	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**

Burns & McDonnell Engineering Company, Inc. Qualifications Package in Response to

Annual Request for Qualifications and Experience
No: ADSPO15-00004729

Due Date: December 23, 2014

Submitted: December 19, 2014

(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:	Burns & McDonnell Engineering Company, Inc.
b. FIRM (OR BRANCH OFFICE) STREET:	2600 N. Central Avenue, Suite 1500
c. FIRM (OR BRANCH OFFICE) CITY:	Phoenix
d. FIRM (OR BRANCH OFFICE) STATE:	Arizona
e. FIRM (OR BRANCH OFFICE) ZIP CODE:	85004

f. YEAR ESTABLISHED:	Phoenix office: 1998 / Firm: 1898

(g1). OWNERSHIP - TYPE:	S-Corporation
(g2) OWNERSHIP - SMALL BUSINESS STATUS:	N/A

h. POINT OF CONTACT NAME AND TITLE:	Ms. Tanya Martella, Associate
i. POINT OF CONTACT TELEPHONE NUMBER:	480-337-6502 (telephone) / 602-717-7748 (cell)
j. POINT OF CONTACT E-MAIL ADDRESS:	tmartella@burnsmcd.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
Architect	P	78	2
CADD Technician	P	310	7
Chemical Engineer	P	151	0
Civil Engineer	P	325	6
Construction Manager	P	58	0
Control Systems Engineer	P	93	1
Cost Engineer / Estimator	P	183	4
Electrical Engineer	P	716	15
Fire Protection Engineer	P	13	0
Mechanical Engineer	P	455	18
Project Manager	P	481	6
Structural Engineer	P	298	8
Total		3161	67

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)*
3	Activity Centers	5
15	Air Pollution Control	6
15	Airports; Navaids; Airport Lighting; Aircraft Fueling	7
12	Airports; Terminals and Hangars; Freight Handling	9
10	Anti-Terrorism/Force Protection	8
3	Barracks; Dormitories	4
2	Chemical Processing & Storage	1
4	Child Care/Development Facilities	7
3	Codes; Standards; Ordinances	4
8	Cold Storage; Refrigeration and Fast Freeze	5
2	Commercial Building (low rise); Shopping Centers	3
3	Community Facilities	4
1	Computer Facilities	4
6	Construction Management	6
4	Controls and Electronics Engineers	9
3	Cost Estimating; Cost Engineering and Analysis; Parametric Costing; Forecasting	5
15	Design-Build - Preparation of Requests for Proposals	7
15	Detention Security Systems	5
2	Disability / Special Needs	4
2	Educational Facilities; Classrooms	3
3	Electrical Studies and Design	5
8	Elevators; Escalators; People-Movers	5
3	Energy / Water Auditing Savings	4
5	Energy Conservation; New Energy Sources	4
10	Fire Protection	7
8	Highways; Streets; Airfield Paving; Parking Lots	7

0	Housing (Residential, Multi-Family; Apartments; Condominiums)	0
12	Industrial Buildings; Manufacturing Plants	8
4	Industrial Processes; Quality Control	7
3	Industrial Waste Treatment	5
8	Infrastructure	6
1	Laboratories; Medical Research Facilities	4
1	Labs - General	5
1	Labs - Research - Dry	5
0	Labs Research - Wet	6
60	LEED Accredited A/E	10
1	LEED Independent 3rd Party Building Commissioning Engineers	2
10	Lighting (Exteriors; Streets; Memorials; Athletic Fields, Etc.)	4
5	Lighting (Interior; Display; Theater, Etc.)	3
4	Measurement / Verification / Conservation Water Consumption Savings	4
2	Modular Systems Design; Pre-Fabricated Structures or Components	4
4	Nuclear Facilities; Nuclear Shielding	6
1	Office Buildings; Industrial Parks	4
2	Outdoor Recreation	3
20	Petroleum and Fuel (Storage and Distribution)	8
6	Phase I Environmental	5
2	Pipelines (Cross-Country - Liquid & Gas)	7
10	Plumbing & Piping Design	5
4	Pneumatic Structures, Air-Support Buildings	0
30	Power Generation, Transmission, Distribution	10
2	Prisons & Correctional Facilities	6
2	Public Safety Facilities	0
2	Recreation Facilities (Parks, Marinas, Etc.)	4
2	Research Facilities	6
4	Seismic Designs & Studies	5

6	Sewage Collection, Treatment and Disposal	7
6	Solar Energy Utilization	7
20	Specifications Writing	5
5	Storm Water Handling & Facilities	6
50	Sustainable Design	10
6	Utilities (Gas and Steam)	7
2	Warehouses & Depots	5
10	Waste Water Treatment Facility	7
4	Water Resources; Hydrology; Ground Water	6
4	Water Supply; Treatment and Distribution	7

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	
Keith Koprowski, PE	**Project Manager, Senior Civil Engineer (Key Team Member)**	1. TOTAL **14**	2. WITH CURRENT FIRM **3**

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

e. EDUCATION *(DEGREE AND SPECIALIZATION)*	f. PROFESSIONAL TRAINING - REGISTRATIONS
• B.S.E. Civil Engineering, Arizona State University	• Professional Engineer – Arizona (Civil)

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*
N/A

H. RELEVANT PROJECTS

1.

(1) TITLE AND LOCATION *(City and State)*
Papago Park Readiness Center, Arizona ARNG (ADOA Contract)
Phoenix, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2014

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE
Mr. Koprowski served as Project Manager for the 62,000 SF Readiness Center Design-Build project for the Arizona Army National Guard that was awarded through a previous ADOA contract. Facility features include private and open office administrative spaces; a Sensitive Compartmented Information Facility (SCIF) with raised access flooring; an assembly area; simulator training space; classrooms; individual and group equipment storage; a secure arms vault; and restroom/locker room support spaces. The facility was designed to meet (& did achieve) the USGBC LEED® Gold certification requirements. Mr. Koprowski was responsible for space planning, design, production, and quality assurance of architectural construction drawings and specifications.

2.

(1) TITLE AND LOCATION *(City and State)*
Florence Readiness Center, Arizona ARNG (ADOA Contract)
Florence, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2013

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE
Mr. Koprowski served as Project Manager for the 76,710 SF Readiness Center Design-Build project for the Arizona Army National Guard that was awarded through a previous ADOA contract. Facility features include open office and private administrative spaces; assembly areas; training and education spaces; individual and group equipment storage; two storage vaults; and a vehicle maintenance shop. The facility was designed to meet (& did achieve) the USGBC LEED® Gold certification requirements. Mr. Koprowski was responsible for direction and supervision of professional, technical, and administrative staff during the design of the new facilities as well as served as the main point of contact between the Design-Build Contractor, the State of Arizona Department of Emergency and Military Affairs, and the National Guard Bureau.

3.

(1) TITLE AND LOCATION *(City and State)*
Octillo Power Plant Drainage Master Plan, Arizona Public Service
Tempe, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2014	N/A

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE
Mr. Koprowski is currently serving as Quality Control Manager while Burns & McDonnell works as Owner's Engineer to support Arizona Public Service (APS) for an Engineer Procure Construct (EPC) project to modernize the power production at the Ocotillo Power Plant. In support of this project Burns & McDonnell is creating a Drainage Master Plan to support the project and future development of the installation. The project includes preliminary development planning with City of Tempe and a Master Grading and Drainage Report to identify drainage solutions for the future development of the Ocotillo Power Plant. Mr. Koprowski is responsible for reviewing designs and providing quality assurance over drawings and specifications.

4.

(1) TITLE AND LOCATION *(City and State)*
Yuma MCAS MILCON P447A, Aircraft Maintenance Hangar Modifications
Yuma, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2013	2013

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

X Check if project performed with current firm

Mr. Koprowski served as Design Project Manager on an A/E design services project for a facility modification to an existing legacy aircraft hangar. The project consisted of 52,500 SF of modifications and additions to accommodate the facility requirements of the new Joint Strike Fighter (JSF) aircraft. The facility provides a hangar bay, maintenance shops, and administrative and operations offices for the new JSF Mission at MCAS Yuma. The facility was designed to meet (& did achieve) the USGBC LEED® Gold certification requirements. Mr. Koprowski was responsible for overall design production and client coordination.

5.

(1) TITLE AND LOCATION *(City and State)*
Squadron Operations Facility, Luke Air Force Base
Glendale, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2014

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

X Check if project performed with current firm

Mr. Koprowski provided design oversight for a new 22,000 SF modern and functional facility which houses the first five squadrons slotted for Luke Air Force Base. For security requirements, the facility has limited secure access and thus, nearly half of the facility is a SAPF space. It contains a secure pilot briefing area with individual flight briefing rooms and a larger briefing room along with Mission Planning, Weapons/Tactical Training, Intel/Weaponry, and TAC Plans. Mr. Koprowski reviewed designs and gave viable feedback to his team in completing this design.

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
Scott Mitchell, AIA, LEED GA	**Architect (Key Team Member)**	**17**	**3**

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

e. EDUCATION *(DEGREE AND SPECIALIZATION)*	f. PROFESSIONAL TRAINING - REGISTRATIONS
• B.A.S., Computer Aided Design – University of Advancing Technology	• Registered Architect – Arizona • Registered Architect – California

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*
- LEED Green Associate

H. RELEVANT PROJECTS

1.

(1) TITLE AND LOCATION *(City and State)*
Papago Park Readiness Center, Arizona ARNG (ADOA Contract)
Phoenix, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2014

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

X Check if project performed with current firm

Mr. Mitchell served as Project Architect for the 62,000 SF Readiness Center Design-Build project for the Arizona Army National Guard that was awarded through a previous ADOA contract. Facility features include private and open office administrative spaces; a Sensitive Compartmented Information Facility (SCIF) with raised access flooring; an assembly area; simulator training space; classrooms; individual and group equipment storage; a secure arms vault; and restroom/locker room support spaces. The facility was designed to meet (& did achieve) the USGBC LEED® Gold certification requirements. Mr. Mitchell was responsible for design, production, and quality assurance of architectural construction drawings and specifications.

2.

(1) TITLE AND LOCATION *(City and State)*
Florence Readiness Center, Arizona ARNG (ADOA Contract)
Florence, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2013

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

X Check if project performed with current firm

Mr. Mitchell served as Project Architect on the 76,710 SF Readiness Center Design-Build project for the Arizona Army National Guard that was awarded through a previous ADOA contract. Facility features include open office and private administrative spaces; assembly areas; training and education spaces; individual and group equipment storage; two storage vaults; and vehicle maintenance shop. The facility was designed to meet (& did achieve) the USGBC LEED® Gold certification requirements. Mr. Mitchell was responsible for quality assurance reviews of architectural construction drawings and specifications. He provided construction administration services, including shop drawing review, site inspections, and final punch approval.

3.

(1) TITLE AND LOCATION *(City and State)*
Joint Forces Los Alamitos Building 4 Renovation
Los Alamitos, California

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2013	2014

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

X Check if project performed with current firm

Mr. Mitchell served as Project Architect for the Type A services for the California Army National Guard (CA ARNG). The existing Building 4 at Joint Force Training Base Los Alamitos was considered for renovations and repurposing into the southern regional headquarters for the California Governor's Office of Emergency Services (CalOES). The Type A service project involved an extensive investigation of the existing 16,800 SF facility, including physical condition, structural and seismic capacity, hazardous materials assessment, and utility service capacity. Three optional floor plans were evaluated as potential courses of action, based on programming efforts coordinated with CA ARNG and CalOES facilities and engineering staff. Mr. Mitchell was responsible for quality assurance reviews of architectural construction drawings and specifications.

4.

(1) TITLE AND LOCATION *(City and State)*
Northrop Grumman Plant 42, Building 401 E-line Addition
Palmdale, California

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
Ongoing	Ongoing

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

[X] Check if project performed with current firm

Mr. Mitchell serves as Project Architect for the design and construction administration services for an addition of an approximately 73,000 SF office structure within existing hangar B401 at the Northrop Grumman Corporation (NGC) site. The new addition consists of two floors of office space above an open first level storage and circulation area, located within the existing hangar space, adjacent to and connected through, an existing administration area. Each floor consists of a number of enclosed office spaces, conference rooms, open office areas for modular workstations, break areas, huddle rooms, and restrooms. The entirety of each working area of the facility addition is designed to meet the requirements of ICD/ICS 705, Technical Specifications for Construction and Management of Sensitive Compartmented Information Facilities (SCIF). Interior spaces are defined by strategic use of various colors, materials, and textures such as wood slat paneling, butt-glazed storefront, and a combination of exposed and suspended acoustical tile ceilings to place emphasis on work groups or special areas. Mr. Mitchell is responsible for quality assurance reviews of architectural construction drawings and specifications.

5.

(1) TITLE AND LOCATION *(City and State)*
Security Forces Facility Addition, CA Air National Guard
Moffett Federal Airfield, Mountain View, California

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
Ongoing	Ongoing

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

[X] Check if project performed with current firm

Mr. Mitchell currently serves as Project Architect for an addition and renovations to the existing Building 653 at Moffett Federal Airfield, in support of the California Air National Guard. Administrative spaces and functions will be consolidated from their current disbursement among three different facilities at the project site, into the newly renovated Security Forces Facility. The additional facility square footage will house the Security Forces Squadron's (SFS) combat arms training simulator and combat arms training maintenance operations. Interior renovations include selective demolition; construction of new walls and doors; replacement of plumbing fixtures; upgrades to mechanical systems; and freshening of finishes throughout. Mr. Mitchell iss responsible for quality assurance reviews of architectural construction drawings and specifications.

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	
Justin Isner, PE	**Civil Engineer, Site (Key Team Member)**	1. TOTAL **14**	2. WITH CURRENT FIRM **4**

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

e. EDUCATION *(DEGREE AND SPECIALIZATION)*
- Bachelor of Science, Civil Engineering – West Virginia University

f. PROFESSIONAL TRAINING - REGISTRATIONS
- Professional Engineer – Arizona (Civil)
- Construction Quality Control Manager, NAVFAC/COE

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*
- Society of American Military Engineers (Young Member), Phoenix Post

H. RELEVANT PROJECTS

1.

(1) TITLE AND LOCATION *(City and State)*
Papago Park Readiness Center, Arizona ARNG (ADOA Contract)
Phoenix, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2014

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

Mr. Isner served as the Civil Engineer on the 62,000 SF Readiness Center Design-Build project for the Arizona Army National Guard that was awarded through a previous ADOA contract. Facility features include private and open office administrative spaces; a Sensitive Compartmented Information Facility (SCIF) with raised access flooring; an assembly area; simulator training space; classrooms; individual and group equipment storage; a secure arms vault; and restroom/locker room support spaces. The facility was designed to meet (& did achieve) the USGBC LEED® Gold certification requirements. Mr. Isner was responsible for the full civil site design as well as worked with the contractor to obtain required permits for construction activities.

2.

(1) TITLE AND LOCATION *(City and State)*
Florence Readiness Center, Arizona ARNG (ADOA Contract)
Florence, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2013

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

Mr. Isner served as the Civil Engineer on the 76,710 SF Readiness Center Design-Build project for the Arizona Army National Guard that was awarded through a previous ADOA contract. Facility features include open office and private administrative spaces; assembly areas; training and education spaces; individual and group equipment storage; two storage vaults; and a vehicle maintenance shop. The facility was designed to meet (& did achieve) the USGBC LEED® Gold certification requirements. Mr. Isner focused on the housing development, which is sited on 11 acres and contains 85-100 single-family homes with an average size of 2,200 SF in two stories. Mr. Isner was responsible for providing preliminary drainage studies, traffic impact studies, grading and drainage plans, water, sewer, paving and SWPPP plans, concept landscape plans, signing and striping, drainage reports, preparation of 404 Permit Application, and coordination with and meetings with City staff, local school district staff, Street Light Improvement District staff, fire department, city water & sewer departments, and engineering.

3.

(1) TITLE AND LOCATION *(City and State)*
Reclaimed Water Recharge Reservoirs & Park
Casa Grande, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2012

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

Mr. Isner served as the Site Civil Engineer with the City of Casa Grande developing, designing and constructing a series of basins that serve as both a recharge facility and a public park amenity. The primary purpose for the basins is to recharge the reclaimed water coming from the City's water reclamation facility. This valuable resource recharges into the local aquifer where it can be

withdrawn at later times for beneficial reuse. With the construction of basins, a public park amenity was also included. Wide walking paths, benches and native landscaping provide a backdrop for the basins. Mr. Isner was responsible for deciding where those walking paths were laid.

4.

(1) TITLE AND LOCATION *(City and State)*
Octillo Power Plant Drainage Master Plan, Arizona Public Service
Tempe, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2014	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

[X] Check if project performed with current firm

Mr. Isner currently serves as the Civil Engineer, while Burns & McDonnell works as Owner's Engineer to support Arizona Public Service (APS) for an Engineer Procure Construct (EPC) project to modernize the power production at the Ocotillo Power Plant. In support of this project Burns & McDonnell is creating a Drainage Master Plan to support the project and future development of the installation. The project includes preliminary development planning with City of Tempe and a Master Grading and Drainage Report to identify drainage solutions for the future development of the Ocotillo Power Plant. Mr. Isner is leading the effort and writing the Drainage Report.

5.

(1) TITLE AND LOCATION *(City and State)*
Mesquite Solar West, Sempra Generation
Maricopa, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2013

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

[X] Check if project performed with current firm

Mr. Isner provided assistance to the design team while Burns & McDonnell served as Owner's Engineer developing Sempra Energy's Mesquite 170 MW photovoltaic (PV) power plant in western Phoenix, Arizona. The project utilized Suntech's new Pluto PV technology and liquid cooled inverters and energy modeling with PVSyst. Mr. Isner was responsible for revising a Special Use Permit (SUP) to reflect the electrical and civil infrastructure to support the western phase of the Mesquite Solar Power Plant. He was also responsible for the roadway layout, pavement design and grading for storm drainage controls on the project site.

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	
Steve Peterson, PE, LEED AP	**Mechanical Engineer, Solar Photovoltaic Designer (Key Team Member)**	1. TOTAL **28**	2. WITH CURRENT FIRM **3**

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

e. EDUCATION *(DEGREE AND SPECIALIZATION)*	f. PROFESSIONAL TRAINING – REGISTRATIONS
• Bachelor of Science in Mechanical Engineering – University of California at Berkeley	• Professional Engineer – Arizona (Mechanical) • Professional Engineer – Nevada (Mechanical)

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*
- LEED Accredited Professional

H. RELEVANT PROJECTS

	(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
		Professional Services	Construction (if applicable)
1.	**Papago Park Readiness Center, Arizona ARNG (ADOA Contract)** ***Phoenix, Arizona***	2012	2014
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE Mr. Peterson provided quality assurance for the 62,000 SF Readiness Center Design-Build project for the Arizona Army National Guard that was awarded through a previous ADOA contract. Facility features include private and open office administrative spaces; a Sensitive Compartmented Information Facility (SCIF) with raised access flooring; an assembly area; simulator training space; classrooms; individual and group equipment storage; a secure arms vault; and restroom/locker room support spaces. The facility was designed to meet (& did achieve) the USGBC LEED® Gold certification requirements. Mr. Peterson provided quality assurance/quality control for the warranty items on the project.	X Check if project performed with current firm	
2.	(1) TITLE AND LOCATION *(City and State)* **Florence Readiness Center, Arizona ARNG (ADOA Contract)** ***Florence, Arizona***	(2) YEAR COMPLETED Professional Services 2012	Construction (if applicable) 2013
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE Mr. Peterson served as the Mechanical Engineer on the 76,710 SF Readiness Center Design-Build project for the Arizona Army National Guard that was awarded through a previous ADOA contract. Facility features include open office and private administrative spaces; assembly areas; training and education spaces; individual and group equipment storage; two storage vaults; and a vehicle maintenance shop. The facility was designed to meet (& did achieve) the USGBC LEED® Gold certification requirements. Mr. Peterson was responsible for reviewing design and detailing of the electrical system, coordinating with architectural, mechanical, and civil disciplines, and for construction administration.	X Check if project performed with current firm	
3.	(1) TITLE AND LOCATION *(City and State)* **Gila Bend Solar Power Plant, Arizona Public Service** ***Gila Bend, Arizona***	(2) YEAR COMPLETED Professional Services 2013	Construction (if applicable) 2014
	(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE Mr. Peterson provided quality assurance services while Burns & McDonnell served as Owner's Engineer during the development and construction of the Gila Bend 32 MW solar power plant. He acted as a sounding board for the team and reviewed bid support; site development; cost/schedule support; submittals; technical design; civil, electrical and substation design; and project engineering.	X Check if project performed with current firm	
4.	(1) TITLE AND LOCATION *(City and State)* **Mesquite Solar West, Sempra Energy** ***Maricopa, Arizona***	(2) YEAR COMPLETED Professional Services 2012	Construction (if applicable) 2013

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

X Check if project performed with current firm

Mr. Peterson acted as Project Manager while Burns & McDonnell served as Owner's Engineer developing Sempra Energy's Mesquite 170 MW photovoltaic (PV) power plant in western Phoenix, Arizona. The project utilized Suntech's new Pluto PV technology and liquid cooled inverters and energy modeling with PVSyst. Mr. Peterson assisted in selecting a successful bidder, reviewing design, monitoring construction, and providing over-sight for the plant's commissioning and performance testing.

5.

(1) TITLE AND LOCATION *(City and State)*

Topaz Solar Energy Plant, MidAmerican Energy
Solar Star Plant, MidAmerican Energy
California

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2013	2014

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

X Check if project performed with current firm

Mr. Peterson was responsible for due diligence, design review, construction oversight, and performance evaluation for MidAmerican Energy's 550 MW Topaz Solar Energy Plant and the 580 MW Solar Star plant, both in California. Burns & McDonnell studied the technical aspects of the development for each, produced an independent annual energy production model for each, and assessed the performance guarantees and commercial terms. The findings were summarized in comprehensive reports written by Steve's team, and reviewed by him.

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	
Nathan Thompson, PE CFM	**Civil Engineer, Stormwater / Drainage (Key Team Member)**	1. TOTAL **11**	2. WITH CURRENT FIRM **6**

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

e. EDUCATION *(DEGREE AND SPECIALIZATION)*
- M.S., Civil & Environmental Engineering – Brigham Young University
- B.S., Civil & Environmental Engineering – Brigham Young University

f. PROFESSIONAL TRAINING – REGISTRATIONS
- Professional Engineer – Arizona (Civil)
- Certified Floodplain Manager – Arizona

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*
- Association of State Floodplain Managers (ASFPM)
- Arizona Floodplain Management Association (AFMA)

H. RELEVANT PROJECTS

1.

(1) TITLE AND LOCATION *(City and State)*
Reclaimed Water Recharge Reservoirs & Park
Casa Grande, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2012

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE
Mr. Thompson served as Civil/Drainage Engineer for the Reclaimed Water Recharge Reservoirs project for the City of Casa Grande, developing, designing and constructing a series of basins that serve as both a recharge facility and a public park amenity. The primary purpose for the basins is to recharge the reclaimed water coming from the City's water reclamation facility. This valuable resource will recharge into the local aquifer where it can be withdrawn at a later time for beneficial reuse. With the construction of basins, a public park amenity was also included. Wide walking paths, benches and native landscaping provide a backdrop for the basins. Mr. Thompson was responsible for deciding where basins would go throughout the site.

2.

(1) TITLE AND LOCATION *(City and State)*
Octillo Power Plant Drainage Master Plan, Arizona Public Service
Tempe, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2014	N/A

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE
Mr. Thompson is currently assigned to this project as a Civil Reviewer while Burns & McDonnell works as Owner's Engineer to support Arizona Public Service (APS) for an Engineer Procure Construct (EPC) project to modernize the power production at the Ocotillo Power Plant. In support of this project Burns & McDonnell is creating a Drainage Master Plan to support the project and future development of the installation. The project includes preliminary development planning with City of Tempe and a Master Grading and Drainage Report to identify drainage solutions for the future development of the Ocotillo Power Plant. Mr. Thompson is responsible for assisting Justin Isner with the drainage report.

3.

(1) TITLE AND LOCATION *(City and State)*
Mesquite Solar West, Sempra Energy
Maricopa County, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2013

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE
Mr. Thompson served as Civil Engineer while Burns & McDonnell acted as Owner's Engineer developing Sempra Energy's Mesquite 170 MW photovoltaic (PV) power plant in western Phoenix, Arizona. The project utilized Suntech's new Pluto PV technology and liquid cooled inverters and energy modeling with PVSyst. Mr. Thompson was responsible for the Drainage Report, conceptual plans,

and civil narrative in support of the Special Use Permit (SUP). He was instrumental in the detailed civil infrastructure design plans for bidding, which became the basis of the construction plans. He was assigned as civil reviewer of the construction permit drawings and drainage reports and performed the appropriate research, analyses, calculations, and designs to meet the high level of detail requisite for the SUP. Mr. Thompson designed the channel / embankment linings based on most current products available, and local materials & experience. He developed cost estimations to evaluate design concepts.

4.

(1) TITLE AND LOCATION *(City and State)*
Sun Valley North Solar Project, Capital Power
Maricopa County, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
Ongoing	Ongoing

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

X Check if project performed with current firm

Mr. Thompson is assigned as Civil Engineer to support a Special Use Permit (zoning/land use related permit) and County Variance for a 3.3-square mile, 200 MW solar energy (PV) project. As Owner's Engineer, Burns & McDonnell is providing preliminary project designs and conceptual system layouts incorporating multiple solar technologies for the project. In preparation for the completion of the SUP permit application, Burns & McDonnell is also providing preliminary design and evaluations of multiple drainage schemes for evaluation and an ultimate selection for inclusion in the SUP application package along with a comprehensive drainage report. Mr. Thompson is responsible for the drainage report, and assisting with the civil designs and cost estimates. Mr. Thompson wrote the SUP draft narrative and used HEC-1 and the County's program, DDMSW for detailed hydrologic analyses. He used ArcGIS, Version 10 to research land uses, zoning, etc., to calculate hydrologic parameters, and to make the maps used in the drainage report and SUP narrative.

5.

(1) TITLE AND LOCATION *(City and State)*
Water Ranch Reclamation Facility, Town of Cave Creek
Cave Creek, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2008	2010

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

X Check if project performed with current firm

Mr. Thompson was responsible for the civil project specifications, the grading & drainage plans; pavement plans; utilities; yard process piping layout; arterial road improvement plans (new lanes on Carefree Hwy); signing/striping plans; and SWPPP for the Water Ranch Reclamation Facility for the Town of Cave Creek. He prepared the drainage report which included culvert and channel design, and a riprap dissipater pool and other riprap designs. He researched boundary surveys, rights of way, and easement locations. He followed the Town of Cave Creek technical design guidelines, MCDOT manuals, and utilized MAG Std. details & spec's. He implemented a notification/coordination process for utility conflicts, including organizing meetings with a number of utility companies. He prepared calculations for the pavement structure design for new lanes on Carefree Hwy and gained MCDOT's approvals and assisted with the design of a riprap launch system to protect a sewer main within a major wash (Maricopa County Flood Control District submittal).

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	
Jason Hope, PE	**Structural Engineer (Key Team Member)**	1. TOTAL **13**	2. WITH CURRENT FIRM **7**

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

e. EDUCATION *(DEGREE AND SPECIALIZATION)*	f. PROFESSIONAL TRAINING - REGISTRATIONS
• B.S.D. (Architecture) – Arizona State University • M.S. Structural Engineering – Arizona State University	• Professional Engineer – Arizona (Structural)

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*
- American Institute of Architects

H. RELEVANT PROJECTS

1.

(1) TITLE AND LOCATION *(City and State)*
Papago Park Readiness Center, Arizona ARNG (ADOA Contract)
Phoenix, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2014

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

[X] Check if project performed with current firm

Mr. Hope served as the Structural Engineer on the 62,000 SF Readiness Center Design-Build project for the Arizona Army National Guard that was awarded through a previous ADOA contract. Facility features include private and open office administrative spaces; a Sensitive Compartmented Information Facility (SCIF) with raised access flooring; an assembly area; simulator training space; classrooms; individual and group equipment storage; a secure arms vault; and restroom/locker room support spaces. The facility was designed to meet (& did achieve) the USGBC LEED® Gold certification requirements. Mr. Hope was responsible for design and detailing of the structural system, coordination with architectural, mechanical, electrical and civil disciplines, and for construction administration.

2.

(1) TITLE AND LOCATION *(City and State)*
Florence Readiness Center, Arizona ARNG (ADOA Contract)
Florence, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2013

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

[X] Check if project performed with current firm

Mr. Hope served as the Structural Engineer on the 76,710 SF Readiness Center Design-Build project for the Arizona Army National Guard that was awarded through a previous ADOA contract. Facility features include open office and private administrative spaces; assembly areas; training and education spaces; individual and group equipment storage; two storage vaults; and a vehicle maintenance shop. The facility was designed to meet (& did achieve) the USGBC LEED® Gold certification requirements. Mr. Hope was responsible for design and detailing of the structural system, coordination with architectural, mechanical, electrical and civil disciplines, and for construction administration.

3.

(1) TITLE AND LOCATION *(City and State)*
Gila Bend Solar Power Plant, Arizona Public Service
Gila Bend, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2013	2014

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

[X] Check if project performed with current firm

Mr. Hope assisted Mr. Peterson with quality assurance/quality control services while Burns & McDonnell served as Owner's Engineer during the development and construction of the Gila Bend 32 MW Solar Power Plant. He acted as a sounding board for the team and reviewed bid support, site development, cost/schedule support, submittal review, technical review, civil design, electrical design, substation design, and project engineering alongside Mr. Peterson.

4.

(1) TITLE AND LOCATION *(City and State)*
Water Ranch Reclamation Facility, Town of Cave Creek
Cave Creek, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2008	2010

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

Mr. Hope served as Quality Control Manager for the Water Ranch Reclamation Facility for the Town of Cave Creek when Burns & McDonnell was selected to provide comprehensive planning, programming and A/E design services as the designer of a design/build project team. The project provided a 0.66 mgd wastewater treatment facility to replace the existing plant. Sewage was conveyed from the existing treatment plant site to a new site. He was responsible for quality control of all project elements.

5.

(1) TITLE AND LOCATION *(City and State)*
Power Plant Support Engineering, Arizona Public Service
New Mexico & Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2010	2010

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

Mr. Hope served as Structural Engineer at Arizona Public Service's Four Corners Power Plant and as Project Manager for Arizona Public Service's Cholla Power Plant and Redhawk Power Plant, in efforts to document and analyze existing lifting devices, as well as to provide structural engineering support for other operational activities at the power plants.

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	
Andy Hornick, PE	**Structural Engineer (Key Team Member)**	1. TOTAL **13**	2. WITH CURRENT FIRM **13**

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

e. EDUCATION *(DEGREE AND SPECIALIZATION)*	f. PROFESSIONAL TRAINING - REGISTRATIONS
• Associate in Architectural Engineering Technology – Pennsylvania State University, 1998 • B.S. Structural Design and Construction Engineering Technology – Pennsylvania State University, 2000	• Professional Engineer – Arizona (Structural) • Professional Engineer – Pennsylvania (Structural) • Professional Engineer – Oklahoma (Structural) • Professional Engineer – Montana (Structural)

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*
- NCEES Record Holder

H. RELEVANT PROJECTS

1.

(1) TITLE AND LOCATION *(City and State)*
Reclaimed Water Recharge Reservoirs & Park
Casa Grande, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2012

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

Mr. Hornick served as Structural Engineer for the Reclaimed Water Recharge Reservoirs project for the City of Casa Grande, developing, designing and constructing a series of basins that serve as both a recharge facility and a public park amenity. The primary purpose for the basins is to recharge the reclaimed water coming from the City's water reclamation facility. This valuable resource will recharge into the local aquifer where it can be withdrawn at a later time for beneficial reuse. With the construction of basins, a public park amenity was also included. Wide walking paths, benches and native landscaping provide a backdrop for the basins. Mr. Hornick was responsible for the structural design of the basins.

2.

(1) TITLE AND LOCATION *(City and State)*
Cooling Tower Survey, Mesquite Power
Buckeye, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2012

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

Mr. Hornick served as Structural Engineer for the Cooling Tower Survey for Mesquite Power. He completed a condition survey of two, reinforced concrete, cooling tower basins; and performed a visual inspection of two, 580 feet X 48 feet, concrete, cooling tower basins that were constructed in 2003. His primary responsibilities included performing an evaluation and assessment of concrete distress, where he then recommended repairs that would reduce further deterioration of the concrete.

3.

(1) TITLE AND LOCATION *(City and State)*
Water Ranch Reclamation Facility, Town of Cave Creek
Cave Creek, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2008	2010

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

Mr. Hornick served as Structural Engineer for the Water Ranch Reclamation Facility for the Town of Cave Creek when Burns & McDonnell was selected to provide comprehensive planning, programming and A/E design services as the designer of a design/build project team. The project provided a 0.66 mgd wastewater treatment facility to replace the existing plant. Sewage was conveyed from the existing treatment plant site to a new site. He was responsible for all structural elements of the project.

4.

(1) TITLE AND LOCATION *(City and State)*
Mulberry Wastewater Plant Upgrades for City of Lake Havasu
Lake Havasu, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2000	2001

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

[X] Check if project performed with current firm

Mr. Hornick assisted in the design for Mulberry Wastewater Plant upgrades for the City of Lake Havasu, Arizona. His primary responsibilities included the design of a 126' diameter reinforced concrete aeration basin; tertiary filter basin; three-channel U.V. disinfection system, and an exterior odor control chemical containment area.

5.

(1) TITLE AND LOCATION *(City and State)*
Bottom Ash Hopper Roof, Arizona Public Service
Farmington, New Mexico

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

[X] Check if project performed with current firm

Mr. Hornick completed a structural site visit to verify record drawing compliance for modifications and replacement of monorails in Bottom Ash Hoppers of Units 4 and 5 for Arizona Power Service, Farmington, New Mexico facility.

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	
Ken Ekström, PE	**Electrical Engineer (Key Team Member)**	1. TOTAL **31**	2. WITH CURRENT FIRM **4**

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

e. EDUCATION *(DEGREE AND SPECIALIZATION)*	f. PROFESSIONAL TRAINING - REGISTRATIONS
• Bachelor of Science in Engineering and Applied Science – California Institute of Technology, 1978	• Professional Engineer – Arizona (Mechanical) • Professional Engineer – Arizona (Electrical)

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*
- NABCEP Certified Solar PV InstallerTM

H. RELEVANT PROJECTS

1.

(1) TITLE AND LOCATION *(City and State)*
Gila Bend Solar Power Plant, Arizona Public Service
Gila Bend, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2013	2014

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

X Check if project performed with current firm

Mr. Ekström provided electrical engineering services while Burns & McDonnell served as Owner's Engineer during the development and construction of the Gila Bend 32 MW solar power plant. He was involved in technical review, electrical design, and project engineering.

2.

(1) TITLE AND LOCATION *(City and State)*
Solar Thermal System Integration into Existing Power Plant, Tucson Electric Power
Tucson, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2013	2014

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

X Check if project performed with current firm

Mr. Ekström assisted with the review of mechanical design and performance testing procedures of the Fresnel-lens based solar thermal addition to an existing fossil fuel power plant. Burns & McDonnell conducted preliminary design services for the client. The Compact Linear Fresnel Reflector (CLFR) technology utilizes flat mirrors to focus the sun's direct radiation on to a linear. The focal line contains piping which transports water through a system of boiler tubes, generating saturated and ultimately superheated steam for augmentation in a conventional fossil fuel power plant. A portion of the feedwater from the fossil fuel power plant is extracted and transported to the solar steam generator. The solar steam generator is arranged north to south tracking the sun and concentrating solar radiation onto a linear receiver consisting of transparent boiler tubes. Water passing through the heated tubes is turned to steam and exits the solar steam generator superheated. The steam is then piped to the power plant and injected into the cold reheat steam system. This solar thermal integration displaces a portion of the fossil fuel used in combustion.

3.

(1) TITLE AND LOCATION *(City and State)*
Mesquite Solar West, Sempra Generation
Maricopa County, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2013

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

X Check if project performed with current firm

Mr. Ekström served as Mechanical Engineer while Burns & McDonnell acted as Owner's Engineer developing Sempra Energy's Mesquite 170 MW photovoltaic (PV) power plant in western Arizona. The project utilized Suntech's new Pluto PV technology and liquid cooled inverters and energy modeling with PVSyst.

4.

(1) TITLE AND LOCATION *(City and State)*
Sun Valley North Solar Project, Capital Power
Maricopa County, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
Ongoing	Ongoing

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

X Check if project performed with current firm

Mr. Ekström is assigned as Mechanical Engineer for this 3.3-square mile, 200 MW solar energy (PV) project. As Owner's Engineer, Burns & McDonnell is providing preliminary project designs and conceptual system layouts incorporating multiple solar technologies for the project. In preparation for the completion of the SUP permit application, Burns & McDonnell is also providing preliminary design and evaluations of multiple drainage schemes for evaluation and an ultimate selection for inclusion in the SUP application package along with a comprehensive drainage report.

5.

(1) TITLE AND LOCATION *(City and State)*

Agua Caliente Photovoltaic Power Plant, NRG
Dateland, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

X Check if project performed with current firm

Mr. Ekström served as the lead investigator and primary author of a due-diligence study for the client prior to their purchase of the project. The due-diligence study included review and fatal flaw analyses of energy output projections, technology assessment, overall design, civil site design, electrical code compliance, interconnection studies, power purchasing agreements, equipment specifications, and key contract exhibits. The purpose of the due diligence evaluation was to determine if any fatal flaws existed that could potentially delay or preclude the successful development of the project.

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
Bill Schweitzer, PE, RCDD/OSP, LEED AP	**Project Manager (Additional Team Member)**	**22**	**5**

d. LOCATION *(City and State)*
Recently relocated from Phoenix to Minneapolis-St. Paul; remaining connected to Arizona office / projects

e. EDUCATION *(DEGREE AND SPECIALIZATION)*
- Bachelor Electrical Engineering – South Dakota State University

f. PROFESSIONAL TRAINING - REGISTRATIONS
- Professional Engineer – Arizona (Electrical)
- Professional Engineer – Minnesota (Electrical)
- Professional Engineer – New Mexico (Electrical)
- Professional Engineer – Nevada (Electrical)
- Registered Communications Dist. Designer

g. OTHER PROFESSIONAL QUALIFICATIONS *(Organizations, Awards, etc.)*
- LEED Accredited Professional
- Building Industry Consulting Services International
- National Council of Examiners For Engineering and Surveying

H. RELEVANT PROJECTS

1.
(1) TITLE AND LOCATION *(City and State)*
Papago Park Readiness Center, Arizona ARNG (ADOA Contract)
Phoenix, Arizona

(2) YEAR COMPLETED
Professional Services: 2012 | Construction (if applicable): 2014

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE
Mr. Schweitzer served as Electrical Engineer for the 62,000 SF Readiness Center Design-Build project for the Arizona Army National Guard that was awarded through a previous ADOA contract. Facility features include private and open office administrative spaces; a Sensitive Compartmented Information Facility (SCIF) with raised access flooring; an assembly area; simulator training space; classrooms; individual and group equipment storage; a secure arms vault; and restroom/locker room support spaces. The facility was designed to meet (& did achieve) the USGBC LEED® Gold certification requirements. Mr. Schweitzer was responsible for construction drawings and specifications for both electrical and communications.

2.
(1) TITLE AND LOCATION *(City and State)*
Florence Readiness Center, Arizona ARNG (ADOA Contract)
Florence, Arizona

(2) YEAR COMPLETED
Professional Services: 2012 | Construction (if applicable): 2013

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE
Mr. Schweitzer served as Electrical Engineer for the A/E services and construction administration for the 76,710 SF Readiness Center Design-Build project for the Arizona Army National Guard that was awarded through a previous ADOA contract. Facility features include open office and private administrative spaces; assembly areas; training and education spaces; individual and group equipment storage; two storage vaults; and a vehicle maintenance shop. The facility was designed to meet (& did achieve) the USGBC LEED® Gold certification requirements. Mr. Schweitzer was responsible for the electrical and communications design of the new facilities.

3.
(1) TITLE AND LOCATION *(City and State)*
Yuma MCAS MILCON P447A, Aircraft Maintenance Hangar Modifications
Yuma, Arizona

(2) YEAR COMPLETED
Professional Services: 2012 | Construction (if applicable): 2013

X Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE
Mr. Schweitzer served as Project Manager, Electrical Engineer, and Communication Designer when Burns & McDonnell was selected to provide A/E design services for a facility modification to an existing legacy aircraft hangar. The project consisted of 52,500 SF of modifications and additions to accommodate the facility requirements of the new Joint Strike Fighter (JSF) aircraft. The facility

provides a hangar bay, maintenance shops, and administrative and operations offices for the JSF Mission at MCAS Yuma. The facility was designed to meet (& did achieve) the USGBC LEED® Gold certification requirements.

4.

(1) TITLE AND LOCATION *(City and State)*
Yuma MCAS MILCON P460, JSF Aircraft Maintenance Hangar Modifications
Yuma, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2012	2013

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

X Check if project performed with current firm

Mr. Schweitzer served as Project Manager, Electrical Engineer, and Communication Designer when Burns & McDonnell was selected to provide A/E design services for a 52,500 Joint Strike Fighter (JSF) aircraft hangar. The facility provides a hangar bay, maintenance shops, and administrative and operations offices for two additional JSF fleet squadrons to be assigned at MCAS Yuma. The facility was designed to meet (& did achieve) the USGBC LEED® Gold certification requirements.

5.

(1) TITLE AND LOCATION *(City and State)*
Yuma MCAS MILCON P583, Communications Infrastructure Upgrade
Yuma, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2011	2013

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

X Check if project performed with current firm

Mr. Schweitzer provided electrical communication design support when Burns & McDonnell was selected to provide A/E design services for a 38,700 Communication Squadron Support Facility. The facility provides a secure facility, housing the operations functions of the Communications Squadron and server equipment, to support the proposed Joint Strike Fighter installation at MCAS Yuma. The facility also houses fiber and copper cable connections and distributions to telephone, NIPR, and SIPR networks along with the administrative and technical services necessary to support them. The design of the communications outside plant fiber and copper infrastructure throughout MCAS Yuma included over 8 miles of new ductbanks, over 90 new manholes, new handholes, new single mode fiber optic cables, new multi-pair copper cables, and supporting devices. The facility was designed to meet (& did achieve) the USGBC LEED® Silver certification requirements.

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
Peter Johnston	**Renewable Specialist (Additional Team Member)**	**39**	**6**

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

e. EDUCATION *(DEGREE AND SPECIALIZATION)*

- PhD in Plasma Physics – University of Sheffield, England
- M. Engineering Plasma Physics – University of Sheffield, England
- B.S. Honors in Telecommunications & Physical Electronics – University of Leeds, England

f. PROFESSIONAL TRAINING - REGISTRATIONS

- UK Institution of Engineering and Technology – Member
- State Energy Advisory Board – Special Government Employee
- International Solar Energy Society – Member
- Arizona Solar Energy Center – Advisor
- Solar Electric Power Association – Board Member
- Common Ground Alliance – Member R&D committee

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

- Protective Devices for (N)EMP. Paper presented to the IEE, 1982
- British Patent 8207272 Triggered Vacuum Gap Device, 1982
- EEV Publication, 1981
- A Triggered Cold Cathode High Repetition Switch for Laser Firing, 1981
- A High Voltage Power Supply for Channel Electron Multipliers, 1973

H. RELEVANT PROJECTS

1.

(1) TITLE AND LOCATION *(City and State)*
Gila Bend Solar Power Plant, Arizona Public Service
Gila Bend, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2013	2014

[X] Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE
Dr. Johnston served as the Project Manager while Burns & McDonnell served as Owner's Engineer during the development and construction of the Gila Bend 32 MW solar power plant. He managed the team and reviewed bid support, site development, cost/schedule support, submittal review, technical review, civil design, electrical design, substation design, and project engineering.

2.

(1) TITLE AND LOCATION *(City and State)*
Biomass and Geothermal Energy Studies
Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2002-2004	2003-2005

[ ] Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE
Dr. Johnston was responsible for initiating several studies of available renewable energy resources in Arizona including forest biomass, landfill and wastewater treatment, plant methane, animal waste, wind energy and geothermal energy. This gave Dr. Johnston and his group detailed insight as to how the resources might be accessed, "harvested", and used for electric power generation. It lead to the construction of the 70kW micro turbine landfill gas to energy demonstration project at the Butterfield Station landfill in 2003 and the construction of the 3MW Eager biomass power plant 2005.

3.

(1) TITLE AND LOCATION *(City and State)*
Hydrogen Refueling Station
Phoenix, Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2002	2002

[ ] Check if project performed with current firm

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE
Dr. Johnston was responsible for the Arizona Public Service Hydrogen Park, which was the first commercial hydrogen motor vehicle refueling station in Arizona and the third to be constructed in the USA. The park, which was permitted to fuel hydrogen motor vehicles in 2002, was located in the downtown Phoenix historic district and provided an example of how a modern infrastructure could

be integrated with urban architecture. A water electrolysis system was used to produce the hydrogen which was compressed and stored at 6,000psi. The hydrogen was dispensed into motor vehicles at pressures up to 5,000psi. The Park also included a natural gas compressor and storage tank. The natural gas could also be dispensed in to vehicles either as CNG or blended with the hydrogen and dispensed as H-CNG fuel. The Hydrogen Park provided a "real world" working laboratory to evaluate the safety and economics of using energy stored in hydrogen as a fuel for motor vehicles and distributed electricity generation.

4.

(1) TITLE AND LOCATION *(City and State)*
Preliminary Engineering for Camp Ripley Solar Project, Minnesota Power
Minnesota

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2014	N/A

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

[X] Check if project performed with current firm

Dr. Johnston serves as Owner's Engineer, assisting Minnesota Power develop an RFP package and select a project developer. Minnesota Power wishes to own or purchase the energy from a 10 MW solar power plant to meet some of their renewable energy portfolio requirements. The plant will be located on the Minnesota ARNG's Camp Ripley and will ultimately provide energy to an energy resilient microgrid system in the event of an energy crisis.

5.

(1) TITLE AND LOCATION *(City and State)*
Emissions to Fuel using Algae
Arizona

(2) YEAR COMPLETED

Professional Services	Construction (if applicable)
2005	2008

(3) BRIEF DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE

[ ] Check if project performed with current firm

One of the most exciting "Future Fuel" projects undertaken by Dr. Johnston was the "Emissions to Fuel" project in which power plant stack emissions were captured by algae, which were in turn processed to reproduce other fuels. Working closely with the GreenFuel Technology Company, the production of bio-diesel, ethanol and high protein animal feed was demonstrated following the capture of the carbon dioxide emissions from the Arizona Public Service Redhawk natural gas power plant in Arizona.

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)*
Papago Park Readiness Center (ADOA Contract) ***Phoenix, Arizona***	**2012**	**2014**

23. PROJECT OWNER'S INFORMATION

c .PROJECT OWNER	d .ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Arizona Army National Guard	**$16.3 Million**	**$16.3 Million**

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

Project Summary: This project is a companion facility to the Papago I Readiness Center that Burns & McDonnell designed and completed in 2010. Procured under ADOA guidelines and executed under the ADOA Design-Build contract, Burns & McDonnell served as Designer of Record for this new Design-Build 62,000 SF Readiness Center, in support of the Arizona Army National Guard's 158th Maneuver Enhancement Brigade (MEB). Burns & McDonnell was responsible for all design development and charrettes; design review meetings with the owner and contract document drawings and specifications; submittal and shop drawing review; periodic site inspection; RFI review; and punchlist and closeout activities.

Design Requirements: Burns & McDonnell collaborated with the Guard to revise the floor plan and re-site the building. Our knowledge of the end-users' criteria allowed us to provide a much more functional facility with consideration for future growth and changing mission requirements.

The facility includes the State's Emergency Operations Command Center. This center is highly secure and is designed to withstand natural disasters with redundant power that will keep it operating so that state agencies and public safety can operate to execute emergency response plans and deploy emergency resources. open office and private administrative spaces; classrooms; combat simulation room; assembly hall; secure communications space; secure arms vault; kitchen; private and unit gear storage areas; locker and shower areas; training and education spaces; individual and group equipment storage; and a weapons vault. The new facility also has approximately 2000 SF SCIF meeting all ICD/ICS 705 standards.

Figure 1. Papago Readiness Center. The facility includes the State's Emergency Operations Command Center, which is highly secured and designed to withstand natural disasters so state agencies and public safety can operate emergency response plans and deploy emergency resources.

Site Development: Sitework included clearing & site preparation, roadways, access roads, parking areas, walkways, and utilities. Flexible pavement is used for the roadways and permanent parking areas. Supporting facilities include military and private vehicle parking areas; security fencing and lighting; anti-terrorism force protection measures; and a telecommunications system incorporating Mass Notification in accordance with AT/FP criteria. Burns & McDonnell designed the project to meet all requirements of UFC 4-010-01, Antiterrorism Standards for Buildings, including site standoff distances and blast resistant window assemblies.

Sustainable Design: The facility is designed to follow Arizona Executive Order 2005-05 for energy-efficient buildings. The facility achieved USGBC LEED® Gold certification and provides cost effective energy conserving mechanical and electrical equipment, pre-wired workstations and an emergency power generator back-up. An on-site renewable photovoltaic system is estimated to generate 60,000 kwh of electricity, exceeding the State of Arizona Executive Order 2005-05 requirement to provide at least 10% of energy from a renewable resource.

Energy savings are projected at a 40% improvement over the ASHRAE 90.1-2007 baseline. Water

efficiency sustainable features include using established landscaping, eliminating the need for a permanent irrigation system. Water savings are projected to exceed 50% over baseline calculations.

Strategies to promote good indoor air quality include a no smoking policy and outside air ventilation rates above ASHRAE 62.1-2007 minimums with automatic controls and reduction of indoor pollutants. IAQ management during construction and before occupancy reduced air quality problems resulting from the construction process. Pollutant source control, increased air filtration, and the use of low-emitting adhesives, sealants, paints, coatings, flooring, carpeting and composite wood products contribute to a healthier indoor environment. Occupant comfort is maintained through efficient system design and verification, with the greatest number of individual temperature controls possible. Natural daylighting reduces lighting loads and improve the interior environment, and task lighting at the workstation controls allows light levels based on individual needs.

Budget Adherence: As design progressed from concept to interim and then to final, Burns & McDonnell worked closely with the Design-Build Contractor and subcontractors to maintain design and costs within budget. These efforts included a selection of cost effective, durable materials for the facility and working with local and county officials on utility and road construction requirements.

Building Information Modeling (BIM): The design team utilized BIM tools such as Autodesk Revit and Navisworks to integrate individual discipline design models for near real-time coordination between the design team, the Design-Build Contractor and subcontractors.

Figure 2. Papago Readiness Center. Procured under ADOA guidelines and executed under the ADOA Design-Build contract, Burns & McDonnell served as Designer of Record for this new Design-Build 62,000 SF Readiness Center, in support of the Arizona Army National Guard's 158th Maneuver Enhancement Brigade (MEB). Project construction was completed in February 2014.

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)*
Florence Readiness Center (ADOA Contract) ***Phoenix, Arizona***	**2012**	**2013**

23. PROJECT OWNER'S INFORMATION

c .PROJECT OWNER	d .ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Arizona Army National Guard	**$15.2 Million**	**$15.2 Million**

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

Project Summary: As Designer of Record under an ADOA Design-Build contract, Burns & McDonnell provided architecture, electrical, mechanical, structural, and civil engineering services and construction support for this new Design-Build 76,710 SF Readiness Center, in support of the Arizona Army National Guard. The facility includes open office and private administrative spaces; assembly areas; training and education spaces; individual and group equipment storage; a vehicle maintenance shop; and a weapons vault. Construction consisted of a structural steel frame with decorative concrete block façade; sealed and stained concrete floors; and a combination of standing seam metal and membrane roofing systems. Building systems were designed to include life-cycle-cost effective energy conservation; mechanical and electrical equipment; pre-wired work stations; and an emergency back-up power generator. Supporting facilities include military and private vehicle parking areas; security fencing and lighting; anti-terrorism force protection measures; and a telecommunications system incorporating mass notification in accordance with AT/FP criteria.

Burns & McDonnell designed the project to meet all requirements of UFC 4-010-01, Antiterrorism Standards for Buildings, including site standoff distances and blast resistant window assemblies.

Figure 3. **Florence Readiness Center.** The 40-piece gym was designed and incorporated for staff use onsite, to accommodate and encourage a healthy lifestyle while working long hours.

Sustainable Design: The project was designed following the Arizona Executive Order 2005-05 and USGBC LEED® for new construction. The project achieved USGBC LEED® Gold certification and received mention in AZRE magazine's May-June 2014 issue. Because of the incorporation of PV and low energy usage strategies for lighting as well as programming the facility efficiently, this facility is net–zero in terms of energy consumption for full-time staff. As a part of the LEED® certification process, the facility underwent enhanced commissioning by a third-party provider, to ensure that all building systems were operating optimally. During construction, measures were taken to protect and relocate the native Saguaro cactus on the site, helping maximize water efficient landscaping and eliminate reliance on potable water for irrigation purposes. Potable water use is further reduced through the use of low-flow plumbing fixtures throughout the facility.

Significant energy saving measures were also been incorporated into the facility design. These measures include: EPAct energy reduction of 42.7%; energy cost savings of 32.1%, equating to 11 LEED® credit points; and on-site energy production of 16.5%, which equates to 7 LEED® credit points. These reductions are accomplished through the use of high efficiency HVAC and electrical equipment, increased building thermal performance, and photovoltaic electrical power production.

Figure 4. Florence Readiness Center. As Designer of Record under an ADOA Design-Build contract, Burns & McDonnell provided architecture, electrical, mechanical, structural, and civil engineering services, as well as construction support for this new Design-Build 76,710 SF Readiness Center, in support of the Arizona Army National Guard. Construction of the facility was completed in 2013.

"The Design-Build team of Haydon Building Corp (builder) and Burns & McDonnell (A&E) was a pleasure to work with from contract award, through the design charrette, design reviews, and during construction. They partnered with the National Guard to produce two outstanding Readiness Centers that will meet our Soldier's training and support requirements for generations. Their performance of these projects was an ideal text book example of the DB team partnering with the Owner to produce a superior product that met all our performance specifications."

- Tibor Lanczy
CFMO MILCON Support Tm Ldr
J.G. Management Systems

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)*
Reclaimed Water Recharge Reservoirs & Park ***Casa Grande, Arizona***	**2012**	**2012**

23. PROJECT OWNER'S INFORMATION

c .PROJECT OWNER	d .ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
City of Casa Grande	**$3 Million**	**$3 Million**

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

Project Summary: Burns & McDonnell performed engineering services for the City of Casa Grande to develop, design and construct a series of basins that serves as a recharge facility and a public park. Our civil engineers worked with the existing topography and designed the location of the basins so that there could be large open spaces for the public to use. We also incorporated a series of wide walking paths throughout the area. Benches and native landscaping enhance the park. We connected it to an existing park so that the public has easy access. The primary purpose for the basins is to recharge the reclaimed water coming from the City's water reclamation facility. This valuable resource will recharge into the local aquifer where it can be withdrawn at some later date for beneficial reuse.

Services Provided: Studies, Preliminary Design, Detailed Design, Bidding Assistance, Construction Inspection, Special Inspections, Site Development, Permitting, and Public Participation.

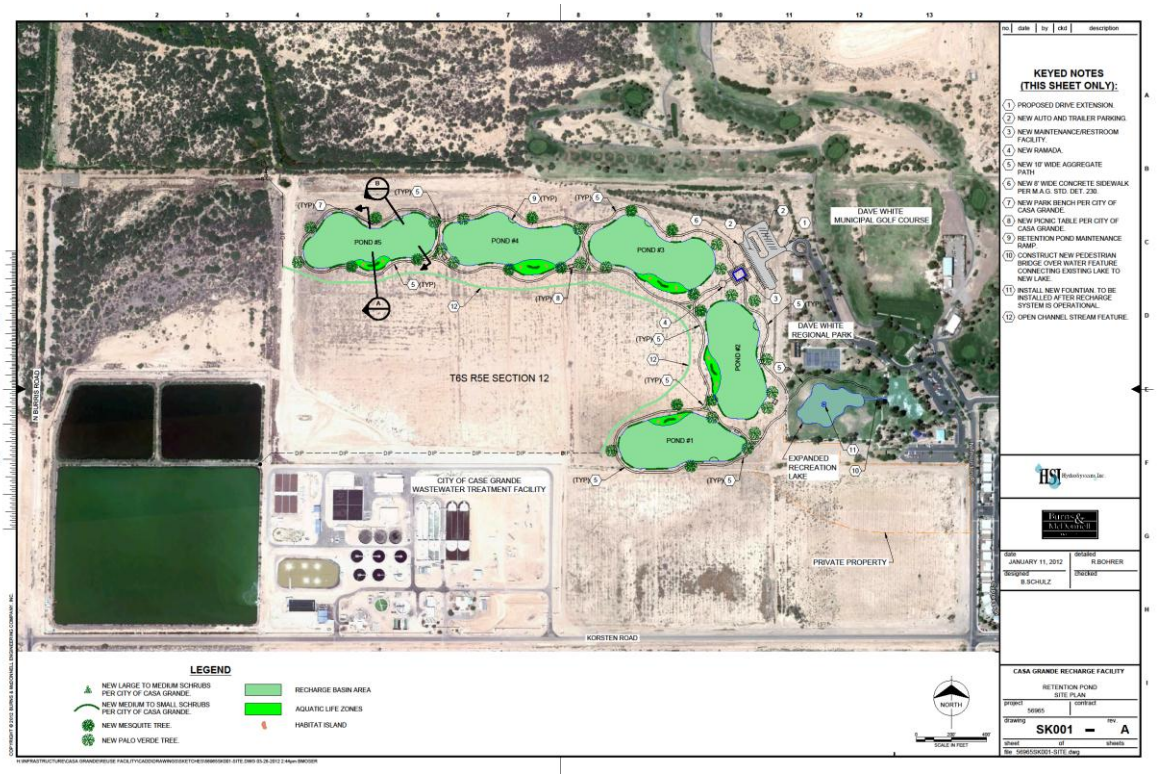


Figure 5. Reclaimed Water Recharge Reservoirs & Park Layout.
The Reclaimed Water Recharge Reservoirs and Park is connected to an existing city park providing access to the public.

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)*
Octillo Power Plant Drainage Master Plan ***Tempe, Arizona***	**2014**	**N/A**

23. PROJECT OWNER'S INFORMATION

c .PROJECT OWNER	d .ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Arizona Public Service	**$125,000 (design)**	**N/A**

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

Burns & McDonnell is currently working as Owner's Engineer to support Arizona Public Service (APS) for an Engineer Procure Construct (EPC) project to modernize the power production at the Octillo Power Plant. In support of this project Burns & McDonnell is creating a Drainage Master Plan to support the project and future development of the installation. The project includes preliminary development planning with the City of Tempe as well as a Master Grading and Drainage Report.

Preliminary Development Planning with City of Tempe: As part of the project, Burns & McDonnell is working with the City of Tempe to initiate the upfront planning with the city for utilities, roadway improvements, grading and drainage. Burns & McDonnell is working with the City of Tempe to identify development requirements for the EPC contractor and engage the various city departments in preliminary discussions of the project development. The project is designing a proposed fire protection loop for the facility that will connect to the City of Tempe water distribution to provide adequate fire protection for existing and future buildings. This required close coordination with the City of Tempe Water Department to identify potential connection points and typical connection requirements for a fire line connection. A new entrance with acceleration/deceleration lanes is being developed on the University Avenue side of the installation to provide access to the proposed facilities. The proposed entrance involved working with the City of Tempe Development Services Department to develop a plan that will meet city criteria and address the needs of the owner.

Master Grading and Drainage Report: In addition to the preliminary development documents, Burns & McDonnell is preparing a Master Grading and Drainage Report to identify drainage solutions for the future development of the Octillo Power Plant. The drainage report will analyze three different conditions for the installation. The current condition is analyzed to identify current drainage issues that exist on the plant. The proposed development for the modernization project will have an effect on the storm water runoff; the drainage report will propose solutions to alleviate the increase in runoff. Burns & McDonnell met with the Development Services Department to incorporate the City of Tempe storm water drainage design standards into the master plan layout. In addition to the proposed modernization development, the future development of the installation will be analyzed to create a plan for identifying required storm water projects needed for the plant to be in compliance with the storm water standards for the City of Tempe. This establishes a development plan for future projects that has been reviewed by the city. It will be a valuable document for APS in support of future improvement projects by having a clearly defined solution that has been created with input from the approving authority. It will minimize the effort required for permitting and development reviews on those future projects. The final report will include an analysis of the state of current capabilities, modernization development, future improvements, infrastructure, and supporting facilities to fully sustain future operations.

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)*
Gila Bend Solar Power Plant ***Gila Bend, Arizona***	**2013**	**2014**

23. PROJECT OWNER'S INFORMATION

c .PROJECT OWNER	d .ORIGINAL BUDGET/NTE AMOUNT OF PROJECT	e. TOTAL COST OF PROJECT
Arizona Public Service	**$613,000**	**$613,000**

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

Burns & McDonnell recently completed working as Owner's Engineer and as the APS Project Engineer in support of Arizona Public Service's 32 MW solar photovoltaic installation in Gila Bend, Arizona. Burns & McDonnell provided design review, functional and performance test protocol review, construction document review, QA/QC onsite monitoring, and commissioning support. Project Features included conventional 72-cell, polycrystalline modules and a single axis tracking system.

This was the first solar construction project for the selected EPC contractor, so Burns & McDonnell was asked to be very involved throughout construction. Therefore Burns & McDonnell provided a field engineer on-site for six months during construction. Burns & McDonnell issued weekly field reports, tracked QA/QC issues, and created punch lists to ensure that a quality project would be delivered.

Figure 6. Gila Bend Solar Power Plant. The Gila Bend Solar Power Plant included conventional 72-cell, polycrystalline modules and a single axis tracking system and was fully operational by July 2014.

6. ADDITIONAL INFORMATION

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

Burns & McDonnell Firm Information

Company Overview: The Burns & McDonnell Phoenix office has been serving clients in the Valley since 1998. Our local staff includes 85 professionals who perform architecture, engineering, project controls, program management and construction management. The key market sectors served from this office are state and municipal facilities, water services including water/waste water, stormwater management and drainage, energy services including energy audits and retro-commissioning, solar technology, process and industrial, aviation, and commercial facilities.

Founded in 1898, Burns & McDonnell Engineering Company, Inc. has more than 5,000 employees and is a nationally recognized architectural, engineering and construction firm. Our core values are our integrity, safety and our commitment to making our clients successful through our technical expertise and commitment. We bring problem-solving ability and a dedication to doing what it takes to get a job done well, within our clients' budgets and time constraints. Our staff includes engineers, architects, contractors, planners, estimators, economists, technicians and scientists, representing virtually all design disciplines. We provide services to our clients in a broad cross-section of markets that touch lives in many ways, from electricity to drinking water, and from roads and airports to manufacturing facilities.

Buns & McDonnell is 100% employee-owned. This guides our behavior as each of us has a vested interest in the success of every client and every project. We act like owners and we believe that this drives us to be more engaged and more responsive than many other consultants, resulting in increased value to our clients. Our company is financially stable and our employee turnover is less than 1%, which means that we can deliver the same personnel to a project from start to finish. On many occasions, years after a project is complete, our clients rely on our employees who originally performed the work to provide historical project information, as-builts, and equipment specifications when they are considering alterations, expansions or renovations. The value we bring is recognized by our repeat clients who account for more than 80% of our business.

Regularly listed in the top 15 percent of the leading 500 design firms by the Engineering News-Record, Burns & McDonnell has been honored with numerous awards for innovation, excellence, and client service from professional organizations, government agencies and aviation clients. However, our greatest achievement is in receiving positive feedback from our clients. One example of such feedback follows, regarding our performance on the Papago I & II Park Readiness Centers, in which we performed as Designer of Record under ADOA Design-Build contracts.

"The Burns and McDonnell team delivered exemplary services to the Arizona Army National Guard in the design and construction of two Readiness Centers. They worked as a team from day-one to deliver outstanding facilities that will serve the Soldiers of the organization for many years to come. Their team listened to owner input, met rigorous design standards, fast-tracked the construction process, and produced the projects on time and on budget; they should be very proud of their work..."

Brigadier General John E. Burk
Arizona National Guard
Arizona Department of Emergency and Military Affairs

Proposed Key Personnel and Recent Relevant Experience: In this statement of qualifications we identified several key personnel who will be assigned to projects arising from this ADOA Contract. These personnel are all licensed in Arizona and have worked on all of the 5 projects that we provided. A matrix of the personnel and their role on each project is provided below:

KEY PERSONNEL PROJECT EXPERIENCE
Identified personnel, role for contract, the five projectseach is associated with

KEY PERSONNEL		1. Papago Park Readiness Center, Arizona ARNG (ADOA Contract)	2. Florence Readiness Center, Florence Military Reservation (ADOA Contract)	3. Reclaimed Water Recharge Reservoirs, Town of Casa Grande	4. Ocotillo Power Plant Drainage Master Plan, Arizona Public Service	5. Gila Bend 32 MW Solar Power Plant, Arizona Public Service
Keith Koprowski, PE	Project Manager / Senior Civil Engineer (Key Team Member)	PM	PM		QC	
Scott Mitchell, AIA, LEED GA	Architect (Key Team Member)	RA	RA			
Justin Isner, PE	Civil Engineer, Site (Key Team Member)	CE	CE	CE	CE	
Steve Peterson, PE	Mechanical Engineer / PV Design (Key Team Member)	QC	ME			QC
Nathan Thompson, PE, CFM	Civil Engineer, Stormwater / Drainage (Key Team Member)			CE	CE	
Jason Hope, PE	Structural Engineer (Key Team Member)	SE	SE			QC
Andy Hornick, PE	Structural Engineer (Key Team Member)			SE		
Ken Ekstrom, PE	Electrical Engineer, Solar (Key Team Member)					EE
Bill Schweitzer, PE, RCDD/OSP, LEED AP	Electrical Engineer / Asst. Project Manager (Additional Team Member)	EE	EE			
Peter Johnston, PhD	Renewables Specialist (Additional Team Member)					PM

PM - Project Manager
RA - Registered Architect
CE - Civil Engineer
QC - Quality Control
ME - Mechanical Engineer
SE - Structural Engineer
EE - Electrical Engineer

Figure 7. Key Personnel Matrix. The personnel who will be assigned to projects arising from this ADOA Contract are all licensed in Arizona and have worked on all of the 5 projects that we provided.

Experience Doing Work under the ADOA Contract: Burns & McDonnell has done projects for the Arizona Department of Military Affairs for the past 7 years. Each of these projects were executed under the ADOA standard contract. In addition, we have performed services for ADEQ as a consultant, providing peer review services, which were executed under the ADOA standard contract.

Experience with Arizona State Guidelines for Energy and Energy Efficiency in Buildings: Burns & McDonnell has recent experience in designing facilities (architecture and full-engineering services) for the Arizona Department of Military Affairs that follow the Arizona State Guidelines for Energy Efficiency and the Federal Guidelines.

Our Papago Park Readiness Center (listed in section 5, project #1) achieved USGBC LEED® Gold certification because it was designed to be highly energy efficient, using 42% below baseline per ASHRAE 189 standards. This was achieved through the use of PV, low energy lighting, incorporating daylight into the design, and using high efficiency HVAC equipment.

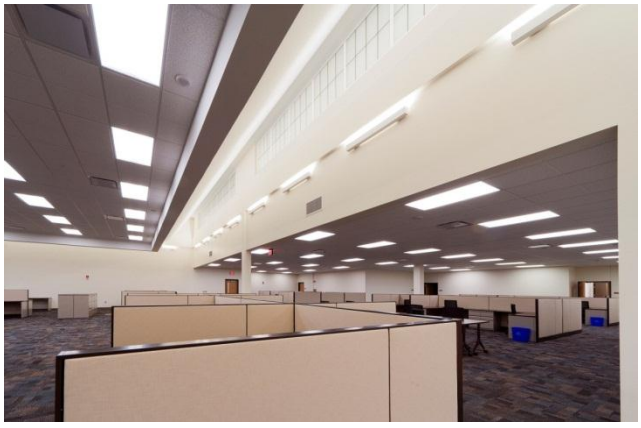


Figure 8. Papago Readiness Center. Natural daylight utilized in open office.

Burns & McDonnell's design for the Florence Readiness Center (listed in section 5, project # 2) also achieved USGBC LEED® Gold certification due to the incorporation of solar energy; the use of LED and high efficiency fluorescent lighting; energy recovery from exhaust heat; daylight with integrated photo sensors; extensive use of occupancy sensors and timers on lighting; and high efficiency HVAC equipment. Additionally, because of our innovative approach to programming the space around full-time occupants in a central area, this facility is net-zero in energy consumption for the full time occupants.

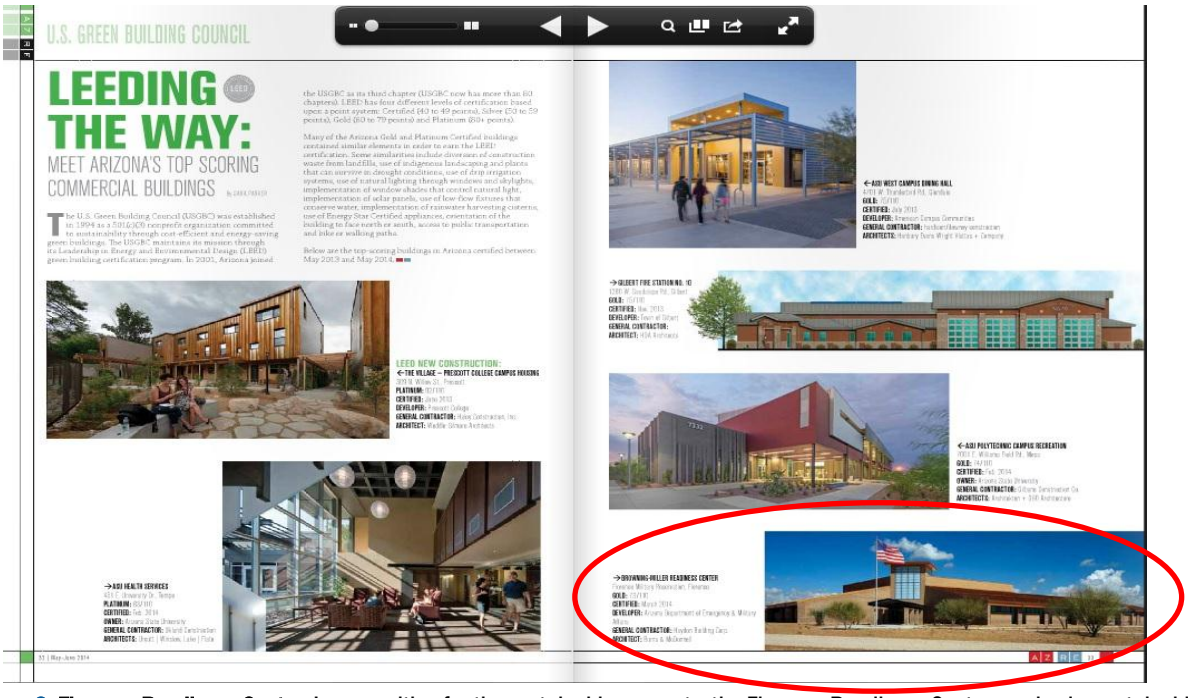


Figure 9. Florence Readiness Center. In recognition for the sustainable concepts, the Florence Readiness Center received a sustainability award from AZRE magazine. It was published in the May-June 2014 issue.

Experience with LEED: We have designed six facilities for Arizona DEMA that all have achieved LEED Certification. The most recent facilities, listed in this SOQ, are the Florence Readiness Center and Papago Readiness Center, both of which are LEED® Gold certified. We achieve this through continuous training of our personnel so that we maintain current knowledge of the following at all times: Arizona State Guidelines for Energy; Guidelines for LEED; federal mandates; executive orders; issued UFCs and ECBs; Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings; ASHRAE Standard 90.1 and ASHRAE 189.1, regarding requirements including energy efficiency; renewable energy; life-cycle cost analysis; performance measurement; water use reduction; and use of environmentally preferable and bio-based products and waste management.

We understand that integrated design with strong, consistent representation from all stake-holders throughout the project is the key to success in achieving a high-performance building and in realizing the increased savings potential while reducing the total cost of ownership. We strive for designs that balance life-cycle costs, energy efficiency, energy security, and occupant benefits within the project's budget and agency's mission.

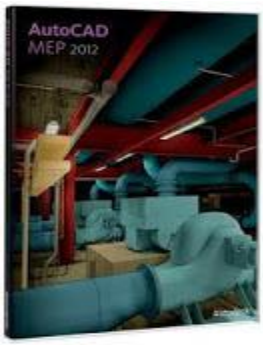
Burns & McDonnell's approach to energy-efficiency is to first question established energy assumptions, and to improve the building envelope. We then look for "free energy" opportunities to reduce load, such as integrating artificial lighting controls with daylight photo sensors. Following that, we look for opportunities to capture waste heat for power and improve the efficiencies of all lighting, and service hot water and HVAC equipment beyond the ASHRAE/IESNA baseline standard. We then we look at feasibility to integrate renewable energy for a portion of the project's energy needs. And lastly, we employ commissioning practices, using an experienced commissioning provider, appropriate to the size and complexity of the building and its system components, in order to verify performance and ensure that the owner's project requirements are met. Building metering of energy systems further enables future ongoing performance measurement.

By using IES Virtual Environment building performance software early in design we are able to explore envelope, orientation,

daylighting and building systems options quickly during design for relative impact on performance. Then using whole-building energy modeling software we document the energy efficiency for certification compliance once design decisions are made. At each step we evaluate initial and operational costs and benefits through life cycle cost analysis to enable informed decision-making by the owner.

Selection and design of building materials and products focuses on meeting requirements of the following: Guiding Principles; Comprehensive Procurement Guidelines; DoD Green Procurement Policy including Environmentally Preferable, Bio-Based, Energy Star and FEMP Energy Efficient Products; and Water Conserving and Recycled Products. Burns & McDonnell bases product specifications on durable, appearance-retaining products with longevity that have a reduced impact on human health and the environment, considering product life-cycle compared to competing products serving the same purpose. Our specifications direct the Contractor to optimize use of materials from within 500 miles of the project site or closer, to give preference to materials made with recycled content and to procure wood products from sustainably managed forests or from rapidly renewable resources. The results are that many of our projects have achieved over 30% recycled content materials, 30% local/regional materials and over 80% certified wood.

We design buildings to include collection and storage of recyclables for the occupants. We also write specifications to require contractors to provide a Waste Management Plan to demonstrate how they plan to achieve a minimum of 75% demolition/construction waste diversion (exceeding the 50% requirement). During construction we hold regularly scheduled calls with the contractors to discuss questions and achievement status. The contractors on most of our projects exceed the 75% diversion goal and typically achieve 80 to 95% diversion rates.



BIM: At Burns & McDonnell, our comprehensive BIM experience increases design collaboration and coordination for which our multi-disciplinary teams have long been known. Burns & McDonnell's experience with the use of BIM models has been recognized by Autodesk by placing the east chiller building for Thermal Energy Corporation on the cover of the AutoCAD MEP 2012 software product. In addition, integrated design tools such as Autodesk Revit are utilized across all disciplines to ensure real time model coordination as the design progresses.

Figure 10. AutoCAD MEP 2012 Cover. Autodesk recognized Burns & McDonnell's experience with BIM by using our BIM model on the cover of software material.

Integrated Engineering and Design

Burns & McDonnell leverages the building information models with our engineering analysis models such as AutoPIPE and RISA 3D. This decreases the probability of errors and enables the design team to quickly evaluate design alternatives and impact from potential design changes.

Clash Detection

Interdisciplinary collaboration is improved with our ability to automatically detect clashes in 3D using tools such as Navisworks.

Rendering Visualization

The creation of a 3D integrated building model allows Burns & McDonnell to quickly produce renderings and walkthroughs that provide our clients and partners with a deeper understanding of the facility design.

Standard BIM Software Platforms	
Architectural Model	Revit Architecture, Sketchup/Podium, NavisWorks
Civil Model	AutoDesk Civil 3D
Structural Model	Revit Structure, NavisWorks
Plumbing Model	Revit MEP, NavisWorks
HVAC Model	Revit MEP, NavisWorks
Electrical Model	Revit MEP, NavisWorks

Building Information

Material and building system data built into the model during design enables our designers to evaluate the cost impact of changes during the design phase resulting in a value engineered process throughout, rather than only at the end of design.

Figure 11. BIM. BIM practices are currently the Burns & McDonnell standard project design authoring method used. We begin the BIM process by assigning a BIM Manager to the project who has the resources and training to ensure that a smooth BIM workflow is achieved. This person helps to facilitate coordination between disciplines and ensure BIM model integrity. All disciplines utilize BIM software.

Quality Control: We strive to provide the highest quality on every job we do – no matter how large or small. The quality of the services we provide on our design and construction projects is evident by the amount of repeat business that Burns & McDonnell achieves…*over 80% of our business is executed with repeat clients.* In order to achieve a high level of quality, we use a detailed six-step quality review process for engineering work with all project work. Our process has been developed and refined internally and has been vetted for use by our clients.

The Quality Review steps include:

Figure 12. Quality Control Six-Step Process. In order to achieve a high level of quality, we use a detailed six-step quality review process for engineering work with all project work.

Q1 Review

Conceptual Design Review (or 10%) – The right conceptual design sets the foundation for the successful direction of the project. A peer-review team reviews the concept design to make sure that the client's objectives are met, the concept fits scope and budget and that the correct building codes and sustainability guidelines have been applied.

Q2 Review

Preliminary Design Review (or 35%) – Once key project documents are developed and before vetting these documents with the Owner, the project team gets together with an independent review team to review these documents and confirm that the project is on the right track towards success: meeting the Owner's goals and objectives.

Q3 Reviews

Periodic Design Reviews at Key Owner Milestones (ex: 65%, 90%) – Prior to being issued to the Owner, design documents are verified by the design team, checking their own design including code interpretation and adherence to design basis. Once the internal review is complete, the client has an opportunity to review the documents and provide input to the team.

Q4 Review

Final Design Review Independent Review of Design Documents – Prior to being issued to the Owner and after the Q3 internal project team review, the design documents are handed over to an independent review team for verification. The Q4 process first looks at overall methodology to ensure the design engineer used his/her professional judgment correctly in outlining the process. Then the Q4 reviewer performs a review of the design documents to form an opinion as to the correctness and completeness of the design.

Q5 Review

Review of Rough Draft Specifications – Complete and accurate specifications reduce questions during the bid process and construction. During this review step, Burns & McDonnell sits with our client to review the specifications for each aspect of the design. At this stage we work with our client to develop the criteria for front-end documents to be issued to equipment suppliers or construction entities.

Q6 Review

Review of Design and Construction Packages by internal discipline leads and management – This review step is to verify integration between disciplines and integration with legal, procurement, and construction to ensure the completeness of the issued packages. Upon acceptance at the Q6 level, the design documents are issued to the Owner for their review.

Audit Program

At the completion of each regimented quality review step, the quality review manager for the project is required to fill out a form and submit to the corporate quality review management. In essence, this procedure is a real time audit for each of the projects, ensuring that the policies and procedures established are followed for each of our assignments.

Minority Participation: Burns & McDonnell is committed to supporting the local community and providing opportunities for minority and small businesses. The key to success on many of our projects can be attributed to the work that our small businesses perform. We seek to mentor our small business partners and in turn find that we are often learning many valuable best practices from them, in our mutual goal of making our clients successful. Through our supplier diversity program, we have expanded our markets and provided value to our clients. On every project that we lead, we work with our clients to identify key sub-consultants that they would like us to add to the team for specialty work and to achieve minority goals for the project.

Awards & Recognition: We have been honored to receive a number of awards that speak to our commitment to client satisfaction and our commitment to our employees.

Best Places to Work in the Valley 2014

The Burns & McDonnell Phoenix office ranks #18 on the Phoenix Business Journal *Best Places to Work in the Valley 2014* (small office category) list. This is the second year in a row that the Phoenix office has been listed in the top 18.

Professional Services Management Journal Premier Award for Client Satisfaction

The Professional Services Management Journal (PSMJ) annually conducts a survey of A/E/C clients to determine the winners of its Premier Award for Client Satisfaction. Burns & McDonnell won this prestigious award for the fourth year in a row. We are the only Engineering News-Record magazine Top 100 Design Firm to win the award.

FORTUNE 100 Best Companies to Work For

Burns & McDonnell ranks #14 in *FORTUNE's 2014 list of 100 Best Companies to Work For*. This is the third consecutive time the firm has made the list, moving up eight spots, and the third time in five years. This national recognition places Burns & McDonnell in a class well above its competitors.

Reasons for selecting Burns & McDonnell:

- Our Team has recent and relevant **demonstrated experience** on ADOA state contracted projects.
- We provide **exceptional qualifications** and a team of outstanding professionals; all registered in Arizona.
- Our firm of over 5,000 professionals provides the **assured capacity** to perform on any size project.

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:	30%
b.	Percentage of Total Work Attributable to Non-Government Work:	70%

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

Signature: Tanya Martella

Date: December 19, 2014

Name: Ms. Tanya Martella

Title: Associate