**CSI 3-Part Specification for BTHL-199A**

1. **General**
   1. **Summary**
      1. Related Documents
         1. Drawings and general provisions of the Subcontract apply to this Section.
         2. Review these documents for coordination with additional requirements and information that apply to the work under this section.
      2. Section Includes
         1. Water Heater
   2. **References**
      1. General
         1. The following documents form part of the Specifications to the extent stated. Where differences exist between codes and standards, the one affording the greatest protection shall apply.
         2. Unless otherwise noted, the referenced standard edition is the current one at the time of commencement of the Work.
         3. Refer to Division 01 Section "General Requirements" for the list of applicable regulatory requirements.
   3. **Submittals**
      1. Submit shop drawings/product data sheets for all products specified in Part 2 of this Section.
   4. **Quality Assurance**
      1. All materials shall meet or exceed all applicable referenced standards, federal, Province/State and local requirements, and conform to codes and ordinances of authorities having jurisdiction.
2. **Products**
   1. **Water Heater**
      * 1. Commercial water heater (Natural or Propane) gas water heater(s) shall be A. O. Smith Cyclone LV Large Volume model BTHL-199A, minimum 95% thermal efficiency, a storage capacity of 250 gallons (946 Liters), an input rating of 199,900 BTUs per hour, a recovery rating of 230 gallons per hour (gph) at 100°F rise and a maximum hydrostatic working pressure of 160 psi.
        2. ASME tank construction standard on all model sizes
        3. Modulating gas burner that automatically adjusts the input based on demand.
        4. Powered anodes that are non-sacrificial and maintenance free.
        5. Have seamless glass-lined steel tank construction, with glass lining applied to all water-side surfaces after the tank has been assembled and welded
        6. Have foam insulation and a CSA Certified and ASME rated T&P relief valve
        7. Have a down-fired power burner designed for precise mixing of air and gas for optimum efficiency, requiring no special calibration on start-up
        8. Be approved for 0˝ clearance to combustibles. The control shall be an integrated solid-state temperature and ignition control device with integral diagnostics, graphic user interface, fault history display, and shall have digital temperature readout.
        9. 150K - 250K BTU Input: For Standard Power Venting: Water heater(s) shall be suitable for standard power venting using a (3˝ or 4˝) diameter PVC pipe for a total distance of (50 ft. or 120 ft.) equivalent feet of vent piping. For Power Direct Venting: Water heater(s) shall be suitable for power direct venting using a (3˝ or 4˝) diameter PVC pipe for a total distance of (50 ft or 120 ft.) equivalent feet of vent piping and (50 ft. or 120 ft.) equivalent feet of intake air piping.
        10. Operation of the water heater(s) in a closed system where thermal expansion has not been compensated for (with a properly sized thermal expansion tank) will void the warranty.

Basis of Design:

* + - * 1. A.O. Smith BTHL-199A

1. **Certifications & Regulatory Compliance**
   1. All models are designed certified by Underwriters Laboratories (UL), Inc., to ANSI Z21.10.3- CSA 4.3 Standards
   2. All models meet the thermal efficiency and standby loss requirements of NRCan and current edition ASHRAE/IES 90.1
   3. All model designs are certified by Underwriters Laboratories to NSF standard 5 for 180°F (62°C) water
   4. ASME tank construction optional on 120-250 model sizes, and standard on 300-500 model sizes
2. **Execution**
   1. **Demolition**
      1. Refer to demolition requirements specified in Section entitled Demolition and Revision Work.
   2. **Installation**
      1. Installed in accordance with manufacturer’s instructions.

**End of Section**