

**ADDENDUM NO. 1**

**Date: August 17, 2020**

Project: 10-yr. Aquatic Facilities Rehabilitation  
Electrical Contract

Wilson School District  
2601 Grandview Blvd.  
West Lawn, PA 19609

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The following items are clarifications, additions, and/or revisions to the original plans and specifications. This Addendum forms a part of the Contract Documents for the above referenced project, and hereby modifies and takes precedence over the original Bidding Documents as though originally included therein. Bidders shall acknowledge receipt of this Addendum by indicating the Addendum number and date in the space provided on the Bid form.

1. Document No. 13 – Specifications is attached hereto as Exhibit A.
2. Document No. 14 – Drawings is attached hereto as Exhibit B.

END OF DOCUMENT

**Exhibit A**  
**Document No. 13 – Specifications**

## MECHANICAL SPECIFICATIONS

### SCOPE OF WORK

CONTRACTOR SHALL VISIT SITE TO DETERMINE EXISTING CONDITIONS, SUBMISSION OF PROPOSAL SHALL CONSIDER AN ACKNOWLEDGEMENT BY THE CONTRACTOR THAT THE CONTRACTOR HAS VISITED AND EXAMINED THE SITE.

FEATURES AS INDICATED ARE BELIEVED TO BE REASONABLY CORRECT BUT ARE NOT GUARANTEED, WHERE CONDITIONS AT PROJECT SITE DO NOT AGREE EXACTLY WITH CONDITIONS AS INDICATED, THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR SAID DISCREPANCY.

NO EXTRA PAYMENT WILL BE ALLOWED THE CONTRACTOR FOR EXTRA WORK CAUSED BY FAILURE TO VISIT, EXAMINE AND CLARIFY.

THE SCOPE OF MECHANICAL WORK INCLUDED IN THIS CONTRACT SHALL INCLUDE COMPLETE MECHANICAL SYSTEMS; INCLUDING BUT NOT LIMITED TO BUILDING HVAC SYSTEMS AND RELATED AUTOMATIC TEMPERATURE CONTROLS, AND SUPPORTS, ETC. AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN. ANY WORK REASONABLY INFERRABLE FROM THE DRAWINGS AND SPECIFICATIONS, AS REQUIRED TO RESULT IN A COMPLETE INSTALLATION AND THE INTENDED OPERATION AND PERFORMANCE OF THE SYSTEMS, SHALL BE INCLUDED IN THE BASE BID EXCEPT WHERE THERE IS SPECIFIC REFERENCE TO EXCLUSION AND INCORPORATION IN OTHER QUOTATIONS.

### CONTRACT DRAWINGS

CONTRACT DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE RELATION OF PIPING, DUCTWORK, CONNECTIONS, AND EQUIPMENT. THE DRAWINGS DO NOT INDICATE ALL OFFSETS, ELBOWS, AND FITTINGS THAT MAY BE REQUIRED. THEREFORE, THE CONTRACTOR SHALL CAREFULLY INVESTIGATE THE STRUCTURAL AND FINISH CONDITIONS AFFECTING THE WORK AND ACTUAL EQUIPMENT PROVIDED. THE CONTRACTOR SHALL FURNISH ALL OFFSETS, ELBOWS, FITTINGS, HANGERS, AND ACCESSORIES AS MAY BE REQUIRED TO MEET THESE CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.

DO NOT SCALE THE DRAWINGS. CONTRACTOR SHALL CHECK CONDITIONS AT THE SITE FOR DIMENSIONS AND SIZES PERTAINING TO THE STRUCTURES. DO NOT DEVIATE FROM THE DRAWINGS WITHOUT PRIOR APPROVAL.

### GENERAL STANDARDS OF MATERIALS

EQUIPMENT AND MATERIALS, UNLESS SPECIFICALLY INDICATED OTHERWISE, SHALL BE NEW AND OF FIRST QUALITY, PRODUCED BY MANUFACTURERS WHO HAVE BEEN REGULARLY ENGAGED IN THE MANUFACTURE OF THESE PRODUCTS FOR A PERIOD OF NOT LESS THAN FIVE YEARS.

NOTE THAT WHERE SPECIFIC MANUFACTURERS' PRODUCTS ARE INDICATED ON THE DRAWINGS, THE ASSOCIATED SYSTEMS HAVE BEEN DESIGNED ON THE BASIS OF THAT PRODUCTS PHYSICAL CHARACTERISTICS. WHERE SPECIFIC MANUFACTURERS' PRODUCTS ARE NOT INDICATED ON THE DRAWINGS AND MORE THAN ONE MANUFACTURER IS NAMED IN THE SPECIFICATIONS, THE ASSOCIATED SYSTEMS HAVE BEEN DESIGNED ON THE BASIS OF THE FIRST-NAMED MANUFACTURER'S PRODUCT. WHEN PRODUCTS OTHER THAN THOSE USED AS THE BASIS OF DESIGN ARE PROVIDED, ADDITIONAL COSTS RELATED TO MODIFICATIONS TO THE SYSTEMS AND/OR STRUCTURE REQUIRED BY THE USE OF THAT PRODUCT SHALL BE PAID BY THE CONTRACTOR.

MATERIALS FURNISHED SHALL BE DETERMINED SAFE BY A NATIONALLY RECOGNIZED TESTING ORGANIZATION, SUCH AS UNDERWRITERS' LABORATORIES, INC., OR FACTORY MUTUAL ENGINEERING CORPORATION, AND MATERIALS SHALL BE LABELED, CERTIFIED OR LISTED BY SUCH ORGANIZATIONS.

WORKMANSHIP AND MATERIALS SHALL BE GUARANTEED ONE YEAR FROM THE OWNER'S ACCEPTANCE AND START-UP DURING THIS PERIOD. THIS CONTRACTOR AGREES TO MAKE ANY ADJUSTMENTS ARE NEEDED TO HIS INSTALLATION, OR REPLACE ANY MATERIAL OR EQUIPMENT THAT PROVES TO BE UNSATISFACTORY. ALL GUARANTEES SHALL BE IN ADDITION TO EXPRESSED GUARANTEES OR STANDARD WARRANTIES OF MANUFACTURERS' AND/OR SUPPLIERS.

INSTALLATION OF HVAC SYSTEMS SHALL BE IN COMPLIANCE WITH THE CURRENT INTERNATIONAL MECHANICAL CODE, NFPA, LOCAL MUNICIPAL CODES, AND AS PER MANUFACTURER'S AND UTILITIES RECOMMENDATIONS.

THE INSTALLATION OF ALL GAS PIPING SHALL BE IN ACCORDANCE WITH NFPA 54, INTERNATIONAL FUEL GAS CODE, AMERICAN GAS ASSOCIATION AND THE LOCAL GAS UTILITY.

### CODES, PERMITS, AND INSPECTIONS

MATERIALS FURNISHED AND WORK INSTALLED SHALL COMPLY WITH CURRENTLY ADOPTED INTERNATIONAL MECHANICAL CODE, THE NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS, THE REQUIREMENTS OF THE LOCAL UTILITY COMPANIES, AND THE REQUIREMENTS OF GOVERNMENTAL DEPARTMENTS OR AGENCIES HAVING JURISDICTION. MATERIALS AND EQUIPMENT FURNISHED FOR THE ELECTRICAL PORTION OF THE MECHANICAL SYSTEMS SHALL BEAR THE APPROVAL LABEL OF OR SHALL BE LISTED BY THE UNDERWRITERS' LABORATORIES, INC.

THE CONTRACTOR SHALL PAY ALL FEES AND OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED BY ANY AUTHORITY HAVING JURISDICTION IN CONNECTION WITH HIS WORK. CERTIFICATES OF INSPECTION SHALL BE DELIVERED TO THE ARCHITECT. FINAL PAYMENT IS CONTINGENT UPON DELIVERY OF SUCH CERTIFICATES TO ARCHITECT.

### QUIET OPERATION AND VIBRATION CONTROL

EQUIPMENT AND ASSOCIATED ITEMS SHALL OPERATE UNDER CONDITIONS OF LOAD WITHOUT SOUND OR VIBRATION DEEMED OBJECTIONABLE BY THE ENGINEER/ARCHITECT/OWNER. IN THE CASE OF MOVING EQUIPMENT, SOUND OR VIBRATION NOTICEABLE OUTSIDE OF THE ROOM IN WHICH IT IS INSTALLED, OR ANNOYINGLY NOTICEABLE WITHIN THE ROOM IN WHICH IT IS INSTALLED, SHALL BE DEEMED OBJECTIONABLE. SOUND OR VIBRATION DEEMED OBJECTIONABLE SHALL BE CORRECTED IN AN APPROVED MANNER AT NO EXTRA COST TO THE OWNER. VIBRATION CONTROL SHALL BE PROVIDED BY MEANS OF APPROVED VIBRATION ISOLATORS AND INSTALLED IN ACCORDANCE WITH THE ISOLATOR MANUFACTURERS' RECOMMENDATIONS.

ALL ROTATING MECHANICAL EQUIPMENT AND ITS ASSOCIATED PIPING AND DUCTWORK SHALL BE PROVIDED WITH VIBRATION ISOLATORS.

### COORDINATION

COORDINATE AND FURNISH TO THE OWNER, IN WRITING, ANY INFORMATION NECESSARY TO PERMIT THE WORK TO BE INSTALLED SATISFACTORILY AND WITH THE LEAST POSSIBLE INTERFERENCE OR DELAY.

### ACCESSIBILITY

LOCATE EQUIPMENT WHICH MUST BE SERVICED, OPERATED OR MAINTAINED IN FULLY ACCESSIBLE POSITIONS. EQUIPMENT REQUIRING ACCESS SHALL INCLUDE, BUT IS NOT NECESSARILY LIMITED TO, VALVES, VOLUME DAMPERS, TRAPS, CLEAN OUTS, MOTORS, FIRE DAMPERS, CONTROLLERS, AND DRAIN POINTS.

### DEMOLITION

THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF EXISTING EQUIPMENT, DUCTWORK, PIPING AND CONTROLS IN THE EXISTING BUILDING WHICH IS SHOWN TO BE REMOVED ON THE DRAWINGS OR WHICH IS IN CONFLICT WITH THE NEW WORK. FURNISH ALL LABOR, EQUIPMENT INCLUDING RIGGING, SCAFFOLDING, ETC. NECESSARY FOR THE REMOVAL PHASE OF THE PROJECT.

THE DEMOLITION PLAN AS SHOWN IS NOT TO BE CONSIDERED ALL INCLUSIVE BUT IS TO BE A GENERAL GUIDE TO THE SCOPE OF THE DEMOLITION. ALL DEMOLITION MUST BE PERFORMED AS REQUIRED TO BRING THE AREA SHOWN TO A STATE WHERE THE NEW CONSTRUCTION WORK CAN BE ACCOMPLISHED AS SHOWN ON THESE CONSTRUCTION DOCUMENTS.

### CONTINUITY OF SERVICES

ALL REMOVAL WORK AND INSTALLATION OF NEW EQUIPMENT REQUIRING SYSTEM SHUTDOWN SHALL BE COORDINATED WITH THE OWNER. PERIODS OF SHUT-DOWN SHALL BE MINIMAL AND ALL NEW WORK SHALL BE PLANNED AND SCHEDULED TO ACCOMPLISH AS FEW SHUT-DOWNS AS POSSIBLE.

ALL CONSTRUCTION AND REMOVAL WORK SHALL BE PERFORMED IN PHASES DETAILED BY THE ARCHITECT AND EXISTING SYSTEMS ARE TO BE KEPT IN OPERATION AS THE WORK PROGRESSES. ALL REMOVED EQUIPMENT SHALL BE THE PROPERTY OF THE OWNER OR DISPOSED OF BY THE CONTRACTOR AS DIRECTED BY THE OWNER.

### STORAGE

EACH CONTRACTOR SHALL PROVIDE SUITABLE STORAGE FACILITIES IN THE LOCATION ASSIGNED HIM AT THE SITE FOR HIS MATERIALS, WHERE PARTS OF THE BUILDING ARE USED FOR SUCH STORAGE. THEY SHALL BE LEFT IN CONDITION SATISFACTORY TO THE ENGINEER.

ALL MATERIALS DELIVERED ON THE PREMISES OR MATERIALS STORED AT THE CONTRACTOR'S PLACE OF BUSINESS OR IN WAREHOUSES, WHICH ARE TO FORM A PART OF THE WORK AND FOR WHICH THE CONTRACTOR HAS SUBMITTED AN APPLICATION FOR PAYMENT, SHALL BE CONSIDERED THE PROPERTY OF THE OWNER AND SHALL NOT BE REMOVED, SOLD, OR USED FOR OTHER PURPOSES WITHOUT HIS CONSENT.

THE CONTRACTOR SHALL REMOVE ALL HIS SURPLUS MATERIALS AFTER COMPLETION OF THE WORK.

### CUTTING AND PATCHING

IN NEW CONSTRUCTION, THE CONTRACTOR SHALL GIVE THE GENERAL CONTRACTOR COMPLETE INFORMATION AS TO SIZE OF OPENINGS REQUIRED IN FLOORS AND WALLS, ETC., SO THAT SUCH OPENINGS MAY BE PROVIDED AS THE PROJECT PROGRESSES.

IF OPENINGS ARE OMITTED OR ARE INCORRECT THROUGH FAILURE OF THE CONTRACTOR TO FOLLOW THESE INSTRUCTIONS, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, ENGAGE THE TRADE WHICH ORIGINALLY INSTALLED THE WORK, TO CUT AND PATCH TO THE SATISFACTION OF THE ARCHITECT.

ALL CUTTING AND PATCHING IN CONNECTION WITH THIS CONTRACT SHALL BE DONE BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE WORK IN THEIR RESPECTIVE LINES OF WORK. ALL PATCHING SHALL MATCH ADJACENT FINISHES.

### CLEANING

AT THE COMPLETION OF THE WORK, ALL PARTS OF THE INSTALLATION SHALL BE THOROUGHLY CLEANED. ALL EQUIPMENT SHALL BE LEFT IN CONDITION FOR USE.

### ELECTRICAL

ANY ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.

THE MECHANICAL CONTRACTOR SHALL ENSURE THAT ALL EQUIPMENT PROVIDED IS COMPATIBLE WITH THE ELECTRICAL SYSTEMS USED.

ALL POWER WIRING FROM PANEL TO DISCONNECT SWITCH SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.

PROVIDE TEMPERATURE CONTROL WIRING, INTERLOCK WIRING, AND EQUIPMENT CONTROL WIRING FOR THE EQUIPMENT PROVIDED UNDER THIS CONTRACT. ALL CONTROL WIRING SHALL BE 24 VOLT, UNLESS OTHERWISE NOTED.

FURNISH FUSES (FOR INSTALLATION BY THE ELECTRICAL CONTRACTOR) FOR EQUIPMENT PURCHASED UNDER THIS DIVISION OF THE SPECIFICATION.

### DISCONNECT SWITCHES

PROVIDE DISCONNECT SWITCHES WHERE NOTED ON SCHEDULES.

### TESTING, ADJUSTING, AND BALANCING

THE CONTRACTOR SHALL EMPLOY A BALANCING CONTRACTOR SPECIALIZING IN TOTAL SYSTEM AIR BALANCING, TESTING, AND COMMISSIONING. THIS BALANCING CONTRACTOR SHALL BE CERTIFIED BY ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) AND SHALL PROVIDE ALL LABOR, ENGINEERING AND TEST EQUIPMENT REQUIRED TO ADJUST AND BALANCE ALL HEATING, VENTILATING, AIR CONDITIONING, AND EXHAUST SYSTEMS HEREAFTER SPECIFIED. ALL PERSONNEL INVOLVED IN THE EXECUTION OF THE WORK UNDER THE BALANCING CONTRACT SHALL BE EXPERIENCED AND FACTORY TRAINED SPECIFICALLY IN THE TOTAL BALANCING OF MECHANICAL SYSTEMS, AS WELL AS BEING REGULAR EMPLOYEES OF THE BALANCING CONTRACTOR.

THE BALANCING CONTRACTOR SHALL INCORPORATE THE FOLLOWING: ADJUST AND BALANCE THE COMPLETE MECHANICAL SYSTEMS INDICATED ON THE DRAWINGS AND SPECIFIED.

RECORD ALL TEST DATA AND SUBMIT FIVE COPIES UPON COMPLETION OF THE BALANCING CONTRACT TO THE OWNER OR HIS REPRESENTATIVE.

INSTALL AT EACH PIECE OF MECHANICAL EQUIPMENT A "DATA REGISTER" SHOWING ALL SIGNIFICANT OPERATING TEMPERATURES, PRESSURES, AMPERES, VOLTAGE, BRAKE HORSEPOWER, ETC. "DATA REGISTER" TO BE ENCLOSED IN VINYL FOLDER SECURELY ATTACHED TO THE EQUIPMENT OR WALL IN THE IMMEDIATE AREA.

ALL TEST EQUIPMENT SHALL BE FURNISHED BY THE BALANCING CONTRACTOR AND REMAINS HIS PROPERTY. ALL INSTRUMENTS SHALL HAVE BEEN CALIBRATED RECENTLY AND VERIFICATION OF CALIBRATION SHALL BE PROVIDED WITH SUBMITTAL DATA.

TESTING AND BALANCING SHALL NOT BEGIN UNTIL THE SYSTEM HAS BEEN COMPLETED AND IS IN FULL WORKING ORDER WITH ALL FILTERS INSTALLED IN AIR SYSTEMS AND STRAINERS HAVE BEEN CLEANED IN HYDRONIC SYSTEMS. THE CONTRACTOR SHALL PUT ALL HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS AND EQUIPMENT INTO FULL OPERATION. CORRECT OPERATION OF EQUIPMENT AND SYSTEM COMPONENTS, AND CLEANLINESS OF PIPING AND DUCTWORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

ADJUST ALL SYSTEMS TO PLUS OR MINUS 10 PERCENT OF THE FIGURES INDICATED ON THE DRAWINGS.

### DUCTWORK

DUCTWORK FITTINGS, REINFORCEMENT, HANGERS, ETC. SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA. SIZES SHOWN ON DRAWINGS SHALL BE CLEAR INSIDE DIMENSIONS. ALL DUCTWORK SHALL BE GALVANIZED STEEL WITH EXTERNAL INSULATION UNLESS NOTED OTHERWISE.

SQUARE ELBOWS SHALL HAVE TURNING VANES. DUCTS SHALL BE SEALED AIR TIGHT TO SMACNA CLASS A. DUCT DEVICES SHALL BE CONSTRUCTED OF THE SAME MATERIAL AS THE DUCT IN WHICH THEY ARE INSTALLED. SUPPLY AIR, OUTSIDE AIR, RETURN AIR, AND EXHAUST AIR DUCTWORK SHALL BE GALVANIZED STEEL. DUCTWORK SHALL BE CONSTRUCTED FOR PRESSURES UP TO 2 INCHES W.G. UNLESS NOTED OTHERWISE.

DUCTWORK SHALL BE MECHANICALLY JOINTED AND SEALED WITH PRECISION No. E26010 DUCT SEALANT OR APPROVED EQUIVALENT.

### DUCT ACCESSORIES

BALANCING DAMPERS: PROVIDE MANUAL BALANCING DAMPERS AS NOTED ON THE DRAWINGS TO PROPERLY BALANCE THE AIR SYSTEMS. CONSTRUCTION OF DAMPERS SHALL CONFORM TO SMACNA STANDARDS. THE INTENDED OPERATING PRESSURE RANGE, DAMPERS SHALL BE RUSKIN MODEL MD35 OR EQUAL. BALANCING DAMPERS SHALL BE OF THE SAME MATERIAL AS THE DUCT IN WHICH THEY ARE INSTALLED. DAMPERS SHALL BE 2 GAGES HEAVIER THAN THE DUCTWORK IN WHICH THEY ARE INSTALLED. DAMPERS IN SQUARE OR RECTANGULAR DUCTS SHALL BE MULTIPLE OPPOSED BLADE TYPE. DAMPERS SHALL BE COMPLETE WITH LOCKING QUADRANTS AND ACCESSIBLE MECHANISMS ON EXTERNALLY INSULATED DUCTS. MOUNT LOCKING QUADRANTS ON STAND-OFF MOUNTING BRACKETS. BASES, OR ADAPTERS, DAMPERS SHALL BE OPPOSED BLADE TYPE, BLADES SHALL NOT EXCEED 6 INCHES IN WIDTH. DAMPERS SHALL BE COMPLETE FACTORY MANUFACTURED AND ASSEMBLED UNITS. CONTRACTOR FABRICATED DAMPERS ARE NOT ACCEPTABLE.

SPIN COLLARS: SPIN COLLARS SHALL BE FABRICATED OF THE SAME MATERIAL AS THE DUCT IN WHICH THEY ARE INSTALLED. SPIN COLLARS SHALL BE COMPLETE WITH AN AIR EXTRACTOR AND A BALANCING DAMPER WITH A POSITIVE LOCKING DEVICE FOR EASY READJUSTMENT. SPIN COLLARS SHALL INCLUDE STAND-OFF MOUNTING BRACKETS, BASES, OR ADAPTER FOR LOCKING QUADRANT MOUNTING ON EXTERNALLY INSULATED DUCTS.

FLEXIBLE DUCTS: INSULATED FLEXIBLE DUCTS SHALL BE TWO PLY VINYL FILM SUPPORTED BY HELICAL WOUND SPRING STEEL WIRE; FIBERGLASS INSULATION; POLYETHYLENE VAPOR BARRIER FILM WITH 10 INCHES WG POSITIVE AND 2.0 INCHES WG NEGATIVE PRESSURE RATING. PROVIDE DRAW BANDS AS REQUIRED FOR INSTALLATION. FLEXIBLE DUCTS SHALL BE SUPPORTED AT MANUFACTURER'S RECOMMENDED INTERVALS. FLEXIBLE DUCTS SHALL BE INSTALLED TO PROVIDE UNOBSTRUCTED PASSAGE FOR AIR FLOW. ELBOWS SHALL BE MADE WITH AN INSIDE RADIUS EQUAL TO THE DUCT DIAMETER. HANGER AND SADDLE MATERIAL IN CONTACT WITH THE FLEXIBLE DUCT SHALL BE OF SUFFICIENT WIDTH TO PREVENT ANY RESTRICTION OF THE INTERNAL DIAMETER OF THE DUCT WHEN THE WEIGHT OF THE SUPPORTED SECTION RESTS ON THE HANGER OR SADDLE MATERIAL. FLEXIBLE DUCTWORK LENGTHS SHALL NOT EXCEED EIGHT FEET IN LENGTH. MATERIAL SHALL BE NFPA APPROVED.

FLEXIBLE CONNECTIONS: CONNECTIONS AT FAN AND AIR SUPPLY UNITS, BOTH AT INLET AND DISCHARGE, SHALL BE MADE WITH FLEXIBLE MATERIAL SO AS TO PROHIBIT THE TRANSFER OF VIBRATION FROM FANS TO CONNECTING DUCTWORK. WITHOUT AIR LEAKAGE, THE FLEXIBLE MATERIAL SHALL HAVE SUFFICIENT SLACK SO AS TO PREVENT TEARING DUE TO FAN MOVEMENT.

MOTORIZED DAMPERS: MOTORIZED DAMPER SHALL BE RUSKIN MODEL CD35 OR EQUIVALENT WITH BELIMO ACTUATOR MODEL AF24. END SWITCH SHALL BE 24V.

### ACCESS DOORS

FURNISH EACH ACCESS DOOR ASSEMBLY MANUFACTURED AS AN INTEGRAL UNIT, COMPLETE WITH ALL PARTS AND READY FOR INSTALLATION AS REQUIRED. INSTALL ACCESS DOORS WHERE INDICATED AND/OR DETAILED.

### EQUIPMENT

INSTALL HVAC EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. ALL EQUIPMENT SHALL BE AS SPECIFIED OR NOTED ON DRAWINGS AND SCHEDULES.

### EQUIPMENT AND PIPING IDENTIFICATION

ALL MECHANICAL EQUIPMENT SHALL BE IDENTIFIED BY THE NAME AND IDENTIFICATION SHOWN IN THE SCHEDULES ON THE DRAWINGS. TAGS SHALL BE 1-1/2 INCHES BY 4 INCHES ENGRAVED ALUMINUM NAMEPLATES WITH BLACK ENAMEL BACKGROUND AND NATURAL ALUMINUM BORDER AND LETTERS. SIZE OF LETTERS SHALL BE SELECTED TO SUIT EACH APPLICATION. NAMEPLATES SHALL BE SECURELY AND PERMANENTLY MOUNTED.

ALL PIPING SHALL BE IDENTIFIED BY TYPE AND DIRECTION OF FLOW. PIPE IDENTIFICATION SHALL BE SELF-ADHERING STRIPS PLACED ON PIPING OR INSULATION AS MANUFACTURED BY SETON CORP. OR APPROVED EQUIVALENT. PIPE IDENTIFICATION SHALL BE PLACED AT MINIMUM 20 FOOT INTERVALS ON STRAIGHT PIPE, AT EACH EQUIPMENT CONNECTION, AND AT EACH CHANGE IN DIRECTION.

### GRILLES/REGISTERS/DIFFUSERS

GRILLES, REGISTERS, AND DIFFUSERS SHALL BE FACTORY FABRICATED AND CONSTRUCTED OF ALUMINUM. DIFFUSERS SHALL HAVE FIXED OR ADJUSTABLE AIR DISCHARGE PATTERN AS SCHEDULED.

GRILLES, REGISTERS, AND DIFFUSERS BORDERS SHALL BE COORDINATED WITH CEILING GRID OR CEILING TYPE TO INSURE FLUSH FIT WITHOUT GAPS AROUND BORDER. COORDINATE ALL GRID COLORS WITH ARCHITECT PRIOR TO RELEASE.

GRILLES, REGISTERS, AND DIFFUSERS SHALL BE AS SCHEDULED.

### FILTER

HEATING AND AIR CONDITIONING SYSTEMS OF THE CENTRAL TYPE SHALL BE PROVIDED WITH APPROVED AIR FILTERS. FILTERS SHALL BE INSTALLED IN THE RETURN AIR SYSTEM UPSTREAM FROM ANY HEAT EXCHANGER OR COIL IN AN APPROVED CONVENIENT LOCATION. LIQUID ADHESIVE COATINGS USED ON FILTERS SHALL HAVE A FLASH POINT NOT LOWER THAN 25° F.

### INSULATION

INSULATION SHALL BE PROVIDED CONTINUOUSLY THROUGH SLEEVES AND OPENINGS.

TESTING OF DUCTWORK OR PIPING SHALL BE COMPLETE BEFORE INSULATION ON THE EXTERIOR OF THE DUCT OR PIPE IS APPLIED.

INSULATION SHALL STOP AT FIRE DAMPERS AND AT ELECTRIC DUCT HEATERS. ALL EXPOSED ENDS OF INSULATION SHALL BE SEALED OR LAPPED WITH VAPOR BARRIER.

ALL INTERIOR SUPPLY AND RETURN DUCTWORK SHALL BE EXTERNALLY INSULATED WITH 1.5 POUND DENSITY JACKETED FIBERGLASS BATT INSULATION, 1-1/2" THICK, WITH A MINIMUM INSTALLED R-VALUE OF 6.0. ALL DUCTWORK INSULATION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS, AND A SMOKE DEVELOPED RATING OF 50 OR LESS IN ACCORDANCE WITH ASTM E84.

ALL OUTSIDE AIR DUCTWORK SHALL BE EXTERNALLY INSULATED WITH 3/8 POUND DENSITY JACKETED FIBERGLASS BATT INSULATION, 1-1/2" THICK WITH A MINIMUM INSTALLED R-VALUE OF 6.0. ALL DUCTWORK INSULATION SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS, AND A SMOKE DEVELOPED RATING OF 50 OR LESS IN ACCORDANCE WITH ASTM E84.

FOR ALL OUTSIDE DUCTWORK OR DUCTWORK EXPOSED TO AMBIENT CONDITIONS IN MECHANICAL ROOMS, PENTHOUSES, ETC., INCREASE INSULATION THICKNESS TO PROVIDE A MINIMUM R-VALUE OF 8.0.

PIPE INSULATION SHALL CONFORM TO RECOMMENDATIONS OF THE NFPA AND SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURES ASTM E-84. NFPA 255, OR UL-723, NOT EXCEEDING FLAME SPREAD 25 AND SMOKE DEVELOPED 50.

ALL CONDENSATE PIPING SHALL BE INSULATED WITH ARMAFLEX AP 1/2" CLOSED-CELL FOAM INSULATION OR APPROVED EQUIVALENT.

ALL REFRIGERATION PIPING SHALL BE INSULATED WITH ARMAFLEX AP 1/2" CLOSED-CELL FOAM INSULATION OR APPROVED EQUIVALENT.

ALL HEATING WATER PIPING WITH A NOMINAL DIAMETER OF 1 1/2" OR LESS SHALL HAVE A MINIMUM 1/2" MICRO-LOK™ FIBERGLASS INSULATION WITH VAPOR BARRIER. HEATING WATER PIPING GREATER THAN 1 1/2" NOMINAL DIAMETER SHALL HAVE A MINIMUM 2" MICRO-LOK™ FIBERGLASS INSULATION WITH VAPOR BARRIER.

FOR ALL PIPING EXPOSED TO AMBIENT CONDITIONS IN MECHANICAL ROOMS, PENTHOUSES OR OUTSIDE, INCREASE INSULATION THICKNESS BY 1/2".

SEAL ALL BUILDING ENVELOPE PENETRATIONS WITH SHEET METAL FLASHING AND SILICONE CAULKING.

### AUTOMATIC TEMPERATURE CONTROLS (ATC)

ALL CONTROLS, SENSORS, THERMOSTATS, AND ASSOCIATED WIRING SHALL BE PROVIDED BY AN A.T.C. CONTRACTOR AS DETERMINED BY THE BASE BUILDING OWNER. CONTRACTOR TO PROVIDE ALL CONTROLS, SENSORS, THERMOSTATS, CONTRACTORS, RELAYS, AND ASSOCIATED WIRING TO PROVIDE A FULLY OPERATING CONTROL SYSTEM.

THE EXISTING CONTROL SYSTEM SHALL BE EXTENDED AS REQUIRED TO MEET THE REQUIREMENTS OF THE SEQUENCE OF OPERATIONS. SYSTEM SHALL BE COMPLETE IN ALL RESPECTS AND SHALL BE INSTALLED BY AUTHORIZED REPRESENTATIVES IN THE DIRECT EMPLOY OF THE CONTROL MANUFACTURER. ALL ELECTRIC WIRING ASSOCIATED WITH THE AUTOMATIC TEMPERATURE CONTROL SYSTEM, EXCEPT WHERE SPECIFICALLY DETAILED AS PART OF THE ELECTRICAL CONTRACT, SHALL BE PROVIDED BY CONTROL MANUFACTURER.

THE CONTROL MANUFACTURER SHALL GUARANTEE ALL EQUIPMENT FURNISHED BY HIM AGAINST DEFECTS FOR A PERIOD OF THREE YEARS AND SHALL KEEP THE CONTROL SYSTEM IN ADJUSTMENT THROUGHOUT THE FIRST COMPLETE HEATING AND COOLING SEASONS, WITHOUT EXPENSE TO THE OWNER.

PROVIDE NEW DDC THERMOSTATS WHERE INDICATED ON THE DRAWINGS.

PROVIDE SUPPLY & RETURN AIR SMOKE DETECTORS.

### PIPES AND ACCESSORIES

VALVES 2-1/2" AND SMALLER FOR SHUT-OFF AND BALANCING SERVICE, SHALL BE BALL VALVES.

VALVES 2-1/2" AND SMALLER FOR SHUT-OFF, SHALL BE FULL PORT BALL VALVES, RATED FOR 150 PSI SWP AND 800 PSI NON-SHOCK CWP WITH 2 PIECE CAST BRONZE BODIES, TEE SEATS, STANDARD PORT, SEPARATE PACKNUT WITH ADJUSTABLE STEM PACKING AND CHROME-PLATED BRASS/BRONZE BALL.

BALANCING VALVES SHALL BE BELL AND GOSSETT CALIBRATED BALANCE VALVES.

CHECK VALVES 2-1/2" AND SMALLER SHALL BE Y-PATTERN SWING TYPE MANUFACTURED IN ACCORDANCE WITH MSS-SP80, CLASS 125, BRONZE ASTM B 62 BODY WITH TPE SEAT DISC. Y STRAINERS SHALL BE ASTM B584 OR B62 BRONZE WITH THREADED OR SOLDER END CONNECTIONS AND .033 INCH PERFORATED TYPE 304 STAINLESS STEEL SCREEN OR 20 MESH TYPE 304 STAINLESS STEEL SCREEN ACCESSIBLE WITHOUT REMOVING THE STRAINER FROM THE LINE.

PRESSURE GAUGES SHALL BE GLYCERIN FILLED, 4-1/2-INCH NOMINAL DIAMETER, BRASS CONNECTION WITH ASME B1.20.1 PIPE THREADS AND BOTTOM-OUTLET, GLASS WINDOW, STAINLESS STEEL RING, PLUS OR MINUS 2 PERCENT ACCURACY.

TEMPERATURE GAUGES SHALL BE LIQUID FILLED THERMOMETERS WITH 9° GRADUATION. CASE SHALL BE RECTANGULAR RIGID TYPE WITH ADJUSTABLE JOINT, TUBE AND CAPILLARY SHALL BE LIQUID FILLED WITH MANUFYING LENS. THERMOMETER RANGE SHALL BE 30 TO 240°F. PROVIDE SEPARABLE STAINLESS STEEL WELL WITH EACH GAUGE AND INSTALL WITH HEAT CONDUCTING FLUID IN THERMAL WELLS.

ALL CONDENSATE DRAIN PIPING SHALL BE COPPER ASTM B-88 HARD TEMPER TYPE (L), FITTINGS SHALL BE WROUGHT COPPER SOLDER JOINT, ANSI B16.18.

HEATING WATER PIPING 2" AND SMALLER SHALL BE HARD COPPER TUBE, ASTM B88, TYPE L WITH CAST COPPER ALLOY; ASME B16.18 OR WROUGHT COPPER, ASME B16.22 FITTINGS WITH ASTM B32 SOLDERED JOINTS OR BLACK STEEL PIPE, ASTM A53, TYPE S, GRADE B, SCHEDULE 40 WITH MALLEABLE IRON THREADED FITTINGS, ASME B16.3, CLASS 150, ASME B1.20.1 THREADS.

### REFRIGERANT PIPING

ALL REFRIGERANT PIPING SHALL BE HARD-DRAWN (TEMPERED) COPPER TUBE, TYPE L ACR. ALL PIPING JOINTS SHALL BE BRAZED WITH SILFOS 15 FILLER METAL AND THE PIPING CHARGED WITH DRY NITROGEN WHILE CONSTRUCTING THE JOINTS. ALL PIPING SHALL BE SUPPORTED WITH CUSH A CLAMPS AND STRUT AS MANUFACTURED BY B-LINE, INC. OR APPROVED EQUAL. ALL SUCTION PIPING SHALL BE INSULATED. ALL REFRIGERANT PIPING SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE REFRIGERANT EQUIPMENT MANUFACTURER AND SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO, FLEXIBLE CONNECTIONS, VALVES, RELIEF VALVES, EXPANSION VALVES, SOLENOID VALVES, FILTER DRIERS, PIPE INSULATION, FLASHING AND SLEEVES THROUGH WALLS, PROPER SUPPORT OF REFRIGERANT PIPING, AND FULL REFRIGERANT CHARGE. PITCH REFRIGERATION PIPING IN DIRECTION OF OIL RETURN TO COMPRESSOR. PROVIDE TRAPS IN SUCTION LINE RISERS WHERE INDICATED OR REQUIRED. TRAPS SHALL BE FABRICATED FROM SHORT RADIUS STREET ELLS. ALL OTHER ELLS SHALL BE LONG RADIUS TYPE. SOLENOID VALVES SHALL BE INSTALLED WITH STEMS POINTING UP. AFTER THE REFRIGERANT PIPING HAS BEEN COMPLETED, THE SYSTEM SHALL BE PRESSURE TESTED AT PRESSURES SPECIFIED BY THE EQUIPMENT MANUFACTURER. THIS PRESSURE SHALL BE MAINTAINED ON THE SYSTEM FOR 12 CONSECUTIVE HOURS WITH NO APPRECIABLE PRESSURE CHANGE. WHILE THE PRESSURE IS APPLIED, THE SYSTEM SHALL BE CHECKED FOR LEAKS. THE SYSTEM SHALL THEN BE EVACUATED TO A MINIMUM VACUUM EQUIVALENT OF 500 MICRONS AND MAINTAINED FOR 12 HOURS. RELEASE VACUUM WITH NITROGEN AND EVACUATE AGAIN. AFTER EVACUATION, THE SYSTEM SHALL BE CHARGED WITH REFRIGERANT IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE EQUIPMENT MANUFACTURER.

### SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

SHOP DRAWING AND SUBMITTAL SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND PRODUCT DATA FOR EACH ELEMENT OF CONSTRUCTION AND TYPE OF PRODUCT OR EQUIPMENT. CONTRACTOR SHALL SUBMIT FIVE COPIES OF EACH SHOP DRAWING, PRODUCT DATA AND SAMPLE.

SUBMITTALS SHALL INCLUDE INFORMATION REGARDING PRODUCTS, OPTIONS, MANUFACTURER'S RECOMMENDATIONS, PRODUCT SPECIFICATIONS, CATALOG CUTS, PERFORMANCE DATA, COMPLIANCE WITH SPECIFIED STANDARDS, DIMENSIONS, WIRING DIAGRAMS, AND INSTALLED LOCATIONS.

SHOW SIZES AND LOCATIONS, BY DIMENSIONS, OF DUCTS, EQUIPMENT, AND OTHER ITEMS. IDENTIFY MATERIALS AND EQUIPMENT BY DESCRIPTION AND NUMBER. INCLUDE WIRING DIAGRAMS, INSTALLED LOCATIONS AND SIZES, AND OTHER DATA THAT COULD AFFECT WORK BY OTHER TRADES. SHOW MANUFACTURERS' NAMES, TRADE NAMES, CATALOG NUMBERS, ACCESSORIES, SPECIAL FEATURES, AND RATING DATA. INDICATE REQUIRED CLEARANCES FOR OPERATING PARTS, FOR REMOVAL AND REINSTALLING, AND FOR SERVICING. SHOW PERFORMANCE DATA, INCLUDING FAN CURVES AND SOUND POWER LEVELS.

ALL SHOP DRAWINGS AND SUBMITTALS WHICH ARE TO BE PREPARED BY THE VARIOUS SUBCONTRACTORS AND EQUIPMENT SUPPLIERS SHALL FIRST BE SENT TO THE CONTRACTOR FOR CHECKING AND EVENTUAL FORMAL SUBMISSION TO THE ENGINEER. THE CONTRACTOR SHALL CHECK ALL OF THESE DRAWINGS AND SUBMITTALS WITH RESPECT TO MEASUREMENTS, MATERIALS, IDENTIFICATIONS AND DETAILS SO AS TO MAKE CERTAIN THAT THEY CONFORM TO THE INTENT OF THE CONTRACT DOCUMENTS. DRAWINGS AND SUBMITTALS WHICH ARE FOUND TO BE INACCURATE OR OTHERWISE IN ERROR SHALL BE RETURNED BY THE CONTRACTOR TO THE ORIGINATING PARTY FOR CORRECTION BEFORE SUBMISSION TO THE ARCHITECT FOR APPROVAL.

SHEET METAL SHOP DRAWINGS SHALL BE SUBMITTED @ 3/8" = 1" SCALE. SHOP DRAWINGS SHALL INDICATE BOTTOM OF DUCT ELEVATIONS, STEEL LOCATIONS, REFLECTED CEILING PLAN, AND OTHER TRADE WORK SUCH AS LIGHTS, ETC.

### PROJECT CLOSEOUT DOCUMENTS

DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN A RECORD SET OF INSTALLATION PRINTS. HE SHALL RECORD ON THESE PRINTS, ALL DEVIATIONS FROM THE CONTRACT DRAWINGS IN DUCT SIZING, ROUTING, LOCATION AND DETAILS.

AT COMPLETION OF THE WORK, THE CONTRACTOR SHALL FORWARD THESE PRINTS TO THE ENGINEER FOR INCORPORATION INTO THE FINAL AS-BUILT DRAWINGS.

OPERATIONS AND MAINTENANCE DATA: INCLUDE INTERCONNECTION WIRING DIAGRAMS, COMPLETE FIELD INSTALLED SYSTEM WITH IDENTIFIED AND NUMBERED SYSTEM COMPONENTS AND DEVICES. INCLUDE INSPECTION PERIOD, CLEANING METHODS, CLEANING MATERIALS RECOMMENDED, AND CALIBRATION TOLERANCES. PROVIDE OPERATIONS AND MAINTENANCE MANUAL.

WARRANTY: PROVIDE MANUFACTURER'S STANDARD WARRANTY FOR ALL MATERIALS AND EQUIPMENT INSTALLED UNDER THIS SECTION.

DEMONSTRATION: DEMONSTRATE COMPLETE AND OPERATING SYSTEM TO OWNER OR THEIR REPRESENTATIVE. INSTRUCT THE OWNER'S PERSONNEL IN THE PROPER OPERATION OF SYSTEMS.

### OWNER TRAINING

PROVIDE A MINIMUM OF A FOUR (4) HOUR TRAINING SESSION WITH OWNER'S PERSONNEL AT THE COMPLETION OF THE TESTED BALANCING, AND ADJUSTMENT. THE TRAINING SHALL BE PERFORMED BY SPECIFICALLY TRAINED PERSONNEL IN THE DIRECT EMPLOY OF THE MANUFACTURER OF THE PRIMARY TEMPERATURE CONTROL SYSTEM.

### FINAL ADJUSTMENT OF EQUIPMENT

AFTER COMPLETION OF THE INSTALLATION, ADJUST THERMOSTATS, CONTROL VALVES, MOTORS AND SIMILAR EQUIPMENT PROVIDED AS WORK OF THIS SECTION. FINAL ADJUSTMENT SHALL BE PERFORMED BY SPECIFICALLY TRAINED PERSONNEL IN THE DIRECT EMPLOY OF THE MANUFACTURER OF THE PRIMARY TEMPERATURE CONTROL SYSTEM.

MECHANICAL SPECIFICATIONS

WILSON HIGH SCHOOL  
2601 GRANDVIEW BOULEVARD,  
WEST LAWN, PA 17609

DATE:	06/15/2020	DSGN:	MWZ
SCALE:	AS NOTED	CHK:	JBL
DRAWN:	MWZ	APPRD:	JBL
JOB:	1002218,000	P MGR:	JBL
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BARRY  
DISETT &  
associates  
INC.  
610.398.0904  
barry@bdt.com

DATE:	
REVISIONS:	

# **Exhibit B**

## **Document No. 14 - Drawings**

POOL DEHUMIDIFICATION SCHEDULE																												
POOL DEHUMIDIFICATION UNIT																	AIR COOLED FLUID COOLER											
TAG NO.	SERVICE	SPACE TEMP (°F)	POOL WATER TEMP (°F)	SPACE REL. HUMIDITY (SUMMER/WINTER) (%)	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXHAUST AIR CFM	SUPPLY FAN		EXHAUST FAN		SPACE HEATING - HOT WATER COIL						UNIT ELECTRICAL		MANUFACTURER & MODEL	MOISTURE REMOVAL CAPACITY (LBS/HR)	EVAPORATOR COIL				REMARKS		
								ESP ("W.C.)	HP	ESP ("W.C.)	HP	HEATING CAPACITY (MBH)	GPM	MAX. WPD (FT)	EW(°F)	LWT(°F)	EAT(°F)	LAT(°F)	V/PH/HZ			MCA	MOCIP	TOTAL CAPACITY (MBH)	SENS CAPACITY (MBH)		QUANTITY	RLA
EXISTING DH1	POOL	86	84	60 / 50	25,000	5,000	5,500	0.75	(1)Ø12 (1)Ø15	0.5	(2)Ø3	500	40	4.4	180	129	73.3	91.3	480/3/60	156.0	200	SERESCO NP-050	313.7	757.1	491.5	2	50 (EA)	1

REMARKS:  
1. REBALANCE EXISTING UNIT TO CFM'S LISTED.

ENERGY RECOVERY VENTILATOR SCHEDULE																														
TAG NO.	MANUFACTURER	MODEL NO.	EXHAUST				SUPPLY				COOLING COIL (DX)										PREHEATER (KW)	MCA	MOPD	SUMMER % EFF.	WINTER % EFF.	WEIGHT (LBS.)	REMARKS			
			CFM	E.S.P.	FAN HP	V/P/HZ	CFM	E.S.P.	FAN HP	V/P/HZ	EAT DB SUMMER	EAT WB SUMMER	LAT DB SUMMER	LAT WB SUMMER	EAT DB WINTER	LAT DB WINTER	EAT DB	EAT WB	LAT DB	LAT WB								ROWS	SENSIBLE MBH	TOTAL MBH
HRU-2	GREENHECK	ERCH-45-15H	4,200	0.38"	5	480/3/60	4,200	0.5"	7.5	480/3/60	89°F	72°F	86.9°F	72.2°F	13°F	64.8°F	86.9°F	72.2°F	57.6°F	56.9°F	6	135.8	217.5	10	39.4	45	67.2	71.3	2,400	1 THRU 8
HRU-3	GREENHECK	ERCH-45-15H	4,150	0.38"	5	480/3/60	4,150	0.5"	7.5	480/3/60	89°F	72°F	86.9°F	72.2°F	13°F	69.8°F	86.9°F	72.2°F	57.5°F	56.9°F	6	134.5	215.7	10	39.4	45	67.5	71.6	2,300	1 THRU 8
HRU-4	GREENHECK	ERCH-45-15H	3,335	0.38"	2	480/3/60	3,335	0.5"	5	480/3/60	89°F	72°F	86.8°F	72.2°F	13°F	67.7°F	86.9°F	72.2°F	56.1°F	55.7°F	6	112.7	185.1	10	29.9	30	71.8	75.9	2,300	1 THRU 8

REMARKS:  
1. PROVIDE ELECTRIC PREHEAT FROST PROTECTION, LOW AMBIENT CONTROLS.  
2. PROVIDE LOW LEAKAGE, MOTORIZED OUTDOOR AND RETURN AIR DAMPERS.  
3. PROVIDE SUPPLY AND EXHAUST FAN VFD'S FOR MODULATING CONTROL.  
4. PROVIDE OUTDOOR AND EXHAUST AIR FILTERS.  
5. PROVIDE HINGED ACCESS DOORS.  
6. UNIT TO BE ROOF MOUNTED. PROVIDE ROOF CURB.  
7. PROVIDE REMOTE TEMPERATURE AND CO2 SENSOR.  
8. UNIT TO BE CONNECTED TO THE EXISTING BUILDING MANAGEMENT SYSTEM FOR REMOTE MONITORING AND CONTROL.

HOT WATER DUCT COIL SCHEDULE																
TAG NO.	SERVED BY	MANUFACTURER	MODEL NO.	CFM	SIZE	ROWS	FPF	APD	EAT	LAT	MBH	GPM	EWT	LWT	WPD	REMARKS
DC-1	HRU-2	TRANE	D5WB33033	4,200	33"x33"	1	80	0.082"wg	64.8°F	85.0°F	93.2	9.3	180°F	160°F	0.23'	1
DC-2	HRU-3	TRANE	D5WB33033	4,150	33"x33"	1	80	0.080"wg	69.8°F	85.0°F	68.1	6.8	180°F	160°F	0.21'	1
DC-3	HRU-4	TRANE	D5TB15031	3,335	15"x31"	1	110	0.308"wg	67.7°F	85.0°F	62.3	6.2	180°F	160°F	3.86'	1

REMARKS:  
1. INTERLOCK CONTROL VALVE WITH UNIT SERVED.

CONDENSING UNIT SCHEDULE																
TAG NO.	UNIT SERVED	MANUFACTURER	MODEL NO.	TOTAL COOL MBH	NO. CIRCUITS	REFRIG.	AMB TEMP	COMPRESSORS		COND. FANS		V/P/HZ	MCA	MOCIP	OPERATING WEIGHT	REMARKS
								NO.	RLA	NO.	HP					
CU-2	HRU-2	TRANE	TTA240	250.0	1	R410A	95°F	2	16.5/14.8	2	1	480/3/60	40	50	770 LBS	1,2,3,4,5
CU-3	HRU-3	TRANE	TTA240	250.0	1	R410A	95°F	2	16.5/14.8	2	1	480/3/60	40	50	770 LBS	1,2,3,4,5
CU-4	HRU-4	TRANE	TTA180	186.0	1	R410A	95°F	2	12.2/12.2	1	1	480/3/60	32	40	700 LBS	1,2,3,4,5

REMARKS:  
1. PROVIDE ANTI-SHORT CYCLE TIMER, HIGH PRESSURE CONTROL, LOW VOLTAGE PROTECTION, AND CRANKCASE HEATER.  
2. PROVIDE CONCRETE BASE.  
3. LIQUID LINE REFRIGERANT DRYER.  
4. PROVIDE DUAL COMPRESSOR DUAL CIRCUIT CONDENSERS.  
5. PROVIDE, SIZE AND INSTALL REFRIGERANT LINE SETS AS REQUIRED BY THE MANUFACTURER.

GRILLE/DIFFUSER SCHEDULE							
SYMBOL	MANUFACTURER	MODEL NO.	FACE SIZE	DUCT SIZE	PATTERN	CFM RANGE	REMARKS
S1	TITUS	S300FL	16"x6"	AS NOTED	HORIZONTAL	AS LISTED	1,2
R1	TITUS	63FS	42"x90"	AS NOTED	HORIZONTAL	AS LISTED	1,2
R2	TITUS	63FS	48"x90"	AS NOTED	HORIZONTAL	AS LISTED	1,2

REMARKS:  
1. BRANCH DUCTS SIZED TO MATCH DUCT CONNECTION.  
2. HEAVY DUTY, ALUMINUM CONSTRUCTION.

DATE	BY
REVISIONS	

**BARRY ISETT & ASSOCIATES**  
MECHANICAL ENGINEERS AND CONSULTANTS

610.398.0904  
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**MECHANICAL SCHEDULES**

WILSON HIGH SCHOOL  
2601 GRANDVIEW BOULEVARD,  
WEST LAWN, PA 17609

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