

**Heating, Ventilation and Air Conditioning System (HVAC), HVAC Direct Digital Control System, Plumbing System, Maintenance and Repair Services for the District 6-0 Office Building
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Statement of Work**

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GENERAL REQUIREMENTS AND BUILDING DESCRIPTION

GENERAL DESCRIPTION OF THE BUILDING

This building is a five (5) story office built in 1989 with a total of 125,000 square feet of floor space. It is four-sided steel-framed structure with a reflective glass facade. The interior is open office space with several offices and conference rooms on each floor. The floors are concrete slabs on metal deck pans secured to steel I-beams. The ceilings are suspended with 18 to 24 inches of clear space that hold the various HVAC units, ductwork, cable trays, sprinkler system, smoke detectors and emergency exit signs etc.

GENERAL REQUIREMENTS

This work is the preventive maintenance and servicing for a one (1) year contract period with a option for one (1) year renewal with a 90 days extension, of the Heating, Ventilation, and Air Conditioning System (HVAC), HVAC Water Treatment System, HVAC Direct Digital Control, and the Plumbing System at the at the following building PENNDOT Engineering District 6-0 Office Building, located at 7000 Geerdes Blvd., King of Prussia PA 19406 -1525.

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This work will also consist of responding to all calls from the Department to service, maintain and troubleshoot the Heating Ventilation Air Conditioning System (HVAC), HVAC Water Treatment System, HVAC Direct Digital Control System, and the Plumbing System in the District 6-0 Office Building. It is the intent of this contract to preserve the original design and operational characteristics and performance of the Heating, Ventilation, and Air Conditioning System (HVAC), HVAC Water Treatment System, HVAC Direct Digital Control System, and the Plumbing System. Contractor shall furnish all labor, parts, materials, tools, equipment, instruments and test equipment and technical and engineering support to provide an integrated program of preventive maintenance and maintenance repair services for the entire Heating, Ventilation, and Air Conditioning System (HVAC), HVAC Water Treatment System, HVAC Direct Digital Control System and the Plumbing System for our building, this work includes the attached list of equipment which is to be incorporated into the appropriate seasonal preventive maintenance schedule. All equipment in these systems should be maintained in accordance with the manufacture specifications. Equipment may be added or subtracted from the semi-annual preventive maintenance schedule if the Pennsylvania Department of Transportation needs change or the contractor recommendation will improve our preventive maintenance system. All recommender maintenance repair services and preventive maintenance schedule changes must be approved by the Building Maintenance Supervisor.

GENERAL DESCRIPTION OF MECHANICAL SYSTEMS

HVAC SYSTEM

The main HVAC Mechanical Room is located on the 4th floor. The Building climate control is provided by a (188 Units) water source heat pump system which are located above the ceiling on each floor. The Heat Pump Units, supply and return pipe work flow from the units on each floor to a central pipe chase and then up to a 75 HP pump in the fourth floor mechanical room. This building loop has a temperature control setting of 80 degrees. This temperature is maintained by either adding heat from (2) two each boilers or cooling from a plate exchanger and a roof mounted cooling tower. The (2) two each fresh air make up units and the (5) five each building exhaust fans are located on the roof. The electrical circuits that feed the various building mechanical components system is a combination of 480/277/120 volt and the system contains (3) three each variable frequencies drives that control (2) two each pumps and (1) one each cooling tower fan.

HVAC WATER TREATMENT SYSTEM

This System is located in the 4th floor Mechanical Room it is a Feed and Bleed type system. It has three (3) each chemical storage tanks with pumps and a system controller.

HVAC DIRECT DIGITAL CONTROL SYSTEM

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The HVAC system control is a combination of standalone automated control devices and Direct Digital Control (DDC) and proprietary controls devices including the AERCO Boiler Management System. The (DDC) control room is located on the lower level Energy Management room (EMS) room and in the 1st floor and the 3rd floor electrical room and the 4th floor Mechanical Room. The (DDC) system is a product of the (Invensys Building Systems Company) it is controlled from a Personal Computer and connected to the System and control devices by an Ethernet system.

PLUMBING SYSTEM

The plumbing system starts at the underground water meter pit box located near the corner of the property at the intersection (Valley Forge Road and Geerdes Blvd.). The potable water is carried by 8" metal pipe underground from the meter to the water service distribution room. In this room there is the main water shut off valve and a check valve, from this room the water service feeds by the use of copper pipe behind walls, in ceilings and pipe chases to the various mechanical equipment and water fixtures in the system.

PRE-BID CONFERENCE

There will be a mandatory Pre-bid conference held on date October 10, 2012 at 11:00 AM at PENNDOT District 6-0 Office located at 7000 Geerdes Blvd King of Prussia Pa 19406-1525. All questions and/or concerns about service requirements should be addressed in writing and submitted to the Contracting Officer five (5) days prior to the Pre-bid Conference/Site Inspection. If the pre-bid conference & site inspection must be rescheduled the Commonwealth will issue an Addendum to this solicitation identifying the new date and time.

INSPECTION OF FACILITIES

Be advised that the contractor is responsible to familiarize themselves with the type of system equipment and components to be maintained as outlined in this statement of work. Contact Michael Masterson after the Pre-Bid Conference, Building Maintenance Supervisor at 610-205-6725 or E-Mail mmasterson@pa.gov to make arrangements to inspect the equipment, prior to placing your bid.

SPECIAL INVOICE AND BILLING INSTRUCTIONS

Upon completion of service each month the contractor will complete a confirmation of services form (OS-501) and compile a billable summary report containing all the information needed to invoice for the work. The OS-501 and the Billable Summary will be mailed to the PENNDOT District 6 Office at 7000 Geerdes Blvd. King of Prussia, PA 19406- 1525, Attention: Michael Masterson Building Maintenance Supervisor or emailed to mmasterson@state.pa.us. The

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electronic OS-501 form will be supplied upon request. Mr. Masterson will confirm the work performed, material, hours, mark up and cost and he will call the vendor to correct mistakes or confirm that the vendor can invoice the Comptroller Office.

The Contractor shall submit an invoice to the Comptroller Office (The address is on the first page of the Purchase Order), with the date of service, purchase order number and the work listed by the item number, description and the unit price. Materials will be paid for at the actual cost of the material, including the tax shown on the vendor's (suppliers) invoice with the appropriate percentage added. Invoices will be submitted on a monthly basis.

CONTRACTOR NOTIFICATION

Notification is defined as a written (including e-mail), oral or faxed authorization to the Contractor or their authorized representative. Upon award of the contract the awarded contractor will be required to provide an e-mail address to the department within two weeks after the award date. It will be the responsibility of the contractor to retain a valid e-mail account for our use during the entire contract period and update the department by e-mail in the event that the contractor's e-mail address has changed.

INSPECTION

All work will be subject to inspection by the Building Maintenance Supervisor or his designee during the term of this contract. Failure to satisfactorily meet all the requirements of this contract or the refusal to promptly correct all deficiencies within 24 hours of notification by phone, fax or written (including email) may be cause to assess liquidated damages and /or cancellation of services. If the contractor's employee's work reflects poor workmanship the department will ban them from future work at our site.

MOBILIZATION

Any cost associated with the mobilization and items such as required licenses, permits, insurance, and communication devices as directed by the Department for the duration of this agreement will be considered incidental to the items of work and no additional payment will be made.

PENNDOT'S STRATEGIC ENVIRONMENTAL MANAGEMENT PROGRAM (SEMP) REQUIREMENTS: Before the start of any work, the contractor must comply with PennDOT's Strategic Environmental Management Program (SEMP) Requirements. This is a **NO FEE** program, the requirements of this program can be found on the PennDOT's website at <http://www.dot.state.pa.us/PennDOT/Districts/district6.nsf/D6Roadwork?OpenFrameSet>. The document titled [Contractor Instructions for SEMP Awareness](#) provides a complete overview of

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the program. For additional information, please contact Ms. Sharon Goldberg, SEMP Manager at 610-205-6566.

CONTRACTOR'S PERSONNEL

Eligible contractor shall be in the HVAC / Plumbing business for at least 5 (five) years. All of Contractor's employees who will be working in our building will be required to have a minimum of three (3) years experience, it can be a combination of an accredited technical training, trade school and work experience in commercial building in their respective fields (Plumbing & HVAC). The Contractor will be required to provide us with the employees name and where they gained the required experience. The HVAC Technician /Plumber will be required to meet all National, State and Township Code requirements to perform work for each respective trade. If the code requires any document submission for code compliance, provide a copy of the submission to the Department. The list of personnel must be submitted at the time of Pre-Construction meeting that will occur prior to the start of work. Also at the Pre-Construction Meeting the contractor will provide a list of any Sub Contractors they intend to use if required. The Sub Contractor list must be approved by the Department prior to the start of work.

WORK HOURS

All planned preventive and service maintenance shall be performed during regular working hours (7:00AM until 4:30 PM Monday through Friday). In the event that this work would adversely affect the building operation or the staff, the work will have to be scheduled for after regular work hours or on weekends. Any work outside of the 7:00AM and 4:30PM hours will be considered premium hours.

PREMIUM AND EMERGENCY WORK HOURS

Premium and emergency work hours may be required for this service. If the contractor works more than eight (8) hours between 7:00AM and 4:30PM their labor shall be invoiced at the Premium and emergency work hour's rate of pay. Please refer to the items and the description section of these specifications, for more details.

RESPONSE TIME

Emergency Work – Contractor to provide qualified HVAC Technician and/ or Plumber appropriate to the type of work required as outlined in the item number section of these specifications within two (2) hours of notification time from the Department to troubleshoot and repair, breakdowns of the HVAC and /or Plumbing System or components at the PENNDOT District 6-0 Office. Contractor will begin work as soon as he arrives at the job site.

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Non-emergency Work – Provide a qualified HVAC Technician and/ or Plumber appropriate to the type of work required as outlined in the item number section of this contract to review requested work within 24 hours of notification from the Department. Contractor will have five 5 working days to begin work from the date their representative reviews the work.

LIQUIDATED DAMAGES

The Department will also assess liquidated damages in the amount two hundred fifty dollars (\$250.00) for each day or portion thereof that the contractor fails to send a qualified electrician within the 2 hours for an Emergency call-out or within a 24 hour period to review non-emergency work or when the contractor fails to begin work within the 5 working day period after review by their representative. The two hundred fifty dollars will be assessed for each calendar day or portion thereof that no work is done.

Liquidated damages will NOT be assessed because of unavoidable delays in completion of work caused by the Department, other Contractors employed by the Department, or unforeseeable causes beyond the control and without fault or negligence of the Contractor.

MISCELLANEOUS HVAC & PLUMBING MATERIALS AND EQUIPMENT

DESCRIPTION – This work is furnishing all materials and equipment required to repair any HVAC/Plumbing component or equipment included in the interior and exterior of the building. This also includes providing rented equipment, lift truck, scissors lift, or other mechanized lifting equipment to allow the Contractor to make required repairs where ladders or scaffolding are not practical. The type of lift equipment to be used must be capable of reaching all systems components in any interior and exterior building area. If the Contractor chooses to use his own equipment it must be in good mechanical condition and acceptable by the Building Maintenance Supervisor. The Contractor will be reimbursed an hourly rate based on the Rental Blue Book Rate for the type of equipment rented.

The Building Maintenance Supervisor must give approval before using the lift equipment and the duration of the rental period, prior to renting or providing the equipment.

MATERIAL AND CONSTRUCTION – All HVAC/Plumbing material will be new and UL approved where applicable, certified through invoices from suppliers and meet all National, State and Township Code requirements.

MEASUREMENT AND PAYMENT – PDA – A predetermined amount of money (PDA) is indicated in the Invitation for Bid (IFB) Header Text for this item. All material, specialized equipment and subcontractor services not specified in the contract will be paid under this item. Common hand tools such as hammers, screw drivers, fish tapes, pliers, measuring tapes, power hand saws, or drills, etc., are considered incidental to the service and are to be supplied by the

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contractor. The cost of material used will be reimbursable at the actual cost of material, including applicable sales tax shown on vendor's (supplier's) invoices. To cover all administration, other overhead costs, and the use of small tools and equipment for which no payment is allowed, add 15% to the material cost, 5% to the rental vendors invoice equipment cost where rental required is required to perform scheduled work and when applicable add 8% to the subcontractors cost.

The submitted invoice must have the following information on the invoice:
Company Name, Federal ID Number, Purchase Order Number

SPECIAL CONDITIONS

All air filters required for the HVAC System equipment will be provided by the Pennsylvania Department of Transportation.

All Material (parts) furnished shall be newly manufactured and the latest current model in production at the time of the required replacement. Contractor shall be required to respond to emergency service calls as required without limitation during the contract period. Response to an emergency call of a critical nature by sending a qualified Heating, Ventilation, Air Conditioning System (HVAC), HVAC Water Treatment System, HVAC Direct Digital Control System, Plumbing System HVAC, Technician or Plumber as required by the type of service or repair work needed within two (2) hours after receiving notification of such requirements by the Building Maintenance Supervisor. The contractor will provide us with a telephone number to use for emergency service calls as well as the required staff to respond to us on 24 hours a day basics seven days a week including all holidays.

Part of the HVAC System consists of (188) each Heat Pump Units they are located in the ceiling above the drop ceiling tile and some of them are located over the office cubical furniture. Many of these units are very difficult to service in place and depending on the type of repair you may be required to remove them from the ceiling to service them. All special equipment needed for the removal of these Heat Pump Units and the removal and reinstall of the cubical furniture, is the responsibility of the contractor.

Removal of the ceiling grid system and the reinstallation of the ceiling grid system and the tile is the responsibility of the contractor. Any contractor damaged components will be replaced at no cost to the Department.

Item # (1) – FY 12 HVAC Technician – Regular Business Hours

Item # (2) – FY 12 HVAC Technician – Premium and Emergency Working Hours

Item # (3) – FY 12 Plumber – Regular Business Hours

Item # (4) – FY 12 Plumber – Premium and Emergency Working Hours

Item # (5) – FY 13 HVAC Technician – Regular Business Hours

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Item # (6) – FY 13 HVAC Technician – Premium and Emergency Working Hours

Item # (7) – FY 13 Plumber – Regular Business Hours

Item # (8) – FY 13 Plumber – Premium and Emergency Working Hours

Item # (1) and Item (#5)

HVAC Technician – Regular Business Hours

Item # (2) and Item (#6)

HVAC Technician – Premium and Emergency Working Hours

DESCRIPTION - This work is the servicing, maintaining, troubleshooting and/or repairing of all existing equipment in accordance with the manufacturer specifications for the entire Heating, Ventilation, and Air Conditioning System (HVAC) as directed.

MATERIAL – Supply all materials and specialized equipment in accordance with the Special Provision titled “Miscellaneous HVAC & Plumbing Materials and Equipment”. Supply all hand tools and equipment required to make repairs.

CONSTRUCTION - Supply personnel who are qualified to perform HVAC work on all systems and appurtenances at the locations identified in these specifications.

Be prepared to perform work within 2 hours of emergency call-out or 24 hour non- emergency work notification by the Building Maintenance Supervisor.

Travel time to the job site is considered incidental to the cost of the item and no additional payment will be made. The hourly charges for this item will start upon arrival of the personnel at the District Office Building and checking in with the Building Maintenance Supervisor or his designee.

MEASUREMENT AND PAYMENT - Hour

The number of hours is estimated for the Technician for this service. The actual demand may be more or less in accordance with the need for repairs.

Item # (3) and Item (#7)

Plumber – Regular Business Hours

Item # (4) and Item (#8)

Plumber – Premium and Emergency Working Hours

DESCRIPTION – This work is the servicing, maintaining, troubleshooting and/or repairing of all existing plumbing systems and equipment as directed.

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MATERIAL – Supply all materials and specialized equipment in accordance with the Special Provision titled “Miscellaneous HVAC & Plumbing Materials and Equipment”. Supply all hand tools and equipment required to make repairs.

CONSTRUCTION - Supply personnel who are qualified to perform Plumbing work on all systems and appurtenances at the locations identified in these specifications.

Be prepared to perform work within 2 hours of emergency call-out or 24 hour non- emergency work notification by the Building Maintenance Supervisor.

Travel time to the job site is considered incidental to the cost of the item and no additional payment will be made. The hourly charges for this item will start upon arrival of the personnel at the District Office Building and checking in with the Building Maintenance Supervisor or his designee.

MEASUREMENT AND PAYMENT - Hour

The number of hours is estimated for the Plumber for this service. The actual demand may be more or less in accordance with the need for repairs.

GENERAL LIST OF HVAC EQUIPMENT, PLUMBING FIXTURES & COMPONENTS

This list represents the major system components, the information presented is deemed accurate but it is the responsibility of the contractor to confirm all the equipment and to verify the provider information.

GENERAL LIST OF HVAC EQUIPMENT

- 75HP Baldor ODP Premium Efficient Super –E Motors (2) Each, Model # EM2549T Spec-42F098W462G1 RPM- 3540 230-460 Volts.
- 75 HP Bell& Gossett Centrifugal Pump ITT Industries (2) Each, Model# Size 1510 BF 8 4 BC.
- McQuay Horizontal Water Source Heat Pump Units (Model Group WSHP) Units listed by tons and total number of units of this type per floor.
- 1/2 Ton – (LL-5 each) (1st FL-2each) (2nd FL-2each)(3rd FL-0each) (4th-1 each)
- 3/4 Ton – (LL-1each) (1st FL-3each) (2nd FL-1each)(3rd FL-0each) (4th-4 each)
- 1 Ton – (LL-2 each) (1st FL-5each) (2nd FL-5each)(3rd FL-7each) (4th-4 each)
- 1 ¼ Ton – (LL-5 each) (1st FL-0each) (2nd FL-6each)(3rd FL-1each) (4thFL-2 each)
- 1 ½ Ton – (LL-6 each) (1st FL-5 each) (2nd FL-3 each)(3rd FL-9 each) (4th-FL-6 each)
- 2 Ton – (LL-1 each) (1st FL-3 each) (2nd FL-4 each)(3rd FL-7 each) (4thFL-9 each)
- 2 ½ Ton – (LL-2 each) (1st FL-7 each) (2nd FL-12 each)(3rd FL-12 each) (4th-FL-9 each)
- 3 Ton – (LL-1 each) (1st FL-3 each) (2nd FL-3 each)(3rd FL-7 each) (4th-FL-5 each)

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- 3 ½ Ton – (LL-0 each) (1st FL-2 each) (2nd FL-5 each)(3rd FL-1 each) (4th FL-1 each)
- 4-Ton – (LL-2 each) (1st FL-1 each) (2nd FL-1 each)(3rd FL-0 each) (4th FL-1 each)
- 5-TON – (LL-0 each) (1st FL-2 each) (2nd FL-0 each)(3rd FL-0 each) (4th FL-0 each)
- Total Number of Heat Pump Units =188 Each.

HEATING EQUIPMENT

- ARECO Boilers (2) each, boiler accessories, furnaces, heaters, burners, heating coils, safety devices, controls (ARECO Boiler Management System), indicating and recording instruments, float valves, water strainers, etc.
- Natural Gas fuel piping, gauges, pumps, pressure reducing valves, pressure regulators, High/low pressure switches, safety shut off valves (manual or motorized) butterfly valves, leak test valves, solenoid valve, meter etc.
- Condensate /feed water, pumps, valves, flow control valves, thermostat valves etc.
- Unit heaters ,fan coil units ,heat exchangers, duct heaters base board heaters, radiant heaters, heat pumps ,etc.
- Flue gas discharge systems including breeching, chimney, stacks, dampers, etc.
- Venting systems. Four each roof fans.
- Combustion air supply systems including inlet air dampers, ducts, controls, etc.
- Water treatment plants.
- System pipe work, pipe fittings, hangers, supports, etc
- HVAC Direct Digital Control System.

AIR CONDITION EQUIPMENT

- Air condition systems comprising of water tower, air cooled/water cooled condensers, Heat pumps, Direct expansion valves, refrigeration compressors, refrigerant piping, air coils, heat recovery units, control instrumentation, refrigerant etc.
- Packaged roof top air handler heating /conditioning units.
- Cooling Tower, Cooling tower fan, Drive motor, pumps, etc.
- Chilled water, condenser water delivery system, piping, flow controls valves, thermostatic valves, etc.
- Humidity control devices.
- Noise control devices.
- Hangers, supports, pads, etc.
- All controls and instrumentation.
- Plate Exchanger.
- Condensate Drain lines.

AIR HANDLING EQUIPMENT

- Air handling units with coils, mixing boxes, heat exchangers, make up air units, fans, motors, power ventilators, air filter boxes, etc.
- Air cleaning devices, dust collectors, filters, etc.

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- Ductwork both ridged and flexible, dampers, access panels, connections, turning vanes etc.
- Sound attenuators.
- Air terminal units including but not limited to constant volume, diffusers, louvers, registers, grills, intake a relief ventilators, etc.
- Hangers and supports.
- All controls and instrumentation.
- Condensate Drain lines.

FUME EXHAUST SYSTEM

- Exhaust fans, motors, dampers, etc.
- Ductwork, connections, turning devices.
- Filters, dust collectors, dust extractors, etc.
- Hanger and supports.
- Controls and instrumentation.

PLUMBING FIXTURES

- Water fountain (11) each.
- Sinks (42) each with faucet sets.
- Toilets (42) each with Sloan flush valves.
- Urinals (10) each with Sloan flush valves.
- Pool filter (1) each sand type.
- Pool pumps (2) with strainers.
- 20 Gallon Hot Water heater (4) each.
- 30 Gallon Hot Water heater (1) each.

WATER DISTRIBUTION SYSTEM

- Water meter pit (1) each for both waters service and fire service.
- Backflow prevention devices testing as required by our water company Aqua America.
- Water isolation valves and check valves.
- Water supply lines, sewer lines, drains and traps.
- Hose bibs.
- Copper pipe, cast iron and plastic pipe.
- Mixing valves.
- Make up water feed lines valves for the pond and cooling tower.
- This work is the maintenance and servicing for a one (1) year contract period of the HVAC & Plumbing systems with option for one (1) year renewal with a 90 days extension at the following building.