



**PURCHASING ITEM  
FOR  
COUNCIL AGENDA  
Memo No. CA08-005**

**1. Agenda Item Number:**  
**35**  
**2. Council Meeting Date:**  
August 9, 2007

**TO: MAYOR & COUNCIL**

**3. Date Prepared:** July 23, 2007

**THROUGH: CITY MANAGER**

**4. Requesting Department:** Municipal Utilities

**5. SUBJECT:** Award a construction management services contract to Wilson Engineers, LLC for the Airport Water Reclamation Facility Expansion – Phase Two, Project No. WW0501-452, in an amount not to exceed \$5,986,880.

**6. RECOMMENDATION:** Staff recommends Council award a construction management services contract to Wilson Engineers, LLC for the Airport Water Reclamation Facility Expansion – Phase Two, Project No. WW0501-452, in an amount not to exceed \$5,986,880.

**7. BACKGROUND/DISCUSSION:** The Airport Water Reclamation Facility is located on Queen Creek Road, just west of McQueen Road. The facility expansion is required due to growth, as determined by the 2004 Wastewater Master Plan. Design for the proposed expansion began in fiscal year 2005-06 under City Project No. WW0501-201. The Department held public information meetings and will continue to keep neighbors informed. Phase One of the construction, to increase capacity from 10 million gallons per day to 12 million gallons per day, was awarded at the February 22 Council Meeting and was necessary to meet Maricopa County Health Services requirements. Phase Two construction is scheduled for completion by the end of calendar year 2009.

Phase Two will increase capacity from 12 million gallons per day to 15 million gallons per day. The Phase Two Guaranteed Maximum Price (GMP) of construction is \$67,143,120, and will be awarded under separate Council action.

**8. EVALUATION:** Staff requested Statements of Qualifications for this project. Wilson & Company was the firm selected for the study, design, and construction management of the Airport Water Reclamation Facility Expansion. Staff has reviewed the scope of work, related work hours per task, the billing rates, fee for this proposal/contract, and determined the fee is consistent with similar types of projects.

**9. FINANCIAL IMPLICATIONS:**

Cost: \$5,986,880  
Savings: N/A  
Long Term Costs: N/A

**Fund Source:**

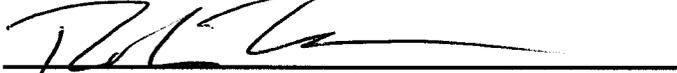
<u>Acct. No.:</u>	<u>Fund Name:</u>	<u>Program Name:</u>	<u>CIP Funded:</u>	<u>Amount:</u>
614.3910.0000.6814.8WW022	Wastewater SDF	Water Reclamation Facility	FY 07/08	\$5,986,880

**10. PROPOSED MOTION:** Move that Council award a construction management services contract to Wilson Engineers, LLC for the Airport Water Reclamation Facility Expansion – Phase Two, Project No. WW0501-452, in an amount not to exceed \$5,986,880, and authorize the Mayor to sign the contract documents.

**ATTACHMENTS:** Location Map, Contract

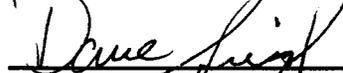
**APPROVALS**

**11. Requesting Department**



Robert Mulvey, Assistant Municipal Utilities Director

**13. Department Head**



Dave Siegel, Municipal Utilities Director

**12. City Engineer**



Sheina Hughes, Acting Assistant Public Works  
Director/City Engineer

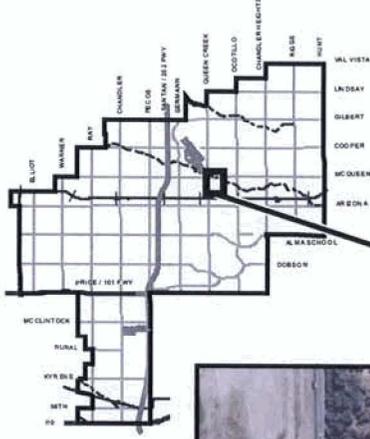
**14. City Manager**



W. Mark Pentz



# AIRPORT WATER RECLAMATION FACILITY EXPANSION PROJECT NO. WW0501-452



MEMO NO. CA08-05



## ENGINEERING SERVICES CONTRACT

PROJECT TITLE: **Airport Water Reclamation Facility Phase II**  
PROJECT NO: **WW0501-452**

This contract is made and entered into by and between the City of Chandler, Arizona, a municipal Corporation, hereinafter called the CITY, and **Wilson Engineers LLC, registered in the State of Arizona**, hereinafter called ENGINEER.

WHEREAS, ENGINEER represents ENGINEER has the expertise and is qualified to perform the services described in this agreement; and

WHEREAS, the Mayor and City Council/City Manager of the City of Chandler are authorized and empowered by the provisions of the City Charter to execute contracts for Professional Services;

NOW THEREFORE, for and in consideration of the mutual covenants and conditions hereinafter contained, it is agreed by and between the CITY and ENGINEER, as follows:

### 1. DESCRIPTION OF PROJECT

Engineer shall provide engineering services related to the construction, start-up, and post-construction warranty phases of the Airport Water Reclamation Facility Expansion Project. Work shall include project administration, engineering and resident services.

### 2. SCOPE OF WORK

ENGINEER shall provide those services described in Exhibit A attached hereto and made a part hereof by reference.

### 3. PAYMENT SCHEDULE

For services described in paragraph 2 of this Agreement, the CITY shall pay ENGINEER a fee based on the fee schedule attached hereto and made a part hereof by reference Exhibit B not to exceed the sum **Five Million Nine Hundred Eighty Six Thousand Eight Hundred Eighty** dollars (\$5,986,880). Payment will be made monthly on the basis of progress reports. An Application and Certification for Payment Sheet must be provided. In addition, the following must also be included: a clear, detailed invoice reflecting items being billed for, a summary sheet showing percentage of work completed to date, amount/percent billed to date and current status of all tasks within a project; any/all backup documentation supporting the above items. Work schedule updates will be included in the monthly progress payment requests.

### 4. PERIOD OF SERVICE

ENGINEER shall complete all services described in paragraph 2 within **Eight Hundred Ten (810)** calendar days after "Notice to Proceed" is issued by the CITY. In the event delays are experienced beyond the control of ENGINEER, the completion date may be extended as mutually agreed upon by CITY and ENGINEER.

### 5. OPINIONS OF PROBABLE COSTS (ESTIMATES)

Any opinions of probable project cost or probable construction cost provided by ENGINEER are made on the basis of information available to ENGINEER and on the basis of ENGINEER's experience and qualifications, and represents its judgment as an experienced and qualified professional engineer. However, since ENGINEER has no control over the cost of labor, materials, equipment or services furnished by others, or over the contractor(s) methods of determining prices, or over competitive bidding or market conditions,

ENGINEER does not guarantee that proposals, bids or actual project or construction cost will not vary from opinions of probable cost ENGINEER prepares.

## 6. APPROVALS

All work shall be subject to the approval by the City Engineer.

ENGINEER agrees to exercise the skill and care which would be exercised by comparable professional engineers performing similar services at the time and in the locality such services are performed. If the failure to meet these standards results in faulty work, ENGINEER shall undertake at its own expense, the corrective adjustments or modifications.

## 7. REPORTING

Written monthly reports, along with updated work schedules, will be made by ENGINEER in the format prescribed by the CITY. These reports will be delivered to the CITY per schedule. When requested by the CITY, ENGINEER will attend Council meetings and provide finished documents including correspondence for Council action, supporting charts, graphs, drawings and colored slides of same.

## 8. STANDARDS OF PERFORMANCE:

A. This design contract has been awarded to ENGINEER based on their proposal that those personnel and consultants listed in Exhibit A attached hereto will perform the portions of the work listed on said Exhibit A. ENGINEER shall not deviate nor substitute any of these team members without prior written approval by CITY.

B. ENGINEER shall be familiar with CITY's Standard Details and Specifications and other relevant CITY regulations. ENGINEER shall insure there are no conflicts among the Contract Documents including, but not limited to, the CITY's General and Supplementary Conditions for Construction Contracts, the plans and specifications prepared by ENGINEER, any standard details or specifications incorporated therein by reference, and the Construction Contract.

C. Correction of Mistakes: ENGINEER shall be responsible for the completeness and accuracy of the work prepared or compiled under ENGINEER's obligation for this project and shall correct, at ENGINEER's expense, all errors or omissions therein which may be disclosed. Correction of errors disclosed and determined to exist during any construction of the project on architectural or engineering drawings and specifications shall be accomplished by ENGINEER. The cost of the design necessary to correct those errors attributable to ENGINEER and any damage incurred by CITY as a result of additional construction costs caused by such engineering or architectural errors shall be chargeable to ENGINEER and shall not be considered a cost of the Work. The fact that CITY has reviewed or approved ENGINEER's work shall in no way relieve ENGINEER of any of its responsibilities.

## 9. INDEMNIFICATION

(a) For Professional Liability:

To the fullest extent permitted by law, ENGINEER shall defend, indemnify and hold harmless the City of Chandler, its agents, representatives, officers, directors, officials and employees, individually and collectively, (hereinafter CoC) from and against all losses, claims, damages, suits, actions, payments, judgments, demands, expenses, and costs, including but not limited to, attorney's fees, defense costs, court costs, and the cost of appellate proceedings, or actions of any kind and nature related to, arising out of, or alleged to have resulted from the errors, mistakes or omissions relating to professional services by ENGINEER, its employees, agents, or any tier of subcontractors in the performance of this Contract or of any other person for whose errors, mistakes or omissions ENGINEER may be legally liable. This indemnity shall not be construed to include losses, claims, damages, suits, or actions of any kind and nature, to the extent arising from or alleged

to have resulted from the errors, mistakes or omissions of CoC (other than ENGINEER, its employees, agents, or any tier of subcontractors). The provisions of this paragraph shall survive termination of this Contract.

(b) For all Other Liabilities, Hazards and Exposures:

To the fullest extent permitted by law, ENGINEER shall defend, indemnify and hold harmless the City of Chandler, its agents, representatives, officers, directors, officials and employees, individually and collectively, (hereinafter CoC) from and against all losses, claims, damages, suits, actions, payments, judgments, demands, expenses, and costs, including but not limited to, attorney's fees, defense costs, court costs, and the cost of appellate proceedings, or actions of any kind and nature, wages or overtime compensation due employees in rendering service under this Contract and whether to any person or property, including natural resources and any claim made under the Fair Labor Standards Act or any other federal or state laws, related to, arising out of, or alleged to have resulted from the actions of ENGINEER and alleged to have been caused in whole or in part by any act or omission of ENGINEER, anyone directly or indirectly employed by them or anyone for whose acts ENGINEER may be legally liable, and from any claims or amounts arising or recovered under Workers' Compensation laws or any other law, bylaw, or ordinance, order or decree or any failure on the part of ENGINEER, its agents, employees or representatives to fulfill ENGINEER's obligations under this Contract. This indemnity shall not be construed to include losses, claims, damages, suits, or actions of any kind and nature, to the extent arising from or alleged to have resulted from the errors, mistakes or omissions of CoC, (other than ENGINEER, its employees, agents, or any tier of subcontractors). The provisions of this paragraph shall survive termination of this Contract.

(c) Consequential Damages:

The parties intend that damages and/or costs and all other terms implying an amount tied to liability shall include consequential damages and loss of productivity limited to the total value of this contract in dollars as payable by the City of Chandler or twice the amount of aggregate insurance required by this Contract, whichever is greater.

(d) Insurance does not limit liability:

The amount and type of insurance coverage requirements set forth herein will in no way be construed as limiting the scope of the indemnity in this paragraph.

**10. INSURANCE REQUIREMENTS:**

- A ENGINEER, at its own expense, shall purchase and maintain insurance of the types and amounts required in this section, with companies possessing a current A.M. Best, Inc. rating of B++6, or better and legally authorized to do business in the State of Arizona with policies and forms satisfactory to CITY.
- B Policies written on a "Claims made" basis are not acceptable without written permission from the City's Risk Manager.
- C All insurance required herein shall be maintained in full force and effect until all work or services required to be performed under the terms of this Agreement is satisfactorily completed and formally accepted. Failure to do so may, at the sole discretion of CITY, constitute a material breach of this Agreement and may result in termination of this contract.
- D If any of the insurance policies are not renewed prior to expiration, payments to the ENGINEER may be withheld until these requirements have been met, or at the option of the City, the City may pay the Renewal Premium and withhold such payments from any monies due the ENGINEER.
- E All insurance policies, except Workers' Compensation and Professional Liability required by this Agreement, and self-insured retention or deductible portions, shall name, to the fullest extent permitted by law for claims arising out of the performance of this contract, the City of Chandler, its agents, representatives, officers, directors, officials and employees as Additional Insureds.

- F ENGINEER's insurance shall be primary insurance over any insurance available to the CITY and as to any claims resulting from this contract, it being the intention of the parties that the insurance policies so effected shall protect both parties and be primary coverage for any and all losses covered by the described insurance.
- G The insurance policies, except Workers' Compensation, shall contain a waiver of transfer rights of recovery (subrogation) against CITY, its agents, representatives, officers, directors, officials and employees for any claims arising out of ENGINEER's acts, errors, mistakes, omissions, work or service.
- H The insurance policies may provide coverage which contain deductibles or self-insured retentions. Such deductible and/or self-insured retentions shall be assumed by and be for the account of, and at the sole risk of ENGINEER. ENGINEER shall be solely responsible for the deductible and/or self-insured retention. The amounts of any self-insured retentions shall be noted on the Certificate of Insurance. CITY, at its option, may require ENGINEER to secure payment of such deductibles or self-insured retentions by a Surety Bond or an irrevocable and unconditional letter of credit. Self-insured retentions (SIR) in excess of \$25,000 will only be accepted with the permission of the Management Services Director/designee.
- I All policies and certificates shall contain an endorsement providing that the coverage afforded under such policies shall not be reduced, canceled or allowed to expire until at least thirty (30) days prior written notice has been given to CITY.
- J Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the ENGINEER with reasonable promptness in accordance with the ENGINEER's information and belief.
- K In the event that claims in excess of the insured amounts provided herein, are filed by reason of any operations under this contract, the amount of excess of such claims, or any portion thereof, may be withheld from payment due or to become due the ENGINEER until such time as the ENGINEER shall furnish such additional security covering such claims as may be determined by the CITY.

## **10.2 Proof of Insurance - Certificates of Insurance**

- A Prior to commencing work or services under this Agreement, ENGINEER shall furnish to CITY Certificates of Insurance, issued by ENGINEER's insurer(s), as evidence that policies providing the required coverages, conditions and limits required by this Agreement are in full force and effect and obtain from the City's Risk Management Division approval of such Certificates.
- B If a policy does expire during the life of this Agreement, a renewal certificate must be sent to the City of Chandler five (5) days prior to the expiration date.
- C All Certificates of Insurance shall identify the policies in effect on behalf of ENGINEER, their policy period(s), and limits of liability. Each Certificate shall include the job site and project number and title. Coverage shown on the Certificate of Insurance must coincide with the requirements in the text of the contract documents. Information required to be on the certificate of Insurance may be typed on the reverse of the Certificate and countersigned by an authorized representative of the insurance company.
- D CITY reserves the right to request and to receive, within 10 working days, certified copies of any or all of the herein required insurance policies and/or endorsements. CITY shall not be obligated, however, to review same or to advise ENGINEER of any deficiencies in such policies and endorsements, and such receipt shall not relieve ENGINEER from, or be deemed a waiver of CITY's right to insist on, strict fulfillment of ENGINEER's obligations under this Agreement.

### 10.3 Required Coverage

Such insurance shall protect ENGINEER from claims set forth below which may arise out of or result from the operations of ENGINEER under this Contract and for which ENGINEER may be legally liable, whether such operations be by the ENGINEER or by a Sub-consultant or subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. Coverage under the policy will be at least as broad as Insurance Services Office, Inc., policy form CG00011093 or equivalent thereof, including but not limited to severability of interest and waiver of subrogation clauses.

- A Claims under workers' compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed;
- B Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- C Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- D Claims for damages insured by usual personal injury liability coverage;
- E Claims for damages, other than to Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- F Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle; Coverage will be at least as broad as Insurance Service Office, Inc., coverage Code "I" "any auto" policy form CA00011293 or equivalent thereof.
- G Claims for bodily injury or property damage arising out of completed operations;
- H Claims involving contractual liability insurance applicable to the Contractor's obligations under the Indemnification Agreement;
- I Claims for injury or damages in connection with one's professional services;
- J Claims involving construction projects while they are in progress. Such insurance shall include coverage for loading and off loading hazards. If any hazardous material, as defined by any local, state or federal authorities are to be transported, MCS 90 endorsement shall be included.

#### 10.3.1 Commercial General Liability - Minimum Coverage Limits:

The Commercial General Liability insurance required herein shall be written for not less than \$1,000,000 limits of liability or ten percent (10%) of the Contract Price, whichever coverage is greater. Any combination between general liability and excess general liability alone amounting to a minimum of \$1,000,000 per occurrence (or 10% per occurrence) and an aggregate of \$2,000,000 (or 20% whichever is greater) in coverage will be acceptable. The Commercial General Liability additional insured endorsement shall be as broad as the Insurance Services, Inc's (ISO) Additional Insured, Form B, CG 20101001, and shall include coverage for ENGINEER's operations and products, and completed operations.

#### 10.3.2 General Liability - Minimum Coverage Limits

The General Liability insurance required herein, including, Comprehensive Form, Premises-Operations, Explosion and Collapse, Underground Hazard, Products/Completed Operations, Contractual Insurance, Broad Form Property Damage, Independent Contractors, and Personal Injury shall be written for Bodily

Injury and Property Damage Combined shall be written for not less than \$1,000,000 or 10% of the contract cost and with a \$2,000,000 aggregate.

### 10.3.3 Automobile Liability

ENGINEER shall maintain Commercial/Business Automobile Liability insurance with a combined single limit for bodily injury and property damage of not less than \$1,000,000 each occurrence with respect to any owned, hired, and non-owned vehicles assigned to or used in performance of the ENGINEER's work. Coverage shall be at least as broad as coverage code 1, "any auto", (Insurance Service Office, Inc. Policy Form CA 00011293, or any replacements thereof). Such insurance shall include coverage for loading and off loading hazards if hazardous substances, materials or wastes are to be transported and a MCS 90 endorsement shall be included with coverage limits of \$5,000,000 per accident for bodily injury and property damage.

### 10.3.4 Worker's Compensation and Employer's Liability

ENGINEER shall maintain Workers' Compensation insurance to cover obligations imposed by federal and state statutes having jurisdiction over ENGINEER's employees engaged in the performance of the work or services; and, Employer's Liability insurance of not less than \$1,000,000 for each accident, \$1,000,000 disease coverage for each employee, and \$1,000,000 disease policy limit.

In case any work is subcontracted, ENGINEER will require the Subcontractor to provide Workers' Compensation and Employer's Liability to at least the same extent as required of ENGINEER.

### 10.3.5 Professional Liability

ENGINEER shall maintain Professional Liability insurance covering acts, errors, mistakes and omissions arising out of the work or services performed by ENGINEER, or any person employed by ENGINEER, with a claims made policy limit of not less than \$1,000,000.

## 11. AMENDMENTS

Whenever a change in the scope of work contemplated in this Contract is determined to be necessary, the work will be performed in accordance with the Contract provided, however, that BEFORE such work is started, a Contract Amendment shall be executed by the CITY and ENGINEER. Additions to, modifications of, or deletions from the project provided herein may be made and the compensation to be paid to ENGINEER may be adjusted accordingly by mutual agreement of the contracting parties. It is agreed that no claim for extra work by ENGINEER will be allowed by the CITY except as provided herein, nor shall ENGINEER do any work not covered by this Contract unless such work is authorized through an executed amendment.

## 12. TERMINATION WITHOUT CAUSE

CITY may at any time and for any or no reason, at its convenience, terminate this contract or any part of the services to be rendered pursuant thereto by written notice to ENGINEER specifying the termination date. Immediately after receiving such notice, ENGINEER shall discontinue advancing the work under this Contract and shall deliver to the CITY all drawings, notes, calculations, sketches and other materials entirely or partially completed, together with all unused materials supplied by the CITY.

ENGINEER shall receive as compensation in full for services performed to date of such termination, a fee for the percentage of work actually completed. This fee shall be a percentage of ENGINEER(S) fee described in this Contract under paragraph 3 and shall be in the amount to be agreed mutually by ENGINEER and the CITY. The CITY shall make this final payment within sixty (60) days after ENGINEER has delivered the last of the partially completed items.

13. OWNERSHIP OF DOCUMENTS

All documents, including, but not limited to, tracings, drawings, original mylars, estimates, field notes, investigations, design analysis and studies which are prepared in the performance of this Contract are to be, and remain the property of, the CITY. ENGINEER shall furnish the CITY, upon its request, originals or reproducible of technical specifications and copies of all other documents listed above. ENGINEER shall endorse, by his professional seal, all plans and engineering data furnished by him.

14. RE- USE OF DOCUMENTS

The parties agree the documents, drawings, specifications and designs, although the property of CITY, are prepared for this specific project and are not intended nor represented by ENGINEER to be suitable for re-use for any other project. Any reuse without written verification or adaptation by ENGINEER for the specific purpose intended will be at CITY's sole risk and without liability or legal exposure to ENGINEER.

15. NO KICK-BACK CERTIFICATION

ENGINEER warrants that no person has been employed or retained to solicit or secure this Contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee; and that no member of the City Council or any employee of the CITY has any interest, financially or otherwise, in the ENGINEERING firm.

For breach or violation of this warranty, the CITY shall have the right to annul this Contract without liability, or at its discretion to deduct from the Contract Price or consideration, the full amount of such commission, percentage, brokerage or contingent fee.

16. CONFLICT OF INTEREST

ENGINEER stipulates that its officers and employees do not now have a conflict of interest and it further agrees for itself, its officers and its employees that it will not contract for or accept employment for the performance of any work or services with any individual business, corporation or government unit that would create a conflict of interest in the performance of its obligations pursuant to this Contract.

Pursuant to A.R.S. Section 38-511, the City may cancel this contract within three (3) years after its execution, without penalty or further obligation by the City if any person significantly involved in initiating, negotiating, securing, drafting or creating the contract on behalf of the City of Chandler is, at any time while the contract is in effect, an employee of any other party to the contract in any capacity or a consultant to any other party of the contract with respect to the subject matter of the contract.

17. CONTROLLING LAW

The law of the state of Arizona shall govern this Contract.

18. NO ASSIGNMENT

ENGINEER shall not assign, transfer, convey or subcontract this contract or the services to be rendered pursuant thereto without the prior written consent of CITY.

19. NOTICES

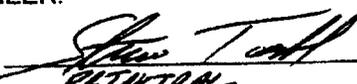
Any notice required under this Contract shall be in writing, addressed to the appropriate party at its address on the signature page and given personally or by registered or certified mail postage prepaid, or by a commercial courier service. All notices shall be effective upon the date of receipt.

IN WITNESS WHEREOF, the parties have hereunto subscribed their names to this \_\_\_\_\_  
day of \_\_\_\_\_ 2007.

CITY OF CHANDLER

ENGINEER:

\_\_\_\_\_  
MAYOR Date

By:   
Title: PRINCIPAL

ADDRESS FOR NOTICE  
City of Chandler  
P.O. Box 4008, Mail Stop 407  
Chandler, AZ 85244-4008  
480-782-3307

ADDRESS FOR NOTICE  
Wilson Engineers LLC  
9633 S. 48th St., Ste. 290  
Phoenix, AZ 85044-5658  
Phone: 480-893-8860

ATTEST:

ATTEST: If Corporation

\_\_\_\_\_  
City Clerk

\_\_\_\_\_  
Secretary

APPROVED AS TO FORM:

\_\_\_\_\_  
City Attorney by:  SEAL

## **EXHIBIT A SCOPE OF WORK**

### **SECTION 100 - GENERAL**

This Scope of Work describes Engineering Services to be provided by Wilson Engineers (ENGINEER) for the CITY of Chandler (CITY). The engineering services to be provided under this Scope of Work shall include services related to the construction, start-up, and post-construction warranty phases of the Airport Water Reclamation Facility (WRF) Expansion Project. The work to be performed for the project consists of the following four types of services:

- 1) Project administration services during construction, Section 200
- 2) Engineering services during construction, Section 300
- 3) Resident services during construction, Section 400
- 4) Special services, Section 500

The level of effort associated with these tasks is included in enclosed spreadsheet.

Engineering services are to be provided throughout the duration of construction and start-up, which is approximately 27 months (24 months for substantial completion and 3 additional months for final completion).

Construction contract documents are defined as the agreement, general conditions, supplemental conditions, drawings, standard details, specifications, addendum, and executed change orders prepared for construction of the project. The ENGINEER's scope of services shall include GMP executed with the CM@Risk Contractor.

### **SECTION 200 - PROJECT ADMINISTRATION SERVICES DURING CONSTRUCTION**

#### **Task 210 - Representation on Behalf of CITY**

The ENGINEER shall consult with and advise CITY and act as its representative during construction. The extent and limitations of the duties, responsibilities and authority of ENGINEER as assigned herein shall not be modified, except as ENGINEER may otherwise agree in writing. CITY instructions to Contractor(s) will be issued through ENGINEER who will have authority to act on behalf of CITY to the extent provided in this Scope of Services except as otherwise provided in writing.

ENGINEER shall not be responsible for the means, methods, techniques, sequences or procedures of construction selected by Contractor, unless otherwise specified in the construction documents or the safety precautions and programs incident to the work of Contractor.

ENGINEER's efforts shall be directed toward providing a greater degree of confidence for CITY that the completed work of Contractor will conform to the Contract Documents, but ENGINEER shall not be responsible for the failure of Contractor to perform the work in accordance with the construction documents.

On the basis of periodic on-site examination of materials, equipment, and workmanship, ENGINEER shall keep CITY informed of the progress of the work, shall endeavor to guard CITY against defects and deficiencies in such work and may disapprove or reject work failing to conform to the construction documents. This task shall include the following items:

1. Conduct preconstruction conference: The ENGINEER shall conduct a preconstruction conference. At the conference, the ENGINEER shall identify field services to be provided by the ENGINEER and discuss appropriate coordination procedures. The ENGINEER shall prepare an agenda for the

meeting and shall prepare and distribute the meeting minutes. The ENGINEER's Resident Project Representative (RPR) shall conduct the meeting.

2. Provide construction administration, quality control, and coordination: The ENGINEER shall provide construction administration and quality control services during the course of the project to assure that the overall technical correctness of the construction phase services and that specified procedures are being followed and that the ENGINEER's schedules are being met. The ENGINEER shall provide coordination functions during the construction phase as follows:
  - A. Hold coordination meetings with the CITY representative.
  - B. Coordinate with regulatory and approving agencies and utilities as required.
  - C. Coordinate the work of specialty subconsultants assigned to the project.
3. Provide project documents: The ENGINEER shall maintain and provide the following detailed project records and documentation during the construction phase:
  - A. The project records shall include correspondence, schedules, submittals, test data, project data, payments, change orders, meeting minutes, clarifications, mark-ups of drawings and specifications, digital control system documentation and other such documentation. Project records shall be delivered to the CITY's representative upon completion of the construction contract. Records shall be maintained under Section 400 at the RPR's field office. A duplicate set of records shall also be maintained in the ENGINEER's Office.
  - B. A status report for the construction contract shall be provided under Task 440.

#### **Task 215 - Administer the Construction Schedule**

The ENGINEER's opinions concerning the various scheduling documents of Task 215 produced or used by the Contractor are for information and are not controlling on the Contractor. It is the Contractor's responsibility to continue to exercise its independent judgment concerning means, methods and sequences of construction it employs. The Contractor remains solely responsible for meeting contract time(s) given in the construction documents.

1. Review progress schedule: The ENGINEER shall review and critique the Contractor's progress schedule in accordance with the construction documents. The ENGINEER shall examine the work sequence, durations, interim milestones, and other appropriate scheduling features in accordance with the requirements of the construction documents. The ENGINEER shall prepare a summary of the review comments and shall meet and discuss the schedule comments with the Contractor and the CITY's representative.
2. Review progress schedule updates: The ENGINEER shall review the Contractor's progress schedule updates to the construction schedule in accordance with the construction documents. The ENGINEER shall perform a review of progress accomplished during the period and compare to planned schedule and discuss significant discrepancies with the Contractor. The ENGINEER and Contractor shall establish, based on the data, the percent of project completion. ENGINEER shall meet with Contractor on monthly basis to review and update the schedule data. Based upon the schedule update, the ENGINEER shall recommend processing progress payments. The primary performance of the task will be performed under Task 400.

#### **Task 220 - Perform Site Visits**

The ENGINEER's design staff may make site visits appropriate for the type of construction at periods appropriate to the various stages of construction to observe, as an experienced and qualified professional, the progress and quality of the executed work of Contractor and to determine in general, if such work is

proceeding in accordance with the design intent. The ENGINEER's site visits shall support the inspection needs and requirements established by the CITY's Building Service Department.

#### **Task 230 - Review Shop Drawings and Test Results**

The ENGINEER shall receive, review, evaluate, and distribute shop drawings, samples, test results, and other data which Contractor is required to submit. The ENGINEER's review shall only be for conformance with the design concept of the Project and compliance with the information given in the construction documents. Such review or other action shall not extend to means, methods, sequences, techniques or procedures of construction selected by Contractor, or to safety precautions and programs incident thereto. The ENGINEER shall receive and review (for general contents as required by the construction documents) maintenance and operating schedules and instructions, operation and maintenance manuals, guarantees, bonds and certificates of inspection which are to be assembled by Contractor in accordance with the construction documents.

As part of this task, the ENGINEER shall maintain a submittal log showing dates of submittal, transmittal action to other subconsultants, dates of return and review action. Copies of the log shall be furnished to the CITY and the Contractor monthly. The ENGINEER shall also evaluate the Contractor's request for substitutions. Submittal review efforts are based upon a maximum of two (2) reviews per submittal and that no more than fifty percent (50%) of the total number of first submittals will require two (2) reviews.

#### **Task 240 - Issue Interpretations and Clarifications**

The ENGINEER shall issue the CITY's instructions to Contractor; issue necessary interpretations and clarifications of the construction documents; have authority, as CITY's representative, to require special inspection or testing of the work; act as initial interpreter of the requirements of the construction documents and judge of the acceptability of the work thereunder, and make decisions on claims of the CITY and the Contractor relating to the acceptability of the work or the interpretation of the requirements of the construction documents pertaining to the execution and progress of the work. The ENGINEER shall render interpretations or decisions in good faith and in accordance with the requirements of the construction documents.

The ENGINEER shall respond to the CITY's representative and/or Contractor to clarify and/or interpret technical, design related questions. Routine technical interpretations shall be responded to under Task 400. The ENGINEER will assist the CITY, as required, in resolution of these issues. The ENGINEER shall respond to issues raised during construction regarding interpretation and clarification of the contractual administrative and technical requirements of the construction documents. Clarifications shall be issued to the Contractor under Task 400.

#### **Task 250 - Certify Progress Payments**

The ENGINEER shall approve the Contractor's schedule of values after the necessary adjustments made by the Contractor. The monthly schedule update, schedule of values established by the Contractor's bid proposal on the project, in combination with the ENGINEER's field observations, and the progress schedule shall be used by the ENGINEER to determine the appropriateness of the Contractor's request for payment.

Based on ENGINEER's on-site observations, as an experienced and qualified professional, and on review of applications for payment and the accompanying data and schedules, the ENGINEER shall determine the amounts owing to Contractor and recommend in writing payments to Contractor in such amounts; such recommendations of payment will constitute a representation to CITY, based on such observations and review, that the work has progressed to the point indicated, that, to the best of ENGINEER's knowledge, information and belief, the quality of such work is in accordance with the construction documents (subject to an evaluation of such work as a functioning Project upon Substantial Completion, to the results of subsequent tests called for in the construction documents, and to qualifications stated in the recommendation), and that payment of the amount recommended is due Contractor.

## **Task 260 - Substantial Completion and Final Acceptance Inspection**

Following notice from the Contractor, the ENGINEER shall conduct an inspection to determine if the project or the work associated with interim milestones is substantially complete in accordance with the construction documents. If the ENGINEER considers the work substantially complete, the ENGINEER shall deliver to the CITY and the Contractor the Certificate of Substantial Completion and the punch list, the date for completion of the punch list, and recommend the division of responsibilities between the CITY and the Contractor.

The ENGINEER shall, upon completion of the punch list items, make final inspection to determine if the finished work has been completed to the standard required by the construction documents, and Contractor has fulfilled the obligations thereunder so that ENGINEER may recommend, in writing, final payment to Contractor and may give written notice to CITY and the Contractor that the work is acceptable, subject to conditions therein expressed.

ENGINEER shall not be responsible for the acts or omissions of the Contractor, or subcontractor, or any of the Contractor's or subcontractor's agents or employees or any other persons (except ENGINEER's own employees and agents) at the site or otherwise performing any of the Contractor's work; however, nothing contained in Tasks 210 through 260, inclusive, shall be construed to release ENGINEER from liability for errors or omissions in the performance of ENGINEER's duties in accordance with this scope of services.

## **SECTION 300 - ENGINEERING SERVICES DURING CONSTRUCTION**

### **Task 320 - Changes**

The ENGINEER shall perform services in connection with change orders to reflect changes requested by CITY or Contractor, for evaluating substitutions proposed by Contractor, and in making revisions to drawings and specifications occasioned thereby, and resulting from significant delays, changes or price increases occurring as a direct or indirect result of material or equipment shortages. Changes and substitutions shall be limited to the scope of the project as defined by the construction documents or additional work as may be requested by the CITY.

### **Task 330 - Material Testing**

The ENGINEER shall provide material testing service for tests as required to be performed by the CITY in the construction contract documents.

### **Task 340 - Record Drawings**

The ENGINEER shall prepare a set of reproducible record drawings showing the "as built" condition of the work, based on the marked-up prints, drawings and other data furnished by Contractor to ENGINEER and which ENGINEER has reviewed for accuracy and completeness.

The ENGINEER shall prepare:

1. One (1) set of reproducible record drawings and specifications. Record drawing information may be reproduced by computer aided methods (CAD).
2. The record specifications shall be conformed to reflect shop drawing review, substitutions, clarifications and change orders.

The Resident Project Representative shall review and coordinate the record documents.

## **Task 350 - Operation and Maintenance Manual**

The ENGINEER shall update the existing O&M manual that documents and describes the function and control of the following major process units and ancillary facilities:

- Influent Pump Station
- Headworks Building
- Pre-Stage Basin
- Aeration Basins
- Blower Building
- RAS/WAS Pump Station
- Secondary Clarifiers
- Flocculation Basins
- Filter Basins
- Washwater Equalization Basin
- Chlorine Contact Basins
- Bulk Sodium Hypochlorite Facility
- Effluent Pump Station
- Sludge Holding Tanks
- Thickening Building
- Dewatering
- Reclaimed Water Pump Station
- Backwash Tank and Backwash Pump Station

A complete draft O&M manual will be submitted at no later than 80 percent completion of construction for review and comment. Comments will be incorporated or responded to and the final O&M manual will be installed on the CITY computer hardware within 60 days after substantial completion.

## **Task 370 – Special Structural Inspections**

Perform Special Structural Inspections as required by the City of Chandler Building Code (Modified International Building Code). Provide Special Inspection Reports, and signed and sealed Special Inspection Certificates, as required by the City of Chandler Building Safety Department.

Perform Special Electrical Inspections as required by the City of Chandler Building Code (Modified International Building Code). Provide Special Inspection Reports, and signed and sealed Special Inspection Certificates, as required by the City of Chandler Building Safety Department.

## **SECTION 400 - RESIDENT SERVICES DURING CONSTRUCTION**

The Resident Project Representative will be furnished and will act as directed by ENGINEER, in order to assist ENGINEER in observing performance of the work of the Contractor. Through increased on-site observations of the work in progress and field checks of materials and equipment by the Resident Project Representative and Staff, ENGINEER shall endeavor to provide further protection for CITY against defects and deficiencies in the work of Contractor; but the furnishing of such Resident Project Representative will not make ENGINEER responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions or programs, or for Contractor failure to perform their work in accordance with the construction documents.

Except upon written instructions, Resident Project Representative:

1. Shall not authorize deviations from the construction documents or approve substitute materials or equipment which may impact cost, time or design intent without approval from the CITY.

2. Shall not undertake the responsibilities of Contractor, subcontractors or Contractor's superintendent, or expedite the work.
3. Shall not advise on or issue directions relative to the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the construction documents.
4. Shall not advise on or issue directions as to safety precautions and programs in connection with the work.
5. Shall not authorize CITY to occupy the project in whole or in part.

The Resident Project Representative, as ENGINEER's agent, will act as directed by and under the supervision of ENGINEER, and will confer with ENGINEER. Resident Project Representative's dealings in matters pertaining to the on-site work shall in general be only with ENGINEER and Contractor, and dealings with subcontractors shall only be through or with the full knowledge of Contractor. Written communication with CITY will be only through or as directed by ENGINEER, and may be through the Resident Project Representative.

Resident Project Representative shall be responsible for performing the following:

**Task 401 - Schedules:**

Review the progress schedule, schedule of Contractor's submissions and schedule of values prepared by Contractor, and consult with ENGINEER concerning their acceptability.

**Task 405 - Conferences:**

Conduct preconstruction conferences and construction progress meetings. Prepare and distribute minutes of such meetings.

**Task 410 - Liaison:**

1. Serve as ENGINEER's liaison with Contractor, working principally through Contractor's superintendent and assist the superintendent in understanding the intent of the construction documents. Assist ENGINEER in serving as CITY's liaison with Contractor, when Contractor's operations affect CITY's on-site operations.
2. As requested by ENGINEER, assist in obtaining from CITY additional details or information, when required at the job site for proper execution of the work.

**Task 415 - Shop Drawings and Samples:**

1. Submittals which are furnished by Contractor shall be received and reviewed as defined in Task 230.
2. Advise ENGINEER prior to the commencement of work requiring a shop drawing or sample submission if the submission has not been approved by ENGINEER. Resident Project Representative will then inform the Contractor.

**Task 420 - Inspection of Work, Rejection of Defective Work, and Review of Tests:**

1. Conduct on-site observations of the work in progress to assist ENGINEER in determining if the work is proceeding in accordance with the construction documents and that completed work conforms to the construction Documents.
2. Report to ENGINEER whenever it is believed that work is unsatisfactory, faulty or defective or does not conform to the construction documents, or does not meet the requirements of inspections, tests or approval required to be made, or has been damaged prior to final payment; and advise ENGINEER

when it is believed work should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

3. Verify that tests, equipment and systems start-up and operating and maintenance instructions are conducted as required by the construction documents and in presence of the required personnel, and that Contractor maintains required records thereof; observe, record and report to ENGINEER appropriate details relative to the test procedures and start-ups.
4. Accompany visiting inspectors representing public or other agencies having jurisdiction over the project, record the outcome of these inspections and report to ENGINEER.

#### **Task 425 - Interpretation of Construction Documents:**

Receive and transmit clarifications and interpretations of the construction documents to/from the Contractor and ENGINEER as described in Task 240. Resident Project Representative will notify the CITY's representative of the ENGINEER's decision prior to issuance to the Contractor.

#### **Task 430 - Changes:**

Consider and evaluate Contractor's suggestions for changes in drawings or specifications and report them with recommendations to ENGINEER. Notify the CITY's representative of changes or alterations believed to be in the CITY's best interest. Provide the CITY's representative with supporting details of proposed changes. Prepare drawing, details, and specifications needed to describe and justify the change. Prepare an estimate of the cost and time impact of the change and conduct the negotiations with the Contractor.

#### **Task 435 - Records:**

1. Maintain at the job site orderly files for correspondence, reports of job conferences, shop drawings and samples submissions, reproductions of original construction documents including all addenda, change orders, field orders, additional drawings issued subsequent to the execution of the Contract, ENGINEER's clarifications and interpretations of the construction documents, progress reports, and other Project related documents.
2. Prepare daily reports recording Contractor's work performed on the job site, major construction equipment on-site, weather conditions, data relative to questions of extras or deductions, list of visiting officials and representatives of manufacturers, fabricators, suppliers and distributors, daily activities, decisions, on-site equipment, subcontractors on-site, observations in general and specific observations in detail as in the case of observing test procedures. Send copies to ENGINEER.
3. Record names, addresses and telephone numbers of the Contractor, subcontractors and major suppliers of materials and equipment.
4. Maintain notes to be capable of cross referencing the Contractor's record drawing information for accuracy and completeness.
5. Receive, review and process daily inspection reports.
6. The ENGINEER will maintain a file of construction photographs to be submitted by the Contractor in accordance with the construction contract documents.

#### **Task 440 - Reports:**

1. Each month, furnish ENGINEER and CITY the project progress meeting minutes (as the construction contract status report) describing the progress of the work and Contractor's compliance with the approved progress schedule and schedule of shop drawing submissions.

The report shall include as a minimum:

- Total project cost to date.
- Total project cost during the period.
- Planned versus actual progress.
- Actual and/or potential defaults or violations of the construction documents.
- Remedies to the above.
- Other project issues.

2. Consult with ENGINEER in advance of scheduled major tests, inspections or start of important phases of the work.
3. Report to ENGINEER at the time of an occurrence of any accident.

**Task 445 - Payment Application:**

Review applications for payment as described in Task 250 with Contractor for compliance with the established procedure for their submission and forward those with recommendations to ENGINEER, noting particularly their relation to the schedule of values, work completed, and materials and equipment delivered at the site but not incorporated in the work.

**Task 450 - Certificates, Maintenance and Operation Manuals:**

During the course of the work, review and determine that certificates, operation and maintenance manuals and other data required to be assembled and furnished by Contractor are applicable to the items actually installed; and deliver this material to ENGINEER for review and forwarding to CITY prior to final acceptance of the work.

**Task 455 - Substantial Completion/Final Acceptance:**

1. Resident Project Representative shall assist ENGINEER in the completion of the Substantial Completion and Final Acceptance tasks as described in Task 260.
2. Before ENGINEER issues a Certificate of Substantial Completion, submit to Contractor a list of observed items requiring completion or correction in accordance with the requirements of the construction documents.
3. After the Contractor has completed the work of the list of Subtask 455.1 and upon request of the Contractor, Resident Project Representative shall conduct final inspection in the company of ENGINEER, CITY and Contractor. Prepare a final list of items to be completed or corrected in accordance with the requirements of the construction documents.
4. After the Contractor has completed the work of the final list of Subtask 455.2 and upon written notice from the Contractor, review and determine that items on the final list have been completed or corrected and make recommendations to ENGINEER concerning acceptance.

**SECTION 500 - SPECIAL SERVICES**

**Task 510 - Warranty**

The ENGINEER shall provide services after completion of the construction phase, such as inspections during the 12-month guarantee/warranty period, reporting observed discrepancies under guarantees called for in the construction documents, and provide assistance for resolution of defects to be corrected under warranty.

## **Task 515 – Plant Operation, Shutdown, and Multiple Startup Assistance**

The Contractor will be working at an operating wastewater treatment facility. There will be several shutdowns associated with the new work that needs to be performed within the vicinity of existing structures, process areas, channels, etc. Extensive coordination would be required with the Contractor to keep the plant shutdowns to a minimum.

The ENGINEER shall review the Contractors proposals for temporary conveyance and/or processing facilities. For work in the areas of process shutdowns, the ENGINEER shall review list of labor, materials, estimation of time, and equipment necessary and a written description of the steps that will be taken for work in that particular process shutdown. In addition, for each process shutdown, the ENGINEER will meet with the Contractor one week prior to the shutdown time.

The new unit processes will come on line as soon as they are installed and start up services will need to be performed to bring equipment on line. The ENGINEER shall provide start-up assistance services for the processes as they come online. Startup services shall be sufficient to transfer finished work from a construction status to operating, functional system(s). Such services may include review of contractor's start up plan, prepare and coordinate a start-up plan and procedures for CITY personnel use, supervise during start-up procedures, and assist the CITY personnel during the period of initial operation.

## **Task 530 - Training**

The ENGINEER shall review Contractor's training plan and instruction materials for compliance with construction documents. Contractor or Manufacturer training presentations shall be scheduled and coordinated with CITY personnel and facility operation. ENGINEER shall provide instruction to CITY personnel on the project objectives, design intent, and system operational procedures.

Specific training services shall consist of the following:

1. Contractor's and manufacturer's training.
  - A. ENGINEER shall coordinate and monitor the Contractor's and manufacturer's training of CITY personnel.
    1. Discuss the preliminary course and lesson plan development with the Contractor and the manufacturer. One meeting shall be held with CITY's operational staff and the Contractor for this discussion.
    2. Review and approve lesson plans and course materials.
    3. Liaison between CITY and Contractor.
    4. Monitor training sessions.
      - a. Monitor attendance
      - b. Evaluate course
      - c. Assist classroom discussions
    5. Report to CITY for each training class conducted.
2. System training.
  - A. ENGINEER shall provide training on the design and operation of the major process systems to the CITY personnel.

1. Prepare a training outline, schedule and lesson plan format for review and approval by CITY staff. Review the training outline in one meeting with CITY staff and incorporate comments and revisions as appropriate. Training will be provided on the following major process systems:
  - Influent Pump Station
  - Headworks
  - Aeration Basins
  - RAS/WAS Pump Station
  - Secondary Clarifiers
  - Flocculation Basins and Filters
  - Chlorine Contact Basins
  - Bulk Sodium Hypochlorite Facility
  - Sludge Holding Tanks
  - Dewatering
  - Reclaimed Water Pump Station
  - Backwash Pump Station
  - Effluent Pump Station
  
2. Develop training lesson plans and presentation materials including training guides for the major process systems and submit the lesson plans to CITY staff for review before finalizing. The lesson plans shall include the following subjects:
  - Purpose and design intent of system
  - Process operations and principles
  - System controls and control strategies
  - Specific sampling, monitoring, and process calculations
  
3. Conduct training on the major process systems. Training will consist of up to 4 hours of classroom training for each system, followed by field orientation or hands-on instruction.

**Task 565 Programming and Graphics Configuration Assistance**

The ENGINEER shall provide assistance to the Contractor during programming for the Distributive Control System (DCS) and configuration of graphics for the operator interface.

The ENGINEER shall review and coordinate new and modified DCS graphic screens with the City and the Contractor. The ENGINEER shall also coordinate programming data that must be determined in the field, such as alarm setpoints, PID tuning parameters, and control setpoints.

The ENGINEER shall coordinate with the Foxboro programmers and be available during these site visits to facilitate installation and testing of new DCS programming, and assist in minimizing disruptions to current plant operations.

**List of Personnel**

- |                     |  |
|---------------------|--|
| 1. Steve Todd       | Principal                                    |
| 2. Uday Gandhe      | Principal/Project Manager                    |
| 3. Ed McCurdy       | Construction Manager                         |
| 4. Phil Noonan      | Asst Project Manager                         |
| 5. Val Hammer       | Resident Project Representative              |
| 6. Dan Booker       | Lead Project Engineer                        |
| 7. Jorge Navarro    | Project Engineer                             |
| 8. Toby Teegerstrom | Project Engineer/Start-up/Process Specialist |
| 9. Miles Costanza   | Project Engineer                             |

- |                     |                          |
|---------------------|--------------------------|
| 10. Srikanth Yamani | Project Engineer         |
| 11. Russ Wachter    | Principal                |
| 12. Chad Meyer      | Asst Project Manager     |
| 13. Kerry Owen      | Electrical Engineer      |
| 14. Tom Streed      | Instrumentation Engineer |

#### List of Firms

1. Wilson Engineers
2. Carollo Engineers
3. Nabar Stanley Brown
4. Ricker Atkinson McGee
5. Logan Simpson Design

**EXHIBIT B  
FEE SCHEDULE**

TASK No.	TASK DESCRIPTION	Staff Hours											LABOR COST	OTHER SUBS	TOTAL COST		
		PRIN \$185	PM \$160	SE \$125	PE \$97	CA \$150	RE \$125	INSP \$110	TECH \$80	CLER \$63	TOTAL HOURS						
<b>SECTION 200 - PROJECT ADMINISTRATION SERVICES DURING CONSTRUCTION</b>																	
210	Representation on Behalf of City	24	240	120		40									424	\$63,840	\$63,840
215	Administer the Construction Schedule		240	80		160							80		560	\$77,440	\$77,440
220	Perform Site Visits	40	420	320	800								800		1580	\$192,200	\$24,000
230	Review Shop Drawings & Test Results	40	800	2000	2800								400		6440	\$707,400	\$40,000
240	Issue Interpretations & Clarifications	40	600	1600	2400								400		5040	\$561,400	\$40,000
250	Certify Progress Payments		120	80	40	160									400	\$57,080	\$57,080
260	Substantial & Final Completion	4	48	64	64	48									228	\$29,828	\$29,828
	<b>SUBTOTAL - PROJECT ADMINISTRATION</b>	<b>148</b>	<b>2468</b>	<b>4264</b>	<b>6104</b>	<b>408</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1280</b>	<b>14672</b>	<b>\$1,689,188</b>	<b>\$104,000</b>				<b>\$1,793,188</b>
<b>SECTION 300 - ENGINEERING SERVICES DURING CONSTRUCTION</b>																	
320	Changes	40	420	800	1600							200	80		3140	\$350,840	\$350,840
330	Material Testing			40	128		240	120							528	\$60,616	\$75,000
340	Record Drawings	16	40	240	280							1200	320		2096	\$182,680	\$40,000
350	O&M Manual		40	160	240							80	40		560	\$58,600	\$58,600
370	Special Inspections						220	160								\$45,100	\$225,000
	<b>SUBTOTAL - PROJECT ADMINISTRATION</b>	<b>56</b>	<b>500</b>	<b>1240</b>	<b>2248</b>	<b>0</b>	<b>460</b>	<b>280</b>	<b>1480</b>	<b>440</b>	<b>6324</b>	<b>\$697,836</b>	<b>\$340,000</b>				<b>\$1,037,836</b>
<b>SECTION 400 - RESIDENT ENGINEERING SERVICES DURING CONSTRUCTION</b>																	
401	Schedules					80	80						40		200	\$24,520	\$24,520
405	Conferences					320	480	620					40		1460	\$178,720	\$178,720
410	Liaison					120	240	80					40		480	\$59,320	\$59,320
415	Shop Drawings and Samples					24	160	80					40		304	\$34,920	\$34,920
420	Inspection of Work, Rejection of Defective Work, Review of Tests					440	2000	8400							10840	\$1,240,000	\$1,340,000
425	Interpretation of Construction Documents					80	80	480							640	\$74,800	\$74,800
430	Changes					80	120	420					80		700	\$78,240	\$78,240
435	Records					120	240	420					800		1580	\$144,600	\$144,600
440	Reports					80	160	160					240		640	\$64,720	\$64,720
445	Payment Applications					80	240						120		440	\$49,560	\$49,560
450	Certificates, Operation and Maintenance Manuals					80	80	80					240		480	\$45,920	\$45,920
455	Substantial Completion / Final Acceptance	8	24	40	8	160	220	420					80		960	\$113,836	\$113,836
	<b>SUB TOTAL - RESIDENT ENGINEERING</b>	<b>8</b>	<b>24</b>	<b>40</b>	<b>8</b>	<b>1664</b>	<b>4100</b>	<b>11160</b>	<b>0</b>	<b>1720</b>	<b>18724</b>	<b>\$2,109,156</b>	<b>\$100,000</b>				<b>\$2,209,156</b>
<b>SECTION 500 - SPECIAL SERVICES</b>																	
510	Warranty		24	80	120										544	\$63,080	\$63,080
515	Plant Operation, Shutdown, and Startup Assistance		120	880	920	440	980	3200							6540	\$758,940	\$758,940
530	Training						40	40					40		440	\$45,640	\$45,640
565	Programming / Graphics Configuration Assistance	16	80	320	240										656	\$79,040	\$79,040

