Tuesday July 29 2025
Addendum #2

23042 Wake County Marbles Boiler Replacement
Wake County
RFB #25-072

This addendum shall become a part of plans and specifications. Contractor shall acknowledge receipt of this addendum in the bid proposal.

ITEM 1 – REVISED BID DATE

a) Refer to attached notice to bidders for revised bid date of 2:00pm August 12th, 2025
b) Additional Mandatory Pre-bid will be held on site at 2:00pm on August 7th, 2025
c) Contractors in attendance at first pre-bid meeting are not required to attend this additional pre-bid to be eligible to bid the project.

ITEM 2 – CHANGES TO DRAWINGS

a) M401 revised to reduce secondary HW controls work. Refer to attached.

ITEM 4 – CHANGES TO SPECIFICATIONS

a) Revised Notice to Bidders

b) 011000 SUMMARY OF WORK
   1) PART 1.4 B
      1.4 B Construction time 60 calendar days.
      This supersedes information distributed in previous addenda.

End of Addendum

Attachments:
Revised Notice to Bidders
M401

NOTICE TO BIDDERS
RFB #25-072

Sealed proposals will be received by Wake County Procurement Services, in Suite 2900, Wake County Justice Center, 301 McDowell Street, Raleigh, NC 27601, up to **2:00 p.m. Tuesday, August 12, 2025**, and immediately thereafter publicly opened and read for providing labor, material and equipment entering into the construction of **Marbles Boiler Replacement**, located in Raleigh, NC. *Please note that the Wake County Justice Center is a secure facility. Please allow sufficient time to pass through the required metal detection and security checks.*

A Mandatory Pre-Bid Conference will be held on **Thursday, August 7, 2025, at 2:00 p.m.** at the project site, Marbles Kid's Museum, 201 E Hargett St, Raleigh, NC 27601. Bidders in attendance should meet at the front entrance and you will be guided to our meeting place. Bidders who have attended previous Mandatory Pre-Bid are not required to attend this conference.

An electronic copy of the contract documents (PDF) may be obtained from the Engineer by sending an email request to Sigma Engineered Solutions, PC bidding@sigmaes.com . Complete contract documents will also be available from the following: The Institute of Economic Development, https://theinstitutenc.org/, info@theinstitutenc.org, (919) 956-8889; Hispanic Contractors Association of the Carolinas (HCAC), https://thehcac.org/, info@hcacarolinas.org, (704) 583-4184; and Construct Connect, http://constructconnect.com, (877) 422-8665.

Wake County provides minorities and women equal opportunity to participate in all aspects of its construction program consistent with NCGS §143-8. Bidders shall comply with the requirements of the Wake County Minority Business Enterprise Program, as outlined in Section 004000 of the Project Manual.

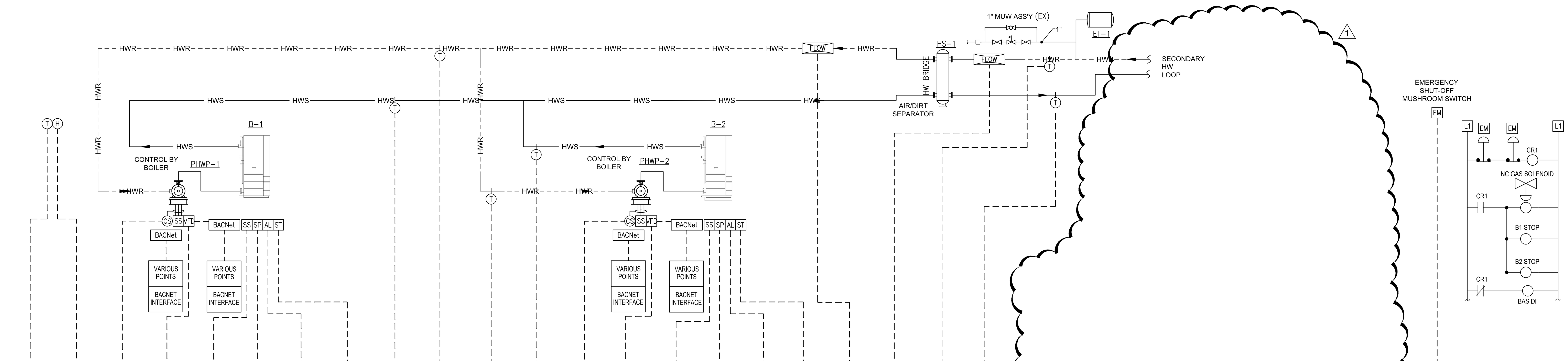
No bid may be withdrawn for sixty (60) days after the scheduled closing time for bids.

The Owner reserves the right to reject any or all bids and to waive informalities.

Signed: COUNTY OF WAKE

By: Roger Ashby PE
Project Manager
Facilities Design & Construction

ENGINEER:
Paul J. Romiti, PE
Sigma Engineered Solutions, PC



OUTSIDE AIR TEMP	OUTSIDE AIR HUMIDITY	PHWP-1 STATUS	PHWP-2 VFD ALARM	BOILER 1 ENABLE	BOILER 1 HWS SETPOINT	BOILER 1 ALARM	BOILER 1 STATUS	BOILER 1 HWS TEMP	BOILER 1 HWR TEMP	BOILER 2 HWR TEMP	BOILER 2 HWS TEMP	PHWP-2 STATUS	PHWP-2 VFD ALARM	BOILER 2 ENABLE	BOILER 2 HWS SETPOINT	BOILER 2 ALARM	BOILER 2 STATUS	PRIMARY FLOW	SECONDARY FLOW	BUILDING HWS TEMP	BUILDING HWR TEMP		BOILER EM SHUT-OFF
ANALOG INPUT	ANALOG INPUT	DIGITAL INPUT	DIGITAL INPUT	DIGITAL OUTPUT	DIGITAL OUTPUT	DIGITAL INPUT	DIGITAL INPUT	ANALOG INPUT	ANALOG INPUT	ANALOG INPUT	ANALOG INPUT	DIGITAL INPUT	DIGITAL INPUT	DIGITAL OUTPUT	ANALOG INPUT	DIGITAL INPUT	DIGITAL INPUT	ANALOG INPUT	ANALOG INPUT	ANALOG INPUT	ANALOG INPUT		DIGITAL INPUT

NOTE: SCHEMATIC TO BE USED FOR AUTOMATED CONTROLS ONLY. SEE DETAIL SHEETS FOR EQUIPMENT INSTALLATION REQUIREMENTS

1 HOT WATER SYSTEM CONTROL SCHEMATIC

CONDENSING BOILER HW SYSTEM – VARIABLE FLOW PRIMARY / VARIABLE FLOW SECONDARY SEQUENCE OF OPERATIONS

1. GENERAL: BAS SHALL CONTROL THE HEATING HOT WATER SYSTEM INCLUDING BOILER ENABLE, SETPOINT. BOILER SHALL CONTROL THE PRIMARY PUMP AND PRIMARY PUMP SPEED.

2. HOT WATER SYSTEM ENABLE: SYSTEM SHALL BE ENABLED WHENEVER
   - 2.1. MANUALLY SELECTED TO RUN BY A MANUAL COMMAND ON THE BAS
   - 2.2. OR, THE OUTSIDE AIR TEMPERATURE IS LESS THAN 50°F
   - 2.3. OR, THERE IS A CALL FOR THE HEATING SYSTEM TO RUN FROM ANY AHU (>=10% HOT WATER VALVE)
   - 2.4. OR, THERE IS A CALL FOR HEATING ON (10%) OR MORE TERMINAL UNITS FOR 10 MINUTES (>=30% HOT WATER VALVE).
   - 2.5. OR, ANY AHU (OR OTHER UNIT) IS TRIPPED DUE TO A FREEZE CONDITION (AUTO OR MANUAL RESET).
   - 2.6. AND, THE EMERGENCY STOP BUTTON IS NOT ENABLED
   - 2.7. AND, THE SYSTEM IS NOT MANUALLY DISABLED BY A COMMAND ON THE BAS.

3. HOT WATER SYSTEM DISABLE: SYSTEM SHALL BE DISABLED WHENEVER
   - 3.1. THE SYSTEM IS MANUALLY DISABLED BY A COMMAND ON THE BAS
   - 3.2. OR, THE EMERGENCY STOP BUTTON IS ENABLED
   - 3.3. OR, THE OUTSIDE AIR TEMPERATURE IS GREATER THAN 70°F AND THERE IS NO CALL FOR THE HEATING SYSTEM TO RUN FROM:ALL AHU HOT WATER VALVES (<5%) FOR 5 MINUTES AND, ALL TERMINAL UNITS HOT WATER VALVE <25% FOR 5 MINUTES

4. PRIMARY PUMP CONTROL
   - 4.1. THE PRIMARY PUMP SHALL BE STARTED VIA AN OUTPUT FROM THE BOILER WHENEVER THE ASSOCIATED BOILER IS ENABLED.
   - 4.2. VFD CONTROL: THE PRIMARY PUMP SPEED WILL BE CONTROLLED BY THE BOILER BASED ON A DELTA T ACROSS THE BOILER.
   - 4.3. VFD INTERFACE: BAS SHALL MONITOR THE VFD VIA BACNET MS/TP. ALL AVAILABLE INFORMATION SHALL BE ACCESSIBLE VIA THE INTERFACE FOR DISPLAY ON THE VFD GRAPHIC. THE VFD ALARM POINT SHALL BE DISPLAYED ON THE MAIN GRAPHIC AND SHALL BE ALARMED VIA THE BAS. ALL OTHER POINTS MAY BE DISPLAYED ON A SEPARATE GRAPHIC THAT IS SELECTED FROM THIS SYSTEM'S GRAPHIC. REFERENCE THE VFD CHART ON THE PROJECT PLANS FOR ADDITIONAL INFORMATION ON POINTS THAT SHOULD BE HARDWIRED VERSUS INTEGRATED THROUGH A DIRECT INTERFACE.
   - 4.4. BAS SHALL MONITOR THE PUMP STATUS.

5. CONDENSING BOILER SYSTEM CONTROL
   - 5.1. ENABLE/DISABLE: WHENEVER THE HOT WATER SYSTEM IS ENABLED, AND A SECONDARY PUMP IS PROVEN, THE BOILER SHALL BE ENABLED AFTER A 1 MINUTE DELAY (ADJ.).
   - 5.2. LEAD/LAG/STANDBY: THE BAS SHALL STAGE THE LAG BOILER ON/OFF AS FOLLOWS:
     - 5.2.1. ENABLE LAG BOILER: THE BAS SHALL ENABLE THE LAG BOILER WHENEVER THE SECONDARY FLOW RATE > 55 GPM (ADJ.) FOR 10 MINUTES.
     - 5.2.2. DISABLE LAG BOILER: THE BAS SHALL DISABLE THE LAG BOILER WHENEVER THE SECONDARY FLOW RATE < 50 GPM (ADJ.) FOR 2 MINUTES'
     - 5.2.3. ENABLE STANDBY BOILER: UPON FAILURE OF THE LEAD OR LAG BOILER, THE BAS SHALL ENABLE THE STANDBY AND ENUNCIATE AN ALARM. BOILER ROTATION SHALL BE ADVANCED WHEN STANDBY BOILER IS CALLED TO RUN.
     - 5.2.4. LEAD BOILER SHALL ROTATE EVERY 7 DAYS.
   - 5.3. HOT WATER BOILER SUPPLY TEMPERATURE SETPOINT: THE BAS SHALL RESET THE BOILER HOT WATER SUPPLY TEMPERATURE SETPOINT VIA A HARD-WIRED ANALOG OUTPUT FROM THE BUILDING AUTOMATION SYSTEM TO THE BOILER.

OUTSIDE AIR TEMPERATURE	HOT WATER SUPPLY TEMPERATURE
20 °F	180 °F
70 °F	100 °F

   - 5.4. ALARM: UPON ALARM OF THE BOILER, THE BAS SHALL ENUNCIATE AN ALARM AT THE BAS.
   - 5.5. E-STOP: UPON ACTIVATION OF THE BOILER ROOM E-STOP, THE BAS SHALL ENUNCIATE AN ALARM AT THE BAS.

Sigma SOLUTIONS

Sigma Engineered Solutions, PC
5909 Falls of Neuse Road
Suite 101
Raleigh, NC 27609
919.840.9300
www.sigmaes.com
NC License #: C-2490
Sigma Project #: 25003

SEALED BY:

MARBLES KID'S MUSEUM BOILER REPLACEMENT
201 E HARGETT ST. WAKE COUNTY FDSC RALEIGHT, NC

REVISIONS:

NO.	DATE	DESCRIPTION
1	7/29/25	ADDENDUM 2

PROJECT MGR: PJR
DESIGNED BY: PJR
DRAWN BY: PJR
PROJECT #: 25003
DATE: 06.25.2025

MECHANICAL CONTROLS SCHEMATIC

M401