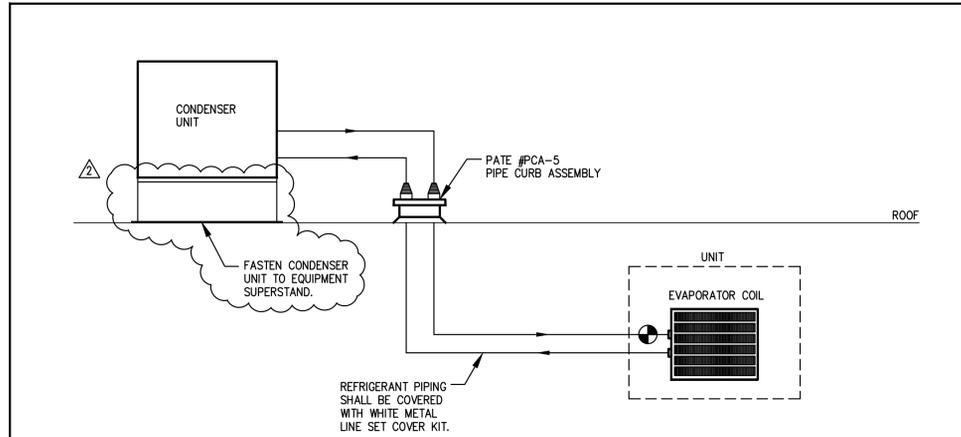


HIGH WALL DUCTLESS SYSTEM SCHEDULE

DRAWING SYMBOL	CFM SETTINGS	CFM OA	EVAP. FAN (W)	COOLING (BTUH)		TOTAL HEAT (BTUH) @ 47° F	AUX. HEAT (KW)	SEER	COP	COND. UNIT				MANUFACTURER	MODEL NUMBER	
				TOTAL	SENSIBLE					MCA	MOCP	VOLTAGE	WEIGHT LBS		AIR UNIT	COND. UNIT
(DSS 1) (CU 1)	374-602-699-915	---	---	30,600	---	32,600	---	18.1	2.86	19.0	20.0	208/1	121	MITSUBISHI	NTXWST30B112AA	NTXSST30B112AA
(DSS 2) (CU 2)	374-602-699-915	---	---	30,600	---	32,600	---	18.1	2.86	19.0	20.0	208/1	121	MITSUBISHI	NTXWST30B112AA	NTXSST30B112AA
(DSS 3) (CU 3)	374-602-699-915	---	---	30,600	---	32,600	---	18.1	2.86	19.0	20.0	208/1	121	MITSUBISHI	NTXWST30B112AA	NTXSST30B112AA
(DSS 4) (CU 4)	374-602-699-915	---	---	30,600	---	32,600	---	18.1	2.86	19.0	20.0	208/1	121	MITSUBISHI	NTXWST30B112AA	NTXSST30B112AA

- ACCESSORIES AND FEATURES: (BY EQUIPMENT INSTALLER)**
- * MITSUBISHI IS THE BASE OF DESIGN. HIGH EFFICIENCY LG, DIAKIN, PANASONIC, HITACHI OR APPROVED SUBSTITUTE.
 - * COOLING CAPACITIES ARE AT 80/67° F INDOOR AND 95° F OUTDOOR TEMPERATURE.
 - * HEATING CAPACITIES ARE AT 70° F INDOOR AND 47° F OUTDOOR TEMPERATURE.
 - * INDOOR UNIT SHALL BE POWERED BY OUTDOOR UNIT.
 - * UNITS SHALL HAVE PHENOMENAL-AIRE-SERIES MODEL D-1.2.2 AIR PURIFIER.
 - * WALL MOUNTED TEMPERATURE SENSOR (MODEL PAC-SE41TSE WIRED BACK TO EACH INDOOR UNIT).
 - * COOLING CAPACITIES DO NOT HAVE FAN MOTOR HEAT DEDUCTED.
 - * SUBMIT SHOP DRAWINGS SHOWING COOLING CAPACITIES WITH MOTOR HEAT AS NOTED.

NOTE:
 ** PROVIDE M-NET ADAPTER FOR EACH UNIT.
 ** PROVIDE TE-200A CENTRALIZED CONTROLLER FOR MITSUBISHI DUCTLESS SPLIT SYSTEMS. CONTROLLER SHALL BE INTERFACED TO EXISTING JOI BUILDING SYSTEM.



TYPICAL DUCTLESS SYSTEM

SCALE: N.T.S.

NOTES:

1. PITCH ALL HORIZONTAL LINES A MINIMUM OF 1/2" IN 10 FEET IN THE DIRECTION OF REFRIGERANT FLOW.
2. SIZE AND INSTALL REFRIGERATION PIPING IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
3. MANUFACTURER SHALL SUBMIT A COMPUTER PRINTOUT SHOWING CALCULATED PIPE SIZES, LENGTHS OF RUN, TRAP LOCATIONS AND SIZES, AND ALL OTHER NECESSARY REQUIREMENTS.

HEAT, VENTILATING, AND AIR CONDITIONING SPECIFICATION

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. PROVIDE ALL LABOR, TOOLS, AND MATERIAL TO CONSTRUCT A COMPLETE HEATING, VENTILATION, AND AIR CONDITIONING SYSTEM AS HEREIN SPECIFIED AND SHOWN ON THE DRAWINGS. PROVIDE EVERYTHING NECESSARY FOR A COMPLETE AND SATISFACTORY INSTALLATION, WHETHER OR NOT SPECIFICALLY SHOWN OR SPECIFIED. THIS INCLUDES ALL MISCELLANEOUS PARTS, DEVICES, CONTROLS, AND APPURTENANCES WHICH ARE REQUIRED TO COMPLETE THE JOB IN A SAFE AND PROPER OPERATING CONDITION. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE LOCAL, MECHANICAL CODE, NFPA 90A, NFPA 96, AND ALL STATE AND LOCAL CODES AND REGULATIONS. PAY ALL FEES AND PERMITS. ALL EQUIPMENT SHALL BE UL OR ASME APPROVED AND BEAR SUCH LABEL WHERE APPROVAL IS APPLICABLE.
- B. THE CONTRACTOR SHALL EXAMINE THE GENERAL AND SUPPLEMENTARY CONDITIONS, ALL OTHER CONTRACT DOCUMENTS, AND EXAMINE THE EXISTING CONDITIONS AT THE BUILDING SITE TO FAMILIARIZE THEMSELVES WITH THE PROVISIONS THEREIN AFFECTING THE MECHANICAL WORK.
- C. THE CONTRACTOR IS REQUIRED TO SUBMIT TO THE ARCHITECT FOR APPROVAL A DIGITAL PDF SET OF MANUFACTURER'S BROCHURES ON ALL MECHANICAL EQUIPMENT NAMED WITH THE SPECIFIC DIVISION AND SECTION I.E. 23 81 11 REFRIGERATION & GAS HEATING.
- D. IN ADDITION TO MANUFACTURER'S WARRANTY, THE CONTRACTOR SHALL WARRANT EQUIPMENT AND WORKMANSHIP FOR ONE YEAR AFTER ACCEPTANCE AND SHALL MAKE GOOD ANY DEFECT IN MATERIAL AND WORKMANSHIP DURING THIS PERIOD WITHOUT COST TO THE OWNER.

1.2 CERTIFICATION

- A. ALL ELECTRICAL COMPONENTS SHALL BE UL LABELED.
- B. ALL UNITS SHALL BE RATED UNDER ARI CERTIFICATION PROGRAM.

1.3 CLEANING

- A. GENERAL:**
1. UPON COMPLETION OF THE CONTRACT AND PROGRESSIVELY AS THE WORK PROCEEDS, CLEAN UP ALL DIRT, DEBRIS, OIL, MATERIALS, ETC., AND REMOVE IT FROM THE SITE, KEEPING PREMISES IN A NEAT AND CLEAN CONDITION TO THE SATISFACTION OF THE ARCHITECT. SEE GENERAL CONDITIONS.
 2. THOROUGHLY CLEAN ALL AIR DISTRIBUTION DEVICES AND APPARATUS CASINGS BEFORE FANS AND FILTERS ARE OPERATED. CLEAN OR RENEW ALL FILTERS AFTER THE EQUIPMENT HAS BEEN TESTED AND BEFORE TURNING OVER TO OWNER.
 3. ALL FACTORY APPLIED FINISHES, IF NOT TO BE REPAINTED, SHALL BE TOUCHED-UP, COVERING ALL BARE PLACES, SCRATCHES, ETC.
 4. ANY STOPPAGE, DISCOLORATION, OR OTHER DAMAGE TO PARTS OF THE BUILDING, ITS FINISH, OR FURNISHINGS DUE TO THE CONTRACTOR'S FAILURE TO PROPERLY CLEAN THE PIPING SYSTEM AND DUCT SYSTEMS SHALL BE REPAIRED BY THE CONTRACTOR WITHOUT COST TO THE OWNER.

PART 2 - PRODUCTS

2.1 DUCTLESS SPLIT SYSTEM

- A. THE UNIT SHALL BE FACTORY ASSEMBLED INCLUDING COIL, CONDENSATE DRAIN PAN, FAN MOTOR, WASHABLE FILTER, AND AIR PURIFYING FILTER. UNIT SHALL HAVE THE CAPABILITY TO BE CONTROLLED REMOTELY. UNIT SHALL BE UL LISTED.
- B. CONDENSING UNIT MATERIALS OF CONSTRUCTION
 1. CABINET:
 - A. FABRICATED OF G-60 GALVANNEALED STEEL
 - B. FINISHED WITH CORROSION INHIBITING, HIGH-GLOSS, POWDER COATED
 2. FAN GUARD:
 - A. HEAVY-GAUGE, VINYL DIPPED WIRE
- C. COMPRESSOR - HERMETICALLY SEALED, HIGH EFFICIENCY ROTARY OR RECIPROCATING TYPE, DEPENDING ON UNIT CAPACITY. MOTOR SHALL BE PSC TYPE WITH INTERNAL OVERLOAD PROTECTION. COMPRESSOR SHALL BE INSTALLED ON RESILIENT MOUNTINGS.
- D. REFRIGERATION CIRCUIT - THE UNIT SHALL BE DELIVERED WITH PRECHARGED REFRIGERANT FOR THE CONDENSER COIL AND EVAPORATOR. CHARGING OF THE FIELD INSTALLED PIPING IS REQUIRED. UNIT REFRIGERATION VALVES SHALL BE PRIME, SOLID BRASS, FOR SWEAT CONNECTION.
- E. CONDENSER COIL - CONDENSER COIL SHALL BE SEAMLESS, COPPER TUBING, ARRANGED IN STAGGERED CONFIGURATION, WITH ENHANCED ALUMINUM FINNS. THE TUBES SHALL BE MECHANICALLY EXPANDED FOR SECURE BONDING TO FIN SHOULDER.
- F. CONDENSER FAN/MOTOR - THE CONDENSER FAN SHALL BE A LARGE DIAMETER, HIGH EFFICIENCY, THREE BLADE PROPELLER TYPE, DIRECTLY CONNECTED TO THE TOTALLY ENCLOSED, 8 POLE, PSC MOTOR. INTERNAL, THERMAL PROTECTION OF THE MOTOR SHALL BE SUPPLIED.
- E. HIGH PRESSURE CONTROL
- H. INDOOR UNIT MATERIALS OF CONSTRUCTION
 1. CABINET:
 - A. FABRICATED OF GALVANNEALED STEEL, WITH STRUCTURAL STIFFENERS
 - B. POWDER COATED FINISH
 2. DISCHARGE GRILLE ASSEMBLY:
 - A. DUAL HORIZONTAL BLADES WITH AUTO SWING
 3. CONDENSATE DRAIN PAN:
 - A. GALVANIZED STEEL WITH ANTI-CORROSION COATING
 4. CABINET COLOR:
 - A. DESIGNER WHITE

2.2 REFRIGERANT PIPING SYSTEM

- A. THE REFRIGERANT PIPING SHALL BE ASTM-B-280 TYPE ACR COPPER WITH WROUGHT COPPER FITTINGS AND HIGH TEMPERATURE SOLDER JOINTS, SIL-FOS, OR APPROVED SUBSTITUTE. THE PIPING SYSTEM SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING: CHARGING VALVES, SIGHT GLASS WITH MOISTURE INDICATOR, LIQUID LINE STRAINER DRIER, AND FLEXIBLE CONNECTORS WHERE REQUIRED. THE PIPING SHALL BE INSTALLED ACCORDING TO THE DIAGRAMS FURNISHED BY THE MANUFACTURER'S AUTHORIZED AGENT. THESE DIAGRAMS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION. THE PIPING SYSTEM SHALL BE TESTED AT 400 POUNDS WITH DRY NITROGEN UNTIL ALL LEAKS HAVE BEEN MADE TIGHT. AFTER THE PRESSURE TEST USE SUITABLE VACUUM PUMP TO EVACUATE THE SYSTEM TO AT LEAST 500 MICRONS, THEN CHARGE THE SYSTEM WITH REFRIGERANT AND OIL AS REQUIRED. PRIOR TO RUNNING THE REFRIGERANT EQUIPMENT, ALL SAFETY AND OPERATING DEVICES AND CONTROLS SHALL BE PROPERLY ADJUSTED AND TESTED FOR PROPER OPERATION AND PROTECTION OF THE EQUIPMENT.
- B. REFRIGERANT PIPING EXTENDING THROUGH THE WALL SHALL BE SLEEVED, WATERPROOFED AND BE FLASHED WATERTIGHT.
- C. INSULATE ALL REFRIGERANT SUCTION LINES ARMSTRONG ARMAFLEX II, 1" THICK FOR PIPE SIZES UP TO AND INCLUDING 1", 1-1/2" THICK FOR PIPE SIZES OVER 1". ALL EXTERIOR INSULATION SHALL BE ENCASED WITH 0.016 INCH SMOOTH ALUMINUM JACKET WITH WEATHER-TIGHT CONSTRUCTION.

2.3 CONTROL WIRING

- A. ALL CONTROL WIRING TO BE FURNISHED AND INSTALLED BY THE MECHANICAL INSTALLER. ALL POWER WIRING SHALL BE BY THE ELECTRICAL INSTALLER.

2.4 CONDENSATE PIPING

- A. EVAPORATOR CONDENSATE PIPING SHALL BE TYPE L COPPER. CHECK FOR LEAKS AT 10 FT. HEAD BEFORE CONCEALING PIPING. ABOVE GRADE PIPING SHALL BE INSULATED WITH 1" ARMSTRONG "ARMAFLEX".

PART 3 - EXECUTION

3.1 TESTS

- A. TEST AND MAKE NECESSARY ADJUSTMENTS ON ALL AIR CONDITIONING EQUIPMENT TO CONFORM TO MANUFACTURER'S INSTRUCTIONS. FURNISH ALL LABOR AND ENERGY FOR TESTING.
- B. PLACE EACH BLOWER IN OPERATION AND MAKE REQUIRED ADJUSTMENT FOR CORRECT SPEED AND QUIET OPERATION. ADJUST ALL BALANCING DAMPERS SO THAT AIR DELIVERED TO OR EXHAUSTED FROM EACH ROOM COMPLIES WITH AMOUNTS INDICATED WITHIN 10%. TEST TO BE PERFORMED BY AN INDEPENDENT AABC OR NBBB CERTIFIED BALANCING COMPANY. PROVIDE BALANCE REPORT LISTING AIR VOLUME FOR EACH ITEM OF AIR CONDITIONING AND AIR HANDLING EQUIPMENT.

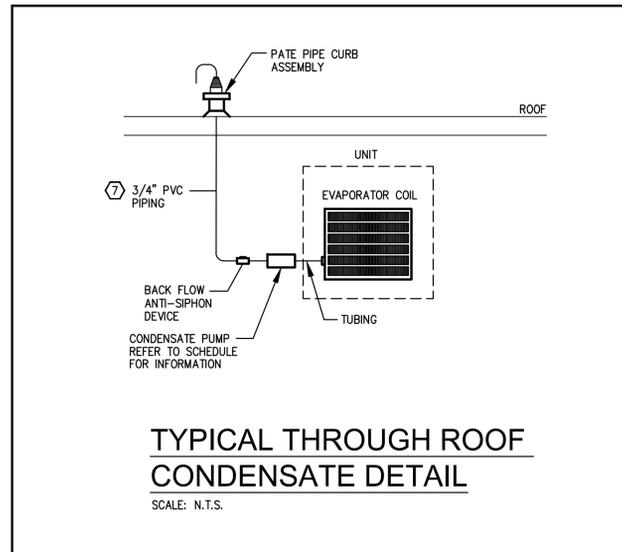
3.2 INSTALLATION

- A. MOUNT UNITS AS SHOWN ON THE DRAWINGS. SUPPORT INDOOR UNITS AT 4 POINTS ON KINETIC TYPE NPS NEOPRENE ISOLATION PAD IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- B. PROVIDE COMPETENT FACTORY-TRAINED ENGINEER FOR START-UP TESTING AND INSTRUCTIONS TO OPERATING PERSONNEL.
- C. THE MANUFACTURER'S AUTHORIZED AGENT SHALL BE RESPONSIBLE FOR ALL INSTALLATION AND CONTROL WIRING SUPERVISION, MOUNTING INSTRUCTIONS, SIZING REFRIGERANT PIPING, SPECIALTIES, AND ALL SUCH DETAILS. HIS AGENT SHALL BE RESPONSIBLE FOR START-UP AND FINAL CHECKOUT. HE SHALL, UPON JOB COMPLETION, NOTIFY THE OWNER, ARCHITECT AND ENGINEER THAT ALL UNITS HAVE BEEN CHECKED OUT, ARE OPERATING PROPERLY AND ARE SATISFACTORY IN EVER RESPECT.

3.3 PROJECT CLOSEOUT

- A. BEFORE REQUESTING FINAL INSPECTION, THE FOLLOWING ITEMS MUST BE COMPLETED:
 1. COMPLETE ALL WORK REQUIRED UNDER THIS DIVISION OF THE SPECIFICATIONS EXCEPT AS MAY BE PERMITTED HERINAFTER.
 2. SUBMIT TEST AND BALANCE REPORT FOR ALL AIR SYSTEMS.
 3. SUBMIT SPECIFIC WARRANTIES AND ANY MAINTENANCE AGREEMENTS.
 4. DELIVER TOOLS, SPARE PARTS, EXTRA STOCK, AND SIMILAR ITEMS.
 5. INSTALL ALL ITEMS OF IDENTIFICATION ON ALL DUCTWORK, PIPING, AND EQUIPMENT.
- B. BEFORE REQUESTING FINAL PAYMENT, THE FOLLOWING ITEMS MUST BE COMPLETED:
 1. SUBMIT OPERATING INSTRUCTIONS AND MAINTENANCE MANUALS.
 2. DEMONSTRATE TO OWNER'S REPRESENTATIVE THE PROPER OPERATION OF ALL EQUIPMENT AND SYSTEMS.

MECHANICAL LEGEND		
STANDARD ABBREVIATIONS AND NOTATIONS		
CD CEILING DIFFUSER	ER EXHAUST REGISTER	OA OUTDOOR AIR DUCTWORK
CE CEILING EXHAUST	EX EXHAUST DUCTWORK	RE RETURN DUCTWORK
CR CEILING RETURN	FA FROM ABOVE	RR RETURN REGISTER
CRD COUNTER BALANCED RELIEF DAMPER	FFE FINISHED FLOOR ELEVATION	SR SUPPLY REGISTER
DN DOWN	NIC NOT IN CONTRACT	SU SUPPLY DUCTWORK
SYMBOL	DESCRIPTION	
—	REFRIGERANT PIPING	
—C—	EQUIPMENT CONDENSATE PIPING	
[]	NEW HVAC EQUIPMENT	
(XXX X)	EQUIPMENT TAG	
①	REFER TO NOTE #1	
(TS) XX-1	WALL MOUNTED TEMPERATURE SENSOR - XXX-1	



TYPICAL THROUGH ROOF CONDENSATE DETAIL

SCALE: N.T.S.

WWR ENGINEERS INC.
 WEST, WELCH, REED ENGINEERS, INC.
 ELECTRICAL & MECHANICAL ENGINEERING

5417 BALL CAMP PIKE
 KNOXVILLE, TN 37921
 PHONE: (865) 588-2431
 FAX: (865) 588-2434

MAYNARDVILLE ELEMENTARY HVAC FOR 4 CLASSROOMS

LEGEND & DETAILS



JOB NO:	120064
FILE:	120064
DRAWN:	MAW
DESIGNED:	MAW
CHECKED:	KLS
DATE:	11-08-21

REVISIONS:	
REV# 1	12/14/21
REV# 2	12/15/21

WWR ENGINEERS INC.

5417 Ball Camp Pike
 Knoxville, TN 37921
 Phone: (865) 588-2431
 Fax: (865) 588-2434
 West, Welch, Reed Engineers, Inc.
 WWR PROJECT# 121077

THIS DRAWING IS GENERALLY DIAGRAMMATIC AND, EXCEPT WHERE SPECIFICALLY DIMENSIONED OR DETAILED, INDICATES THE GENERAL ARRANGEMENT OF THE WORK. THE CONTRACTOR SHALL INSTALL HIS WORK TO CONFORM AS NEARLY AS POSSIBLE TO THE LOCATIONS AND ARRANGEMENTS SHOWN, WITH ONLY SUCH MINOR ADJUSTMENTS AS NECESSARY TO COORDINATE THE WORK WITH ALL OTHER TRADES TO AVOID INTERFERENCES.

M1