On the above date, a core group meeting was held at the Dover Area School District Offices to review the Mechanical, Electrical and Plumbing Systems for Dover Area High School project. Pertinent issues and items of discussion are as follows.

1. A systems questionnaire was handed out and discussed. An edited version is attached with these minutes.
2. Geothermal was discussed and determined not an option due to budget.
3. The entire building will be air-conditioned.
4. The High School will be used year round (major spaces include pool, both gymnasiums, weight room and cardio room).
5. Dehumidification will be provided for the Natatorium. Controls to be integrated into the unit.
6. A 4-pipe system was preferred by DASD. The following systems are in other schools within the district.
   a. Current High School – 4 Pipe
   b. Intermediate School - 2-Pipe, Rooftop VAV (Aaon)
   c. North Salem Elementary School – 4-Pipe
   d. Leib Elementary School – 4-Pipe
   e. Dover Elementary School - Geothermal
   f. Weigelstown Elementary School – Rooftop VAV (Aaon)
7. The Intermediate School has relatively new Benchmark boilers. These shall be relocated to the existing High School during the HS conversion to IS.
8. It was also noted that the IS bleachers are new and in good shape. CRA to investigate if these can be used in the Natatorium or upper Gymnasium (track seating).
9. DASD has had issues with Victaulic piping in the past. MEC to specify strict installation guidelines. Possibly have QA+ provide testing oversight of Victaulic connections. Provide alternate bid for Pro Press.
10. Township water is hard and will need a softener. MEC to facilitate water testing.
11. Plumbing fixtures to be hands free.
12. Grease traps and Acid neutralization tanks to be located outside.
14. Electricity is provided by Met-Ed.
15. TBD if district wide MDF will remain at HS or be relocated to new High School.
16. A fiber interconnect line currently runs between the HS and IS. Run new fiber line from existing HS to new HS. Existing line to remain during construction.

Respectfully submitted,
CRABTREE, ROHRBAUGH & ASSOCIATES

Scott Cousin
Project Manager

cc: Core Group
Dover High School
Initial MEP Discussion
November 2, 2017

The following is a summary of our initial meeting to discuss some MEP preliminary items related to the new high school.

**General Discussion**

1. General feedback:
   a. Are there any specific MEP issues or concerns that Dover Area School District (DASD) wants us to be aware before we start the design effort? **NO SPECIFIC ISSUES NOTED**
   b. What lessons learned should we be aware of on your past projects? **BE SURE TO CONSIDER MAINTENANCE ACCESS FOR UNITS**
   c. Any specific restrictions/requirements related to maintenance and locations of equipment or systems? **ROOFTOP EQUIPMENT IS ACCEPTABLE**
   d. Air conditioning in all areas? **YES**

2. Utilities
   a. Public water available and capacity? **YES – HIGH PRESSURE OF PUBLIC SYSTEM WAS NOTED**
   b. Public Sewer available? **YES**
   c. Natural Gas available? **YES**

3. General Use
   a. How will the building be utilized during a typical school year beyond school? **POOL AND GYM WILL HAVE HEAVY SUMMER USE ON VARYING SCHEDULES**
   b. Will the office be used on a different schedule in the summer than the rest of the building? **NO. THIS AREA CAN BE FED OFF THE CENTRAL HVAC PLANT**
   c. Will the pool be used all year? **YES**

**HVAC Systems**

1. Is there a specific HVAC system that DASD has in mind for the project?
   a. Variable Air Volume Systems
   b. Water Source Heat Pumps
   c. Dedicated outdoor air delivery systems

2. Does DASD prefer chilled water systems or packaged DX cooling systems? **CHILLED WATER**

3. For chilled water systems, is there a preference for the type of chiller?
   a. Air cooled
      i. Lower first cost to install
      ii. Less maintenance requirements
      iii. More exterior noise concerns to address
      iv. Shorter life cycle
   b. Water Cooled
i. Higher first cost
ii. Higher maintenance due to cooling tower
iii. More efficient
iv. Less exterior noise concerns with towers
v. Takes up more space in the building due to indoor chillers and condenser pumps
vi. Longer life cycle

4. Any specific requirements for the boilers? If gas is available, we would normally utilize multiple high efficiency gas boilers. **HIGH EFFICIENCY GAS BOILERS PREFERRED – GOOD SUCCESS WITH AERCO BENCHMARK BOILERS**

5. Specific Manufacturers of HVAC equipment (include and exclude)
   a. Chillers – JOHNSON/YORK, TRANE, DIAKIN ALL NOTED AS ACCEPTABLE
   b. Boilers – AERCO BENCHMARK AS BASIS. PATTERSON KELLEY ACCEPTABLE.
   c. Pumps – NO PREFERENCE NOTED AT MEETING – ARMSTRONG, CRANE, BANDAG NOTED IN EMAIL REPLY.
   d. Cooling Towers
   e. Air Handlers – DO NOT SPECIFY AAON
   f. ATC Control Companies – AUTOMATED LOGIC AS BASIS. ALTERNATES WILL BE DISCUSSED AND CONSIDERED AS THE DESIGN DEVELOPS. TRANE WILL NOT BE LISTED.

6. HVAC Special Systems
   a. Dust collection - YES
   b. Welding - YES
   c. Spray Booth – YES, POSSIBLY TWO BOOTHS
   d. What is in CNC Lab? – INFORMATION WILL BE PROVIDED
   e. Greenhouse prefab or do we need to include heat and ventilation? – PREFAB UNIT WITH ALL MEP SYSTEM INCLUDED IN PACKAGE. CONTRACTORS WILL JUST CONNECT TO CENTRAL ELECTRIC SUPPLY.
   f. Hoods in Science Labs? - YES
   g. Types and quantities of Kilns – TWO ELECTRIC

7. Piping and valves
   a. Victaulic type piping system – YES, ACCEPTABLE
   b. Pro-press piping – YES, ACCEPTABLE
   c. Butterfly and ball valves – YES, ACCEPTABLE

8. Ductwork
   a. Any concerns or comments on how to insulate ductwork? - NO
      i. Fiberglass liner
      ii. Armaflex liner
      iii. Ductwrap
   b. Type of ductwork in exposed areas – Gyms and Pool – **FABRIC DUCTWORK**
**Plumbing**

1. Specific manufacturers for plumbing fixtures
   a. American Standard
   b. Kohler
   c. ZURN

2. Specific manufacturers for faucets
   a. Delta
   b. Chicago
   c. ZURN

3. Specific manufacturers for flush valves
   a. Sloan

4. Water closets
   a. Wall Hung
   b. Hands free
      i. Battery

5. Urinals
   a. Hands free
      i. Battery

6. Lavatories – BRADLEY SINKS
   a. Hands free
      i. Battery

7. Showers – Type and control - BRADLEY

8. Water Heaters
   a. Type preference
      i. High efficiency gas water heater/boiler with separate storage tanks
   b. Manufacturer preference? - RHEEM
   c. Mixing valve manufacturer preference? - Lawler

9. Kitchen
   a. Gas or electric? - GAS
   b. Grease trap – Outside pit type

10. Science labs
    a. Utilities and locations

11. Water softener required for hot water side of the system. MEC will orchestrate a hardness test to size the unit.

12. Pex piping system to be considered if they meet codes.

13. PVC for drain lines where possible.

**Fire Protection**

1. Does the high school have a sprinkler system? Fire Pump? – **YES, FIRE PROTECTION REQUIRED.**
   FLOW TEST TO BE PROVIDED TO VERIFY PUMP REQUIREMENTS.
**Electrical** (A more complete list will be provided at the design kickoff meeting for review and discussion)

1. Do you have a manufacturer preference with the switchgear and panels? – SQUARE D OR EATON CUTLER HAMMER

2. Begin to review and gather information for specialty systems:
   a. Security and access control - DSX
   b. Data and technology
   c. Technology in the classrooms and teaching spaces
   d. Emergency power systems – KOHLER NATURAL GAS
   e. Master clock - BOGEN
   f. Intercom and paging – RAULAND OR BOGAN
   g. Phones – CISCO (VOIP)
   h. Fire alarm – GENERIC (NOTIFIER)
   i. Auditorium sound and lighting
   j. Gymnasium sound systems
   k. LGI sound system
   l. Site lighting and fields