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

**1. REVISED ADSPO13-00003465*: Annual Request for Qualifications***

| | | |
|---|---|---|
| a. | FIRM (OR BRANCH OFFICE) NAME: | LSW Engineers Arizona, Inc. |
| b. | FIRM (OR BRANCH OFFICE) STREET: | 2333 W. Northern Avenue, Suite 9 |
| c. | FIRM (OR BRANCH OFFICE) CITY: | Phoenix |
| d. | FIRM (OR BRANCH OFFICE) STATE: | AZ |
| e. | FIRM (OR BRANCH OFFICE) ZIP CODE: | 85021 |

| | | |
|---|---|---|
| f. | YEAR ESTABLISHED: | 1961 |

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

| | | |
|---|---|---|
| h. | POINT OF CONTACT NAME AND TITLE: | Lance A. Jones, President |
| i. | POINT OF CONTACT TELEPHONE NUMBER: | 602-249-1320 |
| j. | POINT OF CONTACT E-MAIL ADDRESS: | ljones@lswphx.com |

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

**2. EMPLOYEES BY DISCIPLINE**

| a. Discipline Title | b. Function: Primary (P) or Secondary (S) | c. No. of Employees - Firm | d. No. of Employees - Branch |
|---|---|---|---|
| Electrical Engineer | P | 4 | |
| Mechanical Engineer | P | 10 | |
| Other | P | 33 | |
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| | | | |
| **Total** | | 47 | |

**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)* |
|---|---|---|
| 28 | Airports; Terminals and Hangars; Freight Handling | 4 |
| 3 | Community Facilities | 2 |
| 165 | Computer Facilities | 5 |
| 58 | Educational Facilities; Classrooms | 5 |
| 8 | Energy Conservation; New Energy Sources | 2 |
| 12 | Fire Protection | 3 |
| 28 | Hospital and Medical Facilities | 3 |
| 28 | Heating; Ventilation; Air Conditioning | 4 |
| 19 | Industrial Buildings; Manufacturing Plants | 4 |
| 3 | Judicial/Courtroom | 2 |
| 5 | Office/Industrial Park | 2 |
| 10 | Prisons and Correctional Facilities | 2 |
| 13 | Public Safety Facilities | 4 |
| 4 | Refrigeration Plants/Systems | 3 |
| 16 | Security Systems; Intruder and Smoke Detection | 3 |
| 6 | Utilities | 3 |

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 | b. ROLE IN THIS CONTRACT | c. YEARS EXPERIENCE | |
|---|---|---|---|
| | | 1. TOTAL | 2. WITH CURRENT FIRM |
| Lance A. Jones, P.E. | Project Manager/Mechanical Engineer | 30 | 20 |

d. FIRM NAME AND LOCATION *(City and State)*

LSW Engineers Arizona, Inc., Phoenix, AZ

e. EDUCATION *(DEGREE AND SPECIALIZATION)*

Bachelor of Science | Mechanical Engineering

f. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*

20975 | Mechanical Engineer

g. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

American Society of Heating, Refrigeration and Air Conditioning (ASHRAE); American Society of Plumbing Engineers (ASPE); Air Conditioning Contractors of America (ACCA)l American Council of Engineering Companies (ACEC) – Current Board Member

H. RELEVANT PROJECTS

1)

(1) TITLE AND LOCATION *(City and State)*: ADOA 4,000 Bed Prison Expansion - Perryville, Tucson, Yuma, AZ

(2) Year Completed — Professional Services: 2010; Construction *(if applicable)*: 2010

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — [X] Check if project performed with current firm

Lance was the Project Manager for the new 4000-bed expansion three locations. Prototype buildings for housing, administration, dining, education, sally ports, and ACI were developed. Cibola Unit and La Paz Unit at ASPC Yuma expanded to 1,000 beds each, San Carolos Unit at ASPC Perryville expanded to 1,000 beds, and Whetstone Unit at ASPC Tucson expanded to 1,000 beds. Total construction cost was $168,000,000.

2)

(1) TITLE AND LOCATION *(City and State)*: Arizona State Health Laboratory - Phoenix, AZ
Energy and Utility Cost Reductions Analysis | Controls and Operations

(2) Year Completed — Professional Services: 2009; Construction *(if applicable)*: 2009

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — [X] Check if project performed with current firm

Lance performed retro-commissioning/energy audit services and modifications were implemented in an attempt to reduce utility costs. Duct static pressures were lowered, chilled water temperatures were raised, new dampers and actuators on exhaust fans were installed and redundant exhaust fans were shut down along with reprogramming of the building management system. The initial results showed very significant savings, projected on the order of 40% of the annual utility bill. Construction cost was $400,000.

3)

(1) TITLE AND LOCATION *(City and State)*: Arizona State Prison Complex - Tucson , AZ
Rincon Unit Cooling Tower Replacement

(2) Year Completed — Professional Services: 2010; Construction *(if applicable)*: 2010

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — [X] Check if project performed with current firm

Lance was the Project Manager for the replacement of the cooling towers and repiping of condenser water for ASPC Tucson Rincon Unit. Total construction cost was $205,000.

4)

(1) TITLE AND LOCATION *(City and State)*: Arizona State Prison Complex – Florence, AZ
Eyman Unit Evaporative Coolers

(2) Year Completed — Professional Services: 2011; Construction *(if applicable)*: 2011

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — [X] Check if project performed with current firm

Lance was the Project Manager for the replacement of old and deteriorated evaporative cooling units serving the house units. Construction cost was $600,000.

5)

(1) TITLE AND LOCATION *(City and State)*: City of Mesa District Cooling Plant – Mesa, AZ

(2) Year Completed — Professional Services: 2010; Construction *(if applicable)*: 2010

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — [X] Check if project performed with current firm

Lance was the Principal in Charge for the addition of the fourth 900-ton water cooled chillers with associated cooling towers and pumps. As part of the chiller addition, an update to the overall piping infrastructure master plan and provided connection updates. Construction cost was $975,000.

**. 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 | |
|---|---|---|---|
| | | 1. TOTAL | 2. WITH CURRENT FIRM |
| Russell A. Betz, P.E. | Mechanical Engineers | 28 | 17 |

d. FIRM NAME AND LOCATION *(City and State)*

LSW Engineers Arizona, Inc., Phoenix, AZ

e. EDUCATION *(DEGREE AND SPECIALIZATION)*

Bachelor of Science | Mechanical Engineering

f. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*

31249 | Mechanical Engineer

g. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

American Society of Heating, Refrigeration and Air Conditioning (ASHRAE)

H. RELEVANT PROJECTS

| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
|---|---|---|---|
| | | Professional Services | Construction *(if applicable)* |
| 1) | State of Arizona Supreme Court<br>Central Plant Renovations | 2011 | 2011 |

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — [X] Check if project performed with current firm

Russ was the Project Manager and Mechanical Engineer for the replacement of the existing outdated and inefficient thermal storage chilled water central plant with a new efficient low temperature chiller plant. Construction cost was $2,100,000.

| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
|---|---|---|---|
| | | Professional Services | Construction *(if applicable)* |
| 2) | State of Arizona Supreme Court<br>Data Center | 2009 | 2009 |

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — [X] Check if project performed with current firm

Russ was the Project Manager and Mechanical Engineer for a new 4,000 SF data center. The project consisted of a new 30 rack data center to replace their existing center which was outdated and undersized to meet the Owner's needs. The new data center was designed for future growth of 10 racks and a density increase to 7 KW per rack. The mechanical scope included full redundancy in the HVAC system. Construction cost was $1,540,000.

| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
|---|---|---|---|
| | | Professional Services | Construction *(if applicable)* |
| 3) | Arizona Game & Fish Regional Office Remodel, Flagstaff, AZ | 2010 | 2010 |

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — [X] Check if project performed with current firm

Russ was the Principal-in-Charge for the 12,300 SF of building and renovations which included a new 1,800 SF office, a new 750 SF conference room and 3,750 SF boat/warehouse storage. Renovated space included 6,000 SF of the existing building. Construction cost was approximately $1,300,000.

| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
|---|---|---|---|
| | | Professional Services | Construction *(if applicable)* |
| 4) | Kyrene School District Tower & Controls Renovations<br>Tower Replacements | 2009 | 2009 |

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — [X] Check if project performed with current firm

Under our continuing service agreement with the ADOA, Russ provided mechanical design and construction administration services to replace the central plant cooling towers, condenser pumps and update the DDC Controls at Kyrene Middle School, del Cielo Elementary, de los Niños Elementary. All three schools bid as one project with a construction cost of $1,800,000.

| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
|---|---|---|---|
| | | Professional Services | Construction *(if applicable)* |
| 5) | Maricopa County Public Health HVAC Study & Design | 2008 | 2008 |

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — [X] Check if project performed with current firm

Russ performed a study to identify deficiencies within the HVAC system. The scope of the renovation included replacing the packaged rooftop air handling units serving the facility with a new chilled water central plant and VAV air handling units. Construction cost was $980,000.

**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 | |
|---|---|---|---|
| | | 1. TOTAL | 2. WITH CURRENT FIRM |
| Gerald Katafiasz, P.E., RCDD | Electrical Engineers for Special Systems | 31 | 10 |

d. FIRM NAME AND LOCATION *(City and State)*

LSW Engineers Arizona, Inc., Phoenix, AZ

e. EDUCATION *(DEGREE AND SPECIALIZATION)*

Bachelor of Electronic Engineering Technology | Electrical Engineering

f. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*

37828 | Electrical Engineer

g. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

Building Industry Consulting Services International Inc.
- Registered Communication Distribution Designer (RCDD)

H. RELEVANT PROJECTS

| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
|---|---|---|---|
| | | Professional Services | Construction *(if applicable)* |
| 1) | ADOA 4,000 Bed Prison Expansion - Perryville, Tucson, Yuma, AZ | 2010 | 2010 |
| | (3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE | [x] Check if project performed with current firm | |
| | Gerry was the Electrical Engineer for the new 4000-bed expansion three locations. Prototype buildings for housing, administration, dining, education, sally ports, and ACI were developed. Cibola Unit and La Paz Unit at ASPC Yuma expanded to 1,000 beds each, San Carolos Unit at ASPC Perryville expanded to 1,000 beds, and Whetstone Unit at ASPC Tucson expanded to 1,000 beds. Total construction cost was $168 million. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
| | | Professional Services | Construction *(if applicable)* |
| 2) | State of Arizona Supreme Court<br>Central Plant Renovations | 2011 | 2011 |
| | (3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE | [x] Check if project performed with current firm | |
| | Gerry was the Electrical Engineer for the replacement of the existing outdated and inefficient thermal storage chilled water central plant with a new efficient low temperature chiller plant. Construction cost was $2,100,000. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
| | | Professional Services | Construction *(if applicable)* |
| 3) | Arizona State Lottery Building<br>Data Center UPS Replacement Evaluation | 2011 | 2011 |
| | (3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE | [x] Check if project performed with current firm | |
| | Gerry provided an evaluation and report of the Lottery's options for replacement of the existing UPS system. The evaluation consisted of reviewing the existing UPS lifecycle, battery capacity and location, present load capacity of the UPS based on amp meters on the UPS and building code issues. The report included recommendations for replacement and/or upgrades. No construction cost at this time. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
| | | Professional Services | Construction *(if applicable)* |
| 4) | ADOA Executive Towers – SES Replacement, Phoenix, AZ | 2013 | 2013 |
| | (3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE | [x] Check if project performed with current firm | |
| | Gerry is the Project Manager for the SES replacement which is currently in design. The Service Entrance Section will be replaced with new units of equal capacity with bussed space to allow for projected load flexibility, additional branch circuit metering for connection to the building management system for monitoring of building loads will be added. Construction is scheduled to begin February 2014 with a budget of approximately $1,083,600. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
| | | Professional Services | Construction *(if applicable)* |
| 5) | ADOA Capitol Mall Fire Alarm Replacements | 2011 | 2011 |
| | (3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE | [x] Check if project performed with current firm | |
| | Gerry was the Electrical Engineer for the fire alarm replacements at four state buildings that include Boards and Commissions, 62,500 SF; State Land Offices Building, 90,000 SF; Corporation Commission Building, 42,000 SF, and the Attorney General's Office Building, 102,000 SF. Total construction costs for all locations were $586,000. | | |

**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 | |
|---|---|---|---|
| | | 1. TOTAL | 2. WITH CURRENT FIRM |
| Mark D. Ralston, P.E., LEED AP | Electrical Engineer | 29 | 29 |

d. FIRM NAME AND LOCATION *(City and State)*

LSW Engineers Arizona, Inc., Phoenix, AZ

e. EDUCATION *(DEGREE AND SPECIALIZATION)*

Bachelor of Science in Design | Electrical Engineering

f. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*

39543 | Electrical Engineer

g. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

Illuminating Engineering Society of North America

H. RELEVANT PROJECTS

| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
|---|---|---|---|
| | | Professional Services | Construction *(if applicable)* |
| 1) | Arizona State Health Laboratory, Phoenix, AZ<br>Outside Air Evaporative Cooler Addition | 2012 | 2012 |
| | (3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE | [X] Check if project performed with current firm | |
| | Mark provided electrical design for the addition of a new evaporative cooler and run around loop. Construction cost was approximately $350,000. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
| | | Professional Services | Construction *(if applicable)* |
| 2) | Arizona State Prison Complex – Florence, AZ<br>Eyman Unit Evaporative Coolers | 2011 | 2011 |
| | (3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE | [X] Check if project performed with current firm | |
| | Mark provided electrical engineering assistance for the replacement of old and deteriorated evaporative cooling units serving the housing units. A construction cost was $600,000. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
| | | Professional Services | Construction *(if applicable)* |
| 3) | City of Glendale, Glendale, AZ<br>Public Safety Building – IT Data Area | 2010 | 2010 |
| | (3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE | [X] Check if project performed with current firm | |
| | Mark provided electrical engineering design for a new power distribution panel and redundant power configuration to service the new data server racks. Construction cost was $138,000. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
| | City of Scottsdale Ball Field Lighting Replacement, Scottsdale, AZ | Professional Services | Construction *(if applicable)* |
| | | 2013 | 2013 |
| 4) | (3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE | [X] Check if project performed with current firm | |
| | Mark was the Project Manager and Electrical Engineer for the replacement of all lighting system components at the softball fields and associated practice fields at Mountain View Park, two baseball fields at Scottsdale Ranch Park, and luminaire replacement only for the four softball fields at Horizon Park. Construction cost was $455,000. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
| | | Professional Services | Construction *(if applicable)* |
| 5) | City of Scottsdale Airport SES Replacement, Scottsdale, AZ | 2013 | 2013 |
| | (3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE | [X] Check if project performed with current firm | |
| | Engineering services for the replacement of the existing 800A., 120/208V-3Ph., 4W, NEMA-3R, Service Entrance Section serving the Airport Terminal Facility and the 600A., 120/208V-3Ph., 4W, NEMA-1, Service Entrance Section serving the Airport ABC Building. Construction cost was $125,000. | | |

**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 | |
|---|---|---|---|
| | | 1. TOTAL | 2. WITH CURRENT FIRM |
| Richard E. Herzog | Construction Field Observer | 23 | 35 |

d. FIRM NAME AND LOCATION *(City and State)*

LSW Engineers Arizona, Inc., Phoenix, AZ

e. EDUCATION *(DEGREE AND SPECIALIZATION)*

f. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*

g. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, etc.)*

Workshop training in: Labor/Management Relations; Construction Administration; Performance Evaluation; Principals of Supervisions; Occupational Safety and Health Administration

H. RELEVANT PROJECTS

| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
|---|---|---|---|
| | | Professional Services | Construction *(if applicable)* |
| 1) | ADOA 4,000 Bed Prison Expansion - Perryville, Tucson, Yuma, AZ | 2010 | 2010 |
| | (3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE | [Y] Check if project performed with current firm | |
| | Richard was the field observer for the new 4000-bed expansion three locations. Prototype buildings for housing, administration, dining, education, sally ports, and ACI were developed. Cibola Unit and La Paz Unit at ASPC Yuma expanded to 1,000 beds each, San Carolos Unit at ASPC Perryville expanded to 1,000 beds, and Whetstone Unit at ASPC Tucson expanded to 1,000 beds. Total construction cost was $168 million. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
| | | Professional Services | Construction *(if applicable)* |
| 2) | Arizona State Health Laboratory - Phoenix, AZ<br>Energy and Utility Cost Reductions Analysis \| Controls and Operations | 2009 | 2009 |
| | (3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE | [Y] Check if project performed with current firm | |
| | Richard was the field observer during construction of the new dampers and actuators on exhaust fans being installed. Construction cost was $400,000. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
| | | Professional Services | Construction *(if applicable)* |
| 3) | ADOA Capitol Mall Fire Alarm Replacements | 2011 | 2011 |
| | (3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE | [Y] Check if project performed with current firm | |
| | Richard was the field observer during construction for the fire alarm replacements at four state buildings that include Boards and Commissions, 62,500 SF; State Land Offices Building, 90,000 SF; Corporation Commission Building, 42,000 SF, and the Attorney General's Office Building, 102,000 SF. Total construction costs for all locations were $586,000. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
| | | Professional Services | Construction *(if applicable)* |
| 4) | Arizona State Prison Complex – Florence, AZ<br>Eyman Unit Evaporative Coolers | 2011 | 2011 |
| | (3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE | [Y] Check if project performed with current firm | |
| | Richard was the field observer for the replacement of old and deteriorated evaporative cooling units serving the housing units. Construction cost was $600,000. | | |
| | (1) TITLE AND LOCATION *(City and State)* | (2) Year Completed | |
| | | Professional Services | Construction *(if applicable)* |
| 5) | City of Mesa District Cooling Plant – Mesa, AZ | 2010 | 2010 |
| | (3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE | [Y] Check if project performed with current firm | |
| | Richard was the field observer during construction for the addition of the fourth 900-ton water cooled chillers with associated cooling towers and pumps. Construction cost was $975,000. | | |

**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)* |
| Arizona Department of Administration<br>4000-Bed Prison Expansion – Perryville, Tucson, Yuma, AZ | 2010 | 2010 |

23. PROJECT OWNER'S INFORMATION

| c .PROJECT OWNER | d .DOLLAR AMOUNT OF PROJECT | e. TOTAL COST OF PROJECT |
|---|---|---|
| Mike Rank, Sr. Project Manager<br>(602) 542-1983 | $170,000,000 | $168,000,000 |

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

The Arizona Department of Corrections needed to provide 4,000, level 1 beds and have them sited at various locations to best utilize staffing availability. Prototype buildings for housing, administration, dining, education, sally ports, and ACI were developed. Sites include the **Cibola Unit**: 1,000-bed minimum level custody male w/medium level fence, Yuma; **La Paz Unit**: 1,000-bed minimum level custody male w/medium level fence, Yuma; **San Carlos Unit**: 1,000-bed minimum level custody female, Perryville, and **Whetstone Unit**: 1,000-bed minimum level custody male, Tucson.

The total project budget was approximately $170,000,000 and actually bid under estimates and allowed for additional facility improvements. Those improvements included additional vehicle maintenance facilities, upgrades to existing kitchens and new fuel islands at all sites.

The length was from July 2008 to March 2010.

**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)* |
| Arizona State Health Laboratory – Phoenix, AZ<br>Energy and Utility Cost Reductions Analysis \| Controls and Operations | 2009 | 2009 |

23. PROJECT OWNER'S INFORMATION

| c .PROJECT OWNER | d .DOLLAR AMOUNT OF PROJECT | e. TOTAL COST OF PROJECT |
|---|---|---|
| Rick Davis, Project Manager<br>(602) 364-0523 | $400,000 | $400,000 |

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

Biological safety laboratories such as the Arizona Department of Health Facility present unique challenges in their HVAC systems, especially at the BSL-3 level. The lab ventilation equipment has a primary role of maintaining safe working conditions by maintaining ventilation and pressurization standards as recommended by the National institute of Health (NIH), American Society Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), State building codes, and Food and Drug Administration (FDA). The combination of these standards requires very high ventilation rates (in some cases exceeding 50 air changes per hour), and the use of 100% outside air (no recirculation of return air). In the relatively harsh climate of Phoenix, this means a great deal of cooling in the summer and a great deal of heating in the winter. As can be anticipated, it also means extremely high gas and electric bills to cool and heat the ventilation air to maintain indoor comfort
.
LSW Engineers was commissioned to analyze the existing building systems to see what could be done to mitigate the high energy consumption and utility costs. The first step was to determine the magnitude and breakdown of utility bills. Further, the configuration of the ventilation systems and controls and the usage patterns of the building were studied.

Recommendations were developed which would lower the utility consumption, generally in two categories. The first category included reworking of the existing building control systems and minor control modifications with minor capital cost that could be implemented immediately. The second category involved recommendations requiring more significant capital costs which could be implemented as budget is available.

The resulting re-commissioning and capital improvements used a combination of relatively conventional control strategies, in conjunction with some innovative applications of humidity and dewpoint control. The initial results showed some very significant savings, projected on the order of 40% of the annual utility bill.

The study was completed August 2008 with construction completed February 2009.

**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)* |
| Arizona State Prison Complex Tucson<br>Santa Rita/Cimarron Units – Electrical Service Upgrades | 2011 | 2011 |

23. PROJECT OWNER'S INFORMATION

| c .PROJECT OWNER | d .DOLLAR AMOUNT OF PROJECT | e. TOTAL COST OF PROJECT |
|---|---|---|
| Cherie Randall, Project Manager<br>(602) 364-4295 | $2,595,816 | $2,595,816 |

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

LSW was the primary design firm in charge of all electrical design, field investigation and construction planning. LSW also acted as the Primary Construction Management team during the course of construction.

The project required replacing the existing medium voltage loop for (2) housing units and (2) facility support areas at existing ASPC-Tucson Prison Complex. This involved approximately 20,000 lineal feet of trenching, conduit, backfill and marking. 80,000 lineal feet of medium voltage cable was replaced along with 16 new medium voltage, loop feed transformers. This loop is the normal power feed for 30 buildings, housing 800 medium security and 800 medium-high security felons. During the course of the project inmates had to remain housed in these buildings as there were no other facilities to move them to temporarily.

Design started February 2011 and construction completed in September 2011.

**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)* |
| Arizona Capitol Mall Fire Alarm Replacement – Phoenix, AZ | 2011 | 2011 |

23. PROJECT OWNER'S INFORMATION

| c .PROJECT OWNER | d .DOLLAR AMOUNT OF PROJECT | e. TOTAL COST OF PROJECT |
|---|---|---|
| Janet Collegio, Project Manager<br>(602) 542-1925 | $586,000 | $586,000 |

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

LSW Engineers provided fire alarm design and construction administration services for alarm replacements at four state buildings that include Boards and Commissions, 62,500 SF; State Land Office Building, 90,000 SF; Corporation Commission Building, 42,000 SF, and the Attorney General's Office Building, 102,000 SF.

The length of the project for each building is as follows:

Boards and Commissioning: 08/10 – 07/11 (11 months)

State Land Office Building: 08/10 – 07/11 (11 months)

Corporation Commission Building: 01/11 – 11/11 (10 months)

Attorney General's Office Building: 01/11 – 11/11 (10 months)

**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)* |
| Arizona Supreme Court Data Center – Phoenix, AZ | 2008 | 2008 |

23. PROJECT OWNER'S INFORMATION

| c .PROJECT OWNER | d .DOLLAR AMOUNT OF PROJECT | e. TOTAL COST OF PROJECT |
|---|---|---|
| Dave Summers, Facility Manager<br>(602) 452-3330 | $1,500,000 | $1,540,000 |

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

LSW provided full MPE design and held the prime contract and coordinated the Architect and the Structural Engineer as sub-consultants to LSW. Our services also included assisting the Owner in the bidding process, including conducting the pre-bid meeting and review of the bids. Lastly LSW provided construction phase services, including conducting the pre-construction meeting, field observations through the construction to report on compliance with the documents, review of the pay applications and the close out documentation.

The scope of this project included the design of a new 4,000 SF Data Center located on the second floor of an operational office environment. The initial design and construction included 30 racks with provisions to expand to 40 racks total. The design and construction was complicated by the fact that the new data center was being constructed in a facility that remained occupied and operational and the "old" data center had to remain operational as well. The design and construction of this project included the following:

1. Demolition of existing office space
2. New Data IT Room with raised floor
3. New CRAH units dedicated for the space and independent of the "house" system
4. FM200 suppression system
5. Dual power feed system with generator back-up and UPS
6. Master cable tray system to accommodate the power and data wiring systems

The project started in June 2007 and completed July 2008

## 6. ADDITIONAL INFORMATION

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

LSW Engineers Arizona, Inc. ("LSW") is a highly qualified and full service mechanical and electrical engineering firm. Our staff of over 47 employees includes 14 registered professional engineers with a 66-year history of providing reliable and energy efficient design solutions for Arizona's built environment. Included within our staff are Registered Communication Distribution Designers (RCDD) to support data, communications and special systems design; eight LEED Accredited Professionals to support our Green Building Design, a Certified Energy Auditor, and two full-time field observers to support our construction administration services. This depth of experience allows us to provide engineering and consultation for a wide range of project types. In addition, all of LSW's technical staff are proficient in the use of the latest design tools, utilizing state-of-the-art hardware and software to produce complete and comprehensive 2-D or 3-D documents as project demands dictate, transforming your needs into buildable projects that meet both construction and operating budgets.

There are a number of advantages to using LSW Engineers as your HVAC, plumbing, electrical and special systems engineering consultant. The experience and depth of our staff distinguishes us from other firms. We have the largest local staff of mechanical and electrical engineers, which provides backup and assistance as needed for those working on your projects. Another unique feature of LSW is our full-time construction administration staff. Our three full-time field observers who spend all of their time seeing that our clients get the best possible work from the low-bid contractor and assure that the product that you paid for is actually provided. Since they are not involved in the design of projects, they are more available on short notice to respond to construction issues and have much greater experience in seeing that your job is completed successfully. They are better acquainted with the code officials, contractors, and suppliers, and bring this advantage to your projects.

Having been in business locally for 66 years, we understand the importance of taking care of each client and resolving all problems or issues. The nature of construction is such that there will be changes or corrections needed on every job. Most of the time those corrections are minor. When more effort is required, the difference between firms becomes clear, and it is in how they take care of difficult issues. During construction quick action is critical to prevent delays and to avoid extra costs. LSW understands this and always steps forward quickly to see that resolutions are fair and timely.

LSW Engineers Arizona enjoys the long term, on-going working relationships with the ADOA and believe that this customer loyalty is the greatest testament to our abilities and appreciation of the service that we provide. LSW is committed to providing engineering and construction phase services that will be in the best interest the ADOA.

## 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: | 14% |
| b. | Percentage of Total Work Attributable to Non-Government Work: | 86% |

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

Signature: _____ Date: November 21, 2013

Name: Lance A. Jones Title: President