ATTACHMENT B

SCOPE OF WORK

SATALA POWER PLANT DESIGN and BUILD

I. GENERAL

A. The American Samoa Power Authority (ASPA) issues this Request for Proposal for Design and Build Power Plant Building and Facilities from a contractor and/or professional consulting and engineering firm with experience in Design (including Architectural & Engineering) and Build (constructing) Diesel Generating Power Plants and related facilities. The New Power Plant Building and related facilities will be situated next to the old Satala Power Plant location as designated by the land area outlined in the map and diagrams in the Exhibits section.

B. The selected Design & Build Contractor will develop detailed design from a pre-designed conceptual layout of 23 MW diesel engine power plant building which consists of seven (7) each GE16V250GSU Diesel generators & all associated auxiliary equipments, two (2) each, black start generators, 480V, 13.2 kV switchgears, distribution to feeders of 13.2 kV power grid system with a centralized control room and related facilities for the smooth operation of the plant. All local and federal required Permits for Design and Construction of the 23 MW Power Plant and its ancillary structures, cable trenches/runs between the power plant and the existing distribution grid for underground transmission, and distribution lines must be complied with and be included. The Generator, Switchgear, and Auxiliary equipment information and layout will be provided to the Design & Build contractor.

C. The selected Design & Build Contractor will construct the Satala Power Plant Electrical Earth/Ground Grid System as per design specification for Generators, Switchgear & Auxiliaries as listed in Exhibit 7 page 4.

D. The proposed design for construction will have detailed layouts, descriptions, project schedule and costs estimates. The proposed plan will address location, size, parking, landscape, utilities, ingress and egress within the Satala Power Plant ASPA Compound as related to the new building.

E. The Design and Build Contractor will survey, design and perform any required construction for the best cable route and layout for duct work, conduit runs, and cable runs to interconnect with the Satala Power plant with the Satala Medium Voltage and Low Voltage substation, and distribution grid system for all 13.2 kV Feeders.

F. The selected Design and Build Contractor will be responsible for the final detail architectural design & engineering of the New Power Plant Building, Facility and Facility grounds to include Bulk Fuel Storage Tanks, Waste Liquid Storage Tanks, runoff water separator, etc. If required by ASPA, the Design and Build Contractor shall prepare all bid documents for the purpose of issuing the request for bid for the construction of the New Power Plant Building. All engineering
& design, selected materials and equipment are required to be submitted to ASPA project manager for final approval before actual construction.

G. The selected Design and Build Contractor will be tasked with coordinating all work with the ASPA Project Manager, and work with ASPA technical team, Generators & Switchgear supply contractor for timely completion of project as per standard best work practices with the Building Construction Contractor. The scheduled timeline for this project is part of the evaluation criteria.

H. The selected Design and Build Contractor will design the new Power Plant Building to include Noise Attenuation for the surrounding residential area. Noise level must be 65 dB or lower, measured at 10 meters from the corners of the power plant. Other design criteria should also be applied to further reduce the noise level of the plant from the residential homes nearby, such as trees/plants or other natural or man made barriers.

I. The new power plant and entire power plant facility shall include security & boundary fencing, security guard post, and security lighting.

II. SCOPE OF WORK FOR NEW POWER PLANT BUILDING

A. The Design & Build Contractor will be required to design the new power plant building on the proposed ASPA Satala site, outside of the VE Zone in accordance with the map in Exhibit 2.

B. The Design & Build Contractor will be required to plan and design the new Satala power plant to meet the most current industrial and local building codes as well as regulations established by Federal and local government (See page 23, Section II, Code and Design Criteria). The Satala Power Plant design must meet all required environmental regulations and local permits.

C. The Design & Build Contractor shall perform the required work for site survey, soil testing, Geotech and site mapping.

D. The Design & Build Contractor will prepare a site layout and building design for the new Power Plant building and facility as shown in the layout provided in Exhibit 3 and Exhibit 7, page 3 for the Generators, Switchgear & Auxiliaries.

E. The Building will be designed to withstand wind loads up to 150 mph, and accommodate all the generating units, switchgears, auxiliaries, operator controller room, support staff facility, integrated with fuel, lube oil and other ancillary components, fixed overhead crane for maintenance of generators, and connections to support utilities such as water, wastewater and station service.

F. The Design & Build Contractor shall design the new building per Equipment Contractor’s (EC) conceptual design with some modification per ASPA requirements. The Design & Build Contractor will design building layout with EC’s recommended spacing and equipment layout, to house the following major equipment components:

1. Seven (7) 3.5MW, 13.2kV, 60Hz Generators
2. Two (2) 500 kW, 480 V, 60Hz Emergency Generators
3. Electrical Maintenance Overhead Crane – 10 Ton
4. 34.5KV & 13.2 kV and 480V Switchgear
5. Motor Control Centers (MCC) for each Generator
6. Earth Resistors, DC Supply and Battery system and other auxiliaries
7. Other components as required for the Generators, Switchgear & Auxiliaries in conceptual drawings in Exhibit 3

G. The new Power Plant Building shall incorporate energy efficient designs and plans for electric, water and waste water utilities with out sacrificing the artistic design of the building.

H. Apart from the Generator Bay, the new Power Plant Building shall be designed into two story or floors for the control room, offices, workshops, restrooms, etc. with a basement or Ground floor for cable room for all cable runs. All offices, meeting rooms and kitchen shall be fully furnished with appropriate furnishing and appliances – desks, chairs, sinks, refrigerators, etc. The New Power Plant building floors shall be designed to accommodate the following minimum requirements (Design & Build contractor may also propose alternate design that is equivalent or better than ASPA’s requirement – to be approved by ASPA):

1. Ground Floor or Basement:
   Cabling room for HV/MV/LV; Control; LAN/FIBER & SCADA; Telephone etc…

2. First Floor:
   (a) Engine Room
      (i) Seven (7) –GEV16250GSU, 3.5MW, 13.2 kV Gensets with generator LCPs
      (ii) Two (2) Cummins, 500 kW, 480 V Emergency Gensets
      (iii) Overhead Crane – 10 tons
      (iv) MCC Panels/CB
      (v) Air ventilation and circulation system for proper cooling of the power plant
          (ventilation intake openings should be elevated as part of flood proofing)
      (vi) Flood proofing doorways and entry ways – entire plant building will be designed to
          withstand flooding and water inundation of engine room and vital equipment rooms
      (vii) All Entrance/Exit ways should be water tight when closed in case of flooding, but
          also allow for containment of any spills within the power plant
   (b) Switchgear Room - located next to the Engine floor
      (i) 480V Switchgear/CB
      (ii) 13.2 kV Switchgear/CB
      (iii) 34.5 kV Switchgear/CB
      (iv) Auxiliaries – MCC boards, Battery chargers, Environmental Control (Air
          conditioning and dehumidifiers) AC, DC panels.
      (v) Battery Room
   (c) Restroom Lockers and Showers- located next to the Engine floor
   (d) Maintenance crew room (Electrical and Mechanics) - located next to the Engine floor
(c) Material Storage/Warehouse & Tool Room - located next to the Engine floor

3. Second Floor:
   (i) Operator Control Room
   (ii) Office Room – Mgr/Supervisor
   (iii) Meeting Room
   (iv) Rest Room
   (v) Kitchen
   (vi) Public Entrance/Reception Area
   (vii) Generator Bay viewing platform/cat walk with stairway to first floor

4. For general lighting inside and outside, the latest energy efficient lighting shall be used (for example: LED lightings)

5. Air-conditioning for the Control Room and High/Low Voltage Switchgear Room

6. Security surveillance control & monitoring with back up power supply located inside the Operator control room to monitor the entire facility

7. Building and entire facility will be located near the ocean, therefore it must be designed to withstand corrosion and tropical climate

8. Fire detection, Fire suppression system or sprinkler system and emergency exit doors

9. Americans with Disability Act (ADA) compliance where required

10. Rain water harvesting system with adequate storage tank(s) from roof drainage of the building that serves a second purpose of minimizing any runoff within the compound

11. The Operator Controller room shall have windows to allow view of the entire engine bay. A viewing platform along the length of the second floor with stairs shall also be included outside the controller room. The Noise level inside the control room and offices shall not exceed 55dB.

12. Floors shall have adequate space to accommodate moving of desks and equipment between the first and second floor (wide & tall doorways for control room and other critical operational space).

13. A roof platform with railings with easy access for roof and ventilation maintenance.

III. COMPOUND PLAN LAYOUT

The successful Design & Build Contractor will also design and provide a compound plan layout and location for other support facilities for the new Power Plant Project activities to include but not limited to the following:

A. Two (2) each, 50,000 Gallon Bulk Storage Fuel Tank system with Off-loading Refueling Rack Facility; to include mass flow fuel metering, fuel management system, valves, pipe work, spill prevention, fire fighting & detection system, and all associated equipment and materials.
B. Waterlines and Wastewater Installations, including back up Water Storage Tank system for engine cooling water, and Sludge & Waste Oil Storage Tanks with spill prevention (containment structure)

C. Station services transformers – located outside of the Power plant building; to include containment to prevent oil spills

D. Perimeter Concrete & Rock Wall

E. Oil & Water Separator System for treatment of all run-off water from power plant grounds (USEPA and US Coast Guard compliant). The new Power Plant Building and power plant grounds should have adequate containment in case of oil or fuel leak inside the power plant facility.

F. Design the Layout and install for the entire compound the lighting electrical system

G. Re-route Existing Drainage System and Construct Drainage system where required - Internal/External Drainage System for Fuel and Oil Spill Prevention and Runoff

H. Fuel and Lube Oil Storage & Secondary Containment Facilities

I. Parking Space with handicap parking, Security Building, and Machine Shop

J. Drainage shall be designed and constructed properly to avoid flooding of power plant building during heavy rain storms. Building foundation should be high enough to prevent flooding from runoff and heavy rains

IV. GENERATION EQUIPMENT, SWITCHGEAR, AND AUXILIARIES

A. The Successful Design & Build Contractor will be coordinating the New Power Plant building Design with the Equipment Contractor (EC) for the new Satala power plant.

B. The Successful Design & Build Contractor will work with the EC group for any needed civil structure detail layout for the design of the generator foundation and any other required equipment foundation.

C. The Successful Design & Build Contractor will assist and work with the ASPA technical Staff to completely address all schedules and plans for completion of the tasks which are specified in EC’s scope of work (SOW) for the Base Load Generators, Switchgear & Auxiliaries specifications as required by ASPA.

V. DETAIL ARCHITECTURE AND DESIGN

A. The Design & Build Contractor shall arrange and conduct a series of meetings with the ASPA technical team during the scope design phase of the project to fully understand the specific project elements and to define the basic requirements for each of the project scope elements.
B. The Design & Build Contractor and ASPA shall arrange and conduct a series of meeting with the contractor for the Generator, Switchgear & Auxiliaries layout and installation.

C. The Design & Build Contractor shall be required to develop a comprehensive set of safe and constructible plans and specifications for the construction of the Project. The Design & Build Contractor is required to ensure that these are in full compliance with all Federal, State and the ASPA codes, regulations and ordinances. The Design & Build Contractor shall be responsible for development of all details for any feature or function that is not covered by applicable standards. All design, construction materials and its specification require pre-approval from ASPA before actual construction.

D. The design and construction of this project is to be achieved in the shortest time period, at the most economical cost, and with minimal disruption to ASPA daily operation and minimal inconvenience to ASPA customers. Therefore, all work during design and construction must be staged so as to maintain ASPA operation and minimize traffic impacts and disruptions to the surrounding areas. The Design & Build Contractor shall develop staging and phasing plans which will ensure that the construction can be accomplished in this manner.

E. The Design & Build Contractor shall be responsible for developing constructible contract documents that are sufficiently clear and complete, so that they can be easily interpreted and competitively bid out. The Design & Build Contractor shall anticipate the need to develop construction documents in accordance with local and federal law.

F. The Design & Build Contractor shall develop all necessary submissions as required by Federal and Local government, and ASPA. Submissions shall include, but not be limited to, sketch plans, phasing plans, zoning plans, and permit applications. Further, the Design & Build Contractor shall attend and participate in all meetings necessary to satisfy the Federal and Local governments and ASPA requirements.

G. The Design & Build Contractor is required to satisfy all Federal, Local, and ASPA ordinances, statutes and other stipulations. If required, the Design & Build Contractor shall obtain any and all approvals and/or obtain all zoning variances necessary to acquire approval from the relevant agency.

H. Whether or not it is expressly stated, the Design & Build Contractor shall be responsible for the performance of any work that is either incidental to, or a prerequisite for, any of the tasks or services identified herein. Furthermore, the Design & Build Contractor shall be responsible for performing tasks and services that may not be specifically identified herein, but are clearly included in the intent of this section. Wherever in this section a task is described, without specifically stating who is responsible for performing said task, it shall be implicit that the responsibility for the completion of the work is that of the Design & Build Contractor. Sub-Contractor may perform portions of the work subject to the conditions of this Contract with review and supervision by the Design & Build Contractor.

VI. TASK PHASING

The work comprises distinctive design and construction phases as described below:
A. PHASE 1: ENGINEERING & DESIGN
   1. Collection of information and data (ASPA & EC; the Generator and Switchgear Supplier)
   2. Establishment of design requirements
   3. Design development

B. Phase 1 will include Scope Definition (30%), 45%, 90% and 100% design submittals and Bid Documents. The formal design submission review meeting(s) shall be held at a minimum of fifteen (15) calendar days after the design presentation meeting for the 45%, 90%, and 100% stage submittals.

C. ASPA stresses the significance of the design review and discussion of the details presented during the 45% design submittal. The 45% design submittal provides the focal point for critical decision making with respect to the project budget and design direction. ASPA will “freeze” the design at the completion and acceptance of the 45% submittal, preventing any fundamental changes in the design unless directed and deemed necessary by ASPA. Changes in design beyond the 45% milestone shall be incorporated at no added cost should the design element revision in question be determined to be the result of errors or omissions.

VII. FURNISHED INFORMATION & DATA

A. References: The references listed below were used in compiling this Request for Proposal and are available for review. Additional information as it is available will be provided upon request.
   1. TOPOGRAPHIC MAP OF THE ASPA SATALA COMPOUND
   2. ASPA SATALA – LAND DEED/LEASE AGREEMENT BETWEEN ASPA AND THE ASG – FOR PERMITTING PROCESS
   3. UTILITIES MAPS AND LAYOUTS – (ELECTRIC, SEWER, WATER.)
   4. EXISTING FOOTING AND FOUNDATION DESIGN OF EXISTING FREEZER SLAB
   5. PAST GEOTECHNICAL STUDY OF PROJECT SITE CAN BE OBTAINED FROM PACIFIC ENGINEERING PROJECTS, LTD (PEP), NEW ZEALAND. OFFERORS CAN CONTACT PEP ON THEIR OWN
   6. EPA ASSESSMENT OF PROJECT SITE AND ADJACENT SITE

B. ASPA will provide the Design & Build Contractor with topographical map in electronic data format. ASPA will also conduct the route survey and provide ground elevations, coordinates, and related data required for preparation of the plan and profile design sheets for the facilities to be designed under this RFP.

C. ASPA can provide field survey work if requested by the Design & Build Contractor if more data is required for the project site.
VIII. PHASE 1: ENGINEERING & DESIGN

A. ADMINISTRATION

1. The Design & Build Contractor shall provide administrative project management. Administration shall include, but is not limited to, quality control / quality assurance, design procedures and criteria, coordination of the design team and project elements, monitoring schedules, document control, submittal review, submitting of design deliverables, organizing and conducting progress meetings, monitoring the progress of work, and oversight of value engineering implementation and construction estimates.

2. The Design & Build Contractor shall be expected to coordinate the documentation for all design disciplines; including that of the sub-contractors, so that the initial project research and the resulting contract documentation is complete, concise, and without omission, contradiction, or ambiguity.

B. SITE EVALUATION & INVESTIGATION

1. The Design & Build Contractor shall conduct all research and perform all investigations necessary to develop the design documents for the project.

2. This shall include but not be limited to surveys, geotechnical research, hydraulic and hydrological studies, drainage investigations, environmental research, hazardous materials research and assessments of existing conditions.

C. EXISTING CONDITIONS

1. Comprehensive Code Review - The Design & Build Contractor shall research and identify all codes, requirements, guidelines and standards pertaining to the work for inclusion in the Design Manual. If requirements are unclear or contradictory, the Design & Build Contractor shall obtain clarifications from code enforcing bodies and the Equipment Contractor (EC).

Existing Information Review - The Design & Build Contractor shall review all existing information. This effort shall be used to verify information regarding the site, and to augment or revise it as the existing conditions warrant.

D. ASPA EXISTING FACILITIES

1. ASPA and Design & Build Contractor shall work together to locate and identify existing condition plan of all ASPA facilities, both above and below ground that are within the vicinity of the Project.

2. These facilities shall include, but are not limited to power transmission lines and poles, power systems, waterline, sewer line, cable TV, and communications systems.

3. This effort must also include details regarding proposed facilities, including types and locations.

4. In addition, ASPA and the Design & Build Contractor shall work together to identify other utilities (Telecommunication & Cable TV) infrastructures/facilities that will require relocation or adjustment, temporary or permanent, for this project.

E. SURVEY REVIEW
1. ASPA can provide a survey of the site and the following survey information will be provided:
   
   (a) Conventional topographical field property survey that determines the condition, nature, dimensions, elevations, grades and locations of all necessary, existing natural and physical features and facilities within the limits of the proposed work or adjacent areas needed to address changes to the tract, signals, communication, and other systems.
   
   (b) Boundary land survey, as required by local statutes and ordinances, for all parcels that are within a minimum of 500 feet of the limits (but not less than that required by governing entities) of the proposed work. All boundaries of the identified parcels have been verified through an independent title search.
   
   (c) Surface and known subsurface features shown within the limits of the project area.

2. The survey control points have been performed by ASPA surveyors and Public Works surveyors with adequate details to establish horizontal and vertical control with offset ties for recovery and maintenance of all control points.

3. The Design & Build Contractor will review and confirm that the surveys have been performed in adequate detail for their preparation of design documents.

4. The Design & Build Contractor shall provide a fully dimensioned existing condition plan based on the survey. The plan must show all utilities, property boundaries, set back requirements, and other existing features accurately including, but not limited to, the location, size and type of all structures, roadways, and other salient features that are within the limits of the project and those features which may affect or be affected by the project including all aerial and underground utilities within ten (10) feet of the project limits.

5. The Design & Build Contractor shall provide a list of potentially affected property and utilities including telephone, storm water drains, water and sewer, communication tower

F. INFRASTRUCTURE INVESTIGATION

The Design & Build Contractor shall be responsible for performing a detailed investigation of the infrastructure at and surrounding the project area. This infrastructure investigation shall include all items necessary to develop the design documents for the project. This effort shall include, but is not limited to, the following items:

1. Levels of Service - The Design & Build Contractor shall evaluate the level of service provided by other utility that will provide basic services to this facility. If the service is deemed to be inadequate for use in this building, the Design & Build Contractor must develop a design for providing adequate service levels to the facility. Any additional services shall be part of contractor responsibilities.

2. Oil & Water Separator System – The Design & Build Contractor shall investigate and identify all applicable regulatory requirements (e.g. USEPA and US Coast Guard compliant) for treatment of all run-off water from power plant grounds.

3. Storm water Management - The Design & Build Contractor will identify all applicable regulatory requirements and develop a Storm water run off Management Plan for the site.

4. Existing Storm Water – The Design & Build Contractor shall investigate the existing storm water drainage that will require relocation or adjustment, temporary or permanent for this
project. The Design & Build Contractor shall identify if the Army Corp of Engineers 404 section 10 is required.

G. GEOTECHNICAL ANALYSIS

1. The Contractor shall investigate the subsurface conditions in the area of the project. Substantial effort must be made to minimize the potential for unforeseen conditions. This investigation shall study all affected areas, potentially including, but not limited to, platforms areas, foundations, yard areas and areas requiring slope stabilization, in a manner suitable for the type of work proposed. The subsurface investigations shall include digging test pits and/or taking soil borings in numbers and locations necessary to develop an accurate profile of the soil conditions in all areas where construction operation will take place and is appropriate for the planned work.

2. The Design & Build Contractor shall conduct soil borings as required at the area of the proposed work. Test pits may be substituted where deep (four feet +/-1 or greater) foundations are not needed, (e.g., in areas to be paved only). The borings shall be developed to refusal depth, with approximately 33% to include rock sampling. Rock sampling shall be a minimum of 10 feet into rock. A minimum of 20 additional borings shall be taken at areas specified by the ASPA Project Manager and analyzed to provide data and to confirm assertions and assumptions regarding subsurface conditions. The borings delineated above are considered a minimum. If the Design & Build Contractor determines that it is in their best interest to further the quality of the design, i.e., that additional borings are required, they shall be provided.

3. Soil borings are to be coordinated so as to provide samples for environmental evaluation and to expose such subsurface conditions for analysis.

4. The Design & Build Contractor shall provide a full conditions report on the subsurface conditions. The report shall identify subsurface soil layers, including soil type and pertinent soil properties for each layer, identify underground utility locations, including depth, as well as any other important subsurface locations and items. The report shall also include the soil boring logs and soil design criteria. The Design & Build Contractor shall provide a plan locating all soil borings. The drawing shall have the proposed foundation system projected on it as a reference overlay. The subsurface report, including geotechnical engineering data and plot of the subsurface conditions shall be produced in paper and electronic forms suitable for review by ASPA PM and technical team and compatible with ASPA’s current software.

5. The Design & Build Contractor may propose advanced techniques or methods (e.g. geophysical) that have been proven to meet or exceed information obtained from conventional soil borings.

H. ENVIRONMENTAL CLEARANCE

1. Environmental Site Assessment (ESA) - The Design & Build Contractor has to commence a Phase 1 ESA. The Design & Build Contractor shall incorporate the “recommendations for further action” of the ESA in the final contract documents.

2. Environmental Assessment (EA) - The Design & Build Contractor has to commence an Environmental Assessment including Section 106 of the National Historic Preservation Act.
The Design & Build Contractor shall address the findings of the EA in the final contract documents.

3. Subsoil Evaluation - The Design & Build Contractor shall report the results of soil sampling, including sampling done in conjunction with structural soil borings, and incorporate necessary environmental remediation efforts into the final contract documents.

4. Applications for all applicable federal and local permits will be prepared and submitted to respective agencies upon determination of the appropriate action to pursue in order to satisfy NEPA requirements. The A/E pre-design plan shall provide sufficient and adequate environmental data for preparation of permit applications.

5. The Design & Build Contractor must comply with all aspects of the EA.

I. SITE DEVELOPMENT
   1. The Design & Build Contractor shall refine the master development plan and prepare detailed design drawings. The drawings shall include, but not be limited to, plans for the building, parking, pedestrian crossing, and other infrastructure improvements such as roadway and sidewalk improvements.

   2. If additional data are required to meet and comply with the recommendations resulting from the Design Engineering efforts that were accepted by ASPA, the Design & Build Contractor shall conduct the surveys, studies, investigations, inspections, and research necessary to obtain this data and use it in modeling their design.

J. STRUCTURAL
   1. Building - The Design & Build Contractor shall design a two-story building with office facilities for the ground floor and Power Plant main functions for the second floor.

   2. Building Wall should be reinforced concrete, Doorways should be water tight, ventilation openings should be elevated, all pipe and ductwork entry into the plant building should be sealed to withstand water intrusion against flooding force from a tsunami wave or storm surge.

   3. Architectural Site Plan - This plan will include the site area generally within the ASPA Satala compound. The plan will show the proposed location of the Power Generation Building, the parking configuration, side walks, and surrounding roadway improvements.

   4. Schematic Floor Plans - These drawings include the ground floor plan with all the ASPA requirements; ADA compliant bathroom, waiting area, new stairs, new ADA elevators (if required), etc. The drawings will also include schematic plans for upper levels that will be used for office space.

K. SCHEMATIC SECTIONS OF THE PROPOSED BUILDING STRUCTURE
   1. The Design & Build Contractor shall provide drawings for the public parking location.

   2. Based on the results of the geotechnical investigation, the Design & Build Contractor shall review and compare alternative foundation systems for the building that will also meet the Engine footprint and foundation requirement and Over Head (OH) crane requirement. The Design & Build Contractor shall develop cost comparisons for the alternatives. The
advantages and disadvantages of each scheme must be noted with respect to construction cost, life cycle cost, constructability and future maintenance.

3. The Design & Build Contractor will be responsible for the design of retaining structures necessary to stabilize and support elements of the project.

4. The Design & Build Contractor will be responsible for the proper design structures necessary to support the overhead crane rated at 10 tons.

5. The Design & Build Contractor shall provide calculations in support of all elements of the building site design with regard to sizing, loads, volumes, area, flows, controls, consumption levels and capacities. All calculations shall reference the specific code, requirement or criteria that are the subject of the calculations.

6. Engine Foundation - Design Consideration:
   (a) The foundation will have the required mass and base area, assuming installation on firm soil and the use of high quality concrete. Before final details of the foundation design are established by the designer, the bearing capacity and suitability of the soil on which the foundation will rest will be determined. Modification of the manufacturer’s recommended foundation may be required to meet special requirements of local conditions. Modifications required may include:
       (i) Use of a reinforced mat under the regular foundation.
       (ii) Support of the foundation on piles.
       (iii) Piling may require bracing against horizontal displacement
       (iv) The Adjustment of the mass.
       (v) Additional reinforcing steel.
   (b) The engine foundation may extend below the footings of the building and the foundation will be completely isolated from the walls and floors of the building. The foundation block will be cast in a single, continuous pour. If a base mat is used, it will be cast in a separate continuous pour and be provided with vertical re-bars extending up into the foundation block.
   (c) Generator foundation shall be designed to avoid transfer of vibration to adjacent area (generator foundation is to be isolated from power plant floor).

7. Generator Bay Ventilation
   (a) Heat from the engine is radiated to the surrounding air. It is essential that provision be made for removal of this heat. Engine room temperature rise should be limited as much as possible.
   (b) Contractor must provide in any calculations and design plans to provide adequate ventilation of the Generator Bay
   (c) The selected design ventilation system should also help lower parasitic loads.
   (d) Ventilation cool air shall be drawn in, and allow for natural air movement to force hot air out through vent openings in the roof. There shall be adequate ventilation openings with noise attenuation to allow hot/exhaust air out and to keep the ambient air inside the building cool
(e) Intake Ventilation shall be elevated or mounted on top – to avoid flooding from future storm surge or tsunami, and fresh air drawn in shall be ducted to bottom of engine room.
L. ARCHITECTURAL

1. The Design & Build Contractor shall develop the architectural designs provided by their own Design Architect for the Building and parking. The design of the building, compound layout and parking must be consistent with the use of the building. The Design & Build Contractor shall incorporate changes as requested and approved by the ASPA Project Manager and technical team. The review and coordination process will apply for the design of all elements.

2. The architectural design shall ensure that the spaces are sized properly, have appropriate correspondence and are suitably finished and conditioned for all users and programmed functions, including mechanical, electrical and building systems without sacrificing aesthetics and general appearance.

3. The Design & Build Contractor shall prepare and complete all finish schedules.

M. ELECTRICAL

1. The Design & Build Contractor shall provide the necessary details for all electrical systems necessary for the proposed New Power Plant Building and illustrate all electrical spaces with full dimensions. Drawings will show the development of panels and circuits for all electrical systems. Electrical elements comprise all items associated with electrical service and distribution, including but is not limited to, conduits, telephone service, fire alarm systems, cable, emergency back-up power, radio and telephone communications, lighting, and CCTV and/or security systems.

2. All electrical systems and distribution shall meet all applicable local, state, and federal codes, requirements and guidelines.

3. All services shall be distributed from centrally located panels.

4. Connections between systems designed by the Design & Build Contractor shall be specifically noted and detailed such that the systems are properly and fully integrated, fully functional as intended, with specific directions provided as to who is responsible for making the connections.

5. The lighting design must conform to ASPA standards. Lighting shall be provided with emergency back-up systems. The Design & Build Contractor shall incorporate an energy management system and Energy Efficient Design (LEED) components into the lighting design.

6. The Building Electrical system should be designed and linked to the Emergency Supply system provided in the EC Electrical switchgear.

7. The Design & Build Contractor shall ensure the Building Emergency Equipment and Critical electrical Load is connect to the EC’s Emergency back up circuit on the Switchboard.

8. Emergency wiring for the emergency systems must be entirely independent of the wiring used for normal lightning and other circuits, also in separate ducts/cable trays, cables and boxes.

9. All of the New Power plant building Electrical wirings must be labeled and color coded.

10. Electrical wiring and cable material selection shall comply with the latest industrial standards for Diesel Power Plant.

N. ACCESSIBILITY
1. The Design & Build Contractor shall provide for ADA compliant access into and through the Building facility where ADA access is required.
2. For all ramps and platforms, the Design & Build Contractor shall be responsible for developing all related aspects of the design of these elements including, but not limited to, lighting, signage, warning strips, tactile edging, and railings.

O. MECHANICAL
1. The Design & Build Contractor shall design and prepare drawings, details, specifications and calculations for all mechanical systems for the Building.
2. Mechanical design shall include, but not be limited to, all items associated with the plumbing, water supply, waste water disposal, garage, storm/rain water collection, heating, air conditioning and ventilation.
3. The Design & Build Contractor shall prepare a Life Cycle Cost Analysis for major mechanical systems (e.g. heating, cooling, and ADA elevators if required).

P. DESIGN DOCUMENTATION
1. The Design & Build Contractor shall design the necessary elements and prepare complete and coordinated engineering drawings, specifications and calculations for anything related to construction of the Power Plant Building and Facility.
2. The Power Plant Building and Facility is to be constructed in accordance with the latest standards and guidelines including any other supporting documents provided in the Existing Information, Data, Code & Design Criteria.

Q. CONSTRUCTION DOCUMENTS
1. The Design & Build Contractor shall develop construction drawings to depict all the details, layout, configuration, notes, schedules, and dimensions necessary to enable accurate and reliable estimates of the quantities, quality, character, and costs of the labor, materials and equipment required to furnish and install the work in a skillful and well executed manner.
2. The Design & Build Contractor shall prepare the specifications to enable accurate and reliable estimates of the quantities, quality, character, and costs of the labor, materials and equipment required to furnish and install the work in a skillful and well executed manner.
3. The Design & Build Contractor shall prepare the final documents in electronic format, in addition, three (3) sets of hard copies and a copy in reproducible CD in word and PDF format shall be submitted to ASPA.

R. DESIGN MANUAL
1. The Design & Build Contractor shall document all codes, requirements, guidelines and standards pertaining to the work. If requirements are unclear or contradictory, the Design & Build Contractor shall obtain clarifications from code enforcing bodies.

2. The Design Manual shall incorporate approved resolutions to Value Engineering comments.

3. The Design Manual shall incorporate all prior comments and their resolutions, including documented references to correspondence, meeting minutes, telephone conferences, emails, memos or other documents supporting the resolution of the comments or specific directions in the Manual.

4. The Design Manual shall include the data and engineering systems criteria for civil, architectural, structural, electrical, mechanical, communications and other engineering disciplines, which may have a potential impact on the project.

5. In addition, this manual shall clearly, concisely and logically compile pertinent information regarding the size, capacity, layout, spacing, quantity, style, type, location, etc. for all material elements of the design, including structures, hardware, finishes, furnishings, amenities, graphics, signage, and specialty items.

6. The final approved Design Manual shall be considered the basis on which the Design & Build Contractor shall proceed with their final design efforts. Should the Design & Build Contractor not be able to progress their design or proceed in accordance with the information contained in the final approved Design Manual, the Design & Build Contractor shall bring the non-compliant issues to ASPA’s attention for resolution. ASPA’s decisions on these matters shall be final and binding on the Design & Build Contractor. Subsequent design work by the Design & Build Contractor shall be based on ASPA’s decisions.

7. No requests for additional compensation by the Design & Build Contractor will be entertained by ASPA for items that either were not found or were not able to be completed based on the final approved Design Manual.

S. AGENCY COORDINATION & PERMITTING

1. The Design & Build Contractor shall list all regulatory authorities, agencies, utilities and jurisdictions that may have regulations relevant to the project.

2. The Design & Build Contractor shall also provide a detailed written report of all regulatory requirements, approvals and variances for which compliance may be necessary based on the defined scope of the project. The report will also identify permits required for construction.

3. The Design & Build Contractor shall be responsible for all coordination with relevant agencies that have jurisdiction over the intended work, and to obtain necessary approvals and permits. Requests for modifications or out-of-scope work must be approved by the ASPA Project Manager. In particular, the Design & Build Contractor shall satisfy all land development requirements and obtain site plan approval from ASPA.

4. The Design & Build Contractor shall contact in writing all affected utility companies and private property owners or entities to determine their requirements for protection, relocation or replacement of their facilities as necessitated by the design. The Design & Build Contractor shall schedule and conduct any necessary meetings between ASPA and the affected utilities.
and private entities to obtain the necessary approvals or develop the necessary agreements so that the work may progress.

5. The Design & Build Contractor shall confirm the necessity for any utility relocations or special maintenance provisions with the affected utilities and determine if the utilities will accommodate the relocations or maintenance provisions with their own Force Account personnel or request/allow one construction contractors to perform the work.

6. The Design & Build Contractor shall coordinate all traffic, vehicular, and pedestrian related activities with other agencies that might be affected during or as a result of this project. The Design & Build Contractor shall also prepare application(s) for, and obtain, all required permits from American Samoa Department of Public Works (DPW) and American Samoa Department of Public Safety (DPS) such as curb-cuts for ingress and egress, street closures or traffic detours at locations under their respective jurisdictions.

7. The Design & Build Contractor shall engage an ADA compliance specialist that is independent from the design process and that is acceptable to ASPA to review the construction documents for compliance with ADA regulations. The ADA specialist must submit to ASPA, prior to the start of the ADA review, credentials attesting to his experience and knowledge.

T. CONSTRUCTION COST ESTIMATES & SCHEDULES

1. The Design & Build Contractor shall develop Construction Cost Estimates. These cost estimates shall be prepared and submitted to ASPA with the design submittal package at each level of the project as delineated in the project milestones and deliverables.

2. The Design & Build Contractor is required to implement all necessary steps to ensure that the design is constructible.

3. The Design & Build Contractor shall identify and describe during design any and all modifications or adjustments needed to maintain existing generation system Operation during construction.

4. Additional Factors to be considered by the Design & Build Contractor include the following:
   (a) Disruption to street, vehicular and pedestrian traffic
   (b) Disruption to neighboring properties and individuals
   (c) Impacts on and coordination with public utilities
   (d) Material lead and fabrication time
   (e) Staging areas and material deliveries and storage
   (f) Seasonal extremes weather
5. The Design & Build Contractor shall develop a detailed Construction Schedule using PERT/CPM with the Microsoft Project® 2003 or newer version. The schedule shall be updated and submitted to ASPA with the submittal package at each level of the project as delineated in the project milestones and deliverables. All activities, whether or not they are constructed by the Design & Build Contractor or by ASPA shall be shown on the Construction Schedule.

6. The Design & Build Contractor shall provide a bid analysis that describes factors which may impact the 100% cost estimate in comparison to contractor(s) bids received.

7. The Design & Build Contractor shall provide proposal forms for all construction contracts and prepare a Construction Cash Flow Forecast for each construction contract based on the final construction cost estimate and schedule.

U. CONSTRUCTION PHASING

1. The Design & Build Contractor shall provide a comprehensive phasing plan that indicates all construction sequencing necessary to minimize impacts to Operational, adjacent properties and roadways.

2. Preliminary construction phasing plans shall be included with each submittal package. Final phasing plans shall have been submitted and approved by the requisite authorities and agencies.

3. The construction phasing plans will detail the limits of work, the specific work elements, and the duration of the phases to meet other related requirements as stated in this scope of work. These phasing plans shall be in accordance with ASPA and other agency requirements and guidelines.

4. The Design & Build Contractor shall keep their construction phasing efforts current with ASPA throughout their entire design effort.

5. The Design & Build Contractor shall identify means of minimizing disruptions to existing ASPA parking, as well as locations and methods of providing temporary and contractor parking during construction. The Design & Build Contractor shall develop and finalize plans for alternate parking to be used by ASPA customers, ASPA fleet vehicles and ASPA employees displaced during phased construction.

6. The Design & Build Contractor shall identify all temporary construction required to maintain safety and Operational; provide details of how new construction will be coordinated with temporary Operational measures.

7. The Design & Build Contractor will be responsible for the design of all temporary work necessary to stabilize and suitably support any element affected by the scope of the project.

8. Construction access, including access for material loading, unloading and storage, shall be developed and maintained so as to minimize the interference with businesses, adjacent properties, pedestrian flow, and vehicular flow. Construction access shall be coordinated with the phasing of the project.

V. MAINTENANCE AND PROTECTION OF TRAFFIC
1. To minimize disruption to vehicular traffic, adjacent property owners and pedestrians during construction, the Design & Build Contractor shall develop a Maintenance and Protection of Traffic Plan and submit an updated version at each submittal level.

2. The Design & Build Contractor must address any impacts that construction may impose on the traffic amounts and patterns. Additionally, for any predicted lane or street closures, the closure must be identified. As part of identifying the closure, the Design & Build Contractor must identify the predicted date, frequency and duration of the closures. The Design & Build Contractor will provide justification and mitigation measures such as detours, temporary paving markers, and time restrictions.

3. The Design & Build Contractor shall develop and design roadway lane closures in accordance with the American Samoa Department of Public Safety guidelines. The Design & Build Contractor shall meet with personnel from the American Samoa Department of Public Safety to ensure that guidelines are met and all related issues are resolved prior to the 90% design submission. ASPA must approve the traffic control plans.

**PROJECT TECHNICAL REQUIREMENTS**

I. QUALITY ASSURANCE / QUALITY CONTROL

A. The Design & Build Contractor shall be responsible for the professional quality, technical accuracy and the coordination of designs, drawings, specifications, and construction related services to be performed under this Agreement. The Design & Build Contractor shall furnish a written quality assurance and quality control (QA/QC) plan for this project. The plan shall demonstrate the level of quality to be used and maintained to ensure the project’s conclusion within both the prescribed schedule and budget. The Design & Build Contractor’s QA/QC plan and program shall be consistent with QA/QC guidelines. The Design & Build Contractor shall provide the highest level of quality control in developing and administering the Contract Documents.

B. The Design & Build Contractor shall identify and submit qualifications of a responsible and responsive professional within the Design & Build Contractor’s organization who is independent of the design team and shall implement and monitor compliance related to quality assurance and control over all elements of the design development process on a day-to-day basis.

C. The Design & Build Contractor shall develop and submit within twenty-one calendar (21) days of the NTP, a Quality Assurance and Quality Control Program Plan for ASPA approval.

D. The program shall be tailored for the project and shall include, but not be limited to, the following:

1. How the Design & Build Contractor and sub-contractor’s drawings will be coordinated.

2. How the specification sections will be coordinated in order to eliminate conflicts and excessive writing.
3. Prior to each submission, how all documents to be submitted will be checked and updated to insure completeness and accuracy.

4. How drawings and specifications will be coordinated in order to eliminate conflicts between these two sets of documents.

5. How all deficiencies, errors, non-conformance, duplications, conflicts, ambiguities and corrections will be identified and resolved.

6. How compliance of the Contract Drawings with ASPA’s Drafting Standards will be ensured.

7. How consistency in drafting will be achieved so that all drawings are legible and reproducible.

8. How the Design & Build Contractor will ensure that the specification is tailored and developed in accordance with the specific needs of the Project and ASPA’s requirements.

9. How the Design & Build Contractor will ensure that the coordination of all activities with sub-contractors is occurring in a timely manner.

10. How the Design & Build Contractor will ensure that accurate meeting minutes and correspondence are being prepared and responded to in a timely manner.

11. How the Design & Build Contractor will ensure the timely resolution of all project-related comments and their incorporation into the documents.

12. How the Design & Build Contractor will promptly notify ASPA concerning any perceived out-of-scope services that are anticipated to be necessary to be performed by the Design & Build Contractor.

13. Quality Assurance and Quality Control shall be an agenda item at every biweekly progress meeting. A record must be made of every QA/QC issue and its resolution.

14. The Design & Build Contractor shall complete and include a “Design Quality Assurance Checklist” or approved equivalent with every submittal. A submittal will not be considered acceptable unless a checklist has been completed and included.

15. The Design & Build Contractor shall use the attached “Design Review” form to capture comments and responses at design review meetings.

II. CODE AND DESIGN CRITERIA

A. The parameters that shall be used for the design are the following:
   1. Wind load: 140 mph, Exposure C
   2. Earthquake load: Zone 3

B. Required Codes and Standards- The design criteria, in general and as a minimum, will conform to the relevant regulations and the most recently published criteria and standards by selected organizations and agencies. The regulations and publishing organizations include:
   1. American Association of State Highway and Transportation Officials (AASHTO)
   2. American Concrete Institute (ACI)
3. Americans with Disabilities Act (ADA)
4. Americans with Disabilities Act Accessibility Guidelines (ADAAG)
5. American Iron and Steel Institute (AISI)
6. American National Standards Institute (ANSI)
7. American Public Transportation Association (APTA)
8. American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)
9. American Society of Mechanical Engineers (ASME)
10. American Society for Testing Materials (ASTM)
11. American Institute of Steel Construction (AISCU)
12. American Welding Society (AWS)
13. American Railway Engineering and Maintenance of Way (AREMA)
14. Factory Mutual Engineering Corporation (FM)
15. Federal Specifications (FS)
16. Federal Railroad Administration (FRA)
17. Institute of Electrical and Electronic Engineers (IEEE)
18. Insulated Cable Engineers Association (ICEA)
20. Manufacturers Standardization Society of the Valve and Fitting Industry (MSS)
21. National Electric Manufacturers Association (NEMA)
22. National Electric Code (NEC)
23. National Fire Protection Association (NFPA)
24. Structural Steel Painting Council (SS PC)
25. Underwriters Laboratories, Inc. (UL)
26. U.S. Green Building Council (USGBC)

III. CODE COMPLIANCE AND PERMITS

A. The Design & Build Contractor shall continue to coordinate and be fully responsible for code compliance of the design and assurances that the Design & Build Contractor’s work similarly complies.

B. The Design & Build Contractor shall file all necessary Permit Application(s) with Local, Federal and other Regulatory Authorities, and secure their approval(s) and variance(s) after the bid award. If variances are required, the Design & Build Contractor shall support ASPA PM including developing any required documentation.

IV. ASPA STANDARDS, GUIDELINES AND DETAILS
A. ASPA may elect to provide any applicable design standards/details during the design development stage (45% Design).

B. The Design & Build Contractor shall incorporate such standards/details in the final design documents or explain in writing as to why application of such standards/details is not in the best interest of ASPA. ASPA’s determination shall be final and binding on the Design & Build Contractor.

V. CALCULATIONS

A. The Design & Build Contractor will provide design calculations for each design submittal and construction package of the project. Calculations will be recorded neatly, kept in an orderly fashion for easy review and suitable for a permanent record of the design work. Significant assumptions, calculations and conclusions will be highlighted. All routine calculations and assumptions or other features that have a significant effect on the construction time and costs will be provided. Calculations will include, but not be limited to: Civil, Architectural, Structural, Mechanical, HVAC and Electrical.

B. The Design & Build Contractor will provide an original bound copy and two (2) duplicate copies of design calculations within ten (10) calendar days of ASPA request for such calculations, but in any case, no later than the submittal dates stated herein. Design calculations will be updated as appropriate for consistency with any subsequent design changes or modifications throughout the design phase.
DOCUMENTATION & DRAWING STANDARDS

I. DESIGN & BUILD CONTRACTOR RESPONSIBILITIES

A. The Design & Build Contractor shall be responsible for coordinating and producing complete, consistent and unambiguous contract documents including all documents prepared by its sub-contractor(s). Regardless of type or number of sub-contractors employed by Design & Build Contractor, all drawings shall appear consistent, as if they were produced by a single source.

B. The Design & Build Contractor shall consolidate design drawings in all design submissions to conform to ASPA standards and guidelines. Provide a submission that is uniform in presentation.

C. The Design & Build Contractor shall consolidate specifications in all design submissions to conform to ASPA standards and guidelines. Provide a submission that is uniform in presentation with sections of Division 1 reflecting recommended modifications.

II. CONTRACT DRAWINGS

A. All contract drawings prepared by the Design & Build Contractor shall be legibly prepared in an electronic application compatible with ASPA’s AutoCAD 2012 software in accordance with the current version of the Engineering CADD Standards.

B. Drawing scales are delineated in ASPA CADD standards. In all cases, drawings shall be scaled so that they are fully legible when reproduced as 1/2 size (11” x 17”) drawings.

C. Final drawings shall be signed and sealed by a licensed Professional Engineer or Architect, as appropriate, and shall be submitted on a three (3) mil, double matte, drafting film (Mylar).

D. The drafting format to be used for title blocks as well as drawing numbers will be provided to the Design & Build Contractor by ASPA. Reproduced Mylar, if any, shall be wash-off type Mylar prepared from film negatives.

E. Project location plans and access plans shall also be included. The role of the drawings shall be to define the physical relationships of materials upon which a contract is based. Plans, elevations, cross-sections and details shall be provided to allow the Contractor(s) to accurately gauge the nature and complexity of the work and to prepare realistic cost estimates for bid purposes.

F. The project shall be designed in Standard English (U.S.) units of measure.
III. SPECIFICATIONS

A. Specifications shall be customized for this project and shall be prepared using Microsoft Word. The role of the specifications shall be to define the procedures, and quality and type of workmanship and materials upon which a contract is to be based.

B. The arrangement of specifications into “divisions” and “sections” shall be consistent with CSI (Construction Specifications Institute) Format. The organization of the specifications and the arrangement of the drawings do not denote or control the division of work between or among separate contractors, subcontractors and/or trades. The organization and page format of the specification sections shall be subject to prior written concurrence of the ASPA Project Manager. ASPA will prepare the Bidding and Contract Requirements. The Design & Build Contractor, however, shall assist in the preparation of these documents and, if required, provide the necessary information for completion of the Instruction to Bidders, General Terms and Conditions, Special Provisions, Bid Forms and possible agreement revisions.

C. Division 1 is extensively developed in the CSI; however, the Design & Build Contractor shall recommend updates, revisions and/or additions to the sections of this division to provide a complete specification, consistent with the needs of this project. The Design & Build Contractor is responsible for editing and completing Division 1. The Design & Build Contractor shall modify technical Divisions 2 through 16 and all applicable divisions so as not to duplicate, or contradict, the bid documents, the Contract, and/or Division 1.

D. When preparing the specifications, the Design & Build Contractor shall adhere to the following requirements:

E. Develop quality assurance/quality control requirements for each work element of the specifications and incorporate it in each section. Each “Execution” section shall identify “Field Quality Control” subsections tailored to the need of each work element. Factory Quality Control is usually specified in Part 2, “Products”.

F. Describe the technical requirements in a clear, concise and accurate language that does not restrict competition. Do not include solicitation/contractual language in the technical specifications.

G. State each requirement only once and in the most logical location. If any sample specification sections are provided by ASPA, the Design & Build Contractor shall modify them to ensure that they are accurate and consistent with the requirements of this project.

H. All brand name specifications must contain an “or ASPA approved equal” provision, and must identify the salient physical and functional characteristics, including reliability and testing requirements.

I. The Design & Build Contractor shall conduct and document a market survey to determine the sources that offer the products to meet the requirements and list a minimum of three (3) sources of acceptable products which meet the specifications.
J. The Design & Build Contractor shall provide a written sole source justification when the product availability is limited to only one source or when ASPA requires a single source for operational and maintenance economy.

K. The cover sheet of the Final Construction Specification will be signed by the Design & Build Contractor’s project manager and a signature page immediately following the cover sheet signed and sealed by all Professional Architects and/or Engineers, as appropriate, for the specific disciplines. The Architects and/or Engineers shall be licensed US professional engineer.

IV. ELECTRONIC MEDIA

A. All digital files shall be delivered in a format compatible with computers utilizing the Microsoft Windows XP operating system.

B. All digital-drawing files shall be in the native AutoCAD format. AutoCAD compatible formats are not acceptable unless the intended format is approved by ASPA Project Manager, in writing, for this project.

C. Submissions in electronic format shall be provided on CDROM and Flash Drives.

D. Electronic submittals shall have an ASCII format drawing index text file included. The text file shall contain project name, the ASPA project number and a descriptive list of the drawings and associated files and creation date. Media shall be labeled in indelible ink indicating project name, ASPA project number and submission date.

E. AutoCAD drawings must have required fonts, standard drawing sheets, templates, symbols and third-party customization files included without directory dependency. AutoCAD external references shall be bound to the parent drawing.

F. Any submittal of electronic data must be accompanied with a signed transmittal letter in hardcopy format.

V. ART COMPONENT

The project will include an art component. ASPA desires this art component to be practical and functional in nature. It will therefore be especially important for the Design & Build Contractor to closely coordinate the art design with the project design. Determination of the type of possible art, art design and art documentation shall occur simultaneously with the performance of other activities under the Design & Build Contractor Agreement. It is expected that the art construction will occur simultaneously with the project construction.

VI. CONSTRUCTION COST ESTIMATES & SCHEDULES

A. ESTIMATING PROCEDURE

2. The Design & Build Contractor shall prepare the estimate using Microsoft Excel. Copies of the estimate will be submitted in both hard copy and electronic format at each design submittal.

B. ESTIMATING REQUIREMENTS

1. The Design & Build Contractor will submit detailed construction cost estimates conforming to Scope Definition (15%), 45%, 90% and 100% design submittal stages. The level of detail for each estimate submittal must correlate to the level of detail that is included in the drawings and specifications at that level of design. The 100% estimate, i.e., the Bid Estimate, must be accurate and documented based on the bidding environment at the time of advertising the Bid Documents.

2. The Design & Build Contractor shall keep ASPA informed of the development of the estimate. The level of detail and structure the Design & Build Contractor plans to use for the estimate shall be reviewed by ASPA prior to its use. Each estimate shall be broken into construction items and location, with unit price and total cost for each item. Each item or location shall be divided into the following elements: labor, material, and equipment. The Design & Build Contractor’s cost estimates shall include detailed calculations, tabulations of quantities and pricing of construction work for each construction package. The Design & Build Contractor shall include costs for general conditions and all other costs necessary to determine the total cost for all work.

3. All estimates shall be first developed based on current prices. Escalation factors for labor, material and equipment shall be developed and applied separately by the Design & Build Contractor to correlate with the construction schedule.

4. Construction may require work to be accomplished during hours outside the normal workday schedule, where restrictions on the work impacts productivity, and/or where work may have to be performed within the specified time constraints. For a project that requires these types of considerations in its development, special attention must be paid to labor rates, productivity loss, equipment usage, etc.

5. Accordingly, the Design & Build Contractor shall prepare and maintain detailed documentation that supports and validates the values contained in the detailed estimating cost sheets. For an estimate to be complete, all values identified on the summary cost sheets are to be traceable to the detailed work sheets of the Design & Build Contractor.

6. Each estimate submittal will be reviewed in-depth by ASPA for adherence with the terms of the Agreement. The Design & Build Contractor shall review the site and observe the site conditions first hand with ASPA Project Manager (PM). This site review shall take place with a comprehensive set of drawings and no later than prior to the 90% submission. The Design & Build Contractor shall respond in detail, and in writing, to all of ASPA’s comments regarding the estimate within ten (10) days of the receipt of the comments from ASPA.

7. If the cost estimate varies from the available budget, the Design & Build Contractor shall provide a recommendation of what items can be added or deleted to meet the budget. ASPA will review the list of recommended additions or deletions and direct the Design & Build Contractor to modify or implement the recommendations and/or revise the design to reflect the available construction budget.
8. The Design & Build Contractor shall also be responsible for developing cost estimate(s) as and if necessary for each addendum issued during the construction bid cycle, and immediately update the final project estimate to include the addenda. The updating must be done for each addendum within five (5) days of issuing the addendum.

C. LABOR RATE DETAILS
1. The Design & Build Contractor shall provide the detail associated with labor rates prior to the Design & Build Contractor’s development of the estimate.
2. The Design & Build Contractor must identify for ASPA the source that it intends to use in its development of wages prior to calculating labor costs in the estimate.

D. SCHEDULING
1. The Design & Build Contractor shall prepare an accurate Critical Path Method (CPM) schedule, utilizing the project management software Microsoft Project. The construction schedule shall account for all major elements of work through a realistic network of activity durations in a logical sequence that is the Design & Build Contractor’s best projection on how the work will actually proceed.
2. The Design & Build Contractor shall determine and establish the duration of the construction project by using this construction schedule. The duration again must be logically and realistically based on the project’s activities, technical needs, phasing to minimize disruptions to the public, as well as ASPA’s operational requirements and constraints.
3. The construction schedule shall be detailed and be all inclusive. Submission, fabrication and delivery activities as required by the construction specifications shall be included.
4. An updated construction estimate and schedule is required at each design submittal stage and submitted to ASPA at the same time as the design submittal.
5. The estimate and schedule will be an agenda item at each design presentation. The estimate reviews will require face to face discussions between the Design & Build Contractor’s Project Manager and Estimator and ASPA’s Project Manager.

E. ADDITIONAL FACTORS
1. The base estimate and schedule shall be adjusted as necessary to account for the following factors, as they apply to this project:
2. The magnitude of the scope of work and phasing requirements due to contract duration.
3. The coordination of all disciplines defined on the project.
4. Limitations on work hours and limited access to work and/or staging areas due to ASPA’s Operational, project location, overhead utilities.
5. Productivity of work crews during nights, weekends and poor weather conditions.
6. Dust and noise control and other environmental protection factors.
7. Submittal Stage Requirements
8. The estimates at each design submittal stage must satisfy the following requirements:
(a) Adherence with ASPA’s estimating requirements.
(b) Cost itemization for all elements.
(c) A basis of estimate and reconciliation with the previous estimate must be substantiated at each design stage.
(d) The estimate shall be consistent and coordinated with the construction schedule.

F. DESIGN APPROVALS

1. To obtain the necessary approvals and ensure compliance with applicable laws, regulations and design requirements governing the work, the Design & Build Contractor shall coordinate and review the project progress and requirements with all government, public agencies, authorities or groups that have need to provide input or review the work. The Design & Build Contractor shall include any related work by these organizations in progress reports, project schedules, cost estimates, engineering reports and the final design contract documents. ASPA Project Manager (PM) will be responsible for review of any out of scope work request from outside agencies and internal ASPA departments for consideration. Incorporation into the contract documents shall not be done without ASPA’s Project Manager’s prior written direction.

2. ADA Review - The Design & Build Contractor shall have each design submission reviewed by an independent individual and/or Contractor with expertise and complete knowledge regarding the latest ADA regulations. This individual and/or Contractor shall review the design utilizing a checklist developed from the most current ADAAG/FTA standards. The Design & Build Contractor shall verify, and provide a letter of certification, that the design complies with the most current ADA requirements.

G. PROJECT DOCUMENTS

1. The Design & Build Contractor shall sign and seal all bidding and construction documents. The Design & Build Contractor shall also be responsible for the design documents and services to be prepared and performed, respectively, by all sub-contractors.

2. The signing and sealing of bid and construction documents represent that the Design & Build Contractor has developed these documents consistent with the scope of the Construction Services Agreement and all applicable codes and regulations.
PROJECT PLANNING

I. DESIGN SCHEDULE

A. The Design & Build Contractor shall prepare an accurate Critical Path Method (CPM) schedule, Microsoft Project, detailing the services to be performed under this A/E Services Agreement. The design schedule shall include the period from the Notice-To-Proceed (NTP) of design through the completion of construction. All activities as outlined in the Scope of Work shall be listed in this schedule, including but not limited to, report and milestone submittals, agency review and approvals, including ASPA reviews and public meetings as required.

B. The Design & Build Contractor’s proposal shall specifically explain in detail how the Design & Build Contractor will maintain the design schedule. The preliminary design schedule shall be submitted for ASPA’s approval within fourteen (14) calendar days from the NTP for design. The Final Baseline Design Schedule shall be submitted forty two (42) calendar days from design NTP. The Design & Build Contractor shall update the design schedule monthly and prepare a narrative that discusses the Design & Build Contractor’s progress during the updating period. The schedule and progress report shall be submitted monthly, one week prior to the progress meeting.

C. If the Design & Build Contractor decides to request an extension of time due to delays or changes in work scope, the Design & Build Contractor must notify ASPA in writing within five (5) calendar days of the delay or change. ASPA will review the Design & Build Contractor’s request and, if appropriate, extend the time of performance. If ASPA determines that the Design & Build Contractor is not entitled to a time extension, the Design & Build Contractor will be obligated to complete the remaining work within the current time of performance.

D. If, in ASPA’s opinion, the Design & Build Contractor has failed to perform the design tasks in a timely manner, or, if the Design & Build Contractor’s schedule shows the design effort to be more than 30 days behind schedule, ASPA may request the Design & Build Contractor to submit a recovery schedule to show how the Design & Build Contractor plans to complete the project within the time of performance.
SUBMITTAL PRESENTATIONS & REVIEWS

I. DESIGN INITIATION (KICK-OFF) MEETING(S)

A. The Design Initiation, Presentation, and Review meeting(s) will be held at ASPA Tafuna Compound, Power Generation Conference Room

B. This meeting, or series of meetings, immediately follows the Notice to Proceed and initiates the scope definition stage. The Design & Build Contractor will review the goals and requirements of the contract with ASPA. The Design & Build Contractor will review all planning documents prepared by ASPA. ASPA will provide comments to the Design & Build Contractor to update the information provided. The Design & Build Contractor shall use this information to reach the 15% scope definition stage.

C. ASPA’s Project Manager will act as a facilitator to arrange the meetings. The Design & Build Contractor’s Project Manager shall chair the meetings, set the agenda and prepare meeting minutes and action item lists at the conclusion of the meetings, which summarize the project goals, potential issues and recommendations.

II. DESIGN PRESENTATION MEETINGS

A. The Design & Build Contractor shall formally present the design evolution at the contractually identified 30%, 45%, 90% and 100% submittal stages. As part of these presentations, the Design & Build Contractor shall prepare appropriate models, visual displays and aids to adequately convey the design development and status. Each presentation shall also incorporate an overview of any revisions and/or emergent issues from the previous submittal and a summary of changes to the cost estimate.

B. The Design & Build Contractor’s estimator and ASPA PM will review the cost estimate at formal meetings prior to each design presentation for detailed discussions. The estimate meeting will address previous estimate submittals and emergent issues and/or revisions, which impact the estimate.

C. The Design & Build Contractor shall distribute design submissions to participants at the conclusion of presentation meetings.

D. Design submissions shall, at a minimum, include the following:
   1. All products (e.g. drawings, specifications, reports, estimates) that have changed from previous submittals. The Design & Build Contractor will notify and submit to ASPA a list of the items that have not changed.
   2. Design & Build Contractor’s responses to ASPA comments.
   3. Updated action item list.
   5. Updated phasing plans with scope narrative.
6. The Design & Build Contractor will prepare and distribute minutes of each meeting within seven (7) calendar days of the meeting, including a comprehensive list of all unresolved issues.

III. DESIGN REVIEW MEETINGS

A. The formal design submission review meeting(s) shall be held a minimum of fifteen (15) calendar days after the design presentation meeting for the 30%, 45% and 90% stage submittals. In addition, a review meeting for the 100% submittal will be held within fifteen design (15) calendar days after 100% stage submittal.

B. The review meeting(s) shall be held with appropriate members of ASPA. The Design & Build Contractor shall explain the development of the design and conduct a tabletop review of the drawings, including a composite overlay of the interdisciplinary aspects of the design, where applicable, and appropriate to the level of the submittal. All sections and details shall be checked for clarity, completeness and accuracy of cross-references.

C. The Design & Build Contractor shall resolve any technical issues during these sessions and maintain a log of all design review questions and responses. Additional meetings may be necessary to resolve any outstanding issues.

D. The Design & Build Contractor will prepare and distribute detailed minutes of each meeting within seven (7) calendar days of the meeting, including a comprehensive list of all unresolved issues and updated Action Item List.

E. Each design submission will not be considered complete until it is accepted in writing by the ASPA Project Manager. Revisions may be required to all or part of the submission, and shall be COMPLETED BEFORE THE SUBMISSION IS ACCEPTED.

F. Design Presentation/Approval Meeting

G. The Design & Build Contractor shall formally present the complete, fully realized design to ASPA. At the conclusion of the presentation, responsible ASPA parties will be asked to approve the final design. This approval will include all contract drawings, specifications, contractual deliverables, contract bid package and the draft Construction Services Agreement.

IV. PROJECT MEETINGS

A. Project progress meetings shall be arranged on a biweekly basis via video or audio teleconference, until project progresses to where representation of the Design & Build contractor is required on island. These meetings shall review progress according to the design schedule, identify outstanding or potential problems and proposed solutions, and consider current expenditures versus budgeted costs. Critical and important face-to-face meeting(s) will be held at the ASPA Tafuna Compound, Power Generation Conference Room.

B. ASPA shall be informed of and have the option to attend all meetings including those between the Design & Build Contractor and sub-contractors, and including any and all design
coordination meetings. Both formal and informal methods shall be employed to control the technical effort. Day-to-day liaison shall be used to identify problems and assess their importance, to clarify work objectives, to solve interface problems, and to take timely corrective action whenever needed. Informal coordination meetings shall be held as needed.

C. The Design & Build Contractor shall arrange and conduct all meetings to accomplish the project objectives with ASPA, utility companies and other private, government, public agencies, authorities, or groups that have been recognized by ASPA as valid division to provide input or review the work.

D. The Design & Build Contractor shall prepare accurate minutes of all meetings, including the “Bi-Weekly project progress meetings” and all meetings arranged and chaired by ASPA. Meeting minutes shall be distributed to all attendees within seven (7) calendar days of the meeting unless stated otherwise.

E. The Design & Build Contractor is expressly forbidden to issue or make any public statements concerning any aspect of the project without the prior written approval of ASPA. ASPA staff will be largely responsible for directing and handling public relations matters for this project and the Design & Build Contractor’s role shall be primarily in support.

V. PRESENTATION MATERIALS

A. The Design & Build Contractor shall prepare color coded plans and perspective view renderings for ASPA’s use and for presentations at appropriate meetings, community groups, local historic preservation groups, public hearings, zoning boards, planning commissions, etc.

B. The Design & Build Contractor shall provide at least three (3) artist’s renderings of the 90% design, including the design for the mixed-use development for use at the 90% design presentation meetings. The renderings shall be in color and represent the design in true perspective, depicting actual use through the inclusion of pedestrians, vehicles, landscaping, lighting, finishes, shadows, etc. The view points for the renderings are to be selected by the artist with consideration to the intended use and approved by ASPA Project Manager. The renderings shall be prepared with sufficient detail and resolution to be reproduced at 24” x 36” size. Renderings become the property of ASPA upon submission of the work.

VI. DESIGN & BUILD CONTRACTOR BILLINGS & PROGRESS REPORTS

A. The Design & Build Contractor is herein notified that payment will be made in response to monthly invoices, which reflect actual monthly charges incurred in the preceding period and are consistent with the progress required by design phase, task, deliverable and schedule.

B. The Design & Build Contractor shall submit monthly progress reports that coincide with the monthly invoices. The reports shall accurately detail the Design & Build Contractor’s services performed during each monthly period. The report shall be comprehensive, including sub-contractors’ progress. Separate reports from sub-contractors will not be accepted.

C. The reports shall, at a minimum, include the following:
1. Detailed description of design progress by task and deliverable
2. Important events and meetings, both past and future
3. Unresolved issues, responsible parties and action plan to resolve issues
4. Problem areas and other concerns
5. Work to be executed in the following month
6. Budget Summary
7. Schedule Update

VII. SCHEDULE OF MILESTONES

A. ASPA’s projected schedule for the services under the A/E Agreement is included for information below. This schedule shall be implemented and coordinated with the proposal.

B. The Design & Build Contractor will be expected to perform the design work so as not to exceed the phased milestones once fixed at the notice to proceed. If the Design & Build Contractor anticipates needing to deliver items prior to the stated schedule, the early deliveries should be made.

C. Except as noted, provide twelve (12) copies of all deliverables.

<table>
<thead>
<tr>
<th>Milestone: Design &amp; Build Contractor may propose an alternate program so as to not exceed phased durations.</th>
<th>Calendar Days</th>
<th>Cumulative Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td></td>
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</tr>
<tr>
<td>1  NTP For Design</td>
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<td>0</td>
</tr>
<tr>
<td>2  Preliminary Submittals</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>3  30% Scope Definition</td>
<td>45</td>
<td>75</td>
</tr>
<tr>
<td>4  Scope Definition Review</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>5  45% Design</td>
<td>30</td>
<td>130</td>
</tr>
<tr>
<td>6  45% Review</td>
<td>20</td>
<td>150</td>
</tr>
<tr>
<td>7  90% Design</td>
<td>35</td>
<td>185</td>
</tr>
<tr>
<td>8  90% Review</td>
<td>20</td>
<td>205</td>
</tr>
<tr>
<td>9  100% Review</td>
<td>25</td>
<td>230</td>
</tr>
<tr>
<td>10 Design Final Review and Acceptance</td>
<td>40</td>
<td>270</td>
</tr>
<tr>
<td>11 Construction</td>
<td>330</td>
<td>600</td>
</tr>
</tbody>
</table>

VIII. DESIGN AND BUILD PRELIMINARY SUBMITTALS
A. Initial Design Schedule (6 copies), 7 calendar days from design NTP

B. Construction Schedule and Cost Estimate Format Templates, 7 calendar days from design NTP

C. QA/QC Manual (6 copies), 7 calendar days from design NTP

D. Final Baseline Design Schedule (6 copies), 14 calendar days from design NTP

IX. DESIGN and BUILD SCOPE DEFINITION (15%)

A. The Design & Build Contractor shall provide design drawings that develop the schematic plans provided by ASPA and prepared by the Design Architect. Drawings shall include, but not be limited to, plans for the building, parking, pedestrian crossing and other infrastructure improvements such as ramps, roadway and sidewalk improvements.

B. This submission shall have sufficient information, clarity and details to advance the defined scope so that ASPA is clearly able to identify the course of action for furthering the design. Structural plans shall indicate sufficient detail to allow ASPA to fix the scope of construction for final development.

C. This submission shall include the following elements and deliverables:

1. SITE EVALUATION & INVESTIGATION

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Task Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Existing Conditions</td>
<td>Summary of Existing Information</td>
</tr>
<tr>
<td></td>
<td>Assessment of Existing Facilities</td>
</tr>
<tr>
<td></td>
<td>Digital Photo Catalog of Site Conditions</td>
</tr>
<tr>
<td>2 Survey Review</td>
<td>Dimensioned Existing Conditions Plan</td>
</tr>
<tr>
<td></td>
<td>List of Adjacent Property Owners</td>
</tr>
<tr>
<td>3 Infrastructure Investigation</td>
<td>List of Potentially Affected Utilities</td>
</tr>
<tr>
<td></td>
<td>Level of Service Analysis</td>
</tr>
<tr>
<td></td>
<td>Draft Storm water Management Plan and Regulatory</td>
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<tr>
<td></td>
<td>Requirements</td>
</tr>
<tr>
<td>4 Geotechnical Analysis</td>
<td>Preliminary Subsurface Conditions and Geotechnical</td>
</tr>
<tr>
<td></td>
<td>Report</td>
</tr>
<tr>
<td>5 Environmental Clearance</td>
<td>Preliminary Soil Evaluation Report</td>
</tr>
<tr>
<td>6 Operational Issues</td>
<td>Pedestrian &amp; Traffic Assessment</td>
</tr>
</tbody>
</table>

2. SITE DEVELOPMENT

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Task Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Structural</td>
<td>Developed Plan of Building</td>
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<td></td>
<td>Developed Concept for Platforms</td>
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<td></td>
<td>Developed Plan of Parking Garage</td>
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<td></td>
<td>Foundation Alternatives Analysis</td>
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<td></td>
<td>Calculations for Major Elements</td>
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<tr>
<td>2</td>
<td>Architectural</td>
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<tr>
<td>3</td>
<td>Accessibility</td>
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<td>5</td>
<td>Mechanical</td>
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<td>6</td>
<td>Infrastructure</td>
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</table>

### 3. DESIGN DOCUMENTATION

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Task Deliverables</th>
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</thead>
<tbody>
<tr>
<td>1 Construction Documents</td>
<td>Detailed Design Drawings</td>
</tr>
<tr>
<td></td>
<td>Consolidated Specifications Outline including Division 1 (CSI standards)</td>
</tr>
<tr>
<td>2 Design Manual</td>
<td>Draft Design Manual</td>
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<tr>
<td></td>
<td>Comprehensive Code Review Section</td>
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<td></td>
<td>Draft Design Criteria and Requirements Section</td>
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<td></td>
<td>List of proposed materials, components, equipment and/or finishes</td>
</tr>
<tr>
<td>3 Agency Coordination &amp; Permitting</td>
<td>List of Regulatory Authorities, Agencies, Utilities and Jurisdictions</td>
</tr>
<tr>
<td></td>
<td>Required Regulatory Requirements and Approvals Report</td>
</tr>
<tr>
<td></td>
<td>Preliminary Site Plan Approval</td>
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<td></td>
<td>Copies of Required Permits for Investigation</td>
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<td></td>
<td>ADA Checklist &amp; Compliance Assessment</td>
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<td></td>
<td>Confirmation of Utilities Relocation and Responsibility</td>
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<tr>
<td></td>
<td>Draft NPDES Application</td>
</tr>
<tr>
<td>4 Cost Estimates &amp; Schedules</td>
<td>Construction Schedule</td>
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<tr>
<td></td>
<td>Construction Estimate</td>
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<tr>
<td></td>
<td>Constructability Analysis</td>
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<tr>
<td>5 Construction Phasing</td>
<td>Updated Phasing Plan</td>
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<td></td>
<td>Updated MTP Plan</td>
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</tbody>
</table>
X. 45% DESIGN DELIVERABLES

A. The Design & Build Contractor shall provide developed, detailed plans, elevations and sections of the improvements which include, but is not limited to, the building, parking, pedestrian crossing, and infrastructure improvements. Plans should indicate all structural elements, final elevations and grades, clearances, initial details of connections, waterproofing and drainage elements. Details of the structural system connections for the foundation and superstructure shall be supplied. Electrical and Mechanical spaces shall be illustrated with full dimensions, and developed finish schedules shall also be included. The Design & Build Contractor shall also provide details of how new construction will be incorporated with temporary Operational measures and details for all temporary structures required to maintain safety and Operational.

B. Comments to prior submissions shall be resolved and incorporated into the documents at this submission. The Design & Build Contractor’s 45% Design submission will be used by ASPA for value engineering review.

C. The submission shall include the following deliverables:

1. SITE EVALUATION & INVESTIGATION

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Task Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Existing Conditions</td>
<td>Final Existing Conditions Report</td>
</tr>
<tr>
<td>2 Survey Review</td>
<td>Updated Survey Information</td>
</tr>
<tr>
<td>3 Infrastructure Investigation</td>
<td>Final Storm Water Management Plan</td>
</tr>
<tr>
<td>4 Geotechnical Analysis</td>
<td>Final Subsurface Conditions and Geotechnical Report</td>
</tr>
<tr>
<td>5 Environmental Clearance</td>
<td>Final Soil Evaluation Report</td>
</tr>
</tbody>
</table>

2. SITE DEVELOPMENT

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Task Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Structural</td>
<td>Detailed Design Drawings for Building</td>
</tr>
<tr>
<td></td>
<td>Updated Calculations</td>
</tr>
<tr>
<td>2 Architectural</td>
<td>Detailed Signage Plan</td>
</tr>
<tr>
<td></td>
<td>Final List of Material, Components, Equipment and Finishes</td>
</tr>
<tr>
<td>3 Accessibility</td>
<td>Detailed ADA Plan and</td>
</tr>
<tr>
<td>4 Electrical</td>
<td>Detailed Electrical Plans</td>
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<td></td>
<td>Detailed Lighting Plan</td>
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<tr>
<td>5 Mechanical</td>
<td>Detailed Mechanical Plans</td>
</tr>
<tr>
<td>6 Infrastructure</td>
<td>Detailed Landscape Plan</td>
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<tr>
<td></td>
<td>Detailed Plan for Infrastructure Improvements</td>
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</tbody>
</table>
### 3. DESIGN DOCUMENTATION

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Task Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Construction Documents</td>
<td>Detailed Design Drawings</td>
</tr>
<tr>
<td></td>
<td>Fully Developed and Updated Technical Specifications for</td>
</tr>
<tr>
<td></td>
<td>Indicated Materials</td>
</tr>
<tr>
<td>2 Design Manual</td>
<td>Final Design Manual (w/ changes from previous version</td>
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<td>highlighted)</td>
</tr>
<tr>
<td>3 Agency Coordination &amp;</td>
<td>ADA Checklist</td>
</tr>
<tr>
<td>Permitting</td>
<td>Approvals Documentation</td>
</tr>
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<td></td>
<td>Final Application for NPDES Permit</td>
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<tr>
<td></td>
<td>Site Plan Approval</td>
</tr>
<tr>
<td></td>
<td>Draft Agreements for Utility Relocation</td>
</tr>
<tr>
<td>4 Cost Estimates &amp; Schedules</td>
<td>Updated Cost Estimate</td>
</tr>
<tr>
<td></td>
<td>Updated Construction Schedule</td>
</tr>
<tr>
<td>5 Construction Phasing</td>
<td>Updated Phasing Plan including temporary construction</td>
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<tr>
<td></td>
<td>and signage</td>
</tr>
<tr>
<td></td>
<td>Updated MTP Plan</td>
</tr>
</tbody>
</table>

### XI. 90% DESIGN DELIVERABLES

A. This submittal will show the design of all disciplines as essentially complete and without any ambiguities with regard to the requirements of the project. Comments to prior submissions shall be resolved and incorporated into the documents at this submission. Modification generated from Value Engineering and approved by ASPA shall have been addressed and incorporated into the drawings.

B. The Design & Build Contractor shall provide a comprehensive, fully developed pre-final set of Construction Drawings for all work items designed. These drawings shall, at a minimum, be progressed to the levels indicated in the individual tasks. All drawings shall be developed, all clarifying views and sections shown, all notes included and all details provided. All cover sheets, title pages, index pages, and sheets of legends, abbreviations, quantities and general notes shall be provided. All drawings shall be clear, complete and easily interpreted.

C. All Specifications for items to be constructed by the Design & Build Contractor shall be fully developed, including all General, Products and Execution parts so that ASPA can clearly define the finalized course of action for completing the construction package.

D. Site Evaluation & Investigation

E. All site investigation and research necessary to finalize the design should be complete at this time.

1. SITE DEVELOPMENT
<table>
<thead>
<tr>
<th>Task Group</th>
<th>Task Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Structural</td>
<td>Pre-final Drawings for Building</td>
</tr>
<tr>
<td></td>
<td>Final Calculations (Bound &amp; Sealed)</td>
</tr>
<tr>
<td>2. Architectural</td>
<td>Pre-final Signage Plan</td>
</tr>
<tr>
<td></td>
<td>Pre-final Material and Finish Schedule</td>
</tr>
<tr>
<td></td>
<td>Pre-final Submittal Schedule</td>
</tr>
<tr>
<td></td>
<td>Rendering of 90% Design</td>
</tr>
<tr>
<td>4. Electrical</td>
<td>Pre-final Electrical Plans</td>
</tr>
<tr>
<td>5. Mechanical</td>
<td>Pre-final Mechanical Plans</td>
</tr>
<tr>
<td>6. Infrastructure</td>
<td>Pre-final Drawings for infrastructure improvements</td>
</tr>
</tbody>
</table>

2. DESIGN DOCUMENTATION

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Task Deliverables</th>
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<tbody>
<tr>
<td>1. Construction Documents</td>
<td>Pre-final Construction Plans</td>
</tr>
<tr>
<td></td>
<td>Pre-final Technical Specifications</td>
</tr>
<tr>
<td>2. Design Manual</td>
<td>Updated Manual with Final Material and Finish Schedules (including sample boards)</td>
</tr>
<tr>
<td></td>
<td>Preliminary Submittal Schedule</td>
</tr>
<tr>
<td>3. Agency Coordination &amp; Permitting</td>
<td>Final ADA Checklist and Independent Review Confirmation</td>
</tr>
<tr>
<td></td>
<td>Documentation of Status for Required approvals</td>
</tr>
<tr>
<td></td>
<td>NPDES Permit Approval</td>
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<tr>
<td></td>
<td>Final Site Plan Approval</td>
</tr>
<tr>
<td></td>
<td>Final Utility Reviews, Relocation Approvals and Agreements</td>
</tr>
<tr>
<td>4. Cost Estimates &amp; Schedules</td>
<td>Final Constructability Analysis</td>
</tr>
<tr>
<td></td>
<td>Pre-final Construction Cost Estimate</td>
</tr>
<tr>
<td>5. Construction Phasing</td>
<td>Preliminary Proposal Forms and Cash Flow Forecasts</td>
</tr>
<tr>
<td></td>
<td>Updated “Near Complete” Construction Schedule</td>
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<tr>
<td></td>
<td>Pre-final Phasing Plan</td>
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<tr>
<td></td>
<td>Pre-final MTP Plan</td>
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</tbody>
</table>

XII. 100% DESIGN DELIVERABLES

A. ASPA will expect from the Design & Build Contractor that this level of design shall be fully complete and without any ambiguities as to the requirements of the project, including all pertinent details, so as to allow for construction of the facilities required for all general, electrical and mechanical construction packages.
B. The 100% Bid Documents shall be inclusive of all final comments made by ASPA, and the Design & Build Contractor shall ensure that all of the 90% Constructability Review comments are incorporated.

C. Site Evaluation and Investigation

D. All site investigation and research necessary to finalize the design should be complete at this time.

1. SITE DEVELOPMENT

<table>
<thead>
<tr>
<th>Task Group</th>
<th>Task Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Structural</td>
<td>Final Drawings for Building</td>
</tr>
<tr>
<td></td>
<td>Final Drawings for Temporary Construction</td>
</tr>
<tr>
<td>2 Architectural</td>
<td>Final Signage Plan</td>
</tr>
<tr>
<td></td>
<td>Final Material and Finish Schedule</td>
</tr>
<tr>
<td></td>
<td>Final Submittals Schedule</td>
</tr>
<tr>
<td>3 Accessibility</td>
<td>Final ADA Plans</td>
</tr>
<tr>
<td>4 Electrical</td>
<td>Final Electrical Plans</td>
</tr>
<tr>
<td>5 Mechanical</td>
<td>Final Mechanical Plans</td>
</tr>
<tr>
<td>6 Infrastructure</td>
<td>Final Drawings for Infrastructure Improvements</td>
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</table>

1. TASK 3: DESIGN DOCUMENTATION

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Task Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Construction Documents</td>
<td>Sealed Final Construction Documents (Reproducible)</td>
</tr>
<tr>
<td></td>
<td>Sealed Final Technical Specifications (Reproducible)</td>
</tr>
<tr>
<td>2 Design Manual</td>
<td>Final Addenda</td>
</tr>
<tr>
<td>3 Agency Coordination &amp; Permitting</td>
<td>Final ADA Checklist and Review</td>
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<td></td>
<td>Documentation of Approvals</td>
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<td>Documentation of Final Approval of NPDES Permit</td>
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<td>Final Site Plan Approval</td>
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<td>Utility Relocation Approval</td>
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<tr>
<td>4 Cost Estimates &amp; Schedules</td>
<td>Final Detailed Construction Cost Estimate</td>
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<td></td>
<td>Final Proposal Forms and Cash Flow Forecasts</td>
</tr>
<tr>
<td></td>
<td>Final Construction Schedule</td>
</tr>
<tr>
<td>5 Construction Phasing</td>
<td>Final Phasing Plan</td>
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<td></td>
<td>Final MTP Plan</td>
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</tbody>
</table>
XIII. MAN-HOUR SUMMARY

A. LABOR CATEGORIES

1. Offerors shall include in their Technical Proposal a distribution of the total man-hours, which they estimate will be required to perform the work. This estimate shall be submitted using a man-hour table. The man-hours shall be shown by Offerors in accordance with the following applicable labor categories:
   (a) Project Manager
   (b) Sr. Architect / Sr. Engineer
   (c) Architect / Engineer
   (d) Designer / Technician
   (e) Estimator
   (f) Specification Writer
   (g) CADD/Drafter
   (h) Clerical / Secretarial

2. Offerors may provide additional labor categories if it is necessary and required for the scope of work.

B. MAN-HOUR SUMMARIES

1. Using the attached man-hour tables, Offerors shall include in their technical proposals the following:
   (a) Summary of total hours for the design team for the specific tasks identified under Phase 1. Design Related Services.
   (b) Summary of total hours for each member of the design team for the specific tasks identified under Phase 1. Design Related Services.
   (c) Summary of total hours for the design team for the specific tasks identified under Phase 2. Construction Related Services.
   (d) Summary of total hours for each member of the design team for the specific tasks identified under Phase 2. Construction Related Services.
XIV. EROSION CONTROL AND DRAINAGE

A. Erosion control and drainage measures and facilities shall be included in the design including drainage structures, retaining walls, pipe dams, stream bed protection and other elements that will ensure erosion control and drainage is accomplished according to best management practices applied for similar projects or infrastructure.

XV. REMOVAL AND DISPOSAL OF USED EQUIPMENT

A. The equipment to be removed may consist of metal castings, pipes, electrical wiring and switchgear. All used materials will need to be sorted into three possible categories:

1. Materials that may be able to be re-used as spare parts and retained by ASPA
2. Materials that can be sent to ASPA recycling area and
3. Other debris materials that will need to be dumped in the ASPA Futiga approved landfill.

B. The Design & Build Contractor will be responsible for arranging approvals to use landfill sites and meet any costs associated with using these sites. The Design & Build Contractor will inform ASPA Project Manager of the location of the landfill or disposal site and provide copies of approvals that are needed to use the site. Following verification of the site ASPA Project Manager will advise the Design & Build Contractor to proceed with the dumping of the equipment at the site.

XVI. REMOVAL AND DISPOSAL OF EXCAVATED WASTE MATERIALS

A. This will apply to the areas where excavation will be required for building foundations, the internal and external access roads. Materials that will be removed will include waste rock and soil.

1. For materials that will not be re-used these can be placed in dumps, provided with surface drainage and landscaped. Before any dumpsite is created the area is to be cleared and topsoil removed. The Design & Build Contractor is to advise the PE where the material is to be disposed and the ES will give approval.

2. For materials that will be re-used the Design & Build Contractor will arrange their incorporation within the works as required.

3. Any topsoil that is excavated is to be stockpiled for use in future re-vegetation work. The Design & Build Contractor is to inform where topsoil stocks will be stored. These are to be stable sites and must be accessible for later re-use

XVII. TRAFFIC CONTROL PLAN

A. A traffic control plan shall be prepared in accordance with American Samoa Department of Public Safety requirements and guidelines similar or equal to those issued by the U.S. Federal Highway Administration.
B. The plan will minimize disruptions to traffic and identify the most suitable detours with identification of land ownership.

XVIII. DEMOLITION, CLEARING, AND GRUBBING OF THE CONSTRUCTION SITE

A. Existing buildings and concrete structures within the limits of the construction shall be removed, and the site shall be cleared and grubbed to ensure the successful installation of the Project per the applicable requirements of regulatory and jurisdictional authorities. The construction site shall include the entire Authority right-of-way and construction areas required for the construction of grade separations and the relocation of waterways and utilities. Design & Build Contractor shall prepare and submit a demolition plan prior to its demolition activities.

XIX. BID SCHEDULE

A. A draft Bid Schedule shall be prepared that includes all pertinent items included in the construction plans and specifications.

B. The Bid schedule shall be prepared for a unit cost or Design & Build Contractor fixed-price contract and allow ASPA to utilize it as the basis for a construction contract for the facilities designed under this RFP.