

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

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Barrier Free Restrooms, Bedford VAMC

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SUPPLEMENT “A”

SCOPE OF WORK

1.0 Scope of Work:

The Architect/Engineer (A/E) will provide all professional A/E services necessary to develop complete drawings, specifications, cost estimates, construction schedules, project phasing, testing, investigations, site visits and construction period services associated with providing renovation of existing toilet facilities to achieve barrier-free accessible toilet facilities in Buildings 4, 7, 8, and 61 at Edith Nourse Rogers Memorial Bedford Veterans Affairs Medical Center (VAMC) facility located at 200 Springs Road, Bedford MA 01730.

An important goal for the Bedford VAMC facility is to achieve universal barrier-free accessible toilet facilities on campus (per the VA Barrier Free Design Standard). This project represents the first steps towards meeting this goal.

The intents of this project are to include, but are not be limited to:

- Renovate to achieve barrier free design and upgrade building systems and components of 11 toilet facilities in 4 separate buildings to:
 - Building 4: B01B, B01D, B27A, B28A;
 - Building 7: B06, B17, 103, and 129
 - Building 8: B21C, and B16
 - Building 61: B03
- Combine B27A and B28A in Building 4 into one unisex toilet facility
- The toilet facilities are assigned into one of two Tiers. Tier 1 is higher priority than Tier 2.
 - Tier 1 includes: Building 4: B01B, B01D, B27A, B28A; Building 7: B06, B17, 103, and 129
 - Tier 2 includes: Building 8: B21C, and B16; Building 61: B03
- Adjacent areas to be reconfigured to allow toilet facilities to be renovated to achieve barrier free design
- Bariatric accommodations
- Physical Security accommodations
- Identify at the Conceptual Stage the cost to renovate (to achieve barrier free design and/or upgrade to building systems/components) the 11 toilet facilities identified. Make recommendations as to what toilet facilities can be renovated to stay with the project budget. At the end of the Conceptual Stage the AE will have identified the toilet facilities that can be renovated to stay within the budget.
- Reconfigure room layouts as needed to achieve the project goals.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

- Upgrade of building systems and components as needed (e.g., finishes, doors/frames, door hardware, signage, counters, toilet partitions, ceilings, flooring, walls, electrical (normal and emergency power), heating, ventilations, air conditioning, exhaust, lighting, plumbing and fixtures, fire protection, fire detection/alarm, telephone/data, cable television, telephone/data, nurse call, signage, etc.)
- Patient safety features
- Infection control measures
- Patient lift systems
- Lead, asbestos, and (polychlorinated biphenyls) PCBs testing and abatement
- Phasing – It is the intent of this project that no more than one toilet facility can be removed from operation for renovation in a building at any time; exceptions may be made during design. The overall intent is to have the contractor work in multiple buildings at the same time to shorten the Construction Period of Performance; the documents shall clearly state this intent.
- Accessibility requirements (Architectural Barriers Act Accessibility Standard, ADA)
- Access Control, Security and Safety monitoring camera's where needed
- ASHRAE Standard 90.1-2007 Energy Standard for Buildings

This design project will include:

Type A Services – Conceptual and Schematic Design

Type B Services - Preparation of contract drawings and specifications [Design Development (DD) and Construction Development (CD)]

Type C Services - Construction period administration services

The design project schedule identifying milestone tasks is located in Attachment 1- Project Design Schedule. The allocation of days for each Milestone ID number in the Project Design Schedule can be modified at the discretion of the CO and COR. The overall period of performance of **203** calendar days will not change (See Attachment 1 – Project Design Schedule). NOTE: Within ten (10) calendar days after NTP, the A/E shall complete the Actual Date column for each Milestone and submit for approval to the COR. Actual dates and days can be modified at the discretion of the CO and COR.

Refer to Supplement B A/E Submissions Deliverables of Design Review Materials at each submission of design required per the contract.

Refer to Supplement C A/E Minimum Submission Requirements by disciplines that are required per the contract.

2. Description of Work:

2.1 General: A/E shall conduct preliminary meetings and site survey investigations to define the necessary elements of the project scope of work fulfilling the goals of the VA's project team (Engineering Service), and presentation of preliminary layout plans with proposed alternatives to the User Group. Based on User Group meetings and site surveys, prepare a detailed project plan description report pertinent to the project requirements within the constraints of the construction

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC Architect/Engineer (A/E) Statement of Work (Design)

budget consistent with the VA's project team goals. As part of site survey investigations, it is the A/E's responsibility to survey Bedford VAMC VA Engineering's record drawings and determine what drawings are necessary to use for this project; all drawings are to be considered record drawings only and not as-built drawings even if they are so labelled. Not all Bedford VAMC VA Engineering record drawings are in AutoCad. The VA does not guarantee that actual conditions are reflected in the record drawings; it is up to the A/E to verify this. During the course of the design phase, it will be necessary to interface with Medical Center staff to ascertain the details of the scope through a series of meetings and periodic submissions of documents.

2.1.a Codes, Standards and Executive Orders:

- All design submission requirements shall conform to the latest editions of all VA criteria/standards/regulations/design guides, etc. (VA's Office of Construction & Facilities Management web site: <http://www.cfm.va.gov>), in addition to Commonwealth of Massachusetts state codes and regulations and national codes and regulations.
- PURPOSE: The Public Buildings Amendment Act of 1988, Public Law (Pub. L.) 100-678 requires Federal agencies to follow national recognized "model" building codes. The Federal Participation in the Development and Use of Voluntary Standards, Office of Management and Budget (OMB) Circular A-119, requires all executive agencies to rely on voluntary standards, both domestic and international, whenever feasible, and to participate in voluntary standard bodies.
- GENERAL: 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. VA design Manuals and Master Specifications specify other codes and standards that VA follows on its projects
 - VA Directives, Design Manuals, Master Specifications, VA National CAD Standard Application Guide, and other Guidance on the Technical Information Library (TIL) (www.cfm.va.gov/til/).
 - International Building Code (IBC) (Only when specifically referenced in VA Design Documents, see notes below)"
 - National Fire Protection Association (NFPA) 101 Life Safety Code (see notes below)
 - •NFPA National Fire Codes, with the exception of NFPA 5000 and NFPA 900
 - •Occupational, Safety and Health Administration (OSHA) Standards.
 - VA Seismic Design Requirements, H-18-8
 - National Electrical Code (NEC)
 - International Plumbing Code (IPC)
 - Safety Code for Elevators and Escalators, American Society of Mechanical Engineers (ASME) A 17.1.
 - ASME Boiler and Pressure Vessel Code
 - ASME Code for Pressure Piping
 - Architectural Barriers Act Accessibility Standards (ABAAS) including VA supplement, Barrier Free Design Guide (PG-18-13)
 - Building Code Requirements for Reinforced Concrete, American Concrete Institute and Commentary (ACI 318)
 - Manual of Steel Construction, Load and Resistance Factor Design Specifications for Structural Steel Buildings, American Institute of Steel Construction (AISC)

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

- Energy policy Act of 2005 (EPAAct)
- DOE Interim Final Rule: Energy Conservation Standards for New Federal, Commercial and Multi-Family High-Rise Residential Buildings and New Low-Rise Residential Buildings, 10 CFR Parts 433, 434 and 435.
- Federal Leadership in High Performance and Sustainable Buildings: Memorandum of Understanding (MOU)
- Executive Order 13423: Strengthening Federal Environmental, Energy, and Transportation Management.
- The Provisions for Construction and Safety Signs. Stated in the General Requirements Section 01010 of the VA Master Construction Specification.
- Ventilation for Acceptable Indoor Air Quality – ASHRAE Standard 62.1- 2004.
- Safety Standard for Refrigeration Systems – ASHRAE Standard 15 – 2007.
- Local Codes: As an agency of the federal government, VA is not subject to local imposition of code enforcement procedures (drawing reviews, building permits, inspections, fees, etc.). VA must function as the Authority Having Jurisdiction (AHJ) and thus has the responsibility to guard public health and safety through enforcing its adopted codes. However, local authorities should be notified about planned projects and given opportunity to review drawings provided that VA does not pay for review or inspection fees.
- NOTES:
 - 1. 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, seismic 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).
 - 2. 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 VA. The resolution of the conflict shall be made by the authority having jurisdiction for VA to ensure a consistency system wide.
- Conflicts between Nationally And Locally Recognized Codes and Standards and VA Requirements – Should a conflict exist between VA requirements and VA adopted nationally and locally recognized codes and standards, the conflict shall be brought to the attention of VA. The resolution of the conflict shall be made by the authority having jurisdiction for VA to ensure a consistency system wide.

2.2 Implementation: The A/E shall engage the services of all consultants in each discipline deemed to be necessary to fulfill the requirements of the project plan. Each discipline shall document and

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

investigate the relevant existing conditions found, identify/investigate/review the availability of existing building information, and field verify all essential elements pertinent to their discipline. Site investigations shall measure, photograph, video tape, and document the conditions of areas to be renovated and/or impacted. Site investigations include investigating areas above ceilings, behind walls if there is access, crawl spaces, etc. Provide the necessary investigation/inspection/testing/metering of existing utilities to ensure their adequacy for this project. Provide lead, asbestos, PCBs testing in project areas.

2.3 Project Development: The A/E shall provide all services required to prepare documents and reports for the subject project consistent with the VA's project team goals as prioritized during preliminary project meetings, field surveys and studies. The A/E shall determine existing conditions, severity of deficiencies, if any previous deficiencies have been corrected and to identify any conditions which may have previously been unreported. Cost estimates shall be prepared to reflect the cost of replacing the component in a stand alone project (i.e., not as part of another project) and all cost for this replacement including but not limited to lead and asbestos and PCBs removal, required phasing, special field conditions and/or temporary equipment needed during the construction. The completed report shall then be submitted for approval to the Project Engineer.

2.4 Project Design: Based on the approved design development the A/E shall provide all services required to prepare plans, specifications, and other supporting documents necessary to correct the identified deficiencies in priority order. The approved cost estimate and available project funding will be used to determine the amount of deficiencies which will be correct under this project. A complete design including but not limited to determination and evaluation of existing conditions, necessary engineering calculation, necessary design work, independent fire safety/life safety review, IH Services, quantity and cost estimates, bid schedule, construction cost estimates, a proposed construction schedule, design analyses and calculations, a design documentation report, engineering considerations and options report shall be developed for this project. The A/E's interior designer shall provide finish recommendations to the VA Interior Designer for approval; as with other portion of design, this is a reiterative process.

2.5 Asbestos & Lead: The proper identification of Asbestos & Lead to determine construction costs associated with Comprehensive Strategy & Report phase of this project are considered part of this project. To extent possible existing Asbestos and Lead Assessment of the facility will be made available to the A/E; however, it is the A/E's responsibility to conduct testing within the project areas. Additionally proper asbestos and lead abatement design and IH monitoring services required during construction to correct the deficiencies selected for the construction design portion of this project shall also be provided by the A/E.

2.6 PCBs: The A/E shall provide testing for the proper identification Polychlorinated Biphenyls (PCBs) at doors and window caulking and glazing to determine construction costs associated with Comprehensive Strategy & Report phase of this project are considered part of this project. Additionally, proper PCBs abatement design and IH monitoring services required during construction to correct the deficiencies selected for the construction design portion of this project shall also be provided by the A/E.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

3. General Description of Services:

A/E shall provide the services indicated in this Statement of Work, Supplement A, Supplement B and Supplement C. These services will be provided in distinct phases:

Conceptual/15% Submittal – Preliminary User Group Meetings & Field Surveys

30% Submittal – Schematics

60% Submittal – “DD” Design Development

90% Submittal – “CD” Construction Documents

100% Submittal – Bid [Final] Documents

Construction Period Services

Project Close Out Submittal – “As-Built” Construction Documents

3.1 Drawings: The drawings, specifications, and all other submittal items will be prepared using English units of measure.

3.1.1 General: The A/E shall prepare drawings in a manner that clearly and adequately delineates the work to be accomplished by the construction contractor. Design documents will be sufficiently detailed to permit construction contractors to submit responsive bids without visiting the project site. The cover sheet will be signed and stamped by principal of the firm who is a Registered Architect or Professional Engineer. Each drawing shall be signed and stamped by a Registered Architect or Professional Engineer for their respective discipline. All drawings will be created using AutoCAD and National CAD standards. These CAD standards are available on the Internet at the VA’s Office of Construction & Facilities Management web site: <http://www.cfm.va.gov>.

3.1.2 CAD Files: One CAD (*.DWG) file shall be used per drawing (sheet) applying the VA’s CAD layering and disk labeling protocols. All files shall be IBM compatible and furnished on high quality CD-R disks. Provide in accordance with Supplement “B” sets of drawings (AutoCAD). The computerized version, format and media of the computer disks and files shall be specified and verified by the VA Project Engineer at the time each submission is due (XRF, DXF and ZIP files are not acceptable). Provide durable high quality plastic storage boxes at each submission for long term archiving of the disks.

3.1.3 Format: All drawings and sketches will be provided in both hard copy and electronic file format. Full-sized drawings shall be developed as “D” sized sheets (24 inches by 36 inches at the trim line) and shall utilize the standard VA title block. Fonts shall be standard AutoCAD, and drawings must be fully compatible with AutoCAD 2022. Drawing file names shall contain the drawing number and drawing title information. Drawings shall utilize world coordinate system with standard cross hairs. Each drawing shall have a separate drawing file name consistent with the drawing title. Adobe Acrobat PDF files for each AutoCAD file shall be provided and labelled.

3.1.4 Fire/Life Safety Review: A third party, independent fire safety and life safety review shall be accomplished at the 30%, 60% and 95% design submission. Include the cost and coordination for a fire/safety review. Provide qualifications of the Fire/Life Safety Reviewer Consultant.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

3.15 General Drawing Comments:

- a. Key Plans - On each drawing with a floor plan or partial floor plan, provide a key plan that shows where the floor plan is located in the building.
- b. Title Sheet – Provide campus site plan layout and identify where project is located on campus.
- c. Abbreviations – Ensure all abbreviations used are identified in Abbreviations Lists. Do not use the same abbreviation for different meanings.
- d. Symbols – Ensure all symbols used are identified in Legends Lists. Do not use the same abbreviation for different meanings.
- e. The A/E shall prepare drawings in a manner that clearly and adequately delineates the work to be accomplished by the construction contractor. Design documents will be sufficiently detailed to permit construction contractors to submit responsive bids without visiting the project site. The cover sheet will be signed and stamped by principal of the firm who is a Registered Architect or Professional Engineer. Each drawing shall be signed and stamped for the respective discipline by a Registered Architect or Professional Engineer.

3.2 Specifications:

3.2.1 General: The A/E shall utilize the latest edition of VA Master Specifications as revised and provided by the facility supplemented by the VA Office of Construction and Facilities Management Master Specifications as needed. The VA retains no responsibility for the development or preparation of any specification. While it is recognized that certain Divisions and/or Sections will require significant input from the VA, the A/E retains overall responsibility for these Sections.

- a. Remove all references to “Section 00 72 00, GENERAL CONDITIONS”. Some specifications sections still contain this reference. Remove all “spec writer’ notes and slashes for options.
- b. Remove references to spec sections that do not apply and are not located in the specification. These references must be removed in both the Part I reference section and the body of each specification section.
- c. Ensure that if a specification section is listed in the Table of Contents, then that section is included in the specifications. If not needed, then remove from Table of Contents.
- d. Ensure that if a specification section is in the specifications, then it is listed in the Table of Contents.
- f. Do not include a Table of Contents at the beginning of each specification section. Remove service contracts from specification sections. Discuss with VA prior to removal.
- g. Contractor shall be responsible for all testing (including air sample tests and final clearances); the contractor shall retain a third party independent testing agency for all testing required; this includes hazardous waste abatement. Remove references that VA will retain testing services. Remove all references that the VA will conduct air sampling tests and final clearances. Remove all references that the VA will provide security of the project sites.

3.2.2 Electronic Files: All electronic files shall be IBM compatible and furnished on high quality CD-R disks. Provide durable high quality plastic storage boxes at each submission for long term archiving of the disks. Provide in accordance with Supplement “B”. ZIP files are not acceptable.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

3.2.3 Outline Specifications: The A/E shall develop an outline specification listing the proposed guide specifications and the A/E prepared sections that will be used for the project. The outline specification will list the guide specification number and title for each proposed section. Sections shall be arranged within their respective divisions, in numerical order. New specification sections, developed by the A/E in the event the VA does not have a specification required for the project, will be numbered to fall in their respective division at a logical location.

3.2.4 Editing Specifications: The A/E must thoroughly edit and adapt the Specifications to satisfy the project requirements and provide a complete set of construction specifications. The A/E shall notify the VA in writing should there be instances where there are no appropriate Master Specifications available for use. At the VA's direction the required specifications will be prepared by the A/E. These specifications shall list the essential features, functions, and other factors to clearly indicate the type and quantity of items/work required. All specifications will be prepared by listing parameters and requirements that can be met by several manufacturers. The use of trade names may be used to establish the basis of design standard of quality to be met.

3.2.5 Construction Contractor Submittal Register: The specifications require the construction contractor to submit shop drawings, samples, manufacturer's data, certificates, test reports, and other items to the Government. The A/E shall prepare a complete listing of construction contractor submittal requirements on an MS Excel or MS Word Spreadsheet as a Submittal Register. The spreadsheet shall have a separate line for each required submittal and separate columns for Division, Section, and type of submittal (catalog cut, sample, etc). The Submittal Register shall be incorporated into the specifications in the 01 00 00 General Requirements section.

3.3 Cost Estimates:

3.3.1 Quantity and Format: The A/E shall prepare quantity computations, cost estimates, and construction cost estimates for this project. Cost estimates shall be submitted in 1 hard copy and in electronic form. All construction cost estimates shall conform to the requirements contained in VA Manual for Preparation of Cost Estimates (latest edition). Manual is available on the Internet at the VA's Office of Construction & Facilities Management web site: <http://www.cfm.va.gov>.

3.3.2 Cost Estimates: The A/E shall engage an independent, qualified, professional cost estimating company with relative experience to provide detailed cost estimates at milestones as noted. The cost estimate shall consider the government timeframe for procurement and construction and its impact on escalation costs. A representative of estimating company shall join A/E at meeting with VA to review the cost estimate and strategize on adjustments as required. The goal is to make adjustments that do not affect the scope of the work for the A/E or impact the relative scope of the work for the construction. The estimating company shall be prepared to make revised estimates at each report based on feedback from the A/E and VA. The A/E is responsible for establishing internal controls for keeping the project design within the projected construction funding. The A/E will be required to revise the design and resubmit costs estimates as necessary (at no cost to the VA) should cost estimates exceed the construction funding.

3.4 Phasing and Construction Schedules:

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

3.4.1 Schedules: The A/E shall prepare a proposed a construction schedule for construction that is consistent with the project construction cost estimate. The proposed construction schedule shall be submitted at the 95% design submission. During development of this schedule, due consideration will be given to standard construction practices, durations of tasks, the sequence of construction, procurement of materials, climatic conditions, etc. It is planned that areas in and adjacent to the proposed construction area shall be occupied during construction. The A/E shall develop a phasing plan that assures smooth implementation of required construction. Special attention will be required to develop a design that can be phased as to allow work to be performed while all services remain in operation and can reasonably maintain day to day operations.

3.4.2 Schedule Format: The construction schedules shall be horizontal bar charts that: a) identify the major construction activities required to perform the work; b) identify the duration of each of the major construction activities; c) identify anticipated submittal process duration; d) identify the critical path network to achieve the work. The project schedule will be used to determine the Construction Period of Performance.

3.5 Design Analysis: The A/E shall develop a Design Analysis that addresses general project parameters, functional and technical requirements, existing conditions, design objectives, design assumptions, product literature, calculations, etc. applicable to the project's design. Design/Construction Alternatives, existing physical limitation and their impact, meeting minutes, etc. shall also be included in the Design Analysis. The Design Analysis shall be updated and submitted at each design submission.

3.6 Quality Control:

3.6.1. Quality Control Plan: The A/E shall prepare a Quality Control Plan (QCP) which includes the following as a minimum:

- Identification and discussion of all organizational and technical interfaces
- Design team members and their areas of responsibility
- Team members responsible for checking the design
- Team members responsible for checking the electronic files
- Team members responsible for reviewing and submitting the required VA Design Alerts and Quality Alerts
- Project Schedule showing key milestones and review periods

3.6.1.1 VA Design Alerts and VA Quality Alerts can be found on the internet at the VA's Office of Construction & Facilities Management web site: <http://www.cfm.va.gov> .

3.6.2. Quality Assurance: The A/E is responsible for developing and performing quality assurance reviews of all work to confirm that proper criteria, regulations, laws, codes, principles and professional procedures have been used. This includes work performed by subcontractors. The VA may review all project submissions but the review is general in nature and shall not be considered as part of the A/E's Quality Control Plan and/or Quality Assurance; the VA does not perform Quality Control and Quality Assurance for the A/E.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

3.6.3 Quality Certification: The A/E shall certify at each submission in writing that he/she has performed quality assurance reviews of that submission.

3.7 Site Visits, Meetings/Conferences, and Discussions:

3.7.1. Site Visits: The A/E shall perform design site visits as required to accomplish the scope of this project. The purpose of these visits is further define project requirements, observe and evaluate existing field conditions and existing dimensions, review any existing documentation, perform required testing, conduct required design meetings, and to gather supplemental site data necessary for performing the design. Reports summarizing the conditions observed, personnel contacted, and data gathered during the visits shall be prepared and included in the Design Development Documentation.

3.7.2. Design Review Conferences: Design review conferences shall conduct shortly following the issuance of each review Submission. Refer to Supplement B for the proposed schedule, but will typically take place two weeks, unless noted otherwise, after the submission date. Design review conferences for the Schematics, Design Development and Construction Document Development phase shall include, as a minimum, the A/E Project Manager and Senior Designer. These conferences shall take place at the facilities where the work is being performed or through video conferencing as determined by the VA.

3.7.3 Site Visit and Meeting Minutes: The A/E shall take notes and prepare minutes for all site visits, meetings and conferences attended. Minutes will be prepared in typed form, signed by the A/E Project Manager, and furnished to project engineer within seven calendar days after the meeting/conference for concurrence and distribution to attendees. Copies of all meeting/conference minutes will be included in each Submission. Minutes shall include a listing of attendees.

3.8 Responsibility after Design Completion: The A/E is required to support the VA should errors or omissions in the documents create problems in bidding or administering the contract for construction. As needed, the A/E will clarify the design intent and correct any errors or omissions in the original documents. The corrections shall be done in a timely manner at no additional cost to the Government. The A/E shall incorporate amendment changes on the original drawings and/or CAD drawings when requested to do so after the bidding process at no extra cost to the Government. In addition, the A/E shall incorporate amendment changes on the submittal registers and submit on a CD labeled with the project title, location, and construction contract number. Also, during the bidding period, the A/E is required to assist in answering all bidders' inquiries pertaining to the design. If clarifications are required, the A/E will prepare the required amendment. The A/E, however, shall not receive or respond to any direct inquiries from contractors.

3.9 A/E Services during Construction – Construction Period Administration (CPA):

CPA Services shall include, but are not limited to:

- Review and approval of construction submittals covering products that have been listed within the contract documents, including cut sheets, manufacturer's data/performance sheets, samples, shop drawings, schedules, and phasing plans. Specifications shall call for Contractor to provide a schedule of all submittals, cut sheets, etc. Submittals to be sent electronically, redlined and stamped for VA review. The A/E responsibility includes coordination and review of submittals

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

for its team. Review shall provide recommendation for VA action. Turn around time for A/E review shall be 14 calendar days from time of Contractor submission.

- Provide and maintain an updated submittal register
- Provide compatibility analyses of different materials and recommendations associated with acceptance or rejection of alternate materials and products;
- Provide change order review and recommendations;
- Provide cost estimates for change orders;
- Provide cost/time/impact estimates and recommendations relevant to design omissions and construction plan deviations.
- Construction Site Visits/Observations - The A/E shall carry in their proposal Twenty-two Sixteen (22) site inspection/observation visits as requested by the VA Project Engineer for inspection of ongoing construction including final tests and inspections; disciplines as required and/or requested by the VA Project Engineer. Each site visit shall be defined as one team member for a total of 4 hours including travel. A site inspection report shall be furnished by the A/E to the Contracting Officer and Project Engineer within three (3) workdays following all site visits during the construction period. The A/E shall meet with the site superintendent and Project Engineer when entering the site and before leaving to review progress of the work, issues on site affecting the design intent or technical aspects of the work and exceptions that may be noted. Report shall indicate these items discussed.
- Prepare as-built documents in accordance with Supplement "B" which the VA will retain permanently;
- Provide IH services associated with any asbestos or lead or PCBs abatement identified in the project.
- After the award of the project to the general contractor the A/E must remain fully involved.
- Provide A/E clarification for decisions previously made; review suppliers' information for compliance with the Contract Documents; and evaluated contractor requested substitutions.
- If changes affect the operation of the design and building, it is especially important that the IPT be involved. User requirements may change, necessitating changes in the building—these changes require broad consultation among the consultants and sub-consultants, pricing, and incorporation into the contract documents and the building. At no additional cost, A/E to provide full assessment of the impact to the schedule and design fees and construction costs in order for the VA to evaluate and make a determination on moving forward with the potential change.
- The A/E coordinates communication and work of its consultants during construction and reviews progress of the work for general compliance with the documents.
- The A/E participates in the construction phase of the project, assessing compliance with the contract documents by managing appropriate intervals of on-site reviews, acceptance of required contractor submissions and mock ups and evaluations by the sub-consultants.
- Provide responses to Request for Information (RFI) within 2 business days of receipt.
- Provide sketches, at no additional cost to the VA, for clarification to the documents as requested by the VA no longer than 5 business days from when requested.
- Provide cost/time/impact estimates and recommendations relevant to design omissions and construction plan deviations;
- A site inspection report shall be furnished to the CO and COR within three work days following all site visits during the construction period. The A/E shall meet with the site

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

superintendent and COR when entering the site and before leaving to review progress of the work, issues on site affecting the design intent or technical aspects of the work and exceptions that may be noted. Report shall indicate these items discussed. The site inspection report shall include the purpose of the inspection, the status of the work with photos, items reviewed, deficiencies observed, recommendations and additional actions required.

- At the time that the General Contractor notifies the VA that they believe substantial completion has been reached, the VA will notify the A/E to perform site observations to include punch list items. The A/E shall provide recommendation if Substantial Completion (SC) has been achieved and provide notification to the VA. At the time of SC, the punch list shall be provided to the VA. The VA shall review the work and add items as appropriate. The A/E, Contractor and VA shall review the list and sign off on completed items. The A/E shall manage the punch list and keep a log of all findings by each division and conduct as many site visits that may be required to verify completion of the punch list.
- A/E shall verify all devices (valves, circuits, equipment, etc.) have been properly labeled and or tagged with charts and cards as noted in the specifications or per codes.
- Provide registered design professional construction control and submit signed and stamped final construction control affidavits to the VA COR.
- Verification of as-built conditions: A/E shall utilize as-record drawings (field mark-up set from Contractor) and review documents against finished conditions to verify the work. A/E shall then prepare electronic as-built documents. The A/E shall be responsible for assuring that as-built documents are accurate at the end of the construction of the project.
- The Government may issue a change order for the A/E to provide additional services to such as review of value engineering change proposals, preparation of design modifications, or other similar services during construction.
- Electronic Construction Submittals:
 - The A/E shall have the capability to electronically review and process construction submittals including digitally signing the Material Approval Submittal. A PDF writer (such as Adobe Reader/Writer or Pro V Nuance, etc.) is required by the A/E in order to process electronic construction submittals.
 - The A/E shall provide and manage a file share site for the processing of electronic submittals. This file management site shall be set-up to allow the contractor to electronically submit the construction submittals, allow the A/E to review and process the submittals and allow the VA to review and process the submittals. The site the A/E provides must be one that is accessible to the VA.

4. References/Design Criteria:

4.1 Incorporated References/Design Criteria — Part of the A/E SOW is to determine what specifications and guidelines are applicable to the project and to incorporate them into the project documents. The documents will require extensive editing to meet the specific needs of the project. The following documents form a part of this contract to the extent referenced are included in the A/E Scope of Work. Specification sections may be supplemented or replaced (if not available on the VA Office of Construction & Facilities Management website) but shall meet the design intent and performance requirements within the VA specifications. Design requirements identified in these documents are part

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

of the A/E Required Services. National Codes, Standards and other requirements referenced in these documents also become part of the A/E Required Services. The following link to the VA Office of Construction & Facilities Management website has a majority of the: guides, manuals, specifications, and details/documents that may be incorporated into the construction documents; the A/E is required to familiarize themselves with the documents on this site and to ensure compliance with design.

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

- Design Criteria; HVAC, Mechanical, Plumbing, Electrical, Structural, et al (by reference)
- PG-18-1 Master Specifications (by reference)
- PG-18-3 Design and Construction Procedures (by reference)
- PG-18-4 Standard Details and CAD Standards (by reference)
- BIM & CAD Standards (PG-18-4) (by reference):
 - o VA BIM Manual v2.2 (by reference)
 - o VA Drawing Deliverable Requirements (DDR) v1.0 (by reference)
 - o Drawing Sheet Templates (by reference)
 - o VA Facility Space Measurement Standards (by reference)
 - o VA CAD Legacy Layer List (by reference)
 - o VA National CAD Standard CTB Table (by reference)
- PG-18-5 Equipment Guide List (by reference)
- H-18-8 Seismic Design Handbook (by reference)
- PG-18-9 Space Planning Criteria, and VA-Space & Equipment Planning System
- PG-18-10 Design Manuals (by discipline, Architectural; Asbestos Abatement; CPM Schedule and Risk Management; Electrical; Elevator; Equipment; Estimating; Fire Protection; HVAC; Interior Design; Lighting Design; Physical Security and Resiliency; Plumbing; Signage and Wayfaring; Site; Steam Heating, Hot Water and Outside Distribution Systems; Structural; Sustainable Design; Telecommunications and Special Telecommunications Systems) (by reference)
- PG-18-12 Design Guides (graphical, by function) (by reference)
- PG-18-13 Barrier Free Design Standard (by reference)
- PG-18-14 Room Finishes, Door, and Hardware Schedule
- PG-18-15 Minimum Requirements for A/E Submissions (by reference):
 - o Volume C – Minor and NRM Projects (by reference)
 - o Fire Protection Engineer – Qualifications & scope services (by reference)
 - o Subsurface Investigation Study – Use to determine site seismic vulnerability (by reference)
 - o Design Review Checklists

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

- PG-18-17 Environmental Planning Guidance (by reference)
- Critical Path Method Design Manual (by reference)
- VA Alerts (by reference):
 - o Standards Alerts (by reference)
 - o Design Alerts (by reference)
- Manual for Preparation of Cost Estimates (by reference)
- Whole Building Design Guide (by reference)

4.2 Energy Requirements for all New Construction, Major & Minor Renovation Projects (ASHRAE Standard 90.1-2007 Energy Standard for Buildings):

4.2.1 Major and minor Construction:

All new major & minor construction projects shall be designed to achieve an energy consumption level that is at least 30% below the level achieved under ASHRAE Standard 90.1-2007, if life-cycle cost effective. Use Appendix G of ASHRAE Standard 90.1-2007 to document the energy savings.

Should the 30% reduction in energy consumption prove not to be life-cycle cost effective, then the A/E shall evaluate alternative designs at 5% successive decrements in order to identify the most energy efficient design that is life-cycle cost effective.

The following parameters shall be used for performing the analysis:

- 20 year life-cycle period for system comparisons
- Use Public domain programs such as TRACE, E-CUBE, Carrier E20-II, Energy Plus, etc.
- 3% Discount Factor; and
- Neither method shall include taxes, nor insurance while computing cost.

4.2.2. Major and minor renovations and Major Equipment Replacements:

For major renovations: Shall include any renovation where an entire area is "gutted" and rebuilt, regardless of funding source (Major, Minor, NRM or CSI). Any replacement of central HVAC system or changes in air distribution shall be considered a "major Renovation."

Reduce the energy cost budget by 20% below pre-renovations 2003 baseline. A/E shall estimate 2003 baseline energy consumption before the renovation and compare it to the proposed design after the renovation, and document the 20% savings. The primary unit for energy budget reporting is the British Thermal Unit (BTU) per square foot of the area to be renovated. The A/E shall develop the energy budget as required in ASHRAE 90.1-2004, Appendix G, using the same parameters outlined above for new construction.

For NRM and CSI Projects: Where a small portion of a building, and only architectural treatments, or simple equipment replacement is planned and the renovation will have little to no impact on the central

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

HVAC System, or energy use within the renovated area, the A/E shall design all renovated areas to comply with ASHRAE Standard 90.1 -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 NRM and CSI projects.

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.

4.2.3 Renewable Energy Resources: For any work, renewable (geothermal, heat recovery, wind, PV solar, solar hot water, etc.) shall be evaluated for life-cycle cost effectiveness.

5. Design Budget:

5.1 A/E is responsible to develop a design that can be built within budget and function as intended without change orders. The design must be based on the reality of existing site conditions and not solely on "As-Built" drawings. The A/E as part of their site investigation is responsible for confirming all existing conditions that may affect the project construction.

5.2 Cost Estimating: A/E shall be responsible, as part of the Quality Assurance Plan, to develop procedures for tracking estimated construction costs throughout the project design. Cost estimates submitted as part of the submission requirements shall not be used as the sole method of meeting this requirement. The A/E shall notify the Project Engineer when estimated construction costs exceed the construction budget. The A/E shall be responsible for proposing alternates to bring the project cost estimate within the construction budget. A/E shall modify design elements as necessary to keep the project cost estimate within the construction funding level. These changes shall be made at no additional cost to the Government.

5.3 Construction Budget: \$1,000,000

5.4 Deduct Alternates: Shall be utilized in the best interest of the Government for market condition variations to maximize the use of available Government funds. The Government shall select the proposed alternates from the A/E recommendations. Deduct Alternates shall not be used to bring the projected project costs within construction funding. These alternates are designed to assure a contract award and are in addition to the requirement to have a project design and estimate at or below construction funding. The A/E shall incorporate deduct alternates totaling at least **10%** of the construction budget amount into the project and whatever deduct alternates that are required to reduce the cost estimate to the budget amount. The deduct alternates shall be clearly identified in the specifications General Requirements section and on the drawings.

5.5 Add Alternates: Shall not be used.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

6. Design Phases:

6.1 Conceptual with Alternatives: Refer to Supplement A and B. Working with the VA Medical Center's project team (Project Engineer and User Group) the A/E shall propose conceptual needs and requirements with proposed alternatives for the planned scope of work. This task is an iterative process requiring multiple proposals and revisions developed during site meetings.

6.2 Schematics: Refer to Supplements A, B, C. A/E shall develop specific design needs and requirements with proposed alternatives. These documents are to be developed from the documents, meeting minutes and recommendations made during the conceptual phase. Any existing utilities and/or equipment which are to be incorporated into the project design shall be reviewed and evaluated to assure that they are indeed there and are in sufficient quantity and condition to do so. Documents for this task define project requirements based on the planned scope of work. All required functional requirements shall be identified and incorporated into the project. All Architectural and Engineering requirements shall be identified and incorporated into the project. A/E shall provide an evaluation of the coordination of the drawings between disciplines; identification of errors, omissions or conflicts found within or between drawings and specifications.

6.3 Design Development: Refer to Supplements A, B, C. Any existing utilities and/or equipment which are to be incorporated into the project design shall be further reviewed and evaluated to assure that they are indeed there and are in sufficient quantity and condition to do so. Documents for this task define project requirements based on the approved scope of work. These documents are to be developed from the documents, meeting minutes and recommendations made during the schematics phase. All required functional requirements shall be identified and incorporated into the project. All Architectural and Engineering requirements shall be identified and incorporated into the project. A/E shall provide an evaluation of the coordination of the drawings between disciplines; identification of errors, omissions or conflicts found within or between drawings and specifications. A/E shall provide an evaluation of schedule to meet operating plan, project phasing and market conditions which may affect bidding. It is expected that at the completion of this phase marks the completion of the data gathering portion of the project. The A/E shall have obtained all information required (including site visits) to proceed directly the preparation of Construction Documents.

6.4 Construction Documents: Refer to Supplement C. The A/E shall develop complete drawings and specifications and other documents necessary for the bidding and construction of this project. These documents are to be developed from the documents, meeting minutes and recommendations made during the design development phase. A/E shall perform an evaluation of the coordination of the drawings between disciplines; identification of errors, omissions or conflicts found within or between drawings and specifications. A/E shall provide an evaluation of schedule to meet operating plan Invitation for Bids and Award dates, project phasing, and market conditions which may affect bidding.

6.5 Special Remarks: Cost estimates shall incorporate construction related issues which include but are not limited to materials, systems and construction techniques. Design documents review, analyses and recommendation of cost estimates covering labor, materials, equipment, general conditions and requirements developed for the project. Estimates shall allow for incorporation of review comments, which are within the Statement of Work.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

7. Submittals and Performance Schedule:

7.1 Deliver Submission Documents to the VA Boston Healthcare Project Engineer. The performance period will be project specific and will be specified with each scope of work.

7.2 Submission Materials and Schedules: Refer to Supplement B. Reproduction, mailing and delivery time is inclusive to the stated durations.

7.3 Government Review, Comment Resolution, Meeting Minutes: The VA will review all submittals identified under this contract for functional and aesthetic relationship. The VA review may consist of written and/or oral comments at the discretion of the VA. VA review of the A/E's work shall not be construed by either party to relieve the A/E from any requirements of this scope of work; **the A/E is responsible for all design work.** The A/E shall submit written responses to the VA's oral and written design review comments; these written responses shall be within seven (7) calendar days of the VA's comments; and these responses shall explain the action the A/E will take for each comment. The A/E will be responsible for taking minutes at meetings and submitting them to the project engineer for concurrence within seven (7) calendar days of the meeting. Both parties will discuss these comments, if necessary, and attempt to resolve any unsettled issues that may arise from the review. Time for reproduction and mailing is inclusive to the stated durations.

7.4 The A/E may choose to perform work, at its own risk, during the Government review and comment resolution period, however, comments resulting from that review must be incorporated into the design prior to the next submittal. In the event a subsequent design phase is not authorized, the A/E shall incorporate all available review comments into the design to complete the current phase.

7.5 Construction Execution:

Construction Documents to Bidders Date: To Be Determined (TBD)

Bid Opening Date: TBD

Actual Construction Contract Award: TBD

Anticipated Construction Duration: TBD

Construction Completion Date: TBD

8. Authorized Changes: The A/E shall only accept instructions and/or directions from the assigned Project Engineer/Contracting Officers Representative or VA Contracting Officer. Changes in the project scope of work must be authorized by the VA Contracting Officer.

The following Attachments are included as part of this A/E Statement of Work:

- Attachment 1 – Project Design Schedule
- Attachment 2 - Parking Plan Revised

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

- Attachment 3 - Site Features Plan page 4 518-12-04 Woodard & Curran 5/17/2013
- Attachment 4 - Asbestos and Lead Survey Report Bedford Building 04_2-15-11_Final, Mabbett and Associates Inc
- Attachment 5 - Asbestos and Lead Survey Report Bedford Building 07_2-15-11_Final, Mabbett and Associates Inc
- Attachment 6 - Asbestos and Lead Survey Report Bedford Building 08_2-15-11_Final, Mabbett and Associates Inc
- Attachment 7 - Asbestos and Lead Survey Report Bedford Building 61_2-15-11 Final, Mabbett and Associates Inc.
- Attachment 8 - Asbestos and Lead Survey Report Bedford Building 62_2-15-11 Final, Mabbett and Associates Inc.
- Attachment 9 - Asbestos and Lead Survey Report Bedford Building 80_2-15-11 Final, Mabbett and Associates Inc.
- Attachment 10 Building 4 Basement floor plan
- Attachment 11 Building 7 Basement floor plan
- Attachment 12 Building 7 First Floor plan
- Attachment 13 Building 8 Basement floor plan
- Attachment 14 Building 61 Basement floor plan

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

SUPPLEMENT "B"

A/E SUBMISSIONS DELIVERABLES OF DESIGN REVIEW MATERIAL

FIRST PHASE REVIEW (2 submissions/meetings) (Conceptual – Preliminary User Group Meetings & Field Surveys) (per meeting)

- 1 hard copy of Full size (size D drawing) and one half size sets of PDF preliminary layout plans for all concepts
- 1 electronic set of pdf and AutoCad with BIM individual drawings
- 2 Sets of conceptual estimates in hard copy and 1 set of electronic copies in MS Excel and PDF with proposed alternates per meeting
- Detailed cost estimates (1 hard copy set and 1 electronic set in MS Excel and PDF)
- 1 hard copy set and 1 electronic set of Design Engineering Narrative/Analysis (Word and PDF)
-

SECOND PHASE REVIEW (30% Submittal – Schematics)

- 1 electronic set of AutoCad with BIM and PDF schematic drawings
- 1 hard copy set of full size (size D drawing) bound schematic layout plans/elevations/building sections
- 1 hard copy set of half size bound schematic layout plans/elevations/building sections
- 1 hard copy set and 1 electronic set of Design Engineering Narrative/Analysis, including Hazardous Material Testing Reports
- 1 electronic set of MS Word draft outline specifications
- 1 hard copy set of draft outline specifications in 3-ring binders
- Detailed cost estimate (1 hard copy set and 1 electronic set in MS Excel and PDF)
- Preliminary code review for all disciplines. 1 hard copy set and 1 electronic set in MS Word and PDF

THIRD PHASE REVIEW [60% Submittal – Design Development (DD)]

- 1 electronic set of AutoCad (bound) with BIM and PDF
- 1 hard copy set of full size (size D drawing) bound drawings
- 1 hard copy set of half size bound drawings
- 1 electronic set of MS Word specifications
- 1 hard copy set of specifications in 3-ring binders
- Detailed cost estimate (1 hard copy set and 1 electronic set in MS Excel and PDF)
- 1 hard copy sets of draft phasing plans (11X17)
- 1 electronic set of draft phasing plans

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

- 1 hard copy set and 1 electronic MS Word and PDF set of Updated code review for all disciplines
- 1 hard copy set and 1 electronic set of Design Engineering Narrative/Analysis
- 1 electronic set of MS Word and PDF Fire/Life Safety Review.
- Code review for all disciplines. 1 hard copy set and 1 electronic set in MS Word and PDF

FOURTH PHASE REVIEW [95% Submittal – Construction Documents (CD)] **(NOTE: 95% Submittal is considered to be the A/E's 100% design completion)**

- 1 electronic set of AutoCad (bound) with BIM and PDF
- 1 hard copy set of full size (size D drawing) bound drawings
- 1 hard copy set of half size bound drawings
- 1 electronic set of MS Word specifications
- 1 hard copy set of specifications in 3-ring binders
- Detailed cost estimate (1 hard copy set and 1 electronic set in MS Excel and PDF)
- 1 hard copy sets of phasing plans (11X17)
- 1 electronic set of phasing plans
- 1 hard copy set and 1 electronic MS Word and PDF set of Report on design parameters that meet Sustainability and energy requirements
- 1 hard copy set and 1 electronic MS Word and PDF set of Updated code review for all disciplines
- 1 hard copy set and 1 electronic set of Design Engineering Narrative/Analysis
- 1 electronic set of MS Word and PDF Fire/Life Safety Review
- 1 hard copy set in MS Word and 1 electronic set in PDF of A/E memo addressing A/E Peer review
- Code review for all disciplines. 1 hard copy set and 1 electronic set in MS Word and PDF
- 1 electronic set of MS Word and PDF Fire/Life Safety Review

FIFTH PHASE REVIEW (100% Submittal – Bid [Final] Documents)

- 1 electronic set of AutoCad (bound) with BIM and stamped (by Registered Architect and Professional Engineer) PDF drawings.
- 1 hard copy set of full size (size D drawing) bound drawings with Registered Architect and Professional Engineer stamps
- 1 hard copy set of half size bound drawings
- 1 MS Word and PDF 1 electronic set of MS Word specifications
- 1 PDF set of MS Word specifications (individual files and consolidated file)
- 1 hard copy set of specifications in 3-ring binders

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

- Detailed cost estimate (1 hard copy set and 1 electronic set in MS Excel and PDF)
- Detailed cost estimate (1 hard copy set and 1 electronic set in MS Excel and PDF)
 - 1 hard copy sets of phasing plans (11X17)
 - 1 electronic set of phasing plans
 - Code review for all disciplines. 1 hard copy set and 1 electronic set in MS Word and PDF

SIXTH PHASE REVIEW (Project Close Out Submittal – “As-Built” Construction Documents)

- 1 electronic set of AutoCad (bound) with BIM and stamped (by Registered Architect and Professional Engineer) PDF As-Built drawings.
- 1 hard copy set of approved full size (size D Drawing) As-Built drawings with Registered Architect and Professional Engineer stamps

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

SUPPLEMENT “C”

A/E MINIMUM SUBMISSION REQUIREMENTS

Table-of-Contents

<u>I.</u>	<u>GENERAL</u>	23
A	INTRODUCTION	2
B.	<u>A/E RESPONSIBILITIES:</u>	24
C.	<u>SUBMISSION POLICY:</u>	24
D.	<u>QUALITY ASSURANCE/QUALITY CONTROL (QA/QC):</u>	24
E.	<u>ADDITIONAL SERVICES:</u>	25
F.	<u>CRITICAL PATH METHOD PHASING MEETINGS</u>	26
<u>II.</u>	<u>SUBMISSIONS</u>	26
A.	<u>SITE DEVELOPMENT:</u>	26
B.	<u>STRUCTURAL</u>	29
C.	<u>ARCHITECTURAL</u>	30
D.	<u>INTERIOR DESIGN</u>	34
E.	<u>EQUIPMENT</u>	35
F.	<u>FIRE PROTECTION</u>	35
G.	<u>PLUMBING</u>	39
H.	<u>SANITARY</u>	40
I.	<u>HVAC</u>	41
J.	<u>ELECTRICAL</u>	45
K.	<u>AUTOMATIC TRANSPORT</u>	49
L.	<u>ASBESTOS ABATEMENT</u>	51
N.	<u>PHASING</u>	53
O.	<u>ESTIMATING</u>	53
P.	<u>SPECIFICATIONS</u>	55
Q.	<u>FINAL BID DOCUMENTS</u>	56

**A/E SUBMISSION INSTRUCTIONS FOR
MINOR AND NRM CONSTRUCTION PROGRAM
MEDICAL CENTER PROJECTS**

GENERAL

A. INTRODUCTION

1. This document contains information and minimal submission requirements for contract documents specified in the A/E contract.
2. Coordinate all activities with the VA Medical Center (VAMC). Hold informal meetings (upon mutual consent of the VA and the A/E) at the VAMC to discuss the design and related issues. Continue to expand contacts by telephone, rough sketch studies and other means of communication with the purpose of finalizing a general design approach to be followed.
3. Final approved Schematic documents shall be the basis for the development of the Design Development phase. Likewise, final approved Design Development documents shall be the basis for the development of the Construction Documents phase. The VAMC must approve any changes from each set of documents before the A/E proceeds to the next phase.
4. VA will review all submittals for functional and aesthetic relationships. However, no further functional decisions are anticipated after the Design Development phase.
5. Provide at each submission, a Design Engineering Narrative/Analysis for each technical discipline (e.g., architectural, mechanical, fire protection, etc.) which describes the intent of each discipline.
6. Provide computations and sizing calculations for electrical, mechanical (HVAC, plumbing, 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 with 95% Contract Documents.
7. Provide for the following design alternate prices:
 - a. Green Globes, LEED registration and certification
 - b. Number of site inspections during CPS

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

A/E RESPONSIBILITIES:

1. Contract documents shall meet or exceed the requirements of this document.
2. The A/E is responsible for producing a complete set of drawings, design narrative/analysis, calculations, sample boards, and specifications in accordance with professional standard practices and VA criteria. Each A/E discipline shall utilize the VA design manuals, standard details, construction standards, and any applicable BIM documents/details that may be available at start of design via the VA resources on-line.
3. A/E shall conduct coordination meetings between A/E technical disciplines before submitting material for each VA review and provide minutes of the meetings to VAMC.
4. A/E shall provide a checklist of all submittals, certifications, tests, and inspections required per drawing and specification section as a part of the 95% and 100% submissions.

SUBMISSION POLICY:

1. There is a Schematic* submission, a Design Development (DD**) submission, and a Construction Document (CD***) submission indicated in this guide. The VAMC may alter the submission requirements depending upon the complexity of the project by adding or deleting certain reviews. Where additional reviews might be required, the VAMC will issue, at their discretion, a detailed "Statement of Task" or supplemental instructions to the A/E, which would be provided at the time of solicitation for a fee proposal.
2. At each submission, the A/E shall date all material and present the designs on VA standard size drawings that are appropriately labeled, "SCHEMATIC SUBMISSION", "DESIGN DEVELOPMENT SUBMISSION", OR "CONSTRUCTION DOCUMENT SUBMISSION", in large block letters above or beside the VA standard drawing title block. In each submission, the A/E shall incorporate the corrections, adjustments, and changes made by VA at the previous review.

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC):

In an effort to reduce construction change orders due to design errors and omissions, the A/E shall develop, execute, and demonstrate that the project plans and specifications have gone through a rigorous review and coordination effort. The requirements are as follows:

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

1. Fee Proposal: Provide an outline of the actions that your firm will take during the design process along with an associated fee.
2. Two Weeks after Receipt of the Notice To Proceed: Submit a detailed QA/QC Plan describing each step that will be taken during the development of the various phases of design. Each step shall have an appropriate space where a senior member of the firm can initial and date when the action has been completed. This work shall happen independently and in conjunction with a separate peer review as noted herein. The QA/QC Plan shall also contain the following:
 - Identification and discussion of all organizational and technical interfaces
 - Design team members and their areas of responsibility
 - Team members responsible for checking the design
 - Team members responsible for checking the electronic files
 - Team members responsible for reviewing and submitting the required VA Design Alerts and Quality Alerts
 - Project Schedule showing key milestones and review periods
3. 100% Submittal: Submit the completed QA/QC Plan along with the latest marked-up documents (plans, specifications, etc.) necessary to ensure that a thorough review and coordination have been completed.
4. It is expected that oversights/errors will be at a minimum and will be picked up prior to the final 100% construction documents being issued. Design errors mean change orders and time delays which could negatively affect the project.
5. The A/E's may be charged for any errors that occur by their failure to properly design and coordinate the complete design package.
6. The A/E is responsible for developing and performing quality assurance reviews of all work to confirm that proper criteria, regulations, laws, codes, principles and professional procedures have been used. This includes work performed by subcontractors and subconsultants. The VA will review project submissions, but the review is general in nature and shall not be considered as part of the A/E's Quality Control Plan and/or Quality Assurance.
7. The A/E shall certify at each submission in writing that he/she has performed quality assurance reviews of that submission.

ADDITIONAL SERVICES:

As a new project, additional design services should not be required. Design services shall include costs for testing, etc. However, if additional services are necessary to be performed by consultants, submit criteria for the work to be performed to the VA CO as soon as possible. Upon approval of the criteria, submit proposals and qualifications of

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

at least three firms being considered for the work in accordance with the contract procedures (CP1) of the contract, together with a proposal from the recommended firm and a brief justification for the additional work not anticipated and selection of the consultant, for VA approval.

CRITICAL PATH METHOD PHASING MEETINGS

1. If required and prior to submission of Schematic material, the A/E shall meet with the VAMC's Project Manager to discuss and outline phasing requirements for the project. These phasing requirements shall describe the general sequence of the project work, estimated project duration, and what Government constraints will exist that will influence the Contractor's approach to the construction project. The A/E shall be responsible for recording the phasing requirements. It is anticipated that phasing will be required for connection of the new building to campus "tunnel system". As noted herein, provide a conceptual phasing plan that confirms the intent of the Master Plan.
2. Submit a phasing narrative and phasing plans (on reduced size plans) within two weeks after each phasing meeting to the VAMC Project Manager. VA will review these submission(s) and return comments to the A/E within two weeks of receipt. The A/E will then use this information in preparing their schematic, design development, and construction document submissions.

SUBMISSIONS

A. SITE DEVELOPMENT: Submit the following for Civil Engineering and Landscape Design:

Site Development:	Conceptual*	Schematics**	DD***	CD
Narrative	✓			
Analysis of site	✓			
Circulation study	✓			
Phasing analysis	✓	✓		
Parking analysis	✓	✓		
Development concept showing proposed buildings and structures	✓	✓		
Landscape drawings with plant groupings		✓		
Topographic, utility, and landscape survey	✓			
Demolition plan		✓	✓	✓
	Layout plan showing location of:			

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

Site Development:	Conceptual*	Schematics**	DD***	CD
• Building and structures	✓	✓	✓	✓
• New site infrastructure		✓	✓	✓
• Roads	✓	✓	✓	✓
• Fire Access	✓	✓	✓	✓
• Parking	✓	✓	✓	✓
• Accessible spaces			✓	✓
• Van spaces			✓	✓
• Mechanical and electrical equipment on grade		✓	✓	✓
• Future expansion	✓	✓		
• Service area(s)			✓	✓
• Entrances and exits		✓	✓	✓
• Walks		✓	✓	✓
• Inlets			✓	✓
• Contractor's staging area			✓	✓
• Vertical and horizontal road alignment			✓	✓
• Paving joint patterns			✓	✓
Grading plan showing:				
• Existing contours		✓	✓	✓
• Proposed contours		✓	✓	✓
• Spot elevations at structure corners, entrances, equipment pads, etc.			✓	✓
• First floor elevations			✓	✓
• Rim and invert elevations on storm drainage fixtures			✓	✓
• Erosion and sediment control			✓	✓
Rock excavation (quantity)			✓	✓
Planting plan showing:				
• List of plant material		✓	✓	✓
Site details			✓	✓
Landscape plans and details			✓	✓
Signage plan and schedule			✓	✓
Specifications			✓	✓

* Submit site and landscape plans at an appropriate scale to show all work involved.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

** Submit site and landscape plans at same scale as topographic/utility survey incorporating all of the revisions required by comments from schematics.

*** Submit fully dimensioned, complete, and coordinated site and landscape plans incorporating all revisions required by comments from the design development phase.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

B. STRUCTURAL: Submit the following:

Structural:	Conceptual	Schematics*	DD**	CD***
Narratives for design options	✓			
Three alternative structural systems for typical bays ¹		✓		
Supporting calculations ²		✓	✓	✓
Cost estimates for each system ³		✓		
Recommend preferred system		✓		
Column locations		✓		
Shear load resisting elements ⁴		✓		
Boring location plan ⁵		✓		
Structural plans			✓	✓
Sections			✓	✓
Details			✓	✓
Size/location of:				
• Columns			✓	✓
• Beams			✓	✓
Lateral load resisting elements			✓	✓
Load bearing walls			✓	✓
Slabs			✓	✓
Foundations			✓	✓
Elevations				✓
Schedules				✓
General notes				✓
Boring logs				✓
Subsurface investigation report				✓
Estimated quantity of rock				✓
Specifications				✓

* Submit, as a minimum, a single line layout for at a scale not less than 1:100 (1/8 inch). Submit a complete double line layout of areas of critical importance, at a scale of 1:50 (1/4 inch) including equipment.

** Submit minimum 1:100 (1/8 inch) scale floor plans, new and renovated, incorporating all of the revisions required by comments from schematics.

*** Submit fully dimensioned, complete, and coordinated 1:100 (1/8 inch) scale floor plans, incorporating all revisions required by comments from the design development phase.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

B. NOTES:

1. When only one structural system is possible due to other project requirements, include an explanatory statement and submit only that structural system.
2. Include vertical and lateral load design for CD submission.
3. Include foundation and fireproofing.
4. Indicate existing utilities and structures within, adjacent, or contiguous to the new construction.
5. Upon approval of the subsurface investigation criteria, submit qualifications of at least three consultants being considered for the work together with the proposal of the consultant recommended as most qualified.

C. ARCHITECTURAL: Submit or show the following:

Architectural:	Conceptual	Schematics*	DD**	CD***
	Location of:			
• Rooms ^{1,12}	✓	✓	✓	✓
• Doors		✓	✓	✓
• Corridor(s) ²	✓	✓	✓	✓
• Basic column grid/sizes		✓	✓	✓
• Expansion and seismic joints		✓	✓	✓
• Electrical closets		✓	✓	✓
• Equipment rooms		✓	✓	✓
• Signal and telephone closets		✓	✓	✓
• Mechanical shafts and space		✓	✓	✓
• Stair(s)	✓	✓	✓	✓
• Ramp(s)			✓	✓
• Elevator(s), if applicable	✓	✓	✓	✓
• Automatic Conveyances, if applicable	✓	✓	✓	✓
	Floor Plans/Drawings:			
• All floors	✓	✓	✓	✓
• Penthouse		✓	✓	✓
• Roof plan	✓	✓	✓	✓
• Pipe basement			✓	✓
• Pipe tunnel			✓	✓
• Reflected ceiling ³			✓	✓

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

Architectural:	Conceptual	Schematics*	DD**	CD***
• Equipment floor plans 1:50 (1/4 inch) scale ⁴			✓	✓
• Demolition plans ⁵			✓	✓
• Egress and rating Diagrams ¹⁰			✓	✓
• Exterior building elevations ⁸	✓	✓	✓	✓
• Wall sections ^{11,13}			✓	✓
• Building sections ^{11,13}		✓	✓	✓
• Construction details			✓	✓
• Drafting symbols, abbreviations, and general notes			✓	✓
• Door, window, and louver schedules				✓
• Interior details, elevations, sections		✓	✓	✓
• Finish schedule			✓	✓
• Graphics and signage				✓
Other deliverables:				
Code review		✓	✓	✓
Exterior colors and materials		✓	✓	
Sample boards for exterior materials, products, and finishes		✓	✓	
Room names and numbers ⁶	✓	✓	✓	✓
Program net/designed net ⁷	✓	✓	✓	✓
Exterior dimensions/total building gross area	✓	✓	✓	✓
Size and shape of all departmental functions and services		✓	✓	✓
Finish floor elevations ⁹		✓	✓	✓
Door locations, sizes, and swings			✓	✓
Wall thickness and chase walls			✓	✓
Handrail location/dimensions			✓	✓
Fixed equipment			✓	✓
Equipment elevations and details				✓
Plumbing fixtures		✓	✓	✓
Wheelchair accessible facilities			✓	✓
Finish grades at corners, entrances, exits, platforms and ramps			✓	✓
Fire and smoke rated partitions		✓	✓	✓
Lead-lined and radio-frequency-shielded partitions			✓	✓
Fire extinguisher cabinets			✓	✓

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

Architectural:	Conceptual	Schematics*	DD**	CD***
Spray-on fire proofing (see fire protection)				
Color rendering	✓	✓		✓
Specifications		✓	✓	✓
Lead abatement		✓	✓	✓
Lead abatement specification				✓

* Submit, as a minimum, a single line layout for at a scale not less than 1:100 (1/8 inch). A scale of 1:200 (1/16 inch) is acceptable for architectural floor layout if an entire floor cannot be shown on one sheet. Submit a complete double line layout of areas of critical importance, at a scale of 1:50 (1/4 inch) including equipment.

** Submit minimum 1:100 (1/8 inch) scale floor plans, new and renovated, incorporating all of the revisions required by comments from schematics.

*** Submit fully dimensioned, complete, and coordinated 1:100 (1/8 inch) scale floor plans, incorporating all revisions required by comments from the design development phase.

C. NOTES:

1. Use lines between spaces to indicate the centerline of the partition (for schematics only).
2. Along the corridor, the line shall represent the corridor side of the partition.
3. Indicate ceiling mounted equipment, lighting fixtures, air diffusers, registers, tracks, and other significant elements.
4. Identify all equipment for each room. Indicate and coordinate all equipment with the Equipment Guide List (Program Guide 7610) and Activated Equipment List. Use VA standard symbols and notation to distinguish between contractor-furnished and installed (CC), VA-furnished contractor-installed (VC), VA-furnished and installed (VV), and relocated (R) equipment. Equipment floor plans are not required for the offices, consultation rooms, classrooms, conference rooms, and waiting rooms within the above departments. Draw equipment details which are necessary for major decisions, though complete detailing is not required for this submittal.
5. Indicate existing finish schedule and notes on plan.
6. Label as required for schematic drawings. Coordinate new room numbering with medical center.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

7. Use the same names on drawings as those used in the space program. Provide area figures in fractional form, e.g., 400/390. Indicate space provided, but not called for in the space program, as: -/390.
8. If the project requires exterior work, show all facades indicating massing, proposed fenestration and the building relationship to adjacent structures and the finish grade. Show all significant building materials, including their colors, any proposed roof top mechanical equipment, architectural screens, skylights, and stacks on the elevation drawings. If building is designed for future expansion (vertical and/or horizontal), delineate elevations with and without the future expansion. If project is an addition, show elevations of the existing building in sufficient detail to illustrate the relationship between the new and existing in terms of scale, material, and detail.
9. Define the relationship of the finish ground floor to finish grade at major entrances and docks.
10. Provide full code review based on IBC, NFPA and associates references for commercial construction. Indicate construction including fire resistance rating, building materials and systems, etc.
11. Define building configuration. Draw sections at the same scale as floor plans, normally 1:100 (1/8 inch). If the building abuts an existing structure, indicate in the section how the new floor elevations align with existing.
12. Identify psychiatric areas where special considerations are required to ensure the safety of patients (e.g. hard ceilings, safety glazing, etc.).
13. Indicate new building components and systems, such as window design, roofing system, special entryways, building "skin", and any special architectural elements for the project.
14. Indicate all building systems, materials, and future expansion, if applicable.
15. Submit a drawing for all which is part of the construction contract.
16. Format provided in SPECIFICATIONS. If there is no VA master specification, develop contract specification that is in compliance with regulations of the Environmental Protection Agency.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

D. INTERIOR DESIGN: Submit the following:

Interior Design:	Schematics*	DD**	CD***
Written interior design concept ¹	✓		
Illustrate overall design solution ²	✓		
Material and finish samples boards with rendered enlarged plans and elevations	✓		
Sketches	✓		
Design solution for interior spaces:			
• Perspectives	✓	✓	
• Keyed finish and furniture Plans with schedules		✓	✓
• Details		✓	✓
• Elevations		✓	✓
• Sections		✓	✓
• Casework plans, elevations and sections		✓	✓
• Interior design details, elevations, and sections		✓	✓
• Millwork details			✓
• Wayfinding		✓	✓
• Floor patterns		✓	✓
• Wall patterns		✓	✓
• Lighting		✓	✓
• Signage		✓	✓
• Handrails		✓	✓
• Bumper guards		✓	✓
Specification section 09050		✓	✓
Edited carpet and wallcovering specifications		✓	✓
Specifications			✓

* Submit, as a minimum, a single line layout for at a scale not less than 1:100 (1/8 inch). Submit a complete double line layout of areas of critical importance, at a scale of 1:50 (1/4 inch) including equipment.

** Submit minimum 1:100 (1/8 inch) scale floor plans, new and renovated, incorporating all of the revisions required by comments from schematics.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

*** Submit fully dimensioned, complete, and coordinated 1:100 (1/8 inch) scale floor plans, incorporating all revisions required by comments from the design development phase.

D. NOTES:

2. Provide a document of data collected in interior design programming. Include collection and analysis of data from the VAMC project coordinator and interior designer. Data includes, but is not limited to the following: existing interior and exterior design and materials, light, safety, patient profile, customer's "vision" or desired image, public vs. private spaces, complete signage package, goals of customer, relationship to existing facilities, future expansion/renovation plans, regional influences, etc.
3. Discuss and illustrate the overall design solution for the primary areas of the project using marked-up floor plans, loose sketches, and material and finish samples. Use broad categories of materials, finishes, color palettes, patterns, textures, and scales. Separately group all major neutral background materials and finishes that will be used and discuss how they will be integrated with all other materials and finishes on the project. Include all primary and secondary corridors, typical patient and toilet rooms, lobbies, atriums, eating spaces, chapels, waiting rooms, and exam rooms. Show the relationship among departments and functions, and between public and private spaces.

E. EQUIPMENT: Submit the following:

Equipment:	Schematics*	DD**	CD***
Equipment (on architectural drawing)	✓	✓	✓
Activation Equipment List (Excel format)		✓	✓
Specifications			✓

* Submit, as a minimum, a single line layout for at a scale not less than 1:100 (1/8 inch). Submit a complete double line layout of areas of critical importance, at a scale of 1:50 (1/4 inch) including equipment.

** Submit minimum 1:100 (1/8 inch) scale floor plans, new and renovated, incorporating all of the revisions required by comments from schematics.

*** Submit fully dimensioned, complete, and coordinated 1:100 (1/8 inch) scale floor plans, incorporating all revisions required by comments from the design development phase.

F. FIRE PROTECTION: Submit the following:

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

Fire Protection:	Schematics*	DD**	CD***
Fire protection narrative: ¹			
• Code review	✓		
• Fire and smoke separation	✓		
• Fire sprinkler/standpipe system	✓		
• Water supply available/max. demand	✓		
• Water flow testing results	✓		
• Fire alarm systems ²	✓		
Existing to be modernized	✓		
Base loop system for interface of new construction	✓		
• Kitchen extinguishing systems, if applicable	✓		
• Size of air handling unit	✓		
• Exit paths from each zone	✓		
• Distances to stairs	✓		
• Occupancy of each area	✓		
• Exit calculations for each floor	✓		
• Smoke control features	✓		
Floor Plans/Drawings: ^{3 & 4}			
• Sprinkler zones		✓	✓
• Fire alarm zones		✓	✓
• Smoke zones		✓	✓
• Building water supply		✓	✓
• Interior sprinkler supply lines		✓	✓
• Standpipes		✓	✓
• Fire extinguisher cabinets		✓	✓
• Fireproofing of structural members		✓	✓
• Sprinkler/standpipe riser supply piping		✓	✓
• Termination of sprinkler main and inspector test drains		✓	✓
• Sprinkler alarm valves		✓	✓
• Waterflow and tamper switches		✓	✓
• Sprinkler system fire department connections		✓	✓
• Sprinkler design hazards per NFPA 13		✓	✓
• Exit signs and emergency lighting		✓	✓

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

Fire Protection:	Schematics*	DD**	CD***
<ul style="list-style-type: none"> Occupied areas not protected by automatic sprinklers 		✓	✓
Calculations	✓	✓	✓
Estimated capacities for proposed air handling units in cubic meters (cubic feet) per minute		✓	✓
Location of:			
<ul style="list-style-type: none"> Fire alarm system 		✓	✓
<ul style="list-style-type: none"> Annunciator panels 		✓	✓
<ul style="list-style-type: none"> Pull stations 		✓	✓
<ul style="list-style-type: none"> Flow switches 		✓	✓
<ul style="list-style-type: none"> Audio-visual devices 		✓	✓
<ul style="list-style-type: none"> Smoke detectors 		✓	✓
<ul style="list-style-type: none"> Duct smoke detectors 		✓	✓
<ul style="list-style-type: none"> Smoke dampers 		✓	✓
<ul style="list-style-type: none"> Fire dampers 		✓	✓
<ul style="list-style-type: none"> Fire alarm risers⁵ 		✓	✓
<ul style="list-style-type: none"> Exit signs 		✓	✓
<ul style="list-style-type: none"> Emergency lighting 		✓	✓
<ul style="list-style-type: none"> Fire sprinklers 		✓	✓
<ul style="list-style-type: none"> Standpipes 		✓	✓
<ul style="list-style-type: none"> Fire hydrants 		✓	✓
<ul style="list-style-type: none"> Post indicator valves 		✓	✓
<ul style="list-style-type: none"> Sectional valves 		✓	✓
<ul style="list-style-type: none"> Fire extinguisher cabinets 		✓	✓
<ul style="list-style-type: none"> Electromagnetic door hold open devices 		✓	✓
Wall sections indicating fire resistive ratings		✓	✓
Excavation plan signage		✓	✓
Door and window schedule with fire rating or fire rated glazing			✓
Zoning of each fire alarm initiating device			✓
Details:			
<ul style="list-style-type: none"> Stairwell sign, if applicable 			✓
<ul style="list-style-type: none"> Annunciator panel 			✓
Interconnection of fire alarm system with:			
<ul style="list-style-type: none"> Smoke dampers 			✓
<ul style="list-style-type: none"> Air handlers 			✓

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

Fire Protection:	Schematics*	DD**	CD***
• Elevator controls, if applicable			✓
• Kitchen fire extinguishing, if applicable			✓
• HVAC system with smoke duct detectors			✓
Single line riser diagram for fire alarm system			✓
Height/configuration of storage racks and shelving			✓
Specifications			✓

* Submit, as a minimum, a single line layout for at a scale not less than 1:100 (1/8 inch). Submit a complete double line layout of areas of critical importance, at a scale of 1:50 (1/4 inch) including equipment.

** Submit minimum 1:100 (1/8 inch) scale floor plans, new and renovated, incorporating all of the revisions required by comments from schematics.

*** Submit fully dimensioned, complete, and coordinated 1:100 (1/8 inch) scale floor plans, incorporating all revisions required by comments from the design development phase.

F. NOTES:

2. Indicate NFPA 220 and UBC fire resistive rating of the building, NFPA 101 occupancy type, and fire protection code analysis to access compliance with NFPA 101.
3. Determine type, features, age, reliability, compliance with present day codes, capacity, zoning, supervision, control panel and power supplies, initiating devices and circuits, and auxiliary functions for existing fire alarm system. Indicate manufacturer, model number, voltage, and wiring style of existing alarm systems and devices. Provide recommendations for the proposed fire alarm work.
4. Provide information to meet Joint Commission requirements; e.g. location of all fire rated barriers, smoke barriers, exit signs, fire extinguishers, manual pull stations, smoke detectors, and sprinkler flow switches. Show all interim life safety measures such as temporary systems Fire Alarm, Sprinkler, and Smoke.
5. At DD Submission, add room names, room numbers, door locations and swings, smoke and fire rated partitions, sprinkler/standpipe risers to floor plans. Identify psychiatric areas on drawings so areas for institutional type heads are identified.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

Add location of all valves (post indicator, sectional) and backflow preventer if provided.

6. Show new equipment and/or the necessary changes involved if modification to the existing system is required.

G. PLUMBING: Submit the following:

Plumbing:	Schematics*	DD**	CD***
Narrative:			
• Existing plumbing systems to be used and necessary modifications	✓	✓	✓
• New plumbing systems	✓	✓	✓
Floor Plans/Drawings:			
• Room names	✓	✓	✓
• Identify			
New plumbing fixtures w/VA numbering system	✓	✓	✓
Existing equipment		✓	✓
New equipment		✓	✓
New medical gas outlets		✓	✓
Plumbing piping	✓	✓	✓
• Size of pipe		✓	✓
• Equipment schedule		✓	✓
• Fire & smoke partitions	✓	✓	✓
• Demolition plans		✓	✓
• Riser diagrams			✓
• Legend, notes, and details			✓
Location and size of sprinkler riser and standpipes (see fire protection)		✓	✓
Location of emergency eyewash and shower equipment		✓	✓
Calculations (equipment & piping)		✓	✓
List of Required Contract Specifications		✓	
Contract Specifications			✓

* Submit, as a minimum, a single line layout for at a scale not less than 1:100 (1/8 inch).

** Submit minimum 1:100 (1/8 inch) scale floor plans, new and renovated, incorporating all of the revisions required by comments from schematics phase.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

*** Submit fully dimensioned, complete, and coordinated 1:100 (1/8 inch) scale floor plans, incorporating all revisions required by comments from the design development phase. Submit a complete double line layout of areas of critical importance, at a scale of 1:50 (1/4 inch).

H. SANITARY: Submit the following:

Sanitary:	Schematics*	DD**	CD***
Narrative:			
• Existing sanitary systems: underground water, sanitary sewers, storm sewers, & fuel gas with sources, disposal methods, storage pressures, condition, etc.	✓		
• New sanitary systems	✓		
• Circulation study to assess emergency vehicle access	✓		
Utility Plans/Drawings showing existing and new sanitary systems:			
• Size of pipes	✓	✓	✓
• Invert elevations of sewers	✓	✓	✓
• Locate/size			
Pumps	✓	✓	✓
Storage facilities	✓	✓	✓
Treatment equipment, if applicable	✓	✓	✓
Fire hydrants		✓	✓
Sectional and post indicator valves		✓	✓
Backflow preventer		✓	✓
• Profiles of sanitary & storm sewers		✓	✓
• Demolition Plans		✓	✓
• Legend, notes, and details			✓
Point of connection to sprinkler system	✓	✓	✓
Calculations		✓	✓
List of specifications		✓	
Contract Specifications			✓

* Submit utility drawings at same scale as provided for Site Development drawings.

** Submit utility drawings at same scale as provided for Site Development drawings, incorporating all of the revisions required by comments from the schematics phase.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

*** Submit utility drawings at same scale as provided for Site Development drawings, incorporating all of the revisions required by comments from the design development phase. Submit legend, notes, and details at a scale not less than 1:100 (1/8 inch).

I. HVAC: Submit the following:

HVAC:	Schematics*	DD**	CD***
Narrative:			
• Description of HVAC systems	✓		
• Equipment for each functional space	✓		
• Life cycle cost analysis ¹	✓		
Tentative location/sizes:			
• Mechanical equipment room	✓		
• Principal vertical shafts	✓		
Block layout of equipment	✓		
Louvers: ²			
• Outside air		✓	✓
• Exhaust air		✓	✓
• Relief air		✓	✓
Engineering calculations ³	✓	✓	✓
Selection of HVAC equipment		✓	✓
Catalog cuts of equipment		✓	✓
Room by room heating and cooling loads		✓	✓
Zone by zone heating & cooling loads		✓	✓
Building block heating & cooling loads		✓	✓
Psychometric chart for air handling unit		✓	✓
Coil entering and leaving conditions		✓	✓
Fan motor heat gains		✓	✓
Consumption of humidification loads		✓	✓
Sound/acoustic analysis		✓	✓
Room-by-room air balance charts ⁴		✓	✓
Chilled water plant: ⁵			
• Quantity and type of chillers		✓	✓
• Capacity in tons of refrigeration		✓	✓
• Electrical equipment		✓	✓
Heating system:			
• Total heating load		✓	✓
• Domestic hot water load		✓	✓

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

HVAC:	Schematics*	DD**	CD***
Narrative:			
• Humidification load		✓	✓
• Equipment steam demand		✓	✓
• Zoning of heating system		✓	✓
HVAC floor plan: ⁶			
• Main supply, return and exhaust ductwork		✓	✓
• Volume dampers		✓	✓
• Fire and smoke partitions		✓	✓
• Fire and smoke dampers		✓	✓
• Smoke detectors		✓	✓
• Automatic control dampers		✓	✓
• Air quantities for each room		✓	✓
• Air inlets/outlets		✓	✓
• Rises and drops in ductwork		✓	✓
• Expansion loops		✓	✓
• Anchors		✓	✓
• Vales		✓	✓
• Drip assemblies		✓	✓
• Balancing fittings		✓	✓
• Plan/section of mechanical equipment rooms		✓	✓
• Schematic flow and riser diagrams ⁷		✓	✓
• Schematic control diagrams ⁸		✓	✓
• HVAC demolition drawings		✓	✓
• Phasing plan		✓	✓
• Equipment schedule		✓	✓
• Seismic bracing		✓	✓
• VA symbols and abbreviation		✓	✓
• Standard detail drawings			✓
• Automatic temperature control drawings ¹⁰			✓
Selection of			
• Pumps			✓
• Fans			✓
Sizing and selection of			
• Expansion tanks			✓
• Steam to hot water convertor			✓

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

HVAC:	Schematics*	DD**	CD***
Narrative:			
• Heat exchangers			
Sound analysis			✓
Complete selection data			✓
Outside chilled water and condenser water distribution ⁹			✓
Interconnection of HVAC equipment with fire protection equipment (see fire protection)		✓	✓
HVAC specifications			✓

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** Submit minimum 1:100 (1/8 inch) scale floor plans, new and renovated, incorporating all of the revisions required by comments from schematics.

*** Submit fully dimensioned, complete, and coordinated 1:100 (1/8 inch) scale floor plans, incorporating all revisions required by comments from the design development phase.

I. NOTES:

1. Provide specific design recommendations and full back-up data. Include the heating and cooling capacities of each functional area and the block cooling and heating loads for each new and/or existing building.
2. New mechanical equipment will be identified on construction drawings and labeled according to the following naming convention: Bldg# + Floor# + Wing (North/south/east/west) + three digit cumulative sequence number of each type of equipment. (eg. AHU-1 on the 5th floor, North end of building 1 would be AHU-15N001, and so on).
If the equipment will be located on the roof, then the numerical level of the roof will be used for the Floor#.

Before the 100% Design is complete, the VAMC will assign the actual cumulative sequence number of new mechanical equipment. The A/E shall first provide a list of mechanical equipment (usually the mechanical equipment schedule) to the VAMC. The VAMC will then provide to the A/E a new equipment label (changing only the cumulative sequence number for each new mechanical equipment item) and the A/E shall indicate on the construction documents the full identification of the equipment in accordance with this naming/numbering convention.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

3. The locations of these louvers must not allow short circuiting of air from emergency generator exhaust or truck waiting and loading dock areas into air intake etc. Consider factors affecting louver location such as visibility, historical considerations, wind direction, nuisance and health hazard odors (from emergency generator or truck exhausts).
4. Include room-by-room, peak zone-by-zone, and building block heating and cooling loads. Provide a tabulation of steam consumption based on data from all sources. Show correlation between each HVAC zone boundary and architectural floor area correlation between the architectural room numbers and abbreviated/coded room numbers used with computer input data sheets.
5. Show supply, return, exhaust, make-up, and transfer quantities with intended pressure relationships, i.e. positive, negative, or zero with respect to adjoining spaces.
6. Provide pertinent data on accessories such as pumps and cooling tower etc. Show the extent of the outside chilled water and condenser water piping. Clearly show how the piping will be laid in tunnels, trenches, or by direct burial.
7. Show ceiling clearances, at locations where ducts cross each other, by providing 1:50 (1/4 inch) scale local sections. Show all ductwork, and piping 150 mm (6 inch) and larger in double line. Show separate floor plans for air distribution and piping unless waived by VA. Show clearances required for access and maintenance with coil and tube pull.
8. Show typical air handling systems and all hydronic systems with existing capacities and new estimated loads. Verify actual operating conditions and capacities of HVAC systems prior to design.
9. Show control devices, such as, thermostats, humidistats, flow control valves, dampers, freezestats, operating and high limit sensors for all air systems and fluids, smoke dampers, duct detectors etc. Provide a written description of the sequence of operation on the floor plans. Detail the scope of work involved with the Central Engineering Center (ECC) and address if enough spare capacity is available or a new ECC is required. Show a point schedule for analog/digital input/output to be included in ECC.
10. Show pipe sizes and insulation with plans, profile, sections, details, and all accessories, such as, anchors, expansion loops/joints, valves, manholes, capped and flanged connections, interface between the new and existing work (if any). Clearly indicate interferences (if any) with the existing utilities and/or landscape elements on outside piping layout drawings. Show rerouting any utilities, cuttings of roads, pavements, trees, etc., and the extent of new and demolition work. Outside utility drawings shall be based on the study of the latest site drawings,

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

discussions with engineering personnel, and actual site inspection of the existing utility.

11. Show all duct detectors, control valves/dampers static pressure sensors, differential pressure control assemblies, etc., whose actual physical location is critical for the intended sequence of operation on floor plans.

J. ELECTRICAL: Submit the following for electrical and telecommunications:

Electrical:	Schematics*	DD**	CD***
Narratives:			
• Design ¹	✓		
• Life cycle analysis for electrical systems	✓		
Location and size of:			
• Electrical equipment ²	✓		
• Electric closets ³	✓		
• Telephone closets ³	✓		
• Signal closets ³	✓		
• Electrical distribution equipment	✓		
Drawings showing:			
• Electrical plot plan of existing and proposed underground power (including manholes)	✓	✓	✓
• Telephone systems	✓	✓	✓
• Signal inter-building systems	✓	✓	✓
• Proposed electrical system ⁴	✓	✓	✓
• Electric symbols		✓	✓
• Lighting fixture schedule		✓	✓
• Emergency Life Safety Equipment (see fire protection)			
• Symbols, note, abbreviations		✓	✓
List of specialty areas	✓		
Method of short-circuit calculations	✓		
Method of voltage drop and demand calculations	✓		
Utility company correspondence, if applicable	✓		
Utility company requirements, if applicable		✓	✓
Load calculations for normal &	✓	✓	✓

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

Electrical:	Schematics*	DD**	CD***
emergency use			
Drawings:			
• Interior and building Lighting layouts and schedules		✓	✓
• Power (EMP) layouts		✓	✓
• Signal layouts		✓	✓
• Specialty area layouts		✓	✓
• Demolition plans		✓	✓
• Riser diagrams		✓	✓
• Branch circuit wiring (typ.)		✓	✓
• Phasing scheme		✓	✓
• Electrical details			✓
• Smoke partitions and fire alarm zones	✓	✓	✓
• Fire alarm and signal riser diagrams (see fire protection)		✓	✓
Location and size of:			
• Primary distribution switchgear/switchboard		✓	✓
• Engine-generator sets, if applicable		✓	✓
• Substation/padmouted transformer, if applicable		✓	✓
• Manholes		✓	✓
• Location of smoke dampers and duct smoke detectors			✓
• Interconnection of electrical control equipment with HVAC equipment (see fire protection)			✓
• Calculations for emergency generator(s)		✓	✓
• Specifications			✓

* Submit, as a minimum, a single line layout for at a scale not less than 1:100 (1/8 inch). Submit a complete double line layout of areas of critical importance, at a scale of 1:50 (1/4 inch) including equipment.

** Submit minimum 1:100 (1/8 inch) scale floor plans, new and renovated, incorporating all of the revisions required by comments from schematics.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

*** Submit fully dimensioned, complete, and coordinated 1:100 (1/8 inch) scale floor plans, incorporating all revisions required by comments from the design development phase.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

J. NOTES:

1. Include basic assumptions, points of interconnection, impact of new construction to existing electrical distribution system, current demand loading (high voltage switchgear and primary feeder), and projected load of new construction. Propose various feasible electrical systems for project and provide advantages/disadvantages. Address emergency power, including analysis of loading on the existing generators and impacts of new construction.
2. Include means and clearances for installation, maintenance, and removal/replacement of equipment.
3. Electrical, signal and telephone closets must stack vertically if a multi-story building.
4. Include high voltage and low voltage switchgear, transformers and low voltage main and/or distribution panels, branch panels and methods of feeding 277/480 volt and 120/208 volt normal and emergency panels.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

K. AUTOMATIC TRANSPORT: Submit the following, if applicable:

Automatic Transport: <u>IF APPLICABLE</u>	Schematics*	DD*	CD*
Hoistway (arch. dwg.)		✓	✓
Machine room vents (arch. dwg.)		✓	✓
Type of ventilation (mech. dwg.)		✓	✓
Electrical requirements (elect. dwg.)		✓	✓
Drawings: ^{1, 2, & 3}			
• Automatic Transport Systems		✓	✓
• Elevators		✓	✓
• Dumbwaiters		✓	✓
• Other ATS systems		✓	✓
Sizes/dimensions/details:			
• Hoistway enclosures		✓	✓
• Pits		✓	✓
• Pit ladders		✓	✓
• Machine area ladder and railings		✓	✓
• Entrances		✓	✓
• Machine rooms		✓	✓
Locations/dimensions:			
• Elevator cars		✓	✓
• Entrances		✓	✓
• Counterweights		✓	✓
• Trap doors		✓	✓
Location of hoistway vents		✓	✓
Location of steel hoisting beams		✓	✓
Size of machine beams		✓	✓
Size of end reactions		✓	✓
Location/detail of machine beam pockets		✓	✓
Rail loadings		✓	✓
Hydraulic elevator piston pit loads		✓	✓
Details			
• Hoistway entrances for elevators		✓	✓
• Dumbwaiters		✓	✓
• Trash chutes		✓	✓
• Linen chutes		✓	✓
• ETVS		✓	✓
Elevator machine room equipment layout		✓	✓

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

Automatic Transport: IF APPLICABLE	Schematics*	DD*	CD*
Interface with automatic recall and shutdown (see fire protection)			✓
Specifications		✓	✓

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** Submit minimum 1:100 (1/8 inch) scale floor plans, new and renovated, incorporating all of the revisions required by comments from schematics.

*** Submit fully dimensioned, complete, and coordinated 1:100 (1/8 inch) scale floor plans, incorporating all revisions required by comments from the design development phase.

K. NOTES:

1. Include tracking, piping, battery charging areas, blower rooms, queuing areas, cart holding areas, cart washer, central control area, and floor or wall recessed transport control units. Indicate architectural features in areas to be utilized for these systems. Indicate on architectural drawings all the major equipment located in machine rooms, secondary levels, pits, and the areas pertaining to ATS, AGVS and ETVS.
2. Indicate changes required on the architectural drawings where existing transport systems are retained and modified to serve new and existing areas.
3. Provide all electrical criteria (per basic electrical notes and Automatic Transport Design Manual) on electrical drawings.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

L. ASBESTOS ABATEMENT: Submit the following:

Asbestos Abatement:	Schematics*	DD**	CD***
Asbestos abatement report including: 1. Summary results of building records 2. Summary results of station personnel interview 3. determination of materials known to contain asbestos 4. visual inspection of building to determine location and condition of asbestos 5. sample strategy on the extent of asbestos present	✓		
Name and location of qualified laboratory for sample analysis	✓		
Asbestos abatement drawing		✓	
Major Decontamination Areas showing: 1. Limits of sealing off the location 2. Quantities of asbestos material 3. Arrangements for auxiliary rooms 4. Engineering of negative air systems 5. Path of asbestos to loading platform 6. Location and connection to required utilities		✓	
Minor Decontamination Areas showing: 1. location, type, and length of pipe element to be abated by "Glove and Bag" approach 2. Other abatement features		✓	
Summary of: ¹			
• Square meter (feet) of floor space for abatement		✓	✓
• Total linear and square meter (feet) of asbestos to be abated		✓	✓
• Total cost of abatement ²		✓	✓

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

Asbestos Abatement:	Schematics*	DD**	CD***
Asbestos abatement drawings including: 1. restoration of impacted building sub-systems 2. integrated phasing on execution of abatement			✓

* Submit, as a minimum, a single line layout for at a scale not less than 1:100 (1/8 inch). Submit a complete double line layout of areas of critical importance, at a scale of 1:50 (1/4 inch) including equipment.

** Submit minimum 1:100 (1/8 inch) scale floor plans, new and renovated, incorporating all of the revisions required by comments from schematics.

*** Submit fully dimensioned, complete, and coordinated 1:100 (1/8 inch) scale floor plans, incorporating all revisions required by comments from the design development phase.

L. NOTES:

1. Provide a copy of the summary to the construction cost estimator for inclusion as a separate bid item in the project estimate.
2. Include any cost for decontamination of equipment and fixtures.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

SPACE PLANNING

	Schematics	DD	CD
Space-Accounting Summary Table	✓ ¹	✓ ²	✓ ³

M. NOTES:

1. Provide a tabular table with columns entitled Departmental Function, H-7610 Requirements, Approved Space Program [Net Square Meters (Net Square Feet)], Variance Between H-7610 and Approved Space Program, Departmental Conversion Factor, Planned Departmental Gross Square Meters (Feet); column totals; and a Total Project Net to Gross Factor. Also, list separately the area required for additions to the program, unassigned space, major circulation (inter-departmental corridors, stairs, elevators), major mechanical and electrical spaces, exterior walls, connecting corridors to other buildings, space for future mechanical system expansion, and similar special requirements.
2. Update table. Justify in writing substantial deviations from the approved space program.
3. Update table.

N. PHASING: Submit the following:

Phasing:	Schematics	DD	CD
Phasing Narrative	✓	✓	✓
Phasing Plans (on reduced site plans)	✓		
Phasing Diagram	✓		
Phases (marked on full size drawing)	✓		
Written list of systems ¹	✓	✓	✓
Phasing Diagram (drawn on Phasing Plan)		✓	✓
CPM Phasing Plans (full size contract drawings) ²		✓	✓

N. NOTES:

1. Include temporary system by phase, and separate by technical discipline.
2. One drawing may reflect several reduced site plans.

O. ESTIMATING: Submit the following:

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

Estimating:	Schematics	DD	CD
Cost estimate in compliance with Manual for Preparation of Estimates (separate estimates for new construction and alteration work)	✓	✓	✓
Level "A" Summary Sheets for building	✓	✓	
Level "A" Summary Sheets for sitework	✓	✓	
Building gross area computation (new)	✓	✓	
Building gross area computation (alteration work)	✓	✓	
Asbestos abatement		✓	✓
Detailed estimate take-off sheets			✓
Level "B" Summary Sheets for buildings			✓
Level "B" Summary Sheets for sitework			✓
Detail Market Analysis			✓

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

P. SPECIFICATIONS

	Schematics	DD	CD
Specifications (All Disciplines)		✓ ^{1, 2. & 3}	✓ ⁴

1. Submit for all technical disciplines the original VA Master Specification section drafts marked-up with pencil showing the editing for the project. Clearly identify modifications, deletions and insertions. Assure the specification drafts have been edited and tailored in their application to represent accurate coordination between drawings and specifications.
2. When no VA Master Construction Specification exists for a "unit of work", prepare the specification section consistent with VA Master Construction Specifications format.
 - a. Use generic or non-proprietary specifications describing the minimal acceptable product criteria level where no "Standard" exists to define quality and workmanship levels.
 - b. Use applicable "Standards" to define quality and workmanship when these publications exist. List complete designation and title of each publication used in Part 1; follow format in VA Master Construction Specifications for Applicable Publications.
 - c. Do not use proprietary specifications or systems that restrict competition unless authorization in writing has been received from the VA Project Manager for such proprietary specification. See the Federal Acquisition Regulation (FAR) Part 10, Part 14, and Part 36.
 - d. Do not use trade names or manufacturers brand names, except as previously noted.
 - e. When a deviation is requested, define and specify the minimum acceptable levels of essential criteria in descriptive, physical, functional, or performance requirements.
3. Type specifications in final format and content including any desk copy changes made by the VAMC staff at the previous review. Submit a complete set of the typed specifications for review. Include one set of full size final drawings of all disciplines, fully coordinated.
4. Return all draft specifications reviewed at DD review to aid the final bid document review. These draft specifications will later be returned to the A/E.

Project #518-22-101 Barrier Free Restrooms Phase 1, Bedford VAMC
Architect/Engineer (A/E) Statement of Work (Design)

Q. FINAL BID DOCUMENTS

1. Place the seal of the Registered Architect, Registered Landscape Architect, and Professional Engineer responsible for the design and the VAMC Project Director's signature on the Construction Documents.

R. FORMAT OF A/E MATERIAL

Symbol identification of Contract Drawings

- a. Refer to the VHA National CAD Standards Application Guide for the latest application of drawings naming, numbering and prefix designation.

General Notes

- a. Bond prints shall be full-sized.
- b. Bind all drawings into sets in the order of their above classification symbol.
- c. All submitted specifications shall be original, marked-up VA Master Specifications submitted in 3-ring binders. Where no VA Master Specification is available, submit a developed specification.
- d. Submit all materials, packaged and clearly marked by discipline, to the VA CO. However, where a small amount of material is submitted, the drawings may be packaged together for all disciplines as long as the drawings are separated and tagged with the discipline name. Other material may also be consolidated provided they are labeled and can easily be identified and separated.
- e. Material provided unbound will be returned to the A/E. All resubmission costs will be the responsibility of the A/E