURAL PLANS. ARCHITECTURAL CHANGES OR MODIFICATIONS MAY RESULT IN SYSTEM PROBLEMS AND/OR CONFLICTS. CONTRACTOR SHALL IMMEDIATELY NOTIFY BUILDER OF THESE PROBLEMS AND/OR CONFLICTS FOR REVIEW AND RESOLUTION.
- LINE RECTANGULAR SUPPLY AND RETURN AIR DUCT FLENUMS, UNLESS OTHERWISE INDICATED, WITH R-8 DUCT LINER. LINER TO BE ATTACHED TO DUCT USING CODE APPROVED ADHESIVE AND/OR MECHANICAL FASTENERS.
- ALL ROUND SUPPLY AND RETURN AIR DUCT TO BE INSULATED WITH LOW DENSITY, FOIL-FACED URAP (MINIMUM R-8.0), UNLESS OTHERWISE ALLOWED BY CODE.
- ALL FLEXIBLE DUCT SHALL BE INSULATED (MINIMUM R-8), UNLESS OTHERWISE ALLOWED BY CODE, WITH PLASTIC VAPOR BARRIER AT THE INTERIOR AND EXTERIOR STEEL WIRE COIL REINFORCEMENTS. BAND CLAMP AND TAPE SEAL ALL JOINTS TO MAINTAIN VAPOR BARRIER INTEGRITY. FLEXIBLE DUCT AND DUCT SYSTEMS SHALL COMPLY WITH UL-181.
- ALL RECTANGULAR SUPPLY AND RETURN AIR DUCT TO BE INSULATED WITH DUCT LINER WITH VAPOR-PROOF JACKET OF ALUMINUM FOIL OR OTHER APPROVED UL-LABELED FOIL TYPE (MINIMUM R-8), UNLESS OTHERWISE ALLOWED BY CODE. ALL JOINTS AND LAPS TO BE SECURED WITH STAPLES AND COVERED WITH APPROVED METALLIC DUCT TAPE.
- EXHAUST DUCT SHALL NOT BE INSULATED.
- INSTALL AND SUPPORT FLEXIBLE DUCT TO PREVENT SAGGING AND PINCHING. KEEP DUCT LENGTHS TO A MINIMUM (PER THE DRAWINGS).
- PROVIDE FLEXIBLE DUCT CONNECTIONS AT ALL AIR MOVEMENT EQUIPMENT AND WHEN INDICATED, ATTIC MOUNTED A/C EQUIPMENT.
- PROVIDE VIBRATION ISOLATION FOR ALL ROOM MOUNTED A/C EQUIPMENT AND WHEN INDICATED, ATTIC MOUNTED A/C EQUIPMENT.
- RUN 3/4" CONDENSATE LINE FROM THE COOLING COIL(S) TO BUILDING EXTERIOR AUXILIARY CONDENSATE DRAIN TO TERMINATE AT ENTRY, ABOVE EXTERIOR DOOR OR UNDOOR IDENTIFY AUXILIARY DRAIN TERMINATION(S) AND ADVISE BUILDING OWNER THAT WATER DRIPPING FROM THESE FROM THESE LOCATIONS MAY INDICATE CLOGGED MAIN DRAIN(S).
- INSULATE ALL SUCTION LINES WITH MINIMUM OF 3/4" ELASTOMERIC FOAM (ARMAFLEX OR EQUAL). TREAT ALL EXPOSED LINES WITH ARMAFLEX FINISH (OR EQUAL).
- TEST AND BALANCE SYSTEM AIR FLOW TO EACH DUCT, GRILLE AND REGISTER TO CONFORM TO THOSE SPECIFIED ON THE HVAC PLANS.
- DUCTWORK HAS BEEN SIZED WITH EQUAL FRICTION FROM SUPPLY FLENUM THROUGH ALL DUCTING INCLUDING FRICTION LOSS AT DIFFUSERS. TOTAL FRICTION LOSS AT EACH DIFFUSER TERMINATION PLUS OR MINUS 0.02" W.C.
- DUCTWORK SHALL BE HANGED AND/OR SUPPORTED IN ACCORDANCE WITH SMACNA AND THE 2012 UMC.
- PROVIDE SEISMIC SUPPORTS FOR DUCTWORK WHERE THE DUCTS ARE SUSPENDED FROM HANGERS MORE THAN 12' IN LENGTH OR IF THE DUCTWORK HAS A CROSS SECTIONAL AREA OF 6 SQ. FT. OR GREATER. SEISMIC SUPPORTS TO BE VERIFIED BY STRUCTURAL ENGINEER.
- COMPONENTS THAT ARE INSTALLED IN-LINE WITH THE DUCT SYSTEM AND HAVE AN OPERATING WEIGHT GREATER THAN 15 LBS. SHALL BE SUPPORTED AND LATERALLY BRACED INDEPENDENT OF THE DUCT SYSTEM. LATERAL BRACING TO BE VERIFIED BY STRUCTURAL ENGINEER.
- MECHANICAL AND LIGHT FIXTURES WEIGHING 20 LBS. BUT NOT MORE THAN 56 LBS. MUST HAVE TWO (2) GAGE WIRES CONNECTING THEM TO THE CEILING SYSTEM HANGERS OR THE STRUCTURE ABOVE.
- MECHANICAL AND LIGHT FIXTURES WEIGHING MORE THAN 56 LBS. MUST BE INDEPENDENTLY SUPPORTED DIRECTLY FROM THE STRUCTURE ABOVE.
- SUPPLY AND RETURN AIR GRILLES SHALL BE TRIJURE OR EQUAL. RETURN AIR GRILLES SHALL BE BAR TYPE ONLY, NO STAMP FACE.

11-29-18	REVISION	DESCRIPTION

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 SPECIFICATIONS, DETAILS, CALCULATIONS, SCHEDULES, LEGEND

MECHANICAL SHEET INDEX

SHEET NUMBER:	SHEET NAME:
M-001	SPECIFICATIONS, DETAILS, SCHEDULES, SYMBOL LEGEND 1 IECC
M-101	FIRST FLOOR - MECHANICAL PLAN
M-102	SECOND FLOOR - MECHANICAL PLAN

RUSKIN
 CEILING DAMPERS FOR WOOD TRUSS ASSEMBLIES MODEL CFD-7

INSTALLATION INSTRUCTIONS

APPLICATION: Model CFD-7 is designed to function as a heat barrier for HVAC systems in wood truss assemblies. The construction shall be in accordance with the manufacturer's instructions. The CFD-7 shall be installed in the ceiling cavity above the truss assembly. The CFD-7 shall be installed in the ceiling cavity above the truss assembly. The CFD-7 shall be installed in the ceiling cavity above the truss assembly.

CEILING PENETRATIONS: Ceiling penetrations shall be located between adjacent truss and 2" (50 mm) from the truss. The penetrations shall be installed in the ceiling cavity above the truss assembly. The penetrations shall be installed in the ceiling cavity above the truss assembly. The penetrations shall be installed in the ceiling cavity above the truss assembly.

FASTENERS: Support Angle to be secured to truss with 1/4" x 2" (6 mm x 50 mm) bolts. The bolts shall be installed in the ceiling cavity above the truss assembly. The bolts shall be installed in the ceiling cavity above the truss assembly. The bolts shall be installed in the ceiling cavity above the truss assembly.

INSTALLATION 1: UNDUCTED OR FLEX DUCT. With Grille Diffuser. Through Ceiling Membrane Penetration. ALTERNATE DAMPER SUPPORT: Ductwork support may be achieved by supporting the support angle with 1/4" x 2" (6 mm x 50 mm) bolts. The bolts shall be installed in the ceiling cavity above the truss assembly. The bolts shall be installed in the ceiling cavity above the truss assembly. The bolts shall be installed in the ceiling cavity above the truss assembly.

INSTALLATION 2: With Steel Plenum Box. Through Ceiling Membrane Penetration and Ductboard Plenum Box. ALTERNATE DAMPER SUPPORT: Ductwork support may be achieved by supporting the support angle with 1/4" x 2" (6 mm x 50 mm) bolts. The bolts shall be installed in the ceiling cavity above the truss assembly. The bolts shall be installed in the ceiling cavity above the truss assembly. The bolts shall be installed in the ceiling cavity above the truss assembly.

INSTALLATION 3: Through Ceiling Membrane Penetration and Steel Plenum Box. ALTERNATE DAMPER SUPPORT: Ductwork support may be achieved by supporting the support angle with 1/4" x 2" (6 mm x 50 mm) bolts. The bolts shall be installed in the ceiling cavity above the truss assembly. The bolts shall be installed in the ceiling cavity above the truss assembly. The bolts shall be installed in the ceiling cavity above the truss assembly.

INSTALLATION 4: With Steel Box. Through Ceiling Membrane Penetration. ALTERNATE DAMPER SUPPORT: Ductwork support may be achieved by supporting the support angle with 1/4" x 2" (6 mm x 50 mm) bolts. The bolts shall be installed in the ceiling cavity above the truss assembly. The bolts shall be installed in the ceiling cavity above the truss assembly. The bolts shall be installed in the ceiling cavity above the truss assembly.

INSTALLATION 5: With Ductboard Plenum Box. Through Ceiling Membrane Penetration and Ductboard Plenum Box. ALTERNATE DAMPER SUPPORT: Ductwork support may be achieved by supporting the support angle with 1/4" x 2" (6 mm x 50 mm) bolts. The bolts shall be installed in the ceiling cavity above the truss assembly. The bolts shall be installed in the ceiling cavity above the truss assembly. The bolts shall be installed in the ceiling cavity above the truss assembly.

INSTALLATION 6: Through Ceiling Membrane Penetration and Ductboard Plenum Box. ALTERNATE DAMPER SUPPORT: Ductwork support may be achieved by supporting the support angle with 1/4" x 2" (6 mm x 50 mm) bolts. The bolts shall be installed in the ceiling cavity above the truss assembly. The bolts shall be installed in the ceiling cavity above the truss assembly. The bolts shall be installed in the ceiling cavity above the truss assembly.

SYMBOL LEGEND

SYMBOL	ABBR.	DESCRIPTION
☐	SA	SUPPLY AIR
☐	RA	RETURN AIR
☐	EF	EXHAUST FAN
⊕	TSTAT	THERMOSTAT
---	(E)	EXISTING
—	MVD	MANUAL VOLUME DAMPER

PRELIMINARY NOT FOR CONSTRUCTION PROGRESS SET

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M-001