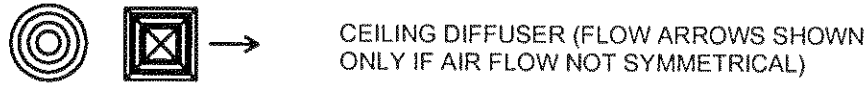
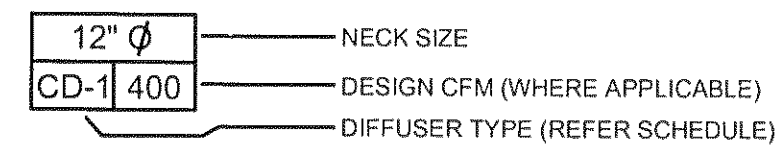
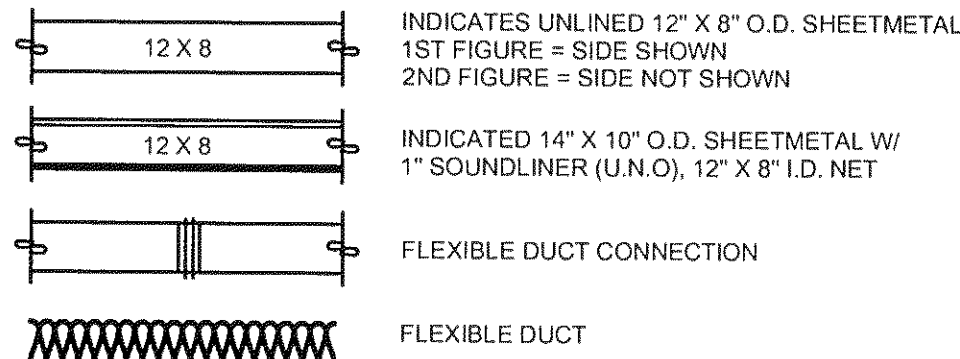
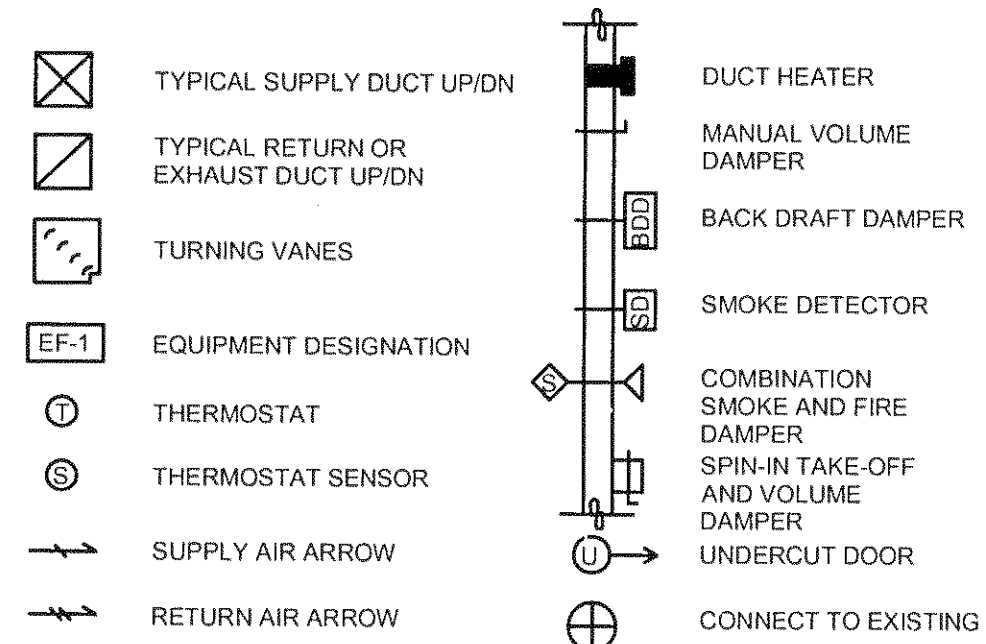


## ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITIES HAVING JURISDICTION
APPROX	APPROXIMATE
BLDG	BUILDING
CLG	CEILING
CONST	CONSTRUCTION
CD	CEILING DIFFUSER
CO2	CARBON DIOXIDE
CXA	COMMISSIONING AGENT
DEG	DEGREES
DTL	DETAIL
DM	STARBUCKS DESIGN MANAGER
DN	DOWN
DWG(S)	DRAWING(S)
EA	EACH
EC	ELECTRICAL CONTRACTOR
ELEC	ELECTRICAL
EM	EMERGENCY
(E) OR (EX)	EXISTING
EXT	EXTERIOR
EG	EXHAUST GRILLE
F&I	FURNISH & INSTALL
FLR	FLOOR
FT	FOOT/FEET
G	GAS PIPING
GC	GENERAL CONTRACTOR
HR	HOURLY
HVAC	HEATING, VENTILATION, AIR CONDITIONING
I.D.	INSIDE DIMENSION
LL	LANDLORD
LV	LOW VOLTAGE
MAX	MAXIMUM
MECH	MECHANICAL
MC	MECHANICAL CONTRACTOR
MEP	MECHANICAL, ELECTRICAL AND PLUMBING
MFG	MANUFACTURER
MIN	MINIMUM
NTS	NOT TO SCALE
O.D.	OUTSIDE DIMENSION
OSA	OUTSIDE AIR
PM	PROJECT MANAGER
REF	REFERENCE
REQ(D)	REQUIRE(D)
REV	REVISION
RG	RETURN GRILLE
RT	ROOFTOP
SHT	SHEET
SPECS	SPECIFICATION(S)
SF	SQUARE FEET
SST	STAINLESS STEEL
TEMP	TEMPORARY
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
WH	WATER HEATER
WSHP	WATER SOURCE HEAT PUMP

## MECHANICAL SYMBOL LEGEND



## DUCTWORK AND ACCESSORIES

**SHEETMETAL DUCTWORK**  
ALL DUCTWORK TO BE RIGID SHEETMETAL CONSTRUCTED FROM GALVANIZED SHEET STEEL IN ACCORDANCE WITH SMACNA LOW VELOCITY DUCT CONSTRUCTION STANDARDS. FIBERGLASS DUCTBOARD IS NOT ALLOWED. ALL EXPOSED DUCTWORK TO BE SPIRAL ROUND, OR RECTANGULAR LOCK-SEAM TYPE, AS SHOWN ON HVAC PLAN SHEET. ASSEMBLE AND INSTALL DUCTWORK IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICE FOR ACHIEVING AIR TIGHT (5% LEAKAGE) AND NOISELESS (NO OBJECTIONABLE NOISE) SYSTEMS, CAPABLE OF PERFORMING EACH INDICATED SERVICE. FURNISH AND INSTALL ALL REQUIRED DAMPERS, TRANSITIONS, CONNECTIONS TO AIR TERMINALS, AND OTHER ACCESSORIES NECESSARY FOR COMPLETE OPERATING SYSTEM. NO VARIATION OF DUCT CONFIGURATION OR SIZES WILL BE PERMITTED EXCEPT BY PERMISSION FROM THE ENGINEER.

**DUCT SEALANT**  
SEAL ALL LONGITUDINAL AND TRANSVERSE JOINTS WITH A NON-HARDENING, NON-MIGRATING MASTIC OR LIQUID ELASTIC SEALANT, WITH VOC CONTENT NO GREATER THAN 250G/L AND OF A TYPE RECOMMENDED BY THE MANUFACTURER FOR SEALING JOINTS AND SEAMS IN SHEET METAL DUCTWORK. COVER ALL FIELD JOINTS, JOINTS AROUND SPIN-IN FITTINGS, AND FASTENING SCREWS WITH MASTIC.

**SUPPORTS**  
PROVIDE HOT-DIPPED GALVANIZED STEEL, FASTENERS, ANCHORS, RODS, STRAPS, TRIM, AND ANGLES FOR SUPPORT OF DUCTWORK.

**DAMPERS**  
PROVIDE OPPOSED-BLADE, MULTI-LEAF VOLUME CONTROL DAMPERS WHERE INDICATED ON DRAWINGS AND AT POINTS ON LOW PRESSURE SUPPLY, RETURN, AND EXHAUST DUCTS WHERE BRANCHES ARE TAKEN FROM LARGER DUCTS. PROVIDE UL LISTED FIRE OR FIRE/SMOKE DAMPERS WHERE REQUIRED AND IN ACCORDANCE WITH NFPA AND LOCAL CODES. PROVIDE CONVENIENTLY LOCATED ACCESS DOORS OF AMPLE SIZE AND QUANTITY FOR SERVICING THE DAMPERS. PROVIDE MOTORIZED DAMPERS AT ALL INTAKE & EXHAUST BUILDING OPENINGS IN ACCORDANCE WITH LOCAL CODES. COORDINATE WITH OTHER TRADES FOR ACCESS PANELS, POWER & FIRE ALARM INTERFACES.

**GRILLES, REGISTERS, AND DIFFUSERS**  
GRILLES, REGISTERS, AND DIFFUSERS SHALL BE AS SPECIFIED AND SHALL BE MECHANICAL CONTRACTOR SUPPLIED, UNLESS OTHERWISE NOTED. DIFFUSERS SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS AND SCHEDULES. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS ITEMS NECESSARY FOR A COMPLETE AND PROPER INSTALLATION IN THE TYPE OF CEILING AND WALLS USED IN THIS PROJECT.

**THERMAL INSULATION**  
PROVIDE EXTERNAL THERMAL INSULATION WITH AN INTEGRAL VAPOR BARRIER FACING OF SUFFICIENT THICKNESS TO MEET LOCAL ENERGY CODE REQUIREMENTS OR ASHRAE 90.1-2004, WHICHEVER IS MORE STRINGENT. PROVIDE INSULATION ON EXHAUST AND OUTSIDE AIR DUCTS, AND ON CONCEALED PORTIONS OF SUPPLY AND RETURN AIR DUCTS. DO NOT EXTERNALLY INSULATE EXPOSED DUCTWORK AND PORTIONS OF DUCTWORK THAT ARE INTERNALLY LINED WITH CODE REQUIRED THICKNESS. THERMAL INSULATION TO COMPLY WITH AN AFPA FLAME SPREAD OF 25 OR LESS, AND SMOKE DEVELOPED NO GREATER THAN 50. INTERNALLY INSULATE EXTERIOR DUCTWORK PER CODE.

**ACOUSTICAL DUCT LINER**  
UNLESS OTHERWISE INDICATED ON THE PLANS, PROVIDE 1" (25MM) GLASS FIBER ACOUSTICAL DUCT LINER ON SUPPLY AND RETURN DUCTWORK WITHIN 10'-0" (305CM) OF THE DISCHARGE AND INTAKE OF AIR HANDLING UNITS. INCREASE DUCT SIZE INDICATED ON PLANS AS NEEDED TO ACCOMMODATE LINER. LINES SHALL BE FASTENED TO DUCT WITH MECHANICAL LINER FASTENERS IN ACCORDANCE WITH SMACNA.

**FLEXIBLE DUCTWORK**  
FLEXIBLE DUCT WORK SHALL ONLY BE INSTALLED AS SHOWN IN PLAN AND NOT ABOVE HARD LID CEILINGS. FLEXIBLE DUCTWORK SHALL NOT EXCEED 5'-0" (152CM) IN LENGTH AND TWO 45° ELBOWS. IT SHALL BE PULLED TAUT AND APPROPRIATELY FASTENED TO RIGID BRANCH DUCT & DIFFUSER. BENDS SHALL BE MINIMIZED AND WHERE NEEDED BE A FULL RADIUS BEND. SUPPORT BANDS SHALL BE INSTALLED SO AS TO NOT CRIMP FLEX DUCT. FLEXIBLE DUCTWORK SHALL BE UL 181 LISTED AS A CLASS 1 AIR DUCT.

**DAMPER AIR LEAKAGE**  
MOTORIZED AND NON-MOTORIZED DAMPERS USED FOR OUTSIDE AIR INTAKES, EXHAUST & RETURN OUTLETS (INCLUDING THOSE WITHIN HVAC EQUIPMENT) SHALL HAVE A MAXIMUM AIR LEAKAGE VALUE PER THE ENERGY CODE OR ASHRAE 90.1 WHEN TESTED PER AMCA STD 500.

## HVAC EQUIPMENT AND MATERIALS

**AIR HANDLING UNITS**  
AIR HANDLING UNITS SHALL BE AS SPECIFIED IN THE MECHANICAL SCHEDULE AND SHALL BE FURNISHED AND INSTALLED PER THE LEASE AGREEMENT. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING DELIVERY, PROVIDING COMPLETE INSTALLATION INCLUDING CURBS, PIPING, VIBRATION ISOLATION, AND NECESSARY ACCESSORIES, AND PROVIDING WARRANTY.

**FILTERS**  
PROVIDE THREE (3) SETS OF 2" (51MM) MERV6 PLEATED DISPOSABLE FILTERS (OR HIGHER RATING IF REQUIRED BY LEED). USE ONE SET UNTIL COMPLETION OF CONSTRUCTION. INSTALL ONE SET AT COMPLETION OF CONSTRUCTION (PRIOR TO TAB) AND DELIVER ONE SET OF FILTERS TO STARBUCKS LABELED TO DENOTE THEIR RESPECTIVE AIR HANDLING UNIT.

**EXHAUST FANS**  
EXHAUST FANS SHALL BE AS SPECIFIED AND PROVIDED PER THE LEASE AGREEMENT. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING DISCHARGE LOCATION WITH NEW AND EXISTING VENTS AND INTAKES, PROVIDING COMPLETE INSTALLATION INCLUDING CURBS, BACKDRAFT DAMPER, DUCTWORK FROM RESTROOM GRILLE TO UNIT, NECESSARY ACCESSORIES AND PROVIDING WARRANTY.

**AIR CURTAINS**  
AIR CURTAINS, WHEN REQUIRED, SHALL BE FURNISHED AND INSTALLED BY THE GENERAL CONTRACTOR. COORDINATE WITH ELECTRICAL CONTRACTOR FOR LOCATION OF POWER CONNECTION.

## TESTING, ADJUSTING, BALANCING

INDEPENDENT AIR BALANCE CONTRACTOR OR QUALIFIED MECHANICAL CONTRACTOR SHALL ACCURATELY BALANCE THE AIR (INCLUDING EXHAUST FAN(S) AND HYDRONIC (WHERE APPLICABLE) SYSTEMS TO PROVIDE AIR AND WATER QUANTITIES INDICATED ON THE DRAWINGS AND IN THIS SPECIFICATION. BALANCER SHALL BE QUALIFIED FOR TAB WORK PER NEBB OR AABC STANDARDS. OPERATE AUTOMATIC CONTROLS SYSTEM AND VERIFY SET POINTS. SUBMIT TWO (2) COPIES OF THE BALANCE REPORT TO THE ENGINEER AND COMMISSIONING AGENT FOR APPROVAL. INCLUDE A COPY OF THE BALANCE REPORT AS APPROVED BY THE ENGINEER WITH APPLICATION FOR FINAL CONTRACT PAYMENT.

## GENERAL MECHANICAL NOTES

1. MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO PATCH AND REPAIR ALL EXISTING WALLS, FLOORS, CEILINGS OR OTHER SURFACES IDENTIFIED TO REMAIN THAT MAY BECOME DAMAGED DURING THE COURSE OF WORK.
2. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL INTENT OR ARRANGEMENT OF SYSTEM(S). FURNISH & INSTALL ALL COMPONENTS NEEDED WHETHER INDICATED OR NOT TO PROVIDE A COMPLETE AND OPERATING SYSTEM.
3. CONTRACTOR TO VERIFY ALL DIMENSIONS, INCLUDING CLEARANCES REQUIRED BY OTHER TRADES, AND NOTIFY STARBUCKS CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK. ALL DIMENSIONS ARE TO THE FACE OF THE FINISHED SURFACE UNLESS NOTED OTHERWISE. ALL DIMENSIONS TO BE TAKEN FROM FROM ACTUAL BUILDING DIMENSIONS.
4. THE MECHANICAL CONTRACTOR SHALL COORDINATE HVAC WORK WITH OTHER TRADES. THE ARCHITECTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER ALL OTHER DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONED DIFFUSER LOCATIONS AND MOUNTING HEIGHTS WHERE EXPOSED.
5. NEW DUCTWORK AND EQUIPMENT SHALL NOT BE INSTALLED WHERE IT OBSTRUCTS ANY EXISTING OR NEW AREAS THAT REQUIRE ACCESS.

## GENERAL SPECIFICATION NOTES

**SCOPE**  
THE INTENT OF THE SPECIFICATIONS AND THE DRAWINGS IS TO PROVIDE A COMPLETE AND FULLY OPERATIONAL MECHANICAL SYSTEM. THE MECHANICAL CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO COMPLETE THE MECHANICAL WORK.

**SITE EXAMINATION**  
THE MECHANICAL CONTRACTOR SHALL THOROUGHLY EXAMINE ALL AREAS WHERE EQUIPMENT, DUCTWORK, AND PIPING WILL BE INSTALLED AND WILL REPORT ANY CONDITION THAT, IN HIS OPINION, PREVENTS THE PROPER INSTALLATION OF THE MECHANICAL WORK.

**STANDARDS**  
EQUIPMENT AND MATERIALS SHALL CONFORM WITH THE APPROPRIATE PROVISIONS OF CSA, UL, ARL, ASME, ASTM, UL, NEMA, ANSI, SMACNA, ASHRAE, NFPA, AS APPLICABLE TO EACH INDIVIDUAL UNIT OR ASSEMBLY.

**CODES**  
ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE PROVINCIAL AND LOCAL CODES AND ORDINANCES. IN CASE OF CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS AND THE CODES AND ORDINANCES, THE HIGHEST STANDARD SHALL APPLY. THE MECHANICAL CONTRACTOR SHALL SATISFY CODE REQUIREMENTS AS A MINIMUM STANDARD WITHOUT ANY EXTRA COST TO STARBUCKS.

**PERMITS AND FEES**  
THE MECHANICAL CONTRACTOR SHALL PROCURE AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY TO COMPLETE THE MECHANICAL WORK.

**WARRANTY**  
THE MECHANICAL CONTRACTOR SHALL UNCONDITIONALLY WARRANT ALL WORK TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE BY STARBUCKS AND WILL REPAIR OR REPLACE ANY DEFECTIVE WORK PROMPTLY AND WITHOUT CHARGE AND RESTORE ANY OTHER EXISTING WORK DAMAGED IN THE COURSE OF REPAIRING DEFECTIVE MATERIALS AND WORKMANSHIP.

## CONTROLS AND OPERATION

**CONTROL WIRING**  
THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL CONTROL WIRING IN CONDUIT NECESSARY FOR THE COMPLETE AND PROPER OPERATING TEMPERATURE CONTROL SYSTEM INCLUDING ALL MODES OF OPERATION AND INTERLOCK.

**THERMOSTAT**  
THERMOSTAT(S) SHALL BE HONEYWELL PROGRAMMABLE SERIES T7351F AND REMOTE SENSOR(S) T7770 FURNISHED AND INSTALLED PER LEASE.

ONE THERMOSTAT AND SENSOR IS PROVIDED FOR EACH AIR HANDLING UNIT. MOUNT THERMOSTAT(S) AND SENSOR(S) IN LOCATION & HEIGHTS AS INDICATED ON DRAWINGS. MECHANICAL CONTRACTOR TO PROVIDE THERMOSTAT IDENTIFICATION LABELS WITH 1/8" (3MM) HIGH WHITE LETTERS ON KELLY GREEN OR BLACK PHENOLIC BACKGROUND, I.E. "AC-1:WORKROOM" AND "AC2:CUSTOMER AREA". REFER TO THERMOSTAT SETUP INSTRUCTIONS BELOW FOR ADDITIONAL REQUIREMENTS.

**THERMOSTAT SETUP INSTRUCTIONS**  
PROVIDE THE FOLLOWING SETUP AND PROGRAMMING ON THE HONEYWELL T7351F THERMOSTAT:

1. FOLLOW INSTRUCTIONS IN THE MANUAL WHICH COMES WITH THE THERMOSTAT. ADDITIONAL INFORMATION IS AVAILABLE FROM HONEYWELL COMMERCIAL FIELD TECHNICAL SUPPORT AT (512) 951-1019 OR (763) 954-6464.
2. CONFIGURE AS FOLLOWS:
  - A. DEGREES "F" DISPLAY
  - B. 12 HOUR CLOCK
  - C. CONTINUOUS FAN OPERATION IN OCCUPIED MODE
  - D. DISABLE KEYBOARD PROGRAMMING
3. SET CLOCK AND DAY.
4. SET TO DISPLAY CURRENT TEMPERATURE
5. SET OCCUPIED START TIME AT 30MIN BEFORE OPENING. SET UNOCCUPIED START TIME AT 30MIN AFTER CLOSING. VERIFY HOURS WITH STORE MANAGER OR CONSTRUCTION MANAGER
6. SET POINTS SHALL BE AS FOLLOWS:
  - A. OCCUPIED (5° F DEADBAND)(3° C DEADBAND)
    - I. HEATING: 70° F (21° C)
    - II. COOLING: 75° F (24° C)
  - B. UNOCCUPIED
    - I. HEATING: 60° F (15° C)
    - II. COOLING: 78° F (25° C)
7. SET THREE (3) HOUR OCCUPIED OVERRIDE FUNCTION TO PROVIDE THE FOLLOWING SET POINT OVERRIDES:
  - A. HEATING: +2° F (1° C)
  - B. COOLING: -2° F (1° C)

**EXHAUST FANS**  
RESTROOM EXHAUST FAN(S) TO BE OPERATED IN CONJUNCTION WITH STORE HOURS UNLESS OTHERWISE NOTED/APPROVED. FAN TO BE CONTROLLED BY LIGHTING CONTROL PANEL. IF A LIGHTING CONTROL PANEL IS NOT AVAILABLE, THEN UTILIZE AUXILIARY CONTACTS (ADDITIONAL RELAYS, ETC. ARE NEEDED) TO CONTROL EXHAUST FAN. (COORDINATE WITH ELECTRICAL)



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ENGINEER OF RECORD

Revision Schedule			
Rev	Date	By	Description



PROJECT NAME:  
**HAY BUILDING**  
PROJECT ADDRESS:  
594 CONGRESS STREET  
PORTLAND, ME 04101

STORE #: 7433

PROJECT #: 04704-026

CONCEPT: NCS

PALETTE: REGIONAL MODERN

ISSUE DATE: 12-16-2013

DESIGN MANAGER: ETA KLIGER

LEED® AP: N/A

PRODUCTION DESIGNER: A. TIKAM

CHECKED BY: K. ENGEN

SHEET TITLE:  
**MECHANICAL SPECIFICATIONS**

SCALE: 1/4" = 1'-0"

SHEET NUMBER:  
M-0001

FULL REMODEL