Building 20 - DVL Autoclave 3536 & 3822 Replacement

2/4/2026

Statement of Work (SoW)

USDA – NCAH
1920 Dayton Avenue
Ames, Iowa 50010

Project Requirements:

1. The USDA National Centers for Animal Health, 1920 Dayton Avenue, Ames, IA 50010 has two (2) pass-through autoclaves serving The Diagnostic Virology Laboratory (DVL) on the third floor main consolidated laboratory facility (building 20) that need to be replaced with new autoclaves including: removal and installation of units, setup, programming and commissioning to the newest/latest controls version/revision and training of USDA operators and maintenance technicians.
2. These requirements are needed to support safety for employees and visitors to the USDA-NCAH location.

Item 0001 – Base – Autoclave 3822:

Replace one (1) Tuttnauer pass-through Autoclave/sterilizer on the third floor of building 20, DVL section, room 3822:

1. The contractor shall remove existing autoclave/sterilizer
2. The contractor shall furnish, assemble, and make final connection points to one (1) Primus Model PSS-F-MSHDD Autoclave/sterilizer (or approved equal) in location shown on attached drawings and in accordance with the specifications listed.
3. Internal chamber dimensions: 26”Wx36”Hx48”D
4. Door configuration: Double door (hinged doors)
5. Mounting: Recessed, two (2) walled
6. Controls: PLC based with minimum 8.5” color touch screen and 30 customizable cycles. The program settings shall be password protected with the password turned over to USDA staff at the completion of the project and training.
7. Provide options for ethernet network connectivity and USB storage transfer.
8. Printer: Alphanumeric, Thermal with take-up with capabilities of printing alarms.
9. Cycles: Gravity, liquid, pre and post vacuum. Names shall be customizable for quick, accurate identifications.
10. Default cycle table provided below.

Sterlizers shall be capable of running, at a minimum, the cycles in the following table:

time	temp	cycle type
30 min/45 min dry	121C	unwrapped cycle - fast & dry exhaust
5 min	121C	liquid cycle slow exhaust
10 min	121C	liquid cycle slow exhaust
12 min	121C	liquid cycle slow exhaust
15 min	121C	liquid cycle slow exhaust
20 min	121C	liquid cycle slow exhaust
25 min	121C	liquid cycle slow exhaust
30 min	121C	liquid cycle slow exhaust
32 min	121C	liquid cycle slow exhaust
35 min	121C	liquid cycle slow exhaust
40 min	121C	liquid cycle slow exhaust
45 min	121C	liquid cycle slow exhaust
10 min	116C	
15 min	116C	
20 min	116C	
10 min	75C	

11. Piping: Stainless steel threaded
12. Vacuum system: Electric pump
13. Valves: Air-operated valves, Non-Proprietary (Electric solenoids not permitted)
14. Chamber: 316L stainless steel
15. Jacket: Fully jacketed-304L stainless steel
16. Bio-Seal: Enhanced fully gasketed (fully gasketed seal, mechanically fastened by locking bars and bolts to SS panels attached bldg.)
17. Stainless steel bio-seal extension panels
18. Insulation: Door and vessel
19. Loading carts (2) and transfer carriages (4)
20. Condensate cooler: Effluent cooled to below 140 deg F in accordance with national plumbing code, 2006, paragraph 701.7
21. Gasket function: Air to gasket in standby mode-steam to gasket during cycles
22. Test cycles: Preset cycles for Vacuum, Gravity, Liquid plus Test cycles, Bowie Dick test
23. Warranty: The new autoclaves and all associated, infrastructure, mechanical, and electrical components shall be warranted to be free from defects in workmanship and materials used in the building 20 DVL Autoclave Replacements. The period of warranty shall be 12 months from the contract completion date. Trouble/service call response time by a certified technician for the autoclave manufacturer for any warranty work shall be less than 5 Business days.

Contractor responsibilities:

1. DVL laboratory access training is required for personnel entering the laboratory space. USDA/DVL employees shall provide training on procedures and protocols for entering and exiting the space. (Approximately 30 minutes to complete. Awarded contractor to schedule with Contracting Officer's Representative after contractor award/notice to proceed.) Examples: Personnel required to wear laboratory supplied clothing (usually surgical scrubs), shower upon exiting the lab, and staff must agree not to have contact with birds and pigs for 5 days after exiting the laboratory.

2. Contractor shall furnish new autoclave/sterilizers. The autoclave shall be shipped to and received by the installation contractor at their place of business. Contractor shall use the NCAH building 20 shipping/receiving warehouse dock for delivery to the project location.
3. Contractor shall review project drawings to ensure the autoclave will fit through all openings and the elevator during transport to its final location.
4. Relocate from the shipping/receiving warehouse dock to final location, set in place and level units, start-up and make final connection to new autoclave/sterilizer in place. The contractor shall provide all necessary labor, parts, and materials to make final connections with new mechanical, electrical, pneumatic controls, control panels, PLC, printer and insulation.
5. All necessary RTD Load temperature sensors, pressure sensors, gauges, and other controls needed for the operation of the sterilizer shall be provided and installed by awarded contractor.
6. Contractor shall furnish and install trim panels and necessary gasketing for tight fit against existing wall/structure.
7. Make final connection to new autoclave/sterilizers in place including attachment to the existing facility structure. The contractor shall provide all necessary labor, parts, and materials to make final connections with new mechanical, electrical, pneumatic controls, control panels, PLC, printer and insulation.
8. Contractor shall submit on installation and operation requirements and information as well as engineering technical requirements of the sterilizers as a part of the shop drawing submittal review process and shall coordinate utility connections needed, including size and locations, as a part of the shop drawing submittal process.
9. Awarded contractor shall provide training consisting of facility staff, operator & supervisor training session at no charge during equipment startup. Training will cover equipment operation, HMI navigation, maintenance, and general equipment questions.
10. Contractor shall remove and dispose of the old existing autoclave/sterilizer from DVL to an approved location external to USDA property.
    - All products shall be disposed of in accordance with all Federal, State and Local codes. Contractor shall supply weight and type of all material recycled and weight and type of all material sent to landfill. Receipts shall be given to the Contracting Officer's Representative.
11. Work on/for this project shall be completed by technicians with at least 5 years of experience and fully trained, certified, and current on repair, rebuilding, servicing, installation, setup, programing and commissioning of the specific manufacturer's autoclaves.
12. All work shall result in a new autoclave in compliance with the manufacturer's corporate policy for field service of their autoclaves. All equipment, programming, and controls shall be upgraded to the latest version at the time of turnover.
13. Contractors shall provide documentation in writing whereby the manufacturer acknowledges providing contract maintenance and repairs service on the autoclaves. This documentation is to be provided with the proposal.
14. The contractor shall submit jobs completed that are of similar size and scope.

USDA responsibilities:

1. USDA will disconnect all electrical, steam, air, water, and drain lines prior to contractor removing equipment.
    - House steam (50-80 PSI)
    - Domestic cold water (45 PSI minimum)
    - Compressed air (90 PSI minimum)
2. USDA will be available to assist in installation of new autoclave/sterilizers
3. The USDA will provide a forklift and operator. The contractor is responsible for ensuring the available resources to facilitate the movement of the autoclave. If the provided forklift does not meet the contractor's needs, then the contractor shall provide its own at no additional cost to the USDA.
4. Floor drains
5. Provide dedicated electrical service
6. Build temporary containment wall between autoclave/sterilizer and DVL laboratory space.
7. Decontaminate the area prior to contractor work. The autoclave shall remain in place until the new autoclave is available for installation.
8. The contractor shall take any-and-all precautions necessary to not damage surrounding campus areas, construction, utilities, and finishes including areas not noted to be in the scope. Any items or areas including flooring, doors, utilities, walls, equipment, millwork, cabinets/counters, or ceilings that are disturbed or damaged by Contractor's work shall be fixed to match existing construction and finish.

Project Timeline:

All work will need to be scheduled with the Government's representative. Contractor shall be given 365 days from the "Notice to Proceed" to complete the project.

Item 0002 – Option #1 – Autoclave 3536:

Replace one (1) Tuttnauer pass-through Autoclave/sterilizer on the third floor of building 20, DVL section, room 3836:

1. The contractor shall remove existing autoclave/sterilizer
2. The contractor shall furnish, assemble, and make final connection points to one (1) Primus Model PSS-F-MSHDD Autoclave/sterilizer (or approved equal) in location shown on attached drawings and in accordance with the specifications listed.
3. Internal chamber dimensions: 26"Wx36"Hx48"D
4. Door configuration: Double door (hinged doors)
5. Mounting: Recessed, two (2) walled
6. Controls: PLC based with minimum 8.5" color touch screen and 30 customizable cycles. The program settings shall be password protected with the password turned over to USDA staff at the completion of the project and training.
7. Provide options for ethernet network connectivity and USB storage transfer.

8. Printer: Alphanumeric, Thermal with take-up with capabilities of printing alarms.
9. Cycles: Gravity, liquid, pre and post vacuum. Names shall be customizable for quick, accurate identifications.
10. Default cycle table provided below.

Sterlizers shall be capable of running, at a minimum, the cycles in the following table:

time	temp	cycle type
30 min/45 min dry	121C	unwrapped cycle - fast & dry exhaust
5 min	121C	liquid cycle slow exhaust
10 min	121C	liquid cycle slow exhaust
12 min	121C	liquid cycle slow exhaust
15 min	121C	liquid cycle slow exhaust
20 min	121C	liquid cycle slow exhaust
25 min	121C	liquid cycle slow exhaust
30 min	121C	liquid cycle slow exhaust
32 min	121C	liquid cycle slow exhaust
35 min	121C	liquid cycle slow exhaust
40 min	121C	liquid cycle slow exhaust
45 min	121C	liquid cycle slow exhaust
10 min	116C	
15 min	116C	
20 min	116C	
10 min	75C	

11. Piping: Stainless steel threaded
12. Vacuum system: Electric pump
13. Valves: Air-operated valves, Non-Proprietary (Electric solenoids not permitted)
14. Chamber: 316L stainless steel
15. Jacket: Fully jacketed-304L stainless steel
16. Bio-Seal: Enhanced fully gasketed (fully gasketed seal, mechanically fastened by locking bars and bolts to SS panels attached bldg.)
17. Stainless steel bio-seal extension panels
18. Insulation: Door and vessel
19. Loading carts (2) and transfer carriages (4)
20. Condensate cooler: Effluent cooled to below 140 deg F in accordance with national plumbing code, 2006, paragraph 701.7
21. Gasket function: Air to gasket in standby mode-steam to gasket during cycles
22. Test cycles: Preset cycles for Vacuum, Gravity, Liquid plus Test cycles, Bowie Dick test
23. Warranty: The new autoclaves and all associated, infrastructure, mechanical, and electrical components shall be warranted to be free from defects in workmanship and materials used in the building 20 DVL Autoclave Replacements. The period of warranty shall be 12 months from the contract completion date. Trouble/service call response time by a certified technician for the autoclave manufacturer for any warranty work shall be less than 5 Business days.

Contractor responsibilities:

1. DVL laboratory access training is required for personnel entering the laboratory space. USDA/DVL employees shall provide training on procedures and protocols for entering and exiting the space. (Approximately 30 minutes to complete. Awarded contractor to schedule with Contracting Officer's Representative after contractor award/notice to proceed.) Examples: Personnel required to wear laboratory supplied clothing (usually

surgical scrubs), shower upon exiting the lab, and staff must agree not to have contact with birds and pigs for 5 days after exiting the laboratory.

2. Contractor shall furnish new autoclave/sterilizers. The autoclave shall be shipped to and received by the installation contractor at their place of business. Contractor shall use the NCAH building 20 shipping/receiving warehouse dock for delivery to the project location.
3. Contractor shall review project drawings to ensure the autoclave will fit through all openings and the elevator during transport to its final location.
4. Relocate from the shipping/receiving warehouse dock to final location, set in place and level units, start-up and make final connection to new autoclave/sterilizer in place. The contractor shall provide all necessary labor, parts, and materials to make final connections with new mechanical, electrical, pneumatic controls, control panels, PLC, printer and insulation.
5. All necessary RTD Load temperature sensors, pressure sensors, gauges, and other controls needed for the operation of the sterilizer shall be provided and installed by awarded contractor.
6. Contractor shall furnish and install trim panels and necessary gasketing for tight fit against existing wall/structure.
7. Make final connection to new autoclave/sterilizers in place including attachment to the existing facility structure. The contractor shall provide all necessary labor, parts, and materials to make final connections with new mechanical, electrical, pneumatic controls, control panels, PLC, printer and insulation.
8. Contractor shall submit on installation and operation requirements and information as well as engineering technical requirements of the sterilizers as a part of the shop drawing submittal review process and shall coordinate utility connections needed, including size and locations, as a part of the shop drawing submittal process.
9. Awarded contractor shall provide training consisting of facility staff, operator & supervisor training session at no charge during equipment startup. Training will cover equipment operation, HMI navigation, maintenance, and general equipment questions.
10. Contractor shall remove and dispose of the old existing autoclave/sterilizer from DVL to an approved location external to USDA property.
    - All products shall be disposed of in accordance with all Federal, State and Local codes. Contractor shall supply weight and type of all material recycled and weight and type of all material sent to landfill. Receipts shall be given to the Contracting Officer's Representative.
11. Work on/for this project shall be completed by technicians with at least 5 years of experience and fully trained, certified, and current on repair, rebuilding, servicing, installation, setup, programing and commissioning of the specific manufacturer's autoclaves.
12. All work shall result in a new autoclave in compliance with the manufacturer's corporate policy for field service of their autoclaves. All equipment, programming, and controls shall be upgraded to the latest version at the time of turnover.
13. Contractors shall provide documentation in writing whereby the manufacturer acknowledges providing contract maintenance and repairs service on the autoclaves. This documentation is to be provided with the proposal.

14. The contractor shall submit jobs completed that are of similar size and scope.

    USDA responsibilities:

    1. USDA will disconnect all electrical, steam, air, water, and drain lines prior to contractor removing equipment.
        - House steam (50-80 PSI)
        - Domestic cold water (45 PSI minimum)
        - Compressed air (90 PSI minimum)
    2. USDA will be available to assist in installation of new autoclave/sterilizers
    3. The USDA will provide a forklift and operator. The contractor is responsible for ensuring the available resources to facilitate the movement of the autoclave. If the provided forklift does not meet the contractor's needs, then the contractor shall provide its own at no additional cost to the USDA.
    4. Floor drains
    5. Provide dedicated electrical service
    6. Build temporary containment wall between autoclave/sterilizer and DVL laboratory space.
    7. Decontaminate the area prior to contractor work. The autoclave shall remain in place until the new autoclave is available for installation.
    8. The contractor shall take any-and-all precautions necessary to not damage surrounding campus areas, construction, utilities, and finishes including areas not noted to be in the scope. Any items or areas including flooring, doors, utilities, walls, equipment, millwork, cabinets/counters, or ceilings that are disturbed or damaged by Contractor's work shall be fixed to match existing construction and finish.

Project Timeline:

All work will need to be scheduled with the Government's representative. Contractor shall be given 365 days from the "Notice to Proceed" to complete the project.

General Requirements:

1.01 Work Restrictions & Conditions

A. General Site Security Access
    1. Access to the construction site is controlled by a security fence and visitor/contractor check-in/check-out system. All contractor/subcontractor employees shall sign-in and out at the main site entrance gate and always wear a contractor/visitor identification badge while on the site. The ID badges will be turned in at the end of the workday. A current/valid government-issued identification with a Real ID is required for entry.
        a. Additional requirements exist within DVL, as noted above.
    2. Access to each individual site shall be arranged by the Contracting Officer's Representative according to the schedule submitted by the contractor and approved by the Contracting Officer's Representative. The contractor shall coordinate and schedule his/her

work under this contract to cause the least interference with the normal flow of visitors and employee traffic.

3. Construction vehicles and contractor employees' personal vehicles shall be parked in the facility parking lots designated by the Contracting Officer's Representative.
4. The Contractor shall use only access routes approved by the Contracting Officer's Representative.
5. Work shall be confined to the areas identified on the Drawings. Unless accompanied by a NCAH/USDA employee, the Contractor, subcontractors, and their employees shall not enter buildings or facilities not specifically part of this project. Reasons included, but are not limited to, disease control and health requirements.
6. Additional security requirements may be imposed when the Federal Government raises the Homeland Security Alert Level. Additional directions will be provided if the situation occurs.
7. Failure to comply with access requirements shall be adequate grounds for removal of the Contractor/subcontractor employees from the site and barring further site access to individuals.

B. Work Hours: Regular work hours for the site are 8:00 AM to 4:30PM, Monday through Friday, excluding Government holidays. Requests for exceptions to this schedule shall be made in writing forty-eight (48) hours in advance and approved by the Contracting Officer's Representative.

C. Work Outside Regular Work Hours: Work scheduled outside regular work hours including late hours, Saturdays, Sundays, and Government holidays requires Contracting Officer's Representative (COR) approval in advance. Make application to the COR at least 5 calendar days prior to such work to allow arrangements to be made by the Government for access to the work area and inspection & monitoring arrangements. Requests shall include the exact dates, hours, location, and purpose of the exception. If approved, the COR will coordinate access with the site security office.

D. Construct Work in stages to accommodate Owner's use of premises during construction period. Coordinate construction schedule and operations with Contracting Office's Representative (COR).

E. Coordinate use of premises under direction of the COR. Contractor shall confine construction equipment, storage of materials and equipment and operations of workers to areas permitted by law, ordinances, permits, or requirements of Contract Documents, and shall not unreasonably encumber premises with construction equipment or other material or equipment.
   1. Assume full responsibility for protection and safekeeping of items under this Agreement, stored on site.
   2. Move any stored items, under Contractor's control, which interfere with operations of Owner or separate contractor.
   3. Obtain and pay for use of additional storage or Work areas needed for operations.

Owner will occupy premises during entire period of construction for conduct of its normal operations. Coordinate with Owner's Representative/COR in all construction operations to minimize conflict, and to facilitate Owner usage. Contractor shall always conduct its operations as to ensure least inconvenience to Owner.

1.02 Special Agreement Checks (SAC)

A. Use of Premises

1. Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the work is approved.
2. Keep driveways and entrances serving premises clear and available to the Government, employees, visitors, and emergency vehicles always. Do not use these areas for parking or storage of materials.
3. Limited parking may be available on the site away from each facility.
   a. The contractor shall provide a list of intended employees to the Contracting Officer's Representative within three (3) calendar days of task order award.
   b. The contractor shall keep the list of employees up to date throughout the project in the event of employee separation and transfer.

B. Adherence to Security Policies and Procedures

1. The Contractor shall adhere to all Site, APHIS and USDA security policies and procedures including Code of Federal Regulations Requirements, Standard Operating Procedures, Security Directives, Security Procedures, General Orders, Post Orders and any applicable Government Policies and Procedures.
   a. Failure to adhere to or violation of any above listed requirements, procedures, directives, orders and/or policies may result in criminal prosecution or contractor representative or contractor employee (violator) removal.

1.03 Contract Drawings

A. Government provided drawings, henceforth referred to as "Contract Drawings," do not attempt to show complete details of building construction that may affect installation. Government provided diagrams of proposed systems are for reference only and do not necessarily show physical arrangement of all equipment and/or maximum number of devices. Minimum system requirements are shown.

B. Devices are shown diagrammatically only. System layout does not necessarily show maximum number of system components and should not be used for obtaining quantities for linear runs of conduits and wires.

C. Locations of existing and Government concept devices are approximate and may be distorted for clarity in representation.

1.04 Regulatory Requirements

A. The equipment materials, installation, workmanship, and operation shall conform to the most stringent applicable requirements of the most recent editions of the associated publications, in the below section and in the attached specifications unless otherwise noted:

1. National Fire Protection Association (NFPA)
   a. NFPA 101 – Safety to Life from Fire in Buildings and Structures.
   b. NFPA 1 – Uniform Fire Code

c. NFPA 5000 – Building Construction and Safety Code
2. Underwriters Laboratories, Inc. (UL)
   a. Appropriate UL Standards
3. State and Local Building Codes as adopted by the Authority Having Jurisdiction (AHJ).
4. The Uniform Federal Accessibility Standards (UFAS)
5. Occupational Safety and Health Administration (OSHA)

1.05 Coordination

A. The contractor shall coordinate all work with the Contracting Officer's Representative.

B. The contractor shall submit an installation schedule for review and approval by the Contracting Officer's Representative within ten (10) days of task order award.

C. The contractor shall be solely responsible for coordinating work with all subcontractors and ensuring that all items of joint use in conjunction with installations are completed.

1.06 Special Provisions

A. The Contractor shall confine all operations to within the work limits of the project and exercise special care to maintain natural surroundings undamaged. All surfaces that have been altered for the installation of the building 20 DVL Autoclave/sterilizer Replacements shall be refinished to match original condition by skilled personnel of the trades involved at no additional expense to the Government.

B. Finished surfaces of existing facilities that are affected, marred, scratched, or damaged by the contractor shall be refinished to match original condition.
   1. Patching material shall be of the same type, style, and thickness, and shall be finished to match existing adjacent surface construction in color and texture.
   2. Patching material, paint color, paint material and paint application methods shall be approved in advance by the Contracting Officer’s Representative.

C. No building structural members shall be cut or altered without prior approval of the Contracting Officer's Representative.

D. Any damage resulting from contractor's operation shall be brought to the attention of the Contracting Officer's Representative immediately.

E. The contractor shall take all necessary and reasonable measures to keep the work site clean of trash and debris. Work areas shall be cleaned immediately as work in that area is completed, and before moving to a new work site. Place all trash and debris in OSHA approved containers, remove, and dispose of trash off site daily.

F. The contractor shall move all materials and equipment, including ladders and scaffolding from the site at the completion of each day's operation unless otherwise approved by the Contracting Officer's Representative.

G. The contractor shall provide proper safety equipment to workers and always ensure a safe environment for employees and the public. The contractor shall work to ensure free, unobstructed, and safe access to and about the work area.

1.07 Temporary Facilities

A. Utilities: The existing USDA utilities at the site may be available for use by the Contractor for completion of the contract work at no cost to the Contractor. The Contractor shall be responsible for notifying the COR to coordinate with USDA facilities personnel before making and removing any utility connections.

B. Telephones: The Contractor shall equip all his supervisors and work leaders with cell phones as necessary to coordinate the work effort. The Government will not provide any phone service for the project.

C. Toilet Facilities: The existing USDA toilet facilities in Building 20 may be used by the Contractor for completion of the contract work at no cost to the Contractor.

1.08 Lock-out/Tag-out Program:

A. The Contractor and/or subcontractor employees who will be working on the job will apply a lockout/tagout (LOTO) process to control dangerous energy sources. The Contractor/subcontractor shall have a LOTO program established and use Contractor LOTO locks, tags, and procedures.

B. The Contractor/subcontractor shall review their LOTO program with NCAH FEU personnel to coordinate LOTO programs before implementing LOTO.

1.09 Hot Work Plan:

A. The Contractor/subcontractor shall have a written plan in place to manage the safety and fire hazards associated with hot work. The Plan shall include fire watch and all other requirements in accordance with OSHA. The Contractor/subcontractor shall maintain written records of hot work until final acceptance of the project and shall provide copies to the Owner's Representatives at any time requested.

1.10 Submittal & Shop Drawings Procedures

A. Submittal Register: At the beginning of the project, the Contractor will provide a Submittal Register identifying all the items called out in the Specifications for submittal to the COR for approval. The Contractor will update and maintain the Submittal Register to show the status of all required submittals.

B. Submittal Requirements
   1. Format: There is no formal submittal transmittal or format for this project other than the
   2. documents shall be submitted as PDF files, scanned, or created in documents that can be easily read when printed on 11x17 sheets. Exceptions for larger sheet sizes will be considered by the COR. Failure of the Contractor to provide legible submittals will be adequate grounds for rejection.
   3. Identification: Submittals shall be labeled and marked for this project. The identification shall include Contractor/subcontractor's name, date of submittal, description of item, specification section, and details on product data that are marked clearly for this project.

C. Submittal Procedures: All submittals will be emailed in PDF by the Contractor to the Contracting Officer and the Contracting Officer's Representative. The reviewed submittals will be emailed back to the Contractor upon approval or disapproval. This same submittal process will be used for RFIs, Change Bulletins, etc.

D. Approved Submittals: The approval/acceptance of submittals is not to be construed as a complete check. Approval or acceptance will not relieve the Contractor of the responsibility for any error which may exist.

E. Submittal items for this project:

1. Sterilizers (Installation and Operational Manuals and engineering data)
2. Wall paneling and trim.
3. Gauges.
4. Remote sensors.
5. Tanks/vessels.
6. Pumps.
7. Insulation.
8. Control panel.
9. PLC.
10. Printer.
11. Program (cycles, etc.).
12. Commissioning plan.
13. USDA training plan.
14. The contractor shall submit jobs completed that are of similar size and scope
15. Project schedule

1.11 Warranty Documentation

A. Provide a warranty summary sheet in spreadsheet format with all the warranties listed by section, description, supplier, warranty contact, start date, end date. Provide electronic copy to the COR and place printed copy in front of the Warranty Binder.

B. The Contractor shall provide 2 printed copies of all Operation & Maintenance documentation provided with the building 20 Lab Resources Unit Autoclave Replacement project and place the manuals in an organized binder. The O&M Manuals shall include a parts list and a list of recommended parts. The O&M Manuals shall be organized by specification section and shall have an index at the front of the binder. The Contractor shall also provide a PDF version of the Manuals to be submitted with the close-out documentation.

C. Record Drawings

1. Redline Specifications: During the construction period the Contractor shall keep an updated & marked up or "redline" copy of the project specifications on the jobsite. The redline set shall include notes on changes, RFI responses, and other field notes. At the end

of the project the Contractor shall electronically scan the redline specifications and provide an electronic copy in PDF to the Owner along with the close-out documentation.

2. Redline Drawings: During the construction period the Contractor shall keep an updated "redline" or "conformed" copy of the project drawings on the jobsite. The redline set shall include notes on changes, RFI responses, and other field notes. At the end of the project the Contractor shall electronically scan the redline drawings at full-size and in color and provide an electronic copy in PDF to the Owner along with the close-out documentation.

END OF SECTION