HVAC GENERAL NOTES:

1. ALL MECHANICAL WORK SHALL CONFORM TO ALL LOCAL, STATE AND BUILDING CODES, ALL GOVERNMENT CODES, NFPA, ASME AND ASHRAE STANDARDS.
2. ALL EQUIPMENT LOADING AND METHODS OF SUPPORT SHALL BE REVIEWED BY THE OWNER'S STRUCTURAL ENGINEER. COORDINATE WITH OWNER.
3. DUCT PENETRATIONS SHALL CONFORM TO THE FIRE RATINGS OF EACH SPECIFIC PARTITION TYPE. CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL DRAWINGS.
4. CONTRACTOR MUST COORDINATE WITH OWNER TO DETERMINE THE EXTENT OF OVERTIME HOURS.
5. CONTRACTOR SHALL PRESSURE TEST ALL PIPING IN ACCORDANCE WITH SPECIFICATIONS. TESTING SHALL BE DONE IN THE PRESENCE OF OWNER.
6. CONTRACTOR SHALL INCLUDE PROVISIONS FOR TEMPORARY PIPING AS REQUIRED TO MAINTAIN SERVICE TO OTHER SPACES.
7. PROVIDE 1 SET OF AS-BUILTS AND 2 COPIES OF THE CERTIFIED TESTING AND BALANCING REPORT TO THE LANDLORD UPON COMPLETION OF THE PROJECT.
8. ALL WORK GENERATING OBJECTIONABLE NOISE SHALL BE COORDINATED WITH LANDLORD.
9. HVAC EQUIPMENT SHALL BE ARRANGED TO MINIMIZE VIBRATION AND NOISE PROPAGATION.
10. ALL WORK AFFECTING EXISTING BUILDING SYSTEMS SHALL BE COORDINATED WITH THE BUILDING INCLUDING ALL SHUT-DOWNS.
11. CONTRACTOR TO COORDINATE ALL WORK WITH BUILDING MANAGEMENT AND BUILDING ENGINEERS. ALL WORK AFFECTING EXISTING SYSTEMS SHALL BE COORDINATED WITH BUILDING MANAGEMENT INCLUDING ALL SHUTDOWNS. COORDINATE ALL WORK WITH THE OTHER TRADES.
12. ALL EXISTING EQUIPMENT TO REMAIN SHALL BE CLEANED, REFURBISHED AND TESTED. REPLACE PARTS AS REQUIRED TO OBTAIN OPTIMAL PERFORMANCE. REPORT FINDINGS TO ENGINEER PRIOR TO COMMENCEMENT OF WORK.
13. CONTRACTOR SHALL PROVIDE AIR BALANCING UPON COMPLETION OF WORK. CONTRACTOR SHALL PROVIDE BALANCE REPORT TO ENGINEER.
14. ALL ATC WIRING SHALL BE PROVIDED IN EMT WITHIN MECHANICAL ROOMS AND UTILITY ROOMS (I.E. ELEVATOR MACHINE ROOMS, ELECTRICAL ROOMS, ETC.). PLENUM RATED CABLING ELSEWHERE. ALL OUTDOOR ATC WIRING SHALL BE PROVIDED WITHIN RIGID METAL CONDUIT.
15. ALL ATC PANELS AND HVAC CONTROL PANELS SHALL BE CAPABLE OF BEING INTERLOCKED WITH THE TENANT'S BMS SYSTEM AS REQUIRED TO MONITOR THE SYSTEM(S) AND CONTROL THE SYSTEM(S) PER THE SEQUENCE OF OPERATIONS.
16. COORDINATE ALL HVAC EQUIPMENT WITH OTHER TRADES (I.E. PLUMBING, SPRINKLER, ELECTICAL POWER AND LIGHTING, ARCHITECTURAL, ETC.) PROVIDE COORDINATED SHOP DRAWINGS INDICATING ALL OF THE MANUFACTURER'S RECOMMENDED CLEARANCES UNOBSTRUCTED FOR REVIEW PRIOR TO INSTALLATION.
17. CONTRACTOR TO PROVIDE UL LISTED FIRE STOPPING SYSTEM FOR ALL THROUGH PENETRATIONS INCLUDING BUT NOT LIMITED TO DUCTWORK, PIPING, HANGERS, CONDUIT, ETC.
18. MANUFACTURERS SYSTEM MUST BE PART OF A UL RATED SYSTEM. LOCATIONS AND TYPES OF FIRESTOPPING SYSTEM INSTALLATIONS SHALL BE COORDINATED WITH ARCHITECTURAL AND LIFE SAFETY PLANS TO DETERMINE SCOPE.
19. CONTRACTOR TO PROVIDE ENGINEER WITH ASSOCIATED MANUFACTURER'S UL DETAIL OF ALL APPLICABLE PENETRATIONS FOR APPROVAL.
20. FIRE STOPPING SYSTEMS MANUFACTURERS SHALL BE HILTI, 3M, STI, OR APPROVED EQUAL.
21. CONTRACTOR TO COORDINATE FIRE STOPPING INSTALLATION WITH PROJECT SPECIAL INSPECTOR PRIOR TO INSTALLATION. FIRESTOPPING INSTALLATION INSPECTION SHALL BE PROVIDED BY SPECIAL INSPECTOR. ALL APPLICABLE FIRESTOPPING SYSTEM UL DETAILS SHALL BE AVAILABLE FOR SPECIAL INSPECTOR REVIEW.

BUILDING MECHANICAL NOTES:

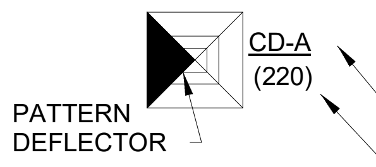
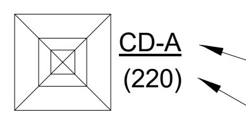
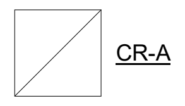
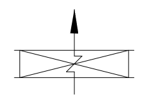
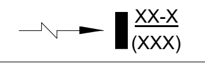
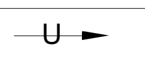
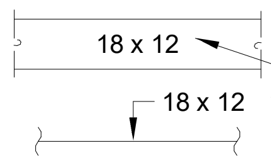
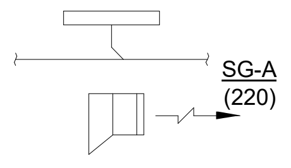
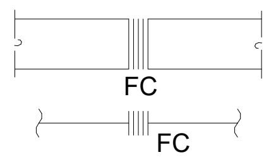
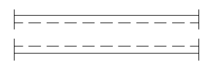
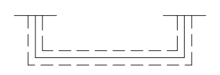
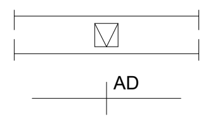
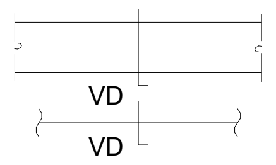
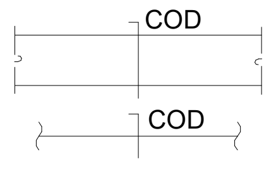
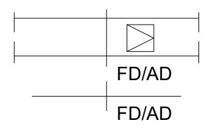
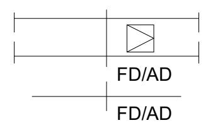
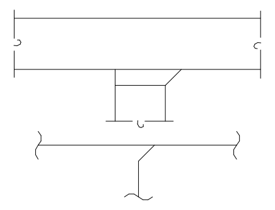
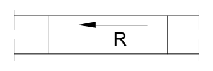
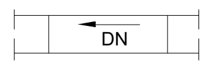
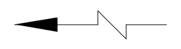
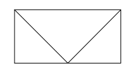
1. ANY CHANGES AND/ OR UPGRADES TO TENANT'S EXISTING MECHANICAL SYSTEMS SHALL COMPLY WITH ALL CODES AND MALL CRITERIA. EXISTING SYSTEMS SHALL POSSESS THE CAPACITY TO HANDLE ANY AND ALL CHANGES IN LOAD.
2. NO PITCH POCKETS ARE PERMITTED ON THE ROOF FOR ANY CONDENSATE DRAINS, REFRIGERANT PIPING, POWER OR CONTROL WIRING. ALL CONNECTIONS ARE TO BE MADE INSIDE THE EQUIPMENT CURB OR THROUGH PRE-MANUFACTURED PIPING CURB.
3. NOTHING IS PERMITTED TO BE ATTACHED TO, SUSPENDED FROM, OR PENETRATE LANDLORD'S STRUCTURE, FLOOR DECK, OR ROOF DECK. YOU MAY ATTACH, NON-DESTRUCTIVELY, TO OR SUSPEND FROM THE TOP CHORD OF THE JOIST OR THE STRUCTURAL STEEL WHICH EXISTS ABOVE THE TENANT SPACE. WHEN ATTACHING TO LANDLORD'S STRUCTURE, DO NOT DRILL, WELD, SCREW, OR SHOOT INTO STRUCTURE. ALTERNATIVE METHODS OF ATTACHMENT ONLY, NOTHING TO DAMAGE LANDLORD'S BASE BUILDING STRUCTURE. TENANT SHALL PROVIDE SIGNED AND SEALED STRUCTURAL DRAWINGS, BY A STRUCTURAL ENGINEER WITH LEGALLY ACTIVE REGISTRATION AS INDICATED BY ALL JURISDICTIONAL REQUIREMENTS, FOR ALL STRUCTURAL MODIFICATIONS FOR LANDLORD RECORDS.
4. ALL PENETRATIONS TO ROOF MUST BE APPROVED BY LANDLORD. ALL RELATED ROOF WORK MUST BE DONE BY MALL'S DESIGNATED ROOFING CONTRACTOR, AT TENANT'S EXPENSE. COORDINATE ALL WORK WITH PROPERTY MANAGEMENT ON SITE.
5. TENANT MUST REMOVE ALL ABANDONED ROOFTOP AND/ OR MECHANICAL EQUIPMENT ABOVE THE LEASED PREMISES AND WITHIN THE LEASED PREMISES, AT TENANT EXPENSE. PATCH AND REPAIR ROOF AS NEEDED.
6. TENANT'S GC TO LABEL ALL ROOF TOP EQUIPMENT WITH TENANT NAME SPACE NUMBER AND EQUIPMENT IDENTIFICATION (RTU-1, EF-1), PER MALL SPECIFICATIONS/ STANDARDS.
7. ALL PIPING ON ROOF SHALL BE SUPPORTED ON PRE-MANUFACTURED PIPE SUPPORTS INSTALLED ON CARRY TREAD, SPACED PROPERLY TO SUPPORT PIPING. TREATED WOOD SUPPORTS ARE NOT PERMITTED.
8. ALL UNEXPOSED SUPPLY AIR AND OUTSIDE AIR DUCTWORK SHALL BE EXTERNALLY INSULATED WITH 1 ½" THICK FOIL FACE INSULATION.INTERNALLY LINED DUCTWORK MAY BE USED FOR ACOUSTIC PURPOSES ONLY, NOT AS A SUBSTITUTE FOR EXTERNAL INSULATION.
9. ALL DUCTWORK SHALL BE SHEET METAL. FLEX DUCT MAY ONLY BE USED IN RUNS OF 5'-0" OR LESS.
10. AT CONCLUSION OF PROJECT, HVAC SYSTEM MUST BE TESTED AND BALANCED BY A LICENSED CONTRACTOR. COPY OF BALANCE REPORT MUST BE PROVIDED TO PROPERTY MANAGEMENT OFFICE ON-SITE.
11. LANDLORD STRONGLY PREFERS USE OF ENERGY STAR PRODUCTS AND/OR EQUIPMENT WHENEVER POSSIBLE DURING TENANT BUILD OUT, WHICH CAN REDUCE ENERGY CONSUMPTION.

2/13/2023 2:42:54 PM

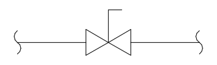
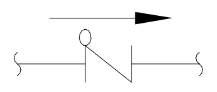
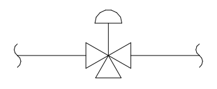
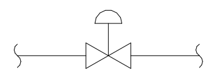
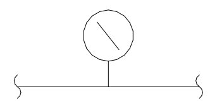
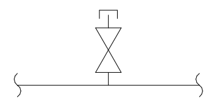
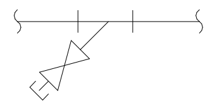
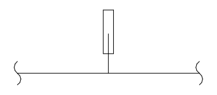
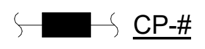
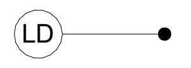
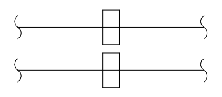
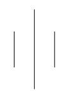
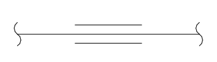
ABBREVIATIONS:

ABBREV.	DESCRIPTION
AC	AIR CONDITIONING
AD	ACCESS DOOR
A.F.F.	ABOVE FINISHED FLOOR
BDD	BACKDRAFT DAMPER
BHP	BRAKE HORSE POWER
BOD	BOTTOM OF DUCT
BTU	BRITISH THERMAL UNIT
CAV	CONSTANT AIR VOLUME
CD	CEILING DIFFUSER AND/OR CONDENSATE DRAIN
COD	CABLE OPERATED DAMPER
CP	CONDENSATE PUMP
CU	CONDENSING UNIT
CR	CEILING RETURN
DN	DOWN
DP	DRIP PAN
DX	DIRECT EXPANSION
EAT	ENTERING AIR TEMPERATURE
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
FC	FLEXIBLE CONNECTION
FCU	FAN COIL UNIT
FD/AD	FIRE DAMPER WITH ACCESS DOOR
FLA	FULL LOAD AMPS
FSD	FIRE SMOKE DAMPER
HP	HORSEPOWER
KW	KILOWATT
KWH	KILOWATT HOURS
LAT	LEAVING AIR TEMPERATURE
LD	LINEAR DIFFUSER (CEILING, WALL, SILL, OR FLOOR) AND/OR LEAK DETECTOR
LRA	LOCKED ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE
MBH	THOUSAND BTU PER HOUR
MD	MOTORIZED DAMPER
N.I.C	NOT IN THIS CONTRACT
N.T.S.	NOT TO SCALE
OA	OUTSIDE AIR
OAF	OUTSIDE AIR FAN
PSIG	POUNDS PER SQUARE INCH (GAUGE)
RG	RETURN GRILLE
RPM	REVOLUTIONS PER MINUTE
SD	SMOKE DETECTOR
SG	SUPPLY GRILLE
SS	STAINLESS STEEL
TD	TRANSFER DUCT
TX	TOILET EXHAUST
VD	VOLUME DAMPER
V.I.F.	VERIFY IN FIELD
WMS	WIRE MESH SCREEN

SYMBOL LIST:

SYMBOL	DESCRIPTION
 CD-A (220) PATTERN DEFLECTOR	SUPPLY DIFFUSER (FOR SIZE, TYPE, ETC. SEE AIR OUTLET SCHEDULE) DIFFUSER TAG (SEE AIR OUTLET SCHEDULE) INDICATES C.F.M.
 CD-A (220)	SUPPLY DIFFUSER (FOR SIZE, TYPE, ETC. SEE AIR OUTLET SCHEDULE) DIFFUSER TAG (SEE AIR OUTLET SCHEDULE) INDICATES C.F.M.
 CR-A	RETURN REGISTER (FOR SIZE, TYPE, ETC. SEE AIR OUTLET SCHEDULE)
	TRANSFER OPENING ABOVE HUNG CEILING
 XX-X (XXX)	TRANSFER AIR GRILLE
 U	DOOR UNDERCUT
 18 x 12 18 x 12	DUCTWORK (SEE SPECIFICATIONS) CLEAR INSIDE DIMENSIONS (FIRST NUMBER INDICATES PLAN SIZE)
 SG-A (220)	SUPPLY GRILLE (FOR SIZE, TYPE, ETC. SEE AIR OUTLET SCHEDULE) DIFFUSER TAG (SEE AIR OUTLET SCHEDULE) INDICATES C.F.M.
 FC FC	DUCT FLEXIBLE CONNECTION
	DUCTWORK WITH ACOUSTICAL LINING (DUCT SIZE NOTED INDICATES CLEAR INSIDE DIMENSION)
	ACOUSTICALLY LINED TRANSFER AIR DUCT WITH 1" A.L. & WMS
 AD	ACCESS DOOR IN DUCT
FSD/AD FD/AD	COMBINATION FIRE AND SMOKE DAMPER (FSD) WITH ACCESS DOOR & SMOKE DETECTOR/FIRE DAMPER (FD) WITH ACCESS DOOR
 VD VD	DUCT VOLUME DAMPER
 COD COD	CABLE OPERATED DAMPER TO BE USED FOR ALL SUPPLY AND RETURN DIFFUSERS IN SHEETROCK OR IN ACCESSIBLE CEILINGS.
 FD/AD FD/AD	FUSIBLE LINK FIRE DAMPER WITH DUCT ACCESS DOOR (SD INDICATES SMOKE TYPE DAMPER, FSD INDICATES FIRE/SMOKE TYPE DAMPER. SEE SPECIFICATIONS)
 FD/AD FD/AD	FIRE SMOKE DAMPER WITH ACCESS DOOR
	BRANCH TAKEOFF
 R	DUCT RISE CONNECTIONS
 DN	DUCT DROP CONNECTIONS
	SUPPLY DUCTWORK UP
	RETURN DUCTWORK DOWN
T	NEW THERMOSTAT
T_S	TEMPERATURE SENSOR
SD	DUCT TYPE SMOKE DETECTOR
M	MOTORIZED DAMPER
	CONTROL WIRING
	DIRECTION OF AIRFLOW
	SERVICE CLEARANCE

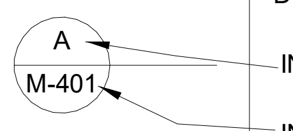
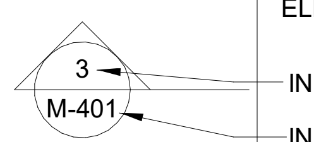
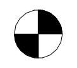
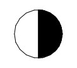
PIPING SYMBOL LIST

SYMBOL	DESCRIPTION
	MANUALLY OPERATED SHUTOFF VALVE
	CHECK VALVE
	AUTOMATIC MODULATING THREE-WAY CONTROL VALVE
	AUTOMATIC TWO-WAY SHUTOFF VALVE
	PRESSURE GAUGE
	FUTURE VALVED AND CAPPED CONNECTION
	Y-STRAINER W/ BLOWOFF VALVE
	THERMOMETER
 CP-#	CONDENSATE PUMP
 LD	LEAK DETECTOR
	PIPING DROP
	PIPING RISE
	OUTDOOR PIPE SUPPORTS / GUIDES
	UNIONS
	PIPE TEE
	PIPE GUIDE

MECHANICAL DRAWING LIST

Sheet Number	DESCRIPTION
M-100	H.V.A.C. TITLE SHEET
M-101	H.V.A.C. SPECIFICATIONS SHEET 1 OF 2
M-102	H.V.A.C. SPECIFICATIONS SHEET 2 OF 2 & COMCHECK
M-300	H.V.A.C. GROUND FLOOR PLAN
M-301	H.V.A.C. ROOF PLAN
M-600	H.V.A.C. SCHEDULES
M-700	H.V.A.C. DETAILS SHEET 1 OF 2
M-701	H.V.A.C. DETAILS SHEET 2 OF 2

DRAWING NOTATIONS:

SYMBOL	DESCRIPTION
 1	SEE REFERENCE NOTE APPLICABLE TO THIS DRAWING. NOTE NUMBER INDICATED BY NUMERAL IN DIAMOND.
 A M-401	DETAIL REFERENCE TAG INDICATES DETAIL NUMBER INDICATES DRAWING NUMBER
 3 M-401	ELEVATION REFERENCE TAG INDICATES DETAIL NUMBER INDICATES DRAWING NUMBER
	POINT OF CONNECTION TO EXISTING
	POINT OF DISCONNECTION
	CUT AND CAP

sg

sweetgreen®

3101 W. EXPOSITION BLVD.
LOS ANGELES, CALIFORNIA 90018

ARCHITECT OF RECORD:

O'NEIL LANGAN
ARCHITECTS
15 WEST 37TH STREET
15TH FLOOR
NEW YORK, NY 10018
PHONE: 212-279-2670
FAX: 212-279-2671

STAMP:

07.18.2022

PROJECT INFORMATION:
PEABODY

PROJECT INFORMATION:
210 ANDOVER STREET,
PEABODY, MA

DRAWN BY:	Author
CHECKED BY:	Checker
PROJECT MANAGER:	JD
SG DESIGN MANAGER:	JM
SG CONSTR. MANAGER:	EL
PROJECT NO:	22.046.00
TEMPLATE VERSION:	06.01.2020

REVISIONS

REV.	DATE	DESCRIPTION
	07/18/2022	PERMIT SET
1	11/14/2022	LL COMMENTS
2	12/16/2022	IFC SET
3	02/13/2023	VE UPDATE

H.V.A.C. TITLE SHEET

FISKAA

FISKAA ENGINEERING
589 EIGHTH AVENUE NEW YORK, NY 10018
T 212 736 9600 F 212 736 9020 WWW.FISKAA.COM

M-100

H.V.A.C. SPECIFICATIONS:

1. GENERAL

A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT A201, LATEST EDITION, AND THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.

B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.

C. INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.

D. DUCTWORK AND PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF DUCTWORK AND PIPING TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF ARCHITECT. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED.

E. SUPPORT ALL DUCTWORK AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OR SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL FRAMING. INSERTS SHALL BE STEEL, SLOTTED TYPE AND FACTORY PAINTED. SINGLE ROD SHALL BE SIMILAR TO GRINNELL FIG. 281. MULTI-ROD SHALL BE SIMILAR TO FEE & MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS. MAXIMUM LOADING INCLUDING PIPES, DUCTWORK CONTENTS AND COVERING SHALL NOT EXCEED 75% OF RATED INSERT CAPABILITY. WHEN SUPPORTING FROM BUILDING USE BEAM CLAMPS IN APPROVED MANNER.

F. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.

G. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP THE WORK PROPOSAL.

H. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO ENSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING OWNER. INSTALL ISOLATION VALVES AT POINT OF CONNECTION TO EXISTING PIPING. PROVIDE TEMPORARY DUCT CAPS AND/OR CONNECTIONS TO MINIMIZE SHUTDOWN TIME.

I. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND APPROVED MANNER. RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY ARCHITECT.

J. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW SYSTEM.

K. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.

L. SEAL OPENINGS AROUND DUCTS AND PIPING THROUGH PARTITIONS, WALLS AND FLOORS (NOT IN SHAFTS) WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL.

M. PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, LOUVERS, CONDUIT, AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AND DUNNAGE STEEL AS REQUIRED.

N. ALL PRESENT MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.

O. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.

P. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.

Q. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.

R. UNLESS OTHERWISE SPECIFICALLY SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.

S. REMOVABLE ACCESS TILE AND/OR ACCESS DOOR ARE REQUIRED IN HUNG CEILINGS, SHAFTS AND WALLS FOR ALL VOLUME AND FIRE DAMPERS, AUTOMATIC DAMPERS AND ALL OTHER MECHANICAL EQUIPMENT AND DEVICES. HVAC CONTRACTOR TO FURNISH ACCESS LOCATION REQUIREMENTS TO GENERAL CONTRACTOR. ACCESS TILE IDENTIFICATION: PROVIDE BUTTONS, TABS, AND MARKERS TO IDENTIFY LOCATION OF CONCEALED VALVES, DAMPERS AND EQUIPMENT.

T. ALL EQUIPMENT SHALL HAVE AN MEA AND/OR BSA NUMBER. THIS INFORMATION MUST BE INCLUDED IN THE SUBMITTAL PACKAGE.

U. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.

V. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING DUCTWORK, PIPING (SIZES, CLEARANCES, ETC) AND CONDITIONS.

W. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.

X. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, BALANCED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.

Y. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.

Z. SUBSTITUTIONS ON EQUIPMENT WILL ONLY BE CONSIDERED BY THE ENGINEER OF RECORD (EOR) IF THE REQUEST IS PUT FORTH BY THE CONTRACTOR(S) IN A TIMELY MANNER (2 WEEKS PRIOR TO SUBMISSION OF BID). THE CONTRACTOR(S) SHALL REVIEW THE DOCUMENTS TO UNDERSTAND THE SCOPE OF THE EQUIPMENT FOR WHICH A SUBSTITUTION IS REQUESTED AND PROVIDE A SHOP DRAWING FROM THE ALTERNATE MANUFACTURER LISTED HEREIN FOR A FORMAL REVIEW BY THE EOR. ANY BREACH OF THE TERMS LISTED IN THIS SECTION WILL AUTOMATICALLY DISQUALIFY THE REQUEST FOR SUBSTITUTION.

Z. DEFINITIONS:

  1) "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.

  2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.

  3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.

  4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.

  5) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.

  6) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.

  7) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.

  8) "BMS": BUILDING MANAGEMENT SYSTEM THAT CONTROLS THE ENTIRE HVAC SYSTEM AND ALL RELATED EQUIPMENT REQUIRED TO ACHIEVE THE SEQUENCE OF OPERATIONS.

2. SCOPE OF WORK

A. THE WORK UNDER CONTRACT INCLUDES ALL LABOR, MATERIALS AND APPLIANCES NECESSARY FOR THE FURNISHING, INSTALLING AND TESTING, COMPLETE AND READY FOR SAFE OPERATION OF THE SYSTEMS. WORK SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER.

B. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.

C. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES, BY OWNER, INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

D. CONTROLLED INSPECTION BY A LICENSED PROFESSIONAL ENGINEER TO BE HIRED BY THIS CONTRACTOR ON BEHALF OF OWNER.

E. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT PROVIDE COMPLETE SET OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, DUCTWORK, PIPING AND CONTROL SYSTEMS INDICATING CAPACITY DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.

F. CONTRACTOR SHALL ATTAIN THE SERVICES OF A LICENSED PROFESSIONAL ENGINEER (PE) TO PREPARE AND SUBMIT ALL FABRICATION DRAWINGS, SIGNED AND SEALED BY THE AFOREMENTIONED PE, PERTAINING TO THE NEW STEAM SERVICE TO CONSOLIDATED EDISON FOR APPROVAL. THE CONTRACTOR SHALL PROVIDE ALL DRAWINGS, CALCULATIONS AND DOCUMENTATION REQUIRED BY CONSOLIDATED EDISON PURSUANT TO THEIR STANDARDS AND REGULATIONS FOR SUCH WORK.

3. SHOP DRAWINGS

A. INDICATE ON EACH SUBMISSION: PROJECT NAME AND LOCATION, ARCHITECT AND ENGINEER, ITEM IDENTIFICATION AND APPROVAL STAMP OF PRIME CONTRACTOR.

B. SUBMISSIONS:

  1) SUBMISSIONS 11 IN. X 17 IN. OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES. OTHERWISE, THE CONTRACTOR SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE.

  2) SUBMISSIONS LARGER THAN 11 IN. X 17 IN.: SUBMIT TWO PRINTS AND ONE PAPER SEPIA TO THE ARCHITECT. THE ARCHITECT WILL FORWARD ONE PRINT AND THE PAPER SEPIA TO THE ENGINEER.

C. SUBMIT SHOP DRAWINGS FOR HVAC EQUIPMENT LISTED IN THE MECHANICAL SCHEDULES AND DRAWINGS SUCH AS, BUT NOT LIMITED TO THE FOLLOWING:

  1) DUCTWORK & PIPING LAYOUT.
  2) VIBRATION ISOLATION.
  3) DUCTWORK & PIPING INSULATION.
  4) AIR BALANCING REPORT.
  5) AIR COOLED VRF HEAT PUMP UNITS.
  6) ROOF MOUNTED FANS.
  7) INLINE FANS.
  8) FIRE DAMPER.
  9) COMBINATION FIRE SMOKE DAMPER.
  10) AIR OUTLETS.
  11) LEAK DETECTORS.
  12) SEQUENCE OF OPERATIONS.

4. AS-BUILTS AND EQUIPMENT OPERATION INSTRUCTIONS

A. ON COMPLETION AND ACCEPTANCE OF WORK, THIS CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS, EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.

B. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE-RING BINDERS WITH CLEAR ACETATE COVERS. THE CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.

C. THE INSTRUCTION BOOKLET SHALL BE ORGANIZED IN SECTIONS, WITH ONE SECTION PER SYSTEM. THE COVER OF THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND PHONE NUMBER OF THE PROJECT, ARCHITECT, ENGINEER, MECHANICAL CONTRACTOR AND SUBCONTRACTORS.

D. REPRODUCIBLE "AS-BUILT" DRAWINGS INDICATING AS INSTALLED CONDITIONS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF THE INSTALLATION.

5. SHEET METAL WORK

A. EXCEPT AS OTHERWISE SHOWN OR NOTED, ALL DUCTWORK AND OTHER SHEET METAL WORK SHALL BE GALVANIZED SHEET STEEL AND SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. DUCT CONSTRUCTION STANDARDS, PRESSURE CLASSIFICATION 2 IN. W.G.

B. FOR DUCTWORK SYSTEMS WHERE AIR MOVING EQUIPMENT (I.E. FANS, AIR HANDLERS ETC.) ASSOCIATED WITH THAT SYSTEM IS IN EXCESS OF 2" WG PRESSURE CLASS, PROVIDE THE REQUIRED PRESSURE CLASS DUCTWORK PURSUANT TO SMACNA STANDARDS. PRESSURE CLASS OF DUCT SYSTEM SHALL BE THE CLOSEST PRESSURE RATING HIGHER THAN THAT OF THE FAN'S STATIC PRESSURE RATING. REFER TO MECHANICAL SCHEDULES FOR PRESSURE INFORMATION.

C. VOLUME DAMPERS: GALVANIZED STEEL, PER SMACNA "LOW VELOCITY MANUAL, EXCEPT PROVIDE BEARING AT ONE END OF DAMPER ROD AND QUADRANT, WITH LEVER AND LOCKSCREW AT OTHER END. FOR INSULATED DUCTS, QUADRANTS MOUNTED ON COLLAR TO CLEAR INSULATION. INSTALL WITH LEVERS ACCESSIBLE.

D. DUCT ACCESS DOORS (DOES NOT APPLY TO KITCHEN EXHAUST ACCESS DOORS): INSULATED OR UNINSULATED, SAME AS DUCT.

  1) PROVIDE MINIMUM 20 IN. X 14 IN. ON MAIN DUCTS, AND 12 IN. X 6 IN. ON BRANCH DUCTS, UNLESS OTHERWISE APPROVED, AT FIRE DAMPERS, AND AT ALL DUCT ACCESSORIES SUCH AS FIRE DAMPERS, COMBINATION FIRE AND SMOKE DAMPERS, DUCT SMOKE DETECTORS, MOTORIZED DAMPERS, LOUVERS, DUCT MOUNTED TEMPERATURE SENSORS, AND ENTHALPY SENSORS.

  2) ALL ACCESS DOORS TO BE HINGED, WITH LATCH SIMILAR TO VENTLOCK NO. 100.

E. ALL DUCTWORK RISERS INSTALLED OUTDOORS SHALL BE COMPOSED OF WEATHERPROOF MATERIALS OR FINISHED WITH A WEATHERPROOF COATING ALONG THE ENTIRE OUTDOOR RUN.

F. FLEXIBLE CONNECTIONS: NEOPRENE-COATED GLASS FABRIC, 30 OZ PER SQ YD WITH SEWED AND CEMENTED SEAMS, SIMILAR TO VENT FABRICS. PROVIDE WITH METAL COLLARS. ALLOW MINIMUM MOVEMENT OF 1 IN.

G. TURNING VANES: GALVANIZED STEEL SMALL DOUBLE-THICKNESS VANES WITH 2 IN. INSIDE RADIUS.

H. COMBINATION FIRE AND SMOKE DAMPERS: UL LISTED, GALVANIZED STEEL CONSTRUCTION MULTI-BLADED TYPE. EQUIPPED WITH FUSIBLE LINK CONFORMING TO NFPA STANDARD 90A. SIMILAR TO RUSKIN MODEL FSD 60 FOR 1-1/2 HOUR RATING. SEE PLANS FOR MORE INFORMATION.

I. ALL DUCT DIMENSIONS INDICATED ON PLANS ARE INSIDE CLEAR DIMENSIONS.

J. AUTOMATIC DAMPERS: COMPLETE WITH LINKAGE AND ELECTRIC OPERATOR. OPPOSED BLADE DAMPER OR GALVANIZED STEEL MIN. 4 IN., MAX. 8 IN. WIDE WITH COMPRESSIBLE EDGE SEALS TO PREVENT LEAKAGE. FACTORY-ASSEMBLE STEEL LINKAGE AND SHAFT WITH NYLON OR OIL-IMPREGNATED BRONZE BEARINGS. MOTOR WITH SUFFICIENT POWER TO LIMIT LEAKAGE TO 10 CFM PER SQ FT. LINKAGE TO WITHSTAND LOAD EQUAL TO TWICE MAXIMUM OPERATING FORCE WITHOUT DEFLECTION. DAMPER MOUNTED IN WELDED STEEL CHANNEL FRAME.

K. WIRE MESH SCREEN (WMS): NO. 16 USSG, 1/2" SQUARE MESH, IN 1 IN. WIDE GALVANIZED STEEL ENCLOSING FRAME. FLANGED DUCT OPENING TO RECEIVE FRAME.

L. LOW PRESSURE FLEXIBLE DUCT: SHALL BE A FACTORY FABRICATED HIGH TEMPERATURE COPOLYMER IMPREGNATED GLASS FABRIC, LOCKED TO COLD ROLLED FLAT STEEL SPIRAL. SIMILAR TO WIREMOLD 57. MAXIMUM INSTALLED LENGTH SHALL NOT EXCEED 18 IN.

M. CONTRACTOR SHALL HIRE STRUCTURAL ENGINEER TO ANALYZE DUCTWORK HANGING AND SUPPORTS AND CONNECTION TO EXISTING STRUCTURE.

6. NOISE CONTROL

A. ALL ROOM NC LEVELS SHALL BE 35 OR LESS.

B. PROVIDE SOUNDLINING FOR THE FOLLOWING DUCTWORK:

  1) ALL DUCTWORK WITHIN MECHANICAL ROOMS AND NOT LESS THAN 20 FT ON EACH SIDE OF ALL FANS AND AC UNITS.

  2) AIR TRANSFER DUCTS.

  3) ALL MIXED AIR PLENUMS, EXCEPT WHERE MOISTURE CARRYOVER FROM OUTDOOR AIR LOUVER WILL OCCUR.

  4) ALSO WHERE NOTED ON A DRAWING.

C. SOUNDLINING IN DUCTWORK: FIBROUS GLASS, MINIMUM 3 LB DENSITY, 1 IN. THICKNESS, MAXIMUM 0.25 K FACTOR AT 75 DEG F MEAN TEMPERATURE WITH ACRYLIC COATED FINISH FACTORY APPLIED EDGE COATING AND STENCILED IN ACCORDANCE WITH NFPA 90. FLAMESPREAD SHALL BE A MAXIMUM OF 25. LINING SHALL NOT SUPPORT MICROBIAL GROWTH AND SHALL BE TESTED IN ACCORDANCE WITH ASTM C 1071 AND ASTM G21/G22. SIMILAR TO MANVILLE PERMACOTE LINA COUSTIC.

D. ALL SOUNDLINING, ADHESIVES, FACES AND ACCESSORIES TO BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, EXCEPT AS OTHERWISE NOTED.

7. TESTING AND BALANCING

A. AIR BALANCING SHALL BE ACCOMPLISHED BY ADJUSTMENT OF FANS AND BRANCH DAMPERS FOR MAJOR ADJUSTMENTS. ADJUSTMENT OF TERMINAL DAMPERS AND DEVICES SHALL BE FOR TRIM OR MINOR ADJUSTMENT ONLY. THIS SHALL BE DONE TO PERMIT THE LEAST NOISE GENERATION TO THE SPACE WHILE PROVIDING THE REQUIRED AMOUNT OF AIR PER THE MECHANICAL DRAWINGS.

B. THE CONTRACTOR SHALL PROVIDE ALL LABOR, PRESSURE GAUGES, FLOW METERS, SHEAVES, AND BELTS REQUIRED TO BALANCE SYSTEMS.

C. BALANCING REPORT SHALL BE PROVIDED ON AABC-TYPE FORMS.

D. FANS, AIR HANDLING UNITS, PACKAGED VERTICAL A/C UNITS, HORIZONTAL CEILING HUNG UNITS, INLINE EXHAUST FANS, MAKEUP AIR UNITS, WATER SOURCE HEAT PUMPS, ETC SHALL BE BALANCED TO WITHIN +5% OF THEIR DESIGN CAPACITIES. ALL OTHER AIR QUANTITIES SHALL BE BALANCED TO WITHIN +10% OF THE DESIGN QUANTITIES.

E. WATER BALANCING SHALL BE ACCOMPLISHED BY ADJUSTMENT OF BALANCING VALVES AT PUMPS FOR PROPER FLOW. ADJUST FLOW THROUGH COILS, PUMPS, LANDLORDS COOLING TOWER, WATER COOLED CONDENSERS, ETC.

F. CONTRACTOR TO PROVIDED PROCEDURE FOR FLUSHING AND FILLING ALL CONDENSER WATER PIPING.

G. BALANCING AND TESTING SHALL BE PERFORMED AND SUPERVISED BY AN INDEPENDENT FIRMS SPECIALIZING IN TESTING AND BALANCING.

H. THE PERFORMANCE AND CAPACITY OF ALL SYSTEMS AND EQUIPMENT TO BE DEMONSTRATED BY THE CONTRACTOR.

8. INSULATION - GENERAL REQUIREMENTS

A. ALL INSULATION MATERIALS, INCLUDING JACKETS, FACING, ADHESIVE, COATINGS, AND ACCESSORIES ARE TO BE FIRE HAZARD RATED AND LISTED BY UNDERWRITERS LABORATORIES, INC. USING STEINER TUNNEL TEST METHOD FOR FIRE HAZARD CLASSIFICATION OF BUILDING MATERIALS, STANDARD UL 723 (ASTM E-84), (ASA A2.5-1963). FLAMESPREAD: MAXIMUM 25. FUEL CONTRIBUTED AND SMOKE DEVELOPED: MAXIMUM 50. FLAMEPROOFING TREATMENTS SUBJECT TO DETERIORATION FROM MOISTURE OR HUMIDITY ARE NOT ACCEPTABLE.

B. ALL INSULATION MATERIALS AND THICKNESSES SHALL COMPLY WITH THE LATEST EDITION (I.E. THE ADDITION IN EFFECT AT THE ANTICIPATED STATE DATE OF CONSTRUCTION) OF THE NEW YORK STATE ENERGY CONSERVATION CONSTRUCTION CODE AND SUBSEQUENT ADDENDA.

C. ALL FACINGS SHALL BE PAINTABLE. COLOR(S) SHALL BE AS SPECIFIED BY ARCHITECT.

D. DEFINITIONS:

  1) EXPOSED: INDOOR DUCTS, PIPING OR EQUIPMENT LOCATED IN MECHANICAL EQUIPMENT ROOMS AND IN AREAS WHICH WILL BE VISIBLE WITHOUT REMOVING CEILINGS OR OPENING ACCESS PANELS.

  2) CONCEALED: INDOOR DUCTS, PIPING OR EQUIPMENT WHICH IS NOT EXPOSED.

  3) OUTDOOR: DUCTS, PIPING OR EQUIPMENT WHICH IS EXPOSED TO THE WEATHER.

9. DUCTWORK INSULATION

A. INSULATE ALL DUCTWORK IN ACCORDANCE WITH INSULATION SCHEDULE EXCEPT AS OTHERWISE NOTED. INSULATION MATERIALS AND THICKNESSES SHALL COMPLY WITH THE LATEST EDITION OF THE FLORIDA ENERGY CONSERVATION CODE, (AT THE TIME OF ANTICIPATED CONSTRUCTION DATE).

INSULATION SCHEDULE - DUCTWORK

SERVICE	LOCATION	THICKNESS	MATERIAL	FINISH
SUPPLY/RETURN	CONCEALED	1-1/2"	D-1	VAPORSEAL
SUPPLY/RETURN	EXPOSED	1-1/2"	D-2	VAPORSEAL
OUTSIDE AIR	ALL	3"	D-3	VAPORSEAL

B. DUCTWORK NOT REQUIRED TO BE THERMALLY INSULATED:

  1) WHERE SOUNDLINING IS OF MINIMUM THICKNESS SPECIFIED FOR INSULATION.

  2) AIR CONDITIONING RETURN AIR DUCTWORK EXPOSED IN AIR CONDITIONED SPACES AND INSTALLED IN HUNG CEILINGS WHERE SPACE IMMEDIATELY ABOVE AND BELOW ARE BOTH AIR CONDITIONED.

C. MATERIAL:

  1) TYPE D-1: MINIMUM 1-LB/CUFT. DENSITY FIBERGLASS BLANKET, MAXIMUM 0.27 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY-APPLIED FOIL-SKRIM-KRAFT VAPOR RETARDANT FACING SIMILAR TO OWENS CORNING SOFTR FRK OR AN APPROVED EQUAL.

  2) TYPE D-2: FIBERGLASS LINER. THE MAX. K FACTOR SHALL BE 0.23 AT 75° F MEAN TEMPERATURE. THE INSULATION SHALL BE PROVIDED WITH A FACTORY-APPLIED ALL PURPOSE OR ALL SERVICE FACING. THE INSULATION SHALL BE EQUAL TO JONS MANVILLE LINACOUSTIC.

  3) TYPE D-3: MINIMUM 6 LB FIBERGLASS BOARD. MAXIMUM 0.22 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY APPLIED ALL PURPOSE OR ALL SERVICE FACING. SIMILAR TO JOHNS MANVILLE 800 SERIES, 817 SPIN-GLAS AP.

D. INSTALLATION:

  1) FIBERGLASS BLANKET: 2 IN. LAP STRIPS AT ALL SEAMS. SECURE BOTTOM OF ALL DUCTS OVER 24 IN. WIDE WITH MIN. 2 ROWS OF WELD PINS 12 IN. ON CENTER. SECURE ALL SEAMS WITH FOIL VAPOR BARRIER TAPE AND VAPORSEAL ADHESIVE.

  2) FIBERGLASS LINER: LINER SHALL BE ADHERED TO THE SHEET METAL WITH FULL COVERAGE OF AN APPROVED ADHESIVE THAT CONFORMS TO ASTMC 916, AND ALL EXPOSED LEADING EDGES AND TRANSVERSE JOINTS SHALL BE COATED WITH PERMACOTE FACTORY-APPLIED OR FIELD APPLIED EDGE COATING AND SHALL BE NEATLY BUTTED WITHOUT GAPS. METAL NOSINGS SHALL BE SECURELY INSTALLED OVER TRANSVERSELY ORIENTED LINER EDGES FACING THE AIRSTREAM AT FORWARD DISCHARGE AND AT ANY POINT WHERE LINED DUCT IS PRECEDED BY UNLINED DUCT. LINER SHALL BE ADDITIONALLY SECURED WITH MECHANICAL FASTENERS SPACED PER MANUFACTURERS RECOMMENDATION. THE PIN LENGTH SHOULD BE SUCH AS TO HOLD THE MATERIAL FIRMLY IN PLACE WITH MINIMUM COMPRESSION OF THE MATERIAL.

10. PIPING INSULATION:

A. INSULATE ALL PIPING IN ACCORDANCE WITH INSULATION SCHEDULE EXCEPT AS OTHERWISE NOTED.

INSULATION SCHEDULE - PIPING

SERVICE	SIZE	THICKNESS	MATERIAL	FINISH
REFRIGERANT LIQUID & SUCTION LINES	ALL	½"	P-6	VAPORSEAL

11. PIPING - GENERAL REQUIREMENTS

A. COMPLETE WITH: PIPE, FITTINGS, VALVES, STRAINERS, MOTORIZED VALVE OPERATORS, STRAINERS, HANGERS, SUPPORTS, GUIDE, SLEEVES, AND ACCESSORIES. ALL WATER AND STEAM PIPING TO BE MINIMUM 3/4".

B. ALL ITEMS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING CODES AND STANDARDS:

  1) AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME).

  2) AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).

  3) AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).

  4) MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY (MSS).

FISKAA

FISKAA ENGINEERING
589 EIGHTH AVENUE NEW YORK, NY 10018
T 212 736 9600 F 212 736 9020 WWW.FISKAA.COM

sg

sweetgreen®

3101 W. EXPOSITION BLVD.
LOS ANGELES, CALIFORNIA 90018

ARCHITECT OF RECORD:

O'NEIL LANGAN
ARCHITECTS
15 WEST 37TH STREET
15TH FLOOR
NEW YORK, NY 10018
PHONE: 212-279-2670
FAX: 212-279-2671

STAMP:

07.18.2022

PROJECT INFORMATION:
PEABODY

PROJECT INFORMATION:
210 ANDOVER STREET,
PEABODY, MA

DRAWN BY:	Author
CHECKED BY:	Checker
PROJECT MANAGER:	JD
SG DESIGN MANAGER:	JM
SG CONSTR. MANAGER:	EL
PROJECT NO:	22.046.00
TEMPLATE VERSION:	06.01.2020

REVISIONS

REV.	DATE	DESCRIPTION
	07/18/2022	PERMIT SET
1	11/14/2022	LL COMMENTS
2	12/16/2022	IFC SET
3	02/13/2023	VE UPDATE

H.V.A.C.
SPECIFICATIONS
SHEET 1 OF 2

M-101

2/13/2023 2:42:55 PM

H.V.A.C. SPECIFICATIONS:

C. ALL PRESSURIZED PIPING TO BE TESTED HYDROSTATICALLY TO 150 PSI OR 150% OF OPERATING PRESSURE, WHICHEVER IS GREATER, BUT NEVER EXCEED TEST PRESSURE ANSI B16.1 BASIS. TEST DURATION TO BE 2 HOURS WITH NO PRESSURE CHANGE CORRECTED FOR TEMPERATURE CHANGE. REPAIR OR REPLACE LEAKS OR DEFECTS WITHOUT ADDITIONAL COST.

D. PROVIDE DIELECTRIC FITTINGS WHERE DISSIMILAR METALS ARE TO BE JOINED.

E. PIPE SUPPORTS:

1) PROVIDE ADEQUATE SUPPORT FOR PIPE AND CONTENTS TO PREVENT SAGGING, VIBRATION, OR SWAYING AND ALLOW FOR EXPANSION AND CONTRACTION. PROVIDE SUPPLEMENTAL STEEL AS REQUIRED WHERE STRUCTURE CANNOT SUPPORT POINT LOADS.

2) HORIZONTAL PIPING TO BE SUPPORTED BY FORGED STEEL ADJUSTABLE CLEVIS TYPE HANGER. MAXIMUM SPACING AS FOLLOWS:

a. STEEL 1 IN. AND SMALLER: 7 FT.

b. STEEL 1-1/4 IN. AND LARGER: 10 FT.

c. COPPER 3 IN. AND SMALLER: 7 FT.

d. ADDITIONAL SUPPORTS AT CHANGES IN DIRECTION, RUNOUTS, AND CONCENTRATED LOADS DUE TO VALVES, ETC.

3) VERTICAL PIPING:

a. BASE ELBOW SUPPORT WITH BEARING PLATE ON STRUCTURAL SUPPORT.

b. GUIDES AT EVERY SECOND FLOOR (SPACING NOT TO EXCEED 25 FT).

c. TOP SUPPORT HANGER OR SADDLE IN HORIZONTAL CONNECTION WITH PROVISIONS FOR EXPANSION.

d. INTERMEDIATE STEEL RISER CLAMP SUPPORT BOLTED AND WELDED TO PIPE BEARING ON STRUCTURAL STEEL OR BEARING PLATE AT FLOOR.

F. PIPING, VALVES AND FITTINGS TO BE INSULATED:

1) LOW TEMPERATURE PIPING SYSTEMS - 40 TO 100 DEG F INCLUDING:

a. CONDENSATE DRAIN PIPING.

b. MAKE UP WATER (COORDINATE WITH PLUMBING SPECIFICATIONS)

c. REFRIGERANT PIPING

d. CONDENSER WATER

G. MATERIAL:

1) TYPE P-1: MINIMUM 4 LB DENSITY MOLDED FIBERGLASS, MAXIMUM 0.23 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY-APPLIED FIRE-RETARDANT FOIL-SKRIM -KRAFT FACING. ALL SERVICE JACKET. SIMILAR TO OWENS-CORNING 650 ASJ.

2) TYPE P-3: MINIMUM 4 LB DENSITY MOLDED FIBERGLASS FITTING, MAXIMUM 0.23 K-FACTOR AT 75 DEG F MEAN TEMPERATURE SIMILAR TO EPOLUX HAMFAB MOLDED FITTINGS.

3) TYPE P-4: MINIMUM 1 LB DENSITY FIBERGLASS FITTING INSERTS, MAXIMUM 0.28 K-FACTOR AT 75 DEG F MEAN TEMPERATURE SIMILAR TO MANVILLE HI-LO TEMP INSULATION INSERTS.

4) TYPE P-6: MINIMUM 6 LB MOLDED FOAMED PLASTIC. MAXIMUM 0.27 K-FACTOR AT 75 DEG F MEAN TEMPERATURE. MAXIMUM 0.17 PERMEANCE. SIMILAR TO ARMSTRONG ARMAFLEX II.

H. FINISH:

1) TYPE F-1: FITTING COVER, MOLDED WHITE PVC JACKET, UL CLASS 1, MAXIMUM PERMEANCE 0.05 SIMILAR TO MANVILLE ZESTRON.

2) TYPE F-2: WHITE VAPOR BARRIER COATING WITH 10X10 OR 20X20 MESH WHITE GLASS, POLYESTER OR NYLON CLOTH REINFORCING MEMBRANE, MINIMUM 31 MIL DRY FILM THICKNESS, SIMILAR TO FOSTER TITE-FIT, UL LABEL.

3) TYPE F-4: ALUMINUM JACKETING WITH MINIMUM 0.016 IN. WALL THICKNESS AND LONGITUDINAL JOINTS WITH LOCK SEAMS.

4) TYPE F-6: ALL PURPOSE JACKET WITH LONGITUDINAL TAPE STRIPPING TO PROTECT INSULATION, SIMILAR TO JOHNS MANVILLE APJ.

I. INSTALLATION:

1) BEFORE APPLYING INSULATION ALL PRESSURE AND LEAK TESTS SHALL BE COMPLETED AND APPROVED.

2) ALL INSULATION SHALL BE BUTTED FIRMLY TOGETHER. PROVIDE 2 IN. LAMP STRIPS AT ALL SEAMS SECURED WITH ADHESIVE. USE VAPOR BARRIER TAPE AND VAPORSEAL ADHESIVE WHERE REQUIRED. STAPLES NOT PERMITTED. REFRIGERANT PIPING INSULATION SHALL HAVE MITERED FITTINGS.

3) ALL INSULATION AND VAPOR BARRIERS SHALL BE CONTINUOUS PASSING THROUGH SLEEVES, HANGERS, ETC., OR OTHER OPENINGS. PROVIDE SADDLES OR SHIELDS FOR PROTECTION.

4) INSULATION FOR STRAINERS OR OTHER FITTINGS OR ACCESSORIES REQUIRING SERVICING OR INSPECTION SHALL HAVE INSULATION REMOVABLE AND REPLACEABLE WITHOUT DAMAGE.

12. REFRIGERANT PIPING:

A. PIPE: ASTM B280 TYPE ACR COPPER TUBING FOR R-410A APPLICATIONS.

B. FITTINGS: BRAZED.

C. PIPING APPURTENANCES SUCH AS, BUT NOT LIMITED TO, THE FOLLOWING: FILTER DRIERS, SUCTION ACCUMULATOR, ETC. SHALL BE FURNISHED BY THE MANUFACTURER OR PROVIDED BY THE MECHANICAL CONTRACTOR BASED ON MANUFACTURER'S EQUIREMNTS AND SPECIFICATIONS. PIPIG APPURTENANCES EXTERNAL TO AC UNITS SHALL BE INSTALLED BY THE MECHANICAL CONTRACTOR PURSUANT TO THE MANUFACTURER'S REQUIREMENTS.

D. INSTALL PIPING SO AS NOT TO PRODUCE TRAPPING OF OIL.

13. CONDENSATE DRAIN PIPING

A. PIPE: ASTM B88, HARD DRAWN COPPER TUBING TYPE "L".

B. FITTINGS: BRAZED.

C. PITCH, EXCEPT AS NOTED:

1) 1 IN. IN 4 FT PREFERRED.

2) 1 IN. IN 8 FT MINIMUM.

D. SWING CHECK VALVES: AT CONDENSATE PUMP DISCHARGE. 300 LB WOG, BRONZE BODY SOLDER ENDS, REGRIND BRONZE DISC TO BE USED WITH COPPER TUBING. JENKINS FIG. 1222.

14. VIBRATION ISOLATION

A. GENERAL:

1) PROVIDE ISOLATION FOR EQUIPMENT, PIPING AND DUCTWORK.

2) INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

3) PROVIDE LEVELING DEVICES AND APPROVED RESILIENT RESTRAINING DEVICES AS REQUIRED TO LIMIT EQUIPMENT AND PIPING MOTION IN EXCESS OF 1/4 IN.

4) ACCEPTABLE MANUFACTURERS:

a. MASON INDUSTRIES, INC.

b. VIBRATION ELIMINATOR CO.

c. KORFUND DYNAMICS CORP.

B. CEILING-HUNG FANS AND EQUIPMENT:

1) PROVIDE SPRING HANGER ROD ISOLATORS. STEEL COMPRESSION SPRING AND NEOPRENE SOUND PAD WITHIN A STEEL RETAINER BOX. SIMILAR TO MASON TYPE PCHS.

2) 1 IN. MINIMUM STATIC DEFLECTION. 1/2 IN. MINIMUM RESERVE DEFLECTION. FACTORY-PRELOADED TO 75% OF RATED LOAD.

3) PROVIDE SUPPLEMENTAL STEEL AS REQUIRED WHERE EQUIPMENT OR STRUCTURE CANNOT SUPPORT POINT LOADS.

C. FLOOR MOUNTED EQUIPMENT HAVING INTERNAL ISOLATION:

1) PROVIDE 5/16 IN.-THICK NEOPRENE ACOUSTICAL BASE PADS OF RIBBED OR WAFFLE CONSTRUCTION. SIMILAR TO MASON TYPE W.

2) 50 PSI MAXIMUM LOADING. PROVIDE STEEL BEARING PLATE TO DISTRIBUTE LOAD WHERE REQUIRED.

D. FLOOR-MOUNTED EQUIPMENT REQUIRING EXTERNAL VIBRATION ISOLATION:

1) PROVIDE BUILT-IN RESILIENT VERTICAL LIMIT STOPS. PROVIDE TWO LAYERS OF 1/4 IN. NEOPRENE BASE PAD SEPARATED BY 1/16 IN. SHEET STEEL. TAPPED HOLES SHALL BE IN TOP PLATE FOR BOLTING TO EQUIPMENT. ISOLATORS SHALL BE CAPABLE OF SUPPORTING EQUIPMENT AT A FIXED ELEVATION DURING ISOLATION.

2) 1 IN. MINIMUM STATIC DEFLECTION.

3) CORROSION RESISTANT WHEN EXPOSED TO WEATHER.

15. HVAC EQUIPMENT SPECIFICATIONS - SEE MECHANICAL SCHEDULES FOR MORE INFORMATION:

A. CENTRIFUGAL INLINE DIRECT DRIVE FANS - (GX-1, TX-1)

1) DUCT MOUNTED SUPPLY, EXHAUST OR RETURN FANS SHALL BE OF CENTRIFUGAL, DIRECT DRIVEN IN-LINE TYPE.

2) THE FAN HOUSING SHALL BE OF THE SQUARE DESIGN, CONSTRUCTED OF HEAVY GAUGE GALVANIZED STEEL AND SHALL INCLUDE SQUARE DUCT MOUNTING COLLARS.

3) FAN CONSTRUCTION SHALL INCLUDE TWO REMOVABLE ACCESS PANELS LOCATED PERPENDICULAR TO THE MOTOR MOUNTING PANEL. THE ACCESS PANELS MUST BE SUFFICIENT SIZE TO PERMIT EASY ACCESS TO ALL INTERIOR COMPONENTS.

B. AIR DOOR:

1) THE UNIT SHALL CONSIST OF STAINLESS STEEL CASING, CENTRIFUGAL FANS, RAISED STAINLESS STEEL INLET SCREEN, DISCHARGE NOZZLE, MOTOR(S), AND AN OPTIONAL Ï" RECLEANABLE FILTER. THE AIR CURTAIN UNIT SHALL PROVIDE A SPECIFIC CFM AND A UNIFORM VELOCITY ACROSS THE ENTIRE LENGTH OF THE DISCHARGE AREA.

2) MOTORS SHALL BE HEAVY DUTY TYPE EQUIPPED WITH PERMANENTLY LUBRICATED, SHIELDED SLEEVE BEARINGS OF EQUAL SIZE AT EACH END AND DOUBLE EXTENDED SHAFTS REQUIRING NO OUTBOARD BEARINGS.

3) FANS SHALL BE GALVANIZED AND FORWARD CENTRIFUGAL TYPE, DOUBLE INLET DESIGN, WITH ZINC LATED HUBS. TANGENTIAL TYPE BLOWERS AND COUPLING CONNECTION SHALL NOT BE PERMITTED. INLET SCREEN SHALL BE PERFORATED STAINLESS STEEL POWDER COATED BLACK.

4) DISCHARGE NOZZLE SHALL BE HIGH EFFICIENCY, DISCHARGE PLENUM, DESIGNED SO THAT THE AIR LEAVES ON A 6 DEGREE PLANE. AIR CURTAIN CREATES A POSITIVE AIR SEAL WITH DIRECTIONAL AIRFOIL VANE. THE VANE SHALL FACILITATE DEFLECTION OF AIR STREAM 20 DEGREES. UNIT SHALL HAVE MULTIPLE SPEED MOTOR(S) TO CONTROL AIR VOLUME DOWN FROM MAXIMUM SPEED.

5) UNITS SHALL BE PROVIDED WITH A FACTORY MATCHED ELECTRIC HEATER.

.

16. OPERATION OF TYPICAL CONTROL SAFETY DEVICES.

A. HOA SUPPLY FAN SWITCHES: SAFETY DEVICES SHALL BE INTERLOCKED WITH "HAND" AND "AUTOMATIC" POSITIONS IN SERIES WITH MOTOR CONTROLLER HOLDING COIL CIRCUIT. INTERLOCKING WITH OTHER FANS AND EQUIPMENT OF SYSTEM SHALL BE THROUGH "AUTOMATIC" POSITION ONLY. "HAND" POSITION SHALL BE FOR MAINTENANCE ONLY.

B. SAFETY DEVICES FOR ALL SYSTEMS, EXCEPT AS OTHERWISE NOTED BELOW:

1) ONE FREEZE PROTECTION THERMOSTAT PER COIL SECTION, WIRED TO STOP SUPPLY FAN IN THE EVENT OF LOW ENTERING AIR TEMPERATURE. THERMOSTAT SHALL BE AUTOMATIC RESET TYPE.

2) FOR SYSTEMS OVER 2,000 CFM, A DUCT MOUNTED SMOKE DETECTOR WITH SAMPLING PROBE LOCATED IN THE SUPPLY AND RETURN DUCT/PLENUM SIMILAR TO GE MODEL SIGA-SD. DUCT SHALL STOP THE SUPPLY FAN AND ASSOCIATED INTERLOCKED EQUIPMENT SHOULD PRODUCTS OF COMBUSTION BE SENSED.

3) LOW STATIC PRESSURE LIMIT SWITCHES WITH MANUAL RESET SHALL STOP ASSOCIATED SUPPLY FANS WHEN STATIC PRESSURE AT SUPPLY FOR INLET SECTIONS FALLS TO ITS SETTING.

4) HVAC PANEL(S) SHALL BE INCLUDED WITH THE FOLLOWING ALARM FEATURES:
(i) LOSS OF AIR FLOW ALARM
(ii) DRAIN PAN ALARM INDICATING A POSSIBLE OVERFLOW CONDITION

5) FILTER ALARM INDICATING FILTERS ARE DIRTY AND NEEDS TO BE CHANGED

6) COMPRESSOR HI/LO PRESSURE ALARMS: SHUT THE APPROPRIATE COMPRESSOR AND PREVENT COMPRESSOR DAMAGE FROM EXTREME PRESSURES.

7) ROOM TEMPERATURE AND HUMIDITY READINGS WITH USER ADJUSTABLE HIGH AND LOW LIMIT ALARMS FOR ALL MISSION CRITICAL SPACES (I.E. SERVER ROOMS, ELECTRICAL CLOSETS, WALK-IN FREEZERS, ETC)
8) HEATER HI-LIMIT ALARM: SHUTS OFF THE HEATER WHEN THE TEMPERATURE RISES WITHIN THE UNIT DUE TO FAN FAILURE (I.E. NO AIRFLOW)

9) ALL ALARMS INCLUDED ON THE MECHANICAL DRAWINGS AND SEQUENCE OF OPERATIONS THAT ARE NOT INCLUDED IN THIS SECTION.

10) CONTRACTOR SHALL PROVIDE ADDITIONAL ATC WIRING AS REQUIRED FOR ALL STANDARD SAFETY FEATURED PROVIDED BY THE MANUFACTURER OF ALL SPECIFIED HVAC EQUIPMENT.

17. AUTOMATIC CONTROLS - GENERAL REQUIREMENTS

A. FURNISH AND INSTALL A COMPLETE ELECTRIC OR ELECTRONIC CONTROL SYSTEM TO PROVIDE TEMPERATURE CONTROL AS SPECIFIED UNDER DESCRIPTION OF OPERATION.

B. WORK SHALL INCLUDE ALL WIRING, CONTROL EQUIPMENT, AND ACCESSORIES NECESSARY TO MAKE THIS SYSTEM COMPLETE. ALL WIRING SHALL BE 24 VOLT. ALL OUTDOOR CONTROL WIRING SHALL BE INSTALLED WITHIN ELECTRICAL CONDUIT. COORDINATE WITH MANUFACTURER FOR INTERCONNECTION WITH CONTROLS INCLUDED IN EQUIPMENT. ALL CONTROL WORK SHALL BE INSTALLED BY HVAC CONTRACTOR.

C. ACCEPTABLE MANUFACTURERS:

1) JOHNSON SERVICE CO.

2) HONEYWELL, INC.

D. OPERATION OF TYPICAL CONTROL SAFETY DEVICES.

1) HOA SUPPLY FAN SWITCHES: SAFETY DEVICES SHALL BE INTERLOCKED WITH "HAND" AND "AUTOMATIC" POSITIONS IN SERIES WITH MOTOR CONTROLLER HOLDING COIL CIRCUIT. INTERLOCKING WITH OTHER FANS AND EQUIPMENT OF SYSTEM SHALL BE THROUGH "AUTOMATIC" POSITION ONLY. "HAND" POSITION SHALL BE FOR MAINTENANCE ONLY.

E. SAFETY DEVICES FOR ALL SYSTEMS, EXCEPT AS OTHERWISE NOTED BELOW:

1) ONE FREEZE PROTECTION THERMOSTAT PER COIL SECTION, WIRED TO STOP SUPPLY FAN IN THE EVENT OF LOW ENTERING AIR TEMPERATURE. THERMOSTAT SHALL BE AUTOMATIC RESET TYPE.

2) FOR SYSTEMS OVER 2,000 CFM, A DUCT MOUNTED SMOKE DETECTOR WITH SAMPLING PROBE LOCATED IN THE SUPPLY AND RETURN DUCT/PLENUM SIMILAR TO GE MODEL SIGA-SD. DUCT SHALL STOP THE SUPPLY FAN AND ASSOCIATED INTERLOCKED EQUIPMENT SHOULD PRODUCTS OF COMBUSTION BE SENSED.

3) LOW STATIC PRESSURE LIMIT SWITCHES WITH MANUAL RESET SHALL STOP ASSOCIATED SUPPLY FANS WHEN STATIC PRESSURE AT SUPPLY FOR INLET SECTIONS FALLS TO ITS SETTING.

4) HVAC PANEL(S) SHALL BE INCLUDED WITH THE FOLLOWING ALARM FEATURES:

(i) LOSS OF AIR FLOW ALARM

(ii) DRAIN PAN ALARM INDICATING A POSSIBLE OVERFLOW CONDITION

5) FILTER ALARM INDICATING FILTERS ARE DIRTY AND NEEDS TO BE CHANGED.

6) COMPRESSOR HI/LO PRESSURE ALARMS: SHUT THE APPROPRIATE COMPRESSOR AND PREVENT COMPRESSOR DAMAGE FROM EXTREME PRESSURES.

7) HEATER HI-LIMIT ALARM: SHUTS OFF THE HEATER WHEN THE TEMPERATURE RISES WITHIN THE UNIT DUE TO FAN FAILURE (I.E. NO AIRFLOW)

8) ALL ALARMS INCLUDED ON THE MECHANICAL DRAWINGS AND SEQUENCE OF OPERATIONS THAT ARE NOT INCLUDED IN THIS SECTION.

9) CONTRACTOR SHALL PROVIDE ADDITIONAL ATC WIRING AS REQUIRED FOR ALL STANDARD SAFETY FEATURED PROVIDED BY THE MANUFACTURER OF ALL SPECIFIED HVAC EQUIPMENT.

18. SEQUENCE OF OPERATIONS.

A) ELECTRIC ROOF TOP UNIT (RTU-1, RTU-2):

1) FAN OFF: THROUGH PROGRAMMABLE THERMOSTAT WITH ASSOCIATED SPACE TEMPERATURE SENSOR SUPPLY FAN SHALL TURN OFF. COMPRESSOR SHALL DE-ENGERGIZE, CONDENSER FAN SHALL SHUT OFF.

2) FAN ON: THROUGH PROGRAMMABLE THERMOSTAT EVAPORATOR FAN SHALL ENERGIZE, RETURN AIR, OUTDOOR AIR INTAKE AND RELIEF AIR DISCHARGE DAMPERS SHALL MODULATE TO THEIR MINIMUM VENTILATION POSITIONS, CONDENSER FANS SHALL REMAIN OFF, COMPRESSORS SHALL REMAIN OFF.

3) COOLING MODE: THROUGH PROGRAMMABLE THERMOSTAT EVAPORATOR FAN SHALL ENERGIZE, RETURN AIR, OUTDOOR AIR INTAKE AND RELIEF AIR DISCHARGE DAMPERS SHALL MODULATE TO THEIR MINIMUM VENTILATION POSITIONS, CONDENSER FANS SHALL ENERGIZE, COMPRESSORS SHALL ENERGIZE. UPON CALL FOR COOLING THERMOSTAT SHALL CYCLE COMPRESSORS TO MAINTAIN USER ADJUSTABLE SPACE TEMPERATURE SETPOINT.

4) HEATING MODE: THROUGH PROGRAMMABLE THERMOSTAT EVAPORATOR FAN SHALL ENERGIZE,OUTDOOR AIR INTAKE AND RELIEF AIR DISCHARGE DAMPERS SHALL MODULATE TO THEIR MINIMUM VENTILATION POSITIONS, SYSTEM SHALL INITIALLY PROVIDE FULL HEAT. ONCE SPACE TEMPERATURE IS SATISFIED, SYSTEM SHALL MODULATE TO MAINTAIN USER ADJUSTABLE SPACE TEMPERATURE SETPOINT.

B) DUCT SMOKE DETECTORS:

1) LEAK DETECTOR SHALL GENERATE A CONTROL SIGNAL WHENEVER WATER IS DETECTED. A EMOTE MOUNTED RED LED ALARM LIGHT SHALL PROVIDE A VISUAL LEAK DETECTOR SHALL HAVE AUDIBLE ALARM THAT WILL SOUND IF WATER IS DETECTED.

2) ON SMOKE DETECTION BY SMOKE DETECTOR, RTU SHALL DE-ENERGIZE. A REMOTE MOUNTED RED LED ALARM LIGHT SHALL PROVIDE A VISUAL

C) GENERAL KITCHEN EXHAUST FAN (GX-1):

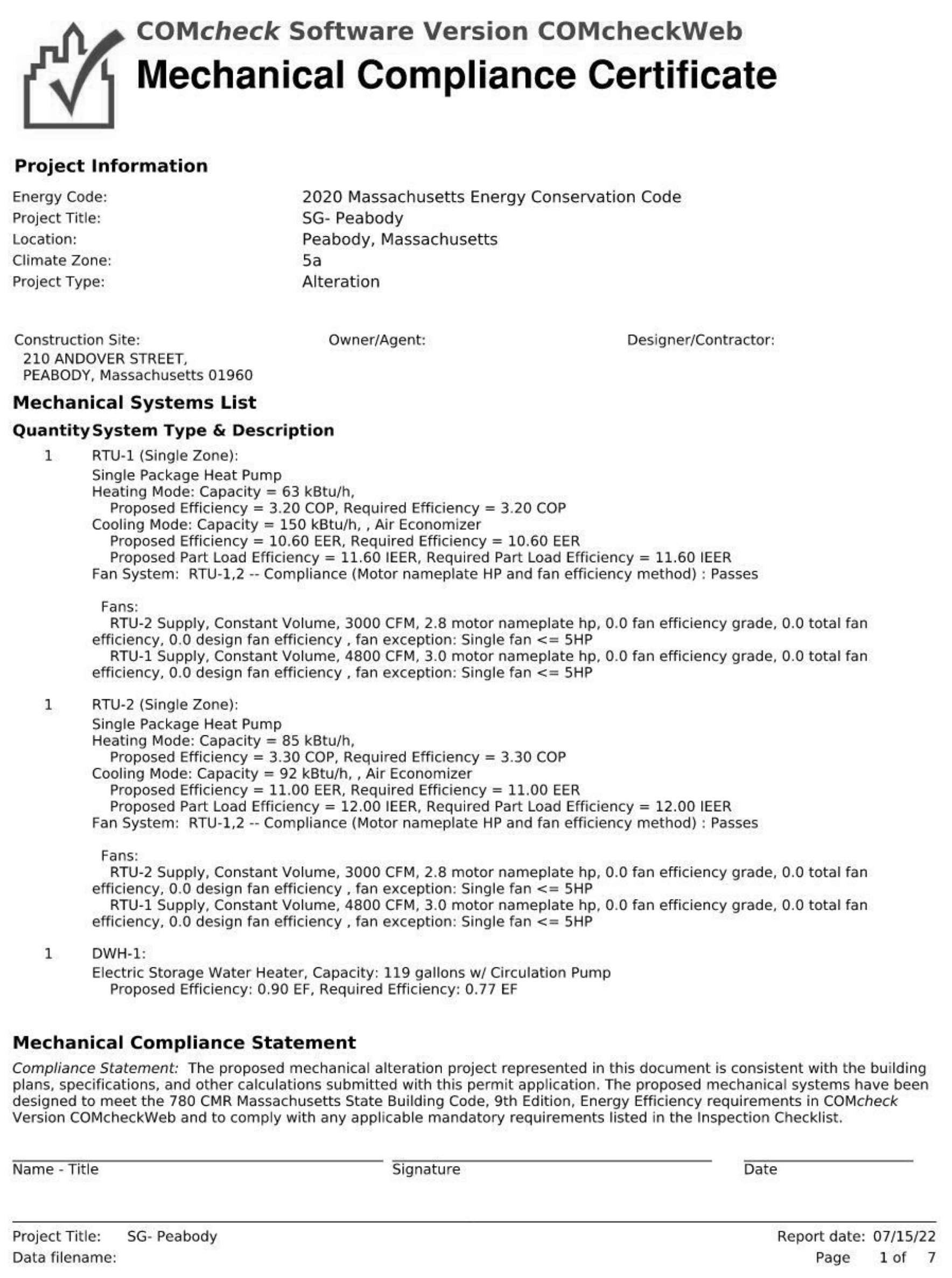
1) EXHAUST FAN SHALL OPERATE CONTINUOUSLY STORE HOURS VIA TIMECLOCK.

D) TOILET EXHAUST FAN (TX-1):

1) FAN SHALL SHALL OPERATE CONTINUOUSLY STORE HOURS VIA TIMECLOCK.

E) AIR CURTAIN (AD-1 & AD-2):

1) AIR CURTAIN SHALL BE COTROLLED VIA ASSOCIATED THERMOSTAT AND ASSOCIATED REMOTE TEMPERATURE SENSOR. WHEN DOOR OPENS AIR CURTAIN AND HEATING ELEMENT SHALL ENERGIZE. SUPPLY FAN SHALL REMAIN ON UNTIL THE DOOR CLOSES.



COMcheck Software Version COMcheckWeb

Mechanical Compliance Certificate

Project Information

Energy Code: 2020 Massachusetts Energy Conservation Code
Project Title: SG- Peabody
Location: Peabody, Massachusetts
Climate Zone: 5a
Project Type: Alteration

Construction Site:
210 ANDOVER STREET,
PEABODY, Massachusetts 01960

Owner/Agent:

Designer/Contractor:

Mechanical Systems List

Quantity	System Type & Description
1	RTU-1 (Single Zone): Single Package Heat Pump Heating Mode: Capacity = 63 kBtu/h, Proposed Efficiency = 3.20 COP, Required Efficiency = 3.20 COP Cooling Mode: Capacity = 150 kBtu/h, , Air Economizer Proposed Efficiency = 10.60 EER, Required Efficiency = 10.60 EER Proposed Part Load Efficiency = 11.60 IEER, Required Part Load Efficiency = 11.60 IEER Fan System: RTU-1,2 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes Fans: RTU-2 Supply, Constant Volume, 3000 CFM, 2.8 motor nameplate hp, 0.0 fan efficiency grade, 0.0 total fan efficiency, 0.0 design fan efficiency , fan exception: Single fan <= 5HP RTU-1 Supply, Constant Volume, 4800 CFM, 3.0 motor nameplate hp, 0.0 fan efficiency grade, 0.0 total fan efficiency, 0.0 design fan efficiency , fan exception: Single fan <= 5HP
1	RTU-2 (Single Zone): Single Package Heat Pump Heating Mode: Capacity = 85 kBtu/h, Proposed Efficiency = 3.30 COP, Required Efficiency = 3.30 COP Cooling Mode: Capacity = 92 kBtu/h, , Air Economizer Proposed Efficiency = 11.00 EER, Required Efficiency = 11.00 EER Proposed Part Load Efficiency = 12.00 IEER, Required Part Load Efficiency = 12.00 IEER Fan System: RTU-1,2 -- Compliance (Motor nameplate HP and fan efficiency method) : Passes Fans: RTU-2 Supply, Constant Volume, 3000 CFM, 2.8 motor nameplate hp, 0.0 fan efficiency grade, 0.0 total fan efficiency, 0.0 design fan efficiency , fan exception: Single fan <= 5HP RTU-1 Supply, Constant Volume, 4800 CFM, 3.0 motor nameplate hp, 0.0 fan efficiency grade, 0.0 total fan efficiency, 0.0 design fan efficiency , fan exception: Single fan <= 5HP
1	DWH-1: Electric Storage Water Heater, Capacity: 119 gallons w/ Circulation Pump Proposed Efficiency: 0.90 EF, Required Efficiency: 0.77 EF

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical alteration project 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 780 CMR Massachusetts State Building Code, 9th Edition, Energy Efficiency requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title
Signature
Date

Project Title: SG- Peabody
Data filename:
Report date: 07/15/22
Page 1 of 7

sg

sweetgreen®

3101 W. EXPOSITION BLVD.
LOS ANGELES, CALIFORNIA 90018

ARCHITECT OF RECORD:

O'NEIL LANGAN
ARCHITECTS
15 WEST 37TH STREET
15TH FLOOR
NEW YORK, NY 10018
PHONE: 212-279-2670
FAX: 212-279-2671

STAMP:

07.18.2022

PROJECT INFORMATION:
PEABODY

PROJECT INFORMATION:
210 ANDOVER STREET,
PEABODY, MA

DRAWN BY:	Author
CHECKED BY:	Checker
PROJECT MANAGER:	JD
SG DESIGN MANAGER:	JM
SG CONSTR. MANAGER:	EL
PROJECT NO:	22.046.00
TEMPLATE VERSION:	06.01.2020

REVISIONS

REV.	DATE	DESCRIPTION
	07/18/2022	PERMIT SET
1	11/14/2022	LL COMMENTS
2	12/16/2022	IFC SET
3	02/13/2023	VE UPDATE

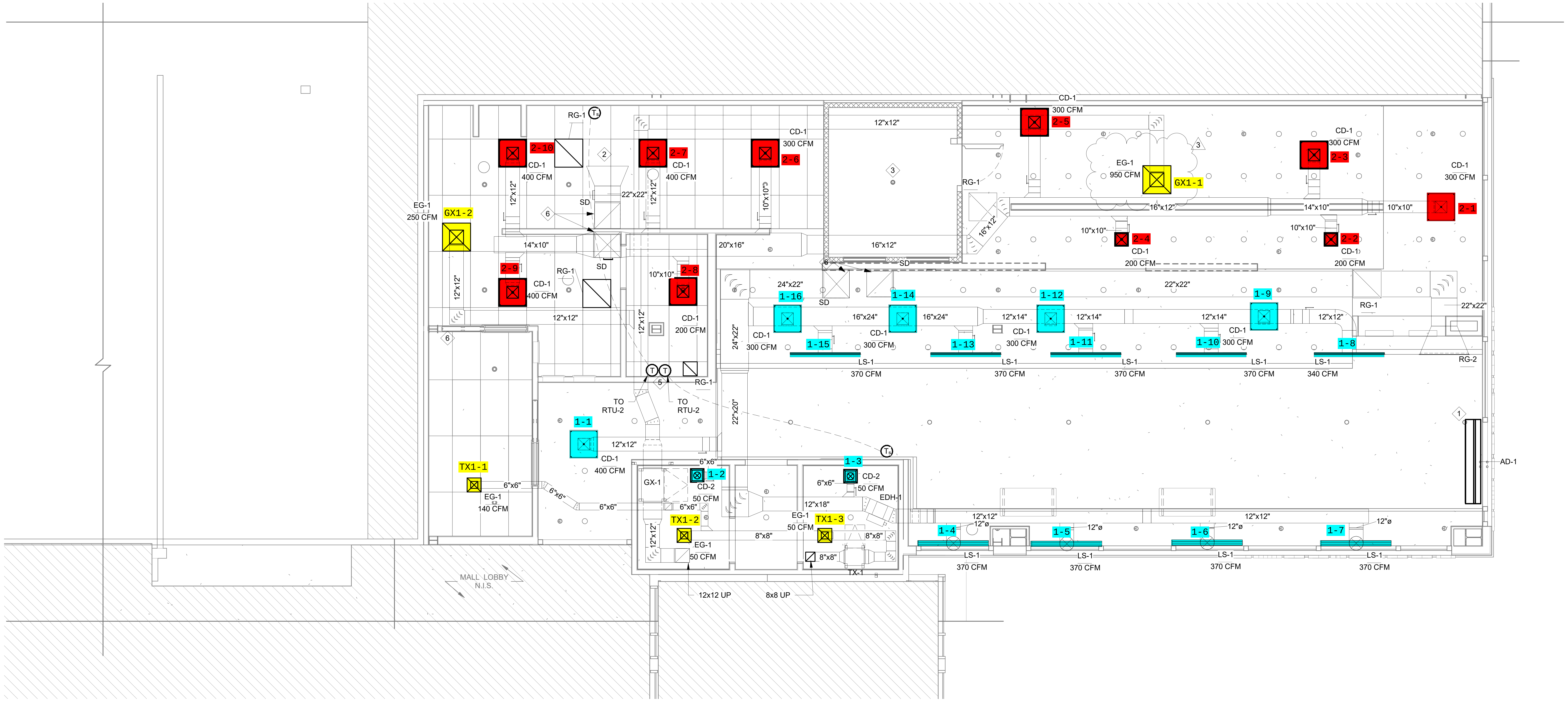
H.V.A.C. SPECIFICATIONS SHEET 2 OF 2 & COMCHECK

M-102

FISKAA

FISKAA ENGINEERING
589 EIGHTH AVENUE NEW YORK, NY 10018
T 212 736 9600 F 212 736 9020 WWW.FISKAA.COM

2/13/2023 2:42:55 PM



MECHANICAL PLAN

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

PLAN NOTES:

1. CONTRACTOR SHALL VERIFY IN FIELD EXACT DUCT ROUTING LOCATION AND CONNECTIONS. CONTRACTOR SHALL COORDINATE WITH ALL TRADES BEFORE ANY WORK IS TO BE PERFORMED. REPORT ANY DISCREPANCIES TO BUILDING MANAGEMENT AND ENGINEER.
2. CONTRACTOR SHALL INSTALL ALL NEW DUCT AS HIGH AS POSSIBLE TO THE CEILING. ALL NEW DUCTWORK SHALL BE PROPERLY SECURED AS PER MECHANICAL SPECIFICATIONS.
3. PROVIDE VOLUME DAMPERS FOR ALL BRANCH DUCTS AND CONNECTIONS TO AIR OUTLETS. PROVIDE CABLE OPERATED, CONCEALED, OPPOSED BLADE DAMPERS FOR BRANCHES AND AIR OUTLETS LOCATED IN NON-ACCESSIBLE CEILINGS MAINTAIN AREA CEILING HEIGHTS.
4. SHEET METAL DUCTWORK DIMENSIONS SHOWN ARE CLEAR INSIDE DIMENSIONS.
5. COORDINATE LOCATIONS, ACCESS AND DETAILS OF VISIBLE DEVICES AND AIR OUTLETS WITH THE ARCHITECT PRIOR TO INSTALLATION.
6. INTERNALLY LINED DUCTWORK IS REQUIRED FOR ACOUSTICAL PURPOSES. PROVIDE 1" ACOUSTICAL LINING 20 FEET UPSTREAM AND DOWNSTREAM OF FAN COIL UNITS AND FANS.
7. PROVIDE CONNECTIONS TO AIR REGISTERS TO ALLOW FOR THE BRANCH VOLUME DAMPERS TO ROTATE WITHOUT OBSTRUCTION. SEE AIR OUTLET SCHEDULES FOR REGISTER NECK SIZES.
8. COORDINATE EQUIPMENT & DUCTWORK HANGING WITH SEISMIC REQUIREMENTS FROM PANYNJ.
9. CONTRACTOR TO FULLY WALK SITE PRIOR TO SUBMITTING FINAL BID.
10. ALL TENANT HVAC SYSTEMS SHALL BE COMMISSIONED UPON COMPLETION OF CONSTRUCTION AND PRIOR TO OCCUPANCY AS PER THE REQUIREMENTS DEFINED IN THE TENANT TECHNICAL CRITERIA MANUAL.
11. REFER TO TABLE CFM'S REQUIRED AT THE CONNECTION POINT FOR AIR BALANCING PURPOSES

REFERENCE NOTES:

1. PROVIDE AIR DOOR ABOVE ENTRANCE. REFER TO MECHANICAL SCHEDULES AND DETAILS FOR MORE INFORMATION.
2. PROVIDE WIRE MESH SCREEN IN RETURN DUCT
3. PROVIDE CONDENSATE PUMP FOR WALK IN COOLER. ROUTE CONDENSATE PIPE TO NEAREST MOP SINK.
4. FOR RTU PENETRACTION LL SUPPLIED FIRE DAMPER AND SG SUPPLIED SMOKE DETETOR.
5. COORDINATE EXACT LOCATION WITH THE ARCHITECT.
6. 1" DOOR UNDERCUT.

LANDLORD MECHANICAL COMMENTS

ANY CHANGES AND OR UPGRADES TO TENANTS EXISTING MECHANICAL SYSTEMS SHALL COMPLY WITH ALL CODES AND MALL CRITERIA. EXISTING SYSTEMS SHALL PROCESS OF THE CAPACITY TO HANDLE ANY AND ALL CHANGES IN LOAD.

NO PITCH POCKETS ARE PERMITTED ON THE ROOF FOR ANY CONDENSATE DRAINS, REFRIGERANT PIPING POWER OR CONTROL WIRING. ALL CONNECTIONS ARE TO BE MADE INSIDE THE EQUIPMENT CURB OR THROUGH PRE-MANUFACTURED PIPING CURB.

NOTHING IS PERMITTED TO BE ATTACHED TO, SUSPENDED FROM OR PENETRATE LANDLORDS STRUCTURE, FLOOR DECK OR ROOF DECK. YOU MAY ATTACH NON-DESTRUCTIVELY TO OR SUSPEND FROM THE TOP CHORD OF THE JOIST OR THE STRUCTURAL STEEL WHICH EXISTS ABOVE THE TENANT SPACE. WHEN ATTACHED TO LANDLORD'S STRUCTURE DO NOT DRILL, WELD, SCREW OR SHOOT INTO STRUCTURE. ALTERNATIVE METHODS OF ATTACHMENT ONLY. NOTHING TO DAMAGE LANDLORDS BASE BUILDING STRUCTURE. TENANT SHALL PROVIDE SIGNED AND SEALED STRUCTURAL DRAWINGS BY A STRUCTURAL ENGINEER WITH LEGALLY ACTIVE REGISTRATION AS INDICATED BY ALL JURISDICTIONAL REQUIREMENTS FOR ALL STRUCTURAL MODIFICATIONS FOR LANDLORD RECORDS.

ALL PENETRATIONS TO ROOF MUST BE APPROVED BY LANDLORD. ALL RELATED ROOF WORK MUST BE DONE BY MALLS DESIGNATED ROOFING CONTRACTOR, AT TENANT'S EXPENSE. COORDINATE ALL WORK WITH PROPERTY MANAGEMENT ON SITE.

TENANT MUST REMOVE ALL ABANDONED ROOFTOP AND OR MECHANICAL EQUIPMENT ABOVE THE LEASED PREMISES AND WITHIN THE LEASED PREMISES AT TENANT EXPENSE. PATCH AND REPAIR ROOF AS NEEDED.

TENAT'S GC TO LABEL ALL THE ROOF TOP EQUIPMENT WITH TENANT NAME SPACE NUMBER AND EQUIPMENT IDENTIFICATION (RTU-1, EF-1) PER MALL SPECIFICATIONS STANDARDS.

ALL PIPING ON THE ROOF SHALL BE SUPPORTED ON PRE- MANUFACTURED PIPE SUPPORTS INSTALLED ON CARRY TREAD SPACED PROPERTY TO SUPPORT PIPING. TREATED WOOD SUPPORTS ARE NOT PERMITTED.

ALL UNEXPOSED SUPPLY AIR AND OUTSIDE AIR DUCT WORK SHALL BE AT EXTERNALLY INSULATED WITH 1 ½" THICK FOIL FACE INSULATION. INTERNALLY LINED DUCTWORK MAY BE USED FOR ACOUSTIC PURPOSES ONLY, NOT AS SUBSTITUTE FOR EXTERNAL INSULATION.

ALL DUCTWORK SHALL BE SHEET METAL. FLEX DUCT MAY ONLY BE USED IN RUNS 5 FEET OR LESS.

AT THE CONCLUSION OF PROJECT HVAC SYSTEM MUST BE TESTED AND BALANCED BY A LICENSED CONTRACTOR. COPY OF BALANCE REPORT MUST BE PROVIDED TO PROPERTY MANAGEMENT OFFICE ON SITE

LANDLORD STRONGLY PREFER USE OF ENERGY STAR PRODUCTS AND/OR EQUIPMENT WHEN EVER POSSIBLE DURING TENANT BUILD OUT, WHICH CAN REDUCE ENERGY CONSUMPTION.

2/13/2023 2:42:57 PM

FISKAA

FISKAA ENGINEERING
589 EIGHTH AVENUE NEW YORK, NY 10018
T 212 736 9600 F 212 736 9020 WWW.FISKAA.COM

sg

sweetgreen®

3101 W. EXPOSITION BLVD.
LOS ANGELES, CALIFORNIA 90018

ARCHITECT OF RECORD:

O'NEIL LANGAN
ARCHITECTS
15 WEST 37TH STREET
15TH FLOOR
NEW YORK, NY 10018
PHONE: 212-279-2670
FAX: 212-279-2671

STAMP:

07.18.2022

PROJECT INFORMATION:
PEABODY

PROJECT INFORMATION:
210 ANDOVER STREET,
PEABODY, MA

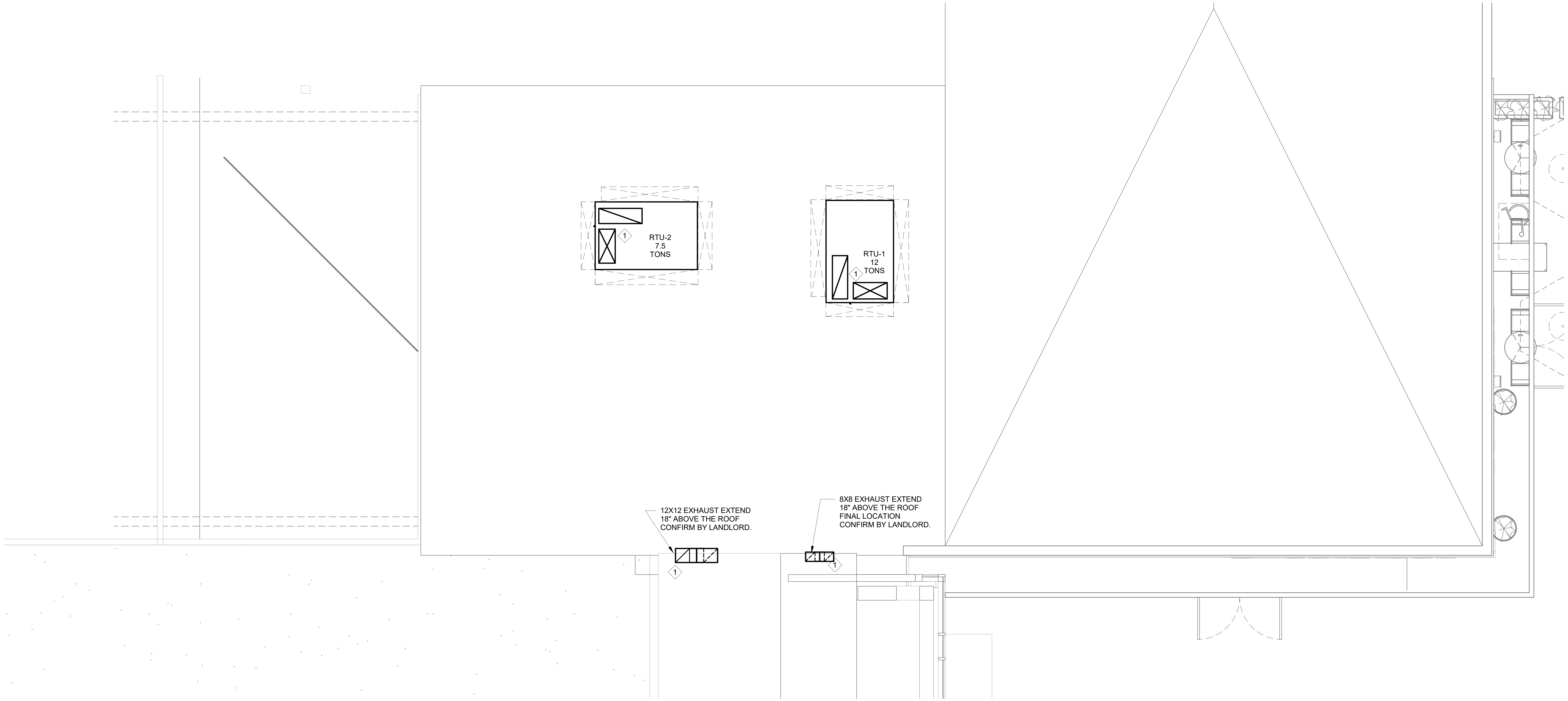
DRAWN BY:	Author
CHECKED BY:	Checker
PROJECT MANAGER:	JD
SG DESIGN MANAGER:	JM
SG CONSTR. MANAGER:	EL
PROJECT NO:	22.046.00
TEMPLATE VERSION:	06.01.2020

REVISIONS

REV.	DATE	DESCRIPTION
	07/18/2022	PERMIT SET
1	11/14/2022	LL COMMENTS
2	12/16/2022	IFC SET
3	02/13/2023	VE UPDATE

H.V.A.C. GROUND FLOOR PLAN

M-300



MECHANICAL PIPING FLOOR PLAN

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

PLAN NOTES:

1. CONTRACTOR SHALL VERIFY IN FIELD EXACT DUCT ROUTING LOCATION AND CONNECTIONS. CONTRACTOR SHALL COORDINATE WITH ALL TRADES BEFORE ANY WORK IS TO BE PERFORMED. REPORT ANY DISCREPANCIES TO MALL MANAGEMENT AND ENGINEER.
2. CONTRACTOR SHALL INSTALL ALL NEW DUCT AS HIGH AS POSSIBLE TO THE CEILING. ALL NEW DUCTWORK SHALL BE PROPERLY SECURED AS PER MECHANICAL SPECIFICATIONS.
3. PROVIDE VOLUME DAMPERS FOR ALL BRANCH DUCTS AND CONNECTIONS TO AIR OUTLETS. PROVIDE CABLE OPERATED, CONCEALED, OPPOSED BLADE DAMPERS FOR BRANCHES AND AIR OUTLETS LOCATED IN NON-ACCESSIBLE CEILINGS MAINTAIN AREA CEILING HEIGHTS.
4. SHEET METAL DUCTWORK DIMENSIONS SHOWN ARE CLEAR INSIDE DIMENSIONS.
5. COORDINATE LOCATIONS, ACCESS AND DETAILS OF VISIBLE DEVICES AND AIR OUTLETS WITH THE ARCHITECT PRIOR TO INSTALLATION.
6. CONTRACTOR TO FULLY WALK ENTIRE PROJECT PRIOR TO SUBMITTING FINAL BID. COORDINATE WITH BUILDING ENGINEER.
7. CONTRACTOR TO REFER TO MANUFACTURER'S RECOMMENDATIONS FOR PROPER EQUIPMENT CLEARANCES, PIPE SIZING, PIPE ROUTING AND ACCESSORIES.
8. ALL SUPPLY, RETURN AND OUTSIDE AIR DUCTWORK SHALL BE INSULATED PER THE MECHANICAL SPECIFICATIONS.
9. A DUCT MOUNTED SMOKE DETECTOR SHALL BE PROVIDED WITHIN 5 FEET OF ANY COMBINATION FIRE SMOKE DAMPER.

REFERENCE NOTES:

◇1 PROVIDE FIRE DAMPER IN ROOF PENETRATION.

BUILDING ROOF TOP EQUIPMENT NOTES:

1. ROOF EQUIPMENT, INCLUDING BUT NOT LIMITED TO HVAC EQUIPMENT, KITCHEN EQUIPMENT, DUCTS, AND PIPING SHALL BE SHOWN ON A ROOF PLAN TO BE INCLUDED IN TENANT'S DRAWINGS SUBMISSION, SHALL NOT BE VISIBLE FROM THE OUTER RING ROAD OR FROM MALL SKYLIGHTS, LOCATED WITHIN THE ROOF AREA OF THE PREMISES AND MINIMUM OF 5'-0" FROM THE VERTICAL PLANE OF ANY DEMISING PARTITION LOCATED, AND SHALL BE COORDINATE WITH THE MALL OPERATIONS TEAM PRIOR TO THE START OF ANY WORK. EQUIPMENT SCREENS OR SCREEN WALLS MAYBE REQUIRED AND SHALL BE APPROVED IN WRITING BY LANDLORD UNDER SEPARATE COVER.
2. TENANT SHALL PROVIDE A STRUCTURAL ENGINEER EVALUATION OF THE EXISTING CONSTRUCTION / STRUCTURE AND DETERMINES THAT IT IS SUFFICIENT FOR THE ADDITIONAL LOADS OF ALL NEW ROOF TOP EQUIPMENT IN ACCORDANCE WITH THE BUILDING CODE THAT HAS BEEN ADOPTED BY THE AUTHORITIES HAVING JURISDICTION (AHJ) AT TENANT'S SOLE EXPENSE. STRUCTURAL DETAILS ARE TO INCLUDE REFERENCE OF APPLICABLE BUILDING CODE(S), EXISTING BUILDING LOADS, AND ADDITIONAL LOADS THAT WILL BE ADDED TO THE STRUCTURE AND ANY REINFORCING THAT IS REQUIRED. STRUCTURAL DETAILS ARE TO BE SIGNED, SEALED, AND SUBMIT TO THE LANDLORD FOR THEIR RECORDS BY A LICENSED STRUCTURAL ENGINEER WITH LEGALLY ACTIVE REGISTRATION IN THE STATE IN WHICH THE PROJECT IS LOCATED. LANDLORD RESERVE THE RIGHT TO HAVE S 3RD PARTY ENGINEER REVIEW TENANT'S DESIGN AND MAY REQUIRE TENANT TO PROVIDE DOCUMENTATION BY A 3RD PARTY INSPECTOR TO VERIFY THAT STRUCTURAL INSTALLATION HAS BEEN INSTALLED CORRECTLY.
3. ROOF EQUIPMENT REQUIRING DECK PENETRATION SHALL BE SET ON A FACTORY SUPPLIED CURB AND MUST EXTEND A MINIMUM OF 12" ABOVE HIGHEST ROOF MATERIAL. RE-USE OF EXISTING CURBS OR THE USE OF CURB ADAPTERS IS STRICTLY PROHIBITED. TENANT SHALL RE-SLOPE ROOF TO MAIN PROPER DRAINAGE AND PROVIDE ROOFING, FLASHING, AND WATERPROOFING FOR INSTALLATION OF NEW CURB PER LANDLORD'S CRITERIA TENANT'S SOLE EXPENSE.
4. ALL CONDENSATION, ELECTRICAL, AND DUCTWORK SHALL BE SET INSIDE THE PERIMETER OF THE CURB. CONDENSATE SHALL DRAIN INTO AN INTERIOR FLOOR DRAIN OR MOP SINK WITHIN THE PREMISES. DAYLIGHTING CONDENSATE LINES DIRECTLY ONTO THE ROOF,DOWNSPOUT OR ROOF DRAIN IS STRICTLY PROHIBITED.
5. TENANT SHALL PROVIDE "ROOF TRAFFIC / WALKWAY PADS" AROUND ALL ROOF TOP EQUIPMENT AND SHALL INDICATE LOCATION OF PADS ON A ROOF PLAN TO BE INCLUDED IN TENANT'S DRAWINGS SUBMISSION. COORDINATE FINAL LOCATION, MATERIAL, AND INSTALLATION OF PADS WITH THE MALL OPERATIONS TEAM PRIOR TO THE START OF ANY WORK.
6. TENANT SHALL LABEL ALL ROOF TOP EQUIPMENT INDICATING: TENANT NAME, SPACE NUMBER, AND EQUIPMENT IDENTIFICATION (RTU-1, EF-1) PER LANDLORD'S DESIGN CRITERIA.
7. EQUIPMENT THAT UTILIZES CONDENSER COILS SHALL BE EQUIPPED WITH HAIL GUARDS
8. LANDLORD STRONGLY PREFERS USE OF ENERGY STAR PRODUCTS AND/OR EQUIPMENT WHENEVER POSSIBLE DURING TENANT BUILD OUT, WHICH CAN REDUCE ENERGY CONSUMPTION

FISKAA

FISKAA ENGINEERING
589 EIGHTH AVENUE NEW YORK, NY 10018
T 212 736 9600 F 212 736 9020 WWW.FISKAA.COM

2/13/2023 2:42:58 PM

sg

sweetgreen®
3101 W. EXPOSITION BLVD.
LOS ANGELES, CALIFORNIA 90018

ARCHITECT OF RECORD:

O'NEIL LANGAN
ARCHITECTS
15 WEST 37TH STREET
15TH FLOOR
NEW YORK, NY 10018
PHONE: 212-279-2670
FAX: 212-279-2671

STAMP:

07.18.2022

PROJECT INFORMATION:
PEABODY

PROJECT INFORMATION:
210 ANDOVER STREET,
PEABODY, MA

DRAWN BY:	Author
CHECKED BY:	Checker
PROJECT MANAGER:	JD
SG DESIGN MANAGER:	JM
SG CONSTR. MANAGER:	EL
PROJECT NO:	22.046.00
TEMPLATE VERSION:	06.01.2020

REVISIONS

REV.	DATE	DESCRIPTION
	07/18/2022	PERMIT SET
1	11/14/2022	LL COMMENTS
2	12/16/2022	IFC SET
3	02/13/2023	VE UPDATE

H.V.A.C. ROOF PLAN

M-301

ROOFTOP HEAT PUMP UNIT SCHEDULE

DESIG.	FAN DATA			COOLING DATA					HEATING DATA		ELECTRICAL DATA			NET WEIGHT (LBS)	EER	MANUF. & MODEL NUMBER	REMARKS
	TOTAL (CFM)	E.S.P (IN.WC)	MOTOR HP	REFRIG. TYPE	TTL (MBH)	AMBIENT TEMP (°F)	E.A.T D.B/W.B(F°)	L.A.T D.B(F°)	TTL (MBH)	HEATING DELTA T	V/∅/Hz	MCA	MOCP MFS				
RTU-1	4,800	1	3.0	R-410A	150.55	95	78/66	57	63.33	14.03+23.59	460/3/60	91	100	2,094	10.6	TRANE WSJ150A4S0D	SEE NOTES BELOW
RTU-2	3,000	1	2.75	R-410A	91.70	95	78/66	53.64	85.28	26.32+28.30	460/3/60	61	70	1,218	11.8	TRANE WHC092H4RKA	SEE NOTES BELOW

NOTES:

1. CONTRACTOR TO COORDINATE UNIT CONFIGURATION WITH FIELD CONDITIONS AND MANUFACTURER'S RECOMMENDED CLEARANCE REQUIREMENTS.
2. PROVIDE ROOF CURB. COORDINATE WITH STRUCTURAL ENGINEER.
3. PROVIDE DISCONNECT SWITCH.
4. PROVIDE WITH FLEXIBLE DUCT CONNECTIONS AT THE INLET AND OUTLET.
5. PROVIDE UNIT WITH ECONOMIZER HOOD OPTION WITH RELIEF AND ASSOCIATED DAMPERS/CONTROLS.
6. PROVIDE UNIT WITH BAROMETRIC RELIEF HOOD OPTION.
7. PROVIDE DUCT SMOKE DETECTOR IN SUPPLY AND RETURN AIR DUCT.
8. PROVIDE 7 DAY PROGRAMMABLE THERMOSTAT.
9. PROVIDE UNIT WITH CONDENSATE OVERFLOW SENSOR.
10. PROVIDE WITH MERV 13 FILTERS.
11. PROVIDE WITH VFD FAN MOTORS.

AIR OUTLET SCHEDULE

		DESIG.	TYPE	CFM RANGE	MAX NC	NECK SIZE	FACE SIZE OR LENGTH x WIDTH	FLOW PATTERN	MANUF.	MODEL No.	REMARKS
SUPPLY	DIFFUSERS & REGISTERS	SD-1	PERFORATED CEILING DIFFUSER	0-600	< 30	10"x10" 12"x12"	24" x 24"	SEE PLAN	TITUS	PCS	SEE NOTES BELOW
		SD-2	CEILING MOUNTED SQUARE DIFFUSER	0-150	< 30	6"∅	12" x 12"	SEE PLAN	TITUS	OMNI	SEE NOTES BELOW
		LS-1	LINEAR PLENUM DIFFUSER	0-380	<30	SEE PLAN	60" X 7 3/4"	SEE PLAN	TITUS	FL-20	SEE NOTES BELOW
RETURN	RETURN GRILLES	RG-1	CEILING MOUNTED RETURN GRILLE	-	< 30	-	12" X 12" 24" X 24"	-	TITUS	PMR	SEE NOTES BELOW
		EG-1	CEILING MOUNTED EXHAUST GRILLE	-	< 30	6" X 6" 12" X 12"	12" X 12" 24" X 24"	-	TITUS	PMR	SEE NOTES BELOW
		RG-2	RETURN GRILLE	-	< 30	-	28" X 28"	-	TITUS	25-RFL	SEE NOTES BELOW

NOTES:

1 COORDINATE AIR OUTLET BORDER TYPES, FRAMING, AND FINISHES WITH THE ARCHITECT.
2. PROVIDE ALL AIR OUTLETS WITH VOLUME DAMPERS.
3. PROVIDE CABLE OPERATED DAMPERS YOUNG REGULATOR MODEL 800AW FOR AIR OUTLETS IN SHEETROCK OR INACCESSIBLE CEILINGS.
4. PROVIDE EXHAUST GRILLES WITH BACKDRAFT DAMPERS

OUTDOOR AIR CALCULATIONS

ROOM DESIGNATION	CLASSIFICATION	AREA (SF)	NR. OF FIXTURES	DEFAULT OCCUPANCY (PPL/1000 SF)	OCCUPANCY BY AREA	AIR RATE			VENTIALTION REQUIRED			VENTILATION REQUIRED CFM	VENTILATION PROVIDED CFM
						CFM/SF	CFM/PERSON	CFM/FIXTURE	OCCUPANCY	AREA	FIXTURES		
BOH KITCHEN, PREP, WORK AREA	RESTAURANT - KITCHEN	930.87	-	20	20	- 0.7E, 0.12 IN	7.5	-	150	-698E, 120 IN	-	-698E, 270 IN	-750E, 270 IN
SERVE LINE,DINNING	RETAIL STORES - SALES	1318.29		5	40	0.18	7.5		300	237.29	-	537.29	600
TRASH ROOM	TRASH ROOM	107	-	-	-	-	-		-	-	-	-	-140
RESTROOMS	RETSROOMS	172	4	-	-	-	-	-70	-	-	-140	-140	-140
OFFICE	OFFICE SPACES	133	-	5	1	0.06	5	-	5	3	-	8	10

NOTES:

BASED ON TABLE 403.3 - MINIMUM VENTILATION RATES OF FL MECHANICAL CODE

AIR DOOR SCHEDULE

DESIG.	LOCATION	FAN					ELECTRICAL MOTORS & UNIT			WEIGHT (LBS)	MANUF. MODEL NO.	REMARKS
		AIR VOLUME CFM	MAX FPM @ NOZZLE	kW	ΔT (° F)	#CKT	V/PH/HZ	MCA	MOP			
AD-1	ENTRANCE	2,072	3,600	20	30	2	208/1/60 480/3/60	1.7 24.1	15 35	44	BERNER ALC08-1072E	SEE NOTES BELOW

NOTES:

1. PROVIDE WITH THERMOSTAT.
2. PROVIDE WITH HANGING BRACKETS.

FAN SCHEDULE

DESIG.	C.F.M.	S.P. (IN. WG)	FAN SPEED (RPM)	MOTOR POWER(HP)	ELECTRICAL		SONES	WEIGHT (LBS.)	MANUF.	MODEL No.	REMARKS
					V/∅/Hz	FLA					
TX-1	280	0.5	1200	0.18	115/1/60	1.9	7.4	64	CAPTIVEAIRE	SIF10-DD	① ② ③ ④
GX-1	1200	1.0	2256	2	460/3/60	2.4	14.3	157	CAPTIVEAIRE	SIF11-DD	① ② ③ ④

NOTES :

1. PROVIDE WITH DISCONNECT SWITCH.
2. COORDINATE INSTALLATION WITH FIELD CONDITIONS.
3. PROVIDE WITH VIBRATION ISOLATORS.
4. PROVIDE WITH BACKDRAFT DAMPER

ELECTRIC DUCT HEATER

DESIG.	HEATER TYPE	LOCATION	MANUF.	KW	DUCT DIMENSIONS		SUPPLY LINE		NO. OF HEATING STAGES	CONTROL OPTION	CFM TREATED
					WIDTH	HEIGHT	VOLTS	PHASE			
EDH-1	ELECTRIC COIL	ATM VESTIBULE	INDEECO	5	12	18	480	3	1	SCR	1480

NOTES:

1. PROVIDE AIRFLOW SWITCH.
2. PROVIDE THERMOSTAT.
3. PROVIDE DISCONNECT SWITCH.
4. PROVIDE THERMAL CUT OUT
5. MULTI-STAGE HEATING CONTROL

sg

sweetgreen®

3101 W. EXPOSITION BLVD.
LOS ANGELES, CALIFORNIA 90018

ARCHITECT OF RECORD:

O'NEIL LANGAN
ARCHITECTS
15 WEST 37TH STREET
15TH FLOOR
NEW YORK, NY 10018
PHONE: 212-279-2670
FAX: 212-279-2671

STAMP:

07.18.2022

PROJECT INFORMATION:
PEABODY

PROJECT INFORMATION:
210 ANDOVER STREET,
PEABODY, MA

DRAWN BY: Author
CHECKED BY: Checker
PROJECT MANAGER: JD
SG DESIGN MANAGER: JM
SG CONSTR. MANAGER: EL
PROJECT NO: 22.046.00
TEMPLATE VERSION: 06.01.2020

REVISIONS

REV.	DATE	DESCRIPTION
	07/18/2022	PERMIT SET
1	11/14/2022	LL COMMENTS
2	12/16/2022	IFC SET
3	02/13/2023	VE UPDATE

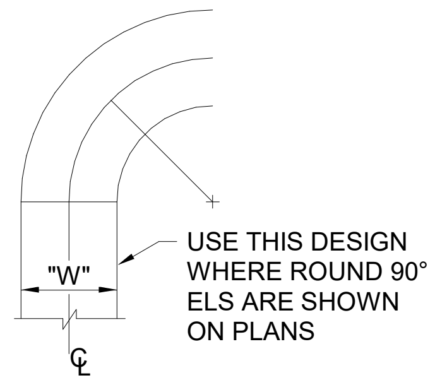
H.V.A.C. SCHEDULES

M-600

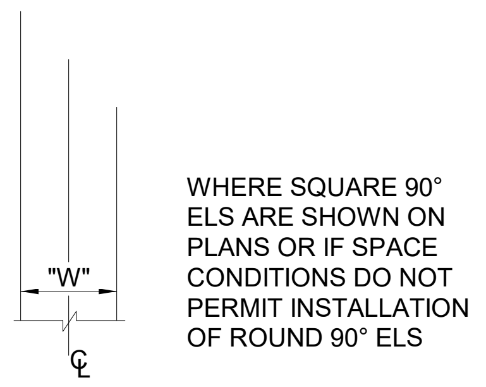
FISKAA

FISKAA ENGINEERING
589 EIGHTH AVENUE NEW YORK, NY 10018
T 212 736 9600 F 212 736 9020 WWW.FISKAA.COM

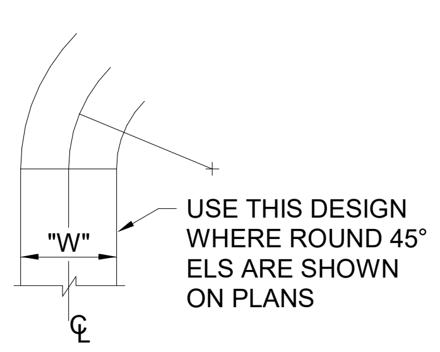
2/13/2023 2:42:58 PM



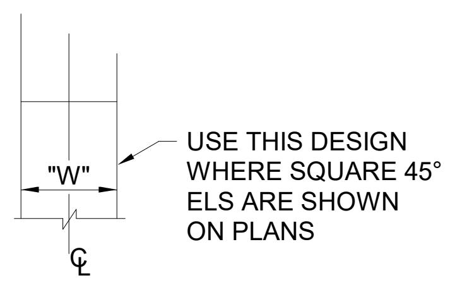
ROUND 90° ELBOW



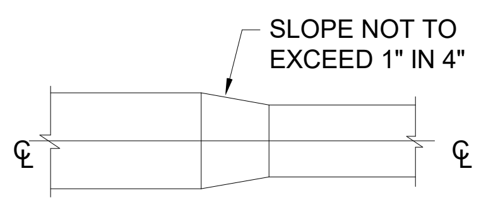
SQUARE 90° ELBOW



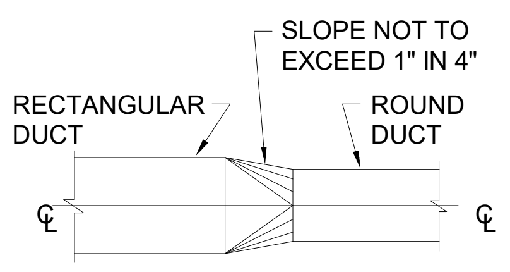
ROUND 45° ELBOW



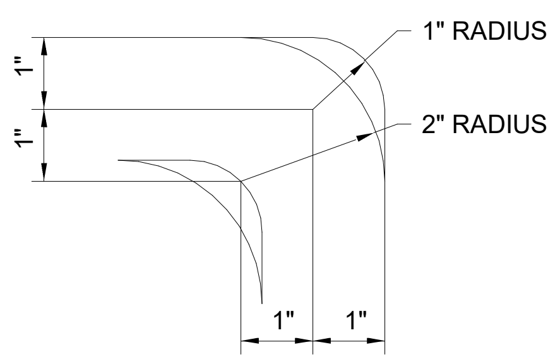
SQUARE 45° ELBOW



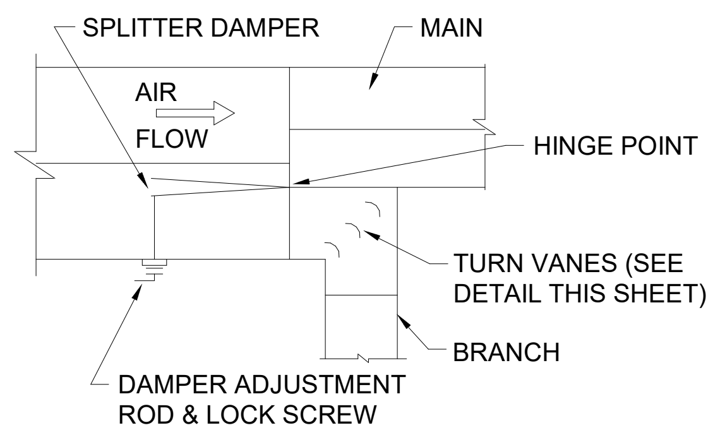
TYPICAL RECTANGULAR TRANSITION



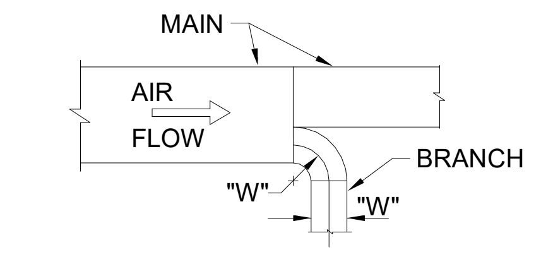
TYPICAL RECTANGULAR TO ROUND TRANSITION



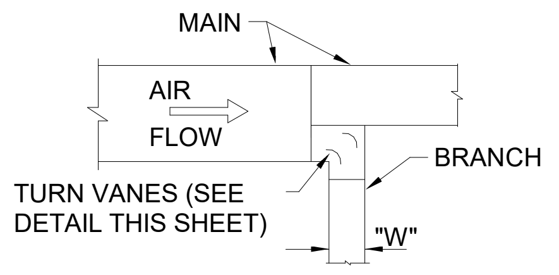
DETAIL OF TURNING VANES



TYPICAL SPLITTER DAMPER



ROUND BRANCH TAKEOFF



SQUARE BRANCH TAKEOFF

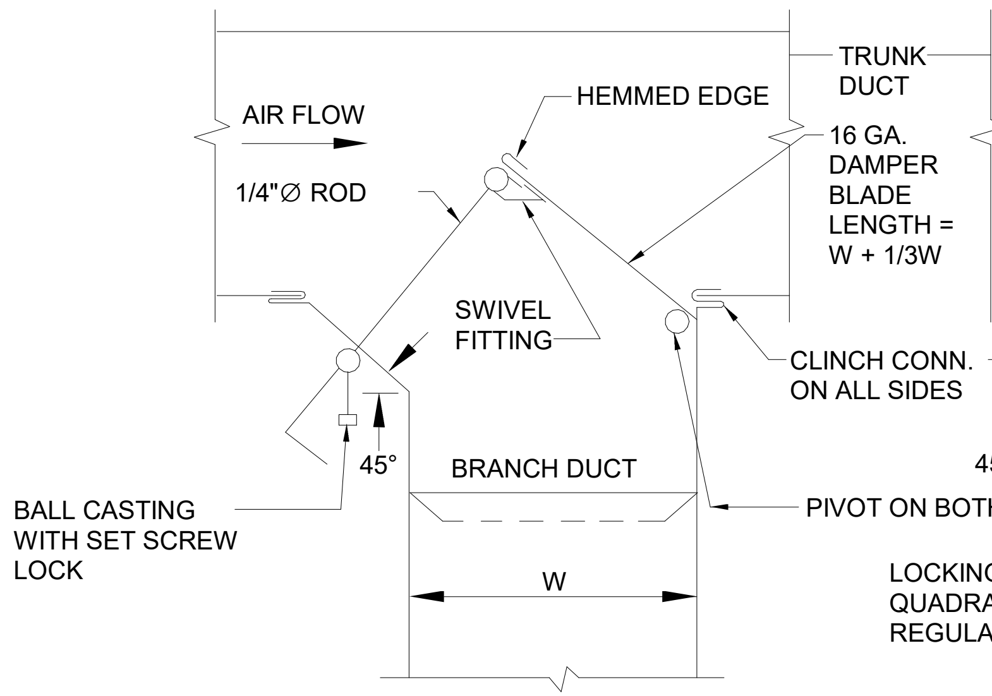
CONSTRUCTION OF BRANCH TAKEOFF FROM MAIN

INSTALLATION NOTES

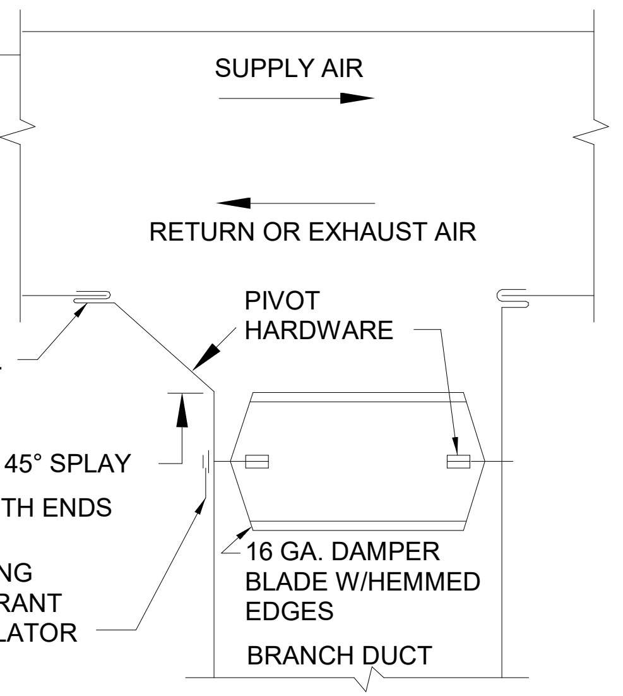
1. ALL DUCTS SHALL BE CONSTRUCTED AND ERECTED IN A NEAT AND WORKMANLIKE MANNER.
2. DUCTS SHALL BE CONSTRUCTED OF THE WEIGHTS GAGES AND MATERIAL SHOWN IN THE SPECIFICATIONS ON THESE DRAWINGS.
3. THE DIMENSIONS SHOWN FOR ALL DUCTS SHOWN IN PLAN GIVE THE WIDTH FIRST AND THEN THE HEIGHT.
4. DUCT RISERS SHOULD BE SUPPORTED BY ANGLES AT EVERY FLOOR.
5. AIR TURN VANES SHALL BE INSTALLED IN ALL ABRUPT ELBOWS TO PREVENT TURBULANCE.
6. DUCTS SHALL BE SECURELY ATTACHED TO THE BUILDING CONSTRUCTION IN AN APPROVED MANNER.
7. DIVERTING TRANSITION PIECES SHALL BE MADE AS GRADUAL AS POSSIBLE.
8. INSTALL PIPE DAMPER AS REQUIRED BY N.F.P.A. PAMPHLET No.90A OR THE LOCAL CODES.
9. ACCESS PANELS SHOULD BE PLACED BEFORE AND/OR AFTER EQUIPMENT INSTALLED IN THE DUCT.
10. WHEN OBSTRUCTION CANNOT BE AVOIDED DUCT AREA SHOULD NOT BE DECREASED MORE THAN 10 PERCEN, AND A STREAMLINED FITTING SHOULD BE USED.
11. FLEXIBLE CONNECTIONS SHOULD BE USED ON BOTH THE INLET AND OUTLET TO ALL FANS.
12. JOINTS AND SEAMS OF SUPPLY DUCTS SHALL BE FASTENED SECURELY AND MADE AIR TIGHT.

LOW VELOCITY DUCT LAYOUT DETAILS

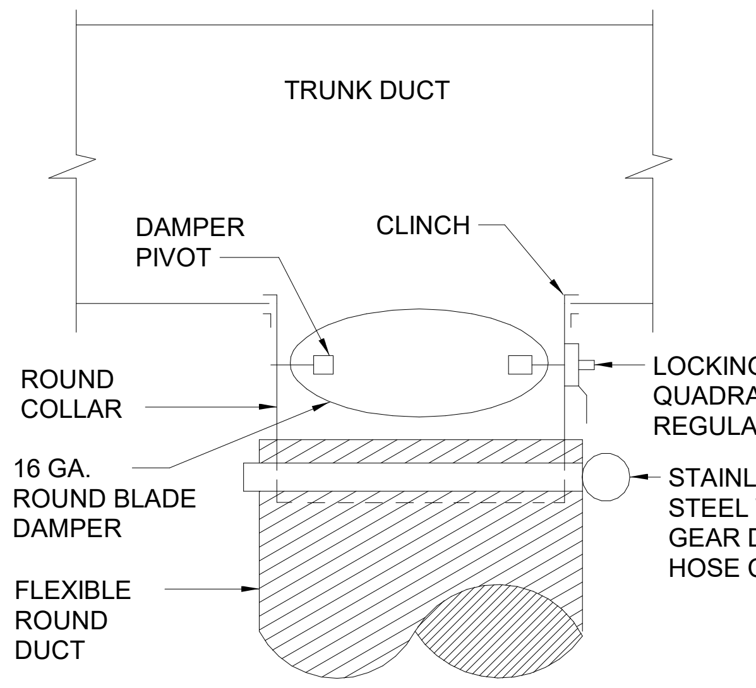
SCALE: NONE



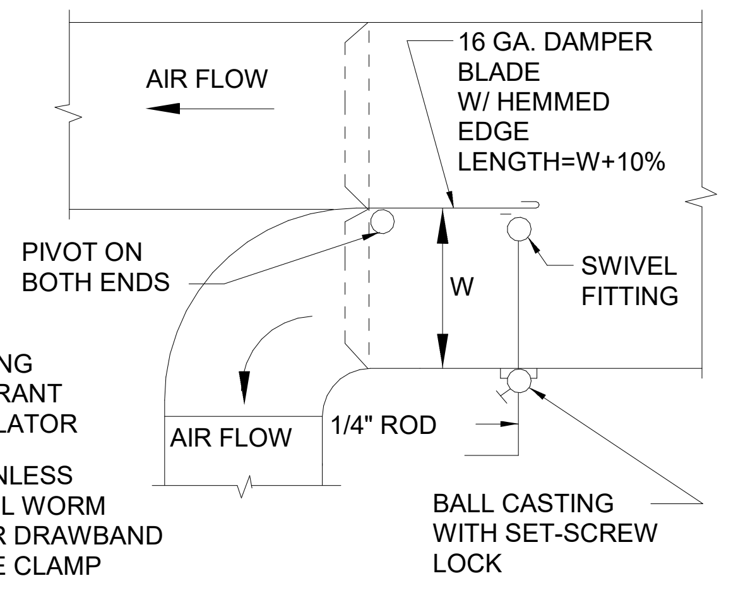
SUPPLY BRANCH DUCT WITH SPLITTER TYPE DAMPER



SUPPLY, RETURN OR EXHAUST BRANCH DUCT WITH SINGLE LEAF DAMPER



SUPPLY AIR ROUND DUCT BRANCH WITH SINGLE LEAF DAMPER



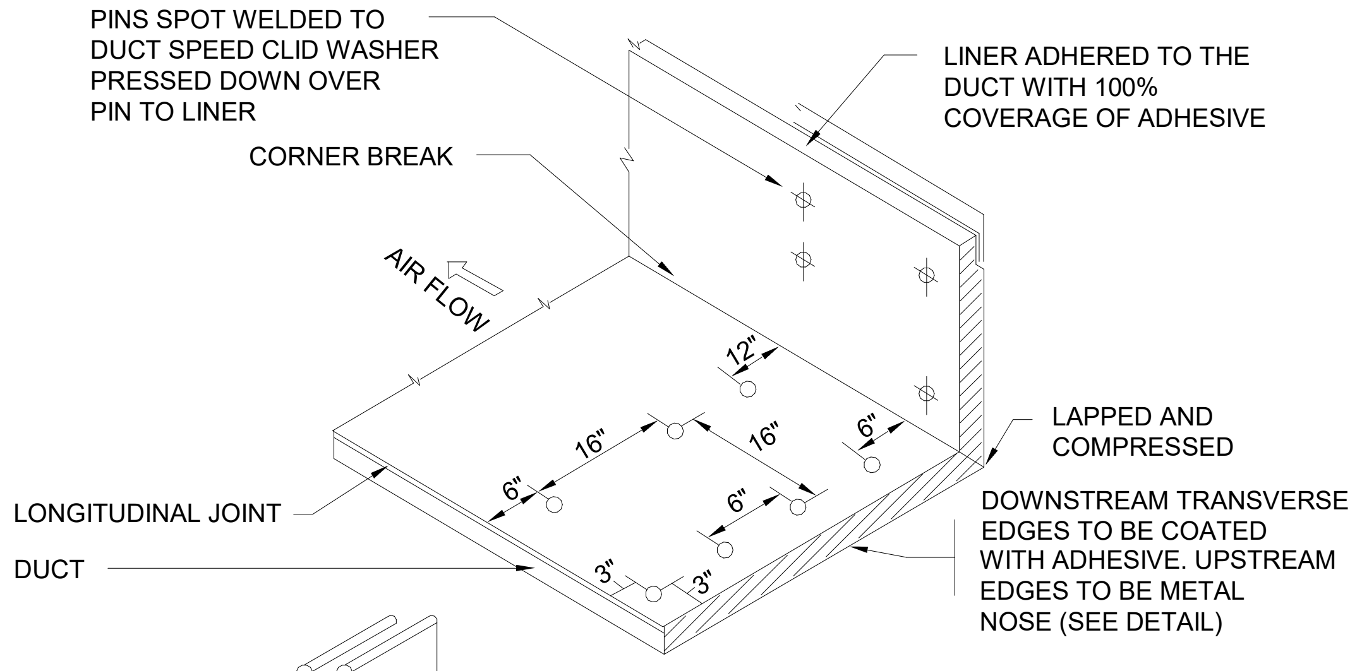
SUPPLY AIR SPLIT CONNECTION WITH SPLITTER DAMPER

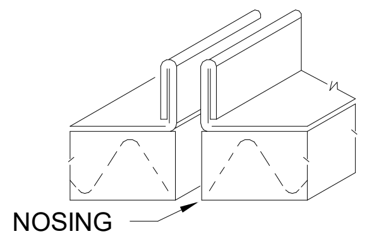
NOTES:

1. PROVIDE ALL BRANCH DUCTS WITH MANUALLY OPERATED VOLUME DAMPERS FOR BALANCING AIR SYSTEMS. THESE DAMPERS SHALL BE INDEPENDENT OF DAMPERS FURNISHED WITH DIFFUSERS AND REGISTERS, WHICH SHALL ONLY BE UTILIZED FOR TRIM BALANCING WITHOUT GENERATING NOISE.
2. FOR DUCTS WIDER THAN 48" USE MULTIPLE SINGLE LEAF DAMPERS OR OPPOSED-ACTION MULTI-BLADE DAMPERS; EACH WITH LOCKING QUADRANT REGULATOR.

BRANCH DUCT VOLUME DAMPERS

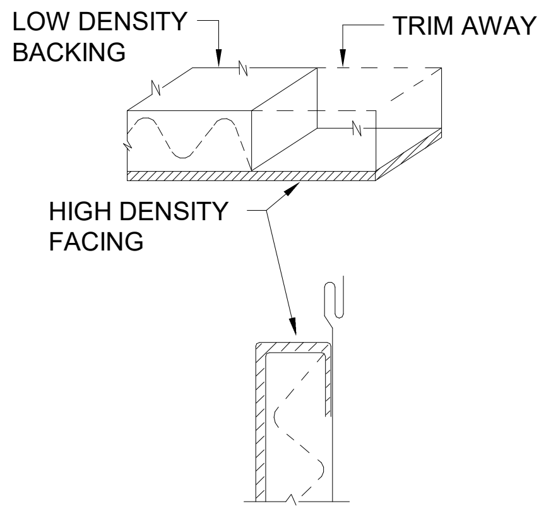
SCALE: NONE





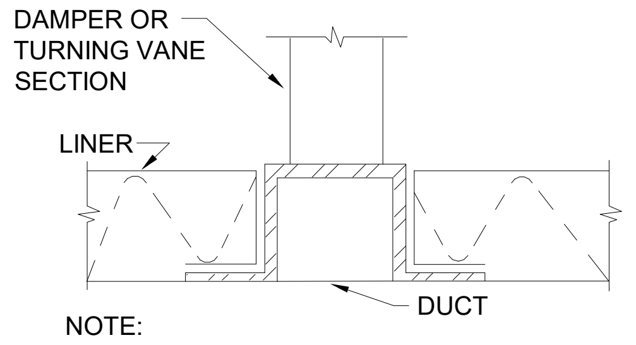
NOTE:
ENTERING, BUTTING & TRAILING EDGES OF LINER AT TRANSVERSE JOINTS TO BE COVERED BY NOSING

TRANSVERSE JOINT DETAIL



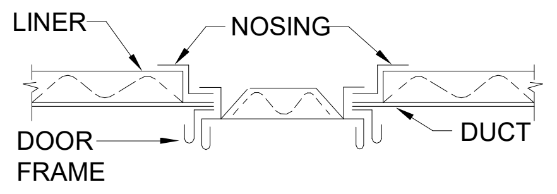
NOTE:
FOLD OVER HIGH DENSITY FACING ON ALL LONGITUDINAL JOINTS & SECURE WITH MECH. FASTENERS

LONGITUDINAL JOINT DETAIL



NOTE:
HAT SECTION INSTALLED WITH NOSING TO CONCEAL LINER EDGES.

DETAIL AT DAMPERS AND TURNING VANES

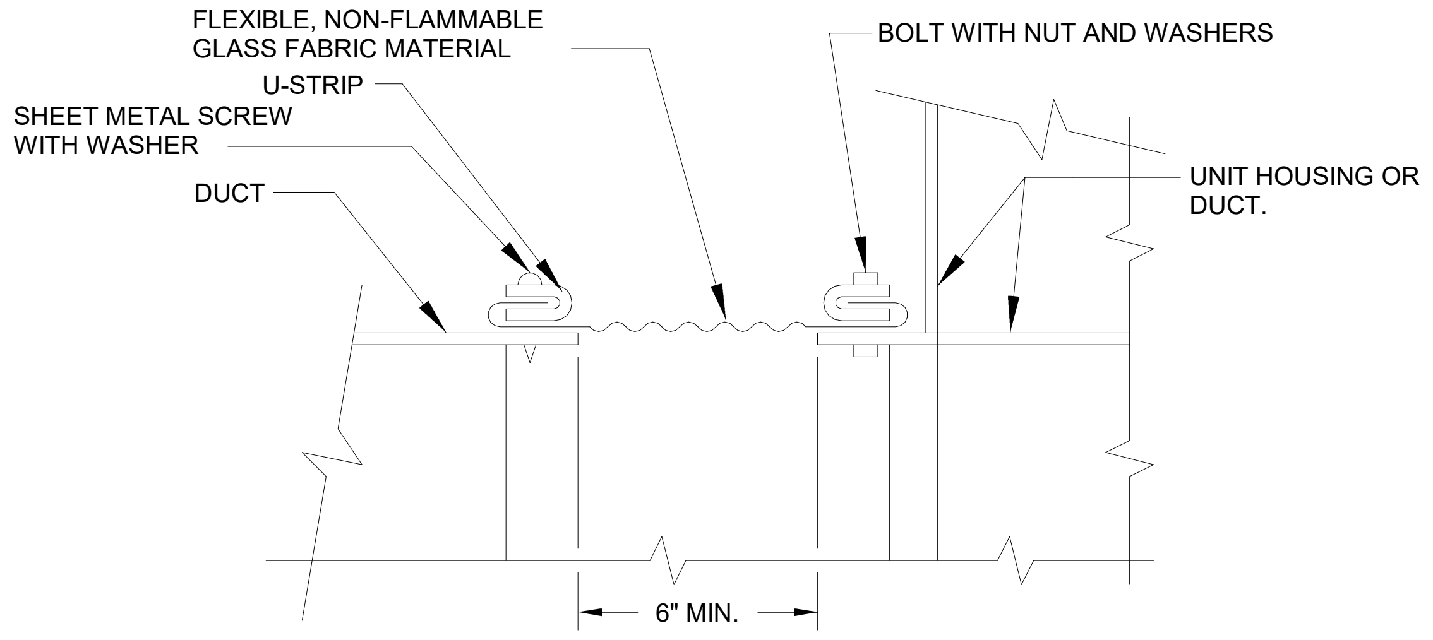


ACCESS DOOR NOSING DETAIL

GENERAL NOTES:
1. NOSING ATTACHED TO DUCT BY RIVETS,SCREWS OR WELDS.
2. NOSING : 24 GA. UP TO 48", OVER 48", SAME GA. AS DUCT

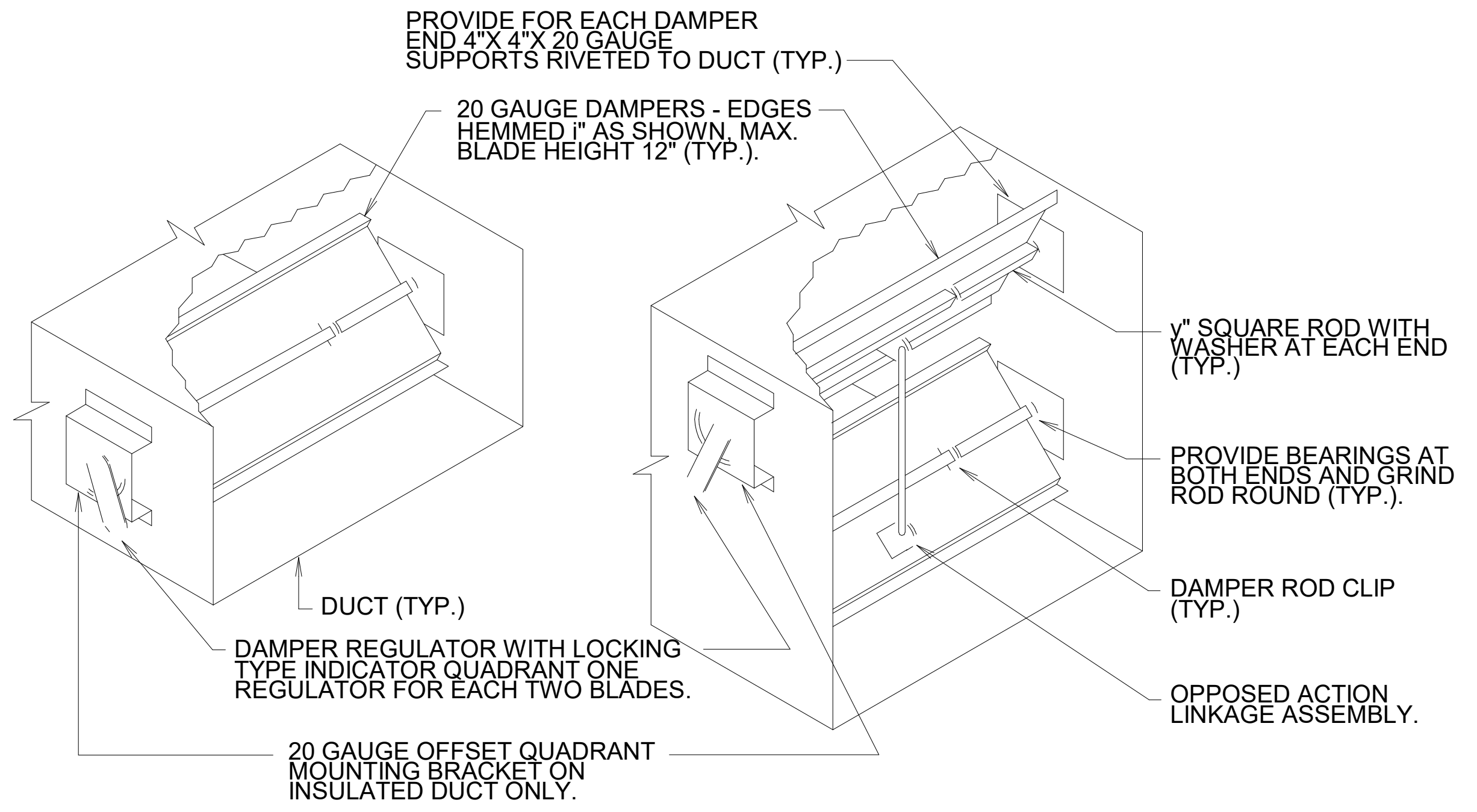
ACOUSTICAL DUCT LINER DETAIL

SCALE: NONE



FLEXIBLE CONNECTION DETAIL

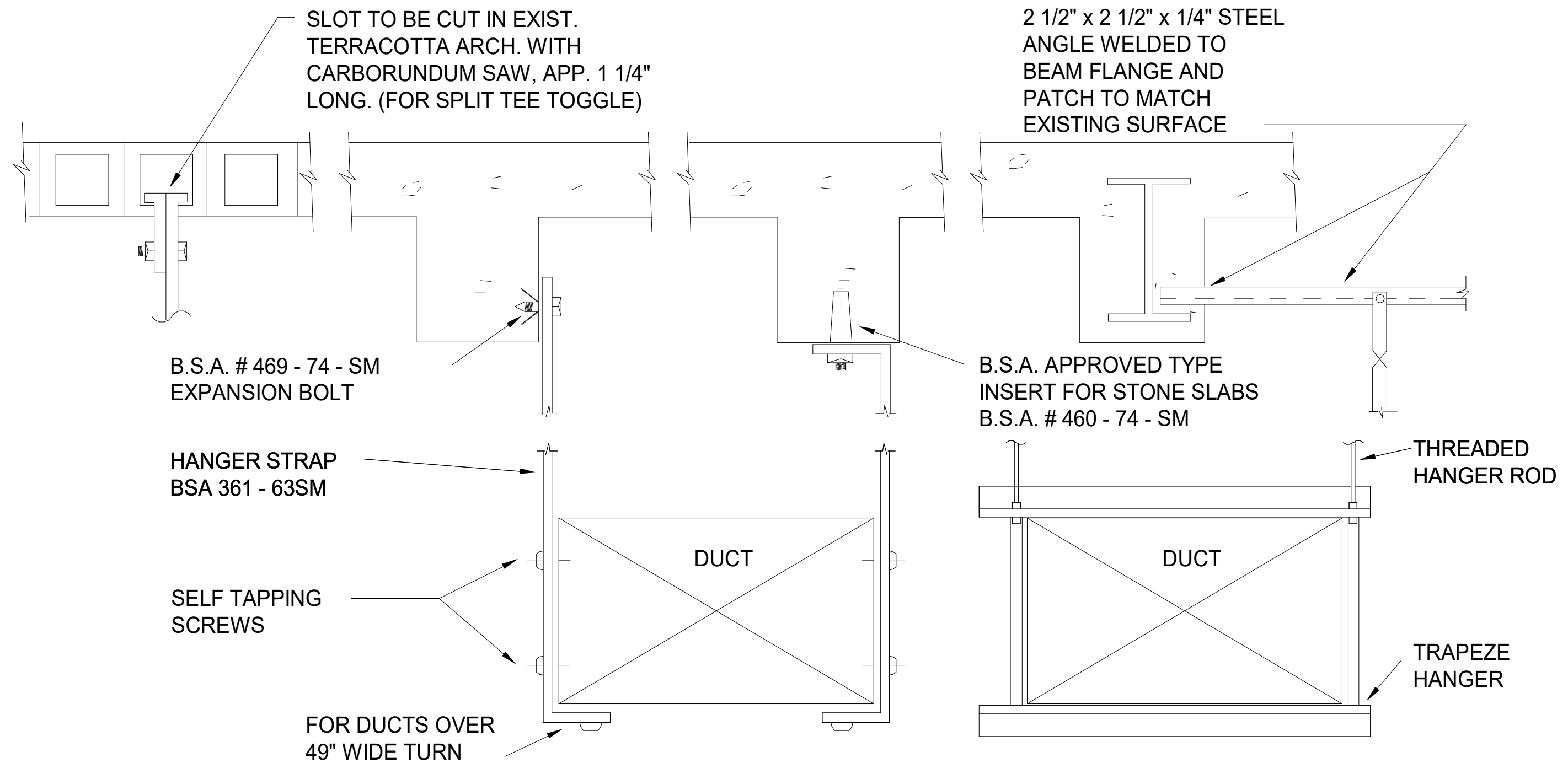
SCALE: NONE REFERENCE #: M100.0017



NOTES:
1. USE SINGLE BLADE FOR DUCTS UP TO 12" HIGH AND LESS THAN 29" WIDE.
2. USE MULTIPLE BLADES FOR DUCTS GREATER THAN OR EQUAL TO 29" AND/OR OVER 12" HIGH.

LOW PRESSURE BALANCING DAMPER

SCALE: NONE



LOW PRESSURE

MEDIUM PRESSURE

NOTE: DAMAGED OR REMOVED FIREPROOFING SHALL BE REPAIRED.

METHOD OF HANGING DUCTWORK

SCALE: NONE

2/13/2023 2:42:59 PM

FISKAA

FISKAA ENGINEERING
589 EIGHTH AVENUE NEW YORK, NY 10018
T 212 736 9600 F 212 736 9020 WWW.FISKAA.COM

sg

sweetgreen®

3101 W. EXPOSITION BLVD.
LOS ANGELES, CALIFORNIA 90018

ARCHITECT OF RECORD:

O'NEIL LANGAN
ARCHITECTS
15 WEST 37TH STREET
15TH FLOOR
NEW YORK, NY 10018
PHONE: 212-279-2670
FAX: 212-279-2671

STAMP:

07.18.2022

PROJECT INFORMATION:
PEABODY

PROJECT INFORMATION:
210 ANDOVER STREET,
PEABODY, MA

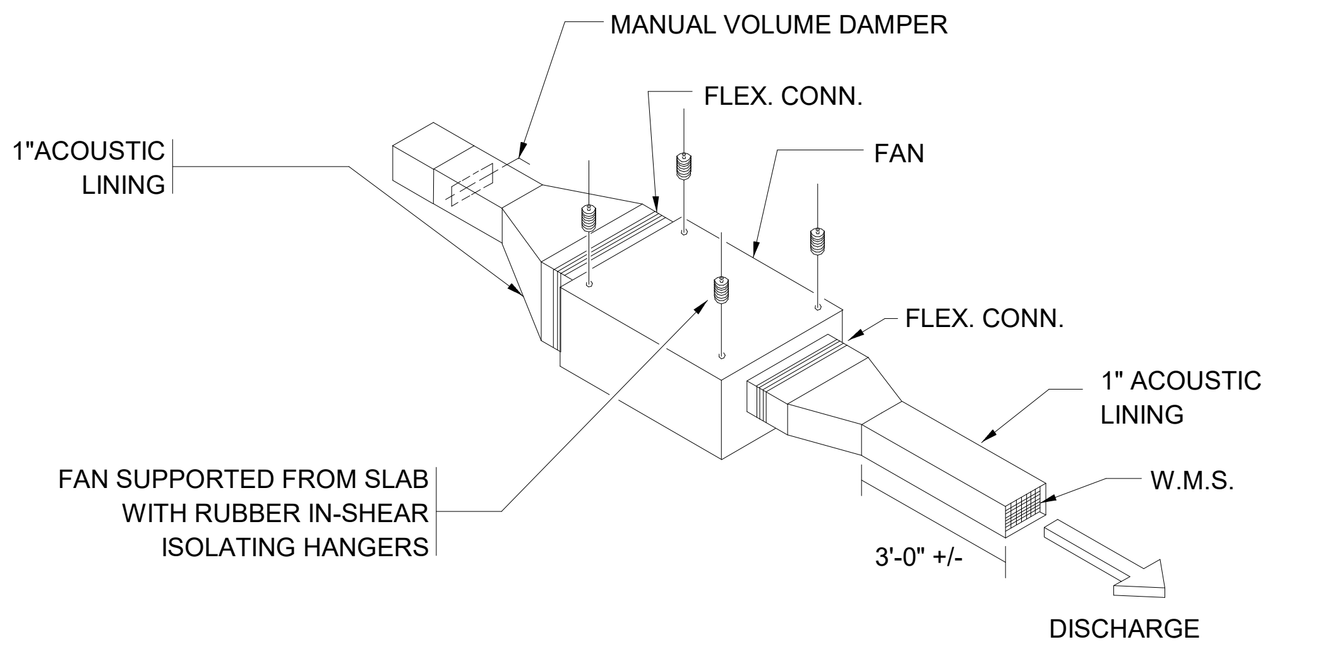
DRAWN BY:	Author
CHECKED BY:	Checker
PROJECT MANAGER:	JD
SG DESIGN MANAGER:	JM
SG CONSTR. MANAGER:	EL
PROJECT NO:	22.046.00
TEMPLATE VERSION:	06.01.2020

REVISIONS

REV.	DATE	DESCRIPTION
	07/18/2022	PERMIT SET
1	11/14/2022	LL COMMENTS
2	12/16/2022	IFC SET
3	02/13/2023	VE UPDATE

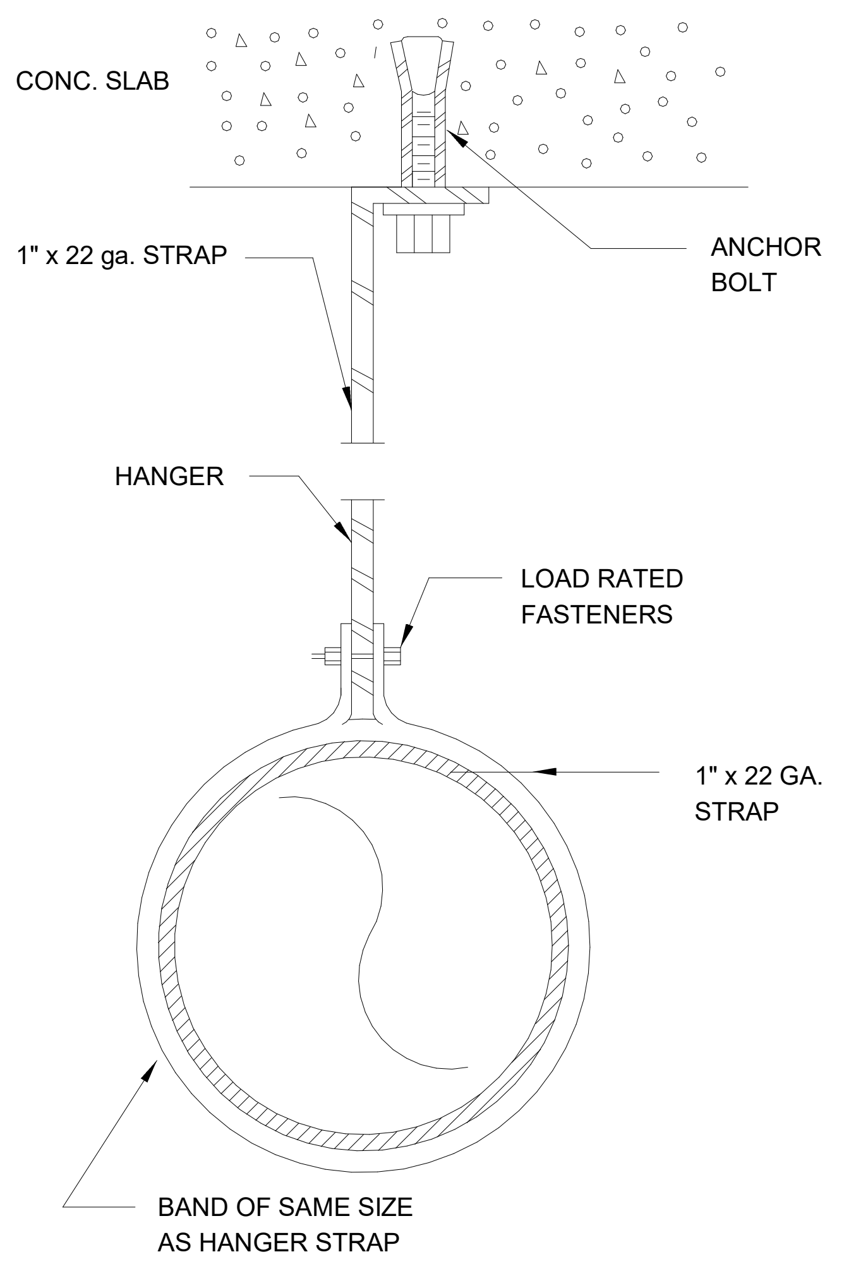
H.V.A.C. DETAILS
SHEET 1 OF 2

M-700



INLINE FAN HANGING SUPPORT DETAIL

SCALE: NONE REFERENCE #: M400.013

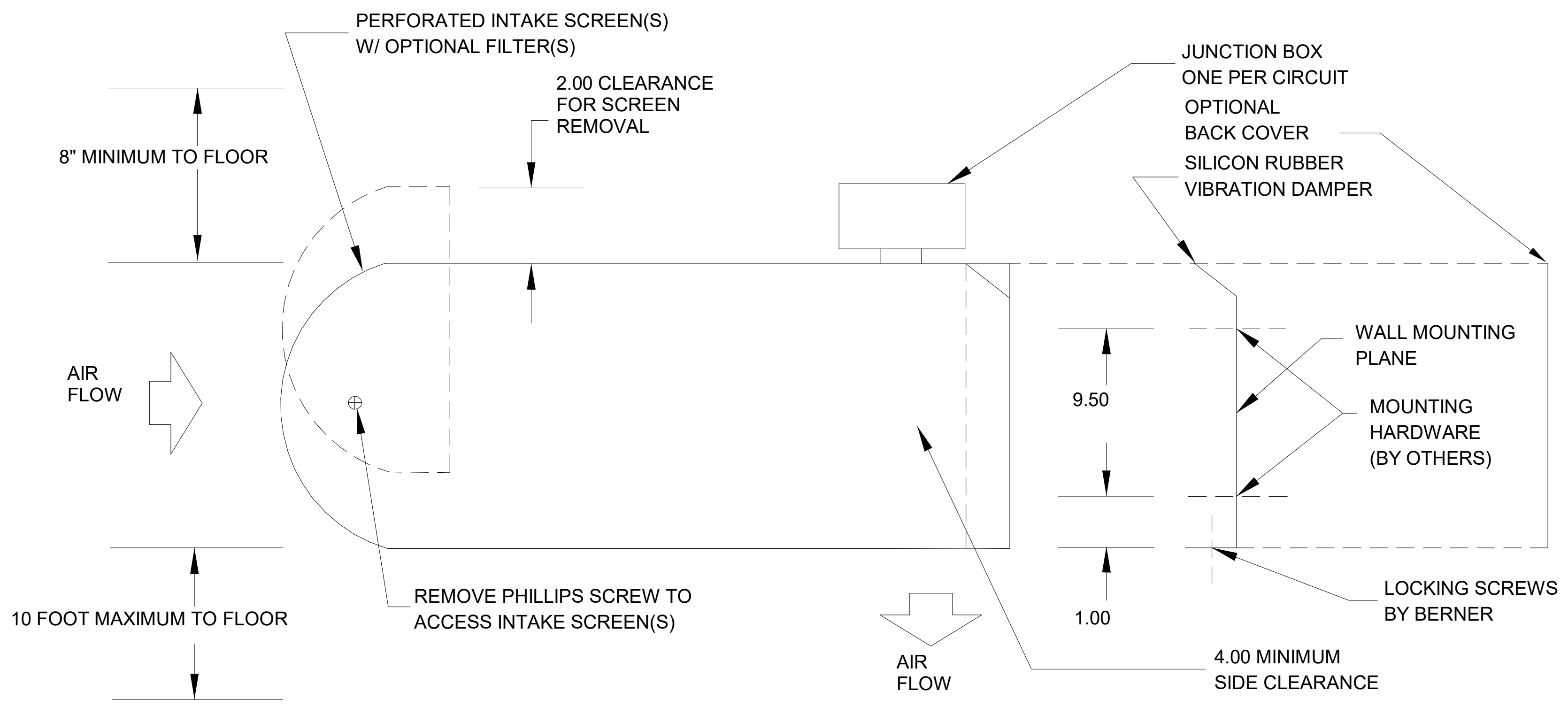


MINIMUM HANGER SIZES TABLE

DIA.	MAXIMUM SPACING	STRAP
10" AND UNDER	12'	1" x 22 GA.
11-18"	12'	1" x 22 GA.
19-24"	12'	1" x 22 GA.
25-36"	12'	1" x 20 GA.
37-50"	12'	TWO 1" x 20 GA.
51-60"	12'	TWO 1" x 18 GA.
61-84"	12'	TWO 1" x 18 GA.

TYPICAL ROUND DUCT HANGER

SCALE: NONE REFERENCE #: M100.057

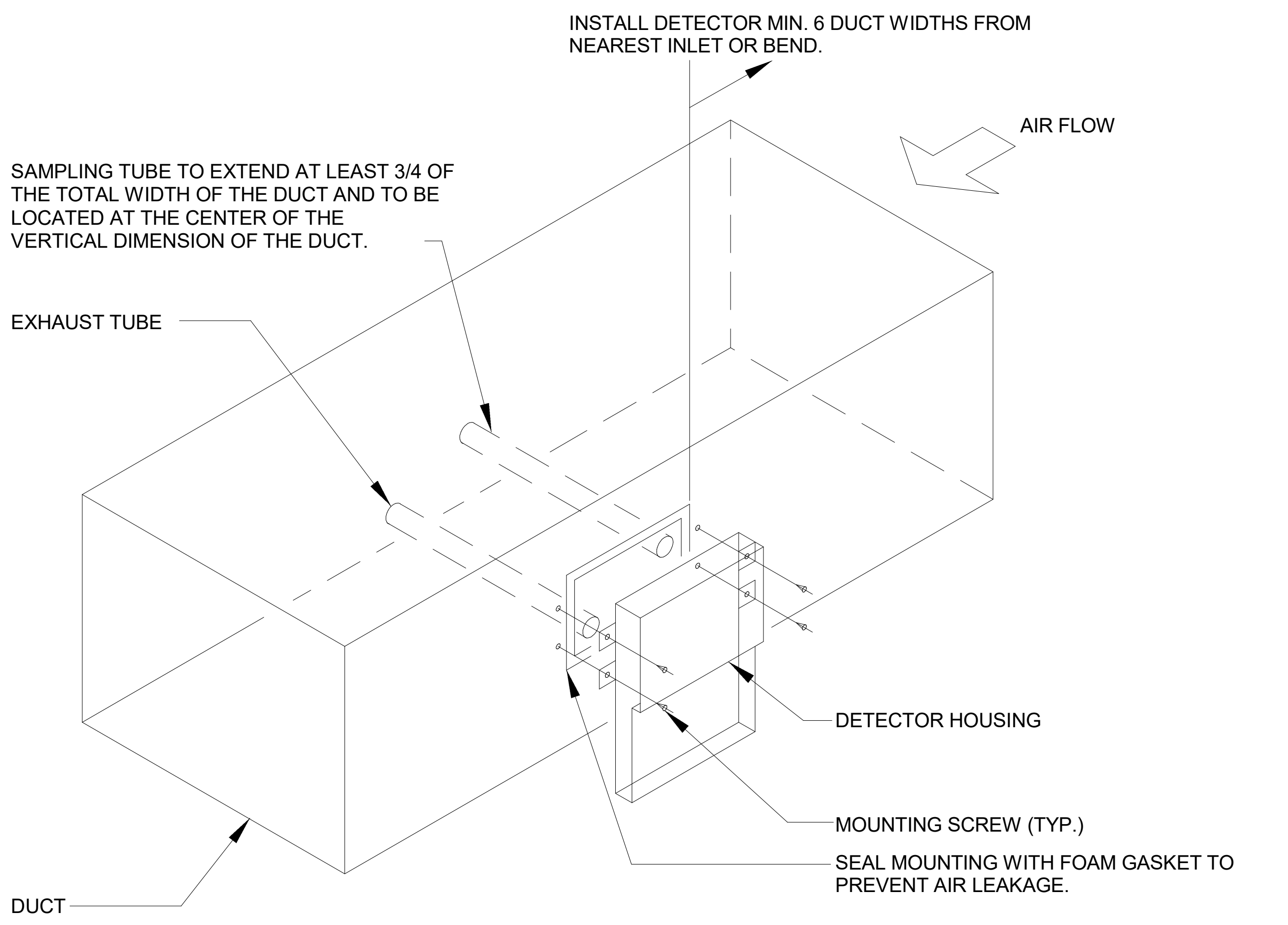


NOTES:

1. AIR CURTAIN MUST BE INSTALLED SO AIR STREAM IS NOT OBSTRUCTED WHEN DEFLECTED 20 DEGREES TO EITHER SIDE OF CL.
2. ELECTRICAL CONNECTIONS TO BE FLEXIBLE.
3. FIELD VERIFY DIMENSIONS.
4. ANCHORS TO SUPPORTING STRUCTURE BY OTHERS.
5. ADEQUACY OF SUPPORTING STRUCTURE IS TO BE VERIFIED BY A PROFESSIONAL ENGINEER.
6. DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.

AIR DOOR DETAIL

SCALE: NONE



DUCT SMOKE DETECTOR MOUNTING DETAIL

SCALE: NONE

2/13/2023 2:43:00 PM

sg

sweetgreen®

3101 W. EXPOSITION BLVD.
LOS ANGELES, CALIFORNIA 90018

ARCHITECT OF RECORD:

O'NEIL LANGAN
ARCHITECTS
15 WEST 37TH STREET
15TH FLOOR
NEW YORK, NY 10018
PHONE: 212-279-2670
FAX: 212-279-2671

STAMP:

07.18.2022

PROJECT INFORMATION:
PEABODY

PROJECT INFORMATION:
210 ANDOVER STREET, PEABODY, MA

DRAWN BY:	Author
CHECKED BY:	Checker
PROJECT MANAGER:	JD
SG DESIGN MANAGER:	JM
SG CONSTR. MANAGER:	EL
PROJECT NO:	22.046.00
TEMPLATE VERSION:	06.01.2020

REVISIONS

REV.	DATE	DESCRIPTION
	07/18/2022	PERMIT SET
1	11/14/2022	LL COMMENTS
2	12/16/2022	IFC SET
3	02/13/2023	VE UPDATE

H.V.A.C. DETAILS
SHEET 2 OF 2

M-701

FISKAA

FISKAA ENGINEERING
589 EIGHTH AVENUE NEW YORK, NY 10018
T 212 736 9600 F 212 736 9020 WWW.FISKAA.COM