GENERAL NOTES

1. THESE GENERAL NOTES, SYMBOL LIST AND DETAILS ARE APPLICABLE TO ALL HVAC/MECHANICAL DRAWINGS.
2. DRAWINGS ARE DIAGRAMMATIC. DETERMINE LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. RELOCATE EXISTING WORK THAT INTERFERES WITH WORK OF THIS CONTRACT.
3. WORK IN THIS SECTION IS SPECIFIED ON THE SPECIFICATION SHEET
4. COORDINATE THIS WORK WITH THAT OF OTHER TRADES.
5. DIMENSIONS SHOWN ON PLAN ARE HORIZONTAL. DIMENSIONS SHOWN IN ELEVATION ARE VERTICAL EXCEPT IN WAY OF STRUCTURAL STEEL, DIMENSIONS ARE MEASURED PERPENDICULAR TO FLANGE.
6. NEITHER ACCURACY NOR COMPLETION OF SERVICES AND UTILITY LOCATIONS SHOWN ON DRAWINGS IS GUARANTEED.
7. MANUFACTURERS MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
8. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURERS RECOMMENDATIONS.
9. PROVIDE HANGERS, INSERTS, ANCHORS, SUPPLEMENTAL STEEL & SUPPORTS AS REQUIRED TO SUPPORT DUCTWORK, PIPING AND EQUIPMENT FROM STRUCTURE.
10. COORDINATE ROOF PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS. MECHANICAL CONTRACTOR TO NOTIFY OWNER PRIOR TO STARTING WORK TO VERIFY COMPLIANCE WITH BOND AND WARRANTY OF EXISTING ROOF.
11. RUN DUCTS AND PIPING CONCEALED AND CLEAR OF CEILING INSERTS, UNLESS OTHERWISE SPECIFIED.
12. INSTALL THERMOSTATS 4'-6" ABOVE FINISHED FLOOR OR AS DIRECTED OTHERWISE BY ARCHITECT.
13. STRUCTURAL WELDING SHALL BE CONTINUOUS 1/4" FILLET UNLESS REQUIRED OTHERWISE.

AIR SYSTEMS

14. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.
15. INTERNAL AIRFLOW DIMENSIONS ARE SHOWN FOR DUCTS. INCREASE DUCT SIZE AS NECESSARY TO MAINTAIN FREE FLOW AREA INDICATED.
16. USE FLAT TRANSVERSE SEAM FOR DUCTWORK WHERE SPACE AVAILABLE DICTATES.
17. DIFFUSER SIZES SHOWN ARE NECK SIZES. REGISTERS AND GRILLE SIZES ARE NOMINAL.
18. PROVIDE VOLUME DAMPERS OR OTHER APPROVED BALANCING DEVICES AT DUCT BRANCHES AND RUN OUTS, AND AT REGISTER GRILLE AND DIFFUSER NECKS IN SUPPLY, RETURN AND EXHAUST DUCTWORK, WHETHER SHOWN OR NOT.
19. DUCTWORK DOWNSTREAM OF ALL AC UNITS SHALL BE ACOUSTICALLY LINED WITH 1" ACOUSTICAL LINING FOR A MINIMUM OF 15 FEET.
20. PROVIDE CLEARANCE IN FRONT OF ALL ELECTRIC CONTROL PANELS PER N.E.C. AND MFG. REQUIREMENTS.

HVAC ABBREVIATIONS

AAV	AUTOMATIC AIR VENT
AC	AIR CONDITIONING
ACU	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
BG	BOTTOM GRILLE
BHP	BRAKE HORSEPOWER
BR	BOTTOM REGISTER
BT	BOTTOM THROAT
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CG	CEILING GRILLE
CLG	CEILING
COND	CONDENSATE
CR	CEILING REGISTER
CUH	CABINET UNIT HEATER
CV	CONSTANT VOLUME
DB	DRY BULB
DIAM	DIAMETER
DMPR	DAMPER
DX	DIRECT EXPANSION
EX	EXISTING TO REMAIN
RE	REMOVE EXISTING
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB TEMPERATURE
EF	EXHAUST FAN
EL	ELEVATION
EF	EXHAUST FAN
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
°F	DEGREES FAHRENHEIT
FA	FREE AREA (SQ.FT.)
FC	FLEXIBLE CONNECTION
FD	FIRE DAMPER
FIN FL	FINISHED FLOOR
FLA	FULL LOAD AMPERES
FPM	FEET PER MINUTE
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HT	HEIGHT
HR	HOUR
HV	HEATING AND VENTILATING
HX	HEAT EXCHANGER
HZ	FREQUENCY
IN	INCH OR INCHES
LAT	LEAVING AIR TEMPERATURE
LD	LINEAR DIFFUSER
LF	LINEAR FEET
LWB	LEAVING WET BULB TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MBH	THOUSAND BTU PER HOUR
MER	MECHANICAL EQUIPMENT ROOM
MIN	MINIMUM
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
OED	OPEN END DUCT
PSI	POUNDS PER SQUARE INCH
PSIA	PSI ABSOLUTE
PSIG	PSI GAUGE
RA	RETURN AIR
REX	RELOCATED EXISTING
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RLA	RUNNING LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
(RRO)	EXISTING TO BE REMOVED AND RETURN TO OWNER
SA	SUPPLY AIR
SD	SMOKE DAMPER
SF	SUPPLY FAN
SP	STATIC PRESSURE
SPEC	SPECIFICATION
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TG	TOP GRILLE
TR	TOP REGISTER
TYP	TYPICAL
UH	UNIT HEATER
VFD	VARIABLE FREQUENCY DRIVE
VAV	VARIABLE AIR VOLUME UNIT
VIV	VARIABLE INLET VANES
W	WIDTH
w/	WITH
WB	WET BULB
WMS	WIRE MESH SCREEN

SYMBOL LEGEND

SYMBOL	DESCRIPTION
	SINGLE LINE DUCTWORK OR EQUIPMENT – NEW
	SINGLE LINE DUCTWORK OR EQUIPMENT – EXISTING
	DUCTWORK TO BE REMOVED
	DUCTWORK WITH ACOUSTIC LINING
	DUCT UNDER POSITIVE PRESSURE (SUPPLY AIR OR FAN DISCHARGE)
	DUCT UNDER NEGATIVE PRESSURE (RETURN, EXHAUST OR OUTSIDE AIR)
VD	VOLUME DAMPER
FD/AD	FIRE DAMPER AND ACCESS DOOR
BDD	BACK DRAFT DAMPER
M	AUTOMATIC DAMPER
R	RISE IN DUCTWORK (IN DIRECTION OF AIR FLOW)
D	DROP IN DUCTWORK (IN DIRECTION OF AIR FLOW)
§ OR CFM	CUBIC FEET PER MINUTE
Ø	DIAMETER
▯	SQUARE FEET
	POINT OF CONNECTION
	POINT OF DISCONNECTION
DD	DUCT SMOKE DETECTOR
	2-WAY SHUT OFF VALVE
	3-WAY SHUT OFF VALVE
	AIR SEPARATOR

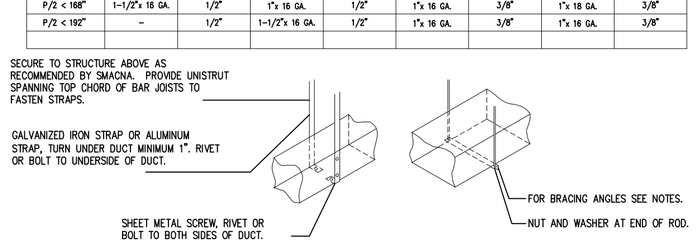
SYMBOL	DESCRIPTION
CD–A 400§	TYPE A CEILING DIFFUSER 400 CFM SUPPLY AIR
10x8 CR(CG) 300§	10" BY 8" CEILING REGISTER (CEILING GRILLE) 300 CFM RETURN AIR
	RECTANGULAR DIFFUSER WITH BLANKING PLATE
	VANED ELBOW (SEE DETAIL) OR RADIUS ELBOW
	FLEXIBLE DUCT
	FLEXIBLE DUCT CONNECTION
	VERTICAL DUCT DROP (IN DIRECTION OF AIRFLOW)
	VERTICAL DUCT RISE (IN DIRECTION OF AIRFLOW)
	SLOTTED LINEAR DIFFUSER WITH PLENUM
	HUMIDISTAT
	LCSH VALVE
	P BREAK
	PETCOCK
	PMP

	AIR FLOW ARROW
	AIR FLOW
	AIR VENT
	ANCHOR
	ANGLE VALVE – SIDE
	ANGLE VALVE – TOP
	ARROW
	BALANCE VALVE
	BM PUMP
	CAP
	CHECK VALVE
	CONTROL VALVE
	CONVERTER
	DOOR LOUVER L
	DOOR LOUVER R
	DRAIN VALVE
D	DROP
	REDUCER
	EXPANSION JOINT
	EXPANSION TANK
	FLANGE
M	FLOW METER
	GUIDE
H	HUMIDISTAT
	PRESSURE GAUGE

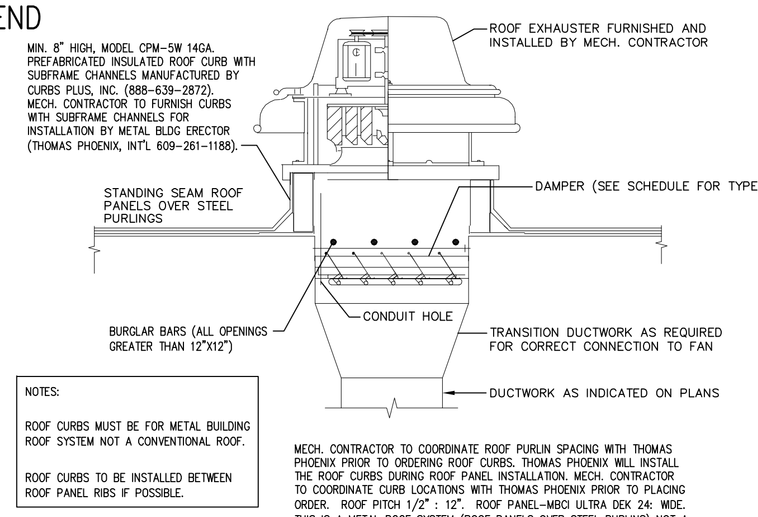
	PRESSURE RELIEF VALVE
	PROPELLER FAN
P/T	PT PLUG
RAD	RAD INFO
	REDUCER
	RELEIF VALVE
R	RISE
	SHUT OFF VALVE
	STEAM TRAP
	STRAINER
	THERMAL WELL
	THERMOMETER
	THROTTLE VALVE
T	THERMOSTAT
U	UNDERCUT
	UNION
	VARIABLE AIR VOLUME BOX
	UNIT HEATER
F	FAN CONTROL

RECTANGULAR DUCT HANGER SCHEDULE (MINIMUM SIZES)

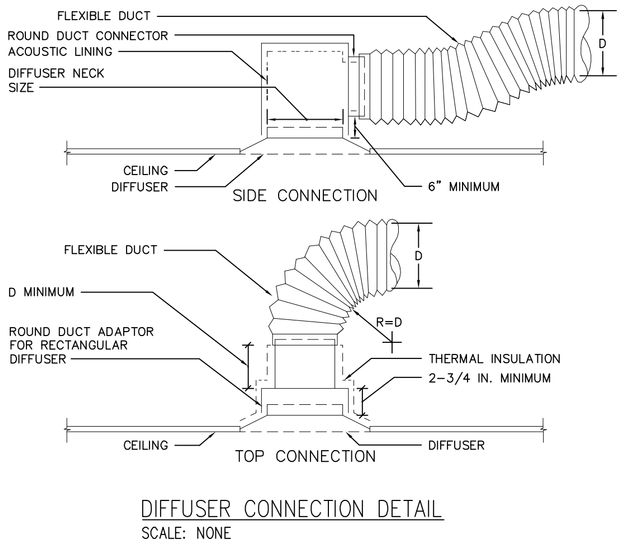
HALF DUCT PERIMETER RANGE	PAIR AT 10' SPACING		PAIR AT 8' SPACING		PAIR AT 5' SPACING		PAIR AT 4' SPACING	
	STRAP	WIRE/ROD	STRAP	WIRE/ROD	STRAP	WIRE/ROD	STRAP	WIRE/ROD
P/2 < 30"	1"x 22 GA.	10 GA. (0.135")	1"x 22 GA.	10 GA. (0.135")	1"x 22 GA.	12 GA. (0.106")	1"x 22 GA.	12 GA. (0.106")
P/2 < 72"	1"x 18 GA.	3/8"	1"x 20 GA.	1/4"	1"x 22 GA.	1/4"	1"x 22 GA.	1/4"
P/2 < 96"	1"x 16 GA.	3/8"	1"x 18 GA.	3/8"	1"x 20 GA.	3/8"	1"x 22 GA.	1/4"
P/2 < 120"	1-1/2"x 16 GA.	1/2"	1"x 16 GA.	3/8"	1"x 18 GA.	3/8"	1"x 20 GA.	1/4"
P/2 < 168"	1-1/2"x 16 GA.	1/2"	1"x 16 GA.	1/2"	1"x 16 GA.	3/8"	1"x 18 GA.	3/8"
P/2 < 192"	–	1/2"	1-1/2"x 16 GA.	1/2"	1"x 16 GA.	3/8"	1"x 16 GA.	3/8"



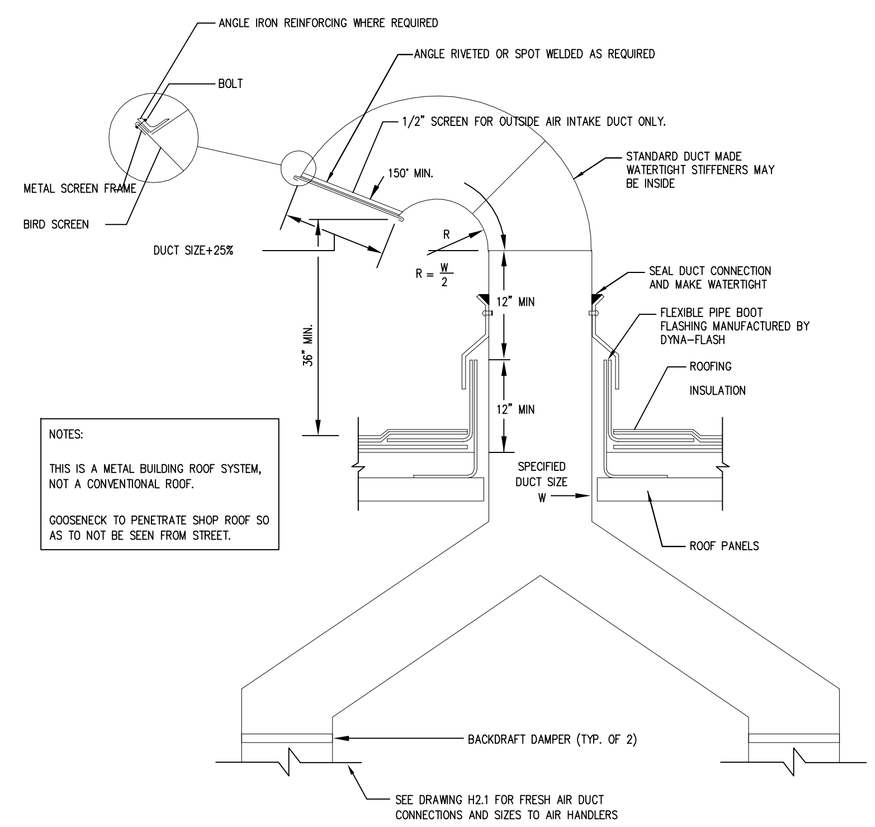
DUCT HANGER DETAILS
SCALE: NONE



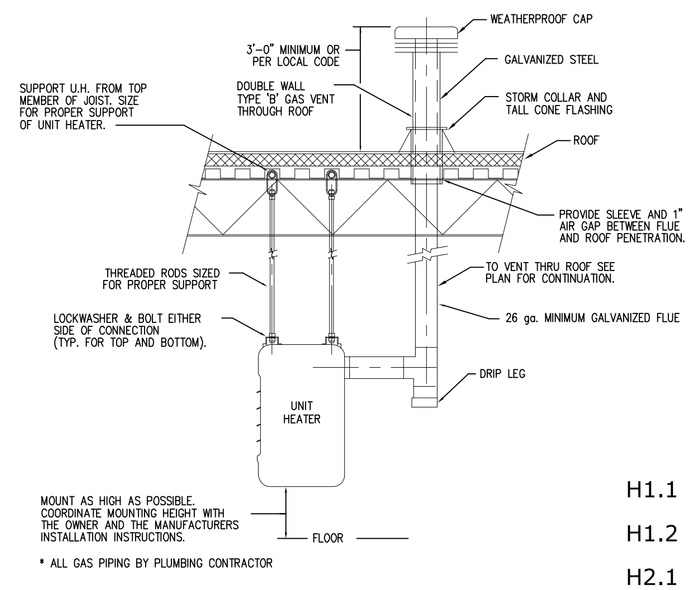
EXHAUST FAN DETAIL
SCALE: NONE



DIFFUSER CONNECTION DETAIL
SCALE: NONE



FRESH AIR INTAKE GOOSENECK DETAIL
SCALE: NONE



UNIT HEATER DETAIL
SCALE: NONE

THE OWNER WILL PROVIDE THE CONSTRUCTION MANAGEMENT SERVICES FOR THIS PROJECT. ALL RFI's, SHOP DRAWINGS AND FIELD COORDINATION SHALL BE REVIEWED WITH OWNER. THE TERM "ARCHITECT" IS USED FOR DIAGRAMMATIC PURPOSES ONLY.

DRAWING LIST

H1.1 HVAC COVER & DETAIL SHEET
H1.2 HVAC SPECIFICATION SHEET
H2.1 HVAC FLOOR & ROOF PLAN
H3.1 HVAC SCHEDULE SHEET

APPLICABLE CODES AND REFERENCES

1. CODES, RULES AND REGULATIONS OF THE STATE OF NEW JERSEY.
2. INTERNATIONAL MECHANICAL CODE, 2006
3. INTERNATIONAL BUILDING CODE, NEW JERSEY EDITION, 2006
4. ASHRAE STANDARD 90.1 – 2004
5. SMACNA HANDBOOK FOR DUCT CONSTRUCTION
6. NFPA #13 – LATEST APPROVED EDITION

SUMMER OUTDOOR DESIGN CONDITIONS

DRYBULB: 90 DEG F
WETBULB: 74 DEG F

SUMMER INDOOR DESIGN CONDITIONS

MAXIMUM DESIGN DRYBULB TEMP: 72 DEG F
RELATIVE HUMIDITY: 50%

WINTER OUTDOOR DESIGN CONDITIONS

10 DEG F DRYBULB

WINTER INDOOR DESIGN CONDITIONS

70 DEG F DRYBULB

CODE REVIEW

–	–	Issued For Permit & Construction	6/03/09
–	–	Issued For Client Review	3/24/09
no.	by	description	date

revisions

New Shop & Office Building for Shupper-Brickle Equipment Co.
11 Burnt Tavern Road
Millstone Township, NJ 08535
Block: 57
Lot: 14.01

BRIAN D. TANNENHAUS

NJ PROFESSIONAL ENGINEER
NO. GE 45801

DATE: June 3, 2009

BD engineering
NJ CERTIFICATE OF AUTHORIZATION – 24GA28116100
BD Engineering, LLC 732-886-5432
1825 Swarthmore Ave. Lakewood, NJ 08701
Project No. 080056

DRAWN BY:	CHECKED BY:	SCALE:
EM	KF	NONE

DRAWING TITLE
HVAC COVER & DETAIL SHEET

DRAWING NO.
H1.1