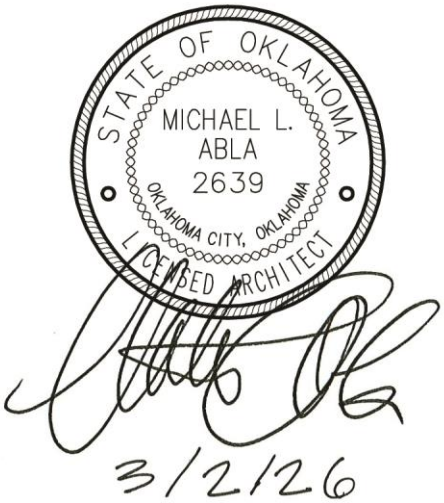
MOORE PUBLIC SCHOOLS -
WAYLAND BONDS ELEMENTARY SCHOOL
2025 HVAC UPGRADES
Moore Public Schools - Moore, Oklahoma
AGP - Moore, Oklahoma

ADDENDUM NO. 4
March 2, 2026



This addendum applicable to work designated herein, shall be understood to be an Addendum, and as such shall be included in the Contract Agreement.

Receipt of this Addendum shall be acknowledged by the Construction Management Firm notifying this office in writing, and by any applicable subcontractor to the CM.

This addendum consists of one (1) page with attachments of six (6) 8.5″x11″ pages and one (1) 24″x36″ sheets.

A. Drawings:

General, Civil, Structural, Architectural, Electrical, and Plumbing

No changes.

Mechanical

Refer to attachments.

B. Specifications:

No changes.

END OF ADDENDUM NO. 4

ADDENDUM 04

Issue Date: March 2, 2026

Project Information

Client: Abla Griffin Partnership
Project Name: Wayland Bonds Elem – HVAC
Project Location: OKC, OK
Owner: Moore Public Schools
Engineer: Salas O'Brien, LLC

Project No. 2550-01871-00

To Prospective Bidders

- This Addendum forms a part of the Contract Documents and modifies the Bidding Documents dated January 28, 2026, (and previous Addenda), with amendments and additions noted below.
- This Addendum consists of (2) pages and (2) attachments.
    - Index of Attachments
        - 23 3 19 – Duct Silencers
        - M601
- Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may disqualify Bidder.

CHANGES TO THE SPECIFICATIONS

- SECTION 23 33 19– Duct Silencers
    - Added in entirety.

CHANGES TO THE DRAWINGS

Revisions have been made to the following drawings and are issued in the form of full-size plans. Edits are indicated by a revision delta and a cloud surrounding the affected portion of the drawing.

- M601 – MECHANICAL SCHEDULES
    - Refer to clouds and deltas for changes on plan.

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Moore, Oklahoma 73160

405.364.9926
salasobrien.com

END OF ADDENDUM [04]

SECTION 23 33 19

DUCT SILENCERS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Furnish and install duct silencers.

1.2 RELATED WORK

A. Division 23 Mechanical.
   1. Ductwork.
   2. Air Balance.

1.4 SUBMITTALS

A. Submittal to submittal drawings detailing all duct silencer data specified in the mechanical drawing schedule.

B. Submittal shall include performance sheet for each air device type. Performance sheet shall include NC levels, throw, and total pressure loss at various air flows.

C. Silencer manufacturer shall submit certified laboratory performance obtained using ASTM E477-13. The laboratory must be NVLAP accredited for the ASTM E477-13 test standard and a copy of the accreditation certificate must be included with submittals. Data from non-NVLAP accredited test facilities is not acceptable.

D. Submitted silencer pressure drops should not exceed those listed in the silencer schedule unless approved by project engineer. Silencer pressure drop measurements shall be made in accordance with ASTM E477-13. 4. Submitted silencer dynamic insertion loss and self-noise data should satisfy values listed in the silencer schedule at the project's air distribution system airflow requirements. ASTM E-477-13 tests to obtain this data shall be conducted in the same facility and utilize the same silencer.

E. Silencer dynamic insertion loss shall not be less than that listed in the silencer schedule unless approved by the project engineer.

F. Silencer generated noise shall not be greater than that listed in the silencer schedule unless approved by the project engineer.

G. The silencer manufacturer shall provide, for approval, acoustic calculations for relevant duct systems with silencers to validate that the submitted silencers will satisfy occupied space design guidelines. Use sound power levels of actual equipment scheduled for installation on project. Acoustic Analysis shall include breakout noise calculations as required. In the absence of specified background noise level criteria, the guidelines outlined in the 2015 ASHRAE Applications Handbook Chapter 48, Table 1 shall apply.

1.4 SHIPPING PROTECTION

A. Silencers shall be shipped with factory-installed end caps

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Vibro-Acoustics.

B. No substitutions.

2.2 GENERAL REQUIREMENTS

A. Silencers shall be of the size, configuration, capacity and acoustic performance as scheduled on the drawings. Silencers shall be fabricated by the same manufacturer.

B. Silencer inlet and outlet connection dimensions must be equal to the duct sizes shown on the drawings. Duct transitions at silencers are not permitted unless shown on the contract drawings or approved by the project engineer.

2.3 CONSTRUCTION

A. Silencers shall be constructed in accordance with ASHRAE and SMACNA Standards for the pressure and velocity classification specified for the air distribution system in which it is installed.

B. Casing seams and joints shall be lock-formed and sealed or stitch welded and sealed except as noted, to provide leakage-resistant construction.

C. Airtight construction shall be achieved by use of a duct-sealing compound supplied and installed by the contractor at the jobsite.

D. Perforated steel shall be adequately stiffened to insure flatness and form. Spot welds shall be painted as required.

E. Fire-Performance Characteristics: Silencer assemblies, including acoustic media fill, natural cotton fiber, sealants and acoustical spacers shall have Class 1 flame spread index not exceeding 25 and smoke-developed index not exceeding 50 when tested according to ASTM E84, NFPA 255 or UL 723.

F. Material gauge thickness:
   1. Material gauges noted in other sections are minimums and shall increase as required for the system pressure and velocity classification.
   2. The silencers shall not fail structurally when subjected to a differential air pressure of 8 inches water gauge.

G. Outer casing shall be ASTM A 653/A 653M, G90 galvanized sheet steel, gauge as listed below:
   1. Rectangular Silencers, including STC-rated models: 22 gauge
   2. Rectangular Elbow Silencers: 22 gauge
   3. Circular Silencers:
      a. For units up to 20 inches in diameter: 22 gauge
      b. For units 21 through 44 inches in diameter: 18 gauge
      c. For units over 44 inches in Diameter: 16 gauge
      d. Transitional Silencers: 22 gauge

J. Inner perforated metal liner shall be supplied in accordance with ASTM A 653/A 653M, G90 galvanized sheet steel in the following gauge thicknesses according to silencer type

or connection size:

1. Rectangular Silencers: 22 gauge
2. Rectangular Elbow Silencers: 22 gauge
3. Circular Silencers: 22 gauge
4. Transitional Silencers: 22 gauge

K. Principal Sound-Absorbing Mechanism:

1. Packless (No-Media) Silencers:
   a. Models shall not contain absorptive media. Attenuation shall be achieved with controlled impedance membranes and broadly tuned resonators.
2. Absorptive (Dissipative) and Film Lined Silencers:
   a. Standard Acoustic media:
      1) Media shall be of acoustic quality, shot-free glass fiber insulation with long, resilient fibers bonded with a thermosetting resin. Glass fiber density and compression shall be as required to insure conformance with laboratory test data.
      2) Media shall be packed with a minimum of 15% compression during silencer assembly.
      3) Media shall be resilient such that it will not pull apart during normal applications, and shall resist settling, breakdown, and sagging from vibration. Media shall not rot, mildew, or otherwise deteriorate, and shall have sufficient flexibility to readily form around corners and curved surfaces.
      4) Media shall not cause or accelerate corrosion of aluminum or steel.
   b. Natural cotton and film lined natural cotton:
      1) Media shall be natural cotton fibers treated with an EPA registered, non-toxic borate solution, and “flash dried” to actively inhibit the growth of mold, mildew, bacteria, and fungi.
      2) Media shall not contain formaldehydes, phenolic resins or Volatile Organic Compounds (VOC’s) that can off-gas and/or cause health concerns.
      3) Media shall be 100% recyclable and comply with UL181 and NFPA 90A. Insulation shall be packed with a minimum of 15% compression during silencer assembly.
      4) Media shall not cause or accelerate corrosion of aluminum or steel. Glass fiber, fiberglass and mineral wool are not permitted as a substitute for natural cotton.

L. Media Protection:

1. Dissipative silencers:
   a. Where indicated on the silencer schedule, media shall be encapsulated in glass fiber cloth to help prevent shedding, erosion and impregnation of the glass fiber.
   b. Axial Fan silencers shall have a glass fiber cloth liner.
2. Film Lined silencers:
   a. The acoustic media shall be completely wrapped with polymer film to help prevent shedding, erosion and impregnation.
   b. The wrapped acoustic media shall be separated from the perforated metal by a factory-installed acoustically transparent spacer.
   c. The spacer shall be flame retardant and erosion resistant.
   d. Mesh, screen or corrugated perforated liner will not be acceptable as a substitute for the specified spacer.
   e. Silencer manufacturer shall provide a written test report showing silencer assemblies have Class 1 flame-spread index not exceeding 25 and smoke-developed index not exceeding 50 when tested according to

ASTM E 84, NFPA 255 or UL 723.

3. HTL Casings:
   a. Where indicated on the silencer schedule, silencers shall have high transmission loss (HTL) walls externally applied and completely sealed to the silencer casing by the silencer manufacturer.
   b. If requested by the project engineer, relevant breakout noise calculations shall be provided to ensure compliance with the relevant room noise criteria that are based on the sound power levels of the specified equipment.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install silencer according to manufacturer’s written installation instructions.

3.2 FIELD QUALITY CONTROL

A. Ensure duct silencers are installed with airflow arrows in direction of airflow.

END OF SECTION

WATER SOURCE HEAT PUMP UNIT SCHEDULE

UNIT	TYPE	AIRFLOW CFM	FAN DATA EXTERNAL S.P. (IN. W.G.)	SENSIBLE CAPACITY (MBH)	TOTAL CAPACITY (MBH)	COIL DATA EAT (°F) DB	EAT (°F) WB	LAT (°F) DB	LAT (°F) WB	HEATING TOTAL CAPACITY	HEATING EAT.DB	HEATING NUM. OF STAGES	HEATING LAT.DB	CONDENSER DATA COOLING EWT (°F)	COOLING LWT (°F)	COOLING ΔP (FT. WG)	COOLING GPM	HEATING EWT	HEATING LWT	HEATING ΔP (FT. WG)	SINGLE POINT POWER CONNECTION MCA	MOCP	V	PH	SEER	C.O.P.	MANUFACTURER	MODEL NUMBER	WEIGHT	REMARKS
WSHP-1	HORIZONTAL	1760	0.66	43.4	57.0	75	63	52	51	55.0	72	1	101	90	101	6.10	13	50	43	7.80	16	20	480	3	14.8	4.3	CLIMATE MASTER	SE-060	475.00	1-6
WSHP-2	HORIZONTAL	1880	0.49	44.7	58.2	75	63	53	52	56.0	72	1	100	90	101	6.10	13	50	43	7.80	16	20	480	3	14.6	4.3	CLIMATE MASTER	SE-060	475.00	1-6
WSHP-3	HORIZONTAL	1100	0.34	42.4	35.1	75	63	55	51.7	36.7	72	1	103	90	102	4.00	8	50	42	4.60	16	25	277	1	15.3	4.7	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-4	HORIZONTAL	850	0.20	21.2	34.2	75	63	51.9	48.3	35.3	72	1	110	90	101	4.00	8	50	42	4.60	14	20	277	1	16	4.5	CLIMATE MASTER	SE-024	360.00	1-6
WSHP-5	HORIZONTAL	730	0.16	16.4	23.4	75	63	54	51.6	24.0	72	1	103	90	102	0.80	5	50	43	1.20	14	20	277	1	14	4.4	CLIMATE MASTER	SE-024	298.00	1-6
WSHP-6	HORIZONTAL	870	0.56	21.2	34.1	75	63	51.9	48.3	35.3	72	1	110	90	101	4.00	8	50	43	4.60	16	25	277	1	16	4.5	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-7	HORIZONTAL	1480	0.23	36.0	49.0	80	66	58	55	60.0	68	1	105	86	98	4.40	10	68	58	4.50	16	20	480	3	15.6	5.1	CLIMATE MASTER	SE-048	450.00	1-6
WSHP-8	HORIZONTAL	1250	0.34	24.7	35.7	75	63	56.7	53	37.6	72	1	100	90	102	4.00	8	50	42	4.60	16	25	277	1	14.9	4.9	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-9	HORIZONTAL	1530	0.88	32.6	46.3	75	63	55	52	48.0	72	1	101	90	101	4.40	10	50	42	4.80	16	20	480	3	14.2	4.4	CLIMATE MASTER	SE-048	450.00	1-6
WSHP-10	HORIZONTAL	1545	0.13	32.7	46.3	75	63	55	52	48.0	72	1	101	90	101	4.40	10	50	42	4.80	16	20	480	3	14.2	4.4	CLIMATE MASTER	SE-048	450.00	1-6
WSHP-11	HORIZONTAL	4360	0.26	85.4	115.0	75	63	57	54	127.8	72	1	99	90	102	12.80	25	50	43	14.30	23	30	480	3	11.2	3.8	CLIMATE MASTER	SE-120	700.00	1-6
WSHP-12	HORIZONTAL	4450	0.22	86.0	115.0	75	63	57	54	128.0	72	1	99	90	102	12.80	25	50	43	14.30	23	30	480	3	11.2	3.8	CLIMATE MASTER	SE-120	700.00	1-6
WSHP-14	HORIZONTAL	1200	0.43	24.3	35.5	75	63	56.3	52.6	37.3	72	1	101	90	102	4.00	8	50	42	4.00	17	25	277	1	15	4.8	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-15	HORIZONTAL	3800	0.11	73.6	94.7	75	63	57	54	104.0	72	1	97	90	102	10.40	20	50	42	12.60	16	20	480	3	12.4	4.2	CLIMATE MASTER	SE-096	645.00	1-6
WSHP-16	HORIZONTAL	1975	0.38	45.7	58.5	75	63	53	52	57.0	72	1	100	90	102	6.10	13	50	43	7.80	16	20	480	3	14.5	4.4	CLIMATE MASTER	SE-060	475.00	1-6
WSHP-17	HORIZONTAL	1975	0.38	45.7	58.5	75	63	53	52	57.0	72	1	100	90	102	6.10	13	50	43	7.80	16	20	480	3	14.5	4.4	CLIMATE MASTER	SE-060	475.00	1-6
WSHP-18	HORIZONTAL	2100	0.28	51.4	68.4	75	63	52	51	64.0	72	1	100	90	101	8.70	15	50	44	10.80	16	20	480	3	13.3	3.7	CLIMATE MASTER	SE-072	475.00	1-6
WSHP-19	HORIZONTAL	2100	0.32	51.4	68.4	75	63	52	51	64.0	72	1	100	90	101	8.70	15	50	44	10.80	16	20	480	3	13.3	3.7	CLIMATE MASTER	SE-072	475.00	1-6
WSHP-20	HORIZONTAL	1190	0.44	24.2	35.5	75	63	56.2	52.5	37.2	72	1	101	90	102	4.00	8	50	42	4.60	16	25	277	1	15.1	4.8	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-21	HORIZONTAL	1215	0.41	24.4	35.6	75	63	56.4	52.7	37.4	72	1	101	90	102	4.00	8	50	42	4.60	16	25	277	1	15	4.8	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-23	HORIZONTAL	1100	0.34	23.4	35.1	75	63	55.3	51.7	36.7	72	1	103	90	102	4.00	8	50	42	4.60	16	25	277	1	15.3	4.7	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-25	HORIZONTAL	2945	0.22	64.8	92.2	75	63	55	52	99.0	72	1	103	90	102	10.40	20	50	42	12.60	16	20	480	3	12.4	4.2	CLIMATE MASTER	SE-096	645.00	1-6
WSHP-29	HORIZONTAL	1500	0.20	32.3	46.2	75	63	55	52	48.0	72	1	102	90	101	4.40	10	50	42	4.80	16	20	480	3	14.3	4.3	CLIMATE MASTER	SE-048	450.00	1-6
WSHP-30	HORIZONTAL	1250	0.32	24.7	35.7	75	63	56.7	53	37.6	72	1	100	90	102	4.00	8	50	42	4.60	16	25	277	1	14.9	4.9	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-32	HORIZONTAL	900	0.54	21.6	34.4	75	63	52.7	49.1	35.5	72	1	109	90	101	4.00	8	50	43	4.60	16	25	277	1	15.8	4.6	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-33	HORIZONTAL	900	0.54	21.6	34.4	75	63	52.7	49.1	35.5	72	1	109	90	101	4.00	8	50	43	4.60	16	25	277	1	15.8	4.6	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-34	HORIZONTAL	900	0.54	21.6	34.4	75	63	52.7	49.1	35.5	72	1	109	90	101	4.00	8	50	43	4.60	16	25	277	1	15.8	4.6	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-35	HORIZONTAL	900	0.54	21.6	34.4	75	63	52.7	49.1	35.5	72	1	109	90	101	4.00	8	50	43	4.60	16	25	277	1	15.8	4.6	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-36	HORIZONTAL	900	0.54	21.6	34.4	75	63	52.7	49.1	35.5	72	1	109	90	101	4.00	8	50	43	4.60	16	25	277	1	15.8	4.6	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-37	HORIZONTAL	1250	0.32	24.7	35.7	75	63	56.7	53	37.6	72	1	100	90	102	4.00	8	50	42	4.60	16	25	277	1	14.9	4.9	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-39	HORIZONTAL	960	0.48	22.2	34.6	75	63	53.6	50	35.9	72	1	107	90	101	4.00	8	50	42	4.60	16	25	277	1	15.7	4.6	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-40	HORIZONTAL	800	0.30	17.1	23.7	75	63	55	52.6	24.0	72	1	100	90	102	0.80	5	50	42	1.20	14	20	277	1	13.8	4.5	CLIMATE MASTER	SE-024	298.00	1-6
WSHP-41	HORIZONTAL	800	0.30	17.1	23.7	75	63	55	53	24.0	72	1	100	90	102	0.80	5	50	42	1.20	14	20	277	1	13.8	4.5	CLIMATE MASTER	SE-024	298.00	1-6
WSHP-42	HORIZONTAL	800	0.30	17.1	23.7	75	63	55	53	24.0	72	1	100	90	102	0.80	5	50	42	1.20	14	20	277	1	13.8	4.5	CLIMATE MASTER	SE-024	298.00	1-6
WSHP-43	HORIZONTAL	900	0.54	21.6	34.4	75	63	52.7	49.1	35.5	72	1	109	90	101	4.00	8	50	43	4.60	16	25	277	1	15.8	4.6	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-44	HORIZONTAL	900	0.54	21.6	34.4	75	63	52.7	49.1	35.5	72	1	109	90	101	4.00	8	50	43	4.60	16	25	277	1	15.8	4.6	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-45	HORIZONTAL	900	0.54	21.6	34.4	75	63	52.7	49.1	35.5	72	1	109	90	101	4.00	8	50	43	4.00	16	25	277	1	15.8	4.6	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-46	HORIZONTAL	1250	0.32	24.7	35.7	75	63	56.7	53	37.6	72	1	100	90	102	4.00	8	50	42	4.60	16	25	277	1	14.9	4.9	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-48	HORIZONTAL	960	0.48	22.2	34.6	75	63	53.6	50	35.9	72	1	107	90	101	4.00	8	50	42	4.60	16	25	277	1	15.7	4.6	CLIMATE MASTER	SE-036	360.00	1-6
WSHP-49	HORIZONTAL	800	0.30	17.1	23.7	75	63	55	53	24.0	72	1	100	90	102	0.80	5	50	42	1.20	14	20	277	1	13.8	4.5	CLIMATE MASTER	SE-024	298.00	1-6
WSHP-50	HORIZONTAL	800	0.30	17.1	23.7	75	63	55	53	24.0	72	1	100	90	102	0.80	5	50	42	1.20	14	20	277	1	13.8	4.5	CLIMATE MASTER	SE-024	298.00	1-6
WSHP-51	HORIZONTAL	800	0.30	17.1	23.7	75	63	55	53	24.0	72	1	100	90	102	0.80	5	50	42	1.20	14	20	277	1	13.8	4.5	CLIMATE MASTER	SE-024	298.00	1-6

GENERAL NOTES:
1. EXTERNAL STATIC PRESSURE INCLUDES LOSSES DUE TO DUCTWORK, AIR DEVICES, DAMPERS, AND DUCT MOUNTED HOT WATER COILS WHERE APPLICABLE. DIRTY FILTER AND UNIT CASING MUST BE ADDED TO EXTERNAL STATIC PRESSURE TO OBTAIN TOTAL PRESSURE LOSS. INCREASE HORSEPOWER AS REQUIRED TO MEET YOUR TOTAL PRESSURE LOSS. COORDINATE WITH ELECTRICIAN.
2. MAINTAIN MINIMUM CLEARANCE FOR COIL PULL AS RECOMMENDED BY UNIT MANUFACTURER. MAINTAIN MINIMUM CLEARANCE AS REQUIRED TO OPEN ACCESS AND CONTROL DOORS ON UNIT FOR SERVICE, MAINTENANCE, AND INSPECTION. MAINTAIN MINIMUM ELECTRICAL CLEARANCE AS REQUIRED BY NEC.

REMARKS:
1. UNIT CAPACITIES ARE BASED ON THE ENTERING AIR AND WATER CONDITIONS IN SCHEDULE.
2. MC TO PROVIDE DISCONNECT. EC TO INSTALL DISCONNECT. COORDINATE WITH EC.
3. FIELD VERIFY UNIT ORIENTATION WITH EXISTING DUCTWORK TO MINIMIZED IMPACT TO DUCT CONNECTIONS.
4. PROVIDE WITH ECM MOTOR.
5. PROVIDE WITH MANUFACTURER'S THERMOSTAT AND BACNET CAPABILITY.
6. PROVIDE UNITS WITH HOT GAS REHEAT.

SILENCER SCHEDULE

TAG	SYSTEM	TYPE (NOTE 1)	DIMENSIONS DUCT WIDTH, IN.	DUCT HEIGHT, IN.	LENGTH IN.	AIRFLOW, CFM	MAX DP IN.W.G. (NOTE 3)	NOTES
DS-1	CT-1 DISCHARGE	RD	143	48	36	72932	0.2	1-8
IS-1	CT-1 INLET	RD	143	108	36	72932	0.2	1-8

Notes:
1. TYPE R - RECTANGULAR D - DISSIPATIVE
2. BASIS OF DESIGN MANUFACTURER IS VIBRO-ACOUSTICS. NO MANUFACTURER SUBSTITUTION WILL BE ALLOWED
3. IDEAL PRESSURE DROP AS DETERMINED PER ASTM E477-20 IN A NVLAP-ACCREDITED ACOUSTICAL LABORATORY.
4. SILENCERS SHALL BE SUPPORTED BY MANUFACTURER SUPPLIED STEEL STRUCUTRAL SYSTEM. SUPPORTS SHALL BE INDEPENDENT OF THE TOWER AND ITS SUPPORTS. SILENCER SUPPORTS SHALL NOT IMPEDE ACCESS TO THE COOLING TOWER.
5. MINIMUM DYNAMIC INSERTION LOSS DETERMINED PER ASTM E477-20 IN A NVLAP-ACCREDITED ACOUSTICAL LABORATORY.
6. SILENCER MANUFACTURER SHALL PROVIDE, FOR APPROVAL, PROFESSIONAL ENGINEER STAMPED ACOUSTICAL CALCULATIONS FOR ALL SYSTEMS WITH SILENCERS TO DEMONSTRATE THAT THE RESULTANT DUCTBORNE FAN SOUND LEVELS, INCLUDING AIRBORNE AND BREAKOUT NOISE, MEET THE REQUIRED CRITERIA.
7. SILENCER MANUFACTURER SHALL PROVIDE, FOR APPROVAL, PROFESSIONAL ENGINEER STAMPED PRESSURE DROP CALCULATIONS FOR ALL SYSTEMS WITH SILENCERS TO DEMONSTRATE THAT THE RESULTANT INSTALLED PRESSURE DROP WITH SYSTEM EFFECTS DOES NOT EXCEED SCHEDULED VALUES.
8. DISCHARGE AND INTAKE SILENCER WITH STEEL SUPPORT STRUCTURES TO MEET 50DBA AT PROPERTY LINE 30 FEET AWAY.

PUMP

TAG	SERVICE	TYPE	GPM	HEAD (FT.)	MOTOR HORSE POWER	MAX. RPM	CURRENT CHARAC. V	P	F	MANUFACTURER	MODEL NUMBER	REMARKS
P-3	COOLING TOWER	VERTICAL INLINE	450	35.00	7.50	1800	480	3	60	GRUNDFOS	5012C-4P-7.5HP VLSE	1-4,6
P-4	GEO HEAT EXCHANGER	VERTICAL INLINE	500	35.00	7.50	1800	480	3	60	GRUNDFOS	50707-4P-7.5HP VLSE	1-5

GENERAL NOTES:
1. PUMP IS TO HAVE A NON-OVERLOADING MOTOR.
2. MINIMUM RECOMMENDED CLEARANCE AROUND A PUMP IS 24 INCHES. MAINTAIN MINIMUM CLEARANCES AS REQUIRED FOR SERVICE, MAINTENANCE, AND INSPECTION.

REMARKS:
1. PROVIDE WITH VARIABLE FREQUENCY DRIVE.
2. DISCONNECT PROVIDED BY MC AS PART OF PUMP ASSEMBLY AND INSTALLED BY EC.
3. PROVIDE SHAFT GROUNDING RINGS.
4. PROVIDE CONTROLS COMPATIBLE WITH EXISTING BUILDING AUTOMATION SYSTEM.
5. 100% WATER.
6. 30% GLYCOL.
7. EQUIPMENT TO BE INSTALLED DURING PHASE 1.

CLOSED-CIRCUIT COOLING TOWER

MARK	ENTERING WATER TEMP.(°F)	LEAVING WATER TEMP.(°F)	GPM	WATER PD (FT)	AMBIENT WET BULB TEMP. (°F)	GLYCOL TYPE	GLYCOL	FAN HP	CURRENT V	P	F	MANUFACTURER	MODEL	WEIGHT	REMARKS
CT-1	96.6	85	450	7.25	78	PROPYLENE	30%	25	460	3	60	BAC	FXV-0812B-36T-N	20,417	1-6

REMARKS:
1. PROVIDE WITH VARIABLE FREQUENCY DRIVE.
2. STAINLESS STEEL CONSTRUCTION.
3. MOTOR SHALL BE OUT OF WATER STREAM.
4. PROVIDE WITH LADDERS AND PLATFORMS.
5. PROVIDE WITH 4KW BASIN HEATER.
6. EQUIPMENT TO BE INSTALLED DURING PHASE 1.

PLATE AND FRAME HEAT EXCHANGER

MARK	ACTUAL CAPACITY (BTU/HR)	COOLING TOWER (COLD) SIDE EWT(°F)	LWT(°F)	GPM	PRESSURE DROP (FT.)	GHEX (HOT) SIDE EWT(°F)	LWT(°F)	GPM	PRESSURE DROP (FT.)	MANUFACTURER	MODEL NUMBER	REMARKS
HX-1	2483218	85	97	450	23.0	100	90	500	20.0	MUELLER	AT55X V	1-3

REMARKS:
1. EXCHANGER SHALL MEET OR EXCEED EFFICIENCIES AS OUTLINED IN ASHRAE 90.1.
2. COORDINATE EXACT LOCATION WITH MOORE PUBLIC SCHOOLS PRIOR TO INSTALLATION.
3. EQUIPMENT TO BE INSTALLED DURING PHASE 1.

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CEDAR CREEK
CIVIL

KFC ENGINEERING
STRUCTURAL

SALAS O'BRIEN
MECHANICAL / ELECTRICAL

KF
drawn by

DG
checked by

JANUARY 2026
date

REVISIONS

Δ	DESCRIPTION	DATE
1	ADD 01	02/24/2026
2	ADD 02	02/26/2026
3	ADD 04	03/02/2025

MOORE PUBLIC SCHOOLS

WAYLAND BONDS
2025 HVAC

sheet no:

M601

Salas O'Brien
Oklahoma City
2900 S. Telephone Road, Suite 120
Moore, OK 73160
CA#: 7058 Expiration Date: 06/30/2027
Salas O'Brien Project Number: 2550-01872-00