

GOVERNMENT OF THE DISTRICT OF COLUMBIA

**DEPARTMENT OF GENERAL SERVICES
CAPITAL CONSTRUCTION SERVICES ADMINISTRATION**

DISTRICT OF COLUMBIA FIRE AND EMERGENCY MEDICAL SERVICES (FEMS)

ENGINE COMPANY 26 NEW FIREHOUSE FACILITY

FORT LINCOLN, NE, WASHINGTON, D.C.

“TECHNICAL REQUIREMENTS AND SUBMITTAL GUIDE”

APPLICABILITY OF ATTACHMENT-A2

Unless otherwise stipulated, the Architect-Engineer shall be responsible to comply with only those Sections and Sub-Sections of the Attachment-A2 that shall be applicable to and usually or customarily found necessary for performing the “Scope-of-Work Services” described herein, and required by Attachment-A1.

CONTRACT NO. _____

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FORT LINCOLN, NE, WASHINGTON, D.C.

1. GENERAL INFORMATION:

- 1.1. All written requests or correspondence regarding this Contract shall be addressed to the Capital Construction Services Division, Department of General Services (DGS), 1250 U Street – 4th Floor Construction Division, Washington, D.C. 20009. In all matters pertaining to this Appendix, information and coordination shall be through the DGS Capital Construction Services Division.
- 1.2. All final decisions relating to design are within the purview of the Director, Department of General Services or the Director’s authorized representative.
- 1.3. During the construction period of the facility for which services are to be performed under this Contract, the Architect-Engineer shall, without additional cost to the District of Columbia (District), be available for complete consulting services on errors, omissions and discrepancies in drawings and specifications for all phases of the design.
- 1.4. Changes in this Attachment-A2 may be made from time to time to accommodate modifications in the requirements of the District, or the requirements for the particular project set forth in the Scope of Work (SOW) of the Contract. Such changes, when required, shall be identified as a Supplement and/or Errata Sheet and numbered sequentially, and/or specifically amended. Changes applicable only to a specific project and Contract shall be identified as supplement and/or specifically amended in the SOW, and be applicable to have effect only with respect to the project and Contract number to which attached and made a part thereof.

2. SCOPE AND DEFINITION:

This Attachment-A2 defines both the technical requirements and the submittal schedules as required for the District

2.1. Technical Requirements:

It is expressly understood and agreed that requirements set forth hereafter are minimum requirements only, not intended to be all inclusive, and that, notwithstanding the absence of any provision of this Attachment-A2. Therefore, it is the responsibility of the Architect-Engineer to provide all services necessary for a complete and integrated design of the facility specified in the SOW. This will include all design and

engineering features, equipment, system, etc., usually or customarily found in or necessary for the design of a structure or facility of the kind and type described therein, together with technical specification, design analyses, construction cost estimates, renderings, photographs, and scale models.

2.2. **Submittal Schedule:**

The preparation of the documents for construction work is complex, exacting, and time-consuming. In each project there are a minimum of three interested parties: the end user, DGS and the Architect-Engineer. The establishment of a mutually acceptable design with the minimum effort will be accomplished by graphic and textual design solutions to be submitted for critical review and comment at certain development stages. The quantity and the development stage of these submissions will vary according to complexity of the work. Following are the submissions for most projects and their minimum contents, unless specifically amended in supplement(s) and/or Scope of Work Attachment-A1:

<u>NO.</u>	<u>Submission</u>	<u>% Completed</u>
I.	Predevelopment Phase.....	15% Completed
II.	Schematic Design Phase.....	35% Completed
III.	Design Development.....	70% Completed
IV.	Construction Documents Phase.....	90% Completed
V.	Compliance Phase.....	Final

2.3. **Document Preparation:**

All documents to be prepared under this Contract will be:

- 2.3.1. Accomplished by the Architect-Engineer in a clear, orderly, intelligible and professional manner; suitable for reproduction; and
- 2.3.2. Identified by the appropriate project name and number assigned by DGS.
- 2.3.3. Prior to the submittal of any design drawings, specifications, engineering analyses, construction cost estimates, and studies, the Architect-Engineer shall completely check and coordinate same for accuracy, compliance with the District of Columbia Building Codes, other applicable codes and regulations, and for compliance with the additional requirements outlined hereafter.
- 2.3.4. Review Time: The Architect-Engineer shall submit to DGS, a schedule (Monthly Progress Report) showing the salient features of the Work and its start and finish dates. The Architect-Engineer shall develop a “Monthly Progress Report Guide” for approval by the Project Manager. In preparing the Schedule of Work, the Architect-Engineer shall allow time for each review by DGS/Construction Division. The review time allowance in calendar days shall be measured from the time DGS receives the submittal until DGS returns the

submittal to the Architect-Engineer, shall be as follows unless otherwise altered in the SOW:

<u>NO.</u>	<u>SUBMISSION</u>	<u>REVIEW TIME</u>
		(calendar days)
I.	Predevelopment Phase-----	20
II.	Schematic Design Phase-----	7
III.	Design Development Phase-----	7
IV.	Construction Documents Phase-----	14
V.	Compliance Phase Final Submission-----	7

Note: The above submissions and schedules may be amended by Scope of Work Attachment-A1 and/or Supplement(s).

2.3.4.1. **Monthly Progress Report:** See General Provisions, Section 3.

2.3.4.2. **Time:**

It is understood and agreed that time is of the essence for the performance of the Services provided or required by this Contract. The Architect-Engineer shall assist the District in preparing, modifying and updating a schedule that will include the Architect-Engineer’s Services, DGS reviews and approvals, and the review and approval of governmental authorities having jurisdiction over the Project and the orderly progress of the design and development of the Project and each Phase thereof (the “Project Schedule”). The Project Schedule shall be prepared so as to coordinate with the dates and objectives of the District’s schedules, the Design Schedules, the Construction Phase Schedule, and will not delay the construction and/or completion of the Project. Should the Architect-Engineer become aware of delays from any source caused by the Architect-Engineer or others, the Architect-Engineer shall provide written notice to the Project Manager of such delays within three (3) days of becoming aware of such delays.

2.4. **Reviews:**

2.4.1. The preparation of construction documents is a combined effort of the professional Architect-Engineer, DGS, the user, and other assignees that are experts in their disciplines. The documents must accurately and completely reflect the design concept to ensure the Project is constructed properly. DGS retains private professional architects and engineers to accomplish this work, confident that their expertise and experience will yield proper documents for the construction of a complete project.

2.4.2. The District shall provide reviews to aid in the correct interpretation of the users’ requirements to encourage appropriate creativity in design, corroborate

the selected engineering system, and to assess the production of the project. DGS does not consider checking and cross-checking for accuracy of the document to be its obligation. The Architect-Engineer is completely responsible for all facets of the development of the documents' constructability reviews. The constructability review process shall assure that:

- 2.4.2.1. The project, as detailed in the plans and specifications, can be constructed using standard construction methods, materials and techniques;
- 2.4.2.2. The plans and specifications provide the contractor with clear, concise information that can be utilized to prepare a competitive, cost-effective bid; and
- 2.4.2.3. The Work, when constructed in accordance with the plans and specifications, will result in a project that can be maintained in a cost-effective manner by the District over the life of the project.

3. SURVEYS AND HAZARDOUS MATERIALS:

3.1. Surveys:

3.1.1. Plat Map:

A "Plat Map" for the two project site options will be obtained by the Architect-Engineer to be incorporated in the construction documents.

3.1.2. Topographic Survey:

The Architect-Engineer shall order the topographic survey immediately after receiving the commission for the work. He shall prepare and submit one (1) reproducible copy of a topographic survey map of each site option of the facility in sufficient detail to permit the proper and efficient execution for the work required by this Contract, unless notified otherwise. The area to be surveyed will include a 50 feet wide strip around the entire perimeter except where there is no right of entry. The topographic survey maps will be at a scale of not less than 1" = 20'-0", and will show and/or include: (i) contours at 1'-0" vertical intervals where slopes are 10% or less, contours at 2'-0" vertical intervals where slopes are greater than 10% (ii) all natural and artificial features including, but not limited to, the following: (a) building, sheds and other structures, both existing and previously demolished, where possible; (b) elevation of basements, areaways, vault floors, etc.; (c) retaining walls, terrace walls, steps, curbs, etc., with top, bottom and adjacent grade elevations; (d) roads, walks, driveways, and other paved areas (Indicate kind); (e) fences, gratings and drainage structures; (g) water, sewer and utility lines, manholes, vaults and both rim elevation and invert elevation; (h) telephone, power and light poles; (i) grass, lawn, weed, bush, and wooded areas; (j) trees, 3" diameter and over, and (k) fields, bare earth and exposed rock areas. The boundary, as indicated by the "Plat Map"

and the location of existing markers will be shown on the topographic map. The marker location will be obtained from the D.C. Surveyor's office. At least one boundary line extending the full length of the site will be located from existing markers and defined by a new marker at each end. All topographic features and all new construction will be accurately located from this boundary line. The Topography Survey shall be a survey of record and shall be sufficiently accurate for building design to be developed without requiring any major plan change when the official survey is prepared.

3.1.3. Zoning Report:

Prepare a zoning analysis and site map that describes what the current two site options allow and require in terms of the site setbacks, height restrictions, FAR, Use Groups and Prohibited Uses. Identify any site easements or rights of way as well as any special restrictions or considerations that may have an impact on how the site may be used.

3.1.4. Soils Data:

The Architect-Engineer shall confer with the Project Manager within five (5) days after NTP and also immediately after acceptance of the Schematic Phase by DGS on the location, quantity and depth of soil identification holes.

3.1.3.1. The Architect-Engineer shall provide two (2) copies of the following with each required soil evaluation: Soil boring, soil samples and certified boring logs. The boring logs will show strata description, resistance to penetration of standard sampling spoons, ground water levels and other pertinent data, [two (2) copies required].

3.1.3.2. Upon DGS approval, the Architect-Engineer shall provide the following on an as needed basis (payable by the District):

3.1.3.2.1. Perforated pipes for water level readings.

3.1.3.2.2. Core drilling in rock, core samples and drilling logs.

3.1.3.2.3. Test pits, test caissons, test piles, load tests, bearing tests and certified records of all pertinent test data.

3.1.3.2.4. Laboratory tests of soil strata and such borings and samples as may be needed in addition to 3.1.3.1.

3.1.3.2.5. Two (2) copies of analysis and recommendations from professional soil mechanics and foundation engineer.

3.1.3.3. The Architect-Engineer shall utilize all soils data secured under 3.1.3.1., as an aid in determining all designs and earthwork necessary for completion of the Project.

- 3.1.3.4. The scope and sequence of various phases of soils investigations under 3.1.3.2. shall be established by consultations and a mutual agreement between the Architect-Engineer and DGS.
- 3.1.3.5. The Architect-Engineer shall provide all administrative and engineering services as needed to secure adequate soils data including the preparation of boring location plans and specifications, supervision of boring operations and, evaluation of soils data during the progress of the borings. 3.1.3.5. The Architect-Engineer shall also provide a drawing (or drawings) to include:
 - 3.1.3.5.1. Locations of test borings and test pits.
 - 3.1.3.5.2. Description and location of soil strata encountered in borings and test pits.
 - 3.1.3.5.3. Record of blow counts on sampling spoons when taking soil samples.
 - 3.1.3.5.4. Water level reading with time and date the record taken.
 - 3.1.3.5.5. Any other data pertinent to the construction of foundations and/or earthwork.

3.2. Hazardous Materials & Contamination:

Removal, Encapsulation, or Enclosure: When the Scope-of-Work Attachment-A1 calls for the alteration and/or modernization of any part or all of any existing building or facility, including any replacement or improvements to HVAC and Plumbing System, the Architect-Engineer shall prepare and furnish a report as set forth below:

- 3.2.1. The Architect-Engineer shall be responsible conducting an initial field check to determine whether or not asbestos exists on the premises. If findings are positive, the Architect-Engineer shall promptly contact the Project Manager to report the locations and the extent of the asbestos. The Architect-Engineer shall also furnish photographs of the asbestos and submit a comprehensive cost estimate for removal, encapsulation, and enclosure of the asbestos that shall be in accordance with the current Public Law and OSHA standards and regulations. The Architect-Engineer shall notify the Project Manager of any suspicion of hazardous materials or contamination if detected.
- 3.2.2. When Asbestos exists on the premises, the report from the Architect-Engineer shall contain inspection photographs as follows:

Requirements for Asbestos Inspection Photographs:

- 3.2.2.1.1. Photographs shall be created digitally and reproducible in enough detail to clearly delineate the issue.

- 3.2.2.1.2. Each photo shall be uniquely identified so as to clearly identify the location of the issue, the name/number of the Project, date taken, and other pertinent information as necessary.

4. BASIC SERVICES:

The Architect-Engineer's basic services shall consist of all services included in and attendant to the stages as described hereinafter in this Section. It is the responsibility of the Architect-Engineer to provide all services necessary for a complete and integrated design of the facility specified in the SOW. This may include, without limitation, all architectural, engineering, technical, interior design, administrative, and other services related to all architectural, structural, mechanical, electrical, plumbing, fire protection, life safety systems, civil engineering, interior design, FF&E, landscape design, vertical transportation (including elevators and pneumatic tubes), IT and telecommunications, medical equipment planning, acoustical, vibration and noise, audio/visual design, lighting design, security system design, graphics/signage/way finding design, materials management, roofing and waterproofing, traffic and parking, hardware materials, and other elements and services as typically provided by an architect-engineer and its consultants for similar projects in similar locations necessary to fully and properly complete the Project, and any and all other services identified in any other provision of this Contract as Basic Services. The Architect-Engineer recognizes, agrees, and accepts that the District is relying upon it for the complete and total design, development, implementation and administration of the design of the Project and each Phase thereof and, notwithstanding the specific listing of services contained in this Section.

4.1. Review Comments:

All DGS review comments shall be in writing, as these comments are incorporated in the documents. The Architect-Engineer shall carefully indicate the action taken. If incorporated, the word "done", "complied" or "not complied" will be written adjacent to the comment; if the comment is not acceptable to the Architect-Engineer, the Architect-Engineer shall note that the request is "not done or not complied because [insert reason]." The Architect-Engineer and DGS shall discuss within ten (10) days after each review, and agree to a mutually acceptable action. The final decision, in every instance, remains with DGS. If the Architect-Engineer cannot concur, the Architect-Engineer shall modify the work in accordance with DGS directive, then write to DGS that "the work has been done but not in accordance with his professional judgment because [insert reason]."

4.2. Consultations:

In addition to these required submissions, DGS is available for consultation at any time during the contract. This office urges understanding and agreement throughout the job by frequent consultation via telephone, email or in person.

4.3. Conferences:

The Architect-Engineer (A-E) shall furnish all information material necessary to coordinate the project with all agencies and with DGS. The Architect-Engineer or its authorized representative shall attend all meetings, arranged by other agencies or community groups or the Project Manager, to obtain the necessary approval of such agencies or groups. The A-E shall furnish all information, data and exhibits required for such meetings or reviews.

4.4. Small Scale Drawings:

The Architect-Engineer shall provide small scale drawings of floor plans for the new additions and existing buildings and the site along with the final submission of the contract drawings. Drawings will be 1" = 30' scale. Minimum sheet size is 11" x 17", Site plans will be drawn at a scale of 1" = 50'. Record square foot area on each floor plan as well as the square feet area on the site plan. Submit the originals reproducible and one (1) set of prints.

4.5. Submission Copies:

At each submission the Architect-Engineer shall submit blue line prints and loaded computer disk (s) in quantities as detailed hereunder unless modified in Scope of Work Attachment-A1:

<u>PHASE</u>	<u>DISK(S)</u>	<u>PRINTS</u>
I. Predevelopment Phase	1 set	4 sets
II. Schematic Design Phase	1 set	4 sets (two full-size; one half-size)
III. Design Development Phase	1 set	4 sets (two full-size; one half-size)
IV. Construction Documents Phase	1 set	7 sets (6 full-size; one half-size) Per 5.7.2
V. Compliance Phase	1 set	2 sets and the signed drawings
Specifications, Final (Compliance Phase)	1 set	5 sets

When the contemplated design of the facility is expected to involve architectural features that are likely to have impact on the use by the physically handicapped, the number of sets of prints required for submission of the Schematic, and Design Development Phases will be increased by one (1) set. That is to say, three (3) sets will be required instead of the two (2) sets indicated in the chart.

4.6. Computerized Drafting:

All design drafting shall be prepared utilizing Computerized Graphic Software as specified by the Project Manager.

5. DESIGN PHASES:**5.1. Predevelopment Phase:**

The Architect-Engineer will be responsible for performing feasibility analysis, site development, programmatic test fit and cost estimating services for the NEW Engine Company 26 facility at the TWO existing site options described in document A1 Scope of Work before fully developing the Construction Documents and associated specifications for the site selected by FEMS for construction.

The Pre-development scope of services include, but are not limited to:

- 5.1.1 Development of Program of Requirements (POR) and how those requirements could be designed and implemented on the selected site. The Architect-Engineer will conduct interviews of all current staff, review of current staffing and equipment procurement plans. The POR must clearly state the minimal design standards, work adjacencies, specialized equipment specifications, and facility circulation requirements that will serve as the basis of design for the A/E when the final site selection has been confirmed.
- 5.1.2 Development of conceptual site massing, programmatic layout and circulation drawing for each of the two existing site options. Drawings should include a minimum of (1) section of the site layout.
- 5.1.3 Development of written summary and assessment of site development and design criteria issues for each of the two existing site options including but not limited to HPO, DCRA, DDOE, NCPC, CFA, DC Water, Pepco, Washington Gas zoning analysis, deed restrictions and requirements, traffic study considerations, DCFEMS response/deployment predictive modeling and response analysis utilizing DCFEMS vendor-approved Deccan International's ADAM 2.0 software, and potential environmental considerations.
- 5.1.4 Preliminary estimate of Construction Cost using area, volume or similar conceptual estimating techniques based on the POR and each of the two existing site requirements.

5.2. Schematic Design Phase:

The purpose of this phase is to arrive at an approved design scheme that fully addresses the program requirements and other information furnished by the District, and that responds to applicable laws, codes and regulations pertaining to the use and location of the project. This phase will prepare sufficient information for the client to select an

approach to the design, and to reach a documented understanding with the Architect-Engineer regarding the requirements of the project. Further, consistent with the Schematic Design, a complete Design Development will be prepared and presented for Client's written approval.

The goal of Schematic Design is the evaluation of the program, District Standards – including environmental considerations -- schedule, budget, and applicable laws, codes and regulations that pertain to the project. Informed by this evaluation, alternative approaches to design and construction will be explored, and a Project Requirements document prepared for sign-off by the Client.

- 5.2.1. The Architect-Engineer shall prepare a preliminary evaluation of the District's Standards, program, schedule, budget for the Cost of Work, site, and the proposed procurement or delivery method and other Initial Information, each in terms of the other, to ascertain the requirements of the Project. The Architect-Engineer shall promptly notify the DGS of (1) any inconsistencies discovered in the information, and (2) other information or consulting services that may be reasonably needed for the Project.
- 5.2.2. The Architect-Engineer shall present its preliminary evaluation to the DGS and shall discuss with the DGS alternative approaches to design and construction of the Project, including the feasibility of incorporating environmentally responsible design approaches. The Architect-Engineer shall reach an understanding with the DGS regarding the requirements of the Project.
- 5.2.3. Based on the Project's requirements agreed upon with the DGS, the Architect-Engineer shall prepare and present for the DGS's approval a preliminary design illustrating the scale and relationship of the Project components.
- 5.2.4. The Architect-Engineer shall consider environmentally responsible design alternative, such as material choices and building orientation, together with other considerations based on program and aesthetics, in developing a design that is consistent with the DGS's program, schedule and budget for the Cost of the Work. The Architect-Engineer shall prepare a written report discussing energy conservation measures and techniques to be employed consistent with the DGS's Standards or the Architect-Engineer's proposed variances from the DGS's Standards. Such written report shall include an analysis of the cost savings attributable to the incorporation of such measures and techniques.
- 5.2.5. **Project Requirements Document:**
 - 5.2.5.1. A group of drawings and documents manifesting the Architect-Engineer's understanding of the client's requirements as defined in the documents and an assessment of the context (conditions, codes, and requirements) within those requirements must be met.
 - 5.2.5.2. The drawing size shall be variable on a reproducible medium.

5.2.6. Subject Matter:

- 5.2.6.1. As it relates to the Condition Assessment Report, the Architect-Engineer shall:
 - 5.2.6.1.1. Review Condition Assessment Reports prepared by DGS and critically review and assess the findings.
 - 5.2.6.1.2. Attend site visits to verify existing site information and data collection.
 - 5.2.6.1.3. Provide drawings that fully describe existing conditions and locations of existing utilities.
 - 5.2.6.1.4. Provide digital and hard copy graphic documentation of existing site conditions to include, but not be limited to photographs.
 - 5.2.6.1.5. Identify areas that require additional investigation as it relates to structural defects and other pertinent matters that adversely affect the constructability of the Project.
- 5.2.6.2. Site Survey (See Section 3.1)
- 5.2.6.3. Hazardous Materials Report (See Section 3.2.)
- 5.2.6.4. MEP Assessment (where applicable)
 - 5.2.6.4.1. Prepare detailed Mechanical, Electrical and Plumbing (MEP) Systems Assessments, including electrical capacity, plumbing capacity, lifecycle assessment and existing energy utilization (baseline) assessment. Develop acceptable Engineering strategies to be considered within the Design Phase.
- 5.2.6.5. Program. The programs for the facility may consist of the following:
 - 5.2.6.5.1. Replacing and/or upgrade mechanical, electrical and plumbing systems as needed to meet current International Building Code (IBC) and all applicable code requirements. Replacing non-functioning and outdated equipment to improve the efficiency of the MEP systems. Determining lifecycle costs of existing and replacement MEP equipment.
 - 5.2.6.5.2. Renovating of interior spaces that shall be in conjunction with MEP upgrades.

- 5.2.6.5.3. Designing all proposed work to be maintained by the current staff and/or similar levels of capability.
- 5.2.6.5.4. Ensuring that all affected areas of the building are in full ADA compliance, based on the value and extent of the work and the code requirements. This provision shall not be construed to increase program requirements. Design tactile signage, doors and door hardware and other items as may be required.

To address the program the Architect-Engineer shall:

- 5.2.6.5.5. Hold ‘Programming Meetings’ and conduct fact finding meetings with DGS, its Client Agency and other stakeholders as necessary, to clarify and define programmatic requirements. Use “block and stacking” technique to clarify programmatic relationships.
- 5.2.6.5.6. The Architect-Engineer shall confirm that the programmatic and functional requirements of the facilities are met, and that any deficiencies are remedied by the scope of the program. All developed solutions must not hinder existing shelter programs that are to remain in place. The Architect-Engineer shall confirm that the programmatic and functional requirements of the facilities are met, and that any deficiencies are remedied by the scope of the program.
- 5.2.6.5.7. Provide Program Analyses, including defined programmatic requirements.

5.2.6.6. Code and Regulatory Requirements

- 5.2.6.6.1. Architect-Engineer shall provide initial Code reviews and summaries. Architect-Engineer shall prepare a report listing all required submission set DCRA permitting, and approval by applicable oversight agencies. Architect-Engineer shall update its schedule to reflect any time frame duration changes resulting from this review.

5.2.6.7. UFAS/ADAAG Compliance Report

- 5.2.6.7.1. The compliance report shall identify any aspects of the above work that may have impacts on UFAS/ADAAG compliance for the facility.

5.2.6.8. DC Green Building Act of 2006/LEED

- 5.2.6.8.1. The Architect-Engineer shall report what needs to be addressed/accomplished in this facility (LEED SILVER V4/Green Communities) in accordance with the requirements and standards included in the subject act.

5.2.6.9. Summary of Options

- 5.2.6.9.1. The Architect-Engineer shall use the existing Conditions Assessment Report and other reports to prepare a summary of strategies or approaches that successfully address the programs and reconciles the above findings.

5.2.6.10. Permit Requirements:

- 5.2.6.10.1. Floor plan(s), two (2) elevations, one (1) each longitudinal and transverse sections, and site plan.
- 5.2.6.10.2. Drawing dimensions shall be to the appropriate scale. Minimum scale will be 1/8" = 1'-0" for plans and elevation, 1/4" = 1'-0" for sections, and 1" = 50' for the site plan (s). North arrow and Building Identification Number (BIN) shall be shown on all floor and site plan (s). The sheet size is variable, but shall be adequate for a clear submission. Approval of sheet size and bin shall be obtained from the Project Manager prior to start of design.
- 5.2.6.10.3. Notes and dimensions shall be sufficient to enable the reviewer(s) to analyze the submission for conformance to the project requirement and to evaluate the quality of design. Include tentative elevations of finish grade and each floor.
- 5.2.6.10.4. Material of construction shall be identified in a general manner.
- 5.2.6.10.5. Required egress information:
- 5.2.6.10.5.1. Square footage of all interior spaces.
- 5.2.6.10.5.2. Square footage of all interior spaces as allotted per Scope of Work Attachment-A1.
- 5.2.6.10.5.3. Egress requirements showing calculated population, egress flow diagram, required exit units and area classification.

5.2.6.11. Reviews:

5.2.6.11.1. This submission shall be made to DGS for review by the user, the Construction Division and the Project Manager. Others may review for program conformance.

5.2.6.11.2. More than one (1) submission may be required before acceptance.

5.2.6.12. Budget Review:

5.2.6.12.1.1. Review construction budget to ensure Project Scope is consistent with budget amount.

5.2.6.12.1.2. The Architect-Engineer is required to design within budget at every stage of design unless otherwise authorized. If the design is over the budgeted amount, the Architect-Engineer shall redesign the submittal until the scope and budget differences are resolved to the satisfaction of DGS.

5.2.7. Deliverables:

5.2.7.1.Preliminary Evaluation

5.2.7.2.Preliminary Design

5.2.7.3.Existing Conditions Report

5.2.7.4.Site Survey

5.2.7.5.Hazardous Material Report

5.2.7.6.MEP Assessment

5.2.7.7.Project Program

5.2.7.8.Code and Regulatory Report

5.2.7.9.DC Green Building Act/LEED SILVER V4 Report

5.2.7.10. Summary of Options

5.2.7.11. Budget Review

5.2.7.12. Other items as required in the Scope of Work

5.3. Design Development Phase:

The goal of this phase is the preparation and approval of Design documents. The documents shall consist of architectural drawings, and 2D, 3D and digital modeling, as necessary, to fully describe a design that is consistent with the District's Program, and addresses all issues stated in the Project Requirements document. It shall also include a schedule and a cost estimate. The Design documents shall be submitted for the Client's written approval.

If required, the completed Design shall be submitted as the "Concept Design" submission for preliminary design review by oversight agencies such as DCRA, CFA, NCPC and Zoning/BZA.

5.3.1. Definition:

The Design Development Phase consists of drawings, description of materials, area tabulations and all other graphic representations necessary to convey the project's concept. The Architect-Engineer will schedule a pre-design conference immediately after approval of the Pre-development and Schematic Phase. The purpose is to establish both a mutual understanding of the project and a common acceptance of the proposed engineering system(s). In-depth discussion shall require simple plans and shall develop acceptable Engineering solutions to be included within the Construction Documents.

5.3.1.1. The drawings shall be developed from the annotated Predevelopment and Schematic drawings. These drawings shall be accurate, sufficiently complete architecturally to enable an exhaustive check for conformance to the Scope of Work. All pertinent information must be included. These documents should confirm that all items identified in the Preliminary Report have been addressed, including but not limited to:

- 5.3.1.1.1. Existing Conditions (Site and MEP)
- 5.3.1.1.2. Site Survey
- 5.3.1.1.3. Hazardous Materials
- 5.3.1.1.4. MEP Assessment
- 5.3.1.1.5. Project Program
- 5.3.1.1.6. Code/ADAAG
- 5.3.1.1.7. Green/LEED SILVER V4, including fully completed LEED SILVER V4 Checklist
- 5.3.1.1.8. Summary of Options

5.3.1.1.9. Budget Review

5.3.1.2. The Architect-Engineer shall schedule a pre-design conference immediately after approval of the Pre-development and Schematic Phase. The purpose is to establish both a mutual understanding of the project and a common acceptance of the proposed engineering system(s). In-depth discussion will require simple plans and will develop acceptable Engineering solutions to be included within the Construction Documents.

5.3.1.3. The Engineering drawings prepared in the Design Phase shall include information and written comments that will be sufficiently complete to portray, on sheets for each discipline, the proposed engineering systems. The drawings for this phase may be prepared to a convenient and easily read scale.

5.3.2. Subject Matter:

5.3.2.1. Floor plan(s), four (4) elevations, one (1) each longitudinal and transverse sections and site plan.

5.3.2.2. Drawing dimensions shall be to the appropriate scale. Minimum scale will be 1/8" = 1'-0" for floor plans and elevations, 1/4" = 1'-0" for section, 1/2" = 1'-0" for typical wall sections, and 1' = 50" for plot plan. North-arrow will be shown on all floor and site plans(s). The sheet size is 29" x 41" (unless modified in Scope of Work Attachment-A1), and must be legible, clear, and easily read.

5.3.2.3. Notes and dimensions shall be adequate for the information required.

5.3.2.4. All rooms shall be identified and sized, typical furnishing and equipment to be named and location, elevations to be developed identifying façade to include fenestration types and openings, site development, overall dimensions, approximate floor and finish grade elevations.

5.3.2.5. A description of materials in which shall be included the proposed engineering systems (structural, mechanical and electrical), materials of construction, and other information describing the project. This shall include, but not be limited to, indicating intended locations and provisions for mechanical systems, meter rooms, and duct chases.

5.3.2.6. Provide on the drawings (within the confines of the area delineated), the seating capacity of assembly halls, auditoriums, gymnasiums and stadiums, plus any other spaces when identification of capacity is essential to the determination of compliance with the Code and Scope of Work.

5.3.2.7. The requirements of the Building Code will be equaled or exceeded. For egress, show the calculated population, egress flow diagram (complex system), identify required, existing and the area classification. Also identify the type of occupancy, type of construction, fire safety requirements, and all other building code requirements.

5.3.2.7.1. Include ADA diagrams confirming code and ADA compliance, and any special provisions required.

5.3.2.8. LEED SILVER V4 Assessment (See Scope of Work Attachment-A1)

5.3.2.9. General Submission Requirements for All Projects: The Architect-Engineer shall provide on each plan drawing, the gross square foot area of each plan or plans on the sheet. On the cover or index sheet, provide the gross square footage of the complete building project. The area of the site is to be expressed separately in terms of gross area.

5.3.2.9.1. The required information is applicable to each review submission and shall be prominently called out and shown as follows:

5.3.2.9.1.1. When a single floor plan only is shown, the square footage is to be placed in proximity of the Title Block. If more than one floor plan is shown on a sheet, show square footage as a part of floor plan identification. For example: (2nd Floor Plan; Area = _____ square feet, etc.).

5.3.2.9.1.2. On the Cover or Index Sheet, the required information may be shown by “Key Plan” or schedule. The Architect-Engineer shall prepare, but need not submit, computations in support or aggregate figures unless requested.

5.3.3. Architectural Standards for the Project:

5.3.3.1. The Index sheets shall incorporate Schematic and Design Phase comments and additional sheets as may be required for the Architect-Engineer to accomplish its work.

5.3.3.2. Topographic survey information, either official or taken by Architect-Engineer.

5.3.3.3. The computation developed to determine egress requirements.

- 5.3.3.4. Descriptive Specifications, not in detail, but that describe the project, its intent, and its systems and identifies key areas for consideration or that shall require additional study.
- 5.3.3.5. Preliminary Cost Estimate representing the likely cost, possibly established on a per-system or per-square foot basis, of the Design should accompany each design Option if there is more than one (1).

5.3.4. Structural Standards for the Project:

- 5.3.4.1. Live and dead loads.
- 5.3.4.2. Proposed Structural system with the back-up information use to make the selection.
- 5.3.4.3. Foundation system based on sub-soil data.
- 5.3.4.4. The proposed structural system to be shown on the plans in a legible, simple manner.

5.3.5. Electrical Standards for the Project:

- 5.3.5.1. Lighting level, based on Illumination Engineering Society (IES) standard, listing of security, fire alarm, telephone and data communication systems.
- 5.3.5.2. Luminaire types, in general.
- 5.3.5.3. Preliminary electrical load, selected voltage level to be applied.
- 5.3.5.4. The major components and services shall be drawn on the plans in a legible, simple manner to include room and approximate area requirements for control panels.
- 5.3.5.5. Written analysis, when applicable, explaining the comparative advantages of one or more systems and the reasons for selection of the recommended system.
- 5.3.5.6. Prior to scheduled meetings, the Architect-Engineer shall confer with all utility organizations to confirm availability of service and recommendations to address.

5.3.6. Mechanical (HVAC) Standards for the Project:

- 5.3.6.1. Heat loss/heat gain load calculations (Block Load) for the building as a whole.
- 5.3.6.2. Assumed quantity and approximate area requirement for boilers, chillers, air handling units, compactors, elevators, and all other

equipment to be installed in mechanical room(s) and other rooms or spaces.

5.3.6.3. The major component and services shall be drawn on the plans in a legible and simple manner to include all rooms and spaces for the required equipment and show the equipment layout to scale in its proper relationship.

5.3.6.4. Written analysis explaining the comparative advantages of one or more systems and the reason for selection of the recommended system.

5.3.7. Plumbing Standards for the Project:

5.3.7.1. The major components and services shall be drawn on the plans in a legible and simple manner to include all rooms and spaces identifying all plumbing fixtures.

5.3.7.2. Prior to the pre-design meeting, the Architect-Engineer shall confer with all utility organizations and confirm availability of service and recommendations that shall be addressed.

5.3.8. Specifications:

5.3.8.1. Outline Specifications including all of the likely relevant Construction Specification Institute (CSI) sections, with basic scope identified (e.g. CSI Section 8: Windows shall include replacement 'monumental' metal windows for all existing exterior walls, and new 'residential' wood windows for the North wing extension. Windows surrounding the main entry shall be repaired and restored.)

5.3.9. Reviews:

5.3.9.1. The review submission(s) will be delivered to DGS for review by the user and the Project Manager. Others may review for aesthetics, orientation, and placement.

5.3.9.2. If the project is to be submitted to either the US Commission of Fine Arts (CFA), the Historic Preservation Review Board (HPRB), the National Capital Planning Commission (NCPC) or the Community, the Architect-Engineer shall prepare a set of plans for a formal presentation by mounting on board stock (board mounting not required for NCPC), by shading, by crisp black lines and bold, clear lettering. The submissions may be reviewed by Commission members from a distance of ten to twelve feet; hence prepare this submission accordingly. At the option of the Architect-Engineer, a rendering may be prepared for submission to CFA; if the work is accepted and the rendering remains correct, it may be used as the one for which DGS has contracted. A model is optional except as specified in Scope of Work Attachment-A1.

If the Architect-Engineer has prepared a study model for office use, it shall be submitted in both Commissions' scheduled monthly meetings. The dates for these meetings may be obtained from the Project Manager.

- 5.3.9.3. If the submission is rejected by DGS, the Architect-Engineer may revise and resubmit promptly; if CFA or NCPC rejects the submission, the earliest resubmission time is one (1) month. It is incumbent upon the Architect-Engineer to carefully and completely prepare the submission.
- 5.3.9.4. It is entirely the Architect-Engineer's responsibility to prepare a design acceptable to all authorized review agencies.
- 5.3.9.5. The Architect-Engineer is required to design within budget at every stage of design unless otherwise authorized. If the design is over the budgeted amount, the Architect-Engineer shall redesign the submittal until the scope and budget differences are resolved to the satisfaction of DGS.
- 5.3.9.6. Acceptance of this submission by the authorized review agencies establishes the aesthetics and the configuration of the project. Only minor refinements of these items will be permitted thereafter. However, interior spaces and operating systems continue to be subjected to intensive review and adjustment.

5.3.10. Deliverables:

- 5.3.10.1. Design Drawings
- 5.3.10.2. Area Tabulations
- 5.3.10.3. LEED SILVER V4 Assessment
- 5.3.10.4. Preliminary Cost Estimate
- 5.3.10.5. Structural loads and systems
- 5.3.10.6. Electrical loads and written analysis as needed
- 5.3.10.7. Heat loss/gain load and written analysis as needed
- 5.3.10.8. Descriptive Specifications
- 5.3.10.9. Special Reports as required
- 5.3.10.10. Other items as required in the Scope of Work

5.3.11. Color Chart Submissions

- 5.3.11.1. Miniature samples shall be used if possible. Lithographs generally are not acceptable. For ceramic floor tiles, use sufficient individual tiles to show pattern.
- 5.3.11.2. Paper reproductions of items such as metal partitions, steel equipment, laminated plastics, porcelain enamels, and similar facsimiles which appear to be actual finishes specified are acceptable.
- 5.3.11.3. Where large and/or heavy samples (e.g. brick, cast stones, etc.) are required, it is not necessary to mount these on display boards, however, they must be properly identified with project name and number, D.C. Color Code and manufacturer's identification.

5.3.12. Computerized Design Analyses:

- 5.3.12.1. The Architect-Engineer shall prepare design analyses in reproducible form complete in such detail as to accurately reflect the development of all engineering design, and sufficient to support all design work prepared to date. Mechanical and Plumbing Design Analysis will: (i) be complete and will include detailed room by room heat loss and heat gain calculations; (ii) load summaries; (iii) detailed equipment selection calculations with major performance data and dimensions of all major equipment items; (iv) air balance calculations; (v) ventilation calculations; and (vi) pipe and duct sizing, diagrams, etc.
- 5.3.12.2. Computer Software: Software to be used for HVAC Design Analysis shall be either Carrier Co.'s "E-20" or Trane Co.'s "Trace" program or other approved. For Plumbing Design Analysis, use Elite software or other approved. Approval shall be obtained from DGS prior start of Design analyses.

5.3.13. Rendering:

The Architect-Engineer shall submit one (1) perspective rendering in color, when required by Scope of Work Attachment-A1. Rendering will be of professional quality and will be furnished matted, suitably framed, protected with non-glare glass, and ready for 'hang' mounting. Additionally, the Architect-Engineer shall be guided by the following:

- 5.3.13.1. Preliminary Sketch Submission: A preliminary sketch of the proposed rendering shall be submitted for DGS review and approval prior to proceeding for finalization.
- 5.3.13.2. Size: The rendering shall be appropriate for the scale of the building portrayed and as may otherwise be dictated by good practice and pleasing proportions. Generally, any overall dimensions (including

frame) in excess of approximately 30" x 40" will not be considered necessary.

5.3.13.3. Perspective Viewpoint: It may be either eye-level or bird's-eye view taken from a point which will best show the scope and aesthetic quality of the project. At least one full principal façade must be shown. Foregrounds for purposes of relating to scale, may show persons, landscaping, vehicles, equipment, etc., provided they do not obscure important architectural elements or otherwise invite attention away from the primary purpose of the rendering which is the delineation of the architectural quality of the building. Shade and shadows will be used to emphasize architectural and other features as appropriate.

5.3.13.4. Medium: Renderings shall be computer generated unless otherwise specified.

5.3.13.5. Project Title and Credits: The title of the project (not project number) shall be appropriately placed on the lower portion of the matted area along with name of the Architect-Engineer of record. If the project has, or is to have, a "dedicated" name, use same for the title. The delineator may sign and date his work in a discreet manner directly on the rendering.

5.3.13.6. Renderings shall be required for all design options including any modifications made during the design process.

5.3.14. **Construction Cost Estimate:**

5.3.14.1. The estimating procedure shall be in accordance with Construction Specifications Institute (CSI) master format standards. In preparing the estimate at this stage, it is recognized that many items may not have been ascertained to a point where a quantity survey is possible. Nevertheless, a number of the general construction features will have been selected which shall permit an itemization of basic quantities under the major branches of work, such as: general excavation, concrete, masonry, etc. In those instances where insufficient information has been developed to determine specific quantities, systems, fixtures, or equipment, an appropriate allowance may be indicated. For each allowance, an explanation of its development will be included. This preliminary estimate will show separately (a) the cost of each new building or addition, (b) the work in existing buildings, and (c) costs of all work outside the buildings. The estimate will be broken down to show the cost analyses or allowances (noted as such) based on these units. As example: building construction cost will be shown separately from mechanical and equipment costs and these will be separated into the various trades and types in the

summary sheets to the degree practical at this stage of development. Similarly, outside work will show components of grading, roads and sidewalks, landscaping, sanitary and electrical services, etc. Computer software such as “Means” or other approved software will be used in developing construction cost estimates.

5.3.15. Reviews:

5.3.15.1. This review submission shall be delivered to DGS for review by the user, Design and Engineer Division/DGS and other agencies that have a required input.

5.3.15.2. The scheduled review submission shall be complete to the degree described. If any discipline is not completed thus, the entire submission will be returned. It is the Architect-Engineer’s responsibility to ascertain that all work is done to this level, qualitatively and quantitatively, prior to making a submission. DGS shall decide the adequacy of a submission by the working day from the date submission is made.

5.3.15.3. The Architect-Engineer is required to design within budget at every stage of design unless otherwise authorized. If the design is over the budgeted amount, the Architect-Engineer shall redesign the submittal until the scope and budget differences are resolved to the satisfaction of DGS.

5.3.15.4. Acceptance of this submission by the authorized review agencies establishes the project’s structural, mechanical, electrical, HVAC, plumbing and other systems as required. Additionally, site, landscaping, architectural, structural, mechanical, plumbing and electrical plans; sections; elevations; typical construction details; and exterior and interior materials and finishes are defined to fix and describe the size and character of the Project as may be appropriate. The budget estimate is now based on comprehensive design and systems. Outline specifications are provided to establish in general their quality levels.

5.3.16. Deliverables:

5.3.16.1. Computerized Design Analysis

5.3.16.2. Rendering as required by Scope of Work

5.3.16.3. Construction Cost Estimate

5.3.16.4. Other items as required in the Scope of Work

5.4. Construction Documents Phase:

The purpose of this phase is to prepare the Construction Documents for the District's DGS and DCRA Approval. The Construction Documents shall illustrate and describe the complete development of the approved Design Development Documents and shall consist of a complete set of Drawings and Final Specifications setting forth in detail the quality levels of materials and systems, and other requirements for the construction of the work. A detailed cost estimate of the work shall be prepared. The Construction Documents and the cost estimate shall be submitted for the DGS' written authorization before permitting. Upon receipt of that authorization, the Architect-Engineer shall submit to appropriate governmental authorities having jurisdiction over the Project, and acquire their permit(s). Further, the Architect-Engineer shall provide the permitted sets and specifications to the District, which shall be used to prepare the documents for bidding.

5.4.1. Definition:

- 5.4.1.1. The review shall be at the completion of the construction documents and known as Construction Documents Phase. This is the development of the documents that constitute the Contract for Construction. Included for this review will be complete plans, specifications in draft form, final estimate, and final detail computations. This submission requires that the plans be complete and ready for issue to bidders including the specifications.
- 5.4.1.2. Notes and dimensions will be adequate for the information required.
- 5.4.1.3. The Architect-Engineer is required to design within budget at every stage of design unless otherwise authorized. If the design is over the budgeted amount, the Architect-Engineer will redesign the submittal until the scope and budget differences are resolved to the satisfaction of DGS.
- 5.4.1.4. Drawings shall be complete and prepared using Computerized Graphic Software as specified by the Project Manager as specified in the Scope of Work Attachment-A1.
- 5.4.1.5. The plans shall be printed as follows:
 - 5.4.1.5.1. Size 29" x 41" trim line unless stipulated otherwise in Scope of Work Attachment-A1, inside border 1-1/2" on binding edge, 1/2" on other edges.
 - 5.4.1.5.2. Optimum readability is a requirement at full size reproduction.
 - 5.4.1.5.3. A graphic scale shall be shown on each drawing for each scale used.

- 5.4.1.5.4. The quality and spacing of lines on the drawings must be carefully controlled. Clear space between parallel lines should always be of greater width than the adjoining lines.
 - 5.4.1.5.5. All lettering shall be vertical capitals with an open quality and will be not less than 1/8" high.
 - 5.4.1.5.6. Material symbols shall be bold and not dense.
 - 5.4.1.5.7. Do not use any kind of half tone or opaque shading or hatch except solid black on the face of the drawings where applicable for small or thin sections.
 - 5.4.1.5.8. Drawings shall be of the best quality for possible scanning reproduction.
 - 5.4.1.5.9. The format and wording of the title block to be used on the drawings shall be approved by DGS before proceeding with printing of blank reproducible sheets.
- 5.4.1.6. Specifications shall follow MasterSpec (Latest Version) to be used as a guide; deleted, appended and corrected by the Architect-Engineer. DGS (DGS) shall review and note the comments with required changes prior to its return to the Architect-Engineer.

5.4.2. Subject Matter:

The minimum work accomplished for the review shall have progressed to the levels hereinafter described:

- 5.4.2.1. Site
- 5.4.2.2. Topographical Survey of site (section 3.1.2.).
- 5.4.2.3. Existing Conditions Plan showing locations of previously demolished structures, structures to be demolished by others and any other changes that are expected to occur on the site between the time the topo survey is made and the time the site is released to the Contractor for its construction operations. Information shown on this drawing will include, but not necessarily be limited to, the following: (i) outline of proposed structures; (ii) locations of demolished structures and rubble fills in basements, areaways, vaults, etc.; (iii) locations of all structures, wall, walks, curbs, trees, paved areas, etc., remaining on the site; (iv) a complete scope and clear definition of all site work to be performed by the contractor related to existing conditions that involve demolition and removal of existing structures, retaining walls, areaways, vaults, walks, footings, basement slabs, paving, etc., removal of rubble and other fills, removal of trees, etc. Existing

conditions plan will show relationship of existing conditions to new construction in both horizontal and vertical planes of reference.

- 5.4.2.4. Site Plan at a scale not less than 1" = 20'-0" showing and/or including location and dimensions of: (i) proposed building(s); (ii) existing proposed sidewalks, street, exterior utilities, property lines, paved areas, play areas, service and parking areas; (iii) existing streets or alleys to be closed; (iv) total square feet; (v) extent of contract lines, and (vi) Building identification number (to be furnished by DGS), include street address, lot and square feet numbers (for all projects).
- 5.4.2.5. Sub-soil information drawing (see Section 3.1.4.)
- 5.4.2.6. Landscape Plan at a scale not less than 1" = 20'-0", identifying plant material and location of same and including a list of materials.
- 5.4.2.7. Architectural: (min. scale 1/8" = 1'-0") at appropriate scales to adequately describe the work.
- 5.4.2.8. Floor plans – dimensioned, completely referenced partitions and fixed equipment located, doors and windows, egress location and identification of sections, details, and other pertinent data.
- 5.4.2.9. Reflected ceiling plans – structural members both heads, horizontal and vertical, luminaries, HV AC registers, sprinkler heads, electronic devices, all other exposed items, and ceiling material layout. Wherever, in the ceiling space, ducts, conduits, beams, etc. indicate possible acute congestion, a vertical section will be included establishing adequate clearances.
- 5.4.2.10. Elevations – fully completed indicating materials, fenestration, finish grade, etc.
- 5.4.2.11. Sections – identification, longitudinal and transverse sections, all wall sections, stair sections, vertical transportation sections, and all other sections, as needed.
- 5.4.2.12. Details – door and window, all other as needed.
- 5.4.2.13. Schedule – completed.
- 5.4.2.14. All other – fully complete in keeping with the spirit and intent of the plans.
- 5.4.2.15. Marked-up plans, computations, notes and a copy of the DGS review comments (with annotated action taken by A-E) from the previous submission.

5.4.3. Civil Standards for the Project:

5.4.3.1. Plans (Existing and Complete) - The location and identification of all utility lines both existing and new shall be shown on the site plans.

5.4.3.2. A copy of DGS's review comments on the previous submission.

5.4.4. Additional Structural Standards for the Project:

5.4.4.1. Floor Plans, foundation plan, roof plan – dimensioned, all structural members and/or system(s), location and identification of section(s) and details, and other pertinent data.

5.4.4.2. Sections – identification, longitudinal and transverse sections, wall sections, stair sections foundation and foundation support sections, and all other major sections.

5.4.4.3. Details – all details as needed.

5.4.4.4. Schedules – completed.

5.4.4.5. Computerized Analysis – all computations including corrections necessitated at original submission review and changes made as the work progressed, as well as located on computer disk(s) with label(s) to show project No., project title and date.

5.4.4.6. Review comments (with annotated action taken by Architect-Engineer) on the previous submission.

5.4.4.7. All other: completed as needed.

5.4.5. Additional Electrical Standards for the Project:

5.4.5.1. Floor plans, ceiling and roof plans - locations of luminaries, switches, wiring panels, switch gear and electrical room, service entrance, transformers, etc. All systems will be shown fully complete.

5.4.5.2. Riser diagrams – all systems.

5.4.5.3. Schedules – panels, fixtures, switchboard, etc.

5.4.5.4. Computerized Analysis – complete lighting and final power load calculations including PEPCO information regarding available short circuit current and maximum permissible inrush current.

5.4.5.5. All other – communications, security alarm, etc.

5.4.5.6. Manufacturer's catalogue cuts of power equipment, wiring devices and lighting fixtures.

5.4.5.7. Marked-up plans, computations, notes and a copy of DGS review comments (with annotated action take by A-E) from the previous submission.

5.4.5.8. Miscellaneous utilities information from suppliers.

5.4.6. Mechanical HVAC:

5.4.6.1. Floor plans, roof plan – all HV AC units, registers, louvers, controls, piping, ductwork and their sizes etc.

5.4.6.2. Risers, control diagrams and description, all mechanical notes and details.

5.4.6.3. Capacities of boilers, chillers, fans, pipe sizes, valves, expansion tanks, and other associated equipment, accessories and data as well as schematic flow diagram(s).

5.4.6.4. Complete computerized Analysis for each room – heat loss, heat gain, ventilation, and total building load with air supply/return and outside air.

5.4.6.5. Fuel tanks, piping, and sizes etc.

5.4.6.6. Equipment schedules, catalogue cuts.

5.4.6.7. Boiler and equipment room size and layout. Room layout and vertical sections (where needed) at 1/4 “scale, minimum.

5.4.6.8. Marked-up plans, computations, notes and copy of DGS review comments (with annotated action taken by A-E) from the previous submission.

5.4.7. Additional Plumbing Standards for the Project:

5.4.7.1. Floor plans, roof plan with vent, equipment locations and roof drains, all fixtures, hot and cold water with distribution, recirculation and waste piping, vents, drains, sprinkler system pumps, etc.

5.4.7.2. All riser diagram(s) to include water, sanitary, gas, sprinkler system, projection (option).

5.4.7.3. Schedules – completed and catalogue cuts.

5.4.7.4. Toilet and equipment room layouts at 1/4” scale, minimum.

5.4.7.5. Computerized load analyses and sizing calculations.

5.4.7.6. Marked-up plans, computations, notes and a copy of DGS review comments (with annotated action taken by A-E) from the previous submission.

5.4.8. Final Specifications:

The Architect-Engineer shall submit Final Specifications at the end of the Construction Document Phase. The Architect-Engineer shall prepare and submit two (2) copies of the complete specifications for review and comment. Preparation of specifications will be accomplished by marking-up a copy of the latest version of the AIA MASTERSPEC® Specifications (as a guide) in accordance with the requirements set forth, and with the addition of double-spaced typed inserts and pages, bound in loose leaf folders, as well as loaded on computer disk (or CD) properly labeled with Project No., Project Title and date.

Miscellaneous Standards for the Project:

5.4.8.1 Elevators, escalators, dumb-waiters, pneumatic tube, waste and other transportation systems.

5.4.8.2 Special equipment:

5.4.8.2.1 FEMS Alerting System (Purvis System)

5.4.8.2.2 FEMS IT/COMMS (DC NET)

5.4.8.2.3 FEMS VEHICLE EXHAUST SYSTEM (Neederman System)

5.4.8.2.4 FEMS ACCESS CONTROL (RS 2 Inc)

5.4.8.3 Trash and disposal equipment.

5.4.9 Construction Cost Estimates:

5.4.9.1 The cost shall be based on an accurate detailed quantity survey of both labor and material. Any approved standard estimating procedure will be acceptable provided that the conclusions are presented in the order and detail shown on the CSI MasterFormat. Lump sums or allowances for major items of the estimates will not be used. However, quantity surveys that could be used to order materials, while desirable from a cost control viewpoint, are not necessary. For example, concrete formwork may be priced on the basis of square area for slabs, walls, beams, etc., rather than the actual quantity of lumber or metal formwork required. Plumbing take-offs will show the linear feet of various pipe sizes, but need not itemize fittings. Fittings may be calculated as a percentage allowance. The same procedure may be used for fittings on ductwork and electric conduit where appropriate.

5.4.9.2 Bidding Alternates are to be indicated on the Recapitulation Form by adding an additional column or columns and adjusting the appropriate items.

5.4.9.3 Explanation of Terms on Recapitulation Form:

Gross Building Area: The gross square foot areas will include all spaces (including all openings in floors) measured to the exterior surfaces of the enclosing walls for all floors, basements, balconies, mezzanines, usable attics, service and equipment rooms, penthouse(s), enclosed passages, and tunnels. The total will include ½ the gross area for pitched roof space (not usable attic), roof enclosures, cornices, areaways, pipe spaces, crawl spaces, covered areas, such as open play areas under buildings, and all other unfinished excavated spaces. The item 1.0 “General Expenses” on the Recapitulation Form: These are the costs experienced by the General Contractor, which are not covered in the other items enumerated on the Recapitulation Form.

5.4.9.4 The computation copy will be sharp and legible.

5.4.9.5 Construction Cost Estimates will be required at the 35% Completion and 90% Completion phase.

5.4.10 **Reviews:**

5.4.10.1 The review submission shall be delivered to DGS for review by the user, Design and Engineer Division/DGS and other agencies that have a required input.

5.4.10.2 The scheduled review submission shall be complete to the degree described. If any discipline is not completed thus. The entire submission will be returned. It is the Architect-Engineer’s responsibility to ascertain that all work is done to this level, qualitatively and quantitatively, prior to making a submission. The Department of Real Estate Services will usually decide the adequacy of a submission by the working day from the date submission is made.

5.4.10.3 The Architect-Engineer is required to design within budget at every stage of design unless otherwise authorized. If the design is over the budgeted amount, the Architect-Engineer will redesign the submittal until the scope and budget differences are resolved to the satisfaction of DGS.

5.4.10.4 Acceptance of this submission by the authorized review agencies establishes the project’s further development of the approved Design Development Documents and shall consist of Drawings and Specifications setting forth in detail the quality levels of materials and systems and other requirements for the construction of the Work. The

Architect-Engineer shall also incorporate into the Construction Documents the design requirements of government authorities having jurisdiction over the Project. Any adjustments to the budget estimate shall be reviewed and resolved.

5.4.11 Deliverables:

- 5.4.11.1 Construction Document Drawings
- 5.4.11.2 Topographic survey (if add alternate used)
- 5.4.11.3 Architectural - marked-up DGS review comments from previous submission
- 5.4.11.4 Civil –marked-up DGS review comments from previous submission
- 5.4.11.5 Structural computerized analyses and marked-up DGS review comments from previous submission
- 5.4.11.6 Electrical computerized analyses, catalogue cuts and marked-up DGS review comments from previous submission
- 5.4.11.7 Mechanical computerized analyses, equipment schedules, catalogue cuts and marked-up DGS review comments from previous submission
- 5.4.11.8 Plumbing computerized load analyses, sizing calculations and marked-up DGS review comments from previous submission
- 5.4.11.9 Final Specifications
- 5.4.11.10 Miscellaneous Reports (elevators, transportation, etc.)
- 5.4.11.11 Construction Cost Estimate
- 5.4.11.12 Other items as required in the Scope of Work

5.5 Compliance Phase

5.5.1 Definition:

- 5.5.1.1 The Compliance Phase will consist of all documents fully completed, signed and ready to print.
- 5.5.1.2 The plans will be in accordance with Section 4.3.1.2. as approved by the Project Manager prior to start of design, as well as accompanied by computer disk (or CD) loaded with the entire design work and with proper labels. The labels will identify project number(s), project title and date as well as agreement number.

5.5.2 Technical Specifications:

In accordance with the approved Draft, the Final Specifications will be prepared for reproduction by Photocopy. The electronic word processing file will be formatted for printing on sheets of 8-1/2" x 11" bond paper with margin for side binding, Times New Roman font type and black imprint. The Architect-Engineer shall submit in electronic format unless otherwise specified by the Project Manager. Wherever in the specification an item is designated to be installed or performed "where indicated" or "as shown on the drawings" or words of like import, it will be the responsibility of the Architect-Engineer to check such drawings and determine if such requirement is in fact shown and/or indicated with sufficient clarity so as to preclude the possibility of disagreement as to contract requirement during the actual construction of the facility as designed.

5.5.3 Design Analysis:

The Architect-Engineer shall submit one two (2) copies of all final corrected design analyses, complete in every respect and one (1) set of electronic files with the entire Design Analysis. The electronic files will be labeled as indicated for previous submission.

5.5.4 Photographs:

The Architect-Engineer shall submit electronic digital images of the rendering in format specified by the Project Manager.

5.5.5 Completion:

Upon acceptance of this submission, the Architect-Engineer has fulfilled the initial terms of the contract.

5.6. Certification of Drawings:

The Architect-Engineer shall certify that the drawings were prepared under the Architect-Engineer's supervision and that the Architect-Engineer acknowledges responsibility for their correctness by placing its professional license stamp and signing the final documents at the completion of Compliance Phase and again by stamping and signing those prints that will be submitted to the Department of Consumer and Regulatory Affairs, Permit Processing Center for a building permit.

5.7. Architect-Engineer Responsibility to Obtain Building Permits:

5.7.1. The Architect-Engineer shall be responsible for obtaining any such building permits and clearance as may be required for the construction of the Project (s). Permits and clearances are required by Public Law and D.C. Regulations. For example, if the project is located in a historic area or is a property listed on the register of historic places, clearances to proceed must be provided by either the

Joint Committee on Landmarks or the Commission of Fine Arts. The conduct of preliminary reviews at the conceptual design stage in conjunction with the Permit Center is encouraged and recommended, particularly, when complex or high cost projects are involved. Step 1 in the procedure for review and permit issuance is to initially contact the Permit Information Counter (the location and telephone number can be obtained from the Project Manager). Other examples of permits and clearances are DCARA, DDOT, DDOE, DOH, SHPO, WASA, etc. The Architect-Engineer shall develop a Permit and Clearance responsibility matrix to include: types of permits/clearances necessary for the Project, the processing time period, contact information for person obtaining permit and/or clearance; permit/clearance status, and payment responsibility.

- 5.7.2. The Architect-Engineer shall submit five (5) sets of drawings to the Permit Processing Center. The Center will retain one (1) set for their permanent file. The remaining four (4) sets of Approved Drawings and the Permit will be given to the Architect-Engineer who in turn will deliver the same to the Project Manager.
- 5.7.3. The Architect-Engineer, for no additional fee, shall be responsible to make any and all such changes and/or corrections as may be required by the Department of Consumer and Regulatory Affairs; compliance being a mandatory requirement prior to the issuance of a Permit.
- 5.7.4. Architect-Engineer shall be compensated for performing Title I services to include obtaining the building permit. The Permit is not for private construction, but shall be for District Owned property. Therefore, the permit shall be issued "NO FEE".
- 5.7.5. The method of obtaining the requisite DCRA Building Permit shall be at the sole discretion of the Architect-Engineer. All costs for any method shall be included in the proposal price.
- 5.7.6. The estimated construction cost will be determined by the Architect-Engineer's design. The DCRA Building Permit fee shall be paid by DGS.
- 5.7.7. Title-I Services shall not be considered 100% complete pending satisfactory accomplishment of the requirements set forth as above.

5.8. Construction Administration Phase

- 5.8.1. Produce electronic documents to be distributed to bidders.
- 5.8.2. Attend one pre-proposal conference and lead one site walk-through.
- 5.8.3. Respond to questions from bidders.
- 5.8.4. Facilitate Pre-Construction meeting and conduct regular bi-weekly construction progress meetings.

- 5.8.5. Provide Construction Administration services:
 - 5.8.5.1. Review, log and approve submittals, shop drawings, Request for Information, etc. Maintain submittal log.
 - 5.8.5.2. Coordinate with Project Manager on all Requests for Change Proposals, Change Orders, etc. including maintaining a log of all such documents.
 - 5.8.5.3. Provide direction for questions and concerns from the contractor and Project Manager in resolution of problems.
- 5.8.6. Provide Field Services for entire construction period
 - 5.8.6.1. Designer's Construction Administrator to conduct bi-weekly site visits, including observation of demolition, installation of finishes, etc.
 - 5.8.6.2. Provide site visit report to Project Manager bi-weekly.
- 5.8.7. Conduct Substantial Completion Inspection, coordinate with Project Manager to create punch list, substantiate that items noted are completed, and issue Substantial Completion Certificate.

5.9. Project Close-Out

- 5.9.1. Provide support services as needed during the project close out process.
- 5.9.2. Obtain and review all project close-out documents as submitted by the Contractors for completeness before transmitting to the DGS. Close-out documents shall include but are not limited to:
 - 5.9.2.1. Contractor's red lines and as-built notes
 - 5.9.2.2. Warranty information
 - 5.9.2.3. Operating and Maintenance Manuals
 - 5.9.2.4. As-Built record drawings (in digital format, both CAD and PDF)

6.0 PROJECT PHASES

	Estimated (Calendar Days)	Duration
Predevelopment Phase	90	
Schematic Design Phase	45	
Design Development Phase	45	
Construction Documents Phase	45	
Bid Phase	60	
Construction Administration	550	

7.0 ARCHITECT - ENGINEER’S BID FORM

ENGINE COMPANY 26 NEW FACILITY

- (i) Predevelopment Phase \$ _____.
- (ii) Schematic Design Phase \$ _____.
- (iii) Design Development Phase \$ _____.
- (iv) Construction Documents Phase \$ _____.
- (v) Bid Phase \$ _____.
- (vi) Construction Administration \$ _____.
- (vii) Maximum Reimbursable Allowance* \$ 325,600.00

**Permits, applications, fees, documents, etc, and DCFEMS vendor-approved, Deccan International ADAM 2.0 Software for response/deployment predictive modeling and response analysis required under the Scope of Work/Pre-development Phase and Section 5.1.3.*