

Revised Apr 2003

PART 1

COMPUTER AIDED ENGINEERING AND TECHNICAL SUPPORT
(SPECIFICATIONS AND DRAFTING)

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SECTION I - SPECIFICATIONS

A. Unless otherwise stated in this guidance, specifications shall be Unified Facilities Guide Specifications (UFGS), a combination of Corps, Navy and Air Force guide specifications. In order of precedence, specifications with no letter suffix shall be used first, specifications with an "A" suffix shall be used second, and specifications with an "N" suffix shall be used last.

B. Specifications shall be prepared in accordance with ER 1110-1-8155 and ER 1110-2-1200.

C. In accordance with ER 1110-1-8155, specifications must be prepared using SPECSINTACT (see <http://www-de.ksc.nasa.gov/specsintact>).

D. Because non-Government specifications (e.g., AIA Masterspecs) often contain provisions which are not in compliance with the FAR or current Corps regulations (references to proprietary or brand name products, materials, or equipment; or inclusion of FED-SPECS/STD's or MIL-SPECS/STD's), or contain standards incompatible with UFGS, use of such specifications are restricted. Where no master specifications are available to cover a feature of work, subject to Baltimore District approval custom specifications may be prepared using a word processor of the designer's choice, but the format must match the SPECSINTACT format.

E. Guide specifications are available on the Internet at the Corps of Engineers address <http://www.hnd.usace.army.mil> at the TECHINFO menu. Baltimore District Division 1 guide specifications are available at <http://www.en.nab.usace.army.mil>. Guide specifications are also available on CD-ROM from the National Institute of Building Science's (NIBS) Construction Criteria Base (CCB). This organization is not COE-related so the CD-ROM is not available from the Baltimore District Office. The NIBS homepage is <http://www.nibs.org/nibshome.htm>.

F. This applies to custom specifications addressed above. When deleting paragraphs do not renumber each paragraph. Delete paragraph text and substitute the word "Omitted" beside the number. When deleting three or more paragraphs delete text and show the extent of paragraphs deleted in the following manner:
"6.1---6.3 OMITTED".

G. Generally the specifications shall contain no provisions that requires the Bidder or Offeror to make a submission of any type with his bid or offer. However, Request for Proposal type projects (i.e., design-build, complex projects requiring technical evaluation of Contractor competence and capacity) as determined by the COE may require submission of clearly specified evaluation documentation with offers. Design reviews will address applicability of all proposed submissions.

H. To permit free and open competition, use of proprietary and "brand name or equal" purchase descriptions are strongly discouraged, and the burden for justifying such descriptions is placed on the designer. If the AE intends to specify proprietary materials or equipment, provide J&A (justification and approval) in accordance with FAR Subparts 6.303 and 6.304, and ER 1110-1-8155. "Brand name or approved equal" specifications shall include salient characteristics, as well as the brand name, for each individual item of material or equipment so specified. All submittals with proprietary specifications must include justification and approval documentation on official letterhead confirming brand name use is acceptable. Documentation is required only with the first submittal in which the products are specified.

I. Submissions containing specifications shall as a minimum adhere to the following requirements:

1. All sets of specifications for design review submittals shall be firmly bound by a method of the A-E's choice. Specifications loosely bound by rubber bands or placed unbound in a box are unacceptable.

2. As a minimum, first pages of all individual specification sections shall have the project title and location. Specifications prepared in SPECSINTACT contain such header on each page.

3. Specifications shall have a cover containing as a minimum the project title, location and A-E's name and address.

J. Unless otherwise specified in the A-E's contract, all specifications submitted through the final review shall be annotated (marked) guide specifications ONLY. This can include both hand-editing and word processor graphic highlighting. If both annotated and typed guide are submitted, only marked guide specifications will be reviewed.

K. Specifications for projects advertised on a CD-ROM as an electronic bid set (EBS) shall be furnished in portable document format (PDF - see <http://www.pdfzone.com>). Specifications for projects issued in hardcopy shall be single-sided as printed by SPECSINTACT, shall be unbound and shall not have holes punched in the left margin.

L. On advertising pdf files (for electronic bid set purposes), delete AE contract number portion of footer on all specs and attachments. Failure to do so will cause delays since AE will be required to remove these at a critical time near advertising.

M. To be compatible with the Baltimore District's Adobe Acrobat Electronic Bid Set (EBS) software, specification fonts shall be either Times Roman or Courier. If, because AE has not satisfied this requirement, text on pdf file specs furnished for advertising will not appear on the completed EBS, AE will be compelled to change fonts at a critical time near advertising.

SECTION II - PRICE SCHEDULE FORMAT

A. Attached to the end of this guidance package are sample price schedules relating to the descriptions below. The Price Schedule shall be specifically tailored for each job. Combinations of the various types of price schedules are permitted and encouraged to reflect specific project design or funding requirements. All Price Schedules are reviewed by the COE during design review and deficiencies or suggestions are provided to the A-E for incorporation or consideration. All review submissions of Final and beyond must include a Price Schedule.

B. Attachment No. 1 is a sample of a Price Schedule in which all construction features of the project are included in a single lump sum bid item.

C. Attachment No. 2 is a sample of a Price Schedule in which the cost of the building and exterior work have been separated. In general, new work building construction and utilities/site work beyond points 5 feet outside the building lines shall be separated as shown.

D. Attachment No. 3 is a sample of a Price Schedule in which items of work that are separately funded have been separated to solicit bid prices reflecting the specific cost of such items for funding purposes.

E. Attachment No. 4 is a sample of a Price Schedule for work at a United States Army Reserve Center in which the majority of funding is allocated for the bulk of construction and installation of some material and/or equipment, while furnishing of the same equipment is separately funded. Also, the costs for the building and exterior work are separately funded. Be sure to add in large type substantially the same note shown at bottom of price schedule to ensure bidders are made aware of the need to allocate separate bid prices for furnishing and installing material or equipment.

F. Attachment No. 5 is a sample of a Price Schedule in which additive items are required for both interior and exterior work. When it appears that funds available for a project may not be sufficient for all desired features of the work, a base bid is established for the most desirable features while additive items are established for the balance of the features in order of priority determined by the Using Agency. On the Price Schedule, additives shall be described and numbered

consecutively in decreasing order of priority. Additives shall consist of numbers consecutive with the base bid numbering sequence (i.e. if last base bid item number is 0003, first additive shall be 0004). Additive items shall also be identified on the drawings (and in the specifications if applicable) without numbering. If changes are made in additive item priority either during design or during the bidding period, only a revision of the price schedule will be necessary, not a potentially massive change of numbers on the drawings. The words "Deduct" or "Alternate" are not to be used to denote additive items on either the Price Schedule or drawings. Using graphics or notes, additive bid items shall be delineated on the drawings to clearly distinguish from base bid items.

G. Attachment No. 6 is a sample of a Unit Price Schedule. This type of schedule is used primarily for Civil Works construction but may be used for Military construction when the quantity of each item is estimated and unit prices are solicited on the estimated quantities. A Unit Price Schedule shall be required when: (a) quantities cannot be determined from the bidding documents within limitations that would permit a lump sum bid without a substantial contingency; (b) quantities may change significantly during construction; or (c) bidders would have to expand unusual effort in making take-off's of quantities. Numbers in the "Item No." column shall be four-digit consecutive numbers and begin with "0001." Item numbers beyond "9999" shall not be used. Subdivided items such as Item No. 0005 on sample Attachment No. 8 shall be designated by adding a suffix of two alphabetic characters beginning with "AA" and continuing through "ZZ." (To avoid mistaking them for numbers, the letters "I" and "O" shall not be used.) Included in the "Description" column of each bid item shall be payment number phrase substantially as follows: "(Payment Item No. 02100-1 as specified in Section 02100)." The payment numbers of all unit price schedule items shall be such that the first designation (e.g. 01000, 02100, 03300, etc.) represents the section number of the technical section where the measurement and payment clauses (see below) are included; the second designation represents the sequential payment item number within that section (e.g. -1, -2, -3).

H. Measurement and payment for each item in the Unit Price Schedule must be covered completely and in a clear and concise manner. The provisions for such measurement and payment will be covered in the technical specification pertinent to the given item of work. In some cases, these provisions are

already included in the Guide Specifications; otherwise they must be written by the designer, be covered in meaning, and are in agreement with each other. If the AE would rather have all such provisions in one location, a dedicated measurement and payment CEGS is available on TECHINFO. Each payment clause must also cross reference the specific Unit Price Schedule item(s) as applicable by referencing both the item number and the item title exactly as listed in the Unit Price Schedule. Below is a sample set of Measurement and Payment paragraphs cross referencing Item No. 0007, Payment Item No. 02230-1 of Attachment No. 8, Unit Price Schedule Sample.

21. MEASUREMENT: Stripping shall be measured for payment in original position by the number of cubic yards of material removed full depth.

22. PAYMENT: All costs in connection with stripping as shown on the contract drawings and described herein including labor, materials, equipment and incidentals shall be paid for at the contract unit price per cubic yard in accordance with Item No. 02230-1, "Stripping", of the Unit Price Schedule. Payment will be made for stripping in any area, including borrow area, where excavation is required. Payment shall be full compensation for stripping, transporting, stockpiling and depositing the material in its final position or spoiling as required.

I. See also Item 13 below. If a Unit Price Schedule similar to Attachment No. 8 is required, the Paragraph "Performance and Payment Bond Reimbursement" of SECTION: ADMINISTRATIVE REQUIREMENTS of the SPECIAL CLAUSES shall be used. The use of a Unit Price Schedule and "Performance and Payment Bond Reimbursement" paragraph together is only required when all bid items are unit price as described in paragraph 7 above. The type of Price Schedule meeting this requirement is called a Total Unit Price Schedule and contains no lump sum bid items similar to that in price schedule sample Attachment No. 3 (i.e. with the first bid item beginning with "All costs in connection with..."). Performance and Payment Bonds are reimbursed to the Contractor and shall go on the Unit Price Schedule as the first bid item and formatted as shown on Attachment No. 8. In any other type of Price Schedule the reimbursement of Performance and Payment Bonds is included in the bid price of the entire project.

J. Attachment No. 7 is an example of a Unit Price Schedule which combines lump sum items with unit prices and is used primarily for military construction projects. Note that the

bulk of the work is covered under Bid Item No. 0001 and excludes subsequent unit price bid items. Measurement and payment paragraphs as described in Item No. 8 above are required for all unit price items.

K. All Government-Furnished equipment/materials shall be shown on the Price Schedule. Attachment No. 8 is a sample of a Price Schedule giving the format for showing Government-Furnished items. Notes on the price schedule shall be included and edited accordingly.

L. Attachment No. 9 is an example of a price schedule which includes optional bid items. Such bid items allow the Government greater award flexibility as, unlike additives discussed above, options may or may not be awarded at the discretion of the Government and may be awarded in any sequence, regardless of their order of appearance on the price schedule. Similarly to additive bid items, optional bid items shall be shown on the drawings without numbering. The words "Optional Bid Item" shall be placed next to the applicable feature of work. Using graphics or notes, optional bid items shall be delineated on the drawings to clearly distinguish from base bid items. Wording on the price schedule shall simply define the optional bid items and be coordinated with the drawings (and specifications if applicable).

M. The format as shown on the attached samples shall be followed in preparation of each appropriate Price Schedule.

N. For design review submittals price schedules are not to be included as part of the cost estimate but submitted as a separate document or bound in with but not forming a part of the specifications.

O. Further information or instructions for preparation and content of a Price Schedule may be obtained through the Design Team Leader. Under no circumstances is the A-E to contact the technical sections for information or guidance.

SECTION III - TABLE OF CONTENTS FORMAT

A. A specification table of contents (TOC) is automatically prepared when using SPECSINTACT.

B. Since a SPECSINTACT table of contents includes only SPECSINTACT-prepared sections, a typed TOC will be required when custom specifications are included. Format shall match a SPECSINTACT TOC.

C. The TABLE OF CONTENTS SAMPLE is located at the end of this guidance package as Attachment No. 10 (2 pages).

SECTION IV - PROCEDURE FOR PREPARATION OF AMENDMENTS

A. GENERAL

1. An amendment is a legally binding document describing revisions and additions to be incorporated into published bidding material (previous amendments, solicitations, specifications and drawings) prior to opening of bids or receipt of proposals.

2. A single amendment may be broken down into only four categories and each category shall be in the following order of priority: Amendments, Solicitation, Specifications and Drawings (the A-E generally has no jurisdiction over the solicitation).

3. Amendment items shall be clear enough to allow all bidders to revise bidding documents with a minimum effort. Ambiguous amendment items may cause inconsistent interpretations of revisions among bidders, resulting in poor bids.

4. Under no circumstance shall "clarifications" or "question and answer" type information be substituted for a formal amendment revisions. "Clarifications" are descriptive changes which do not distinctly cite a portion of the bidding documents (specifications, drawings, previous amendments); "questions and answers" are basically queries from contractors, usually presented during pre-bid or site visits, which are followed by answers which do not cite a distinct portion of the bidding documents. Any of these two categories of proposed changes furnished to the Baltimore District will be returned to the AE to be changed into amendment revisions citing the exact location of the change in either specifications, drawings or previous amendments.

5. The format for presenting amendment revisions in each category is similar, but revisions on drawings which cannot be adequately covered by descriptive amendment items require 8 1/2" x 11" sketches or revised drawings. Revised drawings will be discussed under Drawing Amendment Items below.

6. After descriptive amendment revisions and/or 8 1/2" x 11" sketches are issued, the A-E shall incorporate all changes on the CADD drawing files prior to award of contract.

7. The format as specified herein and as illustrated by the AMENDMENT SAMPLE, Attachment No. 11, shall be followed in the preparation of each amendment.

8. Unless otherwise agreed to by the Baltimore District, all amendments shall be submitted on CD-ROM and include applicable Word files (amendment text, revised price schedule), pdf files (8-1/2" x 11" attachments), CAL files, and drawing "Index.txt" file (discussed in EBS guidance).

9. Further information or instructions shall be obtained through the Design Team Leader. Under no circumstances is the A-E to contact the technical sections for information or guidance.

B. DESCRIPTIVE AMENDMENT ITEMS

1. Descriptive amendment items give bidders directions on revising words, sentences, paragraphs, tables, schedules, etc., previous amendments, specifications and drawings to clarify or augment bidding documents.

2. Except as specified in this guidance, all amendments shall be provided to the COE in a ready-to-be-issued form. The A-E shall fully review and proofread amendments prior to sending to the COE to ensure accuracy. Amendments found to contain excessive ambiguities or inaccuracies, as determined by the COE, will be returned to the A-E for revisions and may delay bid opening or receipt of proposals.

3. Page numbers are to be shown as substantially "PAGE 2 OF 20 PAGES." The first page of the A-E's amendment shall be "2" as the COE adds a standard Government cover page identifying the project.

4. Add to the top of each page of the amendment the heading beginning with "AMENDMENT NO. ..." as shown on AMENDMENT SAMPLE, Attachment No. 11. Leave the amendment number space blank as the COE may issue a non-technical amendment so the A-E may not know the exact number of the current amendment. This number will be added by the Baltimore District.

5. The heading of each category in which a change is made (AMENDMENTS, SPECIFICATIONS or DRAWINGS) shall be typed in capital letters and underscored.

6. To allow Baltimore District personnel to easily manipulate revision items if the amendment is incorrectly formatted and add new items not in the AE's jurisdiction, do not number individual amendment items, or otherwise use automatic paragraph numbering, lettering, or bullets at any level.

7. Items under each category shall be listed in chronological order according to either their page and paragraph numbers or plate numbers. When referencing drawings use only the plate number, not the sheet number or both plate and sheet numbers.

8. Under the category "Amendments" all revisions to previously amended portions of either the specifications, drawings or earlier amendments are to be covered. Items under

this category shall reference the amendment number and item number of the previously issued amendment to be revised (i.e. Amendment No. 0003, Item 25). Only the exact portions of the bidding document to be revised are to be address under the "Amendment" category. If, for example, a single word or phrase is amended, in either specifications or drawings, only this word or phrase shall be revised again in a subsequent amendment. For drawings, if a sketch (see drawing amendments below) is issued showing a revision, subsequent amendments shall amend the sketch, referencing only the amendment which included the sketch, not the other portions of the drawing amended by the sketch. To avoid contradictions or redundancies the A-E should be familiar with previous amendments and have electronic (if project issued EBS) or printed copies of each for reference when preparing new amendments. The attached AMENDMENT SAMPLE, Attachment No. 11, gives examples of amended amendments.

9. Attachments may be substituted for information in the body of the amendment to provide revised tables, schedules or large paragraphs. This method allows the A-E to revise portions of a specifications already in a word processor and simply print it out. All attachments for projects issued hardcopy shall be on pages no larger than 8 1/2" x 11". All attachments for EBS projects shall be in an electronic pdf format (requiring Adobe Acrobat software), as well as hardcopy as stated above (in case the pdf files are corrupt or unacceptable and the files need to be scanned). Do not include any attachments which must be folded by the COE as these will adversely increase printing time.

10. All attachments shall be dated and the date shall be referenced in the descriptive amendment item to which the attachment applies (i.e. "...in accordance with Sketch SK-1, dated Jun 27, 1997.").

11. Unless an agreement is made with the COE, all attachments should be consecutively labeled "Sketch SK-1", "Sketch SK-2", etc., even if they are tables/schedules or series of paragraphs and each shall be dated.

12. No attachments shall have amendment numbers. Attachments shall be identified by revision date only.

13. Title blocks on 8 1/2" x 11" attachments may be of the AE's choice, but must include as a minimum the date and the drawing or specification to which the attachment applies. If a drawing sketch reference either the plate number or sheet number, not both lest an error occur. If a specification reference the section number.

14. Each attachment and its date shall be listed on the last page of the amendment under heading "ATTACHMENTS". When listing multiple consecutive numbered sketches, it is not necessary to list each individually but as follows: "Sketches SK-1 through SK-2, dated Aug 15, 1997."

15. Attachments are also covered in Items 1a and 1b under DRAWING AMENDMENT ITEMS below.

C. DRAWING AMENDMENT ITEMS

1. If drawing amendments have revisions which require showing such features as floor plans, riser diagrams, site plans or other drawing features which cannot be adequately revised descriptively, it may be necessary to issue pictorial sketches or completely revised drawings. These sketches may also include Tables and Schedules. The following methods are recommended:

a. Make all changes on the original drawings, then photocopy the changes onto no larger than 8 1/2" x 11" sheets to accompany the descriptive portion of the amendment. These are considered attachments and are also covered in Items 8 through 11 under DESCRIPTIVE AMENDMENT ITEMS above. Similarly to attachments under DESCRIPTIVE AMENDMENT ITEMS, all attachments for EBS projects which are not full size drawings shall be in an electronic pdf format, as well as hardcopy. See Item 12 under DESCRIPTIVE AMENDMENT ITEMS above for information on attachment title block format.

b. If changes cover too large an area to show clearly on one or more 8 1/2" x 11" sketches, send the revised drawing to the Baltimore District office in hardcopy or a CALS file similar to the original drawings if issued EBS and it will be reissued in its entirety. Drawings reissued in their entirety shall be revised in accordance with Item 3 below prior to issuance to bidders. Full size revised drawings are also considered attachments, but shall be referred to in the descriptive portion of the amendment and in the ATTACHMENT list as "Plate 3", "Plate 12", etc., not "Sketch SK-1", "Sketch SK-13". As with multiple 8 1/2" x 11" sketches discussed above, drawings may be listed in the attachment list as follows: "Revised Plates 1, 5, 12 through 23, 34 and 72, dated Aug 15, 1997" or "New Plates 10, 17, 45 and 47, dated Aug 15, 1997."

2. When providing sketches with pictorial revisions be sure the quality of the print is high. The purpose of a pictorial revision is defeated if the quality is too poor to permit clear reproduction and provide legible copies to bidders.

3. All revised drawings must identify in full all areas where changes were made. Below are the instructions for identifying amendment revisions on drawings:

a. Revisions to drawings shall be numerically identified by 1, 2, etc., and surrounded by a triangle as shown on the attached SAMPLE TITLE BLOCK. Only this symbol is to be used to indicate location of revisions in the body of the drawing. This symbol is also used to identify contract modifications to drawings and its use is discussed in Part VII under subheading "Procedure for Preparation of Contract Modifications".

b. All revisions made on the drawings shall be identified by the revision identification symbol shown in the revision block.

c. If the number of revisions to a single sheet is so great as to make identifying triangles impracticable, place the triangle at the title of the feature revised.

d. The revisions on each drawing shall be identified by a number according to the following:

1. If the revision block has no previous amendments or contract modifications the first revision shall be identified by 1, the second revision by 2, etc.

2. If the revision block contains previous revisions, the identifying number in the triangle shall be the next in sequence, not the amendment number.

e. Amendments shall be described in the revision block as shown on the SAMPLE TITLE BLOCK. Since the same symbol is used for both amendments and contract modifications the A-E shall denote the type of revision in the revision block.

No amendment number shall be shown in the title block. Drawings shall be identified by revision date only.

f. Show the date of the modification in the revision block.

g. Revision block shall be initialed by the A-E office making the change.

h. The SAMPLE TITLE BLOCK is found at the end of this guidance package as Attachment No. 12.

4. All drawing amendments must be incorporated into the design drawings and drawings furnished to the COE in CALS format by project bid opening/receipt of proposal. Body of drawings shall show revision triangles and the title blocks shall be documented as described in INSTRUCTIONS FOR INCORPORATING CONTRACT MODIFICATIONS ON ORIGINAL DRAWINGS below. However, no clouds shall be shown around changes.

SECTION V - A-E INSTRUCTIONS FOR CONSTRUCTION CONTRACTOR
SUBMITTAL REQUIREMENTS

A. General: The A-E shall prepare a list of submittals required for each project on ENG FORM 4288, Submittal Register, as specified in instructions for CEGS 01330 SUBMITTAL PROCEDURES. This form shall be prepared electronically using SPECSINTACT. If a submittal register is prepared for non-SPECSINTACT specifications, format, graphics and typeface must be the same as the SPECSINTACT-prepared form. Determination of submittals on this form shall be in accordance with ER 415-1-1, which distinctly requires the designer to be very specific to allow the construction Contractor to know exactly what it is that is required to be submitted. Citing only the general submittals in Part 1 of specifications is insufficient for the required level of specificity. This completed form will become a part of CEGS 01330 SUBMITTAL PROCEDURES.

B. Submittal Classification: Most guide specifications include paragraphs requiring the Contractor to submit various items to the Government (see submittal categories in CEGS 01330 notes). These submittals are either classified "Government Approved" or "Information Only." Submittal classification may be determined by applying the following guidance (see also ER 415-1-1):

1. Government Approved Submittals: Generally, submittals listed in the specifications which shall be designated "Government Approved" on the submittal register fall into the categories listed below. Unless otherwise approved by the Baltimore District, reviewer for Government approval submittals shall always be the designer ("AE" if architect-engineer designed, and "ED" if Corps of Engineer designed). Specifications shall show approval submittals as "G."

- a. Extensions of design.
- b. Any items of equipment whose compatibility with the entire system must be checked.
- c. Critical materials and major items of equipment.
- d. Deviations from the contract documents.

2. Information Only Submittals: All other submittals not meeting the requirements for Government Approved

shall be considered "Information Only." Because SPECSINTACT will not complete submittal register column titled "Reviewer" for FIO submittals, A-E need not try to designate a reviewer for such submittals.

C. A-E Responsibility: The A-E shall use SPECSINTACT specification tagging to show "Government Approved" submittals. "Information Only" submittal designations need not be shown in the specifications or on the submittal register. Submittal registers generated in SPECSINTACT will contain the proper information for each specification.

D. Submittal Register for Review: The complete ENG FORM 4288, Submittal Register, shall be included in the specifications no later than the final review (inclusion at an earlier review stage may be either in accordance with the A-E scope of work or at the A-E's discretion).

E. Submittal Register for Advertising: If the project will be issued EBS, the completed submittal register shall be a single PDF file including registers for all sections. If the project is issued hardcopy the submittal register shall be the original SPECSINTACT-generated document. Submittal register shall contain no punched holes.

SECTION VI - CONSTRUCTION CRITERIA

A. Technical Instructions TI 800-01 from CEMP-E, dated 20 Jul 1998 (and all current changes), are to be used replacing Architect Engineering Instructions (AEI) for all U.S. Corps of Engineers designs except medical facilities which are governed by AEI, Medical Design Standards.

B. These TI are available at the U.S. Army Corps of Engineers web address <http://www.hnd.usace.army.mil> under the TECHINFO menu.

SECTION VII - INSTRUCTIONS FOR PREPARATION OF CONTRACT
DRAWINGS

A. GENERAL INSTRUCTIONS

1. Unless otherwise specified in the A-E's contract, drawings must be planned, drawn and lettered using Corps of Engineers standards as specified below. Electronic graphics standards are available from the COE Design Team Leader. Drawings shall be in accordance with ER 1110-345-700, Appendix C, "Drawings," and other criteria or guidance furnished by the Design Team Leader as part of the design contract.

2. Drawing Sizes: Drawing sizes shall be as specified below:

a. Concept and final design drawings, and drawings for standard and definitive designs, shall be prepared on standard A1 metric size sheets, 594 mm x 841 mm (23.39" x 33.11") should be used; an American National Standards Institute (ANSI) "D" equivalent sheet.

b. Specifications: There will be projects where it is neither practical nor cost effective to use A1 size drawings. Such projects may need only a minimal number of drawings, include simplified plans, elevations, profiles or details, and may be adequately shown on sheets attached to the end of the specifications (these are not to be confused with such drawings as lighting fixture details or other drawings which are an integral part of individual specifications). Such drawings shall be A4 metric size, 210 mm x 297 mm (8" x 11"), an ANSI "A" equivalent sheet, and must be legible. No fold-out drawings are permitted. If such small drawings are proposed, consult the CENAB Design Team Leader Manager for guidance.

3. All CADD (Computer-Aided Drafting and Design) drawings for advertising must use the standard cover sheet, index sheet and standard border as supplied in electronic format by the Baltimore District. All CADD deliverables shall follow the "Contract clauses for CADD Deliverables" available in electronic format from the Baltimore District.

4. Cover sheet must have project title and location in large letters above index of drawings. Location map and vicinity map must have North arrows and graphic scale bars.

5. Index of drawings must contain interdisciplinary sheet numbers, consecutive plate numbers, drawing file names and individual sheet titles.

6. Sheet titles in the Index of Drawings and the individual title boxes must read verbatim. Abbreviations are permitted only if space does not allow full sheet titles.

7. Sheet numbers should use a letter prefix referencing the discipline (i.e. C-1, C-2 for Civil Drawings; A-1, A-2 for Architectural Drawings, etc.) and shall be inserted in the allotted space in the index of drawings and title boxes.

8. Plate numbers should run consecutively (i.e. 1, 2, 3, etc.) in both title boxes and index of drawings.

9. Prime A-E logo shall be only located in the designated rectangle of the title block. Do not place an excessively large logo elsewhere in the drawing area of the plates and do not provide logos of subcontractors.

10. All full or partial site or floor plans must show north arrows. If several plans are oriented in the same geographical direction only one arrow is necessary.

11. If site plans or floor plans require half-toning to make distinctions between such features as new and existing work, be sure the half-toning is not too light. Half-toning which is too light may not print on half-size bid drawings.

12. No portion of the drawing shall extend beyond the borders of the drawing area or extend into the title block.

13. Except for lettering on location and vicinity maps, and other lettering permitted to be smaller by the COE (i.e., on COE-furnished electronic surveys for site plans), all lettering must be at least 2.5mm (0.10") high to be readable. Drawing text shall adhere to the following:

Type	AutoCad Fonts	Pen Width	Color	Lettering Height			
				Arch.	Decimal	Metric	
Normal Lettering	ROMANS.SHX	0.25mm	1 or 3	3/32"	0.1	2.5 mm	0.0025 m
Normal Lettering	ROMANS.SHX	0.35mm	2 or 6	1/8"	0.125	3.0 mm	0.0030 m
Minor Titles	ROMAND.SHX	0.35mm	2	5/32"	0.14	3.5 mm	0.0035 m
Sub Titles	ROMAND.SHX	0.50mm	4	3/16"	0.175	4.5 mm	0.0045 m

Major Titles	ROMAND.SHX	0.50mm	4	¼"	0.25	6.0 mm	0.0060 m
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Normal lettering consists of notes, dimensioning and drawing annotations. Minor titles consists of note headings such as general notes, references, etc. Subs and Major titles are for drawing, plan, section and detail titles.

14. Use only upper case letters when composing body type (i.e.: notes, schedules, tables, legends, etc.).

15. Show a graphic scale bar for each different scale used on an individual drawing. It is not necessary to show a scale bar at individual details, sections or profiles on a single sheet if the scale is the same.

16. Dates in the title blocks must be the same on all plates.

17. A project drawing number for the project will be provided by District Personnel during review of concept or preliminary plans.

18. All CADD files shall conform to the Tri-Service A/E/C CADD Standards (available at site: <ftp://www.en.nab.usace.army.mil/TriServiceCADDStandard>), ER 1110-345-700 "Appendix C Drawings" (available at site: <http://www.hnd.usace.army.mil> under the TECHINFO menu) and the "CENABEN Contract Clauses for CADD Deliverables" (available at site: <ftp://www.en.nab.usace.army.mil/AE%20Guidance>) unless superseded by any other customer or job-specific CADD standards.

B. INSTRUCTIONS FOR INCORPORATING CONTRACT MODIFICATIONS ON ORIGINAL DRAWINGS.

1. GENERAL: A contract modification is a document describing revisions and additions to be incorporated into the project during the construction period.

a. Before changes are made A-E is to assure that a copy of the original CADD file is available showing conditions prior to the change about to be made.

2. REVISIONS: Revise original tracings as follows:

a. Revisions to drawings shall be numerically identified by an appropriate number surrounded by a triangle as shown on the attached SAMPLE TITLE BLOCK. Only this symbol is to be used to indicate location of revisions in the body of drawing. This symbol has previously been used to identify drawing amendment items as described in Part IV under subheading "Drawing Amendment Items".

b. All revisions made on the drawings shall be identified by the revision identification symbol shown in the revision block.

c. The revisions on each drawing will be identified by a number according to the following:

1. If the revision block has no previous amendments or contract modifications the first revision shall be identified by 1, the second revision by 2, etc.

2. If the revision block already contains revisions the identifying number shall be the next in sequence regardless of whether the previous number identified an amendment or contract modification.

d. A description of the revision shall be concisely described in the revision block and the change identified as a contract modification to distinguish it from an amendment revision.

e. Show the date and the modification number in the revision block.

f. Draw a cloud around each change.

g. Clouds around previous changes shall be removed and new clouds drawn around current modifications.

h. Revision block shall be initialed by the A-E office making the change.

i. A SAMPLE TITLE BLOCK BLOCK is found at the end of this guidance package as Attachment No. 12.

ATTACHMENTS

1. Attachment No. 1 - Price Schedule Sample
2. Attachment No. 2 - Price Schedule Sample
3. Attachment No. 3 - Price Schedule Sample
4. Attachment No. 4 - Price Schedule Sample (2 Pages)
5. Attachment No. 5 - Price Schedule Sample (2 Pages)
6. Attachment No. 6 - Unit Price Schedule Sample (3 Pages)
7. Attachment No. 7 - Unit Price Schedule Sample (2 Pages)
8. Attachment No. 8 - Price Schedule Sample
9. Attachment No. 9 - Price Schedule Sample (2 Pages)
10. Attachment No. 10 - Table of Contents Sample (3 Pages)
11. Attachment No. 11 - Amendment Sample (2 Pages)
12. Attachment No. 12 - Sample Title Block

PART I - THE PRICE SCHEDULE
SECTION 00010 - SUPPLIES OR SERVICES AND PRICES

PRICE SCHEDULE

Description	Amount
All costs in connection with Renovation of Buildings 2487 and 2550, complete as shown on drawings and specified.	\$_____

ATTACHMENT NO. 1
PRICE SCHEDULE SAMPLE

PART I - THE PRICE SCHEDULE
SECTION 00010 - SUPPLIES OR SERVICES AND PRICES

PRICE SCHEDULE

Item No.	Description	Amount
0001	All costs in connection with construction of Boiler Plant, Building 15, including utilities to points 5 feet outside the building lines, complete as shown on the drawings and specified.	\$_____
0002	All costs in connection with construction with all outside utilities beyond points 5 feet outside the building lines and all site work, complete as shown on drawings and specified.	\$_____
TOTAL BID AMOUNT		\$_____

ATTACHMENT NO. 2
PRICE SCHEDULE SAMPLE

PART I - THE PRICE SCHEDULE
SECTION 00010 - SUPPLIES OR SERVICES AND PRICES

PRICE SCHEDULE

Item No.	Description	Amount
0001	All costs in connection with construction of the new addition to the Smith Library Building including all cutting and patching required to connect passages and utilities to the existing building, complete as shown on drawings and specified.	\$_____
0002	All costs in connection with rehabilitation of the existing Smith Library Bldg, complete as shown on drawings and specified.	\$_____
TOTAL BID AMOUNT		\$_____

ATTACHMENT NO. 3
PRICE SCHEDULE SAMPLE

PART I - THE PRICE SCHEDULE
SECTION 00010 - SUPPLIES OR SERVICES AND PRICES

PRICE SCHEDULE

Item No.	Description	Amount
0001	All costs in connection with construction of the U.S.A.R.C. addition, including utilities, to points 5'-0" outside the building lines, and installation of food service equipment, lockers, and wire mesh caging, complete as shown on drawings and specified. Furnishing of lockers, wire mesh caging and some food service equipment is covered under Item Nos. 0003, 0004 and 0005 below. This item (Item No. 0001) shall also include furnishing and installation of all food service equipment not listed in Item No.0003.	\$_____
0002	All costs in connection with construction of the U.S.A.R.C. addition beyond points 5'-0" outside the building lines, including site utilities, paving and landscaping, complete as shown on drawings and specified.	\$_____
0003	All costs in connection with furnishing food service equipment, Item Nos. 1, 2, 3, 20, 21, 23, 29, 30, 34, 36 and 37 as indicated on the Kitchen Equipment Schedule shown on Plate 22, complete as shown on drawings and specified.	\$_____
0004	All costs in connection with furnishing lockers, complete as shown on drawings and specified.	\$_____

PART I - THE PRICE SCHEDULE
SECTION 00010 - SUPPLIES OR SERVICES AND PRICES

PRICE SCHEDULE

Item No.	Description	Amount
0005	All costs in connection with furnishing wire mesh caging, complete as shown on drawings and specified.	\$_____
TOTAL ESTIMATED BID AMOUNT		\$_____

NOTES TO BIDDERS

Bidders shall note that costs for furnishing some equipment goes in one bid item while costs for installing the same equipment goes in another bid item.

ATTACHMENT NO. 4 - Page 2 of 2 Pages
PRICE SCHEDULE SAMPLE

PART I - THE PRICE SCHEDULE
SECTION 00010 - SUPPLIES OR SERVICES AND PRICES

PRICE SCHEDULE

Item No.	Description	Amount
-------------	-------------	--------

BASE BID

0001 All costs in connection with construction with the Human Impact Lab (Bldg 824), including utilities to points 5 feet outside the building lines, complete as shown on drawings and specified, but exclusive of work covered under Additive Items 0004, 0005, and 0006 below. \$_____

0002 All costs in connection with all outside utilities beyond points 5 feet outside the building lines and all site improvements, complete as shown on drawings and specified, but exclusive of work covered under Additive Item 0005 below. \$_____

TOTAL BASE BID AMOUNT \$_____

ATTACHMENT NO. 5 - Page 1 of 2 Pages
PRICE SCHEDULE SAMPLE

PART I - THE PRICE SCHEDULE
SECTION 00010 - SUPPLIES OR SERVICES AND PRICES

PRICE SCHEDULE

Item No.	Description	Amount
-------------	-------------	--------

ADDITIVE ITEMS

0004	All costs in connection with construction of the Mezzanine complete as shown on the drawings and specified.	\$_____
0005	All costs in connection with landscaping and planting of trees and shrubs complete as shown on the drawings and specified. Turfing is included under Base Bid Item No. 0002.	\$_____
0006	All costs in connection with Electric Hoist System complete as shown on the drawings and specified.	\$_____

TOTAL BASE AND ADDITIVE BID AMOUNT \$_____

ATTACHMENT NO. 5 - Page 2 of 2 Pages
PRICE SCHEDULE SAMPLE

PART I - THE PRICE SCHEDULE
SECTION 00010 - SUPPLIES OR SERVICES AND PRICES

UNIT PRICE SCHEDULE

Item No.	Description	Estimated Quantity	Unit	Price	Amount
0001	Reimbursement of Performance and Payment Bonds (See Section 01000)	---	JOB	LS	\$_____
0002	Care & Diversion of Water (Payment Item No. 02500-1 as specified in Section 02500)	---	JOB	LS	\$_____
0003	Channel Clearing (Payment Item No. 02100-1 as specified in Section 02100)	---	JOB	LS	\$_____
0004	Excavation-Common (Payment Item No. 02201-1 as specified in Section 02201)	4500	CY	\$_____	\$_____

ATTACHMENT NO. 6 - Page 1 of 3 Pages
UNIT PRICE SCHEDULE SAMPLE

PART I - THE PRICE SCHEDULE
SECTION 00010 - SUPPLIES OR SERVICES AND PRICES

UNIT PRICE SCHEDULE

Item No.	Description	Estimated Quantity	Unit	Price	Amount
0006	Excavation-Rock: (Payment Item No. 02201-2 as specified in Section 02201)				
0006AA	First 750 cu. yd.	750	CY	\$_____	\$_____
0006AB	Over 750 cu. yd.	250	CY	\$_____	\$_____
0007	Backfill (Payment Item No. 02201-3 as specified in Section 02201)	676	CY	\$_____	\$_____
0008	Stripping (Payment Item No. 02230-1 as specified in Section 02230)	53,000	CY	\$_____	\$_____
0009	Bedding Material (Payment Item No. 02440-1 as specified in Section 02440)	25	CY	\$_____	\$_____
0010	Gabion Protection (Payment Item No. 02490-1 as specified in Section 02490)	80	CY	\$_____	\$_____

PART I - THE PRICE SCHEDULE
SECTION 00010 - SUPPLIES OR SERVICES AND PRICES

UNIT PRICE SCHEDULE

Item No.	Description	Estimated Quantity	Unit	Price	Amount
0011	Miscellaneous Metals (Payment Item No. 05500-1 as specified in Section 05500)	---	JOB	LS	\$_____
TOTAL ESTIMATED BID AMOUNT					\$_____

ATTACHMENT NO. 6 - Page 3 of 3 Pages
UNIT PRICE SCHEDULE SAMPLE

PART I - THE PRICE SCHEDULE
SECTION 00010 - SUPPLIES OR SERVICES AND PRICES

UNIT PRICE SCHEDULE

Item No.	Description	Estimated Quantity	Unit	Price	Amount
0001	All costs in connection with Add to Apron complete as shown on drawings and specified, but exclusive of work covered under Base Bid Item Nos. 0002 through 0005 below.	---	JOB	LS	\$_____
0002	Overexcavation (Payment Item No. 02100-1 as specified in Section 02100)	2,000	CY	\$_____	\$_____
0003	Overexcavation Backfill (Payment Item No. 02100-2 as specified in Section 02100)	2,000	CY	\$_____	\$_____
0004	Concrete Paving (Payment Item No. 02515-1 as specified in Section 02515)	17,725	CY	\$_____	\$_____

ATTACHMENT NO. 7 -- Page 1 of 2 Pages
PRICE SCHEDULE SAMPLE

00010-3

PART I - THE PRICE SCHEDULE
SECTION 00010 - SUPPLIES OR SERVICES AND PRICES

UNIT PRICE SCHEDULE

Item No.	Description	Estimated Quantity	Unit	Price	Amount
0005	Airfield (Taxiway) Bituminous Surfacing (Payment Item No. 02556-1 as specified in Section 02556)	1,000	CY	\$_____	\$_____
TOTAL ESTIMATED BID AMOUNT					\$_____

ATTACHMENT NO. 7 -- Page 2 of 2 Pages
PRICE SCHEDULE SAMPLE

PART I - THE PRICE SCHEDULE
SECTION 00010 - SUPPLIES OR SERVICES AND PRICES

PRICE SCHEDULE

Item No.	Description	Amount
0001	All costs in connection with construction of Administration Building including utilities to points 5 feet outside the building lines, complete as shown on the drawings and specified.	\$ _____
0002	All costs in connection with construction with all outside utilities beyond points 5 feet outside the building lines and all site work, complete as shown on drawings and specified.	\$ _____
TOTAL BID AMOUNT		\$ _____

GOVERNMENT-FURNISHED PROPERTY

The following items shall be Government-Furnished and Contractor-installed. *See below for additional information to be inserted here.

Chalk Boards
Projection Screens

*If the value of Government-Furnished items is valued at \$100,000 or less, the preparer of the price schedule shall insert "(See Clause: GOVERNMENT-FURNISHED PROPERTY (SHORT FORM) of the CONTRACT CLAUSES)". If the value of Government-Furnished items exceeds \$100,000, the preparer of the price schedule shall insert "(See Clause: GOVERNMENT PROPERTY (FIXED PRICED CONTRACTS) of the CONTRACT CLAUSES)". If the value of Government-Furnished items is a combination, the preparer of the price schedule shall insert "(See Clause: GOVERNMENT PROPERTY (FIXED PRICED CONTRACTS) of the CONTRACT CLAUSES)".

ATTACHMENT NO. 8
PRICE SCHEDULE SAMPLE

00010-3

PART I - THE PRICE SCHEDULE
SECTION 00010 - SUPPLIES OR SERVICES AND PRICES

PRICE SCHEDULE

Item No.	Description	Amount
-------------	-------------	--------

BASE BID

0001	All costs in connection with construction of the Operations and Training Facility, including utilities to points 5 feet outside the building lines, complete as shown on drawings and specified, but exclusive of work covered under Optional Items 0005 and 0006 below.	\$_____
0002	All costs in connection with all outside utilities beyond points 5 feet outside the building lines and all site improvements, including turfing, complete as shown on drawings and specified, but exclusive of work covered under Optional Items 0004, 0005 and 0006 below.	\$_____

TOTAL BASE BID AMOUNT \$_____

ATTACHMENT NO. 9 - Page 1 of 2 Pages
PRICE SCHEDULE SAMPLE

PART I - THE PRICE SCHEDULE
SECTION 00010 - SUPPLIES OR SERVICES AND PRICES

PRICE SCHEDULE

Item No.	Description	Amount
-------------	-------------	--------

OPTIONAL ITEMS

0004	All costs in connection with construction of the garage complete as shown on drawings and specified.	\$_____
0005	All costs in connection with landscaping and planting of trees and shrubs complete as shown on drawings and specified.	\$_____
0006	All costs in connection with the outdoor irrigation system complete as shown on drawings and specified.	\$_____

TOTAL BASE AND OPTION BID AMOUNT \$_____

ATTACHMENT NO. 9 - Page 2 of 2 Pages
PRICE SCHEDULE SAMPLE

00010-4

ATTACHMENT NO. 10 - Page 1 of 3 Pages (This TOC is provided for format only. Some specification numbers and names may not be accurate.)

TABLE OF CONTENTS (TOC) SAMPLE
Include only Section titles required by your project.

TABLE OF CONTENTS

<u>SECTION NO.</u>	<u>TITLE</u>
	<u>DIVISION 1 - GENERAL REQUIREMENTS</u>
01000	Administrative Requirements
01050	Job Conditions
01070	Cutting, Patching and Repairing
01060	Safety
01090	Sources for Reference Publications
01330	Submittal Procedures
01451	Contractor Quality Control
01510	Temporary Construction Items
01561	Environment Protection
01720	As-Built Drawings
	<u>DIVISION 2 - SITE WORK</u>
02221	Excavation, Filling, and Backfilling for Buildings
02935	Turf
	<u>DIVISION 3 - CONCRETE</u>
03300	Concrete
	<u>DIVISIONS 4 - 6</u>
	NOT USED

-A-

ATTACHMENT NO. 10 - Page 2 of 3 Pages

TABLE OF CONTENTS

<u>SECTION NO.</u>	<u>TITLE</u>
<u>DIVISION 7 - MOISTURE PROTECTION</u>	
07311	Roofing Strip Shingles
07600	Sheet Metal Work, General
07920	Joint Sealing
<u>DIVISION 8 - DOORS AND WINDOWS</u>	
08110	Steel Doors and Frames
08201	Wood Doors
08312	Sliding Metal Doors
08610	Wood Windows
08700	Builders' Hardware
08810	Glass and Glazing
<u>DIVISION 9 - FINISHES</u>	
09900	Painting, General
<u>DIVISION 10 - SPECIALTIES</u>	
10615	Demountable Partitions
<u>DIVISION 11 - EQUIPMENT</u>	
11400	Food Service Equipment
11710	Casework for Medical and Dental Facilities
<u>DIVISION 12 - FURNISHINGS</u>	
Not Used	
<u>DIVISION 13 - SPECIAL CONSTRUCTION</u>	
13120	Standard Metal Building Systems
13810	Energy Monitoring and Control System (EMCS)

TABLE OF CONTENTS

<u>SECTION NO.</u>	<u>TITLE</u>
	<u>DIVISION 14 - CONVEYING SYSTEMS</u>
	Not Used
	<u>DIVISION 15 - MECHANICAL</u>
15400	Plumbing, General Purpose
15488	Gas Piping Systems
15569	Water and Steam Heating; Oil, Gas or Both; Up to 20 MBTUH
15895	Air Supply, Distribution, Ventilation, and Exhaust System
	<u>DIVISION 16 - ELECTRICAL</u>
16113	Underfloor Duct System
16415	Electrical Work, Interior

ATTACHMENT NO. 11

AMENDMENT SAMPLE - Page 1 of 2 Pages

AMENDMENT NO. _____ TO ADVERTISED IFB DACA31-95-B-0098
EFFECTIVE PAGE 2 OF ? PAGES

AMENDMENTS:

- 1) Amendment No. 2, Item 4: In the last sentence of paragraph 3.5 delete "seed" and substitute therefor "sod".
- 2) Amendment No. 3, Item 26: Delete Plate 9 and substitute therefor the attached revised like-numbered plate, dated Nov 10, 1997.
- 3) Amendment No. 4, Item 17: On Sketch SK-5 change note "#4 Anchor 3" Long" to "#5 Anchor 8" Long".

SPECIFICATIONS:

- 4) Table of Contents, Page A, DIVISION 2 - SITE WORK: Add section number and title as follows: "02580 PAVEMENT MARKINGS".
- 5) Page 01000-1, Paragraph 2: In line 6, delete "\$125.00" and substitute therefor "\$145.00".
- 6) Page 01000-1, Paragraph 3.1: Delete the third sentence of this paragraph.
- 7) Page 02050-1, Paragraph 7.1: Delete this paragraph as originally issued and substitute therefor the following:

"1.1 Availability of work areas: Areas in which salvage and demolition work is to be accomplished will be available upon notice to proceed."
- 8) Section 02485: Immediately after this section insert the attached Section 02580 "PAVEMENT MARKINGS".
- 9) Page 15450-7, Paragraph 7.2.1: Add the following new sentence to the end of this paragraph: "Return duct in ceiling spaces shall not be insulated."

ATTACHMENT NO. 11

AMENDMENT SAMPLE - Page 2 of 2 Pages

DRAWINGS:

10) Plate 20, One Line Diagram, Motor Control Center: Change the following items:

- a. Disconnect for Panel E from "2 pole" to "3 pole".
- b. Circuit M-1, delete size 2 contactor and change feeder size from "3 #1/0" to "3 #2/0".

11) Plate 25: Delete Plate 25 as originally issued and substitute therefor the attached revised Plate 25, dated Nov 10 1997.

12) Plate 32: Revise this plate in accordance with the attached Sketch SK-(A,E,C,etc) 1, 2, 3, dated Nov 11, 1997.

ATTACHMENTS:

- 1) Section 02580, "PAVEMENT MARKINGS."
- 2) Plate 25, revised Nov 10, 1997.
- 3) Plate 9, revised Nov 10, 1997.
- 4) Sketch SK-1, dated Nov 11, 1997.

