	ATTACHMENT I – General Qualifications **ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO: ADSPO15-00004729**	**STATE PROCUREMENT OFFICE** **Department of Administration** **100 North 15th Avenue, Suite 201** **Phoenix, Arizona 85007**

(If a firm has branch offices, complete for each specific branch office seeking work.)

1. ***Annual Request for Qualifications***

a. FIRM (OR BRANCH OFFICE) NAME:	Johnston Engineering Company
b. FIRM (OR BRANCH OFFICE) STREET:	9777 N. 91st Street, Suite 100
c. FIRM (OR BRANCH OFFICE) CITY:	Scottsdale
d. FIRM (OR BRANCH OFFICE) STATE:	Arizona
e. FIRM (OR BRANCH OFFICE) ZIP CODE:	85258

f. YEAR ESTABLISHED:	1992

(g1). OWNERSHIP - TYPE:	Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	Small Business

h. POINT OF CONTACT NAME AND TITLE:	Tom Johnston
i. POINT OF CONTACT TELEPHONE NUMBER:	(480) 443-8773
j. POINT OF CONTACT E-MAIL ADDRESS:	tomj@jechvac.com

k. NAME OF FIRM *(If block 1a is a branch office)*:	Same as 1a.

2. EMPLOYEES BY DISCIPLINE

a. Discipline Title	b. Function: Primary (P) or Secondary (S)	c. No. of Employees - Firm	d. No. of Employees - Branch
Mechanical Engineer	P	2	N/A
Project Manager	P	1	N/A
CADD Technician	S	2	N/A
Other (Administrator)	P	1	NA
Total		7	

3. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST YEAR

a. Approximate No. of Projects	b. Experience	c. Revenue Index Number *(see below)*
2	Automation; Controls; Instrumentation	2
1	Computer Facilities	1
4	Dining Halls; Clubs; Restaurants	1
15	Educational Facilities; Classrooms	2
1	Energy Conservation; New Energy Sources	1
17	Fire Protection	1
4	Forensic Engineering	1
20	Heating; Ventilating; Air Conditioning	2
2	Labs – Research – Wet	1
5	Plumbing and Piping Design	1
5	Testing and Inspection Services	1
2	Warehouse and Depots	1
1	Water Supply	1

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section 4 for each key person.)*

a. NAME: **Thomas Johnston**	b. ROLE IN THIS CONTRACT **Principal of Firm, Mechanical Engineer**	c. YEARS EXPERIENCE 1. TOTAL 41	2. WITH CURRENT FIRM 22

d. LOCATION *(City and State)* Scottsdale, Arizona

e. EDUCATION *(DEGREE AND SPECIALIZATION)*	f. PROFESSIONAL TRAINING - REGISTRATIONS
B.S. Mechanical Engineering Technology – Oregon State University	AZ State Board of Technical Registration – Mechanical Engineering #22374 Certified Energy Manager #20876, LEED AP

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)* Speaker: "Energy Conservation in Existing Buildings" Arizona Forward. 2009 Courses: Magnetic Bearing Technology of Centrifugal Chiller; Variable Flow Chiller Plant Design; Chiller Plant Fundamentals. Energy Engineer of the Year, 1994- Arizona Chapter of Association of Energy Engineers. Received first place – Category I Region XI ASHRAE Energy Award in recognition of outstanding achievement in design of energy efficient buildings for OSU Crop Science Research Facility. Seminar Speaker for ASHRAE, Arizona Public Service, Arizona Plant Engineers Conference.

H. RELEVANT PROJECTS

1.

(1) TITLE AND LOCATION *(City and State):* **Maricopa County Forensic Science Bldg. ASHRAE Energy Audit, Phoenix, Arizona**

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2014	2014

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE: The scope included: (1) ASHRAE Level I and Level II Energy Audit (Energy Study) evaluation of existing systems, (2) Estimates of energy savings and construction estimates, and (3) Energy Assessment Report. Estimated 38 percent electricity savings + 20 percent gas savings. Building Data: Approximately 58,000 SF. Estimated Cost of Construction: $1 million.

✓ Check if project performed with current firm

2.

(1) TITLE AND LOCATION *(City and State)* **The Phoenician Resort Chiller Replacement, Scottsdale, Arizona**

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2014	See below.

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE: The scope of work included performance specification, and mechanical design to implement a new 1,100 chiller replacement. Energy study, documentation of existing field conditions, evaluation of existing electrical, construction documents, bid assistance, city plan review, code compliance. Building Data: Approximately 4,450 SF. Estimated Cost of Construction: $500,000. Construction is to begin and be completed in 2015.

✓ Check if project performed with current firm

3.

(1) TITLE AND LOCATION *(City and State)* **Brookfield Terrace Apartments, Phoenix, Arizona**

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2014	2014

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE The scope of work included the forensic investigation of a chiller compressor plus transformer failures. The work entailed: (1) field investigation including disassembly of failed components; (2) research with equipment manufacturers; (3) engineers report describing findings, conclusions regarding equipment failure, and recommendations to avoid future failure. Building Data: Approximately 60,000 SF. Estimated Cost of Construction: $50,000.

✓ Check if project performed with current firm

4.

(1) TITLE AND LOCATION *(City and State)* **Surgery Center of Gilbert, Mesa, Arizona**

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2014	2014

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE The scope of work included mechanical engineering consultation related to the HVAC mechanical systems. Reviewed site conditions, prepared reports, rendered a professional opinion on the HVAC mechanical system operation, functionality, and stability for an outpatient surgery center. Building Data: Approximately 5,000 SF. Estimated Cost of Construction: $600,000.

✓ Check if project performed with current firm

5.

(1) TITLE AND LOCATION *(City and State)* **Paradise Valley Unified School District Energy Master Plan and Design, Paradise Valley, Arizona**

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2014	2014

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE The scope of work included preparation of a mechanical energy study. Evaluated and documented mechanical and control systems on 45 school and administrative sites. Developed design standards for energy conservation. Prepared full construction documents, complied with code, assisted in obtaining quotes from JOC contractors, construction administration, construction observation visits, and reports on over 10 sites.

✓ Check if project performed with current firm

4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section 4 for each key person.)*

a. NAME:	b. ROLE IN THIS CONTRACT	c. YEARS EXPERIENCE	
Emilio Gonzalez	**Mechanical Engineer**	1. TOTAL 3.5	2. WITH CURRENT FIRM 2.5

d. LOCATION *(City and State)* Scottsdale, Arizona

e. EDUCATION *(DEGREE AND SPECIALIZATION)*	f. PROFESSIONAL TRAINING - REGISTRATIONS
B.S. Mechanical Engineering – University of Arizona	Applying for Professional Engineering license.

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)* American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE), Society of Hispanic Professional Engineers.

H. RELEVANT PROJECTS

1.

(1) TITLE AND LOCATION *(City and State):* **Mechanical and Plumbing Design for the Science Building and the Culinary Arts Building at Paradise Valley High School, Paradise Valley, Arizona**

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2014	See below.

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE: The scope included a mechanical and plumbing design and construction documents for a new 2-story Science Building and a single story Culinary Arts Building. The work included design development, field evaluation of existing conditions, new mechanical systems including fan coil units, makeup air units, exhaust fans, and new plumbing systems, a new DDC system for all HVAC equipment to be integrated to the existing campus. Building Data: Approximately 51,239 SF. Estimated Cost of Construction: $3.2 million. Construction is 40 percent complete to date.

✓ Check if project performed with current firm

2.

(1) TITLE AND LOCATION *(City and State)* **Chiller Plant Renovations at Deer Valley High School, Glendale, Arizona**

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2014	2014

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE: The scope of work included a mechanical design to implement a central plant upgrade. As-built of existing conditions were done using a digital scanner. The central plant was optimized for energy efficiency. Upgrades included a new chiller in the central plant plus relocation of the HEX to the mechanical room from the tower yard. Interface of existing building automation system to the new central chiller, plus the existing chillers for optimized efficiency and controls. Construction documents were prepared and construction administration was part of the scope. Building Data: Approximately 3,400 SF. Estimated Cost of Construction: $1 million.

✓ Check if project performed with current firm

3.

(1) TITLE AND LOCATION *(City and State)* **Mechanical and Plumbing Design for Food Service Warehouse at Cartwright Elementary School District, Phoenix, Arizona**

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2014	2014

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE The scope of work included a packaged heat pump mechanical and plumbing design and construction documents with construction administration. Building Data: Approximately 50,000 SF. Estimated Cost of Construction: $800,000.

✓ Check if project performed with current firm

4.

(1) TITLE AND LOCATION *(City and State)* **Marcos de Niza High School Mechanical and Plumbing System Design, Tempe, Arizona**

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2014	2014

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE The scope of work included a mechanical and plumbing design and construction documents for a remodel of an existing classroom into a single story culinary arts classroom. Evaluation of existing systems to convert classroom to culinary arts kitchen. Bidding services, construction administration, construction observation services. Building Data: Approximately 3,968 SF. Estimated Cost of Construction: $250,000.

✓ Check if project performed with current firm

5.

(1) TITLE AND LOCATION *(City and State)* **Taft Elementary School, Mesa Arizona**

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2014	See below.

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE The scope of work included the mechanical design and construction documents for the demolition of a split system air conditioner to a hydronic air handler with air cooled chiller. Evaluation of existing system to convert from a DX system to hydronic system. Construction administration and bidding services. Building Data: Approximately 4,700 SF. Estimated Cost of Construction: $160,000. Construction is currently in the bid process phase of the project.

✓ Check if project performed with current firm

4. Resumes of Key Personnel Proposed for this Contract (*Complete one Section 4 for each key person.)*

a. NAME: **Rod Collera**	b. ROLE IN THIS CONTRACT **Project Manager**	c. YEARS EXPERIENCE 1. TOTAL 7.5	2. WITH CURRENT FIRM 7.5

d. LOCATION *(City and State)* Scottsdale, Arizona

e. EDUCATION *(DEGREE AND SPECIALIZATION)*	f. PROFESSIONAL TRAINING - REGISTRATIONS
Associate of Applied Science, Anthem College (AutoCAD)	Currently taking Certified Energy Manager course. Scottsdale Community College – REVIT.

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)* American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE), U.S. Green Building Council.

H. RELEVANT PROJECTS

(1) TITLE AND LOCATION *(City and State):* **North High School Cafeteria, Phoenix, Arizona**	(2) YEAR COMPLETED: Professional Services See below.	Construction (if applicable) See below.

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE: The scope included a mechanical and plumbing design for an existing single story cafeteria. Included were design development, construction documents, evaluation and documentation of existing conditions, new mechanical system including fan coil units, makeup air units, exhaust fans and new plumbing systems, new DDC control system for all HVAC equipment to be integrated to the existing campus BAS, construction administration. Building Data: Approximately 17,000 SF. Estimated Cost of Construction: $2.8 million. Design is currently 80 percent complete and construction is scheduled to start April 2015.

☑ Check if project performed with current firm

(1) TITLE AND LOCATION *(City and State)* **Mechanical System Upgrade Design at Central High School and Trevor Browne High School, Phoenix, Arizona**	(2) YEAR COMPLETED: Professional Services 2014	Construction (if applicable) See below.

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE: The scope of work included a mechanical design and construction documents to implement mechanical upgrades. Included were evaluation and documentation of existing field conditions, upgrades to the mechanical systems including a 700 ton chiller and cooling tower replacement at Central HS, upgrades to the existing mechanical systems at Trevor Browne HS including central plant EMS upgrades to primary variable flow, details for converting chilled water systems to variable flow. Construction administration. Building Data: Approximately 39,010 / 2,430 SF. Estimated Cost of Construction: $1.1 million. Construction phase is currently 80 percent complete.

☑ Check if project performed with current firm

(1) TITLE AND LOCATION *(City and State)* **Mechanical Equipment Replacements at Kachina Elementary School, Glendale, Arizona**	(2) YEAR COMPLETED: Professional Services 2014	Construction (if applicable) See below.

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE The scope of work included construction documents to implement new mechanical equipment replacements at Kachina ES. Included were evaluation and documentation of existing field conditions, phasing to include pre-purchase packages, upgrades to the existing mechanical systems including rooftop unit replacements, construction administration. Building Data: Approximately 57,000 SF. Estimated Cost of Construction: $1.5 million. Construction is currently 25 percent complete.

☑ Check if project performed with current firm

(1) TITLE AND LOCATION *(City and State)* **South Mountain High School Cafeteria, Phoenix, Arizona**	(2) YEAR COMPLETED: Professional Services 2014	Construction (if applicable) See below.

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE The scope of work included a mechanical and plumbing design and construction documents for an existing single story cafeteria. Included were design development, evaluation and documentation of existing field conditions, new mechanical system including fan coil units, makeup air units, exhaust fans and new plumbing systems, new DDC system for the new equipment for all HVAC equipment to be integrated to the existing campus BAS. Construction administration. Building Data: Approximately 17,000 SF. Estimated Cost of Construction: $5 million. Construction is scheduled to begin April 2015.

☑ Check if project performed with current firm

(1) TITLE AND LOCATION *(City and State)* **mechanical Equipment Replacements at Pioneer Elementary School, Peoria, Arizona**	(2) YEAR COMPLETED: Professional Services 2014	Construction (if applicable) See below.

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE The scope of work included a design and construction documents to implement new mechanical equipment replacements at Pioneer ES. Included were evaluation and documentation of existing field conditions, phasing to pre-purchase packages, upgrades to the existing mechanical systems including rooftop unit replacements, construction administration. Building Data: Approximately 43,470 SF. Estimated Cost of Construction: $1.2 million. Construction is currently 25 percent complete.

☑ Check if project performed with current firm

5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION *(City and State)*	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
State Capitol Buildings - Controls	2007	See below

23. PROJECT OWNER'S INFORMATION

c .PROJECT OWNER	d .ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Department of Administration	Done in-house	Done in-house

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

The Owner's objective was to define alternatives for controlling individual fans at the following buildings:

- Health Services
- Department of Agriculture
- East Annex
- Old Comp Building
- West Wing of the Executive Tower
- House Building
- Senate Building,
- State Office Building
- Corporation Commissioning / Park Building
- Corporation Commission and Law Building

Further, it was the Owner's objective to use in-house labor, materials and software programming to implement the controls. The professional engineering services included a pre-design report and the follow up design. The pre-design report (**study**) included: 1) The field work to **evaluate and document** the **existing systems** and conditions (existing panels and control components / retrofits) for each building; 2) definition of buildings which could be programed by ADOA; 3) setting **priorities for improvement and replacement** of controls based on the largest return on investment for the most straight forward control components retrofit. In some cases, control components from existing ADOA inventory were used to implement the retrofit; 4) field verification and **evaluation** of which buildings needed stand-alone air conditioners to allow shut down of the main air handlers; 5) **investigation** to determine the work required for bypass switches for both EMCS buildings and hardware buildings; and 6) An **engineering study / report** summarizing the work by ADOA and the work by the Contractor working with ADOA. The special feature of this project was to define for each building what existing components could be interfaced and what air conditioning equipment must remain on (IT equipment rooms) when the main building HVAC is turned off. Field documentation of existing conditions defined this for each building. Johnston Engineering did the follow up design documents from the approved report. Tom Johnston worked on this project. The **relevance of this example project to this contract** is, this is a **automation, controls and instrumentation** project with **mechanical engineering services** including **study and design and controls sequence of operation.** Status – Much of the labor for installation of control components and software programming was done in-house by ADOA. Many of the buildings have been retrofitted by ADOA, resulting in shutting off fans during mild temperatures when buildings were unoccupied. Construction is ongoing.

5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION *(City and State)*	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
Paradise Valley Unified School District Mechanical / Energy Master Plan and Design	Ongoing	Ongoing

23. PROJECT OWNER'S INFORMATION

c .PROJECT OWNER	d .ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Paradise Valley Unified School District	22 Million	See below

g. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

The Owner's objective was to create a master plan to conserve energy throughout the school district. The master plan **evaluated** and **documented** mechanical and control systems at 45 school and administrative sites (4,000,000 SF). The principle elements of this project included; 1) preparation of a mechanical system **energy** master plan / **study** (developed in two months) including drawing review with the Owner, **definition and documentation** of mechanical equipment type (chiller/boiler water source heat pump, split package units, rooftop heat pumps), identification of energy management system type, identification of mechanical issues (including equipment replacement), identification of energy conservation measures, 2) **development of design standards.** Controls standards (including demand control ventilation to meet the School Facilities Board and lighting standards) were established, 3) **construction documents** for individual schools using the **design standards** established. These standards are still followed today. For each of these projects, the mechanical system was upgraded or retrofitted with demand control ventilation, energy management system controllers and an energy management system front end interface. All projects included **full design construction documents, City plan review, and compliance with applicable codes. Assistance in obtaining quotes from job order contract vendors** was provided. **Construction administration, construction observation services including substantial / final visits and reports** were provided. The projects included: (1) Greenway Middle School (energy/mechanical retrofit, chiller plant, lighting, EMS upgrades) which resulted in a 35 percent energy reduction; (2) Shadow Mountain High School (water source heap pump, lighting, EMS upgrades) resulting in a 39 percent energy reduction; (3) Shea Middle School (lighting, EMS, central plant, condensing boilers) resulting in a 30 percent energy savings; (4) Quail Run Elementary School (rooftop units, lighting, EMS upgrades) resulting in a 33 percent energy savings. Ten other sites have been completed from 2008 to 2014. The owner's objective has been met by saving 30 to 45 percent. ***Multiple team members*** Tom Johnston, Emilio Gonzalez and Rod Collera worked together on this project. The **relevance of this example project to this contract** is, this is a **heating, ventilating, air conditioning** project with **mechanical engineering services** including **study, design and construction management**. Status - Construction is ongoing.

5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION *(City and State)*	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
Phoenician Resort 1,100 Ton Chiller Replacement Energy Analysis, Design and Construction Administration	Design 2014	See below

23. PROJECT OWNER'S INFORMATION

c .PROJECT OWNER	d .ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Phoenician Resort	$500,000	$480,000 (under budget)

h. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

An **energy study** identified a baseline replacement chiller and two more efficient chillers. A more efficient chiller than the baseline met the Owners **budget and life cycle cost criteria.** The project owner paid $25,000 more for the more efficient chiller for a 6.0 percent improvement in efficiency. This reduced the operating cost on the chiller by $13,882 per year, creating a payback of 1.8 years. The project then proceeded to design. The **principle elements and special features** of the project included 1) evaluation of the most cost effective chiller selection meeting the Owners criteria; 2) **documentation of existing field conditions and evaluation** of the existing electrical VSD; and 3) identification of existing code clearance issues which needed to be addressed in the design. The design development of the project included **outline specifications** and gathering of technical data (cut sheets) from three **alternative** chiller vendors. **Applicable code** refrigeration machinery room calculations were prepared and incorporated into the **construction documents**. Field investigation identified the physical location of existing piping and interference of the existing piping with the new chiller installation. The **construction documents** communicated the chiller manufacturer's responsibility to disassemble and reassemble the new 1,100 ton chiller to allow it to be installed in the existing chiller (refrigeration machinery) room. **Bidding Assistance** was provided so that the work could be **competitively bid** using Owner approved vendors. The project included **construction documents** which were submitted to the **City for code plan review**, confirming **compliance with all applicable codes**. **Construction administration, construction observation services including substantial / final visits and reports** are to be provided. ***Multiple team members*** Tom Johnston, Emilio Gonzalez and Rod Collera worked together on this project. The **relevance of this example project to this contract** is, this is a **heating, ventilating, air conditioning** project with **mechanical engineering services** including a central plant design, with controls sequence, and AutoCAD drawings. **Status -** Construction to begin January, 2015. Construction to be complete March 2015.

5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

a. TITLE AND LOCATION *(City and State)*	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
Maricopa County Forensic Science Building	Energy Study 2014	N/A. See below

23. PROJECT OWNER'S INFORMATION

c .PROJECT OWNER	d .ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Maricopa County	1.1 Million Dollars	See below

i. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

An ASHRAE Level 1 and Level 2 energy audit (**energy study**) was conducted on this facility. The Owners objective was to save energy with a return on investment of less than eight years. This included review of drawings, **evaluation and documentation of the as built conditions**. Through this **energy study**, an **evaluation of existing systems** (2 chillers, 1 boiler, 2 cooling towers, 7 pumps, 4 air handlers, 60 VAV boxes, 8 exhaust fans) was done. Ten energy conservation measures were identified. Estimates of **energy savings**, ECM **construction estimates**, simple paybacks, priorities for improvements and replacement were documented. The overall project is estimated to save 38 percent of the electricity currently being consumed and 20 percent of the gas currently being consumed. The 1.1 million dollar project is estimated to have a payback of 7.1 years. The project is planned to have **construction documents** submitted to the **city for code plan** review, confirming **compliance with all applicable codes**. **Construction administration, construction observation services including substantial / final visits and reports** are provided. This is a prime example of a project which meets the statement of qualifications specific requirements. ***Multiple team members*** Tom Johnston, Emilio Gonzalez and Rod Collera worked together on this project. The **relevance of this example project to this contract** is, this is a **heating, ventilating, air conditioning** project with **mechanical engineering services** including an ASHRAE Level I + Level II ***Energy Audit***. Status - This project will ***proceed to design*** in early 2015. Therefore, there is no final cost of the project at this time.

For an energy audit to be effective, it is very important to clearly identify all the energy using systems, identify the annual energy use for the facility, and compare the energy use for the facility against the national average for this locality.

It is critical to identify how energy use is consumed by the system. In other words, chillers, cooling towers, boilers, pumps, fans, lights and plug loads.

If all energy using systems are field documented in an organized manner, measuring current energy use, identifying operating schedules for occupants and equipment, accuracy is established in the estimate of how energy is used. ASHRAE Level I and Level II energy audits in combination with thorough analysis create an organized, properly documented energy audit.

5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

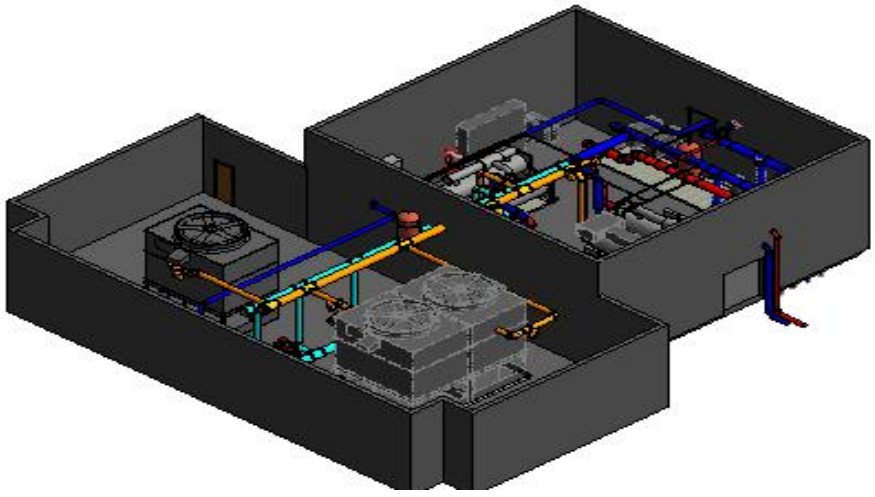
a. TITLE AND LOCATION *(City and State)*	b. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
Deer Valley High School Central Plant	Engineering Design 2014	2014

23. PROJECT OWNER'S INFORMATION

c .PROJECT OWNER	d .ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Deer Valley Unified School District	1 Million Dollars	1 Million Dollars – On Budget

j. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

A complete central plant upgrade was done. ***Principal elements*** were to incorporate one new 160 ton high efficiency magnetic bearing drive chiller with two existing 300 ton centrifugal chillers plus the addition of a new cooling tower. The owner's objective was to create a more efficient central plant. A ***special feature*** of this project was a digital scan was used to create an **as-built** of all existing equipment in the central chiller machinery room at the **evaluation and planning** stage of the project. This scan was converted to REVIT model and the chiller machinery room and cooling tower yard were modeled in 3 dimensions. A control sequence of operation was developed for the new chiller plus the two existing chillers to meet the owner's objective of creating the most **energy conserving** plant possible. Applicable **code** refrigeration machinery room calculations were prepared and incorporated into this **construction documents**. The project was **designed to comply with all applicable codes**. **Construction administration, construction services including substantial final visits and reports** were provided. Utility rebates have been applied for. ***Multiple team members*** Tom Johnston, Emilio Gonzalez and Rod Collera worked together on this project. The **relevance of this example project to this contract** is, this is a **heating, ventilating, air conditioning** project with **mechanical engineering services** including **3D modeling** and **Computer Aided Design**.



6. ADDITIONAL INFORMATION

a. PROVIDE ANY ADDITIONAL INFORMATION YOU FEEL MAY BE NECESSARY TO DESCRIBE YOUR FIRMS QUALIFICATIONS. *(ATTACH ADDITIONAL SHEETS AS NEEDED.)*

Johnston Engineering Company is a mechanical engineering company established in January 1992 which provides energy efficient:

- Heating
- Ventilating
- Air Conditioning
- Plumbing Design

In addition to design, Johnston Engineering Company offers investigative analysis and economic studies. Johnston Engineering Company is committed to high quality engineering that meets the Clients specific needs.

Johnston Engineering Company prepares designs for new and existing:

- Schools
- Hospitals
- Office Buildings
- Industrial Facilities

New designs usually incorporate the latest in energy efficient technology while maintaining an emphasis on simplicity and the Owners requirements. Existing facilities usually are renovated due to worn out equipment, non-code compliant installation, or changing facility use or function. We provide field investigative knowledge which creates safe, efficient, and functional interfaces between existing systems and new designs.

Clients benefit from Johnston Engineering Company's involvement because of:

- Special Knowledge in Integrating New Systems with Existing Systems
- Attention to Detail
- Energy Efficient Designs – Certified Energy Manager
- Attention to Clients Needs
- Personalized Service
- Cost Effective Engineering Analysis

JOHNSTON ENGINEERING COMPANY
HEATING, VENTILATION, AIR CONDITIONING, PLUMBING

7. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

a.	Percentage of Total Work Attributable to State, Federal and Municipal Government Work:	13
b.	Percentage of Total Work Attributable to Non-Government Work:	87

8. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts.

Signature: Thomas W Johnston Date: December 18, 2014

Name: Thomas W. Johnston Title: President