Date: April 18, 2023

MEMORANDUM

TO: Rabbiah Sabbakhan
Department of Permitting Services
FROM: Michael Kyne
Historic Preservation Section
Maryland-National Capital Park & Planning Commission
SUBJECT: Historic Area Work Permit #1025418: Installation of HVAC

The Montgomery County Historic Preservation Commission (HPC) has reviewed the attached application for a Historic Area Work Permit (HAWP). This application was **Approved with one (1) condition** at the April 12, 2023 HPC meeting.

1. **Applicant shall submit all specification sheets for the vent models noted in the floor plans and verify that the vents are part of this HAWP.**

The HPC staff has reviewed and stamped the attached construction drawings**.**

THE BUILDING PERMIT FOR THIS PROJECT SHALL BE ISSUED CONDITIONAL UPON ADHERENCE TO THE ABOVE APPROVED HAWP CONDITIONS AND MAY REQUIRE APPROVAL BY DPS OR ANOTHER LOCAL OFFICE BEFORE WORK CAN BEGIN.

Applicant: M-NCPPC (Timothy Crump, Applicant) (Atlantida Buildings, Inc., Agent)
Address: 19811 Darnestown Road, Beallsville

This HAWP approval is subject to the general condition that the applicant will obtain all other applicable Montgomery County or local government agency permits. After the issuance of these permits, the applicant must contact this Historic Preservation Office if any changes to the approved plan are made. Once work is complete the applicant will contact Michael Kyne at 301.563.3403 or Michael.Kyne@montgomeryplanning.org to schedule a follow-up site visit.

REVIEWED
By Michael Kyne at 11:10 am, Apr 18, 2023

APPROVED
Montgomery County
Historic Preservation Commission

0 10 20 UNIT: FEET 40

STATE OF MARYLAND
AZZAM JAWAD
54767
PROFESSIONAL ENGINEER
3/21/23

I certify that these documents were prepared or approved by me, and that I am a duly licensed Engineer under the laws of the state of Maryland, license number 54767, expiration date 8/8/2023.

Parcel No. (APN) 11-00914917

19811 Darnestown Rd
Beallsville, MD 20839
Scale: 1''=30'

MECHANICAL LEGEND	
SYMBOL	DESCRIPTION
	DUCT WIDTH x DEPTH CLEAR INSIDE DIMENSION
	SUPPLY AIR DUCT SECTION UP - DOWN
	RETURN OR EXHAUST AIR DUCT SECTION UP - DOWN
	ROUND SUPPLY AIR DUCT SECTION UP - DOWN
	ROUND RETURN AIR DUCT SECTION UP - DOWN
V.D.	MANUAL VOLUME DAMPER
	SQUARE ELBOW W/TURNING VANES
DN	DROP IN DUCT (DIRECTION OF FLOW)
UP	RISE IN DUCT (DIRECTION OF FLOW)
	TAKE-OFF DAMPER/EXTRACTOR
	NEW CONSTRUCTION
G	GAS PIPE
	CONDENSATE DRAIN PIPE
	REFRIGERANT PIPE
	REDUCER
	UNION
	PIPE DOWN
	PIPE UP
	GAS PRESSURE REDUCING VALVE
	ISOLATION VALVE
EXH	EXHAUST AIR
GR.	GRILLE
PRV	PRESSURE REDUCING VALVE
EF	EXHAUST FAN
V.D.	VOLUME DAMPER
V.I.F.	VERIFY IN FIELD
W.C.	WATER COLUMN
T	THERMOSTAT
A.F.F.	ABOVE FINISHED FLOOR
B.O.D.	BOTTOM OF DUCT
BTUH	BRITISH THERMAL UNITS PER HOUR
CD	CONDENSATE DRAIN
C.O.	CLEAN OUT
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CLG.	COOLING
EL.	ELEVATION
FPM	FEET PER MINUTE
HP	HORSEPOWER
HTG.	HEATING
KW	KILOWATT
N.R.	NOT REQUIRED
N.T.S.	NOT TO SCALE
O.A.	OUTSIDE AIR
PSI	POUNDS PER SQUARE INCH
SQ. FT.	SQUARE FEET
AHU	AIR HANDLING UNIT
CEF	CEILING EXHAUST FAN

GENERAL NOTES

- ALL WORK PERFORMED SHALL CONFORM WITH LOCAL CITY & STATE REGULATIONS. ALL WORK SHALL BE CONDUCTED, INSTALLED AND COMPLETED IN A WORKMANLIKE AND APPROVED MANNER SO AS TO SECURE THE RESULTS INTENDED BY THESE DOCUMENTS
- ALL WORK IS TO BE FULLY COORDINATED WITH ALL OTHER TRADES.
- CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND INCLUDING ANY ITEMS NOT INDICATED ON THE DRAWINGS BUT NECESSARY FOR PROPER OPERATION OF MECHANICAL SYSTEM.
- THE SEQUENCE FOR THE INSTALLATION OF ALL WORK SHALL BE COORDINATED BETWEEN ALL CONTRACTORS ON THE PROJECT & IN STRICT ACCORDANCE WITH ARCHITECT/ENGINEER & OWNER'S STIPULATION.
- THE CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES & SHALL MAKE NECESSARY OFF-SETS & CHANGES IN ELEVATIONS TO ACCOMMODATE OTHER TRADES & THE EXISTING CONDITIONS.
- WHERE THERE IS EVIDENCE THAT WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, ALL TRADES SHALL MEET ON JOB SITE TO WORK OUT SPACE CONDITIONS & MAKE SATISFACTORY ADJUSTMENTS TO INSTALLATION OF THE NEW WORK. CONTRACTORS SHALL VERIFY EXACT LOCATIONS OF ALL DEVICES & EQUIPMENT WITH FIELD CONDITIONS, SHOP DRAWINGS, & WORK OF OTHER TRADES PRIOR TO ROUGH IN. EACH CONTRACTOR SHALL BE RESPONSIBLE, AT THEIR OWN EXPENSE, FOR THE REMOVAL & REINSTALLATION OF ANY PART OF THEIR WORK IF SAME WAS INSTALLED WITHOUT CONSULTING WITH OTHER TRADES BEFORE INSTALLING THEIR WORK.
- ALL EQUIPMENT AND MATERIALS SHALL BE U.L. LISTED.
- CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND FEES REQUIRED FOR THEIR WORK.
- CONTRACTOR SHALL REFER TO THE ARCHITECTURAL & STRUCTURAL CONTRACT DRAWINGS (BEFORE SUBMITTING THEIR BIDS) TO FAMILIARIZE THEMSELVES WITH THE EXTENT OF THE GENERAL CONTRACTORS WORK, CEILING HEIGHTS AND CLEARANCE FOR INSTALLING THEIR WORK
- INCLUDE ALL OVERTIME NECESSARY TO MAINTAIN JOB SCHEDULE UNDER NORMAL CONDITIONS OR DUE TO THIS CONTRACTOR'S NEGLIGENCE OR INABILITY TO PROPERLY STAFF THE PROJECT.
- CONTRACTORS MUST KEEP UP WITH THE PROGRESS OF THE JOB.
- ALL MAJOR PIECES OF MECHANICAL EQUIPMENT SHALL BE STARTED AND ADJUSTED AND PUT INTO OPERATION BY A FACTORY REPRESENTATIVE. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION INSTRUCTIONS.
- PRIOR TO BID, IF THE CONTRACTOR FINDS ANY DISCREPANCIES OR OMISSIONS IN THE PROJECT DOCUMENTS, THE CONTRACTOR IS TO NOTIFY THE ENGINEER IN WRITING & OBTAIN CLARIFICATION. ADDITIONAL COMPENSATION WILL NOT BE GRANTED AFTER AWARD OF CONTRACT FOR ANY ADDITIONAL WORK REQUIRED TO COMPLY WITH THESE DOCUMENTS.
- ALL CHANGE PROPOSAL REQUESTS FOR WORK ADDITIONAL TO THE BASE BID CONTRACT SHALL BE BASED ON MATERIAL, LABOR, OVERHEAD AND PROFIT AS PUBLISHED IN THE LATEST EDITION OF "MEANS MECHANICAL, ELECTRICAL, PLUMBING AND BUILDING CONSTRUCTION COST DATA. "ALL CHANGE REQUESTS MUST BE BROKEN DOWN IN THE FOLLOWING MANOR.
- MATERIAL COST: (IE. EQUIPMENT, SHEET METAL PER POUND AND PIPING PER LINEAL FOOT/FITTING)
- LABOR COST: (NUMBER OF HOURS AT CURRENT LABOR RATE PER HOUR)
- OVERHEAD & PROFIT: (INDICATING PERCENTAGES)
- TOTAL CHANGE ORDER PRICE: (MATERIAL + LABOR + O&P)
- PRICING FOR ALL ITEMS OF WORK WHICH ARE TO BE CREDITED TO THE PROJECT SHALL BE BROKEN DOWN IN A SIMILAR MANOR TO THE ADDED COSTS.
- THE ASSOCIATED COST FOR DRAFTING CHANGES (INCLUDING THREE DIMENSIONAL MODELING) SHALL NOT EXCEED 10% OF THE COST OF MATERIAL AND LABOR FOR THE CHANGE
- ALL CUTTING AND PATCHING THAT IS REQUIRED TO COMPLETE THE WORK SHALL BE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.
- THE CONTRACTOR IS TO PROVIDE ALL LINTELS, SUPPORT STEEL AND FRAMING THAT IS REQUIRED TO COMPLETE THE WORK.
- CONTRACTOR SHALL PROVIDE SLEEVES IN BEAMS, FLOORS, AND COLUMNS AND WALLS AS SHOWN ON DRAWINGS, AS REQUIRED BY JOB SITE CONDITIONS, AND/OR SPECIFIED, WHEN INSTALLING THEIR WORK. ALL BEAMS AND COLUMNS WHICH ARE REQUIRED TO BE SLEEVED SHALL BE CUT AND REINFORCED AS REQUIRED BY FIELD CONDITIONS AND LOCATIONS AND SIZES SHALL BE CHECKED AND APPROVED BY ARCHITECTS BEFORE CONTRACTOR CUTS ANY STRUCTURAL BUILDING MEMBER.
- PROVIDE ALL COORDINATION AND MISCELLANEOUS IRON NECESSARY FOR SUITABLE ANCHORAGE OF HVAC ITEMS AND EQUIPMENT.
- CONTRACTOR IS TO INCLUDE ALL REQUIRED PREMIUM TIME IN BASE BID.
- INCLUDE ALL ESCALATION COSTS REQUIRED TO COMPLETE THE WORK.
- PROVIDE FOR SAFETY AND PROTECTION OF CONTRACTOR'S OWN WORK, INCLUDING THE COVERING OF ANY HOLES, SHAFT OPENINGS, ETC., SO AS TO AVOID ANY UNNECESSARY SAFETY HAZARDS AS REQUIRED AND OUTLINED BY OSHA AND ALL APPLICABLE REGULATIONS.
- PROVIDE DUST AND NOISE PROTECTION OF ADJOINING NON-CONSTRUCTION AREAS. PROPERLY PROTECT ALL FLOORS, ROOFS AND THE LIKE.
- MECHANICAL EQUIPMENT & APPLIANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR THE LABELED EQUIPMENT. CONNECTIONS TO THE MECHANICAL EQUIPMENT AND APPLIANCES, SUCH AS FUEL SUPPLY, CHIMNEY & DUCTS, SHALL CONFORM TO THE REQUIREMENTS OF THESE DOCUMENTS. MANUFACTURER'S INSTALLATION INSTRUCTIONS SHALL BE AVAILABLE ON THE JOBSITE AT ALL TIMES FOR INSPECTION.
- THE DRAWINGS, SCHEDULES, & SPECIFICATIONS HAVE BEEN PREPARED USING ONE MANUFACTURER FOR EACH TYPES OF EQUIPMENT AS THE BASIS FOR DIMENSIONAL & MECHANICAL DESIGN. SUBSTITUTIONS FOR PRODUCTS WILL ONLY BE CONSIDERED IF SUBMITTED 10 DAYS PRIOR TO BID DATE & ONLY FOR PRODUCTS EQUAL OR BETTER THAN THAT SPECIFIED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL THE DIMENSIONS OF THE EQUIPMENT TO VERIFY THAT IT WILL FIT IN THE SPACE SHOWN ON THE DRAWINGS. MINOR DEVIATIONS IN DIMENSIONS WILL BE PERMITTED; PROVIDED THE RATINGS MEET THOSE SHOWN ON THE DRAWINGS AND EQUIPMENT WILL PHYSICALLY FIT INTO THE SPACE ALLOCATED WITH SUITABLE ACCESS AROUND EQUIPMENT FOR OPERATION & MAINTENANCE ON THE EQUIPMENT.
- THE MECHANICAL EQUIPMENT HAS BEEN COORDINATED WITH THE ELECTRICAL DESIGN DRAWINGS BASED ON THE ELECTRICAL CHARACTERISTICS OF THE EQUIPMENT SPECIFIED. ALL CHANGES AND/OR MODIFICATIONS TO THE ELECTRICAL DESIGN AND INSTALLATION EXPENSE, DUE TO SUBSTITUTIONS OF EQUIPMENT (I.E. AMPERAGE INCREASE) WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
- CONTRACTOR SHALL SUBMIT DETAILED DIMENSIONED SHOP DRAWINGS FOR ALL WORK WHICH MUST BE REVIEWED, COORDINATED & SIGNED OFF BY ALL OTHER TRADES BEFORE SUBMITTAL. IN PREPARATION OF SHOP DRAWINGS, CONTRACTOR MAY, AT HIS OPTION, OBTAIN ELECTRONIC DRAWING FILES IN AUTOCAD FORMAT ON A CD-ROM DISK FROM THE ENGINEER FOR SHIPPING & HANDLING FEE OF $150.00 PER REQUEST. CONTRACTOR SHALL CONTACT THE ARCHITECT & ENGINEER FOR WRITTEN AUTHORIZATION & NECESSARY RELEASE AUTHORIZATION FORM & TO SPECIFY SHIPPING METHOD. IN ADDITION TO PAYMENT, ARCHITECTS WRITTEN AUTHORIZATION & ENGINEERS RELEASE AGREEMENT FORM MUST BE RECEIVED BEFORE ELECTRONIC DRAWING FILES WILL BE SENT.
- CONTRACTOR AND/OR MANUFACTURER SHALL VERIFY THAT THE CHARACTERISTICS OF THE EQUIPMENT HE SUBMITS FOR REVIEW MEETS THE CAPACITY AND DUTY SPECIFIED.
- WHEN EQUIPMENT IS SUBMITTED FOR REVIEW AND DOES NOT MEET THE PHYSICAL SIZE OR ARRANGEMENT OF THAT SCHEDULED & SPECIFIED, CONTRACTOR SHALL PAY FOR ALL ALTERATIONS REQUIRED TO ACCOMMODATE SUCH EQUIPMENT AT NO ADDITIONAL COST TO OWNER. CONTRACTOR WILL ALSO PAY ALL COSTS FOR ADDITIONAL WORK REQUIRED BY OTHER CONTRACTORS, OWNER, ARCHITECT, OR ENGINEER TO MAKE CHANGE WHICH WOULD ALLOW THE EQUIPMENT TO FIT IN THE SPACE & FUNCTION AS INTENDED.

HVAC NOTES:

- ALL EQUIPMENT, DUCTWORK, PIPEWORK, ETC SHALL BE SUPPORTED.
- ALL DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS.
- ALL DUCTWORK AND PIPING IS SHOWN SCHEMATICALLY. PROVIDE ALL TRANSITIONS, TURNING VANES, ELBOWS, FITTINGS, ETC. TO ALLOW SMOOTH FLOWS. ALL SPLIT DUCT FITTINGS SHALL TRANSITION TO FULL SIZE OF THE SUM OF BOTH BRANCHES UPSTREAM OF SPLIT.
- MAINTAIN A MINIMUM 6" CLEARANCE BETWEEN DUCTWORK, PIPING, EQUIPMENT, ETC. AND ALL FIRE RATED AND FIRE/SMOKE RATED PARTITIONS, TO ALLOW FOR INSPECTION OF RATED WALLS.
- SLEEVE AND SEAL ALL PIPING PENETRATIONS THROUGH BUILDING PARTITIONS.
- VERIFY AND COORDINATE ALL ROOF, WALL, AND FLOOR PENETRATIONS WITH THE STRUCTURAL AND ARCHITECTURAL DRAWINGS PRIOR TO THE START OF CONSTRUCTION.
- PROVIDE ACCESS PANELS TO ALL CONCEALED VALVES, DAMPERS, AND EQUIPMENT. COORDINATE THE LOCATION OF ACCESS PANELS TO INSURE THAT THE EQUIPMENT CAN BE MAINTAINED ADEQUATELY.
- INSTALL CONDENSATE DRAINS AT A MINIMUM SLOPE OF 1/4" PER FOOT. INDIVIDUAL UNIT CONDENSATE DRAINS SHALL BE 3/4" DIAMETER LINES AND 1" FOR COMBINED LINES UNLESS OTHERWISE INDICATED.
- THE CONTRACTOR SHALL PROVIDE ALL CONTROL COMPONENTS AND ACCESSORIES INCLUDING EQUIPMENT MOTOR STARTERS, THERMOSTATS, SENSORS, WIRING, BOXES, ETC.
- INSULATE ALL SEWER PIPING RECEIVING AIR CONDITIONING CONDENSATE DRAINS, OR ANY OTHER COLD LIQUID WHICH MAY CREATE CONDENSATION, FROM POINT OF CONNECTION TO TOP OF CONCRETE SLAB-ON-GRADE.
- MOUNT ALL ROOM THERMOSTATS AT 4'-0" ABOVE FINISHED FLOOR UNLESS OTHERWISE INDICATED.
- ALL HVAC SYSTEM THERMOSTATS IN UNITS SHALL BE EQUIPPED WITH ENERGY STAR SEVEN DAY PROGRAMMABLE THERMOSTATS WITH NIGHT SETBACK.
- PRIOR TO PERMIT BEING FINAL, A COMPLETE REPORT OF THE TESTING AND ADJUSTING SHALL BE PROVIDE TO THE OWNER/OWNER'S REPRESENTATIVE AND TO THE INSPECTOR.
- CONDENSER, EVAPORATOR COIL TO MEET CA.24 REQUIREMENTS.
- INSULATION INSPECTION AND APPROVAL SHALL BE DONE BY APPROVED HERS TESTED(AS REQUIRED).THE INSPECTION SHALL COINCIDE WITH INSULATION INSTALLATION COMPLETION. AND PRIOR TO DRY WALL INSTALLATION(AS REQUIRED BY TITLE 24 ENERGY CALCULATIONS)
- ALL HVAC EQUIPMENT SHALL BE APPROVED PRIOR TO INSTALLATION BY NATIONALLY RECOGNIZED STANDARD AND EVIDENCED BY THE LISTING AND LABEL OF AN APPROVED AGENECY(CMC 2019)
- AIR CONDITIONING EQUIPMENT SHALL NOT BE LOCATED IN SETBACK AREA.
- HEATING AND AIR CONDITIONING SYSTEM DESIGN SHALL BE SIZED, DESIGNED AND HAVE THEIR EQUIPMENT SELECTED USING THE FOLLOWING METHOD(CGBSC 2019).
  A. HEATING LOSS AND HEAT GAIN IS ESTABLISHED ACCORDING TO ACCA MANUAL 3, ASHRAE HANDBOOK OR OTHER EQUIVALENT DESIGN SOFTWARE OR METHOD.
  B. DUCT SYSTEM ARE SIZE ACCORDING TO ACCA 29-D MANUAL D,ASHRAE HANDBOOK OR OTHER EQUIVALENT METHOD.
  C. SELECT HEATING AND COOLING EQUIPMENT ACCORDING TO ACCA 36-S MANUAL S OR EQUIVALENT DESIGN SOFTWARE OR METHOD.
- EQUIPMENT INSTALLED OUTSIDE THE BUILDING SHALL BE LISTED FOR OUTDOOR INSTALLATION OR BE APPROVED WEATHER PROOF ENCLOSURE PER CMC 2019.
- COORDINATE LOCATION OF THE CONDENSATE DRAIN WITH PLUMBING CONTRACTOR .PIPE PRIMARY CONDENSATE TO AN APPROVED RECEPTACLE.
- THE PAD SUPPORTING THE CONDENSER OR COMPRESSOR FROM GROUND SHALL BE NOT LESS THAN 3" ABOVE GRADE CMC 2019.
- AIR CONDITIONING EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTION.UNLESS THE EQUIPMENT IS LISTED FOR INSTALLATION ON A COMBUSTIBLE SURFACE SUCH AS A FLOOR OR ROOF OR UNLESS THE SURFACE IS PROTECTED IN APPROVED MANNER,IT SHALL BE INSTALLED ON A SURFACE OF NONCOMBUSTIBLE CONSTRUCTION WITH NO COMBUSTIBLE MATERIAL AGAINST THE UNDERSIDE THEROF(CMC 2019).
- PROVIDE REFRIGERANT SERVICE PORT WITH REQUIRE LOCKING TYPE,TAMPER PROOF REFRIGERANT CAP(CMC 2019).
- CONDENSATE FROM AIR WASHER,AIR COOLING COIL,OR SIMILAR AIR-CONDITIONING EQUIPMENT SHALL BE COLLECTED AND DISCHARGED TO AN APPROVED PLUMBING FIXTURE OR DISPOSAL AREA. (CPC 2019).
- PROVIDE SMOOTH METAL DUCT FOR DRYER EXHAUST NOT LESS THAN 4" AND SHALL TERMINATE OUTSIDE THE BUILDING PER CMC 2019.
- DUCT USED FOR KITCHEN RANGE VENTILATION SHALL BE METAL AND SHALL HAVE SMOOTH INTERIOR SURFACE. (CMC 2019)
- DUCT PENETRATION IN THE GARAGE AND DUCT PENETRATING THE WALLS OR CEILINGS SEPARATING THE DWELLING ROOM FROM THE GARAGE SHALL BE CONSTRUCTED OF A MINIMUM NO.26 GAUGE SHEET STEEL OR OTHER APPROVED MATERIAL SHALL HAVE NO OPENINGS INTO THE GARAGE.
- FASTENERS SHALL BE UL 181 APPROVED AND BE INSTALLED WITHOUT 24 ENERGY CALCULATIONS.USE MINIMUM 2' WIDE HANGER MATERIAL.(602.4).
- DUCT LINER SHALL BE FASTENED WITH BOTH APPROVED ADHESIVE AND MECHANICAL FASTENERS,EXPOSED EDGES SHALL BE TREATED AS NOT TO CAUSE DETERIORATION OF THE LINER(605.4).
- EXTERNAL DUCT INSULATION SHALL BE LABELED WITH MANUFACTURER' NAME, THE R VALUE, THE FLAME SPREAD INDEX AND THE SMOKE DEVELOPMENT INDEX(604.4)
- DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH CHAPTER 6 OF THE CMC OR APPLICABLE SMACNA STANDARDS.
- DUCT JOINTS SHALL BE SEALED WITH MATERIAL TO MEET TITLE 24 REQUIREMENTS AND CURRENT BUILDING CODES.
- THERMOSTATS WILL COMPLY WITH CAL.TITLE 24 REGULATIONS.
- THERMOSTAT AND WIRING WHICH WILL CONTROL BOTH HEATING AND AIR CONDITIONING EQUIPMENTS.EACH HVAC SYSTEM SHALL BE APPROVED WITH AT LEAST ONE AUTOMATIC TEMPERATURE CONTROL DEVICE FOR REGULATION OF TEMPERATURE AS REQUIRED IN SECTION T-1503(C) OF THE CALIFORNIA ADMINISTRATIVE CODE.
- ALL THERMOSTAT SHALL BE ELECTRONIC PROGRAMMABLE TYPE 7 DAY,INSTALL LOW VOLTAGE WIRING AS REQUIRED
- MECHANICAL EXHAUST FANS WHICH EXHAUST DIRECTLY FROM BATHROOMS SHALL BE ENERGY STAR,DUCTED TO TERMINATE OUTSIDE THE BUILDING AND UNLESS FUNCTIONING AS A COMPONENT OF A WHOLE HOUSE VENTILATION SYSTEM BE CONTROLLED BE A READILY ACCESSIBLE HUMIDISTAT SHALL MAINTAIN HUMIDITY BETWEEN 50-80% RH(CGBSC 2019).
- A VENTILATION FAN SHALL BE FURNISHED PER TITLE 24 ENERGY CODE TO RUN CONTINUOUS.THE CAPACITY OF THE FAN SHALL BE CALCULATED PER TITLE 24.A SIGN SHOULD STATE THAT THE FAN SHOULD RUN CONTINUOUSLY FOR PROPER RESIDENCE VENTILATION.
- NOT MORE THAN ONE APPLIANCE SHALL BE CONNECTED TO SINGLE VENT UNLESS CALCULATION SHOWING CONFORMANCE TO CMC 2019 CHAPTER & SUBMITTED TO BUILDING AND SAFETY DEPARTMENT.
- PROVIDE MIN.30" CLEARANCE ABOVE THE RANGE OR COOK TOP TO UNPROTECTED COMBUSTIBLE MATERIAL OR 24" CLEARANCE TO METAL VENTILATION HOOD(CMC 2019).

HVAC SHEET INDEX			
SR NO.	SHEET NO.	SHEET NAME	SCALE
1	M000	GENERAL NOTES AND SYMBOL	N.T.S.
2	M100	BASEMENT PLAN - HVAC	1/4"=1'-0"
3	M101	LEVEL 1 FLOOR PLAN - HVAC	1/4"=1'-0"
4	M102	LEVEL 2 FLOOR PLAN - HVAC	1/4"=1'-0"
7	M500	HVAC SCHEDULES	N.T.S.
8	M600	HVAC DETAILS	N.T.S.

REFERENCE CODES
1. BUILDING CODE 2018 OF MARYLAND 2. RESIDENTIAL CODE 2018 OF MARYLAND 3. PLUMBING CODE 2018 OF MARYLAND 3. MECHANICAL CODE 2018 OF MARYLAND 3. ENERGY CONSERVATION CODE 2018 OF MARYLAND

EQUIPMENT IDENTIFICATION

REVIEWED
By Michael Kyne at 11:11 am, Apr 18, 2023

APPROVED
Montgomery County
Historic Preservation Commission

TEJJY
1801 Research Blvd Suite 110
Rockville MD 20850
call: 202-465-4830
email: info@tejjy.com

SEAL

PROJECT DETAILS

RESIDENCE

19811 Darnestown Rd,
Beallsville, MD 20839

REV.	DATE	DESCRIPTION

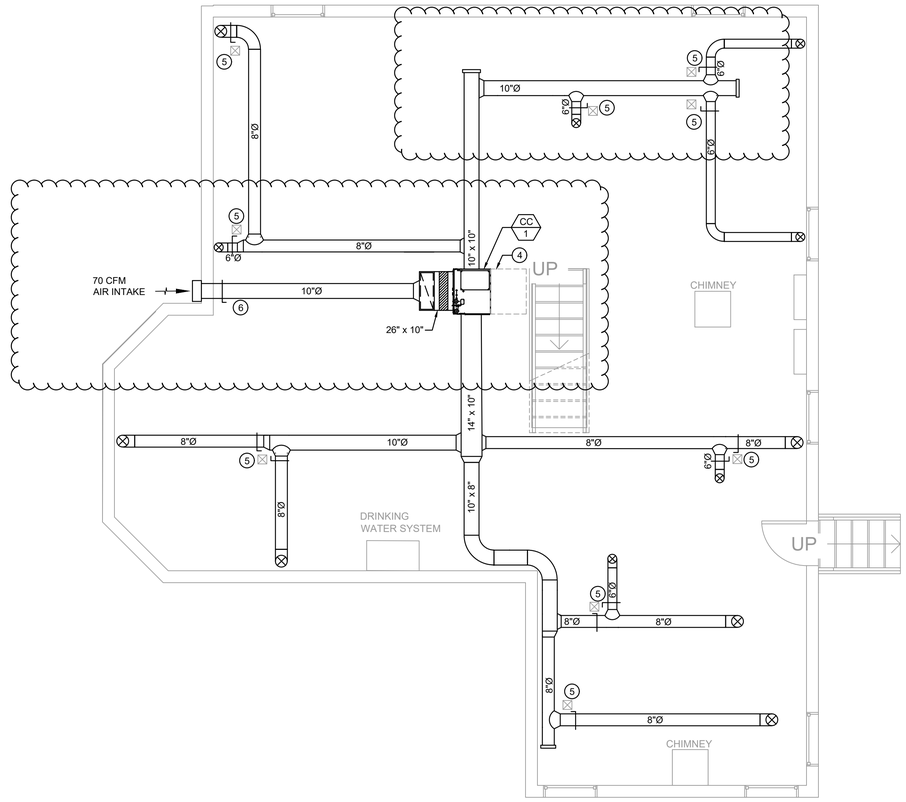
PM :
Author :
Checker :
Scale : As indiacted

SHEET TITLE

MECHANICAL COVERSHEET

SHEET NO.

M000



1 M100 BASEMENT PLAN - HVAC
SCALE: 1/4" = 1'-0"

HVAC GENERAL NOTES

1. ALL DUCTWORK SHALL CONFORM TO SMACNA STANDARDS. ALL DUCTWORK SIZES ARE NET INSIDE DIMENSIONS.
2. MECHANICAL CONTRACTOR TO COORDINATE DUCT LAYOUT AND DIMENSIONS WITH FIELD VERIFIED.
3. ADJUST CEILING DIFFUSER TO FIT AS PER FIELD VERIFIED.
4. DIFFUSER TO BE INSTALLED WITH SYMMETRY IN ACCORDANCE WITH LIGHTING LAYOUT DESIGN. DIFFUSER SHALL NOT BE OFF CENTER OR ALIGNMENT.
5. COORDINATE WITH GENERAL CONTRACTOR FOR ALL CONDENSATE DRAIN LINE LOCATION.
6. DUCT WORK SHALL BE INSULATED WITH R-8 FIBERGLASS DUCT WRAP WITH FSK JACKET.

KEYNOTES:

1. 4"Ø EXHAUST AIR DUCT THROUGH WALL HOOD WITH BUILT IN BACK DRAFT DAMPER & BIRD SCREEN. (MANUFACTURER #BROAN, MODEL NO:885AL OR EQUIVALENT).
2. 6"Ø EXHAUST AIR DUCT THROUGH WALL HOOD WITH BUILT IN BACK DRAFT DAMPER & BIRD SCREEN. (MANUFACTURER #BROAN, MODEL NO:843BL OR EQUIVALENT)
3. 1" UNDERCUT DOOR.
4. 24" SERVICE CLEARANCE FOR UNIT.
5. MANUAL AIR DAMPER WITH ACCESS PANEL.
6. 10"Ø OUTSIDE AIR DUCT THROUGH WALL HOOD WITH BIRD SCREEN. (MANUFACTURER #BROAN MODEL NO:610FA OR EQUIVALENT)
7. 4"Ø DRYER DUCT EXHAUST UP TO WALL.
8. 4"Ø DRYER EXHAUST AIR DUCT THROUGH WALL WITH GRAVITY HOOD(MANUFACTURER# DRYER WALL VENT,MODEL N0# DWV4W OR EQUIVALENT).
9. 6"Ø KITCHEN EXHAUST AIR DUCT THROUGH WALL HOOD WITH BUILT IN BACK DRAFT DAMPER & BIRD SCREEN. (MANUFACTURER# BROAN, MODEL NO# 843BL OR EQUIVALENT).
10. KITCHEN MICROWAVE COMBO VENT CONNECTION. REFER DETAIL:8 OF SHEET:M600.
11. SERVICE CLEARANCE FOR CONDENSING UNIT.

REVIEWED
By Michael Kyne at 11:11 am, Apr 18, 2023

APPROVED
Montgomery County
Historic Preservation Commission

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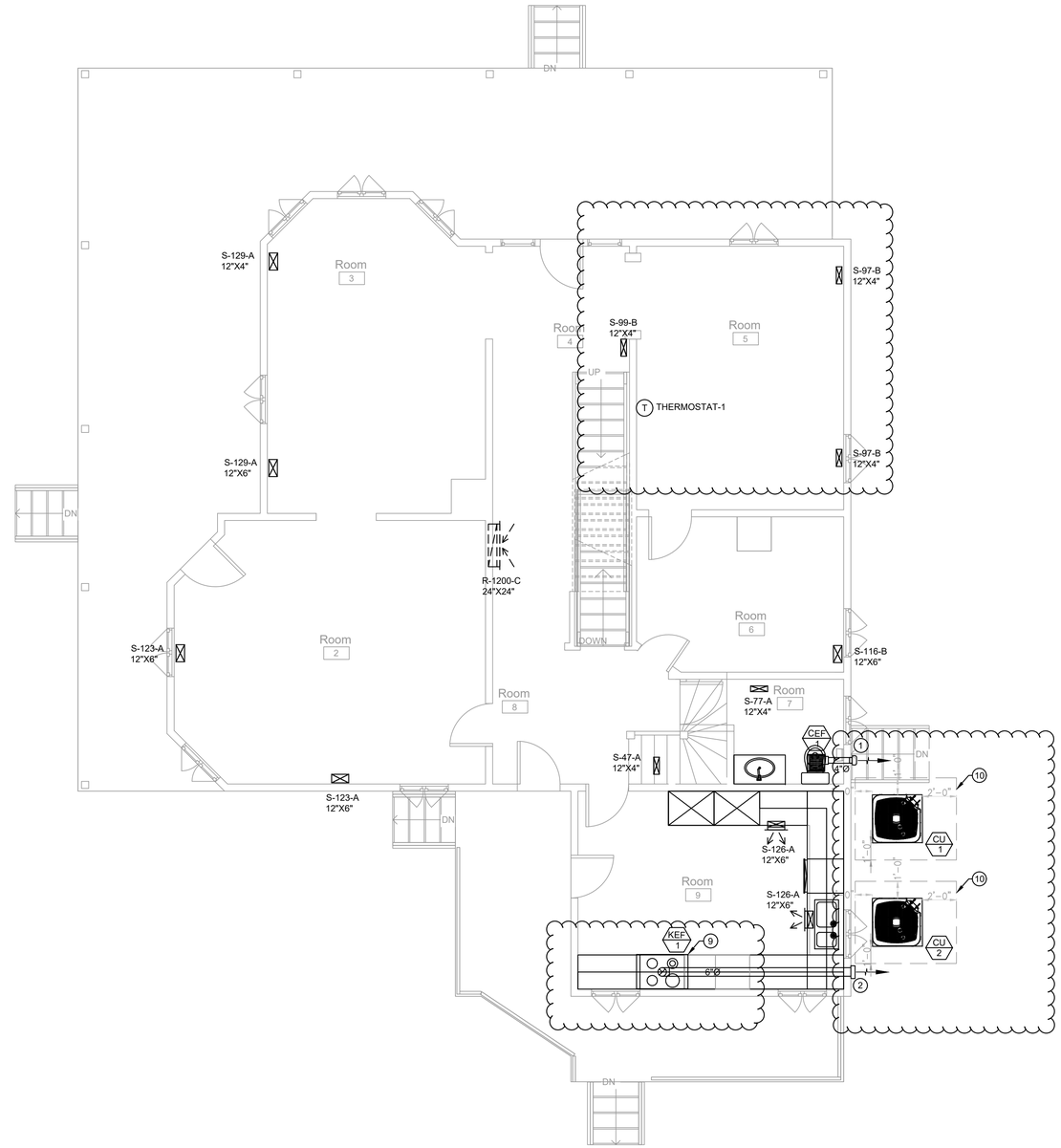
SHEET TITLE

BASEMENT PLAN- HVAC

SHEET NO.

M100



1 M101 LEVEL 1 FLOOR PLAN - HVAC
SCALE: 1/4" = 1'-0"

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2. MECHANICAL CONTRACTOR TO COORDINATE DUCT LAYOUT AND DIMENSIONS WITH FIELD VERIFIED.
3. ADJUST CEILING DIFFUSER TO FIT AS PER FIELD VERIFIED.
4. DIFFUSER TO BE INSTALLED WITH SYMMETRY IN ACCORDANCE WITH LIGHTING LAYOUT DESIGN. DIFFUSER SHALL NOT BE OFF CENTER OR ALIGNMENT.
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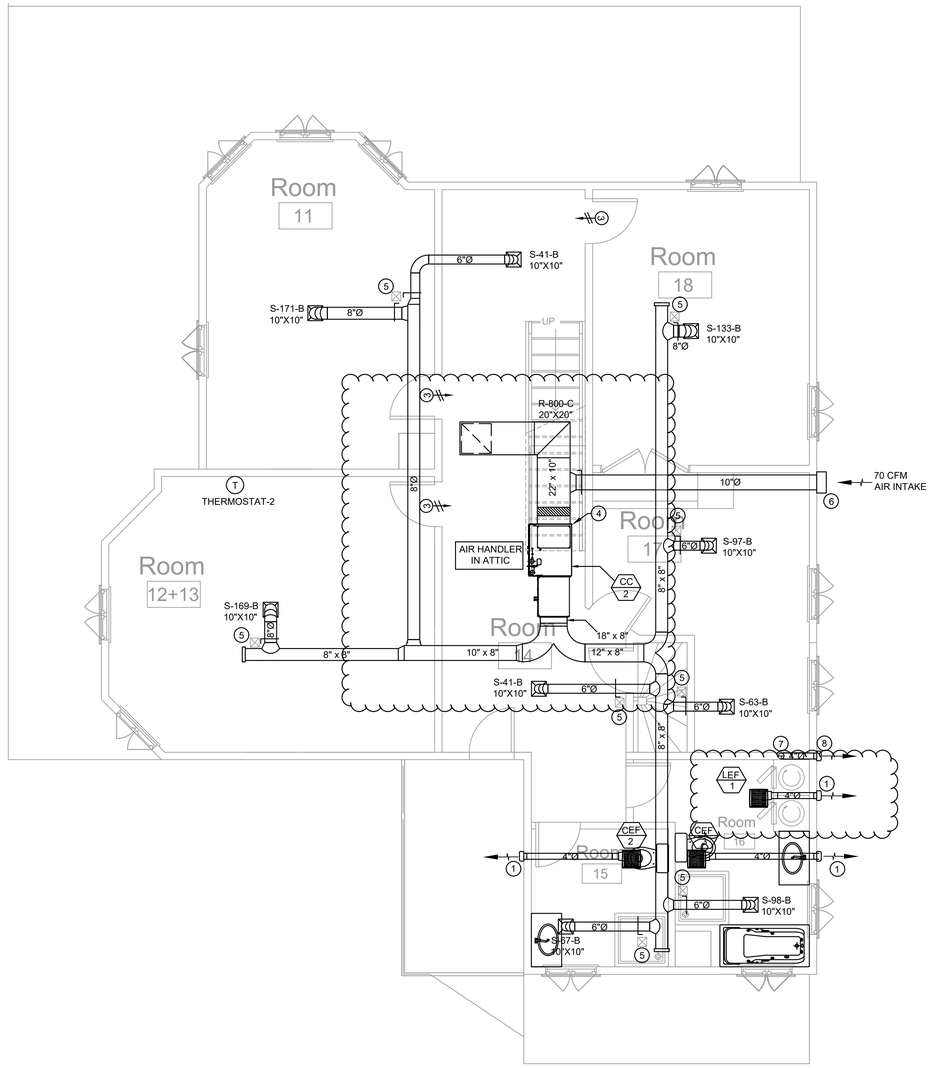
LEVEL 1 FLOOR PLAN- HVAC

SHEET NO.

M101



1 M102 LEVEL 2 FLOOR PLAN - HVAC
SCALE: 1/4" = 1'-0"

HVAC GENERAL NOTES

1. ALL DUCTWORK SHALL CONFORM TO SMACNA STANDARDS. ALL DUCTWORK SIZES ARE NET INSIDE DIMENSIONS.
2. MECHANICAL CONTRACTOR TO COORDINATE DUCT LAYOUT AND DIMENSIONS WITH FIELD VERIFIED.
3. ADJUST CEILING DIFFUSER TO FIT AS PER FIELD VERIFIED.
4. DIFFUSER TO BE INSTALLED WITH SYMMETRY IN ACCORDANCE WITH LIGHTING LAYOUT DESIGN. DIFFUSER SHALL NOT BE OFF CENTER OR ALIGNMENT.
5. COORDINATE WITH GENERAL CONTRACTOR FOR ALL CONDENSATE DRAIN LINE LOCATION.
6. DUCT WORK SHALL BE INSULATED WITH R-8 FIBERGLASS DUCT WRAP WITH FSK JACKET.

KEYNOTES:

1. 4"Ø EXHAUST AIR DUCT THROUGH WALL HOOD WITH BUILT IN BACK DRAFT DAMPER & BIRD SCREEN. (MANUFACTURER #BROAN, MODEL NO:885AL OR EQUIVALENT).
2. 6"Ø EXHAUST AIR DUCT THROUGH WALL HOOD WITH BUILT IN BACK DRAFT DAMPER & BIRD SCREEN. (MANUFACTURER #BROAN, MODEL NO:843BL OR EQUIVALENT)
3. 1" UNDERCUT DOOR.
4. 24" SERVICE CLEARANCE FOR UNIT.
5. MANUAL AIR DAMPER WITH ACCESS PANEL.
6. 10"Ø OUTSIDE AIR DUCT THROUGH WALL HOOD WITH BIRD SCREEN. (MANUFACTURER #BROAN MODEL NO:610FA OR EQUIVALENT)
7. 4"Ø DRYER DUCT EXHAUST UP TO WALL.
8. 4"Ø DRYER EXHAUST AIR DUCT THROUGH WALL WITH GRAVITY HOOD(MANUFACTURER# DRYER WALL VENT,MODEL N0# DWV4W OR EQUIVALENT).
9. 6"Ø KITCHEN EXHAUST AIR DUCT THROUGH WALL HOOD WITH BUILT IN BACK DRAFT DAMPER & BIRD SCREEN. (MANUFACTURER# BROAN, MODEL NO# 843BL OR EQUIVALENT).
10. KITCHEN MICROWAVE COMBO VENT CONNECTION. REFER DETAIL:8 OF SHEET:M600.
11. SERVICE CLEARANCE FOR CONDENSING UNIT.

REVIEWED
By Michael Kyne at 11:11 am, Apr 18, 2023

APPROVED
Montgomery County
Historic Preservation Commission

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SEAL

PROJECT DETAILS

RESIDENCE

19811 Darnestown Rd,
Beallsville, MD 20839

REV.	DATE	DESCRIPTION

PM :
Author :
Checker :
Scale : As indiacted

SHEET TITLE

LEVEL 2 FLOOR PLAN- HVAC

SHEET NO.

M102

OUTDOOR UNIT SCHEDULE

SYMBOL	LOCATION	QTY.	COOLING RATED CAPACITY (MBH)	ENTERING AIR DB (°F)	REFRIGERANT LINE		COMPRESSOR				OUTDOOR FAN		ELECTRIC					SHIPPING WEIGHT (LBS)	DIMENSION (IN INCH.)			TYPE OF REFRIGERANT	SEER	MODEL	BASIS OF DESIGN
					SUCTION (INCH.)	LIQUID (INCH.)	TYPE	STAGE	QTY.	RLA (AMPS)	FAN QTY.	MOTOR FLA	MCA	MOCP	V.	PH.	HZ.		WIDTH	LENGTH	HEIGHT				
CU-1	OUTSIDE BUILDING	1	34.6	92	3/4"	3/8"	ROTARY	INVERTER	1	19	1	2.5	26.3	45	208-230	1	60	180	29 1/8"	29 1/8"	24 15/16"	R-410A	20	BOVA-36HDN1-M20G	BOSCH
CU-2	OUTSIDE BUILDING	1	34.6	92	3/4"	3/8"	ROTARY	INVERTER	1	19	1	2.6	26.3	45	208-230	1	60	180	29 1/8"	29 1/8"	24 15/16"	R-410A	20	BOVA-36HDN1-M20G	BOSCH

NOTES:
1. OUTDOOR UNITS SHALL BE MOUNTED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTION.
2. INSTALL THE AIR CONDITIONER ON A STRONG ENOUGH TO WITHSTAND THE WEIGHT OF THE UNIT.
3. ELECTRICAL WORK MUST BE PERFORMED IN ACCORDANCE WITH RELEVANT LOCAL AND NATIONAL REGULATIONS AND WITH INSTRUCTIONS IN THIS INSTALLATION MANUAL.
4. DURING INSTALLATION, ATTACH THE REFRIGERANT PIPING SECURELY BEFORE RUNNING THE COMPRESSOR.
5. MAX. LENGTH OF REFRIGERANT LINES FROM OUTDOOR TO INDOOR UNIT MUST NOT EXCEED 60 FEET. THE VERTICAL CHANGES MUST NOT EXCEED 60 FEET.

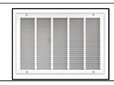
COOLING COIL(INDOOR UNIT) SCHEDULE

SYMBOL	QTY.	TOTAL COOLING CAPACITY (MBH)	DIMENSION (INCH.)			TYPE OF REFRIGERANT	SHIPPING WEIGHT (LBS.)	MODEL	BASIS OF DESIGN
			LENGTH	WIDTH	HEIGHT				
CC-1	1	34.6	21 5/8"	19 5/8"	46 1/2"	R-410A	132	BVA-36WN1-M20	BOSCH
	BACKUP ELECTRIC HEAT KIT - **MODEL - EHK10B, RATING - 10KW**								
CC-2	1	24	21 5/8"	19 5/8"	46 1/2"	R-410A	139	BVA-24WN1-M20	BOSCH
	BACKUP ELECTRIC HEAT KIT - **MODEL - EHK10B, RATING - 10KW**								

NOTES:
1. COOLING COIL SHALL BE MOUNTED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTION.
2. REFRIGERANT PIPING SHALL RUN FROM INDOOR UNITS TO OUTDOOR UNIT AS PER MANUFACTURER'S INSTRUCTION AND BOTH REFRIGERANT PIPING SHALL BE INSULATED.

AIR DEVICE SCHEDULE

NOMENCLATURE: U-CFM-T / SIZE- B — U = USAGE (S = SUPPLY, R = RETURN, E = EXHAUST, T = TRANSFER); CFM = AIR QUANITY; T = TYPE OF AIR DEVICE; SIZE = NECK SIZE OF AIR DEVICE; B = BLOW PATTERN — EXAMPLE: S-150-A / 8"Ø-4W

TYPE	USAGE	SERVING	NECK SIZE	PANEL/FACE SIZE	MATERIAL	DESCRIPTION	MANUFACTURER	MODEL NO.	REMARKS	REFERENCE IMAGE
A	SUPPLY	REFER TO FLOOR PLAN	SEE PLAN	12"x4" 12"x6"	STEEL	ADJUSTABLE BLADE FOR 2WAY AIR FLOW PATTERN	SHOEMAKER	951 SERIES	1,2,3,4,5,6	
B	SUPPLY	REFER TO FLOOR PLAN	SEE PLAN	10" X 10"	ALUMINUM	4-WAY AIR DIFFUSER WITH OPPOSED BLADE DAMPER	SHOEMAKER	CB40	1,2,3,4,5,6	
C	RETURN	REFER TO FLOOR PLAN	SEE PLAN	24" X 24" 20" X 20"	STEEL	INSTALL WITH LOUVERS IN UP OR DOWN POSITION FOR BEST DUCT CONCEALMENT	SHOEMAKER	1050 SERIES	1,2,3,4	

NOTES:
1. CUSTOM FINISH & COLOR AS SELECTED BY ARCHITECT/OWNER.
2. PROVIDE OPPOSED BLADE DAMPER/MUILTI SHUTTER DAMPER.
3. PROVIDE FOAM GASKET SEAL.
4. COORDINATE FRAME TYPE WITH REFLECTED CEILING PLAN & ARCHITECT.
5. INSULATED PLENUM/BACK PAN.
6. ARCHITECT/OWNER SHALL SELECT SUPPLY DIFFUSER BASE ON DRYWALL CEILING .

CEILING EXHAUST FAN SCHEDULE

SYMBOL	TYPE	QTY.	LOCATION	FAN					PHYSICAL DATA				SOUND (Sones)	MODEL	BASIS OF DESIGN
				AIR FLOW (CFM)	E.S.P. (in. H2O)	ELECTRICAL			DIMENSION (in)			NET WEIGHT (lb)			
						VOLTAGE	Hz	AMPS	LENGTH	WIDTH	HEIGHT				
CEF- 1	CEILING MOUNTED	1	BATH RM 1	50	0.1	120	60	0.2	9 1/4	10	5 3/4	10	0.50	AE50	BROAN
CEF- 2	CEILING MOUNTED	1	BATH RM 2	50	0.1	120	60	0.2	9 1/4	10	5 3/4	10	0.50	AE50	BROAN
CEF- 3	CEILING MOUNTED	1	BATH RM 3	50	0.1	120	60	0.2	9 1/4	10	5 3/4	10	0.50	AE50	BROAN

NOTE:
1. TO AVOID MOTOR BEARING DAMAGE AND NOISY OR UNBALANCED IMPELLERS, KEEP DRYWALL SPRAY, CONSTRUCTION DUST, ETC. OFF POWER UNIT.
2. IT SHALL BE DUCTED TO A ROOF OR WALL CAP USING ROUND DUCTWORK.
3. BLOWER ASSEMBLY SHALL BE REMOVABLE, HAVE A CENTRIFUGAL TYPE BLOWER WHEEL AND A PERMANENTLY LUBRICATED.
4. MOTOR DESIGNED FOR COUNTINUOUS OPERATION.
5. PROVIDE FIRE BLANKET AND RADIATION DAMPER.

LAUNDRY EXHAUST FAN SCHEDULE

SYMBOL	TYPE	QTY.	LOCATION	FAN					PHYSICAL DATA				SOUND (Sones)	MODEL	BASIS OF DESIGN
				AIR FLOW (CFM)	E.S.P. (in. H2O)	ELECTRICAL			DIMENSION (in)			NET WEIGHT (lb)			
						VOLTAGE	Hz	AMPS	LENGTH	WIDTH	HEIGHT				
LEF- 1	CEILING MOUNTED	1	BATH RM3	80	0.1	120	60	0.3	9 1/4	10	5 3/4	10	0.80	AE80	BROAN

NOTE:
1. TO AVOID MOTOR BEARING DAMAGE AND NOISY OR UNBALANCED IMPELLERS, KEEP DRYWALL SPRAY, CONSTRUCTION DUST, ETC. OFF POWER UNIT.
2. IT SHALL BE DUCTED TO A ROOF OR WALL CAP USING ROUND DUCTWORK.
3. BLOWER ASSEMBLY SHALL BE REMOVABLE, HAVE A CENTRIFUGAL TYPE BLOWER WHEEL AND A PERMANENTLY LUBRICATED.
4. MOTOR DESIGNED FOR COUNTINUOUS OPERATION.
5. PROVIDE FIRE BLANKET AND RADIATION DAMPER.

RESIDENTIAL MICROWAVE RECIRCULATION HOOD SCHEDULE

SYMBOL	QTY	LOCATION	TYPE	CAPACITY (CU.FT.)	VENTILATION SYSTEM					ELECTRICAL				TYPE OF LIGHTS	MICRO WAVE DIMENSION(INCH.)			MODEL	BASIS OF DESIGN
					BLOWER TYPE	CFM	NUMBER OF SPEED	VENTILATION TYPE	FILTER TYPE	V.	PH.	HZ.	POWER (W)		WIDTH	DEPTH	HEIGHT		
KEF-1	1	KITCHEN	RECIRCULATION KITCHEN HOOD/MICROWAVE COMBO	1.10	CENTRIFUGAL	250	4	UPDRAFT	CHARCOAL ODOR REMOVING FILTER	120	1	60	1000	LED	19"	15"	7"	WML75011HV	WHIRLPOOL

NOTE:
1. INSTALL ACCORDANCE WITH MANUFACTURER'S INSTRUCTION.

REVIEWED
By Michael Kyne at 11:11 am, Apr 18, 2023

APPROVED
Montgomery County
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SEAL

PROJECT DETAILS

RESIDENCE

19811 Darnestown Rd,
Beallsville, MD 20839

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Checker :
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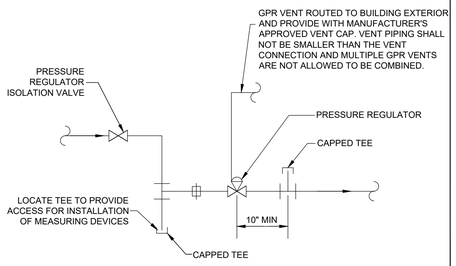
SHEET TITLE

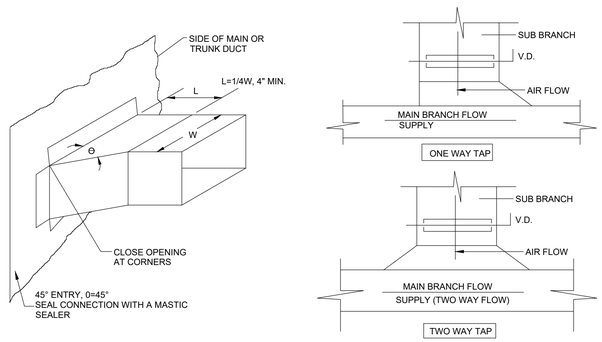
HVAC SCHEDULES

SHEET NO.

M500



GAS PRESSURE REGULATING DETAIL | 4
NOT TO SCALE



TYPICAL BRANCH CONNECTION DETAILS | 3
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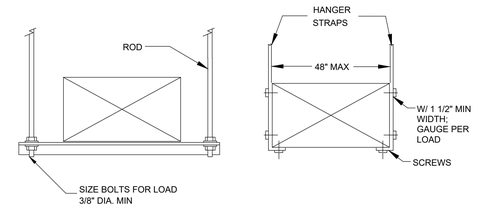

HANGER SUPPORT DETAIL | 2
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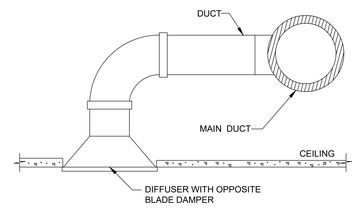

CEILING DIFFUSER BRANCH DUCT DETAIL | 1
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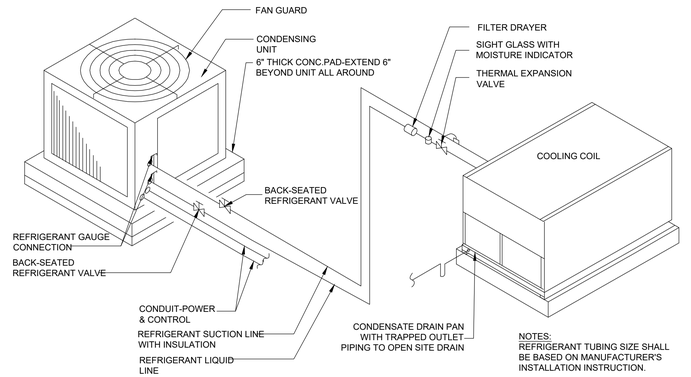

CONDENSING UNIT DETAIL | 5
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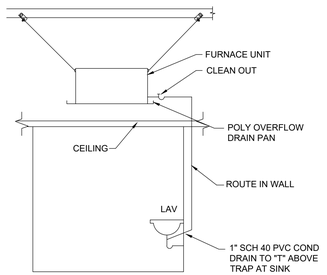

LAVATORY CONDENSOR DRAIN CONNECTION DETAIL | 9
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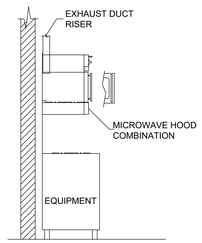

KITCHEN VENT HOOD/MICROWAVE COMBO DETAIL | 8
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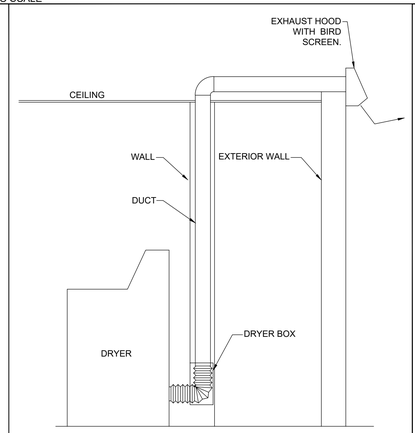

DRYER EXHAUST WALL DETAIL | 7
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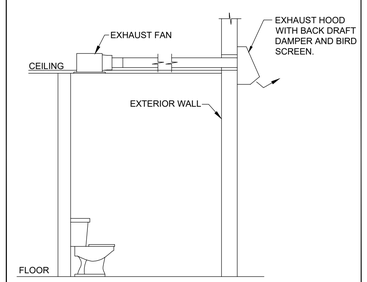

TOILET EXHAUST FAN DETAIL | 6
NOT TO SCALE

REVIEWED
By Michael Kyne at 11:11 am, Apr 18, 2023

APPROVED
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SHEET TITLE

HVAC DETAILS

SHEET NO.

M600

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By Michael Kyne at 11:11 am, Apr 18, 2023

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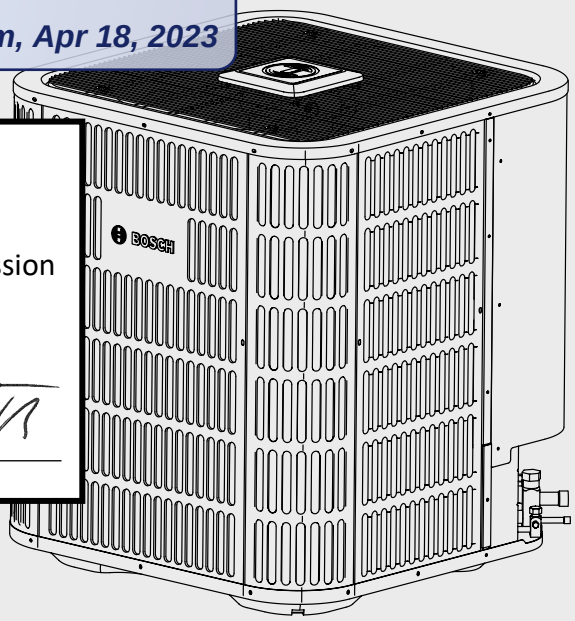
Montgomery County
Historic Preservation Commission



Bosch BOVA20 Split System Heat Pump

Condensing Units Up to 20.5 SEER
2-3-4-5 Ton Capacity
R410A

BOSCH

Product Specifications

AHRI CERTIFIED® www.ahridirectory.org
Unitary Small HP
AHRI Standard 210/240
Certification applies only when the complete system is listed with AHRI.

C ETL LISTED US
Intertek

REVIEWED

By Michael Kyne at 11:11 am, Apr 18, 2023

APPROVED

Montgomery County

Historic Preservation Commission

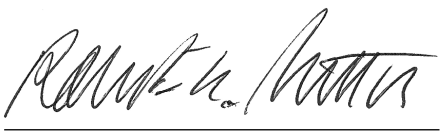


Table of Contents

REVIEWED
By Michael Kyne at 11:11 am, Apr 18, 2023

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Montgomery County
Historic Preservation Commission

1 Product Features

1.1 Features and Benefits

- Premium efficiency – Up to 20.5 SEER and 20 SEER2
- Outdoor coil – copper tube with hydrophilic aluminum fins
- 10 speed ECM outdoor motor for quiet and efficient operation
- Inverter Drive Compressor (36%-130% speed), modulation in 1% increments
- Whisper Quiet operation – as low as 56 dB
- Small footprint – 29-1/8" (W) x 29-1/8" (D)
- Easy to install – compatible with most standard 24 VAC heat pump thermostats

1.2 Standard Features

- R-410A Chlorine-Free Refrigerant
- Intelligent Oil Return Technology
- Inverter Driven Rotary Compressor
- Crankcase Heater Standard
- Compressor Sound Blanket
- Multiple System Protection:
  - High pressure switch and low pressure transducer
  - Compressor liquid return protection
  - Compressor high or low compression ratio protection
  - Compressor high temperature protection
  - High / low voltage protection and over current protection
  - IPM and electronic control board high temperature protection
- Outdoor coil is capable of withstanding 1000 hour salt spray test according to ASTM B117 standard
- AHRI certified; ETL listed

1.3 Cabinet Features

- Baked-on powder paint finish
- Wind Load compliant per Florida Building Code - 2010
- Wire fan discharge grille
- Steel louver coil guard

1.4 Limited Warranty

For Products installed in a one or two family residential dwelling BTC warrants that all compressors and internal components incorporated into the Product at the time of shipment by BTC shall remain free from defects in workmanship and materials for ten (10) years* from the Commencement Date. If the Warranty Registration process has been completed and BTC determines that the Product or any part of the Product has a defect in workmanship or materials, BTC shall pay labor charges associated with the repair or replacement of the part in accordance with the Warranty Labor Allowance Schedule** for the period of ninety (90) days from the Commencement Date.

* Please refer to www.bosch-climate.us for full warranty terms and conditions.

** Warranty Labor Allowance Schedule details are available on www.boschprohvac.com

2 Nomenclature

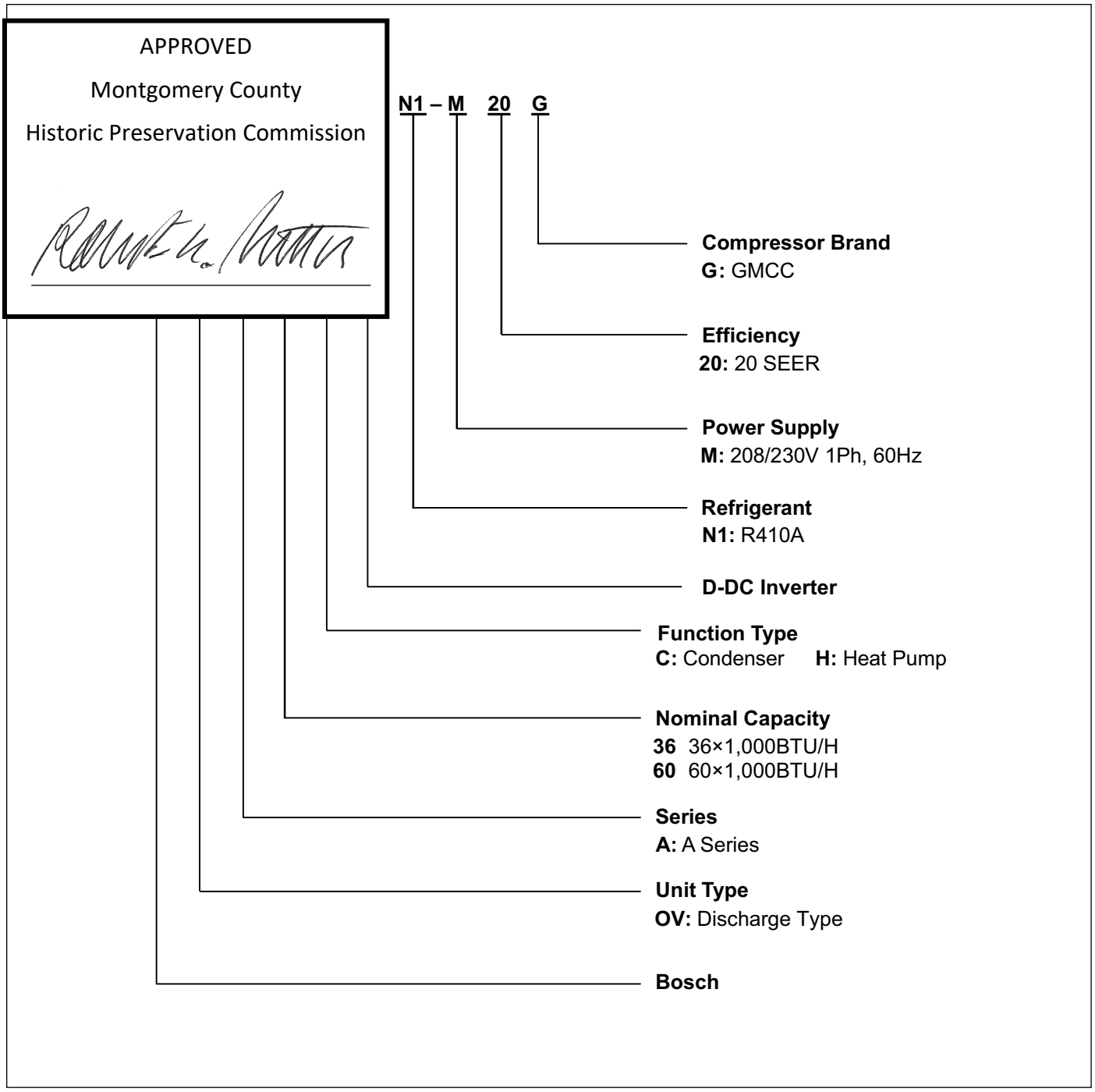

Figure 1

	BOVA20-36	BOVA20-60
	34,600	54,500
	34,200	56,000
	77	79
	56	60
	19	29
	1/3	1/3
	2.5	2.5
Refrigerant Line Size[1]		
Liquid Line Size (OD)	3/8"	3/8"
Suction Line Size (OD)	3/4"	7/8"
Refrigerant Connection Size		
Liquid Valve Size (OD)	3/8"	3/8"
Suction Valve Size (OD)	3/4"	7/8"
Refrigerant Charge (R410-A, oz)	7 lbs. 9 oz.	11 lbs. 5 oz.
Expansion Device	EEV	EEV
Maximum Line Length	150 FT	150 FT
Maximum Elevation Difference	50 FT	50 FT
Operating Range		
Cooling	15-125°F	
Heating	-4~86°F	
Electrical Data		
Voltage-Phase-Hz	208/230-1-60	208/230-1-60
Minimum Circuit Ampacity[2]	26.3	38.8
Max. Overcurrent Protection[3]	45	60
Max Fuse Size	45	60
Min/Max Volts	172V/270V	
Weight		
Net Weight (without packaging)	150	220
Gross Weight (including packaging)[4]	180	253
Dimensions		
Unit L x W x H (in.)	29-1/8 x 29-1/8 x 24-15/16	29-1/8 x 29-1/8 x 33-3/16
Outdoor Coil		
Net face area - sq.ft. Outer Coil	13.6	18.4
Tube diameter-in.	9/32" (7mm)	9/32" (7mm)
No.of rows	2	2.8
Fins per inch	17	19

Table 1

[1] Tested and rated in accordance with AHRI Standard 210/240.

[2] Wire size should be determined in accordance with National Electrical Codes; extensive wire runs will require larger wire sizes.

[3] Must use time-delay fuses or HACR-type circuit breakers of the same size as noted.

[4] Weight values are estimated.

- Always check the rating plate for electrical data on the unit being installed.
- Unit is factory charged with refrigerant for 15' of ⅜" liquid line. System charge must be adjusted per Installation Instructions Final Charge Procedure.
- TXV is required at indoor unit to match our outdoor unit.

4 Extended Performance Data

4.1 Outdoor Unit (BOVA20) + Indoor Unit (BVA20) - Cooling Mode

BOVA20-36 + BVA20-24 For Cooling																			
						63				67				71					
			5			70	75	80	85	70	75	80	85	70	75	80	85		
			.3			18.1	18.3	18.5	18.7	19.3	19.5	19.7	19.9	/	25.2	25.4	25.7		
			0			0.63	0.79	0.93	0.96	0.39	0.57	0.74	0.91	/	0.38	0.52	0.65		
			82			0.82	0.83	0.84	0.85	0.85	0.87	0.88	0.89	/	1.11	1.12	1.14		
			.5			18.3	18.5	18.7	18.9	19.5	19.7	19.9	20.1	/	25.4	25.6	25.9		
			1			0.63	0.79	0.93	0.96	0.39	0.57	0.74	0.91	/	0.38	0.52	0.65		
			84			0.84	0.85	0.87	0.88	0.87	0.88	0.89	0.90	/	1.12	1.13	1.15		
			.6			18.4	18.6	18.8	19.1	19.7	19.9	20.1	20.3	/	25	25.3	25.5		
			1			0.63	0.8	0.93	0.96	0.39	0.57	0.74	0.91	/	0.38	0.52	0.65		
			02			1.02	1.03	1.04	1.05	1.05	1.07	1.08	1.09	/	1.39	1.41	1.42		
			.6			18.4	18.6	18.8	19	19.6	19.8	20	20.2	/	25	25.3	25.5		
			1			0.63	0.8	0.93	0.96	0.39	0.57	0.74	0.91	/	0.38	0.52	0.66		
			20			1.20	1.22	1.23	1.24	1.24	1.26	1.27	1.28	/	1.54	1.56	1.57		
			.6			18.4	18.6	18.8	19	19.6	19.8	20	20.2	/	24.9	25.1	25.3		
			1			0.63	0.8	0.93	0.96	0.39	0.57	0.74	0.91	/	0.38	0.52	0.66		
			46			1.46	1.47	1.49	1.50	1.51	1.52	1.53	1.54	/	1.86	1.88	1.90		
	105	TC	17.7	17.9	18.3	18.5	18.3	18.5	18.7	18.9	19.5	19.7	19.9	20.1	/	24.7	24.9	25.1		
		S/T	0.91	0.96	1	1	0.65	0.82	0.96	0.99	0.4	0.59	0.76	0.94	/	0.39	0.54	0.68		
		kW	1.70	1.72	1.74	1.74	1.74	1.75	1.77	1.79	1.79	1.81	1.83	1.85	/	2.23	2.25	2.27		
	115	TC	17.4	17.6	18	18.2	18	18.2	18.4	18.6	19.2	19.4	19.6	19.8	/	24.5	24.7	24.9		
		S/T	0.92	0.97	1	1	0.66	0.82	0.96	0.99	0.4	0.59	0.77	0.95	/	0.39	0.54	0.68		
		kW	1.99	2.01	2.04	2.04	2.04	2.06	2.08	2.10	2.10	2.12	2.14	2.16	/	2.65	2.67	2.69		
	125	TC	15.9	16.1	16.5	16.7	16.5	16.7	16.9	17	17.9	17.9	18	18	/	19.1	19.1	19.1		
		S/T	0.92	0.97	1	1	0.61	0.81	0.96	0.99	0.41	0.6	0.78	0.98	/	0.4	0.59	0.76		
		kW	1.99	2.01	2.04	2.04	2.04	2.06	2.08	2.10	2.14	2.14	2.14	2.14	/	2.15	2.15	2.15		
	15	TC	17.9	18.1	18.5	18.7	18.5	18.7	18.9	19.1	19.8	20	20.2	18.9	/	25.7	26	26.3		
		S/T	0.95	0.98	1	1	0.65	0.89	0.96	1	0.4	0.57	0.75	0.99	/	0.39	0.52	0.66		
		kW	0.40	0.40	0.40	0.40	0.40	0.41	0.41	0.42	0.41	0.42	0.43	0.37	/	0.74	0.76	0.78		
	65	TC	17.9	18.1	18.5	18.7	18.5	18.7	18.9	19.1	19.7	19.9	20.1	20.3	/	25.8	26	26.3		
		S/T	0.95	0.98	1	1	0.65	0.89	0.96	1	0.4	0.57	0.75	0.92	/	0.39	0.52	0.66		
		kW	0.81	0.81	0.82	0.82	0.82	0.83	0.84	0.85	0.84	0.85	0.87	0.88	/	1.11	1.12	1.14		
	75	TC	18.1	18.3	18.7	18.9	18.7	18.9	19.1	19.3	19.9	20.1	20.3	20.5	/	25.4	25.7	25.9		
		S/T	0.95	0.98	1	1	0.64	0.89	0.96	1	0.4	0.57	0.75	0.92	/	0.39	0.53	0.66		
		kW	0.98	0.99	1.00	1.00	1.00	1.01	1.02	1.03	1.03	1.04	1.05	1.07	/	1.38	1.40	1.42		
	85	TC	18.1	18.3	18.7	18.9	18.7	18.9	19.1	19.3	19.9	20.1	20.3	20.5	/	25.4	25.6	25.9		
		S/T	0.95	0.98	1	1	0.64	0.89	0.96	1	0.4	0.57	0.75	0.92	/	0.39	0.53	0.66		
620		kW	1.16	1.17	1.19	1.19	1.19	1.20	1.21	1.22	1.22	1.23	1.24	1.26	/	1.53	1.54	1.56		
	95	TC	18	18.2	18.6	18.8	18.6	18.8	19	19.2	19.8	20.1	20.2	20.5	/	25.3	25.5	25.7		
		S/T	0.95	0.98	1	1	0.64	0.89	0.96	1	0.4	0.57	0.75	0.92	/	0.39	0.53	0.66		
		kW	1.40	1.42	1.43	1.43	1.43	1.46	1.47	1.48	1.49	1.50	1.51	1.53	/	1.86	1.87	1.89		
	105	TC	17.9	18.1	18.5	18.7	18.5	18.7	18.9	19.1	19.8	20	20.2	20.4	/	25	25.3	25.5		
		S/T	0.96	0.98	1	1	0.66	0.92	0.99	1	0.41	0.59	0.77	0.95	/	0.4	0.55	0.69		
		kW	1.69	1.70	1.72	1.72	1.72	1.74	1.76	1.77	1.78	1.79	1.81	1.83	/	2.23	2.25	2.27		
	115	TC	17.6	17.8	18.2	18.4	18.2	18.4	18.6	18.8	19.5	19.7	19.8	20	/	24.8	25	25.3		
		S/T	0.98	1	1	1	0.66	0.92	0.99	1	0.41	0.6	0.78	0.96	/	0.4	0.55	0.69		
		kW	1.97	1.99	2.01	2.01	2.01	2.05	2.07	2.09	2.09	2.11	2.13	2.15	/	2.66	2.68	2.70		
	125	TC	16.1	16.3	16.6	16.8	16.6	16.8	17	17.2	18.1	18.1	18.1	18.2	/	19.2	19.3	19.3		
		S/T	0.98	1	1	1	0.66	0.92	0.99	1	0.41	0.61	0.81	1	/	0.4	0.6	0.78		
		kW	2.00	2.03	2.05	2.05	2.05	2.07	2.09	2.11	2.15	2.15	2.15	2.15	/	2.16	2.16	2.16		
	15	TC	19.9	20.2	20.6	20.9	20.6	20.9	21	21.2	21.9	22.2	22.4	21	/	28.4	28.8	29		
		S/T	0.96	0.99	1	1	0.65	0.9	0.97	1	0.39	0.58	0.76	1	/	0.39	0.53	0.67		
		kW	0.54	0.54	0.55	0.55	0.55	0.55	0.56	0.56	0.56	0.57	0.58	0.51	/	0.96	0.99	1.00		
	65	TC	19.8	20	20.5	20.7	20.5	20.7	20.9	21.1	21.8	22	22.2	22.5	/	28.1	28.4	28.6		
		S/T	0.96	0.99	1	1	0.66	0.9	0.97	1	0.39	0.58	0.76	0.94	/	0.39	0.53	0.67		
		kW	0.96	0.97	0.98	0.98	0.98	0.99	1.00	1.01	1.00	1.01	1.02	1.04	/	1.29	1.30	1.31		
	75	TC	20	20.2	20.7	20.9	20.7	20.9	21	21.3	22	22.2	22.4	22.6	/	28.2	28.5	28.7		
		S/T	0.96	0.99	1	1	0.65	0.9	0.97	1	0.39	0.58	0.76	0.94	/	0.39	0.53	0.67		
		kW	1.14	1.15	1.16	1.16	1.16	1.18	1.19	1.20	1.20	1.21	1.22	1.24	/	1.53	1.55	1.57		
	85	TC	20	20.2	20.7	20.9	20.7	20.9	21	21.3	21.9	22.2	22.4	22.6	/	27.9	28.1	28.4		
		S/T	0.96	0.99	1	1	0.65	0.9	0.97	1	0.39	0.58	0.76	0.94	/	0.39	0.53	0.68		
680		kW	1.31	1.32	1.33	1.33	1.33	1.35	1.36	1.37	1.38	1.39	1.40	1.41	/	1.72	1.73	1.75		
	95	TC	19.9	20.1	20.6	20.8	20.6	20.8	21	21.2	21.8	22.1	22.3	22.4	/	27.6	27.9	28.1		
		S/T	0.96	0.99	1	1	0.65	0.9	0.97	1	0.39	0.58	0.75	0.95	/	0.39	0.53	0.68		
		kW	1.57	1.59	1.60	1.60	1.60	1.62	1.64	1.66	1.67	1.68	1.69	1.70	/	2.07	2.10	2.11		
	105	TC	19.5	19.8	20.2	20.4	20.2	20.4	20.6	20.9	21.5	21.7	21.9	22.1	/	27.3	27.6	27.8		
		S/T	0.98	0.99	1	1	0.67	0.93	1	1	0.4	0.6	0.79	0.98	/	0.4	0.55	0.7		
		kW	1.86	1.88	1.90	1.90	1.90	1.92	1.93	1.95	1.96	1.98	1.99	2.01	/	2.48	2.50	2.53		
	115	TC	19.4	19.6	20.1	20.3	20.1	20.3	20.5	20.7	21.3	21.5	21.7	22	/	27	27.2	27.5		
		S/T	0.99	1	1	1	0.67	0.93	1	1	0.4	0.6	0.79	0.99	/	0.4	0.56	0.71		
		kW	2.20	2.23	2.25	2.25	2.25	2.28	2.30	2.32	2.33	2.35	2.37	2.39	/	2.97	3.01	3.04		
	125	TC	16.3	16.5	16.9	17.1	16.9	17.1	17.3	17.5	18.3	18.4	18.4	18.4	/	19.5	19.6	19.6		
		S/T	1	1	1	1	0.67	0.94	1	1	0.41	0.64	0.87	1	/	0.41	0.63	0.84		
		kW	2.04	2.06	2.08	2.08	2.08	2.10	2.12	2.14	2.18	2.18	2.18	2.18	/	2.19	2.19	2.19		

Table 2

TC refers to total capacity in kBTU/hr S/T: refer to the ratio of sensible heat and total capacity kW: refer to total input power

BOVA20-36 + BVA20-24 For Cooling																		
Indoor Airflow (CFM)	Outdoor DB (°F)	IWB (°F)	59				63				67				71			
		IDB (°F)	70	75	80	85	70	75	80	85	70	75	80	85	70	75	80	85
720	15	TC	21.8	22.1	22.6	22.8	22.6	22.8	23.1	23.3	24.1	24.3	24.6	22.9	/	31.1	31.4	31.7
		S/T	0.96	0.99	0.99	1	0.66	0.9	0.97	1	0.39	0.58	0.77	1	/	0.38	0.53	0.68
		kW	0.70	0.71	0.72	0.72	0.72	0.73	0.73	0.74	0.73	0.74	0.76	0.65	/	1.20	1.22	1.24
	65	TC	21.9	22.1	22.6	22.9	22.6	22.9	23.1	23.4	24.2	24.4	24.6	24.9	/	30.6	30.9	31.2
		S/T	0.96	0.99	1	1	0.66	0.9	0.97	1	0.39	0.58	0.77	0.95	/	0.39	0.54	0.68
		kW	1.04	1.05	1.07	1.07	1.07	1.08	1.10	1.11	1.10	1.12	1.13	1.14	/	1.49	1.51	1.53
	75	TC	21.6	21.9	22.4	22.6	22.4	22.6	22.9	23.1	24	24.3	24.4	24.4	/	30.7	30.9	31.2
		S/T	0.96	0.99	1	1	0.66	0.9	0.97	1	0.39	0.58	0.77	1	/	0.39	0.54	0.68
		kW	1.30	1.32	1.33	1.33	1.33	1.34	1.36	1.37	1.38	1.39	1.40	1.40	/	1.75	1.77	1.79
	85	TC	21.5	21.7	22.2	22.5	22.2	22.5	22.7	23	24	24.1	24.2	24.4	/	30.3	30.6	30.8
		S/T	0.96	0.99	1	1	0.66	0.9	0.97	1	0.39	0.59	0.78	1	/	0.39	0.54	0.69
		kW	1.43	1.46	1.47	1.47	1.47	1.49	1.50	1.52	1.54	1.54	1.54	1.56	/	1.91	1.93	1.95
	95	TC	21.3	21.6	22.1	22.3	22.1	22.3	22.5	22.8	23.6	23.8	24	24.2	/	30	30.2	30.4
		S/T	0.96	0.99	1	1	0.66	0.9	0.97	1	0.39	0.59	0.78	1	/	0.39	0.54	0.69
		kW	1.71	1.73	1.75	1.75	1.75	1.77	1.78	1.80	1.83	1.84	1.85	1.87	/	2.31	2.33	2.34
	105	TC	21.1	21.4	21.9	22.1	21.9	22.1	22.4	22.6	23.4	23.6	23.8	24.1	/	29.5	29.7	30
		S/T	0.98	1	1	1	0.68	0.93	1	1	0.4	0.61	0.8	1	/	0.4	0.56	0.72
		kW	2.06	2.08	2.10	2.10	2.10	2.12	2.14	2.16	2.17	2.19	2.20	2.23	/	2.77	2.80	2.83
	115	TC	21	21.2	21.7	21.9	21.7	21.9	22.2	22.4	23.2	23.4	23.6	23.8	/	28.3	28.3	28.2
		S/T	0.98	1	1	1	0.68	0.93	1	1	0.4	0.61	0.81	1	/	0.4	0.57	0.74
		kW	2.44	2.46	2.49	2.49	2.49	2.51	2.54	2.56	2.57	2.60	2.62	2.64	/	3.16	3.16	3.16
	125	TC	16.5	16.7	17.1	17.3	17.1	17.3	17.4	17.6	18.5	18.6	18.6	18.6	/	19.8	19.8	19.8
		S/T	1	1	1	1	0.68	0.95	1	1	0.41	0.67	0.93	1	/	0.41	0.66	0.9
		kW	2.08	2.10	2.12	2.12	2.12	2.14	2.16	2.18	2.23	2.23	2.23	2.23	/	2.24	2.24	2.24
960	15	TC	25.4	25.7	26.3	26.6	26.3	26.6	26.9	27.1	28.1	28.3	28.6	28.9	/	35.5	35.8	36
		S/T	0.98	0.99	1	1	0.67	0.9	0.97	1	0.39	0.6	0.8	0.99	/	0.38	0.55	0.71
		kW	1.10	1.11	1.12	1.12	1.12	1.13	1.14	1.15	1.15	1.16	1.18	1.19	/	1.68	1.71	1.73
	65	TC	25.5	25.8	26.4	26.7	26.4	26.7	27	27.2	28.1	28.3	28.6	28.9	/	35.5	35.8	36
		S/T	0.98	0.99	1	1	0.67	0.9	0.97	1	0.39	0.6	0.8	0.99	/	0.38	0.55	0.71
		kW	1.40	1.41	1.43	1.43	1.43	1.45	1.47	1.48	1.48	1.49	1.51	1.52	/	2.00	2.04	2.06
	75	TC	25.6	25.9	26.5	26.8	26.5	26.8	27	27.3	28.2	28.5	28.7	29	/	35.5	35.8	36.1
		S/T	0.97	0.99	1	1	0.67	0.9	0.97	1	0.39	0.59	0.8	1	/	0.38	0.55	0.71
		kW	1.65	1.66	1.68	1.68	1.68	1.70	1.71	1.73	1.73	1.75	1.77	1.78	/	2.18	2.22	2.24
	85	TC	25.2	25.5	26.1	26.4	26.1	26.4	26.7	27	27.8	28.1	28.3	28.5	/	34.9	35.2	35.5
		S/T	0.97	0.99	1	1	0.67	0.9	0.97	1	0.39	0.6	0.8	1	/	0.38	0.55	0.71
		kW	1.80	1.83	1.85	1.85	1.85	1.86	1.88	1.90	1.91	1.93	1.94	1.95	/	2.42	2.44	2.47
	95	TC	24.9	25.2	25.8	26.1	25.8	26.1	26.4	26.6	27.5	27.7	28	28.2	/	33.6	33.8	33.8
		S/T	0.97	0.99	1	1	0.67	0.9	0.97	1	0.39	0.6	0.81	0.99	/	0.38	0.56	0.73
		kW	2.14	2.16	2.18	2.18	2.18	2.20	2.24	2.26	2.26	2.28	2.30	2.32	/	2.80	2.80	2.80
	105	TC	24.5	24.8	25.4	25.7	25.4	25.7	25.9	26.2	27.1	27.3	27.5	27.8	/	31.7	31.9	32
		S/T	0.98	1	1	1	0.69	0.93	1	1	0.4	0.62	0.84	1	/	0.4	0.59	0.77
		kW	2.52	2.55	2.57	2.57	2.57	2.61	2.64	2.66	2.67	2.69	2.71	2.73	/	3.09	3.09	3.09
	115	TC	24.1	24.4	25	25.2	25	25.2	25.5	25.8	26.7	26.9	27.1	27.3	/	29.1	29.2	29.4
		S/T	0.99	1	1	1	0.7	0.93	1	1	0.4	0.63	0.84	1	/	0.4	0.61	0.81
		kW	2.99	3.02	3.05	3.05	3.05	3.08	3.11	3.14	3.15	3.18	3.22	3.24	/	3.28	3.29	3.29
	125	TC	16.6	16.8	17.2	17.4	17.2	17.4	17.6	17.8	18.7	18.7	18.7	18.8	/	20	20	20
		S/T	1	1	1	1	0.73	0.93	1	1	0.41	0.73	1	1	/	0.42	0.73	1
		kW	2.19	2.23	2.25	2.25	2.25	2.27	2.29	2.32	2.36	2.36	2.36	2.36	/	2.37	2.37	2.37

Table 3

TC refers to total capacity in kBTU/hr S/T: refer to the ratio of sensible heat and total capacity kW: refer to total input power

REVIEWED

By Michael Kyne at 11:11 am, Apr 18, 2023

APPROVED

Montgomery County

Historic Preservation Commission

BVA20-36 + BVA20-36 For Cooling

Airflow (CFM)	Outdoor DB (°F)	IDB (°F)	63				67				71				75			
			70	75	80	85	70	75	80	85	70	75	80	85	70	75	80	85
		TC	23.0	23.3	24.2	24.6	24.2	24.6	25.0	25.3	26.6	27.0	27.3	27.6	/	33.9	34.2	34.7
	15	S/T	0.7	0.76	0.84	0.92	0.51	0.69	0.78	0.81	0.32	0.46	0.6	0.74	/	0.31	0.42	0.54
		kW	1.09	1.09	1.10	1.11	1.12	1.12	1.13	1.14	1.16	/	1.51	1.53	1.55			
		TC	23.9	23.4	23.9	24.3	24.7	26.0	26.3	26.5	26.9	/	33.4	33.7	34.5			
	65	S/T	0.92	0.51	0.69	0.78	0.81	0.32	0.46	0.6	0.74	/	0.31	0.42	0.54			
		kW	1.62	1.62	1.64	1.65	1.67	1.67	1.68	1.71	1.72	/	2.01	2.03	1.92			
		TC	24.0	23.6	24.0	24.4	24.8	26.2	26.4	26.8	27.0	/	34.6	34.7	34.8			
	75	S/T	0.92	0.51	0.68	0.75	0.78	0.32	0.46	0.61	0.75	/	0.31	0.42	0.54			
		kW	1.67	1.67	1.68	1.70	1.72	1.72	1.74	1.75	1.77	/	2.22	2.22	2.22			
		TC	23.2	22.9	23.2	23.5	24.0	25.4	25.6	25.9	26.1	/	31.9	32.1	32.4			
	85	S/T	0.92	0.51	0.68	0.78	0.81	0.32	0.46	0.61	0.75	/	0.31	0.42	0.54			
		kW	1.88	1.88	1.90	1.92	1.94	1.95	1.96	1.98	1.99	/	2.37	2.39	2.40			
		TC	22.4	21.9	22.4	22.8	23.1	24.5	24.7	24.9	25.1	/	29.7	30.0	30.0			
	95	S/T	0.92	0.51	0.69	0.78	0.81	0.32	0.46	0.61	0.75	/	0.31	0.43	0.54			
		kW	2.21	2.21	2.23	2.25	2.28	2.29	2.31	2.32	2.34	/	2.67	2.68	2.68			
		TC	21.4	21.1	21.4	21.7	22.1	23.4	23.6	23.9	24.2	/	26.2	26.4	26.2			
	105	S/T	0.92	0.51	0.69	0.78	0.81	0.32	0.47	0.61	0.75	/	0.31	0.43	0.55			
		kW	2.58	2.58	2.61	2.63	2.66	2.67	2.70	2.71	2.73	/	2.81	2.82	2.78			
		TC	14.8	14.4	14.8	15.1	15.3	16.5	16.6	16.7	16.9	/	18.5	18.6	18.7			
	115	S/T	0.7	0.76	0.84	0.92	0.51	0.69	0.78	0.81	0.32	0.47	0.61	0.76	/	0.31	0.43	0.56
		kW	2.23	2.25	2.28	2.28	2.28	2.31	2.33	2.35	2.38	2.39	2.40	2.41	/	2.49	2.49	2.50
		TC	5.8	5.9	6.3	6.5	6.3	6.5	6.7	7.0	7.8	7.8	7.9	7.9	/	9.2	9.2	9.2
	125	S/T	0.69	0.75	0.83	0.92	0.52	0.69	0.78	0.81	0.32	0.51	0.7	0.92	/	0.32	0.5	0.67
		kW	1.59	1.61	1.62	1.62	1.62	1.64	1.65	1.68	1.71	1.71	1.71	1.71	/	1.71	1.71	1.71
		TC	24.2	24.6	25.3	25.7	25.3	25.7	26.1	26.4	27.6	27.9	28.3	28.5	/	34.4	34.7	35.1
	15	S/T	0.73	0.79	0.87	0.92	0.53	0.71	0.81	0.84	0.32	0.48	0.63	0.79	/	0.31	0.44	0.56
		kW	1.12	1.13	1.15	1.15	1.15	1.15	1.17	1.18	1.18	1.19	1.20	1.22	/	1.59	1.61	1.63
		TC	23.6	24	24.7	25	24.7	25	25.4	25.8	27	27.3	27.5	27.8	/	33.9	34.2	34.9
	65	S/T	0.73	0.79	0.87	0.92	0.53	0.71	0.81	0.84	0.32	0.48	0.63	0.79	/	0.31	0.44	0.56
		kW	1.67	1.68	1.70	1.70	1.70	1.72	1.74	1.76	1.76	1.77	1.80	1.81	/	2.12	2.14	2.02
		TC	23.7	24.1	24.9	25.1	24.9	25.1	25.5	25.9	27.2	27.4	27.7	28	/	35	35.2	35.3
	75	S/T	0.73	0.79	0.87	0.92	0.53	0.7	0.81	0.84	0.32	0.48	0.63	0.79	/	0.31	0.44	0.56
		kW	1.72	1.73	1.76	1.76	1.76	1.77	1.79	1.81	1.81	1.83	1.84	1.87	/	2.33	2.34	2.34
		TC	23.1	23.4	24.1	24.5	24.1	24.5	24.8	25.1	26.5	26.7	26.9	27.1	/	32.5	32.7	33
	85	S/T	0.73	0.79	0.87	0.92	0.53	0.7	0.81	0.84	0.32	0.48	0.64	0.79	/	0.31	0.44	0.57
820		kW	1.94	1.95	1.98	1.98	1.98	2.00	2.02	2.04	2.05	2.06	2.08	2.10	/	2.49	2.51	2.53
		TC	22.3	22.6	23.2	23.6	23.2	23.6	24	24.3	25.6	25.8	26	26.3	/	30.5	30.7	30.7
	95	S/T	0.73	0.79	0.87	0.92	0.53	0.7	0.81	0.84	0.32	0.48	0.63	0.8	/	0.31	0.44	0.57
		kW	2.28	2.30	2.32	2.32	2.32	2.35	2.37	2.40	2.41	2.43	2.44	2.46	/	2.82	2.82	2.82
		TC	21.4	21.7	22.4	22.8	22.4	22.8	23.1	23.4	24.7	24.9	25	25.3	/	27.2	27.4	27.2
	105	S/T	0.73	0.79	0.87	0.92	0.53	0.71	0.81	0.84	0.32	0.48	0.64	0.8	/	0.31	0.44	0.58
		kW	2.66	2.68	2.71	2.71	2.71	2.74	2.77	2.80	2.82	2.84	2.85	2.88	/	2.96	2.97	2.93
		TC	15.5	15.7	16.2	16.5	16.2	16.5	16.8	17	18.1	18.2	18.3	18.5	/	20	20.1	20.2
	115	S/T	0.73	0.79	0.87	0.92	0.53	0.71	0.81	0.84	0.32	0.48	0.65	0.81	/	0.31	0.46	0.61
		kW	2.35	2.37	2.40	2.40	2.40	2.43	2.45	2.48	2.51	2.51	2.53	2.54	/	2.62	2.63	2.63
		TC	8.1	8.3	8.7	8.8	8.7	8.8	9	9.2	10.1	10.1	10.2	10.2	/	11.3	11.3	11.3
	125	S/T	0.73	0.79	0.87	0.92	0.53	0.71	0.81	0.84	0.32	0.56	0.8	0.92	/	0.33	0.55	0.77
		kW	1.67	1.69	1.71	1.71	1.71	1.72	1.74	1.76	1.80	1.80	1.80	1.80	/	1.80	1.80	1.80
		TC	26.9	27.3	28.1	28.4	28.1	28.4	28.8	29.1	30.3	30.6	31	31.3	/	37.2	37.4	37.8
	15	S/T	0.8	0.84	0.92	0.92	0.55	0.75	0.87	0.92	0.31	0.49	0.66	0.83	/	0.31	0.45	0.58
		kW	1.17	1.19	1.21	1.21	1.21	1.22	1.23	1.24	1.24	1.25	1.27	1.28	/	1.67	1.69	1.71
		TC	26.4	26.7	27.4	27.8	27.4	27.8	28.2	28.5	29.8	30.1	30.2	30.5	/	36.7	37	37.6
	65	S/T	0.8	0.84	0.92	0.92	0.53	0.75	0.87	0.92	0.31	0.49	0.65	0.82	/	0.31	0.45	0.59
		kW	1.76	1.77	1.79	1.79	1.79	1.81	1.83	1.85	1.85	1.86	1.89	1.91	/	2.23	2.25	2.13
		TC	26.5	26.8	27.6	27.9	27.6	27.9	28.3	28.6	30	30.1	30.4	30.7	/	37.7	37.9	38
	75	S/T	0.81	0.85	0.91	0.92	0.54	0.75	0.87	0.92	0.31	0.48	0.65	0.82	/	0.31	0.45	0.59
		kW	1.81	1.82	1.85	1.85	1.85	1.86	1.88	1.91	1.91	1.92	1.94	1.96	/	2.46	2.46	2.46
		TC	25.8	26.2	26.8	27.2	26.8	27.2	27.5	27.9	29.2	29.4	29.7	29.9	/	35.3	35.5	35.7
	85	S/T	0.81	0.85	0.92	0.92	0.54	0.76	0.87	0.92	0.31	0.49	0.66	0.83	/	0.31	0.45	0.59
960		kW	2.04	2.06	2.08	2.08	2.08	2.11	2.12	2.15	2.16	2.17	2.19	2.21	/	2.62	2.65	2.66
		TC	25	25.3	26	26.4	26	26.4	26.7	27	28.3	28.5	28.7	29	/	33.3	33.5	33.5
	95	S/T	0.81	0.85	0.92	0.92	0.54	0.76	0.87	0.92	0.31	0.49	0.66	0.84	/	0.31	0.45	0.6
		kW	2.40	2.42	2.45	2.45	2.45	2.47	2.50	2.52	2.54	2.56	2.57	2.59	/	2.96	2.97	2.97
		TC	24.2	24.5	25.1	25.5	25.1	25.5	25.8	26.2	27.4	27.6	27.8	28.1	/	30	30.1	30
	105	S/T	0.8	0.84	0.92	0.92	0.54	0.76	0.87	0.92	0.31	0.49	0.67	0.85	/	0.31	0.46	0.61
		kW	2.80	2.82	2.86	2.86	2.86	2.89	2.91	2.95	2.96	2.99	3.00	3.03	/	3.11	3.13	3.08
		TC	18.2	18.4	19	19.3	19	19.3	19.5	19.7	20.9	21	21.1	21.2	/	22.8	22.9	22.9
	115	S/T	0.81	0.85	0.92	0.92	0.54	0.77	0.87	0.92	0.32	0.52	0.71	0.91	/	0.31	0.5	0.68
		kW	2.47	2.50	2.53	2.53	2.53	2.56	2.58	2.61	2.64	2.65	2.66	2.67	/	2.76	2.76	2.77
		TC	10.8	11	11.4	11.6	11.4	11.6	11.8	12	12.8	12.8	12.9	12.9	/	14	14	14
	125	S/T	0.81	0.85	0.92	0.91	0.62	0.92	0.87	0.92	0.33	0.62	0.91	0.92	/	0.34	0.61	0.91
		kW	1.76	1.78	1.80	1.80	1.80	1.81	1.83	1.86	1.89	1.89	1.89	1.89	/	1.90	1.90	1.90

Table 4

TC refers to total capacity in kBTU/hr S/T: refer to the ratio of sensible heat and total capacity kW: refer to total input power

BOVA20-36 + BVA20-36 For Cooling																		
Indoor Airflow (CFM)	Outdoor DB (°F)	IWB (°F)	59				63				67				71			
		IDB (°F)	70	75	80	85	70	75	80	85	70	75	80	85	70	75	80	85
1150	15	TC	29.7	30	30.8	31.2	30.8	31.2	31.6	31.8	33.1	33.4	33.7	34	/	39.9	40.2	40.6
		S/T	0.81	0.86	0.92	0.92	0.56	0.78	0.88	0.92	0.31	0.5	0.68	0.86	/	0.3	0.46	0.6
		kW	1.24	1.25	1.27	1.27	1.27	1.28	1.30	1.31	1.31	1.31	1.33	1.35	/	1.76	1.78	1.81
	65	TC	29.1	29.5	30.1	30.5	30.1	30.5	30.9	31.3	32.5	32.8	33	33.3	/	39.4	39.7	40.4
		S/T	0.81	0.86	0.92	0.92	0.55	0.78	0.88	0.92	0.31	0.5	0.68	0.86	/	0.31	0.46	0.61
		kW	1.85	1.87	1.88	1.88	1.88	1.91	1.93	1.95	1.95	1.96	1.99	2.01	/	2.35	2.37	2.24
	75	TC	29.2	29.6	30.3	30.6	30.3	30.6	31	31.4	32.7	32.9	33.2	33.5	/	40.5	40.7	40.7
		S/T	0.82	0.86	0.92	0.92	0.54	0.77	0.88	0.92	0.31	0.5	0.68	0.86	/	0.31	0.46	0.61
		kW	1.90	1.92	1.95	1.95	1.95	1.96	1.98	2.01	2.01	2.02	2.04	2.07	/	2.58	2.59	2.59
	85	TC	28.5	28.9	29.6	29.9	29.6	29.9	30.2	30.6	31.9	32.1	32.4	32.6	/	38	38.2	38.5
		S/T	0.82	0.86	0.92	0.92	0.55	0.78	0.88	0.92	0.31	0.5	0.68	0.87	/	0.31	0.46	0.62
		kW	2.15	2.16	2.19	2.19	2.19	2.22	2.23	2.26	2.27	2.29	2.30	2.32	/	2.76	2.79	2.80
	95	TC	27.8	28.1	28.7	29.1	28.7	29.1	29.5	29.8	31.1	31.3	31.5	31.7	/	36	36.2	36.2
		S/T	0.82	0.86	0.91	0.92	0.55	0.79	0.88	0.92	0.31	0.5	0.68	0.92	/	0.31	0.47	0.63
		kW	2.52	2.55	2.58	2.58	2.58	2.60	2.63	2.65	2.67	2.69	2.71	2.73	/	3.12	3.13	3.13
	105	TC	26.9	27.2	27.9	28.2	27.9	28.2	28.5	28.9	30.1	30.3	30.5	30.8	/	32.7	32.9	32.7
		S/T	0.81	0.86	0.91	0.92	0.55	0.79	0.88	0.92	0.31	0.51	0.7	0.92	/	0.31	0.49	0.66
		kW	2.94	2.97	3.01	3.01	3.01	3.04	3.07	3.10	3.12	3.15	3.16	3.19	/	3.28	3.29	3.24
	115	TC	20.9	21.1	21.7	22	21.7	22	22.3	22.5	23.6	23.7	23.8	24	/	25.5	25.6	25.7
		S/T	0.82	0.86	0.92	0.92	0.56	0.8	0.88	0.92	0.32	0.54	0.78	0.92	/	0.32	0.54	0.76
		kW	2.60	2.63	2.66	2.66	2.66	2.69	2.72	2.74	2.78	2.79	2.80	2.81	/	2.90	2.91	2.92
	125	TC	13.6	13.7	14.1	14.3	14.1	14.3	14.5	14.7	15.5	15.5	15.6	15.6	/	16.8	16.8	16.8
		S/T	0.81	0.86	0.91	0.92	0.67	0.92	0.88	0.91	0.33	0.67	0.92	0.92	/	0.35	0.66	0.92
		kW	1.85	1.88	1.89	1.89	1.89	1.91	1.93	1.95	1.99	1.99	1.99	1.99	/	2.00	2.00	2.00
1300	15	TC	32.4	32.8	33.5	33.9	33.5	33.9	34.3	34.6	35.8	36.1	36.5	36.8	/	42.6	42.9	43.3
		S/T	0.85	0.88	0.95	0.95	0.61	0.85	0.95	0.95	0.37	0.55	0.74	0.95	/	0.36	0.51	0.67
		kW	1.30	1.32	1.34	1.34	1.34	1.35	1.37	1.37	1.37	1.38	1.40	1.42	/	1.85	1.87	1.90
	65	TC	31.8	32.2	32.9	33.3	32.9	33.3	33.6	34	35.2	35.5	35.7	36	/	42.2	42.4	43.1
		S/T	0.85	0.88	0.95	0.95	0.61	0.84	0.91	0.95	0.37	0.56	0.74	0.94	/	0.36	0.52	0.67
		kW	1.95	1.96	1.98	1.98	1.98	2.01	2.03	2.05	2.05	2.07	2.09	2.11	/	2.47	2.49	2.36
	75	TC	31.9	32.3	33.1	33.3	33.1	33.3	33.7	34.1	35.4	35.6	35.9	36.2	/	43.2	43.4	43.5
		S/T	0.85	0.89	0.95	0.95	0.6	0.84	0.91	0.95	0.37	0.56	0.74	0.95	/	0.36	0.52	0.67
		kW	2.00	2.02	2.05	2.05	2.05	2.07	2.08	2.11	2.11	2.13	2.15	2.18	/	2.72	2.73	2.73
	85	TC	31.3	31.6	32.3	32.7	32.3	32.7	33	33.3	34.7	34.9	35.1	35.3	/	40.7	40.9	41.2
		S/T	0.85	0.89	0.95	0.95	0.61	0.85	0.91	0.95	0.37	0.56	0.75	0.95	/	0.37	0.53	0.69
		kW	2.26	2.28	2.31	2.31	2.31	2.33	2.35	2.38	2.39	2.41	2.43	2.44	/	2.91	2.93	2.95
	95	TC	30.5	30.8	31.5	31.8	31.5	31.8	32.2	32.5	33.8	34	34.2	34.5	/	38.7	38.9	38.9
		S/T	0.86	0.89	0.95	0.95	0.61	0.86	0.91	0.95	0.37	0.57	0.76	0.95	/	0.37	0.54	0.71
		kW	2.66	2.68	2.71	2.71	2.71	2.74	2.77	2.79	2.81	2.83	2.85	2.87	/	3.28	3.29	3.29
	105	TC	29.7	29.9	30.6	31	30.6	31	31.3	31.6	32.9	33.1	33.3	33.5	/	35.4	35.6	35.4
		S/T	0.86	0.89	0.95	0.95	0.62	0.86	0.91	0.95	0.37	0.57	0.77	0.95	/	0.37	0.56	0.75
		kW	3.10	3.13	3.16	3.16	3.16	3.20	3.23	3.27	3.28	3.31	3.33	3.36	/	3.45	3.47	3.41
	115	TC	23.7	23.9	24.4	24.7	24.4	24.7	25	25.2	26.3	26.4	26.5	26.7	/	28.2	28.3	28.4
		S/T	0.86	0.89	0.95	0.95	0.63	0.95	0.91	0.95	0.38	0.63	0.88	0.95	/	0.38	0.62	0.86
		kW	2.74	2.77	2.80	2.80	2.80	2.83	2.86	2.89	2.92	2.93	2.95	2.96	/	3.05	3.06	3.07
	125	TC	16.3	16.5	16.9	17.1	16.9	17.1	17.2	17.4	18.3	18.3	18.4	18.4	/	19.5	19.5	19.5
		S/T	0.85	0.89	0.95	0.95	0.75	0.95	0.91	0.95	0.39	0.76	0.95	0.95	/	0.41	0.76	0.94
		kW	1.95	1.97	1.99	1.99	1.99	2.01	2.03	2.06	2.09	2.09	2.09	2.09	/	2.10	2.10	2.10

Table 5

TC refers to total capacity in kBTU/hr S/T: refer to the ratio of sensible heat and total capacity kW: refer to total input power

REVIEWED
By Michael Kyne at 11:11 am, Apr 18, 2023

APPROVED
Montgomery County
Historic Preservation Commission

60 +BVA20-48 For Cooling

Airflow (CFM)	DB (°F)	IDB (°F)	63								67				71			
			70	75	80	85	70	75	80	85	70	75	80	85	70	75	80	85
		TC	37.0	37.3	38.2	38.6	38.2	38.6	39.0	39.4	40.7	41.1	41.5	41.8		49.5	49.8	50.8
	15	S/T	0.81	0.86	0.92	0.96	0.57	0.76	0.88	0.91	0.38	0.53	0.66	0.81		0.38	0.49	0.61
		kW	3.98	4.02	4.07	4.07	1.35	1.37	1.39	1.41	1.40	1.42	1.46	1.47		2.06	2.09	1.87
		TC	27.1	27.5	28.0	28.3	38.1	38.5	38.9	39.3	40.7	41.0	41.4	41.7		49.4	49.7	50.7
	65	S/T	0.83	0.88	0.94	0.96	0.57	0.76	0.88	0.91	0.38	0.53	0.66	0.81		0.38	0.49	0.61
		kW	3.24	3.27	3.30	3.30	1.98	2.00	2.02	2.04	2.03	2.05	2.08	2.09		2.69	2.72	2.50
		TC	38.4	38.8	39.7	40.1	37.8	38.3	38.7	39.0	40.4	40.7	41.1	41.5		48.9	49.5	49.8
	75	S/T	0.86	0.89	0.96	0.96	0.57	0.76	0.88	0.91	0.38	0.53	0.66	0.81		0.38	0.49	0.61
		kW	2.23	2.26	2.28	2.30	2.23	2.26	2.28	2.30	2.30	2.32	2.36	2.38		2.82	2.72	2.74
		TC	37.8	38.2	39.1	39.5	37.4	37.8	38.2	38.6	40.4	40.6	40.7	41.0		48.3	48.7	49.1
	85	S/T	0.86	0.89	0.96	0.96	0.57	0.76	0.88	0.91	0.38	0.53	0.67	0.82		0.38	0.49	0.61
		kW	2.38	2.41	2.43	2.43	2.38	2.40	2.43	2.45	2.49	2.50	2.50	2.52		3.08	3.10	3.13
		TC	37.4	37.8	38.3	38.7	37.1	37.4	37.8	38.3	39.5	40.0	40.3	40.6		47.6	47.9	48.2
	95	S/T	0.86	0.89	0.96	0.96	0.58	0.76	0.88	0.91	0.38	0.53	0.67	0.82		0.38	0.49	0.62
		kW	2.91	2.94	2.97	2.97	2.88	2.91	2.94	2.97	2.97	3.01	3.03	3.06		3.69	3.72	3.75
		TC	36.2	36.7	37.1	37.6	35.8	36.2	36.7	37.1	38.4	38.6	39.0	39.3		45.8	46.1	46.3
	105	S/T	0.86	0.89	0.96	0.96	0.58	0.76	0.88	0.91	0.38	0.53	0.67	0.83		0.38	0.49	0.62
		kW	3.48	3.52	3.55	3.55	3.45	3.48	3.52	3.55	3.57	3.60	3.62	3.65		4.39	4.43	4.46
		TC	35.4	35.8	36.1	36.5	35.4	35.8	36.1	36.5	37.8	38.1	38.4	38.7		41.7	41.9	42.2
	115	S/T	0.81	0.86	0.92	0.96	0.58	0.77	0.88	0.91	0.38	0.53	0.68	0.83		0.38	0.51	0.64
		kW	4.02	4.06	4.11	4.11	4.11	4.15	4.19	4.23	4.24	4.27	4.33	4.36		4.55	4.56	4.56
		TC	27.4	27.8	28.3	28.6	28.3	28.6	29.0	29.3	30.6	30.7	30.8	30.8		32.6	32.7	32.8
	125	S/T	0.83	0.88	0.94	0.96	0.58	0.78	0.89	0.92	0.38	0.57	0.76	0.96		0.38	0.56	0.73
		kW	3.28	3.31	3.34	3.34	3.34	3.38	3.41	3.45	3.52	3.52	3.52	3.52		3.54	3.54	3.55
		TC	38.8	39.2	40.1	40.6	40.1	40.6	40.9	41.4	42.7	43.2	43.6	44.0		52.4	52.8	53.3
	15	S/T	0.86	0.89	0.96	0.96	0.59	0.79	0.91	0.96	0.38	0.53	0.68	0.84		0.37	0.50	0.62
		kW	1.39	1.41	1.42	1.42	1.42	1.45	1.46	1.48	1.45	1.47	1.50	1.53		1.82	1.83	1.85
		TC	38.5	38.9	39.7	40.2	39.7	40.2	40.7	41.0	42.9	43.0	43.2	43.6		52.4	52.8	53.3
	65	S/T	0.86	0.89	0.96	0.96	0.58	0.78	0.91	0.96	0.38	0.53	0.68	0.84		0.37	0.50	0.62
		kW	2.10	2.13	2.15	2.15	2.15	2.17	2.19	2.21	2.24	2.25	2.26	2.29		2.70	2.73	2.76
		TC	38.7	39.0	39.9	40.4	39.9	40.4	40.8	41.2	42.6	43.0	43.4	43.8		52.1	52.5	52.9
	75	S/T	0.86	0.89	0.96	0.96	0.58	0.78	0.91	0.96	0.38	0.53	0.68	0.84		0.37	0.50	0.63
		kW	2.27	2.29	2.32	2.32	2.32	2.35	2.37	2.40	2.39	2.42	2.44	2.47		2.93	2.96	3.00
		TC	38.1	38.6	39.4	39.8	39.4	39.8	40.3	40.7	42.1	42.5	42.8	43.2		51.3	51.6	52.0
	85	S/T	0.86	0.89	0.96	0.96	0.58	0.78	0.91	0.96	0.38	0.54	0.69	0.85		0.37	0.50	0.63
1240		kW	2.52	2.56	2.58	2.58	2.58	2.61	2.64	2.66	2.67	2.69	2.71	2.74		3.31	3.34	3.37
		TC	37.6	38.1	38.9	39.3	38.9	39.3	39.8	40.2	41.6	42.0	42.3	42.6		50.2	50.6	51.0
	95	S/T	0.86	0.89	0.96	0.96	0.59	0.78	0.91	0.96	0.38	0.54	0.69	0.85		0.37	0.50	0.64
		kW	3.04	3.07	3.10	3.10	3.10	3.13	3.16	3.19	3.20	3.24	3.27	3.29		3.95	3.98	4.01
		TC	36.3	36.8	37.6	38.0	37.6	38.0	38.4	38.8	40.2	40.5	40.9	41.1		48.2	48.6	48.8
	105	S/T	0.86	0.89	0.96	0.96	0.59	0.79	0.91	0.96	0.38	0.54	0.70	0.86		0.37	0.50	0.64
		kW	3.61	3.65	3.70	3.70	3.70	3.74	3.77	3.81	3.82	3.85	3.89	3.92		4.69	4.73	4.76
		TC	35.6	36.0	36.8	37.1	36.8	37.1	37.6	38.0	39.6	39.8	40.0	39.9		42.1	42.3	42.4
	115	S/T	0.86	0.89	0.96	0.96	0.59	0.80	0.91	0.96	0.38	0.54	0.70	0.87		0.38	0.53	0.68
		kW	4.26	4.30	4.35	4.35	4.35	4.40	4.44	4.48	4.53	4.57	4.58	4.57		4.60	4.62	4.64
		TC	27.6	27.9	28.5	28.9	28.5	28.9	29.2	29.4	30.9	30.9	31.0	31.1	/	32.9	33.0	33.0
	125	S/T	0.87	0.90	0.96	0.96	0.61	0.83	0.92	0.96	0.38	0.60	0.80	0.96	/	0.38	0.58	0.78
		kW	3.33	3.36	3.40	3.40	3.40	3.43	3.47	3.51	3.58	3.58	3.58	3.58	/	3.60	3.60	3.60
		TC	41.5	42.0	42.9	43.4	42.9	43.4	43.9	44.3	45.8	46.2	46.6	47.1	/	55.6	56.1	56.5
	15	S/T	0.87	0.90	0.96	0.96	0.60	0.81	0.92	0.96	0.38	0.54	0.70	0.87		0.37	0.51	0.64
		kW	1.73	1.75	1.76	1.76	1.76	1.78	1.80	1.82	1.78	1.82	1.85	1.89		2.24	2.26	2.28
		TC	40.9	41.4	42.3	42.7	42.3	42.7	43.2	43.7	45.2	45.6	46.0	46.3		55.4	55.8	56.3
	65	S/T	0.87	0.90	0.96	0.96	0.59	0.81	0.92	0.96	0.38	0.55	0.71	0.88		0.37	0.51	0.64
		kW	2.41	2.44	2.46	2.46	2.46	2.48	2.51	2.53	2.52	2.56	2.59	2.62		3.06	3.09	3.12
		TC	41.1	41.6	42.5	42.9	42.5	42.9	43.4	43.9	45.4	45.8	46.1	46.5		55.1	55.4	55.8
	75	S/T	0.87	0.90	0.96	0.96	0.60	0.81	0.92	0.96	0.38	0.55	0.71	0.88		0.37	0.51	0.64
		kW	2.56	2.59	2.62	2.62	2.62	2.64	2.67	2.70	2.69	2.72	2.75	2.78		3.26	3.28	3.31
		TC	40.5	40.9	41.9	42.4	41.9	42.4	42.7	43.2	44.7	45.2	45.5	45.9		54.0	54.5	54.9
	85	S/T	0.87	0.90	0.96	0.96	0.60	0.81	0.92	0.96	0.38	0.55	0.71	0.88		0.37	0.51	0.64
1420		kW	2.80	2.83	2.86	2.86	2.86	2.89	2.91	2.94	2.95	2.98	3.01	3.04		3.63	3.67	3.69
		TC	40.0	40.5	41.4	41.8	41.4	41.8	42.3	42.7	44.2	44.5	45.0	45.3		52.9	53.3	53.6
	95	S/T	0.87	0.90	0.96	0.96	0.60	0.81	0.92	0.96	0.38	0.55	0.72	0.89		0.37	0.51	0.65
		kW	3.33	3.36	3.40	3.40	3.40	3.43	3.48	3.51	3.53	3.55	3.58	3.61		4.31	4.36	4.39
		TC	38.4	38.9	39.7	40.2	39.7	40.2	40.6	41.0	42.4	42.9	43.2	43.6		50.6	50.9	51.2
	105	S/T	0.87	0.90	0.96	0.96	0.60	0.82	0.92	0.96	0.38	0.55	0.72	0.89		0.37	0.52	0.66
		kW	3.95	3.99	4.03	4.03	4.03	4.07	4.12	4.16	4.17	4.21	4.24	4.27		5.10	5.13	5.16
		TC	36.1	36.5	37.3	37.7	37.3	37.7	38.2	38.5	40.2	40.3	40.5	40.4		43.4	43.6	43.7
	115	S/T	0.87	0.90	0.96	0.96	0.60	0.83	0.92	0.96	0.38	0.57	0.75	0.96		0.38	0.55	0.72
		kW	4.39	4.43	4.48	4.48	4.48	4.52	4.58	4.62	4.70	4.69	4.71	4.66		4.84	4.86	4.87
		TC	27.8	28.0	28.7	29.0	28.7	29.0	29.3	29.6	31.1	31.1	31.2	31.2		33.1	33.2	33.2
	125	S/T	0.88	0.92	0.96	0.96	0.63	0.89	0.92	0.96	0.38	0.63	0.87	0.95		0.38	0.62	0.84
		kW	3.41	3.45	3.49	3.49	3.49	3.52	3.56	3.59	3.67	3.67	3.67	3.68		3.70	3.70	3.70

Table 6

TC refers to total capacity in kBTU/hr S/T: refer to the ratio of sensible heat and total capacity kW: refer to total input power

BOVA20-60 +BVA20-48 For Cooling																		
Indoor Airflow (CFM)	Outdoor DB (°F)	IWB (°F)	59				63				67				71			
		IDB (°F)	70	75	80	85	70	75	80	85	70	75	80	85	70	75	80	85
1580	15	TC	44.0	44.5	45.5	46.0	45.5	46.0	46.4	47.0	48.6	49.0	49.5	49.8		58.5	58.9	59.3
		S/T	0.87	0.90	0.96	0.96	0.61	0.84	0.92	0.96	0.38	0.55	0.72	0.89		0.37	0.51	0.66
		kW	2.10	2.13	2.15	2.15	2.15	2.17	2.19	2.21	2.18	2.22	2.26	2.30		2.73	2.75	2.79
	65	TC	43.1	43.6	44.5	45.0	44.5	45.0	45.5	46.0	47.8	48.0	48.4	49.6		58.1	58.5	59.4
		S/T	0.87	0.90	0.96	0.96	0.60	0.83	0.92	0.96	0.38	0.56	0.73	0.90		0.37	0.52	0.66
		kW	2.74	2.78	2.81	2.81	2.81	2.83	2.86	2.89	2.89	2.92	2.95	2.74		3.42	3.46	3.23
	75	TC	43.5	44.0	44.9	45.4	44.9	45.4	45.9	46.4	47.9	48.2	48.8	49.2		58.0	58.4	58.8
		S/T	0.87	0.90	0.96	0.96	0.61	0.83	0.92	0.96	0.38	0.56	0.73	0.90		0.37	0.52	0.66
		kW	2.74	2.78	2.81	2.81	2.81	2.84	2.87	2.89	3.03	3.06	2.95	2.98		3.48	3.50	3.53
	85	TC	42.6	43.1	44.1	44.5	44.1	44.5	45.0	45.5	47.2	47.6	47.9	48.2		56.6	56.9	57.3
		S/T	0.87	0.90	0.96	0.96	0.61	0.83	0.92	0.96	0.38	0.56	0.74	0.91		0.37	0.52	0.67
		kW	3.09	3.12	3.15	3.15	3.15	3.18	3.22	3.26	3.27	3.30	3.32	3.35		3.98	4.02	4.05
	95	TC	41.8	42.3	43.2	43.7	43.2	43.7	44.2	44.6	46.3	46.6	47.0	47.4		55.1	55.5	55.9
		S/T	0.87	0.90	0.96	0.96	0.61	0.84	0.92	0.96	0.38	0.56	0.74	0.96		0.37	0.53	0.68
		kW	3.64	3.69	3.73	3.73	3.73	3.76	3.80	3.84	3.86	3.90	3.92	3.96		4.70	4.74	4.78
	105	TC	40.1	40.6	41.5	41.9	41.5	41.9	42.3	42.8	44.5	44.8	45.0	45.4		52.5	52.5	52.7
		S/T	0.87	0.90	0.96	0.96	0.61	0.85	0.92	0.96	0.38	0.57	0.75	0.96		0.37	0.53	0.69
		kW	4.28	4.34	4.38	4.38	4.38	4.42	4.47	4.51	4.53	4.58	4.61	4.64	/	5.49	5.49	5.50
	115	TC	36.1	36.5	37.3	37.7	37.3	37.7	38.2	38.5	40.2	40.4	40.6	40.8	/	44.4	41.1	41.3
		S/T	0.87	0.90	0.96	0.96	0.62	0.86	0.92	0.96	0.38	0.59	0.80	0.96	/	0.38	0.59	0.79
		kW	4.46	4.51	4.56	4.56	4.56	4.61	4.66	4.70	4.83	4.85	4.80	4.82	/	3.78	3.78	3.79
	125	TC	27.8	28.0	28.7	29.1	28.7	29.1	29.3	29.6	31.1	31.2	31.2	31.3	/	33.2	33.2	33.2
		S/T	0.89	0.93	0.96	0.96	0.65	0.96	0.92	0.96	0.38	0.65	0.96	0.96	/	0.39	0.64	0.96
		kW	3.53	3.57	3.60	3.60	3.60	3.64	3.68	3.72	3.79	3.79	3.79	3.79	/	3.81	3.82	3.82
1780	15	TC	45.4	46.0	46.9	47.5	46.9	47.5	47.9	48.5	50.3	50.7	51.0	51.5	/	60.6	61.0	61.4
		S/T	0.88	0.92	0.96	0.96	0.62	0.85	0.92	0.96	0.38	0.56	0.75	0.95		0.37	0.52	0.68
		kW	2.71	2.74	2.78	2.78	2.78	2.81	2.83	2.86	2.87	2.90	2.92	2.95		3.38	3.41	3.45
	65	TC	45.4	46.0	46.9	47.5	46.9	47.5	47.9	48.5	50.3	50.7	51.0	51.5		60.6	61.0	61.4
		S/T	0.88	0.92	0.96	0.96	0.62	0.85	0.92	0.96	0.38	0.56	0.75	0.95		0.37	0.52	0.68
		kW	2.71	2.74	2.78	2.78	2.78	2.81	2.83	2.86	2.87	2.90	2.92	2.95		3.38	3.41	3.45
	75	TC	45.0	45.6	46.5	47.1	46.5	47.1	47.6	48.0	49.8	50.2	50.6	51.0		59.9	60.3	60.6
		S/T	0.89	0.93	0.95	0.96	0.62	0.86	0.92	0.96	0.38	0.57	0.75	0.95		0.37	0.53	0.68
		kW	2.92	2.95	2.98	2.98	2.98	3.02	3.05	3.08	3.09	3.12	3.14	3.17		3.69	3.72	3.75
	85	TC	44.3	44.7	45.7	46.2	45.7	46.2	46.7	47.2	48.9	49.3	49.7	50.0		58.4	58.8	59.1
		S/T	0.89	0.93	0.96	0.96	0.62	0.86	0.92	0.96	0.38	0.57	0.76	0.96		0.37	0.53	0.69
		kW	3.28	3.31	3.35	3.35	3.35	3.38	3.41	3.46	3.47	3.49	3.52	3.55		4.21	4.24	4.27
	95	TC	43.2	43.7	44.7	45.2	44.7	45.2	45.7	46.1	47.9	48.2	48.6	49.0		56.9	57.1	57.5
		S/T	0.88	0.93	0.96	0.96	0.62	0.87	0.92	0.96	0.38	0.57	0.77	0.96		0.37	0.54	0.70
		kW	3.84	3.89	3.93	3.93	3.93	3.97	4.01	4.05	4.07	4.11	4.14	4.17		4.94	4.98	5.02
	105	TC	41.4	41.9	42.8	43.3	42.8	43.3	43.7	44.2	45.9	46.2	46.5	46.8		53.1	53.4	53.2
		S/T	0.89	0.93	0.96	0.96	0.63	0.88	0.92	0.96	0.38	0.58	0.78	0.96		0.38	0.55	0.72
		kW	4.50	4.56	4.60	4.60	4.60	4.65	4.70	4.74	4.76	4.80	4.84	4.88		5.57	5.57	5.57
	115	TC	36.9	37.2	38.1	38.5	38.1	38.5	38.9	39.4	41.0	41.2	41.4	41.6		41.9	42.1	42.2
		S/T	0.88	0.93	0.96	0.96	0.63	0.89	0.92	0.96	0.38	0.61	0.83	0.96		0.38	0.59	0.79
		kW	4.53	4.59	4.64	4.64	4.64	4.68	4.73	4.79	4.87	4.88	4.88	4.88		4.92	4.92	4.93
	125	TC	27.9	28.1	28.8	29.1	28.8	29.1	29.4	29.7	31.2	31.3	31.3	31.4		33.3	33.3	33.4
		S/T	0.89	0.94	0.95	0.96	0.68	0.96	0.92	0.96	0.38	0.68	0.96	0.96		0.39	0.67	0.95
		kW	3.59	3.63	3.68	3.68	3.68	3.71	3.75	3.79	3.86	3.86	3.86	3.86		3.89	3.89	3.89

Table 7

TC refers to total capacity in kBTU/hr S/T: refer to the ratio of sensible heat and total capacity kW: refer to total input power

REVIEWED
By Michael Kyne at 11:11 am, Apr 18, 2023

APPROVED
Montgomery County
Historic Preservation Commission

60 +BVA20-60 For Cooling

Airflow (CFM)	Outdoor DB (°F)	IDB (°F)	63				67				71				75			
			70	75	80	85	70	75	80	85	70	75	80	85	70	75	80	85
		TC	37.5	38.0	38.8	39.2	38.8	39.2	39.6	40.1	41.5	41.8	42.2	42.6	/	49.8	50.2	51.1
	15	S/T	0.63	0.67	0.74	0.95	0.56	0.73	0.77	0.82	0.38	0.51	0.65	0.79		0.36	0.48	0.59
		kW	1.62	1.62	1.64	1.66	1.67	1.66	1.69	1.71	1.73					2.31	2.34	2.12
		TC	38.3	38.9	39.3	39.7	40.1	41.6	41.9	42.3	42.7					49.9	50.3	51.2
	65	S/T	0.63	0.67	0.74	0.95	0.56	0.73	0.84	0.88	0.38	0.51	0.65	0.79		0.36	0.48	0.59
		kW	2.02	2.02	2.04	2.06	2.08	2.07	2.10	2.12	2.14					2.72	2.75	2.53
		TC	38.1	38.7	39.1	39.5	39.9	41.3	41.6	42.0	42.4					50.2	50.6	51.1
	75	S/T	0.63	0.67	0.74	0.95	0.56	0.73	0.85	0.89	0.38	0.51	0.66	0.79		0.36	0.48	0.59
		kW	2.29	2.29	2.32	2.34	2.36	2.36	2.38	2.41	2.44					2.72	2.75	2.77
		TC	38.3	38.7	39.1	39.5	40.9	41.3	41.6	42.0						49.4	49.8	50.2
	85	S/T	0.63	0.67	0.74	0.95	0.56	0.73	0.85	0.89	0.38	0.51	0.66	0.79		0.36	0.48	0.60
		kW	2.43	2.43	2.45	2.48	2.50	2.51	2.53	2.55	2.59					3.10	3.13	3.15
		TC	37.9	38.3	38.8	39.2	40.5	40.9	41.2	41.6						48.7	49.0	49.4
	95	S/T	0.63	0.67	0.74	0.95	0.56	0.73	0.85	0.89	0.37	0.51	0.66	0.80		0.36	0.48	0.60
		kW	2.94	2.94	2.97	3.00	3.03	3.03	3.06	3.09	3.11					3.72	3.75	3.78
		TC	37.1	37.4	37.8	38.2	39.6	39.9	40.2	40.6						47.3	47.7	48.0
	105	S/T	0.63	0.67	0.74	0.95	0.56	0.74	0.85	0.89	0.37	0.52	0.67	0.80		0.36	0.48	0.61
		kW	3.50	3.50	3.53	3.57	3.60	3.63	3.66	3.69	3.72					4.42	4.45	4.49
		TC	36.5	36.9	37.3	37.7	39.0	39.3	39.7	40.0						43.2	43.4	43.7
	115	S/T	0.74	0.79	0.86	0.95	0.56	0.74	0.88	0.93	0.37	0.52	0.67	0.81		0.37	0.49	0.63
		kW	4.08	4.12	4.16	4.16	4.16	4.21	4.25	4.29	4.31	4.35	4.39	4.42		4.48	4.49	4.49
		TC	27.7	28.0	28.7	29.0	28.7	29.0	29.3	29.6	31.1	31.2	31.2	31.3		33.1	33.1	33.2
	125	S/T	0.75	0.80	0.87	0.95	0.57	0.77	0.88	0.93	0.38	0.56	0.74	0.95		0.37	0.55	0.72
		kW	3.22	3.25	3.29	3.29	3.29	3.33	3.36	3.40	3.46	3.46	3.46	3.46		3.49	3.49	3.49
		TC	39.9	40.4	41.3	41.7	41.3	41.7	42.1	42.6	44.1	44.5	44.9	45.3		53.7	54.2	54.6
	15	S/T	0.66	0.70	0.78	0.95	0.56	0.75	0.77	0.82	0.37	0.52	0.67	0.81		0.36	0.48	0.61
		kW	1.73	1.75	1.76	1.76	1.76	1.78	1.80	1.82	1.81	1.83	1.86	1.90		2.29	2.32	2.35
		TC	40.1	40.6	41.5	41.9	41.5	41.9	42.4	42.9	44.3	44.7	45.1	45.5		53.9	54.4	54.8
	65	S/T	0.77	0.82	0.89	0.95	0.56	0.75	0.86	0.90	0.37	0.52	0.67	0.81		0.36	0.48	0.61
		kW	2.21	2.25	2.27	2.27	2.27	2.29	2.31	2.34	2.33	2.35	2.38	2.41		2.80	2.83	2.86
		TC	40.2	40.7	41.6	42.0	41.6	42.0	42.5	43.0	44.4	44.8	45.2	45.6		53.5	54.0	54.4
	75	S/T	0.76	0.81	0.88	0.95	0.56	0.75	0.86	0.90	0.37	0.52	0.67	0.81		0.36	0.48	0.61
		kW	2.38	2.40	2.43	2.43	2.43	2.45	2.48	2.50	2.50	2.52	2.55	2.59		3.02	3.05	3.08
		TC	39.7	40.2	41.1	41.6	41.1	41.6	42.0	42.4	44.0	44.3	44.7	45.0		52.8	53.2	53.5
	85	S/T	0.76	0.81	0.88	0.95	0.56	0.75	0.86	0.90	0.37	0.52	0.67	0.82		0.36	0.48	0.61
1310		kW	2.63	2.66	2.69	2.69	2.69	2.71	2.74	2.77	2.78	2.80	2.82	2.85		3.40	3.43	3.46
		TC	39.2	39.7	40.6	41.0	40.6	41.0	41.5	41.9	43.4	43.7	44.1	44.4		51.7	52.1	52.5
	95	S/T	0.76	0.81	0.88	0.95	0.56	0.75	0.86	0.90	0.37	0.52	0.67	0.82		0.36	0.49	0.62
		kW	3.15	3.18	3.22	3.22	3.22	3.25	3.29	3.33	3.33	3.36	3.39	3.42		4.05	4.09	4.12
		TC	38.2	38.7	39.5	39.9	39.5	39.9	40.4	40.8	42.3	42.7	42.9	43.2		50.2	50.4	50.7
	105	S/T	0.76	0.81	0.88	0.95	0.57	0.76	0.86	0.90	0.37	0.53	0.67	0.83		0.36	0.49	0.63
		kW	3.74	3.78	3.82	3.82	3.82	3.86	3.90	3.94	3.96	4.00	4.03	4.06		4.81	4.85	4.88
		TC	36.4	36.8	37.6	38.0	37.6	38.0	38.5	38.9	40.5	40.8	40.9	40.7		43.5	43.7	43.9
	115	S/T	0.77	0.82	0.89	0.95	0.57	0.76	0.86	0.90	0.37	0.53	0.69	0.86		0.37	0.51	0.67
		kW	4.18	4.22	4.27	4.27	4.27	4.32	4.37	4.41	4.49	4.50	4.50	4.49		4.54	4.54	4.54
		TC	28.0	28.4	29.0	29.4	29.0	29.4	29.6	29.9	31.4	31.4	31.5	31.6		33.4	33.5	33.5
	125	S/T	0.79	0.84	0.91	0.95	0.59	0.82	0.86	0.91	0.38	0.58	0.79	0.95		0.38	0.57	0.77
		kW	3.28	3.31	3.35	3.35	3.35	3.38	3.42	3.45	3.52	3.52	3.52	3.52		3.54	3.54	3.54
		TC	44.0	44.5	45.5	46.0	45.5	46.0	46.5	47.0	48.7	49.1	49.5	49.9		58.2	58.6	59.0
	15	S/T	0.68	0.73	0.81	0.95	0.57	0.77	0.82	0.86	0.37	0.52	0.68	0.83		0.36	0.49	0.62
		kW	1.93	1.95	1.97	1.97	1.97	1.99	2.01	2.03	2.00	2.04	2.08	2.12		2.51	2.54	2.56
		TC	46.1	46.5	47.6	48.1	47.6	48.1	48.7	49.1	51.0	51.3	51.7	52.1		60.4	60.8	61.2
	65	S/T	0.81	0.86	0.93	0.95	0.57	0.76	0.88	0.93	0.37	0.52	0.67	0.81		0.36	0.48	0.61
		kW	2.63	2.65	2.68	2.68	2.68	2.71	2.74	2.76	2.76	2.79	2.82	2.85		3.22	3.27	3.30
		TC	45.7	46.3	47.2	47.8	47.2	47.8	48.3	48.7	50.6	51.1	51.3	51.7		59.8	60.2	60.6
	75	S/T	0.81	0.86	0.93	0.95	0.57	0.76	0.88	0.93	0.37	0.52	0.67	0.82		0.36	0.49	0.62
		kW	2.83	2.86	2.89	2.89	2.89	2.93	2.96	2.99	3.00	3.02	3.05	3.07		3.53	3.56	3.60
		TC	44.9	45.4	46.4	46.9	46.4	46.9	47.4	47.9	49.7	50.1	50.5	50.9		58.3	58.8	59.2
	85	S/T	0.81	0.86	0.93	0.95	0.57	0.76	0.88	0.93	0.37	0.52	0.67	0.83		0.36	0.49	0.62
1480		kW	3.18	3.21	3.24	3.24	3.24	3.29	3.32	3.35	3.37	3.40	3.42	3.45		4.06	4.10	4.13
		TC	44.0	44.5	45.5	46.1	45.5	46.1	46.5	47.0	48.7	49.1	49.5	49.8		56.9	57.3	57.7
	95	S/T	0.81	0.86	0.93	0.95	0.57	0.77	0.88	0.93	0.37	0.52	0.68	0.83		0.36	0.49	0.63
		kW	3.77	3.81	3.85	3.85	3.85	3.89	3.93	3.98	3.99	4.02	4.05	4.08		4.80	4.83	4.86
		TC	42.6	43.0	44.0	44.5	44.0	44.5	45.0	45.5	47.2	47.5	47.9	48.2		54.8	55.0	55.0
	105	S/T	0.81	0.86	0.93	0.95	0.57	0.77	0.88	0.93	0.37	0.53	0.68	0.85		0.36	0.50	0.64
		kW	4.44	4.49	4.53	4.53	4.53	4.58	4.63	4.68	4.70	4.74	4.78	4.81		5.62	5.64	5.64
		TC	36.5	37.0	37.7	38.2	37.7	38.2	38.6	39.0	40.7	40.9	41.0	41.1		42.5	42.6	42.8
	115	S/T	0.81	0.86	0.93	0.95	0.58	0.78	0.88	0.93	0.37	0.56	0.74	0.95		0.37	0.55	0.72
		kW	4.38	4.43	4.47	4.47	4.47	4.52	4.56	4.61	4.67	4.69	4.71	4.59		4.74	4.76	4.77
		TC	28.3	28.6	29.3	29.5	29.3	29.5	29.9	30.2	31.7	31.7	31.8	31.8		33.7	33.8	33.9
	125	S/T	0.82	0.86	0.94	0.95	0.62	0.87	0.88	0.93	0.38	0.62	0.86	0.95		0.38	0.61	0.83
		kW	3.36	3.40	3.44	3.44	3.44	3.47	3.51	3.54	3.62	3.62	3.62	3.62		3.64	3.64	3.64

Table 8

TC refers to total capacity in kBTU/hr S/T: refer to the ratio of sensible heat and total capacity kW: refer to total input power

BOVA20-60 +BVA20-60 For Cooling																		
Indoor Airflow (CFM)	Outdoor DB (°F)	IWB (°F)	59				63				67				71			
		IDB (°F)	70	75	80	85	70	75	80	85	70	75	80	85	70	75	80	85
1720	15	TC	46.7	47.3	48.4	48.8	48.4	48.8	49.4	49.9	51.7	52.1	52.6	53.0		61.6	62.0	62.4
		S/T	0.69	0.74	0.95	0.95	0.58	0.79	0.84	0.88	0.37	0.53	0.69	0.86		0.36	0.50	0.64
		kW	2.37	2.40	2.42	2.42	2.42	2.45	2.47	2.50	2.45	2.50	2.55	2.61		3.09	3.12	3.14
	65	TC	48.9	49.5	50.6	51.1	50.6	51.1	51.7	52.2	54.2	54.6	55.0	55.4		63.8	64.2	64.6
		S/T	0.82	0.86	0.95	0.95	0.57	0.78	0.89	0.94	0.37	0.52	0.68	0.84		0.36	0.49	0.63
		kW	3.00	3.03	3.06	3.06	3.06	3.10	3.13	3.16	3.16	3.19	3.22	3.25		3.66	3.69	3.73
	75	TC	48.6	49.0	50.2	50.7	50.2	50.7	51.2	51.8	53.7	54.1	54.5	54.9		63.0	63.4	64.2
		S/T	0.81	0.86	0.95	0.95	0.57	0.78	0.89	0.94	0.37	0.53	0.68	0.85		0.36	0.49	0.63
		kW	3.18	3.21	3.25	3.25	3.25	3.29	3.32	3.36	3.37	3.40	3.42	3.45		3.94	3.99	3.89
	85	TC	47.6	48.2	49.2	49.7	49.2	49.7	50.3	50.9	52.7	53.1	53.5	53.8		61.5	61.9	62.2
		S/T	0.82	0.86	0.95	0.95	0.58	0.78	0.89	0.94	0.37	0.53	0.69	0.86		0.36	0.50	0.64
		kW	3.53	3.57	3.60	3.60	3.60	3.65	3.69	3.72	3.74	3.76	3.80	3.83		4.48	4.52	4.55
	95	TC	46.5	47.0	48.1	48.7	48.1	48.7	49.1	49.6	51.5	51.8	52.3	52.5		59.7	60.1	60.4
		S/T	0.82	0.86	0.95	0.95	0.58	0.79	0.89	0.94	0.37	0.53	0.69	0.86		0.36	0.50	0.65
		kW	4.15	4.20	4.24	4.24	4.24	4.29	4.34	4.38	4.40	4.44	4.47	4.50		5.24	5.28	5.31
	105	TC	44.8	45.3	46.4	46.8	46.4	46.8	47.3	47.9	49.7	50.1	50.4	50.6		55.6	55.9	55.8
		S/T	0.81	0.86	0.95	0.95	0.58	0.79	0.89	0.94	0.37	0.54	0.71	0.87		0.36	0.51	0.67
		kW	4.86	4.91	4.97	4.97	4.97	5.03	5.08	5.13	5.16	5.20	5.23	5.26		5.79	5.83	5.79
	115	TC	37.6	38.0	38.9	39.2	38.9	39.2	39.7	40.1	41.9	42.1	42.3	42.4		43.4	43.5	43.7
		S/T	0.82	0.86	0.95	0.95	0.59	0.81	0.89	0.94	0.37	0.57	0.77	0.95		0.37	0.57	0.76
		kW	4.51	4.55	4.60	4.60	4.60	4.66	4.70	4.75	4.81	4.83	4.85	4.86		4.99	5.00	5.01
	125	TC	28.4	28.7	29.4	29.6	29.4	29.6	30.0	30.3	31.8	31.8	31.9	32.0		33.9	34.0	34.0
		S/T	0.83	0.87	0.95	0.95	0.65	0.95	0.90	0.95	0.38	0.65	0.95	0.95		0.38	0.64	0.94
		kW	3.48	3.51	3.55	3.55	3.55	3.59	3.63	3.67	3.74	3.74	3.74	3.74		3.76	3.76	3.76
1880	15	TC	48.9	49.5	50.7	51.1	50.7	51.1	51.7	52.3	54.3	54.7	55.1	55.6		63.9	64.3	64.7
		S/T	0.71	0.76	0.95	0.95	0.58	0.80	0.86	0.90	0.37	0.54	0.71	0.87		0.36	0.50	0.66
		kW	2.77	2.80	2.83	2.83	2.83	2.86	2.89	2.93	2.87	2.94	2.99	3.04		3.62	3.65	3.68
	65	TC	51.1	51.6	52.8	53.3	52.8	53.3	53.8	54.4	56.6	56.9	57.3	57.7		66.3	66.7	67.1
		S/T	0.83	0.87	0.95	0.95	0.58	0.79	0.90	0.95	0.37	0.53	0.69	0.86		0.36	0.50	0.65
		kW	3.28	3.31	3.34	3.34	3.34	3.38	3.41	3.45	3.45	3.48	3.51	3.55		3.98	4.01	4.04
	75	TC	50.9	51.3	52.5	53.1	52.5	53.1	53.6	54.2	56.3	56.7	57.1	57.5		65.8	66.2	66.6
		S/T	0.83	0.87	0.95	0.95	0.58	0.79	0.90	0.95	0.37	0.53	0.69	0.86		0.36	0.50	0.65
		kW	3.32	3.36	3.39	3.39	3.39	3.43	3.46	3.50	3.52	3.54	3.57	3.60		4.12	4.15	4.18
	85	TC	49.5	50.1	51.2	51.8	51.2	51.8	52.3	52.9	55.0	55.3	55.7	56.0		63.7	64.1	64.4
		S/T	0.83	0.87	0.95	0.95	0.58	0.80	0.90	0.95	0.37	0.54	0.70	0.87		0.36	0.51	0.66
		kW	3.79	3.83	3.87	3.87	3.87	3.91	3.96	4.00	4.02	4.05	4.08	4.11		4.79	4.82	4.85
	95	TC	48.3	48.7	49.9	50.4	49.9	50.4	51.0	51.5	53.5	53.9	54.2	54.5		61.6	62.0	62.3
		S/T	0.83	0.87	0.95	0.95	0.59	0.80	0.90	0.95	0.37	0.54	0.71	0.88		0.36	0.51	0.67
		kW	4.44	4.49	4.53	4.53	4.53	4.58	4.63	4.68	4.71	4.74	4.78	4.81		5.56	5.59	5.63
	105	TC	46.4	46.9	48.0	48.5	48.0	48.5	49.0	49.5	51.5	51.8	52.1	52.4		56.6	55.7	56.0
		S/T	0.83	0.87	0.95	0.95	0.59	0.81	0.90	0.95	0.37	0.55	0.72	0.90		0.36	0.53	0.69
		kW	5.17	5.22	5.28	5.28	5.28	5.34	5.40	5.45	5.49	5.52	5.56	5.59		5.95	5.86	5.89
	115	TC	38.5	38.9	39.7	40.2	39.7	40.2	40.6	41.0	42.8	43.0	43.2	43.4		44.1	44.3	44.4
		S/T	0.83	0.87	0.95	0.95	0.60	0.84	0.90	0.95	0.37	0.59	0.80	0.95		0.37	0.58	0.80
		kW	4.68	4.73	4.78	4.78	4.78	4.83	4.88	4.93	5.01	5.02	5.04	5.05		5.15	4.84	4.85
	125	TC	28.5	28.8	29.5	29.7	29.5	29.7	30.1	30.4	31.9	31.9	32.0	32.0		34.0	34.1	34.2
		S/T	0.84	0.88	0.94	0.95	0.67	0.95	0.91	0.95	0.38	0.67	0.94	0.95		0.39	0.67	0.94
		kW	3.55	3.59	3.63	3.63	3.63	3.67	3.71	3.75	3.82	3.82	3.82	3.82		3.84	3.84	3.84

Table 9

TC refers to total capacity in kBTU/hr S/T: refer to the ratio of sensible heat and total capacity kW: refer to total input power

REVIEWED

By Michael Kyne at 11:11 am, Apr 18, 2023

APPROVED

Montgomery County

Historic Preservation Commission

4.2 Outdoor Unit (BOVA20) + Indoor Unit (BVA20) – Heating Mode

BOVA20-36 + BVA20-24 For Heating

Airflow	ID	OD	86	72	67	62	57	52	47	42	37	32	27	22	17	12	7	2	-4
							26.8	26.7	26.7	26.5	26.5	25.8	25.3	24.3	24.2	22.4	21.4	20.4	18.6
							1.59	1.71	1.86	2.00	2.21	2.26	2.57	2.48	2.41	2.33	2.25	2.19	2.13
							19.8	19.8	19.8	19.8	19.7	19.7	19.7	19.7	18.8	17.7	16.9	16.6	15.8
							1.17	1.26	1.37	1.54	1.65	1.76	1.90	2.02	2.12	2.36	2.43	2.35	2.29
							16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.1	16.1	16.1	15.7
							0.96	1.06	1.16	1.25	1.37	1.48	1.57	1.70	1.81	1.92	2.09	2.28	2.38
							12.9	12.9	12.9	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.7	12.7
							0.80	0.86	0.94	1.00	1.14	1.20	1.29	1.37	1.46	1.59	1.70	1.80	1.95
							27.2	27.2	27.2	27.0	27.0	25.7	26.2	24.5	24.4	23.2	22.1	21.1	19.5
							1.60	1.71	1.86	2.02	2.23	2.22	2.52	2.44	2.36	2.29	2.22	2.15	2.10
							20.2	20.1	20.1	20.1	20.0	20.0	20.1	20.0	19.1	18.0	17.2	16.8	16.0
							1.16	1.25	1.37	1.53	1.65	1.76	1.88	2.03	2.20	2.38	2.39	2.31	2.25
620	75	TC	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.4	16.4	16.4	16.4	16.5	16.3	16.3	16.3	15.6
		kW	0.51	0.73	0.79	0.87	0.97	1.05	1.15	1.24	1.36	1.48	1.56	1.70	1.81	1.93	2.10	2.30	2.34
	80	TC	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0	12.9	12.9
		kW	0.40	0.58	0.64	0.70	0.78	0.84	0.93	1.02	1.13	1.19	1.28	1.36	1.45	1.58	1.70	1.82	1.96
680	60	TC	29.9	29.9	29.9	29.9	29.9	29.8	29.7	29.7	27.8	26.0	26.6	24.8	24.7	23.4	22.3	21.3	19.7
		kW	1.04	1.37	1.49	1.61	1.77	1.88	2.06	2.28	2.25	2.18	2.48	2.41	2.34	2.27	2.21	2.14	2.10
	70	TC	22.2	22.2	22.2	22.2	22.2	22.1	22.1	22.1	22.0	22.0	22.0	22.0	21.0	19.8	18.9	18.5	17.6
		kW	0.74	1.00	1.08	1.18	1.29	1.41	1.57	1.69	1.83	1.93	2.11	2.27	2.46	2.45	2.38	2.30	2.24
	75	TC	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.1	18.1	18.1	18.1	18.1	18.0	18.0	18.0	17.1	15.8
		kW	0.60	0.82	0.89	0.97	1.08	1.17	1.27	1.37	1.54	1.63	1.75	1.87	1.99	2.15	2.34	2.40	2.33
	80	TC	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.3	14.2	14.2
		kW	0.47	0.66	0.72	0.79	0.87	0.94	1.05	1.13	1.24	1.31	1.41	1.50	1.63	1.74	1.82	2.01	2.17
720	60	TC	32.7	32.7	32.7	32.7	32.7	32.4	32.4	30.4	28.2	26.1	26.9	25.0	24.8	23.5	22.5	21.4	19.9
		kW	1.19	1.54	1.66	1.80	1.96	2.11	2.30	2.29	2.23	2.17	2.46	2.40	2.34	2.27	2.21	2.15	2.10
	70	TC	24.3	24.3	24.3	24.3	24.3	24.2	24.2	24.1	24.1	24.0	24.0	24.0	22.9	21.6	20.6	19.7	18.2
		kW	0.84	1.13	1.22	1.32	1.48	1.58	1.73	1.86	2.01	2.14	2.35	2.53	2.52	2.45	2.38	2.31	2.26
	75	TC	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.8	19.8	19.8	19.8	19.7	19.7	19.7	19.0	17.4	16.1
		kW	0.69	0.93	1.00	1.09	1.20	1.29	1.41	1.57	1.69	1.79	1.93	2.05	2.20	2.39	2.48	2.40	2.34
	80	TC	15.8	15.8	15.8	15.8	15.8	15.8	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.6	15.6	15.6
		kW	0.55	0.75	0.82	0.89	0.97	1.06	1.16	1.24	1.36	1.44	1.55	1.68	1.79	1.89	2.04	2.23	2.40
960	60	TC	39.0	39.0	38.9	38.8	38.0	35.8	34.0	31.3	28.7	27.8	27.3	25.8	26.4	25.0	23.9	22.8	21.1
		kW	1.66	1.96	2.11	2.30	2.41	2.36	2.36	2.30	2.24	2.21	2.49	2.44	2.38	2.33	2.27	2.23	2.19
	70	TC	29.1	29.1	29.1	29.1	29.1	29.0	29.0	28.7	28.2	27.4	27.0	25.2	26.2	24.7	23.6	22.5	20.8
		kW	1.35	1.45	1.58	1.70	1.85	1.98	2.14	2.31	2.45	2.40	2.69	2.63	2.56	2.50	2.44	2.38	2.33
	75	TC	24.0	24.0	24.0	24.0	23.9	23.9	23.9	23.8	23.8	23.7	23.7	23.7	23.1	21.4	19.6	17.9	16.6
		kW	0.98	1.20	1.30	1.41	1.52	1.67	1.81	1.94	2.08	2.20	2.39	2.57	2.67	2.60	2.53	2.47	2.42
	80	TC	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.0	19.0	18.8	18.8	18.8	17.7	16.4
		kW	0.79	0.99	1.07	1.15	1.26	1.35	1.45	1.55	1.72	1.81	1.95	2.06	2.18	2.35	2.54	2.56	2.50

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Table 10

TC refers to total capacity in kBTU/hr S/T: refer to the ratio of sensible heat and total capacity kW: refer to total input power

BOVA20-36+BVA20-36 For Heating

Airflow (CFM)	ID (°F)	OD (°F)	86	72	67	62	57	52	47	42	37	32	27	22	17	12	7	2	-4
		TC	29.6	29.6	29.6	29.6	29.6	29.3	29.2	29.3	29.3	29.3	29.3	27.7	25.9	24.0	22.1	20.4	18.8
		kW	.74	1.89	2.02	2.20	2.53	2.77	2.98	3.28	3.21	3.18	3.08	2.97	2.86	2.77			
		TC	2.6	22.6	22.6	22.6	22.6	22.5	22.4	22.4	22.4	22.5	22.5	21.5	19.8	18.2			
		kW	.30	1.43	1.54	1.67	1.92	2.08	2.19	2.41	2.60	2.90	3.15	3.21	3.09	2.99			
		TC	9.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	18.8	18.9	18.9	18.9	18.9	18.0			
		kW	.09	1.20	1.30	1.42	1.59	1.73	1.88	2.04	2.15	2.39	2.60	2.82	3.10	3.12			
		TC	5.5	15.5	15.5	15.5	15.6	15.5	15.5	15.5	15.5	15.6	15.4	15.4	15.4	14.4			
		kW	.90	0.99	1.07	1.16	1.32	1.46	1.54	1.66	1.78	1.96	2.09	2.28	2.51	2.51			
		TC	3.7	33.7	33.6	33.6	33.7	32.2	30.2	30.1	28.2	26.2	24.3	22.5	20.7	19.2			
		kW	.03	2.22	2.40	2.62	3.01	3.03	2.94	3.22	3.12	3.11	3.01	2.91	2.82	2.75			
		TC	6.0	26.0	26.0	25.9	25.9	25.9	25.9	25.9	25.9	25.7	23.8	21.8	20.2	18.7			
		kW	.56	1.68	1.83	1.99	2.21	2.43	2.60	2.84	3.08	3.37	3.26	3.14	3.04	2.96			
		TC	1.9	21.9	21.8	21.8	21.7	21.8	21.6	21.6	21.6	21.7	21.7	21.6	19.8	18.3			
		kW	0.98	1.10	1.19	1.29	1.42	1.52	1.65	1.83	2.05	2.15	2.35	2.53	2.81	3.05	3.28	3.17	3.08
	80	TC	18.0	18.0	18.0	18.0	18.0	17.9	17.9	18.0	17.9	17.9	17.9	17.9	17.8	17.8	17.8	17.9	17.9
		kW	0.84	0.90	0.98	1.07	1.16	1.26	1.37	1.54	1.68	1.79	1.93	2.07	2.27	2.46	2.67	2.93	3.17
960	60	TC	39.3	39.3	38.5	36.1	34.3	32.0	30.0	29.4	26.8	24.7	24.6	22.7	24.0	22.1	20.3	18.7	17.1
		kW	1.62	2.18	2.24	2.18	2.16	2.10	2.09	2.26	2.20	2.14	2.39	2.32	2.48	2.42	2.34	2.28	2.23
	70	TC	28.9	28.9	28.8	28.8	28.8	28.7	28.7	28.6	26.0	24.1	24.0	22.2	23.5	21.6	19.8	18.2	16.6
		kW	1.07	1.43	1.55	1.72	1.90	2.08	2.28	2.52	2.43	2.36	2.62	2.55	2.70	2.63	2.56	2.47	2.42
	75	TC	23.8	23.8	23.7	23.7	23.4	23.4	23.3	25.4	25.3	23.7	23.6	21.8	22.1	20.2	18.2	16.4	14.9
		kW	0.83	1.15	1.25	1.40	1.48	1.64	1.81	2.28	2.52	2.49	2.76	2.67	2.84	2.76	2.67	2.59	2.52
	80	TC	18.6	18.6	18.6	18.6	18.6	18.6	18.5	19.8	19.8	19.9	19.8	19.8	21.7	19.9	17.9	16.0	14.5
		kW	0.62	0.89	0.96	1.08	1.17	1.31	1.44	1.76	1.95	2.11	2.34	2.55	2.98	2.88	2.80	2.70	2.63
1150	60	TC	42.1	42.0	41.3	38.8	37.0	34.7	32.8	31.8	29.3	27.2	27.1	25.2	26.3	24.4	22.5	20.9	19.4
		kW	1.84	2.40	2.46	2.40	2.38	2.32	2.30	2.50	2.44	2.38	2.63	2.56	2.74	2.68	2.61	2.54	2.49
	70	TC	31.6	31.6	31.6	31.6	31.6	31.5	31.5	31.1	28.5	26.6	26.5	24.6	25.8	23.9	22.0	20.4	18.9
		kW	1.28	1.65	1.77	1.94	2.11	2.29	2.49	2.76	2.67	2.60	2.86	2.79	2.97	2.89	2.82	2.73	2.68
	75	TC	26.6	26.6	26.5	26.5	26.1	26.1	26.0	27.9	27.8	26.2	26.1	24.3	24.4	22.4	20.4	18.7	17.2
		kW	1.05	1.37	1.47	1.61	1.70	1.85	2.03	2.52	2.76	2.73	3.00	2.91	3.10	3.02	2.93	2.85	2.79
	80	TC	21.4	21.4	21.3	21.3	21.3	21.3	21.2	22.3	22.3	22.4	22.3	22.3	24.0	22.1	20.1	18.3	16.8
		kW	0.84	1.10	1.18	1.29	1.39	1.53	1.66	2.00	2.19	2.35	2.58	2.79	3.24	3.15	3.06	2.97	2.89
1300	60	TC	44.8	44.7	44.0	41.6	39.7	37.4	35.5	34.3	31.7	29.7	29.6	27.7	28.5	26.6	25.8	23.2	21.6
		kW	2.05	2.61	2.67	2.61	2.60	2.54	2.52	2.74	2.68	2.62	2.87	2.80	3.01	2.94	2.87	2.80	2.75
	70	TC	34.4	34.4	34.3	34.3	34.3	34.2	34.2	33.6	31.0	29.1	29.0	27.1	28.0	26.1	25.1	22.7	21.1
		kW	1.50	1.86	1.98	2.16	2.33	2.51	2.71	3.00	2.91	2.84	3.10	3.02	3.23	3.16	3.08	3.00	2.94
	75	TC	29.3	29.3	29.2	29.2	28.9	28.9	28.8	30.4	30.3	28.7	28.6	26.8	26.6	24.6	22.7	20.9	19.4
		kW	1.27	1.59	1.68	1.83	1.92	2.07	2.24	2.76	3.00	2.97	3.24	3.15	3.37	3.28	3.20	3.11	3.05
	80	TC	24.1	24.1	24.0	24.0	24.0	24.0	23.9	24.8	24.8	24.9	24.8	24.8	26.2	24.4	22.4	20.5	19.0
		kW	1.05	1.32	1.40	1.51	1.60	1.74	1.87	2.24	2.43	2.59	2.82	3.02	3.51	3.41	3.33	3.23	3.16

Table 11

TC refers to total capacity in kBTU/hr S/T: refer to the ratio of sensible heat and total capacity kW: refer to total input power

60+BVA20-48 For Heating

Airflow (CFM)	ID (°F)	OD (°F)	86	72	67	62	57	52	47	42	37	32	27	22	17	12	7	2	-4
		TC	48.6	48.6	48.6	48.5	48.5	48.5	48.2	46.8	45.9	43.1	40.4	39.1	39.0	37.6	35.9	34.1	32.3
		kW	1.35	1.67	1.75	1.87	2.02	2.15	2.37	2.69	2.93	3.12	3.38	3.63	4.09	4.13	4.01	3.93	3.76
	80	TC	27.9	27.9	27.8	27.8	27.8	27.8	27.8	28.7	28.6	28.6	28.6	28.6	29.9	29.7	29.8	29.7	27.7
		kW	1.20	1.43	1.51	1.60	1.73	1.83	1.96	2.22	2.43	2.57	2.78	2.98	3.32	3.57	3.88	4.25	4.19
1420	60	TC	57.4	57.4	57.4	57.2	57.1	56.5	53.6	50.6	47.0	43.9	41.7	40.4	40.3	38.9	37.1	35.3	33.4
		kW	2.19	2.88	3.07	3.31	3.58	3.79	3.74	3.78	3.67	3.57	3.75	4.11	4.28	4.17	4.10	4.02	3.87
	70	TC	44.3	44.3	44.2	44.1	44.1	44.0	43.9	45.4	45.4	43.0	40.8	39.6	39.4	38.1	36.3	34.5	32.7
		kW	1.74	2.16	2.31	2.49	2.70	2.90	3.17	3.63	3.94	3.89	4.08	4.47	4.66	4.54	4.46	4.38	4.22
	75	TC	37.3	37.3	37.2	37.2	37.0	37.1	37.1	38.3	38.3	38.3	38.3	38.3	39.4	37.4	35.9	33.9	31.9
		kW	1.51	1.87	1.97	2.10	2.25	2.44	2.65	3.03	3.28	3.50	3.82	4.11	4.60	4.65	4.51	4.42	4.23
	80	TC	30.7	30.7	30.6	30.6	30.6	30.6	30.5	31.6	31.6	31.6	31.6	31.6	32.8	32.8	32.8	30.5	28.2
		kW	1.34	1.61	1.69	1.79	1.93	2.05	2.19	2.52	2.72	2.89	3.13	3.34	3.72	4.02	4.38	4.48	4.52
1580	60	TC	62.8	62.6	62.6	62.6	60.8	57.4	54.4	45.8	42.2	39.1	37.1	35.9	40.5	39.1	37.2	35.4	33.5
		kW	2.54	3.25	3.47	3.76	3.87	3.77	3.73	4.21	4.07	3.97	4.16	4.56	4.30	4.19	4.11	4.04	3.89
	70	TC	48.5	48.5	48.5	48.3	48.3	48.2	48.0	49.7	46.5	43.6	41.5	40.1	40.0	38.6	36.9	35.0	33.2
		kW	1.97	2.44	2.62	2.82	3.05	3.27	3.52	4.07	4.02	3.91	4.11	4.50	4.69	4.56	4.49	4.40	4.24
	75	TC	40.9	40.9	40.9	40.8	40.8	40.7	40.6	42.0	42.0	41.9	41.9	39.6	39.9	37.9	36.3	34.3	32.3
		kW	1.71	2.10	2.22	2.39	2.57	2.75	2.97	3.40	3.68	3.94	4.31	4.57	4.62	4.67	4.53	4.44	4.25
	80	TC	33.8	33.7	33.6	33.6	33.6	33.6	33.5	34.6	34.7	34.7	34.6	34.6	36.1	36.1	33.9	31.1	28.8
		kW	1.51	1.82	1.90	2.01	2.16	2.29	2.50	2.83	3.05	3.25	3.49	3.74	4.18	4.53	4.52	4.61	4.66
1780	60	TC	67.4	67.4	67.4	64.6	61.5	57.9	54.6	51.5	47.6	44.9	42.7	41.4	41.3	39.9	37.9	36.1	34.2
		kW	3.19	3.58	3.86	3.87	3.82	3.74	3.69	3.76	3.66	3.60	3.77	4.14	4.73	4.60	4.51	4.44	4.27
	70	TC	52.4	52.4	52.4	52.3	52.3	51.8	51.8	50.9	47.0	44.0	41.7	40.4	40.4	39.0	37.1	35.3	33.5
		kW	2.49	2.68	2.91	3.13	3.37	3.59	3.88	4.13	4.10	4.09	4.29	4.71	5.38	5.24	5.14	5.05	4.86
	75	TC	44.4	44.4	44.4	44.3	44.3	44.2	44.0	45.4	45.4	44.4	43.3	40.5	40.2	38.1	36.6	34.5	32.5
		kW	2.12	2.29	2.46	2.63	2.85	3.04	3.27	3.75	4.06	4.08	4.69	4.56	5.07	5.12	4.97	4.86	4.66
	80	TC	36.6	36.6	36.6	36.6	36.6	36.5	36.4	37.6	37.8	37.7	37.5	37.5	39.1	37.1	34.3	31.4	29.1
		kW	1.72	1.97	2.08	2.22	2.37	2.55	2.73	3.12	3.37	3.54	3.85	4.13	5.08	5.12	4.96	5.07	5.11

Table 12

TC refers to total capacity in kBTU/hr S/T: refer to the ratio of sensible heat and total capacity kW: refer to total input power

BOVA20-60+BVA20-60 For Heating

Airflow (CFM)	ID (°F)	OD (°F)	86	72	67	62	57	52	47	42	37	32	27	22	17	12	7	2	-4
		TC	55.5	55.5	55.5	55.4	55.4	55.1	54.9	54.9	54.3	50.8	48.2	44.1	41.3	39.3	38.1	35.5	32.5
		kW	3.17	3.45	3.69	4.03	4.45	4.83	5.07	5.44	5.63	5.91	6.21	6.52	6.84	7.19			
		TC	41.7	41.6	41.6	41.5	41.4	41.4	41.2	39.1	36.7	34.2	33.3	32.6	31.9	29.5			
		kW	2.32	2.51	2.71	2.98	3.25	3.51	3.78	3.89	4.00	4.04	3.97	3.90	3.81	3.77			
		TC	34.5	34.5	34.5	34.4	34.3	34.3	34.3	34.2	34.0	34.0	32.4	31.0	29.2	27.6			
		kW	1.96	2.13	2.27	2.44	2.64	2.92	3.13	3.42	3.61	3.89	3.89	3.73	3.62	3.54			
		TC	27.8	27.8	27.7	27.7	27.6	27.5	27.5	27.5	27.5	27.5	27.4	27.3	27.3	27.3			
		kW	1.65	1.77	1.88	2.04	2.18	2.36	2.50	2.71	2.89	3.11	3.32	3.60	3.93	4.27			
		TC	60.5	60.3	60.2	60.1	59.5	54.9	51.4	48.7	44.5	42.2	41.5	39.0	35.9	33.3			
		kW	3.53	3.84	4.15	4.52	4.93	4.74	4.60	5.73	5.54	5.35	5.18	5.00	4.83	4.68			
		TC	45.8	45.7	45.7	45.6	45.4	45.2	45.2	42.9	40.2	37.5	36.6	35.7	33.4	31.2			
		kW	2.59	2.81	3.06	3.33	3.63	3.93	4.24	4.69	5.07	5.53	5.61	5.41	5.22	5.07			
		TC	38.0	37.9	37.9	37.8	37.8	37.8	37.8	37.4	37.5	37.4	36.4	35.1	32.8	30.5			
		kW	1.65	1.89	2.02	2.18	2.34	2.51	2.69	3.00	3.25	3.48	3.76	4.04	4.36	5.61	5.41	5.22	5.07
	80	TC	30.5	30.5	30.5	30.5	30.5	30.4	30.5	30.5	30.4	30.4	30.4	30.4	30.1	30.0	30.0	30.0	30.0
		kW	1.46	1.59	1.71	1.82	1.95	2.10	2.24	2.40	2.61	2.77	3.02	3.22	3.41	3.69	4.01	4.41	4.77
1480	60	TC	67.5	67.5	67.0	67.0	66.9	66.8	66.0	60.3	55.4	51.8	51.1	51.5	48.0	44.6	41.2	37.8	35.2
		kW	2.71	3.54	3.75	4.09	4.42	4.80	5.05	4.85	4.68	4.56	5.44	5.48	5.31	5.15	4.98	4.82	4.69
	70	TC	50.9	50.9	50.9	50.9	50.9	50.8	50.4	50.4	50.3	50.3	47.8	44.8	41.7	40.7	39.7	37.1	35.2
		kW	2.04	2.57	2.75	2.99	3.25	3.49	3.73	4.14	4.51	4.88	5.03	5.17	5.22	5.12	5.04	4.92	4.88
	75	TC	42.3	42.3	42.3	42.2	42.2	42.2	42.1	42.0	41.9	41.7	41.7	41.7	41.6	39.6	37.9	35.9	33.7
		kW	1.76	2.18	2.30	2.47	2.65	2.86	3.12	3.41	3.65	3.92	4.30	4.63	5.02	5.02	4.83	4.68	4.57
	80	TC	34.1	34.1	34.1	34.1	34.0	34.0	34.0	33.6	33.9	33.9	33.9	33.5	33.4	33.4	33.4	33.4	33.1
		kW	1.52	1.83	1.93	2.05	2.22	2.35	2.53	2.71	2.96	3.18	3.45	3.62	3.90	4.20	4.58	5.05	5.50
1720	60	TC	74.5	74.0	73.9	73.9	73.9	70.6	66.7	54.7	50.4	47.1	44.8	42.0	43.6	42.6	41.5	38.9	36.3
		kW	3.17	4.08	4.33	4.70	5.09	5.08	5.01	5.45	5.27	5.15	2.43	5.92	5.25	5.11	5.02	4.93	4.75
	70	TC	56.2	56.1	56.3	56.2	56.0	55.2	55.0	54.9	54.1	52.4	49.9	46.7	43.5	42.4	41.4	38.8	36.2
		kW	2.34	2.95	3.16	3.42	3.70	3.92	4.24	4.68	4.90	4.97	5.12	5.26	5.31	5.21	5.13	5.01	4.96
	75	TC	46.8	46.8	46.8	46.7	46.6	46.6	46.5	46.1	46.0	46.0	46.0	46.0	43.0	40.9	39.2	37.0	34.9
		kW	2.00	2.47	2.62	2.81	3.04	3.29	3.54	3.83	4.15	4.45	4.91	5.31	5.56	5.56	5.33	5.17	5.06
	80	TC	37.8	37.8	37.7	37.7	37.6	37.6	37.4	37.4	37.4	37.4	37.1	37.1	37.0	37.0	37.0	36.4	33.7
		kW	1.73	2.07	2.19	2.33	2.50	2.65	2.83	3.09	3.38	3.60	3.84	4.12	4.41	4.80	5.22	5.68	5.53
1880	60	TC	79.5	79.3	79.3	79.3	75.5	71.0	67.1	61.2	56.7	53.0	53.2	52.6	48.9	45.5	42.1	39.3	36.6
		kW	3.55	4.52	4.79	5.22	5.16	5.03	4.97	4.81	4.68	4.57	5.41	5.47	5.92	5.76	5.60	5.44	5.31
	70	TC	60.3	60.3	60.4	60.3	59.7	59.5	59.6	59.7	55.6	53.0	50.4	47.1	44.0	42.9	41.8	39.1	36.0
		kW	2.58	3.27	3.48	3.76	4.01	4.31	4.66	5.16	5.10	4.97	5.12	5.26	5.91	5.80	5.71	5.58	5.52
	75	TC	50.2	50.2	50.2	50.0	50.0	50.0	49.9	49.4	49.3	49.3	49.3	49.3	43.6	41.4	39.7	37.5	35.3
		kW	2.19	2.69	2.87	3.06	3.35	3.59	3.86	4.19	4.55	4.90	5.41	5.85	6.68	6.68	6.41	6.21	6.07
	80	TC	40.5	40.5	40.5	40.5	40.4	40.3	40.3	40.3	40.3	40.0	39.8	39.8	39.8	39.8	39.8	36.9	34.1
		kW	1.88	2.27	2.38	2.54	2.71	2.88	3.10	3.41	3.68	3.87	4.20	4.51	5.40	5.85	6.45	6.34	6.17

Table 13

TC refers to total capacity in kBTU/hr S/T: refer to the ratio of sensible heat and total capacity kW: refer to total input power

5.1 SEER Data

		rnace Model	Cooling Capacity (BTU/h)			Heating Capacity			CFM
			Total	EER[2]	SEER[1]	Hi	HSPF[3]	Low[4]	
		/	24000	14	20.5	24000	10.5	23000	860/680
		/	34600	12.5	20	34200	10.5	28000	1150/820
		/	47500	13.5	20	48000	10.5	40000	1530/1150
		/	54500	12.5	19	56000	10.5	44000	1750/1350
		/	23400	11.8	16	23400	9.5	18000	750
		/	23600	11.8	16	23800	9.5	18000	800
		/	32000	10.8	16	33600	9.5	22000	900
		/	32400	11.2	16	33800	9.5	23000	1000
BOVA-36HDN1-M20G	BMAC3036CNTD	/	32600	11.4	16	34000	9.5	23000	1050
BOVA-36HDN1-M20G	BMAC4248BNTF	/	33000	11.2	16	33800	9.5	24000	1000
BOVA-36HDN1-M20G	BMAC4248CNTF	/	33200	11.2	16	34200	9.5	24000	1050
BOVA-36HDN1-M20G	BMAC4248DNTF	/	33400	11.2	16	34200	9.5	24000	1100
BOVA-60HDN1-M20G	BMAC4248BNTF	/	43000	11.2	16	45500	9.5	31400	1200
BOVA-60HDN1-M20G	BMAC4248CNTF	/	44000	11.8	16	46500	9.5	32000	1350
BOVA-60HDN1-M20G	BMAC4248DNTF	/	45000	11.8	16	47500	9.5	32000	1450
BOVA-60HDN1-M20G	BMAC4860CNTF	/	55000	10.5	16	55500	9.5	38000	1350
BOVA-60HDN1-M20G	BMAC4860DNTF	/	56000	10.5	16	56000	9.5	39000	1500
BOVA-36HDN1-M20G	BMAC2430ANTD	BGH96M060B3A	24000	13	18.5	24000	10	18000	820/630
BOVA-36HDN1-M20G	BMAC2430ANTD	BGH96M080B3A	24000	13	18.5	24000	10	18000	800/580
BOVA-36HDN1-M20G	BMAC2430BNTD	BGH96M060B3A	24000	13.5	19	24000	10	19000	860/680
BOVA-36HDN1-M20G	BMAC2430BNTD	BGH96M080B3A	24000	13.5	19	24000	10	19000	840/630
BOVA-36HDN1-M20G	BMAC3036ANTD	BGH96M060B3A	32200	11.2	17	34000	10	25000	1050/800
BOVA-36HDN1-M20G	BMAC3036ANTD	BGH96M080B3A	32200	11.2	17	34000	10	25000	1020/800
BOVA-36HDN1-M20G	BMAC3036BNTD	BGH96M060B3A	33000	11.6	17.5	34200	10	25000	1100/850
BOVA-36HDN1-M20G	BMAC3036BNTD	BGH96M080B3A	33000	11.6	17.5	34200	10	25000	1070/850
BOVA-36HDN1-M20G	BMAC3036CNTD	BGH96M080C4A	33600	12	18	34200	10	25000	1050/820
BOVA-36HDN1-M20G	BMAC3036CNTD	BGH96M100C5A	33600	12	18	34200	10	25000	1150/750
BOVA-36HDN1-M20G	BMAC4248BNTF	BGH96M080B3A	33000	12.5	18.5	34200	10	26000	1000/850
BOVA-36HDN1-M20G	BMAC4248CNTF	BGH96M100C5A	33000	12.5	18.5	34200	10	26000	1100/800
BOVA-60HDN1-M20G	BMAC4248BNTF	BGH96M080B3A	43000	11.2	18	45000	9.5	34000	1250/1050
BOVA-60HDN1-M20G	BMAC4248CNTF	BGH96M080C4A	44000	12	18.5	46000	10	35000	1250/1050
BOVA-60HDN1-M20G	BMAC4248CNTF	BGH96M100C5A	45000	12.5	18.5	46500	10	35000	1450/1150
BOVA-60HDN1-M20G	BMAC4248DNTF	BGH96M100D5A	45500	12.5	18.5	47000	10	35000	1500/1200
BOVA-60HDN1-M20G	BMAC4248DNTF	BGH96M120D5A	45500	12.5	18.5	47000	10	35000	1500/1200
BOVA-60HDN1-M20G	BMAC4860CNTF	BGH96M100C5A	52000	12	18	53500	10	37000	1450/1150
BOVA-60HDN1-M20G	BMAC4860DNTF	BGH96M100D5A	52000	12.5	18.5	54000	10	38000	1500/1200
BOVA-60HDN1-M20G	BMAC4860DNTF	BGH96M120D5A	52000	12.5	18.5	54000	10	38000	1500/1200

Table 14

[1] Seasonal Energy Efficiency Ratio; Certified per AHRI 210/240

[2] Energy Efficiency Ratio; Certified per AHRI 210/240

[3] HSPF = Heating Seasonal Performance Factor; Certified per AHRI 210/240

[4] Jumper cut or dip switch off

Items in **bold** boxes meet the requirements for ENERGY STAR v5.0

Always check the rating plate for electrical data on the unit being installed. The above data are for reference only.

System Configuration	Outdoor Unit Model	Indoor Unit Model Coils/Air Handlers	Furnace Model	Cooling Capacity (BTU/h) Total	EER2[2]	SEER2[1]	Heating Capacity Hi	HSPF2[3]	Low[4]	CFM	
		1-M20	/	24000	13	20	24000	9.5	22400	720/560	❄
		1-M20	/	34200	12	19	34200	9.5	28000	1170/880	
		1-M20	/	47000	12	18.5	48000	9.5	40000	1580/1100	❄
		1-M20	/	52000	11.7	18	55000	9.5	43500	1720/1310	
		ANTD	BGH96M060B3B	23800	12	18	24000	9	19600	740/540	❄
		ANTD	BGH96M080B3B	23800	12	18	24000	9	19600	750/560	❄
		BNTD	BGH96M060B3B	24000	12	18.5	24000	9	20000	760/550	❄
		BNTD	BGH96M080B3B	24000	12	18.5	24000	9	20000	750/560	❄
		ANTD	BGH96M060B3B	32800	10.6	17.5	34000	9	25000	1090/840	
		ANTD	BGH96M080B3B	32800	10.6	17.5	34000	9	25000	1050/840	
	BOVA-36HDN1-M20G	BMAC3036BNTD	BGH96M060B3B	33600	11	17.5	34200	9	25000	1120/870	
	BOVA-36HDN1-M20G	BMAC3036BNTD	BGH96M080B3B	33600	11	17.5	34200	9	25000	1060/850	
	BOVA-36HDN1-M20G	BMAC3036CNTD	BGH96M080C4B	33600	11	17.5	34200	9	25000	1100/870	
BOVA20 with 96% Gas Furnace	BOVA-36HDN1-M20G	BMAC3036CNTD	BGH96M100C5B	33200	11.2	17.5	34200	9	25000	1000/780	
	BOVA-36HDN1-M20G	BMAC4248BNTF	BGH96M080B3B	33000	11.2	18.5	34200	9	25600	1100/880	
	BOVA-36HDN1-M20G	BMAC4248CNTF	BGH96M100C5B	33000	12	18.5	34200	9	25600	1060/840	❄
	BOVA-60HDN1-M20G	BMAC4248BNTF	BGH96M080B3B	42500	11.7	17	43500	8.8	35000	1120/880	❄
	BOVA-60HDN1-M20G	BMAC4248CNTF	BGH96M080C4B	42500	11.7	17	44500	8.8	35000	1130/900	❄
	BOVA-60HDN1-M20G	BMAC4248CNTF	BGH96M100C5B	45000	11.7	17.5	46500	8.8	35600	1370/1150	
	BOVA-60HDN1-M20G	BMAC4248DNTF	BGH96M100D5B	45500	11.7	17.5	47000	9	35600	1480/1200	❄
	BOVA-60HDN1-M20G	BMAC4248DNTF	BGH96M120D5B	45500	11.7	17.5	47000	9	35600	1480/1200	❄
	BOVA-60HDN1-M20G	BMAC4860CNTF	BGH96M100C5B	51500	11.4	18	53500	8.5	38000	1370/1150	
	BOVA-60HDN1-M20G	BMAC4860DNTF	BGH96M100D5B	52000	11.7	18	54000	8.5	38500	1460/1170	
	BOVA-60HDN1-M20G	BMAC4860DNTF	BGH96M120D5B	52000	11.7	18	54000	8.5	38500	1460/1170	

Table 15

[1] Seasonal Energy Efficiency Ratio; Certified per AHRI 210/240

[2] Energy Efficiency Ratio; Certified per AHRI 210/240

[3] HSPF = Heating Seasonal Performance Factor; Certified per AHRI 210/240

[4] Jumper cut or dip switch off

☐ Items in **bold** boxes meet the requirements for ENERGY STAR v6.1

❄ Denotes combinations that meet ENERGY STAR v6.1 Cold Climate

Model Size		2 Ton	3 Ton	4 Ton	5 Ton
		3/4	3/4	7/8	7/8
		3/4 STD	3/4 STD	7/8 STD	7/8 STD
		5/8 OPT	5/8 OPT	3/4 OPT	3/4 OPT
		1	1	1	1
		1	0.99	0.99	0.98
		0.99	0.99	0.99	0.99
		0.99	0.98	0.98	0.97
		0.99	0.98	0.98	0.97
		0.98	0.95	0.97	0.95
		0.97	0.96	0.96	0.95
	Optional	0.96	0.93	0.95	0.93

Table 16

Std: Standard size
Opt: Optional size

Using suction line larger than shown in chart will result in poor oil return and is not recommended.

7 Sound Data

Model	Sound Power Level [dB(A)]	Full Octave Linear Sound Power Level dB -Center Frequency -Hz								Sound Power Level [dB(A)] with Sound Blanket
		100	125	250	500	1000	2000	4000	8000	
3 Ton	56 (Low)	26.1	28.9	37.5	44.4	48.1	42.5	47.1	40.7	Sound Blanket - Standard
	77 (High)	48.4	54.3	60.5	66.2	68.7	63.6	62.3	53.7	
5 Ton	60 (Low)	30.5	36.0	47.6	50.1	48.5	50.1	50.5	41.3	
	79 (High)	51.6	47.6	62.3	67.0	68.6	64.2	64.6	56.5	

Table 17 IDS Sound power level

8 Dimensions

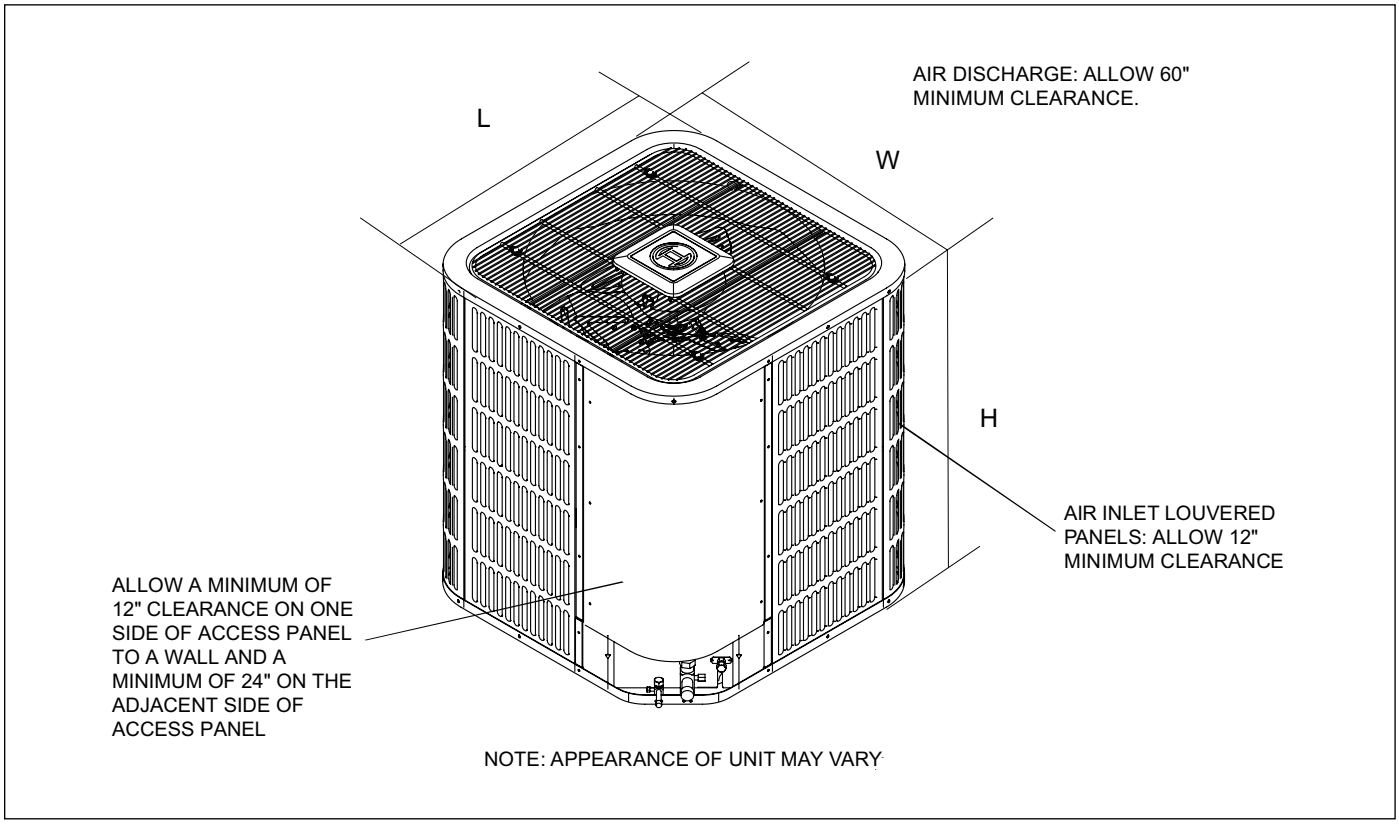

Figure 2

Model Size	Dimensions (Inches)		
Heat Pump	"H" in. [mm]	"W" in. [mm]	"L" in. [mm]
BOVA20-36	24-15/16 [633]	29-1/8 [740]	29-1/8 [740]
BOVA20-60	33-3/16 [843]	29-1/8 [740]	29-1/8 [740]

Table 18

REVIEWED
By Michael Kyne at 11:11 am, Apr 18, 2023

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REVIEWED

By Michael Kyne at 11:11 am, Apr 18, 2023

APPROVED

Montgomery County

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Montgomery County

Historic Preservation Commission

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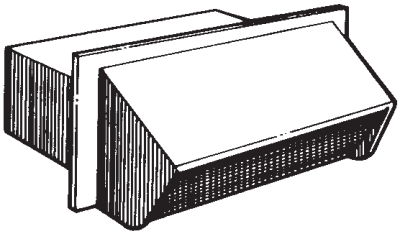
Fax: 603-965-7581
www.bosch-thermotechnology.us

BTC 761701108 I / 02.2023

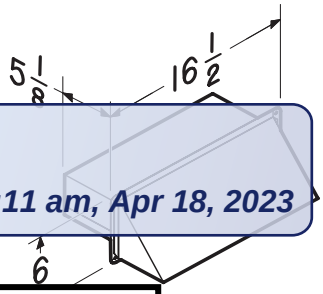
BROAN®

SPECIFICATION SHEET

WALL CAPS



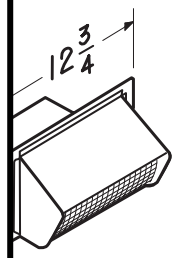
Model WC638
- For 3¼" x 14" duct
- Spring-loaded
- [illegible] damper and bird screen
- 26 GA CRCQ Steel, black finish



APPROVED

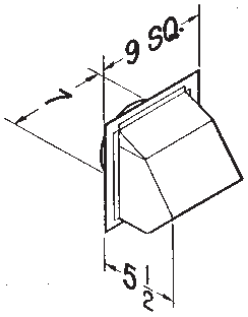
Montgomery County

Historic Preservation Commission

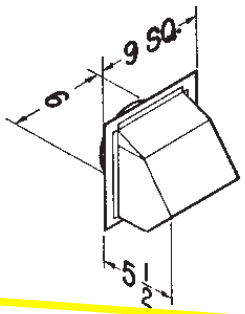


- Same features as Model 639
- .025 Aluminum - natural finish

Model 647
- For 7" round duct
- Spring-loaded backdraft damper and bird screen
- .025 Aluminum - natural finish
- Do not use for dryer venting



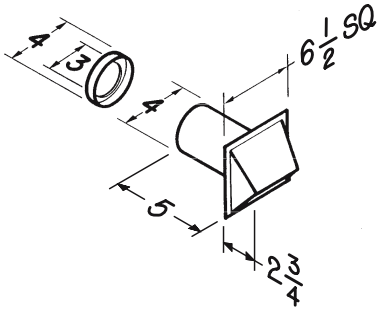
Model 843BL
- For 6" round duct
- Spring-loaded backdraft damper and bird screen
- 22 GA CRCQ Steel, black electrically-bonded epoxy finish
- Attachment collar 1¼" long
- Do not use for dryer venting



Model 641
- Same features as Model 843BL
- .025 Aluminum - natural finish

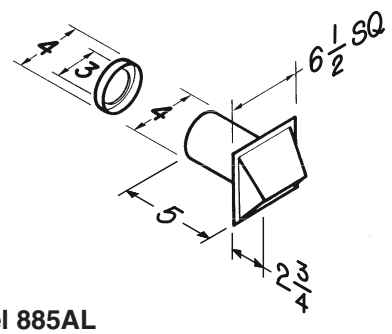
Model 641FA
- Same features as Model 641
- Without backdraft damper
- Includes mesh screen
- Intended for make-up air inlet applications

Model 885BL
- For 3" or 4" round duct (4" to 3" transition included)
- Spring-loaded backdraft damper and bird screen
- 24 GA CRCQ Steel, black electrically-bonded epoxy finish
- Do not use for dryer venting



Broan-NuTone LLC Hartford, Wisconsin www.broan.com 800-558-1711

REFERENCE	QTY.	REMARKS	Project
			Location
			Architect
			Engineer
			Contractor
			Submitted by Date

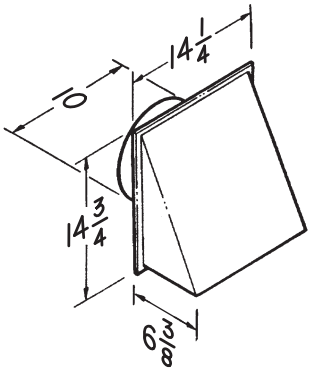


Model 885AL

- For 3" or 4" round duct (4" to 3" transition included)
- Spring-loaded backdraft damper and bird screen
- .025 Aluminum - natural finish
- Do not use for dryer venting

Model 610FA

- For 10" round duct
- .025 Aluminum - natural finish
- Attachment collar 3-3/8" long
- Without backdraft damper
- Includes mesh screen
- Intended for make-up air inlet applications

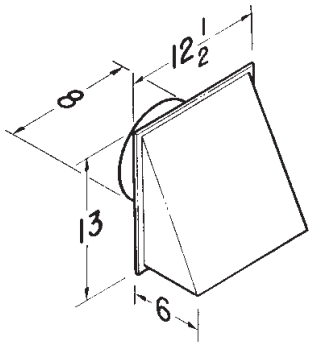


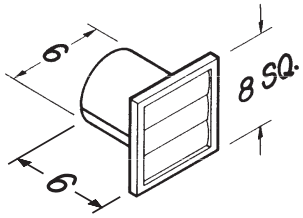
Model 643

- For 8" round duct
- Built-in backdraft damper
- .025 Aluminum - natural finish
- Attachment collar 3-3/8" long

Model 643FA

- Same features as Model 643
- Without backdraft damper
- Includes mesh screen
- Intended for make-up air inlet applications



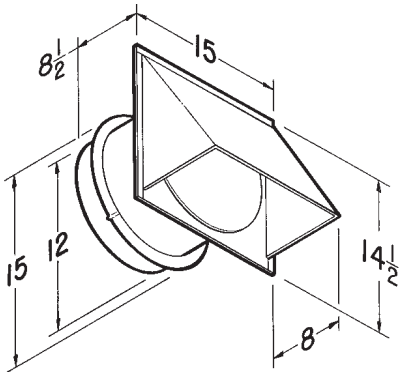


Model 646

- For 6" round duct
- Polymeric construction - white finish

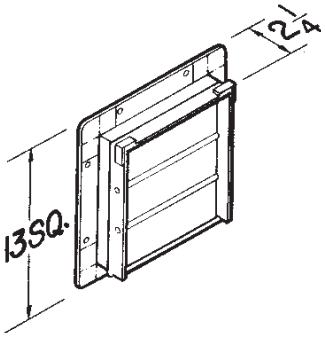
Model 613

- For 12" round duct
- High capacity
- Built-in backdraft damper and bird screen
- .025 Aluminum - natural finish



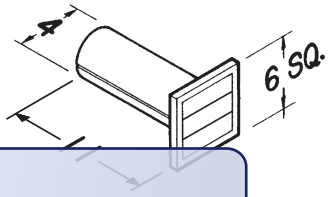
Model 441

- Gravity dampers
- Collar with bird screen for attaching 10" round duct
- 24 GA CRCQ steel construction with aluminum louvers



Model 450 Flexible Wall Ducting Kit

- Includes 5 ft. of 4", flexible, vinyl ducting, 4" diameter metal duct connector, 2 [illegible] 4" to 3" reducer and a polymeric



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By Michael Kyne at 11:11 am, Apr 18, 2023

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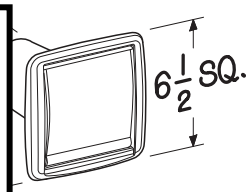
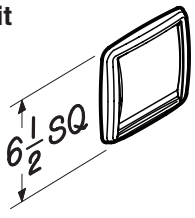
Montgomery County

Historic Preservation Commission



Model WVK2A Flexible Wall Ducting Kit

- Includes 5 ft. of 4", flexible, 2-ply metallic laminate ducting, 10" long 4" diameter metal duct, 2 duct clamps, 4" to 3" reducer, an engineered resin material wall vent, and mounting screws
- Duct conforms to UL181 Class 1 air connector requirements
- Do not use for dryer venting



High-Performance Low-Profile Termination

DryerWallVent™

Lasting Beauty

Well-built Aesthetics

Low profile and clean lines help enhance exterior beauty. With a 26 gauge Galvanized ***and*** powder coated steel body, the Dryer Wall Vent is the last vent a home will ever need.

Ease of Installation

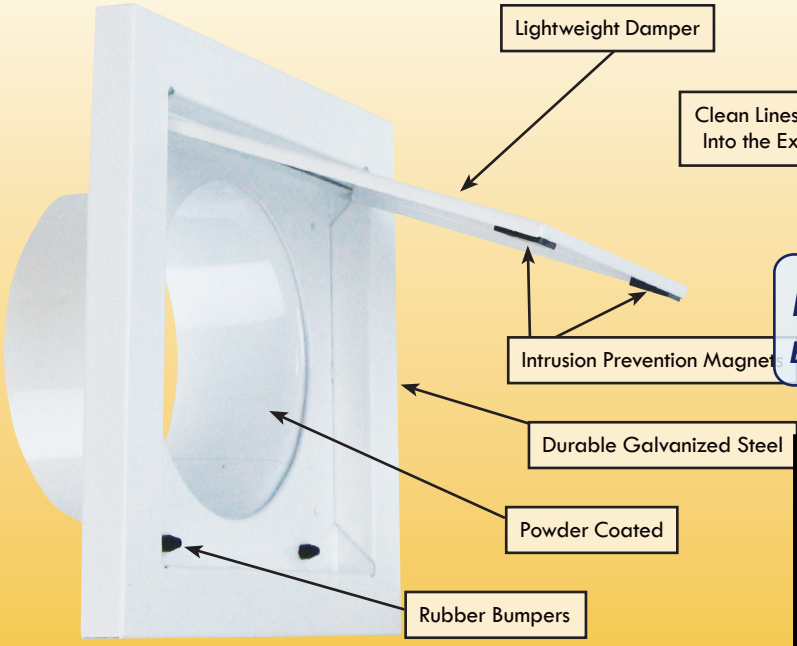
Engineered for a quick, perfect fit in both retrofit and new construction, total replacement time can be as low as four minutes.

Airflow Efficiency

The lightweight damper and clean opening maximize efficiency and exceed all code requirements. Less airflow restriction helps save on energy bills, drying time and appliance wear.

Efficient, Low Profile Termination

- Lightweight Damper Reduces Airflow Restriction
- Balanced Magnets Deter Bird and Rodent Intrusion
- Damper Easily Accommodates Cleaning Equipment
- Exceeds all Code Requirements for Safe Venting



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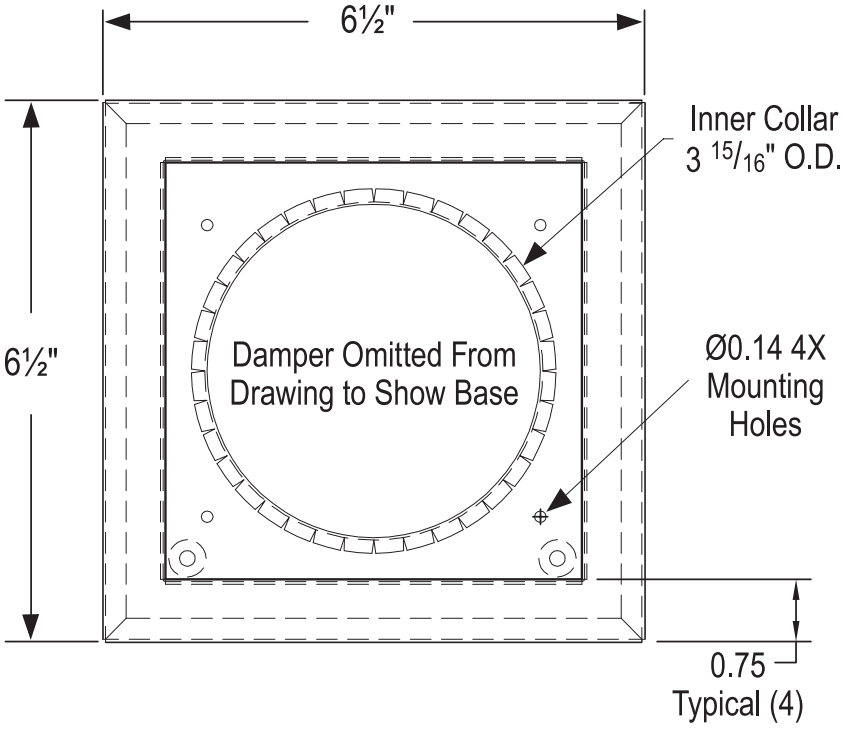
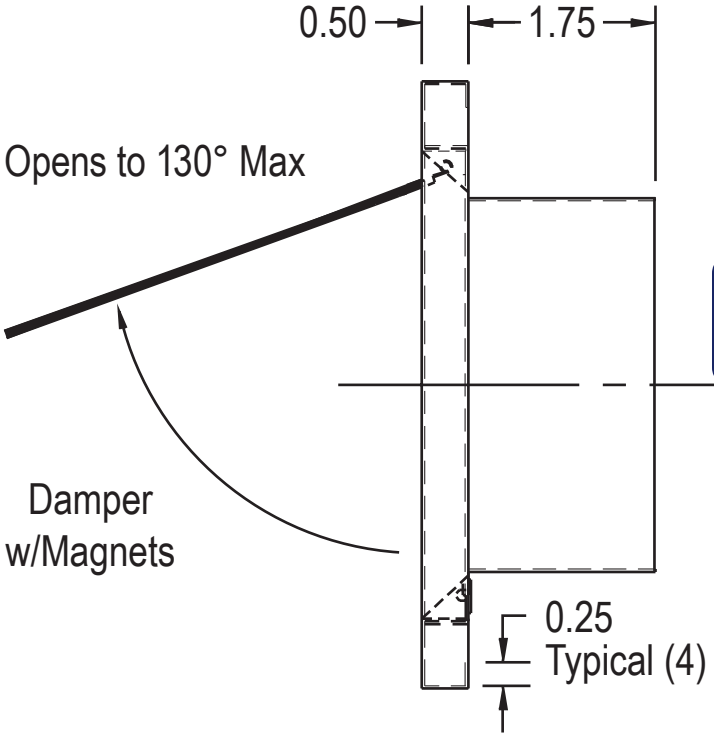
Historic Preservation Commission

In-O-Vate Technologies Inc
888-443-7937
810 Saturn Street • Suite 20 • Jupiter F
t.com
745-9723

DryerWallVent

Technical Product Specifications





Model Number	Color
DWV4W	White
DWV4T	Tan
DWV4B	Brown

Performance Data

Product Use:
- Venting Dryer Exhaust Systems Through Exterior Walls
- Meets or Exceeds Building Code Requirements
- Complies w/ IMC 504.4 & IRC 1502.3

Materials:
- 26 Gauge Galvanized Steel Housing
- 30 Gauge Galvanized Steel Damper
- Polyester TGIC Weather Resistant Powder Coating

General Information

Benefits:
- Improves Aesthetics with Flush Installation
- Installs Easily in New and Existing Construction
- Stands the Test of Time with Durable Materials
- Simplifies Duct Cleaning with Easy Accessibility
- Deters Bird and Rodent Entry
- Operates Quietly when Opening and Closing
- Maximizes Airflow Efficiency
- Minimizes Dryer Cycle Times

Features:
- Galvanized & Powder Coated Steel Construction
- Lightweight Damper and Heavier Frame
- Damper Opens Freely to 130°
- Low Strength Closure Magnets
- Rubber Bumpers for Quiet Closing Damper
- Slightly Narrower Collar Rests within Sturdy Frame
- Four Built-in Mounting Holes
- Stocked in 3 Colors: White, Tan and Brown

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By Michael Kyne at 11:11 am, Apr 18, 2023

Manufactured By
InnoVate Technologies, Inc.
810 Saturn Street, Suite 20
Jupiter, FL 33477

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Historic Preservation Commission

Made in the USA