SECTION 23010

HVAC, PLUMBING GENERAL

1.0 GENERAL

1.01 DESCRIPTION

A. This Division 21, 22 and 23 and the accompanying drawings cover the provision of all labor, equipment, appliances, and materials and performing all operations in connection with the construction of the air conditioning, ventilating, and heating systems as specified herein and as shown.

B. The General Provisions and Division 1, including the general, supplementary and other conditions and other Divisions, as appropriate, apply to work specified in this Division.

1.02 EXISTING CONDITIONS

A. Attention is called to the fact that the work is to be performed within an existing, operational facility. Prior to the submission of bids, each bidder shall visit the project site, thoroughly investigate and be familiar with all existing conditions which will affect their work; especially the work to be performed above the existing ceilings.

B. Connect new work to existing work in a neat and workmanlike manner. Where an existing structure must be cut or existing utilities interfere, such obstructions shall be bypassed, removed, replaced or relocated, patched and repaired. Work disturbed or damaged shall be replaced or repaired to its prior condition.

C. Prior to the start of any demolition or construction, secure the services of a qualified, EPA Certified asbestos abatement agency to check the existing insulation, etc. for asbestos. Should asbestos be found, do not proceed with demolition or construction; notify the Architect in any case in writing of the agency's findings.

1.03 INTENT OF DRAWINGS AND SPECIFICATIONS

A. The implied and stated intent of the drawings and specifications is to establish minimum acceptable standards for materials, equipment and workmanship, and to provide operable mechanical systems complete in every respect.

B. The engineering drawings are diagrammatic, intended to show general arrangement and sizes of system components, and shall not be scaled. Rather, the architectural and structural drawings shall govern space constraints, dimensions and finishes. All offsets and fittings which will be necessary to accomplish the finished installation shall be provided at no additional cost or increase in the Contract.

1.04 COORDINATION

A. Coordinate all work under this Division 21, 22 and 23 with work under all other Divisions, providing adjustment as necessary.

1.05 CODE COMPLIANCE

A. All workmanship and materials provided under this Division 23 shall comply with all laws, ordinances, codes and regulations of all Federal, State and Local Authorities having jurisdiction.

B. All fire suppression, plumbing, heating, ventilating, and air conditioning materials and workmanship shall comply with the following codes and standards as minimum requirements:

1. NEC – 2012 edition
2. Life Safety Code (NFPA 101) – 2012 edition.
3. All other NFPA Codes and Standards – 2012 edition.
4. International Building Code – 2009 edition.
5. International Energy Code – 2012 edition.
6. International Fire Prevention Code – 2009 edition.
7. International Mechanical Code – 2009 edition.
8. International Plumbing Code – 2009 edition.
9. American with Disabilities Act.

C. Secure and pay all fees associated with all permits and licenses required for execution of the Contract. Arrange for all inspections required by city, county, state and other authorities having jurisdiction, and deliver certificates of approval to the Architect .

D. The code requirements are strictly a minimum and shall be met without incurring additions to the Contract. Where requirements of the drawings or specifications exceed the code requirements, the work shall be provided in accordance with these drawings or specifications. In the event of conflict or ambiguity between the various codes, the most stringent requirement shall govern.

1.09 FIRE-STOPS

A. Where ductwork, piping, conduit, etc. pass through fire partitions, fire walls and floors, a fire-stop shall be provided that will ensure an effective barrier against the spread of fire, smoke and gases. Fire-stop material shall be packed tight and completely fill gaps between the ductwork, piping, conduit, etc. and the perimeter of their rough openings.

B. Fire-stopping material shall maintain its dimensions and integrity while preventing the passage of flame, smoke and gases under conditions of installation and use when exposed to the ASTM E119 time-temperature curve for a time period equivalent to the rating of the assembly penetrated. Fire-stopping material shall be noncombustible as defined by ASTM E136; and, for insulation materials, melt point shall be a minimum of 1700 degrees F. for 1-hour protection and 1850 degrees F. for 2-hour protection. Fire-stopping material shall be Dow-Corning RTV Foam or 3M Fire Barrier Products or Sohio Carborundum Fyre Putty.

2.0 PRODUCTS

2.01 MINIMUM STANDARDS

A. Every piece of energy consuming equipment, all fire suppression products and life safety equipment shall comply with the following standards as applicable; especially in regard to prevailing codes:

1. Factory Mutual Laboratories (FM)
2. Industrial Risk Insurers (IRI)
3. Underwriters Laboratories, Inc. (UL)
4. ADC: Air Diffusion Council
5. AGA: American Gas Association
6. AMCA: Air Moving and Conditioning Association, Inc.
7. ANSI: American National Standards Institute
8. API: American Petroleum Institute
9. ARI: American Refrigeration Institute
10. ASHRAE: American Society of Heating, Refrigerating and Air Conditioning Engineers
11. ASME: American Society of Mechanical Engineers
12. ASTM: American Society of Testing and Materials
13. AWWA: American Water Works Association
14. IBR: Institute of Boiler and Radiator Manufacturers
15. MSS: Manufacturers Standardization Society
16. NBBPVI: National Board of Boiler and Pressure Vessel Inspectors
17. NEMA: National Electrical Manufacturer's Association
18. OSHA: Occupational Safety & Health Administration
19. PDI: Plumbing Drainage Institute
20. PPI: Plastic Pipe Institute
21. SMACNA: Sheet Metal and Air Conditioning Contractors National Association, Inc.

3.0 EXECUTION

3.01 CLEANING, LUBRICATION AND ADJUSTMENT

A. The exterior surfaces of all mechanical equipment, piping, ductwork, conduit, etc., shall be cleaned and free of all dirt, grease, oil, paint splatter, and other construction debris.

B. Ducts, plenums, and air unit casings shall be cleaned of all debris and either vacuumed or blown free of all all rubbish, dirt, and dust before installing grilles, registers or diffusers.

C. Bearings that require lubrication shall be lubricated in strict accordance with the manufacturers recommendations.

D. All control equipment shall be adjusted to the settings required for the performance specified.

E. Fans shall be adjusted to the speed indicated by the manufacturer to meet the installed final system pressure at the airflows indicated. Any additional sheaves and belts required for final adjustments shall be provided with no increase in the Contract amount.

F. Any fans operated during construction shall have temporary filters. Temporary filters shall be changed regularly to minimize contamination of the equipment and duct systems. Permanent filters shall be installed prior to final inspection.

G. All coils shall be thoroughly cleaned and combed prior to final inspection.

3.06 DUCTWORK AND PIPING LEAK TESTING

A. Underground, concealed and insulated ductwork and piping shall be tested for leaks in place before backfilling, concealing or covering. Tests shall be conducted in the presence of the Architect or his designated representative.

B. All low pressure ductwork (design operating pressure of 1.0" W.C. E.S.P. or less) shall be tested by the operation of the system to which it is connected.

C. All medium and high pressure ductwork (operating pressure of more than 1.0" W.C. E.S.P.) shall be tested at 1.5 times the design operating pressure of the system to which it is connected, or at the total fan pressure at shut-off, whichever is greater.

D. All visible and audible air leaks from the ductwork systems shall be repaired.

E. The water piping systems shall be tested at a minimum pressure of 125 psi and proved tight at this pressure for not less than thirty (30) minutes or longer if required to permit inspection of all joints. No loss in pressure will be permitted.

F. Chilled water, condenser water and hot water supply and return piping shall be hydrostatically tested at a pressure of 100 psig (60 psig for PVC piping) for a minimum of one hour. No loss in pressure shall be permitted.

G. All refrigerant piping shall be 100% tested with a halide torch leak detector.

H. All leaks shall be repaired by tightening, remaking joints, or replacing pipe and fittings. Caulking of joints shall not be permitted.

3.10 WARRANTY

A. All work provided under this Division 23 shall be subject to a minimum one year warranty. The warranty shall include prompt repair or replacement of equipment or system failures and shall include all parts and labor. In addition, all reciprocating air conditioning compressors shall carry an additional four year parts-only warranty. Extended warranties shall be provided on all other equipment so specified in other Sections.

END OF SECTION

1 / M01.100 GROUND LEVEL PLAN– MECHANICAL DEMO

1/16"=1'-0"

PRE-CONSTRUCTION DEMOLITION NOTES

1. REFER TO THE ARCHITECTURAL DEMOLITION PLANS FOR ADDITIONAL NOTES RELATED TO THE LAYOUT OF WALLS, CEILINGS, ETC... TO BE REMOVED. THE WALLS & DOORS TO BE REMOVED ARE SHOWN IN A DARKER, DASHED LINETYPE.
2. HATCHED AREA IS NOT IN THIS SCOPE OF WORK.

LEGEND NOTES:
(APPLY THIS SHEET ONLY)

1. IN OPEN OFFICE AREAS REMOVE ALL DIFFUSERS AND ASSOCIATED FLEX DUCT. ALL THERMOSTATS ON DEMOLISHED WALLS SHALL BE SAFELY REMOVED AND COILED UP AND SECURED FROM STRUCTURE FOR FUTURE INSTALLATION.
2. DEMO EXISTING INSULATION ON DUCTWORK IN THIS AREA THAT WILL BE IN FUTURE EXPOSED AREAS. SEE ARCHITECTURAL DRAWINGS FOR EXACT CEILING BREAK LOCATIONS.

GENERAL NOTES

1. THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. IT IS INTENDED THAT A COMPLETE TENANT MECHANICAL SYSTEM BE PROVIDED WITH ALL NECESSARY EQUIPMENT, ACCESSORIES, OPTIONS AND CONTROLS, COMPLETELY COORDINATED WITH ALL DISCIPLINES. ALL ITEMS AND LABOR REQUIRED FOR A COMPLETE TENANT MECHANICAL SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS AND THE BASE BUILDING CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT INCURRING ADDITIONS TO THE CONTRACT.
2. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT PARTITION LAYOUTS, REFLECTED CEILING PLANS, DIMENSIONS, ETC.
3. VISIT SITE AND CAREFULLY EXAMINE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. THE EXISTING CONDITIONS SHOWN ARE BASED ON DOCUMENTS PROVIDED BY OTHERS AND HAVE NOT BEEN VERIFIED BY THE ENGINEER. IF EXISTING CONDITIONS DIFFER FROM DRAWINGS IN SUCH A MANNER THAT WILL AFFECT PRICING, (I.E., DUCTWORK, VAV OR PIU ARE NOT IN THE SHOWN LOCATION) CONTRACTOR WILL NOTIFY OWNER SO THAT A RESOLUTION CAN BE MADE PRIOR TO SUBMITTING BIDS. NO ALLOWANCE WILL BE MADE FOR LACK OF KNOWLEDGE OF EXISTING CONDITIONS.
4. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED AIR DISTRIBUTION DEVICES. IF ANY ITEMS ARE NOT SHOWN ON THE REFLECTED CEILING PLANS, PREPARE A DRAWING OF THE PROPOSED LOCATION AND PRESENT IT TO THE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.

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Date	Description
08.18.2017	DEMOLITION & EARLY WORK

Seal / Signature

STATE OF MAINE
BRAD J. RABINOWITZ
No. 15176
LICENSED
PROFESSIONAL ENGINEER
08/18/17

Project Name

Unum Workplace Transformation- Phase 1 (HO2)

Project Number

59.6481.000

Description

GROUND LEVEL PLAN - HVAC AND PLUMBING DEMO

Scale

1/16" = 1'-0"

MD1.100

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