

**PROFESSIONAL CONSTRUCTION SERVICES AGREEMENT**

THIS PROFESSIONAL CONSTRUCTION SERVICES AGREEMENT (Agreement) is made and entered into to be effective the 26th day of May, 2021 by and between the ORANGE COUNTY SANITATION DISTRICT, hereinafter referred to as "SANITATION DISTRICT", and BLACK & VEATCH CORPORATION, hereinafter referred to as "CONSULTANT".

**WITNESSETH:**

WHEREAS, the SANITATION DISTRICT desires to engage a CONSULTANT to provide Construction Support Services for **Contract No. P2-98A, A-Side Primary Clarifiers Replacement at Plant 2**; and,

WHEREAS, CONSULTANT is qualified to provide the necessary services for Construction Support Services in connection with these requirements; and,

WHEREAS, the SANITATION DISTRICT has adopted procedures in accordance with the SANITATION DISTRICT's Purchasing Ordinance Section 4.03(B) for the continuation of services and has proceeded in accordance with said procedures to perform this work; and,

WHEREAS, at its regular meeting on May 26, 2021 the Board of Directors, by Minute Order, accepted the recommendation of the Operations Committee pursuant to SANITATION DISTRICT's Purchasing Ordinance to approve this Agreement between the SANITATION DISTRICT and CONSULTANT.

NOW, THEREFORE, in consideration of the promises and mutual benefits, which will result to the parties in carrying out the terms of this Agreement, it is mutually agreed as follows:

**1. SCOPE OF WORK**

CONSULTANT agrees to furnish necessary professional and technical services to accomplish those project elements outlined in the Scope of Work attached hereto as "Attachment A", and by this reference made a part of this Agreement.

- A. The CONSULTANT shall be responsible for the professional quality, technical accuracy, completeness, and coordination of all design, drawings, specifications, and other services furnished by the CONSULTANT under this Agreement, including the work performed by its Subconsultants. Where approval by the SANITATION DISTRICT is indicated, it is understood to be conceptual approval only and does not relieve the CONSULTANT of responsibility for complying with all laws, codes, industry standards and liability for damages caused by errors, omissions, noncompliance with industry standards, and/or negligence on the part of the CONSULTANT or its Subconsultants.
- B. CONSULTANT is responsible for the quality of work prepared under this Agreement and shall ensure that all work is performed to the standards of best engineering practice for clarity, uniformity, and completeness.

C. In the event that work is not performed to the satisfaction of the SANITATION DISTRICT and does not conform to the requirements of this Agreement or any applicable industry standards, the CONSULTANT shall, without additional compensation, promptly correct or revise any errors or deficiencies in its designs, drawings, specifications, or other services within the timeframe specified by the Project Engineer/Project Manager. The SANITATION DISTRICT may charge to CONSULTANT all costs, expenses and damages associated with any such corrections or revisions.

D. All CADD drawings, figures, and other work shall be produced by CONSULTANTS and Subconsultants using the SANITATION DISTRICT standard software. Conversion of CADD work from any other non-standard CADD format to the SANITATION DISTRICT format shall not be acceptable in lieu of this requirement.

Electronic files shall be subject to an acceptance period of 30 calendar days during which the SANITATION DISTRICT shall perform appropriate acceptance tests. CONSULTANT shall correct any discrepancies or errors detected and reported within the acceptance period at no additional cost to the SANITATION DISTRICT.

E. All professional services performed by the CONSULTANT, including but not limited to all drafts, data, correspondence, proposals, reports, and estimates compiled or composed by the CONSULTANT, pursuant to this Agreement, are for the sole use of the SANITATION DISTRICT, its agents and employees. Neither the documents nor their contents shall be released to any third party without the prior written consent of the SANITATION DISTRICT. This provision does not apply to information that (a) was publicly known, or otherwise known to the CONSULTANT, at the time that it was disclosed to the CONSULTANT by the SANITATION DISTRICT, (b) subsequently becomes publicly known to the CONSULTANT other than through disclosure by the SANITATION DISTRICT.

F. The SANITATION DISTRICT shall furnish the CONSULTANT available studies, reports and other data pertinent to the CONSULTANT's service; obtain or authorize the CONSULTANT to obtain or provide additional reports and data as required; furnish to the CONSULTANT services of others required for the performance of the CONSULTANT's services hereunder, and the CONSULTANT shall be entitled to use and rely upon all such information and services provided by the SANITATION DISTRICT or others in performing the CONSULTANT's services under this Agreement.

G. CONSULTANT shall not be responsible for delays caused by circumstances beyond its reasonable control, including, but not limited to (1) strikes, lockouts, work slowdowns or stoppages or accidents, and (2) acts of God.

While Consultant has made reasonable efforts to incorporate into its plan for the Project any known current project impacts of the COVID-19 pandemic, CONSULTANT has not accounted for, and is not responsible for, unknown future changes due to the COVID-19 pandemic, including, without limitation, additional restrictions by government agencies or others (such as the availability of the site

for access or client or consultant staff or others) to the extent they delay or otherwise impact the Project. In that event, CONSULTANT will notify the SANITATION DISTRICT and work in good faith to equitably address any unexpected impacts therefrom.

## 2. COMPENSATION

Total compensation shall be paid to CONSULTANT for services in accordance with the following provisions:

### A. Total Compensation

Total compensation shall be in an amount not to exceed Eight Million Four Hundred Thousand Dollars (\$8,400,000.00). Total compensation to CONSULTANT including burdened labor (salaries plus benefits), overhead, profit, direct costs, and Subconsultant(s) fees and costs shall not exceed the sum set forth in Attachment "E" - Fee Proposal.

### B. Labor

As a portion of the total compensation to be paid to CONSULTANT, the SANITATION DISTRICT shall pay to CONSULTANT a sum equal to the burdened salaries (salaries plus benefits) actually paid by CONSULTANT charged on an hourly-rate basis to this project and paid to the personnel of CONSULTANT. Upon request of the SANITATION DISTRICT, CONSULTANT shall provide the SANITATION DISTRICT with certified payroll records of all employees' work that is charged to this project.

### C. Overhead

As a portion of the total compensation to be paid to CONSULTANT, the SANITATION DISTRICT shall compensate CONSULTANT and Subconsultants for overhead at the rate equal to the percentage of burdened labor as specified in Attachment "E" - Fee Proposal.

### D. Profit

Profit for CONSULTANT and Subconsultants shall be a percentage of consulting services fees (Burdened Labor and Overhead). When the consulting or subconsulting services amount is \$250,000 or less, the maximum Profit shall be 10%. Between \$250,000 and \$2,500,000, the maximum Profit shall be limited by a straight declining percentage between 10% and 5%. For consulting or subconsulting services fees with a value greater than \$2,500,000, the maximum Profit shall be 5%. Addenda shall be governed by the same maximum Profit percentage after adding consulting services fees.

As a portion of the total compensation to be paid to CONSULTANT and Subconsultants, the SANITATION DISTRICT shall pay profit for all services rendered by CONSULTANT and Subconsultants for this project according to Attachment "E" - Fee Proposal.

E. Subconsultants

For any Subconsultant whose fees for services are greater than or equal to \$100,000 (excluding out-of-pocket costs), CONSULTANT shall pay to Subconsultant total compensation in accordance with the Subconsultant amount specified in Attachment "E" - Fee Proposal.

For any Subconsultant whose fees for services are less than \$100,000, CONSULTANT may pay to Subconsultant total compensation on an hourly-rate basis per the attached hourly rate Schedule as applicable and as specified in the Scope of Work. The SANITATION DISTRICT shall pay to CONSULTANT the actual costs of Subconsultant fees and charges in an amount not to exceed the sum set forth in Attachment "E" - Fee Proposal.

F. Direct Costs

The SANITATION DISTRICT shall pay to CONSULTANT and Subconsultants the actual costs of permits and associated fees, travel and licenses for an amount not to exceed the sum set forth in Attachment "E" - Fee Proposal. The SANITATION DISTRICT shall also pay to CONSULTANT actual costs for equipment rentals, leases or purchases with prior approval of the SANITATION DISTRICT. Upon request, CONSULTANT shall provide to the SANITATION DISTRICT receipts and other documentary records to support CONSULTANT's request for reimbursement of these amounts, see Attachment "D" – Allowable Direct Costs. All incidental expenses shall be included in overhead pursuant to Section 2 - COMPENSATION above.

G. Other Direct Costs

Other Direct Costs incurred by CONSULTANT and its Contractor due to modifications in scope of work resulting from field investigations and field work required by Contract. These items may include special equipment, test equipment and tooling and other materials and services not previously identified. Refer to attachment "D" Allowable Direct Costs for payment information.

H. Reimbursable Direct Costs

The SANITATION DISTRICT will reimburse the CONSULTANT for reasonable travel and business expenses as described in this section and further described in Attachment "D" - Allowable Direct Costs to this Agreement. The reimbursement of the above mentioned expenses will be based on an "accountable plan" as considered by Internal Revenue Service (IRS). The plan includes a combination of reimbursements based upon receipts and a "per diem" component approved by IRS. The most recent schedule of the per diem rates utilized by the SANITATION DISTRICT can be found on the U.S. General Service Administration website at <http://www.gsa.gov/portal/category/104711#>.

The CONSULTANT shall be responsible for the most economical and practical means of management of reimbursable costs inclusive but not limited to travel, lodging and meals arrangements. The SANITATION DISTRICT shall apply the

most economic and practical method of reimbursement which may include reimbursements based upon receipts and/or “per diem” as deemed the most practical.

CONSULTANT shall be responsible for returning to the SANITATION DISTRICT any excess reimbursements after the reimbursement has been paid by the SANITATION DISTRICT.

Travel and travel arrangements – Any travel involving airfare, overnight stays or multiple day attendance must be approved by the SANITATION DISTRICT in advance.

Local Travel is considered travel by the CONSULTANT within the SANITATION DISTRICT general geographical area which includes Orange, Los Angeles, Ventura, San Bernardino, Riverside, San Diego, Imperial and Kern Counties. Automobile mileage is reimbursable if CONSULTANT is required to utilize personal vehicle for local travel.

Lodging – Overnight stays will not be approved by the SANITATION DISTRICT for local travel. However, under certain circumstances overnight stay may be allowed at the discretion of the SANITATION DISTRICT based on reasonableness of meeting schedules and the amount of time required for travel by the CONSULTANT. Such determination will be made on a case-by-case basis and at the discretion of the SANITATION DISTRICT.

Travel Meals – Per-diem rates as approved by IRS shall be utilized for travel meals reimbursements. Per diem rates shall be applied to meals that are appropriate for travel times. Receipts are not required for the approved meals.

Additional details related to the reimbursement of the allowable direct costs are provided in the Attachment “D” - Allowable Direct Costs of this Agreement.

I. Limitation of Costs

If, at any time, CONSULTANT estimates the cost of performing the services described in CONSULTANT’s Proposal will exceed the not-to-exceed amount of the Agreement, including approved additional compensation, CONSULTANT shall notify the SANITATION DISTRICT immediately, and in writing. This written notice shall indicate the additional amount necessary to complete the services. Any cost incurred in excess of the approved not-to-exceed amount, without the express written consent of the SANITATION DISTRICT’s authorized representative shall be at CONSULTANT’s own risk. This written notice shall be provided separately from, and in addition to any notification requirements contained in the CONSULTANT’s invoice and monthly progress report. Failure to notify the SANITATION DISTRICT that the services cannot be completed within the authorized not-to-exceed amount is a material breach of this Agreement.

### 3. REALLOCATION OF TOTAL COMPENSATION

The SANITATION DISTRICT, by its Director of Engineering, shall have the right to approve a reallocation of the incremental amounts constituting the total compensation, provided that the total compensation is not increased.

### 4. PAYMENT

- A. Monthly Invoice: CONSULTANT shall include in its monthly invoice, a detailed breakdown of costs associated with the performance of any corrections or revisions of the work for that invoicing period. CONSULTANT shall allocate costs in the same manner as it would for payment requests as described in this Section of the Agreement. CONSULTANT shall warrant and certify the accuracy of these costs and understand that submitted costs are subject to Section 11 - AUDIT PROVISIONS.
- B. CONSULTANT may submit monthly or periodic statements requesting payment for those items included in Section 2 - COMPENSATION hereof in the format as required by the SANITATION DISTRICT. Such requests shall be based upon the amount and value of the work and services performed by CONSULTANT under this Agreement and shall be prepared by CONSULTANT and accompanied by such supporting data, including a detailed breakdown of all costs incurred and project element work performed during the period covered by the statement, as may be required by the SANITATION DISTRICT.

Upon approval of such payment request by the SANITATION DISTRICT, payment shall be made to CONSULTANT as soon as practicable of one hundred percent (100%) of the invoiced amount on a per-project-element basis.

If the SANITATION DISTRICT determines that the work under this Agreement or any specified project element hereunder, is incomplete and that the amount of payment is in excess of:

- i. The amount considered by the SANITATION DISTRICT's Director of Engineering to be adequate for the protection of the SANITATION DISTRICT; or
- ii. The percentage of the work accomplished for each project element.

He may, at his discretion, retain an amount equal to that which insures that the total amount paid to that date does not exceed the percentage of the completed work for each project element or the project in its entirety.

- C. CONSULTANT may submit periodic payment requests for each 30-day period of this Agreement for the profit as set forth in Section 2 - COMPENSATION above. Said profit payment request shall be proportionate to the work actually accomplished to date on a per-project-element basis. In the event the SANITATION DISTRICT's Director of Engineering determines that no satisfactory progress has been made since the prior payment, or in the event of a delay in the work progress for any reason, the SANITATION DISTRICT shall have the right to withhold any scheduled proportionate profit payment.

- D. Upon satisfactory completion by CONSULTANT of the work called for under the terms of this Agreement, and upon acceptance of such work by the SANITATION DISTRICT, CONSULTANT will be paid the unpaid balance of any money due for such work, including any retained percentages relating to this portion of the work.
- E. Upon satisfactory completion of the work performed hereunder and prior to final payment under this Agreement for such work, or prior settlement upon termination of this Agreement, and as a condition precedent thereto, CONSULTANT shall execute and deliver to the SANITATION DISTRICT a release of all claims against the SANITATION DISTRICT arising under or by virtue of this Agreement other than such claims, if any, as may be specifically exempted by CONSULTANT from the operation of the release in stated amounts to be set forth therein.
- F. Pursuant to the California False Claims Act (Government Code Sections 12650-12655), any CONSULTANT that knowingly submits a false claim to the SANITATION DISTRICT for compensation under the terms of this Agreement may be held liable for treble damages and up to a ten thousand dollars (\$10,000) civil penalty for each false claim submitted. This Section shall also be binding on all Subconsultants.

A CONSULTANT or Subconsultant shall be deemed to have submitted a false claim when the CONSULTANT or Subconsultant: a) knowingly presents or causes to be presented to an officer or employee of the SANITATION DISTRICT a false claim or request for payment or approval; b) knowingly makes, uses, or causes to be made or used a false record or statement to get a false claim paid or approved by the SANITATION DISTRICT; c) conspires to defraud the SANITATION DISTRICT by getting a false claim allowed or paid by the SANITATION DISTRICT; d) knowingly makes, uses, or causes to be made or used a false record or statement to conceal, avoid, or decrease an obligation to the SANITATION DISTRICT; or e) is a beneficiary of an inadvertent submission of a false claim to the SANITATION DISTRICT, and fails to disclose the false claim to the SANITATION DISTRICT within a reasonable time after discovery of the false claim.

**5. CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS (DIR) REGISTRATION AND RECORD OF WAGES**

- A. To the extent CONSULTANT's employees and/or Subconsultants who will perform Work during the design and preconstruction phases of a construction contract for which Prevailing Wage Determinations have been issued by the DIR and as more specifically defined under Labor Code Section 1720 et seq, CONSULTANT and Subconsultants shall comply with the registration requirements of Labor Code Section 1725.5. Pursuant to Labor Code Section 1771.4, the Work is subject to compliance monitoring and enforcement by the DIR.
- B. The CONSULTANT and Subconsultants shall maintain accurate payroll records and shall comply with all the provisions of Labor Code Section 1776, and shall submit payroll records to the Labor Commissioner pursuant to Labor Code

Section 1771.4(a) (3). Penalties for non-compliance with the requirements of Section 1776 may be deducted from progress payments per Section 1776.

- C. Pursuant to Labor Code Section 1776, the CONSULTANT and Subconsultants shall furnish a copy of all certified payroll records to SANITATION DISTRICT and/or general public upon request, provided the public request is made through SANITATION DISTRICT, the Division of Apprenticeship Standards or the Division of Labor Enforcement of the Department of Industrial Relations.
- D. The CONSULTANT and Subconsultants shall comply with the job site notices posting requirements established by the Labor Commissioner per Title 8, California Code of Regulation Section 16461(e).

**6. DOCUMENT OWNERSHIP – SUBSEQUENT CHANGES TO PLANS AND SPECIFICATIONS**

- A. Ownership of Documents for the Professional Services performed.  

All documents, including but not limited to, original plans, studies, sketches, drawings, computer printouts and disk files, and specifications prepared in connection with or related to the Scope of Work or Professional Services, shall be the property of the SANITATION DISTRICT. The SANITATION DISTRICT's ownership of these documents includes use of, reproduction or reuse of and all incidental rights, whether or not the work for which they were prepared has been performed. The SANITATION DISTRICT ownership entitlement arises upon payment or any partial payment for work performed and includes ownership of any and all work product completed prior to that payment. This Section shall apply whether the CONSULTANT's Professional Services are terminated: a) by the completion of the Agreement, or b) in accordance with other provisions of this Agreement. Notwithstanding any other provision of this paragraph or Agreement, the CONSULTANT shall have the right to make copies of all such plans, studies, sketches, drawings, computer printouts and disk files, and specifications.
- B. CONSULTANT shall not be responsible for damage caused by subsequent changes to or uses of the plans or specifications, where the subsequent changes or uses are not authorized or approved by CONSULTANT, provided that the service rendered by CONSULTANT was not a proximate cause of the damage.

**7. INSURANCE**

- A. General
  - i. Insurance shall be issued and underwritten by insurance companies acceptable to the SANITATION DISTRICT.
  - ii. Insurers must have an "A-" Policyholder's Rating, or better, and Financial Rating of at least Class VIII, or better, in accordance with the most current A.M. Best's Guide Rating. However, the SANITATION DISTRICT will accept State Compensation Insurance Fund, for the required policy of Worker's Compensation Insurance subject to the SANITATION DISTRICT's option to require a change in insurer in the event the State Fund financial rating is



decreased below "B". Further, the SANITATION DISTRICT will require CONSULTANT to substitute any insurer whose rating drops below the levels herein specified. Said substitution shall occur within twenty (20) days of written notice to CONSULTANT, by the SANITATION DISTRICT or its agent.

iii. Coverage shall be in effect prior to the commencement of any work under this Agreement.

**B. General Liability**

The CONSULTANT shall maintain during the life of this Agreement, including the period of warranty, Commercial General Liability Insurance written on an occurrence basis providing the following minimum limits of liability coverage: Two Million Dollars (\$2,000,000) per occurrence with Four Million Dollars (\$4,000,000) aggregate. Said insurance shall include coverage for the following hazards: Premises-Operations, products liability/completed operations (including any product manufactured or assembled), broad form property damage, contractual liability, independent contractors liability, personal and advertising injury, mobile equipment, vicarious liability, and cross liability and severability of interest clauses. A statement on an insurance certificate will not be accepted in lieu of the actual additional insured endorsement(s). If requested by SANITATION DISTRICT and applicable, XCU coverage (Explosion, Collapse and Underground) and Riggers/On Hook Liability must be included in the General Liability policy and coverage must be reflected on the submitted Certificate of Insurance.

**C. Umbrella Excess Liability**

The minimum limits of general liability and Automotive Liability Insurance required, as set forth herein, shall be provided for through either a single policy of primary insurance or a combination of policies of primary and umbrella excess coverage. Umbrella excess liability coverage shall be issued with limits of liability which, when combined with the primary insurance, will equal the minimum limits for general liability and automotive liability.

**D. Automotive/Vehicle liability Insurance**

The CONSULTANT shall maintain a policy of Automotive Liability Insurance on a comprehensive form covering all owned, non-owned, and hired automobiles, trucks, and other vehicles providing the following minimum limits of liability coverage: Combined single limit of One Million Dollars (\$1,000,000) or alternatively, Five Hundred Thousand Dollars (\$500,000) per person for bodily injury, One Million Dollars (\$1,000,000) per accident for bodily injury, and Five Hundred Thousand Dollars (\$500,000) per accident for property damage. A statement on an insurance certificate will not be accepted in lieu of the actual additional insured endorsement.

E. Drone Liability Insurance

If a drone will be used, drone liability insurance must be maintained by CONSULTANT in the amount of one million dollars (\$1,000,000) in form acceptable to the SANITATION DISTRICT.

F. Worker's Compensation Insurance

The CONSULTANT shall provide such Workers' Compensation Insurance as required by the Labor Code of the State of California in the amount of the statutory limit, including Employer's Liability Insurance with a minimum limit of One Million Dollars (\$1,000,000) per occurrence. Such Worker's Compensation Insurance shall be endorsed to provide for a waiver of subrogation in favor of the SANITATION DISTRICT. A statement on an insurance certificate will not be accepted in lieu of the actual endorsements unless the insurance carrier is State of California Insurance Fund and the identifier "SCIF" and endorsement numbers 2570 and 2065 are referenced on the certificate of insurance. If an exposure to Jones Act liability may exist, the insurance required herein shall include coverage for Jones Act claims.

G. Errors and Omissions/Professional Liability

CONSULTANT shall maintain in full force and effect, throughout the term of this Agreement, standard industry form professional negligence errors and omissions insurance coverage in an amount of not less than Five Million Dollars (\$5,000,000) with limits in accordance with the provisions of this Paragraph. If the policy of insurance is written on a "claims made" basis, said policy shall be continued in full force and effect at all times during the term of this Agreement, and for a period of five (5) years from the date of the completion of the services hereunder.

In the event of termination of said policy during this period, CONSULTANT shall obtain continuing insurance coverage for the prior acts or omissions of CONSULTANT during the course of performing services under the term of this Agreement. Said coverage shall be evidenced by either a new policy evidencing no gap in coverage or by separate extended "tail" coverage with the present or new carrier.

In the event the present policy of insurance is written on an "occurrence" basis, said policy shall be continued in full force and effect during the term of this Agreement or until completion of the services provided for in this Agreement, whichever is later. In the event of termination of said policy during this period, new coverage shall be obtained for the required period to insure for the prior acts of CONSULTANT during the course of performing services under the term of this Agreement.

CONSULTANT shall provide to the SANITATION DISTRICT a certificate of insurance in a form acceptable to the SANITATION DISTRICT indicating the deductible or self-retention amounts and the expiration date of said policy, and shall provide renewal certificates not less than ten (10) days prior to the expiration of each policy term.

H. Proof of Coverage

The CONSULTANT shall furnish the SANITATION DISTRICT with original certificates and amendatory endorsements effecting coverage. Said certificates and endorsements shall conform to the requirements herein stated. All certificates and endorsements are to be received and approved by the SANITATION DISTRICT before work commences. CONSULTANT shall provide the SANITATION DISTRICT with copies of its insurance certificates and amendatory endorsements affecting coverage. Confidential information may be redacted from said policies, provided that verification of coverage, name of carriers and agent/broker may not be redacted. Said policies and endorsements shall conform to the requirements herein stated.

The following are approved forms that must be submitted as proof of coverage:

- Certificate of Insurance ACORD Form 25 (5/2010) or equivalent.
- Additional Insurance (General Liability) (ISO Form) CG2010 11 85 or  
The combination of (ISO Forms) CG 2010 10 01 and CG 2037 10 01 or equivalent.  
  
All other Additional Insured endorsements must be submitted for approval by the SANITATION DISTRICT, and the SANITATION DISTRICT may reject alternatives that provide different or less coverage to the SANITATION DISTRICT.
- Additional Insured (Auto Liability) Submit endorsement provided by carrier for the SANITATION DISTRICT approval.
- Waiver of Subrogation State Compensation Insurance Fund Endorsement No. 2570 or equivalent.
- Cancellation Notice State Compensation Insurance Fund Endorsement No. 2065 or equivalent.

I. Cancellation Notice

Each insurance policy required herein shall be endorsed to state that coverage shall not be cancelled by either party, except after thirty (30) days' prior written notice. The Cancellation Section of ACORD Form 25 (5/2010) shall state the required thirty (30) days' written notification. The policy shall not terminate, nor shall it be cancelled, nor the coverage reduced until thirty (30) days after written notice is given to the SANITATION DISTRICT except for nonpayment of premium, which shall require not less than ten (10) days written notice to the SANITATION DISTRICT. Should there be changes in coverage or an increase in deductible or SIR amounts, the CONSULTANT shall send to the SANITATION DISTRICT a certified letter which includes a description of the changes in

coverage and/or any increase in deductible or SIR amounts. The certified letter must be sent to the attention of Risk Management, and shall be received by the SANITATION DISTRICT not less than thirty (30) days prior to the effective date of the change(s) if the change would reduce coverage or increase deductibles or SIR amounts or otherwise reduce or limit the scope of insurance coverage provided to the SANITATION DISTRICT.

J. Primary Insurance

All liability policies (with the exception of Workers' Compensation and Professional Liability) shall contain a Primary and Non Contributory Clause. Any other insurance maintained by the SANITATION DISTRICT shall be excess and not contributing with the insurance provided by CONSULTANT.

K. Separation of Insured

All liability policies (with the exception of Workers' Compensation and Professional Liability) shall contain a "Separation of Insureds" clause.

L. Non-Limiting (if applicable)

Nothing in this document shall be construed as limiting in any way, nor shall it limit the indemnification provision contained in this Agreement, or the extent to which CONSULTANT may be held responsible for payment of damages to persons or property.

M. Deductibles and Self-Insured Retentions

Any deductible and/or self-insured retention must be declared to the SANITATION DISTRICT on the Certificate of Insurance. All deductibles and/or self-insured retentions require approval by the SANITATION DISTRICT. At the option of the SANITATION DISTRICT, either: the insurer shall reduce or eliminate such deductible or self-insured retention as respects the SANITATION DISTRICT; or the CONSULTANT shall provide a financial guarantee satisfactory to the SANITATION DISTRICT guaranteeing payment of losses and related investigations, claim administration and defense expenses. The SANITATION DISTRICT will not invoke the option expressed in this paragraph unless it has reasonable cause to question CONSULTANT's financial strength.

N. Defense Costs

Liability policies (except Errors and Omissions/Professional Liability) shall have a provision that defense costs for all insureds and additional insureds are paid in addition to and do not deplete any policy limits.

O. Subconsultants

The CONSULTANT shall be responsible to establish insurance requirements for any Subconsultant hired by the CONSULTANT. The insurance shall be in amounts and types reasonably sufficient to deal with the risk of loss involving the Subconsultant's operations and work.

P. Limits Are Minimums

If the CONSULTANT maintains higher limits than any minimums shown above, then SANITATION DISTRICT requires and shall be entitled to coverage for the higher limits maintained by CONSULTANT. Nothing in this section, however, requires CONSULTANT in the absence of litigation to reveal its Errors and Omissions/Professional Liability limits beyond that required herein Section 7.

**8. SCOPE CHANGES**

In the event of a change in the Scope of Work, requested by SANITATION DISTRICT, the parties hereto shall execute an amendment to this Agreement setting forth with particularity all terms of the new Agreement, including but not limited to any additional CONSULTANT's fees.

**9. PROJECT TEAM AND SUBCONSULTANTS**

CONSULTANT shall provide to SANITATION DISTRICT, prior to execution of this Agreement, the names and full description of all Subconsultants and CONSULTANT's project team members anticipated to be used on this project by CONSULTANT. CONSULTANT shall include a description of the scope of work to be done by each Subconsultant and each CONSULTANT's project team member. CONSULTANT shall include the respective compensation amounts for CONSULTANT and each Subconsultant on a per-project-element basis, broken down as indicated in Section 2 - COMPENSATION.

There shall be no substitution of the listed Subconsultants and CONSULTANT's project team members without prior written approval by the SANITATION DISTRICT.

**10. ENGINEERING REGISTRATION**

The CONSULTANT's personnel are comprised of registered engineers and a staff of specialists and draftsmen in each department. The firm itself is not a registered engineer but represents and agrees that wherever in the performance of this Agreement requires the services of a registered engineer, such services hereunder will be performed under the direct supervision of registered engineers.

**11. AUDIT PROVISIONS**

- A. SANITATION DISTRICT retains the reasonable right to access, review, examine, and audit, any and all books, records, documents and any other evidence of procedures and practices that the SANITATION DISTRICT determines are necessary to discover and verify that the CONSULTANT is in compliance with all requirements under this Agreement. The CONSULTANT shall include the SANITATION DISTRICT's right as described above, in any and all of their subcontracts, and shall ensure that these rights are binding upon all Subconsultants.
- B. SANITATION DISTRICT retains the right to examine CONSULTANT's books, records, documents and any other evidence of procedures and practices that the SANITATION DISTRICT determines are necessary to discover and verify all

direct and indirect costs, of whatever nature, which are claimed to have been incurred, or anticipated to be incurred or to ensure CONSULTANT's compliance with all requirements under this Agreement during the term of this Agreement and for a period of three (3) years after its termination.

- C. CONSULTANT shall maintain complete and accurate records in accordance with generally accepted industry standard practices and the SANITATION DISTRICT's policy. The CONSULTANT shall make available to the SANITATION DISTRICT for review and audit, all project related accounting records and documents, and any other financial data within 15 days after receipt of notice from the SANITATION DISTRICT. Upon SANITATION DISTRICT's request, the CONSULTANT shall submit exact duplicates of originals of all requested records to the SANITATION DISTRICT. If an audit is performed, CONSULTANT shall ensure that a qualified employee of the CONSULTANT will be available to assist SANITATION DISTRICT's auditor in obtaining all project related accounting records and documents, and any other financial data.

## **12. LEGAL RELATIONSHIP BETWEEN PARTIES**

The legal relationship between the parties hereto is that of an independent contractor and nothing herein shall be deemed to make CONSULTANT an employee of the SANITATION DISTRICT.

## **13. NOTICES**

All notices hereunder and communications regarding the interpretation of the terms of this Agreement, or changes thereto, shall be effected by delivery of said notices in person or by depositing said notices in the U.S. mail, registered or certified mail, return receipt requested, postage prepaid.

Notices shall be mailed to the SANITATION DISTRICT at:

ORANGE COUNTY SANITATION DISTRICT  
10844 Ellis Avenue  
Fountain Valley, CA 92708-7018  
Attention: Ludwig Lopus, Senior Contracts Administrator  
Copy: Shahrzad Namini, Project Manager

Notices shall be mailed to CONSULTANT at:

BLACK & VEATCH CORPORATION  
550 S. Hope Street, Suite 2250  
Los Angeles, CA 90071  
Attention: James H. Clark, Senior Vice President

All communication regarding the Scope of Work, will be addressed to the Project Manager. Direction from other SANITATION DISTRICT's staff must be approved in writing by the SANITATION DISTRICT's Project Manager prior to action from the CONSULTANT.

#### **14. TERMINATION**

The SANITATION DISTRICT may terminate this Agreement at any time, without cause, upon giving thirty (30) days written notice to CONSULTANT. In the event of such termination, CONSULTANT shall be entitled to compensation for work performed on a prorated basis through and including the effective date of termination.

CONSULTANT shall be permitted to terminate this Agreement upon thirty (30) days written notice only if CONSULTANT is not compensated for billed amounts in accordance with the provisions of this Agreement, when the same are due.

Notice of termination shall be mailed to the SANITATION DISTRICT and/or CONSULTANT in accordance with Section 13 - NOTICES.

#### **15. DOCUMENTS AND STUDY MATERIALS**

The documents and study materials for this project shall become the property of the SANITATION DISTRICT upon the termination or completion of the work. CONSULTANT agrees to furnish to the SANITATION DISTRICT copies of all memoranda, correspondence, computation and study materials in its files pertaining to the work described in this Agreement, which is requested in writing by the SANITATION DISTRICT.

#### **16. COMPLIANCE**

##### **A. Labor**

CONSULTANT certifies by the execution of this Agreement that it pays employees not less than the minimum wage as defined by law, and that it does not discriminate in its employment with regard to race, color, religion, sex or national origin; that it is in compliance with all federal, state and local directives and executive orders regarding non-discrimination in employment; and that it agrees to demonstrate positively and aggressively the principle of equal opportunity in employment.

##### **B. Air Pollution**

CONSULTANT and its subconsultants and subcontractors shall comply with all applicable federal, state and local air pollution control laws and regulations.

#### **17. AGREEMENT EXECUTION AUTHORIZATION**

Both the SANITATION DISTRICT and CONSULTANT do covenant that each individual executing this document by and on behalf of each party is a person duly authorized to execute agreements for that party.

#### **18. DISPUTE RESOLUTION**

In the event of a dispute arising between the parties regarding performance or interpretation of this Agreement, the dispute shall be resolved by binding arbitration under the auspices of the Judicial Arbitration and Mediation Service ("JAMS"), or similar organization or entity conducting alternate dispute resolution services.

**19. ATTORNEY'S FEES, COSTS AND NECESSARY DISBURSEMENTS**

If any action at law or in equity or if any proceeding in the form of an Alternative Dispute Resolution (ADR) is necessary to enforce or interpret the terms of this Agreement, the prevailing party shall be entitled to reasonable attorney's fees, costs and necessary disbursements in addition to any other relief to which it may be entitled.

**20. PROGRESS REPORTS**

Monthly progress reports shall be submitted for review by the tenth day of the following month and must include as a minimum: 1) current activities, 2) future activities, 3) potential items that are not included in the Scope of Work, 4) concerns and possible delays, 5) percentage of completion, and 6) budget status.

**21. WARRANTY**

CONSULTANT shall perform its services in accordance with generally accepted industry and professional standards. If, within the 12-month period following completion of its services, the SANITATION DISTRICT informs CONSULTANT that any part of the services fails to meet those standards, CONSULTANT shall, within the time prescribed by the SANITATION DISTRICT, take all such actions as are necessary to correct or complete the noted deficiency(ies).

**22. INDEMNIFICATION**

To the fullest extent permitted by law, CONSULTANT shall indemnify, defend (at CONSULTANT's sole cost and expense and with legal counsel approved by the SANITATION DISTRICT, which approval shall not be unreasonably withheld), protect and hold harmless the SANITATION DISTRICT and all of SANITATION DISTRICT's officers, directors, employees, consultants, and agents (collectively the "Indemnified Parties"), from and against any and all claims, damages, liabilities, causes of action, suits, arbitration awards, losses, judgments, fines, penalties, costs and expenses including without limitation, attorneys' fees, disbursements and court costs, and all other professional, expert or consultants fees and costs and the SANITATION DISTRICT's general and administrative expenses (individually, a "Claim", or collectively, "Claims") which may arise from or are in any manner related, directly or indirectly, to any work performed, or any operations, activities, or services provided by CONSULTANT in carrying out its obligations under this Agreement to the extent of the negligent, recklessness and/or willful misconduct of CONSULTANT, its principals, officers, agents, employees, CONSULTANT's suppliers, consultants, subconsultants, subcontractors, and/or anyone employed directly or indirectly by any of them, regardless of any contributing negligence or strict liability of an Indemnified Party. Notwithstanding the foregoing, nothing herein shall be construed to require CONSULTANT to indemnify the Indemnified Parties from any Claim arising from:

(A) the sole or active negligence or willful misconduct of the Indemnified Parties; or

(B) a natural disaster or other act of God, such as an earthquake; or



(C) the independent action of a third party who is neither one of the Indemnified Parties nor the CONSULTANT, nor its principal, officer, agent, employee, nor CONSULTANT's supplier, consultant, subconsultant, subcontractor, nor anyone employed directly or indirectly by any of them.

Exceptions (A) through (B) above shall not apply, and CONSULTANT shall, to the fullest extent permitted by law, indemnify the Indemnified Parties, from Claims arising from more than one cause if any such cause taken alone would otherwise result in the obligation to indemnify hereunder.

CONSULTANT's liability for indemnification hereunder is in addition to any liability CONSULTANT may have to the SANITATION DISTRICT for a breach by CONSULTANT of any of the provisions of this Agreement. Under no circumstances shall the insurance requirements and limits set forth in this Agreement be construed to limit CONSULTANT's indemnification obligation or other liability hereunder.

The terms of this Agreement are contractual and the result of negotiation between the parties hereto. Accordingly, any rule of construction of contracts (including, without limitation, California Civil Code Section 1654) that ambiguities are to be construed against the drafting party, shall not be employed in the interpretation of this Agreement.

### **23. DUTY TO DEFEND**

The duty to defend hereunder is wholly independent of and separate from the duty to indemnify and such duty to defend shall exist regardless of any ultimate liability of CONSULTANT and shall be consistent with Civil Code Section 2782.8. Such defense obligation shall arise immediately upon presentation of a Claim by any person if, without regard to the merit of the Claim, such Claim could potentially result in an obligation to indemnify one or more Indemnified Parties, and upon written notice of such Claim being provided to CONSULTANT. Payment to CONSULTANT by any Indemnified Party or the payment or advance of defense costs by any Indemnified Party shall not be a condition precedent to enforcing such Indemnified Party's rights to indemnification hereunder. In the event a final judgment, arbitration, award, order, settlement, or other final resolution expressly determines that the claim did not arise out of, pertain to, or relate to the negligence, recklessness, or willful misconduct of the CONSULTANT, to any extent, then the DISTRICT will reimburse CONSULTANT for the reasonable costs of defending the Indemnified Parties against such claims.

CONSULTANT's indemnification obligation hereunder shall survive the expiration or earlier termination of this Agreement until such time as action against the Indemnified Parties for such matter indemnified hereunder is fully and finally barred by the applicable statute of limitations.

### **24. CONSULTANT PERFORMANCE**

The CONSULTANT's performance shall be evaluated by the SANITATION DISTRICT. A copy of the evaluation shall be sent to the CONSULTANT for comment. The evaluation, together with the comments, shall be retained by the SANITATION DISTRICT and may be considered in future CONSULTANT selection processes.

**25. COMPLIANCE WITH SANITATION DISTRICT POLICIES AND PROCEDURES**

CONSULTANT shall comply with all SANITATION DISTRICT policies and procedures including the Contractor Safety Standards, as applicable, all of which may be amended from time to time.

**26. CLOSEOUT**

When the SANITATION DISTRICT determines that all Work authorized under the Agreement is fully complete and that the SANITATION DISTRICT requires no further work from CONSULTANT, or the Agreement is otherwise terminated or expires in accordance with the terms of the Agreement, the SANITATION DISTRICT shall give the Consultant written notice that the Agreement will be closed out. CONSULTANT shall submit all outstanding billings, work submittals, deliverables, reports or similarly related documents as required under the Agreement within thirty (30) days of receipt of notice of Agreement closeout.

Upon receipt of CONSULTANT's submittals, the SANITATION DISTRICT shall commence a closeout audit of the Agreement and will either:

- i. Give the CONSULTANT a final Agreement Acceptance: or
- ii. Advise the CONSULTANT in writing of any outstanding item or items which must be furnished, completed, or corrected at the CONSULTANT's cost.

CONSULTANT shall be required to provide adequate resources to fully support any administrative closeout efforts identified in this Agreement. Such support must be provided within the timeframe requested by the SANITATION DISTRICT.

Notwithstanding the final Agreement Acceptance the CONSULTANT will not be relieved of its obligations hereunder, nor will the CONSULTANT be relieved of its obligations to complete any portions of the work, the non-completion of which were not disclosed to the SANITATION DISTRICT (regardless of whether such nondisclosures were fraudulent, negligent, or otherwise); and the CONSULTANT shall remain obligated under all those provisions of the Agreement which expressly or by their nature extend beyond and survive final Agreement Acceptance.

Any failure by the SANITATION DISTRICT to reject the work or to reject the CONSULTANT's request for final Agreement Acceptance as set forth above shall not be deemed to be acceptance of the work by the SANITATION DISTRICT for any purpose nor imply acceptance of, or agreement with, the CONSULTANT's request for final Agreement Acceptance.

**27. CONSULTANT'S OPINION OF COSTS**

The SANITATION DISTRICT acknowledges that construction estimates, financial analyses and feasibility projections are subject to many influences including, but not limited to, price of labor and materials, unknown or latent conditions of existing equipment or structures, and time or quality of performance by third parties. The SANITATION DISTRICT acknowledges that such influences may not be precisely

forecasted and are beyond the control of CONSULTANT and that actual costs incurred may vary substantially from the estimates prepared by CONSULTANT. CONSULTANT does not warrant or guarantee the accuracy of construction or development cost estimates.

**28. ENTIRE AGREEMENT**

This Agreement constitutes the entire understanding and agreement between the Parties and supersedes all previous negotiations between them pertaining to the subject matter thereof.

IN WITNESS WHEREOF, this Agreement has been executed in the name of the SANITATION DISTRICT, by its officers thereunto duly authorized, and CONSULTANT as of the day and year first above written.

**BLACK & VEATCH CORPORATION**

By \_\_\_\_\_ Date

\_\_\_\_\_  
Printed Name & Title

**ORANGE COUNTY SANITATION DISTRICT**

By \_\_\_\_\_ Date  
David John Shawver  
Board Chairman

By \_\_\_\_\_ Date  
Kelly A. Lore  
Clerk of the Board

By \_\_\_\_\_ Date  
Ruth Zintzun  
Purchasing & Contracts Manager

- Attachments: Attachment "A" – Scope of Work  
Attachment "B" – Not Used  
Attachment "C" – Not Used  
Attachment "D" – Allowable Direct Costs  
Attachment "E" – Fee Proposal  
Attachment "F" – Not Used  
Attachment "G" – Not Attached  
Attachment "H" – Not Used  
Attachment "I" – Cost Matrix and Summary  
Attachment "J" – Not Used  
Attachment "K" – Minor Subconsultant Hourly Rate Schedule  
Attachment "L" – Contractor Safety Standards

LL:yp

# **ATTACHMENT “A”**

## **SCOPE OF WORK**

**A-Side Primary Clarifiers Replacement at Plant 2  
Project No. P2-98A**

**PROFESSIONAL CONSTRUCTION SERVICES AGREEMENT  
(PCSA)**

**ATTACHMENT A – SCOPE OF WORK**

**DRAFT**

## TABLE OF CONTENTS

<b>I. SUMMARY</b> .....	<b>3</b>
<b>II. PROJECT SCHEDULE</b> .....	<b>3</b>
<b>III. PROJECT IMPLEMENTATION</b> .....	<b>3</b>
<b>PHASE 4 – CONSTRUCTION AND INSTALLATION SERVICES</b> .....	<b>3</b>
Task 4.1 – Project Management .....	4
Task 4.2 – Initial Project Meetings .....	4
Task 4.3 – Submittal Reviews.....	6
Task 4.4 – Request for Information (RFI).....	6
Task 4.5 – Contract Document Modifications and Design Changes.....	7
Task 4.6 – Construction Progress Meetings and Site Visits .....	7
Task 4.7 – Contractor’s Baseline Schedule and Schedule Updates Review .....	8
Task 4.8 – Specialty Services.....	8
<b>PHASE 5 – COMMISSIONING SERVICES</b> .....	<b>10</b>
Task 5.1 – Commissioning Team Meetings .....	10
Task 5.2 – Personnel Training .....	10
Task 5.3 – Equipment and Instrument Database (EID).....	11
Task 5.4 – Commissioning Support .....	12
Task 5.5 – Operations Manual and Procedures (OMaP).....	12
<b>PHASE 6 – CLOSEOUT</b> .....	<b>13</b>
Task 6.1 – Final Inspection and Punch Lists.....	13
Task 6.2 – Record Drawings.....	13
<b>IV. STAFF ASSISTANCE</b> .....	<b>15</b>
<b>V. QUANTITATIVE ASSUMPTIONS</b> .....	<b>15</b>

**I. SUMMARY**

Provide construction engineering support services for the construction and installation, commissioning, and closeout phases of this project.

**II. PROJECT SCHEDULE**

The schedule for the services specified in this Scope of Work (SOW) shall be provided per the construction contract schedule and the following schedule constraints:

<b>Task(s)</b>	<b>Period of Performance</b>
Submittals	As described under Task 4.3 titled "Submittal Reviews"
Requests for Information	As described under Task 4.4 titled "Request for Information (RFI)"
Record Drawings	Draft Final Record Drawings shall be submitted to OC San within 90 Calendar days of receipt from OC San of the accepted Contractor's As-Built Drawings. The final Record Drawings shall be submitted within 30 Calendar days of receipt of OC San's comments on the Draft Record Drawings. see also Task 6.2 requirements.

**III. PROJECT IMPLEMENTATION**

All Orange County Sanitation District (OC San) projects are divided into six phases. CONSULTANT shall provide engineering support services for Phase 4 Construction and Installation Services, Phase 5 Commissioning Services, and Phase 6 Closeout.

Phase 1 – Project Development – *Completed*

Phase 2 – Preliminary Design – *Completed*

Phase 3 – Final Design – *Completed*

**Phase 4 – Construction and Installation Services**

**Phase 5 – Commissioning Services**

**Phase 6 – Closeout**

**PHASE 4 – CONSTRUCTION AND INSTALLATION SERVICES**

OC San will administer and provide field inspection for the construction contract. Construction and support services shall be provided by the CONSULTANT as requested by OC San.

CONSULTANT shall provide the key management personnel as described in its proposal for this project. CONSULTANT shall not reassign the key project personnel without prior approval of OC San. OC San may request reassignment of any of the CONSULTANT's or its subconsultant's personnel based on that individual's performance.

For all services, the CONSULTANT shall refer to Engineering Design Guidelines, Chapter 01 for detailed requirements.



Quality Assurance/Quality Control (QA/QC): CONSULTANT shall administer a program of QA/QC procedures for producing quality work and shall effectively manage and control the work. Specific procedures shall include but not be limited to planning, coordination, tracking, checking, reviewing, and scheduling the work. CONSULTANT shall subject work products prepared by the CONSULTANT related to design changes to the CONSULTANT's in-house QA/QC procedures prior to submittal to OC San. QA/QC hours and costs shall be incorporated into other tasks within this SOW.

#### **Task 4.1 – Project Management**

CONSULTANT shall be responsible for detailed management of the project, including managing its subconsultants, and shall keep OC San apprised of the status of the project.

CONSULTANT shall conduct monthly project management meetings with OC San's Project Manager. It is assumed that half of the meetings will be attended virtually and half will be attended in-person. These meetings shall be attended by OC San's Project Manager and the CONSULTANT's Project Manager at a mutually agreeable time. The purpose of the meetings shall be to review the CONSULTANT Project Manager's progress report and the status of the project scope, budget, and any issues which may affect completion of the project. Meetings should be arranged so that the progress report can be submitted shortly prior to or at each meeting.

CONSULTANT shall prepare and submit monthly invoices to OC San no later than the second Wednesday of the following month. The invoices shall document the hours and billing rate for each person that works on the project for each task in the Work Breakdown Structure (WBS). Overhead, profit, and any direct costs shall also be shown for each task. As part of the summary section of the invoice, CONSULTANT shall also include the following information:

- Budget
- Current billing period invoicing
- Previous billing period "total invoiced to date"
- Budget amount remaining
- Current billing period "total percent invoice to date"
- Current billing period "total percent completed to date"

The monthly progress report and project schedule shall be submitted with the project invoice as part of the monthly request for payment.

CONSULTANT shall also provide the percent budget spent for each of OC San's WBS cost codes (i.e. by work package and phase). OC San shall provide a list of cost codes by phase to the CONSULTANT.

CONSULTANT shall also provide a summary of progress and expenditures to date.

This subtask shall apply to all phases of work (Phase 4, 5, and 6) under this PCSA.

The OC San will provide a sample invoice structure to the CONSULTANT at the beginning of the project.

#### **Task 4.2 – Initial Project Meetings**

##### **4.2.1 - Construction Hand-Off Workshop**

CONSULTANT shall participate in a two-hour virtual construction hand-off workshop. The purpose of the workshop is for the CONSULTANT and OC San design teams to transfer

project-specific knowledge to the OC San construction management and inspection staff who will be managing and monitoring construction. Topics that might be covered in this meeting include the following:

- Overview of objective of the project
- Review of project elements
- Review of sequencing constraints
- Key issues to be addressed during construction
- Identification of risks and discussions of contingency plans
- Specified submittal review meetings
- List of planned inspections

The workshop will be led by OC San's Project Engineer and the CONSULTANT's Project Discipline Leads. CONSULTANT shall include its Project Manager, Project Engineer, and four other discipline leads.

#### **4.2.2 - PMWeb Procedures Meeting**

The project will utilize PMWeb as the web-based Project Control Management System (PCMS). The PCMS shall be utilized for Project communication, tracking, and management. PCMS utilization is to facilitate the electronic exchange of information, the automation of key processes, and the overall management of the contract. When required by OC San, paper documents shall also be provided. In the event of discrepancy between the electronic version and paper documents, the electronic documents within PCMS shall govern.

CONSULTANT shall participate in a one-hour PMWeb procedure virtual meeting. The training will be provided by OC San's staff. The purpose of this meeting is to review the roles and logistics for review, approval, and provision of various construction related documents. CONSULTANT's Project Manager, Project Engineer, Project Assistant, and two other discipline leads shall participate in the virtual meeting.

#### **4.2.3 - Submittal Review Procedures**

CONSULTANT shall participate in a one-hour virtual Submittal Procedure Meeting. The purpose of this meeting is to review the roles and logistics for review and approval of the Contractor submittals. CONSULTANT's Project Manager and Project Engineer and document control staff who will be handling submittals shall participate in this meeting.

#### **4.2.4 - Preconstruction Conference**

CONSULTANT shall participate in a one-hour Preconstruction Conference attended virtually by OC San staff, the CONSULTANT, the Contractor, subcontractors, and vendors. This meeting will be scheduled and presided over by OC San. In this meeting, OC San's Resident Engineer will describe the CONSULTANT's role in the project as the Design Engineer and the services the CONSULTANT shall provide during construction. OC San will prepare meeting minutes and the CONSULTANT shall review and comment on the minutes. CONSULTANT'S Project Manager, Project Engineer and two other staff shall participate in this meeting.

#### **4.2.5 - Submittal Meetings**

CONSULTANT shall attend the pre-submittal and submittal review virtual meetings (otherwise) specified for the following specification sections:

OC San will prepare the agenda and meeting minutes and the CONSULTANT shall review and comment on the minutes. CONSULTANT’s Project Manager and Project Engineer shall attend virtually.

**Pre-Submittal Meetings:**

- 01783 – Equipment Service Manuals
- 11350 – Odor Control Systems
- 11410 – Circular Clarifier Equipment
- 13235 – Truss Supported Flat Aluminum Basin Covers
- 16340 – Medium Voltage Switchgear
- 16430 – Low Voltage Switchgear
- 16480 – Low Voltage Motor Control
- 16850 – Load Shed and Substation Local Area Hardware Network
- 17405 – Control Panels

**Submittal Review Meetings:**

<b>Spec Section</b>		<b>Upon Submittal Receipt</b>	<b>Upon Submittal Review</b>
16340	Medium-Voltage Switchgear	X	X
16430	Low Voltage Switchgear	X	X
16480	Low Voltage Motor Control	X	X
16850	Load Shed and Substation Local Area Network Hardware	X	X

**Task 4.3 – Submittal Reviews**

OC San will receive and log-in all submittals from the Contractor. OC San will forward copies of selected shop drawing and submittals requiring the CONSULTANT’s review. CONSULTANT shall review the shop drawings and submittals for conformance with the requirements of the Contract Documents and return the submittal review comments to OC San within ten calendar days after receipt of submittal, except for submittals requiring multi-discipline review. CONSULTANT shall return comments to OC San allowing enough time for OC San to incorporate all comments into a combined review comment set that OC San will return to the Contractor. CONSULTANT shall accommodate occasional expedited reviews for time sensitive submittals. Submittals shall include, but not be limited to, shop drawings, vendor tests, certifications, and test reports. All submittals will be made available electronically (PDF) through PMWeb.

See Section V - “Quantitative Assumptions” in this SOW for the estimated number of submittals.

**Task 4.4 – Request for Information (RFI)**

OC San will log in and forward to the CONSULTANT certain RFIs generated by the Contractor or OC San. CONSULTANT shall return written responses to OC San as soon as possible or within three working days of receipt of RFI, except for complex RFIs or those that may have cost impacts and previously discussed with OC San Resident Engineer, clarifying the

requirements of the Contract Documents. CONSULTANT shall generate necessary sketches, figures, and modifications to the drawings for clarifications. When required to avoid schedule delay or additional construction-related costs, the CONSULTANT shall expedite the review of time-sensitive RFIs.

If any changes to the Contract Drawings are required, the CONSULTANT shall prepare these drawings and submit them as AutoCAD files to OC San. The CONSULTANT shall update all AutoCAD drawings and specifications upon OC San acceptance of any changes resulting from RFIs and change orders.

All RFIs will be made available electronically (PDF) through PMWeb.

See Section V - "Quantitative Assumptions" in this SOW for the estimated number of RFIs.

#### **Task 4.5 – Contract Document Modifications and Design Changes**

If the Contract Documents require modifications due to changed conditions, OC San requested changes, omissions, or design errors, the CONSULTANT shall prepare preliminary Request for Proposal (RFP) documents and forward them to OC San, as needed. OC San shall review the RFP and request the CONSULTANT to incorporate any changes. OC San will issue the change order documents in a formal RFP or Field Change Order (FCO) to the Contractor. CONSULTANT shall forward design calculations and other design backup documents as necessary to OC San.

Any Contract Document that requires changes shall be identified with date of change and reference (RFI number, RFP number, FCO number, etc.) shown on the document. Changes shown on drawings shall be clearly marked and "clouded" for accurate identification of the scope of change by the Contractor and inspection staff. CONSULTANT shall maintain up-to-date Contract Documents. When a change is required on a Contract Drawing that has previously undergone a change, the updated drawing showing the previous change shall be used as the base document to identify new changes.

CONSULTANT shall submit complete change documentation to OC San for use in RFIs, RFPs, and FCOs. This change documentation shall a work summary, plan drawings, schematics, details, schedules, and specifications, as required.

CONSULTANT shall prepare cost estimates for the changes when requested by OC San.

See Section V - "Quantitative Assumptions" in this SOW for the estimated number of hours.

#### **Task 4.6 – Construction Progress Meetings and Site Visits**

##### **Task 4.6.1 – Construction Progress Meetings and Site Visits**

CONSULTANT shall attend weekly construction progress meetings. Attendance will be virtual for non-local staff. The scope shall include time for meeting preparation, travel time, follow-up, and review of meeting minutes. Progress meeting minutes will be prepared by OC San.

CONSULTANT shall attend or be available by phone for one-hour pre-construction weekly progress meetings. These meetings will be covered by the on-site design engineer.

CONSULTANT shall make field visits to assist in field problem resolution and design clarification/verification to help resolve construction issues as they arise and as requested by OC San. When possible, field visits shall be scheduled on the same day as construction progress meetings. CONSULTANT shall report the nature of the field site visits, the problem resolved, and identify staff requesting the site visit in the CONSULTANT's monthly project

report. OC San will provide project inspection, except as required in other sections of this SOW.

See Section V - "Quantitative Assumptions" in this SOW for the estimated number of hours.

#### **Task 4.6.2 – On-Site Design Engineers**

CONSULTANT shall assign two engineering staff who will be periodically located in the field office on-site (one from Black & Veatch and one from Brown and Caldwell). Each engineer will be located on-site, one day per week each on average, for a 48-month duration of the Project.

The on-site staff will not have responsibility for the superintendence of construction site conditions, safety, safe practices or unsafe practices or conditions, operation, equipment, or personnel other than employees of the CONSULTANT.

See Section V - "Quantitative Assumptions" in this SOW for the estimated number of hours.

#### **Task 4.7 – Contractor’s Baseline Schedule and Schedule Updates Review**

The OC San will review the Contractor’s baseline construction schedule for compliance with the specified schedule submittal requirements. CONSULTANT shall review the Contractor’s baseline construction schedule to confirm that the work plan indicated in the baseline construction schedule is consistent with the specified sequencing constraints. CONSULTANT shall assume three resubmittals of the Contractor’s baseline construction schedule for review and shall review as needed and requested by OC San up to ten Contractor’s schedule updates.

See Section V - "Quantitative Assumptions" in this SOW for the estimated number of hours.

Budget has not been allocated for in-person meetings related to this task.

#### **Task 4.8 – Specialty Services**

##### **4.8.1 Geotechnical Engineering Services**

The CONSULTANT shall provide field personnel to assist with quality control for geotechnical improvements and coordinate with Contractor/OC San in monitoring the implementation of cement deep soil mixing (CDSM) for the project and also be available for support to respond to differing site conditions (DSC) Requests for Clarification/Information/Claims. OC San will have primary responsibility for monitoring the construction work. The CONSULTANT shall assist in monitoring the work and compile a report of the data collected during the monitoring. The CONSULTANT shall be present on-site while CDSM work is taking place per the assumptions described below.

The CONSULTANT shall perform the following activities:

- Monitor CDSM operations on a full-time basis (up to 8 hours per day) for up to 126 days over an 18-month period, based on the construction schedule developed by the project team.
- Monitor excavation and temporary shoring operations on a part-time basis during the demolition and construction phases of the project, as requested by OC San and Black & Veatch (up to 40 days total).

- Perform CDSM lab strength testing off-site for quality assurance purposes. CONSULTANT will deliver one (1) set of eight (8) specimens per day of CDSM (1008 total tests) to the off-site laboratory for testing. CONSULTANT will also have samples of CDSM core tested for compressive strength. CONSULTANT has assumed that the Contractor will cast the test specimens from the same batch and at the same time they cast their specimens for quality control testing, as required in the project specifications. It is also assumed that the Contractor will be responsible for field curing the specimens in accordance with the specifications.
- Prepare daily field reports documenting the construction progress and presenting the data collected during the day's monitoring.
- At the end of the CDSM operations, review the CONTRACTOR's final report documenting the CDSM process and quality control testing results.
- Provide assistance/technical consultation during CDSM and excavation/shoring activities, as requested by OC San.

See Section V - "Quantitative Assumptions" in this SOW for the estimated number of hours.

#### **4.8.2 Dewatering Support Services**

The CONSULTANT shall provide personnel to coordinate with Contractor/OC San in monitoring the dewatering work for the Project. CONSULTANT shall assist with quality control during well drilling, installation, development, and deconstruction for project wells. The CONSULTANT shall be present on-site to help observe well drilling, installation, development, or deconstruction. OC San will have primary responsibility for monitoring the construction work. OC San will compile groundwater level and discharge data provided by the Contractor on a regular basis. The Consultant shall assess ongoing performance of the dewatering system and provide opinion of operational effectiveness.

The CONSULTANT shall provide hydrogeologic services during the course of the project. Such services may include field observation and assessment of well performance issues through the use of a downhole camera, additional well development, and working with the Contractor to perform short-term pumping tests.

See Section V - "Quantitative Assumptions" in this SOW for the estimated number of hours.

#### **4.8.3 – Structural Engineering Services**

CONSULTANT shall have the structural engineer of record or their designated professional conduct field visits and provide expert opinion in review of observation of the structural work associated with the project. California Building Code requires the structural engineer of record to perform some structural inspections during construction.

See Section V - "Quantitative Assumptions" in this SOW for the estimated number of hours.

#### **4.8.4 – Inspection and Factory Witnessed Testing**

CONSULTANT shall perform offsite and onsite inspection and factory witnesses testing of the following system:

- Primary clarifiers covers
- Medium and low voltage switchgears

- Large complex control panels (PLC and RIO panels for example).
- Medium voltage transformers
- MCCs

See Section V - “Quantitative Assumptions” in this SOW for the estimated number of hours.

#### **4.8.5 – Fire Protection Services**

CONSULTANT shall secure the services of a fire protection engineer to provide construction support services for the fire protection systems.

See Section V - “Quantitative Assumptions” in this SOW for the estimated number of hours.

#### **4.8.6 – Archaeological Monitoring**

CONSULTANT shall secure the services of a qualified archeologist with experience in the area of Orange County/Santa Ana River Basin for the archeological observation and documentation during excavations.

See Section V - “Quantitative Assumptions” in this SOW for the estimated number of hours.

#### **4.8.7 – Contractor Assistance**

CONSULTANT shall secure the services of a qualified contractor to provide review and advice on matters related to constructability issues pertaining to flow isolation and removing facilities from service. Attend meetings and workshops related to the items above.

See Section V - “Quantitative Assumptions” in this SOW for the estimated number of hours.

### **PHASE 5 – COMMISSIONING SERVICES**

#### **Task 5.1 – Commissioning Team Meetings**

CONSULTANT shall attend Commissioning Team meetings at OC San’s request. Budget has been allocated for up to two, two-day in-person visits. All other meetings will be held virtually. The scope includes time for meeting preparation, follow-up, and review of meeting minutes. In addition, CONSULTANT shall attend to review the tracking spreadsheets prepared by the Commissioning Coordinator to document compliance with the requirements of specifications for pre-commissioning and commissioning activities.

Commissioning team meeting minutes will be prepared by the Contractor. CONSULTANT shall review and comment on meeting minutes.

See Section V - “Quantitative Assumptions” in this SOW for the estimated number of hours.

#### **Task 5.2 – Personnel Training**

CONSULTANT shall develop and conduct a training program for the Project. The training program will include both classroom and site orientation. The training plan shall be submitted for review 60 days prior to the start of the training. The CONSULTANT shall arrange and coordinate with OC San’s Project Manager. Generally, each operations training topic will be no more than two hours in duration per training day, no more than twice a week, and at a minimum will be offered to each of the four operations shifts (two days and two nights). Operations day classes will be scheduled between 7:00 am and 3:30 pm. All night shift

classes will be scheduled between 6:30 pm and 8:30 pm. Each topic will be delivered on both a Tuesday and a Thursday for the day shift, and on both a Monday and a Thursday for the night shift. The intent of the training is to educate the Plant Operations staff based on the design and the recommended modes of operation. CONSULTANT provides an overview of the process and equipment and OC San provides an overview of the automation. CONSULTANT shall develop a Training Plan to provide the training services based on the OC San's master project schedule. All training except for On-the-Job (OTJ) training shall be completed prior to the Reliability Acceptance Test (RAT). The Training Plan shall be submitted for OC San's approval as a report, which summarizes the training activities and provides a master training schedule. The training schedules shall include the following: a detailed outline of the class content, discipline(s) to receive the training, instructor's qualifications, and approximate time estimated for each subject covered.

CONSULTANT shall provide training for the following area:

- **Plant Water Pump Station Strainers** - Interim operation
- **Temporary Bleach Station**- Interim operation
- **Electrical Distribution (incorporated into individual system trainings)**
- **Odor Control (APSC)**
  - APSC (Startup, Shutdown, Routine Operation)
  - APSC Caustic Feed System - Startup, Shutdown, Routine Operation
  - APSC Bleach Feed System - Startup, Shutdown, Routine Operation
  - APSC Acid Feed System - Startup, Shutdown, Routine Operation
  - APSC Adjusting APSC Makeup Water
  - APSC Collection Fans - Startup, Shutdown, Routine Operation
  - APSC Recirculation Pumps - Startup, Shutdown, Routine Operation,
  - APSC Sampling
  - Gas Monitoring System
  - Scrubber Cleaning
- **Primary Clarification**
  - Primary Clarifiers - Startup, Shutdown, Routine Operation
  - Scum Removal- Startup, Shutdown, Routine Operation
  - Primary Scum Recycle Pumping - Startup, Shutdown, Routine Operation
  - Primary Sludge Pumping - Startup, Shutdown, Routine Operation
  - Primary Clarifiers - Backflush Grinder
  - Primary Clarifiers - Measuring a PC Sludge Blanket
  - Primary Clarifiers – Weir Washing
  - Primary Clarifiers – Tank Draining

### **Task 5.3 – Equipment and Instrument Database (EID)**

CONSULTANT shall review electronic copies of the EID updated by the Contractor and shall update and verify the fields in the EID required to be filled out in accordance with Specifications Section 01788. The EID shall be completed and submitted to OC San as equipment is taken over for beneficial occupancy.

See Section V- "Quantitative Assumptions" in this SOW for the estimated number of hours.



#### **Task 5.4 – Commissioning Support**

CONSULTANT shall provide assistance to OC San during the startup. CONSULTANT review the Functional Acceptance Test (FAT) and RAT procedures that are issued in the Contract Documents or updated by OC San commissioning team and CONTRACTOR. OC San commissioning team will take the lead in implementing changes as necessary to reflect additional information obtained during the construction process, including specific equipment operating parameters and configuration.

CONSULTANT shall assist with the FAT and RAT testing's and review the testing documentation to determine any deviations from the prepared procedures, failures, and anomalies during the testing and report any activities negatively impacting the operation of the treatment facilities to OC San as needed. CONSULTANT shall assist OC San with to confirm that the new facilities, modifications, and upgrades constructed and installed meet the project's process and performance design expectations. Witness of electrical testing including switchgear function testing, review of ETAP or protective device settings and participation in Operational Readiness Test (ORT) and FATs are not part of this SOW.

See Section V - "Quantitative Assumptions" in this SOW for the estimated number of hours.

#### **Task 5.5 – Operations Manual and Procedures (OMaP)**

OC San maintains an on-line OMaP for the plant operations staff to provide information necessary to operate and maintain plant facilities. Specific requirements and standards for OMaP are provided in Exhibit A and Exhibit B.

Plant operations staff does not perform maintenance work and so typically treatment plant maintenance procedures are not included in the OMaP. Maintenance procedures are included in the Equipment Service Manuals prepared by the Contractor.

CONSULTANT shall review and update the existing Plant No. 2 Primary Clarification OMaP which describes the functionality of the system based on the control strategies, system and device features, and drawings. All features of the system shall be described for normal equipment operation, fail-over equipment operation, and emergency equipment operation.

CONSULTANT shall review the existing manual and procedures and revise them accordingly.

- Headworks
- Primary Clarification
- Odor Control
- Activated Sludge
- Disinfection
- Electrical Distribution
- Natural Gas Water System
- Plant Air

Following commissioning, the CONSULTANT shall address, resolve, and/or incorporate any comments, additions, or change to the OMaP discovered during commissioning requiring revision and then resubmit for review and approval by OC San. A draft OMaP shall be submitted prior to FAT and the final immediately after beneficial occupancy of each facility. Allow for one additional revision.

As part of the OMaP effort, the CONSULTANT shall develop Standard Operating Procedures (SOPs) for the following process units and upgraded system conditions. CONSULTANT shall present the finalized SOPs to OC San Operations staff prior to RATs. During the RAT process, SOPs might be modified based on comments from OC San. A Draft SOPs shall be submitted prior to ORT. Final SOPs review and updates shall be incorporated with the review and updates of the final OMaP.

- **Primary Clarification**

- Primary Clarifiers - Startup, Shutdown, Routine Operation and sampling
- Scum Removal- Startup, Shutdown, Routine Operation
- Primary Scum Recycle Pumping - Startup, Shutdown, Routine Operation
- Primary Sludge Pumping - Startup, Shutdown, Routine Operation
- Primary Clarifiers - Backflush Grinder
- Primary Clarifiers - Measuring a PC Sludge Blanket
- Primary Clarifiers – Weir Washing
- Primary Clarifiers – Tank Draining

- **Odor Control (APSC)**

- APSC (Startup, Shutdown, Routine Operation)
- APSC Caustic Feed System - Startup, Shutdown, Routine Operation
- APSC Bleach Feed System - Startup, Shutdown, Routine Operation
- APSC Acid Feed System - Startup, Shutdown, Routine Operation
- APSC Adjusting APSC Makeup Water
- APSC Collection Fans - Startup, Shutdown, Routine Operation
- APSC Recirculation Pumps - Startup, Shutdown, Routine Operation,
- APSC Sampling
- Gas Monitoring System
- Scrubber Cleaning

- **Plant Water Pump Station-** Interim operation

- **Temporary Bleach station-** Interim operation

## **PHASE 6 – CLOSEOUT**

Closeout tasks include completion of punch list work by the Contractor, final inspection, completion of Record Drawings, and electronic data. CONSULTANT shall submit a final invoice at the completion of the project.

### **Task 6.1 – Final Inspection and Punch Lists**

CONSULTANT's technical leads shall attend the final inspection job walks with the Contractor and OC San staff. CONSULTANT shall make recommendations on the completion of the work including, but not limited to, completion of punch list items, site cleanup, leakage, and overall system operations. The final inspection will be prior to OC San beneficial occupancy.

CONSULTANT shall assist OC San in developing punch lists of items required to be completed prior to Final Acceptance of the project by OC San.

### **Task 6.2 – Record Drawings**

As part of the time budgeted for the on-site design engineers, the CONSULTANT shall attend preliminary as-built meetings with OC San and the Contractor and shall inspect the

SCOPE OF WORK

Project No. P2-98A PCSA

Contractor's as-built drawings to verify that the Contractor has included relevant information from approved change orders and RFIs. As part of the review process, the CONSULTANT shall verify that the Contractor's as-built drawings correctly reflects the information included in the approved shop drawings, RFIs, approved FCOs, plan clarifications, plan changes, and other deviations from the Contract Drawings and that the information in the set is complete. CONSULTANT shall transpose the as-built drawings to a CAD ready set after each meeting.

At the time that OC San take beneficial of occupancy of each facility, CONSULTANT shall provide CAD as-built drawings of Single-Line and PI&D.

After Final Completion of the project, OC San will transmit to the CONSULTANT the final as-built drawings. At that time, the CONSULTANT shall meet with OC San's inspectors and Resident Engineer to review the Contractor's final as-built drawings.

CONSULTANT shall prepare Draft Record Drawings based on the final as-built drawings for all drawings in accordance with the requirements in the CAD Manual. CONSULTANT shall submit the Draft Record Drawings to the OC San Resident Engineer.

The Draft Record Drawings will be reviewed for content and CAD compliance by OC San staff. A comment log will be returned to the CONSULTANT and, if any comments are generated, the CONSULTANT shall revise the Record Drawings and resubmit to the Resident Engineer for review of the changes and acceptance of the Record Drawings. CAD compliance will be limited to the requirements established during the design phase for conversion of BIM drawing files to other file formats.

When no additional comments are identified, the CONSULTANT shall prepare the Final Record Drawings and submit them along with the Contractor's as-built drawings to the Project Manager. All Record Drawings shall contain a stamp indicating:

**"Record Drawings**

These record drawings have been prepared based on information provided by others. The Engineer has not verified the accuracy of this information and shall not be responsible for any errors or omissions which may be herein as a result."

The stamp shall optimally be placed in the bottom right-hand corner of the border and may be included via x-ref. If importing the stamp via x-ref interferes with content in the bottom right hand corner, the stamp may also be placed in other open space along the bottom of the border. In addition, a note shall be placed over the engineer's seal stating that "This drawing was originally approved for construction by [name of engineer] on [date] and sealed by [name of engineer] a licensed professional engineer in the State of California. License No. [License number]. "CONSULTANT shall submit an electronic copy of the Record Drawings to OC San for review and acceptance. The acceptance of the Record Drawings shall be deemed a condition for completion of work.

The Contractor-generated drawings described in the Design Guidelines and the shop drawings will not be updated by the CONSULTANT.

The format and quantities for delivery of the submittals shall be listed below:

<b>Contents</b>	<b>Draft Record Drawings</b>	<b>Final Record Drawings</b>
Hard Copy Sets	2 sets of bound 11x17 prints	None

All related electronic files, including CAD and compiled PDFs	Transmit electronically via OneDrive	Transmit electronically via OneDrive
---	--------------------------------------	--------------------------------------

**IV. STAFF ASSISTANCE**

The OC San staff member or designee assigned to work with the CONSULTANT on the construction phase of this project is Shahrzad Namini at (714) 593-7495, e-mail to: [snamini@ocsd.com](mailto:snamini@ocsd.com)

**V. QUANTITATIVE ASSUMPTIONS**

The assumptions listed in the following table below shall be the basis for the assumed level of effort.

DRAFT

<b>Task</b>	<b>Description</b>	<b>Assumption</b>
4.1	Project Management	3,054 hours 76 months duration from construction NTP to construction completion
4.2	Initial Project Meetings	318 hours
4.3	Submittals	11,578 hours 759 original submittals 569 resubmittals
4.4	Requests for Information	3,677 hours 670 RFIs
4.5	Design Changes	1,583 hours
4.5	Cost Estimating for Design Changes	400 hours
4.6.1	Construction Progress Meetings & Site Visits (not including meetings specified in Task 4.2)	2,288 hours for site visits and progress meeting, including 240 progress meetings @ 1 hour each
4.6.2	On-Site Design Engineers	3,000 hours (equivalent to 2 people, approx. 8 hours/week each during 4-year active construction)
4.7	Contractor's Baseline Construction Schedule Review	124 hours
4.8.1	Geotechnical Engineering Support	2,182 hours
4.8.2	Dewatering Support Services	1,800 hours total, including 76 hours for management and coordination. See breakdown below.
4.8.2.1	Dewatering/observation well install observation	290 hours. Assumes 4 weeks, 3 mobilizations.
4.8.2.2	Assess well performance	180 hours. Assumes 2, 1-week field efforts.
4.8.2.3	Dewatering well rehabilitation	172 hours. Assumes 2, 1-week field efforts.
4.8.2.4	Dewatering System Performance Assessment	388 hours. Assumes 2, 10-week efforts.
4.8.2.5	Hydrogeologic oversight and consultation	520 hours. Assumes 2 hours/week for 200 weeks.

4.8.2.6	Well deconstruction observation	174 hours. Assumes 3, 1-week field efforts.
4.8.3	Structural Engineering Services	374 hours for on-site visits and off-site inspections
4.8.4	Inspection and Factory Witnessed Testing	244 hours for site and off-site visits
4.8.5	Fire protection Services	142 hours
4.8.6	Archeological Monitoring	276 hours
4.8.7	Contractor Assistance	108 hours
5.1	Commissioning Team Meetings	266 hours
5.2	Personnel Training	558 hours
5.3	Equipment and Instrument Database	108 hours
5.4	Commissioning Support	1,016 hours
5.5	Operations Manual and Procedures (OMaP)	1,435 hours
6.1	Final Inspection and Punch Lists	256 hours
6.2	Record Drawings	3,547 hours