Design and Type C Services for EHRM Infrastructure Upgrades Project 523A5-22-700

Department of Veterans Affairs Boston Healthcare System
(VA BHS)
Brockton Campus
940 Belmont Street
Brockton, Massachusetts

Date: 19 December 2022

1.0 INTRODUCTION AND BACKGROUND

1.1 General. This Statement of Work (SOW) is to provide all professional architectural and engineering (A-E) services necessary to develop complete drawings, specifications, cost estimates, construction schedules, project phasing associated with the upgrade, environmental compliance, site investigations, site visits, and project management necessary to provide EHRM Infrastructure Upgrades in accordance with VA standards, VA design Guides and this SOW. This project buildings included in this SOW are as follows: 1, 2, 3, 4, 5, 7, 8, 20, 22, 23, 24, 25, 32, 34, 36,
40, 44, 46, 60, 61, 62, site, new MCR and new TR towers.

The project provides design for the following: 1. Provide a new building to house a stand-alone 1500 square foot TIER 3 replacement Main Computer Room (MCR); 2. Review MCR location at Building 2 and at Building 61; 3. Provide new 170 square foot telecommunication rooms (TR) throughout the facility; 4. Provide new TR towers to vertically stack the new TRs; 5. Provide new TR closets in accordance with VA criteria; 6. Provide new dual demarcation point at the MCR; 7. Provide new cable pathways with cabling for new Demarcation points (DEMARC); 8. Provide new cable pathways and cabling from DEMARC to MCR; 9. Provide new cable pathways and cabling from MCR to TR; 10. Provide new cable pathways and cabling from TRs to faceplates and jacks; 11. Provide utilities for TRs and MCR in accordance with VA criteria; 12. Design shall provide no disruption in service for telephone and data service for the site and end users; 13. Abatement of asbestos, lead paint or any other hazardous materials to be disturbed or demolished shall also be performed as necessary with sufficient safeguards during construction; 14. Provide Type C services. This project is located at the Department of Veterans Affairs (VA), Boston Healthcare System (VA BHS), Brockton Campus, 940 Belmont Street, Brockton, MA.

The intent of this project is to provide the infrastructure required to allow the migration from the existing CPRS Cerner Electronic Health Record (EHR) platform. The MCR will provide system redundancy for contingency and disaster recovery purposes, in appropriately outfitted and configured Rating 3 computing facilities suitable for the criticality of the supported mission. All new cable pathways for the new service entrances, DMARC to MCR and MCR to TR shall provide main cable pathway with redundant/Secondary Pathway. New pathways shall be designed for TR to end device (faceplate and jacks).

Critical utilities such as HVAC and power (normal, emergency and UPS) shall be provided to eliminate single point failures and include provisions to allow shutdowns for facility maintenance and testing.

The goal is to award a design contract in FY23 with Construction Contract award in FY23/FY24 so that construction is completed ahead of the VA's January 2028 deadline to meet Electronic Health Record Management (EHRM) compliance requirements.

1.2 Project History. The project is located on the VA BHS Brockton Campus. The Brockton Campus is located within the City of Brockton and is a 146-acre suburban campus that contains approximately 1.2 million square feet of space in multiple buildings. The surrounding area is a mix of residential and commercial neighbors with wetlands located within the property boundary. The campus offers a wide variety of inpatient and outpatient health care services, including Geriatric care, Homeless Veteran Treatment and Assistance, Post Traumatic Stress Disorder Care, Spinal Cord Injury Care, prosthetics and sensory aid services, audiology, optometry, inpatient and outpatient mental health services and radiology services. In addition to patient care services the facility houses a full range of education and research services and specialized training to residents and medical students in various areas of clinical practice. The building construction dates vary between 1950 to present.

1.3 Supporting Documents and Contracts.

1) Office of Information and Technology- Engineering Assessment & Recommendation - Boston Health Care System - May 22, 2019

2.0 PROJECT SCOPE

1.1 Project Description. The project shall include all utility service upgrades/modifications, utility interconnections and space renovations/reconfigurations required to provide a TIER 3 MCR. A TIER 3 MCR is defined as a data center that can perform repairs without any notable service disruption and/or it is a data center that offers an N+**1** availability. The project includes providing the racks for the servers and all fiber/conduit/cables needed to make the system fully operational. VA will be responsible for supplying and integrating the new computer hardware. All work shall be designed to include phased construction as appropriate to maintain uninterrupted information technology (IT) operation throughout the project.

The replacement MCR will be specifically designed to be able to support Very High Density (VHD) equipment power densities using air cooling, rather than rear-door heat exchangers (RDHx) systems. This will provide additional system redundancy for critical systems. The VA estimates eight (8) full cabinets rated at up to 15kW each to account for future system growth. To ensure successful implementation and continuing headroom in constraining systems, significant technical and phasing details will require additional development, primarily by the impacted facility program elements and supporting IT service line elements. The A-E design shall meet requirements for sustainability and federal energy reduction mandates.

Design shall include the following work items:

1. Evaluate potential MCR site locations at Building 2 and Building 61.
2. Provide Heating, Ventilation and Air Conditioning (HVAC) systems for the MCR that includes computer room air conditioning (CRAC) units and distributed units that provide localized air cooling, and humidification/dehumidification.
3. Equipment cooling options shall provide operational redundancy, redundancy to allow maintenance of systems, and resiliency to meet the TIER 3 data center requirements. The A-E shall evaluate options for the use of CRAC units that provide Direct Expansion (DX) with auxiliary chilled water coil (existing cooling system) versus the use of a glycol system and a heat exchanger with auxiliary chilled water coil.
4. Placement of the exterior/outdoor HVAC equipment shall be located at grade. Interior/indoor CRAC units shall be located outside of the secure area of the MCR so that maintenance can be conducted without entering the secure area. The A-E shall evaluate options for locating mechanical equipment (see related tasks 6, 7 & 8 below).
5. A noise mitigation system shall be provided for outdoor equipment. The intent is to ensure the ANSI NC is met for adjacent buildings. Interior building sound analysis and design shall be based on the applicable noise criterion curves. See Section 3.3.6 for requirements for noise emission study that the A-E will need to perform.
6. Outdoor mechanical equipment shall be provided with weatherproof, heated, dog-house enclosures at the equipment control panel. The enclosures shall be large enough to house maintenance personnel, tools, and equipment.
7. TIER 3 MCR and associated HVAC equipment and CRAC units plus all support utilities are to be located and constructed in accordance with VA fire code and security standoff requirements.
8. HVAC equipment and CRAC unit controls to be compatible with facility wide building automation system.
9. Provide fire protection systems that meet requirements for a TIER 3 data center. TR closets fire protection shall comply with VA criteria. The fire detection and alarm (EST 3) and suppression system will be integrated into the existing campus-wide system.
10. Security system shall be in accordance with the VA Security Design guide and the facility standards. Scope shall include card access, cameras, interconnect cables, raceway, CAT 6 cabling, additional Hirsch MUXs, additional network video recorder, full seamless interface to existing card access and camera system front ends. In addition to the design guide requirements for CCTV and card access at a TIER 3 MCR and TRs, provide domed camera with pan, zoom and tilt operation at each entrance and exit to the new MCR.
11. Emergency power and normal power electrical distribution systems in accordance with the VA criteria to meet the requirements for a TIER 3 MCR and TRs. See Section 3.3.7 of the SOW for information on existing systems.
12. The new emergency generator(s), emergency electrical equipment (ATS, UPS, switchgear, transformers and panelboards) shall be located within a free standing, weatherproof,

acoustical enclosure with a diesel fuel belly tank, stairs, walkways, card access, cameras, etc. Assembly shall be in accordance with the VA security design guide and applicable VA design criteria.

13. New MCR that is fully integrated into the existing system that includes:
   a. Routing of service to the new MCR from outside of the campus and/or from the former MCR.
   b. Dual communication entrances with the associated underground manholes, duct bank and infrastructure to meet the TIER 3 MCR requirements.
   c. A new TIER 3 MCR at near Building 2. Layout in accordance with the EDICT Team layout drawings.
   d. New raceway systems between Building 3, room A026A and the new MCR data center (Note: the existing private branch exchange (PBX) and its associated equipment currently located at room A026A, building 3 shall remain in place).
   e. New raceway routes for fiber and new raceway system from the new MCR to the new telecommunication room (TR) risers and TRs for the site.
   f. Redundant facility and campus fiber optic cabling in accordance with VA design guides.
   g. Decommissioning the existing data center, Building 2, room B008A and existing TRs. This work shall:
      - Restore the space for use by the medical center.
      - Remove existing racks, raised floor, CRAC units, PDUs, UPS cabling, existing UPS equipment, copper cabling, abate asbestos floor and mastic, provide new finishes, remove facility OM 1 fiber optic cabling.

14. Provide new 170 square foot TRs throughout the site.
15. Provide new 4 post racks with wire management at each TR.
16. Provide emergency power, physical security, emergency power, room temperature control, integration to the existing BAS and rack temperature monitoring.
17. All building systems shall be fully commissioned per VA standards.
18. Full compliance with requirements for sustainability and federal energy reduction mandates.

1.2 Construction Cost. The maximum available construction funding for the project is $44,551,000.

3.0 SCOPE OF A-E SERVICES

The A-E will be responsible for the design of the project described above. The A-E shall prosecute the work described herein with the professional standard of care described in the code of practice for each profession involved. The A-E, as an independent contractor and not an agent of the Government, shall provide the personnel, materials (except as furnished by the Government) , facilities , and equipment necessary to accomplish the work described below in accordance with all applicable general requirements and technical specifications identified in the A-E's contract and associated SUBMISSION REQUIREMENTS FOR A-E PRODUCTS TO THE Department of Veteran Affairs . Work expected to be performed under this contract includes the following tasks.

3.1 Task 1 - Project Planning. The objective for this effort is to provide all project planning necessary to complete this work. Subtasks included in this effort are described below.

3.1.1 Project Management. The A-E shall provide a project manager to coordinate all required activities under this contract amongst the A-E's team and Department of Veterans Affairs. All general project management related efforts shall be allocated to this task. In addition, under this task, the A-E shall perform the overall task management activities, including regular updates of project status, routine communication with VA Boston Healthcare and others on the project team, and procurement and management of subcontractors.

3.1.2 General Project Status Meetings. It is assumed that bi-monthly (twice a month) general project coordination /status meetings will be held under this task. Assume all such meetings will be held via telephone or web- based application and led by the COR. The PM will develop an agenda and meeting minutes for these meetings. This task also includes one in person general project coordination or status meeting. This meeting is in addition to those identified for specific tasks that follow.

3.1.3 Project Plans

3.1.3.1 Project Work Plan - The A-E shall develop a Project Work Plan that addresses the A-E's plans for accomplishing the work necessary to meet project goals and objectives as specified in this SOW. Specifically , the Project Work Plan shall address project staffing, coordination of disciplines, task identification, quality control, and schedule over the expected life of the project, and shall be prepared consistent with the A-E's

Quality Control standards. The Project Work Plan shall be detailed to a level commensurate with the scope and complexities of the project and address all tasks to be performed by the A-E. Include a Building Information Modeling (BIM) Management Plan with the Project Work Plan if applicable for the project. The Project Work Plan shall be provided within one week of contract award and be discussed at the Kickoff Meeting.

3.1.3.2 Quality Control Plan - the A-E is responsible for preparing a Quality Control (QC) Plan that documents the methods the A-E will use to ensure conformance with contract requirements and criteria. The A- E shall provide a general Quality Control Plan with the Project Work Plan for work to be performed under the contract that documents their corporate methodologies for providing quality engineering and architectural documents. It shall also include the following elements that are specific to this project:

(1) Brief description of project
(2) Criteria and references
(3) Management philosophy and approach
(4) Special or crucial design considerations
(5) Inherent project risks
(6) Identification of key project team members (including Qualified Fire Protection Engineer and a BICSI Registered Communications Distribution Designer (RCDD)
(7) Independent Technical Review (ITR) team and ITR process
(8) Value Engineering team and process
(9) Team members responsible for reviewing and submitting the required VA Design Alerts and Quality Alerts*
(10) Verification of Government-Furnished information
(11) Project Budget
(12) Schedule, milestones and key decision points
(13) Interdisciplinary checks
(14) Coordination of plans, specifications and cost estimate
(15) Design checklists
(16) Lessons learned checklist
(17) Certification

* VA Design Alerts and VA Quality Alerts can be found on the internet at the VA Office of Construction & Facilities Management (VA OCFM) web site: http://www.cfm.va.gov.

3.1.3.3 Work Schedule - As part of the Project Work Plan, the A-E shall submit a detailed task- based schedule (coordinated with the project work breakdown structure) that meets the overall project schedule objectives for all tasks anticipated to be performed under this PWS. This schedule shall reflect a logical and strategic approach for executing the project; key milestones for meeting and exchanging information shall be identified with proposed dates identified.

3.1.3.4 Field Sampling Work Plan - The A-E shall prepare a Field Sampling Work Plan (FSP) in accordance with VA requirements for all intrusive field data collection activities requested under this SOW. The FSP shall indicate data quality objectives and methodologies proposed to meet SOW requirements and shall include sample collection locations and testing procedures with supporting rationale.

3.1.3.5 Accident Prevention Plan/Activity Hazard Analysis. The A-E shall prepare an Accident Prevention Plan (APP) with an Activity Hazard Analysis (AHA) for all anticipated on-site activities; the scope of either is dependent on the scope of the field work to be performed.

3.2 Task 2 - Initial Coordination Meetings. An integrated design process shall be used to ensure development of more balanced design solutions in all aspects of the project through the sharing of knowledge and expertise among project team members. Early stakeholder collaboration is a critical component.

3.2.1 Kickoff Meeting(s). The A-E shall participate in a kickoff meeting for this project. The scope of these meetings is expected to include (but is not limited to):

- introduction of the A-E's team to the Government's team
- review of project goals and objectives
- review of sustainability and energy reduction criteria to initially identify strategies for meeting said goals and requirements.
- confirm applicability of key criteria
- agree on A-E's design execution schedule
- orient the A-E team to the project documents and criteria
- review of project administrative requirements (reporting, invoicing, etc.)
- establish communication protocols
- plans for project coordination between the A-E, COR, the facility engineering personnel and user staff personnel
- identify critical schedule elements and pre-design activities
- review VA's process for permitting tasks and extent of integration with the A-E's design tasks
- site orientation
- cost estimate preparation and guidance (may be a separate meeting (or call) but if part of kickoff meeting agenda, then A-E's cost engineer shall participate in the kickoff meeting).
- discuss advanced modeling requirements to coordinate the expectations for the Advanced Modeling Project Execution Plan.
- An agenda for the kickoff meeting(s) shall be mutually developed between the A-E and the COR.

3.2.2 Interviews with Project Team Members and Site Visits. The A-E shall participate in meetings and/or conference calls with the COR, facility engineering personnel and user staff personnel, as necessary to better develop an understanding of project data, criteria, and objectives, and to verify user requirements. The A-E shall conduct preliminary scope meeting and site survey investigations to develop all elements for the 10% Design Submittal - Conceptual Submittal consistent with the VA BHS project team goals as prioritized during preliminary project scope meetings, field surveys, and studies. Elements of this task may be combined with items covered under 3.2.1 Kickoff Meetings and 3.3.l Document Existing Conditions/Verify record drawings.

3.3 Task 3 - Pre-Design Field Work. The A-E is required to collect data and perform field investigations of the site as necessary to ensure proper and adequate design. Plan a site visit(s) to investigate specific areas necessary to fully develop conceptual layouts; this may be in conjunction with the Existing Conditions Documentation. A-E shall coordinate with the COR or designated facility personnel. The A-E shall describe the applicable portions of buildings and/or areas where access will be required. Arrangements for visits to make inspections should be made at least 1 week before the visit. It's understood that portions of the pathway verifications will take place in active patient care areas and off hours/weekend verification will be required in order to minimize impacts to patient care.

3.3.1 **Document Existing Conditions Verify Record Drawings.** The A-E shall conduct an existing conditions survey to document existing conditions. The survey may span multiple days and take place off hours (weekends and nights). The purpose of the existing conditions survey is to provide geo tech, evaluate cable pathways, provide potential locations of the CRAC units, generator(s) enclosure, noise controls, data raceways, and available spaces for equipment. One intent of the site visit is to determine suitable locations for locations of new TRs, determine locations for MCR, determine tie-ins to existing building IT networks, determine cable pathways, determine electrical pathways and determine chilled water pathways.

- Review existing MCR facility, IT data raceways, fire detection and suppression system, security system, BAS system, electrical system (supply, lightning, and surge), emergency backup power system and any other building or campus-wide systems to be impacted by the project.
- Review existing above and below ground electrical and IT infrastructure. Locate potential tie-ins and raceway/chases paths to existing electrical and IT systems.
- Gather information needed to evaluate options for TR towers, TR closets and MCR facility.
- Understand the proposed space with respect to designing Very High Density (VHD) equipment racks and power supplies and provide for cooling of these spaces.

- Review potential locations for placing outdoor equipment at grade. Gather information regarding buffer zones, Physical Security setbacks, geo technical information, generator emissions impacts to existing buildings, visual and acoustic screening.
- Review chilled water/DX pipe routing and associated utility chases.
- Understand noise concerns and potential noise mitigation equipment (per Task 3.3.8, a noise emission and mitigation study are required) to include any such equipment presently in use.
- Conduct an indoor architectural survey to document and confirm existing conditions within the impacted building space and show proposed raceways, utilities, and IT integration locations.

The A-E shall confirm all existing conditions and field verify any plans/record drawings provided by the VA. The A-E is wholly responsible for both the accuracy and the level of completeness of the final product and failure to verify information is not acceptable. The A-E shall be responsible for performing investigation of all features of work including areas normally enclosed or inaccessible areas such as spaces above the ceilings, within walls or chases, in pipe crawl spaces, and in or under basement floors. Where necessary, arrange to have walls or ceilings opened to examine the interior or hidden conditions to provide complete drawings. The A-E will issue trip reports for each time they visit the facility and include them in the design analysis report.

3.3.2 Supplemental Topographic and Ground Penetrating Radar Surveys. The VA will provide a base survey for the Brockton Campus. The A-E shall perform supplemental topographic survey in areas they deem necessary to the detail required to complete the design. The A-E is required to perform a topographic survey of the MCR location, TR Tower locations, CRAC location(s), pipe layout and emergency power enclosure - collecting as well as plotting the data in a format that is translatable and downloadable to meet the facility's standards. Supplemental topographic survey includes: a complete survey of the recommended MCR, TR Tower, Emergency Power Enclosure, emergency generator(s) and CRAC locations - providing grades and lines of streets, pavements and adjoining properties - and, the rights, restrictions, boundaries, and the contours of the building site with available information for all utilities. Locate utilities at proposed connection points. Minimum contour interval is 1- foot. All survey work shall be performed under the supervision of a land surveyor registered in the state in which the site is located. Survey accuracy shall be third order. Units shall be in U.S. feet.

All electronic survey files shall be provided in a delimited text file that contains at a minimum the point ID, northing, easting, elevation, and code for each surveyed point. A list of the surveyor's codes and a description of each code shall also be provided. Additionally, a CAD file shall be produced that contains the graphic display of the surveyed features, contours, annotations, a symbols legend and the general notes about the survey. The CAD file shall be submitted in either AutoCAD (version 2019 or later) format and shall be developed according to the criteria listed in Section 4.2.1 Design Drawings and Advanced Modeling. If GPS is used, provide all GPS electronic files with accompanying field notes including information on antennae type and height. Submissions shall also include copies of field notes and be included in the design analysis.

The A-E may elect to use ground penetrating radar (GPR) to locate potential subsurface conflicts in proposed utility/piping network areas.

3.3.3 Geotechnical Investigations. -

The A-E shall perform drilling and testing of subsurface conditions in all areas expected to receive building foundations, structural slabs, paved surfaces and in approximate locations of expected utility lines and distribution pipes. The geotechnical exploration program to be implemented shall be sufficient for the proposed foundation system. The A-E shall obtain subsurface data from any area designated as wetland or similar that will be impacted by construction activities in order to assess to what extent special provisions will need to be accounted for in the design and construction in said area. The A-E shall also evaluate the suitability of likely ‘cut’ material to assess its potential for use as general fill or structural fill with or without the use of admixtures, as well as to evaluate it for potential off-site disposal. The A-E shall perform geotechnical and chemical testing of samples per the approved Field Sampling Work Plan for each phase. Explorations and testing shall be done by the A-E or by their hired geotechnical consultant using experienced, qualified, and licensed drillers and laboratory technicians. Information collected shall be used by the A-E to produce and submit a foundation and pavement design analyses (aka geotechnical report) for the specification and design of construction features placed in the earth. The geotechnical report shall be prepared by or under the supervision of a registered professional engineer qualified in geotechnical engineering and submitted under their seal and signature.

3.3.4 Hydrant Flow Tests. The A-E shall coordinate with the VA to obtain water flow test data, in accordance with the procedures contained in NFPA 291, to determine available water supply for the water-based fire extinguishing systems. The A-E' s fire protection engineer must perform or witness the required flow testing. Use of historical water supply information is not acceptable.

3.3.5 Hazardous Materials Surveys and Testing. Any materials suspected of possibly containing hazardous materials that is expected to be impacted or disturbed during construction shall be sampled and tested in accordance with appropriate standards for the potential hazard. To extent possible, the VA will make available existing asbestos and lead assessments.

(1) **Paint Sampling and Testing for Lead and PCBs**: Laboratory samples shall be collected from all painted surfaces that could potentially contain lead and/or PCBs and that may be modified, altered or demolished during construction. Paint samples (paint chips) will be collected from the designated surfaces to collect an adequate volume of material for laboratory analysis. Paint sample locations shall be recorded with a digital camera and a detailed logbook description. The test results of any hazard containing materials shall be included in the design documents. X-ray fluorescence spectrometers shall not be used in lieu of paint chip sampling and analysis for lead. Lead paint inspections shall be conducted by licensed lead inspector as required in 105 CMR 460.400. Inspections shall conform to the requirements of 105 CMR 460.730. The A-E shall include all efforts for collecting up to 50 paint samples and performing the required analysis for lead and PCBs in their pricing for this task.

(2) **Asbestos Survey**: The A-E shall conduct an asbestos-containing materials (ACM) survey. This survey shall involve a visual inspection, bulk sampling and inventory of suspect ACM, including locating and quantifying the identified ACM. The asbestos survey shall be performed by Massachusetts Division of Labor Standards (DLS) certified Asbestos Inspector as required in 453 CMR 6.07(a). The asbestos survey shall conform to the requirements of310 CMR 7.15(4). Asbestos testing shall be performed by a certified asbestos analytical service provider as required in 453 CMR 6.08. The inspector shall perform both visual inspection and bulk sampling according to EPA approved procedures and methods. Materials to be surveyed shall include wallboard and joint compound, plaster, thermal insulation materials and pipe fittings, pipe wrappings, floor tiles and sheet flooring, mastics, leveling compounds, mortar beds, grouts, adhesives, glazing compounds, textured paints, flashing cements, ceiling tiles, fire stopping, fire proofing materials, gaskets, caulking, sealants, vapor barrier coatings, and any other suspect ACM. The A-E shall include all efforts for collecting up to 50 samples and performing the required analysis for asbestos in their price for this item.

(3) **Additional Paint Sampling and Testing for Lead and PCBs**: Additional sampling and testing for lead and PCBs in paint

(4) **Additional PCB and Mercury Surveys**:

a. Light Ballasts (PCBs): Evaluate and survey all existing lighting ballasts for the presence of PCBs. Every ballast shall be inspected for a " non- PCB" label. Every different type of ballast that exists without a "non-PCB" label shall be assumed to have PCBs and should be indicated on the design drawings.

b. Lamps (Mercury): Identify all fluorescent and High Intensity Discharge (HID) lighting lamps that will be removed as part of the renovation work. Since 1998, new low-level mercury lamps have been available. The field survey shall differentiate between old mercury lamps (which must be disposed of as hazardous waste) and any new low-level mercury lamps, which are classified as non- hazardous waste. The field survey shall identify all hazardous waste lamps on the design drawings. An environmental report shall include all documentation from the field survey that indicates the hazardous or non-hazardous determination.

c. Caulking, Sealants, and Glazing Compounds (PCBs): Samples of any caulking, sealants, and glazing compound suspected of potentially containing PCBS shall be collected and analyzed. Caulking, sealants, and glazing compound samples shall be removed using a disposable, one-time use utility blade and placed in a glass jar. A new, clean blade shall be used for the collection of each sample. The sampler shall wear disposable nitrite gloves shall be changed between samples. Samples shall be checked for the presence of any adjacent materials that may have been inadvertently removed during sampling. Samples shall be prepared in accordance with USEPA Method 3540C. Samples shall be analyzed for PCBs using USEPA Method 8082.

(5) **Additional Asbestos Sampling and Testing**: Additional sampling and testing of building materials for asbestos.

3.3.6 Wetlands . The A-E shall have a professional wetland scientist review the VA Brockton wetlands map. Any work to be performed within 100 ft buffer zones shall require filing of Notice of Intent (NOI) to obtain permit from Brockton Conservation Commission. A-E shall apply for Massachusetts DEP permit (with categorical exclusions if outside buffer zone).

3.3.7 Telecommunications System Evaluation and Design. Evaluate existing telecommunications system, provide recommendations, and provide a design for the requirements specified in Section 2 of the SOW. The contractor is required to review FAR 4.2101, Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment, and ensure prohibited covered equipment or services are not specified or required in the resulting Construction contract. Specific A-E tasks include the following (note that field work related to this effort is included in task 3.3.1):

1) Determining preferred routing of service to the new MCR from outside of the campus and/or from the former MCR. (Note: Routes may require coring through building walls so some building evaluations for hazardous materials, etc. may be required (accounted for under Task 3.3.5)).
2) Provide recommendation for dual communication entrances with the associated underground manholes, duct bank and infrastructure to meet the TIER 3 MCR requirements.
3) Provide recommendation for new raceway systems between A001 and the new MCR (Note: the existing PBX and its associated equipment currently located at room A001, Building 3 shall remain in place).
4) Provide recommendation for new raceway routes for fiber and new raceway system from the new MCR to the telecommunication room (TR) risers and TR closets for the facility. Include findings of the Telecommunication System Evaluation and Design in the Design Analysis Report for the 35% Design Submittal.

3.3.8 Electrical Power Evaluation and Design.

Background: The Building 2 normal power entrance consists of 3 transformers (750 KVA 3 Phase, 500 KVA single phase and 300 KVA single phase. The main panel consisted 480 V and rated for 2000A. The other 2 main single-phase panels are rated for 1600A and 1200A.

Evaluate existing electrical and power distribution systems, perform the required tasks noted below, provide recommendations, and provide a design for the items noted herein. (Note that field work related to this effort is included in Task 3.3.1):

Provide an evaluation (load, coordination, short circuit, redundancy, etc.) for the existing 13.8kV service, loop and tie into existing loop based on the added data center and mechanical equipment loads. Provide investigations, evaluations, recommendations and design for a normal power distribution system to support a TIER 3 data center. Provide survey, recommendations and design for the data center equipment electrical systems, panel board, bus system and branch circuit distribution. Evaluation shall include new location(s) for the substation transformers, duct bank, manholes, feeders, rated barrier and site security. New substation transformers will require an outdoor location, new duct bank, new primary conductors, new primary switches, new secondary conductors, new fire rated barriers and security provisions in accordance with VA criteria.

The existing emergency power system consists of 2 of 480-volt generators. Generator one is 450KW and Generator two is 400KW. The main emergency panel for building #2 is rated for 400A with 3 ATSs. Investigate and evaluate the emergency infrastructure and provide recommendations and design for an emergency distribution system that will support a TIER 3 data center. Design work shall include, but it not limited to, the following: new duct bank, manholes, structural pads, storage tanks, stack, foundations, stairs/platforms, fire alarm, lighting, site security with an upgrade to existing emergency system.

Generator(s) design shall comply with the State of Massachusetts emissions control; dispersion exhaust modeling; exhaust stack design (architecturally compatible with the site); and VA requirements. The

facility standard for emergency generators is a generator in free standing, weatherproof, acoustical enclosure with diesel fuel belly tank. Design shall comply with the VA security design guide.

Emergency electrical work shall include the removal of the existing 80KVA UPS and batteries and electrical connections at Building 2, room B0018. New UPSs shall be provided at the freestanding enclosure to meet the TIER 3 redundancy requirements.

Provide short circuit analysis, arc flash analysis and electrical coordination for the new equipment. Provide new building ground system, lightning protection system, surge protection system.

Submit recommendations for the generator size and recommended location with the 10% Design Submittal. Submit the results of the Electrical Power Evaluation and Design, including recommendations for upgrades required to comply with the VA design criteria for a TIER 3 data center, in the Design Analysis Report submitted with the 35% Design Submittal.

3.3.9 Noise Emission Study. Measure and review baseline noise levels. Provide base line ambient sound level measurements at the following locations:

1) Bldg 2 (first floor, second floor, third floor and fourth floor)
2) Bldg 4 (first floor and second floor)
3) Building 3 (first floor and second floor)

The intended objective is to assess the potential impact of operational noise from the new equipment on affected activities and interior building spaces (offices, in-patient rooms, clinics, etc.). Utilize the Noise Criterion (NC) curves, to identify desirable limits of background noise for different interior spaces. Sound measurements performed at interior locations shall be compared to the applicable NC Levels for the applicable type of room.

Ambient sound level measurements shall be performed using instruments that meet ANSI S1.4- 1983 standards for Type 1 sound level meters and that possess real-time frequency analysis capabilities (e.g., the Larson Davis Model 831 or 824 sound level meters, or equivalent). The sound level meters shall be programmed to sample and store A-weighted sound level data including equivalent sound levels (Leq) and percentile levels (Ll , LI O, L33, 50, L90, and L99). The frequency content (in octave bands) of the existing acoustic environment shall be sampled and stored to determine compliance.

A-E shall utilize up to five (5) monitors to collect simultaneous ambient sound level data for a minimum period of 160 continuous hours at each measurement location. Ambient sound levels shall be sampled and stored for time intervals of no more than I -hour in duration. Except during periods of deployment and retrieval, the intent is to leave the monitors unattended (that is, no observer will be present) at each measurement location.

To the extent possible, the compliance noise measurement program shall be scheduled for periods with forecast weather conditions suitable for sound level measurements (i.e., no precipitation, low wind speeds, etc.). Monitor the weather forecast for the area prior to deploying the equipment. Construction documents shall require the contractor to provide post-construction compliance noise measurement survey. Perform operational noise measurements at the same locations that will be utilized during the pre-construction measurements using instrumentation with the same technical specifications. Utilize data to develop noise abatement strategy for the new equipment to include operational restrictions.

Submit a Noise Study Data Summary with the 10% Design Submittal. Submit the Final Noise Study Memorandum including recommendations with the Design Analysis Report submitted with the 35% Design Submittal.

3.4 Task 4 -10% Design Submittal - {Conceptual Submittal}

The A-E shall prepare a 10% concept design that shall include: an Existing Conditions Report and a Conceptual Design Report that provides a narrative review for an MCR at Building 2 and Building 61. Review feasibility of both locations. Provide a narrative for the design intent for each major component of the MCR: CRAC units, and data distribution system; up to 3 proposed site plans/layouts /distribution alternatives along with single line perspective sketches; itemization of major work elements; a listing of identified and proposed design criteria; and a parametric cost estimate for each alternative. A cost evaluation of each

alternative based on the analysis of the initial cost and life cycle costs shall be included with this submittal. The A-E shall review these alternatives to determine which is the most beneficial and cost effective to the Government and include recommendations for implementation.

Provide a Conceptual Design Analysis Report with an assessment of the existing campus utility systems with equipment location options required to support the new TIER 3 MCR.

The Conceptual Design Analysis Report shall include, but shall not be limited to, the following:

- Three (3) potential MCR Layouts.
- TR tower locations
- Results of evaluation for MCR equipment cooling options (DX vs. glycol).
- Preliminary sizing of new MCR CRAC units.
- Recommendation for locating HVAC equipment, TR towers, MCR CRAC units, piping distribution lines.
- Preliminary sizing of normal power service for MCR
- Preliminary sizing of prefabricated enclosure with generator sizing and enclosure location.
- Preliminary layout of new tele-data pathways
- Summary of Noise Study field monitoring data.
- Summary of Hazardous Materials Testing.
- Summary of environmental conditions and required permits.

Any additional items identified during the existing conditions surveys and reviews that are deemed beneficial by the designer shall be included in the Design Analysis Report for consideration by the medical center. All concepts shall be reviewed with the requirements of the VA HVAC Design Guide, VA Electrical Design Guide, VA Sustainable Design and Energy Reduction Manual.

The A-E shall clearly identify those items that are less well defined or items that require user's input that can have significant implication to the design or scope of the project. The intent is to get direction of such items from this review. The A-E shall make distribution in accordance with the enclosed distribution list for review. The A-E shall present the concepts to the user on the different alternatives within **1** week of the submission. The COR will then provide written design direction to the A-E as to the preferred alternative(s).

3.5 Task 5 - 35% Design Submittal - {Schematics} *(including VE support)*

Submission requirements for each set of documents include (in addition to what is specified below unless otherwise noted):

- Plans
- Outline Specifications
- Construction Cost Estimate
- Design Analysis Report including results of Electrical, Telecommunication, and Noise evaluations and studies with recommendation and options for required utility systems with TIER 3 data center
- Construction Duration Schedule

3.5.1 Submittal Requirements. The A-E shall advance the concept design for the design of the facility that was developed and critiqued during the concept phase. The A-E shall take into consideration changes in criteria and design requirements based upon the comments raised during the review of the Task 4 documents, and any data collection activities. Submittal shall include all requirements specified in this SOW, the A-E's Contract, and VA NRM submission instructions for a 35% submittal.

3.5.2 Technical Requirements. The scope of the 35% design shall be comprehensive in that each of the required design disciplines will be addressed to the level commensurate with this stage of design development. These disciplines include:

- Civil/Site Work
- Geotechnical
- Wetlands
- Applicable Code Review
- Building Architecture including interior space planning, life safety/code compliance, egress evaluation, exterior facades, and functionality. Design documents shall include floor plans, typical cross sections, exterior elevations, finish schedule, and roof plan.
- Interior Design

- IT Integration Plan
- New Raceway Layout
- Process Engineering
- Life Safety and Code Compliance
- Foundations
- Structural
- Mechanical/HVAC
- Plumbing
- Fire Protection incl. Fire Code Review by Fire Protection Engineer
- Fire Alarm Systems
- Electrical Power and Distribution
- Lighting
- Building Communications
- Building Security
- Building Controls and Automation
- Sound/Noise Study
- Vibration Control (building structure and building systems)
- Commissioning
- Sustainable Design
- Cost Engineering
- Scheduling
- Specifications
- Industrial Hygiene and Hazardous Material Abatement (if necessary)
- Historical Preservation Activities - Brockton is in the process to be considered eligible and nominated for listing in the National Register of Historic Places. New construction, additions, renovations, etc. are required to maintain the property's significance of design, materials, workmanship and setting by utilizing similar architectural details as to the original campus style by matching Beaux-Arts composition, flat-roofed main block features, bronze steel-framed windows and buildings sheathed in brick with matching brick color and bond pattern. Essentially, any new building/addition we add must look like it was constructed as part of the original campus to avoid adversely affecting the historical criterion C of architecture/landscape architecture of the campus. The A-E shall complete the National Historical Preservation Act (NHPA) project consultation process. For Brockton, there are a minimum of, but not limited to, four compliance steps required to be completed by the A-E team: (1) Initiation (determine undertaking), (2) identification (of Historic Properties), (3) Assessment (of Affect) and (4) Resolution (of Adverse Effect). Undertakings can be projects, activities or programs either funded, permitted, or approved by a Federal Agency. The identification of a Historic Property will be the Brockton Medical Center campus (but some buildings may be considered 'contributing' while others are 'non-contributing'). Examples of Adverse Effects to historical properties are damage, destruction, or removal of historical properties; change in the character of use/setting; alterations not according to the Secretary of the Interior's Standards. Resolution requires the Federal Agency to resolve the adverse effects through consultation with multiple stakeholders. The consultation process requires making documentation available to the SHPO, Advisory Council on Historic Preservation (ACHP), Tribal Historical Preservation Office (THPO), Indian Tribes and public for objection and/or comments to be considered. The comments are captured in a Memorandum of Agreement (MOA) and the VA is obligated to follow the terms of the MOA. The NHPA project consultation process must be completed by the A-E team for the Government.

3.5.3 Administrative Requirements. The A-E shall engage and coordinate with representatives from the VA to ensure a fully integrated and coordinated schematic design document. For scheduling purposes, the A-E shall assume a review period of no more than three weeks. The A-E shall provide draft responses to comments within 2 calendar days of receipt of comments with a meeting held at the user's facility to reconcile significant comments within 1 week of receipt of comments. See also Section 4 - SUBMITTALS AND REVIEWS.

3.5.4 Value Engineering Support. The A-E is responsible for project Value Management. The A-E shall integrate the value management principles into the design process starting at the beginning prior to critical project decisions. The objective is to utilize the value management process to facilitate and encourage the understanding, consideration, and integration of the needs of the VA. During the review period, the Value Engineering workshop on the 35% design submittal will be conducted. The A- E shall participate by:

- Providing a Certified Value Specialist (CVS) accredited by SAVE International to facilitate

the Value Engineering Study process as well as the project cost engineer to participate during the study

- Conducting a detailed, multi-disciplinary presentation of the design documents to the VE team. The presentation shall include an overview of design decisions, criteria that has proved to be unchangeable to date, and design opportunities foregone for various reasons.
- Attending an informal presentation of the preliminary results of the study to receive advance information of the content of the forthcoming VE study report. The briefing by the VE team will be approximately two hours in duration on the afternoon of the last day of the workshop. The A-E project manager, COR and representatives from the Department of Veteran Affairs discipline professionals will attend the presentation.
- Reviewing the formal VE report and submitting written assessment comments for each proposal to the COR. The comments shall be of appropriate depth to reflect the impact of the proposals on the design. The review will require approximately four hours of effort by the A-E project manager and each prominent discipline professional.
- Participating in follow-up discussions with the VE team as to the final disposition of comments made on the VE study report.

Other than the facilitator and cost engineer, COR, representatives of VA BHS will comprise the participants for the Value Engineering workshop.

3.6 Task 6 - 65% Design Submittal - "DD" Design Development

3.6.1 Architectural Compatibility Package Submittal Requirements. The A-E shall submit 65% architectural renderings of the exterior building in appurtenances (including HVAC and CRAC Units, generator(s), and visual and sound barriers) as well as interior rendering showing the new MCR. The renderings will be reviewed by the VA for compatibility with the Brockton Campus architecture. The submitted package shall consist of a project narrative, architectural renderings , building elevation and drawings, site analysis, and photos.

3.6.2 Design Submittal Requirements. The A-E shall advance the schematic design to address comments and direction provided as part of the review process. The A-E shall incorporate changes in criteria and design requirements based upon the comments raised during the review of the 35% design, associated VE Study, and the latest results from surveys and evaluations that are completed. Submittal shall include all requirements specified in this SOW, the A-E 's Contract, and associated N R M Submission requirements for a 65% submittal.

3.6.3 Technical Requirements. The scope of the 65% design shall be comprehensive in that each of the required design disciplines (previously listed) will be addressed to the level commensurate with this stage of design development. Work by all design disciplines shall be coordinated and integrated with areas in which more work is needed clearly indicated in the design documents.

3.6.4 Administrative Requirements. The A-E shall engage and coordinate with the VA COR as well as other external VA parties as necessary to ensure a fully integrated and coordinated 65% design documents. To reconcile review comments, assume participation in a comment resolution meeting with the VA COR; the A-E shall provide draft responses to comments in advance of said meetings and calls. For schedule and submittal requirements see Section 9 - SCHEDULE and Section 4 - SUBMITTALS AND REVIEWS.

3.7 Task 7 95% Design Submittal- "CD" Construction Documents

3.7.1 Submittal Requirements. The A-E shall advance the design for the project to address comments and direction provided as part of the review process. The A-E shall incorporate changes in criteria and design requirements based upon the comments raised during the previous review of the design documents, and the latest results from surveys and evaluations that have been completed. Submittal shall include all requirements for a Final/CD submittal as specified in this SOW (see Section 4) the A-E' s Contract, and associated NRM Submission requirements.

3.7.2 Technical Requirements. The scope of the Final/CD design shall be comprehensive in that each of the required design disciplines (previously listed) will have completed their design to include all

associated details and instructions to the contractor. Work by all design disciplines shall be fully coordinated and integrated.

3.7.3 Administrative Requirements. The A-E shall engage and coordinate with representatives from the VA, the VA COR and other external VA parties to ensure a fully integrated and coordinated Final/CD design documents. To reconcile review comments, assume participation in a comment resolution meeting with the VA COR; the A-E shall provide draft responses to comments in advance of said meetings and calls. For schedule and submittal requirements see Section 9 - SCHEDULE and Section 4 - SUBMITTALS AND REVIEWS.

3.8 Task 8-100% Design Submittal - {Bid [Final] Documents}

100% Corrected Final Design documents shall include revised 95% design documents to reflect revisions and corrections necessary based upon review comments received on the 95% Final/CD submittal. Submittal shall include all requirements for a 100% submittal as specified in this SOW (specifically see Section 4). Content of submittal shall include materials generated under Task9 so that all projects elements are incorporated. The A-E shall participate in a conference call to reconcile any opencomments. For schedule and submittal requirements see Section 9 - SCHEDULE and Section 4 - SUBMITTALS AND REVIEWS.

3.9 Task 9 - Justification and Authorization (J&A) Documentation

The A-E shall develop documentation for development of J&As for the following work items:

a. HVAC equipment and CRAC unit controls to be compatible with facility wide BAS system.
b. Fire protection systems that meet requirements for a TIER 3 data center and TR closets will need to be integrated into the existing campus-wide system.
c. Fire Alarm system that meets the requirements for a TIER 3 data center, TR closets and emergency power enclosure will need to be integrated into the existing campus-wide system.
d. Key System is an existing Grand Master Key system by Stanley Security Solutions.
e. Security system in accordance with the VA Security Design guide and the facility standards that will need to be integrated into the existing security system.
f. CRAC chiller systems to be manufactured by LIEBERT. The VA 's maintenance personnel are responsible for maintaining several other VA facilities in Massachusetts which all have LIEBERT CRAC systems and the ability to train staff to maintain one brand of equipment is mission critical.

J&A documentation shall be provided no later than the 65% design submittal.

3.10Task 10 - Miscellaneous Support

The A-E shall assist the project team, when requested, on relevant issues not specifically called out under this Task Order, and to provide general professional consultation services. All requests under this task shall be coordinated through the COR for direction **PRIOR** to the A-E performing any work under this task. The A-E shall keep a log of all activities performed under this task and shall provide this with each monthly performance report. The A-E shall initially assume 80 man-hours for this task.

3.10.1 Additional miscellaneous support of up to 50 man-hours.

3.10.2 The A/E shall review the Contractor's requests for information and cost proposals for construction change orders when requested by the COR. The A/E's reply regarding his/her review of cost proposals and his/her recommendations shall include an independent breakdown of costs in detail, quantities, and unit prices and shall cover both additions and deductions of labor, materials, and equipment. The A/E shall also supply cost estimates as requested by the COR for Request for Proposals for anticipated changes.

3.11Task 11 - Conformed Construction Documents

3.11.1 Submittal Requirements. Within two weeks following bid opening, the A-E shall develop a conformed set of Plans and Specifications which includes and identifies the changes made to the construction documents by amendments to the solicitation. The plans shall be updated with revision clouds. The specifications shall be updated with italics and a revision number on each updated specification section. The Government will be responsible for making edits to the Division 1 specification. The Government will

provide the updated Division 1 specs intact files to the A-E to compile into the Conformed Specification Set. The A-E shall print the conformed set of plans and specifications as identified in Section 4.

3.12 Task 12 - Construction Type C Services / Option Item Requirements:

Solicitation Support Services

Pre-bid site visit to include meeting and project walk around. This is the meeting where contractors are invited to the job site to visually inspect the construction site to accurately develop a construction bid package.

Answer any technical questions/requests for information (RFIs) received from contractors over the duration of the solicitation, including questions asked during the site visit. Questions from contractors may come at multiple times and cover several questions over the course of the solicitation period. Technical question responses will be provided to the Contracting Officer who will distribute the information via amendment to the solicitation.

Answers to RFIs will be required from the A-E within five calendar days of the date the questions are sent to the A-E from either the project COR or CO. An alternate response period may be submitted for review, however, unless approved by the CO and COR, the A-E is required to comply with the five-calendar-day requirement.

Throughout the solicitation period, the A-E shall provide addenda as necessary if required to revise specs and drawings. In response to any technical questions and/or addenda issued during the solicitation period, the A-E shall provide any final revisions to the 100% FC CD as part of the construction contract. These documents shall be labeled Final Construction.

Construction Period Services (CPS)

Requests for Information (RFI)
Requests for Information shall be submitted within three calendar days of submittal to the A-E.

Submittal Reviews
Submittal reviews shall be submitted within seven calendar days of submittal to the A-E

Site Visit Reports
Site visit reports shall be submitted within seven calendar days of the visit. All documents in any of the electronic formats listed above.

Modification/Change Order Requests
Modification requests shall be submitted within seven calendar days of submittal to the A-E. This includes the review of the contractor's change order/modification proposal for construction change orders, as well as the formulation of an IGCE for the modification, as requested. The A-E's reply regarding their review of cost proposals and their recommendations shall include an independent breakdown of costs in detail, quantities, and unit prices and shall cover both additions and deductions of labor, materials, and equipment. The A-E shall also supply cost estimates as requested by the COR for Requests for Proposals for anticipated changes. All documents in any of the electronic formats listed above. Note: If major modification, VA will provide additional time and document format guidance.

Punch List
Punch list shall be submitted within seven calendar days of the final acceptance inspection. All documents in any of the electronic formats listed above.

Record Drawings
Record drawings shall be delivered to the VA within 30 calendar days after VA acceptance of the construction project. Autodesk Revit Project (.rvt) format and AutoCAD (.dwg) format.

Third-Party Commissioning

The A-E shall provide Commissioning and Commissioning Agent services and deliverables in accordance with the reference document, OCFM Whole Building Commissioning Process Manual located on the TIL (https://www.cfm.va.gov/til/Cx-RCx/CxManual.PDF). See "Commissioning Agent Tasks" in each section of the reference document. The Commissioning Agent shall be involved in all phases of the project, including both design and construction. It is anticipated that the Commissioning Agent will participate in the following: design reviews, owner's requirements updates, design phase commissioning planning (facilitate), commissioning specification reviews (facilitate), construction project meetings, construction observation visits, equipment startup and testing, Testing Adjusting and Balancing (TAB) verification, and project commissioning (facilitate in coordination with General Contractor). The commissioning process shall be adapted to the size and complexity of the project. Deliverables shall be as described in the reference document. Additionally, the A-E shall develop the commissioning plan, pre-functional checklists, systems functional performance test checklists, integrated

system test checklists, and edited master specification templates to serve as a starting point for the commissioning process on all projects based on the following Systems to be Commissioned.

- Systems to be commissioned shall be as defined in the VA Whole Building Commissioning Process Manual, section 3.2 Systems to be Commissioned
- Additionally, back-up electrical systems
- fire protection systems
- all control systems
- all process systems shall be commissioned

Commissioning Submittals: The A-E shall submit for review the Design Phase Commissioning Plan, the Issues Log, and the Commissioning Process Progress Reports.

4. SUBMITTALS AND REVIEWS

4.1 General Submittal Requirements.

4.1.1 Each submittal shall clearly convey a description of the work involved and be in sufficient detail for accurate analysis of the information contained therein. The submittal shall address all aspects of the work to be performed, be technically accurate, and comply with this scope and the criteria and references contained herein.

4.1.2 All reports presenting data, analyses, and recommendations shall be prepared in a standard typed format for A-E reports. All site drawings shall be of engineering quality with sufficient detail to show interrelations of major features on the site map (i.e., north arrows, keys, scales, etc.). When drawings are required, data may be combined to reduce the number of drawings. The report shall consist of 8-1/2" by 11" pages with drawings folded , if necessary, to this size. Reports that are more architecturally-related which require larger pages to convey graphical information may be produced on 11" by 17" pages. A decimal paragraph system shall be used. A report title page shall identify the report title, the A-E, the contract number, and the date. Submittals shall include incorporation of all previous review comments as well as the disposition of each comment. Any submittal not meeting the requirements set forth herein may be returned for A-E correction before initiating review.

4.1.3 In case of late submission, the A-E must notify the contracting officer and COR of this fact as soon as possible but no later than five (5) calendar days before the original date of submission. A letter of explanation is required for any submission expected to be late by five (5) calendar days or more.

4.1.4 Submittals shall be mailed directly to the distribution list by the A-E to accelerate the overall process. Executive Summaries are required for all submittals unless indicated otherwise. A letter of transmittal shall accompany all submittals to the COR from the A-E identifying the contents of the submission. The A-E may be requested to provide a preliminary electronic copy of specific submittals to the COR for review prior to actual submittal date to ensure full conformance with this SOW. Typically, the COR will provide verbal or marked up comments within five (5) calendar days of receipt to be incorporated into the submittal for full document review.

4.1.5 A Document Distribution List will be developed for this project. The A-E shall prepare this list based on input from COR and shall maintain the list in MS Word. The list shall indicate the number of copies required, addresses and other specific instructions. This list shall be used for all submittals unless indicated otherwise. Contract submittals shall be furnished by guaranteed delivery service as necessary to meet schedule requirements. Submittals shall be sent directly to COR and customer recipients; further direction will be provided by the COR regarding other recipients. Coordination with the COR is urged (prior to submission) to address A-E questions and to ensure submission and distribution requirements will be met. The A-E shall provide a preliminary distribution list for each submittal to the COR for approval prior to actual mailing.

4.1.6 The A-E shall budget for production and distribution of the following number of copies for each of the following submittal types:

Document (ref. PWS section)	Quantity*	parties on distribution list

Meeting Minutes (with copies of attachments) (8.3)	via email	*NIA*
Project Work Plan and Quality Control Plane (3.1.3.2 & 3.1.3.3)	via email	*NIA*
FSP and APP and revisions (3.1.3.4 & 3.1.3.5)	via email	*NIA*
Results from Pre-Design Field Work (3.3)	via email	*NIA*
10% Submittal- Conceptual (3.4) Plans - half size Design Analysis & related documentation (Generator Memo and Noise Data Summary) Cost Estimate	1 total	3
35% Submittal - Schematics (3.5)		3
Plans - full size Plans - half size Outline Specifications Design Analysis incl. Final Noise Study and Final Results from Telecom and Electrical Evaluations Cost Estimate Construction Schedule	1 4 1 1 1	
65% Submittal - Design Development (3.6) Plans - full size Plans - half size Marked-up Specifications Design Analysis Cost Estimate Construction Schedule	 1 4 1 1 1 1	3
95% Submittal - Construction Documents (3.7.) Plans - full size Plans - half size Specifications Design Analysis incl ECI document and ITR Cost Estimate Construction Schedule	 1 4 1 1	3
100% Submittal - Bid Documents (3.8) Plans - full size Plans - half size Specifications Design Analysis Cost Estimate Construction Schedule	 1 4 1 1 1 1	3
Conformed Construction Documents Submittal Plans - full size Plans - half size Specifications	 5 8 6	3
Progress submittals for portions of these documents shall be provided to facilitate the review and approval process, as necessary. * Quantities of draft vs. revised /final documents may vary for each submittal. ** In addition to the distribution specified herein the A-E shall provide subsets of the Final Design materials for submission to permitting authorities and other outside parties as may be necessary.		

4.1.7 All documents shall be provided in hard copy and in electronic format. Electronic copies shall be in a .pdf format and shall be sent by an approved file sharing site MS SharePoint to the COR. Electronic copies may also need to be provided in an editable format if requested by COR. Electronic copies of 100% corrected final design plans shall include copy of Professional Engineering stamp and signatures on each sheet. 100% corrected final design submission shall include editable electronic files of the drawings and specifications. Editable electronic files of the drawings shall be in GIS, CAD, and BIM formats consistent with user and VA technical requirements. Editable electronics files of the specifications shall be in MSWord format. All documents provided as hard copies shall be printed on double sided paper that contains post-consumer fiber (recycled content) and be printed using inks with bio-based content.

4.1.8 It is expected that reviews by the Government and other interested parties will be provided to the A-E through the SharePoint. The A-E will incorporate all review comments at no additional fee or justify non- compliance. All comments shall be resolved and a detailed written reply to all comments will be furnished with the next scheduled submittal or earlier if the comment effects the next design submission. The reply will specifically address how each comment was satisfied, citing drawing and specification references. Responses such as "Will Comply" and "Noted" are typically unacceptable. Should clarification be required, or exception taken to any comment, the A-E must communicate with the COR within five (5) calendar days of receipt of the comments. For any comments that affect cost or scope, the A-E shall flag their response. On-board review or comment resolution meetings will typically be held at the project site. In the event the quality of a submittal is so deficient that significant departures from the requirements of the project scope or design criteria are noted , a resubmission may be required. A Response to Comment package shall be provided along with the subsequent submittal unless directed otherwise.

4.2 Specific Submittal Requirements.

Design Drawings and Advanced Modeling.

4.2.1.1 Advanced Modeling.

In accordance with ISTS v3.1, p. 8, Section 3, Implementation Guidance “Computational Fluid Dynamics (CFD) modeling shall be accomplished for MCR to understand the airflow and determine the effect of teaming various combinations of CRAC units and adjustment of settings.”

4.2.1.2 Design Drawings.

All drawings shall adhere to VA project software requirements for Building Information Modeling (BIM) and Computer Aided Design (CAD) available at http://www.cfm.va.gov/til/projReq.asp. BIM software shall be Revit 2019 or the latest version available to Boston VAMC.

The A/E shall provide a computer 3D model and prepare various 3D renderings to present to VA throughout the design phase to adequately represent architectural, mechanical/electrical/plumbing (MEP), site conditions and other items in the design to aide with facility visualization and contractor coordination.

The project BIM model minimum requirements shall be developed to include the systems described below as they would be built, the processes of installing them and to reflect record drawing conditions (possibly incorporating into the Boston VAMC Master Record Drawing – pending facility expertise). The deliverable model at the SD, DD and CD design phases shall be developed to include as many of the systems described below (but not limited to) as are necessary and appropriate at that design phase.

- Architectural/Interior Design
- Square Footage/Volume
- Room Names and Numbers
- Architectural Schedules
- Architectural Specialties and Woodwork
- Doors
- Windows
- Louvers
- Roof
- Floors
- Ceilings
- Vertical Circulation

- Structural
- Foundations
- Shafts and Pits
- Mechanical
- HVAC
- Plumbing
- Electrical/Telecommunications
- Power and Lighting
- Steam Distribution
- Other Engineering Data as Required
- Exterior Building Information
- Nurse Call System
- Walls/Curtain Wall Sizes, Shapes, & Material Data § Asbestos/Hazardous Material Info

- General Signage
- Schedules
- Furniture
- Equipment

4.2.1.3 Quality Control.

4.2.1.3.1 Advanced Modeling Bim Project Execution Plan (PxP). Prepare an Advanced Modeling Project Execution Plan (PxP) that documents BIM uses , analysis, technologies and workflows. The PxP shall be submitted with the Project Work Plan (see Section 3.1.3.l).

4.2.1.3.2 **Advanced Modeling Submittal Review Checklist.** Prepare and submit an Advanced Modeling Submittal Review Checklist (CHX) with each design submittal.

4.2.1.3.3 Model Uses. Mandatory Model uses are predefined in the PxP and cannot be modified. Identify additional Model Uses in the PxP.

4.2.1.4 Delivery, Storage, and Handling

4.2.1.4.1 Storage Media. Provide project data for each submittal on a disc-based (CD/DVD) media. Provide the full submittal on one disc whenever possible. Directly print the identification of contents onto the storage media. Do not provide adhesive labels. Include the name of the submittal, project, project location, Contract number and Designer of Record firm/Prime Contractor company's name on the label.

4.2.1.4.2 Advanced Model File Packaging. Compress or Purge all CAD and/or BIM files per the CHX before copying to the storage media. Include all supporting files such as external references (X refs), font libraries, plot styles, etc. with each submittal.

4.2.1.4.3 PDF Drawing Packaging. Provide a set of the design drawings in Adobe PDF format for each submittal. Publish PDF drawings directly from the Advanced Modeling software application and save in "Standard" (uncompressed) resolution whenever possible. Bookmark the PDF drawing submittal set to include one Parent Bookmark per discipline and one Child Bookmark per sheet within each discipline. Format Parent Bookmarks as "Discipline" (e.g. Architectural). Format Child Bookmarks as "Sheet ID" (e.g. A-101).

4.2.1.4.4 Hard Copy Drawing Submittal. Print hard copy submittals directly from the electronically packaged PDF drawing set. The Designer of Record shall stamp and sign the final original full size hard copy sheets as Released for Construction.

4.2.1.5 Design Platform and File Format. Design the project using the systems and platforms defined below.

4.2.1.5.1 BIM. The BIM submittal format is Autodesk Revit (version 2019 or later). All vertical design elements of the project shall be designed with Revit. All vertical design drawings shall be produced from Revit.

4.2.1.5.2 CIM. The CIM submittal format is Autodesk Civil 3D (version 2019) or later format.

4.2.1.5.3 CAD. The CAD submittal format is Autodesk AutoCAD (version 2019 or later) format.

4.2.1.6 Government Furnished Materials (GFM). The Government furnished Advanced Modeling Files as GFM for use in Design Development are available on the VA Technical Information, VA BIM Format. Use of Government Furnished BIM/CIM/CAD files is at the A-E ' s own risk. The Government makes no guarantee that the Government Furnished BIM/CIM/CAD files provide a level of completeness or quality required for a submittal. Any adjustment of file structure, format, or software version required to make GFM compatible with computer systems and/or software is the responsibility of the A-E.

4.2.1.6.1 **GFM File formats.** GFM are provided in the following file formats:

a. Government Furnished BIM. The GFM includes VA Autodesk Revit templates (version 2019)
b. Government Furnished CIM/CAD. The GFM includes Autodesk AutoCAD templates, title blocks, plot styles, blocks, etc. in 2019 format.

4.2.1.7 Advanced Modeling Requirements.

4.2.1.7.1 **BIM and CIM Modeling Requirements.** Model to the requirements of the VA BIM Standard as identified in the approved Advanced Modeling PxP.

4.2.1.7.2 **CAD File Requirements.** All CAD files, prepared with AutoCAD, shall be produced in compliance with the VA CAD standards. Standards are available on the Technical Information Website, https://www.cfm.va.gov/til

4.2.1.7.3 Coordinate Systems, Units, and Datums. All site plan model files (planimetric, base map, and utility data) shall be geo-referenced based on the following:

a. Coordinate System: State Plane
b. Zone: Massachusetts (2001 Mainland)
c. Horizontal Units of Measure: U.S. Survey Feet
d. Vertical Units of Measure: Feet
e. Horizontal Datum: NAD 83/2011
f. Vertical Datum: NAYD 88

4.2.1.7.4 **Graphic Format.** All design drawings, whether produced with BIM, CIM, or CAD software, shall adhere to the guidelines set forth in the VA BIM Guide and to the applicable provisions of the National CAD Standard (version 6.0). *The VA has adopted the US NCS v5 replacing the VHA National CAD Standard Application Guide. The VA BIM Guide is available on the Internet at the VA Office of Construction & Facilities Management (VA OCFM) web site: http://www.cfm.va.gov.* All design drawings shall show dimensions in either decimal feet (horizontal designs) or in feet and inches (vertical designs). The A-E has the responsibility to show all information necessary to completely describe the project on the drawings so that the construction contractor will be able to construct the project without numerous modifications. All drawings shall be prepared on ANSI D (42" x 30") size paper. Drawing scales shall be selected to avoid overcrowded and cluttered conditions on the drawings. Where necessary to maintain proper scale, drawings of large structures shall be placed on two or more sheets using break lines. Acceptability of scale is determined by clarity of the drawings at half-scale reduction. All final drawings prepared and submitted by the A- E shall bear the name of the A-E in the title block and each drawing shall be stamped and signed by a registered Professional Engineer or Registered Architect as appropriate.

4.2.2 Specifications. The A-E shall utilize the latest edition of VA Master Specifications as found on the VA Office of Construction and Facilities Management web site: http://www .cfm.va.gov. The A-E shall incorporate any revisions to the VA Master Specifications into the project specifications through the completion of the design. VA Boston Healthcare System Engineering (VA BHS 138) will provide the A-E with information specific to the VA BHS campus and the project to aid in the preparation of the project specifications. Specifications shall conform to industry standards for format and content as established by CSI Manual of Practice.

The A-E shall provide a CD containing specifications in native electronic digital format (xx.doc; where "xx" is the file name) with the 65%, 95%, and 100% design submittals. Specifications shall be prepared by tailoring VA Master Specifications to incorporate specific requirements of this project.

The Government will prepare the Invitation for Bids, the Contract Clauses, and the Bid Form, and will furnish the basic standards and the format to be utilized in preparing the Special Contract Requirements. Specifications shall not deviate from guide specifications except by formal request for waiver. The A-E shall also include a narrative detailing any unique project requirements which would affect the preparation of Division 1 specifications (e.g. traffic control, off-hours work, utility work restriction, etc).

The 35% design submission will include an "outline specification" which is a list of technical specifications proposed, a summary of any deviations from VA Specifications, and a description of the salient features of construction.

The 65% design submission shall provide annotated and complete edited guide specifications with the portions of the guide specifications that are to be deleted to be crossed off. The deleted portion of the specifications will be legible to determine what has been eliminated. Sections modified to comply with specific project conditions will be clearly and completely shown.

The final (95%), back check (100%), and corrected final (100%) design submittals will contain complete specifications based on the annotations and editing, and any custom specifications developed for the project. The final specifications will be neatly prepared on 8-1/2" x 11" bond paper.

The A-E shall develop the Submittal Register, Corp of Engineers ENG Form 4288, to be included as part of the contract specifications (Section 013323). It is a summary of the submittals stated in the specifications whether the submittals are shop drawings, data, instructions, schedules, reports, certificates, samples, records, or O & M Manuals. The Submittal Registry shall be in a Microsoft Excel, x.xls format. The shop drawings/submittals for review/approval shall be incorporated into each of the technical specification sections, in the correct format. In addition, the A-E shall indicate which shop drawings/submittals and samples are to be reviewed by the A-E or the COR. The submittal subparts of each specification section shall identify which submittals are for Government approval (G) and which submittals are for information only.

4.2.3 Construction Cost Estimate. Construction cost estimates shall reflect total project cost for the construction of each project component for each of the anticipated construction procurements. The PG 18-15 A-E Submission Requirements Volume C shall provide guidance specifying which work falls under which project component. A one-page summary of the estimate showing major work divisions (CSI division) for each project component is required with each submittal, can be included as part of the Basis of Estimate Narrative, and shall also compare the Construction Contract Cost with the Construction Budgeted amount.

The A-E is responsible for tracking estimated construction costs throughout the project design. Design decisions throughout the design process shall consider both performance and cost impacts as part of the decision process. The A-E shall notify the COR if proposed construction costs exceed the construction budget. The A-E shall be responsible for developing alternates to bring the estimated project cost under the construction budget. If during the bidding process amendments are issued to the drawings and/or specifications, the A-E is required to update the cost estimate. If major changes are made via amendments, the A-E is required to submit a revised construction cost estimate using the specified cost estimating program.

Each cost estimate shall reflect realistic current prices in the project area for labor, material, and equipment that shall be broken down separately. Back-up data shall be provided in MS Excel format that includes quantity computations of major items and supplier's quotations for major equipment and material items. A Basis of Estimate Narrative shall be written in MS Word format, updated, and included with each estimate submittal; including summary of construction scope of work, assumed construction methodology, additional back-up data that includes general project assumptions and markups as well as an explanation of contractor mark-up (to include the Prime and any subcontractors) and contractor-level markups. All other indirect costs should also be provided with calculations, descriptions, and justification in the narrative. All user created items and/or user created assemblies shall include a description of assumed labor, equipment, and materials that make up those items and/or assemblies in the Note section of the Item Detail in the estimate. This section shall also contain any productivity calculations used to determine duration for these tasks. Unsubstantiated lump sum costs for major items will not be accepted. The estimate shall include area escalation factors as appropriate and contain explanatory backup data. Project notes shall be included with the estimate including descriptive information and assumptions used. Wage rate data shall also be included as well as quotes.

With the Final Cost Estimate submittal, the A-E and the individual most responsible for preparing the cost estimate shall sign the cost estimate front page with the following statement: "The following estimate is a fair and reasonable estimate for the scope of contract developed through price or cost analysis and prepared independently by a qualified cost estimator and access to the estimate has been limited to only personnel whose duties require a need to know. This estimate is confidential indicating there has been no disclosure any part of the estimate to any party outside of the contract requirements."

4.2.4 Design Analysis. The design analysis will be prepared in accordance with PG 18-15 A-E Submission Requirements Volume C. Provide the design analysis, in letter size format, bound together, and divided into appropriate sections by design discipline. Each design analysis shall describe in detail (with all assumptions specifically identified), (1) the scope of work with the specific objectives of the project, (2) the applicable Federal, State and local regulations, codes and standards that apply to the project and documentation indicating how applicability was determined; with the codes, provide distinction as to which reviews, approvals and permits are required during the design stage, and which are required before, during and after the construction stage, (3) design calculations prepared by each design discipline (architectural, structural, civil, mechanical, electrical, fire protection, and others as necessary) , (4) narrative discussion of design alternatives considered and assumptions made over the course of the design, (5) documentation of assessments and supporting analyses made to address applicability of complying with sustainability and energy reduction requirements including LCCA documentation, (6) reports of site visits and field findings, (7) meeting minutes and trip reports, (8) results of assessments and evaluations of alternative designs, and (9) all other relevant data. All key design decisions will be discussed including presentation of economic factors. The design analysis should be complete and well organized so that a person not familiar with the project can still follow the A-E's thought process on a step-by-step basis. The design analysis shall be updated through each stage of submission and must reflect any changes in the development of the statement of work due to review comments, formal changes to the contract, or any other communication (written or oral) between the Government and the A-E.

4.2.4.1 Engineering Considerations and Instructions (ECI) Document. The A-E shall prepare a brief document to include with the Design Analysis for the 65%, 95% and 100% design submittals which outlines the engineering considerations and instructions (ECI) pertaining to the construction phase of the work. The A-E shall develop an Engineering Considerations and instructions for the VA COR personnel. The report shall outline the engineering considerations and provide instructions for field personnel to aid them in the supervision and inspection of the contract.

Provide the following information at a minimum:

- Assumptions regarding field conditions
- Information on special design concepts; assumptions; and any specific instructions on how to construct /oversee unique design features.
- Items of potential risk/uncertainty
- Items that should be monitored closely
- Areas for possible or likely schedule and/or cost growth
- Sensitive matters with users, customers, and stakeholders
- In general, any construction features requiring special attention

It is also recommended that the ECI report identify matters that the A-E/Designer of Record (DOR) should be consulted on that:

- are highly technical/complex;
- are related to field conditions that could not be fully evaluated during the design
- Related to this, the ECI should specifically identify any required field visits (including anticipated durations and coordination required of the contractor), and
- all **critical** shop drawings/submittals/test results (note - not ALL submittals) that the A- E/COR needs to review and approve prior to material procurement.

4.2.4.2 Construction Duration Schedules. The A-E shall submit with each design submission (Tasks 5 - 9) a Gantt Chart schedule compatible with MS Project indicating construction milestones and long lead items. The schedule at each submission will be in sufficient detail to accurately estimate the proper construction duration. The schedule for each construction elements shall be keyed to corresponding cost requirements so that a schedule for when funding is required can be developed if applicable. The construction duration schedule shall take into consideration any construction phasing or work by others that is required. In addition to a construction contract completion date (CCD), the A-E shall determine an appropriate Beneficial Occupancy Date (BOD) - i.e., the date the customer can expect to receive useful occupancy taking into consideration the potential for construction changes, etc. Thus, the BOD will be some date after the CCD with the time growth being determined using a risk-based approach. Schedule shall be formatted to fit on **11"** x 17" sheets.

5. A-E QUALITY

5.1 Quality Control. See PG 18-15 A-E Submission Requirements Volume C.

5.2 A-E Errors. See PG 18-15 A-E Submission Requirements Volume C.

6. PROJECT CRITERIA

In addition to the requirements in the A-E's contract, the development of the documents required shall comply with all applicable Federal, State and local laws and regulations, applicable codes and guidance documents. Each of the references listed below will be made available to the A-E after task order award and can be found at the Technical Information Library Technical Information Library (TIL) - Office of Construction & Facilities Management (va.gov)

Incorporated Reference/Design Criteria:

VA Asbestos Abatement Design Manual
VA Design and Construction Procedures (PG-18-
3) VA Master Specifications (PG-18-1)
VA BHS Campus specific Specifications
Door Hardware
Fire Alarm
Direct Digital Controls
VHA National CAD Standard Application Guide
VA BIM Guide
VA Standard CAD Details (PG-18-4)
VA Design Guides (PG 18-12)
VA Design Manuals (PG 18-10) HVAC, Mechanical, Plumbing, Electrical, Structural, etc. Physical Security Design Manual for VA Facilities
National Standard Plumbing Code (NAPHCC)
National Electrical Code
VA Barrier Free Design Guide (PG 18-
13) Handicapped Standards; latest
revision NFPA
Applicable VA Design Alerts
Applicable VA Quality Alerts
Applicable VA Equipment Guide Lists (PG 18-5)
VA A/E Architectural Review Checklist
VA A/E HVAC Review Checklist
VA A/E Plumbing Review
Checklist VA A/E Electrical
Review Checklist
VA A/E Coordination Drawing Checklist
VA Telecommunications Systems Infrastructure Standards and
Design VA Hospital Building System Development Study
VA Commissioning Process
VA Fire and Safety
VA Physical Security & Resiliency

Applicable VA Energy Conservation & Sustainability Program requirements:

VA Preparation and Issuance of Construction Solicitation Contract Documents
Manual A/E Submission Instructions for Minor and NRM Construction Program
(PG-18-15)

7. SPECIFIC DESIGN INFORMATION

7.1 Fire Protection Design Requirements. All work shall comply with the Department of Veteran

Affairs Fire Protection Design Manual. The A-E shall use this manual and PG-18-15, Minimum Requirements for A/E

Submissions, which defines the information to be shown on drawings and work to be completed at each stage of design. In addition, coordinate with requirements from other applicable VA criteria listed in Appendices C and D of the manual.

7.1.1 Fire Protection Engineer Third Party Design Review. The VA BHS shall engage the services of a third-party with knowledge of applicable fire protection criteria such as the respective Network Safety Manager, Network Safety and Fire Protection Engineer (SFPE), or other qualified fire protection engineering consultant during design to assure the project complies with design criteria. The third-party entity shall be involved in reviewing the design, but, at the VA BHS direction, may also be involved with reviewing contractor's submissions, conducting
pre-occupancy life safety inspections, and/or witnessing final fire protection acceptance testing.

7.2 Electrical & Telecommunications Design Requirements.

7.2.1 Generator Stack Design Requirements. Generator stack design must conform to Massachusetts Department of Environmental Protection regulation 310 CMR 7.26(42).

7.2.2 Telecommunications Design Requirements. A-E contractor generated final drawings and specifications must be stamped by a BICSI Registered Communications Distribution Designer (RCDD).

7.3 Stormwater Design Requirements and Goals. Stormwater design will comply with EISA Section 438, the Clean Water Act, and designed in accordance with the Massachusetts Stormwater Handbook. If there is a conflict in these documents, the more stringent regulation will apply.

7.4 Interior Design Requirements. The A-E shall coordinate with local VA Interior Designer for interior design requirements, standards and finishes.

7.5 Information Security. The A-E will be required to coordinate with the COR and VA Information Security Officer (ISO) for the design of all control systems (e.g. building control systems, utility control systems, electronic security systems, and fire and life safety systems) to ensure that all information security requirements are accommodated in the design of these control systems. At a minimum, the A-E shall perform the following tasks:

(1) Assist the Government in determining the impact levels of each control system by providing information on the functionality of the control systems, the information the control systems contain, and the impact of a failure of the control systems,
(2) Determine the security controls to be applied to each control system. Tailor the standard security controls specific to the project,
(3) Create a list of control correlation identifiers (CCI) based on the list of security controls for the control systems,
(4) Address designer related CCI in the project specifications for the control systems and assist the Government on non-designer related CCI by providing information about the control system design.

7.6 Roofing Design Requirement. - Not Used.

7.7 Lightning Protection. Provide a lightning risk assessment in accordance with NFPA 780 Annex L and document the required level of protection.

7.8 Lightning Protection Design. A-E to provide a lightning protection system and provide recommendations to meet requirements of the VA design criteria for a TIER 3 data center. A-E to provide the lightning protection system (LPS) in accordance with VA requirements. Provide side flash calculations as required by NFPA 780. Provide calculations for alternative grounding methods when required by the design.

7.9 Radon Mitigation. Not Used.

7.10 Sustainable Design Requirements for New Construction and Major Renovations.

7.10.1 General. The A-E shall design all renovated areas to comply with ASHRAE Standard 90.l - 2007 as a minimum. Design to better than ASHRAE Standard 90.1-2007, when obviously life cycle cost effective. Appendix G analysis is not required for this project.

New buildings shall be designed in accordance with VA Sustainable Design Manual. The requirements outlined in this manual are minimum requirements and designers are encouraged to exceed these requirements whenever an analysis indicates an overall benefit to VA. This analysis should consider all costs and benefits, including financial considerations, improvement of services to Veterans, and any other relevant factor. The A-E shall ensure projects comply with all applicable laws and regulations, including state and local laws or codes, and any guidance published by VA or the project's parent administration (i.e., Veterans Health Administration (VHA), Veterans Benefits Administration (VBA), or National Cemetery Administration (NCA)). In the event an applicable law or policy has a more stringent requirement than this manual, the more stringent requirement will apply. In the event an applicable law or policy appears to conflict with the requirements of this manual, designers shall seek to harmonize these requirements in consultation with relevant oversight or regulatory agencies and stakeholder.

7.10.2 Standards and Codes. Sustainable design shall conform to all code and regulatory requirements as listed in this Scope of Work and related contract documents.

7.10.3 Energy Compliance Analysis. Any part of the renovation which impacts energy consumption shall be designed with the mandate to reduce energy consumption. For example, if exterior walls are part of the project, then their R- Value shall be increased. If lighting fixtures are to be replaced, then they shall be replaced with the most energy efficient fixture that is cost effective (20 year life), and meets the lighting W /SF required in Chapter 9, ASHRAE Standard 90.1 -2007. Identify the specific energy conservation criteria that applies to the project, the software used to prepare the necessary calculations, a summary of all input to and output from the calculations, and the calculated baseline and as-designed building energy consumption of the proposed design. The ECA must include a completed "Performance Rating Report" as shown in Appendix G of the ASHRAE 90.1 "User' s Manual." Building-level energy consumption calculations must be performed using a professionally recognized and proven computer program or programs that integrate architectural features with air-conditioning, heating, lighting, and other energy producing or consuming systems. These programs will be capable of simulating the features, systems, and thermal loads used in the design. The energy savings and any parasitic energy loads associated with the utilization of recovered energy, solar heat, solar photovoltaic energy and other renewable or waste heat applications must be included. The program will perform 8,760 hourly calculations. The Department of Energy maintains a list of building energy tools for design (such as eQuest by DoE).

7.10.4 A-E Sustainability Requirements. The A-E is required to use EPA designated recovered material products for work under this contract. The list of EPA designated recovered material products is available on EPA' s website at: (https://www.epa.gov/smm/comprehensive-p rocurement-guideline-cpg-program#products).

8. COORDINATION.

8.1 The COR for this project will be Mr. Andre Doyan. The COR will be responsible for coordination and management of the design of this project and administration of the A-E contract. All technical questions shall be directed to him and all written communications shall be addressed to the COR at the address below. The COR may also be contacted by telephone at 774-826-1262 or email: andre.doyan@va.gov

Engineering Service
VA Boston
Healthcare
Brockton Campus, BLDG
840 Belmont Street
Brockton, MA
ATTN: COR, Mr. Andre Doyan

8.2 In order to prevent misunderstandings leading to later changes and A-E lost effort, the A-E shall coordinate its efforts with the COR. The A-E shall coordinate with the COR periodically during the A-E's performance period, especially at major milestones and decision points. All questions, submissions and other correspondence shall be directed to the COR for necessary action.

8.3 Meetings and conferences initiated by the A-E or U.S. Federal Agencies shall be held only with the approval of and in the presence of either the COR. A draft Memorandum for the Record (MFR) documenting significant issues discussed, resolutions of such issues, remaining open questions, and required information, etc. shall be prepared and type written by the A-E and forwarded to the COR within 3 calendar days. The A-E shall finalize and distribute the MFR to meeting participants following review and comment by the COR. Typically, distribution will be Adobe (.pdf) files transmitted via email but hard copies may need to be provided under some circumstances. Meeting minutes shall be included with the Design Analysis submittals.

8.4 Reports and data generated under this contract shall become the property of the Government and distribution to any other source unless authorized by the COR is prohibited. Information to be developed by the A-E under this Task Order is considered sensitive and shall not be disseminated to others outside of the A-E ' s project execution team without prior approval of COR. The A-E shall take caution when communicating with those outside of the Project Team so as to not divulge information on the scope of the project or its potential impacts without prior approval of COR.

8.5 The A-E, including any of its consultants, shall not make available to the news media, regulatory agencies or publicly disclose any data generated or reviewed under this contract without prior approval of the COR. When approached by the above parties, the A-E shall refer them to the COR for response.

8.6 The Architect-Engineer shall not divulge any portion of the work performed under this contract either during or after performance without the written permission of the Contracting Officer, nor express for publication opinions concerning the direction and possible outcome of their work other than to the COR without the written permission of the Contracting Officer.

9. SCHEDULE.

Award A-E Task Order/NOA	Duration	Schedule
Government admin	14 days	NOA + 14 days
Kickoff Meeting	1 day	NOA + 15 days
Project Work Plan	1 day	NOA + 16 days
Field Sampling Plans/APP	7 days	NOA + 23 days
10% Submission (Noise Data and Generator Memo) 10% Presentation	21 days	NOA + 44 days
10% Presentation	5 days	NOA + 49 days
10% Design Review	7 days	NOA + 56 days
10% Design Review Meeting	3 days	NOA + 59 days
Revised 10% Design	14 days	NOA + 73 days
Final 10% Report w/Cost	3 days	NOA + 76 days
35% Design Kickoff Meeting	3 days	NOA +79 days
35% Design Submission (results of all field investigations)	60 days	NOA + 139 days
35% Review Comments Due (by Gov't)	21 days	NOA + 160 days
35% Design Review Meeting	7 days	NOA + 167 days
65% Design Submittal	75 days	NOA + 240 days
65% Review Comments Due (by Gov't)	21 days	NOA + 261 days
65% Design Review Meeting	3 days	NOA + 264 days
95% Design Submittal	60 days	NOA + 324 days
95% Review Comments Due (by Gov't)	14 days	NOA + 338 days
95% Design Review Meeting	2 days	NOA + 340 days
100% Design Submission	14 days	NOA + 354 days
Backcheck Review (by Gov't)	11 days	NOA + 365 days

10. A-E PRICE PROPOSAL.

The A-E price proposal shall be broken out into man-hours, subcontract costs, and other direct costs (equipment rental, travel/per diem, reproduction, mailings) for each Task and major subtask as listed in Section 3 of this Statement of Work. General project status meetings shall be included with Task 1.2; all other meetings shall be included with the relevant task. Price for Design vs. Non-Design services shall be clearly differentiated. A summary of each category of costs (i.e. direct labor, overhead, travel/per diem, subcontracts, other costs, and profit) shall also be presented. Subcontractor costs shall be itemized to the same level of detail as the A-E's costs clearly indicating profit. Included with the A-E price proposal shall be an abbreviated work plan outlining key personnel and their role in executing the Task Order. The labor category applicable for key personnel shall be clearly indicated.

11. SOW ATTACHMENTS.

1. Attachment 1 VA OEHRM Site Infrastructure Requirements
2. Attachment 2 HEFP SEP Design Alerts 1-9
3. Attachment 3 VHA COVID-19 Supplemental Contract Reqs 12-14-21
4. Attachment 4- Post Award Specs-Drawings Review Checklist
5. Attachment 5 - Brockton - Volume 1 Rpt
6. Attachment 6 – Brockton – Volume 2 Rpt.

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