

**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
Statement of Work**

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GENERAL DESCRIPTION OF SITE REQUIREMENTS

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 of the Heating, Ventilation, and Air Conditioning System (HVAC), HVAC Water Treatment System, HVAC Direct Digital Control, and Plumbing System at the at the following building:

PENNDOT Engineering District 6-0 Office Building
7000 Geerdes Blvd.
King of Prussia PA 19406 -1525.

This work will also consist of responding to all calls from the Pennsylvania Department of Transportation (hereinafter referred to as PennDOT) to service, maintain and troubleshoot the Heating Ventilation Air Conditioning System (HVAC), HVAC Water Treatment System, HVAC Direct Digital Control System, and Plumbing System in the District 6-0 Office Building. It is the intent of this contract to preserve the original design, operational characteristics, and performance of the Heating, Ventilation, and Air Conditioning System (HVAC), HVAC Water Treatment System, HVAC Direct Digital Control System, and Plumbing System. Contractor shall furnish all labor, parts, materials, tools, equipment, instruments, 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 Plumbing System for the above listed 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 manufacturer's specifications. Equipment may be added or subtracted from the semi-annual preventive maintenance schedule as determined by PennDOT.

PennDOT's Project Manager for this contract is the Building Maintenance Foreman or designee. All recommended maintenance repair services and preventive maintenance schedule changes must be approved in writing (including email) by the Building Maintenance Foreman or designee.

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TERM

The contract initial validity period shall be for 1 year. Refer to the contract terms and conditions for renewal options.

OPTION TO EXTEND

PennDOT reserves the right to extend the term of this contract as noted in the terms and conditions.

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 water source heat pump system which is 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 boilers, or cooling from a plate exchanger and a roof mounted cooling tower. The (2) two fresh air make up units and the (5) five building exhaust fans are located on the roof. The electrical circuits that feed the various building mechanical components in the system are a combination of 480/277/120 volts, and the system contains (3) three variable frequencies drives that control (2) two pumps and (1) one 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) chemical storage tanks with pumps and a system controller.

HVAC DIRECT DIGITAL CONTROL SYSTEM

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 Network.

PLUMBING SYSTEM

The plumbing system starts at the underground water meter pit box located near the corner of the property at the intersection of Valley Forge Road and Geerdes Boulevard. The potable water is

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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.

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 information provided below.

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) (4th FL-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)
- 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.

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- 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.
- 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 fountains (11).
- Sinks (42) with faucet sets.
- Toilets (42) with Sloan flush valves.

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- Urinals (10) with Sloan flush valves.
- Pool filter (1) sand type.
- Pool pumps (2) with strainers.
- 20 Gallon Hot Water heaters (4).
- 30 Gallon Hot Water heater (1).
- Sand Filter, 158 gallon, 30 inch, VORTISAND (1)

WATER DISTRIBUTION SYSTEM

- Water meter pit (1) for waters 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.

INSPECTION OF FACILITIES

The contractor is required to attend a mandatory pre- bid meeting with the Building Maintenance Foreman or department designee to familiarize them with the type of system equipment and components to be maintained as outlined in this statement of work.

CONTRACTOR NOTIFICATION

Notification is defined as a written (including e-mail), oral, or faxed authorization to the Contractor or their authorized representative. The contractor will assign a staff member who will be PennDOT's point of contact for services to be provided under this contract. Within two business days of notification of low bidder status, the Contractor will provide PennDOT with its point of contact name and contact information including phone number, fax number, and email address. It is the responsibility of the contractor to retain valid phone number, fax number, and e-mail accounts for PennDOT use during the entire contract period, and to immediately notify PennDOT in the event that the contractor's point of contact and/or contact information has changed.

MOBILIZATION

Any cost associated with the mobilization and items such as required licenses, permits, insurance, and communication devices as directed by PennDOT for the duration of this agreement will be considered incidental to the items of work and no additional payment will be made. 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 PennDOT District 6-0 Office Building and checking in with the Building Maintenance Foreman or his designee.

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RESPONSE TIME

Emergency Work – Contractor will 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 PennDOT 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. Contractor shall be required to respond to emergency service calls as required without limitation during the contract period. The contractor will provide the staff required to respond to PennDOT calls for Emergency Work on 24 hours a day, seven days a week basis, including all holidays.

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 one business day from PennDOT. Contractor will have five 5 working days to begin work from the date their representative reviews the work.

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 of HVAC and/or Plumbing experience, which can be comprised of a combination of an accredited technical training, trade school and work experience in commercial building in their respective fields (Plumbing & HVAC). The Contractor will provide PennDOT with employee names and where they gained the required experience as indicated on Attachment 3. HVAC Technicians & Plumbers 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, the Contractor will provide a copy of the submission to PennDOT. The list of personnel must be submitted to the Building Maintenance Foreman within 3 days of notification of apparent low bidder status.

REGULAR HOURS WORK

All planned preventive and service maintenance shall be performed during regular hour's work which is 7:00 AM 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 hours work or on weekends. Any work scheduled outside of the hours of 7:00 AM until 4:30 PM Monday through Friday, will be considered premium hours work.

PREMIUM HOURS WORK

Premium hours work may be required for this service. Any work performed outside of the hours of 7:00 AM until 4:30 PM Monday through Friday will be considered premium hours work. The

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Building Maintenance Foreman or designee must specifically authorize in writing (including email) all premium hours work.

These hours of labor shall be invoiced at the premium hours work rate of pay. Please refer to the items and the description section of these specifications for more details.

SPECIAL CONDITIONS

All Material (parts) furnished by the Contractor shall be newly manufactured.

Part of the HVAC System consists of 188 Heat Pump Units which are located in the ceiling above the drop ceiling tile. Some of the Heat Pumps are located over the office cubical furniture. Many of these Heat Pumps are very difficult to service in place. Depending on the type of repair it may be necessary to remove the Heat Pump from the ceiling to service it. All special equipment needed for the removal of Heat Pump Units, and the removal and reinstallation of the cubical furniture where necessary, 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 PennDOT.

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 Foreman or department designee. The Contractor will be reimbursed an hourly rate based on the Rental Blue Book Rate for the type of equipment rented.

The Building Maintenance Foreman 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, rental and subcontractor services will be paid under this item. Common hand tools

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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 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. Add 15% to the material cost, add 5% to the rental vendors invoice equipment cost where rental is required to perform scheduled work, and add 8% to the subcontractors cost.

ITEM DESCRIPTION

**Item # (1)
HVAC Technician – Regular Hours Work**

**Item # (2)
HVAC Technician – Premium Hours Work**

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”.

SERVICE - Supply personnel who are qualified to perform HVAC work on all systems and appurtenances at the locations identified in this contract.

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 servicing, maintenance, troubleshooting and/or repairs.

**Item # (3)
Plumber – Regular Hours Work**

**Item # (4)
Plumber – Premium Hours Work**

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

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

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.

ON SITE WORK PERFORMANCE INSPECTION

All work will be subject to inspection by the Building Maintenance Foreman 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. Liquidated Damages will be assessed in accordance with the Terms and Conditions. If the contractor's employee's work reflects poor workmanship the department may ban them from future work at our site.

INVOICE AND BILLING INSTRUCTIONS

Upon completion of service each month the contractor will complete a Confirmation of Services Form (OS-501, Attachment 1), and the contractor shall email a copy of the OS-501 to the Building Maintenance Foreman or designee. Contractor will also mail the original OS-501 to the Building Maintenance Foreman's attention at the following address:

PENNDOT District 6-0
7000 Geerdes Blvd.
King of Prussia, PA 19406-1525

An electronic version of the OS-501 form will be supplied upon request.

Upon receipt of the OS-501 the Building Maintenance Foreman or designee will confirm the work performed, hours worked, materials used, mark up and cost, and will call the vendor to correct mistakes.

The Contractor shall submit a commercial invoice to the Address shown 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, as well as all other information required by the Purchase Order Terms and Conditions.

WORK PERFORMANCE REQUIREMENT

The Prime Contractor shall perform a minimum of 50% or greater of the contract determined by dollar value.

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The Prime Contractor shall submit the Request for Contractor and Subcontractor Information form (Attachment 2) electronically with the bid. The failure to submit this form with the bid; meet the experience requirements; or demonstrate that the Prime Contractor will perform a minimum of 50% or greater determined by dollar value of the contract work may result in rejection of a bid as nonresponsive or support a determination that a prospective contractor is not responsible.

If after contract award it is learned that the Prime Contractor knowingly submitted false information to PennDOT on this form or on any other form submitted with this bid, PennDOT may terminate the contract and seek other available legal remedies. If at any time after Contract award, the Prime Contractor expects to perform, or is performing less than 50% or greater determined by dollar value of the work under the Contract, or there is a change in personnel with the Prime Contractor or its Subcontractor(s) that impacts compliance with the experience requirements under the Contract, the Prime Contractor shall immediately notify PennDOT in writing and submit an amended Request for Contractor and Subcontractor Information form. PennDOT shall review the amended Request for Contractor and Subcontractor Information form. PennDOT must approve the amended Request for Contractor and Subcontractor Information form and may seek additional information in its review. If the Prime Contractor fails to notify PennDOT in writing during the life of the Agreement, PennDOT may terminate the Contract.

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Attachment 1: Confirmation of Services Report (OS-501) (continued)

Instructions:

Complete the OS-501 form in accordance with the instructions below. Once the form is complete, the Contractor must apply their signature and date. Then the Contractor must forward the signed/dated form to the appropriate PennDOT representative for approval. This may be done electronically via email.

The Contractor should not submit an invoice for payment until a fully executed OS-501 is received back from the appropriate PennDOT representative.

Date Service Rendered: Provide the date of service (i.e., weekly, monthly, delivery date, date range etc.)

SAP Vendor Number: This is the vendor's six digit vendor number (i.e. 412345) as it appears on the fully executed Purchase Order.

Contractor Name: Enter name exactly as it appears on the fully executed Purchase Order.

Contractor Address: Fill in complete address, street, city, state, zip code, as it appears on the fully executed Purchase Order.

Phone: Area code and phone number exactly as it appears on the fully executed Purchase Order.

PURCHASE ORDER #: The ten digit number in the upper right corner on the fully executed Purchase Order.

PO Item #: Enter the PO line item number(s) in this column. Many PO's contain numerous line items. Create a separate entry to account for each item that was delivered.

Material / Service Description: Enter the exact description from the PO line item "Material/Service Description" column on the fully executed Purchase Order.

Quantity: Enter the quantity delivered for the time period

U.O.M.: This is the unit of measure for the service/product rendered, i.e. hours, number, etc

Delivery date: Date for service/product commitment to be fulfilled

Net Price: Cost per individual unit

Total: Number of units X cost per individual unit.

