

SCOPE OF WORK
HEATING, VENTILATING & AIR CONDITIONING
MAINTENANCE, SERVICE AND ALTERATION

COORDINATION

The contractor shall provide supervision of his sub-contractors activities at no additional cost to the County.

The contractor shall be required to work in areas where there will be other contractors and in-house staff. The County Buildings & Grounds Superintendent or designee will schedule working hours for all participants and may require them to attend job meetings.

All work shall be performed so that any interruption of the normal operations shall be minimized.

The contractor shall provide cellular telephone numbers for managers, supervisors and technicians as requested by the appropriate Department head.

Departmental Contacts for this bid shall be the Buildings & Grounds Superintendent, Joseph Meyers or designee; Parks & Recreation Department Director, Michael Mangum and Library Systems Maintenance Supervisor, Joseph Cahill.

USE OF THE SITE

The contractor shall confine his operations to those areas designated by the respective Department heads or their Designees. He shall at all times, keep the premises free from accumulation of waste materials or other debris caused by his operations. At the conclusion of the work, he shall remove all waste materials, tools and equipment from the site.

ACCESS TO COUNTY LOCATIONS

Contractor's staff must wear photo identification displaying the company name and employee name on their person when performing work at any County building.

All personnel or agents of the contractor must observe all rules and regulations in effect at the buildings.

Employees or agents of the contractor, while on County property, shall be subject to the control of the County, but under no circumstances shall persons be deemed to be employees or agents of the County.

Contractor must have personnel capable of passing security screening by the County Department of Corrections. Specifically, screening shall be through the National Crime Information Center and State Crime Information Center. Additionally, the County Department of Corrections performs State and municipal criminal and motor vehicle background checks and requires a copy of photo ID/photo license and social security card/employer proof of tax withholding. Such security requirements pertain to all jail and detention facilities.

EXPERIENCE

Contractor shall have a minimum of three (3) years experience working on similar scope and size projects. Submit with the bid, contractor's data sheet listing at least three recent projects applicable to this application.

DEFINITIONS

For the purpose of this contract, the terms journeyman and mechanic shall be used interchangeably and the terms helper and apprentice shall be used interchangeably and shall solely refer to worker qualifications and not preference of union or non-union trades.

RESPONSE TIME

Contractor shall have the ability to respond to Emergency service calls with a two (2) hour on-site response time. Specifically, contractor shall respond with a call back within one (1) hour and be on site within one (1) additional hour. Three (3) documented failures to comply may be considered cause for termination of contract.

Response time for emergency repairs shall not exceed three (3) hours total on Saturday, Sunday and holidays.

Emergency service calls shall be defined as unit failures that cannot await regular scheduling.

Contractor shall respond to regular service calls by scheduling work to occur during regular work hours and within 48 hours of receipt of County purchase order number.

Emergency service during overtime hours that require major repairs or parts not normally carried by the responding mechanic will be scheduled for completion the following day.

Responding to after-hours emergency service calls, the contractor will affect any temporary repairs required, leaving the equipment in safe operating condition. Should emergency repairs not be able to be completed by the close of business the contractor is to notify the County Buildings & Grounds Superintendent or designee or the using department contact and advise of the outstanding condition and required action and/or parts and effect permanent repair the following day or as otherwise agreed to.

DEFINITION OF REGULAR AND OVERTIME HOURS

Regular business hours are defined as any hours worked between 8:00 AM and 4:30 PM, Monday through Friday.

Overtime hours are defined as any work performed outside of "Regular Business" work hour; which may include holidays.

QUOTES

The term quote, proposal, estimate are used interchangeably and shall mean the same. The County does not pay for quotes. The County does not pay fixed fees and will pay only for the actual number of hours authorized and worked.

Quotes for any work shall include a cost breakdown submitted by the contractor as follows: labor rate, quantity of hours, materials list, wholesale cost and mark up, at applicable contract rates.

TIME AND MATERIAL WORK

The County reserves the right to delete or add additional units as needed, at contract bid prices.

Each call shall generate a separate invoice detailing the labor charge and the parts/materials as outlined above.

All invoices are required to include a separate purchase order number, which can be obtained by calling Buildings & Grounds at (732) 929-2039.

REPAIRS

During the course of the work, if repairs are identified, departmental approval is required to obtain a purchase order number for the work before contractor may proceed with the repair. Verbal authorization and purchase order number will be provided to contractor via telephone. Purchase order number must be included on the invoice. Contact the Superintendent of Buildings & Grounds at (732) 929-2039. For repairs in excess of \$2,000.00 identified during after hours or emergency call-ins, the department head or their authorized representative shall be contacted by telephone for advisement and approval. The Parks Department requires the approval by Director Michael Mangum of all repairs in excess of \$250.00. The contact number for Mr. Mangum is (732) 506-9090.

INSTALLATION OF NEW PARTS

When installing new parts provided by the successful contractor, said contractor will be required to give the department's representative all paperwork found in the original package (e.g: warranty registration forms, literature, drawings, installation instructions, part numbers, etc.)

HOURLY LABOR RATE

Labor hours are shown in the proposal page for bid purposes only.

We have attempted to accurately reflect a true picture of the approximate amount of labor hours that the County anticipates. The County does not guarantee any minimum number of hours and will pay only for the actual number of hours authorized and worked.

The labor charge should include all travel time. No additional travel time will be honored. Contractor travel costs must be incorporated in the bid proposal price. Hourly labor rates begin with Contractor's arrival at the site and end when Contractor leaves the site. After the first full hour, hourly rates shall be prorated to the closest fifteen (15) minute interval.

The labor charge should be all inclusive of overhead, profit, shift increases and include shipping fees.

MATERIALS

Parts / Materials Prices: All materials shall be invoiced at actual wholesale cost plus a percentage (%) markup. Copies of the contractor's own purchase invoices reflecting actual costs shall accompany each invoice to the County.

The County will only pay for materials that have been authorized and used. The County does not pay for shipping charges from contractor's vendors nor for drop shipments from contractor's vendor to the County.

Only Original Equipment Manufacturer's (OEM) parts shall be used, unless otherwise approved in advance of order and installation.

INVOICING

An invoice will be generated after each Preventative Maintenance service has been performed. Invoices for Preventative Maintenance and associated materials shall be billed at the applicable contract rates of which shall not be exceeded.

Each service call or additional work request shall generate a separate invoice detailing the labor charge and the parts and materials.

All invoices must be separated by building and class of service and reference the work order number and **each invoice shall reference the corresponding bid item number for each separate line item amount billed.**

CONTRACTOR CLIENT MANAGER

The contractor shall assign one responsible managing employee to act as the County's client manager. This client manager shall be assigned to the County as requested and provide reporting as described herein.

The client manager shall report to the County Buildings & Grounds Superintendent or designee with the status of work as described, at minimum, in "Service Reports" of these specifications. Client manager shall meet with the County Buildings & Grounds Superintendent or designee at Buildings & Grounds administrative offices bi-weekly in summer months to review all open work, weekly service reports and any proactive recommendations by the contractor. Meeting can be approximately three (3) hours or as required based on the quantity of work to be discussed.

The client manager shall advise an assigned Buildings & Grounds employee each morning of the schedule of all mechanics per building. The client manager shall also throughout the day notify Buildings & Grounds of the arrival and departure times of all mechanics per building. Client manager shall be accountable for all time actually worked by the mechanics.

MECHANICAL MINI-PLANS

Mechanical mini-plans (8-1/2" x 11") as supplied by the County shall be color copied and distributed by the contractor to all mechanics for use in field.

SERVICE REPORTS

Daily Service Work Tickets shall be delivered or faxed by the close of each business day to the attention of Joseph Meyers, or his designee, as the work progresses. After hours reports may be faxed to 732-505-3262, as in the case of emergency after hours call by the "Duty Supervisor" at Buildings & Grounds. Daily Check-in / Check-out time per building of all mechanics must be written on their daily service work tickets.

A final service report including all service activity per work order shall be attached to the appropriate invoice.

SAFETY DATA SHEET

Contractor shall supply material safety data sheets (SDS) for all products to be used on site prior to start of work and in sufficient time to allow notice to be posted at buildings.

INVENTORY

Contractor shall maintain an adequate inventory of commonly used replacement parts/ equipment, service tools within the contractor's warehouse, or service vans, in order that emergency repairs can be made to County equipment at once with a minimum of shut down time.

FAULTY MATERIALS

The contractor shall take full responsibility for faulty materials and shall remedy all defects due thereto, and pay any damage to other resulting there from, which shall appear with one (1) year. The County shall give notice of observed defects with reasonable promptness.

EXCESSIVE EQUIPMENT MALFUNCTIONS

In the event that the systems maintained under this contract malfunction more than one (1) time per week for a period of two (2) consecutive weeks or greater, the County shall issue written notice to the contractor to resolve all malfunctions within ten (10) days. Should the contractor not resolve the malfunctions in the given time period, notwithstanding equipment long lead times, the County may obtain the services of another contractor or entity to resolve the malfunctions. If so, the contractor shall be responsible for such additional fees and the County may either be reimbursed by the contractor, or withhold said fees from the next monthly invoice, or by measures so authorized by the County.

PERMITS

The contractor shall be responsible to secure the construction permit for every project before commencement of work. Original construction permits and placards shall be forwarded to the Using Department Head or designee. The contractor shall call for all required inspections and apply for either "Certificate of Occupancy" or "Certificate of Approval".

SUBCONTRACTING

Subcontracting is permitted for Automatic Temperature Controls (ATC) & Building Automation Systems (BMS) Maintenance and Alteration Work labor trades as specified in this bid. Special conditions are applicable to subcontracted work as follows:

1. Contractor shall ensure the subcontractor complies with all terms of this contract.
2. Contractor agrees to provide any supervision required to ensure correct, complete and timely completion of the work at no additional cost to the County and as may be requested by the County.
3. Subcontractor shall be paid by the Contractor per the terms of their subcontract. The County bears no responsibility or liability to the subcontractor or any of their employees.
4. Contractor shall provide Public Work Contractor Registration Certificates for all subcontractors and as to any change in the status of subcontractors. It is the responsibility of the contractor to advise the County and provide all Certificates as required by law pursuant to the Public Work Contractor Registration Act.

GENERAL CONDITIONS

All work covered by this bid shall be classified as either “Maintenance Work” or “Alteration Work”.

Maintenance Work shall be defined as the repair of existing equipment when the size, type or extent of such equipment is not thereby changed or increased. For example, changing filters, pumps, motors in-kind.

Alteration Work shall be defined as upgrades or alterations made to existing systems. This work does not include complete new systems installations.

All Maintenance Work shall be in accordance and as outlined as follows:

- **Section I - Pro-Active Inspections and Preventive Maintenance**
- **Section II - Automatic Temperature Controls (ATC) & Building Automation Systems (BMS) Maintenance**
- **Section III – Maintenance Work – Labor & Materials**

All Alteration Work shall be in accordance as outlined as follows:

- **Section IV – Alteration Work – Labor & Materials**

SECTION I: PRO-ACTIVE INSPECTIONS & PREVENTIVE MAINTENANCE

This contract will cover all HVAC equipment but not limited to the following list in all County buildings (refer to attached building lists for Building & Grounds, Parks & Recreation, and Libraries):

Unit Type	Service Class	Units
1.	A, A1, A2,A3,A4	*HVAC (DX) Systems (RTU's, SP's, SCA/C, DX chillers) refrigerant cooling
2.	B, B1, B2	*HVA/C and HV Air Handlers, hydronic heating and cooling (AHU) water cooling
3.	C	Heat Pumps (HP)
4.	D, D1	Fan Coil Units, hydronic cooling (FC)
5.	E	Electric Heaters (unit heaters, strip heaters, etc.) (EH)
6.	F	Fans includes supply and return exhaust fans, kitchen hoods, laundry & air to air exchanges, energy recovery units (FAN)
7.	G	Window Air Conditioners (WU)
8.	H	Electrostatic Precipitators (EP)
9.	I	Dehumidifiers/Humidifiers (D/H)
10.	J	*Computer Room Air Conditioners (CPU)
11.	K, K1	*Lab Hoods (LH)
12.	L	*Terminal Unit Boxes (V.A.V. boxes, with or without re-heats) (TU)
13.	M	Humidifier Canisters

*Contractor to hire manufacturer authorized technician to once per year conduct complete assessment of equipment and operations and to provide report to Contractor and County. Contractor shall provide quote for service based on report. Manufacturer authorized technician shall provide refresher training of operations to both Contractor and County personnel.

Contractor shall furnish all air filters, canisters, belts, lubricants, condensate pan tablets as part of the Preventive Maintenance material cost line items. All other replacement parts shall be procured according to the "REPAIRS" provisions in these specifications.

Reclamation of removed refrigerant shall be in compliance with EPA regulations (40 CFR Part 82, Subpart F) under Section 608 of the Clean Air Act.

Parks Department will require only one (1) annual inspection for pro-active inspections and preventive maintenance service. This service must be completed by Mid-September. All repairs during inspections in excess of \$250.00 will require the approval of Director Michael Mangum.

For applicable unit types, Contractor shall calibrate all unit gauges and confirm calibration including notating date and any deviations on stickers or devise. Contractor shall notify the Departmental Contacts of any deviation from standard.

Contractor shall inspect and maintain all dampers and motorized valves, relays, unit controls and set points, motors, damper motors, compressors air dryers, gauges and any ancillary associated equipment.

Contractor shall furnish filters that meet or exceed N.J.A.C. 12:100-13 measured per ASHRAE 52.1-1992 as required per manufacturer specifications. After first Preventive Maintenance service compile and submit to County a summary of the type, size, and quantity of filters used in each unit.

SERVICE BY UNIT TYPE AND SERVICE CLASS**Unit Type 1 - Service Class A:** (major inspection April/Spring and Oct/Fall)

1. *Replace air filters
2. *Replace belts as needed
3. Check all ductwork for loose or broken connections, repair any abnormalities found, and record work performed
4. Check all damper motors for proper stroke, adjust as required to insure proper operation with no binding.
5. Check all linkages, adjust as needed and replace badly worn units
6. Check supply and condenser fan motors, lubricate as required, check bearings for noise, fan blades for clearance, etc.
7. Clean all debris from equipment housing
8. Clean electric heating coils with soapy water and air dry with compressed air (Note: Mechanic shall wear safety goggles and safety apparel when performing this operation)
9. Check electric current drawn by heating coils after the coils have been thoroughly cleaned and compare the ratings versus actual readings.
10. Check all equipment controls and safeties for proper operation including but not limited to thermostats, relays, line starters, control coils, freeze stats, fire stats, fan cycling switches, and high and low pressure cutouts
11. Tighten all electrical connections, blow out control cabinets with compress air (Note: Mechanic shall wear safety goggles and safety apparel when performing this operation)
12. Check refrigerant charge, if low, find and repair leak, and recharge system
13. *Clean condensate pans thoroughly and install new treatment tablet
14. Test condensate lines and pumps to ensure full function.
15. Compile the temperature difference of AC outlet air vs. room temperature on all units and provide a report of these measurements.
16. Prepare a preventative maintenance service report with the following information: air range, suction and discharge pressures, amperage readings and rated amperages, ambient air temperatures.
17. Check all fuses for proper sizes and overload ratings. Replace as required and report deficiencies
18. Check all electrical and equipment covers are in place and in good condition. Replace as required and report deficiencies
19. *Check for any mold and/or mildew contamination. Report findings to County's Buildings & Grounds Superintendent or designee
20. A certified mechanic shall perform all items listed above except that helper shall perform items marked with an (*) asterisk
21. AirMATION pre-filters: change pre-filters at Bldg. #31 (9 large in bays and 1 small in upstairs office) and Bldg. #65 (2 large in bays and 1 small in hallway). Replace HEPA and carbon filters at frequency as per indicator light; billed under labor hours.

Units Type 1 - Service Class A1:

(7) #19-Old {RTU1-3, small on Gym & Law Lib-2, DVR Room 3rd flr-1, SCAC5 in medical-1;
 (37) #19-New; (8) '62 jail in Courthouse {3S/P & 5 RTU}.

1. Replace air filters everywhere except Jail secure areas
2. Replace belts as needed
3. Clean condensate pans thoroughly and install new treatment tablet
4. Check unit operation for any obvious problem
5. Check for any mold and/or mildew contamination. Report findings to County's Buildings & Grounds Superintendent or designee
6. Helper shall perform all the above tasks (see P/M form as special instruction)

SERVICE BY UNIT TYPE AND SERVICE CLASS (Cont'd)**Units Type 1 - Service Class A1 (Cont'd)**

7. AirMATION pre-filters: change pre-filters at Bldg. #31 (9 large in bays and 1 small in upstairs office) and Bldg. #65 (2 large in bays and 1 small in hallway). Replace HEPA and carbon filters at frequency as per indicator light; billed under labor hours.

Units Type 1 - Service Class A2:

- (7) #19-Old {RTU1-3, small on Gym & Law Lib-2, DVR Room 3rd flr-1 SCAC5 in medical-1;
(37) #19-New; (8) '62 jail in Courthouse {3S/P & 5 RTU}; (1) #14
1. Replace air filters in Jail secure areas every other month only
 2. Replace air filters in Bldg. #14 every other month only and check operation. Time Allotted 30 minutes; balance of time to be used at building #19 RTU-1,2,3.
 3. *Replace air filters. RTU's 1,2,3 have 33 filters each unit.
 4. *Replace belts as needed
 5. Check all ductwork for loose or broken connections, repair any abnormalities found, and record work performed
 6. Check all damper motors for proper stroke, adjust as required to insure proper operation with no binding
 7. Check all linkages, adjust as needed and replace badly worn units
 8. Check supply and condenser fan motors, lubricate as required, check bearings for noise, fan blades for clearance, etc.
 9. Clean all debris from equipment housing
 10. Clean electric heating coils with soapy water and air dry with compressed air (Note: Mechanic shall wear safety goggles and safety apparel when performing this operation)
 11. Check electric current drawn by heating coils after the coils have been thoroughly cleaned and compare the ratings versus actual readings.
 12. Check all equipment controls and safeties for proper operation including but not limited to thermostats, relays, line starters, control coils, freeze stats, fire stats, fan cycling switches, and high and low pressure cutouts
 13. Tighten all electrical connections, blow out control cabinets with compress air (Note: Mechanic shall wear safety goggles and safety apparel when performing this operation)
 14. Check refrigerant charge, if low, find and repair leak, and recharge system
 15. *Clean condensate pans thoroughly and install new treatment tablet.
 16. Test condensate lines and pumps to ensure full function.
 17. Compile the temperature difference of AC outlet air vs. room temperature on all units and provide a report of these measurements.
 18. Prepare a preventative maintenance service report with the following information: air range, suction and discharge pressures, amperage readings and rated amperages, ambient air temperatures
 19. Check all fuses for proper sizes and overload ratings. Replace as required and report deficiencies
 20. Check all electrical and equipment covers are in place and in good condition. Replace as required and report deficiencies
 21. *Check for any mold and/or mildew contamination. Report findings to County's Buildings & Grounds Superintendent or designee
 22. A certified mechanic shall perform all items listed above except that helper shall perform items marked with an (*) asterisk

SERVICE BY UNIT TYPE AND SERVICE CLASS (Cont'd)

Unit Type 1 – Service Class A3

1. Units listed below per building shall already receive all services listed in Service Class A and A1. This service class A3 is intended to add 8 each additional filter changes in the remaining month thus providing monthly filter changes.
 - Bldg#20- units SP-5, SP-10 and SP-11
 - Bldg #60- all six DX units
 - Bldg #15 (Board of Elections)- AHU-1 only

Unit Type 1 – Service Class A4 (applies to Bldg. #29 ONLY)

1. Units listed below per building shall already receive all services listed in Service Class A and A1. This service class A4 is intended to add 20 additional filter changes (bi-weekly).

Units listed below shall also already receive all services listed in Service Class F. This service class A4 is intended to add 20 additional wash downs of air-to-air exchanges (bi-weekly) per manufacturer recommendations.

Thus, the twenty (20) A-4 Services in addition to four (4) services in Service Class A and A1 total 24 services in 1-year or bi-weekly service.

Bldg#29- two DX units

Unit Type 2 - Service Class B:

1. *Replace air filters
2. *Replace belts as needed
3. Check all ductwork for loose or broken connections, repair any abnormalities found, and record work performed
4. Check all damper motors for proper stroke, adjust as required to insure proper operation with no binding
5. Check all linkages, adjust as needed and replace badly worn units
6. Check supply and return air booster fan motors (where applicable), lubricate as required, check bearings for noise, fan blades for clearance, etc.
7. Clean all debris from equipment housing
8. Clean electric heating coils with soapy water and air dry with compressed air (Note: Mechanic shall wear safety goggles and safety apparel when performing this operation)
9. Check electric current drawn by heating coils after the coils have been thoroughly cleaned and compare the ratings versus actual readings
10. Check all equipment controls and safeties for proper operation including but not limited to thermostats, relays, line starters, control coils, freeze stats, fire stats, fan cycling switches, and high and low pressure cutouts
11. Tighten all electrical connections, blow out control cabinets with compress air (Note: Mechanic shall wear safety goggles and safety apparel when performing this operation)
12. Check all electrical and equipment covers are in place and in good condition. Replace as required and report deficiencies
13. Check all fuses for proper sizes and overload ratings. Replace as required and report deficiencies
14. *Clean condensate pans thoroughly and install new treatment tablet.
15. Test condensate lines and pumps to ensure full function.

SERVICE BY UNIT TYPE AND SERVICE CLASS (Cont'd)

Unit Type 2 - Service Class B: (Cont'd)

16. Start up equipment and check for excessive vibration and noise, proper rotation of motors and proper unit operation.
17. Prepare a preventative maintenance service report with the following information: amperage rating and amperage readings
18. *Check for any mold and/or mildew contamination. Report findings to County's Buildings & Grounds Superintendent or designee
19. A certified mechanic shall perform all items listed above except that helper shall perform items marked with an (*) asterisk

Unit Type 2 - Service Class B1:

1. Replace air filters everywhere but the Jail #19 (4) in new and (4) in old
2. Replace belts as needed
3. Clean condensate pans thoroughly and install new treatment tablet
4. Check unit operation for any obvious problem
5. Check for any mold and/or mildew contamination. Report findings to County's Buildings & Grounds Superintendent or designee
6. Helper shall perform all the above tasks (see P/M form as special instruction)

Unit Type 2 – Service Class B2:

1. Replace air filters once a month in Justice Complex Court Rooms only (5 units)
2. *Replace air filters
3. *Replace belts as needed
4. Check all ductwork for loose or broken connections, repair any abnormalities found, and record work performed
5. Check all damper motors for proper stroke, adjust as required to insure proper operation with no binding
6. Check all linkages, adjust as needed and replace badly worn units
7. Check supply and return air booster fan motors (where applicable), lubricate as required, check bearings for noise, fan blades for clearance, etc.
8. Clean all debris from equipment housing
9. Clean electric heating coils with soapy water and air dry with compressed air (Note: Mechanic shall wear safety goggles and safety apparel when performing this operation)
10. Check electric current drawn by heating coils after the coils have been thoroughly cleaned and compare the ratings versus actual readings
11. Check all equipment controls and safeties for proper operation including but not limited to thermostats, relays, line starters, control coils, freeze stats, fire stats, fan cycling switches, and high and low pressure cutouts
12. Tighten all electrical connections, blow out control cabinets with compress air (Note: Mechanic shall wear safety goggles and safety apparel when performing this operation)
13. Check all electrical and equipment covers are in place and in good condition. Replace as required and report deficiencies
14. Check all fuses for proper sizes and overload ratings. Replace as required and report deficiencies
15. *Clean condensate pans thoroughly and install new treatment tablet.

SERVICE BY UNIT TYPE AND SERVICE CLASS (Cont'd)

Unit Type 2 – Service Class B2: (Cont'd)

16. Test condensate lines and pumps to ensure full function.
17. Start up equipment and check for excessive vibration and noise, proper rotation of motors and proper unit operation
18. Prepare a preventative maintenance service report with the following information: amperage rating and amperage readings
19. *Check for any mold and/or mildew contamination. Report findings to County's Buildings & Grounds Superintendent or designee
20. A certified mechanic shall perform all items listed above except that helper shall perform items marked with an (*) asterisk

Unit Type 3 - Service Class C:

1. *Replace air filters
2. *Replace belts as needed
3. Check all ductwork for loose or broken connections, repair any abnormalities found, and record work performed
4. Check all damper motors for proper stroke, adjust as required to insure proper operation with no binding
5. Check all linkages, adjust as needed and replace badly worn units
6. Check supply and condenser fan motors, lubricate as required, check bearings for noise, fan blades for clearance, etc.
 7. Clean all debris from equipment housing
8. Clean electric heating coils with soapy water and air dry with compressed air (Note: Mechanic shall wear safety goggles and safety apparel when performing this operation)
9. Check electric current drawn by heating coils after the coils have been thoroughly cleaned and compare the ratings versus actual readings.
10. Check all equipment controls and safeties for proper operation including but not limited to thermostats, relays, line starters, control coils, freeze stats, fire stats, fan cycling switches, and high and low pressure cutouts
11. Tighten all electrical connections, blow out control cabinets with compress air (Note: Mechanic shall wear safety goggles and safety apparel when performing this operation)
12. Check refrigerant charge, if low, find and repair leak, and recharge system
13. *Clean condensate pans thoroughly and install new treatment tablet
14. Compile the temperature difference of AC outlet air vs. room temperature on all units and provide a report of these measurements.
15. Prepare a preventative maintenance service report with the following information: air range, suction and discharge pressures, amperage readings and rated amperages, ambient air temperatures
16. *Check for any mold and/or mildew contamination. Report findings to County's Buildings & Grounds Superintendent or designee
17. A certified mechanic shall perform all items listed above except that helper shall perform items marked with an (*) asterisk

Unit Type 4 - Service Class D:

1. *Replace air filters
2. Check all dampers and damper motors for proper stroke and operation, adjust as required to insure proper operation with no binding
3. Check all linkages, adjust as needed and replace badly worn units
4. Check fan motors, lubricate as required, check bearings for noise, fan blades for clearance, etc. and actual amperage versus rated amperage

SERVICE BY UNIT TYPE AND SERVICE CLASS (Cont'd)

Unit Type 4 - Service Class D: (Cont'd)

5. Tighten all electrical connections, blow out control cabinets with compress air (Note: Mechanic shall wear safety goggles and safety apparel when performing this operation)
6. Check the squirrel cage fan blade curvature is not dirt bound, if so, use a wire brush to remove dirt from the fan blade and vacuum up debris
7. Check valves operation with controls and verify they work properly
8. *Clean condensate pans thoroughly and install new treatment tablet
9. *Check for any mold and/or mildew contamination. Report findings to County's Buildings & Grounds Superintendent or designee
10. A certified mechanic shall perform all items listed above except that helper shall perform items marked with an (*) asterisk

Unit Type 4 - Service Class D1:

1. Replace air filters
2. Clean condensate pans thoroughly and install new treatment tablet
3. Check unit operation for any obvious problem
4. Helper shall perform all the above tasks

Unit Type 5 - Service Class E:

1. Check amperage on heater elements and fan motor against rated amperages
2. Clean heating elements with soapy water and air dry with compressed air (Note: Mechanic shall wear safety goggles and safety apparel when performing this operation)
3. Tighten all electrical connections, blow out control cabinets with compress air (Note: Mechanic shall wear safety goggles and safety apparel when performing this operation)
4. Check operation of controls and verify they work properly
5. Helper shall perform all the above tasks

Unit Type 6 - Service Class F:

1. Check amperage on heater elements and fan motor against rated amperages
2. Check fan motors for proper rotation
3. *Replace belts as needed
4. Check all fuses for proper sizes and overload ratings. Replace as required and report deficiencies
5. Tighten all electrical connections, blow out control cabinets with compress air (Note: Mechanic shall wear safety goggles and safety apparel when performing this operation)
6. Check operation of controls and verify they work properly
7. Start up equipment and check for excessive vibration and noise, proper rotation of motors and proper unit operation
8. Check all electrical and equipment covers are in place and in good condition. Replace as required and report deficiencies
9. A certified mechanic shall perform all items listed above except that helper shall perform items marked with an (*) asterisk
10. For building #29- wash down the air-to-air exchangers per manufacturer's recommendation.

Unit Type 7 - Service Class G:

1. Replace window air conditioner air filters twice per year.
2. Check for air ranges, thermostat failure, fan failure, and overall condition.
3. Check for any mold and/or mildew contamination.
4. Report findings to County's Buildings & Grounds Superintendent or designee
5. Helper shall perform all the above tasks

SERVICE BY UNIT TYPE AND SERVICE CLASS (Cont'd)

Unit Type 8 - Service Class H:

1. Clean & check for proper operation per manufacturer's specifications

Unit Type 9 - Service Class I:

1. Check for any mold and/or mildew contamination. Report findings to County's Buildings & Grounds Superintendent or designee
2. Helper shall perform all the above tasks

Unit Type 10 - Service Class J:

At existing locations and (3 Lieberts) #19 – new Jail Room CI0098 ground floor/IT workroom

1. Replace air filters
2. Replace belts as needed
3. Check for any mold and/or mildew contamination. Report findings to County's Buildings & Grounds Superintendent or designee
4. A certified mechanic shall perform all items listed above
5. Note: If a unit is in a down condition, all repair parts not readily available shall be shipped "Next Day" service from the manufacturer

Unit Type 11 - Service Class K:

1. Replace air filters
2. Check air flow meter readings and record them
3. Make required adjustments to maintain design air flow
4. A certified mechanic shall perform all items listed above

Unit Type 11 - Service Class K1:

1. Replace belts
2. Replace air filters
3. Check air flow meter readings and record them
4. Make required adjustments to maintain design air flow
5. A certified mechanic shall perform all items listed above

Type 12 Unit - Service Class L:

1. Replace air filters
2. Check all dampers and damper motors for proper stroke and operation, adjust as required to insure proper operation with no binding
3. Check all linkages, adjust as needed and replace badly worn units
4. Check fan motors, lubricate as required, check bearings for noise, fan blades for clearance, etc. and actual amperage versus rated amperage
5. Check all fuses for proper sizes and overload ratings. Replace as required and report deficiencies
6. Tighten all electrical connections, blow out control cabinets with compress air (Note: Mechanic shall wear safety goggles and safety apparel when performing this operation)
7. Check the squirrel cage fan blade curvature is not dirt bound, if so, use a wire brush to remove dirt from the fan blade and vacuum up debris
8. Check valves operation with controls and verify they work properly
9. Check for any mold and/or mildew contamination. Report findings to County's Buildings & Grounds Superintendent or designee
10. A certified mechanic shall perform all items listed above

NOTE: Health Dept. #38 has 110 filters located throughout all rooms. Coordinate 24 hour advance notice with facility director.

SERVICE BY UNIT TYPE AND SERVICE CLASS (Cont'd)

Type 13 Unit – Service Class M (applies to Bldg. #19 ONLY)

1. Replace humidifier canisters on 14 Liebert units quarterly. New Jail section in mainly electrical closets. Canisters 10ft. to 16ft. above floor.

See PREVENTATIVE MAINTENANCE SCHEDULE charts for type of service by month.

All planned maintenance shall be performed by certified mechanics and helpers at the corresponding unit prices bid herein. All ratios for mechanic and helper contained in the Labor & Quantities chart of this bid serves as a guide for man-hours for quantity and types of unit service. New companies may require slightly more time for their first quarter service due to the "Learning Curve", however, the man hours ceiling for the **NOT TO EXCEED** is fairly generous so no special considerations shall be given.

**SECTION II: AUTOMATIC TEMPERATURE CONTROL SYSTEMS (ATC) & BUILDING
AUTOMATION SYSTEMS (BMS) MAINTENANCE**

Automatic Temperature Control Systems (ATC)

Contractor shall maintain and service the Digital Controls Devices associated with all mechanical equipment in this contract. Controls include but are not limited to the following: Micronics housing, electronic input/output modules, all sensors, relays, valve operators, switches control actuators, dampers, thermostats, controllers, VAV's and reheats.

Perform preventive maintenance Annually in April and May.

Calibrate and adjust in accordance with manufacture instructions and per industry standards. Report any operational problems to the County Buildings & Grounds Superintendent or designee.

Contractor's personnel shall be trained by manufacturer to keep all systems in proper working condition and to maintain these systems in a safe operating condition and in accordance with the original design criteria.

ATC technician shall coordinate maintenance with the HVAC mechanic and both shall be **on-site** during all testing/calibrations.

Major VAV with Re-heats Systems:

The following are approximate quantities to aid in bidding purposes. Said buildings have acoustical ceiling systems.

- Bldg. #15, P.E.E.R. 129 Hooper Ave – 120
- Bldg. #16, Prosecutor Office – 85
- Bldg. #17, Administration - 33
- Bldg. #19, Justice Complex – 97 (4th floor has none)
- Bldg. #38, Health Department - 100

SECTION II: AUTOMATIC TEMPERATURE CONTROL SYSTEMS (ATC) & BUILDING AUTOMATION SYSTEMS (BMS) MAINTENANCE, (Cont'd)

Automatic Temperature Control Systems are located as follows:

<u>Bldg. #</u>	<u>Location</u>	<u>System</u>
#1	1 Mott Place	Carrier VVT
#2	2 Mott Place	Carrier VVT
#3	3 Mott Place	Carrier VVT
#15	129 Hooper Ave.	Distech
#16	119 Hooper Ave.	Distech
#17	101 Hooper Ave.	Distech
#19-New Jail	114 Hooper Ave.	Trane
#19-Justice Complex	120 Hooper Ave.	Distech
#20	118 Washington St.	Distech
#25	15 Hooper Ave.	Carrier VVT
#30	152 Chestnut St. (Chestnut Garage)	Carrier VVT
#31	152 Chestnut St. (Vehicle Maintenance)	Johnson
#32A	152 Chestnut St. (Prosecutor's Gun Rm)	Carrier VVT
#33	141 Mapletree Rd.	Carrier VVT
#37	165 Sunset Ave.	Tridium & Carrier VVT (local only)
#38	175 Sunset Ave.	Trane
#39	1623 Whitesville Rd.	Carrier VVT
#40	1959 Route 9	Carrier VVT (local terminal only)
#41	225 4 th Street, Lakewood	KMC (not local, only Supervisor PC)
#42	659 Ocean Ave, Lakewood	Johnson Controls
#52	Rt. 530 & Mule Road, Berkeley	Johnson Controls
#56	Rt. 530 & Mule Road, Berkeley	Trane
#58A	Communications Tower	Tridium
#63	1959 Route 9 (rear), Toms River	Carrier VVT
#91A	200 Volunteer Way, Waretown	Carrier VVT

Building Automation Systems (BMS) Maintenance

Contractor shall upgrade, expand, alter software and graphics as required based on building modifications, alterations, renovations or as requested or required by manufacturer, including collateral accessories.

Controls Software Manufacturers: (At various County locations as detailed below.)

- Carrier
- Johnston Controls
- Trane
- Distech
- Tridium

Contractor shall be trained and approved by manufacturer to work on software systems.

SECTION III – MAINTENANCE WORK

WINTERIZING CHILLER LOOPS

The contractor shall check the chill water loops at buildings #20, 37, 38 for freeze protection level to 0 degrees Fahrenheit and treat with polypropylene glycol as required to maintain protection levels. Supplying of polypropylene glycol shall be on an as needed basis.

<u>Building</u>	<u>Loop Size</u>
#20	490 gallon loop
#37	1240 gallon loop
#38	approx. 250 gallon loop
#56	205 gallon loop (New Terminal)

Provide material pricing for polypropylene glycol on pricing pages. Labor for winterization shall be billed against the hourly rate per section III “Maintenance Work” per applicable department.

SECTION IV – ALTERATION WORK

Alteration Work is separate from the maintenance work as outlined in sections I – III of this bid.

Alteration Work is defined as upgrades or alterations made to existing systems. This work does not include complete new systems installations.

The following Alteration Work labor crafts may be subcontracted by the HVAC contractor provided provisions outlined in paragraph “Subcontracting” of this bid are adhered to.

Alteration Work shall be billed according to the following labor crafts and the contractor shall provide pricing for these labor crafts on the pricing page for section IV.

Labor Crafts:

- Electrician
- Pipefitter
- Sheet Metal
- Mechanical Insulation Installer
- HVAC Mechanic Installer
- Plumber
- Welder

Mechanical Insulation work shall include the demolition/ removal of old insulation, disposal, and installation of new insulation. Excluded is repair of existing work.