# ATTACHMENT “A1”

## SCOPE OF WORK

Maintenance and Headworks Buildings Seismic Retrofit at Plant No. 2

# ATTACHMENT "A1"

## Operations and Maintenance Facility Improvements at Plant No. 2
## Project No. P2-138

## Maintenance and Headworks Buildings Seismic Retrofit at Plant No. 2

## Attachment "A1" – Scope of Work

## TABLE OF CONTENTS

# 1. PROJECT REQUIREMENTS

## 1.0 SUMMARY

### 1.0.1 PROFESSIONAL DESIGN ENGINEERING SERVICES

A. CONSULTANT shall provide professional engineering services for the Preliminary Engineering, design, and preparation of Contract Documents suitable for bidding of the project described herein. The services include the following:

1. Preliminary Design Report
2. Design Submittals 2, 3, and final design submittal (FDS)
3. Permitting assistance
4. Bid Documents

### 1.0.2 PROFESSIONAL LICENSING REQUIREMENTS

A. CONSULTANT shall be licensed in the State of California.

B. All plans, specifications and reports shall be prepared by professional engineers and/or architects licensed in the State of California for their associated discipline.

C. CONSULTANT shall employ Professional Engineers licensed in the State of California to determine structural engineering and Code requirements, develop, and prepare preliminary design documents and develop and prepare final plans and specifications.

D. CONSULTANT shall employ or otherwise provide a California Licensed Geotechnical Engineer for development of parameters for seismic analyses and evaluation based on existing geotechnical data and reports.

E. CONSULTANT shall employ or otherwise provide other professionals with State of California Registration to provide professional services required to perform the scope of work for this project.

## 1.1 BACKGROUND

The Orange County Sanitation District (OC SAN) completed a Planning Study (PS) under PS15-06 - Seismic Evaluation of Structures at Plant Nos. 1 and 2 which evaluated the seismic vulnerability of selected structures at the two plants and developed recommendations for the mitigation of the identified vulnerabilities. Results of PS15-06 study were provided in three technical memoranda and a final report, which are included under Exhibit 19A - PS15-06 Seismic Evaluation of Structures at Plant Nos. 1 and 2 Project Report and Technical Memoranda.

## 1.2 GENERAL PROJECT DESCRIPTION

Project No. P2-138 – Operations and Maintenance Facility Improvements at Plant No. 2 is the parent project, with Attachment “A1” (P2-138 A1) RFP scope to address the seismic, geotechnical, and code compliance deficiencies for the existing Maintenance building at Plant No. 2, which was originally constructed in 1998. This building is the main hub of OC SAN’s Plant No. 2 Maintenance Department. The two-story, 30,100 square foot building includes offices and shop space for approximately 60 field staff and supervisors. This building also houses the Collections staff that includes approximately 25 persons. Based on structural and

geotechnical deficiencies identified in PS15-06, the P2-138 A1 project shall provide structural improvements aimed at reducing risk of failure during a significant seismic event and be in compliance with current building codes. This Request for Proposal (RFP) also includes hazardous material assessment for the building, and provisions (including accommodations) to relocate staff during the seismic retrofit construction.

Also based on PS15-06 recommendations, this project will address structural deficiencies for two Headworks Power Buildings at Plant No. 2 (Headworks Buildings). The tasks for the Headworks Buildings shall provide geotechnical and structural improvements to reduce the risk of failure during a significant seismic event and requires a detailed structural evaluation of the referenced building structures to identify structural deficiencies and appropriate retrofits and mitigation measures. The selected Headworks Buildings for this project2 are Headworks Power Building B (#15 in PS15-06 report), and Headworks Standby Power Building (#16 in PS15-06). The Scope of Work (SOW) for this task also includes hazardous material assessment for the buildings.

The basis for the structural and geotechnical analysis performed as part of PS15-06 study was a planning-level assessment following the guidelines of ASCE41-13. A detailed analysis was not performed on each individual structure; instead, exemplar structures were identified that represented similar design and performance criteria that represented multiple structures. An analysis was performed on the exemplar structure and the results were judiciously applied to other representative structures to evaluate their performance during a seismic event.

A preliminary review of the PS15-06 seismic and geotechnical improvements of the building was performed by Jacobs (**Exhibit 19A.3 - Study Memo: P2-138 Seismic Evaluation of Maintenance Building**) to determine the required improvements that would maintain an “immediate occupancy” or “life safety” performance of the building, based on a BSE-1E or BSE-2E seismic event respectively. Construction costs were updated to determine if the building should be rehabilitated or replaced.

PS20-01, Collections Yard Relocation Feasibility Study, identified existing conditions of the Collections group locations and cubicles at the Maintenance Building that need to be considered: workspace is not conditioned; workspace is noisy / open to the Shop/PPE storage area; offices and workstations do not meet current OC SAN standards; supervisors cannot see the adjacent workspace; and current shower/locker rooms are too small. This project requires a detailed evaluation of the Maintenance Building as shown in the site photo, below, to identify structural, geotechnical, and code deficiencies, with the appropriate retrofits and mitigation measures to be implemented and constructed. The project also includes tenant improvements for the Collections group.


## 1.3 PROJECT EXECUTION PHASES

All OC SAN projects are divided into six phases. CONSULTANT shall provide engineering services for all Project Elements listed in this Scope of Work for the following Phases:

Phase 1 – Project Development (Not in this Scope of Work)

Phase 2 – Preliminary Design

Phase 3 – Design

Phase 4 – Construction (Not in this Scope of Work)

Phase 5 – Commissioning (Not in this Scope of Work)

Phase 6 – Close Out (Not in this Scope of Work)

## 1.4 DESCRIPTION OF PROJECT ELEMENTS

Detailed descriptions of the Project Elements are presented below.

### 1.4.1 PROJECT ELEMENT 1 – RETROFIT MAINTENANCE BUILDING

A. The structural modifications are needed to conform the Maintenance building to the most current California Building Code (CBC) requirements and the seismic requirements described in Planning Study PS15-06:

1. Structural seismic retrofit
2. Geotechnical mitigation

3. ADA code compliance
4. Maintenance group HVAC adjustments for offices in the Shop work bay
5. Collections group space improvements including HVAC adjustments
6. Hazardous waste containers (3) replacement

### 1.4.2 PROJECT ELEMENT 2 – TEMPORARY FACILITIES DURING CONSTRUCTION

A. During the Maintenance building retrofit construction period, OC SAN personnel may need to be relocated to temporary spaces within Plant No. 2 site. All planning and coordination of these relocation activities (to the temporary facility and back to the retrofitted building) as well as setting up temporary facilities including any temporary furnishings, machinery and equipment for the relocated personnel are part of this project. Temporary facilities also include provisions to protect existing utilities and communications to maintain building operations if the work is going to be completed in phases.

B. In conjunction with the above-mentioned personnel relocations, provisions for temporary locker rooms, showers, and other necessary facilities to relocated personnel are part of this project.

C. Provide temporary facilities concepts for at least two relocation alternatives and the timing with construction of the new Operations Building replacement work detailed in SOW A2.

For the purpose of estimating the predesign and design phase levels of effort, the CONSULTANT shall make the following assumptions regarding this project element:

1. For Predesign, allocate 200 hours (exclusive of hours needed for project management, meetings/workshops with OC SAN, Consultant's internal meetings and QA/QC effort) to evaluate the temporary facilities for the Maintenance building (sections in technical memoranda and preliminary drawings).
2. For concept planning of temporary facilities: Allocate 240 hours (exclusive of hours needed for project management, meetings/workshops with OC SAN, Consultant's internal meetings, and QA/QC effort) to prepare the final design (specifications and drawings) for the items in this project element.
3. As part of the temporary relocation of staff, assume rerouting of required utilities, and IT and ICS system connections to the temporary location. These changes need to be identified and included in specifications for coordination during the construction phase of this project.

### 1.4.3 PROJECT ELEMENT 3 – PLANT NO. 2 HEADWORKS POWER BUILDING B (#15)

A. This project element includes structural modifications to conform the building to the most current California Building Code (CBC) and the seismic requirements described in the Planning Study, PS15-06.

B. The CONSULTANT shall develop the requirements needed to protect in place all systems and equipment, including all electrical equipment, control system equipment, network equipment and infrastructure, and other components associated with this building that are required to maintain plant operations during the construction phase of this Project.

### 1.4.4 PROJECT ELEMENT 4 – PLANT NO. 2 HEADWORKS STANDBY POWER BUILDING (#16)

A. This project element includes structural modifications to conform the building to the most current California Building Code (CBC) and the seismic requirements described in the Planning Study, PS15-06. The Headworks Standby Power Building and Headworks Power Building A are adjacent to each other and the structural modifications will only be made to the Headworks Standby Power Building.

B. The CONSULTANT shall develop the requirements needed to protect in place all systems and equipment, including all electrical equipment, control system equipment, network equipment and infrastructure, and other components associated with this building that are required to maintain plant operations during the construction phase of this Project.

C. The CONSULTANT may also need to consider a temporary mobile backup generator in the event the existing emergency power generator must be taken off-line to safely complete the required structural modifications to the building. The location and size of the temporary mobile generator shall be coordinated with OC SAN Operations and Electrical Staff.

### 1.4.5 COORDINATION WITH OTHER PROJECTS

A. The following projects may impact or require coordination with this project:

1. P2-127, Collections Yard Relocation.

2. P2-128, TPAD Digester Facility at Plant No. 2. This project will enhance the existing anerobic digesters at OCSD's Plant No. 2 with a temperature-phased anaerobic digester (TPAD) configuration. This project will build six new thermophilic digesters; Class A batch tanks; sludge heating and cooling facilities; associated sludge pumping; digester mixing; gas conveyance and cooling; odor control; power distribution; and controls. Replacement and demolition of existing digesters will be included in a separate project.

3. J-98 – Electrical Power Distribution System Improvements - Project Description: This project provides various electrical distribution system improvements at Plant No. 1 and No. 2 which are needed based on equipment condition and age, insufficient equipment ratings, grounding safety, non-compliance with the National Electrical Code (NEC) requirements, and electrical configuration reliability. This includes replacing electrical equipment at the end of its useful life, modifying the electrical system configurations to improve reliability and support maintenance, replacing electrical cables and equipment that are not properly sized, and adding surge protection to protect equipment.

## 1.5 DESIGN CONSIDERATIONS

The following design considerations shall be carried from Preliminary Design through Final Design.

### 1.5.1 TECHNOLOGY AND CONFIGURATION CHOICES

The project elements in this facility shall be achieved using proven approaches. Alternative means of accomplishing the project elements must be reviewed and accepted by OC SAN prior to detailed evaluation. CONSULTANT shall demonstrate that all alternative approaches

proposed were proven to work in other buildings of similar structures that CONSULTANT have designed recently.

### 1.5.2 DESIGN DECISIONS

Design decisions shall be agreed upon by OC SAN prior to any work being performed by the CONSULTANT in preliminary and detailed design. All design decisions shall be documented.

### 1.5.3 DESIGN SELECTION CRITERIA

A. Design selection shall consider construction, lifecycle, operation, and maintenance costs as well as overall quality. When design recommendations are presented to OC SAN, the design selection criteria shall be clearly identified with the recommendation.

B. The economic analysis shall consist of a life cycle cost analysis for the options proposed, including costs for engineering, construction, operational and maintenance, and future rehabilitation and replacement.

C. The construction cost estimate shall be provided by the CONSULTANT as described in Engineering Design Guidelines and available online at https://www.ocsan.gov/about-us/transparency/document-central/-folder-917 Life cycle cost analysis is described in 1.3.5 of the Guidelines.

### 1.5.4 PROJECT ELEMENT DESCRIPTION REVISIONS

CONSULTANT shall review and revise the Project Element Descriptions using track changes at the end of Preliminary Design and at each design submittal. Changes shall be submitted to OC SAN for review.

## 1.6 PROJECT SCHEDULE

### 1.6.1 GENERAL

A. The table below lists the time frames associated with each major project deliverable and with OC SAN's review and approval of those deliverables. CONSULTANT shall comply with the schedule Milestones indicated in that table.

B. Following OC SAN's acceptance of the PMP**,** OC SAN's Project Manager will issue a Preliminary Design NTP. OC SAN's Project Manager will also issue a Final Design NTP upon OC SAN's acceptance of the final Preliminary Design Report.

C. The time frames specified below are used to estimate the scheduled milestone dates based on the assumed NTP date, as shown in **Exhibit 8 - Project Schedule Calculation**.

D. OC SAN will consider a CONSULTANT-proposed alternative schedule, provided it is consistent with OC SAN resources and schedule constraints and demonstrates added value to OC SAN.

| PROJECT MILESTONE AND DEADLINES | |
|---|---|
| **MILESTONE** | **DEADLINE** |
| Kickoff Meeting and Notice to Proceed | The kickoff meeting will be scheduled to coincide with the NTP. |
| Submit Project Management Plan (PMP) | 15 workdays from NTP. |
| OC SAN Review of PMP | 5 working days from receipt of PMP. CONSULTANT shall issue a revised PMP within 5 working days of receipt of OC SAN's comments for OC SAN approval. |
| Submit draft Preliminary Design Report (PDR) | 220 workdays from the NTP, CONSULTANT shall submit the Draft PDR |
| **OC SAN Review of Draft PDR** | 20 workdays from receipt of Draft PDR |
| Submit final Preliminary Design Report | 20 workdays from receipt of OC SAN comments on Draft PDR. |
| **OC SAN Review of Final PDR** | 15 workdays from receipt of Draft PDR |
| Final Design NTP | CONSULTANT's schedule shall allow 5 workdays from submittal of the final PDR to receipt of the Design Phase NTP. |
| Submit Design Submittal 2 (DS2) | 120 workdays from receipt of OC SAN comments on PDR. |
| **OC SAN Review of DS2** | 20 workdays from receipt of DS2 |
| Submit Design Submittal 3 (DS3) | 80 workdays from receipt of OC SAN comments on DS2. |
| **OC SAN Review of DS3** | 20 workdays from receipt of DS3 |
| Submit Final Design Submittal (FDS) | 20 workdays from receipt of OC SAN comments on DS3. CONSULTANT shall stop work upon submission of DS3, except as required to participate in OC SAN meetings, until receipt of OC SAN comments on DS3. |
| **OC SAN Review of FDS** | 15 workdays from receipt of FDS |
| Final Technical Specifications and Plans | 20 workdays from receipt of OC SAN comments on FDS. |

# 2. PHASE 2 – PRELIMINARY DESIGN

The preliminary design phase will define the project. The final deliverable of this phase will be a Preliminary Design Report (PDR) with the basis of design for all elements of the project.

# 2.0 PRELIMINARY DESIGN EXECUTION

### 2.0.1 MAJOR DECISIONS

A. The CONSULTANT shall plan the resolution of major decisions through the following process:

1. Identify major decisions early and the timing required to prevent impacts to the project schedule.

2. Identity the decision-making method that will be used to gain OC SAN concurrence and provide appropriate opportunities for OC SAN to provide input.

3. Identify and schedule at the start of the project the workshops, technical design meetings and focused meetings where major decisions will be made and include a list of required attendees.

B. These decisions should be tracked on the Decision Log and flagged as a major decision.

# 2.1 PRELIMINARY DESIGN PRODUCTION

## 2.1.1 GENERAL

A. Preliminary Design Report (PDR) production involves the preparation of design memos, drawings, calculations, and other supporting material resulting in the PDR.

## 2.1.2 DESIGN MEMOS

A. The CONSULTANT shall produce Design Memos as indicated below in accordance with **Exhibit 1 - Preliminary Design Report Requirements.** The CONSULTANT shall discuss the combining of design memos subject matters with OC SAN, particularly with those memos identified in Paragraph 2.1.3 and develop a design memo submittal list.

☐**Process Design Configuration**
☐**Hydraulic Analysis**
☒**Demolition**
  ☒Describe Demolition Requirements
  ☒Demolition List
  ☒Demolition Plans
  ☐Demo EID
☒**Rehabilitation Requirements**
☐**Geotechnical Data Report**
  ☐Review of Existing Data - Preliminary Geotechnical Report
  ☐Geotechnical Data Report and Recommendations
☐**Utility Requirements**
☐**Structural Design Parameters**
☒**Architectural Design Parameters**
☐**Process Mechanical Design Parameters**
☒**Building Mechanical Design Parameters**
☐**Fire Protection**
☒**Electrical**
☐**Instrumentation and Control**
☐**Landscaping**
☐**Plant Utility Investigation Findings**
☐**Vibration Analysis**
☐**Design Safety Requirements**
☐**Public Impacts**
☐**Environmental and Regulatory Requirements**
☒**Permit Requirements**
  ☒List of Permits Required

☐**Stormwater Requirements**
☒**Hazardous Material Survey, Mitigation and Control**
☐**Maintainability**
☐**Facility Operation and Maintenance**
☐Facility O&M Requirements
☒**Implementation Plan**
☒Identification of Adjacent Projects
☒Preliminary Construction Sequencing Plan
☐Review of Constructability Issues

### 2.1.3 PROJECT SPECIFIC DESIGN MEMOS

A. In addition to the standardized Design Memos described above, produce the following project specific Design Memos. Where there is a duplicate theme with the standardized Design Memos above, combine the requirements together so they are all together in one location in the document.

B. Design Memo 1 – Structural Design Parameters and Analysis Methodology

1. CONSULTANT shall perform the work listed below and prepare the design memorandum to document the analysis and findings:

a. Identify the current applicable codes that apply to the seismic retrofit of existing Maintenance building, and any proposed codes that may come into effect within the design period of the project. Provide the code listing and recommended approach to establish the specific Code criteria and design parameters applicable and required for the seismic retrofit design. Determine the specific sections that apply to this building and any changes to the recommendations used in the Final Geosyntec Report for PS15-06 that supersede the older version of the code.

b. Define how codes, standards and best practices that are applicable to the design and operation will be applied. There is no need to repeat building code requirements.

c. Provide seismic design criteria for the project based on review of existing geotechnical information, evaluation of proximity to faults, and seismic classification assigned to each structure.

d. Description of mitigation to address seismic and liquification issues.

e. Description of general guidelines for structural design (deflections, safety factors, seismic design of non-structural components (architectural, mechanical, and electrical components, including component importance factor).

f. Description of design loads (dead loads, superimposed dead loads, live loads, wind loads, seismic loads, soil loads, and load combinations).

g. Identify the methodology and structural analysis software and features that will be used to perform the required calculations for the structural seismic analysis. Include a description of the input data and the relevant results from the software.

h. Conduct site visits and provide a summary of the investigations and findings from site visit(s) to the building, including areas visited, existing conditions, potential seismic issues, potential construction issues and hazards, offices that

will need to be temporarily relocated during construction, understanding of all the existing equipment and systems in the building to identify/specify their required protection during construction, etc. Use this information, as necessary, in the analysis. The CONSULTANT shall also consider any modifications to the building that have already been made from a review of existing and the most recent building modification record drawings or plans of completed projects with this project, including any additional equipment, openings (wall, floor, other), etc.

i. Description of existing structural construction for the building.

j. Conduct the detailed Structural Analysis and recommended retrofits of the building with respect to the applicable building codes and site conditions, including if any fire protection system modifications are required. The information needs to include any inputs to the calculations, assumptions, design parameters, and the results and explanations. Provide a schedule of the needed modifications to the building, in table form, noting which modifications do and do not differ from the PS15-06 project. Also include any demolition needed to facilitate construction work.

k. Description of minimum material requirements for anchorage.

l. CONSULTANT shall show and explicitly identify the limits of work for the building, including any restrictions to the work allowed in any area, e.g., whether the area can be used for parking or laydown.

m. If any structural updates are to be made to the outside of the building that will affect the aesthetic of the building, these updates shall be identified and made in accordance with the OC SAN's Architectural Guidelines and Requirements.

n. Maintenance Building, specific considerations include, but are not limited to:

(1) Staff electric carts and charging

(2) Tools and test equipment storage

(3) Additional PPE storage

(4) Collections group area modifications and space requirements

(5) Replace hazardous waste containers (3)

o. Identify the elements to be included on the design Drawings to facilitate the plan check review process with the City of Huntington Beach Building & Safety. Include the contact's name and information of the City of Huntington Beach Building & Safety.

C. Design Memo 2 – Demolition for Retrofit and Temporary/ Relocation Planning

1. CONSULTANT shall perform the work listed below and prepare the design memorandum to document the analysis and findings:

a. Identify, list, and create plans for all required demolition. The plans shall also include dust, debris, and vibration control and mitigation measures. This includes, but is not limited to, measures for protecting equipment that cannot be moved from the construction area such as large machine shop equipment.

b. Plan, document, and identify the temporary facilities/relocations needed for construction, including utilities, control equipment, IT Servers, ICS system, instrumentation, etc. and determine what requires design for protecting in-place

that cannot be moved or provided by other temporary means. For those facilities that can be moved, CONSULTANT shall provide temporary facilities/relocation concepts for at least 2 alternatives.

D. Design Memo 3 – Geotechnical Parameters

1. CONSULTANT shall perform the work listed below and prepare the design memorandum to document the analysis and findings:

a. Review existing geotechnical reports for OC SAN Plant No. 2 and data in the PS15-06 report. Based on the findings from this review, CONSULTANT shall develop the geotechnical parameters required for the seismic analysis and structural design of the Maintenance building. The geotechnical work shall be performed by a Professional Registered Engineer in the State of California in the Geotechnical Engineering discipline.

E. Design Memo 4 – Structural Design Parameters and Analysis Methodology for Power Buildings

1. CONSULTANT shall perform the work listed below and prepare the design memorandum to document the analysis and findings:

a. Identify the current applicable codes that apply to the seismic retrofit of existing buildings projects, and any proposed codes that may come into effect within the design period of the projects. Provide the code listing and recommended approach to establishing Code Compliance for the seismic retrofit of each building listed for this project.

b. Establish specific Code criteria and design parameters applicable to each structure and required for the design. Identify the specific items of the code that will be used in the basis of design that supersede the code used in the Final Geosyntec Report for PS15-06.

c. Define how codes, standards and best practices that are applicable to the design and operation will be applied. There is no need to repeat building code requirements.

d. Provide seismic design criteria for the project based on review of existing geotechnical information; evaluation of proximity to faults, seismic classification assigned to each structure.

e. Description of general guidelines for structural design (deflections, safety factors, seismic design of non-structural components (architectural, mechanical, and electrical components, including component importance factor).

f. Description of design loads (dead loads, superimposed dead loads, live loads, wind loads, seismic loads, soil loads, and load combinations).

g. Identify the methodology and structural analysis software and features that will be used to perform the required calculations for the structural seismic analysis. Include a description of the input data and the relevant results from the software.

F. Design Memo 5 – Geotechnical Parameters for Power Buildings

1. CONSULTANT shall perform the work listed below and prepare the design memorandum to document the analysis and findings:

a. Review existing geotechnical reports for OC SAN Plant No. 1 and Plant No. 2 and data in the Geosyntec Report for PS15-06. Based on the findings from this review, CONSULTANT shall develop the geotechnical parameters required for the seismic analysis and structural design of the buildings included in this project. The geotechnical work shall be performed by a Professional Registered Engineer in the State of California in the Geotechnical Engineering discipline.

G. Building Specific Design Memos

1. Consultant shall prepare and submit the Design Memos listed below:

   a. Design Memo 6 – Plant No. 2 Headworks Power Building B

   b. Design Memo 7 – Plant No. 2 Headworks Standby Power Building

2. Design Memos 6 and 7 shall include the following:

   a. Review of the applicable building code as determined in Design Memo 1 and how it applies to this building. Determine the specific sections that apply to this building and any changes to the recommendations of PS15-06 that supersede the older version of the code.

   b. Description of structural improvement for the building.

   c. Conduct site visits and provide a summary of the investigations and findings from site visit(s) for the building, including areas visited, existing conditions, potential seismic issues, potential construction issues and hazards, understanding of all the existing equipment and systems in the building to identify/specify their required protection during construction, etc. Use this information, as necessary, in the analysis. The CONSULTANT shall also consider any modifications to the building that may be or have already been made from a review of existing and the most recent building modification record drawings or plans of completed projects and projects that are either being designed or constructed concurrently with this project, including any additional equipment, openings (wall, floor, other), etc.

   d. Conduct the detailed structural analysis and recommended retrofits of the building with respect to the applicable building codes and site conditions. The information needs to include any inputs to the calculations, assumptions, design parameters, and the results and explanations. Provide a schedule of the needed modifications to the building, in table form, noting which modifications do and do not differ from the PS15-06 project. Also include any demolition needed to facilitate construction work.

   e. Description of minimum material requirements for anchorage.

   f. CONSULTANT shall show and explicitly identify the limits of work for the building, including any restrictions to the work allowed in any area, e.g., whether the area can be used for parking or laydown.

   g. Plan, document, and define the temporary facilities/relocations or protection needed for construction, including utilities, motor control centers, switchgear, grounding devices, control equipment, IT Servers, ICS system, instrumentation, etc. This includes OC SAN personnel access to each of the buildings listed under this project.

   h. Define a preliminary construction sequencing plan specific to the implementation of the seismic retrofit for the building, including any construction

related mitigations, such as hazardous material abatement, protection of equipment that cannot be relocated, and accessibility to areas identified by O&M personnel. This plan also needs to include any required utility outages that will be required during the construction period.

i. Identify, list, and create plans for all required demolition. The plans shall also include dust, debris, and vibration control and mitigation measures. This includes, but is not limited to, measures for protecting equipment that cannot be moved from the construction area such as large machine shop equipment and IT/ICS equipment and servers.

j. If any structural updates are to be made to the outside of the building that will affect the aesthetic of the building, these updates shall be identified and made in accordance with the OC SAN's Architectural Guidelines and Requirements.

k. Identify any constructability issues that may impact bidding and construction and develop mitigation measures for each of the issues at each building. In addition, identify potential changes at each building and the approaches that may be warranted to address each change.

l. For Design Memo 6 – Plant No. 2 Headworks Power Building B, specific considerations include, but are not limited to:

(1) Storage area for Operation's tools and equipment

(2) MCCs

m. For Design Memo 7 – Plant No. 2 Headworks Standby Power Building, specific considerations include, but are not limited to:

(1) Backup power generation, two 2MW each Gensets, must be available for emergency power generation at all times

(2) PDU

(3) Automatic transfer switch

(4) Switchgear

H. Design Memo 8 – Construction Cost Estimate

Prepare Design Memo 8 to include the construction cost estimate for the project for Plant No. 2 Headworks Power Building B and Headworks Standby Power. The cost estimate for these buildings shall include the cost of all demolition, construction, and restoration activities, including but not limited to, the cost of materials, labor estimates, and for protecting in-place equipment at each of the buildings that cannot be moved. Design Memo 8 shall include the percentages for contractor's overhead, profit, mobilization/demobilization, bonds, permits and insurance, and contingency that will be used to prepare the construction cost estimates for each design phase.

### 2.1.4 PRELIMINARY DESIGN DRAWINGS

A. The CONSULTANT shall produce the following Preliminary Design Report drawings in accordance with **Exhibit 1 - Preliminary Design Report Requirements.**

☒General, including construction sequence/phasing for Maintenance building.
☒Demolition
☒Civil (Only with respect to items impacted by retrofit work)

☐Landscape (Only with respect to items impacted by retrofit work)
☒Structural (Only with respect to items impacted by retrofit work)
☒Architectural (Only with respect to items impacted by retrofit work)
☒Mechanical (Only with respect to items impacted by retrofit work)
☒Electrical (Only with respect to items impacted by retrofit work)
☐Instrumentation and Control (Only with respect to items impacted by retrofit work)

### 2.1.5 PRELIMINARY DESIGN REPORT (PDR) PRODUCTION, CONTENTS AND ORGANIZATION

A. Preliminary Design Report (PDR) Production involves the preparation of design memos, drawings, calculations, and other supporting material resulting in the PDR.

B. The CONSULTANT shall combine the materials described below into a draft PDR. The PDR shall be structured as outlined below, with the contents corresponding to the tasks listed in this Scope of Work.

**Volume 1 – Preliminary Design Report Technical Memos**
- **Executive Summary**
- **Design Memos**
  - Design Memos
  - List of Proposed Specification Sections

**Volume 2 – Drawings (see Preliminary Design Drawings list below)**

**Volume 3 – Submittal Documentation**
- Calculations
- Equipment Data & Catalog Cuts
- Decision Log
- Meeting Minutes

C. The Executive Summary shall summarize the conclusions of the Memos included in the report, and specifically include a summary construction schedule and construction cost estimate.

D. The draft PDR and final PDR shall be submitted in searchable PDF format legible on-screen and as a hard copy. The number of hard copies is indicated in **Exhibit 9 - Deliverables Quantities**. The labeling and organization of the PDF submittal shall be in accordance with **Exhibit 14 - Bluebeam Designer Training for Submission**.

E. Each design memo shall be a separate file.

F. The OC SAN Project Manager may request that the CONSULTANT submit an electronic proof set of the Draft PDR and Final PDR prior to hard copy production in order to initially confirm that the submittal is ready for printing.

### 2.1.6 PRELIMINARY DESIGN COST ESTIMATE

A. The CONSULTANT shall provide a Class 3 cost estimate as defined AACE (Association for the Advancement of Cost Engineering) International for the associated PDR submittal indicated below and in accordance with other requirements in **Exhibit 1 - Preliminary Design Report Requirements**. This estimate shall be part of Design Memo No. 1.

## 2.2 PRELIMINARY DESIGN ACTIVITIES

The following services shall be provided by the CONSULTANT or an appropriately qualified subconsultant. In any case, the CONSULTANT shall be responsible for managing all subconsultants, including reviewing their work products prior to submission to OC SAN.

### 2.2.1 PERMITTING ASSISTANCE

A. CONSULTANT services related to Permitting Assistance may span across Phase 2 – Preliminary Design and Phase 3 - Design. These services are required for this project, and they will be based on the requirements of Section III – Project Schedule and the schedule constraints associated with each particular permit. The CONSULTANT shall allocate the budgeted hours between the services in Phase 2 and Phase 3 based on when these services will be required.

B. For all applicable Project Elements of this Scope of Work, CONSULTANT shall provide Bid Documents that ensure that the facility features and the facility performance, and construction procedures comply with all conditions of existing permits and permits required to construct this project. Construction drawings, specifications and supplemental drawings shall be prepared, as necessary, in the format required to obtain all permits.

C. CONSULTANT shall assist OC SAN in obtaining permits. This assistance shall include completing application forms provided by OC SAN, preparing supporting documentation for the permit applications as required by the issuing agency, furnishing the required number of copies of all construction drawings and exhibits, and attending meetings with permitting agencies at the request of OC SAN.

D. With the exception of construction contractor-furnished permits, OC SAN staff will execute all applications. All permit fees will be paid directly by the OC SAN and will not be part of CONSULTANT's fee.

E. CONSULTANT shall submit all supporting documentation in a timely fashion for all permits required for this project as described below.

F. Stormwater Permitting

1. Stormwater permitting is not anticipated to be required for this project, however, include a meeting with Environmental Compliance to confirm. It is anticipated that the stormwater requirements will be covered in the General Requirements.

G. Building Permits

1. Building Permits will be required from the City of Huntington Beach. The list of potential City reviewing departments includes:

a. Building

(1) The CONSULTANT shall assume 5 meetings at 1 hour each.

b. Fire Department

(1) The CONSULTANT shall assume two meetings at two hours each.

c. Public Works

(1) The CONSULTANT shall assist in preparing permit applications to the City of Huntington Beach for any modifications or additions made to the fire hydrant system.

(2) The CONSULTANT shall assume two meetings at two hours each.

### 2.2.2 PROJECT MANAGEMENT

A. CONSULTANT shall be responsible for managing CONSULTANT's project execution, schedule, budget, subconsultants, and coordination with other projects. The CONSULTANT shall perform the project management requirements in accordance with **Exhibit 3 - Project Management Requirements** with the project specific options identified below.

B. Project Management Plan (PMP):

☐Not required

☒Required

☒PMP approval prior to beginning technical work on the project.

C. Project Logs

☒Major Decision Log

☒Project Decision Log

☒Action Item Log

☒Decision Issues Log

☒Meeting Log

☒Risk Management Log

D. Progress Report

☐Not required

☒Required

E. Project Invoices

1. Estimating earned value, tasks shall be further broken down to subtasks of no more than $100,000.

2. Costs for invoicing shall be grouped into the following work packages:

| Work Package | Description | Tasks |
|---|---|---|
| 3146 | Preliminary Design | **All Phase 2 tasks.** |
| 3250 | CONSULTANT Services During Design | **Tasks 3.1 through 3.4** |
| | | **Tasks 3.1 through 3.3, divided into effort by design submittal. FDS is charged against DS3.** |
| 3252 | Design Submittal 2 | |
| 3253 | Design Submittal 3 | |
| 3254 | Bid Support Services | **Task 3.4** |

### 2.2.3 RISK MANAGEMENT

A. When required below, CONSULTANT shall provide risk management in accordance with **Exhibit 4 - Risk Management Requirements** with the project specific options identified below.

B. Risk Management:

☐Not required
☒Required
☐Initial Risk Workshop
☒PDR Risk Management Workshop: 4 hours. (held 4 weeks prior to draft PDR)

### 2.2.4 QUALITY CONTROL

A. The CONSULTANT shall provide quality control requirements in accordance with **Exhibit 6 - Quality Control Requirements**.

## 2.3 PDR WORKSHOPS AND MEETINGS

### 2.3.1 GENERAL

A. Workshop and meeting planning, requirements, agendas, and meeting minutes shall be in accordance with **Exhibit 5 - Workshop and Meeting Requirements**.

### 2.3.2 PDR PRODUCTION WORKSHOPS

A. Predesign Kickoff Workshop

1. A three-hour project kick-off meeting shall be held with OC SAN staff to introduce principal members of OC SAN and CONSULTANT's teams. The discussion topics shall include OC SAN responsibilities, CONSULTANT's responsibilities, invoice procedures, personnel badges, parking, site access, CONSULTANT's Scope of Work, detailed project schedule with milestones, Work Breakdown Structure requirements, and OC SAN confined space and other safety policy training.

B. PDR Production Workshops shall be held during Preliminary Design to review the topics listed below. The list below also indicates the number of workshops to be held to cover the specific topic. Unless otherwise noted, each workshop shall be 2 to 4 hours in length.

| **PDR PRODUCTION WORKSHOPS** | |
|---|---|
| **TOPIC** | **NUMBER OF WORKSHOPS** |
| PDR Production Kickoff | 1 |
| PDR Production Workshops | |
| Structural and Geotechnical Basis for Design | 1 |
| Retrofit Improvements | 3 |
| Temporary Facilities Workshop | 3 |

### 2.3.3 PDR REVIEW WORKSHOPS

A. CONSULTANT shall hold the following workshops to review the draft Preliminary Design Report as required in **Exhibit 5 - Workshop and Meeting Requirements**:

1. Draft PDR Presentation Workshop
2. Draft PDR Review Workshop
3. PDR Validation Workshop

### 2.3.4 PDR CONSTRUCTABILITY WORKSHOP

A. A constructability workshop shall be held after the draft PDR submittal review to identify any fatal flaws in the design relative to constructability and identify design ideas and changes that would reduce both the initial and long-term costs while assuring a credible construction sequence and approach while maintaining design objectives and performance. Some of the subjects that shall be covered in this workshop include the following: conflicts between design disciplines, geotechnical considerations, construction sequencing, utility outages, equipment shutdowns and protection, personnel access during construction, viability of equipment and staff relocations, safety, operational requirements, access for maintenance, access for collections, permitting, other local conditions, and constraints.

B. This workshop shall generally be 4 to 6 hours in length. OC SAN and CONSULTANT staff shall attend this workshop.

C. CONSULTANT shall be responsible for completing the following tasks relative to the workshop:

1. Prepare package for constructability review workshop participants. The package shall consist of latest plans and specifications and other information selected by CONSULTANT.
2. Prepare presentation on the project.
3. Summarize the constructability review workshop comments and action taken on each comment in a memorandum.
4. All comments and recommendations of the workshop shall be incorporated into Implementation Plan Design Memo and the Bid Documents.

### 2.3.5 TECHNICAL PROGRESS MEETINGS

A. Technical Progress Meetings shall be held every six weeks to review various issues with OC SAN's project team. A total of seven meeting shall be held during Preliminary Design Phase. The CONSULTANT shall coordinate with the OC SAN Project Manager to determine what topics will be covered in what meetings, and what OC SAN and CONSULTANT team members are required for each.

### 2.3.6 FOCUSED MEETINGS

A. Focused meetings shall be held throughout preliminary design to discuss specific issues in detail and generate comments and direction from OC SAN staff. The following tentative list of topics may be covered in these meetings:

1. Utility coordination – with respect to structural mitigation impacts.
2. Geotechnical review summary and parameters – with respect to structural mitigation issues.

3. Quality control plan
4. Permits
5. OC SAN Safety Standards
6. City requirements
7. Architectural
8. Construction sequencing, staff relocation, equipment protection, and building access during construction.
9. Coordination with other projects
10. Additional meetings as necessary

B. Meeting lengths shall be as required to cover the topic in question. Depending on subject matter and attendees, one meeting may cover multiple subjects. CONSULTANT shall determine how many meetings will be needed to cover these topics. CONSULTANT may suggest additional topics as necessary. Supplementary meetings may be scheduled with OC SAN staff, as necessary to allow coordination between CONSULTANT and OC SAN staff.

### 2.3.7 COORDINATION WITH OTHER PROJECTS MEETINGS

A. The project shall be a complete and fully functional facility that is integrated with existing facilities and coordinated with other construction projects. CONSULTANT shall coordinate potential conflicts with the following adjacent projects and participate in the number of meetings indicated in the following table:

| PROJECT COORDINATION MEETINGS | | |
|---|---|---|
| **PROJECT** | **PROJECT DESCRIPTION** | **COORDINATION MEETINGS** |
| P2-128 | TPAD Digester Facility at Plant No. 2 | 2 meetings @ 2 hours |
| P2-127 | Collections Yard Relocation | 2 meetings @ 2 hours |
| J-98 | Electrical Power Distribution System Improvements | 2 meetings @ 1 hour |

# 3. PHASE 3 – DESIGN

# 3.0 BID DOCUMENTS

### 3.0.1 GENERAL

A. CONSULTANT shall provide engineering services to prepare biddable plans, technical specifications, and other Bid Documents as required based on the design concepts and criteria developed during Phase 2 - Preliminary Design. In this Scope of Work, construction documents include specifications and drawings.

B. Seismic Retrofit of Plant No. 2 Power Buildings.

1. Review the PDR, for applicable information regarding each of the buildings to be retrofitted under this optional task for P2-138. The CONSULTANT shall validate this information, as needed, during the design process.

2. Develop the Work Constraints specific to each building that may be required during the construction phase. These may include identifying and designing temporary facilities and relocation plans that may be required during the construction period.

3. Prepare the construction Work Sequence plan specific to each building, including any construction related mitigations, such as hazardous material abatement, and protection of equipment that cannot be moved. This plan also needs to include any required outages that will be required to accommodate construction activities and the necessary coordination with Operations and Maintenance personnel to schedule these outages.

### 3.0.2 ENGINEERING DESIGN GUIDELINE UPDATES

A. All changes in OC SAN's Engineering Standards, OC SAN's Design Guidelines, and/or changes in design concepts and facility layouts as a result of OC SAN comments that may occur up to transmittal of OC SAN comments on Design Submittal 2, shall be incorporated into the Design by CONSULTANT with no increase in CONSULTANT's Not-to-Exceed upper limit on fees.

### 3.0.3 GENERAL REQUIREMENTS AND ADDITIONAL GENERAL REQUIREMENTS

A. The following are the minimum Additional GRs topics required for this project:

☒Summary of Work
☒Work Sequence
☒Work Restrictions
☒Permits
☒Environmental Restrictions and Controls with respect to dust mitigation and maintaining the required temperatures in the areas with servers, control panels, and other sensitive equipment.
☒Measurement and Payment (includes Mobilization/Demobilization)
☒Seismic Design Criteria (for those restraints, supports, etc. to be design by the Contractor)
☒Shipping, Storage and Handling
☒Project Control Management System (PMWeb construction management software)
☒Hazardous Materials Mitigation and Controls
☐Mold Remediation and Controls

### 3.0.4 DESIGN SUBMITTALS

A. The CONSULTANT shall produce the following design submittals as indicated below in accordance with **Exhibit 2 - Design Requirements.** If a design submittal is eliminated, then the design submittal shall include the requirements associated with the required design submittal along with the requirements associated with the previous unchecked design submittals.

☐Design Submittal 1
☒Design Submittal 2
☒Design Submittal 3
☒Final Design Submittal

B. Continuing Work After Design Submittal Submission

For Design Submittals 2 and 3, CONSULTANT shall stop all design work until receipt of OC SAN comments on that submittal.

### 3.0.5 CONSTRUCTION SUBMITTAL ITEMS LIST

A. CONSULTANT shall develop the Construction Submittal Items List in accordance with **Exhibit 2 - Design Requirements.**

### 3.0.6 TEMPORARY FACILITIES DURING CONSTRUCTION AND WORK SEQUENCING AND RESTRICTIONS

A. Temporary facilities during construction are required. Prepare plans and work sequence for temporary facilities during construction, as described under the "Temporary Facilities During Construction" paragraph under the Project Elements.

B. CONSULTANT shall develop, with OC SAN staff input, and include in the Bid Documents detailed requirements for construction sequencing and constraints. These shall ensure safe and reliable use of OC SAN facilities. The facilities must be kept on-line and fully operational with minimal interruptions throughout construction.

C. Develop the Work Constraints that may be required during the construction phase. This will include identifying and designing temporary facilities and relocation plans that will be required during the construction period.

D. Prepare the construction Work Sequence plan, including any construction related mitigations, such as hazardous material abatement, staff relocations, and protection of equipment that cannot be moved. This plan also needs to include any required outages that will be required to accommodate construction activities and the necessary coordination with Maintenance and Collections personnel to schedule these outages.

## 3.1 DESIGN SUPPORT DOCUMENTATION

### 3.1.1 DESIGN SUBMITTAL SUPPORT DOCUMENTATION

A. The CONSULTANT shall provide a Design Submittal Support Documentation in accordance **Exhibit 2 - Design Requirements.**

B. Design Information

1. CONSULTANT shall include the following material with each Design Submittal:

   a. CONSULTANT shall maintain the Project Logs specified under Phase 2 Project Management through Phase 3. Current copies of all logs shall be included with each Design Submittal.

   b. Written response log to OC SAN comments on the previous submittal.

   c. Calculations

   d. Draft or final Field Findings Reports not submitted in the previous submittal and those revised since the previous submittal.

   e. All memos that may be prepared since the previous submittal was delivered.

C. Facility Operation and Maintenance

☒Not required.
☐Update operating philosophies
☐Update estimates of Operation and Maintenance staffing requirements

D. Electrical Design Documentation

☐Electrical design documentation not required.
☐Updated Electrical Load Criticality Table
☐Electrical Analysis Report
☐Load list for all equipment
☐Equipment sizing from three manufacturers for motor control centers, switchgear, transformers, and power panels
☒Lighting calculations
☐Standby generator sizing calculations
☐Duct bank cable pulling tension, derating, and cable tray fill calculations

E. Power System Studies

☒ETAP not required.
☐Plant ETAP model for the project performed by OC SAN.
☐Plant ETAP model for the project performed by CONSULTANT.
☐Electrical Systems Analysis Report performed by CONSULTANT.

### 3.1.2 CONSTRUCTION COST ESTIMATE

A. The CONSULTANT shall provide a cost estimate for the associated design submittal indicated below in accordance with **Exhibit 2 - Design Requirements.**

☐Design Submittal 1
☒Design Submittal 2
☒Design Submittal 3
☒Final Design Submittal

### 3.1.3 CONSTRUCTION SCHEDULE

A. The CONSULTANT shall provide a Preliminary Construction Schedule for the associated design submittal indicated below in accordance with **Exhibit 2 - Design Requirements.**

☐Construction Schedule is not Required
☐Design Submittal 1
☒Design Submittal 2
☒Design Submittal 3
☒Final Design Submittal

### 3.1.4 PROCUREMENT ALTERNATIVES

A. The CONSULTANT shall recommend the appropriate procurement alternatives as described in **Exhibit 2 - Design Requirements**.

☒Procurement alternatives not required
☐Procurement alternatives required

## 3.2 DESIGN ACTIVITIES

The following services shall be provided by the CONSULTANT or an appropriately qualified subconsultant. In any case, the CONSULTANT shall be responsible for managing all subconsultants, including reviewing their work products prior to submission to OC SAN.

### 3.2.1 UTILITY INVESTIGATION

A. CONSULTANT services related to Utility Investigation on the project are specified in Phase 2 – Preliminary Design and those services shall continue during Phase 3 – Design as required. CONSULTANT shall allocate the budgeted hours between Phase 2 and Phase 3 based on when these services will be required.

B. Final Design Submittal Utility Coordination Reviews

1. During DS3 submittal review, an on-site inspection shall be made in the project areas. During the on-site inspection, a senior-level CONSULTANT representative shall walk the site accompanied by OC SAN's Project Engineer and Supervising Inspector. The CONSULTANT's representative shall be experienced in the location and identification of utilities in the field. During the on-site inspection the CONSULTANT shall document all visible features that indicate utilities within the project area and compare them with the Contract Drawings.

### 3.2.2 SPECIALTY SERVICE

A. The CONSULTANT shall hire a Specialty Subconsultant that will be needed for any hazardous material mitigation, such as asbestos, lead paint, mold, etc., or any other specialty needs. The Subconsultant shall create the Scope of Work(s) necessary to facilitate the hazardous material mitigation and include this in the bid documents.

### 3.2.3 PERMITTING ASSISTANCE

A. CONSULTANT services related to Permitting Assistance on the project are specified in Phase 2 – Preliminary Design and those services shall continue during Phase 3 - Design. CONSULTANT shall allocate the budgeted hours between the Permitting Assistance services in Phase 2 and Phase 3 based on when these services will be required. CONSULTANT shall submit and obtain approval for the design from City of Huntington Beach at DS 3, to allow incorporation of comments from City of Huntington Beach into FDS and have documents ready for Contractor winning the bid to obtain the permit from the City of Huntington Beach.

### 3.2.4 PROJECT MANAGEMENT

A. CONSULTANT shall be responsible for managing CONSULTANT's project execution, schedule, budget, subconsultants, and coordination with other projects. CONSULTANT services related to Project Management on the project are specified in Phase 2 – Preliminary Design and those services shall continue during Phase 3 – Design as required. CONSULTANT shall allocate the budgeted hours between Phase 2 and Phase 3 based on when these services will be required.

### 3.2.5 RISK MANAGEMENT

A. CONSULTANT shall provide risk management in accordance with **Exhibit 4 - Risk Management Requirements**.

B. Risk Management:

☐Not required
☒Required
☐DS1 Risk Workshops: 1 hour (held during OC SAN's review of DS1)
☒DS2 Risk Workshops: 1 hour (held during OC SAN's review of DS2)
☒DS3 Risk Workshop: 2 hours (held during OC SAN's review of DS3)

### 3.2.6 QUALITY CONTROL

A. The CONSULTANT shall provide Quality Control requirements in accordance with **Exhibit 6 - Quality Control Requirements**.

☒Independent Multi-Discipline Design Workshop is not required.
☐Independent Multi-Discipline Design Workshop is required. (minimum duration of 4 days)

## 3.3 DESIGN WORKSHOPS AND MEETINGS

### 3.3.1 GENERAL

A. Workshop and meeting planning, requirements, agendas, and meeting minutes shall be in accordance with **Exhibit 5 - Workshop and Meeting Requirements**.

### 3.3.2 DESIGN PHASE WORKSHOPS

A. The focus of workshops is to review project progress to date and the technical decisions that have been made in focused meetings. CONSULTANT shall conduct the workshops listed below in Phase 3 – Design. The CONSULTANT shall allow the following time for each workshop:

| DESIGN PHASE WORKSHOPS | |
|---|---|
| **WORKSHOP TYPE** | **DURATION** |
| Design Kickoff Workshop | 3 hours |
| Design Review Meetings | 3 hours |
| Design Validation Meeting | 3 hours |

B. The Design Review Meetings shall include the following topics, as applicable to the project:

1. Construction
2. Coordination with Maintenance and Collections personnel to identify access to the buildings and equipment that cannot be relocated. Also, protection needed for this equipment and required utilities to remain operational during construction activities.
3. Temporary Facilities (including personnel relocation to/from temporary facilities)
4. Equipment Protection

C. A series of workshops shall be provided for the Design Review Meetings.

D. During final design, workshops shall be held after each design submittal.

### 3.3.3 PRE-DS3 CONSTRUCTABILITY WORKSHOP

A. A constructability workshop shall be held after receipt of DS2 comments but prior to the DS3 submittal and shall be a three-day workshop. The constructability review is intended to provide OC SAN with an objective third-party review of the Bid Documents for effectiveness in communicating information to prospective bidders. The review shall determine if the documents have sufficient information needed to bid and construct the project and avoid misunderstandings and misinterpretations that may lead to conflict, confusion or claims during construction. This review is not a comprehensive plan check, a dimensional check, or a value engineering assignment. Further, it is recognized that comments may only be given on the level of detail provided at this level of design.

B. Constructability review participants shall include highly experienced individuals from construction companies, OC SAN construction management staff and CONSULTANT construction management staff. Specialty Consultants and discipline engineers may also be included. The constructability review participants of the workshop will be arranged and provided by OC SAN.

C. Each constructability review participant shall receive a package at least two weeks in advance. The package shall include plans and specifications, general conditions, the CPM schedule, the construction cost estimate, permits, and other pertinent information. The confirmation statements regarding the size-critical equipment as required in the Engineering Design Guidelines, Chapter 01, Design Guidelines – General Requirements, Section 01.2.15.2 “Size-Critical Equipment” shall also be included in the review package.

D. The constructability review shall be held on-site.

E. Day 1 shall start with a site visit, for the reviewers to acquaint themselves with the site conditions. After the site visit, the CONSULTANT shall make a short presentation, followed by a question-and-answer period. This is anticipated to take about 1/2 day. The second half of Day 1, Day 2, and the first half of Day 3 shall be individual workdays for the Constructability Review Team. The CONSULTANT shall not attend, although one designated individual from the CONSULTANT’s Design Team shall remain to answers questions and gather additional information that the constructability review team might need.

F. On the afternoon of Day 3, the CONSULTANT shall return and listen to comments from the Constructability Review Team. A designated individual shall record the comments, and take notes from the workshop, to document the process.

G. Topics the Constructability Review Team must consider shall include:

1. Project consistency, discrepancies, and constructability issues
2. Contradictions, bid package strategies, and biddability issues
3. Power outages and equipment shutdowns
4. Construction methods and mitigating impacts
5. Viability of equipment relocation
6. Operational requirements (including personnel relocation to/from temporary facilities)
7. Access to make proper connections
8. User-friendliness and safety
9. Coordination with other projects
10. Risk sharing
11. Construction sequencing and schedule, materials storage, and work zone accessibility
12. Clarity of the scope of work, and interface activities
13. Impacts on existing operation
14. Access

15. Cost control

16. Partnering with contractor

17. Other local conditions and constraints

H. The Constructability Review Team shall provide a list of comments and the CONSULTANT shall respond to each comment, selecting those comments to be included in the final plans and specifications.

I. To facilitate the Constructability Review Workshop, CONSULTANT shall complete the following tasks:

1. Prepare package for constructability review participants. The package shall consist of detailed plans and specifications and other information selected by CONSULTANT. The package shall be mailed to participants at least two weeks prior to the workshop.

2. Arrange for on-site location for Constructability Review Workshop.

3. Provide for a constructability review facilitator.

4. Prepare presentation on the project for the Constructability Review Team.

5. Meet with Constructability Review Team to receive comments.

6. Provide listing of constructability review comments and action taken on each comment. (The summary report of constructability review comments shall be prepared by the Constructability Review Team.)

J. All comments and recommendations of the workshop shall be considered and responded to by the Consultant. If the comments require re-design work to improve the constructability of the design, additional costs may be required. If the changes are necessary to allow for constructability, changes will be incorporated into the Bid Documents at no additional cost to OC SAN.

K. During FDS, the Constructability Team shall also conduct an additional constructability review of the final Bid Documents to review clarity of the bid package, project completeness, and other issues, as necessary.

### 3.3.4 DESIGN PHASE MEETINGS

A. Technical Progress Meetings

1. Technical Progress Meetings shall be held every 4 weeks for 2 hours to review various issues with OC SAN's project team. A total of 8 meetings for 2 hours shall be held during Design Phase. The CONSULTANT shall coordinate with the OC SAN Project Manager to determine what topics will be covered in what meetings, and what OC SAN and CONSULTANT team members are required for each.

B. Focused Meetings

1. Focused meetings shall be held throughout design to discuss specific issues in detail and generate comments and direction from OC SAN staff. The following tentative list of topics may be covered in these meetings:

a. Quality control plan

b. Common names for facilities and equipment

c. Permits

d. Safety requirements

e. Architectural concepts – Only with respect to structural mitigation impacts.

f. Hazardous Area classification (with OC SAN Authority Having Jurisdiction representative participating)

g. Utilities and utility tie-ins

h. Construction sequencing

i. Special studies

j. Coordination with other projects

k. Additional meetings as necessary

2. Each meeting shall generally be 2-4 hours in length. CONSULTANT shall determine how many meetings will be needed to cover these topics. CONSULTANT may suggest additional topics as necessary. Supplementary meetings may be scheduled with OC SAN staff, as necessary to allow coordination between the CONSULTANT and OC SAN staff.

### 3.3.5 COORDINATION WITH OTHER PROJECTS MEETINGS

A. The project shall be a complete and fully functional facility that is integrated with existing facilities and coordinated with other construction projects. CONSULTANT shall coordinate potential conflicts with adjacent projects and participate in the number of meetings indicated in the table in section 2.3.7 of this Scope of Work.

### 3.3.6 SAFETY AND RISK MEETING

A. Meet with OC SAN Safety and Risk Management personnel between DS2 and DS3 to review the plans and specifications in accordance with OC SAN safety policies and OC SAN Risk Management goals.

## 3.4 BID PHASE SUPPORT SERVICES

### 3.4.1 BID PHASE SUPPORT SERVICES

A. CONSULTANT shall provide the following bid period services:

1. Participate in the pre-bid meeting.

2. Prepare project drawing set and project specification addenda to provide clarification and resolve errors and omissions identified prior to bid opening.

### 3.4.2 BID EVALUATION ASSISTANCE

A. Participate in reviewing alternate equipment proposals from the Contractor, if applicable.

B. Participate in the evaluation of the submitted bids, furnish consultation and advice to OC SAN staff, and assist with all the related equipment, cost, and other analyses as required to finalize the award decision.

### 3.4.3 CONFORMED DOCUMENT PREPARATION

A. Within two weeks of the bid date, prepare conformed documents set (drawings, databases, specifications, and other required materials) that incorporates the addenda. See Engineering Design Guidelines, Chapter 01, Design Guidelines – General Requirements, Section 01.4 “Preparation of Project Deliverables” for requirements as

modified in Section V of this Scope of Work, “Project-Specific Deviations from OC SAN Design Guidelines” and the requirements of the CAD Manual).

# 4. PHASE 4 – CONSTRUCTION AND INSTALLATION SERVICES

Not in this Scope of Work.

# 5. PHASE 5 – COMMISSIONING SERVICES

Not in this Scope of Work.

# 6. PHASE 6 – CLOSE OUT

Not in this Scope of Work.

# 7. GENERAL REQUIREMENTS

## 7.0 GENERAL

### 7.0.1 OC SAN ENGINEERING DESIGN GUIDELINES AND STRATEGIC PLAN

A. CONSULTANT shall refer to and adhere to the requirements of OC SAN Safety Standards, OC SAN Engineering Design Guidelines, any deviations to the Engineering Design Guidelines listed below, and other OC SAN’s Design Standards referenced therein. **Exhibit 17 - OC SAN Engineering Design Guidelines and Standards – Available online at https://www.OC San.com/about-us/transparency/document-central/-folder-917** is a complete set of the OC SAN Safety Standards and OC SAN Design Standards, the latest edition at the time of the design proposal stage.

B. The Engineering Guidelines define what plant design concepts/tools/methods and project management requirements shall be adhered to and in what manner they shall be used/provided by Consultants, e.g., requirements regarding design concepts, submittals, documentation details, use of OC SAN Master Specifications, and other related OC SAN Standards, etc.

C. Refer also to Section “CONSULTANT’s Responsibilities” in OC SAN Engineering Design Guidelines Chapter 01. Refer to “Master Specifications Instructions for Use” that mandates rules and conventions to be used in all OC SAN project specifications.

D. The project Scope of Work defines whether or not each specific deliverable described in the Guidelines shall be part of the project and when each task shall take place.

E. The project Scope of Work also includes requirements that supplement and/or modify the Guidelines requirements for this project.

F. The project Scope of Work and OC SAN Engineering Design Guidelines impact CONSULTANT’s project cost.

G. Except as specified in this Scope of Work, design of all facilities shall conform to the recommendations of the currently approved Master Plan for OC SAN facilities. The project shall also incorporate all applicable mitigation measures included in associated environmental documents and site-specific local requirements.

H. In addition, OC SAN will require the CONSULTANT to follow subsequent revisions of OC SAN Safety Standards, OC SAN Engineering Design Guidelines, and other OC SAN Design Standards up to transmittal by OC SAN of comments on Design Submittal **2**, shall be incorporated into the Design by CONSULTANT with no increase in CONSULTANT's Not-to-Exceed upper limit on fees.

I. OC SAN may update OC SAN's Master Specifications and/or add new OC SAN Master Specifications up to transmittal by OC SAN of comments on Design Submittal 2. The CONSULTANT shall utilize the new and/or modified Master Specifications for the DS3 submittal.

J. The CONSULTANT shall not begin editing the project specifications until the project team meets with OC SAN's Design Standards Custodian to discuss and receive comments regarding the CONSULTANT's proposed list of project specifications. This meeting will be used to determine which specifications are to use OC SAN's master specifications, and where other sources will be utilized.

### 7.0.2 PROJECT PHASES AND TASKS

A. Project tasks and deliverables shall include the requirements described in this Scope of Work. CONSULTANT shall also refer to Appendix A of OC SAN Engineering Design Guidelines for the level of detail requirements for individual deliverables in each Phase of the project not covered in the Scope of Work.

### 7.0.3 WORKING HOURS

A. Meetings with OC SAN staff shall be scheduled from Monday through Thursday between the hours of 8:00 AM and 4:00 PM. Any CONSULTANT staff working on-site shall conform to OC SAN work schedules. CONSULTANT shall refer to the Engineering Design Guidelines, Chapter 01, Section 01.3.5 "CONSULTANT Inspection of Treatment Facilities" for further requirements.

### 7.0.4 STANDARD DRAWINGS AND TYPICAL DETAILS

A. All the details used in the project (OC SAN's Standard Drawings and CONSULTANT-developed typical details) shall be shown on the Plans.

### 7.0.5 SOFTWARE

A. The CONSULTANT is expected to develop and provide the deliverables using the standard software currently approved for use by OC SAN. For Project P2-138, the use of Revit is considered to be an approved software. Additional details of Revit requirements are included in Part B. The standard OC SAN software includes, but is not limited to, the following:

(1) Oracle 9i client

(2) ESRI software (Arc GIS latest version)

(3) AutoCAD P&ID (for P&ID drawings only)

(4) AutoCAD (for all other drawings)

(5) Microsoft Office (latest version)

(6) Bluebeam Revu (latest version)

(7) Primavera P6 for scheduling

(8) PMWEB for Construction Documents

(9) Additional software approval may be granted by OC SAN under Article B.

B. For each design deliverable, CONSULTANT shall submit:

1. Drawings produced using Revit

   a. Revit Model (not .dwg files)

2. Drawings developed using Civil 3D

   a. Unbound .dwg files conforming to OC SAN CAD Standards

3. Drawings developed using AutoCAD

   a. Unbound .dwg files conforming to OC SAN CAD Standards

4. PDFs of all drawings

C. For Conformed drawings submittal, CONSULTANT shall submit:

1. Drawings produced using Revit

   a. Revit Model

   b. .dwg extractions generated by Revit. These .dwg extractions will be viable through AutoCAD, but will not conform to OC SAN CAD Standards

   c. The .dwg extractions will have the file names saved to match the drawing numbers.

   d. The .dwg extractions will be saved in separator folders from other .dwg so they can be distinguished from other AutoCAD files.

2. Drawings using Civil 3D or AutoCAD

   a. Submit unbound .dwg files conforming to OC SAN CAD Standards.

3. PDF of all drawings

D. Any software that the CONSULTANT needs to comply with these standards shall be purchased and maintained by the CONSULTANT at no additional cost to OC SAN. In the event OC SAN provides the CONSULTANT with access to OC SAN software and hardware at an OC SAN facility in order to facilitate performance of their work, all software shall remain the property of OC SAN. Only software licensed to OC SAN shall be installed on OC SAN equipment. In addition, only OC SAN IT Department staff will perform the installation of this software.

E. Refer to Chapters 10 and 11 and Appendix A of OC SAN Engineering Design Guidelines for requirements on preparation of Criticality Tables and ETAP, SAT, and EID databases. Refer to OC SAN CAD Manual and to Chapter 11 and Appendix A of OC SAN Engineering Design Guidelines for requirements regarding P&ID drawings.

### 7.0.6 SUBMITTAL REVIEW USING BLUEBEAM

A. OC SAN has standardized on the use of Bluebeam Revu for reviewing and providing comments to PDF files. PDF files will be hosted in a Bluebeam cloud-based studio session for review. See **Exhibit 15 - Bluebeam Designer User Training** for a detailed explanation on how Bluebeam will be used to provide, validate, and close submittal review comments.

B. Prior to submitting electronic PDF files, format them as indicated in **Exhibit 14 - Bluebeam Designer Training for Submission** and “OC SAN CAD Standards Manual” prior to submission.

C. A one-hour training session on the use of Bluebeam and custom status menu will be provided by OC SAN. All Consultant team members responsible for quality control and reconciliation of submittal comments shall attend.

### 7.0.7 WORD TRACK CHANGES

A. Specifications documents and other MS-Word based deliverables will be hosted in OC SAN Teams environment for review. The guidelines for reviewing and commenting on MS-Word files, including Specifications reviews, can be found in **Exhibit 16 - Spec Review using Microsoft Word and Teams.**

### 7.0.8 PMWEB PROCEDURES

A. This Agreement shall utilize PMWeb as the Project Control Management System (PCMS) for overall management of the Agreement. All PCMS related documents requiring formal signatures shall be digital, and all copies digitally distributed. The PCMS conforms to the requirements set forth in California Government Code section 16.5 regarding digital signatures; therefore, digital signatures are in full force and effect and are legally the same as a hand-written signature. At least one PCMS account shall have the authority to approve Amendments.

B. OC SAN shall maintain the PCMS and serve as the administrator for the duration of this Agreement. OC SAN will provide the CONSULTANT with user access for approved personnel as needed for the duration of the Agreement. OC SAN shall control access to the PCMS by assigning user profiles and login credentials. Notify OC SAN of any changes to personnel. Access modifications shall be coordinated as needed throughout the Agreement. Do not to share PCMS account passwords with anyone inside or outside of the company.

C. Routine maintenance of the PCMS system may be required during the Agreement. Access to the PCMS system may be restricted or unavailable at these times and will be scheduled outside of typical working hours whenever possible.

D. The PCMS is a web-based environment and is therefore subject to the inherent speed and connectivity problems of the Internet. The CONSULTANT is responsible for its own connectivity to the Internet. PCMS response time is dependent on the CONSULTANT's equipment, including processor speed, Internet access speed, Internet traffic, etc.

E. OC SAN will not be liable for any delays associated with the utilization of the PCMS including, but not limited to slow response time, down time periods, connectivity problems, or loss of information.

F. The OC SAN will provide a one-time free training session of up to two (2) hours to train CONSULTANT's designated staff on general system requirements, procedures, and methods.

G. Automated system notifications generated via PCMS (e.g., in-system notices, system generated email, or email with attachment) shall constitute a formal written notification in compliance with the Professional Design Service Agreement (PDSA), Professional Construction Service Agreement (PCSA), or Task Order (TO) Agreement.

## 8. STAFF ASSISTANCE

OC SAN staff member or designee assigned to work with CONSULTANT on the design of this project is Charlie Guess at 949-562-2310, e-mail to: cguess@ocsan.gov.

## 9. EXHIBITS

**Exhibit 1 - Preliminary Design Report Requirements**

**Exhibit 2 - Design Requirements**

**Exhibit 3 - Project Management Requirements**

**Exhibit 4 - Risk Management Requirements**

**Exhibit 5 - Workshop and Meeting Requirements**

**Exhibit 6 - Quality Control Requirements**

**Exhibit 7 - Design Submittal Requirements Matrix**

**Exhibit 8 - Project Schedule Calculation**

**Exhibit 9 - Deliverables Quantities**

**Exhibit 10 - Sample Construction Cost Estimate Format**

**Exhibit 11 - Sample Full Project Safety Review Plan**

**Exhibit 12 - Sample Risk Management Check List**

**Exhibit 13 - MMRP Log Template**

**Exhibit 14 - Bluebeam Designer Training for Submission**

**Exhibit 15 - Bluebeam Designer User Training**

**Exhibit 16 - Spec Review using Microsoft Word and Teams**

**Exhibit 17 - OC SAN Engineering Design Guidelines and Standards – Available online at https://www.ocsan.gov/about-us/transparency/document-central/-folder-917**

**Exhibit 18 – Not Used**

**Exhibit 19A - Project Reference Material**

1. PS17-03 Active Fault Study at Plant No. 2
2. PS15-06 Geosyntec Project Report – Final Volumes 1 & 2
3. Study Memo: P2-138 Seismic Evaluation of Maintenance Building