

STATEMENT OF WORK
Expand Operating Room Suite

PROJECT #672-20-115

ARCHITECTURAL / ENGINEERING DESIGN SERVICES

1- FOREWORD

- 1.1 This document contains information and minimal submission requirements for contract documents specified in the A/E contract for each submission in the production of VA Schematics, Design Development, for this project. It will give VA reviewers and the A/E a clear understanding of what is required at each stage of design.
- 1.2 This document does not relieve the A/E firms of their professional responsibility to produce a correct, complete, and fully coordinated set of construction documents.
- 1.3 The goal of this SOW is to ensure the quality of VA facilities while controlling construction and operating costs. This document is not to be used as a standard design and does not limit the project A/E responsibilities to develop a complete and accurate project design that best meets the users' needs and applicable code requirements.
- 1.4 VA design standard, VA master specifications, design manuals, submission instructions and/or other publications should be obtained by the A/E at the following Internet addresses:

<http://www.cfm.va.gov/cfm/TIL/>

2- SCOPE OF WORK:

A- Furnish all necessary professional services, equipment, labor materials, supervision, tools, testing, and specialty services to perform design services for the NRM Project #672-20-115, Expand Operating Room Suite at the VA Caribbean Healthcare System (VACHS), located at 10 CASIA Street San Juan Puerto Rico 00919. The work includes, but is not limited to site investigation, designing and preparing drawings, phase planning, specifications, cost estimates, construction period services and meetings minutes. This project will implement new Architectural, Mechanical, Civil, Structural, and Electrical requirements over the surgical OR suites also perform upgrades to meet the latest VA and industry standards. Project will reconfigure approximately 17,500sqft of room spaces, room air pressure relationships, air changes, humidity and temperature, electrical distribution, among others. Project must include the replacement of all Mechanical equipment's equipment replacement and air/water system re-balance as necessary to comply with the required VA parameters. Project will also include building service equipment replacement (Steris Lights with monitors). The project will repurpose around 5,700 sf of a Swing space. The project will also address a space gap for OR where PG 18-9 Space Planning Criteria establishes minimum square footage requirements which current OR do not comply with. External CDC document cites

AIA/ASHRAE HVAC requirements for endoscopy suite. A/E as part of their deliverables must include any swing space construction as impact costs in their cost estimates.

The schematic design (SD) (preliminary drawings) design phase will take the design to 35% completion.

The contract document (working drawing) design phases will include 35%, 65% and 100% review stages. If the documents do not meet all the requirements of each submission, then the portions of the documents that are not acceptable by the VA according to the design standards and criteria must be updated by the A/E prior to moving on to the next scheduled submission. All submittals shall be in accordance with VA's Program Guide PG-18-15, Volume C- A/E Design Submission Instructions for Minor and NRM Construction Program Medical Center Projects

The VA may provide requested As-Built drawings (in either AutoCAD, PDF, or JPG form) on a CD-ROM to the A/E for design purposes. The A/E is encouraged to review all drawings with the assigned VA representative COTR to verify what existing drawings are available. The A/E shall coordinate with the VA representative COTR prior to viewing the drawings located at the VA and shall not remove any documents from the files.

The existing drawings on file at the VA may not be 100% accurate and may not exactly reflect the current conditions of the VA Caribbean Healthcare System. It is the responsibility of the A/E to review the existing drawings and verify the existing conditions.

B) Definitions

1. Contracting Officer (CO): The services to be performed under this contract are subject to the general supervision, direction, control and approval of the CO.
2. Project Manager (PM): The Contracting Officer's Technical Representative (COR) responsible for administering contracts under the immediate direction of the CO and the PM/COR at the construction site. When more than one PM/COR is assigned to a construction project one is designated as being in-charge and is called the "Senior PM/COR". The PM/COR is responsible for protecting the Government's interest in the execution of the construction contract work. His duties include surveillance of all construction work to assure compliance with the contract

documents, interpretation of the contract documents, approval of changed work, approval of all submittals, samples, shop drawings, etc.

3. Contractor: This term, as used herein, refers to the Contractor under this contract.
4. A/E: This term, as used herein, refers to the Architect-Engineer firm that is part of the design team (Government Consultant).

C) Tentative Schedule:

1. Schedule Objectives – The contractor shall complete the work required under this Scope of Work within **two hundred (260) calendar days** from receipt of “Notice to Proceed” (NTP). Working hours will vary depending on the tasks being accomplished. Work affecting hospital’s operations must be done after 5 p.m. in the afternoon.

3 – Responsibilities

1. The RFP documents are intended to define existing conditions, certain required items and design parameters to be included in the project. It is the Contractor’s responsibility to complete the documents and construction in a manner consistent with the intent of the RFP documents within the required time period (contract length).
2. Prior to any mobilization and construction, the contractor shall request and have approved an Infection Control Construction Permit, a Construction Safety Certification, and an Interim Life Safety Measures Certification from the VAMC. Also, project schedule and construction phases must be approved by VA Chief Engineering. Contractor shall provide all necessary environmental documents and related EQB approved permits for construction.
3. Contractor shall completely prepare site, prior to the installation of the equipment, and furnish all labor, equipment and materials necessary to perform work for this specific project as required by this statement of work and the project specifications and drawings.
4. All projects associated construction and temporary work shall conform to the latest VA specifications, VA Standards, including sustainability and green building design build construction, energy conservation methods, EPA, OSHA, NFPA, NEC, ASHRAE, LIFE SAFETY CODE, IBC, local, Federal and industry requirements and regulations.

5. The Contractor shall comply with all applicable federal, state and local requirements for protecting the safety of the contractor's employees, building occupants and the environment. In particular, all applicable standards of the Occupational Safety and Health Administration (OSHA) shall be followed when working in accordance with this project. No process or materials shall be employed in such a manner that they will introduce additional hazards into occupied space.
6. The Contractors should visit the site as scheduled by the PM/COTR and CO as shown in the Task Order RFP. Additional visits are not allowed by the Government.
7. Contractor shall have some comprehensive knowledge, experience, expertise, equipment and personnel to complete this work.
8. Contractor shall keep the VA Project Manager informed always of the status and progress of the project.
9. Detailed Schedule and Narrative: The Contractor shall provide a detailed phasing schedule and written narrative, indicating specific dates for each step of the construction process in concurrence with the progress schedule.
10. Contract Progress Schedule: The progress schedule will be provided in a time scaled bar graph format for each project phase. The horizontal axis will be scaled for time beginning with the Notice to Proceed and concluding with contract completion. The vertical axis will show the milestones and a detailed breakdown of the construction tasks. All schedule items will show a start date and a completion date.
11. Breakdown the construction period in at least eight construction tasks as required, (e.g.: site preparation, demolition, equipment procurement, equipment/materials delivery, equipment installation, architectural finishes, tests, and final inspection, etc.)
12. The Contractor shall develop a well-organized, practicable and complete written narrative construction phasing for the proposed project in order that the normal hospital operations

will not be interrupted except by previous and timely coordination with VA staff through the Project Manager.

13. The Contractor shall specify how much allowance has been made for adverse weather in the schedule.
14. The Contractor shall prepare written minutes of each meeting with the Government concerning contractual, design and construction matters. Copies of the minutes shall be furnished to the Contracting Officer and within seven calendar days of the meetings. The Contractor shall prepare written records of phone conversations addressing major project issues and furnish a copy to the Contracting Officer within five calendar days of contract.
15. The Contractor shall develop a complete set of as-built drawings at the end of the construction work and submit it for VA review and approval.
16. Any related supporting system, apparatus, material or work not mentioned, or any incidental accessories necessary to make the work complete in all respects and ready for operation even if not particularly specified, shall be furnished, delivered and installed by the Contractor without additional cost to the Government.
17. Construction General Sections' applicable requirements: the Contractor shall comply with the applicable construction project requirements (e.g. submission of final as-built drawings, shop drawings, tests, safety requirements, new material and equipment provision and installation requirements, Buy American Act, payment and performance bonds requirements; insurance requirements; progress payments and schedules, work inspection and supervision, daily logs requirements, material and workmanship, guaranty, cleaning up, accident prevention, and other requirements) included in the specifications.
18. The Contractor shall provide for HVAC testing, adjusting, and balancing (TAB) work as per project specifications to verify the existing conditions of the equipment's. For VA to coordinate with its Government furnished equipment subcontractor, the Contractor shall

notify PM/COTR and CO at least a month in advance before installation of Government furnished equipment can take place. PM/COTR and/or CO will notify the Contractor if any brief work stoppage (not to exceed 4 weeks) will be required to allow for this installation. Once the Government furnished equipment is installed, the Contractor shall provide any support required during the commissioning and certification of the equipment being furnished by VA and may be required to coordinate with this subcontractor through the PM/COTR and CO for the complete integration of the equipment. Equipment and materials installed shall be compatible in all respects with other Government furnished items and existing items so that the result will be a complete and fully operational space that conforms to the contract requirements.

19. The A/E shall certify the design compliance with all latest design standards, design manuals and national codes used by the VA, as well as all Federal and local Requirements and Regulations. The required stamp on construction documents (e.g. drawings, technical specifications) of the licensed architect or engineer of record will be considered as certification of such compliance.
20. Prior to begin with the design, the A/E and its professional team shall perform, among others, the following.
21. A complete report of the assessment findings and the as-build drawings shall be submitted to the contracting Officer during the schematic submission.
22. The design shall include a well-developed and integrated phasing plan to be followed during the construction phase. The intent of the plan is to avoid interruptions of the hospital normal operation during the construction.
23. If removal or relocation of existing equipment and/or systems is needed, provide on drawings a detailed specifications and/or notes, regarding the removal or relocation of such items. Related equipment and or units to remain shall be evaluated by the A/E, such equipment descriptions and schedules shall be provided on drawings. Also, A/E shall note any existing items to re-used, cut, patched or adapted. Demolition drawings and details shall be clearly shown.
24. Due to coordination between the construction works and facility normal operations all utility shut-down and medical service interference takes some time before it can be performed. Usually takes from two to two and a half weeks. To avoid delays and to ensure the steady run of the construction works, the A/E shall consider in the design the least possible amount of interruptions to medical services and/or utility shut-down.
25. Along with each submission, the A/E shall provide a design narrative/analysis for each technical discipline (e.g. architectural, civil, structural, electrical, mechanical, etc.), which

describes the intent of each discipline.

26. Provide a calculation booklet including but not limited to: computations and sizing calculations for structural, electrical, mechanical, site, surveying, and any other designs calculations as required. For computerized calculations, submit complete and clear documentation of computer programs, interpretation of input/output, and description of program procedures

4- Project Phasing

- 1- During the construction of the project the facility shall remain operational at all time and the construction works must not interfere with medical services. This means that for construction purposes, not all areas of the project will be available at the same time. Therefore, the construction must be executed by phases. The design shall include the project phasing to avoid interruptions.

5- Contractor Personnel Security Requirements:

All contractor employees who require access to the Department of Veterans Affairs' computer systems shall be the subject of a background investigation and must receive a favorable adjudication from the VA Office of Security and Law Enforcement prior to contract performance. This requirement is applicable to all subcontractor personnel requiring the same access. If the investigation is not completed prior to the start date of the contract the contractor will be responsible for the actions of those individuals that provide or perform work for the VA.

Position Sensitivity – The position sensitivity has been designated as (sample: low risk)

Background Investigation – The level of background investigation commensurate with the required level of access is National Agency Check (NACI) with written inquiries.

6- Contractor Responsibilities:

The contractor shall bear the expense of obtaining background investigations. If the investigation is conducted by the Office of Personnel Management (OPM), the contractor shall reimburse the VA within 30 days.

The web site which provides information on the cost of the security investigation is: www.opm.gov/extra/investigate – Select Federal Investigations Notices (FIN 01-01)

The contractor shall prescreen all personnel requiring access to the computer systems to ensure they maintain a U.S. citizenship and are able to read, write, speak, and understand the English language.

The contractor will provide to the Contracting Officer prior to award the following: (1) List of names of contract personnel. (2) Social security numbers of contractor personnel. (3) Home address of contractor personnel or the contractor address.

The Contracting Officer will submit the above information to the Office of Security and Law Enforcement, Washington, D.C. The Office of Security and Law Enforcement will provide the

necessary investigative forms (these forms are indicated in paragraph 3.d. below) to the contractor's personnel, coordinate the background investigations with OPM and notify the Contracting Officer and contractor of the results of the investigation.

The contractor shall submit or have their employees submit the following required forms to the VA Office of Security and Law Enforcement within 30 days of receipt:

- (i) Standard Form 85P, Questionnaire for Public Trust Positions
- (ii) Standard Form 85P-S, Supplemental Questionnaire for Selected Positions
- (iii) FD 258, U.S. Department of Justice Fingerprint Applicant Chart
- (iv) VA Form 0710, Authority for Release of Information Form
- (v) Optional Form 306, Declaration for Federal Employment
- (vi) Optional Form 612, Optional Application for Federal Employment

The contractor, when notified of an unfavorable determination by the Government, shall withdraw the employee from consideration from working under the contract.

Failure to comply with the contractor personnel security requirements may result in termination of the contract for default.

7- - Project Description:

Provide Electrical, Mechanical and Architectural disciplines for the A/E Design Project to implement new Architectural, Mechanical, Civil, Structural, and Electrical requirements over the surgical OR suites also perform upgrades to meet the latest VA and industry standards. With this design we intent reconfigure room spaces, room air pressure relationships, air changes, humidity and temperature, electrical distribution, among others. Project includes must equipment replacement and air/water system re-balance as necessary to comply with the required VA parameters. Project will also include building service equipment replacement (Steris Lights with monitors), also the project will repurpose around 5,700 sf swing space areas. A/E design work shall include detail requirements calculations, detail demolition drawings and detail as-built drawings, as well as necessary architectural, civil, electrical, plumbing, mechanical design work.

Design Services shall review the existing field conditions and perform a survey of buildings to verify the existing conditions. The A/E shall evaluate this building to determine if utilities or any other objects will need to be relocated or addressed in the design. The A/E shall also review the As-Built drawings and the site drawings for the Buildings.

The A/E shall show a detailed containment plan for infection control for this design. This plan shall be detailed showing locations and what infection control requirements are to be used for

each area. The HPMs for Safety and Infection Control will be provided to the A/E for their use. Construction barriers will be required for the duration of the construction to isolate patients and staff from dust, debris and construction hazards. The A/E will also have to indicate these construction barriers on their drawings.

New work includes, but is not limited to designing and preparing drawings, phasing planning, specifications, cost estimates for all disciplines, and general construction to Expand Operating Room Suite and address functional gap deficiencies for SPS. The A/E will be required to attend phase meetings at 35%, 50%, 75%, and 100% to discuss progress with the VA staff. The A/E will be required to take meeting minutes and distribute to the VA for approval and as documentation of what was covered in the meeting.

A. Design Tasks:

1. **SITE INVESTIGATION:** Design Services shall conduct a site survey of the project area to ensure that the design is feasible and without any major obstacles. Available as-built drawings and related other project drawings are available to the A/E, but field verification by the A/E must be completed to verify existing site conditions and to collect data as required for design development work to successful completion of design and construction documents.
2. A/E as part of their deliverables must include any swing space construction as impact costs in their cost estimates
3. **DEMOLITION:** The project demolition work may include structural, architectural, plumbing, mechanical and electrical demolition to clear space for the new systems. The minor demolition of existing landscaping and other items shall be included in this project.
4. **CIVIL / STRUCTURAL:** Work may include architectural modification and structural work. Structural engineering is expected to be completed by a Florida Licensed Structural Engineer for any needed structural reinforcements. All required borings and structural testing shall be completed by the A/E firm. The A/E firm shall proceed with a structural design that will not impede on pedestrian traffic at the ground level.
5. **ARCHITECTURAL:** Field verification of elevations and architectural dimensions are crucial to the success of this project, as the existing drawings are best represented. Exterior work must blend into the surrounding buildings and architectural appearances.

6. **INTERIOR DESIGN:** The VA Interior Designer will perform all interior color and material selections from the Architect's recommended items. The A/E will coordinate all interior selections with the VA interior design staff.
7. **PLUMBING / PIPING:** The plumbing systems need to be evaluated and updated to meet the latest Plumbing Codes. Design modifications, additions and relocations to the plumbing systems and fire protection system must follow the VISN 8 policy and Life Safety codes and other applicable code requirements for a complete certified functional system.
8. **HEATING, VENTILATION AND AIR CONDITIONING (HVAC):** The HVAC systems need to be evaluated and updated to meet the latest HVAC Design Criteria. The A/E must evaluate the Chilled Water System and the Hot Water / Steam System serving the design scope area.
9. **ELECTRICAL:** The electrical systems need to be evaluated and updated to meet the latest Design Criteria. The A/E must evaluate the electrical systems serving the design scope area to determine if there is enough, and provide modifications and extensions to the existing electrical systems, security system, communications system, fire / safety system, etc. All panels shall be metered before any planned connection to insure available capacity. This required metering will be the responsibility of the A/E firm to complete. This design shall evaluate existing as-Built drawings and all ongoing electrical upgrade projects during the design process.
10. **INDUSTRIAL HYGIENIST:** An Industrial Hygienist (IH), licensed as an Asbestos and Lead Consultant, may be required due to the existence of asbestos containing materials that may be encountered during the construction project.
11. **ASBESTOS:** The A/E shall investigate the construction site to verify any asbestos containing materials. Asbestos containing sprayed-on fireproofing, floor tile & mastic, and other asbestos containing / contaminated materials / items may be encountered in buildings 1 and 2. If asbestos is encountered, it is the A/E and their subcontractor's responsibility to adhere follow all VA, OSHA, Federal, and State regulations of ACM procedures. Submittal packages for the Asbestos & IAQ qualifications shall be provided to the VA. The IH shall perform duties as necessary by monitoring, inspecting and testing inside / outside the work area in accordance with OSHA requirements.
 - a. **NOTE:** Some site investigation work may be in asbestos contaminated areas and will require the A/E to have their personnel trained for Class 3 Asbestos Work (Maintenance & Operations within Asbestos Contaminated areas). Air quality monitoring during

asbestos removal activities shall be performed by a third-party inspector who must be present at all times. The design services shall also include an Asbestos Abatement Inspection, Monitoring and Certification by an Independent Third Party Certified Industrial Hygienist Consultant Firm. The IH will perform the necessary monitoring, inspection, testing and other support services to ensure that VA patients, employees, and visitors will not be adversely affected by the abatement work, and that the abatement work proceeds in accordance with asbestos abatement specifications. The Independent Third Party Certified Industrial Hygienist Consultant Firm shall be approved by VA.

b. **IAQ:** The IH will also have to design IAQ measures for construction work in relevant areas.

12. **EQUIPMENT:** The A/E shall coordinate the design work directly with the suppliers / manufacturers of the new equipment to produce a completely designed operational project. All drawings, schematics, and other data available from the equipment suppliers shall be incorporated in the A/E drawings and specifications. The A/E is to determine the points of connection between old and new equipment and clearly detail these connections on the drawings.
13. Design the project by using site measurements and verifying site conditions. The A/E shall not rely solely on the as-Built drawings.
14. The A/E shall provide other documentation (i.e., calculations, reports, recommendations, etc.) that is appropriate to support the design effort and to keep the Government fully informed of all issues or potential problems. Provide computations and sizing calculations for any anticipated new loads, altered loads, and existing loads for electrical, mechanical (HVAC, plumbing, medical gas and steam), sanitary, structural and fire protection designs. For computerized calculations, submit complete and clear documentation of computer programs, interpretation of input / output, and description of program procedures. Provide an investigation and explanation of code requirements incorporated into the design. Furnish a copy of each code quoted or used in the design, when necessary to provide additional understanding of design decisions.
15. The A/E shall provide all schedules and tables used on the drawings in MS Excel 2007.

B. Additional Requirements and Information:

1. **LIFE SAFETY: Requirement for acquiring and incorporating a Certified Independent Third-Party Safety Professional review of design documents.** The A / E shall design the necessary Life Safety and Interim Life Safety provisions for impacted areas, both temporary and permanent measures. The A/E shall provide and coordinate the review of the Life Safety Provisions of the project design with a third party, independent licensed Fire Protection Engineer. The following areas will be reviewed by the third party:
 - a. NFPA Code Compliance
 - b. Environmental / EPA Impacts, Permits, etc.
 - c. OSHA Compliance (i.e., Excavation, Demolition, etc.)
 - d. Security Property / Infrastructure Management, Homeland Security, etc.
 - e. Emergency preparedness
 - f. Disability Accessibility Compliance
 - g. National and Local Codes. The A/E shall deliver a letter certifying compliance with all Life Safety Codes and Requirements applicable to this project from the third party.
2. **CODES, STANDARDS AND EXECUTIVE ORDERS:** The Public Buildings Amendment Act of 1988, Public Law (Pub. L.) 100-678 requires Federal agencies to follow national recognized "model" building codes. The VA has adopted the latest edition of the following codes and standards as a minimum for all projects performed in the modernization, alteration, addition, or improvement of its real property and the construction of new structures. The VA design Manuals and Master Specifications specify other codes and standards that VA follows on its projects:
 - a. VA Directives, Design Manuals, Master Specifications, VA National CAD Standard Application Guide, and other Guidance on the Technical Information Library (TIL) (<http://www.cfm.va.gov/til/>).
 - b. International Building Code (IBC) including International Mechanical and Plumbing Codes
 - c. NFPA 101 Life Safety Code (see notes below)
 - d. NFPA National Fire Codes with the exception of NFPA 5000 and NFPA 900.
 - e. Occupational, Safety and Health Administration (OSHA) Standards
 - f. VA Seismic Design Requirements, H-18-8
 - g. National Electrical Code (NEC)
 - h. National Standard Plumbing Code (NSPC)

- i. Safety Code for Elevators and Escalators, American Society of Mechanical Engineers (ASME) A 17.1.
 - j. ASME Boiler and Pressure Vessel Code
 - k. ASME Code for Pressure Piping
 - l. Uniform Federal Accessibility Standards (UFAS) including VA Supplement, Barrier Free Design
 - m. Building Code Requirements for Reinforced Concrete, American Concrete Institute and Commentary (ACI 318)
 - n. Manual of Steel Construction, Load and Resistance Factor Design Specifications for Structural Steel Buildings, American Institute of Steel Construction (AISC)
 - o. Energy Policy Act of 2005 (EPAAct)
 - p. American Society of Heating and Refrigeration Engineers (ASHRAE) 90.1, Energy Standards for Buildings Except Low-Rise Residential Buildings
 - q. Federal Leadership in High Performance and Sustainable Buildings: Memorandum of Understanding (MOU)
 - r. Executive Order 13423: Strengthening Federal Environmental, Energy, and Transportation Management
 - s. Executive Order 13514: Federal Leadership in Environmental, Energy, and Economic Performance
 - t. The Provisions for Construction and Safety Signs. Stated in the General Requirements, Section 01 00 00, of the VA Construction Specifications
 - u. American Society of Heating and Refrigeration Engineers (ASHRAE), Ventilation for Acceptable Indoor Air Quality – ASHRAE Standard 62.1
 - v. Safety Standard for Refrigeration Systems – ASHRAE Standard 15
3. **NOTES:** NFPA 101 primarily addresses life safety and fire protection features while the IBC addresses a wide range of considerations, including, but not limited to, structural strength, stability, sanitation, adequate light and ventilation, and energy conservation. VA buildings must meet the requirements of NFPA 101 and documents referenced by NFPA 101 in order to comply with the accreditation requirements of the joint Commission. Therefore, designs shall comply with the requirements of the latest edition of NFPA 101 and documents referenced therein. Design features not addressed by NFPA 101 or documents referenced

therein shall comply with the requirements of the latest edition of the IBC or as otherwise addressed above in this Program Guide. For design features that are addressed by both the IBC as well as NFPA 101 or a document referenced by NFPA 101, the requirements of NFPA 101 or the document referenced by NFPA 101 shall be used exclusively. This applies even if the IBC requirements are different.

4. **Conflicts between Nationally Recognized Codes and Standards and VA Requirements:**

Should a conflict exist between VA requirements and VA adopted nationally recognized codes and standards, the conflict shall be brought to the attention of the VA. The resolution of the conflict shall be made by the authority having jurisdiction for the VA to ensure a consistency system wide.

5. **ENERGY & RESOURCE CONSERVATION:** Any alterations or new equipment (motors, light fixtures, windows, HVAC equipment, pumps, chillers, water faucets, urinals, toilets, insulation, etc.) shall be energy efficient and resource efficient. This facility's overall energy usage goal is 142,000 BTU/sq. ft. (142 MBTU/SF). Energy Star, LEEDS and other related criteria shall be utilized. Light bulbs and other equipment shall have very low mercury content or NOT contain mercury at all.

6. **DRAWINGS:** The A/E shall provide electronic copies of drawings at each review step generated in the latest version of AutoCAD or its companion products (digitally signed DWGs) and PDF format in individual sheet files on CD-ROM. Include all associated support files (i.e. plot styles, external referenced files, etc.). This facility currently uses AutoCAD and Autodesk MEP 2010. The standard drawing size shall be ARCH E1 (30" x 42"). The format to be used in creating the CAD drawings (i.e. layer / level structure, fonts, font sizing, file naming conventions, etc.) is that of the latest edition of the National CAD Standard (www.nationalcadstandard.org).

- a. The A/E shall follow these level / layer formats, file – naming conventions, and symbol library.
- b. Drawings are to be drawn from the VA's "As-Built" or construction drawings updated by site verification, not scanned reproductions.
- c. The final sets of the new construction drawings, including the film copies, shall be sealed (embossed & ink stamps) and signed by each respective Professional Engineer in their discipline, Industrial Hygienist, Architect and other necessary licensed professional consultants.

7. **ESTIMATE SUBMISSION REQUIREMENTS:** The A/E shall submit a construction cost estimate from an independent firm for all trade disciplines at each and every project submission. This estimate shall show the cost of construction, most likely to be reflected by the construction contractors' bids, if the bids were submitted on the same date as the estimate. The level of detail for this estimate shall be consistent with the degree of completeness of the drawings being submitted. Therefore, if it is shown, it must be priced. If it is shown in detail, it must be priced in detail. For detailed elements, "lump sum" or "allowance" figures will not be acceptable. Building gross area computations shall be included with each estimate. Estimates shall be broken down by AIA divisions. The first page will be a summary page showing deductive bid items, contractor mark-ups, overhead, profit, special insurance, and bonding to reflect true construction costs. The breakdown shall reflect Bid Items 1, 2, and 3 separately; then in aggregate. Provide an electronic copy of cost estimates with each submittal. Submit cost estimates in accordance with Handbook H-08015 Vol. C., and VA PG-18-3.
8. **SPECIFICATIONS:** The A/E firm may obtain the list of the complete VA Construction Specifications from the VA Facilities Management Technical Information Library (TIL), which is located at <http://www.cfm.va.gov/TIL/spec.asp#02>. The VAMC has specifications that have been edited for general use at this facility and are the preferred specification to be used. If there are missing specifications sections from the VAMC VA specific specification, then the specifications from the Technical Information Library shall be used. Any specifications that are edited by the contractor shall be submitted to the VA for approval. The edited version of the specification shall be in Microsoft Word in the editing format and all changes shall be in RED. Contact the project COTR to obtain a copy of these specifications on CD-ROM. This facility will provide the specification sections needed based on the master list provided in the first review. The A/E shall provide the final edited specifications on CD-ROM in Microsoft Word. The VA uses MS Word 2007. The format shall be 1.5 spaced, left justified, 2-sided, laser quality, and courier-new size 10 font. The specifications shall be provided in four (4) copies with rubber bands around three (3) of the copies. The remaining copy shall be in a colored, 3-"D"-ring loose-leaf binder, with identification labels on the binding and cover so the project title and number are readily visible and with tabbed dividers between each specification section.
- a. The latest VA standards, VA master specifications and/or other VA publications should be

obtained by the A/E at the following Internet address: <http://www.cfm.va.gov/TIL/>. The internet address (shown above) provides just the VA manuals, standards and specifications and does not include the construction industry codes (e.g. AISC, ACI, ASHRAE, OSHA, EQB, NFPA, NEC, Local Building Codes, ADA, etc.).

b. The VA standards and publications include but are not limited to:

- **Master Construction Specification (PG-18-1)** - Defines a standardized method for the A/E to assure that the contractor shall provide equipment and systems that meet the design intent in terms of performance, quality and cost.
- **Design and Construction Procedures (PG-18-3)** - Establishes minimum consistent design/construction practices.
- **National Cad Standard, VHA Application Guide & Standard Details (PG-18-4)** - The VHA Application Guide adopts the NIBS National CAD Standard, establishes VA-specific drafting standards for the preparation of design and construction documents provides utility and sheet template files and standard construction details organized by discipline, for use in design and construction documents for VA projects.
- **Equipment Guide List (PG-18-5)** - Provides information for planning and developing requirements for all equipment and furnishings to be provided in all VA rooms/spaces.
- **Seismic Design Handbook (H-18-8)** - Provides the A/E with specific requirements and design parameters for seismic design and addresses the following topics of concern: new critical and essential facilities, new ancillary facilities, existing facilities (both for evaluation and rehabilitation including alternative seismic approaches), spectral response acceleration, special provisions for structures in seismic categories (C, D, E and F), limitations on steel structures and reinforced concrete structures, and drift limitations, including modifications of IBC requirements for new critical and essential facilities in high seismic design categories.
- **TIL - Space and Facility Planning (PG-18-9)** - Provides a listing of all rooms and spaces and the net square foot area of each for all departments/services within VA medical facilities.
- **Design Manuals (PG-18-10)** - To convey the general and specific VA design philosophy for the HVAC, Electrical, Plumbing, Fire Protection, and other systems for VA medical and support facilities.
- **Design Guides, Graphical, by Function (PG-18-12)** - Provides the A/E with specific layout templates and medical equipment lists for all types of spaces/uses, and specific design parameters for structural, electrical and mechanical service.
- **Barrier Free Design Guides (PG-18-13)** - Provides the A/E with VA standards that exceed minimums of the Architectural Barriers Act (ABA) and the Americans with Disabilities Act (ADA) for health care projects. These standards relate to specific Veteran population needs.
- **Room Finishes, Door, and Hardware Schedules (PG-18-14)** - This document provides guidelines for VA Facility Interior finishes, doors, and hardware for new or renovated facilities constructed within the Department of Veterans Affairs. The essential criteria for selection of products/materials is based on their appropriateness for function and space, sustainability, life cycle costs, durability, and ease of maintenance.
- **Environmental Compliance Manual (PG-18-17)** - This manual provides guidance to VA project proponents for ensuring the required evaluation of potential impacts under National Environmental Policy Act (NEPA) is technically adequate and legally sufficient. This evaluation may be concluded at one of three levels of evaluation as appropriate: a Categorical Exclusion (CATEX) for projects meeting one of the definitions in VA's Implementing Regulations (Title 38

CFR Part 26) with no extraordinary circumstances; an Environmental Assessment (EA) resulting in a Finding of No Significant Impact (FONSI) for projects which do not meet a CATEX definition; or an Environmental Impact Statement (EIS) for those projects which will have an impact(s), but still make sense to proceed with legally binding Mitigation Measures to be implemented. This document also provides guidance with respect to the interaction of the NEPA evaluation and other environmental / historical regulatory requirements.

- **VA Cultural Resource Management (H-7545)** - This handbook describes the procedures DVA uses to meet Federal preservation requirements for all program and construction activities that may affect cultural resources, including historic buildings, landscapes and districts, archaeological sites, Indian tribal spiritual sites and burial places, historical documents and artifacts, and the cultural and historic values of neighborhoods and communities, all of which may be affected by VA construction projects.
- **TIL - Special Requirements-Physical Security** - Design Manual for VA Facilities Mission Critical Facilities & Life Safety Protected Facilities sets physical security standards for facilities required to continue operation during a natural or man-made extreme event and for facilities that are required to protect the life safety of patients and staff in an emergency.
- **TIL - Special Requirements-Fire Protection Design Manual** - This document provides fire protection design criteria for all VA facilities including fire alarm requirements.

9. **DESIGN SCHEDULES:** Approximate time frames are presented below. Actual timelines submitted for approval should reflect the project complexity and follow the format presented below:

- a. **Begin Schematic Design (Notice to Proceed): NTP**
- b. **Submission of Iterations (SD): NTP + 45 Days**
- c. **First Submission of Schematic Design (SD–35%): NTP + 75 Days**
- d. **First Review Meeting and Return First Submission: NTP + 90 Days**
- e. **Second Submission (Design Development 1) (DD1–50%): NTP +125 Days.**
- f. **Second Review Meeting and Return Second Submission: NTP + 140 Days.**
- g. **Third Submission (Design Development 2) (DD2–75%): NTP +175 Days.**
- h. **Third Review Meeting and Return Third Submission: NTP + 190 Days.**
- i. **Fourth Submission (Design Development 2) (CD–100%): NTP +220 Days.**
- j. **Fourth Review Meeting and Return Fourth Submission: NTP + 235 Days.**
- k. **Complete Design and Final Bid Set Submission: 260 Days**

10. **REVIEW MEETINGS:** The A/E is must include at least 20 sites visit to attend a design review meeting during the design process and provide meeting minutes to the VA for approval and distribution.

11. The VA mandates that all facilities are to be 100% fire sprinkled. The A/E shall review the existing sprinkler system and design any modifications necessary to the existing system to ensure that all areas are 100% sprinkled. Once the design for the modifications has been completed, a Fire Protection Engineer shall review and stamp those necessary drawings for code compliance.
12. Provide a moisture control plan and illustrate the use of an appropriate moisture control strategy to prevent building damage, minimize mold contamination, and reduce health risks related to moisture. For façade renovations, a dew point analysis and a plan for cleanup or infiltration of moisture into the building materials are required.
13. Provide a daylighting and lighting controls plan, including automated lighting controls (occupancy / vacancy sensors with manual-off capability) for appropriate spaces including restrooms, conference and meeting rooms, employee lunch and break rooms, training classrooms, and offices.
14. Storm Water: Per EISA Section 438, where redevelopment affects site hydrology, use site planning, design, construction, and maintenance strategies to maintain hydrologic conditions during development, or to restore hydrologic conditions following development, to the maximum extent that is technically feasible.

IV. SUBMISSIONS (FOR EACH DESIGN PHASE):

A. FIRST REVIEW: Schematic Design (SD) submission – 35% complete.

1. Submittals: Three (3) copies of preliminary plans (1 full size and 2 half size), three (3) copies of cost estimates furnished by an independent firm, the marked up As-Built drawings, three (3) copies of calculations, computations, and engineering data. Provide electronic copies of the entire submission on one (1) CD-ROM.
2. Specifications: Submit a cover letter and a list of VACHS Specific VA master specifications intended for use on this project.
3. Drawings: The A/E shall provide a full list of project drawings showing the scope and plan for each discipline involved.
 - a. All Disciplines:
 - 1) Demolition: Show furnishings that will remain during construction. Show means of protection.

- 2) Provide one drawing to include Interim Life Safety Code Plan, Phasing Plan, Security and environmental barriers.
- 3) Show and identify existing conditions, sections, elevations, details, dimensions, and capacities. The A/E shall site verify all items.
- 4) Show extent of asbestos that will be encountered and limits of removal with cost estimate, if applicable.
- 5) Show items to be removed, all disciplines.
- 6) Provide symbol sheets and explanation of detail symbols used.
- 7) Provide a VA Title Sheet for entire set of drawings.
- 8) Provide layout and equipment options.

b. Architectural:

- 1) Show location of existing equipment to be removed, remain, or be relocated.
- 2) Show location of new equipment.
- 3) Floor plans that include all rooms, door swing, windows, corridors, closets, mechanical, and other spaces.
- 4) Show reflected ceiling plan, and architectural details, sections, and finishes.
- 5) Show the structural grid with assumed column sizes, expansion and seismic joint locations, and location of special seismic structural features.
- 6) Show site survey and connection point locations.
- 7) All floor to floor heights shall be indicated. Show typical wall sections. Show smoke compartment and fire protection on the Interim Life Safety / Phasing Plan Drawing.

c. Civil / Structural:

- 1) Show existing conditions and how new work interfaces.

d. Plumbing / Piping:

- 1) Show basis for design and interface with existing system.
- 2) Show sizes of pipes and verified locations of valves.
- 3) Show modifications, old and new.
- 4) Provide a one-line diagram for all systems.

e. Heating, Ventilation and Air Conditioning (HVAC):

- 1) Provide preliminary load calculations.

f. Electrical:

- 1) Show existing including capacities. Furnish preliminary load calculations. Show transformers and panels to scale.

g. Phasing:

- 1) Present proposed phasing plans that will accomplish the construction work with a minimum amount of disruption to the normal operations of the hospital.

h. Calculations:

- 1) Submit in triplicate, all preliminary structural, HVAC, electrical, and plumbing calculations.

4. Estimates: Submit six (6) copies of the cost estimate (for all disciplines). See "Estimate Submission Requirements."
5. Asbestos: Outline area of work expected to disturb asbestos containing fireproofing.
6. Acceptance: If the documents do not meet all of the requirements of this submission, then the portions of the documents that are not acceptable by the VA according to the design standards and criteria must be updated by the A/E prior to moving on to the next scheduled submission.

B. SECOND REVIEW: Design Development (DD1) submission – 50% complete. After material of the 35% review has been reviewed, the A/E shall make necessary changes to incorporate the review comments and furnish the following:

1. Submittals: Three (3) complete sets of 50% drawings (1 full size and 2 half size), the original marked-up drawings, the 35% preliminary review mark-up, three (3) sets of complete cost estimates and three (3) sets of calculations, computations and engineering data. Also, provide one (1) electronic copy of the 35% drawings in accordance with section I.D.6.
2. Specifications: Submit three (3) sets of revised lists of specifications to be used for this project.
3. Drawings: The drawings shall be 50% complete, and include the following information:
 - a. All Disciplines:
 - 1) All demolition works.
 - 2) Environmental controls (dust partitions, signage, etc.).
 - 3) Show and identify existing, verified dimensions, conditions, and interfacing.
 - 4) Show items to be removed.
 - 5) Provide symbol sheets and explanation of symbols used.

- 6) Provide plans to show Interim Life Safety Plan, Phasing Plan, Security, and Environmental barriers. Submit, as a minimum, a single line layout for all floors and roof areas with double line exterior walls at a scale not less than $1/8" = 1'-0"$. These drawings should show all rooms, doors, corridors, basic column grid, assumed column sizes, expansion and seismic joint locations, electrical closets and equipment rooms, signal and telephone closets, mechanical shafts and space, and all vertical circulation, e.g., stairs, conveyers, elevators (personnel and service), and automatic conveyances. In schematics, lines between spaces indicate the centerline of the partition. Along the corridor the line represents the corridor side of the partition. Net areas should be clear space and should not include partitions.

b. Site:

- 1) Ensure that the Contractor is aware of the limited parking and material staging areas at this location.
- 2) Ensure that the Contractor is aware of the limited working spaces of the project site.

c. Architectural:

- 1) Submit floor plans and 50% complete details, schedules, and large-scale plans.
- 2) Draw elevations at a $1/8"$ scale. As necessary, show heights, fenestration and materials.
- 3) Show and identify connections of new work to old work.
- 4) Show general notes, door schedules, and other schedule data.
- 5) Indicate fire and smoke partitions.
- 6) Show the location of new equipment.
- 7) Show the ceiling mounted equipment.
- 8) Label each room or space with its name and the required program net area over the designed net area. The area figures will appear in fractional form, e.g., 400/390. The designed net area shall exclude such circulation space within the room as is permitted by the space planning criteria.

d. Civil / Structural:

- 1) Show existing structural and new work, if applicable.
- 2) Work with the equipment supplier to determine the added floor and ceiling loading, if required. Show structural modifications, if required. Also, show the uni-strut system if required.

e. Plumbing / Piping:

- 1) Show existing plumbing that will be affected by renovations and modifications. Through site verification, show shut-off valves. Show all areas that will be affected by a shutdown.
- 2) Show temporary and permanent relocations.
- 3) Show points of connection.
- 4) Show all piping, including sizes.

f. Heating, Ventilation and Air Conditioning (HVAC):

- 1) Provide preliminary load calculations.
- 2) Provide sketches and schematics and a schedule of points to be monitored by graphic control center.
- 3) Provide 1/4" scale drawings for equipment, piping, ductwork and other interfacing elements.
- 4) Show connections between new and old work. Show riser diagrams.
- 5) Provide demolition drawings and show extent of disruption to areas adjacent to or affected by the modifications.
- 6) Provide drawings to show the extent that asbestos fireproofing will be encountered.
- 7) Provide an equipment schedule.
- 8) Show one-line diagrams of hot, chilled, condenser water, refrigerant and steam piping.
- 9) Notations for types and sizes of hoods and grease and/or bacteriological filters, when required.
- 10) Provide a 1/4" scale drawing of equipment and/or fan room arrangement.
- 11) All heating and steam consuming equipment must be suitably described.

g. Electrical:

- 1) The electrical drawings shall be 50% complete, showing controls, conduits, wire sizes, points of origination and termination, motor sizes, nomenclature, and all other items necessary for a contractor / estimator to do a take-off.
- 2) Have one lighting print, one power print, and one signal print.
- 3) Provide computer terminals, extension of stent phone intercom system, local intercom, nurse call (code blue) system, fire alarm system diagrams and other necessary systems.

- 4) Provide one-line power and noise diagrams, and signal diagrams.
- 5) Provide a preliminary panel schedule.
- 6) Provide an equipment schedule for all equipment (including all medical equipment), showing manufacturer or basis of design, voltage, amperage, phase, conduit size, and conductor size.

h. Phasing:

- 1) Present revised phasing plans that will accomplish the construction work with a minimum amount of disruption to the normal operations of the hospital.

4. Estimates: See "Estimate Submission Requirements."

5. Acceptance: If the documents do not meet all of the requirements of this submission, then the portions of the documents that are not acceptable by the VA according to the design standards and criteria must be updated by the A/E prior to moving on to the next scheduled submission.

C. THIRD REVIEW: Design Development (DD2) submission – 75% complete. After material of the 50% review has been reviewed, the A/E shall make necessary changes to incorporate the review comments and furnish the following:

6. Submittals: Three (3) complete sets of 75% drawings (1 full size and 2 half size), the original marked-up drawings, the 50% preliminary review mark-up, three (3) sets of complete cost estimates and three (3) sets of calculations, computations and engineering data. Also, provide one (1) electronic copy of the 50% drawings in accordance with section I.D.6.
7. Specifications: Submit three (3) sets of revised lists of specifications to be used for this project.
8. Drawings: The drawings shall be 75% complete, and include the following information:

i. All Disciplines:

- 1) All demolition works.
- 2) Environmental controls (dust partitions, signage, etc.).
- 3) Show and identify existing, verified dimensions, conditions, and interfacing.
- 4) Show items to be removed.
- 5) Provide symbol sheets and explanation of symbols used.
- 6) Provide plans to show Interim Life Safety Plan, Phasing Plan, Security, and Environmental barriers. Submit, as a minimum, a single line layout for all floors and roof areas with double line exterior walls at a scale not less than $1/8" = 1'-0"$. These

drawings should show all rooms, doors, corridors, basic column grid, assumed column sizes, expansion and seismic joint locations, electrical closets and equipment rooms, signal and telephone closets, mechanical shafts and space, and all vertical circulation, e.g., stairs, conveyers, elevators (personnel and service), and automatic conveyances. In schematics, lines between spaces indicate the centerline of the partition. Along the corridor the line represents the corridor side of the partition. Net areas should be clear space and should not include partitions.

j. Site:

- 1) Ensure that the Contractor is aware of the limited parking and material staging areas at this location.
- 2) Ensure that the Contractor is aware of the limited working spaces of the project site.

k. Architectural:

- 1) Submit floor plans and 50% complete details, schedules, and large-scale plans.
- 2) Draw elevations at a 1/8" scale. As necessary, show heights, fenestration and materials.
- 3) Show and identify connections of new work to old work.
- 4) Show general notes, door schedules, and other schedule data.
- 5) Indicate fire and smoke partitions.
- 6) Show the location of new equipment.
- 7) Show the ceiling mounted equipment.
- 8) Label each room or space with its name and the required program net area over the designed net area. The area figures will appear in fractional form, e.g., 400/390. The designed net area shall exclude such circulation space within the room as is permitted by the space planning criteria.

l. Civil / Structural:

- 1) Show existing structural and new work, if applicable.
- 2) Work with the equipment supplier to determine the added floor and ceiling loading, if required. Show structural modifications, if required. Also, show the uni-strut system if required.

m. Plumbing / Piping:

- 1) Show existing plumbing that will be affected by renovations and modifications. Through site verification, show shut-off valves. Show all areas that will be affected by a shutdown.
 - 2) Show temporary and permanent relocations.
 - 3) Show points of connection.
 - 4) Show all piping, including sizes.
- n. Heating, Ventilation and Air Conditioning (HVAC):
- 1) Provide preliminary load calculations.
 - 2) Provide sketches and schematics and a schedule of points to be monitored by graphic control center.
 - 3) Provide 1/4" scale drawings for equipment, piping, ductwork and other interfacing elements.
 - 4) Show connections between new and old work. Show riser diagrams.
 - 5) Provide demolition drawings and show extent of disruption to areas adjacent to or affected by the modifications.
 - 6) Provide drawings to show the extent that asbestos fireproofing will be encountered.
 - 7) Provide an equipment schedule.
 - 8) Show one-line diagrams of hot, chilled, condenser water, refrigerant and steam piping.
 - 9) Notations for types and sizes of hoods and grease and/or bacteriological filters, when required.
 - 10) Provide a 1/4" scale drawing of equipment and/or fan room arrangement.
 - 11) All heating and steam consuming equipment must be suitably described.
- o. Electrical:
- 1) The electrical drawings shall be 75% complete, showing controls, conduits, wire sizes, points of origination and termination, motor sizes, nomenclature, and all other items necessary for a contractor / estimator to do a take-off.
 - 2) Have one lighting print, one power print, and one signal print.
 - 3) Provide computer terminals, extension of stent phone intercom system, local intercom, nurse call (code blue) system, fire alarm system diagrams and other necessary systems.
 - 4) Provide one-line power and noise diagrams, and signal diagrams.

- 5) Provide a preliminary panel schedule.
- 6) Provide an equipment schedule for all equipment (including all medical equipment), showing manufacturer or basis of design, voltage, amperage, phase, conduit size, and conductor size.

p. Phasing:

- 1) Present revised phasing plans that will accomplish the construction work with a minimum amount of disruption to the normal operations of the hospital.

9. Estimates: See "Estimate Submission Requirements."

10. Acceptance: If the documents do not meet all of the requirements of this submission, then the portions of the documents that are not acceptable by the VA according to the design standards and criteria must be updated by the A/E prior to moving on to the next scheduled submission.

D. FOURTH REVIEW: Final Construction Documents (CD) submission – 100% complete. After material of the 100% review has been reviewed, the A/E shall make necessary changes to incorporate the review comments and furnish the following:

1. Submittals: Three (3) complete sets of 100% drawings (1 full size and 2 half size), the original marked-up drawings, the 75% preliminary review mark-up, three (3) sets of complete cost estimates and three (3) sets of calculations, computations and engineering data. Also, provide one (1) electronic copy of the 75% drawings in accordance with section I.D.6.
2. Specifications: Submit three (3) sets of revised lists of specifications to be used for this project.
3. Drawings: The drawings shall be 100% complete, and include the following information:

a. All Disciplines:

- 1) All demolition works.
- 2) Environmental controls (dust partitions, signage, etc.).
- 3) Show and identify existing, verified dimensions, conditions, and interfacing.
- 4) Show items to be removed.
- 5) Provide symbol sheets and explanation of symbols used.
- 6) Provide plans to show Interim Life Safety Plan, Phasing Plan, Security, and Environmental barriers. Submit, as a minimum, a single line layout for all floors and roof areas with double line exterior walls at a scale not less than $1/8" = 1'-0"$. These drawings should show all rooms, doors, corridors, basic column grid, assumed column

sizes, expansion and seismic joint locations, electrical closets and equipment rooms, signal and telephone closets, mechanical shafts and space, and all vertical circulation, e.g., stairs, conveyers, elevators (personnel and service), and automatic conveyances. In schematics, lines between spaces indicate the centerline of the partition. Along the corridor the line represents the corridor side of the partition. Net areas should be clear space and should not include partitions.

b. Site:

- 1) Ensure that the Contractor is aware of the limited parking and material staging areas at this location.
- 2) Ensure that the Contractor is aware of the limited working spaces of the project site.

c. Architectural:

- 1) Submit floor plans and 100% complete details, schedules, and large-scale plans.
- 2) Draw elevations at a 1/8" scale. As necessary, show heights, fenestration and materials.
- 3) Show and identify connections of new work to old work.
- 4) Show general notes, door schedules, and other schedule data.
- 5) Indicate fire and smoke partitions.
- 6) Show the location of new equipment.
- 7) Show the ceiling mounted equipment.
- 8) Label each room or space with its name and the required program net area over the designed net area. The area figures will appear in fractional form, e.g., 400/390. The designed net area shall exclude such circulation space within the room as is permitted by the space planning criteria.

d. Civil / Structural:

- 1) Show existing structural and new work, if applicable.
- 2) Work with the equipment supplier to determine the added floor and ceiling loading, if required. Show structural modifications, if required. Also, show the uni-strut system if required.

e. Plumbing / Piping:

- 1) Show existing plumbing that will be affected by renovations and modifications. Through site verification, show shut-off valves. Show all areas that will be affected by a shutdown.

- 2) Show temporary and permanent relocations.
- 3) Show points of connection.
- 4) Show all piping, including sizes.

f. Heating, Ventilation and Air Conditioning (HVAC):

- 1) Provide preliminary load calculations.
- 2) Provide sketches and schematics and a schedule of points to be monitored by graphic control center.
- 3) Provide 1/4" scale drawings for equipment, piping, ductwork and other interfacing elements.
- 4) Show connections between new and old work. Show riser diagrams.
- 5) Provide demolition drawings and show extent of disruption to areas adjacent to or affected by the modifications.
- 6) Provide drawings to show the extent that asbestos fireproofing will be encountered.
- 7) Provide an equipment schedule.
- 8) Show one-line diagrams of hot, chilled, condenser water, refrigerant and steam piping.
- 9) Notations for types and sizes of hoods and grease and/or bacteriological filters, when required.
- 10) Provide a 1/4" scale drawing of equipment and/or fan room arrangement.
- 11) All heating and steam consuming equipment must be suitably described.

g. Electrical:

- 1) The electrical drawings shall be 100% complete, showing controls, conduits, wire sizes, points of origination and termination, motor sizes, nomenclature, and all other items necessary for a contractor / estimator to do a take-off.
- 2) Have one lighting print, one power print, and one signal print.
- 3) Provide computer terminals, extension of stent phone intercom system, local intercom, nurse call (code blue) system, fire alarm system diagrams and other necessary systems.
- 4) Provide one-line power and noise diagrams, and signal diagrams.
- 5) Provide a preliminary panel schedule.

- 6) Provide an equipment schedule for all equipment (including all medical equipment), showing manufacturer or basis of design, voltage, amperage, phase, conduit size, and conductor size.

h. Phasing:

- 1) Present revised phasing plans that will accomplish the construction work with a minimum amount of disruption to the normal operations of the hospital.

4. Estimates: See “Estimate Submission Requirements.”

5. Acceptance: If the documents do not meet all of the requirements of this submission, then the portions of the documents that are not acceptable by the VA according to the design standards and criteria must be updated by the A/E prior to moving on to the next scheduled submission.