

# **ARCHITECTURAL / ENGINEERING SERVICES**

## **SCOPE OF WORK**

### **Supplement B to SF252**

#### **Project No. 561A4-22-108**

#### **Repair of Underground Stormwater & Sewage System**

##### **GENERAL SCOPE**

Provide professional A/E services to prepare specifications, drawings, and cost estimates for a project to repair the underground stormwater and sewage system at the VANJHCS, Lyons Campus located at 151 Knollcroft Road, Lyons New Jersey, 07939.

Design work for the preparation of plans and specification to be accomplished shall include but not be limited to the following:

1. Provide CCTV footage of all underground sewage and storm drain lines
  2. Evaluate sizing of existing lines
  3. Survey all storm water basins and provide drawings to repair.
  4. Provide a plan for storm water management of the areas East of Building 13 and North of Building 136 Chiller plant.
  5. Provide drawings and specifications to address all findings that are deficient.
  6. Provide a phasing plan.
  7. Provide a traffic control plan for road closures if needed.
  8. Upgrade mapping, elevations and GPS labeling of all inlets and manholes.
  9. Provide Ground Penetrating Radar of all areas requiring excavation.
- During the site investigation and preliminary design portion of the project, the A/E will meet with the Safety Manager of the facility, and he will provide the A/E with information concerning safety requirements that will need to be incorporated into the construction specifications.

The Government estimate for the construction of this project is between \$1,000,000 and \$5,000,000. The work is to be performed at the Lyons Campus of the VA New Jersey Healthcare System.

1. The A/E services will include various phases of design starting with a site survey and design analysis and following through with working drawings and construction specifications. A cost estimate shall be required for each design review milestone. The A/E shall provide the VA with a list of all submittals required of the construction contractor. Extra efforts are required towards project phasing in order to provide a minimum interruption to the Medical Centers normal activity.
2. The A/E shall address the need for special protective construction (Pre-construction risk assessments) and methods of work to assure the continued operation of medical center.
3. The A/E shall develop an appropriate phasing and coordination plan for the construction of the project so as to continue the normal operation of the medical center and assure the safety of patients, visitors, and employees during all construction.
4. As-built drawings will be verified by the A/E prior to using information contained in these drawings for design. A/E design shall also include requirements contained in VA standards. Drawings shall be on standard VA drawing sheets in accordance with VA Construction Standards and VA Standard Details. Construction drawings shall be provided on AutoCAD 2021. VA Master Construction Specifications will be furnished in MS Word format. All final construction documents will be submitted to the VA on a CD provided by the A/E. The A/E will edit the specification specific to this project. All cost estimates shall be on VA Form 10-6238. Cost estimates shall be quantitative based on drawings and

specifications, indicating labor and materials for each branch of work and reflecting estimated cost for each item. Cost estimates shall include 10% for overhead and 10% for profit and an allowance for General Conditions.

5. The A/E shall develop bid alternates to keep the final construction cost within the approved budget. In order to accomplish this, the final construction documents shall have bid alternates so that the lowest bid alternate is 10% less than the approved construction budget, based on the A/E's final cost estimate.

## **METHODS AND PROCEDURES**

1. The A/E shall make an on-site inspection of all areas within the scope of the project to familiarize themselves with existing conditions. The A/E shall verify all dimensions including verification of drawings and information furnished the A/E by the VA.
2. Upon appointment by the Director, Facility Management Service Center, the A/E will be assisted by VA Facility Management staff in confirming existing conditions. The VA makes no guarantee as to the accuracy of any as-built drawings or information provided. The A/E must field verify all conditions.
3. The A/E shall meet with all necessary staff and medical center management in order to determine the Medical Centers requirements. The A/E shall use this information and provide several planning options to address all requirements.

## **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.

1. The A/E Firm shall prepare and coordinate all engineering and site drawings, calculations, specifications and cost estimates. The degree of completion and stages of submission shall be as specified.
2. For each submission, the Engineering Firm shall incorporate the corrections, adjustments, and changes made by the VA at the previous review. The A/E Firm shall date all reports, and submission material.
3. Provide computations and sizing calculations for mechanical, plumbing, and electrical designs. For computerized submissions provide complete and clear documentation with computer programs, interpretations, and detailed description of program procedures.
4. If subsurface investigation is necessary, submit criteria for the subsurface investigation as well as the qualifications of consultants being considered for the investigation. Start subsurface investigation upon approval of the proposal by the Contracting Officer in writing.
5. The A/E 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 percentage of completeness of the drawings being submitted. For detailed elements, "lump sum" or "allowance" figures will not be accepted.
6. The A/E shall send receipt requested one set of full-sized drawings for all submissions to:

VANJHCS, Lyons Campus  
151 Knollcroft Road (138)  
Building 10 Rm 215 (Gary Boehner)  
Lyons, NJ 07939

## **PRELIMINARIES 25% DESIGN REVIEW**

1. 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 in order 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.
2. Prior to beginning any design work, a preliminary meeting will be conducted between the A/E 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 A/E Firm will have surveyed the existing facility to verify all existing conditions and become familiar with all deficiencies that need to be corrected. The A/E will write minutes of the meeting to the Contracting Officer for distribution and approval by the appropriate staff.
3. 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 A/E Firm will then complete and present alternative 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.
4. The VA considers originality and imaginative design an essential part of the A/E 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 should be combined to produce a plan that is functional and aesthetically pleasing.
5. 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.
6. 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.
7. Subsequent to each VA review of the Engineering Firm's work, The A/E Firm shall incorporate VA recommendations into the Preliminary Drawings.
8. Review meetings will be conducted at the end of each design phase. Submit five (5) copies of all narratives, drawings, calculations and cost estimates to be reviewed by VA staff. The cost estimates will reflect the level of completeness at each review stage. In addition, the A/E Firm shall take minutes of the review meeting and submit two copies to the Contracting Officer for distribution to VA staff.
9. The first review shall include the following:
  1. Drawings shall be completed to the review percentage.
  2. Demolition work required for each area.
  3. Provide a design analysis for the Bronx VAMC Preliminary Phasing Review.
    - a. Preliminary Impact Analysis
    - b. Preliminary Recommendations/Solutions.
    - c. Review of applicable Codes.
    - d. 1/4 or 1/2-inch scale drawings (typical).
  4. Provide a list of all applicable VA Master Specification sections to be used for this project.
  5. Provide a preliminary cost estimate based on drawings, specifications, and design analysis.

- Provide appropriate adjustments for phasing and local or market conditions.
6. Provide five (2) copies of design analysis, drawings and preliminary cost estimates.
  7. The A/E shall attend all design review meeting at VAMC, Lyons, New Jersey.

#### **PREPERATION OF CONTRACT DRAWINGS & SPECIFICATIONS 75% REVIEW**

The submission shall include materials proposed for use on the project for selection by the VA. This submission should incorporate all comments from 25% Design Review.

1. Drawings shall be completed to the extent the following is shown:
  - a. Demolition work required for each area.
  - b. All preliminary drawings shall be not less than 1/8" scale.
  - c. Area finishes (existing versus proposed)
  - d. Structural, electrical, and mechanical modifications required.
  - e. All new work to be added to existing work shall be shown and identified. All existing items requiring removal to provide for new work installation shall be shown & identified.
2. Provide a design analysis describing proposed construction and phasing. Provide information as to how Life Safety and other applicable codes are being met.
3. Specifications: Provide a marked-up copy of all applicable VA Master Specifications, edited for the Scope of this project.
4. Provide a cost estimate based on drawings, specifications, and design analysis. Cost estimate shall include quantitative take-off for labor and material. Provide appropriate adjustments for phasing and local or market conditions.
5. All floor plans are to be presented on VA standard size drawings. The A/E Firm will submit three (3) floor plan options with the submittal. The floor plans will be drawn at a scale which will permit an entire floor plan layout on one drawing. The plans must show the overall exterior dimensions of the building.
6. Primary horizontal and vertical circulation, entrances to buildings, main entrances to departments and major mechanical spaces shall be shown on the drawings. New construction, renovation and existing construction to remain as is, shall be clearly distinguished from each other. Construction phasing will be carefully considered to permit continuous operation of the facilities services without disruption.
7. Provide five (5) copies of all review material.

#### **PREPERATION OF CONTRACT DRAWINGS & SPECIFICATIONS 95% DESIGN REVIEW**

1. The A/E shall incorporate all comments from previous VA reviews.
2. Drawings shall be complete and checked for errors, ready for use as final contract documents including special requirements (i.e. mechanical, electrical, structural, etc.).
3. Construction phasing schedule
4. Construction specifications shall be prepared in final draft; incorporating bid alternates as required.
5. Updated construction cost estimate. Cost estimate shall reflect labor and material for each category of work based on quantitative take-off, including overhead and profit. The cost for each bid alternate shall be identified in the cost estimate, if applicable.
6. A/E shall incorporate any comments from VA Legal and Technical Review and any bidder questions into Final Documents in direct preparation of amendments to the solicitations as required.
7. Provide five (2) copies of all review material.

#### **DELIVER 100% COMPLETED DRAWINGS & SPSCIFICATIONS**

1. The 100% 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 A/E 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 A/E Firm shall make any changes to the documents identified as necessary.
4. The A/E Firm shall deliver the original contract drawings to the COTR. 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 A/E 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.

## **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.

## **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:
5. Revise draft specifications to incorporate:
6. All changes, resolution of conflicts and modifications noted in previous reviews.
7. Results of any drawing changes not shown on the drawings that affect the specifications.
8. 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.

## **EQUIPMENT SPECIFICATIONS**

1. Submit typed master specifications in final format and content.
2. Include a set of equipment drawings fully coordinate.

## **STRUCTURAL**

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

**SANITARY (If Applicable)**

1. Submit 100% complete drawings to include the following:
2. Previously submitted drawings that have incorporated comments of the last review.
3. Legend, notes, and details.

**PLUMBING (If Applicable)**

1. Submit 100% complete drawings to include the following:
2. Previously submitted drawings that have incorporated comments of the last review.
3. All piping sized.
4. Plumbing riser diagram plans.
5. Demolition plumbing floor plans.
6. Legend, notes and details.

**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, panel boards, 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. Layouts of specialty areas (radiology, office/exam, bed areas, OR's, ICU's, etc) are to be laid out.
8. All electrical drawings shall show smoke partitions and fire alarm zones. Submit fire alarm and signal (nurse call, telephone, MATV, CCTV, radio, PA, etc.) riser diagrams.
9. Phasing and shutdown requirements.

**BARRIER FREE DESIGN (If Applicable)**

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.

**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.

**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:

2. 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.
3. 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.
4. 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.

The A/E shall incorporate all comments from the previous review into the final working drawings and specifications.

1. Final construction cost estimate shall be provided.
2. Final construction specifications.
3. Final construction contract drawings.
4. Final construction project schedule.
5. Provide five (5) copies of all review material.

NOTE: All final construction specifications must be provided on Microsoft Word software, in addition to providing five (5) hardcopies. All drawings shall be stamped and signed. All final construction drawings must be provided on AutoCAD 2021, (see attached description) in addition to providing one (1) set of Mylar and five (5) blue line copies.

### **Construction Period Services**

Review materials, submittals, shop drawings, schedules, etc.

1. Provide recommendation to Resident Engineer as to each submittal being approved, disapproved, or approved as noted. Include review comments as to appropriateness of submittal and conformance to construction drawings and specifications.
2. Provide list of submittals and status report of submittals processed.
3. Review and advise the VA of contractors request for information.
4. Review change orders and provide A/E cost estimate to support VA's negotiations with contractor.
5. Furnish as-built drawings at completion of construction.
6. Advise the VA of the timeliness of the contract with his approved schedule.
7. Site visits:
  1. Pre-bid Conference.
  2. Preconstruction Conference.
  3. Four field visits during construction (All field visits are to be followed by a job meeting).
  4. One (1) Final Inspection, to include construction punch list/report.

**ATTACHMENT A**  
**COMPUTER AIDED DESIGN AND DRAFTING STANDARDS FOR**  
**Project No. 561A4-22-108**

The A/E shall adhere to the following criteria for CAD under this contract.

A. Graphic Format

All CAD data shall be supplied in the latest version of the translation format, Drawing Exchange Format (DXF). The contractor will be responsible for ensuring that all files shall translate to the VAMC's target CAD system. The VA's current target CAD system is AutoCAD 2021.

B. Delivery Media

All CAD data shall be delivered on a CD ROM. All data files shall be organized using the directory structure (path) as outlined in the CAD Standards, Naming Conventions section of this document. All files shall be free of corrupted or unusable data.

C. CAD Standards

1. CAD drawings shall be 2-dimensional drawing files. All drawings should be registered with the lower left limits set at 0,0 x-y coordinate vectors.
2. Translated files shall not exceed 1.44 MB unless approved by C.O. R.
3. Lettering: Only default font style 0 shall be accepted. No attempt to map fonts to Drafix should be made.

-The text sizes to be used are as follows:

General Notes & Associated Text at 1/8"

Drawing Subtitles at 1/4"

Drawing Main Titles at 1/2"

Or approved by C.O.R.

4. Symbolology (graphic libraries/details/border and drawing sheets) shall be provided to the contractor by the Department of Veterans Affairs upon request. These graphics libraries shall be project specific. The contractor shall provide VA with any special symbolology developed for this project on separate delivery diskette.
5. Layering/Level Standards shall follow the American Institute of Architects (AIA) "Recommended Designations for Architecture, Engineering, and Facility Management Computer Aided Design". Cad layers guidelines shall be performed during translation.
6. All files created for use by the Department of Veterans Affairs will conform to the following directory path and file naming conventions:

Directory Path: \station number\building number\project number\discipline\11 character file name (includes 3-character extension)

Abbreviations for Discipline Types

ARCH Architectural

CIVIL Civil/Survey

ELEC Electrical

INTERIOR Interiors

LANDSC Landscape

MASTERPL Master Planning

MECHVAC Mechanical - HVAC

PLUMB Plumbing

SPACEPL Space Planning



STRUCT  
3DMODEL

Structural  
3 Dimensional Models

Directory Path Example: \vame526\project #\arch\

File names identify the drawing type and floor number. File names will contain alphanumeric characters a-z and/or 0-9 and may be up to 11 characters in length. Special characters are not permitted.

File name structure: DTf#xxxx.ext.

DT = drawing type, 2-character abbreviation

f# = floor number, 2-digit number

xxxx= the remaining 4 alphanumeric positions are user assignable to further define drawing, i.e.; building wing or zone.

. ext = drawing extensions (example: \*.dwg, \*.dgn, \*.dxf).

Abbreviations for Drawing Type

de	Details
di	Diagrams
el	Elevations
fp	Floor Plans
rc	Reflected Ceiling Plan
sc	Schedules
se	Sections
3d	3D Models

File Name Example: fp01n.dwg (floor plan, first floor, north wing, AutoCAD file).

**D. Hardcopy and Documentation**

The A/E shall supply a hardcopy of the following items:

- CAD data file listings of diskette contents.
- Full size check plots of all drawings, fully identified with path and drawing name.
- Full size plot of special project specific symbology created by contractor.

**E. Ownership**

All CAD files created and reimbursed for this project shall be the property of the Department of Veterans Affairs.