



Brown and Caldwell  
 6975 Union Park Center, Suite 490  
 Midvale, UT 84047  
 Phone: (801) 316-9800



Timpanogos Special Services District  
 6400 N 505 W  
 American Fork, UT 84003  
 Phone: (801) 756-5231

**SUBMITTAL REVIEW COMMENTS**

Date: 12/9/19

Re: Timpanogos Special Services District – Aeration Blower Procurement  
 Project No. 153330  
 Submittal No. 112519  
 Spec Section: 43 11 20,  
 Description: Blowers, motors, and MCP

Reviewer: P. Zemke, J. Wilde, N. Havens

**SUBMITTAL REVIEW ACTION**

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS. NO RESPONSIBILITY IS ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR DEVIATIONS FROM CONTRACT REQUIREMENTS NOT SPECIFICALLY INDICATED ON THIS SUBMITTAL.

- NO EXCEPTIONS TAKEN                       MAKE CORRECTIONS NOTED
- AMEND AND RESUBMIT                       REJECTED - SEE COMMENTS
- PRODUCT DATA, NOT SUBJECT TO REVIEW

Date: 12/9/19 By: P. Zemke

**BROWN AND CALDWELL**

**COMMENTS:**

Submittal Transmittal Item No.	Submittal Review Comment No.	Reference Spec Sect. or Dwg.	Review Comment	Reviewer's Initials																				
092419	01	43 11 20 1.02.D.2	Specification requires testing to ASME PTC13, but submittal indicates testing per ASME PTC 10. Conduct factory tests per recently-released ASME PTC 13. <del>Make Corrections Noted.</del>	PZ																				
092419	02	43 11 20 1.03.B.6	As part of factory test, record sound levels at Condition A. <del>Make corrections noted.</del>	PZ																				
092419	03	43 11 20 1.03.B.21	Shop coating system not included in submittal. Submit information on equipment coating. <del>Amend and Resubmit</del>	PZ																				
092419	04	43 11 20 2.05.A.8	Given 10-yr warranty on lubrication, omit oil adequate for one oil change from spare parts. <del>Make corrections noted.</del>	PZ																				
092419	05	43 11 20 2.05.A	Lone Star Blower to recommend any spare sensors (e.g. pressure transducers, temperature indicators, surge switch) in place of lubricant. <del>Amend and Resubmit</del>	PZ																				
092419	06	Power Enclosure Nameplates LCP-3.3	Provide the following panel tags in place of "LCP xxxx POWER":  "PNL-1-16-10-01", "PNL-1-16-10-02", "PNL-1-16-10-03", "PNL-1-16-10-10", "PNL-1-16-10-11", "PNL-1-16-10-12",  "PNL-2-16-10-01", "PNL-2-16-10-07", "PNL-2-16-10-08". <del>Make corrections noted.</del>	NH																				
092419	07	43 11 20 1.01.B	The blowers will be re-arranged from their previous layout to provide better service access. Consequently, the blowers will be numbered differently. Revised Equipment numbers are as follows:  <table border="1" data-bbox="721 1402 1156 1772"> <thead> <tr> <th>Item</th> <th>Equipment Number</th> </tr> </thead> <tbody> <tr> <td>East Blower No. 1</td> <td>BWR-1-16-10-01</td> </tr> <tr> <td>East Blower No. 2</td> <td>BWR-1-16-10-02</td> </tr> <tr> <td>East Blower No. 3</td> <td>BWR-1-16-10-03</td> </tr> <tr> <td>East Blower No. 10</td> <td>BWR-1-16-10-10</td> </tr> <tr> <td>East Blower No. 11</td> <td>BWR-1-16-10-11</td> </tr> <tr> <td>East Blower No. 12</td> <td>BWR-1-16-10-12</td> </tr> <tr> <td>West Blower No. 1</td> <td>BWR-2-16-10-01</td> </tr> <tr> <td>West Blower No. 7</td> <td>BWR-2-16-10-07</td> </tr> <tr> <td>West Blower No. 8</td> <td>BWR-2-16-10-08</td> </tr> </tbody> </table> <del>Make corrections noted.</del>	Item	Equipment Number	East Blower No. 1	BWR-1-16-10-01	East Blower No. 2	BWR-1-16-10-02	East Blower No. 3	BWR-1-16-10-03	East Blower No. 10	BWR-1-16-10-10	East Blower No. 11	BWR-1-16-10-11	East Blower No. 12	BWR-1-16-10-12	West Blower No. 1	BWR-2-16-10-01	West Blower No. 7	BWR-2-16-10-07	West Blower No. 8	BWR-2-16-10-08	PZ
Item	Equipment Number																							
East Blower No. 1	BWR-1-16-10-01																							
East Blower No. 2	BWR-1-16-10-02																							
East Blower No. 3	BWR-1-16-10-03																							
East Blower No. 10	BWR-1-16-10-10																							
East Blower No. 11	BWR-1-16-10-11																							
East Blower No. 12	BWR-1-16-10-12																							
West Blower No. 1	BWR-2-16-10-01																							
West Blower No. 7	BWR-2-16-10-07																							
West Blower No. 8	BWR-2-16-10-08																							

Submittal Transmittal Item No.	Submittal Review Comment No.	Reference Spec Sect. or Dwg.	Review Comment	Reviewer's Initials
092419	08	Control Enclosure Nameplates LCP-3.3	Provide the following panel tags in place of "LCP xxxx CONTROL":  "VCP-1-16-10-01", "VCP -1-16-10-02", "VCP -1-16-10-03", "VCP -1-16-10-10", "VCP -1-16-10-11", "VCP -1-16-10-12",  "VCP-2-16-10-01", "VCP-2-16-10-03", "VCP-2-16-10-06", <b>Make corrections noted. Engineer's note: Should be VCP-2-16-10-01, VCP-2-16-10-07 and VCP-2-10-08. Second submittal correctly reflects this.</b>	NH
092419	09	Main Control Panel Nameplates 2-MCP-000	Provide the following panel tags in place of "Main Control Panel"  "Main Control Panel ACP-BB1-01", and "Main Control Panel ACP-BB2-01" <b>Make corrections noted.</b>	NH
092419	10	Section 6.1.1 & 7.1.1 Enclosure	Buyer prefers not to use Pentair /Hoffman enclosures. Provide an alternative manufacturer or take exception. <b>Amend and Resubmit</b>	JW
092419	11	Section 6.1.2 PLC	Provide 1769-L33ERM controller in place of 1769-L33ER. This will ensure blower controller has the same feature set as the MCP controller. <b>Amend and Resubmit</b>	JW
092419	12	Specification Section 43 11 20 2.03 F 4	Deviation states "Due to the amount of I/O and # of communications a switch is required to be able to handle the communications." Response: For Local Blower Control Panels – Allen Bradley Stratix network switches (Section 6.1.4) should not be needed. Provide rack mounted network switch (i.e. 1769-EN2T). Controller network port should be used for local devices or I/O. Rack mounted network switch should be used to connect to Master Control Panel.  For Master Control Panels – Phoenix Contact network switch (Section 7.1.5) is acceptable for communications with Local Blower Control Panels. Switch should be connected to the MCP PLC via the controller network port. Provide rack mounted network switch (i.e. 1769-EN2T). Rack mounted network switch should be used for a dedicated connection to the plant SCADA. <b>Make Corrections Noted</b>	JW

Submittal Transmittal Item No.	Submittal Review Comment No.	Reference Spec Sect. or Dwg.	Review Comment	Reviewer's Initials
092419	13	Section 6.1.3 & 7.1.4 HMI	Identify part numbers for HMIs being provided. Provide the same HMI for all control panels. <b>Amend and Resubmit</b>	JW
092419	14	Section 6.2 Remote Monitoring Hardware	Remote monitoring hardware shall be provided as a shipped loose part and not permanently installed. Training shall include a section discussing this device, it's use, and any manufacturer required maintenance or updates to ensure proper cyber security. <b>Make Corrections Noted</b>	JW
092419	15	Section 6.1.5 and 7.1.6 Power Supplies	Either series of power supplies is acceptable. Provide the same series of power supplies for all control panels. <b>Amend and Resubmit</b>	JW
092419	16	Section 7.2.2 Sheet 2-MCP-002	Aerzen Blower signals on wiring diagram do not match Aerzen submittal drawings. Ensure all necessary I/O is shown for proper integration. <b>Amend and Resubmit</b>	JW
092419	17	Section 6.1 and 7.1	Provide final tested and approved PLC and HMI programs to TSSD with passwords <b>Make Corrections Noted</b>	JW
092419	18	Section 6.1 and 7.1	All PLC CPU need to be updated to latest firmware version. <b>Make Corrections Noted</b>	JW
092419	19	43 11 20 1.04.C	GL-8 West Blowers can meet performance requirements with 350-hp motors. Provide 350-hp motors on all blowers in place of 400-hp blowers for West Blowers. <b>Amend and Resubmit</b>	PZ
092419	20	43 11 20 2.02.J.10	Proposed motors in submittal extend over the edge of the equipment frame approximately 12", consequently encroaching on the access space. Requirement for copper rotors and full IEEE 841 compliance is waived. Provide smaller motors that do not extend over the equipment frames for all blowers. Locate panels such that they do not extend past the ends of the equipment frames. <b>Amend and Resubmit</b>	PZ
092419	21	43 11 20 3.04.A.7	Confirm that specified training will be provided at Owner's facility. <b>Make Corrections Noted</b>	PZ
112519	22		Comments 1-21 have been addressed in this submittal. Note that Comment 8 provided the wrong tag numbers for Blower Building 2 VCPs. However, the correct tag numbers are shown for all VCPs in the submittal. <b>No exceptions taken</b>	PZ

Submittal Transmittal Item No.	Submittal Review Comment No.	Reference Spec Sect. or Dwg.	Review Comment	Reviewer's Initials
112519	23	43 11 20 1.04.C	P. 191 of submittal indicates a diffuser cone with 24" discharge connection. Connection must be 20" as shown on p. 51. <b>Make Corrections Noted</b>	PZ
112519	24	43 11 20 1.04.C	Sections 4.1.1 and 4.1.2 of the submittal indicate MERV 13 second-stage filters. Provide MERV 11 second-stage filters. <b>Make Corrections Noted</b>	PZ
112519	25		Equipment will be located in a seismic zone. Provide holes in inlet filter / silencer mounting feet for anchoring to the equipment pads. Hole size shall be as recommended by Lone Star Blower. <b>Make Corrections Noted</b>	PZ