

**Department of
Veterans Affairs**

**VA Medical Center Projects
A/E Submission Instructions for
Seismic Upgrade Projects**

Schematics

Department of Veterans Affairs
Washington, DC 20420

FOREWORD

This document states the minimum requirements for each submission in the production of VA Schematics for Seismic Upgrade Projects. It will give VA reviewers and the A/E a clear understanding of what is required of the A/E at each stage of schematics' development.

This document does not relieve the A/E firms of their professional responsibility to produce a correct, complete, and fully coordinated set of documents.

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**A/E SUBMISSION INSTRUCTIONS
FOR SEISMIC UPGRADE PROJECTS**

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A/E SUBMISSION INSTRUCTIONS FOR SEISMIC UPGRADE PROJECTS

I. GENERAL

A. INTRODUCTION

1. This document contains information and minimal submission requirements for the development of schematic design specified in the A/E contract.

2. Project shall seismically upgrade the facility in accordance with VA standards and criteria. Other functional, programmatic and physical upgrades shall be limited to the minimum changes necessary to accomplish the implementation of the seismic corrections.

3. Coordinate all activities between VA Medical Center (VAMC), VA Central Office (VACO) and the A/E. Hold informal meetings (upon mutual consent of the VA and the A/E) at the VAMC, the A/E's office, or the VACO 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. Any changes from each set of documents must be approved by the VA Project Manager before the A/E proceeds to the next phase. VA may engage the services of an IDQ/AE (Indefinite Quantity/Architect-Engineer) to review A/E submissions.

5. All submittals will be reviewed for functional and aesthetic relationships.

6. Provide computations and sizing calculations for electrical, mechanical (HVAC, plumbing, and steam), sanitary, and structural designs. For computerized calculations, submit complete and clear documentation of computer programs, interpretation of input/output, and description of program procedures.

7. Provide individually packaged drawings to each unit specified in the "Distribution of A/E Materials" section. Submit the Medical Center's and the Regional Fire, Safety Engineer's and IDQ/AE material directly. These addresses can be obtained from the VA's Project Manager.

8. Submit a complete set of final approved drawings, incorporating all revisions, within 30 days after completion of the Schematic Design Development.

9. A value engineering review will be performed at each review stage by the VA's technical reviewer, a value-engineering consultant, or a construction manager.

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, 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, and construction standards, and VA National CAD Standards Application Guide. The A/E 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 VA.
4. A qualified fire protection engineer shall be retained by the A/E for the project:
5. A/E shall adhere to the approved Memorandum of Agreement (MOA).

C. SUBMISSION POLICY

There are two Schematics (S1 & S2) submissions indicated in this document. At each submission, all material shall be dated, and designs shall be presented on VA standard size drawings that are appropriately labeled, "SCHEMATIC- S1 SUBMISSION", "SCHEMATIC - S2 SUBMISSION", etc., 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):

In an effort 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; and
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, or lead surveys), are necessary to be performed by consultants, submit criteria for the work to be performed to the VA Project Manager 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 (CP1) of the contract, together with a proposal from the recommended firm and a brief justification for its selection, for VA approval.

F. CRITICAL PATH METHOD - PHASING MEETINGS

If required and prior to submission of Schematic 1 material, the A/E shall meet with the VA's Project Manager, a critical path method (CPM) representative, and medical center representatives 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.

Submit a phasing narrative and phasing plans (on reduced size plans) within two weeks after each phasing meeting to the VA Project Manager. The CPM staff will review the submission and return comments to the A/E within two weeks of receipt. The A/E will then use this information in completing the schematic design.

II. SCHEMATICS

A. GENERAL

1. Schematic drawings for construction projects are a means of identifying alternative approaches to correcting seismic deficiencies. The development of these schematic drawings is an interactive process between the VA central office and medical center staff and the A/E. Based on these discussions the A/E will produce a narrative and graphical description of possible program alternatives. As appropriate, the VA will make available prior to contract negotiations, the following:

- a. Facility Condition Assessment and Space Functional study;
- b. Space Program requirements for functional areas included in the project that are involved in backfilling existing space;
- c. Related VA space planning criteria and functional relationships;
- d. Functional and Physical Design Program, if available;
- e. Evaluation reports to include but not limited to available seismic site evaluation, seismic vulnerability study summary, seismic strengthening study summary, subsurface investigation reports, and as-built structural drawings;
- f. Approved Memorandum of Agreement;
- g. Approved Design Program; and

h. Design Manuals.

The A/E, in collaboration with the VA central office and medical center staff, shall sketch various possible alternatives and refine them based on continuing interaction with the VA project team. The A/E will then complete and present alternative architectural solutions that are functionally viable for consideration. The VA will select the final concept identify the approved scope to be developed in the Schematics #2 review stage. These alternates shall be carefully evaluated to ensure that the programmatic, functional and infrastructure changes proposed are the minimum necessary to implement the seismic corrections.

2. The VA considers originality and imaginative design an essential part of the A/E'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 appropriate to the type of medical service and patient profiles.

3. Close consideration must be given for seismic requirements, site constraints and local critical soil conditions. Evaluate the need for a site specific evaluation for seismic design.

4. Complete conceptual alternatives must be displayed on the Schematic drawings. The work may include the division of an alternative into distinct parts, each of which has an identified priority. The Schematic design must, therefore, be developed so that further development shall provide a well designed facility with respect to functional layout, construction phasing, minimized disruption of existing facility operation, and coordination with structures and utilities.

B. SCHEMATICS 1 [S1]

1. ARCHITECTURAL

a. Analyze impact of seismic correction plan on existing functional layout. Determine minimal acceptable changes necessary to implement seismic corrections.

b. Provide schematic block plans (floor plans) at a scale that will permit an entire floor plan to be shown on one drawing. A neat freehand presentation drawn to scale is acceptable.

c. Show every floor of the building, including the penthouse, a typical interstitial plan, and pipe basement, if included, and identify changes required because of seismic corrections.

- d. Indicate changes in the size and shape of all departmental functions and services in the space program. 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). Show departmental area versus departmental net program area as a fraction (DA/DNPA) for each functional block.
- e. Show changes necessary in primary horizontal and vertical circulation (including material transport), entrances to buildings, main entry point to each functional block, and major mechanical spaces on the drawings to accommodate seismic corrections. Indicate structural grid, proposed location of expansion joints, and special seismic structural features. Clearly distinguish new construction, renovation, and existing construction to remain unchanged.
- f. Provide a schematic section to define building configuration.
- g. Provide all finish floor elevations. Define the relationship of the finish ground floor to finish grade at major entrances and docks.
- h. Submit an architectural narrative explaining each alternate design.
- i. Determine if lead abatement (lead paint, x-ray shielding, etc.) is necessary. If so, provide square meters (feet) of lead paint and x-ray shielding to be removed.

2. ASBESTOS ABATEMENT

- a. Determine if there is asbestos in building and if it will be impacted by seismic corrections.
- b. Submit report to identify areas where asbestos mitigation required.

3. AUTOMATIC TRANSPORT

- a. Analyze impact of seismic correction plan on automatic transport system. Determine minimal acceptable changes necessary to implement seismic corrections.

4. CRITICAL PATH METHOD (CPM)

If required, submit the following including VA comments from discussions and analysis:

- a. Phasing Narrative.
- b. Phasing Plans (on reduced site plans).
- c. Phasing Diagram.
- d. Phases marked on all full size drawings submitted for VA review.

e. Written list of systems, including temporary system by phase, and separated by technical discipline.

5. ELECTRICAL

- a. Analyze impact of seismic correction plan on all electrical systems. Determine minimal acceptable changes necessary to implement seismic corrections.
- b. Provide and resolve the electrical design approach in narrative form. Determine whether the existing service, switchgear, primary feeders, power transformers and distribution equipment are adequate for the seismic corrections for both normal and emergency power systems. Describe extent of utility company work if any is required.
- c. Provide copies of all correspondence and minutes of meetings with the utility company's representatives if these occur.
- d. Show on the project site plan changes to location of incoming electrical power service, manholes, duct lines; etc., and show extent of work with locations of substations and transformers, generators, etc., where modifications or changes are required.
- e. Show all electrical rooms on the Electrical drawings. Show all major electrical equipment and provide electrical ratings. If new electrical, signal and telephone closets are required, they must stack vertically. Provide electrical symbols and schedule sheets where required.

6. ESTIMATING

Submit a construction cost estimate in compliance with the Manual for Preparation of Estimates. Include at least the following:

- a. Level "A" Summary Sheets: For each building and site work. Separate estimate for new construction and alteration work.
- b. Building gross area computations for alteration work.
- c. Local Market Survey

7. EQUIPMENT

No submission is required.

8. FIRE PROTECTION

No submission is required.

9. HEATING, VENTILATING & AIR CONDITIONING

a. Analyze impact of seismic correction plan on all heating, ventilating and air conditioning systems. Determine minimal acceptable changes necessary to implement seismic corrections.

b. Provide estimated heating and cooling requirements of the existing and/or new buildings configurations based on changes in functions or the gross square feet area of each unique function space, that is, patient bedrooms wing, animal research area, laboratories, offices, etc. Coordinate changes in the estimated preliminary steam demand with the A/E submission requirements of the Steam Generation Section.

c. Investigate the availability of utilities, such as natural or propane gas, electricity, etc., to address required changes in the HVAC equipment and provide description of changes required because of seismic corrections.

d. Provide description of the changes to zoning of the spaces for existing HVAC systems. If changes of system are required, state clearly the engineering criteria and rationale used for selecting three different types of HVAC systems for the life cycle cost analysis for each functional space. State clearly all assumptions and parameters to be used in the analysis. If the analysis is scheduled to be performed on a computer, provide the name of the program.

e. Provide description of the impact of seismic corrections on energy conservation goals of the facility. If significant impact is identified, recommend system changes to indicate increased energy usage. State clearly the logic and criteria used in selecting each conservation measure.

10. INTERIOR DESIGN

a. Analyze impact of seismic correction plan on all interior designs. Determine minimal acceptable changes necessary to implement seismic corrections.

11. PLUMBING

a. Analyze impact of seismic correction plan on plumbing systems. Determine minimal acceptable changes necessary to implement seismic corrections.

b. If modernization is involved, describe the existing facilities and make recommendations to replace or reuse fixtures and equipment.

c. Locate and provide approximate sizes of new equipment.

12. SANITARY

- a. Analyze impact of seismic correction plan on sanitary systems. Determine minimal acceptable changes necessary to implement seismic corrections.
- b. Provide changes to existing fuel gas, oxygen, and water sources; disposal methods of sewage and storm water; and proposed fuel gas, water, irrigation, sanitary sewage, and storm water systems. Indicate if existing utilities and equipment can be used for this project. Recommend changes required because of seismic corrections.
- c. Submit plans indicating existing, abandoned, and proposed utilities listed above. Provide approximate size of proposed utilities. Locate roughly where treatment facilities (if required) will be located and areas of lawn irrigation.

13. SITE DEVELOPMENT

- a. Become thoroughly familiar with the medical center site. Provide the following in narrative and graphic format:
 - 1) Phasing analysis to determine impacts of seismic corrections on maintaining hospital routine, ingress/egress of pedestrians and traffic flows, transportation and storage of construction materials, mitigation of air and noise pollution, sequencing of new conflicts, areas of future construction, and parking.
- b. A formal presentation of the above data may be required. The need for the presentation and material to be included will be provided by the VA Project Manager.

14. SPACE PLANNING

Provide a tabular Space-Accounting Summary Table comparing current data with changes caused by seismic corrections with columns entitled Departmental Function, H-7610 Requirements, Approved Space Program [Net Square Meters [Feet (NSF)], Variance Between H-7610 and Approved Space Program, Departmental Conversion Factor, Planned Departmental Gross Square Meters (Feet); column totals; and a Total Project Net to Gross Factor.

15. SPECIFICATIONS

No submission is required.

16. STEAM DISTRIBUTION (OUTSIDE)

- a. Analyze impact of seismic correction plan on outside steam distribution systems. Determine minimal acceptable changes necessary to implement seismic corrections.
- b. Provide a report with the following information as a minimum:
 - 1) Identify changes in steam and condensate loads to be carried by the systems;
 - 2) Description and evaluation of the existing steam distribution facilities which may be involved in the project. Include an estimate of existing loads, an analysis of capabilities for changed loads and an estimate of remaining service life for all steam

and condensate systems. Recommend tests, as appropriate, to assess remaining service life;

- 3) Rationale for proposed changes required in steam distribution systems; and
- 4) Provide information on steam pressures, types of condensate return systems (pumped, gravity, vacuum, etc.), and line sizes.

b. On drawings, show locations of existing steam distribution systems, which may be affected by the project, alternate new locations, and recommended new location.

17. STEAM GENERATION

a. Analyze impact of seismic correction plan on all steam generation systems. Determine minimal acceptable changes necessary to implement seismic corrections.

b. Provide a report with the following information as a minimum:

1) Estimation of peak steam demands for the new facilities and any change in existing steam demands;

2) Evaluation of the capability of existing steam generating facilities to accept any changes in steam demand. If a significant load increase is expected, provide a complete description of the existing steam generating facilities. Include makes, models, sizes, ages, performance capabilities, and remaining service life of all equipment and systems. Recommend tests, as appropriate, to determine remaining service life and capacity of major equipment and piping;

18. STRUCTURAL

Provide a comprehensive report, which includes the following information:

- Review of earlier seismic study completed in (-----), and comments on the proposed retrofit scheme.
- Review of the building for architectural mechanical, and electrical needs, address significant changes required in the support system due to structural and non-structural modifications.
- Conceptual scheme for phasing and disruption during construction.
- Address impact issues, e.g. need for swing space etc. during construction

C. SCHEMATICS 2 [S2]

GENERAL

1. ARCHITECTURAL

a. Using the approved architectural concept from S1, submit, as a minimum, a single line layout for all floors, penthouses, and roof areas with double line exterior walls at a scale not less than 1:200 (1/16 inch). 1:100 (1/8 inch) is better, if it will allow an entire floor to be shown on one sheet. Identify changes from existing layouts. Incorporate all revisions from comments on the previous submittal and show all rooms, doors, corridors, basic column grid, assumed column sizes, expansion and seismic joint locations, electrical closets and equipment rooms, signal and telephone closets, mechanical shafts and space, and all vertical circulation, e.g., stairs, conveyers, elevators, and automatic conveyances. Doors may be indicated with a slash mark. In schematics, use lines between spaces to indicate the centerline of the partition. Along the corridor, the line shall represent the corridor side of the partition.

b. Identify each room or space with its name and the program net area over the designed net area. Names on drawings shall be the same as those used in the space program. Provide area figures in fractional form, e.g., 400/390. Indicate space provided, but not called for in the space program, as: -/390.

c. When the project includes more than one department or service, outline and label each service with its name and code. When a service is fragmented or scattered in various locations, similarly outline and identify (use code number alone where space is limited) each piece.

d. Show the overall exterior dimensions for determining the total building gross area.

e. Submit a complete double line layout of nursing units, and any other areas of critical importance, at a scale of 1:50 (1/4 inch) including equipment.

f. Submit preliminary elevations of all facades showing massing, proposed fenestration and the building relationship to adjacent structures and the finish grade. Show all significant building materials, any proposed roof top mechanical equipment, and architectural screens on the elevation drawings. If applicable, indicate future expansion (vertical and horizontal).

g. Provide a schematic section to define building configuration.

2. ASBESTOS ABATEMENT

a. If determined in S1 that asbestos mitigation is necessary, submit an asbestos assessment report (see VA guidelines for asbestos abatement) that was prepared by a professional industrial hygienist (P.I.H.). Include the following:

- 1) Summary results of review of building records;
- 2) Summary results of interview of station personnel;

3) Results of visual inspection of the building to determine location and condition of asbestos materials; and

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

b. Provide name and location of qualified laboratory for sample analysis, which P.I.H. intends to utilize.

3. AUTOMATIC TRANSPORT

If changes are required, provide transport narrative with recommendations for improving the existing automatic transport systems (ATS) and a traffic study that include existing and proposed ATS with alternate methods of distribution, if feasible.

4. CRITICAL PATH METHOD (CPM)

Submit the following including VA comments from previous phasing meetings and Schematics 1 review:

a. Phasing Narrative;

b. Phasing Plans (on reduced site plans);

c. Phasing Diagram;

d. Phases marked on all full size drawings submitted for VA review; and

e. Written list of systems, including temporary system by phase, and separated by technical discipline.

5. ELECTRICAL

a. Based on required changes, submit a narrative describing the design, including basic assumptions and necessary changes to the existing electrical systems. Provide a full description of the impact of seismic correction to the existing electrical distribution system. Where new construction is required, include current demand loading (high voltage switchgear and primary feeder) and projected load of new construction. Propose various feasible electrical systems for the project and provide advantages/disadvantages for each.

b. Show location and sizes of electrical equipment rooms and electrical, telephone, and signal closets on drawings. Show all electrical distribution equipment at scale. Include means and clearances for installation, maintenance and removal/replacement of equipment.

c. Provide a sheet for symbols, lighting fixture schedules, notes and abbreviations if required.

d. Submit a plot plan showing existing and proposed electrical underground power, telephone, and signal inter-building systems (F/A, CCTV, MATV, radio, security, etc.) associated with the new construction or if modification to the existing system is required.

- e. For new construction, submit a clear, concise elementary one-line diagram of the proposed electrical system. Include high voltage and low voltage switchgear, transformers and low voltage main and/or distribution panels, branch panels and representative methods of feeding 277/480 volt and 120/208 volt normal and emergency panels. Indicate ratings and locations of existing electrical devices to be reused.
- f. For any new major equipment, describe the proposed method of short-circuit calculations. Describe the method by which voltage drop and demand will be calculated.
- g. Provide narrative report on the various designs with priority on recommended designs. Weigh alternatives and convey convincingly the recommended alternative.
- h. Provide copies of all correspondence and minutes of meetings with the utility company's representatives if these occur.
- i. For new construction, submit preliminary square foot load calculations for both normal and emergency use. Separate calculations into lighting, receptacles, and power (kitchen, x-ray, elevator, and mechanical).

6. ESTIMATING

Submit a construction cost estimate in compliance with the Manual for Preparation of Estimates. Incorporate review comments from the previous review into the estimate. Include at least the following:

- a. All costs associate with phasing, functional changes, programmatic changes and building infrastructure;
- b. Level "B" Summary Sheets: For each building and site work in detail. Separate estimates for new construction and alteration work;
- c. Building gross area computations for new construction and alteration work;
- d. Project Data Sheet 1; and
- e. Local Market Survey

7. EQUIPMENT

No submission is required.

8. FIRE PROTECTION

- a. Analyze impact of seismic correction plan on all fire protection systems. Determine minimal acceptable changes necessary to implement seismic corrections.
- b. Use VA standard symbols. Identify all changes to sprinkler, fire alarm, and smoke zones at a legible scale that will show an entire floor per drawing, if possible. Also indicate existing areas that are completely sprinklered, location of building water supply, interior sprinkler supply lines, standpipes, fire extinguisher cabinets, exit paths from each zone,

distances to the stair, and the occupancy of each area. Show fireproofing of structural members where applicable. Submit exit calculations for each floor, which justify the number of exits provided.

c. Survey the impact of the seismic correction on existing fire alarm system. Determine changes for 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 modification required for proposed fire alarm work.

d. Provide narrative for building construction, building fire and smoke separation, fire sprinkler/standpipe systems, size of fire pumps (if required), water supply available/maximum demand, water flow testing results, fire alarm systems, and kitchen extinguishing systems. Include calculations where required. 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.

9. HEATING, VENTILATING & AIR CONDITIONING

a. Provide a description of the modification required for heating, ventilating, and air conditioning (HVAC) systems and equipment for each functional space.

b. Provide complete life cycle cost analysis with specific recommendations and full back-up data for necessary major system upgrades. State the heating and cooling capacities of each functional area used in the life cycle cost analysis. State the block cooling and heating loads for each new and/or existing building.

c. Indicate tentative locations and sizes of required new mechanical equipment rooms and principal vertical shafts. Show a block layout of major pieces of equipment in each mechanical equipment room. For new or significantly changed outside air, show exhaust air, and relief air louvers. Resolve various items affecting louver location, considering other factors such as visibility, historical considerations, wind direction, nuisance and health hazard odors caused by short circuiting of air from exhaust from emergency generators and truck waiting areas, etc. to intake.

10. INTERIOR DESIGN

a. Using the information gained in S1, develop and submit a written interior design concept.

11. PLUMBING

a. Submit design narrative that reflects comments from S1.

b. Provide drawings indicating room names, locations of new equipment, and plumbing fixtures using VA fixture numbers.

12. SANITARY

a. Provide revisions to the design narrative and plans of utility systems indicated in S1. Indicate (obtain from medical center staff) water pressure and flow at two fire hydrants serving building in project and depth of cover for new water and fuel gas mains.

13. SITE DEVELOPMENT

a. Further develop the VA-selected alternative from S1 or the VA provided concept plan. Slight deviation from the selected alternative is possible with approval of the VA Project Manager.

b. Depict site features with more detail than the previous submission.

14. SPACE PLANNING

Update and expand the Space-Accounting Summary Table. In addition to the data required at S1, provide columns for Designed Net Area and Variance From Approved Space Program Net Area for each department or service. Also, list separately the area required for additions to the program, unassigned space, major circulation (inter-departmental corridors, stairs, elevators), major mechanical and electrical spaces, exterior walls, connecting corridors to other buildings, space for future mechanical system expansion, and similar special requirements.

15. SPECIFICATIONS

No submission is required.

16. STEAM DISTRIBUTION (OUTSIDE)

a. Provide a report with the following information as a minimum:

- 1) Estimate of steam and condensate loads which will be imposed on new or existing distribution facilities;
- 2) Calculations of pipe sizing.

17. STEAM GENERATION

a. Provide a report with the following information as a minimum:

- 1) Combined new (estimated) and existing steam loads including maximum and minimum summer and winter demands and total annual production. Provide breakdown of new steam loads into categories of end use such as building heating, humidification, reheat, domestic hot water, sterilization, line losses, kitchen, and laundry;
- 2) Select any new major equipment and preliminary calculations of equipment sizing.

18. STRUCTURAL

- a. Submit conceptual drawings showing significant structural features, e.g. new shear walls, braced frames etc., for the proposed strengthening scheme.
- b. Submit criteria of proposed seismic site specific study if required along with qualifications of three consultants with expertise in the field of geological study together with proposal of the consultant recommended as most qualified. Indicate the reasons for the selection.
- c. Prepare a detailed cost estimate for the mitigation scheme including phasing cost, and cost of architectural, mechanical, and electrical modifications.

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
- MS**- 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 Project Manager. 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 and/or un-separated will be returned to the A/E. All re-submittal costs will be the responsibility of the A/E.
6. Submit record drawings on bond paper, full size one copy and on standard format DVD, two copies. Each of the two electronic copies shall contain .dwg and .pdf files of each drawing, and .doc and .pdf files of each project manual document. Each DVD will be labeled as to station #, project #, date, etc..

**DISTRIBUTION OF A/E MATERIAL
PG-18-15F
Schematics 1 Submission**

VA UNITS	EDITING PRINTS (Full Size)	REFERENCE PRINTS (Half Size)	ESTIMATES	CALCULATIONS	OTHER
PM		1 Complete Set	1 Complete Set		1 Complete Set 1 Lead Report
Architectural IDQ/AE	1 Set AS	1 Complete Set			1 Architectural Report 1 Lead Abatement Report 1 Space Accounting Summary
CPM		1 Complete Set			
Electrical IDQ/AE	1 Set ES	1 Complete Set			1 Electrical Report
HVAC	1 Set MH				1 HVAC Report
Site Development IDQ/AE	1 Set AS Basement, First Floor, & other floors that exit to grade; MS,ES, GS, & CU				

**DISTRIBUTION OF A/E MATERIAL
PG-18-15F
Schematics 1 Submission (cont.)**

VA UNITS	PRINTS (Full Size)	REFERENCE PRINTS (Half Size)	ESTIMATES	CALCULATIONS	OTHER
Plumbing/ Sanitary IDQ/AE	1 Set PL & CU	1 Complete Set			1 Plumbing Report 1 Sanitary Report
Structural IDQ/AE		1 Complete Set			1 Structural Report
Estimating IDQ/AE	1 Complete Set		1 Complete Set		1 Space Accounting Summary
Automatic Transport IDQ/AE	1 Set AS				1 Auto. Trans. Report 1 Auto. Trans. Flow Chart
Steam IDQ/AE	1 Set CU, MP, MS,& Incinerator				1 Steam Generation Report 1 Steam Distribution Report 1 Incinerator Report.

**DISTRIBUTION OF A/E MATERIAL
PG-18-15F
Schematics 1 Submission (cont.)**

VA UNITS	PRINTS (Full Size)	REFERENCE PRINTS (Half Size)	ESTIMATES	CALCULATIONS	OTHER
		1 Complete Set			
194D	1 Set ES				
182B					1 Space Accounting Summary
VAMC	1 Complete Set		1 Complete Set		1 Complete Set

**DISTRIBUTION OF A/E MATERIAL
PG-18-15F
Schematics 1 Submission**

VA UNITS	EDITING PRINTS (Full Size)	REFERENCE PRINTS (Half Size)	ESTIMATES	CALCULATIONS	OTHER
Construction Manager (provide data only when assigned to project)	3 Complete Sets prints				1 Complete Set
TOTALS (without Construction Manager)	2 Complete Sets 3 Sets ES 2 Sets AS. & CU 1 Set AS Basement, First Floor, & other floors that exit to grade; MU; MP; MH; Incinerator; GS; & PL	7 Complete Sets	3 Complete Sets		2 Complete Sets 5 Space Accounting Summaries 1 Lead Abatement Reports 1 Arch., Auto. Trans., Elect., HVAC, Plb., San., Steam (Gen/Dist), Incinerator, & Struct. Reports 1 Auto. Trans. Flow Chart

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VA UNITS	EDITING PRINTS (Full Size)	REFERENCE PRINTS (Half Size)	ESTIMATES	CALCULATIONS	OTHER
PM		1 Complete Set	1 Complete Set	1 Set Exit	1 Complete Set
Architectural IDQ/AE	1 Set AS & FA	1 Complete Set			1 Space Accounting Summary 1 Fire Protection Report
CPM 183A		1 Complete Set	1 Gross Area		1 Asbestos Report
Electrical IDQ/AE	1 Set ES & FA	1 Complete Set		1 Set Electrical	1 Electrical Report 1 Fire Protection Report
HVAC IDQ/AE	1 Set HA, FA, & MH			1 Set HVAC & Energy Conservation	1 HVAC Report 1 Asbestos Report 1 Fire Protection Report
Site Development IDQ/AE	1 Set AS Basement, First Floor, & other floors that exit to grade; ES, MS,GS, & CU				

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Schematics 2 Submission (cont.)**

VA UNITS	PRINTS (Full Size)	REFERENCE PRINTS (Half Size)	ESTIMATES	CALCULATIONS	OTHER
Plumbing/ Sanitary IDQ/AE	1 Set FA, PL, & CU	1 Complete Set		1 Set Plumbing & Sanitary	1 Plumbing Report 1 Sanitary Report 1 Fire Protection Report
Structural IDQ/AE	1 Set SS	1 Complete Set		1 Set Structural	1 Structural Report 1 Criteria for Sub- surface Investigation Report
Estimating IDQ/AE	1 Complete Set		1 Complete Set		1 Space Accounting Summary
Automatic Transport IDQ/AE	1 Set AS			1 Set Auto. Trans.	1 Automatic Transport Report 1 Traffic Study

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Schematics 2 Submission (cont.)**

VA UNITS	PRINTS (Full Size)	REFERENCE PRINTS (Half Size)	ESTIMATES	CALCULATIONS	OTHER
Steam IDQ/AE	1 Set MS,MP, & Incinerator			1 Set Steam Generation/ Distribution 1 Set Incinerator	1 Steam Generation/ Distribution Report 1 Incinerator Report
Interior Design IDQ/AE	1 Set AS				1 Interior Design Report 1 Set Interior Design Sketches 1 List of Samples & Loose Samples
194D	1 Set ES				
182B					1 Space Accounting Summary
VAMC	1 Complete Set		1 Complete Set		1 Complete Set

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Schematics 2 Submission (cont.)**

VA UNITS	EDITING PRINTS (Full Size)	REFERENCE PRINTS (Half Size)	ESTIMATES	CALCULATIONS	OTHER
None					
SFPE Network Support Office IDQ/AE FP Consultant		1 Complete Set		1 Set Exit	1 Asbestos Report 1 Fire Protection Report
Construction Manager (provide data only when assigned to project)	3 Complete Sets prints				1 Complete Set

**DISTRIBUTION OF A/E MATERIAL
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Schematics 2 Submission**

VA UNITS	EDITING PRINTS (Full Size)	REFERENCE PRINTS (Half Size)	ESTIMATES	CALCULATIONS	OTHER
TOTALS (without construction manager)	2 Complete Sets 4 Sets FA 3 Sets AS. & ES 2 Sets CU 1 Set Architectural Basement, First Floor, & other floors that exit to grade; HA; MU; MP MH; Incinerator; GS; PL; & SS	7 Complete Sets	3 Complete Sets 1 Gross Area	2 Sets Exit 1 Set Auto Trans, Electrical, Energy Conservation, HVAC, Incin., Plb., San., Steam Gen & Dist., & Struct.,	2 Complete Sets 5 Fire Protection Reports & 4 Space Accounting Summaries 3 Asbestos Reports 1 Auto. Trans., Criteria for Sub-surface Invest. Elect. HVAC, Incinerator, Int. Des., Plb., San., Steam Gen/Dist, & Struct. Reports 1 Set Int. Des. Sketches, 1 List of Samples, & Loose Samples 1 Traffic Study