SUPPLEMENT "A"

Additional Requirements of Architect/Engineer Services:

1) On-site visits to define the details of the project scope of work meeting the goals of the Veterans Affairs' (VA) project team, and presentation of preliminary layout plans with proposed alternatives.

2) Electronic drawings shall be developed utilizing most up to date VA version of AutoCAD. Each electronic drawing file shall be identified with the drawing number and drawing title.

3) Specifications shall be developed utilizing most up to date VA version of MS Word. Electronic Specification files shall be identified with the specification number and specification section title.

4) Cost Estimates shall be developed utilizing most up to date VA version of MS Excel or RS Means. The cost estimate shall be certified by a professional cost estimator accredited by the American Society of Cost Estimators (ASPE), the Association for the Advancement of Cost Engineering International (AACEi), or similar organization.

5) All computer-generated files shall be IBM compatible and furnished on high quality CD-R disks. Provide in accordance with Supplement "B" sets of drawings (AutoCAD) and specifications (MS Word) and cost estimates (MS Excel/ RS Means). 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 and ZIP files are not acceptable). Provide durable high-quality plastic storage boxes at each submission for long term archiving of the disks by the VA.

6) 95% Design Submission: The 95% design submission shall be a **complete 100% design**. All plans, sections, details, etc. shall be complete at this time. The A/E shall ensure that the 95% design submittal is in fact his/her 100% product, and that it represents a total biddable package. An incomplete 95% design submittal may be rejected by the VA; a rejection will require the A/E to resubmit a 95% design with no additional cost to the A/E.

7) The design consultant must have a PDF writer program to electronically sign material submittals; all Material Submittal Forms will be processed via electronic format with digital signature which utilizes a PDF Writer Program such as Adobe Reader/Writer or Pro V Nuance.

8) Site visits (4 design and 4 construction) as required and/or requested by the VA Contracting Officer and Project Engineer for review and inspection of progress including final tests and inspections.

9) Phasing and Construction Project Schedules shall be developed using most up to date VA version of Microsoft Office Project.

Supplement B to SF 252

Project #: 630A4-26-401
Project Title: MRI AHU Modification

Supplement B defines the minimum requirements of completion for each phase of the project design. This document applies to the design of the MRI AHU Modification project and involves several disciplines.

Provide AE professional services to prepare basis of design, design development drawings, contract drawings, specifications, cost estimates, and construction period services for the Brooklyn VA Medical Center at 800 Poly Pl, Brooklyn, NY for the following items, but not limited to:

Submit with each submission the A/E checklist with comments. See AE submission instruction for minor and NRM Construction programs Program Guide pg-18-15, volume C. http://www.cfm.va.gov/contract/aeDesSubReq.asp. Provide a report to include executive summary, design methodology, options, comparison. Design in accordance with standards and codes mentioned. Provide briefing, design alerts for the function of this space, VA Space planning criteria, HVAC requirements, MEP, phasing plans, commissioning, etc.

Provide services of CIH (if applicable) for asbestos abatement documents, sampling, air monitoring, drawings. A/E must meet and survey the nurses to meet their needs and concerns.

Applicable chapters of VA Master Construction Specifications shall be prepared by the A/E, including any necessary adaptations. VA Construction Standards, H-08-3, shall apply to specific design requirements. Particular attention is called to CD4, "Symbol Identification of Contract Drawings", and CD5, "Contract Drawings Details". Equipment symbols shall be utilized to the greatest extent practicable.

Designs for the accommodations of the physically handicapped shall conform to VA H-08-13, Barrier Free Design Handbook and VA Construction Standard CD-28, Accommodation for the Physically Handicapped.

SPECIFIC REQUIREMENTS:

A. AE shall provide professional services for the MRI AHU Modification project for the Brooklyn VA Medical Center at 800 Poly Pl, Brooklyn, NY in accordance with manufacturer specifications and VA specifications at http://www.cfm.va.gov/til/specs.asp. Work shall meet all VA design guidelines and requirement.

B. N/A

C. Refer to the following attachment for detailed project information and requirement, additional information can be found in VA Technical Information Library (TIL) https://www.cfm.va.gov/til/spec.asp#26 :
   1. Manufacturer spec
      i. N/A
   2. VA TIL Specification

D. All design shall comply with VA Standards & Design Criteria, applicable Federal, State and Local code requirements, NFPA, ASHRAE, ASME, ANSI, JCAHO. AE shall be responsible for complete functional design and provide construction documents meeting all the requirements.

E. The AE shall carefully review all requirements of the latest edition of the Accreditation Manual for Hospitals of the Joint Commission on Accreditation of Hospitals, with respect to design and operating requirements and report all conflicting conditions in writing.

F. The AE shall provide all AE services necessary for preparation of complete construction documents and construction period services. Work includes verification of existing As-Built drawings, preparation of contract drawings & specifications, and detailed cost estimate.

G. The AE shall provide complete contract drawings & specifications including demolition, architectural, plumbing, fire protection, structural and mechanical & electrical drawings for construction.

H. The AE shall provide construction period services to include submittal review; shall also provide response to RFI, attending field meetings, site-visit report, commissioning, and testing procedure review, and prepare As-Built drawings from contractor mark-up.

I. The Contractor shall utilize VA provided Construction Management Platform.

REVIEW REQUIREMENTS

The following are minimum requirements for review purposes only. This does not relieve the Engineering Firm of responsibility to produce a complete set of construction documents and estimates in accordance with industry standard practice and VA criteria.

A. The Engineering Firm shall prepare and coordinate all engineering and site drawings, calculations, specifications and cost estimates. The degree of completion and the stages of submission shall be as specified.

B. For each submission, the Engineering Firm shall incorporate the corrections, adjustments, and changes made by the VA at the previous review. The Engineering Firm shall date all reports, studies, and other submission material. The Engineering Firm shall clearly indicate on the drawing any corrections/adjustments/changes for review.

C. Provide computations and sizing calculations for mechanical and electrical designs. For computerized calculations, submit complete and clear documentation of computer programs, interpretations of input/output and description of program procedures.

D. The Engineering Firm shall submit a construction cost estimate with the drawings at each project submission. This estimate shall show the cost of construction which would be expected to be reflected by the construction contractors' bids, if the bids were submitted on the same day as the estimate. The level of detail for this estimate shall be consistent with the degree of completeness of the drawings being submitted. For detailed elements, "lump sum" or "allowance" figures will not be accepted.

PRELIMINARIES

A. Preliminary drawings for construction projects are a means of identifying alternative approaches to correcting physical and functional deficiencies. The development of these drawings is an interactive process between VA staff and the Engineering Firm to produce a narrative and graphical description of possible program alternatives. As appropriate, the VA will make available prior to contract negotiations a tentative priority list of functional areas which may be included in the project, and a statement task.

B. Preliminary Meeting: Prior to beginning any design work, a preliminary meeting will be conducted between the Engineering Firm and VA staff. At this stage, the scope of work will be finalized and agreed to by all VA services involved in this project. At this point the Engineering Firm will have surveyed the existing facility to verify all existing conditions and become familiar with all deficiencies that need to be corrected. The Engineering Firm will prepare a basis of design and submit it to the Contracting Officer for distribution and approval by the appropriate staff.

C. The Engineering Firm in collaboration with VA staff, will illustrate in sketch form various possible program alternatives and refine them based on continuing interaction with the VA project team. The Engineering Firm will then complete and present alternative architectural solutions which are functionally and architecturally viable for consideration. The VA will select the final concept and subsequently identify the approved scope to be developed in the second preliminary (100%) review stage.

D. The VA considers originality and imaginative design an essential part of the Engineering Firm's responsibility. The total environmental approach is a necessity to all planning. Site, structures, vehicular and pedestrian circulation, open and screened areas and their relationships to each other shall be combined to produce a plan that is functional and aesthetically pleasing.

E. Complete conceptual alternatives must be displayed on the preliminary drawings. The work may include the division of an alternative into distinct parts, each of which has an identified priority. The preliminary drawings must, therefore, be developed so that irrespective of which parts (in priority order) are selected for further development in the Working Drawing phase, the solution shall provide a well designed facility with respect to functional operation, construction phasing, minimized disruption of existing hospital operation, and compatibility with structure and utilities between (1) existing facilities; (2) those for imminent construction; and, (3) those with low priority for future construction.

F. A narrative to accompany the drawings shall identify construction phasing which will be necessary to permit continuous operation of critical hospital operations. In addition, areas of new construction and renovation shall be shown. A detailed listing of submission requirements for phasing is included in a later paragraph.

G. Subsequent to each VA review of the Engineering Firm's work, The Engineering Firm shall incorporate VA recommendations into the Preliminary Drawings.

H. Review Meetings: Review meetings shall be conducted at the end of each design phase. Two (2) weeks prior to each scheduled review meeting (set forth in SP-13 of the contract); submit six (6) copies of all narratives, drawings, calculations and cost estimates to be reviewed by VA staff. The cost estimates shall reflect the level of completeness at each review stage. In addition, the Engineering Firm shall take minutes of the review meeting and submit two copies to the Contracting Officer for distribution to VA staff.

100% PRELIMINARIES

A. LANDSCAPE ARCHITECTURAL

1. No requirement at this submission.

B. ARCHITECTURAL

1. The drawings required by this submittal delineate the one approved scheme from the previous submittal. Submit a layout for all elevators. These drawings shall incorporate all revisions from comments on the previous submittal and should show all elevators, doors, corridors, basic column grid, column sizes, electrical, equipment rooms, shafts, and space.

2. Show preliminary building sections to define building configuration, area and volume. Typical wall sections showing proposed building systems and materials shall be drawn.

3. Using the floor plans, clearly define smoke compartments and exits from each compartment. Also indicate sprinklered areas (if any), location of fire extinguisher cabinets, exit paths and distance to the stair and employee occupancy.

C. INTERIOR DESIGN

1. No requirement at this submission.

D. ARCHITECTURAL SPECIFICATIONS

1. Submit the technical architectural specification sections of VA Master Construction Specifications edited to reflect the scope of work of the project. Coordinate drawings with all changes to the specifications.

E. EQUIPMENT SPECIFICATIONS

1. Submit equipment master specification sections of VA Master Construction Specifications edited to reflect the scope of work of the project. Coordinate drawings with all changes to the specifications.

F. STRUCTURAL

1. No requirement at this submission.

G. SANITARY

1. Submit design narrative prepared in the first review that has been adjusted for the site scheme selected. Include corrections and changes.

2. Using the site scheme selected in the first review, submit a preliminary utility plot plan showing the existing and proposed trunk sewers and the water distribution system in the entire facility. Include locations of connections to existing VA owned utility systems.

H. PLUMBING

1. Submit design narrative prepared in the first review that has been adjusted for the scheme selected. Include corrections and changes that also indicate sprinkler, fire alarm and smoke zones and areas that are presently sprinklered.

I. HEATING, VENTILATION AND AIR CONDITIONING (HVAC)

1. Provide the first version of the room-by-room heating and cooling load calculations. These calculations shall be accompanied with the architectural drawings showing correlation between each HVAC zone boundary and the floor area, and a room schedule showing correlation between the architectural room numbers and abbreviated/coded room numbers used with computer input data sheets. The Engineering Firm shall also provide input manuals for the computer programs with clear indications of the capabilities and limitations of the programs. Show derivation of all "U" factors for building elements based on the actual building construction and published window data. The accuracy and the level of detail of the calculations shall be consistent with the development of the architectural drawings. The Engineering Firm shall update these calculations during subsequent design phases to reflect all changes and availability of additional information. The calculations shall include the following:

   (a) Peak zone-by-zone heating and cooling loads.

   (b) Building block heating and cooling loads.

   (c) Estimated steam consumption from all sources.

   (d) Psychometric chart for each air handling unit showing cooling and heating coil conditions and computation of humidification loads. Show coil entering and leaving conditions and fan motor heat gains for supply and return air fans.

   (e) Room-by-room air balance charts for each air handling unit showing supply, return, exhaust, make-up and transfer air quantities with an intended pressure relationship, that is positive, negative or zero with respect to adjoining spaces.

2. Submit complete engineering calculations and selection of major HVAC equipment, that is, chillers, cooling tower, air handling units, heating and ventilating units,

return and exhaust fans, circulating pumps, etc. Provide catalogue cuts for all selected equipment.

3. Ensure coordination with other disciplines, that is, electrical, plumbing and steam generation by compiling the pertinent information required by them. Information, such as normal and emergency power requirements, steam consumption for all HVAC and kitchen/sterilizer equipment, make-up water requirements, etc., shall be distributed to the respective trades.

4. Submit 1/8 inch scale HVAC floor plans for typical area showing at least main supply, return and exhaust air ductwork with sizes based on the updated calculations. Show ceiling clearances, locations where ducts cross each other, by providing 1/4 inch scale local sections. The ductwork, regardless of sizes and/or complexity of layout and all piping 6 inch size and large, shall be shown in double line. The duct and piping layouts shall also show individual room air distribution and temperature control arrangement for a representative sample of typical spaces, such as patient bedrooms, operating suite,, laboratory areas, conference rooms, etc. Provide separate floor plan drawings for layouts of air distribution and piping systems. This requirement shall be waived only under specific conditions where the layouts of either the air distribution system or piping system are not extensive. Each specific situation shall be reviewed with VA HVAC project engineer for resolution.

5. Provide updated 1/4 inch scale, typical mechanical equipment room plans with resolution of review comments made during previous submission.

6. Update the typical schematic and riser diagrams for air handling systems and hydronic systems by providing quantities and sizes to reflect the latest engineering calculations. Show locations of all exhaust fans. The locations of all major components, with respect to the building floor and each other, should be shown.

7. Provide the scope of work of demolition work by showing the outline of demolition drawings.

8. Show the impact of phasing (if any) on the proposed HVAC system design. Provide a written description of the sequence in which the design and construction work are scheduled to be completed. If the phasing plan requires more than one time testing and balancing of the HVAC system, this fact should be clearly described in the contract documents.

9. Show the extent of the outside chilled water distribution and show clearly as to how the piping shall be laid, that is, in tunnel or trench or direct burial.

10. Update the schematic control diagrams for each type of typical air and hydronic system used for development in previous submission by providing written

description of the sequence of operation on the floor plans. Explain clearly the function and role of each control device and describe the safety/alarms and normal operating controls of each system. Provide a schedule showing electrical interlock of various equipment.

11. Provide a list of the VA Master Specifications to be included in the next submission. Indicate the VA date of issue for each section.

12. Provide the details of the scope of work involved with regard to the central Engineering Control Center (ECC) and indicate the planned capabilities including features of energy management and conservation.

J. ASBESTOS ABATEMENT

1. Prior to this submission of the final exposure assessment report, the CIH shall have completed the following work:

    a. Tasks 1 through 4 according to the "Special Instructions - Asbestos Abatement" document (attached).

2. Submit an exposure assessment report on the impacted areas of the project. Include the following information:

    a. Describe the impacted areas by sketches, room names or other means. Show or describe the location of each sample taken, its composition and identification number.

    b. Classify each impacted space as "Major Abatement", "Minor Abatement" or "No Abatement" areas. a "Major Abatement" area requires full protection measures (sealing off, change room, shower room, etc.), and removal of all asbestos within the limits of the area. A "Minor Abatement" area can be decontaminated with one or more applications of the "glove and bag" approach. A "No Abatement" area requires no abatement work.

    c. For each "Major Abatement" area, identify area location within building, provide quantity and cost estimates of all asbestos within the limits of the area. Quantities are to be in linear feet of pipe and square feet of ceilings and walls. The cost is to be derived from the quantities multiplied by a unit price.

    d. For each "Minor Abatement" area, provide the description, size and location of each pipe element to be decontaminated, include a cost estimate.

    e. Provide a summary of the square feet of floor space for all major and minor abatement areas, the total linear and square feet of asbestos to be abated, the

total cost of abatement and a preliminary schedule of completion. Include in the cost estimate, any cost for decontamination of equipment and fixtures. Provide a copy of the above summary to the construction cost estimator for inclusion as a separate bid item in the project estimate.

f. Provide an assessment on the impact of abatement on building sub-systems such as ceilings, lights, walls, carpets, pipes and equipment. Provide room by room description and estimated quantities of impact items to be replaced (number of lighting fixtures, square feet of ceiling, etc.) and a summary of these quantities. Provide a cost estimate for all impacted items.

g. Provide a signed cover statement.

K. ELECTRICAL

1. Provide a statement of the impact of the new construction to the existing distribution system. Include the projected load of the new construction. The narrative must include the advantages/disadvantages to support the systems as recommended by the Engineering Firm.

2. Provide a sheet for symbols, lighting fixture schedules, notes and abbreviations used at this submission.

3. Submit a clear, concise elementary one-line diagram of the proposed electrical system including all new equipment.

4. Provide a plot plan of the existing electrical distribution system.

L. BARRIER FREE DESIGN

1. No requirement at this submission.

M. FIRE PROTECTION

1. No requirement at this submission.

WORKING DRAWINGS

A. The final approved preliminary plan shall be the basis for the development of the Working Drawings. Any changes from this plan that the Engineering Firm proposes must be approved by the VA Project Manager prior to proceeding with the Working Drawings.

B. All plans will be reviewed for functional and aesthetic relationships. The result of this phase will be a set of design documents defined to the point that no further functional decisions are required.

C. Some of the project elements may not be covered by a VA Master Specification Section. It is the responsibility of the Engineering Firm to develop the final specification requirements for each unit of work introduced into the project. New sections developed by the Engineering Firm shall be in the same format as that used in the VA Master Specifications.

D. Review meetings will be conducted at the end of each working drawing design phase. Two (2) weeks prior to each scheduled review meeting (set forth in SP-13 of the contract), submit six (6) copies of drawings, specifications, and cost estimates for review. The cost estimate will reflect the level of completeness of each stage. After final approval of contract drawings has been received and the packages is ready for bid, submit one set of specification documents, one set of drawings on mylar and one set of drawings on CD. CD files that cannot be edited using AUTO CAD 2006 will be deemed unacceptable.

65% WORKING DRAWINGS

A. LANDSCAPE ARCHITECTURAL

1. No requirement at this submission.

B. ARCHITECTURAL

1. Submit plans with all of the revisions required from reviews in the Preliminary Phase incorporated into the plans.

2. Submit floor plans for each floor, new as well as renovated, showing door locations and swing, smoke and fire rated partitions and fire extinguisher cabinets. Show wall thickness and chase walls. All plans shall show column grid with columns indicated and expansion joints. Indicate and identify fixed equipment. Identify wheelchair accessible facilities.

3. Submit reflected ceiling plans for the entire scope indicating ceiling mounted equipment, lighting fixtures, air diffuser registers, etc.

4. Submit equipment floor plans incorporating comments from previous review meetings. All existing and new equipment to be installed should be identified.

5. Building sections, as needed, to define building configuration. All finish floor elevations should be indicated, as well as interstitial space, if applicable.

6. Submit typical wall sections showing construction, building materials and systems, and proposed sill and head heights of openings.

7. Show drafting symbols and abbreviations per VA standards, general notes and begin drawings for partition, door, window and louver schedules.

8. Submit demolition plans, existing finish schedule and notes, on demolition plan.

C. INTERIOR DESIGN

1. When the project involves an existing building, a proposal that deals with the refinishing of existing spaces must be submitted.

    a. Submit complete finish schedule. All materials and colors should be filled out.

    b. Where existing spaces occur that requires refinishing, be prepared to present and discuss the existing conditions, colors, materials and window treatments.

D. ARCHITECTURAL SPECIFICATIONS

1. Assure the original specification drafts have been edited and tailored in their application to represent accurate coordination between the drawings and specifications.

2. Submit one full set of drawings of all disciplines, fully coordinated.

E. EQUIPMENT SPECIFICATIONS

1. Submit printed master specifications reflecting corrections of previous submittal stage.

F. STRUCTURAL

1. Show necessary typical details correlating architectural and mechanical features.

2. Show sections and details so that construction features can be defined, including the interfacing with new to existing construction.

3. Submit necessary structural sections of the VA Master Specifications edited to reflect the scope of work of the project.

G. SANITARY

1. Add building service piping to preliminary utility plans. Include approximate size of all existing pipe and invert elevations of trunk sewers.

2. Submit calculations.

3. Submit sections of the VA Master Specifications and Details edited to reflect the scope of work of the project. Coordinate drawings with all changes to the specifications.

H. PLUMBING

1. Submit floor plans identifying new plumbing fixtures and existing plumbing fixtures that will be affected by new construction. Provide schedules for equipment on these drawings.

2. Provide equipment calculations.

3. Submit sections of the VA Master Specifications and Details edited to reflect the scope of work of the project. Coordinate drawings with all changes to the specifications.

I. HEATING, VENTILATION AND AIR CONDITIONING (HVAC)

1. Provide engineering calculations of all systems. In addition to the updated room by room heating and cooling calculations, the following additional calculations shall be performed and submitted:

    a. Selection of all pumps.

    b. Selection of all fans.

    c. Selection of all expansion tanks.

    d. Selection of all steam to hot water converters and heat exchangers.

2. Provide selection data, including catalog cuts and calculations, for all HVAC equipment and drawings showing all equipment schedules.

3. Establish coordination requirements with electrical, plumbing, and steam generation by providing revised information (if any) developed since the last submission. In addition, complete coordination with the architectural drawings (Examples: Louvers, ceiling access panels reflected ceiling plans, etc.) and structural drawings (Examples: Operating weights of ceiling and floor mounted equipment, concrete and steel supports, roof and floor openings, etc.).

4. Provide preliminary HVAC demolition drawing showing the extent of demolition work.

J. ASBESTOS ABATEMENT

1. Prepare drawings and specifications for the asbestos abatement work reflecting the exposure assessment report. The drawings shall be separately identified from the rest of the drawings, and shall provide as a minimum the following information:

2. For each "Major Abatement" area show the limits of sealing of, the location and quantities of asbestos material, the arrangements for auxiliary rooms, such as change room, shower room, etc., the engineering of the negative air system, the path of asbestos transportation to the loading platform and location and connection to required utilities.

3. For each "Minor Abatement" area show on plans the exact location type and length of pipe element to be abated by the "Glove and Bag" approach and any other abatement features.

4. Provide a major and minor summary of the square feet of floor space for all abatement areas, the total linear and square feet of asbestos to be abated and the total cost of abatement. Include in the cost estimate any cost for decontamination of equipment

and fixtures. Provide a copy of the above summary to the construction cost estimator for inclusion as a separate bid item in the project estimate.

K. ELECTRICAL

1. Submit a full set of electrical lighting, power and signal floor plans. Submit proposed one-line and riser diagrams of the electrical power distribution system. Final equipment ratings may vary, but all equipment should be located, identified and sized dimensionally for adequate capacity.

2. Provide load calculations.

3. Indicate the electrical equipment to be installed in the electrical closets based on the preliminary riser.

4. Provide demolition plans to indicate the complete electrical work in all areas to be renovated.

5. Provide plans which shall show typical power, signal and lighting layouts for newly constructed and renovated areas.

6. Show on the signal floor plans, using the standard VA Architectural Symbol, the fire alarm/smoke zone indicating smoke compartments and fire alarm zoning.

7. Provide a drawing for all symbols, lighting fixtures, general notes and abbreviations.

8. Submit sections of the VA Master Specifications and Details edited to reflect the scope of work of the project. Coordinate drawings with all changes to the specifications.

L. BARRIER FREE DESIGN

1. Submit plans incorporating comments from the previous review.

M. FIRE PROTECTION

1. Submit plans showing layout of new/relocated equipment incorporating comments from the previous review.

95% WORKING DRAWINGS

1. The 95% Working Drawing phase involves the production of complete drawings, specifications, and other documents necessary for the bidding and construction of the project. Also included at this phase are the final detailed cost estimate, the final phasing plan and the construction schedule.

2. It is the Engineering Firm's responsibility to provide a quality set of documents. Related documents shall be complete, fully coordinated and ready for reproduction for contract.

3. Prior to reproduction for issue for construction bids, the Engineering Firm shall make any changes to the documents identified as necessary.

4. Submit a complete set of applicable VA Master Specifications edited to reflect the scope of work of the project. Also, submit copies of any architectural specifications prepared by the Engineering Firm from any source other than VA Master Specifications. Ensure the specifications have been edited and tailored in their application to represent accurate coordination between the drawings and specifications.

A. LANDSCAPE ARCHITECTURAL

1. The coordination of the Construction Documents is part of the quality control expected from the Engineering Firm. Related documents shall be complete, Fully coordinated and ready for reproduction for contract bidding and construction.

B. ARCHITECTURAL

1. Submit a 100% complete and coordinated set of construction drawings and specifications.

2. Submit fully dimensioned floor plans showing all revisions required by comments from the previous review meetings.

3. Submit interior details.

4. Submit drafting symbols, and abbreviations, general notes and schedules that are complete and coordinated with all contract documents.

5. Submit a complete and coordinated finish schedule.

6. Submit demolition plans, existing finish schedule and notes, on demolition plans.

7. Submit completed building sections, wall sections and exterior elevations that show finish floor elevations and indicate all building systems and materials.

8. Submit completed reflected ceiling plans for entire buildings, indicating all ceiling mounted equipment, lighting fixtures, air diffusers, etc.

9. Submit equipment plans and details with all revisions from comments on previous submittal.

C. INTERIOR DESIGN

1. Provided 100% completed finish schedule and specifications for all rooms and areas. These shall be fully coordinated between the drawings and specifications.

D. ARCHITECTURAL SPECIFICATIONS

1. Assure the original specification drafts have been edited and tailored in their application to represent accurate coordination between the drawings and specifications.

2. Submit one full set of drawings of all disciplines, fully coordinate.

3. Submit a brief description of work for inclusion in the Pre-Solicitation Notice.

4. Final Bid Document Submittal:

    a. Revise draft specifications to incorporate:

        i. All changes, resolution of conflicts and modifications noted in previous reviews.

        ii. Results of any drawing changes not shown on the drawings that affect the specifications.

        iii. Type the specifications in final format and content including any desk copy changes made by the VA staff at the previous reviews. Submit a complete set of the typed architectural specifications including one full set of final drawings of all disciplines, fully coordinate.

E. EQUIPMENT SPECIFICATIONS

1. Submit typed master specifications in final format and content.

2. Include a set of equipment drawings fully coordinate.

F. STRUCTURAL

1. Include all completed structural drawings. All drawings shall be checked and coordinated with other disciplines prior to submission for review.

G. SANITARY

1. Submit 100% complete drawings to include the following:

    a. Previously submitted drawings that have incorporated comments of the last review.

    b. Legend, notes, and details.

H. PLUMBING

1. Submit 100% complete drawings to include the following:

    a. Previously submitted drawings that have incorporated comments of the last review.

    b. All piping sized.

    c. Plumbing riser diagram plans.

    d. Demolition plumbing floor plans.

    e. Legend, notes and details.

I. HEATING, VENTILATION AND AIR CONDITIONING (HVAC)

1. Provide complete and final engineering calculations of all systems. In addition to the updated room by room heating and cooling calculations, the following additional calculations shall be performed and submitted:

    a. Final selection of all pumps with head calculations based on the actual piping layout and takeoffs, and pressure drop through the equipment selected for the systems.

    b. Final selection of all fans with the fan static pressure calculations based on the actual duct layouts and takeoffs, and static pressure drop through the equipment for all systems.

    c. Sizing and selection of all expansion tanks based on the actual piping layout and volume computation.

    d. Sizing and selection of all steam to hot water converters and heat exchangers based on the flow requirement of each terminal unit, that is, duct mounted reheat coil, box

(air terminal unit) mounted reheat coil, unit heaters, convectors, finned tube radiation, radiant ceiling panels, etc.

e. Sound analysis of various systems and steps taken to ensure compliance with the specified noise levels.

2. Provide complete selection data, including catalog cuts and calculations, for all HVAC equipment and drawings showing all equipment schedules.

3. Complete the coordination requirements with electrical, plumbing, and steam generation by providing revised information (if any) developed since the last submission. In addition, complete coordination with the architectural drawings (Examples: Louvers, ceiling access panels reflected ceiling plans, etc.) and structural drawings (Examples: Operating weights of ceiling and floor mounted equipment, concrete and steel supports, roof and floor openings, etc.).

4. Submit 1/8 inch scale HVAC floor plans for all areas showing all ductwork and piping on separate floor plans. Show all duct/pipe sizes and quantities, that is, air quantities for each room and each air inlet/outlet, expressed in cubic feet per minute (CFM) and fluid quantity, where required, in gallons per minute (GPM). Show all volume dampers, fire dampers, smoke dampers, automatic control dampers, risers and drops in ductwork, air inlet/outlets, etc., on the air distribution floor plans. Show all piping specialties, such as expansion loops, anchors, valves, drip assemblies, balancing fittings, etc. on the piping floor plans. All architectural room names and numbers must be shown on the floor plans along with designated smoke and smoke/fire barriers.

5. Submit 1/4 inch scale HVAC floor plans for all mechanical equipment rooms with at least two cross-sections taken at right angles to each other. Show all equipment located on roof and/or grade.

6. Provide updated design and drawings of the outside chilled water distribution work showing 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). The outside piping layout drawings shall clearly indicate interferences (if any) with the existing utilities and/or landscape elements. The scope of work shall show rerouting any utilities, cuttings of roads, pavements, trees, etc., and the extent of new and demolition work, thus, involved. The outside utility drawings shall be based on the study of the latest site drawings, discussions with engineering personnel and actual site inspection of the existing utility. To determine the actual location of the existing utility, should it become necessary to perform limited excavation, the Engineering Firm shall make necessary arrangements to do so in consultation with the site engineering personnel and project manager.

7. Update all automatic temperature control drawings showing revisions (if any) since the last submission. 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 the operation shall be clearly shown on the floor plans and identified as such. For projects involving a central Engineering Control Center (ECC), provide a point schedule with intended analog/digital input/outputs, graphics capabilities and requirements of the other trades to be included in the ECC. Provide a riser diagram showing locations of all field data gathering panels and their interface with the ECC. The actual location of the ECC and peripherals should be shown on the floor plans.

8. Submit VA standard detail drawings. The details shall be edited to suit the project. Include any special details deemed useful and necessary for the project.

9. Provide complete HVAC demolition drawing showing clearly the extent of demolition work. Indicate major sizes of ductwork and piping to be dismantled. Show capacities and sizes of the existing equipment to be removed. Show clearly, points of connection and disconnection, blankoffs, dead end flanges with isolating valves. Coordinate demolition and restoration work with other disciplines. The revised capacities of the systems affected by the demolition work shall be clearly stated together with additional efforts, if any, involved in testing, balancing and adjusting them.

10. Provide edited sections of the VA Master Specifications. Include all information which is applicable to the project.

J. ASBESTOS ABATEMENT

1. Provide details, sections, notes and other information that is necessary for complete bid documents.

2. Prepare project specifications by editing and modifying VA Master Specifications on asbestos abatement.

3. Provide the drawings and specifications for the restoration of the impacted building sub-systems as an integral part of the overall project design. Provide for replacing of removed asbestos insulation with acceptable non-asbestos insulation, replacing contaminated carpets, replacing old contaminated light fixtures and replacing partially torn down plaster ceilings. Coordinate work with the Engineering Firm.

4. Provide an integrated phasing plan showing how the abatement and the general modification work will be executed. Provide some reasonable cushion between each abatement phase and the following general construction phase to allow for unforeseen delays in abatement completion.

5. Provide a major and minor summary of the square feet of floor space for all abatement areas, the total linear and square feet of asbestos to be abated and the total cost of abatement. Include in the cost estimate any cost for decontamination of equipment and fixtures. Provide a copy of the above summary to the construction cost estimator for inclusion as a separate bid item in the project estimate.

6. Perform Task 5 according to the "Special Instructions - Asbestos Abatement" document (attached).

K. ELECTRICAL

1. Submit 100% complete drawings including legend symbol list, details and schedules.

2. On the electrical one-line diagrams and risers show the final sizes, ratings, feeders and identification of the electrical equipment.

3. Plans shall include any major equipment to be removed and/or relocated. Any equipment, devices or fixtures to remain and be reused shall be shown where necessary for rewiring.

4. Submit the complete final lighting, load and sizing calculations. (ie, transformers, conductors, panelboards, etc.).

5. Indicate the short-circuit current values available at each level of distribution on the one-line and riser diagrams.

6. Submit a full set of floor plans. Show locations of primary distribution switchgear, engine generator sets, unit substations, feeder routing plan and other major pieces of equipment.

7. All floor plans shall have room titles and area functions shown on the drawings. Location of all equipment, lighting fixtures, outlets for power, fire alarm devices, and signal outlets and devices shall be shown.

8. All electrical drawings shall show smoke partitions and fire alarm zones.

9. Phasing and shutdown requirements.

L. BARRIER FREE DESIGN

1. Complete all drawings and specifications. Ensure that every effort to make this facility accessible to handicapped employees and patients has been taken in this design.

M. FIRE PROTECTION

1. Complete all plans and specifications. Ensure compliance with NFPA.

N. PHASING REQUIREMENTS

1. Phasing requirements shall describe the general sequence of the project work, estimated project duration (including allowances for delivery items), and what government constraints will exist that will influence the Contractor's approach to the construction project. In addition, special attention shall be given to asbestos abatement requirements to ensure that the project phasing plan and associated cost are reasonable. Adequate time shall be allocated for the evaluation for asbestos abatement areas in addition to the time to perform the asbestos abatement work that must precede the general construction. The Engineering Firm shall submit the following phasing information:

    a. Phasing Narrative in written form which outlines phasing requirements and sequence with all areas of the project identified as a part of some phase. Each phase description shall include constraints particular to that phase, what other phases that must precede it, and any VA moves which must precede the start of the phase or phases. If equipment and other removable items require storage and relocation by the government, because of asbestos abatement, these requirements shall be listed in the phasing narrative. Special phasing constraints which may be common to the project should be listed at the end of the narrative and not within each individual phase description.

    b. Individual phases shall be outlined and labeled on all drawings including site, architectural, structural, plumbing and electrical drawings. Phases shall be outlined on the submitted full sized drawings.

    c. All systems shall be designed so that, upon completion of a particular phase, the entire area covered by that phase can be occupied by the Medical Center personnel with all systems functioning properly.

100% WORKING DRAWINGS

1. The 100% Working Drawing phase involves the production of complete drawings, specifications, and other documents necessary for the bidding and construction of the project. Also included at this phase are the final detailed cost estimate, the final phasing plan and the construction schedule.

2. It is the Engineering Firm's responsibility to provide a quality set of documents. Related documents shall be complete, fully coordinated and ready for reproduction for contract.

3. Prior to reproduction for issue for construction bids, the Engineering Firm shall make any changes to the documents identified as necessary.

4. The Engineering Firm shall deliver the original contract drawings to the Project Manager for signature, after the previous review comments are incorporated and the contract drawings have been approved. The contract drawings shall bear the seal of the Registered Architect and Professional Engineer responsible for the design.

5. Submit a complete set of applicable VA Master Specifications edited to reflect the scope of work of the project. Also, submit copies of any architectural specifications prepared by the Engineering Firm from any source other than VA Master Specifications. Ensure the specifications have been edited and tailored in their application to represent accurate coordination between the drawings and specifications.

A. LANDSCAPE ARCHITECTURAL

1. The coordination of the Construction Documents is part of the quality control expected from the Engineering Firm. Related documents shall be complete, Fully coordinated and ready for reproduction for contract bidding and construction.

B. ARCHITECTURAL

1. Submit a 100% complete and coordinated set of construction drawings and specifications.

2. Submit fully dimensioned floor plans showing all revisions required by comments from the previous review meetings.

3. Submit interior details.

4. Submit drafting symbols, and abbreviations, general notes and schedules that are complete and coordinated with all contract documents.

5. Submit a complete and coordinated finish schedule.

6. Submit demolition plans, existing finish schedule and notes, on demolition plans.

7. Submit completed building sections, wall sections and exterior elevations that show finish floor elevations and indicate all building systems and materials.

8. Submit completed reflected ceiling plans for entire buildings, indicating all ceiling mounted equipment, lighting fixtures, air diffusers, registers, etc.

9. Submit equipment plans and details with all revisions from comments on previous submittal.

C. INTERIOR DESIGN

1. Provided 100% completed finish schedule and specifications for all rooms and areas. These shall be fully coordinated between the drawings and specifications.

D. ARCHITECTURAL SPECIFICATIONS

1. Assure the original specification drafts have been edited and tailored in their application to represent accurate coordination between the drawings and specifications.

2. Submit one full set of drawings of all disciplines, fully coordinate.

3. Submit a brief description of work for inclusion in the Pre-Solicitation Notice.

4. Final Bid Document Submittal:

    a. Revise draft specifications to incorporate:

        i. All changes, resolution of conflicts and modifications noted in previous reviews.

        ii. Results of any drawing changes not shown on the drawings that affect the specifications.

    b. Type the specifications in final format and content including any desk copy changes made by the VA staff at the previous reviews. Submit a complete set of the typed architectural specifications including one full set of final drawings of all disciplines, fully coordinate.

E. EQUIPMENT SPECIFICATIONS

1. Submit typed master specifications in final format and content.

2. Include a set of equipment drawings fully coordinate.

F. STRUCTURAL

1. Include all completed structural drawings. All drawings shall be checked and coordinated with other disciplines prior to submission for review.

G. SANITARY

1. Submit 100% complete drawings to include the following:

    a. Previously submitted drawings that have incorporated comments of the last review.

    b. Legend, notes, and details.

H. PLUMBING

1. Submit 100% complete drawings to include the following:

    a. Previously submitted drawings that have incorporated comments of the last review.

    b. All piping sized.

    c. Plumbing riser diagram plans.

    d. Demolition plumbing floor plans.

    e. Legend, notes and details.

I. HEATING, VENTILATION AND AIR CONDITIONING (HVAC)

1. Provide complete and final engineering calculations of all systems. In addition to the updated room by room heating and cooling calculations, the following additional calculations shall be performed and submitted:

    a. Final selection of all pumps with head calculations based on the actual piping layout and takeoffs, and pressure drop through the equipment selected for the systems.

    b. Final selection of all fans with the fan static pressure calculations based on the actual duct layouts and takeoffs, and static pressure drop through the equipment for all systems.

c. Sizing and selection of all expansion tanks based on the actual piping layout and volume computation.

d. Sizing and selection of all steam to hot water converters and heat exchangers based on the flow requirement of each terminal unit, that is, duct mounted reheat coil, box (air terminal unit) mounted reheat coil, unit heaters, convectors, finned tube radiation, radiant ceiling panels, etc.

e. Sound analysis of various systems and steps taken to ensure compliance with the specified noise levels.

2. Provide complete selection data, including catalog cuts and calculations, for all HVAC equipment and drawings showing all equipment schedules.

3. Complete the coordination requirements with electrical, plumbing, and steam generation by providing revised information (if any) developed since the last submission. In addition, complete coordination with the architectural drawings (Examples: Louvers, ceiling access panels reflected ceiling plans, etc.) and structural drawings (Examples: Operating weights of ceiling and floor mounted equipment, concrete and steel supports, roof and floor openings, etc.).

4. Submit 1/8 inch scale HVAC floor plans for all areas showing all ductwork and piping on separate floor plans. Show all duct/pipe sizes and quantities, that is, air quantities for each room and each air inlet/outlet, expressed in cubic feet per minute (CFM) and fluid quantity, where required, in gallons per minute (GPM). Show all volume dampers, fire dampers, smoke dampers, automatic control dampers, risers and drops in ductwork, air inlet/outlets, etc., on the air distribution floor plans. Show all piping specialties, such as expansion loops, anchors, valves, drip assemblies, balancing fittings, etc. on the piping floor plans. All architectural room names and numbers must be shown on the floor plans along with designated smoke and smoke/fire barriers.

5. Submit 1/4 inch scale HVAC floor plans for all mechanical equipment rooms with at least two cross-sections taken at right angles to each other. Show all equipment located on roof and/or grade.

6. Provide updated design and drawings of the outside chilled water distribution work showing 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). The outside piping layout drawings shall clearly indicate interferences (if any) with the existing utilities and/or landscape elements. The scope of work shall show rerouting any utilities, cuttings of roads, pavements, trees, etc., and the extent of new and demolition work, thus, involved. The outside utility drawings shall be based on the study of the latest site drawings, discussions with engineering personnel and actual site inspection of the

existing utility. To determine the actual location of the existing utility, should it become necessary to perform limited excavation, the Engineering Firm shall make necessary arrangements to do so in consultation with the site engineering personnel and project manager.

7. Update all automatic temperature control drawings showing revisions (if any) since the last submission. 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 the operation shall be clearly shown on the floor plans and identified as such. For projects involving a central Engineering Control Center (ECC), provide a point schedule with intended analog/digital input/outputs, graphics capabilities and requirements of the other trades to be included in the ECC. Provide a riser diagram showing locations of all field data gathering panels and their interface with the ECC. The actual location of the ECC and peripherals should be shown on the floor plans.

8. Submit VA standard detail drawings. The details shall be edited to suit the project. Include any special details deemed useful and necessary for the project.

9. Provide complete HVAC demolition drawing showing clearly the extent of demolition work. Indicate major sizes of ductwork and piping to be dismantled. Show capacities and sizes of the existing equipment to be removed. Show clearly, points of connection and disconnection, blankoffs, dead end flanges with isolating valves. Coordinate demolition and restoration work with other disciplines. The revised capacities of the systems affected by the demolition work shall be clearly stated together with additional efforts, if any, involved in testing, balancing and adjusting them.

10. Provide edited sections of the VA Master Specifications. Include all information which is applicable to the project.

J. ASBESTOS ABATEMENT

1. Provide details, sections, notes and other information that is necessary for complete bid documents.

2. Prepare project specifications by editing and modifying VA Master Specifications on asbestos abatement.

3. Provide the drawings and specifications for the restoration of the impacted building sub-systems as an integral part of the overall project design. Provide for replacing of removed asbestos insulation with acceptable non-asbestos insulation, replacing contaminated carpets, replacing old contaminated light fixtures and replacing partially torn down plaster ceilings. Coordinate work with the Engineering Firm.

4. Provide an integrated phasing plan showing how the abatement and the general modification work will be executed. Provide some reasonable cushion between each abatement phase and the following general construction phase to allow for unforeseen delays in abatement completion.

5. Provide a major and minor summary of the square feet of floor space for all abatement areas, the total linear and square feet of asbestos to be abated and the total cost of abatement. Include in the cost estimate any cost for decontamination of equipment and fixtures. Provide a copy of the above summary to the construction cost estimator for inclusion as a separate bid item in the project estimate.

6. Perform Task 5 according to the "Special Instructions - Asbestos Abatement" document (attached).

K. ELECTRICAL

1. Submit 100% complete drawings including legend symbol list, details and schedules.

2. On the electrical one-line diagrams and risers show the final sizes, ratings, feeders and identification of the electrical equipment.

3. Plans shall include any major equipment to be removed and/or relocated. Any equipment, devices or fixtures to remain and be reused shall be shown where necessary for rewiring.

4. Submit the complete final lighting, load and sizing calculations. (ie, transformers, conductors, panelboards, etc.).

5. Indicate the short-circuit current values available at each level of distribution on the one-line and riser diagrams.

6. Submit a full set of floor plans. Show locations of primary distribution switchgear, engine generator sets, unit substations, feeder routing plan and other major pieces of equipment.

7. All floor plans shall have room titles and area functions shown on the drawings. Location of all equipment, lighting fixtures, outlets for power, fire alarm devices, and signal outlets and devices shall be shown.

8. All electrical drawings shall show smoke partitions and fire alarm zones.

9. Phasing and shutdown requirements.

L. BARRIER FREE DESIGN

1. Complete all drawings and specifications. Ensure that every effort to make this facility accessible to handicapped employees and patients has been taken in this design.

M. FIRE PROTECTION

1. Complete all drawings and specifications. Ensure compliance with NFPA. Provide hydraulic calculations used to derive the pipe and equipment dimensions and ratings.

N. PHASING REQUIREMENTS

1. Phasing requirements shall describe the general sequence of the project work, estimated project duration (including allowances for delivery items), and what government constraints will exist that will influence the Contractor's approach to the construction project. In addition, special attention shall be given to asbestos abatement requirements to ensure that the project phasing plan and associated cost are reasonable. Adequate time shall be allocated for the evaluation for asbestos abatement areas in addition to the time to perform the asbestos abatement work that must precede the general construction. The Engineering Firm shall submit the following phasing information:

    a. Phasing Narrative in written form which outlines phasing requirements and sequence with all areas of the project identified as a part of some phase. Each phase description shall include constraints particular to that phase, what other phases that must precede it, and any VA moves which must precede the start of the phase or phases. If equipment and other removable items require storage and relocation by the government, because of asbestos abatement, these requirements shall be listed in the phasing narrative. Special phasing constraints which may be common to the project should be listed at the end of the narrative and not within each individual phase description.

    b. Individual phases shall be outlined and labeled on all drawings including site, architectural, structural, plumbing and electrical drawings. Phases shall be outlined on the submitted full sized drawings.

    c. All systems shall be designed so that, upon completion of a particular phase, the entire area covered by that phase can be occupied by the Medical Center personnel with all systems functioning properly.

CONSTRUCTION PERIOD SERVICE

1. Assist in the development of shop drawings, and review submittals for acceptance.

2. Answer questions from prospective bidders about the project design.

3. Draft record (as Built) drawings where necessary.

4. Conduct periodic inspection services. These "site visits" also include a pre-construction conference and a final inspection visit. The Engineering Firm will submit a survey report summarizing the conditions found at the construction site as a result of the site visit.

5. Provide estimates and aid in the development of supplemental agreements amendments to the contract (if necessary).

6. Perform Tasks 6 through 9 according to the "Special Instructions - Asbestos Abatement" document (attached).

ASBESTOS TASKS 1-9

TASK 1:

Inspect project areas suspected of containing asbestos. CIH shall submit a preliminary description of asbestos assessment and abatement problems and solutions. This preliminary report shall include the following:

a. Summary results of review of building records.

b. Summary results of interview of station personnel.

c. Determination of whether any materials used in the building construction are known to contain asbestos. Some trade name materials are known to contain asbestos and should be identified.

d. Results of visual inspection of the building to determine location and condition of asbestos materials.

e. Presentation of sampling strategy that will yield statistically viable conclusion on the extent of asbestos present.

TASK 2:

Sample suspect materials and select a qualified laboratory to perform analysis. Provide the name and location of a qualified laboratory for sample analysis which the CIH intends to utilize.

TASK 3:

Review sample analysis and determine the most appropriate approach to take during construction. At this time the CIH should have collected appropriate samples, selected a qualified laboratory for sample analysis, evaluated sample analysis results to determine adequacy for an assessment report, and ensured that the sample analysis results and number of samples taken are adequate to provide the CIH with confidence that the maximum detection of asbestos has been achieved.

TASK 4:

Submit laboratory analysis and recommended actions. Submit an exposure assessment report on the impacted areas of the project. Include the following information:

a. Describe the impacted areas by sketches, room names or other means. Show or describe the location of each sample taken, its composition, and identification number.

b. Classify each impacted space as "Major Abatement", "Minor Abatement", or "No Abatement" areas. A "Major Abatement" area requires full protective measures - sealing off, change room, shower room, etc; and removal of all asbestos within the limits of the area. A "Minor Abatement" area can be decontaminated with one or more applications of the "Glove and Bag" approach. A "No Abatement" area requires no abatement work.

c. For each "Major Abatement" area, identify area location within building and provide quantity and cost estimates of all asbestos within the limits of the area. Quantities are to be in linear feet of pipe and square feet of ceilings and walls. The cost is to be derived from the quantities multiplied by a unit price.

d. For each "Minor Abatement" area, provide the description, size, location of each pipe element to be decontaminated, and a cost estimate.

e. Provide a summary of the square feet of floor space for all major and minor abatement areas, the total linear and square feet of asbestos to be abated, the total cost of abatement and a preliminary schedule of completion. Include in the cost estimate any cost for decontamination of equipment and fixtures. Provide a copy of the above summary to the construction cost estimator for inclusion as a bid item in the project estimate. Work will be done in phases. Consult with the VA on this so that phasing is reflected in cost.

f. Provide an assessment on the impact of abatement on building sub-systems such as ceilings, lights, walls, carpets, pipes and equipment. Provide room by room description and estimated quantities of impact items to be replaced (number of lighting fixtures, square feet of ceiling, etc.), and a summary of these quantities. Provide a cost estimate for all impacted items.

g. Provide a signed cover statement. This statement shall be in accordance with the "Sample Cover Statement" provided by the VA as a part of the A/E package.

h. Evaluate the removal cost versus the deferral of some asbestos removal. The VA will furnish a CIH with a list of areas asbestos would be abandoned in place. This CIH will then review and make recommendations, and incorporate a final decision into the design.

TASK 5:

Design and specify the appropriate techniques and approaches for the execution of the recommended actions in TASK 4, and submit specifications and drawings. Verify if the State Specification will have to be adhered to.

Prepare drawings and specifications for the asbestos abatement work reflecting the assessment report and paragraph 4(h). The drawings shall be separately identified from the rest of the drawings, could be 1/16" scale plans (if convenient), and shall provide as a minimum the following information:

a. For each "Major Decontamination" area show the limits of sealing off, the location and quantities of asbestos material, the arrangements for auxiliary rooms (such as change room, shower room, etc.), the engineering of the negative air systems, the path of asbestos transportation to the loading platform, the location and connection to required utilities.

b. For each "Minor Decontamination" area, show on plans the exact location type and length of pipe element to be abated by the "Glove and Bag" approach, and any other abatement features.

c. Provide a major and minor summary of the square feet of floor space for all abatement areas, the total linear and square feet of asbestos to be abated and the total cost of abatement. Include in the cost estimate any cost for decontamination of equipment and fixtures. Provide a copy of the above summary to the construction cost estimator for inclusion as a separate bid item in the project estimate.

d. Provide details, sections, notes, and other information that is necessary for complete bid documents.

e. Prepare project specifications by editing and modifying VA master specifications on asbestos abatements.

f. Provide information and data for the restoration of the impacted building sub-systems as an integral part of the overall project design. Provide information and data for replacing the removed asbestos insulation with acceptable non-asbestos insulation. Replacing old contaminated light fixtures and replace partially torn down plaster ceilings.

g. Incorporate comment from the Department of Veterans Affairs, Region 1, Industrial Hygienist. This review is to ensure that VA regulations and policies are adhered to.

h. Provide VA Engineering with an itemized estimate for Tasks 6-9 received as part of Task 2.

TASK 6:

Assist VA in evaluating qualifications of contractor and personnel by establishing minimum qualification requirements for specialization experience, key personnel, standard operating procedures, etc.

TASK 7:

Continuously monitor performance of contractor during abatement work to ensure adherence to abatement design. Monitor air quality in and around work space, worker exposure, operating procedures, respiratory protection systems, the abatement process, and the packing, transportation, and disposal of asbestos. Secure the services of a qualified analytical laboratory, to turn over sample results within 24 hours.

TASK 8:

At the end of abatement and after final cleaning, inspect the work space and perform the required testing to establish the decontamination level specified.

TASK 9:

Provide a certificate to the Resident Engineer certifying that the abatement process was performed in accordance with the best practice, the maximum feasible protection of people and the environment has been achieved during the abatement process, and the impacted space has achieved the VA required decontamination levels.

SUPPLEMENT "C"

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

I. GENERAL

A. INTRODUCTION

1. This document contains information and minimal submission requirements for contract documents specified in the A/E contract.

2. The Department of Veterans Affairs (VA) may contract with an Architect/Engineer (A/E) for any portion of a design: Schematics, Design Development, Construction Documents, or a combination of these.

a. For projects where the VA is contracting for Schematics Documents only, Schematics and Design Development Documents only, or Schematics, Design Development, and Construction Documents, the VA will provide the Design Program (if available), Facility Development Plans (if available), and VA design standards to accompany the Scope of Work for the project.

b. For projects where the VA is contracting for Design Development and Construction Documents only, the VA will provide the Schematics Plans and VA design standards to accompany the Scope of Work for the project.

c. For projects where the VA is contracting for Construction Documents only, the VA will provide the Design Development Plans and VA design standards to accompany the Scope of Work for the project.

3. 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.

4. 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.

5. VA will review all submittals for functional and aesthetic relationships. However, no further functional decisions are anticipated after the Design Development phase.

6. Provide a design narrative/analysis for each technical discipline (e.g., architectural, mechanical, fire protection, etc.) which describes the intent of each discipline with schematic and/or design development submission.

7. 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.

8. Provide individually packaged drawings for each submission to each unit specified in the "Distribution of A/E Materials" section.

9. Submit a complete set of final approved drawings incorporating all revisions, as per Supplement B A/E Submissions of Design Review Material after completion of the Schematics and Design Development stages.

10. At each review stage, the VA's technical reviewer, a value-engineering consultant, or a construction manager will perform a value engineering review.

11. Submit final drawings (Bid Documents) in high quality CD-R disks to be used with the AutoCAD version at the VAMC, PDF file, and 2 hard copies. Submit instructions on the use of the disks along with a complete listing of all layers that are used.

B. 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 receive a copy of their respective VA design manuals, standard details, construction standards, and VA National CAD Standard Application Guide. The AE is responsible for obtaining the NCS.

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 adhere to the approved Memorandum of Agreement (MOA).

5. A/E shall provide a checklist of all submittals, certifications, tests, and inspections required per drawing and specification section.

6. In addition, the A/E shall conduct interim fire protection installation inspections and witness final fire protection equipment testing if needed.

C. 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.

D. QUALITY ASSURANCE/QUALITY CONTROL (QA/QC):

To reduce construction change orders due to design errors and omissions, the Office of Facilities Management has initiated a Quality Assurance/Quality Control program. 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:

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 should have an appropriate space where a senior member of the firm can initial and date when the action has been completed.

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.

E. ADDITIONAL SERVICES:

If additional services (i.e. surveys, soil borings, asbestos surveys, water flow testing, or lead surveys), are necessary to be performed by consultants, submit criteria for the work to be performed to the VAMC Contracting Officer as soon as possible. Upon approval of the criteria, submit proposals and qualifications of at least three firms being considered for the work in accordance with the contract procedures of the contract, together with a proposal from the recommended firm and a brief justification for its selection, for VA approval. A/E should submit survey information for the Schematic Review.

F. CRITICAL PATH METHOD PHASING MEETINGS

A. 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.

B. 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.

G. Risk Assessment

A. The A/E shall meet with the VAMC's Project Manager to discuss and develop Project risk assessment and risk register. The A/E shall be responsible for recording and development the risk assessment and risk register. 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 to update the risk register. Risk assessment and risk register for the project shall be an iterative process, at minimum review shall be perform monthly.

II. SUBMISSIONS

A. SITE DEVELOPMENT: Submit the following as applicable for the project:

Site Development:	Schematics*	DD**	CD***
Design Analysis (Narrative)	✓	✓	✓

Site Development:	Schematics*	DD**	CD***
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:			
• Building and structures	✓	✓	✓
• Roads	✓	✓	✓
• Fire Access		✓	✓
• Parking	✓	✓	✓
• Accessible spaces		✓	✓
• Van spaces		✓	✓
• Mechanical and electrical equipment on grade	✓	✓	✓
• Future expansion	✓		
• Off-site roads	✓	✓	✓
• Off-site utilities	✓	✓	✓
• 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)		✓	✓

Site Development:	Schematics*	DD**	CD***
Planting plan showing:			
• List of plant material	✓	✓	✓
• Limits of irrigation	✓	✓	✓
Site details		✓	✓
Landscape details		✓	✓
Signage plan and schedule		✓	✓
List of Required Specifications	✓		
Specifications		✓	✓
Component catalog cuts	✓	✓	✓

B. ARCHITECTURAL: Submit or show the following as applicable for the project:

Architectural:	Schematics*	DD**	CD***
Location of:			
• Rooms[1]	✓	✓	✓
• Doors2	✓	✓	✓
• Corridor(s)[3]	✓	✓	✓
• 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)	✓	✓	✓
• Automatic Conveyances	✓	✓	✓
Floor Plans/Drawings:			
• All floors (new and renovated)	✓	✓	✓
• Penthouse	✓	✓	✓
• Roof plan	✓	✓	✓
• Pipe basement	✓	✓	✓
• Pipe tunnel		✓	✓
• Reflected ceiling[4]		✓	✓
• Equipment floor plans 1:50 (1/4 inch) scale[5]		✓	✓
• Demolition plans[6]		✓	✓
Room names and numbers[7]		✓	✓

Architectural:	Schematics*	DD**	CD***
Program net/designed net	✓	✓	✓
Exterior dimensions/total building gross area	✓	✓	✓
Size and shape of all departmental functions and services[9]	✓	✓	✓
Exterior building elevations[10]	✓	✓	✓
Finish floor elevations[11]	✓	✓	✓
Door locations, sizes, and swings		✓	✓
Wall thickness and chase walls		✓	✓
Handrail location/dimensions		✓	✓
Fixed equipment		✓	✓
Equipment elevations and details			✓
Plumbing fixtures		✓	✓
Wheelchair accessible facilities		✓	✓
Wall sections[12]		✓	✓
Building sections[13]		✓	✓
Finish grades at corners, entrances, exits, platforms and ramps		✓	✓
Fire and smoke rated partitions[14]	✓	✓	✓
Lead-lined and radio-frequency-shielded partitions[14]		✓	✓
Fire extinguisher cabinets[14]		✓	✓
Spray-on fire proofing (see fire protection)			
Construction details[15]		✓	✓
Drafting symbols, abbreviations, and general notes		✓	✓
Door, window, and louver schedules		✓	✓
Interior details, elevations, sections		✓	✓
Finish schedule[16]		✓	✓
Graphics and signage[17]		✓	✓
Color rendering			✓
Specifications		✓	✓
Lead abatement[18]	✓	✓	
Lead abatement specification[19]		✓	✓
List of Required Specifications	✓		
Specifications	✓	✓	✓
Component catalog cuts	✓	✓	✓
Design Analysis (Narrative)	✓	✓	✓

* 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.

NOTES:

1. Use lines between spaces to indicate the centerline of the partition (for schematics only).

2. Indicate doors with a slash mark.

3. Along the corridor, the line shall represent the corridor side of the partition.

4. Indicate ceiling mounted equipment, lighting fixtures, air diffusers, registers, tracks, and other significant elements.

5. 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), VA-furnished with construction funds [VC(CF) and VV(CF)], 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.

6. Indicate existing finish schedule and notes on plan.

7. Label as required for schematic drawings. Coordinate new room numbering with medical center if needed.

8. Label each service or activity listed in the Project Scope Data of the Design Program and indicate boundaries with a distinctive line. Include the activity code number (see Handbook 7610).

9. Indicate construction including fire resistance rating, building materials and systems, and proposed sill and head heights of openings. Indicate both new and renovated areas on form provided by VA.

10. 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.

11. Identify psychiatric areas where special considerations are required to ensure the safety of patients (e.g. hard ceilings, safety glazing, etc.).

12. Submit a drawing for all which is part of the construction contract.

13. Provide square meters (feet) of lead paint and x-ray shielding to be removed.

14. 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.

C. FIRE PROTECTION: Submit the following as applicable for the project :

Fire Protection:	Schematics*	DD**	CD***
Fire protection Design Analysis (Narrative):[1]			
• Fire and smoke separation	✓	✓	✓
• Fire sprinkler/standpipe system	✓	✓	✓
• Size of fire pumps	✓	✓	✓
• 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	✓	✓	✓
• 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	✓	✓	✓

Fire Protection:	Schematics*	DD**	CD***
• 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		✓	✓
• Occupied areas not protected by automatic sprinklers		✓	✓
Calculations	✓	✓	✓
Estimated capacities for proposed air handling units in cubic meters (cubic feet) per minute		✓	✓
Location of:			
• Fire alarm system		✓	✓
• Annunciator panels		✓	✓
• Pull stations		✓	✓
• Flow switches		✓	✓
• Audio-visual devices		✓	✓
• Smoke detectors		✓	✓
• Duct smoke detectors		✓	✓
• Smoke dampers		✓	✓
• Fire dampers		✓	✓
• Fire alarm risers[5]		✓	✓
• Exit signs		✓	✓
• Emergency lighting		✓	✓
• Fire sprinklers		✓	✓
• Standpipes		✓	✓
• Fire hydrants		✓	✓
• Fire pumps		✓	✓
• Post indicator valves		✓	✓
• Sectional valves		✓	✓
• Fire extinguisher cabinets		✓	✓

Fire Protection:	Schematics*	DD**	CD***
• Electromagnetic door hold open devices		✓	✓
Wall sections indicating fire resistive ratings		✓	✓
Staff sleeping rooms		✓	✓
Excavation plan signage		✓	✓
Door and window schedule with fire rating or fire rated glazing		✓	✓
Zoning of each fire alarm initiating device		✓	✓
Details:			
• Fire pump system (capacity and pressure)		✓	✓
• Elevation and isometric view of fire pump		✓	✓
• Stairwell sign		✓	✓
• Annunciator panel		✓	✓
Interconnection of fire alarm system with:			
• Smoke dampers		✓	✓
• Air handlers		✓	✓
• Elevator controls		✓	✓
• Kitchen fire extinguishing and fire pump system		✓	✓
• HVAC system with smoke duct detectors		✓	✓
Single line riser diagram for fire alarm system		✓	✓
Height/configuration of storage racks and shelving		✓	✓
FP design/plan review by independent Professional FP Engineer			✓
List of Required Specifications	✓		
Specifications	✓	✓	✓
Component catalog cuts	✓	✓	✓

* 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.

NOTES:

1. 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.

2. 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.

3. Provide information to meet JCAHO 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.

4. Show new equipment and/or the necessary changes involved if modification to the existing system is required. Include any recommendations where certain requirements of VA criteria might be waived, in order to allow the existing equipment to be reused.

D. INTERIOR DESIGN: Submit the following as applicable for the project:

Interior Design:	Schematics*	DD**	CD***
Written interior design concept1	✓		
Illustrate overall design solution[2]	✓		
Material and finish samples	✓		
Sketches	✓		
Design solution for interior spaces:			
• Perspectives		✓	✓
• Plans		✓	✓
• Details		✓	✓
• Elevations		✓	✓
• Sections		✓	✓
• Wayfinding		✓	✓
• Floor patterns		✓	✓
• Wall patterns		✓	✓
• Lighting		✓	✓
• Signage		✓	✓
• Handrails		✓	✓
• Bumper guards		✓	✓
Specification section 09050		✓	✓
Finish schedule		✓	✓
Exterior colors and materials		✓	✓
Sample boards for interior and exterior materials, products, and finishes		✓	✓
Edited carpet and wallcovering specifications		✓	✓
List of Required Specifications	✓		
Specifications	✓	✓	✓
Component catalog cuts	✓	✓	✓
Keyed Finish plans		✓	✓
Interior design details, elevations, and sections		✓	✓

* 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.

NOTES:

1. 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.

2. 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. Show the relationship among departments and functions, and between public and private spaces.

E. STRUCTURAL: Submit the following as applicable for the project :

Structural:	Schematics*	DD**	CD***
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[6]	✓	✓	✓
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		✓	✓
List of Required Specifications	✓		
Specifications	✓	✓	✓
Component catalog cuts	✓	✓	✓
Design Analysis (Narrative)	✓	✓	✓

* 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.

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..

F. PLUMBING: Submit the following as applicable for the project:

Plumbing:	Schematics*	DD**	CD***
Design Analysis (Narrative):			
• Existing plumbing systems to be used and necessary modifications	✓	✓	✓
• New plumbing systems	✓	✓	✓
• New or modified water treatment	✓	✓	✓
Floor Plans/Drawings:			
• Room names	✓	✓	✓
• Identify			
Existing plumbing fixtures w/VA numbering system	✓	✓	✓
New plumbing fixtures w/VA numbering system	✓	✓	✓
Existing equipment	✓	✓	✓
New equipment	✓	✓	✓
New medical gas outlets		✓	✓
New laboratory 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, standpipes, and fire pumps (see fire protection)		✓	✓
Location of emergency eyewash and shower equipment		✓	✓
Calculations (equipment & piping)		✓	✓
List of Required Specifications	✓		

Plumbing:	Schematics*	DD**	CD***
Specifications	✓	✓	✓
Component catalog cuts	✓	✓	✓

F. PLUMBING (cont.):

* 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.

*** 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).

G. HVAC: Submit the following as applicable for the project:

HVAC:	Schematics*	DD**	CD***
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		✓	✓
Tabulation of steam consumption		✓	✓
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		✓	✓
• Humidification load		✓	✓
• Equipment steam demand		✓	✓
• Zoning of heating system		✓	✓

HVAC:	Schematics*	DD**	CD***
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		✓	✓
Interconnection of HVAC equipment with fire protection equipment (see fire protection)		✓	✓
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		✓	✓
Selection of			
• Pumps			✓
• Fans			✓
Sizing and selection of			
• Expansion tanks			✓
• Steam to hot water convertor			✓
• Heat exchangers			
Sound analysis			✓
Complete selection data			✓
Outside chilled water and condenser water distribution[9]			✓
Standard detail drawings			✓

HVAC:	Schematics*	DD**	CD***
Automatic temperature control drawings[10]			✓
List of Required Specifications	✓		
Specifications		✓	✓
Component catalog cuts	✓	✓	✓
Design Analysis (Narrative)	✓	✓	✓

* 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.

NOTES:

1. Provide specific design recommendations and full back-up data. Include the heating and cooling capacities of each functional area.

2. 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.

3. Show supply, return, exhaust, make-up, and transfer quantities with intended pressure relationships, i.e. positive, negative, or zero with respect to adjoining spaces.

4. 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.

5. 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.

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

H. ELECTRICAL: Submit the following as applicable for the project:

Electrical:	Schematics*	DD**	CD***
Design Analysis (Narrative):			
• 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	✓		
Utility company requirements		✓	✓
Load calculations for normal & emergency use	✓	✓	✓
Drawings:			
• Lighting layouts		✓	✓
• Power layouts		✓	✓
• Signal layouts		✓	✓
• Specialty area layouts		✓	✓
• Demolition plans		✓	✓
Riser diagrams		✓	✓
Branch circuit wiring (typ.)		✓	✓

Electrical:	Schematics*	DD**	CD***
Location and size of:			
• Primary distribution switchgear/switchboard		✓	✓
• Engine-generator sets		✓	✓
• Substation/pad mounted transformer		✓	✓
• Manholes		✓	✓
Location of smoke dampers and duct smoke detectors		✓	✓
Interconnection of electrical control equipment with HVAC equipment (see fire protection)		✓	✓
Smoke partitions and fire alarm zones	✓	✓	✓
Fire alarm and signal riser diagrams (see fire protection)		✓	✓
Calculations for emergency generator(s)		✓	✓
Phasing scheme		✓	✓
Electrical details		✓	✓
List of Required Specifications	✓		
Component catalog cuts	✓	✓	✓
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.

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.

2. Include means and clearances for installation, maintenance, and removal/replacement of equipment.

3. Electrical, signal and telephone closets must stack vertically.

I. EQUIPMENT: Submit the following as applicable for the project:

Equipment:	Schematics*	DD**	CD***
Equipment (on architectural drawing)	✓	✓	✓
Activation Equipment List (Excel format)		✓	✓
List of Required Specifications	✓		
Specifications	✓	✓	✓
Component catalog cuts	✓	✓	✓
Design Analysis (Narrative)	✓	✓	✓

* 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.

J. STEAM GENERATION: Submit the following as applicable for the project :

Steam Generation:	Schematics*	DD**	CD***
Report on new and existing steam loads[1]	✓		
Life-cycle cost analysis of steam supply alternatives	✓		
Analysis of alternate plant locations	✓		
Life-cycle cost analysis for alternative types of equipment	✓		
Life-cycle cost analysis for heat recovery alternatives	✓		
Data on emissions regulations	✓		
Data on methods of compliance	✓		
Selection of major equipment	✓	✓	✓
Plot plan with new and existing plant locations	✓	✓	✓
Fuel related storage and handling facilities	✓	✓	✓
Alternate plan view layouts of new and existing plant	✓		
Plot plan of steam generating facility[2]		✓	✓
Catalog cuts on equipment from two manufacturers		✓	✓
Plans/sections/locations of:			
• Equipment		✓	✓
• Major piping		✓	✓
• Pipe supports		✓	✓
Demolition		✓	✓
Schematic flow diagrams of all piping systems		✓	✓
Calculations:			
• Equipment sizing	✓	✓	✓
• Major piping systems		✓	✓
• Steam load		✓	✓
• Control and regulating valve		✓	✓
• Flowmeter systems		✓	✓
• Steam trap		✓	✓
• Heating and ventilating system		✓	✓
• Steam piping		✓	✓
Schedules		✓	✓
Equipment lists		✓	✓
Verification of emission regulations		✓	✓

Steam Generation:	Schematics*	DD**	CD***
List of standards and details		✓	
List of Required Specifications	✓		
Specifications		✓	✓
Component catalog cuts	✓	✓	✓
Design Analysis (Narrative)	✓	✓	✓

* 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.

NOTES:

1. Include maximum and minimum summer and winter demands and total annual production. Provide break-down of new steam loads into categories of end use such as building heating, humidification, reheat, domestic hot water, sterilization, line losses, kitchen, and laundry

K. ASBESTOS ABATEMENT: Submit the following as applicable for the project:

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]	✓	✓	✓

Asbestos Abatement:	Schematics*	DD**	CD***
Asbestos abatement drawings including: 1. restoration of impacted building sub-systems 2. integrated phasing on execution of abatement			✓
List of Required Specifications	✓		
Specifications	✓	✓	✓
Design Analysis (Narrative)	✓	✓	✓

* 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.

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.

L. CRITICAL PATH METHOD (CPM): Submit the following:

Critical Path Method (CPM)j:	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)1		✓	✓
CPM Phasing Plans (full size contract drawings)[2]		✓	✓

NOTES:

1. Include temporary system by phase and separate by technical discipline.

2. One drawing may reflect several reduced site plans.

M. ESTIMATING: Submit the following:

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)	✓	✓	
Project Data Sheet 1	✓		✓
Project Data Sheet 1 and 2		✓	✓
Asbestos abatement	✓	✓	✓
Detailed estimate take-off sheets	✓	✓	✓
Level "B" Summary Sheets for buildings		✓	✓
Level "B" Summary Sheets for sitework		✓	✓
Supplement A to SF 252			✓
Detail Market Analysis			✓

N. SPECIFICATIONS

	Schematics	DD	CD
Specifications (All Disciplines)		✓1, 2. & 3	✓4 & 5

1. Comply with the requirements of the VA Manual for Preparation and Issuance of Construction Solicitation and Contract Documents.

2. 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.

3. 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.

4. 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.

5. 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.

O. FINAL BID DOCUMENTS

a. 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. A stamp of the VAMC Project Director's signature will be furnished.

b. Submit updated Department Ratio Chart of Final Bid stage to the VAMC Project Manager.

III. DISTRIBUTION OF A/E MATERIAL

A. SYMBOL IDENTIFICATION OF CONTRACT DRAWINGS

AS - Architectural Drawings (Numbered Only)
HA - Asbestos Removal Drawings
BI - Boring Log Drawings
ES - Electrical Drawings
FA - Fire Protection Drawings
MH - Heating, Ventilating, and Air Conditioning Drawings
PL - Plumbing Drawings
GS - Site Development and Environmental Drawings
CU - Sanitary and Irrigation Drawings
MU - Steam Distribution Drawings
MP - Steam Generation Drawings
SS - Structural Drawings

B. GENERAL NOTES

1. Bond prints shall be full-sized.

2. Bind all drawings into sets in the order of their above classification symbol.

3. All submitted specifications shall be original, unbound, and marked-up VA Master Specifications. Where no VA Master Specification is available, submit a developed specification.

4. Submit all materials, packaged and clearly marked by discipline, to the VA's Contracting Officer. 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.

5. Material provided unbound will be returned to the A/E. All resubmission costs will be the responsibility of the A/E

Distribution of A/E Material

Schematic Submission:

VA Medical Center (VAMC)	Appropriate Network Office*
See Supplement "B" A/E Submissions for Design Review Material	2 complete set

Design Development Submission:

VA Medical Center (VAMC)	Appropriate Network Office*
See Supplement "B" A/E Submissions for Design Review Material	2 complete set

Construction Documents Submission:

VA Medical Center (VAMC)	Appropriate Network Office*
See Supplement "B" A/E Submissions for Design Review Material	2 complete set

*Network Office will coordinate the necessary review with the responsible safety and fire protection person in their network.