

REQUEST FOR PROPOSAL OF ARCHITECTURAL/ENGINEERING SERVICES

Construct Water Tower Project Number CG100016

Department of Military and Veterans' Affairs
15 DEC 2009

In General:

Camp Grayling is a stand alone facility that operates its own water well, water storage, and water distribution system. Existing storage tank capacity has been deemed to be undersized in both pressure and volume for future needs.

This project is to use attached water system study and conduct additional research and calculations required to design a water storage and pressure control structure on main camp.

The attached study suggests a water tank size and three possible locations for a storage tank. The A&E will determine the best storage tank size and location for the new construction. Also included as part of the professionals requirements is the tie in of new water storage to existing water system and installation of controls for water height between the two storage tanks. (if existing tank is to remain in the system)

The Department of Military and Veterans Affairs (MDMVA) realizes that budget numbers may only allow for a recycled/relocated storage tank.

A & E should also include survey of existing storage tank location, new storage tank location and soil borings required to determine existing base materials for new tank location.

Budget

Construction Budget for this project is \$740,000

CHANGES:

PROJECT REQUIREMENTS

SECTIONS

- A. General Bid Document Information.
- B. Time line
- C. Meetings / Site Visits
- D. Submittal Requirements
- E. Design Reviews – Document Review Procedures
- F. Type C services (Construction: 600-700)
- G. Track Required / Proposed
- H. Commissioning
- I. As-Built Record Drawings
- J. General Overall CAD Standards
- K. Phase Submittal Requirements
- L. Site Investigation Report (NGR 415-5)

ENCLOSURES:

- I. Water System Study
- II. DMVA Charrette Documentation @ Pre-Proposal
- III. CAD Layer and Title Sheet (@ Pre-Proposal)

SECTION A

GENERAL BID DOCUMENT INFORMATION

- a. The requirements of the AE are to develop 100% plans and specifications within the guidelines of this document, industry standards, and State/Federal/Military codes, regulations and design guides, and be able to justify the design.
- b. Not Applicable
- c. Not Applicable.
- d. Not Applicable
- e. Required items for documents and correspondence:
 - **Drawings and the cover page of bound documents shall have items 1-5 below located on the bottom right hand corner.**
 - **All paper correspondence shall have items 1-3 below.**
 - **All EMAIL shall have items 1-2 below as the beginning of the subject line and followed by purpose of the email**
 - 1. Project name**
 - 2. DMVA project number and State project number if applicable,**
 - 3. Submittal date**
 - 4. Engineer Castle / State of Michigan Seal**
 - 5. Submittal phase (identify by percent and interim, initial or resubmittal)**
- f. Construction drawings and specifications shall be 'hand' numbered
- i. Definition:
 - AE = Architect/Engineer and various sub-disciplines. The party responsible for design, specifications and coordination of all design documents.
 - Owner = Department of Military and Veterans Affairs –State of Michigan
 - Contractor = The party responsible for implementing the design documents and coordinating all construction trades.

SECTION B

TIME LINE

The intent is to receive construction bids no later than **26 MAY 2010** in order to execute the contract in the first week of June. The below dates and design times are approximate. Reviews times by agencies by those outside of DMVA's control may require the design acceleration to meet the **26 MAY 2010 100%** completion time.

- | | |
|------------------------------|------------|
| - Concept (10% - Charrette)) | Jan 2010 |
| - Preliminary (35%) | Feb 2010 |
| - Pre-Final (65%) | March 2010 |
| - Final 95% | April 2010 |
| - Revised Final (100%). | April 2010 |

For 35%, 65% and 95% submittals a minimum of 10 review days are required by the DMVA. AE will manage design time to allow DELEG (State Code) review comments incorporation into the bid documents prior to the bid date.

SECTION C

MEETINGS/SITE VISITS

A. Design Meetings:

- a. **Two days** prior to regularly scheduled meetings the AE will furnish the Owner with an agenda. As a minimum, the agenda will address the following: meeting purpose, estimated versus current schedule; items causing delays; actions to correct schedule delays; current work; work to be completed in the next two weeks; outstanding issues with responsible person, action, and action date; new items with responsible person, action and action date; review task status; and corrective actions; other significant events; Change Order/Bulletin status; time and place of the next scheduled meeting; and time and place of special meeting (s).
- b. AE will meet with the end users as required in order to understand their purpose and intent for the facility. In addition, the AE will develop the equipment and furniture layouts. The intent for the layouts is to design the facility so that it will accept government-furnished equipment and furnishings. It is not the intent for the AE to fully develop an equipment and furniture bid document (example of design effort - drill press requires single phase, 120v, xy connection, and occupy 2ft X 3ft X 9ft).
- c. AE will schedule meetings with the Owner to develop the bid documents' final intent and intermediate milestones for each phase. It should be the AE's understanding that each phase will be the foundation for follow-on submittals.
- d. At no additional cost to the Owner, the AE shall meet with the Owner when the intent, milestones and/or progress are not being accomplished. The Owner will indicate in writing when this shall occur.
- e. AE will have the appropriate design disciplines at meetings to ensure the full understanding of guidance and intent are understood by the Owner and the AE Design Team.
- f. AE shall have available for Owner review specified manufacturer's literature and samples.
- g. **Five days** after the meeting the AE shall provide comprehensive, organized notes of the meeting to the Owner and General Contractor. The AE shall be the note taker, creator and maintainer.
- h. Concept and Preliminary design meetings will occur at each of the sites listed Subsequent design meeting will be held at the Lansing Engineering Office.

B. Construction Meetings/Site Visits:

- a. **Two days** prior to regularly scheduled meetings, the AE shall furnish a meeting agenda to the Owner and Contractor. If there are new items that need to be addressed, then the AE will furnish to the meeting participants a new meeting agenda at the beginning of the meeting.
- b. The meeting agenda shall address the following items: safety issues; estimated versus current work schedule; items causing delays, including administrative, technical (plans and specification), construction work force; materials, Gov't and weather; actions to correct schedule delays; current work; work to be completed in the next two weeks; Submittal Log review; RFI's Log review; major commissioning requirements; outstanding issues with responsible person, action and action date; new items, responsible person, action and action date; other significant events; Change Order/Bulletin Log review; time and place of the next scheduled meeting; time and place of the special meeting (s); as-built review; site review notes. Once a month the Construction Contractor's pay request will be reviewed at the end of the meeting.
- c. **Two days** prior to the meeting, the AE shall provide an up to date Submittal Log to the Owner and General Contractor. The Submittal Log shall show the date of submittal, date of approval/approval with exception/disapproval, date returned to Contractor, date of re-submittal and date re-submittal was returned. Submittals that affect the Contractor's critical path will be noted.
- d. **Two days** prior to the meeting, the AE shall provide an up to date RFI Log to the Owner and General Contractor. The RFI Log submittal date, date response furnished or date a response will be furnished. RFI's that affect the Contractor's critical path will be noted.
- e. **Two days** prior to the meeting, the AE shall provide an up-to-date Change Order/Bulletin Log to the Owner and General. It shall show the general description, amount and date the Contractor quoted, approved/disapproved and who/what/when actions are required.
- f. **Five days** after the meeting the AE shall provide comprehensive, organized notes of the meeting to the Owner and General Contractor. The AE shall be the note taker, creator and maintainer.
- g. For each site the AE shall create, maintain and furnish to the Owner and Contractor notes to include – date, time, weather, name and position of the person, decisions reached including background information, significant events, trades onsite, items impacting, construction occurring, work progress, verbal RFI's, and safety issues.

Construct Water Tower
PROJECT NUMBER CG100016
15 DEC 09

- h. AE should anticipate special meetings to resolve onsite problems, complex construction task, and multiple trade construction tasks that may cause difficulties in the execution of the construction process.
- i. Special meetings to resolve conflicts that are bid document created will be at no additional charge to the Owner and will not count towards AE programmed meeting hours.
- j. Program one progress meetings a month. This does not include meetings addressed in item “ h “ above or Commissioning meetings.

SECTION D

SUBMITTAL REQUIREMENTS

This section defines submittal requirements, to include Bid Documents, Estimates, TABS A, B and C and color charts. *Section K shows the submittal phase requirements.* TABS A, B, and C will be submitted separately from other submittal items. Each submittal will furnish the required number of hardcopy documents and an electronic copy. *The electronic copy will be in the same format as the As-Built Record Drawings. See Section I & J for AUTOCAD requirements.*

TAB A:

This tab provides a *description of the **proposed facilities.*** It contains a general overview of the work to be performed .. Required paragraphs follow:

- a. Project Title -Provide a brief overview of the functions performed at the facility. It will contain DMVA's project number.
- b. Scope - This summary, together with the narrative required under Tab B paragraphs a and b, is intended to provide a concise and accurate description of full project requirements
- c. Maximum Construction Cost (Construction Budget and its calculation).
- d. Fire and water requirements for current and future requirements
- e. Tank Size calculations and requirements .
- f. Additional requirements, water, power, etc.

TAB B:

This tab provides a *description of the project site*. It contains information on all *exterior* work items needed to provide a complete and usable facility. Each paragraph of Tab B is described as follow:

- a. Project Title:
- b. Provide a brief summary of the major exterior work items needed and paragraphs subsequently described in further detail. This summary, together with the narrative required under Tab A paragraphs a and b, is intended to provide a concise and accurate description of the full project requirements.
- c. Vicinity Sketch and Location Map.
- d. Site Plan: Describe the immediate area of the project site. Attach a simple site plan showing tank outline, driveways, parking, paved storage, fencing, and items to be demolished and existing rough ground contours. The site plan is intended to show the nature and approximate extent of exterior work items.
- e. Utility Plan: Describe what is known about each of the existing utilities that are needed service the facility. Attach a simple utility plan and the location of all existing and proposed utilities including water, sanitary sewer, storm drain, gas lines, electric and electric communication and fire hydrants (size, location, pressure, owner, etc.).
- f. Environmental requirements: It is the responsibility of the AE to investigate the need for locally required documentation and construction features to satisfy environmental consideration. (1) The State will report to NGB on the status of environmental problems at the Preliminary and Final Design stages. (2) Other Environmental Requirements: Environmental related items previously described in the facility description should not be covered again. This subparagraph is used to describe other environmental considerations that may impact on the design of the facility. Examples are: water quality, solid waste disposal criteria (Federal, State or local), disposal method and sewage system capacity, project site location relative to flood plains, design for outside noise level reduction. Also include required items such as neutralizers, oil/water separators, sound attenuation, etc.

TAB C:

This section will be submitted as a separate document that contains (3) sections.

- a. List *design criteria* used for developing the project. Indicate documents that are Owner furnished, Owner furnished in part, industry standards and local, state, or federal requirements.
- b. Design calculations to include but not limited to the following disciplines civil, architectural, structural, plumbing, fire protection, mechanical, and electrical. This data should be in a clear, readily understandable manner and in sufficient detail to assure a uniform interpretation of the project scope. Follow-on submittals will have supporting design data and new and/or changed assumptions chronologically added by phase (An example of this is a 10% assumption of a truss roof would require analysis for the trusses; at 35% design a new assumption of a precast roof will be used, therefore new structural calculations must occur).
- c. Assumptions for this submittal shall have the following disciplines: civil, architectural, structural, plumbing, fire protection, mechanical electrical, and energy conservation (passive and active). This data should be in a clear, readily understandable manner and in sufficient detail to assure a uniform interpretation of the project scope. Reference to applicable codes and/or supplemental information should be provided to support project intentions.

PLANS:

Graphical representation of the project that shows the project scope. Sheets shall be coordinated with themselves, the specification, and all other submittals. They shall be submitted in hardcopy and electronic format.

SPECIFICATIONS:

Written representation of the project that defines quality, methods of installation, quality control. State of Michigan front-end section will be incorporated into the Concept Specification.

Upon request the AE shall provide manufacture's information of items specified.

CODE ANALYSIS:

Use a spreadsheet format to perform a code analysis for each building/room type, use, material utilized, special electrical, and all safety features. At no additional cost to the Owner and at the appropriate design time, the AE will prepare documents for and meet with State of Michigan Consumer and Industry Services, Bureau of Construction Codes as required for code compliance review. The AE will prepare responses to code compliance comments and correct Bid Documents as required. Their current policy is each building on a project will be submitted for individual review and permits

- c. **CONCEPT ESTIMATE:** An estimate of construction cost is to be prepared based on the design of the project. The cost of various building features and outside supporting facilities are to be listed separately for verification of the accuracy of the programming cost estimate and design control cost of the total project (the estimate should be by discipline). If the preliminary cost estimate exceeds the design control cost by more than **5 percent**, the items contribution to the additional costs or the reasons for the increase are to be identified for special review and resolution of any potential funding problem. All items in the project that exceed the general construction standards authorized for Federal support, as outlined in NGR 415-10, will be identified and listed as bid alternates to be supported with other than Federal funds. The AE shall maximize the use of construction funds through bid alternates.

PRELIMINARY DOCUMENTS (35%)

This submittal shall include documents that communicate in narrative or drawing format responses to all review comments.

BID DOCUMENTS

Owner approval, guidance and comments should be obtained prior to incurring any expenses for the preparation of Pre-Final Documents (65%). These documents should expand and amplify the concept submittal and incorporate guidance from DMVA. The intent for these documents is to act as the foundation for building, expanding and amplifying follow-on submittals, which rely on direction and assumptions of this submittal, and lead to 100% Design Documents that meet DMVA's intent and they are clear, concise and coordinated. Beyond the minimum requirements, the AE shall use his professional judgment in determining document needs to ensure intent, clarity, conciseness and coordination. Review of the Preliminary Document by the Owner will occur in conjunction with the

- a. **Site Investigation Report: The Site Survey Report must be received prior to, or simultaneously with the 35% submission of the project's Preliminary submittal.**
- b. **b. Estimate:** An estimate of construction cost is to be prepared because of the proposed project design. The cost of the various building features and outside supporting facilities are to be listed separately for verification of the accuracy of the Programming cost estimate and design control cost of the total project (the estimate should be by discipline). If the preliminary cost estimate exceeds the design control cost by more than 5 percent, the items contributing to the additional costs or the reason for the increase are to be identified for special review and resolution of any potential funding problem. All items in the project that exceed the general construction standards authorized Federal support, as outlined in NGB 415-10, will be identified and listed as a bid alternate to be supported with other than Federal funds. The AE shall present proposals to the Owner to adjust the budget while staying within the project requirements.
- c. **Plan Sheets:** These should be submitted with sufficient data that adequately depict the basic design features being proposed for the project.
- (1) **Cover-**At a minimum the following items will be included on this sheet: project name; standard abbreviations; symbols and architectural materials legends; vicinity and location maps; submittal phase and date; and sheet index. The sheet index shall list all sheets to be in the 100% design. The sheet index will have sheets submitted for this submittal in bold text and sheets for future submittals will be in normal text.
- (2) **Civil / Site -** At a minimum the following items will be included:
- (i) *One sheet:* Existing utilities with sizes, pressures, rim elevations, invert elevations and volumes; existing walks, roads, parking areas, and fencing; vegetation within the limits of construction grouped by size and/or type; existing contours; property boundaries; streets; general area surrounding the site to include streams, rivers, lakes, wetlands, flood plains, adjacent property buildings or environmentally sensitive areas; location and finish floor elevation of proposed building using phantom lines; and existing buildings within the limits of construction.
- (ii) *Another sheet:* Existing and proposed utilities with sizes, pressures, rim elevations, invert elevations and volumes; location and finish floor elevation of proposed building; and walks, roads, parking areas, and fencing existing not being demolished

(3) Facilities:- At a minimum the following items will be included: (1) Electrical illumination systems showing the number and types (schedule) of lighting fixtures proposed, the required lighting intensity, and a reflective ceiling plan showing their positions. Include the lighting intensity in foot-candles for each area and the locations of electrical, data, telephone and intercom outlets and fixtures. (2) Plumbing (sewer, storm, water) fixture schedule and location to be used on the plans. A single line drawing and initial schedule showing location and types.

d. SPECIFICATIONS: These should be submitted with sufficient data to adequately depict the basic design and standard for features being proposed for the project.

(1) A specification brief is to be prepared outlining the technical sections that are to be included in the Final Specifications. Each section should include a brief description of each system or piece of equipment to be used. Any substitutions of items or finishes authorized of items for Federal support will be listed as proposed alternates in the brief. The use of proprietary equipment or materials that would limit the number of bidders or require payment for permits, royalties, etc., are generally not authorized Federal funding support. Any Proposed use item must be specifically identified in the preliminary specifications with reasons and justifications presented in sufficient detail to support the items unique project requirements

(2) Submittals that are requested within the specification shall be made available by the AE to the Owner throughout the design stages at no additional charge upon request.

PRE-FINAL DOCUMENTS - (65%)

These documents shall include documents that communicate in a narrative or drawing format responses to Preliminary Submittal review comments.

PLANS AND SPECIFICATIONS:

Owner approval and/or guidance should be obtained prior to incurring any expenses for the preparation of Final Documents (95%). These documents should expand and amplify the Preliminary submittal and incorporate guidance from DMVA. Include direct digital controls drawings and specifications. The intent of the pre-final documents is to form the foundation to build, expand and amplify follow-on submittals that rely on direction and assumptions of this submittal, and lead to Revised Final Documents (100%) and meet DMVA's project intent. They must be clear, concise and coordinated. The AE shall use his professional judgment to determining document needs for ensuring the intent, clarity, conciseness and coordination. All sheets listed on the Preliminary Drawing index sheet and Specification sheet shall be part of these documents and expanded upon.

FINAL DOCUMENTS - (95%)

This submittal shall include documents that communicate in a narrative or drawing format responses to Pre-Final review comments.

- a. Final Documents will be prepared upon DMVA's approval of the Pre-Final (65%) and authorization to proceed with the development of the project. The purpose of these documents is to explicitly describe the quantity and quality of work to be performed by the construction contractor the will result in a complete and usable facility suited for the purpose intended without recourse to subsequent contract modifications or changes.
- b. The Final Project Design should be in conformance with comments provided DMVA on the review of Pre-Final (65%), construction standards, authorized Federal local, State and Federal requirements and supported items outlined in NGB 415-10.
- c. Prior to this submission, the using personnel at the operating level (State, Environmental, Safety, Occupational Health and other State staff personnel) and the FMO for the State should check the Final Documents for completeness with special attention given to possible omissions of authorized items, environmental protection, and safety (OSHA/MIOSHA) regulatory requirements. If any omissions are noted, they may be marked in free-hand pencil on the documents being submitted for review and/or a narrative document clarifying comments and referencing requirements. These can be incorporated into the design later in conjunction with adjustments normally required to conform to NGB criteria and standards
- d. Final Bid Documents must be stamped by an AE licensed to practice within the State.

FINAL PLANS

Final Bid Documents will include the necessary plans, elevations, sections, schedules and notes prepared in sufficient detail to assure: (1) Complete construction of all elements of the project building and exterior supporting facilities. (2) Coordination of drawings and specifications to eliminate omissions, conflicts, or ambiguities. (3) Completion of all details referenced in specifications. (4) Clear and uniform interpretation of project scope and complexity by all qualified bidders. (5) Delineate between Owner furnished/Contractor installed and all other items (6) Complete delineation of any alternate bid items, and substitutes designated as "Contractor Options"; (7) On the plans a table showing proposed and programmed quantities for interior and exterior items.

FINAL SPECIFICATIONS

For convenience of reference, the technical specifications are to be separated into titled sections by trade of specialty and in conjunction with the plans, must include a complete identification of materials and equipment to be used and description of the methods of construction, installation, or application, as appropriate, for each type of work. Final Specifications must incorporate a clear and accurate description of the technical requirements of the material or product required in the completed project. Such product descriptions will not unduly restrict competition. The description may include a statement of the qualitative nature of the material or project specified or when necessary, may set forth those minimum essential characteristics and standards to which it must conform, if it is to satisfy its intended use. When it is impractical or uneconomical to develop a clear and accurate description of the technical requirements, a 'brand name or equal' description may be used as a means to define the performance of other salient requirements of specified item. In addition, a single manufacturer can be defined as a "Quality Condition", if a statement is added to the specifications allowing manufacturers with a similar degree of quality be acceptable. In all cases when a brand name is specified, the specific features of the named branch must be met by the contractor and clearly stated in the completed specifications. **Quality control portions of each section will clearly define testing responsibilities as either the Owner or Contractor. In addition, the final specification will include a submittal log showing all required contractor submittals.**

REVISED FINAL DOCUMENTS - (100%)

This submittal shall include documents that communicate in a narrative or drawing format responses to Final review comments.

- a. The Revised Final Documents (100%) should be documents with the incorporation of DMVA Review comments into the Final Document (95%), in order to reduce the prebid and post bid addenda. If items have been designated as being in excess of authorized still remain in the project, but have not been listed or adequately identified for separate bidding,.
- b. Revised Final Bid Documents must be stamped by an Architect/Engineer licensed to practice within the State of Michigan.
- c. The Revised Final Documents should incorporate Code Review Comments in order to reduce pre-bid and post-bid addenda.
- d. The AE shall assist the Owner in the bidding process by responding to verbal and written Contractor and Owner questions and coordinating and issuing addenda as required to execute the Construction contract. There will be no additional cost associated for time issuing addenda, answering questions because of incomplete bid documents, poor coordination and document clarity, or missing requirements. In addition, the AE should anticipate some design effort; feedback to the Owner and issuance of addenda to ensure the Owner gets maximum use of construction funds. As required the AE shall assist the Owner to evaluate bids and for completeness, accuracy and cost. The AE shall assist the Owner to determine the best qualified bidder.

BID DOCUMENTS

The State of Michigan utilizes an electronic website, Bid4Michigan, to advertise, distribute and track construction projects. The AE shall be responsible for posting bid documents, plans and specs, on this site. The AE will also be responsible for posting any addendum that may occur.

SECTION E
DESIGN REVIEWS – DOCUMENT REVIEW PROCEDURES

a Owner Review:

- i. The Owner will review the following submittals: 10%, 35%, 65%, 95% and 100%.
- ii. Owner comments will be combination of narrative and marked-up drawings. Narrative . Marked-up drawings will be returned to the Owner with the next submittal, signed and dated by the Contractor. Each comment on the drawings must indicate that it has been addressed and/or a narrative must be generated for the comments.

b. other Agencies:

- i. The following submittals will be forwarded to Agencies for their review: 100%. Bid, to DLEG.

c. Document submittal times will be negotiated in conjunction with Section B.

SECTION F

TYPE C SERVICES (600/700 SERVICES)

These are the AE's responsibility during construction in addition to the other contract requirements during Type C Services.

- a. **Shop Drawings/Submittals:** Throughout the construction phase, the AE shall be responsible for reviewing and approving/disapproving shop drawings and submittals for bid document compliance. **The turn-around date for this process will be established prior to the AE contract execution.** Distribution shall be the AE's responsibility.
- b. **Inspections:** In conjunction with the scheduled and special meetings, the AE shall visit the construction site to become familiar with construction quantity compared to the submitted work schedule and the quality compared to bid documents, industry standards, approved shop drawings/submittals and approved sample construction. **AE should be present for initial item placement to ensure the project standards are initial met (window, paint, overhead door, etc.). The AE will break the areas down for these types of visits in the Commissioning Section.** If it is part of the scheduled or special meetings then minimum cost should be associated with it. During peak periods of construction, the AE should visit the site to ensure compliance. The AE shall record all site visits as required by Section C, for Construction Meetings/Site Visits.
- c. **Contractor Close Out:** The AE will conduct a Pre-punch List inspection and a Substantial Completion/Punch-List inspection in conjunction with the Owner and Contractor.
 - (1) The **Pre-Punch List** will occur when the Contractor notifies in writing that the project is ready for a pre-punch list inspection. The AE and Owner will perform a cursory project review to ensure that level of completion is worth the effort to perform the pre-punch list inspection. . If the project status is not at a level of completion that warrants completing a Pre-punchlist, then the AE shall inform the Owner and the Contractor in writing. The document produced from this inspection will locate and identify non-conforming contract requirements that are communicated to the parties with a narrative, digital pictures and references to bid documents, codes and industry standards. The AE may demonstrate conforming/non-conforming areas using examples or preapproved sample construction. This demonstration must be documented in the communication document. The intent of the pre-punch list is to narrow the amount of items on the punch list that are non-conforming and shall not be used to change acceptable standards
 - (2) The **Substantial Completion/Punch List** will occur when the Contractor notifies in writing that the project is ready for a punch list inspection. The AE and Owner will perform a cursory project review to ensure that level of completion is worth the effort to perform the punch list inspection. . If the project status is not at a level of completion that warrants completing a Punchlist, then the AE shall inform the Owner and the Contractor in writing. The document produced from this inspection will locate and identify non-conforming contract requirements that are communicated to the parties with a narrative, digital pictures and references to bid documents, codes and industry standards. The AE may demonstrate conforming/non-conforming areas using examples or preapproved sample construction. This demonstration must be documented in the communication document. In addition to non-conforming construction the punch list will include all close-out requirements (warranties, permits, demonstrations, etc.), including any DMVA requirements.

SECTION H **COMMISSIONING**

Design Documents shall incorporate Building Commissioning. The goal is to formalize milestones and ensure coordination prior to installation. This will include, but is not limited to, installation submittals, pre-installation meetings, functionality test, installation checklist, and Construction Contractor and Sub-Contractor commissioning meeting attendance. The AE will act as the 'Commissioning Agent'. The Owner or AE will not direct Contractor work method or means. The AE will work with the Owner to make the documents project specific and ensure plans and other specification sections coordinate with these documents.

SECTION I

AS-BUILT RECORD DOCUMENTS

As-Built Drawings will be submitted in both electronic and hard copy format (the electronic format is the format for all submittal phases).

a. DRAWING ELECTRONIC FORMAT:

- (1) Follow the 'General Overall CAD Standards' Section for submission of the electronic format.
- (2) Provide a list of software used for creating drawings. At no additional cost, the AE will furnish the Owner licensed network capable programs to make the submitted documents useable with the programs listed in 'General Overall CAD Standards' Section.
- (3) All drawings shall have "As-Built" Stamped and corresponding "Completion Date" on them, as well as being marked, "FINAL RECORD."
- (4) These computer drawings shall be coordinated with the hard copy set submitted (referenced below).

b. DRAWING HARDCOPY FORMAT:

- (1) Submit a full size hard copy set of As-Built black-line drawings. All drawings shall have "As-Built" Stamped on them.
- (2) Each drawing shall have the corresponding Completion Date on them, as well as being marked, "FINAL RECORD".
- (3) These hard copy drawings shall be coordinated with the electronic set submitted (referenced above).

c. SPECIFICATION ELECTRONIC FORMAT:

Electronic As-Built Specifications compatible with Microsoft Office format and not include features exclusive to higher Office versions or other programs. At no additional cost, the AE will furnish the Owner licensed network capable programs to make the submitted documents useable with Microsoft Word.

d. SPECIFICATION HARDCOPY FORMAT:

Submit a bound copy on 8 1/2 X 11-inch sheets. The cover shall be dated and marked with "As-Built" and "FINAL RECORD".

SECTION J

GENERAL AUTOCAD STANDARDS

(version 1.0, 14 OCT 2009)

This Standard will provide guidance and procedures for preparing computer-aided design and drafting (CAD) products for the Department of Military and Veterans Affairs. These standards must be concise and are not intended to be all-inclusive and amendments shall be provided. *The Purpose of this Guide is to set a basic CAD Standard to ensure a consistent electronic deliverable product to DMVA. All drawings shall be produced according to the DMVA standard guidelines..*

The terminology or use of certain AutoDesk terms or phases within this scope are to be assumed the user is aware of, and understands the meaning of the term.

Objectives

1. Create uniform CAD (.dwg) drawings.
2. Create uniform design, presentation and construction information and establish a clear and precise method of communication.

Software Guidelines

All Software must follow the guidelines of the DMVA approved software list:

1. AutoCAD 2009
2. Autodesk Architectural Desktop 2009
3. Autodesk Building Systems 2009
4. Autodesk Civil 3D 2009

Only Autodesk software will be accepted in the design and drafting of projects for the DMVA. If any Autodesk software other than what is listed above is used, a licensed network copy must be furnished.

Drawings in General

Drawings produced under the guidance of these standards should demonstrate a professional and quality appearance. The technical competence and aesthetic judgment of DMVA should be appropriately demonstrated at every level, to the point that a Contractor should never find cause to question. Construction drawings should demonstrate at least as much refinement as the design they illustrate.

1. All drawing files (.dwg) must be purged of all unneeded blocks, fonts, layers, etc.
2. All contract document drawings files (.dwg) shall be saved in Paper Space and at "ZOOM EXTENTS".
3. All Model drawings (.dwg) shall be saved in Model Space and at "ZOOM EXTENTS".
4. The Leader command will be used for all leaders and associated text.
5. All text for Drawings shall be Arial. Use of bold or Italic fonts where desired is acceptable.
6. ll text in title block shall be Arial.

7. Do not use unique shape files or font styles.
8. For any text that consists of more than one line, the MTEXT option shall be used.
9. All items put on the drawings shall be positioned in a manner to prevent a "crowded" drawing.
10. Use text masking when appropriate for clean appearance.
11. All graphics will be created "By Layer".

General Overall CAD Standards continued

Drawing Setup

1. Units: All work is to be produced in "real world" units, Architectural (feet and inches) to 1/32" precision and Engineering (feet and tenths) to 0.000" precision.
2. Origin: The Origin is the position within every electronic drawing file. Standardizing the location of the origin of a drawing is important because it serves as the point of reference from which all other elements are located. The global origin will be 0,0,0.
3. Survey: All electronic Survey's will be furnished in an original electronic file and will *not* be exploded or bound. All Survey's will be provided in a separate usable cad (.dwg) file.
4. Be sure all files are located in the correct location and the proper xrefs are attached.

Model Drawing Files

1. Model drawing files are created for the use of "xrefing" them into contract document drawings files. A Model file will contain the physical components of a building and/or the civil/topographic information used to create the sheet files.
2. The Model file shall be drawn at full scale.
3. The general rule is that anything at the site after construction will be placed in this type of drawing. No text entities will be created in the Model file.

Contract Document Drawings Files

1. These files are synonymous with a plotted Cad drawing file (.dwg) and will be used to generate plots, one plot per drawing file.
2. These files are a selected view or portion of the Model file(s) within a title block.
3. These files are plotted one to one with scaled viewports.
4. Each file will represent only one contract drawing. There will be no multiple generations of plots or tabs from one contract document drawing file. For example, you cannot plot the Architectural Floor Plan and the reflected Ceiling Plan from the same drawing file.
5. These files shall reference (xrefs) files in Model space where applicable.
6. These files shall contain the DMVA Title Block in Paper space.
7. All Title Blocks are inserted at 0,0.

External Reference Drawings Files

1. All External References (xrefs) shall be OVERLAYED and not ATTACHED.
2. All External Reference files shall be provided in their own separate file (.dwg).
3. Never xref one plotted drawing into another or across other disciplines folders.
4. All xref files' naming convention will begin with an "X".

5. All Engineering drawings that reference the architectural facility plans must change the back ground to color 254 so it will be plotted at a gray shade.

6. No deliverables shall be bound. Overall CAD Standards

General Overall CAD Standards

Layers

1. All Layer names must follow the latest *AIA* or *National CAD Standards* naming convention, all upper case.
2. All graphics will be created “by Layer”.

Details/Blocks

1. Only Details pertaining to the project shall be on the final contract document drawings.
2. All Details must follow to the standards, including layer names, text font, etc.

Title Blocks

1. All contract document drawings shall use DMVA’s furnished Title Blocks.
2. Title blocks are always to be inserted as a block using the insert command and inserted in Paper Space with an insert point of 0,0.
3. Title blocks shall be inserted on layer “0.”
4. Title block layers shall keep the original layer colors.

General Overall CAD Standards continued

5. All Title information needs to be Upper and Lower case (Title Case).

Drawing Title/ Detail Title

All drawings/details will include a TITLE, positioned in the lower section of the drawing/detail. All title annotation shall be placed in paper space on the individual drawing sheets. The block for the title information is located on the “Call outs” or “Annotations” tab of any of the pallets with in any AutoDesk software product.

Examples of title:



Examples of titles:

1. *Foundation Floor Plan*
2. *Framing Floor Plan*
3. *HVAC Floor Plan*
4. *Fire Protection Floor Plan*
5. *Plumbing Floor Plan*

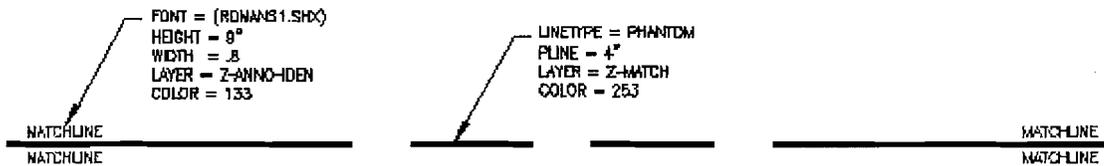
6. *Electrical Floor Plan*

North Arrow / Site map

1. A North Arrow shall be located near the title used for that detail and inserted in the lower right corner of the detail.
2. Site Map (NTS) shall be located near the title used for that detail and inserted in the lower right corner of the detail.

Match lines

1. All drawings that consist of partial floor plans per sheet shall include a match line.
2. This match line will be placed on individual drawings so that they can be adjusted accordingly.
3. The match line and text will stay the same for all divisions for consistency.



Section and Elevation Marks

All Section and Elevation Marks are to be clear and consistent and well coordinated within the drawing set.

Dimensions

1. Dimensions will be placed in Model Space of the Contract Drawing file.
2. *No dimensions or dimension text is allowed in the model file which is xref'ed.*
3. Dimension line terminators shall be either Architectural Ticks or Closed Filled Arrowheads.
4. Be consistent through out the project. Only one style can be used.
5. Associated Dimensions and Associated text shall be used.

Final Product

1. To produce Contract Drawings used as construction bidding documents.
2. To produce these drawings in such a manner that they are usable electronic files (.dwg) that the Design Section of DMVA can use at a later date and be incorporated into future projects.
3. Upon completion of said construction project and prior to final payment, the following shall be turned over to DMVA
4. Electronic Drawing files (Bidding Contract Documents as well as As-Built) in the format that this Guide Outlines.

5. These files shall be AutoCAD (.dwg) files.
6. Overall CAD Standards

General Overall CAD Standards continued

SCALING FACTORS

| Architecture | | | | | | |
|----------------------|-------------------------------|---------------------|------------------|-------|---------|-----|
| Drawing Scale | Insertion Scale Factor | Scale Factor | Text Size | | | |
| Full | 1 | 1 | 3/32 | 1/8 | 3/16 | 1/4 |
| 3" = 1'-0" | 0.25 | 4 | 3/8 | 1/2 | 3/4 | 1 |
| 1-1/2" = 1'-0" | 0.125 | 8 | 3/4 | 1 | 1-1/2 | 2 |
| 1" = 1'-0" | 0.08333 | 12 | 1-1/8 | 1-1/2 | 2-1/4 | 3 |
| 3/4" = 1'-0" | 0.0625 | 16 | 1-1/2 | 2 | 3 | 4 |
| 1/2" = 1'-0" | 0.041666 | 24 | 2-1/4 | 3 | 4 1/2 | 6 |
| 3/8" = 1'-0" | 0.03125 | 32 | 3 | 4 | 6 | 8 |
| 1/4" = 1'-0" | 0.0208333 | 48 | 4-1/2 | 6 | 9 | 12 |
| 1/8" = 1'-0" | 0.0104166 | 96 | 9 | 12 | 18 | 24 |
| 1/16" = 1'-0" | 0.0052083 | 192 | 18 | 24 | 36 | 48 |
| Engineering | | | | | | |
| 1" = 20' | 0.0041666 | 240 | 22-1/2 | 30 | 45 | 60 |
| 1" = 30' | 0.0027777 | 360 | 33-3/4 | 45 | 67-1/2 | 90 |
| 1" = 40' | 0.00208333 | 480 | 45 | 60 | 90 | 120 |
| 1" = 50' | 0.00166667 | 600 | 56-1/4 | 75 | 112-1/2 | 150 |
| 1" = 60' | 0.00138889 | 720 | 67-1/2 | 90 | 135 | 180 |
| 1" = 100' | 0.0008333 | 1200 | 112-1/2 | 150 | 225 | 300 |
| 1" = 200' | 0.0004166 | 2400 | 225 | 300 | 450 | 600 |

SECTION K
PHASE SUBMITTAL REQUIREMENTS

| | PERCENT | Tab - A | Tab - B | Tab - C | Hard copy Plans | Hard Copy Specifications | Electronic Plans | Electronic Specifications | Estimate | Spreadsheet RM Req. | Code Analysis | Color Charts | Comment Responses: Owner, Agencies | Contractor Submittal List | |
|--------------------|------------|---------|---------|---------|-----------------|--------------------------|------------------|---------------------------|----------|---------------------|---------------|--------------|---------------------------------------|---------------------------|--|
| Concept | 10 | X | X | X | * | * | X | * | * | * | * | * | - | - | |
| Preliminary | 35 | X | X | X | X | * | X | * | * | * | * | * | X | | |
| Pre-Final | 65 | * | * | X | X | X | X | X | X | X | * | * | X | * | |
| Final | 95 | * | * | X | X | X | X | X | X | X | X | X2 | X | * | |
| Bid | 100 | * | * | X | X | X | X | X | X | * | X | * | X | X | |

X = REQUIRED

* = NOT REQUIRED

X2 =REQUIRED 2 SETS

SECTION L
SITE INVESTIGATION REPORTS
For Additions or cold storage buildings

In conjunction with the Concept and Preliminary design efforts the AE shall ensure a Survey and Soil Investigation are completed. Site Investigation Report shall be submitted prior to or concurrently with the **Preliminary Submittal (35%)**. **Preliminary Review will not occur without the Site Investigation Reports being submitted.**

The following items will be included

- a. A site survey with topography, utilities and any other structures.
- b. Description of existing ground surface conditions -vegetation, approximate ground slope, surface material.
- c. Layout plan of a sufficient number of soil borings to determine adequately the general subsoil conditions existing at the site in the areas of proposed improvements. The plans should indicate the location of the borings reference to the site boundaries and the ground surface elevation at the borings together with a log of the soil types and characteristics and encountered ground water levels.
- d. Laboratory test results as necessary, to determine classification, grading characteristics, CBR and strength of the surface land sub-soils in regards to support building and pavement construction.
- e. A **Declaration of Soil Bearing Capacity Declaration** in conformance with the wording of the declaration provided is required (document verbiage cannot be altered).
- f. A **Uniformity of Soil Declaration** in conformance with the wording of the declaration provided is required (document verbiage cannot be altered).
- g. Discussion and summary of the site investigation with special attention given to any features of the site that may either affect its suitability for construction or have a significant impact on project costs.
- h. Not Applicable
- i. Any Owner provided survey data is for job pricing only. All items shall be verified to their correctness and accuracy and be incorporated into the bidding documents. Cost for errors or omissions related to the survey shall be the responsibility of the AE at no additional cost to the Owner.
- j. Any Owner provided Soil Boring data is for job pricing only. It is the Owner's intent that these borings provide insight into the soil make-up and characteristics, but the AE shall make a professional decision as to the number s, depth and location of borings. All items shall be verified to their correctness and accuracy and be incorporated into the bidding documents. Cost for errors or omissions related to the borings shall be the responsibility of the AE at no additional cost to the Owner.

UNIFORMITY OF AREA SOIL CONDITIONS

**31 July 2003
Appendix G
Soils Declarations**

NG Pam 415-5

DECLARATION ON
UNIFORMITY OF AREA SOIL CONDITIONS

State:

Date:

Site Location:

Address:

Project:

I hereby declare, on the basis of my knowledge of soil conditions within this area and in conjunction with review of published geological data for this region, that the soil conditions and characteristics existing at the subject site for the proposed project are not peculiar to the site but are, in my judgement, the same type and nature of soils that are prevalent throughout the area within at least a 5-mile radius of the subject site to such an extent that it would not be reasonable to expect that the requirements for special foundation work needed for the proposed facilities at this site could be avoided by relocation of the project to another area within the 5-mile radius.

(Signature of Soils Engineer)

(Soils Engineer Name)

(Title)

(Firm Name)

SOIL BEARING CAPACITY

NG Pam 415-5

31 July 2003

DECLARATION
OF
SOIL BEARING CAPACITY

State:

Date:

Site Location:

Address:

Project:

On the basis of our surface and subsurface investigation, and on generally accepted practices and procedures of the geotechnical engineering profession, I hereby declare to the best of my professional opinion, that the existing soil conditions at the site for this project are of a nature and classification which determine that the undisturbed soils at elevation _____ feet (elevation of the bottom of the proposed footing) when considered in conjunction with the supporting capability of the underlying soils strata, are rated at an allowable design bearing capacity of not less than _____ pounds per square foot for a spread footing type of building foundation.

(Signature of Soils Engineer)

(Soils Engineer Name)

(Title)

(Firm Name)

Design CHARRETTE

The A&E will be responsible for conducting a design Charrette for this project. The Charrette will be held at the initial design meeting and is designed to determine the scope of work to be completed at each location. This meeting will be conducted with facility users, construction and facilities management staff, DMB representative and A&E. The 35% meeting will also be held at the project location. This meeting is to firm up project scope for the location and to apprise users of scope and schedule. Additional reviews required by this document will be by paper copy to the Construction and Facilities Management office.